**Setting Up for Google Cloud Spanner**

In this hands-on lab, we’ll walk through the process of establishing a Cloud Spanner instance and then creating a populated database to manage: from querying data to exporting it to Google Cloud Storage.

How to Log in to Google Lab Accounts

On the lab page, right-click **Open GCP Console** and select the option to open it in a new private browser window (this option will read differently depending on your browser — e.g., in Chrome, it says "Open Link in Incognito Window"). Then, sign in to Google Cloud Platform using the credentials provided on the lab page.

On the *Welcome to your new account* screen, review the text, and click **Accept**. In the "Welcome L.A.!" pop-up once you're signed in, check to agree to the terms of service, choose your country of residence, and click **Agree and Continue**.

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Now, on to the lab!

Enable APIs.

1. Navigate to **APIs & Services** > **Library**.
2. Search for "Cloud Spanner".
3. Select the **Cloud Spanner API** card.
4. Click **Enable**.
5. Head back to **APIs & Services** > **Library**.
6. Search for "dataflow".
7. Select the **Dataflow API** card.
8. Click **Enable**.
9. One last time, head to **APIs & Services** > **Library**.
10. Search for "storage".
11. Select the **Cloud Storage** card.
12. We should see it's already enabled. (If it isn't, click **Enable**.)

Create a Cloud Spanner instance.

1. Navigate to **Spanner**.
2. Click **Create instance**.
3. Provide the following details:
   * *Instance name*: **la-spanner**
   * *Configuration*: **Regional**, **us-central1**
   * *Nodes*: 1
4. Click **Create**.

Create database and table.

1. Click **Create database**.
2. Name the database (e.g., "la-db-spanner").
3. Click **Continue**.
4. In the **Define your database schema** section, click **Edit as text**.
5. In the *DDL statements* box, enter the following code:
6. CREATE TABLE Artists (
7. ArtistId INT64 NOT NULL,
8. FirstName STRING(1024),
9. LastName STRING(1024),
10. ArtistInfo BYTES(MAX),
11. BirthDate DATE )

PRIMARY KEY(ArtistId);

1. Click **Create**.

Populate table.

1. Select **Artists**.
2. Review the schema.
3. Click **Data**.
4. Click **Insert**.
5. Enter the following records, clicking **Save** after each one and then **Insert**:
6. ArtistId = 100
7. FirstName = Paul
8. LastName = Cezanne
9. BirthDate = 1839-01-19
10. ArtistId = 101
11. FirstName = Ansel
12. LastName = Adams
13. BirthDate = 1902-02-20
14. ArtistId = 102
15. FirstName = Frida
16. LastName = Kahloe

BirthDate = 1907-07-06

Editing data.

1. Select the checkbox next to the **Frida Kahloe** record.
2. Choose **Edit**.
3. Change the *LastName* to **Kahlo**.
4. Click **Save**.

Query data.

1. Click **Query**.
2. In the **Query** field, enter:

SELECT \* from Artists WHERE BirthDate > '1900-01-01'

1. Click **Run query**.
2. Review results.

Export data.

1. First, we need to create a bucket. Navigate to **Storage** (via the search bar at the top of the console).
2. Click **Create Bucket**.
3. Provide the following details:
   * *Name*: **la-spanner-export-** *(must be unique across all Cloud Storage)*
   * *Default storage class*: **Regional**
   * *Location*: **us-central1**
4. Click **Create**.
5. Navigate back to **Spanner**.
6. Choose database instance from left sidebar.
7. From the context menu, select **Export**.
8. Provide the following details:
   * *Choose where to store your export*: **Browse** and select the newly created bucket
   * *Choose a database to export*: Select your database
   * *Choose a region for the export job*: **us-central1**
9. Click **Confirm charges** checkbox.
10. Click **Export**.
11. Visit Cloud Spanner to view progress of operation.
12. Visit Cloud Storage bucket to confirm operation.

Conclusion

Congratulations on completing this lab!