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Project 1 Architecture

There are many steps for the completion of this project. First, we will need to set up a “Jump Box” or the bastion in a public subnet to allow traffics from outside the world and able to let the admins to SSH into the bastion. Next, we will need to create a Net instance that helps the instances in the private subnets to have network connection. The Net instance will points to an Internet Gateway, which has a public IP address that everyone can see. We will also need to define two private subnets within different AZs, and need to create two public subnets in the same regions of the two private subnet’s AZ respectively. The purpose of the public subnets is to the Elastic Load Balancer access and balance the traffic to the private subnets. The Auto-Scaling Group will launch the instances.

In order to let the Auto-Scaling group to launch the instance correctly, we will need to provision the Launch Configure correctly. Especially In the advance configuration section under the Configuration Group of ASG, I configured basic setup for each instance and defined a cronJob to synchronize to the S3 bucket every minute to make sure I get the most updated content. After setting up the ASG, I put it behind the ELB. Although I mentioned the ASG and ELB over here, but these two steps should be done after The lambda function and API deployment plus the step for uploading the static content to S3.

The Lambda functions that I defined was calculator, which is a simple calculator that takes in user’s input to give back an result. The rest are just letting the user to input and retrieve records from DynamoDB. I also change the Front-end content for the website I was going to deploy, the functionality of getting an image that stored in S3 was also added. After lambda functions are defined, I deploy them using the API Gateway by setting up the resource and method for the Lambda functions. For testing, I used POSTMAN.

Finally, After everything works and the website can be seen using the ELB DNS, I deployed to the edge locations on the CloudFront so everybody in the world can see my website.