

Migration Tool Administration Guide

Novell® Open Enterprise Server

2 SP1

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About This Guide

This guide describes the functionality and usage of the Novell® Open Enterprise Server 2 (OES 2) SP1 migration tool. It covers the following topics:

- ♦ Chapter 1, “Overview of the Migration Tools,” on page 15
- ♦ Chapter 2, “Overview of the Migration GUI,” on page 21
- ♦ Chapter 3, “What’s New,” on page 31
- ♦ Chapter 4, “Planning for Migration,” on page 35
- ♦ Chapter 5, “Using Migration Tool GUI,” on page 37
- ♦ Chapter 6, “Preparing for Server Consolidation,” on page 43
- ♦ Chapter 7, “Using the Migration GUI Tool for Consolidation,” on page 45
- ♦ Chapter 9, “Preparing for Transfer ID,” on page 53
- ♦ Chapter 10, “Transfer ID Using Migration GUI Tool,” on page 55
- ♦ Chapter 11, “Transfer ID Using Migration Commands,” on page 65
- ♦ Chapter 13, “Security Considerations for Data Migration,” on page 75
- ♦ Appendix A, “Migrating Data from Windows to OES 2 Linux,” on page 79
- ♦ Appendix B, “Migrating eDirectory to OES 2 Linux,” on page 91
- ♦ Appendix C, “Migrating AFP from NetWare to OES 2 Linux,” on page 95
- ♦ Appendix D, “Migrating Novell Archive and Version Services from OES 1 NetWare to OES 2 Linux SP1,” on page 99
- ♦ Appendix E, “Migrating CIFS from NetWare to OES 2 SP1 Linux,” on page 105
- ♦ Appendix F, “Migrating DHCP from NetWare to OES 2 Linux SP1,” on page 117
- ♦ Appendix G, “Migrating DNS from NetWare to OES 2 Linux SP1,” on page 133
- ♦ Appendix H, “File System Migration,” on page 137
- ♦ Appendix I, “Migrating FTP from NetWare to OES 2 Linux,” on page 177
- ♦ Appendix J, “Novell iFolder Upgrade, Migration, and Coexistence,” on page 181
- ♦ Appendix K, “Migrating iPrint from NetWare to OES 2 Linux,” on page 197
- ♦ Appendix L, “Migrating Timesync/NTP from NetWare to NTP on OES 2 Linux,” on page 213

Audience

This guide is intended for network administrators, installers, and consultants who are involved in migrating data and services to OES 2 Linux.

Feedback

We want to hear your comments and suggestions about this manual and the other documentation included with this product. Please use the User Comments feature at the bottom of each page of the online documentation, or go to www.novell.com/documentation/feedback.html and enter your comments there.

Documentation Updates

For the most recent version of the *OES 2: Migration Tools Administration Guide*, visit the [OES 2 Web site \(http://www.novell.com/documentation/oes2\)](http://www.novell.com/documentation/oes2).

Additional Documentation

For additional information on OES 2 migrations, see the [OES Migration Web site \(http://www.novell.com/products/openenterpriseserver/migrate.html\)](http://www.novell.com/products/openenterpriseserver/migrate.html).

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When a single pathname can be written with a backslash for some platforms or a forward slash for other platforms, the pathname is presented with a backslash. Users of platforms that require a forward slash, such as Linux* or UNIX* , should use forward slashes as required by your software.

Overview

- ♦ Chapter 1, “Overview of the Migration Tools,” on page 15
- ♦ Chapter 2, “Overview of the Migration GUI,” on page 21
- ♦ Chapter 3, “What’s New,” on page 31

Overview of the Migration Tools

1

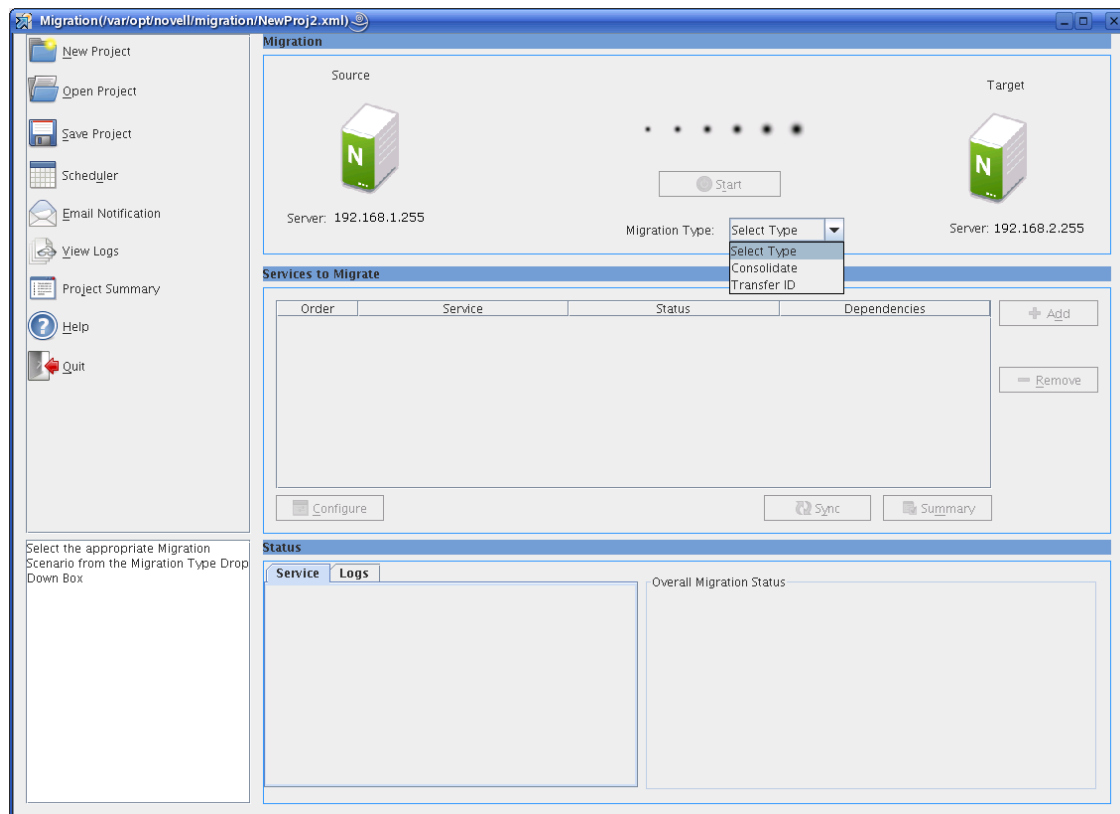
Migration is the process of migrating the services, file system data, and eDirectory™ information from an existing NetWare® 5.1, NetWare 6.0, NetWare 6.5, Open Enterprise Server (OES) 1 Linux , or OES 2 Linux server to an OES 2 SP1 Linux server. The OES 2 Migration Toolkit is designed to meet all your OES migration needs.

In this document , NetWare, OES 1 Linux, and OES 2 Linux servers are referred as the source server, and the OES 2 SP1 Linux server is referred to as the target server.

The various activities you can do in the Migration Tool graphical user interface (GUI) are explained below:

- ♦ Use the Consolidate and Transfer ID scenario.
- ♦ Configure multiple services for migration.
- ♦ View migration status for a single service, overall migration, service-specific logs, and overall migration logs.
- ♦ Schedule migration at your convenience.
- ♦ View a project summary of the migration options configured.

Figure 1-1 Migration Tool GUI



The following topics are discussed in this section:

- ♦ [Section 1.1, “Enhancements for OES 2 SP1,” on page 16](#)
- ♦ [Section 1.2, “Different Migration Tools,” on page 16](#)
- ♦ [Section 1.3, “Migration Scenarios,” on page 17](#)
- ♦ [Section 1.4, “Supported Service Migration,” on page 19](#)

1.1 Enhancements for OES 2 SP1

The Migration Tool has an enhanced graphical user interface (GUI). All the services are migrated from a single source server to the target server. The Migration Tool uses a plug-in architecture and is made up of Linux command line utilities with a GUI wrapper.

Enhancements in this version enable you to do the following actions during a migration:

- ♦ Create a migration project to migrate multiple services.
- ♦ Schedule and run the migration at your convenience.
- ♦ Receive an e-mail indicating the success or failure of the migration process.
- ♦ Display the status of the migrating service and the service-specific logs.
- ♦ Display the overall progress of migration and logs.
- ♦ View a summary of the options configured for each service and for the entire migration project.

1.2 Different Migration Tools

The following table lists the tool to use for migrating the services, depending on the source platform and target platform.

Table 1-1 *Migration Tools Matrix*

Source Platforms	Target Platforms	Migration Tool	For Information
From any of these physical servers: <ul style="list-style-type: none">♦ OES 2 Linux or NetWare♦ OES 1 Linux or later♦ NetWare 5.1 Sp8♦ NetWare 6.0 SP5♦ NetWare 6.5 SP7	To this physical or virtualized server: <ul style="list-style-type: none">♦ OES 2 SP1 Linux	Migration Tool with OES 2 SP1	Chapter 2, “Overview of the Migration GUI,” on page 21
From any of these physical servers: <ul style="list-style-type: none">♦ NetWare 5.1 SP8 or later	To this physical or virtualized server: <ul style="list-style-type: none">♦ NetWare 6.5 SP8	Server Consolidation Migration Toolkit 1.2	Novell Server Consolidation and Migration Toolkit Administration Guide
From Windows server	To this physical or virtualized server: <ul style="list-style-type: none">♦ OES 2 SP1 Linux	Migrate Windows Share Utility	Appendix A, “Migrating Data from Windows to OES 2 Linux,” on page 79

1.3 Migration Scenarios

The Migration Tool supports the following scenarios:

- ♦ [Section 1.3.1, “Consolidate,” on page 17](#)
- ♦ [Section 1.3.2, “Transfer ID,” on page 19](#)

1.3.1 Consolidate

The Consolidate scenario helps you reorganize your network by copying the service configuration and data from any number of source servers to the target server. By consolidating data onto newer, more powerful servers, you can simplify your network administration processes and lower your IT costs.

This section describes example scenarios of how to consolidate your data.

- ♦ [“NetWare-to-OES Linux Consolidations” on page 17](#)
- ♦ [“Example Consolidation Scenarios” on page 17](#)
- ♦ [“Cross-Platform Data Consolidations” on page 19](#)

NetWare-to-OES Linux Consolidations

For NetWare-to-OES Linux consolidations, you can copy service configuration and data from the source servers to target server. The OES Linux server must have a Novell Storage Services™ (NSS) volume. As with NetWare-to-NetWare consolidations, all NetWare rights, trustees, ownership, and namespace information are copied to the target server along with the files.

Example Consolidation Scenarios

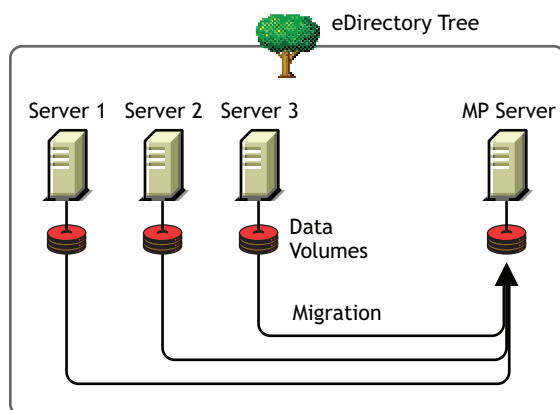
The benefits the Server Consolidation Utility provides can be better understood through examining some sample consolidation scenarios.

- ♦ [“Basic Server Consolidation: Many-to-One” on page 17](#)
- ♦ [“Consolidating Data from Multiple Servers onto a Two-Node Cluster” on page 18](#)

Basic Server Consolidation: Many-to-One

In the first scenario (see [Figure 1-2](#)), suppose you have three existing NetWare servers. You recently purchased a multiprocessor server and installed OES 2 SP1 Linux. You want to copy the data from each of the three servers to the single OES 2 SP1 server. Rather than manually moving all the data, or backing up the data on each of the three servers and then restoring it to the OES 2 SP1 Linux server, you can use the Migration Tool to automate the process.

Figure 1-2 *Many-to-One Server Consolidation*

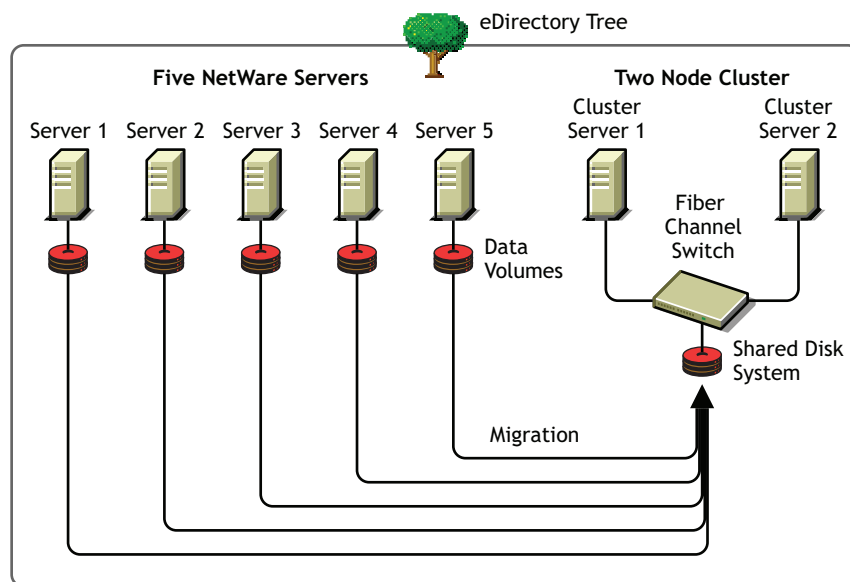


Although Figure 1-1 shows the servers all in the same eDirectory tree, the Migration Tool lets you perform tree-to-tree consolidations as well.

Consolidating Data from Multiple Servers onto a Two-Node Cluster

In the second scenario (see [Figure 1-3](#)), suppose you have five existing NetWare servers. You recently purchased two multiprocessor servers and the necessary hardware to create a two-node cluster complete with an attached Storage Area Network (SAN). You have decided to install OES NetWare on the two-node cluster because OES NetWare comes with Novell Cluster Services™ software and a two-node cluster license. You want to copy the data from each of the five servers to the SAN on the two-node cluster. Rather than manually moving all the data and Printer Agents or backing up the data and restoring it to the SAN, you can use the Migration Tool, which automates the data migration process.

Figure 1-3 *Cluster Server Consolidation*



Cross-Platform Data Consolidations

The OES2 SP1 Migration Tool does not support cross-platform data consolidations. However, OES 2 provides additional tools to make cross-platform consolidations easier for you.

The Novell® Server Consolidation and Migration Toolkit 1.2 combines the Novell Server Consolidation Utility 4.2 and the NetWare Migration Wizard 8.2 under a single launch interface. You must use the Server Consolidation Utility 4.2 to copy data from Windows servers in a Windows* NT* domain or Windows 2000/2003 Mixed Mode domain to servers in a Novell eDirectory tree.

If you have Novell Open Enterprise Server (OES), you must use the Server Consolidation Utility to copy data between the following server platforms:

- ♦ NetWare to NetWare
- ♦ Windows NT/2000/2003 to NetWare
- ♦ Windows NT/2000/2003 to OES 2 SP1 Linux

1.3.2 Transfer ID

The Transfer ID scenario runs a series of tasks for transferring the server identity of the source server to the target server. The identity of the server is made up of its IP address, hostname, eDirectory identity, NICI keys, and the certificates from the source server.

On successful completion of the Transfer ID migration, the target server functions with the identity of the source server and source server goes offline.

1.4 Supported Service Migration

Table 1-2 lists the supported scenarios for migrating the OES 2 SP1 services and **Table 1-3** lists the support for the source platforms for OES 2 SP1 services.

Table 1-2 Migration Scenario Support for OES 2 SP1 Services

Services	Consolidate		Transfer ID
	Same Tree	Different Tree	Same Tree
AFP	✓	✗	✓
Archive and Version Services	✓	✗	✓
CIFS	✓	✗	✓
DHCP	✓	✓	✓
File System	✓	✓	✓
FTP	✓	✓	✓

Services	Consolidate		Transfer ID
	Same Tree	Different Tree	Same Tree
iFolder®	✓	✓	✓
iPrint	✓	✓	✓
NTP	✓	✓	✓

Table 1-3 Source Platform Support for OES Services

Services	NW 5.1	NW 6.0	NW 6.5	OES 1.0	OES 2.0
AFP	✓	✗	✓	✗	✗
Archive and Version Services	✗	✗	✓	✗	✗
CIFS	✗	✗	✓	✗	✗
DHCP	✓	✓	✓	✗	✗
FTP	✓	✗	✓	✗	✗
iFolder 2	✗	✗	✓	✓	✓
iFolder 3	✗	✗	✗	iFolder 3.2	iFolder 3.6
iPrint	✓	✓	✓	✓	✓
NTP	✓	✗	✓	✗	✗
NCP	✗	✗	✗	✓	✓
NSS	✓	✓	✓	✓	✓
Linux POSIX* (export as an NCP™ Volume)	✗	✗	✗	✓	✓
NetWare Traditional	✓	✓	✓	✗	✗

NOTE: Details to configure and migrate the above services are documented as Appendix in this guide.

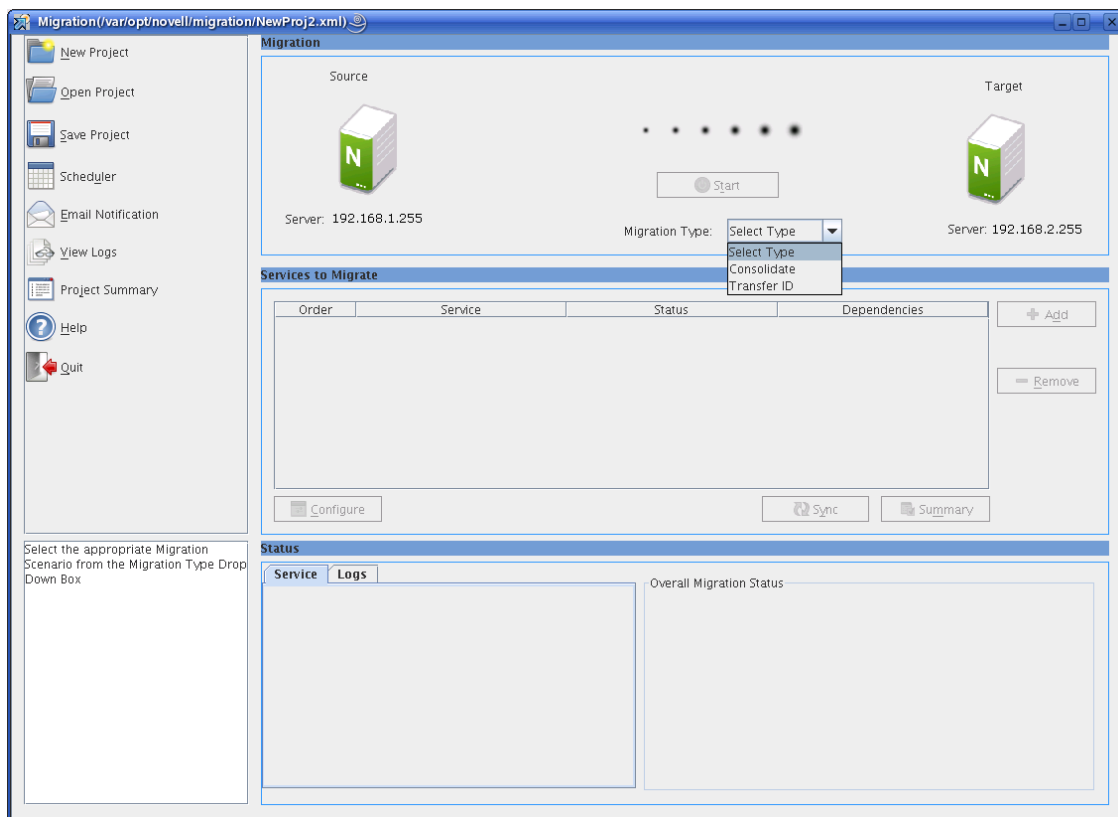
Overview of the Migration GUI

2

The section describes the different panes in the Migration Tool GUI.

- ◆ [Section 2.1, “Project Pane,”](#) on page 21
- ◆ [Section 2.2, “Migration Pane,”](#) on page 25
- ◆ [Section 2.3, “Services to Migrate Pane,”](#) on page 27
- ◆ [Section 2.4, “Service Migration Status,”](#) on page 28
- ◆ [Section 2.5, “Overall Migration Status,”](#) on page 29

Figure 2-1 Migration Tool GUI



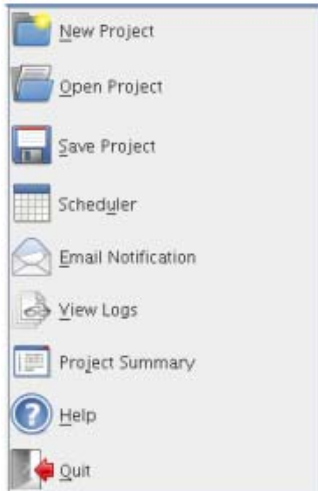
2.1 Project Pane

This is the left pane. You use it to access common project options:

- ◆ [Section 2.1.1, “Create Project,”](#) on page 22
- ◆ [Section 2.1.2, “Schedule Service,”](#) on page 23
- ◆ [Section 2.1.3, “Mail Notification,”](#) on page 23
- ◆ [Section 2.1.4, “Log Files,”](#) on page 24
- ◆ [Section 2.1.5, “Project Summary,”](#) on page 24

- ♦ Section 2.1.6, “Help,” on page 25
- ♦ Section 2.1.7, “Quit,” on page 25
- ♦ Section 2.1.8, “Whiteboard,” on page 25

Figure 2-2 *Project Pane*



2.1.1 Create Project

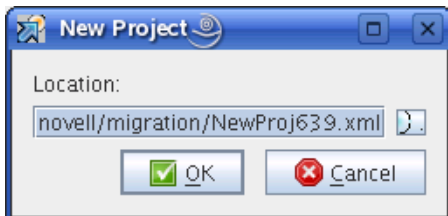
You can create, load or save the migration project.

- ♦ “New Project” on page 22
- ♦ “Load Project” on page 22
- ♦ “Save Project” on page 22

New Project

To create a new project, click *New Project*. Specify the path or browse to the location to create a new project.

Figure 2-3 *New Project*



Load Project

To open an existing migration project, click *Open Project*.

Save Project

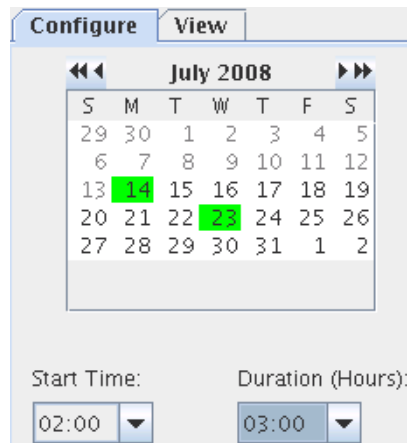
To save a migration project, click *Save Project*, then specify the filename and location.

For example, `/var/opt/novell/migration/NewProj1.xml`. The migration project file `NewProj1.xml` is saved to the default location.

2.1.2 Schedule Service

You can schedule and run the migration project at any time at your convenience.

Figure 2-4 Scheduler



You use the scheduler to perform the following tasks:

- ♦ “Configure” on page 23
- ♦ “View” on page 23

Configure

Schedule the migration project to run on multiple days.

- 1 Select the date in the calendar.
- 2 Specify the *Start Time* to run the project.
- 3 Specify the *Duration* to run the project.
- 4 Click *OK* to save the schedule

The migration project runs on the scheduled date and time.

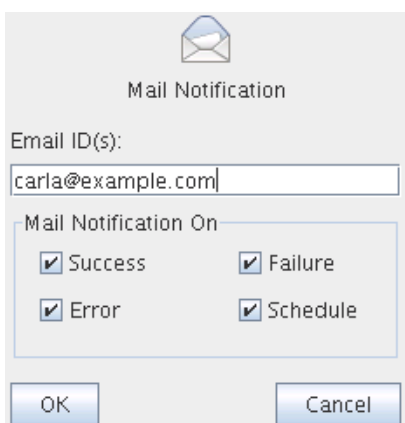
View

Use this tab to see the weekview of the scheduled project.

2.1.3 Mail Notification

You can set e-mail notifications for receiving the status of migration.

Figure 2-5 Notification

A screenshot of a 'Mail Notification' dialog box. At the top is an envelope icon and the title 'Mail Notification'. Below the title is a label 'Email ID(s):' followed by a text input field containing 'carla@example.com'. Underneath is a section titled 'Mail Notification On' containing four checkboxes: 'Success', 'Failure', 'Error', and 'Schedule', all of which are checked. At the bottom are 'OK' and 'Cancel' buttons.

Mail Notification

Email ID(s):
carla@example.com

Mail Notification On

☒ Success ☒ Failure
☒ Error ☒ Schedule

OK Cancel

- ♦ “E-Mail” on page 24
- ♦ “Configure” on page 24

E-Mail

- 1 In the *Email Ids* field, enter the e-mail ID of the individuals to receive notifications. You can include multiple e-mail addresses separated by commas.
- 2 In the *Mail Notification On* field, select the option to generate a mail.
- 3 Click *OK* to save the settings.

Configure

- 1 In the *Server* field, specify the hostname or IP address of the recipient's inbound mail queue.
- 2 Specify the port for the recipient's mail server. In non-secure mode the default port is 25.
- 3 To send e-mail through a secure SMTP connection, select *StartTLS*.
For example, to send an e-mail to a gmail account, the IP address is *gmail-smtp-in.l.google.com* and the port is 26.
- 4 Click *OK* to save the settings.

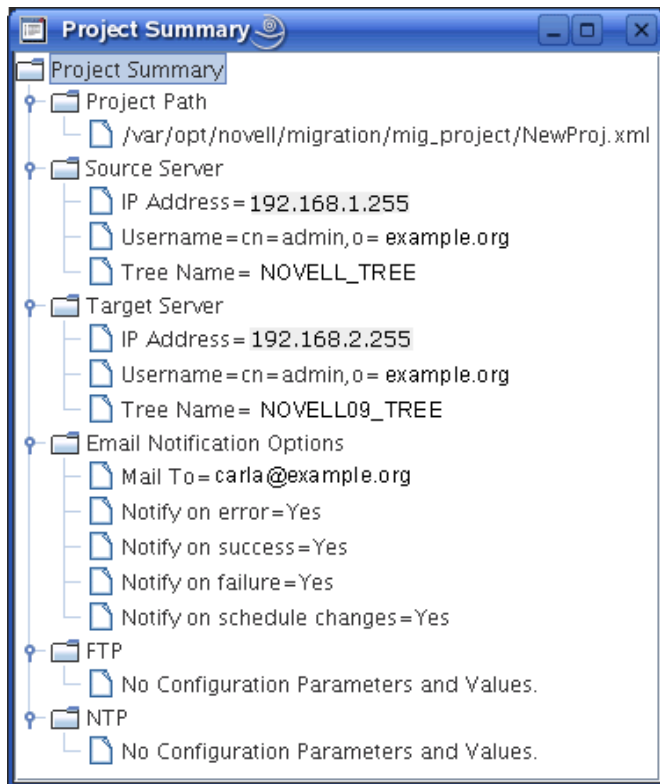
2.1.4 Log Files

The progress of migrating services is displayed in the logs. A log directory is created in the same folder as the migration project. By default, the progress of overall migration is recorded in the *migration.log*. For example, */var/opt/novell/migration/NewProj1/log/migration.log*.

2.1.5 Project Summary

Displays a tree view display of the options configured for all the services selected for migration.

Figure 2-6 *Project Summary*



2.1.6 Help

Displays the help for the Migration Tool.

2.1.7 Quit

Closes the migration window and stops the migration process. If the migration project is not saved, it prompts you to save the project.

2.1.8 Whiteboard

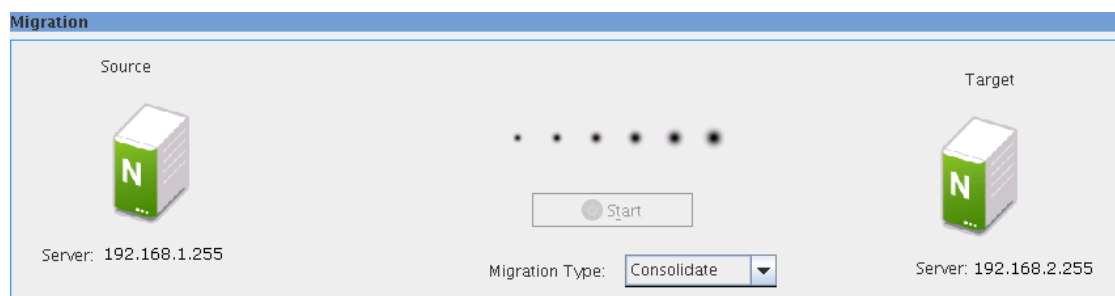
Displays instructions and tips to perform a successful migration.

2.2 Migration Pane

This is the top pane. You use it to perform the following tasks:

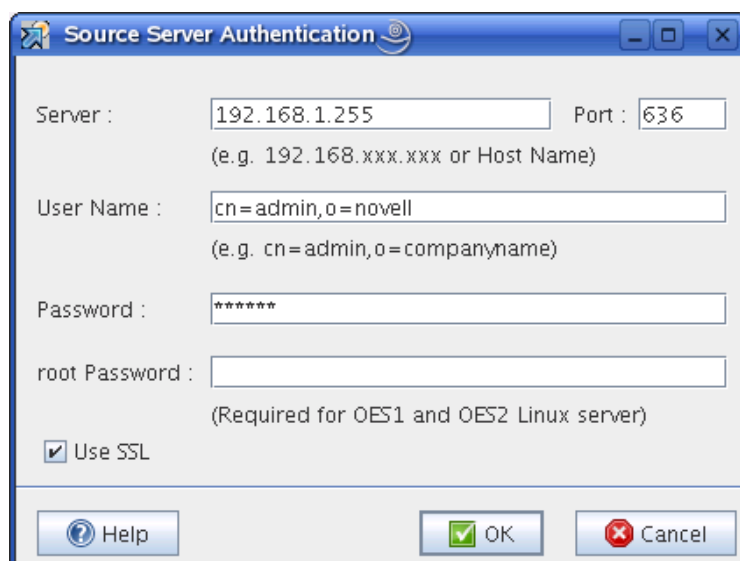
- ♦ Authenticate the source server and target server credentials.
- ♦ Select the type of migration as Consolidate or Transfer ID.

Figure 2-7 Migration Pane

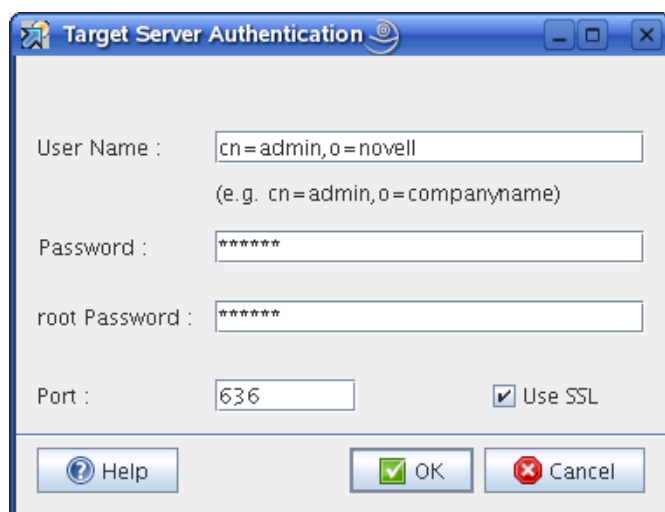


On successful authentication of the source server and target server, the IP address or the DNS name of the servers are displayed below the server icons.

- 1 Specify the credentials of the source server, then click *OK*.



- 2 Specify the credentials of the target server, then click *OK*.



- 3 Depending on your requirements, select the migration type:
 - ♦ **Consolidate:** Select this option if you want to consolidate the services from the source server into an already running instance of the service on the target server. The source server and the target server can be in the same eDirectory tree or a different eDirectory tree.
 - ♦ **Transfer ID:** Select this option to transfer the server identity of the source server to the target server. The source server and target server must be in the same eDirectory tree.
- 4 To configure the services for migration, see [Section 2.3, “Services to Migrate Pane,” on page 27](#)

2.3 Services to Migrate Pane

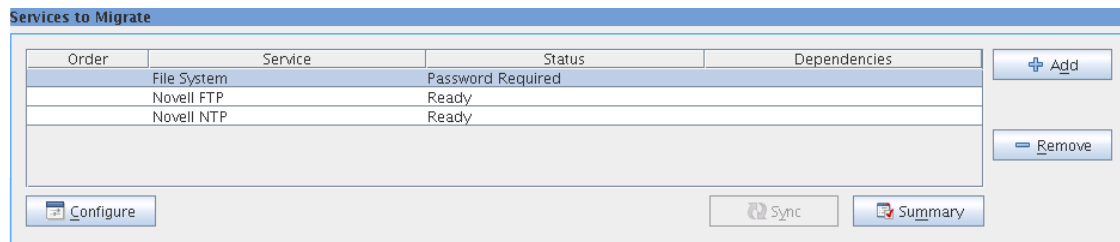
This is the central pane. You use it to select the services that you plan to migrate, and configure the options. When multiple services are configured for migration, the order represents the sequence for migration of the services.

IMPORTANT: You must install all the services on the target server that you plan to migrate from the source server. Services that are not installed on the target server prior to the migration are not listed in the *Add Services* dialog box, so they cannot be migrated.

You use this pane to perform the following tasks:

- ♦ Select and configure services for migration.
- ♦ Synchronize the migrated service with the service on the source server.
- ♦ View the configuration summary of the service.

Figure 2-8 *Services to Migrate*



- ♦ **Order:** The number indicates the order in which to migrate each service. The order is displayed by the migration tool and cannot be edited.
- ♦ **Service:** Lists the name of service to be migrated.
- ♦ **Status:** The *Service* column lists services to be migrated, depending on the source operating system, support for different types of migration scenarios (Consolidate and Transfer ID), and the services installed on the target server.

NOTE: Only services installed on the target server can be migrated from the source server.

The services can be in different states during migration:

State	Description
Not Configured	The service is not configured.
Password Required	Configuration of a service is not complete.
Ready	The service is configured and ready to migrate.
Migrating	The service is in the process of migration.
Migrated	The service is migrated to the target server.

- ♦ **Dependencies:** Lists the dependent services to be migrated. The migration process progresses independently of whether the dependency is completed.
- ♦ **Configure:** Select the service to prepare for migration, then click *Configure*.
- ♦ **Sync:** The service details on the target server are compared with the source server and only the changed information is migrated to the target server. Select the service to synchronize the details and click *Sync*.

NOTE: Metadata changes are not synchronized by the Sync option. You must manually copy the files to the target server if there are changes to only the attributes of the file.

- ♦ **Summary:** A tree view that displays migration options configured for a selected service.

To select the services to migrate:

- 1 Click *Add* to display the list of services available for migration.
- 2 In the *Add Services* window, select the services to migrate, then click *OK*.
In the *Status* column, the status of the unconfigured services is listed as *Not Configured*.
- 3 Select the service and click *Configure* to configure the migration options.
Details to configure and migrate the services are documented as an Appendix in this guide.

NOTE: The services are listed depending on the source operating system, support for different types of migration scenarios (Consolidate and Transfer ID) and the services installed on the target server.

2.4 Service Migration Status

Displays the migration status and progress of each service along with logs.

- ♦ [Section 2.4.1, “Service,” on page 28](#)
- ♦ [Section 2.4.2, “Logs,” on page 29](#)

2.4.1 Service

Displays the status of the selected service. If a service is in the Migrating state, the progress of the migration is displayed.

Table 2-1 Migration Status

State	Description
Ready	The service is configured and ready to migrate.
Precheck	The prerequisites and migration options configured for each service are validated.
Migrate	The service is in the process of migration.
Sync	Synchronization of the services on the source and target server is complete.

Started: Displays the date and start time of migration for a service.

Elapsed: Displays the service migration execution time.

Percentage: The completion percentage of the migration for a service.

2.4.2 Logs

Displays the service migration log. A log directory is created in the same path as the migration project. The associated output and log files for the project are stored in this directory. For example, /var/opt/novell/migration/log.

NOTE: On receiving a Fatal error, the overall migration process is stopped and details are logged in the service-specific log file and common log file. The default common log file name is debug.log.

2.5 Overall Migration Status

State Progress displays the progress of the overall migration. The progress icon turns green for each achieved state.

Table 2-2 Migration Status

State	Description
Ready	All the required migration parameters are configured for the services.
Precheck	The prerequisites and migration options configured for each service are validated.
Migrate	The service is in progress of migration.
Sync	Synchronization of the services on the source and target server is complete.

Started: Displays the date and start time of overall migration.

Elapsed: Displays the overall migration execution time.

Percentage: The percentage completion of the overall migration.

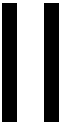
The OES 2 SP1 Migration Tool has an enhanced gui interface. With the help of a single interface, all the services can be migrated from a source server to the target server. The Migration Tool uses a plug-in architecture and is made up of Linux* command line utilities with a GUI wrapper.

The Migration Tool supports the Consolidate and Transfer ID scenario.

The following tasks are performed during migration:

- ♦ Create a migration project to migrate multiple services.
- ♦ Schedule and run the migration at your convenience.
- ♦ Receive an e-mail indicating the success or failure of the migration process.
- ♦ Display the status of the migrating service and the service-specific logs.
- ♦ Display the overall progress of migration and logs.
- ♦ View a summary of the options configured for each service and for the entire migration project.

Getting Started



- ♦ Chapter 4, “Planning for Migration,” on page 35
- ♦ Chapter 5, “Using Migration Tool GUI,” on page 37

Planning for Migration

4

The following topics are discussed in this section:

- ♦ [Section 4.1, “Prerequisites,” on page 35](#)
- ♦ [Section 4.2, “Preparing the Source Server for Migration,” on page 36](#)
- ♦ [Section 4.3, “Preparing the Target Server for Migration,” on page 36](#)
- ♦ [Section 4.4, “Installing the Migration Tool,” on page 36](#)
- ♦ [Section 4.5, “What’s Next,” on page 36](#)

4.1 Prerequisites

The Migration Tool is installed as part of OES 2 SP1 installation. The source server and the target server must meet the requirements outlined in this section.

☒ **Platform Support for Source Server:**

- ♦ NetWare® 5.1 SP8 and eDirectory™ 8.7.3.7 or later
- ♦ NetWare 6.0 SP5 and eDirectory 8.7.3.7 or later
- ♦ NW 6.5 SP6 or later and eDirectory 8.7.3.7 or later or 8.8.x
- ♦ OES 1.0 SP2 (32 bit) and eDirectory 8.7.3.7 or later or 8.8.x
- ♦ OES 2 Linux on 32 bit or 64 bit
- ♦ OES 2 SP1 Linux on 32 bit or 64 bit

☒ **Platform Support for Target Server:** OES 2 SP1 Linux

Migration cannot be performed from a 32-bit to 64-bit platform.

- ☒ The source and target servers must be using the same time synchronization method. For more information on time synchronization, see [“Time Synchronization”](#) in the *OES2 SP1: Planning and Implementation Guide*.

4.1.1 Source Server Requirements

The source server is the NetWare server that contains the files, volumes, and NDS®/ eDirectory objects to be copied to the target server.

- ☒ The source server must be running supported versions of NetWare and eDirectory.
- ☒ Update the source server with the latest NetWare Support Pack.
- ☒ Ensure that the user performing migration has read /write /access rights on the source server.

4.1.2 Target Server Requirements

- ☒ The OES 2 SP1 Linux target server must be installed. For instructions on installing an OES 2 SP1 Linux server, see the *OES2 SP1: Linux Installation Guide*.
- ☒ Ensure that the user performing migration has read/write/access rights on the target server.

4.2 Preparing the Source Server for Migration

1. Shut down any applications, products, or services (virus scan software, backup software, etc.) running on the server to be migrated.
2. Verify the health of eDirectory by loading DSRepair with the following three options:
 - ♦ Unattended Full Repair
 - ♦ Time Synchronization
 - ♦ Report Synchronization Status

If errors are reported, resolve them before attempting migration.

3. We recommend you to back up eDirectory, data and trustees on the source server, even though the source data is not modified during migration.

For information on creating a backup of eDirectory, see “[Backing Up and Restoring Novell eDirectory](#)” in the *Novell eDirectory 8.8 Administration Guide*.

4. Remove any unnecessary applications, then delete and purge unused files and folders.
5. Ensure all the latest patches are installed.

4.3 Preparing the Target Server for Migration

1. Back up the eDirectory information on the target servers. For information on creating a backup of eDirectory, see “[Backing Up and Restoring Novell eDirectory](#)” in the *Novell eDirectory 8.8 Administration Guide*.
2. You must install and configure the services that you are migrating from the source server.

IMPORTANT: If a service is not available on the target server, it is not listed in the Migration Tool gui. This is a mandatory requirement.

4.4 Installing the Migration Tool

The Migration Tool is automatically installed with OES 2 SP1 server in the `/opt/novell/migration` folder.

Use one of the following method to access the Migration Tool:

- ♦ **Desktop:** Click *Computer > More Applications > System > Novell Migration Tool*.
- ♦ **Terminal Prompt:** Enter the following command,
`miggui`

4.5 What's Next

The next chapter covers the following topics:

- ♦ [Chapter 5, “Using Migration Tool GUI,” on page 37](#)
- ♦ [Part IV, “Transfer ID Migration,” on page 51](#)

Using Migration Tool GUI

5

This section describes how to migrate data from an existing Novell® NetWare®, OES 1 Linux or OES 2 Linux server to an OES 2 SP1 Linux server.

After you have completed the prerequisite procedures in [Chapter 4, “Planning for Migration,” on page 35](#), you are ready to perform migration. To do this, complete the following tasks in the order they are listed:

5.1 Getting Started

The Migration Tool is automatically installed with OES 2 SP1 in the `/opt/novell/migration` folder.

IMPORTANT: To perform migration, you must be an eDirectory™ administrator. Migration is not supported if you are a Domain Services for Windows (DSfW) administrator.

5.2 Launch the Migration Tool Utility

You can access the Migration Tool utility in two ways:

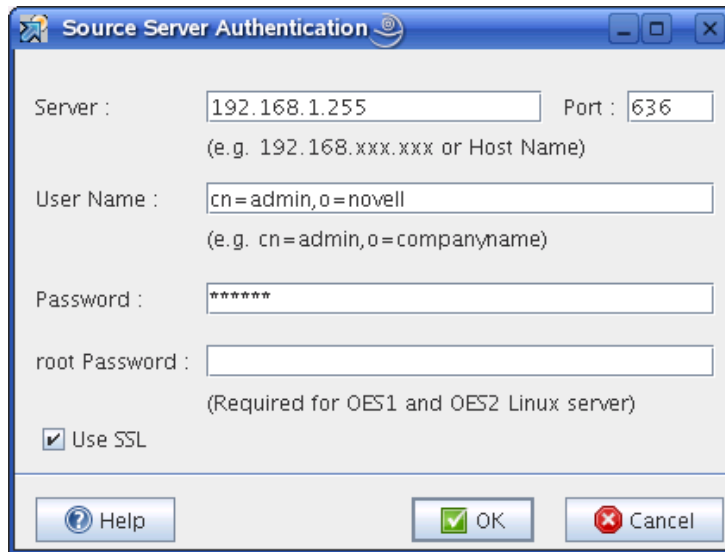
Desktop: Click *Computer > More Applications > System > Novell Migration Tools*.

Console: Enter the following command at a terminal prompt:

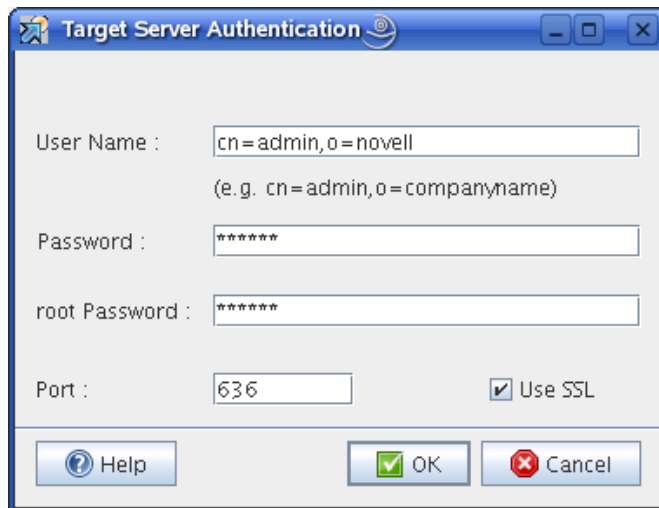
```
miggui
```

5.3 Migration Process

- 1 Launch the Migration Tool.
- 2 Do one of the following to create, open, or save the migration project:
 - ♦ To create a new migration project, click *New Project*, then specify the name of the project and click *OK*.
 - ♦ To open an existing project, click *Open Project*, then select the project and click *Open*. A confirmation message to open the project is displayed, click *Yes*.
 - ♦ To save a project, click *Save Project > Yes*.
- 3 Specify the credentials of the source server, then click *OK*.



- 4 Specify the credentials of the target server, then click *OK*.



- 5 Depending on your requirements, select the migration type:
 - ♦ Consolidate
 - ♦ Transfer ID. To perform Transfer ID, see [Part IV, “Transfer ID Migration,” on page 51](#).
- 6 In the *Services to Migrate* pane, select the services to migrate from the source server to target server.

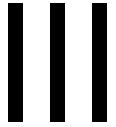
NOTE: Only services installed on the target server are listed for migration.

- 6a To display the list of services for migration, click *Add*.
- 6b In the *Add Services* window, select the services to migrate, then click *OK*.
- 7 Select the service to configure the migration options, then click *Configure*.
On configuring the service, the status of the service changes to *Ready*.
- 8 Click *Start* to proceed with migration. The status of the service changes to *Migrating*.

In the *Status > Service*, you can view the progress of migration. On completion of migration the status of the service changes to *Migrated*.

NOTE: If you encounter errors during migration, check the *Logs* tab in the *Service* pane. After resolving the errors, execute the migration procedure again.

Server Consolidations



- ♦ Chapter 6, “Preparing for Server Consolidation,” on page 43
- ♦ Chapter 7, “Using the Migration GUI Tool for Consolidation,” on page 45
- ♦ Chapter 8, “Synchronization,” on page 49

Preparing for Server Consolidation

To prepare your source server and target server for a Consolidation project, complete the tasks in the following sections:

- ♦ [Section 6.1, “Prerequisites,” on page 43](#)
- ♦ [Section 6.2, “Consolidation Support Matrix,” on page 43](#)

6.1 Prerequisites

- ♦ Ensure that the source server and target server are running with the supported versions of the NetWare®, or Linux server software. For more information, see [Section 1.4, “Supported Service Migration,” on page 19](#).
- ♦ The target must be running Open Enterprise Server (OES) 2 SP1 with the following components enabled:
 - ♦ Novell® eDirectory™
 - ♦ Novell NCP™ Server for Linux
 - ♦ Novell Storage Services™ (NSS)
 - ♦ Novell Storage Management Services™ (SMS)

For more information on installing and configuring OES on Linux, see the [OES2 SP1: Linux Installation Guide](#).

6.2 Consolidation Support Matrix

To migrate or consolidate a service, you must select the Consolidate scenario. Depending on the service, the Consolidate scenario either migrates or consolidates the service.

The [Table 6-1](#) explains the behavior of the service on selecting the Consolidate scenario.

- ♦ **Overwrites the existing configuration:** The service configuration on the target server is overwritten with the service configuration from the source server.
- ♦ **Append to existing configuration:** The service configuration on the target server is appended with the service configuration from the source server.

Table 6-1 *Support Matrix*

Services	Consolidate	Details
	Overwrites the existing configuration	Append to the existing configuration
AFP	✗	✓ Section C.2, “Migration Scenarios,” on page 95

Services	Consolidate		Details
Archive and Version Services	✓	✗	Section D.2.1, "Consolidate - Same Tree," on page 99
CIFS	CIFS configuration	<ul style="list-style-type: none"> ◆ Shares ◆ Context 	Section E.1.1, "Consolidate - Same Tree," on page 105
DHCP	✗	✓	Section F.3.2, "Consolidation," on page 129 Section F.3.2, "Consolidation," on page 129
FTP	✓	✗	Section I.2, "Migration Scenarios," on page 178
iFolder 3	✗	<ul style="list-style-type: none"> ◆ User's iFolder ◆ Sharing information of iFolder 3.2. 	"Migration Scenarios" on page 183
iPrint	✗	✓	Section K.2, "Migration Scenarios," on page 198
NTP	✗	✓	Section L.2, "Migration Scenarios," on page 213

Using the Migration GUI Tool for Consolidation

7

After you have completed the general prerequisites in [Chapter 4, “Planning for Migration,” on page 35](#) and prerequisite procedures in [Chapter 6, “Preparing for Server Consolidation,” on page 43](#), you are ready to migrate the source server. To do this, complete the following tasks in the order they are listed:

- ♦ [Section 7.1, “Launch the Migration Tool Utility,” on page 45](#)
- ♦ [Section 7.2, “Create the Project File,” on page 46](#)
- ♦ [Section 7.3, “Select the Source Server, Target Server, and Migration Type,” on page 47](#)
- ♦ [Section 7.4, “Configure the Services,” on page 48](#)
- ♦ [Section 7.5, “Run the Migration,” on page 48](#)

7.1 Launch the Migration Tool Utility

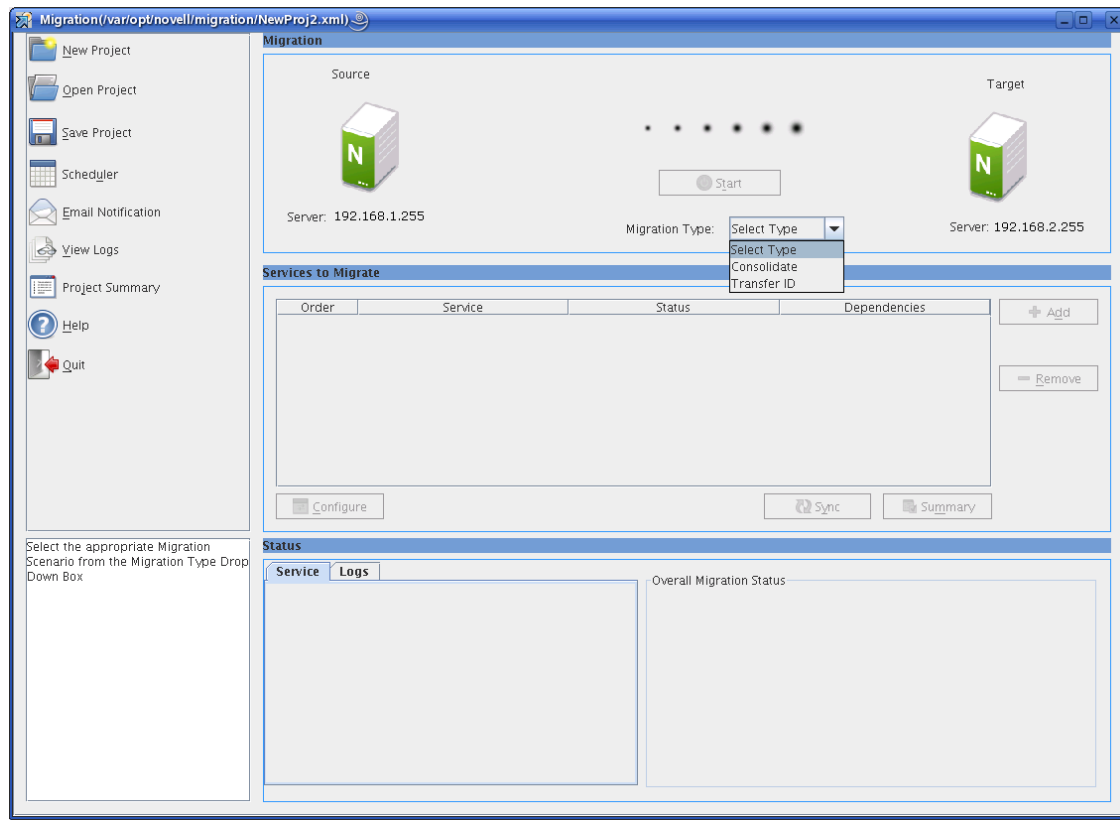
You can access the Migration Tool utility in two ways:

Desktop: Click *Computer > More Applications > System > Novell Migration Tools*.

Console: Enter the following command at a terminal prompt:

```
miggui
```

Figure 7-1 Migration Tool GUI



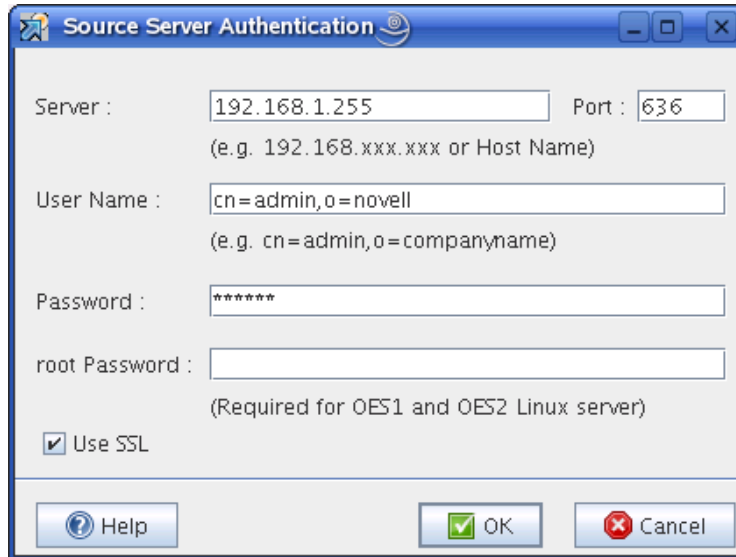
7.2 Create the Project File

- 1 To create a new migration project, click *New Project*. Type the path to the project in the *Location* field or browse to the location and click *Save*.
or
To open an existing migration project, click *Open Project*. Type the path to the project in the *Location* field or browse to the project and click *Open*.
For example, `/home/Carla/migration/mig.xml`
- 2 Type the project filename in the field provided.
The filename can be up to 64 characters long and can include any character except `\ * ? < > | " / .`. The project name also serves as the project's folder name, so you might want to keep it short. The project folder stores the log files and other files associated with the project.
- 3 (Conditional) If you want to store the project file in a location other than the default location provided, click *Browse* and navigate to the desired location, then click *OK*.
- 4 Continue with [Section 7.3, "Select the Source Server, Target Server, and Migration Type,"](#) on [page 47](#).

7.3 Select the Source Server, Target Server, and Migration Type

Specify the credentials to authenticate the source server and target server.

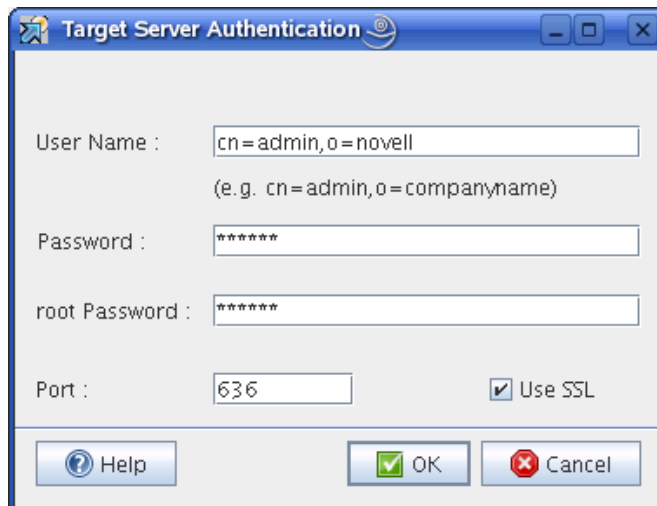
- 1 Specify the source credentials and click *OK*.



The "Source Server Authentication" dialog box contains the following fields and controls:

- Server :** Text box with "192.168.1.255". Below it, a hint: "(e.g. 192.168.xxx.xxx or Host Name)".
- Port :** Text box with "636".
- User Name :** Text box with "cn=admin,o=novell". Below it, a hint: "(e.g. cn=admin,o=companyname)".
- Password :** Text box with "*****".
- root Password :** Text box (empty). Below it, a hint: "(Required for OES1 and OES2 Linux server)".
- ☒ **Use SSL**
- Buttons: **Help** (with question mark icon), **OK** (with green checkmark icon), and **Cancel** (with red X icon).

- 2 Specify the target server credentials and click *OK*.



The "Target Server Authentication" dialog box contains the following fields and controls:

- User Name :** Text box with "cn=admin,o=novell". Below it, a hint: "(e.g. cn=admin,o=companyname)".
- Password :** Text box with "*****".
- root Password :** Text box with "*****".
- Port :** Text box with "636".
- ☒ **Use SSL**
- Buttons: **Help** (with question mark icon), **OK** (with green checkmark icon), and **Cancel** (with red X icon).

On successful authentication, both the servers change to green.

- 3 Select the migration type as *Consolidate*.
- 4 Continue with [Section 7.4, "Configure the Services,"](#) on page 48.

7.4 Configure the Services

- 1 In the *Services to Migrate* panel, click *Add* and select the services to migrate to target server. The *Status* of the services is *Not Configured*.

- 2 To configure a service for migration, click *Configure*.

On successful configuration, the *Status* of the service changes to *Ready*.

IMPORTANT: Before you proceed with migration, ensure that you have met all the prerequisites and configured the migration options for all the services that are to be migrated to the target server.

For a list of service migration chapters and their corresponding documentation, see *Appendix* section.

- 3 Continue with [Section 7.5, “Run the Migration,” on page 48](#).

7.5 Run the Migration

- 1 Click *Start* to proceed with migration.

When migration is in progress, the *Start* button changes to *Stop*. To suspend the migration process, click *Stop*.

You can view the service-specific status of the migration or the status of the overall migration:

- ♦ In the *Status > Service* tab, you can view the progress of migration. On completion of migration, the *Status* of a service changes to *Migrated*.
- ♦ In the *Status* pane > *Overall Migration Status* tab, you can view the progress of overall migration. A message *Migration completed for all Services* is displayed on completion of the migration.

NOTE: If you encounter any errors during migration, check the *Logs* tab in the *Service* pane for individual services or click *View Logs* in the left pane. After resolving the errors, execute the migration procedure again.

On successful completion of migration, the *Stop* button changes to *Start*.

Transfer ID Migration

IV

- ♦ Chapter 9, “Preparing for Transfer ID,” on page 53
- ♦ Chapter 10, “Transfer ID Using Migration GUI Tool,” on page 55
- ♦ Chapter 11, “Transfer ID Using Migration Commands,” on page 65
- ♦ Chapter 12, “Troubleshooting Issues,” on page 71

Preparing for Transfer ID

9

To prepare your source server and target server for a Transfer ID project, complete the tasks in the following sections:

- ♦ [Section 9.1, “Prerequisites,” on page 53](#)
- ♦ [Section 9.2, “Preparing the Source Server for Migration,” on page 54](#)
- ♦ [Section 9.3, “Preparing the Target Server for Migration,” on page 54](#)

9.1 Prerequisites

- ♦ Ensure that the source server and target server are running supported versions of NetWare[®], or Linux server software. For more information, see [Section 1.4, “Supported Service Migration,” on page 19](#).
- ♦ You must have sufficient rights to perform migration.
- ♦ Target server must be a non-replica server in the eDirectory tree.
- ♦ Verify the health of eDirectory by loading DSRepair on OES 2 SP1 Linux with the following three options:

- ♦ Unattended Full Repair
- ♦ Time Synchronization

The target server must be time synchronized with the source server.

For more information on time synchronization, see “[Time Synchronization](#)” in the *OES2 SP1: Planning and Implementation Guide*.

NOTE: The DSRepair command, locks the eDirectory database, this results in failure of the Transfer ID migration. You must ensure that all the eDirectory operations are complete before performing Transfer ID migration.

- ♦ Report Synchronization Status

All the eDirectory replicas are synchronized.

If any errors are reported, resolve them before attempting migration.

- ♦ The names and properties of an NSS volume on both the source server and target server must be same.
- ♦ Time is synchronized across all the servers that host the eDirectory replicas of the partition where the source server and the target server resides.
- ♦ Ensure that all the eDirectory replicas are up and working in the current partition; otherwise, eDirectory migration cannot be completed successfully.
- ♦ Ensure that the hostname and IP address of source server and target server are mapped correctly. The hostname can be resolved using the DNS server or using the `/etc/hosts` file.

9.2 Preparing the Source Server for Migration

Before you launch Migration Tool Wizard, follow these steps to prepare the source server:

1. Shut down any applications, products, or services (virus scan software, backup software, etc.) running on the server to be migrated.
2. We recommend you to back up all your data on the target server.
For information on creating a backup of eDirectory, see “[Backing Up and Restoring Novell eDirectory](#)” in the *Novell eDirectory 8.8 Administration Guide*.
You must back up the data and trustee of the source servers, even though the source data is not modified during migration.
3. Remove any unnecessary applications, then delete and purge unused files and folders. Files that are salvaged are not migrated to the target server.
4. Enable ssh service on the source server.
5. (Conditional) If the source server is OES 1 Linux or OES 2 Linux, ensure you have copied the ssh keys to avoid multiple password prompts on execution of the *DIB Copy* step.
6. Ensure that the `/root/.ssh/known_hosts` file contains the entries of both the hostname and its corresponding IP address.

9.3 Preparing the Target Server for Migration

Before you launch Migration Tool Wizard, follow these steps to prepare the target server:

- 1 When you install the target server for a Transfer ID migration, and you reach the *Software Selection and System Tasks* dialog box, you must select the *Novell Pre-Migration Server* option. This prepares eDirectory for the Transfer ID migration that you will perform later.
If the target server is not installed with this option, it cannot be the target of a Transfer ID migration until you reinstall OES 2 SP1 and select the option.
- 2 Back up the eDirectory information on the target server. For information on creating a backup of eDirectory, see “[Backing Up and Restoring Novell eDirectory](#)” in the *Novell eDirectory 8.8 Administration Guide*.
- 3 On the target server, you must install and configure the services that you need to migrate from the source server.

IMPORTANT: If a service is not installed on the target server, it is not listed in the Migration Tool GUI screen for migration. This is a mandatory requirement.

Transfer ID Using Migration GUI Tool

10

After you have completed the prerequisite procedures in [Chapter 9, “Preparing for Transfer ID,” on page 53](#), you are ready to migrate source server. To do this, complete the following tasks in the order they are listed:

- [Section 10.1, “Launch Migration Tool Utility,” on page 55](#)
- [Section 10.2, “Create the Project File,” on page 55](#)
- [Section 10.3, “Select Source and Target Server and Migration Type,” on page 56](#)
- [Section 10.4, “Configure the Services and Run the Migration,” on page 57](#)
- [Section 10.5, “Understanding Transfer ID GUI,” on page 57](#)
- [Section 10.6, “Backup eDirectory Database and NCI Keys,” on page 58](#)
- [Section 10.7, “Run Transfer ID,” on page 60](#)
- [Section 10.8, “Post Transfer ID Migration,” on page 63](#)

10.1 Launch Migration Tool Utility

You can access the Migration Tool Utility in two ways:

On the Desktop: Click *Computer* > *More Applications* > *System* > *Novell Migration Tools*.

Console: Enter the following command at a terminal prompt:

```
miggui
```

10.2 Create the Project File

- 1 To create a new migration project, click *New Project*. Soecify the path to the project in the *Location* field or browse to the location, then click *Save*.

or

To open an existing migration project, click *Open Project*. Type the path to the project in the *Location* field or browse to the project and click *Open*.

For example, `/home/Carla/migration/mig.xml`

- 2 Type the project filename in the field provided.

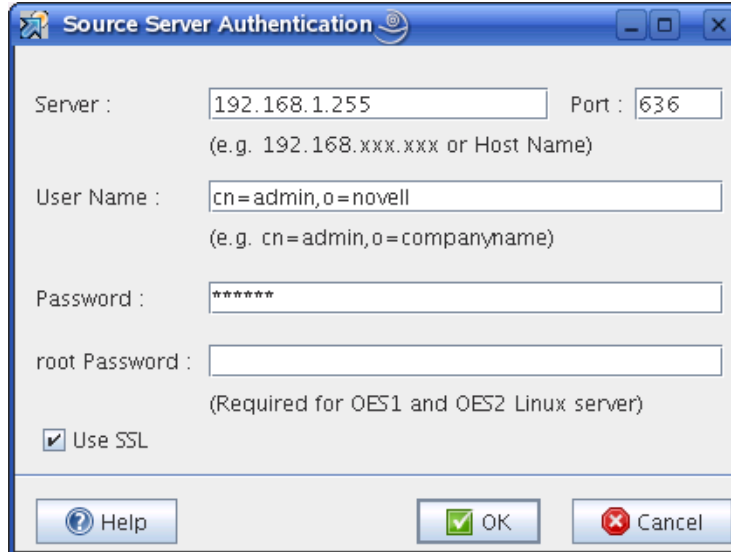
The filename can be up to 64 characters long and can include any character except `\ * ? < > | " / .`. The project name also serves as the project's folder name, so you might want to keep it short. The project folder stores the log files and other files associated with the project.

- 3 (Conditional) If you want to store the project file in a location other than the default location provided, click *Browse* and navigate to the desired location, and then click *OK*.

10.3 Select Source and Target Server and Migration Type

Specify the credentials to authenticate the source server and target server.

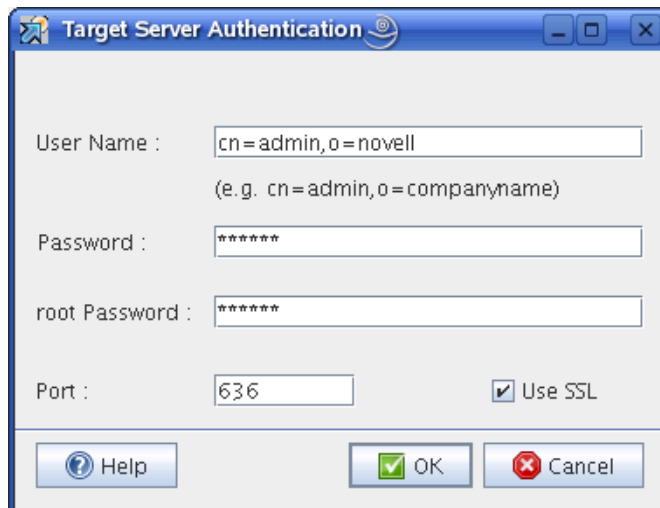
- 1 Specify the source credentials, then click *OK*.



The "Source Server Authentication" dialog box contains the following fields and controls:

- Server :** Text box with "192.168.1.255". Below it, a hint: "(e.g. 192.168.xxx.xxx or Host Name)".
- Port :** Text box with "636".
- User Name :** Text box with "cn=admin,o=novell". Below it, a hint: "(e.g. cn=admin,o=companyname)".
- Password :** Password field with "*****".
- root Password :** Empty password field. Below it, a hint: "(Required for OES1 and OES2 Linux server)".
- ☒ **Use SSL**
- Buttons: **Help** (with question mark icon), **OK** (with green checkmark icon), and **Cancel** (with red X icon).

- 2 Specify the target server credentials, then click *OK*.



The "Target Server Authentication" dialog box contains the following fields and controls:

- User Name :** Text box with "cn=admin,o=novell". Below it, a hint: "(e.g. cn=admin,o=companyname)".
- Password :** Password field with "*****".
- root Password :** Password field with "*****".
- Port :** Text box with "636".
- ☒ **Use SSL**
- Buttons: **Help** (with question mark icon), **OK** (with green checkmark icon), and **Cancel** (with red X icon).

On successful authentication, both the servers change to green.

- 3 Select the migration type as *Transfer ID*.
- 4 Continue with [Section 10.4, "Configure the Services and Run the Migration,"](#) on page 57

10.4 Configure the Services and Run the Migration

1 In the *Services to Migrate* panel, click *Add* and select the services to migrate to target server. The *Status* of the services is *Not Configured*.

2 To configure a service for migration, click *Configure*.

On successful configuration the *Status* of the service changes to *Ready*.

NOTE: Before you proceed with migration, ensure that you have met all the prerequisites and configured the migration options for all the services that are to be migrated to the target server.

For a list of service migration chapters and their corresponding documentation, see the *Appendix* section.

3 Click *Start* to proceed with migration.

In the *Services to Migrate* pane, select the service to view the service-specific progress in the *Status > Service* tab. On completion of migration, the *Status* of a service changes to *Migrated*.

If you encounter any errors during migration, check the *Logs* tab in the *Service* pane for individual services or click *View Logs* in the left pane. After resolving the errors, execute the migration procedure again.

In the *Status* pane, *Overall Migration Status* tab, you can view the progress of overall migration. A message *Migration completed for all Services* is displayed on completion of migration.

4 On successful completion of migration the *Start* button changes to *Transfer ID*.

To perform Transfer ID migration do one of the following:

- ♦ **GUI:** Continue with [Step 5](#).
- ♦ **CLI:** Continue with the [Chapter 11, “Transfer ID Using Migration Commands,” on page 65](#).

We recommend you to complete migration and sync before proceeding for Transfer ID.

5 To launch the Transfer ID gui, click *Transfer ID*. For more information, see [Section 10.7, “Run Transfer ID,” on page 60](#)

10.5 Understanding Transfer ID GUI

The Transfer ID GUI runs a series of tasks for transferring the server identity of the source server to the target server. The identity of the server comprises of its IP address, hostname and the eDirectory DIB information from the source server.






WARNING: On successful completion of the tasks, the target server functions with the identity of the source server.

The dialog box is divided into left pane and right pane, each task is associated with a symbol that is linked with the status of the task.

10.5.1 Left Pane

The left pane lists a series of tasks to be completed for successful completion of Transfer ID. Each task is associated with a symbol. The representation of the symbols is as follows:

Table 10-1 *Icon Explanation*

Icon	Description
	The task is not yet started.
	The task is in process of execution.
	A task is successfully completed.
	Errors must be resolved before proceeding with the next step. An error is displayed in the <i>Errors</i> text box.
	You can choose to ignore task using GUI and perform it manually.

10.5.2 Right Pane

- ♦ **Task Description:** Displays a description of the executing task. The *Command Executed* field displays the command executed to perform the task.
- ♦ **Errors:** Displays a description of the error or warnings and a possible resolution. If no resolution is provided, you can find more information in the [Novell Error Code online documentation \(http://www.novell.com/documentation/lg/nwec/index.html\)](http://www.novell.com/documentation/lg/nwec/index.html). (Search the system by error code number.)
- ♦ **Log Messages:** Displays log messages for each executed tasks and overall Transfer ID.
- ♦ **Send E-mail Notification:** Select to receive an email for a main task. An email is only sent if you have already configured Email Notification tab in the main Migration GUI screen. Email is not sent for sub-tasks.
- ♦ **Ignore:** Ignores a task and proceeds with the next task.
- ♦ **Back:** Click *Back* to re-execute a task.

WARNING: On execution of the current task the changes are committed, using *Back* on a completed task does not roll back the changes committed.

- ♦ **Next:** Click *Next* for completion of the current task and on successful completion move to the next task.
- ♦ **Cancel:** Click *Cancel* to close the Transfer ID wizard and quit the scenario.

WARNING: The Transfer ID process is canceled but changes or steps executed earlier are not reverted on cancellation.

10.6 Backup eDirectory Database and NCI Keys

Before proceeding for Transfer ID, we recommend you to backup your eDirectory database and NCI keys on both the source server and target server.

10.6.1 Source Server

On proceeding with the *DIB Copy* task, the source eDirectory is locked. No eDirectory operations can be performed on the source server. If Transfer ID fails or you quit the scenario, you cannot perform any actions on the source server without restoring the source server's DIB.

To backup and restore on a OES 1 Linux server

Backup

```
1 /etc/init.d/ndsd stop
2 mkdir /var/opt/novell/eDirectory/data/data/dib.bak
3 cp -rp /var/opt/novell/eDirectory/data/data/dib/* /var/opt/
  novell/eDirectory/data/data/dib.bak
4 mkdir /var/opt/novell/nici.bak
5 cp -rp /var/opt/novell/nici/* /var/opt/novell/nici.bak
6 /etc/init.d/ndsd start
```

Restore

```
1 /etc/init.d/ndsd stop
2 cp -rp /var/opt/novell/eDirectory/data/data/dib.bak/* /var/opt/
  novell/eDirectory/data/data/dib/
3 cp -rp /var/opt/novell/nici.bak/* /var/opt/novell/nici/
4 /etc/init.d/ndsd start
```

To backup and restore on a NetWare Server

Backup

```
1 load tbx
2 unload ds
3 mkdir sys:\_netware\dib.bak
4 copy /q sys:\_netware\* sys:\_netware\dib.bak
5 load ds
6 mkdir sys:\_netware\nici.bak
7 copy /q sys:\system\nici\* sys:\system\nici.bak\
```

Restore

```
1 load tbx
2 unload ds
3 copy /q sys:\_netware\dib.bak sys:\_netware\
4 load ds
5 copy /q sys:\system\nici.bak\* sys:\system\nici\
```

10.6.2 Target Server

On failure of the *DIB Restore* task, the target server may fail to function. You can restore the target server with help of the DIB copy.

To backup and restore on a OES 2 SP1 Linux Server

Backup

```
1 /etc/init.d/ndsd stop
2 mkdir /var/opt/novell/eDirectory/data/data/dib.bak
3 cp -rp /var/opt/novell/eDirectory/data/data/dib/* /var/opt/
  novell/eDirectory/data/data/dib.bak
4 mkdir /var/opt/novell/nici.bak
5 cp -rp /var/opt/novell/nici/* /var/opt/novell/nici.bak
6 /etc/init.d/ndsd start
```

Restore

```
1 /etc/init.d/ndsd stop
2 cp -rp /var/opt/novell/eDirectory/data/data/dib.bak/* /var/opt/
  novell/eDirectory/data/data/dib/
3 cp -rp /var/opt/novell/nici.bak/* /var/opt/novell/nici/
4 /etc/init.d/ndsd start
```

10.7 Run Transfer ID

Ensure you have also completed the following:

- ♦ All the services you need to migrate must be configured on the target server.
- ♦ Ensure all the eDirectory applications (like eDirectory repair etc.) are completed before performing the Transfer ID scenario. Transfer ID process locks the DIB (eDirectory Database) on the source server and no operations can be performed.

IMPORTANT: Some of the steps need to be performed manually. The GUI displays messages to ensure that you have completed the manual step. When the steps are completed, click *OK* to proceed to the next step, or click *Cancel* and complete the step. If you skip the manual steps, errors are encountered in the subsequent steps.

The following steps describe how each task is performed for transferring the source credentials to the target server:

- 1 eDirectory Precheck:** This step can be executed multiple times to verify the health of the eDirectory tree. Execution of this step does not modify the source server and target server.

- 1a** Click *Next* to execute this step.

On successful completion of this step, the icon adjacent to eDirectory Precheck step changes to a green tick.

2 Preparation: Removes the eDirectory from the target server. The LUM association with the groups and users is no longer available because the Unix Workstation object is also removed. This step fails to execute if the prerequisites are not met.

3 DIB Copy: Creates a eDirectory DIB (Directory Information Base) copy of the source server on to the target server.

On completion of this step, the source server's DIB is locked and further operations are not permitted on the source server. The eDirectory database and the NICI files are copied to the target server.

Ensure to back up the eDirectory database and NICI keys on the source server, see [Section 10.6.1, “Source Server,” on page 59](#) for more information.

IMPORTANT: In this step the eDirectory database on the source server is locked. eDirectory database and the NICI files are copied to the target server.

(Conditional) If the source server is OES 1 Linux or OES 2 Linux, ensure you have copied the ssh keys to avoid multiple password prompts on execution of this step.

To copy the ssh keys:

1. Enable ssh on the source server and the target server.
2. Enter the command on the target server, # `ssh-keygen -t rsa`
On executing the above command, you are prompted for the following:
 - a. “Enter file in which to save the key (/root/.ssh/id_rsa)”, press Enter.
The ssh keys are stored in the default location.
 - b. “Enter passphrase (empty for no passphrase)”, press Enter.
We recommend you not to include passphrase.

3. Copy the key value i.e. the output of the above command to the source server
`scp ~/.ssh/id_rsa.pub root@<source-server>/root/`
where <source-server> is the IP address or the hostname of the source server.
4. Log on to source server using `ssh`. If the `.ssh` directory is not available, create the directory, then append the key value to the list of authenticated keys.
`cat id_rsa.pub >> /root/.ssh/authorized_keys`

3a Click *Next* to execute the step.

IMPORTANT: This command fails to execute if the replica ring is not in sync, or the time is not synchronized between all the servers in the replica ring.

WARNING: On completion of this step the source server’s DIB is locked and further operations are not permitted on the source server.

4 Shutdown Source: You need to manually shutdown the source server and disconnect it from the network.

4a Click *Next* to execute the step.

A dialog box is prompted to confirm that the source server is shutdown. Click *OK* and proceed with the next step, else click *Cancel* and shutdown the source server.

5 DIB Restore: Restores the eDirectory database that was backed up from the source server in [Step 2](#) on the target server. This includes the NICI keys and the eDirectory related information.

IMPORTANT: Ensure to backup the target eDirectory database and NCI keys, see [Section 10.6.2, “Target Server,” on page 60](#) for more information.

5a Click *Next* to execute the step.

WARNING: If the backup in [Step 2](#) was not successful, the *DIB Restore* step fails. A failure at this point may cause the target eDirectory server to be unusable.

6 IP Change: The IP address of the services and their configuration files on target server is changed to source server IP address.

WARNING: Failure of the script to change the IP address or terminating the operation manually, may cause the system to hang. For more details, refer the [Chapter 12, “Troubleshooting Issues,” on page 71](#).

WARNING: If you are executing the Migration GUI through a remote session, the Transfer ID wizard hangs and fails to proceed.

6a System: The target server IP address is overwritten with the source server IP address.

6b Services: The configuration files of the migrated services are assigned the new IP address of the target server.

6c Others: Executes the IP address change scripts for the services that are not included in the plug-ins of the Migration Tool GUI. The IP address change scripts are located in the `/opt/novell/migration/sbin/serveridswap/ipchange/nonplugin/` folder. If you need to change the IP address of any additional services, you must add the scripts to the `nonplugin` folder.

In this step, the Transfer ID wizard runs the IP address change scripts located in the `nonplugin` folder.

NOTE: No email is sent in this step, even if you have selected the settings to receive an email.

7 Hostname Change: The hostname of the services and their configuration files is changed to source server hostname.

WARNING: Failure of the script to change the hostname or terminating the operation manually, may cause the system to hang. For more details, refer the [Chapter 12, “Troubleshooting Issues,” on page 71](#).

7a System: The target server hostname is overwritten with the source server hostname.

7b Services: The configuration files of the migrated services are assigned the new hostname of the target server.

7c Others: Executes the hostname change scripts for the services that are not included in the plug-ins of the Migration Tool GUI. The hostname change scripts are located in the `/opt/novell/migration/sbin/serveridswap/hostchange/nonplugin/` folder. If you need to change the hostname of any additional services, you need to add the scripts in the `nonplugin` folder.

In this step, Transfer ID wizard runs the hostname change scripts located in the `nonplugin` folder.

NOTE: No email is sent in this step, even if you have selected the settings to receive an email.

- 8 Reinitialize Server:** Reinitialize the target server with the IP address and hostname of the source server. In this step eDirectory is also restarted.
- 9 Restart Server:** You need to manually restart your target server for the IP address and hostname changes to be effective
- 10** On restarting the server, launch the Migration Tool GUI, and open the same project created for Transfer ID scenario.
- 11** Authenticate to the target server.
- 12** On successful authentication, *Transfer ID* dialog box is launched and *Repair* task is selected.
- 13 Repair:** This step repairs LUM, eDirectory, and services on the target server. Use the `ndsrepair` command to perform eDirectory repair. Service specific repairs only run for services that were migrated using the current project.
 - 13a E Dir:** Checks if eDirectory is up and running on the target server. It also runs a repair on the eDirectory tree.
 - 13b Certificates:** Repairs the target server certificate and the trusted root certificate.
 - 13c LUM:** The following steps are performed during LUM repair:
 - ♦ Creates a Unix Workstation object.
 - ♦ Regenerates the certificate for LUM on the target server.
 - ♦ Associates “admin”, “novlxtier” and “www” groups to the target servers’s Unix Workstation object.
 - ♦ Associates the users “admin”, “novlxregd”, “wwwrun”, and “novlxsrvd” to the target server’s Unix Workstation object.
 - ♦ Refreshes the LUM cache.
 - 13d Services:** Repairs all the services migrated to the target server.
 - 13e Others:** Executes the repair scripts for the services that are not included in the plug-ins of the Migration Tool GUI. The scripts are located in the `/opt/novell/migration/sbin/serveridswap/repair/nonplugin/` folder. If you need to repair any additional services, you must add the scripts in the `nonplugin` folder.

In this step, Transfer ID wizard runs the scripts located in `nonplugin` folder.

- 14 Restart Server:** You need to manually restart your target server for completion of Transfer ID.

The target server now runs with the source server identity.

10.8 Post Transfer ID Migration

- ♦ On completion of the Transfer ID migration, you should manually configure some files in the following services to change the IP address and the hostname.
 - ♦ “QuickFinder:” on page 63
 - ♦ “iFolder:” on page 64
 - ♦ **QuickFinder:** Update the `/var/lib/qfsearch/SiteList.properties` file with the new IP address and hostname.

For example, the old IP address is 172.16.200.201, the new IP address after Transfer ID migration is 172.16.100.101.

1. The target server old IP address in the file is `/var/lib/qfsearch/Sites/default@Alias:172.16.200.201`

After Transfer ID migration, change the IP address in the file to the new IP address as `/var/lib/qfsearch/Sites/default@Alias:172.16.100.101`

2. To restart tomcat, enter `rcnovell-tomcat5 restart`
3. To restart apache, enter `rcapache2 restart`.

- ◆ **iFolder:** Update the values manually in the following servers with the new IP address or hostname.

For example, the old IP address is 172.16.200.201, the new IP address after Transfer ID migration is 172.16.100.101.

- ◆ **iFolder Server:** Update the values in the `/var/simias/data/simias/Simias.config` file with the new IP address or hostname.

1. Change the `PublicAddress` value to 172.16.100.101
2. Change the `PrivateAddress` value to 172.16.100.101
3. Change the `LdapUri` value to 172.16.100.101

- ◆ **iFolder Web Access Server:** Update the value in the `/opt/novell/iFolder3/lib/simias/webaccess/Web.config` file with the new IP address or hostname.

1. Change the `SimiasURL` value to 172.16.100.101

- ◆ **iFolder Web Admin Server:** Update the value in the `/opt/novell/iFolder3/lib/simias/admin/Web.config` file with the new IP address or hostname.

1. Change the `SimiasURL` value to 172.16.100.101

For more in

Transfer ID Using Migration Commands

11

Before running Transfer ID, ensure you have met all the **prerequisites** and prepared your servers as described in **Section 4.2, “Preparing the Source Server for Migration,”** on page 36 and **Section 4.3, “Preparing the Target Server for Migration,”** on page 36.

Ensure you have also completed the following:

- ♦ All the services you need must be migrated to the target server.
- ♦ On starting the Transfer ID process, you cannot perform any operations on the source server because the process locks the DIB (eDirectory Database) on the source server.

Performing Transfer ID using CLI:

- 1 eDirectory Precheck:** This step can be executed multiple times to verify the health of the eDirectory tree. Execution of this step does not modify the source server and target server.

```
migedir -s <sourceipaddress> -u <admin name> -A <projectpath> -i -t
```

For example, `/opt/novell/migration/sbin/migedir -s 172.16.100.101 -u admin.novell -A /var/opt/novell/migration/NewProj0 -i -t`

NOTE: When prompted, enter the username and password of the source server.

- 2 Preparation:** Removes the eDirectory from the target server. The LUM association with the groups and users is no longer available because the Unix Workstation object is also removed.
- 2a** Ensure the availability of the hostname and IP address on the source server. The hostname or IP address can be resolved using the DNS server or using the `/etc/hosts` file of the source server.
- 2b** (Conditional) If the source server is OES 1 or OES 2, ensure that ssh keys to avoid multiple prompts for password on execution of this step.

To copy the ssh keys:

1. Enable ssh on the source server and target server.
2. Enter the command on the target server, # `ssh-keygen -t rsa`
On executing the above command, you are prompted for the following:
 - a. “Enter file in which to save the key (`/root/.ssh/id_rsa`)”, press Enter.
The ssh keys are stored in the default location.
 - b. “Enter passphrase (empty for no passphrase)”, press Enter.
We recommend you not to include passphrase.
3. Copy the key value i.e. the output of the above command to the source server
`scp ~/.ssh/id_rsa.pub root@<source-server>`
4. Log to source server using ssh and add the key value to the list of authenticated keys.

```
cat id_rsa.pub >> /root/.ssh/authorized_keys
```

- 2c** If the source server is OES1 or OES2, create a backup of the `/etc/nam.conf` file of the source server.

If the source server is NetWare, create a backup of the `/etc/nam.conf` file of the target server.

- 2d** To remove the Unix Workstation object on the target server, enter

```
/usr/bin/namconfig rm -a admin.novell
```

- 2e** To remove eDirectory from the target server, enter

```
ndsconfig rm -c --config-file /etc/opt/novell/eDirectory/  
conf/nds.conf
```

- 2f** To verify the health of the eDirectory and to ensure that both the source server and target server are time-synchronized, enter

```
migedir -s <sourceipaddress> -u <admin name> -A  
<projectpath> -i -t
```

For example, `/opt/novell/migration/sbin/migedir -s 172.16.100.101 -u admin.novell -A /var/opt/novell/migration/NewProj0 -i -t`

NOTE: When prompted, enter the username and password of the source server.

- 3 DIB Copy:** Creates a backup of the eDirectory DIB (Directory Information Base) of the source server on to the target server. This step locks the DIB of the source server and further operations are not permitted on the source server.

```
migedir -s <source-server-ip> - u <admin dn> -A <logfile  
directory> -i -B
```

For example, `/opt/novell/migration/sbin/migedir -s 172.16.100.101 -u -A /var/opt/novell/migration/NewProj0 -i -B`

On running the above command, you are prompted for the username and password of the source server. Enter “y” all the questions.

IMPORTANT: This command fails to execute if the replica ring is not in sync, or the time is not synchronized between all the servers in the replica ring.

NOTE: If you need to perform any operations on the source server, you must unlock the DIB. To unlock the DIB on the NetWare server, reload the `DS.nlm` file and on the OES 1 Linux server or OES 2 Linux server, restart `ndsd` daemon.

- 4 Shutdown Source:** You need to shutdown the source server and disconnect it from the network.

- 5 DIB Restore:** Restores the eDirectory database that was backed up from the source server in [Step 3](#) on the target server. This includes the NICI keys and the DIB identity.

IMPORTANT: Ensure to backup the target eDirectory database and NICI keys, see [Section 10.6.2, “Target Server,” on page 60](#) for more information.

- 5a** At the command prompt of the target server, enter

```
migedir -R
```

On running the above command, you will be prompted for the password of the root user on the target server.

WARNING: If the backup in **Step 3** was not successful, the *DIB Restore* step fails. A failure at this point may cause the eDirectory service on the target server to be unusable.

6 IP Change: The IP address of the target server and its services is changed to the source server IP address.

WARNING: If you are executing the Migration GUI by using a remote session, the Transfer ID wizard hangs and fails to proceed.

The scripts to be executed in this step are located in the `/opt/novell/migration/sbin/serveridswap/scripts/ipchange/nonplugin` folder.

- ♦ To change the IP address of the server in the `/opt/novell/migration/sbin/serveridswap/scripts/ipchange` folder, enter

```
ruby server-yast-ipchange.rb --old-ip <target_server IP> --ip <source_server IP>
```

For example, `ruby server-yast-ipchange.rb --old-ip 172.16.200.201 --ip 172.16.100.101`

- ♦ The `nonplugin` folder contains a list of scripts that need to be executed for changing the IP address. An example to change the IP address of the services on the target server by using the `iprintipchange.sh` script. In the `/opt/novell/migration/sbin/serveridswap/scripts/ipchange/nonplugin` folder, enter

```
<server-script> <target_server IP> <source_server IP>
<source_server IP> <source_server IP>
```

For example, `iprintipchange.sh 172.16.200.201 172.16.100.101 172.16.100.101 172.16.100.101`

If you want to execute any additional scripts copy them to the `/ipchange/nonplugin` folder in the same pattern as the existing scripts.

WARNING: Failure of the script to change the IP address or terminating the operation manually, may cause the system to hang. If a service-specific IP address script fails to change the IP address, replace the `<service>.conf` file with `<service>.orig` file.

For example, if eDirectory authentication fails on completion of *IP Change* step, do the following:

```
cp /opt/novell/eDirectory/conf/nds.orig /opt/novell/eDirectory/conf/nds.conf
```

7 Hostname Change: The hostname of the services is changed to source server hostname.

The scripts to be executed in this step are located in the `/opt/novell/migration/sbin/serveridswap/scripts/hostchange/nonplugin` folder.

- ♦ To change the hostname of the server and the services go to `/opt/novell/migration/sbin/serveridswap/scripts/hostchange` folder, enter

```
<hostname-script> <targethostname> <sourcehostname>
```

For example, `server-hostname-change.sh aus-market201.marketing.com aus-market101.marketing.com`

If you want to execute any additional scripts copy them to the `nonplugin` folder in the same pattern as the existing scripts.

For example, `./iprinthostnamechange.sh netwarehostname
linuxhostname netwarehostname linuxhostname`

WARNING: Failure of the script to change the hostname or terminating the operation manually, may cause the system to hang. If a service specific hostname script fails to change the hostname, replace the `<service>.conf` with `<service>.orig` file.

For example, if iPrint authentication fails on completion of *Hostname Change* step, do the following:

```
cp /etc/opt/novell/iprint/httpd/conf/iprint_ssl.orig /etc/opt/  
novell/iprint/httpd/conf/iprint_ssl.conf
```

8 Reinitialize Server: Reinitialize the target server with the IP address and hostname of the source server. In this step eDirectory is also restarted.

- ♦ To re initialize the server, enter
`/etc/init.d/network restart`
- ♦ To restart eDirectory, enter
`/etc/init.d/nds restart` for restarting nds

9 Repair: This step repairs certificates for both server and eDirectory, LUM, and other OES services on the target server.

9a To repair eDirectory, enter

```
/opt/novell/eDirectory/bin/ndsrepair -U
```

9b Restart eDirectory, enter

```
/etc/init.d/nds restart
```

9c To create the SAS object, enter

```
/opt/novell/eDirectory/bin/ndsconfig add -m sas -a <admin  
dn> --config-file /etc/opt/novell/eDirectory/conf/nds.conf
```

The above step also repairs the certificates for the server and eDirectory.

9d To verify the health of eDirectory, enter

```
ndscheck -h <target-newip> -a <admin dn> -w <adminpass> -F  
<log directory path>
```

9e LUM:

9e1 (Conditional) If the source server is OES2 linux server, enter

```
chown -R wwwrun:www /var/opt/novell/nici/30
```

9e2 To remove the existing `nam.conf`, enter

```
rm /etc/nam.conf
```

9e3 Creates or modifies the existing Unix Workstation object

- ♦ If the source server is NetWare, a new Unix Workstation object is created. Enter the following command,

```
ruby /opt/novell/migration/sbin/serveridswap/scripts/  
repair/nam-reconf.rb -a <admindn> -s <new ip> -u <Unix  
config object-dn>
```

where `Unix_config_object-dn` is the value of the base-name parameter in the `nam.conf` file. The file was backed up in [Step 2c](#).

- ♦ If the source server is OES 1 Linux or OES 2 Linux, the Unix workstation object is retained. To modify the Unix workstation object, enter

```
ruby /opt/novell/migration/sbin/serveridswap/scripts/repair/nam-reconf.rb -a <admindn> -s <new ip> -u <Unix_config_object-dn>
```

where `Unix_config_object-dn` is the value of the base-name parameter in the `nam.conf` file. The file was backed up in [Step 2c](#).

9e4 To regenerate the certificate on the target server, enter

```
/opt/novell/oes-install/util/getSSCert -a <new ip address> -t <treename> -u <admindn>
```

For example, eg `/opt/novell/oes-install/util/getSSCert -a 172.16.100.101 -t TESTTREE -u cn=admin,o=novell`

You are prompted for the password of the administrator.

9e5 Copy the certificate as the IP address, enter

```
cp /etc/opt/novell/certs/SSCert.der /var/lib/novell-lum/.<targetnew_ipaddress>.der
```

For example, `cp /etc/opt/novell/certs/SSCert.der /var/lib/novell-lum/.172.16.100.101.der`

9e6 To convert the certificate to the pem format, enter

```
openssl x509 -inform der -in /etc/opt/novell/certs/SSCert.der -outform pem -out /etc/opt/novell/certs/SSCert.pem
```

9e7 Modifies the predefined users and groups

- ♦ If the source server is NetWare

1. To modify the `admingroup`, `www`, and `novlxtier` groups, enter

- ♦ `ruby /opt/novell/migration/sbin/serveridswap/scripts/repair/nam-grpmod.rb -H <hostname> -a <admin dn> admingroup`
- ♦ `ruby /opt/novell/migration/sbin/serveridswap/scripts/repair/nam-grpmod.rb -H <hostname> -a <admin dn> www`
- ♦ `ruby /opt/novell/migration/sbin/serveridswap/scripts/repair/nam-grpmod.rb -H <hostname> -a <admin dn> novlxtier`

When prompted enter the password for the administrator.

2. To modify the users `admin`, `wwwrun`, `novlxregd`, `novlxsrvd`, enter

- ♦ `/opt/novell/migration/sbin/serveridswap/scripts/repair/nam-usrmod.rb -H <hostname> -a <admin dn> admingroup admin`
- ♦ `/opt/novell/migration/sbin/serveridswap/scripts/repair/nam-usrmod.rb -H <hostname> -a <admin dn> novlxtier novlxregd`

- ♦ `/opt/novell/migration/sbin/serveridswap/scripts/repair/nam-usrmod.rb -H <hostname> -a <admin dn> novlxtier novlxsrvd`
- ♦ `/opt/novell/migration/sbin/serveridswap/scripts/repair/nam-usrmod.rb -H <hostname> -a <admin dn> www wwwrun`
- ♦ `/opt/novell/migration/sbin/serveridswap/scripts/repair/nam-usrmod.rb -H <hostname> -a <admin dn> novlxtier admin`

When prompted for password, enter the password for the administrator.

- ♦ If the source server is OES 1 linux or OES 2 Linux, to modify the users and groups, enter

```
ruby /opt/novell/migration/sbin/serveridswap/scripts/repair/nam-fix.rb -H <sourcehostname> -a <admin dn>
```

10 Restart Server: Restart the target server for the changes to be effective.

On successful completion of the Transfer ID migration, the target server functions with the source server's eDirectory identity.

- Section 12.1, “On completing Transfer ID migration, I am unable to access iManager or Novell Remote Manager via a Web browser on the target server,” on page 71
- Section 12.2, “On executing Transfer ID scenario, if you terminate the step for changing IP address, it may cause the system to hang,” on page 71
- Section 12.3, “On executing Transfer ID scenario, if you terminate the step for changing Hostname, it may cause the system to hang,” on page 72

12.1 On completing Transfer ID migration, I am unable to access iManager or Novell Remote Manager via a Web browser on the target server

Description: On performing the Transfer ID migration, certificates are not repaired properly in the *Repair* step.

Action:

- 1 Relaunch the project created for the Transfer ID migration, then authenticate the target server.
- 2 On successful authentication of the target server, the Transfer ID GUI is launched. The *Finish* and the *Back* buttons are highlighted.
- 3 Click *Back* to reach the *Repair* step, then run the *Repair* step again.
- 4 Restart the target server for changes to be effective.

12.2 On executing Transfer ID scenario, if you terminate the step for changing IP address, it may cause the system to hang

Description: Failure of the script to change the IP address or terminating the *IP Change* step manually, may cause the system to hang. You must restart the target server and replace the service-specific configuration file with the backed up file of the service.

Action: To restore the original IP address of the target server, replace the `<service>.conf` configuration file with the `<service>.orig` backed up file of the service.

For example, if eDirectory authentication fails on completion of *IP Change* step, do the following:

```
cp /opt/novell/eDirectory/conf/nds.orig /opt/novell/eDirectory/conf/nds.conf
```

where `nds.orig` is the backed up service file on the target server and `nds.conf` is the changed configuration file due to execution of the *IP Change* step.

12.3 On executing Transfer ID scenario, if you terminate the step for changing Hostname, it may cause the system to hang

Description: Failure of the script to change the hostname or terminating the *Hostname Change* step manually, may cause the system to hang. You must restart the target server and replace the service-specific configuration file with the backed up file of the service.

Action: To restore the original hostname of the target server, replace the `<service>.conf` configuration file with the `<service>.orig` backed up file of the service.

For example, if iPrint authentication fails on completion of *Hostname Change* step, do the following:

```
cp /etc/opt/novell/iprint/httpd/conf/iprint_ssl.orig /etc/opt/novell/iprint/httpd/conf/iprint_ssl.conf
```

where `iprint_ssl.orig` is the backed up service file on the target server and `iprint_ssl.conf` is the changed configuration file due to execution of the *Hostname Change* step.

Supplement Information



- ♦ Chapter 13, “Security Considerations for Data Migration,” on page 75

Security Considerations for Data Migration

13



This section describes how the Novell® Open Enterprise Server 2 (OES 2) file system migration tools can be used in a secure environment. It provides information to help you ensure that authentication credentials and other sensitive data are not compromised through the use of these tools.

For additional security implementation information, see “Security” in the *OES2 SP1: Planning and Implementation Guide*.

- ♦ [Section 13.1, “Root-Level Access Is Required,” on page 75](#)
- ♦ [Section 13.2, “Securing User Credentials,” on page 75](#)
- ♦ [Section 13.3, “Mounting Remote File Systems,” on page 77](#)
- ♦ [Section 13.4, “Transmitting Data Across the Network,” on page 78](#)
- ♦ [Section 13.5, “Managing Passwords for Migrated Users,” on page 78](#)

13.1 Root-Level Access Is Required

To use the OES migration tools, you must be logged in to the target OES 2 Linux server as root or a root-equivalent user.

13.2 Securing User Credentials

authentication credentials (usernames and passwords) securely stored and retrieved when using the OES 2 migration tools.

- ♦ [Section 13.2.1, “How User Credentials Are Stored During a Migration,” on page 75](#)
- ♦ [Section 13.2.2, “How Credentials Are Passed from the Migration GUI Utilities to the Migration Commands,” on page 77](#)
- ♦ [Section 13.2.3, “Managing Credential Storage with migcred,” on page 77](#)
- ♦ [Section 13.2.4, “Securing Credentials When Piping Commands,” on page 77](#)

13.2.1 How User Credentials Are Stored During a Migration

By default, neither the migration GUI utilities (File System Migration Utility and NTFS Migration Utility) nor the command line tools (`mls`, `migfiles`, etc.) store the usernames and passwords entered by the user running the migration.

- ♦ [“Migration Commands” on page 76](#)
- ♦ [“Migration GUI Utilities” on page 76](#)

Migration Commands

When using the migration commands, administrators can choose to use the Novell Common Authentication Service Adapter (CASA) to store credentials during a migration, so that they are not prompted repeatedly for usernames and passwords when authenticating to the source and target servers. This feature can be selected by adding the `--use-casa` option in the migration commands. If this option is used, the username and password information is stored in the CASA secret store.

NOTE: As an alternative to using the `--use-casa` option in the migration commands, you can set the `MIG_USE_CASA` environment variable using the following export command:

```
export MIG_USE_CASA=1
```

You can set this environment variable in the shell init scripts so that every shell has it set.

Various migration commands provide the `--use-casa` option, which tells the command to obtain the credentials from the CASA store and not prompt the user for them. If the `--use-casa` option is used and the credentials are not found in the CASA store, the command prompts for them and then stores them in the CASA store.

The migration commands use the CASA API library to securely store and retrieve credentials from this secret store. For more information, see the *Novell Common Authentication Services Adapter (CASA)* documentation.

Migration GUI Utilities

The migration GUI utilities do not use CASA, nor do they store user credentials in any file format. Rather, the utilities accept the user credentials entered for the source server and target server and, after validating them (via secure or LDAP authentication), the utilities store this information in a proprietary cache. These credentials are used by the applications to execute various migration-related operations. For example:

- ♦ To retrieve NetWare® source volumes, the File System Migration Utility issues an `ncpshell` command.
- ♦ To retrieve Windows source shares, the NTFS Migration Utility issues the `ntresource` command.
- ♦ To carry out migrations, the GUI utilities execute the required migration commands (`mls`, `migfiles`, `maprights`, `maptrustees`, `ntfsmis`, etc.).

The migration utility cache is flushed when the applications are closed.

In a saved migration project, only the IP addresses of the source and target servers, the volume names, and other migration options, are stored in the `.xml` configuration file. When you open and rerun a saved project, you are prompted to reenter the credentials.

13.2.2 How Credentials Are Passed from the Migration GUI Utilities to the Migration Commands

The GUI utilities execute migration commands within their process context and pass the user credentials whenever required or prompted through their process APIs, which can be hidden from the user. The GUI applications neither set the credentials in environment variables nor use the CASA store, even though the migration commands provide the option.

To pass credentials to the migration commands, the GUI utilities open a terminal connected to the standard input and feed in the password to the command line prompt.

13.2.3 Managing Credential Storage with migcred

As mentioned previously, administrators can choose to store user credentials in CASA so that they are not prompted for usernames and passwords every time they perform a migration task.

You can use the `migcred` command to control and manage what is stored in the CASA secret store. This command provides options to store, view, and delete information for a particular identity. With the necessary user credentials stored in CASA, usernames and passwords can be retrieved as needed by other migration commands.

13.2.4 Securing Credentials When Piping Commands

Administrators might also want to pipe the output of one migration command to another, so they cannot feed usernames and passwords to the commands through the console. Using the CASA secret store provides a way to protect this secure information when piping migration commands.

The user must include the `--use-casa` option when building the pipelines. For example:

```
mls -s 192.168.131.135 -v V1 --use-casa | maptrustees -s  
192.168.131.135 -r --use-casa
```

13.3 Mounting Remote File Systems

The OES 2 migration tools, which run on the target OES 2 Linux server, must mount the remote file systems of the source servers in order to obtain information about the source volumes and to copy the specified data to the target server.

- ♦ [Section 13.3.1, “NetWare and OES 1 Linux Source Servers,” on page 77](#)
- ♦ [Section 13.3.2, “Windows Source Servers,” on page 78](#)

13.3.1 NetWare and OES 1 Linux Source Servers

For NetWare and OES 1 Linux migrations, the `mls` and `migfiles` commands require an NCP™ mount. They use the `ncpmount` command to map the remote volume to `/tmp/migrate`, and then read data from the `_admin` volume to validate the source path. These commands unmount the file system upon termination. If the process is killed forcibly (), the mount point remains mounted and must be unmounted by the administrator.

For NetWare source servers, the `mls` command also uses the NCP mount to copy the output file of `tcnvlrx.nlm`. For OES 1 Linux source servers, `mls` reads the `.trustee_database.xml` file from the source volume's `._NETWARE` folder to build the list of trustees.

13.3.2 Windows Source Servers

For Windows migrations, `migfiles` uses the `mount.cifs` command to mount the remote Windows share to `/tmp/migrate`. It then uses `rsync` to copy the files to the target volume. The remote share is unmounted after the files are copied. If the process is killed forcibly (`kill -9`), the mount point could possibly remain mounted. If so, it must be unmounted by the administrator.

13.4 Transmitting Data Across the Network

The OES migration tools use Novell Storage Management™ (SMS) to copy data from NetWare and OES 1 Linux source servers, and `rsync` to copy data from Windows source servers. Data is not encrypted when it is transmitted across the network.

13.5 Managing Passwords for Migrated Users

When performing a tree-to-tree migration or a migration from Windows to OES 2 Linux, you have the option to migrate users into the target server's eDirectory™ tree. If you are migrating users, you have two choices :

- ♦ Generate random passwords for the migrated users (by using the `-r` option of the `maptrustees` command)
- or
- ♦ Assign a specific password for all migrated users (by using the `-S` option of the `maptrustees` command)

If neither `-r` nor `-S` is used, users are created without a password and the user accounts are locked until they are manually assigned a password by the administrator, using iManager or other eDirectory management tools. Null passwords (`-S ""`) are not allowed.

The new passwords are recorded in the `maptrustees` output file. This file is then used as an input to the `migtrustees` command and possibly the `mignotify` command. To avoid password theft, dispose of this file in a secure manner after you have communicated the new passwords to their respective users.

For an example of how to use `mignotify` to notify migrated users of their new passwords, see [Section , “mignotify,” on page 167](#).

Currently, the migration GUI utilities neither prompt for any password nor default to any password when performing tree-to-tree migrations. Migrated users are created with no passwords and their user accounts are disabled. The administrator must manually assign all migrated users a password and enable their accounts before the users can log in to the target tree and access their data.

Migrating Data from Windows to OES 2 Linux

A

This section explains how to migrate data from Microsoft Windows servers to Novell® Open Enterprise Server 2 (OES 2) SP1 Linux servers.

NOTE: To migrate data from Windows to an OES 2 SP1 Linux server, use the *Migrate Windows Shares* Utility. The Migration Tool with OES 2 SP1 does not support Windows migration.

- ♦ [Section A.1, “Prerequisites,” on page 79](#)
- ♦ [Section A.2, “Using the Migration Commands,” on page 80](#)
- ♦ [Section A.3, “Using the Migrate Windows Shares Utility,” on page 82](#)

A.1 Prerequisites

To perform migration, you must be an eDirectory™ administrator. Migration is not supported if you are a Domain Services for Windows (DSfW) administrator.

For the source server:

- ☐ The OES migration tools support Windows NT/2000/2003 sources with NTFS file system data and Active Directory* domains.
- ☐ The source must be a Primary Domain Controller (PDC).
- ☐ The source path must be exported as a Windows share.
- ☐ You need the credentials of the Administrator or equivalent user with full access rights to the exported Windows share.

For the target server:

- ☐ Make sure that the `samba-client` software package is installed on the OES 2 Linux server.

The `samba-client` package is installed by default with SUSE® Linux Enterprise Server (SLES) 10 SP1. To verify that it is installed, select *Computer > YaST > Software > Software Management* and search for `samba-client`.

- ☐ Create the required target volumes by using `nssmu` (for NSS volumes) or `ncpcon` (for NCP™ volumes).
- ☐ If you want to use the CASA secret store to store usernames and passwords during the migration, ensure that the following RPM is installed on the OES 2 Linux server:

`CASA-1.7-xxx.i586.rpm`

Restart the CASA daemon by entering the following command:

```
/etc/init.d/micasad restart
```

For more information, see “[Using CASA with Linux](#)” in the *Novell Common Authentication Services Adapter (CASA)* documentation.

A.2 Using the Migration Commands

This section covers data migration from the NTFS file system on Windows NT, 2000, or 2003 source machines to NSS or NCP volumes on OES 2 Linux servers.

- ♦ [Section A.2.1, “Migration Commands to Use,” on page 80](#)
- ♦ [Section A.2.2, “Migration Steps,” on page 80](#)
- ♦ [Section A.2.3, “Example,” on page 80](#)
- ♦ [Section A.2.4, “Limitations,” on page 81](#)
- ♦ [Section A.2.5, “Troubleshooting,” on page 82](#)

A.2.1 Migration Commands to Use

The main command to use is `migfiles`. To map the users and groups from the source domain to the target eDirectory tree, you need to use `ntfsmls`, `maptrustees`, and `migtrustees`. To map the user and group permissions, you also need to use `ntfsmls`, `ntfsmap`, and `migrights`.

A.2.2 Migration Steps

- 1 Run the `migfiles` command to copy the data from the source to the target server.
- 2 Capture the ACL and rights information of the Windows share by running `ntfsmls` and redirecting the output to a file.
- 3 Generate a list of users and groups who have rights to the files on the source share by running `ntuserls`.
- 4 Run the following commands in the order specified to map the Windows users and groups in the generated list to eDirectory users and groups and to create the new users and groups in the target tree:

```
maptrustees
migtrustees
```

- 5 Run the following commands in the order specified to map the Windows users' rights to eDirectory/NSS or NCP trustee rights:

```
ntfsmap
migrights
```

A.2.3 Example

The following example shows how to migrate data from a Windows share to an NSS volume on an OES 2 Linux server.

- 1 Migrate the files from a share named WinShare on a Windows source server with an IP address of 192.168.1.3 to a target NSS volume named NSSVOL:

```
migfiles -n -w -s 192.168.1.3 -v WinShare -i -V NSSVOL
```

If you are migrating to a target NCP volume named VOL1, omit the `-n` option:

```
migfiles -w -s 192.168.1.3 -v WinShare -i -V VOL1
```


The `migfiles` command mounts the Windows share by using a CIFS mount and copies the files using `rsync`.

- 2 Capture the ACL and rights information of the Windows share to an output file:

```
ntfsmcls -s 192.168.1.3 -v WinShare > ntfsmcls.yaml
```

- 3 Generate a list of users and groups who are assigned as authorized users for the files (with their ACLs) on the source share:

```
ntuserls -g -s 192.168.1.3 ntfsmcls.yaml > ntuserls.yaml
```

Be sure to include the `-g` option.

- 4 Map the Windows users and groups in the generated list to eDirectory users and groups:

```
maptrustees -s 192.168.1.3 -C DC=adminusers,DC=Windows,  
DC=Domain -k ou=winusers,o=org -r ntuserls.yaml >  
maptrustees.yaml
```

The `maptrustees` command uses LDAP to retrieve the user attributes from Active Directory.

Use the `-C` option to specify the Administrator user context.

All Windows users are migrated into a single eDirectory container specified by the `-k` option (`ou=winusers.o=org` in this example).

The `-r` option is for generating random passwords. If this option is used, each user is assigned a random password stored in the `maptrustees` output file (`maptrustees.yaml` in this example). If you want to assign users specific passwords, use the `-S` option instead of the `-r` option.

- 5 Migrate/create the mapped users in the target eDirectory tree:

```
migtrustees -d 192.168.1.67 maptrustees.yaml
```

- 6 Map the Windows users' rights to their files and folders to eDirectory/NSS trustee rights:

```
ntfsmap -n -k ou=winusers,o=org -V NSSVOL ntfsmcls.yaml >  
ntfsmap.yaml
```

If you are migrating to a target NCP volume, omit the `-n` option:

```
ntfsmap -k ou=winusers,o=org -V NCPVOL ntfsmcls.yaml >  
ntfsmap.yaml
```

- 7 Migrate/assign the eDirectory/NSS trustee rights on the target volume:

```
migrights -i ntfsmap.yaml > migrights.yaml
```

A.2.4 Limitations

Be aware of the following limitations when migrating file system data from Windows to OES 2 Linux:

- ♦ The Active Directory hierarchy is not maintained. All Windows users are migrated into a single eDirectory container.
- ♦ The OES migration tools support the migration of Windows users and groups only. They do not support the migration of other Active Directory objects.
- ♦ Migration of a Windows Encrypted File System (EFS) is not supported in this release of the OES migration tools.

- ♦ Only the following Windows user attributes are migrated:
 - ♦ description
 - ♦ mail
 - ♦ facsimileTelephoneNumber
 - ♦ fullName
 - ♦ givenName
 - ♦ initials
 - ♦ language
 - ♦ physicalDeliveryOfficeName
 - ♦ postOfficeBox
 - ♦ postalCode
 - ♦ st
 - ♦ street
 - ♦ telephoneNumber
 - ♦ title
- ♦ Windows Allow rights are supported, but not Deny rights.
- ♦ The OES migration tools do not migrate file sharing permissions, only user rights assigned in the security permissions.
- ♦ The OES migration tools do not support special Windows file types such as DFS junctions, shortcuts, and so on.

A.2.5 Troubleshooting

If the CIFS mount fails during the `migfiles` operation, try using the `mount.cifs` command to resolve issues related to mounting the source share.

If `migfiles` fails to unmount the Windows share from `/tmp/migrate`, use the following command to unmount the source share:

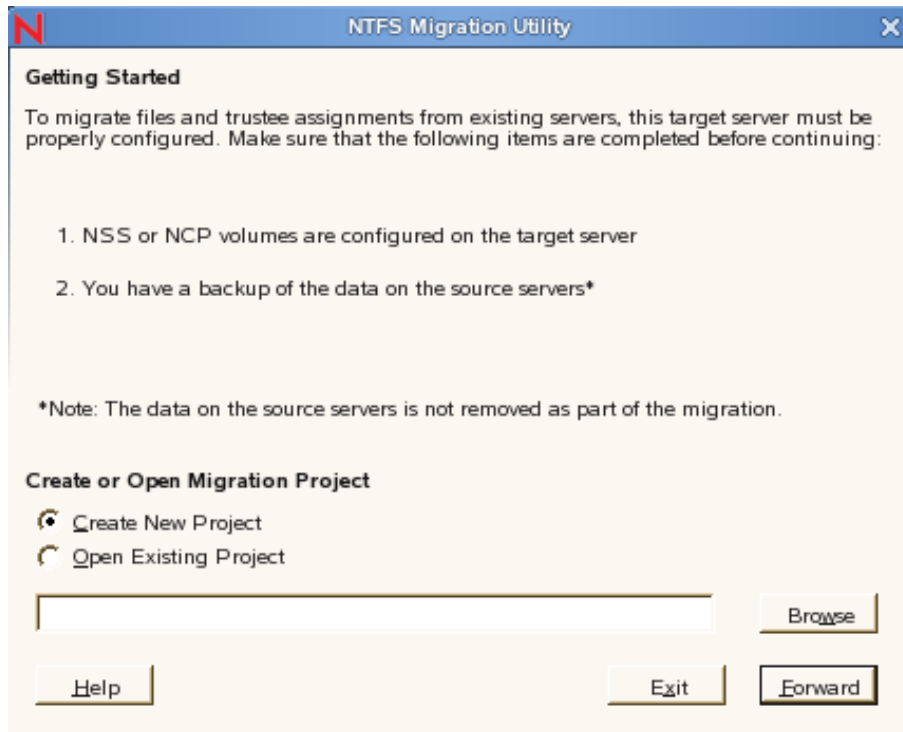
```
umount -i /tmp/migrate
```

A.3 Using the Migrate Windows Shares Utility

When you install an OES 2 Linux server or later, the Migrate Windows Share utility is automatically installed through YaST. This utility lets you perform basic data migrations from Windows to OES 2 Linux by using a graphical user interface (GUI) instead of command line tools.

To migrate Windows data shares:

- 1 Prepare the source and target servers as instructed in [Section A.1, “Prerequisites,” on page 79](#).
- 2 On the target server, access the utility from the desktop by selecting *Computer > YaST Administrator Settings > Open Enterprise Server > Migrate Windows Shares*.



3 (Optional) Create a new migration project:

3a Select *Create New Project*.

3b Specify the path to where you want the project file to be saved, or click *Browse* and select the path.

The default path is `/root/Desktop/` and the default project name is `newProject.xml`. You can change the path and project name as necessary.

A subdirectory with the same name as the project is created in the specified path. The associated output and log files for the project are stored in this subdirectory.

If a project with the same name already exists in the specified path, you are prompted whether you want to replace the old file. If you click *OK*, the new project overwrites the old one.

3c Click *Forward*.

3d Skip to **Step 5**.

4 (Optional) Open an existing migration project. Select *Open Existing Project*, click *Browse*, select a project file (`project_name.xml`), then click *Forward*.

If a selected file is not a valid migration project file, an error is displayed and you are prompted to select a valid project file.

The screenshot shows a window titled "NTFS Migration Utility" with a red 'N' icon. The main heading is "Source Server Authentication". Below it, a text block says: "Enter the following information for the Primary Domain Controller (PDC). The PDC is the domain from which you will migrate data to the target server." There are three input fields: "PDC" with a hint "(e.g. 192.168.xxx.xxx or Host Name)", "User Name" with a hint "(e.g. administrator or cn=admin,cn=users,dc=novell)", and "Password". Below these is a checked checkbox labeled "Authenticate using Secure Socket Layer (SSL)". At the bottom are four buttons: "Help", "Cancel", "Back", and "Forward".

5 Authenticate to the source Windows domain:

- 5a** In the *PDC* (Primary Domain Controller) field, specify the IP address or DNS name of the PDC server.
- 5b** In the *User Name* field, specify the fully distinguished, typeful name of an Active Directory user with admin rights, or the Windows administrator of the source server.
Use either the simple form (Administrator) or the LDAP comma-delimited format (cn=admin,cn=users,dc=novell).
- 5c** In the *Password* field, specify the password for the user.
The *Authenticate using Secure Socket Layer (SSL)* option is unavailable for Windows source servers.
- 5d** Click *Forward*.

NTFS Migration Utility

Target Server Authentication

This Server is not in the same eDirectory tree as the source server you specified. Enter the following information for the target eDirectory tree.

Server : 127.0.0.1
(e.g. 192.168.xxx.xxx or Host Name)

User Name :
(e.g. cn=admin,o=companyname)

Password :

☒ Authenticate using Secure Socket Layer (SSL)

Help Cancel Back Forward

6 Authenticate to the target tree.

6a In the *Server* field, specify the IP address or DNS name of the target server.

6b In the *User Name* field, specify the fully distinguished, typeful name of a user with admin rights in the target tree.

Use the LDAP (comma-delimited) format. For example: cn=admin,o=novell

6c In the *Password* field, specify the password for the user.

6d Decide whether to use a secure connection.

- ♦ To use a secure connection for LDAP authentication, make sure the *Authenticate using Secure Socket Layer (SSL)* option is selected (the default setting).

When this option is selected, you must also ensure that TLS is enabled for LDAP on the source server. In iManager, click *LDAP > LDAP Options > LDAP Group-server_name > Authentication Options* and verify that *Require TLS for Simple Binds with Password* is selected (it is selected by default).

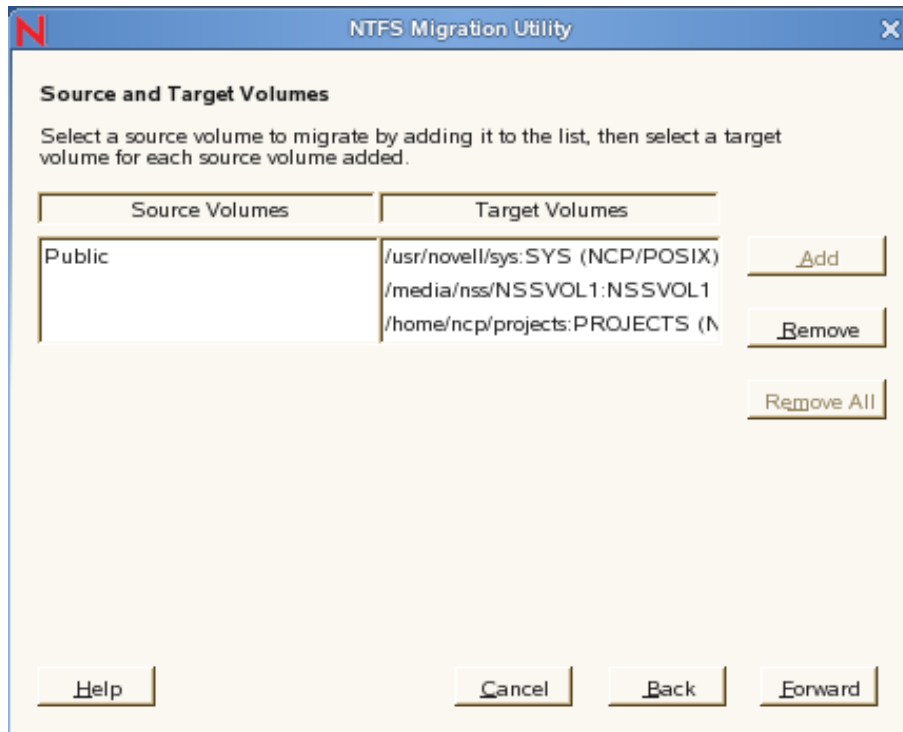
- ♦ If you do not want to use a secure connection, deselect the *Authenticate using Secure Socket Layer (SSL)* option.

You must also disable TLS for LDAP on the source server by using *iManager > LDAP > LDAP Options > LDAP Group-server_name > Authentication Options* and deselecting *Require TLS for Simple Binds with Password*.

Failure to set these options as instructed can result in unpredictable system behavior.

6e Click *Forward*.

7 Select the source and target volumes.



7a Click *Add*.

7b In the *Source Volumes* column, select the source share you want to migrate.

In the *Target Volumes* column, select the corresponding target volume.

The target volume type is displayed after the volume path:

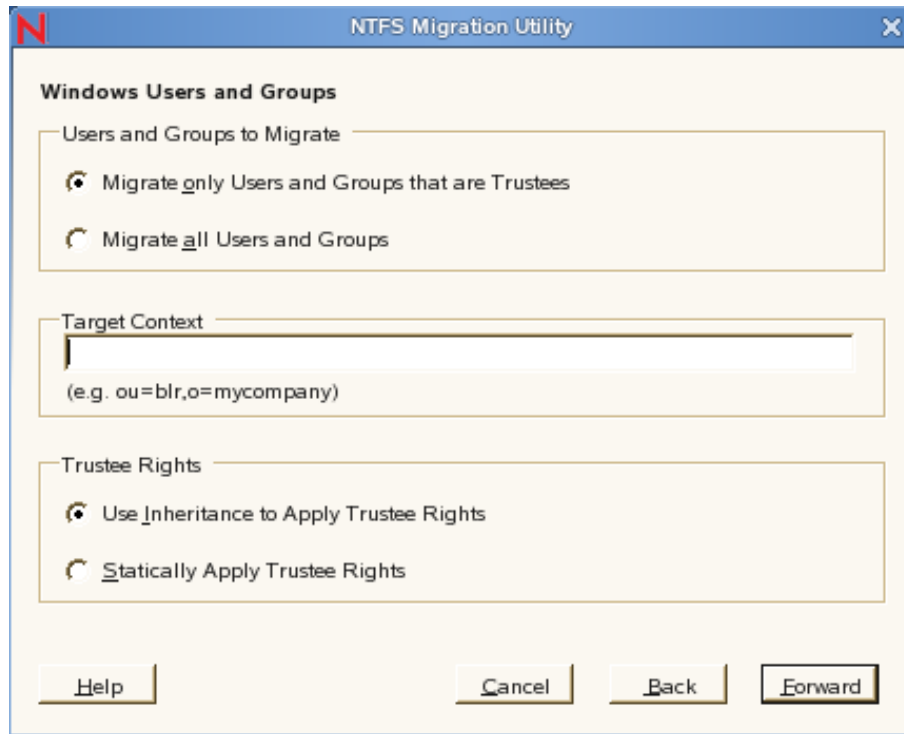
- ♦ NSS indicates a Novell Storage Services™ volume.
- ♦ NCP/POSIX indicates a NetWare Core Protocol™ volume on a Linux POSIX file system, such as EXT3 or XFS.

If no entry is selected for the source or target volume, the first volume listed in the respective column is selected by default.

7c If necessary, click *Remove* to clear the source and target volume entries and start over.

The *Remove All* button is not functional in this release.

7d When you have selected the desired source and target volumes, click *Forward*.



8 Specify the settings for migrating the Windows users and groups.

8a The *Users and Groups to Migrate* setting determines which users and groups to migrate from the Windows domain. Select one of the following options:

- ♦ Select *Migrate Only Users and Groups That Are Trustees* (the default) to migrate only users and groups that have been assigned permissions to the data.
- ♦ Select *Migrate All Users and Groups* to migrate all users and groups in the Windows domain regardless of whether they have been assigned permissions to the data.

8b In the *Target Context* field, specify the container in the target eDirectory tree where you want User and Group objects to be created for the migrated Windows users and groups.

Use LDAP (comma-delimited) format. For example: ou=blr,o=mycompany.

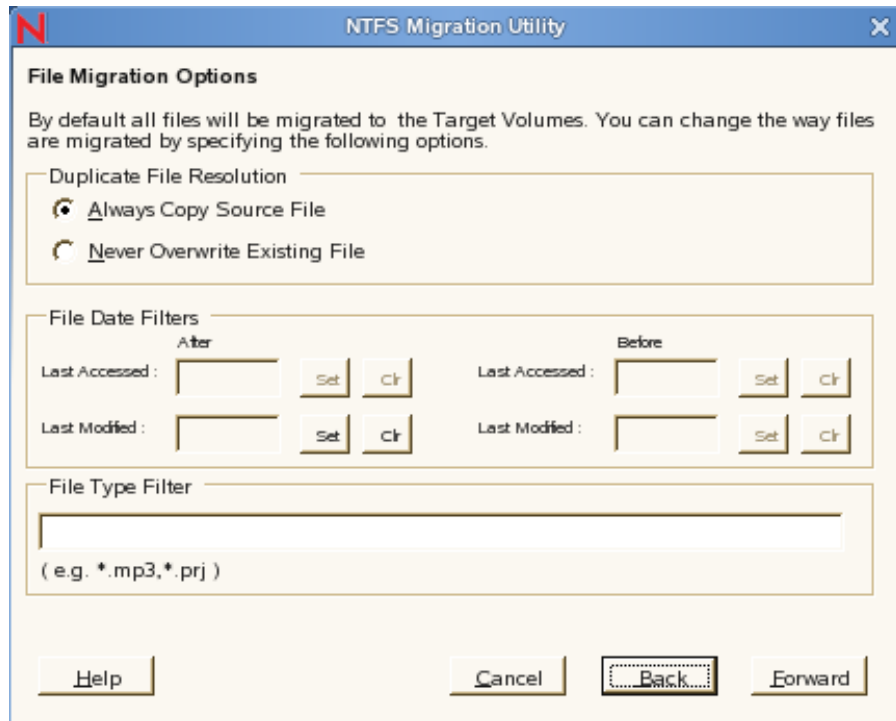
If the specified context does not exist, it is created in the target tree.

8c The *Trustee Rights* setting specifies whether or not you want to use inheritance to apply trustee rights. Select one of the following options:

- ♦ Select *Use Inheritance to Apply Trustee Rights* (the default) if you want the migrated data to take advantage of the Novell rights model, which allows rights set at one level to flow down to lower levels in the file system hierarchy.
- ♦ Select *Statically Apply Trustee Rights* if you want trustee rights to be explicitly assigned at each level in the file system hierarchy.

In this release of the OES migration tools, selecting *Statically Apply Trustee Rights* has no effect. The migration always uses the default setting.

8d Click *Forward*.



9 Specify the file migration options you want to use for this migration project.

9a The *Duplicate File Resolution* setting determines what action should occur when a file is being copied from the source server and a file with the same name and path exists on the target server. Select one of the following options:

- ♦ Select *Always Copy Source File* (the default) if you want the source files to overwrite files with the same name on the target server.
- ♦ Select *Never Overwrite Existing File* if you do not want the source files to overwrite files with the same name on the target server.

9b Select the filter options you want.

The *File Date Filters* let you set date ranges for *Last Accessed* and *Last Modified* to filter the files that are migrated from the source server.

Only the Last Modified After filter is functional in this release of the OES migration tools.

- ♦ If no filters are set, files are migrated regardless of their Last Accessed and Last Modified dates.
- ♦ If you specify a date in the *After* column, only files accessed or modified after the specified date are migrated.
- ♦ If you specify a date in the *Before* column, only files accessed or modified before the specified date are migrated.
- ♦ If you set both an *After* and a *Before* date, only files accessed between the two specified dates are migrated.

For each date filter setting, click *Set* to select a date from a calendar, or type a date in DD-MM-YYYY hh:mm:ss format. If necessary, click *Clear* to remove the date.

The File Date Filters are inclusive in nature, meaning all files that fall within the specified date ranges are migrated.

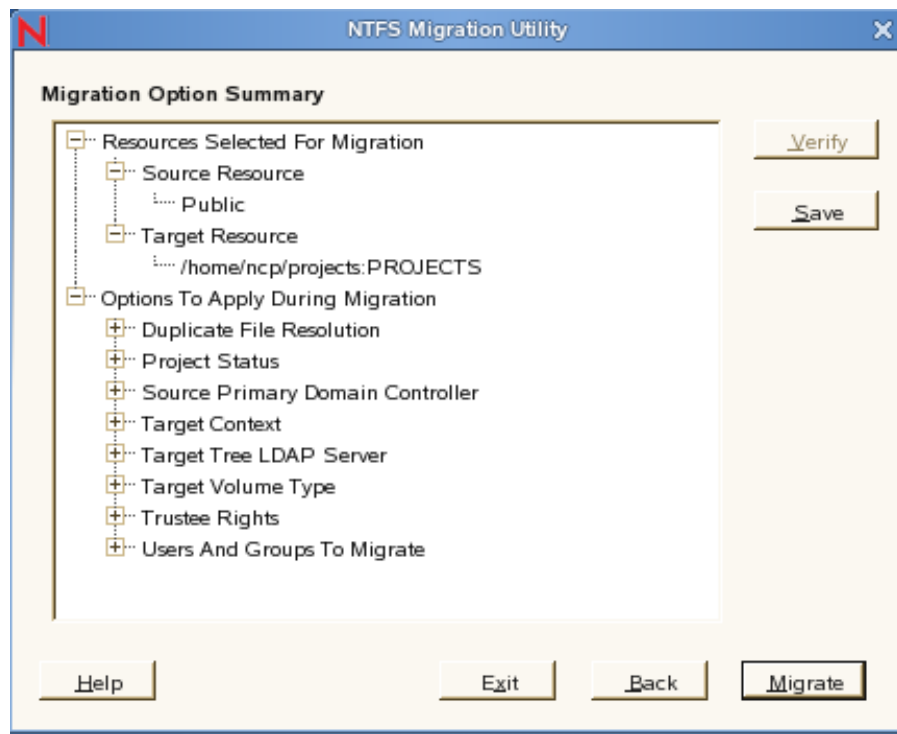
9c (Optional) Select File Type filter options.

The *File Type Filter* lets you exclude all files of a specific type, as well as individual filenames.

Enter filenames or extensions. Wildcard (*) specifications are permitted. For example, entering *.mp3 excludes all files with an extension of .mp3 from being migrated. Entering samplefile.txt excludes any files with this name from being migrated. Use a comma to separate multiple entries; for example: *.mp3, *.mov, *.tmp

The File Type Filter is exclusive in nature, meaning all files that match the filter patterns are not migrated.

9d When you have finished selecting your migration options, click *Forward*.



10 Review the migration option summary:

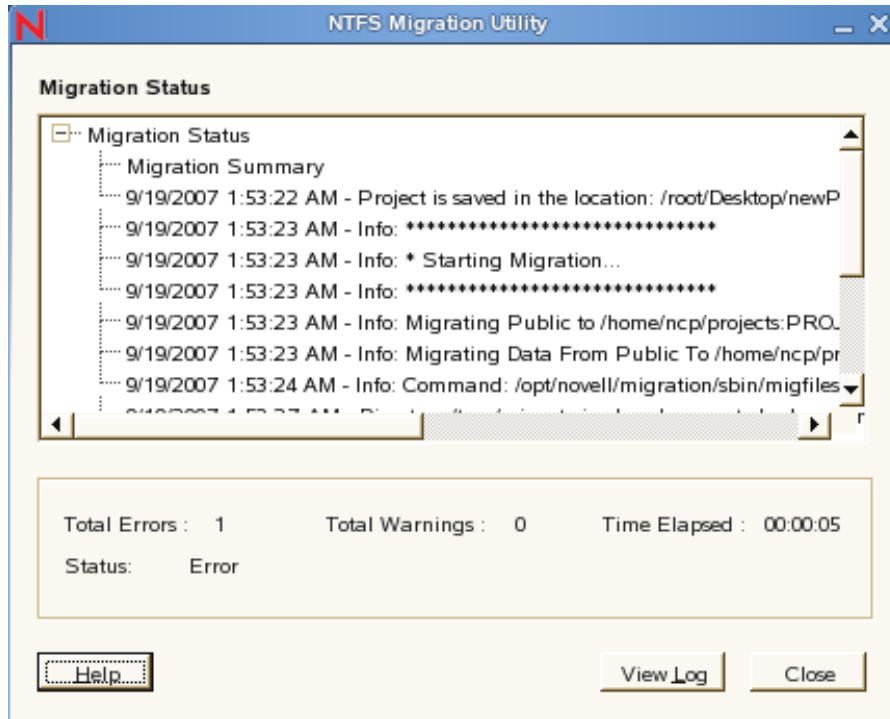
10a Expand the entries to verify that you have made the correct selections.

10b Take the appropriate action:

- ♦ If needed, click *Back* to go back through the previous pages and change the migration settings.
- ♦ If you do not want to start the migration now, click *Save* to save the settings to the migration project file. You can open and continue the migration project later.
- ♦ Click *Cancel* to exit the project without performing the migration.
- ♦ Click *Migrate* to start the migration process. Continue with **Step 11**.

The *Verify* button is enabled only after the migration has completed (see **Step 14 on page 90**).

11 Monitor the progress of the migration project.



The Migration Status window displays the progress of the migration, and the field below shows the total number of errors and warnings, the time elapsed, and a status message.

- 12** When the migration finishes or if it stops prematurely, click *View Log* to open the log file (`project.log` in the project folder) in a text editor.

The log file records everything displayed in the Migration Status window. You should review the log to verify the success of the migration.

If errors occurred, the messages recorded in the log file can help you determine what needs to be corrected before you attempt the migration again.

- 13** Click *Close* to close the Migration Status window.
- 14** (Conditional) To ensure that everything was migrated correctly, click *Verify* and review the log file again.
- 15** Click *Exit* to exit the *Migrate Windows Shares* utility.

Migrating eDirectory to OES 2 Linux

B

eDirectory™ migration to Open Enterprise Server (OES) 2 Linux requires the migration of the eDirectory data and server identity to provide seamless accessibility after migration. The eDirectory migration utility performs all of the pre-migration tasks, health validations and server backups, server migration, and post-migration tasks for you.

The following sections give you more details on the migration procedure for eDirectory. For more information, see the *OES Migration Guide* (<http://www.novell.com/products/openenterpriseserver/migrate.html>).

- ♦ Section B.1, “Planning Your Migration,” on page 91
- ♦ Section B.2, “Migration Tools,” on page 92
- ♦ Section B.3, “Migration Procedure,” on page 92
- ♦ Section B.4, “After the Migration,” on page 94

B.1 Planning Your Migration

This section lists the important requirements that must be verified before attempting eDirectory migration.

- ♦ Section B.1.1, “System Requirements,” on page 91
- ♦ Section B.1.2, “Prerequisites,” on page 92
- ♦ Section B.1.3, “Supported Platforms,” on page 92
- ♦ Section B.1.4, “Considerations,” on page 92

B.1.1 System Requirements

- ❑ The target server must run OES 2 SP1 with the migration pattern selected, and should have the eDirectory 8.8 SP4 RPMs already installed.
- ❑ If there is any eDirectory 8.8 SP4 instance already configured in the target OES 2 server, it must be deconfigured. For more information on removing a server object, refer to the [Using the ndsconfig Utility to Add or Remove the eDirectory Replica Server](http://www.novell.com/documentation/edir88/edirin88/data/a79kg0w.html) (<http://www.novell.com/documentation/edir88/edirin88/data/a79kg0w.html>) in the *eDirectory 8.8 Installation Guide*.
- ❑ OES 2 does not support multiple instances of eDirectory on the same server, so any non-default instances should not be running during migration.
- ❑ The source server should be running and should not be part of any partition operation. For more information on supported source server versions, refer to the ‘eDirectory Coexistence and Migration’ (http://www.novell.com/documentation/oes2/oes_implement_lx_nw/index.html?page=/documentation/oes2/oes_implement_lx_nw/data/edir.html#edir-coexistnmig) in the *OES 2 SP1: Planning and Implementation Guide*.

B.1.2 Prerequisites

- ❑ The eDirectory migration utility can run only on the target server and must be able to access the source server remotely.

B.1.3 Supported Platforms

The eDirectory migration utility is designed to run on the Linux version of OES 2, which is the target platform for migration. For more information on the compatible eDirectory versions at the source and the corresponding target servers, refer to the [Section 4.1, “Prerequisites,” on page 35](#) and [Section 1.4, “Supported Service Migration,” on page 19](#).

B.1.4 Considerations

- ♦ IP address and DNS migrations are not performed by this migration utility. [! \[if possible, x-ref to something that tells them how to do this.\]](#)
- ♦ Only the eDirectory instance is migrated. Applications depending on eDirectory are not migrated by this utility. [! \[if possible, x-ref to something that tells them how to do this.\]](#)
- ♦ You should not use this migration methodology if you want both the servers to be available during the migration operation.

NOTE: Only the target server is available after the migration. The eDirectory DIB on the source server is locked. Other service migrations cannot be performed after completing eDirectory migration. The source server can be brought back by restarting the eDirectory server, but you should do this only if the target server migration is unsuccessful.

B.2 Migration Tools

The eDirectory migration can be performed independently or by using the OES migration framework. The complete migration task is performed by invoking the migedir command line utility.

B.3 Migration Procedure

- 1 Run the migedir utility by entering the following command on the target server:

```
migedir [-A <log directory name>] [-s <IP address>] [-t] [-h] [-i] [-u] [-a] [-w] [-B] [-R]
```

The utility takes the following command line options:

Option	Description
-A <i>directory name</i>	Enables auditing. <i>directory name</i> specifies the directory in which log files should be created.
-s <i>IP address</i>	Specifies the IP address of the source server containing the eDirectory instance to be migrated.
	IMPORTANT: -s is a mandatory parameter.
-t	Tests the validity of the input parameters.
	NOTE: This option verifies the IP address; however, it does not perform the actual migration.
-h	Prints help about using this utility.
-i	Enables the verbose mode.
-u	Enables the unattended mode.
-a	Specifies the tree adminDN.
-w	Specifies the admin password.
-B	Enables the Backup Only mode.
-R	Enables the Restore Only mode.

2 Follow the on-screen instructions as the utility performs the migration.

The migration utility does some pre-migration checks, performs the migration, then does some post-migration tasks.

- ♦ [“Pre-migration” on page 93](#)
- ♦ [“Migration” on page 93](#)
- ♦ [“Post-migration” on page 94](#)
- ♦ [“Handling Failures” on page 94](#)

Pre-migration

The utility performs the following checks:

- ♦ The health and state of the replicas in the ring are verified.
- ♦ Time synchronization is verified between the source and target servers.

Migration

The utility performs the migration of the eDirectory instance from the collected configuration information. This involves backing up the source server data, locking the eDirectory instance in the source server, migrating data to the target server, and restoring the eDirectory instance on the target server. The dependent NICI files are also migrated.

Post-migration

After migration, the following tasks are performed by the utility:

- ♦ The `nds.conf` configuration file is modified with the source server eDirectory instance information, such as tree name and server name.
- ♦ The eDirectory instance in the target server is restarted so it can use the new data.
- ♦ Network address repair is performed to start the synchronization of the new IP address in the replica ring.

Handling Failures

During migration, the database in the source server is locked to avoid multiple copies of the instance running on the source and target servers. Multiple copies of the same instance can lead to data inconsistency. If the process fails and if you intend to bring up the source server again, you need to perform the following tasks:

- 1 Remove the partially migrated eDirectory instance on the target server.

For more information on removing the eDirectory instance from a server, refer to the ‘Removing a Server Object And Directory Services From a Tree’ (<http://www.novell.com/documentation/edir88/edir88/data/a79kg0w.html#bxm6fn9>) in the *eDirectory 8.8 Installation Guide*.

- 2 Bring up the source server by reloading the directory services. Make sure that the source server is brought up on the network only when the migration fails. The database backup and log files are saved in the `SYS:\` folder.

B.4 After the Migration

After migration, the target eDirectory instance listens on the IP address of the target server and not on the source server’s address. It requires additional time after migration for the eDirectory instance to synchronize the new IP address in the replica ring. Successful eDirectory migration can be verified by performing eDirectory operations on the new IP address.

If you want to use the existing security certificates, you must change the IP address of the target server to that of the source server. If you don’t want to do this, you must issue new certificates.

NOTE: If you change the IP address of the target server after migration, you must modify the `nds.conf` file, restart the eDirectory instance, and repair the network address and partitions replica manually. For more information on repairing eDirectory instance, refer to ‘Advanced DSRepair Options’ (<http://www.novell.com/documentation/edir88/edir88/data/aflm3p7.html>) in the *eDirectory 8.8 Administration Guide*.

Migrating AFP from NetWare to OES 2 Linux

C

Migration refers to the process of migrating AFP services from a NetWare® system to a Linux system. For general information about the OES 2 SP1 Migration Tool, see [Chapter 1, “Overview of the Migration Tools,” on page 15](#)

The following sections give you more details on the migration procedure for AFP.

- ♦ [Section C.1, “Requirements,” on page 95](#)
- ♦ [Section C.2, “Migration Scenarios,” on page 95](#)
- ♦ [Section C.3, “Understanding the Migration Process,” on page 96](#)
- ♦ [Section C.4, “Migration Procedure,” on page 96](#)
- ♦ [Section C.5, “Verifying the Migration Process,” on page 97](#)
- ♦ [Section C.6, “Cross-Platform Issues,” on page 97](#)

C.1 Requirements

Make sure your source server and target server meet the following requirements:

Source Server Requirements

- ♦ NetWare 5.1 or later versions

Target Server Requirements

- ♦ OES 2 SP1 Linux server
- ♦ Install and configure the AFP server by following the instructions in [“Installing and Setting Up AFP”](#).

C.2 Migration Scenarios

AFP supports the following migration scenarios:

- ♦ Migrating Servers through Server Consolidation
- ♦ Migrating Servers through Transfer ID

For more information about these scenarios, see [Section 1.3, “Migration Scenarios,” on page 17](#).

NOTE: AFP does not support migration across different eDirectory tree. it can be achieved :

For details, see [Section H.3.2, “Migrating Data to a Server in a Different Tree,” on page 150](#)
[“Installing and Setting Up AFP”](#)

C.3 Understanding the Migration Process

During the migration process, the source server reads the context file information and migrates it to the target server.

If the contexts on NetWare do not have a Universal Password policy, the migration process includes the Universal Password policy.

If the contexts on NetWare already have a Universal Password policy, the migration process modifies the policy by enabling Universal Password and including the proxy user to read the users' password.

C.4 Migration Procedure

Migrating the AFP configuration is done by using the YaST utility or through the command line interface.

- ♦ [Section C.4.1, “Using the Migration Tool to Migrate,” on page 96](#)
- ♦ [Section C.4.2, “Using Command Line Utilities to Migrate,” on page 96](#)

C.4.1 Using the Migration Tool to Migrate

- 1 Access the Migration Tool by using the steps detailed in [Section 5.2, “Launch the Migration Tool Utility,” on page 37](#).
- 2 Authenticate to the source and target servers.
- 3 Select *Novell AFP*, then click *Configure*. The AFP configuration window is displayed.
- 4 From the list, select the password policies to which the AFP users are assigned.
Click *OK* to finish the configuration and go back to the migration screen.

C.4.2 Using Command Line Utilities to Migrate

To run the AFP migration utility through command line, run `migafp` with the following parameters:

Table C-1 *migafp command line parameters*

Parameter	Description
-h	Prints a summary of the migration process
-s	IP address of the source server
-u	DN of the source tree admin. For example : <code>cn=user, o=company</code>)
-w	Admin password to authenticate to the source server
-b	DN of the destination tree. For example: <code>cn=user, o=company</code>)
-x	Admin password to authenticate to the destination server
-q	Port number of the target LDAP server

Parameter	Description
-t	Use 1 as a parameter for secure authentication and 0 as a parameter for non-secure authentication
-f	Full path of file containing the password policy DN's. Each entry should be separated by a new line

For example:

```
migafp -s 10.10.10.1 -u cn=sourceadmin.o=novell -w password -b
cn=targetadmin.o=novell -x password -q 689 -t 1 -f /tmp/
passwordpolicyfdn.ldf
```

C.5 Verifying the Migration Process

- 1 Ensure that all the context details from `sys:/etc/ctxs.cfg` (NetWare context file) are migrated to `/etc/opt/novel/afptcpd/afpdirctxt.conf` (OES 2 SP1 Linux server context file).
- 2 Check if the password policies specified during AFP migration have the proxy user added as a user to read the passwords of users :
 - 2a Click *Passwords>Password Policies*. Select the AFP Password policy from the list.
 - 2b Select *Universal Password>Configuration Options*. Ensure the following options are enabled:
 - Enable Universal Password*
 - Allow User to retrieve password*
 - 2c Under *Allow the following to retrieve passwords* list, select the AFP proxy user.

C.6 Cross-Platform Issues

AFP on Linux uses Universal Password as the authentication mechanism instead of the Simple Password authentication mechanism on NetWare. During migration from NetWare to Linux, the simple passwords on the NetWare system are synchronized to the Universal Password, so that the user can authenticate seamlessly to the AFP service on the Linux server.

This feature is restricted based on the following conditions:

- ♦ The first-time login by the user should use the Diffie Hellman Exchange or cleartext authentication methods. The automatic password synchronization does not happen if the user authenticates by using the Random Exchange or Two-way Random Exchange method of authentication.
- ♦ When the Diffie Hellman Exchange or cleartext authentication methods are used, the eDirectory service (nds) should be started with the environment variable `NDS_TRY_NDSLOGIN_FIRST` set to `TRUE`.

If the above conditions are not met, all the users with Simple Passwords are required to manually authenticate to the AFP server on NetWare after they are enabled for Universal Password, in order to trigger the password synchronization to Universal Password.

Migrating Novell Archive and Version Services from OES 1 NetWare to OES 2 Linux SP1

This section provides information on how to migrate Novell Archive and Version Services running on NetWare® 6.5 SP6 or later to OES 2 SP1 Linux platform. In the later sections the Netware server is referred to as the source server and the OES 2 SP1 Linux as the target server.

For general information on the OES 2 Migration Tool, see [Chapter 1, “Overview of the Migration Tools,” on page 15](#)

- ♦ [Section D.1, “Prerequisites,” on page 99](#)
- ♦ [Section D.2, “Migration Scenarios,” on page 99](#)
- ♦ [Section D.3, “Migration Procedure,” on page 100](#)
- ♦ [Section D.4, “Post-Migration Procedure,” on page 103](#)

D.1 Prerequisites

Before proceeding to migrate, meet the following prerequisites:

- ♦ Archive server is installed on the NetWare 6.5 SP6 or later. For more details, refer the *OES 2: Novell Archive and Version Services 2.1 for NetWare Administration Guide*.
- ♦ Install NSS file system on the OES 2 SP1 Linux server.
- ♦ Archive server and the Primary volume must reside in the same edirectory™ tree.
- ♦ Archive server, PostgreSQL database, and Archive volume must be installed on the same machine.

D.2 Migration Scenarios

The supported scenarios for Archive and Versions Services are as follows:

D.2.1 Consolidate - Same Tree

In the Consolidate scenario the data and configuration on the source server is overwritten.

D.2.2 Transfer ID - Same Tree

In this scenario, the target server is installed in the same tree as the source server. On successful completion of Transfer ID, the target server functions with the same credentials (like IP address and hostname) as the source server and source server node is no longer available in the network.

D.2.3 What is Migrated

The following is migrated from the source server to the target server:

- ♦ The Archive volume that contains the versions of your files.
- ♦ The configuration details stored in `ArkConfig.xml` file.
- ♦ Database records from the MySQL database to PostgreSQL database.

D.3 Migration Procedure

- 1 Install OES 2 SP1 Linux server as the target server for the Archive and Version Services into the same edirectory tree as the source server. For more information on installing Novell Archive Versions Services, see “[Setting Up Archive and Version Services](#)” in the *OES 2 SP1: Novell Archive and Version Services 2.1 for Linux Administration Guide*.

- 2 Stop the Archive and Version Service on source server. Continue to run the MySQL database.
`arkstop`

- 3 Stop the Archive Service on target server, enter
`rcnovell-ark stop`

NOTE: The command stops the Archive server and default instance of PostgreSQL database.

- 3a If you have configured Archive server with the default configuration, restart the PostgreSQL database with the following command:

`/opt/novell/arkmanager/bin/pg_restart.sh`

- 4 Migrate data from Archive volume on the NetWare server to OES 2 SP1 server. The migration is between NetWare NSS source volume to OES 2 SP1 Linux NSS target volume, where the source and target servers are in the same eDirectory tree. For more information, refer to the [OES 2: NSS File System Administration Guide \(http://www.novell.com/documentation/oes2/stor_nss_lx_nw/index.html?page=/documentation/oes2/stor_nss_lx_nw/data/bt8gbxo.html\)](http://www.novell.com/documentation/oes2/stor_nss_lx_nw/index.html?page=/documentation/oes2/stor_nss_lx_nw/data/bt8gbxo.html).

IMPORTANT: You need to migrate Archive volume before migrating the Archive and Version Service, otherwise, versions of files created on the NetWare server will be unusable on OES 2 SP1 Linux server.

- 4a (Optional) Migrate data from Primary volume on NetWare server to OES 2 SP1 Linux server using either Command Line Utilities or GUI interface. For more information, refer to the [OES 2: NSS File System Administration Guide \(http://www.novell.com/documentation/oes2/stor_nss_lx_nw/index.html?page=/documentation/oes2/stor_nss_lx_nw/data/bt8gbxo.html\)](http://www.novell.com/documentation/oes2/stor_nss_lx_nw/index.html?page=/documentation/oes2/stor_nss_lx_nw/data/bt8gbxo.html).
- 5 The Migration Tool GUI has a plug-in architecture and is made up of Linux Command Line Utilities with a GUI wrapper. You can migrate Archive and Version Services using either of the methods:
 - ♦ “[Using Migration Tool GUI](#)” on page 101
 - ♦ “[Using Command Line Utilities](#)” on page 102

D.3.1 Using Migration Tool GUI

- 1 Click *Computer > More Applications > System > Novell Migration Tools* to launch Migration Tool GUI.

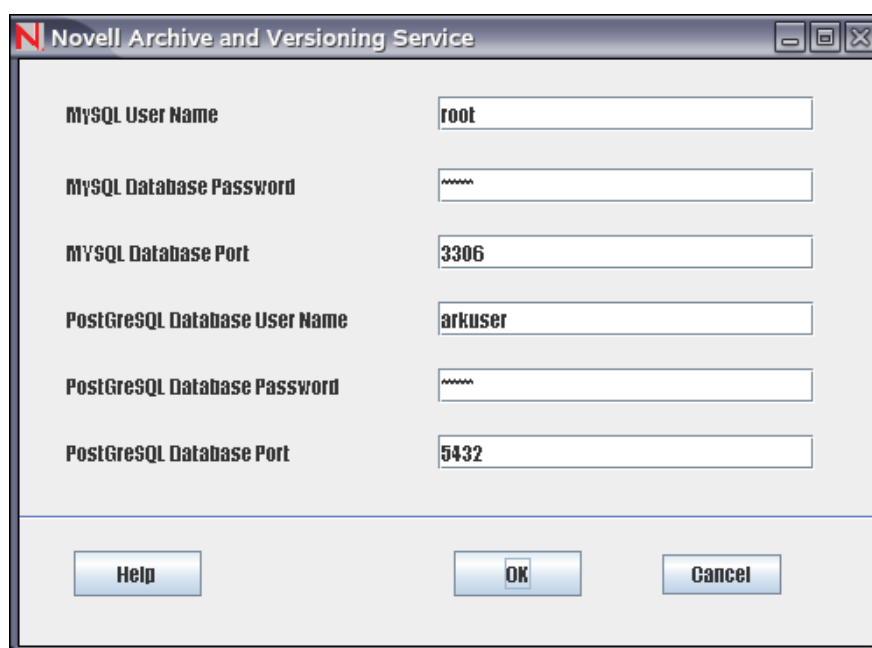
For more information on using Migration Tool GUI, refer [Chapter 5, “Using Migration Tool GUI,” on page 37](#)

- 2 Authenticate the source and target server, Archive and Version Service is listed in the *Service* panel.

NOTE: Select the *Migration Type* as *Consolidate* for Same and Different tree scenario, *Transfer ID* for Transfer ID scenario.

- 3 In the *Services to Migrate* panel, click *Add* and select Novell Archive and Versioning Services. The *Status* of the service is *Not Configured*.
- 4 Select Novell Archive Versioning Service and click *Configure*.

Figure D-1 Novell Archive and Versioning Service Migration Screen



Parameter	Description
MySQL User Name	Specify a username for the administrator of the MySQL database on the source server.
MySQL Database Password	Specify a password for the MySQL user.
MySQL Database Port	Specify a port number used for the archive database communications on the source server. Port 3306 is the default.

Parameter	Description
PostgreSQL Database User Name	Specify a username for the administrator of the archive database (the PostgreSQL database for the archived data) on the OES 2 SP1 Linux server.
	IMPORTANT: The Postgres user must be an unprivileged user, not the root user.
PostgreSQL Database Password	Specify a password for the PostgreSQL user.
PostgreSQL Database Port	Specify a port number to use for the archive database communications on OES 2 SP1 server. Port 5432 is the default.

5 Click *OK*.

The *Status* of the service is *Ready*.

6 Click *Start* to proceed with migration. The *Status* is *Migrating*.

In the *Status* pane, *Service* tab, you can view the progress of migration. On completion of migration the *Status* changes to *Migrated*.

NOTE: If you encounter any errors during migration, check the *Logs* tab in the *Service* pane. After resolving the errors, execute the migration procedure again.

D.3.2 Using Command Line Utilities

1 To run the Archive and Version migration utility through command line, run `/opt/novell/migration/bin/migark.sh` with the following details:

Option	Description
<code>--mysqldb-user=<opt></code>	Specify a username for the administrator of the MySQL database.
<code>--mysqldb-passwd=<opt></code>	Specify a password for the MySQL User.
<code>--mysqldb-port=<opt></code>	Specify a port number used for the archive database communications on NetWare server. Port 3306 is the default.
<code>--hostname=<opt></code>	Specify the host name or IP address of the NetWare server on which Archive and Version Service resides.
<code>--username=<opt></code>	Specify the fully distinguished eDirectory name and context of the administrator user. For example, <code>cn=admin.o=novell</code>
	NOTE: Use the dot (.) format for specifying eDirectory name and context, not the comma (,) format.
<code>--password=<opt></code>	Specify a password for the Admin user.

Option	Description
<code>--pg_db-user=<opt></code>	Specify a username for the administrator of the archive database (the PostgreSQL database for the archived data) on the Novell OES 2 SP1 server.
	IMPORTANT: The Postgres user must be an unprivileged user, not the root user.
<code>--pg-db-passwd</code>	Specify a password for the PostgreSQL user.
<code>--pg_db-port=<opt></code>	Specify a port number to use for the archive database communications on OES 2 SP1 Linux server. Port 5432 is the default.

For example:

```
/opt/novell/migration/bin/migark.sh --mysqldb-user=root --
mysqldb-passwd=novell --mysqldb-port=3306 --
hostname=192.168.1.255 --username=cn=admin.o=novell --
password=novell12 --pg_db-user=arkuser --pg_db-
passwd=novell12 --pg_db-port=5432
```

NOTE: If you encounter any errors during migration, check the `archive_migration.log` file in `/var/opt/novell/log/migration/` folder. After resolving the errors, execute the migration procedure again.

D.4 Post-Migration Procedure

1 Before restarting the Archive server, ensure the following:

- ♦ Migration of Archive volume is successful.
- ♦ (Optional) Migration of Primary volume is successful. In the `ArkConfig.xml` file under the `job` tag, ensure that the server name and context reflect the configuration details of the target machine.
- ♦ The migrated data from the volumes and database is consistent.
- ♦ Edit `ArkConfig.xml` to update the Archive volume path under `archivePath` tag on the OES 2 SP1 Linux server.
- ♦ Ensure that the admin is a part of the `novlxtier` group. For more information, refer the “[Caveats on Upgrading from OES 1 to OES 2 SP1](#)” in the *OES 2 SP1: Novell Archive and Version Services 2.1 for Linux Administration Guide*.
- ♦ Ensure the admin is LUM enabled on the target server running Archive and Version Services.
- ♦ Ensure that the read only attribute is not set on the ARK volume.

To check if ARK volume is set with read only attribute, enter `attrib /media/nss/ARK`. The output of the above command includes read only (`ro`) attribute.

To delete the read only attribute, enter `attrib -c ro /media/nss/ARK`

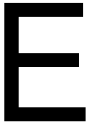
2 Restart the Archive Service on OES 2 SP1 Linux server, enter:

```
rcnovell-ark start
```

D.4.1 Verifying Migration

To verify that migration completed successfully, check availability of versions of file using NSS File Version Utility.

Migrating CIFS from NetWare to OES 2 SP1 Linux



The NetWare to OES 2 Linux CIFS migration process is either initiated from the Migration Tool or by a Command Line Utility. For detailed information on migration using Migration Tool, see [Chapter 1, “Overview of the Migration Tools,” on page 15](#) and Command Line Utility, see [Section E.6, “Manpage for Migration,” on page 113](#). Migrating CIFS means migrating CIFS shares, contexts, and server configuration information.

The following sections give you more detail on the CIFS migration procedure for OES 2 Linux:

- ♦ [Section E.1, “Migration Scenarios,” on page 105](#)
- ♦ [Section E.2, “Migration Prerequisites,” on page 106](#)
- ♦ [Section E.3, “Migration Procedure,” on page 106](#)
- ♦ [Section E.4, “Post-Migration Procedure,” on page 112](#)
- ♦ [Section E.5, “Verifying Migration,” on page 112](#)
- ♦ [Section E.6, “Manpage for Migration,” on page 113](#)

E.1 Migration Scenarios

The CIFS migration scenarios are explained in this section:

- ♦ [Section E.1.1, “Consolidate - Same Tree,” on page 105](#)
- ♦ [Section E.1.2, “Transfer ID - Same Tree,” on page 106](#)
- ♦ [Section E.1.3, “What is Migrated Checklist,” on page 106](#)

E.1.1 Consolidate - Same Tree

Only CIFS shares and contexts of the source servers are consolidated. The remaining server configuration information is not consolidated. The target server configuration is overwritten with the source server configuration. For details on consolidation migration, see [Section 1.3, “Migration Scenarios,” on page 17](#).

NOTE: CIFS consolidation for Different Tree is not supported. But it can be achieved using the following procedure:

1. Migrate the File System using Different Tree scenario. For details, see [Section H.3.2, “Migrating Data to a Server in a Different Tree,” on page 150](#).
 2. Re-configure CIFS on the target server. For details on configuring CIFS, see “[Setting the CIFS Server and Authentication Properties](#)” in the *OES 2 SP1: Novell CIFS for Linux Administration Guide*.
-

E.1.2 Transfer ID - Same Tree

In this scenario, the target is installed into the same tree with a temporary name and ip. At the end the source server name and ip are swapped for target server name and ip. For details on Transfer ID migration, see [Part IV, “Transfer ID Migration,” on page 51](#).

E.1.3 What is Migrated Checklist

The following table information gives you a quick overview of what gets migrated from NetWare CIFS to OES 2 Linux CIFS for different scenarios:

Table E-1 Migration Support for CIFS service

Service supported	Consolidation		Transfer ID	
	Same Tree	Different Tree	Same Tree	Different Tree
Migrating CIFS shares	✓	✗	✓	✗
Migrating CIFS contexts	✓	✗	✓	✗
Migrating server configuration information	✗	✗	✓	✗

E.2 Migration Prerequisites

For the migration to happen successfully:

- ♦ CIFS server is installed and configured on the source server in one of the following platforms:
 - NetWare 5.0
 - NetWare 6.0
 - NetWare 6.5 SP7 or SP 8

For details about CIFS on a NetWare server, see [OES 2 SP1: AFP, CIFS, and NFS for NetWare \(NFAP\) Administration Guide](#).

- ♦ CIFS server is installed and configured on the target server (OES 2 SP1 Linux). For details, see [“Installing a CIFS server on an OES 2 SP1 Linux”](#).
- ♦ NSS file system migration from the source to the target server is completed.

E.3 Migration Procedure

Follow the instructions in these sections to perform the CIFS migration.:

- ♦ [Section E.3.1, “Using Migration Tool,” on page 107](#)
- ♦ [Section E.3.2, “Using Command Line Utility,” on page 110](#)

E.3.1 Using Migration Tool

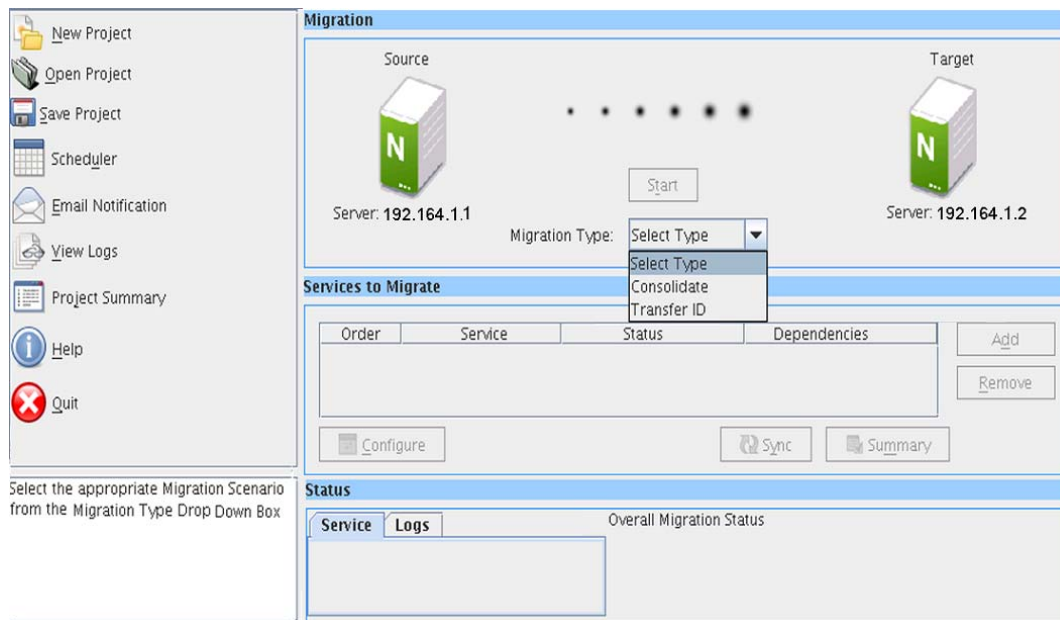
The migration tool can be started either from the command prompt or applications menu. Start the tool and complete the following instructions:

- 1 Launch the Migration Tool on the target server in one of the following ways:

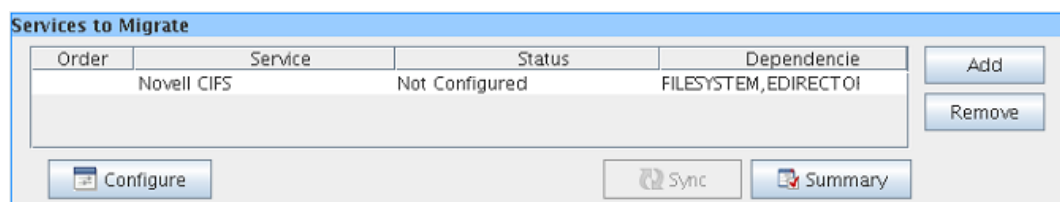
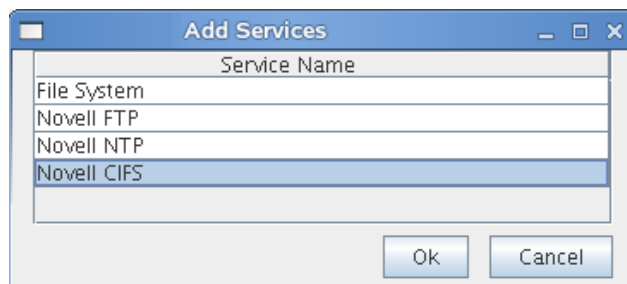
From your Desktop: Click *Computer > More Applications > System > Novell Migration Tools*.

From your Terminal: Run `miggui` command.

For details on configuring Source and Target Server information, selecting a Migration Type, Open Project, and all tool buttons, see [Chapter 2, “Overview of the Migration GUI,” on page 21](#).



- 2 Click *Add*, select *Novell CIFS* to migrate and click *OK*.



The *Status* is displayed as *Not Configured*.

- 3 Select *Novell CIFS* and click *Configure* to configure the migration parameters.
- 4 Under *CIFS Shares*, select the *Source* and *Target* shares for migration. Use *Browse* to browse for target shares. Use *Add* to add more source and target share mappings. Use *Update* to modify the configuration. Use *Delete* to remove the share mappings.

The screenshot shows the 'CIFS Shares' tab in a configuration window. The 'Source' dropdown is set to 'V1:'. The 'Target' text box is empty. Below these are two empty lists: 'Source List' and 'Target List'. To the right of the lists are buttons for 'Browse', 'Add', 'Update', and 'Delete'. At the bottom are 'Help', 'OK', and 'Cancel' buttons.

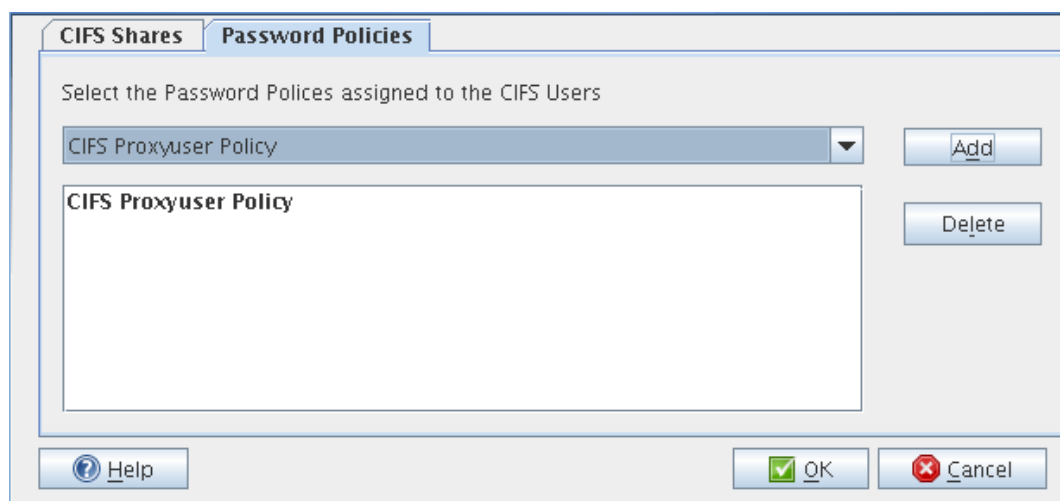
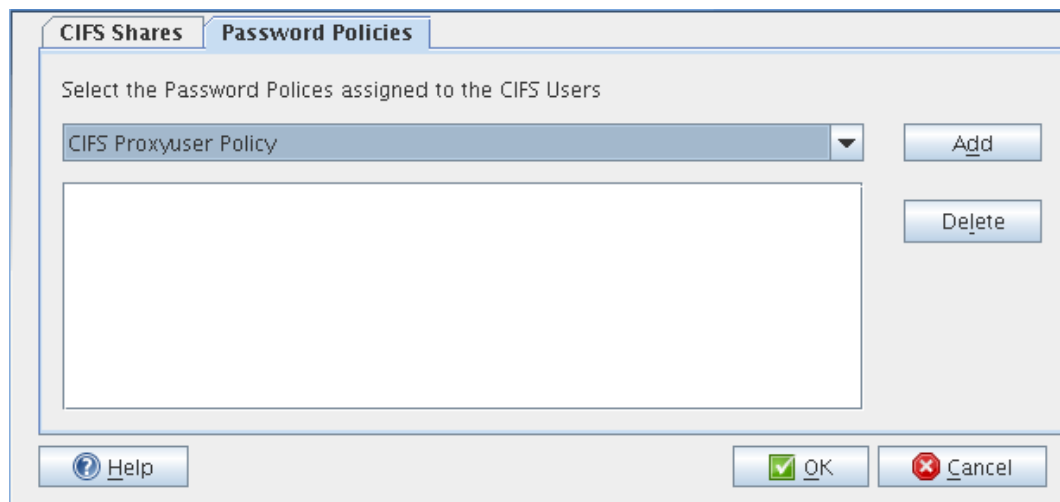
The screenshot shows the 'CIFS Shares' tab. The 'Source' dropdown is still 'V1:'. The 'Target' text box now contains '/media/nss/V1'. The 'Source List' and 'Target List' remain empty. The 'Add', 'Update', and 'Delete' buttons are visible on the right.

The screenshot shows the 'CIFS Shares' tab with both lists populated. The 'Source' dropdown is now 'VOL1'. The 'Target' text box is empty. The 'Source List' and 'Target List' contain the following entries:

Source List	Target List
ark	/media/nss/ARK
primary	/media/nss/PRIMARY
CIFS	/media/nss/CIFS
VOL1	/media/nss/VOL1

The 'Add', 'Update', and 'Delete' buttons are visible on the right.

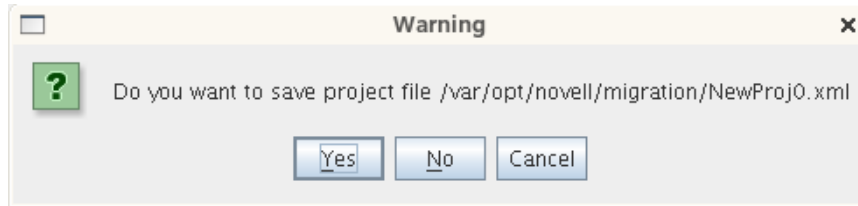
- Under *Password Policies*, select and add password policies to be associated with the proxy user to enable CIFS share access. Use *Add* to attach additional password policies. Use *Delete* to detach the password policies.



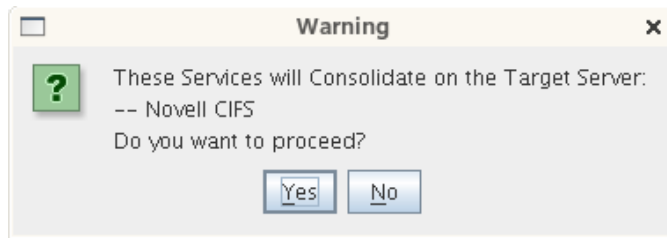
- Click *OK* to complete the configuration.
The *Status* is displayed as *Ready*.

Services to Migrate			
Order	Service	Status	Dependencies
	Novell CIFS	Ready	FILESYSTEM, EDIRECTORY

- Click *Start* to start the migration process. A dialog box appears. Click *Yes* to save the project.

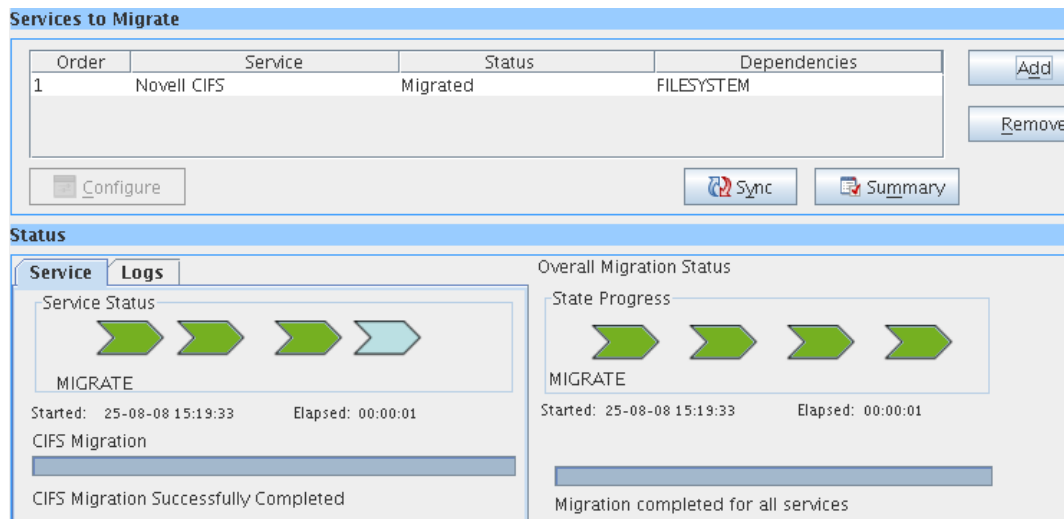


8 A dialog box appears. Click *Yes* to Proceed with migration.



Wait for the migration to be completed. The *Status* changes to *Migrated*. The message *CIFS Migration Successfully Completed* is displayed.

NOTE: Use *Status > Logs* tab to verify for errors during migration. Fix the errors and restart the migration procedure.



E.3.2 Using Command Line Utility

CIFS migration requires the complete source and target server details. Run the migCifs utility on the target server for migrating. The migCifs command is represented in the following format. For details on the command, see “migCifs” usage in [Section E.6, “Manpage for Migration,” on page 113](#):

```

migCifs -s <sourceIPAddr> -p <sourceportnum> -a <sourceFDN> -w <passwd> -f <sec/
nonsecConn> -d <targetIPAddr> -q <targetportnumber> -b <targetFDN> -x <passwd> -g
<secure/nonsecureconn> -S <MigrationType> [-m <cifssharemappings>] [-n
<cifspasswordpolicies>]

```

```

migCifs -s <sourceIPAddr> -p <sourceportnum> -a <sourceFDN> -w <passwd> -f <sec/
nonsecConn> -d <targetIPAddr> -q <targetportnumber> -b <targetFDN> -x <passwd> -g
<secure/nonsecureconn> -S <MigrationType> -c

```

```

migCifs -s <sourceIPAddr> -p <sourceportnum> -a <sourceFDN> -w <passwd> -f <sec/
nonsecConn> -d <targetIPAddr> -q <targetportnumber> -b <targetFDN> -x <passwd> -g
<secure/nonsecureconn> -S <MigrationType> [-m <sourcecifsshare>] -r

```

Table E-2 *migCifs Command Details*

Command option	Description
-s <sourceIPAddr>	Source server IP address. For example, -s 192.168.0.1.
-p <sourceportnum>	Port number of the source server. For example -p 636.
-a <sourceFDN>	Source server FDN. For example, -a cn=admin,o=novell.
-w <passwd>	Password for the source server FDN. For example, -w mysrc.
-f <sec/nonsecConn>	Secure(SSL) or Non-secure(Non-SSL) connection type of the source server. 1 for SSL and 0 for Non-SSL. SSL is preferred. For example, -f 1 or -f 0.
-d <targetIPAddr>	Target server IP address. For example, -d 192.168.0.2.
-q <targetportnum>	Port number of the target server. For example, -q 636.
-b <targetFDN>	Target server FDN. For example, -b cn=admin,o=novell.
-x <passwd>	Password for the target server FDN. For example, -x mytgt.
-g <sec/nonsecConn>	Secure(SSL) or Non-secure(Non-SSL) connection type of the target server. 1 for SSL and 0 for Non-SSL. SSL is preferred. For example, -g 1 or -g 0.
-S <MigrationType>	One of the migration types such as, Same Tree or Different Tree or Transfer ID or Consolidation. 0 for Same Tree, 3 for Transfer ID, and 5 for Consolidation. For example, -S 0 or -S 3 or -S 5.

Command option	Description
-m <cifsSharesmap>	<p>CIFS source to target share mapping file. This is an optional command.</p> <p>Create the file using any text editor. Use these steps to create the file. Separate individual sharemaps by a line.</p> <ol style="list-style-type: none"> 1. Open a new file using the text editor. 2. Specify sourcesharename#targetsharepath. For example, share1#CIFSv1:linuxshare1 share2#NSSvol:linuxshare2/cifsshare 3. Specify the required number of share details and save the file.
-n <cifsPasswordPolicies>	<p>File containing the list of password policies. Specify each policy in a separate line and save.</p> <p>This is an optional command.</p>
-c	<p>Synchronizes the migration after consolidation.</p> <p>Only the CIFS Context will be synchronized. CIFS Shares and Server Configuration information are not synchronized.</p>
-r	<p>Removes the shares related to source (NetWare) server from the target server after a Transfer ID migration.</p> <p>Pass the source only CIFS share file. The source shares are listed and each share terminated with a #. For example, /media/nss/CIFSv1:#. Do not pass the CIFS Password Policies files with this option.</p>

E.4 Post-Migration Procedure

CIFS should be restarted for the service to take effect on target server. Use `rcnovell-cifs restart` from your command prompt to restart CIFS.

E.5 Verifying Migration

After migration is complete the CIFS server on the target server must be available and running as it used to be in your NetWare server. This ensures that the migration has been successfully completed.

After a successful migration,

- ♦ All the CIFS shares get migrated and listed on the target server.
- ♦ All the CIFS contexts get migrated to the target server.
- ♦ The source server proxy admin gets attached to the selected CIFS user policies and context on the target server.

You can verify these steps for a successful migration using either iManager or CLI options.

WARNING: If the CIFS server is not running after migration, see how to troubleshoot in the Troubleshooting chapter.

- ♦ [Section E.5.1, “Verifying using iManager,” on page 113](#)
- ♦ [Section E.5.2, “Verifying using CLI,” on page 113](#)

E.5.1 Verifying using iManager

- 1 Open iManager on the target server.
- 2 Go to *File Protocols > CIFS*.
- 3 Browse or specify the OES 2 Linux server.
- 4 Click *OK*.
- 5 Click *Start*. This will display the CIFS status *Running*.
- 6 Click *Shares*. You must be able to list the sharepoints that were running on your NetWare and now migrated to OES 2 Linux server.

For details on CIFS administration through iManager, see [“Managing CIFS from iManager”](#).

E.5.2 Verifying using CLI

- 1 On the target server console type the command `rcnovell-cifs status`.
- 2 If the status is not running, type the command `rcnovell-cifs start`, to start the server.
- 3 If the status is running, type the command `rcnovell-cifs restart`, to restart the server.
- 4 Next type the command `novcifs [-sl | --share --list]` or `novcifs [-sln sharename | --share --list --name=sharename]`

This will display the list of sharepoints which were available on the NetWare and now migrated to the OES 2 Linux server.

For details on CIFS administration through Command Line Utilities, see [“Managing CIFS from Command Line”](#).

E.6 Manpage for Migration

This section describes the command line utility for CIFS migration from NetWare to OES 2 Linux.

To access this man page with the command information, enter `man migCifs` at the command prompt.

- ♦ [“migCifs\(8\)” on page 114](#)

migCifs(8)

Name

migCifs - is a command line utility that communicates with the source and target servers for migrating CIFS configuration information from NetWare to Novell OES 2 Linux. The command has to be run on a target server.

Syntax

Migrating the CIFS service from NetWare to OES 2 Linux

```
migCifs -s <sourceIP> -p <portnumber> -a <sourceFDN> -w <password>
-f <sec/nonsecConnType> -d <targetIP> -q <portnumber> -b <targetFDN>
-x <password> -g <sec/nonsecConnType> -S <MigType> [-m <mapfilename>] [-n
<pswdpolicyfilename>]
```

Synchronizing after consolidation

```
migCifs -s <sourceIP> -p <portnumber> -a <sourceFDN> -w <password>
-f <sec/nonsecConnType> -d <targetIP> -q <portnumber> -b <targetFDN>
-x <password> -g <sec/nonsecConnType> -S <MigType> -c
```

Repair after Transfer ID

```
migCifs -s <sourceIP> -p <portnumber> -a <sourceFDN> -w <password>
-f <sec/nonsecConnType> -d <targetIP> -q <portnumber> -b <targetFDN>
-x <password> -g <sec/nonsecConnType> -S <MigType> [-m <sourcesharefilename>] -r
```

Options

Usage Options:

-s <sourceIP>

Source server IP address.

-p <portnumber>

Portnumber of source LDAP server.

-a <sourceFDN>

Fully Distinguished Name (FDN) of the source server tree admin.

-w <password>

Source server tree admin password.

-f <sec/nonsecConnType>

Enable / disable SSL connection for the source LDAP server. 1 for SSL and 0 for non-SSL connection.

-d <targetIP>

Target server IP address.

-q <portnumber>

Portnumber of target LDAP server.

-b <targetFDN>

Fully Distinguished Name (FDN) of the target server tree admin.

-x <password>

Target server tree admin password.

-g <sec/nonsecConnType>

Enable / disable SSL connection for the target LDAP server. 1 for SSL and 0 for non-SSL connection.

-S <MigType>

Set your Migration Type. 0 for Consolidation, 3 for Transfer ID.

-m mapfilename

File containing source and target server share mappings.

-n pswdpolicyfilename

File containing the names of the password policies assigned to the users.

-c

Synchronizes only the CIFS Context after Consolidate. CIFS Shares and Server Configuration information are not synchronized.

-r

Removes the shares related to NetWare server from the target server after a Transfer ID migration.

Help Options

-h | --help

Displays the help information of the command and syntax.

-u | --usage

Displays the usage information of the command.

Files

/etc/opt/novell/cifs/cifs.conf

CIFS configuration file.

/etc/opt/novell/cifs/cifsctxs.conf

CIFS context file.

/etc/opt/novell/cifs/.cifspwdfile

Encrypted CIFS proxy user file.

/var/opt/novell/log/cifs.log

CIFS server log file.

/var/opt/novell/migration/Newproj[n]/log/cifs.log

CIFS migration log file.

Example

```
migCifs -s 192.168.0.1 -p 636 -a cn=admin,o=novell -w novell -f 1 -d 192.168.0.2 -q 636 -b  
cn=admin,o=novell -x novell -g 1 -S 0 -m cifsShares.tmp -n cifsPasswordPolicies.tmp
```

Authors

Copyright 2008, Novell, Inc. All rights reserved. <http://www.novell.com>.

See Also

novcifs(8)

Report Bugs

To report problems with this software or its documentation, visit <http://bugzilla.novell.com>.

Migrating DHCP from NetWare to OES 2 Linux SP1

F

Migration refers to the process of migrating the Novell® DHCP Services running on NetWare® 5.1 or later to Open Enterprise Server (OES) 2 SP1 Linux.

For general information about the OES 2 Migration Tool, see the *OES 2 SP1: Migration Tool Administration Guide*.

- ♦ [Section F.1, “Migration Requirements,” on page 117](#)
- ♦ [Section F.2, “Migrating DHCP,” on page 117](#)
- ♦ [Section F.3, “Migration Scenarios,” on page 128](#)
- ♦ [Section F.4, “Clustered Migration,” on page 129](#)
- ♦ [Section F.5, “Post-Migration Procedures,” on page 130](#)
- ♦ [Section F.6, “Verifying the Migration,” on page 130](#)

In these sections, the NetWare server is referred to as the source server and the OES 2 SP1 Linux server as the target server.

F.1 Migration Requirements

Make sure your setup addresses the following requirements before you migrate DHCP to the new platform.

- ❑ An eDirectory™ integrated DHCP server installed and configured on the target machine. This takes care of the schema extension on the target server tree and creation of the dhcpLocator and DHCPGroup objects.
- ❑ The user running DHCP Migration requires read and write permissions on the target machine for the following folders:

```
/opt/novell/migration/dhcpmigration/tmp  
/opt/novell/migration/dhcpmigration/dhcp
```

Recommended: Run DHCP Migration as the root user.

- ❑ The target and source servers should have their time synchronized, or the Leases might not function properly.

The following platforms are accepted as valid source platforms for the migration process:

- ♦ NetWare 5.1 or later versions

F.2 Migrating DHCP

To migrate the DHCP Services you use the Migration Tool or the command line interface.

- ♦ [Section F.2.1, “Understanding the Migration Process,” on page 118](#)

- ♦ [Section F.2.2, “Using the Migration Tool,” on page 119](#)
- ♦ [Section F.2.3, “Using the Command Line to Migrate Servers,” on page 127](#)

F.2.1 Understanding the Migration Process

Make sure that you install the OES 2 SP1 Linux server as the target server for the DHCP Services. For more information on installing Novell DHCP Services, refer *Installing and Configuring DHCP Server*.

During migration, the NetWare DHCP configuration objects are read and mapped to the corresponding configuration objects on Linux DHCP. This helps in retaining the same functionality after the migration process.

- ♦ **Subnets:** All the subnets associated with the NetWare DHCP server are migrated to the new platform. If there is at least one address range associated with the NetWare DHCP server inside the subnet, the subnet is migrated with all the associated address ranges. The subnet object is created inside the dhcpService object on Linux. After migration, the subnet is identified by its IP address.
- ♦ **DHCP Server:** After migration, the Linux DHCP server is appended with the string "OES". For example, if the source server on NetWare is named DHCP_NWServer, after migration the server is identified on Linux as OESDHCP_NWServer.
- ♦ **DHCP Service:** During a server-level or tree-level migration, a dhcpService object is created on the target server corresponding to each source NetWare DHCP server. This is the container object that contains all the DHCP configuration data associated with DHCP Server. The dhcpService object is created inside the context specified in the *BaseDN* field during migration. The dhcpService object is prefixed with “dhcpService_OES”. For example, if the DHCP Server on NetWare is named as DHCP_NWServer, then the corresponding dhcpService on Linux will be identified as dhcpService_OESDHCP_NWServer.

In case of Subnet Level Migration, the subnets are created inside an existing dhcpService object on target server. Specify the existing dhcpService object in the BaseDN field.

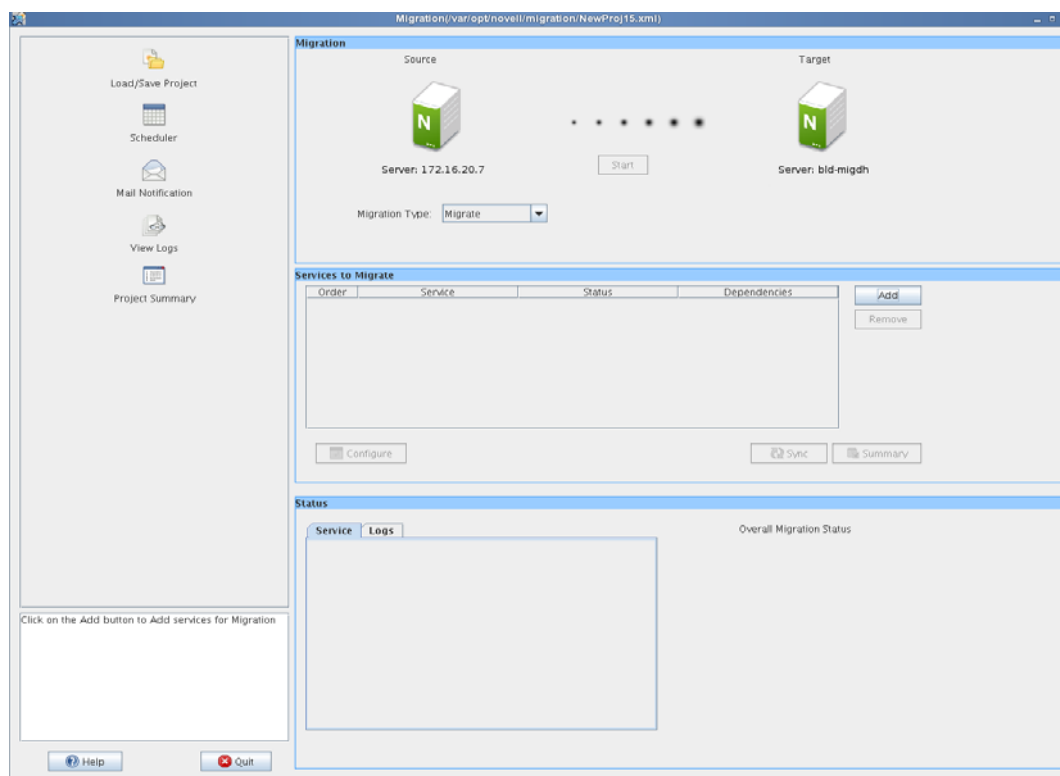
- ♦ **Address Range:** After the migration process, all the address range objects are mapped to pool objects on Linux.
- ♦ **Zone:** After the migration, all the zone objects retain the same name as they had on the NetWare platform. Zone objects are also created inside the dhcpService object.
- ♦ **Subnet Pool:** On the Linux platform, subnet pools on NetWare are mapped to the Shared Network objects.
- ♦ **IP Address (manual):** All manually defined IP addresses are migrated as hosts inside the subnet object. The hosts are identified by their IP addresses. For example, if the address of an IP address object on NetWare is 1.1.1.1, on Linux it is identified as 1_1_1_1.
- ♦ **IP Address (dynamic):** The lease information for DHCP Services on Linux is stored in a file. Information on all the dynamically leased IP addresses are maintained in the `/var/opt/novell/dhcp/leases` file. This lease file contains details for every IP address leased. The lease file is prefixed with the name of the corresponding DHCP server. For example, if the server name is DHCP_SERVER, the lease file is named as DHCP_SERVER.leases.
- ♦ **Comments:** Any comments that exist on the NetWare platform are not migrated to the Linux platform.

- ♦ **Excluded Hardware Addresses:** Excluded hardware addresses on NetWare after migration are mapped to `class-excluded_hosts` on Linux.
- ♦ **Included Hardware Addresses:** Included hardware addresses on NetWare after migration are mapped to `class-included_hosts` on Linux.

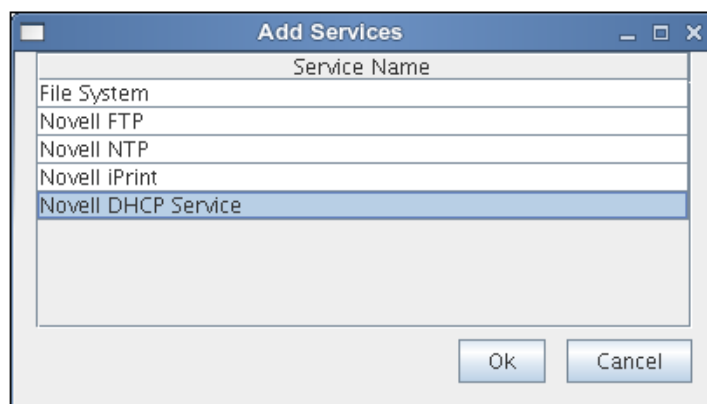
NOTE: If the name of any object contains a space, the space is replaced by an underscore “_” during migration.

F.2.2 Using the Migration Tool

- 1 Open the Migration Tool GUI.



- 2 Authenticate the source and target servers.
- 3 Select the type of migration from the *Migration Type* drop-down list.
- 4 Click *Add* in the *Services to Migrate* panel, then select the *Novell DHCP Service*.



- 5 Click *OK*, then click *Configure*. The DHCP configuration window displays.
- 6 DHCP provides migration at the following three levels. Click the desired level below to view the appropriate procedure.
 - ♦ **Tree Level**
 - ♦ **Server Level**
 - ♦ **Subnet Level**
- 7 Click *OK* to return to the main migration screen. You can either configure other services, or click *Migrate* to start the migration process.

The following table lists the fields in the DHCP configuration window:

Table F-1 DHCP configuration fields

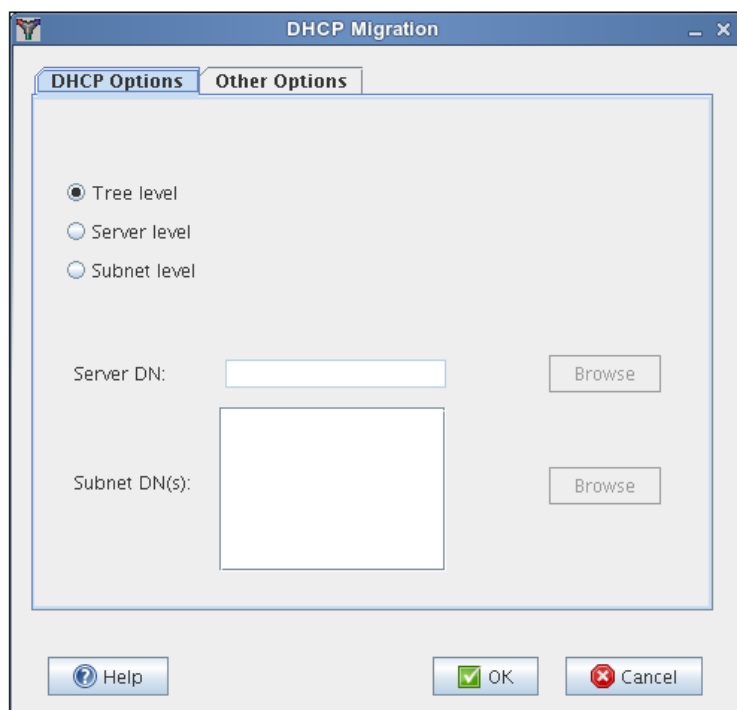
Fields	Description
Server DN	The distinguished name of the DHCP server to be migrated.
Subnet DN	The distinguished name of the subnets to be migrated.
Base DN	<p>The distinguished name of the container on the Target tree where the configuration is to be migrated.</p> <p>NOTE: For tree-level and server-level migration, Base DN is a container such as Organization, Organization Unit, Domain, etc.</p> <p>For Subnet Level Migration, Base DN is a DHCP Service object only. When you browse for the Base DN, it appropriately displays all the available service objects.</p>
Locator DN	<p>The distinguished name of the dhcpLocator object in the target tree.</p> <p>NOTE: Not applicable for a subnet level migration.</p>
Group DN	<p>The distinguished name of the DHCPGroup object in the Target tree.</p> <p>NOTE: Not applicable for a subnet level migration.</p>

Fields	Description
Lease file	The path and filename for the leases to be migrated. All the dynamic IP addresses on NetWare are mapped to a lease file entry in this file.
	NOTE: Not applicable for tree-level and server-level migration.

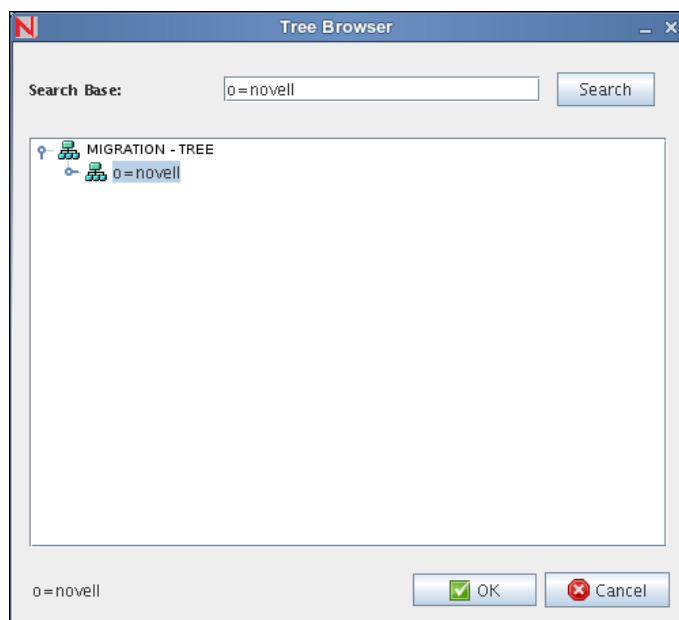
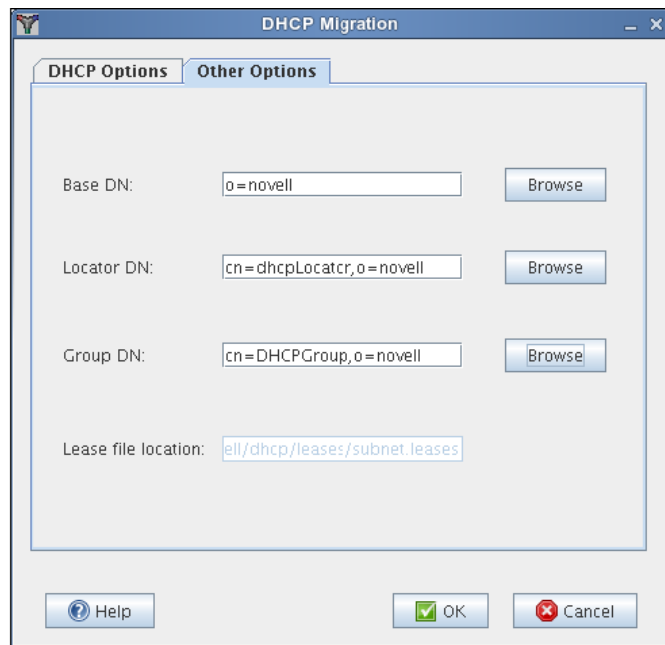
Tree Level

NOTE: Refer to [Table F-1 on page 120](#) for DHCP configuration field descriptions.

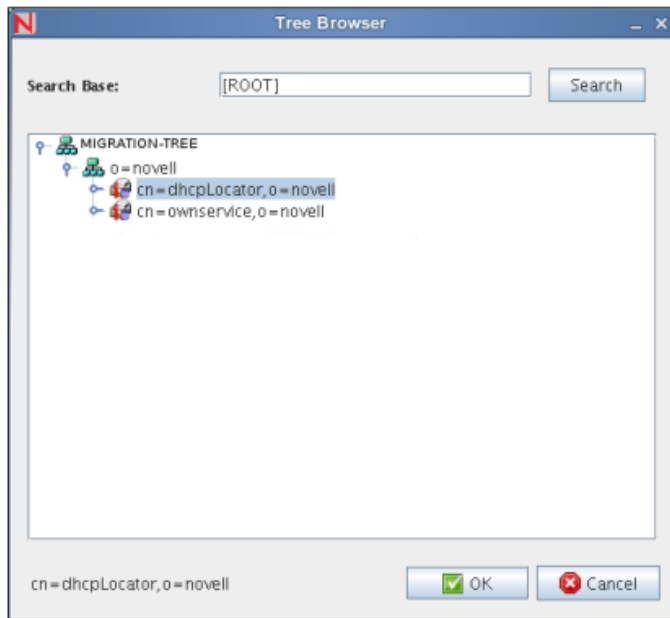
- 1 In the *DHCP Options* window, select the *Tree level* option.



- 2 In the *Other Options* window, click *Browse* to select *Base DN*.



3 Click *Browse* to select the *Locator DN*.



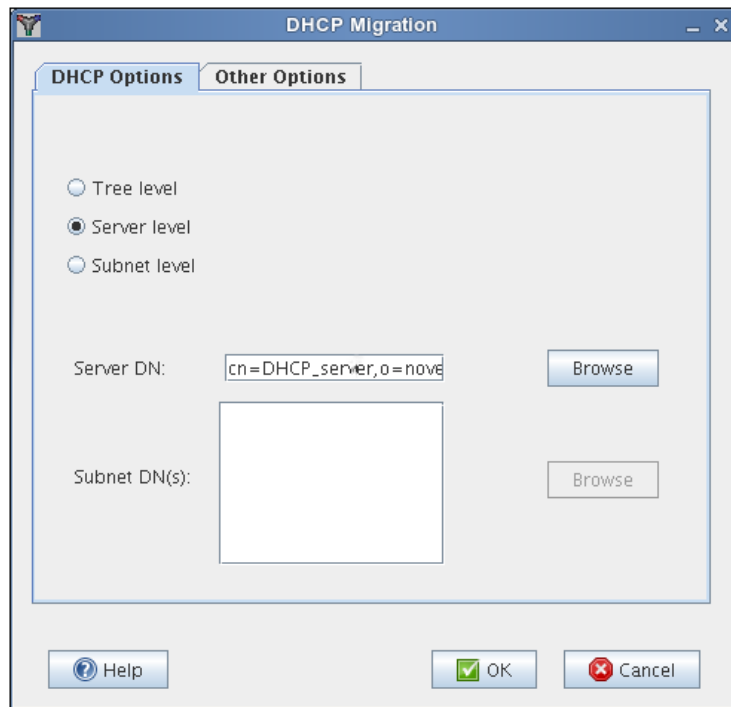
- 4 Click *Browse* to select the *Group DN*.
- 5 Click *OK* to complete the configuration.
- 6 Click *OK* to return to the main migration screen.
- 7 Continue configuring other services, or click *Migrate* to start the migration process.

NOTE: Refer [Table F-1 on page 120](#) for the DHCP configuration field description.

Server Level

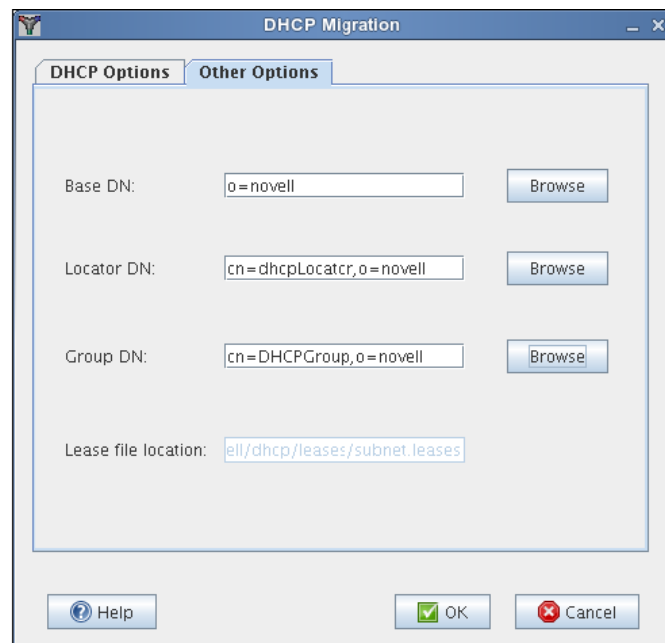
NOTE: Refer to [Table F-1 on page 120](#) for DHCP configuration field descriptions.

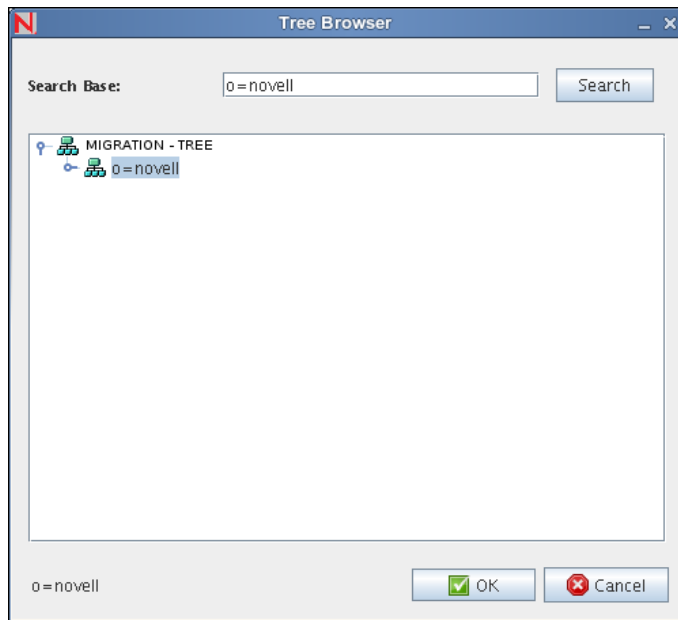
- 1 In the *DHCP Options* window, select *Server level* option.



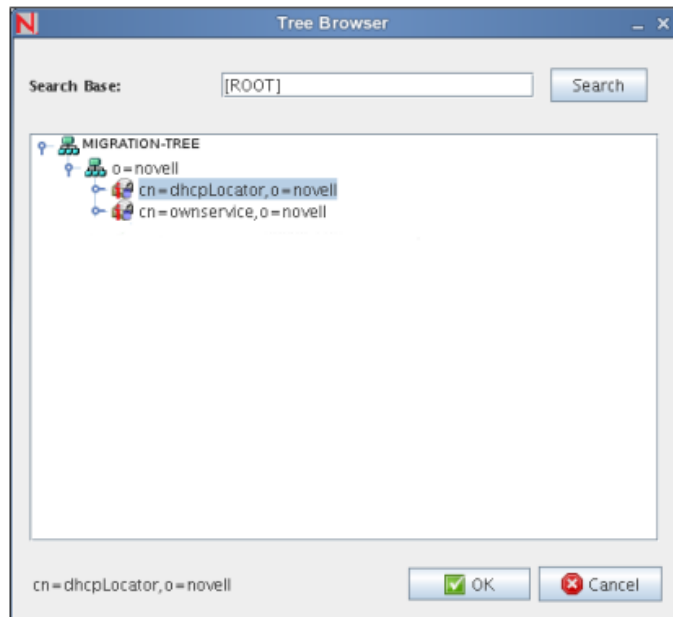
2 Click *Browse* to select the *Server DN*

3 In the *Other Options* window, click *Browse* to select the *Base DN*.





- 4 Click *Browse* to select the *Locator DN*.

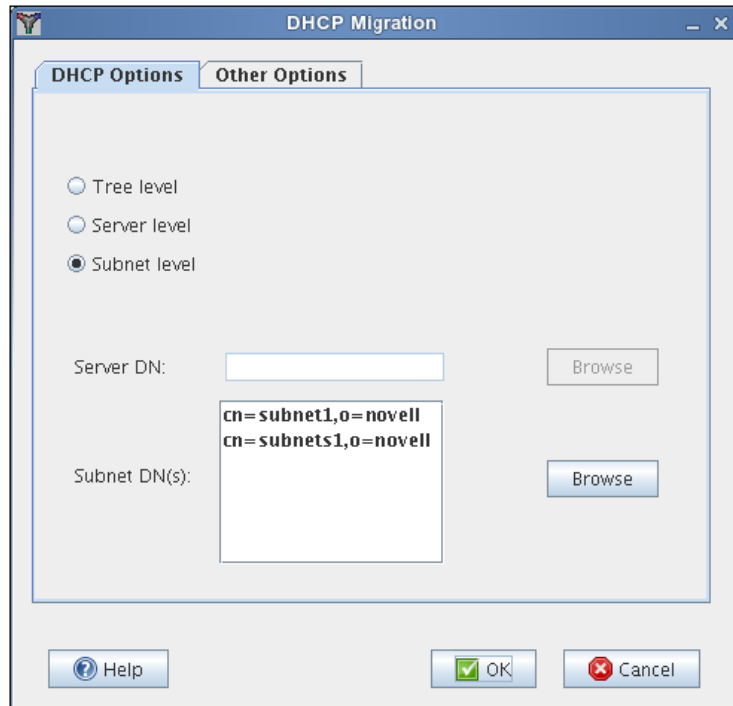


- 5 Click *Browse* to select the *Group DN*.
- 6 Click *OK* to complete the configuration.
- 7 Click *OK* to return to the main migration screen.
- 8 Continue configuring other services, or click *Migrate* to start the migration process.

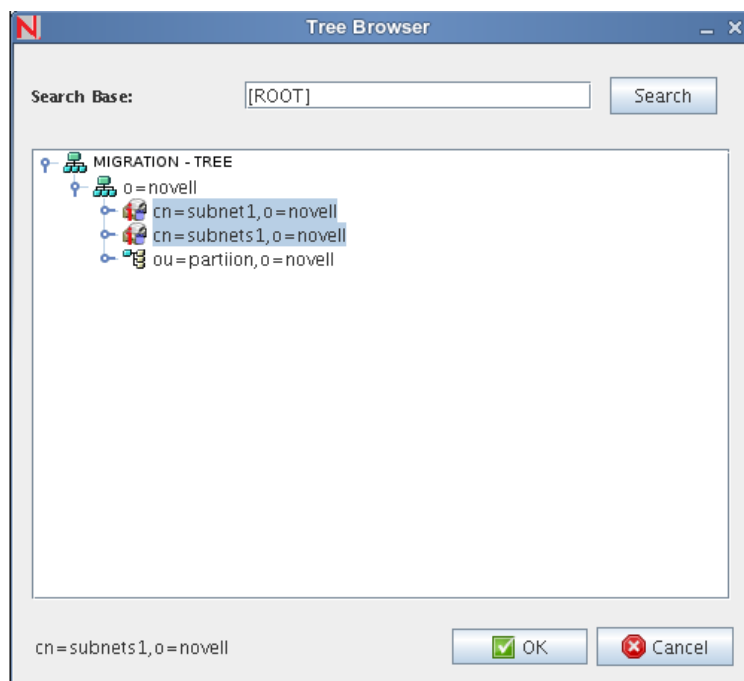
Subnet Level

NOTE: Refer to [Table F-1 on page 120](#) for DHCP configuration field descriptions.

- 1 In the *DHCP Options* window, select *Subnet level* option.



- 2 Click *Browse* to select the *Subnet DN*. Use the Ctrl key to select multiple subnets.



- 3 In the *Other Options* tab, click *Browse* to select the *Base DN*.
- 4 Specify the *Lease file Location*.

The screenshot shows a window titled "DHCP Migration". It has two tabs: "DHCP Options" and "Other Options". The "Other Options" tab is selected. Inside the tab, there are four rows of input fields, each with a "Browse" button to its right:

- Base DN: Browse
- Locator DN: Browse
- Group DN: Browse
- Lease file location:

At the bottom of the dialog, there are three buttons: "Help" (with a question mark icon), "OK" (with a green checkmark icon), and "Cancel" (with a red X icon).

- 5 Click *OK* to complete the configuration.
- 6 Click *OK* to return to the main migration screen.
- 7 Continue configuring other services, or click *Migrate* to start the migration process.

F.2.3 Using the Command Line to Migrate Servers

- 1 To run the DHCP migration utility through the command line, run `/opt/novell/migration/bin/migdhcp` with the following parameters:

Option	Description
-h	Print this summary.
-k	Level of migration (subnet tree server).
-i	Verbose mode - on or off.
-d	Debug mode - on or off.
-s	IP address of the source LDAP server.
-p	Port number of the source LDAP server.
-a	DN of the admin user in the source tree.
-t	IP address of the destination LDAP server.
-q	Port number for the destination LDAP server.

Option	Description
-b	DN of the admin user in the destination tree.
-l	DN of the dhcpLocator object in the destination tree (Required only for server-level or tree-level migration).
-g	DN of the DHCPGroup object in the destination tree (Required only for server-level or tree-level migration).
-e	DN of the server to be migrated (Required only for server-level migration).
-n	Base DN of the container in the destination tree where you want to migrate the servers. For subnet-level migration specify the ServiceDN.
-r	1 for source SSL bind, 0 for source non-SSL bind.
-u	1 for destination SSL bind, 0 for destination non-SSL bind.
-f	Absolute path of the file containing the DNs of the subnets that you want to migrate. (Required only for subnet-level migration). Enter the subnet DNs in the following format: cn=subnet1,o=novell cn=subnet2,ou=novell1,o=novell cn=subnet3,ou=novell2,o=novell
-c	Absolute path of the file where you want to store the lease file information (Required only for the subnet-level migration).

Examples for Command Line Migration

Tree Level: /opt/novell/migration/bin/migdhcp.sh -k tree -i on -d on -s 192.168.13.1 -p 636 -a cn=admin,o=novell -t 182.155.13.8 -q 636 -b cn=admin,o=novell -l cn=dhcpLocator,o=novell -g cn=DHCPGroup,o=novell -n o=novell -r 1 -u 1

Server Level: /opt/novell/migration/bin/migdhcp.sh -k tree -i on -d on -s 192.168.13.1 -p 636 -a cn=admin,o=novell -t 182.155.13.8 -q 636 -b cn=admin,o=novell -l cn=dhcpLocator,o=novell -g cn=DHCPGroup,o=novell -e cn=DHCP_SERVER,o=novell -n o=novell -r 1 -u 1

Subnet Level: /opt/novell/migration/bin/migdhcp.sh -k subnet -i on -d on -s 192.168.13.1 -p 636 -a cn=admin,o=novell -t 182.155.13.8 -q 636 -b cn=admin,o=novell -n cn=DHCPService,o=novell -r 1 -u 1 -f /someslocation/filewithsubnetdns -c /someslocation/filename

F.3 Migration Scenarios

DHCP migration supports two scenarios:

- ♦ [Section F.3.1, “Transfer ID,” on page 129](#)
- ♦ [Section F.3.2, “Consolidation,” on page 129](#)

For more information about these scenarios, see Supported Migration Scenarios in the *OES 2 SP1: Migration Tool Administration Guide*

F.3.1 Transfer ID

In this scenario, the identity of the target server is swapped with the source server. The IP address and the machine name of the target server changes to the source IP address and machine name. The target should be installed in the same tree as the source server. The target should be a non replica tree.

Based on the level of migration (subnet, server or tree), the configuration objects are created for the Linux DHCP server on the target tree inside the dhcpService object created during migration.

F.3.2 Consolidation

In this scenario, the configuration data associated with the source server is associated to a single target server. DHCP Consolidation migration can be performed at tree, server, or subnet Level.

F.4 Clustered Migration

There are two scenarios in Clustered Migration:

- ♦ [Section F.4.1, “NetWare and Linux Clusters Attached to the Same Tree,” on page 129](#)
- ♦ [Section F.4.2, “NetWare and Linux Clusters Attached to Different Trees,” on page 129](#)

F.4.1 NetWare and Linux Clusters Attached to the Same Tree

Run the migration tool from one of the Linux nodes. Perform the tree-level migration with same source and target servers.

This ensures that all NetWare DHCP configuration data is available for Linux DHCP.

In this scenario, both the NetWare server and the OES 2 SP1 Linux server are on the same eDirectory tree. The NetWare source server must be running NetWare 5.1 or later. The Linux target server must be running SUSE® Linux Enterprise Server (SLES) 10 SP2 with OES 2 SP1 on either 32-bit or 64-bit hardware.

F.4.2 NetWare and Linux Clusters Attached to Different Trees

Run the migration tool from one of the Linux nodes. Perform the tree-level migration with different source (the tree to which NetWare clustered nodes are attached) and target servers (the tree to which the Linux clustered nodes are attached).

This ensures that all NetWare DHCP configuration data is available for Linux DHCP.

In this scenario, the NetWare server and the OES 2 SP1 Linux server are on different eDirectory trees. The NetWare source server must be running NetWare 5.1 or later. The Linux target server must be running SUSE Linux Enterprise Server (SLES) 10 SP2 with OES 2 SP1 on either 32-bit or 64-bit hardware.

F.5 Post-Migration Procedures

- 1 In the `/etc/dhcpd.conf` file, change `ldap-base-dn` to reflect the context of the migrated DHCP Server and change `ldap-dhcp-server-cn` to reflect the name of the migrated DHCP Server.
- 2 Copy the `DHCP_SERVER.leases` file from `/var/opt/novell/dhcp/leases/` folder to the `/var/lib/dhcp/db` folder and rename it to `dhcpd.leases`.
- 3 Start the OES2 SP1 Linux DHCP server by using the `rcdhcpd start` command.
- 4 Continue with [Section F.5.1, “Cluster Migration from NetWare to Linux,” on page 130](#) and [Section F.5.2, “Running a Pre-existing DHCP Server,” on page 130](#) as necessary.

F.5.1 Cluster Migration from NetWare to Linux

On the node where Migration is run:

- 1 Open the `<mountpath>/etc/dhcpd.conf` file.
The `<mountpath>` parameter indicates the target directory in the shared volume where DHCP-specific directories are created.
Inside the `/etc/dhcpd.conf` file, which is located in the shared volume, change the `ldap-dhcp-server-cn` attribute to the migrated server cn.
- 2 Copy the `migrated_server.leases` file from the `/var/lib.dhcp/bd` folder to the `<mountpath> var/lib/dhcp/db/` folder and rename it to `dhcpd.leases`.

F.5.2 Running a Pre-existing DHCP Server

After migration, the DHCP server and service objects are created in the tree. You can run a pre-existing DHCP server along with the migrated NetWare server's configuration.

- 1 Log in to the tree by using iManager.
- 2 Click to expand DHCP (OES Linux).
- 3 Select the service.
- 4 Select *View/Modify* service.
- 5 Select the service object that was created after migrating the NetWare server. The name of this service starts with the string *dhcpservice*.
- 6 Associate this service object with the existing DHCP server.

F.6 Verifying the Migration

To verify the migration, use iManager to go to the destination tree and locate the DHCP Server object and the corresponding DHCP Service object. All the DHCP server configuration is stored inside the corresponding DHCP Service object. For details, refer to “Viewing or Modifying a Service”.

Verify that leases are present at the following location:

- ♦ For tree-level or server-level migration, the lease file must be located at: `/var/opt/novell/dhcp/leases/`
- ♦ For a subnet-level migration, the lease filename and location are provided by the user. Make sure the expected files are present in the specified location.

Migrating DNS from NetWare to OES 2 Linux SP1



Migration refers to the process of migrating DNS services from a NetWare[®] system to a Linux system. The OES Migration tools follow a source/destination model. For the migration process, the source servers are NetWare and the destination is the Open Enterprise Server 2 SP1 Linux.

The following sections give you more information on the prerequisites and the procedure to migrate source servers based on different scenarios:

- ♦ [Section G.1, “Planning Your Migration,” on page 133](#)
- ♦ [Section G.2, “Migration Scenarios,” on page 134](#)
- ♦ [Section G.3, “Migration Procedure,” on page 134](#)
- ♦ [Section G.4, “Post Migration Procedure,” on page 135](#)

G.1 Planning Your Migration

Make sure your setup addresses the following requirements before you migrate DNS to the new platform.

G.1.1 System Requirements

- ♦ An eDirectory[™] integrated DNS server installed on the target machine.
- ♦ Schema extension is already done on the destination server tree and DNS-DHCP Group, RootServerInfo and DNS-DHCP Locator objects are created.
- ♦ The user running the migration process should have rights to update files on the target machine. This user should also be included in the DNS-DHCP group in eDirectory.

G.1.2 Supported Platforms

The following platforms are accepted as valid source platforms for the migration process:

- ♦ NetWare 6.5 SP5
- ♦ NetWare 5.1 SP8
- ♦ NetWare 6.0 SP5 and later versions

G.1.3 Coexistence

The OES 2 Linux can coexist with the following operating systems:

- ♦ OES 1 NetWare
- ♦ SLES 10
- ♦ SLES 10 SP1

G.2 Migration Scenarios

- ♦ [Section G.2.1, “Migrating servers within the Same eDirectory tree,” on page 134](#)
- ♦ [Section G.2.2, “Migrating servers across eDirectory tree,” on page 134](#)

To migrate DNS to the new platform, you can use tools like iManager or Java Management Console. During migration, the configuration details as well as the data are also migrated to the destination platform.

G.2.1 Migrating servers within the Same eDirectory tree

In this scenario, both the NetWare server and the OES 2 Linux server are on the same eDirectory tree.

G.2.2 Migrating servers across eDirectory tree

In this scenario, the Netware server and the OES 2 Linux server are on different eDirectory trees, so the migration is across the trees.

Depending on your setup, you can choose to migrate a single server at a time or migrate all the servers at the same time.

G.3 Migration Procedure

- ♦ [Section G.3.1, “Using iManager to Migrate Servers within the Same eDirectory Tree,” on page 134](#)
- ♦ [Section G.3.2, “Using iManager to Migrate Servers across eDirectory Tree,” on page 135](#)

G.3.1 Using iManager to Migrate Servers within the Same eDirectory Tree

- 1 Launch iManager.
- 2 Identify the source NCP™ server and the corresponding DNS server object that should be migrated to target server. This means that the server and the server object will no longer exist on the NetWare server after migration. Make sure that the DNS Service is not running on this source NCP server.

To stop the service, see “[Stopping the DNS Server](#)” in the *OES 2 SP1: Novell DNS/DHCP Administration Guide for Linux*.
- 3 Use iManager to move the source DNS server. This task also migrates the primary zones in the tree.

To move DNS server, see “[Moving a DNS Server](#)” in the *OES 2 SP1: Novell DNS/DHCP Administration Guide for Linux*.
- 4 To migrate secondary zones, create a secondary zone on the target Linux server and specify the IP address of the master/primary name server.

To create a secondary zone, see “[Creating a Secondary Zone](#)” in the *OES 2 SP1: Novell DNS/DHCP Administration Guide for Linux*.

Ensure that the SOA number of the secondary zone is less than the SOA number of the corresponding zone on the master server. Ensure that both the primary and the secondary zones are identified by the same name. This is essential for a successful zone transfer.

G.3.2 Using iManager to Migrate Servers across eDirectory Tree

- 1 In iManager, create the DNS server object using the iManager utility. For details, see *OES 2 SPI: Novell DNS/DHCP Administration Guide for Linux*.
- 2 After creation of the DNS server object, migrate the zone data.
- 3 On the OES 2 Linux server, create a secondary zone and specify the zone master IP address as the IP address of the NetWare server where the primary zone exists. After the initial zone transfer, change the zone on the source NetWare server to secondary and make the zone on the destination server to be the primary server.

To migrate primary zones, on the OES 2 Linux server, create a secondary zone and specify the zone master IP address as the IP address of the NetWare/OES server where the primary zone exists. Load the DNS servers on primary and secondary server to initiate zone transfer. After the initial zone transfer, change the zone on the source NetWare server to secondary and make the zone on the destination server to be the primary server zone.x

To migrate secondary zones, create a secondary zone on the Linux server and specify it to be the secondary zone to the target primary zone that is on the OES 2 Linux server. Ensure that both the primary and the secondary zones use the same name. This is essential for a successful zone transfer.

NOTE: This method of migration is limited to migrating the zone data only.

G.4 Post Migration Procedure

- 1 Use iManager or Java Management Console to check existence of the following objects:
 - ♦ DNS-DHCP
 - ♦ DNSDHCP-GROUP
 - ♦ RootServerInfo
 - ♦ DNS Server object
- 2 Load `novell-named` and check to see if the `/etc/opt/novell/named.conf` file contains zone database files with valid information.
- 3 Start `named` with the `rcnovell-named start` command and use the `Nslookup` utility to query for records in zones.

File System Migration

H

This section provides information on how to migrate the file system running on OES NetWare® or OES Linux to OES 2 SP1 Linux. In the later sections the Netware server is referred as the source server and the OES 2 SP1 Linux as the target server.

H.1 Preparing for File System Migration



To prepare your network for file system migration complete the tasks in the following sections:

- ♦ [Section H.1.1, “Prerequisites,” on page 137](#)
- ♦ [Section H.1.2, “Migration Scenarios,” on page 139](#)
- ♦ [Section H.1.3, “GUI Limitations,” on page 140](#)
- ♦ [Section H.1.4, “Migration Procedure,” on page 140](#)

H.1.1 Prerequisites

Before you start the file system migration from OES NetWare or OES Linux to OES 2 SP1 Linux, make sure your system meets the following prerequisites:

- ♦ [“Source Server Requirements” on page 137](#)
- ♦ [“Target Server Requirements” on page 138](#)

Source Server Requirements

- ♦ [“NetWare Server” on page 137](#)
- ♦ [“OES 1 or OES 2 Linux Server” on page 138](#)

NetWare Server

On the source NetWare server:

- ♦ Ensure that the latest version of Storage Management Services™ (SMS) is running on the source NetWare server.

SMS updates can be downloaded from the [Novell Downloads Web site \(http://www.novell.com/download\)](http://www.novell.com/download).

- ♦ When migrating data from a Traditional NetWare volume, ensure that the NFS is loaded on Traditional NetWare Volumes and name spaces such as LONG, and NFS are loaded on the source NetWare server.
- ♦ If your data contains extended ASCII or Unicode* characters, add the following setting to the `etc/opt/novell/sms/tsafs.conf` file:
`useCodeSet=xxx`

For xxx, substitute the code page value set on the NetWare server. For example, the default code page is 437. (Alternate forms include CP437, CSPC8CODEPAGE437, and IBM437.) For more information and a list of code page values, see “Code Pages” in the *NetWare 5.1 Server Operating System Guide* (http://www.novell.com/documentation/nw51/sos__enu/data/hu3pac0y.html#hu3pac0y).

Restart SMS by running the following command:

```
rcnovell-smdrd restart
```

- ♦ Although data on the source server is not deleted as part of the migration, we recommend you to backup your data.

OES 1 or OES 2 Linux Server

On the source OES Linux server:

- ♦ Ensure that the server is running OES 1 SP2 or OES 2 with all the available patches in the channel.
- ♦ Ensure that the latest version of Storage Management Services™ (SMS) is running on the server.
- ♦ Ensure that the latest version of NetWare Core Protocol™ (NCP™) is installed on the server.
- ♦ Source volumes on OES 1.0 or OES 2.0 Linux servers must be NSS volumes, or NCP volumes, or POSIX volumes.

NOTE: The Migration Tool GUI does not support POSIX file system migration. Create an NCP volume with the POSIX path that you want to migrate, then migrate the NCP volume.

To perform migration, the user must have read/write/access permissions to the source server

- ♦ To migrate data from NCP volumes on OES 1 server, ensure the following:
 - ♦ Install Novell Client 2.0 SP1 for Linux
 - ♦ Restart SMS by running the following command:

```
rcnovell-smdrd restart
```
 - ♦ Ensure that the user performing migration has read/write/access rights to back up the files on the NCP volume.

Target Server Requirements

- ♦ Ensure that the server is running OES 2 SP1.

IMPORTANT: Services to be migrated must be installed and configured on the OES 2 SP1 server.

The following additional prerequisites must be met for NSS and NCP target volumes:

- ♦ “For NSS Target Volumes” on page 139
- ♦ “For NCP Target Volumes” on page 139

For NSS Target Volumes

- ❑ Use the Novell Storage Services™ Management Utility (nssmu) or iManager to create the NSS volumes to which you will be migrating the data. Ensure that you allocate sufficient space for the volume to hold all of the source data.
- ❑ Ensure that the target volumes have similar properties to the source volumes. For example, if compression is turned on for the source volume, turn on compression for the target volume as well. The same applies to user quotas and other NSS features.
- ❑ If you want to use the CASA secret store to store usernames and passwords during the migration (via the `--use-casa` option), ensure that the following RPM is installed on the OES 2 Linux server:

`CASA-1.7-xxx.i586.rpm`

Restart the CASA daemon by entering the following command:

```
/etc/init.d/micasad restart
```

For more information, see “[Using CASA with Linux](#)” in the *Novell Common Authentication Services Adapter (CASA)* documentation.

For NCP Target Volumes

- ❑ Use the NCP Server Console utility (ncpcon) to create the NCP volumes.
- ❑ Ensure that the user performing the migration has read/write/access rights to the POSIX path that corresponds to the NCP volume.

H.1.2 Migration Scenarios

The procedures for migrating file system data from the NSS volumes or Traditional volumes on NetWare or from the NSS volumes on OES 2 Linux vary depending on whether the source server and target server are in the same eDirectory tree or in different eDirectory trees. This section covers the following scenarios:

- ♦ “[Consolidating Data to a Server in the Same Tree](#)” on page 139
- ♦ “[Consolidating Data to a Server in the Different Tree](#)” on page 140
- ♦ “[Transfer ID](#)” on page 140

NOTE: For more information about migration scenarios, see [Chapter 1, “Overview of the Migration Tools,”](#) on page 15.

Consolidating Data to a Server in the Same Tree

The source file system volumes are migrated to the target file system volumes within the same eDirectory tree.

What to expect

The following is migrated from the source server to target server:

- ♦ Volumes, folders and files
- ♦ Users and their trustee rights

Consolidating Data to a Server in the Different Tree

The source file system volumes are migrated to the target file system volumes in a different eDirectory tree.

What to expect

The following is migrated from the source server to target server:

- ♦ Volumes, folders and files
- ♦ Users and their trustee rights

Transfer ID

In the Transfer ID scenario a series of tasks are executed for transferring the Server Identity of the source server to the target server. In the Migration Tool GUI, file system is configured, then migrated. On successful migration of all the services, the Start button changes to Transfer ID. For more information, see [Part IV, “Transfer ID Migration,” on page 51](#).

No additional steps are required for migrating file system using Transfer ID scenario.

H.1.3 GUI Limitations

In the File System window, folders names with non-english characters are not displayed when you configure the file system for migration in Volume Information > Source Server.

H.1.4 Migration Procedure

Use either of the following methods to perform File System migration:

- ♦ [Appendix H.2, “Migrating File System with GUI Migration Tool,” on page 140](#)
- ♦ [Appendix H.3, “Migrating File System with Command Line Utilities,” on page 147](#)

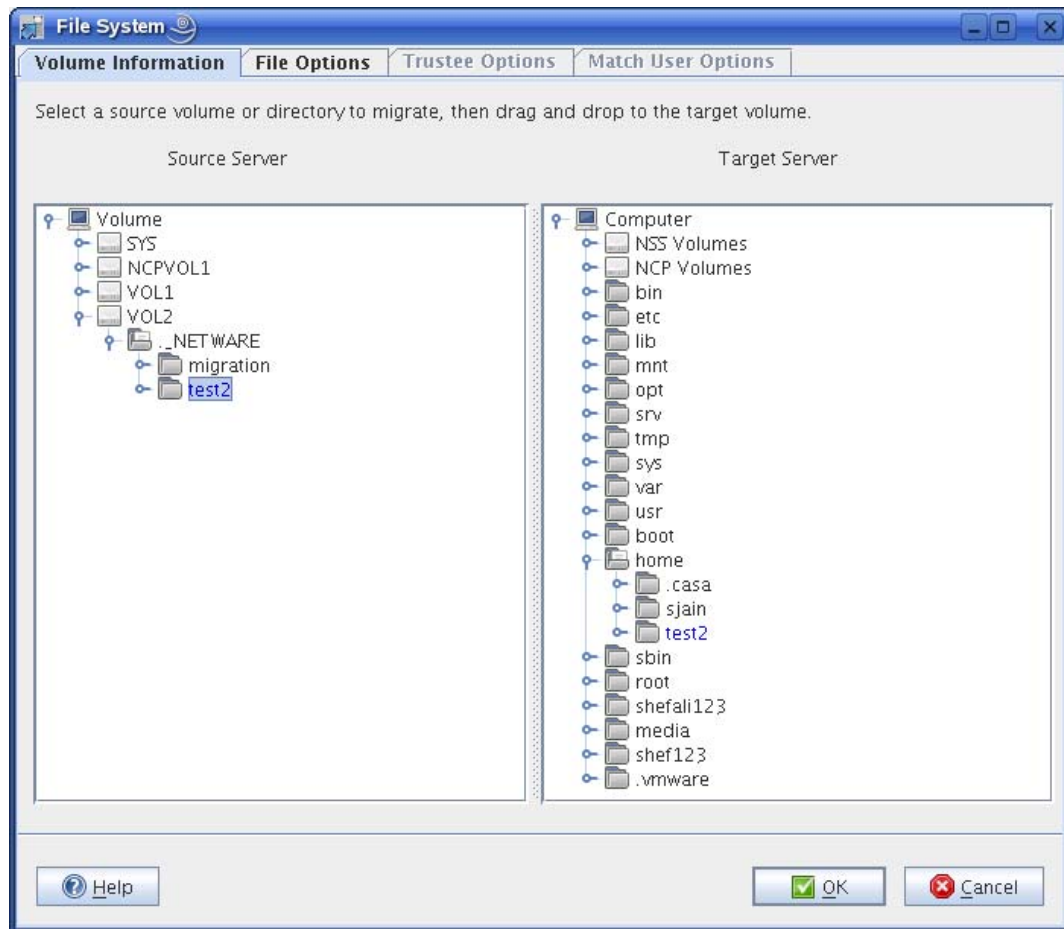
H.2 Migrating File System with GUI Migration Tool

After you have completed the prerequisite procedures in [Appendix H.1, “Preparing for File System Migration,” on page 137](#), you are ready to migrate the source server. Do the following tasks:

- 1 Launch the Migration Tool using either of the following methods:
On the Desktop: Click *Computer* > *More Applications* > *System* > *Novell Migration Tools* to launch the Migration GUI.
From the Terminal Prompt: Run `miggui`
- 2 Enter your authentication credentials for the source server and target server.
File System is listed in the *Service* panel.
- 3 Depending on the type of migration to perform, select the *Migration Type* as *Consolidate* or *Transfer ID*.
- 4 In the *Services* panel, click *Add* and select *File System*.
The *Status* of the service is *Not Configured*.

IMPORTANT: File System is listed in the Service panel list only if it installed and configured on the target server.

- 5 To configure migration parameters for file system, select *File System*, then click *Configure*.



Tabs	Purpose
Volume Information	Identify the volumes or folders that you want to move from the selected source server to a selected target server. By default, all of the data in the volumes or folders that you select for migration in the source server tree is migrated to the target server.
File Options	Customize the files and quotas that are migrating to the target server. You can also specify the home directory location and set options to synchronize the file system.
Trustee Options	You can migrate the trustee rights of the users from the source server to target server. You can also specify the global password for the new users created on the target server. This tab is enabled only in a Different Tree scenario.
Match User Options	You can specify which users to migrate and how to handle the migration if the user already exists on the target server. This tab is enabled on selecting Custom User mapping option in the <i>Trustee Options</i> tab.

- 5a** In the *Volume Information* tab, in the *Source Server* tree, select the volume or folder that you want to migrate, then drag and drop it in the *Target Server* tree.

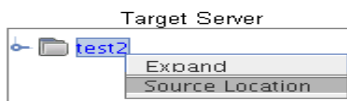
NOTE: In the *Source Server* tree, you cannot expand the volume or folder on copying to the *Target Server* tree.

For explanation on different tasks that can be performed in the Volume Information tab, refer to the table below, else proceed with default settings to **Step 5b**.

Task	Description
Removing Volumes or Folders from the Target Server	In the target Server tree, right-click the volume or folder that you have decided not to migrate, then select Undo. The folder no longer appears under the target server tree and is no longer a candidate for migration.
Volumes or Folders selected for migration	The volumes or folders that are selected for migration are highlighted in a blue color in the <i>Source Server</i> tree and the <i>Target Server</i> tree.
Target Location	After you have selected volumes and folders for migration, you might want to identify the path of the folder or volume moved to the target server. <ul style="list-style-type: none"> In the <i>Source Server</i> tree, right-click the volume or folder that is highlighted for migration, then click <i>Target Location</i> from the drop-down menu. The tree in the <i>Target Server</i> view expands to display the volume or folder that was copied from the source server.

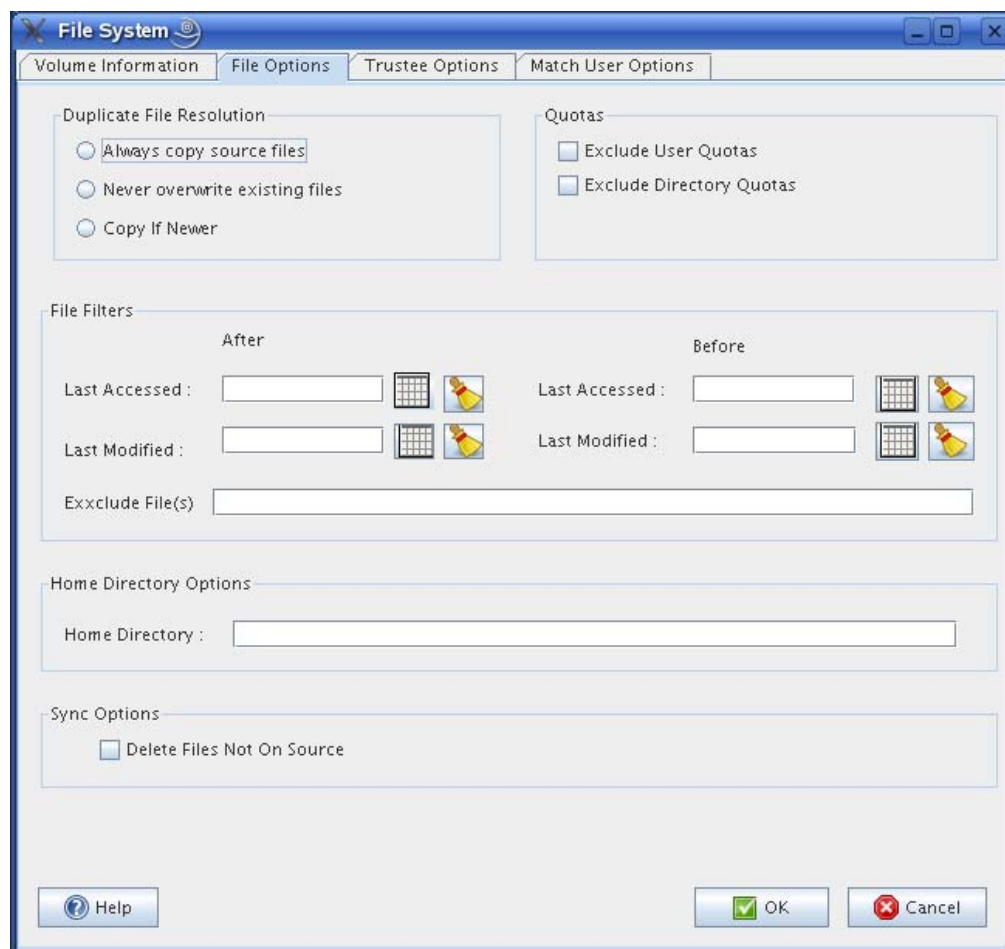


Task	Description
Source Location	<p>After you have selected volumes and folders for migration, you might want to identify the path of the folder or volume moved from the source Server.</p> <ul style="list-style-type: none"> In the <i>Target Server</i> tree, right-click the volume or folder that is highlighted for migration, then click <i>Source Location</i> from the drop-down menu. The tree in the <i>Source Server</i> view expands to display the volume or folder that was copied to the <i>Target Server</i>.



5b In the *File Options* tab, you can customize the files and quotas that are migrating to the target server.

For explanation on different tasks that can be performed in the *File Options* tab, refer to the table below, else proceed with default settings to [Step 5c](#).



Task	Description
Duplicate File Resolution	<p>Determines what action to take when a file copied from the source server has the same filename as an existing file on the target server. Specify one of the following resolutions:</p> <ul style="list-style-type: none"> ♦ Always Copy Source File (default): The migrated file always overwrites the existing file. ♦ Never Overwrite Existing File: The file from the source server is not migrated, if a file of the same name exists on the target server. ♦ Copy if Newer: The migrated file overwrites the existing file on the target server, only if its last modified date is newer than the existing file's date.
Quotas	<p>You may need to remove user quotas, If you are migrating the volume or folder to a larger NSS pool/ volume on the target server.</p> <hr/> <p>NOTE: If you are migrating to a different file system (NSS to NCP volumes or from NSS to Linux POSIX volumes) on the target server, user quotas are not valid.</p> <hr/> <ul style="list-style-type: none"> ♦ Exclude User Quotas: The user quotas from the source server are not copied to the OES 2 SP1 Linux server. ♦ Exclude Directory Quotas: The directory quotas from the source server are not copied to the OES 2 SP1 Linux server.
File Filters	<p>Determines which files to include for migration. If no filters are set, all files are migrated. You can specify the files that you want to migrate by specifying the date range or you can exclude the files from migrating by specifying the filenames or file extensions.</p> <ul style="list-style-type: none"> ♦ Last Accessed/ Last Modified: The date range to include files for migration. ♦ Exclude File(s): The filenames or file extensions to exclude from migration. Wildcards (*) specifications are permitted. For example: *.mp3,*.mov,*.tmp,samplefile.txt,"my sample file.txt." <p>Specifying *.mp3 excludes all files with an extension of .mp3 from being migrated. Specifying samplefile.txt excludes all samplefile.txt from being migrated.</p>
Home Directory Options	<p>Type the path where you want to create home directories for the users who are being migrated to the target server.</p>
Sync Options	<p>The <i>Sync</i> option performs synchronization of the target server with the source server. After completion of file system migration, if the source server is updated with new information, use the Sync option for synchronizing the servers. The Sync option is available in the main Migration GUI window.</p> <p>Delete Files Not On Source: During synchronization of the servers, additional files or folders on the target servers are deleted that are not available on the source server.</p> <p>To modify handling of trustees, or user options, change the options in the Trustee Options tab.</p>

- 5c** In the Trustee Options tab, you can migrate the trustee rights of users on the source server to target server.

For explanation on different tasks that can be performed in the *File Options* tab, refer to the table below, else proceed with default settings to [Step 5d](#).

NOTE: In the Same Tree scenario, the *Trustee Options* tab is disabled.

The screenshot shows the 'File System' dialog box with the 'Trustee Options' tab selected. The dialog has four tabs: 'Volume Information', 'File Options', 'Trustee Options', and 'Match User Options'. The 'Trustee Options' tab contains three sections: 'Trustee Migration', 'Existing User Options', and 'New User Options'. The 'Trustee Migration' section has three radio buttons: 'Do Not Migrate Trustees' (selected), 'Flatten Trustees', and 'Custom User Mapping'. The 'Flatten Trustees' and 'Custom User Mapping' options have associated text boxes for 'Target Context to flatten the users' and 'Search Context to map the users' respectively, each with a browse button. The 'Existing User Options' section has two radio buttons: 'Ignore All' and 'Overwrite All'. The 'New User Options' section has a text box for 'eDirectory Password'. At the bottom, there are buttons for 'Help', 'OK', and 'Cancel'.


File System

Volume Information | File Options | **Trustee Options** | Match User Options


Trustee Migration

☒ Do Not Migrate Trustees

☐ Flatten Trustees

Target Context to flatten the users : 

☐ Custom User Mapping

Search Context to map the users : 

Existing User Options

☐ Ignore All

☐ Overwrite All

New User Options

eDirectory Password :

Help OK Cancel

Task	Description
Trustee Migration	<p>Specify one of the option to migrate trustee rights of users from the source server to target server.</p> <ul style="list-style-type: none"> ♦ Do Not Migrate Trustees (default): The user rights to access folder and its content on the source server is not migrated to the target server. ♦ Flatten Trustees: The users on the source server are migrated to a selected context on the target server, irrespective of whether the users are in different context on the source server. <ul style="list-style-type: none"> ♦ Target Context to flatten the users: Select the context on the target server to migrate all the users. ♦ Custom User Mapping: Users on the source volume are mapped with the users on the target server. In the Match User Options tab, select the users from the source server or target server, then assign migration options. On selection of this option, <i>Match User Options</i> tab is enabled. <ul style="list-style-type: none"> ♦ Search Context to map users: Select the context on the target server to match the users.
Existing User Options	<p>A username on the source server has a corresponding username on the target server. You can overwrite the trustee details of the user on the target server, or ignore the user.</p> <ul style="list-style-type: none"> ♦ Ignore All: Do not create users on the target server. ♦ Overwrite All: Overwrite the users on the target server.
New User Options	<p>Specify the global password for the new users created on the target server.</p> <p>eDirectory Password: Specify the password for the users to use, when they first time log in on the target server.</p>

5d The *Match User Options* tab is enabled on selecting **Custom User mapping** option in the *Trustee Options* tab.

In the *Match User Options* tab, you can specify which users to migrate and how to handle the migration if the user already exists on the target server. When you migrate the volume to the target server, the users on the source server are migrated by default to the target server.

For explanation on different tasks that can be performed in the *Match User Options* tab, refer to the procedure below, else click OK to save your file system migration setup, then return to the main Migration Tool window.

5d1 To view the list of users on the source server and target server, click *Map Users*. The users in the source server and target server can be categorized as mapped users and new users.

- ♦ **Existing or Mapped Users:** A username on the source server has a corresponding username on the target server. If the users are mapped, only the trustee details are migrated.
- ♦ **New Users:** Users do not exist on the target server. Create new users on the target server, or ignore the users.

5d2 This is a global setting for all the users. Specify one of the following options to migrate users, or ignore users.

- ♦ **Ignore All:** Do not migrate the new users. Only existing users are migrated to the target server.
- ♦ **Create All:** Create all users to the target server.

5d3 (Optional) You can specify settings for individuals and groups that override the global handling of user migration.

5d3a Click the username, then assign one of the migration options from the drop-down menu:

- ♦ **Create:** Create users on the target server and assign the trustee rights.
The users are created on the target server using the same FDN as the source server. The search context is used only to match the source server users to target server users in that context.
- ♦ **Ignore:** Ignore the user and do not assign the trustee rights of the source user.
- ♦ **Browse:** Assign an equivalent user by choosing in the same context or different context on the target server and assign trustee rights.

After you are done configuring the parameters in each tab, click *OK* to save your file system migration setup, then return to the main Migration window. The migration does not begin until you click *Start* on the main page.

H.3 Migrating File System with Command Line Utilities

This section provides information on how to migrate File System running on OES NetWare or OES Linux to OES 2 SP1 Linux platform using Migration Command Line Tools.

The procedures for migrating file system data from the NSS or Traditional volumes on NetWare or from NSS volumes on OES 1 Linux vary depending on whether the source server and target server are in the same eDirectory tree or in different eDirectory trees. This section covers the following scenarios:

- ♦ [Section H.3.1, “Migrating Data to a Server in the Same Tree,” on page 147](#)
- ♦ [Section H.3.2, “Migrating Data to a Server in a Different Tree,” on page 150](#)
- ♦ [Section H.3.3, “Migrating Data to a POSIX File System,” on page 156](#)
- ♦ [Section H.3.4, “File System Migration Commands,” on page 159](#)
- ♦ [Section H.3.5, “Additional Migration Options,” on page 173](#)

H.3.1 Migrating Data to a Server in the Same Tree

This section describes how to migrate file system data from a NetWare or OES 1 Linux server to an OES 2 Linux server in the same eDirectory tree.

- ♦ [“Migration Commands to Use” on page 148](#)
- ♦ [“Migration Steps” on page 148](#)
- ♦ [“Examples” on page 148](#)

- ♦ “Limitations” on page 149
- ♦ “Troubleshooting” on page 149

Migration Commands to Use

The main command to use is `migfiles`. If you need to modify the home directories of the migrated users, you also need to use `mls`, `maptrustees`, and `migtrustees`.

Migration Steps

- 1 (Conditional) If you need to modify the home directories of the migrated users, run the following command:

```
mls
```

- 2 Run the `migfiles` command to copy the data from the source server to target server.
- 3 (Conditional) If you need to modify the home directories of the migrated users, run the following commands in the order specified:

```
maptrustees
```

```
migtrustees
```

Examples

The following examples illustrate ways to use the various options available for the migration commands.

Example 1, Volume-to-Volume Migration:

This command migrates all data from the Traditional or NSS volume `SRCVOL1` on the source server with IP address `192.168.1.3` to the target server’s `TGTVOL1` volume with verbose output:

```
migfiles -s 192.168.1.3 -V SRCVOL1 -v TGTVOL1 -i
```

Example 2, Directory-to-Directory Migration:

This command migrates data from the Traditional or NSS path `DATA:impstuff` on the source server with IP address `192.168.1.3` to the `stuff` directory on the NSS volume `NSS1` with verbose output:

```
migfiles -s 192.168.1.3 -V DATA:impstuff -x /media/nss/NSS1/stuff -i
```

Example 3, Volume-to-Directory Migration:

This command migrates data from the Traditional or NSS volume named `DATA` on the source server with IP address `192.168.1.3` to the `newdir` directory on the NCP volume `NCPI` located at path `/data/ncp1` without verbose output:

```
migfiles -s 192.168.1.3 -V DATA -x /data/ncp1/newdir
```

Example 4, Source Linux NSS Directory to Directory Migration

This command migrates data from NCP Linux volume NCPVOL. The NCPVOL is located at `/usr/novell/ncpvol` on the source server with the IP address 192.168.1.3 to the `newdir` directory on the NSS volume NSS1:

```
migfiles -s 192.168.1.3 -X /usr/novell/ncpvol -x /media/nss/NSS1/
```

Example 5: Remapping Home Directories

These commands migrate the VOL1 volume on source server 192.168.1.3 to the VOL1 volume on target server 192.168.1.4. The `-H` option in the `maptrustees` command is used to remap the home directories of the users to the target server named NEW-SERVER.

- 1 Create a list of files and associated rights on the source volume:

```
mls -s 192.168.1.3 -V VOL1 > mls.yaml
```

- 2 Copy the data from the source volume to the target volume:

```
migfiles -s 192.168.1.3 -V VOL -x /media/nss/VOL1 -i
```

- 3 Map the trustees and home directories from the source server to the target server:

```
maptrustees -s 192.168.1.3 -H /media/nss/VOL1/users/--map-homedir-only mls.yaml> maptrustees.yaml
```

The `-H` option is a path to the base directory that includes all the home directories.

- 4 Migrate the information generated in the previous step:

```
migtrustees -d 192.168.1.4 -m maptrustees.yaml
```

Limitations

You should be aware of the following limitations when using the migration commands to copy data:

- ♦ If you have user space restrictions set on a source NSS volume, the restrictions are migrated to target NSS volumes if you do a full volume migration.

Troubleshooting

- ♦ The error `nbackup: open file` means that files on the source server are open, so they are not migrated because this would cause data inconsistencies.
- ♦ The error `nbackup: execute only files` means that `nbackup` encountered files with the Execute-only bit set. These files are not copied by default. If you want to copy Execute-only files, use the `tsafs /ExcludeExecuteOnly=0` setting on the source NetWare server.
- ♦ SMS errors, such as `nbackup: A file cannot be read` and `nbackup: Failed to read dataset`, occur if the source volumes or the target volumes become unavailable or are renamed during the course of a migration. Do not rename volumes while a migration is in progress. If a migration stops because a volume becomes unavailable, ensure that the volume is properly activated and mounted, then restart the migration project.

H.3.2 Migrating Data to a Server in a Different Tree

When the source server and target servers are in different eDirectory trees, your file system user and group trustees must be migrated from the source tree to the target tree, along with their associated data. The `maptrustees` and `migtrustees` commands are used to migrate users and groups assigned as trustees in the source tree to the target tree. Alternatively you can use Novell Identity Manager to migrate the eDirectory users and groups, and then use the `migmatchup` command to match the user from the source server to the target server. Use the `maprights` and `migrights` commands only if the user and the group structure has changed during the migration.

- ♦ “Migration Commands to Use” on page 150
- ♦ “Migration Steps” on page 150
- ♦ “Examples” on page 151
- ♦ “Limitations” on page 155
- ♦ “Troubleshooting” on page 156

Migration Commands to Use

The main command to use is `migfiles`. To map the trustees (users and groups) from the source tree to the target tree, you need to use `mls`, `maptrustees`, and `migtrustees`. If you are reorganizing the trustees (migrating to a different context), you also need to use `mls`, `maprights`, and `migrights` to map the trustee rights. If you want to notify users that their data has been migrated to a new tree and that their passwords have changed, you can use the `mignotify` command.

Migration Steps

To migrate the data from a source NetWare server in one eDirectory tree to the target Linux server in another tree:

- 1 You can either migrate the source server trustees to the target server or map the source server trustees with the target server.
 - ♦ To migrate the trustees, run the following commands in the order shown:

```
mls
maptrustees
migtrustees
```
 - or
 - ♦ To map the trustees, run the following commands in the order shown:

```
mls
migmatchup
```
- 2 Run the `migfiles` command to copy the data from the source to the target server.
- 3 (Conditional) If you are migrating users and groups to a different context or matching the user with different name, run the following commands in the order shown:

```
mls
maprights
migrights
```
- 4 To notify users, run the following commands in the order shown:

```
mls
maptrustees
mignotify
```

NOTE: The output of `maptrustees` is needed for `mignotify`, but it must be run after `migfiles` and the `maprights/migrights` operation.

Examples

Below are examples of migrating data between trees.

- ♦ “Example 1: Tree-to-Tree Migration Using the Migration Tool to Migrate Trustees” on page 151
- ♦ “Example 2: Tree-to-Tree Migration Using the Migration Tool to Migrate Trustees and flatten the Trustee Structure” on page 152
- ♦ “Example 3: Tree-to-Tree Migration with trustees already migrated to the new tree and reorganized in the new tree.” on page 154

Example 1: Tree-to-Tree Migration Using the Migration Tool to Migrate Trustees

The following example shows how to migrate data from a source NetWare server in one tree to a target OES 2 Linux server in another tree. In this example, the target volumes are NSS volumes, and the users are to be migrated to the same context in the target tree.

- 1 Create a list of files and trustees on volume V1 on the source server with IP address 192.168.1.3:

```
mls -s 192.168.1.3 -V V1 > mls.yaml
```

- 2

Map the trustees on the source server and output the list to a file:

```
maptrustees -s 192.168.1.3 -H/media/nss/VOL1/users/ --random-  
password mls.yaml > maptrustees.yaml
```

The `-H` option replaces the home directory of the source server user with the new home directory specified by `-H` option. The `-H` option is a path to the base directory that includes all the home directories. If the users don't have home directories, this option doesn't need to be used.

The `--random-password` option is for generating random passwords. If this option is used, each user is assigned a random password stored in the `maptrustees` output file (`maptrustees.yaml`). If you want to assign users specific passwords, use the `-specific-password` option.

NOTE: The new passwords are stored in the `maptrustees` output file. To avoid password theft, dispose of this file in a secure manner after you have communicated the new passwords to their respective users.

- 3 Migrate the trustees to the target server:

```
migtrustees -d 192.168.1.67 maptrustees.yaml
```

- 4 (Conditional) When migrating to a NCP Linux volume, if you want to preserve file ownership in the target tree, you should LUM-enable the migrated users before continuing. For information about LUM-enabling users, see “[LUM Implementation Suggestions](#)” in the *OES2 SP1: Planning and Implementation Guide*.

- 5 Migrate the data from source volume V1 to target NSS volume VOL1:

```
migfiles -s 192.168.1.3 -V VOL1 -x /media/nss/VOL1/ -i
```

After the users have been migrated (this only needs to be done once), additional data volumes can be migrated. Repeat this command to migrate other volumes on the source server.

- 6 Notify users about the data migration:

```
mignotify -a login -e myusername@mycompany.com --mail-server  
smtp.mycompany.com -m message -i maptrustees.yaml
```

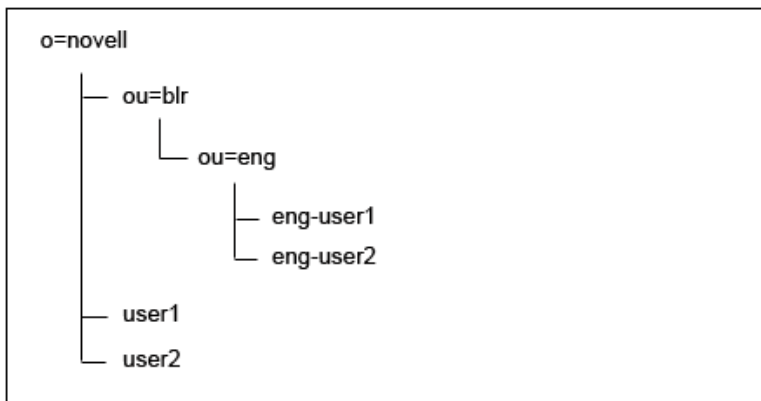
This command sends an e-mail containing the message specified in the message text file to all users who have been migrated to the new server. See [Section , “mignotify,” on page 167](#) or the mignotify man page for a sample message file.

Example 2: Tree-to-Tree Migration Using the Migration Tool to Migrate Trustees and flatten the Trustee Structure

The maptrustees command includes a `-k` option that allows you to migrate users to a different context in the target tree. When you do this, the container hierarchy is flattened.

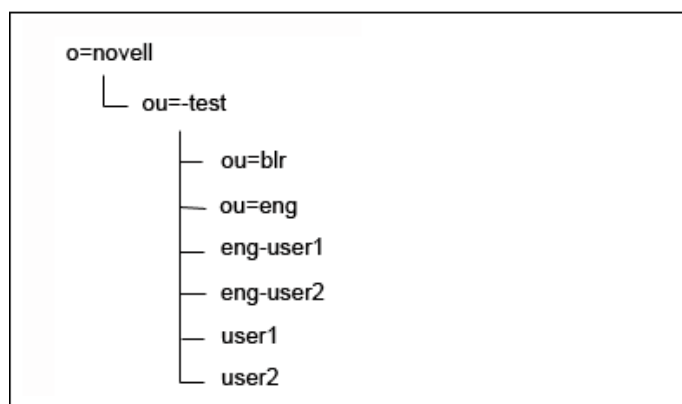
For example, suppose your source eDirectory tree looks like the one shown in [Figure H-1](#).

Figure H-1 Source eDirectory Tree Structure



When the users are migrated to ou=test.o=novell, the resulting tree structure is shown in [Figure H-2](#).

Figure H-2 Target eDirectory Tree Structure



The following example shows how to migrate data from a source OES 1 Linux server in one tree to a target OES 2 Linux server in another tree. In this example, the target volumes are NCP Linux volumes and the new user context is `ou=new-context.o=company`.

- 1 Create a list of files and trustees on volume SRCVOL on the source server with IP address 192.168.1.3:

```
mls -s 192.168.1.3 -V SRCVOL > mls.yaml
```

- 2 Map the trustees on the source server and output the list to a file:

```
maptrustees -s 192.168.1.3 -H/usr/novell/NCP1/homes/ -k
'ou=new-context,o=company' --random-password mls.yaml >
maptrustees.yaml
```

The `-H` option replaces the home directory of the source server user with the new home directory specified by `-H` option. The `-H` option is a path to the base directory that includes all the home directories. If the users don't have home directories, this option doesn't need to be used.

The `--random-password` option is for generating random passwords. If this option is used, each user is assigned a random password stored in the `maptrustees` output file (`maptrustees.yaml`). If you want to assign users specific passwords, use the `--specific-password`.

NOTE: The new passwords are stored in the `maptrustees` output file. To avoid password theft, dispose of this file in a secure manner after you have communicated the new passwords to their respective users.

- 3 Migrate the trustees to the target server:

```
migtrustees -d 192.168.1.67 maptrustees.yaml
```

- 4 (Conditional) When migrating to a NCP Linux volume, if you want to preserve file ownership in the target tree, you should LUM-enable the migrated users before continuing. For more information on LUM-enabling users, see “[LUM Implementation Suggestions](#)” in the *OES2 SP1: Planning and Implementation Guide*.

- 5 Migrate the data from source volume SRCVOL to target NCP Linux volume NCP1:

```
migfiles -s 192.168.1.3 -V SRCVOL -x /usr/novell/NCP1/ -i --no-
trustees
```

After the users have been migrated (this only needs to be done once), various data volumes can be migrated. Repeat this command to migrate other volumes on the source server.

6 Map the trustee rights on the source server:

```
maprights -V SRCVOL -k ou=new-context,o=company -x /usr/novell/
NCP1/ mls.yaml > maprights.yaml
```

7 Migrate the trustee rights to the target server:

```
migrights -i maprights.yaml
```

Repeat [Step 1](#), [Step 6](#), and [Step 7](#) for each source volume being migrated.

8 Notify users about the data migration:

```
mignotify -a login -e myusername@mycompany.com --mail-server
smtp.mycompany.com -m message -i maptrustees.yaml
```

This command sends an e-mail containing the message specified in the message text file to all users who have been migrated to the new server. See [Section , “mignotify,” on page 167](#) or the mignotify man page for a sample message file.

Example 3: Tree-to-Tree Migration with trustees already migrated to the new tree and reorganized in the new tree.

The following example shows how to migrate data from a source NetWare server in one tree to a target OES 2 Linux server in another tree. In this example, the target volume is NSS volume, and the users have already been migrated so that they now reside in different contexts using tools like the Novell Identity Manager to the target tree. In this example, the migration tools are used to only migrate the data and map the trustees correctly.

1 Create a list of files and trustees on volume V1 on the source server with IP address 192.168.1.3:

```
mls -s 192.168.1.3 -V V1 > mls.yaml
```

2 Match-up the users on the source server to the users on the target server:

```
mismatchup -s 192.168.1.3 -d 192.168.1.67 -k 'ou=re-
org,o=company' > mismatchup.yaml
```

mismatchup searches for the trustees in their source context, if it doesn't find a matching trustee, it searches the container specified with the -k option recursively and matches the first trustee with the same name. If the trustee with the same name is not found, it is not matched.

If the trustee name is changed, then the output of mismatchup can be edited so that each source trustee is mapped to the corresponding user on the target tree.

3 (Conditional) When migrating to a NCP Linux volume, if you want to preserve file ownership in the target tree, you should LUM-enable the migrated users before continuing. For more information on LUM-enabling users, see [“LUM Implementation Suggestions” in the OES2 SPI: Planning and Implementation Guide](#).

4 Migrate the data from source volume SRCVOL to target NSS volume TGTVOL:

```
migfiles -s 192.168.1.3 -V SRCVOL -x /media/nss/TGTVOL/ -i --no-
trustees
```

After the users have been migrated (this only needs to be done once), various data volumes can be migrated. Repeat this command to migrate other volumes on the source server.

5 Map the trustee rights on the source server:

```
maprights -V SRCVOL --matchup-file migmatchup.yaml -x /media/  
nss/TGTVOL/ mls.yaml > maprights.yaml
```

6 Migrate the trustee rights to the target server:

```
migrights -i maprights.yaml
```

Repeat **Step 5**, and **Step 6** for each source volume being migrated.

Limitations

You should be aware of the following limitations when performing tree-to-tree migrations:

- ♦ If users have home directories on a volume that is migrated, the Home Directory attribute is changed only for users who are assigned as trustees or belong to the groups that are assigned as trustees.
- ♦ If maptrustee and migtrustee commands are used to migrate the users then the following User Object attributes are migrated:
 - ♦ Common Name (CN)
 - ♦ Country
 - ♦ Description (description)
 - ♦ E-mail Address (mail)
 - ♦ Fax Number (facsimileTelephoneNumber)
 - ♦ Full Name (fullName)
 - ♦ Generational Qualifier (generationQualifier)
 - ♦ Given Name (givenName)
 - ♦ Initials (initials)
 - ♦ Language (Language)
 - ♦ Locality Name (l)
 - ♦ Lockout After Detection (lockedByIntruder)
 - ♦ Login Allowed Time (loginAllowedTimeMap)
 - ♦ Login Disabled (loginDisabled)
 - ♦ Login Expiration Time (loginExpirationTime)
 - ♦ Login Grace Limit (loginGraceLimit)
 - ♦ Login Grace Remaining (loginGraceRemaining)
 - ♦ Login Intruder Limit (loginIntruderAttempts)
 - ♦ Login Maximum Simultaneous (loginMaximumSimultaneous)
 - ♦ Login Script (loginScript)
 - ♦ Network Address Restriction (networkAddressRestriction)
 - ♦ Organizational Name (o)
 - ♦ Organizational Unit Name (ou)
 - ♦ Password Allow Change (passwordAllowChange)
 - ♦ Password Expiration Interval (passwordExpirationInterval)
 - ♦ Password Expiration Time (passwordExpirationTime)

- ♦ Password Minimum Length (passwordMinimumLength)
- ♦ Password Required (passwordRequired)
- ♦ Password Unique Required (passwordUniqueRequired)
- ♦ Physical Delivery Office Name (physicalDeliveryOfficeName)
- ♦ Post Office Box (postOfficeBox)
- ♦ Postal Address (postalAddress)
- ♦ Postal Code (postalCode)
- ♦ State or Province Name (st)
- ♦ Street Address (street)
- ♦ Surname (sn)
- ♦ Telephone Number (telephoneNumber)
- ♦ Title (title)
- ♦ When LUM-enabled users are migrated to a new tree, they are no longer LUM-enabled.

Troubleshooting

- ♦ If the ownership information is changed during a migration from NSS to NCP, make sure you LUM-enable the users that are migrated into the target eDirectory tree before you run the `migfiles` command.

If you LUM-enabled the users that were migrated into the target eDirectory tree and still don't see the proper ownership information (for example, the owner is nobody as viewed in POSIX, or the server name as viewed by the Novell Client™), try the following:

- ♦ At the OES 2 Linux server terminal prompt, enter `namcd cache_refresh`.
- ♦ Synchronize the eDirectory replicas by using `DSREPAIR`.
- ♦ Enter `nsscon /resetidcache`.

To check to see if the owner information is now correct, enter:

```
ls -l /usr/novell/NCP1
```

H.3.3 Migrating Data to a POSIX File System

This section provides information on migrating data from NetWare or OES 1 Linux NSS volumes to a POSIX file system such as EXT3 or Reiser on a target OES 2 Linux server.

- ♦ [“Mapping Users, Groups, and File Attributes to POSIX” on page 156](#)
- ♦ [“Migration Steps” on page 157](#)
- ♦ [“Example” on page 158](#)
- ♦ [“Limitations” on page 159](#)

Mapping Users, Groups, and File Attributes to POSIX

In this type of migration, eDirectory users and groups are migrated to POSIX. The `useradd` and `groupadd` commands are used to create the POSIX users and groups corresponding to their eDirectory equivalents, and the NetWare file attributes are mapped to the POSIX `rwX` permissions.

Objects in eDirectory with an objectClass of Organization, groupOfNames, or organizationUnit are mapped to POSIX groups. Those with objectClass organizationalPerson are mapped to POSIX users.

Because POSIX user and group names are more restrictive than eDirectory object names, the following conventions are used to map the common name (cn) of the objects to POSIX:

- Names with 32 or more characters are truncated to 31 characters in length.
- Characters not belonging to the POSIX portable character class ([A-Za-z_] [A-Za-z0-9_-.] * [A-Za-z0-9_-.]) are replaced by an underscore (_) character.

For more details about POSIX names, see the man page for the `useradd` command.

NetWare file attributes are mapped as shown in [Table H-1](#).

Table H-1 Mapping of NetWare Attributes to POSIX Permissions

NetWare Attributes	POSIX Permissions
No attributes set	rw_ _ _
Read Onlyand Hidden	_ _ _
Read Only	r_ _ _
Hidden	_w_ _ _

For directories the execute bit for the owner is set.

NOTE: These mappings are based on NetWare attributes, not trustee rights. Administrators should evaluate the post-migration POSIX permissions and make adjustments as necessary to maintain suitable data security for users.

Migration Steps

- 1 Run the `migfiles` command to copy the data from the source to the target server.
- 2 (Conditional) If you need to modify the home directories of the migrated users, run the following three commands in the order specified:

```
mls
maptrustees
migtrustees
```

- 3 Run the following commands in the order shown:

```
mls
maprights
migrights
```

- 4 To notify users, run the following commands in the order shown:

```
mls
maptrustees
mignotify
```

NOTE: The output of `maptrustees` is needed for `mignotify`, but it must be run after `migfiles` and the `maprights/migrighths` operation.

Example

The following example shows how to migrate data to a POSIX file system.

- 1 Migrate the data from the volume SRCVOL on the source server with IP address 192.168.1.3 to the target POSIX path:

```
migfiles -s 192.168.1.3 -V SRCVOL -x /path/to/copy --no-trustees -pi
```

Substitute the desired target POSIX path for `/path/to/copy`.

After the users have been migrated (this only needs to be done once), various data volumes can be migrated. Repeat this command to migrate other volumes on the source server.

- 2 Create a list of files and trustees on volume SRCVOL:

```
mls -s 192.168.1.3 -V SRCVOL > mls.yaml
```

- 3 Map the trustees on the source server and output the list to a file:

```
maptrustees -s 192.168.1.3 -p -H /data/home/ --random-password mls.yaml > maptrustees.yaml
```

The `-H` option replaces the home directory of the source server user with the new home directory specified by `-H` option. The `-H` option is a path to the base directory that includes all the home directories. If the users don't have home directories, this option doesn't need to be used.

The `--random-password` option is for generating random passwords. If this option is used, each user is assigned a random password stored in the `maptrustees` output file (`maptrustees.yaml`). If you want to assign users specific passwords, use the `--specific-password`.

NOTE: The new passwords are stored in the `maptrustees` output file. To avoid password theft, dispose of this file in a secure manner after you have communicated the new passwords to their respective users.

- 4 Migrate the trustees to the target server:

```
migrighths -p maptrustees.yaml
```

- 5 Map the trustee rights on the source server:

```
maprights -p -V SRCVOL1 -x /path/to/copy -m maptrustee.yaml mls.yaml > maprights.yaml
```

- 6 Migrate the trustee rights to the target server:

```
migrighths -p maprights.yaml
```

Repeat [Step 1](#), [Step 5](#), and [Step 6](#) for each source volume being migrated.

- 7 Notify users about the data migration:

```
mignotify -a login -e myusername@mycompany.com --mail-server smtp.mycompany.com -m message -i maptrustees.yaml
```

This command sends an e-mail containing the message specified in the message text file to all users who have been migrated to the new server. See [Section , “mignotify,” on page 167](#) or the `mignotify` man page for a sample message file.

Limitations

You should be aware of the following limitations when migrating data to POSIX:

- ♦ Sparse files are copied as normal files when migrated from NSS to POSIX. This is because of a known limitation from the POSIX perspective. Sparse files are generally supported on restore by restoring the data areas to sparse locations in the file system. The file system then determines whether or not to preserve the sparse nature of the file. POSIX file systems do not preserve the sparse nature of sparse files.

H.3.4 File System Migration Commands

The OES 2 migration tools include several command line tools for file system migrations. Each tool performs a subtask of the migration by taking the required input and outputting the converted output or results to stdout. [Table H-2](#) lists the commands that are available for file system migrations.

Table H-2 *File System Migration Commands*

Command	Description
<code>maprights</code>	Maps NetWare® NSS/Traditional or OES 1.0 Linux NSS file system rights to OES 2 Linux file system rights.
<code>maptrustees</code>	Maps users and groups from the source server to the target server specifications.
<code>migcred</code>	Establishes persistent credentials for the migration utilities.
<code>migfiles</code>	Copies files and folders from a source server to a target server.
<code>mignotify</code>	Sends e-mail notifications to the migrated users.
<code>migrights</code>	Sets file rights on the target server as defined by the output from the <code>maprights</code> command.
<code>migtrustees</code>	Creates users and groups on the target server based on the output generated by the <code>maptrustees</code> command.
<code>mls</code>	Lists all files in a given NetWare or OES 1.0 Linux NSS path, with associated trustees, rights, and quotas.
<code>ntfsmls</code>	Lists all files under a given Windows share path, with associated owners and their rights to files and folders.
<code>ntfsmap</code>	Maps the Windows NTFS rights and ACLs to OES 2 Linux NSS, NCP™ or POSIX rights and permissions.
<code>ntresource</code>	Provides detailed information about a Windows source server.
<code>ntuserls</code>	Lists all users and groups in a Windows Active Directory domain.

The sections that follow discuss these commands and their options in greater detail. You can also refer to the respective man page for each command or use the `-h (--help)` and `--usage` options.

maprights

The `maprights` command gleans file system rights information from the `mls` output and maps the rights to a specified volume or path on the OES 2 Linux target server. You can specify a mapping to NSS, NCP, or POSIX rights. If neither `-n` nor `-p` is specified, the default is NCP rights.

If the target server is in a different tree and users and groups are to be in new containers, you can use the `-k` option to migrate the users and groups into a specified container in the target eDirectory tree.

Syntax

```
maprights -v [-n] [-p] -V|-x [-k] [-m] inputfile
```

Options

Option	Long Form	Purpose
-v	--source-path	Specify the volume or directory path to use on the source server. Examples: -v NSSVOL -v VOL1:/apps/data
[-n]	[--nss]	Map user rights to NSS file system access rights.
[-p]	[--posix]	Map user rights to POSIX file system access rights.
-V	--destination-volume	Specify the volume on the OES 2 Linux target server where the rights information should be mapped. This option cannot be used with the <code>-x</code> option. Example: -V NSSVOL
-x	--destination-path	Specify the volume path on the OES 2 Linux target server where the rights information should be mapped. You must use <code>-x</code> in <code>maprights</code> if you have used <code>-x</code> in <code>migfiles</code> . This option cannot be used with the <code>-v</code> option.
[-k]	[--destination-ldap-container]	Specify an eDirectory container where all users and groups are to be migrated. You must use <code>-k</code> in <code>maprights</code> if you have used <code>-k</code> in <code>maptrustees</code> . Example: -k ou=users,o=company
[-m]	[--maptrustee-file]	Specify the name of the <code>maptrustees</code> file associated with this <code>maprights</code> migration (required for POSIX rights mapping). Example: -m maptrustees.yaml
	<i>inputfile</i>	Indicate the name of the output file produced from the <code>mls</code> command or from <code>stdin</code> .
	[--debug]	Print debug messages to the <code>maprights</code> log file located at <code>/var/opt/novell/log/migration/</code> .

maptrustees

The `maptrustees` command maps the users and groups from the source server's tree or domain to the target server's specifications. It uses input from `mls` or `ntuserls` to produce and map user and group data from the source server. You must use `maptrustees` when migrating data to a different tree or when migrating users and groups to a different context.

By default, `maptrustees` maps users and groups into a new target tree. The target file server should be in the same tree as the LDAP target server. You can use the `-k` option to map users and groups into a single target container.

The `maptrustees` command can also be used to map users and groups to POSIX users and groups in `/etc/passwd` and `/etc/group`. It uses `ldapsearch` to retrieve the user and group data from the source LDAP server. The source LDAP server should be in the same tree as the source file server that produced the `mls` output.

Syntax

```
maptrustees -s [-H] [-p] [-k] [-g] [-r] [-S] [-E] [--use-casa]
inputfile
```

Options

Option	Long Name	Purpose
-s	--source-ldap	Specify the source LDAP server's IP address. Example: -s 192.168.1.3
[-H]	--homedir	Specify the path to the directory for migrating user's home directories. This option is used to map users' home directories to the new path on the target server. Example: -H /media/nss/nssvol1/homedir
[-p]	[--posix]	Map users and groups to <code>/etc/passwd</code> and <code>/etc/group</code> on the OES 2 Linux server. (If no mapping option is specified, the default is LDAP.)
[-k]	[--destination-ldap-container]	Specify the container where all users and groups are to be migrated. This option is mandatory for Windows-to-Linux migrations. Example: -k ou=merged,o=company
[-g]	[--primary-group]	Specify the primary POSIX group for migrated users. If not specified, the default primary group is "users." Example: -g migrated-users The specified group must be created before you run the <code>maptrustees</code> command, because <code>maptrustees</code> does not create the group.

Option	Long Name	Purpose
[-r]	[--random-password]	Generate random passwords for each user to be created in the target tree. If neither -r nor -s is used, users are created without a password and the user accounts are locked until they are manually assigned a password.
[-S]	[--specific-password]	Assign the specified password for each user to be created in the target tree. Example: -S "abcd1234" If neither -r nor -s is used, users are created without a password and the user accounts are locked until they are manually assigned a password. Null passwords (-S "") are not allowed.
[-E]	[--obj-exclude-file]	Exclude from migration the objects listed in the specified file. Example: -E excludefile.txt If this option is used, the global exclude file is not read. See "Excluding Objects" on page 163 for more information.
	[--use-casa]	Use CASA to store and retrieve usernames and passwords.
	<i>inputfile</i>	Indicate the output file produced from the mls or ntuserls command or from stdin.
	[--debug]	Print debug messages to the maptrustees log file located at /var/opt/novell/log/migration/.

Examples

- ♦ This first example illustrates the simple case of mapping users and groups to the same container in the target tree as in the source tree, using the output from the mls command, and generating random passwords for the users:

```
maptrustees -s 192.168.1.3 -r mls.yaml > maptrustees.yaml
```

The example assumes you have the same tree structure in the target tree as in the source tree. The random passwords are recorded in the maptrustees output file.

- ♦ This next example illustrates the case of mapping users and groups to a new container in the target tree, using the output from the ntuserls command:

```
maptrustees -s 192.168.1.3 -k ou=merged,o=company -r  
ntuserls.yaml > maptrustees.yaml
```

A new container named ou=merged,o=company is created in the target tree, and all migrated users and groups are created within that container.

- ♦ This third example illustrates the case of mapping users to /etc/passwd and /etc/group in a POSIX environment:

```
maptrustees -s 192.168.1.3 -p -r mls.yaml > maptrustees.yaml
```

Excluding Objects

When generating the list of users and groups to be mapped to the target tree, `maptrustees` reads the `obj-exclude-list.conf` file in the `/etc/opt/novell/migration/` directory and excludes the eDirectory™ objects listed in that file.

The global exclude file includes entries for NetWare-specific objects, such as `cn=admin,ou=Tomcat-Roles`.

If you find that objects are being migrated from your source eDirectory tree that you do not want to appear in the target tree, you can add the objects to the `obj-exclude-list.conf` file. Use fully distinguished object names in LDAP (comma-delimited) format. For example:

```
cn=testuser,ou=users,o=novell
```

NOTE: NCP Server objects that are assigned as file system trustees are not migrated in a tree-to-tree migration.

migcred

The `migcred` command can be used to store, retrieve, and delete persistent credentials for the other file system migration commands. It uses CASA to store credential details of an identity. A `migcred` identity can be either a server IP address or a Windows domain name. With each identity, a type of user name (for example, LDAP, NDS Distinguished Name, or e-mail name) is stored along with an associated password.

Syntax

```
migcred -i -l|-n|-N|-c|-o|-W|-e [-w] [-r] [-d]
```

Options

Option	Long Form	Purpose
-i	--id	Specify the identify or key to identify the credential. Example: <code>-i 192.168.1.3</code>
-l	--ldap-dn	Specify credential details in LDAP format. Example: <code>-l cn=admin,o=company</code>
-n	--nds-dn	Specify credential details in NDS_DN format. Example: <code>-n admin.company</code>
-N	--nds-fdn	Specify credential details in NDS_FDN format. Example: <code>-N cn=admin.o=company</code>
-c	--cn	Specify credential details in Common Name (CN) format. Example: <code>-c John Smith</code>
-o	--other	Specify credential details in a non-specified format.

Option	Long Form	Purpose
-W	--windows	Specify credential details as a Windows username. Example: -W administrator
-e	--email	Specify credential details as an e-mail address. Example: -e admin@company.com
[-w]	[--password]	Retrieve a stored password.
[-r]	[--retrieve]	Retrieve credential details of an identity.
[-d]	[--delete]	Delete the credentials of an identity.
	[--debug]	Print debug messages to the migcred log file located at /var/opt/novell/log/migration/.

Examples

- This example illustrates storing the credential details of identity 192.168.1.3 in LDAP format. The command prompts for credential details, which should be entered in LDAP format (cn=admin,o=mycompany):

```
migcred -i 192.168.1.3 -l
```

- This example illustrates retrieving credentials after they have been stored:

```
migcred -i 192.168.1.3 -l -r
```

- This example illustrates deleting credential details of identity 192.168.1.3:

```
migcred -i 192.168.1.3 -d
```

migfiles

The `migfiles` command copies files from NetWare Traditional or NSS volumes and OES 1.0 Linux NSS volumes to OES 2.0 Linux NSS, NCP or POSIX paths. It uses the Novell Storage Management System (SMS) framework to migrate file data and metadata.

When the migration is between two servers in the same eDirectory tree, `migfiles` copies the trustees and rights information along with the file data. When migrating data to a server in a different tree, `migfiles` copies only the file data. You must use other commands such as `mls`, `maptrustees`, `migtrustees`, `maprights`, and `migrights` to migrate the trustees and rights information.

This command also supports file migration from Windows NT, Windows 2000, and Windows 2003 servers to OES 2.0 Linux NSS or NCP volumes. It uses `cifs mount` to mount the Windows share to a local path and then uses `rsync` to copy the files to target. You must use other commands such as `ntfsm ls`, `ntuser ls`, `maptrustees`, `migtrustees`, `ntfsmap`, and `migrights` to migrate Windows ACLs and other rights information.

Syntax

```
migfiles -s [-w] [-n] [-p] [-i] -v -V|-x [-N] [-e] [-L] [-c] [-u]
[--use-casa] [--no-trustees] [--demigrate-files]
[--update-ifnewer]
```

General Options

Option	Long Form	Purpose
-s	--source-server	Specify the source server's IP address. Example: -s 192.168.1.3
[-w]	[--windows]	Specify that a Windows file server is the migration source.
[-n]	[--nss]	Specify that the target is an NSS volume/path. (If not specified, the default target type is NCP over POSIX.).
[-p]	[--posix]	Specify that the target is a POSIX path. (If not specified, the default target type is NCP over POSIX.).
[-i]	[--verbose]	Print verbose file migration status.
-v	--source-path	Specify the source path, in VOLNAME or VOLNAME:/path or Windows share name format. Examples: -v NSSVOL -v VOL:apps/data -v winshare
-V	--destination-volume	Specify the volume on the target server where the files should be copied. This option cannot be used with the -x option. Example: -V VOL1
-x	--destination-path	Specify the target path for copying NSS, NCP, or POSIX data. This option cannot be used with the -V option. Example: -x /media/nss/TEST
[-N]	[--never-overwrite]	Do not overwrite files that already exist on the target server.
[-e]	[--exclude]	Set an exclude filter on files to be copied. Use this option multiple times to exclude multiple file types. Example: -e "*.mp3" -e "*.tmp"
[-L]	[--log]	Write an error log to the file specified. The default error log is novell-migration.log created in /var/opt/novell/log/migration. Example: -L /root/documents/migration/error.log
	[--use-casa]	Use CASA to store and retrieve usernames and passwords.
	[--debug]	Print debug messages to the migfiles log located at /var/opt/novell/log/migration/.

NetWare Options

The following options can be used only in NetWare-to-Linux migrations.

Option	Long Form	Purpose
[-c]	[--session-file]	<p>Store the migration's progress, including the date and time of the migration, the source and target IP addresses, and the source and target volume names, in the specified session file.</p> <p>Example: <code>-c "status.log"</code></p> <p>This file can be used to resume a previously halted migration job. If an absolute or relative path is not specified with the filename, <code>migfiles</code> searches the current working directory for the file. If the specified file does not exist, all files are migrated. See "Multi-Session Migration" on page 166 for more information.</p>
[-u]	[--update]	<p>Migrate files newer than the date specified with this option. See "Updating Modified Files" on page 167 for more information.</p> <p>This option supports date/time inputs in the following formats:</p> <p><code>"%d-%m-%Y %H:%M:%S"</code></p> <p><code>"%d-%m-%Y %H:%M"</code></p> <p>where d, m, Y, H, M, and S are format variables of standard Linux date/time implementations. The supported formats can be extended by using the DATEMSK environment variable. The DATEMSK environment variable must be sent to the file path pointing to the date/time formats to support. See <code>getdate(1)</code> and <code>strptime(3)</code> for more information on using DATEMSK.</p>
	[--no-trustees]	Exclude trustees while migrating file system data.
	[--demigrate files]	Migrate the data of HSM-migrated files. By default, only stubs are migrated.
	[--update-ifnewer]	Update the file if the file on the source server is newer than the file on the target server.

Progress Indicator

While the `migfiles` command is running (without the `-i` option), a pound (#) character is displayed for every 100 files migrated.

Multi-Session Migration

The `-c` or `--session-file` option of the `migfiles` command allows you to stop the migration partway through and then continue it later from where it left off. This is especially useful when migrating large data volumes that might take several working days to copy and that must remain online during the migration.

For example, the following command stores the migration's progress and other metadata in a session file named `V1-to-V1 090907`:

```
migfiles -s 192.168.1.3 -v VOL1 -V VOL1 -ni -c "V1-to-V1 090907"
```

To terminate the migration session at any time, press `Ctrl+C`. You can resume the session later by reentering the `migfiles` command by passing the same session file `V1-to-V1 090907`

Updating Modified Files

Another useful option for the `migfiles` command is the `-u` or `--update` option. This option lets you specify a date and time, then `migfiles` copies only files that have been modified after this date and time. This option must be used after completing a multi-session migration described above to update all the files modified by users during the migration. The session file contains the data and time at which the migration started.

For example, the following command updates all the files on the target volume that have been modified at the source after 9 September 2008 at 12:30:

```
migfiles -s 192.168.1.3 -v V1 -V V1 -ni -u "9-09-2007 12:30"
```

mignotify

The `mignotify` command can be used to notify users via e-mail that a data migration has occurred and that their passwords have been changed. To generate the e-mail notifications, `mignotify` uses the `maptrustees` output file as its input.

Syntax

```
mignotify -e --mail-server -m -a [-i] inputfile
```

Options

Option	Long Form	Purpose
-e	--email-address	Specify the string that should be used in the <code>#{from}</code> field in the e-mail message. Example: <code>-e "Mail admin <admin@company>"</code>
	--mail-server	Specify the SMTP mail server's IP address for posting messages to users. Example: <code>--mail-server smtp1.company.com</code>
-m	--message-file	Specify the message file that is to be sent to the users. Example: <code>-m message.txt</code>
-a	--authentication	Specify the type of authentication required by the mail server: plain, login, cram_md5. Example: <code>-a login</code>
[-i]	[--verbose]	Print verbose information about which users have been sent e-mail messages.
	<i>inputfile</i>	Indicate the output file produced from the <code>maptrustees</code> command or from stdin.

Example

To notify users of the data migration and new passwords:

```
mignotify -a login -e admin@mycompany.com -mail-server  
smtpserver.company.com -m messagefile -i maptrustees.yaml
```

Here is an example of a message file:

```
<intentional line> Hello #{first} #{last} with email address  
#{email},
```

```
This email is to inform you that you must re-login in order to  
transfer over to the new file server. Your new password is  
#{password}.
```

```
Regards,
```

```
#{from} of your friendly IT staff
```

migrights

The `migrights` command uses input from `maprights` or `ntfsmmap` to set file rights on the target server. All details for setting rights are stated in the input file. `migrights` uses this information to set the rights appropriately on the target file system.

Syntax

```
migrights [-i] [-A] [-t] [-d] [--use-casa] inputfile
```

Options

Option	Long Form	Purpose
[-i]	[--verbose]	Print verbose rights migration status.
[-A]	[--audit]	Audit the results of the file rights migration.
[-t]	[--test]	Perform a test run of the rights migration operation.
[-d]	[--destination-ldap]	Indicate the IP address of an LDAP server in the target server's tree. (Required when using the <code>-t</code> option.)
	[--use-casa]	Use CASA to store and retrieve usernames and passwords.
	<i>inputfile</i>	Indicate the output file produced by the <code>maprights</code> or <code>ntfsmmap</code> command or from stdin.
	[--debug]	Print debug messages to the <code>migrights</code> log file located at <code>/var/opt/novell/log/migration/</code> .

Examples

- ♦ To set rights on the target file system with verbose output:

```
migrights -i maprights.yaml
```

- ♦ To audit the outcome after setting rights on the target file system:

```
migrights -i -A maprights.yaml
```

- ♦ To perform a test run with the output from `maprights` and see if the files and users exist in the target tree, the target LDAP server IP address of 192.168.1.5, with the test results being redirected to `migrights-t.yaml`:

```
migrights -i maprights.yaml -td 192.168.1.5 > migrights-t.yaml
```


migtrustees

The `migtrustees` command uses input from `maptrustees` to create users and groups in the target tree. It uses `ldapadd` and `ldapmodify` to make the changes on the target LDAP server.

If the `-p` (`--posix`) option has been specified in `maptrustees`, `migtrustees` uses `useradd` and `groupadd` to create users and groups in `/etc/passwd` and `/etc/group`.

If the `-g` (`--primary-group`) option was specified in `maptrustees`, the specified group must already exist or it must be created before running `migtrustees`.

Syntax

```
migtrustees -d [-i] [-A] [-m] [--use-casa] inputfile
```

Options

Option	Long Form	Purpose
-d	--destination-ldap	Specify the target LDAP server's IP address (not needed for POSIX migrations). Example: <code>-d 192.168.1.5</code>
[-i]	[--verbose]	Print verbose information regarding the user and group migration status.
[-A]	[--audit]	Audit the results of the user and group migration.
[-m]	[--modify-existing]	Modify or update users or groups if they already exist. If you do not include the <code>-m</code> option, the <code>migtrustees</code> command displays <code>user exists</code> errors if a User object being migrated is already present in the target eDirectory tree. In this case, no modifications are made to the User object in the target tree.
	[--use-casa]	Use CASA to store and retrieve usernames and passwords.
	<i>inputfile</i>	Indicate the output file produced from the <code>maptrustees</code> command or from stdin.
	[--debug]	Print debug messages to the <code>migtrustees</code> log file located at <code>/var/opt/novell/log/migration/</code> .

Examples

- ♦ To migrate users and groups to a target tree, using an LDAP server with the IP address of 192.168.1.4 in the target tree:

```
migtrustees -d 192.168.1.4 maptrustees.yaml
```

- ♦ To audit the outcome of a trustee migration:

```
migtrustees -d 192.168.1.4 -A maptrustees.yaml
```

- ♦ To migrate users and groups to POSIX with verbose information:

```
migtrustees -i maptrustees.yaml
```

mls

The `mls` command lists files and associated trustees, rights, and quotas from NetWare or OES 1.0 Linux source servers. The output from this command is used as input for both `maprights` and `maptrustees`.

To gather the required information for NetWare Traditional or NSS volumes, `mls` copies `tcnvlrx.nlm` to the NetWare server. To gather this information for OES 1.0 Linux NSS volumes, it uses the `.trustee_database.xml` file in the `._NETWARE` directory.

Syntax

```
mls -s -v [--use-casa]
```

Options

Option	Long Form	Purpose
-s	--source-server	Specify the source server's IP address. Example: <code>-s 192.168.1.3</code>
-v	--source-path	Specify the volume or directory path to use on the source server. Examples: <code>-v NSSVOL</code> <code>-v VOL1:/apps/data</code>
	[--use-casa]	Use CASA to store and retrieve usernames and passwords.
	[--debug]	Print debug messages to the <code>mls</code> log file located at <code>/var/opt/novell/log/migration/</code> .

ntfsm ls

The `ntfsm ls` command is used to list file attributes and user permissions for files on a Windows NTFS file system. The output from this command is in YAML file format and is used as input for both `maprights` and `maptrustees`.

Syntax

```
ntfsm ls -s -v [--use-casa]
```

Options

Option	Long Form	Purpose
-s	--source	Specify the Windows source server's IP address.
-v	--source-path	Specify the share name on the Windows source server.
	[--use-casa]	Use CASA to store and retrieve usernames and passwords.
	[--debug]	Print debug messages to the <code>ntfsm ls</code> log file located at <code>/var/opt/novell/log/migration/</code> .

Example

To list file rights and user permissions of the data share on a Windows server with the IP address 192.168.1.3, and with all information being redirected to `ntfsmls.yaml`:

```
ntfsmls -s 192.168.1.3 -v data > ntfsmls.yaml
```

ntfsmap

The `ntfsmap` command gleans all rights information from `ntfsmls` output and maps it to a specified volume or a specified path on the OES 2 Linux target server. It also maps all the Windows users to a specified eDirectory container. The output from this command is in YAML file format.

Syntax

```
ntfsmap -k [-n] [-I] [-m] -V|-x inputfile
```

Options

Option	Long Form	Purpose
-k	--destination-ldap-container	Specify a container where all Windows users and groups will be migrated.
[-n]	[--nss]	Specifies that Windows permissions are to be mapped to NSS rights. The default is NCP.
[-I]	[--inheritance]	Specify an inheritance type of static or inherited. The default is inherited.
[-m]	[--mapfile]	Specify a user-specified rights mapping file.
-V	--destination-volume	Specify the volume on the OES 2 Linux target server where all the rights information should be mapped.
-x	--destination-path	Specify the path on the OES 2 Linux target server where all the rights information should be mapped.
	<i>inputfile</i>	Output file produced from the <code>ntfsmls</code> command or from stdin.
	[--debug]	Print debug messages to the <code>ntfsmap</code> log file located at <code>/var/opt/novell/log/migration/</code> .

Example

To obtain all rights information from `ntfsmls.yaml`, map it to an NCP volume named TEST, migrate the user rights to the container `ou=test1,o=novell`, and redirect the output to `ntfsmap.yaml`:

```
ntfsmap -V TEST -k ou=test1,o=novell ntfsmls.yaml > ntfsmap.yaml
```

ntresource

The `ntresource` command displays information about the Windows source server, including shares, computer information, NetBIOS information, and domain information. You can use this command with the `-l` option to display the share names to be used in the `migfiles` command.

Syntax

```
ntresource -s [-l] [-c] [-n] [-d] [--use-casa]
```

Options

Option	Long Form	Purpose
-s	--source	Specify the Windows source server's IP address.
[-l]	[--shares-info]	List the shares defined on the Windows server.
[-c]	[--computer-info]	List information about the Windows server computer.
[-n]	[--netbios-info]	List NetBIOS information from the Windows server.
[-d]	[--domain-info]	List the domain information from the Windows server.
	[--use-casa]	Use CASA to store and retrieve usernames and passwords.
	[--debug]	Print debug messages to the <code>ntresource</code> log file located at <code>/var/opt/novell/log/migration/</code> .

Examples

- ♦ To list the shares defined on a Windows source server with the IP address of 192.168.1.3:

```
ntresource -s 192.168.1.3 -l
```

- ♦ To list NetBIOS information about a Windows source server with the IP address of 192.168.1.5:

```
ntresource -s 192.168.1.3 -n
```

ntuserls

The `ntuserls` command lists the users and groups in the Windows source server's domain. Use the `-g` option to generate the user and groups list based on the output generated by `ntfsmls`.

Syntax

```
ntuserls -s [-g] [--use-casa] inputfile
```

Options

Option	Long Form	Purpose
-s	--source	Specify the Windows source server's IP address.
[-g]	[--generate]	Output the list of users and groups based on the output generated by <code>ntfsmls</code> . If this option is not specified, the command lists all users and groups.
	<i>inputfile</i>	Specify the input file produced by running <code>ntfsmls</code> . If no filename is provided, the command reads input from stdin.
	[--use-casa]	Use CASA to store and retrieve usernames and passwords.

Option	Long Form	Purpose
	<code>[--debug]</code>	Print debug messages to the <code>ntuserls</code> log file located at <code>/var/opt/novell/log/migration/</code> .

Examples

To generate a list of users and groups from a Windows server with the IP address of 192.168.1.3, using a file produced by running `ntfsmls`, and redirecting the output to `ntuserls.yaml`:

```
ntuserls -s 192.168.1.3 -g ntfsmls.yaml > ntuserls.yaml
```

H.3.5 Additional Migration Options

The OES 2 SP1 Migration Tool provides additional options to be executed with file system migration utilities.

You can execute these commands with File System migration utilities, except Windows migration specific utilities (`ntfsmls`, `ntfsmap`, `ntuserls`, `ntuserls`, `ntresource`). [Table H-2](#) lists the additional options that are available for file system migrations.

Table H-3 Additional Migration Options with File System Commands

Option	Description
<code>-session-file</code>	Stores the checkpoint information of a command.
<code>-progress</code>	Display the progress of the command being executed
<code>-progress-interval</code>	Specifies the time interval for displaying the progress of a command.
<code>-debug</code>	Executes the command in a debug mode and creates a log file.
<code>-precheck</code>	Validates the arguments passed in a command.

Session Files

A session file stores the status of a command, checkpoint information of a command (the point at which the execution of command was stopped), and parameters for validating the session file. You can create a session file by executing a command with `-session-file` option.

An example to create a session file for `migfiles` command:

```
migfiles -s 192.168.1.3 -iV src_volume -v dest_volume -session-file /home/migfiles_session.session
```

The above command migrates data from source NSS volume `src_volume` to target NSS volume `dest_volume`. You can stop the command and re-execute it at a later stage. On executing the command at a later stage the `migfiles_session.session` file is taken as an input and the `migfiles` command starts at the point when it was last stopped.

If your source volume contains 50GB of data and on migrating 40 GB of data, migration was stopped. On re-executing the `migfile` command the remaining 10 GB of data is migrated.

Sample Session File

```
src-server: 192.168.1.3
dest-server: 192.65.1.2
src-path: "DFS:"
dest-path: "/media/nss/VOL1/"
started-on: "18-7-2008 16:8:15"
status: stopped
stopped-at: "DFS:db/"
Bytes Processed: 22
```

Progress

The `-progress` command can be executed with any command to display the progress of the command being executed.

An example to view progress on executing the `migtrustees` command:

```
migtrustees -d 192.168.1.3 maptrustees.yaml -i -progress
```

Output of the command:

```
Created 200 trustees of 500
```

On executing the `migtrustees` command with `-progress` option, displays the progress of trustee creation. You can set the time to display the progress specifying `-progress-interval` option.

Progress Interval

The `-progress-interval` option is used along with `-progress` option to specify the time interval for displaying the progress of a command. The default time interval is 30 seconds for refreshing the progress of a command.

An example to view progress every 10 seconds on executing the `migtrustees` command:

```
migtrustees -d 192.168.1.3 maptrustees.yaml -i -progress -progress-  
interval 10
```

The `migtrustees` command refreshes the progress every 10 seconds.

Debug

The `-debug` option executes the command in debug mode and creates a log file in `/var/opt/novell/log/migration` folder.

An example to execute `mls` command in debug mode:

```
mls -s 192.168.1.3 -V src_volume -debug
```

The above command creates a `mls.log` file that is stored in `/var/opt/novell/log/migration` folder.

Precheck

The `-precheck` option validates the arguments passed in a command.

An example to execute the `migfiles` command:

```
migfiles -s 192.165.1.1 -iV src_volume -v dest_volume -precheck
```

On executing the above command the `-precheck` option validates the existence of `src_volume` and `dest_volume` on the source server and the target server respectively. The command authenticates to the source server and target server and also checks if SMS is running on the target server.

Migrating FTP from NetWare to OES 2 Linux

Migration refers to the process of migrating FTP services from a NetWare® system to a Linux system. The Open Enterprise Server (OES) migration tools follow a source/destination model. For the migration process, the source servers are on NetWare and the destination is the OES 2 Linux server. The following sections give you more details on the migration procedure for FTP.

- ♦ [Section I.1, “Planning the Migration,” on page 177](#)
- ♦ [Section I.2, “Migration Scenarios,” on page 178](#)
- ♦ [Section I.3, “Migration Procedure,” on page 178](#)
- ♦ [Section I.4, “Mapping Parameters,” on page 179](#)

I.1 Planning the Migration

Make sure your setup addresses the following requirements before you migrate FTP to the destination platform.

- ♦ [Section I.1.1, “System Requirements,” on page 177](#)
- ♦ [Section I.1.2, “Source Servers,” on page 177](#)
- ♦ [Section I.1.3, “Target Server,” on page 177](#)
- ♦ [Section I.1.4, “Coexistence,” on page 177](#)

I.1.1 System Requirements

- ♦ Pure-FTPd

I.1.2 Source Servers

- ♦ NetWare 5.1 SP8
- ♦ NetWare 6.0 SP5
- ♦ NetWare 6.5 SP5 and later

I.1.3 Target Server

- ♦ OES 2 SP1 Linux

I.1.4 Coexistence

The OES 2 Linux is compatible with the following operating systems:

- ♦ OES 1 NetWare

- ♦ SUSE Linux[®] Enterprise Server (SLES) 10
- ♦ SLES 10 SP1

I.2 Migration Scenarios

The following are the three different scenarios supported for FTP migration:

- ♦ Consolidation on Same Tree
- ♦ Consolidation on Different Tree
- ♦ Transfer ID on Same Tree

For details on what are these three scenarios, see [Section 1.3, “Migration Scenarios,” on page 17](#).

Prerequisites

For all the three scenarios, eDirectory should be running for all the eDirectory users to login.

What Is Migrated

When the migration is complete, the FTP parameters on NetWare are mapped to the corresponding parameters in Pure-FTPd on Linux. For details on mapped parameters, see [Table I-1 on page 179](#).

I.3 Migration Procedure

Migration of FTP configuration can be done from the Migration Tool or through the command line interface.

NOTE: Before you start the Pure-FTPd server, ensure that eDirectory is up and running on the target server. This is to ensure that all the eDirectory users can be used for Pure-FTPd access. For Server ID Swap all eDirectory objects get migrated as part of the DIB migration step. For complete details on eDirectory migration, read [Appendix B, “Migrating eDirectory to OES 2 Linux,” on page 91](#).

- ♦ [Section I.3.1, “Using Migration Tool,” on page 178](#)
- ♦ [Section I.3.2, “Using Command Line,” on page 179](#)

I.3.1 Using Migration Tool

- 1 Launch the Migration Tool in one of the following ways:

From your desktop: Click *Computer > More Applications > System > Novell Migration Tools*

From your Terminal: Run `miggui` command

- 2 Configure the Source and Target Parameters.

For details on configuring Source and Target Server information, selecting a Migration Type, Open, Save Project, and all other tool buttons, see [Chapter 2, “Overview of the Migration GUI,” on page 21](#).

- 3 Select *Novell FTP* from *Services* and click *Configure*. The status now changes from *Not Configured* to *Ready*.
- 4 If *Ready*, click *Migrate* to start the migration process. The status changes from *Migrating* to *Migrated* on success.

NOTE: Use *Status > Logs* tab to verify for errors during migration. Fix the errors and restart the migration procedure.

I.3.2 Using Command Line

- 1 Run the following FTP migration utility from the command line with the required parameters:

```
migftp -s <source_server>
```

For example:

```
migftp -s 192.168.1.54
```

If the migration is successful, a message indicating success is displayed.

- 2 Start the eDirectory server to allow eDirectory users to login.
- 3 Start the FTP server by using the `rcpure-ftpd start` command.

I.4 Mapping Parameters

The following table is the mapping of parameters from NetWare to Linux during FTP migration:

Table I-1 NetWare Linux FTP FTPd mapping parameters

NetWare FTP Parameters	Linux Pure FTPd Parameters
SECURE_CONNECTIONS_ONLY	TLS
PASSIVE_PORT_MIN	PassivePortRange
PASSIVE_PORT_MAX	PassivePortRange
MAX_FTP_SESSIONS	MaxClientsNumber
HOST_IP_ADDR	Bind
FTP_PORT	Bind
FORCE_PASSIVE_ADDR	ForcePassiveIP
ANONYMOUS_ACCESS	AnonymousOnly
IDLE_SESSION_TIMEOUT	MaxIdleTime

NOTE: If `SECURE_CONNECTIONS_ONLY` is set in the NetWare and a FTP migration certificate does not exist on Linux, a default FTP certificate (`/etc/ssl/private/pure-ftpd.pem`) is created using either an eDirectory certificate (`/etc/ssl/servercerts/eDircert.pem`) of the target server or the server certificate (`/etc/ssl/servercerts/servercert.pem`). If

neither of them exists then migration creates a certificate with default parameters. The admin can replace this by creating a new certificate using the steps listed here, [Create Certificate Procedure \(http://download.pureftpd.org/pub/pure-ftpd/doc/README.TLS\)](http://download.pureftpd.org/pub/pure-ftpd/doc/README.TLS).

Novell iFolder Upgrade, Migration, and Coexistence

J

One of the top priorities in designing Novell® iFolder® 3.7 was to ensure that new iFolder services, running on Novell Open Enterprise Server 2.0 Linux or later can bridge the gap between the Novell iFolder 2.x services and the iFolder 3.2 services that are currently running on OES 1.0.

This section familiarizes you with the migration and upgrade capabilities of iFolder 3.7. It also discusses using the Novell Migration Tool to introduce the iFolder 3.7 services into an existing network environment without disrupting existing Novell iFolder 2.x and iFolder 3.x services.

Migration: In this chapter, migration means the process of migrating Novell iFolder 3.2 running on OES 1 Linux and iFolder 2.x on OES 1 Linux or on Netware® to Novell iFolder 3.7 running on the OES 2 SP1 Linux platform.

Upgrade: Upgrade means the process of upgrading iFolder 3.2 and iFolder 3.4 on OES 1 Linux and iFolder 3.6 on OES 2 Linux to Novell iFolder 3.7 running on OES 2 Linux SP1.

This section discusses the following:

- ♦ [Section J.1, “Migrating iFolder 2.x,” on page 181](#)
- ♦ [Section J.2, “Migrating iFolder 3.2,” on page 188](#)
- ♦ [Section J.3, “Upgrading iFolder 3.x,” on page 192](#)
- ♦ [Section J.4, “Upgrading iFolder 3.6,” on page 194](#)
- ♦ [Section J.5, “Coexistence of iFolder 3.7 and 2.x Servers,” on page 194](#)
- ♦ [Section J.6, “Coexistence of the iFolder 3.7 Client with Novell iFolder 1.x and 2.x Clients,” on page 194](#)

J.1 Migrating iFolder 2.x

Migration is the process of moving iFolders and user data from an iFolder 2.x domain to iFolder 3.7. In the following sections, the iFolder 2.x server is referred to as the source server and the iFolder 3.7 server as the target server.

IMPORTANT: You cannot migrate encrypted iFolders. Use the client-side migration wizard to migrate the encrypted iFolders. For more information on the client-side migration, see “[Novell iFolder Migration And Upgrade](#)” in the *OES 2 SP1: Novell iFolder 3.7 Cross-Platform User Guide*.

- ♦ [Section J.1.1, “Server Migration,” on page 181](#)
- ♦ [Section J.1.2, “Client-Based Migration,” on page 187](#)

J.1.1 Server Migration

This section helps you understand the server migration, its prerequisites, and the migration process.

- ♦ [“Supported Platforms” on page 182](#)

- ♦ “Prerequisites” on page 182
- ♦ “Planning” on page 182
- ♦ “Migration Scenarios” on page 183
- ♦ “iFolder Migration Procedure” on page 184
- ♦ “Multi-Server Migration” on page 186
- ♦ “What to Expect” on page 186
- ♦ “Verifying the Migration” on page 186
- ♦ “Post-Migration Procedure” on page 187

Supported Platforms

Table J-1 *Supported Platforms*

Source Platform	Destination Platform
NetWare 6.5 SP6 and above	OES 2.0 SP1
OES 1.x Linux	OES 2.0 SP1

Prerequisites

Before proceeding to migrate, meet the following prerequisites:

- ♦ You must perform the File System Migration for the source data path.

For more information, see the [Appendix H.2, “Migrating File System with GUI Migration Tool,” on page 140](#).
- ♦ Ensure that the iFolder 3.7 servers, iFolder 3.7 Web Access server, and the eDirectory™ services are up and running.

The iFolder 3.7 Web Access server and the Web Admin server should be running on the target server.
- ♦ You must ensure that the user objects are available in eDirectory and are accessible from the target server.

Planning

- ♦ **Novell iFolder Server:** Novell iFolder 3.7 has the capacity to manage 1000 connected users simultaneously on a single server. This can vary based on the server hardware and network capabilities. If there are more than 1000 users, you can use a multi-server setup. For details, see [“Deploying iFolder Server”](#) in the *OES 2 SP1: iFolder 3.7 Administration Guide*.
- ♦ **Web Access Server:** The Novell iFolder 3.7 Web Access console for end-users must run on the target server.

- ♦ **Web Admin Server:** The Novell iFolder 3.7 Web Admin console for end users must run on the target server. You must ensure that the policies for disk quota, iFolder limit, and file filter are set at the system level, because these policies affect the storage availability on the server. For details on policies, see “[Configuring System Policies](#)” in the *OES 2 SP1: iFolder 3.7 Administration Guide*.
- ♦ **Multi-Server Setup:** If you have a predefined choice of servers for a set of users or LDAP Groups, you must provision them, and set the policies by using the iFolder 3.7 Web Admin console. If the users are not provisioned and no policies are set, the iFolder 3.7 server uses the round-robin provisioning method to provision the users. Novell iFolder 3.7 has its own LDAP attribute for provisioning users and it does not use the iFolder 2.x LDAP attribute for provisioning. You can use this attribute for selective provisioning and use the Web Admin console for manual provisioning of users/groups.

Migration Scenarios

The following scenarios are supported for migrating Novell iFolder Services:

For general explanation of the scenarios supported in OES 2 SP1, see the [Section 1.3, “Migration Scenarios,”](#) on page 17.

- ♦ **Transfer ID:** In this scenario, the target server is installed into the same eDirectory tree as the source server, with a temporary hostname and IP address. The iFolder 2.x data is copied to the target machine to perform the basic operations, while the original copy is operational in the source machine until the move completes. When the move completes, the source and target server swaps and all the iFolder 2.x data on the source server is available on the target server. The target server functions with the same credentials (such as IP address and hostname) as the source server and the source server node is no longer available in the eDirectory tree.

IMPORTANT: In a Netware to OES2 SP1 Transfer ID scenario, ensure that the target server is installed in the same context as the source server.

- ♦ **Consolidate:** In this scenario, you can copy the iFolder data from any number of existing source servers to a target server. The source server must be running NetWare 5.1 or later versions. The target server must be running SUSE Linux Enterprise Server 10 SP2 with OES 2 SP1 on either 32-bit or 64-bit hardware.

In Transfer ID scenario, only Same Tree migration is applicable. In Consolidate Scenario, both Same Tree and Different Tree migration is possible.

- ♦ **Same Tree:** In the Same Tree migration, source and target server are on the same eDirectory tree. The source server must be running NetWare 5.1 or later versions. The target server must be running SUSE® Linux Enterprise Server (SLES) 10 SP2 with OES 2 SP1 on either 32-bit or 64-bit hardware.
- ♦ **Different Tree:** In the Different Tree migration, source server and the target server are on different eDirectory trees. The source server must be running NetWare 5.1 or later versions. The target server must be running SUSE Linux Enterprise Server 10 SP2 with OES 2 SP1 on either 32-bit or 64-bit hardware.

iFolder Migration Procedure

This section helps you understand the server migration processes.

- ♦ “Using the Migration Tool GUI” on page 184
- ♦ “Using Command Line Utilities” on page 185

Using the Migration Tool GUI

- 1 Install, configure and run iFolder 3.7 on the target server.
- 2 Open the Migration Tool GUI.
From Desktop: Select *Computer > More Applications > System > Novell Migration Tools*.
From Terminal: Run `miggui`.
- 3 Select *Computer > More Applications > System > Novell Migration Tools* to open the .
- 4 Authenticate the source and target servers. All the associated services are listed below in the Services panel.
- 5 Select *Novell iFolder*, then click *Configure*. The iFolder configuration window displays as follows.

IMPORTANT: Ensure that you migrate the iFolder 2.x file system data by using the File System migration tools. For more information, refer to [Appendix H.2, “Migrating File System with GUI Migration Tool,”](#) on page 140.

The default data path for iFolder 2.x is `/var/opt/novell/<ifolderdata>` for Linux. For Netware, the data path is configurable.

The screenshot shows the 'iFolder Service' window with the following details:

- Source Information:**
 - ☒ 2.x Migration
 - iFolder 2.x Data Path:
 - ☐ 3.2 Migration
 - iFolder 3.2 Data Path:
 - iFolder 3.2 Admin Name:
 - iFolder 3.2 Admin Password:
- Target Information:**
 - iFolder 3.7 Admin Name:
 - iFolder 3.7 Admin Password:
- Partial Migration Details:**
 - ☐ Partial Migration
 - ☒ User List File:
 - ☐ Select LDAP Users:

At the bottom, there is a button on the left, and and buttons on the right.

6 Fill in the following fields:

Parameter	Description
2.x Migration	Select this option if you want to migrate the iFolder 2.x application to iFolder 3.7 on OES 2 SP1. iFolder Data Path: Specify the path where the iFolder 2.x system data is migrated to on the target server. This is the location on the iFolder target server where iFolder application files and the users' iFolders and files are migrated to. The path is case-sensitive.
iFolder 3.7 Admin Name	Specify the username of the iFolder 3.7 administrator.
iFolder 3.7 Admin Password	Specify the iFolder 3.7 admin password.
Partial Migration	Select this option if you want to perform a partial migration that allows you to migrate a selected set of users to an iFolder 3.7 domain. You can perform partial migration either by using a user list file or by browsing and selecting users from an eDirectory tree. User List File: Specify the location of the user list file. This is a text file that contains the list of user DNs for all the users selected for migration. Select LDAP Users: Browse the eDirectory tree and select the users for migration.

7 Click *OK* to configure iFolder for migration.

8 In the main window, you can either configure other services, or click *Migrate* to start the migration process.

The Migration Tool takes care of the order in which each service migrates. Therefore, iFolder migration initiates only after file system migration completes.

Using Command Line Utilities

To run the Novell iFolder migration utility through the command line, run `/opt/novell/migration/sbin/iFolder2Reader --option value` with the following details:

Table J-2 *Command Line Options*

Option	Description
--precheck	(Optional)Checks whether migration is possible with the given parameters or not.
--2xdatapath	Specifies the path where the iFolder system data is stored. This is the location where the iFolder source server stores iFolder application files and the users' iFolders and files. The path is case sensitive.

Option	Description
--serveripaddress	Specify the IP address of the iFolder 3.7 server.
--adminname	Specify the username of the iFolder 3.7 administrator.
--password	Specify the password for the iFolder 3.7 administrator.
--workarea	(Optional)Specify the location for the temporary migration files.
--userlist	(Optional)Specify a text file that contains the list of users for migration. If you don't specify this, a complete migration is performed.
--sync	(Optional)Performs the sync operation during migration for any changes made on the source server.

Multi-Server Migration

To migrate user data to the master server, all the iFolder 3.7 servers are up and running. The master server automatically provisions the home servers for each migrated user. Depending upon the user provisioning priority you have set, each user is provisioned in the appropriate iFolder 3.7 server. If you want to move each user from a single iFolder 2.x server to different iFolder 3.7 servers or from many iFolder 2.x servers to a single iFolder 3.7 server, you must set the provisioning with the iFolder 3.7 Web Admin console. By default, round-robin provisioning method is used. For more information on using the Web Admin console, refer to the following sections in the *OES 2 SP1: iFolder 3.7 Administration Guide*.

- ♦ “Managing iFolder Services via Web Admin ”
- ♦ “Managing iFolders”
- ♦ “Managing iFolder Users”

What to Expect

- ♦ The iFolder 2.x user data format is converted to that of iFolder 3.7. The flat directory structure of the 2.x data is changed to the hierarchical structure of iFolder 3.7 client.

NOTE: The 2.x configuration is not migrated.

- ♦ The 2.x encrypted iFolders are not migrated. This is because the passphrase for each user is not known to the administrator. Each user is expected to do a client-side migration.
- ♦ If the userlist is provided, only those users specified in the userlist are migrated.
- ♦ In the Transfer ID scenario, the iFolder 3.7 updates the configuration files with the new server IP address once the migration is completed.

Verifying the Migration

You can find the migration logs at `/var/opt/novell/log/ifolder/checkpoint.log`. The `checkpoint.log` contains the status of the iFolder 2.x migration.

Post-Migration Procedure

Post-Migration configuration: No additional configuration is required because only data is migrated and no policies are migrated from iFolder 2.x to iFolder 3.7. You must set the policies again for each user by using the Web Admin console, because the iFolder 2.x policies are not compatible with iFolder 3.7.

For more information on using the Web Admin console, refer to the following chapters in the *OES 2 SP1: iFolder 3.7 Administration Guide*.

- ♦ “Managing iFolder Services via Web Admin ”
- ♦ “Managing iFolders”
- ♦ “Managing iFolder Users”

Merge: User can have a local copy of the 2.x iFolders on their machine that are already migrated to the server. When they connect the iFolder 3.7 client to the iFolder 3.7 server, the migrated iFolders are also available for download. Instead of downloading them and having a different copy on the same machine, they can simply merge the iFolders on the local machine to the migrated iFolders on the server. This also reduces the data transfer traffic and effort. For details on the merge functionality provided in the client, see “Merging iFolders” in the *OES 2 SP1: Novell iFolder 3.7 Cross-Platform User Guide*.

J.1.2 Client-Based Migration

There is an automatic client-side migration from Novell iFolder 2.x to iFolder 3.7. The Migration Wizard provided for the user in the iFolder 3.7 client migrates the existing 2.x iFolder data to the iFolder 3.7 domain. The Migration Wizard appears soon after the installation of iFolder 3.7 client, and displays a message about the existence of previous version data and a request for a migration. This Wizard is also available on the *Preferences* menu so that it can be invoked at any time after installation.

IMPORTANT: The Novell iFolder 2.x client and the iFolder 3.7 client can run independently and concurrently on the same user machine. They are separate applications and should not be installed in the same directory.

You must remove the iFolder 2.x client when the client- side migration is completed.

Preparing for Migration

- ♦ The user must have both an iFolder 2.x account and a corresponding iFolder 3.7 account.
- ♦ The user must use only the Migration Wizard available in the iFolder client to migrate an existing 2.x iFolder to a 3.7 iFolder. The user should not perform iFolder 2.x to 3.7 conversion by any other means, such as using iFolder shell integration (Windows Explorer or Nautilus) or the iFolder 3.7 client upload mechanism from the thick client.
- ♦ If the user selects to make a copy of the iFolder 2.x data and move it to the iFolder 3.7 domain, ensure that you allocate sufficient space (at least 10 MB larger than the size of the iFolder 2.x data) on the hard disk (user’s Home directory for Linux and user’s Application Data directory for Windows) before performing migration. The additional space is used to store the iFolder database.

In this case, the user must log out of the 2.x client before performing the migration to avoid synchronization issues and related possible data corruption.

- ♦ If the user selects to migrate the iFolder and disconnect it from 2.x domain, the folder is not accessible through the 2.x account after the migration, because it is completely moved to the 3.7 domain and 2.x registry entries are removed in the client. It is possible that the same 2.x iFolder is available on another user desktop. If so, make sure that it is manually removed to avoid data inconsistency, because it is not under the control of iFolder 3.7 domain.

J.2 Migrating iFolder 3.2

Migration means the process of moving iFolders and the user data from an iFolder 3.2 domain to iFolder 3.7 domain. In the following sections, the iFolder 3.2 server is referred to as the source server and the iFolder 3.7 as the target server.

J.2.1 Server Migration

This section helps you understand the server migration, its prerequisites, and the migration process.

Supported Platforms

Table J-3 Supported Platforms

Source Platform	Target Platform
OES 1.x Linux	OES 2 Linux SP1

Prerequisites

Before proceeding to migrate, see [“Prerequisites” on page 182](#).

Planning

- ♦ **Novell iFolder Server:** Novell iFolder 3.7 has the capacity to manage 1000 connected users simultaneously in a single server. This can vary based on the server hardware and network capabilities. If there are more than 1000 users, you can use a multi-server setup. For details, see [“Deploying iFolder Server”](#) in the *OES 2 SP1: iFolder 3.7 Administration Guide*.
- ♦ **Web Access Server:** The Novell iFolder 3.7 Web Access console for end users is running on the target server.
- ♦ **Web Admin Server:** The Novell iFolder 3.7 Web Admin console is running on the target server. You must ensure that the policies for disk quota, iFolder limit, and file filter are set at system level, because these policies affect the storage availability in the server. For details on policies, see [“Configuring System Policies”](#) in the *OES 2 SP1: iFolder 3.7 Administration Guide*.
- ♦ **Multi-Server Setup:** If you have a predefined choice of servers for a set of users or LDAP Groups, you must provision them, and set the policies by using the iFolder 3.7 Web Admin console. If the users are not provisioned and no policies are set, the iFolder 3.7 server uses the round-robin provisioning method to provision the users. Novell iFolder 3.7 has its own LDAP

attribute for provisioning users and it does not use the iFolder 3.x LDAP attribute for provisioning. You can use this attribute for selective provisioning and use the Web Admin console for manual provisioning of users/groups.

Migration Scenarios

The following scenarios are supported for migrating Novell iFolder Services:

For general explanation of the scenarios supported in OES 2 SP1, see the [Section 1.3, “Migration Scenarios,” on page 17](#).

- ♦ **Transfer ID:** In this scenario, the target server is installed into the same eDirectory tree as the Source server with a temporary hostname and IP address. The iFolder 3.2 data is copied to the target machine to perform the basic operations, while the original copy is operational in the source machine until the move completes. When the move completes, and all the iFolder 3.2 data on the source server is available on the target server. The target server functions with the same credentials (such as IP address and hostname) as the source server and the source server node is no longer available in the eDirectory tree.
- ♦ **Consolidate:** In this scenario, you can copy the iFolder data from any number of existing source servers to a target server. The source server must be running NetWare 5.1 or later versions. The target server must be running SUSE Linux Enterprise Server 10 SP2 with OES 2 SP1 on either 32-bit or 64-bit hardware.

In Transfer ID scenario, only Same Tree migration is applicable. In Consolidate Scenario, both Same Tree and Different Tree migration is possible.

- ♦ **Same Tree:** In this scenario, the source server and target server are on the same eDirectory tree. The source server must be running OES1 Linux or later versions. The destination server must be running SUSE Linux Enterprise Server (SLES) 10 SP2 with OES 2 SP1 on either 32-bit or 64-bit hardware.
- ♦ **Different Tree:** In this scenario, the source server and the target server are on different eDirectory trees. The source server must be running OES1 Linux or later versions. The target server must be running SUSE Linux Enterprise Server 10 SP2 with OES 2 SP1 either on 32-bit or on 64-bit hardware.

iFolder Migration Process

This section helps you understand the server migration processes.

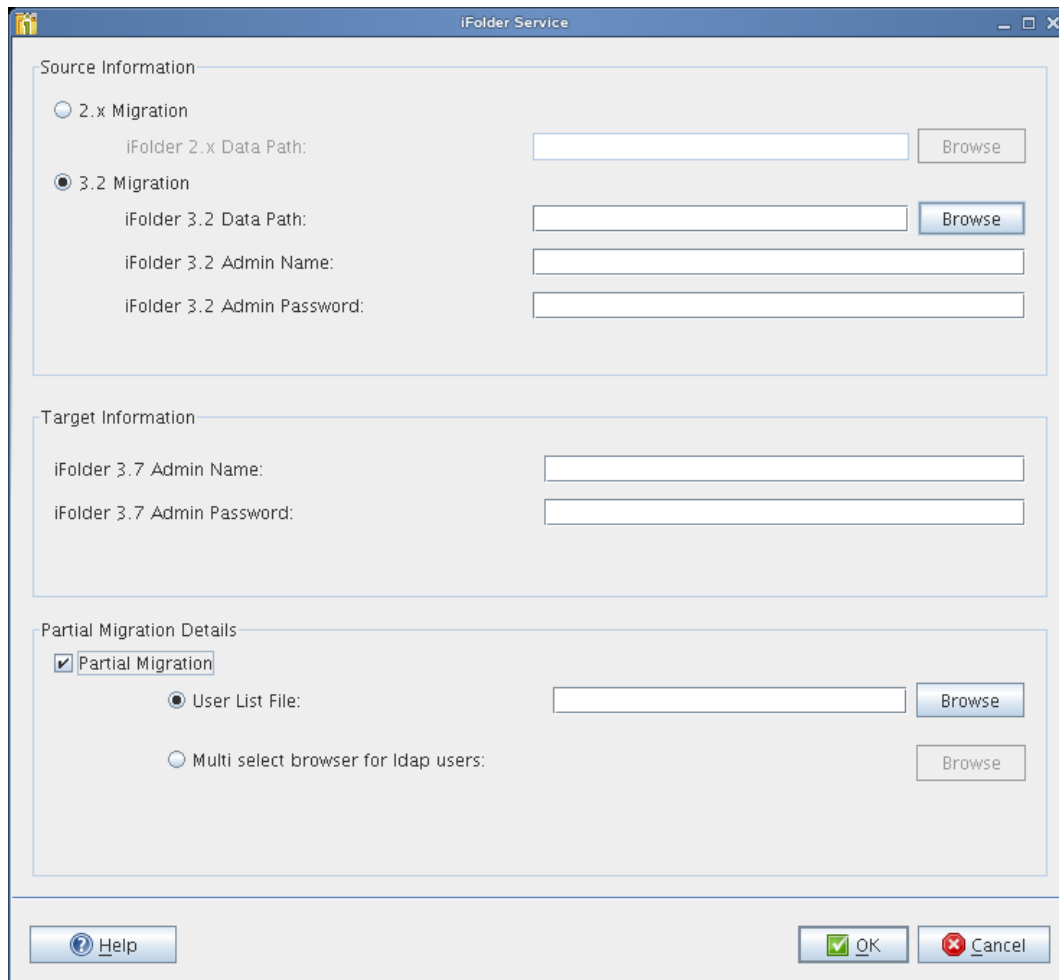
Using Migration Tool GUI

- 1 Install, configure and run iFolder 3.7 on the target server.
- 2 Copy the `simias.config` file from the source server to the location `/var/lib/wwwrun/.local/share/simias` in the target server.
- 3 Open the Migration Tool GUI.
 - From Desktop:** Select *Computer > More Applications > System > Novell Migration Tools*.
 - From Terminal:** Run `miggui`.
- 4 Authenticate the source and target servers. All the associated services are listed below in the Services panel.
- 5 Select *File System Migration*, then click *Configure* and give the iFolder 3.2 file system details.

- 6 Select *Novell iFolder*, then click *Configure*. The iFolder configuration window displays as follows.

IMPORTANT: Ensure that you migrate the iFolder 3.2 file system data by using the File System migration tools. For more information, refer to [Appendix H.2, “Migrating File System with GUI Migration Tool,”](#) on page 140.

The default data path for iFolder is `/var/lib/wwrun/simias` for Linux.

The image shows the 'iFolder Service' configuration window. It is divided into three main sections: 'Source Information', 'Target Information', and 'Partial Migration Details'. In the 'Source Information' section, the '3.2 Migration' radio button is selected. Below it are fields for 'iFolder 3.2 Data Path' (with a 'Browse' button), 'iFolder 3.2 Admin Name', and 'iFolder 3.2 Admin Password'. The 'Target Information' section has fields for 'iFolder 3.7 Admin Name' and 'iFolder 3.7 Admin Password'. The 'Partial Migration Details' section has a checked 'Partial Migration' checkbox, followed by 'User List File' (with a 'Browse' button) and 'Multi select browser for ldap users' (with a 'Browse' button). At the bottom are 'Help', 'OK', and 'Cancel' buttons.

- 7 Fill in the following fields: then click *OK* to configure iFolder for migration.

Parameter	Description
3.2 Migration	Select this option if you want to migrate the iFolder 3.2 application to iFolder 3.7 on OES 2 SP1. iFolder 3.2 Data Path: Specify the path where the iFolder 3.2 system data is migrated to on the target server. This is the location on the iFolder target server where iFolder application files and the users' iFolders and files are migrated to. The path is case-sensitive.

Parameter	Description
iFolder 3.2 Admin Name	Specify the username of the iFolder 3.2 administrator. This is the fully distinguished name of the iFolder admin user. For example: cn=admin,o=acme.
iFolder 3.2 Admin Password	Specify the iFolder 3.2 admin password.
iFolder 3.7 Admin Name	Specify the username of the iFolder 3.7 administrator. For example: admin.
iFolder 3.7 Admin Password	Specify the iFolder 3.7 admin password.
Partial Migration	<p>Select this option if you want to perform a partial migration, that allows you to select a set of users and migrate them to an iFolder 3.7 domain.</p> <p>User List File: Specify the location of the user list file. This is a text file that contains the list of user DNs for all the users selected for migration.</p> <p>Select LDAP Users: Browse the eDirectory tree and select the users for migration.</p>

- 8 Click *OK* to configure iFolder for migration.
- 9 In the main window, you can either configure other services, or click *Migrate* to start the migration process.

The Migration Tool takes care of the order in which each service migrates. Therefore, the iFolder migration initiates only after file system migration is completed.

Using Command Line Utilities

To run the Novell iFolder migration utility through command line, run `/opt/novell/migration/sbin/migrate32 --option=value` with the following details:

Option	Description
--precheck	(Optional)Checks whether migration is possible with the given parameters or not.
--oldadminname	Specify the username of the iFolder 3.2 administrator.
--newadminname	Specify the username of the iFolder 3.7 administrator.
--oldadminpassword	Specify the iFolder 3.2 admin password.
--previousserverurl	Specify the IP address of the iFolder 3.2 server.
--newsverurl	Specify the IP address of the iFolder 3.7 server.
--workarea	(Optional)Specify the location for the temporary migration files.

Option	Description
--userlist	(Optional)Specify a text file that contains the list of users for migration. If you don't specify this, a complete migration is performed.
--sync	(Optional)Performs the sync operation during migration for any changes made on the source server.

What to Expect

- ♦ The user data (iFolders) is migrated.
- ♦ If the userlist is provided, only those users specified in the userlist are migrated.
- ♦ In the Transfer ID scenario, the iFolder 3.7 updates the configuration files with the new server IP address once the migration is completed.

J.3 Upgrading iFolder 3.x

In this section, upgrade means the process of upgrading iFolder 3.x on OES 1 to iFolder 3.7 on OES 2 SP1. This is a single server scenario, where source and target server resides on the same machine.

This section helps you understand the following:

- ♦ [Section J.3.1, “Server Upgrade,” on page 192](#)
- ♦ [Section J.3.2, “Client Upgrade,” on page 193](#)

J.3.1 Server Upgrade

Ensure that the server-side data is backed up before you perform the upgrade.

You must use the YaST-based Novell iFolder configuration for the in-place upgrade. A YaST upgrade of OES 1 to OES 2 SP1 upgrades the configuration values of the iFolder enterprise server from the 3.x iFolder server to the 3.7 iFolder server.

For details on YaST-based configuration, see “[Deploying iFolder Server](#)” in the *OES 2 SP1: iFolder 3.7 Administration Guide*.

- 1 Install OES 2 SP1 by using YaST. For more information, see “[Installing iFolder on an Existing OES 2 Linux SP1 Server](#)”.
- 2 Select *Use Following Configuration* and click *Novell iFolder* to change the default configuration settings for iFolder.
If you decide to use default settings, click *Next* to start Novell iFolder 3 configuration.
For security reasons, it is recommended that you always change the default iFolder configuration settings.
- 3 Follow the Yast on-screen instructions to proceed through the Novell iFolder 3.7 configuration. The table in the “[Configuring the iFolder Enterprise Server](#)” summarizes the decisions you make.

NOTE: In an upgrade scenario, the following fields in the YaST UI for iFolder are disabled so you don't have to specify them.

- ♦ *Path to the Server Data files*
 - ♦ *Install into Existing iFolder Domain*
 - ♦ *Private URL of Master server*
 - ♦ *Directory Server Address*
 - ♦ *iFolder Admin Password*
 - ♦ *Verify iFolder Admin password*
 - ♦ *LDAP Search Contexts*
 - ♦ *LDAP Naming Attribute*
 - ♦ *Require a secure connection between the LDAP server and the iFolder server*
-

J.3.2 Client Upgrade

- ♦ “Understanding the Upgrade Process” on page 193
- ♦ “Preparing for the Upgrade” on page 193
- ♦ “Upgrade Procedure for the User” on page 194

Understanding the Upgrade Process

With the client upgrade, binaries are upgraded with the new version of binaries and the client data is auto-upgraded.

Preparing for the Upgrade

Make sure that you perform the following server-side operations so that the user is notified of the new version of the iFolder client and prompted to accept the client upgrade.

IMPORTANT: You must ensure that the user backs up the Simias store before upgrading the client.

- 1 Enter `http:\\ IP address of iFolder server` in the browser to go to the OES 2.0 home page.
- 2 Download the client RPMs or executables from the OES 2.0 home page.
- 3 Place the RPMs under the respective platform directories in the path `ifolder_installDirectory/lib/simias/web/update/unix`

The latest client RPMs are installed only if they are present in the given path. The automatic installation happens when the user attempts to connect the 3.x or 3.4.1 client to the iFolder 3.7 server. The names of the platform-specific directories are in the `version.config` file in the same path. A script file named `install-ifolder.sh` in the `unix` directory contains the commands for upgrading the RPMs to the latest version.

Examples for `install-ifolder3.sh` are as follows:

```
rpm -Uvh <absolute path of simias rpm>
rpm -Uvh <absolute path of ifolder rpm>
```

```
rpm -Uvh <absolute path of nautilus-ifolder3 rpm>
```

- 4 Modify `version.config` to include the entries of the directory where in the RPMs or the executables are placed.

Upgrade Procedure for the User

- 1 Connect the existing client to the server.

The client automatically prompts the user to accept the client upgrade when he or she attempts to connect an iFolder 3.x or 3.4 1 to a 3.7 server. For details, refer to “[Automatically Upgrading to iFolder 3.7](#)” in the *OES 2 SP1: Novell iFolder 3.7 Cross-Platform User Guide*.

For a manual upgrade, refer to “[Manually Upgrading to iFolder 3.7](#)” in the *OES 2 SP1: Novell iFolder 3.7 Cross-Platform User Guide*.

J.4 Upgrading iFolder 3.6

- 1 On the iFolder 3.7 Downloads page, click the *iFolder client for Linux* link to download the RPMs as desired.

For details, see “[Deploying iFolder Server](#)” in the *OES 2 SP1: iFolder Administration Guide*.

- 2 Follow the on-screen prompts to download the files to a directory on your machine.
- 3 Enter `cd <location where you have downloaded the files>`.
- 4 Run `rpm -Uvh *.rpm` to upgrade to iFolder 3.7.

J.5 Coexistence of iFolder 3.7 and 2.x Servers

If you use both iFolder 2.x and Novell iFolder 3.7 services, we recommend that you install each version on its own dedicated server. The OES 2.0 Linux services do not support iFolder 2.x services.

J.6 Coexistence of the iFolder 3.7 Client with Novell iFolder 1.x and 2.x Clients

Do not install the iFolder 3.7 client in the same application folder as the Novell iFolder 1.x or 2.x client.

The iFolder 3.7 client can coexist on the same workstation as the Novell iFolder 1.x client or 2.x client, with the following caveats:

- ♦ The iFolder 3.7 client and its iFolders work only with the Novell iFolder 3.7 enterprise server.
- ♦ The Novell iFolder 1.x or 2.x client and its iFolder on the workstation continue to work only with the assigned Novell iFolder server of the same release.
- ♦ The single iFolder created with the iFolder 1.x or 2.x client can coexist with the multiple iFolders created with the iFolder 3.7 client. The iFolders function independently on the workstation; they do not exchange information or data. However, you can manually transfer local data between old and new iFolder folders.
- ♦ You should not attempt to convert the Novell iFolder 1.x or 2.x to an iFolder to be managed by Novell iFolder 3.7 by any other means other than using the migration tool. Similarly, you should not convert parent folders of that iFolder to a next-generation iFolder.

For example, if *abc* is the parent directory of the *xyz* directory, you should not attempt to migrate *abc* to iFolder 3.7 while *xyz* still remains an iFolder of type 2.x or 1.x. In addition, you should not attempt to migrate *xyz* to iFolder 3.7 while *abc* still belongs to a 2.x or 1.x domain.

If the folder is no longer used by a prior version of the Novell iFolder client, such as after you uninstall the old client from the workstation, you can convert the folder or its parent folders to a next-generation iFolder.

Migrating iPrint from NetWare to OES 2 Linux



Migration refers to the process of migrating iPrint from a NetWare® system to a Linux system. For general information about the OES 2 Migration Tool, see [Chapter 1, “Overview of the Migration Tools,” on page 15](#).

The following sections will give you more details on the migration procedure for iPrint.

- ♦ [Section K.1, “Prerequisites,” on page 197](#)
- ♦ [Section K.2, “Migration Scenarios,” on page 198](#)
- ♦ [Section K.3, “What Happens During Migration,” on page 199](#)
- ♦ [Section K.4, “Migration Procedure,” on page 199](#)
- ♦ [Section K.5, “Post-Migration Procedure,” on page 202](#)
- ♦ [Section K.6, “Verifying Migration,” on page 203](#)
- ♦ [Section K.7, “Script to cleanup the stale objects,” on page 203](#)
- ♦ [Section K.8, “Troubleshooting iPrint Migration,” on page 204](#)
- ♦ [Section K.9, “iPrintmig Man Page,” on page 207](#)

K.1 Prerequisites

This section covers the migration prerequisites for all the migration scenarios supported by iPrint.

K.1.1 Platform Specifications

Source Server Requirements

- ♦ NetWare 5.1, 6.0, 6.5, OES 1 Linux, OES 2 Linux

IMPORTANT: If your source server is OES 1 Linux, ensure you update the server with `novell-iprint-server-5.1.20080415-1.i586.rpm` patch. If your source server is NetWare 6.5 SP 6, apply the `nw65sp7b` patch. After applying the patch, do the following:

1.Restart the active Print Manager.

2.Start the web browser and open

`https://OES1 IPADDRESS/PsmStatus/Misc?backupDB=true`.

On the page, if the *Database XML File* field is not displaying `padbtxt.xml` file then click *Backup Database* to re-generate the `padbtxt.xml` file. For more information about patching your server, see [“Patching an OES Linux Server” in the OES Linux Installation Guide](#).

Target Server Requirements

- ♦ OES 2 SP1 Linux server with iPrint installed and Driver Store configured. For more information, see “[Setting Up iPrint on Your Server](#)” and “[Creating a Driver Store](#)”

IMPORTANT: If your target server is in a non-replica eDirectory tree, for migration to be successful, both the target Driver Store and Print Manager must be active. Configure slp to make these active. For details on slp configuration, see “Configuration Parameters” of [Novell eDirectory 8.8 Administration Guide \(http://www.novell.com/documentation/edir88/edir88/data/akscitm.html\)](http://www.novell.com/documentation/edir88/edir88/data/akscitm.html)

K.1.2 General Prerequisites

- ♦ Before starting the migration, ensure the source and target Print Managers are running. If you are using CLI tools for migration, ensure the source Print Managers are running.
- ♦ Ensure that the file containing the printers to be migrated does not contain extra spaces or characters. For troubleshooting on extra space see “[Printers are not migrating with -f option](#)” on [page 205](#).
- ♦ Ensure the driver paths are correct and accessible. For troubleshooting on Bad Driver assignment see “[Invalid Driver path assignments](#)” on [page 205](#).
- ♦ Ensure to retain the Print Agent redirection on the source servers. Follow the steps mentioned here:
 - ♦ For NetWare source servers, follow the instructions in the, “[Setting Up DNS for the Print Manager](#)” of *OES 2 SP1: iPrint Administration Guide for NetWare*.
 - ♦ For Linux source servers, follow the instructions in the, “[Creating a Print Manager](#)” of *OES 2: iPrint for Linux Administration Guide*.
- ♦ Ensure the user has the following rights and permissions assigned explicitly on the source server. So that the user can access and execute the `psminfo.nlm`, even if there is a mismatch of source server and container admin credentials for the user:
 - ♦ Read permission to `sys:ndps` folder on the migration source server.
 - ♦ Add the user as a trustee with supervisor rights to the source server NCP server object.
- ♦ Back up the Print Manager Database files on the source server prior to migration for any changes. For NetWare, see “[Understanding the Print Manager Database](#)” in the *OES 2 SP1: iPrint Administration Guide for NetWare*. For Linux, see “[Understanding the Print Manager Database](#)”.

K.2 Migration Scenarios

iPrint supports the following migration scenarios:

- ♦ Migrating Servers within the same eDirectory Tree
- ♦ Migrating Servers across different eDirectory Tree
- ♦ Migrating Servers through Server Consolidation
- ♦ Migrating Servers through Server ID Swap

For more information about these scenarios, see [Section 1.3, “Migration Scenarios,” on page 17](#)

K.3 What Happens During Migration

During the migration process, the following objects are transferred from the source server to the target server in a seamless manner:

- ♦ Printers
- ♦ Drivers
- ♦ Banners
- ♦ Printer Pools
- ♦ Redirected Printers
- ♦ ACL
- ♦ Printer Profiles
- ♦ `iPrint.ini` file (Only if the source server is NetWare 5.1, 6.0, 6.5)
- ♦ iPrint Client Management (only if the source and target servers are in same tree sharing a common user)

K.4 Migration Procedure

Migration of iPrint configuration can be done using the Migration Tool or thorough the command line interface.

- ♦ [Section K.4.1, “Migrate using the Migration Tool,” on page 199](#)
- ♦ [Section K.4.2, “Migrate an iPrint System Using Command Line Utility,” on page 201](#)

K.4.1 Migrate using the Migration Tool

- 1 Access the Migration Tool using steps detailed in [Section 5.2, “Launch the Migration Tool Utility,” on page 37](#).
- 2 Authenticate the Source and Target servers.
- 3 Select *Novell iPrint*, then click *Configure*. The iPrint configuration window is displayed.
- 4 Specify the following parameters to proceed with the migration process:

Tab Name	Parameter	Description
<i>Print Objects</i>	Source Print Manager	<p>Specify the active Print Manager on the source server. Click the <i>Browse</i> button to open the Object Selector. Search and select a Print Manager. The source Print Manager can be either an NDPS™ manager (for NetWare® 5.1,6.5) or iPrint Manager (for OES 1, OES 2 Linux).</p> <p>To directly go to a context of your choice, specify the context in the <i>Search Base</i> and click <i>Search</i>. The objects in the specified context are displayed.</p>

Tab Name	Parameter	Description
	Target Print Manager	Specify the Active Print Manager on the target server. Click the <i>Browse</i> button to open the Object Selector. Search and select a Print Manager. The target Print Manager must be an iPrint Manager. To directly go to a context of your choice, specify the context in the <i>Search Base</i> and click <i>Search</i> . The objects in the specified context are displayed.
	Get Printers	Click this button to fetch printer objects from the Source Print Manager.
	Printer Objects	Displays all the printers of the Active Print Manager available on the source server. The printers that already exist on the target server are indicated by an asterisk (*).
	Select All	Select this option to automatically choose all the printers listed in the Printer Objects dialog box.
	Create target printer objects in Source Printer Context	Select this option if you want to maintain the contexts of the source printers on the target server.
	Create target printer objects in Target Printer Context	Select this option if you want the contexts of the source printers to be created under a different context on the target server. This option does not maintain the context hierarchy of the source printer. Click the <i>Browse</i> button to open the Object Selector. Search and select a context. To directly go to a context of your choice, specify the context in the <i>Search Base</i> and click <i>Search</i> . The objects in the specified context are displayed
	Do Not Migrate Existing Printers	Select this option to avoid migrating the same printers, if the printer names on source server matches the existing printer names on the target server under the same context. Otherwise, the target printer properties and attributes are overwritten by the source printer properties and attributes. The printers that already exist on the target server are indicated by an asterisk (*)
Other Options	Target IDS DN	Specifies the distinguished name for the Driver Store of the target server. Click the <i>Browse</i> button to open the Object Selector. Search and select a Driver Store. To directly go to a context of your choice, specify the context in the <i>Search Base</i> and click <i>Search</i> . The objects in the specified context are displayed.
	Do Not Migrate Printer Drivers	Select this option if you do not want the printer drivers to be migrated. If drivers are not present in target Driver Store, clients cannot install printers.
	Overwrite Printer Drivers on Target	If the driver names are same on the source Driver Store and the target Driver Store, the target drivers are overwritten.

Tab Name	Parameter	Description
	Do Not Migrate Printer Drivers Profile	Printer driver profiles are not migrated. If driver profiles are not present on the target server, clients cannot install printers.
	Overwrite Existing Printer Drivers Profile	If the profiles are same on the source server as the source server, the target profiles are overwritten.

Click *OK* to finish the configuration and go back to the migration screen.

K.4.2 Migrate an iPrint System Using Command Line Utility

To run iPrint migration utility through command line, type the following command at the prompt:

```
iprintmig
```

For more information on the `iprintmig` utility, see [Section K.9, “iPrintmig Man Page,” on page 207](#)

- 1 Use one of these methods to migrate to an OES 2 SP1 Linux server.
 - ♦ From a terminal prompt on the target server, run `iprintmig` to migrate the printers on the source server to the target server. Before running the utility set the environment variable for safely transferring the password.

NOTE: For safe transmit of passwords to the script via an environment variable or via the `-P/-T` options, see Using Password and Examples in [“Using Passwords” on page 211](#).

IMPORTANT: This method is safe and recommended.

Syntax: `iprintmig -s source_server -u source_username_only -U target_username_only -a -x psminfo.xml -I cn=ids,o=example,c=us -i ids.example.com -c ou=iPrint,o=example,c=us`

- ♦ From a terminal prompt on the target server, run `iprintmig` to migrate the printers on the source server to the target server by providing the password.

WARNING: The password is visible to users in this method.

Syntax: `iprintmig -s source_server -u source_username_only -p source_password -U target_username_only -t target_password -a -x psminfo.xml -I cn=ids,o=example,c=us -i ids.example.com -c ou=iPrint,o=example,c=us`

To migrate one printer at a time

Example 1: `iprintmig -s source_server_name -u source_admin -U target_admin -n printer1 -x psminfo.xml -I cn=ids,o=example,c=us -i ids.example.com -c ou=iPrint,o=example,c=us -N`

To migrate a few printers at a time

Example 2: `iprintmig -s source_server_name -d target_server_name -u source_admin -U target_admin -x psminfo.xml -I cn=ids,o=example,c=us -i ids.example.com -c ou=iPrint,o=example,c=us -n printer1 -n printer2 -n printer3 -n printer4 -L`

To migrate all printers at a time

Example 3: `iprintmig -s source_server_name -d target_server_name -u source_admin -U target_admin -x psminfo.xml -I cn=ids,o=example,c=us -i ids.example.com -c ou=iPrint,o=example,c=us -a -N`

To migrate printers using SSL

Example 1: `iprintmig -s source_server -u source_username -U target_username -a -I cn=ids,o=example,c=us -i ids.example.com -c ou=iPrint,o=example,c=us -ssl -port LDAP_port -N`

To migrate printers without SSL

Example 1: `iprintmig -s source_server -u source_username -U target_username -a -I cn=ids,o=example,c=us -i ids.example.com -c ou=iPrint,o=example,c=us -port LDAP_port -N`

K.5 Post-Migration Procedure

With the new server in place, review the following items before the users start the new iPrint system.

- ❑ Using the target server's IP address, load the iPrint Printer List Web page (http://server_IP_address/ipp) and test the new print system.
- ❑ You can have users start using the new system with one of these methods:
 - ♦ **Configure redirection on the source server:** Using iManager, you can enable redirection for the printers on the source server to printers on the new server. For a NetWare source server, see “[Enabling Printer Agent Redirection](#)” in the [OES 2 SP1: iPrint Administration Guide for NetWare](#).

IMPORTANT: This method causes the existing printer to be uninstalled and the new printer installed on the client workstation.

This method lets you move groups of printers rather than the entire system. If you discover a printer that isn't working correctly, you can disable redirection on the source server and enable redirection on the target server, thereby allowing users to continue to print until you fix the new printer.

- ♦ **Change the DNS Service to point to the new server:** If you want to use the same DNS name for your print server, complete the following:
 1. On the target server, edit the `ipsmd.conf` file by changing the value of the `PSMHostAddress` field to the DNS name you are currently using.
 2. Down the target server.

3. Down the source server.
4. Update your DNS tables to reflect the target server's address.
5. Start the target server.

K.6 Verifying Migration

After migration is complete the desired Print Manager on the target server must be active. This ensures that the migration has been successfully completed. Check for Print Manager and Printers with these steps to verify a safe and successful migration using either iManager or CLI options.

WARNING: If the print manager is in the down state after migration, see how to troubleshoot in the [Section K.8, "Troubleshooting iPrint Migration," on page 204](#).

♦Checking for Print Manager and Printer using iManager

1. Open iManager on the target server
2. Go to *iPrint > Manage Print Manager*
3. Browse or type the *iPrint Manager name* or *NDPS Manager name*
4. click *OK*. Here, the print manager status must be *Active*.
5. Click *Printer Agents*. This will display the printers on the target server.

♦Checking for Print Manager and Printer using CLI

1. On the console type the command `iprintman psm -l -u admin`
2. Enter the admin password when prompted. This will display all the Print Managers with their status. Ensure the desired Print Manager is *Active*.
3. On the console type the command `iprintman printer -l -u admin`
4. Enter the admin password when prompted. This will display the printers on the target server.

K.7 Script to cleanup the stale objects

Clean up the iPrint stale objects using `/opt/novell/iprint/bin/iprintcleanup.pl -s <source_server> -u <source_user(FDN format)> --ssl --port <LDAP_Port> -f <filename>` command.

Table K-1 Script Usage options

Option	Description
-h --help	Print the summary.
-s --src <source_server>	Source server ip address.
-u --src-user <user>	Admin user FDN for source server. For example, cn=admin,o=novell.
-p --src-pass <pswd>	Password of source server admin user.

Option	Description
-f --renamed-printers-file <filename>	Filename to clean up. For example, /etc/opt/novell/iprint/conf/renamed_printer_objects.
--ssl	Use this option, if ssl enabled on the server.
--port	LDAP enabled port.

K.8 Troubleshooting iPrint Migration

- ♦ “Printers are not migrating to OES 2 Linux Server” on page 204
- ♦ “Target Server Authentication Failure in cluster environment” on page 204
- ♦ “Printers are not migrating with -f option” on page 205
- ♦ “Invalid Driver path assignments” on page 205
- ♦ “Printers are not migrating in the same eDirectory tree under same context” on page 206
- ♦ “Migration fails even after a pre-check is passed” on page 206
- ♦ “Migration fails when a printer is assigned to a Print Manager” on page 206
- ♦ “Migration fails for container admin credentials on source server” on page 206
- ♦ “Migration fails with an error message” on page 206
- ♦ “Driver Store and Print Manager not initialized after migration on the target server” on page 207
- ♦ “Printers not coming up after Transfer ID migration” on page 207

Printers are not migrating to OES 2 Linux Server

Explanation: In a random scenario the status of iPrint migration is successful, the specified Print Manager is not active (Down) and hence Printers do not get migrated on OES 2 Linux server.

Possible Cause: Some other Print Manager is active or already loaded on the OES 2 Linux server. Hence, printers are not migrating.

Action: On OES 2 Linux server,

1. Search for the ipsmgd daemons by executing

```
ps ax | grep ipsmgd
```

command. This will display two running ipsmgd processes.
2. Kill the individual ipsmgd daemons by executing

```
kill -9 pid_of_ipsmgd
```

command. This will kill these two ipsmgd processes.
3. Restart the migration by executing `iprintmig`

Target Server Authentication Failure in cluster environment

Explanation: Loopback address does not get authenticated.

Possible Cause: The loopback address is not getting resolved to the target server’s IP address in the cluster environment.

Action: The user should enter the target server's IP address or DNS name.

Printers are not migrating with -f option

Explanation: `iprintmig` skips adding printers from the file containing printers list

Possible Cause: If the file with the printers to be migrated is passed on to `iprintmig` utility with `-f` option contains extra spaces or characters will be skipped by the utility.

Action: Delete the extra spaces or characters and restart the migration process.

Invalid Driver path assignments

Explanation: Specific printers are not getting migrated with an error message
XMLToDoCIMInstance::doWork(): CIMException encountered (general error) <Operating System Name> GetDriverInfo failed:<Printer Name>, during migration.

Possible Causes: Either of these can be the possible cause

- ◆ The Printers are associated with some deleted or missing drivers.
- ◆ Driver associated to a remote path and that no longer exists. The path can be a remote server or an unmounted volume.

Action: Use these steps to verify the driver path and generate a report to correct the driver assignment:

1. From iManager select *Manage Print Manager*
2. Select a *NDPS Manager*
3. Click *OK*

NOTE: If the Print Manager is *Down*. Click *Startup* to make it *Active*.

4. Click *Printer Agents Configuration Report*
5. Select one or more *Configuration Options* for the Operating System Name displayed in the error message
6. Click *Generate Report*
The driver assignment path is displayed for individual Printer Agents in the Report. Verify the complete driver path is a valid assignment. If invalid, go to iManager and,
 7. Select *Manage Printer*
 8. Choose a required printer under *NDPS Printer Name*
 9. Click *OK*
 10. Select the specific operating system for which the assignment is invalid under the *Drivers* tab. A message window appears with a message *The current driver does not exists*
 11. Click *OK*
 12. Select either *NONE* or a suitable driver

Printers are not migrating in the same eDirectory tree under same context

- Explanation: Printers are not getting migrated with an error message: CIMException encountered (general error): Creation of printer 'CN=<PrinterName>,o=<organization>' object failed. Object exists, but failed to get iPrintPrinterManager value.
- Possible Cause: When migrating in the same eDirectory tree, the Source Print Manager and the Target Print Manager are under same context.
- Action: Create Print Manager on the target server in a different context using iManager. Restart migration with target Print Manager as the newly created Print Manager.

Migration fails even after a pre-check is passed

- Explanation: On restarting source server, if the Print Manager unload is not successful, the migration would fail..
- Possible Cause: The eDirectory attributes for the unloaded PSM are not cleaned up.
- Action: Restart the Print Manager.

Migration fails when a printer is assigned to a Print Manager

- Explanation: Migration fails with an error message: CIMException encountered (general error): Creation of printer <Printer FDN> (Eg: cn=Printer1,o=novell) object failed. Object exists, iPrintPrinterManager value indicates that the printer is associated with another ipsmd.
- Possible Cause: Trying to reassign a printer to new Print Manager, when an existing Print Manager assigned to this printer, is down.
- Action: Do not select the printer, which is currently assigned to a Print Manager on the target server, when it is down.

Migration fails for container admin credentials on source server

- Explanation: Printer objects are not getting migrated with container admin credentials.
- Possible Cause: Mismatch of source server and container admin credentials for the user. The source server might not be in the same container admin where the full access rights are defined.
- Action: Ensure the user has the following rights and permissions assigned explicitly. So that the user can access and execute the `psminfo.nlm`:
- ◆ Read permission to `sys:ndps` folder on the migration source server.
 - ◆ Add the user as a trustee with supervisor rights to the source server NCP server object.

Migration fails with an error message

- Explanation: terminate called after throwing an instance of 'OpenWBEM4::HTTPException' what(): Unable to process request: 401: Authentication failure Aborted.
- Possible Cause: Admin user not LUM enabled properly.

Action: LUM enable the admin user using the following steps:

- 1 run `yast2 novell-lum` from the command prompt
- 2 Click *Continue*
- 3 Enter admin password
- 4 Click *Next* and proceed

Driver Store and Print Manager not initialized after migration on the target server

Explanation: Driver Store and Print Manager not initialized on the target server, when slp configuration is used.

Possible Cause: Problems in the slp configuration before starting migration.

Action: Enter `slptool findsrvs service:ndap.novell | grep <TREE NAME>` command to list the TREENAME. If the tree name is not listed, fix the slp configuration. For details, see [Section 4.1, “Prerequisites,” on page 35](#).

Printers not coming up after Transfer ID migration

Explanation: Migrate printers using Transfer ID option. Printers not coming up.

Possible Cause: Printers are not getting associated with the Drivers after ID swap.

Action: Use the following procedure:

- 1 Run `/opt/novell/bin/iprintman psm --xml-import /tmp/psmimport_idswap.xml -s <Server IP Address> -u admin -f --accept-cert` command on the OES 2 Linux console.
- 2 Type the admin password.

K.9 iPrintmig Man Page

- ♦ [“iprintmig\(1\)” on page 208](#)

iprintmig(1)

Name

iprintmig - Migration utility for Novell iPrint

Syntax

This section contains iPrint commands and utilities used on the Linux platform.

```
iprintmig -s <server> -u <user> <options> -n <printer1>...<printerN>
```

```
iprintmig -s <options>
```

Description

iprintmig is a management tool used to migrate printers to OES Linux.

Options

-h, --help

Print this summary.

-v, -vv, -vvv, -vvvv, -verbose

Determines the level of detail to display about the execution of operations with -v displaying a minimum amount of detail and -vvvv displaying the most detail.

-V, --version

Print version information

-s <server>, --src <server>

Source server hostname or address to migrate from

-d <server>, --dst <server>

Destination server hostname or address to migrate to

-D <PSM DN>, --dst-dn <PSM DN>

Destination print manager DN to migrate to

-u <user>, --src-user <user>

The FDN format admin for source server such as cn=admin, o=example

-U <user>, --dst-user <user>

The FDN format admin for target server such as cn=admin, o=example

-p <pass>, --src-pass <pass>

Password of source server admin user

-P <fd>, --src-pass-fd <fd>

File descriptor number to read source admin password from???

-t<password>, --dst-pass <password>

Password of user on the destination server.

-T<fd>, --dst-pass-fd <fd>

File descriptor number to read destination admin password from???

-i<IDS_server>, --ids <IDS_server>

Destination IDS server hostname or address. Defaults to dst

-I<IDS_DN>, --ids-dn <IDS_DN>

Distinguished name of destination IDS

-e<server>, --edir <server>

Server hostname or address of eDirectory server for destination server to use

-n<printer>, --printer-name <printer>

Name of printer to migrate. May be specified multiple times.

-f <file>, -printers-file <file>

File containing names of printer (1 per line) to migrate

-F <fd>, -printers-fd <fd>

File descriptor number listing names of printers to migrate

-a, --all

Migrate all printers from source

-c<DN>, --dst-container <DN>

DN of container to create print objects in (conflicts with -S)

-S, --same-dn

Create objects on the destination server with the same DN as the source server. Only valid when migrating to a new tree

-H, --same-hostname

Create manager on the destination server with the same hostname as the source manager. Useful when migrating entire print server

-x<file>, --xml-outfile <file>

Save XML migration processing file to <file>

--srcversion

Indicates the version of the operating system on the source server.

--nodrivers

Do not migrate drivers. If drivers are not present in destination IDS, clients will not be able to install printers

--overwrite-drivers

If the destination IDS has a driver with the same name as a corresponding driver on the source server, overwrite it

--noacls

Do not migrate access control lists (ACLs).

--noprofiles

Do not migrate profiles. If profiles are not present on the destination server, clients won't be able to install printers

--overwrite-profiles

If the destination server has a profile for a driver with the same name as a profile on the source server, overwrite it

--nogo

Prepare but do not perform migration. Creates output XML file and migrates drivers (unless --nodrivers was specified) but does not perform migration

--debug

Prints debug messages to a /var/opt/novell/log/migration/iprintmig.log file.

--update

This option synchronizes with the target server any changes that have occurred in the source server data after the migration process is completed. This option must be used in conjunction with the -a option .

--resume

Using this option you can resume the migration process from where it was suspended.

--precheck

Validates the parameters passed for the migration process and return the status without actually starting the migration.

--consolidation

Use this option to aggregate services on a single destination server from multiple source servers.

--ssl

Use this option to enable secure authentication.

--port

Indicates the LDAP port.

--treeflattening

Use this option if you want the contexts of the source printers to be created under a different context on the target server. The context of the target printer is specified using the -c<DN>, -dst-container <DN> option.

--idswap

Use this option to migrate the printers from the source server to the target server without changing the identity.

Using Passwords

For security reasons, it's safest to transmit passwords to the script via an environment variable or via the -P/-T options, since any user of the system will be able to view the password if it is on the command line (-p/-t options).

So, after having the calling program set its environment with the following two variables:

```
IPRINTMIG_SRC_PASSWORD=examplePassword1
```

```
IPRINTMIG_DST_PASSWORD=examplePassword2
```

Then you can execute the following command which migrates all the printers from server1.example.com to the server where the script was being run from.

```
iprintmig -s server1.example.com -u admin.example.us -U admin -a -x  
psminfo.xml -I cn=ids,o=example,c=us \-i ids.example.com -c  
ou=iPrint,o=example,c=us
```

Examples

The following example migrates a few printers at a time while explicitly specifying the hostname of the new print manager:

```
iprintmig -s server1.example.com -d newserver.example.com -u  
admin.example.us -U admin -x psminfo.xml \ -I cn=ids,o=example,c=us  
-i ids.example.com -c ou=iPrint,o=example,c=us -n printer1 -n  
printer2 \-n printer3 -n printer4
```

If a calling program will be specifying a large number of printers, there are three ways to do it.

- ♦ The -n (or --printer-name) option can be specified with a printer name one or more times, as in the example above. This can create a very long command line if many printers are being migrated, so this usage is discouraged in this scenario.
- ♦ A file containing printer names, one per line, can be specified using the -f (or --printers-file) option. This usage is fine, but for a calling program to use it, the calling program must first write the list of printers to a temporary file.
- ♦ The calling program can avoid the use of a temporary file by using the -F (or --printers-fd) option, which allows the calling program to send the list of printer names over a pipe created with socketpair(), for example. As with the -f (or --printers-file) option, printer names are read from the file descriptor one per line.

A simple example of this usage follows in C. Similar methods are available with Mono's Mono.Posix.Syscall members, for example.

```
char *printers[] = { "p1", "p2", "p3" };  
int fds[2], pid, rc;  
rc = socketpair(AF_UNIX, SOCK_STREAM, 0, fds);  
if (rc < 1)  
{  
    perror("Error creating socket pair");  
    exit(1);  
}  
pid = fork();  
switch (pid)
```

```

{
    case -1: //Error
        perror("Fork failed");
        exit(1);
    case 0: //Parent
        close(fds[1]);
        for (int i; i < (sizeof(printers)/sizeof(char**)); ++i)
        {
            write(fds[0], printers[i], strlen(printers[i]));
            write(fds[0], "\n", 1);
        }
    close(fds[0]);
    break;
    default: //Child
        close(fds[0]);
        //Set an environment that contains the password env vars
        //Make sure that close on exec isn't set for fds[1]
        //exec the iprintmig script with "-F" and fds[1] converted from an int to
        a string as arguments
}

```

Notes

Most the information that this program requires can be obtained from the eDirectory objects that the user selects. For example, to migrate all printers from a NetWare server to the new Linux server, the user would need to select the old PSM object, which contains the address of the server it is running on. Then the user would need to select the destination PSM, which has attributes for its network address, what eDirectory server it is using, which IDS it is using (and the corresponding IDS object will have its own address).

There are some details that cannot be selected or discovered, but must be provided by the user, such as credentials, whether or not to migrate profiles or drivers, etc.

The user can select a destination container which will hold the objects created during migration, or the user can choose to keep the same path for objects (which only works for a move from one tree to another, since the NetWare-style objects already exist in the source tree and would conflict with the new Linux versions of the objects).

Authors

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See Also

iprintman

Migrating Timesync/NTP from NetWare to NTP on OES 2 Linux



Migration refers to the process of migrating Timesync services from a NetWare[®] system to NTP on a Linux system. The OES Migration tool follows a source/target model.

The following sections give more details on the migration procedure for Timesync.

- ♦ [Section L.1, “Planning the Migration,” on page 213](#)
- ♦ [Section L.2, “Migration Scenarios,” on page 213](#)
- ♦ [Section L.3, “Migration Procedure,” on page 213](#)
- ♦ [Section L.4, “Post-Migration Procedure,” on page 214](#)

L.1 Planning the Migration

You can migrate the NTP services running in one of the following source platforms to the listed target platform:

Source Servers

- ♦ NetWare 5.1 SP8
- ♦ NetWare 6.0 SP5
- ♦ NetWare 6.5 SP5 and later

Target Server

- ♦ OES 2 SP1 Linux

L.2 Migration Scenarios

The following scenarios are supported for Timesync/NTP migration:

- ♦ Consolidation on Same Tree
- ♦ Consolidation on Different Tree
- ♦ Transfer ID on Same Tree

For details on what are these three scenarios, see [Section 1.3, “Migration Scenarios,” on page 17](#).

L.3 Migration Procedure

Migration of NTP configuration can be done from the Migration Tool or through Command Line Interface.

The migration procedure reads the NetWare NTP/Timesync configuration file and maps its parameters to the equivalents in NTP Linux. During the migration process the existing `ntp.conf` file is backed up and saved as `ntp.conf.old` in the `/etc` directory and the new parameters are saved in `/etc/ntp.conf`. If NTP is already configured on the target server while configuring eDirectory, post-migration this configuration will be overwritten.

- ♦ [Section L.3.1, “Using Migration Tool to Migrate Servers,” on page 214](#)
- ♦ [Section L.3.2, “Using the Command Line to Migrate Servers,” on page 214](#)

L.3.1 Using Migration Tool to Migrate Servers

- 1 Launch the Migration Tool in one of the following ways:

From your desktop: Click *Computer > More Applications > System > Novell Migration Tools*

From your Terminal: Run `miggui` command

- 2 Configure the Source and Target Parameters.

For details on configuring Source and Target Server information, selecting a Migration Type, Load/Save Project, and all buttons, see [Chapter 2, “Overview of the Migration GUI,” on page 21](#).

- 3 Select *Novell NTP* from *Services* and click *Configure*. The status changes from *Not Configured* to *Ready*.
- 4 Click *Migrate* to start the migration process. The status changes from *Migrating* to *Migrated*.

NOTE: Use *Status > Logs* tab to verify for errors during migration. Fix the errors and restart the migration procedure.

L.3.2 Using the Command Line to Migrate Servers

To run the NTP migration utility through command line, run the following command on the target server with the required parameters:

```
migtime -s <source IP address>
```

For example:

```
migftp -s 192.168.0.54
```

L.4 Post-Migration Procedure

Load the XNTPD daemon by entering the following command at the prompt:

```
rcntp restart
```

Documentation Updates

M

This section contains information about documentation content changes made to the *OES 2: Novell Migration Tool Administration Guide* since Beta 3. If you are an existing user, review the change entries to readily identify modified content. If you are a new user, simply read the guide in its current state.

In this section, content changes appear in reverse chronological order, according to the publication date. Within a dated entry, changes are grouped and sequenced, according to where they appear in the document itself. Each change entry provides a link to the related topic and a brief description of the change.

This document was updated on the following dates:

M.1 December 24, 2008

Updates were made to the following sections.

- ♦ [Section M.1.1, “Overview of the Migration Tool,” on page 215](#)
- ♦ [Section M.1.2, “Using Migration Tool GUI,” on page 215](#)
- ♦ [Section M.1.3, “Server Consolidations,” on page 216](#)
- ♦ [Section M.1.4, “Preparing for Transfer ID,” on page 216](#)
- ♦ [Section M.1.5, “Transfer ID Using Migration GUI Tool,” on page 216](#)

M.1.1 Overview of the Migration Tool

Location	Changes
Figure 1-1 on page 15	Updated the screenshot
Section 1.3.1, “Consolidate,” on page 17	Updated the section with new screenshots and explanations.
Table 1-1 on page 16	Listed the migration tool to use for migrating services depending on the source platform and target platform.
Table 1-3 on page 20	Updated the iFolder source platform support.

M.1.2 Using Migration Tool GUI

The following changes were made to this section:

Location	Changes
Section 5.1, “Getting Started,” on page 37	An important note is added. User performing migration must be an eDirectory admin, not DSFW admin.

M.1.3 Server Consolidations

The following change was made to this section:

Location	Changes
Chapter 6, "Preparing for Server Consolidation," on page 43	Chapter is new.
Chapter 7, "Using the Migration GUI Tool for Consolidation," on page 45	Chapter is new.

M.1.4 Preparing for Transfer ID

Location	Changes
Section 9.1, "Prerequisites," on page 53	Updated the section with the following: <ul style="list-style-type: none">♦ Target server must be time synchronized. For more information, added a new link to the <i>OES2 SP1: Planning and Implementation Guide</i>.♦ NSS volumes names and properties must be same.♦ The hostname and IP address of the source and target servers are mapped correctly.♦ An important note is added. Transfer ID cannot be performed through a remote session.
Section 9.2, "Preparing the Source Server for Migration," on page 54	Added step 4 to copy ssh keys.

M.1.5 Transfer ID Using Migration GUI Tool

Location	Changes
Section 10.5.1, "Left Pane," on page 58	Added the missing icons.
"eDirectory Precheck:" on page 60	Updated this step
"Preparation:" on page 61	Added new step
"Reinitialize Server:" on page 63	Added new step
"Repair:" on page 63	Updated this step