

Datastore: Qwik Start

GSP131



Overview

This hands-on lab will show you how to store and query data in Google Cloud Datastore using the Google Cloud.

Setup

Before you click the **Start Lab** button

Read these instructions. Labs are timed and you cannot pause them. The timer, which starts when you click **Start Lab**, shows how long Google Cloud resources will be made available to you.

This Qwiklabs hands-on lab lets you do the lab activities yourself in a real cloud environment, not in a simulation or demo environment. It does so by giving you new, temporary credentials that you use to sign in and access Google Cloud for the duration of the lab.

What you need

To complete this lab, you need:

- Access to a standard internet browser (Chrome browser recommended).
- Time to complete the lab.

Note: If you already have your own personal Google Cloud account or project, do not use it for this lab.


Note: If you are using a Pixelbook, open an Incognito window to run this lab.


How to start your lab and sign in to the Google Cloud Console


1. Click the **Start Lab** button. If you need to pay for the lab, a pop-up opens for you to select your payment method. On the left is a panel populated with the temporary credentials that you must use for this lab.

[Open Google Console](#)

Caution: When you are in the console, do not deviate from the lab instructions. Doing so may cause your account to be blocked. [Learn more.](#)


Username
google2727032_student@qwiklabs.n 

Password
k68CZxsxMZ 

GCP Project ID
qwiklabs-gcp-4fbfecac8667e457 

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- Copy the username, and then click **Open Google Console**. The lab spins up resources, and then opens another tab that shows the **Sign in** page.



Sign in
Use your Google Account


[Forgot email?](#)


Tip: Open the tabs in separate windows, side-by-side.

If you see the **Choose an account** page, click **Use Another**


Choose an account

 Your.Email@gmail.com

 google1381214_student@qwiklabs.net
Signed out

 **Use another account**

Account.

3. In the **Sign in** page, paste the username that you copied from the Connection Details panel. Then copy and paste the password.

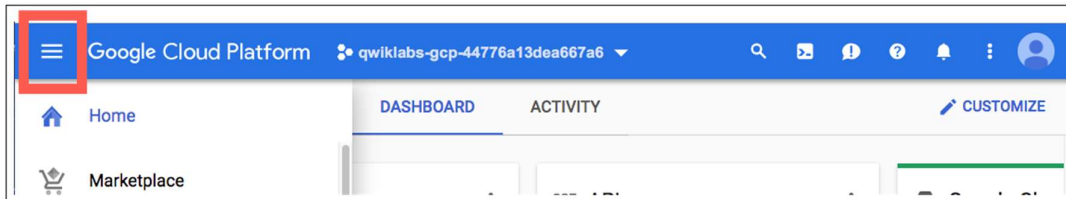
Important: You must use the credentials from the Connection Details panel. Do not use your Qwiklabs credentials. If you have your own Google Cloud account, do not use it for this lab (avoids incurring charges).

4. Click through the subsequent pages:

- Accept the terms and conditions.
- Do not add recovery options or two-factor authentication (because this is a temporary account).
- Do not sign up for free trials.

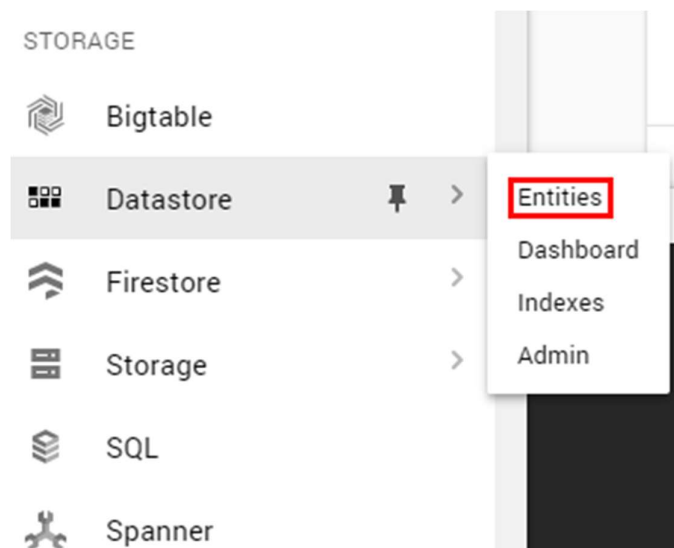
After a few moments, the Cloud Console opens in this tab.

Note: You can view the menu with a list of Google Cloud Products and Services by clicking the **Navigation menu** at the top-left.



Store data

In left menu on the Console, Storage section, go to **Datastore** > **Entities**.



Under the Datastore mode column, click **Select Datastore Mode**.

1 Select a database service
2 Choose where to store your data

Cloud Firestore is the next generation of Cloud Datastore. You can use Cloud Firestore in either Native mode or Datastore mode, each with distinct system behavior optimized for different types of projects. [Pricing](#) for both modes is based on location, stored data, operations, and network egress with a daily free quota for each. [Learn more about choosing a mode](#)

The mode you select here will be permanent for this project

	Native mode	Datastore mode
	Enable all of Cloud Firestore's features, with offline support and real-time synchronization. <div>SELECT NATIVE MODE</div>	Leverage Cloud Datastore's system behavior on top of Cloud Firestore's powerful storage layer. <div>SELECT DATASTORE MODE</div>
API	Firestore	Datastore
Scalability	Automatically scales to millions of concurrent clients	Automatically scales to millions of writes per second
App engine support	Not supported in the App Engine standard Python 2.7 and PHP 5.5 runtimes	All runtimes
Max writes per second	10,000	No limit
Real-time updates	✓	✗
Mobile/web client libraries with offline data persistence	✓	✗

SHOW MORE

Now choose where you'll create your database. Use the dropdown menu to select a location:

Get started

Select a database service
2 Choose where to store your data

You selected Cloud Firestore in Datastore mode. Now choose a database location.

The location of your database affects its cost, availability, and durability. Choose a regional location (lower write latency, lower cost) or a multi-region location (higher availability, higher cost). [Learn more](#)

Choose carefully: your location selection is permanent and will also apply to this project's App Engine app

Select a location

Multi-region (99.999% SLA)

eur3 (Europe)

nam5 (United States)

Regional (99.99% SLA)

asia-east2 (Hong Kong)

asia-northeast1 (Tokyo)

asia-south1 (Mumbai)

The location applies to both Cloud Datastore and App Engine for your Google Cloud project. You cannot change the location after it has been saved.

Click **Create database**.

Click **Create Entity**.

On the **Create an entity** page, use [default] for **Namespace**.

Type `Task` for **Kind**.

Under **Properties** use the **Add property** button to add these properties, and click **Done** after each one:

Name	Type	Value	Indexed
description	String	Learn Google Cloud Datastore	×
created	Date and time	(today's date)	✓
done	Boolean	False	✓

Your creation page should now look like this:

← Create an entity

Namespace

[default] ?

Kind

Task ?

Key identifier

Numeric ID (auto-generated) ▼ ?

✓ SPECIFY PARENT

Properties

description: Learn Google Cloud Datastore (Not saved) ▼

created: 2019-02-03 (22:48:16.264) UTC-5 (Not saved) ▼

Indexed

done: false (Not saved) ▼

Indexed

ADD PROPERTY

CREATE

CANCEL

Click **Create**. The console displays the Task entity that you just created.

You just stored data in Cloud Datastore!

Test Completed Task

Click **Check my progress** to verify your performed task. If you have completed the task successfully you will be granted with an assessment score.

Run a query

Cloud Datastore supports querying data by kind or by Google Query Language (GQL); the instructions below walk you through the steps of doing both.

Run kind queries

1. Click **Query by kind**.
2. Select `Task` as the kind.

The query results show the `Task` entity that you created.

Next, add a query filter to restrict the results to entities that meet specific criteria:

1. Click **Filter entities** tab.
2. In the dropdown lists, select `done`, **is a boolean**, and **that is false**.
3. Click **Apply filters**. The results show the `Task` entity that you created, since its `done` value is `false`.

The screenshot shows the 'Query by kind' tab selected. The 'Namespace' is set to '[default]' and the 'Kind' is set to 'Task'. A 'Filter entities' button is visible. Below this, a filter is applied: 'done' is selected from the first dropdown, 'is a boolean' from the second, and 'that is false' from the third. There are '+' and '-' buttons to the right of the filter. Below the filter, there are 'Apply filters' and 'Clear filters' buttons. The results table below shows one entity with the following data:

<input type="checkbox"/> Name/ID	created	description	done
<input type="checkbox"/> id=5730082031140864	2016-04-29 (12:58:00.000) PDT	Learn Google Cloud Datastore	false

4. Now try a query of `done`, **is a boolean**, and **that is true** then **Apply filters**. The results do not include the `Task` entity that you created, because its `done` value is not `true`.

Run GQL queries

1. Click the **Query by GQL** tab.
2. In the query box add the following:

```
SELECT * FROM Task
```

Note that `Task` is case sensitive.

3. Click **Run query**.

The query results show the `Task` entity that you created.

Tip: The GQL query editor supports autocompletion for kinds: When you need to type a kind name, press Ctrl+Space to see a list of the available kinds. Up to 300 alphabetically sorted kinds can appear in the list. For better matches of kinds, type one or more characters.

Now add a query filter to restrict the results to entities that meet specific criteria:

Run this query:

```
SELECT * FROM Task WHERE done=false
```

Note that `Task` and `done` are case sensitive. The results show the `Task` entity that you created, since its `done` value

The screenshot shows the GQL query editor interface. At the top, there are two tabs: "Query by kind" and "Query by GQL", with "Query by GQL" being the active tab. Below the tabs is a "Namespace" dropdown menu set to "[default]". The main area contains a query editor with the text "1 SELECT * FROM Task WHERE done=false". Below the editor are three buttons: "Run query" (highlighted in blue), "Clear query", and "GQL query help" with an external link icon. At the bottom, there is a table of results. The table has four columns: "Name/ID", "created", "description", and "done". The first row shows a task with ID "id=5730082031140864", created on "2016-04-29 (12:58:00.000) PDT", with description "Learn Google Cloud Datastore", and a "done" value of "false".

<input type="checkbox"/> Name/ID	created	description	done
<input type="checkbox"/> id=5730082031140864	2016-04-29 (12:58:00.000) PDT	Learn Google Cloud Datastore	false

is false.

Now run this query:

```
SELECT * FROM Task WHERE done=true
```

The results do not include the `Task` entity that you created, because its `done` value is not `true`.

Test your Understanding

Below are multiple-choice questions to reinforce your understanding of this lab's concepts. Answer them to the best of your abilities.

Google Cloud Datastore is a NoSQL document database built for automatic scaling, high performance, and ease of application development.

True

Cloud Datastore is a relational database, and it is an effective storage solution for analytic data.

False

Congratulations!



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Next Steps / Learn More

This lab is also part of a series of labs called Qwik Starts. These labs are designed to give you a little taste of the many features available with Google Cloud. Search for "Qwik Starts" in the [lab catalog](#) to find the next lab you'd like to take!

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