

**SUN SEEBEYOND**

**JAVA™ COMPOSITE APPLICATION  
PLATFORM SUITE TUTORIAL**

**Release 5.1.3**



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## Chapter 1

# Introduction

This document explains a sample Project scenario that helps you get started using the Sun SeeBeyond Java™ Composite Application Platform Suite (Java CAPS).

This chapter provides a brief introduction to the purpose, scope, and organization of the document, as well as additional reference information.

### What's in This Chapter

- [About This Document](#) on page 9
- [Related Documents](#) on page 11
- [Sun Microsystems, Inc. Web Site](#) on page 11
- [Documentation Feedback](#) on page 11

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## 1.1 About This Document

This document contains procedures that explain how to run a sample Project scenario that demonstrates some of the basics of Java CAPS, including:

- eGate™ Integrator
- eInsight™ Business Process Manager
- Oracle eWay™ Adapter

The sample scenario is basic and intended for novice Java CAPS users. Its Projects and related files are provided in the same file that contains this document. Using this sample scenario, you can build, deploy, and run Java CAPS Projects to produce output data that you can verify.

## 1.1.1 What's in This Document

This document contains the following sections:

- **Chapter 1 “Introduction”** introduces this tutorial including its purpose, scope, and contents.
- **Chapter 2 “Prerequisites and One-Time Setup Steps”** provides lists of the prerequisites you need to operate the sample Project scenario, for example, installed applications.
- **Chapter 3 “Sample Project Scenario for Java CAPS”** contains the step-by-step tutorial procedures that explain how to create and use the sample Project.

## 1.1.2 Scope

This document provides tutorial-style instructions to create two Projects (a client Project and a server Project) that demonstrate how to use CAPS products, eGate and eInsight, along with eWays and web services to create a credit-scoring application.

## 1.1.3 Intended Audience

The scenarios in this document help new users get up to speed fast with Java CAPS products, especially eGate and eInsight.

For more information about getting started with Java CAPS, see the *eGate Integrator Tutorial*, which contains sample eGate Project scenarios.

## 1.1.4 Text Conventions

The following conventions are observed throughout this document.

**Table 1** Text Conventions

Text Convention	Used For	Examples
<b>Bold</b>	Names of buttons, files, icons, parameters, variables, methods, menus, and objects	<ul style="list-style-type: none"><li>▪ Click <b>OK</b>.</li><li>▪ On the <b>File</b> menu, click <b>Exit</b>.</li><li>▪ Select the <b>eGate.sar</b> file.</li></ul>
Monospaced	Command line arguments, code samples; variables are shown in <b><i>bold italic</i></b>	<code>java -jar <b>filename</b>.jar</code>
<b>Blue bold</b>	Hypertext links within document	See <b>Text Conventions</b> on page 10
<b>Blue underlined</b>	Hypertext links for Web addresses (URLs) or email addresses	<a href="http://www.sun.com">http://www.sun.com</a>

### 1.1.5 Screenshots

Depending on what products you have installed, and how they are configured, the screenshots in this document may differ from what you see on your system.

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## 1.2 Related Documents

The following documents provide additional information:

- *Sun SeeBeyond Java Composite Application Platform Suite Installation Guide*
- *Sun SeeBeyond eGate Integrator Tutorial*
- *Sun SeeBeyond eGate Integrator User's Guide*
- *Sun SeeBeyond eGate Integrator System Administration Guide*
- *Sun SeeBeyond eInsight Business Process Manager User's Guide*
- *Sun SeeBeyond File eWay Adapter User's Guide*
- *Sun SeeBeyond Oracle eWay Adapter User's Guide*

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## 1.3 Sun Microsystems, Inc. Web Site

The Sun Microsystems web site is your best source for up-to-the-minute product news and technical support information. The site's URL is:

<http://www.sun.com>

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## 1.4 Documentation Feedback

We appreciate your feedback. Please send any comments or suggestions regarding this document to:

[CAPS\\_docsfeedback@sun.com](mailto:CAPS_docsfeedback@sun.com)

# Prerequisites and One-Time Setup Steps

This chapter explains the prerequisite applications, components, and operations you need to have in place and running before you can create the Projects in this tutorial.

### What's in This Chapter

- [Easy Offering Java CAPS](#) on page 12
- [Required Java CAPS Products](#) on page 12
- [Required eGate Components](#) on page 13
- [Preparatory Steps for Java CAPS](#) on page 13
- [Using the Sample Projects and Environment](#) on page 17

**Note:** For instructions on how to install any Java CAPS applications, as well as how to use the Java CAPS Installer interface, see the *Sun SeeBeyond Java Composite Application Platform Suite Installation Guide*.

---

## 2.1 Easy Offering Java CAPS

If you are using Easy Offering Java CAPS, you do not need to install any additional products to go through the sample Project scenario and use the tutorial, since Easy Offering Java CAPS contains all required Java CAPS products. If this applies to you, you can skip ahead to [Preparatory Steps for Java CAPS](#) on page 13.

---

## 2.2 Required Java CAPS Products

If you are *not* using Easy Offering Java CAPS, the following products must already be installed on your system:

- eGate Integrator
- eInsight Business Process Manager
- File eWay
- Oracle eWay

**Note:** This client Project uses an Oracle database and requires the Oracle eWay.

---

## 2.3 Required eGate Components

This tutorial assumes all of the following are installed on a single Windows system:

- (*required*) eGate Repository, set up to run on localhost ports 1200x
- (*required*) Enterprise Designer
- (*required*) Logical Host, set up to run a domain (**domain1**) on localhost ports 1800x
- (*optional*) Enterprise Manager, set up to run on localhost ports 1500x

Refer to the *Sun SeeBeyond Java Composite Application Platform Suite Installation Guide* for system requirements and installation instructions, and to the *Sun SeeBeyond eGate Integrator System Administration Guide* for instructions on ports, protocols, and Enterprise Manager. For detailed information about running the eGate tutorial, see the *Sun SeeBeyond eGate Integrator Tutorial*. For detailed information about Enterprise Designer components and editors, see the *Sun SeeBeyond eGate Integrator User's Guide*.

---

## 2.4 Preparatory Steps for Java CAPS

This tutorial assumes that all the following conditions have already been met:

- An Oracle database is running, and you can set up user access to it.

You or your database administrator (DBA) will create a table in this database, using a SQL script (included with the sample). In addition, you will need to supply the following information to access the database: hostname; SID; username/password.

- An eGate Repository is running on localhost ports 1200x, and you can log in to Enterprise Designer.

*Reminders:* To start a Repository, use

C:\JavaCAPS51\repository\startserver.bat; to start Enterprise Designer, use C:\JavaCAPS51\edesigner\bin\runed.bat.

- A domain named **domain1** has been created, and it runs on localhost ports 1500x

*Reminders:* To create a domain, use

C:\JavaCAPS51\logicalhost\createdomain.bat; to start **domain1**, use C:\JavaCAPS51\logicalhost\start\_domain1.bat.

### 2.4.1 Installing Sample Files

Before you can obtain the sample scenario .zip file, you must use Java CAPS Installer to install the **eGateDocs.sar** file to your Repository. This sar file also contains the sample file, **eGate\_Sample.zip**.

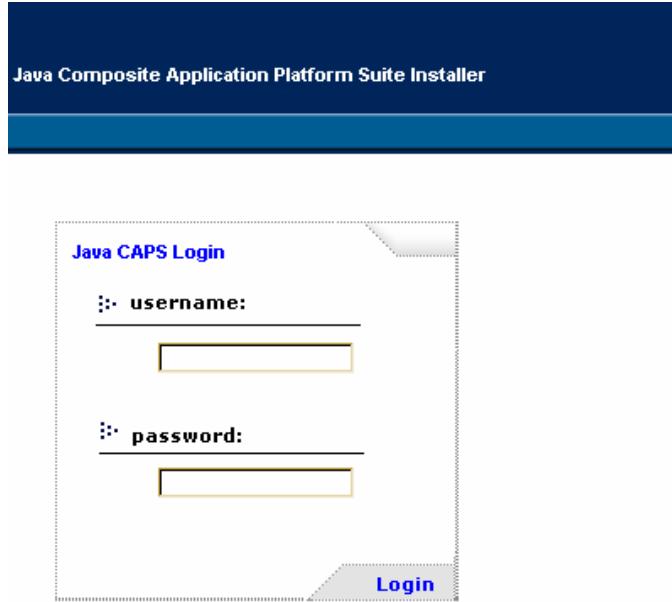
#### To download the sample scenario files

- 1 Use your Web browser to run Java CAPS Installer by entering the appropriate URL, for example:

`http://localhost:12000/`

The Java CAPS Installer **Login** page appears. See Figure 1.

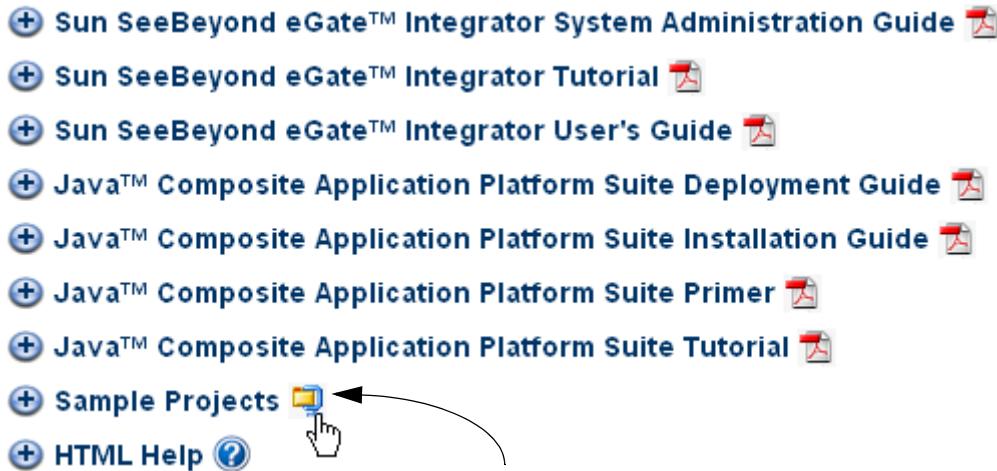
**Figure 1** Java CAPS Login Page



- 2 Enter your user name and password and click **Login**.
- 3 If you have not previously installed **eGateDocs.sar**, do the following:
  - A In the **Administration** tab (**Display** page), click the link to install additional products.
  - B In the **Display >> Select** page: Under Product Name, open **Documentation**.
  - C Scroll down to **eGateDocs**, select its check box, and then click the **Next** button.
  - D In the **Select >> Upload** page: Browse to the location of **eGateDocs.sar** file, select it, and then click the **Next** button.
- 4 Once **eGateDocs.sar** has been installed, click the **Documentation** tab.
- 5 In the left pane, click the **Core Products** tab.
- 6 Click the link for **Sun SeeBeyond eGate™ Integrator**.

- 7 In the right pane, click the **Sample Projects** icon. See Figure 2.

**Figure 2** Downloading the Sample Scenario File



- 8 Save **eGate\_Sample.zip** to an interim location.

To download the sample files for the tutorials

- 1 Extract the contents of **eGate\_Sample.zip** to a convenient folder on your computer.

**Note:** This *eGate\_Sample.zip* contains five *.zip* files: *Project1.zip* through *Project4.zip* (used by a different tutorial) and *Java\_CAPS\_Tutorial.zip* (used by this tutorial).

- 2 Extract the contents of **Java\_CAPS\_Tutorial.zip** to a folder convenient for your use, preserving file structure.

## 2.4.2 Extracted Files

After you have extracted the contents of **Java\_CAPS\_Tutorial.zip**, a new subfolder named **Sample** contains all the extracted files, as follows:

```
Sample\Data\Customer1.dat
Sample\Data\Customer2.dat
Sample\Data\Customer3.dat
Sample\Data\Customer4.dat
Sample\Data\Customer5.dat
Sample\Data\Customer6.dat
Sample\Data\Customer7.dat
Sample\Data\Customer8.dat
Sample\Data\Customer9.dat
Sample\Data\Customer10.dat
Sample\Jars\MyDateConverter.jar
Sample\Projects\CreditScore_Sample.zip
Sample\ResultsTable.sql
```

The **Customer\*.dat** files are used to feed sample data at run time; the **.jar** file is used in one of the sample Projects; the **.zip** file contains two sample Projects as well as a sample Environment; and the **.sql** file is a script for setting up your Oracle database table.

## 2.4.3 Running the SQL Script (Oracle Database)

Before you can use certain components in the tutorial, you or your Oracle DBA must run the **ResultsTable.sql** script against an Oracle database to set up a table called **credit\_status**. This script is supplied with the sample and contains the following text:

```
CREATE TABLE credit_status
  (ID VARCHAR2(20),
   SSN VARCHAR2(11),
   LOAN_AMOUNT number,
   STATUS VARCHAR2(10),
   STATUS_DATE DATE)
/

```

Typically, this script can be run at a command line. For example:

```
sqlplus user/password@SID_hostname @ResultsTable.sql
```

If your DBA sets this up for you, make sure you record the hostname, SID, and a valid username/password combination for accessing the database; you will need these four items of information later in the tutorial.

## 2.4.4 Starting Enterprise Designer

This section explains how to start Enterprise Designer and get started with eGate.

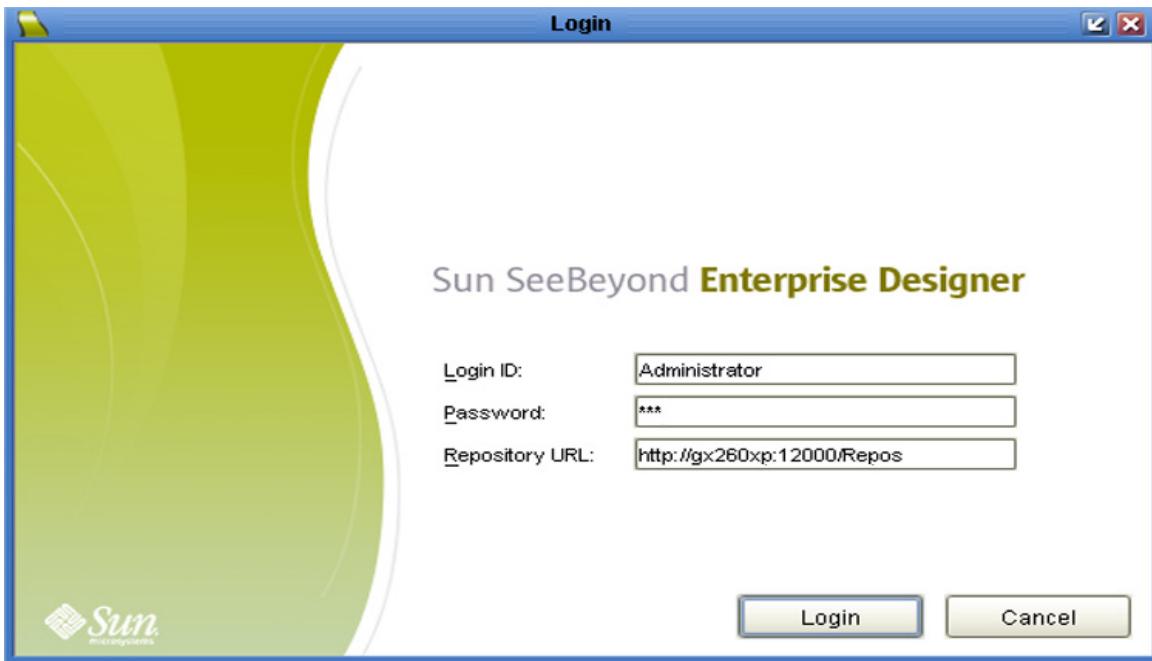
**Note:** For complete instructions on how to start the Repository server and use Enterprise Designer, see the **Sun SeeBeyond eGate Integrator User's Guide**.

### To start Enterprise Designer and log in

- 1 Start the Repository server, if it is not already running.
- 2 Start Enterprise Designer by double-clicking the **runed.bat** file in the **<Java CAPS Install>\edesigner\bin\** folder, for example, **C:\JavaCAPS51\edesigner\bin**

The **Login** window for Enterprise Designer appears. See Figure 3.

**Figure 3** Enterprise Designer Login Window



- 3 Enter your **Login ID** and **Password**.
- 4 Click **Login**.

**Note:** If the **Login** dialog box does not appear, or if an error indicates an invalid user name and/or password, make sure your Repository is running. Login ID and password are both case-sensitive.

---

## 2.5 Using the Sample Projects and Environment

You can approach the tutorial in either or both of the following ways:

- *Load and go:* You can import the sample Projects and Environment, customize them for conditions that apply to you (such as Oracle database connection parameters), and then run them.

If all you want is an overview and a reference setup, this approach provides a fast route to completion; continue with [Importing the Samples](#) on page 18.

- *Build from scratch:* You can re-create the Projects and Environment on your own, step by step.

If you want to acquire familiarity with the eGate components and editors, this approach provides complete instructions, with many screen shots along the way; skip ahead to [Chapter 3 Sample Project Scenario for Java CAPS](#) on page 20.

## 2.5.1 Importing the Samples

Before you import the sample Projects, your Repository must be running, and you must be logged in to Enterprise Designer.

### To import the sample Projects

- 1 On **Project Explorer**, right-click the Repository and, on the context menu, click **Import Project**.
- 2 In the **Import Manager** dialog box, click **Browse** and navigate to the folder where you installed the sample Projects, for example, C:\Temporary\Sample\Projects.
- 3 In the **Open** dialog box, select the **CreditScore\_Sample.zip** file, and click **Open**.
- 4 Click **Import**.
- 5 If a message warns you about missing APIs, click **Continue**.
- 6 When a message appears indicating the import operation is successful, click **OK**; then, in the **Import Manager** dialog box, click **Close** and wait for the Repository to refresh.

*Result:* You have imported two sample Projects and one sample Environment. In Enterprise Designer, the Projects appear in the **Project Explorer** tab, and the Environment appears in the **Environment Explorer** tab.

## 2.5.2 After Importing

Certain components in the sample Projects and Environment require information that is specific to you or your machine. Before you can run the sample:

- Supply connection parameters for the Oracle external system (**esOracle**) and the Oracle OTD (**otdOracle**). Check out each component and follow these procedures:
  - ♦ [To add and configure the Oracle External System \(Client\)](#) on page 25
  - ♦ [To create the Oracle OTD](#) on page 63

*Note:* Select **Edit** from the OTD's context menu to display the OTD Wizard.

- If you feed sample data files from a location other than C:\temp, you must change the default in the File external system. Check out **esFile** and follow this procedure:
  - ♦ [To add and configure the File External System \(Client\)](#) on page 25
- If you use Enterprise Designer (rather than Enterprise Manager) to deploy applications, you must supply the administrator password in the Integration Server properties. Check out **IntegrationSvr1** and follow this procedure:
  - ♦ [To add and configure the Logical Host](#) on page 21

After you have supplied all necessary information, then continue with the following procedures to build and deploy your applications and then run them:

- ♦ [Building and Deploying the Server Project](#) on page 58
- ♦ [Building and Deploying the Client Project](#) on page 120
- ♦ [Running the Sample Scenario](#) on page 121

# Sample Project Scenario for Java CAPS

This chapter contains a step-by-step tutorial explaining how to create and use the sample Project scenario provided with this document. The tutorial's procedures guide you through the operation of Java CAPS Projects that perform the following operations:

- Interacting with a server and implementing a Web Service
- Interacting with a client to invoke a Web Service and communicate with an Oracle database

**Note:** *If you are new to Java CAPS, or if you are a first-time user of eGate, you may want to go through the scenarios in the Sun SeeBeyond eGate Integrator Tutorial before starting to use this tutorial. The eGate Integrator Tutorial only requires the eGate product. This tutorial requires eGate, eInsight, and an Oracle database.*

### What's in This Chapter

- [Overview of the Sample Scenario](#) on page 20
- [Creating and Setting Up the Server Project](#) on page 27
- [Creating and Setting Up the Client Project](#) on page 60
- [Running the Sample Scenario](#) on page 121

---

### 3.1 Overview of the Sample Scenario

This chapter explains how to create Java CAPS Projects and includes the procedures necessary to build and deploy a Server and a Client Project.

Note that the samples for this Java CAPS Tutorial also contain complete Projects. Although the procedures in this chapter guide you through the creation of a Server and a Client Project, and this is the recommended way to learn about Java CAPS, you can also import the Projects.

If you do import the Projects, make sure to create a new deployment profile for both the Server and Client Projects, then build and deploy both Projects.

### 3.1.1 Approving or Rejecting a Loan Application

To provide a simplified example, the Credit Approval Sample unrealistically and arbitrarily looks at the last two digits of an applicant's Social Security Number (SSN) to determine credit worthiness. If the applicant's score is greater than or equal to 50, and the applicant is at least 18 years old, then the loan application is approved. If the score is less than 50, or if the applicant is less than 18 years of age, the loan application is rejected.

### 3.1.2 Creating and Configuring the Sample Environment

In this section, you create and configure an Environment for use by the sample Projects. The server and client Projects both use the same Environment.

An Environment is a collection of physical resources and its configurations that are used to host Project objects. An Environment contains Logical Hosts and External Systems.

You create Logical Hosts and External Systems using Environment Explorer. First create an Environment. The Environment Explorer displays resources required to implement a Project and allows you to supply information about external systems that interact with Java CAPS.

#### To create the Environment

- 1 In Enterprise Designer, click the **Environment Explorer** tab.
- 2 Right-click the RepositoryName (HEAD) on the context menu. Then choose **New Environment**.  
The new Environment appears on the **Environment Explorer** tree, and the Environment Editor opens.
- 3 In the tree, rename the new component from **Environment1** to **envCreditScore** and press **Enter**.

#### To add and configure the Logical Host

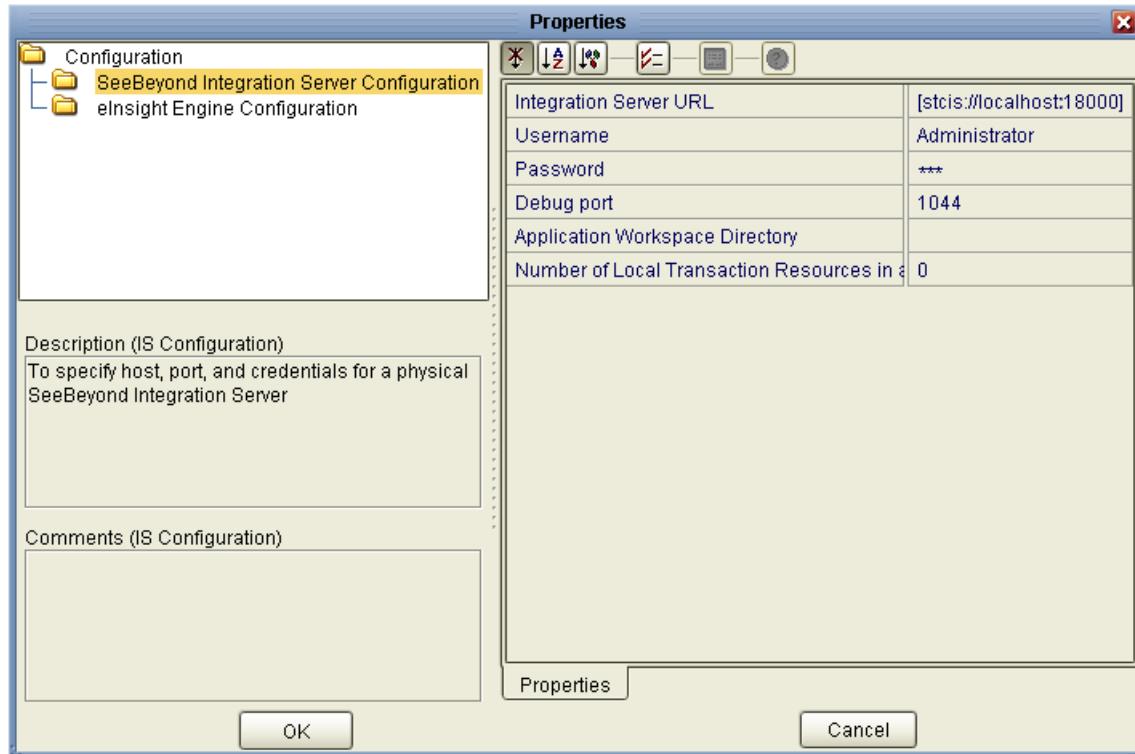
Make sure the Integration server URL port number is `localhost:18000`.

- 1 In the **Environment Explorer** tree, right-click **envCreditScore** and, on the context menu, point at **New** and choose **Logical Host**.  
The new Logical Host (**LogicalHost1**) appears in the **Environment Explorer** tree, and its container appears on the canvas.
- 2 In the **Environment Explorer** tree, right-click **LogicalHost1** and, on the context menu, point at **New** and click **Sun SeeBeyond Integration Server**.  
The new Integration Server (**IntegrationSvr1**) appears in the **Environment Explorer** tree, and its icon appears on the canvas, inside the **LogicalHost1** container.
- 3 In the **Environment Explorer** tree, right-click **IntegrationSvr1** and, on the context menu, choose **Properties**.
- 4 In the **Properties** dialog box, left pane, click **SeeBeyond Integration Server Configuration**.

- 5** Enter **Username**, and enter and confirm **Password**.

See the following figure.

**Figure 4** SeeBeyond Integration Server Properties

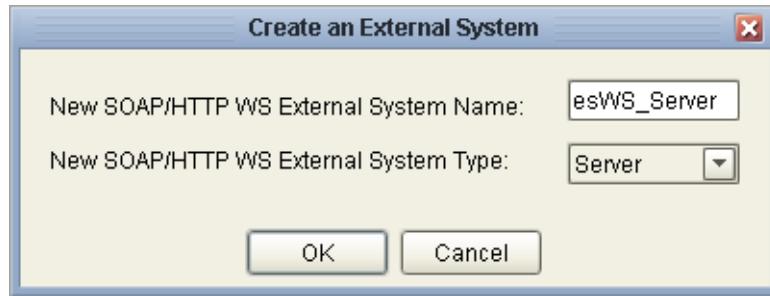


- 6** Click **OK**.

To add and configure the SOAP/HTTP Web Service External System (Server)

- 1** In the **Environment Explorer** tree, right-click **envCreditScore** and, on the context menu, point at **New** and choose **SOAP/HTTP Web Service External System**.
- 2** In the **Create an External System** dialog box (see Figure 5), do the following actions:
  - ♦ For **External System Name**, enter **esWS\_Server**.
  - ♦ For **External System Type**, accept the default **Server**.

**Figure 5** Create an External System Dialog Box



- ♦ Click **OK**.

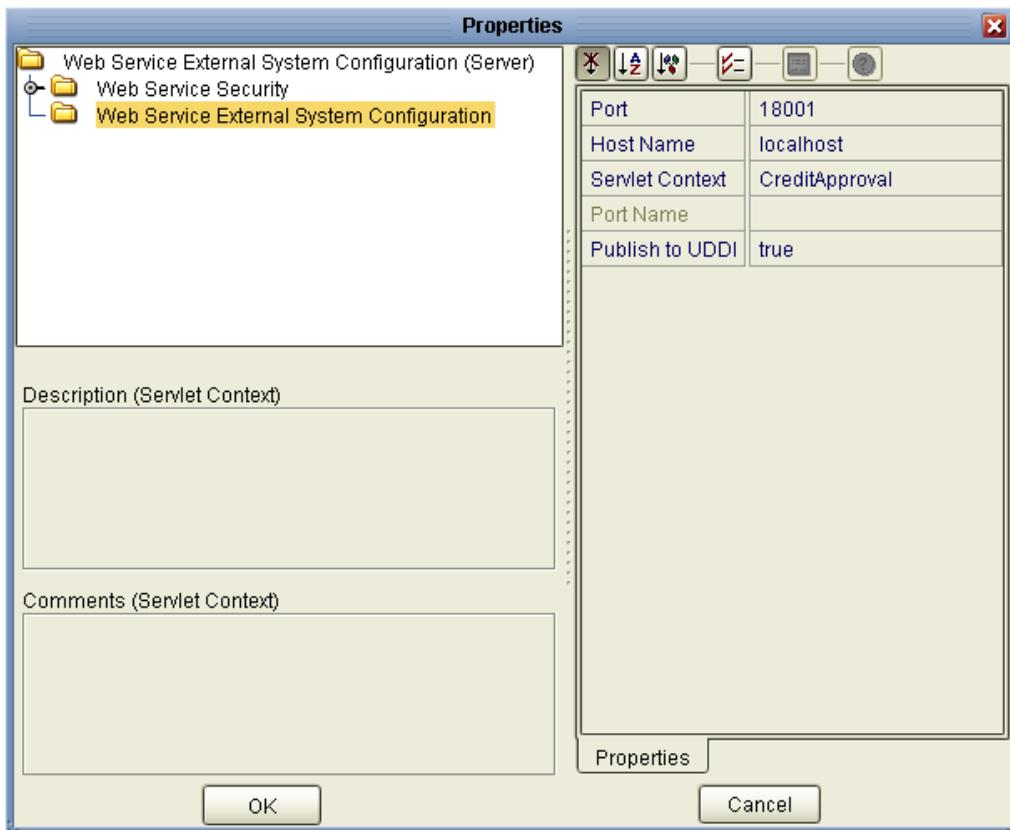
The new External System appears in the **Environment Explorer** tree, and its container appears on the canvas.

**Note:** *Move the dialog box if it overlays the LogicalHost1 dialog box.*

- 3 In the **Environment Explorer** tree, right-click **esWS\_Server** and, on the context menu, click **Properties**.
- 4 In the **Properties** dialog box, click **Web Service External System Configuration** and enter values as follows:
  - ♦ For **Port**, enter: **18001** (unless your system administrator has changed the default for the Domain).
  - ♦ For **Host Name**, enter **localhost** (or, alternatively, the actual host name of the machine).
  - ♦ For **Servlet Context**, enter **CreditApproval**.
  - ♦ For Port Name, leave blank
  - ♦ For **Publish to UDDI**, accept the default: **true**

- 5 When these values have been supplied (see Figure 6), click **OK**.

**Figure 6** Web Service External System Properties



- 6 Save your work (on the **File** menu or main toolbar, click **Save All**).

*Interim result:* You have configured the Environment with the Integration Server and External Systems needed to deploy the server Project. Continue with the next three procedures to create and configure additional External Systems for the client Project.

#### To add and configure the SOAP/HTTP Web Service External System (Client)

- 1 In the **Environment Explorer** tree, right-click **envCreditScore** and, on the context menu, point at **New** and choose **SOAP/HTTP Web Service External System**.
- 2 In the **Create an External System** dialog box, do the following actions:
  - ♦ For **External System Name**, enter **esWS\_Client**.
  - ♦ For **External System Type**, change the value to **Client**.
  - ♦ Click **OK**.

The new External System appears in the **Environment Explorer** tree, and its container appears on the canvas.

- 3 In the **Environment Explorer** tree, right-click **esWS\_Client** and, on the context menu, click **Properties**.

- 4** In the **Properties** dialog box, left pane, click **Web Service External System Configuration** and enter values as follows:
  - ♦ For **Port**, enter: **18001** (unless your system administrator has changed the default for the Domain).
  - ♦ For **Host Name**, enter **localhost** (or, alternatively, the actual host name of the machine).
  - ♦ For **Servlet Context**, leave blank
  - ♦ For **Enable SSL**, retain the default: **false**
- 5** After these values have been supplied, click **OK**.

**To add and configure the File External System (Client)**

- 1** In the **Environment Explorer** tree, right-click **envCreditScore** and, on the context menu, point at **New** and choose **File External System**.
- 2** For **External System**, enter **esFile** and click **OK**.
- 3** In the **Environment Explorer** tree, right-click **esFile** and, on the context menu, click **Properties**.
- 4** In the **Properties** dialog box, left pane, open **Inbound File eWay** and click **Parameter Settings**.
- 5** For the **Directory** setting: If you will be feeding sample input files from a location other than **C :\temp**, change the value to the correct path.
- 6** Click **OK**.

**To add and configure the Oracle External System (Client)**

- 1** In the **Environment Explorer** tree, right-click **envCreditScore** and, on the context menu, point at **New** and choose **Oracle External System**.
- 2** For **External System**, enter **esOracle** and click **OK**.
- 3** In the **Environment Explorer** tree, right-click **esOracle** and, on the context menu, click **Properties**.
- 4** In the **Properties** dialog box, left pane, open **Outbound Oracle eWay** and click **JDBC Connector Settings**.
- 5** For each of the following parameters, supply the appropriate information. This may have been supplied to you by the Oracle database administrator (DBA) who ran the SQL script mentioned in [Running the SQL Script \(Oracle Database\)](#) on page 16.
  - ♦ **ServerName**—The DBA's name for this parameter might be "hostname"
  - ♦ **DatabaseName**—The DBA's name for this parameter might be "SID"
  - ♦ **User**
  - ♦ **Password**
- 6** Click **OK**.
- 7** Save your work (on the **File** menu or main toolbar, click **Save All**), and then close the Environment Editor.

*Final result:* You have configured the Environment with the Integration Server and External Systems needed to deploy both Projects.

---

## 3.2 Creating and Setting Up the Server Project

This section explains how to create and set up the server Project for the sample scenario, including Project configuration operations, as well as building and deploying the server Project.

**Note:** *Before you can build and deploy a client Project, you have to build and deploy a server Project.*

This operation employs Enterprise Designer and includes the following procedures:

- [Creating the Server Project](#) on page 28
- [Creating and Configuring the Server OTD](#) on page 29
- [Creating and Configuring the Server Collaboration Definition](#) on page 34
- [Creating and Configuring the Server Web Service Definition](#) on page 41
- [Creating and Configuring the Server Business Process](#) on page 47
- [Creating and Configuring the Server Connectivity Map](#) on page 52
- [Creating and Configuring the Sample Environment](#) on page 21
- [Creating and Configuring the Server Deployment Profile](#) on page 56
- [Building and Deploying the Server Project](#) on page 58

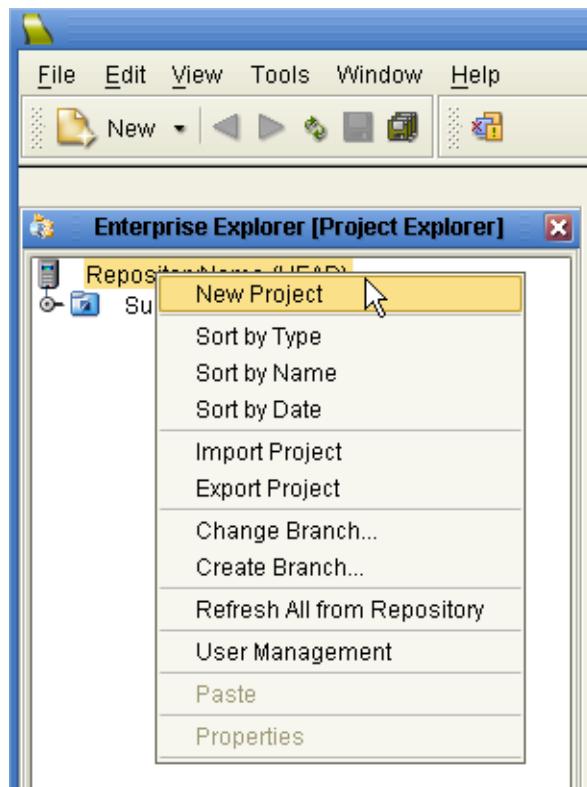
### 3.2.1 Creating the Server Project

In this section, you create and name a Project for the server. A Project is a collection of logical objects, configured components, and eWays, that are used to design a solution for a business problem.

#### To create the server Project

- 1 Click the Project Explorer tab to navigate to the Project Explorer.
- 2 In the Enterprise Designer's **Project Explorer** tree (left pane), right-click the Repository to display the context menu and select **New Project**. See Figure 7.

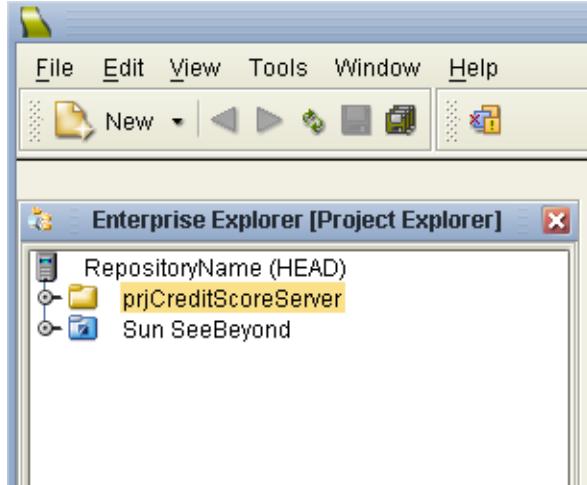
**Figure 7** New Project Context Menu



- 3 Name your new Project **prjCreditScoreServer**.
- 4 Press **Enter**.

*Result:* The new server Project, **prjCreditScoreServer**, appears on the **Project Explorer** tree. See the following figure.

**Figure 8** New prjCreditScoreServer Project



### 3.2.2 Creating and Configuring the Server OTD

In this section, you create and configure an eGate OTD for the server Project. An OTD represents the structure of the data and is used for message parsing.

**Note:** If the OTD already exists, select **Edit** from the OTD's context menu to display the OTD Wizard. For more details on OTDs see the **eGate Integrator User's Guide**.

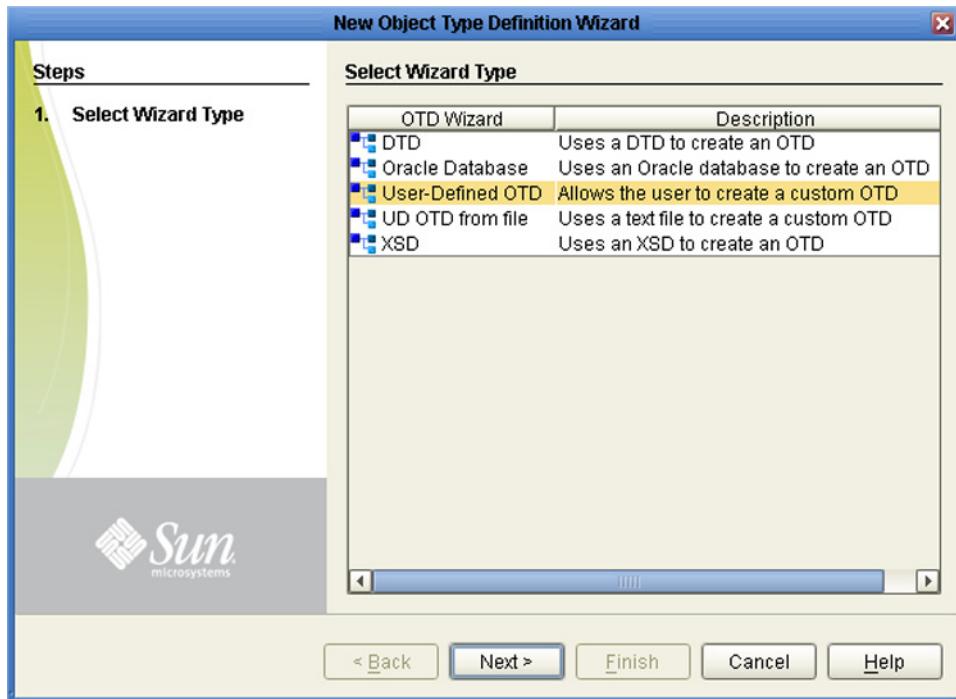
#### To create the server OTD

- 1 In the Enterprise Designer's **Project Explorer** tree, right-click the Project **prjCreditScoreServer** to display the context menu and select **New > Object Type Definition**.

The New Object Type Definition wizard appears.

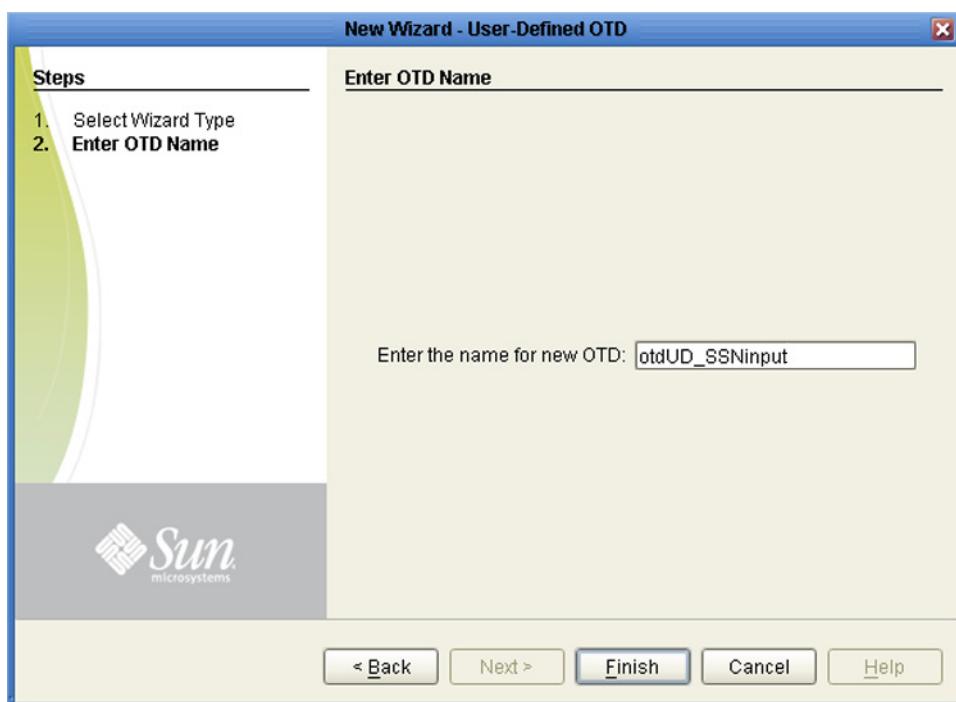
**2** Select User-Defined OTD (see Figure 9), and then click **Next**.

**Figure 9** OTD Wizard Selection



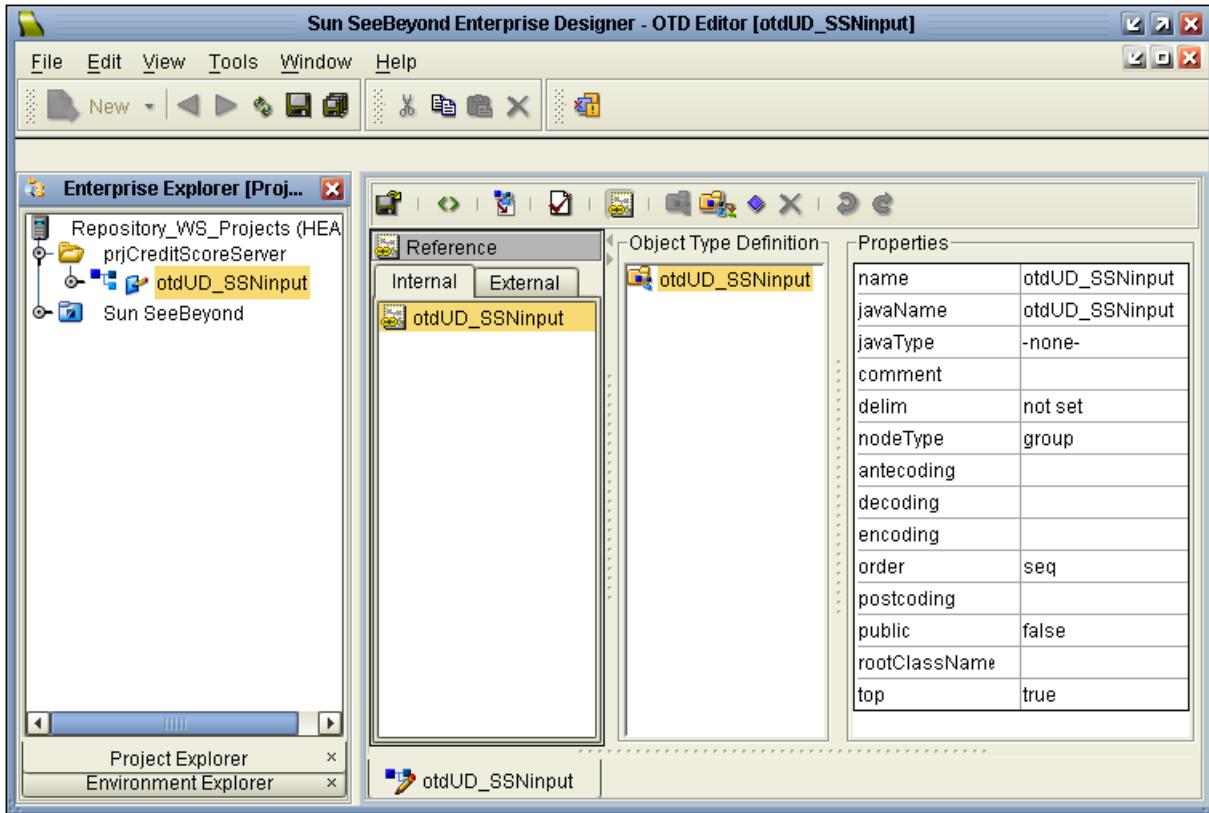
**3** Enter OTD Name: **otdUD\_SSNinput** (see Figure 10), and then click **Finish**.

**Figure 10** Enter OTD Name



*Result:* The new OTD, **otdUD\_SSNIinput**, appears on the **Project Explorer** tree, and the OTD Editor opens. See the following figure.

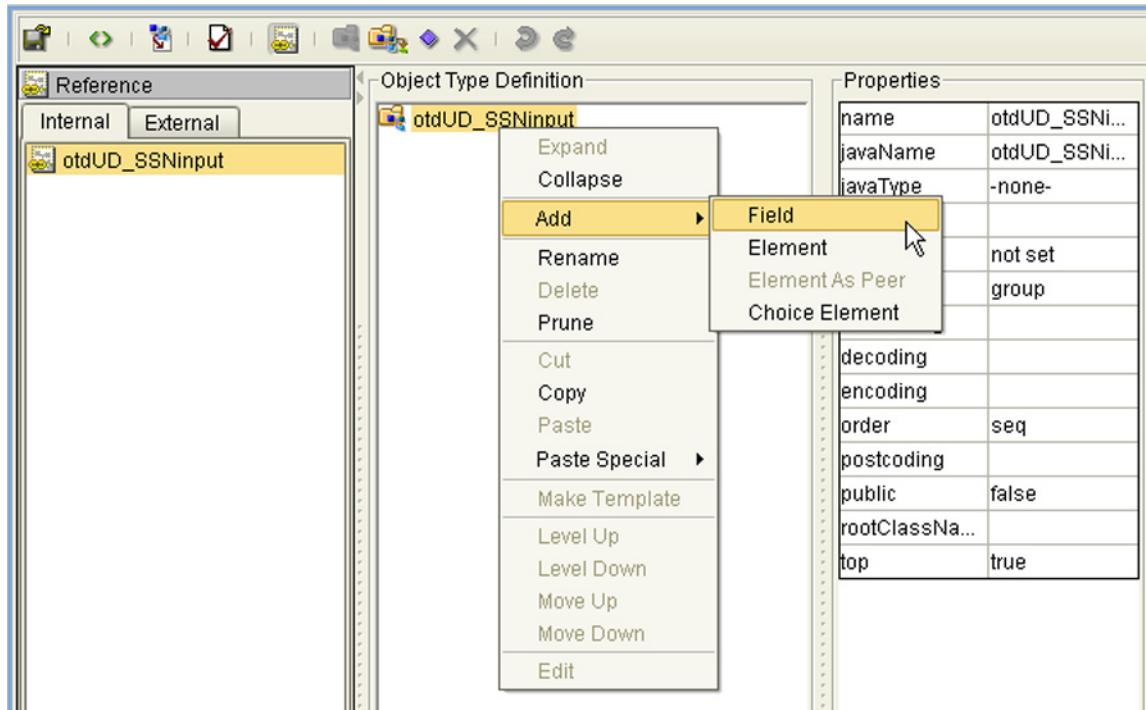
**Figure 11** OTD Editor



### To configure the server OTD

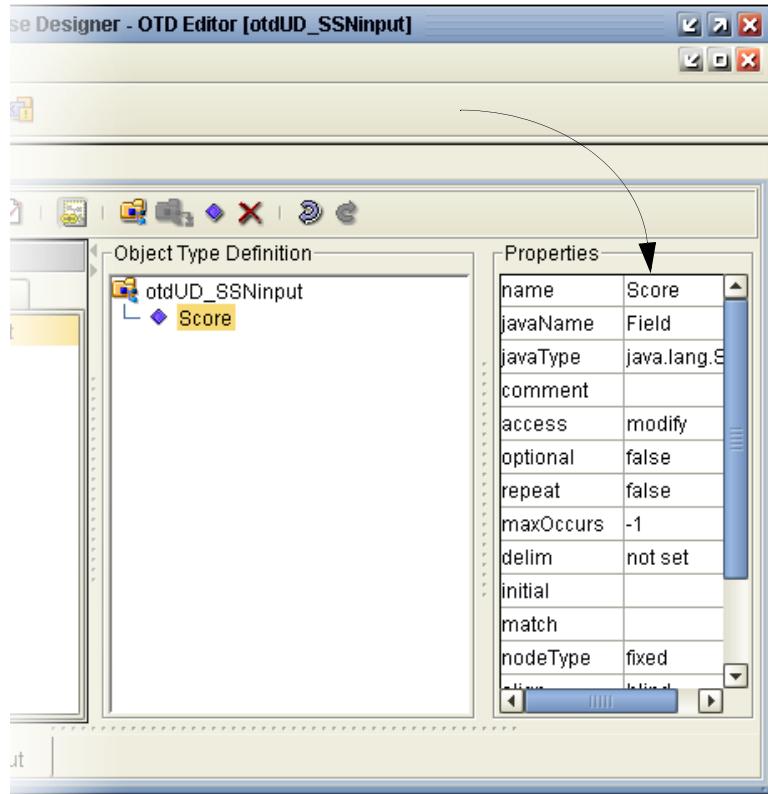
- 1 In the OTD Editor's **Object Type Definition** pane, right-click **otdUD\_SSNIinput** to display the context menu and select **Add > Field**. See the following figure.

**Figure 12** OTD Editor: Add Fields



- 2 Change the name of the new field from **field** to **Score**. Make sure you change the name in the properties name field as shown in the following figure.

**Figure 13 Change Properties Name**



- 3 Press **Enter**.
- 4 In the properties for **Score**, change the value of **nodeType** from **delim** to **fixed** and press **Enter**.

**Note:** Be sure to press **Enter** after setting the properties for fields. A unique **javaName** is set and resolved when an OTD is saved.

- 5 Save your work (on the **File** menu or main toolbar, click **Save All**), and then close the OTD Editor.

*Result:* You have configured the OTD to hold one item of text data. In this case, it is an 11-character Social Security number (SSN) string.

Next, you can reference this OTD in a Collaboration Definition.

### 3.2.3 Creating and Configuring the Server Collaboration Definition

In this section, you create a Java Collaboration Definition named **jcdCreditScore**, and then configure it with a Business Rule that maps a substring of the input **Score** to the output **Score**. A Collaboration Definition describes your data and connections and contains information about message routing and transformation logic.

In this sample scenario, the output of this Collaboration Definition, which is the last two digits of the eleven-character SSN, is considered a two-digit credit score.

#### To create the server Collaboration Definition

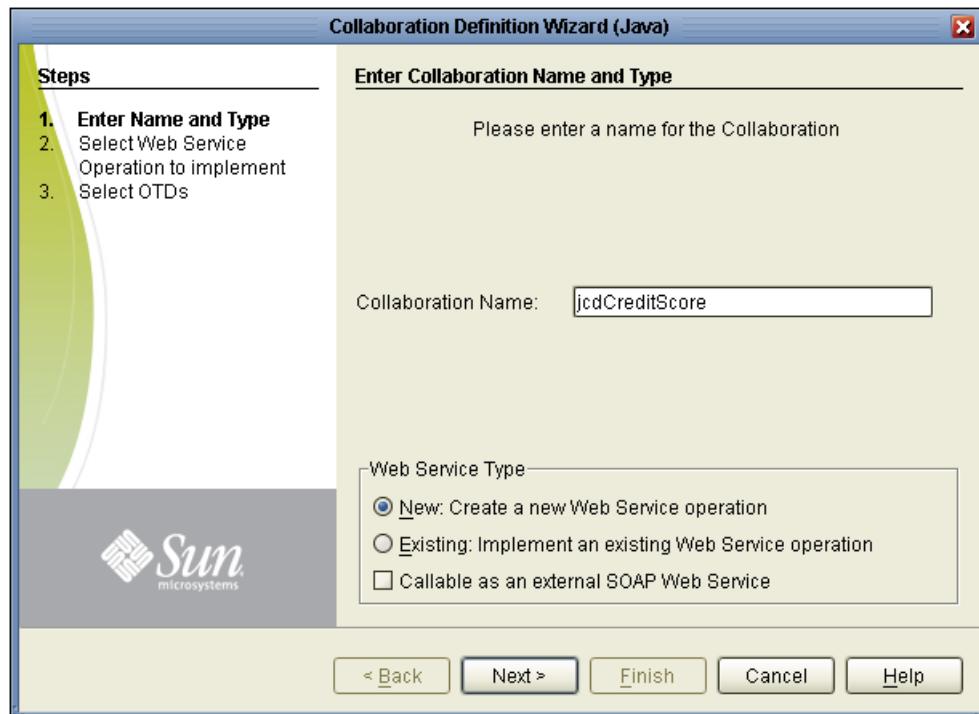
In creating the Collaboration Definition, you will first create the JCD object and then create the Operation name object. After that, you will select an input and an output message.

- 1 In the Enterprise Designer's **Project Explorer** tree, right-click the Project **prjCreditScoreServer** to display the context menu and select **New > Collaboration Definition (Java)**.

The Collaboration Definition wizard (Java) appears.

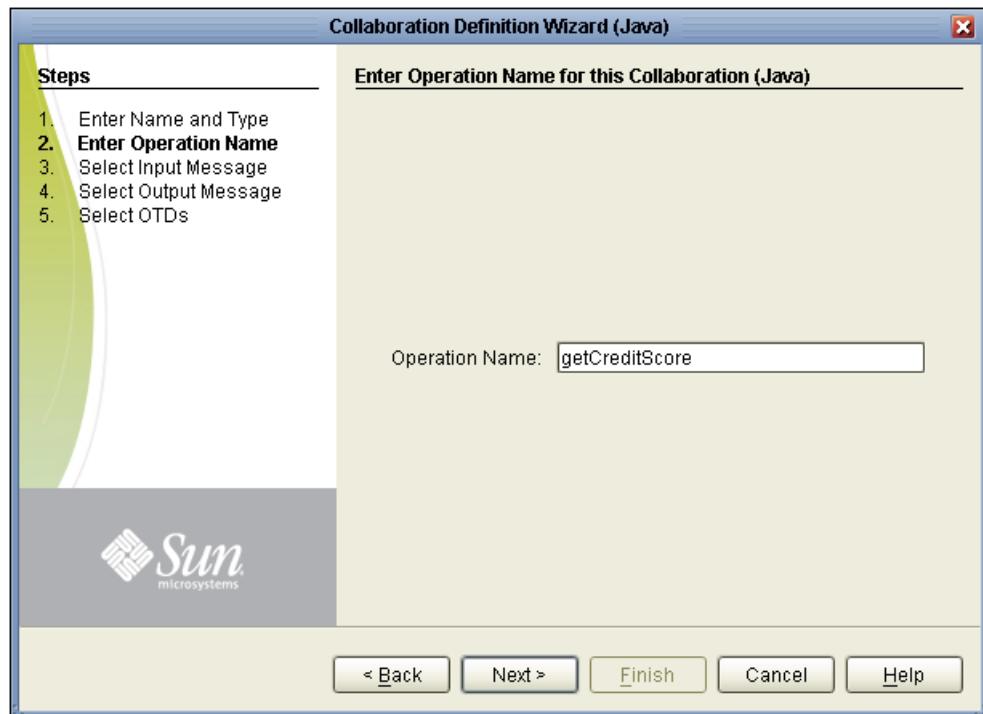
- 2 Enter Name and Type (see Figure 14). Do the following actions:
  - ♦ For **Collaboration Name**, enter **jcdCreditScore**.
  - ♦ For **Web Service Type**, select **New: Create a new Web Service operation**.
  - ♦ Click **Next**.

**Figure 14** Collaboration Definition Wizard (Java)



- 3 Enter Operation Name, **getCreditScore**, and then click **Next**. See the following figure.

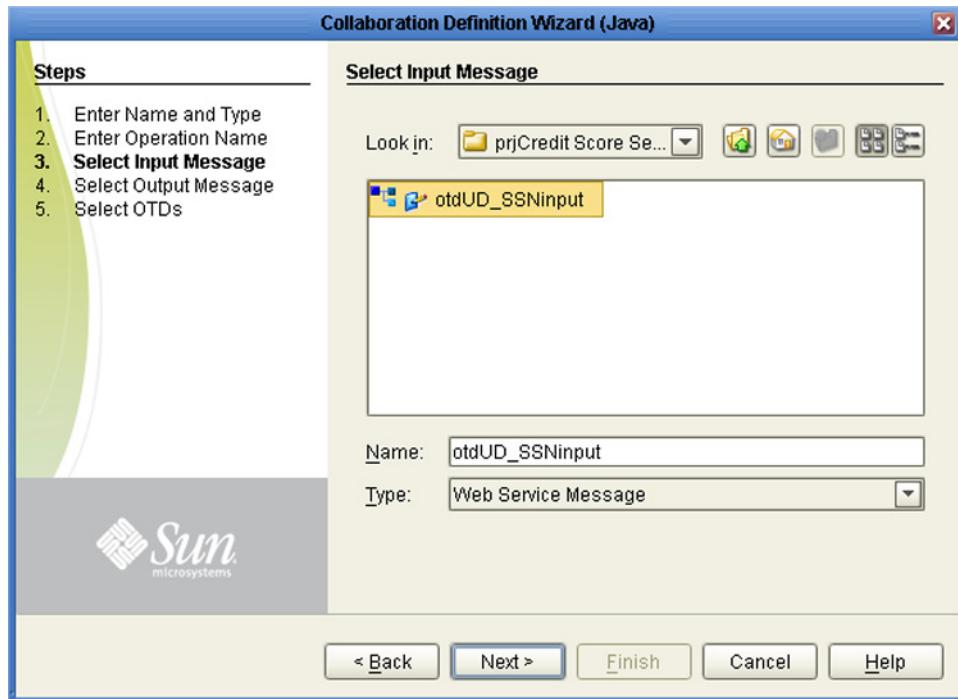
**Figure 15** Collaboration Definition Wizard (Java)



**4 Select Input Message:** Open **prjCreditScoreServer** and double-click its OTD **otdUD\_SSNIinput**; for **Type**, accept the default **Web Service Message**. See the following figure.

**5 Click Next.**

**Figure 16** Collaboration Definition Wizard (Java)

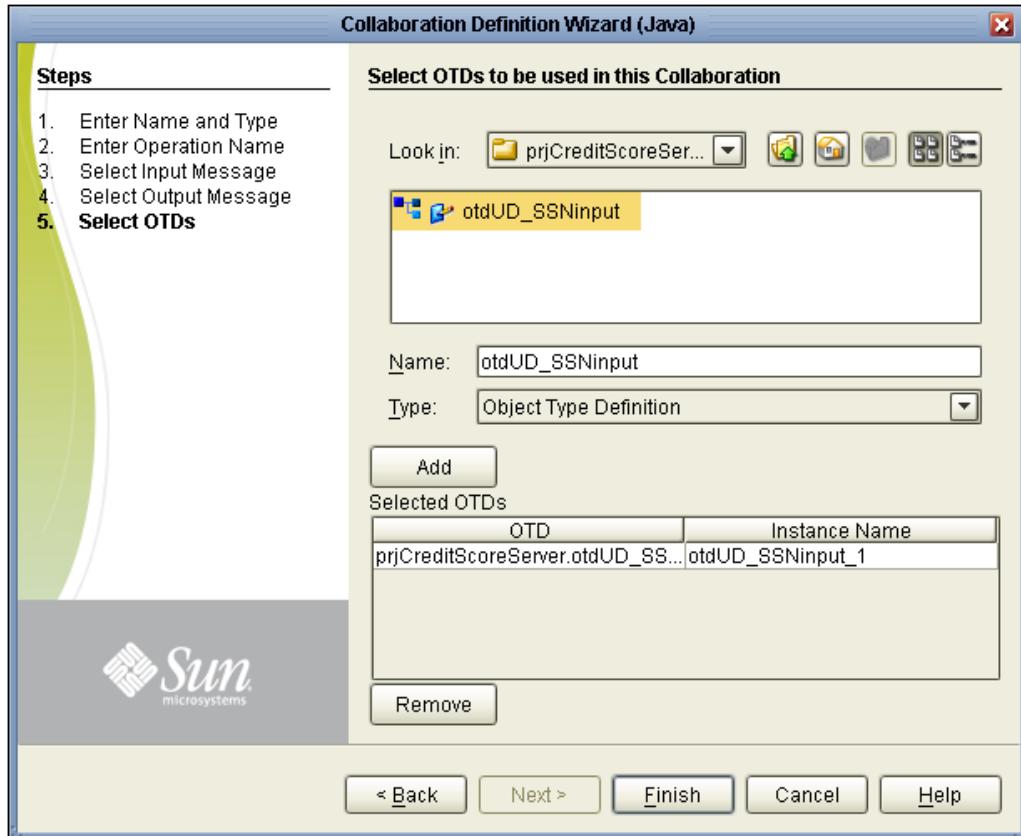


**6 Select Output Message:** Similar to the previous two steps select the Output Message, using the same OTD, **otdUD\_SSNIinput**.

**7 Click Next.**

- 8 Select OTDs:** Open **prjCreditScoreServer** and double-click its OTD **otdUD\_SSNIinput**. See the following figure.

**Figure 17** Collaboration Definition Wizard (Java): Step 5



The fully qualified OTD and its instance name **otdUD\_SSNIinput\_1** are added. If you make a mistake, you can use the **Remove** and **Add** buttons to correct it.

- 9 Click Finish.**

*Result:* The new Collaboration Definition **jcdCreditScore** appears on the Project Explorer tree, and the Collaboration Editor appears.

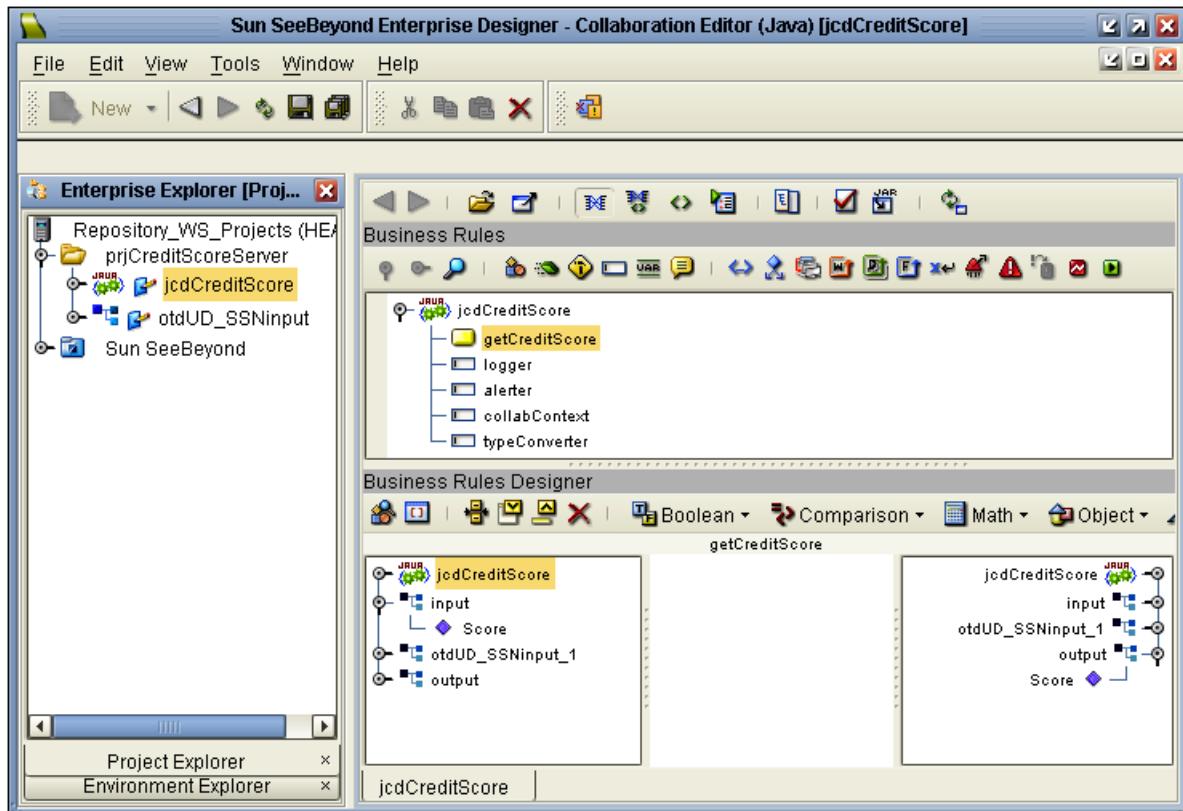
You can use the Collaboration Editor to create Business Rules for the Collaboration Definition — Business Rules define the operations you want the Collaboration Definition to perform. Use the Collaboration Editor to perform the next procedure.

### To configure the Business Rules for the server Collaboration Definition

- 1 In the **Business Rules Designer** pane, make sure **getCreditScore** is selected/highlighted.
- 2 In the **Business Rules Designer** window open the **input** node in the left pane to expose **Score**; open the **output** node in the right pane to expose **Score**.

See the following figure.

**Figure 18** Score: Input and Output Nodes Exposed

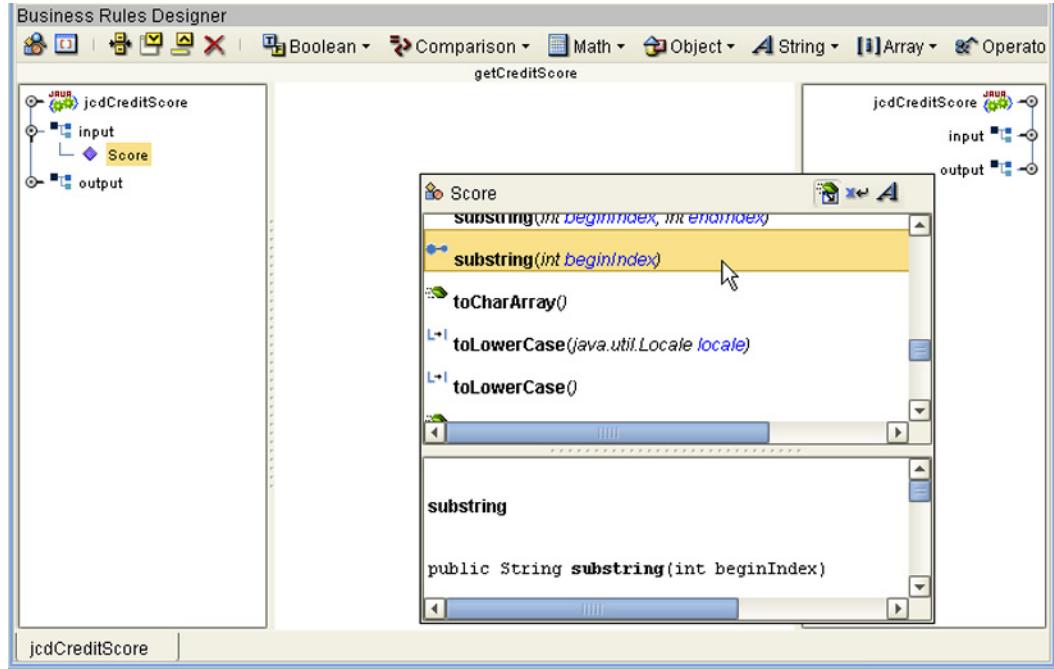


- 3 Drag **Score** from the left pane onto the center pane, and a method list appears.

**Note:** Alternatively, you can right-click the **Score** node to display the context menu, then click **Select Method to Call** to display the method list.

- 4 In the list, scroll down and double-click the method **substring(int beginIndex)**. See the following figure.

**Figure 19** Method List With **substring(int beginIndex)**



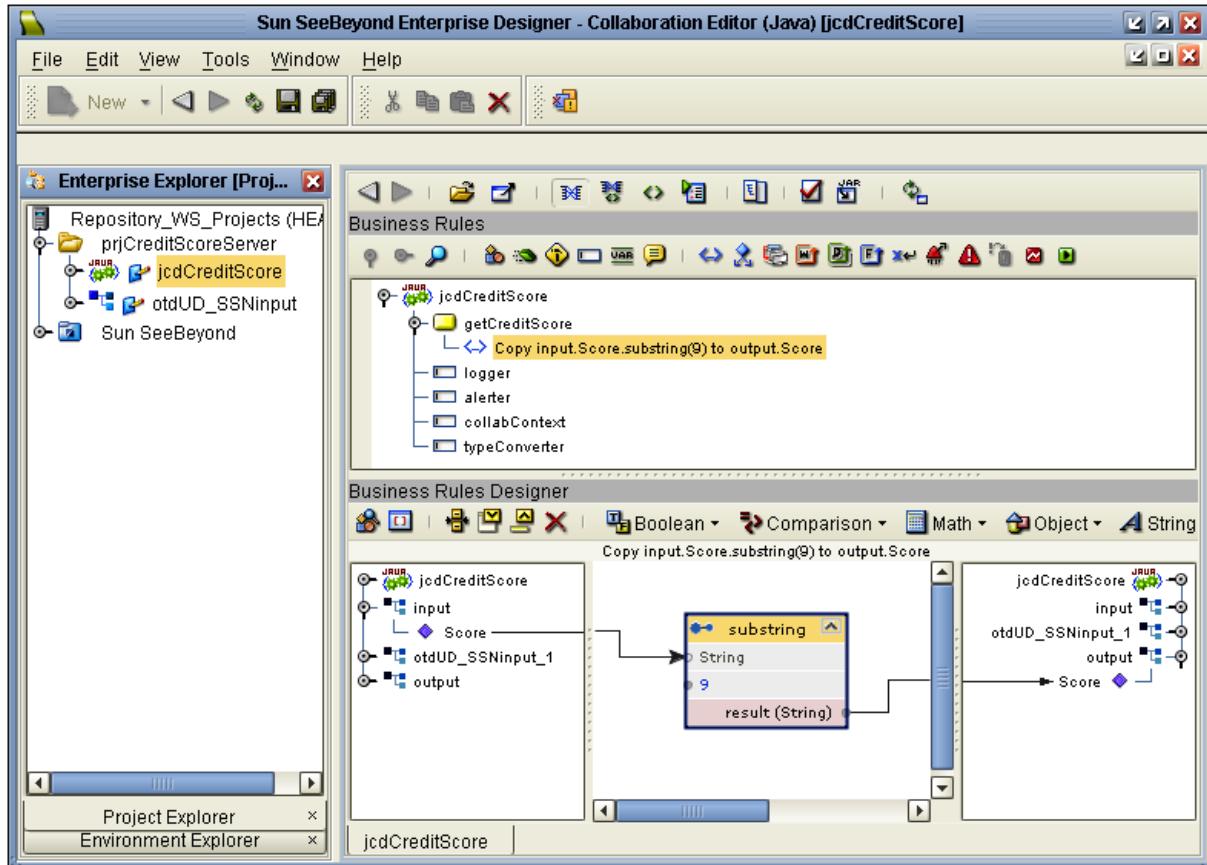
A method named **substring** appears on the canvas.

- 5 In the substring operator, double-click the second field. Change it from **beginIndex (int)** to the value **9** and press **Enter**.

(Thus, the operator must bypass the first nine characters for an 11-character input string, such as 123-45-6789, to produce the two-character output substring 89.)

- 6 Drag the method's **result (String)** onto the **output.Score** node on the right pane. See the following figure.

**Figure 20** Result Score Node



- 7 Save your work (on the **File** menu or main toolbar, click **Save All**), and then close the Collaboration Editor.

*Result:* You have configured the server Collaboration Definition's Business Rules. In a later procedure, you will use its **getCreditScore** operation in an eInsight Business Process.

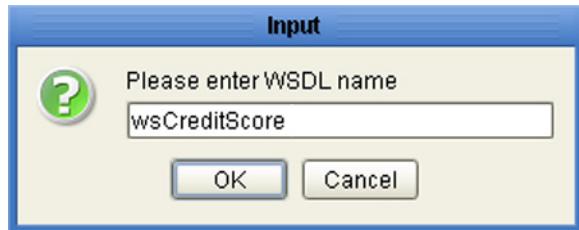
### 3.2.4 Creating and Configuring the Server Web Service Definition

In this section, you create a Web Service named **wsCreditScore**, for the server Project, and then configure it to expect customer information in three parts.

#### To create the server Web Service Definition

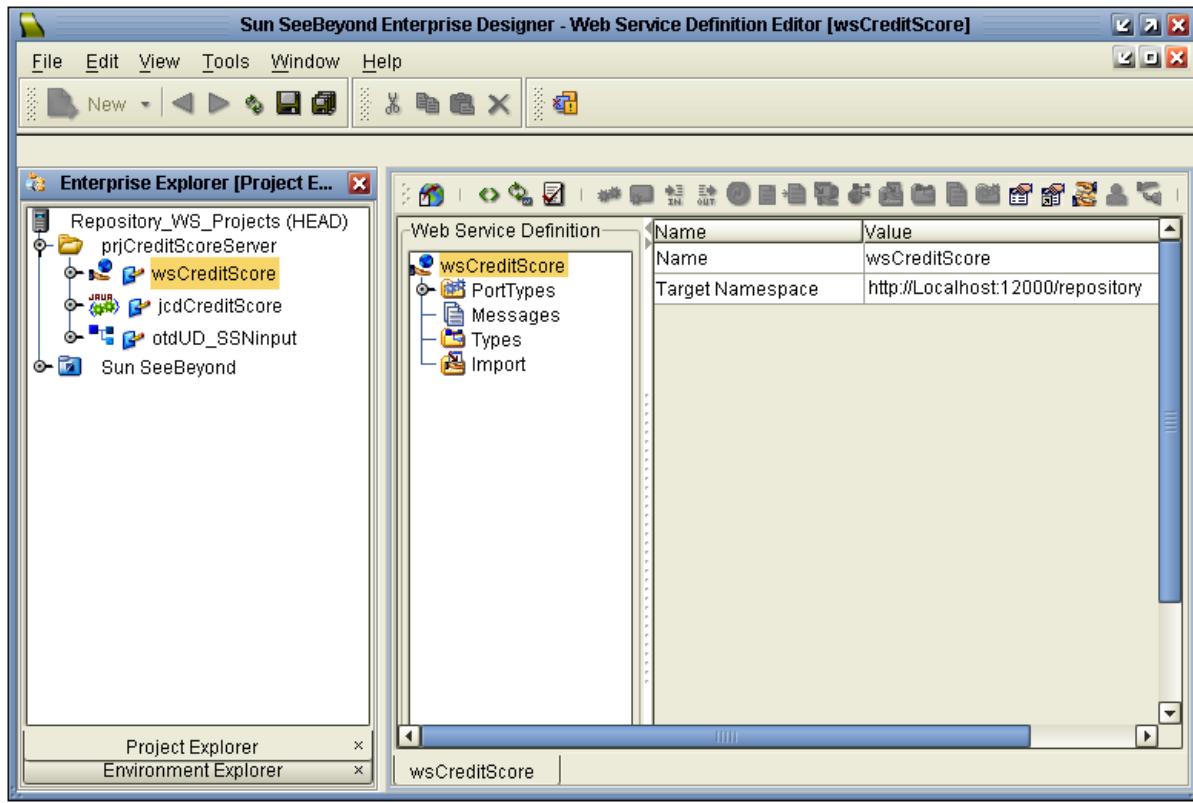
- 1 In the Enterprise Designer's Project Explorer tree, right-click the Project **prjCreditScoreServer** to display the context menu and select **New > Web Service Definition**.
- 2 The **Input** dialog appears; rename the new component to **wsCreditScore** and click **OK** (see Figure 21).

**Figure 21** WSDL Name Input Dialog



The new Web Service now appears on the Project Explorer tree, and the Web Service Designer opens (see Figure 22).

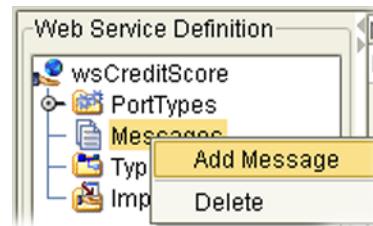
**Figure 22** Web Service Designer



To configure the server Web Service Definition

- 1 In the Web Service Definition pane, right-click the **Messages** node and, on the context menu, choose **Add Message**. See the following figure.

**Figure 23** Add Message

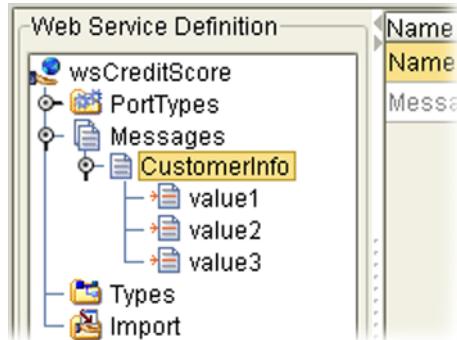


Under **Messages**, a new subnode named **Message1** is added.

- 2 Click **Message1** and, on the right pane, change the value for **Name** from **Message1** to **CustomerInfo**; then press **Enter**.

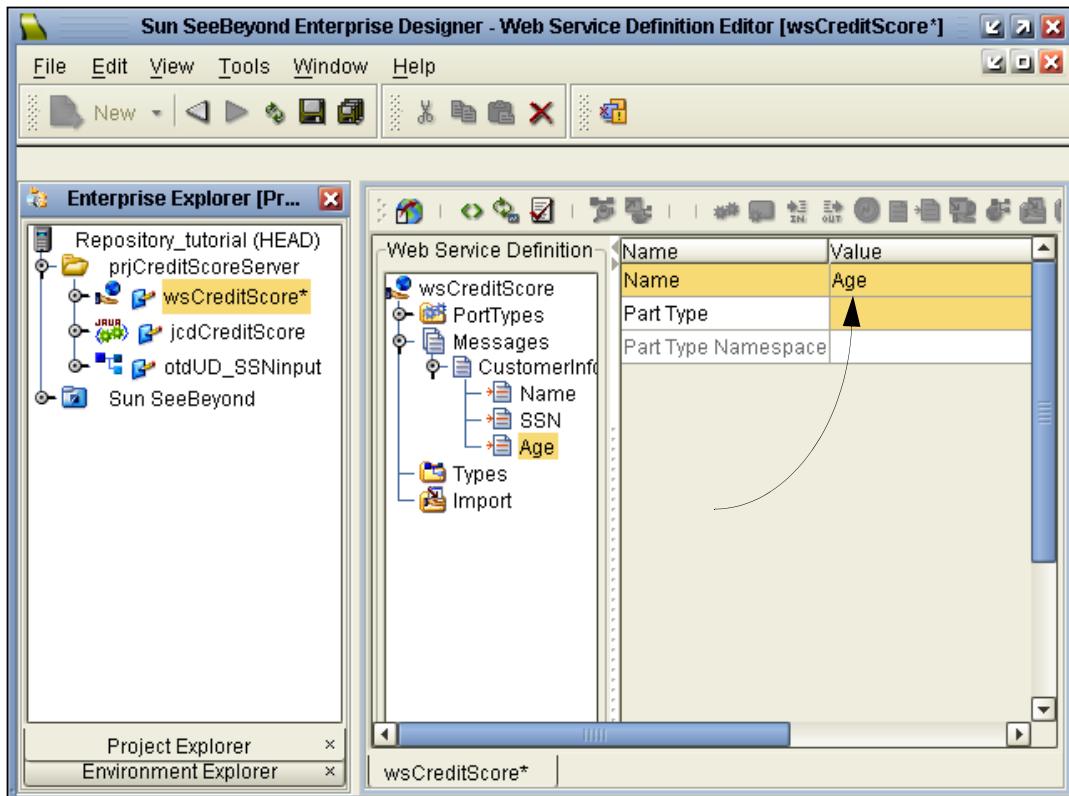
- 3 In the **Web Service Definition** pane, right-click **CustomerInfo** and, on the context menu, choose **Add Part**. Repeat this operation two more times until you have added three parts, named **value1**, **value2**, and **value3**. See the following figure.

**Figure 24** Add Part



- 4 Click **value1**. Change the three value names as follows:
- Value1 = **Name**; Value2 = **SSN**; Value3 = **Age**.
- 5 Press **Enter** after entering each name. See the following figure.

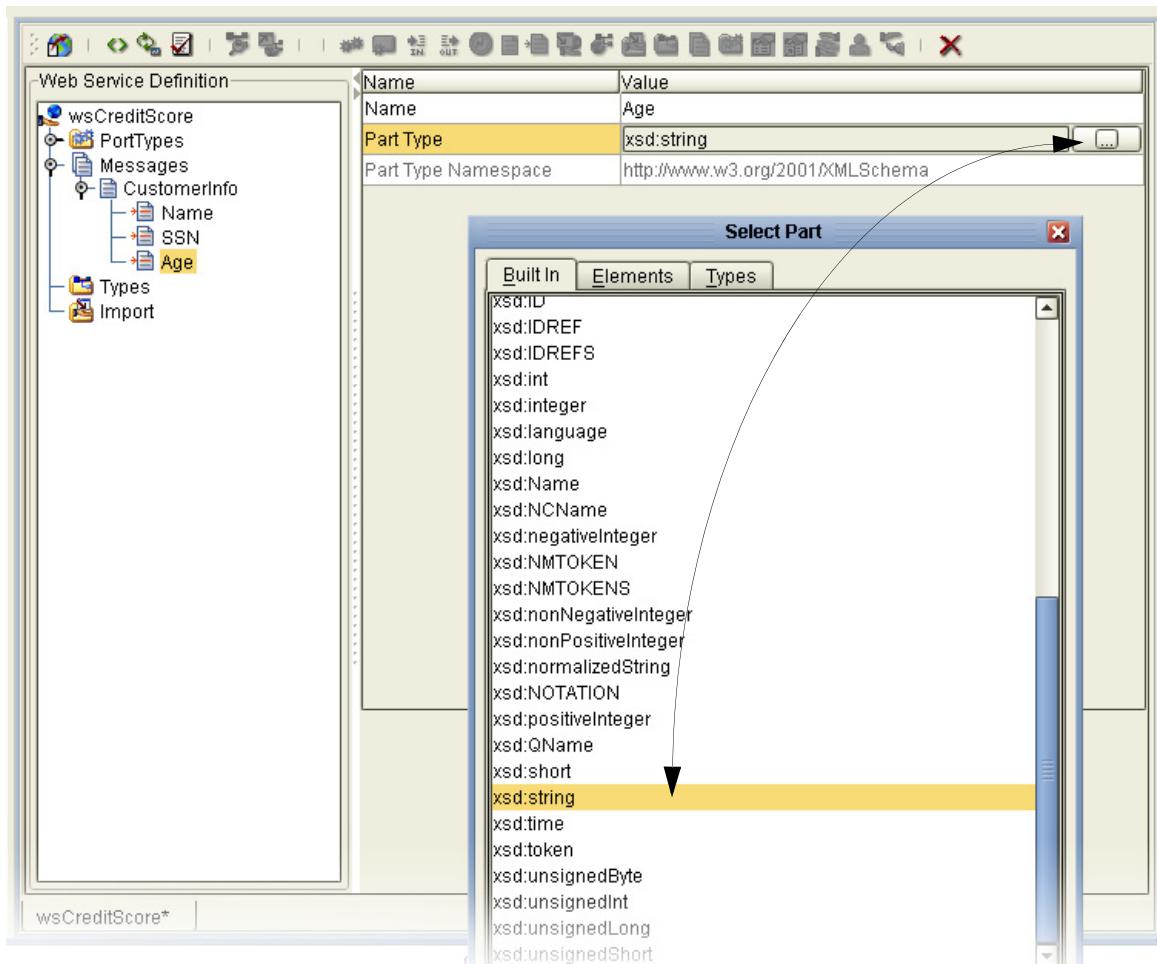
**Figure 25** Change Value Names



Select Part Types for each field Name.

- 6 Click in the **Part Type** field (shown in the previous figure). For each field, **Name**, **SSN**, and **Age**, select **xsd:string**. See the following figure.

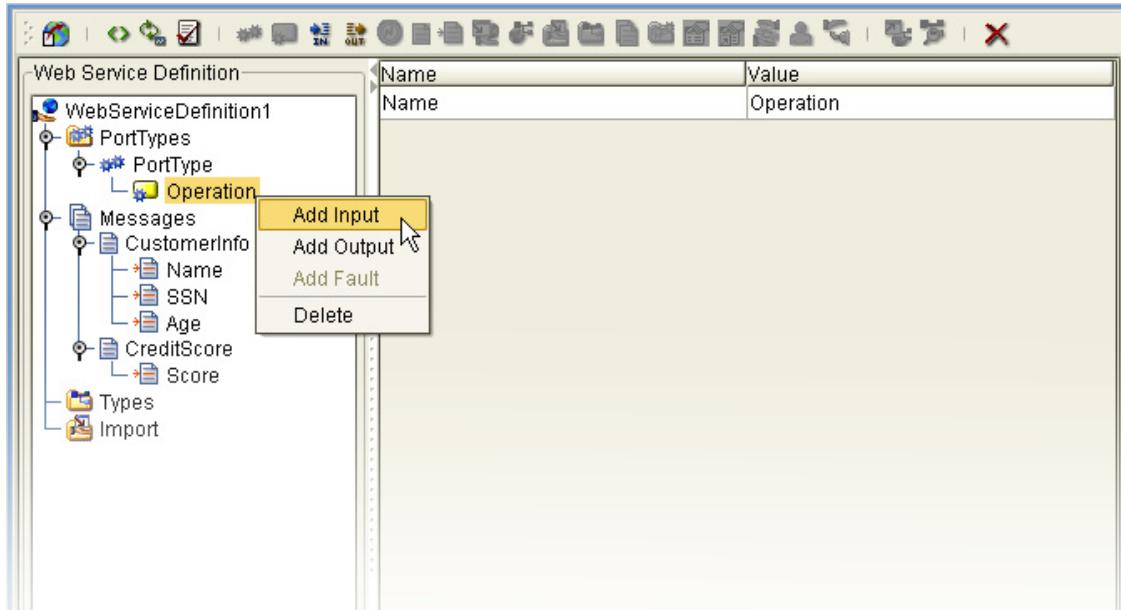
**Figure 26** Select Part Dialog Box



- With the **Built In** tab active, scroll down to **xsd:string**, click it, and click **Select**.
  - Make sure you select **xsd:string** for all three fields.
- 7 In the **Web Service Definition** pane, right-click the **Messages** node and, on the context menu, choose **Add Message**.
- Under **Messages**, a new subnode named **Message1** is added.
- 8 Click **Message1** and, on the right pane, change the value for **Name** from **Message1** to **CreditScore**; then press **Enter**.
- 9 In the **Web Service Definition** pane, right-click **CreditScore** and, on the context menu, choose **Add Part**.
- 10 Click the newly added subnode **value1** and, on the right pane, change the name from **value1** to **Score**, press **Enter**, and then change its part type to **xsd:string**.
- 11 In the **Web Service Definition** pane, expand **Open PortTypes > PortType** to expose **Operation**.

- 12 Right-click **Operation** to display the context menu and select **Add Input**. See the following figure.

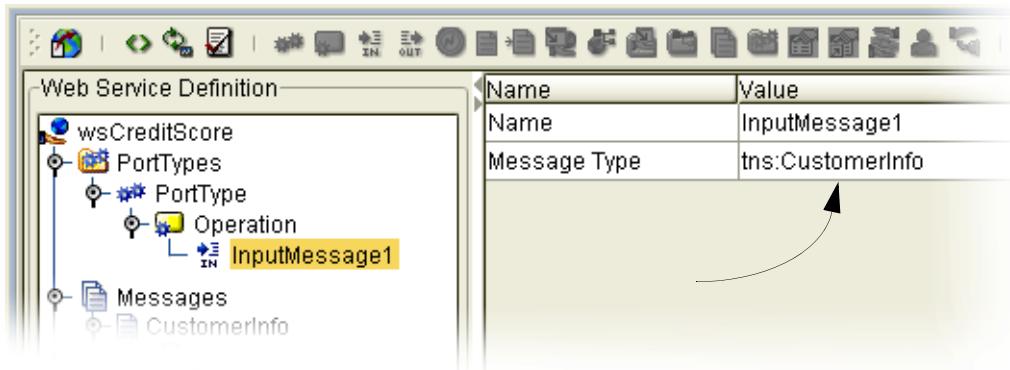
**Figure 27** Adding an Input to an Operation



Under **Operation**, a new subnode named **InputMessage1** is added.

- 13 Click **InputMessage1** and, on the right pane, in the **Message Type** field, open the drop-down list and choose **tns:CustomerInfo**. See the following figure.

**Figure 28** InputMessage1

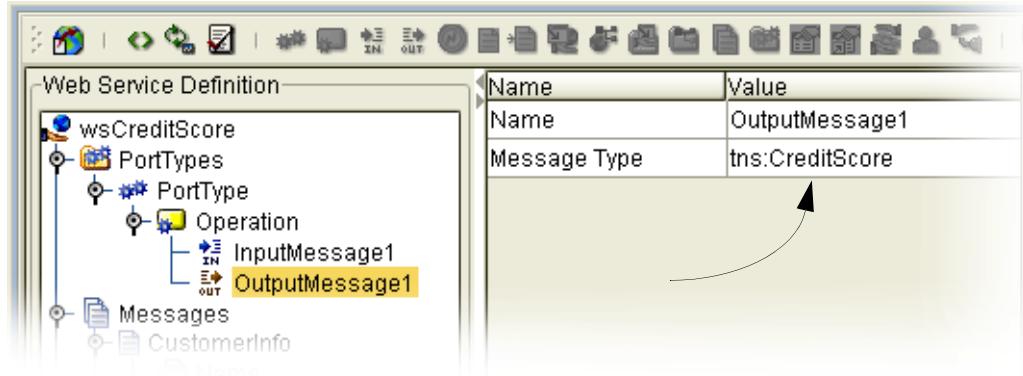


- 14 Right-click **Operation** to display the context menu and select **Add Output**.

Under **Operation**, a new subnode named **OutputMessage1** is added.

- 15** Click **OutputMessage1** and, on the right pane, in the **Message Type** field, open the drop-down list and select **tns:CreditScore**. See the following figure.

**Figure 29** OutputMessage1



- 16** Save your work (on the **File** menu or main toolbar, click **Save All**), and then close the Web Service Designer.

*Result:* You have created the server Web Service and configured its input and output messages. In the next procedure, you will create an eInsight Business Process that implements **Operation** (in other words, uses **Operation** in the server mode).

### 3.2.5 Creating and Configuring the Server Business Process

In this section, you create and configure a Business Process for the server Project. The eInsight Business Process Designer is where you create the Business Process data flow. For more information about eInsight Business Processes, see the *eInsight Business Process Manager User's Guide*.

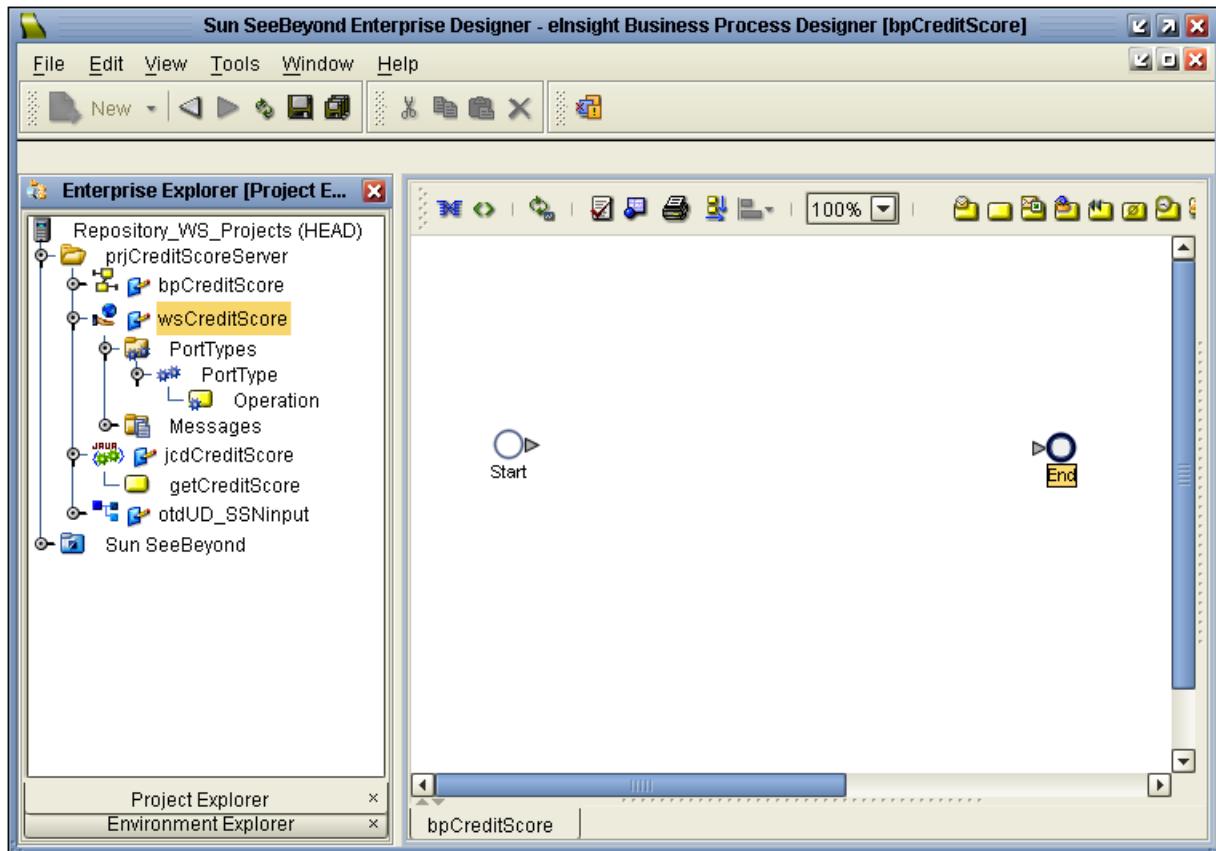
#### To create the server Business Process

- 1 In the Enterprise Designer's **Project Explorer** tree, right-click the Project **prjCreditScoreServer** to display the context menu and select **New > Business Process**.

After a few seconds the new Business Process appears in the **Project Explorer** tree. The eInsight Business Process Designer opens.

- 2 In the **Project Explorer** tree, rename the new component **bpCreditScore** and press **Enter**. See the following figure.

**Figure 30** eInsight Business Process Designer



#### To add and connect activities in the server Business Process

- 1 In the Enterprise Designer's **Project Explorer** tree, expand **wsCreditScore > PortTypes > PortType** to expose **Operation**.
- 2 Drag **Operation** onto the canvas, halfway between **Start** and **End**.

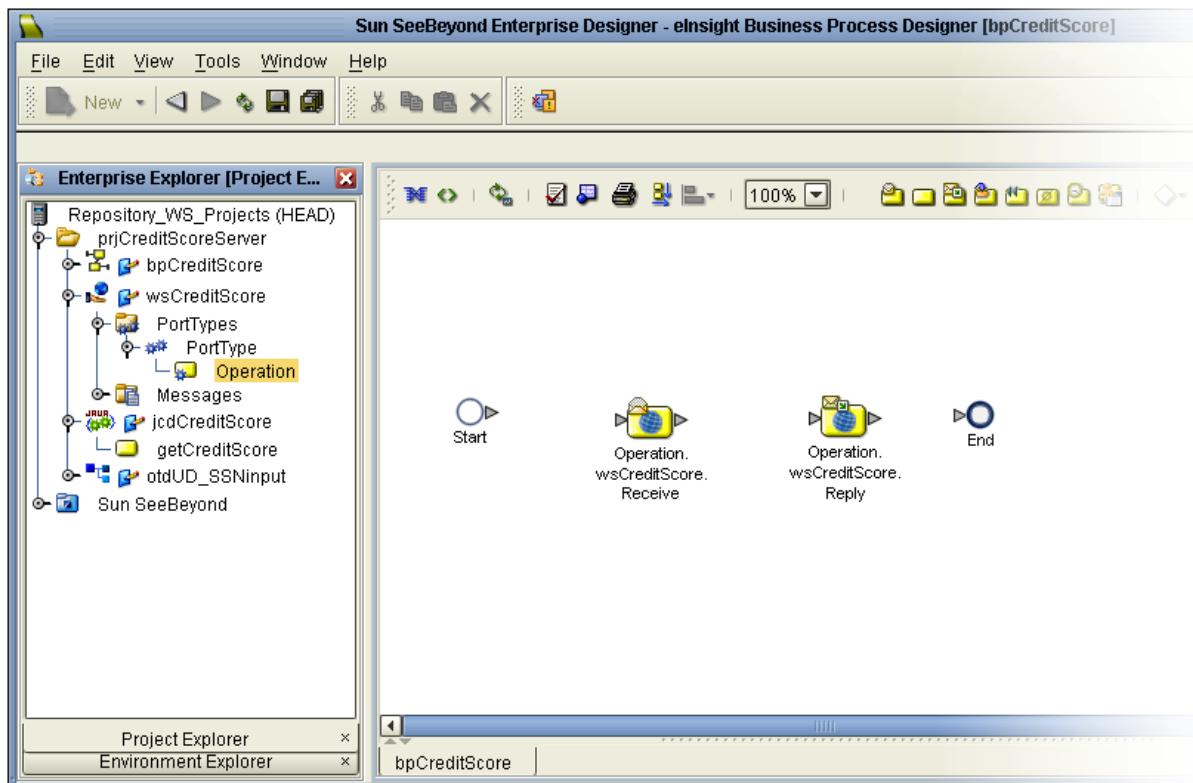
- 3 In the **Web Service Operation** dialog box (see Figure 31), select **Implement the operation (Server Mode)** and click **OK**.

**Figure 31** Web Service Operation Dialog Box



Two activities appear on the canvas: **Receive** and **Reply**. See the following figure.

**Figure 32** The implement and Reply Activities

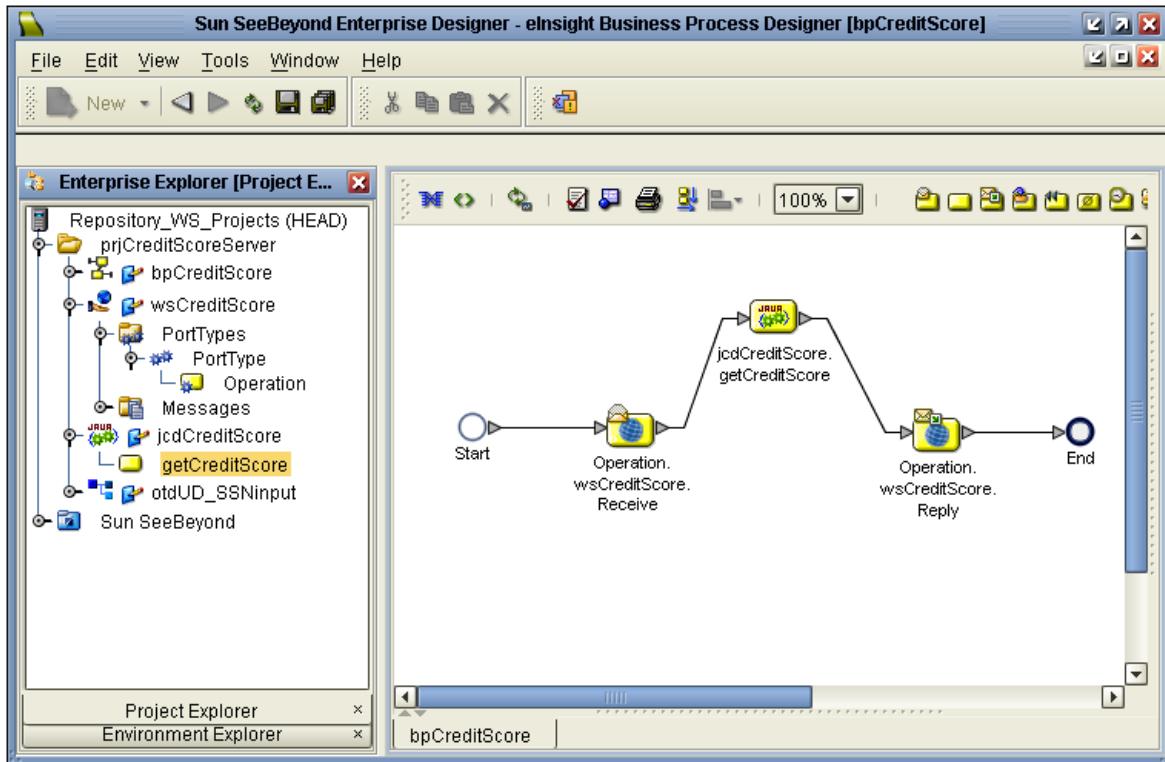


Later, you connect the **Receive** activity to **Start** and the **Reply** activity to **End**.

- 4 In the **Project Explorer** tree, expand the **jcdCreditScore** node to expose **getCreditScore**.
- 5 Drag **getCreditScore** onto the canvas, halfway between **Receive** and **Reply**.

6 Connect the activities as shown in Figure 33.

**Figure 33** Business Process Activities



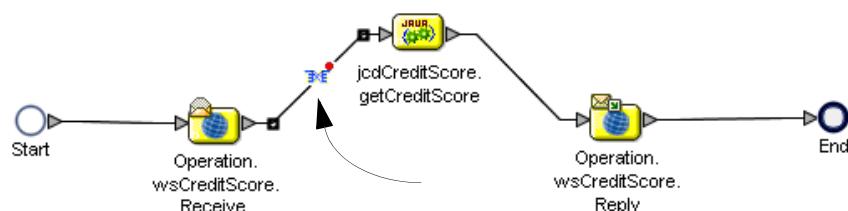
*Result:* All the activities are in place and connected.

#### To add and configure Business Rules in the Server Business Process

- 1 In the eInsight Business Process Designer, right-click the link from **Receive** to **getCreditScore**, and choose **Add Business Rule**.

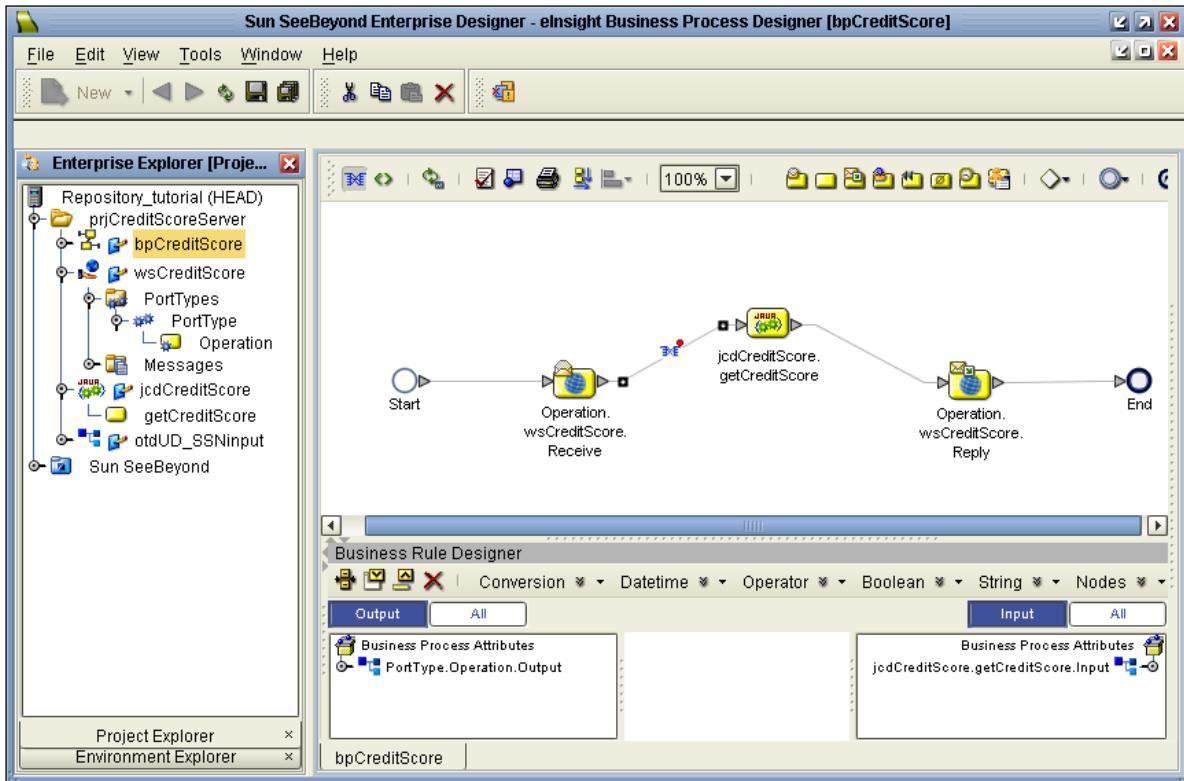
See the following figure. The red dot indicates that the Business Rule (blue icon) has not been mapped/coded yet.

**Figure 34** Adding a Business Rule



**2** Double-click the Business Rule to open the Business Rule Designer. See Figure 35.

**Figure 35** Business Rule Designer



- 3** In the left pane, with the **Output** button selected, expand the **PortType.Operation.Output** node to expose its three subnodes (**Name**, **SSN**, and **Age**).
- 4** In the right pane, with the **Input** button selected, expand the **...getCreditScore.Input > otdUD\_SSINput** node to expose its subnode (**Score**).

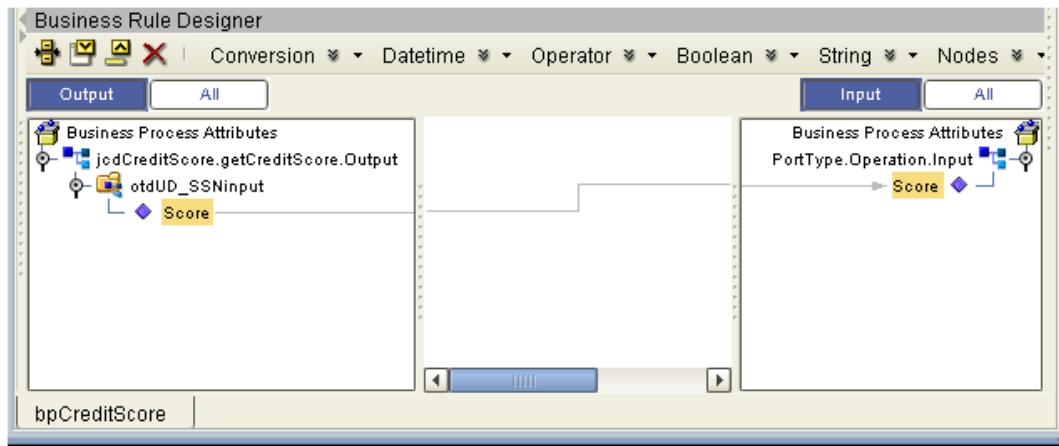
- 5 Connect the **SSN** field from the left pane onto the **Score** field on the right pane. See Figure 36.

**Figure 36** Dragging SSN to Score



- 6 In the eInsight Business Process Designer's main canvas, right-click the link from **getCreditScore** to **Reply** and, on the context menu, choose **Add Business Rule**.
- 7 In the left pane, expand the ....**getCreditScore**.**Output** > **otdUD\_SSNNinput** node to expose its subnode (**Score**).
- 8 In the right pane, expand the ....**Operation**.**Input** > **otdUD\_SSNNinput** node to expose its subnode (also named **Score**).
- 9 Connect the **Score** field from the left pane ...**getCreditScore**.**Output** to the **Score** field on the right pane ...**Operation**.**Input**. See the following figure.

**Figure 37** Dragging Score and Score



- 10 Save your work (on the **File** menu or main toolbar, click **Save All**), and then close the eInsight Business Process Designer.

*Result:* You have fully configured the Business Process with Business Rules for messages passed from one activity to the next. You can now use this Business Process in a Connectivity Map.

## 3.2.6 Creating and Configuring the Server Connectivity Map

In this section, you create and configure a Connectivity Map for the server Project. The Connectivity Map is a graphical representation of a Project's data connectivity. For more information about the Connectivity Map and how to use it, see the *eGate Integrator User's Guide*.

### To create the Connectivity Map

- 1 In the Enterprise Designer's **Project Explorer** tree, right-click the Project **prjCreditScoreServer** to display the context menu and select **New > Connectivity Map**.

The new Connectivity Map node appears on the **Project Explorer** tree, and the Connectivity Map editor opens.

- 2 In the Project Explorer tree, rename the Connectivity Map **cmGetScore** and press **Enter**.

### To add the service containers and externals

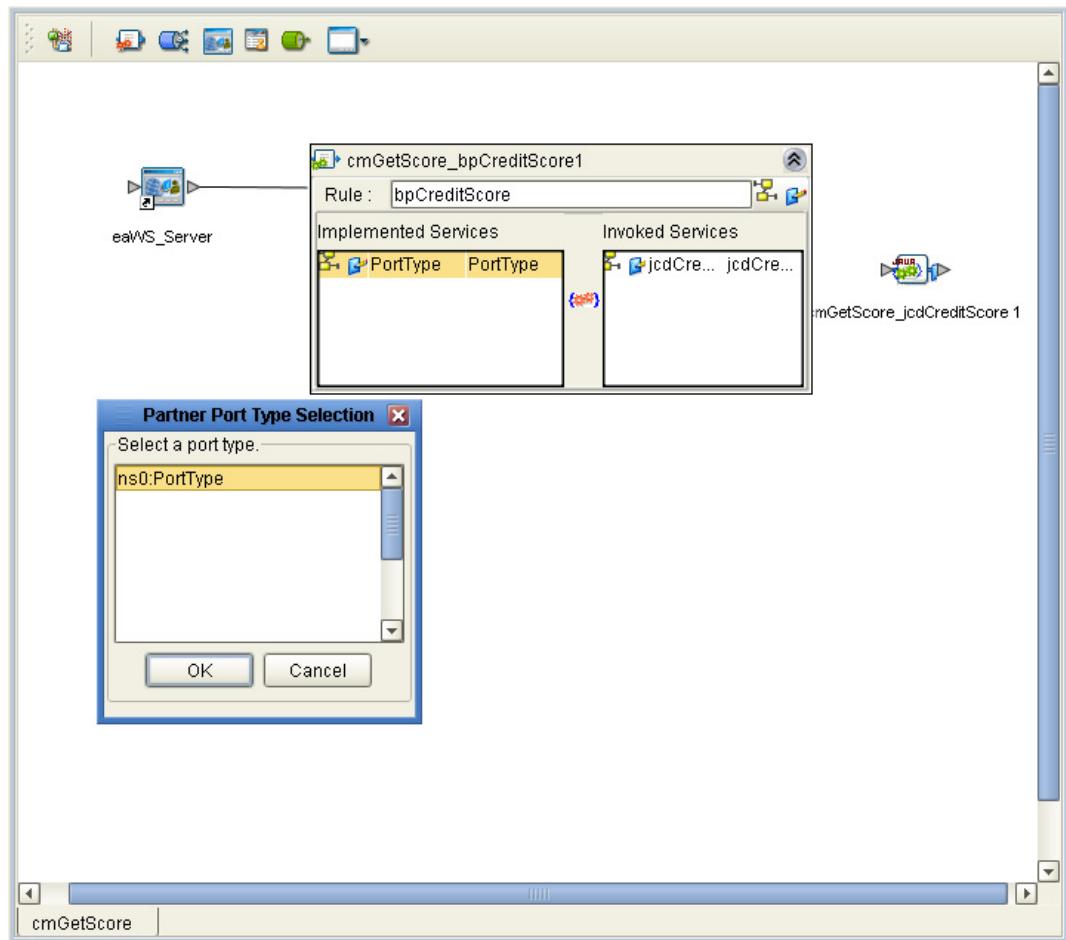
- 1 From the tool palette, drag an instance of **Web Service External Application** onto the left portion of the canvas and rename it **eaWS\_Server**, and press **Enter**.
- 2 From the **Project Explorer** tree, drag an instance of **bpCreditScore** onto the canvas and drop it far to the right of **eaWS\_Server**.
- 3 From the **Project Explorer** tree, drag an instance of **jcdCreditScore** onto the canvas and drop it far to the right of **bpCreditScore1**.

### To connect the service containers and externals

- 1 Double-click **bpCreditScore1** to open its binding box.
- 2 From the opened **bpCreditScore1** container, drag its implemented service (**PortType**) onto **eaWS\_Server**.

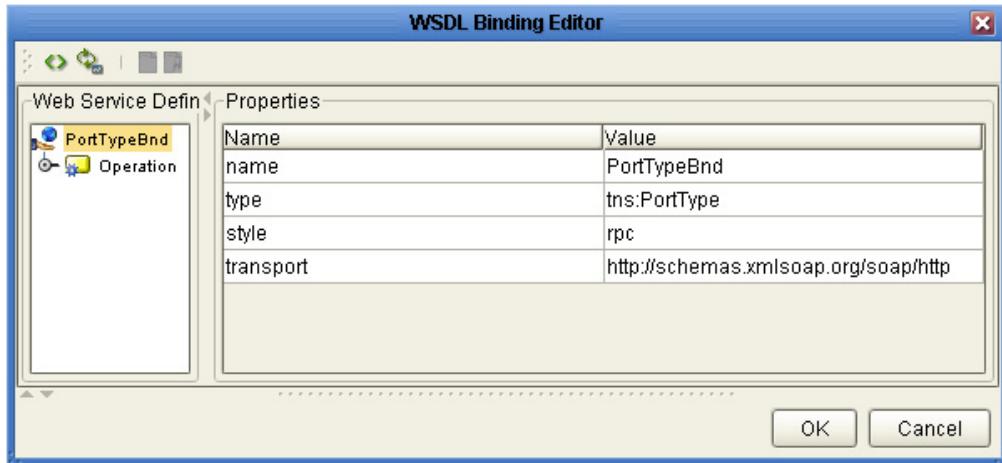
- 3 In response to the **Partner Port Type Selection** prompt, keep the default (**ns0:PortType**) and click **OK**. See Figure 38.

**Figure 38** Partner Port Type Selection



- 4 In the **WSDL Binding Editor** (see Figure 39), click **OK** to accept all defaults. The connection between **eaWS\_Server.** and **bpCreditScore1** appears in the Connectivity Map.

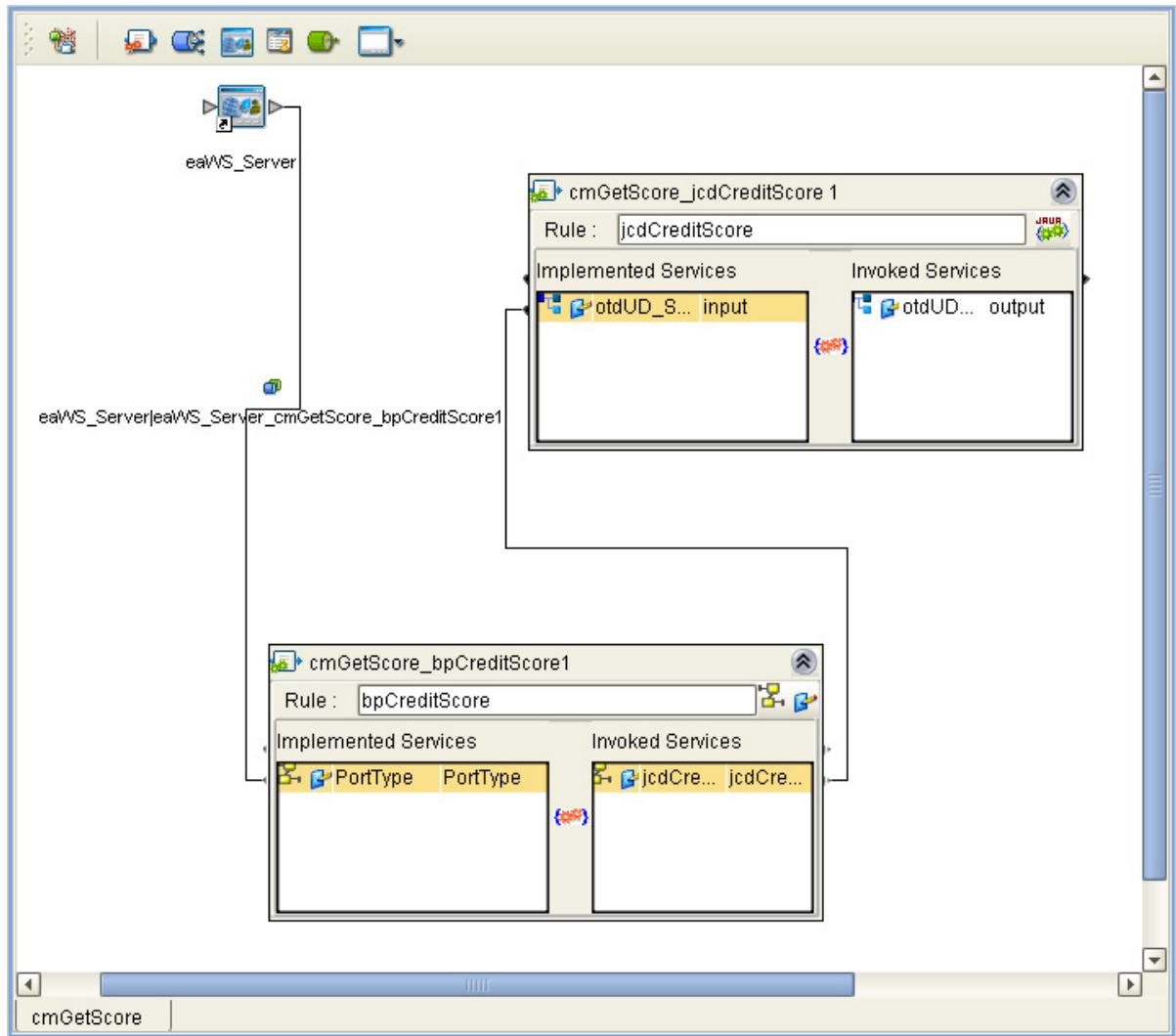
**Figure 39** WSDL Binding Editor



- 5 On the canvas, double-click **jcdCreditScore1** to open its Binding box.

- 6 From **bpCreditScore1**, drag its invoked service (**jcdCreditScore**) onto the implemented service (**otdUD\_SSNInjput**) of **jcdCreditScore1**. The connection between **bpCreditScore1** and **jcdCreditScore1** appears in the Connectivity Map (see Figure 40).

**Figure 40** Connectivity Map: WSDL Binding



- 7 Minimize both Binding boxes, save your work, and then close the Connectivity Map Editor.

*Result:* You have created and configured the Connectivity Map for the **prjCreditScoreServer** Project. In a later procedure, you assign its components to the external systems you create using the procedures under [Creating and Configuring the Sample Environment](#) on page 21.

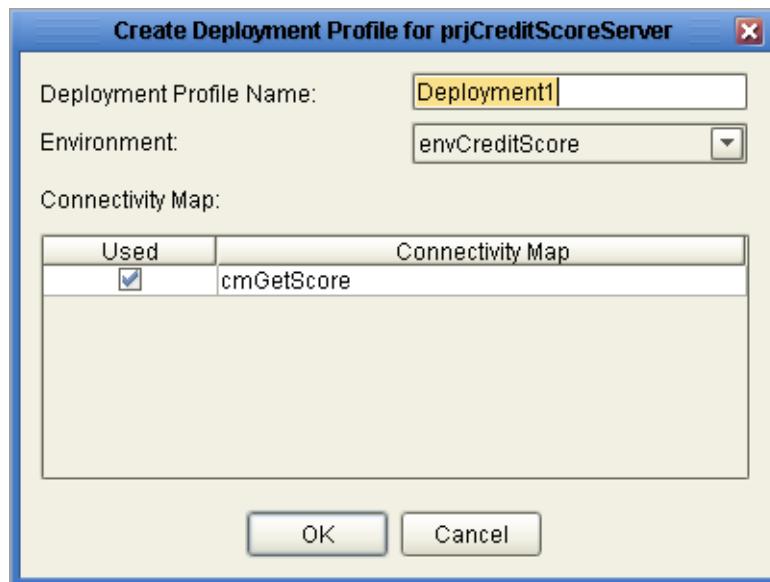
### 3.2.7 Creating and Configuring the Server Deployment Profile

In this section, you create and configure the Deployment Profile for the server Project. A Deployment Profile contains information about how Project components are mapped and deployed to the resources of an existing Environment.

#### To create the server Deployment Profile

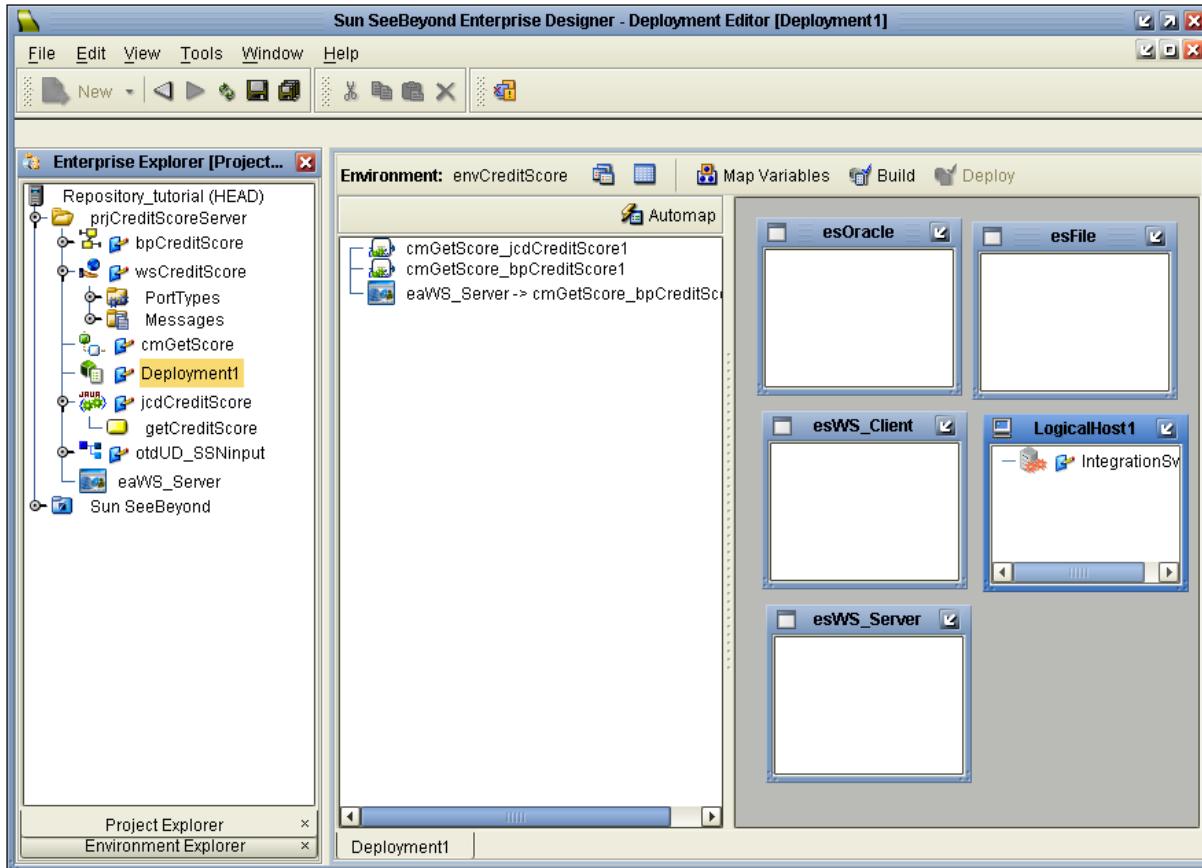
- 1 In the **Project Explorer** tree, right-click the Project **prjCreditScoreServer** to display the context menu and select **New > Deployment Profile**.
- 2 Click **OK** to accept the default name (**Deployment1**), Environment (**envCreditScore**), and Connectivity Map (**cmGetScore**). See Figure 41.

**Figure 41** Creating a Deployment Profile



- 3 The new Deployment Profile appears on the **Project Explorer** tree, and the Deployment Editor opens. See Figure 42.

**Figure 42** Deployment Editor: Automap



- 4 Click **Automap** to assign all components to their associated servers.

After this process is finished, the **Automap Results** message box appears. See the following figure.

**Figure 43** Automap Results



- 5 Close the message box.
- 6 Save your work (on the **File** menu or main toolbar, click **Save All**) but keep the Deployment Editor open for use in procedure under **Building and Deploying the Server Project** on page 58.

### 3.2.8 Building and Deploying the Server Project

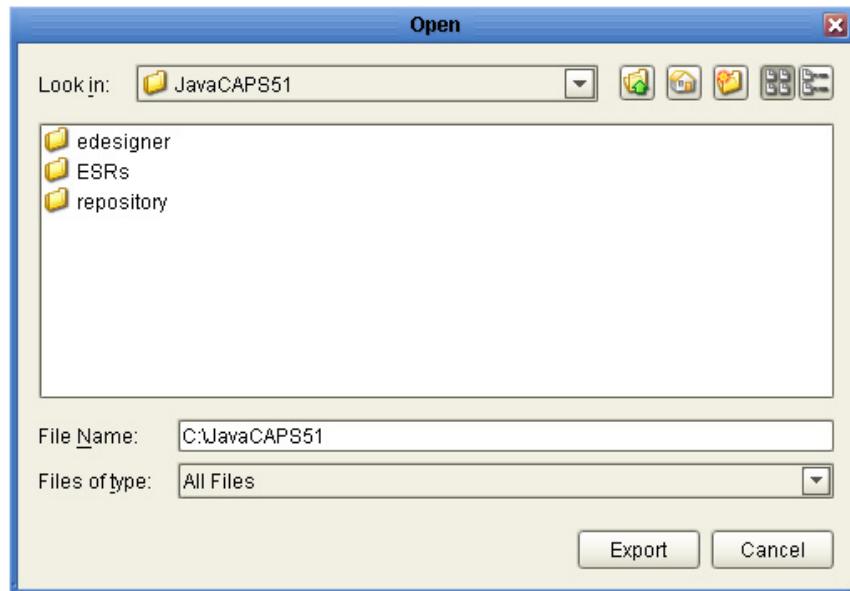
In this section, you build the server Project’s application (that is, you create an **.ear** file for the Project), and then deploy the file (run it on the Integration Server).

Your integration server should be running. This is **domain1** in your **Logicalhost** directory. Run the script **start\_domain1.bat**, if you haven’t already done so.

#### To build the application

- 1 On the Deployment Editor toolbar, click **Build**.
- 2 After a pause (dismiss the UDDI message), a window prompts you to export the file **wsdls.jar**.
- 3 In the **Open** dialog box, navigate to the correct location, such as **C : \JavaCAPS51** (see the following figure), and then click **Export**.

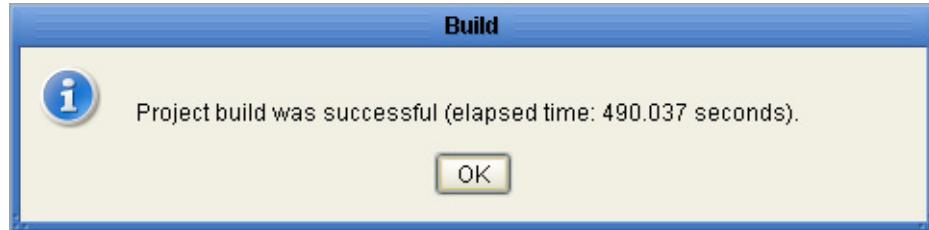
**Figure 44** Export wsdl.jar



**Note:** If the Project cannot be validated, a **Validation Errors** pane appears at the bottom of the Deployment Editor, providing you with information about errors. Make all necessary corrections, and then click **Build** again.

- 4 When a message box indicates that the build was successful (see Figure 45), click **OK**.

**Figure 45** Build Successful



*Result:* The **wsdls.jar** file has been created and exported to the correct location, and a valid **.EAR** file was built.

For example:

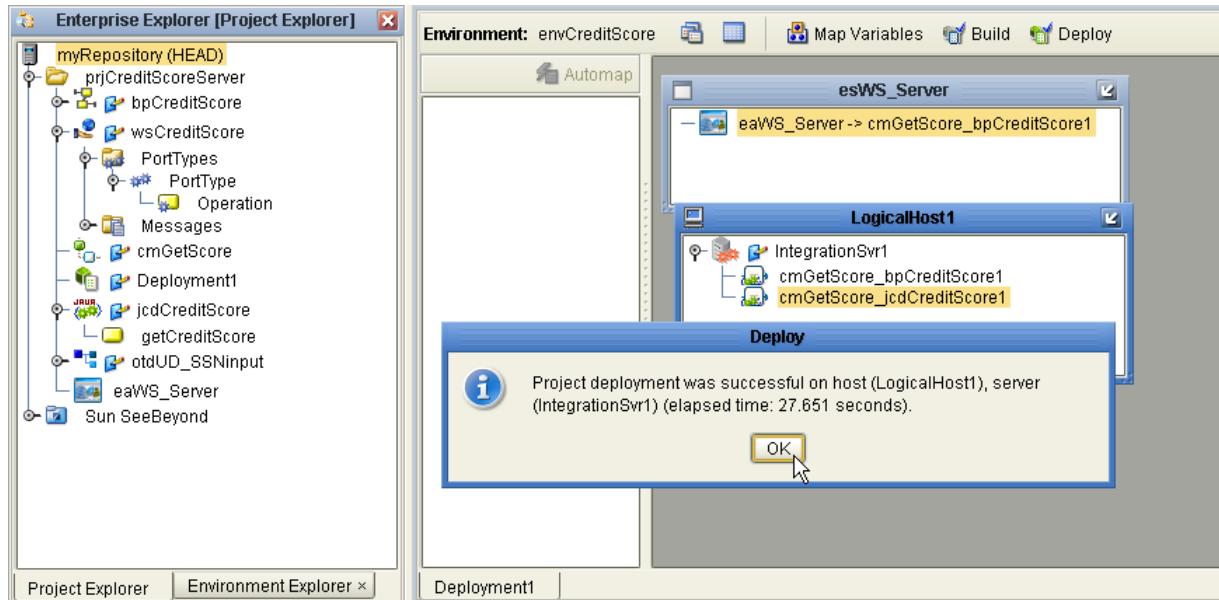
```
C:\JavaCAPS51\edesigner\builds\prjCreditScoreServerDeployment1\Logica
lHost1\integrationSv1 > prjCreditScoreServerDeployment1.ear
```

This **.ear** file can now be deployed.

#### To deploy the application

- 1 If you have not already done so, run **start\_domain1.bat** to start **domain1**.
- 2 On the Deployment Editor toolbar, click the **Deploy** button, and then click **Yes**.
- 3 When a message box indicates that deployment was successful click **OK**.

**Figure 46** Deployment Successful



*Final result:* You have created and configured all components in the Environment for the Server Project, built an application, and deployed it to a running Integration Server.

---

## 3.3 Creating and Setting Up the Client Project

The section explains how to create and set up the client Project, including Project configuration operations, as well as building and deploying the Project.

This operation employs Enterprise Designer and includes the following procedures:

- [Creating the Client Project](#) on page 60
- [Creating and Configuring the Client OTDs](#) on page 60
- [Creating the Client Collaboration Definition](#) on page 69
- [Configuring a Business Rule for the Collaboration Definition](#) on page 72
- [Creating and Configuring the Client Business Process](#) on page 96
- [Creating and Configuring the Client Connectivity Map](#) on page 115
- [Creating and Configuring the Client Deployment Profile](#) on page 117
- [Building and Deploying the Client Project](#) on page 120

### 3.3.1 Creating the Client Project

To begin creating and setting up the next Project, you create and name a Project for the client.

#### To create the client Project

- 1 In the Enterprise Designer's **Project Explorer** tree (left pane), right-click the Repository and choose **New Project** from the context menu.
- 2 Name your new Project **prjCreditScoreClient**.
- 3 Press **Enter**.

*Result:* The new Project **prjCreditScoreClient** appears on the **Project Explorer** tree.

### 3.3.2 Creating and Configuring the Client OTDs

In this section, you create and configure eGate OTDs for the client Project.

#### To create the `CustomerDetail_UDinput` client OTD

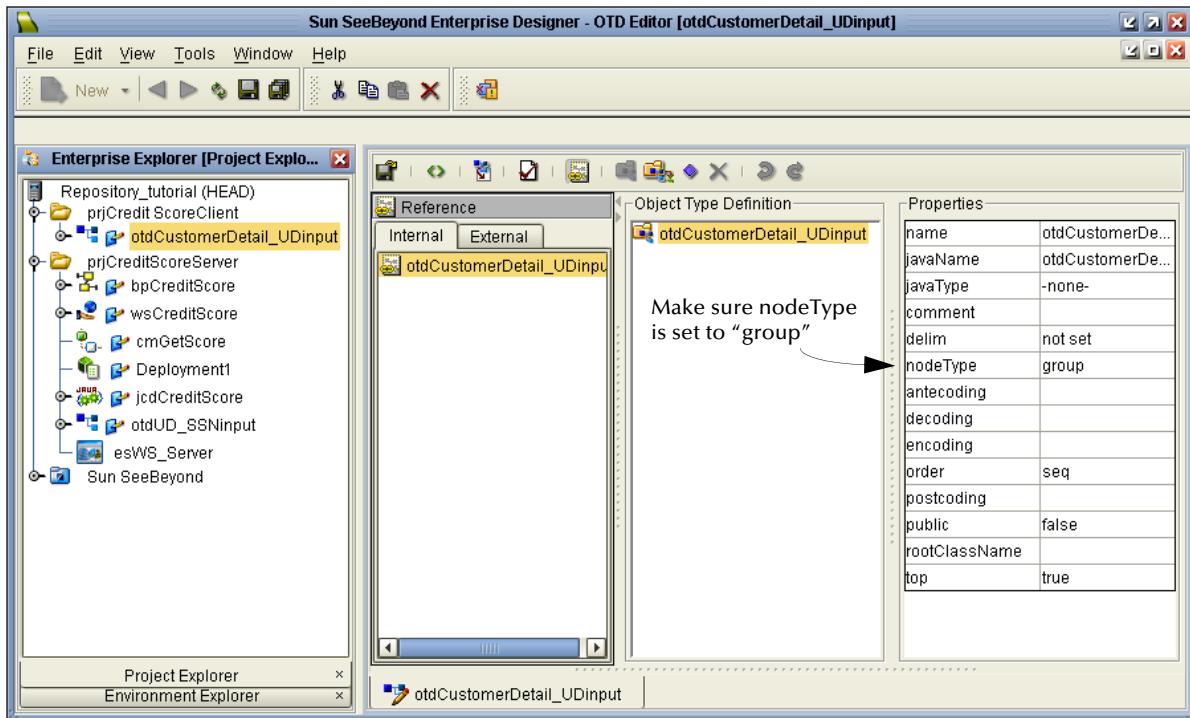
- 1 In the Enterprise Designer's **Project Explorer** tree, right-click the Project **prjCreditScoreClient** to display the context menu and select **New > Object Type Definition**.

The New Object Type Definition wizard appears.

- 2 Click **User-Defined OTD**, and then click **Next**.
- 3 Name your OTD, **otdCustomerDetail\_UDinput**, and then click **Finish**.

*Result:* The new OTD, **otdCustomerDetail\_UDinput**, appears on the **Project Explorer** tree, and the OTD Editor appears. See the following figure.

**Figure 47** Customer Detail OTD Editor

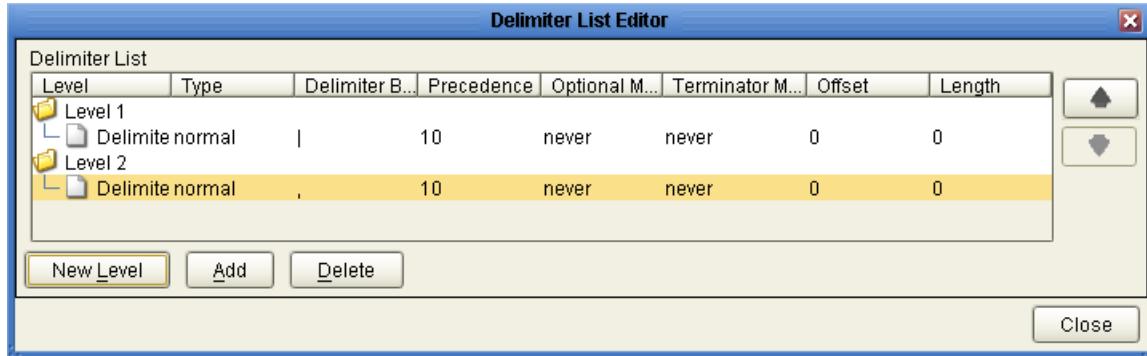


### To configure the CustomerDetail\_UDinput client OTD

- 1 In the OTD Editor's **Object Type Definition** pane, right-click **otdCustomerDetail\_UDinput** to display the context menu and select **Add > Element**.
- 2 Change the name of the new element from **element** to **FullName**, and then press **Enter**.
- 3 Right-click **FullName** and, on the context menu, point at **Add** and choose **Field**.
- 4 Change the name of the new field from **field** to **FirstName**, and then press **Enter**.
- 5 Right-click **FullName** again and, on the context menu, point at **Add** and choose **Field**.
- 6 Change the name of the second field from **field** to **LastName**, and then press **Enter**.
- 7 Click the root node (**otdCustomerDetail\_UDinput**) and, in the **Properties** pane, do the following actions:
  - ♦ For **delim**, click in the **delim** field then click the ellipsis ([...]) button to open the Delimiter List Editor.
  - ♦ In the Delimiter List Editor, click **New Level** once, and then click **Add**.
  - ♦ In the new **Delimiter** entry, for **Delimiter Bytes**, enter | (the vertical bar, or “pipe” character) and press **Enter**.
  - ♦ Click **New Level** once more, and then click **Add**.

- ♦ In the new **Delimiter** entry, for **Delimiter Bytes**, enter **,** (the comma character) and press **Enter**. See Figure 48.

**Figure 48** Delimiter List Editor

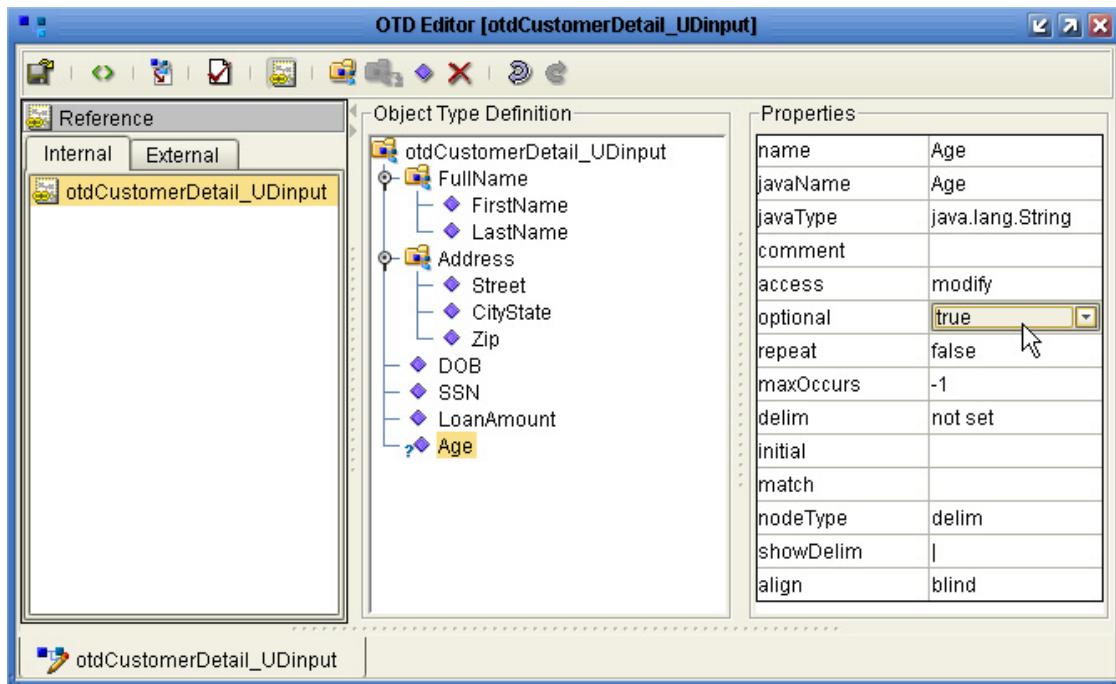


- 8 Click **Close** to close the Delimiter List Editor.

The value for **delim** changes from **not set** to **specified**.

- 9 In the OTD Editor, right-click **otdCustomerDetail\_UDinput** and, on the context menu, point at **Add** and choose **Element**.
- 10 Change the name of the new element from **element** to **Address**, and then press **Enter**.
- 11 Right-click **Address** and, on the context menu, point at **Add** and choose **Field**.
- 12 Repeat the previous step two more times until you have added three fields altogether.
- 13 Rename the fields to **Street**, **CityState**, and **Zip**.
- 14 In the OTD Editor, right-click **otdCustomerDetail\_UDinput** and, on the context menu, point at **Add** and choose **Field**.
- 15 Repeat the previous step three more times until you have added four fields altogether.
- 16 Rename the fields to **DOB**, **SSN**, **LoanAmount**, and **Age**.
- 17 Click **Age** and, in the **Properties** pane, change the value for **optional** from **false** to **true**, and then press **Enter**. See Figure 49.

**Figure 49** Configured otdCustomerDetail\_UDinput OTD



**Note:** Be sure to press **Enter** after setting any properties. A unique *javaName* is set and resolved when an OTD is saved.

- 18 Save your work (on the **File** menu or main toolbar, click **Save All**).

**Result:** You have configured an OTD to hold customer information (consisting of names, addresses, dates-of-birth, and so on). In a later procedure, you reference this OTD in a Collaboration Definition.

#### To create the Oracle OTD

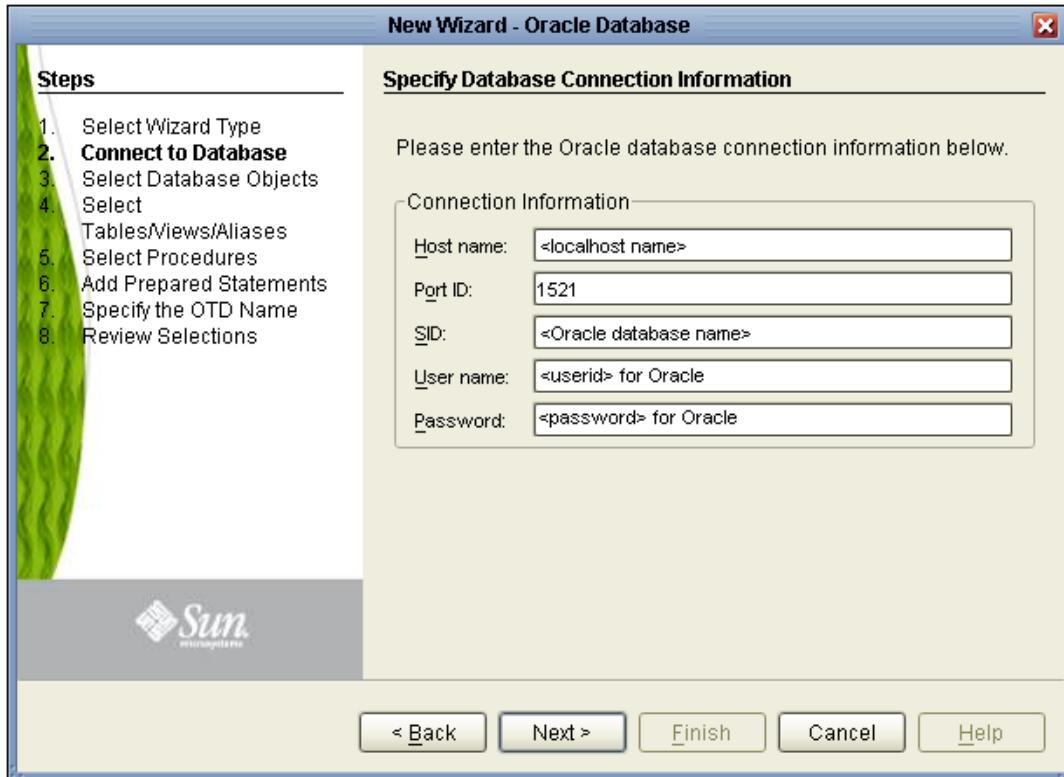
- 1 On Enterprise Designer's **Project Explorer** tree, right-click the Project **prjCreditScoreClient** to display the context menu and select **New > Object Type Definition**.

The New Object Type Definition wizard appears.

- 2 Click **Oracle Database OTD**, and then click **Next**.

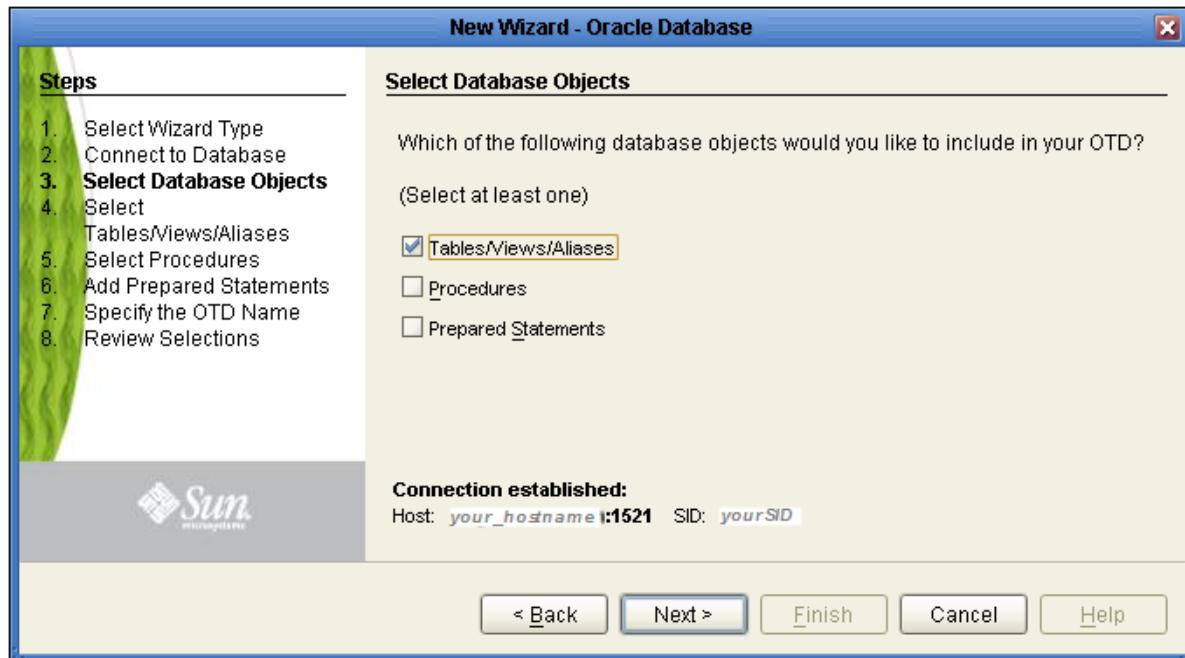
- 3 Supply the connection parameters for your Oracle database (see Figure 50), and then click **Next**.

**Figure 50** Step 2. Connect to Database



**4 Database Objects:** Select the first **Tables/Views/Aliases** check box (see Figure 51), and then click **Next**.

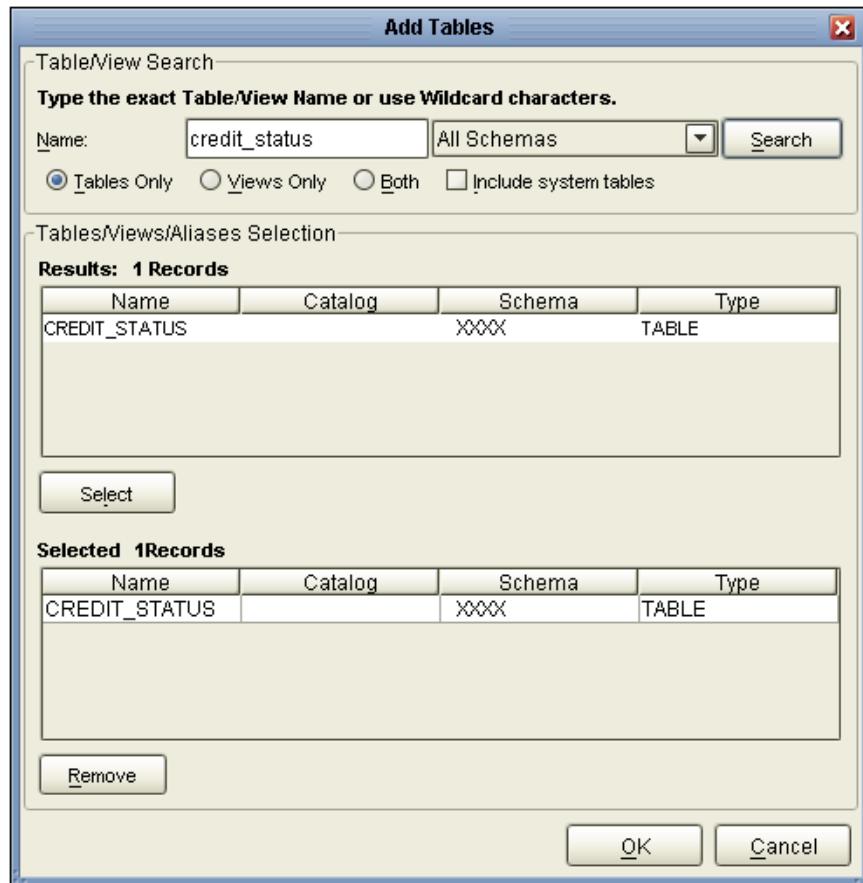
**Figure 51** Step 3. Select Database Objects



**5 Select Tables/Views/Aliases:** Click **Add**, and then, on the **Add Tables** dialog box, do the following actions:

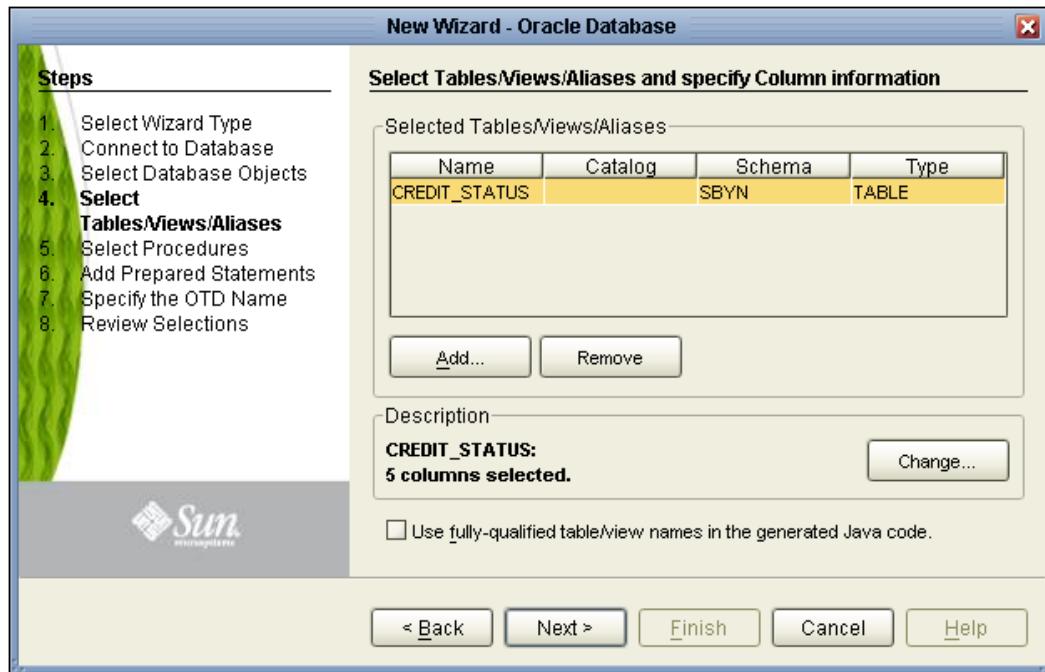
- For **Name**, enter **credit\_status** and click **Search**.
- Under **Results**, when Results appear, select **CREDIT\_STATUS**, and then click **Select**.

**Figure 52** Table Views



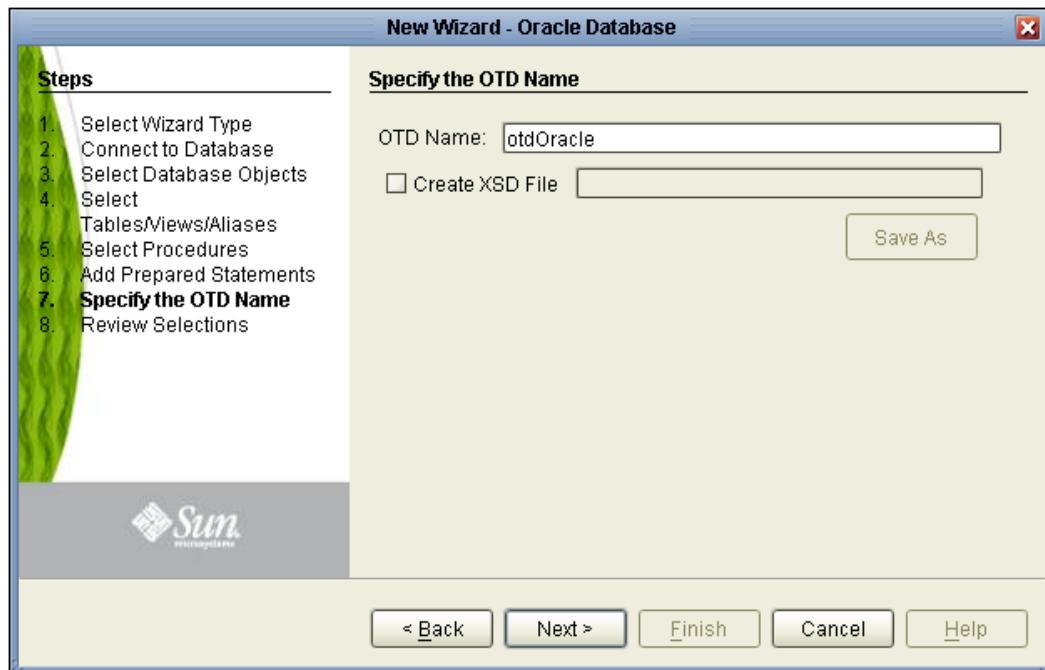
- When **CREDIT\_STATUS** appears in the selected pane at the bottom, click **OK**.  
The OTD wizard reappears.

**Figure 53** Columns Selected



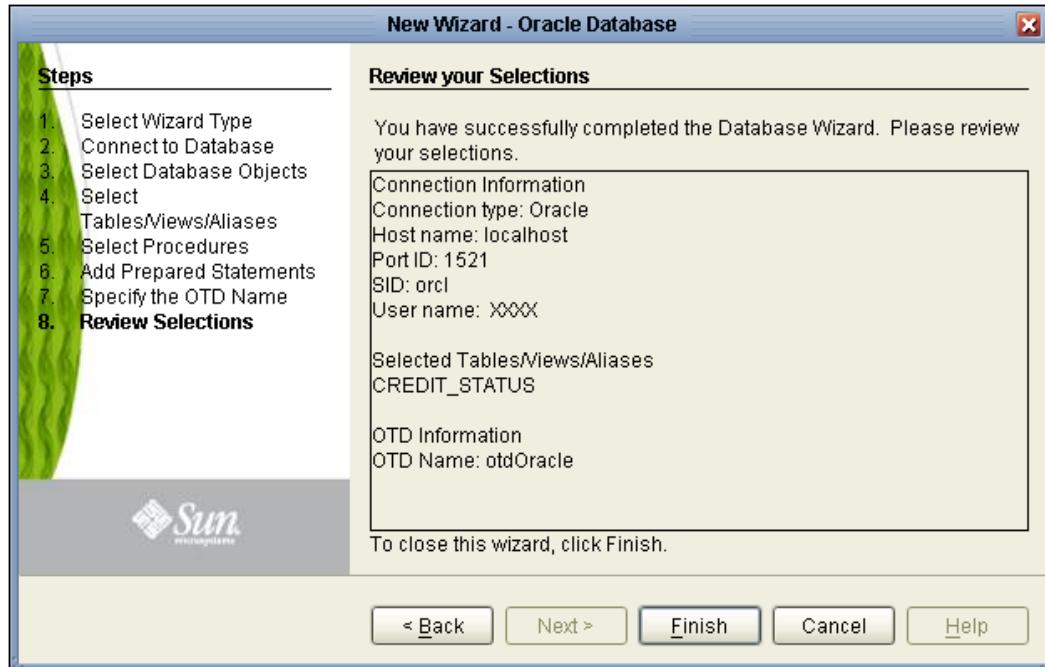
- 6 Click Next.
- 7 Specify the OTD Name: Enter otdOracle for the OTD Name, and then click Next.

**Figure 54** Specify OTD Name



- 8 Review Selections:** Review the parameters you have set, use the **Back** button to make any adjustments.

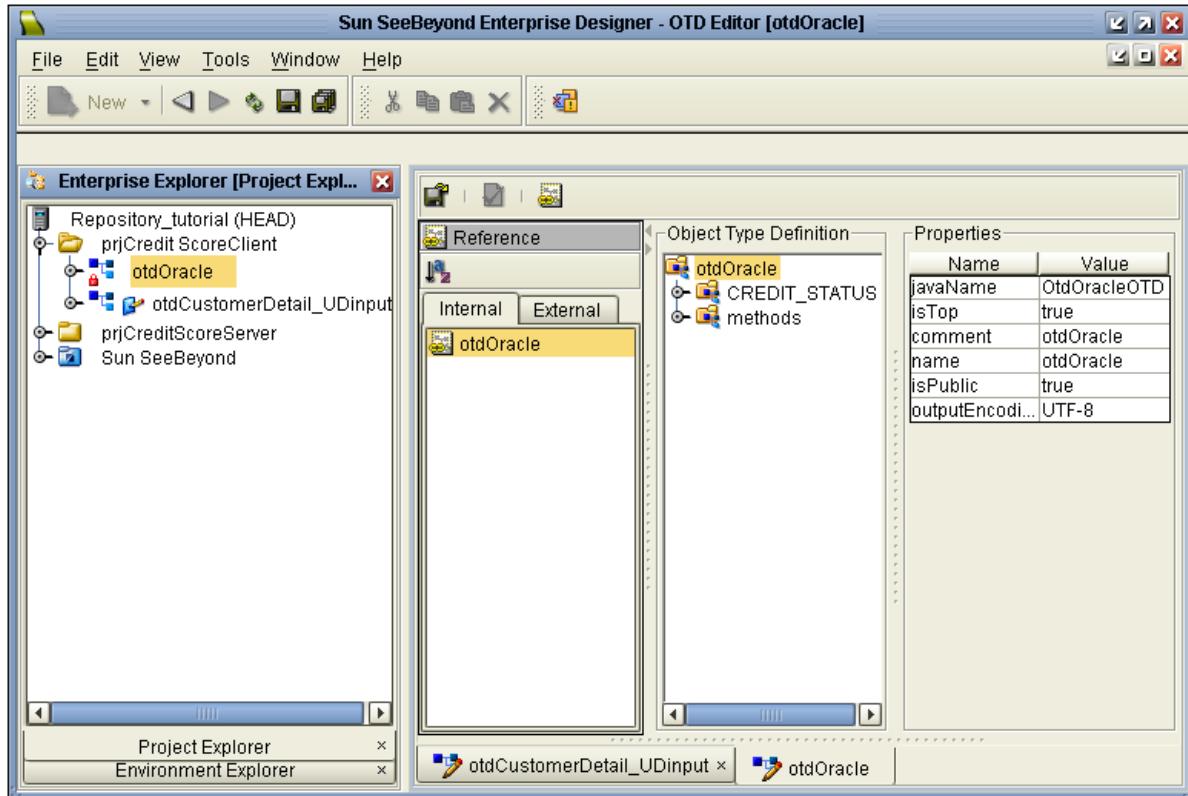
**Figure 55** Review Selections



- 9 Click Finish.**

The new OTD, **otdOracle**, appears in the **Project Explorer** tree, and the OTD Editor opens. See the following figure.

**Figure 56** Configured otdOracle OTD



**10** Save your work (on the **File** menu or main toolbar, click **Save All**).

*Result:* You have configured an Oracle database OTD to hold details of customer loan applications. In a later procedure, you reference this OTD in a Business Process.

### 3.3.3 Creating the Client Collaboration Definition

In this section, you create a Java Collaboration Definition named **jcdGetAge**.

#### To create the client Collaboration Definition

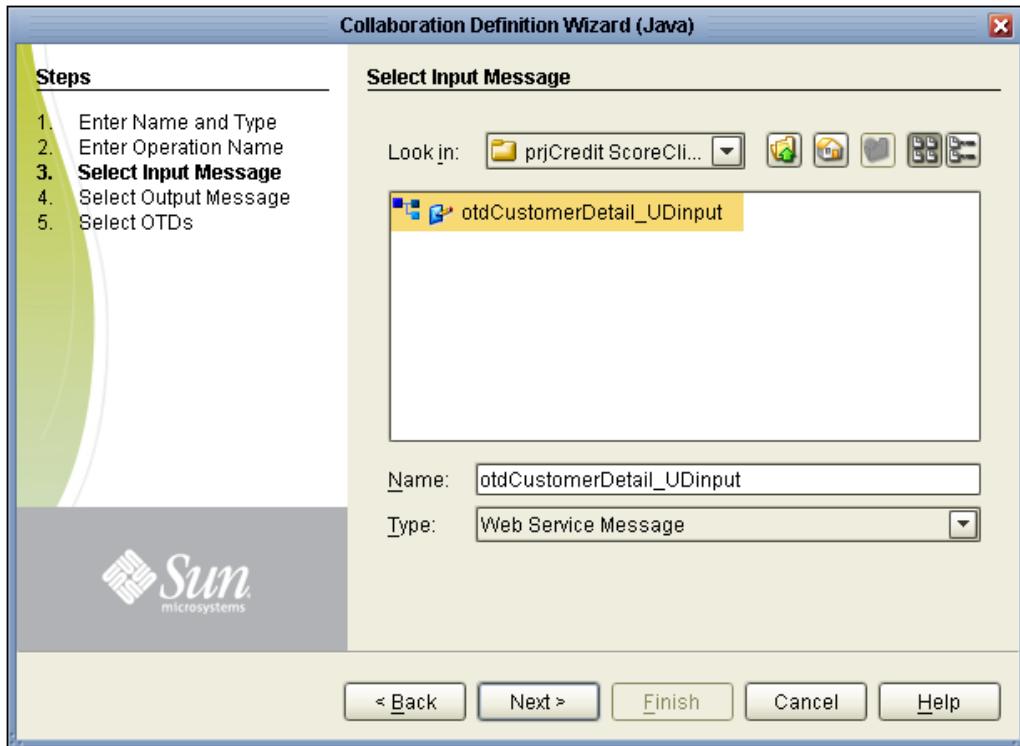
- 1 In the Enterprise Designer's **Project Explorer** tree, right-click the Project **prjCreditScoreClient** to display the context menu and select **New > Collaboration Definition (Java)**.

The Collaboration Definition wizard (Java) appears.

- 2 **Enter Name and Type:** Do the following actions:
  - ♦ For **Collaboration Name**, enter **jcdGetAge**.
  - ♦ For **Web Service Type**, select **New: Create a new Web Service operation**.
  - ♦ Click **Next**.

- 3 Enter Operation Name:** For Operation Name, enter `getAge`, and then click **Next**.
- 4 Select Input Message:** Open `prjCreditScoreClient` and double-click its OTD `otdCustomerDetail_UDinput`; for Type, retain **Web Service Message**.

**Figure 57** Select Input Message



- 5 Click Next.**
- 6 Select Output Message:** Similar to the previous step, Open `prjCreditScoreClient` and double-click its OTD `otdCustomerDetail_UDinput`; for Type, retain **Web Service Message**.

You used the same message OTD for both input and output.

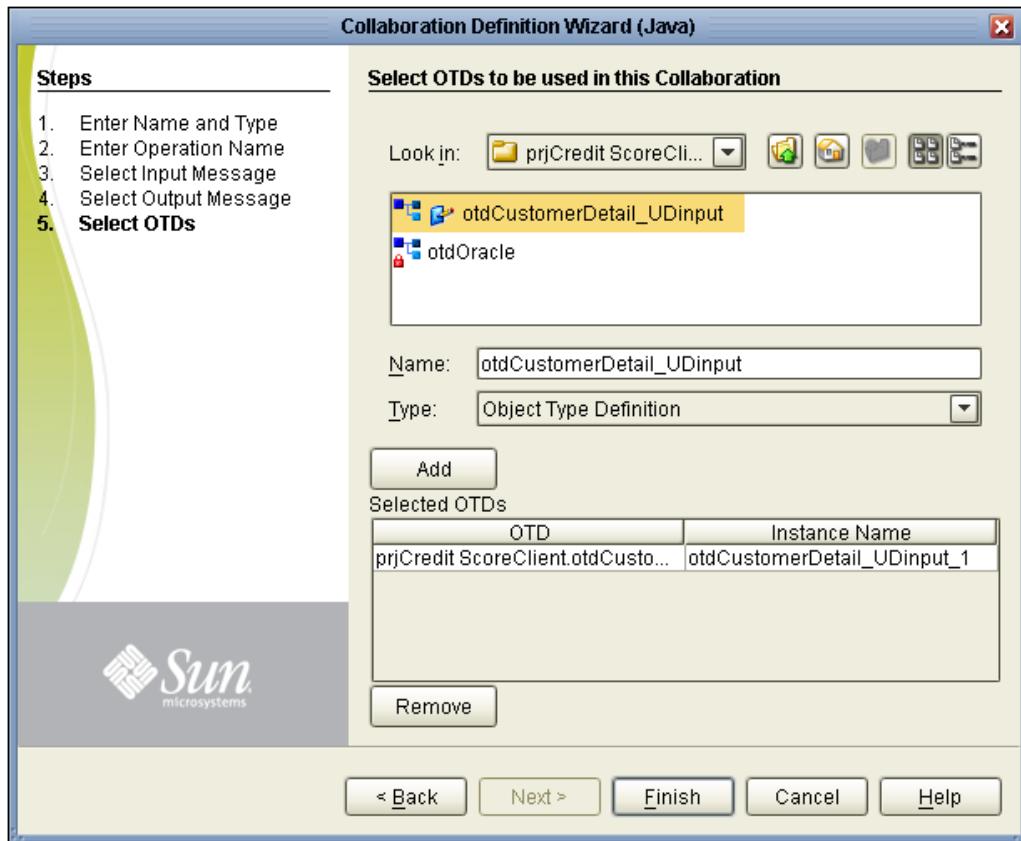
- 7 Click Next.**

Now select the same OTD for the Collaboration.

- 8 Select OTDs:** Open `prjCreditScoreClient` and double-click its OTD `otdCustomerDetail_UDinput`.

The fully qualified OTD and its instance name `otdCustomerDetail_UDinput` is added. If you make a mistake, you can use the **Remove** and **Add** buttons to correct it.

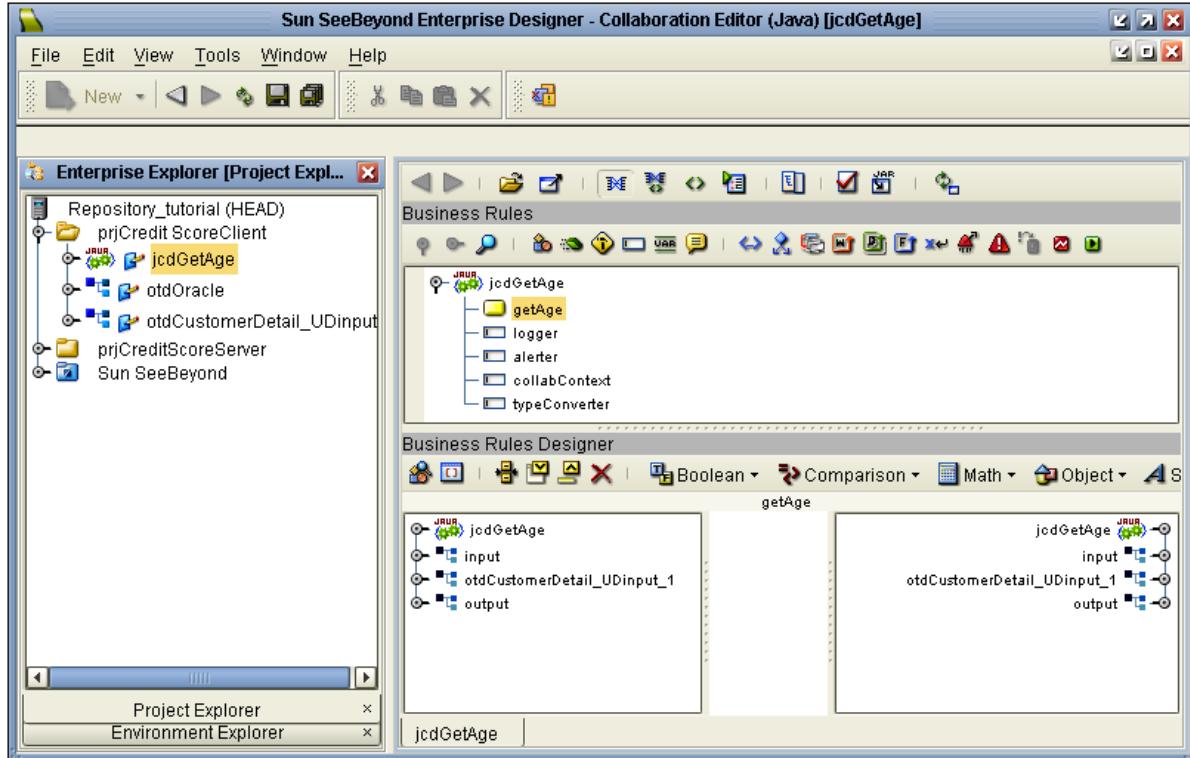
**Figure 58** Select Collaboration OTD



**9** Click **Finish**.

*Result:* The new Collaboration Definition **jcdGetAge** appears on the **Project Explorer** tree, and the Collaboration Editor appears. See the following figure.

**Figure 59** Collaboration Definition **jcdGetAge**



### 3.3.4 Configuring a Business Rule for the Collaboration Definition

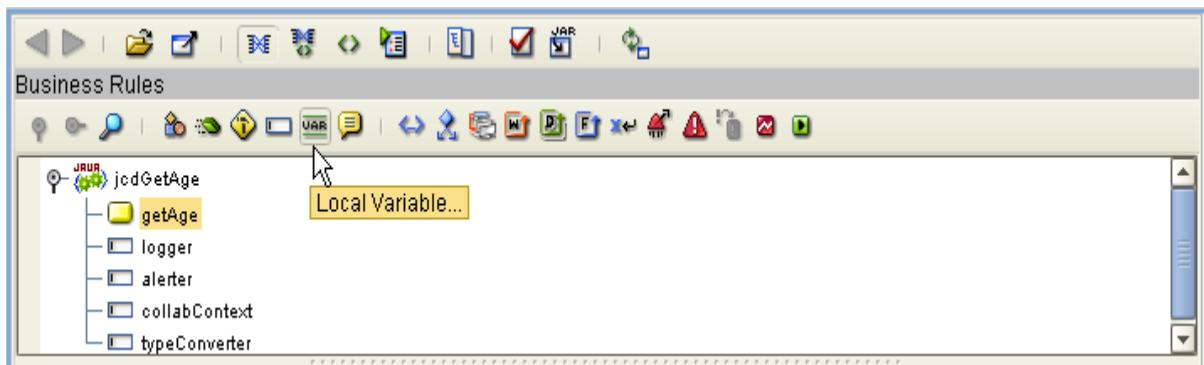
In this section, you configure the client Collaboration Definition **jcdGetAge** with a Business Rule that approximates an applicant's age by subtracting the date-of-birth year from the current year.

Use the Collaboration Editor (Java) to perform this operation with the series of procedures provided in this section.

To create the **ageStr** variable

- 1 Double-click your **jcdGetAge** in the Project Explorer if the editor is not open.
- 2 In the Collaboration Editor, in the **Business Rules** pane's tool palette, click **Local Variable**. See the following figure.

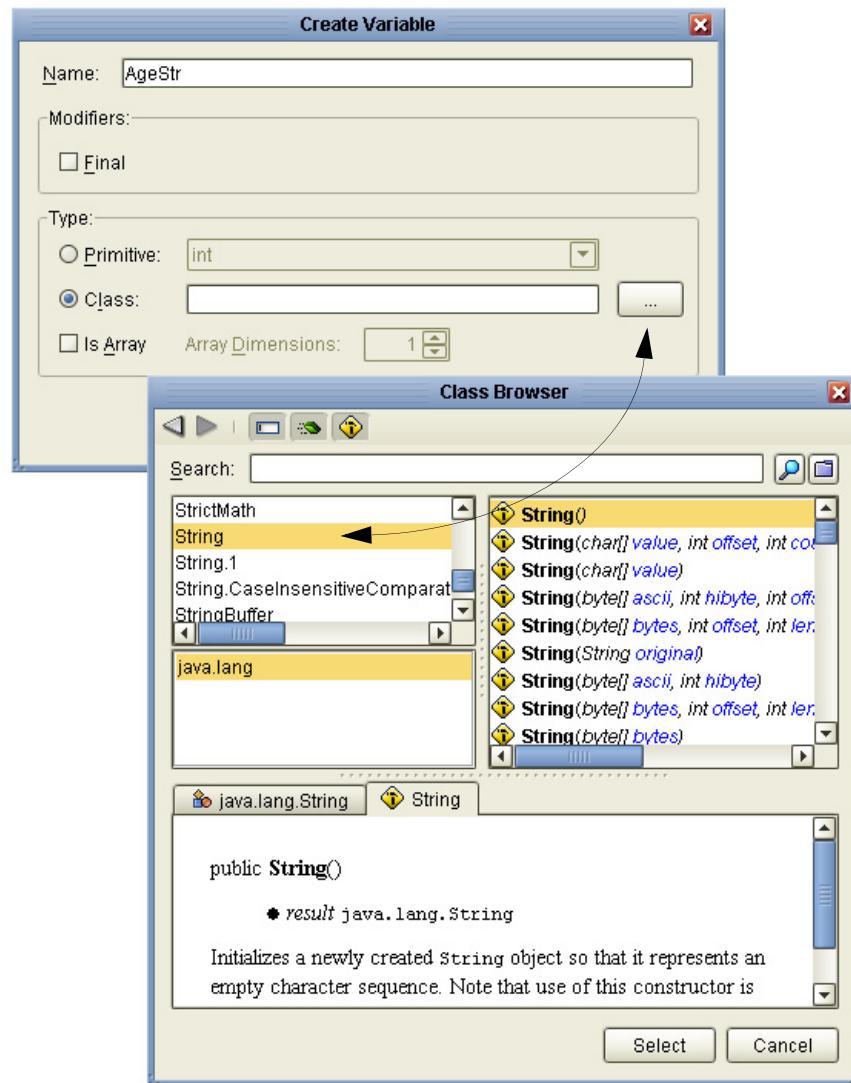
**Figure 60** Local Variable for jcdGetAge



- 3 In the **Create Variable** dialog box do the following actions, while referring to the following graphic:
- For **Name**, enter **AgeStr**
  - For **Type**, select **Class**, and then click the ellipsis ([...]) button to open the **Class Browser** dialog box.
  - In the **Class Browser** dialog box, click **String** and then click **Select**.

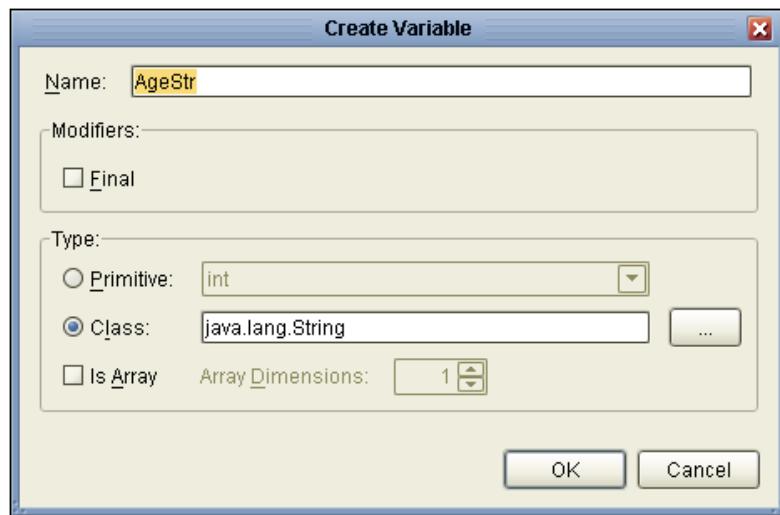
See the following figure.

**Figure 61** Create String Variable



The Java.lang.String appears. See the following figure.

**Figure 62** Age String

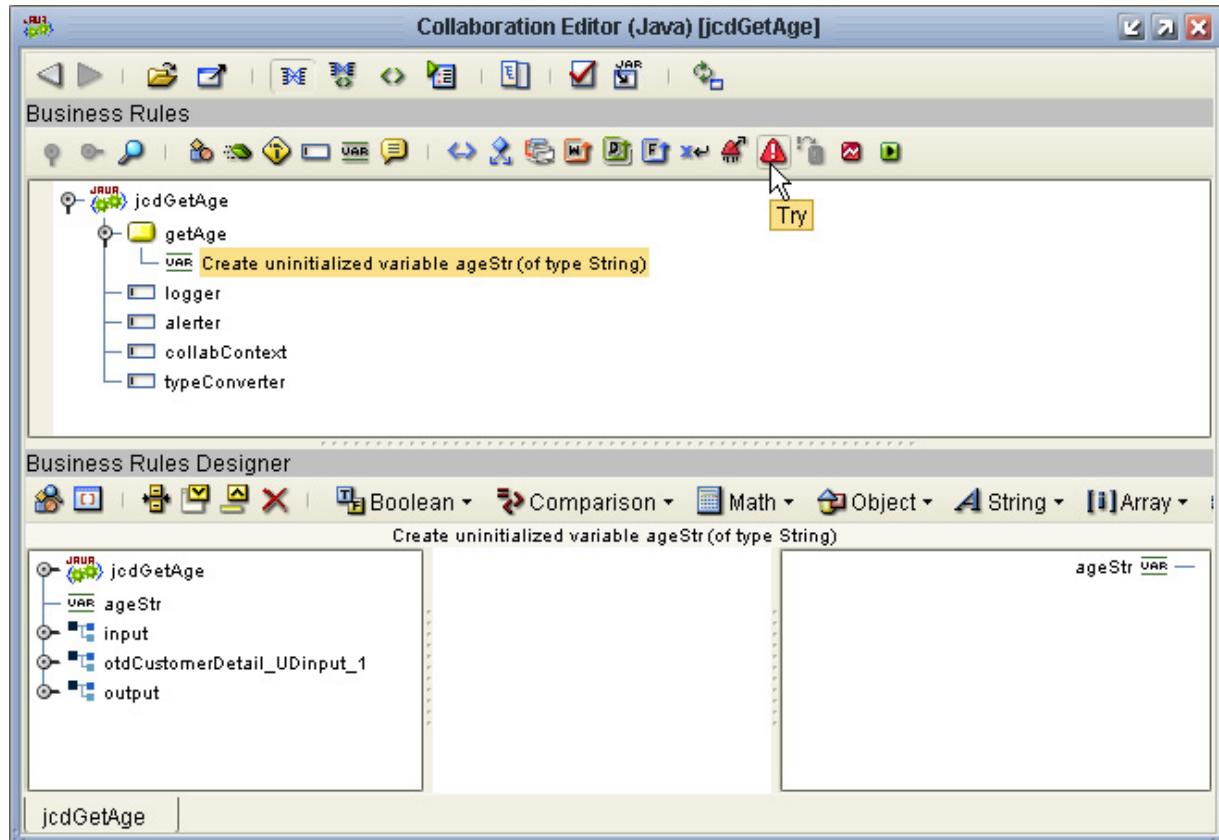


**4** Click **OK**.

### To create and use the currentDate variable

- 1 In the Collaboration Editor, in the **Business Rules** pane's tool palette, click **Try**. See the following figure.

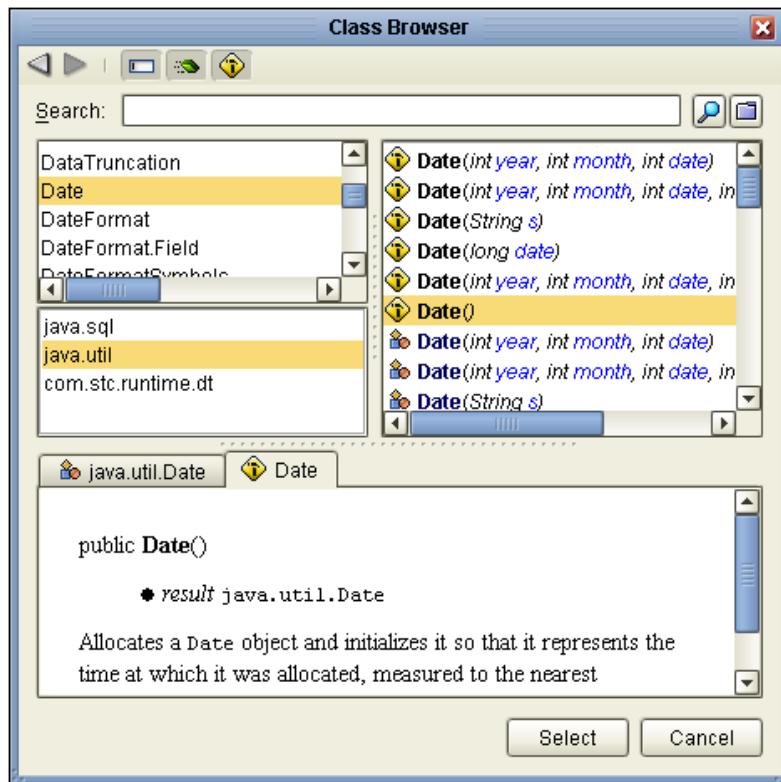
**Figure 63** Business Designer: Business Rules Pane



- 2 Expand the newly created **Try** node to expose its two subnodes.
- 3 Right-click the **rules** subnode and add a **Local Variable**.
- 4 Do the following in the **Create Variable** dialog box:
  - A For **Name**, enter **currentDate**
  - B For **Type**, select **Class**, and then click the ellipsis [...] button.

- C In the **Class Browser** dialog box, search for **Date**, select the **java.util** package, select **Date()**. See the following figure.

**Figure 64** Select Date



- D Click **Select**.

The **Create Variable**, **currentDate** dialog reappears.

- E Click **OK**.

In the **Business Rules Designer** pane, do the following:

- F On the tool palette, click **Class Browser**.

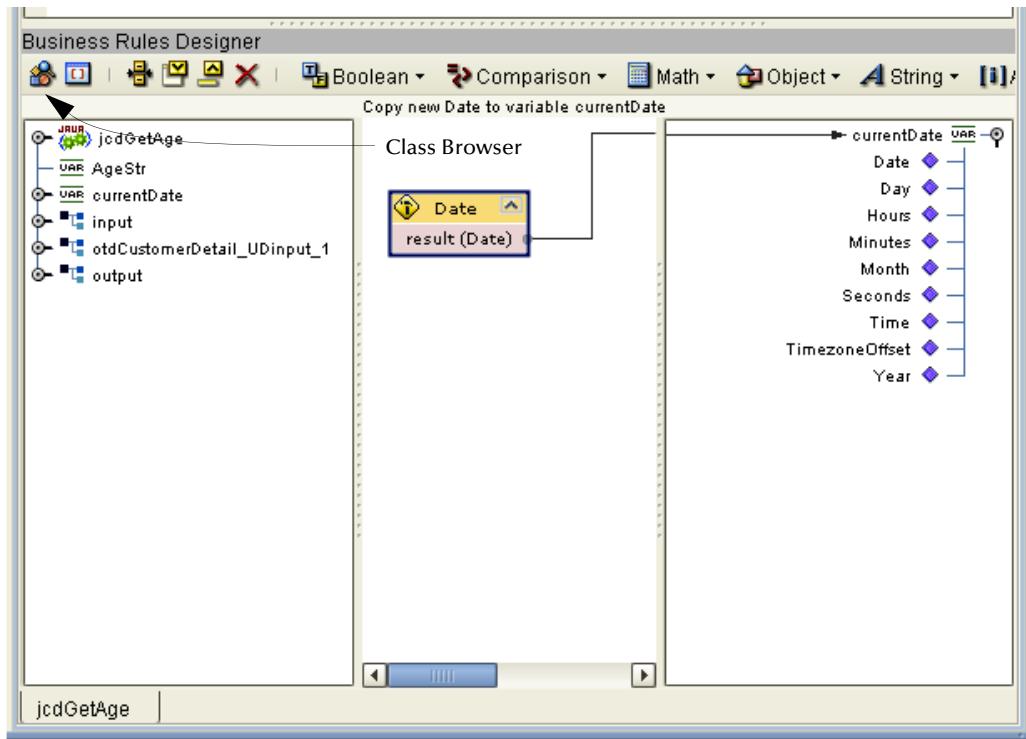
- G In the Class Browser, search for **Date** and then select **java.util**.

- H Select **Date()**, and then click **Select**.

This is similar to the previous steps, but this puts the Date Constructor GUI on the design canvas.

- I From the newly created **Date** constructor that appears on the center pane, drag **result(Date)** onto the **currentDate** node on the right pane. Refer to Figure 65.

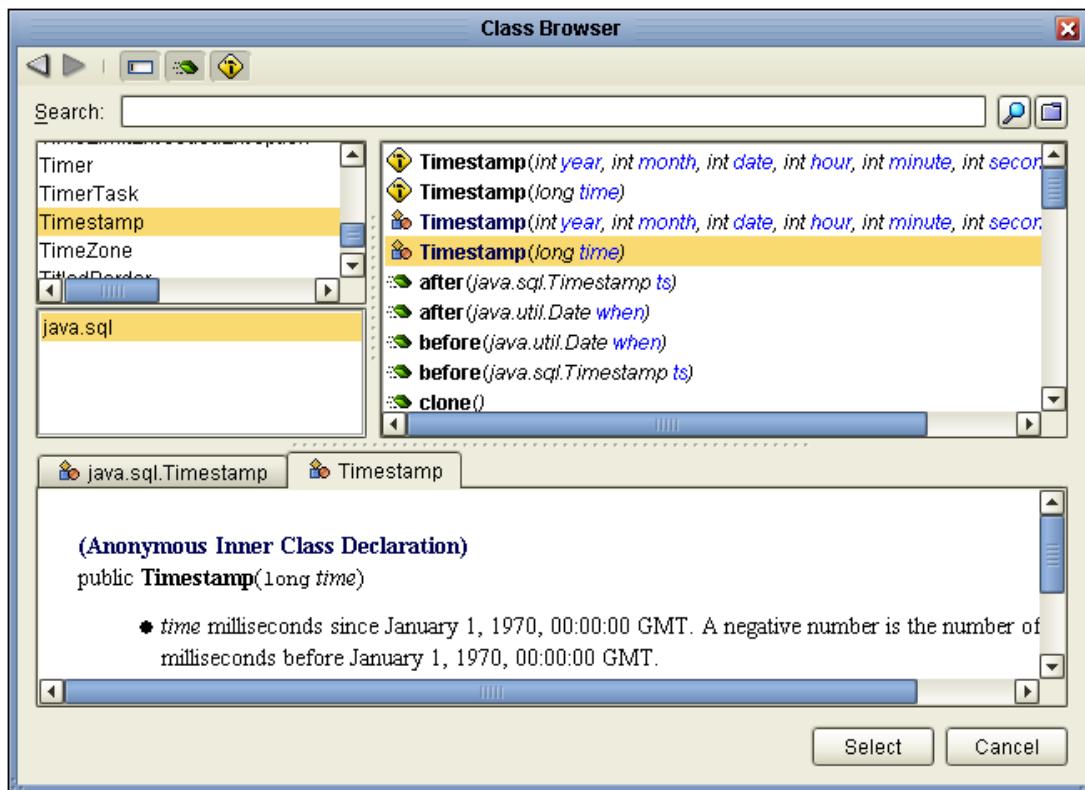
**Figure 65** Return Date



To create and use the **timeStamp** variable

- 1 In the Collaboration Editor, in the **Business Rules** pane's tool palette, click **Local Variable**.
- 2 In the **Create Variable** dialog box, do the following actions:
  - A For **Name**, enter **timeStamp**
  - B For **Type**, select **Class**, and then click the ellipsis ([...]) button to open the **Class Browser**.
  - C In the **Class Browser** dialog box, search for **Timestamp**, select **Timestamp(long time)**.

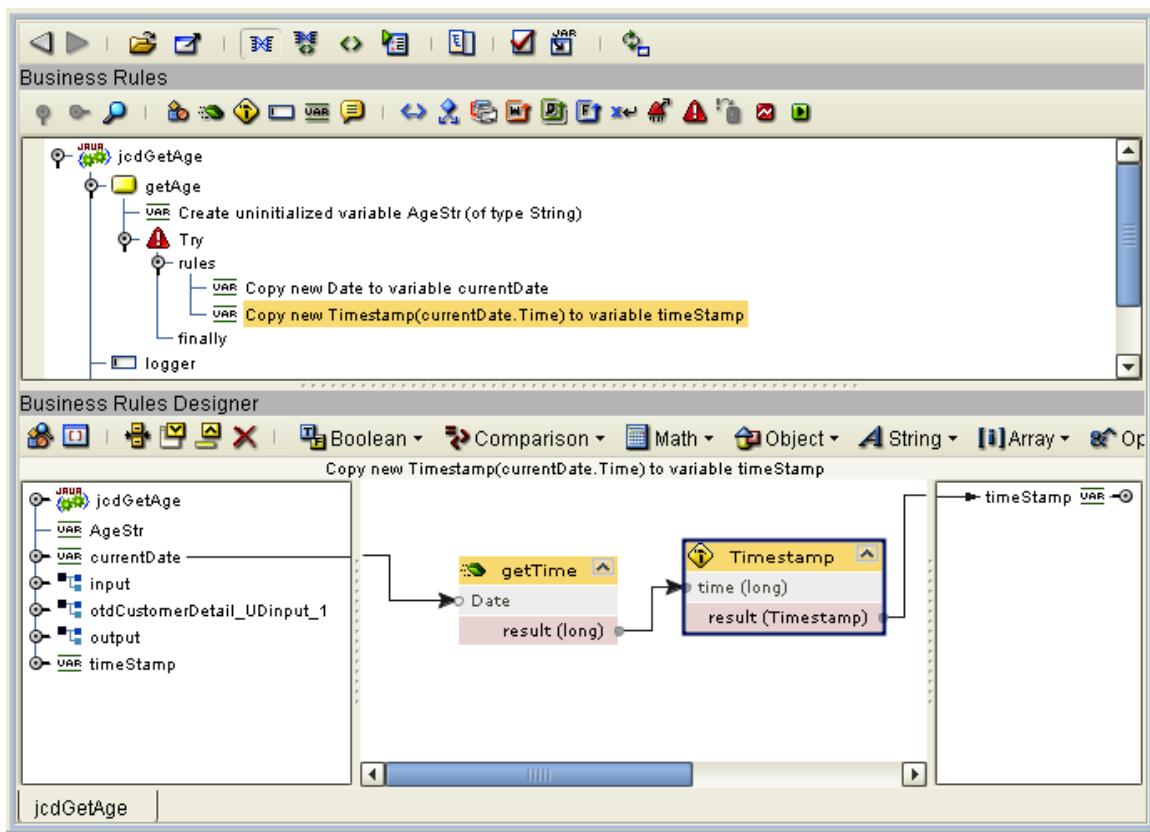
**Figure 66** Class Timestamp



- D** Click **Select**.
  - E** When the **Create Variable** dialog box reappears, click **OK**.
- 3 In the **Business Rules Designer** pane do the following actions:
- A** In the tool palette, click **Class Browser**.
  - B** In the **Class Browser** dialog box, search for **Timestamp**, select the **Timestamp(long time)** constructor, *not* the class, and then click **Select**.

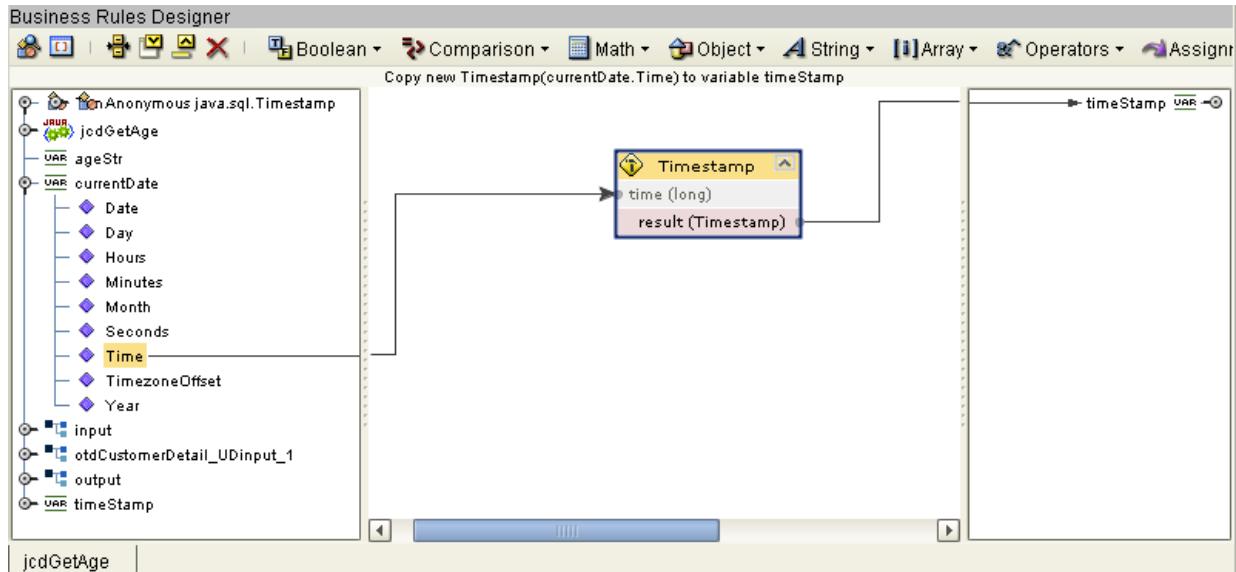
- C From the newly created **Timestamp** constructor that appears on the center pane, drag **result(Timestamp)** onto the **timeStamp** node on the right pane.

**Figure 67** timeStamp Constructor



- D Drag **currentDate** to the center pane. From the resulting list of classes double-click **getTime()**.
- E Link the objects as shown in the following figure.
- F Save your work.

**Figure 68** Completed timeStamp Variable



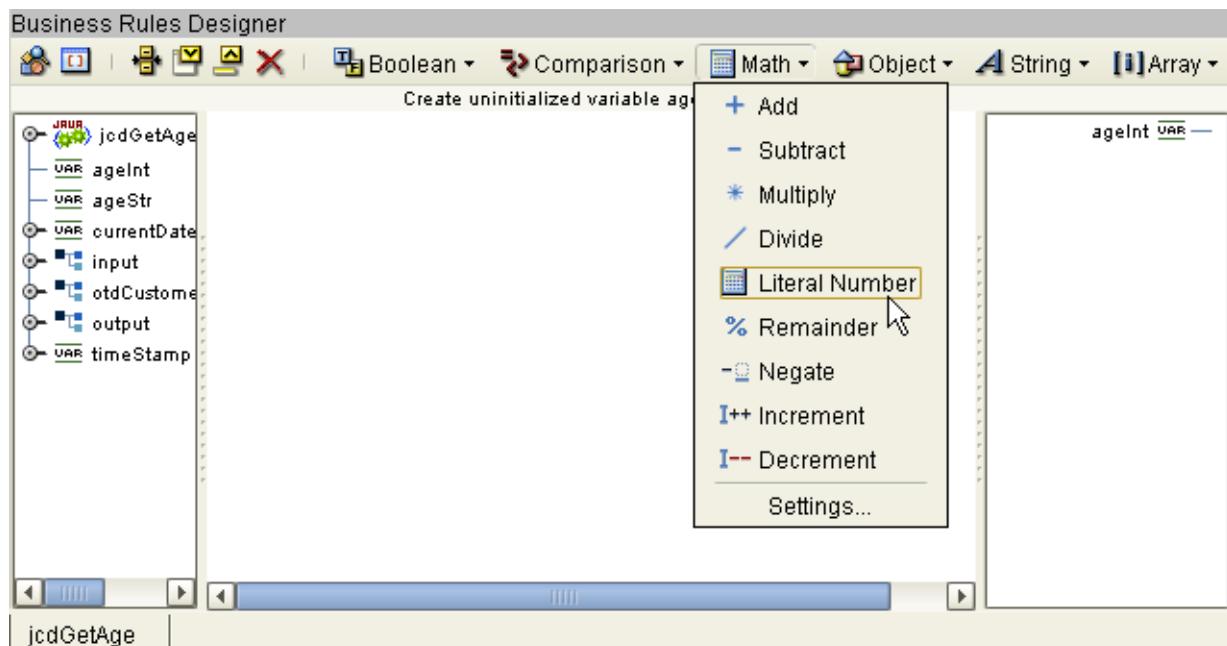
#### To create and use the ageInt variable

- 1 In the Collaboration Editor, in the **Business Rules** pane's tool palette, click **Local Variable**.
- 2 In the **Create Variable** dialog box, do the following actions:
  - A For **Name**, enter: ageInt.
  - B For **Type**, keep the default choices: **Primitive** and **int**.
  - C Click **OK**.

**3** In the **Business Rules Designer** pane, do the following actions:

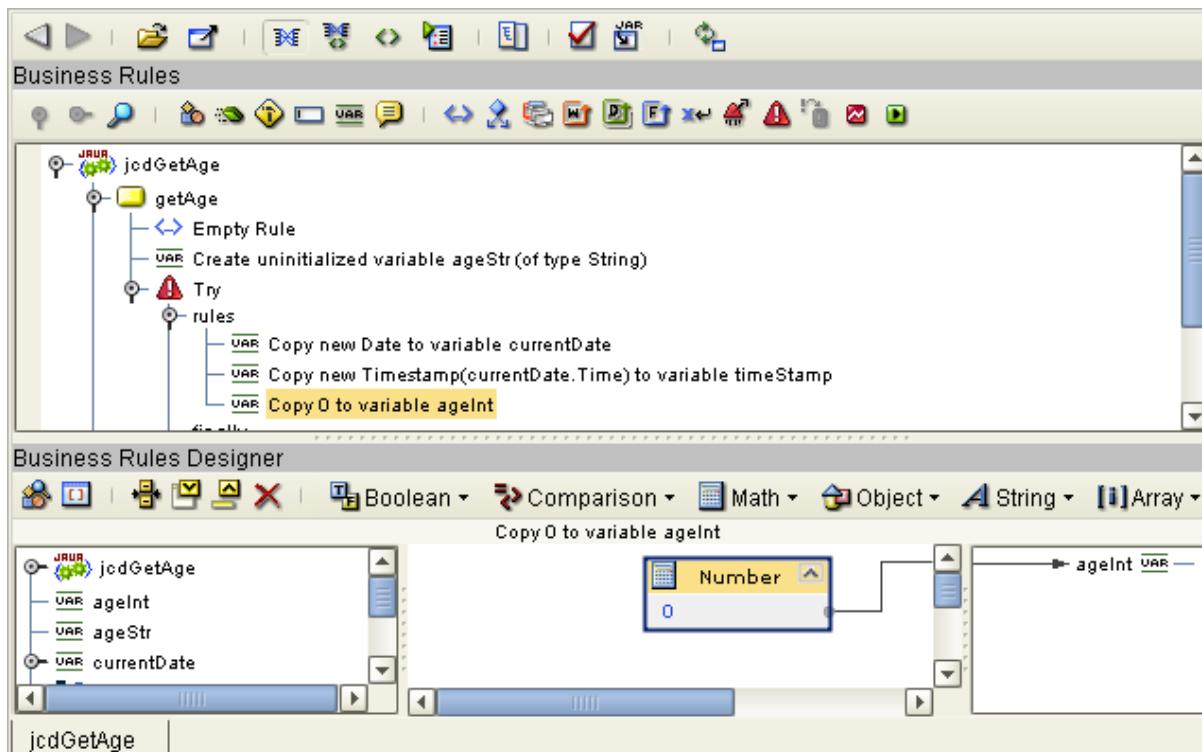
- A On the tool palette, click **Math**, and then, from the list, select **Literal Number**. See Figure 69.

**Figure 69** Selecting Literal Number From Math List



- B Retaining the default value of 0, drag it to the **ageInt** variable in the right pane.  
Figure 70.

**Figure 70** Completed ageInt Variable



#### To create and use the currentYearStr variable

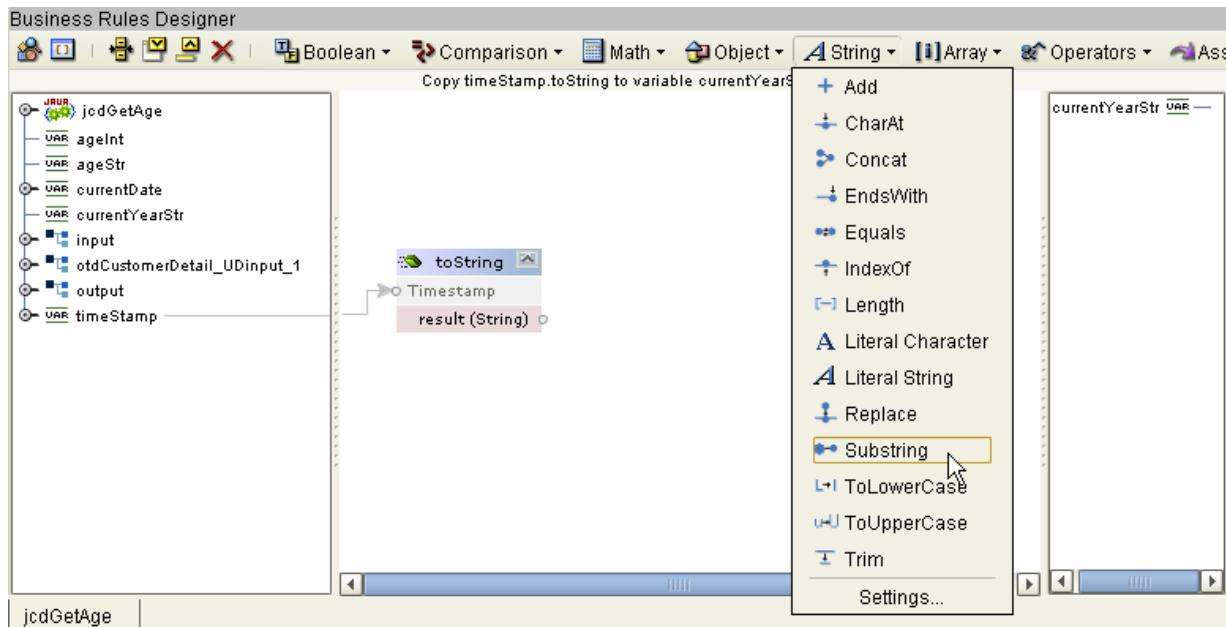
- 1 In the Collaboration Editor, in the **Business Rules** pane's tool palette, click **Local Variable**.
- 2 In the **Create Variable** dialog box, do the following actions:
  - A For **Name**, enter **currentYearStr**.
  - B For **Type**, select **Class**, and then click the ellipsis [...] button to open the **Class Browser** dialog box.
  - C In the **Class Browser** dialog box, search for **String**, select **String()**, and then click **Select**.
  - D Click **OK**.
- 3 In the **Business Rules Designer** pane, drag **timeStamp** from the left pane into the center pane. (Alternatively, you can right-click **timeStamp** and, on the context menu, click **Select Method to Call**.)
 

A method list opens.
- 4 In the list, scroll down to the **toString()** method and double-click it.
 

A method named **toString** appears on the canvas.

- E On the **Business Rules Designer** tool palette, click **String**, and then, from the list, select **Substring**. Figure 71.

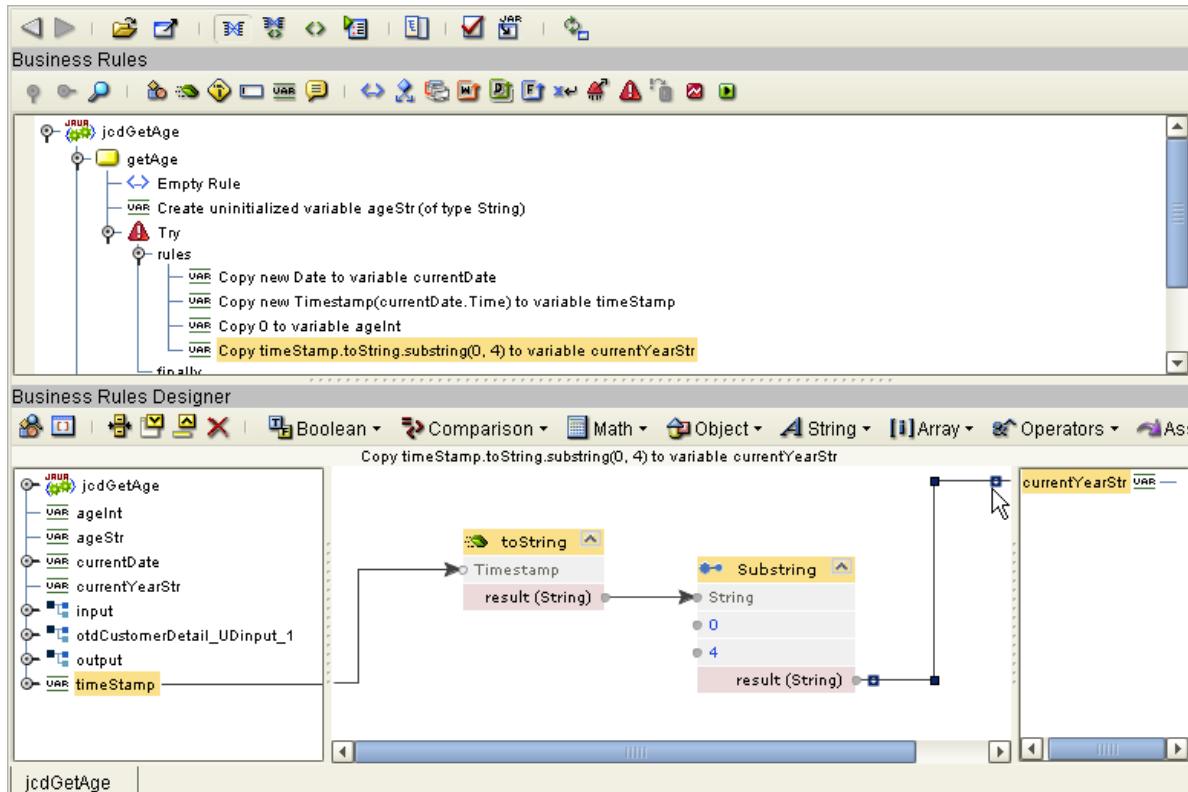
**Figure 71** Selecting Substring from the String List



- 5 From the **toString** operator, drag the output **result(String)** to **String** (the first input of the **Substring** method box).
- 6 For the second input, change **beginIndex(int)** to the value **0** and press **Enter**.
- 7 For the third input, change **endIndex(int)** to the value **4** and press **Enter**.

- 8 From the **Substring** method box, drag the output **result(String)** to **currentYearStr** in the right pane. Figure 72.

**Figure 72** Completed currentYearStr Variable

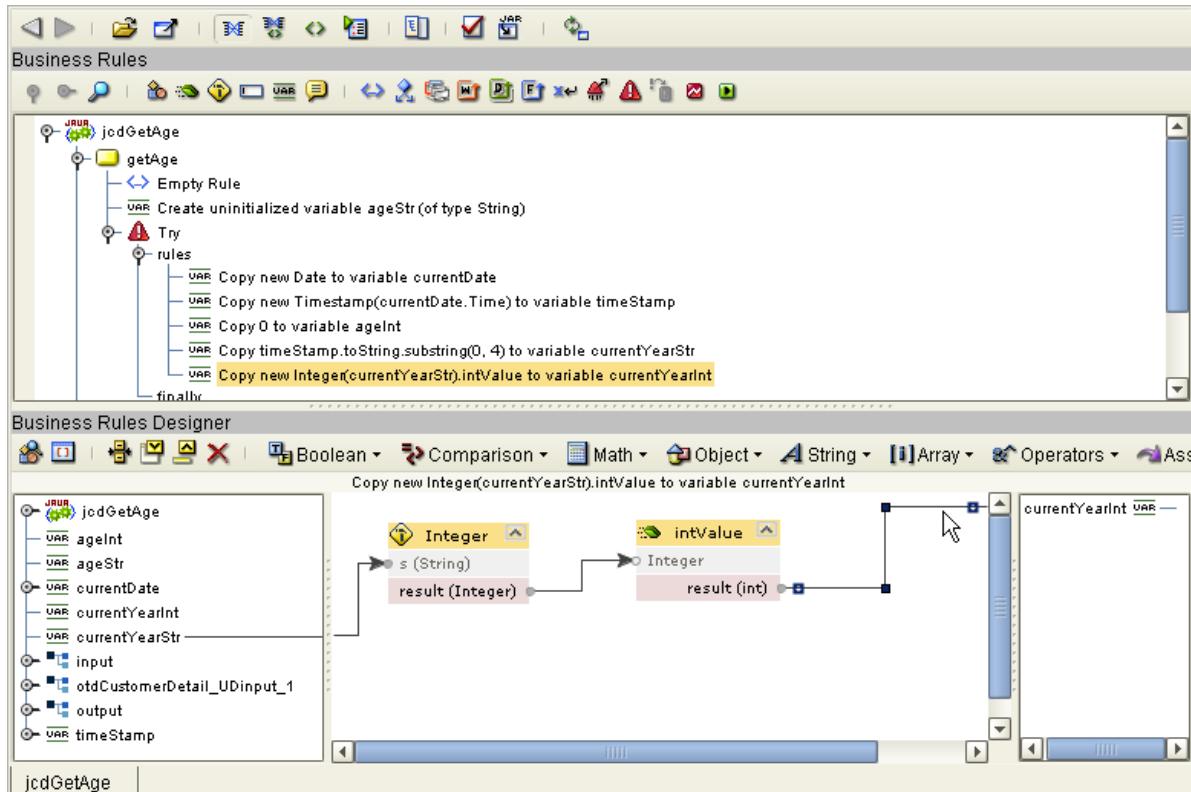


#### To create and use the currentYearInt variable

- 1 In the Collaboration Editor, in the **Business Rules** pane's tool palette, click **Local Variable**.
- 2 In the **Create Variable** dialog box, do the following actions:
  - A For **Name**, enter **currentYearInt**.
  - B For **Type**, keep the default choices: **Primitive** and **int**.
  - C Click **OK**.
- 3 In the **Business Rules Designer** pane, do the following actions:
  - A On the tool palette, click **Class Browser**.
  - B In the **Class Browser** dialog box, search for **Integer**, select the **Integer(String s)** constructor, and then click **Select**.
  - C From the left pane, drag **currentYearStr** to the input **s(String)** of the **Integer** constructor.
  - D From the **Integer** constructor, drag the output **result(Integer)** to an empty place on the canvas, to open the method list.
  - E In the method list, scroll down to the **intValue()** method and double-click it.

- F From the newly created **intValue** method, drag the output **result(Integer)** to **currentYearInt** in the right pane. Figure 73.

**Figure 73** Completed currentYearInt Variable



To import the file **MyDateConverter.jar**

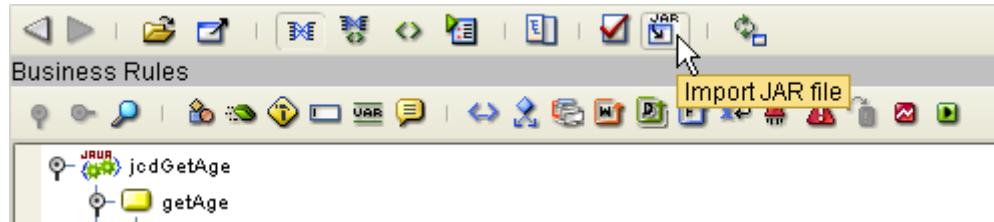
- 1 In the **Project Explorer** tree, right-click the Project **prjCreditScoreClient** to display the context menu and select **Import > File**.
- 2 In the **Import Files** dialog box, do the following actions:
  - A Look in the location where you extracted the sample files.
  - B Expand **Sample > Jars**.
  - C Click **MyDateConverter.jar** and click **Select**.
  - D Click **Import**.

*Result:* The new file appears in the **Project Explorer** tree and can be used in the Collaboration Definition.

### To make MyDateConverter.jar available to the Collaboration Definition

- 1 In the Collaboration Editor, main tool palette, click **Import JAR file**. See Figure 74.

**Figure 74** Import .jar File



- 2 In the **Add/Remove Jar Files** dialog box, click **Add**.
- 3 In the **Select Jar File** dialog box, open **prjCreditScoreClient** and then double-click **MyDateConverter.jar**.
- 4 Back in the **Add/Remove Jar Files** dialog box, click **Close**.

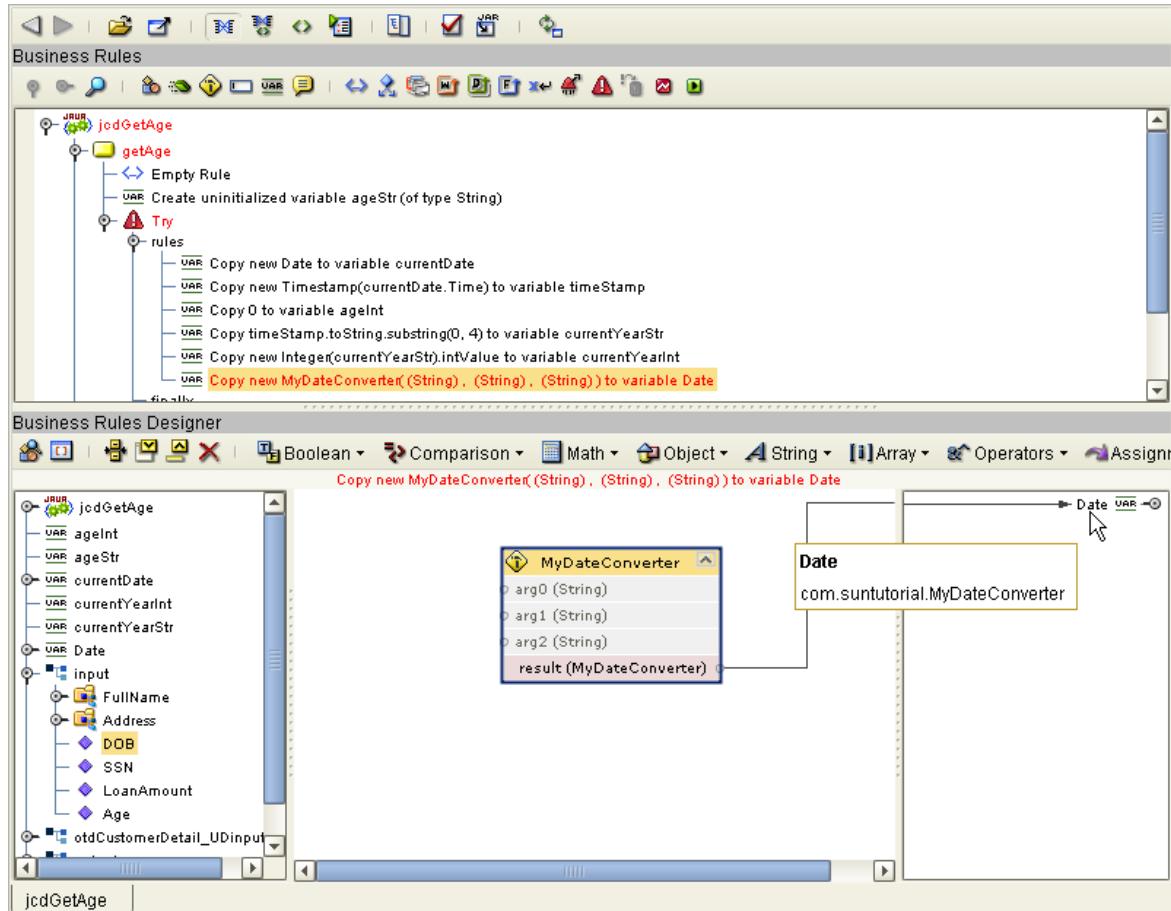
### To create and use the Date variable

- 1 In the Collaboration Editor, in the **Business Rules** pane's tool palette, click **Local Variable**.
- 2 In the **Create Variable** dialog box, do the following actions:
  - A For **Name**, enter **Date**.
  - B For **Type**, select **Class**, and then click the ellipsis [...] button to open the **Class Browser**.
  - C In the **Class Browser** dialog box, search for **MyDateConverter**, select **MyDateConverter(String arg0,...)** constructor—not the class—and then click **Select**.
  - D Click **OK**.
- 3 On the **Business Rules Designer** tool palette, click **Class Browser**.
- 4 In the **Class Browser** dialog box, search for **MyDateConverter**, select the **MyDateConverter(String arg0,...)** constructor, and then click **Select**.

This places the **MyDateConverter** on the design canvas.

- From the method box, drag the output **result(MyDateConverter)** to the **Date** variable in the right pane. See Figure 75.

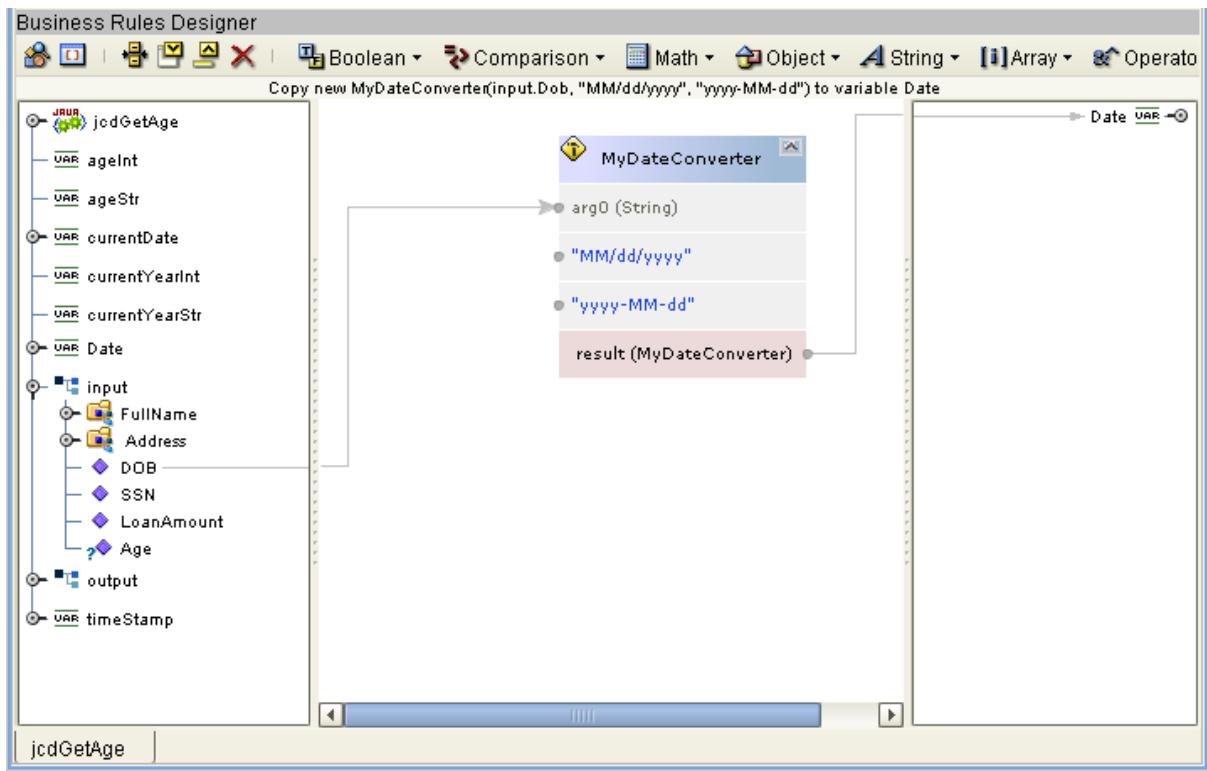
**Figure 75** MyDateConverter(String arg0, ...) Constructor



- In the left pane, expand the **input** node and drag its **DOB** node to the first input **arg0(String)** of the **MyDateConverter** method box.
- For the second input, change **arg1(String)** to the value **MM/dd/yyyy** and press **Enter**.

- 8 For the third input, change **arg2(String)** to the value **yyyy-MM-dd** and press **Enter**. See Figure 76.

**Figure 76** Completed Date Variable

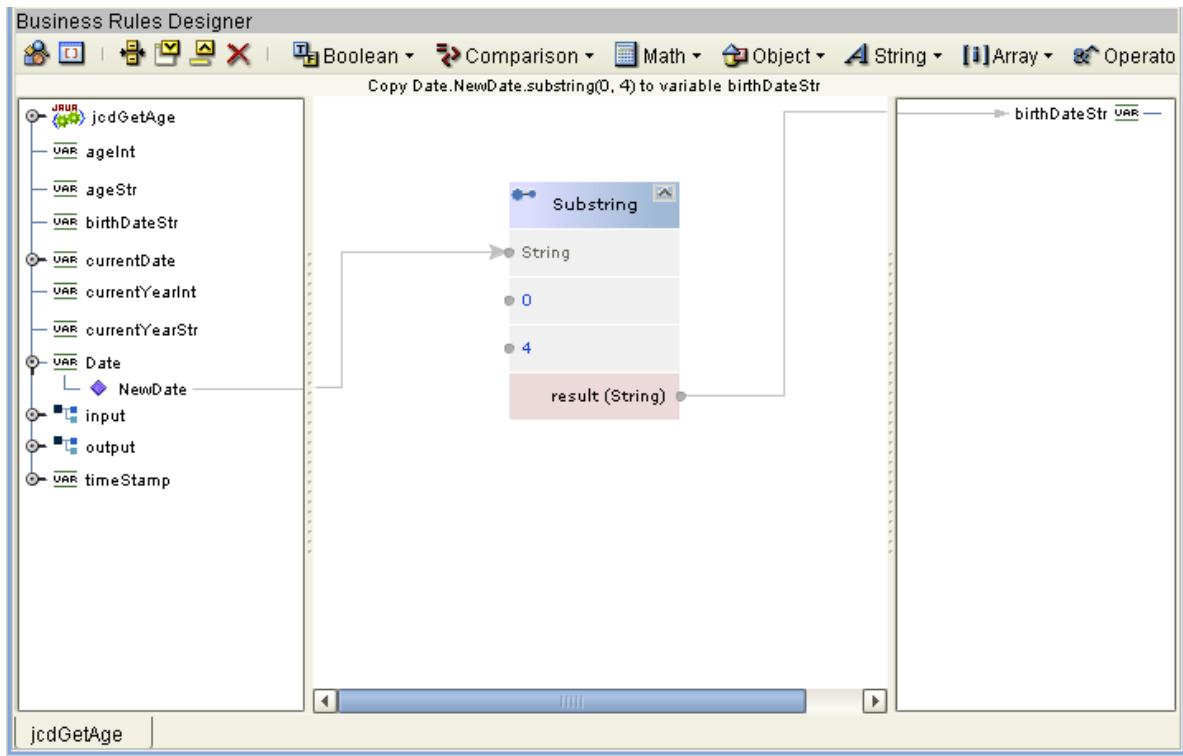


#### To create and use the birthDateStr variable

- 1 In the Collaboration Editor, in the **Business Rules** pane's tool palette, click **Local Variable**.
- 2 In the **Create Variable** dialog box, do the following actions:
  - A For **Name**, enter **birthDateStr**.
  - B For **Type**, select **Class**, and then click the ellipsis [...] button to open the **Class Browser**.
  - C In the **Class Browser** dialog box, search for **String**, select **String()**, and then click **Select**.
  - D Click **OK**.
- 3 On the **Business Rules Designer** tool palette, click **String**, and then, from the list, select **Substring**.
- 4 In the left pane, open **Date** to expose **NewDate**, and drag it onto the first input **String** of the **Substring** method box.
- 5 For the second input, change **beginIndex(int)** to the value **0** and press **Enter**.
- 6 For the third input, change **endIndex(int)** to the value **4** and press **Enter**.

- 7 From the method box, drag the output **result(String)** to **birthDateStr** in the right pane. See Figure 77.

**Figure 77** Completed birthDateStr Variable

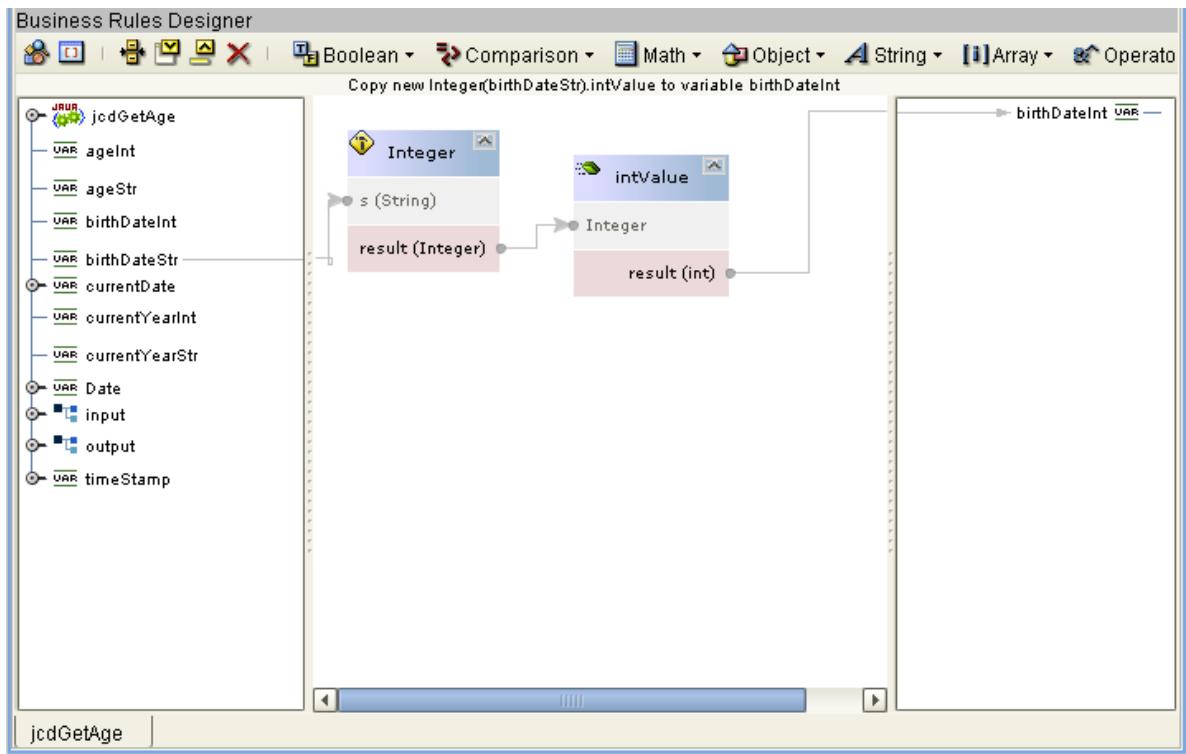


#### To create and use the birthDateInt variable

- 1 In the Collaboration Editor, in the **Business Rules** pane's tool palette, click **Local Variable**.
- 2 In the **Create Variable** dialog box, do the following actions:
  - A For **Name**, enter **birthDateInt**.
  - B For **Type**, keep the default choices: **Primitive** and **int**.
  - C Click **OK**.
- 3 In the **Business Rules Designer** pane, do the following actions:
  - A On the tool palette, click **Class Browser**.
  - B In the **Class Browser** dialog box, search for **Integer**, select the **Integer(String s)** constructor, and then click **Select**.
  - C From the left pane, drag **birthDateStr** to the input **s(String)** of the **Integer** constructor.
  - D From the **Integer** constructor, drag the output **result(Integer)** to an empty place on the canvas, to open the method list.
  - E In the method list, scroll down the **intValue()** method and double-click it.

- F From the newly created **intValue** method, drag the output **result(Integer)** to **birthDateInt** in the right pane. See the following figure.

**Figure 78** Linking birthDateStr to s(String)

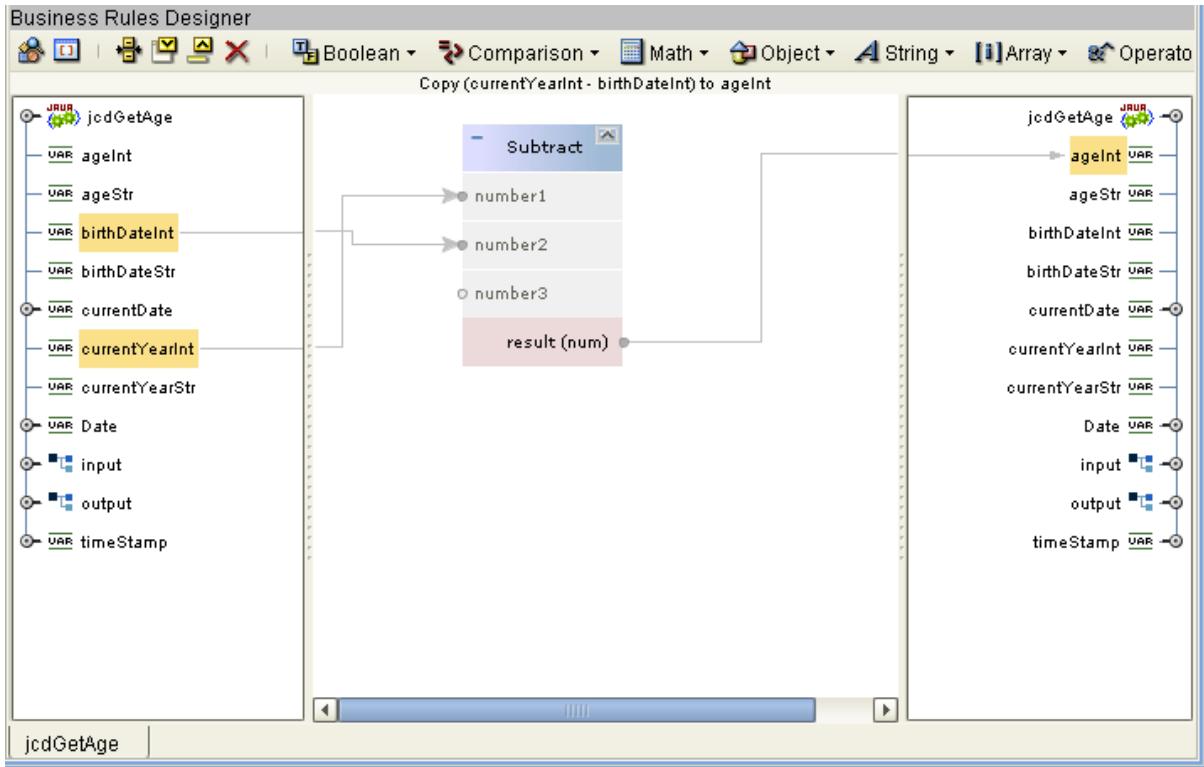


To calculate age

- 1 In the Collaboration Editor, **Business Rules Designer** tool palette, click **Math**, and then, from the list, select **Subtract**.
- 2 From the left pane, drag **currentYearInt** onto **number1** (the first input of the **Subtract** method box).
- 3 From the left pane, drag **birthDateInt** onto **number2** (the second input of the method box).

- From the **Subtract** operator, drag the output **result(num)** to **ageInt** in the right pane. See Figure 79.

**Figure 79** Mapping result(num) to ageInt

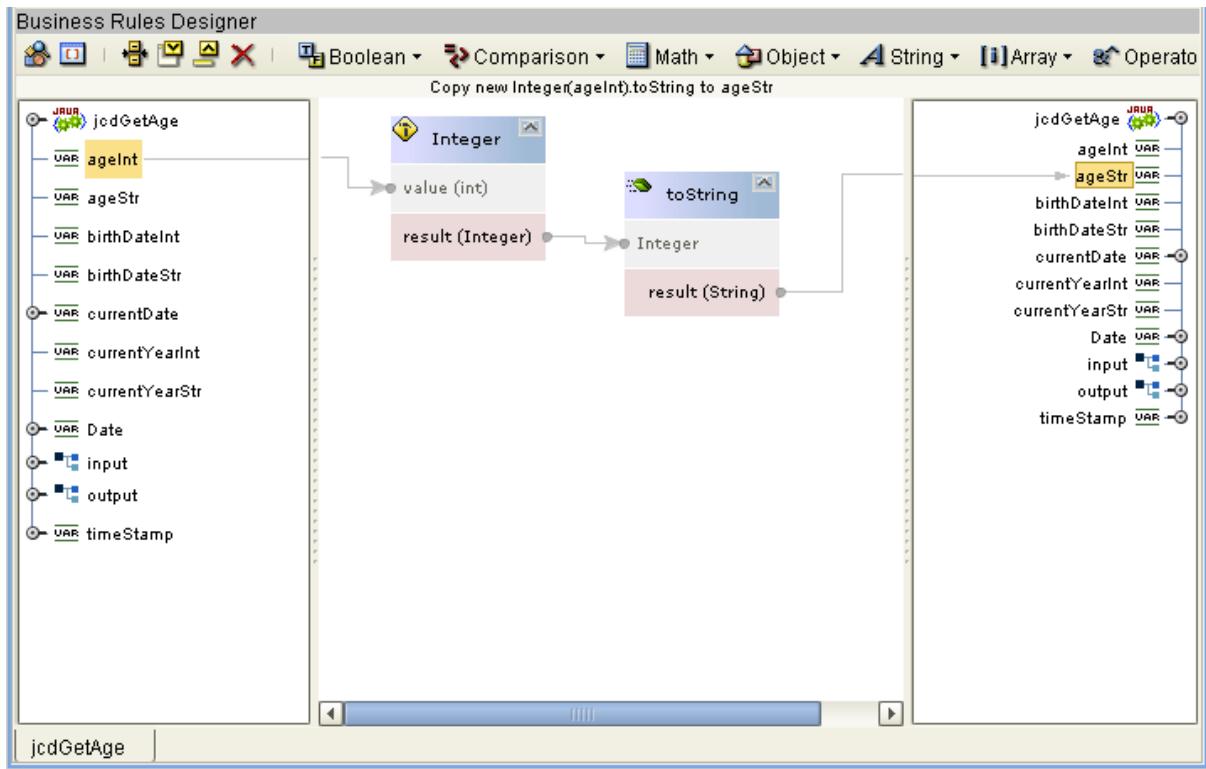


To convert age from integer to string

- In the Collaboration Editor, **Business Rules Designer** pane, click **Class Browser**.
- In the **Class Browser** dialog box, search for **Integer**, select the **Integer(int value)** constructor, and then click **Select**.
- From the **Integer** constructor, drag the output **result(Integer)** to an empty space on the canvas to open the method list.
- In the method list, scroll down to the **toString()** method and double-click it.
- From the left pane, drag **ageInt** onto **value(int)**, the input of the **Integer** constructor.

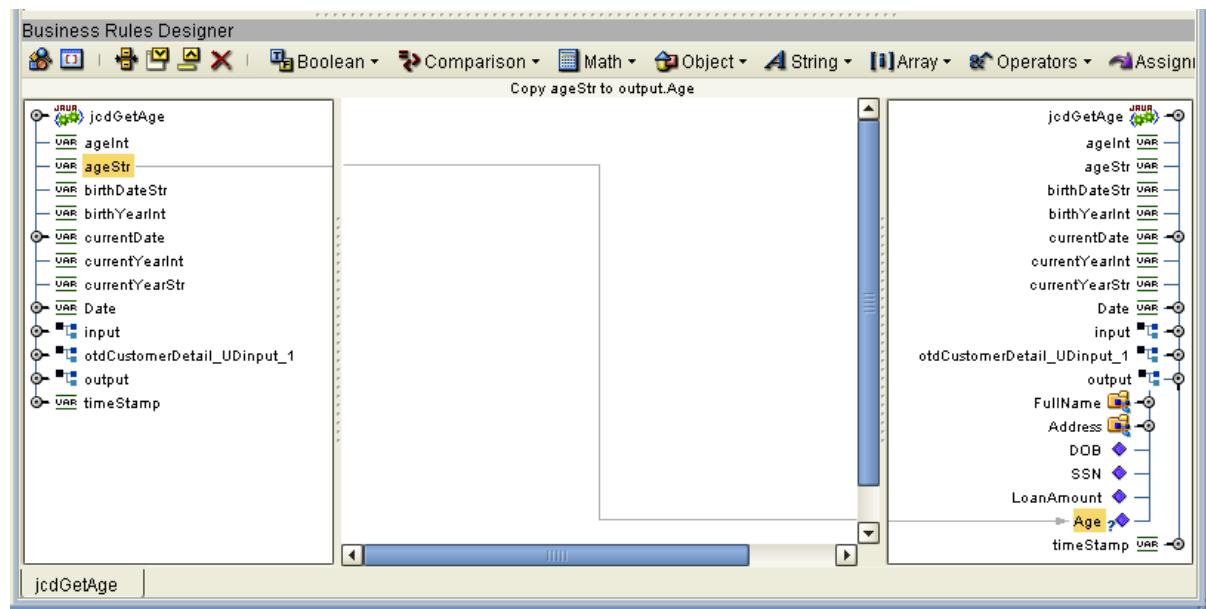
- 6 From the **toString** method box, drag the output **result(String)** to the **ageStr** variable in the right pane. See Figure 80.

**Figure 80** Mapping result(String) to String



- 7 Connect the **ageStr** node to the **Age** node as shown in the following figure.

**Figure 81** Age String to Age Output



### To complete the mappings

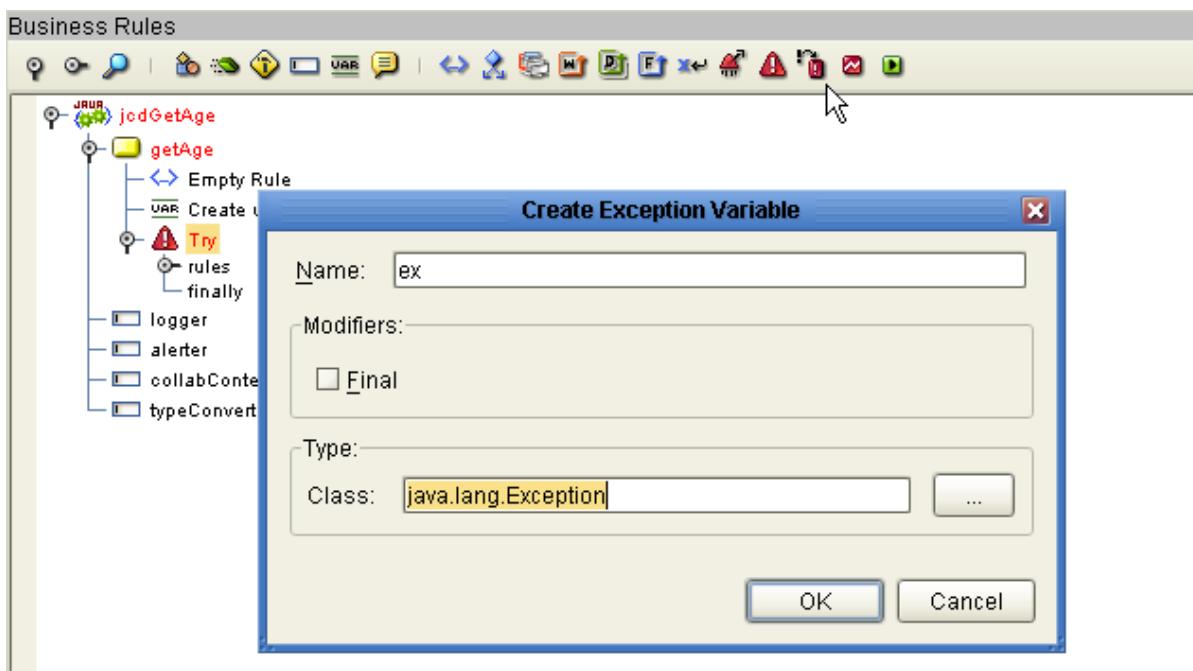
- 1 In the Collaboration Editor, **Business Rules Designer**, left pane, expand **input > FullName** to expose its two subnodes, **FirstName** and **LastName**.
- 2 In the right pane, expand **output > FullName** to expose its two subnodes, **FirstName** and **LastName**.
- 3 In the left pane, expand **input > Address** to expose its three subnodes (**Street**, **CityState**, and **Zip**).
- 4 In the right pane, expand **output > Address** to expose its three subnodes (**Street**, **CityState**, and **Zip**).
- 5 From the input (left) pane, drag each of the following nodes to the corresponding node in the output (right) pane:
  - ♦ **FirstName** to **FirstName**
  - ♦ **LastName** to **LastName**
  - ♦ **Street** to **Street**
  - ♦ **CityState** to **CityState**
  - ♦ **Zip** to **Zip**
  - ♦ **DOB** to **DOB**
  - ♦ **SSN** to **SSN**
  - ♦ **LoanAmount** to **LoanAmount**

### To add an exception variable

- 1 In the Collaboration Editor, **Business Rules** pane, click the **Try** node.
- 2 On the **Business Rules** tool palette, click **Catch**.

The **Create Exception Variable** dialog box appears. See Figure 82.

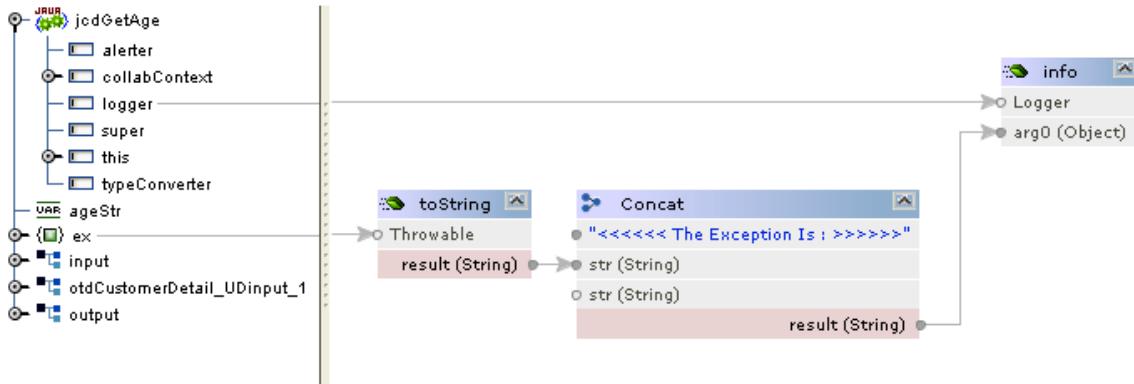
**Figure 82** Create Exception Variable Dialog Box



- 3 In the **Create Exception Variable** dialog box, do the following actions:
  - A For **Name**, enter **ex**.
  - B For **Type**, select **Class**, click the ellipsis ([...]) button to open the **Class Browser**.
  - C In the **Class Browser**, search for **Exception**, select an **Exception** constructor, and then click **Select**.
  - D Back in the **Create Exception Variable** dialog box (see [Figure 82 on page 95](#)), click **OK**.
- 4 In the **Business Rules Designer**, left pane, expand **jcdGetAge** to expose its subnodes.
- 5 From the left pane, drag **logger** to an empty place on the canvas, to open the method list.
- 6 In the method list, scroll down the **info(Object arg0)** method and double-click it.
- 7 From the left pane, drag **ex** to an empty place on the canvas, to open the method list.
- 8 In the method list, scroll down to the **toString()** method and double-click it.
- 9 On the tool palette, click **String**, and then, from the list, select **Concat**.
- 10 If necessary, move the **Concat** operator on the canvas so it does not obstruct the methods.
- 11 In the **Concat** operator, change **String** (the first input) to <<<<< The **Exception** is : >>>>>.
- 12 From the **toString** method, drag **result(String)** onto **str(String)**, the second input of the **Concat** operator.

- 13 From the **Concat** operator, drag **result(String)** onto **arg0(Object)**, the second input of the **info** method. See Figure 83.

**Figure 83** Mapping result(String) to arg0(Object)



- 14 Save your work (on the **File** menu or main toolbar, click **Save All**), and then close the Collaboration Editor.

*Result:* You have configured the Collaboration Definition's Business Rules. In a later procedure, you use its **getAge** operation in a Business Process.

### 3.3.5 Creating and Configuring the Client Business Process

In this section, you create and configure a Business Process for the client Project, named **bpCreditScoreResult**. You then configure it to invoke Web Service Operation (in other words, uses **Operation** in the client mode).

#### To import the server wsdl into the client Project

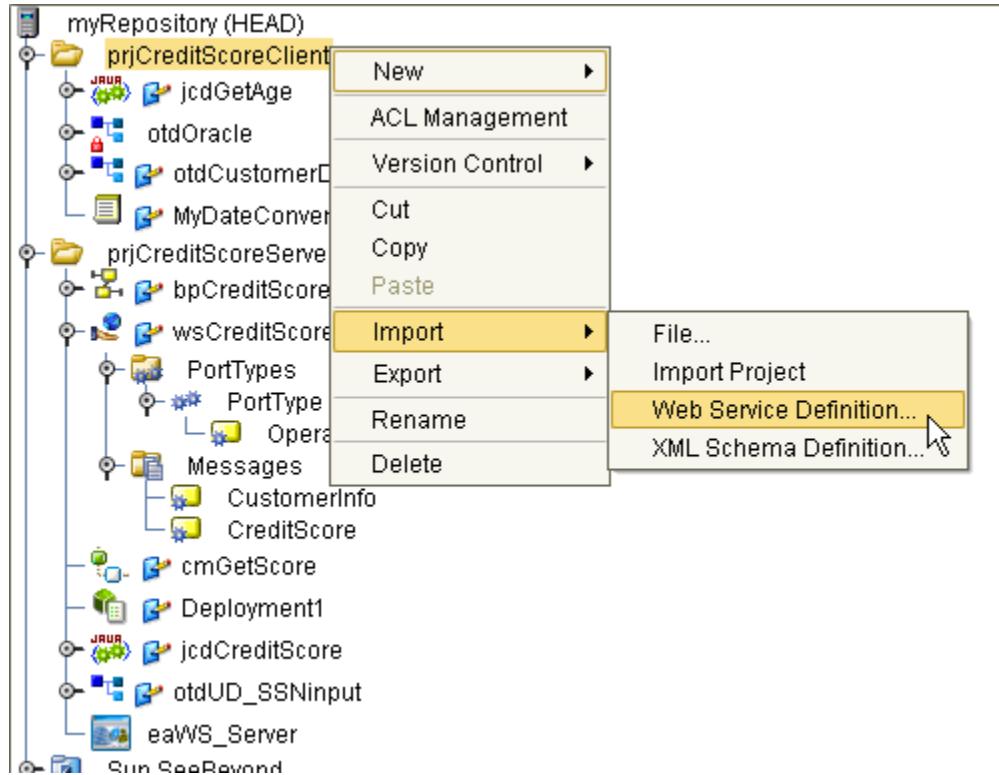
- 1 Use Windows Explorer to navigate to the location where you previously exported the file **wsdls.jar** (such as C :\JavaCAPS51\).
- 2 Double-click or right mouse click to open **wsdls.jar** and extract the **wsCreditScore.wsdl** file to the same location, preserving file paths.

In the folder hierarchy, the **.wsdl** file is added to the **bpCreditScore** folder:

```
C:\JavaCAPS51\envCreditScore\prjCreditScoreServer\bpCreditScore\
wsCreditScore.wsdl
```

- 3 In Enterprise Designer, **Project Explorer**, right-click the client Project **prjCreditScoreClient** to display the context menu and select **Import > Web Service Definition**. See the following figure.

**Figure 84** Importing the Web Service Definition

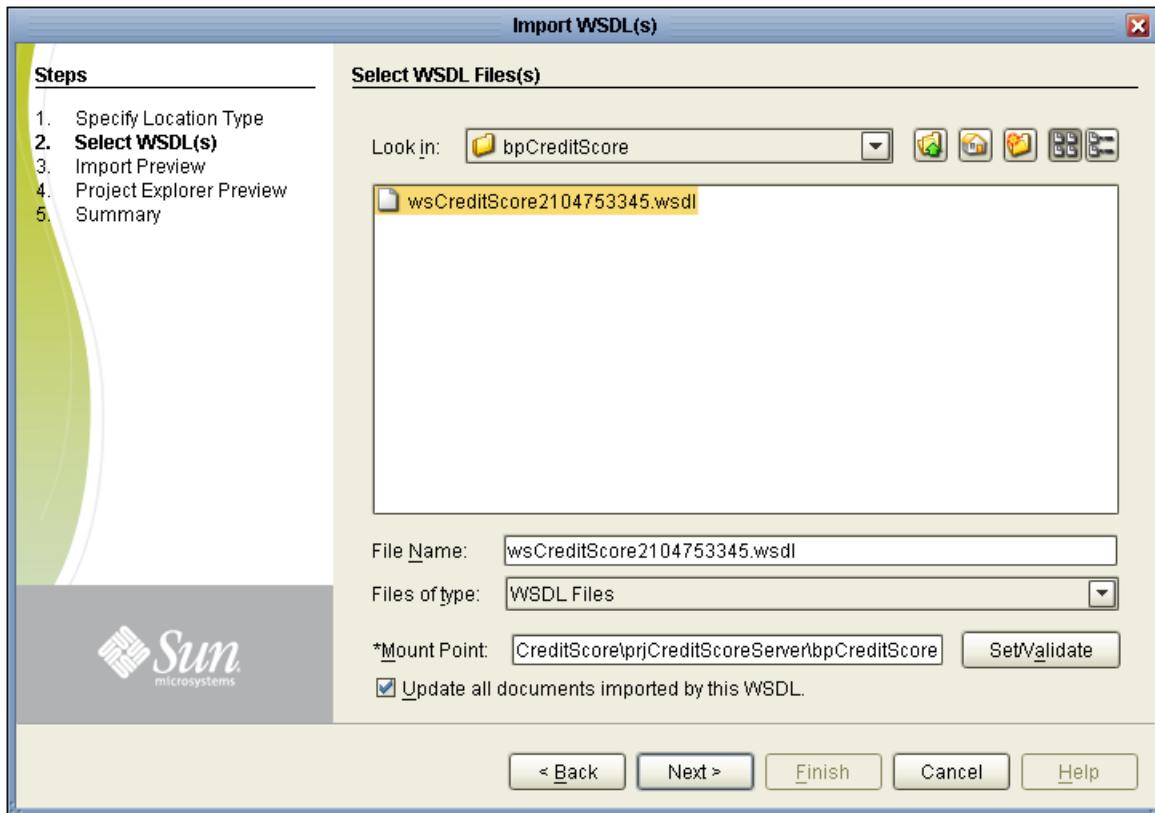


The **Import WSDL(s)** wizard appears.

- 4 For **Specify Location Type**: Retain the default choice, File System, and click **Next**.
- 5 For **Select WSDL(s)**: Look in the location where you extracted the **wsdl.jar**. See Figure 85. As needed, navigate to the correct path location; for example:

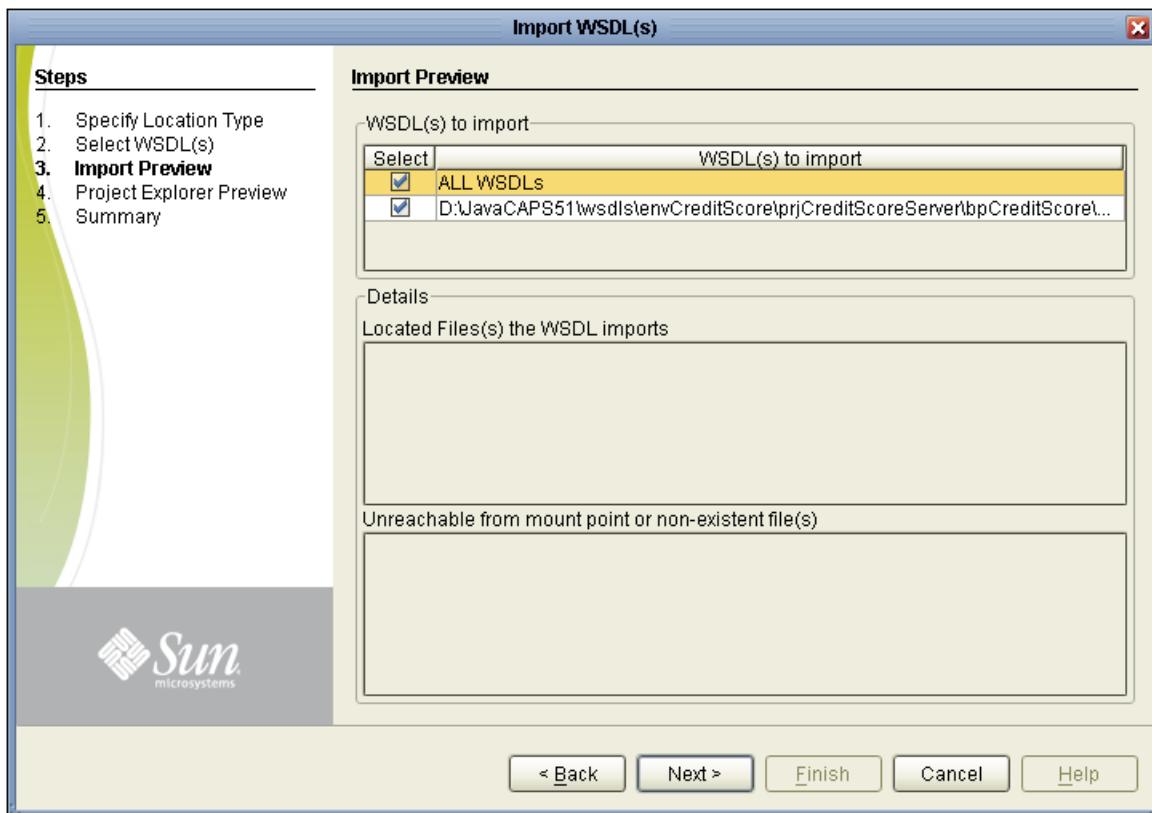
C:\JavaCAPS51\envCreditScore\prjCreditScoreServer\bpCreditScore\

**Figure 85** Selecting the WSDL File



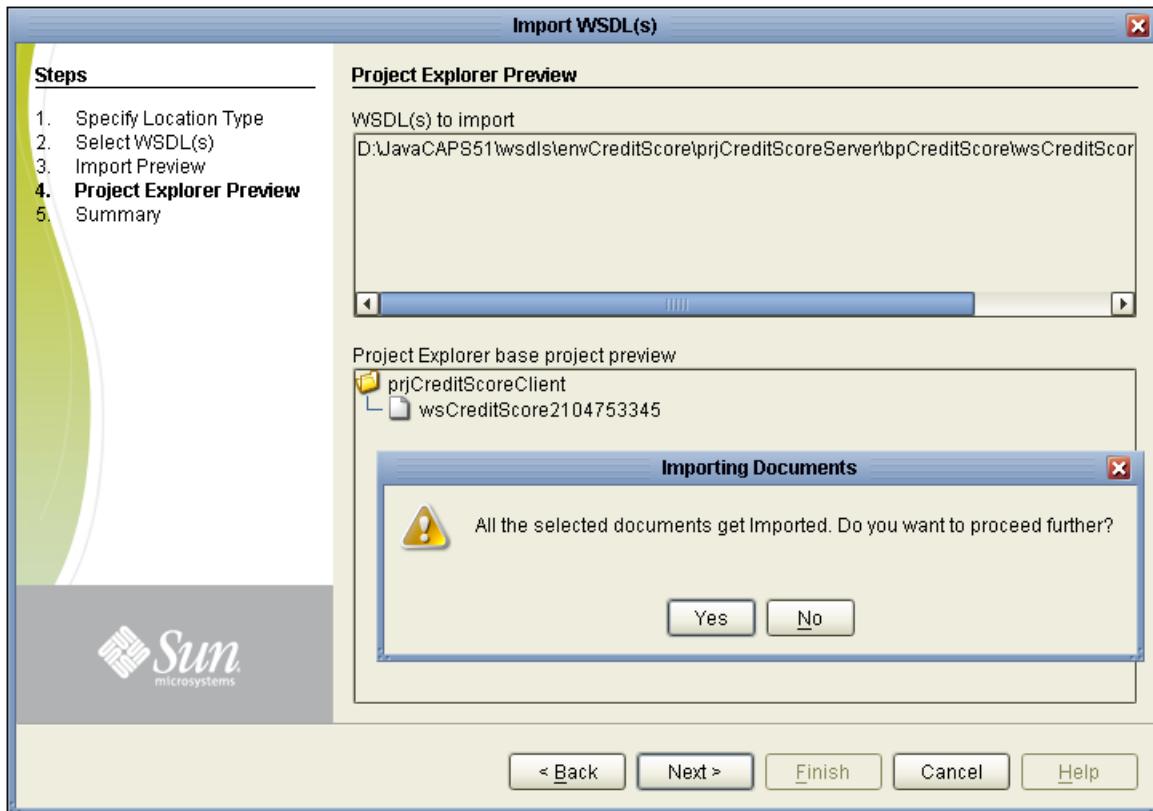
**6 Import Preview:** Accept the defaults and click **Next**.

**Figure 86 Import Preview**



**7 Project Explorer Preview:** Accept the defaults and click **Next**. Then, in response to the message box, click **Yes**. See the following figure.

**Figure 87** Previewing the WSDL Import



**8 Summary:** Click **Finish**.

To create the client Business Process

- 1 In the Enterprise Designer's **Project Explorer** tree, right-click the Project **prjCreditScoreClient** to display the context menu and select **New > Business Process**.

The new Business Process appears in the **Project Explorer** tree. The eInsight Business Process Designer opens.

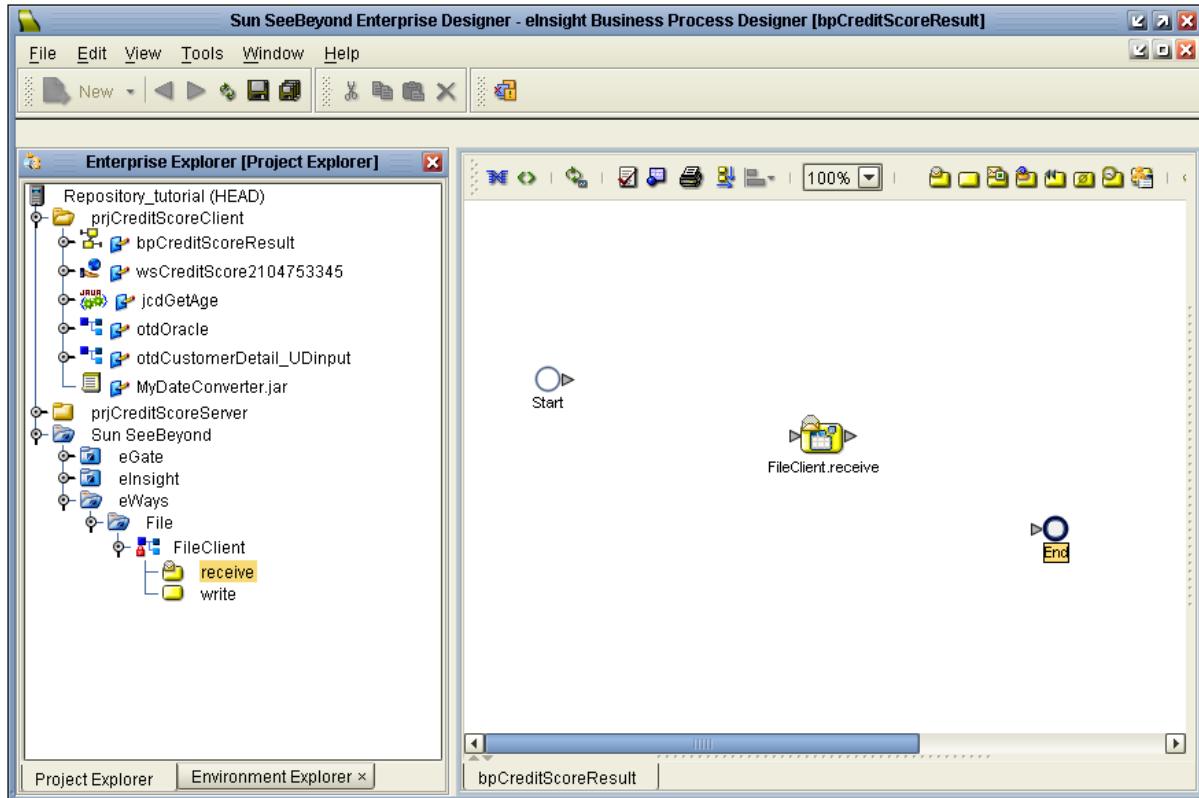
- 2 In the **Project Explorer** tree, rename the new component **bpCreditScoreResult** and press **Enter**.

To add and connect activities in the client Business Process: before branch

- 1 In the **Project Explorer** tree, expand **Sun SeeBeyond > eWays > File > FileClient** to expose **receive**.

- 2 From the **Project Explorer** tree, drag the **receive** operation onto the **Business Process Designer** canvas. See Figure 88.

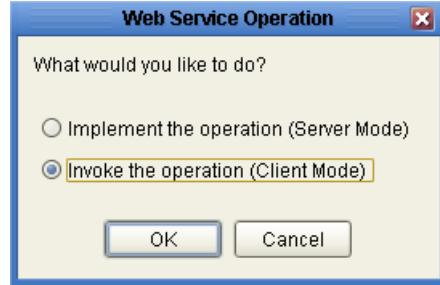
**Figure 88** Business Process Designer Canvas: receive Operation



- 3 Expand **otdCustomerDetail\_UDinput** and then drag its **unmarshal** operation onto the canvas to the right of **receive**.
- 4 Expand **jcdGetAge** and then drag its **getAge** operation onto the canvas to the right of **unmarshal**.
- 5 Expand **wsCreditScore > PortTypes > PortType** and then drag its **Operation** onto the canvas to the right of **getAge**.

- 6 In response to the **Web Service Operation** message box (see Figure 89) click **Invoke the operation (Client Mode)** and then click **OK**.

**Figure 89** Web Service Operation Message Box

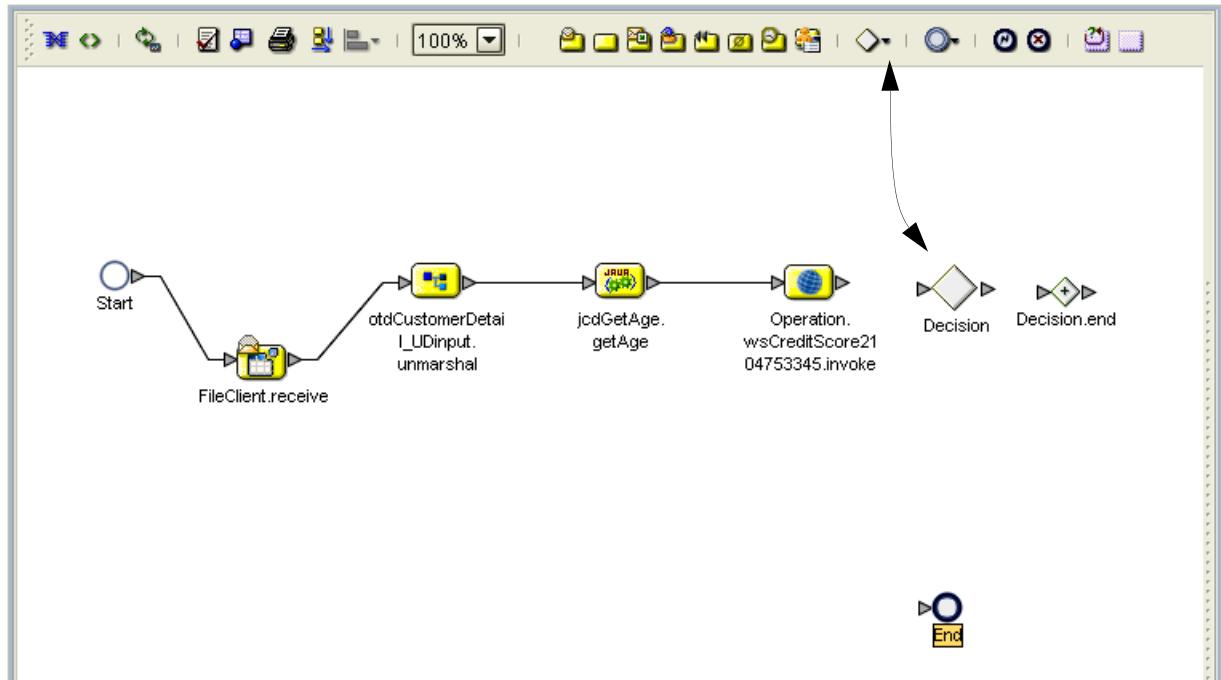


- 7 Connect **Start** to **receive**, **receive** to **unmarshal**, **unmarshal** to **getAge**, and **getAge** to **invoke**.

To add and connect activities in the client Business Process: with branch

- 1 In the eInsight Business Process Designer toolbar, click **Branching Activities** to open its drop-down menu, and then drag the menu item **Decision** onto the canvas. See the following figure.

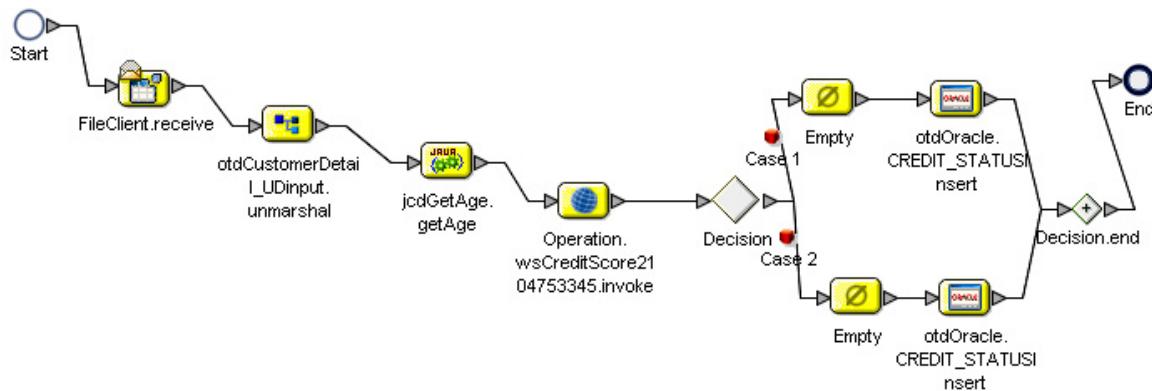
**Figure 90** Decision Branching Activity



- 2 From the **Project Explorer** tree, open **otdOracle**.
- 3 Drag one instance of its **CREDIT\_STATUSInsert** operation to the upper right of the canvas.

- 4 Drag another instance of its **CREDIT\_STATUSInsert** operation to the lower right of the canvas.
- 5 From the eInsight Business Process Designer toolbar, drag an instance of **Empty** onto the canvas to the left of one of the **Insert** activities.
- 6 Then, drag another instance of instance of **Empty** onto the canvas, to the left of the other **Insert** activity.
- 7 Connect all remaining activities as shown in Figure 91.

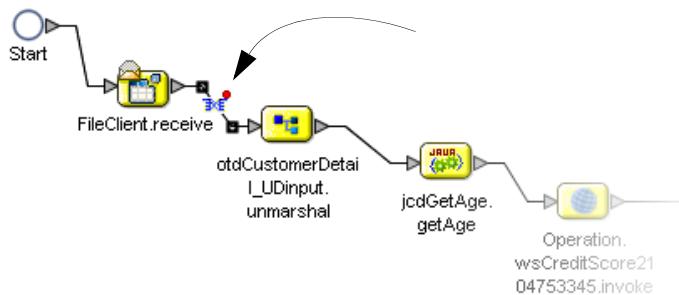
**Figure 91** Connecting All Remaining Activities



To add a Business Rule: receive to unmarshal

- 1 In the eInsight Business Process Designer, right-click the link from **receive** to **unmarshal** and, on the context menu, choose **Add Business Rule**.

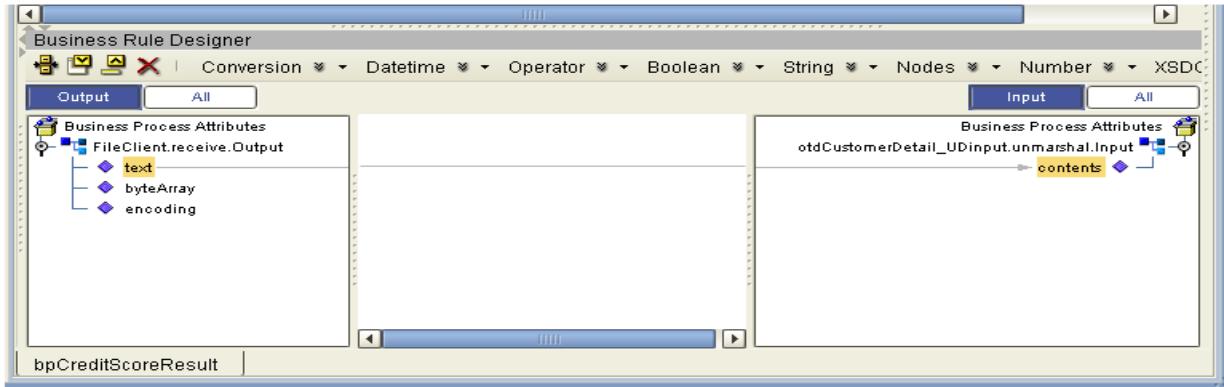
**Figure 92** Add Business Rule



- 2 A **Business Rule** (blue icon) is added to the connection.

- 3 Double-click the **Business Rule** to open the **Business Rule Designer**.
- 4 In the **Business Rule Designer**, left pane, open ....receive.Output to expose its three nodes.
- 5 In the **Business Rule Designer**, right pane, open ....unmarshal.Input to expose its contents.
- 6 From the left pane, drag **text** onto **contents** in the right pane. See Figure 93.

**Figure 93** Business Rule: receive to unmarshal

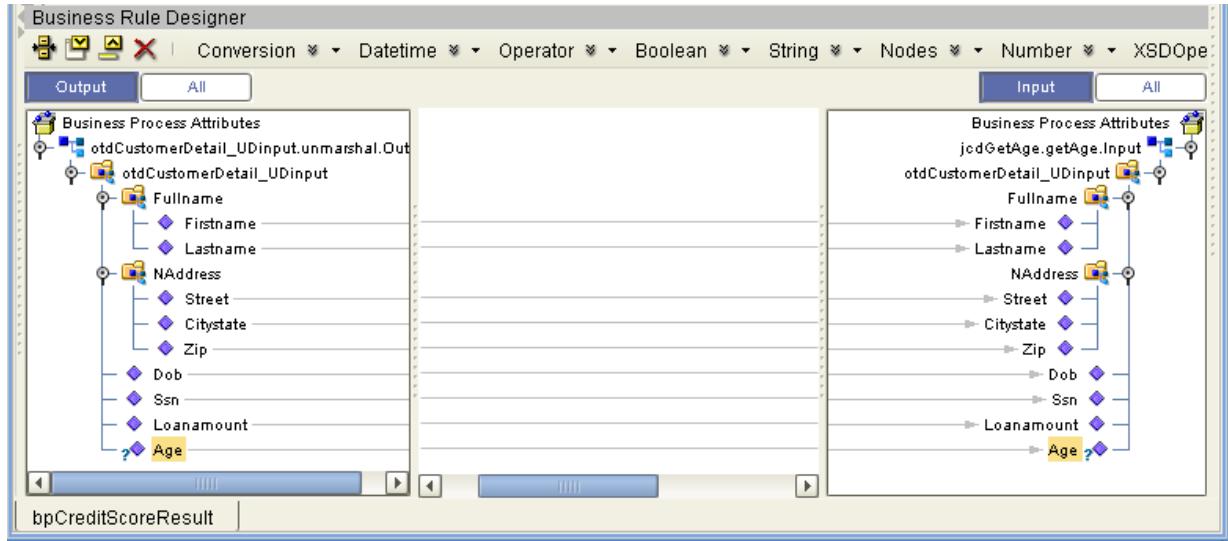


#### To add a Business Rule: unmarshal to getAge

- 1 In the eInsight Business Process Designer, right-click the link from **unmarshal** to **getAge** to display the context menu and select **Add Business Rule**.
- 2 In the **Business Rule Designer**, left pane, open all the sub-nodes of ....unmarshal.Output.
- 3 In the Business Rule Designer, right pane, open all the sub-nodes of ....getAge.Input.
- 4 From the **Output** (left) pane, drag each of the following nodes to the corresponding node in the **Input** (right) pane.
  - ♦ **FirstName** to **FirstName**
  - ♦ **LastName** to **LastName**
  - ♦ **Street** to **Street**
  - ♦ **CityState** to **CityState**
  - ♦ **Zip** to **Zip**
  - ♦ **DOB** to **DOB**
  - ♦ **SSN** to **SSN**
  - ♦ **LoanAmount** to **LoanAmount**
  - ♦ **Age** to **Age**

See the following figure.

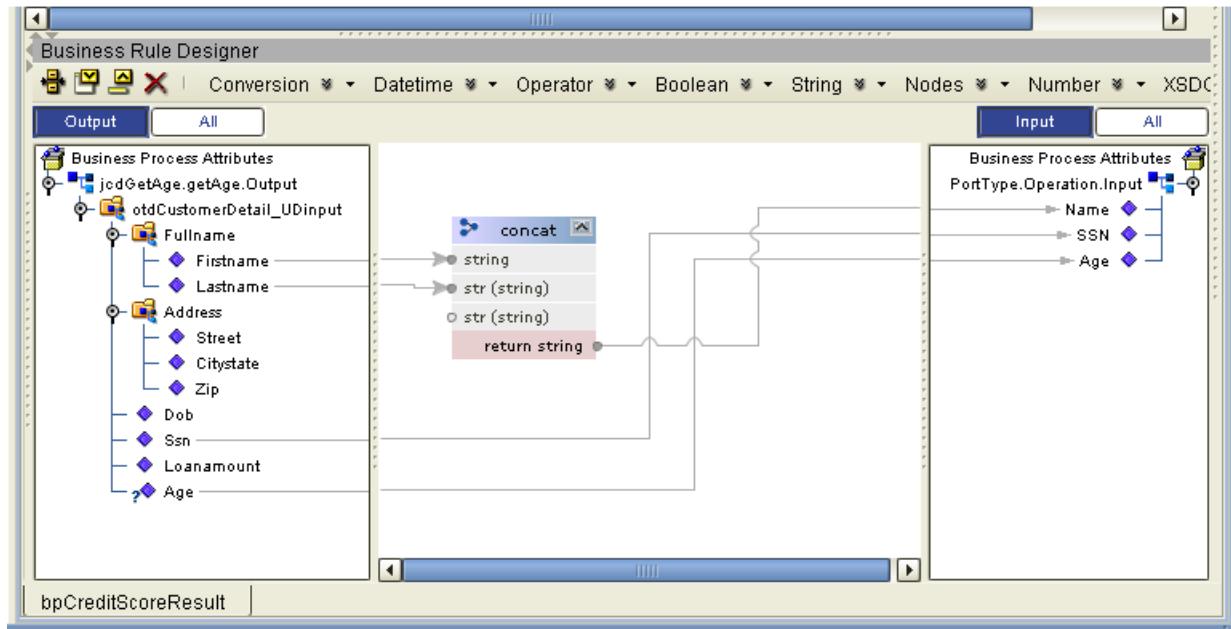
**Figure 94** Business Rule: unmarshal to getAge



To add a Business Rule: **getAge** to invoke

- 1 In the eInsight Business Process Designer, right-click the link from **getAge** to **invoke** and, on the context menu, choose **Add Business Rule**.
- 2 In the **Business Rule Designer**, left pane, open all the sub-nodes of ....**getAge.Output**.
- 3 In the **Business Rule Designer**, right pane, open all the sub-nodes of ....**Operation.Input**.
- 4 Click the **String** button, and from the drop-down menu, select **Concat**.
- 5 Connect the nodes as shown in Figure 95.

**Figure 95** Business Rule: getAge to invoke

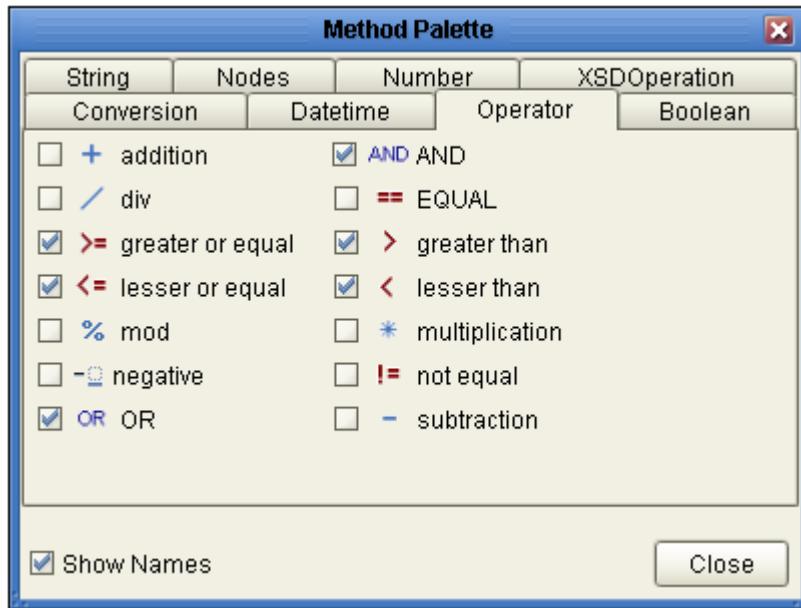


#### To add a Business Rule: Decision Case 1

- 1 In the eInsight Business Process Designer canvas, double-click **Case 1** to open the **Decision Gate Properties** dialog box.
- 2 In its left pane, open **PortType.Operation.Output** and click its **Score** node.
- 3 On the tool palette, click **Operator** and click the menu item **Settings** to open the Method Palette.
- 4 In the Method Palette, select only the check boxes for the following operations:
  - ♦  $\geq$  greater or equal
  - ♦  $\leq$  lesser or equal
  - ♦  $>$  greater than
  - ♦  $<$  lesser than
  - ♦ OR
  - ♦ AND

For an illustration of the Method Palette (**Operator**), see Figure 96.

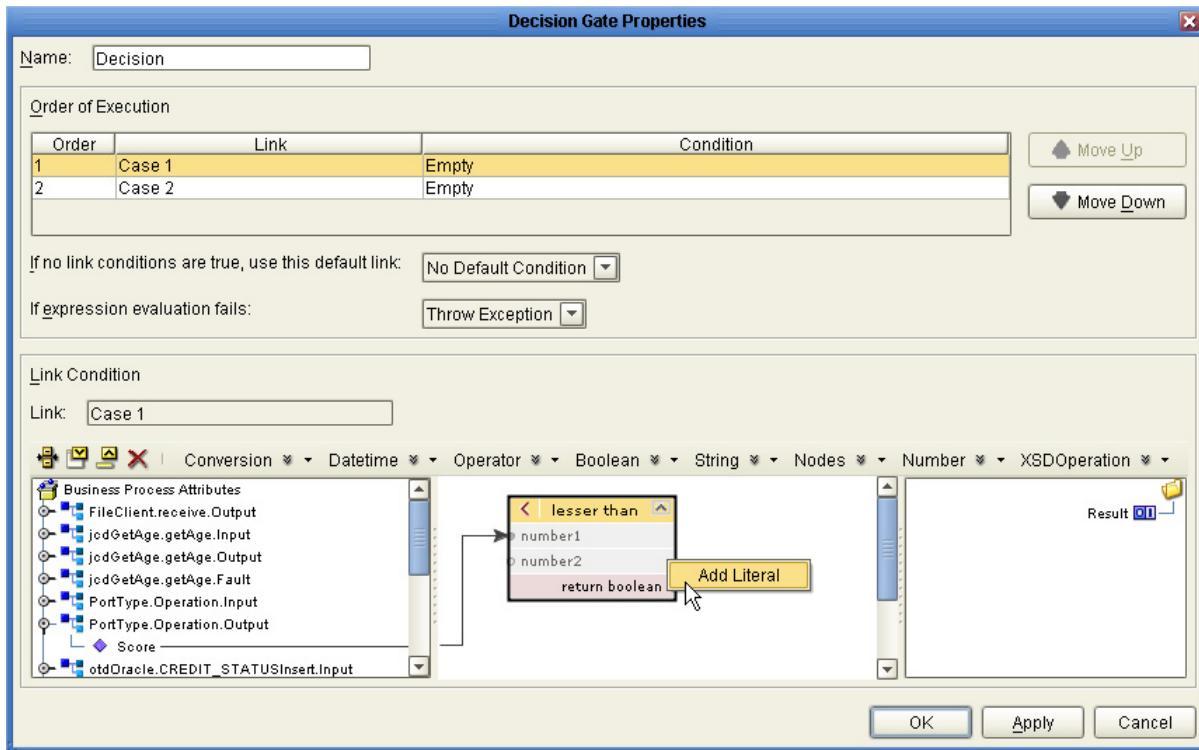
**Figure 96** Method Palette: Operator



- 5 When you have completed your selections in the Method Palette (see Figure 96), click **Close**.
- 6 On the tool palette, click **Operator** and drag the menu item **lesser than** onto the canvas.
- 7 From the left pane, drag **Score** onto **number1** (the first input of the **lesser than** method), and reply **Yes** to convert the datatype.

- 8 Right-click **number2** (the second input of the **lesser than** method) and, on the context menu, click **Add Literal**. See Figure 97.

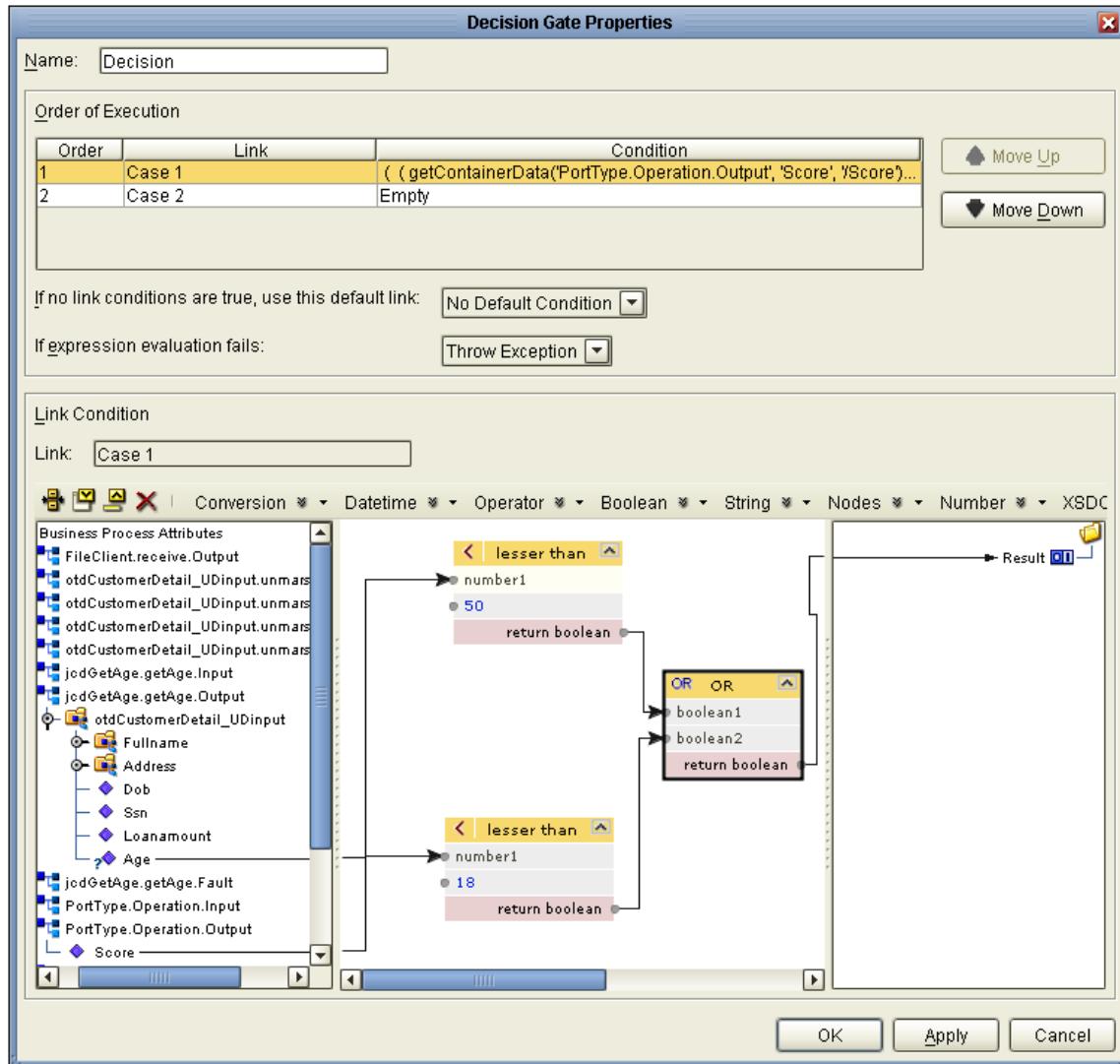
**Figure 97** Choosing Add Literal for Decision Case 1



- 9 Enter the value **50** and then press **Enter**.
- 10 On the tool palette, click **Operator** and drag menu item **lesser than** onto the canvas.
- 11 From the left pane, drag **Age** (from ....getAge.Output) onto **number1** (the first input of the **lesser than** method), and reply **Yes** to convert the datatype.
- 12 Right-click **number2** (the second input of the **lesser than** method) and, on the context menu, click **Add Literal**.
- 13 Enter the value **18** and then press **Enter**.
- 14 On the tool palette, click **Operator** and drag menu item **OR** onto the canvas.

- 15 From each of the two **lesser than** methods, drag the output **return boolean** onto the inputs **boolean1** and **boolean2** of the **OR** method.
- 16 From the **OR** method, drag the output **return boolean** onto **Result** in the right pane.

**Figure 98** Business Rule: Decision Case 1



- 17 Click to select the **Case2** field.

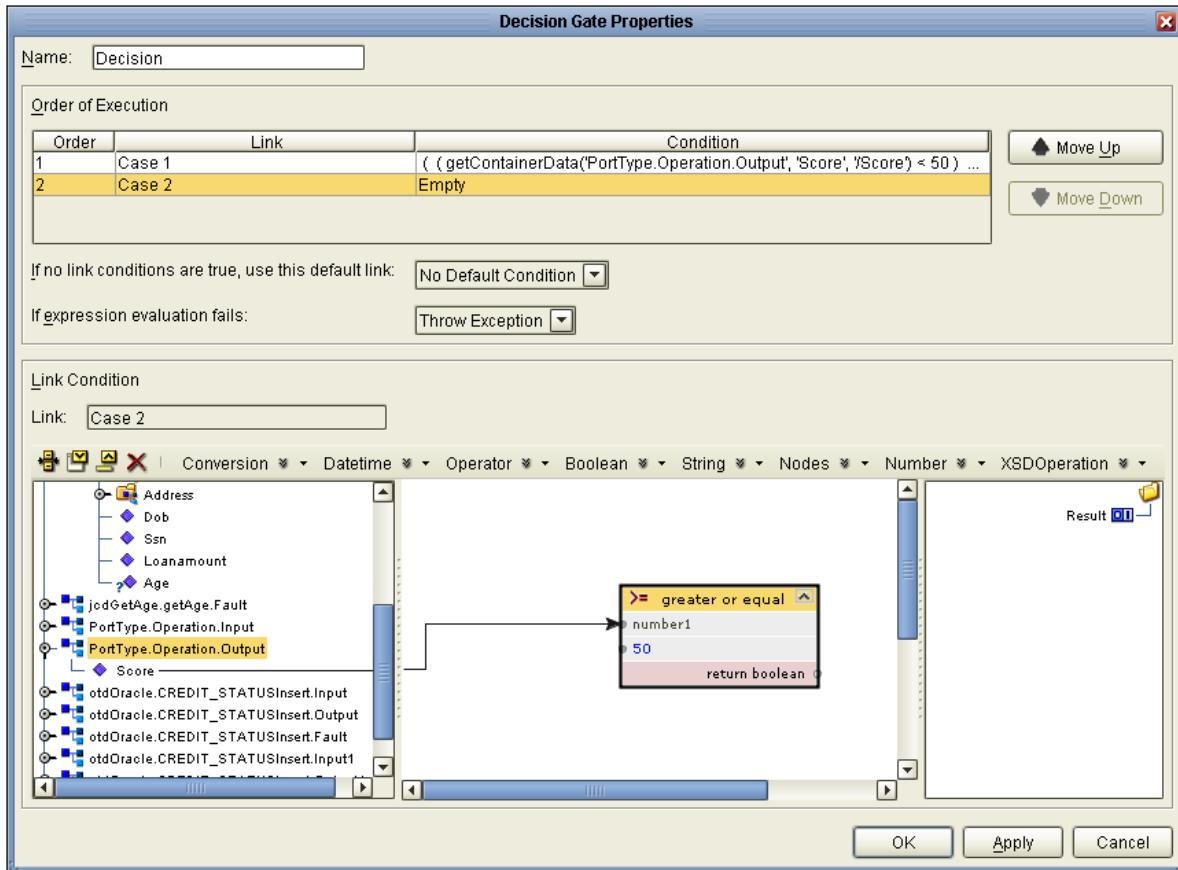
The **Decision Gate Properties** window correctly indicates that **Case 2** is currently **Empty**.

#### To add a Business Rule: Decision Case 2

- 18 On the Decision Gate tool palette, click **Operator** and drag the menu item **greater or equal** onto the canvas.
- 19 From the left pane, drag PortType.Operation.Output, **Score** onto **number1** (the first input of the **greater or equal** method), and reply **Yes** to convert the **datatype**.

- 20 Right-click **number2** (the second input of the **greater or equal** method) and, on the context menu, click **Add Literal**.
- 21 Enter the value **50** and then press **Enter**. See Figure 99.

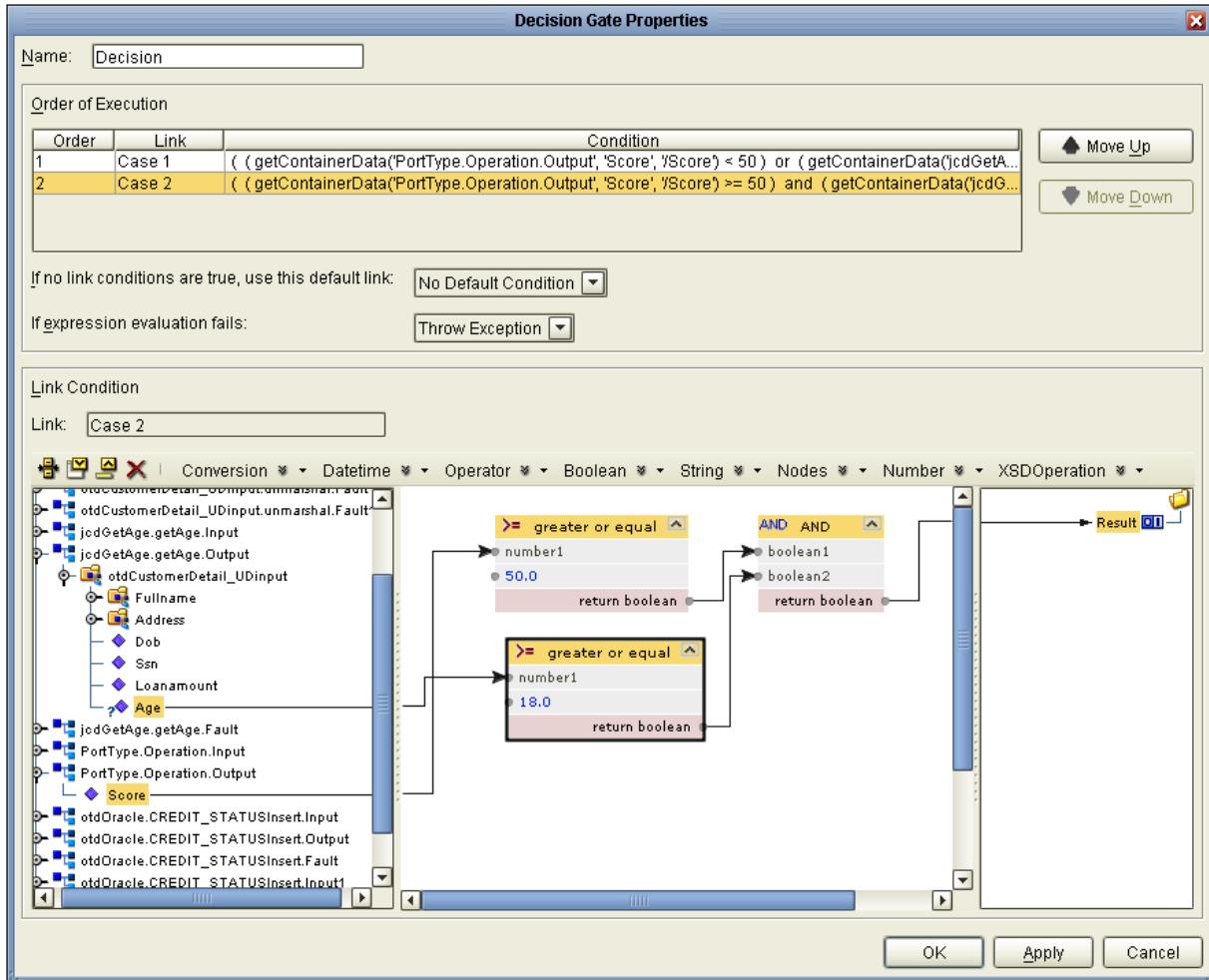
**Figure 99** Choosing Add Literal for Decision Case 2



- 22 On the tool palette, click **Operator** and drag menu item **greater or equal** onto the canvas.
- 23 From the left pane, drag **Age** (from ....**getAge**.**Output**) onto **number1** (the first input of the **greater or equal** method), and reply **Yes** to convert the datatype.
- 24 Right-click **number2** (the second input of the **greater or equal** method) and, on the context menu, click **Add Literal**.
- 25 Enter the value **18** and then press **Enter**.
- 26 On the tool palette, click **Operator** and drag menu item **AND** onto the canvas.

- 27 From each of the two **greater or equal** methods, drag the output **return boolean** onto the inputs **boolean1** and **boolean2** of the **AND** method.
- 28 From the **AND** method, drag the output **return boolean** onto **Result** in the right pane.

**Figure 100** Business Rule: Decision Case 2



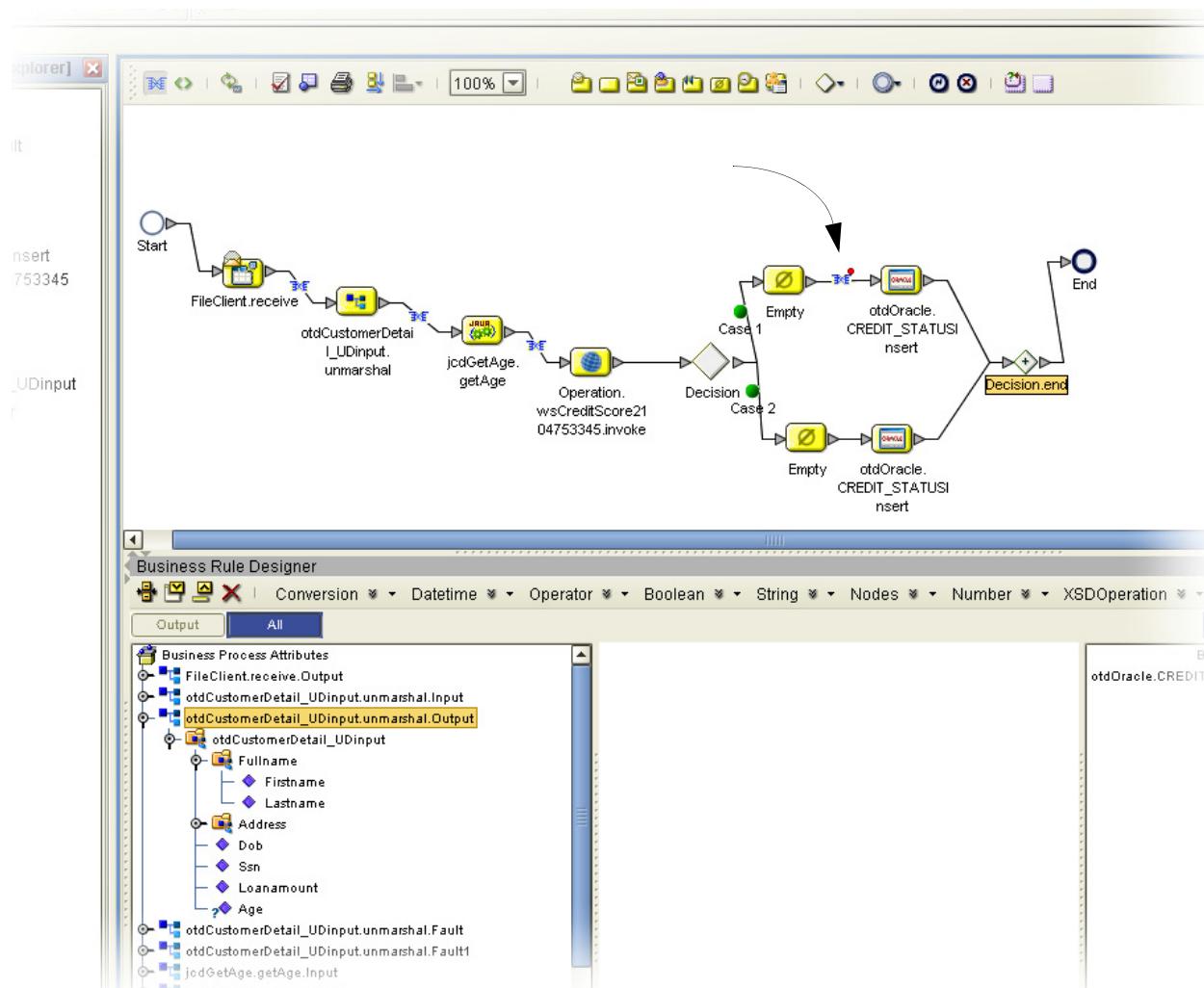
**29 Click OK.**

*Result:* The icons for **Case 1** and **Case 2** change from red to green, indicating they are both configured.

To add a Business Rule: Case 1 to Oracle Insert

- 1 In the eInsight Business Process Designer canvas, on the upper branch (**Case 1**), right-click the link from **Empty** to **otdOracle.CREDITSTATUSInsert** to display the context menu and select **Add Business Rule**.

**Figure 101** Oracle Inset Business Rule

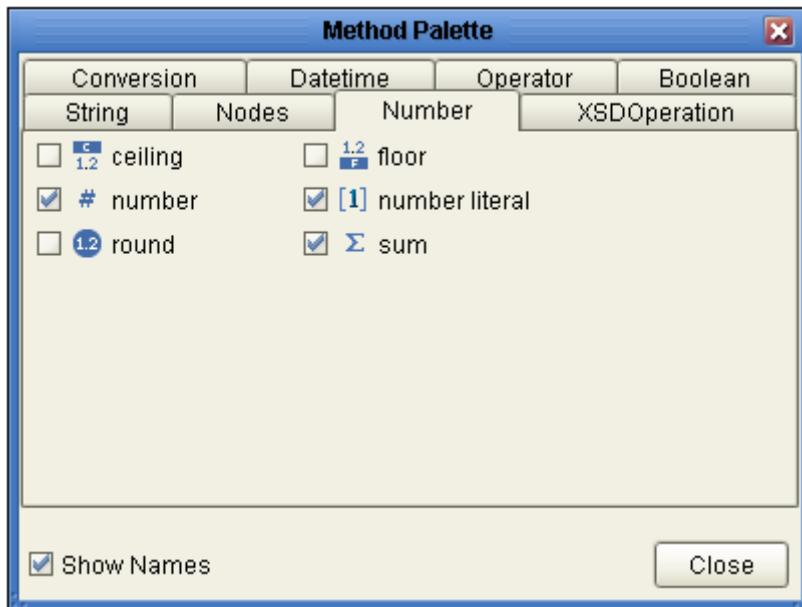


- 2 In the **Business Rule Designer**, left pane, expand **otdCustomerDetail\_UDinput.unmarshal.Output > ...UDinput > Fullname** to expose its two subnodes.
- 3 In the **Business Rule Designer**, right pane, expand the nodes and subnodes for future linkage.
- 4 On the tool palette, click **String**, and then, from the list, select **concat**.
- 5 Drag **Firstname** to **string** (the first input of the **concat** method).
- 6 Drag **Lastname** to **str(string)**, the second input of the **concat** method.
- 7 From the **concat** operator, drag return string onto **ID** (the first node under **input** in the right pane).
- 8 From the left pane, drag **Ssn** onto **SSN** in the right pane. (**SSN** is the second node under **input** in the right pane.)
- 9 On the tool palette, click **Number** and click the menu item **Settings** to open the Method Palette.

- 10** In the Method Palette, select only the checkboxes for the following operations:
- ♦ **number**
  - ♦ **number literal**
  - ♦ **sum**

For an illustration of the Method Palette (**Number**), see Figure 102.

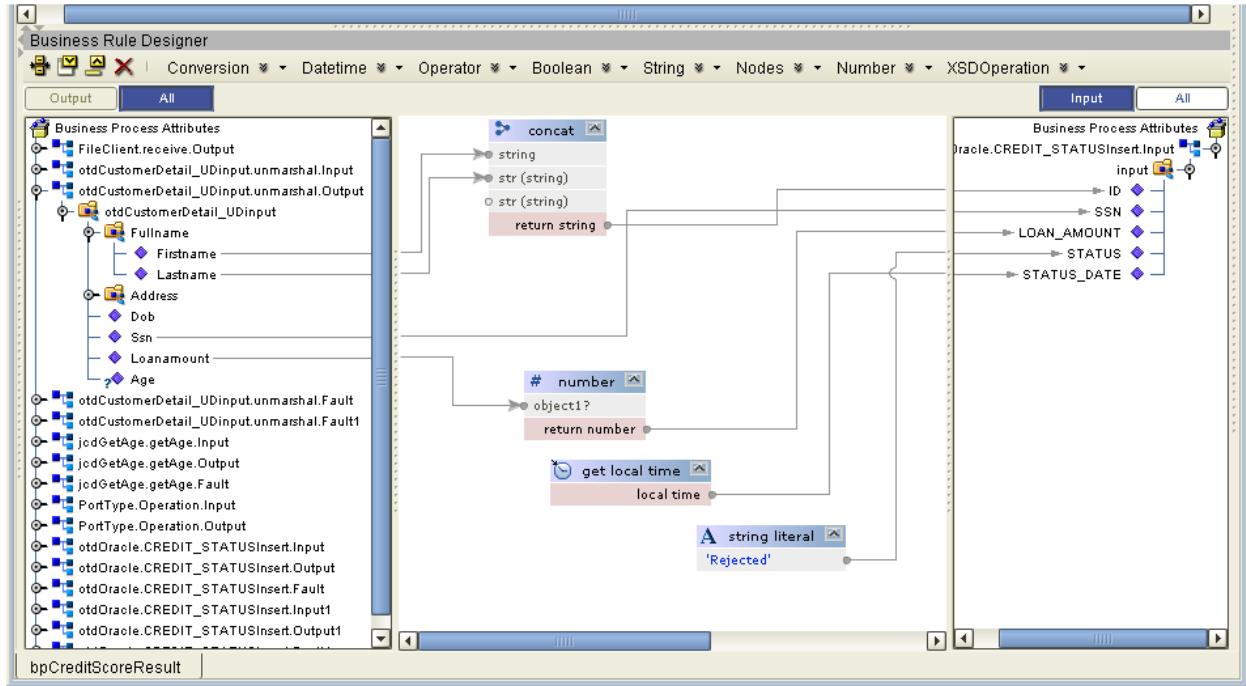
**Figure 102** Method Palette: Number



- 11** When you have completed your selections click **Close**.
- 12** On the tool palette, click **Number** and drag the menu item **number** onto the canvas.
- 13** From the left pane, drag **Loanamount** to **object?** (the input of the **number** method).
- 14** From the number operator, drag **return number** onto **LOAN\_AMOUNT** in the right pane, and reply **Yes** to convert the datatype.
- 15** On the tool palette, click **String** and drag the menu item **string literal** onto the canvas.
- 16** In the newly created method, double-click its field and enter the word **Rejected**. Press **Enter**.
- 17** From the method, drag **Rejected** onto **STATUS** in the right pane. (**STATUS** is the fourth node under input in the right pane.)
- 18** On the tool palette, click **Datetime** and drag the menu item **get local time** onto the canvas.

- From the method, drag **local time** onto **STATUS\_DATE** in the right pane (the fifth and last node under **input**). See Figure 103.

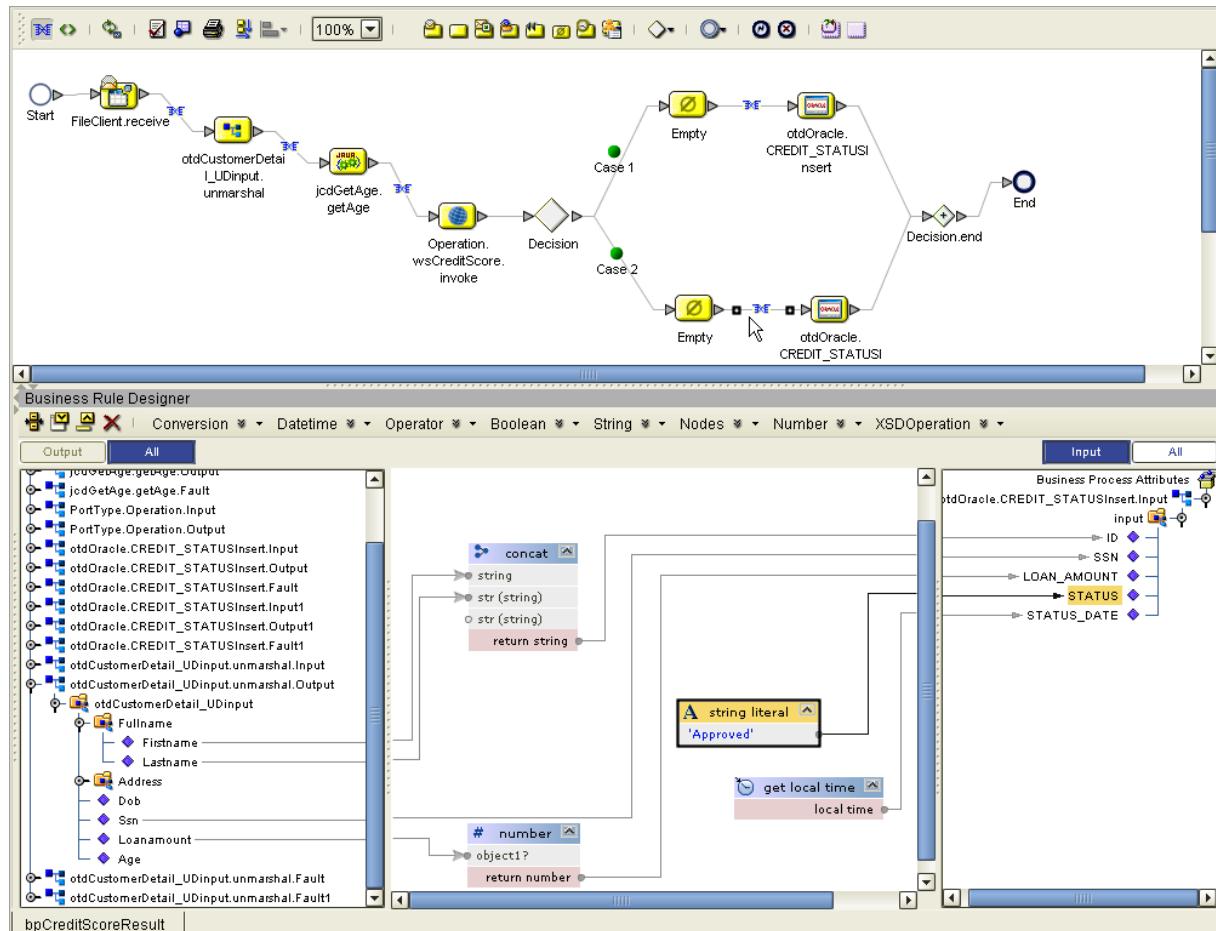
**Figure 103** Business Rule: Case 1 to Oracle Insert



#### To add a Business Rule: Case 2 to Oracle Insert

- In the eInsight Business Process Designer canvas, on the lower branch (**Case 2**), right-click the link from **Empty** to **otdOracle.CREDITSTATUSInsert** to display the context menu and select **Add Business Rule**.
- Follow the same steps for **To add a Business Rule: Case 1 to Oracle Insert** on page 111 starting with Step 2. When you finish, Case 2 should look similar to the previous figure, except substitute **Case 2** and '**Approved**' where appropriate.

**Figure 104** Business Rule: Case 2 to Oracle Insert



- 3 Save your work (on the **File** menu or main toolbar, click **Save All**), and then close the eInsight Business Process Designer.

*Result:* You have fully configured the Business Process with Business Rules for messages passed from one activity to the next. You can now use this Business Process in a Connectivity Map.

### 3.3.6 Creating and Configuring the Client Connectivity Map

In this section, you create and configure a Connectivity Map for the client Project.

#### To create the Connectivity Map

- 1 In the Enterprise Designer's **Project Explorer** tree, right-click the Project **projCreditScoreClient** to display the context menu and select **New > Connectivity Map**.

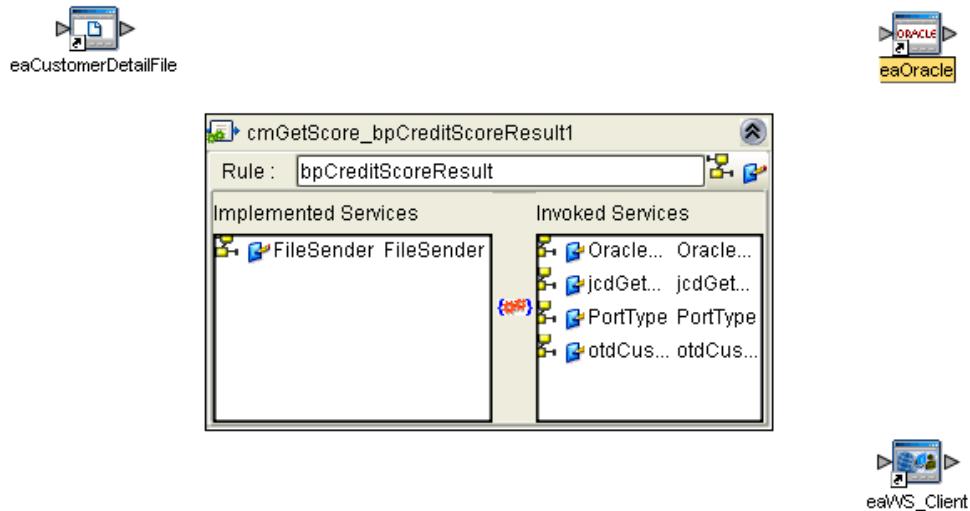
The new Business Process appears on the **Project Explorer** tree. The Connectivity Map opens.

- 2 In the **Project Explorer** tree, the component appears as **CMap1**. Rename your Connectivity Map to **cmGetScore**, press **Enter**, and respond **Yes** to the prompt.

### To add the service containers and externals

- 1 From the tool palette, drag an instance of **File External Application** onto the far left portion of the canvas and rename it **eaCustomerDetailFile**.
- 2 From the tool palette, drag an instance of **Web Service External Application** onto the far lower right of the canvas, and then rename the instance to **eaWS\_Client**.
- 3 From the tool palette, drag an instance of **Oracle External Application** onto the far upper right of the canvas, and then rename the instance to **eaOracle**.
- 4 From the **Project Explorer** tree, drag an instance of **bpCreditScoreResult** onto the center of the canvas, then double-click the object to open the binding box.

**Figure 105** Open Binding Box



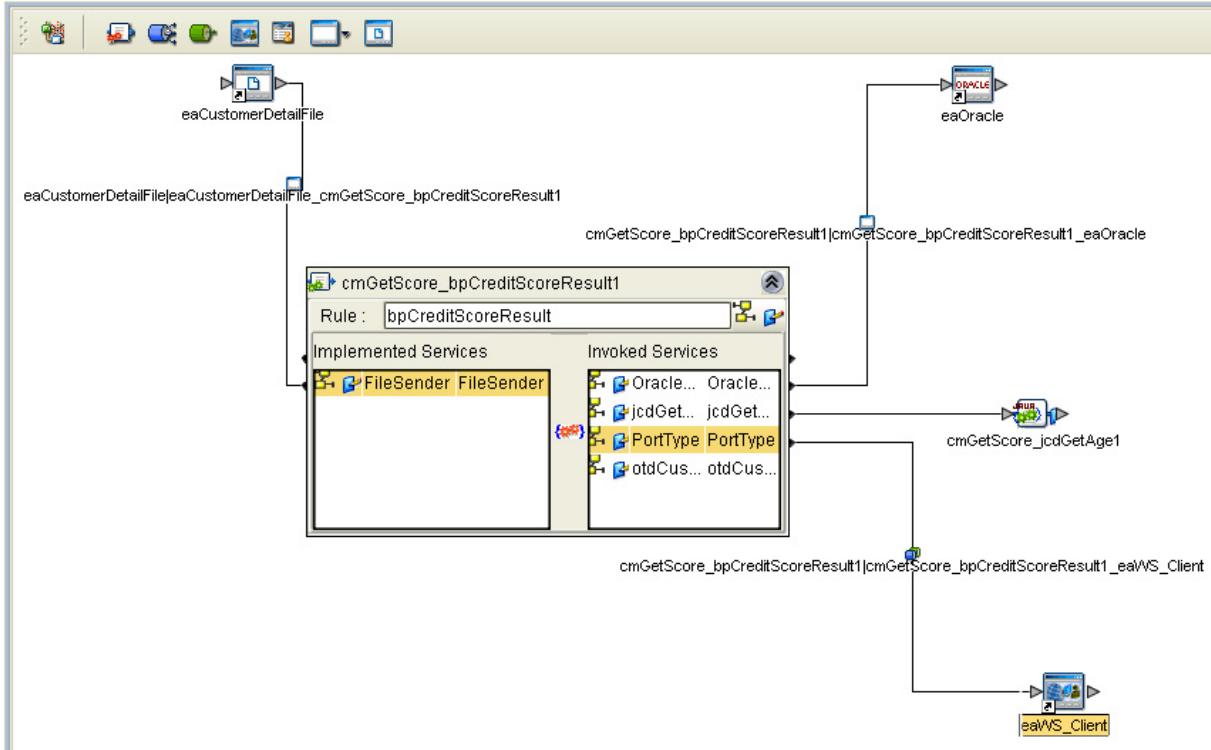
- 5 From the **Project Explorer** tree, drag an instance of **jcdGetAge** onto the canvas and drop it far to the right of the opened object, shown above.

### To connect the service containers and externals

- 1 From the opened **bpCreditScoreResult1** container, drag its implemented service (**FileSender**) onto **eaCustomerDetailFile**.
- 2 On the connection that is made, double-click the red File eWay.
- 3 In the **Properties** dialog box, change **Input file name** from **input\*.txt** to **Customer\*.dat** and click **OK**.
- 4 From **bpCreditScoreResult**, drag its first invoked service (**Oracle\_..**) onto **eaOracle**.
- 5 On the connection that is made, double-click the red Oracle eWay, and click **OK** to accept '**Outbound Oracle eWay**'.
- 6 In the **Properties** dialog box, click **OK** to accept the defaults.

- 7 From **bpCreditScoreResult**, drag its second invoked service (**jcdGetAge**) onto **jcdGetAge1**.
- 8 From **bpCreditScoreResult**, drag its third invoked service (**PortType**) onto **eaWS\_Client**. See Figure 106.

**Figure 106** Configured Connectivity Map for Client



- 9 Minimize the Binding box, save your work, and close the Connectivity Map Editor.

*Result:* You have created and configured the Connectivity Map for the **prjCreditScoreClient** Project. You are now ready to assign its components to the external systems in your Environment.

### 3.3.7 Creating and Configuring the Client Deployment Profile

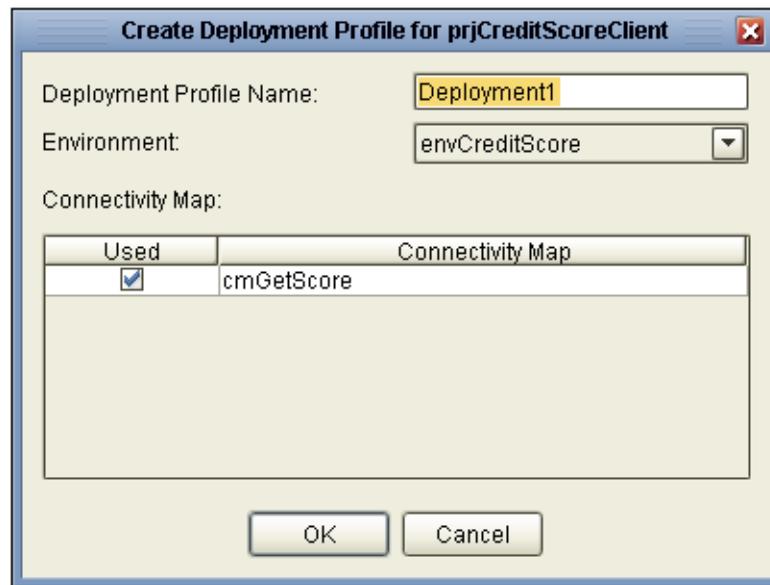
In this section – that is similar to [Creating and Configuring the Server Deployment Profile](#) on page 56 – you create and configure the Deployment Profile for the client Project. A Deployment Profile contains information about how Project components are mapped and deployed to the resources of an existing Environment.

#### To create the Client Deployment Profile

- 1 In the **Project Explorer** tree, right-click the Project **prjCreditScoreClient** to display the context menu and select **New > Deployment Profile**.

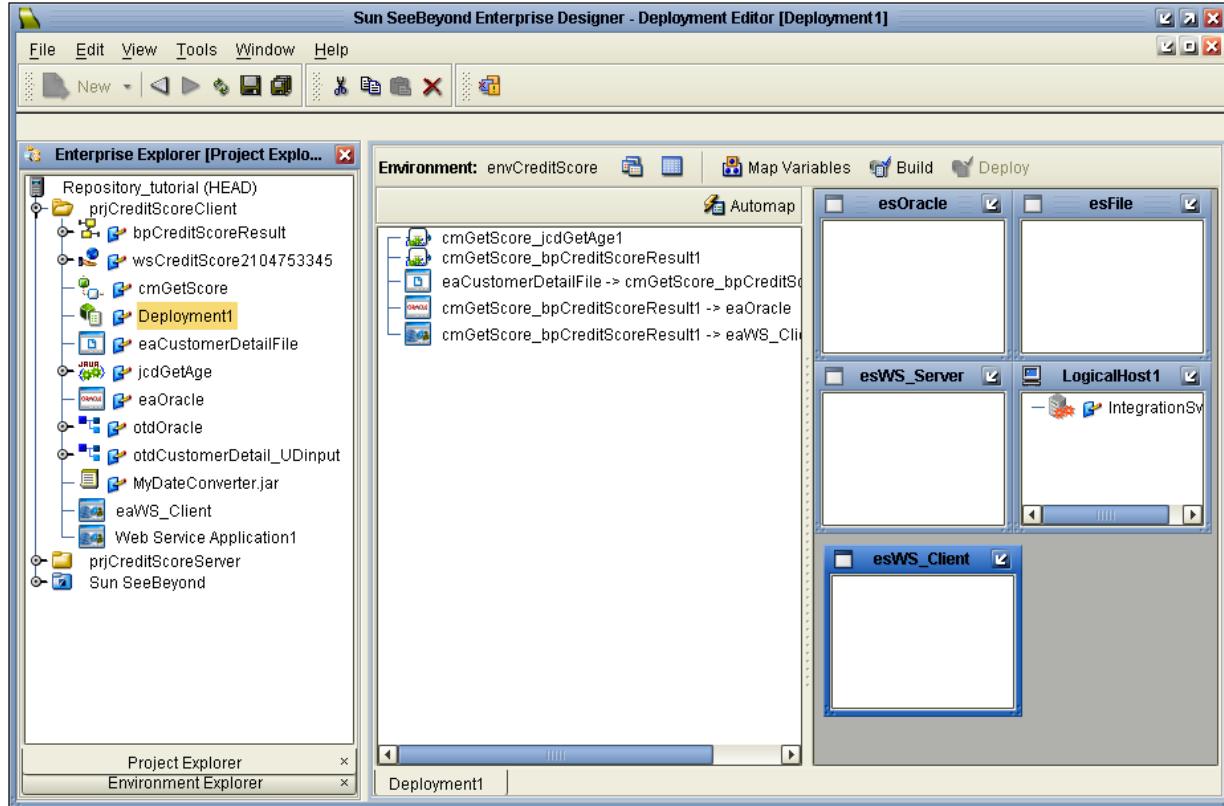
- 2 Click **OK** to accept the default name (**Deployment1**), Environment (**envCreditScore**), and Connectivity Map (**cmGetScore**). See the following figure.

**Figure 107** Creating a Deployment Profile



- 3** The new Deployment Profile appears on the **Project Explorer** tree, and the Deployment Editor opens. See the following figure.

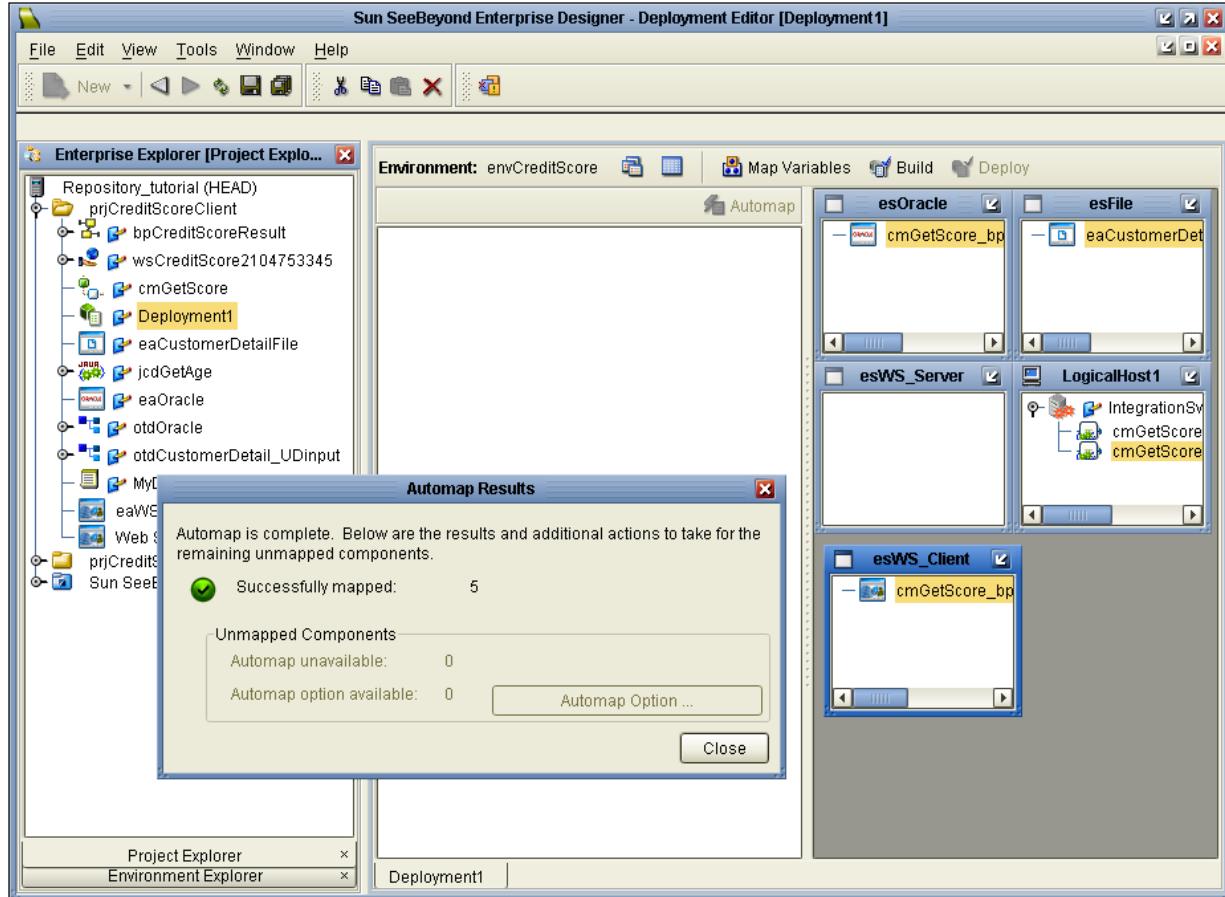
**Figure 108** Deployment Editor: Automap



- 4** Click **Automap** to assign all components to their associated servers.

After this process is finished, the **Automap Results** message box appears. See the following figure.

**Figure 109** Automap Results



- 5 Close the message box.
- 6 Save your work (on the **File** menu or main toolbar, click **Save All**) but keep the Deployment Editor open for use in the following section "**Building and Deploying the Client Project**".

### 3.3.8 Building and Deploying the Client Project

In this section, you build the client Project's application, and then deploy the .EAR file. See [Building and Deploying the Server Project](#) on page 58 for details.

*Final result:* You have created and configured all components in the Environment and the client Project, built an application, and deployed it to a running Integration Server. The sample Project scenario is now ready for run-time operation.

---

## 3.4 Running the Sample Scenario

You run the Projects in this tutorial in the same way as you run any other eGate Projects. For details on how to run and operate eGate and eInsight see the *Sun SeeBeyond eGate Integrator User's Guide* and the *Sun SeeBeyond eInsight Business Process Manager User's Guide*.

After you have established the run-time operation of the sample scenario, you are ready to process data using the scenario.

### To process data using the sample Project scenario

- 1 For input, use the data files from the . . . \Sample\data folder where you extracted the contents of the sample **.zip** files.
- 2 Copy the input files to C :\temp (or an alternative folder, if you configured it for the File eWay in the [procedure on page 25](#)).
- 3 After you finish deploying and running the Projects, the input files are read in (the **.dat** extension is renamed to **.~in**), and the last two digits of each **SSN** value are calculated as the **Score** value.
- 4 Go to your Oracle database table (**credit\_status**) to check the output.
- 5 You can edit the sample data files, saving them as **Customer11.dat**, **Customer12.dat**, to see the results of experimenting with different data. (For example, check the results of a data file for a loan applicant born later than 1990.)

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