

# Create a function

First, you're going to create a simple function named `helloWorld`. This function writes a message to the Cloud Functions logs. It is triggered by cloud function events and accepts a callback function used to signal completion of the function.

For this lab the cloud function event is a cloud pub/sub topic event. A pub/sub is a messaging service where the senders of messages are decoupled from the receivers of messages. When a message is sent or posted, a subscription is required for a receiver to be alerted and receive the message. For more information about pub/subs, see [Google Cloud Pub/Sub: A Google-Scale Messaging Service](#).

For more information on the event parameter and the callback parameter, see [Background Functions](#).

To create a cloud function:

1. In the Cloud Shell command line, create a directory for the function code.

```
mkdir gcf_hello_world
content_copy
```

2. Move to the `gcf_hello_world` directory.

```
cd gcf_hello_world
content_copy
```

3. Create and open `index.js` to edit.

```
nano index.js
content_copy
```

4. Copy the following into the `index.js` file

```
/**
 * Background Cloud Function to be triggered by Pub/Sub.
 * This function is exported by index.js, and executed when
 * the trigger topic receives a message.
 */
```

```

* @param {object} data The event payload.
* @param {object} context The event metadata.
*/
exports.helloWorld = (data, context) => {
  const pubSubMessage = data;
  const name = pubSubMessage.data
    ? Buffer.from(pubSubMessage.data, 'base64').toString() : "Hello World";
  console.log(`My Cloud Function: ${name}`);
};

```

content copy

5.Exit nano (Ctrl+x) and save (Y) the file.

## Create a cloud storage bucket

Use the following command to create a new cloud storage bucket for your function:

```
gsutil mb -p [PROJECT_ID] gs://[BUCKET_NAME]
```

content copy

•**PROJECT\_ID** is the Project ID in the connection details of 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

student-04-a4775b90c907@qwiklabs.net



### Password

dqB6NphL89NH



### GCP Project ID

qwiklabs-gcp-04-c50671f13df2



• **BUCKET\_NAME** is the name you give to the bucket. It must be a globally unique name. For more information, see [Bucket naming guidelines](#).

## 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.

# Deploy your function

When deploying a new function, you must specify `--trigger-topic`, `--trigger-bucket`, or `--trigger-http`. When deploying an update to an existing function, the function keeps the existing trigger unless otherwise specified.

For this lab, you'll set the `--trigger-topic` as `hello_world`.

1. Deploy the function to a pub/sub topic named **hello\_world**, replacing `[BUCKET_NAME]` with the name of your bucket:

```
gcloud functions deploy helloWorld \
  --stage-bucket [BUCKET_NAME] \
  --trigger-topic hello_world \
  --runtime nodejs8
```

[content copy](#)

If prompted, enter Y to allow unauthenticated invocations of a new function.

2. Verify the status of the function.

```
gcloud functions describe helloWorld
```

[content copy](#)

An **ACTIVE** status indicates that the function has been deployed.

```
entryPoint: helloWorld
eventTrigger:
  eventType: providers/cloud.pubsub/eventTypes/topic.publish
  failurePolicy: {}
  resource:
...
status: ACTIVE
...content copy
```

Every message published in the topic triggers function execution, the message contents are passed as input data.

## Test Completed Task

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

## Test the function

After you deploy the function and know that it's active, test that the function writes a message to the cloud log after detecting an event.

Enter this command to create a message test of the function.

```
DATA=$(printf 'Hello World!'|base64) && gcloud functions call helloWorld --data  
'{"data":"$DATA"}'  
content_copy
```

The cloud tool returns the execution ID for the function, which means a message has been written in the log.

Example output:

```
executionId: 3zmhpf7l6j5bcontent_copy
```

View logs to confirm that there are log messages with that execution ID.

# View logs

Check the logs to see your messages in the log history.

```
gcloud functions logs read helloWorld
```

[content copy](#)

If the function executed successfully, messages in the log appear as follows:

```
LEVEL NAME      EXECUTION_ID TIME_UTC      LOG
D    helloWorld  3zmhpf7l6j5b 2017-12-05 22:17:42.585 Function execution started
I    helloWorld  3zmhpf7l6j5b 2017-12-05 22:17:42.650 My Cloud Function: Hello World!
D    helloWorld  3zmhpf7l6j5b 2017-12-05 22:17:42.666 Function execution took 81 ms,
finished with status: 'ok'
```

[content copy](#)

**Note:** The logs will take around 10 mins to appear. Also, the alternative way to view the logs is, go to **Logging > Logs Explorer**.

Your application is deployed, tested, and you can view the logs.

## 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.

True

# Congratulations!



## Finish Your Quest

This self-paced lab is part of the Qwiklabs [Baseline: Deploy & Develop](#), [Baseline: Infrastructure](#), and [Optimizing your Google Cloud Costs](#) Quests. A Quest is a series of related labs that form a learning path. Completing this Quest earns you the badge above, to recognize your achievement. You can make your badges public and link to them in your online resume or social media account. Enroll in this Quest and get immediate completion credit if you've taken this lab. [See other available Qwiklabs Quests here.](#)

## Take Your Next Lab

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!

## Next Steps /Learn More

- Now that you used the command line to start a Cloud Function, try the [Cloud Functions: Qwik Start - Console](#) lab to start a Cloud Function using the Cloud Console.
- Learn more about App Engine with [An Overview Of App Engine](#).
- Try something else with App Engine with [Getting Started with Flask on App Engine Standard Environment](#).

## Google Cloud Training & Certification

...helps you make the most of Google Cloud technologies. [Our classes](#) include technical skills and best practices to help you get up to speed quickly and continue your learning journey. We offer fundamental to advanced level training, with on-demand, live, and virtual options to suit your busy schedule. [Certifications](#) help you validate and prove your skill and expertise in Google Cloud technologies.

Manual Last Updated January 26, 2021

Lab Last Tested January 8, 2021

Copyright 2021 Google LLC All rights reserved. Google and the Google logo are trademarks of Google LLC. All other company and product names may be trademarks of the respective companies with which they are associated.