

[Cloud SQL](https://cloud.google.com/sql/) (<https://cloud.google.com/sql/>)

[Documentation](https://cloud.google.com/sql/docs/) (<https://cloud.google.com/sql/docs/>)

[MySQL](https://cloud.google.com/sql/docs/mysql/) (<https://cloud.google.com/sql/docs/mysql/>) [Guides](#)

# Importing data into Cloud SQL

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**MySQL** | [PostgreSQL](https://cloud.google.com/sql/docs/postgres/import-export/importing) (<https://cloud.google.com/sql/docs/postgres/import-export/importing>) | [SQL Server](https://cloud.google.com/sql/docs/sqlserver/import-export/importing) (<https://cloud.google.com/sql/docs/sqlserver/import-export/importing>)

This page describes how to import data into Cloud SQL. For best practices for importing data, see [Best Practices for Importing and Exporting Data](https://cloud.google.com/sql/docs/mysql/import-export/) (<https://cloud.google.com/sql/docs/mysql/import-export/>).

To import data from Cloud Storage, the instance's service account needs to have the **Bucket Reader ACL** permission set in the project. For more information see [Cloud Identity and Access Management for Cloud Storage](https://cloud.google.com/storage/docs/access-control/iam/) (<https://cloud.google.com/storage/docs/access-control/iam/>).

## Importing SQL dump files to Cloud SQL

### Before you begin

- Do not use a system user (such as root@localhost) as the DEFINER for triggers, view, or stored procedures. You won't have access to this user in Cloud SQL.

For help with creating a SQL dump file that can be imported into Cloud SQL, see [Creating a SQL dump file](#)

(<https://cloud.google.com/sql/docs/mysql/import-export/creating-sqldump-csv#sqldump>).

- The database you are importing into must already exist on your Cloud SQL instance and it must be empty. You can't overwrite existing data.

For help with creating a database, see [Creating a database](#)

(<https://cloud.google.com/sql/docs/mysql/create-manage-databases#create>).

The SQL Mode setting affects how Cloud SQL interprets SQL queries. For example, if you export from a database without Strict SQL enabled, then try to import to Cloud SQL (which enables Strict SQL by default), the import might fail. The best practice is to use the same SQL Mode on import that you used for export.

Review the SQL Mode on both the source and target databases for compatibility. Pay particular attention to the flags that enable Strict SQL mode. If Strict SQL is NOT set on your database, you will likely want to remove it in Cloud SQL. If you remove Strict SQL, you must set another flag.

To verify that your Cloud SQL instance has the desired mode set, run `SELECT @@GLOBAL.sql_mode;`

## Importing a SQL dump file

To import a SQL dump file to a Cloud SQL instance:

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1. Create your SQL dump file, if you haven't already, using the [required parameters](https://cloud.google.com/sql/docs/mysql/import-export/creating-sqldump-csv#sqldump) (<https://cloud.google.com/sql/docs/mysql/import-export/creating-sqldump-csv#sqldump>) to ensure that your dump file is useable by Cloud SQL.  
For help with creating a SQL dump file, see [Creating a SQL dump file](https://cloud.google.com/sql/docs/mysql/import-export/creating-sqldump-csv#sqldump) (<https://cloud.google.com/sql/docs/mysql/import-export/creating-sqldump-csv#sqldump>).
2. Create a Cloud Storage bucket, if you haven't already.  
For help with creating a bucket, see [Creating Storage Buckets](https://cloud.google.com/storage/docs/creating-buckets) (<https://cloud.google.com/storage/docs/creating-buckets>).
3. Upload the file to your bucket.  
For help with uploading files to buckets, see [Uploading an Object](https://cloud.google.com/storage/docs/uploading-objects) (<https://cloud.google.com/storage/docs/uploading-objects>).
4. Go to the Cloud SQL Instances page in the Google Cloud Console.  
**[GO TO THE CLOUD SQL INSTANCES PAGE \(HTTPS://CONSOLE.CLOUD.GOOGLE.COM/SQL/INSTANCES\)](https://console.cloud.google.com/sql/instances)**
5. Select the instance to open its **Instance details** page.
6. Click **Import** in the button bar.
7. Enter the path to the bucket and SQL dump file you uploaded, or browse to it by clicking **Browse** and doubleclicking the name of the bucket and then selecting the file and clicking **Select**.  
You can use a compressed (.gz) or an uncompressed (.sql) file.
8. For **Format**, select **SQL**.
9. Select the database you want the data to be imported into.  
This causes Cloud SQL to run the `USE DATABASE` statement before the import.

- ★ If your SQL dump file includes a **USE DATABASE** statement, it overrides the database you set in the console.

10. Click **Import** to start the import.

**Note:** If you get an error message about needing the SUPER privilege when you attempt to import a file, your export file contains elements that cannot be imported into Cloud SQL. If your export file contains DEFINER clauses, that means that it contains one or more triggers, views, or stored procedures. This error message could also be caused by attempting to import system databases. To avoid these issues, make sure you are following the instructions in [exporting data for import into Cloud SQL](https://cloud.google.com/sql/docs/mysql/import-export/creating-sqldump-csv#sqldump) (<https://cloud.google.com/sql/docs/mysql/import-export/creating-sqldump-csv#sqldump>) when you create your export file.

## Importing CSV files to Cloud SQL

### Before you begin

- The database and table you are importing into must already exist on your Cloud SQL instance. For help with creating a database, see [Creating a database](https://cloud.google.com/sql/docs/mysql/create-manage-databases#create) (<https://cloud.google.com/sql/docs/mysql/create-manage-databases#create>). To create a table, use the **CREATE TABLE** (<https://dev.mysql.com/doc/refman/5.7/en/creating-tables.html>) SQL statement in the `mysql` client.

- Your CSV file must conform to the [CSV file format requirements](#) (#csv-reqs) below.

If your file does not meet these requirements, you can also use the **LOAD DATA LOCAL INFILE** (<https://dev.mysql.com/doc/refman/5.7/en/load-data.html>) statement in the `mysql` client, which loads a local file to the database. This requires using the **--local-infile** ([https://dev.mysql.com/doc/refman/5.7/en/mysql-command-options.html#option\\_mysql\\_local-infile](https://dev.mysql.com/doc/refman/5.7/en/mysql-command-options.html#option_mysql_local-infile)) option for the `mysql` client.

(#)

### CSV file format requirements

CSV files must have one line for each row of data and have comma-separated fields.

The format of CSV files that Cloud SQL accepts is equivalent to using the following MySQL statements:

```
LOAD DATA INFILE ... CHARACTER SET 'utf8mb4'  
FIELDS TERMINATED BY ',' OPTIONALLY ENCLOSED BY '\"' ESCAPED BY '\\'
```



To create a CSV in this format, when you export your data from an existing database, make sure your export uses the same options or delimiters as those used by Cloud SQL for import. See [Creating a CSV file](#)

(<https://cloud.google.com/sql/docs/mysql/import-export/creating-sqldump-csv#csv>) for an example.

**Note:** The default behavior for Cloud SQL is to import columns in your CSV file in the same order as the table schema. If the order is different in your CSV file or if some columns are skipped, use

[importContext.csvImportOptions.columns\[\]](#)

(<https://cloud.google.com/sdk/gcloud/reference/sql/import/csv#--columns>) to import data from the CSV file.

## Importing the CSV file

To import data to a Cloud SQL instance using a CSV file:

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1. Go to the Cloud SQL Instances page in the Google Cloud Console.  
**GO TO THE CLOUD SQL INSTANCES PAGE** ([HTTPS://CONSOLE.CLOUD.GOOGLE.COM/SQL/INSTANCES](https://console.cloud.google.com/sql/instances))
2. Select the instance to open its Instance details page.
3. Click **Import** in the button bar.
4. Choose the CSV file you uploaded for import into your Cloud SQL instance.
5. Under **Format**, select **CSV**.
6. Specify the **Database** and **Table** in your Cloud SQL instance where you wish to import the CSV file.
7. You can optionally specify a user to use for the import.
8. Click the **Import** to start the import.

If you get an error such as `ERROR_RDBMS`, ensure the table exists. If the table exists, confirm that you have the correct permissions on the bucket. For more information about configuring access

control in Cloud Storage, see [Create and Manage Access Control Lists](#) (<https://cloud.google.com/storage/docs/access-control/create-manage-lists>).

## What's next

- Learn how to [check the status of import and export operations](#) (<https://cloud.google.com/sql/docs/mysql/import-export/checking-status-import-export>).
- Learn more about [importing and exporting data](#) (<https://cloud.google.com/sql/docs/mysql/import-export/>).
- Learn more about [Cloud Storage](#) (<https://cloud.google.com/storage/docs/>).

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