

Using Connected Sheets

With Connected Sheets, you can access, analyze, visualize, and share billions of rows of BigQuery data from your Sheets spreadsheet.

You can also do the following:

- Collaborate with partners, analysts, or other stakeholders in a familiar spreadsheet interface.
- Ensure a single source of truth for data analysis without additional spreadsheet exports.
- Streamline your reporting and dashboard workflows.

Connected Sheets runs BigQuery queries on your behalf either upon your request or on a defined schedule. Results of those queries are saved in your spreadsheet for analysis and sharing.

Example use cases

The following are just a few use cases that show how Connected Sheets lets you analyze large amounts of data within a sheet, without needing to know SQL.

- **Business planning:** Build and prepare datasets, then allow others to find insights from the data. For example, analyze sales data to determine which products sell better in different locations.
- **Customer service:** Find out which stores have the most complaints per 10,000 customers.
- **Sales:** Create internal finance and sales reports, and share revenue reports with sales reps.

Access control

Direct access to BigQuery datasets and tables is still controlled within BigQuery. If you want to give a user Sheets access only, share a spreadsheet and do not grant BigQuery access.

A user with Sheets-only access can perform analysis in the sheet and use other Sheets features, but the user will not be able to perform the following actions:

- Manually refresh the BigQuery data in the sheet.
- Schedule a refresh of the data in the sheet.

Before you begin

If you do not yet have a Google Cloud project that is set up for billing, follow these steps:

1. [Sign in](https://accounts.google.com/Login) (https://accounts.google.com/Login) to your Google Account.

If you don't already have one, [sign up for a new account](https://accounts.google.com/SignUp) (https://accounts.google.com/SignUp).

2. In the Cloud Console, on the project selector page, select or create a Cloud project.

★ **Note:** If you don't plan to keep the resources that you create in this procedure, create a project instead of selecting an existing project. After you finish these steps, you can delete the project, removing all resources associated with the project.

[Go to the project selector page](https://console.cloud.google.com/projectselector2/home/dashboard) (https://console.cloud.google.com/projectselector2/home/dashboard)

3. Make sure that billing is enabled for your Google Cloud project. [Learn how to confirm billing is enabled for your project](/billing/docs/how-to/modify-project) (/billing/docs/how-to/modify-project).

4. BigQuery is automatically enabled in new projects. To activate BigQuery in a preexisting project, go to Enable the BigQuery API.

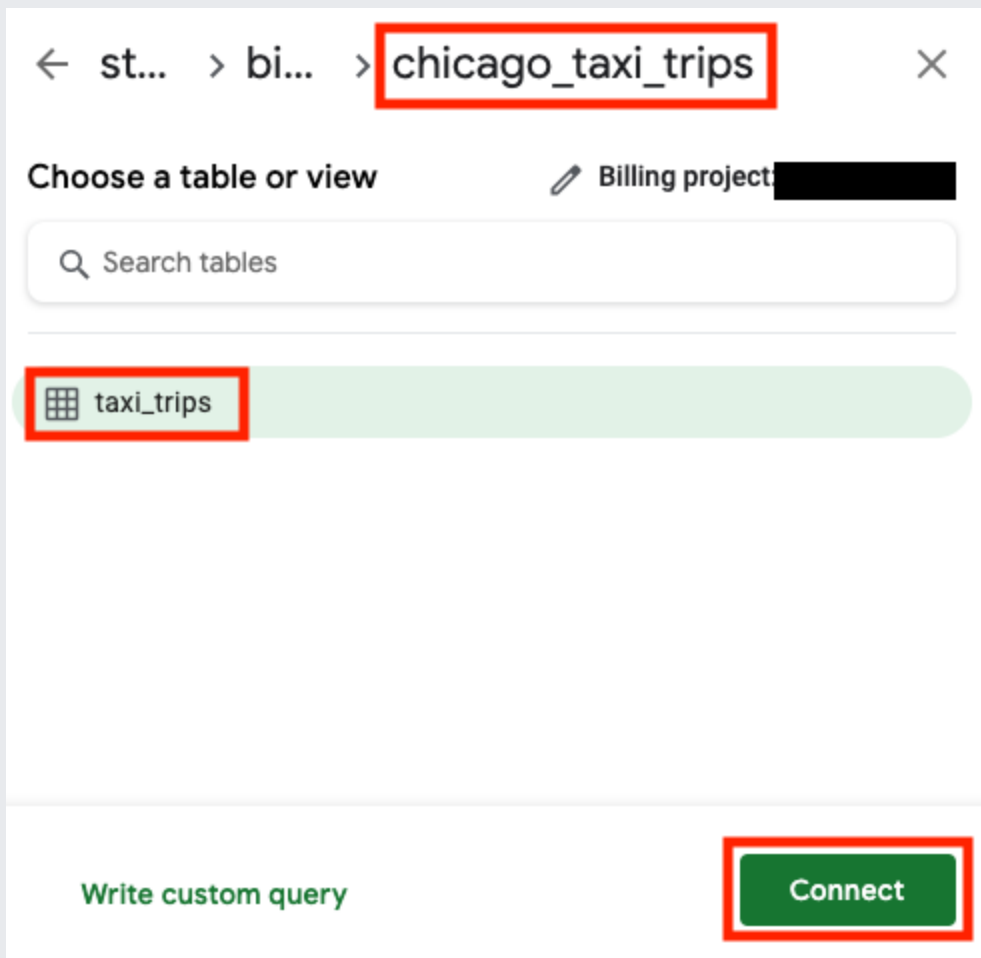
[Enable the API](https://console.cloud.google.com/flows/enableapi?apiid=bigquery) (https://console.cloud.google.com/flows/enableapi?apiid=bigquery)

When you finish this topic, you can avoid continued billing by deleting the resources you created. See [Cleaning up](#) (#clean-up) for more detail.

Use Connected Sheets with BigQuery

The following example uses a public dataset to show you how to connect to BigQuery from Sheets.

1. Create or open a Sheets spreadsheet.
2. Click **Data**, click **Data connectors**, and then click **Connect to BigQuery**.
3. Click **Get connected**.
4. Select a Google Cloud project that has billing enabled.
5. Click **Public datasets**.
6. In the search box, type **chicago** and then select the **chicago_taxi_trips** dataset.
7. Select the **taxi_trips** table and then click **Connect**.



Your spreadsheet should look similar to the following:

unique_key	taxi_id	trip_start_time	trip_end_time	trip_seconds	trip_miles	pickup_city
5ca0f04de0e5cd	93ed0b8d2841e	5/10/2015 10:30	5/10/2015 11:00	1949	9	
07ec06d200f3d9	0fb1abb17fe80c	5/3/2015 4:15:00	5/3/2015 4:30:00	1553	17.3	
c4307129434351	46cb4badd6423	4/29/2015 21:45	4/29/2015 22:15	1541	5.3	
fd026dfd0a58c6	c0233d1acdf95f	5/2/2015 9:45:00	5/2/2015 10:00:00	1509	9.1	
97b677642b2bd	f705c825446b66	5/9/2015 7:00:00	5/9/2015 7:15:00	584	3.1	
273f3722f43b66	919ad1eb29141	5/17/2015 5:00:00	5/17/2015 5:15:00	609	6.3	
ac1f07a082d92a	4a3ff87c5a5781	5/2/2015 6:45:00	5/2/2015 7:00:00	843	5.7	
2a7dcb77748a3f	008dda45db57c	5/5/2015 6:30:00	5/5/2015 6:45:00	1453	7.8	
c0562a7cc5f04f	70d9077f1ddbcb	5/15/2015 18:00	5/15/2015 18:45	3143	8.9	
2a7cc6226c8d1	fbfc2ff558d0fc2	5/22/2015 11:00	5/22/2015 11:15	1108	5.5	
2b40f5f67c710	1066c000c0000	5/10/2015 10:30	5/10/2015 11:00	1801	9.5	
10				763	4.5	
4d921f5aa47d9e	d7a173e9444db	5/12/2015 6:30:00	5/12/2015 7:00:00	1621	8.3	

Start using the spreadsheet. You can create pivot tables, formulas, and charts using familiar Sheets techniques.

Although the spreadsheet shows a preview of only 500 rows, any pivot tables, formulas, and charts use the entire set of data. You can also extract the data to a sheet. For more information, see the [Connected Sheets tutorial](https://www.youtube.com/watch?v=rkimlhnLKGI) (https://www.youtube.com/watch?v=rkimlhnLKGI).

Cleaning up

To avoid incurring charges to your Google Cloud account for the resources used in this tutorial:

Caution: Deleting a project has the following effects:


- **Everything in the project is deleted.** If you used an existing project for this tutorial, when you delete it, you also delete any other work you've done in the project.

- **Custom project IDs are lost.** When you created this project, you might have created a custom project ID that you want to use in the future. To preserve the URLs that use the project ID, such as an **appspot.com** URL, delete selected resources inside the project instead of deleting the whole project.

If you plan to explore multiple tutorials and quickstarts, reusing projects can help you avoid exceeding project quota limits.

1. In the Cloud Console, go to the **Manage resources** page.

[Go to the Manage resources page \(https://console.cloud.google.com/iam-admin/projects\)](https://console.cloud.google.com/iam-admin/projects)

2. In the project list, select the project that you want to delete and then click **Delete** .
3. In the dialog, type the project ID and then click **Shut down** to delete the project.

What's next

- Get more information from the G Suite [Get started with BigQuery data in Google Sheets](https://support.google.com/docs/answer/9702507) (https://support.google.com/docs/answer/9702507) topic.
- View videos from the [Using Connected Sheets playlist](https://www.youtube.com/playlist?list=PLU8ezl8GYqs74i8hy_qln3FvkAuSpE-r1) (https://www.youtube.com/playlist?list=PLU8ezl8GYqs74i8hy_qln3FvkAuSpE-r1) on YouTube.

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