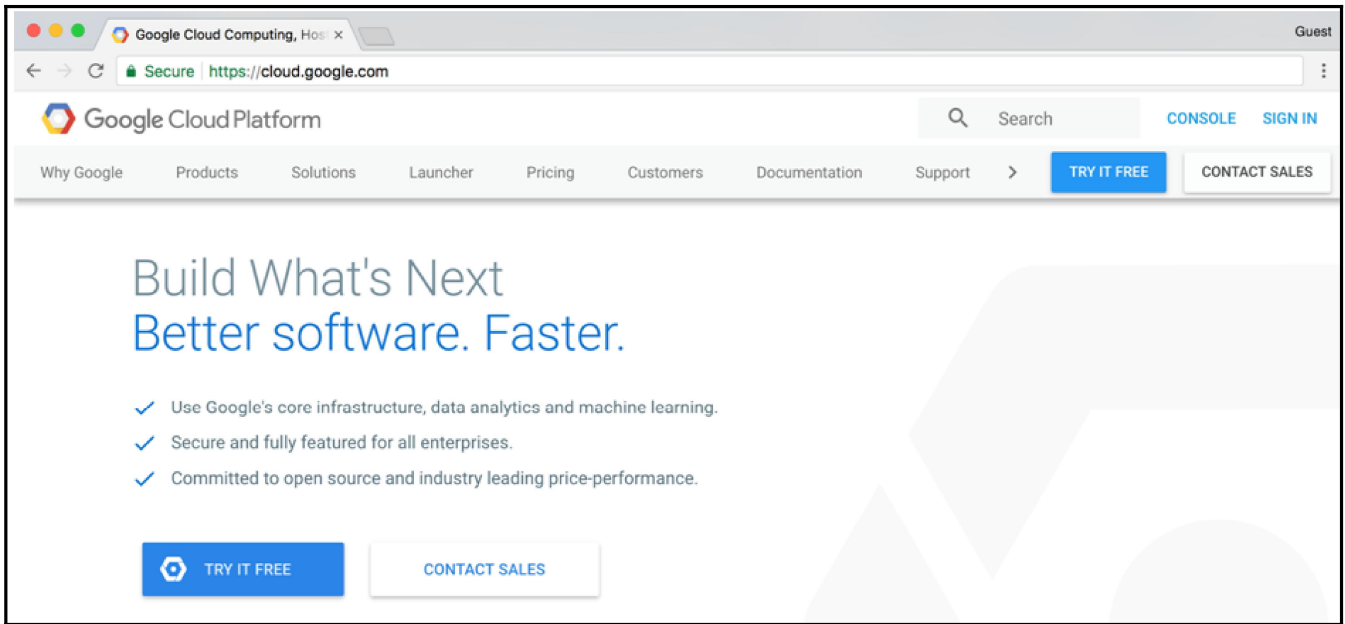
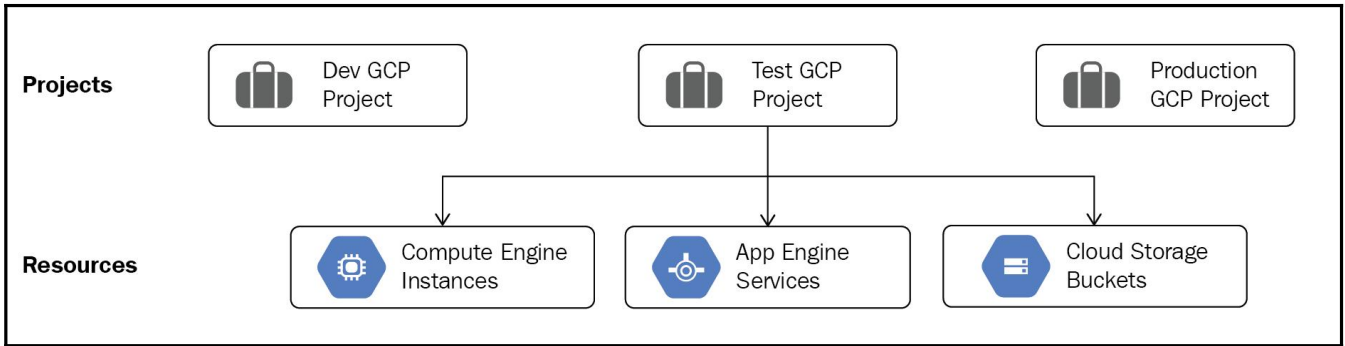


Chapter 01: Introduction to Google Cloud Platform

Region	Zones	Location
asia-east1	a, b, c	Changhua County, Taiwan
asia-northeast1	a, b, c	Tokyo, Japan
asia-south1	a, b, c	Mumbai, India
asia-southeast1	a, b, c	Jurong West, Singapore
australia-southeast1	a, b, c	Sydney, Australia
europa-north1	a, b, c	Hamina, Finland
europa-west1	b, c, d	St. Ghislain, Belgium
europa-west2	a, b, c	London, England, UK
europa-west3	a, b, c	Frankfurt, Germany
europa-west4	a, b, c	Eemshaven, Netherlands
northamerica-northeast1	a, b, c	Montréal, Québec, Canada
southamerica-east1	a, b, c	São Paulo, Brazil
us-central1	a, b, c, f	Council Bluffs, Iowa, USA
us-east1	b, c, d	Moncks Corner, South Carolina, USA
us-east4	a, b, c	Ashburn, Northern Virginia, USA
us-west1	a, b, c	The Dalles, Oregon, USA
us-west2	a, b, c	Los Angeles, California, USA



Google Cloud Platform Select a project

Billing Overview My Billing Account RENAME BILLING ACCOUNT

Overview Billing account overview Payment overview

Billing account ID: 00

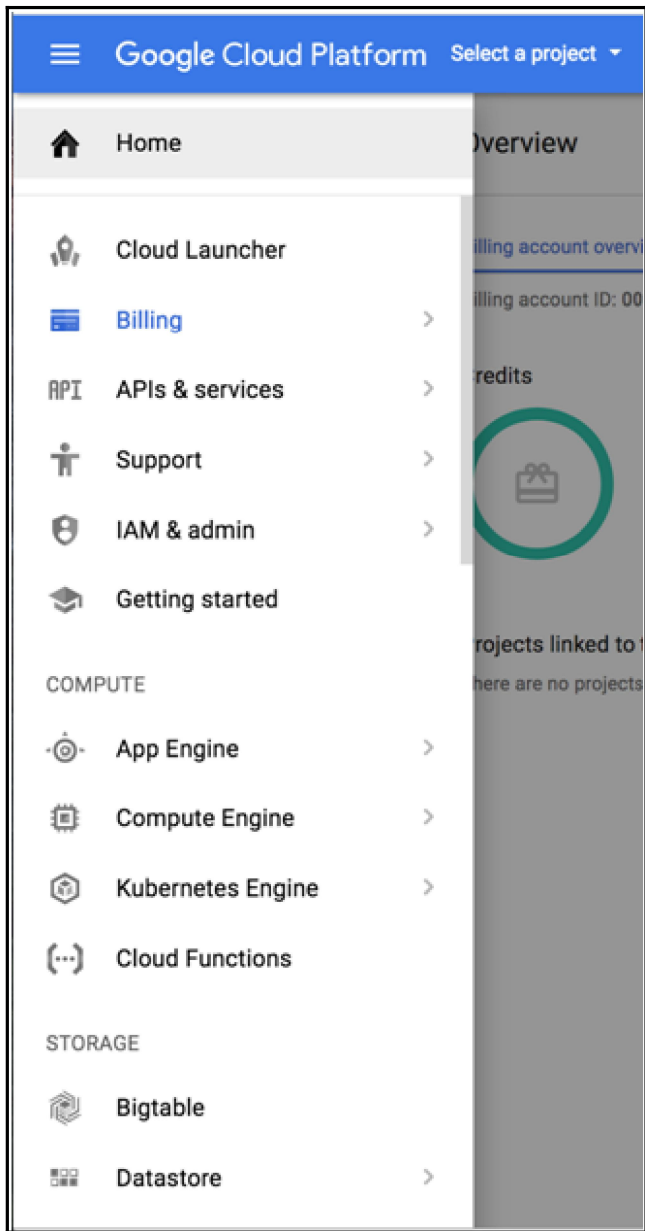
Credits

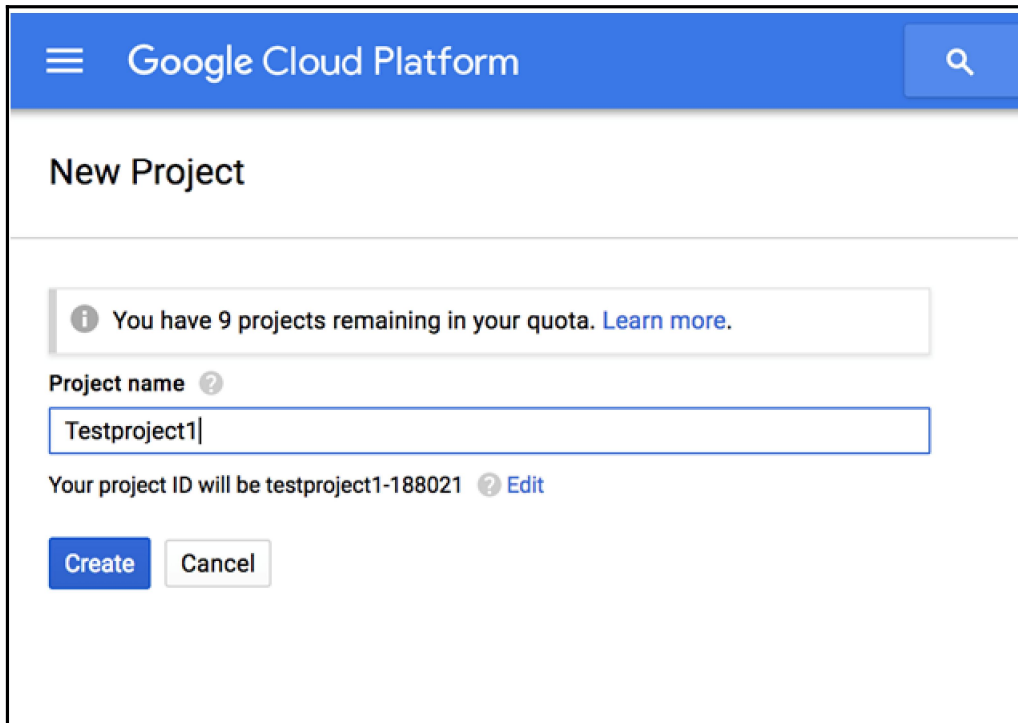
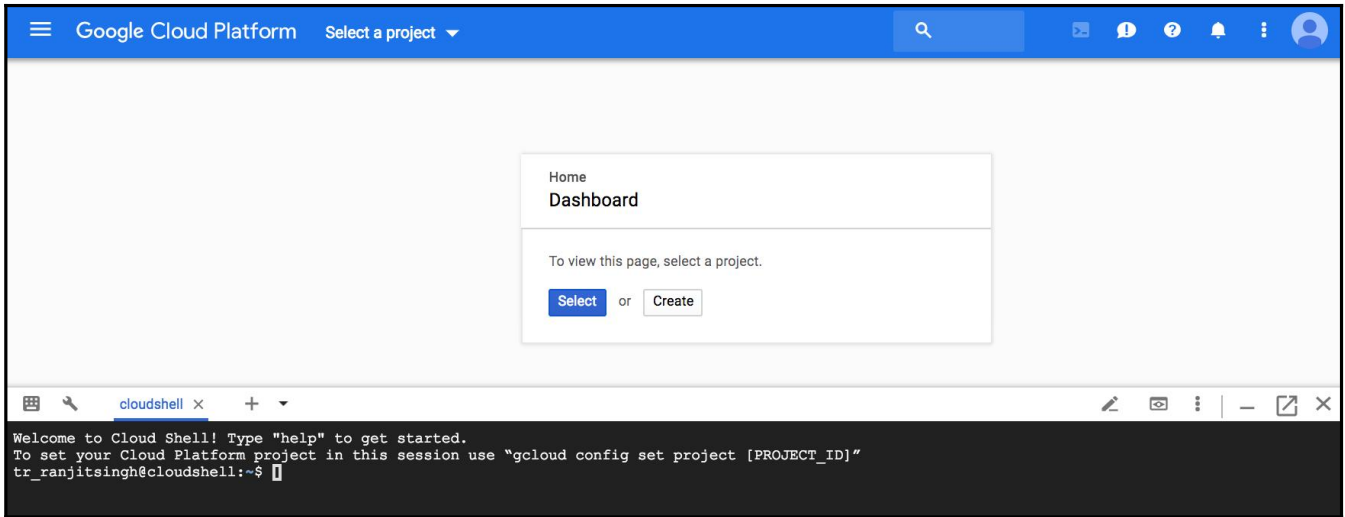
\$299.96 Credits remaining Out of \$300.00

118 Days remaining Ends Apr 2, 2018

Projects linked to this billing account

There are no projects linked to this billing account.





Google Cloud Platform Testproject1

DASHBOARD ACTIVITY CUSTOMIZE

Project info

Project name
Testproject1

Project ID
testproject1-188021

Project number
918977199451

[Go to project settings](#)

Resources

Compute Engine
You do not have permission to see this information

Trace

No trace data from the past 7 days

[Get started with Stackdriver Trace](#)

Getting Started

RPI Enable APIs and get credentials like keys

Compute Engine

CPU (%)

[Go to the Compute Engine dashboard](#)

RPI APIs

Requests (requests/sec)

Google Cloud Platform status

All services normal

[Go to Cloud status dashboard](#)

Billing

Estimated charges \$0.00
For the billing period Dec 1 - 4, 2017

[View detailed charges](#)

Error Reporting

No sign of any errors. Have you set up Error Reporting?

[Learn how to set up Error Reporting](#)

News

Precious cargo: Securing containers with Kubernetes Engine 1.8
4 days ago

Introducing an easy way to deploy containers on Google Compute Engine virtual machines

Google Cloud Platform Testproject1

IAM & admin

Settings SHUT DOWN MIGRATE

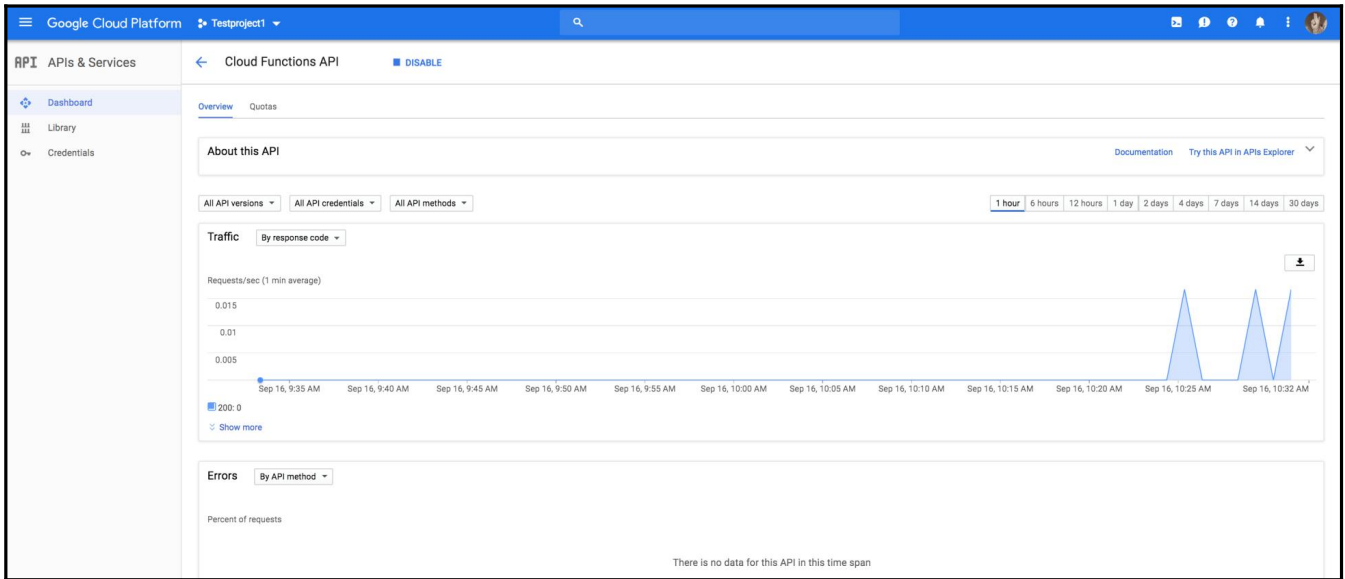
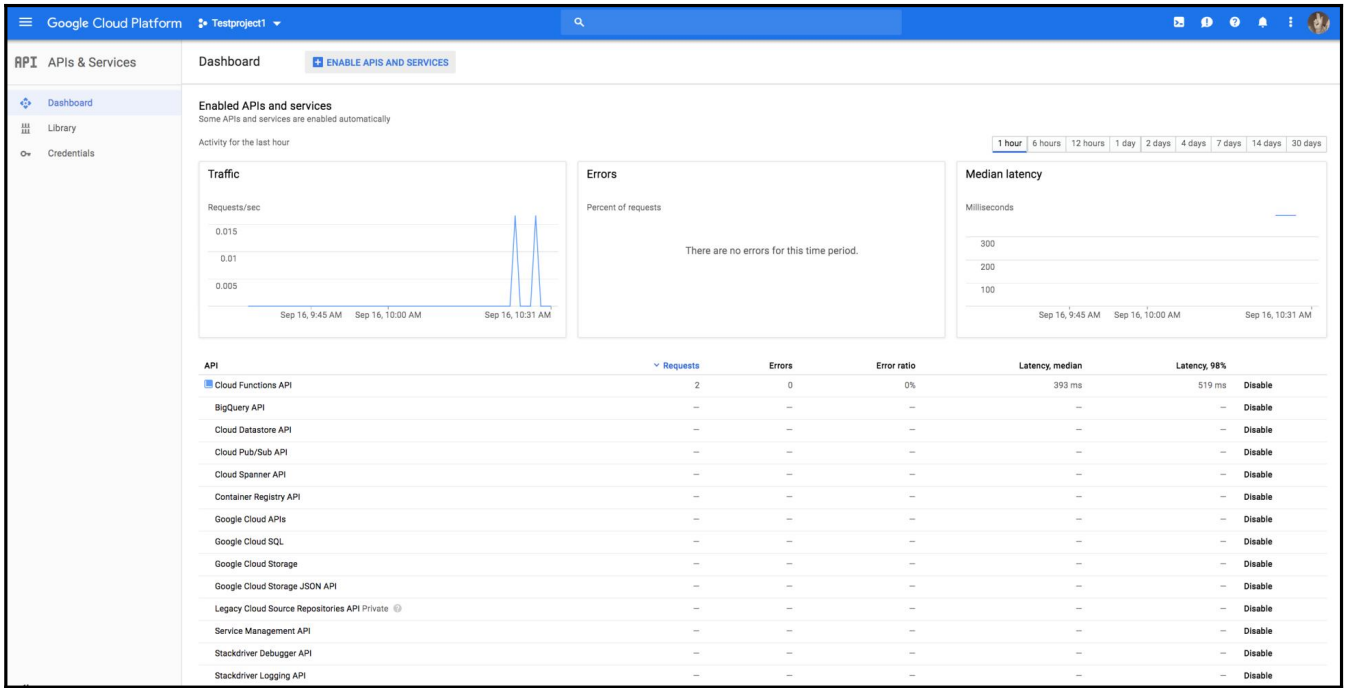
- [IAM](#)
- [Identity](#)
- [Quotas](#)
- [Service accounts](#)
- [Labels](#)
- [GCP Privacy & Security](#)

Project name ?

Save

Project ID
testproject1-188021

Project number
918977199451



```
thakur6 — Python -S ~/google-cloud-sdk/lib/gcloud.py init --console-only —...
Reachability Check passed.
Network diagnostic (1/1 checks) passed.

You must log in to continue. Would you like to log in (Y/n)? Y

Go to the following link in your browser:

    https://accounts.google.com/o/oauth2/auth?redirect_uri=urn%3Aietf%3Aawg%3Aauth%3A2.0%3Aob&prompt=select_account&response_type=code&client_id=32555940559.apps.googleusercontent.com&scope=https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fuserinfo.email+https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fcloud-platform+https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fappengine.admin+https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fcompute+https%3A%2F%2Fwww.googleapis.com%2Fauth%2Faccounts.reauth&access_type=offline

Enter verification code: 4/Xe
You are logged in as: [singh.ranjit@gmail.com].

Pick cloud project to use:
  [1] testproject1-188021
  [2] Create a new project
Please enter numeric choice or text value (must exactly match list item):
```

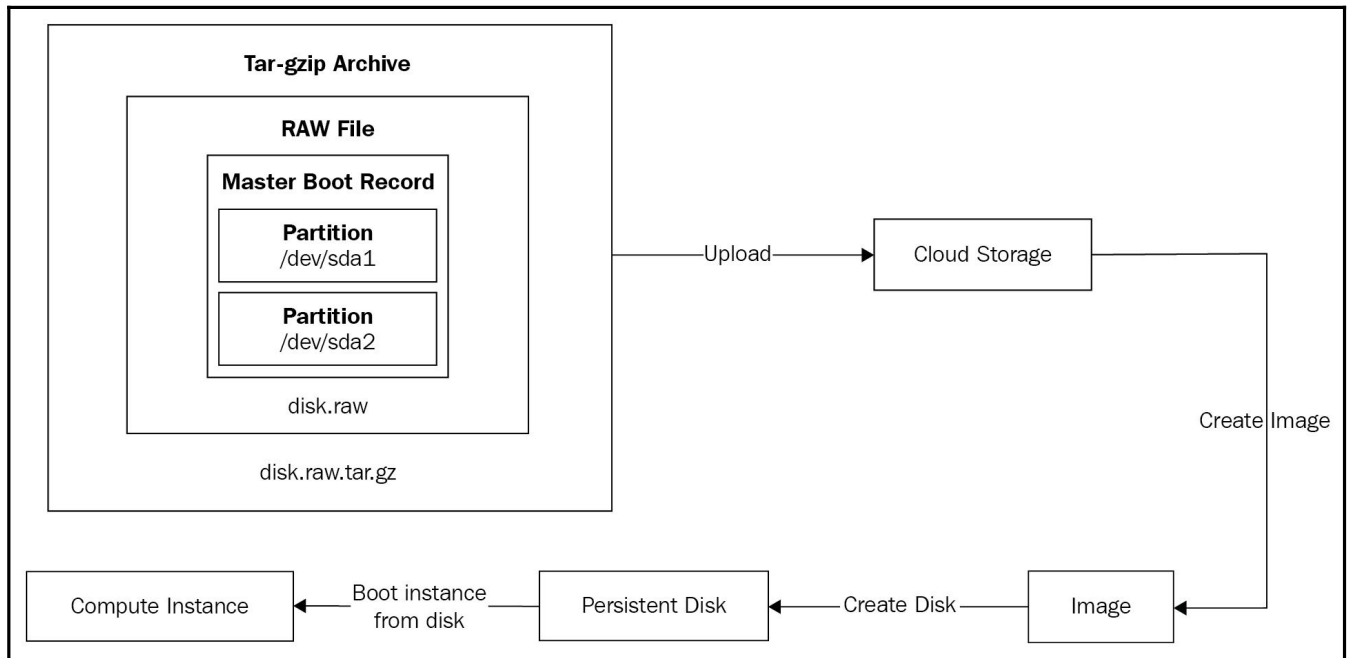
```
You are logged in as: [singh.ranjit@gmail.com].

Pick cloud project to use:
  [1] testproject1-188021
  [2] Create a new project
Please enter numeric choice or text value (must exactly match list item): 2

Enter a Project ID. Note that a Project ID CANNOT be changed later.
Project IDs must be 6-30 characters (lowercase ASCII, digits, or
hyphens) in length and start with a lowercase letter.
```

```
[usenthakur6m1:~ thakur6$ gcloud projects list
PROJECT_ID      NAME                PROJECT_NUMBER
testproject1-188021 Testproject1        918977199451
testproject2-998189 testproject2-998189 1077246767336
usenthakur6m1:~ thakur6$
```

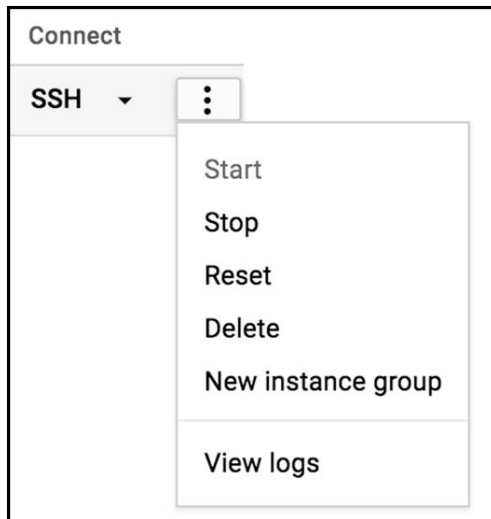
Chapter 02: Google Cloud Platform Compute



VM instances [CREATE INSTANCE](#) [IMPORT VM](#) [REFRESH](#) [START](#)

Filter VM instances

<input type="checkbox"/>	Name ^	Zone	Recommendation	Internal IP	External IP	Connect
<input type="checkbox"/>	<input checked="" type="checkbox"/> instance-1	us-central1-f		10.128.0.2	35.202.219.175	SSH ▼ ⋮



← VM instance details EDIT RESET CLONE STOP DELETE

instance-1

CPU utilization ▾ 1 hour 6 hours 12 hours 1 day 2 days 4 days 7 days 14 days 30 days

CPU
% CPU

Jan 21 Jan 22 Jan 23 Jan 24 Jan 24, 9:38 PM

CPU: 0.487

Remote access

SSH ▾ Connect to serial console ▾

Enable connecting to serial ports ⓘ

Logs

[Stackdriver Logging](#)

[Serial port 1 \(console\)](#)

[More](#)

Machine type

n1-standard-1 (1 vCPU, 3.75 GB memory)

CPU platform

Intel Skylake

Availability policy

Preemptibility

A preemptible VM costs much less, but lasts only 24 hours. It can be terminated sooner due to system demands. [Learn more](#)

Off (recommended)

On

Compute Engine can automatically restart your instances if they are terminated for non-

Instance templates

[+ CREATE INSTANCE TEMPLATE](#)

[REFRESH](#)

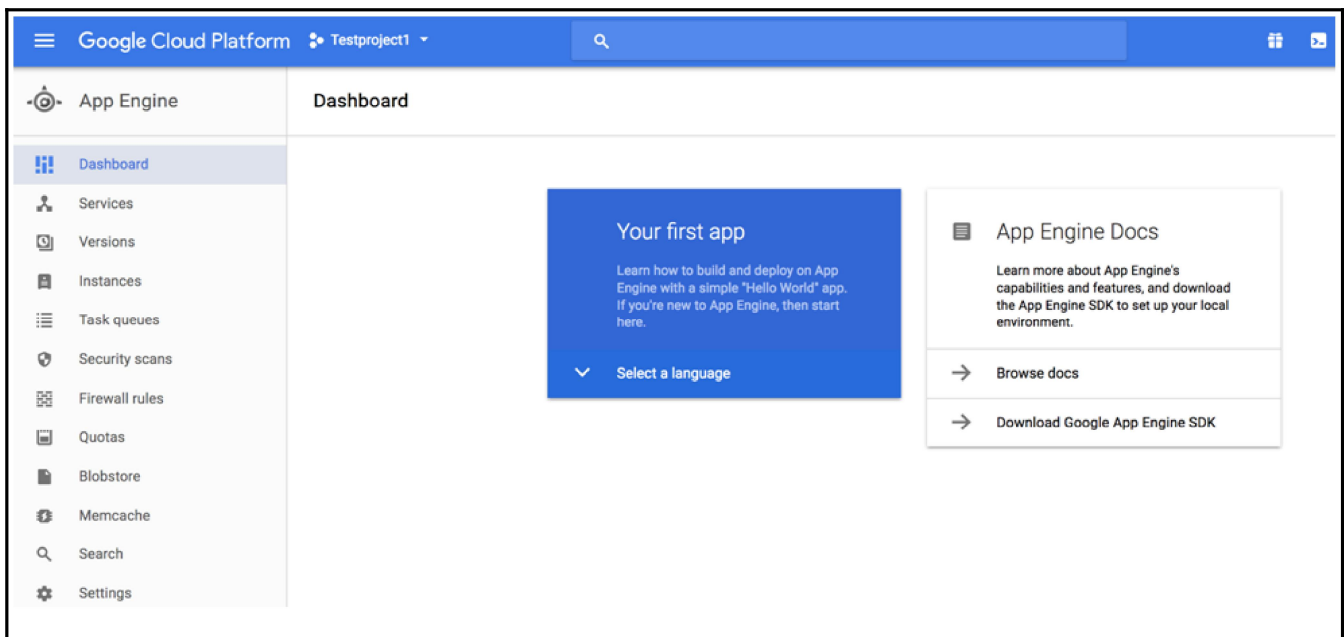
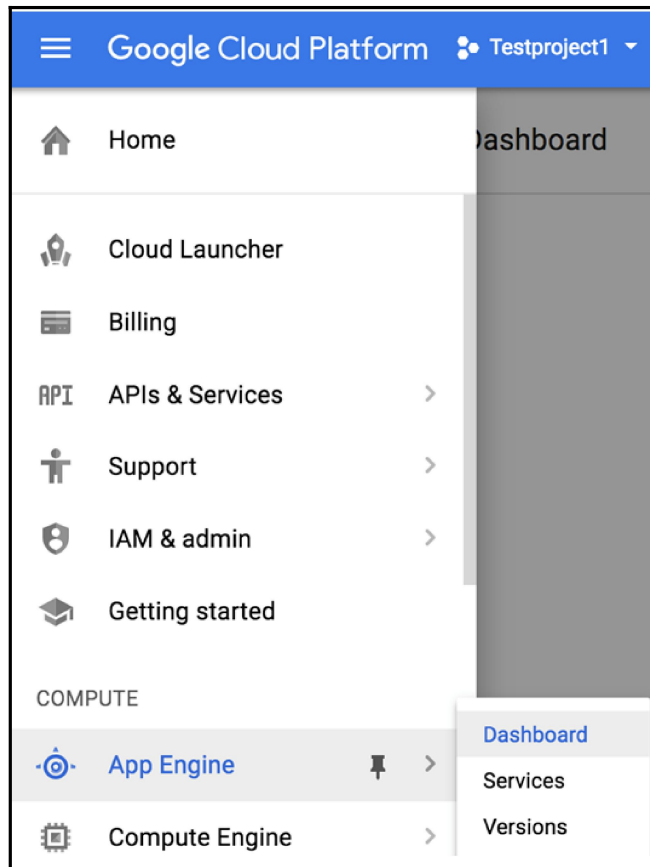
[COPY](#)

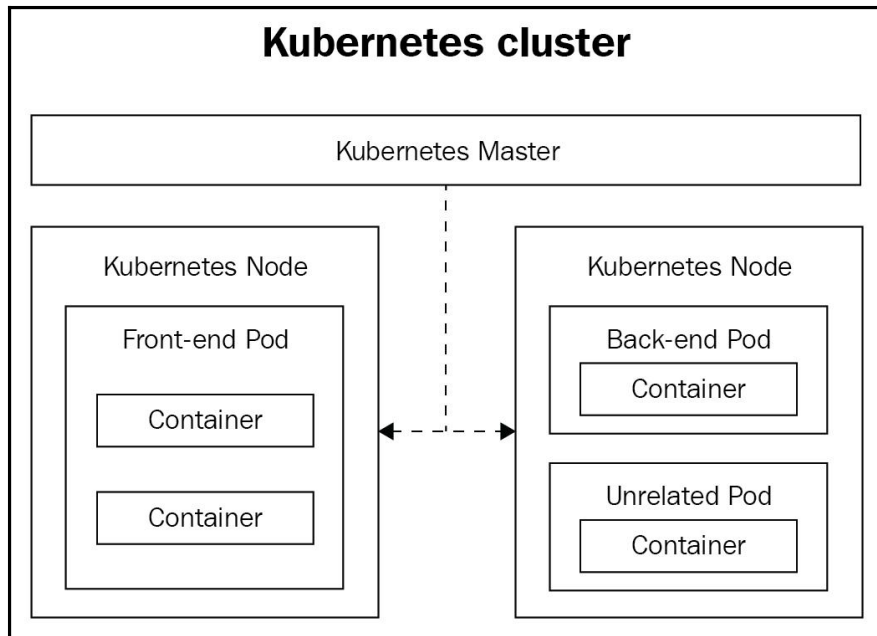
[CREATE INSTANCE GROUP](#)

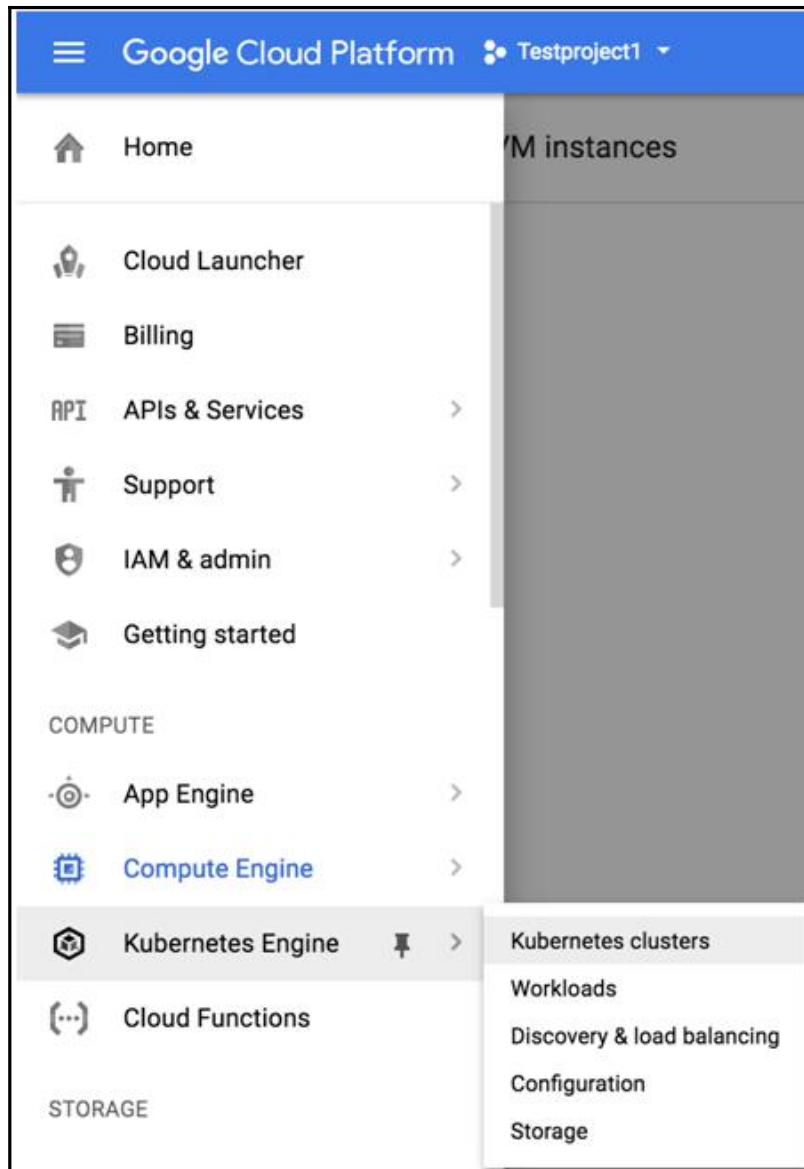
Filter instance templates


Columns

<input type="checkbox"/> Name ^	Machine type	Image	Disk type	In use by	Creation time
<input type="checkbox"/> instance-template-1	1 vCPU, 3.75 GB	debian-9-stretch-v20180129	Standard persistent disk		Feb 3, 2018, 12:46:51 AM








 **Kubernetes Engine**

Kubernetes clusters


- Workloads
- Discovery & load balancing
- Configuration
- Storage

← Create a Kubernetes cluster

A Kubernetes cluster is a managed group of uniform VM instances for running Kubernetes. [Learn more](#)


Name 


Description (Optional)

Location 

Zonal

Regional (beta)


Zone 

Cluster Version 


Machine type

3.75 GB memory [Customize](#)

[Upgrade your account](#) to create instances with up to 96 cores

Node image 

cos provides better security and performance but has limitations that may affect some users. Use "Ubuntu" if you are affected by these limitations. Note that Ubuntu requires Kubernetes 1.6.4 or greater. [Learn more](#)

Size 

Cluster Version 

Node image ?

"cos" provides better security and performance but has limitations that may affect some users. Use "Ubuntu" if you are affected by these limitations. Note that Ubuntu requires Kubernetes 1.6.4 or greater. [Learn more](#)

Container-Optimized OS (cos)

Ubuntu

Size ?

3

Total cores 3 vCPUs

Total memory 11.25 GB

Cluster instances use ephemeral local disks. You can [attach a persistent disk](#) to your pod, if needed.

Automatic node upgrades ?

Disabled

Automatic node repair (beta) ?

Disabled

Stackdriver Logging ?

Enabled

Stackdriver Monitoring ?

Enabled

Kubernetes clusters [+ CREATE CLUSTER](#) [REFRESH](#) [DELETE](#)

Filter by label or name

Kubernetes clusters

<input type="checkbox"/> Name ^	Location	Cluster size	Total cores	Total memory	Notifications	Labels
<input checked="" type="checkbox"/> cluster-1	us-central1-a	3	3 vCPUs	11.25 GB		Connect

VM instances [+ CREATE INSTANCE](#) [IMPORT VM](#) [REFRESH](#) [START](#) [STOP](#)

Filter VM instances

<input type="checkbox"/> Name ^	Zone	Recommendation	Internal IP	External IP	Connect
<input checked="" type="checkbox"/> gke-cluster-1-default-pool-a92ba717-l0ff	us-central1-a		10.128.0.4	35.194.2.175	SSH ▾ ⋮
<input checked="" type="checkbox"/> gke-cluster-1-default-pool-a92ba717-p7zn	us-central1-a		10.128.0.3	35.224.82.255	SSH ▾ ⋮
<input checked="" type="checkbox"/> gke-cluster-1-default-pool-a92ba717-v9sp	us-central1-a		10.128.0.2	35.224.221.139	SSH ▾ ⋮

← Kubernetes clusters
✎ EDIT
🗑️ DELETE
▶️ CONNECT

Node Pools

Node pools are separate instance groups running Kubernetes in a cluster. You may add node pools in different zones for higher availability, or add node pools of different type machines. To add a node pool, click Edit. [Learn more](#)

Name	default-pool	
Size	<input type="text" value="2"/>	
Node version	1.7.12-gke.0	Change
Node image	Container-Optimized OS (cos)	Change
Machine type	n1-standard-1 (1 vCPU, 3.75 GB memory)	
Total cores	2 vCPUs	
Total memory	7.50 GB	

Automatic node upgrades ?

Disabled

Automatic node repair (beta) ?

Disabled

Autoscaling ?

Off

Preemptible nodes	Disabled
Boot disk size in GB (per node)	100
Local SSD disks (per node)	0
Instance groups	gke-cluster-1-default-pool-a92ba717-grp

+ Add node pool

You will be billed for the 2 nodes (VM instances) in your cluster [Learn more](#)

Save
Cancel

Name	Size	Version
default-pool	2	1.7.12-gke.0

Name ?

Machine type

1 vCPU ▼ 3.75 GB memory [Customize](#)

[Upgrade your account](#) to create instances with up to 96 cores

Node image ?

"cos" provides better security and performance but has limitations that may affect some users. Use "Ubuntu" if you are affected by these limitations. Note that Ubuntu requires Kubernetes 1.6.4 or greater. [Learn more](#)

<input type="checkbox"/>	<input checked="" type="checkbox"/>	gke-cluster-1-pool-1-adbde9b4-qpbq	us-central1-a	10.128.0.4	104.197.199.244	SSH	▼	⋮
<input type="checkbox"/>	<input checked="" type="checkbox"/>	gke-cluster-1-pool-1-adbde9b4-xc6t	us-central1-a	10.128.0.5	35.224.86.15	SSH	▼	⋮

Google Cloud Functions BETA

Google Cloud Functions is a lightweight, event-based, asynchronous compute solution that allows you to create small, single-purpose functions that respond to cloud events without the need to manage a server or a runtime environment

[Create function](#)

Google Cloud Platform Testproject1

Cloud Functions Function details EDIT

Memory allocated
256 MB

Trigger
HTTP

URL
https://us-central1-testproject1-188021.cloudfunctions.net/function-1

Source code

- Inline editor
- ZIP upload
- ZIP from Cloud Storage
- Cloud Source repository

Runtime
Node.js 6

[index.js](#) package.json

```
1 /**  
2  * Responds to any HTTP request that can provide a "me  
3  *  
4  * @param {!Object} req Cloud Function request context  
5  * @param {!Object} res Cloud Function response context  
6  */  
7 exports.helloWorld = (req, res) => {  
8   // Example input: {"message": "Hello!"}  
9   if (req.body.message === undefined) {  
10    // This is an error case, as "message" is required  
11    res.status(400).send('No message defined!');  
12   } else {  
13    // Everything is okay.  
14    console.log(req.body.message);  
15    res.status(200).send('Success: ' + req.body.messag  
16   }  
17 };  
18
```

Function to execute ?
helloWorld

More

Save Cancel

Cloud Functions Overview CREATE FUNCTION REFRESH DELETE

Filter functions

Name	Region	Trigger	Memory allocated	Executed function	Last deployed
<input checked="" type="checkbox"/> function-1	us-central1	HTTP trigger	256 MB	helloWorld	2/3/18, 4:04 PM

Google Cloud Platform Testproject1

Cloud Functions Function details EDIT DELETE COPY VIEW LOGS

function-1
Version 3, deployed at Jul 10, 2018, 6:18:18 AM

General Trigger Source Testing

Invocations 1 hour 6 hours 12 hours 1 day 2 days 4 days 7 days 14 days 30 days

Last deployed: July 10, 2018 at 6:18:18 AM UTC-5

Region: us-central1

Memory allocated: 256 MB

Timeout: 60 seconds

Service account: testproject1-188021@appspot.gserviceaccount.com

Errors in the last 7 days: No error reported

Environment variables: Not specified

Equivalent REST

Name	Region	Trigger	Memory allocated	Executed function	Last deployed
<input checked="" type="checkbox"/> function-1	us-central1	HTTP trigger	256 MB	helloWorld	2/3/18, 4:07 PM

- Copy function
- Test function
- View logs
- Delete

(...) Cloud Functions | < Function details

✔ function-1

General Trigger Source Testing

Triggering event ?

```
1 { "message": "hello world" }
2
```

Test the function


Output

Success: hello world

Chapter 03: Google Cloud Platform Storage



Boot disk ?

 New 10 GB standard persistent disk
Image
Debian GNU/Linux 9 (stretch) Change

Additional disks ? (Optional)

Name	Mode	When deleting instance
Select... ▾	Read/write ▾	Keep disk ▾
+ Add item		

✕

Create a disk

Name ?

disk-1

Description (Optional)

Local SSD scratch disk (maximum 8)
Max disk size: 375 GB

SSD persistent disk
Max disk size: 65,536 GB

Standard persistent disk
Max disk size: 65,536 GB

100

Estimated performance ?

Operation Type	Read	Write
Sustained random IOPS limit	3,000.00	3,000.00
Sustained throughput limit (MB/s)	48.00	48.00

Encryption ?

Automatic (recommended) ▼



Storage ← Create a bucket

Browser
Transfer
Transfer Appliance
Settings

Name ⓘ
Must be unique across Cloud Storage. If you're [serving website content](#), enter the website domain as the name.

⚠ Note that a bucket name may only contain a dot if it is a valid domain name, such as "example.com" or "sub.example.com". You will need to demonstrate that you are an owner or manager of this domain before creating the bucket. [Learn more](#)

Default storage class ⓘ
[Compare storage classes](#)

- Multi-Regional
- Regional
- Nearline
- Coldline

Location

Storage cost	Retrieval cost	Class A operations ⓘ	Class B operations ⓘ
\$0.026 per GB-month	Free	\$0.005 per 1,000 ops	\$0.0004 per 1,000 ops

Labels

⌵ [Hide advanced settings](#)

Create

← **Create a transfer job**

You can transfer data to your Cloud Storage bucket from a source you specify here. Required permissions: You must be a project owner and destination bucket owner, and you need read access to the source. [Learn more](#)

1 Select source ^

Google Cloud Storage bucket
 Amazon S3 bucket
 List of object URLs

You must have read access to the source bucket.

Cloud Storage bucket

∨ Specify file filters

2 Select destination ∨

3 Configure transfer ∨

Creating a transfer job grants a Cloud Storage Transfer Service account the necessary source, destination, and project permissions to complete the transfer. Your permissions will update to reflect this change.

Request Transfer Appliance

Transfer Appliance lets you quickly and securely transfer large amounts of data to Google Cloud Platform via a high capacity storage server that you lease from Google and ship to our datacenter. Transfer Appliance is recommended for data that exceeds 20 TB or would take more than a week to upload.

Complete this form to receive Transfer Appliance pricing details and eligibility information. [Learn more](#)

Note: [Transfer Appliance](#) is governed by the [Google Cloud Platform Terms of Service](#), including the [Service Specific Terms](#).

Contact email (Optional)

i Confirmation will be sent to singh.ranjit@gmail.com, but this alternate email will be used for future communications.

Amount of data to move

Enter your best estimate to help us determine the right size and number of appliances for your needs

Business name

Business domain name

Current location of data

⌵ [Show account and project info](#)



← Create an instance

Instance name
For display purposes only.

firstcloudspanner1

Instance ID
Unique identifier for instance. Permanent.

firstcloudspanner1

Configuration
Determines where your data and nodes are located. Affects cost, performance, and replication. This choice is permanent. Select a configuration to view its details.

Regional
 Multi-region

us-central1

Nodes
Add nodes to increase data throughput and queries per second (QPS). Affects billing.

1

Node guidance

Cost
Storage cost depends on GB stored per month. Nodes cost is an hourly charge for the number of nodes in your instance. [Learn more](#)

Nodes cost \$0.90 per hour	Storage cost \$0.30 per GB/month
--------------------------------------	--

Create Cancel

Google Cloud Platform stackdriver-test-project

Spanner

← Instance details CREATE DATABASE EDIT INSTANCE IMPORT EXPORT DELETE INSTANCE

firstcloudspanner1

firstcloudspanner1

Overview Monitor

ID: firstcloudspanner1 Configuration: northamerica-northeast1

Nodes	CPU utilization (mean)	Operations	Throughput
1	-	-	-

Databases

No databases yet. Create a database to get started.

Create database Cloud Spanner documentation

Create a table

Edit as text

1 Name your table ^
 Enter a permanent name for your table.
Name

2 Add columns ^
 Define the columns for your table in any order.

name: STRING(MAX) NOT NULL	<input type="text"/>
age: INT64 NOT NULL	<input type="text"/>
password: STRING(MAX) NOT NULL	<input type="text"/>
id: INT64 NOT NULL	<input type="text"/>

3 Set primary key ^
 Each table requires a primary key of one or more columns.
Key type Single column Composite
Column

← Instance

- firstcloudspanner1
- ▼ db1test
- Query
- userLogins

← Database details QUERY CREATE TABLE DELETE

db1test


Overview Monitor

CPU utilization (mean) Operations

Tables

Name	Indexes
userLogins	-




 SQL | [←](#) Create an instance

Choose a database engine

MySQL
Versions 5.6 or 5.7

PostgreSQL **BETA**
Version 9.6

[Next](#)

 SQL | [←](#) Choose a MySQL instance type

There are two types of Cloud SQL MySQL instances. [Learn more](#)

MySQL Second Generation (Recommended)

High performance, high storage capacity, low cost.

- Up to 7X throughput and 20X storage capacity of First Generation
- Less expensive than First Generation for most use cases
- Option to add High Availability failover and read replication
- Configurable backup period and maintenance window
- Supports only MySQL 5.6 and 5.7

[Choose Second Generation](#)

MySQL First Generation (Legacy)

Older version of Cloud SQL providing basic performance and storage capacity. Does not support MySQL 5.7.

[Choose First Generation](#)



SQL



Create a MySQL Second Generation instance

Instance ID

Choice is permanent. Use lowercase letters, numbers, and hyphens. Start with a letter.

Root password

Set a password for the root user. [Learn more](#)



No password

Location

For better performance, keep your data close to the services that need it.

Region

Choice is permanent



Zone

Can be changed at any time



[Show configuration options](#)

Configuration options

- Choose database version**
MySQL 5.7
- Configure machine type and storage**
Machine type is db-n1-standard-1. Storage type is SSD. Storage size is 10 GB, and will automatically scale as needed.
- Enable auto backups and high availability**
Automatic backups enabled. Binary logging enabled. Not highly available.
- Authorize networks**
No networks authorized.
- Add database flags**
No flags set.
- Set maintenance schedule**
Updates may occur any day of the week. Cloud SQL chooses the maintenance timing.
- Add labels**
No labels set.

[Hide configuration options](#)

Google Cloud Platform stackdriver-test-project

Instance details EDIT IMPORT EXPORT RESTART STOP DELETE CLONE

firstinstance1
MySQL Second Generation master

OVERVIEW USERS DATABASES AUTHORIZATION SSL BACKUPS REPLICAS OPERATIONS

CPU utilization 1 hour 6 hours 12 hours 1 day 2 days 4 days 7 days 14 days 30 days
Sep 24, 2018 8:18 AM

Operations and logs

Date/Time	Type	Status
Sep 24, 2018, 9:16:54 AM	Create	Create finished

View all operations
View MySQL error logs

Connect to this instance

Primary IP address
35.192.0.161

Instance connection name
stackdriver-test-123:us-central1:firstinstance1

Connect using Cloud Shell
See all connection methods

Suggested actions

- Create a backup
- Create failover replica (enable high availability)

Configuration

vCPUs	Memory	SSD storage
1	3.75 GB	10 GB

- Database version is MySQL 5.7
- Auto storage increase is enabled
- Automated backups are enabled
- Binary logging is enabled
- Located in us-central1-b
- No database flags set
- No labels set
- Not highly available (zonal)

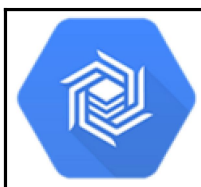
Edit configuration


```

MySQL [(none)]> show databases;
+-----+
| Database |
+-----+
| information_schema |
| myUserProfile |
| mysql |
| performance_schema |
| userInfo_1 |
+-----+
5 rows in set (0.00 sec)

MySQL [(none)]>

```



 Bigtable | [←](#) Create an instance

A Cloud Bigtable instance is a container for your cluster. Choose the instance and cluster properties below.

Instance properties

Instance name
For display purposes only.

Instance ID
ID is permanent. Use lowercase letters, numbers, or hyphens.

Instance type ⓘ

- Production (recommended)**
Minimum of 3 nodes. High availability. Cannot downgrade later.
- Development**
Low-cost instance for development and testing. Does not provide high availability. Can upgrade to Production later.

Cluster properties

Cluster ID
ID is permanent. Use lowercase letters, numbers, or hyphens.

Zone
Choice is permanent. Determines where cluster data is stored. To reduce latency and increase throughput, store your data near the services that need it.

Bigtable

← Instance details [EDIT INSTANCE](#) [DELETE INSTANCE](#)

Instance
mybiganalytics

Cluster
mybiganalytics-cluster
asia-east1-a

myBiganalytics
Type: Production
Instance ID: mybiganalytics
Cluster ID: mybiganalytics-cluster

CPU utilization ▾

Time	% CPU
Mar 19, 10:00 AM	~0.161
Mar 19, 10:05 AM	~0.161
Mar 19, 10:10 AM	~0.161

Average CPU utilization: 0.161

Chapter 04: Google Cloud Platform Networking



Google Cloud Platform VPC-Project

Create a VPC network

Name ?

Description (Optional)

Subnets

Subnets let you create your own private cloud topology within Google Cloud. Click Automatic to create a subnet in each region, or click Custom to manually define the subnets. [Learn more](#)

Subnet creation mode

Custom Automatic

Warning: These IP address ranges will be assigned to each region in your VPC network. When an instance is created for your VPC network, it will be assigned an IP from the appropriate region's address range.

<< Previous 1 2 Next >>

Region	IP address range
us-central1	10.128.0.0/20
eu-west-1	10.132.0.0/20
us-west1	10.138.0.0/20

Subnet creation mode
 Custom Automatic

New subnet 🗑 ✕

Name ?
network1

[Add a description](#)

Region ?
us-central1

IP address range ?
10.0.1.0/24

[Create secondary IP range](#)

Private Google access ?

On
 Off

Flow logs

On
 Off

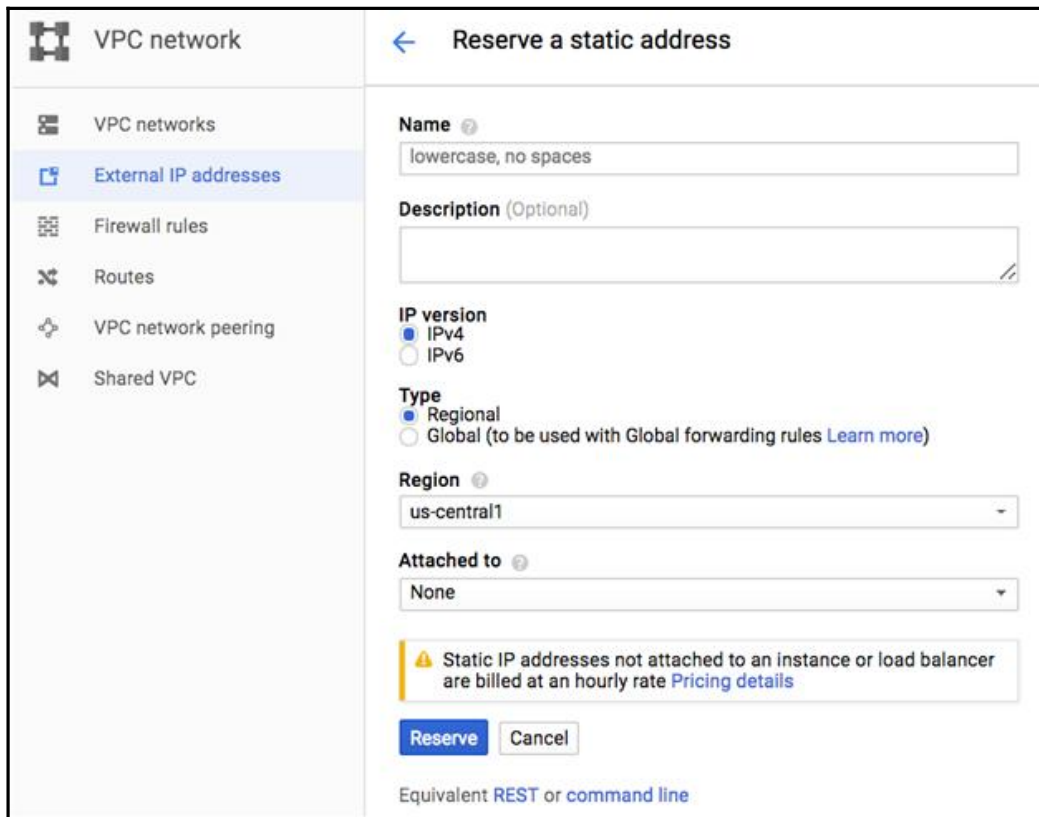
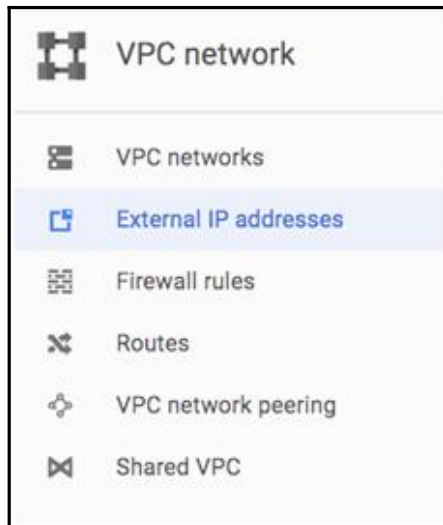
Google Cloud Platform stackdriver-test-project













VPC networks

[+ CREATE VPC NETWORK](#) [REFRESH](#)

Name ^	Region	Subnets	Mode	IP addresses ranges	Gateways	Firewall Rules	Global dynamic routing	Flow logs
vpc-network1		17	Auto			0	Off	
	us-central1	vpc-network1		10.128.0.0/20	10.128.0.1			Off
	europa-west1	vpc-network1		10.132.0.0/20	10.132.0.1			Off
	us-west1	vpc-network1		10.138.0.0/20	10.138.0.1			Off
	asia-east1	vpc-network1		10.140.0.0/20	10.140.0.1			Off
	us-east1	vpc-network1		10.142.0.0/20	10.142.0.1			Off
	asia-northeast1	vpc-network1		10.146.0.0/20	10.146.0.1			Off
	asia-southeast1	vpc-network1		10.148.0.0/20	10.148.0.1			Off
	us-east4	vpc-network1		10.150.0.0/20	10.150.0.1			Off
	australia-southeast1	vpc-network1		10.152.0.0/20	10.152.0.1			Off
	europa-west2	vpc-network1		10.154.0.0/20	10.154.0.1			Off
	europa-west3	vpc-network1		10.156.0.0/20	10.156.0.1			Off
	southamerica-east1	vpc-network1		10.158.0.0/20	10.158.0.1			Off
	asia-south1	vpc-network1		10.160.0.0/20	10.160.0.1			Off
	northamerica-northeast1	vpc-network1		10.162.0.0/20	10.162.0.1			Off
	europa-west4	vpc-network1		10.164.0.0/20	10.164.0.1			Off
	europa-north1	vpc-network1		10.166.0.0/20	10.166.0.1			Off
	us-west2	vpc-network1		10.168.0.0/20	10.168.0.1			Off

vpc-network2		2	Custom			0	Off	
	us-central1	vpc-network2		192.168.0.0/28	192.168.0.1			Off
	europa-west1	vpc-network3		192.168.1.0/28	192.168.1.1			Off



 VPC network	← Create a route
<ul style="list-style-type: none"> VPC networks External IP addresses Firewall rules Routes VPC network peering Shared VPC	<p>Name </p> <input type="text" value="lowercase, no spaces"/> <p>Description (Optional)</p> <input type="text"/> <p>Network </p> <input type="text" value="vpc-network1"/> <p>Destination IP range </p> <input type="text" value="for example 10.0.0.0/16"/> <p>Priority </p> <input type="text" value="1000"/> <p>Instance tags (Optional) </p> <input type="text"/> <p>Next hop </p> <input type="text" value="Default internet gateway"/> <p><input type="button" value="Create"/> <input type="button" value="Cancel"/></p> <p>Equivalent REST or command line</p>

VPC network

- VPC networks
- External IP addresses
- Firewall rules
- Routes
- VPC network peering
- Shared VPC

← Create a firewall rule

Firewall rules control incoming or outgoing traffic to an instance. By default, incoming traffic from outside your network is blocked. [Learn more](#)

Name ?

Description (Optional)

Network ?

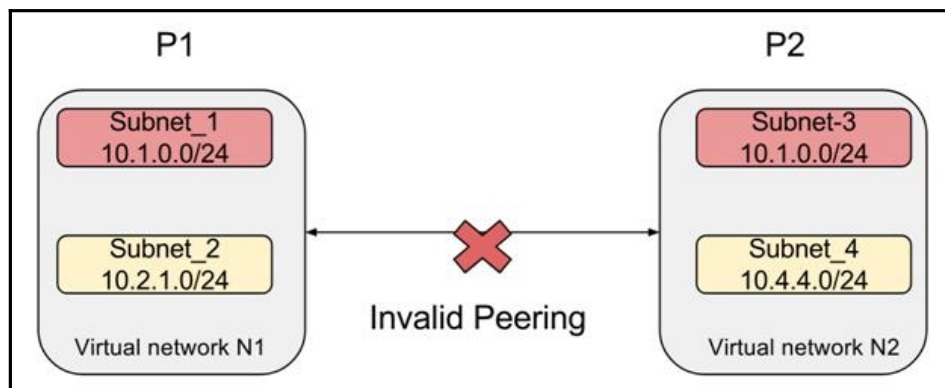
Priority ?
Priority can be 0 - 65535 [Check priority of other firewall rules](#)

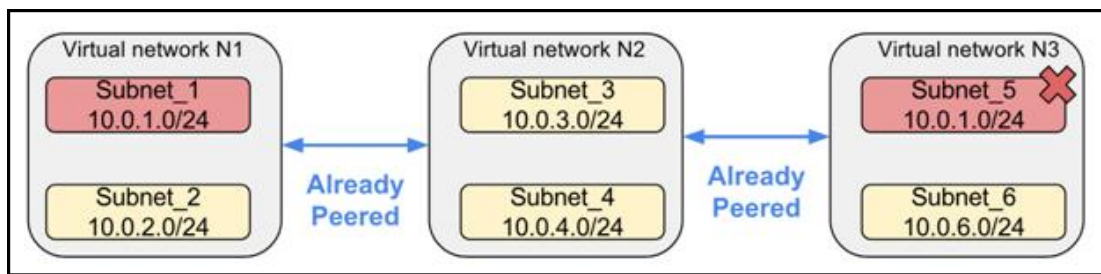
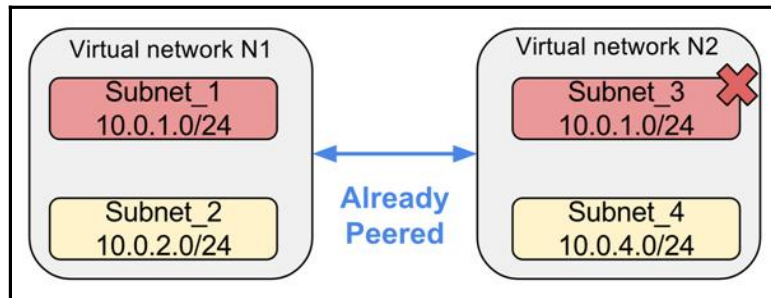
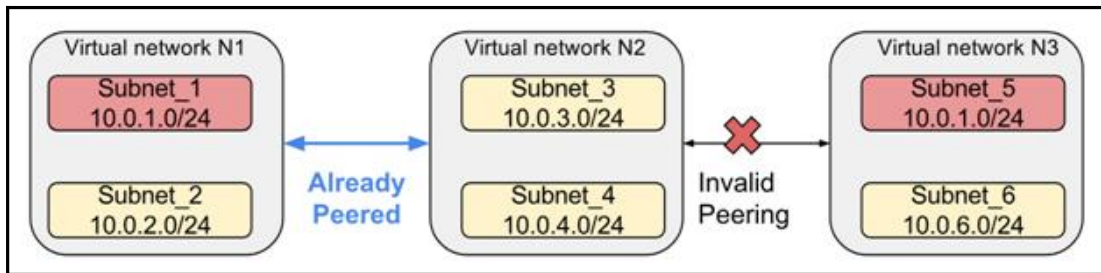
Direction of traffic ?

Ingress
 Egress

Action on match ?

Allow
 Deny





Select

Search projects and folders

Recent All

Name	ID
✓ asia-project1	asia-project1
us-project1	us-project1

VPC networks + CREATE VPC NETWORK ↻ REFRESH						
Name ^	Region	Subnets	Mode	IP addresses ranges	Gateways	
asia-vpc-network		1	Custom			
	asia-south1	basic-asia-vpc		192.168.1.0/28	192.168.1.1	

VPC networks + CREATE VPC NETWORK ↻ REFRESH						
Name ^	Region	Subnets	Mode	IP addresses ranges	Gateways	
us-vpc-network		1	Custom			
	us-central1	basic-vpc		192.168.2.0/28	192.168.2.1	

Create peering connection

You will need the following info. [Learn more](#)

1. The project ID (if you are connecting to a VPC network in another project)
2. The name of the VPC network you want to peer with

Note: The subnet IP ranges in peered VPC networks cannot overlap.

Create peering connection

Name [?]
us-peer

Your VPC network [?]
us-vpc-network

Peered VPC network
 In project us-project1
 In another project

Project ID
asia-project1

VPC network name
asia-vpc-network

i Your VPC network will be fully connected to the peered VPC network (full mesh topology). Routes to subnets in the peered VPC network will be automatically created.

Create **Cancel**

VPC Network Peering [+ CREATE PEERING CONNECTION](#) [REFRESH](#) [DELETE](#)

Name	Your VPC network	Peered VPC network	Peered project ID	Status
us-peer	us-vpc-network	asia-vpc-network	asia-project1	⚠️ Waiting for peer network to connect.

Create peering connection

You will need the following info. [Learn more](#)

1. The project ID (if you are connecting to a VPC network in another project)
2. The name of the VPC network you want to peer with

Note: The subnet IP ranges in peered VPC networks cannot overlap.

Continue **Cancel**

← Create peering connection

Name ?

Your VPC network ?

Peered VPC network

In project asia-project1

In another project

Project ID

VPC network name

ⓘ Your VPC network will be fully connected to the peered VPC network (full mesh topology). Routes to subnets in the peered VPC network will be automatically created.

Create
Cancel

VPC Network Peering

+ CREATE PEERING CONNECTION
 ↻ REFRESH
 🗑️ DELETE

	Name ^	Your VPC network	Peered VPC network	Peered project ID	Status
<input type="checkbox"/>	asia-peer	asia-vpc-network	us-vpc-network	us-project1	✔ Connected. ⋮

Private Google access ?

On

Off

Google Cloud Platform stackdriver-test-project

Network services < Create a load balancer

- Load balancing
- Cloud DNS
- Cloud CDN

HTTP(S) Load Balancing

Layer 7 load balancing for HTTP and HTTPS applications [Learn more](#)

Configure
HTTP LB
HTTPS LB (includes HTTP/2 LB)

Options
Internet-facing only
Single or multi-region

[Start configuration](#)

TCP Load Balancing

Layer 4 load balancing or proxy for applications that rely on TCP/SSL protocol [Learn more](#)

Configure
TCP LB
SSL Proxy
TCP Proxy

Options
Internet-facing or Internal
Single or multi-region

[Start configuration](#)

UDP Load Balancing

Layer 4 load balancing for applications that rely on UDP protocol [Learn more](#)

Configure
UDP LB

Options
Internet-facing or Internal
Single-region

[Start configuration](#)

< New HTTP(S) load balancer

Name ⓘ

lowercase, no spaces

- Backend configuration**
You have not configured your backend yet
- Host and path rules**
Requests will be sent to the default backend
- Frontend configuration**
You have not configured your frontend yet
- ⓘ **Review and finalize**
Optional

[Create](#) [Cancel](#)



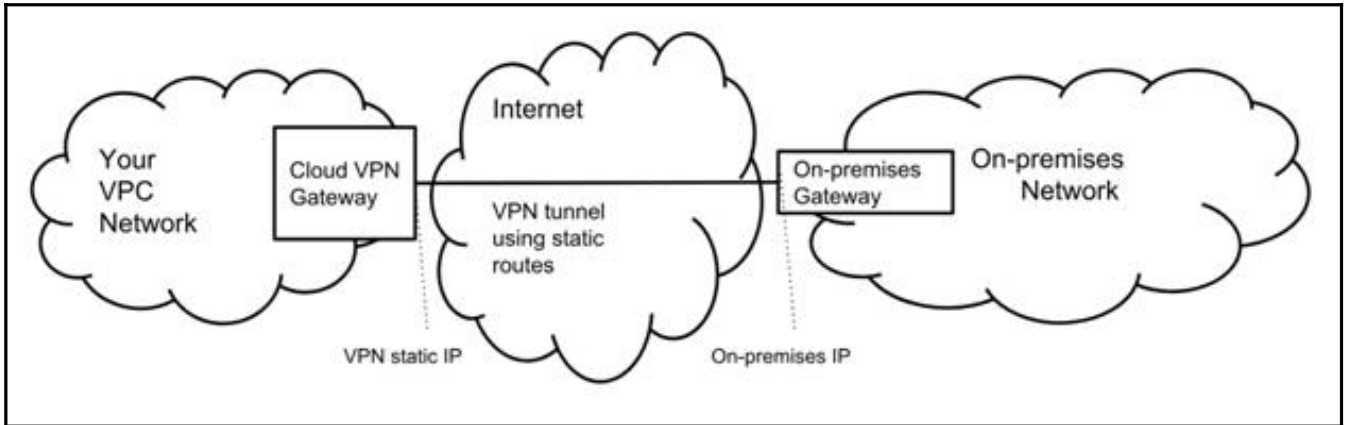
← Add origin to Cloud CDN

Choose a load balancer as origin. Responses from the origin will be cached by Cloud CDN.

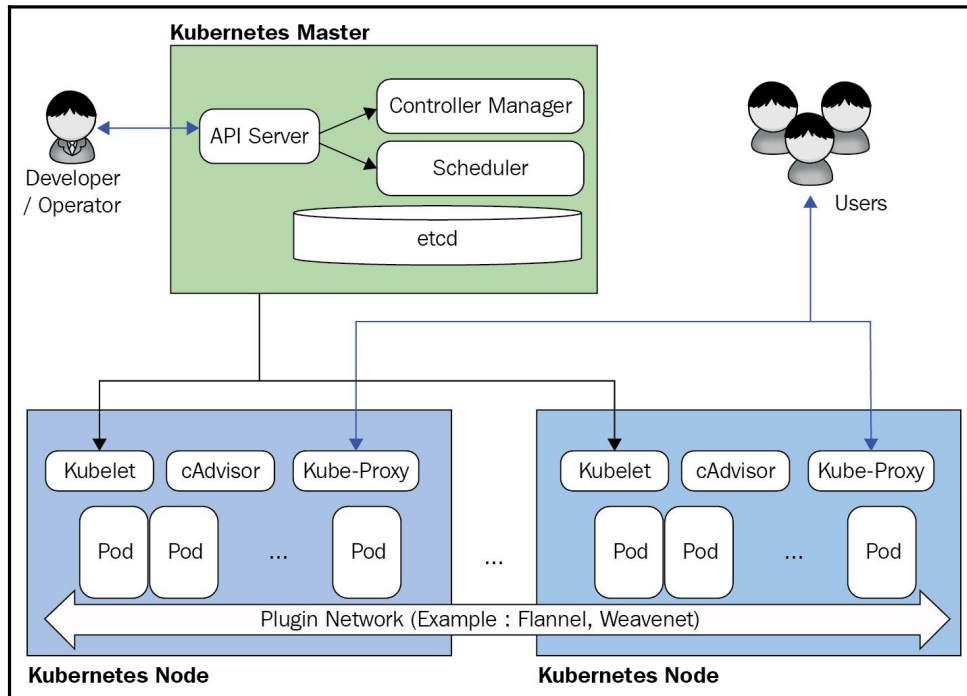
Origin ⓘ

Select origin

Add Cancel



Chapter 05: Google Cloud Platform Containers



[←](#) Create a Kubernetes cluster

Name [?](#)

Location type [?](#)
 Zonal
 Regional

Zone [?](#)

Master version

Node pools

Node pools are separate instance groups running Kubernetes in a cluster. You may add node pools in different zones for higher availability, or add node pools of different type machines. To add a node pool, click Edit. [Learn more](#)

default-pool

Number of nodes

Machine type [?](#)
Customize to select cores, memory and GPUs
 3.75 GB memory [Customize](#)

[Upgrade your account](#) to create instances with up to 96 cores

[⌵ Advanced options](#)

You will be billed for the 3 nodes (VM instances) in your cluster. [Learn more](#)

Equivalent [REST](#) or [command line](#)

Edit node pool

Name ?
default-pool

Node version
1.9.7-gke.6 (master version) ▼

Size

Number of nodes
3

Enable autoscaling ?

Nodes

Image type ?
Container-Optimized OS (cos) (default) ▼

Machine type ?
Customize to select cores, memory and GPUs

1 vCPU ▼ 3.75 GB memory [Customize](#)

[Upgrade your account](#) to create instances with up to 96 cores

Boot disk type ?
Standard persistent disk ▼

Boot disk size (GB) ?
100

Local SSD disks (Optional) ?
0

Enable preemptible nodes (beta) ?

Management

Enable auto-upgrade ?


Enable auto-repair ?

Security

Service account ?
Compute Engine default service account ▼

Access scopes ?

- Allow default access
- Allow full access to all Cloud APIs
- Set access for each API

 Starting with version 1.10, new clusters will not have the Compute

[Save](#) [Cancel](#)

Kubernetes clusters + CREATE CLUSTER REFRESH DELETE

Filter by label or name

Kubernetes clusters

Name	Location	Cluster size	Total cores	Total memory	Notifications	Labels
mytestcluster	us-central1-a			0.00 GB		

Google Cloud Platform stackdriver-test-project

Compute Engine VM instances + CREATE INSTANCE IMPORT VM REFRESH START STOP RESET DELETE

Filter VM instances

Name	Zone	Recommendation	Internal IP	External IP	Connect
gke-mytestcluster-default-pool-de4db7ea-39zx	us-central1-a		10.128.0.2 (nic0)	35.226.103.142	SSH
gke-mytestcluster-default-pool-de4db7ea-h5ts	us-central1-a		10.128.0.4 (nic0)	35.192.111.14	SSH
gke-mytestcluster-default-pool-de4db7ea-jzhr	us-central1-a		10.128.0.3 (nic0)	35.238.181.240	SSH

Kubernetes clusters + CREATE CLUSTER + DEPLOY REFRESH DELETE

A Kubernetes cluster is a managed group of uniform VM instances for running Kubernetes. [Learn more](#)

Filter by label or name

Name	Location	Cluster size	Total cores	Total memory	Notifications	Labels
<input checked="" type="checkbox"/> mytestcluster	us-central1-a	3	3 vCPUs	11.25 GB		Connect ✎ 🗑️

stackdriver-test-project

VM instances [CREATE INSTANCE](#) [IMPORT VM](#) [REFRESH](#) [START](#) [STOP](#) [RESET](#) [DELETE](#)

Filter VM instances [Columns](#)

<input type="checkbox"/> Name ^	Zone	Recommendation	Internal IP	External IP	Connect
<input type="checkbox"/> gke-mytestcluster-default-pool-de4db7ea-39zx	us-central1-a		10.128.0.2 (nic0)	35.226.103.142	SSH ▾ ⋮
<input type="checkbox"/> gke-mytestcluster-default-pool-de4db7ea-h5ts	us-central1-a		10.128.0.4 (nic0)	35.192.111.14	SSH ▾ ⋮
<input type="checkbox"/> gke-mytestcluster-default-pool-de4db7ea-jzhr	us-central1-a		10.128.0.3 (nic0)	35.238.181.240	SSH ▾ ⋮

Kubernetes clusters

<input type="checkbox"/> Name ^	Location	Cluster size	Total cores	Total memory
<input type="checkbox"/> mytestcluster	us-central1-a	3	3 vCPUs	11.25 GB

stackdriver-test-project
🔍

← Clusters
✎ EDIT
🗑 DELETE
+ DEPLOY
🔗 CONNECT

✔
mytestcluster

Details
Storage
Nodes

Cluster

Master version	1.9.7-gke.6	Upgrade available
Endpoint	104.155.180.19	Show credentials
Client certificate	Enabled	
Binary authorization	Disabled	
Kubernetes alpha features	Disabled	
Total size	3	
Master zone	us-central1-a	
Node zones	us-central1-a	
Network	vpc-network1	
Subnet	vpc-network1	
VPC-native (alias IP)	Disabled	
Pod address range	10.36.0.0/14	
Stackdriver Logging	Enabled	
Stackdriver Monitoring	Enabled	
Private cluster	Disabled	
Master authorized networks	Disabled	
Network policy	Disabled	
Legacy authorization	Disabled	
Maintenance window	Any time	
Cloud TPU	Disabled	

Labels

None

⌵ [Add-ons](#)

⌵ [Permissions](#)

Node Pools

Node pools are separate instance groups running Kubernetes in a cluster. You may add node pools in different zones for higher availability, or add node pools of different type machines. To add a node pool, click Edit. [Learn more](#)

default-pool (3 nodes, version 1.9.7-gke.6)
^

Node Pools

Node pools are separate instance groups running Kubernetes in a cluster. You may add node pools in different zones for higher availability, or add node pools of different type machines. To add a node pool, click Edit. [Learn more](#)

default-pool (3 nodes, version 1.9.7-gke.6) ^

Name	default-pool
Size	3
Node version	1.9.7-gke.6 Change
Node image	Container-Optimized OS (cos) Change
Machine type	n1-standard-1 (1 vCPU, 3.75 GB memory)
Total cores	3 vCPUs
Total memory	11.25 GB
Automatic node upgrades	Disabled
Automatic node repair	Enabled
Autoscaling	Off
Preemptible nodes	Disabled
Boot disk type	Standard persistent disk
Boot disk size in GB (per node)	100
Local SSD disks (per node)	0
Instance groups	gke-mytestcluster-default-pool-de4db7ea-grp

Kubernetes labels

No labels set

Taints

No taints set

Done

Cancel

WARNING: Accessing a Kubernetes Engine cluster requires the kubernetes commandline client [kubectl]. To install, run
`$ gcloud components install kubectl`

Command-line access

Configure `kubectl` command line access by running the following command:

```
$ gcloud container clusters get-credentials mytestcluster --zone us-central1-a --project kubecluster-206421
```

[Run in Cloud Shell](#)

Google Cloud Platform stackdriver-test-project

Kubernetes Engine

- Clusters
- Workloads
- Services
- Applications
- Configuration
- Storage

← Create a deployment

A deployment is a configuration which defines how Kubernetes deploys, manages, and scales your container image. Kubernetes will ensure your system matches this configuration.

Deployment

Container

Container image

Select Google Container Registry image

Environment variables

Initial command (Optional)

Done Cancel

+ Add container

Application name

Namespace

Labels

Key	Value
app	nginx-1

+ Add label

Cluster

Deploy View YAML

Google Cloud Platform stackdriver-test-project

Kubernetes Engine Deployment details

nginx-1

To let others access your deployment, expose it to create a service

Overview Details Revision history Events YAML

CPU Memory Disk

Cluster: mytestcluster
 Namespace: default
 Labels: app: nginx-1
 Logs: Container logs, Audit logs
 Replicas: 3 updated, 3 ready, 3 available, 0 unavailable
 Pod specification: Revision 1, containers: nginx

Active revisions

Revision	Name	Status	Summary	Created on	Pods running/Pods total
1	nginx-1-7cb5b65464	OK	nginx: nginx:latest	Sep 24, 2018, 10:04:52 AM	3/3

Managed pods

Revision	Name	Status	Restarts	Created on
1	nginx-1-7cb5b65464-cjspl	Running	0	Sep 24, 2018, 10:04:52 AM
1	nginx-1-7cb5b65464-dcw6j	Running	0	Sep 24, 2018, 10:04:52 AM
1	nginx-1-7cb5b65464-g2rpp	Running	0	Sep 24, 2018, 10:04:52 AM

```

$ kubectl apply -f pvc.yaml
persistentvolumeclaim "myvolumeclaim" created
$ kubectl get pvc
NAME          STATUS    VOLUME                                     CAPACITY   ACCESS MODES   STORAGECLASS   AGE
myvolumeclaim Bound     pvc-3d7fedf7-6bfa-11e8-a49e-42010a800112  250Gi      RWO             standard       8s

```

Google Cloud Platform stackdriver-test-project

Kubernetes Engine Storage REFRESH

Persistent volume claims Storage classes

Persistent volume claims are requests for storage of specific size and access mode. [Learn more](#)

Filter persistent volume claims

Name ^	Phase	Volume	Storage class	Namespace	Cluster
myvolumeclaim	Bound	pvc-42ad34c3-c00d-11e8-b247-42010a800fd9	standard	default	mytestcluster

Storage REFRESH

Persistent volume claims Storage classes

Storage classes are parameters for a class of storage for which persistent volumes are dynamically provisioned.

Filter storage classes

Name ^	Provisioner	Type	Zone	Cluster
standard	kubernetes.io/gce-pd	pd-standard		mytestcluster

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Kubernetes Engine Clusters EDIT DELETE DEPLOY CONNECT

mytestcluster

Details Storage Nodes

Persistent volumes

Filter persistent volumes

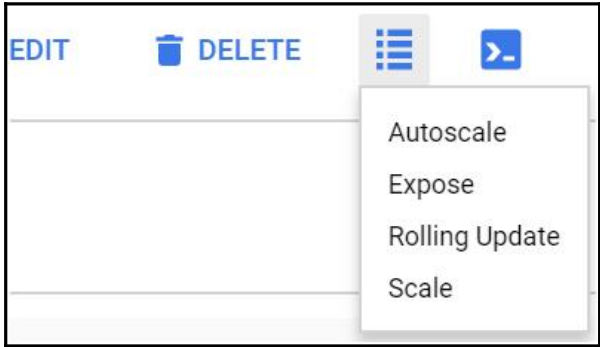
Name ^	Status	Type	Source	Read only	Storage Class	Claim
pvc-42ad34c3-c00d-11e8-b247-42010a800fd9	BOUND	GCE persistent disk	gke-mytestcluster-7b18-pvc-42ad34c3-c00d-11e8-b247-42010a800fd9	False	standard	myvolumeclaim

Storage classes

Filter storage classes

Name ^	Provisioner	Type	Zone
standard	kubernetes.io/gce-pd	pd-standard	

```
[\$ kubectl get pods
NAME                READY   STATUS    RESTARTS   AGE
nginx-1-97dd4c589-dgzdj   1/1     Running   0           1m
nginx-1-97dd4c589-mn96c   1/1     Running   0           1m
nginx-1-97dd4c589-zm67c   1/1     Running   0           2h
```



Expose

Expose a resource's Pods using a Kubernetes Service.

Port mapping

New port mapping

Port [?] Target port [?] (Optional)



Protocol [?]


Service type [?]


Expose


Expose a resource's Pods using a Kubernetes Service.

Port mapping

New port mapping  

Port 

Target port  (Optional)

Protocol 

Cluster IP
Exposes the service on an internal IP in the cluster.

Node port
Exposes the service on the same port of each selected Node.

Load balancer
Creates a load balancer with external IP.

CANCEL **EXPOSE**

Expose

Expose a resource's Pods using a Kubernetes Service.

Port mapping

New port mapping 🗑️ ⬆️

Port ?	Target port ? (Optional)
<input type="text" value="80"/>	<input type="text" value="80"/>
Protocol ?	
<input type="text" value="TCP"/>	

Service type ?

Google Cloud Platform **stackdriver-test-project**

Kubernetes Engine **Service details** REFRESH EDIT DELETE KUBECTL

mywebapp-1-service
Overview Details Events YAML

1h 6h 1d 7d 30d

CPU Sep 24, 2018 10:07 AM
mywebapp-1-service: 6e-4

Memory Sep 24, 2018 10:07 AM
mywebapp-1-service: 4.465M

Disk Sep 24, 2018 10:07 AM
mywebapp-1-service: 233,472.00

Cluster: mytestcluster
Namespace: default
Labels: app: mywebapp-1
Stackdriver logs: Deployment: mywebapp-1
Type: LoadBalancer
External endpoints: 104.198.179.26:80

LoadBalancer
Cluster IP: 10.39.244.126
Load balancer IP: 104.198.179.26
Load balancer: aaf2db8dcc00e11e8b24742010a800fd

Deployments

Name	Status	Pods
mywebapp-1	OK	1/1

Serving pods

Name	Status	Restarts	Created on
mywebapp-1-69d899f85f-zvlpv	Running	0	Sep 24, 2018, 10:29:43 AM

Load balancing CREATE LOAD BALANCER REFRESH DELETE

Load balancers Backends Frontends

Filter by name or protocol

Name	Protocol	Backends
a99315c1a6e7911e8a49e42010a80011	TCP	1 target pool (3 instances)

⌵
← Load balancer details
✎ EDIT
🗑️ DELETE

a99315c1a6e7911e8a49e42010a80011

Frontend

Protocol ^	IP:Port	Network Tier ?
TCP	130.211.187.93:80	Premium

Backend

Name: a99315c1a6e7911e8a49e42010a80011 Region: us-central1 Session

Instances ^ 130.211.187.93

gke-mytestcluster-default-pool-f136ee16-k6sr	✔
gke-mytestcluster-default-pool-f136ee16-q4dn	✔
gke-mytestcluster-default-pool-f136ee16-nxnp	✔

← → ↻ 130.211.187.93
☆ 📄

Welcome to nginx!


If you see this page, the nginx web server is successfully installed and working. Further configuration is required.








For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.

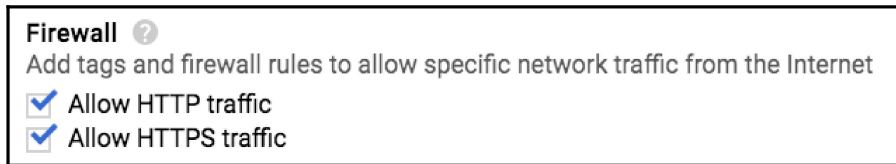
LoadBalancer	
Cluster IP	10.39.251.43
Load balancer IP	130.211.187.93
Load balancer	a99315c1a6e7911e8a49e42010a80011

k8s-fw-aaf2db8dcc00e11e8b24742010a800fd	Ingress	gke-mytestcluster-7b18b8f6-node	IP ranges: 0.0.0.0/0	tcp:80	Allow	1000	vpc-network1
---	---------	---------------------------------	----------------------	--------	-------	------	--------------

← **Firewall rule details** ✎ EDIT 🗑️ DELETE

	<b data-bbox="341 378 901 409">k8s-fw-a99315c1a6e7911e8a49e42010a80011
	<b data-bbox="341 441 454 462">Description {"kubernetes.io/service-name":"default/mywebapp-1-rmr4h", "kubernetes.io/service-ip":"130.211.187.93"}
	<b data-bbox="341 525 422 546">Network default
	<b data-bbox="341 619 406 640">Priority 1000
	<b data-bbox="341 714 430 735">Direction Ingress
	<b data-bbox="341 808 503 829">Action on match Allow
	<b data-bbox="341 903 422 924">Targets
<b data-bbox="365 945 479 966">Target tags	gke-mytestcluster-8b995f5b-node

Chapter 06: Google Cloud Platform Operations



<input type="checkbox"/> Name ^	Zone	Recommendation	Internal IP	External IP	Connect
<input type="checkbox"/> small-http-stack	us-east1-b		10.142.0.2 (nic0)	35.237.134.28 ↗	SSH ⌵ ⋮

- Open in browser window
- Open in browser window on custom port
- View gcloud command
- Use another SSH client



Apache2 Debian Default Page

It works!

This is the default welcome page used to test the correct operation of the Apache2 server after installation on Debian systems. If you can read this page, it means that the Apache HTTP server installed at this site is working properly. You should **replace this file** (located at `/var/www/html/index.html`) before continuing to operate your HTTP server.

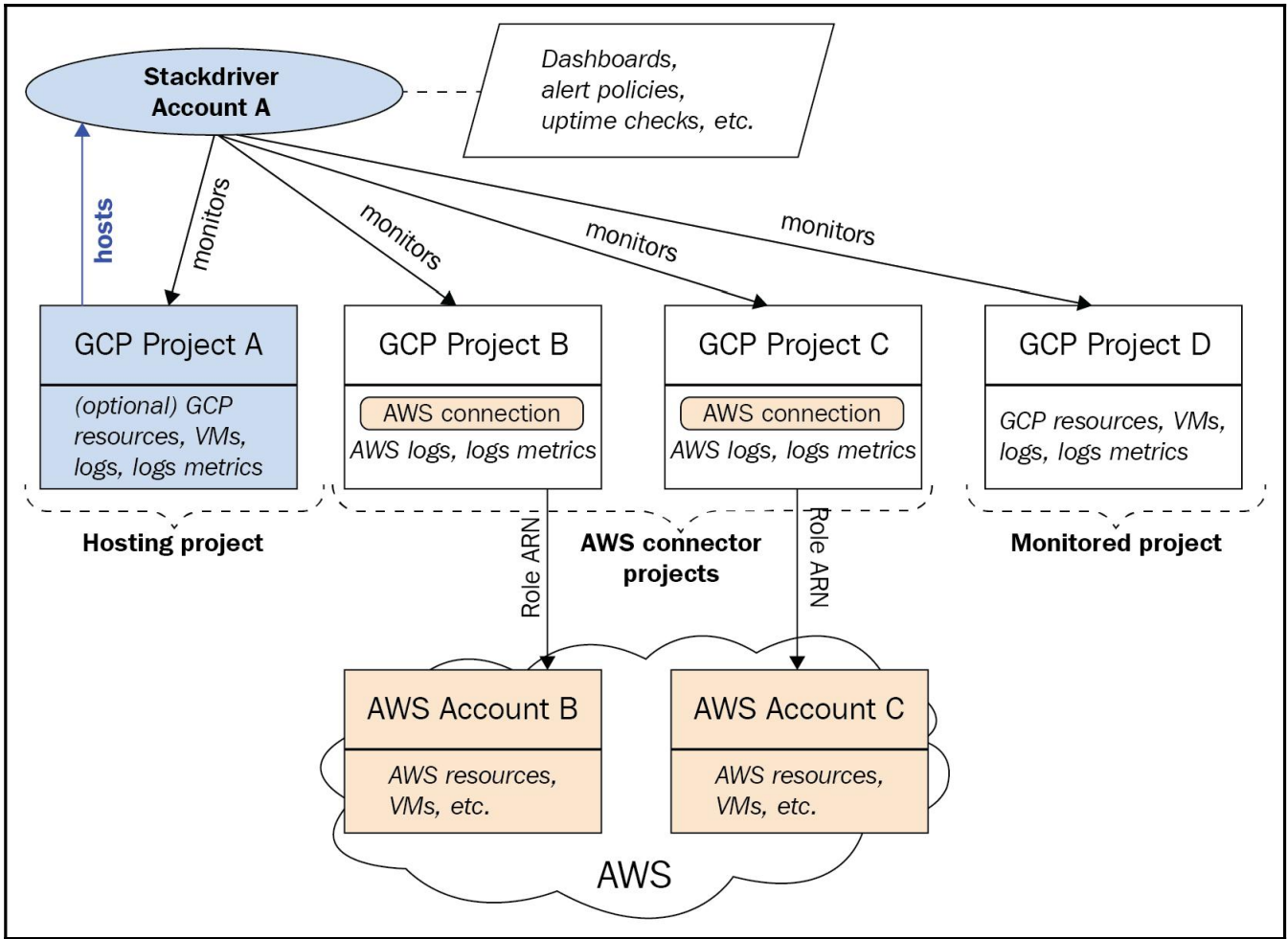
If you are a normal user of this web site and don't know what this page is about, this probably means that the site is currently unavailable due to maintenance. If the problem persists, please contact the site's administrator.


Configuration Overview

Debian's Apache2 default configuration is different from the upstream default configuration, and split into several files optimized for interaction with Debian tools. The configuration system is **fully documented in `/usr/share/doc/apache2/README.Debian.gz`**. Refer to this for the full documentation. Documentation for the web server itself can be found by accessing the **manual** if the `apache2-doc` package was installed on this server.

The configuration layout for an Apache2 web server installation on Debian systems is as follows:

```
/etc/apache2/  
|-- apache2.conf
```



 **Stackdriver** Select account

Create your free Stackdriver Account

Start your 30 day free trial. No credit card required.

Select or create a new Google Cloud Platform project to store your account settings and user permissions. The selection cannot be changed, but you can create other Stackdriver Accounts later. [Learn more](#)

Google Cloud Platform project

When you add an AWS account, a Google Cloud Platform project will be created to store your AWS monitoring and logging data.

Install the Stackdriver Agents recommended

Get the most out of your free Stackdriver Account by installing the Stackdriver Monitoring and Logging agents on each of your VM instances. Agents collect more information from your VM instances, including metrics and logs from third party applications:

1. Switch to the terminal connected to your VM instance, or create a new one.
2. Install the Stackdriver agents by running the following commands on your instance:

```
# To install the Stackdriver monitoring agent:  
$ curl -sSO https://dl.google.com/cloudagents/install-monitoring-agent.sh  
$ sudo bash install-monitoring-agent.sh  
  
# To install the Stackdriver logging agent:  
$ curl -sSO https://dl.google.com/cloudagents/install-logging-agent.sh  
$ sudo bash install-logging-agent.sh
```

For more details and troubleshoot options when installing the agents, see [Installing the Stackdriver Monitoring Agent](#) and [Installing the Stackdriver Logging Agent](#).

Continue

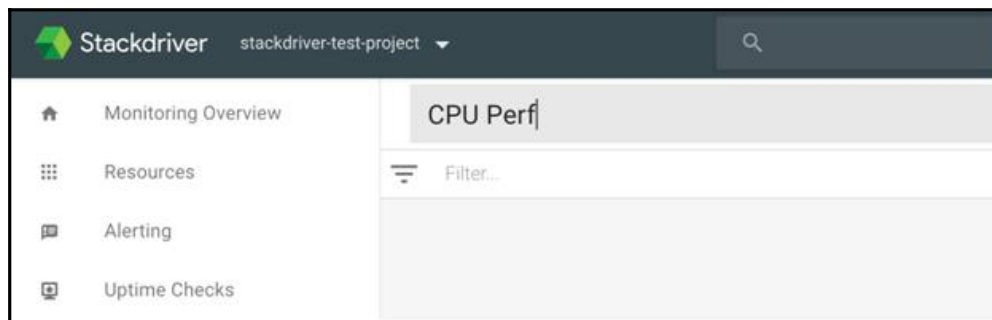
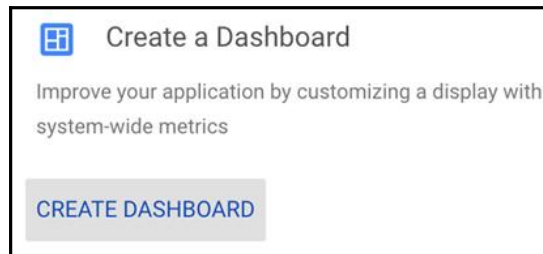
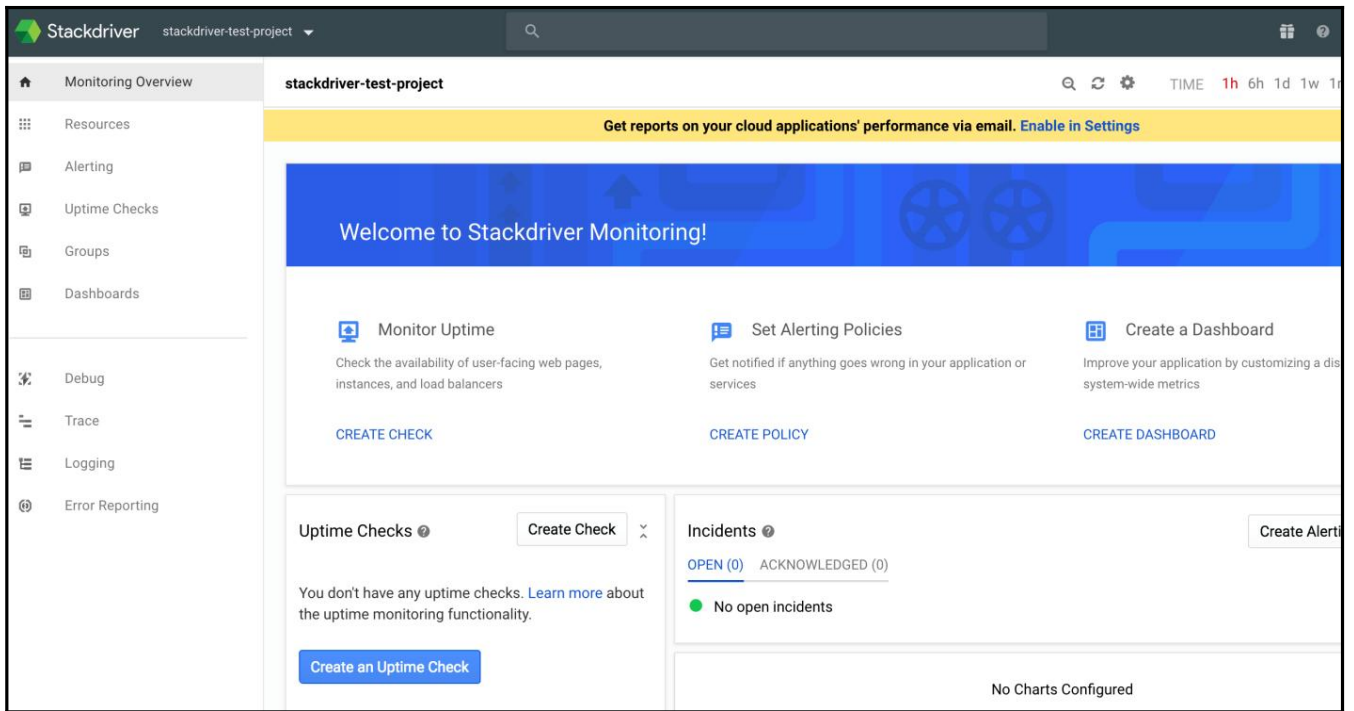
Get Reports by Email

Stackdriver can send you reports on the performance of your cloud applications by email. Reports include information on incidents and utilization.

Select the frequency of reports that you would like to receive. You can change this setting any time in your Stackdriver Account Settings.

- Daily reports, including weekly summaries
- Weekly reports
- No reports

Continue



Add Chart

CPU Usage

METRIC VIEW OPTIONS



Find resource type and metric ?

instance, cpu usage, etc.

Resource types

+ GCE VM Instance
gce_instance

METRIC VIEW OPTIONS

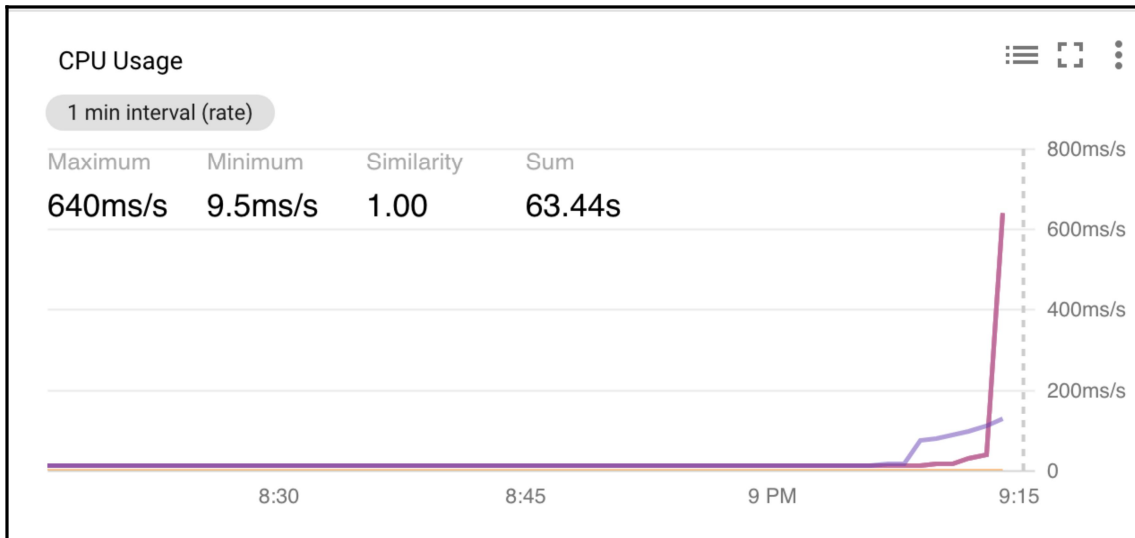
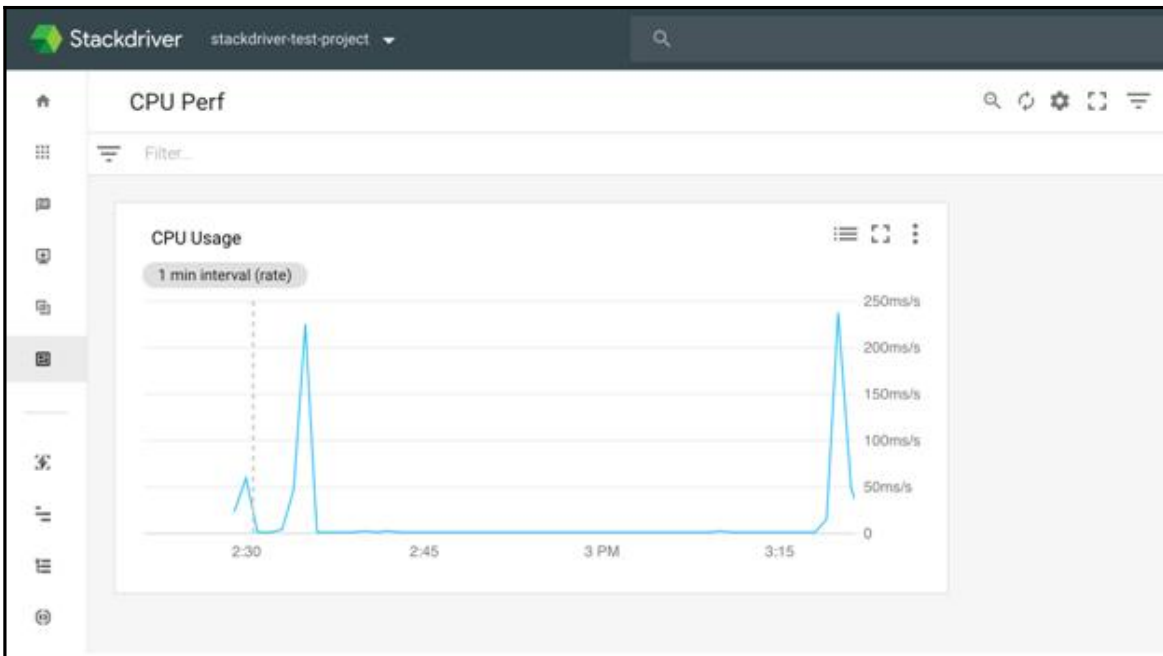


Find resource type and metric ?

Resource type: GCE VM Instance x

Metric: CPU usage x

Filter ?



Google Cloud Platform stackdriver-test-project

CREATE METRIC CREATE EXPORT

Filter by label or text search

GCE Project, 968775468325 All logs Any log level Last hour Jump to now

Recently selected resources

- GCE Project, 968775468325
- GCE Firewall Rule
- GCE Firewall Rule
- GCE Project
- GCE VM Instance
- Google Project

(CDT)

No entries found matching current filter in the last hour. Load older logs

Load newer logs

All project_id

Search by prefix...

968775468325

Google Cloud Platform stackdriver-test-project

Stackdriver Logging

CREATE METRIC CREATE EXPORT

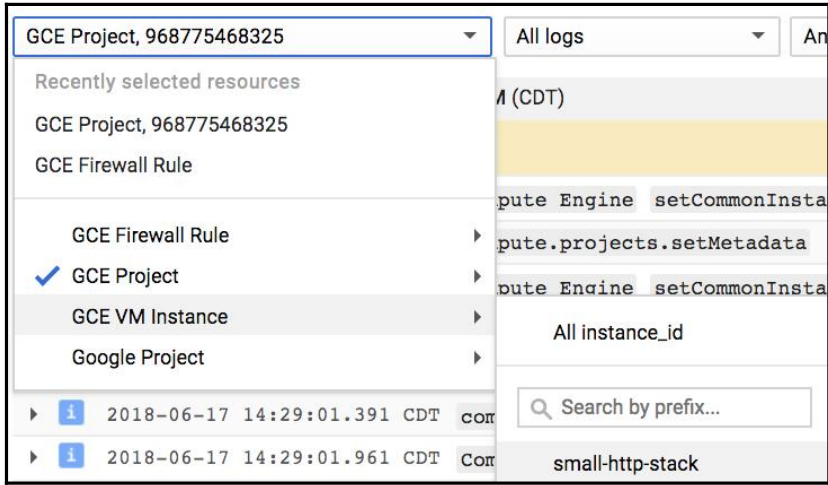
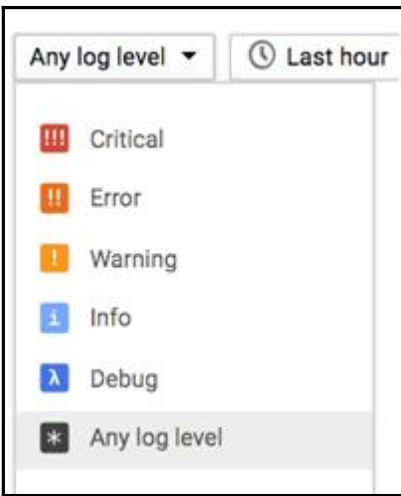
Filter by label or text search

GCE Project, 968775468325 All logs Any log level

Showing logs from the beginning of time to 9:47 PM (CDT)

↓

▶		2018-06-17 14:28:52.126	CDT	Compute Engine	setCommonInstanceMetadata
▶		2018-06-17 14:28:52.628	CDT	compute.projects.setMetadata	{"actor":{"
▶		2018-06-17 14:28:53.899	CDT	Compute Engine	setCommonInstanceMetadata
▶		2018-06-17 14:28:55.026	CDT	compute.projects.setMetadata	{"event_sub
▶		2018-06-17 14:29:01.005	CDT	Compute Engine	setCommonInstanceMetadata
▶		2018-06-17 14:29:01.391	CDT	compute.projects.setMetadata	{"actor":{"
▶		2018-06-17 14:29:01.961	CDT	Compute Engine	setCommonInstanceMetadata
▶		2018-06-17 14:29:02.093	CDT	compute.projects.setMetadata	{"event_tim
▶		2018-06-17 14:29:04.914	CDT	Compute Engine	setCommonInstanceMetadata
▶		2018-06-17 14:29:05.505	CDT	compute.projects.setMetadata	{"event_tim
▶		2018-06-17 14:29:11.441	CDT	Compute Engine	setCommonInstanceMetadata
▶		2018-06-17 14:29:11.586	CDT	compute.projects.setMetadata	{"event_tim
▶		2018-06-17 14:32:06.020	CDT	Compute Engine	setCommonInstanceMetadata
▶		2018-06-17 14:32:06.524	CDT	compute.projects.setMetadata	{"ip_addres
▶		2018-06-17 14:32:17.438	CDT	Compute Engine	setCommonInstanceMetadata
▶		2018-06-17 14:32:17.546	CDT	compute.projects.setMetadata	{"event_tim



```

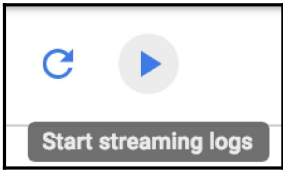
▶ * 2018-06-17 21:51:48.000 CDT Jun 18 02:51:48 small-http-stack systemd[1]: Stopping The Apache HTTP Server...
▶ * 2018-06-17 21:51:48.000 CDT Jun 18 02:51:48 small-http-stack systemd[1]: Stopped The Apache HTTP Server.
▶ * 2018-06-17 21:51:48.896 CDT [Mon Jun 18 02:51:48.896209 2018] [mpm_prefork:notice] [pid 8265] AH00169: caught SIGTERM, shutting down

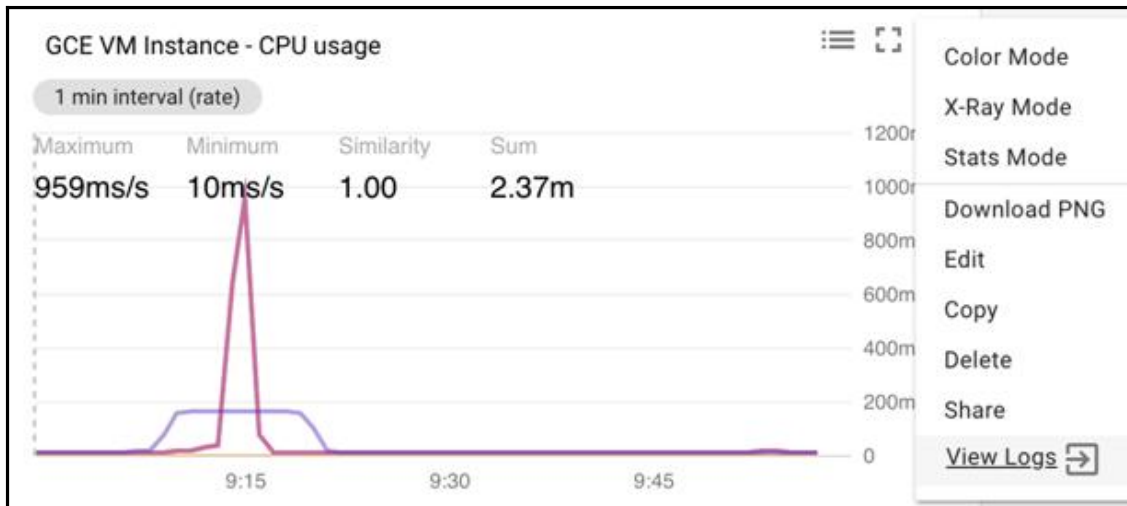
```

```

▶ * 2018-06-17 21:53:00.000 CDT Jun 18 02:53:00 small-http-stack systemd[1]: Starting The Apache HTTP Server...
▶ * 2018-06-17 21:53:00.000 CDT Jun 18 02:53:00 small-http-stack systemd[1]: Started The Apache HTTP Server.
▶ * 2018-06-17 21:53:00.724 CDT [Mon Jun 18 02:53:00.724031 2018] [mpm_prefork:notice] [pid 17383] AH00163: Apache/2.4.25 (Debian) config
▶ * 2018-06-17 21:53:00.726 CDT [Mon Jun 18 02:53:00.726690 2018] [core:notice] [pid 17383] AH00094: Command line: '/usr/sbin/apache2'

```





Google Cloud Platform stackdriver-test-project

App Engine Dashboard

Let's get started. →

App Engine Quickstart

Introduction

This tutorial shows you how to deploy a sample Python application to Google App Engine using the `gcloud` command.

Here are the steps you will be taking.

- **Build and run your "Hello, world" app**
You will learn how to run your app using Google Cloud Shell, right in your browser. At the end you'll deploy your app to the web using the `gcloud` command.
- **After the tutorial...**
Your app will be real and you'll be able to experiment with it after you deploy, or you can remove it and start fresh.

Python and the Python logos are trademarks or registered trademarks of the Python Software Foundation.

App Engine Quickstart

Please confirm this project to be used in the tutorial:

stackdriver-test-project

stackdriver-test-123

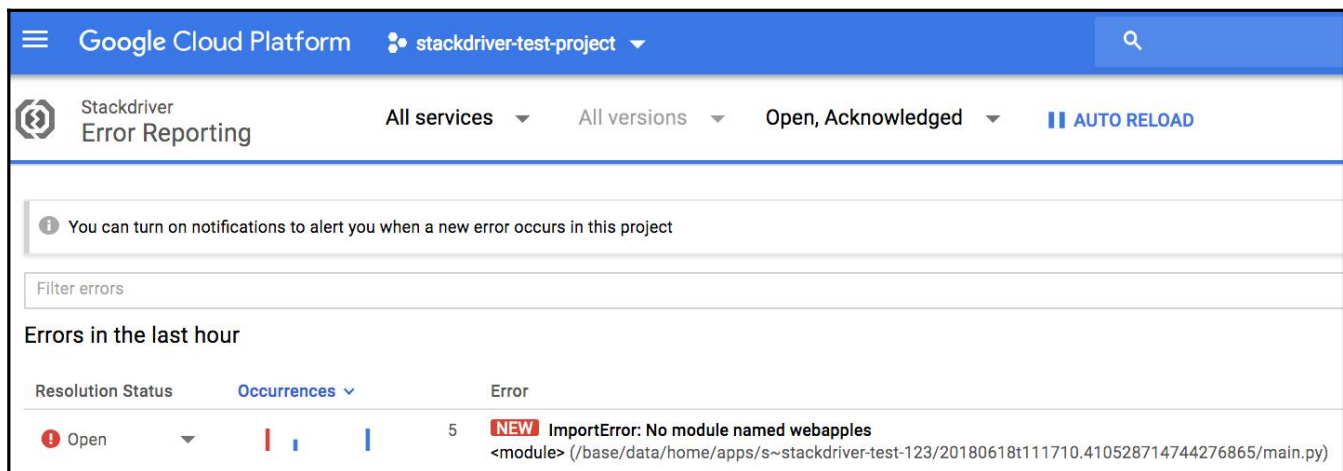
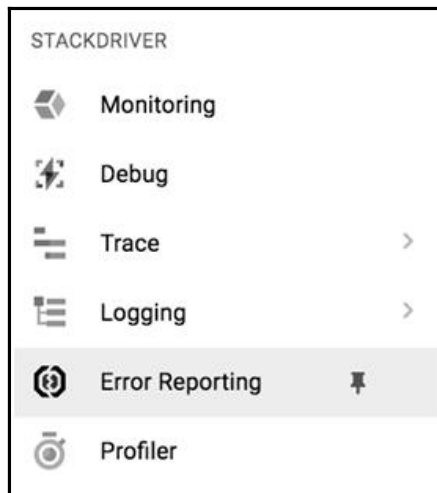
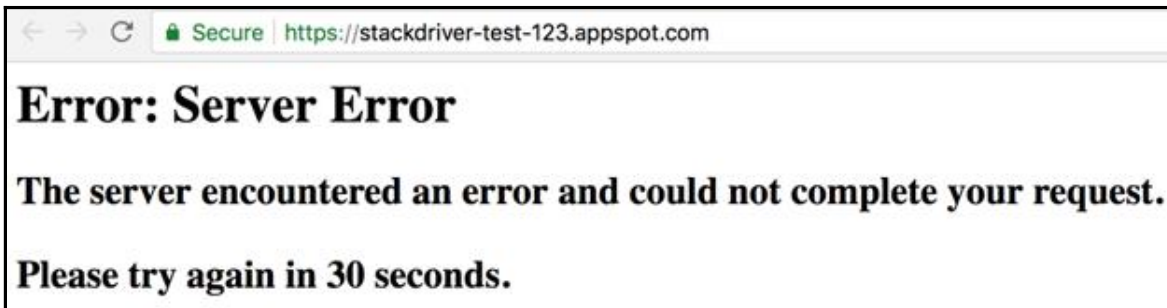
← → ↻ ⓘ stackdriver-test-123.appspot.com

Hello, World!

App Engine	Services 🗑️ DELETE										
<ul style="list-style-type: none"> Dashboard <li style="background-color: #e0e0e0;"> Services Versions 	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th><input type="checkbox"/> Service</th> <th>Versions</th> <th>Dispatch routes ?</th> <th>Last version deployed ▼</th> <th>Diagnose</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> default ↗</td> <td>1</td> <td></td> <td>Jun 18, 2018, 10:35:27 AM by tr.ranjitsingh@gmail.com</td> <td>Tools ▼</td> </tr> </tbody> </table>	<input type="checkbox"/> Service	Versions	Dispatch routes ?	Last version deployed ▼	Diagnose	<input type="checkbox"/> default ↗	1		Jun 18, 2018, 10:35:27 AM by tr.ranjitsingh@gmail.com	Tools ▼
<input type="checkbox"/> Service	Versions	Dispatch routes ?	Last version deployed ▼	Diagnose							
<input type="checkbox"/> default ↗	1		Jun 18, 2018, 10:35:27 AM by tr.ranjitsingh@gmail.com	Tools ▼							

App Engine	Services 🗑️ DELETE										
<ul style="list-style-type: none"> Dashboard <li style="background-color: #e0e0e0;"> Services 	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th><input type="checkbox"/> Service</th> <th>Versions</th> <th>Dispatch routes ?</th> <th>Last version deployed ▼</th> <th>Diagnose</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> default ↗</td> <td>2</td> <td></td> <td>Jun 18, 2018, 11:06:32 AM by tr.ranjitsingh@gmail.com</td> <td>Tools ▼</td> </tr> </tbody> </table>	<input type="checkbox"/> Service	Versions	Dispatch routes ?	Last version deployed ▼	Diagnose	<input type="checkbox"/> default ↗	2		Jun 18, 2018, 11:06:32 AM by tr.ranjitsingh@gmail.com	Tools ▼
<input type="checkbox"/> Service	Versions	Dispatch routes ?	Last version deployed ▼	Diagnose							
<input type="checkbox"/> default ↗	2		Jun 18, 2018, 11:06:32 AM by tr.ranjitsingh@gmail.com	Tools ▼							

App Engine	Versions <input type="button" value="REFRESH"/> <input type="button" value="DELETE"/> <input type="button" value="STOP"/> <input type="button" value="START"/> 												
<ul style="list-style-type: none"> Dashboard Services <li style="background-color: #e0e0e0;"> Versions Instances 	<div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;"> <input type="text" value="Filter versions"/> </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th><input type="checkbox"/> Version</th> <th>Status</th> <th>Traffic Allocation</th> <th>Instances</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> 20180618t111710 ↗</td> <td>Serving</td> <td><div style="width: 100%; height: 10px; background-color: #0070c0;"></div> 100%</td> <td>0</td> </tr> <tr> <td><input type="checkbox"/> 20180618t103509 ↗</td> <td>Serving</td> <td><div style="width: 0%; height: 10px; background-color: #ccc;"></div> 0%</td> <td>1</td> </tr> </tbody> </table>	<input type="checkbox"/> Version	Status	Traffic Allocation	Instances	<input type="checkbox"/> 20180618t111710 ↗	Serving	<div style="width: 100%; height: 10px; background-color: #0070c0;"></div> 100%	0	<input type="checkbox"/> 20180618t103509 ↗	Serving	<div style="width: 0%; height: 10px; background-color: #ccc;"></div> 0%	1
<input type="checkbox"/> Version	Status	Traffic Allocation	Instances										
<input type="checkbox"/> 20180618t111710 ↗	Serving	<div style="width: 100%; height: 10px; background-color: #0070c0;"></div> 100%	0										
<input type="checkbox"/> 20180618t103509 ↗	Serving	<div style="width: 0%; height: 10px; background-color: #ccc;"></div> 0%	1										



Google Cloud Platform | stackdriver-test-project

Stackdriver Error Reporting | Error Details | All services | All versions | AUTO RELOAD | Open

Filter errors | 1 hour | 6 hours | 1 day | 7 days | 30 days

ImportError: No module named webapples
 <module> (/base/data/home/apps/s-stackdriver-test-123/20180618t111710.410528714744276865/main.py:15)

Resolution Status Open Link to issue	Occurrences 5	Seen in 20180618t110625 20180618t111710	Response Code 500 Internal Server Error	First seen 37 minutes ago	Last seen 1 minute ago
---	------------------	---	--	------------------------------	---------------------------

Errors

Stack trace sample

Parsed Raw

```
ImportError: No module named webapples
  at <module> (/base/data/home/apps/s-stackdriver-test-123/20180618t111710.410528714744276865/main.py:15)
  ...
```

[Show all](#)

Recent samples [Learn more](#)

6/18/18, 11:44 AM	ImportError: No module named webapples
-------------------	--

Request GET stackdriver-test-123.appspot.com/ ([View request](#))

Status 500 Internal Server Error

User agent Mozilla/5.0 (Macintosh; Intel Mac OS X 10_11_4) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/66.0.3359.181 Safari/537.36

Service default

Version 20180618t111710

Report location Handle (/base/alloc/tmpfs/dynamic_runtimes/python27/277b61042b697c7a_unzipped/python27_lib/versions/1/google/appengine/runtime/wsgi.py:263)

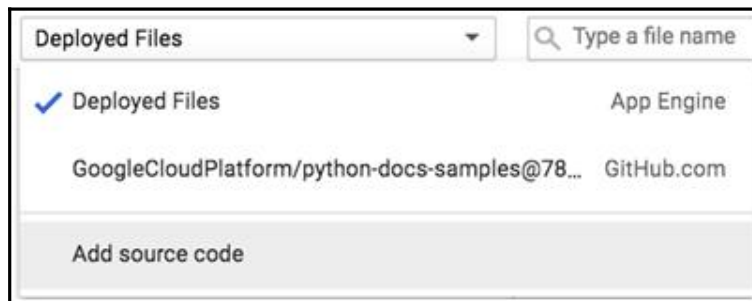
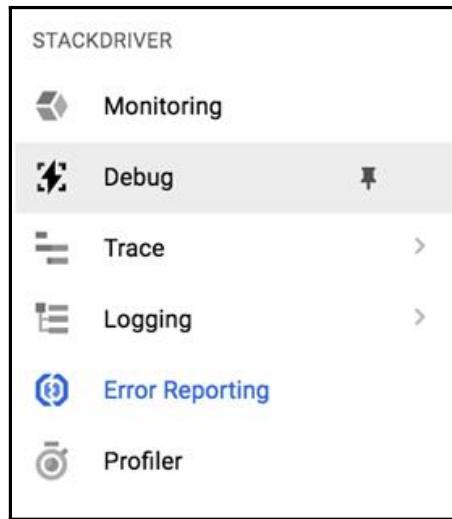
Parsed Raw

```
ImportError: No module named webapples
  at <module> (/base/data/home/apps/s-stackdriver-test-123/20180618t111710.410528714744276865/main.py:15)
  ...
```

[Show all](#)

6/18/18, 11:44 AM	ImportError: No module named webapples	GET stackdriver-test-123.appspot.com/
6/18/18, 11:18 AM	ImportError: No module named webapples	GET stackdriver-test-123.appspot.com/
6/18/18, 11:08 AM	ImportError: No module named webapp22	GET stackdriver-test-123.appspot.com/
6/18/18, 11:08 AM	ImportError: No module named webapp22	GET stackdriver-test-123.appspot.com/





Stackdriver **Debug** default - 20180618t103509
20180618t103509-dot-stackdriver-test-123.appspot.com


Deployed Files

app engine:
app.yaml
main.py
main_test.py
source-context.json

Current source code


Using the source code version that was deployed to App Engine.

Alternative source code

Local files 


View source files locally in this browser session. Source code will not be uploaded to Google servers.
While loading a large directory, the page might become unresponsive.

[Select source](#)

Cloud Source Repositories 


Manually select a repository and version to use.

[Select source](#)

GitHub 


Manually select a repository and version to use. No source code will be stored on Google servers.

[Select source](#)

Bitbucket 


Manually select a repository and version to use. No source code will be stored on Google servers.

[Select source](#)

GitLab 

Manually select a repository and version to use. No source code will be stored on Google servers.

[Select source](#)

App Engine 

View source files that were deployed to App Engine.

[Select source](#)

Google Cloud Platform **stackdriver-test-project**

Stackdriver Debug **default - 20180618t111710 (100%)** [WHAT'S NEW](#)

Deployed Files

app engine:/

- app.yaml
- main.py
- main_test.py
- source-context.json

```

1 runtime: python27
2 api_version: 1
3 threadsafe: true
4
5 handlers:
6 - url: /*
7   script: main.app
8

```

Snapshot Logpoint

Click a line number or type file:line to take a snapshot.

Condition: (Optional)



Expressions: (Optional)

Debug without stopping or slowing down your application

Click a line number to take a snapshot of variables and call stack. Taking a snapshot does not stop the running application.

- Use the condition to scope the result.
- Add expressions to access even more variables.
- [Learn more](#) about Stackdriver Debugger.

default - 20180618t103509

- default - 20180618t111710 (100%)** 
GitHub.com: GoogleCloudPlatform/python-docs-...
- default - 20180618t103509** 
GitHub.com: GoogleCloudPlatform/python-docs-...

Stackdriver **Debug** default - 20180618t103509
 20180618t103509-dot-stackdriver-test-123.appspot.com




Deployed Files

app engine:/
 app.yaml
main.py
 main_test.py
 source-context.json

```

1  # Copyright 2016 Google Inc.
2  #
3  # Licensed under the Apache License, Version 2.0 (the "License");
4  # you may not use this file except in compliance with the License.
5  # You may obtain a copy of the License at
6  #
7  #     http://www.apache.org/licenses/LICENSE-2.0
8  #
9  # Unless required by applicable law or agreed to in writing, software
10 # distributed under the License is distributed on an "AS IS" BASIS,
11 # WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
12 # See the License for the specific language governing permissions and
13 # limitations under the License.
14
15 import webapp2
16
17
18 class MainPage(webapp2.RequestHandler):
19     def get(self):
20         self.response.headers['Content-Type'] = 'text/plain'
21         self.response.write('Hello, World!')
22
23
  
```

Snapshot Logpoint

main.py:20   

Condition: (Optional)

Expressions: (Optional)

Waiting for snapshot to hit. The running application will not stop. ...

Logs Snapshot History Logpoint History

[Logs](#) [Snapshot History](#) [Logpoint History](#)

Showing 1 snapshot

▶ **main.py:20** **Waiting for snapshot to hit...**

default - 20180618t103509 ▼

[20180618t103509-dot-stackdriver-test-123.appspot.com](#)

Q Type a file name

```

1 # Copyright 2016 Google Inc.
2 #
3 # Licensed under the Apache License, Version 2.0 (the "License");
4 # you may not use this file except in compliance with the License.
5 # You may obtain a copy of the License at
6 #
7 #     http://www.apache.org/licenses/LICENSE-2.0
8 #
9 # Unless required by applicable law or agreed to in writing, software
10 # distributed under the License is distributed on an "AS IS" BASIS,
11 # WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
12 # See the License for the specific language governing permissions and
13 # limitations under the License.
14
15 import webapp2
16
17
18 class MainPage(webapp2.RequestHandler):
19     def get(self):
20         self.response.headers['Content-Type'] = 'text/plain'
21         self.response.write('Hello, World!')
22
23
24 app = webapp2.WSGIApplication([
25     ('/', MainPage),
26 ], debug=True)
27

```

Snapshot Logpoint

main.py:20

Condition: (Optional)

Expressions: (Optional)

Variables 2018-06-18 (12:55:42)

[View request logs](#)

▶ self

Call Stack

MainPage.get	main.py:20
MainPage.dispatch	webapp2.py:545
Webapp2HandlerAdapter.__call__	webapp2.py:1077
Router.default_dispatcher	webapp2.py:1253
WSGIApplication.__call__	webapp2.py:1505
WsgiRequest.Handle	wsgi.py:267
HandleRequest	wsgi.py:329
HandleRequest	runtime.py:159

[Logs](#) [Snapshot History](#) [Logpoint History](#)

Showing 1 snapshot

▶ **main.py:20** **Captured at 2018-06-18 (12:55:42)**

Variables   2018-06-18 (12:55:42)
[View request logs](#) 

- ▼ self
 - ▼ app
 - debug True
 - ▶ error_handlers
 - ▼ config
 - (Empty dictionary)
 - ▶ registry
 - ▼ router
 - ▶ build_routes
 - ▼ match_routes
 - ▶ [0]
 - ▼ handlers
 - (Empty dictionary)
 - ▼ request

Snapshot [Logpoint](#)

Click a line number or enter a file:line and message to add a logpoint.

Log Level:
Info

Condition: (Optional)

Message:

Dynamically add logging to your application

Click on a line number or fill out this form to add a logpoint. Messages will be logged to Stackdriver Logging and viewable in the logs panel each time your application executes the logpoint location.

- Use the condition to scope messages.
- Add an expression to the log message using curly braces syntax. eg., var = {var}
- Logpoints automatically expire after 24 hours.
- [Learn more](#)



Snapshot [Logpoint](#)


Log Level:
Info

Condition: (Optional)

Message:

Snapshot Logpoint

main.py:20  


Log Level:
 Info

Condition: (Optional)
true

Message:
Code passed this line successfully.

Logs Snapshot History Logpoint History


Showing 1 logpoint

 main.py:20 logpoint("Code passed this line successfully.")

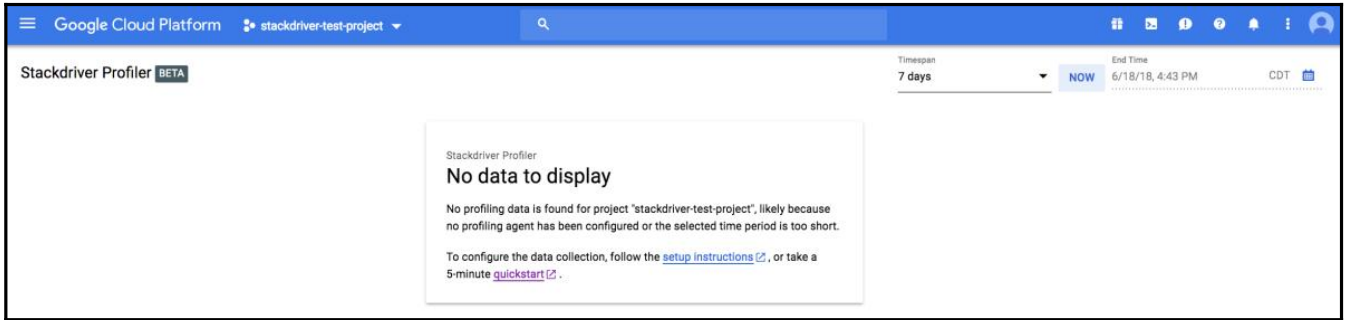
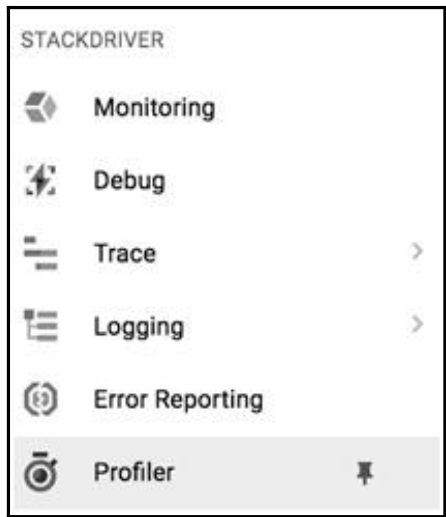
```
18 class MainPage(webapp2.RequestHandler):
19     def get(self):
20         logpoint("Code passed this line successfully.")
21         self.response.headers['Content-Type'] = 'text/plain'
22         self.response.write('Hello, World!')
```

Logs Snapshot History Logpoint History

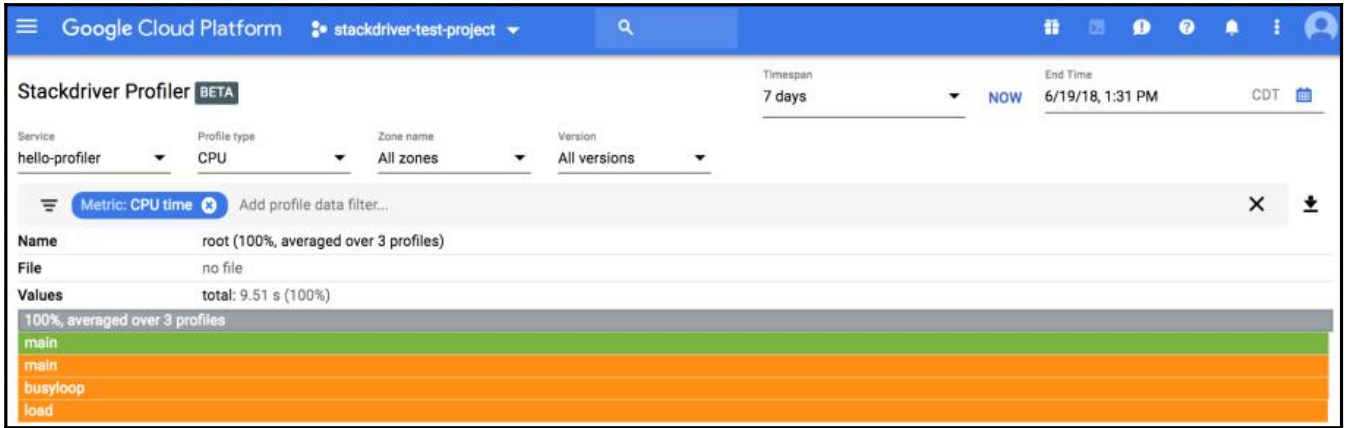
Showing logs older than 2018-06-18 (13:11:15.086) – [Load more](#)

 2018-06-18 (13:11:15.086) LOGPOINT: Code passed this line successfully.





```
tr_ranjitsingh@cloudshell:~/gopath/src/github.com/GoogleCloudPlatform/golang-samples/profiler/profiler_quickstart (stackdriver-test-123)$ go run main.go
2018/06/19 13:29:11 profiler has started
```

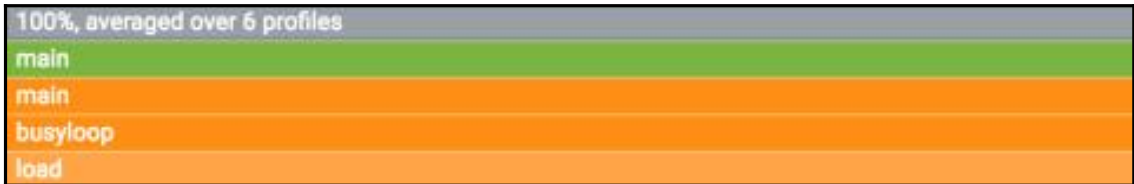


100%, averaged over 5 profiles

```
2018/06/19 13:30:21 successfully created profile CPU
2018/06/19 13:30:31 start uploading profile
2018/06/19 13:31:00 successfully created profile CPU
2018/06/19 13:31:10 start uploading profile
2018/06/19 13:32:01 successfully created profile CPU
2018/06/19 13:32:12 start uploading profile
2018/06/19 13:32:52 successfully created profile CPU
2018/06/19 13:33:02 start uploading profile
2018/06/19 13:33:54 successfully created profile CPU
2018/06/19 13:34:05 start uploading profile
```

Service: hello-profiler | Profile type: CPU | Zone name: All zones | Version: All versions

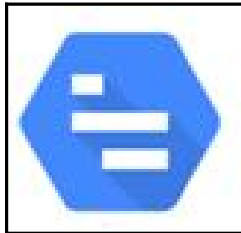
Metric: CPU time | Add profile data filter...

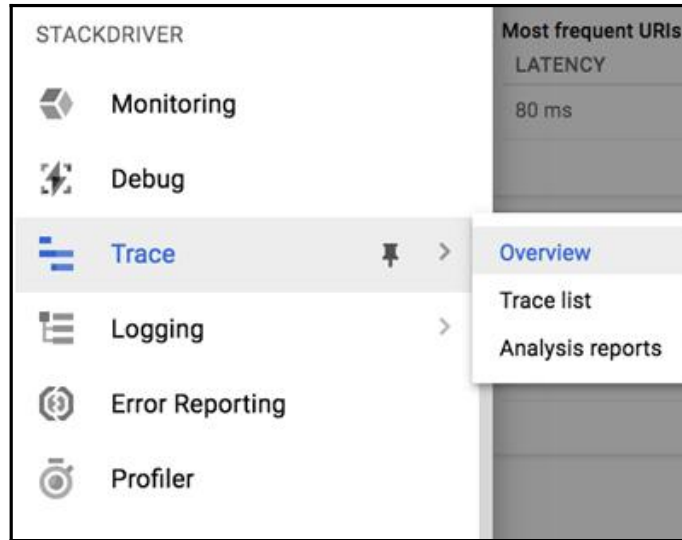


Metric: CPU time | Hide stacks: main | Add profile data filter...

Name: root (0.211%, averaged over 6 profiles)
File: no file
Values: total: 15 ms (0.211%)

0.211%, averaged over 6 profiles			
mstart	_System	mcall	profileWriter
mstart1	mcall	gosched_m	readProfile
sysmon		goschedImpl	(*profBuf).read
netpoll	usleep	schedule	
epollwait		execute	
		casgstatus	





Google Cloud Platform stackdriver-test-project

Stackdriver Trace

Overview [+ CREATE NEW ANALYSIS REPORT](#) [LEARN TRACE API](#)

Insights
No insights to report for the past 7 days.

Recent traces

LATENCY	URI	TIME
171 ms	/	4:36 PM
43 ms	/	4:36 PM

See more ...

Most frequent URIs

LATENCY	URI	REPORT
80 ms	/	

Most frequent RPCs

LATENCY	RPC
<1 ms	/cloud_debugger.DebugletStarted
<1 ms	/cloud_debugger.UpdateBreakpoints

No recent auto daily reports could be found for the last 7 days.

New report request

Request URI
Enter the first part of a URI

Only analyze requests that result in remote procedure calls

HTTP method: All | HTTP status: All

Report name (optional)

Service (App Engine): All services | Version: All versions | Time range: Custom | Start: Jun 19, 2018, 1:04:42 PM | End: Jun 19, 2018, 2:04:42 PM

Compare to baseline

[Submit](#) [Cancel](#)

Google Cloud Platform stackdriver-test-project

Stackdriver Trace

Trace list [+ ANALYZE RESULTS](#) UNDO ZOOM AUTO RELOAD 1 hour 4 hours 12 hours 1 day 3 days 1 week 1 month Custom

Request filter

HTTP method: All | HTTP status: All | Service (App Engine): All services | Version: All versions

(ms) Click and drag along the graph to zoom in to the selected area

Latency	HTTP Method	URI	Analysis Report	Time
141 ms	GET	/		2:08 PM (Just now)
40 ms	GET	/		2:06 PM (1 minute ago)

Latency	HTTP Method	URI	Analysis Report	Time
141 ms	GET	/		2:08 PM (1 minute ago)
40 ms	GET	/		2:06 PM (2 minutes ago)

Stackdriver Trace

Trace list [+ ANALYZE RESULTS](#) UNDO ZOOM [▶ AUTO RELOAD](#) 1 hour 4 hours 12 hours 1 day 3 days 1 week 1 month Custom

Request filter

HTTP method: All HTTP status: All Service (App Engine): All services Version: All versions

Latency	HTTP Method	URI	Analysis Report	Time
141 ms	GET	/		2:08 PM (1 minute ago)
40 ms	GET	/		2:06 PM (3 minutes ago)

(ms) Click and drag along the graph to zoom in to the selected area

Timeline

0 50 100 150 200

141.15 ms

Show logs

/cloud_debugger.UpdateBreakpoints (0...

@0 ms

/

Summary

Name	RPCs	Total Duration (ms)
/	1	141
/cloud_debugger.UpdateBreakpoints	1	0

Details

Timestamp: 2018-06-19 (14:08:33.506)

Traced time: 0.317 ms

Untraced time: 140.833 ms

Log: [View](#)

Service: default

Version: 20180618111710.410528714744276865

HTTP method: GET

HTTP status code: 500

Google Cloud Platform stackdriver-test-project

Stackdriver Trace

Analysis reports [+ NEW REPORT](#) [DELETE](#)

Overview

Trace list

Analysis reports

Custom reports

Performance and bottlenecks

Create a new report to see the latency distribution for your application and identify performance bottlenecks. To learn more, see [our documentation](#).

[Create a report](#)

Analysis reports

New report request

Request URI

Only analyze requests that result in remote procedure calls ?

HTTP method

HTTP status

Report name (optional)

Service (App Engine)

Version

Time range

Start

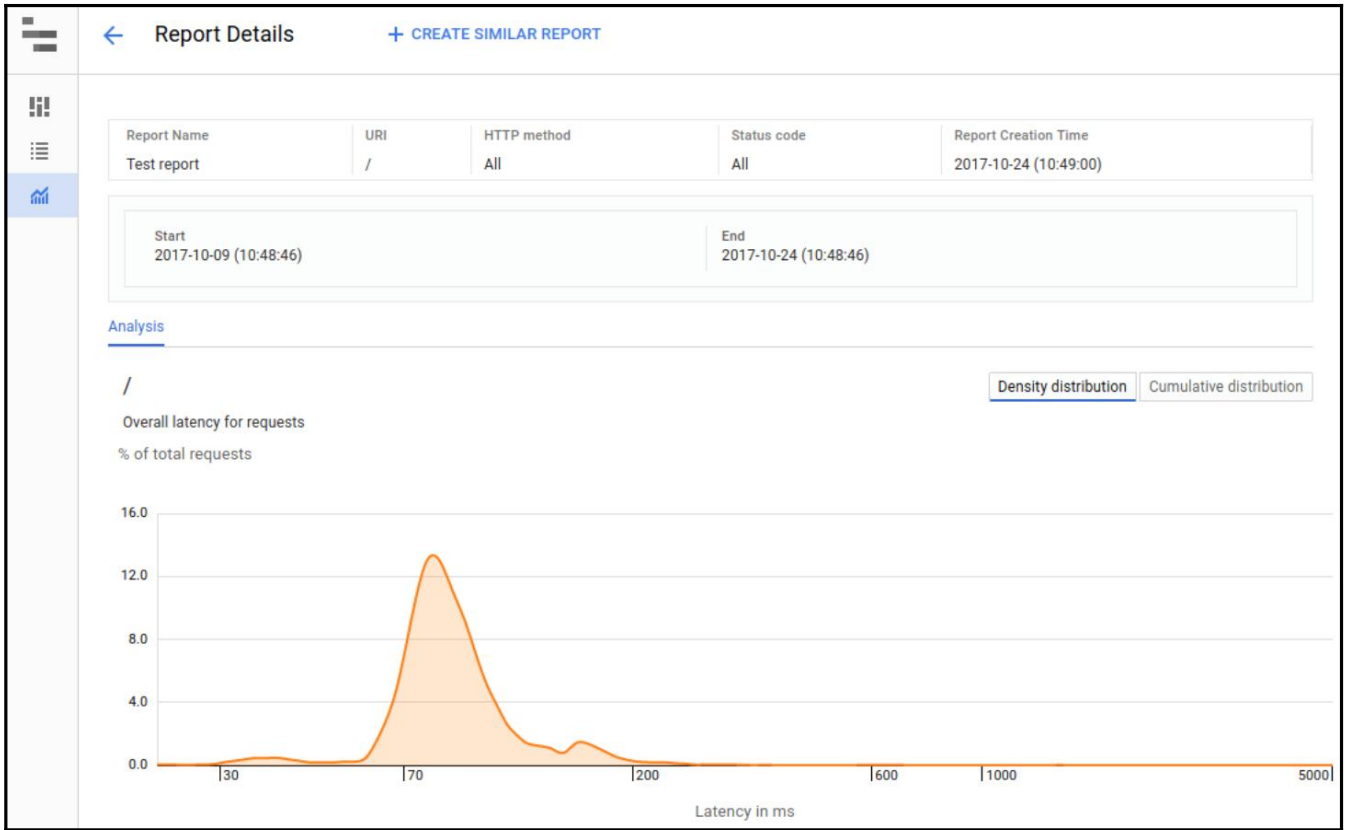
End

Compare to baseline

Submit

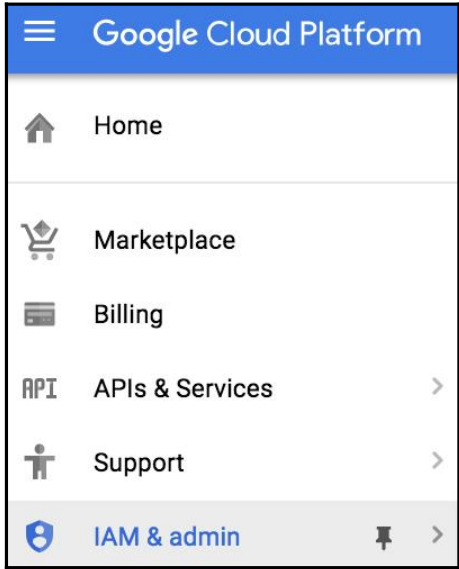
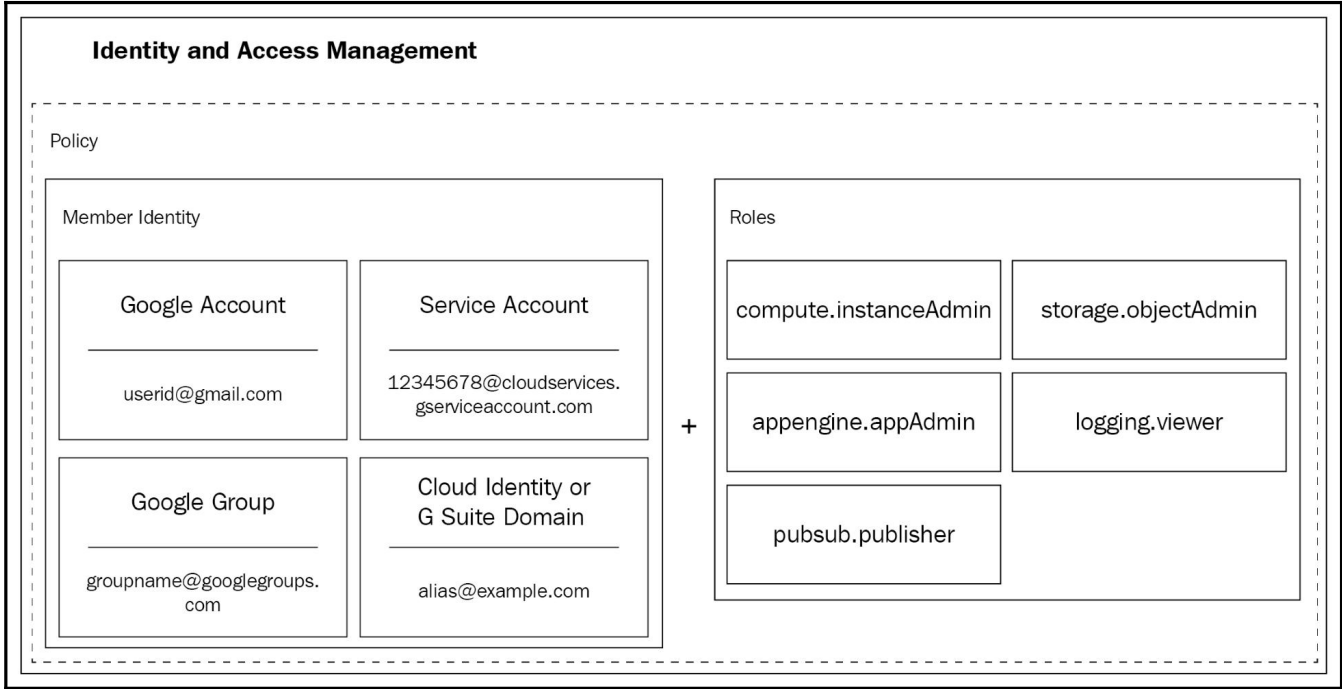
Cancel

The request will not produce a useful report because it had less than 100 traces. Create a new report with a longer time range or less-restrictive filter.



Chapter 07: Google Cloud Platform Identity and Security

Operational Security			
Intrusion Detection	Reducing Insider Risk	Safe Employee Devices & Credentials	Safe Software Development
Internet Communication			
Google Front End	DoS Protection		
Storage Services			
Encryption at rest	Deletion of Data		
User Identity			
Authentication	Login Abuse Protection		
Service Deployment			
Access Management of End User Data	Encryption of Inter-Service Communication	Inter-Service Access Management	Service Identity, Integrity, Isolation
Hardware Infrastructure			
Secure Boot Stack and Machine Identity	Hardware Design and Provenance	Security of Physical Premises	



Google Cloud Platform Testproject1

IAM & admin IAM + ADD - REMOVE

Permissions for project "Testproject1"

These permissions affect this project and all of its resources. [Learn more](#)

View By: MEMBERS ROLES

Filter table

Type	Member ↑	Name	Role	Inheritance
<input type="checkbox"/>	918977199451-compute@developer.gserviceaccount.com	Compute Engine default service account	Editor	
<input type="checkbox"/>	918977199451@cloudservices.gserviceaccount.com	Google APIs Service Agent	Editor	
<input type="checkbox"/>	service-918977199451@container-engine-robot.iam.gserviceaccount.com	Kubernetes Engine Service Agent	Kubernetes Engine Service Agent	
<input type="checkbox"/>	service-918977199451@containerregistry.iam.gserviceaccount.com	Google Container Registry Service Agent	Editor	
<input type="checkbox"/>	service-918977199451@gcf-admin-robot.iam.gserviceaccount.com	Google Cloud Functions Service Agent	Cloud Functions Service Agent	
<input type="checkbox"/>	singh.ranjit@gmail.com	Ranjeet Singh	Owner	
<input type="checkbox"/>	testproject1-188021@appspot.gserviceaccount.com	App Engine app default service account	Editor	

Permissions for project "Testproject1"

These permissions affect this project and all of its resources. [Learn more](#)

View By: MEMBERS ROLES

Filter tree

Role / Member ↑	Name
<input type="checkbox"/> ▶ Cloud Functions Service Agent (1)	
<input type="checkbox"/> ▶ Editor (4)	
<input type="checkbox"/> ▶ Kubernetes Engine Service Agent (1)	
<input type="checkbox"/> ▶ Owner (1)	

Google Cloud Platform Testproject1

IAM & admin IAM + ADD - REMOVE

Add members to "Testproject1"

Add members, roles to "Testproject1" project

Enter one or more members below. Then select a role for these members to grant them access to your resources. Multiple roles allowed. [Learn more](#)

New members

Must select at least one member to add

Select a role

+ ADD ANOTHER ROLE

SAVE **CANCEL**

Select a role

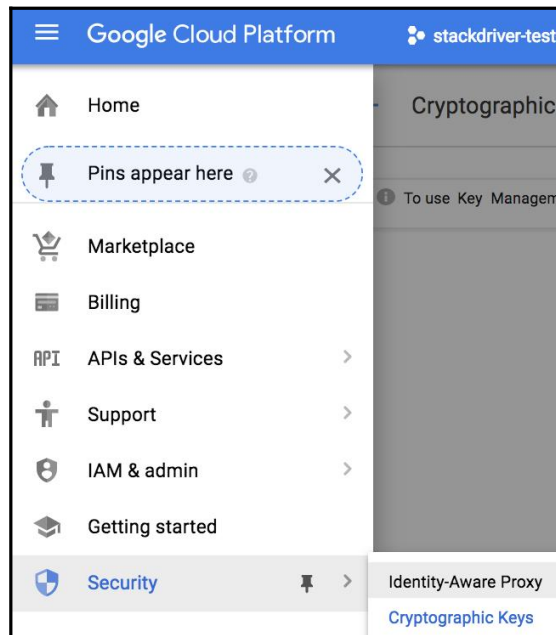
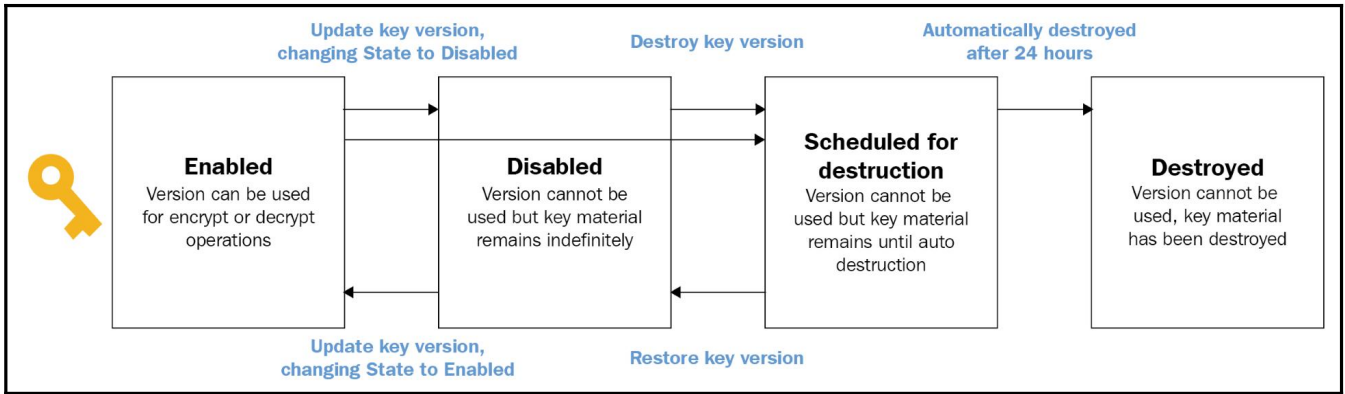
Type to filter

- Cloud Services
- Cloud Spanner
- Cloud SQL
- Cloud Tasks
- Cloud TPU
- Cloud Trace
- Compute Engine

- Compute Admin
- Compute Image User
- Compute Instance Admin (beta)
- Compute Instance Admin (v1)
- Compute Network Admin
- Compute Network User
- Compute Network Viewer
- Compute OS Admin Login

MANAGE ROLES

Compute Admin
Full control of all Compute Engine resources.



i To use Key Management you must enable Google Cloud Key Management Service (KMS) API, and setup billing. [Learn more](#)

← Create key ring

Key rings group keys together to keep them organized. In the next step, you'll create keys that are in this key ring. [Learn more](#)

Project name
stackdriver-test-project

Key ring name ?

MyfirstKey

Key ring location

global ▾

Create

Cancel

← Create key

A key is an AES 256-symmetric encryption key that can encrypt or decrypt data. Keys are used to protect some corpus of data in a consistent way. A key can have multiple versions, and one primary version which is used to encrypt new data. You can rotate a key to create a new version. [Learn more](#)

Project name
stackdriver-test-project

Key ring
MyfirstKey

Key name ?

Rotation period ?

Starting on

Rotation summary: Every 90 days starting on Oct 23, 2018

Labels ?

Create

Keys for "MyfirstKey" key ring

A crypto key is an AES 256-bit symmetric encryption key that can encrypt or decrypt data. You can rotate keys to change their material and create new key versions. To encrypt or decrypt data with a key, use the Cloud KMS API. [Learn more](#)

<input type="checkbox"/> Name ^	Status ?	Next Rotation ?
<input type="checkbox"/> key1	✔ Available	Oct 23, 2018

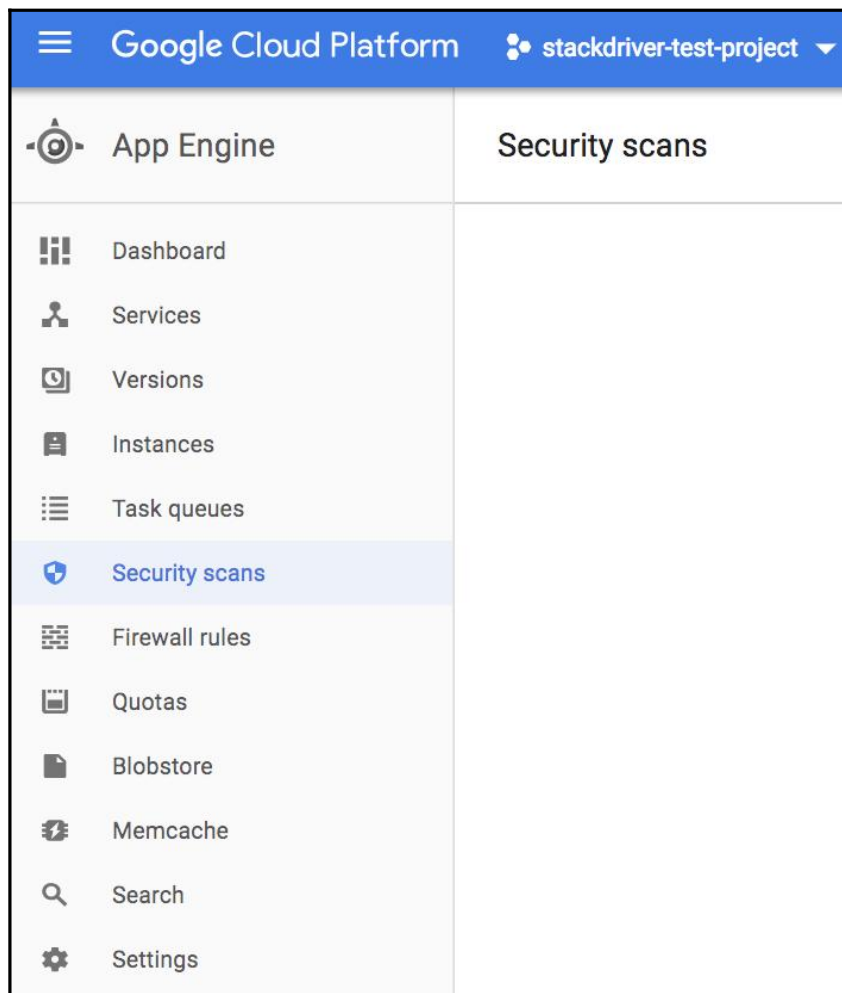
Rotate key key1

When you rotate a key, this immediately happens:

- A new version will be created and made the primary version.
- New data will be encrypted with the new version.

Older versions can be used to decrypt data. Data encrypted using older key versions will remain so unless explicitly re-encrypted.

[CANCEL](#) [ROTATE](#)



Security scans

Create a new scan

Name

Starting URLs [?](#)
List one or more apps hosted on App Engine Standard or Flexible environment.

https://stackdriver-test-123.appspot.com ×

Excluded URLs (Optional) [?](#)
Use patterns to match more than one URL. [Learn more](#)

Authentication [?](#)

None ▼

Schedule [?](#)

Never ▼

User agent [?](#)

Chrome on Linux ▼

Maximum scan speed (QPS) [?](#)

15 ▼

[^](#) [Less](#)

[Create](#)

Security scans

[+ NEW SCAN](#) [▶ RUN](#) [✎ EDIT](#) [🗑 DELETE](#)

Scan_stackdriver-test-123.appspot.com_448

[Results](#) [URLs tested](#) [Details](#)

ⓘ You have not run this scan yet [Run scan](#)

Security scans

[NEW SCAN](#) [STOP](#) [EDIT](#) [DELETE](#)

Scan_stackdriver-test-123.appspot.com_448

7/25/18, 11:16 AM (Scanning now...)

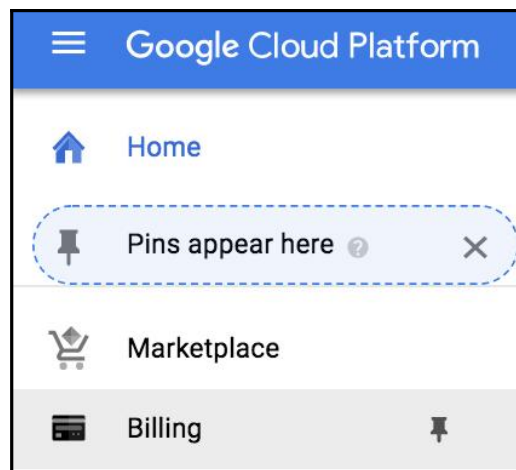
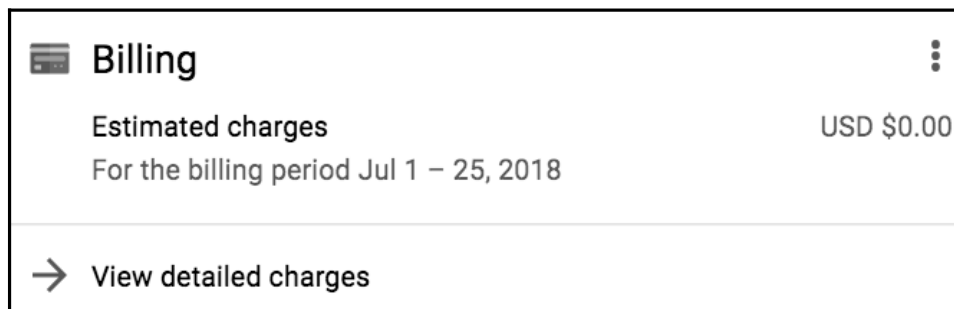
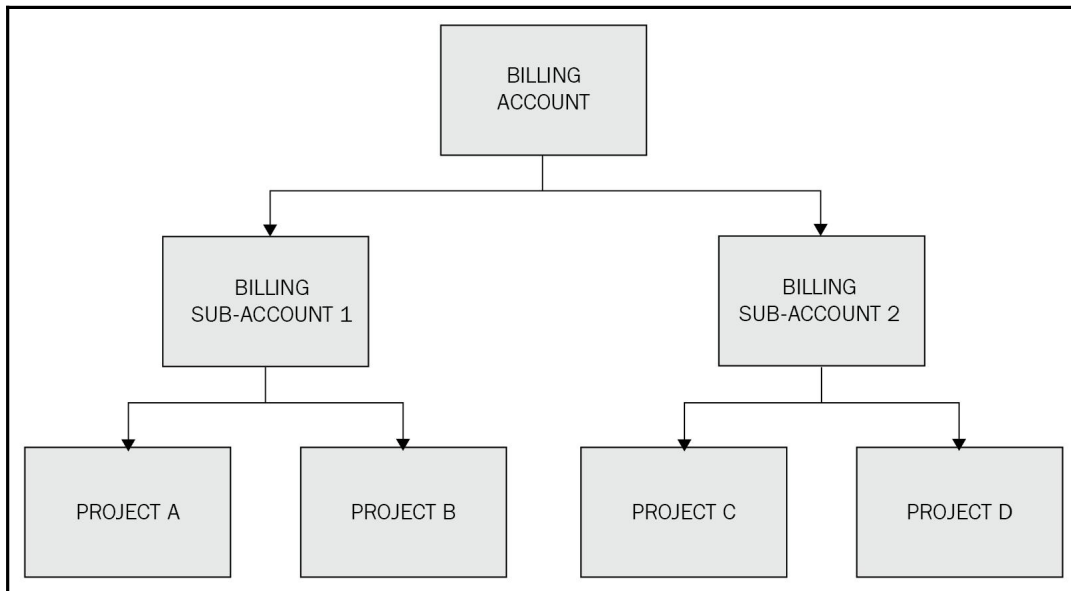
Scan date Jul 25, 2018 11:16 AM	URLs tested Scanning...	Duration 1 min 21 sec	Vulnerabilities found 0
--	-----------------------------------	---------------------------------	-----------------------------------

[Results](#) [URLs tested](#) [Details](#)



✔ Found no vulnerabilities.

Chapter 08: Google Cloud Platform Billing



Google Cloud Platform


Billing

Overview My Billing Account [RENAME BILLING ACCOUNT](#) [CLOSE BILLING ACCOUNT](#)


Overview [Billing account overview](#) [Payment overview](#)

Billing account ID: 01617F-B8843D-AA20F0

Credits



\$270.94
Credits remaining
Out of \$300.00

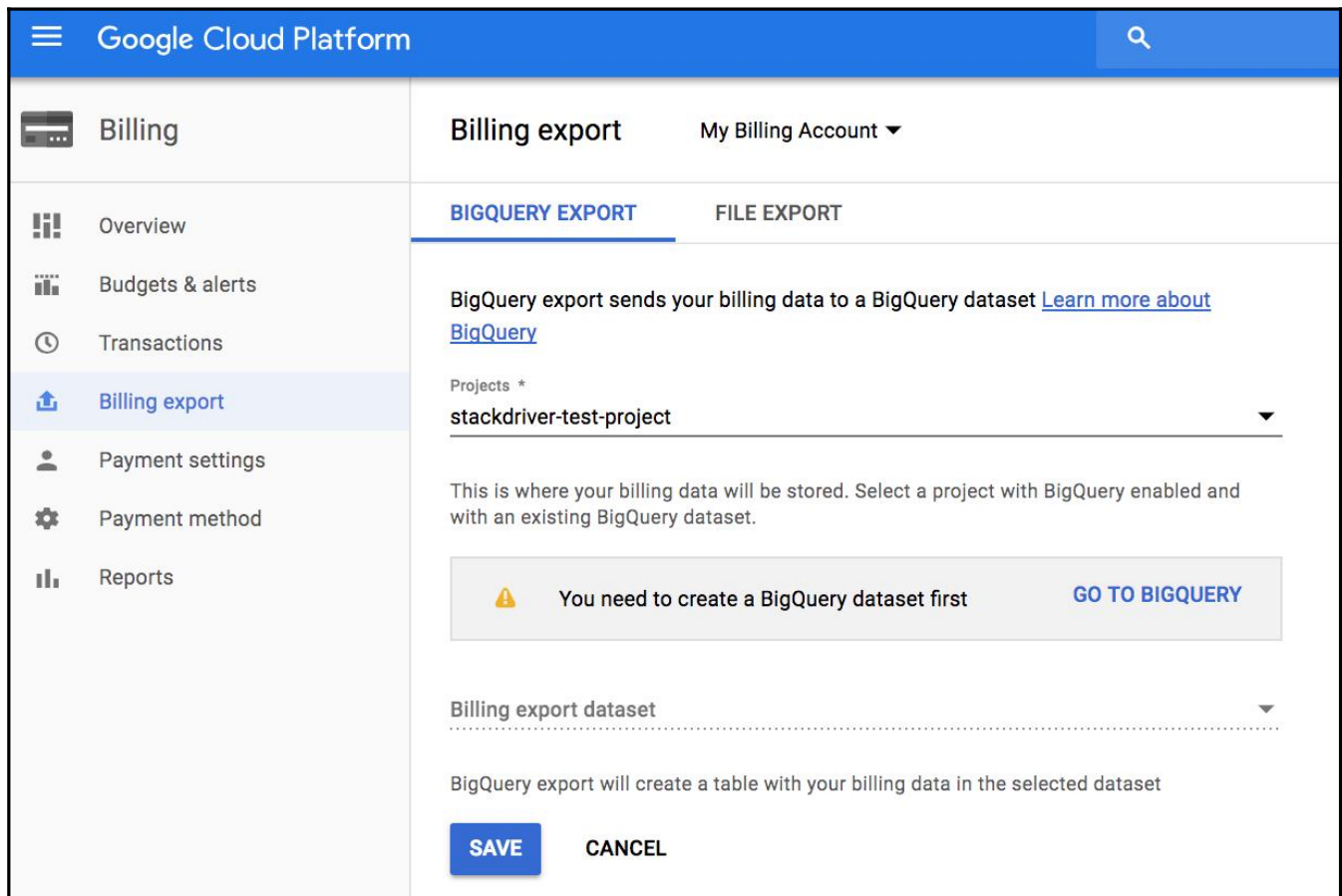
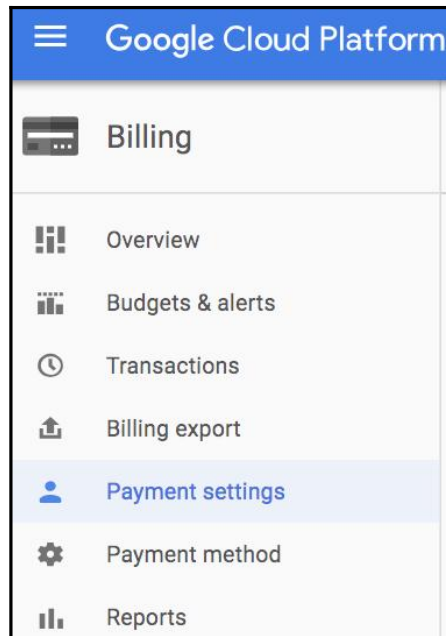


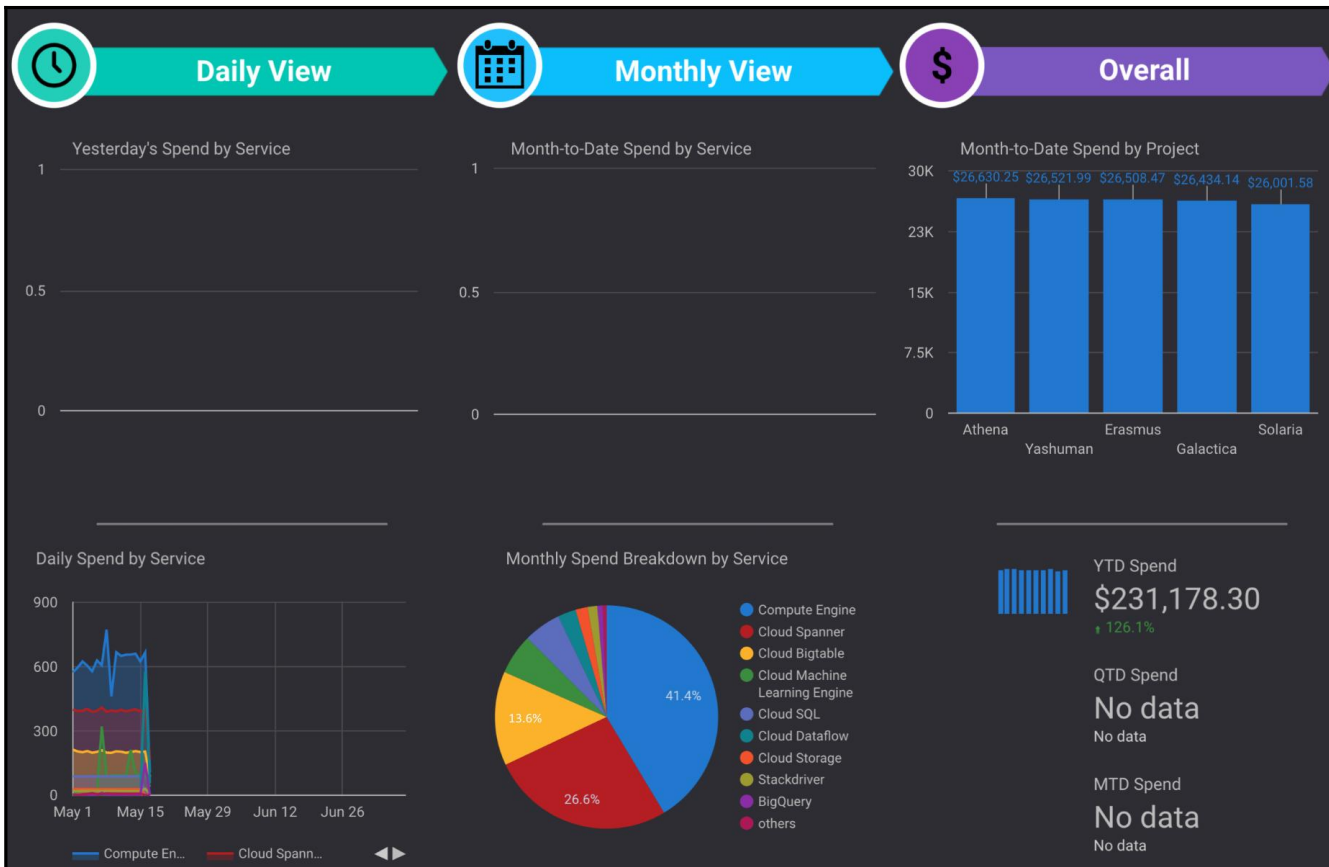
316
Days remaining
Ends Jun 6, 2019

Projects linked to this billing account

Project name	Project ID
My First Project	premium-bearing-206421
KubeCluster	kubecluster-206421
stackdriver-test-project	stackdriver-test-123

Overview	ALL BILLING ACCOUNTS
	My Billing Account
Billing account overview	
Billing account ID: 01	Manage billing accounts





←

Create budget

Set budget

Your budget can be a specified amount or based on previous spend. Budget spend resets the first day of each month to \$0.00.

Budget name

Project or billing account

Select a project or billing account for your budget to track

Budget amount

Set a budget by entering a specified amount or by selecting last month's spend

Include credit as a budget expense ?

Set budget alerts

Send email alerts to billing admins and users after spend exceeds a percent of the budget or a specified amount. Alerts are based on estimated expenses, so actual expenses may be greater.

Percent of budget	Amount	
50	%	\$ 50.00
90	%	\$ 90.00
100	%	\$ 100.00

+ Add item

Manage notifications

You can use Pub/Sub notifications to programmatically receive spend updates on this budget.

Connect a Pub/Sub topic to this budget ?

Save
Cancel


Budgets & alerts

My Billing Account ▾

[+ CREATE BUDGET](#)

[🗑 DELETE](#)

Budgets track expenses within a Google Cloud Platform project or billing account. Your budget can be a specified amount or based on previous spend. You can set alerts to notify billing admins and users when a budget goes over a specified amount.

<input type="checkbox"/> Budget name ^	Budget type	Applies to	Trigger alerts at	Spend and budget amount
<input type="checkbox"/> MyFirstBudget	Specified amount	This billing account	50%, 90%, and 100%	 \$6.63 / \$100.00 <small>Includes \$6.63 in credit usage</small>

Chapter 09: Google Cloud Platform Tools

TOOLS

- Cloud Build >
- Container Registry >
- Source Repositories >
- Deployment Manager >
- Endpoints >

Deployments [+ DEPLOY MARKETPLACE SOLUTION](#)

The screenshot displays the Google Cloud Platform Marketplace interface. At the top, there is a navigation bar with the Google Cloud Platform logo and a search bar. Below the navigation bar, there is a large banner with the text "Explore, launch, and manage solutions in just a few clicks" and "Marketplace lets you quickly deploy software on Google Cloud Platform". A search bar is also present in the banner area.

The main content area is divided into several sections:

- Recommended:** A grid of six solution cards, each with an icon, name, provider, description, and type. The solutions are: Compute Engine (Google), Geocoding API (Google), Maps JavaScript API (Google), App Engine (Google), WordPress (Google Click to Deploy), and Places API (Google).
- Featured:** A grid of five solution cards, each with an icon, name, provider, description, and type. The solutions are: SAP HANA, express edition (server + applications) (SAP), NVIDIA GPU Cloud image for Deep Learning and HPC (NVIDIA), VM-Series Next-Generation Firewall Bundle 2 (Palo Alto Networks, Inc.), Traffic Manager Enterprise Edition & WAF - 1 Gbps (Pulse Secure, LLC), and SendGrid Email API (SendGrid).
- Virtual machines:** A section at the bottom with a "VIEW ALL (529)" link and several small solution cards.

On the left side, there is a "Filter by" section with a list of categories and their counts: Virtual machines (529), Google Cloud Platform (38), APIs & services (326), Kubernetes apps (27), Container images (44), Datasets (101), Operating systems (48), Developer stacks (108), Networking (88), Databases (95), Developer tools (199), and Blog & CMS (100).

☰ Google Cloud Platform stackdriver-test-project
🔍

← New WordPress deployment

Deployment name

Zone ?

Machine Type ?

1 vCPU

3.75 GB memory

Customize

Upgrade your account to create instances with up to 96 cores

Administrator Email ?

Install phpMyAdmin ?

 Install phpMyAdmin ?

Boot Disk

Disk type ?

Disk size in GB ?

Networking

Network name ?

Subnetwork name ?

Firewall ?

Add tags and firewall rules to allow specific network traffic from the Internet

 Allow HTTP traffic
 Allow HTTPS traffic

Deploy

WordPress overview

Solution provided by Google Click To Deploy

WordPress will be deployed to a single Compute Engine instance.

Software

Operating System	Debian 8
Software	Apache HTTP Server (2.4.10) MySQL (5.5.58) PHP (5.6.30)

Documentation

[Get started with WordPress](#) ↗

Learn about Getting Started with WordPress

[Get started with PHP](#) ↗

Learn about Getting Started with PHP

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By using this product, you understand that certain account and usage information may be shared with Google Click To Deploy for the purposes of sales attribution, performance analysis, and support. ?

Google is providing this software or service "as-is" and will not perform any ongoing maintenance. Ongoing upgrades and maintenance are your responsibility.

Google Cloud Platform stackdriver-test-project

Deployment Manager ← wordpress-1 STOP DELETE

Deployments

Type registry

wordpress-1 is being deployed

- Overview - wordpress-1
 - wordpress wordpress.jinja
 - mysql-password password.py
 - wordpress-password password.py
 - wordpressdb-password password.py
 - wordpress-1 vm_instance.py
 - wordpress-1-vm vm instance
 - wordpress-1-tcp-80 firewall
 - wordpress-1-tcp-443 firewall
 - deployment_coordinator deployment_coordinator.jinja
 - wordpress-1-coord vm instance

WordPress
Solution provided by Google Click To Deploy

Site address	Pending
Instance	Pending
Instance zone	Pending
WordPress administrator username	admin
WordPress admin password	Pending
MySQL password	Pending
phpMyAdmin installed	Pending
phpMyAdmin username	root

[More about the software](#)

Get started with WordPress
You will be able to use WordPress after the deployment is completed.

Documentation

- [Get started with WordPress](#) [↗](#)
Learn about Getting Started with WordPress
- [Get started with PHP](#) [↗](#)
Learn about Getting Started with PHP

Support

Google does not offer support for this solution. However, community support is available on [Stack Overflow](#) [↗](#). Additional support is available from [WordPress](#) [↗](#).

- [Go to Stack Overflow](#) [↗](#)
- [Go to WordPress](#) [↗](#)

Template properties

[More](#)

Deployments + DEPLOY MARKETPLACE SOLUTION DELETE

Filter by label or name

<input checked="" type="checkbox"/> Name ^	Created on	Last modified	Labels
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> wordpress-1	1 minute ago	Just now	cloud-mark... : click-to-d... More

```
[$ gcloud init
Welcome! This command will take you through the configuration of gcloud.

Settings from your current configuration [trsingh] are:
core:
  account ██████████ gmail.com
  disable_usage_reporting: 'True'
  project: stackdriver-test-123

Pick configuration to use:
[1] Re-initialize this configuration [trsingh] with new settings
[2] Create a new configuration
[3] Switch to and re-initialize existing configuration: [default]
Please enter your numeric choice: █
```

```
[$ gcloud config list
[core]
account = ██████████@gmail.com
disable_usage_reporting = True

Your active configuration is: [default]
$ █
```

```
|$ gcloud components list
```

```
Your current Cloud SDK version is: 213.0.0
```

```
The latest available version is: 213.0.0
```

Components			
Status	Name	ID	Size
Not Installed	App Engine Go Extensions	app-engine-go	152.8 MiB
Not Installed	Cloud Bigtable Command Line Tool	cbt	4.8 MiB
Not Installed	Cloud Bigtable Emulator	bigtable	4.3 MiB
Not Installed	Cloud Datalab Command Line Tool	datalab	< 1 MiB
Not Installed	Cloud Datastore Emulator	cloud-datastore-emulator	17.4 MiB
Not Installed	Cloud Datastore Emulator (Legacy)	gcd-emulator	38.1 MiB
Not Installed	Cloud Pub/Sub Emulator	pubsub-emulator	33.4 MiB
Not Installed	Cloud SQL Proxy	cloud_sql_proxy	2.5 MiB
Not Installed	Emulator Reverse Proxy	emulator-reverse-proxy	14.5 MiB
Not Installed	Google Cloud Build Local Builder	cloud-build-local	4.4 MiB
Not Installed	Google Container Local Builder	container-builder-local	4.4 MiB
Not Installed	Google Container Registry's Docker credential helper	docker-credential-gcr	1.8 MiB
Not Installed	gcloud Beta Commands	beta	< 1 MiB
Not Installed	gcloud app Java Extensions	app-engine-java	118.6 MiB
Not Installed	gcloud app PHP Extensions	app-engine-php	21.9 MiB
Not Installed	gcloud app Python Extensions	app-engine-python	6.2 MiB
Not Installed	gcloud app Python Extensions (Extra Libraries)	app-engine-python-extras	28.5 MiB
Installed	BigQuery Command Line Tool	bq	< 1 MiB
Installed	Cloud SDK Core Libraries	core	8.3 MiB
Installed	Cloud Storage Command Line Tool	gsutil	3.6 MiB
Installed	gcloud Alpha Commands	alpha	< 1 MiB
Installed	kubectl	kubectl	< 1 MiB

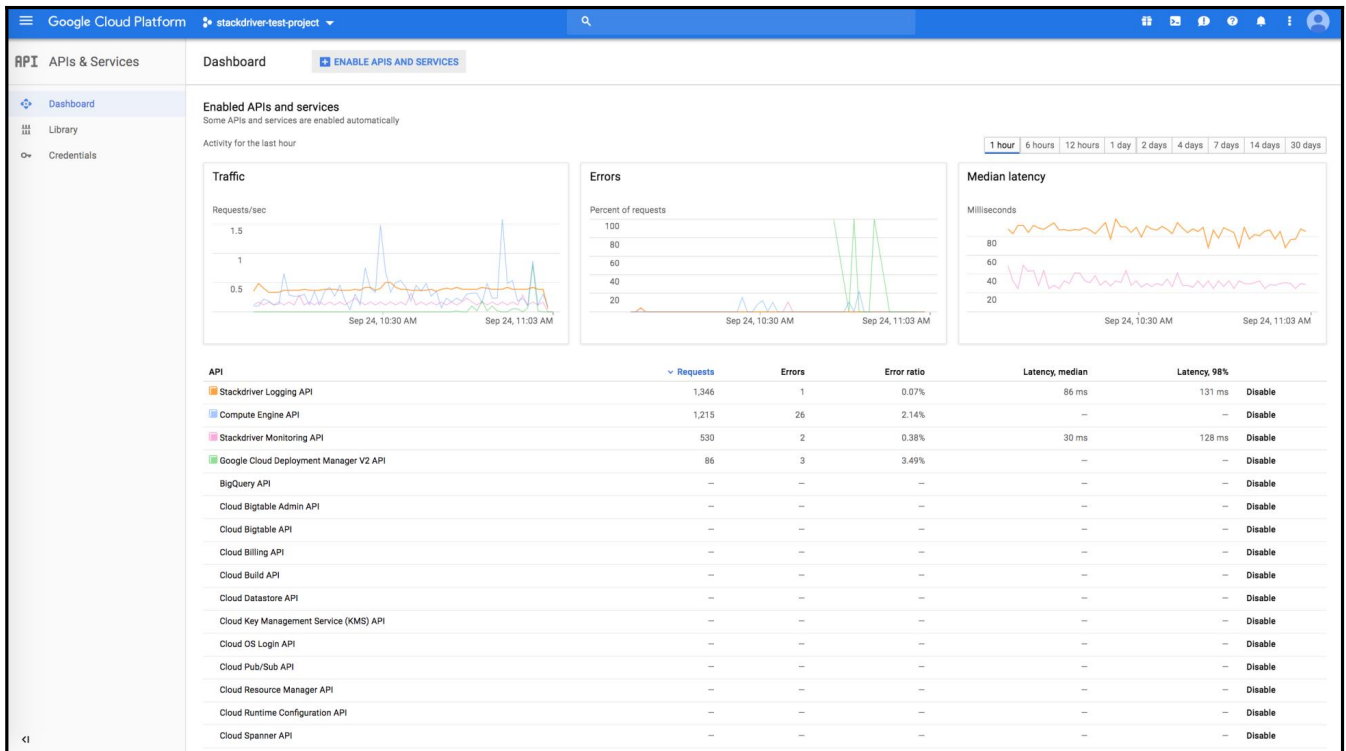
```
To install or remove components at your current SDK version [213.0.0], run:
```

```
$ gcloud components install COMPONENT_ID
```

```
$ gcloud components remove COMPONENT_ID
```

```
To update your SDK installation to the latest version [213.0.0], run:
```

```
$ gcloud components update
```



Google Cloud Platform **My First Project**

API Library

Compute Engine API
Google

Compute Engine API

ENABLE [TRY THIS API](#)

