Oracle® Cloud

Using the Oracle Autonomous AI Transaction Processing (ATP) Adapter with Oracle Integration 3

F45571-24
July 2026

Oracle Cloud Using the Oracle Autonomous AI Transaction Processing (ATP) Adapter with Oracle Integration 3,

F45571-24

Primary Author: Oracle Corporation

Contents

About This Content

1 Understand the Oracle Autonomous AI Transaction Processing (ATP) Adapter

Oracle Autonomous AI Transaction Processing (ATP) Adapter Capabilities 1
- Cloud Database Connectivity Support 3

Oracle Autonomous AI Transaction Processing (ATP) Adapter Restrictions 3

What Application Version Is Supported? 4

Workflow to Create and Add an Oracle Autonomous AI Transaction Processing (ATP) Adapter Connection to an Integration 4

2 Create an Oracle Autonomous AI Transaction Processing (ATP) Adapter Connection

Prerequisites for Creating a Connection 1
- Download the Credentials Wallet and Obtain Database Details 1
- Satisfy Bulk Data Import Operation Prerequisites 1
- Manage AI and Vector Profiles 3
- Migrate from an Oracle Database Classic Cloud Service Database Instance to an Oracle Autonomous AI Transaction Processing or Oracle Autonomous Data Warehouse Database Instance 3
- Configure the Embedding Models and Database User Privileges 4

Create a Connection 5
- Configure Connection Properties 7
- Configure Connection Security 7
- Configure the Endpoint Access Type 9
- Test the Connection 10

3 Add the Oracle Autonomous AI Transaction Processing (ATP) Adapter Connection to an Integration

Basic Information Page 1

Trigger Polling Page 3

Polling Page 3
Manage Tables Page 3
Relations Page 4
Polling Strategy and Options Page 4
Invoke Stored Procedure Page 5
Invoke SQL Statement Page 7
Table Operation Page 8
Import Tables Page 8
Relationships Page 8
Create Relationship Page 9
Attribute Filtering Page 9
Advanced Options Page 9
Operations on Table Page 10
Invoke Select AI for SQL Page 11
Invoke Cloud AI Vector Search Page 12
Invoke Hybrid Index Operations Page 13
Invoke Bulk Load from Object Storage Page 14
Summary Page 16

4 Implement Common Patterns Using the Oracle Autonomous AI Transaction Processing (ATP) Adapter

Create an AI-Generated SQL Query 1
Perform Inbound Polling Without the Connectivity Agent 3
Methods for Connecting Oracle Integration to an Oracle Autonomous AI Transaction Processing - Dedicated Database Instance with the Oracle Autonomous AI Transaction Processing (ATP) Adapter 4
Define a Select Operation on Database Tables 4
Upload Data from a Flat File into a Database Table 7

5 Troubleshoot the Oracle Autonomous AI Transaction Processing (ATP) Adapter

Read Timeout Error When Testing the Autonomous Database Connection 1
Service Name Specified on the Connections Page is Too Long 2
Special Characters are Not Supported in Schema Names 2
Oracle Autonomous AI Transaction Processing Database is Unreachable During a Connection Test 2

About This Content

This guide describes how to configure this adapter as a connection in an integration in Oracle Integration.

Audience

This guide is intended for developers who want to use this 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 at `http://cloud.oracle.com`
- *Using Integrations in Oracle Integration 3*
- *Using the Oracle Mapper with Oracle Integration 3*
- Oracle Integration documentation on the Oracle Help Center.

Conventions

The following text conventions are used in this document.

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Understand the Oracle Autonomous AI Transaction Processing (ATP) Adapter

Review the following conceptual topics to learn about the Oracle Autonomous AI Transaction Processing (ATP) 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 AI Transaction Processing (ATP) Adapter Capabilities
- Oracle Autonomous AI Transaction Processing (ATP) Adapter Restrictions
- What Application Version Is Supported?
- Workflow to Create and Add an Oracle Autonomous AI Transaction Processing (ATP) Adapter Connection to an Integration

Oracle Autonomous AI Transaction Processing (ATP) Adapter Capabilities

The Oracle Autonomous AI Transaction Processing (ATP) Adapter enables you to integrate the Oracle Autonomous AI Transaction Processing database with Oracle Integration through use of a wallet for direct connectivity. Use the Oracle Autonomous AI Transaction Processing (ATP) Adapter to execute SQL queries or stored procedures in the Oracle Autonomous AI Transaction Processing database. For example, quotes in Oracle CPQ Cloud can be created as `Orders` in the Oracle Autonomous AI Transaction Processing database by executing SQL statements or stored procedures using the Oracle Autonomous AI Transaction Processing (ATP) Adapter.

The Oracle Autonomous AI Transaction Processing (ATP) Adapter provides the following capabilities:

- Support for using a wallet for direct connectivity to connect to the Oracle Autonomous AI Transaction Processing - Shared (ATP-S) database in place of using the on-premises connectivity agent.
- Support for polling new and updated records for processing in the Oracle Autonomous AI Transaction Processing (ATP) Adapter with or without use of the connectivity agent. See Perform Inbound Polling Without the Connectivity Agent.
  The Oracle Autonomous AI Transaction Processing (ATP) Adapter supports distributed polling and multithreading. Distributed polling helps eliminate duplicate polling of the same records while multithreading provides optimum performance.
- Support for connecting to private resources that are in your virtual cloud network (VCN) with a private endpoint. SCAN Domain Name System (DNS) is supported with private endpoints. See Connect to Private Resources in *Provisioning and Administering Oracle Integration 3* and Configure the Endpoint Access Type. This type of connection does not use the connectivity agent.
- Support for integrating an Oracle Autonomous AI Transaction Processing - Shared (ATP-S) database with an Oracle Cloud Infrastructure private endpoint. Integration is achieved with

a wallet-based connection that uses the connectivity agent. See Configure Connection Security.

- Support for accessing an Oracle Autonomous AI Transaction Processing – Dedicated (ATP-D) database with a wallet-based connection that uses the connectivity agent.
- Support for the bulk data import operation. This feature is supported for the following scenarios:
  - When using direct connectivity (that is, without use of the connectivity agent)
  - When using the Oracle Autonomous AI Transaction Processing - Shared (ATP-S) database
  - With the comma-separated value (CSV) data format only.

  A typical bulk data import use case with the Oracle Autonomous AI Transaction Processing (ATP) Adapter consists of getting a data file from an FTP server or application (such as an HCM payroll system), placing the file in an object storage bucket, and placing the file contents into an Oracle Autonomous AI Transaction Processing - Shared (ATP-S) database. The file can be in a format expected by the database (for example, a CSV file) or in a format that the database is not expecting (for example, XML or JSON). In that case, Oracle Integration is used to translate the format into a CSV format that the database expects.
- Support for creating integrations with Oracle Autonomous AI Lakehouse.
- Support for invocation of stored procedures in the Oracle Autonomous 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. To automatically generate SQL queries using a natural language prompt, select the **Select AI for SQL** option. 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.
- Select the **AI Vector Search** option on the Basic Info page of the Adapter Endpoint Configuration Wizard to execute search data using vector embeddings, rather than traditional keyword or attribute-based queries. You can search for relevant text from your source data on a specific column. The vector search locates and matches data that is similar to the text that you provide as your search input.
- Support for hybrid index operations from an invoke connection, including ingesting documents into a hybrid index, searching a hybrid index, and checking the status of a hybrid index ingestion job.
- 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 AI 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.

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

Cloud Database Connectivity Support

This table describes cloud database connectivity support for the Oracle Autonomous AI Transaction Processing (ATP) Adapter.

Database	Public Gateway	Private Gateway	Connectivity Agent
Oracle Autonomous AI Transaction Processing - public access with wallet	Supported (If access not restricted)	Supported	Supported
Oracle Autonomous AI Transaction Processing - private endpoint access with wallet	Not supported	Supported	Supported

Oracle Autonomous AI Transaction Processing (ATP) Adapter Restrictions

Note the following Oracle Autonomous AI Transaction Processing (ATP) Adapter restrictions in Oracle Integration.

- You cannot connect to an Exadata-based (Dedicated) Oracle Autonomous Database with the Oracle Autonomous AI Transaction Processing (ATP) Adapter through a private endpoint.
- Overloaded procedures are not supported.
- The NCHAR field type is not supported as the primary key on merge (update/insert) operations.
- Automatic metadata refresh is not supported. Any modifications to stored procedures or tables used in the invoke or trigger connection must be re-imported or redone in the Adapter Endpoint Configuration Wizard for the changes to be reflected.
- Using the bulk data import operation with the connectivity agent is not supported.
- The database password length cannot exceed 20 characters.
- Database schema names with hyphens (`-`) are not supported.
- All integrations that include stored procedure, PureSQL, or operation on table database operations must finish within 240 seconds. Otherwise, the query times out and a `Limit Exceeded` error occurs.

- Access to object storage is a requirement for using the bulk data import operation. Oracle Integration for SaaS consists of a subscription-based account dedicated to Oracle Integration, and does not include services such as object storage. You must obtain a separate trial account to provision object storage for use with the Oracle Autonomous AI Transaction Processing (ATP) Adapter.
- 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.
- The Oracle Autonomous AI Transaction Processing (ATP) Adapter uses JDBC drivers to interact with the database and is restricted by JDBC driver constraints. Therefore, 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.
- Cross schema stored procedures are not allowed in cases where Oracle Integration must generate the wrappers.
- The **Perform Hybrid Index Operation** option on the Basic Information page is supported only when the JDBC With OCI Signature security policy is configured for the connection. See Basic Information Page.

> **Note**
>
> There are overall service limits with Oracle Integration. A service limit is the quota or allowance set on a resource. See Service Limits.

What Application Version Is Supported?

For information about which application version is supported by this adapter, see the Connectivity Certification Matrix.

Workflow to Create and Add an Oracle Autonomous AI Transaction Processing (ATP) 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.

Step	Description	More Information
1	Decide where to work	• Work in a project (see why working with projects is preferred in *Using Integrations in Oracle Integration 3*). • Work outside a project.
2	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.	Create an Oracle Autonomous AI Transaction Processing (ATP) Adapter Connection

Step	Description	More Information
3	Create the integration. When you do this, you add trigger and invoke connections to the integration.	Best Practices and Add the Oracle Autonomous AI Transaction Processing (ATP) Adapter Connection to an Integration
4	Map data between the trigger connection data structure and the invoke connection data structure.	Map Data in *Using Integrations in Oracle Integration 3*
5	(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).	Manage Lookups in *Using Integrations in Oracle Integration 3*
6	Activate the integration.	Manage Integrations in *Using Integrations in Oracle Integration 3*
7	Monitor the integration on the dashboard.	Monitor Integrations During Runtime in *Using Integrations in Oracle Integration 3*
8	Track payload fields in messages during runtime.	Assign Business Identifiers for Tracking Fields in Messages and Track Integration Instances in *Using Integrations in Oracle Integration 3*
9	Manage errors at the integration level, connection level, or specific integration instance level.	Manage Errors in *Using Integrations in Oracle Integration 3*

2

Create an Oracle Autonomous AI Transaction Processing (ATP) 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

Satisfy the following prerequisites appropriate to your environment for creating a connection with Oracle Integration.

- Download the Credentials Wallet and Obtain Database Details
- Satisfy Bulk Data Import Operation Prerequisites
- Manage AI and Vector Profiles
- Migrate from an Oracle Database Classic Cloud Service Database Instance to an Oracle Autonomous AI Transaction Processing or Oracle Autonomous Data Warehouse Database Instance
- Configure the Embedding Models and Database User Privileges

Download the Credentials Wallet and Obtain Database Details

You must download the credentials wallet and obtain database details.

1. Download the client credentials wallet from the Oracle Autonomous AI Transaction Processing instance. See Download Client Credentials (Wallets) in *Using Oracle Autonomous AI Database Serverless*.
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 user name and password for connecting to the database.

Satisfy Bulk Data Import Operation Prerequisites

If you want to use the bulk data import operation, you must configure the Oracle Autonomous AI Transaction Processing (ATP) Adapter to use the JDBC With OCI Signature security policy

on the Connections page. Before you can successfully configure this security policy on the Connections page, you must complete the following prerequisites.

1. Create an object storage bucket in Oracle Cloud Infrastructure and obtain the OCID value of the compartment in which you create the storage bucket. You need this value when configuring the security policy on the Connections page.

   You specify the OCID of the object storage user on the Connections page when configuring the JDBC With OCI Signature security policy. This user should have the `manage bucket` and `manage object` privileges. Set the following policies to manage privileges on the bucket and object in the object storage:

   ```
   Allow group group_name to manage buckets in compartment compartment_name

   Allow group group_name to manage objects in compartment compartment_name
   ```

   See How Policies Work and Policy Reference.

2. Obtain the tenancy OCID and user OCID details in the Oracle Cloud Console. You need these values when configuring the security policy on the Connections page. When you sign up for Oracle Cloud Infrastructure, Oracle creates a tenancy for your company, which is a secure and isolated partition within Oracle Cloud Infrastructure where you can create, organize, and administer your cloud resources.
   a. Sign in to the Oracle Cloud Console.
   b. Open the navigation menu and click **Governance & Administration**. Under **Account Management**, click **Tenancy Details**.
   c. In the **Tenancy information** section, click **Show** to display the **OCID** tenancy value.
   d. Copy the value. You need this value when configuring the security policy on the Connections page.
   e. Click the **Profile** icon and select **User Settings**.

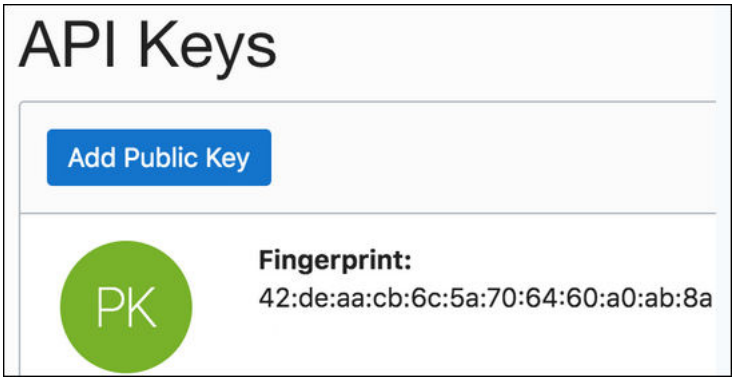
      > **Note**
      >
      > You can also open the navigation menu and click **Identity & Security**. Under **Identity**, click **Users** to access the user profile.

   f. Click **Show** to display the **OCID** user value.
   g. Copy the value.
3. Create an API signing key. You then specify the signing key in Oracle Cloud Infrastructure.
   a. Sign in to the Oracle Cloud Console.
   b. Open the navigation menu and click **Identity & Security**. Under **Identity**, click **Users**.
   c. On the Users page, click the link of the user name to use.
   d. Under **Resources**, click **API Keys**, then click **Add API Key**.

      > **Note**
      >
      > Only a private key *without* a pass phrase/password is supported.

e. In the Add API Key dialog, select **Paste Public Key** and enter the contents of the public key you created, then click **Add**.

f. Copy the finger print value generated by Oracle Cloud Infrastructure. You need this value when configuring the JDBC With OCI Signature security policy on the Connections page.



Manage AI and Vector Profiles

You must create and manage your AI profiles and vector profiles.

- AI profiles: Create and manage your AI profiles through the `DBMS_CLOUD_AI` package.
  See Manage AI Profiles.
- Vector profiles: Create and manage your vector profiles and index through the `DBMS_CLOUD_AI` package.
  See CREATE_VECTOR_INDEX Procedure.

Migrate from an Oracle Database Classic Cloud Service Database Instance to an Oracle Autonomous AI Transaction Processing or Oracle Autonomous Data Warehouse Database Instance

Perform the following steps if you want to migrate from an Oracle Database Classic Cloud Service database instance to an Oracle Autonomous AI Transaction Processing or Oracle Autonomous Data Warehouse database instance.

1. Migrate all the required database objects, stored procedures, wrapper procedures, and tables to the destination Oracle Autonomous AI Transaction Processing or Oracle Autonomous Data Warehouse database instance.
2. Change the Oracle Database Cloud Service Adapter connection details to point to an Oracle Autonomous AI Transaction Processing or Oracle Autonomous Data Warehouse database instance.
   a. Go to the Connection page for the Oracle Database Cloud Service Adapter.
   b. Click **Configure Connectivity**.
   c. Specify the new host name.
   d. Specify the new service name and click **OK**.
   e. Click **Configure Security**.

f. Select the **Oracle Wallet** security policy.
g. Upload the wallet.
h. Specify the wallet password and reconfirm it.
i. Specify the database service username.
j. Specify the database service password, reconfirm it, and click **OK**.
k. Delete the agent from the connection.

3. Test the connection.
4. Once the test is successful, click **Save** to save the connection details.
5. Reactivate the integrations.

Configure the Embedding Models and Database User Privileges

You must configure the embedding models and database user privileges.

Configure the Embedding Models in Oracle Autonomous AI Transaction Processing

Vector ingestion and vector search in Oracle Autonomous AI Transaction Processing require pretrained embedding models to be preconfigured and available at the database level. These models generate vector embeddings from document content and are mandatory for all vector-based operations.

Before performing vector ingestion, upload one or more approved embedding models to the database. Embedding models configured as part of this prerequisite are reused across document ingestion pipelines, vector search queries, and hybrid search queries.

> **Note**
>
> Vector ingestion or search cannot be executed unless this prerequisite is satisfied.

See Convert Pretrained Models to ONNX Model: End-to-End Instructions for Text Embedding.

Use `DBMS_DATA_MINING.IMPORT_ONNX_MODEL` to import the embedding model.

Sample Query: DBMS_DATA_MINING.IMPORT_ONNX_MODEL

```
DBMS_DATA_MINING.IMPORT_ONNX_MODEL(
  'EMBEDDING_MODEL_NAME',
  EMBEDDING_MODEL_SOURCE_BLOB,
  JSON(
    '{
      "function": "embedding",
      "input": {
        "input": ["INPUT_ATTRIBUTE"]
      },
      "embeddingOutput": "OUTPUT_ATTRIBUTE"
    }'
  )
);
```

Grant Database User Privileges

Grant the database user used by the integration the privileges required for hybrid index operations. These privileges support table creation, vectorizer preference creation, hybrid vector index creation, vector search package execution, and hybrid index ingestion, search, and ingestion status operations.

Run the following SQL statements as a DBA or administrator user. Replace *db_user* with the Oracle Autonomous AI Transaction Processing database user used by the adapter connection.

```
GRANT CONNECT TO db_user;
GRANT RESOURCE TO db_user;
GRANT CREATE SEQUENCE TO db_user;
GRANT CREATE TRIGGER TO db_user;
GRANT CREATE TABLE TO db_user;
GRANT CREATE JOB TO db_user;
GRANT EXECUTE ON DBMS_VECTOR_CHAIN TO db_user;
GRANT EXECUTE ON DBMS_SCHEDULER TO db_user;
GRANT EXECUTE ON CTX_DDL TO db_user;
GRANT EXECUTE ON DBMS_CLOUD TO db_user;
GRANT EXECUTE ON DBMS_HYBRID_VECTOR TO db_user;
ALTER USER db_user QUOTA UNLIMITED ON DATA;
```

Create a Connection

Before you can build an integration, you must create the connections to the applications with which you want to share data.

> **Note**
>
> You can also create a connection in the integration canvas. See Define Inbound Triggers, Outbound Invokes, and Actions.

To create a connection in Oracle Integration:

1. Decide where to start:
   - Work in a project (see why working with projects is preferred).
     a. In the navigation pane, click **Projects**.
     b. Select the project name.
     c. Click **Integrations**.
     d. In the **Connections** section, click **Add** if no connections currently exist or **+** if connections already exist. The Create connection panel opens.
   - Work outside a project.
     a. In the navigation pane, click **Design**, then **Connections**.
     b. Click **Create**. The Create connection panel opens.
2. Select the adapter to use for this connection. To find the adapter, scroll through the list, or enter a partial or full name in the **Search** field.
3. Enter the information that describes this connection.

Element	Description
Name	Enter a meaningful name to help others find your connection when they begin to create their own integrations.
Identifier	Automatically displays the name in capital letters that you entered in the **Name** field. If you modify the identifier name, don't include blank spaces (for example, `SALES_OPPORTUNITY`).
Role	Select the role (direction) in which to use this connection. **Note**: *Only* the roles supported by the adapter you selected are displayed for selection. Some adapters support all role combinations (trigger, invoke, or trigger and invoke). Other adapters support fewer role combinations. 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, you'll get an error when you try to drag the adapter into the section you didn't select. For example, assume you configure a connection for the Oracle Service Cloud (RightNow) Adapter as only an **invoke**. Dragging the adapter to a **trigger** section in the integration produces an error.
Keywords	Enter optional keywords (tags). You can search on the connection keywords on the Connections page.
Description	Enter an optional description of the connection.
Share with other projects	**Note**: This field only appears if you are creating a connection in a project. Select to make this connection publicly available in other projects. Connection sharing eliminates the need to create and maintain separate connections in different projects. When you configure an adapter connection in a different project, the **Use a shared connection** field is displayed at the top of the Connections page. If the connection you are configuring matches the same type and role as the publicly available connection, you can select that connection to reference (inherit) its resources. See Add and Share a Connection Across a Project.

4. Click **Create**.

   Your connection is created. You're now ready to configure the connection properties, security policies, and (for some connections) access type.

5. Follow the steps to configure a connection.
   The connection property and connection security values are specific to each adapter. Your connection may also require configuration with an access type such as a private endpoint or an agent group.

6. Test the connection.

Configure Connection Properties

Enter connection information so your application can process requests.

1. Go to the **Properties** section.
2. If configuring the connection to use direct connectivity (that is, you are *not* using the connectivity agent):
   a. In the **Host** field, specify the host.
   b. In the **Service Name** field, specify the database service name. It is recommended that you use the `low` profile as the database service name. The database service name is *not* the same as the database service username that you specify in the **Security** section.

> **Note**
>
> The service name must be the same as the one in the `tnsnames.ora` file in the wallet. However, if you receive an error when testing the connection, it may be because the name is too long. See Service Name Specified on the Connections Page is Too Long.

3. If configuring the connection to use the connectivity agent:
   a. In the **Host** field, specify the host.
   b. In the **Port** field, specify the SQL*Net port.
   c. In the **SID** field, specify the database SID.
   d. In the **Service Name** field, specify the database service name. It is recommended that you use the `low` profile as the database service name. The database service name is *not* the same as the database service username that you specify in the **Security** section.

> **Note**
>
> You must specify *either* a SID or service name value. Do not specify values for both fields.

Configure 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.

> **Note**
>
> When a wallet is rotated and you download a new wallet or when credentials are updated in the connection, you must first deactivate the integrations using that connection. Update the connection with the new wallet or credentials and reactivate the integrations for these changes to take effect.

1. Go to the **Security** section.

2. Select the security policy.
3. If you select **JDBC Basic Authentication**:

> **Note**
>
> Use the JDBC Basic Authentication security policy when the target Oracle Autonomous AI Transaction Processing database supports the TCP protocol.

- Enter the database service user name and password to connect to the Oracle Autonomous AI Transaction Processing database. The database service user name is the schema user name for the user to log in to the database. The database service user name is *not* the same as the database service name that you specify in the **Connection Properties** section.

4. If you select **JDBC Over SSL**:

> **Note**
>
> The Oracle Autonomous AI Transaction Processing (ATP) Adapter can connect through the connectivity agent when using the wallet. It can be used as a trigger connection only if the connectivity agent is used in the connection. However, all operations that you select on the Basic Info page such as **Run a SQL Statement**, **Invoke a Stored Procedure**, and **Perform an Operation On a table** are supported when configuring the adapter to use direct connectivity (without the connectivity agent).

   a. In the **Wallet** field, select the check box, then click **Upload** to upload the wallet file.
   b. Enter the wallet password.
   c. Enter the database service user name and password to connect to the Oracle Autonomous AI Transaction Processing database. The database service user name is the schema user name for the user to log in to the database. The database service user name is *not* the same as the database service name that you specify in the **Connection Properties** section.

5. If you select **JDBC With OCI Signature**:

> **Note**
>
> This option is required to use the bulk data import operation and is only supported when using the private gateway or direct connectivity (that is, you are *not* using the connectivity agent).

   a. In the **Wallet** field, select the check box, then click **Upload** to upload the wallet file.
   b. Enter the wallet password.
   c. Enter the database service user name and password to connect to the Oracle Autonomous AI Transaction Processing - Shared (ATP-S) database. The database service user name is the schema user name for the user to log in to the database. The database service user name is *not* the same as the database service name that you specify in the **Connection Properties** section.

d. In the **Object Storage Region** field, specify the region in which your object storage is located (for example, `us-ashburn-1`).

e. In the **Object Storage Tenancy OCID** field, specify the value you copied from the Oracle Cloud Console (for example, `ocid1.tenancy.oc1.alphanumeric.value`). See Prerequisites for Creating a Connection.

f. In the **Object Storage Compartment OCID** field, specify the value you copied from the Oracle Cloud Console (for example, `ocid1.compartment.oc1.alphanumeric.value`).

g. In the **Object Storage User OCID** field, specify the value you copied from the Oracle Cloud Console (for example, `ocid1.user.oc1.alphanumeric.value`).

h. In the **Private Key** field, click **Upload** to select the key you created. Ensure that the key is in RSA (PKCS1) format.

> **Note**
>
> Only a private key *without* a pass phrase/password is supported.

i. In the **Finger Print** field, enter the finger print that was generated when you created the key in the Oracle Cloud Console.

Configure the Endpoint Access Type

Configure access to your endpoint. Depending on the capabilities of the adapter you are configuring, options may appear to configure access to the public internet, to a private endpoint, or to an on-premises service hosted behind a fire wall.

- Select the Endpoint Access Type
- Ensure Private Endpoint Configuration is Successful

Select the Endpoint Access Type

1. Go to the **Access type** section.
2. Select the option for accessing your endpoint.

Option	This Option Appears If Your Adapter Supports ...
Public gateway	Connections to endpoints using the public internet.
Private endpoint	Connections to endpoints using a private virtual cloud network (VCN). **Note**: To connect to private endpoints, you must complete prerequisite tasks in the Oracle Cloud Console. Failure to do so results in errors when testing the connection. See Connect to Private Resources in *Provisioning and Administering Oracle Integration 3* and Troubleshoot Private Endpoints in *Using Integrations in Oracle Integration 3*.

Option	This Option Appears If Your Adapter Supports ...
Connectivity agent	Connections to on-premises endpoints through the connectivity agent. a. Click **Associate agent group**. The Associate agent group panel appears. b. Select the agent group, and click **Use**. To configure an agent group, you must download and install the on-premises connectivity agent. See Download and Run the Connectivity Agent Installer and About Creating Hybrid Integrations Using Oracle Integration in *Using Integrations in Oracle Integration 3*.

Ensure Private Endpoint Configuration is Successful

- To connect to private endpoints, you must complete prerequisite tasks in the Oracle Cloud Console. Failure to do so results in errors when testing the connection. See Connect to Private Resources in *Provisioning and Administering Oracle Integration 3*.
- When configuring an adapter on the Connections page to connect to endpoints using a private network, specify the fully-qualified domain name (FQDN) and *not* the IP address. If you enter an IP address, validation fails when you click **Test**.

Test the Connection

Test your connection to ensure that it's configured successfully.

1. In the page title bar, click **Test**. What happens next depends on whether your adapter connection uses a Web Services Description Language (WSDL) file. Only some adapter connections use WSDLs.

If Your Connection...	Then...
Doesn't use a WSDL	The test starts automatically and validates the inputs you provided for the connection.
Uses a WSDL	A dialog prompts you to select the type of connection 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.

2. Wait for a message about the results of the connection test.
   - If the test was successful, then the connection is configured properly.
   - If the test failed, then edit the configuration details you entered. Check for typos and verify URLs and credentials. Continue to test until the connection is successful.
   - If using the JDBC With OCI Signature security policy, compartment ID verification doesn't occur during the connection test. The Adapter Endpoint Configuration Wizard handles verification and authorization issues with the compartment OCID.
3. When complete, click **Save**.

3

Add the Oracle Autonomous AI Transaction Processing (ATP) Adapter Connection to an Integration

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

The following sections describe the wizard pages that guide you through configuration of the Oracle Autonomous AI Transaction Processing (ATP) Adapter as a trigger or invoke in an integration.

Topics:

- Basic Information Page
- Trigger Polling Page
- Invoke Stored Procedure Page
- Invoke SQL Statement Page
- Table Operation Page
- Operations on Table Page
- Invoke Select AI for SQL Page
- Invoke Cloud AI Vector Search Page
- Invoke Hybrid Index Operations Page
- Invoke Bulk Load from Object Storage 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.

Element	Description
What do you want to call your endpoint?	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: • Blank spaces (for example, `My DB Connection`) • Special characters (for example, `#;83&` or `righ(t)now4`) • Multibyte characters

Element	Description

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**
	• **Select AI for SQL** — Select to enter natural language to create a SQL query.
	• **AI Vector Search** — Select to enable a natural language-based semantic search to find related content across stored documents.
	• **Perform Hybrid Index Operation** — Select to perform one of the following hybrid index operations on a list. This option is only displayed if you configured the JDBC With OCI Signature security policy.
	– **Hybrid Index Ingestion**: Ingests documents into the Oracle Autonomous AI Transaction Processing Database and creates a hybrid index for search.
	– **Hybrid Index Search**: Searches an existing hybrid index using text, semantic, or hybrid search.
	– **Hybrid Index Ingestion Status**: Checks whether a hybrid index ingestion job is running, succeeded, or failed by using the job ID.
	• **Perform Bulk Data Import Operation** — Select to perform one of the following bulk data import operations on a table. This option is only displayed if you configured the **JDBC With OCI Signature** security policy and are using direct connectivity (that is, the connection is *not* configured to use the connectivity agent).
	– **Perform Bulk Load**: Loads a file into the object storage bucket and puts it into the specified database table.
	– **Fetch Load Status**: Fetches the status of a bulk data import operation (either completed, failed, or in progress).
	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:
	`select concat(empname, 'ss') from DB_AQ where empno=#empno`
	`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

Element	Description
	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.

Trigger Polling Page

Select the root database table for the service query.

Topics

- Polling Page
- Manage Tables Page
- Relations Page
- Polling Strategy and Options Page

Polling Page

The following table describes the key information on the Polling page.

Element	Description
Import Tables	Imports tables and the root database table for the service query. A maximum of five tables can be imported.
Remove Tables	Removes the selected table from the service query tables list.
Review and Manage relationships reachable from the root database table.	Appears after importing tables. Select **Edit** to open the Relations page where you can view, create, and remove relationships between tables.
Review and verify the attributes created from the imported tables and relationships.	Appears after importing tables. Select **Edit** to open the Attributes Filtering page where you can review, verify, select or deselect the attributes in the object model created from the imported tables and the defined relationships.
Polling Strategy and Options	Appears after importing tables. Select **Edit** to open the Polling Strategy and Options page where you can define the polling strategy and specify polling options.

Manage Tables Page

The following table describes the key information on the Manage Tables page. The Manage Tables page appears when you select **Import Tables** on the Polling page.

Element	Description
Schema	Select the schema for the tables and views you are importing. Special characters (for example, #) are not supported in schema names. See Special Characters are Not Supported in Schema Names.

Element	Description
Table Type	The type of the table to which the schema or view is applied. The list allows these selections: • All — selects all available tables and views. • Materialized View — selects materialized views. • Materialized View Log — selects materialized view logs. • Synonym — selects the alias for the schema object. • Table — selects tables. • View — selects views.
Table Name	Specify the table name. Table names are case sensitive.
Search	Click to search for the specified table.
Available Tables	Lists the tables that meet the selection criteria.
Selected Tables	Lists your table selection.
Primary Keys	Appears when you select tables without a primary key defined. Selects the virtual primary key for the table. **Note**: Having the primary key at the database level is the best practice.

Relations Page

The following table describes the key information on the Relations page. The Relations page appears when you select **Edit** for the Review and Manage relationships reachable from the root database table option on the Polling page.

Element	Description
Create New	Opens the Create Relation page with these options: • Parent Table — selects the parent table for the relationship between tables. • Child Table — selects the child table for the relationship between tables. • Relationship — defines the relationship between the parent and child tables. • Attribute Name — Applies attributes to the table relationship. • Mapping — Displays the mapping for the table relationship.
Detach	Opens the Relationships list in a new window.

Polling Strategy and Options Page

The following table describes the key information on the Polling Strategy and Options page. The Polling Strategy and Options page appears when you select **Edit** for Polling Strategy and Options on the Polling page.

Element	Description
Logical Delete Field	Selects a field in the root database table. To allow the selection, polling must be enabled in the Status column.

Element	Description
Read Value	Identifies the value that is used to indicate a row has been read. For example, PROCESSED. Surrounding quotes are not required.
Unread Value	Indicates the rows to process. Only rows with Logical Delete Field and column values that match the Unread Value are read.
Rejected Value	Set to **REJECTED**. If the incoming message is greater than the threshold size, that particular record is updated to **REJECTED** instead of **READ**. If the outbound operation returns a response greater than the size allowed, the response message is ignored and a fault response is sent to the calling client. For details about supported sizes, see Service Limits in *Provisioning and Administering Oracle Integration 3*.
Polling Frequency (Sec)	Specifies the polling frequency (in seconds) for new records or events.

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. Procedures without parameters are not listed in the Adapter Endpoint Configuration Wizard for database versions 18*c* and above. You can pass a dummy parameter or create a wrapper procedure with a dummy parameter to list it in the wizard.
> - Stored procedures that contain Boolean or %rowtype as IN/OUT parameters are not supported. You can create wrappers on top of these stored procedures to use them.

Element	Description
Select Schema	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.
Select Package	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.
Select Procedure	Displays the in (inbound), out (outbound), and in/out (inbound/outbound) parameters for the selected package.
Arguments	Display the in, out, and in/out parameters that are passed with this procedure.

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)
  ```

Element	Description
SQL Query	Identifies the SQL query.
Validate SQL Query	Validates the SQL query syntax.
Status	Displays the SQL query syntax validation status. When syntax validation is successful, the message `Success!` appears.

Table Operation Page

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

> **Note**
>
> When you change the structure of a table (for example, you add or delete a column), you must re-import the table by doing a re-edit in the Adapter Endpoint Configuration Wizard. Go to the Import Tables page and re-import the same table, then click **OK** > **Next** > **Done** to complete the wizard. Only then are the table changes reflected in the integration.

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

Element	Description
Schema	Select the schema to use. The page is refreshed to display the tables available for selection.
Name Filter	Filter the display of tables.
Available	Select the tables on which to insert or update records.
Selected	Displays the selected tables.

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.

Element	Description
Relationships Table	Displays the relationships defined on the root database table and any related tables (one-to-one or one-to-many).
Create	Click to create new relationships.

Element	Description
Remove	Click to remove a selected relationship.
Rename	Click to rename a selected relationship.

Create Relationship Page

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

Element	Description
Parent Table	Select the parent table.
Child Table	Select the child 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.

Element	Description
Attributes Tree	Deselect any attributes to exclude from the database query. You cannot exclude primary key attributes.

Advanced Options Page

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

Element	Description
Table	Displays the selected table.

Element	Description
Sequence	Specify that the primary key is assigned from a sequence on any insert. Click **Search** and select a sequence from the list. Only the sequences of the user who owns the adapter on the Connections page are listed. The first sequence value is not the `START WITH` definition in a database sequence after another sequence is used. For example, you use the Insert option of the Perform an Operation on a Table operation and the database sequence for primary key generation. Note that the generated IDs then start with a value that is 50 less then the sequence start value. This is the expected behavior. You can create a sequence by adjusting the start value by 50 or running `select seq.nextval from dual` once to consume the first 50 after creation.

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

Element	Description
Schema	Select the database schema that includes the tables to process.
Table Name	Enter a filter with which to search the schema (for example, %TAB to search for tables with TAB in the name).
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.

Element	Description
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

Element	Description
Create New	Click to create a new relationship.
Relations	View the existing parent and child table relations automatically created by the adapter.

Review and filter columns from selected database tables Option

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

Element	Description
Attributes Tree	View and deselect attributes automatically created by the adapter.

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

Element	Description
SQL Edit	Click to manually edit the query in the **SQL Query** field. Use this field to add any necessary arguments or parameters.
Maximum Number of Records to be fetched	Select the number of records to fetch with this SQL query.

Invoke Select AI for SQL Page

Select a user profile that you have registered in the Oracle Autonomous AI Transaction Processing Database. Then, enter a query in natural language. Add binding parameters, if required, validate, and test the generated query.

Element	Description
Select Profile	Displays a list of profiles that have been registered in the Oracle Autonomous AI Transaction Processing Database. Select one from the list. **Note**: All registered profiles must have access to the required database tables. See Manage AI Profiles.
Natural Language Query	Enter the natural language query. **Note**: Follow these guidelines: • Write the query/prompt in simple English language. • Write the statement clearly and explicitly. • Include schema and table details and validate foreign key relationships for accurate results. • Do not include quotes ("") or any other special characters.
Generate Query	Click to generate the SQL query based on the natural language query provided.
Parameter Name	Displays a list of parameters that fulfill the conditions mentioned in the natural language query.
Parameter Value	Double-click the input area and provide values for the binding parameters.
Add	Click **Add** to add any new or additional binding parameters. **Note**: You must ensure that the generated SQL query is in accordance with the parameters added.
Remove	Click **Remove** to eliminate one or multiple binding parameters. **Note**: You must ensure that the generated SQL query is in accordance with the parameters removed.
Validate and Test SQL Query	Click to validate the SQL query syntax.
Status	Displays the SQL query syntax validation status. When syntax validation is successful, a `Success!` message appears.

See Create an AI-Generated SQL Query.

Invoke Cloud AI Vector Search Page

Select a user profile that you registered in the Oracle Autonomous AI Transaction Processing Database. Then, enter a query in natural language format.

Element	Description
Select Profile	Displays a list of profiles that have been registered in the Oracle Autonomous AI Transaction Processing Database. Select one from the list. **Note**: All registered profiles must have access to the required database tables. See CREATE_VECTOR_INDEX Procedure.

Element	Description
Natural Language Query	Enter the natural language query. **Note**: Follow these guidelines: • Write the query/prompt in simple English language. • Write the statement clearly and explicitly. • Do not include quotes ("") or any other special characters. For example: • `Can I reimburse my travel expenses of INR 50?` • `Can we merge the code without review?`
Test Query	Validates the prompt and retrieves a preview response.
Result	Displays the output generated and shows the source document where the response was found.

Invoke Hybrid Index Operations Page

Select the **Perform Hybrid Index Operation** option on the Basic Information page to configure Oracle Autonomous AI Transaction Processing (ATP) Adapter hybrid index operations.

Operation	Description	Configuration Details
Hybrid Index Ingestion	Ingests documents into an Oracle Autonomous AI Transaction Processing database and creates a hybrid index for search.	Select the embedding model to use.
Hybrid Index Search	Searches an existing hybrid index.	Select the hybrid index and search type. The available search types are **Text**, **Semantic**, and **Hybrid**. See Hybrid Index Search.
Ingestion Status	Checks whether a hybrid index ingestion job is running, succeeded, or failed.	Provide the job ID to check the ingestion status.

Hybrid Index Search

On the Edit Hybrid Index Search page, select the hybrid index to search and configure the search criteria.

You can select one of the following search types:

Search Type	Description
Text	Searches for exact words or phrases.
Semantic	Searches by meaning using AI embeddings.
Hybrid	Combines keyword matching and AI-based meaning search.

For semantic and hybrid searches, select the search mode:

Search Mode	Description
Document	Searches and ranks results at the document level.
Chunk	Searches and ranks individual chunks within documents.

1. Enter the query text in the **query** field, then click **Test** to preview the search results.
2. Click **Continue** to proceed.

Invoke Bulk Load from Object Storage Page

Specify the details for performing a bulk data import operation.

Element	Description
Select Bucket	Select the object storage bucket in which to place or delete the file. The object storage buckets available for selection are located in the compartment that you specified on the Connections page when creating the connection. **Note**: If you don't have the privilege to access the buckets, a `User is Not authorized` message is shown on the screen and no other options are listed.
Delete file from object storage after operation completion	Select to delete the file from the object storage bucket. Otherwise, the file remains in the bucket.

Element	Description
Review and specify the copy_data format options	Click **Edit** to *optionally* specify the file format options. If not specified here or sent in the mapper, all default options are used. The following options are displayed by default. • **Delimiter**: Select the field delimiter used in the file. – **Pipe** – **Single space** – **Comma** – **Semicolon** – **Tab** – **Other** (Select to display a field for entering a custom delimiter.) • **Record Delimiter**: Select the record delimiter used in the file. A new line value is the default value. • **Skip Headers**: Specify the number of rows to skip at the top of the file (if any). • **Show Advanced Options**: Click to optionally specify advanced formatting options for the file. If no formatting options are specified, the default settings are used. If you want to specify an option that is not available in the wizard, you can send the format options as a JSON string in the mapper as follows. `'{"delimiter" : "\"|\"", "quote" : "\"^\"", "ignoremissingcolumns" : "true", "dateformat" : "YYYY-MM-DD-HH24-MI-SS", "blankasnull" : "true"}'` **Note**: For special character usage in the JSON string, when the format options are sent in the mapper, the options provided in the Adapter Endpoint Configuration Wizard are overridden. In this case, the format options sent in the mapper are only considered. It is recommended that you select only one way of providing the format options (either from the wizard or through the mapper). If both are provided, the options in the mapper are only considered. When complete, click **OK** to return to the Bulk Load from Object Storage page.
Select Schema	Select the database table schema.
Select Table	Select the database table in which to write the file data. Based on your selection, all the fields in that table are displayed for selection.

Element	Description

Table Columns	Displays the columns (fields) in the table.
	Note: When selecting the fields in the table, select all the fields in the order of the incoming data. If none of the fields are selected, a default value is considered that takes into account that the data fields are in the same order as the table fields. Table column names with special characters such as spaces or a # are not supported.
	For example, assume the CSV file was formatted as follows:
	
	`booker12|123|Rachel|Johnson`
	`gray07|234|Laura|Johnson1`
	`johnson81|345|Craig|Johnson2`
	`jenkins46|456|Mary|Johnson`
	
	As an example, you may select to move the following table columns to the **Re-order columns as per input data** list to match the order of the CSV file:
	• **USERNAME**
	• **IDENTIFIER**
	• **FIRSTNAME**
	• **LASTNAME**

Summary Page

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

Element	Description
Summary	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 **Go back**. To cancel your configuration details, click **Cancel**.

4

Implement Common Patterns Using the Oracle Autonomous AI Transaction Processing (ATP) Adapter

You can use the Oracle Autonomous AI Transaction Processing (ATP) Adapter to implement the following common patterns.

Topics:

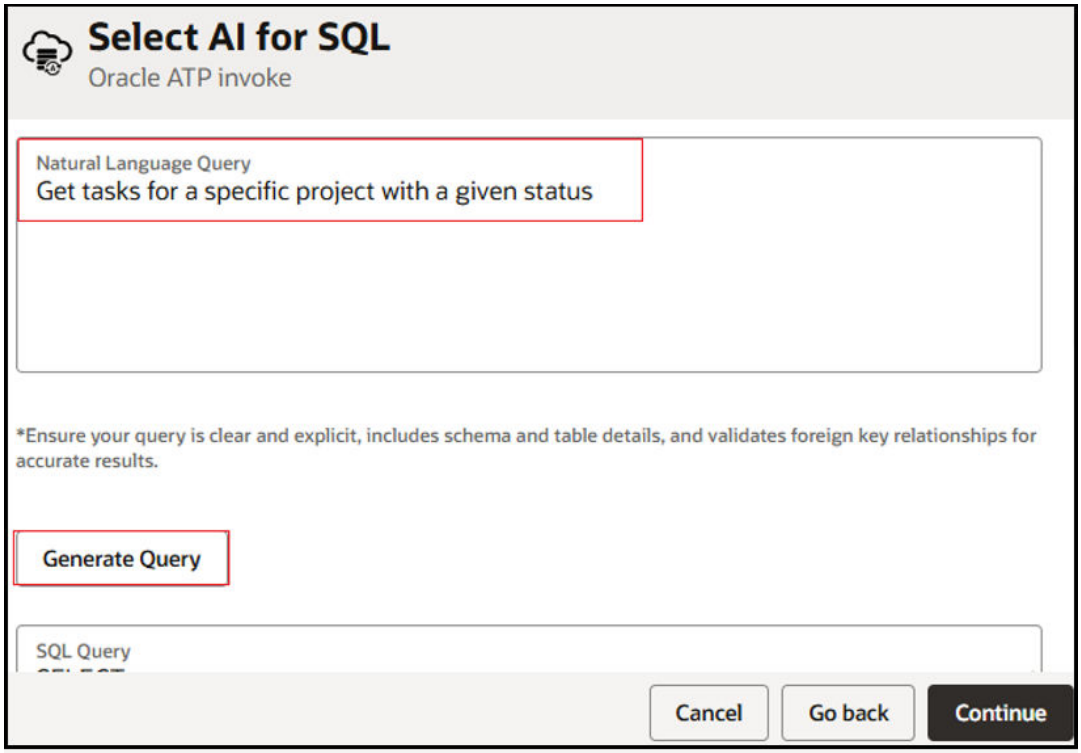
- Create an AI-Generated SQL Query
- Perform Inbound Polling Without the Connectivity Agent
- Methods for Connecting Oracle Integration to an Oracle Autonomous AI Transaction Processing - Dedicated Database Instance with the Oracle Autonomous AI Transaction Processing (ATP) Adapter
- Define a Select Operation on Database Tables
- Upload Data from a Flat File into a Database Table

Create an AI-Generated SQL Query

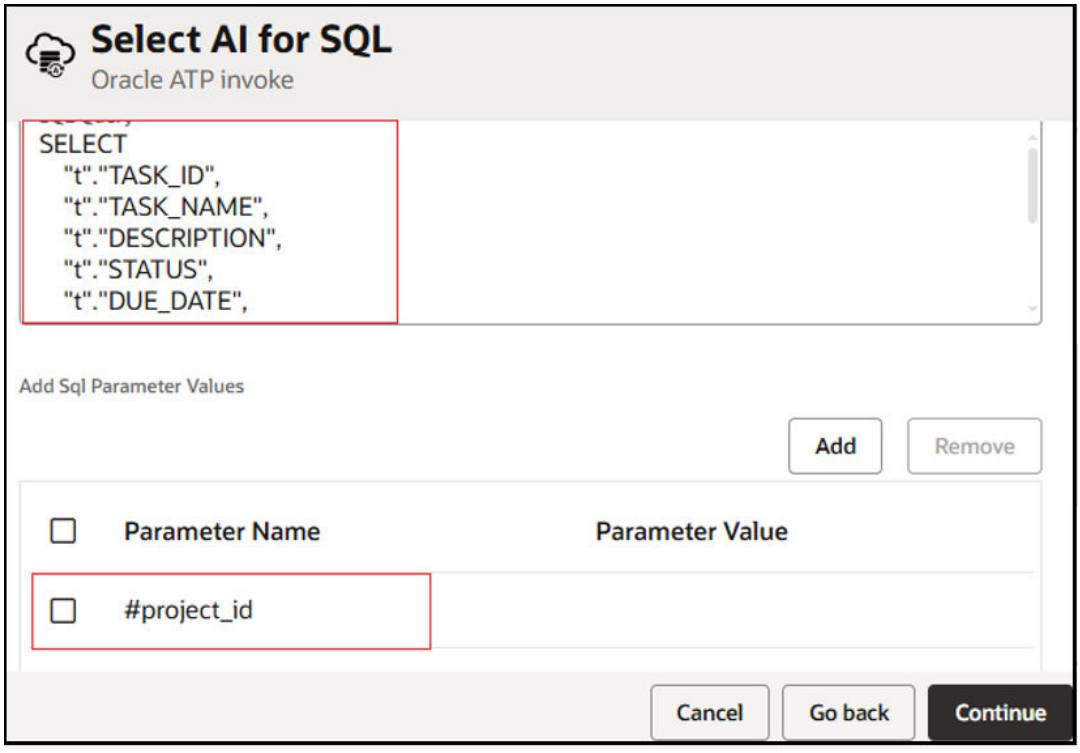
You can create AI-generated SQL queries in the Oracle Autonomous AI Transaction Processing Database. This section provides an overview of performing this task.

To create an AI-generated SQL query, you must satisfy the prerequisites described in Manage AI and Vector Profiles.

1. Create an Oracle Autonomous AI Transaction Processing (ATP) Adapter invoke connection.
2. Drag the Oracle Autonomous AI Transaction Processing (ATP) Adapter into the integration canvas.
3. On the Basic Info page, chose **Select AI for SQL** from the **What operation do you want to perform** list.
4. Select a profile, then enter a SQL query in the **Natural Language Query** field in natural language. When complete, click **Generate Query**.



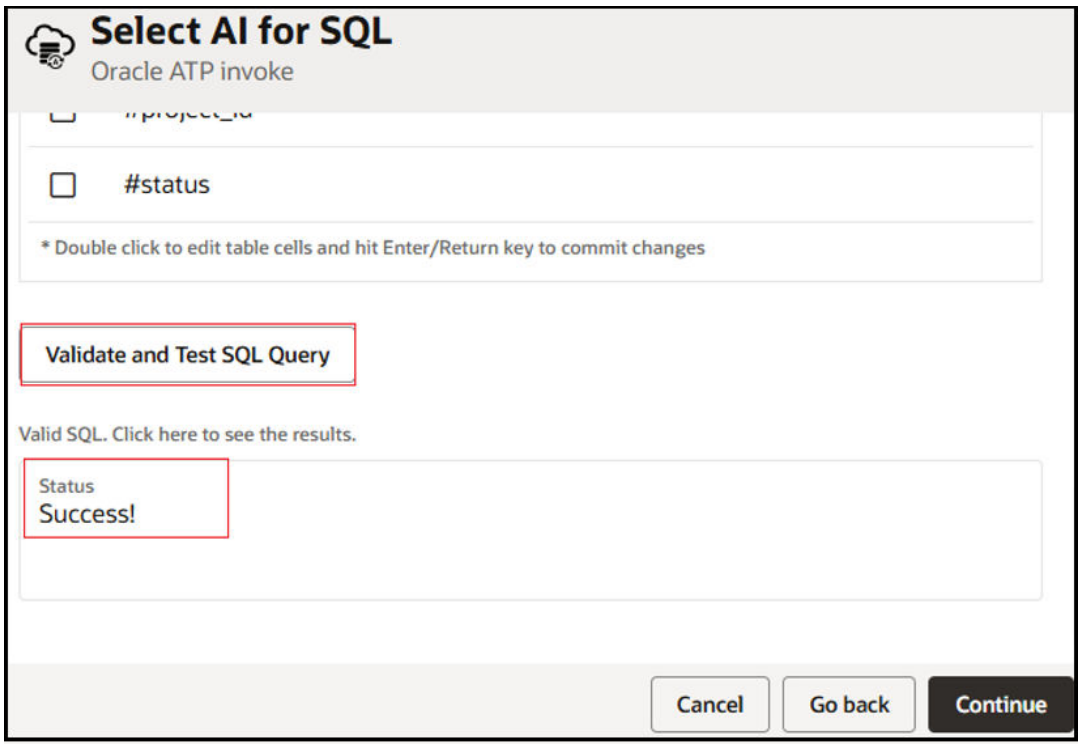
A list of parameters that fulfill the conditions provided in the natural language query is displayed.



5. Double-click the input area in the **Parameter Value** column and provide values for the binding parameters.

6. Click **Add** to add any additional binding parameters.
7. Click **Validate and Test SQL Query**.

   If syntax validation is successful, the message `Success!` appears.

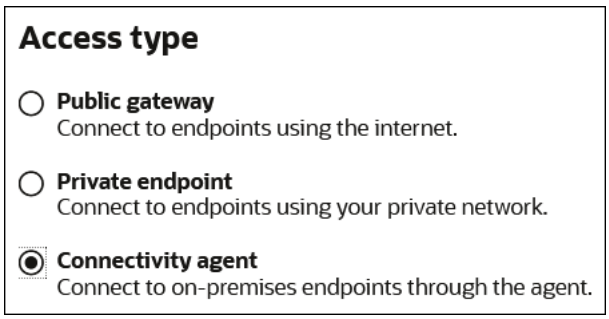


Perform Inbound Polling Without the Connectivity Agent

You can perform inbound polling without the connectivity agent. You can create new connections or update existing connections to bypass the connectivity agent. Depending on your database or messaging service location, you can use the public internet or a private endpoint for polling. If you want, you can continue to use the connectivity agent for inbound polling.

Perform the following steps to create a new connection or update an existing connection to bypass the connectivity agent.

1. Go to the **Access type** section of the Connections page.



2. Select an option based on the location of your database or messaging service.

- If the database or messaging service to access is in a private network, select **Private endpoint** to poll without the connectivity agent. This selection requires that you first configure private endpoint support in the Oracle Cloud Console. See Connect to Private Resources in *Provisioning and Administering Oracle Integration 3*.
- If the database or messaging service to access is public, select **Public gateway** to poll without the connectivity agent. Private endpoint configuration is not required in these scenarios and the adapter polls directly without the connectivity agent.

3. Deactivate and then reactivate the integration.

> **Note**
>
> After completing these steps, the connectivity agent is no longer used for inbound polling. However, it still continues to run. If you no longer need to use the connectivity agent, you can manually stop it.

Several adapters support inbound polling without the connectivity agent. Watch a video to learn more about how to use this feature with one such adapter.

Video

Methods for Connecting Oracle Integration to an Oracle Autonomous AI Transaction Processing - Dedicated Database Instance with the Oracle Autonomous AI Transaction Processing (ATP) Adapter

Connectivity from Oracle Integration to an Oracle Autonomous AI Transaction Processing - Dedicated database instance using the Oracle Autonomous AI Transaction Processing (ATP) Adapter can be accomplished through the following methods.

- Connectivity agent: Use this approach when the Oracle Autonomous AI Transaction Processing - Dedicated database instance is not publicly accessible and resides within a private subnet in your Virtual Cloud Network (VCN). With this topology, the Oracle Autonomous AI Transaction Processing (ATP) Adapter cannot directly access the Oracle Autonomous AI Transaction Processing - Dedicated database instance. The connectivity agent must be deployed in your network to allow the connectivity agent access to the Oracle Autonomous AI Transaction Processing - Dedicated database instance.
- Direct connectivity: Use this approach when the Oracle Autonomous AI Transaction Processing - Dedicated database instance is directly accessible from Oracle Integration. In this case, the connectivity agent is not necessary. However, Oracle strongly recommends using Transport Level Security (TLS) for the communication between Oracle Integration and the Oracle Autonomous AI Transaction Processing - Dedicated database instance to ensure the data being transmitted is encrypted in motion.

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 AI Transaction

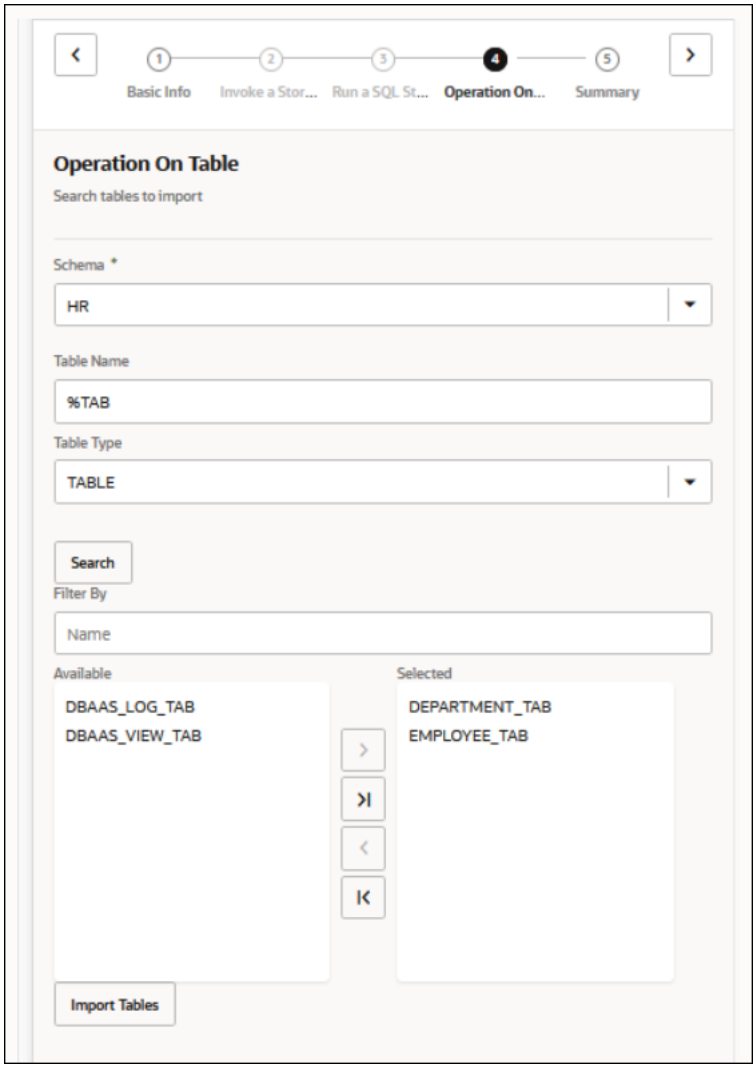
Processing (ATP) Adapter is configured as an invoke connection to retrieve table records from the Oracle Database.

To define a SELECT operation on database tables:

1. Configure SOAP Adapter and Oracle Autonomous AI Transaction Processing (ATP) Adapter connections.
2. Select **Application** in the Create integration panel.
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 AI Transaction Processing (ATP) 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 AI Transaction Processing (ATP) Adapter to recognize the relation between the tables.

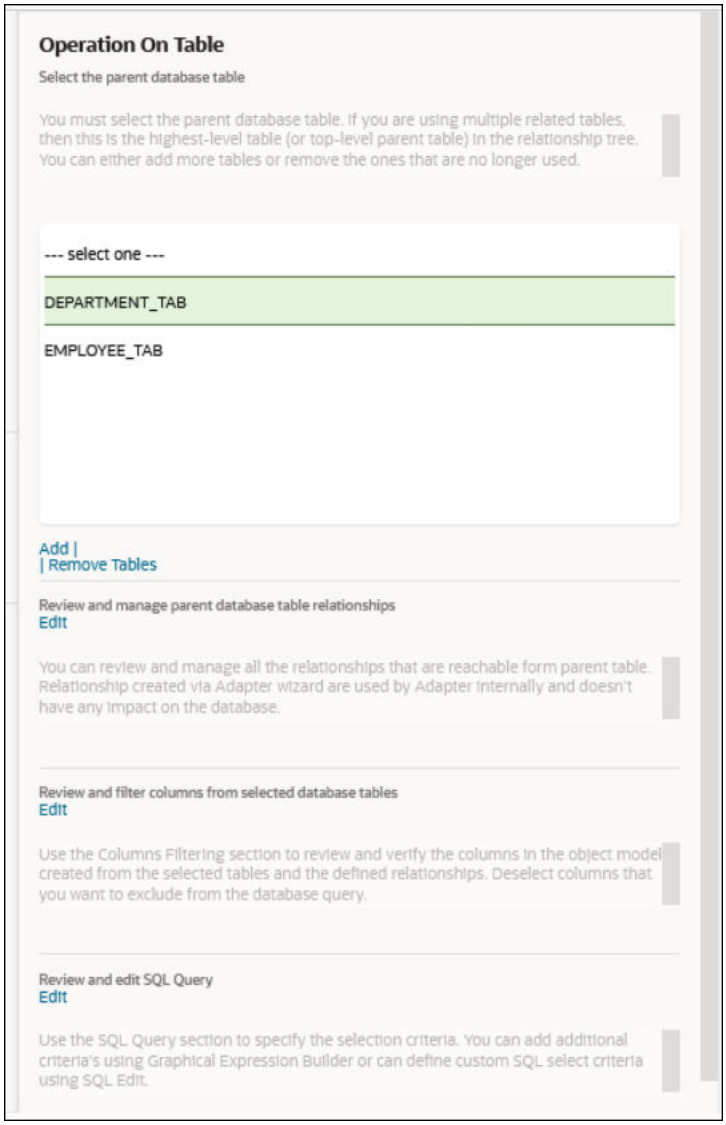


The page is refreshed for you to select the parent (root) database table.

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. View your selections on the Summary page. Links to the tables you selected to import and SQL query you specified are provided.
9. Click **Done** to exit the Adapter Endpoint Configuration Wizard.
10. Complete the integration by performing mapping and tracking tasks.
11. Activate the integration.
12. Copy the link to invoke the integration from under the **How to Run** link.
13. Invoke the integration from a tool such as the SOAP UI.
14. Review the values returned by the Oracle Autonomous AI Transaction Processing (ATP) Adapter.

Upload Data from a Flat File into a Database Table

The Oracle Autonomous AI Transaction Processing (ATP) Adapter can read rows of data in chunks from a comma-separated value (CSV) or XML file and insert them into a table in the Oracle Autonomous AI Transaction Processing database. With support for cloud libraries in the Oracle Autonomous AI Transaction Processing database, this operation can be completed

much faster. This section provides details about how to use the Oracle Autonomous AI Transaction Processing (ATP) Adapter to insert data from a large, flat CSV file into an Oracle Autonomous AI Transaction Processing database.

This use case is first demonstrated with a standard integration that:

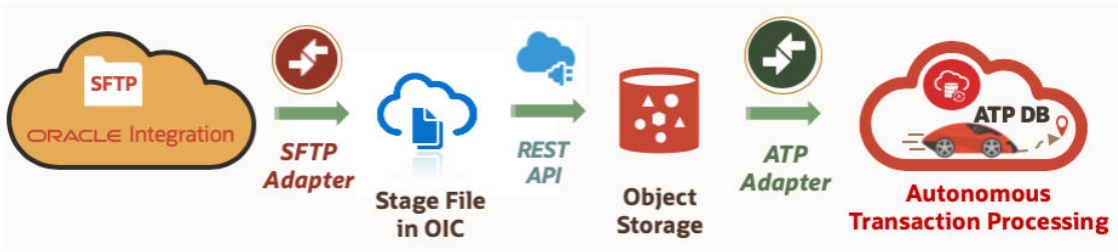
- Retrieves a CSV file from the embedded File Server included in Oracle Integration.
- Uses the Oracle Autonomous AI Transaction Processing (ATP) Adapter to process the file in chunks and perform a standard insert operation into an Oracle Autonomous AI Transaction Processing database table.

This standard integration is shown.

To demonstrate the enhanced integration use case:

- The same file is read from the same SFTP server location and uploaded to an object storage location within Oracle Cloud Infrastructure through a REST Adapter invoke connection.
- The Oracle Autonomous AI Transaction Processing (ATP) Adapter invokes the COPY_DATA PL/SQL procedure from the DBMS_CLOUD standard package library, which reads the file from the object storage location and inserts the data into the target table in the Oracle Autonomous AI Transaction Processing database. PL/SQL package library details are available in the Oracle Autonomous AI Transaction Processing documentation.

This enhanced integration is shown.



The configuration process is described in two sections:

- The standard integration that is built uses basic components.
- The enhanced integration that is built uses PL/SQL libraries in the Oracle Autonomous AI Transaction Processing database.

Standard Integration

An overview of the steps to build the standard integration is provided below.

1. Configure the File Server to enable SFTP server functionality. See Administer File Server in *Using File Server in Oracle Integration 3*.
2. Create an FTP Adapter connection to retrieve the file from the File Server.
3. Create an Oracle Autonomous AI Transaction Processing (ATP) Adapter connection to point to the target Oracle Autonomous AI Transaction Processing database.
4. Build the integration shown in the first image above.
5. In the Adapter Endpoint Configuration Wizard, select the insert operation with the target table in the Oracle Autonomous AI Transaction Processing database.

Enhanced Integration

An overview of the steps to build the enhanced integration is provided below.

1. Use the same SFTP connection built in Step 2 of the previous section.
2. Use the same Oracle Autonomous AI Transaction Processing (ATP) Adapter connection from Step 3 of the previous section.
3. Create a REST Adapter connection to upload a CSV file to an Oracle Cloud Infrastructure object storage location.
4. Create PL/SQL credentials in the database to access the object store using the DBMS_CLOUD.CREATE_CREDENTIAL procedure.
5. Create a PL/SQL wrapper package and procedure to call DBMS_CLOUD.COPY_DATA using the credentials from Step 4 and the target table in the Oracle Autonomous AI Transaction Processing database to insert the data.
6. Build the enhanced integration shown in the second image above.
7. In the Adapter Endpoint Configuration Wizard, instead of selecting the insert operation, select the PL/SQL procedure option.
8. Select the wrapper procedure created in Step 5.

XML files can also be processed by DBMS_CLOUD. See this blog.

5

Troubleshoot the Oracle Autonomous AI Transaction Processing (ATP) Adapter

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

Topics:

- Read Timeout Error When Testing the Autonomous Database Connection
- Service Name Specified on the Connections Page is Too Long
- Special Characters are Not Supported in Schema Names
- Oracle Autonomous AI Transaction Processing Database is Unreachable During a Connection Test

Read Timeout Error When Testing the Autonomous Database Connection

When testing the database connection, the Oracle Cloud Console can return a `Read Timeout` error after 90 seconds with the following exception:

```
Unable to test the connection Oracle_DB_Connection
("detail":**,"status":"HTTP 500 Internal Server Error",
"title":"io.micronaut.http.client.exceptions.ReadTimeoutException: Read
Timeout","type":"https://www.w3.org/Protocols/rfc2616/rfc2616-
sec10.html#sec10.5.1")
```

Verify that the database has not reached the maximum number of sessions.

When testing the connection, a new database session must be created. If the database has already reached its session limit, it cannot allocate a new session for the connection test. In this case, the database receives the request, but must wait for an existing session to be released before it can process it.

Oracle Integration waits up to 90 seconds for the connection test to complete; if the database does not process the request within this time, the operation times out.

The number of available sessions are tied to the base ECPU or OCPU count (75 SESSIONS per ECPU or 300 SESSIONS per OCPU).

See Service Concurrency.

You can monitor the number of sessions used and the session utilization using the following Oracle Cloud Infrastructure database metrics:

- `Sessions`: The number of sessions in the database.
- `SessionUtilization`: The maximum session utilization expressed as a percentage, aggregated across all consumer groups.

See Available Metrics: oci_autonomous_database.

To resolve the issue in the database, ensure that you have enough OCPUs or ECPUs allocated to the database instance.

Service Name Specified on the Connections Page is Too Long

The service name that you specify in the **Service Name** field on the Connections page is provided in the `tnsnames.ora` file included in the wallet ZIP file downloaded from the Oracle Autonomous AI Transaction Processing database. If the service name is too long, you receive the following error when testing the connection:

```
Unable to test connection "MYATP". [Cause: CLOUD-0005]
CLOUD-0005 : Unable to establish connection. Please check connection
parameters
Network Adapter could not establish the connection. Please check the wallet
credentials
and ensure database is reachable.
```

Perform the following steps to resolve this error.

1. Ensure that the correct service name is provided.
2. Pick the name from the name-value pair. The `tnsnames.ora` file includes a list of service names.
3. Ensure that the database is reachable. Try connecting from any other SQL client to confirm.
4. Ensure that the correct wallet credentials are provided.

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.

Oracle Autonomous AI Transaction Processing Database is Unreachable During a Connection Test

If you receive the following error during a connection test and are using the connectivity agent to connect to an Oracle Autonomous AI Transaction Processing database running on a private subnet, you must verify that the Oracle Autonomous AI Transaction Processing database IP address can be resolved from the agent host.

```
Network Adapter could not establish the connection. Please check the wallet
credentials and ensure database is reachable
```

1. From the Oracle Autonomous AI Transaction Processing wallet file, extract the `tnsnames.ora` file.

2. Find the service name being used (for example, `test_atp_low`) and retrieve the host name (for example, `test_atp.adb.us-phoenix-1.oraclecloud.com`).
3. From the agent host, run the following command:

   ```
   nslookup ATP_hostname
   ```

4. If the hostname does not resolve to the Oracle Autonomous AI Transaction Processing database IP address, create an entry in the `/etc/hosts` file on the agent host:

   ATP_IP_Address ATP_Service_Hostname_from_tnsnames.ora Hostname
   For example:

   ```
   10.0.0.64 test_atp.adb.us-phoenix-1.oraclecloud.com test_atp
   ```

5. Test the connection again.