Oracle® Identity Manager

Connector Guide for Novell eDirectory

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Oracle Identity Manager Connector Guide for Novell eDirectory, Release 9.0.1

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Contents

Preface

Oracle Identity Manager Connector Guide for Novell eDirectory provides information about integrating Oracle Identity Manager with Novell eDirectory.

> **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 Novell eDirectory.

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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.
italic	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.

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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 Novell eDirectory is used to integrate Oracle Identity Manager with Novell eDirectory.

> **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.

Process Task	Type	Description
Create User	Provisioning	Creates a user in Novell eDirectory
Delete User	Provisioning	Deletes a user in Novell eDirectory
Enable User	Provisioning	Enables a user in Novell eDirectory
Disable User	Provisioning	Disables a user in Novell eDirectory
Move User	Provisioning	Moves a user from one container to another in Novell eDirectory
Update User Password	Provisioning	Updates the password of a user in Novell eDirectory
Add User to Group	Provisioning	Adds a user to a group in Novell eDirectory
Remove User from Group	Provisioning	Removes a user from a group in Novell eDirectory
Assign Role to User	Provisioning	Assigns a role to a user in Novell eDirectory
Remove Assigned Role from User	Provisioning	Removes a role from a user in Novell eDirectory

Process Task	Type	Description
Assign Trustee Right to User	Provisioning	Adds a trustee right to a user in Novell eDirectory
Remove Trustee Right from User	Provisioning	Removes a trustee right from a user in Novell eDirectory
Add Network Address Restriction to User	Provisioning	Adds a network address restriction to a user in Novell eDirectory
Remove Network Address Restriction from User	Provisioning	Removes a network address restriction from a user in Novell eDirectory
Create User	Reconciliation	Creates a user in Oracle Identity Manager
Delete User	Reconciliation	Deletes a user from Oracle Identity Manager
Enable User	Reconciliation	Enables a user in Oracle Identity Manager
Disable User	Reconciliation	Disables a user in Oracle Identity Manager
Move User	Reconciliation	Moves a user from one container to another in Oracle Identity Manager
Add User to Group	Reconciliation	Adds a user to a group in Oracle Identity Manager
Remove User from Group	Reconciliation	Removes a user from a group in Oracle Identity Manager
Assign Role to User	Reconciliation	Assigns a role to a user in Oracle Identity Manager
Remove Assigned Role from User	Reconciliation	Removes a role from a user in Oracle Identity Manager
Assign Trustee Right to User	Reconciliation	Adds a trustee right to a user in Oracle Identity Manager
Remove Trustee Right from User	Reconciliation	Removes a trustee right from a user in Oracle Identity Manager
Add Network Address Restriction to User	Reconciliation	Adds a network address restriction to a user in Oracle Identity Manager
Remove Network Address Restriction from User	Reconciliation	Removes a network address restriction from a user in Oracle Identity Manager

Reconciliation Module

This section describes the elements that the reconciliation class 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 Group, Role, and Profile master data.

User Reconciliation

The following fields are reconciled:

> **Note:** These fields do not have the `ldap` prefix.

- User ID (Required field)
- First Name
- Last Name
- Middle Name
- Department
- Location
- Telephone
- Email
- Communication Language
- Timezone
- Logon Script
- Title
- Profile
- Organization Unit
- Server Name
- Security Group (You can specify multiple group names)
- Role
  - Role Name
  - Scope
  - Inheritance
- Trustee Rights
  - Property
  - Supervisor
  - Read
  - Write
  - Compare
  - Add Self
- Network Address (You can specify multiple network addresses)

Provisioning Module

The following fields are provisioning:

- User ID
- First Name

- Last Name

- Middle Name

- Department

- Location

- Telephone

- Email

- Communication Language

- Timezone

- Logon Script

- Title

- Profile

- Organization Unit

- Server Name

- Security Group

- Role

  - Role Name

  - Scope

  - Inheritance

- Trustee Rights

  - Property

  - Supervisor

  - Read

  - Write

  - Compare

  - Add Self

- Network Address

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:

```
Directory Servers\Novell eDirectory\Novell eDirectory Rev 2.1.0.zip
```

These files and directories are listed in the following table.

File in the Installation Media Directory	Description
`xml\xlieDirectoryUserObject.xml`	This XML file contains the following components of the connector: ■ IT resource type ■ Custom process form ■ Process tasks and adapters (along with their mappings) ■ Resource object ■ Provisioning process ■ Pre-populate rules ■ Reconciliation process ■ Lookup definitions
`lib\eDirProv.jar`	This JAR file contains the class files required for provisioning and reconciliation.

`troubleshoot\log.properties`
`troubleshoot\TroubleShootingUtilityLdap.class`
`troubleshoot\TroubleShootLdap.properties`
	These files are used to implement test cases that are run by using the troubleshooting utility.

`\docs\B31124_02.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.

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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 deployment requirements for the connector.

Item	Requirement
Oracle Identity Manager	Oracle Identity Manager release 8.5.3 or later
Target systems	Novell eDirectory 8.7.3
Target system host platforms	The target system host platform can be any one of the following operating systems: - Red Hat Linux AS 2.1 - Microsoft Windows 2000
External code	`ldap.jar` Refer to "Step 2: Copying the Connector Files and External Code" on page 2-1 for information about downloading this JAR file.

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:
>
> `Directory Servers\Novell eDirectory\Novell eDirectory Rev 2.1.0.zip`
>
> Refer to "Files and Directories That Comprise the Connector" on page 1-4 for more information about these files.

File in the Installation Media Directory	Destination Directory
`xml\xlieDirectoryUserObject.xml`	`xellerate_home\xellerate\eDir\xml`
`lib\eDirProv.jar`	`xellerate_home\xellerate\eDir\lib` `xellerate_home\xellerate\JavaTasks`

The following files in the `troubleshoot` directory:
 	
`log.properties`
`TroubleShootingUtilityLdap.class`
`TroubleShootLdap.properties`
	`xellerate_home\xellerate\eDir\troubleshoot`

`\docs\B31124_02.pdf` `\docs\html`	`xellerate_home\xellerate\eDir\docs`

To copy the external code into the required directories:

1. Log on to the Novell Web site at

   `http://developer.novell.com/wiki/index.php/Special:Downloads/jldap/builds/netware_windows/`

2. Download the following file from the Novell Web site:

   `novell-jldap-devel-2005.10.03-1netware_windows.zip`

   The size of the file is 11.1 MB.

3. Extract the contents of the file that you download in Step 2.

4. Copy the `ldap.jar` file from the `novell-jldap-devel-2005.10.03-1netware_windows\jldap_2005.10.03\lib` directory to the `xellerate_home\JavaTasks` directory on the Oracle Identity Manager server.

Step 3: Importing the Connector XML File

To import the connector XML file:

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 `xlieDirectoryUserObject.xml` file, which is in the `xellerate_home\xellerate\eDir\xml` 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 `eDirectory IT Resource` IT resource is displayed.

8. Specify values for the parameters of the `eDirectory IT Resource` IT resource. Use the table given 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 `LDAP Server` 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 file is imported into Oracle Identity Manager.

After you import the connector XML file, proceed to the "Step 4: Configuring Reconciliation" section on page 2-4.

Defining IT Resources

You must specify values for the `eDirectory IT Resource` IT resource parameters listed in the following table.

Parameter Name	Parameter Value
Admin ID	DN value of the user who has admin rights on the target Novell eDirectory server
	Default value:
	`cn=Admin,ou=People,dc=pxed,dc=example,dc=com,o=PXED-DEV`
Admin Password	Password of the administrator
Server Address	Server address of the target Novell eDirectory server
	Default value: `172.20.36.65`
Root DN	Base DN on which all user operations are to be carried out
	Default value: `dc=pxed,dc=example,dc=com,o=PXED-DEV`
Port	Port number to connect to the target Novell eDirectory server
	Default value: `391`
SSL	If set to `true`, then SSL is used to secure communication between Oracle Identity Manager and Novell eDirectory.
	Default value: `false`

Parameter Name	Parameter Value
Last Recon TimeStamp	The value is empty for the first reconciliation run. After that, the time at which the last reconciliation run was completed is stored in this parameter.
	Default value: 20060519120000Z
	In this sample value:
	■ 2006 is the year
	■ 05 is the month
	■ 19 is the day of the month
	■ 12 is the hour
	■ 00 is the minute
	■ 00 is the second
	■ The letter Z is required at the end
Prov Attribute Lookup Code	Name of the lookup definition that has the target attribute mappings required for provisioning
	Default value: AttrName.Prov.Map.EDIR
	Note: This value should not be changed.
Recon Attribute Lookup Code	Name of the lookup definition that has the target attribute mappings required for reconciliation
	Default value: AttrName.Recon.Map.EDIR
	Note: This value should not be changed.
Use XL Org Structure	If set to true, then the Oracle Identity Manager Organization structure is used during provisioning and reconciliation. If set to false, then the value of the Organization field in the process form is used for provisioning and the organization or container in the target LDAP is used for reconciliation.
	Default value: false

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

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 define the second scheduled task.

After you define both scheduled tasks, proceed to the "Step 5: Compiling Adapters" section on page 2-7.

Specifying Values for the Scheduled Task Attributes

This section provides information about the attribute 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.
>
> You must define a scheduled task for each master lookup data reconciliation: Group, Role, and Profile.

Attribute Name	Description	Sample/Default Value
LookupCodeName	Name of the lookup definition to which the values are to be reconciled	Lookup.EDIR.Groups
ITResourceName	Name of the IT resource for setting up a connection to Novell eDirectory	eDirectory IT Resource
SearchContext	Search context to be used for searching for users	Sample value: DC=mycompany,DC=com

Attribute Name	Description	Sample/Default Value
ObjectClass	Name of the object class, such as GroupOfNames and rBSRole	GroupOfNames
CodeKeyLTrimStr	String value for left-trimming the value obtained from the search. For example, cn= or uid=. If there is nothing to be trimmed, then specify the value [NONE].	[NONE]
CodeKeyRTrimStr	String value for right-trimming the value obtained from the search. For example, ,DC=mycompany,DC=com. If there is nothing to be trimmed, then specify the value [NONE].	Sample value: ,DC=mycompany,DC=com
ReconMode	Specify REFRESH to completely refresh the existing lookup. Specify UPDATE if you want to update the lookup with the new values.	REFRESH or UPDATE

After you specify values for these scheduled 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	Sample/Default Value
ITResourceName	Name of the IT resource for setting up a connection to Novell eDirectory	eDirectory IT Resource
ResourceObjectName	Name of the resource object into which users need to be reconciled	eDirectory User
XLDeleteUsersAllowed	If this attribute is set to true, then the Delete reconciliation event is started. Users who are deleted from the target system are removed from Oracle Identity Manager. This requires all the users on the target system to be compared with all the users in Oracle Identity Manager. **Note:** This process affects performance.	true
UserContainer	DN value from where users are reconciled into Oracle Identity Manager	Sample value: ou=user

Attribute Name	Description	Sample/Default Value
`Keystore`	Directory path to the Novell eDirectory keystore. This is required to make a secure SSL connection. If an SSL connection is not required, then specify the value `[NONE]`.	Sample value: `E:\j2sdk1.4.2_05\jre\lib\security\cacerts` or `[NONE]`

After you specify values for these scheduled 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.

- `eDir Create User`
- `eDir Delete User`
- `eDir Modify User`
- `eDir Move User`
- `eDir Add User to Group`
- `eDir Remove User from Group`
- `eDir Add Trustee Right to User`
- `eDir Remove Trustee Right from User`
- `eDir Add Assigned Role to User`
- `eDir Remove Assigned Role from User`
- `eDir Add Network Restriction`
- `eDir Remove Network Restriction`
- `eDir PP String`

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.

   > **Note:** Click **Compile Previously Failed** to recompile only those adapters that were not compiled successfully. Such adapters do not have an `OK` compilation status.

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 Administrative and User Console* for information about how to use these forms.

Step 6: Configuring SSL

> **Note:** This is an optional step of the deployment procedure.

To enable SSL connectivity between Oracle Identity Manager and the target Novell eDirectory:

1. Import the certificate from the target system into the JSDK (the JSDK that is used during installation of Oracle Identity Manager Server) `cacerts` keystore as follows:

   ```
   keytool -import -file certificate_file_name -alias ndscert -keystore
   E:\j2sdk1.4.2_05\jre\lib\security\cacerts
   ```

2. Restart the Oracle Identity Manager server.

3. In the `eDirectory IT Resource` IT resource definition:

   - Set the `SSL` parameter value to `true`.

   - Change the `Port` parameter value to the SSL port number. Typically, this number is 636.

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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.

Before you use the troubleshooting utility, you must set the required values in the `config.properties` file. This file is in the `troubleshoot` directory. The following table describes the sections of this file.

Section Name	Information
Novell eDirectory Connection Parameters	Connection parameters required to connect to the target system
Create User	Values requited to create a user on the target system
Modify User	Values required to modify a user
Delete User	DN of the user to be deleted

In addition, you must set the classpath to the following JAR files:

- *xellerate_home*\xellerate\lib\xlLogger.jar
- *xellerate_home*\xellerate\lib\xlUtils.jar
- *xellerate_home*\xellerate\JavaTasks\eDirProv.jar
- *xellerate_home*\xellerate\JavaTasks\ldap.jar
- `log4j.jar` file in the application server installation directory

Then, perform the following tests:

> **Note:** While performing these tests, ensure that the location of the `TroubleShootLdap.properties` and `log.properties` files is correctly specified.

- Create a Novell eDirectory user as follows:

```
java
-DpropertyFile=xellerate_home/xellerate/eDir/troubleshoot/TroubleShootLdap.prop
erties
-Dlog4j.configuration=file:/xellerate_home/xellerate/eDir/troubleshoot/log.prop
erties TroubleShootingUtilityLdap createUser
```

- Modify a Novell eDirectory user as follows:

```
java
-DpropertyFile=xellerate_home/xellerate/eDir/troubleshoot/TroubleShootLdap.prop
erties
-Dlog4j.configuration=file:/xellerate_home/xellerate/eDir/troubleshoot/log.prop
erties TroubleShootingUtilityLdap modifyUser
```

- Delete a Novell eDirectory user as follows:

```
java
-DpropertyFile=xellerate_home/xellerate/eDir/troubleshoot/TroubleShootLdap.prop
erties
-Dlog4j.configuration=file:/xellerate_home/xellerate/eDir/troubleshoot/log.prop
erties TroubleShootingUtilityLdap deleteUser
```

Troubleshooting

The following table lists solutions to some commonly encountered issues associated with the connector.

Problem Description	Solution
Oracle Identity Manager cannot establish a connection to Novell eDirectory. **Returned Error Message:** LDAP Connection exception **Returned Error Code:** INVALID_CONNECTION_ERROR	- Ensure that the Novell eDirectory 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). Ensure that the IP address, admin ID, and admin password are correct.
Target not available. **Returned Error Message:** Connection error - unable to create Initial LDAP **Returned Error Code:** TARGET_UNAVAILABLE_ERROR	Ensure that the specified Novell eDirectory connection values are correct.

Problem Description	Solution
Returned Error Message: Connection error - unable to create Initial LDAP. **Returned Error Code:** AUTHENTICATION_ERROR	Ensure that the specified Novell eDirectory connection values are correct.
Oracle Identity Manager cannot create a user. **Returned Error Message:** Required information missing **Returned Error Code:** INSUFFICIENT_INFORMATION_PROVIDED	■ Ensure that the specified IP address, admin ID, and administrator password are correct. ■ Ensure that the following information has been provided: User Container User First Name User Last Name User ID User Password
Oracle Identity Manager cannot create a user. **Returned Error Message:** User already exists **Returned Error Code:** USER_ALREADY_EXISTS	A user with the assigned ID already exists in Novell eDirectory.
Oracle Identity Manager cannot create a user. **Returned Error Message:** Connection error - unable to create Initial LDAPContext **Returned Error Code:** INVALID_NAMING_ERROR	■ Ensure that the specified Novell eDirectory connection values are correct. ■ Check if the value for an attribute violates the schema definition.
Oracle Identity Manager cannot create a user. **Returned Error Message:** User creation failed **Returned Error Code:** USER_CREATION_FAILED	The user cannot be created because one or more attribute values violate the schema definition.
The Create User function failed because a value was being added to a nonexistent attribute. **Returned Error Message:** Attribute does not exist **Returned Error Code:** ATTRIBUTE_DOESNOT_EXIST	In the `AttrName.Recon.Map.EDIR` lookup definition, check if the decode values are valid attribute names in the target system.

Problem Description	Solution
The Create User function failed because an invalid value was specified. **Returned Error Message:** Invalid value specified for an attribute **Returned Error Code:** `INVALID_ATTR_VALUE_ERROR`	Check the values specified during user creation.
Oracle Identity Manager cannot delete a user. **Returned Error Message:** User does not exist in target **Returned Error Code:** `USER_DOESNOT_EXIST`	The specified user ID does not exist in Novell eDirectory.
Oracle Identity Manager cannot modify the value of a user. **Returned Error Message:** Invalid attribute value or state **Returned Error Code:** `INVALID_ATTR_MODIFY_ERROR`	Check the attribute ID and value that were specified.
The Modify User function failed because a value was being added to a nonexistent attribute. **Returned Error Message:** Attribute does not exist **Returned Error Code:** `ATTRIBUTE_DOESNOT_EXIST`	1. From the corresponding process task, get the value specified for `AttrName` of the connector. 2. Using the name obtained in the previous step, check in the `AttrName.Recon.Map.EDIR` lookup definition if the decode value is a valid attribute name in the target.
The Modify User function failed because an invalid value was specified. **Returned Error Message:** Invalid value specified for an attribute **Returned Error Code:** `INVALID_ATTR_VALUE_ERROR`	Check the value entered.
The Modify User function failed because a value was specified for an attribute that does not exist in the `AttrName.Prov.Map.EDIR` lookup definition. **Returned Error Message:** One or more attribute mappings are missing **Returned Error Code:** `ATTR_MAPPING_NOT_FOUND`	1. From the corresponding process task, get the value specified for `AttrName` of the connector. 2. Using the name obtained in the previous step, check if an entry has been made in the `AttrName.Recon.Map.EDIR` lookup definition.

Problem Description	Solution
Error caused because a duplicate value was specified for an attribute. **Returned Error Message:** Duplicate value **Returned Error Code:** DUPLICATE_VALUE_ERROR	The attribute specified already exists for another user in the system.
Oracle Identity Manager cannot move a user from one container to another. **Returned Error Message:** Moving User to different container failed **Returned Error Code:** USER_MOVE_FAILED	Generic error. Review the log for more details.
Oracle Identity Manager cannot add a user to a security group. **Returned Error Message:** Group does not exist **Returned Error Code:** SEC_GROUP_DOESNOT_EXIST	The specified user security group does not exist in Novell eDirectory.
Oracle Identity Manager cannot add a user to a security group. **Returned Error Message:** User is already a member of this group **Returned Error Code:** DUPLICATE_VALUE	The user is already a member of the specified security group.
Oracle Identity Manager cannot add the Trustee Right to a user. **Returned Error Message:** Trustee Right already added **Returned Error Code:** DUPLICATE_VALUE	Check if the Trustee Right value has already been specified for the user in Novell eDirectory.
Oracle Identity Manager cannot add a role to a user. **Returned Error Message:** Role does not exist **Returned Error Code:** ROLE_DOESNOT_EXIST	The specified role for the user in Oracle Identity Manager does not exist in Novell eDirectory. Create the role in Novell eDirectory.
Oracle Identity Manager cannot add a role to a user. **Returned Error Message:** Error while updating user info **Returned Error Code:** USER_UPDATE_FAILED	Generic error. Review the log for more details

Problem Description	Solution
Oracle Identity Manager cannot add a role to a user. **Returned Error Message:** User has already been assigned this role **Returned Error Code:** DUPLICATE_VALUE	The user has already been assigned this role.
Oracle Identity Manager cannot remove an assigned role from a user. **Returned Error Message:** Removing Assigned role failed **Returned Error Code:** USER_DELETE_ASSIGNED_ROLE_FAIL ED	Generic error. Review the log for more details.
Oracle Identity Manager cannot add a network restriction. **Returned Error Message:** This Network Restriction already exists **Returned Error Code:** DUPLICATE_VALUE	The specified network restriction already exists for this user in Novell eDirectory.

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Known Issues

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

- The user search operation is based only on the user ID.

- The user ID in the process form must be the same as that of the Oracle Identity Manager User login. Otherwise, reconciliation of the enable/disable status of the user and the organization update fails because these operations require direct API calls to update information.

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