



CLOUD COMPUTING APPLICATIONS

IaaS Providers: Google

Prof. Roy Campbell

Google

- Leads online advertising
- Small and mid-size businesses
- Does not change to meet customer needs
- Does rapidly innovate
- Values data, including real-time data
- Champions Cloud (not hybrid), web-scale infrastructure
- We're not like you and you should want to be more like us

Platform as a Service (PaaS)

- Google App Engine: Python, Java, PHP and Go, Autoscaling
- Shared hardware
- Cloud storage (its object store)
- NoSQL Cloud data store
- MySQL-based relational Cloud SQL
- Apache Hadoop
- Cloud Pub/Sub
- Cloud Endpoints
- Business analytics baPaaS
including Big Query and Prediction API

Infrastructure as a Service (IaaS)

- Google Compute Engine

Application Services

- Maps, Translate, Forms, Sites (wiki), Shopping, Keep

Build at the speed of Google

Google Cloud Platform enables developers to build, test and deploy applications on Google's highly-scalable and reliable infrastructure. Choose from computing, storage and application services for your web, mobile and backend solutions.

[Go to Console](#) or [See the FAQ](#)

- ✓ Platform as a service
- ✓ Virtual machines
- ✓ Big data solutions
- ✓ SQL and NoSQL databases
- ✓ Object storage
- ✓ Application services

New! Compute Engine prices reduced by up to 30%

We've reduced compute pricing by up to 30% and introduced a new class of virtual machine, Preemptible VMs, for short-duration batch jobs that is up to 70% cheaper than standard virtual machines.

[Learn more »](#)



console.developers.google.com

Google Developers Console

Select a project

Upgrade your account. Only \$500.00 and 52 days remain in your free trial.

Create Project

Filter by label, name or id

Columns

Edit labels

<input type="checkbox"/>	Project Name	Project ID	Requests ?	Errors ?	Charges ?		
<input type="checkbox"/>	API Project	api-project-606541937514	0	0	—		
<input type="checkbox"/>	My Project	peerless-truck-694	0	0	—		

Cloud Computing Applications - Roy Campbell

7

Google Developers Console

My Project

Upgrade your account. Only \$500.00 and 52 days remain in your free trial.

Overview

Permissions

APIs & auth

Monitoring

Source Code

Deploy & Manage

Compute

Networking

Storage


Big Data

Project ID: peerless-truck-694 Project Number: 55081951518

Estimated charges this month: \$0.00


Project Dashboard

Need help getting started with your free trial? [Ask us a question](#)




Deploy a Hello World app

App Engine lets you build and deploy an app without worrying about the underlying infrastructure. Learn how to use App Engine to create a Hello World app and deploy it in the cloud.




Try out the VM quickstart

Spin up virtual machines using Google Compute Engine, NodeJS, and MongoDB to create a guestbook app




Enable Google APIs for use in your apps

Let your apps take advantage of Google's products and services




Create a Cloud Storage bucket

Store your unstructured data safely and with high availability using Google Cloud Storage



Try BigQuery with population data

Run queries against huge public data sets to see how BigQuery can help you analyze your own data



Start with a prebuilt solution

Launch your favorite software packages on Google Cloud Platform with just a few clicks

<<

Cloud Computing Applications - Roy Campbell

8

- Overview
- Permissions
- APIs & auth
- Monitoring
- Source Code
- Deploy & Manage
- Compute
- App Engine
- Compute Engine
- VM instances
- Instance groups
- Instance templates
- Disks
- Snapshots
- Images
- Networks
- Network load balancing
- HTTP load balancing
- Metadata
- Zones
- Operations
- Quotas
- Settings
- Container Engine
- Networking
- Storage
- Big Data
- <<

New instance

New instance group

Reset

Start

Stop

Delete

VM instances

CPU utilization ▾

1 hour

6h

12h

1 day

2d

4d

7d

14d

30d

CPU

...

<input type="checkbox"/>	Name ^	Zone	Disk	Network	In use by	External IP	Connect
<input type="checkbox"/>	✔️ instance-1	us-central1-f	instance-1	default		130.211.126.70 📄	SSH ⋮

Activities (Idle) 🔄 - ✕

Create VM instance "instance-1" and its boot disk "instance-1" ✔️

Initializing Compute Engine for project My Project ✔️

See all activity 9