

GOOGLE Infrastructure

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Global Vision:



40

REGIONS



121

ZONES



187

NETWORK EDGE LOCATIONS

AVAILABLE IN



200+

COUNTRIES AND TERRITORIES

COMING SOON! Google Cloud will continue expanding into the following regions: Mexico, Malaysia, Thailand, New Zealand, Greece, Norway, Austria and Sweden.

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Regions:

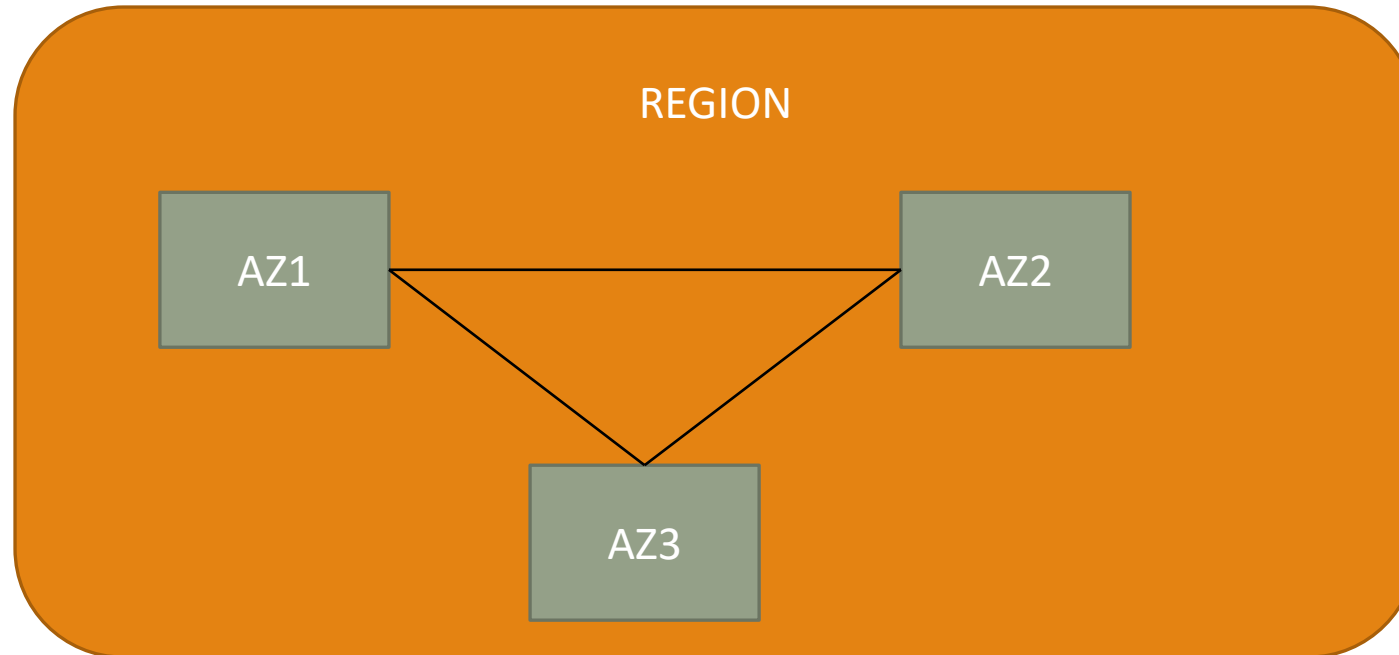
- Geographic areas where Google deploys its infrastructure and data centers.
- Each region is separated from other regions.



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Availability Zones(AZ Availability Zones)

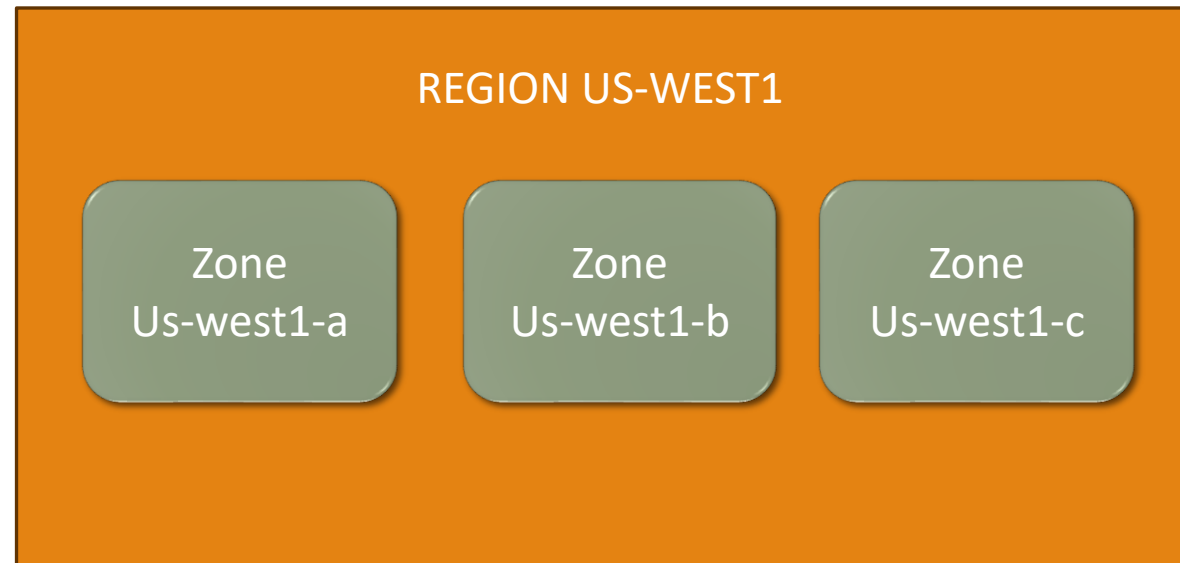
- They are Data Centers (DPCs) located within a region and that allow high availability and failover and improve performance and functionality.
- At the time of making this course there are 118 AZ. Usually, the regions have 3 zones.



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Regions.

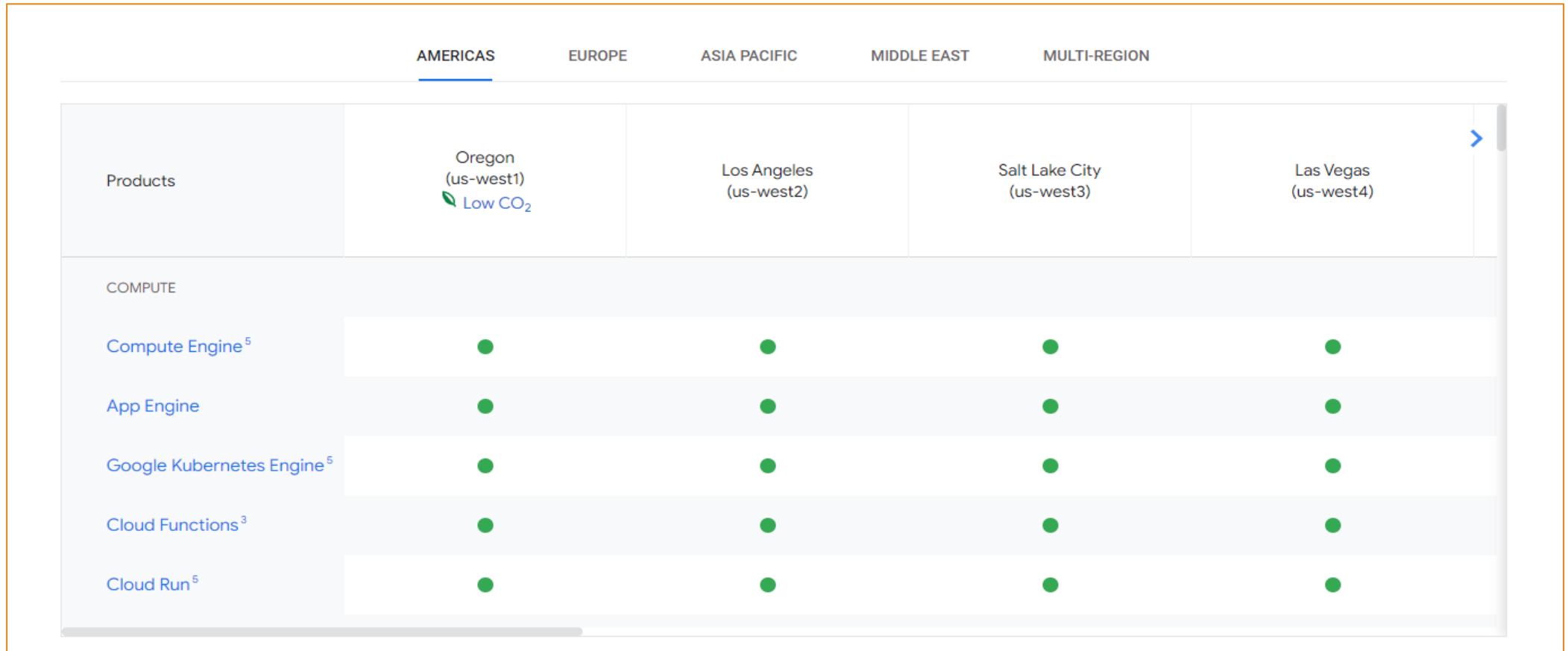
- Regions are given a name and AZ are assigned an alphanumeric code.
- For example, the Oregon region is US-WEST1 and its zones are called:
 - US-WEST1-A
 - US-WEST1-B
 - US-WEST1-C



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Services by region.

Not all services are available in all regions. We can see the list in Google's documentation.



The screenshot shows a table of Google Cloud services availability across different regions. The regions are AMERICAS, EUROPE, ASIA PACIFIC, MIDDLE EAST, and MULTI-REGION. The AMERICAS region is selected, showing sub-regions: Oregon (us-west1) with a Low CO2 icon, Los Angeles (us-west2), Salt Lake City (us-west3), and Las Vegas (us-west4). The services listed are Compute Engine, App Engine, Google Kubernetes Engine, Cloud Functions, and Cloud Run. All services are available in all four sub-regions of AMERICAS.

	AMERICAS	EUROPE	ASIA PACIFIC	MIDDLE EAST	MULTI-REGION
Products	Oregon (us-west1) Low CO2	Los Angeles (us-west2)	Salt Lake City (us-west3)	Las Vegas (us-west4)	
COMPUTE					
Compute Engine ⁵	●	●	●	●	●
App Engine	●	●	●	●	●
Google Kubernetes Engine ⁵	●	●	●	●	●
Cloud Functions ³	●	●	●	●	●
Cloud Run ⁵	●	●	●	●	●

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- ❑ Network Edge Locations (PoPs → Points of Presence)
 - ❑ Edge Networking aims to bring services such as computing or storage closer to users.
 - ❑ Edge POPs are where Google's network connects to the rest of the internet through peering.
 - ❑ This large global network connects edge PoPs to our data centers.
 - ❑ By operating an extensive global network of interconnection points, we are able to bring Google traffic closer to our hubs, thereby reducing the costs and providing users with a better experience.

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□ Edge Nodes

- Edge locations are designed to deliver services with the lowest possible latency.
- Edge nodes represent the layer of Google's infrastructure closest to users.
- With edge nodes, network operators and Internet service providers deploy Google-supplied servers within their network.
- Google has dozens of these data centers spread across the globe.
- They are closer to users than regions or AZs, often in major cities, so responses can be quick and efficient.