# Oracle® Cloud

# Using the Netezza Adapter with Oracle Integration 3

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# Contents

# Preface

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

> **Note:**
>
> The use of this adapter may differ depending on the features you have, or whether your instance was provisioned using Standard or Enterprise edition. These differences are noted throughout this guide.

**Topics:**



## Audience

This guide is intended for developers who want to use this adapter in integrations in Oracle Integration.

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the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

# 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. |

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# Understand the Netezza Adapter

Review the following conceptual topics to learn about the Netezza 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:**



## Netezza Adapter Capabilities

The Netezza Adapter enables you to integrate the Netezza database residing behind the firewall of your on-premises environment with Oracle Integration through use of the on-premises connectivity agent. You can configure the Netezza Adapter as a trigger or invoke connection in an integration in Oracle Integration.

The Netezza Adapter provides the following capabilities:

For trigger endpoints:

- Support for polling new and updated records for processing in the Netezza database.
- Support for a logical delete polling strategy. This strategy involves updating a special field on each row once it is processed.
- Support for processing message payloads up to 10 MB in size. In the case of polling, you must set the **Rejected Value** property to **REJECTED** on the Polling Strategy and Options page. If the incoming message is greater than 10 MB, that particular record is updated to **REJECTED** instead of **READ**. If the message payload is greater than 10 MB, a fault response is sent to the calling clients.

For invoke endpoints:

- Support for bulk data import by selecting the **Perform Bulk Data Import Operation** on the Basic Info page of the Adapter Endpoint Configuration Wizard. See Import Data Files Using the Bulk Data Import Operation and Import Transactional Data Using the Bulk Data Import Operation.
- Support for invocation of stored procedures in the Netezza database.
  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 performing the `Select`, `Insert`, `Update`, and `Insert/Update` (`Merge`) operations against database tables.
- Support for execution of SQL queries against database tables.

- Support for pagination. You can implement pagination when fetching a large number of records for a Select query and receive sorted data in chunks. See Use Pagination in an Integration.

The Netezza Adapter is one of many predefined adapters included with Oracle Integration.

## Supported Data Types

The Netezza Adapter supports the following data types for **Run a SQL Statement** and **Perform an Operation On Table** operations.

| Data Type |
|---|
| BigInt |
| Boolean |
| ByteInt |
| Char |
| Date |
| Decimal |
| Double |
| Float |
| Integer |
| Interval Day |
| Interval Day To Hour |
| Interval Day To Minute |
| Interval Day To Second |
| Interval Hour |
| Interval Hour To Minute |
| Interval Hour_To Second |
| Interval Minute |
| Interval Minute To Second |
| Interval Month |
| Interval Second |
| Interval Year |
| Interval Year To Month |
| national character varying |
| Nchar |
| Numeric |
| Real |
| SmallInt |
| Time |
| time with time zone |
| TimeStamp |
| VarBinary |
| Varchar |

# Netezza Adapter Restrictions

Note the following Netezza Adapter restrictions.

The Netezza Adapter does not support distributed polling.

> **Note:**
>
> There are overall service limits for 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 a Netezza 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 in Oracle Integration.

This table lists the workflow steps for both adapter tasks and overall integration tasks, and provides links to instructions for each step.

| Step | Description | More Information |
|---|---|---|
| 1 | 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 a Netezza Adapter Connection |
| 2 | Create the integration. When you do this, you add trigger (source) and invoke (target) connections to the integration. | Understand Integration Creation and Best Practices in *Using Integrations in Oracle Integration 3* and Add the Netezza Adapter Connection to an Integration |
| 3 | Map data between the trigger connection data structure and the invoke connection data structure. | Map Data in *Using Integrations in Oracle Integration 3* |
| 4 | (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* |
| 5 | Activate the integration. | Activate an Integration in *Using Integrations in Oracle Integration 3* |
| 6 | Monitor the integration on the dashboard. | Monitor Integrations During Runtime in *Using Integrations in Oracle Integration 3* |
| 7 | 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* |
| 8 | Manage errors at the integration level, connection level, or specific integration instance level. | Manage Errors in *Using Integrations in Oracle Integration 3* |

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# Create a Netezza Adapter Connection

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

**Topics:**



## Prerequisites for Creating a Connection

You must satisfy the following prerequisites to create a connection with the Netezza Adapter:



**Netezza Database Prerequisites**

- Ensure that you have write permissions on the database.
- Ensure that you have the required permissions to run SQL statements against the Netezza database.
- Know the database hostname or IP address and the port number.
- Know the database name.
- Know the user name and password for connecting to the database.
- Install the connectivity agent. The connectivity agent is required to connect Oracle Integration with a Netezza on-premises database. See Configure the Endpoint Access Type.
- Download a Java Database Connectivity (JDBC) `.jar` file and place it in the third-party `lib` folder while configuring the connectivity agent. A JDBC driver enables a Java application to interact with a database. See Installing and uninstalling the client tools software and Installing and configuring JDBC.

**Bulk Data Import Operation Prerequisites**

- Ensure that you have admin privileges.
- Ensure that you have read, write, create, and delete file permissions for the mount location.
- Ensure that the mount path is local to the Netezza database and accessible by the Netezza database.
- Ensure that file header names match with target table fields and the order of fields is the same.

# Create a Connection

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

To create a connection in Oracle Integration:

1. In the navigation pane, click **Design**, then **Connections**.
2. Click **Create**.

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

3. In the Create connection panel, 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.
4. 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 (trigger, invoke, or both). Only the roles supported by the 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, you'll get an error when you try to drag the adapter into the section you didn't select.<br>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. |

| Element | Description |
|---|---|
| **Share with other projects** | **Note**: This field only appears if you are creating a connection in a project.<br>Select to make this connection publicly available in other projects. Connection sharing eliminates the need to create and maintain separate connections in different projects.<br>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.<br>See Add and Share a Connection Across a Project. |

5. Click **Create**.

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

## Configure Connection Properties

Enter connection information so your application can process requests.

1. Go to the **Properties** section.
2. Enter the host name or IP address of the database server.
3. Enter the database name.
4. (Optional) Enter the database server port number.

## Configure Connection Security

Configure security for your Netezza Adapter connection.

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

   The **Security Policy** field shows **Username Password Token**. This value cannot be changed.
2. Complete the **Username** and **Password** fields.

## 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

Select the option for accessing your endpoint.

| Option | This Option Appears If Your Adapter Supports ... |
|---|---|
| **Public gateway** | Connections to endpoints using the public internet. |
| **Connectivity agent** | Connections to on-premises endpoints through the connectivity agent.<br>1. Click **Associate agent group**. The Associate agent group panel appears.<br>2. Select the agent group, and click **Use**.<br>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*. |

## 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:<br>• **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.<br>• **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.
3. When complete, click **Save**.

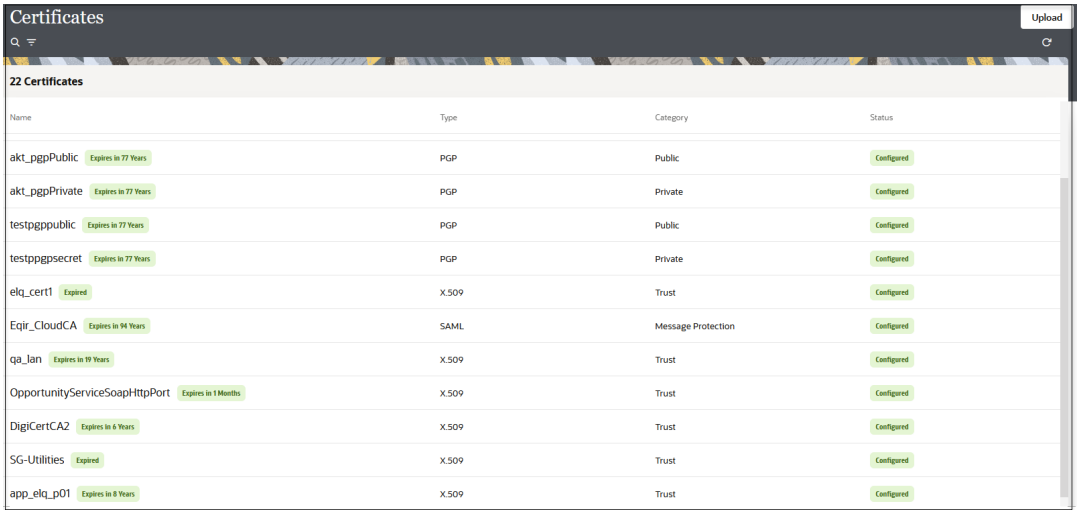
# Upload a Certificate to Connect with External Services

Certificates allow Oracle Integration to connect with external services. If the external service/endpoint needs a specific certificate, request the certificate and then import it into Oracle Integration.

If you make an SSL connection in which the root certificate does not exist in Oracle Integration, an exception error is thrown. In that case, you must upload the appropriate certificate. A

certificate enables Oracle Integration to connect with external services. If the external endpoint requires a specific certificate, request the certificate and then upload it into Oracle Integration.

1. Sign in to Oracle Integration.
2. In the navigation pane, click **Settings**, then **Certificates**.
   All certificates currently uploaded to the trust store are displayed on the Certificates page.
3. Click **Filter** to filter by name, certificate expiration date, status, type, category, and installation method (user-installed or system-installed). Certificates installed by the system cannot be deleted.




4. Click **Upload** at the top of the page.
   The Upload certificate panel is displayed.
5. Enter an alias name and optional description.
6. In the **Type** field, select the certificate type. Each certificate type enables Oracle Integration to connect with external services.
   - Digital Signature
   - X.509 (SSL transport)
   - SAML (Authentication & Authorization)
   - PGP (Encryption & Decryption)
   - Signing key

### Digital Signature

The digital signature security type is typically used with adapters created with the Rapid Adapter Builder. See Learn About the Rapid Adapter Builder in Oracle Integration in *Using the Rapid Adapter Builder with Oracle Integration 3*.

1. Click **Browse** to select the digital certificate. The certificate must be an X509Certificate. This certificate provides inbound RSA signature validation. See RSA Signature Validation in *Using the Rapid Adapter Builder with Oracle Integration 3*.
2. Click **Upload**.

### X.509 (SSL transport)

1. Select a certificate category.

a. **Trust**: Use this option to upload a trust certificate.
   i. Click **Browse**, then select the trust file (for example, `.cer` or `.crt`) to upload.
b. **Identity**: Use this option to upload a certificate for two-way SSL communication.
   i. Click **Browse**, then select the keystore file (`.jks`) to upload.
   ii. Enter the comma-separated list of passwords corresponding to key aliases.

> **Note:**
>
> When an identity certificate file (`.jks`) contains more than one private key, all the private keys must have the same password. If the private keys are protected with different passwords, the private keys cannot be extracted from the keystore.

   iii. Enter the password of the keystore being imported.
c. Click **Upload**.

**SAML (Authentication & Authorization)**

1. Note that **Message Protection** is automatically selected as the only available certificate category and cannot be deselected. Use this option to upload a keystore certificate with SAML token support. Create, read, update, and delete (CRUD) operations are supported with this type of certificate.
2. Click **Browse**, then select the certificate file (`.cer` or `.crt`) to upload.
3. Click **Upload**.

**PGP (Encryption & Decryption)**

1. Select a certificate category. Pretty Good Privacy (PGP) provides cryptographic privacy and authentication for communication. PGP is used for signing, encrypting, and decrypting files. You can select the private key to use for encryption or decryption when configuring the stage file action.
   a. **Private**: Uses a private key of the target location to decrypt the file.
      i. Click **Browse**, then select the PGP file to upload.
      ii. Enter the PGP private key password.
   b. **Public**: Uses a public key of the target location to encrypt the file.
      i. Click **Browse**, then select the PGP file to upload.
      ii. In the **ASCII-Armor Encryption Format** field, select **Yes** or **No**.
         - **Yes** shows the format of the encrypted message in ASCII armor. ASCII armor is a binary-to-textual encoding converter. ASCII armor formats encrypted messaging in ASCII. This enables messages to be sent in a standard messaging format. This selection impacts the visibility of message content.
         - **No** causes the message to be sent in binary format.
      iii. From the **Cipher Algorithm** list, select the algorithm to use. Symmetric-key algorithms for cryptography use the same cryptographic keys for both encryption of plain text and decryption of cipher text. The following supported cipher algorithms are FIPS-compliant:
         - AES128

- AES192
- AES256
- TDES

c. Click **Upload**.

### Signing key

A signing key is a secret key used to establish trust between applications. Signing keys are used to sign ID tokens, access tokens, SAML assertions, and more. Using a private signing key, the token is digitally signed and the server verifies the authenticity of the token by using a public signing key. You must upload a signing key to use the OAuth Client Credentials using JWT Client Assertion and OAuth using JWT User Assertion security policies in REST Adapter invoke connections. Only PKCS1- and PKCS8-formatted files are supported.

1. Select **Public** or **Private**.
2. Click **Browse** to upload a key file.
   If you selected **Private**, and the private key is encrypted, a field for entering the private signing key password is displayed after key upload is complete.
3. Enter the private signing key password. If the private signing key is not encrypted, you are not required to enter a password.
4. Click **Upload**.

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# Add the Netezza Adapter Connection to an Integration

When you drag the Netezza Adapter into the trigger or invoke area of an integration, the Adapter Endpoint Configuration Wizard is invoked. This wizard guides you through configuration of the Netezza Adapter endpoint properties.

The following sections describe the wizard pages that guide you through configuration of the Netezza Adapter as a trigger or invoke in an integration.

**Topics:**



## Basic Info Page

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

| Element | Description |
|---|---|
| **What do you want to call your endpoint?** | Provide a meaningful name so that others can understand the connection. For example, if you are creating a database connection for adding new employee data, you may want to name it `CreateEmployeeInDB`. You can include English alphabetic characters, numbers, underscores, and dashes in the name. You cannot include the following:<br>• Blank spaces (for example, `My DB Connection`)<br>• Special characters (for example, `#;83&` or `righ(t)now4`)<br>• Multibyte characters |
| **What does this endpoint do?** | Enter an optional description of the connection's responsibilities. |

| Element | Description |
|---|---|
| **What operation do you want to perform?**<br>(**Note**: This option is only displayed when you configure the Netezza Adapter as an invoke connection in an integration.) | Select the type of operation for this connection to perform:<br>• **Invoke a Stored Procedure**: Select to invoke a stored procedure in the database.<br>• **Run a SQL Statement**: Select to run a SQL query against the database.<br>• **Perform an Operation On a Table**: Select to perform one of the following operations on a table.<br>– **Insert**<br>– **Update**<br>– **Insert or Update (Merge)**<br>– **Select**<br>• **Perform Bulk Data Import Operation**: Select to import bulk data into the Netezza database. |

# Trigger Polling Page

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

> **Note:**
>
> Sequential order is not always maintained while polling records.

| Element | Description |
|---|---|
| **Add Tables** | Import tables and the root database table for the service query. |
| **Remove Tables** | Removes tables. Select **Remove Tables**, clear the check box to the right of the table you want to remove, and click **OK**. You cannot remove the root database table. |
| **Review and manage parent database table relationships** | Appears after importing tables. Select **Edit** to open the Relationships page where you can view, create, and remove relationships between tables. |
| **Review and verify table and relationship attributes** | 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. |
| **Review the polling strategy and specify polling 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. |

## Trigger Manage Tables Page

The following table describes the key information on the trigger Manage Tables page. The trigger Manage Tables page appears when you select **Add Tables** on the adapter trigger Poll for a New or Changed Records page.

| Element | Description |
|---|---|
| **Schema** | Select the schema for the tables and views you are importing. |

| Element | Description |
|---|---|
| **Table Type** | The type of the table to which the schema or view is applied. The list allows these selections:<br>• **All** — Select all available tables and views.<br>• **Table** — Select tables.<br>• **View** — Select views. |
| **Table Name** | Specify the table name. Table names are case sensitive. |
| **Search** | Click to search for the specified table. |
| **Available** | Lists the tables that meet the selection criteria. |
| **Selected** | Lists the selected table. |
| **Filter By** | Type the initial letters to filter the display of table names. |
| **Primary Key** | Appears when you select tables without a primary key defined. Select the virtual primary key for the table.<br>**Note**: Having the primary key at the database level is the best practice. |

## Trigger Relationships Table

The following table describes the key information on the trigger Relationships page. The trigger Relationships page appears when you select **Edit** to review and manage the parent database table relationships option on the adapter trigger Poll for a New or Changed Records page.

| Element | Description |
|---|---|
| **Create New** | Opens the Create Relation page with these options:<br>• **Parent Table** — Select the parent table for the relationship between tables.<br>• **Child Table** — Select the child table for the relationship between tables.<br>• **Relationship** — Defines the relationship between the parent and child tables.<br>• **Attribute Name** — Apply attributes to the table relationship.<br>• **Mapping** — Provide the mapping for the table relationship. |

## Trigger Polling Strategy and Options Page

The following table describes the key information on the trigger Polling Strategy and Options page. The trigger Polling Strategy and Options page appears when you select **Edit** to review the polling strategy and specify polling options on the adapter trigger Poll for a New or Changed Records 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. |
| **Read Value** | Identifies the value that is used to indicate a row has been read (for example, **PROCESSED**). Surrounding quotes are not required. |

| Element | Description |
|---|---|
| **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.<br>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. |
| **Advanced Options** | Click **Edit** to access the **Batch Size** field to specify the number of table rows to process during a single transaction. The default value is **1** and the maximum value is **50**. |

# Invoke a Stored Procedure Page

Enter the Netezza Adapter invoke stored procedure parameters. The Invoke a Stored Procedure page is the wizard page that is displayed if you selected **Invoke a Stored Procedure** as the operation type on the Basic Info page.

> **Note:**
>
> 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.

| Element | Description |
|---|---|
| **Select Schema** | Select a database schema from the list that includes the data you want to query (for example, you want to query details about an employee based on their employee ID). This action refreshes the page to display fields for selecting a package or procedure to invoke. |
| **Select Package** | Select the database package. |
| **Select Procedure** | Select the stored procedure. The page is refreshed to display the in (inbound), out (outbound), and in/out (inbound/outbound) parameters available with this procedure. |
| **Arguments** | Displays the in, out, and in/out parameters that are passed with this procedure. |

# Invoke Run a SQL Statement Page

Enter the SQL statement values. The Run a SQL Statement page appears when you select the **Run a SQL Statement** operation 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)
  ```

| Element | Description |
|---|---|
| **SQL Query** | Enter the SQL query. |
| **Status** | The **Status** field displays `Success!` when a query is successfully validated. |

# Invoke Operation 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**.<br>• **ALL**<br>• **SYNONYM**<br>• **TABLE**<br>• **VIEW** |
| **Filter By** | Enter the initial letters to filter the display of table names. |
| **Available** | Lists the tables that meet the selection criteria. |
| **Selected** | Lists your table selection. |
| **Import Tables** | Click to import the tables. The page is refreshed for you to select the parent database table. |
| **Primary Keys** | Appears when you select tables without a primary key defined. Select the virtual primary key for the table.<br>**Note**: Having the primary key at the database level is the best practice. |
| **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**<br>(Displayed only if the **Select** operation is selected on the Basic Info page.) | Click **Edit** to view and edit the default SQL query. See Review and edit SQL query Option. |

## Review and manage parent database table relationships Option

Specify values for the **Review and manage parent database table relationships** option.

| Element | Description |
|---|---|
| **Create New** | Click to create a new relationship. |
| **Parent Table** | Select the parent table. |
| **Child Table** | Select the child table. |
| **Relationship** | Select the relation type (one-to-many, one-to-one, or one-to-one with the foreign key on the child table). For example, if you selected **ORDERS** as the parent table and **ORDERS** as the child table, the following options are displayed:<br>• **ORDERS has a 1:1 Relationship with ORDERS**<br>• **ORDERS has a 1:1 Relationship with ORDERS (Foreign key on Child table)**<br>• **ORDERS has a 1:M Relationship with ORDERS** |
| **Attribute Name** | Applies attributes to the table relationship. |
| **Mapping** | Displays the mapping for the table relationship. |

## Review and filter columns from selected database tables Option

Specify values for the **Review and filter columns from selected database tables** option.

| Element | Description |
|---|---|
| **Select the Columns** | View and deselect attributes automatically created by the adapter. Deselect any attributes to exclude from the database query. |

## Review and edit SQL query Option

Specify values for the **Review and edit SQL query** option.

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

| Element | Description |
|---|---|
| **SQL Edit** | Click to manually edit the query in the **SQL Query** field. |
| **Parameter** | Click to specify a bind parameter. |
| **Add New** | Click to add new criteria to the SQL query. |
| **Remove** | Click to remove the SQL criteria you specified. |

| Element | Description |
|---|---|
| **Maximum Number of Records to be fetched** | Select the number of records to fetch with this SQL query. |
| **Pagination** | Select the check box. When you must fetch a large number of results/records, you can implement the Netezza Adapter's pagination feature and receive sorted results/records in chunks. **Offset** and **Limit** fields are displayed in the mapper. You can specify the number of results per page by providing the offset and limit values according to your requirement. Enter a starting value in the **Offset** field and an ending value in the **Limit** field to receive sorted results. A use case is provided for the pagination feature. See Use Pagination in an Integration. |

# Invoke Bulk Load from File to Table Page

The following table describes the key information on the Bulk Load from File to Table page.

| Element | Description |
|---|---|
| **Mount Location** | Specify the mount location. The mount location represents the root directory of the file storage file system. You must have read, write, create, and delete file permissions for the mount location. Ensure that the mount path is local to the Netezza database and accessible by the Netezza database. |
| **Delimiter** | Select one of the following supported file delimiter options as per the source file:<br>• **Single space**<br>• **Comma**<br>• **Semicolon**<br>• **Pipe** (for example, Name\|City\|Country) |
| **Select Schema** | Select the database schema that includes the tables to process. |
| **Select Table** | Select the table name. |
| **Name** | Enter the initial letters to filter the display of table columns. |
| **Table columns** | Displays the table columns that meet the selection criteria. |
| **Re-Order columns as per input data** | Displays the list of table columns you have selected. |

See Import Data Files Using the Bulk Data Import Operation and Import Transactional Data Using the Bulk Data Import Operation.

# 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.<br>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.<br>To return to a previous page to update any values, click the appropriate tab in the left panel or click **Go back**.<br>To cancel your configuration details, click **Cancel**. |

4

# Implement Common Patterns Using the Netezza Adapter

You can use the Netezza Adapter to implement the following common patterns.

**Topics:**



> **Note:**
>
> Oracle Integration offers a number of prebuilt integrations, known as *recipes*, that provide you with a head start in building your integrations. You can start with a recipe, and then customize it to fit your needs and requirements. Depending upon the solution provided, a variety of adapters are configured in the prebuilt integrations. See the Recipes and Accelerators page on the Oracle Help Center.

## Import Data Files Using the Bulk Data Import Operation

This use case describes how to import data files from an FTP server into the Netezza database. Similarly, you can import data files from an application into the Netezza database using the Netezza Adapter.

To perform this operation, you create the FTP Adapter and Netezza Adapter connections in Oracle Integration. The Netezza Adapter first validates an input file header with the target table header (columns), places file data into a mount location (local to the database), and inserts the mount location data into the target table if the data is in the expected format.

1. Create a schedule integration.
2. Drag an FTP Adapter into the integration canvas.
3. Configure the FTP Adapter as follows.
    a. On the Basic Info page, provide a name.
    b. On the Operations page, select **Download File** from the **Select Operation** list.
    c. Select **Binary** from the **Select a Transfer Mode** list.
    d. Provide the input directory, file name, and download directory.
    e. On the Summary page, review your selections.
4. Drag a Netezza Adapter into the integration canvas.
5. Configure the Netezza Adapter endpoint:
    a. On the Basic info page, provide an endpoint name, and select **Perform Bulk Data Import Operation**.

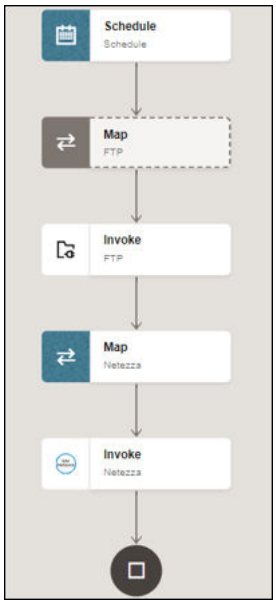
b. On the Bulk Load from File to Table page, enter the mount location, and select the delimiter (for example, comma), schema, table, and table columns.

c. On the Summary page, review your selections.

6. In the mapper, map the file reference from the FTP response to pass the data to the target table. The FTP response (file reference) provides an input to the Netezza database.

7. Click **Validate**.

   The completed integration looks as follows.




8. When complete, save and activate the integration. As a result, the Netezza Adapter inserts the mount location data into the target table if the data is in the expected format.

# Import Transactional Data Using the Bulk Data Import Operation

This use case describes how to import transactional records in chunks from an application (for example, Salesforce) into the Netezza database. In this use case, the Salesforce application is used. Similarly, you can import data files from other applications into the Netezza database using the Netezza Adapter.

To perform this operation, you create the Salesforce Adapter and Netezza Adapter connections in Oracle Integration. The Netezza Adapter first validates an input file header with the target table header (columns), places file data into the mount location (local to the database), and inserts mount location data into the target table if the data is in the expected format.

1. Create an application integration.

2. Drag a REST Adapter into the integration as a trigger connection.

   a. On the Basic Info page, provide a name.

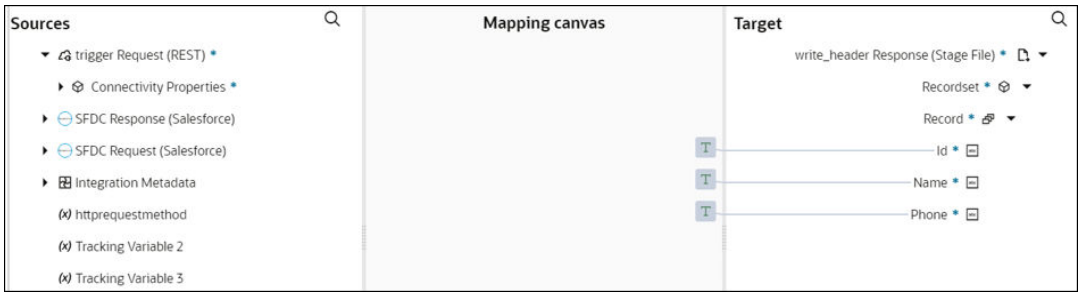
   b. On the Resource Configuration page, select the **GET** action, and the **Configure this endpoint to receive the response** check box.

   c. On the Response page, select **JSON Sample** in the **Select the response payload format** field.

d. Select **JSON** in the **What is the media-type of Response Body? (Accept Header)** field.

e. Review your selections on the Summary page.

3. Drag a Salesforce Adapter into the integration canvas.
4. Configure the Salesforce Adapter endpoint:
   a. On the Basic Info page, provide a name.
   b. On the Action page, select **Query Information**.
   c. On the Operations page, select **Query** as an operation, and select the **Exclude** option for the deleted and achieved records.
   d. Enter a valid SOQL query statement and select the **Use Default Header** check box.
   e. Review your selections on the Summary page.
5. Drag a stage file action into the integration canvas after the Salesforce Adapter and configure it to write (insert) transactional records in a file.
   a. On the Basic Info page, provide a name.
   b. On the Configure Operation page, select the **Write File from the Choose Stage File Operation** field.
   c. Specify the XPath expression for the file name in the **Specify the File Name** field.
   d. Enter the file name with an extension (for example, `Accounts.csv`).
   e. Specify the directory name in the **Specify the Output Directory** field.
   f. On the Scheme Options page, select **Yes** in the **Do you want to specify the structure for the contents of the file** field.
   g. Select **Sample delimited document (e.g. CSV)** in the **Which one of the following choices would be used to describe the structure of the file contents** field.
   h. On the Format Definition page, click **Drag and Drop** and upload the sample CSV file in the **Select a New Delimited Data File** field.
   i. Review your selections on the Summary page.
6. In the mapper, map headers as an input for the **write_header** (stage) file.




7. Drag a second stage file action into the integration canvas. The stage file action helps to add the header to a file and then append the data to the same file.
   a. On the Basic Info page, provide a name.
   b. On the Configure Operation page, select **Write File from the Choose Stage File Operation** field.
   c. Specify the XPath expression for the file name in the **Specify the File Name** field.

d. Enter the same file name and extension that you provided for **write_header** (stage).

e. Specify the directory name in the **Specify the Output Directory** field.

f. Enter the same output directory that you provided for **write_header** (stage).

g. Under **Append to Existing File**, select the **Append** check box.

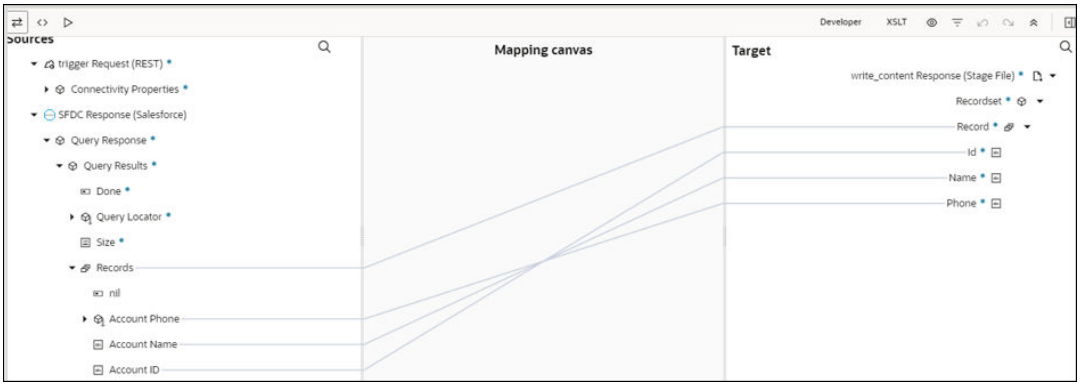
h. On the Scheme Options page, select **Yes** in the **Do you want to specify the structure for the contents of the file** field.

i. Select **Sample delimited document (e.g. CSV)** in the **Which one of the following choices would be used to describe the structure of the file contents** field.

j. On the Format Definition page, click **Drag and Drop** and upload a sample CSV file in the **Select a New Delimited Data File** field.

k. Review your selections on the Summary page.

8. In the mapper, map the Salesforce response to the **write_content** (stage) request.




9. Drag a Netezza Adapter into the integration canvas.

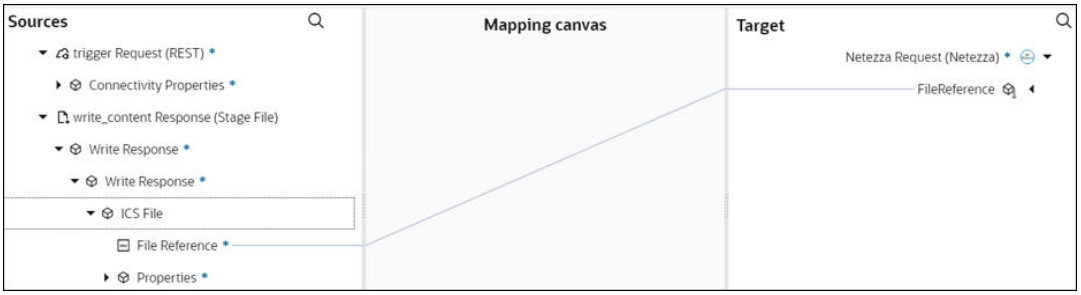
10. Configure the Netezza Adapter endpoint:

a. On the Basic info page, provide an endpoint name, and select **Perform Bulk Data Import Operation**.

b. On the Bulk load from File to table page, enter the mount location, and select the delimiter (for example, comma), schema, table, and table columns.

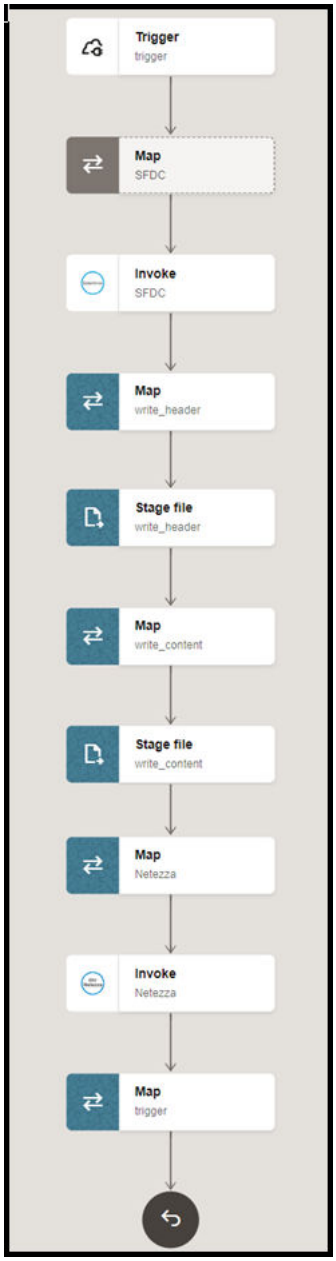
c. On the Summary page, review your selections.

11. In the mapper, map the **File Reference** from the **ICS File** response to pass the data to the target table.




12. Click **Validate**.

The completed integration looks as follows.




13. When complete, save and activate the integration. As a result, the Netezza Adapter inserts data into the target table if the data is in the expected format.

# Use Pagination in an Integration

When you must fetch a large number of results, you can use the Netezza Adapter's pagination feature and receive sorted results/records in chunks. This use case describes how to use pagination to receive sorted results/records from the Netezza database to insert into an application (for example, SAP ASE) or files.

In this use case, the Netezza database is the source and the SAP ASE database is the target application. Similarly, you can receive sorted results/records from the Netezza database to insert into other applications or files using the Netezza Adapter.

To perform this operation, you create the Netezza Adapter andSAP ASE (Sybase) Adapter connections in Oracle Integration.

This use case uses the following features or operations:

- **Offset and Limit Fields**: These fields are displayed in the mapper. You can specify the number of results per page by providing the offset and limit values according to your requirement. Enter a starting value in the **Offset** field and an end value in the **Limit** field to receive sorted results.
- **Run a SQL Statement** (Netezza Adapter): Retrieves the total number of records.
- **Select** (Netezza Adapter): Enables you to enter the required query and select the pagination option.
- **Insert or Update** (SAP ASE (Sybase) Adapter): Inserts or updates the records into the SAP ASE database.

1. Create a schedule integration.
2. Assign the following two variables to your integration. Specify the values to the variables as follows:

   ```
   offset = "0"
   limit= "schedule_limit"
   ```

3. Drag a Netezza Adapter into the integration canvas.
4. Configure the Netezza Adapter as follows:
   a. On the Basic info page, provide an endpoint name, and select **Run a SQL Statement**.
   b. On the Run a SQL Statement page, enter a SQL query, and click **Validate SQL Query**.
   c. On the Summary page, review your selections.
5. Assign the following variable to your integration. Specify the value to the variable as follows:

   ```
   count="COUNT"
   ```

6. Drag a while action below the assign action.
7. Set the condition for the specified variables as follows:

   ```
   offset < count
   ```

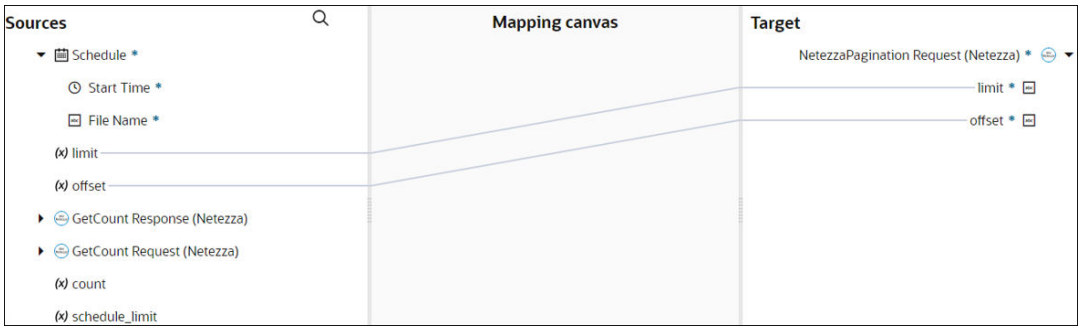
8. Drag a Netezza Adapter inside the while action.
9. Configure the Netezza Adapter as follows:
   a. On the Basic info page, provide an endpoint name, and choose **Select** from the **Perform an Operation On a Table** list.
   b. On the Operation on Table page, select the parent database table, and click **Edit** under **Review and edit SQL Query**.
   c. In the **SQL Query** field, enter the required query. For this example:

      ```
      SELECT emp_id, employee_name, "location", designation
      FROM public.employee rows limit #limit offset #offset
      ```

   d. Select the **Pagination** check box.

e. On the Summary page, review your selections.

10. In the mapper, map **offset** to **offset** and **limit** to **limit**.




11. Drag an SAP ASE (Sybase) Adapter inside the while action.
12. Configure the SAP ASE (Sybase) Adapter as follows:
    a. On the Basic info page, provide an endpoint name, and choose **Insert** from the **Perform an Operation On a Table** list.
    b. On the Operation on Table page, select the parent database table, and click **Edit** under **Review and filter columns from selected database tables**.
    c. Select the required columns.
    d. On the Summary page, review your selections.
13. Drag an assign action inside the while action to update the specified variables as follows:

    ```
    offset = offset+limit
    ```

14. When complete, save and activate the integration.

    The completed integration looks as follows.


Schedule
Schedule
Assign
Assign Offset and Limit
Map
GetCount
Invoke
GetCount
Assign
AssignCount
While
WhileLoop
Map
NetezzaPagination
Invoke
NetezzaPagination
Map
SybaseInsert
Invoke
SybaseInsert
Assign
Increment_Offset

5

# Troubleshoot the Netezza Adapter

Review the following topics to learn about troubleshooting issues with the Netezza Adapter.

**Topics:**



## Primary Key Error While Importing Table for the Merge Operation

The following error occurs when a table without a primary key is selected for the **Insert or Update (Merge)** operation on the Operations On Table page.

```
One or more tables imported, doesn't have a primary key. Merge operation
cannot proceed without a primary key.
```

**Solution**: Ensure that a table with a primary key is selected.

## Invalid SQL Query Error

The following error occurs when you enter an invalid SQL query on the Run a SQL Statement page when configuring an invoke connection.

```
Unable to create the request and response data definition for this SQL Query.
Please fix the SQL Statement…
```

**Solution**: Enter a valid SQL query. See Invoke Run a SQL Statement Page.