Experts

Let's go Cloud! Salerno 2023

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Experts
Google Cloud

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GCP Trainer & Consultant
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Google Developers

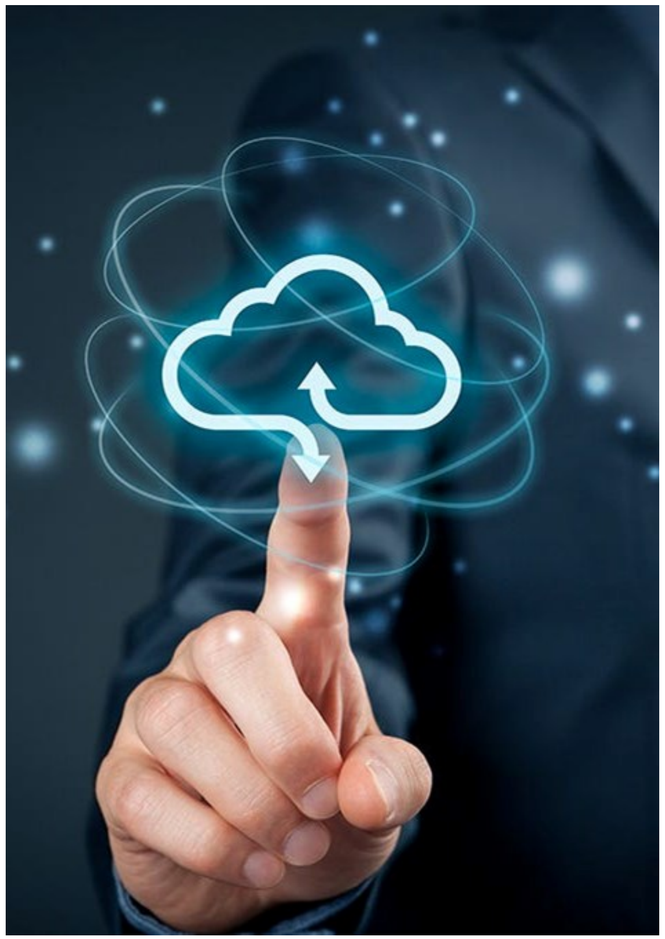
Disclaimer:

Everything you will see in this talk can be done both with Google and AWS, and likely with some other cloud provider...

What is the “Cloud”

From NIST - National Institute of Standards and Technology

- On-demand self-service.
- Broad network access.
- Resource pooling.
- Rapid elasticity.
- Measured service.

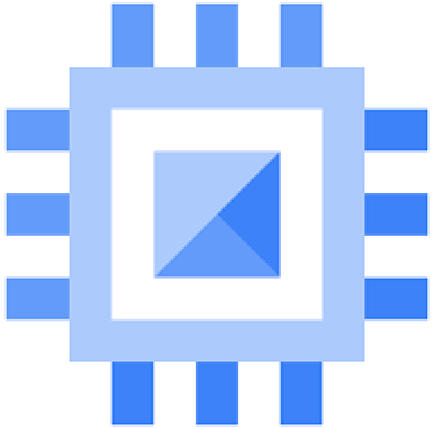


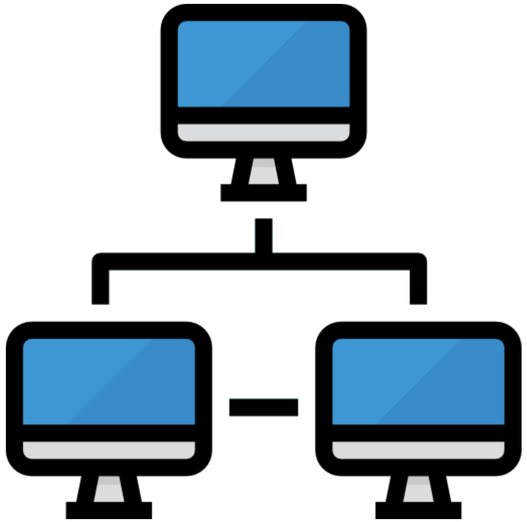
https://en.wikipedia.org/wiki/Cloud_computing

What is the “Cloud”

Cloud components:

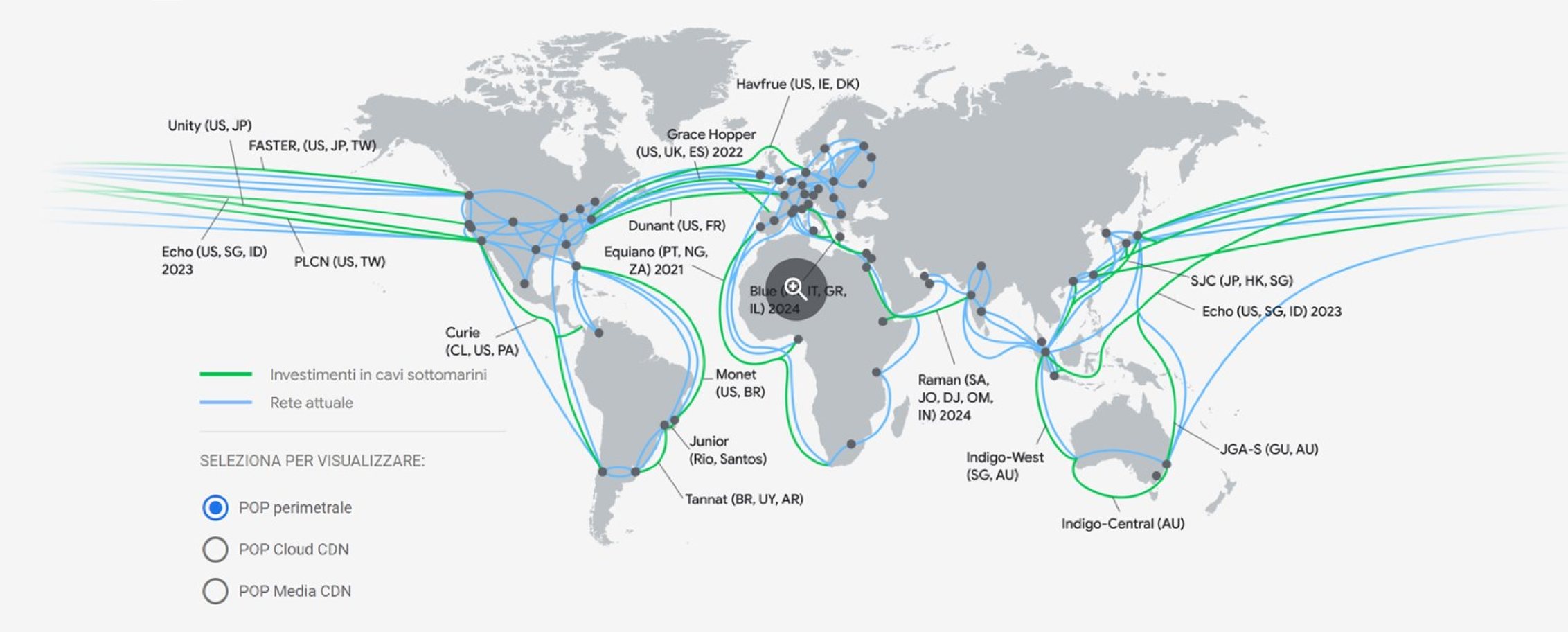
Basic components





Google’s regions

Google’s network



#GCPSketchnote
@PVERGADIA
THECLOUDGIRL.DEV
08.11.2021

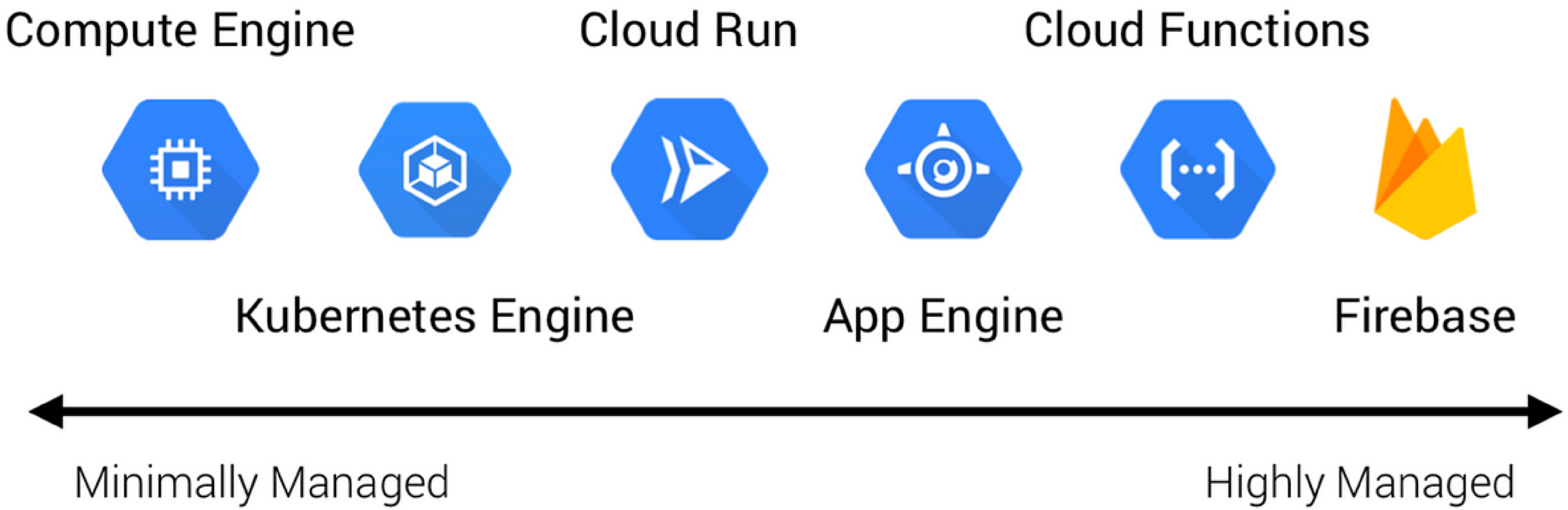
Wait... what is Cloud again?

TRADITIONAL ON-PREMISES	INFRASTRUCTURE AS A SERVICE (IaaS)	CONTAINERS AS A SERVICE (CaaS)	PLATFORM AS A SERVICE (PaaS)	FUNCTION AS A SERVICE (FaaS)	SOFTWARE AS A SERVICE (SaaS)
Data & Configurations	Data & Configurations	Data & Configurations	Data & Configurations	Data & Configurations	Data & Configurations
Application Code	Application Code	Application Code	Application Code	Application Code	Application Code
Scaling...	Scaling...	Scaling...	Scaling...	Scaling...	Scaling...
Runtime	Runtime	Runtime	Runtime	Runtime	Runtime
OS	OS	OS	OS	OS	OS
Virtualization	Virtualization	Virtualization	Virtualization	Virtualization	Virtualization
Hardware	Hardware	Hardware	Hardware	Hardware	Hardware

You Manage

Cloud Provider Manages

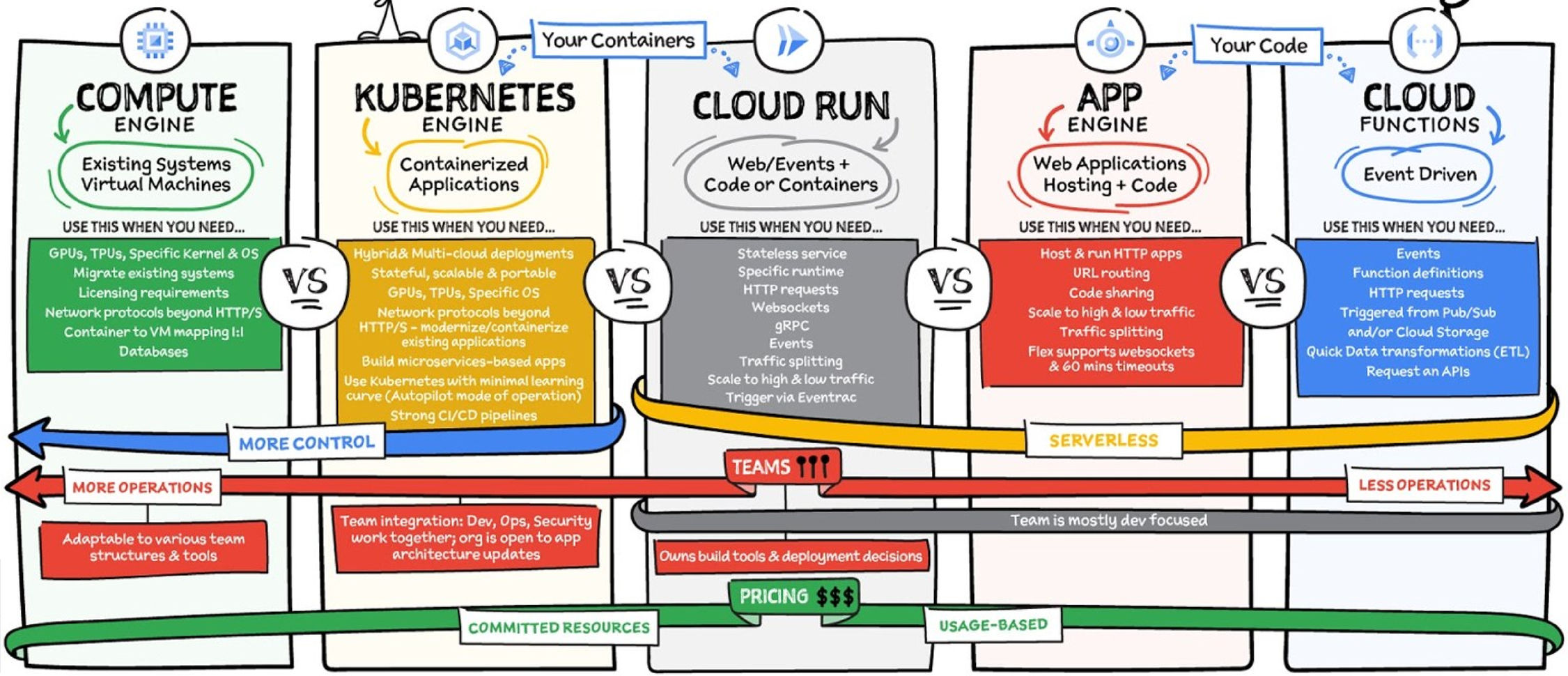
Cloud services evolution



Where should I run my stuff?

IT DEPENDS...

PRO TIP: YOU CAN USE THEM TOGETHER



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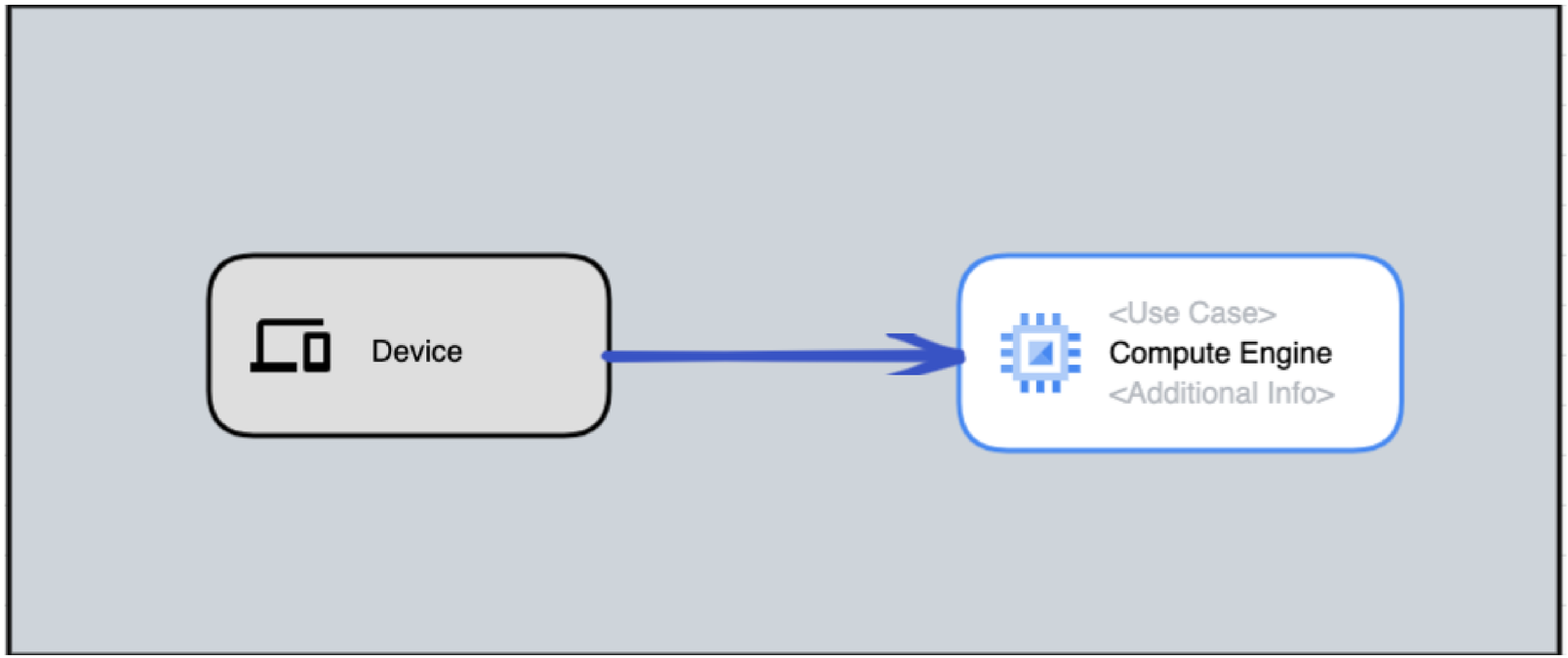
Application needs

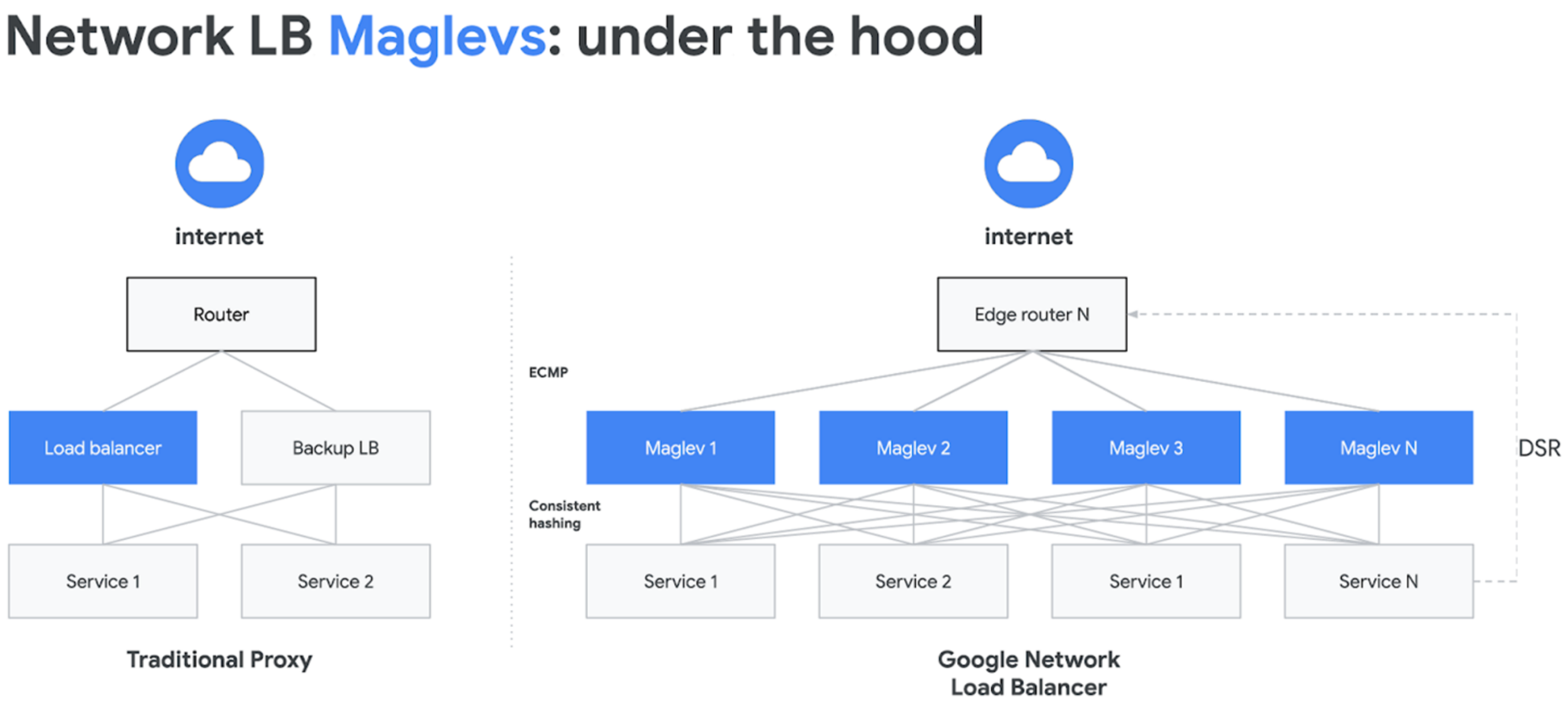
- just works!

Starting point:

Simplest architecture



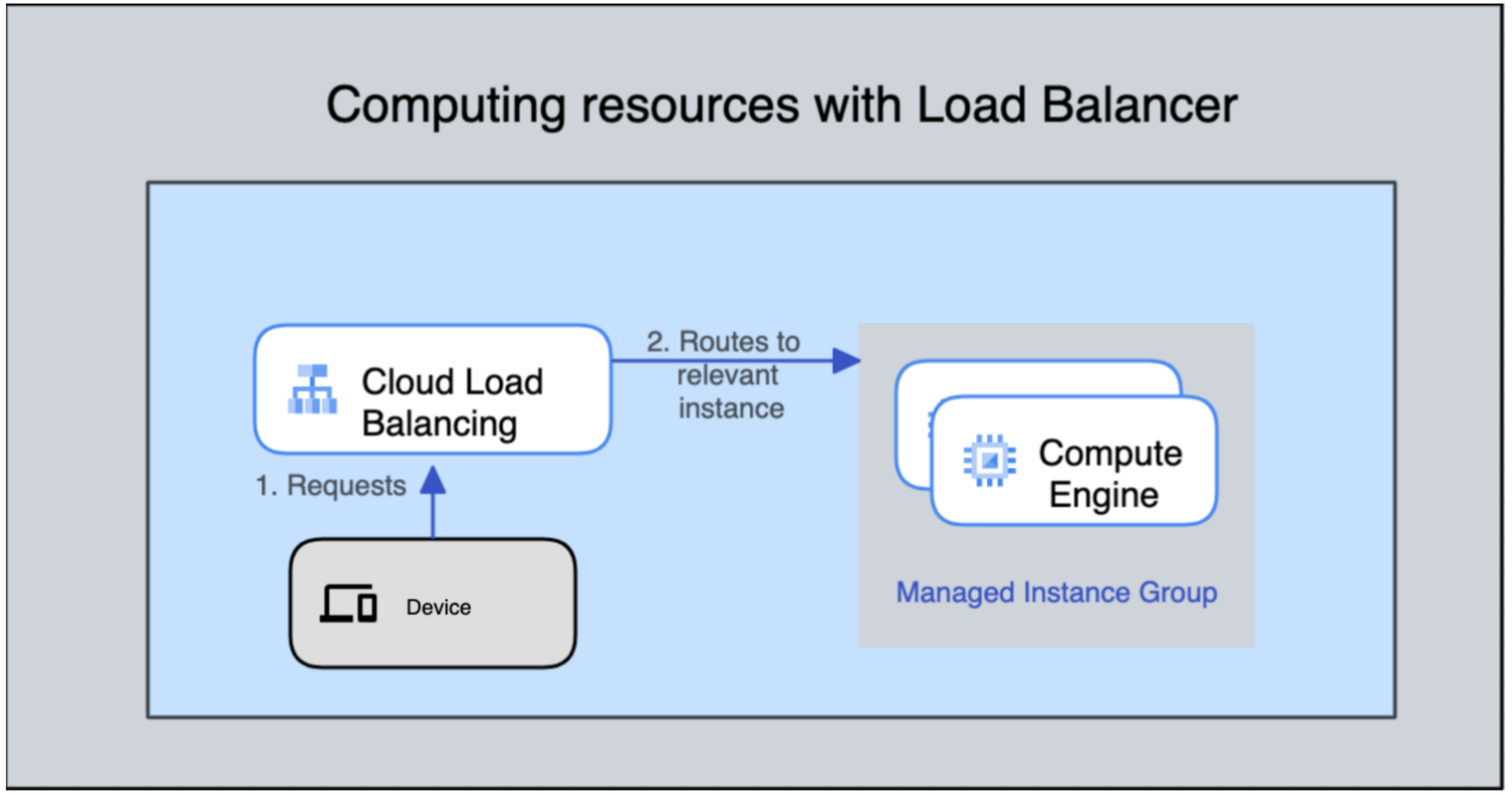
Load Balancer



Global LB: Expand seamlessly

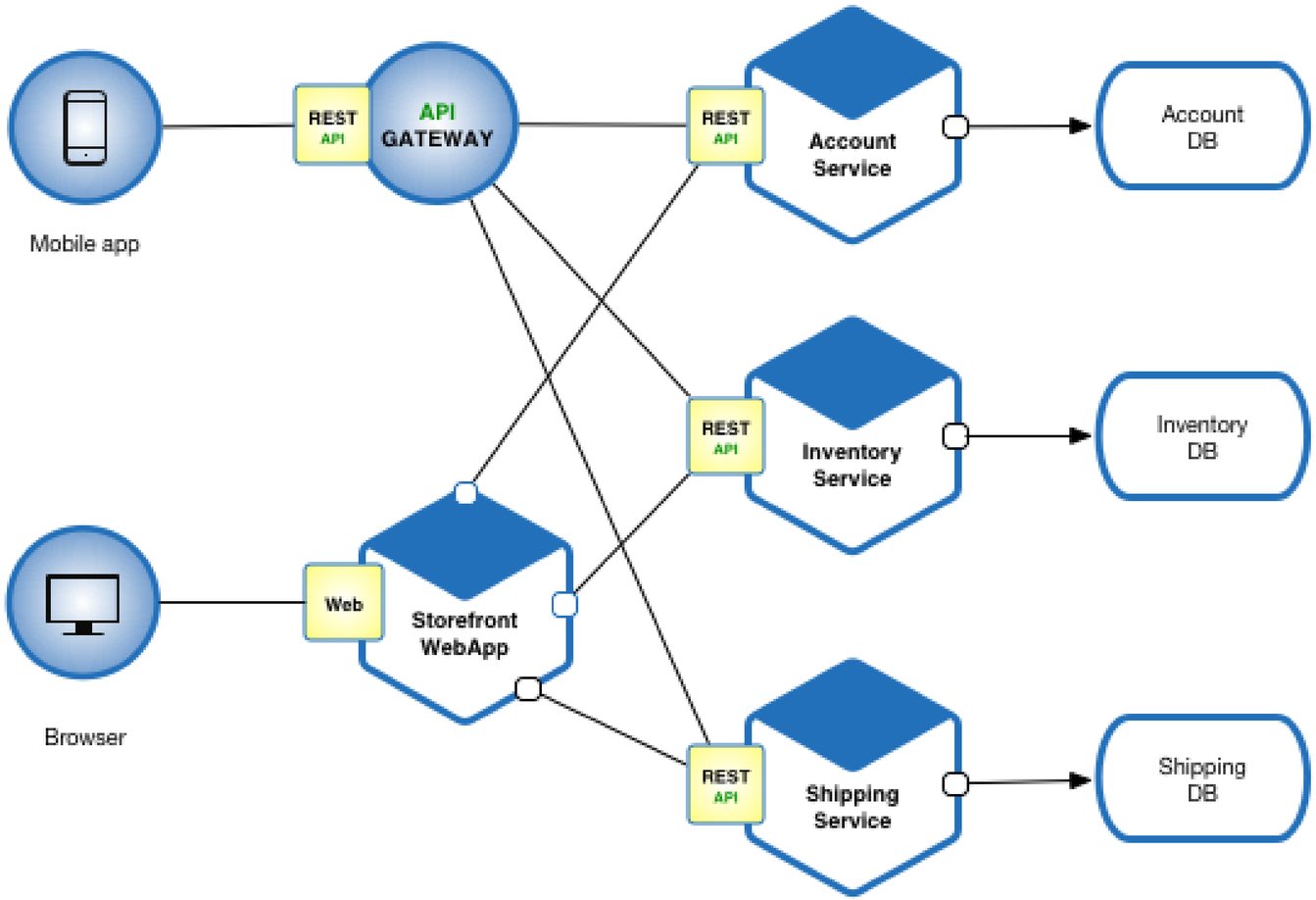
Better solution:

- Performance
- Availability
- Resilience



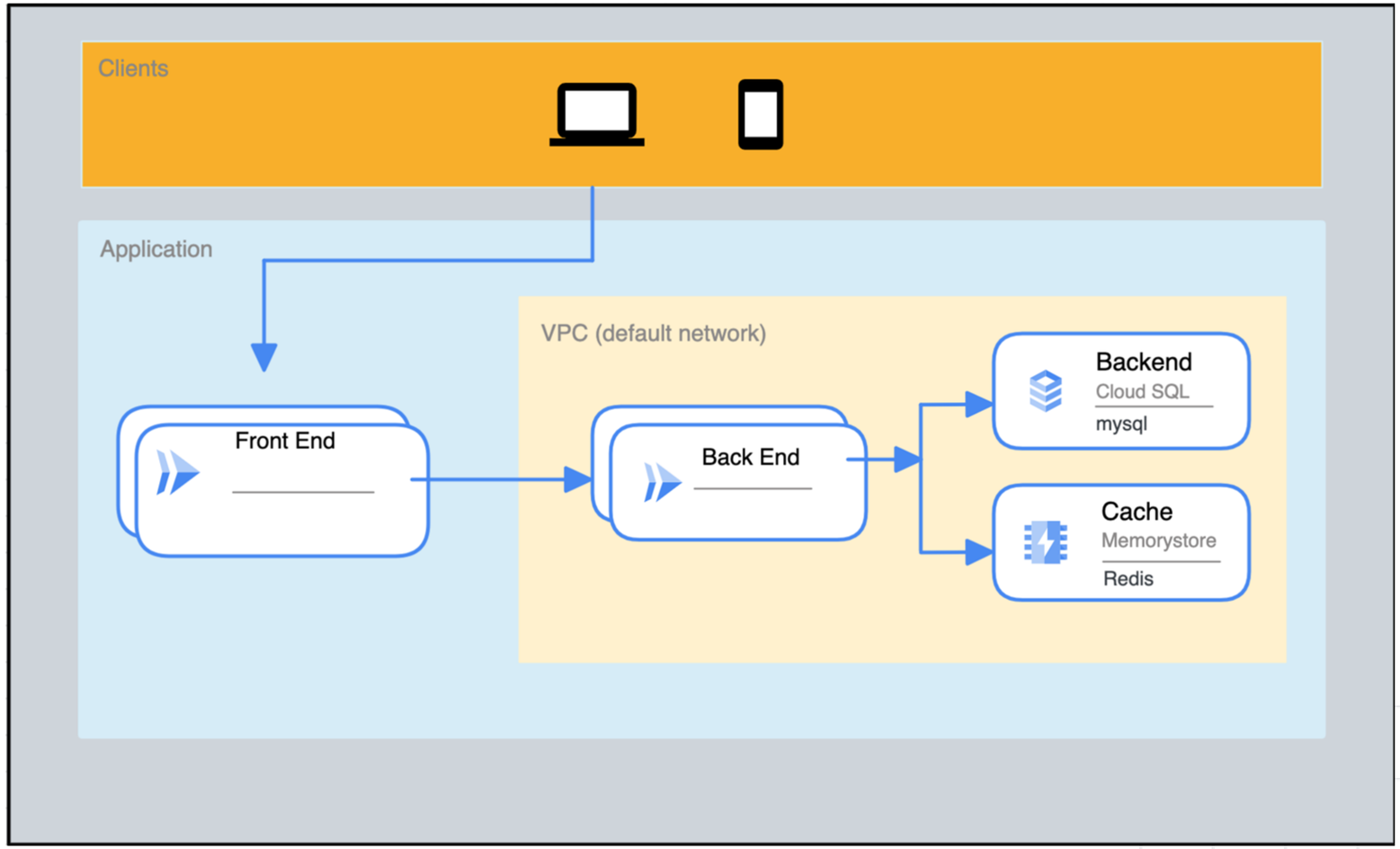
Microservices & Containers

- Performance
- Availability
- Resilience
- Distribution
- Scalability

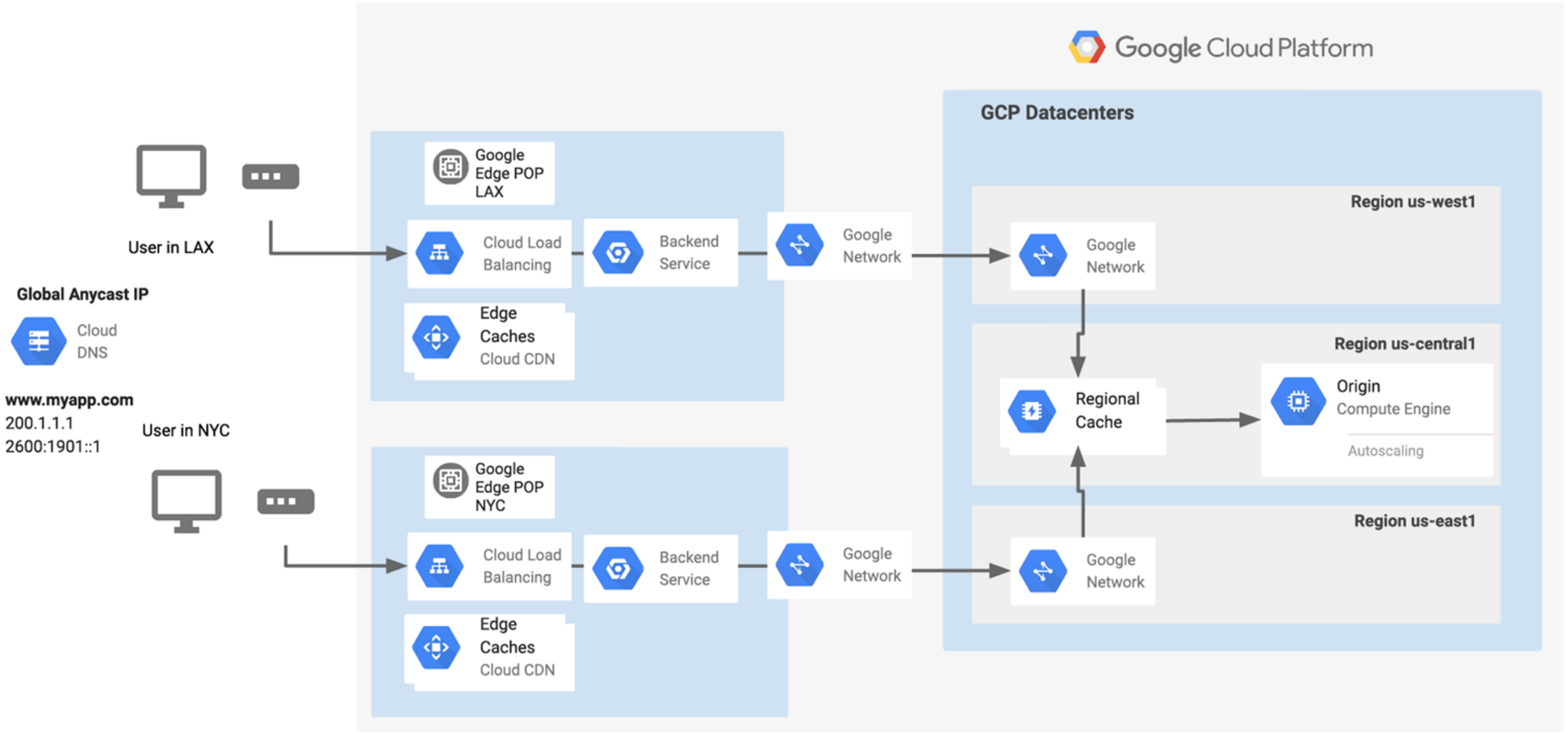


More complex solution:

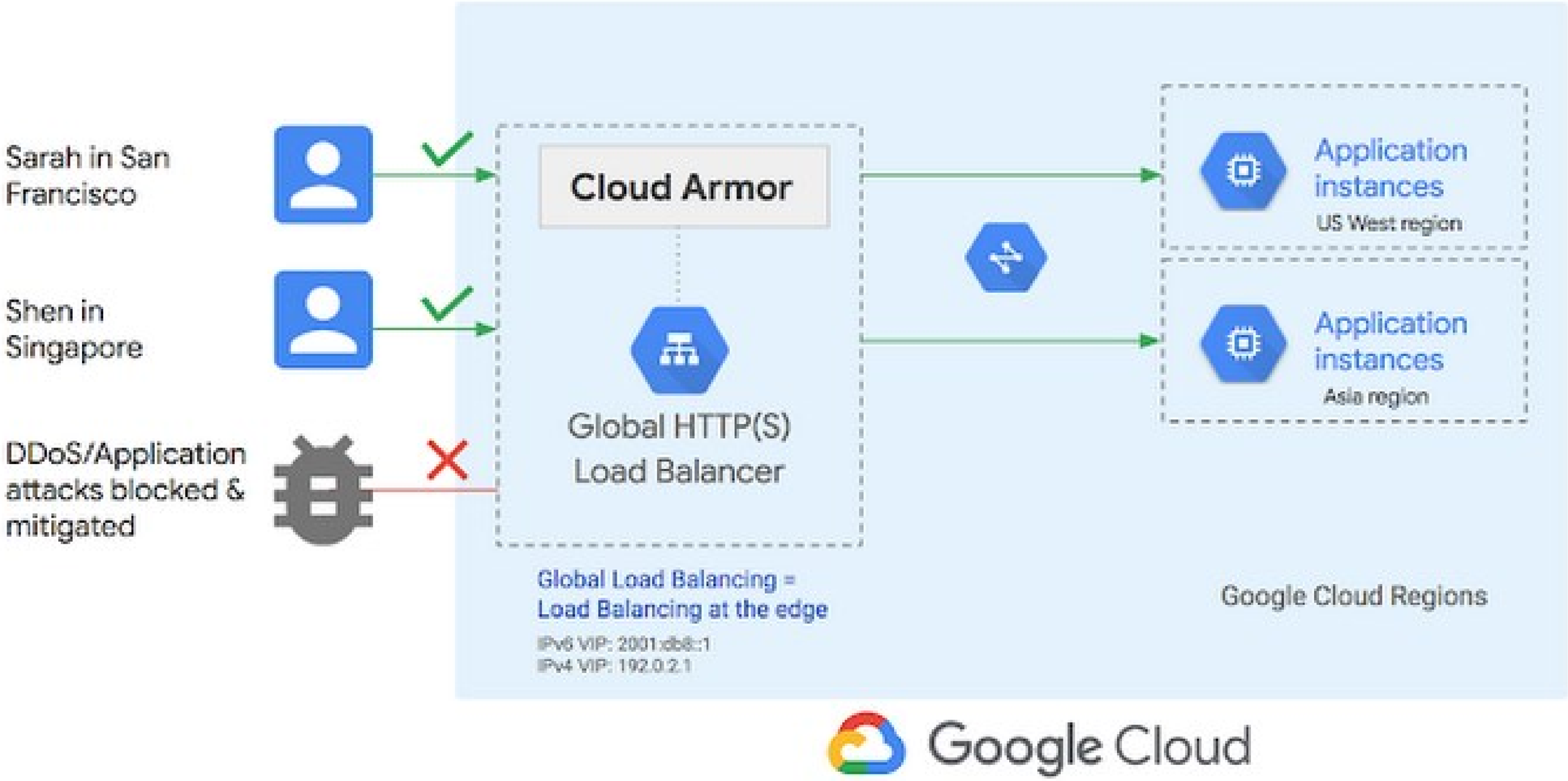
- Performance
- Availability
- Resilience
- Distribution
- Scalability



CDN (Content Delivery Network)



Cloud Armor



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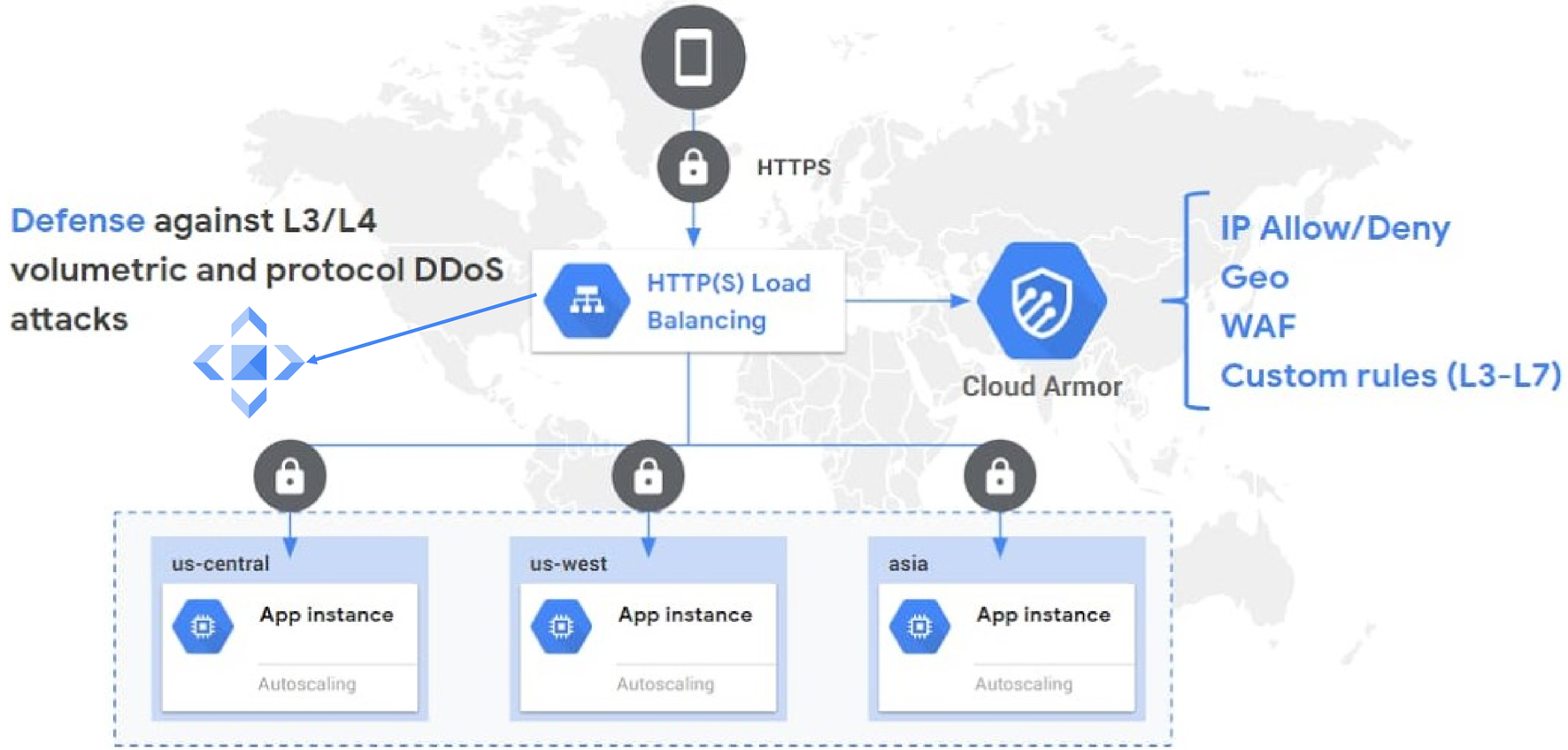
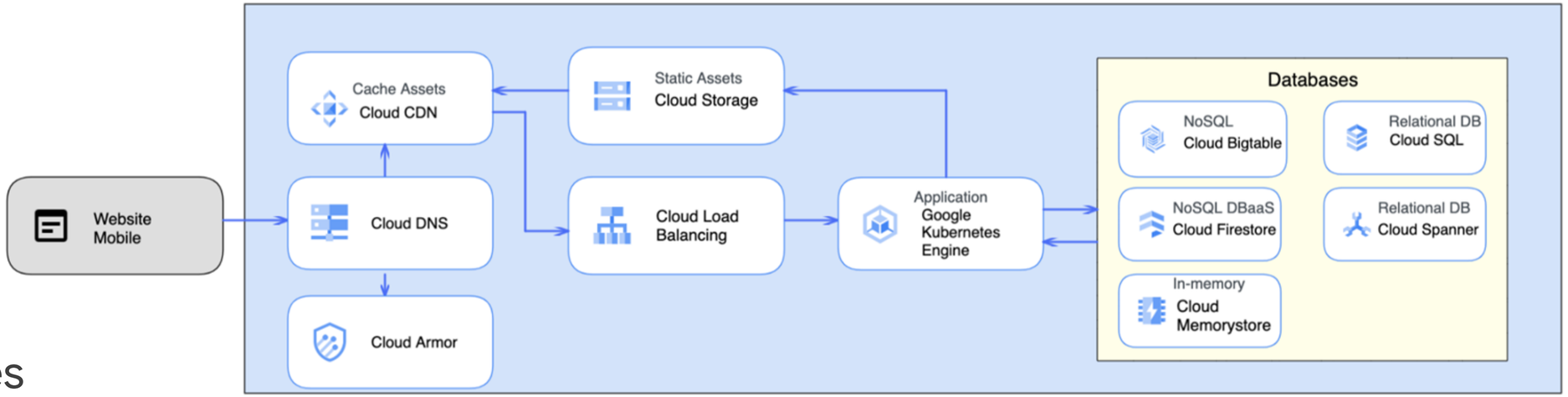
Load Balancer l7 + Cloud Armor + CDN

Cloud Armor: DDoS Protection & WAF



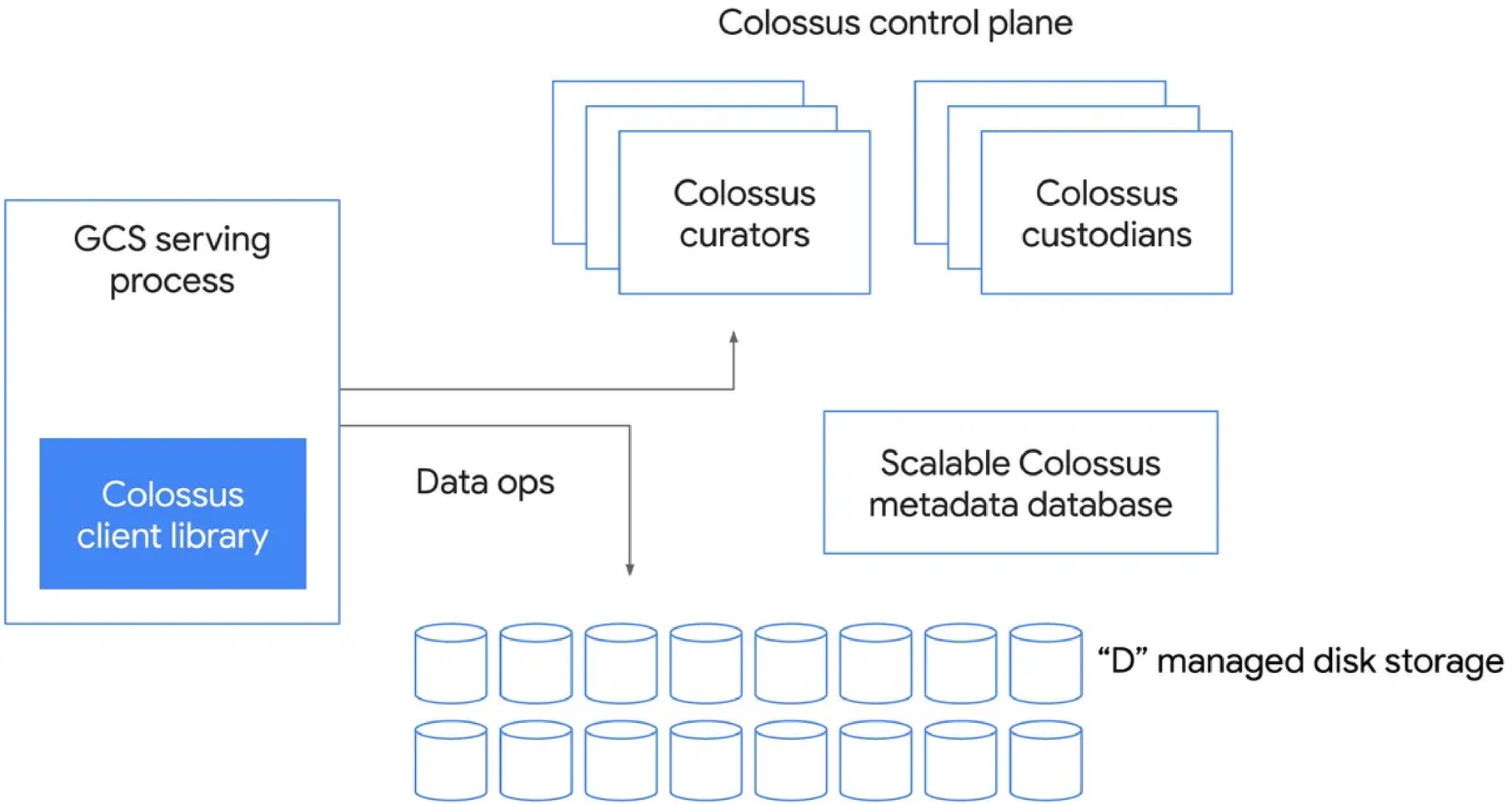
Even more complex solution:

- Performance
- Availability
- Resilience
- Elasticity
- Security
- Managed services

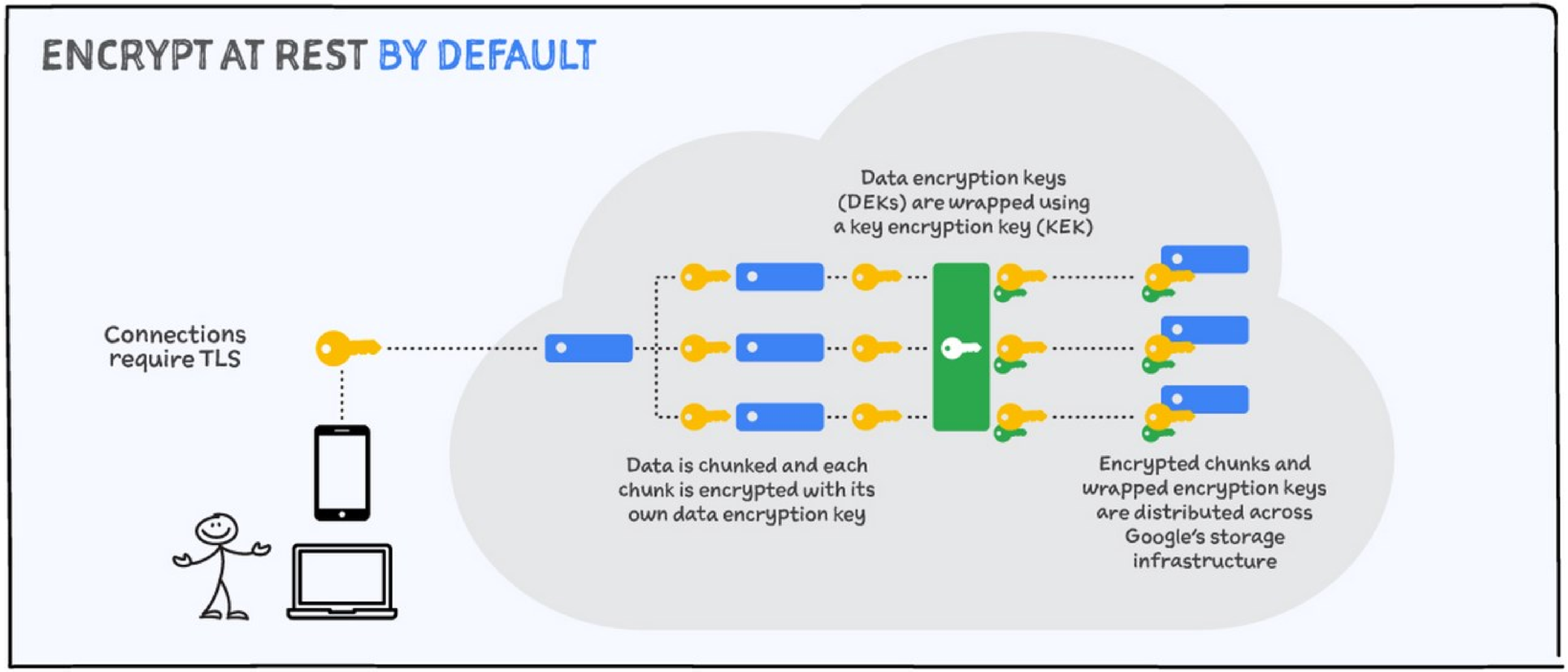


What is Cloud Storage

Google Cloud Storage



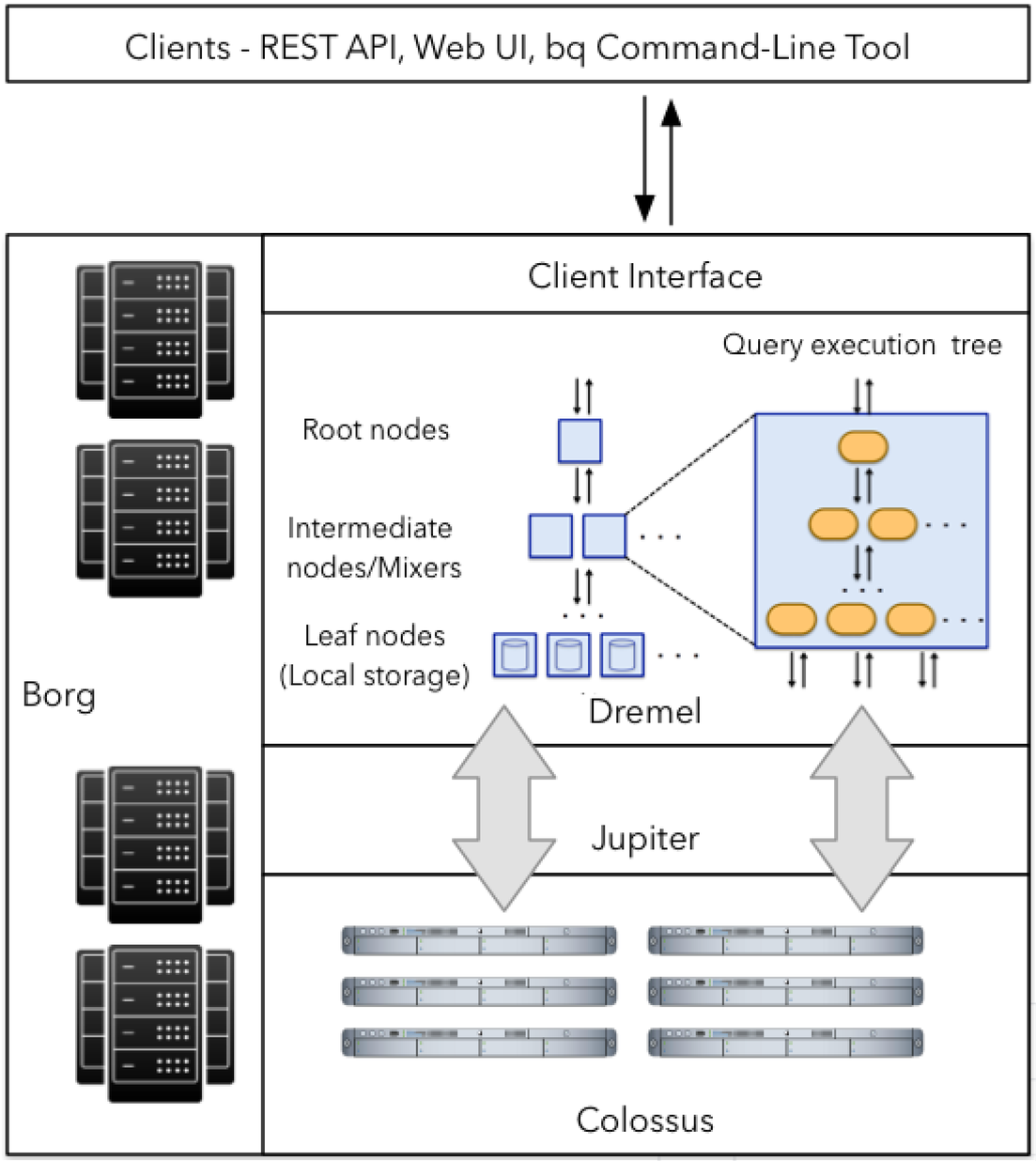
Google Cloud Storage Security



Google Cloud storage and database portfolio

Relational		NoSQL		Object	Warehouse	In memory
 Cloud SQL	 Cloud Spanner	 Firestore	 Cloud Bigtable	 Cloud Storage	 BigQuery	 Memorystore
Good for: Web frameworks	**Good for:** RDBMS+scale, HA, HTAP	**Good for:** Hierarchical, mobile, web	**Good for:** Heavy read + write, events	**Good for:** Binary object data	**Good for:** Enterprise data warehouse	**Good for:** Caching for Web/Mobile apps
Such as: CMS, eCommerce	**Such as:** User metadata, Ad/Fin/MarTech	**Such as:** User profiles, Game State	**Such as:** AdTech, financial, IoT	**Such as:** Images, media serving, backups	**Such as:** Analytics, dashboards	**Such as:** Game state, user sessions
Scales to 30 TB MySQL PostgreSQL SQL Server	**Scales infinitely Regional or multi-regional**	**Completely managed Document database**	**Scales infinitely Wide-column NoSQL**	**Completely managed Infinitely scalable**	**Completely Managed SQL analysis**	**Managed Redis DB**
Fixed schema	Fixed schema	Schemaless	Schemaless	Schemaless	Fixed schema	Schemaless

BigQuery internals



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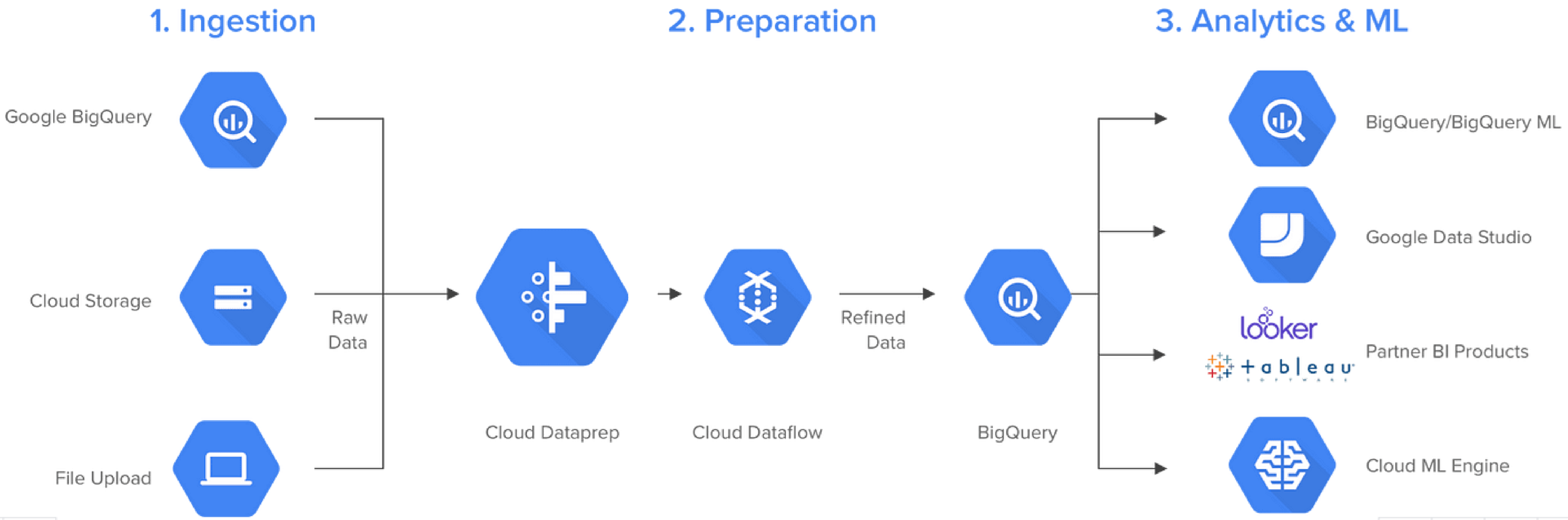
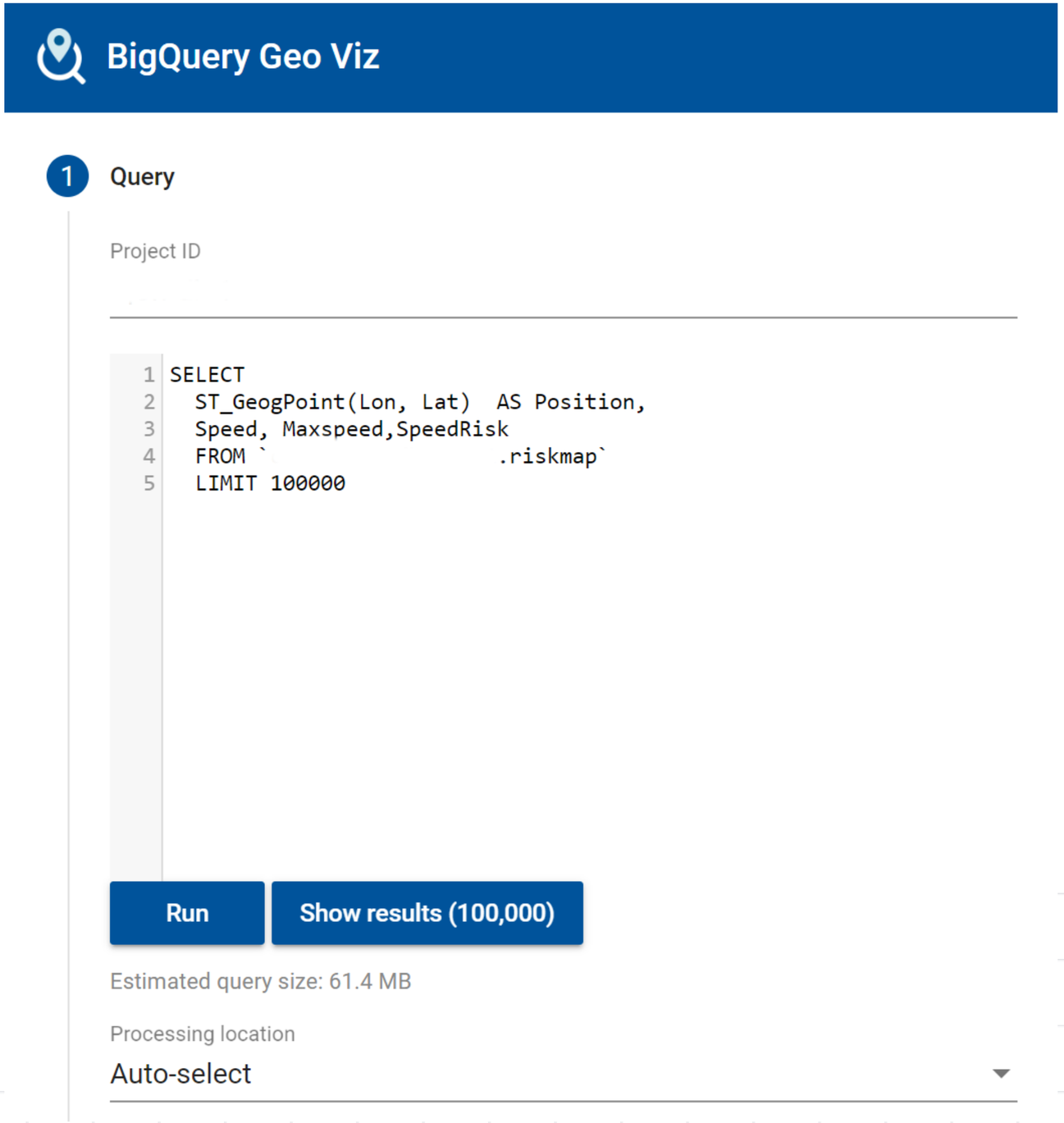
https://cloud.google.com/blog/products/data-analytics/new-blog-series-bigquery-explained-overview

BigQuery pipeline



BigQuery Geo Viz

https://bigquerygeoviz.appspot.com/



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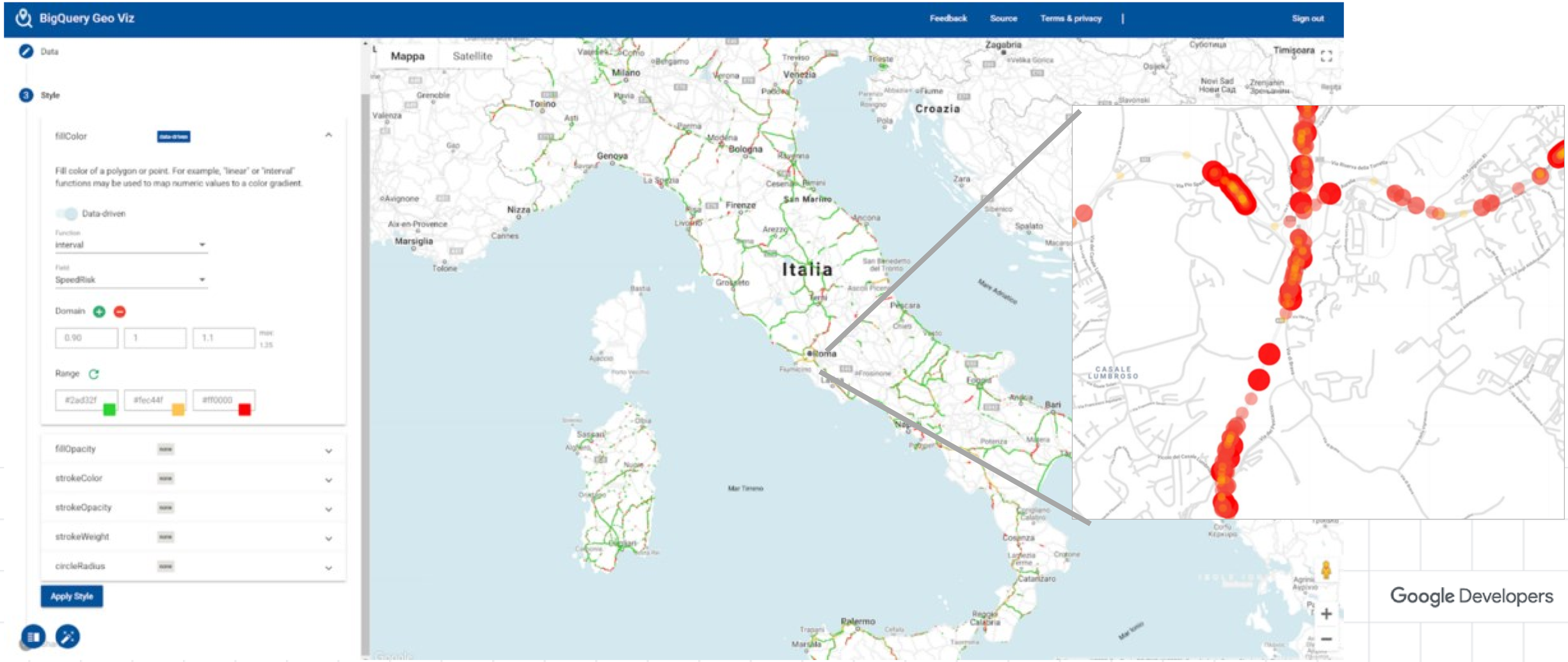
Apply some styles and rules



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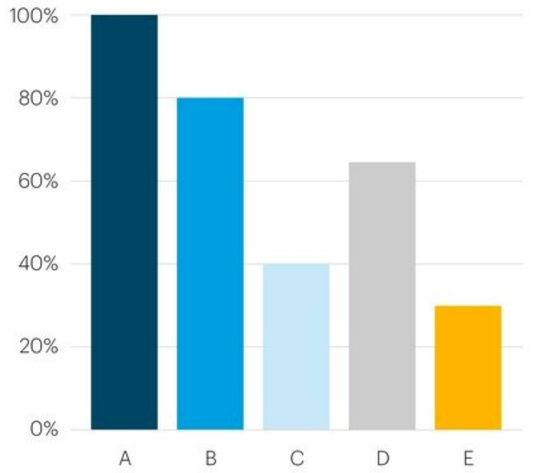
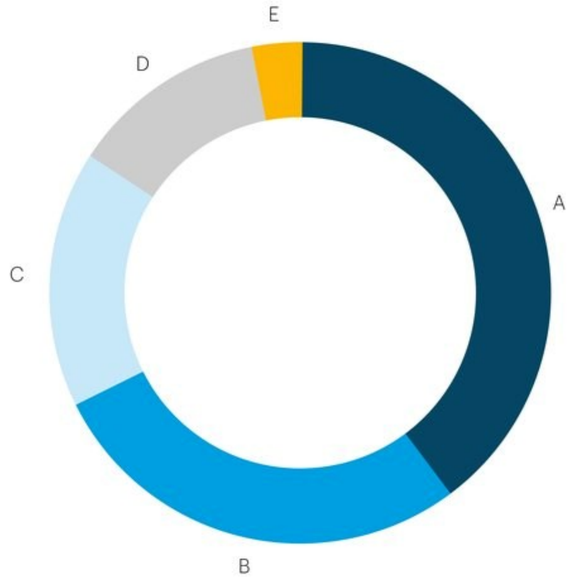
Cost evolution

- Pay for what you use
- Service on demand
- Don’t preallocate
- Serverless





What is in Google Cloud ?

https://googlecloudcheatsheet.withgoogle.com/

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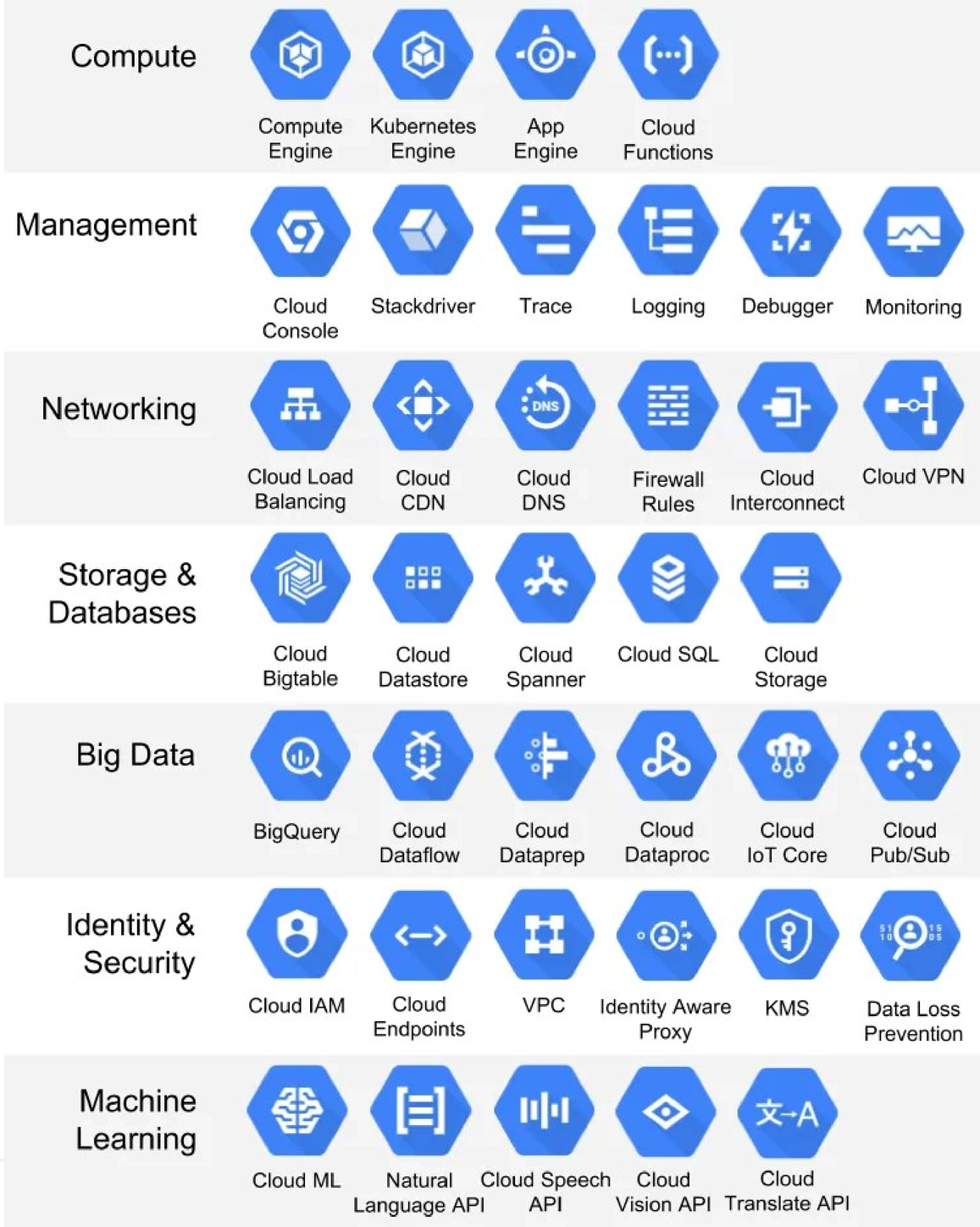

What is the “Cloud”

The Cloud is an incredible opportunity...

“Question time”

Experts

Thank You!

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- https://twitter.com/nicola_guglielm