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COMPAQ TECHNOTE FOR NETWARE

NETWARE MIGRATION FROM 2.X TO 3.12

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Chapter 1

INTRODUCTION

There are many reasons to upgrade your NetWare 2.x server to NetWare 3.12. NetWare 3.12 is a true 32-bit operating system that uses NetWare Loadable Modules (NLMs) to add functionality, providing a dynamic and modular environment. You can design your system to meet your current needs and easily add services, users, and enhancements as needed. NetWare 3.12 can support a specific number of users for your existing system, while allowing you to purchase upgrades to add more users as needed. You can purchase NetWare 3.12 to support 5, 10, 25, 50, 100, and 250 users. NetWare 3.12 can be installed using SmartStart from Compaq. SmartStart is an intelligent way to configure your Compaq server with NetWare system software and can help you achieve a well-integrated server.

ABOUT THIS COMPAQ TECHNOTE

This TechNote is for system integrators and network administrators with a knowledge of Compaq Server products and NetWare 2.x and 3.12. It is a supplement to the *Compaq Hardware Reference* documentation and the *NetWare 3.12 Installation and Upgrade* documentation, which can be found on *Novell ElectroText*. This Compaq TechNote provides guidelines for:

- Installing NetWare 3.12 using SmartStart
- Migrating data and user information using Across-the-Wire Migration
- Fine tuning memory allocation for NetWare 3.12

The chapters in this Compaq TechNote contain the following information:

- ***Chapter 1 - Introduction*** provides an overview, other resources to use, documentation conventions, and NetWare 3.12 features and requirements, including memory allocation.

- **Chapter 2 - Different Migration Methods** describes the three different methods for upgrading to NetWare 3.12, including the Compaq recommended method.
- **Chapter 3 - How Information is Migrated** describes how files migrate from 2.x to 3.12 using the NetWare Across-the-Wire Migration method.
- **Chapter 4- Installing NetWare 3.12 from SmartStart** describes installation procedures for NetWare 3.12 from the SmartStart CD, creating a *NetWare Migration* diskette, and installing Novell ElectroText.
- **Chapter 5- Across-the-Wire Migration** describes the installation procedures for the Across-the-Wire Migration method.

Appendix A provides an example of a migration report log file. Appendix B provides a glossary of terms used in this TechNote. Appendix C provides information on how to order individual Compaq TechNotes.

OTHER RESOURCES TO USE

Other resources to use for more information are as follows:

- *Performance Management in a NetWare v3.1x Environment TechNote*, P/N 133399-002
- *Novell ElectroText*
- NetWire on CompuServe
- *NetWare Application Notes and Research Reports*
- Hardware Reference documentation

Performance Management in a NetWare v3.1x Environment TechNote provides guidelines for using a variety of network monitoring tools to analyze network server and network communication subsystems and to manage network performance.



Novell ElectroText allows you to read NetWare documentation from your workstation. You can install Novell ElectroText files on a NetWare server or a local hard disk, or access the files directly from the CD-ROM disk. You must set up a Windows workstation to view Novell ElectroText. To install the Novell ElectroText files on a NetWare server involves copying the files from the NetWare Software from Compaq CD-ROM to your server's hard disk. See Chapter 4 of this TechNote for more information on installing Novell ElectroText.

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

- In the United States or Canada: (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.

NetWare Application Notes and *Research Reports* cover technical aspects of NetWare-based system design, implementation, and management.

- June 1993 "NetWare Migration Utilities Part 1: The In-Place Upgrade NLM"
- September 1993 "NetWare Migration Utilities Part 2: The Across-the-Wire Migration Utility"

The *Compaq Hardware Reference* 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.



DOCUMENTATION CONVENTIONS

Table 1-1 lists the conventions this TechNote uses to distinguish elements of text.

Table 0-1
Documentation Conventions

Convention	Use
keys	Keys 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.
<i>filenames, directories, screen selections, variables</i>	These items always appear in italics.
"new terms," "prompts"	The first occurrence of a technical term, prompts, and references to a word rather than a command appears in quotes.
commands, options, programs, utilities	These items always appear in boldface.
user input, screen display	Information you type exactly as it appears and information displayed on the screen appears in a different type face.
! IMPORTANT	Presents clarifying information or specific instructions.
NOTE	Presents commentary, sidelights, or interesting points of information.

Continued

**Table 1-1** Continued

Convention	Use
ENTER, F1-F12	These items are keys on your keyboard, not a sequence of keys to press.
type	When instructed to type information, do so without pressing ENTER .
enter	When instructed to enter information, type the information and press the ENTER key.
Select <i>item</i> → <i>item</i> → <i>item</i>	Items separated by arrows indicate items you select in a sequence.

NETWARE 3.12 FEATURES

NetWare 3.12 provides many performance enhancement features and network environment enhancements that allow for improved network performance and security. These features include:

- High performance
- Security
- Data protection
- Network management and administration tools
- Network applications
- Modular design
- Support for multiple environments

High Performance

NetWare 3.12 takes full advantage of 386 and 486 processors, increasing network capacity and performance. NetWare 3.12 supports up to 250 concurrent users while providing fast network performance. Unlike general-purpose operating systems, the specific design of NetWare 3.12 is to provide the performance necessary for network computing.

Security

NetWare's security features ensure that you control access to network resources and data. These features include login, rights, attribute, and file server security plus Network Core Protocol (NCP) authentication.

Data Protection

NetWare 3.12 data protection includes Hot Fix, disk mirroring, disk duplexing, resource management, and UPS monitoring. These increase network dependability by safeguarding data against failure in critical parts of the network hardware or temporary interruptions in power.

Network Management and Administration Tools

A NetWare Loadable Module (NLM) is a software module that links dynamically to the operating system. NLMs simplify network installation and enable the addition of server-based applications while the server is running. Remote console services enable you to enter any server command from your workstation. The **MONITOR** utility displays resource usage statistics traced by the operating system.

Network Applications

Novell provides third-party developers with Application Programming Interfaces (APIs) and development tools to help them design products to run on a NetWare network. This ensures that you can easily find off-the-shelf applications that meet your needs.



Modular Design

With an open network server platform, you can add services and enhancements and communicate with a variety of file sever and workstation types. While the file server is running, you can also add customized modules or tools.

Support for Multiple Environments

NetWare 3.12 supports multiple environments including Cross Platform Consistency, Open Data-Link Interface (ODI), and Streams.

Cross Platform Consistency allows DOS, UNIX, Macintosh, and OS/2 workstations to connect to the same server and share a consistent set of network resources.

Open Data-Link Interface (ODI) makes NetWare 3.12 an open server platform upon which a Multiple Link Interface Drive (MLID), a unique kind of NLM, is built. These specifications allow multiple protocols such as IPX/SPX, TCP/IP, and AppleTalk filing protocol to share the same driver and network board.

Streams allow multiple protocols to exist in a single file server.

Enhancements

NetWare 3.12 is capable of considerably more capacity than NetWare 2.x. Table 1-2 shows some important changes to NetWare since 2.2.



Table 1-2
NetWare 3.12 Compared to NetWare 2.2

	2.x	3.12
Volumes per server	32	64
Hard disks per volume	1	32
Maximum volume space	255 MB	32 TB
Maximum addressable disk storage	2 GB	32 TB
Maximum file size	255 MB	4 GB
Maximum addressable RAM	12 MB	4 GB
Maximum volume name length	15 characters	15 characters
Maximum directory/file name length	14 characters	12 characters
Name space support	DOS, Macintosh	DOS & Windows, Macintosh, UNIX, FTAM, OS/2
Disk block sizes	4 KB	4 KB, 8 KB, 16 KB, 32 KB, 64 KB



NETWARE 3.12 REQUIREMENTS

To upgrade your NetWare 2.x server to a NetWare 3.12 server using the Across-the-Wire Migration method, you need to have the following:

- The current NetWare 2.x server
- A server with Intel 80386 (or greater) system processor that NetWare 3.12 will run on
- A workstation with at least 640 KB of memory, a high-density drive, and access to 5 megabytes of free disk space on a local or unrelated network drive
- CD-ROM drive and support drives
- The SmartStart CD and the NetWare Software from Compaq CD(s)
- Adequate system memory for a standard NetWare 3.12 installation
- Adequate disk storage on the new NetWare 3.12 server

Use the following Compaq memory formula to estimate the *minimum system memory* requirements for your NetWare 3.12 server based on total NetWare volume space. Table 1-3 explains the variables in the formula and provides the Compaq recommendations.

Minimum Memory
(Megabytes) = $5.0 + (2 \times A) + (8.2 \times V) + (5 \times (F/1,048,576)) + C + O + (P/1,000,000)$

Table 1-3
NetWare Memory Formula Variables

Variable	Definition/Novell Recommendation	Compaq Recommendation
A	Memory needed to load <i>CLIB.NLM</i> or <i>BTRIEVE.NLM</i> . Use 1 if loading any NLM that uses <i>CLIB.NLM</i> or <i>BTRIEVE.NLM</i> . Use 0 if not.	Use 1 for any NLM that uses <i>CLIB.NLM</i> or <i>BTRIEVE.NLM</i> such as <i>PSEVER.NLM</i> ; use 0 if not. (See Note below.)
V	Volume size (in GB) divided by volume block size (in KB).	Volume block size should be 64 KB with block suballocation enabled.
F	Number of files using additional name space entries such as FTAM or MAC.	Do not include the DOS name space in this parameter.
C	Memory used for additional cache. Use a value between 1 and 4 megabytes.	Add 1 + (0.2 x total disk space (in GB)). If using file compression add 2 to this number.
O	Memory requirements for each additional NLM on the server.	Include memory for all NLMs such as device drivers, utilities, and applications.
P	Packet receive buffers.	Calculate 1 buffer per user plus 10 buffers per server NIC. Then multiply that number by the maximum packet receive buffer size.

NOTE: If your server includes a Compaq drive array and you do not use SmartStart to install NetWare 3.12, use *CPQDAOPT.NLM* to ensure an optimized configuration. To use *CPQDAOPT.NLM*, you must also use *CLIB.NLM*; therefore, use a value of 1 for Compaq drive array subsystems, and a value of 0 for non-array subsystems. Refer to the NetWare Programs from Compaq (NPFC) diskette for detailed instructions.



Chapter 2

DIFFERENT MIGRATION METHODS

There are three different migration methods available to upgrade your NetWare 2.x server to NetWare 3.12. The upgrade process is necessary because the 2.x bindery must go through a conversion process to the new 3.12 environment. You cannot simply restore a complete 2.x backup to a 3.12 server or copy all of the 2.x files to the 3.12 server. The bindery, accounting, and security information must go through a translation process into the 3.12 format.

The three different migration methods that NetWare provides are:

- In-Place Upgrade (*2XUPGRDE.NLM*)
- Same Server Migration Utility (*MIGRATE.EXE*)
- Across-the-Wire Migration Utility (*MIGRATE.EXE*)

Because of the increased capacity NetWare 3.12 offers over NetWare 2.x, 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 method. There are other resources available to provide more detail on the Same Server Migration method and the In-Place Upgrade, if that is the upgrade method that you need. See Chapter 1 of this TechNote for more information on other resources available. Figure 2-1 shows the selection process for the appropriate upgrade method.

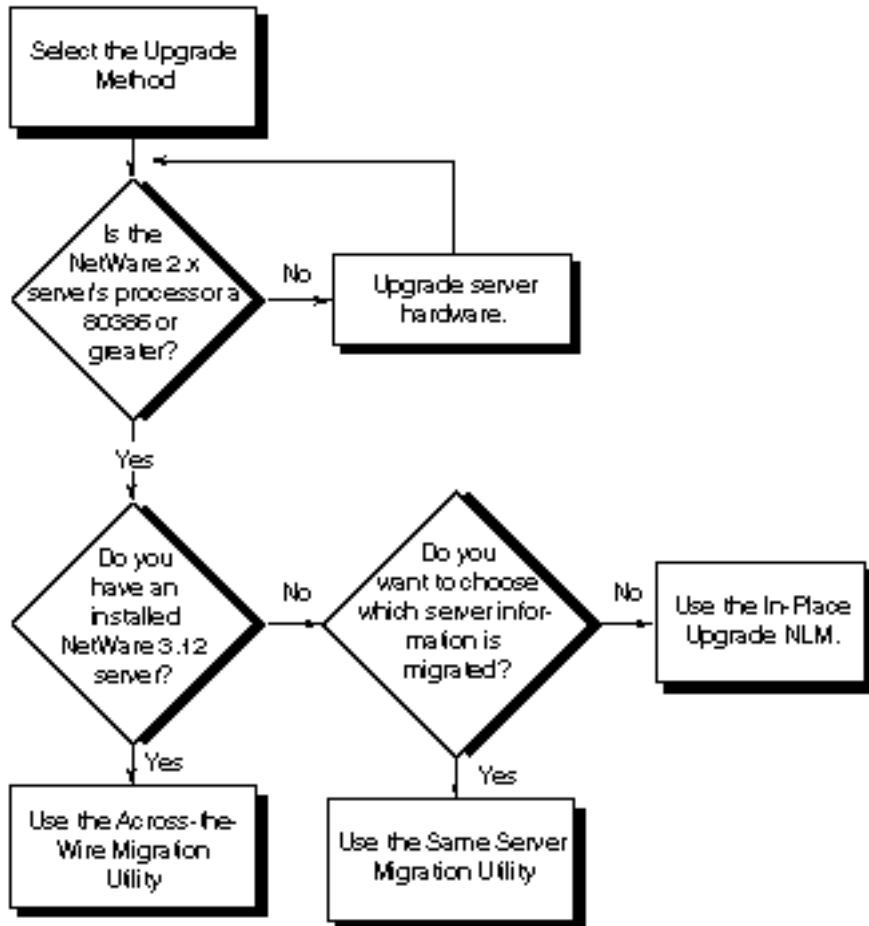


Figure 2-1. Selecting the Appropriate Upgrade Method

IN-PLACE UPGRADE

The In-Place Upgrade method is a server-based approach to upgrade to NetWare 3.12. You can use the In-Place Upgrade if your current 2.x server has at least a 80386 processor and you are not planning to upgrade any hardware during the migration to NetWare 3.12. After booting the NetWare 3.12 install diskette, you must manually load the In-Place NLM (*2XUPGRDE.NLM*) from 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's console as shown in Figure 2-2.

NOTE: *2XUPGRDE.NLM* is available on NetWare and can be found in NOVLIB section 6 in file *2XTO3X.ZIP*. See Chapter 1 for more information on NetWare.

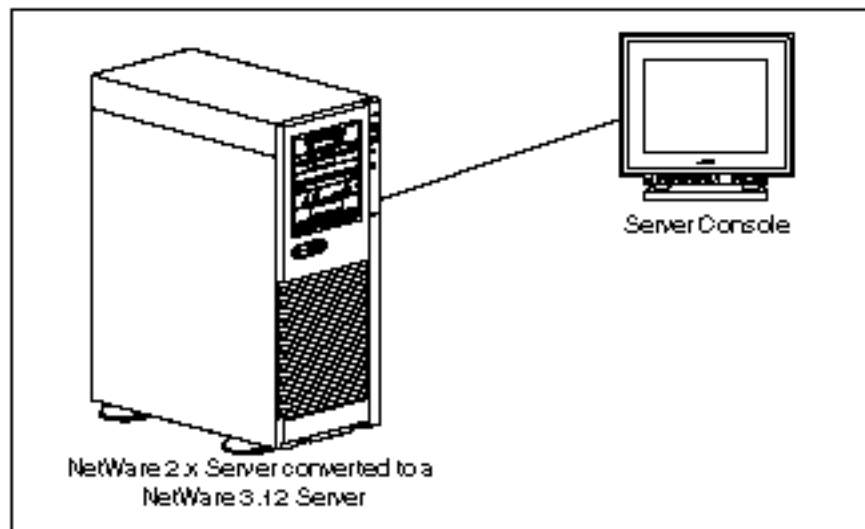


Figure 2-2. In-Place Method

The In-Place method requires the transfer of the entire 2.x server environment. You cannot control which data and bindery information you want to migrate.

Ensuring that you allot sufficient time to perform the In-Place Upgrade is essential. It can be very time consuming, depending on the hardware configuration and amount of data on the 2.x server. The process goes 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 2.x format is converted to the 3.12 format. If a failure should occur during either of these two phases, you must restore the 2.x system from a current and complete backup before starting the upgrade process again.

MIGRATION UPGRADE

The Migration Upgrade method is a client-based approach for performing the upgrade. There are two different versions of the NetWare Migration process:

- Same Server Migration
- Across-the-Wire Migration

If you are currently running a 2.x server with a 286 processor, NetWare 3.12 will not run on your 80286 systems; therefore, the migration method is the only method you can use to upgrade to NetWare 3.12. The Same Server Migration method requires at least a 80386 processor in the server before it can run.



SAME SERVER MIGRATION

The Same Server Migration method relies on the NetWare 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 NetWare migration utility translates and transfers the bindery information. This process requires a 2.x server that is overwritten to 3.12, a client workstation, and NetWare Software from Compaq CD(s) as shown in Figure 2-3.

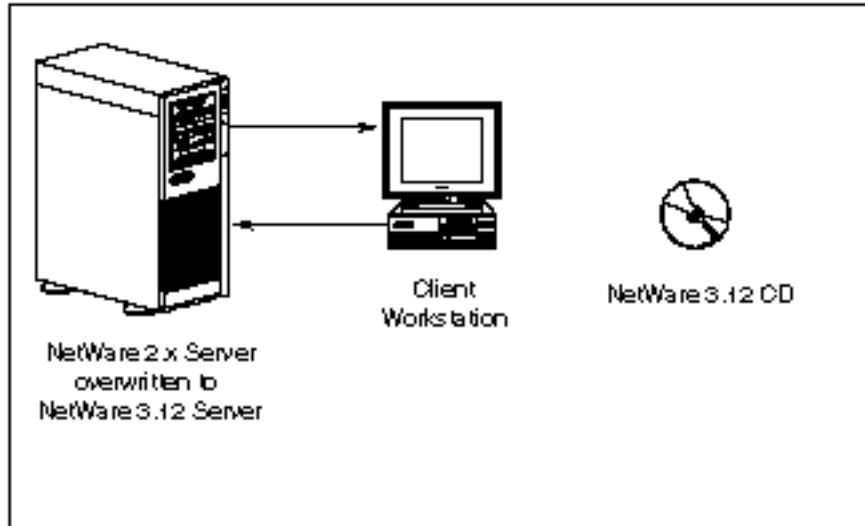


Figure 2-3. Same Server Migration

After you transfer the bindery information to the working directory on a client workstation and you have a backup copy of the data files, NetWare uses the existing 2.x server as the system for the new 3.12 server. After the 3.12 installation process, the client workstation connects to the new server and migrates the bindery information back to the new 3.12 server. The NetWare migration utility performs any necessary translation of the bindery data. 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 2.x server if the upgrade fails for any reason. If the data backups become corrupt or you have some delays in completing the 3.12 installation, for example, you must create the original 2.x system from backups and start the migration process again.

ACROSS-THE-WIRE MIGRATION

The Across-the-Wire Migration is the recommended upgrade method for the following reasons:

- Safest
- Fastest
- Most flexible

Across-the-Wire Migration is the safest of the three methods. If the migration fails for any reason, simply repeat the procedure until it works successfully. The original 2.x server remains intact until you decide to overwrite it.

This migration process is probably the fastest of the three methods. 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 In-Place Upgrade process.

It is also the most flexible migration option. You can consolidate two or more 2.x servers into one 3.12 server. You can choose what data you want to migrate across to the 3.12 server. You can direct the data to a volume or directory on the 3.12 server that differs from the 2.x source server.



It is a client-based approach to upgrade a 2.x server to a *newly installed or existing* 3.12 server. Bindery information and data files pass from one server to another via a DOS client workstation that has access to both servers as a supervisor-equivalent user.

The Across-the-Wire Migration method reads the 2.x bindery information (users, groups, trustee assignments, and accounting information) from the source 2.x server. It stores the 2.x bindery information in an intermediate file on the client workstation running the NetWare migration utility, then reads from this intermediate file and writes to the destination 3.12 server.

The Across-the-Wire Migration method 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 2.x server, a newly installed or existing 3.12 server, and a client workstation that can attach to both servers as shown in Figure 2-4. The client workstation must have adequate memory to login to two servers concurrently and run the Across-the-Wire Migration utility. It must also have enough hard disk space to hold all the bindery information during the migration process.

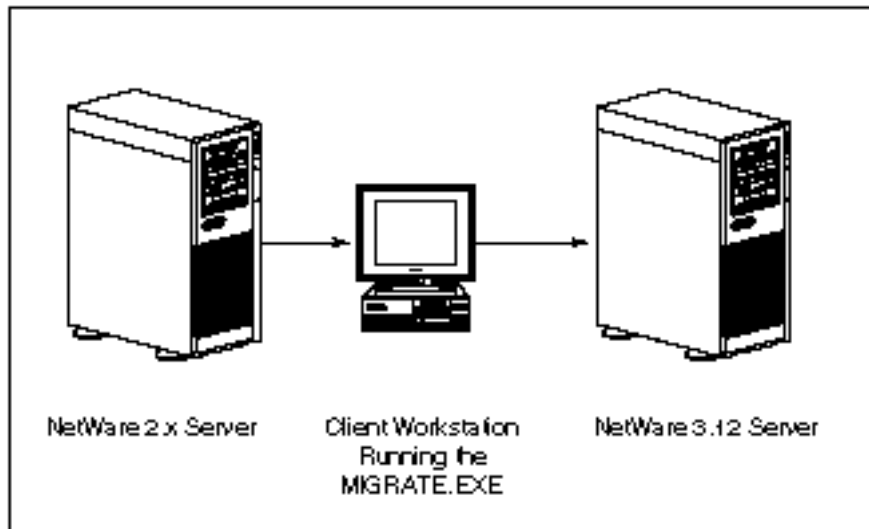


Figure 2-4. Across-the-Wire Migration

You should install the 3.12 server and have it up and running before the migration takes place. This gives time to test and tune the 3.12 server, before making it available. You can validate and modify the connectivity and configurations before you migrate the 2.x server. See *Performance Management in a NetWare v3.1x Environment TechNote* for more information on management and tuning of NetWare 3.1x environments. See Chapter 1 of this TechNote for more information.

You may not be able to simply upgrade your existing hardware to 3.12 requirements. If you are planning to use the existing server hardware, you should use the Same Server Migration method or the In-Place Upgrade method.

You must have the ability to login as a supervisor-equivalent user to both the existing 2.x server and the new 3.12 server at the same time.



SUMMARY

There are three different migration methods to upgrade from a NetWare 2.x server to a NetWare 3.12 server. The method of choice is the Across-the-Wire Migration because it is the safest, fastest, and most flexible method and allows you to consolidate multiple 2.x servers.

To use the In-Place or Same Server method, see Chapter 1 of this TechNote on other resources to use for more information.



Chapter 3

HOW INFORMATION IS MIGRATED

When using the Across-the-Wire Migration method, you can choose to migrate specific information to the destination 3.12 server. Be aware that certain information may or may not overwrite the 3.12 server's configuration. Due to that fact, the following sections go into more detail on how certain information migrates from 2.x to 3.12.

ACCOUNTING INFORMATION

You can select the accounting information you want to migrate to the destination 3.12 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, the Across-the-Wire Migration Utility determines if accounting is active on the source 2.x server. If accounting is not active on the source server, accounting is not active on the destination 3.12 server. If accounting is active on the source server, it is active on the destination server.

Figure 3-1 shows how accounting information migrates from the source server to the destination server.

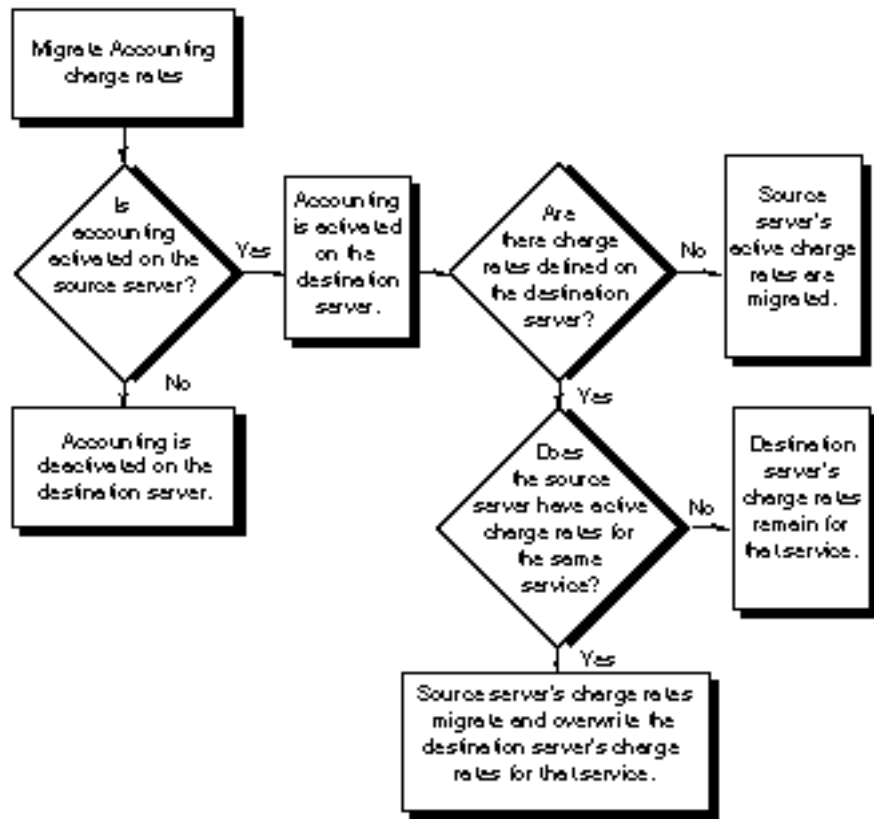


Figure 3-1. How Accounting Information is Migrated

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 (A) - Connect time	Accounting ON Charges for: - Service requests (B) - Disk storage	Accounting ON Charges for: - Service requests (A) - Connect time - Disk storage

ACCOUNT RESTRICTIONS

A user's account locks when you exceed certain limits that are in the account restrictions. When an account locks, you are no longer able to log into the file server. An account locks automatically when an account expires, when an account's balance depletes, and when the limit for incorrect password use is exceeded. The 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 source 2.x server specifies creation of home directories for users, the Across-the-Wire Migration Utility determines if the home directories are available on the destination 3.12 server. If home directories are available, the Across-the-Wire Migration Utility uses the same path as on the source 2.x server. If the home directories are not available, the Across-the-Wire Migration Utility uses the default path, SYS:USERS, to create the home directories for migrated users.

To ensure that the Across-the-Wire Migration Utility uses a specific directory as a home directory, use the **SYSCON** utility to create a user on the destination server. Also specify a directory where the migrated user's home directory should reside. See *Novell ElectroText* under the *Utilities Reference* documentation for more information on using the **SYSCON** utility.

Figure 3-2 shows how account restrictions migrate from 2.x to 3.12.

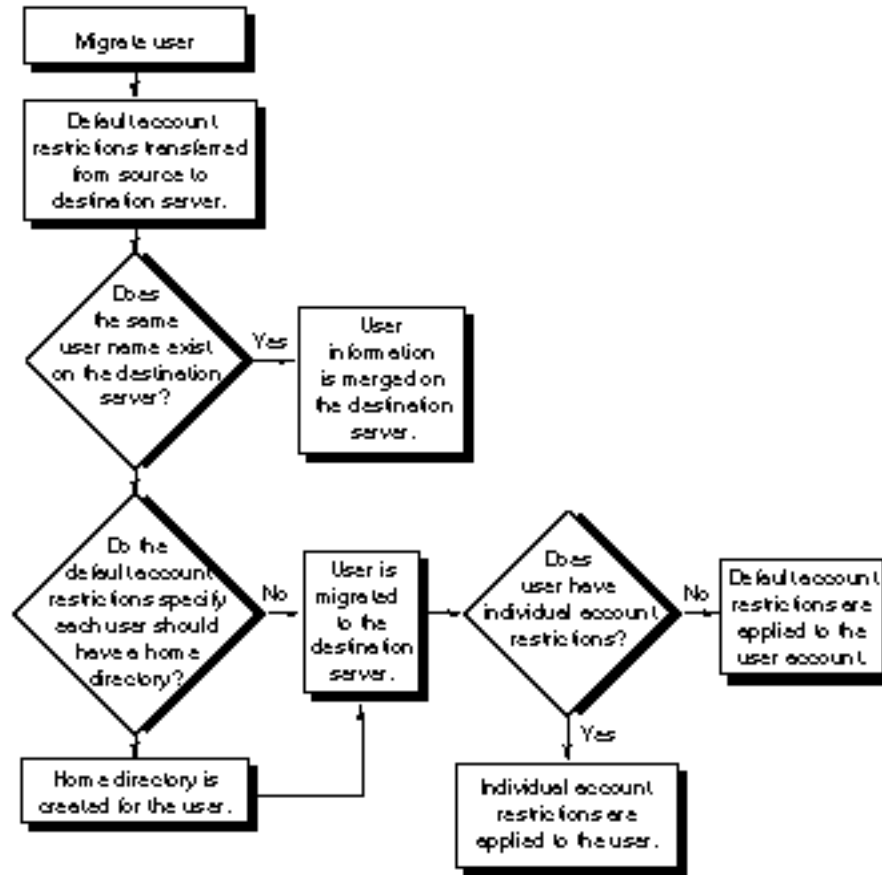


Figure 3-2. How Account Restrictions & User Information Are Migrated

Three types of user information can migrate from 2.x to 3.12. The order in which the Across-the-Wire Migration Utility migrates this information to the destination server is:

- Default account restrictions
- Users
- User restrictions

Before creating users, the Across-the-Wire Migration Utility 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 that the Across-the-Wire Migration Utility creates start out with the same restrictions. The migrated default account restrictions take precedence over those that may have already existed on the destination server. The users apply individual user restrictions and override any values taken from the default account restrictions.

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

The Across-the-Wire Migration Utility copies data files one volume at a time in an "all or none" fashion. 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 Across-the-Wire Migration Utility, you need to specify which volumes on the source server to migrate, as well as a volume. Optionally, you need to specify a directory on the destination server where you want each source volume to be copied. Note that the Across-the-Wire Migration Utility 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 who 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 the Across-the-Wire Migration Utility. When migrating from NetWare 2.x to NetWare 3.12, source server trustee rights translate to their corresponding destination trustee rights as shown in Table 3-2.

Table 3-2
Directory Rights

NetWare 2.x Directory Rights	NetWare 3.12 Directory Rights
Create	Create
Delete	Erase
Modify	Modify
Open	Granted with the Read, Write, and Create rights
Parental	Access Control
Read	Read
Search	File Scan
Write	Write

Migrating trustee assignments works best when done in conjunction with data files, users, and groups. If you select this category without selecting the others, the Across-the-Wire Migration Utility displays a series of error messages while attempting to make trustee assignments. See *Novell ElectroText* under the *NetWare 3.12 System Messages* documentation for more information on error messages.

USERS

Any person that has access to use resources on the file server is a user. Each person needs a user "identity," or username. Once a username exists as an object in the file server bindery, the user can then log in to the file server with that username and access the file server's resources.



Each user account includes the following information:

- Full name
- User print job configurations (*PRINTCON.DAT* from the user's mail directory)
- User login scripts for DOS (from the user's mail directory)
- Whether or not the user has work group manager privileges
- File server console operator status
- Managed users and groups
- Managers
- Security equivalencies

If the default account restrictions on the destination server specify that users should have a home directory, then the Across-the-Wire Migration Utility creates one for each user. Figure 3-2 shows how user information migrates from 2.x to 3.12.

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

Migrating users work best when done in conjunction with groups. If you select this category without selecting groups, the utility displays a series of error messages while attempting to set up security equivalencies. See *Novell ElectroText* under the *NetWare 3.12 System Messages* documentation for more information on error messages.

USER RESTRICTIONS

Each user account can have default restrictions different from the supervisor defaults in the Default Account Restrictions. These include:

- Whether or not the account is disabled
- The account expiration date (if any)
- The limit on the number of grace logins (if any)

- Whether or not to require unique passwords
- The user's account balance
- The lower limit on the account balance
- Station restrictions
- Login time restrictions

NOTE: Disk restrictions are not migrated.

When the Across-the-Wire Migration Utility tries to create a user on the destination server that already exist, the user's individual account restrictions do not alter. Existing user restrictions take precedence over user restrictions coming from the source server.

GROUPS

Group information that migrates from 2.x to 3.12 includes:

- Full name
- Group members
- Whether or not the group has work group manager privileges
- File server console operator status
- Managed users and groups
- Managers

When the Across-the-Wire Migration Utility tries to create a group that already exists on the destination server, the information listed above merges into the existing group definition.

Migration of groups work best when done in conjunction with users. If you select this category without selecting users, the Across-the-Wire Migration Utility displays a series of error messages while attempting to add users to the group. See *Novell ElectroText* under the *NetWare 3.12 System Messages* documentation for more information on error messages.



PRINT QUEUES AND PRINT SERVERS

Print queues, which are basically subdirectories, are created when the print server is installed. The queue stores the job until the print server can deliver it to the printer.

Print servers allow you to share printers on your network. Moreover, the print server allows you to locate printers where you need them in the workplace, not just next to the file server.

The following information migrates from 2.x to 3.12 for each print queue:

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

Print queues and print server definitions migrate from 2.x to 3.12, which include the following about each print server:

- Full 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 *Novell ElectroText* under the *NetWare 3.12 System Messages* documentation for more information on error messages.



SUMMARY

When using the Across-the-Wire Migration Utility, you can migrate specific data and user information to the 3.12 server. You can migrate information from:

- Accounting Information
- Account Restrictions
- Volumes of Data Files
- Trustee Assignments
- Users and Groups
- User Restrictions

See Chapter 5 for procedures on the Across-the-Wire Migration method.



Chapter 4

INSTALLING NETWARE 3.12 FROM SMARTSTART

By using the Compaq SmartStart CD, you can install NetWare 3.12 on your file server. This chapter describes the installation procedures for NetWare 3.12 from Compaq, how to create the NetWare Migration diskette from the NetWare Software from Compaq CD(s), and how to install *Novell ElectroText* from the NetWare Software from Compaq CD(s).

INSTALLING NETWARE 3.12 FROM THE COMPAQ SMARTSTART CD

To install NetWare 3.12 from Compaq using the Compaq SmartStart CD, you need to configure the server, configure NetWare 3.12, and copy the NetWare files. This section describes the installation process for NetWare 3.12 using the Compaq SmartStart CD.

If you do not have a Network Interface Card (NIC) recognized by SmartStart, then you need to use the manual installation process. Refer to SoftPaq *SP0722.EXE* for more installation information.

NOTE: The manual installation process is available on NetWare Programs from Compaq (NPFC) v2.20 or later. NPFC v2.20 is available on the Compaq CompuServe Forum as SoftPaq file *SP0722.EXE*. For more information, contact your Authorized Compaq Reseller or Compaq Service Provider or call the Compaq Customer Support Center at 1-800-345-1518 in North America. In Canada, call 1-800-263-5868. In North America and Canada, you can also call 1-800-OKCOMPAQ, or 1-800-652-6672. Outside the United States and Canada, contact your local Compaq office.

Before You Begin

Before you begin the installation process, make sure you have the following:

- Compaq SmartStart CD
- NetWare Software from Compaq CD(s)
- Software Activation Keys
- Program License Diskette
- One diskette for the NetWare Migration Utility (blank, formatted)

Configuring the Server

Before you can install NetWare 3.12 from Compaq, you need to configure the server hardware. To configure the server hardware using SmartStart, follow these steps:

1. Start the system from the Compaq SmartStart CD.
Insert the SmartStart CD and turn on the server. The server reboots and then displays the Compaq SmartStart screen.
2. Select the appropriate language, country, and keyboard for this installation.
3. Select on the *SmartStart* button from the Compaq SmartStart menu screen.
4. Select *First Time Install* button from the SmartStart from Compaq menu screen.
5. Select *Novell Products* from the Operating System menu screen.
6. Select the NetWare version you wish to install, which is *NetWare 3.12*.
7. Follow the instructions on the screen.

A warning panel appears that states you will lose all data on the hard disk during this procedure. If there is data on the hard disk, ensure that you back up the disk before continuing.



8. If you wish to review or modify your server hardware or install ISA boards, select *Review or Modify Hardware Settings*.

After you review the hardware settings to be correct, proceed to the next step that is configuring NetWare.

When the configuration process is complete, the Main menu appears.

NOTE: The server will restart multiple times and automatically create and configure the system partition. A status screen appears and reports configuration progress.

From the Main menu, you can configure NetWare 3.12 from Compaq.

Configuring NetWare

The configuration of NetWare has five stages:

- User Profile Settings
- Software Setup
- Network Configuration
- Disk Configuration
- Automatic Server Recovery

NOTE: You must first purchase an activation key from an authorized reseller. The program license diskette does not work without the proper activation key.

To configure the NetWare operating system, follow these steps:

1. Select the *User Profile* button from the Main menu.
2. Confirm the date and time settings and return to the Main menu.
3. Select the *Software Setup* button to unlock NetWare.
4. Insert the program license diskette in drive A and provide the activation keys for the software you have purchased.

5. Select *Network Configuration* button from the Main menu and provide the following for the server:
 - File Server Name - Give a unique name that can be any alphanumeric characters from 2 to 47 characters long.
 - IPX Internal Network Number - Enter a unique name that can be any hexadecimal digits from 1 to 8 digits long.

NOTE: SmartStart generates a random IPX Internal Network Number for you, but you can enter your own.
6. Provide the following for each Network Interface Card (NIC) installed in the server:
 - Board Name - Enter a name for each instance of a loaded driver.
 - Network Address - Enter a unique network number for the cable to which this network adapter is attached. This number cannot be the same as the IPX Internal Network Number.
 - Frame Type - Enter the frame type that matches the protocol used on the network.
7. Return to the Main menu when complete.
8. Select *Disk Configuration* icon from the Main menu.
9. Adjust the DOS and NetWare partitions and volumes to suit your installation and return the Main menu when complete.
10. Select *Automatic Server Recovery* icon from the Main menu to configure appropriate actions for your server to take in the event of catastrophic hardware or software failure, excessive temperature, or loss of power and return to the Main menu when complete.

At this time, you can review the SmartStart setting and make any modifications.



Reviewing SmartStart Settings

Since NetWare automatically configures the operating system according to the settings provided in the previous section, it is important to take a few minutes to carefully review these settings before proceeding with the installation. On the basis of your configuration, SmartStart displays a detailed summary.

To review the SmartStart Settings, follow these steps:

1. Select *Review SmartStart Settings* from the Main menu.
2. Carefully review all settings. If necessary, return to "Configuring NetWare" and make corrections using steps provided in that section.
3. Return to the Main menu when complete.

You are now ready to install the NetWare 3.12 files on to the server.

Installing the NetWare 3.12 Files

To install the NetWare files using SmartStart, follow these steps:

1. Select *Software installation* from the Main menu.
2. Insert the program license diskette in drive A and select *OK* to proceed.
3. Replace the Compaq SmartStart CD with the NetWare Software from Compaq CD from the SmartStart package.

NOTE: The server restarts and begins automatic installation of the NetWare 3.12 operating system.

After finishing the automatic installation process, the Compaq NetWare Installation Summary screen is displayed.

4. Complete the additional installation instructions shown in the installation summary.
5. Down the server and exit to the DOS partition.
6. Remove the NetWare from Compaq CD and program license diskette and reboot the server.

This completes the NetWare 3.12 installation using SmartStart.

CREATING A NETWARE MIGRATION DISKETTE FROM THE COMPAQ SMARTSTART CD

To create a NetWare Migration diskette from the NetWare Software from Compaq CD, follow these steps:

1. Down the server and exit to the DOS partition.
2. Insert the NetWare Software from Compaq CD into the CD-ROM drive.
3. Change drives to make F the current drive.
4. Change directories to the F:\312\CLIENT\MIGRATE subdirectory by entering

```
CD \312\CLIENT\MIGRATE
```

5. Insert a formatted diskette into drive A.
6. To create the client diskette with the NetWare Migration files, at the F:\312\CLIENT\MIGRATE subdirectory, enter:

```
MAKEDISK A:
```

You need to use the *NetWare Migration* diskette during the Across-the-Wire Migration. See Chapter 5 of this TechNote for more information.



INSTALLING NOVELL ELECTROTEXT

The *Novell ElectroText* viewer allows you to read NetWare 3.12 manuals from your Windows workstation. You can install the Novell ElectroText files on a NetWare server or a local hard disk. You can also access the files directly from the CD-ROM disk. You must set up a Windows workstation to view Novell ElectroText.

Prerequisites

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

- A minimum of 50 megabytes hard disk space free for program, book, and temporary files. (If you read Novell ElectroText directly from CD-ROM; only 1 megabyte of disk space is necessary.)
- A CD-ROM drive that can read ISO 9660 formatted CD-ROM disks.

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

- Hercules monochrome, EGA, VGA, or Super VGA display card and monitor.
- A minimum of 4 megabytes of RAM.
- Microsoft Windows 3.x.
- A printer for printing sections of the electronic text (Optional).

NOTE: If you install and view Novell ElectroText on a standalone computer or a workstation, all of the prerequisites apply to the same computer. If you install Novell ElectroText on a NetWare server and view Novell ElectroText on a client workstation attached to that server, the first set of requirements applies to the server and the second set to the client workstation.

Installing ElectroText on a NetWare 3.12 Server

This procedure involves copying the Novell ElectroText files from the NetWare Software from Compaq CD(s) to your server's hard disk on the SYS volume in the DOC subdirectory.

After you have installed NetWare 3.12 with SmartStart, completed the installation summary instructions, and rebooted the server, install Novell ElectroText by following these steps:

1. Insert the NetWare Software from Compaq CD into the CD-ROM drive.
2. From the file server console, load *INSTALL.NLM*. At the prompt, enter:
LOAD INSTALL

The *Installation Options* menu appears.

3. Select *Product Options* from the Installation Options menu. The *Currently Installed Products* screen appears.
4. At the *Currently Installed Products* screen, press **INS** to install the Novell ElectroText files. You are prompted for the location of the Novell ElectroText files, enter:

F:\312\INSTALL\IBM_PC\NETWARE\312\ENGLISH\312DOC

If a message appears stating UNABLE TO FIND DIRECTORY F:\DOC, press **F6** and enter:

F:\312

The *Installing ElectroText File* window appears, which shows the progress of the copying procedure. When finished copying, a message appears indicating when all of the files have been copied.

5. Press **ESC** to continue. The *Currently Installed Products* screen displays showing the installed products.
6. At the *Currently Installed Products* screen, press **INS** to install the Electronic Doc Viewer files. You are prompted for the location of the Electronic Doc Viewer files, enter:

F:\312\INSTALL\IBM_PC\NETWARE\312\ENGLISH\VIEWER



If a message appears stating **UNABLE TO FIND DIRECTORY F:VIEWER**, press **F6** and enter:

F:\312

The *Installing Electronic Doc Viewer File* window appears, which shows the progress of the copying procedure. When finished copying, a message appears indicating when all of the files have been copied.

7. Press **ESC** to continue. The *Currently Installed Products* screen displays showing the installed products.
8. Press **ESC** again to return to the Installation Options menu.
9. Press **ESC** once more to exit the *INSTALL.NLM*.

Setting Up a Windows Workstation for Viewing

Novell ElectroText is a Windows application. To set up a Windows workstation, follow these steps:

Login into the server that has ElectroText loaded.

1. Copy the *ET.INI* file from the SYS:\DOC\DATA\CONFIG directory to the WINDOWS directory on the client workstation's hard disk, enter:

```
COPY F:\DOC\DATA\CONFIG\ET.INI C:\WINDOWS
```

2. Edit your copy of the *ET.INI* file in C:\WINDOWS.

Set the paths for ET files. This file, *ET.INI*, tells Novell ElectroText where documents and other essential files are located on your system or network. A copy of the *ET.INI* file must reside in your local Windows directory (usually C:\WINDOWS). You should update the drive letters and/or directory paths listed in this file after copying into your Windows directory so that they point to the correct locations of the specified files.

As an example, change the following:

```
DATA=Z:\DOC\DATA to DATA=F:\DOC\DATA
```

You need to change all instances of Z to F.

For example, if the DOC directory is installed at the root of volume SYS, either map a drive to SYS and specify that drive letter, or specify the F:\DOC directory path.

3. In your *AUTOEXEC.BAT* file, add the following line:

```
set nlanguage=language
```

For language, substitute the name of the language for the book text. For example, *English*, *Deutsch*, *Español*, *Français*, etc. This variable specifies which set of electronic books will be viewed. The name must match one of the subdirectories under the \312\DOC directory.



4. Reboot the client workstation so that the language setting will take effect, or enter the setting on the command line.

NOTE: If you set up Novell ElectroText to run under Windows 3.0 (not 3.1) copy the *DDEML.DLL* file from a Windows 3.1 *WINDOWS\SYSTEM* directory into the directory where the *ET.EXE* file is located, usually *\PUBLIC*.

5. Start Windows.
6. Create a program icon for Novell ElectroText.
Use *ET.EXE* located in *F:\PUBLIC* as your windows program item properties' command line.

You are now ready to use Novell ElectroText.

Starting Novell ElectroText

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

1. Start Windows.
2. Choose the *Novell ElectroText* icon on your Windows desktop. Icons for the available bookshelves appear.
3. Choose the icon for the bookshelf containing the book you want to view. Icons for the books in the bookshelf appear.
4. Choose the icon for the book you want to view. The text and the Table of Contents outline for the book you specified appear.

Novell ElectroText also has online help available, select the *Help* option from the menu bar.



Chapter 5

ACROSS-THE-WIRE MIGRATION

Across-the-Wire Migration allows you to migrate your NetWare v2.1x server to another physical server on the network that has NetWare 3.12 installed.

Selected bindery information migrates to a working directory on a DOS workstation's local hard drive, translates to NetWare 3.12 format, and then migrates from the working directory to the newly installed 3.12 server. The data files migrate directly to the 3.12 server.

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

Across-the-Wire Migration 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. In Across-the-Wire Migration there is no risk of data loss since you are migrating to a previously installed NetWare 3.12 server.

BEFORE YOU BEGIN

Before beginning the migration process, you should go through the 2.x server (source server) directories and clean up any old files or users that you no longer need. You may want to review the current directory structure and revise the organization of the files. When migrating information to a new 3.12 server (destination server), it is advisable to spend some time up front to make configuration changes to either the source server or the destination server. This will ensure that you end up with the new 3.12 server configured as you expect.

If you use accounting, make certain that the source server contains the charge configurations that you desire, because the source server's configuration either overrides or merges with the destination server's configuration.

If you have a satisfactory accounting setup on the destination server (3.12 server), you may want to choose the **custom** option of Across-the-Wire migration and not migrate accounting information. See Chapter 3 of this TechNote for more information on how accounting information migrates from 2.x to 3.12.

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. You will receive a message stating that the utility did not overwrite the file in the migration report log. To ensure that a file migrates properly; 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 utility does not migrate the older program files from the source server if the files have the same name.

When migrating users, be aware that if a user already exists on the destination server with the same user name as someone on the source server, the Across-the-Wire Migration Utility does not migrate the source user. If you have two different users with the same user name, change the name of one of the users before starting the migration process. The Across-the-Wire Migration Utility does not overwrite an existing user on the destination server with the same user on a source server.

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.



Necessary Resources

The following resources are necessary to migrate from NetWare 2.x to NetWare 3.12:

- The SmartStart CD and the NetWare Software from Compaq CD(s)
- A NetWare 2.x source server
- A NetWare 3.12 destination server with a 386 or higher processor

NOTE: If you do not have NetWare 3.12 installed on your destination server, see Chapter 5 of this TechNote for installation procedures.

- A DOS workstation (client workstation) with at least 640 Kbyte of memory and 5 megabytes of free disk space on either its hard drive or another network drive (using *NETx.COM* v3.02 or later)

Prerequisites

To migrate from NetWare 2.x to NetWare 3.12 requires the following prerequisites:

- Rename DOS files and directories that have long names.

Although NetWare 2.15 and earlier lets you give directories and files 14-character names, NetWare 3.12 allows only DOS naming conventions for DOS directories and files. DOS limits filenames to 8 characters with a 3-character extension.

NOTE: Only files that conform to DOS naming conventions (8.3) are migrated.

- Move files that you want to keep out of the SYS:MAIL directory.

The user print job configurations (*PRINTCON.DAT*) and DOS user login scripts migrate from SYS:MAIL to the users new mail directory on the destination server. The Across-the-Wire Migration Utility does not copy other files left in the mail directories to the destination mail directory.



- Run the **BINDFIX** utility on the source server.

BINDFIX can delete mail subdirectories and trustee rights of all users who no longer exist on the source server. See *Novell ElectroText* under the *Utilities Reference* documentation for more information on the **BINDFIX** utility.

- Delete unnecessary files.

Value Added Processes (VAPs) are not compatible with 3.12, so you may want to delete them before you start the migration.

VAPs do not run on NetWare 3.12. NetWare Loadable Modules (NLMs) are available to replace your third-party VAPs. For NLM product information, contact your vendor or call Novell product information at 1-800-NETWARE.

Table 5-1 shows the NetWare 2.x files that are not compatible with NetWare 3.12 files.

**Table 5-1
Incompatible 2.x Files**

NetWare 2.0a	NetWare 2.1x
ENDSPOOL.EXE	LARCHIVE.EXE
Q.EXE	LRESTORE.EXE
QUEUE.EXE	MACBACK.EXE
SPOOL.EXE	NARCHIVE.EXE NRESTORE.EXE

If these files are only in SYS:PUBLIC or SYS:SYSTEM, the migration utility blocks them from being transferred.

- Modify the subdirectory depth to a maximum of 25.



NetWare 3.12 sets the default for subdirectory depth to 25 levels, and the migration utility does not copy subdirectories deeper than 25.

If the source server has subdirectories deeper than 25, modify the subdirectory structure so that the subdirectories are no deeper than 25. You should do this before you start the migration.

- Migrating two or more source servers.

If you merge two or more NetWare 2.x servers onto the same NetWare 3.12 server, you need to plan for extra disk space for volume SYS.

SYS requires at least 6 megabytes of disk space to accommodate additional users and their login scripts.

- Make sure you have a NetWare Migration diskette.

You can create a NetWare Migration diskette from the NetWare Software from Compaq CD(s) or get it from CompuServe. See Chapter 4 of this TechNote for information on creating a NetWare Migration diskette.

MIGRATION PROCEDURE

Across-the-Wire Migration includes two options. You can choose either the standard option or the custom option. The standard option migrates all information, including data files and bindery information. The custom option lets you select specific types of information to migrate. For example, if you don't want to overwrite default account restrictions, you do not have to migrate the account restrictions from the source server.

The following sections describe the instructions for using both options.

Using the Standard Option

This option migrates all information, including data files and bindery information, from a NetWare 2.x server, across the network, to a NetWare 3.12 server.

Before starting the migration utility you must copy the *NetWare Migration* diskette to the hard drive on your DOS workstation. Use the following instructions to start the migration utility:

1. From your DOS workstation, log in to your NetWare 2.x source server as a user with supervisory privileges and attach to your NetWare 3.12 destination server. Make sure you are the only user logged into the network.
2. Create a directory called MIGRATE on your DOS workstation's hard drive.
3. Insert the *NetWare Migration* diskette in drive A and type:
copy a: *.* c:\migrate
Press **ENTER**.
4. Change to the migrate directory and type:
MIGRATE
Press **ENTER**.
5. From the *Select a migration option* menu, highlight *Standard migration*. and press **ENTER**.
6. From the *Select the source LAN type* menu, highlight *NetWare 2.x* as the source LAN type and press **ENTER**.
7. From the *Select the destination LAN type* menu, highlight *NetWare v3.x* as the destination LAN type and press **ENTER**.
8. Under Step 1, press the Down Arrow key to accept the default working directory, or press **ENTER** to specify another working directory.

1. Configure the migration utility.

Working directory: C:\MIGRATE

The working directory is where the bindery information and migration reports are stored. Data files are not stored here. You need 5 megabytes of free disk space in this directory.



- Under Step 2, press the Down Arrow key to accept the default source server, or press **ENTER** to display a list of source servers.

2. Define the NetWare source server.

Server:

Choose the source server you want to migrate from. If the NetWare source server you want to select is not shown, press **INS** to see a list of available servers you can log in to. Press **ENTER** to accept the source server.

- Under Step 2, press **ENTER** to display a list of volumes on the source server you want to migrate files and trustee assignments from.

2. Define the NetWare source server (v2.x-v3.x).

Server:

Source volumes to migrate:

Mark the volumes using **F5** and then press **ENTER**. Select source volumes to migrate only if you are migrating information that is contained on those volumes. Press **ESC** to continue.

NOTE: The standard option migrates "ALL" categories.

- Under Step 3 *Define the NetWare Destination Server*, press **ENTER** to display a list of servers on the network.

3. Define the NetWare destination server (v3.x-v4.x)

Server:

Choose the NetWare 3.12 destination server that you want to migrate the source server to. If the NetWare destination server you want to select is not shown, press **INS** to see a list of available servers you can log in to. Press **ENTER** to accept the destination server.

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

3. Define the NetWare destination server (v3.x-v4.x)

Server:

Volume destinations:

Select a source volume and press **ENTER** again to specify the destination volume and directory of your choice on the NetWare 3.12 destination server. To browse the existing Directory structure on the destination server, press **INS**. Press **ESC** to continue.

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.

13. Under Step 3, press **ENTER** to choose a password option.

3. Define the NetWare destination server (v3.x-v4.x)

Server:

Volume destinations:

Passwords:



There are two options for assigning passwords. Table 5-2 describes the two options. Highlight the password option you want and press **ENTER**.

Table 5-2
Assigning Password Options

Password Option	Description
Assign Random Passwords (Default)	<p>A password for each user name that has a password on the source server is generated randomly and stored in a file (NEW.PWD) in SYS:SYSTEM on the 3.12 destination server.</p> <p>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.</p> <p>Only users with rights to SYS:SYSTEM have access to this file. Users cannot log in until they are given passwords.</p>
Assign No Passwords	<p>Users who had a user name on the 2.x server can log in using their previous user name. They are not prompted for a password.</p> <p>Users have the option to create their passwords if no passwords were issued upon migration.</p> <p>Note: If user account restrictions require users to have a password, they are prompted to type a new password, which the system verifies.</p>



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

```
Select a migration action
      Start migration
      Return to configuration
      View migration report
      Exit (return to DOS)
```

Highlight *Start migration*.

The bindery information is copied to the working directory on your DOS workstation and translated into the 3.12 format; it is then copied to the NetWare 3.12 server. The data files are migrated directly to the destination 3.12 server.

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

```
A migration error has occurred and is displayed in the migration log
above. Do you want to continue with the migration?
(Y=Yes/N=No/I=Ignore Error)
```



Table 5-3 describes what happens if you select Y, N, or I.

Table 5-3
Selection Definitions

If you select	Then
Yes	The migration continues. The error is written to the report file, and you are prompted again the next time an error occurs.
No	The migration stops. The error is written to the report file. You receive this message: <i>Migration from the source server to the destination server is complete. Press ENTER to continue.</i>
Ignore	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 report file.

The migration utility creates a migration report log file named "MIGxxx.RPT" (where xxx is the number of the report generated) and is written to the C:\MIGRATE directory on the DOS workstation. See Appendix A of 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, highlight *Exit (return to DOS)* from the *Select a migration action* menu. Then highlight *Yes* from the *Exit?* menu to return to DOS.

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.

To view the migration reports, follow these steps:

1. Highlight *View Migration Reports* from the *Select a migration action* menu, and 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.

See Appendix A of this TechNote for an example of a migration report log file. Proceed to the "After the Migration" section later in this chapter.



Using the Custom Option

This option lets you select specific information from the bindery and data files so you can upgrade a server or several servers (one at a time) and create a customized destination server.

Before starting the migration utility you must copy the *NetWare Migration* diskette to the hard drive on your DOS workstation. Use the following instructions to start the migration utility:

1. From your DOS workstation, log in to your NetWare 2.x source server as a user with supervisory privileges and attach to your NetWare 3.12 destination server. Make sure you are the only user logged into the network.
2. Create a directory called MIGRATE on your DOS workstation's hard drive.
3. Insert the *NetWare Migration* diskette in drive A and type:
copy a: *.* c:\migrate
Press **ENTER**.
4. Change to the migrate directory and type:
MIGRATE
Press **ENTER**.
5. From the *Select a migration option* menu, highlight *Custom Migration* and press **ENTER**.
6. From the *Select the type of migration option* menu, highlight *Across-the-Wire migration* and press **ENTER**.
7. From the *Select the source LAN type* menu, highlight *NetWare 2.x* as the LAN type and press **ENTER**.
8. From the *Select the destination LAN type* menu, highlight *NetWare v3.x* as the destination LAN type and press **ENTER**.



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

1. Configure the migration utility.

Working directory: C:\MIGRATE

The working directory is where the bindery information and migration reports are store. Data files are not stored here. You need 5 megabytes of free disk space in this directory.

- Under Step 1, press **ENTER** to select an error/warning action. Your choice of options are shown in Table 5-4.

1. Configure the migration utility.

Working directory: C:\MIGRATE
Error/warning action:

Table 5-4
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.



11. Under Step 2, press the Down Arrow key to accept the default source server, or press **ENTER** to display a list of source servers.

2. Define the NetWare source server.

Server:

Choose the source server you want to migrate from. If the NetWare source server you want to select is not shown, press **INS** to see a list of available servers you can log in to. Press **ENTER** to accept the source server.

12. Under Step 2, press **ENTER** to display categories of information you want to migrate.

2. Define the NetWare source server.

Server:

Information to migrate:

Using **F5**, mark the information you want to migrate. Mark as many categories as necessary. Press **ESC** to continue.



Table 5-5 describes the information that can be migrated:

**Table 5-5
Information To Be Migrated**

Category to be Migrated	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 3.12 attributes.
Trustee Assignments	Migrates rights assigned to users and groups for directories and files to corresponding 3.12 rights.
Users	Migrates users and user login scripts. (<i>LOGIN.BAK</i> is not migrated). Also migrates user print job configurations (<i>PRINTCON.DAT</i>).
User Restrictions	<p>Migrates account restrictions, station restrictions, and time restrictions. If a user exists on the destination server, his or her restrictions are not overwritten.</p> <p>If you select this category, you must also select "Users."</p> <p>If a user with a corresponding set of categories does not exist on the destination server, then 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.</p>

Continued

**Table 5-5** *Continued*

Category to be Migrated	Description
User Restrictions	Volume and disk restrictions for users do not get migrated because of differences in NetWare 2.x and 3.12. In 2.x, the restrictions were server-wide, whereas in 3.12 the restrictions are volume-specific.
Groups	<p>Migrates the Group's members and assigned group trustee rights for directories and files. Groups that existed on the source server remain intact.</p> <p>If multiple source servers are migrated, then groups from the servers are merged on the destination servers.</p>
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	<p>Migrates the accounting charge method chosen to charge for services (blocks read, blocks written, connect time, disk storage, service requests).</p> <p>Charge rates that exist on the source server are left intact.</p>
Print Queues and Print Servers	Migrates print queues, print queue operators and users, print queue servers, print queue status, print servers, print server operators and users, and print server control files.

13. Under Step 2, press **ENTER** to display a list of volumes on the source server you want to migrate data from.

2. Define the NetWare source server.

Server:
Information to migrate:
Source volumes to migrate:

Mark the volumes using **F5** and then press **ENTER**. Select source volumes to migrate only if you are migrating data files or trustee assignments on those volumes. Press **ESC** to continue.

If you are only migrating one or more of the following categories, you do not need to select a source volume:

- Accounting Information
- Default Account Balance/Restrictions
- Groups
- Print Queues
- User Restrictions
- Users

You must select a source volume to migrate if you select any of the following categories to migrate:

- All Information
- Data Files
- Trustee Assignments

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

3. Define the NetWare destination server (v3.x-v4.x).

Server:



Choose the NetWare 3.12 destination server that you want to migrate the source server to. If the destination server you want to select is not shown, press **INS** to see a list of available servers that you can log in to. Press **ENTER** to accept the destination server.

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

3. Define the NetWare destination server (v3.x-v4.x).

Server:

Volume destinations:

Select a source volume and press **ENTER** again to specify the destination volume and directory of your choice on the NetWare 3.12 destination server. To browse the existing directory structure on the destination server, press **INS**. Press **ESC** to continue.

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.

16. Under Step 3, press **ENTER** to choose a password option.

3. Define the NetWare destination server (v3.x-v4.x).

Server:

Volume destinations:

Passwords:



There are two options for assigning passwords. Table 5-6 has a description of each option. Highlight the password option you want and press **ENTER**.

Table 5-6
Assigning Password Options

Password Option	Description
Assign Random Passwords (Default)	<p>A password for each user name that has a password on the source server is generated randomly and stored in a file (<i>NEW.PWD</i>) in SYS:SYSTEM on the 3.12 destination server.</p> <p>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.</p> <p>Only users with rights to SYS:SYSTEM have access to this file. Users cannot log in until they are given passwords.</p>
Assign No Passwords	<p>Users who had a user name on the 2.x server can log in using their previous user name. They are not prompted for a password.</p> <p>Users have the option to create their passwords if no passwords were issued upon migration.</p> <p>NOTE: If user account restrictions require users to have a password, they are prompted to type a new password, which the system verifies.</p>



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

Highlight *Start migration* from the *Select a migration action* menu to start the migration process.

Select a migration action:

Start migration
Return to configuration
View migration reports
Exit (return to DOS)

The bindery information is copied to the working directory on your DOS workstation and translated into the 3.12 format; it is then copied to the NetWare 3.12 server. The data files are migrated directly to the destination 3.12 server.

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

A migration error has occurred and is displayed in the migration log above. Do you want to continue with the migration?
(Y=Yes/N=No/I=Ignore Error):



Table 5-7 describes what happens if you select Y, N, or I.

**Table 5-7
Selection Definitions**

If you select	Then
Yes	The migration continues. The error is written to the report file, and you are prompted again the next time an error occurs.
No	The migration stops. The error is written to the report file. You receive this message: <i>Migration from the source server to the destination server is complete. Press <Enter> to continue.</i>
Ignore	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 report file.

The migration utility creates a migration report log file named "MIGxxx.RPT" (where xxx is the number of the report generated) and is written to the C:\MIGRATE directory on the DOS workstation. See Appendix A of 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, highlight *Exit (return to DOS)* from the *Select a migration action* menu. Then highlight *Yes* from the *Exit?* menu to return to DOS>.



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.

To view the migration reports, follow these steps:

1. Highlight *View migration reports* from the *Select a Migration Action* menu, and 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. Then highlight *Yes* from the *Exit?* menu to return to DOS.

See Appendix A of this TechNote for an example of a migration report log file.

AFTER THE MIGRATION

After the migration is complete, check the NetWare 3.12 server and do the following:

- Update references to the NetWare 2.x server in user login scripts.
Although user login scripts are migrated, they are not modified, and server names and directory paths are not 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 may want to print the *NEW.PWD* file located in *SYS:SYSTEM* on the 3.12 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.

- 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 may have to reinstall them to work properly under NetWare 3.12. 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 may 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 *DSPACE.EXE* (located in *SYS:PUBLIC*) to restrict the application's disk space in the application's directory on the destination server.
 - Make the directory a fake root with *MAP* (see *Novell ElectroText* under *NetWare 3.12 Concepts* documentation).
- Examine the files in merged directories and reorganize them if necessary. Any directories that were merged may contain unrelated files.



Appendix A

EXAMPLE OF MIGRATION SUMMARY LOG FILE

The migration utility creates a migration report log file named "MIGxxx.RPT" (where xxx is the number of the report generated) and is written to the C:\MIGRATE directory on the DOS workstation. NetWare updates the migration report 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. This appendix contains an example of the *MIG011.RPT*.

MIG011.RPT

NetWare v2.2 Server

NetWare Migration Utility v4.00b, Bindery Import Phase

Migration summary :

Source NetWare server : SIG22, Dedicated NetWare V2.2(100) Rev. A (02/11/91)

Report file name : MIG011.RPT

Import phase started : 2-08-94 2:54:15pm

Information will be migrated from the following volumes :

SYS:

VOL1:

The following will be read from the source NetWare server:

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



- * Groups
- * Print queues and print servers

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

- * Data files

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

Reading trustee assignments from the source server.

SYS:SYSTEM\00230115

Trustee : PRINTS-SIG22 (print server), [RWCEMF]

SYS:SYSTEM\0024011D

Trustee : PS-SIG22-1 (print server), [RWCEMF]

SYS:MAIL

Trustee : EVERYONE (group), [C]

SYS:MAIL\20007

Trustee : GUEST (user), [RWCEMF]

SYS:MAIL\D001D

Trustee : USER1 (user), [RWCEMF]

SYS:MAIL\E0045

Trustee : USER2 (user), [RWCEMF]

SYS:MAIL\F004D

Trustee : USER3 (user), [RWCEMF]

SYS:MAIL\100055

Trustee : USER4 (user), [RWCEMF]

SYS:MAIL\11005D

Trustee : USER5 (user), [RWCEMF]

SYS:MAIL\250123

Trustee : COMPAQ1 (user), [RWCEMF]

SYS:MAIL\26012D

Trustee : COMPAQ2 (user), [RWCEMF]

SYS:MAIL\270137

Trustee : COMPAQ3 (user), [RWCEMF]

SYS:MAIL\280141

Trustee : COMPAQ4 (user), [RWCEMF]

SYS:MAIL\29014B

Trustee : COMPAQ5 (user), [RWCEMF]

SYS:PUBLIC

Trustee : EVERYONE (group), [R F]

VOL1:USERS\USER1

Trustee : USER1 (user), [RWCEMFA]



VOL1:USERS\USER2
Trustee : USER2 (user), [RWCEMFA]
VOL1:USERS\USER3
Trustee : USER3 (user), [RWCEMFA]
VOL1:USERS\USER4
Trustee : USER4 (user), [RWCEMFA]
VOL1:USERS\USER5
Trustee : USER5 (user), [RWCEMFA]
VOL1:USERS\COMPAQ1
Trustee : COMPAQ1 (user), [RWCEMFA]
VOL1:USERS\COMPAQ2
Trustee : COMPAQ2 (user), [RWCEMFA]
VOL1:USERS\COMPAQ3
Trustee : COMPAQ3 (user), [RWCEMFA]
VOL1:USERS\COMPAQ4
Trustee : COMPAQ4 (user), [RWCEMFA]
VOL1:USERS\COMPAQ5
Trustee : COMPAQ5 (user), [RWCEMFA]
Reading accounting charge rates from the source server.
Accounting activated : Yes
Accounting charge rate : Blocks read
Reading default account balance and account restrictions from the source server.
Account expires : No
Limit connections : No
Create home directory : No
Require a password : No
Account balance : 0
Allow unlimited credit : Yes
Time restrictions apply : Yes
Detect intruders : Yes
Incorrect login attempts : 3
Bad login count retention time : 0 days, 0 hours, 30 minutes
Lock account after detection : Yes
Length of account lockout : 0 days, 0 hours, 15 minutes
Reading users from the source server.
SUPERVISOR
Security equivalent to : EVERYONE (group)



Mail directory : SYS:MAIL1
Console operator : Yes
Workgroup manager : No
Account uses a password : No
Account balance : 0
Allow unlimited credit : No
Credit low limit : 0
Account disabled : No
Account expires : No
Limit connections : No
Allow password changes : Yes
Require a password : No
Time restrictions apply : No

GUEST

Security equivalent to : EVERYONE (group)
Mail directory : SYS:MAIL\20007
Console operator : Yes
Workgroup manager : Yes
Account uses a password : No
Account balance : 0
Allow unlimited credit : No
Credit low limit : 0
Account disabled : No
Account expires : No
Limit connections : No
Allow password changes : Yes
Require a password : No
Time restrictions apply : No

USER1

Full name : user 1
Security equivalent to : EVERYONE (group)
Security equivalent to : SUPERVISOR (user)
Mail directory : SYS:MAIL\D001D
Associated file : SYS:MAIL\D001D\LOGIN
Console operator : Yes
Workgroup manager : Yes
Account uses a password : Yes
Account balance : 0



Allow unlimited credit : No
Credit low limit : 0
Account disabled : No
Account expires : No
Limit connections : No
Allow password changes : Yes
Require a password : No
Time restrictions apply : No

USER2

Full name : user 2
Security equivalent to : EVERYONE (group)
Security equivalent to : SUPERVISOR (user)
Mail directory : SYS:MAIL\E0045
Console operator : Yes
Workgroup manager : Yes
Account uses a password : Yes
Account balance : 0
Allow unlimited credit : No
Credit low limit : 0
Account disabled : No
Account expires : No
Limit connections : No
Allow password changes : Yes
Require a password : No
Time restrictions apply : No

USER3

Full name : user 3
Security equivalent to : EVERYONE (group)
Security equivalent to : SUPERVISOR (user)
Mail directory : SYS:MAIL\F004D
Console operator : Yes
Workgroup manager : Yes
Account uses a password : Yes
Account balance : 0
Allow unlimited credit : No
Credit low limit : 0
Account disabled : No
Account expires : No



Limit connections : No
Allow password changes : Yes
Require a password : No
Time restrictions apply : No

USER4

Full name : user 4
Security equivalent to : EVERYONE (group)
Security equivalent to : SUPERVISOR (user)
Mail directory : SYS:MAIL\100055
Console operator : Yes
Workgroup manager : Yes
Account uses a password : Yes
Account balance : 0
Allow unlimited credit : No
Credit low limit : 0
Account disabled : No
Account expires : No
Limit connections : No
Allow password changes : Yes
Require a password : No
Time restrictions apply : No

USER5

Full name : user 5
Security equivalent to : EVERYONE (group)
Security equivalent to : SUPERVISOR (user)
Mail directory : SYS:MAIL\11005D
Console operator : Yes
Workgroup manager : Yes
Account uses a password : Yes
Account balance : 0
Allow unlimited credit : No
Credit low limit : 0
Account disabled : No
Account expires : No
Limit connections : No
Allow password changes : Yes
Require a password : No
Time restrictions apply : No



COMPAQ1

Security equivalent to : EVERYONE (group)
Mail directory : SYS:MAIL\250123
Console operator : No
Workgroup manager : No
Account uses a password : No
Account balance : 0
Allow unlimited credit : No
Credit low limit : 0
Account disabled : No
Account expires : Yes
Date account expires : 3-01-94
Limit connections : Yes
Concurrent connections : 5
Allow password changes : Yes
Require a password : Yes
Password minimum length : 3
Force password changes : Yes
Expiration interval : 40
Limit grace logins : Yes
Grace logins allowed : 6
Date password expires : 1-01-85
Require unique passwords : Yes
Time restrictions apply : Yes

COMPAQ2

Security equivalent to : EVERYONE (group)
Mail directory : SYS:MAIL\26012D
Console operator : No
Workgroup manager : No
Account uses a password : No
Account balance : 0
Allow unlimited credit : No
Credit low limit : 0
Account disabled : No
Account expires : Yes
Date account expires : 3-01-94
Limit connections : Yes
Concurrent connections : 5



Allow password changes : Yes
Require a password : Yes
Password minimum length : 3
Force password changes : Yes
Expiration interval : 40
Limit grace logins : Yes
Grace logins allowed : 6
Date password expires : 1-01-85
Require unique passwords : Yes
Time restrictions apply : Yes

COMPAQ3

Security equivalent to : EVERYONE (group)
Mail directory : SYS:MAIL\270137
Console operator : No
Workgroup manager : No
Account uses a password : No
Account balance : 0
Allow unlimited credit : No
Credit low limit : 0
Account disabled : No
Account expires : Yes
Date account expires : 3-01-94
Limit connections : Yes
Concurrent connections : 5
Allow password changes : Yes
Require a password : Yes
Password minimum length : 3
Force password changes : Yes
Expiration interval : 40
Limit grace logins : Yes
Grace logins allowed : 6
Date password expires : 1-01-85
Require unique passwords : Yes
Time restrictions apply : Yes

COMPAQ4

Security equivalent to : EVERYONE (group)
Mail directory : SYS:MAIL\280141
Console operator : No



Workgroup manager : No
Account uses a password : No
Account balance : 0
Allow unlimited credit : No
Credit low limit : 0
Account disabled : No
Account expires : Yes
Date account expires : 3-01-94
Limit connections : Yes
Concurrent connections : 5
Allow password changes : Yes
Require a password : Yes
Password minimum length : 3
Force password changes : Yes
Expiration interval : 40
Limit grace logins : Yes
Grace logins allowed : 6
Date password expires : 1-01-85
Require unique passwords : Yes
Time restrictions apply : Yes

COMPAQ5

Security equivalent to : EVERYONE (group)
Mail directory : SYS:MAIL\29014B
Console operator : No
Workgroup manager : No
Account uses a password : No
Account balance : 0
Allow unlimited credit : No
Credit low limit : 0
Account disabled : No
Account expires : Yes
Date account expires : 3-01-94
Limit connections : Yes
Concurrent connections : 5
Allow password changes : Yes
Require a password : Yes
Password minimum length : 3
Force password changes : Yes



Expiration interval : 40
Limit grace logins : Yes
Grace logins allowed : 6
Date password expires : 1-01-85
Require unique passwords : Yes
Time restrictions apply : Yes

Reading groups from the source server.

EVERYONE

Managed by : GUEST (user)
Managed by : USER1 (user)
Managed by : USER10 (user)
Managed by : USER2 (user)
Managed by : USER3 (user)
Managed by : USER4 (user)
Managed by : USER5 (user)
Group member : SUPERVISOR
Group member : GUEST
Group member : USER1
Group member : USER2
Group member : USER3
Group member : USER4
Group member : USER5
Group member : COMPAQ1
Group member : COMPAQ2
Group member : COMPAQ3
Group member : COMPAQ4
Group member : COMPAQ5
Console operator : No
Workgroup manager : No

Reading print queues from the source server.

PRINTQSIG22

Queue users can add jobs : Yes
Servers can attach to queue : Yes
Servers can service queue : Yes



Print queue operator : SUPERVISOR (user)
Print queue user : EVERYONE (group)
Print queue user : SUPERVISOR (user)
Print queue user : USER1 (user)
Print queue user : USER2 (user)
Print queue user : USER3 (user)
Print queue user : USER4 (user)
Print queue user : USER5 (user)
Print queue server : PRINTS-SIG22 (print server)

PQSIG22-1

Queue users can add jobs : Yes
Servers can attach to queue : Yes
Servers can service queue : Yes
Print queue operator : SUPERVISOR (user)
Print queue user : EVERYONE (group)
Print queue user : SUPERVISOR (user)
Print queue user : COMPAQ1 (user)
Print queue user : COMPAQ2 (user)
Print queue user : COMPAQ3 (user)
Print queue user : COMPAQ4 (user)
Print queue user : COMPAQ5 (user)
Print queue server : PS-SIG22-1 (print server)

Reading print servers from the source server.

PRINTS-SIG22

Full name : print server sig22
Account uses a password : No
Print server operator : SUPERVISOR (user)
Print server user : EVERYONE (group)
Associated file : SYS:SYSTEM\00230115\PRINT.000
Associated file : SYS:SYSTEM\00230115\QUEUE.000

PS-SIG22-1

Account uses a password : No
Print server operator : SUPERVISOR (user)
Print server user : EVERYONE (group)



Associated file : SYS:SYSTEM\0024011D\PRINT.000
Associated file : SYS:SYSTEM\0024011D\QUEUE.000

Finished reading information from NetWare server SIG22.

NetWare v3.12 Server

NetWare Migration Utility v4.00b, Bindery Export Phase
Migration summary :

Destination NetWare server : NW312, NetWare v3.12 (50 user) (8/12/93)
Report file name : MIG011.RPT
Export phase started : 2-08-94 2:06:13pm

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

SYS:	NW312\SYS:\
VOL1:	NW312\SYS:\

No random passwords will be given to migrated accounts. Instead, each user and print server will be given an empty password.

The following will be migrated to the destination NetWare server:

- * Accounting charge rates
- * Trustee assignments
- * Default account restrictions
- * Users
- * User restrictions
- * Groups
- * Print queues and print servers

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



* Data files

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

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

Account expires : No
Limit connections : No
Create home directory : No
Require a password : No
Account balance : 0
Allow unlimited credit : Yes
Time restrictions apply : Yes
Bindery update status : Update succeeded
Detect intruders : Yes
Incorrect login attempts : 3
Bad login count retention time : 0 days, 0 hours, 30 minutes
Lock account after detection : Yes
Length of account lockout : 0 days, 0 hours, 15 minutes
Bindery update status : Update succeeded

Writing accounting charge rates to the target server.

Accounting activated : Yes
Charge rates : Blocks read

Creating groups on the target server.

EVERYONE

Creation status : The group already exists; migrated information is being merged.
Console operator : No
Workgroup manager : No

Creating users on the target server.



SUPERVISOR

User's mail directory : NW312\SYS:MAIL\1
Creation status : The user already exists; migrated information
(except user restrictions) is being merged.
Console operator : Yes
Workgroup manager : No

GUEST

User's mail directory : NW312\SYS:MAIL\2000001
Creation status : The user already exists; migrated information
(except user restrictions) is being merged.
Console operator : Yes
Workgroup manager : Yes

USER1

User's mail directory : NW312\SYS:MAIL\4000002
Creation status : The user already exists; migrated information
(except user restrictions) is being merged.
Full name : value not changed
Console operator : Yes
Workgroup manager : Yes
Associated file : NW312\SYS:MAIL\4000002\LOGIN

USER2

User's mail directory : NW312\SYS:MAIL\C000001
Creation status : The user already exists; migrated information
(except user restrictions) is being merged.
Full name : value not changed
Console operator : Yes
Workgroup manager : Yes

USER3

User's mail directory : NW312\SYS:MAIL\D000001
Creation status : The user already exists; migrated information
(except user restrictions) is being merged.
Full name : value not changed
Console operator : Yes
Workgroup manager : Yes



USER4

User's mail directory : NW312\SYS:MAIL\E000001
Creation status : The user already exists; migrated information
(except user restrictions) is being merged.
Full name : value not changed
Console operator : Yes
Workgroup manager : Yes

USER5

User's mail directory : NW312\SYS:MAIL\F000001
Creation status : The user already exists; migrated information
(except user restrictions) is being merged.
Full name : value not changed
Console operator : Yes
Workgroup manager : Yes

COMPAQ1

Creation status : The user has been created.
User's mail directory : NW312\SYS:MAIL\23000001
Give a random password : No
Console operator : No
Workgroup manager : No

COMPAQ2

Creation status : The user has been created.
User's mail directory : NW312\SYS:MAIL\24000001
Give a random password : No
Console operator : No
Workgroup manager : No

COMPAQ3

Creation status : The user has been created.
User's mail directory : NW312\SYS:MAIL\25000001
Give a random password : No
Console operator : No
Workgroup manager : No



COMPAQ4

Creation status : The user has been created.
User's mail directory : NW312\SYSTEM\MAIL\26000001
Give a random password : No
Console operator : No
Workgroup manager : No

COMPAQ5

Creation status : The user has been created.
User's mail directory : NW312\SYSTEM\MAIL\27000001
Give a random password : No
Console operator : No
Workgroup manager : No

Writing user account restrictions to the target server.

SUPERVISOR

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

GUEST

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

USER1

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

USER2

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

USER3

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



USER4

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

USER5

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

COMPAQ1

Account balance : 0
Allow unlimited credit : No
Credit low limit : 0
Bindery update status : Update succeeded
Account disabled : No
Account expires : Yes
Date account expires : 3-01-94
Limit connections : Yes
Concurrent connections : 5
User can change password : Yes
Require a password : Yes
Password minimum length : 3
Force password changes : Yes
Expiration interval : 40
Date password expires : 1-01-85
Limit grace logins : Yes
Grace logins allowed : 6
Require unique passwords : Yes
Time restrictions apply : Yes
Bindery update status : Update succeeded

COMPAQ2

Account balance : 0
Allow unlimited credit : No
Credit low limit : 0
Bindery update status : Update succeeded
Account disabled : No
Account expires : Yes
Date account expires : 3-01-94



Limit connections : Yes
Concurrent connections : 5
User can change password : Yes
Require a password : Yes
Password minimum length : 3
Force password changes : Yes
Expiration interval : 40
Date password expires : 1-01-85
Limit grace logins : Yes
Grace logins allowed : 6
Require unique passwords : Yes
Time restrictions apply : Yes
Bindery update status : Update succeeded

COMPAQ3

Account balance : 0
Allow unlimited credit : No
Credit low limit : 0
Bindery update status : Update succeeded
Account disabled : No
Account expires : Yes
Date account expires : 3-01-94
Limit connections : Yes
Concurrent connections : 5
User can change password : Yes
Require a password : Yes
Password minimum length : 3
Force password changes : Yes
Expiration interval : 40
Date password expires : 1-01-85
Limit grace logins : Yes
Grace logins allowed : 6
Require unique passwords : Yes
Time restrictions apply : Yes
Bindery update status : Update succeeded

COMPAQ4

Account balance : 0



Allow unlimited credit : No
Credit low limit : 0
Bindery update status : Update succeeded
Account disabled : No
Account expires : Yes
Date account expires : 3-01-94
Limit connections : Yes
Concurrent connections : 5
User can change password : Yes
Require a password : Yes
Password minimum length : 3
Force password changes : Yes
Expiration interval : 40
Date password expires : 1-01-85
Limit grace logins : Yes
Grace logins allowed : 6
Require unique passwords : Yes
Time restrictions apply : Yes
Bindery update status : Update succeeded

COMPAQ5

Account balance : 0
Allow unlimited credit : No
Credit low limit : 0
Bindery update status : Update succeeded
Account disabled : No
Account expires : Yes
Date account expires : 3-01-94
Limit connections : Yes
Concurrent connections : 5
User can change password : Yes
Require a password : Yes
Password minimum length : 3
Force password changes : Yes
Expiration interval : 40
Date password expires : 1-01-85
Limit grace logins : Yes
Grace logins allowed : 6



Require unique passwords : Yes
Time restrictions apply : Yes
Bindery update status : Update succeeded

Creating print queues on the target server.

PRINTQSIG22

Creation status : The print queue already exists; migrated information is being merged.

PQSIG22-1

Creation status : The print queue already exists; migrated information is being merged.

Creating print servers on the target server.

PRINTS-SIG22

Creation status : The print server already exists; migrated information is being merged.

Full name : value not changed

File left unmodified : NW312/SYS:SYSTEM\21000001\PRINT.000

File left unmodified : NW312/SYS:SYSTEM\21000001\QUEUE.000

PS-SIG22-1

Creation status : The print server already exists; migrated information is being merged.

File left unmodified : NW312/SYS:SYSTEM\22000001\PRINT.000

File left unmodified : NW312/SYS:SYSTEM\22000001\QUEUE.000

Setting up properties for users on the target server.

SUPERVISOR

Security equivalent to : EVERYONE (group)

GUEST

Security equivalent to : EVERYONE (group)



USER1

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

USER2

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

USER3

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

USER4

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

USER5

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

COMPAQ1

Security equivalent to : EVERYONE (group)

COMPAQ2

Security equivalent to : EVERYONE (group)

COMPAQ3

Security equivalent to : EVERYONE (group)

COMPAQ4

Security equivalent to : EVERYONE (group)

COMPAQ5

Security equivalent to : EVERYONE (group)

Setting up properties for groups on the target server.



EVERYONE

Managed by : GUEST (user)
Managed by : USER1 (user)
Managed by : USER2 (user)
Managed by : USER3 (user)
Managed by : USER4 (user)
Managed by : USER5 (user)
Group member : SUPERVISOR (user)
Group member : GUEST (user)
Group member : USER1 (user)
Group member : USER2 (user)
Group member : USER3 (user)
Group member : USER4 (user)
Group member : USER5 (user)
Group member : COMPAQ1 (user)
Group member : COMPAQ2 (user)
Group member : COMPAQ3 (user)
Group member : COMPAQ4 (user)
Group member : COMPAQ5 (user)

Setting up properties for print queues on the target server.

PRINTQSIG22

Print queue operator : SUPERVISOR (user)
Print queue user : EVERYONE (group)
Print queue user : SUPERVISOR (user)
Print queue user : USER1 (user)
Print queue user : USER2 (user)
Print queue user : USER3 (user)
Print queue user : USER4 (user)
Print queue user : USER5 (user)
Print queue server : PRINTS-SIG22

PQSIG22-1

Print queue operator : SUPERVISOR (user)
Print queue user : EVERYONE (group)
Print queue user : SUPERVISOR (user)
Print queue user : COMPAQ1 (user)



Print queue user : COMPAQ2 (user)
Print queue user : COMPAQ3 (user)
Print queue user : COMPAQ4 (user)
Print queue user : COMPAQ5 (user)
Print queue server : PS-SIG22-1

Setting up properties for print servers on the target server.

PRINTS-SIG22

Print server operator : SUPERVISOR (user)
Print server user : EVERYONE (group)

PS-SIG22-1

Print server operator : SUPERVISOR (user)
Print server user : EVERYONE (group)

Writing trustee assignments to the target server.

NW312\SYS:\SYSTEM\00230115

Trustee assignment : [RWCEMF], PRINTS-SIG22 (print server)

NW312\SYS:\SYSTEM\0024011D

Trustee assignment : [RWCEMF], PS-SIG22-1 (print server)

NW312\SYS:\MAIL

Trustee assignment : [C], EVERYONE (group)

NW312\SYS:\MAIL\20007

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

NW312\SYS:\MAIL\D001D

Path name change to : SYS:MAIL\4000002
Trustee assignment : [RWCEMF], USER1 (user)

NW312\SYS:\MAIL\E0045

Path name change to : SYS:MAIL\C000001



Trustee assignment : [RWCEMF], USER2 (user)

NW312\SYS:\MAIL\F004D

Path name change to : SYS:\MAIL\D000001

Trustee assignment : [RWCEMF], USER3 (user)

NW312\SYS:\MAIL\100055

Path name change to : SYS:\MAIL\E000001

Trustee assignment : [RWCEMF], USER4 (user)

NW312\SYS:\MAIL\11005D

Path name change to : SYS:\MAIL\F000001

Trustee assignment : [RWCEMF], USER5 (user)

NW312\SYS:\MAIL\250123

Path name change to : SYS:\MAIL\23000001

Trustee assignment : [RWCEMF], COMPAQ1 (user)

NW312\SYS:\MAIL\26012D

Path name change to : SYS:\MAIL\24000001

Trustee assignment : [RWCEMF], COMPAQ2 (user)

NW312\SYS:\MAIL\270137

Path name change to : SYS:\MAIL\25000001

Trustee assignment : [RWCEMF], COMPAQ3 (user)

NW312\SYS:\MAIL\280141

Path name change to : SYS:\MAIL\26000001

Trustee assignment : [RWCEMF], COMPAQ4 (user)

NW312\SYS:\MAIL\29014B

Path name change to : SYS:\MAIL\27000001

Trustee assignment : [RWCEMF], COMPAQ5 (user)

NW312\SYS:\PUBLIC

Trustee assignment : [R F], EVERYONE (group)



NW312\SYS:\USERS\USER1
Trustee assignment : [RWCEMFA], USER1 (user)

NW312\SYS:\USERS\USER2
Trustee assignment : [RWCEMFA], USER2 (user)

NW312\SYS:\USERS\USER3
Trustee assignment : [RWCEMFA], USER3 (user)

NW312\SYS:\USERS\USER4
Trustee assignment : [RWCEMFA], USER4 (user)

NW312\SYS:\USERS\USER5
Trustee assignment : [RWCEMFA], USER5 (user)

NW312\SYS:\USERS\COMPAQ1

MIGRATE-4.00b-004: The program cannot add a trustee to a directory.
Object : COMPAQ1 (user)
Directory path : NW312\SYS:\USERS\COMPAQ1

NW312\SYS:\USERS\COMPAQ2

MIGRATE-4.00b-004: The program cannot add a trustee to a directory.
Object : COMPAQ2 (user)
Directory path : NW312\SYS:\USERS\COMPAQ2

NW312\SYS:\USERS\COMPAQ3

MIGRATE-4.00b-004: The program cannot add a trustee to a directory.
Object : COMPAQ3 (user)
Directory path : NW312\SYS:\USERS\COMPAQ3



NW312\SYS:\USERS\COMPAQ4

MIGRATE-4.00b-004: The program cannot add a trustee to a directory.

Object : COMPAQ4 (user)

Directory path : NW312\SYS:\USERS\COMPAQ4

NW312\SYS:\USERS\COMPAQ5

MIGRATE-4.00b-004: The program cannot add a trustee to a directory.

Object : COMPAQ5 (user)

Directory path : NW312\SYS:\USERS\COMPAQ5

The program has completed writing information to server NW312.

A total of 5 errors or warnings were reported during migration.



Appendix B

GLOSSARY

BINDFIX utility	A utility you can use to repair damaged bindery files. It is intended to correct certain system security problems. You must have supervisor rights or equivalent to run this utility.
MONITOR	NLMs that allow you to lock the file server console and to see how efficiently your network is operating.
NetWare Loadable Modules	A program you can load and unload from file server memory while the server is running. NLMs link disk drives, LAN drivers, name space, and other file server management and enhancement utilities to the operating system.
NetWire	Novell's online information service, 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.
NLMs	See NetWare Loadable Modules.
Novell ElectroText	Novell's viewer that allows you to read NetWare 3.12 manuals from your Windows workstation.
ODI	See Open Data-Link Interface.
Open Data-Link Interface	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.



STREAMS	NLMs that provide 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, STEAMS allows services to be provided across the network, regardless of the transport protocols used.
SYSCON utility	A system configuration utility that provides many system maintenance 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.
Value Added Processes	A process that ties enhanced operating system features to a NetWare 2.x operating system without interfering with the network's normal operation. VAPs run on top of the operating system in much the same way a word processing or spreadsheet application runs on top of DOS.
VAPs	See Value Added Processes.



Appendix C

MULTIVENDOR INTEGRATION FROM COMPAQ

To help you successfully integrate and optimize your network or multivendor system, Compaq has developed a library of systems integration TechNotes for the NetWare, Microsoft Windows NT, and SCO UNIX operating system environments. TechNotes provide you with important information on topics such as network performance management, server management, and operating system interconnectivity.

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