Oracle® Identity Manager

Connector Guide for PeopleSoft Employee Reconciliation

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Oracle Identity Manager Connector Guide for PeopleSoft Employee Reconciliation, Release 9.0.4

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Contents

Preface

Oracle Identity Manager Connector Guide for PeopleSoft Employee Reconciliation provides information about integrating Oracle Identity Manager with PeopleSoft 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 PeopleSoft 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 Connector Pack Release 9.0.4 documentation library, 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 PeopleSoft Employee Reconciliation?

This chapter provides an overview of the updates made to the software and documentation for the PeopleSoft Employee Reconciliation connector in release 9.0.4 of the Oracle Identity Manager connector pack.

> **See Also:** The 9.0.3 release of this guide for information about updates that were new for the 9.0.3 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.

Enabling Logging

By following the instructions in the "Enabling Logging" section on page 2-4, you can configure the generation of log information that is specific to the target system.

Partial Reconciliation

You can customize the reconciliation process by specifying the subset of added or modified target system records that must be reconciled. This is described in the "Partial Reconciliation" section on page 3-1.

Specifying the Number of Records to Be Reconciled

In this release of the connector, you can specify the number of records to be reconciled. This feature is described in the "Specifying the Number of Records to Be Reconciled" section on page 3-2.

Changes in the List of Supported Target Systems

In the "Step 1: Verifying Deployment Requirements" section on page 2-1, the list of supported target systems has been modified. This release of the connector also supports PT 8.45 - 8.47.

Separate Scheduled Tasks for Trusted and Nontrusted Source Reconciliation

In this release of the connector, there are separate user reconciliation scheduled tasks for trusted and nontrusted source reconciliation. In the "Employee Reconciliation Scheduled Tasks" section on page 3-3, the attributes of these scheduled tasks are described.

Timeout Feature During Reconciliation

In this release of the connector, you can specify the number of retries and the delay between retries for connection attempts from Oracle Identity Manager to the target system. The "Defining IT Resources" section on page 2-19, describes the following parameters that are used to implement this feature:

- NumberOfRetries
- DelayBetweenRetries

Documentation-Specific Updates

The following documentation-specific update has been made in this release of the guide:

- Instructions in the "Files and Directories That Comprise the Connector" section on page 1-4 have been revised.
- Information from Appendix B, "Encrypting a New Oracle Identity Manager Password" of the earlier release of this guide has been moved to the "Encrypting a New Oracle Identity Manager Password" section on page 3-9. The old Appendix B has been removed.
- Information from Appendix C, "Adding Custom Attributes for Reconciliation" of the earlier release of this guide has been moved to the "Adding Custom Attributes for Reconciliation" section on page 3-5. The old Appendix C has been removed.
- Some of the content from the Chapter 2 of the earlier release of this guide has been moved to Chapter 3.

1

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 PeopleSoft Employee Reconciliation is used to integrate Oracle Identity Manager with PeopleSoft 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:

Employee Data Reconciliation

Reconciliation involves duplicating in Oracle Identity Manager additions of and modifications to user accounts on the target system. It is an automated process initiated by a scheduled task that you configure.

See Also: The "Deployment Configurations of Oracle Identity Manager" section in *Oracle Identity Manager Connector Framework Guide* for conceptual information about reconciliation configurations

The following fields of PeopleSoft Employee Reconciliation are reconciled:

- LastName
- FirstName
- BirthDate
- Sex
- City
- SSN

- Phone
- Country
- Address
- State
- DeptId
- JobCode
- EmplID
- Postal
- HireDate
- EmpStatus
- Termination Date

The following target system fields are reconciled only if trusted source reconciliation is implemented:

- User ID
- First Name
- Last Name
- Organization
- User Type
- Employee Type

The connector supports employee data reconciliation in two ways:

- **Bulk reconciliation (first-time reconciliation)**

  Bulk reconciliation involves reconciling records of existing employees using a flat file. The flat file is generated using an Application Engine program written in PeopleCode. This program is run using PeopleSoft Application Designer.

- **Change-based reconciliation**

  In change-based reconciliation, data for any newly created or updated employee is reconciled instantaneously. This type of reconciliation is performed using the PeopleSoft Application Messaging mechanism.

  Change-based reconciliation involves the use of:

  – A PeopleCode trigger, which generates an XML message containing updated information

  – Attribute definitions (usually resource parameters) to be synchronized

  – A Web service that acts as a passive listener for XML messages from PeopleSoft

  – An XML file, `psft_xellerate_msg.xml`, that defines the schema of the XML message received from PeopleSoft

  The synchronization process from PeopleSoft Employee Reconciliation to Oracle Identity Manager involves the following steps:

  1. Employee information is updated in PeopleSoft Employee Reconciliation. This activates a PeopleCode trigger.

2. The PeopleCode trigger generates an XML message containing the updated employee information and sends it to the listener for the PeopleSoft Employee Reconciliation connector.
3. The listener forwards the XML message to the PeopleSoft Employee Reconciliation connector using HTTP.
4. The PeopleSoft Employee Reconciliation connector receives the XML message and sends a reconciliation event to the Oracle Identity Manager.

Supported Functionality

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

Function	Type	Description
Trusted Employee Reconciliation	Reconciliation	Reconciles employee data from PeopleSoft Employee Reconciliation 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 Employee Reconciliation	Reconciliation	Reconciles employee data from PeopleSoft Employee Reconciliation to Oracle Identity Manager. A user is not created in Oracle Identity Manager.

See Also: Appendix A for information about attribute mappings between Oracle Identity Manager and PeopleSoft Employee Reconciliation.

Multilanguage Support

The connector supports the following languages:

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

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

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/PeopleSoft Enterprise Applications/PeopleSoft Employee Reconciliation`

The following table lists the files and directories that comprise the connector.

File in the Installation Media Directory	Description
`lib/xlPSFTHRRecon.jar`	This JAR file contains the class files that are used to implement bulk reconciliation.
`lib/peopleSoftApp.war`	This WAR file contains the classes and configuration files required for the PeopleSoft listener Web application. This file is used to implement change-based reconciliation.

For PeopleTools 8.22, the following files in the `MsgPublisher` directory:
`xliMsgPublisher.jar`
`publish.bat`
	The JAR file contains the class file that transfers the XML messages generated by the PeopleTools 8.22 file handler on the PeopleSoft Web server to the PeopleSoft connector listener servlet.
	The `publish.bat` file is a Windows batch file that triggers the message transfer on a periodic basis. Refer to the "Configuring PeopleSoft Enterprise Portal" section on page 2-9 for more information.

For PeopleTools 8.22*:*
`PeopleCode/PT822/HRMSCBRecon.txt`
For PeopleTools 8.45 through 8.47*:*
`PeopleCode/HRMSCBRecon.txt`
	This file contains the code that you must add to the PeopleCode for the`SavePostChange` event while performing the "Publishing the Message" procedure described in the "Creating and Publishing the Message" section on page 2-6.

For PeopleTools 8.22*:*
`PeopleCode/PT822/HRMSBulkRecon.txt`
For PeopleTools 8.45 through 8.47*:*
`PeopleCode/HRMSBulkRecon.txt`
	This file contains the code for the Application Engine program. It is used to generate the flat file for bulk reconciliation.

`test/config/configureReconciliation.properties`	This file is used to specify the date format used for reconciliation.
`test/config/attributemapping_recon.properties`	This file contains the parameters 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.
`test/cbrecon/psft-xel-test.vbs`	This VBScript file can be used to test the PeopleSoft listener Web service by creating XML messages similar to the ones created by PeopleSoft Employee Reconciliation.

File in the Installation Media Directory	Description
test/cbrecon/pingRequest.xml test/cbrecon/pingResponse.xml test/cbrecon/publishRequest.xml test/cbrecon/publishResponse.xml	These XML files are required by the psft-xel-test.vbs file for communicating with the PeopleSoft listener Web service using XML over HTTP.
test/cbrecon/psft_xellerate_msg.xml	This XML file is used by the psft-xel-test.vbs file to define the schema of the XML message that is received from PeopleSoft Employee Reconciliation.
ext/csv.jar	The csv.jar file is a third-party library that is used to read comma-separated files.
XML/adpPSFT_RECON_DM.xml	This XML file contains definitions of the following components of the connector: ■ Resource object ■ Process definition ■ Process tasks ■ Custom Process Form
XML/adpPSFT_XellerateUser_RECON_DM.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.

Note: The files in the test directory are used only to run tests on the connector.

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

Determining the Release Number of the Connector

You can use any one of the following methods to determine the release number of the connector.

Before Deployment

To determine the release number of a connector:

1. Extract the contents of the xlPSFTHRRecon.jar file. This file is in the following directory on the installation media:

   Enterprise Applications/PeopleSoft Enterprise Applications/PeopleSoft Employee Reconciliation/lib

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

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

Note: If you maintain a copy of the `xlPSFTHRRecon.jar` file after deployment, you can use this method to determine the release number of the connector at any stage. After you deploy the connector, it is recommended that you use the "After Deployment" method, which is described in the following section.

After Deployment

To determine the release number of a connector that has already been deployed:

See Also: *Oracle Identity Manager Design Console Guide*

1. Open the Oracle Identity Manager Design Console.
2. In the Form Designer, open the process form. The release number of the connector is the value of the **Version** field.

2

Deploying the Connector

Deploying the connector involves the following steps:

Step 1: Verifying Deployment Requirements

To verify deployment requirements for the PeopleSoft Employee Reconciliation connector:

1. Ensure that your environment meets the requirements listed in the following table.

Item	Requirement
Oracle Identity Manager	Oracle Identity Manager release 8.5.3 or later
Target system	The target system can be any one of the following: ■ PeopleSoft HRMS 8.3 SP 1 ■ PeopleSoft HRMS 8.9 ■ PeopleTools 8.22 and 8.45 through 8.46 You must ensure that the following components are installed and configured: ■ Tuxedo and Jolt (the application server) ■ PeopleSoft Internet Architecture ■ PeopleSoft Application Designer (2-tier mode)
Target system host platform	Microsoft Windows
External code	The external code requirement consists of the following files: ■ `HRMSBulkRecon.txt` ■ `HRMSCBRecon.txt` Refer to "Step 2: Copying the Connector Files" on page 2-2 for more information about these files.

2. Ensure that you have administrative rights on the PeopleSoft Employee Reconciliation server to perform the following procedures:
   - Create a new message node
   - Configure PeopleSoft Enterprise Portal
   - Add a routing rule to publish messages

Step 2: Copying the Connector Files

The 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/PeopleSoft Enterprise Applications/PeopleSoft Employee Reconciliation`

Refer to the "Files and Directories That Comprise the Connector" section on page 1-4 for more information about these files.

File in the Installation Media Directory	Destination Directory
`lib/peopleSoftApp.war`	*OIM_home*`/xlclient/lib`
`lib/xlPSFTHRRecon.jar`	*OIM_home*`/xellerate/ScheduleTask`
`lib/ext/csv.jar`	*OIM_home*`/xellerate/ThirdParty`
For PeopleTools 8.22, copy the files from the `MsgPublisher` directory	*OIM_home*`/xellerate/MsgPublisher`
For PeopleTools 8.22, copy the files from the `PeopleCode/PT822` directory	*OIM_home*`/xellerate/Scripts`
For PeopleTools 8.45 through 8.47, copy the files from the `PeopleCode` directory	**Note:** You must copy the files for either PeopleTools 8.22 or PeopleTools 8.45 through 8.47, not both.
Files in the `test/config` directory	*OIM_home*`/xellerate/XLIntegrations/PSFTHR/config`
Copy the files from the `resources` directory	*OIM_home*`/xellerate/connectorResources`
Files in the `test/cbrecon` directory	*OIM_home*`/xellerate/XLIntegrations/PSFTHR/cbrecon`
Files in the `XML` directory	*OIM_home*`/xlclient`

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 3: 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
- Enabling Logging

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.

You may require the assistance of the system administrator to change to the required input locale.

Clearing Content Related to Connector Resource Bundles from the Server Cache

While performing the instructions described in the "Step 2: Copying the Connector Files" section on page 2-2, you copy files from the `resources` directory on the installation media into the *`OIM_home`*`/xellerate/connectorResources` directory. Whenever you add a new resource bundle in the `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.

   Note: You must perform Step 1 before you perform Step 2. If you run the command described in Step 2 as follows, then an exception is thrown:

   `OIM_home``/xellerate/bin/`*`script_file_name`*

2. Enter one of the following commands:

   - On Microsoft Windows:

     ```
     PurgeCache.bat ConnectorResourceBundle
     ```

   - On UNIX:

     ```
     PurgeCache.sh ConnectorResourceBundle
     ```

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

   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`

Enabling Logging

When you enable logging, Oracle Identity Manager automatically stores in a log file information about events that occur during the course of provisioning and reconciliation operations. To specify the type of event for which you want logging to take place, you can set the log level to one of the following:

- ALL

  This level enables logging for all events.

- DEBUG

  This level enables logging of information about fine-grained events that are useful for debugging.

- INFO

  This level enables logging of informational messages that highlight the progress of the application at coarse-grained level.

- WARN

  This level enables logging of information about potentially harmful situations.

- ERROR

  This level enables logging of information about error events that may still allow the application to continue running.

- FATAL

  This level enables logging of information about very severe error events that could cause the application to stop functioning.

- OFF

  This level disables logging for all events.

The file in which you set the log level depends on the application server that you use:

- **BEA WebLogic**

  To enable logging:

  1. Add the following line in the *OIM_home*/xellerate/config/log.properties file:

     log4j.logger.Adapter.PSFTEmpRecon=*log_level*

  2. In this line, replace *log_level* with the log level that you want to set.

     For example:

     log4j.logger.Adapter.PSFTEmpRecon=INFO

  After you enable logging, log information is written to the following file:

  WebLogic_home/user_projects/domains/*domain_name*/*server_name*/*server_name*.log

- **IBM WebSphere**

  To enable logging:

  1. Add the following line in the *OIM_home*/xellerate/config/log.properties file:

     log4j.logger.Adapter.PSFTEmpRecon=*log_level*

2. In this line, replace *log_level* with the log level that you want to set.

   For example:

   ```
   log4j.logger.Adapter.PSFTEmpRecon=INFO
   ```

After you enable logging, log information is written to the following file:

WebSphere_home/AppServer/logs/*server_name*/startServer.log

- **JBoss Application Server**

  To enable logging:

  1. In the *JBoss_home*/server/default/conf/log4j.xml file, locate the following lines:

     ```
     <category name="Adapter.PSFTEmpRecon">
        <priority value="log_level"/>
     </category>
     ```

  2. In the second XML code line, replace *log_level* with the log level that you want to set. For example:

     ```
     <category name="Adapter.PSFTEmpRecon">
        <priority value="INFO"/>
     </category>
     ```

  After you enable logging, log information is written to the following file:

  JBoss_home/server/default/log/server.log

- **OC4J**

  To enable logging:

  1. Add the following line in the *OIM_home*/xellerate/config/log.properties file:

     ```
     log4j.logger.Adapter.PSFTEmpRecon=log_level
     ```

  2. In this line, replace *log_level* with the log level that you want to set.

     For example:

     ```
     log4j.logger.Adapter.PSFTEmpRecon=INFO
     ```

  After you enable logging, log information is written to the following file:

  OC4J_home/opmn/logs/default_group~home~default_group~1.log

Step 4: Configuring the Target System

To configure the PeopleSoft Employee Reconciliation server, use an administrator account to perform the following procedures:

- Creating and Publishing the Message
- Configuring PeopleSoft Enterprise Portal
- Preparing the Flat File for Bulk Reconciliation

Creating and Publishing the Message

The procedure to create and publish the message depends on the release of PeopleTools that you are using:

- Creating and Publishing the Message on PeopleTools 8.22
- Creating and Publishing the Message on PeopleTools 8.45 Through 8.47

Creating and Publishing the Message on PeopleTools 8.22

Creating and publishing the message on PeopleTools 8.22 involves the following steps:

1. To create the message channel:
   a. Click **Start**, **Programs**, and **Application Designer**. The Application Designer window is displayed in the 2-tier mode.
   b. Select **New** from the **File** menu. The New Definition dialog box is displayed.
   c. Select **Message Channel**, and then click **OK**.
   d. Save the new message channel as `PERSON_BASIC`.
   e. Select **Object Properties** from the **File** menu. The Message Channel Properties dialog box is displayed.
   f. Select the **Run** option, and then select **Archive Messages**.
   g. Click **OK,** and then save the message.
2. To create the message:
   a. In the Application Designer, select **New** from the **File** menu. The New Definition dialog box is displayed.
   b. Select **Message** from the list, and then click **OK**.
   c. Select **Object Properties** from the **File** menu. The Message Properties dialog box is displayed.
   d. Click the **Use** tab.
   e. On the Use tab, select the **PERSON_BASIC** message channel and the version of the message that you create.
   f. Select **Active** to make the message an active message, and then click **OK**.
   g. Right-click **VERSION_1**, and select the **Insert Child Record** option. The Insert Record window is displayed.
   h. Enter `PERSONAL_DATA` in the **Name** field, click **Insert**, and then click **Close**.
   i. Click **PERSONAL_DATA** under **VERSION_1**. All the fields comprising `PERSONAL_DATA` records are displayed.

      By default, all the fields appear as selected. Deselect the fields that are not required for the message XML file to be generated. Refer to the *`OIM_home`*`/xellerate/test/cbrecon/psft_xellerate_msg.xml` file for information about the fields in the message XML file.
   j. Repeat Steps g through i for the `PS_PERS_NID`, `EMPLOYMENT`, and `JOB` records.
   k. Save the message as `PSFT_XELLERATE_MSG`.
3. To publish the message:
   a. Select **Open** from the **File** menu. The Open Definition dialog box is displayed.

b. Select **Component** from the **Definition** list, enter `PERSONAL_DATA` in the **Name Selection Criteria** field, and then click **Enter**. All component names starting with the text `PERSONAL_DATA` are displayed.

c. Select **PERSONAL_DATA** from the list, and then click **Open**. The details of the `PERSONAL_DATA` component are displayed.

d. Click the **Structure** tab, right-click **PERSONAL_DATA**, and then select **View PeopleCode**. The PeopleCode for the `PERSONAL_DATA` component is displayed.

e. Select the `SavePostChange` event from the list in the upper-left corner of the window. The PeopleCode for this event is displayed.

f. Copy the code given in the following file immediately after the import definitions in the PeopleCode for the `SavePostChange` event:

`OIM_home/xellerate/Scripts/HRMSCBRecon.txt`

g. Select **Save** from the **File** menu to save the changes to the `PERSONAL_DATA` component.

After you complete this procedure, proceed to the "Configuring PeopleSoft Enterprise Portal" section on page 2-9.

Creating and Publishing the Message on PeopleTools 8.45 Through 8.47

Creating and publishing the message on PeopleTools 8.45 through 8.47 involves the following steps:

1. To create the message channel:

   a. Click **Start**, **Programs**, **Peoplesoft8.*x***, and then **Application Designer**. The Application Designer window is displayed in 2-tier mode.

   Note: The reconciliation process requires the Application Engine program to be run in 2-tier mode. To open the Application Designer in 2-tier mode, you must have the database client, which is the client of the database that PeopleSoft is using, installed on the server. In addition, you must select the appropriate database type from the **Connection Type** field (for example, Oracle Database) while providing sign-on information in the PeopleSoft Application Designer Signon window.

   b. Select **New** from the **File** menu. The New Definition dialog box is displayed.

   c. Select **Message Channel,** and then click **OK.**

   d. Save the new message channel as `PERSON_BASIC`.

   e. Select **Definition Properties** from the **File** menu. The Message Channel Properties dialog box is displayed.

   f. Select the **Run** option, and then select **Archive Messages.**

   g. Click **OK** and save the message channel.

2. After creating the message channel, create the message as follows:

   a. In the PeopleSoft Application Designer, select **New** from the **File** menu. The New Definition dialog box is displayed.

   b. Select **Message** from the list and then click **OK.**

c. Select **Definition Properties** from the **File** menu. The Message Properties dialog box is displayed.

d. Click the **Use** tab.

e. On the Use tab, select the PERSON_BASIC message channel and the version of the message that you create in Step 2 of this procedure.

f. Select **Active** to make the message an active message.

g. Save the message as PSFT_XELLERATE_MSG.

3. To publish the message:

a. Select **Open** from the **File** menu. The Open Definition dialog box is displayed.

b. Select **Component** from the Definition list, enter PERSONAL_DATA in the **Name Selection Criteria** field, and then press **Enter**. All component names starting with the text PERSONAL_DATA are displayed.

c. Select PERSONAL_DATA from the list, and then click **Open.** The details of the PERSONAL_DATA component are displayed.

d. Click the **Structure** tab, right-click **PERSONAL_DATA,** and then select **View PeopleCode.** The PeopleCode for the PERSONAL_DATA component is displayed.

e. Select the **SavePostChange** event from the list in the upper-right corner of the window. The PeopleCode for this event is displayed.

f. Copy the code given in the following file after the import definitions in the PeopleCode for the SavePostChange event:

OIM_home/xellerate/Scripts/HRMSCBRecon.txt

g. If the Peoplesoft server is running on Microsoft SQL Server, then:

– Replace TO_CHAR(BIRTHDATE, 'ddmmyy') with convert (varchar, BIRTHDATE, 104)

– Replace TO_CHAR(HIRE_DT, 'ddmmyy') with convert (varchar, HIRE_DT, 104)

If the Peoplesoft server is running on IBM DB2 UDB, then:

– Replace TO_CHAR(BIRTHDATE, 'ddmmyy') with CHAR (BIRTHDATE, EUR)

– Replace TO_CHAR(HIRE_DT, 'ddmmyy') with CHAR (HIRE_DT, EUR)

h. Add the following function call code at the end of the PeopleCode for the SavePostChange event:

Note: Perform this step after you copy the code from the HRMSCBRecon.txt file.

```
/**********************************************************************/
/*  Calling the Generate function to generate the
PSFT_XELLERATE_MSG message*/
/**********************************************************************/
Local string &emplid;
&emplid = PERSON.EMPLID;
GENERATE(&emplid);
```

i. To save the changes to the PERSONAL_DATA component, select **Save** from the **File** menu.

Configuring PeopleSoft Enterprise Portal

PeopleSoft Enterprise Portal provides a single gateway to critical information in PeopleSoft Employee Reconciliation and other PeopleSoft applications.

The procedure to configure PeopleSoft Enterprise Portal depends on the release of PeopleTools that you are using:

- Configuring PeopleSoft Enterprise Portal on PeopleTools 8.22
- Configuring PeopleSoft Enterprise Portal on PeopleTools 8.45 Through 8.47

Configuring PeopleSoft Enterprise Portal on PeopleTools 8.22

Configuring PeopleSoft Enterprise Portal on PeopleTools 8.22 involves the following steps:

1. To create the XL_NODE remote node:
   a. In the Application Designer, select **New** from the **File** menu. The New Definition dialog box is displayed.
   b. Select **Message Node** from the list, and then click **OK**.
   c. Right-click anywhere in the white space, and then select **Insert Location**. The Location dialog box is displayed.
   d. Enter the URL for the PeopleSoft Application Gateway in the following format:

      `http://hostname:port/servlets/gateway`

      In this URL, *hostname* is the application server that hosts PeopleSoft and *port* is the port number at which the application server is listening.
   e. Select **Object Properties** from the **File** menu. The Message Node Properties dialog box is displayed.
   f. Select the **Use** tab. Ensure that **Local Node** is not selected.
   g. Save the remote node as XL_NODE.
2. To configure the PERSON_BASIC message channel:
   a. From the **File** menu, select **Open** and then click **Message Channel**.
   b. To open the PERSON_BASIC message channel, select **PERSON_BASIC**.
   c. Click the **Routing Rules** tab.
   d. Right-click anywhere in the empty area of the right pane, and then select **Insert Message Node**. The Insert Message Node dialog box is displayed.
   e. Select the **XL_NODE** message node, and then click **Insert**.
   f. Click **Cancel** to close the dialog box.
   g. Right-click the message node displayed on the Routing Rules tab.
   h. Point to **Routing Direction**, and then select **Publish To**.
   i. Save the message channel.

3. To configure the PeopleSoft Enterprise Portal gateway so that messages can be sent through the gateway to third-party systems:

   Note: The Simple File Handler mentioned in this procedure is a utility in PeopleTools 8.22 that can receive messages published by a PeopleSoft node and write these messages to a file that can be used by third-party systems.

   a. In a Web browser, use a URL with the following format to launch the PeopleSoft configuration servlet interface (handler directory):

      `http://hostname:port/servlets/gateway.administration`

      In this URL, *hostname* is the application server that hosts PeopleSoft and *port* is the port number at which the application server is listening.

   b. Click **Add Handler**. The Add Handler window is displayed.

   c. Enter the full name of the Simple File Handler class, `psft.pt8.filehandler.SimpleFileHandler`.

   d. Click **Save**. The Handler Directory window is displayed.

   e. To load the handler, click **Load**. After the handler loads, the "Loaded successfully" message is displayed in the Status column.

   f. Click **Configure**.

   g. Click **Add a file handler node**. The Add File Handler Node window is displayed.

   h. In the **Node Name** field, enter the name of the message node that you create, `XL_NODE`.

   i. Specify the output directory in which the published messages are to be stored.

   j. Select **Include Header**.

   k. Click **Save**.

4. XML messages are generated by the PeopleTools 8.22 Simple File Handler. To publish these messages to the PeopleSoft Connector Listener servlet, you must create a scheduled task as follows:

   Note: The scheduled task calls a Java program that communicates with the servlet deployed on the Oracle Identity Manager server. The servlet parses the message and sends reconciliation events to Oracle Identity Manager.

   The servlet sends a return code based on the status of reconciliation event. If the reconciliation event is successfully sent, then the message is deleted or archived. Otherwise, the message file is left unchanged. The next time the scheduled task is run, another attempt is made to send the message.

   a. Copy the `publish.bat` and `xliMsgPublisher.jar` files from the *OIM_home*`/xellerate/MsgPublisher` directory to a directory on the PeopleSoft Employee Reconciliation server.

b. Use a text editor to open the `publish.bat` file, and then make the following changes in the file:

i. Change the value of the *JAVA_HOME* variable so that it points to the JDK installation directory on the PeopleSoft Web server.

ii. Specify the following values in the Java command given at the end of the file:

- `PeopleSoft_listener_servlet_URL`
- `Output_directory_for_XML_messages`
- `XML_message_name`
- `console_log_file_path`

The command is in the following format:

```
java com.thortech.xl.Integration.msgpublisher.PeopleSoftPublisher
"PeopleSoft_listener_servlet_URL" "Output_directory_for_XML_messages"
XML_message_name >> console_log_file_path
```

For example:

```
java Com.thortech.xl.Integration.msgpublisher.PeopleSoftPublisher
"http://host:port/peopleSoftApp/do/peopleSoftAction" "C:/test/file"
PSFT_XELLERATE_MSG >> c:/test/consolelog.log
```

c. Save and close the batch file.

d. On the PeopleSoft Web server, click **Start**, **Settings**, and **Control Open**.

e. Double-click **Scheduled Tasks**.

f. Click **Add Schedule Task**, and then click **Next**.

g. Click **Browse**, and then select the `publish.bat` file from the directory in which you save it.

h. Select **Daily**, click **Next**, and then click **Next** again.

i. Enter the user ID and password for the scheduled task to run.

j. Select **Open Advance properties**.

k. Click **Finish**.

l. On the Schedule tab, click **Advanced**.

m. Select **Repeat Task**.

n. Select the frequency at which you want the task to run.

o. Click **OK**, and then click **OK** again to close the window.

Configuring PeopleSoft Enterprise Portal on PeopleTools 8.45 Through 8.47

Configuring PeopleSoft Enterprise Portal on PeopleTools 8.45 through 8.47 involves the following steps:

To configure the PeopleSoft Enterprise Portal gateway so that messages can be sent through the gateway to the connector:

1. Open a Web browser and enter the URL for PeopleSoft Enterprise Portal. The URL for PeopleSoft Enterprise Portal is in the following format:

   `http://`*servername*`/psp/`*Databasename*`/?cmd=login`

For example:

```
http://psftserver.acme.com/TestDB/?cmd=login
```

2. Expand **PeopleTools, Integration Broker,** and then **Gateways**. The Gateway component details are displayed.
3. Enter `LOCAL` in the **Integration Gateway ID** field, and then click **Search.** The `LOCAL` gateway is a default gateway that is created when you install PeopleSoft Enterprise Portal.
4. Ensure that the IP address specified in the URL of the PeopleSoft listening connector is the IP address of the Web server on which PeopleSoft Employee Reconciliation is installed. The PeopleSoft listening connector is a module provided by PeopleSoft. The URL of the PeopleSoft listening connector is in the following format:

   ```
   http://computer_name/PSIGW/PeopleSoftListeningConnector
   ```

   For example:

   ```
   http://172.19.151.53/PSIGW/PeopleSoftListeningConnector
   ```

5. Click **Load Gateway Connectors** to load all target connectors that are registered with the LOCAL gateway.
6. Click **Save**.

To create the `XL_NODE` node to serve as the remote node:

1. In the PeopleSoft Enterprise Portal window, expand **PeopleTools, Integration Broker,** and **Node Definitions**.
2. Click the **Add a New Value** tab.
3. On the Add a New Value tab, enter `XL_NODE` as the node name and then click **Add**. The Node Definition page is displayed.
4. Enter a description for the node in the **Description** field.
5. Make this node a remote node by deselecting the **Local Node** check box and selecting the **Active Node** check box.
6. On the **Connectors** tab, enter the following information and then perform a lookup:

   Gateway ID: `LOCAL`

   Connector ID: `PSFT81TARGET`

7. On the **Properties** tab, enter the following information:

   Property ID: `PSFT81TARGET`

   Property Name: `URL`

   Required value: Enter the URL of the PeopleSoft servlet that is supposed to receive the XML message. This URL must be in the following format:

   ```
   http://computer_name:port/peopleSoftApp/do/peopleSoftAction
   ```

   For example:

   ```
   http://myserver:8080/peopleSoftApp/do/peopleSoftAction
   ```

8. Click **Save.**

9. On the **Transactions** tab, click **Add Transaction.** The Add Transaction dialog box is displayed.
10. Enter the following details to define a new transaction:

    Transaction Type: `Outbound Asynchronous`

    Request Message: `PSFT_XELLERATE_MSG`

    Request Message Version: `VERSION_1`
11. Click **Add.**
12. To keep the status as active, select **Active.**
13. Click **Save** to save the changes.

To secure the `PERSON_BASIC` message channel:

1. In PeopleSoft Enterprise Portal, expand **PeopleTools**, **Security**, **Permission & Roles**, and **Permission Lists**.
2. Select **AEAE1000**. The AEAE1000 permission list is displayed.
3. Select the **Message Monitor** tab, and then click the '+' button to add a channel name**.**
4. Specify **PERSON_BASIC** as the channel name, and select **FULL** as the access level.
5. Click **Save.**
6. To verify that the `PERSON_BASIC` message channel is in running mode:
    a. Expand **PeopleTools, Integration Broker, Monitor,** and **Monitor Message.**
    b. Click the **Channel Status** tab.
    c. Verify that the `PERSON_BASIC` message channel is running. If it is paused, then click **Run.**

Preparing the Flat File for Bulk Reconciliation

Preparing the flat file for bulk reconciliation involves the following steps:

- Creating the Application Engine Program
- Running the Application Engine Program

Creating the Application Engine Program

To create the Application Engine program:

1. Click **Start**, **Programs**, **Peoplesoft8.*x***, and then **Application Designer**. The Application Designer window is opened in 2-tier mode.
2. Select **New** from the **File** menu. The New Definition dialog box is displayed.
3. Select **Application Engine** from the **Definition** list. The App Engine Program window is displayed.
4. Click the plus sign (+) that is displayed before the `MAIN` section in the Application Engine Program under which there may be multiple steps and in each step there may be some PeopleCode to be run. By default, a step titled `Step01` is created and added to `MAIN`.
5. Rename `Step01` to `Populate.`

6. In the App Engine Program window, select **Action** from the **Insert** menu. An action is added to the `Populate` step.
7. Select **PeopleCode** from the list for the new action.
8. Click **Save** from the **File** menu to save the Application Engine program with the name `BLKPRCS_HR`.
9. Double-click the **PeopleCode** action. A new PeopleCode window is displayed.
10. In the PeopleCode window, copy the code from the *OIM_home*`/xellerate/Scripts/HRMSBulkRecon.txt` file. You must make the following changes in this code:
    - A sample directory path for the output file is given in this code. Change the sample directory path to a directory path on the PeopleSoft Employee Reconciliation server.
    - Depending on the database that the Peoplesoft server is running on, you may need to make changes in the code that you copy from the `HRMSBulkRecon.txt` file:
      – If the Peoplesoft server is running on Microsoft SQL Server, then:

        Replace `TO_CHAR(BIRTHDATE, 'ddmmyy')` with `convert(varchar, BIRTHDATE, 104)`

        Replace `TO_CHAR(HIRE_DT, 'ddmmyy')` with `convert(varchar, HIRE_DT, 104)`

      – If the Peoplesoft server is running on IBM DB2 UDB, then:

        Replace `TO_CHAR(BIRTHDATE, 'ddmmyy')` with `CHAR(BIRTHDATE, EUR)`

        Replace `TO_CHAR(HIRE_DT, 'ddmmyy')` with `CHAR(HIRE_DT, EUR)`
11. Depending on the database that the PeopleSoft server is running on, you may need to change the value of the `XelServerDate` property in the following file:

    OIM_home`/xellerate/XLIntegrations/PSFTHR/config/configureReconciliation.properties`

    - For Microsoft SQL Server, change the value of this property to the following:

      `dd.mm.yy`

    - For IBM DB2 UDB, change the value of this property to the following:

      `dd.mm.yyyy`
12. Save the Application Engine program and close the window.

Running the Application Engine Program

The procedure to run the Application Engine program depends on the release of PeopleTools that you are using:

- Running the Application Engine Program on PeopleTools 8.22
- Running the Application Engine Program on PeopleTools 8.45 Through 8.47

Running the Application Engine Program on PeopleTools 8.22

To run the Application Engine program on PeopleTools 8.22*:*

1. Log in to the PeopleSoft Enterprise Portal.
2. Click **People Tools**, **Process Scheduler Manager**, **Use**, and **Process Definitions**. The Process Definitions page is displayed.
3. Click **Add a New value**.
4. Select **Application Engine** from the **Process Type** list.
5. Enter the name of the Application Engine program as the process name, for example, **BLKPRCS_HR**.
6. Click **Add**.
7. Select the Application Engine Program from the search results that are displayed when you click **Add**.
8. On the Process Definition Options tab, specify the following values:
   - **Run Location**: Server
   - **Server Name**: PSNT
   - **Component**: PRCSMULTI
   - **Process Groups**: ALLPANLS
9. Click **Save**.
10. Return to the home page.
11. Click **People Tools**, **Process Scheduler Manager**, **Process**, and **Sample Processes**. The Sample Processes page is displayed.
12. Click **Add a New value**.
13. Specify a run control ID, and then click **Add**.

    Note: A run control ID is used as a key for records that contain the parameters required by a process at run time. If the parameters are stored in a table that the process can query using the run control ID and user ID, then the process can run without user intervention.

14. Click **Run**. The Process Scheduler Request page is displayed
15. Specify the server name.
16. Select the Application Engine program name, and then click **OK**.
17. Click **Process Monitor** to verify the status of the process.

    After the process status changes to `Success`, the comma-separated file is created at the location specified in the code that you copy from the `HRMSBulkRecon.txt` file.

Running the Application Engine Program on PeopleTools 8.45 Through 8.47

Note: For the Application Engine program to run in 2-tier mode, the database client must be installed on the server used for accessing the application designer. To switch to the 2-tier mode, you select Connection Type as the database on the PeopleSoft sign-on screen.

To run the Application Engine program on PeopleTools 8.45 through 8.47*:*

1. Click **Start**, **Programs**, **Peoplesoft8.*x***, and then **Application Designer**. The Application Designer window is opened in 2-tier mode.
2. Specify the connection type, user ID, and password.
3. To open the Application Engine program that you create:
   a. From the **File** menu, select **Open** and then select **Application Engine Program** from the **Object Type** list.
   b. Select **BLKPRCS_HR,** and then click **Open**.
4. Click the RUN PROGRAM control on the toolbar below the menu bar. The code for the PeopleCode action is run. The comma-separated file containing employee records is created at the location specified in the code.

Step 5: Configuring the PeopleSoft Listener for Change-Based Reconciliation

This section describes how to configure the listener for the connector. In the following procedure, *OIM_home* refers to the local Oracle Identity Manager installation directory.

To configure the PeopleSoft listener:

1. Enter the following command to extract the contents of the `peopleSoftApp.war` file. This file is in the *OIM_home*`/xlclient/lib` directory.

   ```
   jar -xvf peopleSoftApp.war
   ```

   Note: All the files mentioned in the remaining steps of this procedure are extracted from the `peopleSoftApp.war` file.

2. Edit the `deployment.properties` file. This file contains the message property that corresponds to the name of the XML message from the PeopleSoft feed. The default value of this attribute is `PSFT_XELLERATE_MSG`. Obtain the correct value for this attribute from the PeopleSoft administrator.
3. Edit the `xlsession.properties` file. This file contains the following Oracle Identity Manager connection parameters:
   - **ObjectName:** This is the name of the resource object in Oracle Identity Manager against which the reconciliation event is created. The default value is `PSFT_HR_RO`. For nontrusted source reconciliation, you can change it to the name of any other resource object.
   - **Username:** This is the user name for logging in to Oracle Identity Manager. The default value is `xelsysadm`.
   - **Password:** This is the password for logging in to Oracle Identity Manager. You must enter the encrypted value for the default password:

     ```
     Kk3821YZhIoG36lvDH2YTw==
     ```

     Note: If the password for Oracle Identity Manager is different from the default password, then refer to the "Encrypting a New Oracle Identity Manager Password" section on page 3-9 for information about encrypting a plaintext password.

4. Edit the `xlclient.properties` file. This file contains the following system properties that enable an API client to communicate with Oracle Identity Manager:
   - **xl.homedir:** This property specifies the Oracle Identity Manager client directory. Typically, the Oracle Identity Manager client directory is *`OIM_home`*`/xlclient.`
   - **java.security.policy:** This property specifies the path of the security policy file. Typically, this file is located in the *`OIM_home`*`/xlclient/config` directory.
   - **java.security.auth.login.config:** This property specifies the path of the authentication configuration file. Typically, this file is located in the *`OIM_home`*`/xlclient/config` directory.

     Each application server uses a different authentication configuration file:

     IBM WebSphere: `authws.conf`

     BEA WebLogic: `authwl.conf`

     JBoss Application Server: `auth.conf`
   - **java.naming.provider.url:** This property specifies the JNP URL of the application server. This URL is given in the `<Discovery><CoreServer><java.naming.provider.url>` tag of the *`OIM_home`*`/xlclient/config/xlconfig.xml` file.
5. Edit the following properties in the `configureReconciliation.properties` file:
   - **reconciliationMode:** This property can accept one of two possible values:
     - If you want to perform reconciliation in trusted mode, then set this property to `trusted.`
     - If you want to perform reconciliation in nontrusted mode, then set this property to `nontrusted.`
   - **Serverdateformat:** This property specifies the date format that is used by the PeopleSoft Employee Reconciliation server. You can select one of the following date formats:
     - `dd-mmm-yy`
     - `ddmmyy`
     - `yyddmm`
     - `yymmdd`
     - `dd.mm.yy` (for Microsoft SQL Server)
     - `dd.mm.yyyy` (for IBM DB2 UDB)
   - **xellerateOrganization:** This property specifies the name of the Oracle Identity Manager organization. The default value of this property is `Xellerate Users.` The value that you assign to this property must exist in Oracle Identity Manager.
   - **nullDate:** This property specifies the default value for a date field. The value is `2200/01/01 00:00:00 PST.` This value is used if the date field is left empty.
   - **PeoplesoftstartingYEAR:** This property specifies the year in two digits. If the number represented by these two digits (*xx*):
     - Is greater than or equal to 50, then it is assumed that the year is 19*xx.*

– Is less than 50, then it is assumed that the year is 20*xx*.

This specifies a range of 1950 to 2049 for the property.

- **XelServerDate:** This property contains the date format that is used for the Oracle Identity Manager server.

  Current value of the `XelServerDate` property: `yyyy/MM/dd hh:mm:ss z`

  Note: You must not change this date format.

6. Copy the following files from the *OIM_home*`/xellerate/lib` directory to the `WEB-INF/lib` directory:

   Note: If required, delete the existing JAR files in the `WEB-INF/lib` directory before you copy the JAR files from the *OIM_home*`/xellerate/lib` directory.

   - `wlXLSecurityProviders.jar`
   - `xlAPI.jar`
   - `xlAuthentication.jar`
   - `xlBackOfficeBeans.jar`
   - `xlBackofficeClient.jar`
   - `xlCache.jar`
   - `xlCrypto.jar`
   - `xlDataObjectBeans.jar`
   - `xlDataObjects.jar`
   - `xlLogger.jar`
   - `xlUtils.jar`
   - `xlVO.jar`

   Copy the following files from the *OIM_home*`/xellerate/ext` directory to the `WEB-INF/lib` directory:

   - `oscache.jar`
   - `javagroups-all.jar`

7. Delete the `peopleSoftApp.war` file from the temporary directory into which you extract it, and then use the following command to re-create the file:

   ```
   jar -cvf peopleSoftApp.war .
   ```

8. Ensure that the old version of the `peopleSoftApp.war` file is removed from the application server (JBoss Application Server, IBM WebSphere, BEA WebLogic, or OC4J) deployment directory and the *OIM_home*`/xellerate/webapp` directory.
9. Copy the newly created `peopleSoftApp.war` file into the application server deployment directory and the *OIM_home*`/xellerate/webapp` directory.
10. Restart the Oracle Identity Manager server and client.

Note: You can add custom attributes to be reconciled during change-based reconciliation. However, you must complete the deployment procedure before you can add custom attributes.

Refer to the "Adding Custom Attributes for Reconciliation" section on page 3-5 for information about the procedure to add custom attributes for reconciliation.

Step 6: 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 `adpPSFT_RECON_DM.xml` file, which is in the *`OIM_home`*`/xlclient` directory. Details of the XML file are shown on the File Review page.
5. Click **Add File.** The Substitutions page is displayed.
6. Click **Next.** The Confirmation window is displayed.
7. 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. These nodes represent Oracle Identity Manager entities that are redundant. Before you import the connector XML file, you must remove these entities by right-clicking each node and then selecting **Remove**.
8. Click **Import.** The connector file is imported into Oracle Identity Manager.

Defining IT Resources

You must specify values for the `PSFT Base Server` IT resource parameters listed in the following table.

Parameter	Description
`NumberOfRetries`	Number of times the connection to the target system must be retried before the `InvocationTargetException` is thrown Default value: 2 **Note:** The timeout feature is enabled only for bulk reconciliation and provisioning. It is not applied during change-based reconciliation.
`DelayBetweenRetries`	Time difference between subsequent retries (in milliseconds) Default value: 20000
`IndexOfLastReconciledRecords`	Stores the index of last successful reconciled record Default value: `-1`

3

Configuring the Connector

After you deploy the connector, you must configure it to meet your requirements. This chapter discusses the following connector configuration procedures:

> **Note:** These sections provide both conceptual and procedural information about configuring the connector. It is recommended that you read the conceptual information before you perform the procedures.

- Configuring Reconciliation
- Configuring the Connector for Multiple Installations of the Target System

Configuring Reconciliation

As mentioned earlier in this guide, reconciliation involves duplicating in Oracle Identity Manager additions of and modifications to user accounts on the target system. This section discusses the following topics related to configuring reconciliation:

- Partial Reconciliation
- Specifying the Number of Records to Be Reconciled
- Configuring Trusted Source Reconciliation
- Configuring the Reconciliation Scheduled Tasks
- Adding Custom Attributes for Reconciliation
- Encrypting a New Oracle Identity Manager Password

Partial Reconciliation

By default, all target system records that are added or modified after the last reconciliation run are reconciled during the current reconciliation run. You can customize this process by specifying the subset of added or modified target system records that must be reconciled. You do this by creating filters for the reconciliation module.

Creating a filter involves specifying a value for a target system attribute, which will be used in the query SELECT criteria to retrieve the records to be reconciled. You can specify values for any one or a combination of the following target system attributes:

- `LastName`
- `DeptId`

- Postal

If you want to use multiple target system attributes to filter records, then you must also specify the logical operator (AND or OR) that you want to apply to the combination of target system attributes that you select.

While deploying the connector, follow the instructions in the "Specifying Values for the Scheduled Task Attributes" section on page 3-3 to specify values for these attributes and the logical operator that you want to apply.

Specifying the Number of Records to Be Reconciled

During a reconciliation run, all changes in the target system records are reconciled into Oracle Identity Manager. Depending on the number of records to be reconciled, this process may require a large amount of time. In addition, if the connection breaks during reconciliation, then the process would take longer to complete.

You can specify the number of records to be reconciled. To do this, you use the `NoOfRecordsToBeReconciled` scheduled task attribute.

You specify a value for the `NoOfRecordsToBeReconciled` attribute by following the instructions described in the "Specifying Values for the Scheduled Task Attributes" section on page 3-3.

Configuring Trusted Source Reconciliation

While configuring the connector, the target system can be designated as a trusted source or a target resource. If you designate the target system as a **trusted source**, then both newly created and modified user accounts are reconciled in Oracle Identity Manager. If you designate the target system as a **target resource**, then only modified user accounts are reconciled in Oracle Identity Manager.

Note: You can skip this section if you do not want to designate the target system as a trusted source for reconciliation.

1. Import the XML file for trusted source reconciliation, `adpPSFT_XellerateUser_RECON_DM.xml`, by using the Deployment Manager. This section describes the procedure to import the XML file.

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

2. Specify values for the attributes of the `PSFTHRTrustedUserRecon` scheduled task. This procedure is described later in this guide.

To configure trusted source reconciliation:

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 `adpPSFT_XellerateUser_RECON_DM.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 Substitutions page is displayed.
6. Click **Next**. The Confirmation page is displayed.
7. Click **Import**.
8. In the message that is displayed, click **Import** to confirm that you want to import the **XML** file and then click **OK**.

Configuring the Reconciliation Scheduled Tasks

When you perform the procedure described in the "Step 6: Importing the Connector XML File" section on page 2-19, the scheduled tasks for lookup fields, trusted source user, and nontrusted user reconciliations are automatically created in Oracle Identity Manager. To configure 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.
5. 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. To set the task to run only once, select the **Once** option in the Interval region.
9. Provide values for the attributes of the scheduled task. Refer to the "Specifying Values for the Scheduled Task Attributes" section on page 3-3 for information about the values to be specified.
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 task, proceed to the "Adding Custom Attributes for Reconciliation" section on page 3-5.

Specifying Values for the Scheduled Task Attributes

The user reconciliation scheduled task has been divided into two scheduled tasks, one each for trusted employee reconciliation and nontrusted employee reconciliation.

Employee Reconciliation Scheduled Tasks Depending on whether you want to implement trusted or nontrusted soured reconciliation, you must specify values for the attributes of one of the following employee reconciliation scheduled tasks:

- `PSFTHRTrustedUserRecon` (Scheduled task for trusted source reconciliation)
- `PSFTHRNonTrustedUserRecon` (Scheduled task for nontrusted source reconciliation)

The following table describes the attributes of both scheduled tasks.

Note:

- Attribute values are predefined in the connector XML file that you import. Specify values only for those attributes that you want to change.
- Values (either default or user-defined) must be assigned to all the attributes. If even a single attribute value were left empty, then reconciliation would not be performed.

Attribute Name	Description	Sample Value
`FolderPath`	Directory path where employee reconciliation files generated by PeopleSoft Employee Reconciliation are stored	`C:/PSFTHR/UserRecon`
`TargetSystem`	Name of the resource object	`PSFT_HR_RO`
`IsTrusted`	Specifies whether or not reconciliation is to be performed in trusted mode	For trusted source reconciliation, set the value of this attribute to `Yes`. For nontrusted source reconciliation, set the value of this attribute to `No`.
`XellerateOrganization`	Default name for the Oracle Identity Manager organization This value is used to create the Xellerate User in trusted source reconciliation mode. **Note:** This attribute is specific to the scheduled task for trusted source reconciliation.	`Xellerate Users`
`NoOfRecordsToBeReconciled`	Specifies the number of records to be reconciled Default value: `all`	Any integer value greater than zero
`Lastname`	Specifies the Lastname attribute value for which you want to perform reconciliation During reconciliation, only those target system records that contain the Lastname value you specify are reconciled.	`Nodata`
`Postal`	Specifies the `Postal` attribute value for which you want to perform reconciliation During reconciliation, only those target system records that contain the `Postal` value you specify are reconciled.	`Nodata`
`DeptId`	Specifies the `DeptId` attribute value for which you want to perform reconciliation During reconciliation, only those target system records that contain the `DeptId` value you specify are reconciled.	`Nodata`
`Operator`	Specifies the `Operator` attribute value for which you want to perform reconciliation During reconciliation, only those target system records that contain the `Operator` value you specify are reconciled.	`Nodata`

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

Adding Custom Attributes for Reconciliation

Note: In this section, the term "attribute" refers to the identity data fields that store user data.

Standard change-based reconciliation involves the reconciliation of predefined attributes. If required, you can add custom attributes to the list of attributes that are reconciled.

Note: Before you can add custom attributes, you must complete the connector deployment procedure described in Chapter 2.

The procedure to add a custom attribute for reconciliation depends on the release of PeopleTools that you are using:

- Adding a Custom Attribute for Reconciliation on PeopleTools 8.22
- Adding a Custom Attribute for Reconciliation on PeopleTools 8.45 Through 8.47

Adding a Custom Attribute for Reconciliation on PeopleTools 8.22

To add a custom attribute for reconciliation on PeopleTools 8.22:

1. In PeopleSoft Application Designer:
   a. Select **Open** from the **File** menu. The Open Definition dialog box is displayed.
   b. Select Application Engine program from the Definition list, enter `BLKPRCS_HR` in the **Name Selection Criteria** field, and then click **Enter**. The details of the `BLKPRCS_HR` Application Engine program are displayed.
   c. Click the plus sign (+) that is displayed before the `MAIN` section in the Application Engine Program under which the Populate step is listed.
   d. Double-click the **PeopleCode** action. A new PeopleCode window is displayed.
   e. In the PeopleCode window, copy the code from the *`OIM_home`*`/xellerate/Scripts/HRMSBulkRecon.txt` file. A sample directory path for the output file is given in this code. Change the sample directory path to a directory path on the PeopleSoft Employee Reconciliation server.
   f. Save the Application Engine program, and then close the window.
   g. To run the Application Engine program, follow the steps described in the "Running the Application Engine Program on PeopleTools 8.22" section on page 2-14.
2. Make the required changes in the PeopleCode given in the `HRMSBulkRecon.txt` file. This file is in the *`OIM_home`*`/xellerate/Scripts` directory. The required changes are as follows:
   a. Modify the following line in the file:

```
&hdr =
"EMPLID,LASTNAME,FIRSTNAME,SEX,POSTAL,CITY,SSN,PHONE,BIRTHDATE,COUNTRY,ADDR
```

```
ESS,STATE,HIRE_DATE,DEPTID,JOBCODE";
```

For example, to add the LOCATION column, add LOCATION at the end of the list of the list of column names as follows:

```
&hdr =
"EMPLID,LASTNAME,FIRSTNAME,SEX,POSTAL,CITY,SSN,PHONE,BIRTHDATE,COUNTRY,ADDR
ESS,STATE,HIRE_DATE,DEPTID,JOBCODE,LOCATION";
```

b. At the end of the SQL statements section, edit the SQL statement to retrieve the column values for the new attribute and store the values in local variables.

For example, suppose you want to add the job location attribute, LOCATION, to the list of attributes that are reconciled. Then, performing this step involves editing the SQL statement as follows, so that it retrieves the values of the LOCATION column from the JOB table:

```
SQLExec("select DEPTID, JOBCODE, LOCATION from ps_job a where emplid =:1
and effdt=(select max(effdt) from ps_job b where a.emplid=b.emplid and
effseq =(select max(effseq) from ps_job c where b.emplid = c.emplid and
b.effdt=c.effdt))", &empid, &deptid, &jobcd, &location);
```

c. Add the required lines at the end of the block of code for adding data to the XML message. For example, to add the LOCATION column to the JOB tag, add the lines highlighted in bold in the following code sample:

```
/* FOR JOB RECORD */
&MSG_ROWSET.GetRow(1).JOB.JOBCODE.Value = &jobcd;
&MSG_ROWSET.GetRow(1).JOB.DEPTID.Value = &deptid;
&MSG_ROWSET.GetRow(1).JOB.LOCATION.Value = &location;
```

3. To extract the contents of the peopleSoftApp.war file into a temporary directory, enter the following command:

```
jar -xvf peopleSoftApp.war
```

Copies of this file are in the application server deployment directory and the *OIM_home*/xellerate/webapp directory.

4. In the attributemap.properties file, add the XPath (key-value entry) of the custom attribute. For example, you can add the following XPath for the LOCATION attribute:

```
Users.LOCATION=//Transaction/DEPT_TBL/LOCATION
```

5. Delete the existing peopleSoftApp.war file from the temporary directory into which you extract it, and then enter the following command to re-create the file:

```
jar -cvf peopleSoftApp.war .
```

6. Delete the old version of the peopleSoftApp.war file from the application server deployment directory and the *OIM_home*/xellerate/webapp directory.
7. Copy the newly created peopleSoftApp.war file into the application server deployment directory and the *OIM_home*/xellerate/webapp directory.
8. In the Oracle Identity Manager Design Console, make the required changes as follows:

See: *Oracle Identity Manager Design Console* for detailed instructions on performing the following steps

a. Add a column corresponding to the new attribute in the User Defined process form, UD_PSFT_HR. For the example described earlier, you can add the UD_PSFT_HR_LOCATION column.

b. Add a reconciliation field corresponding to the new attribute in the resource object, PSFT_HR_RO. For the example described earlier, you can add the Users.LOCATION reconciliation field.

c. Modify the PSFT_HR Process process definition to include the mapping between the newly added attribute and the corresponding reconciliation field. For the example described earlier, the mapping is as follows:

```
Users.LOCATION = UD_PSFT_HR_LOCATION
```

d. Modify the attributemapping_recon.properties file, which is in the *OIM_home*/xellerate/XLIntegrations/PSFTHR/config directory.

You can also add new attributes in this file. The format that you must use is as follows:

```
TargetAttribute=Users.OimAttributeName
```

For example:

```
LOCATION=Users.LOCATION
```

In this example, LOCATION is the reconciliation field and also the equivalent target system attribute. As a standard, the prefix "Users." is added at the start of all reconciliation field names.

9. Restart the Oracle Identity Manager server and client.

Adding a Custom Attribute for Reconciliation on PeopleTools 8.45 Through 8.47

To add a custom attribute for reconciliation on PeopleTools 8.45 through 8.47:

1. Make the required changes in the PeopleCode given in the HRMSCBRecon.txt file. This file is in the *OIM_home*/xellerate/Scripts directory. The required changes are as follows:

a. At the end of the SQL statements section, add a SQL statement to retrieve the column values for the new attribute and store the values in local variables.

For example, suppose you want to add the department location attribute, LOCATION, to the list of attributes that are reconciled. Then, performing this step involves adding the following SQL statement to retrieve the values of the LOCATION column from the PS_DEPT_TBL table:

```
SQLExec("SELECT DESCR, LOCATION FROM PS_DEPT_TBL WHERE DEPTID=:1", &deptid,
&deptname, &location);
```

b. Add the required lines at the end of the block of code for adding data to the XML message. For example, to add the LOCATION column to the DEPT_TBL tag, add the lines highlighted in bold in the following code sample:

```
&recnode = &fieldtypenode.AddElement("DEPT_TBL");
&recnode.AddAttribute("class", "R");
&fields = &recnode.AddElement("DEPTNAME");
&fields.AddAttribute("type", "CHAR");
&fields = &recnode.AddElement("LOCATION");
&fields.AddAttribute("type", "CHAR");
```

c. Add the required lines at the end of the block of code for adding data to the XML message. For example, to add the LOCATION column to the DEPT_TBL tag, add the lines highlighted in bold in the following code sample:

```
&datarecnode = &transnode.AddElement("DEPT_TBL");
&datarecnode.AddAttribute("class", "R");
&datafldnode = &datarecnode.AddElement("DEPTNAME");
&textnode = &datafldnode.AddText(&deptname);
&datafldnode = &datarecnode.AddElement("LOCATION");
&textnode = &datafldnode.AddText(&location);
```

2. In PeopleSoft Application Designer, copy the contents of the HRMSCBRecon.txt file into the savePostChange event for the PERSONAL_DATA component.
3. To extract the contents of the peopleSoftApp.war file into a temporary directory, enter the following command:

```
jar -xvf peopleSoftApp.war
```

Copies of this file are in the application server deployment directory and the *OIM_home*/xellerate/webapp directory.

4. In the attributemap.properties file, add the XPath (key-value entry) of the custom attribute. For example, you can add the following XPath for the LOCATION attribute:

```
Users.LOCATION=//Transaction/DEPT_TBL/LOCATION
```

5. Delete the existing peopleSoftApp.war file from the temporary directory into which you extract it, and then enter the following command to re-create the file:

```
jar -cvf peopleSoftApp.war .
```

6. Delete the old version of the peopleSoftApp.war file from the application server deployment directory and the *OIM_home*/xellerate/webapp directory.
7. Copy the newly created peopleSoftApp.war file into the application server deployment directory and the *OIM_home*/xellerate/webapp directory.
8. In the Oracle Identity Manager Design Console, make the required changes as follows:

See: *Oracle Identity Manager Design Console* for detailed instructions on performing the following steps

a. Add a column corresponding to the new attribute in the User Defined process form, UD_PSFT_HR. For the example described earlier, you can add the UD_PSFT_HR_LOCATION column.

b. Add a reconciliation field corresponding to the new attribute in the resource object, PSFT_HR_RO. For the example described earlier, you can add the Users.LOCATION reconciliation field.

c. Modify the PSFT_HR Process process definition to include the mapping between the newly added attribute and the corresponding reconciliation field. For the example described earlier, the mapping is as follows:

```
Users.LOCATION = UD_PSFT_HR_LOCATION
```

d. Modify the attributemapping_recon.properties file, which is in the *OIM_home*/xellerate/XLIntegrations/PSFTHR/config directory.

You can also add new attributes in this file. The format that you must use is as follows:

TargetAttribute=Users.*OimAttributeName*

For example:

LOCATION=Users.LOCATION

In this example, LOCATION is the reconciliation field and also the equivalent target system attribute. As a standard, the prefix "Users." is added at the start of all reconciliation field names.

9. Restart the Oracle Identity Manager server and client.

Encrypting a New Oracle Identity Manager Password

If the password of the Oracle Identity Manager administrator is different from the default password, then you must encrypt the Oracle Identity Manager password as follows:

Note: The default administrator user ID is xelsysadm.

1. On the Oracle Identity Manager server, open a command window.
2. In the command window, change to the *OIM_home*/xellerate/ScheduleTask directory.
3. Enter the following command:

```
java -classpath xlPSFTHRRecon.jar  \
com.thortech.xl.Integration.peoplesoft.util.tcUtilEncryption -e \
OIM_plaintext_password
```

In this command, *OIM_plaintext_password* is the new Oracle Identity Manager administrator password that you want to encrypt.

The encrypted password is displayed in the command window.

4. Copy the encrypted password into the xlsession.properties file. This file is compressed in the *OIM_home*/xlclient/lib/peopleSoftApp.war file.
5. Delete the peopleSoftApp.war file from the temporary directory in which you extract it, and then use the following command to re-create the file:

```
jar -cvf peopleSoftApp.war .
```

6. Ensure that the old version of the peopleSoftApp.war file is removed from the application server (JBoss Application Server, IBM WebSphere, BEA WebLogic, or OC4J) deployment directory and the *OIM_home*/xellerate/webapp directory.
7. Copy the newly created peopleSoftApp.war file into the application server (JBoss, IBM WebSphere, BEA WebLogic, or OC4J) deployment directory and the *OIM_home*/xellerate/webapp directory.
8. Restart the Oracle Identity Manager server and client.

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 PeopleSoft Employee Reconciliation.

You may want to configure the connector for multiple installations of PeopleSoft Employee Reconciliation. The following example illustrates this requirement:

The Tokyo, London, and New York offices of Acme Multinational Inc. have their own installations of PeopleSoft Employee Reconciliation. The company has recently installed Oracle Identity Manager, and they want to configure Oracle Identity Manager to link all the installations of PeopleSoft Employee Reconciliation.

To meet the requirement posed by such a scenario, you must configure the connector for multiple installations of PeopleSoft Employee Reconciliation.

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

See Also: *Oracle Identity Manager Design Console Guide* for detailed instructions on performing each step of this procedure

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

   The IT Resources form is in the Resource Management folder. An 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 IT resource type.

2. Configure reconciliation for each target system installation. Refer to the "Configuring Reconciliation" section on page 3-1 for instructions. Note that you only need to modify the attributes that are used to specify the IT resource and to specify whether or not the target system installation is to be set up as a trusted source.

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

Additional Steps for Configuring Change-Based Reconciliation

For change-based reconciliation, you must perform the procedure described in the "Step 4: Configuring the Target System" section on page 2-5 and in the "Step 5: Configuring the PeopleSoft Listener for Change-Based Reconciliation" section on page 2-16.

The following are actions that you must perform differently from the procedure described in these sections:

- In Step 4.b of the "Configuring PeopleSoft Enterprise Portal on PeopleTools 8.22" section on page 2-9:

  Note: Perform this step only if you use PeopleTools 8.22.

  Change the Java command in the `publish.bat` file as shown in the following example:

  ```
  java Com.thortech.xl.Integration.msgpublisher.PeopleSoftPublisher
  "http://host:port/peopleSoftApp1/do/peopleSoftAction" "C:/test/file"
  PSFT_XELLERATE_MSG >> c:/test/consolelog.log
  ```

Similarly, change the name of the Web application for each WAR file that you create.

- In Step 7 of the procedure to create the `XL_NODE` node, given in the "Configuring PeopleSoft Enterprise Portal on PeopleTools 8.45 Through 8.47" section on page 2-11:

  Note: Perform this step only if you use PeopleTools 8.45 through 8.47.

  Change the name of the application in the URL as shown in the following example:

  `http://computer_name:port/peopleSoftApp1/do/peopleSoftAction`

  Similarly, change the name of the Web application in the URL for each WAR file that you create.

- In the "Step 5: Configuring the PeopleSoft Listener for Change-Based Reconciliation" section on page 2-16:

  In Step 3, the value that you specify for the ObjectName parameter in the `xlsession.properties` file must be the name of the resource object that you create.

  In Step 7, specify a different file name in the command that you use to re-create the WAR file. For example:

  ```
  jar -cvf peopleSoftApp1.war
  ```

  Similarly, change the name of the WAR file for each target system installation.

4

Testing the Connector

Testing the connector involves verifying that the PeopleSoft Listener Web application can reconcile employees into Oracle Identity Manager. This chapter provides instructions to perform this test.

Prerequisites for Testing the PeopleSoft Listener Web Application

The following are prerequisites for testing the PeopleSoft Listener Web application:

- Ensure that the Microsoft Windows scripting engine is installed. This is required to run VBScript files.
- Ensure that the PeopleSoft XML message schema is described in the `psft_xellerate_msg.xml` file, which is in the *`OIM_home`*`/xellerate/test` directory.

Testing the PeopleSoft Listener Web Application

To test the PeopleSoft Listener Web application:

1. In the *`OIM_home`*`/xellerate/test/cbrecon/psft-xel-test.vbs` file:
   - Modify the value of the `ps_server_url` variable so that it points to the URL for the PeopleSoft Listener Web application.
   - Specify the required PeopleSoft attributes and employee data values in the `ExecuteATM` function.
2. Run `psft-xel-test.vbs`. Ensure that the script runs without any errors.

When the script is run, it creates a reconciliation event. Verify that the reconciliation event is created in Oracle Identity Manager and that the event contains the data that you specify in the VBScript file.

5

Known Issues

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

- Secure Sockets Layer (SSL) connections are not supported.
- The connector files for PeopleTools 8.22 and PeopleTools 8.45 through 8.47 cannot be deployed on the same Oracle Identity Manager installation.

A

Attribute Mappings Between Oracle Identity Manager and PeopleSoft Employee Reconciliation

The following table discusses attribute mappings between Oracle Identity Manager and PeopleSoft Employee Reconciliation.

Oracle Identity Manager Attribute	PeopleSoft Employee Reconciliation Attribute	Description
EmployeeID	PS_NAMES.EMPLID	Person ID associated with user
LastName	PS_NAMES.LAST_NAME	Last name
FirstName	PS_NAMES.FIRST_NAME	First Name
Sex	PS_PERSONAL_DATA.SEX	Sex
Postal	PS_PERSONAL_DATA.POSTAL	Postal address
City	PS_PERSONAL_DATA.CITY	City name
SSN	PS_PERS_NID.NATIONAL_ID	National ID provided to user
Phone	PS_PERSONAL_DATA.PHONE	Telephone number
BirthDate	PS_PERSONAL_DATA.BIRTHDATE	Date of birth
Country	PS_PERSONAL_DATA.COUNTRY	Country name
Address	PS_PERSONAL_DATA.ADDRESS1	Contact address
State	PS_PERSONAL_DATA.STATE	State
HireDate	PS_EMPLOYMENT.HIRE_DT	Date of hire
DepartmentID	PSJOB.DEPTID	Department ID
JobCode	PSJOB.JOBCODE	Job code

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