

Oracle® Email

Migration Tool Guide

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Oracle Email Migration Tool Guide, Release 2 (9.0.4)

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Part No. B10723-01

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Preface

This manual describes how to use the Oracle Email Migration Tool packaged with Oracle Collaboration Suite, and provides information about the Migration Tool, the Migration Setup Wizard, and the tasks you perform to migrate e-mail systems to the Oracle Email component of Oracle Collaboration Suite.

This preface contains these topics:

- [Audience](#)
- [Organization](#)
- [Related Documentation](#)
- [Conventions](#)
- [Documentation Accessibility](#)

Audience

The Oracle Email Migration Tool Guide is intended for system administrators, e-mail administrators, and people involved in planning e-mail systems for organizations migrating users to Oracle Collaboration Suite from Oracle eMail Server 5.2.x, Microsoft Exchange 5.0 and 5.5, Lotus Domino Server R5, GroupWise, and Samsung Contact (formerly OpenMail). This document is intended to help perform the following tasks:

- Premigration Tasks
- Migrating Users
- Migrating Data
- Post Migration Tasks

To use this document, you must have an understanding of Oracle Email server administration.

Organization

This document contains:

Chapter 1, "Introduction to Oracle Email Migration Tool"

Introduces the Migration Tool and provides an overview of the migration process.

Chapter 2, "Migration Planning and Using the Oracle Email Migration Tool"

Explains planning for migration and focuses on configuration, plug-ins, and routing reconfiguration planning.

Chapter 3, "Migration Tasks"

Describes pre-migration, migration, and post-migration tasks for e-mail.

Appendix A, "Plug-In Generated File Formats"

Provides file formats and examples of generated files including user list, distribution lists, public aliases, shared folders, and server-side rules.

Appendix B, "API Architecture"

Provides guidelines for developing plug-ins to migrate other third party e-mail systems.

Related Documentation

For more information, see these Oracle resources Oracle Collaboration Suite Release 9.0.4 documentation set:

- *Oracle Collaboration Suite Concepts and Planning Guide*
- *Oracle Collaboration Suite Configuration Handbook*
- *Oracle Collaboration Suite Installation Guide for AIX-Based Systems and HP Tru64 UNIX*
- *Oracle Collaboration Suite Installation Guide for Solaris, HP, and Linux*
- *Oracle Collaboration Suite Installation Guide for Windows*
- *Oracle Collaboration Suite Release Notes for Solaris*
- *Oracle Collaboration Suite Release Notes for Windows*
- *Oracle Email Administrator's Guide*

Printed documentation is available for sale in the Oracle Store at

<http://oraclestore.oracle.com/>

To download free release notes, installation documentation, white papers, or other collateral, please visit the Oracle Technology Network (OTN). You must register online before using OTN; registration is free and can be done at

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Conventions

This section describes the conventions used in the text and code examples of this documentation set. It describes:

- [Conventions in Text](#)
- [Conventions in Code Examples](#)
- [Conventions for Windows Operating Systems](#)

Conventions in Text

We use various conventions in text to help you more quickly identify special terms. The following table describes those conventions and provides examples of their use.

Convention	Meaning	Example
Bold	Bold typeface indicates terms that are defined in the text or terms that appear in a glossary, or both.	When you specify this clause, you create an index-organized table .
<i>Italics</i>	Italic typeface indicates book titles or emphasis.	<i>Oracle10i Database Concepts</i> Ensure that the recovery catalog and target database do <i>not</i> reside on the same disk.
UPPERCASE monospace (fixed-width) font	Uppercase monospace typeface indicates elements supplied by the system. Such elements include parameters, privileges, datatypes, RMAN keywords, SQL keywords, SQL*Plus or utility commands, packages and methods, as well as system-supplied column names, database objects and structures, usernames, and roles.	You can specify this clause only for a NUMBER column. You can back up the database by using the BACKUP command. Query the TABLE_NAME column in the USER_TABLES data dictionary view. Use the DBMS_STATS.GENERATE_STATS procedure.
lowercase monospace (fixed-width) font	Lowercase monospace typeface indicates executables, filenames, directory names, and sample user-supplied elements. Such elements include computer and database names, net service names, and connect identifiers, as well as user-supplied database objects and structures, column names, packages and classes, usernames and roles, program units, and parameter values. Note: Some programmatic elements use a mixture of UPPERCASE and lowercase. Enter these elements as shown.	Enter sqlplus to open SQL*Plus. The password is specified in the orapwd file. Back up the datafiles and control files in the /disk1/oracle/dbs directory. The department_id, department_name, and location_id columns are in the hr.departments table. Set the QUERY_REWRITE_ENABLED initialization parameter to true. Connect as oe user. The JRepUtil class implements these methods.
<i>lowercase italic monospace (fixed-width) font</i>	Lowercase italic monospace font represents placeholders or variables.	You can specify the <i>parallel_clause</i> . Run <i>Uold_release</i> .SQL where <i>old_release</i> refers to the release you installed prior to upgrading.

Conventions in Code Examples

Code examples illustrate SQL, PL/SQL, SQL*Plus, or other command-line statements. They are displayed in a monospace (fixed-width) font and separated from normal text as shown in this example:

```
SELECT username FROM dba_users WHERE username = 'MIGRATE';
```

The following table describes typographic conventions used in code examples and provides examples of their use.

Convention	Meaning	Example
[]	Brackets enclose one or more optional items. Do not enter the brackets.	DECIMAL (<i>digits</i> [, <i>precision</i>])
{ }	Braces enclose two or more items, one of which is required. Do not enter the braces.	{ENABLE DISABLE}
	A vertical bar represents a choice of two or more options within brackets or braces. Enter one of the options. Do not enter the vertical bar.	{ENABLE DISABLE} [COMPRESS NOCOMPRESS]
...	Horizontal ellipsis points indicate either: ■ That we have omitted parts of the code that are not directly related to the example ■ That you can repeat a portion of the code	CREATE TABLE ... AS <i>subquery</i> ; SELECT <i>col1</i> , <i>col2</i> , ... , <i>coln</i> FROM employees;
. . . .	Vertical ellipsis points indicate that we have omitted several lines of code not directly related to the example.	SQL> SELECT NAME FROM V\$DATAFILE; NAME ----- /fsl/dbs/tbs_01.dbf /fsl/dbs/tbs_02.dbf . . . /fsl/dbs/tbs_09.dbf 9 rows selected.
Other notation	You must enter symbols other than brackets, braces, vertical bars, and ellipsis points as shown.	acctbal NUMBER(11,2); acct CONSTANT NUMBER(4) := 3;

Convention	Meaning	Example
<i>Italics</i>	Italicized text indicates placeholders or variables for which you must supply particular values.	CONNECT SYSTEM/ <i>system_password</i> DB_NAME = <i>database_name</i>
UPPERCASE	Uppercase typeface indicates elements supplied by the system. We show these terms in uppercase in order to distinguish them from terms you define. Unless terms appear in brackets, enter them in the order and with the spelling shown. However, because these terms are not case sensitive, you can enter them in lowercase.	SELECT last_name, employee_id FROM employees; SELECT * FROM USER_TABLES; DROP TABLE hr.employees;
lowercase	Lowercase typeface indicates programmatic elements that you supply. For example, lowercase indicates names of tables, columns, or files. Note: Some programmatic elements use a mixture of UPPERCASE and lowercase. Enter these elements as shown.	SELECT last_name, employee_id FROM employees; sqlplus hr/hr CREATE USER mjones IDENTIFIED BY ty3MU9;

Conventions for Windows Operating Systems

The following table describes conventions for Windows operating systems and provides examples of their use.

Convention	Meaning	Example
Choose Start >	How to start a program.	To start the Database Configuration Assistant, choose Start > Programs > Oracle - <i>HOME_NAME</i> > Configuration and Migration Tools > Database Configuration Assistant.
File and directory names	File and directory names are not case sensitive. The following special characters are not allowed: left angle bracket (<), right angle bracket (>), colon (:), double quotation marks ("), slash (/), pipe (), and dash (-). The special character backslash (\) is treated as an element separator, even when it appears in quotes. If the file name begins with \\, then Windows assumes it uses the Universal Naming Convention.	c:\winnt\\"system32 is the same as C:\WINNT\SYSTEM32

Convention	Meaning	Example
C:\>	Represents the Windows command prompt of the current hard disk drive. The escape character in a command prompt is the caret (^). Your prompt reflects the subdirectory in which you are working. Referred to as the <i>command prompt</i> in this manual.	C:\oracle\oradata>
Special characters	The backslash (\) special character is sometimes required as an escape character for the double quotation mark (") special character at the Windows command prompt. Parentheses and the single quotation mark (') do not require an escape character. Refer to your Windows operating system documentation for more information on escape and special characters.	C:\>exp scott/tiger TABLES=emp QUERY=\"WHERE job='SALESMAN' and sal<1600\" C:\>imp SYSTEM/password FROMUSER=scott TABLES=(emp, dept)
HOME_NAME	Represents the Oracle home name. The home name can be up to 16 alphanumeric characters. The only special character allowed in the home name is the underscore.	C:\> net start OracleHOME_NAME_TNSListener

Convention	Meaning	Example
<i>ORACLE_HOME</i> and <i>ORACLE_BASE</i>	In releases prior to Oracle8i release 8.1.3, when you installed Oracle components, all subdirectories were located under a top level <i>ORACLE_HOME</i> directory. For Windows NT, the default location was <i>C:\orant</i>. This release complies with Optimal Flexible Architecture (OFA) guidelines. All subdirectories are not under a top level <i>ORACLE_HOME</i> directory. There is a top level directory called <i>ORACLE_BASE</i> that by default is <i>C:\oracle</i>. If you install the latest Oracle release on a computer with no other Oracle software installed, then the default setting for the first Oracle home directory is <i>C:\oracle\orann</i>, where <i>nn</i> is the latest release number. The Oracle home directory is located directly under <i>ORACLE_BASE</i>. All directory path examples in this guide follow OFA conventions. Refer to <i>Oracle10i Database Platform Guide for Windows</i> for additional information about OFA compliances and for information about installing Oracle products in non-OFA compliant directories.	Go to the <i>ORACLE_BASE\ORACLE_HOME\rdms\admin</i> directory.

Documentation Accessibility

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<http://www.oracle.com/accessibility/>

Accessibility of Code Examples in Documentation JAWS, a Windows screen reader, may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an otherwise empty line; however, JAWS may not always read a line of text that consists solely of a bracket or brace.

Introduction to Oracle Email Migration Tool

This chapter provides an overview of the Oracle Email Migration Tool.

This chapter contains these topics:

- [What Is the Oracle Email Migration Tool?](#)
- [Who Uses the Oracle Email Migration Tool?](#)
- [Overview of the Migration Process](#)

What Is the Oracle Email Migration Tool?

The Oracle Email Migration Tool is a Java tool that migrates users to the Oracle Email component of Oracle Collaboration Suite from Oracle eMail Server 5.2.x, and, using plug-ins developed for each third party e-mail system, Microsoft Exchange 5.0 and 5.5, Lotus Domino Server R5, Novell GroupWise 6.0, and Samsung Contact 7.1 (formerly OpenMail).

The Migration Tool can be installed on and run from either the source, target, or other intermediate system.

To perform a migration, a system administrator requires the following:

- The base Migration Tool
- A plug-in developed specifically for the source e-mail server
- System administrator privileges on the source e-mail server

Note: Plug-ins for the preceding source e-mail systems are packaged with the Migration Tool.

The plug-in communicates with the source e-mail system to extract data from the source message store, which it saves in a format understood by the Migration Tool. Once the required files are generated, the Migration Tool reads the files and migrates them to Oracle Email. The plug-in and the Migration Tool communicate through an API.

See Also:

- [Appendix B, "API Architecture"](#) for information about APIs
- ["Installing the Migration Tool"](#) on page 3-3 for directory information

Oracle Email Migration Tool Features

Features of the Migration Tool include:

- Two-phase migration, done over a period of weeks prior to the final migration, facilitates the overall migration process of a large scale migration
- E-mail notifications of new account creation and migration completion provide feedback to users

Who Uses the Oracle Email Migration Tool?

The Oracle Email Migration Tool is designed specifically to migrate large mail systems, such as:

- Corporate installations that generally have a few thousand to hundreds of thousands of users with large mailboxes (tens to hundreds of megabytes).
- Internet service providers that generally have a large number of users (millions) with small mailboxes (a few hundred kilobytes).

Overview of the Migration Process

E-mail migration is an intricate process. It requires migration of account information, including user names, public aliases, distribution lists, and server-side rules; data, including messages, folders, and shared folders; and Web client address books. Additionally, the migration process requires changes to the Simple Mail Transfer Protocol (SMTP) routing. Migrating a large e-mail system with minimal downtime is a challenging task.

Migrating a mail system involves migrating account information and migrating data, and routing new and future messages to the target Oracle Email server.

The migration process includes performing the following tasks:

1. Run the Migration Setup Wizard to configure the migration
2. Extract directory information from the source system
3. Load information into the Migration Tool and migration repository
4. Create users on Oracle Email
5. Create batches of users
6. Migrate data
7. Verify the migration

The Migration Tool performs the following tasks:

- Creates new user accounts on the target Oracle Email server and defines user name creation policies on the target system
- Consolidates domains
- Maintains mail delivery throughout the migration process to eliminate downtime

- If there is a data migration error for a particular account, it maintains mail delivery to the user

This section contains the following topics:

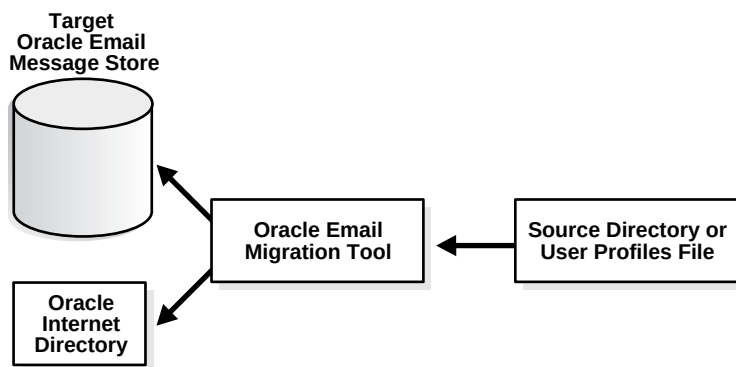
- [Migrating Accounts](#)
- [Migrating Data](#)

Migrating Accounts

The Migration Tool extracts account information, including user names, public aliases, distribution lists, and server-side rules, from the source directory server or user profiles file and places it into the target Oracle Email system and the target Oracle Internet Directory, as shown in [Figure 1-1](#).

Note: The objects that can be migrated depend upon the source system. Not all plug-ins support migrating all objects.

Figure 1-1 Account Migration



You can choose to retain the user names from the source system, or direct the Migration Tool to generate new target user names based on rules you create.

See Also: ["Step 10: Specifying New Account User Names"](#) on page 3-31 for information on generating new target user names

Migrating Data

Migrating user data is a major part of migration and involves the most resources of the system on which the Migration Tool is installed. Data migration is also the most time consuming part of a system migration and, for large e-mail systems, performing a two-phase migration can help to minimize down time. Batching users is another way to efficiently manage the time needed to migrate data.

See Also:

- ["Performing a Two-Phase Migration"](#) on page 3-43 for more information about pre-migration
- ["Creating Batches"](#) on page 3-40 for more information about batching users

The following operations occur during data migration:

- Messages, folders, and shared folders are migrated
For shared messages, a copy of each message is inserted into the database and a pointer is provided for every recipient of the same message, as opposed to having a copy of the message sent to each recipient. This can potentially save an enormous amount of disk space that would otherwise be taken up by duplicate e-mail messages.
- Server-side rules are migrated
- New messages are routed to Oracle Email
- Successful migration is verified

See Also: ["Verifying Migration"](#) on page 3-46 for more information about verification

The Migration Tool migrates data using either MBOX or IMAP-based migration.

MBOX-Based Migration

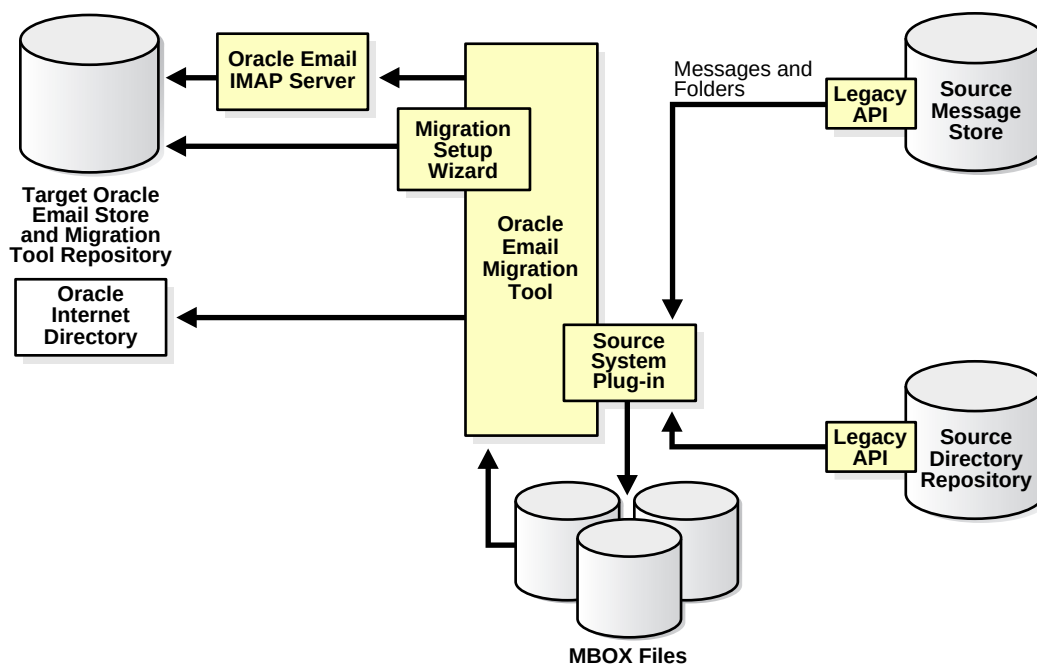
MBOX-based migration is the migration process used in a plug-in-based migration. Where a plug-in does not exist for a source system, other techniques, such as IMAP-based migration, are used.

The Migration Tool plug-in creates a collection of MBOX files for each user in a staging directory. E-mail folders are represented by separate MBOX files, and messages are appended to the file by the plug-in.

Note: Because MBOX-based migration can generate a tremendous amount of data, an intermediate computer system may be required for storage.

An overview of the MBOX-based migration process is shown in [Figure 1–2](#)

Figure 1–2 Overview of an MBOX-Based Migration

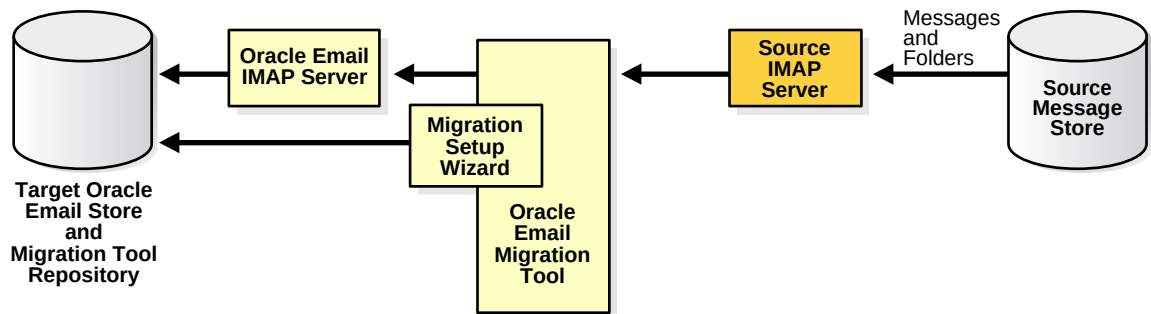


See Also: ["Step 1: Specifying Mail System Objects"](#) on page 3-8 for information on selecting a migration option

IMAP-Based Migration

If there is no plug-in available for the source e-mail system, an IMAP-based migration can be employed.

During an IMAP-based migration, the Migration Tool extracts the data from the source e-mail system message store and places it directly into the target e-mail system message store, as shown in [Figure 1–3](#).

Figure 1-3 Overview of an IMAP-Based Migration

Note: As long as you have a plug-in, MBOX-based migration can be used in an IMAP-supported source e-mail server to avoid source password requirements.

Migration Planning and Using the Oracle Email Migration Tool

This chapter provides migration planning information.

This chapter contains these topics:

- [Requirements Before Migration](#)
- [System Requirements](#)
- [Configuration Planning](#)
- [Using the Oracle Email Migration Tool](#)

Requirements Before Migration

Before starting a migration, at least one instance of Oracle Collaboration Suite and Oracle Internet Directory must be installed on the target system.

Know something about how the enterprise is organized, including various divisions within the enterprise, organization of employees and geographical locations, and the various work groups that may be in place. Try to migrate groups of users in a logical manner according to the organization of the enterprise, in order minimize any disruptions in communication between members of the same organizational unit.

Gather some preliminary information about the migration, including target domain structure and user namespace, and source domain structure and directory source. Also, be familiar with the user LDAP tree, as you will need to reference this information frequently during the migration process.

Depending upon what source e-mail system you are migrating from, certain requirements must be met for each.

This section contains the following topics:

- [Preparing for a Microsoft Exchange Migration](#)
- [Preparing for a Lotus Notes Migration](#)
- [Preparing for a Novell GroupWise Migration](#)
- [Preparing for a Samsung Contact Migration](#)

Preparing for a Microsoft Exchange Migration

This section contains information for performing a migration from a Microsoft Exchange 5.0 or 5.5 source system.

This section contains the following topics:

- [Microsoft Requirements](#)
- [Creating an Administrator Profile](#)
- [Using Statistics Task to Estimate Disk Space Requirements \(Optional\)](#)

Microsoft Requirements

Microsoft Outlook 97, Microsoft Outlook 98, or Microsoft Outlook 2000, and Microsoft Exchange Administrator must be installed on the machine where you

want to generate the various files (such as user list, MBOX, and shared folders) if migrating from Microsoft Exchange to Oracle Email.

The following Microsoft Exchange Server Services must be configured and set up properly:

- Microsoft Exchange Internet Mail Service
- Microsoft Exchange Information Store
- Microsoft Exchange System Attendant
- Microsoft Exchange Event Service
- Microsoft Exchange Directory Service

Notes:

- If you are migrating from a Microsoft Exchange source e-mail system and running the Migration Tool on a machine other than the one upon which Microsoft Exchange is installed, ensure that Microsoft Outlook and Microsoft Exchange Administrator are installed on the machine from which you are running the Migration Tool.
 - A user profile file cannot be generated from a machine where a Microsoft Exchange e-mail client is not installed.
 - Users with X.400 addresses are not migrated.
-

Creating an Administrator Profile

If your source e-mail system is Microsoft Exchange, perform the following steps on the system on which the source e-mail system is installed to create an administrator profile:

1. Ensure that Microsoft Outlook is installed on the system and is operating correctly.
2. Create a profile using Microsoft Outlook.
 1. Choose **Start > Settings > Control Panel** from the Windows NT task bar.
 2. Double-click the **Mail** icon.
 3. Click **Show Profiles > Add**.

4. Select **Microsoft Exchange Server** and enter a name in the **Profile Name** field. Click **Next**.
 5. Enter the name of the server in the **Microsoft Exchange Server** field.
 6. In the **Mailbox** field, enter the name of an administrator.
3. The profile information for the source e-mail system is entered using the Migration Setup Wizard.

See Also: ["Step 2: Configuring Source Plug-ins"](#) on page 3-9

Using Statistics Task to Estimate Disk Space Requirements (Optional)

To use Statistics Task to estimate disk space requirements, run it on the system on which Microsoft Exchange is installed.

To run Statistics Task, enter the following command using a Windows DOS prompt:

```
msplugin.exe statistics_file=file_name domain=domain_name
```

Preparing for a Lotus Notes Migration

When migrating from Lotus Domino server R5 to Oracle Collaboration Suite, release 9.0.4, use the Lotus Notes plug-in with the Migration Tool. The plug-in works with Lotus Domino version 5.0.8, or higher.

The following tasks are not supported by the Lotus Notes plug-in:

- Extract and migrate server-side rules
- Extract the public aliases files
- Extract shared folders

Note: Users with X.400 addresses are not migrated.

See Also: [Table 2–1, "Source E-mail System and Migration Tasks Supported"](#) for information about tasks supported by the plug-in

This section contains the following topics:

- [Lotus Notes Plug-in Requirements](#)
- [Other Lotus Notes Migration Information](#)

Lotus Notes Plug-in Requirements

Ensure that the following requirements are met before running the Lotus Notes plug-in:

- Lotus Notes must be installed on the machine on which the plug-in is run
- All users have an internet address set for them in the Lotus Domino directory
- If you want to perform an MBOX-based migration, the plug-in assumes that there is one user who has administrator privileges to read the contents of every user's mail file
- If the Migration Tool is used to create base accounts on Oracle Collaboration Suite, the Lotus Domino LDAP server must be running and allow anonymous binds

See Also: Lotus Domino documentation for instructions regarding how to start this server

Other Lotus Notes Migration Information

If an MBOX-based migration is used for migrating from a Lotus Domino server, and there are messages on the Lotus Domino server that use multibyte character sets, the plug-in extracts all multibyte data in the UTF-8 character set. When viewing such messages through mail browsers, it might be necessary to set the view character set to UTF-8 to see the messages correctly.

The Lotus Notes plug-in migrates a user's **Shared, Private**, and **Shared, private on first use** folders but does not migrate the user's **Shared, desktop private on first use** folders.

Folder names that contain the forward slash character (/) are renamed upon extraction by the plug-in, replacing the forward slash with an underscore character (_). For example, a folder in Lotus Notes named my/folder will be renamed to my_folder.

The Lotus Notes plug-in is currently available only on Microsoft Windows NT but can be used to migrate from a Lotus Domino server running on any platform.

Preparing for a Novell GroupWise Migration

Note: The Novell GroupWise plug-in is currently available only on Microsoft Windows NT and with the Novell GroupWise 6.0.2 client.

This plug-in works with the Novell GroupWise server 6.0.

The following tasks cannot be performed by the Novell GroupWise plug-in:

- Making routing changes for the users
- Generating user profile files

See Also: [Table 2–1, "Source E-mail System and Migration Tasks Supported"](#) for information about tasks supported by the plug-in

Novell GroupWise Plug-in Requirements

- If the Migration Tool is used to create base accounts on Oracle Email, the Novell GroupWise LDAP server must be running and allow anonymous binds

Note: NDS is a Novell directory service also known as eDirectory. In this document NDS and eDirectory are used interchangeably.

- NDS (eDirectory 8.6) with Novell GroupWise 6.0, or higher
- MTA and POA of the Novell GroupWise server installation process must be running
- The Novell GroupWise client 6.0.2 patch must be applied on the system from which Migration Tool is invoked
- Administrator profile name, password, tree name, and the context (as explained in the configuration parameter file)
- Ensure that the Novell Default Settings profile contains the **Novell GroupWise Address Book** service

Locate the **Novell Default Settings** profile in Windows by choosing **Start > Settings > Control Panel > Mail > Show Profiles** (the profile is added automatically when the GroupWise client is installed on the Windows system). If the profile does not contain the service, add it to the profile.

- Users must set up proxy access for the administrator

The GroupWise administrator must be able to access (proxy) all users on the GroupWise system.

To grant proxy access to the GroupWise administrator:

1. Log in as a GroupWise user.
2. Choose **Tools > Options > Security > Proxy Access**.
3. Click **Addressbook** adjacent to the **Name** field.
4. Choose the GroupWise administrator's name from the Novell GroupWise Address Book (Novell GroupWise Address Book is the GroupWise system address book that holds all users in the GroupWise domain).
5. Select **Mail/Phone** for read access.
6. Click **OK** to grant proxy access to the GroupWise administrator.

To ensure that proxy access is available to the GroupWise administrator:

1. Log in as the GroupWise administrator.
2. Choose **File > Proxy**.
3. A window displays that contains the **name** field and **Proxy** drop-down list.
4. Click **Address Book** and choose a user who has granted proxy access to the GroupWise administrator.
5. Click **OK**.

Preparing for a Samsung Contact Migration

This plug-in works with Samsung Contact Server 7.1.0.

The following tasks cannot be performed by the Samsung Contact plug-in:

- Extracting bulletin boards
- Extracting and migrating server-side rules
- Extracting shared folders
- IMAP-based migration

See Also: [Table 2–1, "Source E-mail System and Migration Tasks Supported"](#) for information about tasks supported by the plug-in

The following requirements must be met in order to ensure a successful migration:

- Ensure that the **Remote Client Interface** service is running on the Samsung Contact server
- All users on the Samsung Contact server must have the administrator user as a *real designate*

Use the Samsung Contact Java Windows client and choose **Tools > Preferences > Designates**.

- a. Click **New**.
 - b. Select **Designate** and enter the name of the administrator in the form of the **Personal** name in the Samsung Contact system directory.
 - c. In the Access Area & Capabilities window give minimum access permissions in the following list boxes:
 - **Inbox : R**
 - **Drafts : R**
 - **Sent : R**
 - **Filing Cabinet : R**
 - **Bulletin Board : R**
 - **Address Book : R**
 - **Personal Directory : R**
 - **Configuration : R/M**
 - Select the **Personal**, **Private**, and **Confidential** boxes
 - d. You can specify **start** and **expiry** dates or they can be left blank to allow for unlimited time for designate access.
 - e. Click **Apply** then click **OK** (for client version 7.5.0 and earlier).
 - f. Click **OK** (for client version later than 7.5.0).
- Ensure that users who are to be migrated have an SMTP internet address
 - Ensure that the system where the Migration Tool is running has a swap space of at least 2 GB

System Requirements

The Migration Tool can be run on either the source system, an intermediate system, or the target system. Parallel instances of the Migration Tool can be run, as well, on the different locations.

This section describes the following system requirements for the machine on which the Migration Tool is running:

- [Memory](#)
- [Disk Space](#)
- [Network Bandwidth](#)
- [Intermediate Storage of Data During Migration](#)

Memory

The amount of memory required to perform a migration is dependent upon such variables as the volume of data to be migrated, the profile of the message store, concurrency of the process, and size of messages. As a very general guideline, the minimum memory requirement is 512 megabytes (MB) of random access memory (RAM).

Disk Space

The disk space requirement is:

- 300 MB for migrating 10 users concurrently from MBOX, assuming a quota of 20 MB for each user (including all the intermediate store files)
- 70 MB for migrating from IMAP

Note: The Microsoft Exchange plug-in has a feature called Statistics Task that you can use to estimate your disk space requirements if you are migrating from a Microsoft Exchange source e-mail system. This feature is available after you install the Migration Tool.

See Also: ["Using Statistics Task to Estimate Disk Space Requirements \(Optional\)"](#) on page 2-3 for information about using the Statistics Task feature

Network Bandwidth

The Migration Tool network bandwidth requirements are the same as those for IMAP4 clients, although, for high speed migrations, more bandwidth is required. Oracle Corporation recommends 100 megabits per second (Mbps).

Notes:

- Migration operates efficiently on a local area network (LAN) with a bandwidth of at least 10 Mbps.
 - If you are performing an MBOX-based migration, a network connection is not always necessary. Once the MBOX files are extracted from the source system, they can be transferred to the target system through tape or disc transfer.
-
-

Intermediate Storage of Data During Migration

During an MBOX-based data migration, sufficient disk space must be available for intermediate storage to hold all of the e-mail of all the users being migrated together.

Note: The Migration Tool does not delete generated MBOX files.

See Also: *Oracle Collaboration Suite Installation Guide for Windows* for Oracle Email sizing guidelines

Configuration Planning

Configuration planning involves the following:

- [Choosing the Migration Option](#)
- [Routing Reconfiguration Planning](#)
- [Supporting Different Character Sets](#)
- [Reconfiguring Heap Size](#)

Choosing the Migration Option

[Table 2–1](#) lists the various source e-mail systems supported by the Oracle Email Migration Tool the migration tasks supported by each plug-in.

Table 2–1 Source E-mail System and Migration Tasks Supported

Source E-mail System	Migration Tasks Supported
Microsoft Exchange 5.0	Account creation, MBOX-based data migration, distribution lists, shared folders, public aliases, and server-side rules
Microsoft Exchange 5.5	In addition to the tasks supported by the Microsoft Exchange 5.0 plug-in, IMAP-based data migration
Lotus Domino Server R5	Account creation, MBOX and IMAP-based data migration, and distribution lists
Novell GroupWise 6.0	Account creation (from an LDAP server information source), MBOX and IMAP-based data migration, distribution lists, shared folders, and public aliases
Samsung Contact	Account creation using a User Profile file, MBOX-based data migration, distribution lists, and public aliases
Other Mail Systems	All migration tasks are supported, however none of the extraction options in "Step 1: Specifying Mail System Objects" are enabled. You must provide files for each of the mail system objects you want to migrate according to the formats in Appendix A, "Plug-In Generated File Formats" .

Choose one of the following options for data migration:

- IMAP-based migration for data migration through standard protocols
- MBOX-based migration, where a plug-in exists for the source system

Note: Either migration option can be used to migrate from a Microsoft Exchange 5.5 source e-mail systems.

For each of these types of migrations, you can choose to retain your source system user names or have the Migration Tool generate new target user names using rules you create.

Routing Reconfiguration Planning

The mail system is always available to a user during data migration. Prior to migrating a user's data, the Migration Tool routes all of the user's new mail to Oracle Email. The user can still access old mail on the source account until data migration is complete.

Once data migration is complete for a user, an e-mail notification is sent to the user's new account stating that migration is complete and that old and new e-mail can be accessed in the new Oracle Email account.

Note: If you receive an **Unable to start directory services** error message from the Microsoft Exchange plug-in, the error is logged in the `ORACLE_HOME/oes/migration/log` directory.

If an error occurs during data migration, the user's e-mail continues to be routed to the user's new account. If the Migration Tool fails to route the user, the migration fails.

Supporting Different Character Sets

See the *Oracle Email Administrator's Guide* for information about configuring the Oracle Email database to support different character sets.

Reconfiguring Heap Size

The size of the heap is an important factor when deciding upon the number of users to migrate concurrently.

The default heap size specified in the `migrate.sh` (UNIX) and `migrate.cmd` (Windows NT) files is:

- Initial heap size: 256 MB
- Maximum heap size: 512 MB

If running on UNIX, heap size is specified in `migrate.sh` as follows:

```
exec $JRE -Xms256m -Xmx512m
```

If running on Windows NT, heap size is specified in `migrate.cmd` as follows:

```
"%JREHOME%\bin\java" -Xms256m -Xmx512m
```

You must add 8 MB to the minimum heap size for every user that you want to migrate concurrently. The formula is $256 + 8 * N$, subject to a maximum of 1 GB, where N is the number of users you want to migrate concurrently.

For example, to migrate 50 users concurrently, the maximum heap size must be set to 656 MB ($256 + 8 * 50$).

The ideal maximum heap size is 50% of the amount of total RAM on the target system.

Once you determine the heap size, Oracle Corporation recommends that you set the minimum value of the heap to the same size specified in the maximum value. Continuing with the preceding example, the parameter is set as follows:

```
-Xms656m -Xmx656m
```

See Also: ["Advanced Migration Tool Configuration"](#) on page 3-16 for information about specifying a number of users to migrate concurrently

Using the Oracle Email Migration Tool

The Migration Tool has various menu bar selections and methods for viewing information about users, source domains, batches, and migration status.

Initially, all menu selections except **File > Migration Setup** are disabled. You must run the Migration Setup Wizard at least once for the directory tree on the left side of the screen to be populated and the menu selections to be available.

The Migration Setup Wizard stores migration parameters in the database every time you run the wizard. The Migration Setup Wizard picks up the prior settings from the database each time it is run.

See Also: ["Task 3: Setting Up a Migration Session"](#) on page 3-7 for information about the Migration Setup Wizard

This section contains the following topics:

- [Overview of the Oracle Email Migration Tool Screen](#)
- [Displaying User, Domain, Batch, and Migration Status Information](#)
- [User States During Migration](#)
- [Tuning for Performance](#)
- [Viewing Log Files](#)

Overview of the Oracle Email Migration Tool Screen

This section contains an overview of the Migration Tool screen.

This section contains the following topics:

- [Migration Tool Screen Menu Selections](#)
- [Migration Tool Screen Fields](#)

Migration Tool Screen Menu Selections

[Figure 2–1](#) shows the menu selections on the Migration Tool screen.

Figure 2–1 *Migration Tool Screen Menu Selections*



- **File:** The File menu contains the following selections:
 - **Migration Setup:** Launches the Migration Setup Wizard
If the Migration Tool is being run for the first time or if you have cleared the migration parameters, a message dialog will display saying, "There are no instances found. Click OK to continue." Clicking **OK** will launch the Migration Setup Wizard.
 - **Load Users:** Loads user information into the migration repository for later retrieval
 - **Create Batch:** Displays a screen in which you enter the type of batch that you want to create.

See Also: ["Creating Batches"](#) on page 3-40 for more information about creating batches
 - **Exit:** Shuts down the Migration Tool. Any ongoing migrations are canceled. No rollback or state saving is performed.
- **Edit:** The Edit menu contains the following selections:
 - **User Details:** Displays a screen in which you enter the source user name for the user whose details you want to edit

Note: You can also select a user from the directory tree to modify that user's details.

See Also: ["Task 4: Migrating Users to Oracle Email"](#) on page 3-33 for more information about editing user details

- **Migration Parameters:** Displays a screen in which you can edit various migration parameters

See Also: [Figure 3–20, "Modify Migration Parameters Screen"](#) on page 3-45

- **Clear Migration Parameters:** Clears the migration parameters stored in the migration repository. After clearing the migration parameters, the only menu options enabled are **Migration Setup** and **Exit**.
- **Extract:** The Extract menu selections generate the following files in the Migration Tool files directory by extracting data from the source system as metadata to control the migration process:
 - **Users:** The `users.xml` file

Note: If you are extracting a user list file for a domain such as `oracle.com`, the file is generated in the `ORACLE_HOME/oes/migration/files/com/oracle` directory.

- **Public Aliases:** The `public_aliases.ldif` file
- **Distribution Lists:** The `distribution_lists.ldif` file
- **Shared Folders:** The `shared_folders.ldif` file
- **User Profiles:** The `user_profiles.ldif` file
- **Migrate:** The Migrate menu contains the following selections:
 - **Create Users on Oracle:** Starts the migration of user accounts to the target Oracle Email server
 - **Migrate Shared Folders:** Starts the migration of shared folders
 - **Migrate Public Aliases:** Starts the migration of public aliases

- **Migrate Distribution Lists:** Starts the migration of distribution lists
- **Pre-Migrate User Data:** Starts premigration of user data

See Also: ["Performing a Two-Phase Migration"](#) on page 3-43 for more information about pre-migrating user data

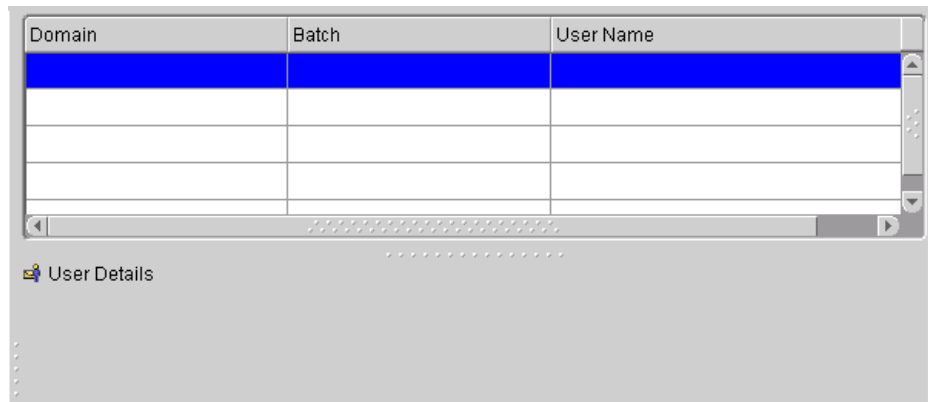
- **Migrate User Data:** Starts the migration of user data
- **Migrate Address Book:** Starts the migration of users' WebMail address books
- **User Status:** Displays a user's current migration status
- **Verify New Accounts:** Displays the Verification screen and gives information about an individual user's migration status by comparing the source and target accounts

See Also: ["Verifying Migration"](#) on page 3-46 for more information about verification

- **Cancel Migration:** Cancels data migration. No rollback is performed and migration is terminated immediately
- **Help:** The Help menu contains the following selections:
 - **Contents:** Displays the online help
 - **About:** Displays information about the release of the Migration Tool

Migration Tool Screen Fields

[Figure 2-2](#) shows the right side of the Migration Tool screen when the **Migration Instance** node is selected.

Figure 2–2 Migration Tool Screen Fields

- The number of users currently migrating is displayed at the top of the section
- **Migrating Users:** Displays the **Domain**, **Batch**, and **User Name** of users that are in a current state of migration
- **User Details:** Displays user details of a user selected from the **User Name** column of the **Migrating Users** field

Note: When more than one Migration Tool instance runs against a single repository, each instance selects users independently. The **Migration Instance** for a particular instance shows only the users that are being migrated by that instance. Users listed in the directory tree on the left side of the window might not be listed in the **Migrating Users** field. If you select a user from the directory tree and find that their status is **Migrating**, it means that the user is being migrated by another instance.

Displaying User, Domain, Batch, and Migration Status Information

You can display user, domain, batch, and migration status information using the Migration Tool screen. You can also edit the scheduled start time for migrating a batch using the Migration Tool screen.

This section contains the following topics:

- [Viewing Domain, Batch, and User Information](#)
- [Displaying Source Domain Information and Migration Status](#)

- [Displaying Batch Information and Migration Status](#)
- [Displaying User Information and Status from the Directory Tree View](#)

Viewing Domain, Batch, and User Information

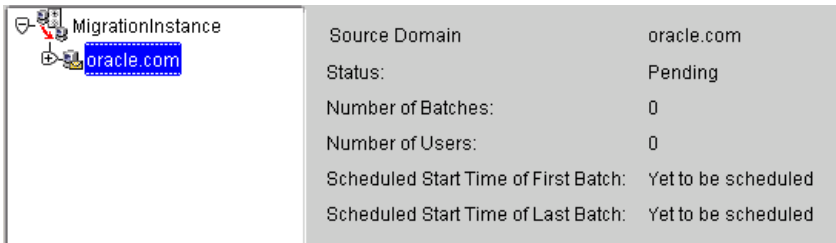
You can expand the various nodes of the directory tree on the left side of the Migration Tool screen to display specific information.

- When you expand **MigrationInstance**, all the source domains display
- When you expand a domain, all the batches in the domain display
- When you expand a batch, all the users belonging to the batch display

Displaying Source Domain Information and Migration Status

All the domains on the source system you want to migrate are listed under **MigrationInstance** in the directory tree on the left side of the Migration Tool screen. To view the information and migration status for a particular source domain, as shown in [Figure 2–3](#), select the source domain.

Figure 2–3 Migration Tool Screen with Source Domain Information Displayed



Source Domain	oracle.com
Status:	Pending
Number of Batches:	0
Number of Users:	0
Scheduled Start Time of First Batch:	Yet to be scheduled
Scheduled Start Time of Last Batch:	Yet to be scheduled

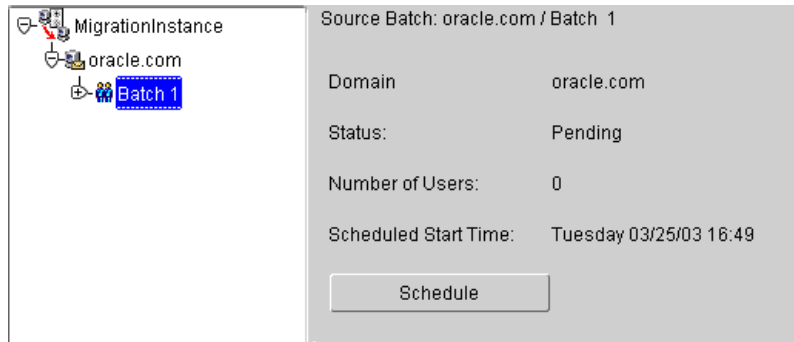
The following information displays:

- Name of **Source Domain** being displayed
- **Status** (Pending, Migrating, Done, or Failed)
- **Number of batches** in the domain
- **Number of users** in the domain
- **Scheduled start time of first batch**
- **Scheduled start time of last batch**

Displaying Batch Information and Migration Status

To monitor batch information, expand a domain to view the batches in the domain. Select a batch name to view information and migration status, as shown in [Figure 2–4](#).

Figure 2–4 Migration Tool Screen with Batch Information Displayed



When you select a batch from the directory tree on the left side of the Migration Tool screen, the details for the selected batch display on the right side, showing the following information:

- Name of the **Source Batch**
- **Domain** to which the batch belongs
- **Status** (Pending, Migrating, Done, Premigration Done, Premigration Failed, or Failed)
- **Number of Users** in the batch
- **Scheduled start time** (you can edit the date and time field and click **Schedule** to save the changes)
- **Users migrated** (the percentage of users migrated)

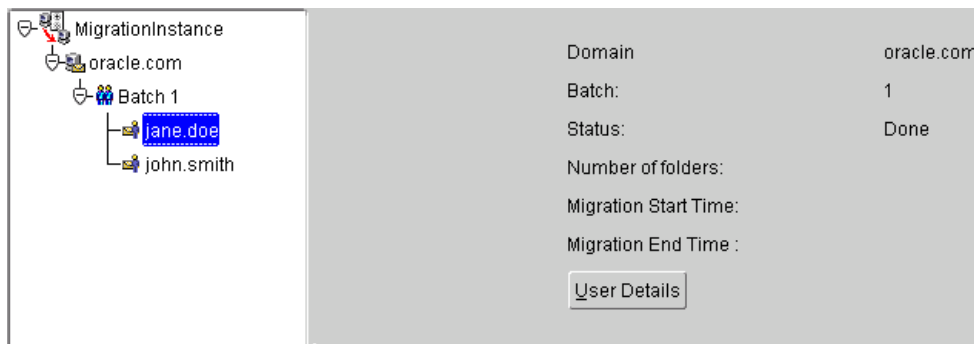
Note: If a single user in a batch fails to migrate, the entire batch is marked as **Failed** and must be rescheduled for migration. Users that migrated successfully are not migrated a second time.

See Also: ["Creating Batches"](#) on page 3-40 for more information about batches

Displaying User Information and Status from the Directory Tree View

To view all the users belonging to a particular batch, expand the batch. To view a specific user's information and migration status, as shown in [Figure 2–5](#), click their user name.

Figure 2–5 Migration Tool Screen with User Information Displayed



When you select a user from the directory tree on the left side of the Migration Tool screen, the details for the selected user display, showing the following information:

- **Source User** displays *domain_name/batch_number/user_name*
- **Domain** to which the user belongs
- **Batch** to which the user belongs
- **Status** (Pending, Migrating, Done, Premigration Done, Premigration Failed, or Failed)
- **Number of folders**
- **Migration start time**
- **Migration end time**
- At the bottom of the page the **User Migration Progress** is displayed as a progress bar that also shows the number of folders migrated and the amount of total bytes written

Note: If one folder fails to migrate, the user is marked as **Failed** and must be migrated again.

User States During Migration

A user is assigned one of the states shown in [Table 2–2](#) during the data migration process.

Table 2–2 Migration States

State	Description
Pending	The user is yet to migrate
Migrating	The user is currently migrating
Premigration Done	The user was successfully premigrated and is ready for proper migration
Premigration Failed	Premigration of the user failed but the user can still be picked up for proper migration
Done	The user was successfully migrated
Failed	Migration of the user failed, possibly due to failure of routing or mail migration Failed users do not receive completion notifications

See Also: ["Displaying User, Domain, Batch, and Migration Status Information"](#) on page 2-17 for information about viewing user states in the Migration Tool screen

Tuning for Performance

Read and write speeds are displayed at the bottom of the main Migration Tool screen, indicating the performance of the Migration Tool.

You can increase or decrease the number of users migrating concurrently to optimize performance.

If you have two batches scheduled to migrate at times that overlap each other, the migration speed does not increase.

Viewing Log Files

Log files are generated in the `log` directory of the Migration Tool. Every run of the Migration Tool generates a new log file that an administrator can open in any text editor to view the contents. Log files should be viewed frequently throughout the migration process.

The logs should be viewed after each of the following tasks to ensure successful migration:

- Extraction of accounts, shared folders, public aliases, and distribution lists
- Extraction of an MBOX file

Note: When you perform an MBOX-based migration, MBOX files are generated by the plug-in. View the *process_number.log* file in the Migration Tool *ORACLE_HOME/oes/migration/log/process_number* directory to view errors about extraction of MBOX, distribution list, public alias, user list, and shared folder files.

The *process_number* is unique for each run of the Migration Tool.

- Migration of data, accounts, shared folders, public aliases, and distribution lists

Note: Any extraction failures of the Migration Tool are logged in the *ORACLE_HOME/oes/migration/log/migration/process_number/text.log* file.

The *process_number* is unique for each run of the Migration Tool.

- Routing a user

Migration Tasks

This chapter provides information about migration tasks.

This chapter contains these topics:

- [Administrator Responsibilities Before Migration](#)
- [Task 1: Starting the Migration Tool](#)
- [Task 2: Logging In to the Migration Repository](#)
- [Task 3: Setting Up a Migration Session](#)
- [Task 4: Migrating Users to Oracle Email](#)
- [Task 5: Extracting Mail System Objects from the Source System](#)
- [Task 6: Migrating Shared Folders](#)
- [Task 7: Migrating Public Aliases](#)
- [Task 8: Migrating Distribution Lists](#)
- [Task 9: Migrating WebMail Address Books](#)
- [Task 10: Migrating Data](#)
- [Modifying Migration Parameters](#)
- [Post-Migration Administrator Responsibilities](#)

Administrator Responsibilities Before Migration

Note: At least one instance of Oracle Collaboration Suite, with the Oracle Email component, and Oracle Internet Directory must be installed on the target system prior to installing the Migration Tool.

This section contains the following topics:

- [Configuring the Domain Name Server Entry](#)
- [IMAP Server Configuration](#)
- [Verifying Source and Target IMAP Server Ports](#)
- [Installing the Migration Tool](#)

Configuring the Domain Name Server Entry

You must configure the DNS entry prior to beginning the migration process so that the target Oracle Email server is visible to the rest of the internet.

IMAP Server Configuration

The source IMAP servers should be suitably configured for a potentially large number of IMAP connections for concurrently migrating users. This includes database configuration for the source and target systems, if required.

The IMAP connection requirements are one connection for each concurrent user on the source IMAP server and three connections for each concurrent user on the target IMAP server.

To deploy message sharing in JMA-based migrations, you must configure the IMAP server as follows:

1. Use the Oracle Enterprise Manager administrator pages to add the value `MigrationHeader=Message-ID` to the Process Flag IMAP server process parameter.
2. Restart the IMAP server prior to running the Migration Tool.

Verifying Source and Target IMAP Server Ports

If you are performing an IMAP-based migration, verify that both the source and target IMAP servers are configured on port 143.

If you are performing an MBOX-based migration, verify that the target IMAP server only is configured on port 143.

Note: If a port other than 143 is being used, you must configure the `esmigration.config` file.

See Also:

- ["Advanced Migration Tool Configuration"](#) on page 3-16 for information about configuring ports
- *Oracle Email Administrator's Guide* for target IMAP server configuration information

Installing the Migration Tool

The Migration Tool can be run on both Windows NT and UNIX platforms.

Notes:

- Some of the plug-ins will only run on one platform. Therefore, variables, such as the chosen migration path, will determine which platform you should use.
 - All source servers in the currently migrating site must stay up for the entire duration of the migration.
 - If you are migrating from a Microsoft Exchange source e-mail system and running the Migration Tool on a system other than the one upon which Microsoft Exchange is installed, ensure that Microsoft Outlook and Microsoft Exchange Administrator are installed on the system from which you are running the Migration Tool.
-

To install the Migration Tool:

1. Unzip the `esmigration.zip` file located on the Oracle Collaboration Suite Clients CD-ROM.

For UNIX operating systems, navigate to the `ORACLE_HOME/oes/migration` directory and enter the following:

```
unzip esmigration.zip
```

For Windows NT operating systems, use WinZip to unzip and extract all files from the `esmigration.zip` file located in the `ORACLE_HOME\oes\migration` directory.

For either operating system, the following files and directories are created where you unzip the `esmigration.zip` file: `doc`, `help`, `log`, `files`, `bin`, `images`, `sql`, `config`, `lib`, and `mesg`.

2. Set up the `JREHOME` environment variable to point to the Java Runtime Environment (JRE) 1.3.1 (or higher) directory.

Set up the variable either in the environment, or in the `migrate.cmd` (Windows) or `migrate.sh` (UNIX) files.

To set up `JREHOME` on UNIX operating systems, do the following:

- For C-Shell, enter the following:
`setenv JREHOME directory_containing_JDK`
- For Korn-Shell, enter the following:
`set JREHOME=/directory_containing_JDK`
`export JREHOME`

To set up `JREHOME` on Windows NT operating systems, use a MS-DOS prompt to enter the following command:

```
set JREHOME=C:\directory_containing_JDK
```

Once the Migration Tool is installed, you must choose and set up the appropriate plug-in for your source e-mail system.

Task 1: Starting the Migration Tool

To start the Migration Tool on UNIX operating systems, run the `migrate.sh` script, located in the Migration Tool `bin` directory, by entering the following commands:

```
cd bin
./migrate.sh
```

To start the Migration Tool on Windows NT operating systems, double-click the `migrate.cmd` file, located in the Migration Tool `bin` directory, or enter the following commands:


```
C:\> cd bin
C:\> .\migrate.cmd
```

Note: If you are migrating from a Lotus Notes source system, edit the `migrate.cmd` file to include the directory in which Lotus Notes is installed in the path, or set the path using a Windows DOS prompt, as follows:

```
set PATH=directory_where_Lotus_Notes_is_installed;%PATH%
```

The Migration Repository Login screen displays, shown in [Figure 3–1](#).

Multiple instances of the Migration Tool can be started if a situation warrants the use of multiple instances, as is the case in the following situations:

- You can use multiple instances of the Migration Tool to migrate more users concurrently to a single mailstore
- You can use multiple instances of the Migration Tool to connect to many mailstores in a multi-mailstore setup

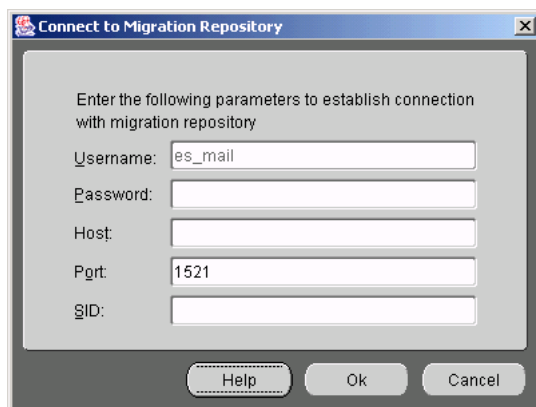
Notes:

- Multiple instances of the Migration Tool running against the same repository must be run from different systems.
 - When more than one Migration Tool instance runs against a single repository, each instance picks up users independently.
-

Task 2: Logging In to the Migration Repository

The Migration Tool creates a repository under the `es_mail` user schema on the Oracle Email database. If a repository already exists, the Migration Tool reuses it.

Figure 3–1 Migration Repository Screen



1. Specify the following information to log in to the migration repository:

Note: The **Username** field cannot be edited.

- **Password:** The default password for the `es_mail` user is `es`.
- **Host:** Enter the host name of the system on which Oracle Collaboration Suite is installed.

Note: If you enter a host name that is not exactly the same as the `X.121HostName` attribute of the target mail store, the Migration Setup Wizard fails at the Mail Services screen and you will have to exit the Migration Tool and log in again.

- **Port:** The default port number on which the Oracle Net Services listener is running is 1521. Enter a different port number, if required.
 - **SID:** Enter the SID where Oracle Collaboration Suite is installed.
2. Click **OK**. If this is the first time you are connecting to the migration repository, the Migration Tool prompts you to create a new instance.
 3. Click **OK** to display the Migration Setup Wizard Welcome screen.

Task 3: Setting Up a Migration Session

The Migration Setup Wizard collects details about the source and target domains; information for setting specific migration options; and notification of successful migration.

The following Migration Setup Wizard steps are described in this section:

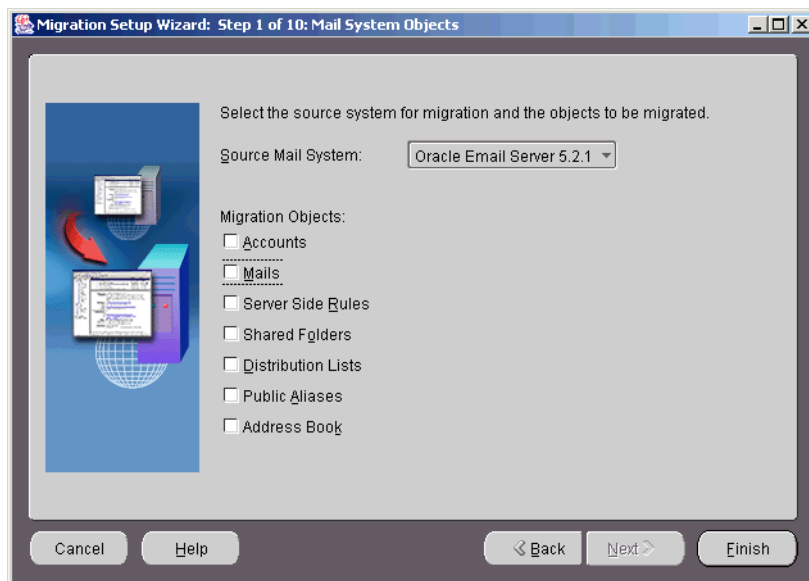
Note: All of the following steps are not required. The number of required steps is determined by choices made in "[Step 1: Specifying Mail System Objects](#)".

- [Step 1: Specifying Mail System Objects](#)
- [Step 2: Configuring Source Plug-ins](#)
- [Step 3: Specifying Account Migration Options](#)
- [Step 4: Specifying Mail Migration Options](#)
- [Step 5: Specifying Migration Notifications](#)
- [Step 6: Specifying Source LDAP Server Parameters](#)
- [Step 7: Specifying Oracle Internet Directory Server Parameters](#)
- [Step 8: Specifying LDAP Schema Mapping](#)
- [Step 9: Specifying Mail Services](#)
- [Step 10: Specifying New Account User Names](#)
- [Modifying Migration Parameters](#)

Click **Next** to display the Mail System Objects screen, shown in [Figure 3–2](#).

Step 1: Specifying Mail System Objects

Figure 3–2 Mail System Objects Screen



Specify the following information in the Mail System Objects screen:

- Select the source e-mail system from the **Source Mail System** drop-down list

See Also: [Table 2–1, "Source E-mail System and Migration Tasks Supported"](#) on page 2-11 for a list of source e-mail system choices

- Select each of the objects you want to migrate. Do not select an object if:
 - It does not exist on the source e-mail server
 - You do not want to migrate the object

After you finish entering the information, click **Next** to display the Source System Information screen specific to the selection you made from the **Source Mail System** drop-down list.

Step 2: Configuring Source Plug-ins

This section contains information for configuring the various source e-mail system plug-ins.

See Also:

- ["Requirements Before Migration"](#) on page 2-2 for source system prerequisites
- [Table 2–1, "Source E-mail System and Migration Tasks Supported"](#) on page 2-11 for a list of migration tasks supported by each plug-in

This section contains the following topics:

- [Configuring the Oracle eMail Server Plug-in](#)
- [Configuring the Microsoft Exchange Plug-in](#)
- [Configuring the Lotus Notes Plug-in](#)
- [Configuring the Novell GroupWise Plug-in](#)
- [Configuring the Samsung Contact Plug-in](#)
- [Advanced Configuration](#)

Configuring the Oracle eMail Server Plug-in

Enter the Oracle eMail Server system information in the Source System Information screen, shown in [Figure 3–3](#).

Figure 3–3 Source System Information Screen for Oracle eMail Server 5.2.x

Migration Setup Wizard: Step 2 of 10: Source System Information

Enter the configuration for Oracle 5.2 Source System

DCN Information

Domain Name:

Host:

Port: SID:

Password:

Node Information

Node Name:

Host:

Port: SID:

Password:

Cancel Help < Back Next > Finish

Specify the following in the **DCN Information** section of the Source System Information screen:

- **Domain Name:** Enter the domain for the domain configuration node (DCN) of the Oracle eMail Server
- **Host:** Enter the host name of the Oracle eMail Server DCN
- **Port:** Enter the port of the Oracle eMail Server DCN
- **SID:** Enter the SID of the Oracle eMail Server DCN
- **Password:** Enter the OO account password for the DCN

Specify the following in the **Node Information** section of the Source System Information screen:

- **Node Name:** Enter the name of the node on which Oracle eMail Server is running
- **Host:** Enter the name of the node host
- **Port:** Enter the port number on which the node listens
- **SID:** Enter the SID of the node

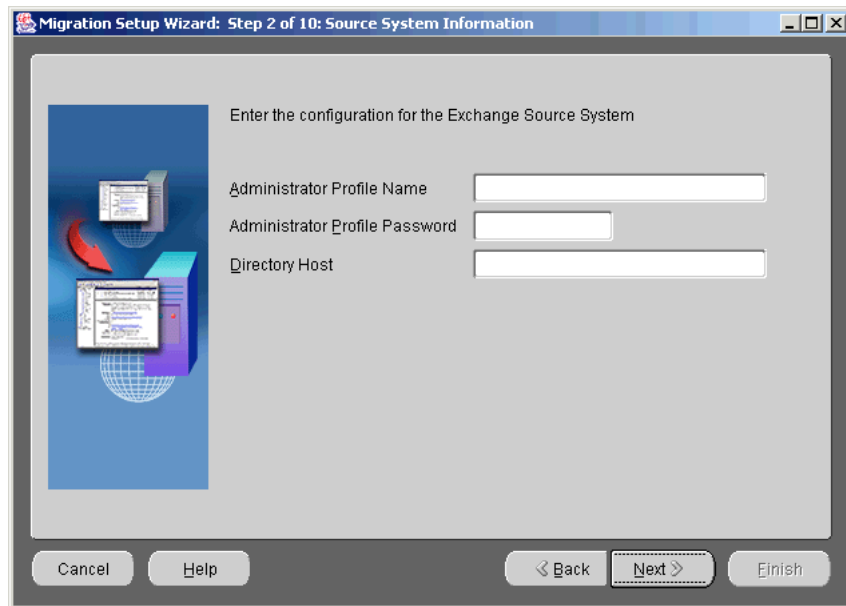
- **Password:** Enter the password for the node

Click **Next** to display the Account Migration Options screen, shown in [Figure 3-8](#).

Configuring the Microsoft Exchange Plug-in

Enter the Microsoft Exchange system information in the Source System Information screen, shown in [Figure 3-4](#).

Figure 3-4 Source System Information Screen for Microsoft Exchange

The screenshot shows a window titled "Migration Setup Wizard: Step 2 of 10: Source System Information". On the left is a graphic with a globe and a red arrow pointing to a computer screen. The main area contains the text "Enter the configuration for the Exchange Source System" and three input fields: "Administrator Profile Name", "Administrator Profile Password", and "Directory Host". At the bottom are buttons for "Cancel", "Help", "< Back", "Next >", and "Finish".

Migration Setup Wizard: Step 2 of 10: Source System Information

Enter the configuration for the Exchange Source System

Administrator Profile Name

Administrator Profile Password

Directory Host

Cancel Help < Back Next > Finish

- **Administrator Profile Name:** Enter the name of the administrator profile you created
- **Administrator Profile Password:** Enter the password of the administrator profile you created

See Also: ["Creating an Administrator Profile"](#) on page 2-3

- **Directory Host:** Enter the host name of the machine on which the Microsoft Exchange directory is running

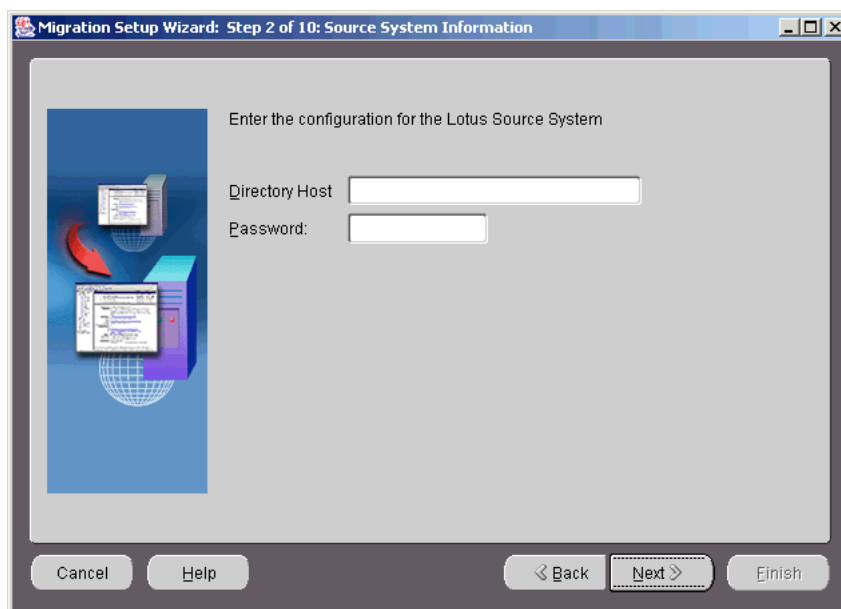
See Also: ["Microsoft Exchange"](#) on page 3-18 for configuration instructions using the command line

Click **Next** to display the Account Migration Options screen, shown in [Figure 3-8](#).

Configuring the Lotus Notes Plug-in

Enter the Lotus Notes system information in the Source System Information screen, shown in [Figure 3-5](#)

Figure 3-5 Source System Information Screen for Lotus Notes



- **Directory Host:** Enter the host name of the machine on which the Lotus Notes directory is running
- **Password:** Enter the password of the Lotus Notes administrator's key file (*user.id*)

To further configure the Lotus Notes plug-in, do the following:

1. Move `nesmtd.dll` from the `ORACLE_HOME/oes/migration/bin` directory into the directory where Lotus Notes is installed.

Note: `nesmtld.dll` must be available only in the Lotus Notes directory and must not be present in any other directory on the machine where the plug-in is run.

2. The key file (*user.id*) of the administrator (who also has permission to access and read all user's mail files) must be available in the Data directory of the Lotus Notes installation.
3. The `KeyFileName` entry in the `notes.ini` file (located in the directory where Lotus Notes is installed) must contain the file name of the administrator's key file.
4. Edit the `notes.ini` file in the directory where Lotus Notes is installed and add the following line to the end of the file:

`EXTMGR_ADDINS=ESMTLD`

See Also: ["Lotus Notes"](#) on page 3-18 for configuration instructions using the command line

Click **Next** to display the Account Migration Options screen, shown in [Figure 3-8](#).

Configuring the Novell GroupWise Plug-in

Enter the Novell GroupWise system information in the Source System Information screen, shown in [Figure 3-6](#).

Figure 3–6 Source System Information Screen for Novell GroupWise

Migration Setup Wizard: Step 2 of 10: Source System Information

Enter the configuration for the Novell Source System

Administrator Profile Name

Port

Administrator Profile Password

EDirectory Information

Directory Host

Administrator Name

Administrator Password

Tree Context

Tree Name

UNC Path

Cancel Help < Back Next > Finish

- **Administrator Profile Name:** Enter the name of the administrator profile
- **Port:** Enter the TCP/IP port of the GroupWise installation
- **Administrator Profile Password:** Enter the password of the administrator profile
- **Directory Host:** Enter the name of the host on which the GroupWise server is running
- **Administrator Name:** Enter the name of the Novell eDirectory administrator
- **Administrator Password:** Enter the password of the Novell eDirectory administrator
- **Tree Context:** Enter the GroupWise eDirectory tree context
- **Tree Name:** Name of the Novell eDirectory tree
- **UNC Path:** Path to the shared location of `wpdomain.db` on the GroupWise server

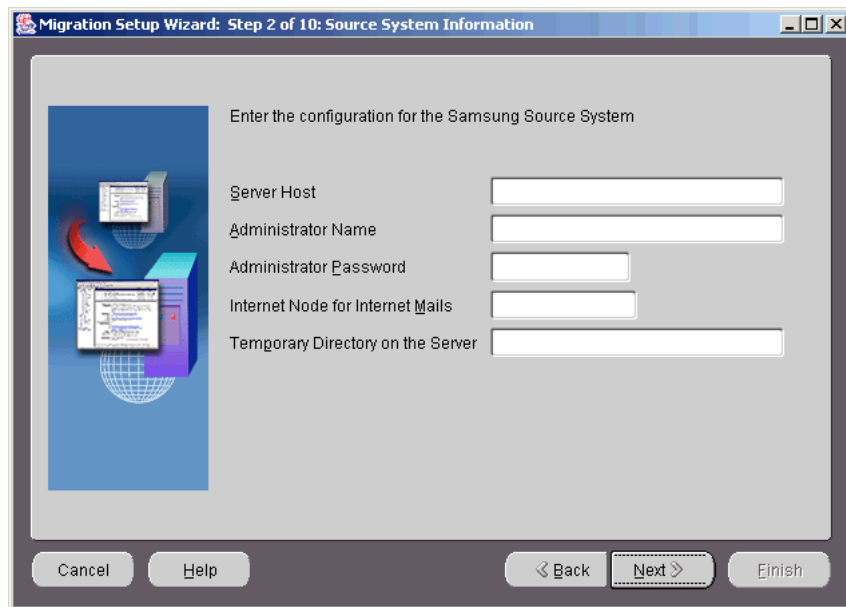
See Also: ["Novell GroupWise"](#) on page 3-18 for configuration instructions using the command line

Click **Next** to display the Account Migration Options screen, shown in [Figure 3-8](#).

Configuring the Samsung Contact Plug-in

Enter the Samsung Contact system information in Source System Information screen, shown in [Figure 3-7](#).

Figure 3-7 Source System Information Screen for Samsung Contact



Migration Setup Wizard: Step 2 of 10: Source System Information

Enter the configuration for the Samsung Source System

Server Host

Administrator Name

Administrator Password

Internet Node for Internet Mails

Temporary Directory on the Server

Cancel Help < Back Next > Finish

- **Server Host:** Enter the host name of the machine on which the Samsung Contact server resides
- **Administrator Name:** Enter the name of the administrator of the Samsung Contact server
- **Administrator Password:** Enter the password of the administrator of the Samsung Contact server
- **Internet Node for Internet Mails:** Enter the name of the node configured for the Internet Mail Gateway
- **Temporary Directory on the Server:** Enter the path to a temporary directory on the Samsung Contact server with read and write privileges

See Also: ["Samsung Contact"](#) on page 3-19 for configuration instructions using the command line

Click **Next** to display the Account Migration Options screen, shown in [Figure 3–8](#).

Advanced Configuration

This section describes further configuring the Migration Tool to improve performance, in addition to information for anyone who wants to run a plug-in from the command line.

Note: Advanced configuration should be done by advanced users, only. Under normal circumstances the `esmigration.config` file does not need editing.

This section contains the following topics:

- [Advanced Migration Tool Configuration](#)
- [Configuring Plug-ins Using the Command Line](#)

Advanced Migration Tool Configuration By editing parameters located in the `esmigration.config` file in the `ORACLE_HOME/oes/migration/config` directory, you can do the following:

- Specify the minimum and maximum number of connections in a pool created by each instance of the Migration Tool
- Specify a particular instance of the Migration Tool by name
- Specify the source IMAP server port (if different from 143)
- Specify the number of concurrent users to migrate

Following are instructions for configuring Migration Tool parameters:

- Every instance of the Migration Tool creates a pool of connections to the database. You can specify the minimum and maximum numbers of connections by editing the following parameters:

```
oracle.mail.migration.util.dbcache.min=1
oracle.mail.migration.util.dbcache.max=2
```

The values shown are default values.

Notes:

- Oracle Corporation recommends setting the maximum value to N, where N is the number of users migrating concurrently.
 - If extra connections are needed after the maximum limit is reached, the Migration Tool still opens connections to the database. The extra connections immediately close when they are no longer required.
-

- By default, the Migration Tool makes IMAP connections through port 143. If either the source or target IMAP server is set to a port other than 143, you can change it by editing the following parameters:

```
mail.imap.port.source=port_number  
mail.imap.port.target=port_number
```

- You can specify the number of users migrating concurrently by editing the following line:

```
oracle.mail.migration.migrate.num_of_threads=number_of_users
```

See Also: ["Reconfiguring Heap Size"](#) on page 2-12 to ensure that you have a large enough heap to accommodate the number of users you specify

Once the parameters are configured, you can start the Migration Tool by entering the following command:

```
migrate.sh (on UNIX)
```

or

```
C:\migration\bin\> migrate (on Windows NT)
```

The Migration Repository screen displays, shown in [Figure 3-1](#).

Configuring Plug-ins Using the Command Line This section contains command line instructions for configuring the following plug-ins:

- [Microsoft Exchange](#)
- [Lotus Notes](#)
- [Novell GroupWise](#)

- **Samsung Contact**

Microsoft Exchange

Edit the following parameters in the `esmigration.config` file:

```
oracle.mail.migration.plugin.msx.profile_admin=name_of_profile_with_
adminstrator_privileges
```

```
oracle.mail.migration.plugin.msx.profile_password=password_of_profile_with_
adminstrator_privileges
```

```
oracle.mail.migration.plugin.msx.directory_host=name_of_host_where_Microsoft_
Exchange_Directory_is_running
```

Lotus Notes

Edit the following parameters in the `esmigration.config` file:

```
oracle.mail.migration.plugin.lotus.directory_host=host_name_where_Lotus_Domino_
directory_server_is_running
```

```
oracle.mail.migration.plugin.lotus.userid_password=password_of_administrator's_
key_file
```

Novell GroupWise

Edit the following parameters in the `esmigration.config` file:

```
oracle.mail.migration.plugin.grpwise.profile_admin=GroupWise_administrator
oracle.mail.migration.plugin.grpwise.port=server_port_on_which_GroupWise_poa_is_
running
oracle.mail.migration.plugin.grpwise.profile_password=GroupWise_administratr_
password
oracle.mail.migration.plugin.grpwise.directory_host=hostname_where_GroupWise_
server_is_running
oracle.mail.migration.plugin.grpwise.nds_admin=Novell_eDirectory_admin_name
oracle.mail.migration.plugin.grpwise.nds_tree=Novell_eDirectory_tree_name
oracle.mail.migration.plugin.grpwise.nds_password=Novell_eDirectory_admin_
password
oracle.mail.migration.plugin.grpwise.nds_uncpath=shared_location_of_wpdomain.db_
on_GroupWise_server
```

Note: The uniform naming convention (UNC) path points to the location of `wpdomain.db` on the GroupWise server that holds the data of the GroupWise system. Use the directory structure where `wpdomain.db` resides. If this file resides on the same system on which the plug-in is run, there is no need to share the directory. If it resides on a remote system, the directory in which the file exists must be shared (preferably through drive mapping).

See Also: Novell GroupWise documentation for instructions regarding how to start the GroupWise server

Samsung Contact

Edit the following parameters in the `esmigration.config` file:

```
oracle.mail.migration.plugin.samsung.server_host=hostname_where_Samsung_Contact_
server_is_running
oracle.mail.migration.plugin.samsung.admin_name=name_of_user_with_admin_
privileges
```

Note: The `admin_name` must be in the OR (Originator Recipient) Name format with **Personal Name** and **Organizational Units**, as follows: John Smith/newyork,sales,collab,imteam

```
oracle.mail.migration.plugin.samsung.admin_password=password_of_admin_user
oracle.mail.migration.plugin.samsung.inet_node=name_of_mail_node_used_for_
configuring_the_Internet_Mail_Gateway_using_omconfux_command
```

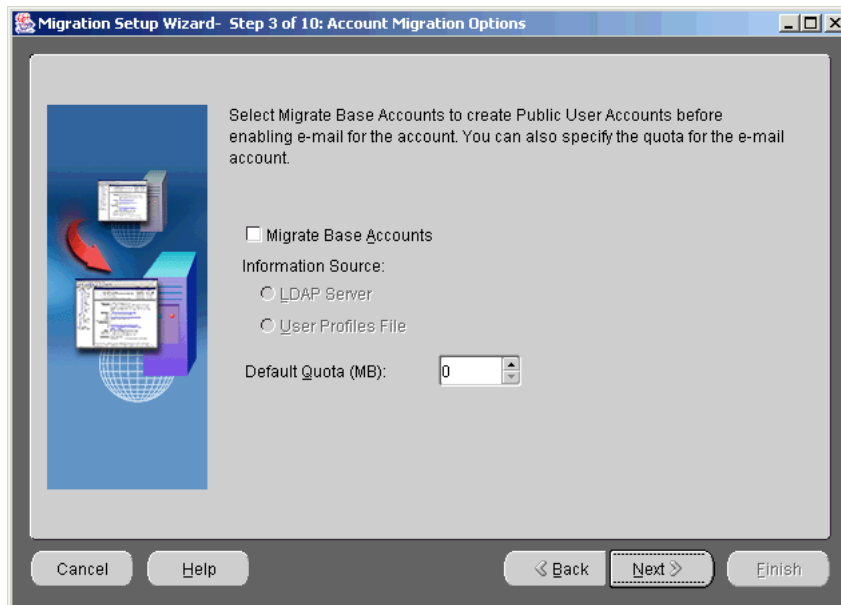
Note: For example, if you enter `omconfux -m unix,mime`, the `inet_node` entry is `unix,mime`.

```
oracle.mail.migration.plugin.samsung.temp_dir=name_of_a_directory_on_Samsung_
Contact_server_system
```

Note: The `temp` directory must have read and write privileges because the plug-in uses it to write and read temporary files.

Step 3: Specifying Account Migration Options

Figure 3–8 Account Migration Options Screen



Specify the following information in the Account Migration Options screen:

- **Migrate Base Accounts:** Select to create public user accounts before enabling e-mail for the account

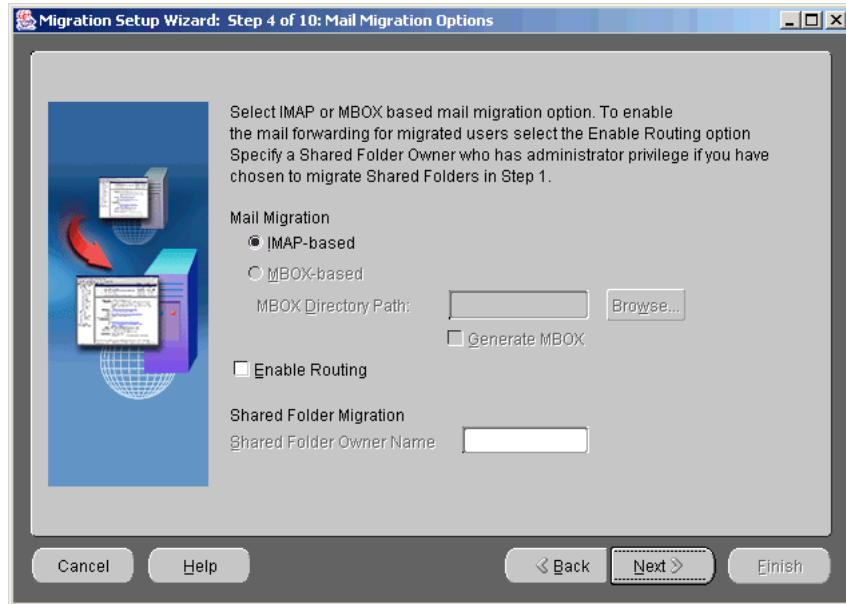
Note: If Oracle Collaboration Suite is already installed with Oracle Files configured and populated with users, deselect **Migrate Base Accounts**.

- In the **Information Source** section, choose as your information source either **LDAP Server** or **User Profiles File**
- Specify **User Quota** (in MB) by entering a number in the adjacent field, or by using the arrows to select a number

When you finish entering the information, click **Next** to display the Mail Migration Options screen, shown in [Figure 3–9](#).

Step 4: Specifying Mail Migration Options

Figure 3–9 Mail Migration Options Screen



Specify the following information in the Mail Migration Options screen:

- In the **Mail Migration** section, select whether you want to perform an **IMAP-based** or **MBOX-based** migration

Note: The Oracle eMail Server 5.2 plug-in packaged with this release of the Migration Tool does not generate MBOX files.

- **IMAP-based:** If your source e-mail system supports IMAP, the Migration Tool extracts the message information from the source e-mail system and places it directly into the target e-mail system
- **MBOX-based:** If your source e-mail system does not support IMAP, as is the case with Microsoft Exchange 5.0, choose this option. Select **Generate MBOX** and use the **Browse** button to specify the **MBOX Directory Path** to where the MBOX files will be created.

Do not select **Generate MBOX** if you are running the Migration Tool again, after an initial run. The files will already exist and need not be generated again.

If you do not select **Generate MBOX** on an initial run of the Migration Tool, you must provide the MBOX files in the MBOX directory location to the plug-in using the command-line interface.

No extraction of files will occur if **Generate MBOX** is not selected.

The **Generate MBOX** feature is useful for extracting MBOX files from a source system, moving them to an intermediate store, and loading them into the target Oracle Email server.

Notes:

- MBOX is a common file-based mailstore, an intermediate storage format, similar to UNIX mail. The Migration Tool imports the information into the target e-mail system from the intermediate store.
 - There must be sufficient space on the target disk to store all of the users' e-mail being migrated.
-

See Also: ["Viewing Log Files"](#) on page 2-21 for information on viewing the logs associated with MBOX file generation

- Select **Enable Routing** to enable routing of mail to the new user accounts
-

Notes: If your source e-mail system is Microsoft Exchange and you select **Enable Routing**, a rule is created on the Microsoft Exchange server during each user migration to forward a copy of all future messages to the target e-mail system.

- In the **Shared Folder Migration** section, enter the folder owner's target e-mail address

Note: Public folders in Microsoft Exchange have no corresponding object in Oracle Collaboration Suite. Therefore, you must assign public folders an owner. Enter a valid user ID in the **Shared Folder Owner Name** field. Typically, you would enter the mail ID of the Oracle Email administrator.

When you finish entering the information, click **Next** to display the Notification screen, shown in [Figure 3–10](#).

Step 5: Specifying Migration Notifications

Figure 3–10 Notification Screen



Notifications are e-mail messages that inform users about migration events. Select either **New Account Details**, **Migration Report**, or both.

Note: If you choose to run a two-phase migration, do not select either **New Account Details** or **Migration Report**. Click **Next** to proceed to "[Step 6: Specifying Source LDAP Server Parameters](#)".

See Also: "[Performing a Two-Phase Migration](#)" on page 3-43 for more information about two-phase migration

- When **New Account Details** is selected, after the account for the user is created on the target e-mail server, an e-mail is sent to the user's old e-mail account notifying the user of their new user name, password, and IMAP and SMTP host names.

Note: Select only **New Account Details** when you are using the Migration Tool to create accounts but not migrating any data.

- When **Migration Report** is selected, you can choose include a verification report when you send a notification to either the user's target account, the administrator, or both, notifying them that the migration is complete and that the user can begin using the new account.

Note: Select only **Migration Report** if you are not creating accounts with the Migration Tool.

If you choose to send a migration report to the administrator, enter the administrator's user ID on Oracle Collaboration Suite in the **Administrator Email Address** field.

Click **Customize Notification** to add header and footer notes to the notification.

When you finish entering the information, click **Next** to display the Source LDAP Service screen, shown in [Figure 3-11](#).

Step 6: Specifying Source LDAP Server Parameters

Figure 3–11 Source LDAP Service Screen

Migration Setup Wizard: Step 6 of 10: Source LDAP Service

Enter the source directory server host, port, Administrator DN, Administrator password and Object Class of the E-mail user.

Host:

Port:

Administrator DN: Example cn=orcladmin

Administrator Password:

Object Class of E-mail user:

Cancel Help < Back Next > Finish

Specify the following source LDAP server information in the Source LDAP Service screen:

- **Host:** Enter the host name of the machine on which the source directory server is running
- **Port:** Enter the port number on which the source directory server is listening

The default port number for LDAP is 389. Update the port number if your port number is different.

Note: If you are migrating from Microsoft Exchange, Active Directory may be running on port 389, in which case you must use the Microsoft Exchange Administrator to bind the LDAP protocol to another port, such as 390.

- **Administrator DN:** Enter the directory manager distinguished name

- **Administrator Password:** Enter the directory manager password
Leave the **Administrator DN** and the **Administrator Password** fields empty if the source LDAP server supports anonymous login.
- **Object Class of E-mail User:** Enter the object class that identifies the schema of an e-mail user on the source LDAP server

See Also: *Oracle Email Administrator's Guide* for more information about the e-mail user schema

When you finish entering the information, click **Next** to display the Target LDAP Service screen, shown in [Figure 3-12](#).

Step 7: Specifying Oracle Internet Directory Server Parameters

Figure 3-12 Target LDAP Service Screen

Migration Setup Wizard: Step 7 of 10: Target LDAP Service

Enter the Oracle Directory server host, port, Administrator DN, Administrator Password.

Host:

Port:

Administrator DN:
Example: cn=orcladmin

Administrator Password:

Cancel Help < Back Next > Finish

Specify the following target Oracle Internet Directory information in the Target LDAP Service screen:

- **Host:** Enter the host name of the machine on which the Oracle Internet Directory server is running
- **Port:** Enter the port number on which the Oracle Internet Directory server is listening

The default port number for LDAP is 389. Update the port number if your port number is different.

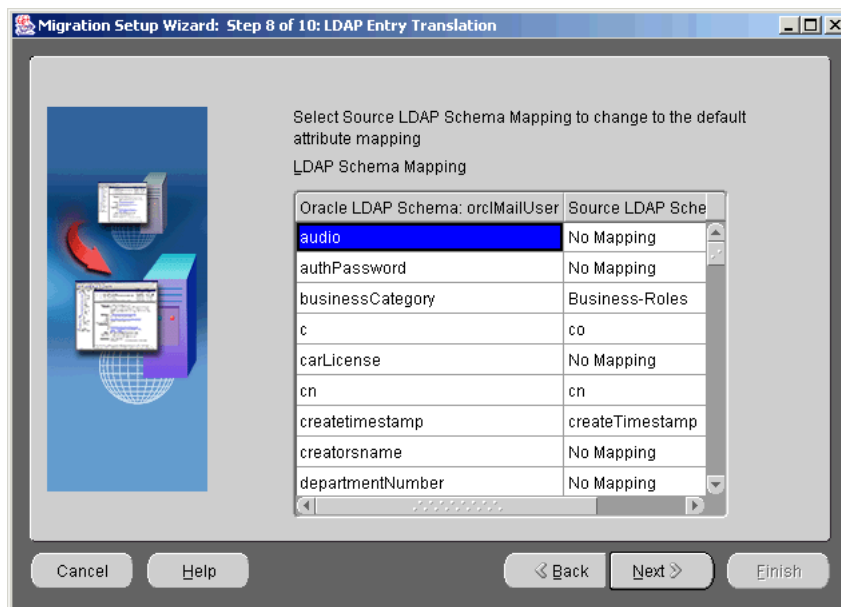
- **Administrator DN:** Enter the directory manager distinguished name
- **Administrator Password:** Enter the directory manager password

When you finish entering the information, click **Next** to display the LDAP Schema Mapping screen shown in [Figure 3–13](#).

Note: If you did not select **Accounts** in "[Step 1: Specifying Mail System Objects](#)", or you selected **Accounts** but did not select **Migrate Base Accounts** in "[Step 3: Specifying Account Migration Options](#)", the Username Generation screen, shown in [Figure 3–15](#), displays after you click **Next**. The Username Generation screen also displays if you selected **Migrate Base Accounts** and **User Profiles File** in "[Step 3: Specifying Account Migration Options](#)".

Step 8: Specifying LDAP Schema Mapping

Figure 3–13 LDAP Schema Mapping Screen



On Oracle Email, an e-mail account is described by the `orclperson` object class. The object class attributes `cn` (common name) and `sn` (last name) must map to source directory attributes.

Mandatory Attributes: Click the source attribute on the right to display a drop-down list of mapping choices and select the mapping that you want to update the source attribute.

Non-Mandatory Attributes: Attributes that are not mandatory on the target Oracle Internet Directory have the option **No Mapping** displayed in the right column. Click the attribute to display a drop-down list of attribute choices to which to map if you want to map a non-mandatory attribute.

Note: You need only map these attributes once, because the Migration Tool saves the values for the subsequent batches.

When you finish entering the information, click **Next** to display the Mail Services screen, shown in [Figure 3–14](#).

Step 9: Specifying Mail Services

Figure 3–14 Mail Services Screen

Migration Setup Wizard: Step 9 of 10: Mail Services

Select the mailstore DN and enter the Source and Target Mail System information.

Mail Store: IASDB.INSN152BC.IDC.ORACLE.COM

Mail Systems

Source Domain	Target Domain	Source IMAP Host

Cancel Help < Back Next > Finish

Specify the following source and target mail system information in the Mail Services screen:

- Choose the distinguished name (DN) of the target mail store from the **Mail Store** drop-down list,
- In the **Mail Systems** section, enter the following:

Note: Depending on your selections in the previous steps, the following text boxes are enabled on an as-needed basis.

- **Source Domain:** Enter the source e-mail domain name

- **Target Domain:** Enter the target e-mail domain name to which the source domain maps

The data that belongs to a source domain is created on the target domain to which this source domain is mapped. For example, all objects belonging to both `us.oracle.com` and `uk.oracle.com` are created under `oracle.com`.

- **Source IMAP Host:** Enter the source IMAP host name (if you selected the MBOX based migration option in the previous step, this field does not appear)
- **Target IMAP Host:** Enter the target IMAP host name
- **Source LDAP DN:** Enter the LDAP DN for users on the source domain. If you have more than one domain, enter the LDAP DNs for all the domains. The Migration Tool looks for source account entries under the DN of the LDAP. Each domain has a separate DN.

See Also: Your LDAP server documentation for information about DN representation

- **Target LDAP DN:** Enter the LDAP DN as the DN of the Base Subscriber tree for Oracle Collaboration Suite users in Oracle Internet Directory.

For example, if the DNS domain of your server is `us.oracle.com`, the typical format is `cn=Users,dc=us,dc=oracle,dc=com`. This domain must correspond exactly to the configuration of your Oracle Collaboration Suite installation.

The Migration Tool creates base account entries under the DN of the LDAP entry. Each domain has a separate DN.

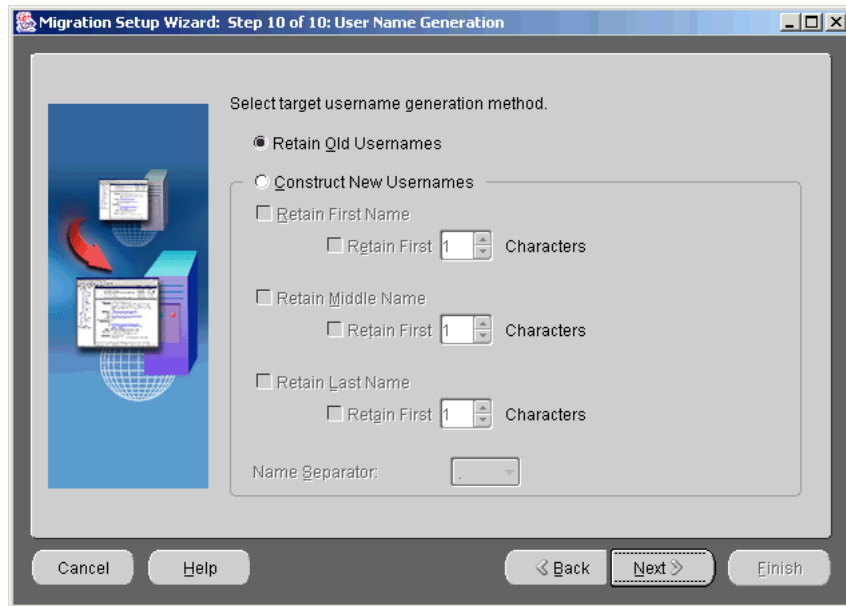
- **Target SMTP Host:** Enter the SMTP host of the target domain that listens for e-mail

Note: The **Target SMTP Host** field will only be active when you choose to send out migration notifications or have the Migration Tool create routing rules.

When you finish entering the information, click **Next** to display the User Name Generation screen, shown in [Figure 3–15](#).

Step 10: Specifying New Account User Names

Figure 3–15 User Name Generation Screen



To generate new account user names, select one of the following:

- **Retain Old Usernames:** Specifies that the target user names remain the same as the source user names
- **Construct New Usernames:** Specifies that the Migration Tool generates the target user names

If you choose to have the Migration Tool construct new user names, you must also supply the rules for user name generation in the **Construct New Usernames** section.

When supplying rules for new user name construction, you can choose to retain the first, middle, or last names, or any combination of the three. Select the appropriate box to retain any of the three names.

You can also retain only part of a name by choosing the number of characters you want to retain. Specify the number of characters you want to use in the **Characters** field adjacent to each name.

You must also choose a separator character. To select a separator character, click the **Name Separator** drop-down list.

Notes:

- If a name is disabled, it was not mapped in the LDAP Schema Mapping screen.
 - The values for first name, middle name, and last name are picked up from the source LDAP attributes that map to the given name, middle name, and surname `orclperson` attributes. You must provide this mapping in the LDAP Attribute Mapping screen.
 - Target user names, if specified in the user list, are used in all cases.
-
-

When you finish entering the information, click **Next**. The Summary screen displays. Click **Finish** to quit the Migration Setup Wizard and display the Oracle Email Migration Tool screen.

Resolving Account Name Conflicts

If the Migration Tool detects any duplicate target user names (also called name conflicts) when creating accounts in the target Oracle Internet Directory, it logs an error and does not create the duplicate account.

Duplicate target user name errors (name conflict errors) can only be avoided if user name generation rules are chosen so that unique target user names are generated.

To resolve name conflicts, perform the following steps:

1. Manually create the user with a unique name in Oracle Email.
2. Choose **Edit > User Details** to edit the information for that user.
3. Update the user's status to **Migrate User Data**.

When all accounts have been successfully created, proceed to creating batches and migrating user data.

See Also:

- ["Creating Batches"](#) on page 3-40
- ["Task 10: Migrating Data"](#) on page 3-40

Task 4: Migrating Users to Oracle Email

To migrate account information from the source directory server to Oracle Email, do the following:

1. Choose **Extract > Users** from the Migration Tool menu bar to generate `users.xml`.

Note: If you selected **User Profiles File** from the Account Migration Options screen, choose **Extract > User Profiles** to generate the `user_profiles.ldif` file.

See Also:

- ["Overview of the Oracle Email Migration Tool Screen"](#) on page 2-14 for information about the location of the `users.xml` file
 - [Appendix A, "Plug-In Generated File Formats"](#) for more information about user profile file formats
2. View the `text.log` file located in the `ORACLE_HOME/oes/migration/log/migration/process_number` directory. Any errors that occur during account migration are logged in the `text.log` file as administrator error messages.
 3. Choose **File > Load Users** from the Migration Tool menu bar to load `users.xml` into the repository.
 4. If you selected **Accounts** in ["Step 1: Specifying Mail System Objects"](#), choose **Migrate > Create Users on Oracle** from the Migration Tool menu bar to create user accounts in the target Oracle Internet Directory.
 5. View the `text.log` file located in the `ORACLE_HOME/oes/migration/log/migration/process_number` directory. Any errors that occur during account migration are logged in the `text.log` file as administrator error messages.

See Also: *Oracle Email Administrator's Guide* for descriptions of error messages

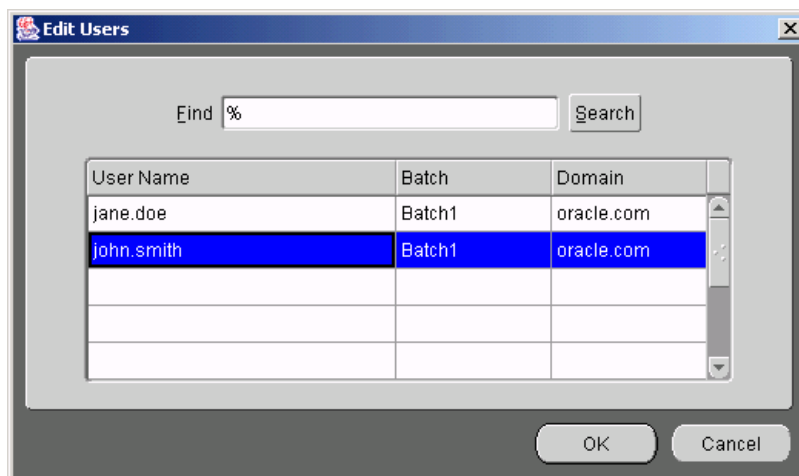
If account migration for a specific user fails, you can modify the user's details and attempt to re-migrate the batch after editing.

To modify user details, do the following:

1. Choose **Edit > User Details** from the Migration Tool menu bar. The Edit Users screen displays, shown in [Figure 3–17](#).

Note: You can also select a user from the directory tree, choose **Edit > User Details**, and proceed with modifying the user's details.

Figure 3–16 *Edit Users Screen*



2. Enter a source user name in the **Find** field and click **Search** to display all users in the repository matching the search criteria.
Use % as a wildcard to assist in your search.
3. Select the row containing the user you want to edit from the displayed list and click **OK**. The left hand pane of the Migration Tool screen expands with that user selected.
4. Click **User Details** on the Migration Tool screen to display the Modify User Details screen shown in [Figure 3–17](#).

Figure 3–17 *Modify User Details Screen*

The screenshot shows a 'Modify User Details' window with the following fields and values:

Field	Value
Domain	oracle.com
Userid	john.smith
Status	To be scheduled for data migration
Source Password	
Source IMAP Server	
Target Userid	john.smith
Target Password	*****
Target IMAP Server	
MailStoreDN	cn=marconi.regress.rdbms.dev.us.oracle.com,cn=mailstore
Target Domain	
User Quota	

5. Edit the field entries.

Note: Fields are populated according to what is stored in the migration repository during the preceding steps. Changes made on this screen are reflected back to the repository.

6. Update the migration status by choosing from the list of choices in the **Status** drop-down list.
7. Click **OK**.

Task 5: Extracting Mail System Objects from the Source System

1. If you chose to migrate shared folders, choose **Extract > Shared Folders** from the Migration Tool menu bar to generate the `shared_folders.ldif` file in the `files` directory.

2. If you chose to migrate public aliases, choose **Extract > Public Aliases** from the Migration Tool menu bar to generate the `public_aliases.ldif` file in the `files` directory.
3. If you chose to migrate distribution lists, choose **Extract > Distribution Lists** from the Migration Tool menu bar to generate the `distribution_lists.ldif` file in the `files` directory.
4. View the `text.log` file located in the `ORACLE_HOME/oes/migration/log/migration/process_number` directory. Any errors that occur during mail system object extraction are logged in the `text.log` file as administrator error messages.

Task 6: Migrating Shared Folders

Prior to migrating shared folders, ensure that the following tasks are complete:

- All user accounts have been migrated
- You have generated the shared folders file

See Also: ["Task 5: Extracting Mail System Objects from the Source System"](#) on page 3-35 to generate the shared folder file

To migrate shared folders, do the following:

1. Choose **Migrate > Migrate Shared Folders** from the Migration Tool menu bar to create the shared folders on the target e-mail server. The Shared Folder Migration Status screen displays.
2. When 100% displays, indicating the migration is complete, click **OK**.
3. View the `text.log` file located in the `ORACLE_HOME/oes/migration/log/migration/process_number` directory. Any errors that occur during shared folder migration are logged in the `text.log` file as administrator error messages.

See Also: *Oracle Email Administrator's Guide* for descriptions of error messages

To cancel migration of shared folders, click **Cancel** on the status dialog that displays when you start to migrate mail objects.

Note: If you cancel migration of shared folders, rollback does not occur and you can safely restart migration. The e-mail objects that were created before you canceled migration are not re-created when migration is recommenced. Migration continues from the point where it was canceled.

Task 7: Migrating Public Aliases

Prior to migrating public aliases, ensure that the following tasks are complete:

- All user accounts have been migrated
- You have generated the public aliases file

See Also: ["Task 5: Extracting Mail System Objects from the Source System"](#) on page 3-35 to generate the public aliases file

To migrate public aliases, do the following:

1. Choose **Migrate > Migrate Public Aliases** from the Migration Tool menu bar to create the public aliases on the target e-mail server. The Public Alias Migration Status screen displays.
2. When 100% displays, indicating the migration is complete, click **OK**.
3. View the `text.log` file located in the `ORACLE_HOME/oes/migration/log/migration/process_number` directory. Any errors that occur during public aliases migration are logged in the `text.log` file as administrator error messages.

See Also: *Oracle Email Administrator's Guide* for descriptions of error messages

To cancel migration of public aliases, click **Cancel** on the status dialog that displays when you start to migrate mail objects.

Note: If you cancel migration of public aliases, rollback does not occur and you can safely restart migration. The e-mail objects that were created before you canceled migration are not re-created when migration is recommenced. Migration continues from the point where it was canceled.

Task 8: Migrating Distribution Lists

Prior to migrating distribution lists, ensure that the following tasks are complete:

- All user accounts have been migrated
- You have generated the distribution lists file

See Also: ["Task 5: Extracting Mail System Objects from the Source System"](#) on page 3-35 to generate the distribution lists file

There are two phases to distribution list migration:

- All distribution lists are created
- The distribution lists are populated with users

The status bar displays immediately, and shows progress when distribution lists are being populated with users. For example, when the status bar shows that 50% of the distribution lists have been migrated, it means all of the distribution lists have been created and 50% of the distribution lists have been populated with users.

To migrate distribution lists, do the following:

1. Choose **Migrate > Migrate Distribution Lists** from the Migration Tool menu bar to create the distribution lists on the target e-mail server. The Distribution List Migration Status screen displays.
2. When 100% displays, indicating the migration is complete, click **OK**.
3. View the `text.log` file located in the `ORACLE_HOME/oes/migration/log/migration/process_number` directory. Any errors that occur during distribution list migration are logged in the `text.log` file as administrator error messages.

See Also: *Oracle Email Administrator's Guide* for descriptions of error messages

To cancel migration of distribution lists, click **Cancel** on the status dialog that displays when you start to migrate mail objects.

Note: If you cancel migration of distribution lists, rollback does not occur and you can safely restart migration. The e-mail objects that were created before you canceled migration will not be re-created when migration is recommenced. Migration continues from the point where it was canceled.

Task 9: Migrating WebMail Address Books

Note: WebMail Address Book migration is available only for Oracle eMail Server to Oracle Email migrations. This migration can only be run for users using the Oracle eMail Server 5.2.1 WebMail client.

The Migration Tool can migrate the private address books created by users using their Oracle eMail Server 5.2.1 WebMail client. Migration of the WebMail address book of each user involves migrating both the private aliases and private distribution lists that users have.

Prior to migrating address books, ensure that all user accounts have been migrated.

To migrate WebMail address books, do the following:

1. Choose **Migrate > Migrate Address Book** from the Migration Tool menu bar. The Address Book Migration Status screen displays.
2. When 100% displays, indicating the migration is complete, click **OK**.
3. View the `text.log` file located in the `ORACLE_HOME/oes/migration/log/migration/process_number` directory. Any errors that occur during address book migration are logged in the `text.log` file as administrator error messages.

See Also: *Oracle Email Administrator's Guide* for descriptions of error messages

To cancel migration of address books, click **Cancel** on the status dialog that displays when you start to migrate address books.

Note: If you cancel migration of address books, rollback does not occur and you can safely restart migration. The address book objects that were created before you canceled migration are not re-created when migration is recommenced. Migration continues from the point where it was canceled.

Task 10: Migrating Data

This section contains the following topics:

- [Creating Batches](#)
- [Scheduling Batches and Migrating User E-mails](#)
- [Performing a Two-Phase Migration](#)

Creating Batches

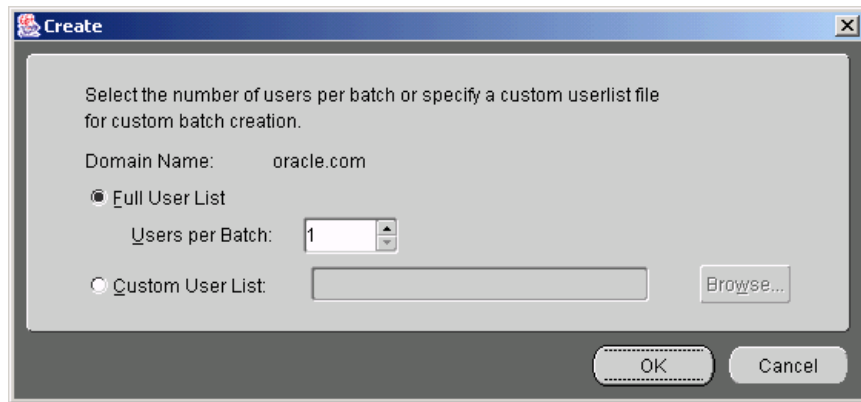
Prior to migrating data you must create and schedule batches for migration.

Using the Migration Tool, you can create a batch either by designating the number of users for each batch or by creating a custom batch.

Batch creation is done on a domain basis.

To create a batch by domain, do the following:

1. Expand the **Migration Instance** node on the directory tree on the left side of the Migration Tool screen.
2. Select the appropriate domain.
3. Choose **File > Create Batch**. The Create screen displays, as shown in [Figure 3-18](#).

Figure 3–18 Create Screen

4. Create batches using one of the following methods:

- Select **Full User List** and enter or use the arrows to select the number of **Users per Batch** in the adjacent field. For example, if you have 100 users and specify 5 users in each batch, 20 batches are created.
- Select **Custom User List** to create a custom batch.

Prepare a file containing the users formatted according to the following example:

```
<userlist>
<user sourceimapuserid="test1" targetimapuserid="Test2" />
</userlist>
```

Enter the path to the custom batch file in the adjacent field or use the **Browse** button to locate the file.

After you create the batches, you can view them by expanding the domain node on the Migration Tool screen to display all the batches in the domain.

See Also: ["Task 10: Migrating Data"](#) on page 3-40 for information about scheduling batches for migration

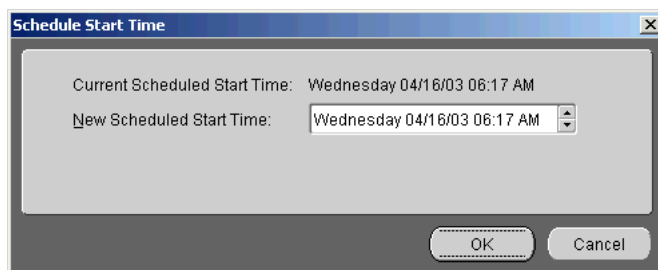
Scheduling Batches and Migrating User E-mails

To schedule batches for user e-mail migration, expand the domain node to view the batches, as shown in [Figure 2–4, "Migration Tool Screen with Batch Information Displayed"](#).

To schedule a start time for batch migration, do the following:

1. Select a batch from the directory tree in the Migration Tool screen.
2. Click **Schedule** to display the Schedule Start Time screen shown in [Figure 3–19](#).

Figure 3–19 *Schedule Start Time Screen*



3. In the **New Scheduled Start Time** field, edit the day, date, and time by selecting one element in the string and using the **Up** and **Down** arrows to scroll through and select values.

Note: You can schedule multiple batches to migrate in parallel by scheduling them to start at the same time.

4. Click **OK**.

To start data migration, choose **Migrate > Migrate User Data** from the Migration Tool menu bar.

Migration begins at the time you selected while scheduling batches. If you start migration at a time later than that which you scheduled, migration begins instantly.

To cancel migration, choose **Migrate > Cancel Migration** from the Migration Tool menu bar.

View the text .log file located in the `ORACLE_HOME/oes/migration/log/migration/process_number` directory. Any errors that occur during data migration are logged in the text .log file.

Note: If a single user in a batch fails, the batch is marked as failed. To reschedule the batch for migration, select the failed batch from the Migration Tool screen, edit the **Scheduled Start Time** field, and click **OK**. Once a batch is rescheduled, the users that failed are reverted to the pending state and the batch is picked up again for data migration when the scheduled migration time occurs. Only users that have failed to migrate are migrated. Users that have been successfully migrated are not re-migrated.

Performing a Two-Phase Migration

Because the migration of user accounts and messages involves transferring large amounts of data and is, therefore, time consuming, users must be transferred from the old system to the new in the least possible amount of time.

The Migration Tool provides a two-phase migration option to achieve these conflicting goals that transfers messages from the old system to the new Oracle Email.

This section contains the following topics:

- [Phase I: Pre-Migration](#)
- [Phase II: User Migration](#)

Phase I: Pre-Migration

All users' messages from the source system are written into the target Oracle Email system. User accounts, however, are not actually populated with messages, nor are their folders created. In this phase all the message bodies are transferred into the Oracle Email system. This is typically done in the background over several days while users continue to use their old accounts.

To start pre-migration, do the following:

1. Ensure that user accounts have been created on the target Oracle Email system.
2. Ensure that message routing has been disabled.

See Also: ["Step 3: Specifying Account Migration Options"](#) on page 3-20 for more information about message routing

3. Choose **Migrate > Pre-Migrate User Data** from the Migration Tool menu bar.

Phase II: User Migration

In the second phase, the Migration Tool takes advantage of the message sharing capability of Oracle Email to quickly populate users' folders with the messages that were transferred in the first phase.

This phase typically involves only minimal housekeeping updates to the e-mail store and folder creation, and can be done over a weekend. During the second phase, the following operations are performed:

- Any new messages that users receive between the first and second phases are transferred to the target user account
- Any messages that users delete in the interim do not appear in the target users' accounts
- Any new folders that users create in the interim are transferred to the target users' account
- Any folders that users have deleted in the interim do not appear in the target users' account

Follow the procedures for migrating data in this section to perform the second phase of the migration.

Notes:

- For best results, the second phase should be performed as quickly as possible after the first phase is complete.
 - When you perform a two-phase migration, all batches are migrated during both phases. It is not possible to selectively migrate specific batches during a two-phase migration.
-
-

Modifying Migration Parameters

Any changes you make take effect after you cancel and restart the migration.

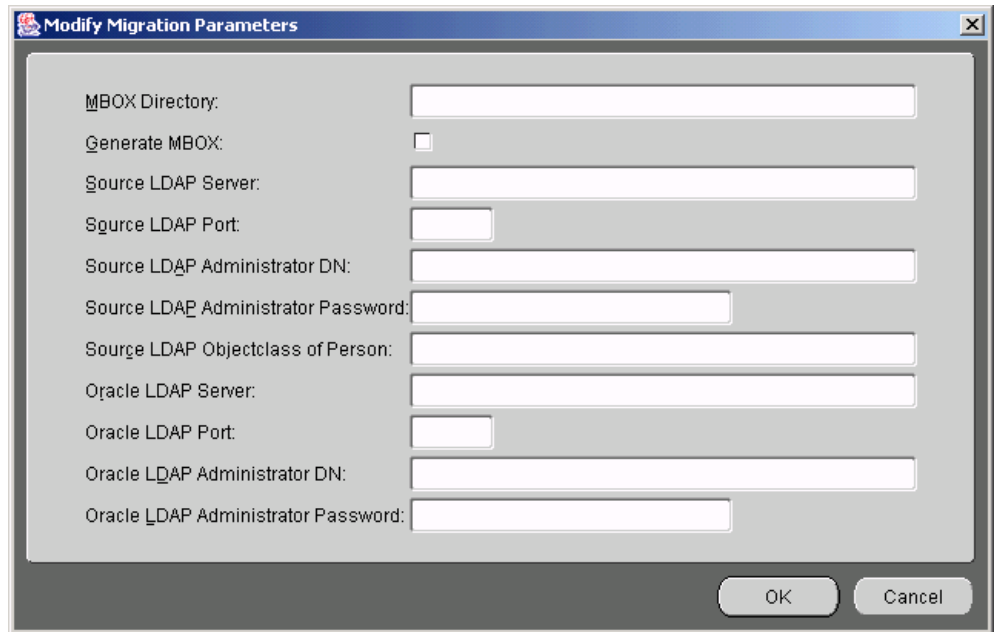
You cannot modify migration parameters during the migration.

Note: If two or more instances of the Migration Tool are running against the same repository, all instances except one must be shut down before modifications to the migration parameters can proceed.

To modify migration parameters, do the following:

1. Choose **Edit > Migration Parameters** from the Migration Tool menu bar. The Modify Migration Parameters screen displays, as shown in [Figure 3–20](#).

Figure 3–20 *Modify Migration Parameters Screen*



The screenshot shows a window titled "Modify Migration Parameters". Inside the window, there are the following fields and controls:

- MBOX Directory: [Text Input Field]
- Generate MBOX: ☐
- Source LDAP Server: [Text Input Field]
- Source LDAP Port: [Text Input Field]
- Source LDAP Administrator DN: [Text Input Field]
- Source LDAP Administrator Password: [Text Input Field]
- Source LDAP Objectclass of Person: [Text Input Field]
- Oracle LDAP Server: [Text Input Field]
- Oracle LDAP Port: [Text Input Field]
- Oracle LDAP Administrator DN: [Text Input Field]
- Oracle LDAP Administrator Password: [Text Input Field]

At the bottom right of the window are two buttons: "OK" and "Cancel".

2. Modify the parameters.

Note: Values for these parameters were originally entered in "[Step 4: Specifying Mail Migration Options](#)", "[Step 6: Specifying Source LDAP Server Parameters](#)", and "[Step 7: Specifying Oracle Internet Directory Server Parameters](#)".

3. Click **OK**.

Post-Migration Administrator Responsibilities

Upon completion of migration, the administrator must perform certain post-migration tasks.

This section contains the following topics:

- [Changing the MX Record](#)
- [Verifying Migration](#)
- [Viewing User Status](#)
- [Shutting Down Source Mail Servers](#)

Changing the MX Record

You must change the mail exchanger (MX) record in order to redirect e-mail to the new system.

Note: Routing is not implemented for Novell GroupWise and you should immediately switch to using Oracle Collaboration Suite after the MX record changes.

Verifying Migration

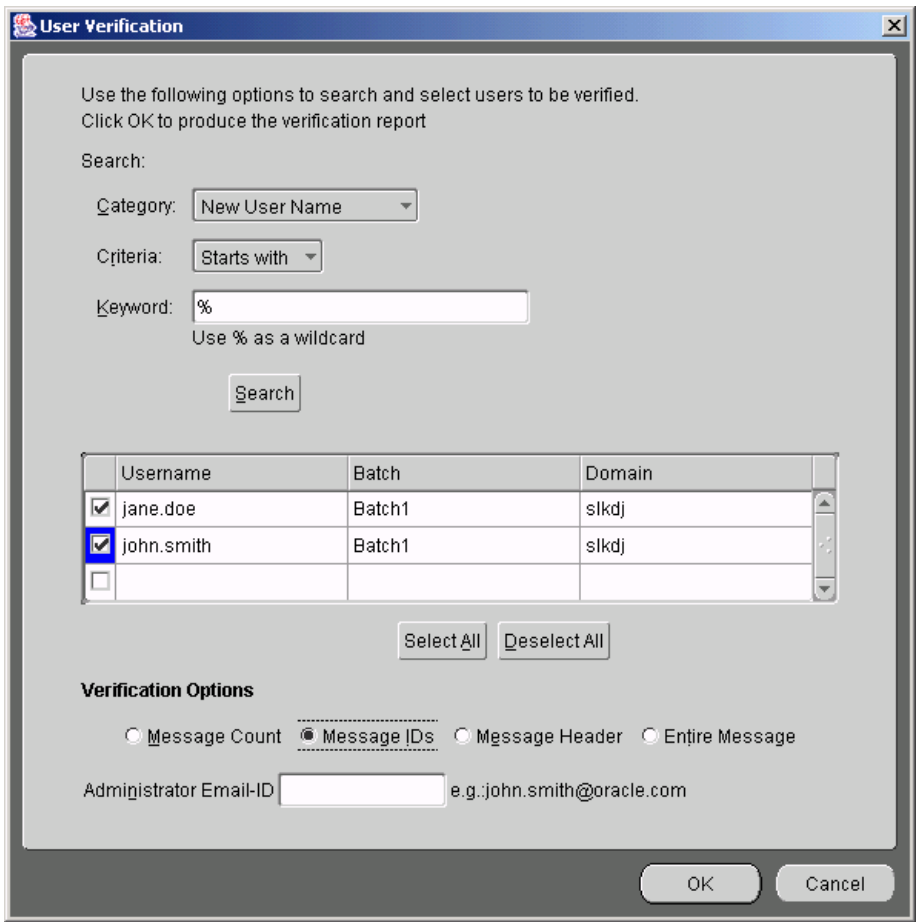
You can verify the migration of individual users' accounts and data using one of several methods of comparison. This helps the administrator to verify the validity of the overall migration, and is also helpful to support personnel when users complain of discrepancies in their accounts.

Notes:

- The verifier can only be used for users who have successfully migrated.
 - The verifier is not available for MBOX-based migration.
-
-

To access the Verification screen shown in [Figure 3–21](#), choose **Migrate > Verify New Accounts** from the Migration Tool menu bar.

Figure 3–21 Verification Screen



The 'User Verification' dialog box contains the following elements:

- Instructions:** 'Use the following options to search and select users to be verified. Click OK to produce the verification report.'
- Search Section:**
 - Category:** A dropdown menu currently set to 'New User Name'.
 - Criteria:** A dropdown menu currently set to 'Starts with'.
 - Keyword:** A text input field containing '%'. Below it, the text 'Use % as a wildcard' is displayed.
 - Search:** A button to execute the search.
- User List Table:**

	Username	Batch	Domain
☒	jane.doe	Batch1	slkdj
☒	john.smith	Batch1	slkdj
☐			
- Selection Buttons:** 'Select All' and 'Deselect All' buttons.
- Verification Options:**
 - Four radio buttons: 'Message Count', 'Message IDs' (selected), 'Message Header', and 'Entire Message'.
 - Administrator Email-ID:** A text input field with the example 'e.g.:john.smith@oracle.com'.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom right.

1. Enter the user IDs of users you want to verify in the **Username** field.
You can populate the **Username** field using the search feature. The search feature enables you to search for specific users.
 - a. Choose from the **Category** drop-down list either **New User Name**, **Target Domain Name**, or **Batch No**.
 - b. Choose from the **Criteria** drop-down list either **Starts with**, **Ends with**, or **equals**.

- c. Enter a user name, domain, or batch number in the **Keyword** field. Use % as a wildcard character for partial entries.
 - d. Click **Search**.
The results of your search display in the **Username**, **Batch**, and **Domain** fields. Select the users you want to verify or click **Select All** to select all of the users in the returned list.
2. Select from one of the following verification options:

Note: Each option verifies that all folders in an individual user's account have been created on the target e-mail system, and compares different message information between the source and target e-mail systems.

- **Message Count:** Compares the message counts in the folders to verify that they match
- **Message IDs:** Compares the SMTP message IDs to verify that they match
- **Message Header:** Compares the message headers to verify that they match
- **Entire Message:** Compares the message bodies of every message to verify that they match

Note: If you choose either the **Message Header** or **Entire Message** verification option while migration is proceeding, migration process is slowed considerably.

3. Enter the address of the recipient of the verification reports in the **Administrator Email ID** field. Any verification errors are shown in this report.
4. Click **OK**.

Viewing User Status

The Oracle Email Migration Tool enables you to view users according to their migration status. Click **Migrate > User Status** to display the View User Status screen, shown in [Figure 3–22](#).

Figure 3–22 View User Status Screen

Use the following options to search and select users to be verified.

Domain: oracle.com

Batch: Batch1

Status: Done

Show Users

Results:

User Name	Batch
jane.doe	Batch1
john.smith	Batch1

Ok

1. Select a domain from the **Domain** drop-down list.
2. Select a batch from the **Batch** list.
3. Select a particular status from the **Status** drop-down list.

See Also: ["User States During Migration"](#) on page 2-21 for an explanation of the various user states

4. Click **Show Users** to display a list of users whose status is that which you selected in the **Results** section.
5. Click **Ok** to exit the screen.

Shutting Down Source Mail Servers

You can shut down the source mail server upon completion of migration only after you determine that you no longer need routing rules set up on the source e-mail system.

Note: If you have multiple Microsoft Exchange servers, you can move users from whichever machine they reside to one single machine as their data is migrated to Oracle Email.

See Also: Microsoft Exchange documentation for information about moving users from one machine to another

Plug-In Generated File Formats

This appendix provides the following sample LDIF and XML file formats:

- [User List File Format \(XML\)](#)
- [Distribution List File Format \(LDIF\)](#)
- [Public Aliases File Format \(LDIF\)](#)
- [Shared Folder File Format \(LDIF\)](#)
- [User Profile File Format \(LDIF\)](#)
- [Rules File Format \(XML\)](#)

User List File Format (XML)

Following is the syntax of a user list file in XML format (`users.xml`):

```
?xml version="1.0" encoding="UTF-8" ?>
<!ELEMENT userlist (user*)>
<!ELEMENT user EMPTY>
<!-- user sourceimapuserid CDATA #REQUIRED sourceimappasswd CDATA #IMPLIED
      sourceimapserver CDATA #IMPLIED targetimapuserid CDATA #IMPLIED
      targetimappasswd CDATA #IMPLIED targetimapserver CDATA #IMPLIED
      targetdomain CDATA #IMPLIED mailstore CDATA #IMPLIED
      quota CDATA #IMPLIED -->
```

For IMAP-based migration, the `sourceimapuserid` and `sourceimappasswd` attributes are mandatory. For MBOX-based migration, only the `sourceimapuserid` attribute is mandatory.

Following is a sample user list file for two users:

```
<userlist>
<user
  sourceimapuserid="TEST1"
  sourceimappasswd="WELCOME"
/>
<user
  sourceimapuserid="TEST2"
  sourceimappasswd="WELCOME"
/>
</userlist>
```

The values for all other attributes are provided using the Migration Setup Wizard. For any user, if the administrator does not want to use the default values, specific values can be provided using the specified format.

Distribution List File Format (LDIF)

The distribution list file, `distribution_lists.ldif`, that the plug-in generates is in the following format:

```
dn: cn= dl1
cn:dl1
objectclass: top
objectclass: groupofuniquenames
objectclass: orclMailGroup
orclmgprfc822mailmember: user1@acme.com
```



```
orclmgprfc822mailmember: user2@acme.com
mail:dl1@acme.com
uniquemember: dl200@acme.com
uniquemember: dl300@acme.com
uniquemember: dl400@acme.com

dn: cn= dl2
cn:dl2
objectclass: top
objectclass: groupofuniquenames
objectclass: orclMailGroup
orclmgprfc822mailmember: user4@acme.com
orclmgprfc822mailmember: user3@acme.com
mail:dl2@acme.com
uniquemember: xd1500@acme.com
uniquemember: xd1400@acme.com
```

The mail attribute contains the fully-qualified name of the distribution list. The Migration Tool expects the name in the format *dlname@sourcedomain*.

The *orclmgprfc822mailmember* attribute is the fully-qualified e-mail address of a user who is a member of the distribution list. The Migration Tool expects the name in the format *source_imap_userid@sourcedomain*.

The *uniquemember* attribute contains the sub distribution lists of this distribution list. The Migration Tool expects the name in the format *dlname@sourcedomain*.

Public Aliases File Format (LDIF)

The public alias information file, *public_aliases.ldif*, that the plug-in generates is in the following format:

```
dn:cn=alias1
name:alias1@acme.com
cn:alias1
orclmailemail:user1@acme.com
objectclass:top
objectclass:orclMailAlias

dn:cn=alias2
name:alias2@acme.com
cn:alias3@acme.com
orclmailemail:user2@acme.com
objectclass:top
objectclass:orclMailAlias
```

```
dn:cn=alias3
name:alias3@acme.com
cn:alias3
orclmailemail:user3@acme.com
objectclass:top
objectclass:orclMailAlias
```

The `name` attribute contains the fully-qualified name of the alias. The Migration Tool expects the name in the format *aliasname@sourcedomain*.

The `orclmailemail` attribute is the fully-qualified e-mail address of the user for whom this alias is created. The Migration Tool expects the name in the format *source_imap_userid@sourcedomain*.

Shared Folder File Format (LDIF)

The shared folder file, `shared_folders.ldif`, generated by the plug-in contains information about shared folders that are being migrated, and is in the following format:

```
dn: cn=/pubfol
objectclass: top
objectclass: orclMailFolder
orclmailaci: user2@acme.com l r w
orclmailaci: user4@acme.com l r
owner: user1@acme.com
cn:/pubfol
orclIsSharedFolder: false
```

```
dn: cn=/shfol
objectclass: top
objectclass: orclMailFolder
orclmailaci: user2@acme.com l r w
orclmailaci: user4@acme.com l r
owner: user1@acme.com
cn:/shfol
orclIsSharedFolder: true
```

The `cn` attribute contains the name of the shared folder. The Migration Tool expects the name in the format */foldername*.

The `orclmailaci` attribute contains ACI information. The Migration Tool expects the user name of the ACI in the format *source_imap_userid@sourcedomain*.

The `orclIsSharedFolder` attribute has a false value if the folder is a public folder.

The `orclMailStore` attribute contains the distinguished name of the target mail store on which the shared folder is to be created.

The `owner` attribute contains the fully-qualified mail address of the owner of the shared folder. The Migration Tool expects the name in the format *source_imap_userid@sourcedomain*.

User Profile File Format (LDIF)

If your source directory information comes from a user profile file, `user_profiles.ldif`, instead of an LDAP directory, use the following format:

```
dn: cn=user_given_name,dc=acme,dc=com
cn: user_given_name
mail: username@acme.com
title:title
telephoneNumber:telephone_number
homePhone:telephone_number
sn:surname
st:state
physicalDeliveryOfficeName:physical_delivery_address_of_office
manager:user's_manager
ou:organizational_unit
o:organization
secretary:name_of_secretary
postalAddress:postal_delivery_address
```

The only mandatory attributes are `mail` and `sn` and `mail` is expected in the format *sourceuserid@sourcedomain*.

Rules File Format (XML)

A rule consists of two parts: a set of conditions to be met, and actions to be performed when at least one of the set of conditions is met. The set of conditions is evaluated until a true condition in the set is encountered. Rules are identified by their actions. If multiple actions are to be carried out when a certain condition is true, then multiple rules must be defined sharing the same set of conditions.

A condition is a combination of simple clauses. A clause is a relational operation between a message attribute and a scalar constant value. For example, a clause can be "message size is greater than 10 Kb".

Condition evaluation is implemented as a short-circuit AND operation upon all clauses, which fails upon encountering the first failed clause.

A `rulelist` is a list of rules that apply when a message is delivered to a user's inbox. A rule begins with the tag `<rule>` and ends with the tag `</rule>`. A condition begins with the tag `<condition>`, as shown in the following example rule in XML format:

```
<account qualifiedName="user_rules" ownerType="user">
  <rulelist event="deliver">
    <rule visible="yes" active="yes" description="exchusr1">
      <condition>
        <attribute tag="rfc822from"/>
        <operator op="contains"/>
        <operand> EXCHUSR1 </operand>
      </condition>
      <action>
        <command tag="moveto"/>
        <parameter> pvtflldr1 </parameter>
      </action>
    </rule>
  </rulelist>
</account>
```

Following is the XML format for specifying a server-side rule:

```
<?xml version="1.0" encoding="UTF-8" ?>
<!-- an account contains multiple rulelists -->
<!ELEMENT account (rulelist*)>
<!-- ATTLIST account name NMTOKEN #REQUIRED
      ownerType (user|system|domain) "user" -->
<!-- a rulelist is associated with an event and a list of rules -->
<!ELEMENT rulelist (rule+)>
<!-- ATTLIST rulelist event (relay|reception|deliver|flagchange|move|copy|
      queuing|expunge|expire) #REQUIRED -->
<!-- a rule consists of an optional condition and a list of actions.
      a rule can be visible, hidden, activated or disabled -->
<!ELEMENT rule (condition?, action+)>
<!-- ATTLIST rule visible (yes|no) "yes"
      active (yes|no) "yes"
      description CDATA #IMPLIED -->
<!-- conditions are either attribute comparisons (leaf conditions),
      sub conditions (parenthesis) or external procedure calls -->
<!ELEMENT condition ((attribute, operator, operand*)
|condition+|procCall|inBody)>
```

```

<!-- ATTLIST condition negation (yes|no) "no">
<!-- ATTLIST condition junction (and|or) "and">
<!-- attributes are message properties, param is for extended header and flag-->
<!-- ELEMENT attribute EMPTY>
<!-- ATTLIST attribute name (rfc822from|rfc822to|rfc822cc|rfc822date|
                                rfc822subject|rfc822replyto|sendhost|sender|
                                recipients|message_id|receiveddate|
                                contenttype|charset|xpriority|messagesize|
                                xheader|folder|flag|overquota|rulestatus)
                                #REQUIRED
                                param CDATA #IMPLIED>
<!-- operators -->
<!-- ELEMENT operator EMPTY>
<!-- ATTLIST operator op (equal|greaterthan|lessthan|lessequal|
                                greaterequal|in|stringequal|isnull|
                                startswith|endswith|contains|between|istrue)
                                #REQUIRED
                                caseSensitive (yes|no) "no">
<!-- operands custom data -->
<!-- ELEMENT operand (#PCDATA)>
<!-- procCall is external condition call -->
<!-- ELEMENT procCall (#PCDATA)>
<!-- inBody is content related match condition -->
<!-- ELEMENT inBody (#PCDATA)>
<!-- actions may have parameters-->
<!-- ELEMENT action (command, parameter*)>
<!-- ELEMENT command EMPTY>
<!-- ATTLIST command name (pass|reject|suspend|discard|forward|
                                bcc|moveto|copyto|setprop|notify|reply|
                                replyall|break|sign|verify|decrypt|
                                encrypt|enqueue|call) #REQUIRED>
<!-- ELEMENT parameter (#PCDATA)>

```

API Architecture

This appendix contains information about the architecture of an API that communicates with a third party plug-in.

Any plug-in that is to work with the Migration Tool must support the following interface:

```
public interface PluginInterface
{
    public boolean doTask(String taskName, String taskArgs[]) throws
        PluginException;
    public String getVersion();
    public void init() throws PluginException;
    public void cleanUp();
}
```

The `getVersion` method must return the version number of the plug-in.

The `init` method must contain any initialization code.

The `cleanUp` method must contain any cleanup code.

The Migration Tool passes a command string and an argument array to the `doTask` method. The values that the command string and argument array must contain for different commands are listed in [Table B-1](#).

Table B-1 *Parameter Values for doTask Method*

Parameters for the doTask Method	Operation
command = "User_list" arg[0]= "file=file_name" arg[1]="domain=domain_name"	The plug-in generates a user list file for a specific domain in the specified file

Table B-1 Parameter Values for doTask Method

Parameters for the doTask Method	Operation
<code>command = "User_profiles"</code> <code>arg[0]="file=file_name"</code>	The plug-in generates an LDIF file of all users on the source system
<code>command = "Mbox_files"</code> <code>arg[0] = "user=m_sourceuname"</code> <code>arg[1] = "mbox_dir=m_mboxDir"</code>	The plug-in generates an MBOX file for the user in the specified directory
<code>command = "User_rules"</code> <code>arg[0] = "user=sourceuname"</code> <code>arg[1] = "dir=m_rulesDir"</code>	The plug-in generates the rules XML file for the specified user in the specified rules directory
<code>command = "Shared_folders"</code> <code>arg[0] = "file=file_name"</code> <code>arg[1] = "shared_folder_mbox_dir=mboxdir"</code>	The plug-in generates the shared folder file in the standard format in the specified file. MBOX files for the shared folder are generated in the <code>shared_folder_mbox_dir</code> .
<code>command = "Distribution_lists"</code> <code>arg[0] = "file=file_name"</code>	The plug-in generates the distribution list file in the standard format in the specified file
<code>command = "Public_aliases"</code> <code>arg[0] = "file=file_name"</code>	The plug-in generates the list of public aliases in the specified file in the standard format

Any developer writing a plug-in should ensure that the plug-in accepts the preceding set of parameters. Various parameters on the command line are separated by a single space.

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