**Objective:**

Creating an infrastructure on AWS using cloud formation. The cloud formation template should get instance type as user input and PEM key as launch the environment. The overall stack details are explained below in detail.

**User input:**

* PEM key
* Instance type

**Cloud formation designed:**

* Created a VPC.
* Private subnets are created on the VPC.
* Security groups are created to open the ports for web traffic (80,443) and ssh (22) Opened all the outbound traffic and restricted the inbound as mentioned above.
* EC2 server design:
  + EC2 servers are designed to be launched on the different availability of the private subnet.
  + Instance type and PEM key for the EC2 servers will be as per the choice of the user.
  + Security group created above will be attached to the EC2 servers.
  + AMI for the EC2 servers will be attached.
  + Tags are attached to the EC2 servers. These tags can be used to manage the AWS resources.
  + User data will be used to install apache server on the EC2 instance.
* ELB configuration:
  + ELB will be configured to manage the traffic of the EC2 servers.
* Auto scaling:
  + Auto scaling will be used to maintain the EC2 server count as 3.
* S3 bucket configuration:
  + Created s3 bucket.
  + Attached policy in such a way only EC2 servers will be able to get and put objects on this bucket.
* Attach a role to the EC2 servers, so that servers should have access to s3.

Note: it’s running only in Oregon region.