Oracle® Cloud

Using the Oracle Autonomous Transaction Processing Adapter with Oracle Integration
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Preface

This guide describes how to configure the Oracle Autonomous Transaction Processing Adapter as a connection in an integration in Oracle Integration.

Note:

The information in this guide applies to all of your Oracle Integration instances. It doesn’t matter which edition you’re using, what features you have, or who manages your cloud environment. You'll find what you need here, including notes about any differences between the various flavors of Oracle Integration when necessary.

Topics

• Audience
• Documentation Accessibility
• Related Resources
• Conventions

Audience

This guide is intended for developers who want to use the Oracle Autonomous Transaction Processing Adapter in integrations in Oracle Integration.

Documentation Accessibility

For information about Oracle’s commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

Access to Oracle Support

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

Related Resources

See these Oracle resources:
• Oracle Cloud
  http://cloud.oracle.com
• Using Integrations in Oracle Integration
• Using the Oracle Mapper with Oracle Integration

Conventions

The following text conventions are used in this document:

<table>
<thead>
<tr>
<th>Convention</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>boldface</strong></td>
<td>Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.</td>
</tr>
<tr>
<td><em>italic</em></td>
<td>Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.</td>
</tr>
<tr>
<td><code>monospace</code></td>
<td>Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.</td>
</tr>
</tbody>
</table>
Understand the Oracle Autonomous Transaction Processing Adapter

Review the following conceptual topics to learn about the Oracle Autonomous Transaction Processing Adapter and how to use it as a connection in integrations in Oracle Integration. A typical workflow of adapter and integration tasks is also provided.

Topics:

- Oracle Autonomous Transaction Processing Adapter Capabilities
- Oracle Autonomous Transaction Processing Adapter Restrictions
- What Application Version Is Supported?
- Workflow to Create and Add an Oracle Autonomous Transaction Processing Adapter Connection to an Integration

Oracle Autonomous Transaction Processing Adapter Capabilities

The Oracle Autonomous Transaction Processing Adapter enables you to integrate the Oracle Autonomous Transaction Processing database with Oracle Integration through use of direct connectivity. Use the Oracle Autonomous Transaction Processing Adapter to execute SQL queries or stored procedures in the Oracle database. For example, quotes in Oracle CPQ Cloud can be created as Orders in the on-premises Oracle database by sending SQL statements or stored procedures using the Oracle Autonomous Transaction Processing Adapter.

The Oracle Autonomous Transaction Processing Adapter provides the following capabilities:

- Support for using direct connectivity to connect to the Oracle Autonomous Transaction Processing database in place of using the on-premises connectivity agent.
- Support for creating integrations with Oracle Autonomous Data Warehouse.
- Support for invocation of stored procedures in the Oracle database.
- Support for non-JDBC (PL/SQL record and PL/SQL table) datatypes in outbound invocations of stored procedures.
- Support for execution of DML statements and SQL queries: Select, Insert, Update, and Delete.

Select the Run a SQL Statement option on the Basic Info page of the Adapter Endpoint Configuration Wizard to execute simple SQL queries. For complex SQL queries, use stored procedures by selecting the Invoke a Stored Procedure option on the Basic Info page of the Adapter Endpoint Configuration Wizard. Stored procedures can reduce the complexity of a SQL query.
• Support for updating or inserting multiple records in a single request.
• Support for performing a `SELECT` operation against database tables.
• Support for the operations on a table feature, which enables you to model SQL statements with the Adapter Endpoint Configuration Wizard. The operation on a table feature also supports multiple records in a single request.

**Note:**

In Java, Unicode characters are represented as 2 bytes.

Oracle Autonomous Transaction Processing delivers a self-driving, self-securing, self-repairing database service that can instantly scale to meet demands of mission critical transaction processing and mixed workload applications. See [Autonomous Transaction Processing](https://oracle.com).

The Oracle Autonomous Transaction Processing Adapter is one of many predefined adapters included with Oracle Integration. You can configure the Oracle Autonomous Transaction Processing Adapter as a connection in an integration in Oracle Integration.

### Oracle Autonomous Transaction Processing Adapter Restrictions

Note the following Oracle Autonomous Transaction Processing Adapter restrictions in Oracle Integration.

- The PL/SQL boolean type is not supported as an IN/OUT parameter in a stored procedure. However, you can create a wrapper stored procedure that converts PL/SQL boolean to an integer and use those wrapper stored procedures in Oracle Integration.
- Nested PL/SQL types (for example, `RECORD` types inside a `TABLE` type) are not supported as IN/OUT parameters in a stored procedure. However, you can define `OBJECT` types inside the `TABLE` type.
- The Oracle Autonomous Transaction Processing Adapter cannot be configured as a trigger connection in an integration.
- Cross schema stored procedures are not allowed in cases where Oracle Integration must generate the wrappers.
- Inbound (trigger) polling is not supported.
- Use of the on-premises connectivity agent is not supported. Instead, the Oracle Autonomous Transaction Processing Adapter uses direct connectivity to connect to the Oracle Autonomous Transaction Processing database.

•
What Application Version Is Supported?

For information about which application version is supported by this adapter, see the Oracle Integration Adapters Certification Matrix under section Oracle Integration Adapters Certification at the top of the page:

Oracle Integration Adapters Certification Matrix

Workflow to Create and Add an Oracle Autonomous Transaction Processing Adapter Connection to an Integration

You follow a very simple workflow to create a connection with an adapter and include the connection in an integration.

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>More Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Create the adapter connections for the applications you want to integrate. The connections can be reused in multiple integrations and are typically created by the administrator.</td>
<td>Create an Oracle Autonomous Transaction Processing Adapter Connection</td>
</tr>
<tr>
<td>2</td>
<td>Create the integration. When you do this, you add trigger and invoke connections to the integration.</td>
<td>Create Integrations and Add the Oracle Autonomous Transaction Processing Adapter Connection to an Integration</td>
</tr>
<tr>
<td>3</td>
<td>Map data between the trigger connection data structure and the invoke connection data structure.</td>
<td>Map Data of Using Integrations in Oracle Integration</td>
</tr>
<tr>
<td>4</td>
<td>(Optional) Create lookups that map the different values used by those applications to identify the same type of object (such as gender codes or country codes).</td>
<td>Manage Lookups of Using Integrations in Oracle Integration</td>
</tr>
<tr>
<td>5</td>
<td>Activate the integration.</td>
<td>Manage Integrations of Using Integrations in Oracle Integration</td>
</tr>
<tr>
<td>6</td>
<td>Monitor the integration on the dashboard.</td>
<td>Monitor Integrations of Using Integrations in Oracle Integration</td>
</tr>
<tr>
<td>7</td>
<td>Track payload fields in messages during runtime.</td>
<td>Assign Business Identifiers for Tracking Fields in Messages and Manage Business Identifiers for Tracking Fields in Messages of Using Integrations in Oracle Integration</td>
</tr>
<tr>
<td>8</td>
<td>Manage errors at the integration level, connection level, or specific integration instance level.</td>
<td>Manage Errors of Using Integrations in Oracle Integration</td>
</tr>
</tbody>
</table>
Create an Oracle Autonomous Transaction Processing Adapter Connection

A connection is based on an adapter. You define connections to the specific cloud applications that you want to integrate.

Topics:
• Prerequisites for Creating a Connection
• Create a Connection

Prerequisites for Creating a Connection

You must satisfy the following prerequisites for creating a connection with Oracle Integration.

1. Download the client credentials wallet from the Oracle Autonomous Transaction Processing instance. See Download Client Credentials (Wallets) of Using Oracle Autonomous Transaction Processing.
2. Ensure that the target database is accessible.
3. Ensure that you have write permissions to the database.
4. Ensure that you have the required permissions to run stored procedures and SQL statements.
5. Know the database service name.
6. Know the database service username and password for connecting to the database.

Create a Connection

The first step in creating an integration is to create the connections to the applications with which you want to share data.

1. In the navigation pane, click Integrations, then click Connections.
2. Click Create.
Note:

You can also create a connection in the integration canvas of:

- An orchestrated integration (See Define Inbound Triggers and Outbound Invokes.)
- A basic routing integration (See Add a Trigger (Source) Connection.)

The Create Connection — Select Adapter dialog is displayed.

3. Select an adapter from the dialog. You can also search for the type of adapter to use by entering a partial or full name in the Search field, and clicking Search. The Create New Connection dialog is displayed.

4. Enter the information to describe the connection.

- Enter a meaningful name to help others find your connection when they begin to create their own integrations. The name you enter is automatically added in capital letters to the Identifier field. If you modify the identifier name, do not include a blank space (for example, Sales Opportunity).

- Select the role (direction) in which to use this connection (trigger, invoke, or both). Only the roles supported by this adapter are displayed for selection. When you select a role, only the connection properties and security policies appropriate to that role are displayed on the Connections page. If you select an adapter that supports both invoke and trigger, but select only one of those roles, then try to drag the adapter into the section you did not select, you receive an error (for example, configure an Oracle Service Cloud (RightNow) Adapter as only an invoke, but drag the adapter to the trigger section).

- Enter an optional description of the connection.
5. Click **Create**.

Your connection is created and you are now ready to configure connection details, such as email contact, connection properties, security policies, connection login credentials, and (for certain connections) agent group.

**Add a Contact Email**

From the Connection Administrator section of the connection, you can add a contact email address for notifications.

1. In the **Email Address** field, enter an email address to receive email notifications when problems occur.
2. In the upper right corner, click **Save**.

**Configuring Connection Properties**

Enter connection information so your application can process requests.

1. Click **Configure Connectivity**.
   
The Connection Properties dialog is displayed.
2. Enter the service name.
3. Click **OK**.
   
   You are now ready to configure connection security.

**Configuring Connection Security**

Configure security for your database connection by selecting the security policy and setting login credentials. A database connection is only allowed for publicly accessible databases.

1. Click **Configure Credentials**.
2. Click the check box, then click **Upload** to upload the wallet. This wallet retrieves the client credentials information.
3. Enter and then confirm the wallet password.
4. Enter the database service user name.
5. Enter and then confirm the database service password.
6. Click **OK**.

**Test the Connection**

Test your connection to ensure that it is successfully configured.

1. In the upper right corner of the page, click **Test**.

   *If your adapter connection uses a WSDL, a dialog is displayed that prompts you to select the type of connection testing to perform. Otherwise, this step is not applicable.*

   • Select the testing to perform:
• **Validate and Test:** Performs a full validation of the WSDL, including processing of the imported schemas and WSDLs. Complete validation can take several minutes depending on the number of imported schemas and WSDLs. No requests are sent to the operations exposed in the WSDL.

• **Test:** Connects to the WSDL URL and performs a syntax check on the WSDL. No requests are sent to the operations exposed in the WSDL.

If successful, the following message is displayed and the progress indicator shows 100%.

Connection `connection_name` was tested successfully.

2. If your connection was unsuccessful, an error message is displayed with details. Verify that the configuration details you entered are correct.

3. When complete, click **Save**, then click **Close**.
Add the Oracle Autonomous Transaction Processing Adapter Connection to an Integration

When you drag the Oracle Autonomous Transaction Processing Adapter into an integration, the Adapter Endpoint Configuration Wizard appears. This wizard guides you through configuration of Oracle Autonomous Transaction Processing Adapter endpoint properties.

The following sections describe the wizard pages that guide you through configuration of the Oracle Autonomous Transaction Processing Adapter as an invoke in an integration. The Oracle Autonomous Transaction Processing Adapter cannot be configured as a trigger connection in an integration.

Topics:
- Basic Information Page
- Invoke Stored Procedure Page
- Invoke SQL Statement Page
- Table Operation Page
- Operations on Table Page
- Summary Page

Basic Information Page

Specify a name, description, and operation type on the Basic Info page of each trigger and invoke connection in your integration.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>What do you want to call your endpoint?</td>
<td>Identifies the connection with a meaningful name that defines the purpose of connection. For example, CreateEmployeeInDB for a database connection that adds new employee data. The name can include English alphabetic characters, numbers, underscores, and dashes. The name cannot include:</td>
</tr>
<tr>
<td></td>
<td>• Blank spaces (for example, My DB Connection)</td>
</tr>
<tr>
<td></td>
<td>• Special characters (for example, #:836 or righ(t)now4)</td>
</tr>
<tr>
<td></td>
<td>• Multibyte characters</td>
</tr>
</tbody>
</table>
What operation do you want to perform?

- **Invoke a Stored Procedure** — Select to run a stored procedure on the database.
- **Run a SQL Statement** — Select to run a SQL query on the database.
- **Perform an Operation On a Table** — Select to perform one of the following operations on a table. You can update or insert multiple records in a single request.
  - **Insert**
  - **Update**
  - **Insert or Update (Merge)**
  - **Select**

**Notes**

- When operations in a SQL statement such as Update, Concat, and Merge accept values for the inbound invocation of an integration, they do not work. For example, the following query does not work:

  ```sql
  select concat(empname, 'ss') from DB_AQ
  where empno=#empno
  ```

  ```sql
  select empno from DB_AQ where
  empname=concat(#empname, 'YY')
  ```

  As a workaround, handle these scenarios during payload mapping. For example, perform a concatenation during mapping of the payload. The final output can then be passed as input to the SQL query.

- **IN/BETWEEN** operators are not supported with bind parameters. Use greater than (>) and less than (<) operators instead.

---

**Invoke Stored Procedure Page**

Enter the invoke stored procedure values. The Invoke a Stored Procedure page appears when you select **Invoke a Stored Procedure** as the operation to perform on the Basic Info page.

You can specify the following values on the Invoke a Stored Procedure page.

- Select the database schema that includes the data you want to query (for example, you want to query details about an employee based on their employee ID).
- Select a stored procedure or package from the list that is displayed after you select the database schema.
Note:

- Stored procedures return binary large objects (for example, BLOB database data types) as base64Binary types in XML. Depending upon the use cases, these can be decoded during transformation using inbuilt functions such as decodeBase64 or can be passed as-is for downstream processing.
- Adapter input/output parameters are defined based on the stored procedure IN/OUT parameters. The IN parameter corresponds to the request and the OUT parameter is translated as the response.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select Schema</td>
<td>Select a database schema from the list. This action refreshes the page to display fields for selecting a package or procedure to invoke. Special characters (for example, #) are not supported in schema names. See Special Characters are Not Supported in Schema Names.</td>
</tr>
<tr>
<td>Select Package</td>
<td>Select the database package. This action refreshes the page to display the procedures available for the package. When importing a predefined integration package containing PLS or SQL stored procedures, the wrapper package is not recreated in the target database. To add the wrapper package, confirm JPublisher is installed on the target database and define the original stored procedure. After confirming JPublisher is installed and the stored procedure is defined, open the PL/SQL Wrapper utility and execute the add scripts command to add the scripts included in the exported inventory archives (IAR) file.</td>
</tr>
<tr>
<td>Select Procedure</td>
<td>Displays the in (inbound), out (outbound), and in/out (inbound/outbound) parameters for the selected package.</td>
</tr>
<tr>
<td>Arguments</td>
<td>Display the in, out, and in/out parameters that are passed with this procedure.</td>
</tr>
</tbody>
</table>
Invoke SQL Statement Page

Enter the SQL statement values. The Run a SQL Statement page appears when **Run a SQL Statement** is selected as the operation to perform on the Basic Info page. You can specify the following values on the Run a SQL Statement page.

**Note:**

- Do not use schema/database names in SQL queries. Configure the details in the connection. For example:

  Update HR.employee set HR.employee.first_name = 'Name' where HR.employee.employee_id='1'

  can be changed to a simple query, such as:

  Update employee set first_name = 'Name' where employee_id='1'

  where HR is used in the connection details. This restricts a user with specific privileges to a particular schema/database.

- When configuring the adapter as an invoke connection, ensure that proper spaces are provided between key words for a pure SQL statement. For example, the following statement fails during integration activation because there is no blank space between VALUES and (#).

  ```
  INSERT INTO table_name VALUES(#EMPNO, #EMPNAME)
  ```

  Add a blank space between VALUES and (#, and the statement is successfully processed.

  ```
  INSERT INTO table_name VALUES (#EMPNO, #EMPNAME)
  ```

- When configuring the adapter as an invoke connection, define all bind parameters in the same order and define the parameters that takes absolute values at the end.

  ```
  INSERT INTO table_name (EMPNO, EMPNAME, EMPUUID, EMPPHONE, EMPHIREDATE) VALUES (#EMPNO, #EMPNAME, Sys_guid(), NULL, SYSDATE)
  ```

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQL Query</td>
<td>Identifies the SQL query.</td>
</tr>
<tr>
<td>Validate SQL Query</td>
<td>Validates the SQL query syntax.</td>
</tr>
</tbody>
</table>
Table Operation Page

You can update or insert multiple records in a single request.

Topics:
- Relationships Page
- Create Relationship Page
- Attribute Filtering Page
- Operations on Table Page

Import Tables Page

Filter and select the tables to import based on the selected schema. These tables are used to generate a SQL statement based on the operation selected.

You can import the following number of tables:
- A maximum of three tables for insert, update, and insert or update actions
- A maximum of five tables for the select-operation on table feature
- A maximum of five tables for the polling feature

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schema</td>
<td>Select the schema to use. The page is refreshed to display the tables available for selection.</td>
</tr>
<tr>
<td>Name Filter</td>
<td>Filter the display of tables.</td>
</tr>
<tr>
<td>Available</td>
<td>Select the tables on which to insert or update records.</td>
</tr>
<tr>
<td>Selected</td>
<td>Displays the selected tables.</td>
</tr>
</tbody>
</table>

Relationships Page

Review the relationships between the selected tables and optionally create, remove, or rename relationships. These relationships are used in the insert or update SQL statements.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relationships Table</td>
<td>Displays the relationships defined on the root database table and any related tables (one-to-one or one-to-many).</td>
</tr>
<tr>
<td>Create</td>
<td>Click to create new relationships.</td>
</tr>
<tr>
<td>Remove</td>
<td>Click to remove a selected relationship.</td>
</tr>
</tbody>
</table>
Create Relationship Page

Specify the parent and child relationships to use in the SQL statement.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent Table</td>
<td>Select the parent table.</td>
</tr>
<tr>
<td>Child Table</td>
<td>Select the child table.</td>
</tr>
</tbody>
</table>
| Mapping Type          | Select the mapping type (one-to-many, one-to-one, or one-to-one with the foreign key on the child table). For example, if you selected Employees as the parent table and Departments as the child table, the following options are displayed:  
  • Employees has a 1:1 Relationship with Departments  
  • Employees has a 1:1 Relationship with Departments (Foreign Key on Child table)  
  • Employees has a 1:M Relationship with Departments |
| Parent and Child Table| Associate the foreign key fields to the primary key fields. |
| Relationship Name     | Optionally name the relationship (a default name is generated). |

Attribute Filtering Page

Filter out the attributes to exclude.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attributes Tree</td>
<td>Deselect any attributes to exclude from the database query. You cannot exclude primary key attributes.</td>
</tr>
</tbody>
</table>

Advanced Options Page

Provide additional advanced options such as sequencing. This is only valid for the insert and merge operations.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table</td>
<td>Displays the selected table.</td>
</tr>
<tr>
<td>Sequence</td>
<td>Specify that the primary key is assigned from a sequence on any insert. Click Search and select a sequence from the list.</td>
</tr>
</tbody>
</table>
Operations on Table Page

Select the database tables. To use the bulk extract feature, you must choose the **SELECT** operation from the **Perform an Operation On a Table** list on the Basic Info page.

### Operations on Table Page

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Schema</strong></td>
<td>Select the database schema that includes the tables to process.</td>
</tr>
<tr>
<td><strong>Table Name</strong></td>
<td>Enter a filter with which to search the schema (for example, %TAB to search for tables with TAB in the name).</td>
</tr>
</tbody>
</table>
| **Table Type**                         | Specify the table type filter to get a subset of the appropriate database objects, then click **Search**.  
  • ALL  
  • TABLE  
  • VIEW |
| **Filter By**                          | Enter the initial letters to filter the display of table names.             |
| **Table Names**                        | Select the tables to import.                                                |
| **Note**: It is recommended that you to import the tables together for the adapter to automatically recognize the relationship. If you import the tables separately, you must explicitly create the table relationship. |
| **Import Tables**                      | Click to import the tables. The page is refreshed for you to select the parent database table. |
| **Select the parent database table**   | Select the parent (root) table from the list. If using multiple related tables, this is the top-level parent table in the relationship. After making your selection, the page is refreshed for you to view and edit the table relationships. |
| **Add || Remove Tables**               | Click to add more tables or remove tables no longer in use.                |
| **Review and manage parent database table relationships** | Click **Edit** to view and edit the table relationships. The relationships automatically identified by the adapter are displayed. See **Review and manage parent database table relationships Option**. |
| **Review and filter columns from selected database tables** | Click **Edit** to view and edit the table attributes. You can deselect any attributes to exclude from the database queries. Primary key attributes cannot be excluded. See **Review and filter columns from selected database tables Option**. |
| **Review and edit SQL query**          | Click **Edit** to view and edit the default SQL query. See **Review and edit SQL query Option**.  
  **Note**: This field is available for a **Select** operation on the table. |
Review and manage parent database table relationships Option

Table 3-1  - Review and manage parent database table relationships Option

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create New</td>
<td>Click to create a new relationship.</td>
</tr>
<tr>
<td>Relations</td>
<td>View the existing parent and child table relations automatically created by the adapter.</td>
</tr>
</tbody>
</table>

Review and filter columns from selected database tables Option

Table 3-2  - Review and filter columns from selected database tables Option

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attributes Tree</td>
<td>View and deselect attributes automatically created by the adapter.</td>
</tr>
</tbody>
</table>

Review and edit SQL query Option

Note:
This is only applicable for a Select operation on a table.

Table 3-3  - Review and edit SQL query Option

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQL Edit</td>
<td>Click to manually edit the query in the SQL Query field.</td>
</tr>
</tbody>
</table>
Table 3-3  (Cont.) - Review and edit SQL query Option

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edit using Expression Builder</td>
<td>Click to edit the query in the Expression Builder.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Add New</strong>: Click to add new criteria to the SQL query.</td>
</tr>
<tr>
<td></td>
<td>1. Click <strong>Add New</strong>.</td>
</tr>
<tr>
<td></td>
<td>2. In the <strong>First Argument</strong> field, click <strong>Edit</strong>, and select the argument to add (for example, <code>deptno</code>).</td>
</tr>
<tr>
<td></td>
<td>3. In the <strong>Operator</strong> field, select the operator to use for the comparison from the dropdown list (for example, <code>=</code>).</td>
</tr>
<tr>
<td></td>
<td>4. In the <strong>Second Argument</strong> field, select the option to use:</td>
</tr>
<tr>
<td></td>
<td>– <strong>Literal</strong>: Click to specify a value. If selected, you are prompted to select the data type (for example, integer) and specify the value.</td>
</tr>
<tr>
<td></td>
<td>– <strong>Parameter</strong>: Click to specify a bind parameter.</td>
</tr>
<tr>
<td></td>
<td>– <strong>Query Key</strong>: Click to run the comparison against another column in the table.</td>
</tr>
</tbody>
</table>

New criteria is appended to the SQL query with a **WHERE** clause. If you add subsequent SQL queries, they are appended to the SQL query with an **AND** clause

- **Add Nested**: Click to add nested criteria to the SQL query.
- **Edit**: Click the edit the SQL criteria you specified.
- **Remove**: Click the edit the SQL criteria you specified.

Click to edit the query with the Expression Builder.

**Maximum Number of Records to be fetched**  Select the number of records to fetch with this SQL query.
Summary Page

You can review the specified adapter configuration values on the Summary page.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary</td>
<td>Displays a summary of the configuration values you defined on previous pages of the wizard. The information that is displayed can vary by adapter. For some adapters, the selected business objects and operation name are displayed. For adapters for which a generated XSD file is provided, click the XSD link to view a read-only version of the file. To return to a previous page to update any values, click the appropriate tab in the left panel or click <strong>Back</strong>. Click <strong>Cancel</strong> to cancel your configuration details.</td>
</tr>
</tbody>
</table>
Implement Common Patterns Using the Oracle Autonomous Transaction Processing Adapter

You can use the Oracle Autonomous Transaction Processing Adapter to implement the following common patterns.

Topics:
- Define a Select Operation on Database Tables

Define a Select Operation on Database Tables

You can define a `SELECT` operation to perform against database tables. This section provides a high level overview of creating an integration in which an Oracle Autonomous Transaction Processing Adapter is configured as an invoke connection to retrieve table records from the Oracle Database.

To define a `SELECT` operation on database tables:

2. Select **App Driven Orchestration** in the Create Integration - Select a Style dialog.
3. Add and configure the SOAP Adapter as a trigger connection in the integration.
   - The SOAP Adapter is configured to accept an input and return the response received from the invoke connection.
4. Add the Oracle Autonomous Transaction Processing Adapter as an invoke connection in the integration.
   - This invokes the Adapter Endpoint Configuration Wizard.
5. On the Basic Info page, select **Perform an Operation On a Table** as the type of operation to perform and **Select** as the operation to perform on the table.
6. On the Operate On Table page, specify the schema and tables to import, and click **Import Tables**. For this example, the following values are specified.
   - **Schema**: HR
   - **Table Type**: TABLE
   - **Table Name**: %TAB
   - **Selected Tables**: EMPLOYEE_TAB and DEPARTMENT_TAB. The tables are imported together for the Oracle Autonomous Transaction Processing Adapter to recognize the relation between the tables.
The page is refreshed for you to select the parent (root) database table.

7. Select the parent table (for this example, DEPARTMENT_TAB is selected).

This page enables you to:
- View the automatically created table relationships and create new ones.
- View and deselect attributes.
- View and edit the automatically created SQL query.

8. If you want to edit the automatically created SQL query, click **Edit** to the right of **Review and edit SQL Query**.
   a. Click **Edit using Expression Builder**. You can also manually edit the SQL query by clicking **SQL Edit**.
b. Click **Add New** to add new criteria to the SQL query. The automatically created SQL query is displayed below the link.

   ![Query Criteria Add New](image)

   SELECT DEPTNO, DEPTNAME, LOC FROM DEPTARTMENT_TAB

   ![Expression](image)

   The criteria you specify are appended to the existing SQL query as part of a **WHERE** clause. Any additional SQL query criteria you specify are appended as part of an **AND** clause. For example:

   ```sql
   SELECT DISTINCT t0.DEPTNO, t0.DEPTNAME, t0.LOC FROM DEPTARTMENT_TAB t0, EMPLOYEE_TAB t1
   WHERE ((t0.DEPTNO = #deptno) AND (t1.EMPID > 999)) AND (t1.DEPTNO = t0.DEPTNO))
   ```

d. Click **OK**.

9. Click **Next**.

10. View your selections on the Summary page. Links to the tables you selected to import and SQL query you specified are provided.

11. Click **Done** to exit the Adapter Endpoint Configuration Wizard.
12. Complete the integration by performing mapping and tracking tasks.
13. Activate the integration.
14. Copy the link to invoke the integration from under the How to Run link.
15. Invoke the integration from a tool such as the SOAP UI.
16. Review the values returned by the Oracle Autonomous Transaction Processing Adapter.
Troubleshoot the Oracle Autonomous Transaction Processing Adapter

Review the following topics to learn about troubleshooting issues with the Oracle Autonomous Transaction Processing Adapter.

Topics:

• **Special Characters are Not Supported in Schema Names**

Additional integration troubleshooting information is provided. See Troubleshoot Oracle Integration in *Using Integrations in Oracle Integration*.

**Special Characters are Not Supported in Schema Names**

If you use schema names with special characters such as #, integration activation fails. For stored procedures, the schema derives the names of the types in the XSD. If the type name contains #, the XSD has problems with the name. Use a schema name that does not contain any special characters.