Write, deploy, and trigger an HTTP Cloud Function (/functions/docs/writing/http) that accesses Spanner.

This topic uses Spanner and Cloud Functions, which are billable components of the Google Cloud.

- For information on the cost of using Spanner, see Spanner pricing (/spanner/pricing).
- For information on the cost of using Cloud Functions, including free invocations, see Cloud Functions pricing (/functions/pricing).

1. This topic assumes you have a Spanner instance named `test-instance` and a database named `example-db` that uses the music application schema (/spanner/docs/schema-and-data-model#creating-interleaved-tables). For instructions on creating an instance and database with the music application schema, see Quickstart using the console (/spanner/docs/quickstart-console) or the tutorials for Getting Started in Go (/spanner/docs/getting-started/go/), Java (/spanner/docs/getting-started/java/), Node.js (/spanner/docs/getting-started/nodejs/), or Python (/spanner/docs/getting-started/python/).

★ **Note:** After this step, you should have two tables, **`Singers`** (/spanner/docs/schema-and-data-model#creating_a_table) and **`Albums`** (/spanner/docs/schema-and-data-model#creating_multiple_tables), in your database with the sample data specified in the music application schema.

2. Enable the Cloud Functions API.

   Enable the API (https://console.cloud.google.com/flows/enableapi?apiid=cloudfunctions.googleapis.com)

3. Install and initialize the Cloud SDK (/sdk/docs/).

4. Update `gcloud` components:

5. Prepare your development environment:

1. Clone the sample app repository to your local machine:

2. Change to the directory that contains the Cloud Functions sample code for accessing Spanner:

3. Take a look at the sample code:

The function sends a SQL query to fetch all `Albums` data from your database. The function is executed when you make an HTTP request to the function's endpoint.

To deploy the function with an HTTP trigger, run the following command in the `spanner` directory:

Function deployment may take up to 2 minutes.

Note the `url` value returned when your function finishes deploying. You will use it when you trigger the function.

You can view your deployed functions on the Cloud Functions (https://console.cloud.google.com/project/_/functions) page in the Google Cloud Console. You can also create and edit functions on that page, and get details and diagnostics for your functions.

Make an HTTP request to your function:

where ***`REGION`*** and ***`PROJECT_ID`*** match the values that are visible in your terminal when your function finishes deploying. You should see output that shows the results of the SQL query, assuming you worked through a Getting Started tutorial (/spanner/docs/tutorials) and populated the database:

You can also visit the function's URL in your browser to see the result of your SQL query.

To avoid incurring additional charges to your Google Cloud account for the Spanner and Cloud Functions resources used in this topic:

1. Delete the instance:

2. Delete the function that you deployed:

- Learn more about writing Cloud Functions (/functions/docs/writing).
- Learn more about deploying Cloud Functions (/functions/docs/deploying).
- Learn more about calling Cloud Functions (/functions/docs/calling).
- Learn more about monitoring Cloud Functions (/functions/docs/monitoring).