



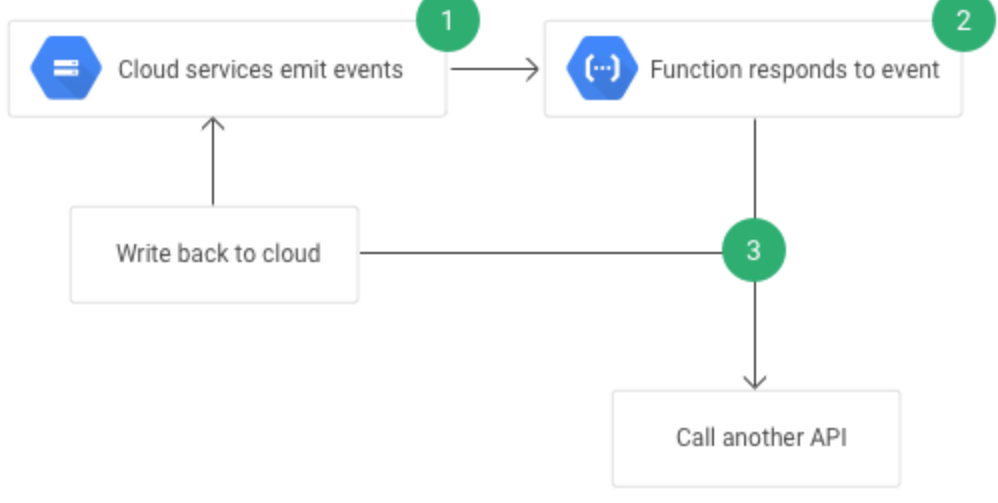
Google Cloud Functions: a serverless environment to build and connect cloud services

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By Jason Polites, Product Manager

Developers rely on many cloud services to build their apps today: everything from storage and messaging services like [Google Cloud Storage](#) and [Google Cloud Pub/Sub](#) and mobile development platforms like [Firebase](#), to data and analytics platforms like [Google Cloud Dataflow](#) and [Google BigQuery](#). As developers consume more cloud services from their applications, it becomes increasingly complex to coordinate them and ensure they all work together seamlessly. Last week at [Google Cloud Next '17](#), we announced the public beta of a new capability for [Google Cloud Platform](#) (GCP) called [Google Cloud Functions](#) that allows developers to connect services together and extend their behavior with code, or to build brand new services using a completely serverless approach.

With Cloud Functions you write simple, single-purpose functions that are attached to events emitted from cloud services. Your Cloud Function is triggered when an event being watched is fired. Your code executes in a fully managed environment and can effectively connect or extend services in Google's cloud, or services in other clouds across the internet; no need to provision any infrastructure or worry about managing servers. A function can scale from a few invocations a day to many millions of invocations without any work from you, and you only pay while your function is executing.



Asynchronous workloads like lightweight ETL, or cloud automation tasks such as triggering an application build no longer require an always-on server that's manually connected to the event source. You simply deploy a Cloud Function bound to the event you want and you're done.

"Semios uses Google Cloud Functions as a critical part of our data ingestion pipeline, which asynchronously aggregates micro-climate telemetry data from our IoT network of 150,000 in-field sensors to give growers real-time insights about their orchards."

— Maysam Emadi, Data Scientist, Semios

Cloud Function's fine-grained nature also makes it a perfect candidate for building lightweight APIs, microservices and webhooks. HTTP endpoints are automatically configured when you deploy a function you intend to trigger using HTTP — no complicated configuration (or integration with other products) required. Simply [deploy your function](#) with an [HTTP trigger](#), and we'll give you back a secure URL you can curl immediately.

"At Vroom, we work with a number of partners to market our services and provide us with leads. Google Cloud Functions makes integration with these partners as simple as publishing a new webhook, which scales automatically with use, all without having to manage a single machine." — Benjamin Rothschild, Director of Analytics, Vroom

If you're a mobile developer using [Firebase](#), you can now connect your Firebase app to one or more Functions by binding a Cloud Function to mutation events in the Firebase Realtime Database, events from Firebase Authentication, and even execute a Cloud Function in response to a conversion event in Firebase Analytics. You can find out more about this Firebase integration at <https://firebase.google.com/features/functions>.

Cloud Functions also empowers developers to quickly and easily build messaging bots and create custom actions for Google Assistant.

"At Meetup, we wanted to improve developer productivity by integrating task management with Slack. Google Cloud Functions made this integration as simple as publishing a new HTTP function. We've now rolled the tool out across the entire organization without ever touching a server or VM." — Jose Rodriguez, Lead of Engineering Effectiveness, Meetup

In our commitment to openness, Cloud Functions uses only standard, off-the-shelf runtimes and doesn't require any proprietary modules or libraries in your code: your functions will just work. In addition, the execution environment doesn't rely on a proprietary or forked operating system, which means your [dependencies](#) have native library compatibility. We currently support the Node.js runtime and have a set of open source [Node.js client libraries](#) for connecting to a wide range of GCP services.

As part of the built-in deployment pipeline we'll resolve all dependencies by running *npm* install for you (or *npm* rebuild if you provide packages that require compilation), so you don't have to worry about building for a specific environment. We also have an open source [local emulator](#) so you can build and quickly iterate on your Cloud Functions from your local machine.

"Node.js is continually growing across the cloud, especially when it comes to the container and serverless space. This new offering from Google, built in collaboration with the open source community, will provide even more options to the Node.js community going forward." — Mikeal Rogers, Community Manager, Node.js Foundation

Head over to our [quickstart guide](#) to dive right in! Best of all, we've created a [generous free tier](#) to allow you to experiment, prototype and play with the product without spending a dime. You can find out more on our [pricing page](#).

We look forward to seeing what you create with Cloud Functions. We'd love to hear your feedback on [StackOverflow](#).



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