**Regions:**

* It is a physical isolated locations spread across globe to host your data to reduce latency and fault tolerance.
* In each region there will be at least two availability zones for fault tolerance
* Each Region is interconnected with fiber.
* No data is shared among region unless we explicitly asked for.

**Availability Zone – AZ:**

* It is a combination of one or more isolated data centers in each region.
* Each AZ isolated from other AZs within the region. They are many kilometers apart and consider geographical feature.
* Though physically separated all AZs within a region are interconnection via High bandwidth, Low latency fully redundant fiber.

**Other options-**

* **Local Zones-** AWS Local Zones are a type of infrastructure deployment that places compute, storage, database, and other **select AWS services close to large population and industry centers.**
* **Wavelength Zones**- AWS Wavelength embeds **AWS compute and storage services within 5G networks**, providing mobile edge computing infrastructure for developing, deploying, and scaling ultra-low-latency applications.
* **Direct Connect Locations**- AWS Direct Connect is a network service that provides an **alternative to using the Internet** to utilize AWS cloud services. AWS Direct Connect enables customers to have low latency, secure and private connections to AWS for workloads which require higher speed or lower latency than the internet.
* **Edge locations**
* **Regional edge caches**

An **edge location** and **regional edge caches** is a site that Amazon CloudFront(CDN) uses to store cached copies of your content closer to your customers for faster delivery.

***Planning for failure and deploying applications across multiple Availability Zones is an important part of building a resilient and highly available architecture.***

Selecting a Region

1. Compliance with data governance and legal requirements
2. Proximity to your customers
3. Available services within a Region
4. Pricing

AWS Outpost is isolated mini region within your own data center.

It is a service that enables you to run infrastructure in a hybrid cloud approach.