AWS Website Launch using EC2, Load Balancer & Auto Scaling Group

Architecture Overview

User → Application Load Balancer → EC2 Instances (Auto Scaling Group)

Step 1: AWS Account & Region

AWS Console me login karo aur region select karo (Recommended: ap-south-1 Mumbai).

Step 2: Key Pair Creation

EC2 → Key Pairs → Create key pair → Name: web-key → RSA → .pem file download karo.

Step 3: Security Groups

alb-sg: HTTP 80 open (0.0.0.0/0). ec2-web-sg: HTTP 80 from alb-sg aur SSH 22 from your IP.

Step 4: Launch Template

Amazon Linux 2 AMI select karo, instance type t2.micro, key pair web-key, security group ec2-web-sg aur user-data me Apache install script add karo.

Step 5: User Data Script

```
#!/bin/bash
yum update -y
yum install httpd -y
systemctl start httpd
systemctl enable httpd
echo "Welcome from $(hostname)" > /var/www/html/index.html
```

Step 6: Target Group

Target Group create karo: Type Instances, Protocol HTTP, Port 80, Health Check Path / .

Step 7: Application Load Balancer

Internet-facing ALB create karo, minimum 2 subnets select karo, alb-sg attach karo aur listener HTTP 80 ko target group se connect karo.

Step 8: Auto Scaling Group

ASG create karo using launch template, desired 2, min 1, max 3 instances. CPU utilization 50% par scaling enable karo.

Step 9: Verification

EC2 instances running hone chahiye aur Target Group me healthy status dikhna chahiye.

Step 10: Testing

Load Balancer DNS ko browser me open karo. Page refresh karne par different hostnames dikhne chahiye (load balancing proof).

Step 11: Auto Scaling Test

EC2 me CPU stress generate karo aur check karo ki new instance automatically launch hota hai.

Step 12: Cleanup

Auto Scaling Group, Load Balancer, Target Group aur EC2 instances delete karo to avoid charges.