BigQuery ODBC Connection Troubleshooting Guide

The following is a troubleshooting guide for verifying your ability to connect to Google BigQuery through a variety of methods besides the ODBC driver. If you are unable to connect via the ODBC driver, consult this guide for alternative means of connecting to BigQuery. In the event that any of these alternatives do not work, then it is likely that the issue lies with the network, proxy configuration, or application configuration.

Verifying with the JDBC Driver

Preamble: Authentication Settings

Ensure that your authentication credentials are correct. If you have generated them using the methods in the ODBC driver (DSN configuration dialog for Windows, and the get_refresh_token shell script on OSX and Linux), then the same credentials will be usable in the JDBC driver.

Install the JDBC Driver and SQL Client

1. Get the latest BigQuery JDBC driver from your connectivity provider.
2. Download and install a JDBC SQL client. For the purposes of this guide, we advise the SQuirreL SQL Client, which can be found at the SQuirreL home page [1].

Configure a JDBC Driver Connection String

Follow the instructions for configuring a connection string in JDBC. The instructions below are for configuring a connection string in SQuirreL.

In the SQuirreL SQL Client:

1. Click the `Drivers` tab and ensure that your BigQuery JDBC driver is there. If it is not, then follow the instructions from the SQuirreL screenshots page [2] to configure the driver. For the JDBC driver, you need the Simba JDBC Driver for Google BigQuery jar, as well as the dependencies included.
2. Click the `Aliases` tab and add a new Alias. As in the previous step, use the SQuirrel screenshots page as a reference for the instructions. Your Alias' URL should be the connection string which you want to use to connect, e.g. `jdbc:bigquery://https://www.googleapis.com/bigquery/v2:443;AllowLargeResults=1;OAuthType=2;ProjectId=my-testing-project;TimestampFallback=0;OAuthRefreshToken=my-refresh-token;OAuthClientId=my-client-id;OAuthClientSecret=my-client-secret;Timeout=3000;QueryDialect=SQL`. For simplicity, it is best to use the valid credentials which you use in the ODBC driver. The configuration guide has a list of keys and the appropriate

values which should be included in the connection string. If you have any proxy settings, make sure that you specify them in the connection string (see the driver configuration guide for details).
3. Using your new Alias, connect and run a query.

References - JDBC Driver Setup and Verification

1. SQuirreL SQL Client - Home Page
2. Introduction, Features, and Screen Shots

Verifying Connection with the Google Web Console

1. Using a browser of your choice, go to [the BigQuery web console][1].
2. Log into the console using your credentials. If you are behind a firewall or proxy, ensure that it is configured to allow you to connect to the console.
3. Click `Compose Query` to open up the query dialog.
4. Using the query dialect of your choice do a small and simple SELECT query on a table.

References - Google Web Console

1. Google BigQuery Web Console

Google Cloud CLI Verification

To begin, open the Google Cloud command-line tool. If you do not have it, then you can download it at [the Google Cloud download page][1]. Update to the latest gcloud with the command `gcloud components update`. If you are behind a proxy or firewall, then consult the [Configuring Cloud SDK for use behind a proxy/firewall guide][2] provided by Google.

Set up New Valid Credentials

1. Use the command `gcloud auth revoke` to revoke the current credentials.
2. Use the command `gcloud auth login` to log in and generate new credentials. If you are using a service account, then use `gcloud auth activate-service-account [EMAIL] --key-file=[PATH_TO_KEYFILE]`. Consult the gcloud auth login and gcloud auth activate-service-account web pages for further details.
3. Use the command `gcloud auth application-default` to log in and generate credentials to be used by BigQuery in future tests.

Set up a Test Configuration

Use the command `gcloud init` to begin. When prompted, enter the appropriate options to match the configuration in the ODBC driver. You will need to configure the email used to authenticate and the

cloud project which hosts your dataset. For the purposes of these tests, you should answer no to the prompt which asks if you would like to configure for a default Compute Region and Zone. You can check the email and project associated with this configuration using the `gcloud config configurations list` command.

Test Connection

Simply execute the command `bq query --nouse_legacy_sql --apilog=stdout "<your_query_here>"` to execute a query and fetch the data. The query you use should be a quick and simple one, such as "SELECT * FROM `my_dataset.my_small_table` LIMIT 10".

References - Google Cloud CLI Setup and Verification

1. Google Cloud Command-Line Tool Overview
2. Configuring Cloud SDK for use behind a proxy/firewall
3. gcloud auth login | Cloud SDK
4. gcloud auth activate-service-account | Cloud SDK

Known BigQuery Endpoints

- **Default server name:** www.googleapis.com
- **Default API URL:** https://www.googleapis.com/bigquery/v2
- **Default Access Token Request URL (User auth):** https://oauth2.googleapis.com/token
- **Default Access Token Request URL (Service auth):** https://accounts.google.com/o/oauth2/auth?
- **Default OAuth Scope:** https://www.googleapis.com/auth/cloud-platform
- **Google Drive Scope:** https://www.googleapis.com/auth/drive
- **Google Client X509 Certification URL:** https://www.googleapis.com/robot/v1/metadata/x509/