Connecting a client using the Cloud SQL Proxy

MySQL (https://cloud.google.com/sql/docs/mysql/connect-admin-proxy) | PostgreSQL (https://cloud.google.com/sql/docs/postgres/connect-admin-proxy) | **SQL Server**

Beta

This feature is in a pre-release state and might change or have limited support. For more information, see the product launch stages (https://cloud.google.com/products/#product-launch-stages).

For information about connecting a sqlcmd client to a Cloud SQL instance using IP, see Connecting sqlcmd Client Using IP Addresses (https://cloud.google.com/sql/docs/sqlserver/connect-admin-ip).

For more information about how the proxy works, see About the Cloud SQL Proxy (https://cloud.google.com/sql/docs/sqlserver/sql-proxy).

Before you begin

Before you can connect a sqlcmd to a Cloud SQL instance, you must have:

- Created a Cloud SQL instance, including configuring the default user.
  For more information about creating instances, see Creating Instances (https://cloud.google.com/sql/docs/sqlserver/create-instance).

  For more information about configuring the default user, see Configuring the default user account (https://cloud.google.com/sql/docs/sqlserver/create-manage-users#user-root).
- Determined how you will connect to your instance.

Connecting the sqlcmd client

Connecting a sqlcmd to your Cloud SQL instance with the proxy involves the following steps:

1. Enable the Cloud SQL API (#enable-api)
2. Install the proxy (#install)
3. Create a service account (#service-account)
4. Start the proxy (#start-proxy)
5. Start the sqlcmd session (#start-mysql)

1. Enable the API

Enable the Cloud SQL Admin API.

ENABLE THE API (HTTPS://CONSOLE.CLOUD.GOOGLE.COM/FLOWS/ENABLEAPI?APIID=SQLADMIN&REDIR

2. Install the proxy

LINUX 64-BIT | LINUX 32-BIT | MORE

1. Download the proxy:

```
wget https://dl.google.com/cloudsql/cloud_sql_proxy.linux.amd64 -O cloud_sql_
```

2. Make the proxy executable:

```
chmod +x cloud_sql_proxy
```

If your operating system isn't included here, you can also compile the proxy from source (http://github.com/GoogleCloudPlatform/cloudsql-proxy).

3. Create a service account

When you connect using the proxy, the proxy needs to authenticate with Google Cloud Platform. You can either use your Cloud SDK credentials, or you can provide the proxy with a path to a local key file from a service account you create (recommended for production instances). If you are using your Cloud SDK credentials, you can skip this step.

For more information about service accounts, see the Google Cloud Platform Auth Guide (https://cloud.google.com/docs/authentication#service_accounts).

Note: To create a service account with the required permissions, you must have `resourcemanager.projects.setIamPolicy` permission. This permission is included in the Project Owner, Project IAM Admin, and Organization Administrator roles.
You must also have enabled the Cloud SQL Admin API.

1. Go to the **Service accounts** page of the Google Cloud Console.

   GO TO THE SERVICE ACCOUNTS PAGE (HTTPS://CONSOLE.CLOUD.GOOGLE.COM/IAM-ADMIN/SERV

2. Select the project that contains your Cloud SQL instance.
3. Click **Create service account**.
4. In the **Create service account** dialog, provide a descriptive name for the service account.
5. For **Role**, select one of the following roles:
   - **Cloud SQL > Cloud SQL Client**
   - **Cloud SQL > Cloud SQL Editor**
   - **Cloud SQL > Cloud SQL Admin**

   Alternatively, you can use the primitive Editor role by selecting **Project > Editor**, but the Editor role includes permissions across Google Cloud.

   If you do not see these roles, your Google Cloud user might not have the `resourcemanager.projects.setIamPolicy` permission. You can check your permissions by going to the IAM page (https://console.cloud.google.com/iam-admin) in the Google Cloud Console and searching for your user id.
6. Change the **Service account ID** to a unique, easily recognizable value.
7. Click **Furnish a new private key** and confirm that the key type is `JSON`.
8. Click **Create**.

   The private key file is downloaded to your machine. You can move it to another location. Keep the key file secure.

4. Start the proxy

Depending on your language and environment, you can start the proxy using either TCP sockets or Unix sockets.

TCP SOCKETS UNIX SOCKETS

1. Copy your instance connection name from the **Instance details** page.

   For example: `myproject:us-central1:myinstance`.

2. If you are using a service account to authenticate the proxy, note the location on your client machine of the private key file that was created when you created the service account.

3. Start the proxy.
   Some possible proxy invocation strings:

   - Using Cloud SDK authentication:

     ```
     ./cloud_sql_proxy -instances=<INSTANCE_CONNECTION_NAME>=tcp:1433
     ```

     The specified port must not already be in use, for example, by a local database server.

   - Using a service account and explicit instance specification (recommended for production environments):

     ```
     ./cloud_sql_proxy -instances=<INSTANCE_CONNECTION_NAME>=tcp:1433 \
                       -credential_file=<PATH_TO_KEY_FILE> &
     ```

   For more information about proxy options, see Options for authenticating the proxy (https://cloud.google.com/sql/docs/sqlserver/sql-proxy#authentication-options) and Options for specifying instances (https://cloud.google.com/sql/docs/sqlserver/sql-proxy#instances-options).

5. Start the client session

Now that you have installed and started the proxy, you can start a sqlcmd session using the proxy. This command can be used whenever you want to connect to your Cloud SQL instance with a sqlcmd client.

The connection string you use depends on whether you started the proxy using a TCP socket or a UNIX socket.

TCP SOCKETS UNIX SOCKETS

1. Start the sqlcmd client:
   When you connect using TCP sockets, the proxy is accessed through `127.0.0.1`.
2. Enter the password.
3. You should see the sqlcmd prompt.

Need help? For help troubleshooting the proxy, see Troubleshooting Cloud SQL Proxy connections (https://cloud.google.com/sql/docs/sqlserver/sql-proxy#troubleshooting). Or, see our Cloud SQL Support page (https://cloud.google.com/sql/docs/sqlserver/support).

What's next

- Learn more about the proxy (https://cloud.google.com/sql/docs/sqlserver/sql-proxy).
- Get help troubleshooting connection issues (https://cloud.google.com/sql/docs/sqlserver/sql-proxy#troubleshooting) for the Cloud SQL Proxy.
- Learn about the two levels of access control (https://cloud.google.com/sql/docs/sqlserver/instance-access-control) for Cloud SQL instances.
- Create users (https://cloud.google.com/sql/docs/sqlserver/create-manage-users) and databases (https://cloud.google.com/sql/docs/sqlserver/create-manage-databases).
- Learn about connecting to your instance from your application (https://cloud.google.com/sql/docs/sqlserver/instance-access-control).
- Learn about options for support (https://cloud.google.com/sql/docs/support).

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