Google Cloud Computing Foundation Course
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Google Cloud

Lecture-22
Event Driven Programs with Cloud Functions

Cloud function is server less code that allows you to run it based on certain events. In this topic you will learn how cloud functions work.

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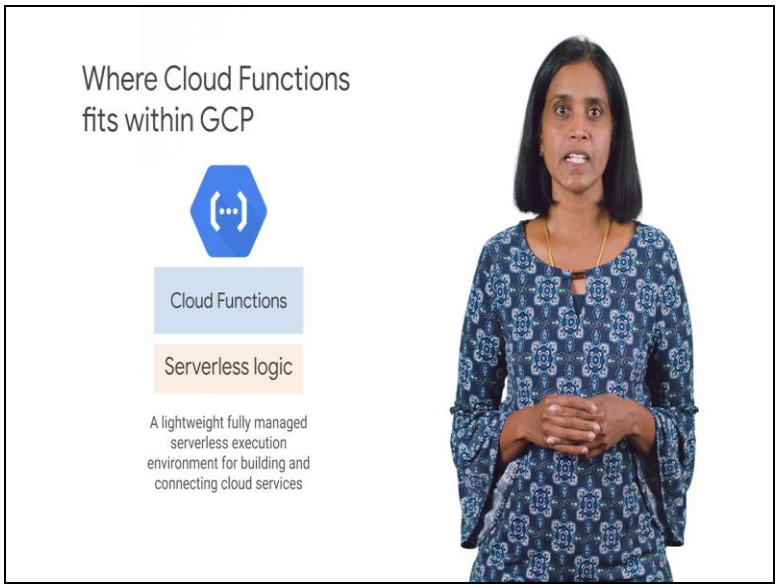

Developer agility comes from building systems composed of small independent units of functionality focused on doing one thing well. Cloud functions lets you build and deploy services at the level of a single function not at the level of entire applications containers or VMs. Cloud functions are ideal if you need to connect and extend cloud services and want to automate with event-driven functions that respond to cloud events.

It is also ideal if you want to use open and familiar Nodejs, Python or Go without the need to manage a server or runtime environment.

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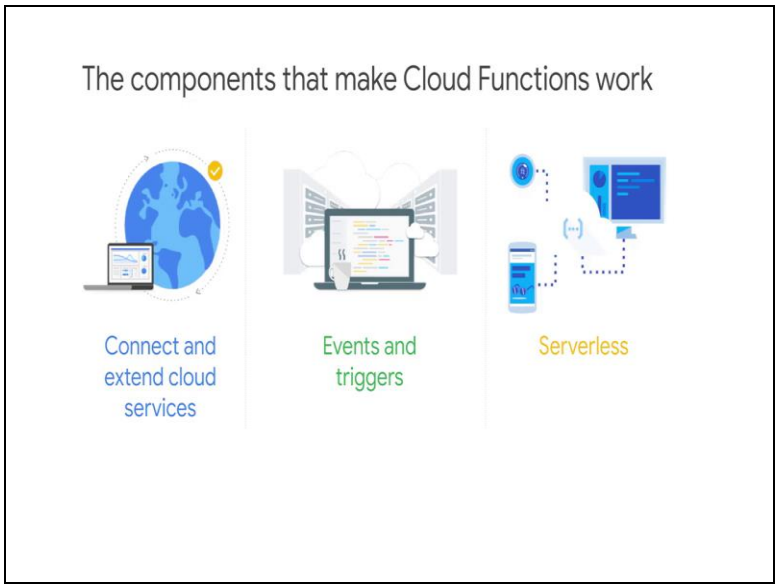

A cloud function provides a connective layer of logic that lets you write code to connect and extend cloud services. You can listen and respond to a file upload to cloud storage a log change or an incoming message on a cloud pub/sub topic and so on. Cloud functions have access to the Google service account credential and are therefore seamlessly authenticated with the majority of the GCP services such as cloud data store, cloud spanner, cloud translation API and cloud vision API.

Cloud events are things that happen in the 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 created. Events occur whether or not users choose to respond to them. You can create a response to an event with a trigger. A trigger is a declaration of interest in a certain event or set of events. Binding a function to a trigger allows you to capture and act on the events.

A cloud function removes the work of managing servers configuring software updating frameworks and patching operating systems. We fully manage the software and infrastructure so that you just add code. Furthermore the provisioning of resources that happens automatically in response to events this means that a function can scale from a few invocations a day to many millions of invocations without any additional work for you.

Events happen all the time within a system like file uploads to cloud storage changes to database records, requests to http endpoints and so on. By writing code that runs in response to those events cloud functions runs it while automatically managing any underlying infrastructure. A cloud function connects and extends cloud services with code. So, you can treat them as building blocks and adjust them as your needs change. You can also extend your application using a broad ecosystem of third-party services and api's.

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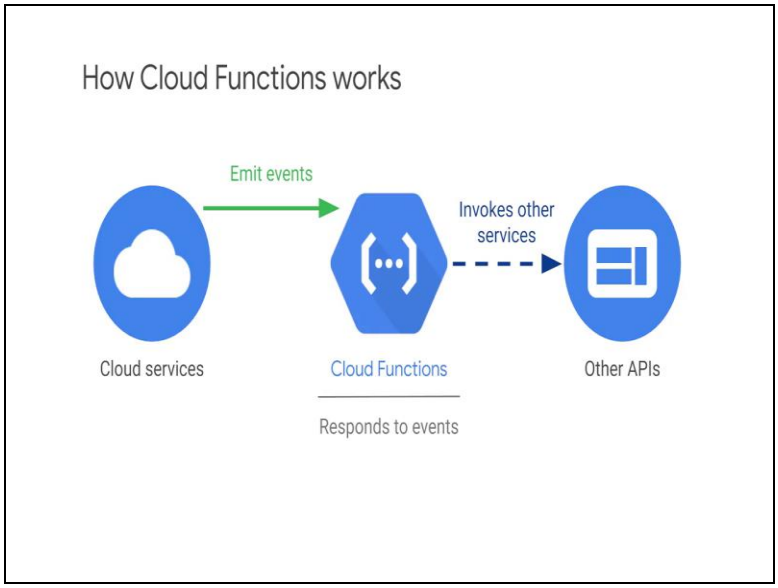

A cloud service emits some kind of event this can be a pops up message, a change to a cloud storage object or a web hook for example. The event kicks off a cloud function the function can be written in Nodejs, Python or Go. The function can invoke other services and write back the results building infrastructure is not required when leveraging cloud functions.