Oracle® Identity Manager

Connector Guide for Microsoft Exchange

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Oracle Identity Manager Connector Guide for Microsoft Exchange, Release 9.0.4

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Preface

This guide provides information about Oracle Identity Manager Connector for Microsoft Exchange.

Audience

This guide is intended for resource administrators and target system integration teams.

Documentation Accessibility

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Related Documents

For information about installing and using Oracle Identity Manager, see the Oracle Identity Manager documentation library.

For generic information about connectors, see *Oracle Identity Manager Connector Concepts*.

The following Oracle Technology Network page provides links to Oracle Identity Manager documentation:

http://www.oracle.com/technology/documentation/oim.html

Documentation Updates

Oracle is committed to delivering the best and most recent information available. For information about updates to the Oracle Identity Manager Connectors documentation, 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 Oracle Identity Manager Connector for Microsoft Exchange?

This chapter provides an overview of the updates made to the software and documentation for the Microsoft Exchange connector in release 9.0.4.17.

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

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

- Software Updates

  This section describes updates made to the connector software.

- Documentation-Specific Updates

  This section describes major changes made to this guide. These changes are not related to software updates.

Software Updates

The following sections discuss updates made from release 9.0.4 to the current release of the connector:

- Software Updates in Release 9.0.4.13

Software Updates in Release 9.0.4.1.1

The following are issues resolved in release 9.0.4.1.1:

Bug Number	Issue	Resolution
6891695	The status of an Exchange resource stays at `Provisioned` even after the OIM User to whom the resource has been provisioned is deleted.	This issue has been resolved. When you delete an OIM User, the status of that user's Exchange resource changes to `Revoked`.

Software Updates in Release 9.0.4.2

The following are issues resolved in release 9.0.4.2:

Bug Number	Issue	Resolution
6877390	If you delete a mailbox by using the Microsoft Active Directory console, then the Microsoft Exchange attributes of the user are also deleted. However, if you performed a Delete Mailbox provisioning operation from Oracle Identity Manager, then the Exchange attributes of the user were not deleted.	This issue has been resolved. When you perform a Delete Mailbox provisioning operation, the Microsoft Exchange attributes of the user are also deleted.

Software Updates in Release 9.0.4.3

There are no software updates in release 9.0.4.3.

Software Updates in Release 9.0.4.4

The following are issues resolved in release 9.0.4.4:

Bug Number	Issue	Resolution
6998281	During a Delete Mailbox provisioning operation, the `legacyExchangeDN` attribute was automatically set to `ADCDisabledMail`.	The issue has been resolved. The `legacyExchangeDN` attribute is deleted when you delete a mailbox.

Software Updates in Release 9.0.4.5

The following are issues resolved in release 9.0.4.5:

Bug Number	Issue	Resolution
7014860	If you provisioned an Exchange mailbox to an OIM User, then some attribute values of that user's Active Directory account were overwritten with incorrect values.	This issue is now resolved. When you provision an Exchange mailbox to an OIM User, attribute values of that user's Active Directory account are not overwritten.

Software Updates in Release 9.0.4.6

The following are issues resolved in release 9.0.4.6:

Bug Number	Issue	Resolution
6839860	A reconciliation run failed if you did not specify Exchange as the name of the resource object in the Name field of the Resource Objects form.	To resolve this issue, the ResourceObject attribute has been added to the Exchange Reconciliation scheduled task. If you change the name of the resource object in the Resource Objects form, then specify the same name as the value of the ResourceObject attribute.

Software Updates in Release 9.0.4.7

The following are issues resolved in release 9.0.4.7:

Bug Number	Issue	Resolution
7026049	A Delete Mailbox operation failed if the mailbox was provisioned without specifying values for the optional attributes.	This issue has been resolved. You can now delete a mailbox even if the mailbox was created without specifying values for the optional attributes.
	As the outcome of the Delete Mailbox operation, the Rejected status was displayed for the Delete Mailbox operation on the Resource Provisioning Details page of the Administrative and User Console. In addition, the "AD User Deletion Failed: Problem modifying object" error message was written to the log file.	

Software Updates in Release 9.0.4.8

The following are issues resolved in release 9.0.4.8:

Bug Number	Issue	Resolution
6771509 and 6776924	Values specified for the Server Name and Store Name parameters of the IT resource were not considered during a reconciliation run. In other words, *all* newly created and modified mailboxes were fetched during each reconciliation run.	These issues have been resolved. In addition, the Store Group Name parameter has been added to the IT resource.
		By providing values for the Server Name, Store Group Name, and Store Name IT resource parameters, you can specify the mail stores from which mailboxes must be fetched for reconciliation. See the "Importing the Connector XML Files" section for information about using this feature.
	In addition, you could not specify that you wanted to reconcile mailboxes from a specific server or store group.	In addition, the mail store that you specify in the IT resource is displayed on the process form.

Software Updates in Release 9.0.4.9

There are no software updates in release 9.0.4.9.

Software Updates in Release 9.0.4.10

There are no software updates in release 9.0.4.10.

Software Updates in Release 9.0.4.10.1

The following are issues resolved in release 9.0.4.10.1:

Bug Number	Issue	Resolution
7045721	Suppose you provision a Microsoft Exchange mailbox to an OIM User and then revoke the mailbox resource. For the same user, you again provision and revoke a mailbox. Up to this point, the connector worked as expected. If you provisioned a mailbox to the same user a third time, then the mailbox provisioned the second time is reactivated. The expected behavior was that a new mailbox should be provisioned to the user.	This issue has been resolved. Each time you revoke an existing mailbox and then provision a mailbox, a new mailbox is created for the user. Mailboxes that have been revoked are not reused.

Software Updates in Release 9.0.4.11

There are no software updates in release 9.0.4.11.

Software Updates in Release 9.0.4.12

Arabic and Danish have been added to the list of supported languages.

Software Updates in Release 9.0.4.13

The following are issues resolved in release 9.0.4.13:

Bug Number	Issue	Resolution
7298922	Reconciliation of deleted mailboxes was not supported.	This issue has been resolved. If a deleted mailbox is detected during reconciliation, then the Microsoft Exchange resource is revoked from the corresponding OIM User. See "Scheduled Task for Reconciliation of Deleted Mailboxes" on page 3-3 in the connector guide for more information about the scheduled task for reconciling deleted mailboxes. To track the time stamp at which this reconciliation run ends, the Last Deleted Time Stamp parameter has been added in the definition of the IT resource. See "Importing the Connector XML Files" on page 2-5 for information about this parameter.

Software Updates in Release 9.0.4.14

There are no software updates in release 9.0.4.14.

Software Updates in Release 9.0.4.15

There are no software updates in release 9.0.4.15.

Software Updates in Release 9.0.4.16

The following are issues resolved in release 9.0.4.16:

Bug Number	Issue	Resolution

8237825	The following is the format of the time-stamp filter applied to each target system record during reconciliation:
	
	`timestamp_record_updated >= last_reconciliation_run_timestamp`
	
	When this filter was applied, a record that was added or modified at the instant the reconciliation run ended was also reconciled. However, the application of the time-stamp filter caused the same record to be reconciled during the next reconciliation run.
		This issue has been resolved.
		
		The time-stamp filter cannot be changed to the following:
		
		`timestamp_record_updated > last_reconciliation_run_timestamp`
		
		As a workaround, one second is added to the time stamp recorded in the IT resource before the filter is applied during a reconciliation run. In other words, the filter is changed to the following:
		
		`timestamp_record_updated + 1 second >= last_reconciliation_run_timestamp`
		
		Application of this filter ensures that a record reconciled at the end of a reconciliation run is not reconciled during the next reconciliation run.

Software Updates in Release 9.0.4.17

There are no software updates in release 9.0.4.17.

Documentation-Specific Updates

The following is the documentation-specific updates made in release 9.0.4.17:

- Microsoft Windows 2000 Server is no longer a supported host for the target system. All occurrences of "Microsoft Windows 2000 Server" have been removed from this guide.

- In the "Verifying Deployment Requirements" section, changes have been made in the "Target systems" row.

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. This guide discusses the procedure to deploy the connector that is used to integrate Oracle Identity Manager with Microsoft Exchange.

> **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:

- Reconciliation Module
- Provisioning Module
- Supported Functionality
- Multilanguage Support
- Files and Directories on the Installation Media
- Determining the Release Number of the Connector

> **Note:** In this guide, the term *Oracle Identity Manager server* refers to the computer on which Oracle Identity Manager is installed.
>
> At some places in this guide, Microsoft Exchange have been referred to as *target systems.*

1.1 Reconciliation Module

Reconciliation involves duplicating in Oracle Identity Manager the creation 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 Concepts Guide* for conceptual information about reconciliation configurations

The following target system fields are reconciled:

- Display Name

- Employee Type

- Mobile Number

- Pager Number

- ObjectGUID

- SAMAccountName

- Mail

- Mail Nick Name

- Garbage Collection Period

- Deleted Item Flags

- Delivery Cont Length

- Submission Cont Length

- DB Over Hard Quota Limit

- DB Over Quota Limit

- DB Storage Quota

- Exchange Recipient Limit

- DB User Defaults

- Exchange Hide From Address Lists

- Employee ID

- Street Address

- Telephone Number

- Other Telephone Number

- Extension Attribute1

- Extension Attribute2

- Extension Attribute3

- Extension Attribute4

- Extension Attribute6

- Extension Attribute8

- Extension Attribute12

- Extension Attribute15

- Distinguished Name

1.2 Provisioning Module

Provisioning involves creating or modifying a user's account information on the target system through Oracle Identity Manager. You use the Oracle Identity Manager Administrative and User Console to perform provisioning operations.

> **See Also:** The "Deployment Configurations of Oracle Identity Manager" section in *Oracle Identity Manager Connector Concepts Guide* for conceptual information about provisioning

For this target system, the following fields are provisioned:

- Email Alias
- Display Name
- Garbage Collection Period
- Deleted Item Manager
- Max Incoming Message Size
- Max Outgoing Message Size
- Mailbox Size Receipt Quota
- Mailbox Size Transmit Quota
- Mailbox Warning Size
- Max Recipients Per Message
- Use Storage Defaults
- Hide From Address Lists
- Rout Email
- Employee Type
- Registered Represent
- Desk Location
- PL Proceed
- Company Address
- Mailbox Type
- Mobile Number
- Pager Number
- Routing Email Addr
- Major Business Number
- Other Business Number
- ObjectGUID

1.3 Supported Functionality

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

Process Task	Type	Description
Create Mailbox	Provisioning	Creates a mailbox in Microsoft Exchange
Delete Mailbox	Provisioning	Deletes a provisioned mailbox from Microsoft Exchange
Deleted Item Manager Updated	Provisioning	Updates the configuration of a mailbox in Microsoft Exchange according to a change in the Deleted Item Manager attribute
Disable Mailbox	Provisioning	Disables a provisioned mailbox in Microsoft Exchange
Display Name Updated	Provisioning	Updates the configuration of a mailbox in Microsoft Exchange according to a change in the Display Name attribute

Process Task	Type	Description
Email Alias Updated	Provisioning	Updates the configuration of a mailbox in Microsoft Exchange according to a change in the Email Alias attribute
Enable Mailbox	Provisioning	Enables a disabled mailbox in Microsoft Exchange
Garbage Collection Period Updated	Provisioning	Updates the configuration of a mailbox in Microsoft Exchange according to a change in the Garbage Collection Period attribute
Hide From Address Lists Updated	Provisioning	Updates the configuration of a mailbox in Microsoft Exchange according to a change in the Hide From Address Lists attribute
Mailbox Size Receipt Quota Updated	Provisioning	Updates the configuration of a mailbox in Microsoft Exchange according to a change in the Mailbox Size Receipt Quota attribute
Mailbox Size Transmit Quota Updated	Provisioning	Updates the configuration of a mailbox in Microsoft Exchange according to a change in the Mailbox Size Transmit Quota attribute
Mailbox Warning Size Updated	Provisioning	Updates the configuration of a mailbox in Microsoft Exchange according to a change in the Mailbox Warning Size attribute
Max Incoming Message Size Updated	Provisioning	Updates the configuration of a mailbox in Microsoft Exchange according to a change in the Max Incoming Message Size attribute
Max Outgoing Message Size Updated	Provisioning	Updates the configuration of a mailbox in Microsoft Exchange according to a change in the Max Outgoing Message Size attribute
Max Recipients Per Message Updated	Provisioning	Updates the configuration of a mailbox in Microsoft Exchange according to a change in the Max Recipients Per Message attribute
Disable Mailbox Time Stamp Updated	Provisioning	Updates the configuration of a mailbox in Microsoft Exchange according to a change in the Disable Mailbox Time Stamp attribute
Set Exchange Related Properties	Provisioning	Updates certain important configurations of a mailbox in Microsoft Exchange
Use Storage Defaults Updated	Provisioning	Updates the configuration of a mailbox in Microsoft Exchange according to a change in the Use Storage Defaults attribute
Get ObjectGUID from Process	Provisioning	Retrieves the ObjectGUID (unique identifier in Microsoft Active Directory) for an existing provisioned Microsoft Active Directory user, for whom a Microsoft Exchange mailbox needs to be provisioned
Create Mailbox	Reconciliation	Reconciles a mailbox from Microsoft Exchange into Oracle Identity Manager

1.4 Multilanguage Support

This release of the connector supports the following languages:

- Arabic
- Chinese Simplified
- Chinese Traditional
- Danish
- English
- French
- German
- Italian
- Japanese

- Korean

- Portuguese (Brazilian)

- Spanish

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

1.5 Files and Directories on the Installation Media

The files and directories on the installation media are listed in the following table:

File in the Installation Media Directory	Description
`lib/xliExchange.jar`	This JAR file contains the class files required for provisioning and 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/xliExchangeObject_DM.xml`	This XML file contains definitions for the following components of the connector:
	- IT resource type
	- Custom process form
	- Process task and adapters (along with their mappings)
	- Resource object
	- Provisioning process
	- Pre-populate rules
`xml/xliExchangeSchedulerTask_DM.xml`	This XML file contains the parameters for setting up the reconciliation scheduled task.

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

1.6 Determining the Release Number of the Connector

You might have a deployment of an earlier release of the connector. While deploying the latest release, you might want to know the release number of the earlier release. To determine the release number of the connector that has already been deployed:

1. In a temporary directory, extract the contents of the following JAR file:

   OIM_HOME/xellerate/JavaTasks/xliExchange.jar

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

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

2

Deploying the Connector

Deploying the connector involves the following steps:

- Verifying Deployment Requirements
- Configuring the Target System
- Copying the Connector Files
- Configuring the Oracle Identity Manager Server
- Importing the Connector XML Files

2.1 Verifying Deployment Requirements

The following table lists the deployment requirements for the connector.

Item	Requirement
Oracle Identity Manager	Oracle Identity Manager release 8.5.3.1 or later
Target systems	Microsoft Exchange 2003
Target system host platforms	Microsoft Windows Server 2003
Other systems	Microsoft Active Directory
Target system user account	Because this connector requires the Microsoft Active Directory connector for its functioning, the target system user account requirements are the same as the requirements for the Microsoft Active Directory connector.

> **Note:** You must deploy the Microsoft Active Directory connector before you can deploy and use the Microsoft Exchange connector. In addition, you must ensure that the Microsoft Active Directory connector is configured for use with SSL enabled.
>
> Refer to *Oracle Identity Manager Connector Guide for Microsoft Active Directory* for instructions to deploy the Microsoft Active Directory connector.

2.2 Configuring the Target System

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

2.3 Copying the Connector Files

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

> **See Also:** "Files and Directories on the Installation Media" on page 1-5 for more information about these files

File in the Installation Media Directory	Destination Directory
lib/xliExchange.jar	*OIM_HOME*/xellerate/JavaTasks *OIM_HOME*/xellerate/ScheduleTask
Files in the resources directory	*OIM_HOME*/xellerate/connectorResources
Files in the xml directory	*OIM_HOME*/xellerate/XLIntegrations/Exchange/xml

> **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 contents of the connectorResources directory and the JAR files to the corresponding directories on each node of the cluster.

2.4 Configuring the Oracle Identity Manager Server

Configuring the Oracle Identity Manager server involves performing the following procedures:

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

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

2.4.1 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.

2.4.2 Clearing Content Related to Connector Resource Bundles from the Server Cache

While performing the instructions described in the "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. An
> exception is thrown if you run the command described in Step 2 as
> follows:
>
> *OIM_HOME*/xellerate/bin/*batch_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

2.4.3 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 and the log file path depend on the application server that you use:

- **Oracle WebLogic**

  To enable logging:

  1. Add the following lines in the *OIM_HOME*/xellerate/config/log.properties file:

     ```
     log4j.logger.XELLERATE=log_level
     log4j.logger.XL_INTG.EXCHANGE=log_level
     ```

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

     For example:

     ```
     log4j.logger.XELLERATE=INFO
     log4j.logger.XL_INTG.EXCHANGE=INFO
     ```

  After you enable logging, log information is displayed on the server console.

- **IBM WebSphere**

  To enable logging:

  1. Add the following lines in the *OIM_HOME*/xellerate/config/log.properties file:

     ```
     log4j.logger.XELLERATE=log_level
     log4j.logger.XL_INTG.EXCHANGE=log_level
     ```

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

     For example:

     ```
     log4j.logger.XELLERATE=INFO
     log4j.logger.XL_INTG.EXCHANGE=INFO
     ```

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

  WEBSPHERE_HOME/AppServer/logs/*SERVER_NAME*/SystemOut.log

- **JBoss Application Server**

  To enable logging:

  1. In the *JBoss_home*/server/default/conf/log4j.xml file, add the following lines if they are not already present in the file:

     ```
     <category name="XELLERATE">
        <priority value="log_level"/>
     </category>

     <category name="XL_INTG.EXCHANGE">
        <priority value="log_level"/>
     </category>
     ```

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

     ```
     <category name="XELLERATE">
        <priority value="INFO"/>
     ```

```
    </category>

    <category name="XL_INTG.EXCHANGE">
        <priority value="INFO"/>
    </category>
```

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

`JBoss_home/server/default/log/server.log`

- **OC4J**

  To enable logging:

  1. Add the following lines in the
     `OIM_HOME/xellerate/config/log.properties` file:

     ```
     log4j.logger.XELLERATE=log_level
     log4j.logger.XL_INTG.EXCHANGE=log_level
     ```

  2. In these lines, replace `log_level` with the log level that you want to set.

     For example:

     ```
     log4j.logger.XELLERATE=INFO
     log4j.logger.XL_INTG.EXCHANGE=INFO
     ```

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

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

2.5 Importing the Connector XML Files

As mentioned in the "Files and Directories on the Installation Media" section on page 1-5, the connector XML file contains definitions of the components of the connector. By importing the connector XML file, you create these components in Oracle Identity Manager.

To import the connector XML files 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 opening files is displayed.

4. Locate and open the `xliExchangeObject_DM.xml` file, which is in the
   `OIM_HOME/xellerate/XLIntegrations/Exchange/xml` directory. Details of this XML file are shown on the File Preview page.

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

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

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

8. Specify values for the parameters of the IT resource. Refer to the following table for information about the values to be specified:

Parameter	Description
Store Group Name	Store group name
	Sample value: `MyStorageGroup`
Last Modified Time Stamp	Time at which the last reconciliation run for new and modified mailboxes was completed
	This is in the timestamp format `YYYYMMDDHHMMSSZ`. At the end of each reconciliation run, the value is updated with the target system time stamp at that instance.
	You must not enter a value for this parameter.
Last Deleted Time Stamp	Time at which the last reconciliation run for deleted mailboxes was completed
	This is in the timestamp format `YYYYMMDDHHMMSSZ`. At the end of each reconciliation run for deleted mailboxes, the value is updated with the target system time stamp at that instance.
	You must not enter a value for this parameter.
Server Name	Host name of the Microsoft Windows computer on which Microsoft Exchange is installed
	Sample value: `W2K_HOST`
	Note: The value must be specified in uppercase.
Store Name	Mail store name
	Note: The value that you specify is displayed in the Mail Store field on the process form during provisioning. This is a read-only field.
	Sample value: `MyMailStore`

> **Note:** When you perform provisioning operations, you must select this IT resource from the list displayed on the process form.

---

9. Click **Next.** The Provide IT Resource Instance Data page for a new instance of the `Exchange Server` IT resource type is displayed.

10. If you want to use the same combination of the Server Name, Store Group Name, and Store Name parameters for both provisioning and reconciliation, then click **Skip** and proceed to Step 13 in this procedure.

11. If you want to specify a different combination of the Server Name, Store Group Name, and Store Name parameters for reconciliation, then use the Provide IT Resource Instance Date page to create another IT resource.

    Refer to the following table for reconciliation-specific information about the values that you must specify for the parameters of the new IT resource:

Parameter	Description
Store Group Name	If you want to fetch mailboxes from a specific store group, then enter the name of the store group.
	If you want to fetch mailboxes from all store groups, then enter the asterisk (*) character.
	Default value: *
Last Modified Time Stamp	Time at which the last reconciliation run was completed
	This is in the timestamp format `YYYYMMDDHHMMSSZ`. At the end of each reconciliation run, the value is updated with the target system timestamp at that instance.
	You need not specify a value for this parameter.

Parameter	Description
Server Name	If you want to fetch mailboxes from a specific Exchange server, then enter the name of the Exchange server.
	If you want to fetch mailboxes from all configured Microsoft Exchange installations, then enter the asterisk (*) character.
	Default value: *
Store Name	If you want to fetch mailboxes from a specific mail store, then enter the name of the mail store.
	If you want to fetch mailboxes from all mail stores, then enter the asterisk (*) character.
	Note: The value that you specify is displayed in the Mail Store field on the process form during provisioning. This is a read-only field.
	Default value: *

> **Note:** When you perform provisioning operations, you must *not* select this IT resource from the list displayed on the process form.

12. Click **Skip** to specify that you do not want to define another IT resource. The Confirmation page is displayed.

13. 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**.

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

15. Perform the same procedure to import the xliExchangeSchedulerTask_DM.xml file, which is in the *OIM_HOME*/xellerate/XLIntegrations/Exchange/xml directory.

After you import the connector XML files, proceed to the next chapter.

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

3.1 Configuring Reconciliation

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

- Configuring the Reconciliation Scheduled Tasks
- Enabling Reconciliation in Oracle Identity Manager Release 9.0.1

3.1.1 Configuring the Reconciliation Scheduled Tasks

When you perform the procedure described in the "Importing the Connector XML Files" section on page 2-5, the scheduled tasks for lookup fields and user reconciliations are automatically created in Oracle Identity Manager. To configure the scheduled task:

1. Open the Oracle Identity Manager Design Console.

2. Expand the **Administration** folder.

3. Select **Task Scheduler.**

4. Click **Find**. The details of the predefined scheduled task are displayed.

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 3-2 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.

After you create the scheduled task, proceed to the "Enabling Reconciliation in Oracle Identity Manager Release 9.0.1" section on page 3-3.

3.1.1.1 Specifying Values for the Scheduled Task Attributes

You must specify values for the attributes of the following 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.
>
> - 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.

- Scheduled Task for Reconciliation of New and Modified Mailboxes

- Scheduled Task for Reconciliation of Deleted Mailboxes

3.1.1.1.1 Scheduled Task for Reconciliation of New and Modified Mailboxes

The Exchange Reconciliation Task scheduled task is used to reconcile new and modified mailboxes. The following are attributes of this scheduled task:

Attribute	Description	Default/Sample Value
ADServer	Name of the Microsoft Active Directory IT resource	ADITResource
Server	Name of the Microsoft Exchange IT resource	ITRExchange
Resource Object	Name of the Microsoft Exchange resource object	Exchange

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

3.1.1.1.2 Scheduled Task for Reconciliation of Deleted Mailboxes

The `Exchange Delete Reconciliation Task` scheduled task is used to reconcile deleted target system mailboxes. The following are attributes of this scheduled task:

Attribute	Description	Default/Sample Value
ADServer	Name of the Microsoft Active Directory IT resource	ADITResource
Server	Name of the Microsoft Exchange IT resource	ITRExchange
Resource Object	Name of the Microsoft Exchange resource object	Exchange

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

3.1.2 Enabling Reconciliation in Oracle Identity Manager Release 9.0.1

If you are using Oracle Identity Manager release 9.0.1, then you must perform the following procedure to enable reconciliation:

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

1. Open the Process Definition form. This form is in the Process Management folder.

2. Click the **Reconciliation Field Mappings** tab.

3. For each field that is of the IT resource type:

   a. Double-click the field to open the Edit Reconciliation Field Mapping window for that field.

   b. Deselect **Key Field for Reconciliation Matching**.

3.2 Configuring Provisioning

As mentioned earlier in this guide, provisioning involves creating or modifying a user's account information on the target system through Oracle Identity Manager.

> **Note:** You must perform the procedure described in this section if you want to use the provisioning features of Oracle Identity Manager for this target system.

Adapters are used to implement provisioning functions. The following adapters are imported into Oracle Identity Manager when you import the connector XML file:

> **See Also:** The "Supported Functionality" section on page 1-3 for a listing of the provisioning functions that are available with this connector

- `check user process ordered`
- `Exchange Delete Mailbox`

- `AD Set User Property`

- `Set Time Stamp`

- `Get Value Form User Process`

- `Chk Value Set`

- `Exchange Create Mailbox`

- `Exchange Set User Properties`

- `DB Prepopulate UserLogin`

You must compile these adapters before they can be used in provisioning operations.

To compile adapters by using the Adapter Manager form:

1. Open the Adapter Manager form.

2. To compile all the adapters that you import into the current database, select **Compile All**.

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

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

3. Click **Start.** Oracle Identity Manager compiles the selected adapters.

4. If Oracle Identity Manager is installed in a clustered environment, then copy the compiled adapters from the *OIM_HOME*/xellerate/Adapter directory to the same directory on each of the other nodes of the cluster. If required, overwrite the adapter files on the other nodes.

If you want to compile one adapter at a time, then use the Adapter Factory form.

> **See Also:** *Oracle Identity Manager Tools Reference Guide* for information about using the Adapter Factory and Adapter Manager forms

To view detailed information about an adapter:

1. Highlight the adapter in the Adapter Manager form.

2. Double-click the row header of the adapter, or right-click the adapter.

3. Select **Launch Adapter** from the shortcut menu that is displayed. Details of the adapter are displayed.

3.3 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 Microsoft Exchange.

You may want to configure the connector for multiple installations of Microsoft Exchange. The following example illustrates this requirement:

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

To meet the requirement posed by such a scenario, you must configure the connector for multiple installations of Microsoft Exchange.

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 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 need to modify only 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.

When you use the Administrative and User Console to perform provisioning, you can specify the IT resource corresponding to the Microsoft Exchange installation to which you want to provision the user.

4

Known Issues

There are no known issues associated with this release of the connector.

A

Attribute Mappings Between Oracle Identity Manager and Microsoft Exchange

The following table discusses attribute mappings between Oracle Identity Manager and Microsoft Exchange.

Oracle Identity Manager Attribute	Microsoft Exchange Attribute	Description
Company Address	physicalDeliveryOfficeName	Office address
Deleted Item Manager	deletedItemFlags	Number of items in the Deleted Items folder
Desk Location	extensionAttribute6, desktopProfile	Location of the desktop profile for a user or group of users
Display Name	displayName	Name of a user as displayed in the address book
		This is usually a combination of the user's first name, middle initial, and last name.
Email Alias	mailNickname	Mailbox alias, which is generally the same as sAMAccountName
Employee Type	extensionAttribute1,employeeType	Job category for an employee
Garbage Collection Period	garbageCollPeriod	Time interval, in hours, between garbage collection runs
Hide From Address Lists	msExchHideFromAddressLists	Specifies if the user appears in address lists
Mailbox Size Receipt Quota	mDBOverHardQuotaLimit	Maximum mailbox size, in KB, over which sending and receiving e-mail is disabled
Mailbox Size Transmit Quota	mDBOverQuotaLimit	Mailbox quota overdraft limit, in KB
Mailbox Type	extensionAttribute15,otherMailbox	Specifies the type of mailbox other than the standard X.400 and RFC822 configuration
Mailbox Warning Size	mDBStorageQuota	Message database quota, in KB
Major Business Number	telephonenumber	Primary office phone number
Max Incoming Message Size	delivContLength	Maximum incoming message size, in KB
Max Outgoing Message Size	submissionContLength	Maximum outgoing message size, in KB
Max Recipients Per Message	msExchRecipLimit	Maximum number of recipients of a single e-mail

Oracle Identity Manager Attribute	Microsoft Exchange Attribute	Description
Mobile Number	mobile	Primary mobile phone number of the user
Object GUID	objectGUID	GUID based on the current time stamp assigned to an object
Other Business Number	otherTelephone	Alternative office phone number
Pager Number	pager	Primary pager number
PL Proceed	extensionAttribute8	A custom attribute in Microsoft Exchange
Registered Represent	extensionAttribute3	A custom attribute in Microsoft Exchange
Rout Email	extensionAttribute2	Flag that specifies whether or not e-mail is to be routed
Routing Email Addr	extensionAttribute4	E-mail routing address
Use Storage Defaults	mDBUseDefaults	Specifies whether or not the mailbox store must use the default quota, instead of the per-mailbox quota

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