

# Oracle® Cloud

## Using the MySQL Adapter with Oracle Integration 3



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# 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](#)
- [Documentation Accessibility](#)
- [Diversity and Inclusion](#)
- [Related Resources](#)
- [Conventions](#)

## 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 <https://www.oracle.com/corporate/accessibility/>.

### Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit <https://support.oracle.com/portal/> or visit [Oracle Accessibility Learning and Support](#) if you are hearing impaired.

## Diversity and Inclusion

Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our initiative to build a more inclusive culture that positively impacts our employees, customers, and partners, we are working to remove insensitive terms from our products and documentation.

We are also mindful of the necessity to maintain compatibility with our customers' existing technologies and 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
<b>boldface</b>	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	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 MySQL Adapter

Review the following conceptual topics to learn about the MySQL 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:

- [MySQL Adapter Capabilities](#)
- [MySQL Adapter Restrictions](#)
- [What Application Version Is Supported?](#)
- [About MySQL Adapter Use Cases](#)
- [Workflow to Create and Add a MySQL Adapter Connection in an Integration](#)

## MySQL Adapter Capabilities

The MySQL Adapter enables you to integrate the MySQL database residing behind the firewall of your on-premises environment with Oracle Integration through use of the on-premises connectivity agent. Use the MySQL Adapter to poll for new and updated records for processing in Oracle Integration. For example, any new record added to the `Employee` table in your MySQL database can be synchronized with Oracle HCM Cloud using Oracle Integration. In addition, use the MySQL Adapter to execute SQL queries or stored procedures in the MySQL database. For example, quotes in Oracle CPQ Cloud can be created as `Orders` in the on-premises MySQL database by sending SQL statements or stored procedures using the MySQL Adapter.

The MySQL Adapter provides the following capabilities:

- Support for invocation of stored procedures in the MySQL database.
- Support for execution of DML statements and SQL queries: `Select`, `Insert`, `Update`, and `Delete`.  
  
Select the **Run a SQL Statement** option on the Basic Info page of the Adapter Endpoint Configuration Wizard to execute simple SQL queries. For complex SQL queries, use stored procedures by selecting the **Invoke a Stored Procedure** option on the Basic Info page of the Adapter Endpoint Configuration Wizard. Stored procedures can reduce the complexity of a SQL query.
- Support for generating XSD from PureSQL. This feature generates an XSD from a PureSQL statement provided by dynamically querying on the table.
- Support for polling new and updated records for processing in the MySQL database. The MySQL Adapter supports distributed polling. Distributed polling helps eliminate duplicate polling of the same records.
- Support for performing a `SELECT` operation against database tables.
- Support for bulk data import and extract by choosing the **SELECT** operation from the **Perform an Operation On a Table** list on the Basic Info page.

- 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 the 10 MB threshold size, that particular record is updated to **REJECTED** instead of **READ**. If the outbound operation returns a response greater than the 10 MB threshold size, the response message is ignored and a fault response is sent to the calling client.

 **Note:**

In Java, Unicode characters are represented as 2 bytes.

The MySQL Adapter is one of many predefined adapters included with Oracle Integration. You can configure the MySQL Adapter as an invoke connection in an integration in Oracle Integration.

## Supported Data Types for SQL Stored Procedures

The MySQL Adapter supports the following data types for SQL stored procedures.

SQL Data Type	XML Schema Type
BINARY	base64Binary
BLOB	
LOB	
MEDIUMBLOB	
TINYBLOB	
VARBINARY	
BOOLEAN	boolean
CHAR	string
LONGTEXT	
MEDIUMTEXT	
TEXT	
TINYTEXT	
VARCHAR	
DATE	dateTime
DATETIME	
TIMESTAMP	
DECIMAL	decimal
NUMERIC	
REAL	
DOUBLE	double
FLOAT	float
TINYINT	byte
TINYINT UNSIGNED	unsigned_byte
SMALLINT	short



SQL Data Type	XML Schema Type
SMALLINT UNSIGNED	unsigned_short
INTEGER	int
INT	
MEDIUMINT	
INTEGER UNSIGNED	unsigned_int
INT UNSIGNED	
MEDIUMINT UNSIGNED	
BIGINT	long
BIGINT UNSIGNED	unsigned_long

## MySQL Adapter Restrictions

Note the following MySQL Adapter restrictions.

- The MySQL Adapter can only be used with the on-premises connectivity agent.
- The database password length cannot exceed 20 characters.
- Database schema names with hyphens (-) are not supported.
- The MySQL Adapter supports 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 the 10 MB threshold size, that particular record is updated to **REJECTED** instead of **READ**. If the outbound operation returns a response greater than the 10 MB threshold size, the response message is ignored and a fault response is sent to the calling client.
- 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.

### 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](#).

## About MySQL Adapter Use Cases

The MySQL Adapter can be used in scenarios such as the following:

You can create an integration that includes a SOAP Adapter connection on the trigger (inbound) side and a MySQL Adapter on the invoke (outbound) side. For example, when configuring the invoke MySQL Adapter, you can select a stored procedure that enables you

to pass an employee ID as an inbound parameter from the SOAP Adapter to an on-premises MySQL database to retrieve additional information about the employee (first name, last name, email ID, and so on).

## Workflow to Create and Add a MySQL Adapter Connection in 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.

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.	<a href="#">Create a MySQL Adapter Connection</a>
2	Create the integration. When you do this, you add trigger and invoke connections to the integration.	Create Integrations and <a href="#">Add the MySQL Adapter Connection to an Integration</a>
3	Map data between the trigger connection data structure and the invoke connection data structure.	Map Data in <i>Using Integrations in Oracle Integration 3</i>
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 <i>Using Integrations in Oracle Integration 3</i>
5	Activate the integration.	Manage Integrations in <i>Using Integrations in Oracle Integration 3</i>
6	Monitor the integration on the dashboard.	Monitor Integrations in <i>Using Integrations in Oracle Integration 3</i>
7	Track payload fields in messages during runtime.	Assign Business Identifiers for Tracking Fields in Messages and Manage Business Identifiers for Tracking Fields in Messages in <i>Using Integrations in Oracle Integration 3</i>
8	Manage errors at the integration level, connection level, or specific integration instance level.	Manage Errors in <i>Using Integrations in Oracle Integration 3</i>

# 2

## Create a MySQL Adapter Connection

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

### Topics:

- [Prerequisites for Creating a Connection](#)
- [Create a Connection](#)

## Prerequisites for Creating a Connection

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

- Ensure that you have write permissions on the database.
- Ensure that you have the required permissions to run stored procedures and packages and SQL statements against the MySQL Database.
- Know the database hostname or IP address and the port number.
- Know the database name.
- Know the username and password for connecting to the database.
- Download the `mysql-connector-java-commercial-5.1.22-bin.jar` or the relevant `mysql-connector` JAR based on your MySQL database version to the host on which the connectivity agent is installed.

For example, perform the following steps if `mysql-connector-java-commercial-5.1.22-bin.jar` is the JAR required for your environment.

1. Download the `mysql-connector-java-commercial-5.1.22-bin.jar` from the [MySQL Database site](#). Check the [Oracle Integration Adapters Certification](#) matrix to identify the certified versions of the MySQL Database.
2. Copy the JAR file to `agenthome/thirdparty/lib`.
3. Restart the connectivity agent.

If you do not download and install this JAR file, you receive a `Check agent status` error when testing the connection on the Connections page in Oracle Integration.

## 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
<b>Name</b>	Enter a meaningful name to help others find your connection when they begin to create their own integrations.
<b>Identifier</b>	Automatically displays the name in capital letters that you entered in the <b>Name</b> field. If you modify the identifier name, don't include blank spaces (for example, SALES OPPORTUNITY).
<b>Role</b>	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. For example, assume you configure a connection for the Oracle Service Cloud (RightNow) Adapter as only an <b>invoke</b> . Dragging the adapter to a <b>trigger</b> section in the integration produces an error.
<b>Keywords</b>	Enter optional keywords (tags). You can search on the connection keywords on the Connections page.
<b>Description</b>	Enter an optional description of the connection.

Element	Description
<b>Share with other projects</b>	<p><b>Note:</b> This field only appears if you are creating a connection in a project.</p> <p>Select to make this connection publicly available in other projects. Connection sharing eliminates the need to create and maintain separate connections in different projects.</p> <p>When you configure an adapter connection in a different project, the <b>Use a shared connection</b> 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.</p> <p>See Add and Share a Connection Across a Project.</p>

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 server port number.
4. Enter the database name.

By default, the MySQL client establishes secure connections with the SSL-enabled MySQL servers. There is currently no support for SSL-encrypted network connections in the MySQL Adapter. As a workaround, you can use a new or additional parameter in the **Database Name** field to connect with SSL-enabled MySQL servers.

MySQL Version	Recommended Parameter
8.0.12 and earlier	<p>useSSL=false</p> <p>For example, test?useSSL=false, where:</p> <ul style="list-style-type: none"> <li>• test is the database name</li> <li>• ? is a required character</li> <li>• useSSL=false is the parameter setting</li> </ul>
8.0.13 and later	<p>sslMode=DISABLED</p> <p>For example, test?sslMode=DISABLED, where:</p> <ul style="list-style-type: none"> <li>• test is the database name</li> <li>• ? is a required character</li> <li>• sslMode=DISABLED is the parameter setting</li> </ul>

## Configure Connection Security

Configure security for your MySQL Adapter connection by selecting the security policy and security token.

1. Go to the **Security** section.  
The **Security Policy** field displays **Username Password Token**. This value cannot be changed.
2. Complete the **Username**, **Password**, and **Confirm 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 ...
<b>Connectivity agent</b>	<p>Connections to on-premises endpoints through the connectivity agent.</p> <ol style="list-style-type: none"> <li>1. Click <b>Associate agent group</b>. The Associate agent group panel appears.</li> <li>2. Select the agent group, and click <b>Use</b>.</li> </ol> <p>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 <i>Using Integrations in Oracle Integration 3</i>.</p>

## 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.

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If Your Connection...	Then...
Uses a WSDL	<p data-bbox="662 254 1383 317">A dialog prompts you to select the type of connection testing to perform:</p> <ul data-bbox="662 323 1383 562" style="list-style-type: none"><li data-bbox="662 323 1383 470">• <b>Validate and Test:</b> 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.</li><li data-bbox="662 476 1383 562">• <b>Test:</b> Connects to the WSDL URL and performs a syntax check on the WSDL. No requests are sent to the operations exposed in the WSDL.</li></ul>

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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**.

# 3

## Add the MySQL Adapter Connection to an Integration

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

These topics describe the wizard pages that guide you through configuration of the MySQL Adapter as a trigger or invoke in an integration.

### Topics:

- [Basic Information Page](#)
- [Invoke a Stored Procedure Properties](#)
- [Invoke SQL Statement Properties](#)
- [Trigger Polling Properties](#)
- [Summary Page](#)

## Basic Information Page

You can enter a name and description on the Basic Info page of each trigger and invoke adapter in your integration.

Element	Description
<b>What do you want to call your endpoint?</b>	<p>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 <code>CreateEmployeeInDB</code>. You can include English alphabetic characters, numbers, underscores, and dashes in the name. You cannot include the following:</p> <ul style="list-style-type: none"><li>• Blank spaces (for example, <code>My DB Connection</code>)</li><li>• Special characters (for example, <code>#;83&amp;</code> or <code>righ(t)now4</code>)</li><li>• Multibyte characters</li></ul>



Element	Description
What operation do you want to perform?	<p>Select the type of operation for this connection to perform:</p> <ul style="list-style-type: none"> <li>• <b>Invoke a Stored Procedure:</b> Select to invoke a stored procedure in the database.</li> <li>• <b>Run a SQL Statement:</b> Select to run a SQL query against the database.</li> <li>• <b>Perform an Operation On a Table</b> — Select to perform one of the following operations on a table. You can update or insert multiple records in a single request. <ul style="list-style-type: none"> <li>– <b>Insert</b></li> <li>– <b>Update</b></li> <li>– <b>Insert or Update (Merge)</b></li> <li>– <b>Select</b></li> </ul> </li> </ul> <p><b>Note:</b> 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:</p> <pre>select concat(empname, 'ss') from DB_AQ where empno=#empno</pre> <pre>select empno from DB_AQ where empname=concat(#empname, 'YY')</pre> <p>As a workaround, handle these scenarios during payload mapping. For example, perform a concatenation during mapping of the payload. The final output can then be passed as input to the SQL query.</p>

## Invoke a Stored Procedure Properties

Enter the MySQL 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:

- 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.

Element	Description
<b>Select Schema</b>	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.
<b>Select Package</b>	Select the database package.
<b>Select Procedure</b>	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.
<b>Arguments</b>	Display the in, out, and in/out parameters that are passed with this procedure.

## Invoke SQL Statement Properties

Enter the SQL statement parameters. The Create a SQL Statement page is the wizard page that is displayed if you selected Run a SQL Statement as the operation type on the Basic Info 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 a SQL query.
Status	Display the results of the SQL query validation. The <b>Status</b> field displays <i>Success!</i> when a query is successfully validated.

## Trigger Polling Properties

Import the tables and select the root database table for the service query.



### Note:

No order is maintained while polling records.

### Topics

- [Trigger Polling Page](#)
- [Trigger Manage Tables Page](#)
- [Trigger Relations Page](#)
- [Trigger Polling Strategy and Options Page](#)

## Trigger Polling Page

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

Element	Description
<b>Import Tables</b>	Imports tables and the root database table for the service query.
<b>Remove Tables</b>	Removes tables. Select <b>Remove Tables</b> , clear the checkbox to the right of the table you want to remove, and click <b>Ok</b> . You cannot remove the root database table.
<b>Review and Manage relationships reachable from the root database table.</b>	Appears after importing tables. Select <b>Edit</b> to open the Relations page where you can view, create, and remove relationships between tables.
<b>Review and verify the attributes created from the imported tables and relationships.</b>	Appears after importing tables. Select <b>Edit</b> 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.
<b>Polling Strategy and Options</b>	Appears after importing tables. Select <b>Edit</b> 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 **Import Tables** on the adapter trigger Poll for a New or Changed Records page.

Element	Description
<b>Schema</b>	Selects the schema for the tables and views you are importing.
<b>Table Type</b>	The type of the table to which the schema or view is applied. The list allows these selections: <ul style="list-style-type: none"> <li>• All — selects all available tables and views.</li> <li>• Materialized View — selects materialized views.</li> <li>• Materialized View Log — selects materialized view logs.</li> <li>• Synonym — selects the alias for the schema object.</li> <li>• Table — selects tables.</li> <li>• View — selects views.</li> </ul>
<b>Table Name</b>	Specify the table name. Table names are case sensitive.
<b>Search</b>	Click to search for the specified table.
<b>Available Tables</b>	Lists the tables that meet the selection criteria.
<b>Selected Tables</b>	Lists your table selection.
<b>Primary Keys</b>	Appears when you select tables without a primary key defined. Selects the virtual primary key for the table. <b>Note:</b> Having the primary key at the database level is the best practice.

## Trigger Relations Page

The following table describes the key information on the trigger Relations page. The trigger Relations page appears when you select **Edit** for the Review and Manage relationships reachable from the root database table option on the adapter trigger Poll for a New or Changed Records page.

Element	Description
<b>Create New</b>	Opens the Create Relation page with these options: <ul style="list-style-type: none"> <li>• Parent Table — selects the parent table for the relationship between tables.</li> <li>• Child Table — selects the child table for the relationship between tables.</li> <li>• Relationship — defines the relationship between the parent and child tables.</li> <li>• Attribute Name — Applies attributes to the table relationship.</li> <li>• Mapping — Displays the mapping for the table relationship.</li> </ul>
<b>Detach</b>	Opens the Relationships list in a new window.

## 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** for Polling Strategy and Options on the adapter trigger Poll for a New or Changed Records page.

Element	Description
<b>Logical Delete Field</b>	Selects a field in the root database table. To allow the selection, polling must be enabled in the Status column.
<b>Read Value</b>	Identifies the value that is used to indicate a row has been read. For example, PROCESSED. Surrounding quotes are not required.
<b>Unread Value</b>	Indicates the rows to process. Only rows with Logical Delete Field and column values that match the Unread Value are read.
<b>Polling Frequency (Sec)</b>	Specifies the polling frequency (in seconds) for new records or events.
<b>Rejected Value</b>	Set to <b>REJECTED</b> . If the incoming message is greater than the 10 MB threshold size, that particular record is updated to <b>REJECTED</b> instead of <b>READ</b> . If the outbound operation returns a response greater than the 10 MB threshold size, the response message is ignored and a fault response is sent to the calling client.
<b>Advanced Options</b>	Click <b>Edit</b> to access the <b>Batch Size</b> field to specify the number of table rows to process during a single transaction. The default value is <b>10</b> .

## 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:

- [Import Tables Page](#)
- [Relationships Page](#)
- [Create Relationship Page](#)
- [Attribute Filtering 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
<b>Schema</b>	Select the schema to use. The page is refreshed to display the tables available for selection.
<b>Name Filter</b>	Filter the display of tables.
<b>Available</b>	Select the tables on which to insert or update records.
<b>Selected</b>	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
<b>Relationships Table</b>	Displays the relationships defined on the root database table and any related tables (one-to-one or one-to-many).
<b>Create</b>	Click to create new relationships.
<b>Remove</b>	Click to remove a selected relationship.
<b>Rename</b>	Click to rename a selected relationship.

## Create Relationship Page

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

Element	Description
<b>Parent Table</b>	Select the parent table.
<b>Child Table</b>	Select the child table.
<b>Mapping Type</b>	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 <b>Employees</b> as the parent table and <b>Departments</b> as the child table, the following options are displayed: <ul style="list-style-type: none"> <li>• <b>Employees has a 1:1 Relationship with Departments</b></li> <li>• <b>Employees has a 1:1 Relationship with Departments (Foreign Key on Child table)</b></li> <li>• <b>Employees has a 1:M Relationship with Departments</b></li> </ul>

Element	Description
<b>Parent and Child Table</b>	Associate the foreign key fields to the primary key fields.
<b>Relationship Name</b>	Optionally name the relationship (a default name is generated).

## Attribute Filtering Page

Filter out the attributes to exclude.

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

## 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
<b>Schema</b>	Select the database schema that includes the tables to process.
<b>Table Name</b>	Enter a filter with which to search the schema (for example, %TAB to search for tables with TAB in the name).
<b>Table Type</b>	Specify the table type filter to get a subset of the appropriate database objects, then click <b>Search</b> . <ul style="list-style-type: none"> <li>• <b>ALL</b></li> <li>• <b>TABLE</b></li> <li>• <b>VIEW</b></li> </ul>
<b>Filter By</b>	Enter the initial letters to filter the display of table names.
<b>Table Names</b>	Select the tables to import. <b>Note:</b> 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.
<b>Import Tables</b>	Click to import the tables. The page is refreshed for you to select the parent database table.
<b>Select the parent database table</b>	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.
<b>Add    Remove Tables</b>	Click to add more tables or remove tables no longer in use.

Element	Description
<b>Review and manage parent database table relationships</b>	Click <b>Edit</b> to view and edit the table relationships. The relationships automatically identified by the adapter are displayed. See <a href="#">Review and manage parent database table relationships Option</a> .
<b>Review and filter columns from selected database tables</b>	Click <b>Edit</b> 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 <a href="#">Review and filter columns from selected database tables Option</a> .
<b>Review and edit SQL query</b>	Click <b>Edit</b> to view and edit the default SQL query. See <a href="#">Review and edit SQL query Option</a> . <b>Note:</b> This field is available for a <code>Select</code> 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
<b>Create New Relations</b>	Click to create a new relationship. 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
<b>Attributes Tree</b>	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
<b>SQL Edit</b>	Click to manually edit the query in the <b>SQL Query</b> field. Use this field to add any necessary arguments or parameters.
<b>Maximum Number of Records to be fetched</b>	Select the number of records to fetch with this SQL query.



## Summary Page

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

Element	Description
<b>Summary</b>	<p>Displays a summary of the configuration values you defined on previous pages of the wizard.</p> <p>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.</p> <p>To return to a previous page to update any values, click the appropriate tab in the left panel or click <b>Go back</b>.</p> <p>To cancel your configuration details, click <b>Cancel</b>.</p>

# 4

## Implement Common Patterns Using the MySQL Adapter

You can use the MySQL Adapter to implement common patterns.

### Topics:

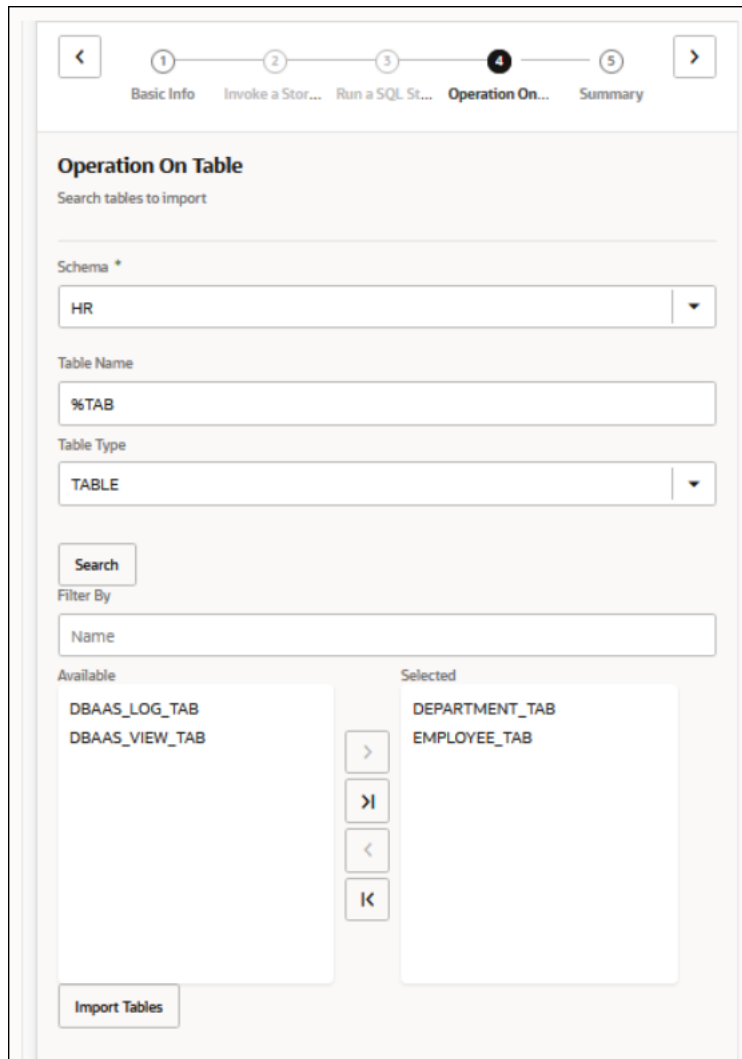
- [Define a Select Operation on Database Tables](#)

## Define a Select Operation on Database Tables

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

To define a `SELECT` operation on database tables:

1. Configure SOAP Adapter and MySQL 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 MySQL 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 Operation 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 MySQL 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.

**Operation On Table**  
Select the parent database table

You must select the parent database table. If you are using multiple related tables, then this is the highest-level table (or top-level parent table) in the relationship tree. You can either add more tables or remove the ones that are no longer used.

--- select one ---

DEPARTMENT\_TAB

EMPLOYEE\_TAB

[Add](#) | [Remove Tables](#)

**Review and manage parent database table relationships**  
[Edit](#)

You can review and manage all the relationships that are reachable from parent table. Relationship created via Adapter wizard are used by Adapter internally and doesn't have any impact on the database.

**Review and filter columns from selected database tables**  
[Edit](#)

Use the Columns Filtering section to review and verify the columns in the object model created from the selected tables and the defined relationships. Deselect columns that you want to exclude from the database query.

**Review and edit SQL Query**  
[Edit](#)

Use the SQL Query section to specify the selection criteria. You can add additional criteria's using Graphical Expression Builder or can define custom SQL select criteria using SQL Edit.

8. View your selections on the Summary page.
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 MySQL Adapter.

# 5

## Troubleshoot the MySQL Adapter

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

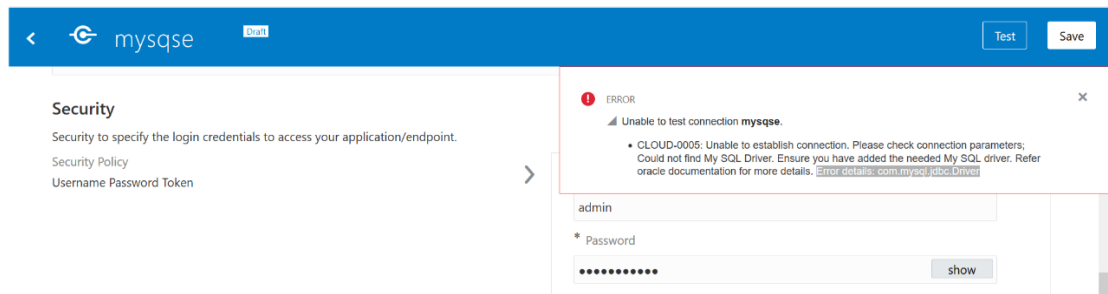
### Topics:

- [Troubleshoot a Connection Test Error](#)

Additional integration troubleshooting information is provided. See [Troubleshoot Oracle Integration in \*Using Integrations in Oracle Integration 3\*](#) and the [Oracle Integration Troubleshooting page](#) on the Oracle Help Center.

## Troubleshoot a Connection Test Error

You can receive the following error when testing the MySQL Adapter connection on the Connections page.



If you receive this error, ensure that you perform the following prerequisite steps:

1. Download the `mysql-connector-java-commercial-5.1.22-bin.jar` driver file from the [MySQL Database site](#).
2. Copy the driver file to the `agenthome/thirdparty/lib` directory of the instance on which the connectivity agent is installed.
3. Restart the connectivity agent.

See [Prerequisites for Creating a Connection](#).