Oracle® Application Server Integration

Adapter for Siebel 2000 User's Guide

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Oracle Application Server Integration Adapter for Siebel 2000 User's Guide, 10*g* (9.0.4)

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Preface

This guide explains how to use Oracle Application Server ProcessConnect and the Oracle Application Server Integration Adapter for Siebel 2000 to access Siebel Business Components and Business Services. In this guide you will learn how to define a delivery channel for Siebel and add an interaction to generate native events, which are XML instances defined by XSD (XML payload defined by an XML Schema Definition instance). In this guide you will also find a chapter describing the datatype mapping between Siebel and XSD.

See Also: *Oracle Application Server ProcessConnect User's Guide*

This preface contains these topics:

- Intended Audience
- Organization
- Related Documentation
- Conventions
- Documentation Accessibility

Intended Audience

Oracle Application Server Integration Adapter for Siebel 2000 User's Guide is intended for those who perform the following tasks:

- Create delivery channels and interactions with a Siebel system
- Maintain applications

To use this document, you need some knowledge of Siebel Business Components and Business Services.

Organization

This document contains:

Chapter 1, "Introduction to Oracle Application Server Integration Adapter for Siebel 2000"

This chapter describes the Oracle Application Server Integration Adapter for Siebel 2000 and the hardware and software requirements.

Chapter 2, "Defining a Delivery Channel"

This chapter provides instructions for using Oracle Application Server ProcessConnect to define a delivery channel for a Siebel system.

Chapter 3, "Defining an Interaction"

This chapter provides instructions for using Oracle Application Server ProcessConnect to add a Siebel interaction.

Chapter 4, "Siebel Methods"

This chapter describes how the Oracle Application Server Integration Adapter for Siebel 2000 uses Siebel methods to communicate with Business Components and Business Services in a Siebel system.

Chapter 5, "Using Siebel Datatypes"

This chapter provides information on Siebel 2000 datatypes.

Related Documentation

For more information, see these Oracle resources:

- *Oracle Application Server ProcessConnect User's Guide* in the Oracle Application Server Documentation Library
- *Oracle Application Server Installation Guide*

Printed documentation is available for sale in the Oracle Store at

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Conventions

This section describes the conventions used in the text and code examples of this documentation set. It describes:

- Conventions in Text
- Conventions in Code Examples
- Conventions for Windows Operating Systems

Conventions in Text

We use various conventions in text to help you more quickly identify special terms. The following table describes those conventions and provides examples of their use.

Convention	Meaning	Example
Bold	Bold typeface indicates terms that are defined in the text or terms that appear in a glossary, or both.	When you specify this clause, you create an **index-organized table**.
Italics	Italic typeface indicates book titles or emphasis.	*Oracle9i Database Concepts* Ensure that the recovery catalog and target database do *not* reside on the same disk.

Convention	Meaning	Example
UPPERCASE monospace (fixed-width) font	Uppercase monospace typeface indicates elements supplied by the system. Such elements include parameters, privileges, datatypes, RMAN keywords, SQL keywords, SQL*Plus or utility commands, packages and methods, as well as system-supplied column names, database objects and structures, usernames, and roles.	You can specify this clause only for a NUMBER column. You can back up the database by using the BACKUP command. Query the TABLE_NAME column in the USER_TABLES data dictionary view. Use the DBMS_STATS.GENERATE_STATS procedure.
lowercase monospace (fixed-width) font	Lowercase monospace typeface indicates executables, filenames, directory names, and sample user-supplied elements. Such elements include computer and database names, net service names, and connect identifiers, as well as user-supplied database objects and structures, column names, packages and classes, usernames and roles, program units, and parameter values. **Note:** Some programmatic elements use a mixture of UPPERCASE and lowercase. Enter these elements as shown.	Enter sqlplus to open SQL*Plus. The password is specified in the orapwd file. Back up the datafiles and control files in the /disk1/oracle/dbs directory. The department_id, department_name, and location_id columns are in the hr.departments table. Set the QUERY_REWRITE_ENABLED initialization parameter to true. Connect as oe user. The JRepUtil class implements these methods.
lowercase italic monospace (fixed-width) font	Lowercase italic monospace font represents placeholders or variables.	You can specify the *parallel_clause*. Run U*old_release*.SQL where *old_release* refers to the release you installed prior to upgrading.

Conventions in Code Examples

Code examples illustrate SQL, PL/SQL, SQL*Plus, or other command-line statements. They are displayed in a monospace (fixed-width) font and separated from normal text as shown in this example:

```
SELECT username FROM dba_users WHERE username = 'MIGRATE';
```

The following table describes typographic conventions used in code examples and provides examples of their use.

Convention	Meaning	Example
[ ]	Brackets enclose one or more optional items. Do not enter the brackets.	DECIMAL (*digits* [, *precision*])
{ }	Braces enclose two or more items, one of which is required. Do not enter the braces.	{ENABLE | DISABLE}
|	A vertical bar represents a choice of two or more options within brackets or braces. Enter one of the options. Do not enter the vertical bar.	{ENABLE | DISABLE} [COMPRESS | NOCOMPRESS]
...	Horizontal ellipsis points indicate either: ■ That we have omitted parts of the code that are not directly related to the example ■ That you can repeat a portion of the code	CREATE TABLE ... AS *subquery*; SELECT *col1*, *col2*, ... , *coln* FROM employees;
. . .	Vertical ellipsis points indicate that we have omitted several lines of code not directly related to the example.	SQL> SELECT NAME FROM V$DATAFILE; NAME ---------- /fsl/dbs/tbs_01.dbf /fs1/dbs/tbs_02.dbf . . . /fsl/dbs/tbs_09.dbf 9 rows selected.
Other notation	You must enter symbols other than brackets, braces, vertical bars, and ellipsis points as shown.	acctbal NUMBER(11,2); acct CONSTANT NUMBER(4) := 3;
Italics	Italicized text indicates placeholders or variables for which you must supply particular values.	CONNECT SYSTEM/*system_password* DB_NAME = *database_name*
UPPERCASE	Uppercase typeface indicates elements supplied by the system. We show these terms in uppercase in order to distinguish them from terms you define. Unless terms appear in brackets, enter them in the order and with the spelling shown. However, because these terms are not case sensitive, you can enter them in lowercase.	SELECT last_name, employee_id FROM employees; SELECT * FROM USER_TABLES; DROP TABLE hr.employees;

Convention	Meaning	Example

lowercase	Lowercase typeface indicates programmatic elements that you supply. For example, lowercase indicates names of tables, columns, or files.
	
	Note: Some programmatic elements use a mixture of UPPERCASE and lowercase. Enter these elements as shown.
		`SELECT last_name, employee_id FROM employees;`
		`sqlplus hr/hr`
		`CREATE USER mjones IDENTIFIED BY ty3MU9;`

Conventions for Windows Operating Systems

The following table describes conventions for Windows operating systems and provides examples of their use.

Convention	Meaning	Example
Choose Start >	How to start a program.	To start the Database Configuration Assistant, choose Start > Programs > Oracle - *HOME_NAME* > Configuration and Migration Tools > Database Configuration Assistant.
File and directory names	File and directory names are not case sensitive. The following special characters are not allowed: left angle bracket (<), right angle bracket (>), colon (:), double quotation marks ("), slash (/), pipe (|), and dash (-). The special character backslash (\) is treated as an element separator, even when it appears in quotes. If the file name begins with \\, then Windows assumes it uses the Universal Naming Convention.	`c:\winnt"\"system32 is the same as C:\WINNT\SYSTEM32`
`C:\>`	Represents the Windows command prompt of the current hard disk drive. The escape character in a command prompt is the caret (^). Your prompt reflects the subdirectory in which you are working. Referred to as the *command prompt* in this manual.	`C:\oracle\oradata>`

Convention	Meaning	Example
Special characters	The backslash (\) special character is sometimes required as an escape character for the double quotation mark (") special character at the Windows command prompt. Parentheses and the single quotation mark (') do not require an escape character. Refer to your Windows operating system documentation for more information on escape and special characters.	`C:\>exp scott/tiger TABLES=emp QUERY=\"WHERE job='SALESMAN' and sal<1600\"` `C:\>imp SYSTEM/`*`password`*` FROMUSER=scott TABLES=(emp, dept)`
HOME_NAME	Represents the Oracle home name. The home name can be up to 16 alphanumeric characters. The only special character allowed in the home name is the underscore.	`C:\> net start Oracle`*`HOME_NAME`*`TNSListener`
ORACLE_HOME and *ORACLE_BASE*	In releases prior to Oracle8*i* release 8.1.3, when you installed Oracle components, all subdirectories were located under a top level *ORACLE_HOME* directory. For Windows NT, the default location was `C:\orant`. This release complies with Optimal Flexible Architecture (OFA) guidelines. All subdirectories are not under a top level *ORACLE_HOME* directory. There is a top level directory called *ORACLE_BASE* that by default is `C:\oracle`. If you install the latest Oracle release on a computer with no other Oracle software installed, then the default setting for the first Oracle home directory is `C:\oracle\ora`*`nn`*, where *nn* is the latest release number. The Oracle home directory is located directly under *ORACLE_BASE*. All directory path examples in this guide follow OFA conventions. Refer to *Oracle9i Database Getting Started for Windows* for additional information about OFA compliances and for information about installing Oracle products in non-OFA compliant directories.	Go to the *ORACLE_BASE*`\`*ORACLE_HOME*`\rdbms\admin` directory.

Documentation Accessibility

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Accessibility of Code Examples in Documentation JAWS, a Windows screen reader, may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an otherwise empty line; however, JAWS may not always read a line of text that consists solely of a bracket or brace.

1

Introduction to Oracle Application Server Integration Adapter for Siebel 2000

Oracle Application Server ProcessConnect connects to a Siebel system through the Oracle Application Server Integration Adapter for Siebel 2000. The Oracle Application Server Integration Adapter for Siebel 2000 provides connectivity and executes interactions on a Siebel system.

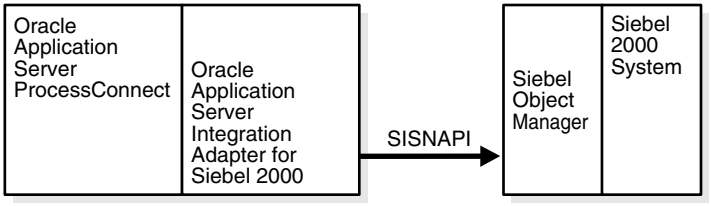
This chapter discusses the following topics:

- Architecture: Oracle Application Server Integration Adapter for Siebel 2000
- Software Requirements
- Supported Platforms
- Postinstallation
- Siebel Configuration

Architecture: Oracle Application Server Integration Adapter for Siebel 2000

Oracle Application Server Integration Adapter for Siebel 2000 is a JCA-based component that plugs in to Oracle Application Server ProcessConnect. Using the Oracle Application Server Integration Adapter for Siebel 2000, you can access Siebel Business Components and Business Services. The Oracle Application Server Integration Adapter for Siebel 2000 uses configuration options from its associated Oracle Application Server ProcessConnect Delivery Channel definition to determine how to connect to and log on to the Siebel system. The Oracle Application Server Integration Adapter for Siebel 2000 uses Siebel Java Data Bean classes to communicate to the Siebel system. As shown in Figure 1–1, the Oracle Application Server Integration Adapter for Siebel 2000 runs on the machine running Oracle Application Server ProcessConnect and uses the SISNAPI (Siebel Internet SessioN API) protocol, which is a session-based RPC to communicate with the Siebel system.

Figure 1–1 Architecture



For Business Components, the Oracle Application Server Integration Adapter for Siebel 2000 supports `Insert`, `Query`, `QueryWithViewMode`, `Update` and `Delete` operations.

The Oracle Application Server Integration Adapter for Siebel 2000 supports outbound interactions. The interactions have both request and reply records. Each record has one record element associated with it. The following naming convention is used for the records:

- Request records

  `AEProtocolName_interactionGroupName_interactionName_Request`

- Reply records

  `AEProtocolName_interactionGroupName_interactionName_Reply`

See Also: Chapter 3, "Defining an Interaction"

Software Requirements

The Oracle Application Server Integration Adapter for Siebel 2000 connects to Siebel, Version 6.2.1 with patch 110 or higher.

The following jar files must be accessible:

- `SiebelTcOM.jar`
- `SiebelTcCommon.jar`
- `SiebelTC_enu.jar`
- `SiebelDataBean.jar`

These jar files comprise the Siebel Java Data Bean provided on the Siebel installation CD.

Supported Platforms

Oracle Application Server Integration Adapter for Siebel 2000 is supported on:

- Solaris 8 (2.8)
- HP-UX 11.0

Postinstallation

Verify you are connecting to Siebel, Version 6.2.1 with patch 110 or higher.

Copy the following jar files from your Siebel installation and place them in *ORACLE_install*`/ip/adapters/lib`:

- `SiebelTcOM.jar`
- `SiebelTcCommon.jar`
- `SiebelTC_enu.jar`
- `SiebelDataBean.jar`

The following discussion refers to the Oracle database that is the back-end to the Siebel system. Siebel may require many open database cursors if you are running any kind of remote client—Siebel tools, Siebel client, or Oracle Application Server ProcessConnect. Although the default setting in the `ora*.ini` file is 100 open

cursors maximum, Siebel recommends 1500 when using remote clients. You can edit `ora*.ini` (your file name may vary) using a text editor. The Oracle installation determines the name of the `ora*.ini` file.

Siebel Configuration

Siebel requires that you enable the Siebel Thin Client Enterprise Component to allow any thin clients to communicate remotely with the Siebel Application Server. Ensure that the Siebel Thin Client Enterprise component is enabled.

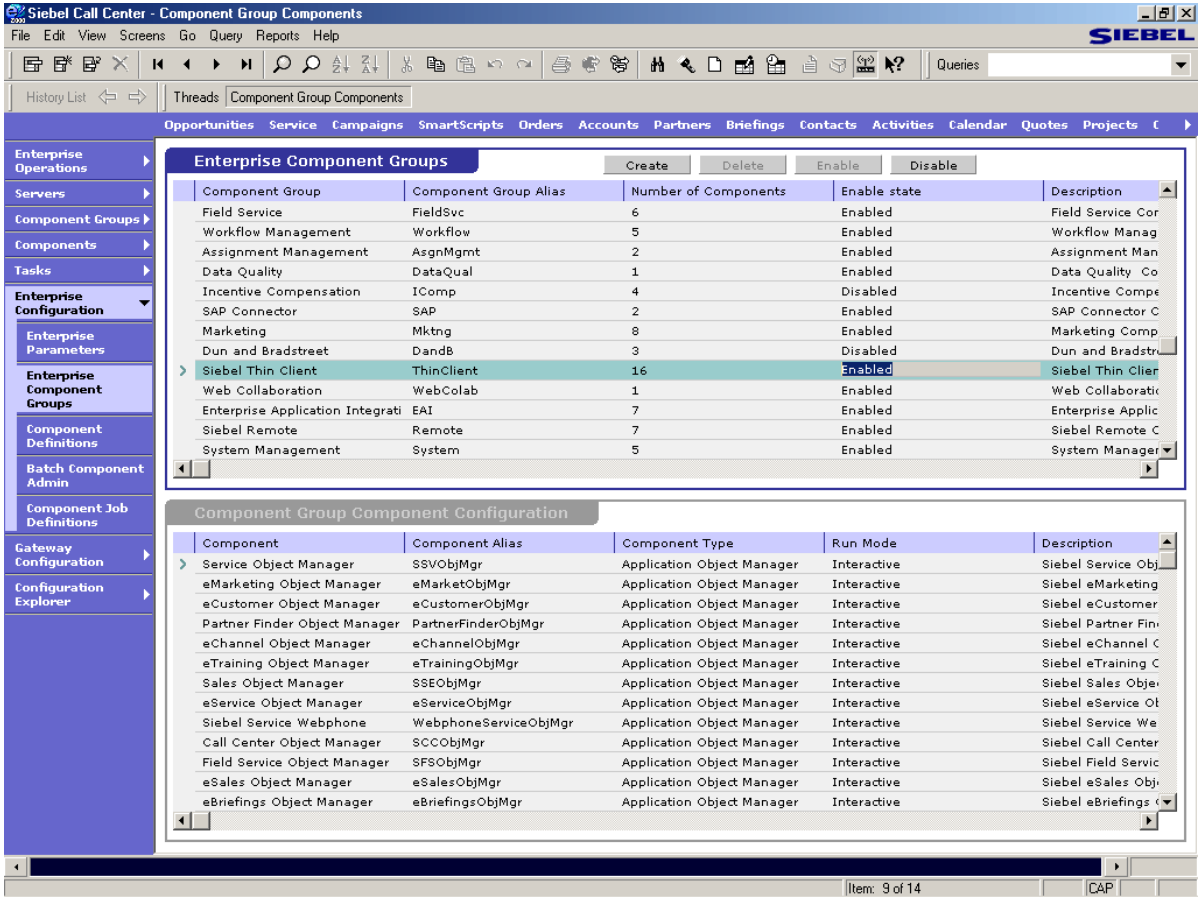
1. Log on using the Siebel Client (with Server Administration enabled).

   The user ID must have sufficient authorization to make server management changes.

2. Select **Screens > Server Administration > Enterprise Configuration > Enterprise Component Groups**.

3. Ensure that the **Thin Client** component is enabled**.**

   If it is not enabled, select the component in the list and click **Enable**.



4. Restart Siebel to ensure that the settings are registered and the component started.

2

Defining a Delivery Channel

This chapter describes how to use Oracle Application Server ProcessConnect to define a delivery channel to connect to a Siebel 2000 system.

This chapter discusses the following topics:

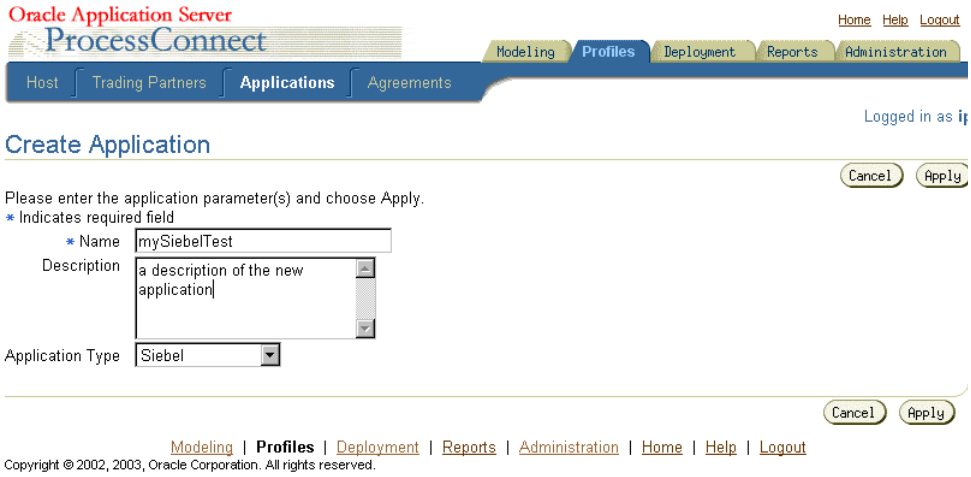
- Adding and Configuring a Delivery Channel
- Verifying Your Siebel Information
- Troubleshooting Siebel Settings

Adding and Configuring a Delivery Channel

Part of the application definition includes adding a delivery channel for the adapter. Setting up the delivery channel in Oracle Application Server ProcessConnect requires information which is specific to the adapter.

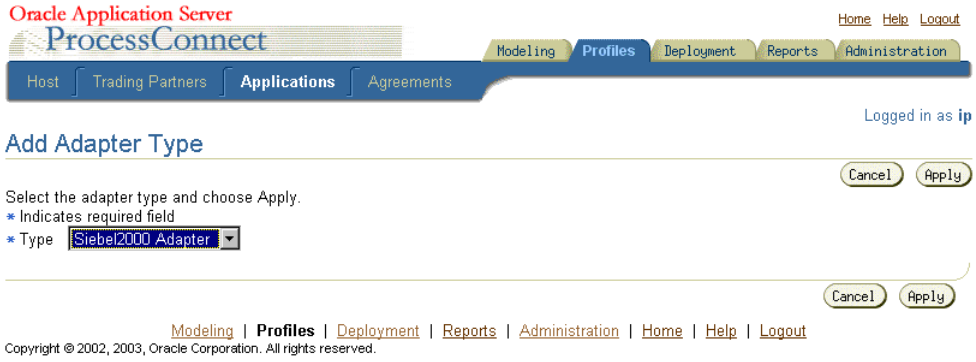
> **See Also:** *Oracle Application Server ProcessConnect User's Guide* for details about adding an application delivery channel in Oracle Application Server ProcessConnect

1. Select the **Profiles** > **Applications** tabs.
2. Click **Create**.



3. Type an application name in the **Name** field.
4. Select the **Siebel** application type from the **Application Type** box and click **Apply**.
5. Click **Add** in the **Adapter Types** section to add the Oracle Application Server Integration Adapter for Siebel 2000.

   The Add Adapter Type page appears.



6. Select **Siebel2000 Adapter** in the **Type** selection box in the Add Adapter Type page and click **Apply**.

   The Adapter Type Details: Siebel Adapter page is displayed.

7. Click **Create** in the **Delivery Channels** section in the Adapter Type Details page.

8. Add the following information to create a delivery channel.

   In Table 2–1 an asterisk (*) indicates a required field.

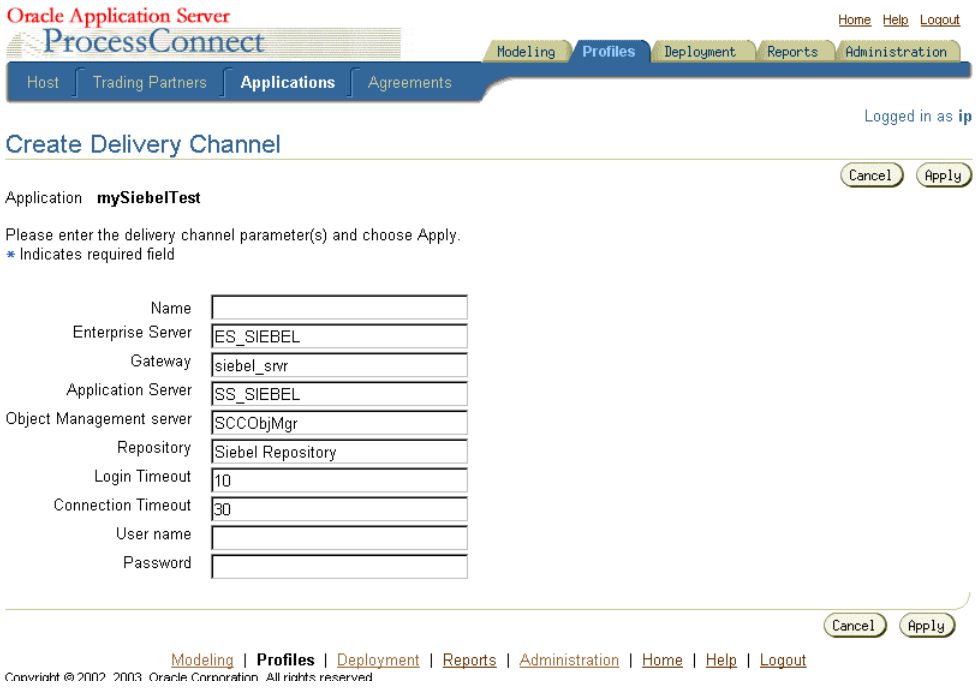
> **Note:** All parameters are case-sensitive.

Table 2–1 Siebel Specific Parameters

Field	Description
Name*	Enter a name for the delivery channel.
Enterprise Server*	Enter the Siebel Enterprise Server name. The default is `ES_SIEBEL`.
Gateway*	Enter the name of the gateway. The default is `siebel_srvr`.
Application Server*	Enter the name of the application server where you have access to all the metadata for the Siebel system. The metadata is the information regarding the Business Services and Business Objects, which is the container for Business Components. The default is `SS_SIEBEL`.
Object Management Server*	Enter the name of the Siebel Object Management server. The default is `SCCObjMgr`.
Repository*	Enter the name of the repository where the Siebel Repository files are located. The Siebel Repository contains Business Service methods, Business Components, and typed method arguments. The default is `Siebel Repository`.
Login Timeout	This is the amount of time Oracle Application Server ProcessConnect waits when attempting to log on to a Siebel system. If the login fails within that amount of time, Oracle Application Server ProcessConnect returns an exception to the user. It can be set to any value between 1 and 300 seconds (5 minutes). The default is 10 seconds.

Table 2–1 (Cont.) Siebel Specific Parameters

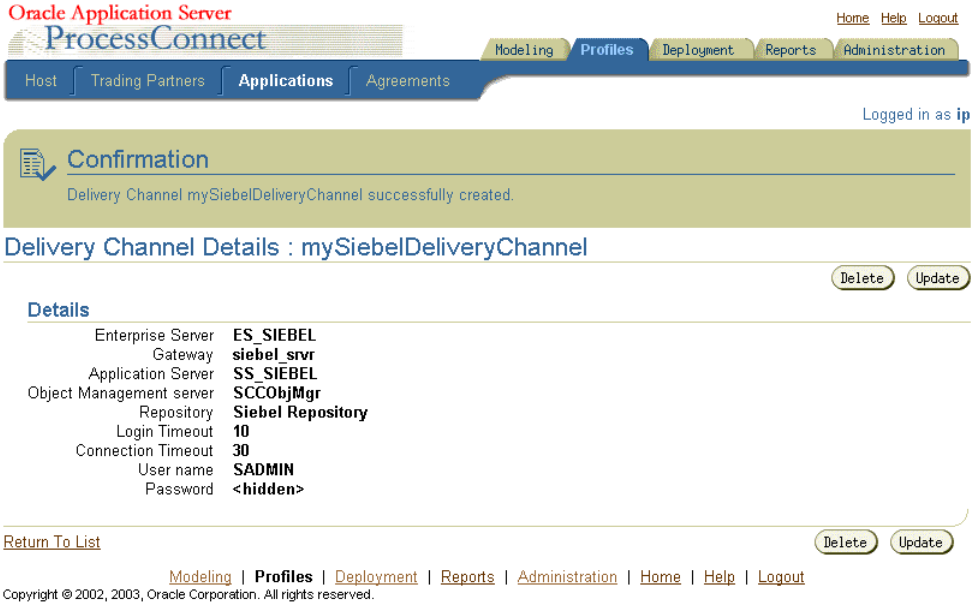
Field	Description
Connection Timeout	This is the amount of time Oracle Application Server ProcessConnect waits for a response before the request times-out. This value must be set between 10 and 300 minutes. Networks with a higher load should have this timeout variable set to a higher limit to allow enough time for the request to process. The purpose of having Login timeout is to keep the threads from deadlocking. If there is no response within the specified time, the system stops sending packets and issues a timeout. At that point, you need to re-initiate a login. The default is 30 minutes.
User Name*	Enter a user name to login to the Siebel system.
Password*	Enter the password of the specified user. You must have developer rights to the areas of the Siebel system you want to access.



See Also: "Troubleshooting Siebel Settings" on page 2-7 for connection error information

9. Click **Apply** after entering your parameters to connect to a Siebel system.

   The delivery channel Confirmation screen appears. You can modify any parameters and click **Update** in the confirmation page to change your parameters or click **Delete** to remove the channel.



10. Click the **Return to List** link to return to the Adapter Details page.

    The delivery channel is added for the adapter and you can now add interactions.

See Also: Chapter 3, "Defining an Interaction"

Verifying Your Siebel Information

To assist in connecting to a Siebel system, the following provides a brief description of Siebel terms and where you can locate information in a Siebel system.

- An **Application Server** refers to the name of the Siebel system. This is the name of host machine on which the Siebel system is installed.
- A **Gateway** refers to the name of the host on which gateway server is running.
- An **Enterprise** refers to the name that was specified for the Enterprise server during a Siebel installation.

  An **Enterprise Server** is a logical entity. It collectively represents the Siebel application servers and Gateway server.

You can retrieve the name of the Gateway server, Application server, Enterprise, and Repository from the `siebel.cfg` file located in `siebel-root/siebsrvr/BIN` directory.

You can verify the Siebel user name and password by running Siebel Call Center. When you launch this application, you need to enter the user name and password (which has administrator privileges). If it successfully connects to the Siebel system, it means that the user name and password are correct.

Troubleshooting Siebel Settings

Error ID	Possible Cause / Error Description	Possible Correction
E-SBL0016	Siebel Java Data Bean jars are missing.	Verify your CLASSPATH settings.
	Failed to instantiate Siebel Java Data Bean on thread -742484740	Refer to "Software Requirements" on page 1-3.
E-SBL0030	Wrong Enterprise, app server, gateway server, Object manager.	Verify your Siebel connection parameters. The parameters are case-sensitive.
	Error Message: Call to Login failed.	Refer to "Enterprise Server*" on page 2-4.
	Wrong Repository - Business Services: Call to GetBusinessServices failed.	Verify your repository setting.
		Refer to "Repository*" on page 2-4.
	Wrong Repository - Business Objects: Call to GetBusinessObjects failed.	Verify your repository setting.
		Refer to "Repository*" on page 2-4.
	Wrong User or Password - Call to Login failed.	Reenter your logon parameters. The parameters are case-sensitive.
	You have entered an invalid set of logon parameters.	Refer to "User Name*" on page 2-5.

Error ID	Possible Cause / Error Description	Possible Correction
E-SBL0039	Siebel Java Data Bean jars are missing	Thread task failed while trying to do login. Refer to "Software Requirements" on page 1-3.
	Wrong Enterprise, app server, gateway server, Object manager. Thread task failed while trying to do login. Error Message: Call to Login failed.	Verify your Siebel connection parameters. The parameters are case-sensitive. Refer to "Repository*" on page 2-4.
	Wrong Repository - Business Services: Thread task failed while trying to retrieve business services.	Verify your repository setting. Refer to "Repository*" on page 2-4.
	Wrong Repository - Business Objects: Thread task failed while trying to retrieve business objects.	Verify your repository setting. Refer to "Repository*" on page 2-4.
	Wrong User or Password. Thread task failed while trying to do login.	Reenter your logon parameters. The parameters are case-sensitive. Refer to "User Name*" on page 2-5.

3

Defining an Interaction

This chapter describes how to configure Oracle Application Server ProcessConnect to access Business Objects and Business Services in a Siebel system.

This chapter discusses the following topic:

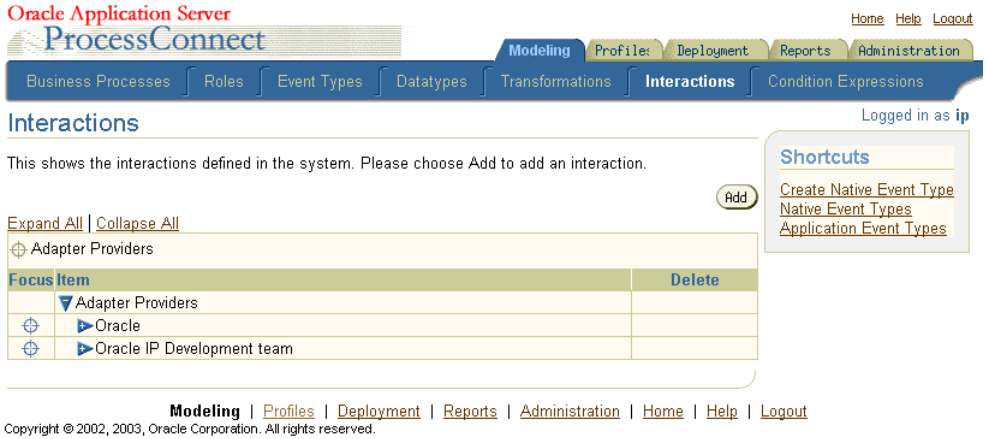
- Adding an Interaction

Adding an Interaction

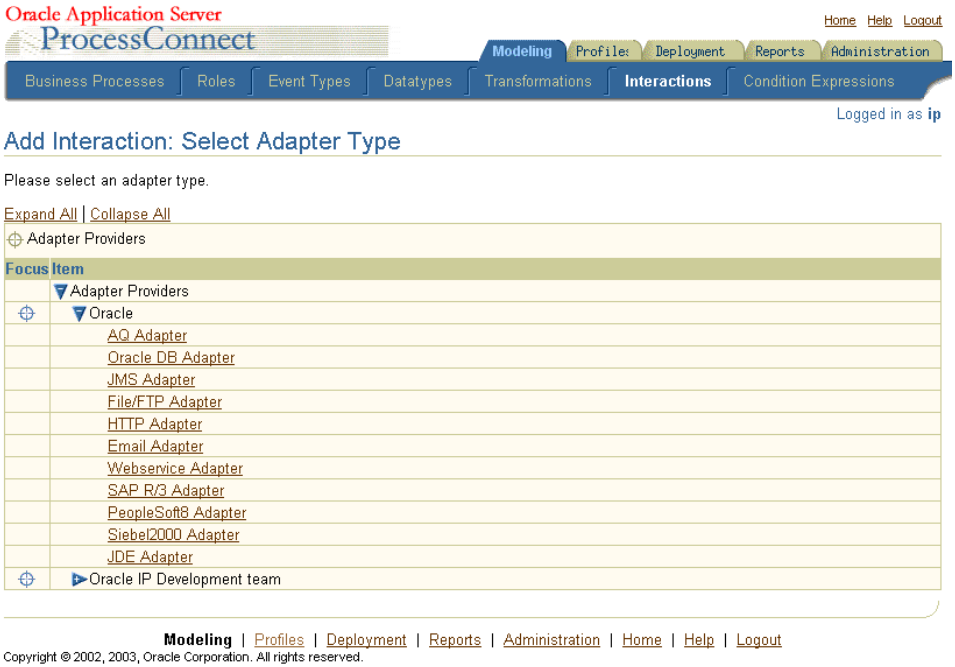
After defining a delivery channel for a Siebel system you can add interactions. Follow these instructions to add a Business Service or Business Component as an interaction in Oracle Application Server ProcessConnect.

> **See Also:** *Oracle Application Server ProcessConnect User's Guide* for details about interactions in Oracle Application Server ProcessConnect

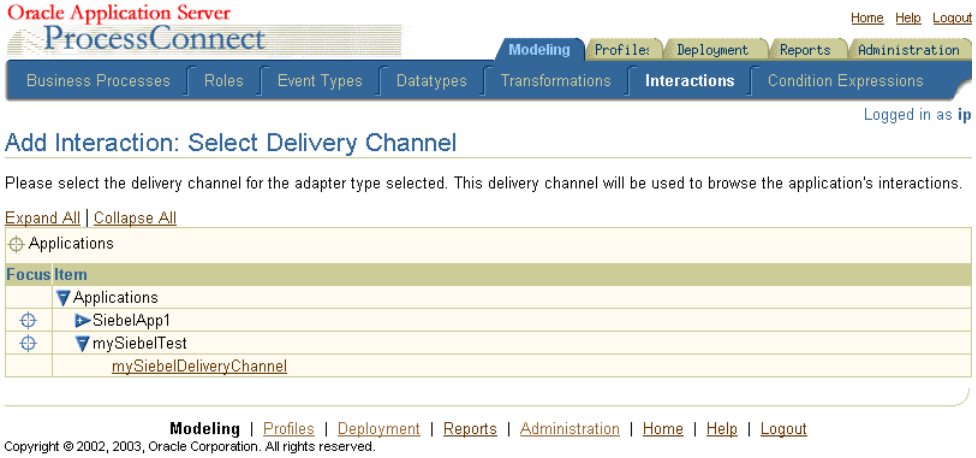
1. Select **Modeling > Interactions**.



2. Click **Add** to add an interaction.
3. Expand **Oracle**.

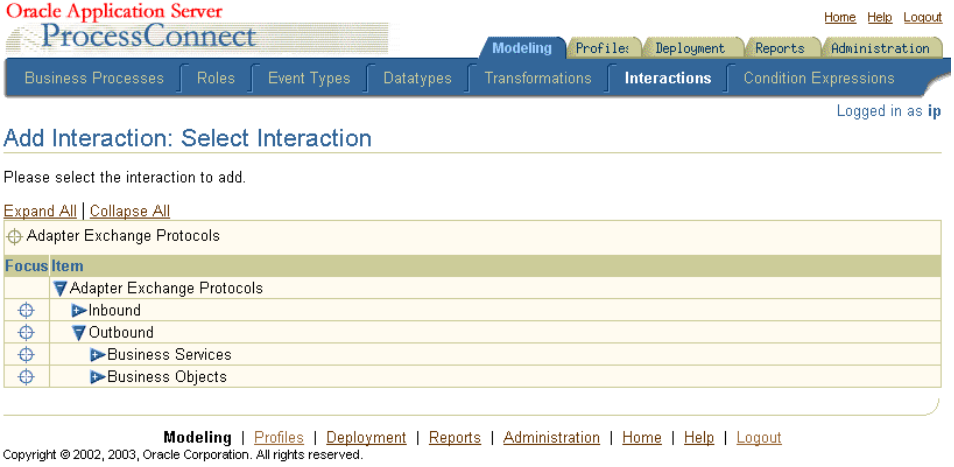


4. Select **Siebel2000 Adapter**.
5. Select a delivery channel.



6. Expand the **Outbound** node.

   The Add Interaction: Select Interaction page displays the Business Services and Business Objects adapter exchange protocols that you can access.



   Siebel has two Adapter Exchange Protocols called: Business Services and Business Objects.

A Siebel Business Service is a container for methods or operations that either came with the Siebel system or are the result of customization. A Siebel Business Object is a container for Business Components and a Business Component is like a table in the Siebel database.

- **Business Objects**: All Siebel Business Objects are contained in Siebel Business Objects. The primary purpose of a Siebel Business Object is to organize and contain related Siebel Business Objects.

  A Siebel Business Component may be contained by several Siebel Business Objects. For example, in a typical Siebel 6.2.1 system, the Contacts Business Component is contained by both the Accounts Business Object and the Contacts Business Object, among others. Siebel Business Objects appear as folders in the Systems Explorer for a Siebel system.

  Siebel Business Objects are like views on the data in the Siebel system. Each Business Component usually has a primary view or table associated with it in the underlying database. It has fields whose values it displays directly from that view. It may have fields with values that are calculated, or it may retrieve some of its field data from other views or tables.

  When you open the Business Objects folder you can see a list of Business Object folders. Within each Business Object folder are the Business Objects it contains. When you click on a Business Component you see the methods it supports. Oracle Application Server ProcessConnect displays five logical operations or methods, which Oracle Application Server ProcessConnect provides for each Business Component: **Delete**, **Insert**, **Query**, **QueryWithViewMode**, and **Update**.

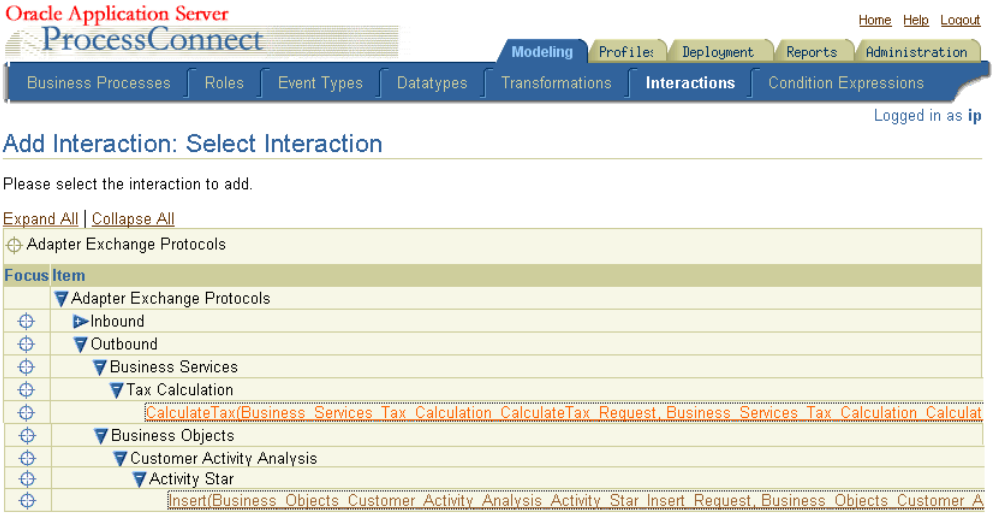
  Four of the Business Objects use the same argument data type, but in different ways. Each has a RecordSet data type. **Query** and **QueryWithViewMode** have an ***out*** RecordSet parameter. **Insert** and **Update** have an ***in*** RecordSet parameter.

- **Business Services**: A Siebel Business Service is a container for methods or operations that either came with the Siebel system or are the result of customization. The primary purpose of a Siebel Business Service is to encapsulate methods that operate on Siebel Business Objects or other Siebel Business Service methods. For example, in a Siebel 6.2.1 system, you will find the Credit Card Authorization Business Service with its methods, such as **Verify Credit Card**. Siebel Business Services display under the **Business Services** folder.

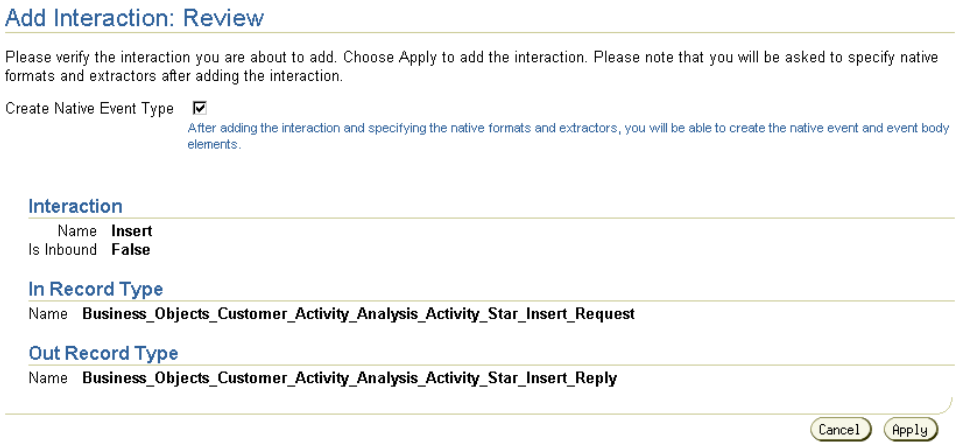
  When you open the Business Services folder, you can see a list of Business Services. Within each Business Service are the methods it contains. When

you click on a Business Service you see its methods. Oracle Application Server ProcessConnect supports Siebel Business Services whose methods have parameters of type Number, Date or String.

7. Select a group and choose an interaction. For this discussion, click **Business Objects > Customer Activity Analysis > Activity Star** and select the **Insert** interaction.

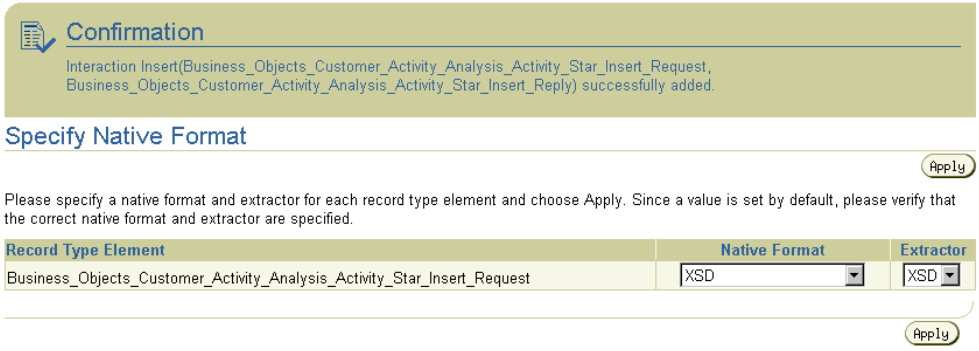


The Add Interaction: Review page displays the details. For an Outbound selection there is an InRecord Type and an OutRecord Type.



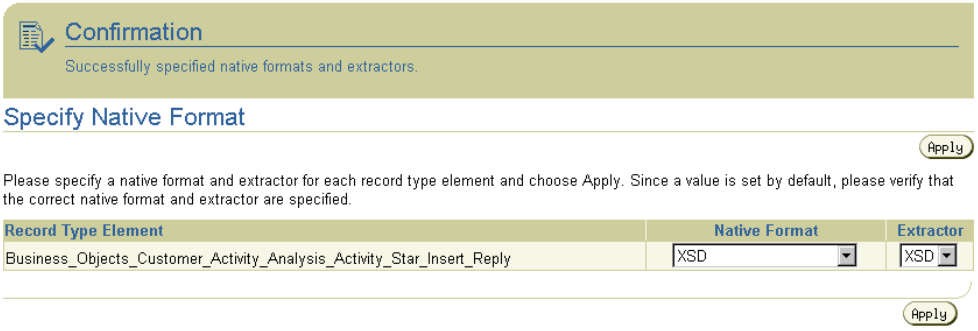
8. Click **Apply**.

   The Confirmation screen appears, allowing you to specify the Native Format of the request.



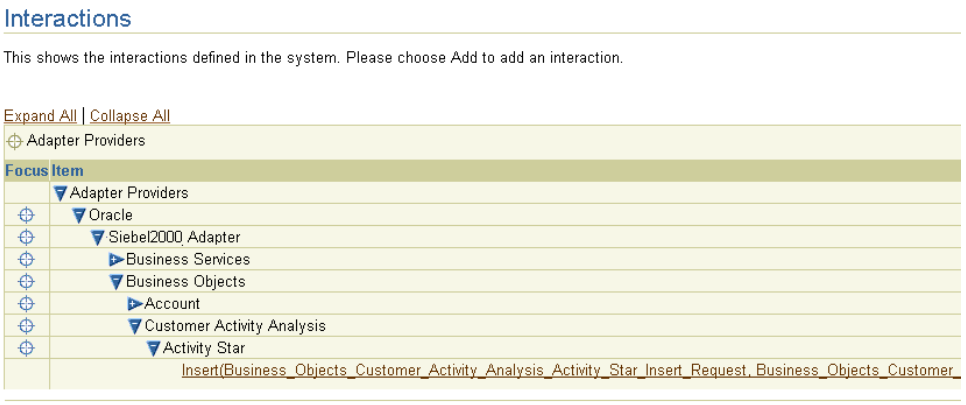
9. Verify that the selection for the Native Format and the Extractor of the request is **XSD** and click **Apply**.

   The Confirmation screen appears, allowing you to specify the Native Format of the reply.

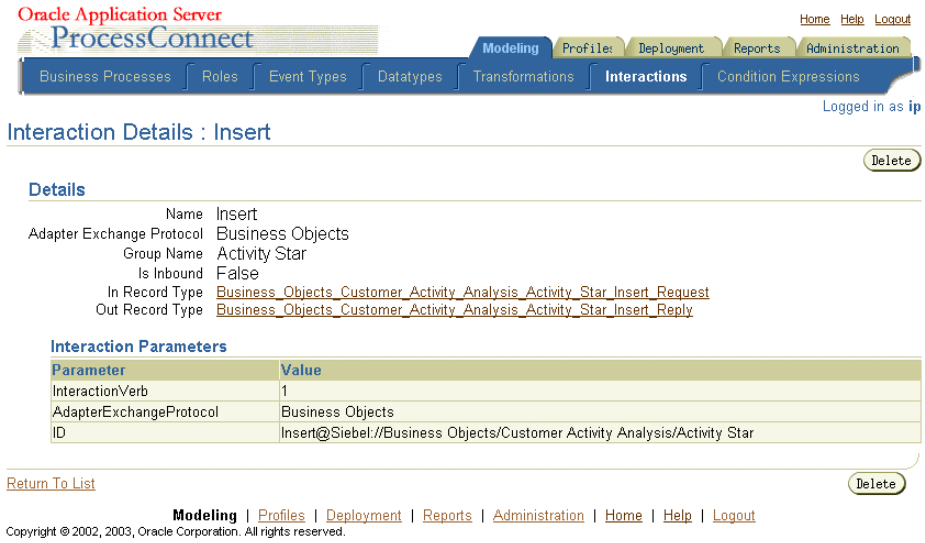


10. Verify that the selection for the Native Format and the Extractor of the reply is **XSD** and click **Apply**.
11. The interaction continues into the Create Native Event Type wizard. You can continue using the instructions in the *Oracle Application Server ProcessConnect User's Guide* for this wizard.

On completion, the new Outbound interaction appears in the Interactions list.



You can click the interaction link for a complete view of the interaction details.


Oracle Application Server
ProcessConnect
Home Help Logout
Modeling Profile: Deployment Reports Administration
Business Processes Roles Event Types Datatypes Transformations Interactions Condition Expressions
Logged in as ip
Interaction Details : Insert
Delete
Details
Name Insert
Adapter Exchange Protocol Business Objects
Group Name Activity Star
Is Inbound False
In Record Type Business_Objects_Customer_Activity_Analysis_Activity_Star_Insert_Request
Out Record Type Business_Objects_Customer_Activity_Analysis_Activity_Star_Insert_Reply
Interaction Parameters
Parameter Value
InteractionVerb 1
AdapterExchangeProtocol Business Objects
ID Insert@Siebel://Business Objects/Customer Activity Analysis/Activity Star
Return To List
Delete
Modeling | Profiles | Deployment | Reports | Administration | Home | Help | Logout
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4

Siebel Methods

This chapter describes how the Oracle Application Server Integration Adapter for Siebel 2000 uses Siebel methods to communicate with Business Objects in a Siebel system.

This chapter discusses the following topic:

- Siebel Business Component Record Sets
- Querying a Siebel Business Component
- Inserting Siebel Business Component Records
- Updating Siebel Business Component Records
- Deleting Siebel Business Component Records

Siebel Business Component Record Sets

Siebel Business Component methods operate on lists of Business Component records, or record sets. The `Query` method returns a record set, while `Insert` and `Update` operate on an input record set.

The record set itself is mapped by Oracle Application Server ProcessConnect to an array. This array will contain elements of a record type corresponding to the Siebel Business Component.

Querying a Siebel Business Component

You can submit a Query to the Siebel Business Component to retrieve a set of records that satisfy a search criteria. Query interaction takes a `searchExpression` parameter and an optional `sortExpression` parameter. For example, you may want to retrieve all Account records that match a certain pattern for the Name, such as `"[Name] like \""A*"\"` to retrieve all account records whose Name field begins with the letter A. You can also specify an optional sort expression that tells how you want the results sorted. It is a simple, comma-delimited list of fields, such as: `"Name, Location"` to sort first by Name and then by Location. By default, the records are sorted in ascending order.

The Oracle Application Server Integration Adapter for Siebel 2000 also supports querying for records based a specific view mode. By using **QueryWithViewMode** method, you can specify a Siebel view mode as one of the parameters. View Modes are one of the security features provided by Siebel. Siebel 6.2.1 has support of 4 levels of views for Business Objects.

- 0 - Sales Rep
- 1 - Manager
- 2 - Personal
- 3 - All

The number of records returned by **QueryWithViewMode** method for a Business Component, depends on the specified view mode level. This method enables the user to retrieve the records based on different view modes. For this reason it is recommended to expose QueryWithViewMode method to only authorized users. If view mode is not provided, Oracle Application Server ProcessConnect does not set a default view mode. In this case, Siebel System calculates view mode based on some internal rules. Similarly for the Query method that does not have the view mode parameter, no default view mode is set on the Business Objects.

Inserting Siebel Business Component Records

You can insert new records for a Siebel Business Component using Insert interaction. Insert interaction expects an array of records to be inserted as input and returns an array of the record IDs for the newly inserted records. Each record is a complex type with a set of fields that are defined on the Siebel Business Component. Most fields are optional for Siebel Business Component Records. Exactly which fields are required and which fields serve as keys for the Business Component Records can be investigated using your Siebel system documentation.

Updating Siebel Business Component Records

You can update the existing records of a Siebel Business Component using Update interaction. The Update interaction takes an array containing the records you wish to update. For each record that you want to update, you must specify the record ID for the field 'Id' and set the fields you desire to update. If you do not know the record ID, you can call a Query Interaction to retrieve the record and extract the record ID from the retuned record.

Deleting Siebel Business Component Records

You can delete the existing records of a Siebel Business Component using Delete interaction. The Delete interaction takes an array containing the record IDs of the records to be deleted. If you do not know the record ID, you can call a Query Interaction to retrieve the record and extract the record ID from the retuned record.

5

Using Siebel Datatypes

This chapter provides information on Siebel datatypes. This chapter discusses the following topics:

- Siebel Interfaces
- Business Services
- Business Objects and Business Components
- Unformatted DTYPE_PHONE Values

Siebel Interfaces

Using Oracle Application Server ProcessConnect, you can browse and call Siebel Business Services (objects with methods) and Business Objects (data sets which you can query and update).

Under the hood, all Siebel applications use Business Objects and Business Services, the basic building blocks. Business Objects are representations of a set of one or more joined tables. They have certain table-like behaviors such as the ability to query a set of records. Business Services are effectively containers for code. Custom business services can be defined using the Siebel Tools, including defining a list of arguments and datatypes.

Business Services

Business Services are also called services in Siebel. The Siebel repository contains Business Service methods and typed method arguments. The Oracle Application Server Integration Adapter for Siebel 2000 uses a query interface to find the repository objects for Business Services. All method arguments are passed into the Business Service through a single invocation API. Arguments of all Siebel Simple Business Service types are supported. Custom methods (function calls) can be defined using the Siebel Tools, including defining a list of arguments and datatypes.

Business services that have hierarchy of property set parameters are not currently supported.

Table 5–1 describes the list of basic types in Siebel Business Services and how they map to XML Schema types in Oracle Application Server ProcessConnect. The `xsd` prefix stands for the namespace `http://www.w3.org/2001/XMLSchema`.

Table 5–1 Business Service Datatypes

Siebel	Oracle Application Server ProcessConnect	Description
String	xsd:string	An unbound string (not fixed length)
Number	xsd:string	A numeric string with a total length of 22. This total length includes any plus or minus sign, exponent symbols, decimal symbol, integer or decimal fraction digits.
Date	xsd:date	A date

Note: Limitation: Many business service method parameters are not strongly typed in Siebel meaning that when they are created you can choose to type a parameter as a string even though internally it is used as a Number or Date. If such a business service method is found, you can remedy this by changing the parameter type to match how the parameter is actually used. See your Siebel system administer or Siebel Tools expert for more information.

Business Objects and Business Components

Business Components are representations of a set of one or more joined tables. They have certain table-like behaviors such as the ability to retrieve a set of records. Business Objects are containers for Business Components.

For Business Components:

- Their datatypes are all complex.
- These complex datatypes are record sets.

Table 5–2 describes the list of basic types in Siebel Business Objects and how they map to XML Schema types in Oracle Application Server ProcessConnect. The `xsd` prefix stands for the namespace `http://www.w3.org/2001/XMLSchema`.

Table 5–2 Business Component Datatypes

Siebel	Oracle Application Server ProcessConnect	Description
DTYPE_BOOL	xsd:boolean	Boolean
DTYPE_CURRENCY	xsd:string	A numeric string (has no currency symbols, but handles the locale-based decimal symbol, and +/- prefix/suffix.
DTYPE_DATE	xsd:date	Date
DTYPE_DATETIME	xsd:dateTime	Date and time
DTYPE_TIME	xsd:time	Time
DTYPE_INTEGER	xsd:int	A 32-bit integer
DTYPE_NOTE	xsd:string	An unbounded text field

Table 5–2 (Cont.) Business Component Datatypes

Siebel	Oracle Application Server ProcessConnect	Description
DTYPE_NUMBER	xsd:string	Similar to DTYPE_CURRENCY but not used as currency in Siebel
DTYPE_PHONE	xsd:string	A string representing a phone number. It can be of two formats: + any string, or US area code and number: XXX-XXX-XXXX.
DTYPE_TEXT	xsd:string	Strings of fixed length. The exact length of a DTYPE_TEXT field is visible in the Oracle Application Server Integration Adapter for Siebel 2000 browser.
DTYPE_UTCDATETIME	xsd:dateTime	Date and time. Siebel interprets the datetime in UTC.

Unformatted DTYPE_PHONE Values

All phone numbers should be submitted as unformatted. A formatted phone number looks like:

```
(514) 332-6430 x909
```

An unformatted phone number looks like:

```
5143326430x909
```

A formatted value for a record field of type DTYPE_PHONE is a value whose format matches the locale for which the Siebel application server has been configured.

The Oracle Application Server Integration Adapter for Siebel 2000 expects unformatted phone number values for inserts and updates.

If you submit a formatted phone number value for any business component phone field (of type DTYPE_PHONE), the insert/update succeeds for the first record, but all subsequent queries to retrieve that record fail with a seemingly unrelated error message back from Siebel. If you insert multiple records in a single Insert call, the first record insertion succeeds and the rest fail.

The following is the log exception if formatted phone number values are submitted:

```
Exception occurred:
    Source: Siebel
    Error Code: 65538 (0x10002)
    Cause: Siebel://exception=SBLException (Unique ID none)
```

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