

Pub/Sub: Qwik Start - Console

Overview

This lab focused on using Google Cloud Pub/Sub, a messaging service for exchanging event data among applications and services in a reliable, scalable, asynchronous manner. A producer publishes messages to a topic, and consumers subscribe to this topic to receive data.

Objectives

- Set up a Pub/Sub topic to hold data.
- Create a subscription to access data from the topic.
- Publish and consume messages using pull subscriber via Cloud Shell.
- Reinforce understanding through lab-based MCQs.

Task 1. Setting up Pub/Sub

To use Pub/Sub, you create a topic to hold data and a subscription to access data published to the topic.

1. From the **Navigation menu** (≡) click **View All Products**. Go to **Analytics** section, click **Pub/Sub > Topics**.

The screenshot shows the Google Cloud Platform interface. On the left, there's a sidebar titled 'Solutions' with sections for 'All products', 'Jump Start Solutions', 'Solution deployments', 'Categories', 'Management', 'Compute', 'Storage', 'Analytics' (which is currently selected), 'Networking', 'Distributed Cloud', 'Serverless', 'Databases', and 'Observability'. The main content area has a title 'Analytics' with a sub-instruction: 'Collect, store, process, and analyze large amounts of data'. Below this is a table titled 'Topics' with columns 'Name' and 'Description'. The table lists several services: BigQuery (Data warehouse/analytics), Pub/Sub (Global real-time messaging, highlighted with a red box), Dataflow (Streaming analytics service), Composer (Managed workflow orchestration service), Dataproc (Managed Apache Hadoop), Dataprep (Visual data wrangling), Data Fusion (Data pipeline management), Looker (Enterprise BI and Analytics), Healthcare (Healthcare data storage and processing), and Financial Services (Revenue growth through the cloud). Each row has edit and delete icons.

Name	Description	Actions
BigQuery	Data warehouse/analytics	edit delete
Pub/Sub	Global real-time messaging	edit delete
Dataflow	Streaming analytics service	edit delete
Composer	Managed workflow orchestration service	edit delete
Dataproc	Managed Apache Hadoop	edit delete
Dataprep	Visual data wrangling	edit delete
Data Fusion	Data pipeline management	edit delete
Looker	Enterprise BI and Analytics	edit delete
Healthcare	Healthcare data storage and processing	edit delete
Financial Services	Revenue growth through the cloud	edit delete

2. Click **Create topic**.

The screenshot shows the Google Cloud Platform Pub/Sub service interface. At the top, there's a navigation bar with a 'Pub/Sub' icon, the text 'Pub/Sub', a dropdown arrow, 'Topics', a 'CREATE TOPIC' button, and a 'DELETE' button. Below this is a sidebar with a 'Pub/Sub' header, a dropdown arrow, and four items: 'Topics' (selected, indicated by a blue background), 'Subscriptions', 'Schemas', and 'Schemas'. The main content area has tabs 'LIST' (selected) and 'METRICS'. Under 'LIST', there's a 'Filter' section with a checkbox, 'Topic ID ↑', and an 'Encryption key' link. A message below says 'No topics to display'.

3. The topic must have a unique name. For this lab, name your topic MyTopic. In the **Create a topic** dialog:
 - a. For **Topic ID**, type MyTopic.
 - b. Leave other fields at their default value.
 - c. Click **Create**.

Topic ID * —

 ?

Topic name: projects/qwiklabs-gcp-01-8d32c5af2c4c/topics/MyTopic

- Add a default subscription ?
- Use a schema ?
- Enable ingestion ?
- Enable message retention ?
- Export message data to BigQuery ?
- Backup message data to Cloud Storage ?

Encryption

- Google-managed encryption key
Keys owned by Google
- Cloud KMS key
Keys owned by customers

CREATE

Task 2. Add a subscription

Now you'll make a subscription to access the topic.

1. Click **Topics** in the left panel to return to the **Topics** page. For the topic you just made click the three dot icon > **Create subscription**.

The screenshot shows the Google Cloud Pub/Sub 'Topics' page. At the top, there are buttons for 'CREATE TOPIC' and 'DELETE'. Below that, tabs for 'LIST' and 'METRICS' are visible, with 'LIST' being the active tab. A 'Filter' input field is present. The main area displays a table with one row for 'MyTopic'. The columns in the table are 'Topic ID', 'Encryption key', 'Topic name', 'Retention', and 'Ingestion source'. To the right of the table, a context menu is open, listing options like 'Create subscription', 'Create snapshot', 'Import from', 'Export', 'Trigger Cloud Function', 'Update labels', 'View permissions', 'View storage policies', and 'Delete'. The 'Create subscription' option is highlighted.

2. In the **Add subscription to topic** dialog:

- Type a name for the subscription, such as **MySub**
- Set the Delivery Type to **Pull**.
- Leave all other options at the default values.

Add subscription to topic

subscribers immediately, or subscribers can pull messages as needed.

Subscription ID * ?

Subscription name: projects/qwiklabs-gcp-03-8ea56b7cabda/subscriptions/MySub

Topic name ?

Delivery type

If Pull, subscribers must request delivery. If Push, Pub/Sub delivers messages as soon as they are published.

Pull

Push

- Click **Create**.

Task 3. Publish a message to the topic

1. Navigate back to **pub/sub > Topics** and open **MyTopics** page.
2. In the Topics details page, click **Messages** tab and then click **Publish Message**.
3. Enter Hello World in the **Message** field and click **Publish**.

Publish message

Topic name
projects/qwiklabs-gcp-04-417eafdb59c9/topics/MyTopic

Publish count

You can publish the given message once or multiple times in an interval. This can be useful for getting messages in new subscriptions and testing. For a more robust way to publish messages multiple times, consider using Cloud Scheduler.

Number of messages *
1

Enter an amount between 1-100.

Message interval (seconds)
1

How long to wait before publishing the next message

Message body

The message you want to publish to this topic. Either message or attribute will be required to publish.

Message *
Hello World

Message size should not exceed 10MB.

Message attributes

PUBLISH CANCEL

Task 4. View the message

To view the message, use the subscription (MySub) to pull the message (Hello World) from the topic (MyTopic).

- Enter the following command in Cloud Shell:

```
gcloud pubsub subscriptions pull --auto-ack MySub
```

```
student_01_8545be9b812e@cloudshell:~ (qwiklabs-gcp-01-8d32c5af2c4c)$ gcloud pubsub subscriptions pull --auto-ack MySub
DATA: Hello World
MESSAGE_ID: 11938495658530057
ORDERING_KEY:
ATTRIBUTES:
DELIVERY_ATTEMPT:
ACK_STATUS: SUCCESS
student_01_8545be9b812e@cloudshell:~ (qwiklabs-gcp-01-8d32c5af2c4c)$ █
```

Outcome

 Successfully:

- Created **Pub/Sub Topic** and **Subscription**.
- Published and consumed a message.
- Understood the working of **Publisher-Subscriber model** on **Google Cloud Pub/Sub**.

Key Learnings

-  Pub/Sub decouples producers and consumers while ensuring reliable, scalable, event-driven communication.
-  Topics store messages, while subscriptions pull or receive them via push.
-  Using **Cloud Shell** and gcloud simplifies testing and retrieval in real environments.