Oracle® Identity Manager

Connector Guide for Oracle e-Business Employee Reconciliation

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Oracle Identity Manager Connector Guide for Oracle e-Business Employee Reconciliation, Release 9.0.3

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Preface

Oracle Identity Manager Connector Guide for Oracle e-Business Employee Reconciliation provides information about integrating Oracle Identity Manager with Oracle e-Business Employee Reconciliation.

> **Note:** 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 Oracle e-Business Employee Reconciliation.

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Related Documents

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

- *Oracle Identity Manager Release Notes*
- *Oracle Identity Manager Installation Guide for JBoss*
- *Oracle Identity Manager Installation Guide for Oracle Containers for J2EE*
- *Oracle Identity Manager Installation Guide for WebLogic*
- *Oracle Identity Manager Installation 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 Globalization Guide*
- *Oracle Identity Manager Glossary of Terms*

The following document is available in the Oracle Identity Manager Connector Pack documentation library:

- *Oracle Identity Manager Connector Framework Guide*

Documentation Updates

Oracle is committed to delivering the best and most recent information available. For information about updates to the Oracle Identity Manager 9.0.3 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.

What's New in the Oracle Identity Manager Connector for Oracle e-Business Employee Reconciliation?

This chapter provides an overview of the updates made to the connector and documentation for Oracle e-Business Employee Reconciliation in release 9.0.3 of the Oracle Identity Manager connector pack.

> **See Also:** The 9.0.2 release of this guide for information about updates that were new for the 9.0.2 release

The updates discussed in this chapter are divided into the following categories:

- Software Updates

   These include updates made to the connector software.

- Documentation-Specific Updates

   These include major changes made to the connector documentation. These changes are not related to software updates.

> **See Also:** *Oracle Identity Manager Release Notes*

Software Updates

This section discusses updates made to this release of the connector software.

Enhancement in the Multilanguage Support Feature

In addition to the two languages supported by the earlier release, this release of the connector supports seven new languages. All the supported languages are listed in the "Multilanguage Support" section on page 1-2.

Support for OC4J

Earlier releases of the connector supported the following application servers:

- JBoss Application Server
- BEA WebLogic
- IBM WebSphere

This release of the connector also supports Oracle Containers for J2EE (OC4J).

Documentation-Specific Updates

The following documentation-specific updates have been made in this release of the guide.

In the Known Issues list in Chapter 4, the following changes have been made:

- The issue about not being able to reconcile data containing special characters has been removed.

- This release of the connector does not support the Japanese language. This point has been added.

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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 Oracle e-Business Employee Reconciliation is used to integrate Oracle Identity Manager with Oracle e-Business Employee Reconciliation.

> **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
- Multilanguage Support
- Reconciliation Module
- Files and Directories That Comprise the Connector
- Determining the Release Number of the Connector

Supported Functionality

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

Function	Type	Description
Reconcile New User	Reconciliation	Creates an Oracle Identity Manager user in trusted mode
Reconcile Delete User	Reconciliation	Deletes an Oracle Identity Manager user account, in both trusted and nontrusted mode
Reconcile Updated User	Reconciliation	Updates an Oracle Identity Manager user record during reconciliation, in both trusted and nontrusted mode

> **See Also:** Appendix A for information about attribute mappings between Oracle Identity Manager and Oracle e-Business Employee Reconciliation.

Multilanguage Support

This release of the connector supports the following languages:

- English
- Brazilian Portuguese
- French
- German
- Italian
- Korean
- Simplified Chinese
- Spanish
- Traditional Chinese

> **See Also:** *Oracle Identity Manager Globalization Guide* for information about supported special characters

Reconciliation Module

This section discusses 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
- Employee Reconciliation

Lookup Fields Reconciliation

Lookup fields reconciliation involves reconciling the Person ID lookup field.

Employee Reconciliation

Employee reconciliation involves reconciling the following fields:

- First Name
- email
- PersonId
- Middle Name
- Last Name
- Dept
- SSN
- Title
- Location
- Manager
- City
- PostalCode

- Country

- Telno

- EmployeeNumber

- ManagerId

Files and Directories That Comprise the Connector

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

```
Enterprise Applications\Oracle e-Business\Oracle e-Business Employee
Reconciliation
```

These files and directories are listed in the following table.

File in the Installation Media Directory	Description
`lib\ScheduleTask\xlReconOraHREmp.jar`	This JAR file contains the class files that are required for reconciliation.
Files in the `resources` directory	Each of these resource bundle files contains language-specific information that is used by the connector. **Note:** A **resource bundle** is a file containing localized versions of the text strings that are displayed on the user interface of Oracle Identity Manager. These text strings include GUI element labels and messages displayed on the Administrative and User Console.
`xml\oracleHRResAdp.xml`	This XML file contains definitions for the following components of the connector: ■ IT resource type ■ Custom process form ■ Resource object ■ Reconciliation process ■ Lookup definitions

The "Step 3: Copying the Connector Files and External Code" section on page 2-1 provides instructions to copy these files into the required directories.

Determining the Release Number of the Connector

To determine the release number of the connector that you have deployed:

1. Extract the contents of the `xlReconOralHREmp.jar` file. For a connector that has been deployed, this file is in the following directory:

   OIM_home\xellerate\JavaTasks

2. Open the `manifest.mf` file in a text editor. The `manifest.mf` file is one of the files bundled inside the `xlReconOralHREmp.jar` file.

   In the `manifest.mf` file, the release number of the connector is displayed as the value of the `Version` property.

   > **See Also:** *Oracle Identity Manager Design Console Guide*

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Deploying the Connector

Deploying the connector involves the following steps:

- Step 1: Verifying Deployment Requirements
- Step 2: Configuring the Target System
- Step 3: Copying the Connector Files and External Code
- Step 4: Configuring the Oracle Identity Manager Server
- Step 5: Importing the Connector XML File
- Step 6: Configuring Reconciliation

If you want to configure the connector for multiple installations of Oracle e-Business Employee Reconciliation, then perform the following procedure:

- Configuring the Connector for Multiple Installations of the Target System

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 system	Oracle e-Business Suite 11.5.10
External code	JDBC class library (`classes12.jar`)
Target system user account	APPS user with full privileges You provide the credentials of this user account while performing the procedure in the "Defining IT Resources" section on page 2-4.

Step 2: Configuring the Target System

For this connector, you do not need to perform any configuration steps on the target system.

Step 3: 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 directory on the installation media:
>
> ```
> Enterprise Applications\Oracle e-Business\Oracle e-Business
> Employee Reconciliation
> ```
>
> Refer to the "Files and Directories That Comprise the Connector" section on page 1-3 for more information about these files.

File in the Installation Media Directory	Destination Directory
lib\ScheduleTask\xlReconOraHREmp.jar	*OIM_home*\xellerate\ScheduleTask
Files in the resources directory	*OIM_home*\xellerate\connectorResources
xml\oracleHRResAdp.xml	*OIM_home*\xlclient

Copy the JDBC class library (classes12.jar) from the *oracle_home*\ora92\jdbc\lib\classes12.jar directory to the *OIM_home*\xellerate\ThirdParty directory. Here, *oracle_home* is the directory in which Oracle9*i* Database is installed. For example, C:\Oracle.

> **Note:** While installing Oracle Identity Manager in a clustered environment, you copy the contents of the installation directory to each node of the cluster. Similarly, you must copy the connectorResources directory and the JAR files to the corresponding directories on each node of the cluster.

Step 4: Configuring the Oracle Identity Manager Server

Configuring the Oracle Identity Manager server involves the following procedures:

> **Note:** In a clustered environment, you must perform this step on each node of the cluster. Then, restart each node.

- Changing to the Required Input Locale
- Clearing Content Related to Connector Resource Bundles from the Server Cache

Changing to the Required Input Locale

Changing to the required input locale (language and country setting) involves installing the required fonts and setting the required input locale.

To set the required input locale:

> **Note:** Depending on the operating system used, you may need to perform this procedure differently.

1. Open Control Panel.
2. Double-click **Regional Options**.

3. On the Input Locales tab of the Regional Options dialog box, add the input locale that you want to use and then switch to the input locale.

Clearing Content Related to Connector Resource Bundles from the Server Cache

Whenever you add a new resource bundle in the *OIM_home*\xellerate\connectorResources directory or make a change in an existing resource bundle, you must clear content related to connector resource bundles from the server cache.

To clear content related to connector resource bundles from the server cache:

1. In a command window, change to the *OIM_home*\xellerate\bin directory.

2. Enter one of the following commands:

Note: You must perform Step 1 before you perform this step. If you run the command as follows, then an exception is thrown:

OIM_home\xellerate\bin*batch_file_name*

- On Microsoft Windows:

    PurgeCache.bat ConnectorResourceBundle

- On UNIX:

    PurgeCache.sh ConnectorResourceBundle

In this command, ConnectorResourceBundle is one of the content categories that you can remove from the server cache. Refer to the following file for information about the other content categories:

OIM_home\xellerate\config\xlConfig.xml

Note: You can ignore the exception that is thrown when you perform Step 2.

Step 5: 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 oracleHRResAdp.xml file, which is in the *OIM_home*\xlclient directory. Details of this XML file are shown on the File Preview page.

5. Click **Add File.** The Substitution page is displayed.

6. Click **Next.** The Confirmation page is displayed.

7. Click **Next.** The Provide IT Resource Instance Data page for the Oracle HR IT resource is displayed.

8. Specify values for the parameters of the `Oracle HR` IT resource. Refer to the table given in the "Defining IT Resources" section on page 2-4 for information about the values to be specified.

9. Click **Next**. The Provide IT Resource Instance Data page for a new instance of the `Oracle HR` 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. Remove these nodes by right-clicking each node and then selecting **Remove.**

12. Click **Import.** The connector file is imported into Oracle Identity Manager.

After you import the connector XML file, proceed to the "Step 6: Configuring Reconciliation" section on page 2-5.

Defining IT Resources

You must specify values for the following `Oracle HR` IT resource parameter.

Parameter	Description
`Admin`	User ID to connect to the Oracle e-Business Employee Reconciliation database
	The default value is `Apps.`
`AdminCredentials`	Password of the administrator
`Host`	Host name or IP address of the Oracle e-Business Employee Reconciliation database
`IsDebug`	Debug feature
	The value can be `YES` or `NO.` The default value is `NO.`
`OracleHREmp.Orga nization Name`	Default value for the Oracle Identity Manager Organization name
	This value is used to create the Xellerate User in trusted mode. The default value is `Xellerate Users.`
`Port`	TCP/IP port at which the Oracle e-Business Employee Reconciliation server is listening
	The default value is `1521.`
`SID`	SID for the Oracle e-Business Employee Reconciliation database
`TimeStamp`	Timestamp for the last reconciliation

After you specify values for the IT resource parameter, proceed to Step 9 of the procedure to import connector XML files.

> **Note:** You must use the existing standard APPS User for connecting to the Oracle e-Business Employee Reconciliation database because only this user has the rights required to update the database.

Step 6: Configuring Reconciliation

Configuring reconciliation involves the following steps:

- Configuring Trusted Source Reconciliation
- Creating the Reconciliation Scheduled Tasks

Configuring Trusted Source Reconciliation

> **See Also:** *Oracle Identity Manager Connector Framework Guide* for conceptual information about reconciliation configurations

You do not need to perform any procedure to configure trusted source reconciliation. This target system is configured as a trusted source when you import the connector XML file.

Creating the Reconciliation Scheduled Tasks

To create the scheduled tasks for lookup fields and user reconciliations:

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. For the first scheduled task, enter a number in the **Max Retries** field. This number represents the number of times Oracle Identity Manager must attempt to complete the task before assigning the ERROR status to the task.

6. Ensure that the **Disabled** and **Stop Execution** check boxes are not selected.

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 "Specifying Values for the Scheduled Task Attributes" section on page 2-6 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 the scheduled tasks, proceed to the "Configuring the Connector for Multiple Installations of the Target System" section on page 2-7.

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
- Employee 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	Description	Default/Sample Value
Server	Name of the IT resource instance that the connector uses to reconcile data	Oracle HR
LookupField Name	Name of the lookup field to be reconciled	OracleHR.Employees

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

Employee Reconciliation Scheduled Task

You must specify values for the following attributes of the employee 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	Description	Default/Sample Value
Target System Recon – Resource Object name	Name of the resource object	Oracle HR Employee
Server	IT resource instance that the connector uses to reconcile data	Oracle HR

Attribute	Description	Default/Sample Value
IsTrusted	Specifies whether or not reconciliation must be performed in trusted mode	YES or NO

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

Configuring the Connector for Multiple Installations of the Target System

> **Note:** Perform this procedure only if you want to configure the connector for multiple installations of Oracle e-Business Employee Reconciliation. Refer to *Oracle Identity Manager Design Console Guide* for detailed instructions on performing each step of this procedure.

To configure the connector for multiple installations of the target system:

1. Create and configure one resource object for each target system installation.

   The Resource Objects form is in the Resource Management folder. The Oracle HR Employee resource object is created when you import the connector XML file. You can use this resource object as the template for creating the remaining resource objects.

2. Create and configure one IT resource for each resource object.

   The IT Resources form is in the Resource Management folder. The Oracle HR IT resource is created when you import the connector XML file. You can use this IT resource as the template for creating the remaining IT resources, of the same resource type.

3. Design one process form for each resource object.

   The Form Designer form is in the Development Tools folder. The UD_ORAHR_EM process form is created when you import the connector XML file.

   You can use this process form as a template for creating the remaining process forms.

4. Create and configure one process definition for each resource object.

   The Process Definition form is in the Process Management folder. The Oracle HR Employee process definition is created when you import the connector XML file. You can use this process definition as the template for creating the remaining process definitions.

   While creating process definitions for each target system installation, the following steps that you must perform are specific to the creation of each process definition:

   - From the **Object Name** lookup field, select the resource object that you create in Step 1.

   - From the **Table Name** lookup field, select the process form that you create in Step 3.

5. Configure reconciliation for each target system installation. Refer to the "Step 6: Configuring Reconciliation" section on page 2-5 for instructions. Note that only the values of the following attributes are to be changed for each reconciliation scheduled task:

- `Target System Recon - Resource Object name`
- `Server`
- `IsTrusted`

Set the `IsTrusted` attribute to `YES` for the Oracle e-Business Employee Reconciliation installation that you want to designate as a trusted source. You can designate either a single or multiple installations of Oracle e-Business Employee Reconciliation as the trusted source. For the remaining Oracle e-Business Employee Reconciliation installations, set this attribute to `NO`.

6. If required, modify the fields to be reconciled for the Xellerate User resource object.

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Testing and Troubleshooting

After you deploy the connector, you must test it to ensure that it functions as expected. This chapter discusses the following topics related to connector testing:

- Connector Test Cases
- Troubleshooting

Connector Test Cases

There are two types of tests that you can perform for reconciliation testing:

- A test from the trusted source/target resource to Oracle Identity Manager (a T-X test).
- A test from the nontrusted source/target resource to Oracle Identity Manager (an N-X test).

The following table describes sample test cases based on these test types.

Test Case	Type	Test Type	Description/Comments
If an Xellerate User is not found, then create the Xellerate User and provision a resource object for the user.	Functional	T-X	The user should be reconciled successfully.
If the Xellerate User is found, then update the user and the corresponding resource objects.	Functional	T-X	The user should be updated successfully.
Check if resource objects have been provisioned an Xellerate User. If resource objects are found, then do not delete the user. If resource objects are not found, then delete the user.	Functional	T-X	If there are no resource objects, then the user should be deleted successfully from Oracle Identity Manager. If resource objects are found, then the user should not be deleted from Oracle Identity Manager.
If the Xellerate User exists, then update the user and the corresponding resource object.	Functional	N-X	The Xellerate User should be updated successfully.
If the Xellerate User is not found, then do not perform any action.	Functional	N-X	No action is performed.

Troubleshooting

This section provides solutions to a commonly encountered problem associated with the connector.

Problem:

Oracle Identity Manager cannot establish a connection with the Oracle e-Business Employee Reconciliation server.

Solution:

- Ensure that the Oracle e-Business Employee Reconciliation server is running.

- Ensure that the Oracle Identity Manager server is running.

- Examine the Oracle Identity Manager record (in the IT Resources form). Ensure that the IP address, administrator ID, and administrator password are correct.

4

Known Issues

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

- While reconciling a date field from Oracle e-Business Employee Reconciliation to Oracle Identity Manager, the Oracle Identity Manager API does not accept a blank or null value for the date. However, Oracle e-Business Employee Reconciliation accepts a null value for the date. Therefore, the value provided in the case of null date is `0000/00/00`.

- SSL functionality is not available in this release.

- Some Asian languages use multibyte character sets. If the character limit for the fields in the target system is specified in bytes, then the number of Asian-language characters that you can enter in a particular field may be less than the number of English-language characters that you can enter in the same field. The following example illustrates this limitation:

  Suppose you can enter 50 characters of English in the User Last Name field of the target system. If you were using the Japanese language and if the character limit for the target system fields were specified in bytes, then you would not be able to enter more than 25 characters in the same field.

- This release of the connector does not support the Japanese language.

A

Attribute Mappings Between Oracle Identity Manager and Oracle e-Business Employee Reconciliation

The following table discusses attribute mappings between Oracle Identity Manager and Oracle e-Business Employee Reconciliation.

Oracle Identity Manager Attribute	Oracle e-Business Employee Reconciliation Attribute	Description
First Name	PER_ALL_PEOPLE_F.FIRST_NAME	First name
Email	PER_ALL_PEOPLE_F.EMAIL_ADDRESS	E-mail address
Person ID	PER_ALL_PEOPLE_F.PERSON_ID	Identification ID
Middle Name	PER_ALL_PEOPLE_F.MIDDLE_NAMES	Middle name
Last Name	PER_ALL_PEOPLE_F.LAST_NAME	Last name
Department	HR_ALL_ORGANIZATION_UNITS.ORGANIZATION_ID	Organization
SSN	PER_ALL_PEOPLE_F.NATIONAL_IDENTIFIER	Social security number
Title	PER_ALL_PEOPLE_F.TITLE	Title
Location	HR_LOCATIONS_ALL.LOCATION_CODE	Location
Manager	PER_ALL_PEOPLE_F.FULL_NAME	Supervisor's name
City	PER_ADDRESSES.TOWN_OR_CITY	City
Postal Code	PER_ADDRESSES.POSTAL_CODE	Postal code
Country	PER_ADDRESSES.COUNTRY	Country name
Telephone Number	PER_ADDRESSES.TELEPHONE_NUMBER_1	Telephone number
Employee number	PER_ALL_PEOPLE_F.EMPLOYEE_NUMBER	Assignment number
Manager ID	PER_ALL_PEOPLE_F.PERSON_ID	Identification ID for supervisor

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