



Google Cloud Compute Services

Introduction to Compute Engine
Creating and Managing Virtual Machine Instances
Introduction to Kubernetes Engine
Introduction to App Engine
Introduction to Cloud Functions

Introduction to Compute Engine

Compute Engine is an Infrastructure as a Service (IaaS) offering that allows users to create and manage virtual machines (VMs) in the cloud. Compute Engine provides scalable and flexible computing resources, enabling users to run their applications and workloads efficiently.



**Google
Compute
Engine**

Virtual Machine Instances

A virtual machine is the virtualization or emulation of a computer system. Virtual machines are based on computer architectures and provide the

Google Cloud

My First Project

Search (/) for resources, docs, products, and more

Search

Create an instance

To create a VM instance, select one of the options:

New VM instance

Create a single VM instance from scratch

New VM instance from template

Create a single VM instance from an existing template

New VM instance from machine image

Create a single VM instance from an existing machine image

Marketplace

Deploy a ready-to-go solution onto a VM instance

Name *

instance-2

Labels

+ ADD LABELS

Region *

us-central1 (Iowa)

Region is permanent

Zone *

us-central1-a

Zone is permanent

Machine configuration

General purpose

Compute optimized

Memory optimized

GPUs

Machine types for common workloads, optimized for cost and flexibility

Series

E2

CPU platform selection based on availability

Machine type

Choose a machine type with preset amounts of vCPUs and memory that suit most workloads. Or, you can create a custom machine for your workload's particular needs. [Learn](#)

Pricing summary

Monthly estimate

\$25.46

That's about \$0.03 hourly

Pay for what you use: no upfront costs and per second billing

Item	Monthly estimate
2 vCPU + 4 GB memory	\$24.46
10 GB balanced persistent disk	\$1.00
Total	\$25.46

[Compute Engine pricing](#)

[LESS](#)

CREATE

CANCEL

[EQUIVALENT CODE](#)

Preemptible Instances



Create an instance

To create a VM instance, select one of the options:



New VM instance

Create a single VM instance from scratch



New VM instance from template

Create a single VM instance from an existing template



New VM instance from machine image

Create a single VM instance from an existing machine image



Marketplace

Deploy a ready-to-go solution onto a VM instance

Metadata

You can set custom metadata for an instance or project outside of the server-defined metadata. This is useful for passing in arbitrary values to your project or instance that can be queried by your code on the instance. [Learn more](#)

+ ADD ITEM

Availability policies

VM provisioning model

Standard

Ideal for most workloads

Spot

Ideal for fault-tolerant workloads

On VM termination

Stop

Choose what happens to your VM when it's preempted or reaches its time limit

On host maintenance

Terminate VM instance

When Compute Engine performs periodic infrastructure maintenance it can migrate your VM instances to other hardware without downtime

Automatic restart

CREATE

CANCEL

↔ EQUIVALENT CODE

Persistent Disks



Create a disk

☒ Single zone

☐ Regional

Create a failover replica in the same region for high availability. Storage and data replication is provided between both zones. [Learn more](#)

Region *

us-central1 (Iowa)



Zone *

us-central1-a



Source

Create a blank disk, apply a bootable disk image, or restore a snapshot of another disk in this project.

Disk source type *

Blank disk



Disk settings

Disk type *

Balanced persistent disk



[COMPARE DISK TYPES](#)

Size *

100

GB



CREATE

CANCEL

EQUIVALENT COMMAND LINE



Images
[+] CREATE IMAGE
 REFRESH

IMAGES

IMAGE IMPORT HISTORY

Filter Enter property name or value

<input type="checkbox"/>	Status	Name
<input type="checkbox"/>	✓	c0-deeplearning-common-cpu-v20230501-debian-10
<input type="checkbox"/>	✓	c0-deeplearning-common-cpu-v20230501-debian-10-py37
<input type="checkbox"/>	✓	c0-deeplearning-common-cu113-v20230501-debian-10
<input type="checkbox"/>	✓	c0-deeplearning-common-cu113-v20230501-debian-10-py37
<input type="checkbox"/>	✓	c1-deeplearning-tf-1-15-cu110-v20221107-debian-10

[←](#) Create an image

Name *

image-1

?

Name is permanent

Source *

Disk

▼

?

Source disk *

▼

?

Location ?

☐ Multi-regional

☐ Regional

Select location ▼

Family

?

Description

The screenshot shows the 'INFO PANEL' interface. At the top, there's a header bar with 'INFO PANEL' on the left and a 'LEARN' button with a graduation cap icon on the right. Below the header, there's a horizontal separator line. The main area contains a list of items. Each item has a category label on the left and a corresponding image on the right. The categories are 'ecated images', 'Actions', and three unlabeled sections. The images are small, square thumbnails. The first section shows four items, each with a different colored background (yellow, green, blue, red). The second section shows one item with a yellow background. The third section shows two items, both with yellow backgrounds. The fourth section shows one item with a yellow background. The fifth section shows one item with a yellow background.



Create a snapshot

.



.



Snapshots are backups of persistent disks. They're commonly used to recover, transfer, or make data accessible to other resources in your project. [Learn more](#)

Name *

snapshot-2

Name is permanent

Description

Source disk *



Type



Snapshot

Best for long-term backup and disaster recovery



Archive snapshot

Best for cost-efficient data retention

Location

There may be a network transfer fee if you choose to store this snapshot in a location different

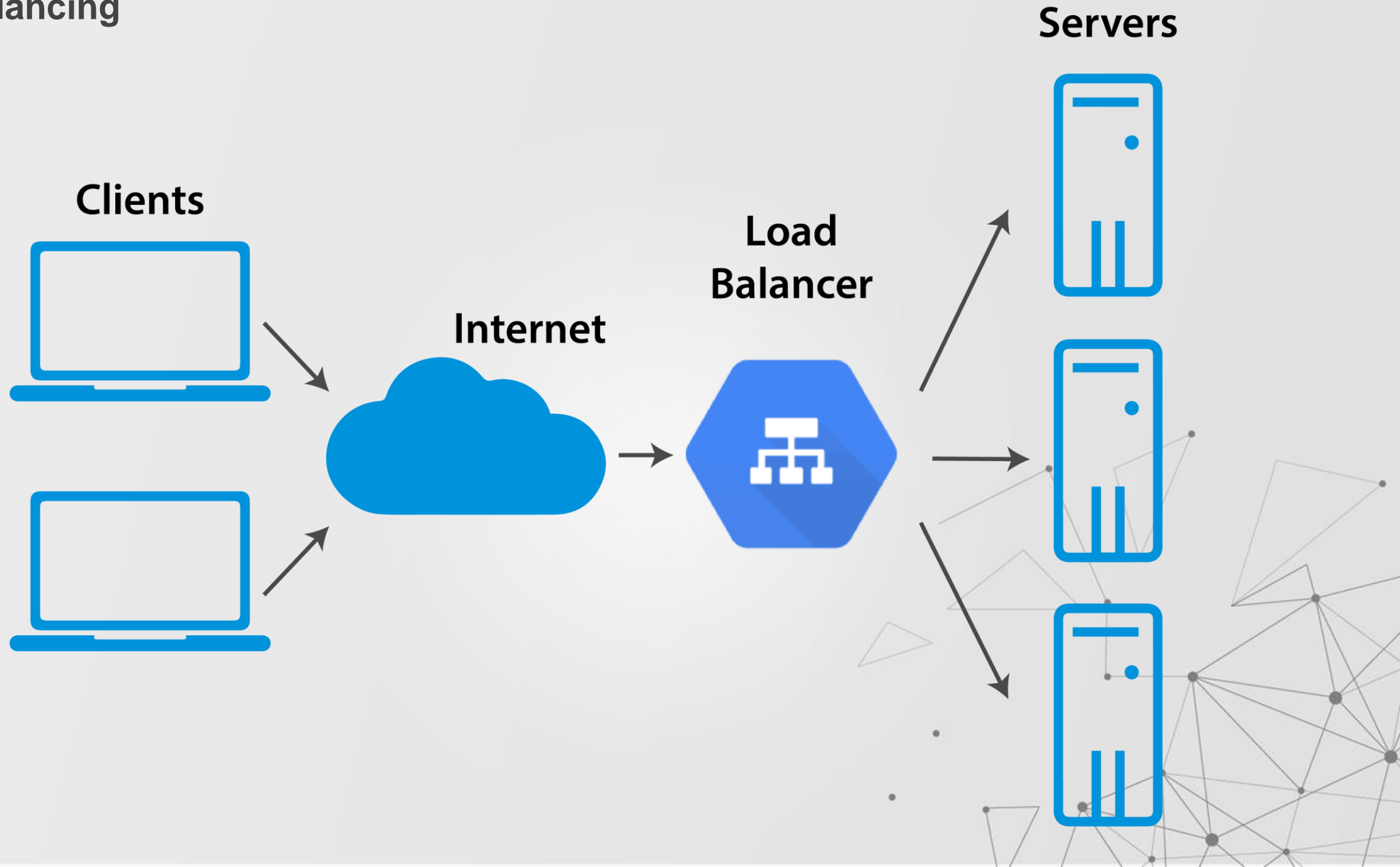
CREATE

CANCEL

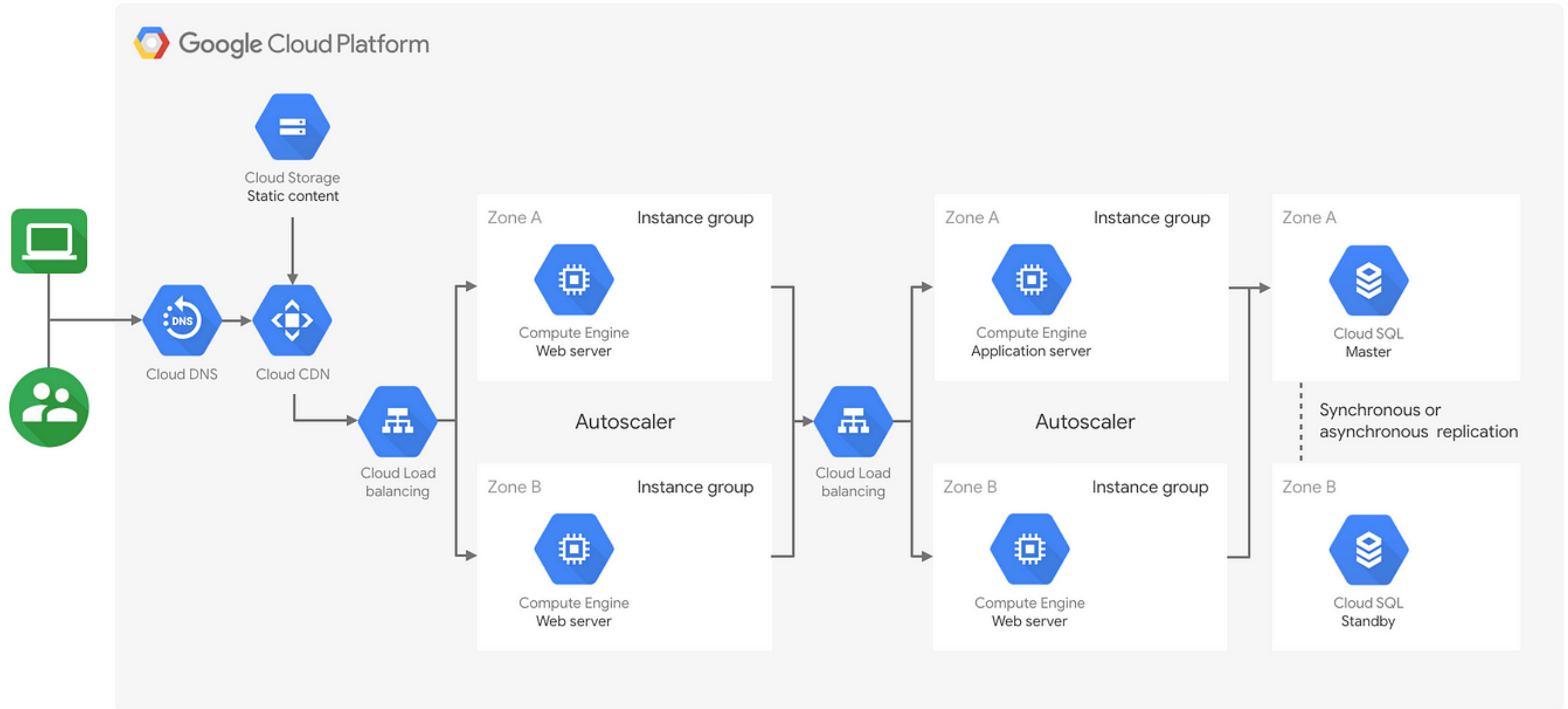
EQUIVALENT COMMAND LINE



Load Balancing



Autoscaling



In Conclusion

Flexibility, Scalability and Reliability

Provision and Manage VMs

Access to Google's Global network infrastructure

An abstract network diagram in the bottom right corner, featuring a complex web of interconnected nodes and lines, with some nodes highlighted in black.