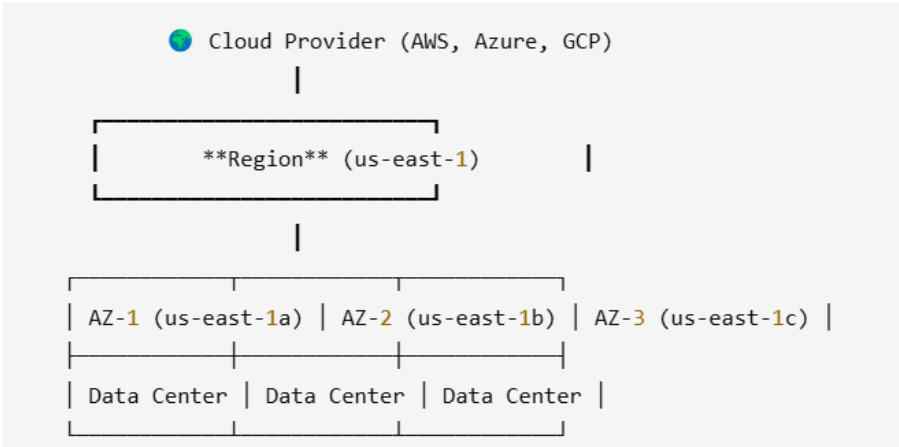


Difference Between Region and Availability Zone

Feature	Region	Availability Zone (AZ)
Definition	A <b>geographical area</b> that contains multiple Availability Zones.	A <b>logical data center</b> within a Region, physically separated but connected via low-latency links.
Scope	Covers a large geographical location (e.g., <b>us-east-1</b> in Virginia).	Exists <b>inside</b> a Region (e.g., <b>us-east-1a</b> , <b>us-east-1b</b> ).
Purpose	Helps customers deploy applications closer to their users for lower latency.	Ensures <b>high availability</b> by distributing resources across multiple AZs.
Fault Tolerance	Failure of a Region can impact all its Availability Zones.	If one AZ fails, workloads can be shifted to another AZ within the same Region.
Data Centers	Composed of <b>multiple</b> Availability Zones.	Each AZ consists of <b>one or more</b> physical data centers.
Connectivity	Regions are isolated from each other.	AZs within a Region are connected via high-speed, low-latency links.
Example	AWS <b>us-west-2</b> (Oregon), <b>eu-central-1</b> (Frankfurt).	AWS <b>us-west-2a</b> , <b>us-west-2b</b> , <b>us-west-2c</b> within the <b>us-west-2</b> Region.

Diagram to illustrate



Explanation:

- The Cloud Provider (AWS, Azure, GCP) has multiple Regions worldwide.
- Each Region (e.g., **us-east-1**) contains multiple Availability Zones (AZs).
- Each AZ has its own independent Data Centers, but all AZs within a Region are connected via low-latency networking.
- If one AZ fails, services can shift to another AZ within the same Region for high availability.