COMPAQ

Migration from NetWare 3 to intraNetWare

Compaq TechNote

Includes information on:

- Migrating Across-the-Wire
- Migrating Printing Environments
- Installing NetWare Client Software
- Installing and using DynaText

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Migration from NetWare 3 to intraNetWare

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Chapter 1
About This TechNote

There are many reasons to migrate your NetWare 3 server to intraNetWare. intraNetWare is an operating system that continues the evolution of NetWare into a full-service Intranet/Internet access platform, with scalability for businesses of all sizes. intraNetWare is a true 32-bit operating system that uses NetWare Loadable Modules (NLMs) to add functionality, which provides a dynamic and modular environment. You can design your system to meet your current needs and easily add services, users, and enhancements as required. intraNetWare can support a specific number of users for your existing system, while allowing you to purchase upgrades to add more users as needed. The new Novell Distributed Print Services (NDPS) architecture based on Document Printing Application (DPA) makes it easier for you to connect printers. It also provides centralized print management that is integrated with intraNetWare administration utilities.

intraNetWare offers a comprehensive set of Internet and Intranet services so that you can access the Internet and establish a corporate intranet using open standards. Intranets combine Internet technology and corporate networks to provide universal access to information. Organizations are using Intranets to strengthen and streamline their business processes. intraNetWare creates a powerful Intranet platform on your existing NetWare network infrastructure, allowing you to preserve your investment in training and network resources, while leveraging the existing skills of your users and administrators. The bottom line is that you save money and make your organization more productive.

With intraNetWare, you'll enjoy all the benefits and business advantages of a full-service Intranet:

- Closer interaction with your customers, employees, and business partners.
- Complete set of Internet and Intranet services; including Novell Web Server, Netscape Navigator web browser, IPX/IP gateway, CGI (Common Gateway Interface) for scripting, JVM (Java Virtual Machine) for Java applications, and FTP server for file transfer.

- Instant access to a wealth of information and services so your employees can follow emerging business and technology trends, and keep close watch on competitors.
- More economical networking that could reduce telecommunications costs by 20 to 50 percent.
  - Gartner Group research indicates that a typical company will save 50% of operating expenses, and realize savings of between 33% and 83% of user account administration over 3.x, depending on the size of the network. ("The Cost of Not Converting to NetWare 4.x" (Gartner Group Top View, June 13, 1995))
  - By upgrading to intraNetWare, the following companies cut annual operating expenses more than 50%, consistent with Gartner Group's findings:
    a. Nortel Communications – 57%
    b. Automated Logic Corp. – 57%
    c. City of Tucson – 59%
    d. Sun Diamond Growers – 57%
- Even greater ease of use and management by allowing users to see and access all network resources with a single login. Administrators can manage the network from a central location with simple point-and-click operations. NetWare Application Launcher (NAL) allows distribution of applications to a client from a central location. Automatic Client Update streamlines the process of updating client software.
- Additive Licensing permits multiple individual licenses to be added together to form what is known as a *license chain*. As an example, a server requiring a license count of 350 could have a license chain consisting of one 250-user license plus one 100-user license. Additive licensing reduces the cost of growing your network as your business grows.

  NOTE: NetWare 4.0x and NetWare 3.x did not support additive licensing. For example, if an upgrade from 100 users to 150 users was required on a given server, the customer had to purchase a 250-user license for that server.

This TechNote is for system integrators and network administrators with knowledge of Compaq Server products, NetWare 3 and intraNetWare. It is a supplement to the *Compaq Hardware Reference* documentation and the *intraNetWare Installation and Upgrade* documentation.

This Compaq TechNote provides guidelines for the following:

- Migrating data and user information using the *MIGRATE.EXE* Across-the-Wire Migration utility.
- Migrating printing environments using the *MIGPRINT.EXE* utility.
- Using the DS Migrate and File Migration utilities to migrate modeled bindery information to an existing intraNetWare Directory tree.
- Installing and using Simware's REXXWARE Migration Toolkit (RMT), a server-based utility that is used in Across-the-Wire upgrades of large-scale NetWare networks to intraNetWare.
- Installing workstation software and management applications.
- Installing Novell DynaText.

The chapters in this Compaq TechNote contain the following information:

- ***Chapter 1 -- About This TechNote*** provides an overview, a list of other resources to use, documentation conventions, and migration requirements, including memory allocation.
- ***Chapter 2 -- Different Migration Methods*** describes the three different migration methods available to upgrade your NetWare 3 server to intraNetWare.
- ***Chapter 3 -- MIGRATE.EXE Across-the-Wire Migration Utility*** describes the procedures for using the utility, including:
  - How to create intraNetWare Migration utility diskettes
  - How to migrate printing environments
- ***Chapter 4 -- DS Migrate and File Migration Utilities*** describes how to upgrade your NetWare 3 server by migrating modeled bindery information to an existing intraNetWare Directory tree with the DS Migrate utility. It also describes how to use the File Migration utility.

- ***Chapter 5 -- Simware's REXXWARE Migration Toolkit (RMT)*** describes the recommended procedures for the server-based RMT utility that is used in Across-the-Wire upgrades of large-scale NetWare 3 networks to intraNetWare. After you have installed intraNetWare on the destination servers using the Install utility, you use RMT to migrate network information and data files from the NetWare 3 source servers.
- ***Chapter 6 -- Workstation Software and Management*** describes the procedures for installing workstation software and management applications.
- ***Chapter 7 -- DynaText*** describes DynaText installation procedures from the Compaq SmartStart package or the intraNetWare package.
- ***Appendix A -- Examples of Migration Reports*** provides examples of the following:
  - Migration report log file generated by the *MIGRATE.EXE*
  - Print migration report log file generated by the *MIGPRINT.EXE*
  - DS Migrate report
  - File Migration report
  - RMT report
- ***Glossary*** defines server management and related networking terms.

Other Resources to Use

For more information, other resources available are as follows:

- Novell intraNetWare Upgrade Information

  Everything that you want and need to know about upgrading to intraNetWare can be found at the following Novell web site:

  http://www.novell.com/intranetware/upgrade/

  Novell announced the release of the Novell Upgrade Wizard in beta version at the time of printing of this TechNote. Novell Upgrade Wizard is a client-based utility that upgrades a NetWare 3 server to an intraNetWare server across the wire. The utility features a split Project Window that displays both source and destination servers. You can easily move the NetWare bindery and file system to an intraNetWare server by dragging and dropping the bindery or volumes to the desired location in the NDS tree and new file system.

  Key features include:

  - Drag and drop modeling capability
  - Ability to migrate both the NetWare 3 bindery and file system in a single GUI utility
  - Password and trustee assignment migration functionality
  - Simple print component migration
  - Ability to run on both Windows 95 and Windows NT clients on its own or as a snap-in to NetWare Administrator
  - Option to establish migrated users' rights based on existing user template or create new user templates for migrating users
  - Ability to create new containers in the existing Directory tree and new subdirectories in the file system
  - Notification of possible errors and ability to correct these errors before migration
  - Migration progress bar indicating percentage of completion

Novell Upgrade Wizard runs on both Windows 95 and Windows NT workstations. You can download the utility free of charge from the following Novell web site:

http://www.novell.com/intranetware/upgrade/utilities.html

- Compaq TechNote, *intraNetWare Performance Management*

  This TechNote provides guidelines for using a variety of network monitoring tools to analyze network server and network communication subsystems and to manage network performance.

- *DynaText*

  DynaText allows you to read intraNetWare online documentation from your workstation. You can install DynaText files on an intraNetWare server, a local hard disk, or access the files directly from the CD. You must set up a Windows workstation to view DynaText.
  See Chapter 7, “DynaText,” for more information.

- NetWire Novell support forum on CompuServe

  NetWire is a fairly inexpensive way to get up-to-date advice and patches from the CompuServe service. To open a CompuServe account, call one of the following numbers:

  - In the United States or Canada: 1-800-524-3388.
  - In the United Kingdom: 0800-289-378.
  - In Germany: 0130-37-32.
  - In other European countries: 44-272-255-111.
  - In locations other than the United States, Canada, or Europe, call (614) 457-0802. Ask for "Representative 200," which identifies you as a Novell customer.

- *Novell and NetWare Application Notes and Research Reports*

  These notes and reports cover technical aspects of Novell- and NetWare-based system design, implementation, management, optimization, troubleshooting, and software development.

  - "Consumer Gas Company, Ltd. Migration to intraNetWare from NetWare 3.12: A Case Study ," January 1998, *Novell AppNotes*, P/N 464-000054-001
  - "A Practical Guide to Using Novell Application Launcher (NAL) 2.01," January 1998, *Novell AppNotes*, P/N 464-000054-001
  - "Using Novell Application Launcher 2.0 and snAppShot for Application Delivery," August 1997, *Novell AppNotes*, P/N 464-000052-008
  - Special Issue for intraNetWare Client for Windows NT, May 1997, *Novell AppNotes*, P/N 464-000052-005
  - Special Issue for NetWare Client 32 for Windows 95, November 1996, *Novell Application Notes*, P/N 164-000050-011
  - "Migrating to NetWare 4.11 Using the Across-the-Wire Method," October 1996, *Novell Application Notes*, P/N 164-000050-010
  - "Lessons Learned While Upgrading to NetWare 4.1," August 1996, *Novell Application Notes*, P/N 164-000050-008
  - Special Issue for NetWare Client 32 for DOS/Windows, May 1996, *Novell Application Notes*, P/N 164-000050-005
  - "Using DS Standard to Migrate Networks to NetWare 4.1," February 1996, *Novell Application Notes*, P/N 164-000050-002

- *Compaq Hardware Reference* documentation

  This documentation can help isolate a problem to a certain computer component or cable segment. Some network problems occur because of malfunctioning hardware. Check the documentation that came with the hardware involved.

Migration Requirements

To migrate your NetWare 3 server to an intraNetWare server using one of the Across-the-Wire Migration methods, you need the following:

- The current NetWare 3 server
- A backup of the data files on the NetWare 3 server
- CD-ROM drive and supporting drivers
- Compaq SmartStart (optional) and an intraNetWare license disk and intraNetWare media from SmartStart or Novell
- Unless you are using RMT, a client workstation with certain minimum requirements that depend on the utility you plan to use:

  MIGRATE.EXE:

  To run MIGRATE.EXE, your client workstation must meet the following system requirements:

  - DOS, Windows 3.1x or Windows 95
  - NETX 3.26 or later, VLM 1.20 or later, or NetWare Client 32 software
  - At least 640KB of RAM (with 480KB of free memory)
  - At least 5MB of free disk space to hold the bindery information during the migration process
  - At least 1.72MB of free disk space for the Migration utility files
  - IPX Retry Count set to 60

- The following line included in your CONFIG.SYS file:

  FILES = 20 (OR GREATER)

DSMigrate:

To run DS Migrate, the NetWare File Migration utility, and NetWare Administrator, your NetWare client workstation must meet the following system requirements:

- Windows 3.1x or Windows 95
- VLM or NetWare Client 32 software
- At least 8MB of RAM
- 1.2MB of free disk space for NetWare Administrator if not running from the network drive
- 10MB of free disk space for DS Migrate executables if not running from the network drive (17MB if DS Migrate Assistant is also installed)
- 3MB of free disk space for each NetWare server discovered
- The following line included in your CONFIG.SYS file:

  FILES = 40 (OR GREATER)

NOTE: RMT does not require a client workstation.

- An intraNetWare server with a 386 (or greater) system processor with a minimum of 15MB for the DOS partition, 75MB for the intraNetWare partition, and 20MB system memory

  Use the following intraNetWare Server Memory Calculation Worksheet to estimate the *recommended system memory* requirements for your intraNetWare server based on total intraNetWare volume space.

  See the Compaq TechNote, *intraNetWare Performance Management*, for more detailed information on system memory.

intraNetWare Server Memory Calculation Worksheet

(from *Novell AppNotes*, March 1997 – Photocopy as needed)

STEP 1: Calculate the following variables.

V1. Enter the *total* number of megabytes of disk connected to the server. _____MB
(For example: enter 1 for each MB, enter 1024 for each GB.)

V2. Calculate the number of megabytes of *useable* disk space connected to the server. _____MB
(If you are mirroring or duplexing multiply V1 * 0.5, otherwise copy V1.)

V3. Enter the server's volume block size (4, 8, 16, 32, or 64). _____KB

V4. Calculate the number of disk blocks per MB (divide 1024 / V3). _____Blocks/MB

V5. Calculate the total number of disk blocks (multiply V2 * V4). _____Blocks

V6. Enter the maximum number of clients (end-users) attached to the server. _____Clients
(For example: enter 24 for 24 end-users)

V7. Enter the maximum number of files that will reside on the server. _____Files

STEP 2: Calculate your individual memory requirements.

Line 1. Enter the base memory requirement for the core OS and NDS. _____KB
(Enter 6144 for intraNetWare; 11,264 for SFT III; or 12,288 for SMP.)

Line 2. Calculate the memory requirement for the Media Manager (multiply V1 * 0.1). _____KB

Line 3. Calculate the memory requirement for directory tables _____KB
(multiply V7 * .006, or if suballocation is enabled multiply V7 * .011).

Line 4. Calculate the memory requirement for additional Name Spaces _____KB
(multiply V7 * .006 * number of additional Name Spaces loaded on the server).

Line 5. Calculate the memory required to cache the FAT (multiply Line V5 * .008). _____KB

Line 6. Calculate the memory requirement for file cache using the following table: _____KB

This calculation uses a 0.4-MB file cache per client memory requirement. The decrease as the user community size increases is based on assumptions regarding increased repetitive use of shared data (temporal and spatial locality) within cache.

Less than 100 clients	V6 * 400
Between 100 and 250 clients	40,000 + ((V6 - 100) * 200)
Between 250 and 500 clients	70,000 + ((V6 - 250) * 100)
Between 500 and 1000 clients	95,000 + ((V6 - 500) * 50)

Line 7. Enter the total memory (KB) required for support NLMs. _____KB
2,000KB is recommended for BTRIEVE(700), CLIB(500), INSTALL(600), and PSERVER(200)

Line 8. Enter the total memory (KB) required for other services. _____KB
Other services include GroupWise, ManageWise, NetWare for Macintosh, NetWare for SAA, and so on.

STEP 3: Calculate the server's total memory requirement.

Line 9: Total Lines 1–8 for your total memory requirement (in KB). _____KB

Line 10: Divide Line 9 by 1024 for a result in MB. _____MB

Using this result, round up to the server's nearest memory configuration. intraNetWare will enhance server performance by using all leftover memory for additional file cache.

General Update Preparations

- Perform two file system backups on the NetWare 3 server and verify them. If possible, restore some files to a spare server as a test.
- Verify that migration server requirements are met.
  - The DOS partition must be a minimum of 15MB, but Compaq recommends that you create a partition equal to the size of the server system memory plus 20MB for server start files and DOS utilities. This extra DOS partition space will allow you to dump the core memory to your hard drive in the event of a server abend. Examining the core dump may aid you in diagnosing the cause of the abend, if the abend log does not help determine the cause.
  - Ensure that there is plenty of free space on the NetWare partition that will contain the SYS volume. A minimum installation requires 75MB, but it is safer to make the volume at least 100MB. If DynaText will be installed on SYS, allow another 70MB for the viewer and one language collection. If the SYS volume runs out of disk space, the Transaction Tracking System (TTS) that protects NDS from corruption is disabled. Because NDS is stored on the SYS volume, you also need space to expand the database with additional objects. Do not place print queues on SYS. Use another volume to host the queues. This will avoid the possibility of filling all the space if print jobs stack up in a queue.
- Verify that workstation requirements (if needed) are met.
- Verify that you have an account with sufficient rights on all servers involved in the migration.
- If migrating Across-the Wire:
  - Load and add name spaces necessary to destination server volumes.
  - Upgrade 3.x NLMs if required by the migration method.
  - Disable any SAP filtering on your network.

Notational Conventions

Table 1-1 lists the conventions used in this TechNote to distinguish elements of text found within this document.

Table 1-1
Notational Conventions

Convention	Use
KEYS	Keys on your keyboard appear in boldface.
KEY+KEY	When you see a plus sign (+) between two keys, hold down the first key while you press the second key. For example, "Press the **Ctrl**+**Z** keys" means press and hold down the **Ctrl** key while you press and release the **Z** key.
New terms, screen selections, variables	These items always appear in italics
FILENAMES	Names of files appear in uppercase italics in DOS and in other environments
COMMANDS, DIRECTORY NAMES, DRIVE NAMES, and PROGRAMS	These items always appear in uppercase in DOS and in other environments.
USER INPUT	Information you type exactly as it appears is shown in upper cases.
! IMPORTANT	Presents clarifying or specific points of information.
NOTE:	Presents commentary, sidelights, or interesting points of information.
Type	When instructed to type information, do so without pressing the **Enter** key.
Select *item* → *item* → *item*	Items separated by arrows indicate items you select in a sequence.

Chapter 2
Different Migration Methods

There are three different migration methods available to upgrade your NetWare 3 server to intraNetWare. The upgrade process is necessary because the NetWare 3 bindery must go through a conversion process to the new intraNetWare environment. You cannot simply restore a complete NetWare 3 backup to an intraNetWare server or copy all of the NetWare 3 files to the intraNetWare server. The bindery, accounting, and security information must go through a translation process into the intraNetWare format.

The three different migration methods available to intraNetWare are:

1. Install Upgrade, using Install Utility (*INSTALL.BAT*)

NOTE: Install Upgrade as used in this TechNote refers to the NetWare 4.11 Installation Program.

2. Same Server Migration
3. Across-The-Wire Migration
    a. *MIGRATE.EXE*
    b. DS Migrate and File Migration Utilities
    c. Simware's REXXWARE™ Migration Toolkit (RMT)

    NOTE: Through Novell's partnership with Simware, RMT is provided free of charge to registered NetWare 3 customers at http://www.simware.com or by calling 1-800-267-9991.

Because of the increased capacity intraNetWare requires over NetWare 3, it is likely that many upgrade plans will include new server hardware that offers more disk space, more memory, more powerful processor, and/or more powerful network interface controllers. If you decide to upgrade your operating system with a new Compaq server to take advantage of advances in technology, you will obtain increased performance, built-in fault tolerance, and security features.

In this TechNote, there is a general description of each upgrade method, with more detail on the Across-The-Wire Migration methods using *MIGRATE.EXE*, DS Migrate, and RMT. **The RMT utility or DS Migrate used with the File Migration Utility are the recommended methods of migrating a NetWare server Across-the-Wire.** The *MIGRATE.EXE* utility still ships with intraNetWare, but is not recommended for future use because of its various limitations. There are other resources available to provide more detail on the Same Server Migration or the Install Upgrade if you need to use one of these methods. See Chapter 1, "About This TechNote," for more information on other resources available. Figure 2-1 shows the selection process for the appropriate upgrade method.

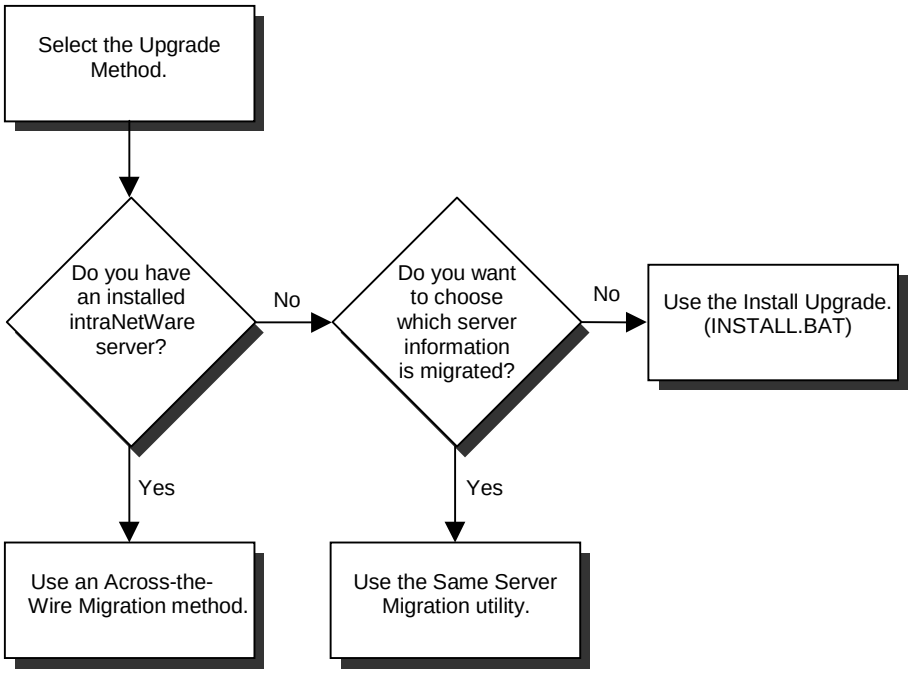

Figure 2-1. Selecting the Appropriate Upgrade Method

Table 2-1 compares the migration methods using several categories.

Table 2-1
Migration Method Comparison

Method	Speed	H/W Needed	Passwords	Login Scripts and Printing	Files and Trustees	Disaster Risk	Volume Block Size, Compression, Suballocation	Choose information migrated?
Install Upgrade	Faster	Server	Migrated	Migrated	Migrated	Restore server from backup	No auto-change block size, can turn ON after, can turn ON after (both will affect new writes only)	No
Same-Server Migration	Slowest	Server, WS	Not Migrated	Not Migrated	Backup and Restore	Restore server from backup	64K, ON, ON	Yes
Across-the-Wire Migration using:								
MIGRATE.EXE	Slow	2 Servers, WS	Not Migrated	*UIMPORT.EXE* *MIGPRINT.EXE*	Migrated	Source server intact	64K, ON, ON	Yes
DS Migrate/File Migration	Faster	2 Servers, WS	Migrated	Migrated	Migrated	Source server intact	64K, ON, ON	Yes
RMT	Fastest	2 Servers	Migrated	Migrated	Migrated	Source server intact	64K, ON, ON	Yes

Install Upgrade

The Install Upgrade method is a server-based approach to upgrading intraNetWare. You can use the Install Upgrade if your current NetWare 3 server meets the following requirements for intraNetWare and you are not planning to upgrade any hardware until after the migration:

- A 15 MB DOS partition is present
- DOS is installed on the DOS partition
- The server boots from the DOS partition
- Free hard disk space is allocated to NetWare
- Each hard disk contains one NetWare volume
- Randomly generated IPX addresses can be used
- A default NDS tree with a single container can be used

After running *INSTALL.BAT* from the intraNetWare CD-ROM, select *Upgrade a 3.x or 4.x server to intraNetWare* from the main menu on the console of the server you are upgrading. This process requires no client workstation or any other hardware other than the server itself. You perform the entire upgrade from the server console as shown in Figure 2-2. In this case, the operating system is upgraded in place and all the data files are automatically converted to intraNetWare data files. All your passwords are maintained and migrated to NDS. When upgrading a server, you are allowed to choose additional product options, including "*Upgrade 3.1x Print Services*" to upgrade print services. Selecting this option will launch *PUPGRADE.NLM*, which upgrades all print databases, printers, print servers, and print queues in place. Use Install upgrade when you want to use the same server hardware for your new network.

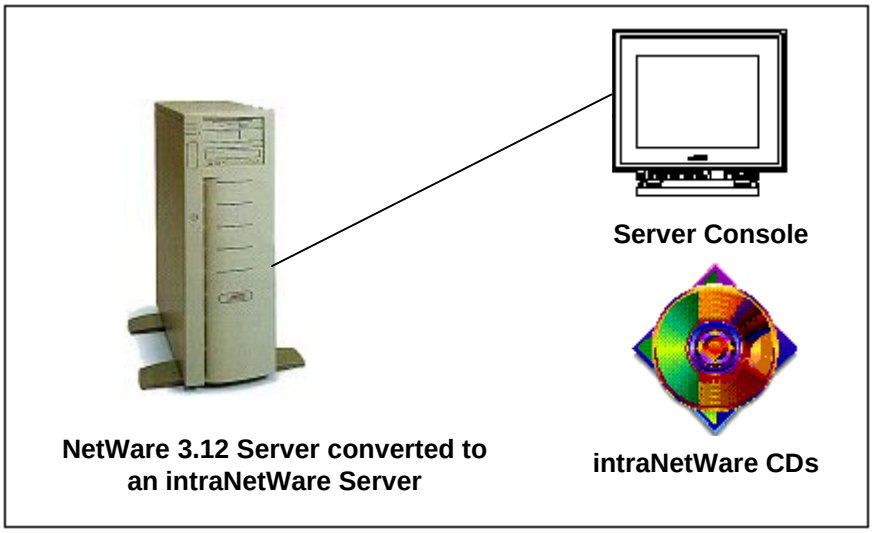

Figure 2-2. Install Upgrade

The Install Upgrade method requires the transfer of the entire NetWare 3 server environment. You cannot control which data and bindery information you want to migrate.

Ensuring that you allot sufficient time to perform the Install Upgrade is essential. It can be very time consuming, depending on the hardware configuration and amount of data on the NetWare 3 server. The process proceeds through four phases:

- System Analysis (non-destructive)
- Disk Analysis (non-destructive)
- Disk Modification (destructive)
- Bindery Conversion (destructive)

The system and disk analysis phases are non-destructive. They simply ensure that the server has enough disk space and memory to complete the upgrade successfully.

The disk modification and bindery conversion phases are destructive. During the modification and conversion phases, the NetWare 3 format is converted to the intraNetWare format. If a failure should occur during either of these two phases, you must restore the NetWare 3 system from a current and complete backup before starting the upgrade process again.

Same Server Migration

If you are currently running a NetWare 3 server with a 286 processor, intraNetWare will not run on your system. Therefore, the Install Upgrade and Same Server Migration methods cannot be used to upgrade to intraNetWare. The Across-The-Wire Migration method can move data from a 286 server to a new server meeting the intraNetWare requirements.

The Same Server Migration method relies on the Migration utility to backup and modify bindery information. It also relies on a current backup of the data files. You must back up the data files to tape or to another location, and the Migration utility translates and transfers the bindery information. This process requires a NetWare 3 server that is overwritten to intraNetWare, a client workstation, and intraNetWare CDs as shown in Figure 2-3.

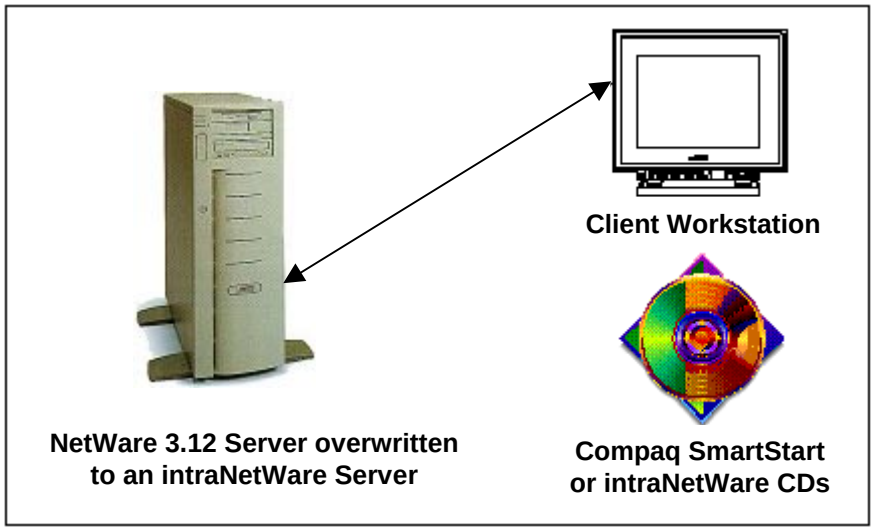

Figure 2-3. Same Server Migration

The requirements for the client workstation are given in Chapter 1, under "Migration Requirements."

After you transfer the bindery information to the working directory on a client workstation and you have a backup copy of the data files, intraNetWare uses the existing NetWare 3 server as the hardware for the new intraNetWare server. After the intraNetWare installation process, the client workstation connects to the new server and migrates the bindery information back to the new intraNetWare server. The Migration utility performs any necessary translation of the bindery data to NDS. Finally, you copy the backup copy of the data files to the new server. This method relies completely on a current and complete backup of the NetWare 3 server if the upgrade fails for any reason. If the data backups become corrupted or you have some delays in completing the intraNetWare installation, for example, you must create the original NetWare 3 system from backups and start the migration process again.

Across-The-Wire Migration

The Across-The-Wire Migration is the recommended upgrade method because it is:

- Safest
- Fastest
- Most flexible
- Capable of migrating multiple servers into one server

Across-The-Wire Migration is the safest of the three methods discussed. If the migration fails for any reason, simply repeat the procedure until it works successfully. The original NetWare 3 server remains intact until you decide to overwrite it.

This migration process is probably the fastest of the three methods discussed. There is no restoration of a backup tape as in the Same Server Migration process and there is no hardware and system analysis done as in the Install Upgrade process.

It is also the most flexible migration option. You can consolidate two or more NetWare 3 servers into one intraNetWare server. You can choose which volumes you want to migrate across to the intraNetWare server. You can direct the data to a volume or directory on the intraNetWare server that differs from the NetWare 3 source server.

The Across-The-Wire upgrades a NetWare 3 server to a *newly installed or existing* intraNetWare server. You might not be able to simply upgrade your existing hardware to intraNetWare requirements. If you are planning to use the existing server hardware, you should use the Same Server Migration method or the Install Upgrade method. See “Install Upgrade” or “Same Server Migration” for more information.

Migration Utility (*MIGRATE.EXE*)

With the Migration utility (*MIGRATE.EXE*) method, bindery information and data files pass from one server to another via a client with access to both servers as a supervisor-equivalent user. The Migration reads the NetWare 3 bindery information (users, groups, trustee assignments, and accounting information) from the source NetWare 3 server. It stores the NetWare 3 bindery information in an intermediate file on the client workstation running the Migration utility, then reads from this intermediate file and writes to the destination intraNetWare server.

This Across-The-Wire Migration method then copies the data files (files, directories, and their attributes) directly from the source server to the destination server via the client workstation.

This process requires an existing NetWare 3 server, a newly installed or existing intraNetWare server, and a client workstation that can attach to both servers as shown in Figure 2-4. Other requirements for the workstation are given in Chapter 1, “Migration Requirements.”

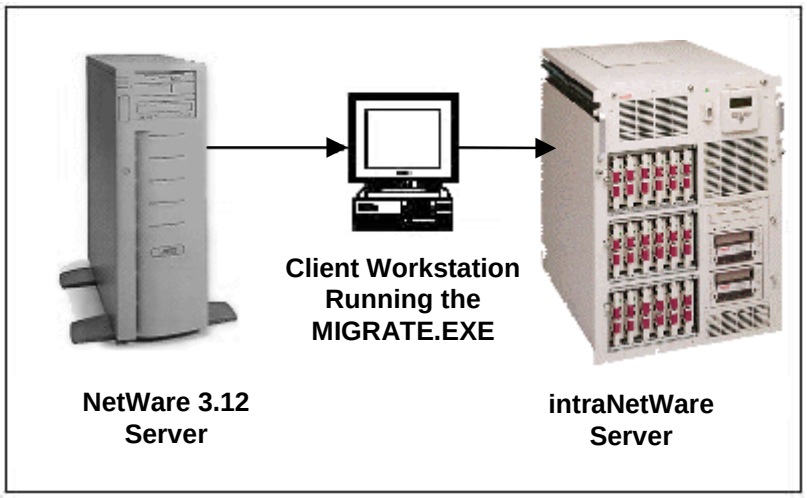

Figure 2-4. Across-The-Wire Migration

You should install the intraNetWare server and have it up and running before the migration takes place. This gives time to test and tune the intraNetWare server before making it available. You can validate and modify the connectivity and configurations before you migrate the NetWare 3 server. See the Compaq TechNote, *intraNetWare Performance Management* for more information on management and tuning of intraNetWare environments. See Chapter 1, "About This TechNote," for more information on obtaining that document.

Compaq SmartStart is the intelligent way to quickly install and configure a tested and proven server platform. If you use SmartStart to install intraNetWare, the configuration is optimized by including the performance recommendations discussed in the intraNetWare Performance Management TechNote.

Some advantages for using SmartStart are:

- SmartStart restarts your server, runs the System Configuration Utility, creates a system partition, and sets hardware parameters specific to the selected software.
- SmartStart has three installation paths: Assisted Integration, Replicated Installation, and Manual Configuration.
  - Assisted Integration provides for accepting the SmartStart default installation options without going through the entire SmartStart interview process. Assisted Integration gives you a fast option for basic, default-based installation on a single-server LAN.
  - Replicated Installation allows you to automatically create a server with the same configuration as one previously SmartStarted, using a Replication diskette created during a previous installation.
  - Manual Configuration allows you to customize the install for your particular network.
- The installation of the appropriate Compaq Insight Management Agents and the creation of the Compaq Insight Manager diskettes for installation on the management PC are integral parts of the SmartStart installation program. When you install the operating system, the appropriate Compaq Insight Management Agents will install automatically.

IMPORTANT: Compaq SmartStart is tested and supported only on Compaq servers.

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You must have the ability to login as a supervisor-equivalent user to both the existing NetWare 3 server and the new intraNetWare server at the same time.

DS Migrate and File Migration Utilities

DS Migrate is a workstation-based utility that is used only in Across-The-Wire upgrades. It is used in conjunction with the File Migration Utility. DS Migrate and the File Migration Utility run on any Windows 3.x, Windows 95 or Windows NT client workstation on the network. Other requirements for the workstation are given in Chapter 1, “Migration Requirements.”

Both DS Migrate and the File Migration Utility are plug-ins to NetWare Administrator (*NWADMIN.EXE*) and are launched through the *Tools* menu. They employ an easy-to-use Graphical User Interface (GUI) to provide a simple way to migrate bindery information and data files.

After you have installed intraNetWare on the destination server using the Install utility, you use DS Migrate and the NetWare File Migration Utility to migrate network information and data files. You can consolidate multiple NetWare 3 servers onto a single intraNetWare server, but you must do it one NetWare server at a time.

DS Migrate migrates network information, such as bindery information, account restrictions, and login scripts, from a NetWare 3 server to an intraNetWare server. The File Migration Utility migrates data files. DS Migrate reads the necessary information from the source server, converts it automatically, and writes it to the destination server.

DS Migrate/File Migration Upgrade Steps

1. DS Migrate creates an NDS tree model of a NetWare 3 bindery and extracts bindery objects (users, groups, queues, printers, print servers, account restrictions, and user and system login scripts) from a NetWare 3 source server. It then converts them into a Novell Directory Services model on the destination server. DS Migrate does not migrate current user passwords. You assign passwords globally or individually in the NDS tree model.
2. Next, DS Migrate will migrate user, group, and print objects from the model it created to the live NDS tree. You can view the NDS model graphically and modify it to ensure it fits your planned NDS tree structure before migrating it to the live NDS environment.

3. Finally, when you have completed the migration of the NDS model using DS Migrate, you use the File Migration Utility to migrate selected data files from the source to the destination server. You can consolidate multiple volumes from the source server into a single volume on the destination sever.

Features of DS Migrate/File Migration

- No server console access required—DS Migrate and File Migration run on the client; you don't need to access the server console.
- Windows utility—It runs on the client workstation with an easy to use GUI. The GUI is similar to that of the NetWare Administrator utility, which is the NDS-based equivalent of the SYSCON.EXE utility.
- Easy modeling of the tree—You can create new NDS containers, and drag and drop individual objects to these containers. Due to the graphical display of the NDS tree, it is very easy to see what is going to be migrated.
- File Migration Wizard—The File Migration has a simple to use Wizard to lead you through the migration of file system data.
- System metrics—DS Migrate allows you to set up system metrics, such as the number of maximum name length of new objects or the maximum objects in a single container, which will be checked prior to doing the migration. If violations of these metrics are discovered, you will receive a warning.

Simware's REXXWARE™ Migration Toolkit (RMT)

RMT is a server-based utility that is used in Across-The-Wire upgrades of large-scale NetWare networks to intraNetWare. Novell has licensed RMT from Simware Incorporated and is offering it free of charge to customers who have an existing NetWare 3 server.

After you have installed intraNetWare on the destination servers using the Install utility, you use RMT to migrate network information and data files from the NetWare 3 source servers. With RMT, you can migrate multiple NetWare 3 servers at the same time. You can also consolidate multiple NetWare 3 servers into a single intraNetWare server at the same time.

RMT Upgrade Steps

First, RMT creates an NDS model of a NetWare 3 bindery by extracting bindery objects such as users, groups, queues, printers, and print servers from the specified NetWare 3 source servers and converting them into NDS objects. RMT then places these objects in an intraNetWare database on the destination servers. You have complete control over every step of this process to ensure that the resulting intraNetWare database accurately models the NDS tree structure you have established.

RMT then migrates the NDS model (user, group, and print objects) into a live NDS tree. You can edit the NDS model graphically to ensure it fits your planned NDS tree structure before migrating it to the live NDS environment.

Finally, when you have completed the migration of the NDS model to the live NDS tree, RMT migrates data files from the selected source NetWare 3 servers to the destination intraNetWare servers. You can consolidate multiple volumes from the source server into a single volume on the destination sever.

Features for Upgrading Large Networks

RMT provides the following capabilities that enhance the upgrading of large networks:

- RMT allows you to simultaneously upgrade multiple servers. DS Migrate can only upgrade one server at a time.
- RMT's REXX scripting capability allows you to customize it to your environment, maximizing its efficiency and effectiveness.
- Unlike DS Migrate, RMT maintains all current passwords and migrates them to the destination server.
- You can interrupt the migration process at any time. RMT automatically checkpoints your current status. When you resume the migration, RMT starts up from exactly where you left off.
- Using a simple command, you can undo the migration of the NDS model to the live NDS environment and roll back to the NDS environment prior to the migration. This allows you to recover quickly in case of a problem.
- RMT runs on the destination server and performs high-speed server-to-server transfer of information. As a result, information transfer is considerably faster than with DS Migrate, which transfers all information through the client workstation on which it is installed.
- RMT can detect and resolve duplicate objects automatically, whereas DS Migrate requires you to resolve them manually.

Summary

There are three different methods available to upgrade from a NetWare 3 server to an intraNetWare server. The method of choice is the Across-The-Wire Migration using either the DS Migrate and File Migration Utilities method or the RMT.

To use the Install Upgrade or Same Server method, refer to the resources listed in Chapter 1, "About This TechNote," for more information.

Chapter 3
MIGRATE.EXE Across-The-Wire Migration Utility

This chapter discusses two aspects of *MIGRATE.EXE*. First, an explanation of how the information is migrated is presented. Next is the procedure for performing an Across-the-Wire migration using *MIGRATE.EXE*.

Across-The-Wire Migration

Across-the-Wire Migration allows you to migrate your NetWare 3 server to another physical server on the network that has intraNetWare installed.

Selected bindery information migrates to a working directory on the local hard drive of a DOS workstation, translates to NDS format, and then migrates from the working directory to the newly installed intraNetWare server. The data files migrate directly to the intraNetWare server.

You can migrate several servers to one server and you can choose which information you want to migrate. You can also direct data to a specific volume or directory.

The Across-the-Wire Migration utility allows you to preserve your user environment (users and their trustee assignments), as well as default account restrictions, accounting methods, print queues, and print servers. With the Across-the-Wire Migration utility, there is no risk of data loss, since you are migrating to a previously installed intraNetWare server.

How Information is Migrated

When using *MIGRATE.EXE*, you can choose to migrate specific information to the intraNetWare destination server. Be aware that certain information may or may not overwrite the configuration of the intraNetWare server. Due to that fact, the following sections go into more detail on how certain information migrates from NetWare 3 to intraNetWare when using *MIGRATE.EXE*.

Figure 3-1 shows the types of information that may be chosen for migration.

Figure 3-1. Types of information that may be chosen for migration

Accounting Information

You can select the accounting information you want to migrate to the intraNetWare destination server. Accounting information includes:

- Accounting status (whether or not accounting is activated on the server)
- Accounting charge rates for each accounting resource (blocks read, blocks written, connect time, service requests, disk storage)
- Accounting servers that are authorized to charge for services

When accounting information migrates from the source server to the destination server, *MIGRATE.EXE* determines if accounting is active on the NetWare 3 source server. If accounting is not active on the source server, accounting is not active on the intraNetWare destination server. If accounting is active on the source server, it is active on the destination server.

Figure 3-2 shows how accounting information migrates from the source server to the destination server.

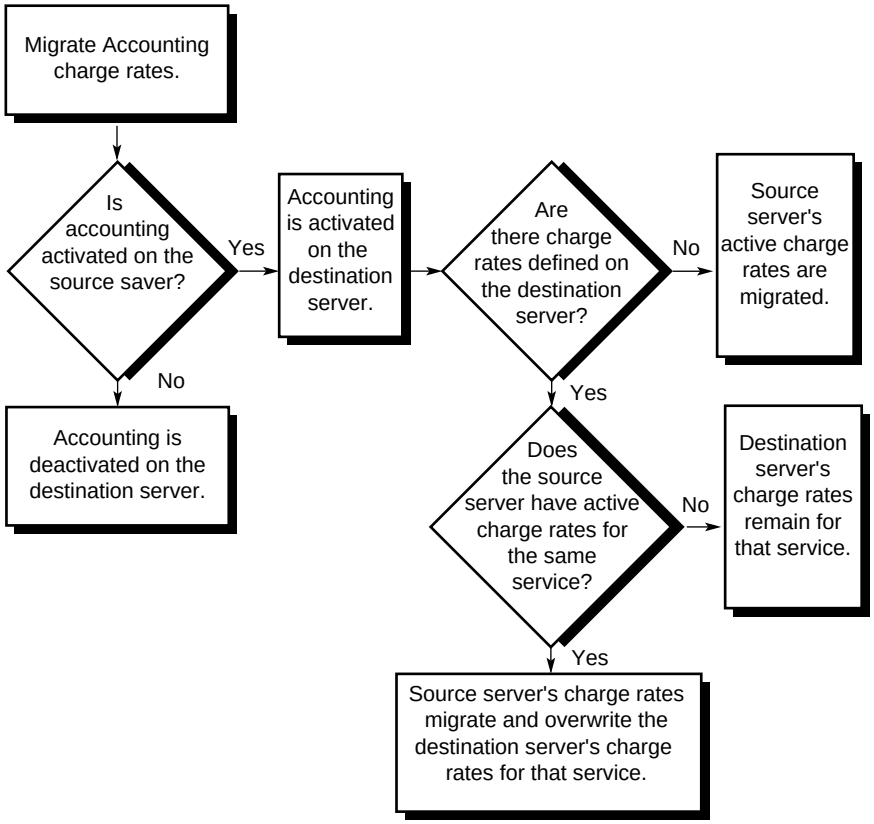


Figure 3-2. How Accounting Information is Migrated

Table 3-1 shows examples of accounting information before and after the migration process.

Table 3-1
Examples of Accounting Information

Source Server Before Migration	Destination Server Before Migration	Destination Server After Migration
Accounting ON Charges for: - Disk storage - Service requests	Accounting OFF	Accounting ON Charges for: - Disk storage - Service requests
Accounting OFF	Accounting ON Charges for: - Blocks read - Blocks written	Accounting OFF
Accounting ON Charges for: - Service requests-X - Connect time	Accounting ON Charges for: - Service requests-Y - Disk storage	Accounting ON Charges for: - Service requests-X - Connect time - Disk storage

Users

Any person that has access to use resources on the file server is a user. Each person needs a user *Identity* (user name). Once a user identity exists as an object in the bindery or NDS, the user can then log in to the server with that user identity or *account*, and access the resources on the server.

Bindery user account information migrates as follows:

- Full user name
- User print job configurations (*PRINTCON.DAT* from the user's mail directory. intraNetWare stores this information in NDS.)
- User login scripts for DOS (*LOGIN* from the user's mail directory. intraNetWare stores this information in NDS.)
- Whether or not the user has work group manager privileges (not valid in intraNetWare)
- File server console operator status (not valid in intraNetWare)
- Managed users and groups (not valid in intraNetWare)
- Managers (not valid in intraNetWare)
- Security equivalencies, other than those to Supervisor

The exception to this is the user Supervisor on the source server. It will not migrate. Any reference to Supervisor is replaced with the name of the server object. The Admin user will be able to access and change the objects with a Supervisor reference, such as a Print Queue Operator property value.

If the default account restrictions on the destination server specify that users should have a home directory, *MIGRATE.EXE* creates one for each user. Figure 3-2 shows how user information migrates from NetWare 3 to intraNetWare.

Migrating users is best done in conjunction with groups. If you select users without selecting groups, the utility displays a series of error messages while attempting to set up security equivalencies. See the online documentation, *DynaText* CD, in *System Messages*, for more information on error messages.

User Login Scripts and Mail Directories

In NetWare 3, the user login script is stored in a file called *LOGIN* that resides in the user's mail directory. The MIGRATE utility creates a new mail directory on the destination server for each user that is migrated. The name of the mail directory will match that user's new object ID (which will be different than it was on the NetWare 3 server). The user is granted RWCEMF rights to the new directory. MIGRATE will then copy the *LOGIN* file (if one exists) from the old 3.x mail directory into the new intraNetWare mail directory.

Later, during the file system copy phase, the old user mail directory and all files in it will also be copied to the new server. However, users are not given rights to the old mail directories on the destination server. If users had files other than LOGIN stored in their original mail directories, they will no longer have access to them.

If your users have files other than LOGIN in their mail directories, it is recommended to move any desired files from the old mail directory, and then delete the old mail directories on the NetWare 3 server before running the MIGRATE utility. This will prevent any conflict in the event that newly created users are given an ID that happens to match the name of an old mail directory. You can run *BINDFIX* on the NetWare 3 server(s) prior to running *MIGRATE* to delete mail directories of users that no longer exist. If you have already run the MIGRATE utility, you can run *DSREPAIR* on the intraNetWare server to delete mail directories of users that no longer exist.

Migrated users that had login scripts on the source NetWare 3 server will still execute those migrated login scripts when logging into the new server as bindery users. However, those same users will have no login script when logging in as an NDS user. This is because user login scripts are not actually converted into NDS by *MIGRATE.EXE*. You can use the UIMPORT utility to complete the user login script migration by converting bindery login scripts to NDS login scripts. Alternatively, you can use the NetAdmin or NetWare Administrator utility to create the scripts manually.

Using UIMPORT to Convert Login Scripts

The migration process automatically creates the files *UIMPORT.DAT* and *UIMPORT.CTL* in the SYS:SYSTEM directory of the destination server. The *UIMPORT.EXE* utility uses these files to convert users' bindery login scripts to NDS user login scripts. General guidelines for using *UIMPORT.EXE* are given below:

- Login as an NDS user such as Admin to run the *UIMPORT* utility.
- Set your current context to the container where the users being updated reside.
- Ensure that the *UIMPORT.DAT* file includes a backslash after the volume name in the path to the login script file.
- Since there are no last name values in the *UIMPORT.DAT* file, -991 errors will occur, but the conversion will succeed. Last name values can be added to the file with a text editor before using the utility, if desired.
- Use the following syntax:

  ```
  UIMPORT UIMPORT.CTL UIMPORT.DAT <Enter>
  ```

For full instructions in using *UIMPORT.EXE*, see the online documentation, *Dynatext* CD, in *Supervising the Network.*

NOTE: User login scripts might need to be modified after the migration to remove any references to the source server.

System Login Script

The NetWare 3 system login script is not converted into NDS, but the text file *NET$LOGIN.DAT* is migrated into the SYS:PUBLIC directory if you migrate the SYS volume. Users logging in to the new server under bindery emulation will run this system login script. NDS users will not execute this file. Container and Profile login scripts take the place of a system login script in the intraNetWare environment. These must be created using the NetWare Administrator or NetAdmin utilities. You may use COPY (**Ctrl + C**) and PASTE (**Ctrl + V**) to copy this script into a container login script. You may then modify it if needed.

User Restrictions

Each user account can have restrictions different from the default account restrictions. These include:

- Whether or not the account is disabled
- Account expiration date (if any)
- Limit on the number of grace logins (if any)
- Whether or not to require unique passwords
- User's account balance
- Lower limit on the account balance
- Station restrictions
- Login time restrictions

User account restrictions are all migrated to the destination server and will be in effect whether the users login under NDS or bindery emulation. Existing user restrictions take precedence over user restrictions coming from the source server. When *MIGRATE.EXE* tries to create a user that already exists on the destination server, the user account restrictions do not alter.

Account Restrictions

A user's account may be accessed according to settings made in the account restrictions. When an account locks, you are no longer able to log into the file server using that account. An account locks automatically when an account expires, when the balance of the account depletes, or when the limit set in intruder detection for incorrect password use is exceeded. The default account restrictions include the following:

- Account expiration date
- Allowance of concurrent connections for each user
- Creation of a home directory for each user
- Minimum password length

- Number of days between password changes
- Allowance number of grace logins
- Necessity for unique passwords
- Initial account balance
- Lower limit on the account balance
- Login time restrictions

If the NetWare 3 source server specifies creation of home directories for users, *MIGRATE.EXE* determines if the home directories are available on the intraNetWare destination server. If home directories are available, *MIGRATE.EXE* uses the same path as on the NetWare 3 source server.

To ensure that the Across-the-Wire Migration utility uses a specific directory as a home directory, use the NetWare Administrator utility to create a user on the destination server. Also specify a directory where the migrated user's home directory should reside. See the online documentation, *DynaText* CD, in *Utilities Reference,* for more information on using the NetWare Administrator utility.

Figure 3-3 shows how account restrictions migrate from NetWare 3 to intraNetWare.

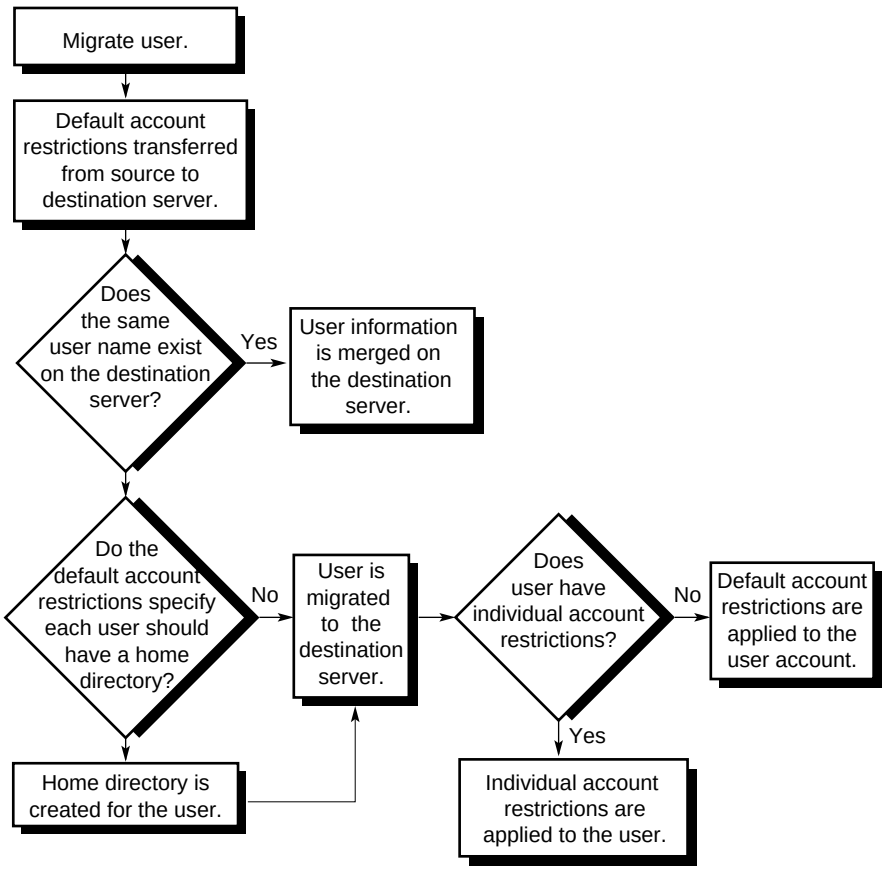


Figure 3-3. How Account Restrictions and User Information Are Migrated

Three types of user information can migrate from NetWare 3 to intraNetWare. The order in which *MIGRATE.EXE* migrates this information to the destination server is as follows:

1. Default account restrictions
2. Users
3. User restrictions

Before creating users, *MIGRATE.EXE* sets up default account restrictions on the destination server. Then, while creating user accounts, it applies those default account restrictions to each user account it creates. This ensures that all user accounts created by *MIGRATE.EXE* start out with the same restrictions. Any individual user restrictions are applied last.

Passwords

User passwords are not migrated. When running *MIGRATE.EXE*, you must choose between options to assign no passwords or to assign random passwords. Users who do not have passwords on the source server will still have no password on the destination server, regardless of the option you select. If you choose random passwords, a text file named *NEW.PWD* will be created on the destination server in the SYS:SYSTEM directory. This file lists the new password generated for each user.

Users who had passwords on the source server will be prompted to change their password on their first login attempt to the new server, regardless of whether the migrate choice was for random or no passwords. When the password is changed, it affects both NDS and bindery logins.

IMPORTANT: There is a work-around that will allow you to save passwords during a migration. On the NetWare 3 server, run *BINDFIX.EXE* twice and copy the *NET$OBJ.OLD, NET$PROP.OLD,* and *NET$VAL.OLD* files from the SYS:SYSTEM directory to a diskette. Copy these files from the diskette into the SYS:SYSTEM directory on the destination server. On the intraNetWare server console, load INSTALL. Then choose *Directory options → Upgrade NetWare 3 bindery information to the Directory.*

Groups and Security Equivalences

Group information that migrates from NetWare 3 to intraNetWare includes:

- Full group name
- Group members
- Whether or not the group has work group manager privileges (not valid in intraNetWare)

- File server console operator status (not valid in intraNetWare)
- Managed users and groups (not valid in intraNetWare)
- Managers (not valid in intraNetWare)

When *MIGRATE.EXE* tries to create a group that already exists on the destination server, the information from the source server merges into the existing group definition.

Migration of group information works best when done in conjunction with users. If you select groups without selecting users, *MIGRATE.EXE* displays a series of error messages while attempting to add users to the group. See the online documentation, *Dynatext* CD, in *System Messages,* for more information on error messages.

Security equivalences to other users are maintained after the migration. File system trustee rights inherited through these equivalences will be in effect on the destination server. Since the Supervisor user is not migrated, Supervisor security equivalence is not migrated.

NOTE: User disk space restrictions are not migrated.

Data Files

Data file information includes:

- Directory structure and data files
- File and directory attributes
- File and directory ownership
- Name space information for file systems that support NetWare

MIGRATE.EXE copies data files one volume at a time in an "all or none" manner. You can choose which volumes you want to migrate; but for each one chosen, the entire volume migrates to the destination server.

If you migrate data files with *MIGRATE.EXE* Across-the-Wire Migration utility, you can retain extended attributes for name spaces other than DOS by installing the appropriate name space on the destination server volume before migrating. Subdirectories deeper than 25 levels are not migrated. Directories of the same name will be merged, meaning that files from the directory on the source server will be copied into the directory with the same name on the destination server.

> **!** **IMPORTANT:** *MIGRATE.EXE* does not overwrite any existing files on the destination server when copying a file from the source server to the destination server. Thus, if a file with the same name already exists in the destination directory, the Across-the-Wire Migration utility writes a message to the report log file stating that the utility could not copy a file.

Trustee Assignments

A trustee assignment consists of the rights assigned to a user or group. A user or group that has been assigned rights to work in a directory or file is known as a *trustee* of that directory or file.

Trustee rights to directories and files migrate to the destination server using *MIGRATE.EXE*. When migrating from NetWare 3 to intraNetWare, source server trustee rights translate to their corresponding destination server trustee rights.

The migration process preserves file system trustee assignments, even if you are migrating data from different volume names on the source and destination servers. For example, if the source server has volumes SYS, VOL1, and VOL2, while the destination server has only SYS and VOL1, all data and trustees from any of the three source volumes can be migrated to either of the two destination volumes. The Directory Entry Tables are rebuilt with the correct object IDs of the migrated users.

Migrating trustee assignments works best when done in conjunction with migrating data files, users, and groups. If you select this category without selecting the others, *MIGRATE.EXE* displays a series of error messages while attempting to make trustee assignments. See the online documentation, *DynaText* CD, in *System Messages,* for more information on error messages.

Print Queues and Print Servers

Print queues are network directories that store print jobs. When the printer assigned to a print queue is ready, the print server takes the print job out of the print queue and sends it to the assigned printer. The print queue can hold as many print jobs as disk space available.

NetWare print servers run through the *PSERVER.NLM* on an intraNetWare server. intraNetWare print servers can service up to 255 printers with any number of print queues assigned to the printer.

The following information migrates from NetWare 3 to intraNetWare for each print queue:

- Print queue operators
- Print queue servers
- Print queue status information
- Print queue users

Print queues and print server definitions that migrate from NetWare 3 to intraNetWare include the following information about each print server:

- Full server name
- Print server operators
- Print server users
- Print server configuration files

Migrating print queues and print servers works best when done in conjunction with users and groups. If you select this category without selecting the others, the utility displays a series of error messages while attempting to set up users and operators of print queues and print servers. See the online documentation, *DynaText* CD, in *System Messages*, for more information on error messages.

An additional step (*MIGPRINT.EXE*) is required to migrate the printing environment to intraNetWare. “See Migrating Printing Environments” in this chapter.

Before You Begin

Before beginning the migration process, you should go through the NetWare 3 server (source server) directories and clean up any old files or users that you no longer need. You might want to review the current directory structure and revise the organization of the files. When migrating information to a new intraNetWare server (destination server), it is advisable to allocate some time before you start the migration process for configuration changes to either the source server or the destination server. This will ensure that after the migration is complete, the intraNetWare server is configured as you expect.

If you use accounting, determine that the source server contains the charge configurations you want, because the source server's configuration either overrides or merges with the configuration of the destination server.

When migrating data, be aware that if a file already exists on the source server with the same filename as a file in the same directory on the destination server, the Across-the-Wire Migration utility does not overwrite the file. This prevents the NetWare 3 utilities and NLMs from overwriting the intraNetWare versions. You will receive a message in the migration report log stating that the utility did not overwrite the file. If you wish such a file to migrate, you should change the filename on either the source server or the destination server before beginning the migration process. This could be important if you have different versions of the same program on the different servers. If the destination server has the most recent version of a program, the Across-the-Wire Migration utility does not migrate the older program files from the source server if the files have the same name. See the Merging Users and Groups section later in this chapter.

If you are transferring user information to the destination server, it is best to transfer their complete configuration information including data files, groups, printing configurations, and trustee assignments.

Bindery Context

Migrated users and groups will be placed into the container designated as the bindery context of the intraNetWare Server. If multiple bindery contexts are set, the users and groups will be created in the first bindery context. You can use the CONFIG server console command to verify the order of the bindery context containers.

Note: While multiple contexts can be set for bindery emulation, those contexts are then viewed together as a single common “bindery.” This is important to understand, especially in a case where multiple NetWare 3 servers are being migrated into the same tree.

For example, suppose you are migrating two NetWare 3 servers, ACCT_1 and SALES_1, into an intraNetWare tree. A user named Ron exists on each server, but these represent two separate and distinct user accounts. You want to migrate server ACCT_1 into the container .OU=Acct.O=Novell and server SALES_1 into the container .OU=Sales.O=Novell.

You set the bindery context to .OU=Acct.O=Novell;.OU=Sales.O=Novell and proceed to migrate. The migration of server ACCT_1 will create Ron in the first container for which a bindery context is set, which is OU=Acct. You then set the bindery context to .OU=Sales.O=Novell;.OU=Acct.O=Novell and proceed to migrate server SALES_1. The migration of SALES_1 will merge its Ron with the Ron from ACCT_1, since Ron already exists in the “global” bindery context made up of OU=Acct and OU=Sales.

There are two ways to avoid this accidental merging of users. One is to ensure that all users on the NetWare 3 servers who are in fact separate users have distinct and unique names prior to migrating. Alternatively, a single bindery context could be set on the intraNetWare server as each server is migrated.

Using the above example, the bindery context would be set only to .OU=Acct.O=Novell while ACCT_1 is migrated, and set only to .OU=Sales.O=Novell while SALES_1 is migrated. In this way, the destination of each server’s users and groups can be controlled. However, if you create duplicate names in this manner, and you later set the bindery context to multiple containers in which conflicting names exist, only the user defined in the first bindery context will be found.

Merging Users and Groups

When migrating multiple NetWare 3 servers into the same container in an intraNetWare tree, groups and users that have the same name will be merged, with the exception of user account restrictions and login scripts.

For example, suppose that Ron exists on the source NetWare 3 server and also in the destination server's bindery context. You set up Ron on the NetWare 3 server to require a password, to have concurrent login and time restrictions, to have a login script, and to have membership in groups Everyone and SSUsers. The Ron on the intraNetWare server has no password and no account restrictions, but has both a bindery and NDS login script and belongs to WPUsers.

After running the migration utility, Ron on the intraNetWare server is now a member of SSUsers, WPUsers, and Everyone, still has no password, has no time restrictions, and the Ron login scripts are unchanged. This scenario is shown in Table 3-2:

Table 3-2
Merging Users and Groups

Existing NetWare 3 RON	Existing intraNetWare RON	Resulting intraNetWare RON
Password = Yes	Password = No	Password = No
Time Restrictions = Yes	Time Restrictions = none	Time Restrictions = none
Concurrent Connections = 1	Concurrent Connections = not set	Concurrent Connections = not set
Group Membership = Everyone, SSUsers	Group Membership = WPUsers	Group Membership = Everyone, SSUsers, WPUsers
Bindery login script	Bindery and NDS login script	Bindery and NDS login script (contents unchanged)

Workstation Memory Problems

The process of migration creates an intermediate file in the specified working directory. This file is used to convert bindery information and file system trustee assignments from the source server to a format compatible with the destination server. After the file is created in the working directory, it is read back into memory in increments and sent to the destination server. If the number of users, groups, and/or file trustees is large on the source server, it is possible that the workstation memory will not be adequate to hold a file record from the intermediate file.

Memory errors are posted at the workstation, but migration may continue, if desired. The result may be loss of information for the users, groups, or file trustees being migrated. To avoid memory problems, it is best to do the migration in several sections. First, migrate everything EXCEPT the categories *All Information*, *Data Files*, and *Trustee Assignments*. Next, migrate the *Data Files*. Finally, migrate the *Trustee Assignments.*

Necessary Resources

The following resources are necessary to migrate from NetWare 3 to intraNetWare:

- Compaq SmartStart or the intraNetWare package from Novell
- A NetWare 3 source server
- A DOS workstation (client workstation) with at least 640 KB RAM, 480KB free memory, and 5MB of free disk space on either its hard drive or a network drive (using *NETX.COM* 3.26 or later or VLM 1.20 or later). The *CONFIG.SYS* should allow at least FILES=20. The client software IPX Retry Count should be set to 60.
- An intraNetWare destination server (also referred to as NetWare 4.x destination server)

Prerequisites

Prerequisites for migrating from NetWare 3 to intraNetWare are:

- Move any files other than *PRINTCON.DAT* and *LOGIN* out of the SYS:MAIL directory. The user print job configurations (*PRINTCON.DAT*) and DOS user login scripts (*LOGIN)* migrate from SYS:MAIL to the users' new mail directory on the destination server.

  NOTE: The Across-the-Wire Migration utility does not copy other files left in the mail directories to the destination mail directory.

- Use *PRINTUSR.EXE* to find obsolete user accounts and delete them. Use *DUPBIND.EXE* to find different types of objects with the same name. Resolve the conflict by renaming one of the objects. These utilities are found in the file *AN304X.ZIP* on the Novell Support Connection CD, Disk 2, in the \DOWNLOAD\NETWARE subdirectory.

- Run the **BINDFIX** utility on the source server, then run the **VREPAIR** utility.

  BINDFIX prompts you to delete the mail subdirectories and trustee rights of deleted users. See *NetWare 3* documentation for more information on the **BINDFIX** utility.

  Use VREPAIR to correct volume problems or to remove name space entries from File Allocation Tables (FATs) and Directory Entry Tables (DETs).

- Delete unnecessary files.

- When migrating two or more NetWare 3 source servers onto one intraNetWare server, you need to plan for extra disk space for volume SYS. To accommodate additional users and their login scripts, SYS requires 6MB of additional disk space for each additional server migrated.

- Ensure that you have the NetWare Migration Utility diskettes.

  You can create the Migration Utility diskettes from the Compaq SmartStart package, intraNetWare package, or get them from CompuServe. See the following section for instructions on creating the Migration Utility diskettes.

Creating Migration Utility Diskettes

To create Migration Utility diskettes from the Compaq SmartStart package or intraNetWare package, follow these steps:

NOTE: You will need two formatted High-Density diskettes.

1. Insert the intraNetWare Software from Compaq No. 1 CD or the intraNetWare CD into the CD-ROM drive of the server.
2. From the server console, enter:

   ```
   LOAD INSTALL
   ```

   Press **Enter**. The Installation Options menu is displayed.
3. Select Choose an item or product listed above from the Other Installation Options menu.
4. Select Product Options (other optional installation items) from the Installation Options menu.
5. Select Make Diskettes from the Other Installation Items/Products menu.
6. Verify that the path shown on the screen corresponds to the source directory where the intraNetWare server installation files are located.

   On the Compaq SmartStart package, intraNetWare Software from Compaq No. 1 CD, the path is:

   ```
   <Drive_or_Vol_Name>:\411\Products\NW411\Install\IBM\DOS\XXX\<Language_Dir>
   ```

   Example: D:\411\Products\NW411\Install\IBM\DOS\XXX\English

On the intraNetWare package, intraNetWare CD, the path is:

<Drive_or_Vol_Name>:\Products\NW411\Install\IBM\DOS\XXX\<Language_Dir>

Example: D:\Products\NW411\Install\IBM\DOS\XXX\English

Press **Enter** to continue.

7. Select Create NetWare Migration Utility Diskettes.

   Press **F10** to accept your selection and continue.

8. Insert a formatted diskette in drive A and press **Enter** to continue.

9. Follow the instructions on the screen for copying the utilities and labeling the diskettes.

You will use the Migration Utility diskettes during the Across-the-Wire Migration.

Migrating Across-the-Wire

The Across-the-Wire Migration utility migrates all information, including data files and bindery information, from a NetWare 3 server, across the network to an intraNetWare server.

When you use the migration utility, it is important to have only bindery connections because the utility depends on bindery emulation to work. To ensure that you have only bindery connections, log in to the intraNetWare server as Supervisor using the */B* option. The bindery emulation Supervisor uses the password used to install the server.

For example:

LOGIN <Destination_Server_Name>/SUPERVISOR /B

Installing the NetWare Migration Utility

Before starting the Across-the-Wire Migration utility, you must install the NetWare Migration Utility diskettes on the hard drive of your DOS workstation. You must have at least 5 megabytes of available disk space.

To start the Across-the-Wire Migration utility, follow these steps:

1. From your DOS workstation, log in to your intraNetWare destination server using the */B* option for bindery mode as described above and attach to your NetWare 3 source server as Supervisor, using the command:

   ```
   LOGIN <Source_Server_Name>/Supervisor /NS
   ```

   Make sure that you are the only user logged into the network.

2. Insert the Migration Utility DISK 1 in drive A.

3. At the A prompt type:

   ```
   INSTALL
   ```

   Press **Enter**. By default the install program creates a directory on the hard drive of your DOS workstation called MIGRATE and copies the migration utility files from drive A to the MIGRATE directory.

   Use the following example to change the default parameters of the installation program if you are using floppy drives other than A and hard drives other than C:

   ```
   INSTALL <Floppy Drive>: <Hard Drive>:\<Directory>
   ```

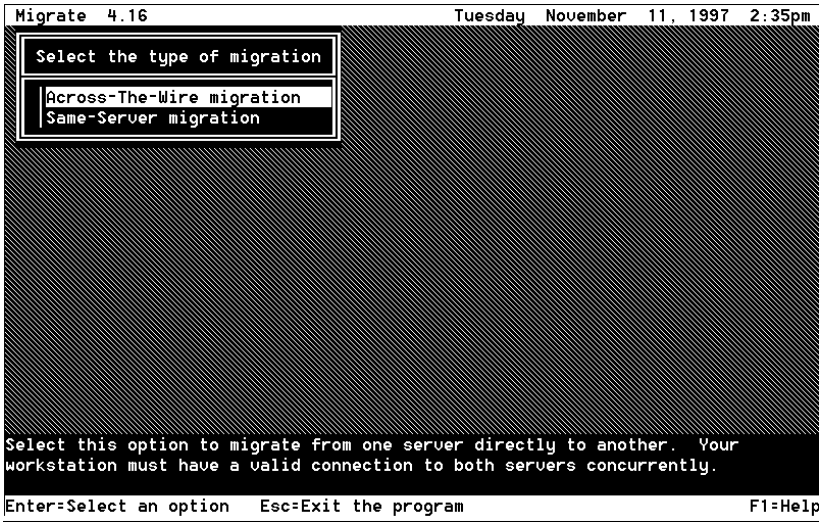
   For example: INSTALL B: D:\Mydir

4. When prompted, insert the *Migration Utility DISK 2* in drive A and press any key to continue the installation of the Across-the-Wire Migration utility.

5. Change to the migrate directory on the hard drive of your workstation and type:

   ```
   MIGRATE
   ```

Press **Enter**. The Select the type of migration menu is displayed.

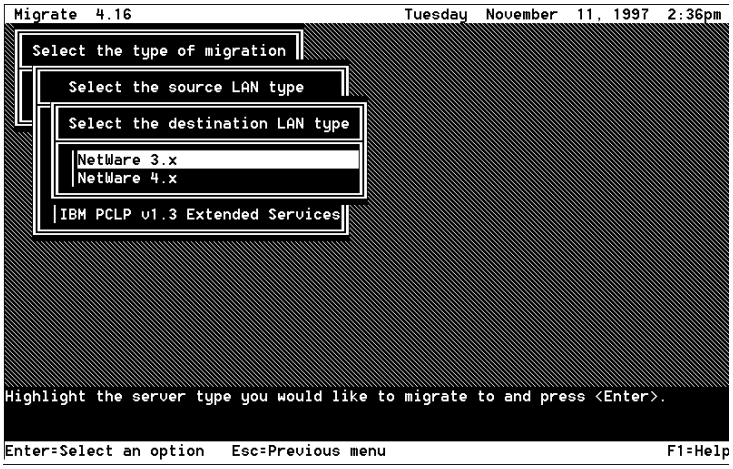


6. Select *Across-the-Wire migration* from the Select the type of migration menu and press **Enter**.

The Select the source LAN type menu is displayed.

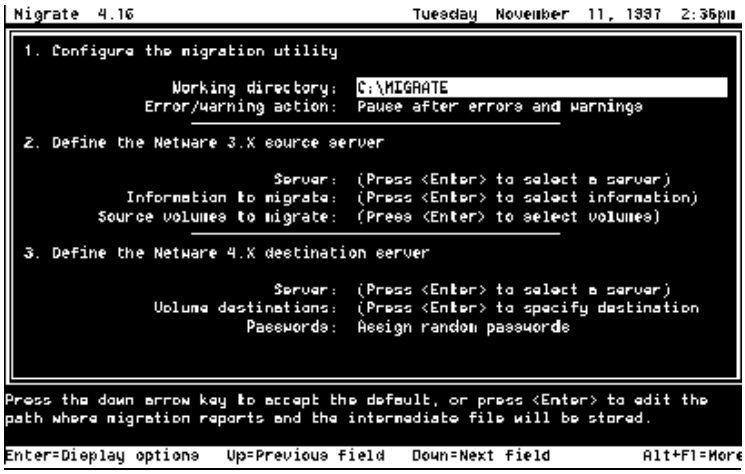
7. Select *NetWare 3* from the Select the source LAN type menu and press **Enter**.

   The Select the destination LAN type menu is displayed.



8. Select *NetWare 4.x* from the Select the destination LAN type menu and press **Enter**.

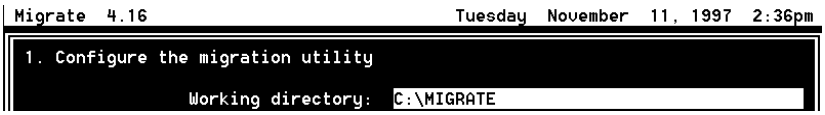
   The migration utility configuration form is displayed.



Using the Migration Utility Configuration Form

To complete the migration utility configuration form, follow these steps:

1. Under Step 1, press the Down Arrow key to accept the default working directory, or press **Enter** to specify another working directory.



   The working directory is where the bindery information and migration reports are stored. You need 5 megabytes of free disk space in this directory.

2. Under Step 1, press **Enter** to select an error/warning action.

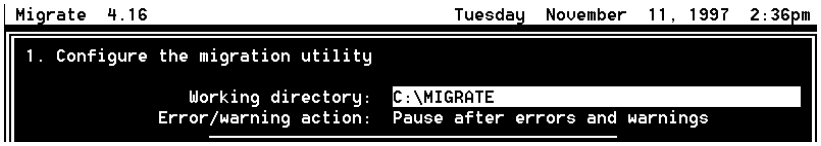


Table 3-3 describes the different options for error/warning actions.

Table 3-3 Error/Warning Options

Error/ Warning Action	Description
Pause after warnings and errors	Choose this option if you want the utility to stop after each warning and error and prompt you to continue with the migration. Each time an error is reported and you are prompted, you can choose to discontinue the prompting.
Do not pause after warnings and errors	Choose this option if you do not want to be prompted after each warning and error.
NOTE: All errors are listed in the report file regardless of the option you select.	

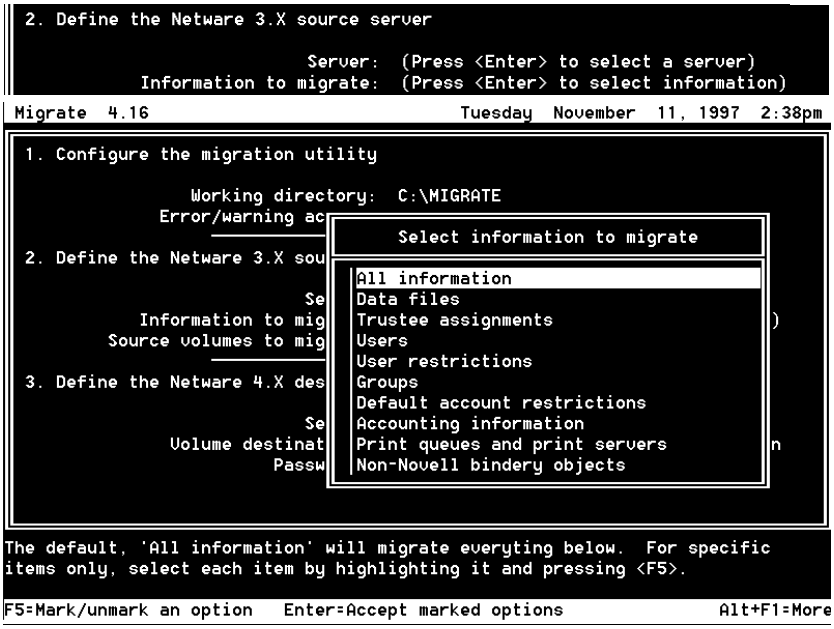
Select the type of error/warning action you require and press **Enter**.

3. Under Step 2, press **Enter** to display a list of source servers.

Choose the source server from which you want to migrate. Press **Ins** to see a list of available servers you can log in to if the NetWare 3 source server you want to select is not shown. Press **Enter** to accept the source server. Type the Supervisor name and password if prompted.

NOTE: To migrate multiple source servers, you must migrate them one at a time.

4. Under Step 2, press **Enter** to select information to migrate.



Select the categories of information to be migrated from the source server using **F5** to mark your selections and then press **Enter**. This allows you to create a customized destination server.

IMPORTANT: The migration utility program cannot migrate the printing environment to intraNetWare servers. After this migration procedure, use *MIGPRINT.EXE* to migrate your printing environment. See *Migrating Printing Environments* in this TechNote for more information.

Table 3-4 describes the information that can be migrated.

Table 3-4
Information To Be Migrated

Category	Description
All Information	Migrates all information listed in this table.
Data Files	Migrates all data files and their DOS and NetWare attributes for files and directories to the corresponding intraNetWare attributes.
Trustee Assignments	Migrates rights assigned to users and groups for directories and files to corresponding intraNetWare rights.
Users	Migrates users accounts, users work groups, and security equivalencies.
User Restrictions	Migrates account restrictions, station restrictions, and time restrictions. If users exist on the destination server, their restrictions are not overwritten. If you select this category, you must also select *Users.* If a user does not exist on the destination server, the restrictions set on the source server are migrated to the destination server and are not overwritten or merged by any subsequently migrated source servers. Volume and disk restrictions for users are not migrated because of differences in NetWare 3 and intraNetWare. In NetWare 3.12, the restrictions are server-wide; whereas in intraNetWare, the restrictions are volume-specific.

Table 3-4
Information To Be Migrated

Category	Description
Groups	Migrates the Group's members and assigned group trustee rights for directories and files. Groups that existed on the source server remain intact. If multiple source servers are migrated, groups from the servers are merged on the destination server.
Default Account Restrictions	Migrates default account restrictions. Default account restrictions on the destination server are overwritten by any source server that also has default account restrictions.
Accounting Information	Migrates the accounting charge method chosen to charge for services (blocks read, blocks written, connect time, disk storage, service requests). Charge rates that exist on the source server remain intact.
Print queues and print servers	See *Migrating Printing Environments* in this TechNote for more information.
Non-Novell bindery objects	When this option is selected, all static objects in the source server's bindery are migrated to the destination server. For each object migrated, all bindery properties are migrated, but no attempt is made to interpret their structure or meaning.

5. Under Step 2, press **Enter** to display a list of volumes on the source server. Mark the volumes using **F5** and press **Enter** again.

Select source volumes to migrate only if you are migrating files and trustee assignments contained on those volumes. Select the volume you want to migrate and press **Enter**.

6. Under Step 3, press **Enter** to display a list of servers on the network.

   Select the intraNetWare destination server from which you want to migrate the NetWare 3 source server. If the intraNetWare destination server you want to select is not shown, press **Ins** to see a list of available servers you can access. Press **Enter** to accept the destination server.

7. Under Step 3, press **Enter** to display a list of selected source volumes and their default destination volumes.

   Select a source volume and press **Enter** again to specify the destination volume and directory of your choice on the intraNetWare destination server. To browse the existing directory structure on the destination server, press **Ins**.

   NOTE: The volume organization, as well as the directory structure, is migrated. You can modify the organization on the destination server after all source servers have been migrated.

   Continue to specify destination paths if you have multiple volumes.

   Press **F10** when selections are complete.

8. Under Step 3, press **Enter** to choose a password option.

   There are two options for assigning passwords. Table 3-5 describes the two options. Highlight the password option you want and press **Enter**.

Table 3-5
Assigning Password Options

Password Option	Description
Assign Random Passwords (Default)	A password for each user name that has a password on the source server is generated randomly and stored in a file called *NEW.PWD* in SYS:SYSTEM on the intraNetWare destination server. **NOTE:** New passwords are given only to users and print servers that had a password on the source server. The supervisor's password is not changed. Only users with rights to this server have access to the password file. Users cannot login until they are given passwords.
Assign No Passwords	Users who had a user name on the NetWare 3 server can log in using their previous user name. They are not prompted for a password. Users have the option to create their password if no password was issued upon migration. **NOTE:** If user account restrictions require users to have a password, they are prompted to type a new password, which the system stores.

Figure 3-4 shows an example of a completed configuration form.

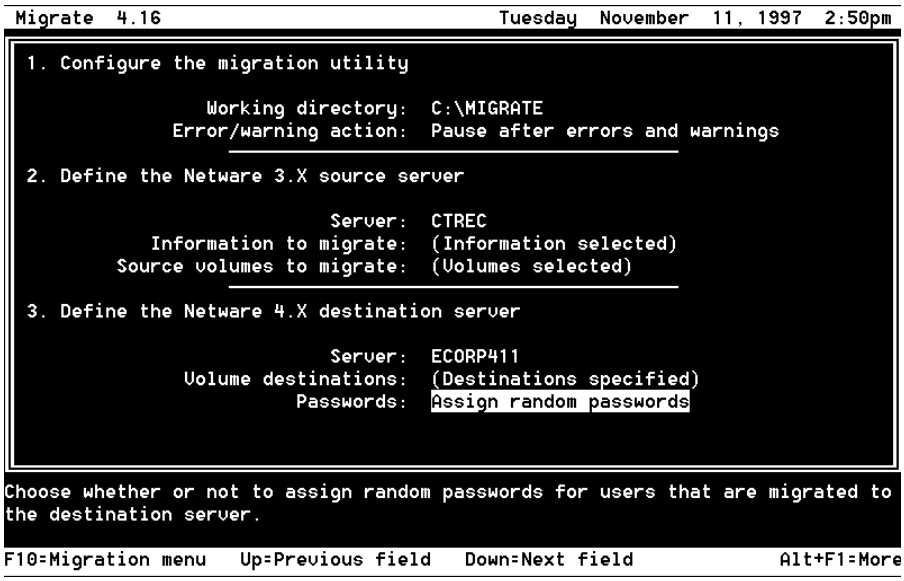
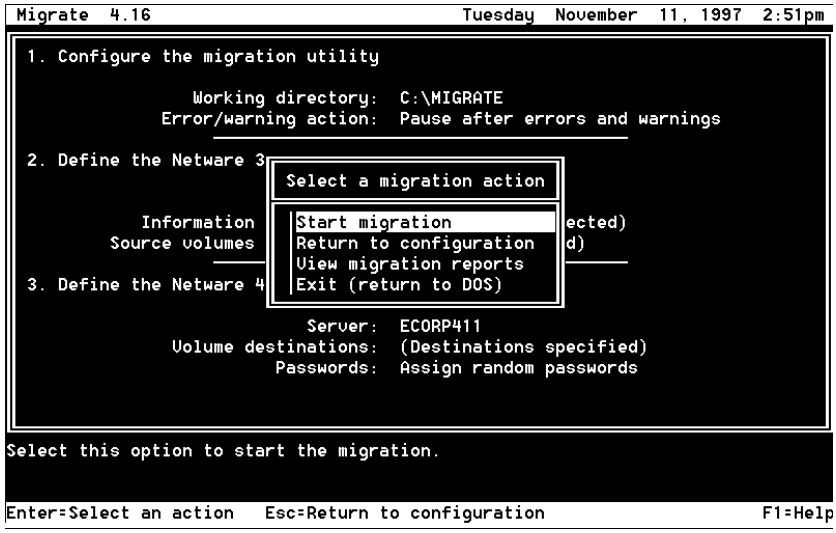


Figure 3-4. Example of a Completed Migration Utility Configuration Form

9. Press **F10** to display the Select a migration action menu.



Select *Start migration* and press **Enter**.

The bindery information is copied to the working directory on your DOS workstation and translated into the intraNetWare format; it is then copied to the intraNetWare server. The data files are migrated directly to the intraNetWare destination server.

If errors occur during migration, you will receive the following message:

Table 3-6 describes what happens if you select Y, N, or I.

Table 3-6 Error Selection Definitions

If you select	Then
Yes	The migration continues. The error is written to the migration report file, and you are prompted again the next time an error occurs.
No	The migration stops. The error is written to the migration report file. You receive this message: *Migration from the source server to the destination server is complete. Press **Enter** to continue.*
Ignore Error	The migration continues. The error is written to the report file. You are no longer prompted when an error occurs, but all errors are written to the migration report file.

The Across-the-Wire Migration utility creates a migration report log file named *MIGxxx.RPT*, where "xxx" is the number of the report generated. This file is written to the working directory specified (C:\MIGRATE) on the DOS workstation. See Appendix A, "Examples of Migration Reports," in this TechNote for an example of a migration report log file.

A message is displayed stating that the migration process has completed. If you do not want to view the migration report, select *Exit (return to DOS)* from the Select a migration action menu. Next, select *Yes* from the Exit menu to return to DOS.

To view the migration report from *MIGRATE.EXE*, follow these steps:

1. Highlight *View Migration Reports* from the Select a Migration Action menu, then select the report for the migration you completed and press **Enter**.
2. Press **Esc** twice to exit the report and return to the Select a Migration Action menu.
3. Highlight *Exit (return to DOS)* from the Select a Migration Action menu. Highlight *Yes* from the Exit menu to return to DOS.

After the migration has completed, you can choose to view the migration report. See "Viewing the Migration Report" section in this TechNote for more information.

You are now ready to migrate the printing environment.

Migrating Printing Environments

The migration utility program cannot migrate the printing environment to intraNetWare servers. intraNetWare has a specific program, *MIGPRINT.EXE* , that can migrate your printing environment.

To migrate your printing environment, follow these steps:

1. From your local workstation, login to the intraNetWare destination server as Admin.

> **!** **IMPORTANT:** Do not use the */B* option. To run the *MIGPRINT.EXE* utility, you must be authenticated to an intraNetWare tree with NDS.

2. Create a search drive on the intraNetWare server by mapping a search drive to SYS:SYSTEM/NLS.

   For example: MAP INSERT S1:=SYS:SYSTEM/NLS

3. Attach to the NetWare 3 source server as Supervisor. You will need to use

   LOGIN <Source_Server_Name>/Supervisor /NS

4. Run the *MIGPRINT.EXE* utility from the MIGRATE directory on your workstation by typing:

   MIGPRINT /S=<Source_Server_Name> /D=<Destination_Server_Name>

   For example: MIGPRINT /S=Server312 /D=Server411

   Press **Enter.**

If you wish to move the print queues to a volume other than SYS:, use the /VOL= parameter to specify the volume on the destination server. You must specify a distinguished name for the volume object.

PRINTCON.DAT is migrated as an NDS property of the NDS user object and as *PRINTJOB.DAT* in the SYS:MAIL directory of the corresponding bindery user. When an NDS user selects its Print Job Configuration property, the Print Job attribute is converted from a pre-intraNetWare format to the intraNetWare format. When a bindery emulation user accesses the *PRINTJOB.DAT*, the Print Job configuration will point to the bindery file server defined as the source server when running *MIGPRINT.EXE*. The bindery file server name cannot be changed. Print job configurations need to be recreated for users who will continue to access the server in bindery mode, unless the new server is renamed to the old server's name after migration. Print devices and forms do not migrate.

When migrating from multiple NetWare 3 servers to a single intraNetWare server, print queues that already exist with the same names will not be duplicated. Printers migrated with the same name as those already created will be created as numbers 0000, 1000, 2000, and so forth. If *MIGPRINT.EXE* is run more than twice, the printer names will then be 0001, 1001, 2001, and so forth.

The *MIGPRINT.EXE* utility creates a print migration report log file named *MPxxx.RPT*, where "xxx" is the number of the report generated. This file is written to the working directory (C:\MIGRATE) on your workstation. After the print migration is completed, the ASCII text file, *MPxxx.RPT*, can be viewed with a text editor. See Appendix A, "Examples of Migration Reports," in this TechNote for an example of a print migration report log file.

After the Migration

After the migration is complete, check the intraNetWare server and do the following:

- Use *UIMPORT.EXE* to complete user login script migration.
- Update references to the NetWare 3 server in user login scripts.

  Although user login scripts are migrated, they are not modified. Server names and directory paths need to be changed to match your new environment.
- Check user restrictions and accounting charge rates to make sure your system is configured the way you want it.
- If you choose to assign random passwords, you might want to print the *NEW.PWD* file located in SYS:SYSTEM on the intraNetWare server and distribute the password information to your users. The users should change their passwords immediately.

  The *NEW.PWD* file, an ASCII text file, shows passwords sorted by date. If users were migrated from more than one server, the current password is the last one listed on the report.
- Examine the files in merged directories and reorganize them if necessary. Any directories that were merged can contain unrelated files that need to be consolidated or removed.

- Update migrated print queues and print servers.

  Check print servers and print queues to make sure they are configured correctly. Also make sure that the physical printer connection is secure. Use the NetWare print utilities to verify print queue and print server configuration.

- Run third-party applications. You might have to reinstall them to work properly under intraNetWare. The following conditions require you to reinstall an application:

  - The application has an .EXE file that did not migrate.
  - The application is path-specific and you changed the path structure during migration.

  You might also have to enter new paths in the setup files for third-party applications. Check applications to see if they run properly after making any changes.

- Some DOS applications do not work when installed on volumes that have more than 32 megabytes of disk space. Some of these applications can be made to work by doing the following:

  - Use *NWADMIN.EXE* or *NETADMIN.EXE* (located in SYS:PUBLIC) to restrict the disk space in the directory of the application on the destination server.
  - Make the directory a fake root with MAP (see the online documentation, *DynaText* CD, in *Concepts*).

Viewing the Migration Report

After the migration is complete, you can choose to view the migration report. The report is an ASCII text file that consists of the following:

- Summary information of the bindery import phase (migrating bindery data from the source server to the working directory).
- Summary information of the bindery export phase (migrating bindery data from the working directory to the destination server).

- A listing of each item in each category that was read from the source server.
- A listing of each item in each category that was written to or created on the destination server.
- The number of errors that occurred during the migration process.

You can view the migration report with any text editor or through the *MIGRATE.EXE* utility.

Consolidating Command Line Utilities

If during the migration process you elect to migrate all information from the NetWare 3 source server or the SYS: volume, be aware that some of the NetWare 3 command line utilities have been consolidated or changed in intraNetWare. The consolidation of the NetWare 3 command line utilities is shown in Table 3-7.

Table 3-7
Command Line Utilities

NetWare 3	intraNetWare
ALLOW, GRANT, REMOVE, REVOKE, RIGHTS, TLIST	RIGHTS
ATOTAL and PAUDIT	AUDITCON
ATTACH and LOGIN	LOGIN
BINDFIX and BINDREST	DSREPAIR
CASTON, CASTOFF, and SEND	SEND
CHKDIR, CHKVOL, NDIR, and LISTDIR	NDIR
DSPACE, SECURITY, SYSCON, and USERDEF	NETWARE ADMINISTRATOR or NETADMIN
FCONSOLE	MONITOR
FILER, SALVAGE, PURGE, and VOLINFO	FILER
FLAG, FLAGDIR, and SMODE	FLAG

Table 3-7
Command Line Utilities

NetWare 3	intraNetWare
MAKEUSER	UIMPORT
RCONSOLE and ACONSOLE	RCONSOLE
SESSION	NETUSER
SLIST and USERLIST	NLIST

The migration utility does not block these utilities from being migrated to the intraNetWare destination server; however, intraNetWare does not support these utilities and they should be removed from the intraNetWare server after the migration.

The following command line utilities should be removed from the intraNetWare server if they were copied during the migration process:

- ACONSOLE
- ALLOW
- ATOTAL
- ATTACH
- BINDFIX
- BINDREST
- CASTON
- CASTOFF
- DSPACE
- FCONSOLE
- FLAGDIR
- GRANT
- LISTDIR
- MAKEUSER
- PAUDIT
- PURGE
- REMOVE
- REVOKE
- SALVAGE
- SECURITY
- SLIST
- SMODE
- SYSCON
- TLIST
- USERDEF
- USERLIST
- VOLINFO

Summary

When using *MIGRATE.EXE*, you can migrate specific data and user information to the intraNetWare server. You can migrate information from:

- Accounting Information
- User Restrictions
- Groups and Security Equivalences
- Trustee Assignments
- Users
- Account Restrictions
- Data File Volumes
- Print Queues and Print Servers

Chapter 4
DS Migrate and File Migration Utilities

Overview

These utilities allow you to upgrade your NetWare 3 bindery server by migrating modeled bindery information to an existing intraNetWare NDS tree. Bindery migration is done through the new DS Migrate utility.

DS Migrate is a migration and modeling solution provided from a partnership agreement between Preferred Systems Inc., the makers of DS Standard (the utility on which DS Migrate is based) and Novell. Following the migration of the server bindery, the server files are migrated using the new File Migration utility.

Both DS Migrate and the File Migration utility are launched through the *Tools* menu of NetWare Administrator. This method is one of the recommended ways of migrating a NetWare server Across-the-Wire, rather than using *MIGRATE.EXE* for both bindery and file migration.

How DS Migrate Works

Bindery Migration

DS Migrate converts bindery objects such as users, groups, queues, printers, print servers, and so forth, into Novell Directory Services (NDS) objects. DS Migrate migrates a NetWare 3 bindery through a three-step process. Each step is discussed below.

The Discover Step

From a NetWare client running Windows 3.1x or Windows 95 and logged in to an intraNetWare server, the network supervisor connects to the NetWare 3 server whose bindery is to be migrated. The network supervisor launches DS Migrate through NetWare Administrator and indicates the desired bindery server to discover. A report is generated, and the bindery is placed in a graphical structure that appears like an NDS tree. At this point, the bindery information is placed in the DS Migrate database where it can be modeled.

The Model Step

With the bindery displayed in a graphical NDS tree-like structure, the structure is saved in a *view*. The network supervisor then modifies the view to his or her liking, including adding or deleting objects, moving objects, granting or deleting rights and trustee assignments, and so forth. Changes made in the view do not affect the actual NDS tree until those changes are merged to the actual NDS tree during the configure step. Once the modeling process is complete, the information displayed in the view can be configured (or merged) into the NDS tree.

The Configure Step

The network supervisor logs in or maps a drive to the intraNetWare server. From there he or she configures the objects within the view. Once all replicas have been updated, the new bindery information becomes part of the NDS tree.

Items Migrated to NDS

The following bindery information is converted to NDS:

- All user account restrictions
- Mail directories and contents
- Default user account restrictions, which become the properties of USER_TEMPLATE.
- User login scripts-both bindery and NDS
- Group memberships and security equivalencies

- Novell print servers, queues, and printers
- User print job configurations
- System login script

NOTE: The instructions within the System login script become part of the Container login script.

- Directory level trustee assignments (DS Migrate also creates the directories where trustees exist).

NOTE: When migrating a NetWare 3 server, the directories and associated trustees are created using the File Migration utility.

- File level trustee assignments

  Working in conjunction, DS Migrate and the File Migration utility assure that file level trustee assignments are migrated properly.

Items Not Migrated to NDS

The following bindery information is not converted to NDS:

- User passwords

NOTE: Passwords can be assigned globally or individually in the modeling process.

- Printer definition database

File Migration

Once the NetWare 3 server bindery has been migrated, the server files are migrated using the File Migration Utility. The File Migration utility is a Graphical User Interface (GUI) utility that is run from a NetWare Client running Windows 3.1x or Windows 95. Files from a NetWare 3 server are copied by simply indicating the source and destination volumes in the utility's Wizard-based interface.

NetWare Server Files Not Migrated

The File Migration utility migrates all NetWare 3 server files and subdirectories except for the following:

- TTS$LOG.ERR from each migrated volume
- VOL$LOG.ERR from each migrated volume
- All files in SYS:SYSTEM
- The SYS:SYSTEM\NLS subdirectory
- All files in SYS:PUBLIC
- All files in SYS:/PUBLIC/OS2
- All files in SYS:PUBLIC/UNIX
- All files in SYS:PUBLIC/NLS
- All files in SYS:PUBLIC/CLIENT
- The SYS:LOGIN directory
- The SYS:ETC directory
- Any files that are currently open

Preparing for Migration

Prior to migration, you must do the following:

- Meet all client workstation system requirements
- Disable Service Advertising Protocol (SAP) filtering on servers involved in the migration process
- Setup NetWare Administrator on the workstation

Client Workstation System Requirements

To run DS Migrate, the File Migration utility, and NetWare Administrator, your NetWare client workstation must meet the following system requirements:

- Windows 3.1x or Windows 95
- Virtual Loadable Module (VLM) or NetWare Client 32 software
- At least 8 MB of RAM
- 1.2 MB of free disk space for NetWare Administrator
- 3 MB of disk space for each NetWare server discovered
- The following line included in your CONFIG.SYS file:

```
FILES = 40
```

Disabling Service Advertising Protocol (SAP) Filtering

If you plan to use the File Migration utility to migrate NetWare 3 server files to an intraNetWare server, you should first ensure that Service Advertising Protocol (SAP) filtering is disabled on each server. If SAP filtering cannot be disabled, you should ensure that the default server (preferred server) for the client workstation through which you are running the utility is on the same LAN segment as the other servers you are migrating to and from.

You can change the default server setting for the client workstation you are running the utility from by using the Preferred Server setting. You set this parameter in the *Control Panel →Network→Novell NetWare Client 32→ Properties* for Windows 95 workstations, or in the NET.CFG file for VLMs and for NetWare Client 32 for DOS and Windows workstations.

If either of the two servers that you are using for the migration exist across a routed LAN segment, you must ensure that SAP filtering is disabled.

Setup NetWare Administrator

DS Migrate and the File Migration utility are launched through NetWare Administrator. If you do not have NetWare Administrator already set up on your workstation, you must do so at this time.

For a Client Running Windows 3.1x

Prerequisites

- ❑ A workstation cabled to the network and running Windows 3.1x and either VLM or Client 32 software
- ❑ 1.2 MB of free disk space on the workstation
- ❑ A drive mapping to SYS:PUBLIC on the intraNetWare server
- ❑ Authentication to an NDS tree

Procedure

1. In Program Manager, choose the program group you want to start NetWare Administrator from.
2. Click *File→New.*
3. Choose *Program Item→OK.*
4. In the “Description” field, enter NWADMIN→<Tab>.
5. Click **Browse**.

6. In the Drives drop-down list, choose the drive that points to SYS:PUBLIC.
7. Click on *File Name→NWADMN3X.EXE→OK*. The path to the executable file is placed in the "Command Line" text box.
8. Again, choose *OK→Yes*. NetWare Administrator is created as a program item icon in the group you selected.
9. Before exiting Windows, select *Options→Save Settings on Exit*.

For a Client Running Windows 95

Prerequisites

- ❑ A workstation cabled to the network and running Windows 95 and Novell Client 32 software
- ❑ 1.2 MB of free disk space on the workstation
- ❑ A drive mapping to SYS:PUBLIC on the intraNetWare server
- ❑ Authentication to an NDS tree

Procedure

1. From the Windows 95 desktop, single click the right mouse button and choose *New→Shortcut*
2. In the Command Line text box, enter
   Z: \PUBLIC\WIN95\NWADMN95.EXE <Enter>
3. Choose **Finish**.
4. NetWare Administrator is created as a shortcut icon on your desktop.

Run DS Migrate

This process involves running DS Migrate to migrate the NetWare 3 server's bindery. The procedures are divided into the three sub-steps: discover, model, and configure.

The procedures that follow are those required to migrate a single volume NetWare server to a single volume intraNetWare server. Based on your source and destination server configurations, the procedures below may need to be modified to address your server configuration needs.

Discover the NetWare Bindery

Prerequisites

- From a NetWare client running Windows 3.1x or Windows 95, log in or map a drive to an intraNetWare server (as a user with Supervisor rights) from which you can run the NetWare Administrator utility.
- From the same workstation, establish a network connection (as a user with Supervisor rights) to each bindery server to be migrated.

Procedure

The procedures in the following sections are somewhat condensed. Along with these procedures, we recommend that you use the comprehensive Windows online help that is built into the DS Migrate utility.

You can access the DS Migrate help system table of contents through the *Help* menu, or by clicking the **Help** button (located on the far-right end of the toolbar). You can access context-sensitive help by pressing **F1**.

1. Launch NetWare Administrator by double-clicking the **NWADMIN** icon.
2. Select *Tools→DS Migrate→Continue*. The DS Migrate main window appears.
3. Discover the bindery server you are mapped to by choosing *File→New View→Bindery View*. You can also discover the bindery view by clicking the Bindery Discovery toolbar button (the second button from the left) on the toolbar. The *Enter New View from Bindery* screen appears.

4. Enter the view name and author for the new view and click **OK.** For information on views, refer to the DS Migrate online help. The *Specify Discover Parameters* dialog box appears.
5. Choose the server to discover and the information you want discovered, and click **OK**. The bindery objects you chose are discovered. DS Migrate then generates a report displaying all of the information captured in the discover.
6. Review the report for any errors (listed at the bottom of the report) and close it when finished. The report is saved on the server in the *BINDDISC.LOG* file. The NetWare bindery appears in a graphical NDS tree-like structure where it can be modeled.

Model the NetWare Bindery

With the NetWare 3 bindery information discovered and saved to the DS Migrate database, you can now begin the modeling process.

All bindery objects are placed into an Organizational Unit (OU) which is given the same name as the server being upgraded. These objects, including the OU, can be renamed, moved, or modified as desired. In addition, new NDS tree objects can be created. During the modeling process, object properties and login scripts can be created or edited as well.

The modeling changes affect only the DS Migrate database. The original bindery objects in the NetWare 3 server and the actual intraNetWare NDS tree where these objects will eventually reside are left untouched until the configure process.

Modeling Considerations

It is important that the modeled tree structure be similar to that of the intraNetWare NDS tree. Specifically, the container, server, and volume objects that exist in the actual intraNetWare NDS tree above the objects being migrated should also exist in the modeled tree.

If the names of the source (NetWare 3) server and destination (intraNetWare) server are different, the following objects and properties must be modified during the modeling process:

- Print queues - These must be modified to reflect the new intraNetWare volume names where the queue directories reside.
- Login scripts - These may require modifications to reflect new server and volume names.
- Print jobs - These may require modification to reflect new queue information.

NOTE: DS Migrate has a Find and Replace utility under the *Tools* menu. This utility will allows you to identify users and groups, and modify their properties before they are configured to the NDS tree.

Model the Objects

Procedure

1. Rename the discovered bindery server and volume objects to match the names of those in the actual intraNetWare NDS tree. Double click the object and modify the *Name* field to do this.
2. Verify that all print queue objects' volume properties now reflect the actual intraNetWare volume names by double-clicking the queues and reading the *Volume* property.
3. Add or rename container objects (the Organization and Organizational Units) in the view as needed so that the tree structure above the container holding the discovered objects appears identical to the actual intraNetWare NDS tree where these objects will be migrated.
4. Drag and drop all NetWare 3 server and volume objects that were renamed in Step 1 into the proper containers to match the locations of the actual server and volume objects in the intraNetWare NDS tree.

Configure the NetWare Bindery to the NDS Tree

With the modeling process completed, you are ready to configure (or merge) the modeled bindery to the NDS tree.

Prerequisites

- From a NetWare client running Windows 3.1x or Windows 95, log in or map a drive (as ADMIN or a user with Supervisor rights) to the intraNetWare server SYS: volume.
- Launch NetWare Administrator and then select *Tools→DS Migrate*.

Procedure

1. Select *File→Open View*.
2. Choose the desired view and click OK to activate the view.
3. Consistent with NDS security, you must have sufficient rights to configure selected objects and containers.
4. Select *Tools→Options→Configure*.
5. Decide if you want directory trustees configured for directories that do not yet exist on the destination intraNetWare server (these are directories that have not yet been migrated through the file migration process).

   If you decide not to migrate the trustee assignments, un-check the *Create trustee directories if they do not exist* check box in the *Configure* dialog box.

6. Set other desired configuration options in the Configure dialog box. These include password and object merge options.

    a. Selecting the *Configure passwords* checkbox lets you control whether User passwords are configured to your live NDS tree. Selecting this box activates the *Create passwords for new objects* and *Replace passwords for existing objects* checkboxes.

    b. Select the *Create passwords for new objects* checkbox if you want to configure the passwords for any new users being added to the live tree. Deselect this checkbox if you want new users added to the live tree to have blank passwords.

    c. Select the *Replace passwords for existing objects* checkbox if you also want to configure the passwords for existing users in the live tree with the passwords assigned to those users in the DS Migrate view. Deselect this checkbox if you do not want to replace existing user's passwords during the configuration.

    d. If you choose to have DS Migrate configure random passwords for each user, they are placed in a text file (*DSCONFIG.LOG*) in the SYS:\SYSTEM\DSMIGRATE\DATA\OUTPUT subdirectory. You will need to devise a process to distribute these passwords to the users so that they can log in.

    e. If you do choose not to have DS Migrate configure random passwords, each user will be required to enter a password during their initial logon.

7. When all desired options have been set, click OK.

8. Choose *View→Configure All Objects*. A pre-configuration verification is run. The pre-configuration verification checks that the integrity of the objects is complete and can be merged into the intraNetWare NDS tree. A dialog box displays when the pre-verification process is complete. If errors were encountered, the dialog indicates this as well. Refer to the on-line documentation for error explanations.

If	Then
The dialog indicates that there were errors	Click **Cancel** to close the dialog and go back and correct the errors in the view. Or Click **OK** to ignore the errors and configure. **NOTE**: Any pre-configuration errors must be corrected either before or after configuration. If you ignore the errors at this time, you will need to correct them after the configuration.
No errors are indicated in the dialog	Click **OK** to configure.

The time required for bindery information to configure itself in the NDS tree varies according to the number of objects in the current view. Once configured, a report appears.

9. Review the report for errors and then close it. Errors are documented at the bottom of the report.

10. Perform additional measures as needed.

Item	Action needed
User passwords	Establishing them on the intraNetWare server (This will depend on the password options you set in Step 6).
Login scripts	May need to be updated to reflect new server and volume names
Print job files	May need to be updated to reflect new queues

11. Continue with *Migrate Server Files.*

Migrate Server Files

File Migration Overview

Once the NetWare 3 bindery has been migrated, the NetWare 3 server files are migrated using the new NetWare File Migration utility.

Like DS Migrate, the File Migration utility is launched through the *Tools* menu of the NetWare Administrator utility.

> **IMPORTANT:** The File Migration utility must be run on the same workstation that you used to run DS Migrate.

The File Migration utility allows you to easily migrate server volumes by simply designating the source server and the specific volume and subdirectory on the destination server.

The NetWare File Migration utility uses a Windows help wizard. The wizard provides visible online help for each page of the utility's interface.

Prepare to Migrate NetWare 3 Server Files

Make sure each of the following is true for your setup:

- You must have Supervisor or Supervisor Equivalent rights to both the source (NetWare 3) and destination (intraNetWare) servers.
- If any of the volumes you are going to migrate contain files with non-DOS naming conventions, load the appropriate name spaces on the destination volumes:

  ```
  Add Name Space name_space [ to volume-name]
  ```

- In the SYS:SYSTEM directory on the source server, update the NLMs with the following NLMs located on the intraNetWare Operating System CD in PRODUCTS\NW3X:

For a NetWare 3.11 source server	For a NetWare 3.12 source server
TSA311.NLM	TSA312.NLM
SPXS.NLM	SPXS.NLM
TLI.NLM	TLI.NLM
CLIB.NLM	CLIB.NLM
AFTER311.NLM	AFTER311.NLM
A3112.NLM	A3112.NLM
SMDR.NLM	SMDR.NLM
STREAMS.NLM	STREAMS.NLM

- ❑ Update the server drivers to the latest Compaq Novell Support Software Diskettes (NSSD).
- ❑ Restart the source server and load TSA31x.NLM.
- ❑ If you are migrating volumes with Macintosh name space support and the MAC.NAM file is earlier than version 3.12, dismount the volume, unload MAC.NAM, load the 3.12 version of MAC.NAM (located in PRODUCTS\NW3X) and then run the VREPAIR.NLM.

32-character Macintosh filenames are renamed during file migration. To maintain filenames, reduce 32-character filenames prior to running the NetWare File Migration utility.

Migrate the Server Files

Procedure

1. In the NetWare Administrator utility, choose *Tools→File Migration*.

   Be sure to follow the directions on each of the wizard pages before continuing.

2. Click **Next** to continue. A new screen appears where you can indicate the source server and volume whose files you want to migrate.
3. In the *Source server* field, click the down arrow and choose the desired NetWare 3 server.
4. In the *Source volume* field, click the down arrow and choose the desired volume for the server you selected.
5. Click **Next** to continue. A new screen appears with a field for you to type the source server password.
6. In the *Password* field, type the NetWare 3 server password.
7. Click **Next** to continue. A new screen appears where you indicate your destination server, volume object and directory path.
8. In the *Destination server* field, click the down arrow and choose the server you want to migrate the files to.
9. In the *Destination volume* field, click the down arrow and choose the volume you want to migrate the files to.
10. In the *Destination directory* field, click the down arrow and choose the directory you want the files migrated to. Destination directories must be located at the root of the volume.
11. Click **Next** to continue. A new screen appears with a field for you to type the destination server password.
12. In the *Password* field, type the intraNetWare server password.

13. Click **Next** to continue. At this point, the File Migration utility:

    a. Verifies that the source and destination information you entered is valid and can be migrated.

    b. Verifies that you have appropriate rights to the source and destination servers.

    c. Locates and reads the DS Migrate name mapping file created by DS Migrate.

    d. Reads all users and groups on the source server and checks for the NDS name property.

    e. Disables login privileges for all users who are not currently logged in to the source server.

    f. Reads the name space information on the source and destination volumes.

    If you encounter problems, specific messages or dialogs appear that require your input to fix the problems.

14. Click **Migrate** to begin the file migration. The *Migrating Files* screen appears showing the progress of the migration. You can stop the migration by clicking **Stop**.

If you are migrating	Then
Filenames that already exist on the destination Server	The migrated file is renamed. The log file *MIGRATE.LOG* displays the name of the renamed file.
Directories that already exist on the destination Server	The directory contents are merged into the directory with the same name.

At this point, the File Migration utility automatically loads the *TSA410.NLM* and *MAP3XIDS.NLM* on the destination server.

A screen informs you when the migration for the server volume is complete. You can view the migration log by clicking **View log**. The log is stored as *MIGRATE.LOG* in the root of the destination path.

15. Migrate another server volume or exit the utility.

If you want to	Then
Migrate another server volume	Click **Again**. Click **Next** and start the file migration process again, beginning with Step 2.
Exit the File Migration utility	Click **Done**.

Chapter 5
Simware's REXXWARE Migration Toolkit (RMT)

Overview

Simware's REXXWARE Migration Tool (RMT) is a server-based utility that is used in Across-The-Wire upgrades of large-scale NetWare 3 networks to intraNetWare. After you have installed intraNetWare on the destination servers using the Install utility, you use RMT to migrate network information and data files from the NetWare 3 source servers. With RMT, you can migrate multiple NetWare 3 servers at one time. You can also consolidate multiple NetWare 3 servers into a single intraNetWare server at one time.

How RMT Works

How RMT Migrates Information

First, RMT creates a Novell Directory Services (NDS) model of the NetWare 3 bindery. RMT then extracts bindery objects such as users, groups, queues, printers, and print servers from the specified NetWare 3 source servers, converts them into NDS objects, and places them in an intraNetWare database on the destination servers. You have complete control over every step of this process to ensure that the resulting intraNetWare database accurately models the NDS tree structure you have established.

Second, RMT migrates the NDS model of user, group, and print-system objects from the intraNetWare database to the live NDS tree. You can edit the NDS model graphically to ensure it fits your planned NDS tree structure before migrating it to the live NDS environment.

When you have completed the migration of the NDS model to the live NDS environment, RMT migrates data files from the selected source NetWare 3 servers to the destination intraNetWare servers. You can consolidate multiple volumes from the source server into a single volume on the destination sever.

RMT Menus

RMT has the following top-level menus, each of which is one major task of a migration.

The wording of some options is abbreviated in the following diagram:

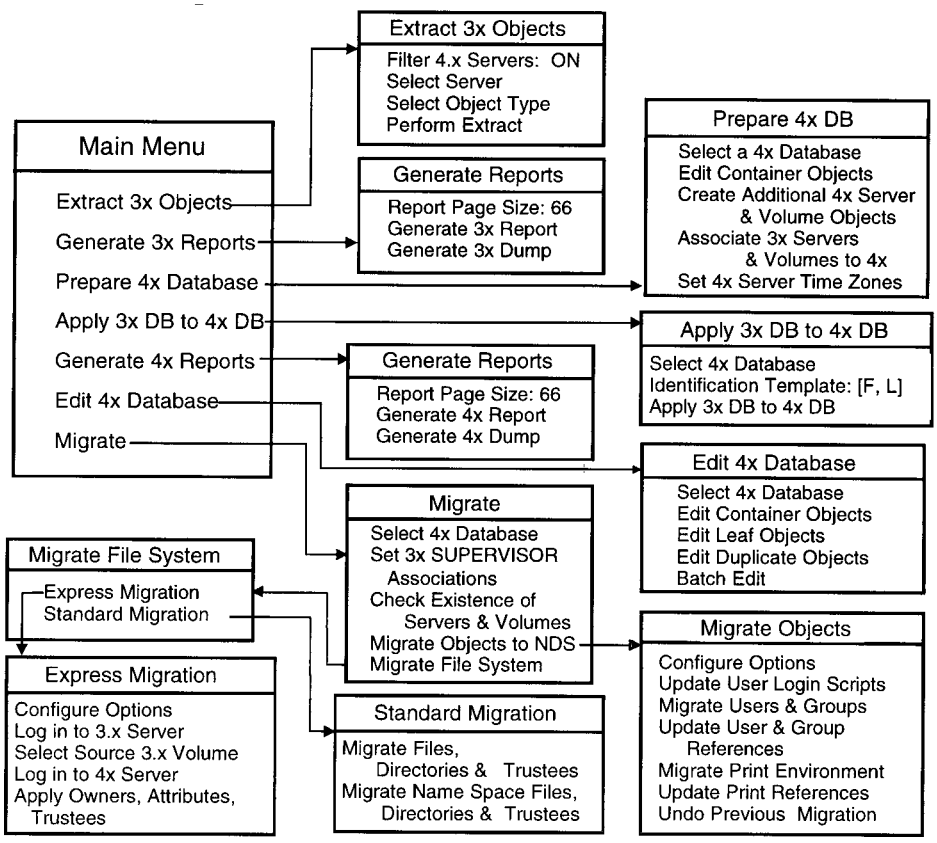


Figure 5-1. RMT Menus

Overview of RMT Migration Tasks

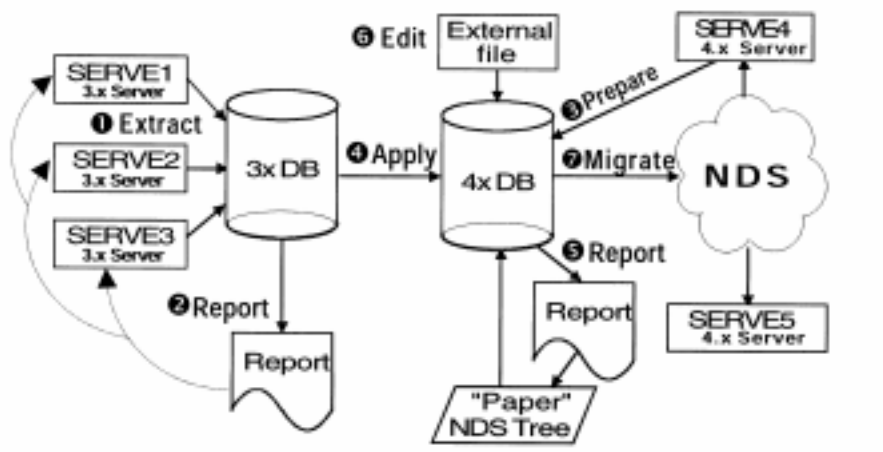


Figure 5-2. RMT Task Flow Chart

Each migration with RMT involves seven high-level tasks:

1. Extract 3.x server objects into a 3x database.
2. Generate a NetWare 3 report.
3. Prepare an intraNetWare (4x) database.
4. Apply the 3x database to the intraNetWare (4x) database.
5. Generate a report for the intraNetWare (4x) database.
6. Edit the intraNetWare (4x) database.
7. Migrate from the intraNetWare (4x) database to live intraNetWare.

Task 1 - Extracting Information from the NetWare 3 Server

In this task, you extract the following information from NetWare 3 server binderies, and store the resulting records and properties in a NetWare 3 database:

- Standard bindery objects (such as USERS, GROUPS, PRINT_QUEUES, PRINT_SERVERS)
- Their properties (such as user objects and the groups to which they belong)

Choose the following options in order to perform this task:

1. *Filter 4x Servers* (the default is **ON**) to set this option to **OFF** (by choosing the *Show All Servers* option) if you are connected to a WAN or if you have a large number of servers.
2. *Select Server* to display a list of NetWare 3 servers and to choose the server you want to extract. For each additional server, repeat this and the following two steps.
3. *Select Object Type* to choose from a list of object types (such as USER) for extraction.
4. *Perform Extract* to read the objects and their properties on the selected NetWare 3 servers, and to create a copy of them in the NetWare 3 database.

Task 2 - Generating NetWare 3 Reports

Task 2 allows you to create a NetWare 3 report to find out exactly which user, group, print server, and/or print queue objects are on each NetWare 3 server. It generates the report on any object class or objects that have common attributes (for example, all user objects with Supervisor equivalence). You can select the detail level you want for your NetWare 3 reports.

Choose the following options to perform this task:

- *Report Page Size* to specify the number of lines per page (the default is 66) for a report.
- *Generate 3x Report* to produce a formatted report on any objects that you have extracted into the NetWare 3 database.
- *Generate 3x Dump* to produce a dump of the contents of your extracted servers, which are now in the NetWare 3 database.

Task 3 - Preparing an intraNetWare Database

Task 3 creates an intraNetWare database and makes it ready to receive the NetWare 3 database information by extracting an existing NDS tree or emulating an NDS installation. It also creates the container structure from your NDS plan and associates NetWare 3 servers to NDS server objects, and the NetWare 3 volumes to NDS volume objects. Set the time zone for each NDS server object.

Choose the following options in order to perform this task:

1. *Select an intraNetWare Database* either to choose an existing database that represents your NDS environment, or to create a new intraNetWare database.
2. *Edit Container Objects* in the intraNetWare database to add, delete, or modify any Organization (O), Organizational Unit (OU), Locality (L), or Country (C) object.
3. *Create Additional intraNetWare Server & Volume Objects* in the intraNetWare database when you are migrating to more than one server at a time.
4. *Associate 3x Servers & Volumes to intraNetWare* to map your migration on a server-to-server basis (you can also use this step to consolidate servers).
5. *Set intraNetWare Server Time Zones* to specify the number of hours a server is offset from Greenwich Mean Time (GMT) so that RMT will set the correct user login times when migrating users. This option does not reset the time zone on the server itself.

Task 4 - Applying the NetWare 3 Database to an intraNetWare Database

In Task 4, you bring the information from NetWare 3 database objects to the corresponding intraNetWare database objects by selecting an intraNetWare database to receive the NetWare 3 information. You then configure the user Identification Template to parse first names and last names correctly before applying the NetWare 3 database object information to the intraNetWare database. At this point, the intraNetWare database becomes a virtual NDS tree, which you will edit.

Choose the following options in order to perform this task:

1. *Select an intraNetWare Database* to choose the database that represents your NDS environment, or to create a new intraNetWare database that models your NDS plan.
2. *Identification Template* to edit the default format for user objects to the format you want for mapping the Full Name format in NetWare 3 to *First Name* and *Last Name* user attributes in NDS and a placeholder for *Middle Name*.
3. *Apply 3x DB to intraNetWare DB* to take the NetWare 3 server information extracted into the NetWare 3 database, and apply it to the intraNetWare database.

Task 5 - Generating an intraNetWare Report

Task 5 creates and runs a report to check whether your intraNetWare database model matches your NDS plan. It reports on any object class or objects that have common attributes (for example, all users with Admin equivalence). You can select the detail level you want for reports on the virtual NDS tree.

Choose the following options to perform this task:

- *Report Page Size* to specify the number of lines per page (the default is 66) for a report.
- *Generate intraNetWare Report* to produce a formatted report on any objects that you have extracted into the intraNetWare database.
- *Generate intraNetWare Dump* to produce a dump of the contents of your extracted servers, which are now in the intraNetWare database.

Task 6 - Editing an intraNetWare Database

In Task 6, you model your intraNetWare database into the exact NDS tree structure you have planned by moving all of the database objects to the NDS contexts shown in your plan. You can then edit the objects to give them new NDS attributes (for example, Email Address). If necessary, combine duplicate objects of the same class originating from different NetWare 3 servers (for example, consolidate the contents of several servers in the same container). You can also resolve duplicate objects of different classes originating from the same NetWare 3 server.

Choose the following options in order to perform this task:

1. *Select intraNetWare Database* to choose from a list of databases that you created when you prepared the intraNetWare database.
2. *Edit Container Objects* to edit or create new Country, Organization, or Organizational Unit objects.
3. *Edit Leaf Objects* to edit objects in the intraNetWare database to change their context to fit your plan and to add attributes (such as Email Address).
4. *Edit Duplicate Objects* to combine or rename objects with the same object name, originating from different NetWare 3 servers, or from the live NDS tree.
5. *Batch Edit* to use an external ASCII input file to modify the attribute values of objects in the intraNetWare database (same procedure as Leaf Edit, but with input given through a file rather than built interactively).

Task 7 - Migrating

Finally, in Task 7 you bring the intraNetWare database model of your NDS plan into your live NDS environment. You can choose the type of initial passwords you want to give users on the intraNetWare servers (such as null, random, or passwords from an external file you create). You then migrate the user, group, and print-system objects to the live NDS tree, and update references within the objects in the live NDS tree. When you begin the actual migration, you choose the type of file migration to perform, either test or real. You also select whether to migrate files and directories from the DOS name space, or from other name spaces, such as Mac, OS/2, NT, and NFS.

Choose the following options in order to perform this task:

1. *Select an intraNetWare Database* to choose a virtual NDS tree from among those that you have created.
2. *Set 3x SUPERVISOR Associations* to map each NetWare 3 Supervisor object to a line intraNetWare user who is an Admin-equivalent user in the corresponding part of your NDS tree.

   You must assign an Admin-equivalent user for each intraNetWare server in the NDS tree. If you do not, RMT will set the Supervisor association to your login userid.
3. *Check Existence of Volumes and Servers* to compare volumes and servers in the intraNetWare database against the live NDS tree.
4. *Migrate Objects to NDS* to migrate users and groups, print environment, and the references for these objects.
5. (Optional) If you are migrating files with name spaces other than DOS, run the Name Space Applet on the NetWare 3 server first, then on the intraNetWare server.
6. *Migrate File System* to bring the files, directories, and trustees over from the NetWare 3 environment to the NDS environment. You can use either the *Express Migration* or *Standard Migration* option.

Before Running RMT

Before you run RMT, ensure that you complete the following tasks:

- With no users logged in, run the Novell utility BINDFIX on each of your NetWare 3 servers to purge deleted records from the bindery.
- Back up all the NetWare 3 servers that you will be migrating.
- If *BTRIEVE.NLM* is already loaded on the intraNetWare server where RMT is running, carefully unload any operations that use Btrieve, unload Btrieve, and then load it with the following line:

  ```
  LOAD BTRIEVE -b=64K
  ```

- Make sure all intraNetWare servers are updated with the latest Novell intraNetWare updates for Directory Services, such as *DS.NLM* and *DSREPAIR.NLM*.
- Turn off all automatic backups and cancel any manual backups planned for the migration period. A backup during the migration period could disrupt a migration.
- If you have a WAN, create a local replica of your NDS Partition on your RMT server or elsewhere on your LAN. When RMT is updating a local replica of NDS, performance is better. In addition, any danger of a break in the link to the server where NDS is located is greatly reduced.

NOTE: The RMT server should be part of an NDS tree unless you are accessing more than one NDS tree during migration. In such a case, the RMT server should not be part of any NDS tree.

- 32 MB (64 MB recommended) is the minimum memory you should have on the intraNetWare server where you are installing RMT.
- If you get a “Cache memory allocator out of memory” error, ensure there is enough unfragmented memory. Save your previous SET command settings, issue three set commands, and edit the three SET command lines in *AUTOEXEC.NCF*. Here is a convenient way to do this.

1. Save your previous SET command settings:
   a. Go to the system console and type:

      LOAD SERVMAN

   b. Choose Server Parameters→Memory.
   c. Change one value to another number, and then change it back to the original number.
   d. Press **Enter**→**Esc**.
   e. When prompted with *Copy parameters to a file?*, press **Enter** to accept (creating or updating your *SETCMD.CP* file with the current settings).
2. Issue the three SET commands and update your *AUTOEXEC.NCF* file:
   a. Press **Esc** until you reach *Choose Server Parameters*.
   b. Choose *Memory*.
   c. Vary three memory settings downward from their current levels by using these SET commands from the system console or by using *SERVMAN.NLM*:

      SET MINIMUM FREE MEMORY FOR GARBAGE COLLECTION

      SET NUMBER OF FREES FOR GARBAGE COLLECTION

      SET GARBAGE COLLECTION INTERVAL

   a. Press **Enter** for each setting.
   d. Press **Esc**.
   e. When prompted with *Update AUTOEXEC.NCF?*, press **Enter** to accept.
   f. Press **Esc** to exit SERVMAN.
3. When you have finished running RMT, do the following:
   a. Go to the system console and type:
   b. LOAD SERVMAN.
   c. Choose *Server Parameters→Memory*.

d. Change the three values back to those listed in SYS:\SYSTEM*SETCMD.CP*.

e. Press **Enter**→**Esc**.

f. When prompted with *Copy parameters to a file?*, press **Enter** to accept (updating your *SETCMD.CP* file with the current settings).

Final Tips for Using RMT

- Ensure that you have adequate free space on the RMT server. A large migration may use from 10 to 200MB of free space on a server to store the RMT, its databases, reports, and log files.
- Make a copy of the 4.x database after applying the 3.x database to it, but before migrating. If anything goes wrong with the migration, you will have a backup database to restore.
- Any reference to SUPERVISOR is translated to the distinguished name of the Admin during the migration.
- Do not skip running BINDFIX on the 3.x bindery before you extract.
- You may consolidate several 3.x servers on one intraNetWare server by extracting information on subsequent servers into the 3.x database created by extracting the first 3.x server. Answer *Yes* to *Append to existing 3x DB?* when prompted.
- Ensure that you have created the emulated server and volume objects and created appropriate associations before applying the 3x database to the intraNetWare (4x) database.
- When editing the intraNetWare (4x) database, remember that you can use Batch Edit to change the property values (attributes) that groups of leaf objects should have in common.
- Before migrating files with name spaces other than DOS, remember to run the Name Space Applet on the NetWare 3 server first, then on the intraNetWare server.
- Remember that files in the SYSTEM, PUBLIC, MAIL, LOGIN, and ETC directories will not be migrated to the intraNetWare server because those directories contain 3.x specific files. Move files to other directories if they need to be migrated.

Chapter 6
Workstation Software and Management

This chapter describes the procedures for installing workstation software and management applications. Detailed explanation of these procedures is contained on the intraNetWare Online Documentation CD, which is accessed by using the DynaText viewer. See Chapter 7 for instructions on installing and using DynaText.

NetWare Client 32 Software

This section provides procedures to install NetWare Client 32 Software from the intraNetWare server.

To install NetWare Client 32 software, you need to first install intraNetWare or use the Installation Utility to make client diskettes. If intraNetWare has not been installed yet, see the Compaq SmartStart documentation or the intraNetWare documentation for information on installing intraNetWare.

You can install the NetWare Client 32 Software from the intraNetWare server or by using the NetWare Client 32 diskettes. To make the NetWare Client 32 diskettes, use the SmartStart package or the intraNetWare package. Compaq recommends installing the NetWare Client 32 Software from the intraNetWare server because it:

- Is fastest
- Is easiest
- Requires no diskettes

Before You Begin

Client Requirements

The following resources are necessary to install NetWare Client 32 Software for Windows NT, Windows 95, and DOS/Windows 3.1x workstations:

- A 386 processor or better for Windows 3.1x; 486 or better for Windows 95 and Windows NT
- RAM as follows:
  - At least 12 MB of Ram (16 MB recommended) for Windows NT
  - At least 6 MB of RAM for Windows 95
  - At least 5 MB of RAM for Windows 3.1x and DOS
- 6 KB of conventional memory; remaining memory is allocated to extended memory
- A memory manager, such as *HIMEM.SYS, EMM386.EXE,* QEMM, or 386MAX
- A network board installed in your workstation and a record of the board settings to use during the installation process
- A physical connection to a NetWare network
- A supported operating system

Communication Protocol

A communications protocol is a set of rules determining the “language” used to move data across the network. The protocol guarantees that two devices using the same protocol can communicate because they “speak the same language.”

The communications protocol is provided to the workstation by *IPX.NLM* for DOS/Windows 3.1x and Windows 95. The intraNetWare Client 32 for Windows NT does not ship with its own IPX/SPX protocols, but uses Microsoft’s NWLink instead.

Open Data-Link Interface (ODI) Specifications

intraNetWare network workstations use a version of the IPX communications protocol that works according to the ODI specifications. ODI allows you to run multiple protocols on the same cabling system. This increases the functionality of your network by allowing devices with different communications protocols to exist on the same network. For example, a computer can run both the IPX and TCP/IP protocols on the same Network Interface Card (NIC).

The benefits of using ODI are:

- Concurrent communication with a variety of workstations, servers, and mainframe computers using different protocols.
- Use of any NIC designed to ODI specifications for communications.
- Fewer hardware components to maintain.

Link Support Layer (LSL)

LSL is the implementation of the ODI specification. LSL acts like a switchboard to route network information of different protocols between the Local Area Network (LAN) driver and the appropriate communications software.

LSL is loaded on the workstation by *LSLC32.NLM* for DOS/Windows 3.1x and Windows 95, and *LSL.SYS* for Windows NT.

LAN Driver

The LAN driver controls the workstation NIC. NetWare Client 32 supports several different methods for connecting the workstation to the server. An example of a LAN driver is *CNE2000.LAN*.

NOTE: You will need the manufacturer's MLID driver for the NIC installed in your workstation, if one is not provided with the intraNetWare workstation software. intraNetWare workstation software supports most NICs. If a driver is not listed for your particular NIC, check the packaging or contact the NIC manufacturer to obtain an intraNetWare compatible driver.

NetWare Client 32 for Windows NT

NetWare Client 32 is installed using the Windows NT Graphical User Interface (GUI) setup program, *SETUPNW.EXE*. It can be installed in the following ways:

- Using a server-based Windows install (UNATTEND.TXT setup) on a workstation that does not have Windows NT installed
- Using the *SETUPNW.EXE* application on a workstation that already has Windows NT installed
- Using the Automatic Client Update (ACU) for NT

NetWare Client 32 installation incorporates Windows NT property pages that were created specifically to set NetWare Client 32 configuration parameters contained in the Windows NT Registry. These pages use a GUI to replace editing network configuration settings in a configuration file.

Installing NetWare Client 32 Using a Server-Based Windows NT Install (UNATTEND.TXT Setup)

This method prepares the Windows NT and NetWare Client 32 files on a server so that they can be installed at the same time. During installation, the files are copied from the server to the workstation. See the help files in NetWare Client 32 for more information about UNATTEND.TXT setup.

Installing NetWare Client 32 on a Workstation that has Windows NT Installed

This method can be used if you are upgrading from the NetWare DOS Requester (VLM) client. If you do not have any network client software installed, you need to have the Windows NT CD-ROM or diskettes, or the Windows NT **.CAB* files.

After the installation is complete, you can customize the client using the Network Configuration Page. Here you can also set the interrupt and address of the workstation's NIC. You can also specify which of the GUI login cards display when *LOGINWNT.EXE* is launched.

Installing NetWare Client 32 Using Automatic Client Update (ACU) for Windows NT

ACU for NT automatically updates NetWare Client 32 for Windows NT software. It operates through network-based login scripts or through NAL. When a user logs in to the network or clicks on the NAL-installed update icon, the update mechanism checks the version of the client software and updates older clients automatically. You can custom-configure the installation and update for each user. ACU for NT can also update the Microsoft Client for NetWare Networks, but does not work with NETX or with the VLM programs.

Configuring Network Parameters in Windows NT

NetWare Client 32 is designed to minimize configuration time. Most default values will suffice in most environments. NetWare Client 32 uses some settings as a guide, or as an initial value, and then dynamically adjusts the settings' run-time equivalents for optimum performance, reducing the amount of time you spend on configuration.

After installing NetWare Client 32, you can customize the client for your workstation.

1. To open the network properties window, perform either of the following:

   a. On the desktop, right click on *Network Neighborhood* icon→*Properties*.

   b. On the task bar, click the *Start button→Setting→Control Panel→Network icon*.

2. With the Network properties window open, select *Novell NetWare Client 32→Properties*.

The NetWare Client 32 Properties window allows you to change settings at a workstation. On the Client 32 tab, you can specify the following:

- Preferred server
- Preferred tree
- Name context
- First network drive

On the Login tab, you can set which of the tabs appear when the GUI login is executed.

NetWare Client 32 for Windows NT Installation Procedure

Perform the following steps to complete installation of NetWare Client 32 software:

1. Start Windows NT.
2. Verify Microsoft's Client Service for NetWare is loaded.
   a. Right-click on *Network Neighborhood*.
   b. Select *Properties* → *Services* tab.
   c. Client Services for NetWare should be listed as an installed service.
   d. Click *OK*.
3. Start the *SETUPNW.EXE* program.
4. After consenting to the software license agreement, an information box indicating that Microsoft Client Service for NetWare will be removed is displayed. Click *Yes* to continue.
5. *SETUPNW.EXE* performs the following:
   a. Removes existing client information from the Registry database.
   b. Adds the new intraNetWare Client keys to the Registry.
   c. Copies the necessary files to the workstation.

6. When the step above is complete, an Installation Complete information box is displayed. You can either:

   a. Close the installation program by clicking the *Close* button.

   b. Reboot the workstation by clicking the *Reboot* button.

7. After rebooting, you should see a new intraNetWare Client window instructing you to press **Ctrl+Alt+Delete** to log in. After doing so, the login interface is displayed for you to login.

8. The installation process is complete.

NetWare Client 32 for Windows 95

NetWare Client 32 is installed using the Windows 95 Graphical User Interface (GUI) setup program, *SETUP.EXE*. It can be installed in the following ways:

- Using a server-based Windows install (MSBATCH setup) on a workstation that does not have Windows 95 installed
- Using the *SETUP.EXE* application on a workstation that already has Windows installed
- Using the Automatic Client Update (ACU) for Windows 95

NetWare Client 32 installation incorporates Windows 95 property pages that were created specifically to set NetWare Client 32 configuration parameters contained in the Windows 95 Registry. These pages use a GUI to replace editing network configuration settings in a configuration file.

Installing NetWare Client 32 Using a Server-Based Windows 95 Install (MSBATCH Setup)

This method prepares the Windows 95 and NetWare Client 32 files on a server so that they can be installed at the same time. During installation, the files are copied from the server to the workstation. See the help files in NetWare Client 32 for more information about MSBATCH setup.

Installing NetWare Client 32 on a Workstation that has Windows 95 Installed

This method can be used if you are upgrading from the NetWare DOS Requester (VLM) client. If you do not have any network client software installed, you need to have the Windows 95 CD-ROM or diskettes, or the Windows 95 **.CAB* files.

After the installation is complete, you can customize the client using the Network Configuration Page. Here you can also set the interrupt and address of the workstation's NIC. You can also specify which of the GUI login cards display when *LOGINW95.EXE* is launched.

Installing NetWare Client 32 Using Automatic Client Update (ACU) for Windows 95

ACU for Windows 95 automatically updates NetWare Client 32 for Windows 95 software. It operates through network-based login scripts or through NAL. When a user logs in to the network or clicks on the NAL-installed update icon, the update mechanism checks the version of the client software and updates older clients automatically. You can custom-configure the installation and update for each user. ACU can also update the Microsoft Client for NetWare Networks, but does not work with NETX or with the VLM programs.

Configuring Network Parameters for Windows 95

NetWare Client 32 is designed to minimize configuration time. Most default values will suffice in most environments. NetWare Client 32 uses some settings as a guide, or as an initial value, and then dynamically adjusts the settings' run-time equivalents for optimum performance, reducing the amount of time you spend on configuration.

After installing NetWare Client 32, you can customize the client for your workstation.

1. To open the network properties window, perform either of the following:

   a. On the desktop, right click on *Network Neighborhood* icon→*Properties*.

   b. On the task bar, click the *Start button→Setting→Control Panel→Network icon*.

2. With the Network properties window open, select *Novell NetWare Client 32→Properties*.

The NetWare Client 32 Properties window allows you to change settings at a workstation. On the Client 32 tab, you can specify the following:

- Preferred server
- Preferred tree
- Name context
- First network drive

On the Login tab, you can set which of the tabs appear when the GUI login is executed.

NetWare Client 32 for Windows 95 Installation Procedure

Perform the following steps to complete installation of NetWare Client 32 software:

1. Run *SETUP.EXE*.
2. When the Software License Agreement page appears, click Yes to accept the agreement and display the NetWare Client 32 installation screen.
3. Select whether or not to update NDIS drivers to ODI automatically, if available.
4. Click Start. *SETUP.EXE* automatically installs and configures NetWare Client 32 with default properties.

5. When the setup is complete, click Customize.
6. Select *Novell NetWare Client 32 → Properties.*
7. Type in the Preferred server, Preferred tree, and Name context. Leave the First network drive set to F.
8. Click Login and select the following:
    a. Display script page
    b. Display variables page
    c. Save settings when exiting Login
9. Click *OK→OK*.
10. If prompted to configure the resources for your board, do the following:
    a. Add the interrupt values
    b. Add the I/O address range values
    c. Add the memory address values
11. Wait while Windows builds a driver information database.
12. When prompted, click Yes to restart your computer.
13. The installation process is complete.

NetWare Client 32 for DOS/Windows 3.1x

NetWare Client 32 needs specific files to be copied into the Windows directories, and it also requires several Windows files to be modified. The NetWare Client 32 installation software automatically does this.

NetWare Client 32 software is installed on a DOS/Windows 3.1 workstation by running *INSTALL.EXE* from DOS, or *SETUP.EXE* from Windows. Both of these programs can modify the *AUTOEXEC.BAT* and *CONFIG.SYS* files to enable the client to load automatically on startup. The first line in the Installation Configurations screen, "Modify *AUTOEXEC.BAT* and *CONFIG.SYS*", is defaulted to Yes, which allows the Install program to change these configuration files. After the installation is complete, you should confirm the settings in the workstation's *NET.CFG* file.

Installing NetWare Client 32 Using Automatic Client Update (ACU) for DOS/Windows 3.1x

If you are installing to a DOS/Windows 3.1x workstation, you can use Automatic Client Update to update NETX, VLMs, or an older version of NetWare Client 32 to the current version.

ACU for DOS/Windows 3.1x uses the following utilities:

- NWDETECT – begins the ACU process by looking for an Install Stamp in the *NET.CFG* file on the workstation, and detecting whether a difference exists between the parameters in the login script and the *NET.CFG* file.
- NWSTAMP – updates (or creates) the Install Stamp in the *NET.CFG* file.
- *NWLOG.EXE* – produces a log file that contains the following information:
  - Date
  - Time
  - Username
  - IPX external network number
  - Node address
  - Any text defined by the network administrator
- REBOOT – automatically reboots the workstation.

Configuring Network Parameters for DOS/Windows 3.1x

NET.CFG specifies non-default value settings for NetWare Client 32 software configuration options, such as the default hardware setting on the NIC, whether or not you are using multiple protocols, or if you are using the LAN WorkPlace software. To create or modify the *NET.CFG*, complete the following:

1. Use a DOS text editor to type section headings and options in an existing or new *NET.CFG* file. The default location of the *NET.CFG* file is C:\NOVELL\CLIENT32.
2. Copy or save the *NET.CFG* to the client workstation's NOVELL\CLIENT32 directory.

NetWare Client 32 for DOS/Windows 3.1x Installation Procedure

Complete the following steps to install NetWare Client 32 software:

1. Close all other programs running on the computer.
2. From Program Manager, choose *File→Run*.
3. Browse to the NetWare Client 32 *SETUP.EXE* file.
4. Click OK.
5. Select the appropriate language for your system→*OK*.
6. In the Welcome dialog box, click *Continue→Yes* to accept the Software License Agreement.
7. Click *Next* at the Directory Locations dialog box.
8. Select a 32-bit LAN driver for your NIC.
9. Confirm that the board setting specifies the correct ODI LAN driver for your NIC.
10. Click *Next→Next*.
11. When the installation is completed, *select Restart Computer (Recommended)→OK*.

12. After the workstation has restarted, and Windows is running, run NetWare User Tools for Windows.
13. Click the *NetWare Settings* button→*Startup* tab.
14. Verify that "Launch on Startup" is selected.
15. Click the Login tab.
16. Verify that "Display Connection Page", "Display Script Page", "Display Variables Page", and "Restore Permanent Connections" are selected.
17. Click OK.
18. Exit NetWare User Tools for Windows.
19. Reboot the workstation.

Automatic Client Update (ACU)

NetWare Automatic Client Update (ACU) allows administrators to automatically update NetWare Client software.

Automatically Updating NetWare Client 32 for Windows NT

To use ACU, the following must be performed:

- Place the NetWare Client 32 installation files and Windows NT installation **.CAB* files in a directory where they can be read during client login.
- Verify that the user has Read and File Scan rights to this directory.

NOTE: ACU for Windows NT will not update NETX or VLM clients.

ACU executes the following instruction from a login script:

```
@\\servername\volume\…\SETUP.EXE /ACU
```

The instruction automatically updates the client workstations during the next login. Depending upon which login script is modified, the administrator can allow different clients to update. If the user login script is modified, only that client will automatically update. If a container login script is modified, all clients in that container will automatically update. A profile login script can be used to automatically update selected groups of clients.

When the user at the workstation logs in, ACU checks the client's files to see if the system files are newer than the client's files. If they are, a dialog box is displayed asking them to "Click Continue to install the newer version, or Cancel to retain your existing client software." If the user chooses Continue, the update starts automatically, and the files are copied to the workstation. If the user chooses Cancel, the workstation continues to use the older client software. Each time that the user logs in with the older client software, ACU will attempt to update the workstation's client. After the client has been updated, the user must reboot the workstation in order to use the new client software.

Automatically Updating NetWare Client 32 for Windows 95

To use ACU, the following must be performed:

- Place the NetWare Client 32 installation files and Windows 95 installation **.CAB* files in a directory where they can be read during client login.
- Verify that the user has Read and File Scan rights to this directory.

NOTE: ACU for Windows 95 will not update NETX or VLM clients.

ACU executes the following instruction from a login script:

```
@\\servername\volume\…\SETUP.EXE /ACU
```

The instruction automatically updates the client workstations during the next login. Depending upon which login script is modified, the administrator can allow different clients to update. If the user login script is modified, only that client will automatically update. If a container login script is modified, all clients in that container will automatically update. A profile login script can be used to automatically update selected groups of clients.

When the user at the workstation logs in, ACU checks the client's files to see if the system files are newer than the client's files. If they are, a dialog box is displayed asking them to "Click Continue to install the newer version, or Cancel to retain your existing client software". If the user chooses Continue, the update starts automatically, and the files are copied to the workstation. If the user chooses Cancel, the workstation continues to use the older client software. Each time that the user logs in with the older client software, ACU will attempt to update the workstation's client. After the client has been updated, the user must reboot the workstation in order to use the new client software.

Automatically Updating NetWare Client 32 for DOS/Windows 3.1x

The following must be performed before using ACU to update client software on DOS and Windows 3.1x workstations:

1. Choose a login script for the type of workstation to be updated.
2. Install NetWare Client 32 installation files in a directory on a network server. Users must have Read and File Scan rights to this directory.
3. Copy the ACU utilities and files to the NetWare Client 32 parent directory. The ACU utilities and files are located in the SYS:PUBLIC\CLIENT\DOSWIN32\ADMIN\DOS_ACU subdirectory.
4. Create a LOG subdirectory in the NetWare Client 32 parent directory.
5. Review the settings in *INSTALL.CFG*, located in the NetWare Client 32 parent directory. The InstallType setting located under [Setup] should be set as follows:

```
[Setup]
    InstallType=AUTO
```

6. Edit your login script and insert the ACU commands. If you placed the NetWare Client 32 files in SYS:PUBLIC\CLIENT\DOSWIN32 directory on you server, the commands would be:

```
MAP I:=server/SYS:PUBLIC\CLIENT\DOSWIN32
#I:NWDETECT NovelI_Client32 4.1.0
IF ERROR_LEVEL = "1" THEN
   #I:INSTALL
   IF ERROR_LEVEL = "0" THEN
      #I:NWSTAMP NovelI_Client32 4.1.0
      #I:NWLOG /F I:\LOG\UPDATE.LOG
      #I:REBOOT
   END
END
MAP DEL I
```

intraNetWare Online Documentation CD

The intraNetWare Online Documentation CD contains the prerequisites, setup, installation, and other pertinent information on the following subjects. You can use the DynaText viewer to access this information. Refer to Chapter 6 for additional information on how to install and use the DynaText viewer.

- NetWare Client 32 Software for DOS and Windows 3.1x
- NetWare Client 32 Software for Windows 95
- intraNetWare Client for Windows NT
- NetWare Application Manager
- Workstation Manager
- Automatic Client Update

NetWare Application Manager (NAM)

NetWare Application Manager (NAM) allows users to run network applications that have been configured by the network administrator. NAM consists of Application objects and the NetWare Application Launcher (NAL). The application's setup information is stored as an Application object in the Directory tree. NAL displays icons for all available applications in a window at the workstation and allows the user to double-click the icon to launch the application.

NAM eliminates the need for users to have a drive mapping or path to an application's directory in order to use the application.

Using NAM to configure NDS and the File System for NAL

NAM supplies four new objects in the Directory. These objects are Application objects for Windows NT, Windows 95, Windows 3.x, and DOS applications.

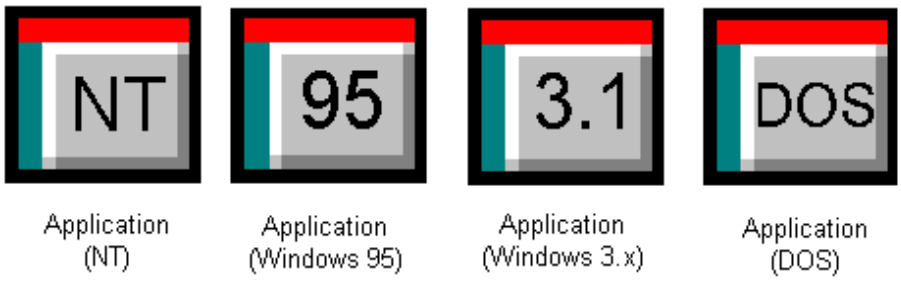


Figure 6-1. Application Objects

To configure NDS and the file system for NAL, you must complete the following tasks:

- Create Application objects.
- Configure the Application objects.
- Assign appropriate file system rights to the application's directory.
- Configure the user's workstations.

Creating Application Objects

You can create Application objects in the same way you create other NDS objects in NetWare Administrator. Select the container where the Application object will reside and choose *Create* from the **Object** menu. When creating the Application object, you must provide a name for the object and a path to the application the object represents.

Configuring the Application Object

Application objects can contain many pages of information. However, the only information necessary to provide access to a network application is the path to the application and a list of User objects that are allowed access to the application.

After creating an Application object, you must associate User objects with the Application object and provide any special commands that should be executed when the user launches the application. Figure 6-2 shows the Applications property page.

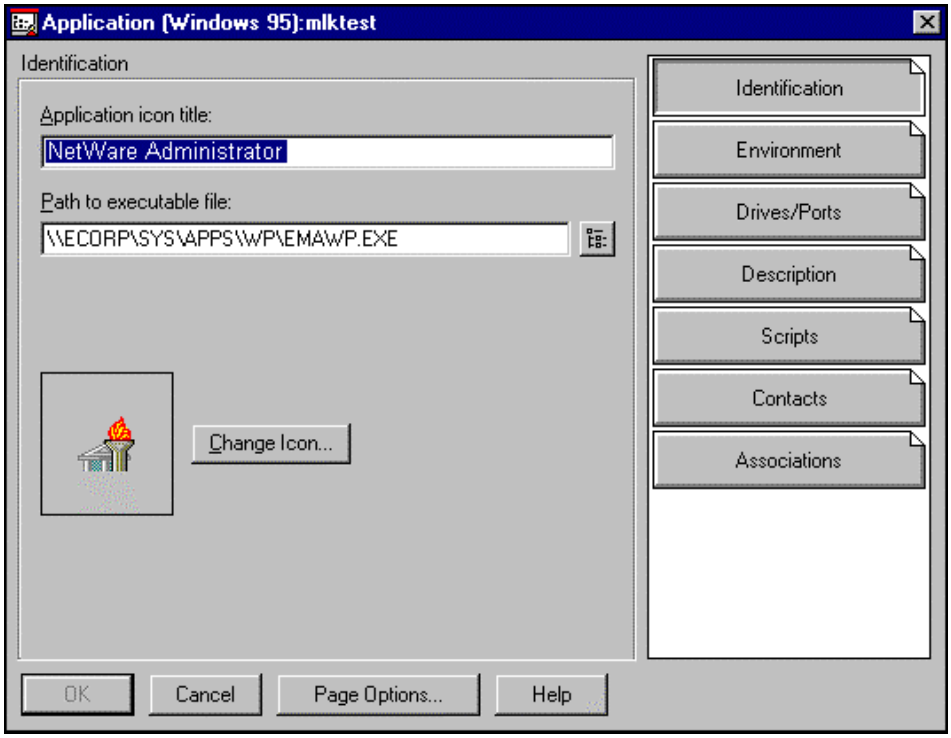


Figure 6-2. Configuring an Application Object

Application objects have the ability to map network drives and capture printer ports when the application is launched from the workstation. These drives and ports are only active as long as the application is running; when the user exits the application, the mappings and captures are deleted.

Scripts can also be added to the Application object. These scripts run when the application is launched from NAL. These scripts use the same syntax as login scripts.

You can also enter a description and names of contacts for the application that can be viewed by users.

NAM also adds the Applications and Launcher Configuration property pages to the Container and User objects in the Directory. The Applications property page (Figure 6-3) allows you to specify which applications can be launched by the user (icon appears in the user's NAL window) and which applications launch automatically when NAL is launched.

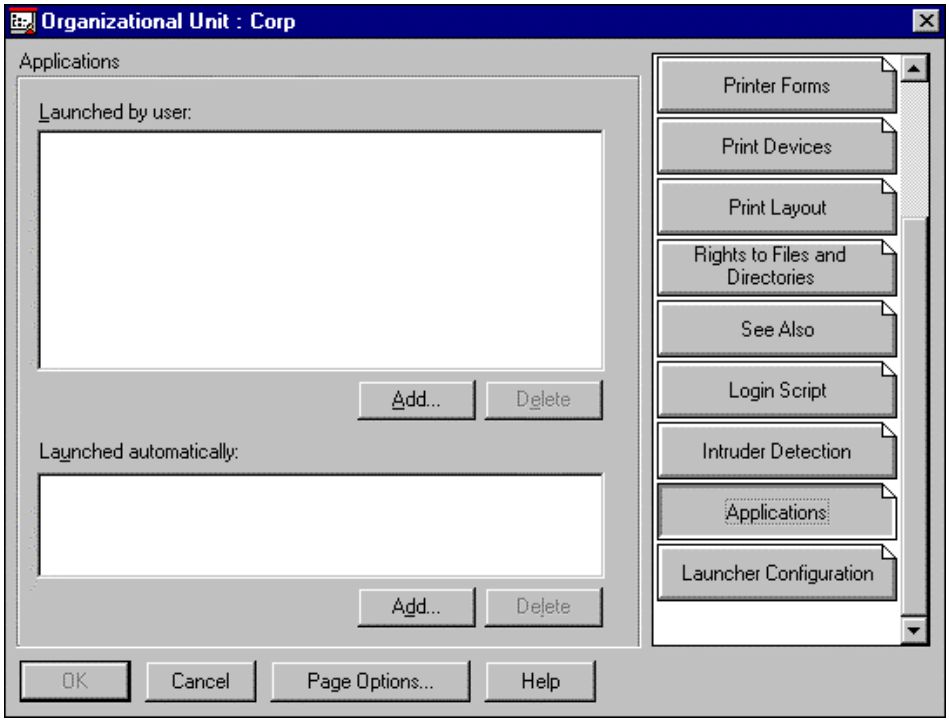


Figure 6-3. Application Property Page for the Corp Container

The Launcher Configuration property page (Figure 6-4) allows you to configure how NAL functions on the desktops of Windows workstations.

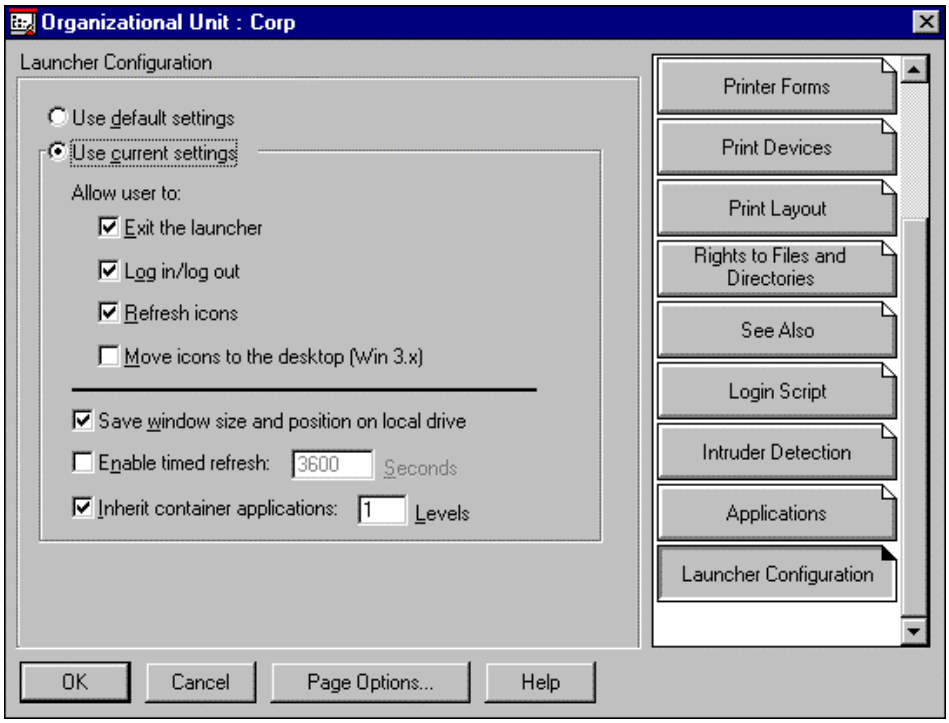


Figure 6-4. Launcher Configuration Page for the Corp Container

IMPORTANT: To launch an application with NAL, users need the appropriate rights to the directory where the network application is located.

Customizing NAL to Replace the Windows Interface

No special configuration is needed to run NAL from a workstation. Users can run NAL from the PUBLIC directory or from a copy of NAL that is stored on the workstation's hard disk.

NAL can also be configured to replace the normal Windows interface (*EXPLORER.EXE* in Windows 95 or *PROGMAN.EXE* in Windows 3.x) so that users only have access to those applications which have been associated with their User objects.

To replace the Windows interface with NAL, perform the following:

1. If you are using Windows 95, copy the following files to a directory on the local hard disk:
   a. *NALW95.EXE*
   b. *NALRES32.DLL*
   c. *NALBMP32.DLL*
   d. *NAL.HLP*
2. If you are using Windows 3.x, copy the following files to a directory on the local hard disk:
   a. *NALW31.EXE*
   b. *NALRES.DLL*
   c. *NALBMP.DLL*
   d. *NAL.HLP*
3. Edit the *SYSTEM.INI* file to set NAL as the shell. Find the line in the [boot] section that starts with SHELL=, as in the following:

   ```
   SHELL=EXPLORER.EXE
   ```

   Replace the setting with the location of the NAL files, as in the following:

   ```
   SHELL=C:\path\NAL95.EXE
   ```

4. Save the changes and restart Windows.

Launching Network Applications with NAL

Network applications are launched from the NAL window. A user can double-click the application's icon to run the application. When the application is launched, NAL runs any scripts associated with the Application object, checks the path to the application, and then launches the application.

When the user exits the application, any mappings or other special commands that were set with the Application object's script are removed.

Chapter 7
DynaText

This chapter provides installation procedures for the NetWare online documentation, DynaText. It also discusses setting up your workstation to view and start DynaText.

Novell online documentation allows you to electronically store and access NetWare manuals from your workstation.

The Novell online documentation has two parts:

- **Document Collection** – contains the intraNetWare product documentation in the online documentation set, as shown in Figure 7-1. The collections are available in several languages.

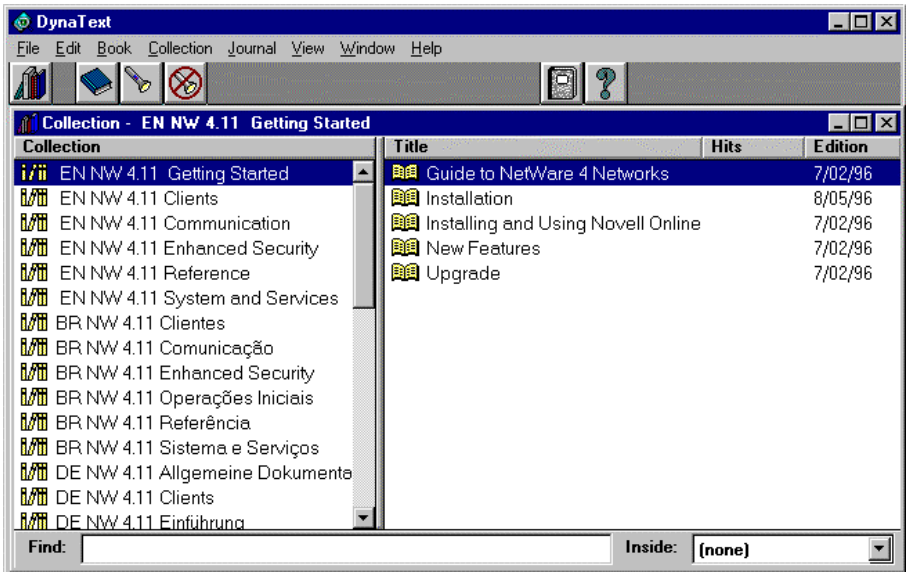


Figure 7-1. Document Collections

- **DynaText Viewer Software** – allows you to read, search, annotate, and print online documentation from Windows or Macintosh clients.

The online documentation can be accessed three different ways:

- **From the network** – After the DynaText viewer and the document collection are installed on the server, they are available to all workstations on the network.
- **From a standalone workstation** - After the DynaText viewer and the document collection are installed on the workstation, they are available to all users of that workstation.
- **From the product CD-ROM** – Install the DynaText viewer on a local or network hard disk and leave the document collection on the product CD-ROM. For network access, you can mount the CD-ROM on the server as an intraNetWare volume. For standalone access, you can set up the CD-ROM on the workstation.

Before You Begin

You must install DynaText on a computer (the intraNetWare server, client workstation with local hard disk, or standalone computer) with the following:

- A minimum of 60 megabytes hard disk space free (for each language) to have both the viewer and the document collection installed on the server.
- If only the viewer files will be installed and the document collection files will be read directly from CD-ROM, the server needs only 6 megabytes of disk space for the first viewer language. For each additional viewer language, add 2 megabytes.
- A CD-ROM drive that can read ISO 9660 formatted CDs.

You can view DynaText from a computer (the client workstation or standalone computer) with the following:

- VGA, or Super VGA display card and monitor
- Minimum of 4 MB of RAM (recommended 8 MB or more)
- Microsoft Windows 3.x, Windows 95, Windows NT, or OS/2 2.1x

Installing DynaText

This procedure involves copying the DynaText files and the intraNetWare document collections from the Compaq SmartStart package or the intraNetWare package to the hard drive on your server on the SYS volume in the DOC subdirectory.

Install DynaText by following these steps:

1. Insert the intraNetWare From Compaq No. 2 CD or the online documentation CD into the CD-ROM drive of the workstation.
2. Login to your server as a user with all rights to the SYS volume.
3. Locate *SETUPDOC.EXE* on the CD and run it from within Windows.
4. Install the DynaText viewer to your local drive.
    a. Click the DynaText viewer *Install*.
    b. Select the source path and click *OK*.
    c. Select the local destination directory and click *OK*.
    d. Select the languages for the DynaText viewer and click *OK*.
    e. To install the viewer, click *OK* in the confirmation box.
    f. To create a viewer icon, click *Yes*.
    g. Click *OK* when prompted.
5. Install the intraNetWare document collections.
    a. Click the Document Collections *Install*.
    b. Select the source path for the documentation and click *OK*.
    c. Specify the destination directory on your own server to which the document collection will be copied and click *OK*.
    d. Select the document collection you want to use and click *OK*.
    e. Confirm your installation selections and click *OK*.

    The online documentation will be copied to your selected destination.

f. Click *OK* when prompted.

g. Click *Continue* in the success box.

6. Configure the viewer to access the document collections.

a. Click *Configure Viewer*.

b. Select the DynaText viewer on your local drive and click *Configure*.

c. Click *Advanced* to configure the shared copies of the document collections.

d. Click *Create*.

e. Click *Select*.

You might get a message about the SYS:volume being almost out of disk space. The file will still be created.

f. Click *Create* to create the *SYSDOCS.CFG* file on your server.

g. Click the *SYSDOCS.CFG* file you just created and click *Select*.

h. Select each collection on your server and click the *Add* arrow, or double-click each collection.

i. When all the collections are in the upper window, click *Save*.

j. Click *Exit*.

k. Click *Yes* to quit *SETUPDOC.EXE*.

Now you can set up access to the DynaText Viewer on your Windows workstation.

Setting Up a Workstation for Viewing

DynaText is an application for the Windows environment. The following resources are necessary for the NetWare Client workstation from which DynaText is viewed.

- Minimum of 4 MB of RAM, 8 MB recommended
- Microsoft Windows 3.x, Windows 95, Windows NT, or OS/2 2.1x
- VGA or Super VGA display card and monitor

- Access to the network as a NetWare Client
- Login to the server that has DynaText loaded

To set up a workstation that has a viewer icon created, follow these steps:

1. Ensure the following line is in your *AUTOEXEC.BAT* file:

   ```
   SET NWLANGUAGE=<language>
   For example: SET NWLANGUAGE=ENGLISH
   ```

   For language, substitute the name of the language for the book text, for example, *English*, *Deutsch*, *Español*, or *Français*. This variable specifies which set of electronic books will be viewed. The name must match one of the subdirectories under the following directory path:

   - From Compaq SmartStart installation: \DOC directory
   - From intraNetWare installation: \DOC directory

2. Reboot or enter SET NWLANGUAGE=*LANGUAGE* at the command line to make the language setting effective.

   Start Microsoft Windows, if your workstation is running Windows 3.x. You are now ready to use DynaText.

Editing Configuration Files

You should edit the configuration files, if your installation meets any of the following criteria:

- Documentation files are installed somewhere other than DOC and DOCVIEW, which are at the root of the same drive or volume.
- Simultaneous access to multiple languages is required.
- Multiple collections are installed.
- Some installed collections are for private viewing only.

The configuration files, *SYSDOCS.CFG* and *DYNATEXT.INI*, are text files and can be edited with any text editor.

SYSDOCS.CFG

The *SYSDOCS.CFG* file references the location of public collections. No other configuration options are specified in *SYSDOCS.CFG*. This file contains a section for each platform, which references the location of the documentation databases. If you have multiple public collections, you need to separate each collection with a semicolon and no space.

For example, the *SYSDOCS.CFG* file should reside in the SYS:PUBLIC directory on the intraNetWare server or the \PUBLIC directory on the CD-ROM.

DYNATEXT.INI

The *DYNATEXT.INI* file is the Windows DynaText configuration file. It references private collections and points to the *SYSDOCS.CFG* file, which references public collections. The *DYNATEXT.INI* file also references the location of resource files for the viewer and defines viewer presentation characteristics such as color and window location. This file is self-documenting; each parameter is explained within the file. Use the instructions provided for each section to make the modifications.

The *DYNATEXT.INI* file should reside in the \DOCVIEW\DTAPPWIN directory. To provide for individual setup, the *DYNATEXT.INI* file can be copied to the user's Windows directory where it will take precedence over other versions of the file. If a user has a local copy of the *DYNATEXT.INI* file, the local copy is used by the viewer instead of the public copy.

Starting DynaText

After you install DynaText, you can access it from a client workstation running Windows. To run DynaText, follow these steps:

1. Start Windows. If you are accessing the collection from the network, login to the appropriate server.
2. Select the *DynaText* icon on your Windows desktop. Icons for the available bookshelves appear.
3. Select the icon for the bookshelf containing the book you want to view. Icons for the books in the bookshelf appear.
4. Select the icon for the book you want to view. The text and the Table of Contents outline for the book you specified appear.

DynaText also has online help available. Select the *Help* option from the menu bar.

Appendix A
Examples of Migration Reports

This appendix contains examples of migration reports:

- Migration Utility Reports
  - MIG001.RPT - *MIGRATION.EXE* Migration Report
  - MP001.RPT - *MIGPRINT.EXE* Print Migration Report
- DS Migrate Reports
  - *BINDDISC.LOG*
  - *DSCONFIG.LOG*
  - *PRECONFIG.LOG*
- RMT Reports
  - *DUMPBIND.SUM*
  - *MIGPRINT.LOG*
  - *MIGPASS.LOG*
  - *APPLY3X.LOG*
  - *CONSIST.LOG*
  - *MIGFILES.LOG*
  - *XCLASS.LOG*
  - *XREFOBJS.LOG*
  - *DUMPBIND.LOG*
  - *MIGCOUNT.LOG*
  - *MIGUSERS.LOG*
  - *MIGGROUP.LOG*
  - *TREEWALK.LOG*
  - *DMARKUP.LOG*
  - *EXTRACT4.LOG*
  - *TOLIVE.LOG*
  - *XREFPRNT.LOG*
  - *DUPOBJ.LOG*

MIGRATE.EXE

Each log file is written to the C:\MIGRATE directory on the workstation. NetWare updates the log file with important information. This file is used to troubleshoot or determine the status of the migration process. The file also contains a history of system activity and can be used to track the events that occurred prior to a failure. See "Viewing the Migration Report" in Chapter 4 for more information on viewing the migration report.

The migration utility creates a migration report log file named *MIGxxx.RPT* (where "xxx" is the number of the report generated). The print migration utility creates a print migration report log file named *MPxxx.RPT* (where "xxx" is the number of the report generated). This appendix contains an example of a migration report log file, *MIG001.RPT*, and a print migration report log file, *MP001.RPT*.

MIG001.RPT

```
NetWare Migration Utility v4.16, Bindery Import Phase

Migration summary:

"

" Source NetWare server: CTREC, NetWare v3.12 (50 user) (8/12/93)

" Report file name: C:\MIGRATE\MIG000.RPT

  Import phase started: 11-11-97 3:43:38 pm

  Information will be migrated from the following volumes:

    SYS:

  The following will be read from the source NetWare server:

    * Accounting charge rates
    * Trustee assignments
    * Default account restrictions
    * Users
    * User restrictions
```

* Groups
* Non-Novell bindery objects

The following will not be read from the source NetWare server:

* Data files
* Print queues and print servers

---------- End of migration summary ----------

Reading trustee assignments from the source server.

SYS:PUBLIC
Trustee : EVERYONE (group), [R F]
Trustee : NOVCLASS (user), [R F]
Trustee : APPCLASS (user), [R F]
Trustee : EVAL (user), [R F]
Trustee : CLASSROOM (group), [R F]

SYS:PUBLIC\MCAFEE
Trustee : GUEST (user), [RWCEMF]

SYS:MAIL
Trustee : EVERYONE (group), [C]

SYS:MAIL\1
Trustee : SUPERVISOR (user), [RWCEMF]

SYS:MAIL\2000001
Trustee : GUEST (user), [RWCEMF]

SYS:MAIL\17000063
Trustee : CINDY (user), [RWCEMF]

SYS:MAIL\2500001F
Trustee : CAROLE (user), [RWCEMF]

SYS:MAIL\3B0000B0
Trustee : MIKE_K (user), [RWCEMF]

SYS:MAIL\48000089
Trustee : RON (user), [RWCEMF]

SYS:USERS\MIKE_K
Trustee : MIKE_K (user), [SRWCEMFA]

SYS:USERS\CINDY
Trustee : CINDY (user), [RWCEMFA]

SYS:DOC
Trustee : S&S (group), [R F]

SYS:DOCVIEW
Trustee : APPCLASS (user), [R F]
Trustee : NOVCLASS (user), [R F]
Trustee : CLASSROOM (group), [R F]
Trustee : S&S (group), [R F]

Reading accounting charge rates from the source server.

Accounting activated : No

Reading default account balance and account restrictions from the source server.

Account expires : No
Limit connections : Yes
Concurrent connections : 2
Create home directory : Yes
Require a password : Yes
Password minimum length : 5
Force password changes : No
Require unique passwords : No

Account balance : 0
Allow unlimited credit : Yes
Time restrictions apply : No
Detect intruders : Yes
Incorrect login attempts : 5
Bad login count retention time : 0 days, 1 hours, 0 minutes
Lock account after detection : Yes
Length of account lockout : 0 days, 0 hours, 20 minutes

Reading users from the source server.

SUPERVISOR
Security equivalent to : EVERYONE (group)
Mail directory : SYS:MAIL\1
Associated file : SYS:MAIL\1\LOGIN
Associated file : SYS:MAIL\1\LOGIN.OS2
Console operator : No
Workgroup manager : No
Account uses a password : Yes
Account disabled : No
Account expires : No
Limit connections : No
Allow password changes : Yes
Require a password : No
Time restrictions apply : No
Non-Novell item property : MY_LT_FILTER

GUEST
Security equivalent to : EVERYONE (group)
Mail directory : SYS:MAIL\2000001
Associated file : SYS:MAIL\2000001\LOGIN
Associated file : SYS:MAIL\2000001\LOGIN.OS2
Console operator : No
Workgroup manager : No
Account uses a password : No
Account disabled : No
Account expires : No

Limit connections : No
Allow password changes : No
Require a password : No
Time restrictions apply : No
Non-Novell item property : MY_LT_FILTER

CINDY
Security equivalent to : EVERYONE (group)
Security equivalent to : SUPERVISOR (user)
Security equivalent to : CNI (group)
Security equivalent to : S&S (group)
Mail directory : SYS:MAIL\17000063
Associated file : SYS:MAIL\17000063\LOGIN
Associated file : SYS:MAIL\17000063\LOGIN.OS2
Console operator : No
Workgroup manager : No
Account uses a password : Yes
Account disabled : No
Account expires : No
Limit connections : No
Allow password changes : Yes
Require a password : Yes
Password minimum length : 5
Force password changes : No
Require unique passwords : No
Time restrictions apply : No
Non-Novell item property : MY_LT_FILTER

CAROLE
Full name : CAROLE
Security equivalent to : EVERYONE (group)
Security equivalent to : SUPERVISOR (user)
Mail directory : SYS:MAIL\2500001F
Console operator : No
Workgroup manager : No
Account uses a password : Yes
Account disabled : No

Account expires : No
Limit connections : No
Allow password changes : Yes
Require a password : Yes
Password minimum length : 4
Force password changes : No
Require unique passwords : No
Time restrictions apply : No
Non-Novell item property : MY_LT_FILTER

MIKE_K
Full name : Mike Kettleson
Security equivalent to : EVERYONE (group)
Security equivalent to : SUPERVISOR (user)
Security equivalent to : S&S (group)
Security equivalent to : NOVTEST (group)
Security equivalent to : CNI (group)
Mail directory : SYS:MAIL\3B0000B0
Console operator : No
Workgroup manager : No
Account uses a password : Yes
Account disabled : No
Account expires : No
Limit connections : No
Allow password changes : Yes
Require a password : Yes
Password minimum length : 5
Force password changes : No
Require unique passwords : No
Time restrictions apply : No
Non-Novell item property : MY_LT_FILTER

RON
Full name : RON LEDBETTER
Security equivalent to : EVERYONE (group)
Security equivalent to : SUPERVISOR (user)
Security equivalent to : NOVTEST (group)

Security equivalent to : CNI (group)
Security equivalent to : S&S (group)
Mail directory : SYS:MAIL\48000089
Console operator : No
Workgroup manager : No
Account uses a password : Yes
Account disabled : No
Account expires : No
Limit connections : No
Allow password changes : Yes
Require a password : Yes
Password minimum length : 5
Force password changes : No
Require unique passwords : No
Time restrictions apply : No
Non-Novell item property : MY_LT_FILTER

Reading groups from the source server.

EVERYONE
Full name : EVERYONE
Managed by : SS1 (user)
Managed by : CAROLE (user)
Managed by : GUEST (user)
Managed by : S&S (group)
Group member : SUPERVISOR
Group member : GUEST
Group member : CAROLE
Group member : RON
Group member : MIKE_K
Group member : CINDY
Console operator : No
Workgroup manager : No

S&S
Full name : Service and Support
Group member : MIKE_K

```
    Group member : RON
    Group member : CINDY
    Console operator : No
    Workgroup manager : No

  CNI
    Full name : NetWare Instructors
    Managed by : CINDY (user)
    Managed by : MIKE_K (user)
    Managed by : RON (user)
    Managed by : CAROLE (user)
    Group member : JIM
    Group member : CINDY
    Group member : MIKE_K
    Group member : RON
    Console operator : No
    Workgroup manager : No

Reading non-Novell bindery objects from the source server.

  LT_AUDITOR
    Non-Novell item property : LTA_LAN_FILTER
    Non-Novell item property : SYS_LT_FILTER
    Non-Novell item property : LTA_BIND_FILTER
    Non-Novell item property : LTA_NODE_LIST
    Non-Novell item property : LTA_WARN_MESS

      MIGRATE-4.16-232: An internal error has occurred.  The bindery
        property is too large to read into available memory.
      Property name : LTA_WARN_MESS

    Non-Novell item property : LTAUDITOR_CFG
    Non-Novell item property : LTA_USERS_LIST
    Non-Novell item property : LTA_METER_LIST

  AUDITOR_PARAM
    Non-Novell item property : INSTALL_DATE
```

Finished reading information from NetWare server CTREC.

NetWare Migration Utility v4.16, Bindery Export Phase
Migration summary :

Destination NetWare server : ECORP411, NetWare 4.11 (August 22, 1996)
Report file name : C:\MIGRATE\MIG000.RPT
Export phase started : 11-11-97 2:56:17 pm

The following table lists volumes selected for migration from the source server with their corresponding destination directories on the destination server :

SYS: ECORP411\SYS:\

Random passwords will be generated for users and print servers which had a password on the source server. The new passwords can be found in the file SYS:SYSTEM/NEW.PWD on the destination server.

To setup Directory Services login scripts, login to the Directory and run UIMPORT, using UIMPORT.CTL and UIMPORT.DAT (in SYS:SYSTEM on the destination server).

The following will be migrated to the destination NetWare server:

* Accounting charge rates
* Trustee assignments
* Default account restrictions
* Users
* User restrictions
* Groups
* Non-Novell bindery objects

The following will not be migrated to the destination NetWare server:

* Data files
* Print queues and print servers

---------- End of migration summary ----------

Writing default account balance and account restrictions to the destination server.

Account expires : No
Limit connections : Yes
Concurrent connections : 2
Create home directory : Yes
Default home directory : ECORP411\SYS:USERS
Require a password : Yes
Password minimum length : 5
Force password changes : No
Require unique passwords : No
Account balance : 0
Allow unlimited credit : Yes
Time restrictions apply : No
Bindery update status : Update succeeded
Detect intruders : Yes
Incorrect login attempts : 5
Bad login count retention time : 0 days, 1 hours, 0 minutes
Lock account after detection : Yes
Length of account lockout : 0 days, 0 hours, 20 minutes
Bindery update status : Update succeeded

Writing accounting charge rates to the destination server.

Accounting activated : No

Creating groups on the destination server.

EVERYONE
Creation status : The group has been created.
Full name : EVERYONE

```
    Console operator : No
    Workgroup manager : No

  S&S
    Creation status : The group has been created.
    Full name : Service and Support
    Console operator : No
    Workgroup manager : No

  CNI
    Creation status : The group has been created.
    Full name : NetWare Instructors
    Console operator : No
    Workgroup manager : No

Creating users on the destination server.

  SUPERVISOR
    User's mail directory : ECORP411\SYS:MAIL\1
    Creation status : The user already exists; migrated information
      (except user restrictions) is being merged.
    Console operator : No
    Workgroup manager : No
    Associated file : ECORP411\SYS:MAIL\1\LOGIN
    Special note : The user's name and the location of his/her login
      script have been written to UIMPORT.DAT in SYS:SYSTEM on the
      destination server.  Use UIMPORT to copy the login script to
      Directory Services.
    Associated file : ECORP411\SYS:MAIL\1\LOGIN.OS2
    Non-Novell item property : MY_LT_FILTER

  GUEST
    Creation status : The user has been created.
    User's mail directory : ECORP411\SYS:MAIL\D3010074
    User's home directory : ECORP411\SYS:USERS\GUEST
    Give a random password : No
    Console operator : No
```

Workgroup manager : No
Associated file : ECORP411\SYS:MAIL\D3010074\LOGIN
Special note : The user's name and the location of his/her login script have been written to UIMPORT.DAT in SYS:SYSTEM on the destination server. Use UIMPORT to copy the login script to Directory Services.
Associated file : ECORP411\SYS:MAIL\D3010074\LOGIN.OS2
Non-Novell item property : MY_LT_FILTER

CINDY
Creation status : The user has been created.
User's mail directory : ECORP411\SYS:MAIL\1020064
User's home directory : ECORP411\SYS:USERS\CINDY
Give a random password : Yes
Console operator : No
Workgroup manager : No
Associated file : ECORP411\SYS:MAIL\1020064\LOGIN
Special note : The user's name and the location of his/her login script have been written to UIMPORT.DAT in SYS:SYSTEM on the destination server. Use UIMPORT to copy the login script to Directory Services.
Associated file : ECORP411\SYS:MAIL\1020064\LOGIN.OS2
Non-Novell item property : MY_LT_FILTER

CAROLE
Creation status : The user has been created.
User's mail directory : ECORP411\SYS:MAIL\11020016
User's home directory : ECORP411\SYS:USERS\CAROLE
Give a random password : Yes
Full name : CAROLE
Console operator : No
Workgroup manager : No
Non-Novell item property : MY_LT_FILTER

MIKE_K
Creation status : The user has been created.
User's mail directory : ECORP411\SYS:MAIL\1F020013

User's home directory : ECORP411\SYS:USERS\MIKE_K
Give a random password : Yes
Full name : Mike Kettleson
Console operator : No
Workgroup manager : No
Non-Novell item property : MY_LT_FILTER

RON
Creation status : The user has been created.
User's mail directory : ECORP411\SYS:MAIL\23020008
User's home directory : ECORP411\SYS:USERS\RON
Give a random password : Yes
Full name : RON LEDBETTER
Console operator : No
Workgroup manager : No
Non-Novell item property : MY_LT_FILTER

Writing user account restrictions to the destination server.

SUPERVISOR
This user account existed before the migration took place; the user's account restrictions will not be changed.

GUEST
Account disabled : No
Account expires : No
Limit connections : No
User can change password : No
Require a password : No
Time restrictions apply : No
Bindery update status : Update succeeded

CINDY
Account disabled : No
Account expires : No
Limit connections : No
User can change password : Yes

Require a password : Yes
Password minimum length : 5
Force password changes : No
Require unique passwords : No
Time restrictions apply : No
Bindery update status : Update succeeded

CAROLE
Account disabled : No
Account expires : No
Limit connections : No
User can change password : Yes
Require a password : Yes
Password minimum length : 4
Force password changes : No
Require unique passwords : No
Time restrictions apply : No
Bindery update status : Update succeeded

MIKE_K
Account disabled : No
Account expires : No
Limit connections : No
User can change password : Yes
Require a password : Yes
Password minimum length : 5
Force password changes : No
Require unique passwords : No
Time restrictions apply : No
Bindery update status : Update succeeded

RON
Account disabled : No
Account expires : No
Limit connections : No
User can change password : Yes
Require a password : Yes

Password minimum length : 5
Force password changes : No
Require unique passwords : No
Time restrictions apply : No
Bindery update status : Update succeeded

Creating non-Novell bindery objects on the destination server.

LT_AUDITOR
Creation status : The bindery object has been created.
Non-Novell item property : LTA_LAN_FILTER
Non-Novell item property : SYS_LT_FILTER
Non-Novell item property : LTA_BIND_FILTER
Non-Novell item property : LTA_NODE_LIST
Non-Novell item property : LTAUDITOR_CFG
Non-Novell item property : LTA_USERS_LIST
Non-Novell item property : LTA_METER_LIST

AUDITOR_PARAM
Creation status : The bindery object has been created.
Non-Novell item property : INSTALL_DATE

Setting up properties for users on the destination server.

SUPERVISOR
Security equivalent to : EVERYONE (group)

GUEST
Security equivalent to : EVERYONE (group)

CINDY
Security equivalent to : EVERYONE (group)
Security equivalent to : SUPERVISOR (user)
Security equivalent to : CNI (group)
Security equivalent to : S&S (group)

CAROLE

Security equivalent to : EVERYONE (group)
Security equivalent to : SUPERVISOR (user)

MIKE_K
Security equivalent to : EVERYONE (group)
Security equivalent to : SUPERVISOR (user)
Security equivalent to : S&S (group)
Security equivalent to : NOVTEST (group)
Security equivalent to : CNI (group)

RON
Security equivalent to : EVERYONE (group)
Security equivalent to : SUPERVISOR (user)
Security equivalent to : NOVTEST (group)
Security equivalent to : CNI (group)
Security equivalent to : S&S (group)

Setting up properties for groups on the destination server.

EVERYONE
Managed by : CAROLE (user)
Managed by : S&S (group)
Group member : SUPERVISOR (user)
Group member : GUEST (user)
Group member : CAROLE (user)
Group member : RON (user)
Group member : MIKE_K (user)
Group member : CINDY (user)
S&S
Group member : MIKE_K (user)
Group member : RON (user)
Group member : CINDY (user)
CNI
Managed by : CINDY (user)
Managed by : MIKE_K (user)
Managed by : RON (user)
Managed by : CAROLE (user)

Group member : CINDY (user)
Group member : MIKE_K (user)
Group member : RON (user)

Setting up properties for non-Novell bindery objects on the destination server.

LT_AUDITOR
No set properties required changes.

AUDITOR_PARAM
No set properties required changes.

Writing random passwords for users.

CINDY
CAROLE
MIKE_K
RON

Writing trustee assignments to the destination server.

ECORP411\SYS:\PUBLIC
Trustee assignment : [R F], EVERYONE (group)

ECORP411\SYS:\PUBLIC\MCAFEE

MIGRATE-4.16-004: The program cannot add a trustee to a directory.
Object : GUEST (user)
Directory path : ECORP411\SYS:\PUBLIC\MCAFEE

ECORP411\SYS:\MAIL
Trustee assignment : [C], EVERYONE (group)

ECORP411\SYS:\MAIL\1
Path name changed to : SYS:MAIL\1

```
    Trustee assignment : [ RWCEMF ], SUPERVISOR (user)

ECORP411\SYS:\MAIL\2000001
    Path name changed to : SYS:MAIL\D3010074
    Trustee assignment : [ RWCEMF ], GUEST (user)

ECORP411\SYS:\MAIL\17000063
    Path name changed to : SYS:MAIL\1020064
    Trustee assignment : [ RWCEMF ], CINDY (user)

ECORP411\SYS:\MAIL\2500001F
    Path name changed to : SYS:MAIL\11020016
    Trustee assignment : [ RWCEMF ], CAROLE (user)

ECORP411\SYS:\MAIL\3B0000B0
    Path name changed to : SYS:MAIL\1F020013
    Trustee assignment : [ RWCEMF ], MIKE_K (user)

ECORP411\SYS:\MAIL\48000089
    Path name changed to : SYS:MAIL\23020008
    Trustee assignment : [ RWCEMF ], RON (user)

ECORP411\SYS:\USERS\MIKE_K
    Trustee assignment : [SRWCEMFA], MIKE_K (user)

ECORP411\SYS:\USERS\CINDY
    Trustee assignment : [ RWCEMFA], CINDY (user)

ECORP411\SYS:\DOC
    Trustee assignment : [ R     F ], S&S (group)

ECORP411\SYS:\DOCVIEW
    Trustee assignment : [ R     F ], S&S (group)

The program has completed writing information to server ECORP411.
A total of 12 errors or warnings were reported during migration.
```

MP001.RPT

NetWare Printing Environment Migration Utility

Source NetWare server : CTREC

Destination NetWare server : ECORP411
Destination context : OU=CNI.O=CTREC

Migrating the printer devices
MIGPRINT.EXE-4.11-039: Could not read the printer device.

Migrating the printer forms
MIGPRINT.EXE-4.11-034: The program could not read the source printer form.

Migrating print queues
Q_CTREC
User : EVERYONE (Group)
MIGPRINT.EXE-4.11-029: The program could not add an attribute to the Directory because it references an object that does not exist in the current context.

Print server : PS_CTREC (Print Server)
MIGPRINT.EXE-4.11-031: The print server referenced by this attribute does not exist in the current context. Print servers are created later in the migration process.

Migrating print servers
PS_CTREC
Migrating printers serviced by PS_CTREC

P_CTREC
Type : Parallel port
Starting form : 0
Buffer size (KB) : 3
Sampling interval : 5

Banner type : Text
Driver name : NPRINTER
Default queue : Q_CTREC
Print server : PS_CTREC
Object to notify :
Print queue : Q_CTREC

Printer to service : P_CTREC (Printer)
Operator : CINDY (User)
User : EVERYONE (Group)
MIGPRINT.EXE-4.11-029: The program could not add an attribute to the Directory because it references an object that does not exist in the current context.

Migrating print job configurations
GUEST
Source configuration exists : No
Print job configuration updated : No

CINDY
Source configuration exists : No
Print job configuration updated : No

CAROLE
Source configuration exists : No
Print job configuration updated : No

MIKE_K
Source configuration exists : No
Print job configuration updated : No

RON
Source configuration exists : No
Print job configuration updated : No

DS Migrate

BINDDISC.LOG

Discover results for file server TAPE_CD are being recorded to:

'Z:\SYSTEM\DSMIGRAT\DATA\OUTPUT\binddisc.log'

The following information will be captured as Organization: Organization

File Server
Volume
NNS Domain
User
Group
System Printer
Print Queue
Print Server

Process started on Tuesday, December 23, 1997 12:27 pm

Capturing default user information.
Captured file server information (FID:0000000033).
Capturing console operators.
Captured console operator: BACKUP_EXEC
1 console operator discovered.
Captured system login script.
Captured system AUTOEXEC file.

Captured volume: SYS
Captured volume: DIMAGE
2 volumes discovered.

0 domains discovered.
0 profiles discovered

Capturing user: SUPERVISOR
Capturing group memberships:
EVERYONE
1 group membership discovered.
Capturing security equivalences:
EVERYONE
1 security equivalence discovered.
Capturing Trustee Assignments for SUPERVISOR.
SYS:PUBLIC [R F]
SYS:ARCSERVE.6 [RWCE F]
SYS:MAIL/1 [RWCEMF]
SYS:SYSTEM/06000003.QDR [RW F]
4 trustees discovered.
Capturing volume information.
Captured volume restriction for: SYS
Captured volume restriction for: DIMAGE
2 volume entries discovered.
User does not have personal print job definitions.
Merged DOS and OS/2 login scripts.
Captured user: SUPERVISOR

Capturing user: GUEST
Capturing group memberships:
EVERYONE
1 group membership discovered.
Capturing security equivalences:
EVERYONE
1 security equivalence discovered.
Capturing Trustee Assignments for GUEST.
SYS:MAIL/2000001 [RWCEMF]
1 trustee discovered.
Capturing volume information.
Captured volume restriction for: SYS
Captured volume restriction for: DIMAGE
2 volume entries discovered.
User does not have personal print job definitions.

Merged DOS and OS/2 login scripts.
Captured user: GUEST

Capturing user: SANDY
Capturing group memberships:
EVERYONE CNI
2 group memberships discovered.
Capturing security equivalences:
EVERYONE CNI
2 security equivalences discovered.
Capturing Trustee Assignments for SANDY.
SYS:MAIL/900005D [RWCEMF]
SYS:USERS/SANDY [RWCEMFA]
2 trustees discovered.
Capturing volume information.
Captured volume restriction for: SYS
Captured volume restriction for: DIMAGE
2 volume entries discovered.
User does not have personal print job definitions.
Merged DOS and OS/2 login scripts.
Captured user: SANDY

Capturing user: MIKE_K
Capturing group memberships:
EVERYONE CNI FAX
3 group memberships discovered.
Capturing security equivalences:
EVERYONE SUPERVISOR CNI FAX
4 security equivalences discovered.
Capturing Trustee Assignments for MIKE_K.
SYS:MAIL/A00003E [RWCEMF]
SYS:USERS/MIKE_K [RWCEMFA]
2 trustees discovered.
Capturing volume information.
Captured volume restriction for: SYS
Captured volume restriction for: DIMAGE
2 volume entries discovered.

User does not have personal print job definitions.
Merged DOS and OS/2 login scripts.
Captured user: MIKE_K

Capturing user: CINDY
Capturing security equivalences:
EVERYONE SUPERVISOR CNI
3 security equivalences discovered.
Capturing group memberships:
EVERYONE CNI
2 group memberships discovered.
Capturing Trustee Assignments for CINDY.
SYS:MAIL/1E00002B [RWCEMF]
SYS:USERS/CINDY [RWCEMFA]
2 trustees discovered.
Capturing volume information.
Captured volume restriction for: SYS
Captured volume restriction for: DIMAGE
2 volume entries discovered.
User does not have personal print job definitions.
Merged DOS and OS/2 login scripts.
Captured user: CINDY

Capturing user: JOHNC
Capturing group memberships:
EVERYONE
1 group membership discovered.
Capturing security equivalences:
EVERYONE SUPERVISOR
2 security equivalences discovered.
Capturing Trustee Assignments for JOHNC.
SYS:MAIL/360000C2 [RWCEMF]
SYS:USERS/JOHNC [RWCEMFA]
DIMAGE:TECHWRIT [SRWCEMFA]
DIMAGE:COMPAQ [RWC MF]
4 trustees discovered.
Capturing volume information.

```
Captured volume restriction for: SYS
Captured volume restriction for: DIMAGE
2 volume entries discovered.
User does not have personal print job definitions.
Merged DOS and OS/2 login scripts.
Captured user: JOHNC

6 users discovered.
Capturing user workgroup managers.
0 workgroup managers discovered.

Capturing group: EVERYONE
Capturing group memberships:
SUPERVISOR  GUEST  CINDY  SANDY  MIKE_K
JOHNC
6 group memberships discovered.
Capturing Trustee Assignments for EVERYONE.
SYS:PUBLIC  [ R   F ]
SYS:MAIL  [  C   ]
SYS:BKUPEXEC  [ R    ]
SYS:BKUPEXEC/PM  [ RW  F ]
SYS:BKUPEXEC/CATALOGS  [ R   F ]
SYS:BKUPEXEC/DOS_WS  [ R   F ]
SYS:BKUPEXEC/NOTIFY  [ RWC  F ]
SYS:BKUPEXEC/WIN_WS/WIN31  [ R   F ]
SYS:BKUPEXEC/WIN_WS/WIN95/ENG  [ R   F ]
SYS:BKUPEXEC/WIN_WS/WIN95/DEU  [ R   F ]
SYS:BKUPEXEC/WIN_WS/WIN95/FRA  [ R   F ]
11 trustees discovered.
Captured group: EVERYONE

Capturing group: CNI
Capturing group memberships:
CINDY  SANDY  MIKE_K
3 group memberships discovered.
Capturing Trustee Assignments for CNI.
SYS:  [ RWCEMF ]
```

1 trustee discovered.
Captured group: CNI

Capturing group: FAX
Capturing group memberships:
MIKE_K
1 group membership discovered.
Capturing Trustee Assignments for FAX.
0 trustees discovered.
Captured group: FAX

3 groups discovered.
Capturing group workgroup managers.
0 workgroup managers discovered.

There are no System Printer Definitions to discover.

Capturing print queue: TECHQ
Capturing queue users:
EVERYONE
Capturing queue operators:
CINDY
Captured print queue: TECHQ

1 print queue discovered.

Capturing print server: TECHW
Capturing print server operators:
CINDY
Capturing print server users:
EVERYONE
Capturing file servers serviced:
TAPE_CD
Capturing printer configurations:
Capturing queues serviced by...
TECHQ
Capturing notification list...

Unable to get Object ID for probably because this object doesn't exist anymore.
Relationship to this object not recorded.

Captured TECHP
Capturing print server operators:
CINDY
Capturing queues serviced by...
TECHQ
Capturing notification list...

Unable to get Object ID for probably because this object doesn't exist anymore.
Relationship to this object not recorded.

Captured print server: TECHW

1 print server discovered.

Process finished successfully on Tuesday, December 23, 1997 12:29 pm.

DSCONFIG.LOG

---------- 12/23/97 12:42:44 PM Configure ----------

Configure Options Settings:

Append multi-valued properties.
Do not Create Trustee directories if they do not exist.
Configure passwords.
Create passwords for new objects.
Replace passwords for existing objects.

Begin configure of object O=Organization of type Organization
End configuring object O=Organization.

Begin configure of object OU=TAPE_CD.O=Organization of type Organizational Unit

End configuring object OU=TAPE_CD.O=Organization.

Error - The Host Server CN=TAPE_CD.OU=TAPE_CD.O=Organization associated with Volume TAPE_CD_DIMAGE does not exist in Directory Services.

Error - A mandatory attribute for TAPE_CD_DIMAGE Volume does not exist, therefore we can not configure this object.

Error - The Host Server CN=TAPE_CD.OU=TAPE_CD.O=Organization associated with Volume TAPE_CD_SYS does not exist in Directory Services.

Error - A mandatory attribute for TAPE_CD_SYS Volume does not exist, therefore we can not configure this object.

Begin configure of object CN=CNI.OU=TAPE_CD.O=Organization of type Group

End configuring object CN=CNI.OU=TAPE_CD.O=Organization.

Write property of type ACL.

Begin configure of object CN=EVERYONE.OU=TAPE_CD.O=Organization of type Group

End configuring object CN=EVERYONE.OU=TAPE_CD.O=Organization.

Write property of type ACL.

Begin configure of object CN=FAX.OU=TAPE_CD.O=Organization of type Group

End configuring object CN=FAX.OU=TAPE_CD.O=Organization.

Write property of type ACL.

Begin configure of object CN=TECHW TECHP.OU=TAPE_CD.O=Organization of type Printer

End configuring object CN=TECHW TECHP.OU=TAPE_CD.O=Organization.

Write property of type ACL.

Write property of type ACL.

Write property of type ACL.

Write property of type ACL.

Begin configure of object CN=TECHW.OU=TAPE_CD.O=Organization of type Print Server

End configuring object CN=TECHW.OU=TAPE_CD.O=Organization.

Write property of type ACL.

Write property of type ACL.

Write property of type ACL.

Error - The Host Server CN=TAPE_CD.OU=TAPE_CD.O=Organization associated with Queue TECHQ does not exist in Directory Services.

Error - A mandatory attribute for TECHQ Queue does not exist, therefore we can not configure this object.

Begin configure of object CN=CINDY.OU=TAPE_CD.O=Organization of type User

Write property of type Surname.

End configuring object CN=CINDY.OU=TAPE_CD.O=Organization.

Begin configure of object CN=GUEST.OU=TAPE_CD.O=Organization of type User
  Write property of type Surname.
End configuring object CN=GUEST.OU=TAPE_CD.O=Organization.

Begin configure of object CN=JOHNC.OU=TAPE_CD.O=Organization of type User
  Write property of type Surname.
End configuring object CN=JOHNC.OU=TAPE_CD.O=Organization.

Begin configure of object CN=MIKE_K.OU=TAPE_CD.O=Organization of type User
  Write property of type Surname.
End configuring object CN=MIKE_K.OU=TAPE_CD.O=Organization.

Begin configure of object CN=SANDY.OU=TAPE_CD.O=Organization of type User
  Write property of type Surname.
End configuring object CN=SANDY.OU=TAPE_CD.O=Organization.

Begin configure of object CN=SUPERVISOR.OU=TAPE_CD.O=Organization of type User
  Write property of type Surname.
End configuring object CN=SUPERVISOR.OU=TAPE_CD.O=Organization.

Begin configure of object CN=USER_TEMPLATE.OU=TAPE_CD.O=Organization of type User
  Write property of type Surname.
  Write property of type CN.
End configuring object CN=USER_TEMPLATE.OU=TAPE_CD.O=Organization.
Error - The Host Server CN=TAPE_CD.OU=TAPE_CD.O=Organization associated with Volume TAPE_CD_DIMAGE does not exist in Directory Services.
Error - A mandatory attribute for TAPE_CD_DIMAGE Volume does not exist, therefore we can not configure this object.
Error - The Host Server CN=TAPE_CD.OU=TAPE_CD.O=Organization associated with Volume TAPE_CD_SYS does not exist in Directory Services.
Error - A mandatory attribute for TAPE_CD_SYS Volume does not exist, therefore we can not configure this object.

Begin discovering object O=Organization.
  Discovering 2 properties type ACL
  Discovering 2 properties type Object Class
  Discovering property of type O
  Discovering property of type Revision
  Discovering trustees for object O=Organization.

Complete discovering object O=Organization.

Begin configure of object O=Organization of type Organization
End configuring object O=Organization.

Begin discovering object OU=TAPE_CD.O=Organization.
  Discovering 2 properties type ACL
  Discovering 2 properties type Object Class
  Discovering property of type OU
  Discovering property of type Revision
  Discovering trustees for object OU=TAPE_CD.O=Organization.
Complete discovering object OU=TAPE_CD.O=Organization.

Begin configure of object OU=TAPE_CD.O=Organization of type Organizational Unit
  Write property of type Login Script.
  Write property of type Lockout After Detection.
  Write property of type Detect Intruder.
End configuring object OU=TAPE_CD.O=Organization.

Begin discovering object CN=CNI.OU=TAPE_CD.O=Organization.
  Discovering property of type ACL
  Discovering property of type CN
  Discovering 2 properties type Object Class
  Discovering property of type Revision
  Discovering trustees for object CN=CNI.OU=TAPE_CD.O=Organization.
Complete discovering object CN=CNI.OU=TAPE_CD.O=Organization.

Begin configure of object CN=CNI.OU=TAPE_CD.O=Organization of type Group
  Write property of type Member.
  Write property of type Member.
  Write property of type Member.
End configuring object CN=CNI.OU=TAPE_CD.O=Organization.
  Trustee points to a bindery server. An NDS object can not have a trustee to a bindery server.

Begin discovering object CN=EVERYONE.OU=TAPE_CD.O=Organization.
  Discovering property of type ACL
  Discovering property of type CN

Discovering 2 properties type Object Class
Discovering property of type Revision
Discovering trustees for object CN=EVERYONE.OU=TAPE_CD.O=Organization.
Complete discovering object CN=EVERYONE.OU=TAPE_CD.O=Organization.

Begin configure of object CN=EVERYONE.OU=TAPE_CD.O=Organization of type Group
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
End configuring object CN=EVERYONE.OU=TAPE_CD.O=Organization.
Trustee points to a bindery server. An NDS object can not have a trustee to a bindery server.
Trustee points to a bindery server. An NDS object can not have a trustee to a bindery server.
Trustee points to a bindery server. An NDS object can not have a trustee to a bindery server.
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Trustee points to a bindery server. An NDS object can not have a trustee to a bindery server.
Trustee points to a bindery server. An NDS object can not have a trustee to a bindery server.

Begin discovering object CN=FAX.OU=TAPE_CD.O=Organization.
Discovering property of type ACL
Discovering property of type CN
Discovering 2 properties type Object Class
Discovering property of type Revision
Discovering trustees for object CN=FAX.OU=TAPE_CD.O=Organization.
Complete discovering object CN=FAX.OU=TAPE_CD.O=Organization.

Begin configure of object CN=FAX.OU=TAPE_CD.O=Organization of type Group
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
Write property of type Member.
End configuring object CN=FAX.OU=TAPE_CD.O=Organization.
****
Error - Server CN=TAPE_CD.OU=TAPE_CD.O=Organization
does not exist in Directory Services. You must create it
in Directory Services before the application can configure
this server.
****

Begin discovering object CN=TECHW TECHP.OU=TAPE_CD.O=Organization.
Discovering 4 properties type ACL
Discovering property of type CN
Discovering 3 properties type Object Class
Discovering property of type Revision
Complete discovering object CN=TECHW TECHP.OU=TAPE_CD.O=Organization.

Begin configure of object CN=TECHW TECHP.OU=TAPE_CD.O=Organization of type Printer

Warning - CN=TECHQ.OU=TAPE_CD.O=Organization does not exist in Directory Services, cannot create directory Queue attribute.

Write property of type Print Server.

Write property of type Printer Configuration.

Write property of type Operator.

Warning - CN=TECHQ.OU=TAPE_CD.O=Organization does not exist in Directory Services, cannot create directory Default Queue attribute.

Write property of type Owner.

End configuring object CN=TECHW TECHP.OU=TAPE_CD.O=Organization.

Begin discovering object CN=TECHW.OU=TAPE_CD.O=Organization.

Discovering 6 properties type ACL

Discovering property of type CN

Discovering property of type Host Device

Discovering 3 properties type Object Class

Discovering property of type Public Key

Discovering property of type Revision

Complete discovering object CN=TECHW.OU=TAPE_CD.O=Organization.

Begin configure of object CN=TECHW.OU=TAPE_CD.O=Organization of type Print Server

Write property of type SAP Name.

Write property of type Printer.

Write property of type Operator.

Write property of type User.

End configuring object CN=TECHW.OU=TAPE_CD.O=Organization.

Error - The Host Server CN=TAPE_CD.OU=TAPE_CD.O=Organization associated with Queue TECHQ does not exist in Directory Services.

Error - A mandatory attribute for TECHQ Queue does not exist, therefore we can not configure this object.

Begin discovering object CN=CINDY.OU=TAPE_CD.O=Organization.

Discovering 6 properties type ACL

Discovering property of type CN

Discovering 4 properties type Object Class

Discovering property of type Public Key

Discovering property of type Surname

Discovering 2 properties type Group Membership

Discovering property of type Revision

Discovering trustees for object CN=CINDY.OU=TAPE_CD.O=Organization.
Complete discovering object CN=CINDY.OU=TAPE_CD.O=Organization.

Begin configure of object CN=CINDY.OU=TAPE_CD.O=Organization of type User
Write property of type Security Equals.
Write property of type Security Equals.
Write property of type Security Equals.
Write property of type Password Unique Required.
Write property of type Password Required.
Write property of type Password Allow Change.
Write property of type Minimum Account Balance.
Write property of type Login Script.
Write property of type Login Intruder Attempts.
Write property of type Login Intruder Address.
Write property of type Login Disabled.
Write property of type Login Allowed Time Map.
Write property of type Locked By Intruder.
Write property of type Language.
Write property of type Allow Unlimited Credit.
Write property of type Account Balance.
End configuring object CN=CINDY.OU=TAPE_CD.O=Organization.
Trustee points to a bindery server. An NDS object can not have a trustee to a bindery server.

Begin discovering object CN=GUEST.OU=TAPE_CD.O=Organization.
Discovering 6 properties type ACL
Discovering property of type CN
Discovering 4 properties type Object Class
Discovering property of type Public Key
Discovering property of type Surname
Discovering property of type Group Membership
Discovering property of type Revision
Discovering trustees for object CN=GUEST.OU=TAPE_CD.O=Organization.
Complete discovering object CN=GUEST.OU=TAPE_CD.O=Organization.

Begin configure of object CN=GUEST.OU=TAPE_CD.O=Organization of type User
Write property of type Security Equals.
Write property of type Password Unique Required.

Write property of type Password Required.
Write property of type Password Allow Change.
Write property of type Minimum Account Balance.
Write property of type Login Script.
Write property of type Login Intruder Attempts.
Write property of type Login Intruder Address.
Write property of type Login Disabled.
Write property of type Login Allowed Time Map.
Write property of type Locked By Intruder.
Write property of type Language.
Write property of type Allow Unlimited Credit.
Write property of type Account Balance.
End configuring object CN=GUEST.OU=TAPE_CD.O=Organization.

Begin discovering object CN=JOHNC.OU=TAPE_CD.O=Organization.
Discovering 6 properties type ACL
Discovering property of type CN
Discovering 4 properties type Object Class
Discovering property of type Public Key
Discovering property of type Surname
Discovering property of type Group Membership
Discovering property of type Revision
Discovering trustees for object CN=JOHNC.OU=TAPE_CD.O=Organization.
Complete discovering object CN=JOHNC.OU=TAPE_CD.O=Organization.

Begin configure of object CN=JOHNC.OU=TAPE_CD.O=Organization of type User
Write property of type Security Equals.
Write property of type Security Equals.
Write property of type Password Unique Required.
Write property of type Password Required.
Write property of type Password Allow Change.
Write property of type Minimum Account Balance.
Write property of type Login Script.
Write property of type Login Intruder Attempts.
Write property of type Login Intruder Address.
Write property of type Login Disabled.
Write property of type Login Allowed Time Map.

Write property of type Locked By Intruder.
Write property of type Language.
Write property of type Allow Unlimited Credit.
Write property of type Account Balance.
End configuring object CN=JOHNC.OU=TAPE_CD.O=Organization.
Trustee points to a bindery server. An NDS object can not have a trustee to a bindery server.
Trustee points to a bindery server. An NDS object can not have a trustee to a bindery server.
Trustee points to a bindery server. An NDS object can not have a trustee to a bindery server.

Begin discovering object CN=MIKE_K.OU=TAPE_CD.O=Organization.
Discovering 6 properties type ACL
Discovering property of type CN
Discovering 4 properties type Object Class
Discovering property of type Public Key
Discovering property of type Surname
Discovering 3 properties type Group Membership
Discovering property of type Revision
Discovering trustees for object CN=MIKE_K.OU=TAPE_CD.O=Organization.
Complete discovering object CN=MIKE_K.OU=TAPE_CD.O=Organization.

Begin configure of object CN=MIKE_K.OU=TAPE_CD.O=Organization of type User
Write property of type Security Equals.
Write property of type Security Equals.
Write property of type Security Equals.
Write property of type Security Equals.
Write property of type Password Unique Required.
Write property of type Password Required.
Write property of type Password Allow Change.
Write property of type Minimum Account Balance.
Write property of type Login Script.
Write property of type Login Intruder Attempts.
Write property of type Login Intruder Address.
Write property of type Login Disabled.
Write property of type Login Allowed Time Map.
Write property of type Locked By Intruder.
Write property of type Language.
Write property of type Allow Unlimited Credit.

Write property of type Account Balance.
End configuring object CN=MIKE_K.OU=TAPE_CD.O=Organization.
Trustee points to a bindery server. An NDS object can not have a trustee to a bindery server.

Begin discovering object CN=SANDY.OU=TAPE_CD.O=Organization.
Discovering 6 properties type ACL
Discovering property of type CN
Discovering 4 properties type Object Class
Discovering property of type Public Key
Discovering property of type Surname
Discovering 2 properties type Group Membership
Discovering property of type Revision
Discovering trustees for object CN=SANDY.OU=TAPE_CD.O=Organization.
Complete discovering object CN=SANDY.OU=TAPE_CD.O=Organization.

Begin configure of object CN=SANDY.OU=TAPE_CD.O=Organization of type User
Write property of type Security Equals.
Write property of type Security Equals.
Write property of type Password Unique Required.
Write property of type Password Required.
Write property of type Password Allow Change.
Write property of type Minimum Account Balance.
Write property of type Login Script.
Write property of type Login Intruder Attempts.
Write property of type Login Intruder Address.
Write property of type Login Disabled.
Write property of type Login Allowed Time Map.
Write property of type Locked By Intruder.
Write property of type Language.
Write property of type Allow Unlimited Credit.
Write property of type Account Balance.
End configuring object CN=SANDY.OU=TAPE_CD.O=Organization.
Trustee points to a bindery server. An NDS object can not have a trustee to a bindery server.

Begin discovering object CN=SUPERVISOR.OU=TAPE_CD.O=Organization.
Discovering 6 properties type ACL
Discovering property of type CN

Discovering 4 properties type Object Class
Discovering property of type Public Key
Discovering property of type Surname
Discovering property of type Group Membership
Discovering property of type Revision
Discovering trustees for object CN=SUPERVISOR.OU=TAPE_CD.O=Organization.
Complete discovering object CN=SUPERVISOR.OU=TAPE_CD.O=Organization.

Begin configure of object CN=SUPERVISOR.OU=TAPE_CD.O=Organization of type User
Write property of type Security Equals.
Write property of type Password Unique Required.
Write property of type Password Required.
Write property of type Password Allow Change.
Write property of type Minimum Account Balance.
Write property of type Login Script.
Write property of type Login Intruder Attempts.
Write property of type Login Intruder Address.
Write property of type Login Disabled.
Write property of type Login Allowed Time Map.
Write property of type Locked By Intruder.
Write property of type Language.
Write property of type Allow Unlimited Credit.
Write property of type Account Balance.
End configuring object CN=SUPERVISOR.OU=TAPE_CD.O=Organization.
Trustee points to a bindery server. An NDS object can not have a trustee to a bindery server.
Trustee points to a bindery server. An NDS object can not have a trustee to a bindery server.

Begin discovering object CN=USER_TEMPLATE.OU=TAPE_CD.O=Organization.
Discovering 6 properties type ACL
Discovering 2 properties type CN
Discovering 4 properties type Object Class
Discovering property of type Public Key
Discovering property of type Surname
Discovering property of type Revision
Discovering trustees for object CN=USER_TEMPLATE.OU=TAPE_CD.O=Organization.
Complete discovering object CN=USER_TEMPLATE.OU=TAPE_CD.O=Organization.

Begin configure of object CN=USER_TEMPLATE.OU=TAPE_CD.O=Organization of type User
Write property of type Password Unique Required.
Write property of type Password Required.
Write property of type Password Allow Change.
Write property of type Minimum Account Balance.
Write property of type Login Intruder Attempts.
Write property of type Login Grace Remaining.
Write property of type Login Grace Limit.
Write property of type Login Disabled.
Write property of type Login Allowed Time Map.
Write property of type Locked By Intruder.
Write property of type Language.
Write property of type Allow Unlimited Credit.
Write property of type Account Balance.
Write property of type Full Name.
End configuring object CN=USER_TEMPLATE.OU=TAPE_CD.O=Organization.
Password Configure Summary

Object Name	Password	Status
CN=TECHW.OU=TAPE_CD.O=Organization	(None)	(New)
CN=CINDY.OU=TAPE_CD.O=Organization	DEFAULTPW	(New)
CN=GUEST.OU=TAPE_CD.O=Organization	DEFAULTPW	(New)
CN=JOHNC.OU=TAPE_CD.O=Organization	DEFAULTPW	(New)
CN=MIKE_K.OU=TAPE_CD.O=Organization	DEFAULTPW	(New)
CN=SANDY.OU=TAPE_CD.O=Organization	DEFAULTPW	(New)
CN=SUPERVISOR.OU=TAPE_CD.O=Organization	DEFAULTPW	(New)
CN=TERESA.OU=TAPE_CD.O=Organization	DEFAULTPW	(New)
CN=USER_TEMPLATE.OU=TAPE_CD.O=Organization	DEFAULTPW	(New)

Number of Warnings found 2.

Number of Errors found 13.

---------- 12/23/97 12:44:53 PM End Configure ----------

PRECONFIG.LOG

---------- 12/23/97 12:40:45 PM Preconfigure Verify ----------

****

Error - Server CN=TAPE_CD.OU=TAPE_CD.O=Organization
does not exist in Directory Services. You must create it
in Directory Services before the application can configure
this server.

****

Error - The Host Server CN=TAPE_CD.OU=TAPE_CD.O=Organization associated with Volume TAPE_CD_DIMAGE does not exist in Directory Services.

Error - The Host Server CN=TAPE_CD.OU=TAPE_CD.O=Organization associated with Volume TAPE_CD_SYS does not exist in Directory Services.

Number of Warnings found 0.

Number of Errors found 3.

---------- 12/23/97 12:40:59 PM End Preconfigure Verify ----------

RMT Reports

DUMPBIND.SUM

Summary File Time: 11:05:38 Date: 19 Nov 1997

TAPE_CD

Users: 20
Groups: 3
Print Queues: 1
Print Servers: 1
Servers: 1
Volumes: 2

Total: 28

Elapsed Time: 00:00:14

Total Number of Objects Read: 28

Total Time in Seconds = 14.170000 seconds
Number of Seconds per Object = 0.506071429

MIGCONT.LOG

>>>

>>> Start: MIGCONT.LOG

>>> Date: Wednesday, 19 Nov 1997

>>> Time: 1:16pm

>>>

>>> NOTE: To verify this log search for 'ERROR', 'SYNTAX' and '*** Note'.
>>>
Searching for container class COUNTRY
Searching for COUNTRY containers at level [Root]
Searching for container class ORGANIZATION
Searching for ORGANIZATION containers at level [Root]
Skipping TRASH_CAN record 1 (0.660000)
Object Name = O=TRASH_CAN
Object Context = [Root]
Searching for container class LOCALITY
Searching for LOCALITY containers at level [Root]
Searching for container class ORGANIZATIONAL_UNIT
Searching for ORGANIZATIONAL_UNIT containers at level [Root]
Searching for container class COUNTRY
Searching for COUNTRY containers at level O=EMA
Searching for COUNTRY containers at level O=CTREC
Searching for COUNTRY containers at level O=TRASH_CAN
Searching for container class ORGANIZATION
Searching for ORGANIZATION containers at level O=EMA
Searching for ORGANIZATION containers at level O=CTREC
Searching for ORGANIZATION containers at level O=TRASH_CAN
Searching for container class LOCALITY

```
Searching for LOCALITY containers at level O=EMA
Searching for LOCALITY containers at level O=CTREC
Searching for LOCALITY containers at level O=TRASH_CAN
Searching for container class ORGANIZATIONAL_UNIT
Searching for ORGANIZATIONAL_UNIT containers at level O=EMA
Searching for ORGANIZATIONAL_UNIT containers at level O=CTREC
Searching for ORGANIZATIONAL_UNIT containers at level O=TRASH_CAN
Skipping TRASH_CAN record 2 (3.030000)
  Object Name    = OU=TAPE_CD
  Object Context = O=TRASH_CAN
Searching for container class COUNTRY
Searching for container class ORGANIZATION
Searching for container class LOCALITY
Searching for LOCALITY containers at level OU=Corp.O=EMA
Searching for LOCALITY containers at level OU=Prod.O=EMA
Searching for LOCALITY containers at level OU=Lon.O=EMA
Searching for LOCALITY containers at level OU=Par.O=EMA
Searching for LOCALITY containers at level OU=Sao.O=EMA
Searching for LOCALITY containers at level OU=Tok.O=EMA
Searching for LOCALITY containers at level OU=Syd.O=EMA
Searching for LOCALITY containers at level OU=New.O=EMA
Searching for LOCALITY containers at level OU=CNI.O=CTREC
Searching for LOCALITY containers at level OU=TAPE_CD.O=TRASH_CAN
Searching for container class ORGANIZATIONAL_UNIT
Searching for ORGANIZATIONAL_UNIT containers at level OU=Corp.O=EMA
Searching for ORGANIZATIONAL_UNIT containers at level OU=Prod.O=EMA
Searching for ORGANIZATIONAL_UNIT containers at level OU=Lon.O=EMA
Searching for ORGANIZATIONAL_UNIT containers at level OU=Par.O=EMA
Searching for ORGANIZATIONAL_UNIT containers at level OU=Sao.O=EMA
Searching for ORGANIZATIONAL_UNIT containers at level OU=Tok.O=EMA
Searching for ORGANIZATIONAL_UNIT containers at level OU=Syd.O=EMA
Searching for ORGANIZATIONAL_UNIT containers at level OU=New.O=EMA
Searching for ORGANIZATIONAL_UNIT containers at level OU=CNI.O=CTREC
Searching for ORGANIZATIONAL_UNIT containers at level OU=TAPE_CD.O=TRASH_CAN
>>>
>>>   End: MIGCONT.LOG
>>>  Date: Wednesday, 19 Nov 1997
```

```
>>>   Time: 1:16pm
>>>
>>> Elapsed Time = 5.610000
```

MIGPRINT.LOG

```
>>>

>>>  Start:  MIGPRINT.LOG

>>>   Date: Wednesday, 19 Nov 1997

>>>   Time: 1:16pm

>>>

  "  NOTE: To verify this log search for 'ERROR', 'SYNTAX' and '*** Note'.

  "

  "  DESCRIPTION OF RETURN CODES

  "

     -606 Entry Already Exists.  The Toolkit attempted to create an object that
          already exists in the current context.  This object may exist under a
          different class.  NDS does not allow duplicate object names, even
          if they are of different object class types, in the same context.

Adding record ( PRINT_QUEUE ) 1 to NDS.....(0.990000)
  Object Name    = TECHQ
  Object Context = OU=Corp.O=EMA
  Class          = C_QUEUE
  HostServer     = CN=ECORP411.OU=Corp.O=EMA
  QueueDirectory = SYS:/QUEUES
    ERROR ADDING OBJECT TO NDS: TECHQ to OU=Corp.O=EMA (-606  ERR_ENTRY_ALREADY_EXISTS ).

Adding record ( PRINT_SERVER ) 1 to NDS.....(1.640000)
  Object Name    = TECHW
  Object Context = OU=Corp.O=EMA
    ERROR ADDING OBJECT TO NDS: TECHW to OU=Corp.O=EMA (-606  ERR_ENTRY_ALREADY_EXISTS ).
```

```
Adding record ( PRINTER ) 1 to NDS.....(2.080000)
  Object Name    = TAPE_CD_TECHW_000_TECHP
  Object Context = OU=Corp.O=EMA
    Setting Attribute: A_NOTIFY = 0
    Setting Attribute: A_OWNER = 0

>>>
>>>    End:  MIGPRINT.LOG
>>>
>>>   Date: Wednesday, 19 Nov 1997
>>>   Time: 1:16pm
>>>
>>>   Elapsed Time = 2.790000
```

MIGUSERS.LOG

```
>>>

>>>  Start: MIGUSERS.LOG

>>>   Date: Wednesday, 19 Nov 1997

>>>   Time: 1:12pm

 

     NOTE: To verify this log search for 'ERROR', 'SYNTAX' and '*** Note'.

     DESCRIPTION OF RETURN CODES

     -606 Entry Already Exists.  The Toolkit attempted to create an object that
          already exists in the current context.  This object may exist under a
          different class.  NDS does not allow duplicate object names, even
          if they are of different object class types, in the same context.

Adding record 1 to NDS.....(2.040000)
  Object Name    = MIKE_K
  Object Context = OU=Corp.O=EMA
  Object Status   = Object already exists ...
    ERROR ADDING OBJECT: MIKE_K to OU=Corp.O=EMA
```

```
            CODE: -606 -  ERR_ENTRY_ALREADY_EXISTS

Skipping TRASH_CAN record 2 (1.810000)
  Object Name    = APPCLASS
  Object Context = OU=TAPE_CD.O=TRASH_CAN

Skipping TRASH_CAN record 3 (3.190000)
  Object Name    = GUEST
  Object Context = OU=TAPE_CD.O=TRASH_CAN

Skipping TRASH_CAN record 4 (3.580000)
  Object Name    = NOVCLASS
  Object Context = OU=TAPE_CD.O=TRASH_CAN

Skipping TRASH_CAN record 5 (4.020000)
  Object Name    = CINDY
  Object Context = OU=TAPE_CD.O=TRASH_CAN

Skipping TRASH_CAN record 6 (4.400000)
  Object Name    = GORDON
  Object Context = OU=TAPE_CD.O=TRASH_CAN

Begining cleanup of password migration containers under: .OU=~BINDERY~.OU=CORP.O=EMA

    Searching .OU=TAPE_CD.OU=~BINDERY~.OU=CORP.O=EMA for user objects.
       Removing: .OU=TAPE_CD.OU=~BINDERY~.OU=CORP.O=EMA from NDS.

    Removing: .OU=~BINDERY~.OU=CORP.O=EMA from NDS.
Update NDS objects.....
>>>
>>>   End: MIGUSERS.LOG
>>>  Date: Wednesday, 19 Nov 1997
>>>  Time: 1:13pm
>>>
>>> Elapsed Time = 4.950000
```

MIGPASS.LOG

>>>

>>> Start: MIGPASS.LOG

>>> Date: Wednesday, 19 Nov 1997

>>> Time: 1:10pm

NOTE: To verify this log search for 'ERROR', 'SYNTAX' and '*** Note'.

41 Bindery was closed for = 0.060000
Delete OK: CN=Techw Type 7 On Ecorp411.OU=Corp.O=EMA
Delete OK: Bindery Type=8+CN=Aq6 Chey Type 8 On Ecorp411.OU=Corp.O=EMA
Delete OK: Bindery Type=1959+CN=Tape Cd Type 7a7 On Ecorp411.OU=Corp.O=EMA
Delete OK: Bindery Type=1960+CN=Backup Exec Type 7a8 On Ecorp411.OU=Corp.O=EMA
Delete OK: Bindery Type=9+CN=As Backup Server Type 9 On Ecorp411.OU=Corp.O=EMA
>>>
>>> End: MIGPASS.LOG
>>> Date: Wednesday, 19 Nov 1997
>>> Time: 1:12pm
>>>
>>> Elapsed Time = 108.750000

MIGGROUP.LOG

>>>

>>> Start: MIGGROUP.LOG

>>> Date: Wednesday, 19 Nov 1997

>>> Time: 1:13pm

>>>

NOTE: To verify this log search for 'ERROR', 'SYNTAX' and '*** Note'.

DESCRIPTION OF RETURN CODES

-606 Entry Already Exists. The Toolkit attempted to create an object that already exists in the current context. This object may exist under a different class. NDS does not allow duplicate object names, even if they are of different object class types, in the same context.

Skipping TRASH_CAN record 1 (0.710000)
Object Name = EVERYONE
Object Context = OU=TAPE_CD.O=TRASH_CAN

Skipping TRASH_CAN record 2 (0.880000)
Object Name = CNI
Object Context = OU=TAPE_CD.O=TRASH_CAN

>>>
>>> End: MIGGROUP.LOG
>>> Date: Wednesday, 19 Nov 1997
>>> Time: 1:13pm
>>>
>>> Elapsed Time = 1.320000

APPLY3X.LOG

>>>

>>> Start: APPLY3X.LOG

>>>

Setting up to apply server TAPE_CD

Adding record 3 to 4X database.....(2.260000)
Object Name = SANDY
Object Class = USER
Object Context = OU=Corp.O=EMA.[Root]
Adding record 5 to 4X database.....(3.470000)
Object Name = EVERYONE
Object Class = GROUP
Object Context = OU=Corp.O=EMA.[Root]

```
Adding record 6 to 4X database.....(3.020000)
  Object Name    = MIKE_K
  Object Class   = USER
  Object Context = OU=Corp.O=EMA.[Root]
Adding record 7 to 4X database.....(4.680000)
  Object Name    = TECHW
  Object Class   = PRINT_SERVER
  Object Context = OU=Corp.O=EMA.[Root]
Adding record 8 to 4X database.....(3.960000)
  Object Name    = GUEST
  Object Class   = USER
  Object Context = OU=Corp.O=EMA.[Root]
Adding record 9 to 4X database.....(6.430000)
  Object Name    = CINDY
  Object Class   = USER
  Object Context = OU=Corp.O=EMA.[Root]
Adding record 10 to 4X database.....(7.530000)
  Object Name    = CNI
  Object Class   = GROUP
  Object Context = OU=Corp.O=EMA.[Root]
Adding record 12 to 4X database.....(7.960000)
  Object Name    = TECHQ
  Object Class   = PRINT_QUEUE
  Object Context = OU=Corp.O=EMA.[Root]
Adding record 13 to 4X database.....(9.840000)
  Object Name    = JOHNC
  Object Class   = USER
  Object Context = OU=Corp.O=EMA.[Root]
Applied 13 records for server TAPE_CD
Applied a total of 9 3X records to the 4XDB.....
Adding PRINTER record 1 to 4X database.....(19.350000)
  Object Name    = TAPE_CD_TECHW_000_TECHP
  Object Context = OU=Corp.O=EMA.[Root]
>>>
>>>   End: APPLY3X.LOG
>>>
>>> Elapsed Time = 19.730000
```

TREEWALK.LOG

```
>>>

>>> Start: Discover Live NDS Tree. 4X DB= EMA_TREE2

>>>  Date: Wednesday, 19 Nov 1997

>>>  Time: 11:23am

>>>

>>>

 

SEARCH FOR CONTAINERS AT CONTEXT: [ROOT]

 

VERIFYING CONFIGURATION FOR EXCLUDED CONTAINERS
   NO EXCLUSIONS WERE DETECTED.

   SEARCHING FOR LOCALITY CONTAINERS.
   SEARCHING FOR COUNTRY CONTAINERS.
   SEARCHING FOR ORGANIZATION CONTAINERS.
      FOUND 2 CONTAINER(S).
   SEARCHING FOR ORGANIZATIONAL_UNIT CONTAINERS.

   ==> O=EMA
   ==> O=CTREC

   F10 WAS PRESSED. EXTRACTION WILL BEGIN FROM: [ROOT]

>>>
>>>  End : Discover Live NDS Tree
>>>  Time: 11:23am
>>>
```

CONSIST.LOG

```
>>>
```

```
>>> Start:

>>>  Date: Wednesday, 19 Nov 1997

>>>  Time: 12:55pm

>>>
>>>
   ****************************************
         RMT CONSISTENCY CHECK

     START: Date: Wednesday, 19 Nov 1997
         Time: 12:55pm

   ****************************************

Version: 1.55b (18 Aug 1997 10:17am)

RMT NLM Versions:
In RMT directory                Loaded in memory
-------------------------------------------------------------------
RXMTKERN                        1.53.1(a)   December 16 /96   1.53.1(a)   December 16 /96
RXMTSNUT                        1.52.2(b)   September 12 /96  1.52.2(b)   September 12 /96
RXMTNDS                         1.53.1(a)   November 27 /96   1.53.1(a)   November 27 /96
RXMTARC                         1.53.4(d)   January 7 /97     1.53.4(d)   January 7 /97
RXMTKIT                         1.50.1(a)   March 22 /96      1.50.1(a)   March 22 /96

Loaded in memory
-----------------------------------------------
CLIB                            4.11.0()    August 23 /96
DS                              5.73.0()    July 29 /96
DSAPI                           5.00.2(b)   July 1 /96
BTRIEVE                         6.10.6(f)   May 3 /96
MATHLIB                         4.20.0()    October 6 /95
NWSNUT                          4.16.0()    July 1 /96
OS2                             Unavailable
MAC                             Unavailable
NFS                             Unavailable
```

Server information
==========

Server Name:	ECORP411
Netware Version:	4
NetWare Sub Version:	11
Max Connections Supported:	9
Connections In Use:	1
Max Volumes Supported:	64
Revision Level:	0
SFT Level:	2
TTS Level:	1
Peak Connections Used:	1
Accounting Version:	1
VAP Version:	1
Print Server Version:	0
Virtual Console Version:	1
Security RestrictionLevel:	1
CLib Major Version:	4
CLib Minor Version:	11
Clib Revision:	0

Login successful
User id: .cindy.cni.ctrec
password: _____

File server #1

Server DS Name	=	.CN=ECORP411.OU=Corp.O=EMA.[Root]
Server Name	=	ECORP411
Associated 3.x Server	=	1
		TAPE_CD
Time Zone	=	-6
Supervisor	=	.CN=Admin.O=EMA
Origin	=	NDS
Can Authenticate	=	Yes
Number of volume	=	2

Volume #1

```
  Volume DS Name                          =    .CN=ECorp_SYS.OU=Corp.O=EMA.[Root]
  Volume Name                             =    SYS:
  Associated 3.x Volume                   =    1
                                               TAPE_CD/SYS:
  Host Server                             =    CN=ECORP411.OU=Corp.O=EMA
  Origin                                  =    NDS
  Is Mounted                              =    Yes

Volume #2
  Volume DS Name                          =    .CN=ECorp_Vol1.OU=Corp.O=EMA.[Root]
  Volume Name                             =    VOL1:
  Associated 3.x Volume                   =    0
  Host Server                             =    CN=ECORP411.OU=Corp.O=EMA
  Origin                                  =    NDS
  Is Mounted                              =    Yes

>>> Total number of server(s)              : 1
>>> Total number of volume(s)              : 2

>>> Total Time                  : 00:00:36

>>>
>>>  End :
>>>  Time: 12:55pm
>>>
```

DMARKUP.LOG

```
>>>

>>> Start: Process Marked-Up DUPOBJ.LOG File

>>>  Date: Wednesday, 19 Nov 1997

>>>  Time: 12:49pm

>>>

>>>
```

```
>>>

>>>  NOTE: To verify this log, search for 'LINE'.
>>>
>>>  Database     : EMA_TREE2
   <Operation canceled by the user>
```

MIGFILES.LOG

```
   ****************************************

        MIGRATE FILES AND DIRECTORIES


      START: Date: Wednesday, 19 Nov 1997

           Time: 1:36pm

   ****************************************

Summary of volume(s)/directorie(s) selected for migration:
   TAPE_CD/SYS:/USERS

Verifying Destination Volumes
      Destination Volume ECORP411/SYS:/ is available
All volumes available

  Migfiles detected a value in the MergedTo Field.

  Object   : GUEST (USER)
  Merged To: .CN=Guest.OU=Corp.O=EMA
  Owners, Attributes, and Trustees will be applied to the Merged object


  Migfiles detected a value in the MergedTo Field.

  Object   : CINDY (USER)
  Merged To: .CN=Cindy.OU=Corp.O=EMA
```

Owners, Attributes, and Trustees will be applied to the Merged object

Migfiles detected a value in the MergedTo Field.

Object : EVERYONE (GROUP)
Merged To: .CN=Everyone.OU=Corp.O=EMA
Owners, Attributes, and Trustees will be applied to the Merged object

Migfiles detected a value in the MergedTo Field.

Object : CNI (GROUP)
Merged To: .CN=Cni.OU=Corp.O=EMA
Owners, Attributes, and Trustees will be applied to the Merged object

1. Processing Directory : TAPE_CD/SYS:/USERS
Created directory ECORP411/SYS:/USERS on SYS

Listing files on TAPE_CD/SYS:/USERS/*.*
0 files and 12 directories found.
Processing Directory: TAPE_CD/SYS:/USERS complete.

2. Processing Directory : TAPE_CD/SYS:/USERS/CINDY
Created directory ECORP411/SYS:/USERS/CINDY on SYS

>>> Trustee Rights for ID: 503316523 applied Successfully
Source Path: TAPE_CD/SYS:/USERS/CINDY
Destination Path: ECORP411/SYS:/USERS/CINDY
Rights: 251

Listing files on TAPE_CD/SYS:/USERS/CINDY/*.*
0 files and 0 directories found.
No Files found in Directory TAPE_CD/SYS:/USERS/CINDY
Processing Directory: TAPE_CD/SYS:/USERS/CINDY complete.

3. Processing Directory : TAPE_CD/SYS:/USERS/JOHNC
Created directory ECORP411/SYS:/USERS/JOHNC on SYS

```
>>> Trustee Rights for ID: 905969858 applied Successfully
Source Path: TAPE_CD/SYS:/USERS/JOHNC
Destination Path: ECORP411/SYS:/USERS/JOHNC
Rights: 251

Listing files on TAPE_CD/SYS:/USERS/JOHNC/*.*
     0 files and      0 directories found.
No Files found in Directory TAPE_CD/SYS:/USERS/JOHNC
Processing Directory: TAPE_CD/SYS:/USERS/JOHNC complete.

4. Processing Directory : TAPE_CD/SYS:/USERS/MIKE_K
   Created directory ECORP411/SYS:/USERS/MIKE_K on SYS

   >>> Trustee Rights for ID: 167772222 applied Successfully
   Source Path: TAPE_CD/SYS:/USERS/MIKE_K
   Destination Path: ECORP411/SYS:/USERS/MIKE_K
   Rights: 251

   Listing files on TAPE_CD/SYS:/USERS/MIKE_K/*.*
        0 files and      0 directories found.
   No Files found in Directory TAPE_CD/SYS:/USERS/MIKE_K
   Processing Directory: TAPE_CD/SYS:/USERS/MIKE_K complete.

5. Processing Directory : TAPE_CD/SYS:/USERS/RON
   Created directory ECORP411/SYS:/USERS/RON on SYS

   Listing files on TAPE_CD/SYS:/USERS/RON/*.*
        2 files and      2 directories found.
   Processing Directory: TAPE_CD/SYS:/USERS/RON complete.

6. Processing Directory : TAPE_CD/SYS:/USERS/RON/312PT8
   Created directory ECORP411/SYS:/USERS/RON/312PT8 on SYS

   Listing files on TAPE_CD/SYS:/USERS/RON/312PT8/*.*
        4 files and      1 directories found.
   Processing Directory: TAPE_CD/SYS:/USERS/RON/312PT8 complete.
```

```
7. Processing Directory : TAPE_CD/SYS:/USERS/SANDY
   Created directory ECORP411/SYS:/USERS/SANDY on SYS

   >>> Trustee Rights for ID: 150995037 applied Successfully
   Source Path: TAPE_CD/SYS:/USERS/SANDY
   Destination Path: ECORP411/SYS:/USERS/SANDY
   Rights: 251

   Listing files on TAPE_CD/SYS:/USERS/SANDY/*.*
        0 files and      0 directories found.
   No Files found in Directory TAPE_CD/SYS:/USERS/SANDY
  Processing Directory: TAPE_CD/SYS:/USERS/SANDY complete.

*** End of File/Directory Processing ***

DIRDB.001 closed successfully
DIRDB.001 deleted successfully

>>> Total number of directories migrated                    : 7
>>> Total number of files migrated                          : 6
 : ----------
>>> Total number of directories and files                   : 13

>>> Total Time                                              : 00:00:30

>>> Total bytes migrated                                    : 2284810
>>> Number of seconds per Dir/File                          : 0.24983871
>>> Bytes/Sec                                               : 73751.1298

>>> LogoutFromFileServer ECORP411 Rc = 0
>>> LogoutFromFileServer TAPE_CD Rc = 0
>>> NWDS Logout from     EMA_TREE2 Rc = 0

   ****************************************
      MIGRATE FILES AND DIRECTORIES

    END: Date: Wednesday, 19 Nov 1997
```

Time: 1:37pm

****

EXTRACT4.LOG

>>>

>>> Start: Extract Live NDS Tree EMA_TREE2

>>> Date: Wednesday, 19 Nov 1997

>>> Time: 11:23am

>>>

>>>

RECORD # 1

NAME	:	PAIGE
CONTEXT	:	OU=CORP.O=EMA.[ROOT]
CLASS	:	USER

RECORD # 2

NAME	:	CINDY
CONTEXT	:	OU=CORP.O=EMA.[ROOT]
CLASS	:	USER

RECORD # 3

NAME	:	ADMIN
CONTEXT	:	OU=SYD.O=EMA.[ROOT]
CLASS	:	USER

RECORD # 4

NAME	:	CINDY
CONTEXT	:	OU=CNI.O=CTREC.[ROOT]
CLASS	:	USER

RECORD # 5
NAME : SANDY
CONTEXT : OU=CNI.O=CTREC.[ROOT]
CLASS : USER

RECORD # 6
NAME : RON
CONTEXT : OU=CNI.O=CTREC.[ROOT]
CLASS : USER

RECORD # 7
NAME : MIKE_K
CONTEXT : OU=CNI.O=CTREC.[ROOT]
CLASS : USER

RECORD # 8
NAME : CAROLE
CONTEXT : OU=CNI.O=CTREC.[ROOT]
CLASS : USER

RECORD # 9
NAME : JIM
CONTEXT : OU=CNI.O=CTREC.[ROOT]
CLASS : USER

RECORD # 10
NAME : STUDENTS
CONTEXT : OU=CORP.O=EMA.[ROOT]
CLASS : GROUP

RECORD # 11
NAME : WPUSERS
CONTEXT : OU=CORP.O=EMA.[ROOT]
CLASS : GROUP

RECORD # 12
NAME : MRKTG

CONTEXT : OU=CORP.O=EMA.[ROOT]
CLASS : GROUP

RECORD # 13
NAME : ACCTG
CONTEXT : OU=CORP.O=EMA.[ROOT]
CLASS : GROUP

RECORD # 14
NAME : EMAILUSERS
CONTEXT : OU=CORP.O=EMA.[ROOT]

RECORD # 16
NAME : EVERYONE
CONTEXT : OU=CORP.O=EMA.[ROOT]
CLASS : GROUP

RECORD # 17
NAME : CNI
CONTEXT : OU=CORP.O=EMA.[ROOT]
CLASS : GROUP

RECORD # 18
NAME : CORP_P
CONTEXT : OU=CORP.O=EMA.[ROOT]
CLASS : PRINTER

RECORD # 19
NAME : PROD_P
CONTEXT : OU=PROD.O=EMA.[ROOT]
CLASS : PRINTER

RECORD # 20
NAME : CORP_PS
CONTEXT : OU=CORP.O=EMA.[ROOT]
CLASS : PRINT_SERVER

RECORD # 21
NAME : CORP_Q
CONTEXT : OU=CORP.O=EMA.[ROOT]
CLASS : PRINT_QUEUE

RECORD # 22
NAME : ECORP411
CONTEXT : OU=CORP.O=EMA.[ROOT]
CLASS : FILE_SERVER

RECORD # 23
NAME : ECORP_SYS
CONTEXT : OU=CORP.O=EMA.[ROOT]
CLASS : VOLUME

RECORD # 24
NAME : ECORP_VOL1
CONTEXT : OU=CORP.O=EMA.[ROOT]
CLASS : VOLUME

RECORD # 25
NAME : O=EMA
CONTEXT : [ROOT]
CLASS : ORGANIZATION

RECORD # 26
NAME : O=CTREC
CONTEXT : [ROOT]
CLASS : ORGANIZATION

RECORD # 27
NAME : OU=CORP
CONTEXT : O=EMA.[ROOT]
CLASS : ORGANIZATIONAL_UNIT

RECORD # 28
NAME : OU=PROD

```
    CONTEXT                         :   O=EMA.[ROOT]
    CLASS                           :   ORGANIZATIONAL_UNIT

RECORD # 29
    NAME                            :   OU=LON
    CONTEXT                         :   O=EMA.[ROOT]
    CLASS                           :   ORGANIZATIONAL_UNIT

RECORD # 30
    NAME                            :   OU=PAR
    CONTEXT                         :   O=EMA.[ROOT]
    CLASS                           :   ORGANIZATIONAL_UNIT

RECORD # 31
    NAME                            :   OU=SAO
    CONTEXT                         :   O=EMA.[ROOT]
    CLASS                           :   ORGANIZATIONAL_UNIT

RECORD # 32
    NAME                            :   OU=TOK
    CONTEXT                         :   O=EMA.[ROOT]
    CLASS                           :   ORGANIZATIONAL_UNIT

RECORD # 33
    NAME                            :   OU=SYD
    CONTEXT                         :   O=EMA.[ROOT]
    CLASS                           :   ORGANIZATIONAL_UNIT

RECORD # 34
    NAME                            :   OU=CNI
    CONTEXT                         :   O=CTREC.[ROOT]
    CLASS                           :   ORGANIZATIONAL_UNIT

>>>
>>>  End : 4x NDS Extract
>>>  Time: 11:25am
>>>  Elapsed Time =    0:01:03 (hh:mm:ss) or 63 seconds
```

>>>
>>> TOTAL OBJECTS COPIED TO DATABASE: 34

XCLASS.LOG

>>>

>>> Start: Rename Cross-Class Duplicates

>>> Date: Wednesday, 19 Nov 1997

>>> Time: 12:46pm

>>>

>>>

>>> DATABASE = EMA_TREE2

>>>

========== Renaming Order ==========

 Time: 12:46pm

Duplicate objects will be renamed in the following order:
1. PRINT_SERVER
2. PRINTER
3. USER
4. GROUP
5. PRINT_QUEUE

==========END: Renaming Order ==========
Time: 12:46pm

========== Rename cross class duplicates using DUPDB ==========
Time: 12:46pm

PROCESSING DUPLICATE OBJECT: ACCTG
PROCESSING DUPLICATE OBJECT: ADMIN

```
PROCESSING DUPLICATE OBJECT: CAROLE
PROCESSING DUPLICATE OBJECT: CINDY
PROCESSING DUPLICATE OBJECT: CNI
PROCESSING DUPLICATE OBJECT: EMAILUSERS
PROCESSING DUPLICATE OBJECT: EVERYONE
PROCESSING DUPLICATE OBJECT: GUEST
PROCESSING DUPLICATE OBJECT: JIM
PROCESSING DUPLICATE OBJECT: MIKE_K
PROCESSING DUPLICATE OBJECT: MRKTG
PROCESSING DUPLICATE OBJECT: RON
PROCESSING DUPLICATE OBJECT: SANDY
PROCESSING DUPLICATE OBJECT: WPUSERS

================END: Rename cross class duplicates using DUPDB ================
   Time: 12:47pm

>>>
>>>  End : Rename Cross-Class Duplicates
>>>  Time: 12:47pm
>>>  Elapsed Time =    0:00:12 (hh:mm:ss) or 12 seconds
>>>
```

TOLIVE.LOG

```
>>>

>>> Start: Merge Virtual to Live Summary

>>>  Date: Wednesday, 19 Nov 1997

>>>  Time: 12:45pm

>>>

>>>

>>>  DATABASE = EMA_TREE2

>>>  SAMECONTEXT = Yes

>>>
```

″

========== Merge Virtual to Live using DUPDB ==========
Time: 12:45pm

PROCESSING GROUP ACCTG FROM OU=CORP.O=EMA.[ROOT]
PROCESSING GROUP ACCTG FROM OU=PROD.O=EMA.[ROOT]
PROCESSING GROUP ACCTG FROM OU=LON.O=EMA.[ROOT]
PROCESSING GROUP ACCTG FROM OU=PAR.O=EMA.[ROOT]
PROCESSING GROUP ACCTG FROM OU=SAO.O=EMA.[ROOT]
PROCESSING GROUP ACCTG FROM OU=TOK.O=EMA.[ROOT]
PROCESSING GROUP ACCTG FROM OU=SYD.O=EMA.[ROOT]
PROCESSING USER ADMIN FROM O=EMA.[ROOT]
PROCESSING USER ADMIN FROM OU=PROD.O=EMA.[ROOT]
PROCESSING USER ADMIN FROM OU=LON.O=EMA.[ROOT]
PROCESSING USER ADMIN FROM OU=PAR.O=EMA.[ROOT]
PROCESSING USER ADMIN FROM OU=SAO.O=EMA.[ROOT]
PROCESSING USER ADMIN FROM OU=TOK.O=EMA.[ROOT]
PROCESSING USER ADMIN FROM OU=SYD.O=EMA.[ROOT]
Setting MESSAGESERVER to CN=ECORP411.OU=Corp.O=EMA
Setting SECURITYEQUALS to EVERYONE ID=16777217 3x_Server=TAPE_CD
Setting SECURITYEQUALS to SUPERVISOR ID=1 3x_Server=TAPE_CD
Setting SECURITYEQUALS to CNI ID=520093766 3x_Server=TAPE_CD

PROCESSING USER CINDY FROM OU=CNI.O=CTREC.[ROOT]

PROCESSING GROUP CNI FROM OU=CORP.O=EMA.[ROOT]
MERGING CNI INSTANCE FROM TAPE_CD TO INSTANCE FROM OU=CORP.O=EMA.[ROOT]
Setting GROUPMEMBER to CINDY ID=503316523 3x_Server=TAPE_CD
Setting GROUPMEMBER to SANDY ID=150995037 3x_Server=TAPE_CD
Setting GROUPMEMBER to MIKE_K ID=167772222 3x_Server=TAPE_CD

PROCESSING ORGANIZATIONAL_UNIT CNI FROM O=CTREC.[ROOT]
PROCESSING GROUP EMAILUSERS FROM OU=CORP.O=EMA.[ROOT]
PROCESSING GROUP EMAILUSERS FROM OU=PROD.O=EMA.[ROOT]
PROCESSING GROUP EMAILUSERS FROM OU=LON.O=EMA.[ROOT]
PROCESSING GROUP EMAILUSERS FROM OU=PAR.O=EMA.[ROOT]
PROCESSING GROUP EMAILUSERS FROM OU=SAO.O=EMA.[ROOT]

```
PROCESSING GROUP EMAILUSERS FROM OU=TOK.O=EMA.[ROOT]
PROCESSING GROUP EMAILUSERS FROM OU=SYD.O=EMA.[ROOT]
PROCESSING GROUP EVERYONE FROM OU=CORP.O=EMA.[ROOT]
   MERGING EVERYONE INSTANCE FROM TAPE_CD TO INSTANCE FROM OU=CORP.O=EMA.[ROOT]
   Setting GROUPMEMBER to SUPERVISOR  ID=1  3x_Server=TAPE_CD
   Setting GROUPMEMBER to GUEST  ID=33554433  3x_Server=TAPE_CD
   Setting GROUPMEMBER to CINDY  ID=503316523  3x_Server=TAPE_CD
   Setting GROUPMEMBER to DIMAGE  ID=889192504  3x_Server=TAPE_CD
   Setting GROUPMEMBER to SANDY  ID=150995037  3x_Server=TAPE_CD
   Setting GROUPMEMBER to MIKE_K  ID=167772222  3x_Server=TAPE_CD
   Setting GROUPMEMBER to JOHNC  ID=905969858  3x_Server=TAPE_CD

PROCESSING GROUP EVERYONE FROM OU=PROD.O=EMA.[ROOT]
PROCESSING GROUP EVERYONE FROM OU=LON.O=EMA.[ROOT]
PROCESSING GROUP EVERYONE FROM OU=PAR.O=EMA.[ROOT]
PROCESSING GROUP EVERYONE FROM OU=SAO.O=EMA.[ROOT]
PROCESSING GROUP EVERYONE FROM OU=TOK.O=EMA.[ROOT]
PROCESSING GROUP EVERYONE FROM OU=SYD.O=EMA.[ROOT]
```

XREFOBJS.LOG

```
>>>

>>> Start: XREFOBJS.LOG

>>>  Date: Wednesday, 19 Nov 1997
>>>  Time: 1:15pm
>>>
>>>  NOTE: To verify this log search for 'ERROR' and '*** Note'.
>>>
>>>

Default Administrator = .CN=cindy.OU=cni.O=ctrec

Server/Admin Associations
   ~TAPE_CD ECORP411 .CN=Admin.O=EMA~

============================== Xref User Attributes ==============================
```

```
  0. User Object: .CN=SANDY.OU=Corp.O=EMA
     Adding Attribute: A_SECURITY_EQUALS
        Setting value to: .CN=Everyone.OU=Corp.O=EMA
              *** Note: The value already existed.
        Setting value to: .CN=Cni.OU=Corp.O=EMA
              *** Note: The value already existed.
     Adding Attribute: A_GROUP_MEMBERSHIP
        Setting value to: .CN=Everyone.OU=Corp.O=EMA
              *** Note: The value already existed.
        Setting value to: .CN=Cni.OU=Corp.O=EMA
              *** Note: The value already existed.
     Adding Attribute: A_MAILBOX_LOCATION - There are no values to be added
     Adding Attribute: A_MESSAGE_SERVER
        Setting value to: CN=ECORP411.OU=Corp.O=EMA
              *** Note: The value already existed.
     Adding Attribute: A_PROFILE - There are no values to be added
     Adding Attribute: A_PROFILE_MEMBERSHIP - There are no values to be added

  1. User Object: .CN=JOHNC.OU=Corp.O=EMA
     Adding Attribute: A_SECURITY_EQUALS
        Setting value to: .CN=Everyone.OU=Corp.O=EMA
              *** Note: The value already existed.
     Adding Attribute: A_GROUP_MEMBERSHIP
        Setting value to: .CN=Everyone.OU=Corp.O=EMA
              *** Note: The value already existed.
     Adding Attribute: A_MAILBOX_LOCATION - There are no values to be added
     Adding Attribute: A_MESSAGE_SERVER
        Setting value to: CN=ECORP411.OU=Corp.O=EMA
              *** Note: The value already existed.
     Adding Attribute: A_PROFILE - There are no values to be added
     Adding Attribute: A_PROFILE_MEMBERSHIP - There are no values to be added

============================ END: Xref User Attributes ============================

============================ Xref Live User Attributes ============================

======================== END: Xref Live User Attributes ========================
```

========== Xref Groups (Attribute = A_MEMBER) ==========

1. Group Object = .CN=FAX.OU=Corp.O=EMA
   Adding Attribute: A_MEMBER
      Setting value to: .CN=JOHNC.OU=Corp.O=EMA
         *** Note: The value already existed.

ERROR: Found a reference to object(USER): CN=MIKE_K.OU=Corp.O=EMA in the 4x DB which was not migrated.

========== END: Xref Groups (Attribute = A_MEMBER) ==========

========== Xref Live Groups (Attribute = A_MEMBER) ==========

========== END: Xref Live Groups (Attribute = A_MEMBER) ==========

>>>
>>> End: XREFOBJS.LOG
>>>
>>> Elapsed Time = 0:00:39 (hh:mm:ss) or 39 seconds

XREFPRNT.LOG

>>>

>>> Start: XREFPRNT.LOG

>>> Date: Wednesday, 19 Nov 1997
>>> Time: 1:16pm
>>>
>>> NOTE: To verify this log search for 'ERROR' and '*** Note'.
>>>
>>>

Default Administrator = .CN=cindy.OU=cni.O=ctrec

Server/Admin Associations
  ~TAPE_CD ECORP411 .CN=Admin.O=EMA~

========== Xref Printer Attributes ==========

```
   0. Printer Object: .CN=TAPE_CD_TECHW_000_TECHP.OU=Corp.O=EMA
      Adding Attribute: A_QUEUE
ERROR: Found a reference to object(PRINT_QUEUE): CN=TECHQ.OU=Corp.O=EMA in the 4x DB which was not migrated.
      Adding Attribute: A_NOTIFY
ERROR:   Could not find  from server TAPE_CD in the database
COMMENT: Check if this object still exists in the 3x bindery (PCONSOLE.EXE or SYSCON.EXE)
        Run a 3x and 4x report on the object to see if it exists in the databases

========================= END: Xref Printer Attributes =========================

========================= Xref Live Printer Attributes =========================

======================== END: Xref Live Printer Attributes ======================

========================= Xref Print Server Attributes =========================

======================== END: Xref Print Server Attributes ======================

======================== Xref Live Print Server Attributes ======================

=================== END: Xref Live Print Server Attributes ====================

========================== Xref Print Queue Attributes ==========================

======================== END: Xref Print Queue Attributes ======================

======================== Xref Live Print Queue Attributes ======================

==================== END: Xref Live Print Queue Attributes ====================

>>>
>>>   End: XREFPRNT.LOG
>>>
>>> Elapsed Time =    0:00:05 (hh:mm:ss) or 5 seconds
```

DUMPBIND.LOG

```
>>>

>>> Start: DUMPBIND.LOG

>>>

dbFile = ECORP411/SYS:/RMT/DATA\3XDB.001

*******************************************************************************
*

*

*  START: Gathering information from server TAPE_CD
*
*******************************************************************************
=======================================================
=
=  START : Extracting information about Bindery Object Type GROUP
=
=======================================================
      TAPE_CD.....
      Found Bindery GROUP Object on TAPE_CD.....
         Object Name      = EVERYONE
         Object ID        = 16777217
         Object Type      = 2
         Object Has Props = 1
         Object Flag      = 0
         Object Security  = 00110001
      Scanned 1 properties on object EVERYONE

      Adding GROUP record #1 to 3X database.....

      TAPE_CD.....
      Found Bindery GROUP Object on TAPE_CD.....
         Object Name      = CNI
         Object ID        = 520093766
         Object Type      = 2
         Object Has Props = 1
         Object Flag      = 0
```

```
      Object Security  = 00110001
    Scanned 1 properties on object CNI

    Adding GROUP record #2 to 3X database.....

    TAPE_CD.....
    Found Bindery GROUP Object on TAPE_CD.....
      Object Name      = FAX
      Object ID        = 2298609668
      Object Type      = 2
      Object Has Props = 1
      Object Flag      = 0
      Object Security  = 00110001
    Scanned 1 properties on object FAX

    Adding GROUP record #3 to 3X database.....

=======================================================
  =
  =  END : Extracting information about Bindery Object Type GROUP
  =       Extracted 3 GROUP objects from TAPE_CD
  =
=======================================================

=„=====================================================

=„

=„ START : Extracting information about Bindery Object Type PRINT_QUEUE

=„

=======================================================
    TAPE_CD.....
    Found Bindery PRINT_QUEUE Object on TAPE_CD.....
      Object Name      = TECHQ
      Object ID        = 872415418
      Object Type      = 3
      Object Has Props = 1
```

```
    Object Flag      = 0
    Object Security  = 00110001
  Scanned 5 properties on object TECHQ
    Q_DIRECTORY = SYS:/SYSTEM/340000BA.QDRrops = 1
    Object Flag      = 0
    Object Security  = 00110001
  Scanned 6 properties on object TECHW
    LOGIN_CONTROL =
00000000000000FF0000FF000000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
FFF610A1F0A040500007FFFFFFF0000000000000000000000000000000000000000000000000000000000000000000000000
000000000000000000000000000000000000000000000
    Length of LOGIN_CONTROL = 128
    Found property SAP_NAME . Did not store.....
    ACCOUNT_BALANCE =
0000000080000000CADE9B100000220048DF8ADECCDE3EDF441FCADEAB2221122112DA03A7310D0002329B10B60103870104
A731A841BADE48DF3EDF0D003EDF441FBADEA841A7313EDF441FCCDEA841A7313EDF0D00F8C70B003EDF441FE0DEA731A731
3EDF0D00F8C70B0046329B106401FF90FFFF3EDF48DF20DFFFFF0BDF
    Length of ACCOUNT_BALANCE = 128
    IDENTIFICATION = _CONTROL =
00000000000000FF0000FF000000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
FFF610B0B0D2A2800007FFFFFFF0000000000000000000000000000000000000000000000000000000000000000000000000
000000000000000000000000000000000000000000000
    Length of LOGIN_CONTROL = 128


  TAPE_CD..................................................................
  Found Bindery USER Object on TAPE_CD.....
    Object Name      = SANDY
    Object ID        = 150995037
    Object Type      = 1
    Object Has Props = 1
    Object Flag      = 0
    Object Security  = 00110001
  Scanned 4 properties on object SANDY
    LOGIN_CONTROL =
00000000000000FF0000FF000000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
FFF6007180D260100007FFFFFFF0000000000000000000000000000000000000000000000000000000000000000000000000
000000000000000000000000000000000000000000000
    Length of LOGIN_CONTROL = 128

  Adding USER record #1 to 3X database.....

  TAPE_CD..................................................................
```

```
Found Bindery USER Object on TAPE_CD.....
    Object Name      = MIKE_K
    Object ID        = 167772222
    Object Type      = 1
    Object Has Props = 1
    Object Flag      = 0
    Object Security  = 00110001
Scanned 4 properties on object MIKE_K
    LOGIN_CONTROL =
00000000000000FF0000FF000000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
FFF610B03122D1200007FFFFFFF0000000000000000000000000000000000000000000000000000000000000000000000000000
0000000000000000000000000000000000000000000000
    Length of LOGIN_CONTROL = 128

Adding USER record #2 to 3X database.....

TAPE_CD................................................................
Found Bindery USER Object on TAPE_CD.....
    Object Name      = CINDY
    Object ID        = 503316523
    Object Type      = 1
    Object Has Props = 1
    Object Flag      = 0
    Object Security  = 00110001
Scanned 4 properties on object CINDY
    LOGIN_CONTROL =
00000000000000FF0000FF000000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
FFF610B130B231800007FFFFFFF0000000000000000000000000000000000000000000000000000000000000000000000000000
0000000000000000000000000000000000000000000000
    Length of LOGIN_CONTROL = 128
    MISC_LOGIN_INFO =
61031A12260903FF760D22140C00760D22140A00F253000EF143F1430200B614930374D058FA5A0E59230000760D22140500F
2530000F143F143B21448A4930374D062FA8C03591800004EFAF1430500300000000F143F143F143BB80F14300000000252D000
0000084F5F1431E00002B035F04001100E9128CFBA5014F0A520B
    Length of MISC_LOGIN_INFO = 128

Adding USER record #3 to 3X database.....

TAPE_CD................................................................
Found Bindery USER Object on TAPE_CD.....
    Object Name      = JOHNC
```

Object ID   = 905969858
Object Type   = 1
Object Has Props = 1
Object Flag   = 0
Object Security = 00110001
Scanned 4 properties on object JOHNC
LOGIN_CONTROL =
00000000000000FF0000FF000000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
FFF610B1307280E00007FFFFFFF0000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
0000000000000000000000000000000000000000000000000000000
Length of LOGIN_CONTROL = 128

Adding USER record #4 to 3X database.....

===
=
= END : Extracting information about Bindery Object Type USER
=   Extracted 4 USER objects from TAPE_CD
=
===

Adding FILE_SERVER record for TAPE_CD to 3X database.....

Adding VOLUME record 1 for TAPE_CD to 3X database.....

Adding VOLUME record 2 for TAPE_CD to 3X database.....

****
*
* END: Gathering information from server TAPE_CD
*   Extracted 4 objects
*
****
Total number of objects extracted : 4
>>>
>>>   End: DUMPBIND.LOG
>>>
>>> Elapsed Time = 00:00:14

DUPOBJ.LOG

```
>>>

>>> Start: Duplicate Object Summary(Scanned using DUPDB)

>>>  Date: Wednesday, 19 Nov 1997

>>>  Time: 11:44am

>>>

>>>

>>> _____ Example - Start
 _____

>>>
>>>  NOTE: The sample below illustrates how to fill the checkboxes to designate various methods of handling
>>>       duplicate objects. RMT can read a marked-up file back in and perform the actions. This method is
>>>       meant to be used if a manageable number of duplicate objects is found. For large migrations we
>>>       recomend using the batch handling routines first and rerunning the scan.
>>>
>>>                                          LEAVE BOXES UNCHECKED TO SKIP THE OBJECT
>>>
>>>                                          New Name (max 64 chars) ---------------+
>>>                                        or New Context (max 256 chars) ----------+
>>>                                        or Number of the Instance to Merge to ---+
>>>                                                                                 |
>>>                                          Move to Another Context ----------+    |
>>>                                          Rename ----------------------+    |    |
>>>                                          Merge to another Instance-+   |    |    |
>>>  Object                                     Move to Trash_Can-----+   |    |    |    |
>>>  Instance/Class  Status  Source_Server   Object_Context                v    v    v    v    v
>>>
 _____
 _____

>>>
>>>  SampleDupl
>>>     1 USER         L                 OU=Some Department.O=Some Co
>>>     2 USER         V    TEST         OU=Some Department.O=Some Co            [ ] [x] [ ] [ ] [1
>>>     3 USER         V    TEST_OLD     OU=Some Department.O=Some Co              [x] [ ] [ ] [ ] [
>>>     4 GROUP        V    TEST         OU=Some Department.O=Some Co           [ ] [ ] [x] [ ] [DUP_GRP_SampleDupl
```

```
>>>     5 PRINT_QUEUE   V    TEST          OU=Some Department.O=Some Co            [ ] [ ] [x] [ ] [DUP_P_Q_SampleDupl
>>>     6 PRINT_SERVER  V    TEST          OU=Some Department.O=Some Co            [ ] [ ] [x] [ ] [DUP_P_S_SampleDupl
>>>     7 USER          L                 OU=Another Department.O=Some Co
>>>     8 USER          V    SERVER_TWO    OU=Another Department.O=Some Co         [ ] [ ] [ ] [x] [OU=Yet Another
 Department.O=Some Co
>>>     9 USER          V    SERVER_THREE  OU=Another Branch.O=Some Co            [ ] [ ] [ ] [ ] [
>>>
>>> _____ Example - End
 _____
>>>
>>>
>>>
>>>  DATABASE = EMA_TREE2, CLASS = *, MASK = *
>>>  NOTE:        Under Status,  L = Live Object, V = Virtual Object
>>>
>>>                                          LEAVE BOXES UNCHECKED TO SKIP THE OBJECT
>>>
>>>                                          New Name (max 64 chars) ----------+
>>>                                        or New Context (max 256 chars) ----------+
>>>                                        or Number of the Instance to Merge to ---+
>>>                                                                                 |
>>>                                          Move to Another Context ----------+   |
>>>                                          Rename ------------------------+   |  |
>>>                                          Merge to another Instance-+   |  |  |
>>>  Object                                     Move to Trash_Can-----+   |  |  |  |
>>>  Instance/Class  Status  Source_Server   Object_Context                  v  v  v  v  v
>>>
  1. Acctg
       1 GROUP        L                OU=Corp.O=EMA
       2 GROUP        L                OU=Prod.O=EMA
  2. Admin
       1 USER         L                O=EMA
       2 USER         L                OU=Prod.O=EMA
  3. Carole
       1 USER         L                OU=Corp.O=EMA
       2 USER         L                OU=CNI.O=CTREC
  4. Cindy
       1 USER         L                OU=Corp.O=EMA
```

```
      2 USER        L              OU=CNI.O=CTREC
      3 USER        V   TAPE_CD       OU=Corp.O=EMA                  [ ] [ ] [ ] [ ] [
 5. CNI
      1 GROUP       L              OU=Corp.O=EMA
      2 GROUP       V   TAPE_CD       OU=Corp.O=EMA                  [ ] [ ] [ ] [ ] [
 6. EMAILUSERS
      1 GROUP       L              OU=Corp.O=EMA
      2 GROUP       L              OU=Prod.O=EMA
 7. Everyone
      1 GROUP       L              OU=Corp.O=EMA
      2 GROUP       L              OU=Prod.O=EMA
 8. Guest
      1 USER        L              OU=Corp.O=EMA
      2 USER        L              OU=Prod.O=EMA
 9. Jim
      1 USER        L              OU=Corp.O=EMA
      2 USER        L              OU=CNI.O=CTREC
10. MIKE_K
      1 USER        L              OU=CNI.O=CTREC
      2 USER        V   TAPE_CD       OU=Corp.O=EMA                  [ ] [ ] [ ] [ ] [
11. Mrktg
      1 GROUP       L              OU=Corp.O=EMA
      2 GROUP       L              OU=Prod.O=EMA
12. Ron
      1 USER        L              OU=Corp.O=EMA
      2 USER        L              OU=CNI.O=CTREC
13. SANDY
      1 USER        L              OU=CNI.O=CTREC
      2 USER        V   TAPE_CD       OU=Corp.O=EMA                  [ ] [ ] [ ] [ ] [
14. WPUSERS
      1 GROUP       L              OU=Corp.O=EMA
      2 GROUP       L              OU=Prod.O=EMA
>>>
>>>  End : Duplicate Object Summary
>>>  Time: 11:46am
>>>  Elapsed Time =    0:01:24 (hh:mm:ss) or 84 seconds
>>>
```

Glossary

Account	See Identity (ID)
Authentication	A means of verifying that an object sending messages or requests to NDS is authorized to do so.
Bindery	A network database, in NetWare versions earlier than NetWare 4, that contains definitions for entities such as users, groups, and workgroups. In NetWare 4, the bindery has been replaced by the NetWare Directory database, under NDS.
BINDFIX utility	A utility you can use to repair damaged bindery files. It is intended to correct certain system security problems. You must be a supervisor or have equivalent rights to run this utility.
Cross Class Duplicate	Two objects of the same name and same context but different object type, which was allowed in NetWare 3.x, but is not valid in NDS (and therefore not in NetWare 4.x). One example would be a user, a group and a printer with the name of FAXSERVE in the same context.
Destination server	The intraNetWare server to which you migrate data files, bindery files, and other information from a previous NetWare version or another network operating system when upgrading to intraNetWare.
DynaText	Online viewer that allows you to read intraNetWare online documentation from your Windows workstation.
DYNATEXT.INI	A configuration file that references private collections and points to the *SYSDOCS.CFG* file.
Identity (ID)	The user name of any person that has access to use resources on the server.

License chain	Formed as a result of Additive Licensing, which permits multiple individual licenses to be added together.
MIGPRINT.EXE	A utility used to properly migrate printing from NetWare 2.x or NetWare 3.x servers to intraNetWare.
MIGRATE.EXE	A utility used to migrate selected information from NetWare 2.x or NetWare 3.x servers to intraNetWare.
MIGxxx.RPT	An ASCII text file containing a migration report log file, which is created by the *MIGRATE.EXE* utility.
MONITOR	An NLM that allows you to lock the file server console and to see how efficiently your network is operating.
MPxxx.RPT	An ASCII text file containing a print migration report log file, which is created by the *MIGPRINT.EXE* utility.
NDS	See Novell Directory Services.
NETADMIN utility	A text based system configuration utility used in intraNetWare that provides many system administrations functions, including setting up accounts for new users, modifying settings of existing users, creating and managing groups of users and their access rights, and managing the system accounting.
Novell Directory Services	A database that maintains information about resources on the network.
NetWare Loadable Module (NLM)	A program you can load and unload from file server memory while the server is running. NLMs link disk drives, LAN drivers, name spaces, and other file server management and enhancement utilities to the operating system.

NetWire	Public bulletin board system (BBS) from Novell, which provides access to Novell product information, Novell service information, and time-sensitive technical information for NetWare users. NetWire is accessed through the CompuServe Information Service.
NEW.PWD	An ASCII file that shows passwords sorted by date. If users are migrated from more than one server, the current password is the last one listed on the report.
NLM	See NetWare Loadable Module.
ODI	See Open Data-Link Interface.
Open Data-Link Interface (ODI)	An architecture that allows multiple LAN drivers and protocols to coexist on network systems. ODI supports media- and protocol-independent communications by providing a standard interface that allows transport protocols to share a single network without conflict.
RMT Server	The physical server that is running the REXXWARE Migration Toolkit.
SAP	See Service Advertising Protocol.
Service Advertising Protocol (SAP)	A protocol that provides a way for servers to advertise their services on a intraNetWare internetwork.
Source server	The server from which you migrate data files, bindery files, and other information to an intraNetWare

STREAMS	An NLM that provides a common interface between NetWare and transport protocols that need to deliver data and requests to NetWare for processing. By making the transport protocol transparent to the network operating system, STREAMS allows services to be provided across the network, regardless of the transport protocols used.
SYSCON utility	A system configuration utility used in NetWare 3.12 that provides many system administration functions, including setting up accounts for new users, modifying settings of existing users, creating and managing groups of users and their access rights, and managing the system accounting.
SYSDOCS.CFG	A configuration file that references the location of public collections.
Trustee	A user or group that has been assigned rights to work with a directory, file, or object.
View	An DS Migrate file containing NDS information about a particular tree.
Volume	A physical amount of hard disk storage space, fixed in size. A NetWare volume is the highest level in the NetWare file system (on the same level as a DOS root directory). In NDS, each volume is also a Volume object in the Directory.
Volume Object	A leaf object that represents a physical volume on the network.

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COMPAQ TECHNOTE ORDER FORM

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