Solution 1 :

A picture containing text, map

Description automatically generated

The architecture uses the following services:

1. **RDS** – To create managed mysql database.
2. **ElastiCache** – To create managed redis instance.
3. **Lambda Function** – nodejs function with IAM role to access RDS and ElastiCache.
4. **Auto Scaling Group** – nodeJs ec2 instances with autoscaling policies
5. **Application Load Balancer** – Internet-facing LB, configured with two target groups, one target group pointing to Nginx server ec2 ( target type – instance) managed by ASG which serves the static website and another target group to nodejs Lambda function ( target type – Lambda function ) which serves the requests to /api
6. **Cloudfront** – For CDN, create a Web distribution with the ALB as origin.
7. **Route53** – For DNS , create a CNAME record pointing to Cloudfront domain name.

Solution 2:

A close up of a map

Description automatically generated

The architecture uses the following services:

1. **RDS** – To create managed mysql database.
2. **ElastiCache** – To create managed redis instance.
3. **Lambda Function** – nodejs function with IAM role to access RDS and ElastiCache.
4. **Auto Scaling Group** – nodeJs ec2 instances with autoscaling policies
5. **S3** – To store the static web contents.
6. **API Gateway** – To create websocket API gateway with Lambda integration.
7. **Cloudfront** – For CDN, create a Web distribution with S3 and API Gateway as origin.
8. **Route53** – For DNS , create a CNAME record pointing to Cloudfront domain name.