



# Cloud Computing

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# Google Cloud

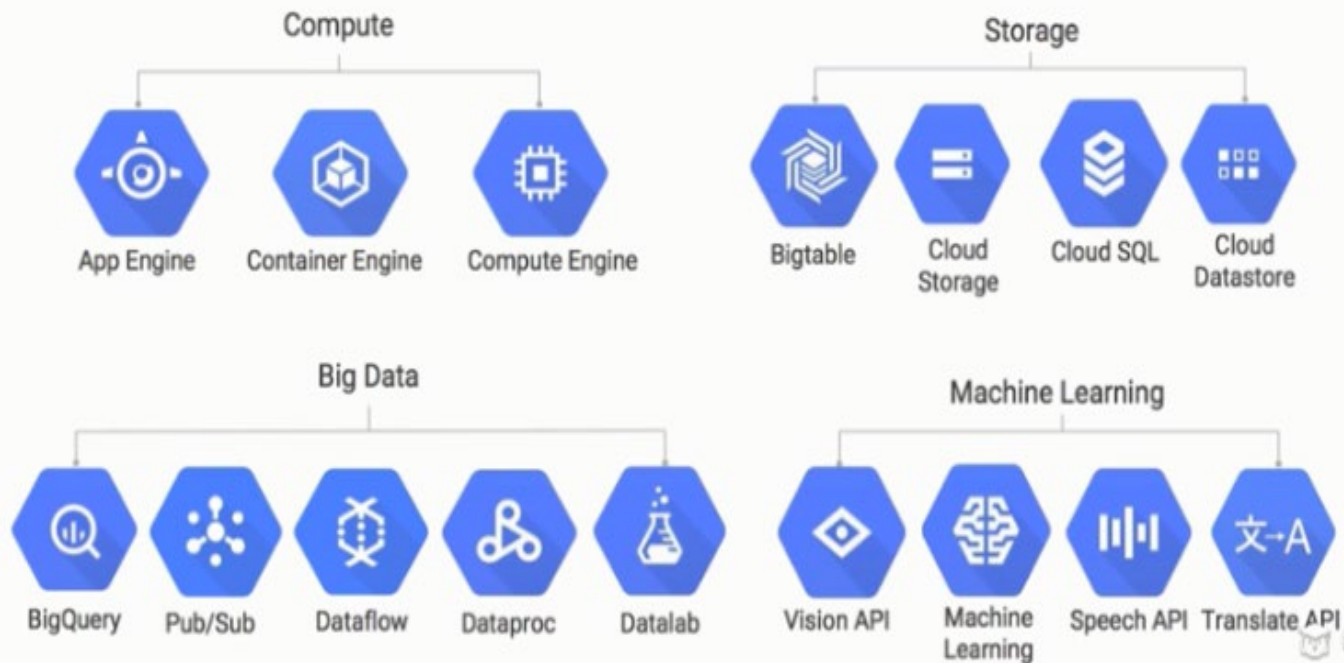
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- What is Google Cloud Platform?
  - Suite of cloud computing services
  - Google's worldwide collection of data centers
  - Hosts IaaS, PaaS, and SaaS use cases
  - At a basic level, it hosts and manages your computer infrastructure so you don't have to
- Like most other cloud platforms:
  - “Pay-as-you-go” basis, use only what you need
    - Also known as ‘on demand’ computing
  - Convert capital expenses into operating expenses
  - Focus on rapid innovation
  - Productivity enhanced due to no software installed
  - “Vertically-integrated” stacks enhance functionality, performance, reliability, and security

# Google Cloud

Glance:

## Google Cloud Platform





# Data Center Infrastructure

- **Data centers**

- Google operates an extensive deployment of high-efficiency backend data centers used for **computation and storage capacity**.

- **Backbone**

- Google has built a global, **meshed backbone network to connect their data centers and to deliver traffic to their edge points of presence (POPs)**.

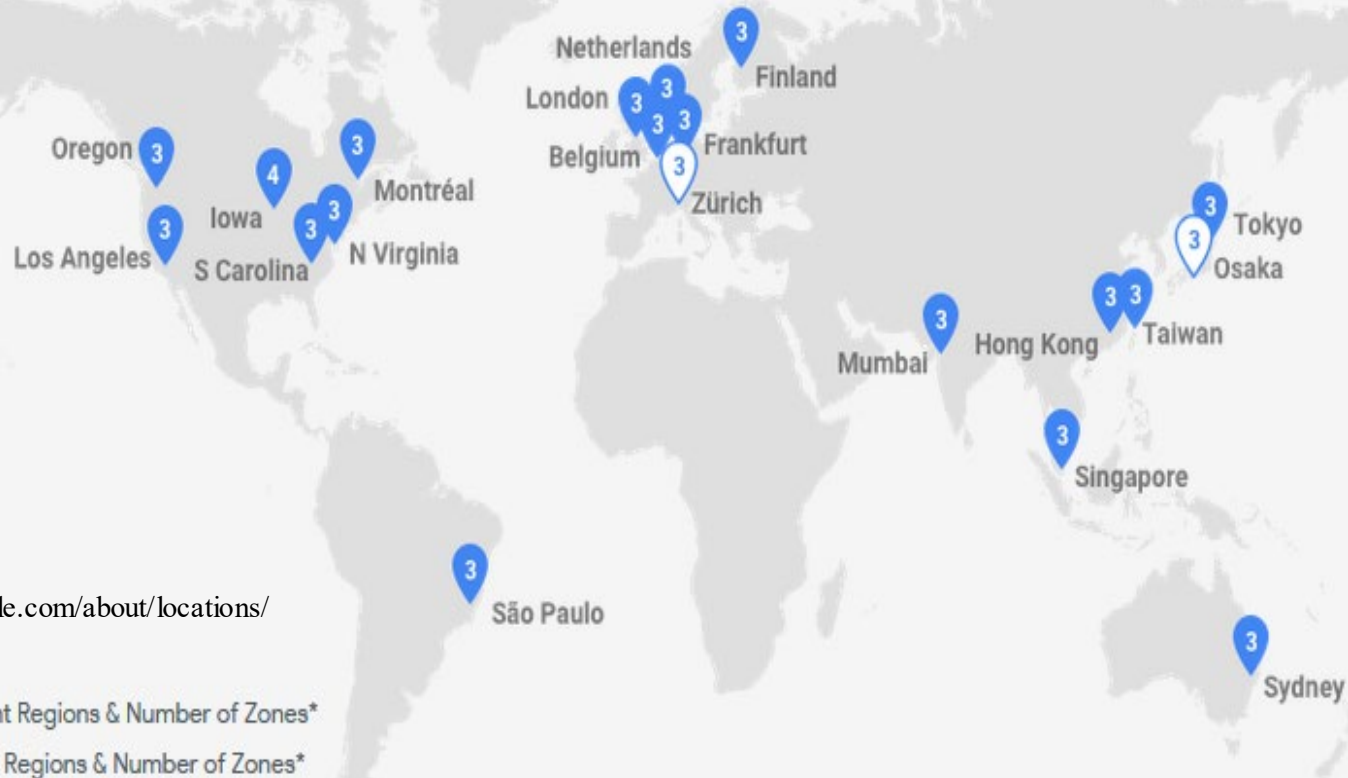
- **Points of presence**

- 90+ edge points of presence in 33 countries connected via Google's backbone network.

- **Edge caching**

- Google runs an edge caching platform on top of their network infrastructure with edge locations in virtually every country.

# Data centers



<https://cloud.google.com/about/locations/>

\* While some regions may launch with 2 zones, all regions are planned for a minimum of 3 zones.



# Cloud Regions and Zones

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18 regions split into 27 zones

- Regions

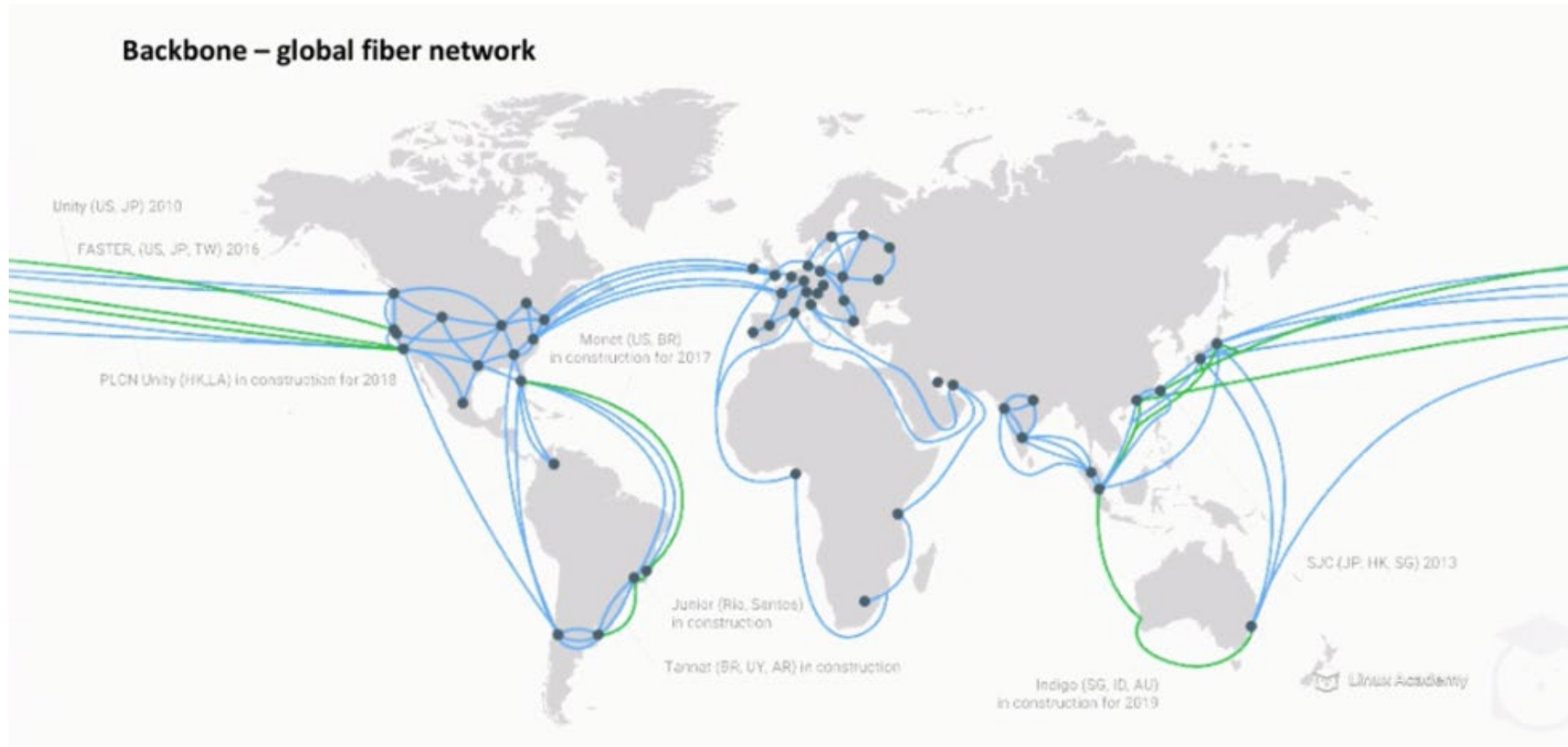
- Regions are specific geographical locations where you can run your resources
- Collections of zones
- Regional resources are available to **resources in any zone** in the region
- Frequently expanding

- Zones

- Isolated physical locations within a region
- **Zonal resources are only available in that zone**
- Machines in different zones have no single point of failure

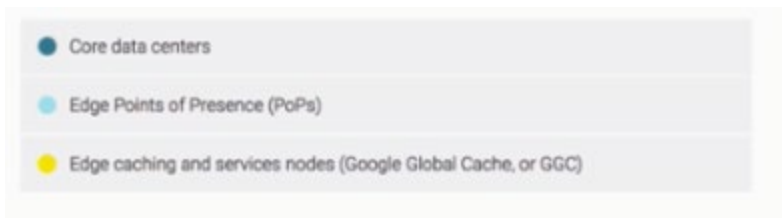
- **For example: an effective disaster recovery plan would have assets deployed across multiple zones, or even different regions.**

# Global Fiber Private Network



# Network Infrastructure

- Network infrastructure from data centers to end users consist of three elements:
  - Core data centers
  - Edge Points of Presence (PoPs)
  - Edge nodes





# Points of Presence

- 90+ locations worldwide
- **Brings Google traffic closer to users worldwide**, thereby reducing their costs and providing users with a better experience.
- Connects to the private meshed network backbone that connects Edge PoPs to datacenters and bridges to the public Internet



# Edge Nodes/Caching

- Tier of Google's infrastructure closest to end users
- Internet service providers (ISPs) deploy Google-supplied servers inside their own network
- “Static content that is very popular with the local host's user base, including YouTube and
- Google Play, is temporarily cached on edge nodes. Google's traffic management systems
- direct user requests to an edge node that will provide the best experience.”
- Pulling popular content from edge cache is substantially **faster** than pulling everything from data centers





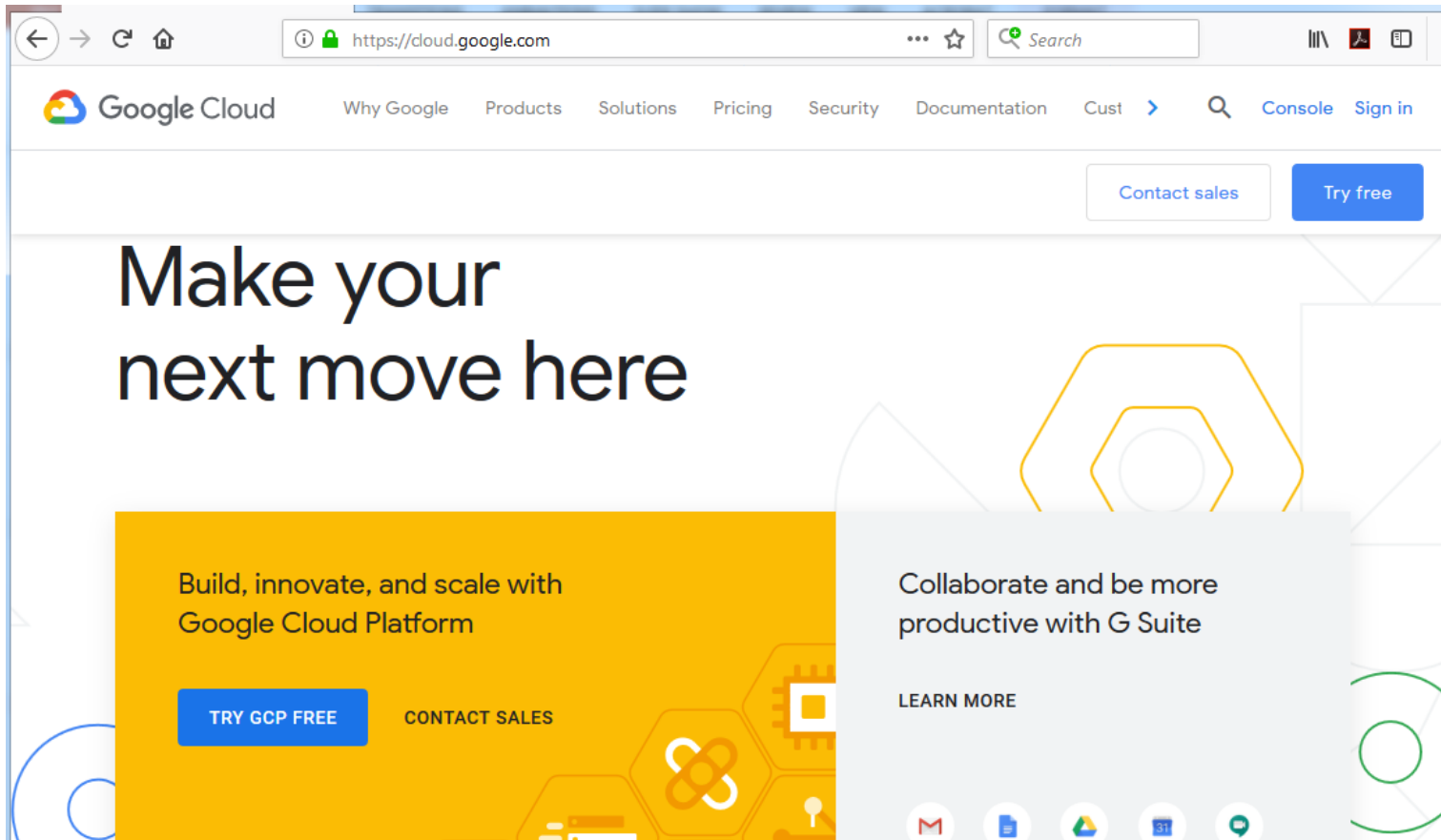
# End result

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- Fast, redundant, worldwide presence that provides fast and reliable access to your resources no matter where in the world you are
- All of this while being 100% carbon neutral

# Sign up

- Go to (<https://cloud.google.com/>)



# Sign up



Try Cloud Platform for free

Google

Country

United States

Acceptances

Please email me updates regarding feature announcements, performance suggestions, feedback surveys and special offers.

☐ Yes ☐ No

I agree that my use of any [services and related APIs](#) is subject to my compliance with the applicable [Terms of Service](#). I have also read and agree to the [Google Cloud Platform Free Trial Terms of Service](#).

Required to continue

☐ Yes ☒ No

Agree and continue

[Privacy policy](#)



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