

Oracle® Identity Manager

Connector Guide for IBM Lotus Notes and Domino

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Oracle Identity Manager Connector Guide for IBM Lotus Notes and Domino, Release 9.0.1

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Preface

Oracle Identity Manager Connector Guide for IBM Lotus Notes and Domino provides information about integrating Oracle Identity Manager with IBM Lotus Notes and Domino.

Note: This is a transitional release following Oracle's acquisition of Thor Technologies. Some parts of the product and documentation still refer to the original Thor company name and Xellerate product name and will be rebranded in future releases.

Audience

This guide is intended for users who want to deploy the Oracle Identity Manager connector for IBM Lotus Notes and Domino.

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Related Documents

For more information, refer to the following documents in the Oracle Identity Manager documentation set:

- *Oracle Identity Manager Release Notes*
- *Oracle Identity Manager Installation and Upgrade Guide for JBoss*
- *Oracle Identity Manager Installation and Upgrade Guide for WebLogic*
- *Oracle Identity Manager Installation and Upgrade Guide for WebSphere*
- *Oracle Identity Manager Administrative and User Console Guide*
- *Oracle Identity Manager Administrative and User Console Customization Guide*
- *Oracle Identity Manager Design Console Guide*
- *Oracle Identity Manager Tools Reference Guide*
- *Oracle Identity Manager Audit Report Developer Guide*
- *Oracle Identity Manager Best Practices Guide*
- *Oracle Identity Manager Connector Framework Guide*
- Connector guides for various third-party applications

Documentation Updates

Oracle is committed to delivering the best and most recent information available. For information about updates to the Oracle Identity Manager 9.0.1 connector documentation set, visit Oracle Technology Network at

<http://www.oracle.com/technology/documentation/index.html>

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

About the Connector

Oracle Identity Manager automates access rights management, security, and provisioning of IT resources. Oracle Identity Manager connectors are used to integrate Oracle Identity Manager with third-party applications. The connector for IBM Lotus Notes and Domino is used to integrate Oracle Identity Manager with IBM Lotus Notes and Domino.

Note: Oracle Identity Manager connectors were referred to as *resource adapters* prior to the acquisition of Thor Technologies by Oracle.

This chapter contains the following sections:

- [Supported Functionality](#)
- [Reconciliation Module](#)
- [Provisioning Module](#)
- [Files and Directories That Comprise the Connector](#)

Supported Functionality

The following table lists the functions that are available with this connector.

Function	Type	Description
Add User	Provisioning	Creates a user
Delete User	Provisioning	Deletes a user
Update User Last Name	Provisioning	Updates the last name of a user
Update User First Name	Provisioning	Updates the first name of a user
Update User Middle Name	Provisioning	Updates the middle name of a user
Update User Organization Unit	Provisioning	Updates the organization unit of a user
Update User Short Name	Provisioning	Updates the short name of a user
Update User Mail Internet Address	Provisioning	Updates the e-mail address of a user
Update User Location	Provisioning	Updates the location of a user
Update User Comment	Provisioning	Updates the comment of a user

Function	Type	Description
Update User Forward Domain	Provisioning	Updates the e-mail address to which e-mail for the user should be forwarded
Update User Password	Provisioning	Updates the user password and resets the ID file
Disable User	Provisioning	Disables a user
Enable User	Provisioning	Enables a user
Reconcile lookup field	Reconciliation	Reconciles the lookup fields
Reconcile User Data	Reconciliation	Trusted mode: Reconciles user data from IBM Lotus Notes and Domino to Oracle Identity Manager. A corresponding user is created in Oracle Identity Manager. If the user already exists in Oracle Identity Manager, then this user is updated. Nontrusted mode: Reconciles user data from IBM Lotus Notes and Domino to Oracle Identity Manager. A user is not created in Oracle Identity Manager.

Note:

- The Delete User provisioning function is implemented by using the DeleteUser Administration Process (AdminP) function of IBM Lotus Notes and Domino. Similarly, the RenameNotesUser AdminP function is used to implement the following provisioning functions:
 - Update User Last Name
 - Update User First Name
 - Update User Middle Name
 - Update User Organization Unit
- When you create a user, you must specify the End Date in the DD/MM/YY format.

Reconciliation Module

This section describes the elements that the reconciliation module extracts from the target system to construct reconciliation event records.

Reconciliation can be divided into the following types:

- [Lookup Fields Reconciliation](#)
- [User Reconciliation](#)

Lookup Fields Reconciliation

Lookup fields reconciliation involves reconciling the Group lookup field.

User Reconciliation

User reconciliation involves reconciling the fields that are used to store user information in IBM Lotus Notes and Domino. These fields are:

- FirstName
- MiddleName
- LastName
- ShortName
- Password
- OrgUnit
- MailInternetAddress
- Location
- Comment
- ForwardDomain
- EndDate
- SecurityType
- Group
- OldLastName
- OldFirstName
- OldMiddleName
- OldOrgUnit

Provisioning Module

The following fields of IBM Lotus Notes and Domino are provisioned:

- FirstName
- MiddleName
- LastName
- ShortName
- Password
- OrgUnit
- MailInternetAddress
- Location
- Comment
- ForwardDomain
- EndDate
- SecurityType
- Group

Files and Directories That Comprise the Connector

The files and directories that comprise this connector are compressed in the following ZIP file on the installation media:

Collaboration and Messaging Applications\IBM Lotus Notes Domino\IBM Lotus Notes

Domino Rev 1.0.0.zip

These files and directories are listed in the following table.

File in the Installation Media Directory	Description
xml\xlLotusNotesConnector.xml	This XML file contains the following components of the connector: <ul style="list-style-type: none">■ IT resource type■ Process form■ Process task and rule-generator adapters (along with their mappings)■ Resource object■ Pre-populate rules that are used with this connector
xml\xlLotusNotes_XellerateUser.xml	This XML file contains the configuration for the Xellerate User. You must import this file only if you plan to use the connector in trusted source reconciliation mode.
lib\JavaTask\xlLotusNotesProvision.jar	This JAR file contains the class files that are used to implement provisioning.
lib\ScheduleTask\xlLotusNotesRecon.jar	This JAR file contains the class files that are used to implement reconciliation.
docs\B31117_01.pdf docs\html	These are PDF and HTML versions of this guide, which provides instructions to deploy the connector.

The "[Step 2: Copying the Connector Files and External Code](#)" section on page 2-1 provides instructions to copy these files into the required directories.

Deploying the Connector

Deploying the connector involves the following steps:

- [Step 1: Verifying Deployment Requirements](#)
- [Step 2: Copying the Connector Files and External Code](#)
- [Step 3: Importing the Connector XML File](#)
- [Step 4: Configuring Reconciliation](#)
- [Step 5: Compiling Adapters](#)
- [Step 6: Configuring SSL](#)

Step 1: Verifying Deployment Requirements

The following table lists the installation requirements for the connector.

Item	Requirement
Oracle Identity Manager	Oracle Identity Manager release 8.5.3 or later
Target systems	IBM Lotus Notes and Domino Server 6.5 or later
External code	NCSO.jar Notes.jar

Refer to the "[Step 2: Copying the Connector Files and External Code](#)" section on page 2-1 for more information about these files.

Step 2: Copying the Connector Files and External Code

The connector files to be copied and the directories to which you must copy them are given in the following table.

Note: The directory paths given in the first column of this table correspond to the location of the connector files in the following ZIP file on the installation media:

Collaboration and Messaging Applications\IBM Lotus Notes Domino\IBM Lotus Notes Domino Rev 1.0.0.zip

Refer to "[Files and Directories That Comprise the Connector](#)" on page 1-3 for more information about these files.

File in the Installation Media Directory	Destination Directory
xml\xlLotusNotesConnector.xml	xellerate_home\xlclient
xml\xlLotusNotes_XellerateUser.xml	xellerate_home\xlclient
lib\JavaTask\xlLotusNotesProvision.jar	xellerate_home\xellerate\JavaTasks
lib\ScheduleTask\xlLotusNotesRecon.jar	xellerate_home\xellerate\ScheduleTask
docs\B31117_01.pdf docs\html	xellerate_home\xellerate\docs

After you copy the connector files, copy the following files into the `java_installation\jre\lib\ext` directory:

- `NCSO.jar` (from the `lotus_home\lotus\Domino\Data\domino\java` directory)
- `Notes.jar` (from the `lotus_home\lotus\Domino` directory)

Here, `java_installation` is the JDK directory used for Oracle Identity Manager and `lotus_home` is the directory in which IBM Lotus Notes and Domino is installed.

Step 3: Importing the Connector XML File

To import the connector XML file into Oracle Identity Manager:

1. Open the Oracle Identity Manager Administrative and User Console.
2. Click the **Deployment Management** link on the left navigation bar.
3. Click the **Import** link under Deployment Management. A dialog box for locating files is displayed.
4. Locate and open the `xlLotusNotesConnector.xml` file, which is in the `xellerate_home\xlclient` directory. Details of this XML file are shown on the File Preview page.
5. Click **Add File**. The Substitutions page is displayed.
6. Click **Next**. The Confirmation page is displayed.
7. Click **Next**. The Provide IT Resource Instance Data page for the LotusNotes IT resource is displayed.
8. Specify values for the parameters of the LotusNotes IT resource. Refer to the table in the "[Defining IT Resources](#)" section on page 2-3 for information about the values to be specified.
9. Click **Next**. The Provide IT Resource Instance Data page for a new instance of the Lotus Notes IT resource type is displayed.
10. Click **Skip** to specify that you do not want to define another IT resource. The Confirmation page is displayed.

See Also: If you want to define another IT resource, then refer to *Oracle Identity Manager Tools Reference Guide* for instructions.

11. Click **View Selections**.

The contents of the XML file are displayed on the Import page. You may see a cross-shaped icon along with some nodes. You must remove these nodes. To do this, right-click each such node and then select **Remove**.

12. Click **Import**. The connector XML file is imported into Oracle Identity Manager.
13. If you plan to use the connector in trusted source reconciliation mode, then perform the same procedure to import the `x1LotusNotes_XellerateUser.xml` file. This file is in the `xellerate_home\xlclient` directory.

Caution: Only one connector can be configured as a trusted source. If you import the `x1LotusNotes_XellerateUser.xml` file while you have another trusted source configured, then both connector reconciliations would stop working.

After you import the connector XML file, proceed to the "[Step 4: Configuring Reconciliation](#)" section on page 2-5.

Defining IT Resources

You must specify values for the LotusNotes IT resource parameters listed in the following table.

Parameter Name	Parameter Description
AddBook	Indicates whether the server entry in the Domino Directory is updated when the ID file is created The value can be <code>True</code> or <code>False</code> . The default value is <code>True</code> . Domino Directory is the database that contains user personal documents, connection documents, server documents and cross-certification files. This directory is also known as the public address book or <code>names.nsf</code> .
Admin	User ID of the IBM Lotus Notes and Domino server administrator
AdminPwd	Password of the administrator
CertPath	Complete file specification of the certifier ID to be used when creating IDs
CertPwd	Password of the certifier ID file
CreateMailIDFile	Indicates whether or not a mail database is created with the ID file when calling the Register New User function of IBM Lotus Notes and Domino The value can be <code>True</code> or <code>False</code> . The default value is <code>True</code> .
Host	Host name or IP address of the IBM Lotus Notes and Domino server
Port	TCP/IP port at which the IBM Lotus Notes and Domino server is listening The default value is 63148.
IDFilePath	Path for the ID files to be stored
IDType	Type of ID files to create: <code>HIERARCHICAL</code> or <code>CERTIFIER</code> The default is 172 (<code>HIERARCHICAL</code>). The numeric value for <code>CERTIFIER</code> is 173.
IsDebug	Debug feature The value can be <code>YES</code> or <code>NO</code> . The default value is <code>NO</code> .

Parameter Name	Parameter Description
MailDBPath	Mail file path
MailOwnerAccess	Mail database ACL setting for the owner The value can be one of the following: <ul style="list-style-type: none"> ■ DESIGNER (1) ■ EDITOR (2) ■ MANAGER (0) The default value is 0.
MailQuotaLimit	Maximum size of the user's mail database, in megabytes The default value is 50.
MailQuotaWarning	Size, in megabytes, at which the user's mail database issues a warning that the size limit may be exceeded The default value is 40.
MailServer	Canonical name of the server containing the user's mail file
MailSystem	User's mail system The value can be one of the following: <ul style="list-style-type: none"> ■ INOTES (3) ■ INTERNET (4) ■ NOTES (0) The default value is 0.
MailTemplateName	Name of the template for the design of the mail file
PasswordLength	Minimum number of characters that can be used in the password The value can be any number. The default minimum length is 5 characters.
RegLog	Name of the log file to use when creating IDs
RegServer	Name of the server to use when creating IDs and performing other registration functions
StoreAddBook	Indicates whether or not the ID file is stored in the Domino Directory of the server The value can be <code>True</code> or <code>False</code> . The default value is <code>True</code> .
SyncInternetPassword	If this parameter is set to <code>True</code> , then the user can use the same password for both local client-based access and Web-based access to IBM Lotus Notes and Domino. The value can be <code>True</code> or <code>False</code> . The default value is <code>True</code> .
LastReconciliationTimeStamp	For the first reconciliation run, this parameter does not hold any value. From the second time onward, this parameter stores the time at which the last reconciliation run was completed. The default value is <code>None</code> .
IsSecure	Specifies whether or not the SSL feature is enabled The value can be <code>YES</code> or <code>NO</code> . The default value is <code>NO</code> .
DenyAccessGroupName	Name of the group for users whose accounts have been disabled

After you specify values for these IT resource parameters, go to Step 9 of the procedure to import connector XML files.

Step 4: Configuring Reconciliation

Configuring reconciliation involves creating scheduled tasks for lookup fields and user reconciliations. To create these scheduled tasks:

1. Open the Oracle Identity Manager Design Console.
2. Expand the **Xellerate Administration** folder.
3. Select **Task Scheduler**.
4. Click **Find**. The details of the predefined scheduled tasks are displayed on two different tabs.
5. Enter a number in the **Max Retries** field. This number represents the number of times Oracle Identity Manager should attempt to complete the task before assigning the `ERROR` status to the task.
6. Ensure that the **Disabled** and **Stop Execution** check boxes are cleared.
7. In the Start region, double-click the **Start Time** field. From the date-time editor that is displayed, select the date and time at which you want the task to run.
8. In the Interval region, set the following schedule parameters:
 - To set the task to run on a recurring basis, select the **Daily**, **Weekly**, **Recurring Intervals**, **Monthly**, or **Yearly** option.
If you select the **Recurring Intervals** option, then you must also specify the time interval at which you want the task to run on a recurring basis.
 - To set the task to run only once, select the **Once** option.
9. Provide values for the attributes of the scheduled task. Refer to the appropriate table in the "[Specifying Values for the Scheduled Task Attributes](#)" section on page 2-5 for information about the values to be specified.

See Also: *Oracle Identity Manager Design Console Guide* for information about adding and removing task attributes
10. Click **Save**. The scheduled task is created. The `INACTIVE` status is displayed in the **Status** field, because the task is not currently running. The task is run at the date and time that you set in Step 7.
11. Repeat Steps 5 through 10 to create the second scheduled task.

After you create both scheduled tasks, proceed to the "[Step 5: Compiling Adapters](#)" section on page 2-6.

Specifying Values for the Scheduled Task Attributes

This section provides information about the values to be specified for the following scheduled tasks:

- [Lookup Fields Reconciliation Scheduled Task](#)
- [User Reconciliation Scheduled Task](#)

Lookup Fields Reconciliation Scheduled Task

You must specify values for the following attributes of the lookup fields reconciliation scheduled task.

Note: Attribute values are predefined in the connector XML file that you import. Specify values only for those attributes that you want to change.

Attribute Name	Description	Default/Sample Value
TargetRO	Name of the resource object	LOTUSRO
ServerName	Name of the IT resource instance that the connector uses to reconcile data	LotusNotes
LookupFieldName	Name of the group lookup field that is to be reconciled	LookUp.Lotus.GroupList

After you specify values for these task attributes, go to Step 10 of the procedure to create scheduled tasks.

User Reconciliation Scheduled Task

You must specify values for the following attributes of the user reconciliation scheduled task.

Note: Attribute values are predefined in the connector XML file that you import. Specify values only for those attributes that you want to change.

Attribute Name	Description	Default/Sample Value
TargetRO	Name of the resource object	LOTUSRO
ServerName	Name of the IT resource instance that the connector uses to reconcile data	LotusNotes
IsTrusted	Specifies the mode of reconciliation, trusted or nontrusted	YES or NO The default value is NO .
LoginNameField	Parameter whose value is used as the login name for the Xellerate User Ensure that the value of the parameter that you select is unique for each IBM Lotus Notes and Domino user.	Notes.LastName or Notes.ShortName
Notes.XellerateOrganisation	Default value for the Oracle Identity Manager Organization name This value is used to create the Xellerate User in trusted mode.	Xellerate Users

After you specify values for these task attributes, go to Step 10 of the procedure to create scheduled tasks.

Step 5: Compiling Adapters

The following adapters are imported into Oracle Identity Manager when you import the connector XML file. You must compile these adapters before you can use them to provision accounts on the target system.

- adpLNCreateuser
- adpLNUpdateUserName
- adpUpdateUserInfo
- adpLNDeleteUser
- adpLNDisableUser
- adpLNEnableUser
- adpLNUpdateGrp
- adpLNUpdateUserPassword

To compile adapters by using the Adapter Manager form:

1. Open the Adapter Manager form.
2. To compile all the adapters that you import into the current database, select the **Compile All** option.

To compile multiple (but not all) adapters, select the adapters you want to compile. Then, select the **Compile Selected** option.

3. Click **Start**. Oracle Identity Manager compiles the adapters that you specify.

To view detailed information about an adapter:

1. Highlight the adapter in the Adapter Manager form.
2. Double-click the row header of the adapter, or right-click the adapter.
3. Select **Launch Adapter** from the shortcut menu that is displayed. Details of the adapter are displayed.

Note: To compile multiple adapters simultaneously, use the Adapter Manager form. To compile one adapter at a time, use the Adapter Factory form. Refer to *Oracle Identity Manager Tools Reference Guide* for information about how to use these forms.

Step 6: Configuring SSL

Note: This is an optional step of the deployment procedure. For more information about this procedure, refer to

http://www-128.ibm.com/developerworks/lotus/library/ls-Java_access_2/

To set up SSL connectivity between Oracle Identity Manager and the IBM Lotus Notes and Domino server:

1. Ensure that the Domino IIOP (DIIOP) and HTTP tasks are running on the IBM Lotus Notes and Domino server for SSL communication.
2. On the IBM Lotus Notes and Domino server, create a key ring using the Server Certificate Admin (`certsrv.nsf`) database. Move the two key ring files, `keyfile.kyr` and `keyfile.sth`, to the data directory of the server.

3. Restart the DIIOP task to generate a file named `TrustedCerts.class` in the IBM Lotus Notes and Domino data directory. The following is the path of the data directory:

`lotus_home\Lotus\Domino\Data`

Here, `lotus_home` is the directory in which IBM Lotus Notes and Domino is installed.

4. Package the `TrustedCerts.class` file in the `TrustedCerts.jar` file.
5. Move the `TrustedCerts.jar` file to the `java_installation\jre\lib\ext` directory on the Oracle Identity Manager server.

Testing the Connector

After you deploy the connector, you must test it to ensure that it functions as expected.

This chapter contains the following sections:

- [Running Test Cases](#)
- [Troubleshooting](#)

Running Test Cases

This section discusses test cases that you can perform by using the troubleshooting utility.

You can use the troubleshooting utility to directly use the connector for identifying the cause of problems associated with connecting to the target system server and performing basic operations on the target system. The following are sample test cases that you can run by using the troubleshooting utility.

From the `JavaTasks` directory in which the `xlLotusNotesProvision.jar` file is present, perform the following tests:

- Create an IBM Lotus Notes and Domino user as follows:

```
java -jar xlLotusNotesProvision.jar Create host portNo admin adminpassword \  
certpath regsrv maildbpath reglog lastName idpath mailserver firstName \  
password certpws mailtemplatename
```

For example:

```
java -jar xlLotusNotesProvision.jar Create 172.21.106.106 63148 "John \  
Doe/TEST" password C:\\Test\\cert.id SGM mail\\ log.nsf lname C:\\Test\\ \  
CN=SGM/O=TEST fname password password mail6.ntf
```

- Update information, such as the first name and last name of an IBM Lotus Notes and Domino user, as follows:

```
java -jar xlLotusNotesProvision.jar UpdateUserInfo host portNo \  
admin adminpassword mailserver firstName lastName middleName orgUnit \  
attrName attrValue;
```

- Update information, such as the location and forward domain of an IBM Lotus Notes and Domino user, as follows:

```
java -jar xlLotusNotesProvision.jar UpdateUserName host portNo admin \  
adminpassword mailServer certPath certPassword firstName lastName \  
middleName orgUnit attrName attrValue;
```

- Delete an IBM Lotus Notes and Domino user as follows:

```
java -jar xlLotusNotesProvision.jar Delete host \
portNo admin adminpassword mailserver firstName lastName middleName orgUnit \
regserver;
```

Troubleshooting

The following table lists solutions to some commonly encountered issues associated with the IBM Lotus Notes and Domino connector.

Problem Description	Solution
Oracle Identity Manager cannot establish a connection to the IBM Lotus Notes and Domino Server.	<ul style="list-style-type: none"> ■ Ensure that the IBM Lotus Notes and Domino Server is running. ■ Ensure that Oracle Identity Manager is working (that is, the database is running). ■ Ensure that all the adapters have been compiled. ■ Examine the Oracle Identity Manager record (from the IT Resources form).
An Operation Fail message is displayed on the Oracle Identity Manager Administrative and User Console	<ul style="list-style-type: none"> ■ Ensure that the attribute values do not contain delimiter characters (white space). ■ Ensure that the attribute values do not exceed the specified length.

Known Issues

The following are known issues associated with this release of the connector:

- For the Update User function, the following functionality is not available:
 - Update of more than one of the following fields is not possible:
 - * First Name
 - * Last Name
 - * Middle Name
 - * Organization Unit
 - An update of the first name, last name, middle name, or organization unit takes approximately 5 minutes to take effect on IBM Lotus Notes and Domino. Any other updates made for the same user during this time (until the previous changes take effect) may not work.
- No error is thrown if you use Oracle Identity Manager to provision a user account that already exists on IBM Lotus Notes and Domino. This is considered an update operation for the user.
- IBM Lotus Notes and Domino does not have a unique field for a user.
- Reconciliation of a user whose name (first name or last name) has been updated once works correctly. However, if the name (first name or last name) is updated again, then this second update is not reconciled during the next reconciliation run.

The following example illustrates this limitation:

Suppose a user's first name and last name were updated from `John` and `Doe` to `John1` and `Doe1`, respectively. This update is reconciled correctly. In the second update, the first name and last name are changed to `John2` and `Doe2`, respectively. This update will not be reconciled because the old first name and old last name values stored in IBM Lotus Notes and Domino are still `John` and `Doe`.

- The limitation described in the preceding point is also applicable for user deletion after updates to the first name or last name in IBM Lotus Notes and Domino.

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