

[Global Infrastructure B, Reliability]

Selecting a Region:

* Compliance with data governance & legal requirements.

Depending on your company & location you might need to run data out of specific areas.

Eg: If my company requires all of its data to reside within the boundaries of UK, then choose London region.

* Proximity to your customers:

→ Selecting a region close to our customer will help you to get content to them faster.

Eg:

us company is in Washington DC
many of its customers live in
Singapore. Instead of running its infrastructure
in the application from Singapore region.

* Available services within a region:

Sometimes the closest region might
not have all the features that you
want to offer to customers.

Eg:-

Suppose that your developer want
to build an application that uses Amazon
Braket. Amazon Braket is not available on
every region around the world. So, the
developer need to run it in one of the
region that already offers it.

* pricing:

Suppose that you are considering running an app. in both the United States & Brazil.

The Brazil had structure fee 50% more to run same workload in the US Region.

The cost of services can vary from region to region.

Availability Zones:

→ Availability Zones: Is a single data center or a group of data centers within a region.

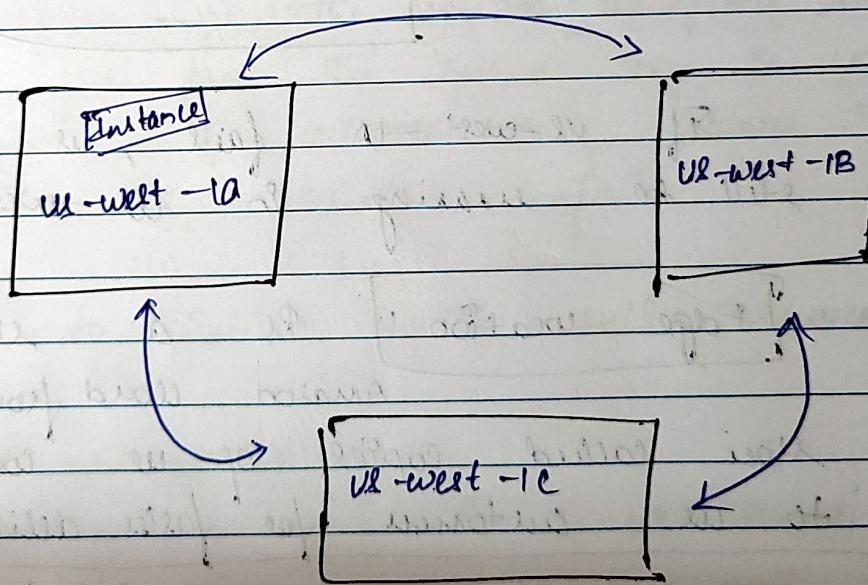
→ Availability zones are located tens of miles apart from each other.

→ It has low latency between availability zones.

→ If Pk a disaster occurs in one part of the region, they are distant enough to reduce the chance that multiple availability zones are affected.

Step →

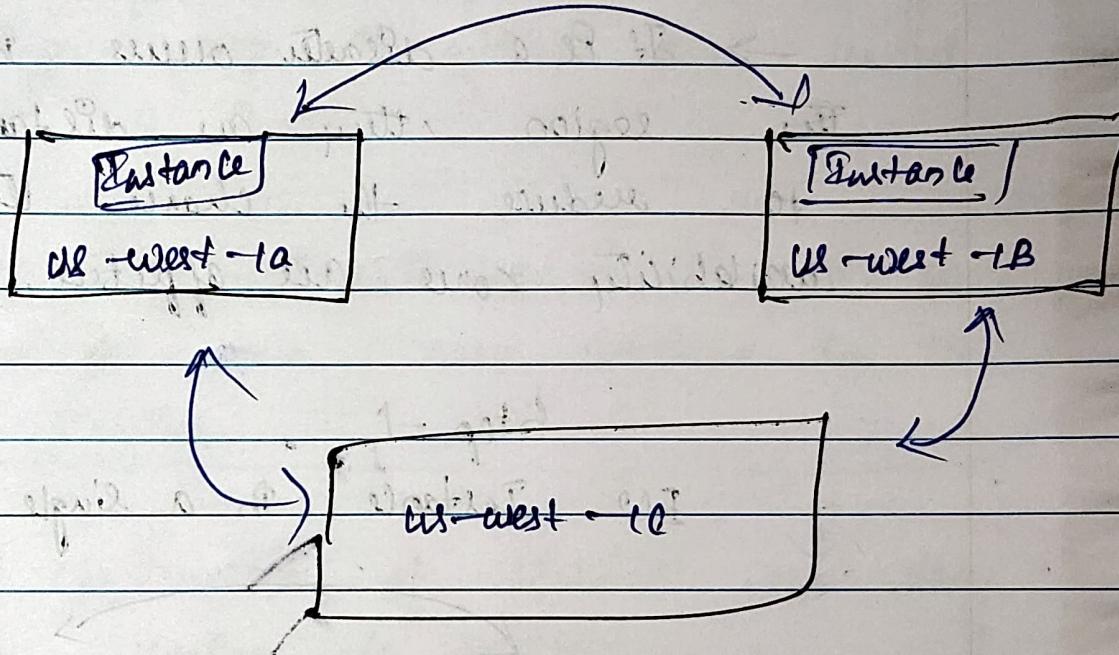
EC2 Instance in a single AZ.



Here if the us-west-1a fail you'll lose us instances.

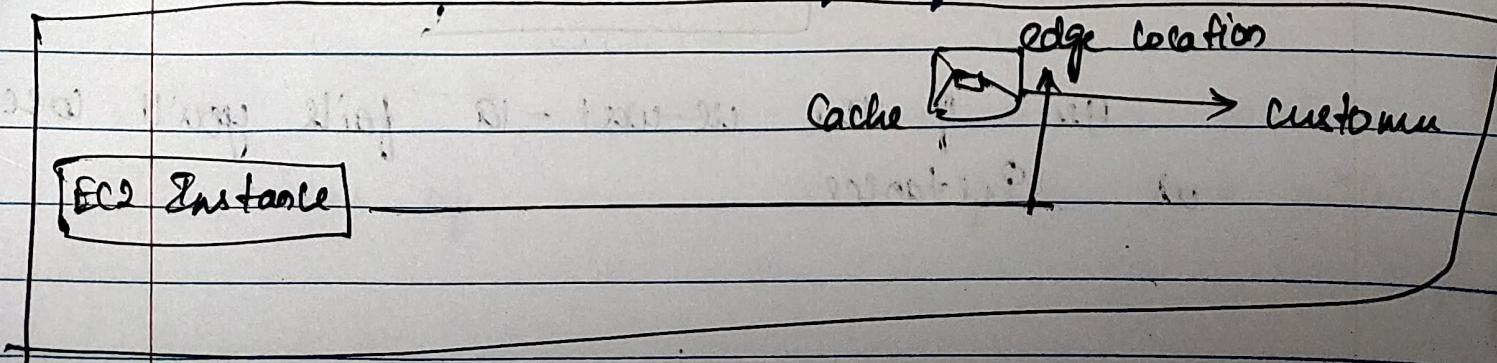
Step - 2

EC2 instance in a multi-AZ.



If us-west-1A fails, the app would still be running in us-west-1B.

Edge location: It's a IP that Amazon cloud front uses to store cached copies of the content closer to the customer for faster delivery.



If the data is in Brazil, & the customer is in China. To provide the content to the customer, instead of getting data from Brazil you'll get a copy of usually at edge location that is closer to the customer in China.

By doing this:

when customer requests one of the files → the Amazon CloudFront retrieves the file from the called copy in edge location & delivered to customer. The files are delivered faster.

ways to interact with AWS service:

AWS management console:

It is a web-based interface for accessing & managing AWS services.

↳ You can quickly access recently used services by name, very good at automation.

AWS Command Line Interface:

- * AWS CLI is available for use on windows, mac & linux.
- * It controls multiple AWS services directly from the CLI within one tool.
- * By using AWS CLI you can use commands to launch EC2 instances.

Software Development Kit:

- It is also used to access & manage AWS services.
- SDK enables use of AWS services with all existing applications or create entirely new app that will run on AWS.
- SDK supports programming lang. like C++, java, .NET.

AWS Elastic Beanstalk :

→ using EBS you can provide

- * Code

- * Configuration settings

→ It deploys resource to perform

- * Adjust capacity

- * Load Balancing.

- * Automatic scaling.

- * Application health monitoring.

AWS CloudFormation :

Using AWS CloudFormation you can treat your Infrastructure as code.



If more you can build an app environment by writing lines of code instead of using AWS mgmt console to individually provide resources.

→ It gives eight operation to perform
it also roll back changes automatically if
it detects errors.