

GCP Certification Series: Section 2: Planning and configuring a Cloud solution, 2.1 Planning and estimating GCP product use using the Pricing Calculator

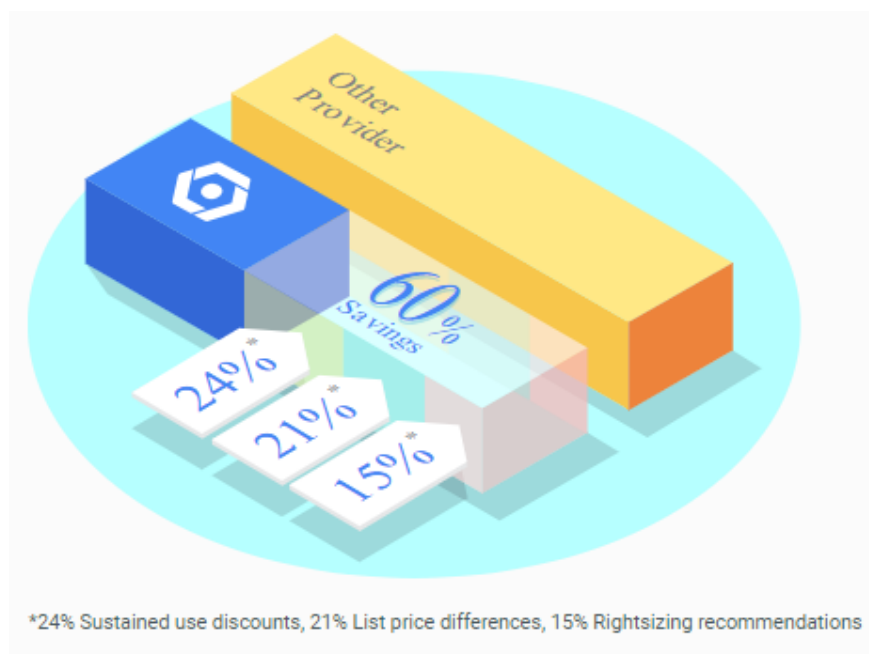


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From the early days, since I started learning cloud, I have heard about Google making the pricing of its products in the cloud very competitive and scientific. Today we will dig deeper into what it is now and how the pricing is done in Google cloud.

Google says it has 60% savings in cost compared to other vendors.



*24% Sustained use discounts, 21% List price differences, 15% Rightsizing recommendations

GCP compared to others

These savings are achieved by


1. Sustained use discount: meaning that running the instances for a significant portion of the billing month will reduce the cost of an instance. ***More your instances are running bigger discount you will get.***
2. List price differences: Google is reducing the price of services and instances according to Moore's law and immediately after the price of any instance or services are reduced they are applied in your monthly billing. This way you always get discounted rate than the standard pricing of that item.
3. Rightsizing recommendations: Google cloud provides recommendations for compute engine based on the 8 days stack driver monitoring to resize the VM. If properly followed will result in savings up to 15% in total price for a month.

Google says: "Compute Engine provides machine type recommendations to help you optimize the resource utilization of your virtual machine instances. These recommendations are generated automatically based on system metrics gathered by the Google Stackdriver Monitoring service over the previous 8 days. Use these recommendations to resize your instance's machine type to more efficiently use the instance's resources. This feature is also known as Rightsizing Recommendations."

The important thing to note here is that Google doesn't have any third party payment services. All the billings are on the platform and directly with Google. This largely avoids the hassle for users who want to use the services but are afraid of being fooled by the third party. There are no additional discounts other than calculated by the system and customers don't need to ask for a discount, they are included automatically. This avoids the need for bargaining of the services which is profound in other IT services.


Google has no upfront cost in using their basic product and services in GCP.

Customer Friendly Pricing [LEARN MORE](#)




No upfront costs

No upfront costs required: You don't need to make commitments to get great prices. Google Cloud Platform is on average 60% less for many compute workloads than other clouds¹, with \$0 paid upfront.



Pay-as-you-go

Building data centers is probably not your business. By paying for services on an as-needed basis, you save money and direct more focus to innovation.



No termination fees


The second you turn off services is the second you stop paying for that service.²

After setting up GCP account and billing you get a startup amount and if you plan to use GCP you will not be billed until the free balance and time exceed the limit set on the free tier.

You don't have to deposit any amount for using GCP products and services. Payment usually is done once a month based on usage.


You can terminate the account anytime you want. No termination fees are applied.

Pricing Innovation [LEARN MORE](#)




Sustained use discounts

Automatically up to 30%-off workloads that run for a significant portion of the billing month on Compute Engine and Cloud SQL.




Preemptible VM instances

Up to 80%-off workloads that can be interrupted, like data mining and data processing.




Per second billing

You pay per-second, which is how a cloud should work.




Coldline

Archival storage at the cost of tape at the speed of disk.




Custom machine types

Pick any configuration of CPU and memory to save up to 50% compared to fixed machine types from other clouds.



Committed use discounts

Savings of up to 57% without upfront fees or instance-type lock-in.



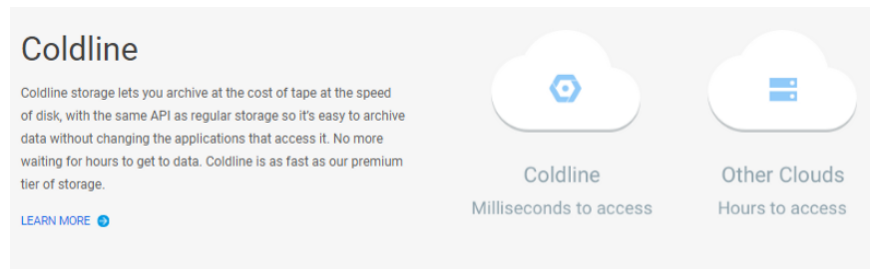
Rightsizing recommendations

Compute sizing recommendations based on usage, so you consume less and save time on management.

Another thing to note is using preemptive VM instances will reduce the cost of the GCP as Google has a special discount for these kinds of machines.

Now, Google will calculate the price in per second basis. This is especially useful for those instances that last for a few seconds and destroys itself. For example, a file processing system where one file is uploaded and processed and downloaded in the client machine.

Data that are not frequently in use can be stored in the cold line storage medium which is much cheaper than persistent or SSD. The advantages of Google over long-term storage media are it can be accessed as normal storage and don't have to wait for hours.



Coldline

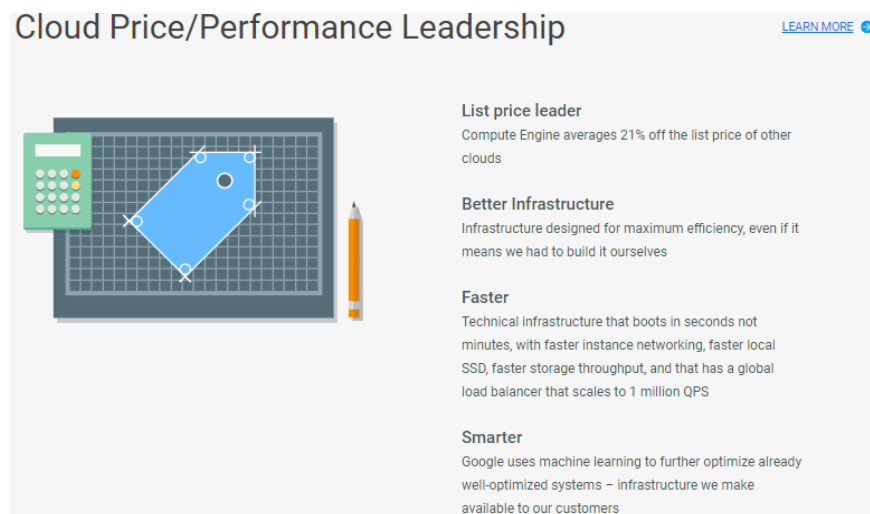
Coldline storage lets you archive at the cost of tape at the speed of disk, with the same API as regular storage so it's easy to archive data without changing the applications that access it. No more waiting for hours to get to data. Coldline is as fast as our premium tier of storage.

[LEARN MORE](#)

| Storage Type | Access Time |
|--------------|------------------------|
| Coldline | Milliseconds to access |
| Other Clouds | Hours to access |

A user has the choice of using any type of machine with any configuration which has clear cost benefits over fixed type machine from other vendors.

Users also get a discount on Committed use over some time period.



Cloud Price/Performance Leadership [LEARN MORE](#)

List price leader
Compute Engine averages 21% off the list price of other clouds

Better Infrastructure
Infrastructure designed for maximum efficiency, even if it means we had to build it ourselves

Faster
Technical infrastructure that boots in seconds not minutes, with faster instance networking, faster local SSD, faster storage throughput, and that has a global load balancer that scales to 1 million QPS

Smarter
Google uses machine learning to further optimize already well-optimized systems – infrastructure we make available to our customers

Pricing Calculator

For convenience, Google has built a service where customers can predict the price of using instances and services in Google Cloud Platform. This service is called Pricing calculator.

You can access this webpage in

Google Cloud Platform Pricing Calculator |
Google Cloud Platform | Google Cloud

Create your own Custom Price Quote for the
products offered through Google Cloud Platform...
cloud.google.com

The screenshot shows the Google Cloud Platform Pricing Calculator interface. At the top, there's a navigation bar with links like 'Why Google', 'Products', 'Solutions', 'Pricing', 'Security', 'Documentation', 'Customers', 'Partners', 'Support', and 'Marketplace'. Below this, the 'Compute Engine' tab is selected, and the 'Calculate' button is visible. The main form is titled 'Compute Engine' and contains several sections: 'Instances' (with a dropdown for 'Number of instances'), 'What are these instances for?' (with a dropdown for 'Operating System'), 'VM Class' (with a dropdown for 'Free Debian, CentOS, CoreOS, Ubuntu, or other User Provided OS'), 'Instance type' (with a dropdown for 'Regular'), 'Disk type' (with a dropdown for 'Provisioned IOPS'), 'Location' (with a dropdown for 'us-east1'), 'Commitment' (with a dropdown for 'None'), and 'Usage' (with a dropdown for '24 hours'). There are also checkboxes for 'Add GPUs', 'Local SSD', and 'Include Always Free usage in my estimate'. The bottom of the form has a link to 'Learn More about Always Free'.

Before directly jumping into the website you should already know

1. what you are building?
2. where you are hosting?
3. what components are required for that system?

Then you can list all those instances and provide it to pricing calculator that will give you the tentative amount per month or the period you select.

For example, I am hosting a dynamic website in Finland which will be accessible through the world. I will have a database for storing the information from the form in the website which will be name and address of volunteers.

So, now let's list what instances we are talking about.

1. Compute instance>VM>Linux machine, Debian ,Ubuntu> 10GB persistent HD, 2 core.
2. Database>Cloud SQL>server, dual-core, 10GB

These are just examples, pieces of information required in pricing calculator may be more detailed. Now put these in the pricing calculator

So, I put all these selections in the price calculator which gives me an estimated monthly bill of \$114.04 per month.

The screenshot displays the Google Cloud Platform Pricing Calculator interface. The left sidebar shows the 'Compute Engine' section expanded, with various configuration options like 'Number of instances', 'VM class', and 'Instance type'. The main area shows the 'Estimate' for 'Compute Engine' and 'Cloud SQL for PostgreSQL'. The 'Compute Engine' estimate shows a total cost of USD 66.79 per month, with a 30% sustained use discount applied. The 'Cloud SQL for PostgreSQL' estimate shows a total cost of USD 27.25 per month, also with a 30% sustained use discount. The final 'Total Estimated Cost' is USD 114.04 per month.

| Product | Configuration | Estimated Cost (USD) |
|--------------------------|--|-------------------------------|
| Compute Engine | 1 x webserver, 730 total hours per month, VM class: regular, Instance type: custom-2-4, Region: Iowa | USD 66.79 per 1 month |
| Cloud SQL for PostgreSQL | db-pg-g1-small, # of instances: 1, Location: Iowa, 730.0 total hours per month, Storage: 10.0 GB, Backup: 0.0 GB | USD 27.25 |
| Total | Total Estimated Cost | USD 114.04 per 1 month |

Here you see a 30% reduction due to sustained use in both products.

So, estimating price is very easy but you should know in detail all the items that could contribute to the total price.

