

Oracle® iSetup

Developer's Guide

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Part No. E22957-05

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Oracle iSetup Developer's Guide, Release 12.2

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- Are the implementation steps correct and complete?
- Did you understand the context of the procedures?
- Did you find any errors in the information?
- Does the structure of the information help you with your tasks?
- Do you need different information or graphics? If so, where, and in what format?
- Are the examples correct? Do you need more examples?

If you find any errors or have any other suggestions for improvement, then please tell us your name, the name of the company who has licensed our products, the title and part number of the documentation and the chapter, section, and page number (if available).

Note: Before sending us your comments, you might like to check that you have the latest version of the document and if any concerns are already addressed. To do this, access the new Oracle E-Business Suite Release Online Documentation CD available on My Oracle Support and www.oracle.com. It contains the most current Documentation Library plus all documents revised or released recently.

Send your comments to us using the electronic mail address: appsdoc_us@oracle.com

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Preface

Intended Audience

Welcome to Release 12.2 of the *Oracle iSetup Developer's Guide*.

This guide assumes you have a working knowledge of the following:

- The principles and customary practices of your business area.
- Computer desktop application usage and terminology.

If you have never used Oracle E-Business Suite, we suggest you attend one or more of the Oracle E-Business Suite training classes available through Oracle University.

This manual describes how to set up your development environment, build, test, and deploy Oracle iSetup Framework Interfaces. For more information on coding standards followed by the Oracle E-Business Suite development staff and information on extending the products shipped by Oracle E-Business Suite development, see the *Oracle Application Framework Developer's Guide*, available from My Oracle Support Knowledge Document 1315485.1.

This documentation is written for the application developer and assumes familiarity with Java and SQL.

See Related Information Sources on page viii for more Oracle E-Business Suite product information.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at

<http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

Structure

- 1 Oracle iSetup Framework Interface Registration**
- 2 Oracle iSetup Reportable API**
- A Oracle Application Object Library Messages for Oracle iSetup**

Related Information Sources

This book is included in the Oracle E-Business Suite Documentation Library, which is supplied in the Release 12.2 Media Pack. If this guide refers you to other Oracle E-Business Suite documentation, use only the latest Release 12.2 versions of those guides.

Online Documentation

All Oracle E-Business Suite documentation is available online (HTML or PDF).

- **Online Help** - Online help patches (HTML) are available on My Oracle Support.
- **PDF Documentation** - See the Oracle E-Business Suite Documentation Library for current PDF documentation for your product with each release. The Oracle E-Business Suite Documentation Library is also available on My Oracle Support and is updated frequently.
- **Release Notes** - For information about changes in this release, including new features, known issues, and other details, see the release notes for the relevant product, available on My Oracle Support.
- **Oracle Electronic Technical Reference Manual** - The Oracle Electronic Technical Reference Manual (eTRM) contains database diagrams and a detailed description of database tables, forms, reports, and programs for each Oracle E-Business Suite product. This information helps you convert data from your existing applications and integrate Oracle E-Business Suite data with non-Oracle applications, and write custom reports for Oracle E-Business Suite products. The Oracle eTRM is available on My Oracle Support.

Related Guides

You should have the following related books on hand. Depending on the requirements of your particular installation, you may also need additional manuals or guides.

Oracle iSetup User's Guide

This guide describes how to use Oracle iSetup to migrate data between different instances of the Oracle E-Business Suite and generate reports. It also includes configuration information, instance mapping, and seeded templates used for data migration.

Oracle Application Framework Developer's Guide

This guide contains the coding standards followed by the Oracle E-Business Suite development staff to produce applications built with Oracle Application Framework. This guide is available in PDF format on My Oracle Support and as online documentation in JDeveloper 10g with Oracle Application Extension.

Additional Oracle JDeveloper 10g helpsets that apply to Oracle Application Framework application development include:

- Oracle Application Framework ToolBox Tutorial
- Oracle Application Component Reference
- Getting Started with the Oracle Application Extension
- Getting Started with JDeveloper
- Developing Business Components

Integration Repository

The Oracle Integration Repository is a compilation of information about the service endpoints exposed by the Oracle E-Business Suite of applications. It provides a complete catalog of Oracle E-Business Suite's business service interfaces. The tool lets users easily discover and deploy the appropriate business service interface for integration with any system, application, or business partner.

The Oracle Integration Repository is shipped as part of the E-Business Suite. As your instance is patched, the repository is automatically updated with content appropriate for the precise revisions of interfaces in your environment.

You can navigate to the Oracle Integration Repository through Oracle E-Business Suite Integrated SOA Gateway.

Do Not Use Database Tools to Modify Oracle E-Business Suite Data

Oracle **STRONGLY RECOMMENDS** that you never use SQL*Plus, Oracle Data Browser, database triggers, or any other tool to modify Oracle E-Business Suite data unless otherwise instructed.

Oracle provides powerful tools you can use to create, store, change, retrieve, and maintain information in an Oracle database. But if you use Oracle tools such as SQL*Plus to modify Oracle E-Business Suite data, you risk destroying the integrity of

your data and you lose the ability to audit changes to your data.

Because Oracle E-Business Suite tables are interrelated, any change you make using an Oracle E-Business Suite form can update many tables at once. But when you modify Oracle E-Business Suite data using anything other than Oracle E-Business Suite, you may change a row in one table without making corresponding changes in related tables. If your tables get out of synchronization with each other, you risk retrieving erroneous information and you risk unpredictable results throughout Oracle E-Business Suite.

When you use Oracle E-Business Suite to modify your data, Oracle E-Business Suite automatically checks that your changes are valid. Oracle E-Business Suite also keeps track of who changes information. If you enter information into database tables using database tools, you may store invalid information. You also lose the ability to track who has changed your information because SQL*Plus and other database tools do not keep a record of changes.

Oracle iSetup Framework Interface Registration

Oracle iSetup Framework Interface Registration

This chapter explains how to register an Oracle iSetup Framework (BC4J) API through iSetup Interface Repository and create an Extract for the registered API. The API registration process is explained with an example using SYSADMIN as the user and the API "Currency". Please note that Currency is an Oracle iSetup framework (BC4J) API which is available as a part of Oracle E-Business Suite. You can find the class files for the Currency API under

```
$JAVA_TOP/oracle/apps/gl/ispeed/currency/server
```

Security Setup for Registering the Oracle iSetup Framework (BC4J) API

Follow these instructions for the security setup of the API.

For more information on managing security, see: Oracle User Management, *Oracle E-Business Suite Security Guide*.

To assign the iSetup Super User Role to a User:

1. Log in to Oracle E-Business Suite as a system administrator with the User Management responsibility and the Functional Administrator responsibility.
2. Go to the User Management responsibility > User.
3. Search for the username SYSADMIN and click **Update**.

ORACLE User Management

Home Logout Preferences Help Diagnostics

User Management

Users Roles & Role Inheritance Role Categories Registration Processes

User Maintenance

Search for people and user accounts. All fields except "First Name" are case insensitive. For wildcard searches, please use "%"

Search

User Name: sysadmin Organization: Role: Email: Last Name: First Name: Go

Register: Go

Last Name	First Name	Email	User Name	Status	Create User	Reset Password	Update
SYSADMIN	SYSADMIN	SYSADMIN@yaboo.com	sysadmin	Active			

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User Management Home Logout Preferences Help Diagnostics

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- Assign the role to the user. Click on **Assign Roles**. In the LOV search window, search for iSetup Super User and select it.

Search and Select List of Values - Mozilla Firefox

Search and Select: Assign Roles

Search

To find your item, select a filter item in the pulldown list and enter a value in the text field, then select the "Go" button.

Search By: Role iSetup Go

Results

Select Name	Description	Type	Code
<input type="checkbox"/> iSetup Super User	iSetup Super User	Role	UMX(AZ_SUPER_USER)

Cancel Select

Done

sysadmin

Active

01-Jan-1951

(example: 21-May-2009)

Status	Remove
Assigned	<input type="checkbox"/>
Assigned	<input type="checkbox"/>
Assigned	<input type="checkbox"/>
Assigned	<input type="checkbox"/>
Assigned	<input type="checkbox"/>
Assigned	<input type="checkbox"/>
Inactive	<input type="checkbox"/>
Inactive	<input type="checkbox"/>
Inactive	<input type="checkbox"/>
Inactive	<input type="checkbox"/>

Cancel Reset Password Save Apply

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- Provide a justification to add the role and click **Apply**. Return to the main menu.

Roles **Contact Information**

Changes can only be made for roles you have been granted administrative privileges.

Assign Roles

Details	Role	Description	Status
Show	ABM Supervisor	ABM Application Supervisor	Assigned
Show	ABM Manager	ABM Manager	Assigned
Show	ABM Web Reports	Responsibility for abm web reports	Assigned
Show	Application Developer Common Modules	AK Developer GUI	Assigned
Show	AK Html Forms	AK html forms Access	Assigned
Show	Alert Manager, Vision Enterprises	Oracle Alert Manager for Forms 4.0	Assigned
Show	Trading Community Manager	Main Menu for TCA	Inactive
Show	Mobile Admin	wechin created on Jan 31, 2000	Inactive
Show	Quoting Sales Manager	Quoting Sales Manager	Inactive
Hide	iSetup Super User	iSetup Super User	Ready for Submission

* Justification * Active From

Active To

Role Inheritance

Assign Roles

To Create a Function:

1. Navigate to Functional Administrator.
2. Navigate to Home > Core Services > Functions > Create Function.

ORACLE® Applications Administration Home Logout Preferences Diagnostics

Security Core Services Personalization File Manager

Lookups Messages Profile Categories Profiles **Functions** Menus Caching Framework Personalization

Create Function: Define Function

* Indicates required field

* Name

* Code

Description

Type

Maintenance Mode Support

Context Dependence

Security Core Services Personalization File Manager Home Logout Preferences Diagnostics

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3. Enter the following details:
 - Name: BC4JREGFUNC (Name of your choice)
 - Code: **BC4J:oracle.apps.gl.ispeed.currency.server.currsetupam**. Prefix **BC4J:** with the Java class path to the Application Module that you have created. The code is not case sensitive; ultimately, it will be converted to uppercase by the application.

- Type: Interface Method

ORACLE® Applications Administration

Home Logout Preferences Diagnostics

Security Core Services Personalization File Manager

Lookups Messages Profile Categories Profiles **Functions** Menus Caching Framework Personalization

Create Function: Define Function

* Indicates required field

* Name: BC4JREGFUNC

* Code: CURRENCY.SERVER.CURRSETUPAM

Description:

Type: Interface Method

Maintenance Mode Support: None

Context Dependence: Responsibility

Cancel Continue

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4. Click **Continue**.
5. Add a dummy character in the HTML Call field.

ORACLE® Applications Administration

Home Logout Preferences Diagnostics

Security Core Services Personalization File Manager

Lookups Messages Profile Categories Profiles **Functions** Menus Caching Framework Personalization

Create Function: Details

* Indicates required field

Cancel Back Submit

Web

* HTML Call: a

☐ Secured

☐ Encrypt Parameters

Host Name:

Agent Name:

Icon:

Others

Object Name:

Parameters:

Region Code:

Region Application Name:

Cancel Back Submit

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6. Click **Submit**.

ORACLE® Applications Administration Home Logout Preferences Diagnostics

Security Core Services Personalization File Manager

Lookups Messages Profile Categories Profiles **Functions** Menus Caching Framework Personalization

Functions [Save Search](#)

Simple Search

Note that the search is case insensitive [Advanced Search](#)

Name

Code

Type

[Go](#) [Clear](#)

[Create Function](#)

Name	Code	Type	Last Update	Duplicate	Update
BC4JREGFUNC	BC4J:ORACLE,APPS,GL,ISPEED,CURRENCY,SERVER,CURRSETUPAM	INTERFACE	12-May-2009		

[Save Search](#)

Security Core Services Personalization File Manager Home Logout Preferences Diagnostics

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After creating the function, you can add it to a menu. You can directly proceed to that task by clicking on **Menu** in the subtab.

To Create a Menu:

1. Click on **Create Navigation Menu**.

ORACLE® Applications Administration

Home Logout Preferences Help Diagnostics

Security Core Services Personalization File Manager

Lookups Messages Profile Categories Profiles Functions **Menus** Caching Framework Personalization

Navigation Menus

Save Search

Simple Search

Note that the search is case insensitive

Advanced Search

Name

Code

Type

Go Clear

Create Navigation Menu

Name	Code	Type	Last Update	Duplicate	Update
No search conducted.					

Save Search

Security Core Services Personalization File Manager Home Logout Preferences Help Diagnostics

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2. Enter the following details.

- Name: BC4JREGMENU (Name of your choice)
- Code: BC4JREGMENU (Code of your choice)
- Type: Interface

Click **Add Another Row**. Add the following:

- Prompt: BC4JREGMENU
- Function: BC4JREGFUNC (Registered function)
- Grant: Deselect the box.

Click **Apply**.

ORACLE® Applications Administration Home Logout Preferences Diagnostics

Security Core Services Personalization File Manager

Lookups Messages Profile Categories Profiles Functions **Menus** Caching Framework Personalization

Create Navigation Menu

* Indicates required field

* Name

* Code

Description

Type

Menu Builder

Select Menu Entries:

[Select All](#) [Select None](#)

Select Prompt	Sub Menu	Sub Menu Type	Function	Function Type	Grant	Description
<input type="checkbox"/> BC4JREGMENU	<input type="text"/>		<input type="text" value="BC4JREGFUNC"/>		<input type="checkbox"/>	<input type="text"/>

Security Core Services Personalization File Manager Home Logout Preferences Diagnostics

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To Create a Grant:

1. Navigate to Home > User Management > Role & Role Inheritance.
2. Search for the iSetup Super User role.

ORACLE® User Management Home Logout Preferences Help Diagnostics

User Management

Users | **Roles & Role Inheritance** | Role Categories | Registration Processes

Roles and Role Inheritance [View Full Hierarchy](#)

Search

Type

Name

Code

Application

Role	Code	Application	Active	View In Hierarchy	Update
iSetup Super User	UMX AZ_SUPER_USER	Application Implementation	✓		

[View Full Hierarchy](#)

User Management Home Logout Preferences Help Diagnostics

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- Click the **Update** icon.

ORACLE® User Management Home Logout Preferences Help Diagnostics

User Management

Users | **Roles & Role Inheritance** | Role Categories | Registration Processes

User Management: Roles & Role Inheritance >

Update Role : iSetup Super User

* Indicates required field

* Category

Role Code

* Display Name

* Description

* Application

* Active From

Active To

(example: 18-May-2009)

Permissions

Name	Set	Object	Data	Context	Type	Access Policy	Last Update	Duplicate	Update	Delete
Interface Repository	AZ_APIREP_MAIN						02-Aug-2006			
Create Custom Selection Set	AZ_R12_SELSET_CUSTOM_CR_STD						25-May-2006			
iSetup Demo Setup	.CUSTOM_CR_STD						12-May-2009			
iSetup Reportable Currencies	iSetupReportCurrenciesMenu						16-May-2009			

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- Click **Create Grant**.
- Enter the following:
 - Name - iSetup API Demo
 - Responsibility - iSetup

ORACLE® User Management

Home Logout Preferences Help Diagnostics

User Management

Users | **Roles & Role Inheritance** | Role Categories | Registration Processes

Define Grant | Select Object Data Context | Define Object Parameters and Select Set | Review and Finish

Create Grant: Define Grant

* Indicates required field

* Name: iSetup API Demo

Description:

* Effective From: 18-May-2009 (example: 18-May-2009)

Effective To:

Security Context

Define the context when the grant is applied by selecting a grantee, a responsibility and/or operating unit.

Grantee Type: Group Of Users

Grantee: iSetup Super User

Operating Unit:

Responsibility: iSetup

Data Security

To define a data security policy, select an object.

Object:

Cancel Step 1 of 4 Next

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6. Click **Next**.
7. Add the Menu name to the Set field.
Set: BC4JREGMENU

ORACLE® User Management

Home Logout Preferences Help Diagnostics

User Management

Users | **Roles & Role Inheritance** | Role Categories | Registration Processes

Define Grant | Select Object Data Context | **Define Object Parameters and Select Set** | Review and Finish

Create Grant: Define Object Parameters and Select Set

* Indicates required field

Cancel Back Step 3 of 4 Next

Set

Select the permission set or menu navigation set that defines the grantee's access.

* Set:

Cancel Back Step 3 of 4 Next

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8. Click **Next**.
9. Click **Finish**.

ORACLE® User Management

Home Logout Preferences Help Diagnostics

User Management

Users | **Roles & Role Inheritance** | Role Categories | Registration Processes

Define Grant | Select Object Data Context | Define Object Parameters and Select Set | **Review and Finish**

Create Grant: Review and Finish

Cancel Back Step 4 of 4 Finish

Name **iSetup API Demo**
 Description
 Effective From **18-May-2009**
 Effective To

Security Context

Grantee Type **Group Of Users**
 Grantee **iSetup Super User**
 Operating Unit
 Responsibility **iSetup**

Set

Name **BC4JREGMENU**
 Code **BC4JREGMENU**
 Description

Cancel Back Step 4 of 4 Finish

User Management Home Logout Preferences Help Diagnostics

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Registering the iSetup Framework (BC4J) API

To register the interface:

The following are descriptions of the fields used in registering an interface.

- Name - This field refers to the name of the Interface to be registered. This name has to be unique to get registered.
- Description - The description refers to the description of the API to be created.
- Application - This field refers to the application which owns the interface being registered.
- Type - This field refers to the type of the interface to be created. This field would be read/display only in the Update flow. For example, the interface defined above has the type "iSetup Framework".
- Path - The path of the application module. For example, in the API defined above the path is:

```
oracle.apps.gl.ispeed.currency.server.CurrSetupAM
```

'CurrSetupAM' should be physically present in the above-mentioned Java path.

Details:

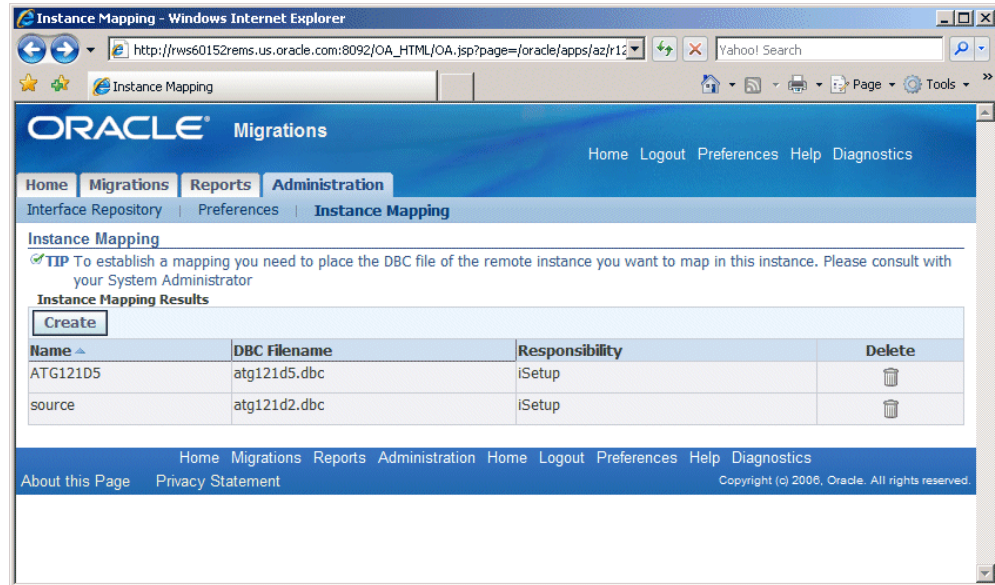
- Supports Filter - This flag indicates if iSetup could enable filtering support for the

interface being registered. If this option is checked, then Oracle provides a filtering icon in front of this interface in the iSetup UI shipped with Oracle E-Business Suite.

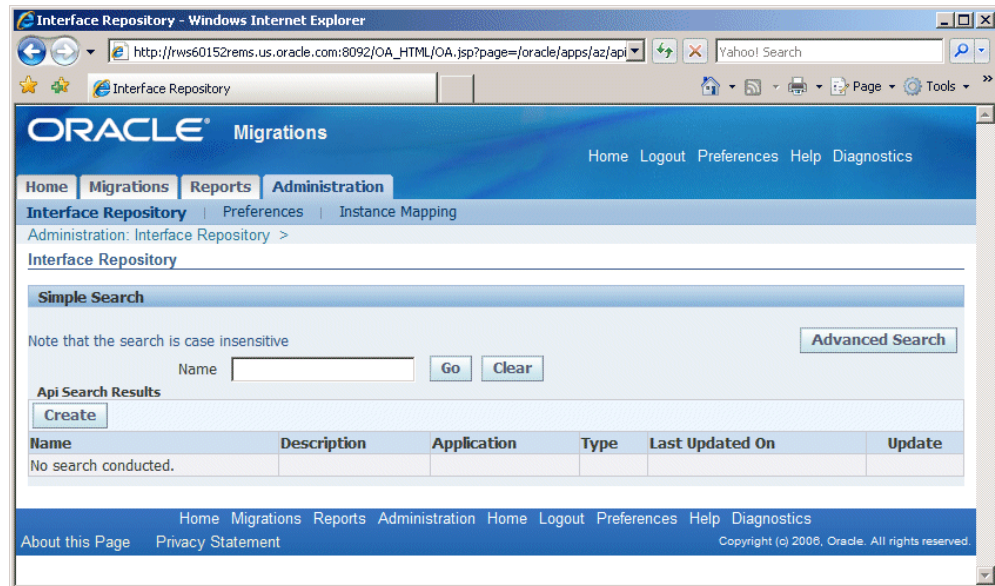
- **Supports Transform** - This flag indicates whether the API supports transformation on any attributes. This flag does not need to be set for a Reportable API.
- **Commit If Warning** - This flag indicates whether the transaction could be committed in the case of a warning while validating the data at the time of loading using the interface. This flag does not need to be set for a Reportable API.
- **Supports Update** - This flag indicates whether the API supports updates to preexisting records. That is, at the time of loading the extracted data into the target instance, if the interface finds any record already existing in the instance, then based on the business logic it should be able to update the record. This flag does not need to be set for a Reportable API.
- **Override Update** - This flag would be functional only if the "Support Update" flag is checked. Support Update and Override Update flags go hand in hand. This flag indicates if user has a choice to make a call to override the existing record in the target instance. This flag does not need to be set for a Reportable API.

The steps to register an interface are:

1. Navigate to Home > iSetup > Administration.
2. Click **Administration**.



3. Navigate to Interface Repository.



4. Click on **Create** and fill in the following details:

- Name: iSetup Demo API.
- Application: General Ledger
- Type: iSetup Framework

- Path: oracle.apps.gl.ispeed.currency.server.CurrSetupAM

Click Supports Filter, Commit If Warning, Supports Update, Override Update (Depending on what the API can do).

Note: The actual file 'CurrSetupAM' should be physically present under \$JAVA_TOP in path the oracle.apps.gl.ispeed.currency.server in the instance where the API is registered. The reason for this requirement is that when the API is registered, the system does not validate that the given file physically exists in the path; however, during extraction the system will try to instantiate the file ('CurrSetupAM' in this case) and if the file is not found, the system will return an error.

5. Click **Apply**.

To Create a Custom Selection Set:

1. Navigate to Migration > Selection Set.

ORACLE® iSetup

Home Logout Preferences Help Diagnostics

Home Migrations Reports Administration

Selection Sets | Extracts | Transforms | Loads

Selection Sets

Simple Search

Note that the search is case insensitive

Name Go Clear

Advanced Search

Create Standard Create Custom

Select Name	Description	Last Updated On	Source Instance	Active	Update	Delete
No search conducted.						

Home Migrations Reports Administration Home Logout Preferences Help Diagnostics

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2. Click on **Create Custom** and enter the following details:

- Name - iSetup Custom API Demo.
- Source Instance - Choose 'source'.
- LOV Field Name - iSetup Demo API.

ORACLE®

Home Logout Preferences Help Diagnostics

Home Migrations Reports Administration

Selection Sets | Extracts | Transforms | Loads

Create Custom Selection Set: Set Parameters

Cancel Apply

* Name

Source Instance

Description

TIP Choose the Data Object for this Selection Set. Filters can only be set during the Update process.

Name	Application Name	Supports Filter	Supports Transform	Supports Update	Override Update
<input type="text" value="iSetup Demo API"/>	<input type="text" value="General Ledger"/>	Yes	No	Yes	Yes

Cancel Apply

Home Migrations Reports Administration Home Logout Preferences Help Diagnostics

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3. Click on **Apply**. The Selection Set is created successfully.

ORACLE® iSetup Home Logout Preferences Help Diagnostics

Home Migrations Reports Administration

Selection Sets Extracts Transforms Loads

Confirmation
A Selection Set 'iSetup Custom API Demo' has been created.

Selection Sets

Simple Search
Note that the search is case insensitive Advanced Search

Name

Select Selection Set: |

Select Name	Description	Last Updated On	Source Instance	Active	Update	Delete
<input type="radio"/> iSetup Custom API Demo		18-May-2009 10:02:10	source	<input checked="" type="checkbox"/>		

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To Create an Extract:

1. Navigate to iSetup > Migrations > Selection Set. Search for iSetup Custom API Demo, select it, and click on **Extract**.

ORACLE® iSetup Home Logout Preferences Help Diagnostics

Home Migrations Reports Administration

Selection Sets **Extracts** Transforms Loads

Create Extract: Set Parameters Schedule

* Indicates required field

* Name

* Selection Set
Choosing a different source could invalidate the filters set at the time of the creation of the selection set.

* Source Instance

Description

[Expand All](#) | [Collapse All](#)

Focus	Filter Set	Supports Update
<input checked="" type="checkbox"/> iSetup Custom API Demo		
<input type="checkbox"/> iSetup Demo API		<input checked="" type="checkbox"/>

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2. Click on **Continue** and **Finish**.

ORACLE® iSetup

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Home Migrations Reports Administration

Selection Sets Extracts Transforms Loads

Set Parameters Schedule

Create Extract: Schedule

☒ As soon as possible
☐ As scheduled

Date

Time : ☒ AM ☐ PM

Cancel Back Finish

Cancel Back Finish

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3. Search for iSetup Custom Extract and click on the **iSetup Custom Extract** link.

ORACLE® iSetup

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Home Migrations Reports Administration

Selection Sets Extracts Transforms Loads

Extracts

Simple Search

Note that the search is case insensitive

Name Go Clear

Advanced Search

Select Extract: Transform Load Report Create Upload

Select Name	Request ID	Source Instance	Submitted On	Phase	Status	Active	Delete	Download
<input type="radio"/> iSetup Custom Extract	4406278	source	18-May-2009 10:10:39	Pending	Normal			
<input type="radio"/> iSetupCurrencies_1 <small>Name</small>	4405961	source	16-May-2009 15:31:55	Completed	Normal	<input checked="" type="checkbox"/>		4405961.zip

TIP You can Transform, Load or Report on an Active Extract. Reports can also be generated on a Reportable Extract.

Home Migrations Reports Administration Home Logout Preferences Help Diagnostics

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4. Wait for the Phase to be marked as Completed. Click on the **Refresh** button to confirm that it is Completed.

Note: You need to follow the same steps and register the API on the Central Instance and the Target Instance.

ORACLE® iSetup

Home Logout Preferences Help Diagnostics

HomeMigrationsReportsAdministration

Selection Sets | Extracts | Transforms | Loads

Migrations: Extracts >

Extract: Test Custom BC4J

Request ID4405276

Selection SetiSetup Custom API Demo

ActiveYes

Source Instance**source**

Description

Download4405276.zip

Submitted On12-May-2009 11:12:34

Scheduled OnAs soon as possible

Completed On12-May-2009 11:12:57

PhaseCompleted

StatusNormal

LoadReportView Log

Expand All | Collapse All

Focus Name	Filters	Number of Records
<input checked="" type="checkbox"/> Test Custom BC4J		
<input type="checkbox"/> Test BC4J Demo		254

Return to Extracts

LoadReportView Log

HomeMigrationsReportsAdministrationHomeLogoutPreferencesHelpDiagnostics

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Oracle iSetup Reportable API

Oracle iSetup Reportable API

This chapter explains how to write a iSetup Reportable API for Oracle E-Business Suite Release 12.0.6 and later.

Typographical Conventions

This chapter uses the following typographic conventions to distinguish important elements from the body of the chapter.

Command and Example Syntax

Syntax:

```
OAPageContext.getParameter("<parameterName>");
```

Example:

```
/*  
** Creates a SupplierEOImpl entity object and a corresponding row in the  
SuppliersVO.  
*/  
public void createSupplier()  
{  
    OAViewObject vo = getSuppliersVO();  
    vo.insertRow(vo.createRow());  
}
```

Command and example syntax adhere to the conventions in the following table:

Convention	Explanation
plain monotype	Used for code fragments and examples.

Convention	Explanation
< Italic monotype in angle brackets >	Indicates developer-supplied values.
...	An ellipsis indicates that the actual code extends beyond the example shown.
/*	A C-style comment.
*/	
/**	A Javadoc comment.
*/	
//	A Java comment.
Indentation	The Oracle standard indentation helps to show code structure.

Setting Up JDeveloper

Refer to My Oracle Support Knowledge Document 416708.1 to find out the patch number for the patch with the appropriate version of JDeveloper for the Oracle E-Business Suite that you need. Download this patch for JDeveloper.

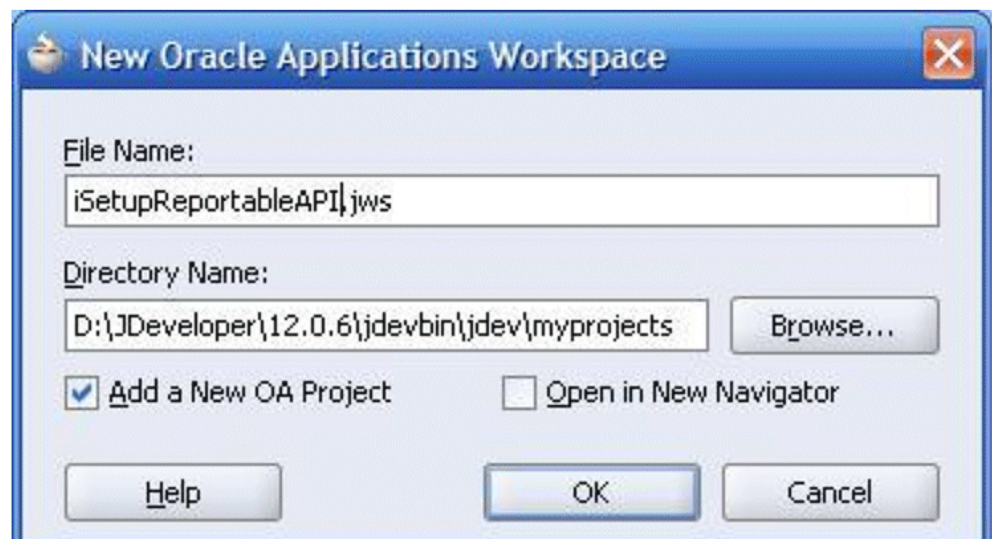
Note: You can build, test, and deploy Oracle iSetup Framework interfaces on Oracle E-Business Suite Release 12.0.6 and later. These instructions use Release 12.0.6 as an example.

Download the Tutorial attachment to My Oracle Support Knowledge Document 843397.1 to get the Oracle iSetup Framework Library and sample code used in this document.

To Set Up JDeveloper:

1. Unzip the JDeveloper patch to the folder JDeveloper_12.0.6.
2. You can add iSetup framework tutorial shipped with patch to your developer. Alternatively, you can go through this chapter to create BC4J objects on your own.
3. Unzip the Tutorial.zip. You should have the following contents:
 - iSetupFwk.jar - Oracle iSetup Framework Library.

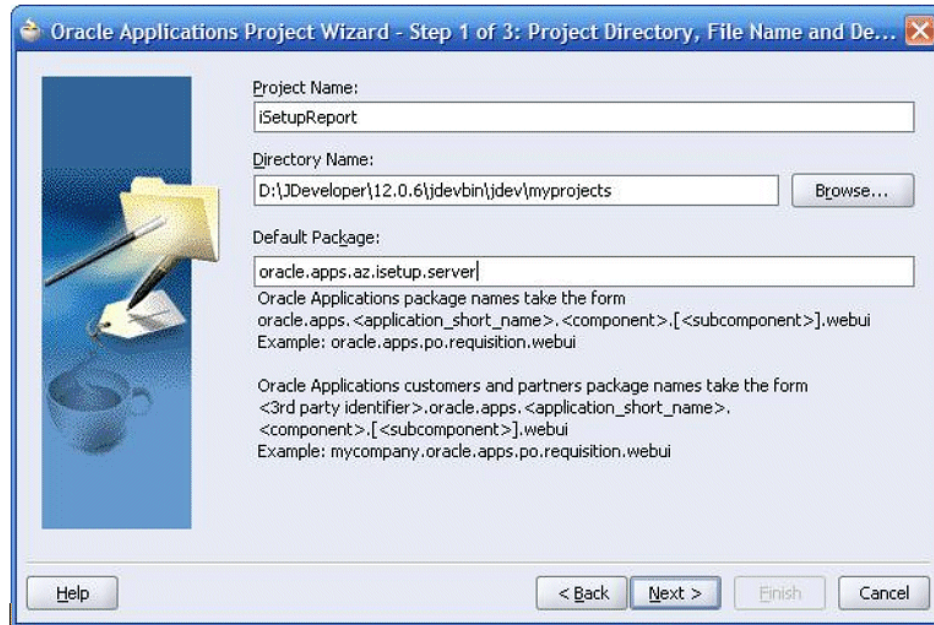
- TutorialCode - Sample code used in this document.
4. Navigate through the folder JDeveloper_12.0.6/jdevbin/ and click on jdeveloper.exe
 5. To open the example code, select File > Open in JDeveloper and navigate to the location where TutorialCode is present. Select **iSetupReportableAPI.jws** in the TutorialCode folder and click **Open**. To compile the above code, add the iSetup Framework Library as described in Steps 10 and 11, below. To create your own BC4J Objects, please follow the process described below.
 6. Click on Applications Navigator tab > Right-click on Applications > New OA Workspace > Enter the workspace file name and directory name. Ensure that the "Add a new OA Project" box is checked.



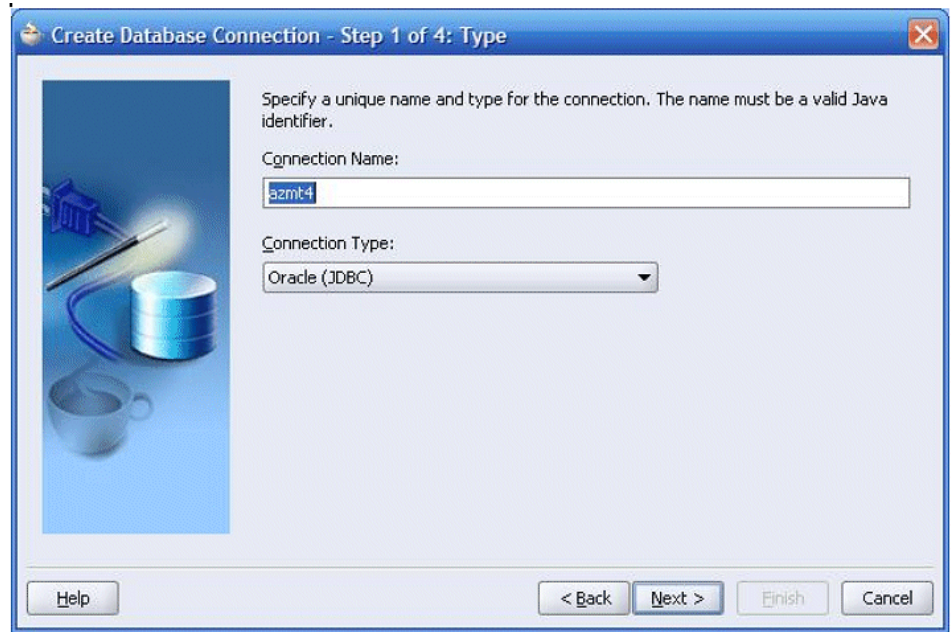
Click **OK**.

The window "Oracle Applications Project Wizard" opens.

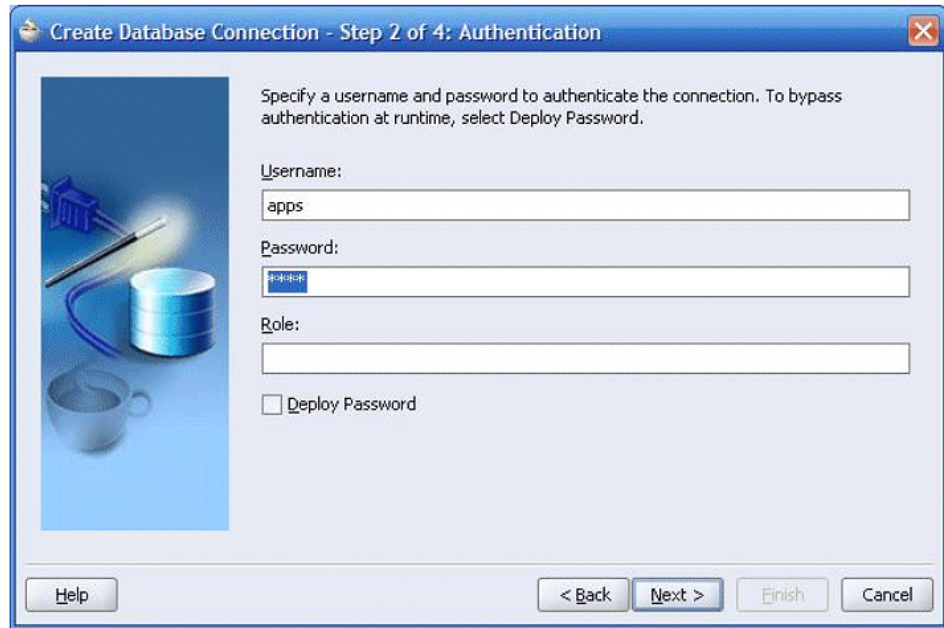
7. Complete the following steps in the Oracle Applications Project Wizard window.
 - Step 1 of 3: Click on Next. Enter Project Name, Directory Name, and Default Package Name (for example, 'oracle.apps.az.issetup.server').



- Click **Next**.
 - Step 2 of 3: Check the box "Use Repository for Design Time". If you have already defined the database connection select it from the list or else click on **New**. The window "Create Database Connection Wizard" opens.
8. Click **Next**. Perform the steps required to create a database connection.
- Step 1 of 4: Enter Connection Name and Select Connection type as Oracle (JDBC). Click **Next**.



- Step 2 of 4: Enter Username and Password to authenticate the connection. Click **Next**.



Create Database Connection - Step 2 of 4: Authentication

Specify a username and password to authenticate the connection. To bypass authentication at runtime, select Deploy Password.

Username:

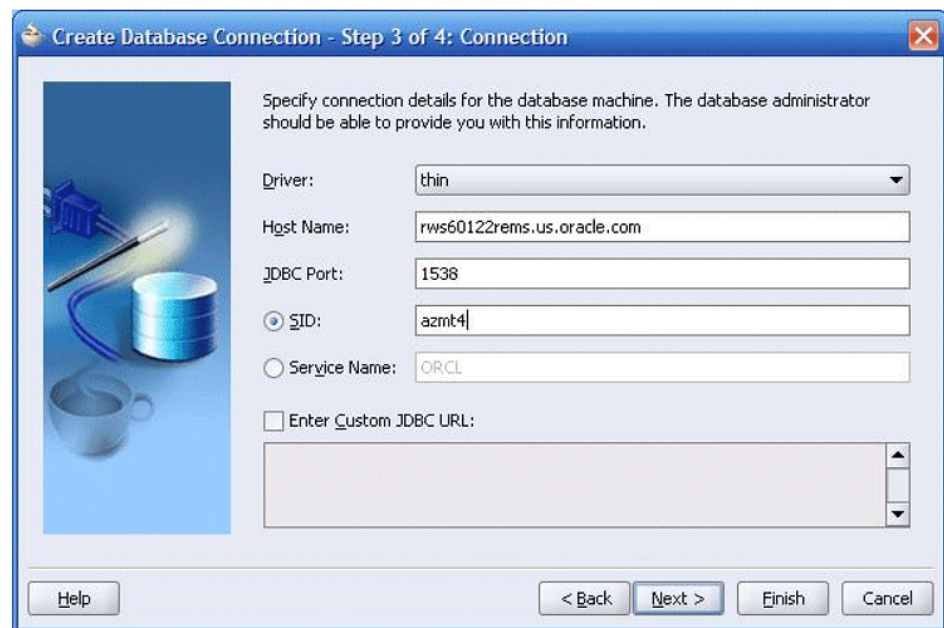
Password:

Role:

☐ Deploy Password

Help < Back Next > Finish Cancel

- Step 3 of 4: Specify connection details of the database machine. Click **Next**.



Create Database Connection - Step 3 of 4: Connection

Specify connection details for the database machine. The database administrator should be able to provide you with this information.

Driver:

Host Name:

JDBC Port:

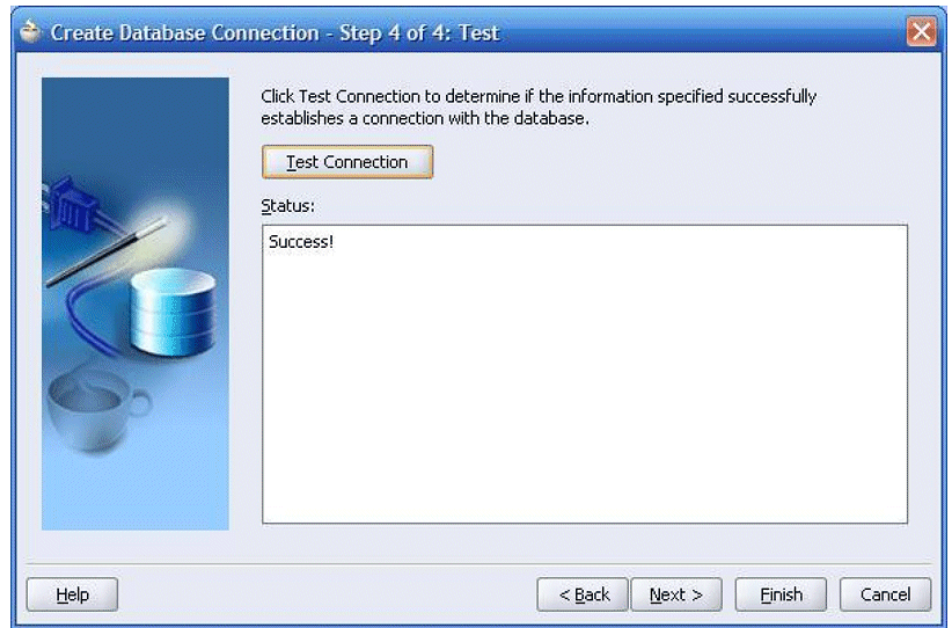
☒ SID:

☐ Service Name:

☐ Enter Custom JDBC URL:

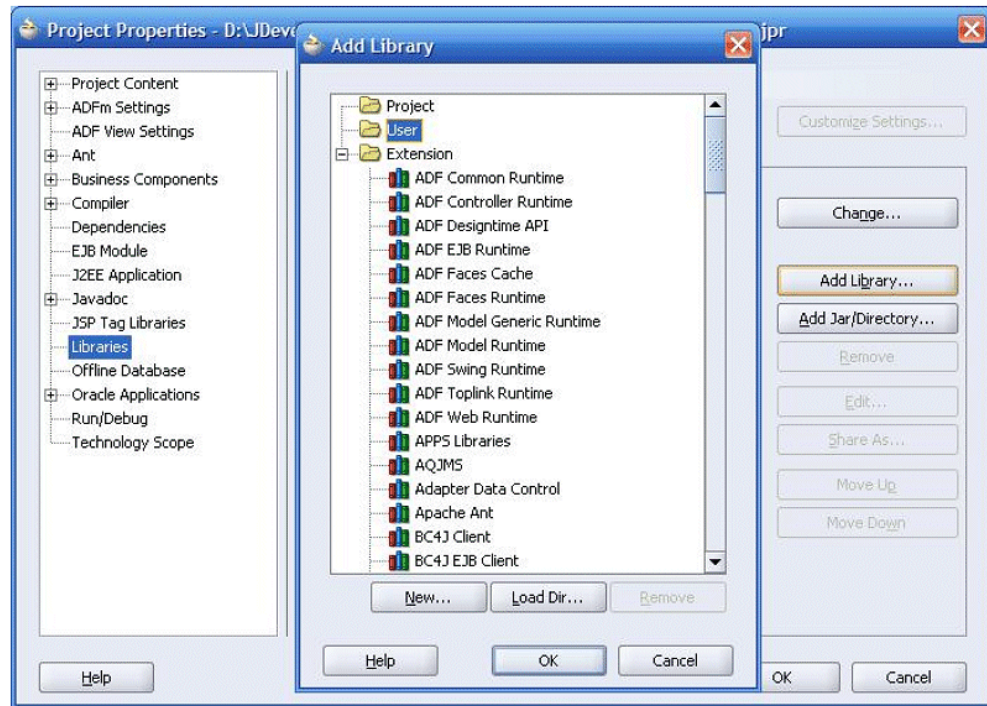
Help < Back Next > Finish Cancel

- Step 4 of 4: Click on **Test Connection** to ensure that all the details you supplied above are correct.



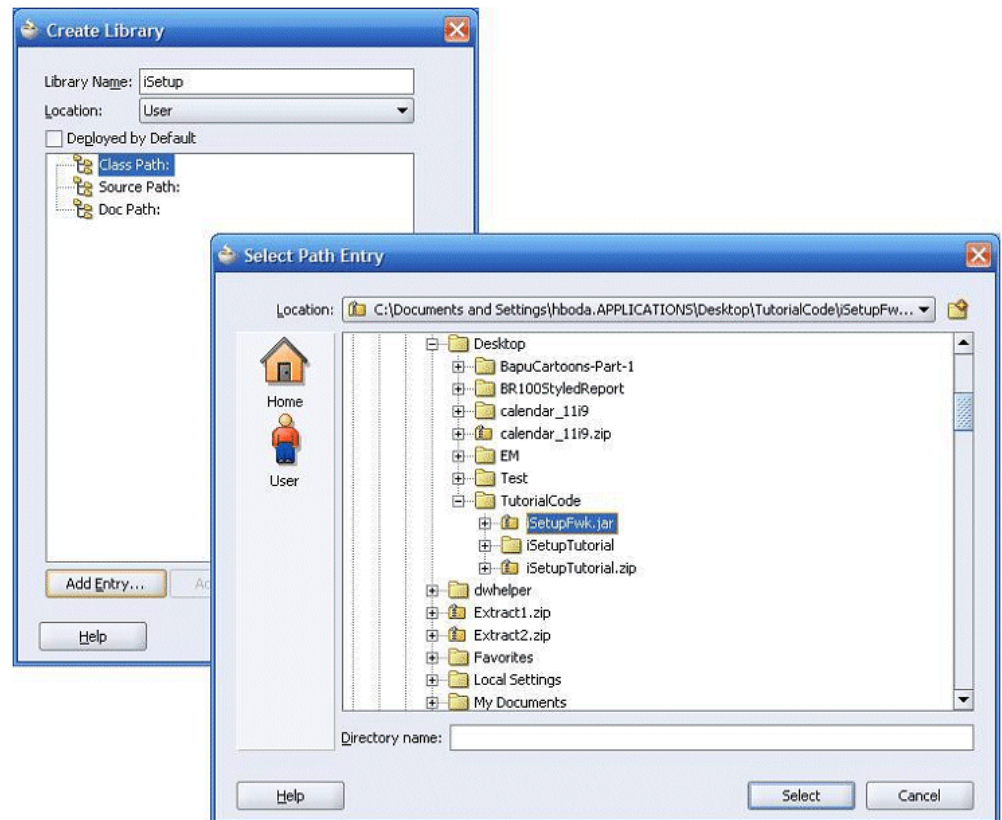
Click **Finish** to return to the Oracle Applications Project Wizard.

9. Now you are done creating the new OA Project. Click **Finish**.
10. In the Applications Navigator right-click on the project and navigate to Project Properties > Libraries > Add Library.



11. Add a new library:

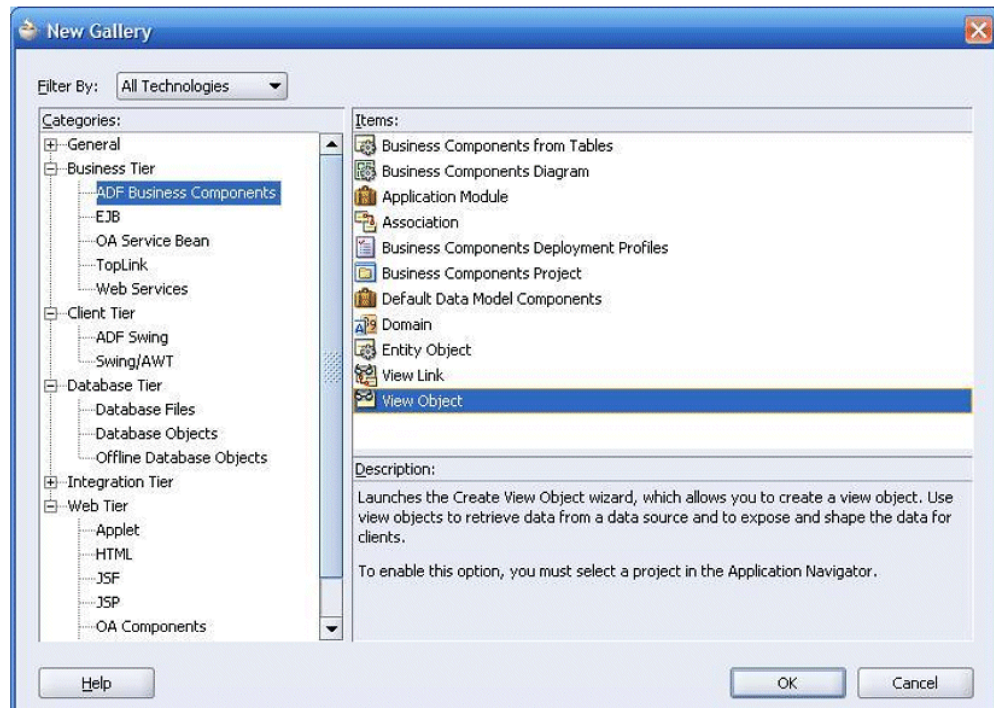
- Click on **New**.
- Enter Library Name using the navigation path iSetup > Select Class Path and click on **Add Entry**.
- Browse to the directory where the iSetup Tutorial files have been unzipped (Refer to Step 3). Select **iSetFwk.jar**. Click **OK** in Create Library Dialog Pane.



12. Click **OK** in Add Library Dialog Pane.
13. Click **OK** in Project Properties Dialog Pane.

To Create the iSetup Framework Reportable Interface:

1. Create View Object: Right-click on the Project and click on New > Select ADF Business Components: View Object.



2. Click on **OK**. The "Create View Object Wizard" window opens.

3. Click **Next**.

4. Perform the following in the Create View Object screens:

- Step 1 of 7: Specify the package and name of the View Object.

Select rows populated with SQL Query: with Read-only access radio button.

Click **Next**.

This tutorial is explained using Oracle iSetup, with the application short name 'az' ('AZ'). You can create under your custom PRODUCT_TOP. You can replace 'az' with your own product short code (application short name).

For example, the Package Name can be given as oracle.apps.az.isetup.server and the View Object name as ReportCurrenciesVO.

Create View Object - Step 1 of 7: Name

Specify the package to contain your new view object.
 Package:

Specify the name of your new view object.
 Name:

If you would like your object to extend from another view object, please specify the base object.
 Extends:

What kind of data do you need this view object to manage?

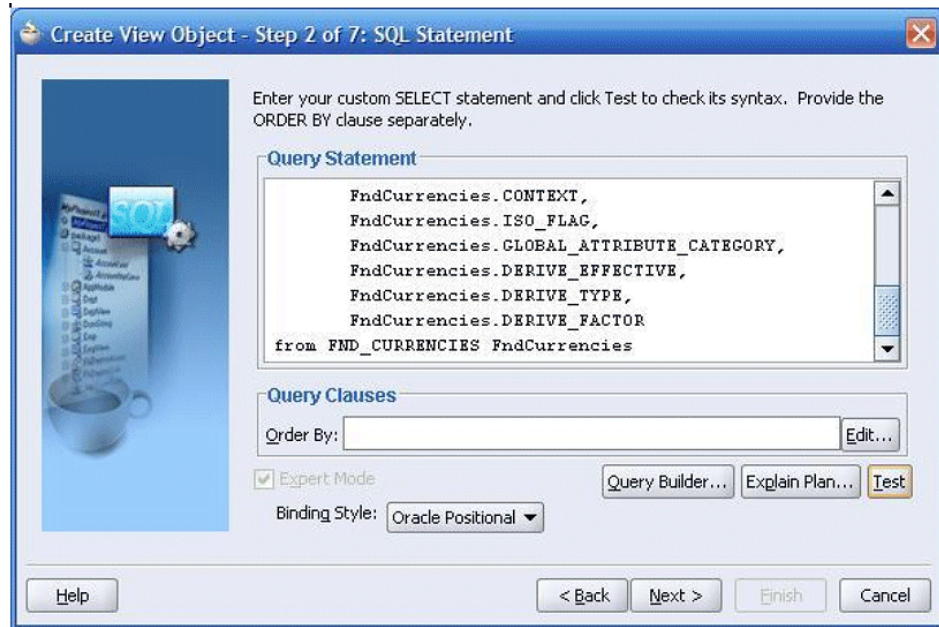
☒ Rows Populated by a SQL Query, with:

☐ Updatable Access through Entity Objects

☒ Read-only Access

☐ Rows Populated Programmatically, not Based on a Query

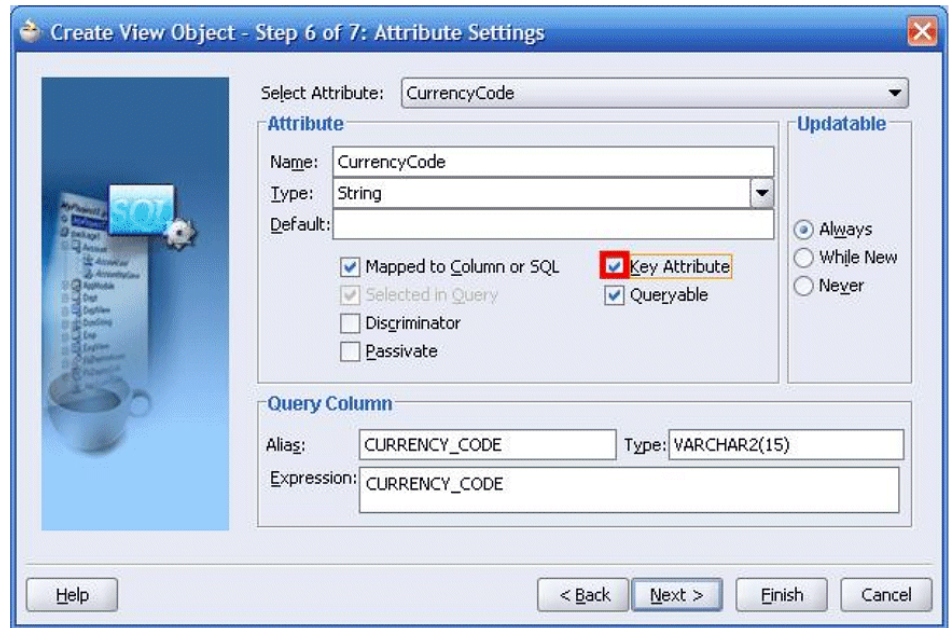
- Step 2 of 7: Enter the SQL query (The query for the desired records that needs to come in the report. In this example, we used the FND_CURRENCIES table) in the Query Statement text box and select the binding style as Oracle Positional. Click **Next**.



Note: An example query is

```
SELECT
  FndCurrencies.CURRENCY_CODE,
  FndCurrencies.ENABLED_FLAG,
  FndCurrencies.CURRENCY_FLAG,
  FndCurrencies.DESCRPTION,
  FndCurrencies.ISSUING_TERRITORY_CODE,
  FndCurrencies.PRECISION,
  FndCurrencies.EXTENDED_PRECISION,
  FndCurrencies.SYMBOL,
  FndCurrencies.START_DATE_ACTIVE,
  FndCurrencies.END_DATE_ACTIVE,
  FndCurrencies.MINIMUM_ACCOUNTABLE_UNIT,
  FndCurrencies.CONTEXT,
  FndCurrencies.ISO_FLAG,
  FndCurrencies.GLOBAL_ATTRIBUTE_CATEGORY,
  FndCurrencies.DERIVE_EFFECTIVE,
  FndCurrencies.DERIVE_TYPE,
  FndCurrencies.DERIVE_FACTOR
FROM FND_CURRENCIES FndCurrencies
```

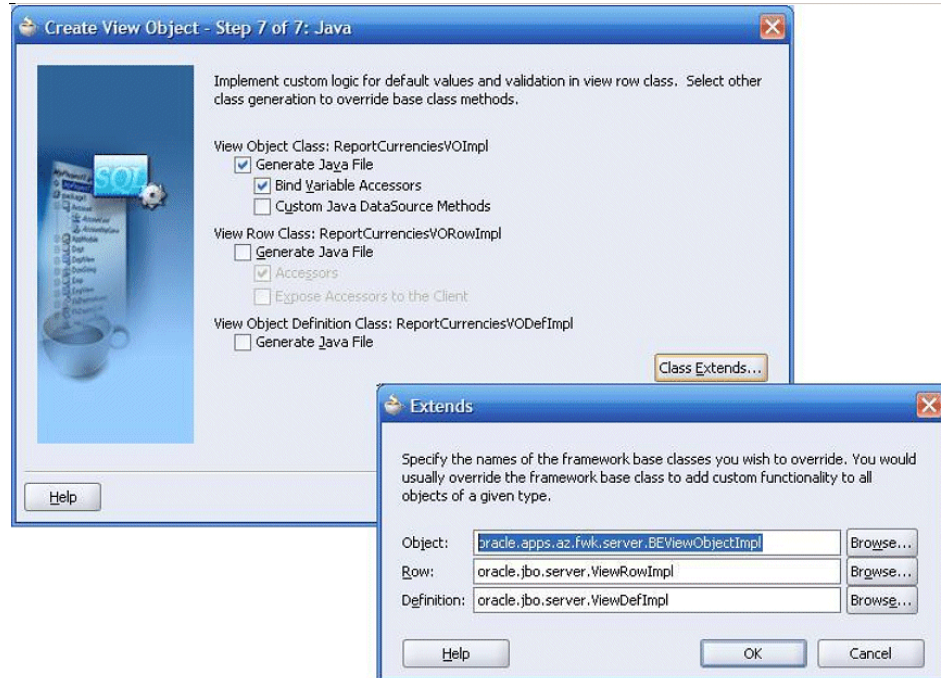
- Click on **Next**, accepting the defaults, until you reach step 6 of 7: Attribute Settings.
- Step 6 of 7: Now mark the unique key attributes (Unique keys are the developer keys of your API. Unique Keys should not contain any sequence IDs. Based on unique key columns, you can uniquely identify a record. In this example, the CurrencyCode view object attribute uniquely identifies a record.



- Step 7 of 7: Select Generate Java File for View Object Class:
ReportCurrenciesVOImpl.

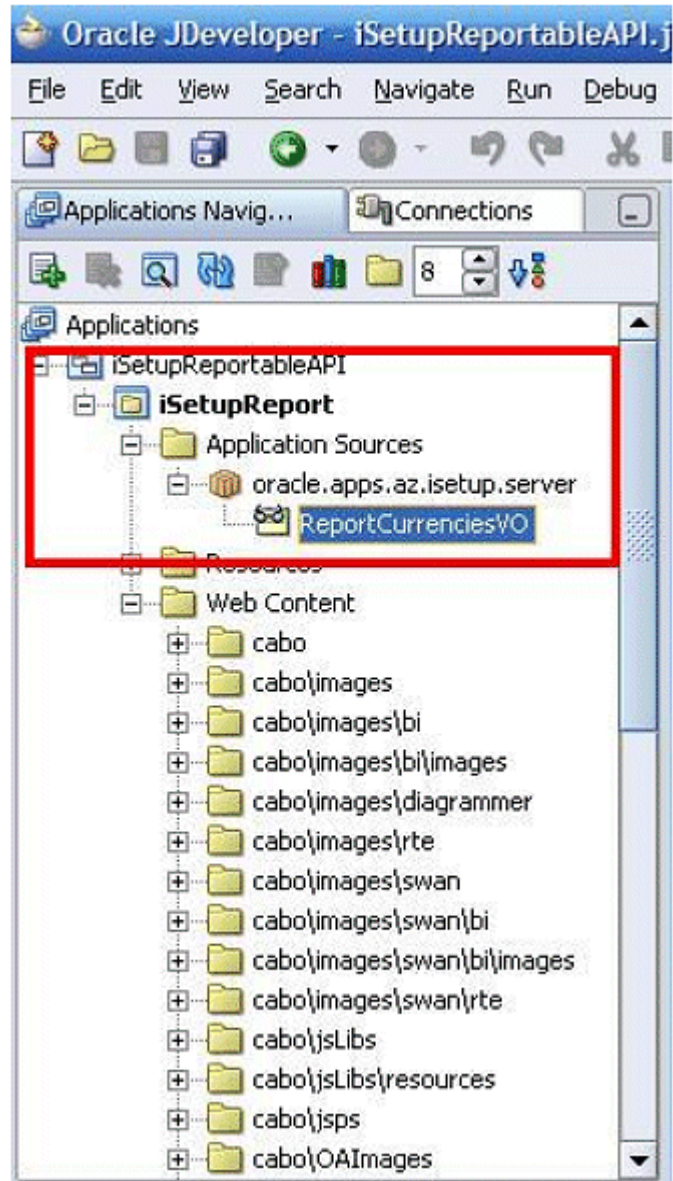
Click on the **Class Extends** button. In the Against Object box, you need to override the base class as 'oracle.apps.az.fwk.server.BEViewObjectImpl'.

Click **OK** on the Extends dialog pane and click **Finish** in Create View Object wizard.

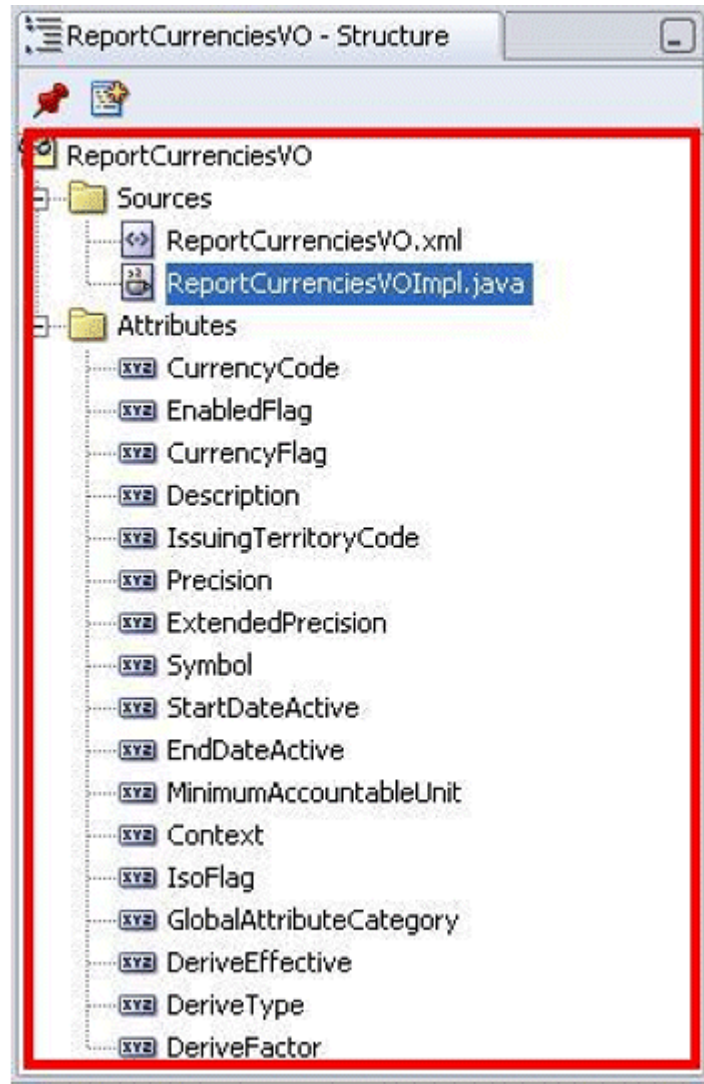


Note that the View Object is created with following two files:

- ReportCurrenciesVO.xml



- ReportCurrenciesVOImpl.java



5. Filtering attributes need to be marked if the iSetup Reportable API has to support filtering records. APIs are responsible for determining which filtering parameters are allowed and to which view object attributes that these filtering parameters map. In order to achieve these goals, the APIs need to register the filtering parameters by marking view object attributes as filtering parameters as shown below:

For the attributes that need to be filtered on, the APIs need to add the following three properties

- AZ_FILTER_NAME: a unique value within the view object. Make sure it's all-uppercase and has no spaces. This is a mandatory parameter if you wish to set filter on an attribute.
- AZ_ATT_DISPLAY_MSG: The Oracle Application Object Library (FND)

message name.

- **AZ_ATT_DISPLAY_APP**: The application short name that corresponds to the FND message name.

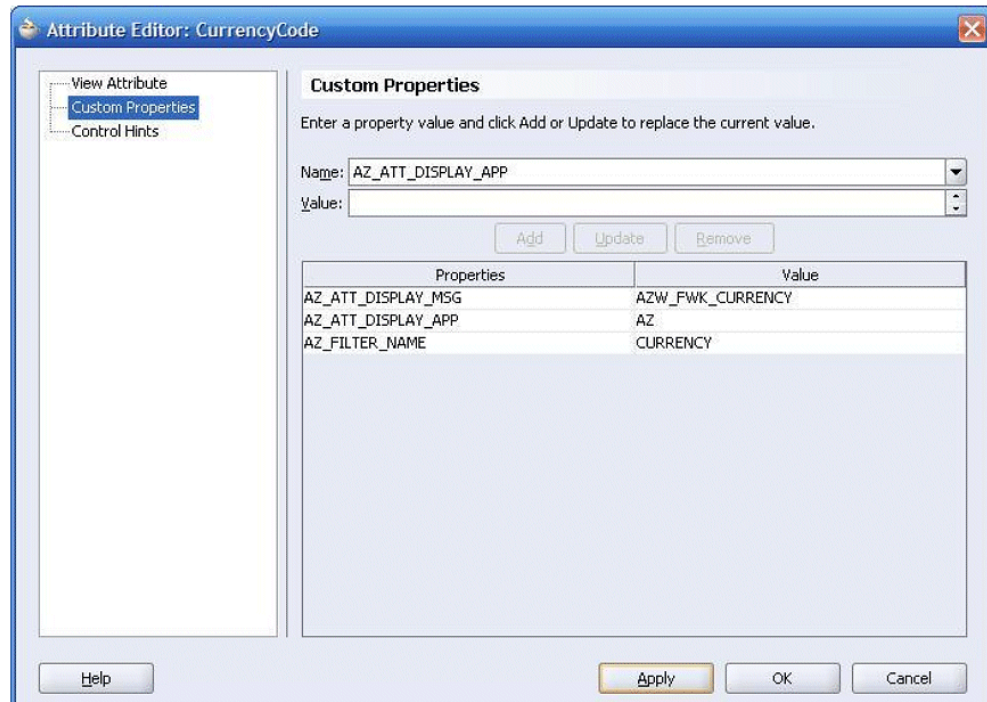
Optional properties are as follows:

Properties **AZ_ATT_DISPLAY_MSG** and **AZ_ATT_DISPLAY_APP** are used to show the label of the filtering parameter in the iSetup Migration UI pages. These properties are optional. If you do not set the values for these properties, then the VO attribute name would be used as the display name.

To set the above properties you need to follow following steps.

In this example, attribute **CurrencyCode** of **ReportCurrenciesVO** is the filtering parameter.

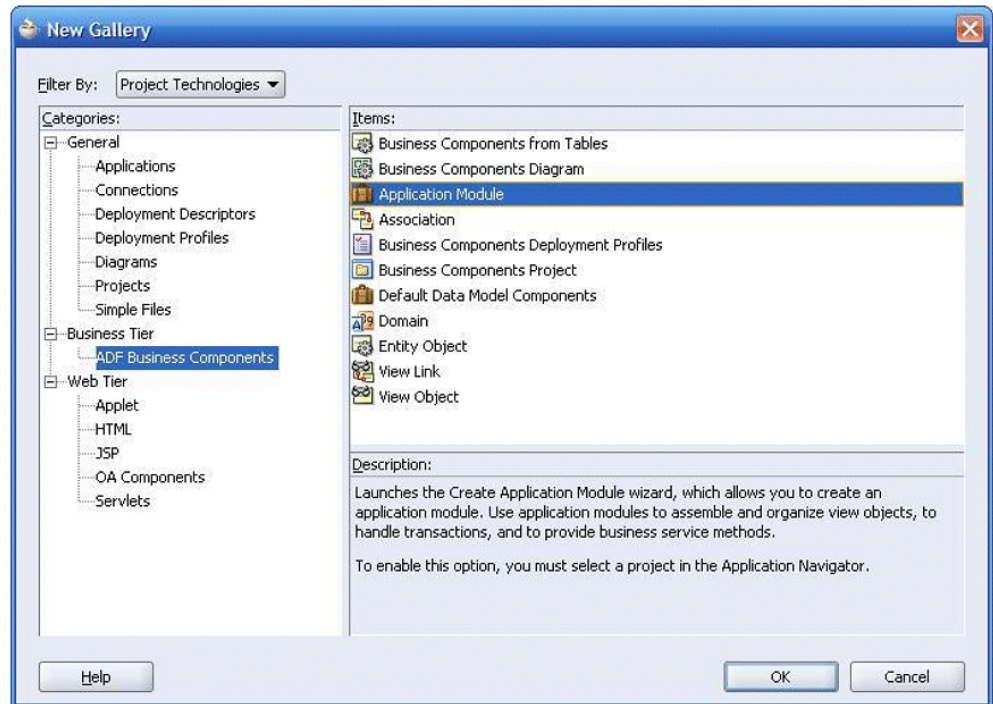
1. Select **ReportCurrenciesVO** in Applications Navigator of JDeveloper. In the Structure Pane, select and right-click on the **CurrencyCode** view object attribute and select 'Edit **CurrencyCode**'. Then select 'Custom Properties' in Attribute Editor wizard. For Name enter: **AZ_FILTER_NAME** and for Value enter: **CURRENCY**. Click on **Add** and **Apply**.
2. Repeat the above procedure for the properties (Optional): **AZ_ATT_DISPLAY_MSG** and **AZ_ATT_DISPLAY_APP**. In this example the values are given as follows:
 - **AZ_FILTER_NAME**: **CURRENCY**
 - **AZ_ATT_DISPLAY_MSG**: **AZW_FWK_CURRENCY**
 - **AZ_ATT_DISPLAY_APP**: **AZ**
3. After entering all the properties for filtering parameters, click **OK**.



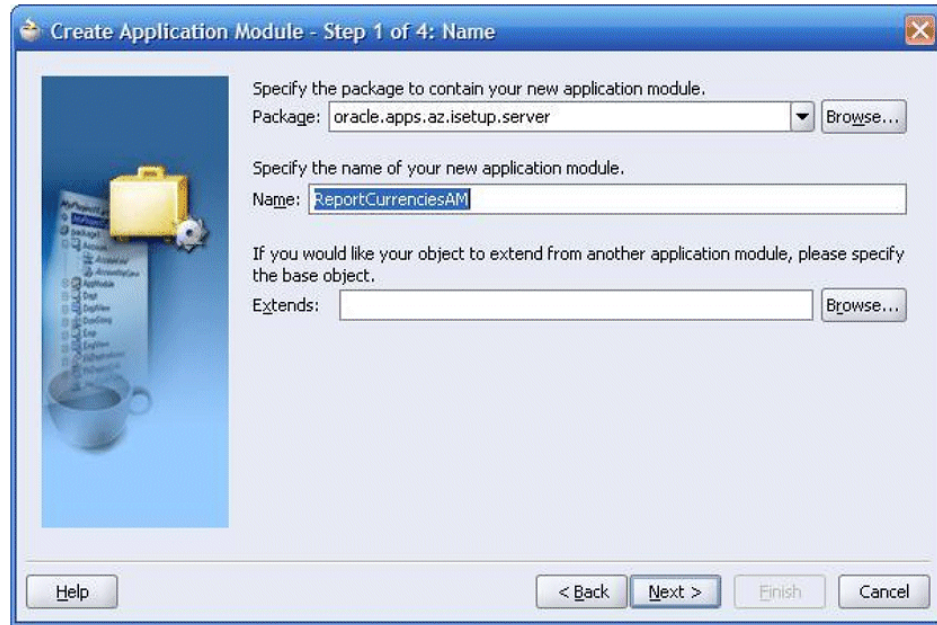
To Create an Application Module:

Perform the following steps to create an application module.

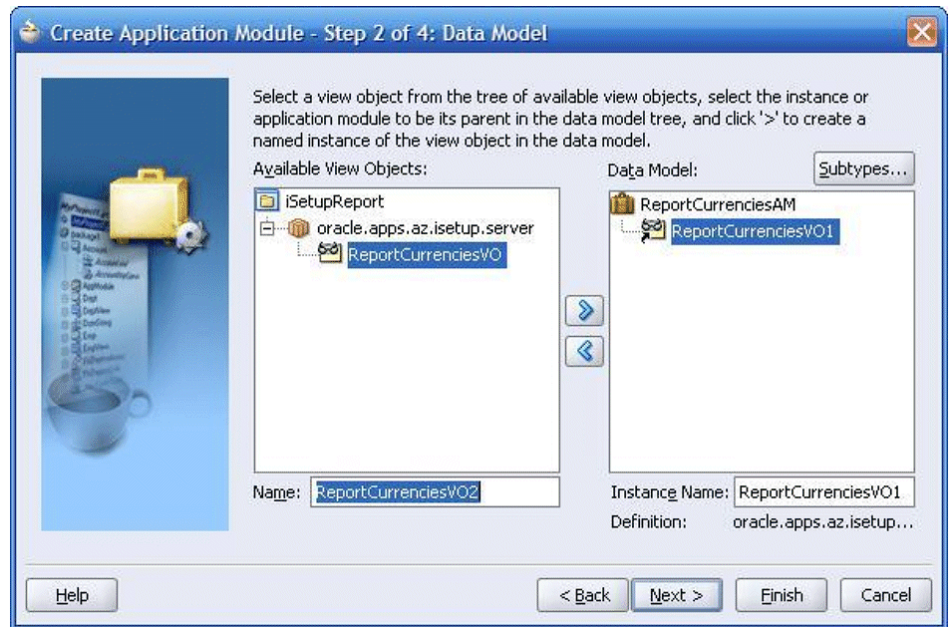
1. Right-click on the project and click on **New**. Select ADF Business Components: Application Module.



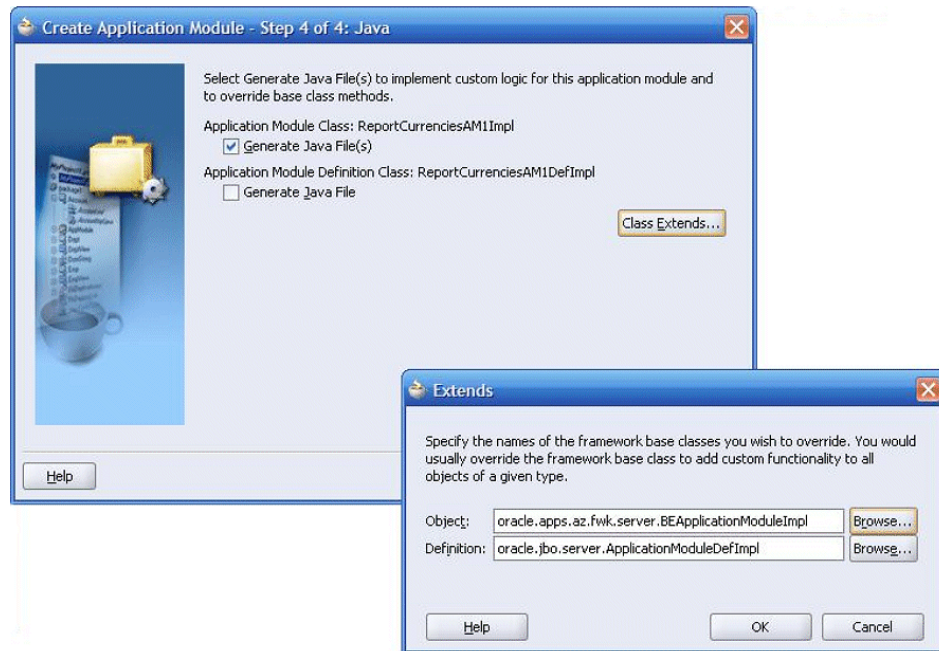
2. Click **OK**. The "Create Application Module" wizard opens. Click **Next**.
3. Perform the steps in the Create Application Module window.
 - Step 1 of 4: Specify the package and name of the Application Module. Here the package name is given as 'oracle.apps.az.issetup.server' and the View Object name is given as 'ReportCurrenciesAM'.



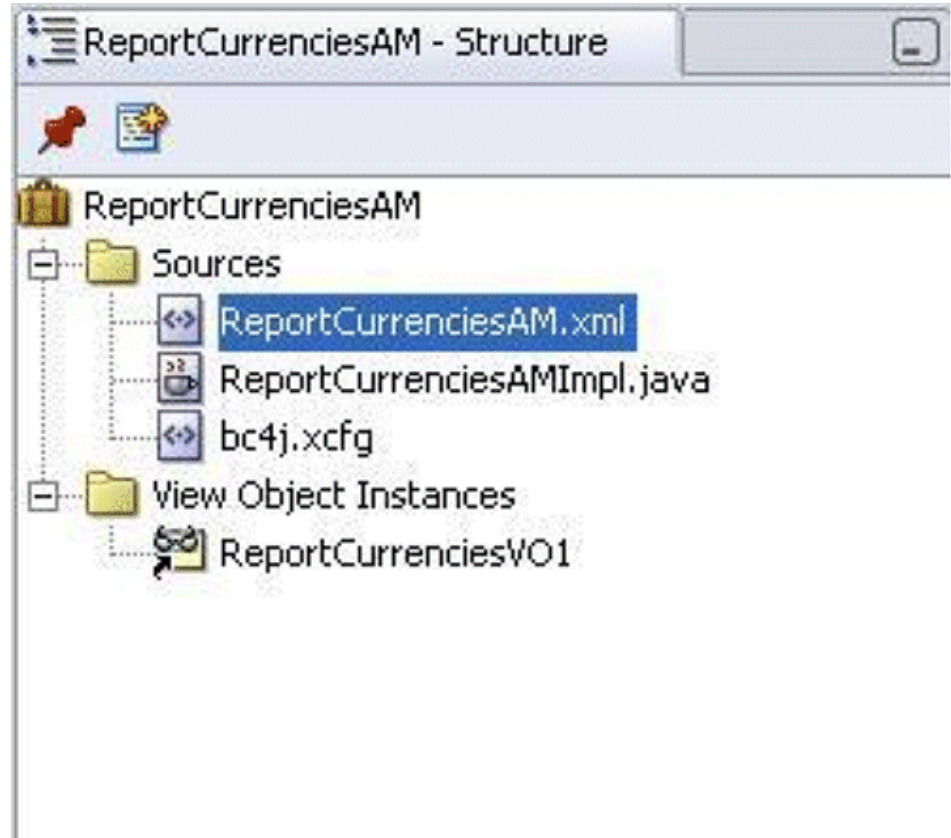
- Step 2 of 4: Select ReportCurrenciesVO in the Available View Objects and add it to the data model. Click on **Next**.



- Click on **Next** until you reach step 4 of 4: Java.



- Select Application Module Class: ReportCurrenciesAM1Impl > Generate Java File(s). Click on the **Class Extends** button. In the Against Object box you need to override the base class as 'oracle.apps.az.fwk.server.BEApplicationModuleImpl'. Click **OK** on the Extends dialog pane and click **Finish** in the Create Application Module wizard.
- Note that the Application Module is created with following two files:
 - ReportCurrenciesAM.xml
 - ReportCurrenciesAMImpl.java



- Now you need to add exportable view object to the application module. Open `ReportCurrenciesAMImpl.java` and add the following piece of code to the application module's default constructor:

```
public class ReportCurrenciesAMImpl extends
    BEApplicationModuleImpl {
    /**This is the default constructor (do not remove)
    */
    public ReportCurrenciesAMImpl() {
        addVO("ReportCurrenciesVO1");    }

    .....
}
```

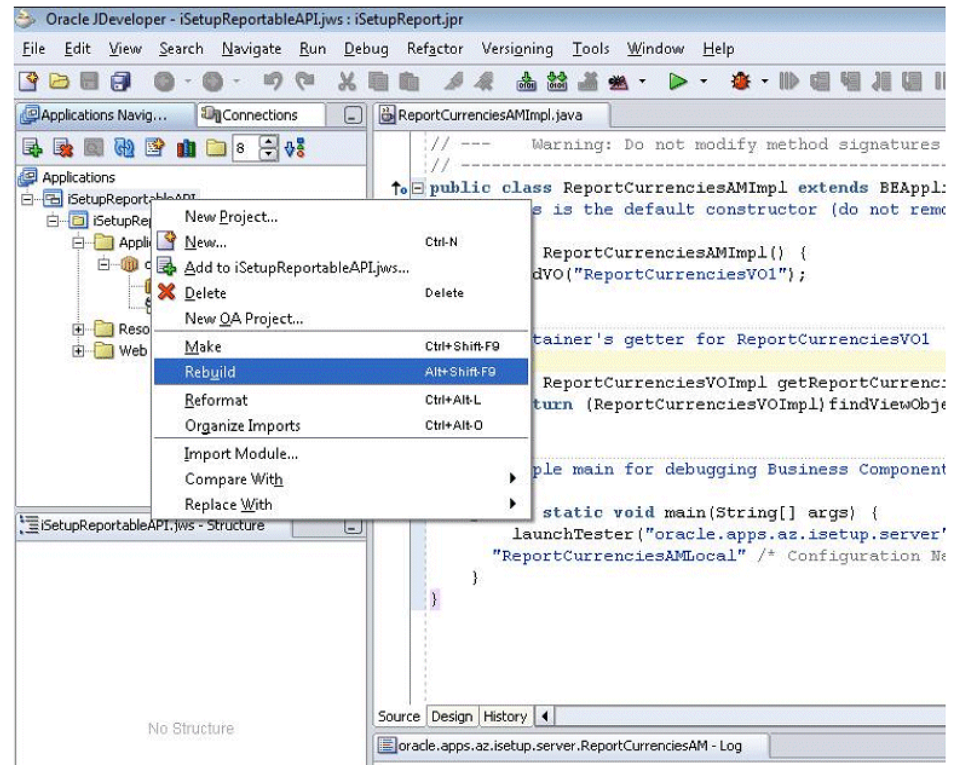
- In the iSetup Migrator UI, a LOV can be linked to each filtering parameter. This feature is optional. You may skip this if you do not want the LOV. To enable this feature, the API needs to override `BEViewObjectImpl.getSqlForLov` method to return the LOV SQL, which should select the distinct values of the filtered column. Add the following piece of code to the `ReportCurrenciesVOImpl.java` file.

```

public class ReportCurrenciesVOImpl extends
    BEViewObjectImpl {
    /**This is the default constructor (do not remove)
    */
    public ReportCurrenciesVOImpl() {
    }
    public String getSqlForLov(String attrName) {
        if (attrName.equalsIgnoreCase("CurrencyCode")) //if this
attribute is not defined on a database column
        {
            StringBuffer sql = new StringBuffer();
            sql.append("select distinct currency_code ");
            sql.append("from ");
            sql.append("fnd_currencies ");
            return sql.toString();
        } else {
            return super.getSqlForLov(attrName);
        }
    }
}

```

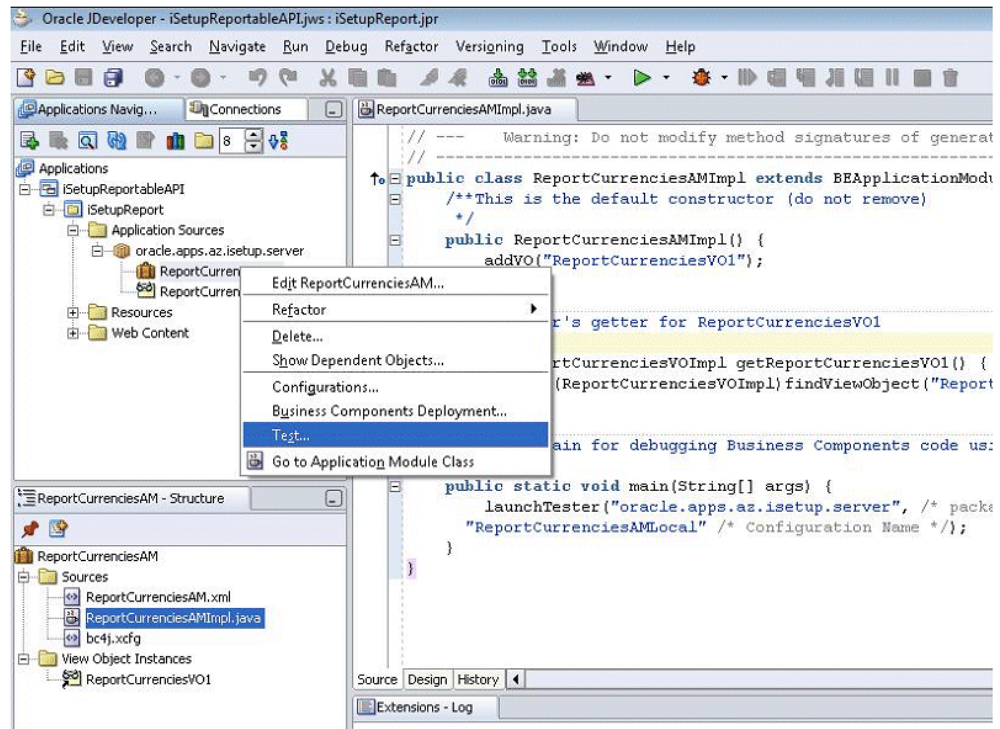
- Now right-click on the workspace and select **Rebuild**. Ensure that there are no compilation errors.



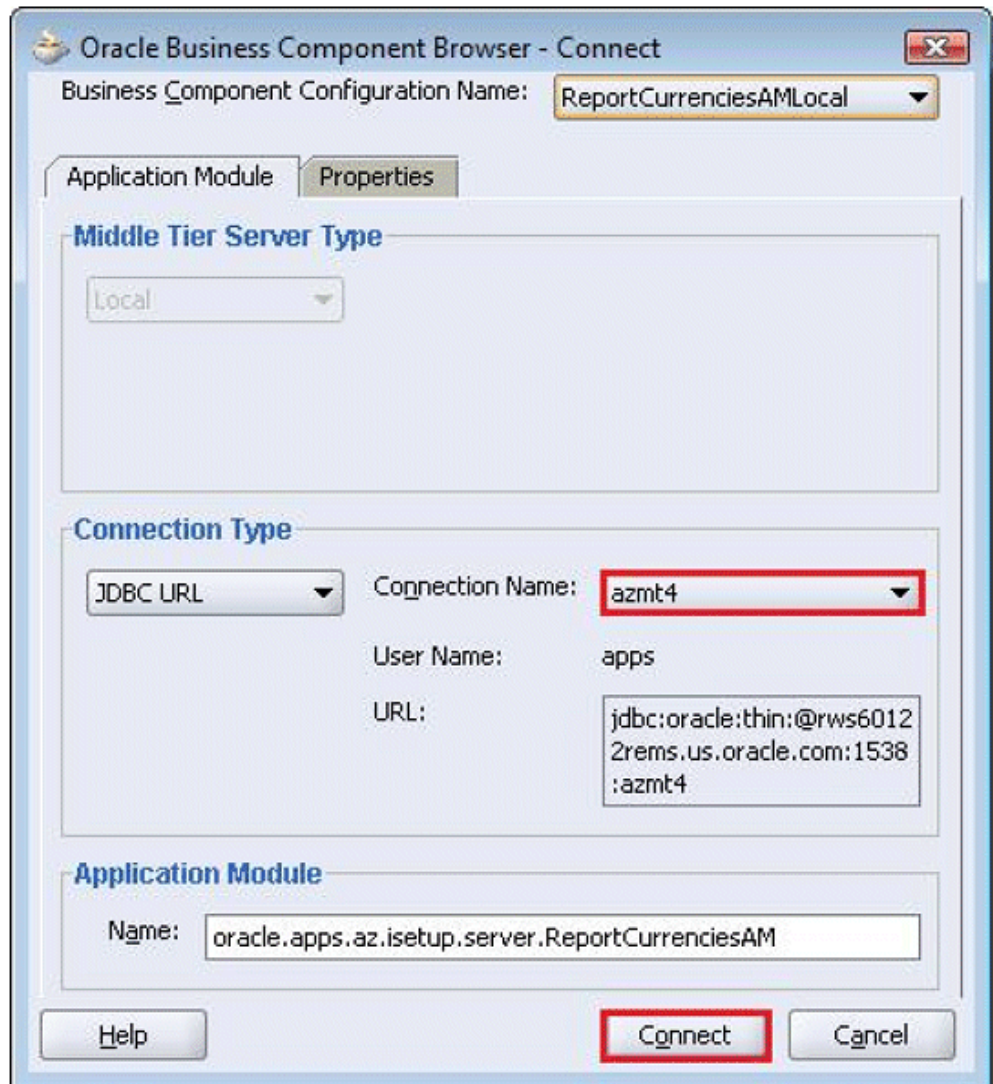
- Now your API supports the default export functionality, which is exporting all the records found for the defined view objects so that a report can be generated with the exported records.

To Test the Interface in JDeveloper:

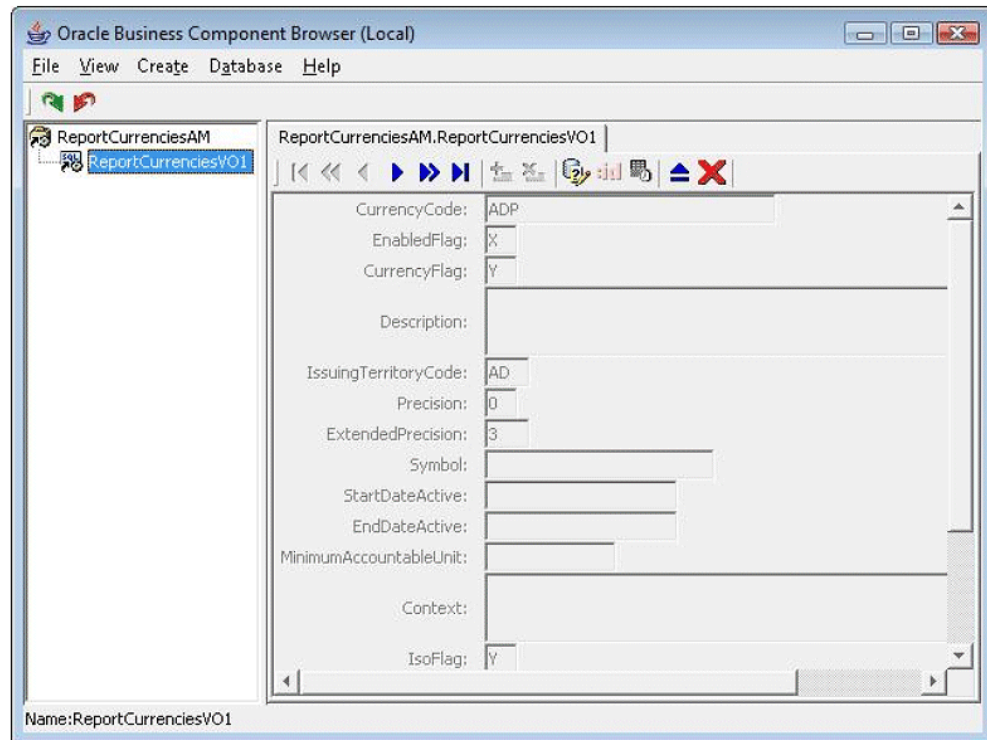
1. Right-click on ReportCurrenciesAM application module and select **Test**.



2. The Oracle Business Component Browser opens. Select **Connection Name** to the instance on to which you need to test and click on **Connect**.



3. A Java frame window 'Oracle Business Component Browser' opens up. Click on the View Object you need to test. In this example, we added ReportCurrenciesVO1 to the application module, so we would click on ReportCurrenciesVO1. All the records that need to be fetched with the SQL query will be returned.



4. Click on File > Exit to close the Testing mode.

To Test and Deploy Interface in an Oracle E-Business Suite Instance:

1. Navigate to the JDeveloper folder where your code resides. By default when you create workspace and project, this folder is usually created here:

```
<JDeveloper12.0.6>\jdevbin\jdev\myclasses
```

Copy the Application Module and View Object related files to the JAVA_TOP of the instance. During copy don't disturb the directory structure. Here you need to copy the folder

```
<JDeveloper12.0.6>\jdevbin\jdev\myclasses\oracle\apps\az\isetup\server
```

to

```
<$JAVA_TOP>\oracle\apps\az\isetup\server
```

2. For testing purposes, execute the following query against the instance database.

Note: This query is purely for testing purpose only. After testing and if your API is working as expected, remove the below inserted record from the database and register the API as described in the section Registering the iSetup Framework (BC4J) API, page 1-10.

INSERT

```

INTO az_apis
(
    API_NAME,
    APPLICATION_SHORT_NAME,
    SEQ ,
    DISPLAY_NAME,
    DESCRIPTION,
    COMMIT_IF_WARNING,
    TYPE_CODE,
    METHOD_NAME,
    PATH,
    CREATED_BY,
    CREATION_DATE,
    LAST_UPDATED_BY,
    LAST_UPDATE_DATE,
    LAST_UPDATE_LOGIN,
    API_CODE,
    SEQ_NUM,
    API_DESC,
    COMMIT_IF_WARNING_FLAG,
    API_TYPE,
    REPORT_LAYOUT,
    FILTERING_PARAMETERS,
    DATA_SOURCE_NAME,
    UPDATABLE_FLAG,
    CHANGE_UPDATABLE_FLAG,
    ALLOW_SET_TARGETVAL_FLAG,
    ALLOW_FILTER_FLAG,
    API_STANDALONE_FLAG,
    ACTIVE,
    DISABLE_REPORT_FLAG
)
VALUES
(
    NULL ,
    'AZ' ,
    NULL ,
    :1,
    NULL ,
    NULL ,
    NULL ,
    'importFromXML',
    :2,
    1,
    to_timestamp('03-JAN-07','DD-MON-RR HH.MI.SSXFF AM'),
    1,
    to_timestamp('21-MAR-07','DD-MON-RR HH.MI.SSXFF AM'),
    0,
    :3,
    NULL,
    NULL,
    'N',
    'BC4J',
    'MULTIPLE',
    NULL,
    NULL,
    NULL,
    NULL,
    NULL,

```

```
'Y',
    'Y',
    'Y',
    NULL
);
```

Where

:1 => DISPLAY_NAME => Any user friendly name to identify the API. In this case, please substitute Report Currencies for DISPLAY_NAME

:2 => PATH => Java path to refer AM. In this case, substitute oracle.apps.az.isetup.server.ReportCurrenciesAM for PATH.

:3 => API_CODE => A unique identifier to register the API. Naming convention is prefix with Application Short Name + "_" + API Name without any spaces. In this case, substitute AZ_Currencies for API_CODE.

Delete Record Query

```
DELETE
FROM az_apis
WHERE api_standalone_flag = 'Y'
AND api_code= 'AZ_Currencies';
```

3. Reports can be generated as described in the *Oracle iSetup User's Guide*. You will need to create a Custom Selection Set by selecting the data object created above. In our example, the navigation path is Report Currencies > Create Extract > Create Report. The detailed process can be found in the *Oracle iSetup User's Guide*.
4. Once you are done with testing the interface, you can deploy it on to any Oracle E-Business Suite instance. Follow the steps described in the section Registering the iSetup Framework (BC4J) API, page 1-10 to register the iSetup reportable API to the iSetup Interface Repository.

Oracle Application Object Library Messages for Oracle iSetup

Oracle iSetup Messages in Oracle Application Object Library (FND)

The following table provides a list of the Oracle Application Object Library (FND) messages that are owned and managed by Oracle iSetup and can be shared among all APIs.

Message Name	Message
AZW_FWK_INV_ORG_NAME	"Inventory Organization Name"
AZW_FWK_SOB_NAME	"Set of Books Name"
AZW_FWK_ORG_NAME	"Organization Name"
AZW_FWK_USER_NAME	"User Name"
AZW_FWK_LANGUAGE	"Language"
AZW_FWK_CURRENCY	"Currency"
AZW_FWK_BG_NAME	"Business Group Name"
AZW_FWK_LE_NAME	"Legal Entity Name"
AZW_FWK_PARTY_NAME	"Party Name"
AZW_FWK_CUSTOMER_NAME	"Customer Name"

Message Name	Message
AZW_FWK_CUST_ACT_NUM	"Customer Account Number"
AZW_FWK_SUPPLIER_NAME	"Supplier Name"
AZW_FWK_SUPPLIER_NUM	"Supplier Number"
AZW_FWK_BANK_NAME	"Bank Name"
AZW_FWK_BANK_NUM	"Bank Number"
AZW_FWK_EMP_NAME	"Employee Name"
AZW_FWK_EMP_NUM	"Employee Number"