

GCP Computing Service

Google Cloud Function

A Serverless environment to build and connect cloud services



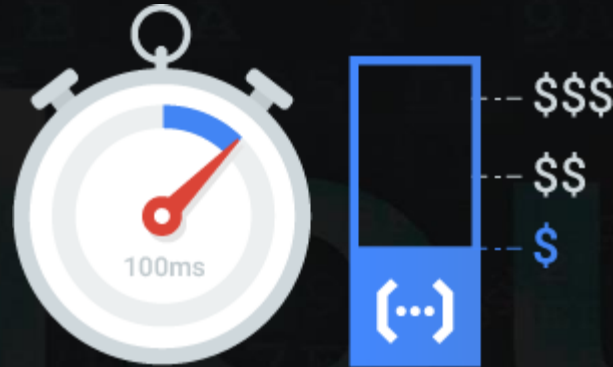
Google Cloud Platform

Google Cloud Function



Cloud Function is fully serverless models of computing where logic can be spun up on-demand in response to events originating from anywhere. Applications can be from bite-sized business logic billed to the nearest 100 milliseconds, only while your code is running. Serve users from zero to planet-scale, all without managing any infrastructure

True Serverless Economics



Cloud Functions are ephemeral, spinning up on-demand and back down in response to events in the environment. Pay only while your function is executing, metered to the nearest 100 milliseconds, and pay nothing after your function finishes.

Mobile Ready



Mobile app developers can use Cloud Functions directly from Firebase, Google Cloud's mobile platform. Firebase natively emits events to which Cloud Functions can respond, including from Firebase Analytics, Realtime Database, Authentication, and Storage.

Just Write & add code



Run in a fully-managed, serverless environment where Google handles infrastructure, operating systems, and runtime environments completely on your behalf.

Each Cloud Function runs in its own isolated secure execution context, scales automatically, and has a lifecycle independent from other functions.

Open Source Support



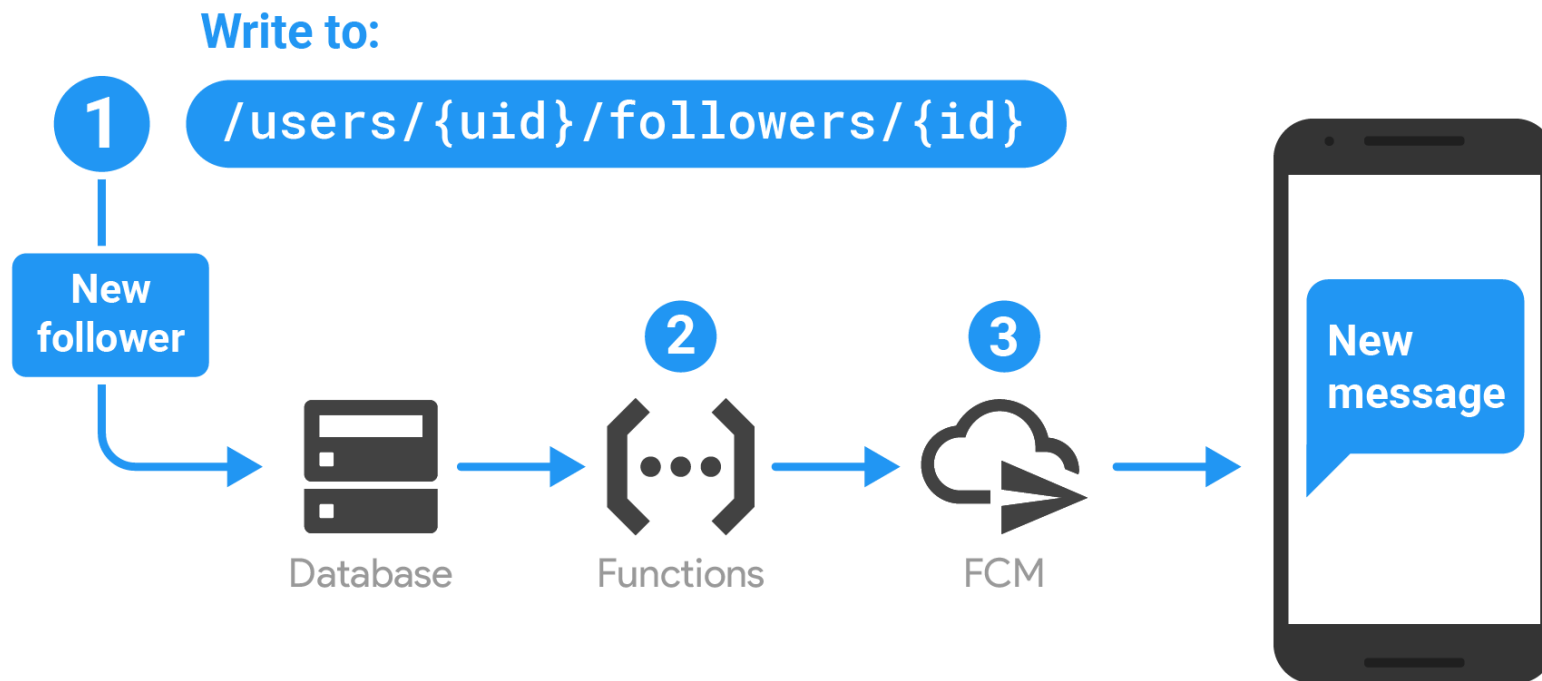
Open Source Support

Cloud Functions are written in JavaScript and execute in a standard Node.js runtime environment.

Supported by V8 Engine which is Google's open source high-performance JavaScript engine, written in C++ and used in Chromium, Node.js and multiple other embedding applications

What can be done with Cloud Functions - Examples

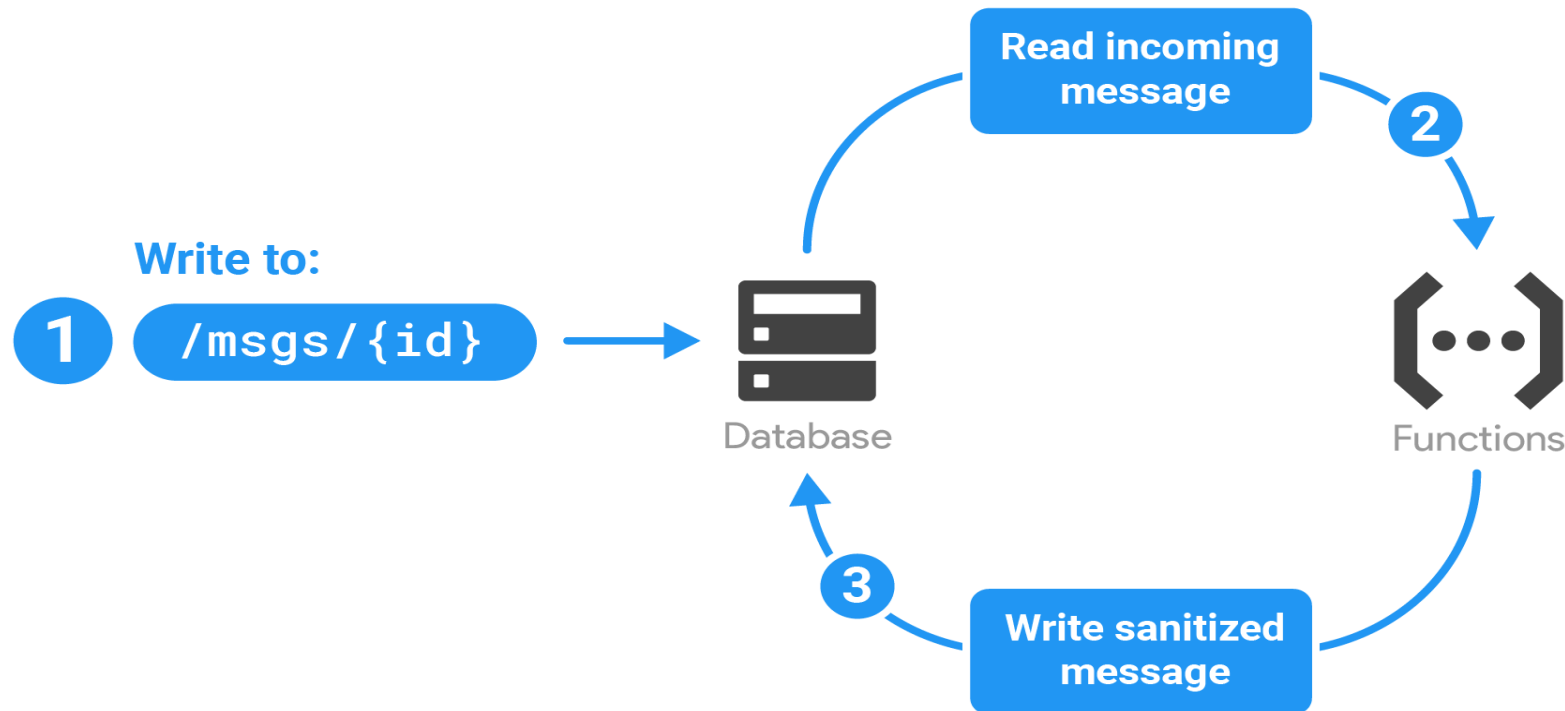
Notify users when something interesting happens



- 1.The function triggers on writes to the Realtime Database path where followers are stored.
- 2.The function composes a message to send via FCM.
- 3.FCM sends the notification message to the user's device.

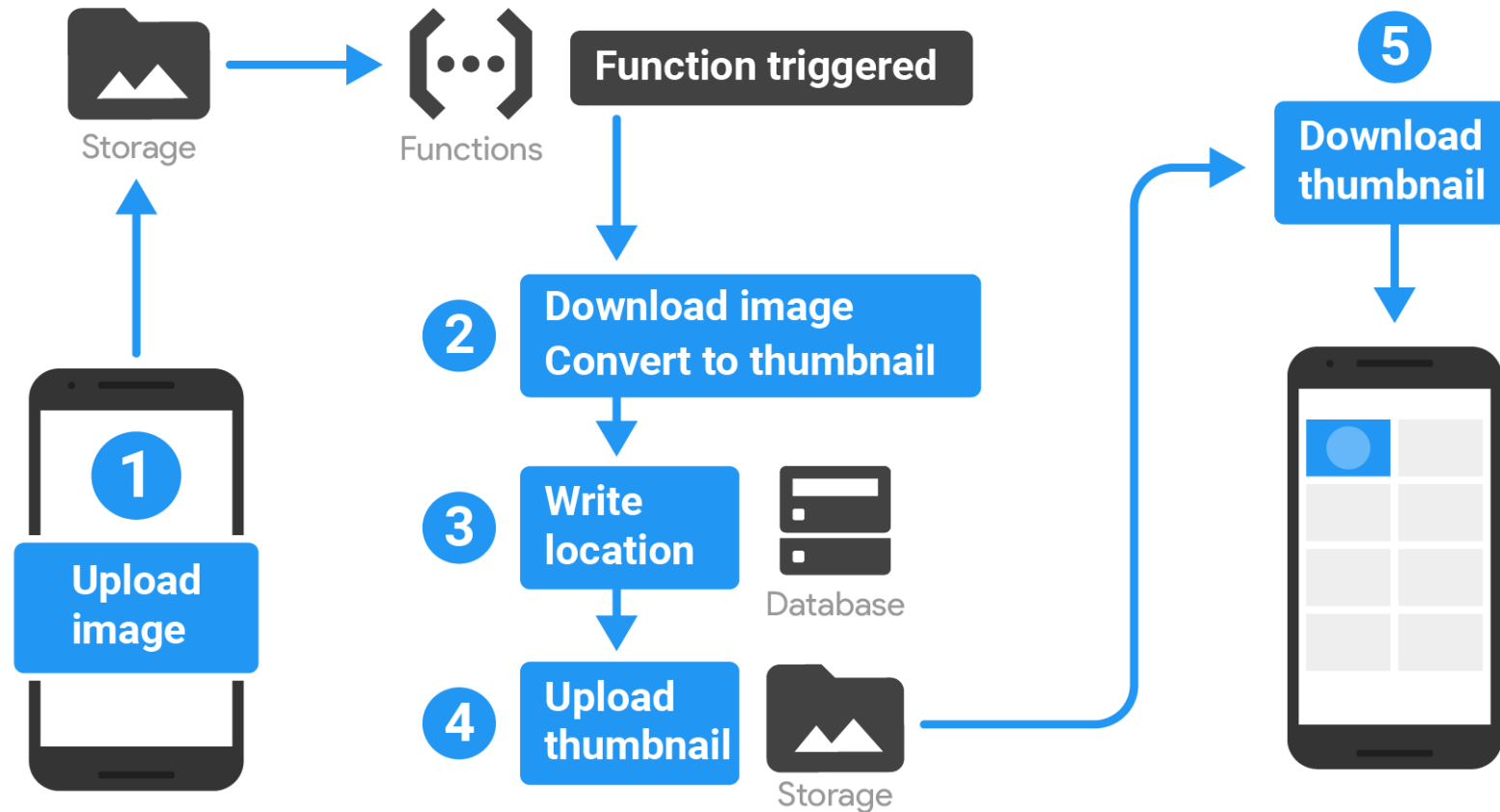
What can be done with Cloud Functions - Examples

Perform Realtime Database sanitization and maintenance



1. The function's database event handler listens for write events on a specific path, and retrieves event data containing the text of any chat messages.
2. The function processes the text to detect and scrub any inappropriate language.
3. The function writes the updated text back to the database.

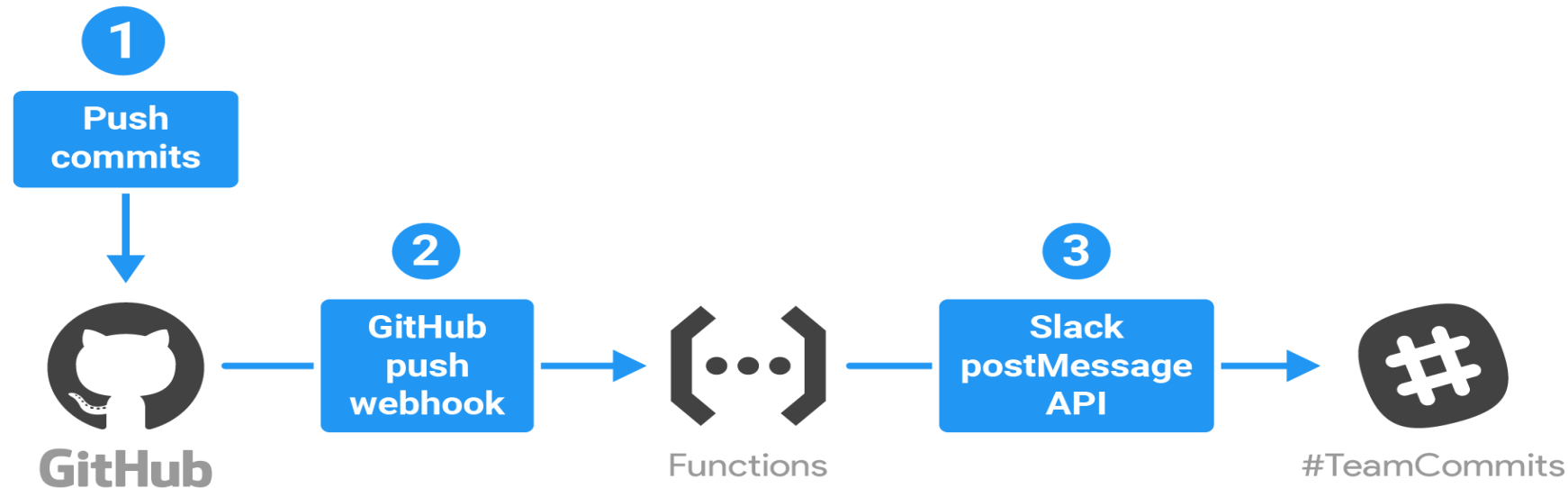
What can be done with Cloud Functions - Examples



1. A function triggers when an image file is uploaded to Storage.
2. The function downloads the image and creates a thumbnail version of it.
3. The function writes that thumbnail location to the database, so a client app can find and use it.
4. The function uploads the thumbnail back to Storage in a new location.
5. The app downloads the thumbnail link.

What can be done with Cloud Functions - Examples

Integrate with third-party services and APIs



1. A user pushes commits to a GitHub repo.
2. An HTTPS function triggers via the [GitHub webhook API](#).
3. The function sends a notification of the commit to a team Slack channel.

Cloud Function

- **Event Based Microservice**
- **Fully Managed Serverless and Secure**
- **Triggers**
 - **Cloud Pub/Sub, HTTP, Cloud Storage, Stackdriver, Firebase**
- **Code**
 - **Deploys functions from Cloud Storage Bucket, Github, BitBucket repo**
 - **Written in Java Script and runs Node.js**
- **Stackdriver Integration**

Google Cloud Function : Concepts

Events and Triggers

Cloud events are things that happen in your cloud environment. These might be things like changes to data in a database, files added to a storage system, or a new virtual machine instance being created

- You create a response to an event with a trigger.
- **A trigger is a declaration** that you are interested in a certain event or set of events.
- Binding a function to a trigger allows you to capture and act on events

Cloud Functions : Features



Cloud Function

- ✓ **Mobile Backend**
- ✓ **API & Microservices**
- ✓ **Data Processing and ETL**
- ✓ **Webhooks**
- ✓ **IOT**
- ✓ **True Serverless**
- ✓ **Fully Managed**
- ✓ **100 millisecond charging**
- ✓ **Support firebase**



Cloud function : Access Control

- You can set access control using roles at the project level.
- Assign a role to a project member or service account to determine the level of access to your Google Cloud Platform project and its resources.
- By default, **all Google Cloud Platform projects come with a single user**: the original project creator. No other users have access to the project, and therefore, access to functions, until a user is added as a project team member.



Cloud function : Access Control

Users needs to be added as team members to project and grant them permissions using Identity and Access Management (IAM) roles. Cloud Functions currently only supports primitive roles..

Role	Google Cloud Platform Permissions
Owner	All viewer and editor privileges, plus the ability to view deployed source code, invite users, change user roles, and delete an application. Has admin privileges to all resources in the project.
Editor	View function information and edit function settings. Has admin privileges to all resources in the project.
Viewer	View function information. Has admin privileges to all resources in the project.



Cloud function : Pricing

Invocations

Invocations per Month	Price/Million
First 2 million	Free
Beyond 2 million	\$0.40

Compute Time

Memory	CPU ¹	Price/100ms
128MB	200MHz	\$0.000000231
256MB	400MHz	\$0.000000463
512MB	800MHz	\$0.000000925
1024MB	1.4 GHz	\$0.000001650
2048MB	2.4 GHz	\$0.000002900

Unit	Price
GB-Second	\$0.0000025
GHz-Second	\$0.0000100



Cloud function : Pricing Free tier..

- **2 Million Invocations**
- **400000 GB Sec**
- **200000 GHZ Sec.**
- **5GB egress per month.**

GCP Computing Service

Cloud Function

Demo Next....



Google Cloud Platform