Google Cloud

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Our Topics

- *Choosing Google Cloud Platform*
- *Our Timeline and important milestones*
- *Goals For Decade*
- *Main Products*
- *Google Cloud Service*
- *Security*

Google Cloud Platform :

Google Cloud Platform is a suite of public cloud computing services offered by Google. The platform includes a range of hosted services for compute, storage and application development that run on Google hardware. Google Cloud Platform services can be accessed by software developers, cloud administrators and other enterprise IT professionals over the public internet or through a dedicated network connection.

Why Google Cloud

Key Reasons

- *Run your apps wherever you need them*
- *Make smarter decisions with the leading data platform*
- *Run on the cleanest cloud in the industry*
- *Operate confidently with advanced security tools*
- *Transform how you connect and collaborate*
- *Save money, increase efficiency, and optimize spend*
- *Get customized solutions for your specific industry*

Choosing Google Cloud

Multicloud

Open Cloud

Global Infrastructure

Security

Data Analytics

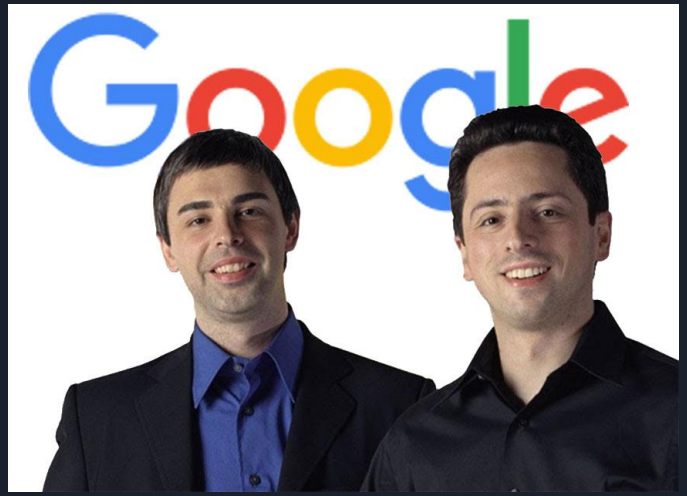
Foundation

World Headquarters

Mountain View, California, United States

1600 Amphitheatre Parkway
Mountain View, CA 94043

Larry Page, Sergey Brin were the founder of Google in 4th September,1998



Larry Page & Sergey Brin

Our Timeline

2008	• Google app engine announced in Preview
2010	• Google Cloud Storage launched
2011	• Google Cloud Sql is announced in preview
2012	• Google Compute engine is announced in preview
2013	• Google compute engine is released to GA
2014	• Google cloud sql became GA
2015	• Google cloud DNS became GA.
2016	• Google cloud function became available in alpha
2016	• Google Cloud Storage launched
2017	• Google Cloud Sql is announced in preview
2017	• Google acquires Kaggie • Google Cloud launched in Beta
2018	• Google cloud IOT became GA
2017	• Google cloud run released
2020.	• ----

Our Goal For The Decade :

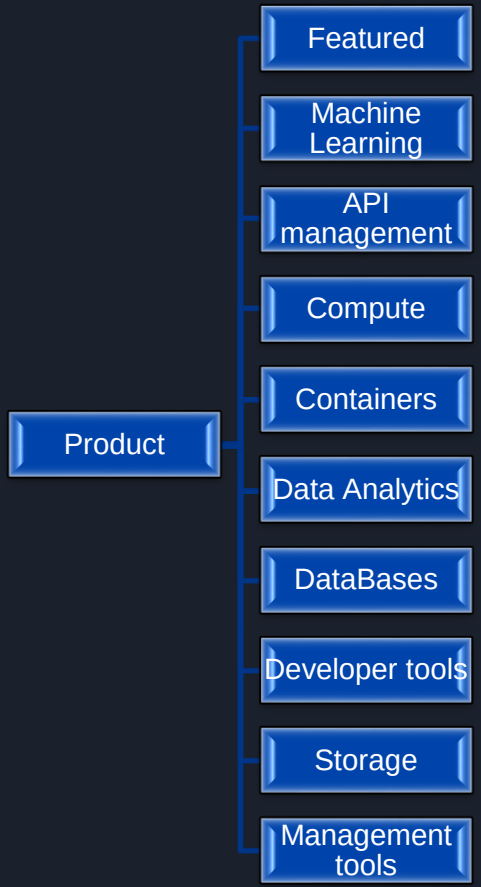
Ambition of this Decade

Enabling Everyone

Breakthrough AI research to dramatically increase building efficiency

Help over 500 cities to reduce 1 gigaton of carbon emissions annually by 2030

Our Products :


Product
Featured
Machine Learning
API management
Compute
Containers
Data Analytics
DataBases
Developer tools
Storage
Management tools

Compute Engine :

Google Compute Engine is Google's Infrastructure-as-a-Service (IaaS) virtual machine offering. It allows customers to use powerful virtual machines in the Cloud as server resources instead of acquiring and managing server hardware.

Key Features

Predefined machine types

Compute Engine offers predefined virtual machine configurations for every need from small general purpose instances to large memory-optimized instances with up to 11.5 TB of RAM or fast compute-optimized instances with up to 60 vCPUs.

Custom machine types

Create a virtual machine with a custom machine type that best fits your workloads. By tailoring a custom machine type to your specific needs, you can realize significant savings.

Confidential VMs

Confidential VMs are a breakthrough technology that allows you to encrypt data in use—while it's being processed. It is a simple, easy-to-use deployment that doesn't compromise on performance. You can collaborate with anyone, all while preserving the confidentiality of your data.

Other features of Compute Engine

Preemptible VMs

Live migration for VMs

Persistent disks

Local SSD

GPU accelerators

Reservations

OS patch management

Placement Policy

Google Compute Engine Unit

Google compute engine unit (GCEU), which is pronounced as GQ, is an abstraction of computing resources. According to Google, 2.75 GCEUs represent the minimum power of one logical core (a hardware hyper-thread) based on the Sandy Bridge platform. The GCEU was created by Anthony F. Voellm out of a need to compare the performance of virtual machines offered by Google.

Advantages

Easy integration

Scale globally as needed

Get more value

Cloud Storage :

Cloud storage is a cloud computing model that stores data on the Internet through a cloud computing provider who manages and operates data storage as a service. It's delivered on demand with just-in-time capacity and costs, and eliminates buying and managing your own data storage infrastructure.

Key Features

Automatic Backups

Automatic backups offer the convenience of configuring backup jobs to occur based on a preset time and date. The feature alleviates the need for the user to have to remember to manually run the job.

Incremental Backups

A feature that ensures only files which were modified, or newly created, since the last backup are saved to your cloud storage.

File Archiving

Without this feature, older files are automatically deleted and replaced by their newer versions. File archiving preserves older versions so that, if needed, they can be accessed.

Remote Access

A feature that allows you to access stored files from any computer whenever the need arises. All that's required are the login details for your cloud storage account.

File Security

Providers of secure online backups encrypt files during both transfer and storage; otherwise, your data is liable to be intercepted and read by malevolent parties.

File Sharing

The file sharing feature gives the ability for multiple users to access files, on your online account, from wherever they may be.

Cloud Storage Pricing

Pricing :

The pricing is most expensive for Multi-Regional to the cheapest for coldline as you would expect. One big difference in Google's archival products such as nearline and coldline is that we can retrieve the stored data in less than a second while for Amazon's Glacier (which is their archival solution) the retrieval time is (currently) a few hours.

Cloud Storage offers different products for accessibility and archival. Different offerings are:

- *Multi-Regional: Ideal for content that is required to be served across geographic regions.*
- *Regional: For use within a single region.*
- *Nearline: Used for data accessed less than once a month (Archival solution).*
- *Coldline: Used for data accessed less than once a year (Archival solution).*

Standard Storage

starting at $.02 per GB per month

Nearline Storage

starting at $.01 per GB per month

Coldline Storage

starting at $.004 per GB per month

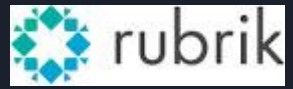
Archive Storage

starting at $.0012 per GB per month

Google Cloud Partners

Google Cloud partners integrate their industry-leading tools with Cloud Storage for enhanced support with everything from security and data transfer, to data backup and archive.

Backup, archival, and disaster recovery



File systems and gateways

Data transfer

Storage platforms

Customer-supplied encryption keys

BigQuery:

BigQuery is an enterprise data warehouse that solves this problem by enabling super-fast SQL queries using the processing power of Google's infrastructure. ... You can control access to both the project and your data based on your business needs, such as giving others the ability to view or query your data.

Key Features

BigQuery ML

BigQuery ML enables data scientists and data analysts to build and operationalize ML models on planet-scale structured or semi-structured data, directly inside BigQuery, using simple SQL—in a fraction of the time.

BigQuery GIS

BigQuery GIS uniquely combines the serverless architecture of BigQuery with native support for geospatial analysis, so you can augment your analytics workflows with location intelligence.

BigQuery BI Engine

BigQuery BI Engine is a blazing-fast in-memory analysis service for BigQuery that allows users to analyze large and complex datasets interactively with sub-second query response time and high concurrency.

Connected Sheets

Connected Sheets allows users to analyze billions of rows of live BigQuery data in Google Sheets without requiring SQL knowledge.

Other features of BigQuery

Serverless

Multi-cloud capabilities

Natural language processing

Real-time analytics

Automatic high availability

Standard SQL

Geo-expansion

Public datasets

Advantages

Gain insights with real-time and predictive analytics

Access data and share insights with ease

Protect your data and operate with trust

BigQuery Pricing

Pricing

BigQuery charges for data storage, streaming inserts, and querying data, but loading and exporting data are free of charge.

Item	Price
Storage	$0.02 per GB, per month $0.01 per GB, per month for long-term storage
Streaming inserts	$0.01 per 200 MB
Loading, copying, or exporting data; metadata operations	Free

Google Cloud Services

About Google Cloud services

The GCP covers the mainly following types of services:

- *Computing and hosting*
- *Storage*
- *Databases*
- *Networking*
- *Big data*
- *Machine learning*

Computing and hosting services

Google Cloud gives you options for computing and hosting. You can choose to do the following:

- *Work in a serverless environment.*
- *Use a managed application platform.*
- *Leverage container technologies to gain lots of flexibility.*
- *Build your own cloud-based infrastructure to have the most control and flexibility.*
- *You can imagine a spectrum where, at one end, you have most of the responsibilities for resource management and, at the other end, Google has most of those responsibilities.*

Storage services

Whatever your application, you'll probably need to store some media files, backups, or other file-like objects. Google Cloud provides a variety of storage services, including:

- *Consistent, scalable, large-capacity data storage in Cloud Storage. Cloud Storage comes in several flavors:*
- *Standard Cloud Storage provides maximum availability.*
- *Cloud Storage Nearline provides low-cost archival storage ideal for data accessed less than once a month.*
- *Cloud Storage Coldline provides even lower-cost archival storage ideal for data accessed less than once a quarter.*
- *Cloud Storage Archive provides the lowest-cost archival storage for backup and disaster recovery ideal for data you intend to access less than once a year.*

Database services

Google Cloud provides a variety of SQL and NoSQL database services:

- *A SQL database in Cloud SQL, which provides either MySQL or PostgreSQL databases.*
- *A fully managed, mission-critical, relational database service in Cloud Spanner that offers transactional consistency at global scale, schemas, SQL querying, and automatic, synchronous replication for high availability.*
- *Two options for NoSQL data storage: Firestore, for document-like data, and Cloud Bigtable, for tabular data.*
- *You can also choose to set up your preferred database technology on Compute Engine by using persistent disks. For example, you can set up MongoDB for NoSQL document storage.*

Google Cloud Security

GCP offer security products across GCP, Google Workspace, and Cloud Identity that help you meet your policy, regulatory, and business objectives. Here is a quick look at some of the top security use cases that customers can solve with Google Cloud..

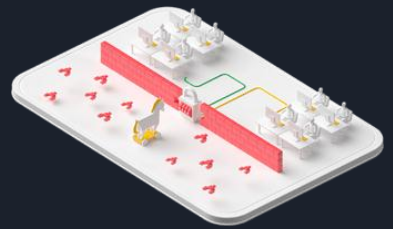
Infrastructure security

Rely on a secure-by-design infrastructure with hardening, configuration management, and patch and vulnerability management.

Multi-Layered Security

Operational & device security

Google BigQuery is a cloud-based big data analytics web service for processing very large read-only data sets. BigQuery was designed for analyzing data on the order of billions of rows, using a SQL-like syntax.



Internet communication

Communications over the Internet to our public cloud services are encrypted in transit. Our network and infrastructure have multiple layers of protection to defend our customers against Denial-of-service attacks.

Identity

Identities, users, and services are strongly authenticated with multiple factors. Access to sensitive data is protected by advanced tools like phishing-resistant Security Keys.

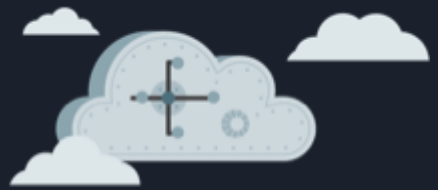
Storage services

Data stored on our infrastructure is automatically encrypted at rest and distributed for availability and reliability. This helps guard against unauthorized access and service interruptions.

Hardware infrastructure

From the physical premises to the purpose-built servers, networking equipment, and custom security chips to the low-level software stack running on every machine, our entire hardware infrastructure is Google-controlled, secured-built, and hardened.

Network Security



GCP helps to secure the network with products that define and enforce your perimeter and allow for network segmentation, remote access, and DoS defense.

Endpoint security

GCP helps to secure endpoints and prevent compromise with device hardening, device management, and patch and vulnerability management.

Data security

Make sensitive data more secure with data discovery, data governance, and controls to prevent loss, leakage, and exfiltration.

Features

Encryption at rest

Encryption at rest refers to the encryption of data stored on a disk or backup. Google Cloud is the first major cloud provider who provides encryption at rest by default, using a multilayered approach that includes encryption both at the storage-device level and at the storage-system level.

Privileged access

The proper management of privileged access within an organization can help prevent accidental disclosure of sensitive data and minimize the risk of an unauthorized user accessing this data.

Deployment integrity

Deployment integrity refers to Google Cloud's ability to ensure that code and configurations deployed to its production environment that interact with customer data are properly reviewed and authorized. Binary Authorization for Borg, or BinAuthz, is an internal deploy-time enforcement check that production software and configuration deployed at Google Cloud is properly reviewed and authorized, particularly if that code has the ability to access user data.

Identity and access management

Manage and secure employee, partner, customer, and other identities, and their access to apps and data, both in the cloud and on-premises.

Thank You