Create a Application

Auto Scaling groups : It helps keep your application running smoothly when traffic increases and saves money when traffic decreases.

STEP 1 :- We need to create a VPC (virtual private cloud)

STEP 2 :- Change the inbound & outbond rules of security groups, which is attach with the existing VPC

STEP 3 :- We create a instance

STEP 4 :- Create image & template with the help of existing instance

STEP 5 :- Then create a load balancer (we create classic load balancers

STEP 6 :- Create a Simple Notification Service topic and create a subscription with the help of existing topic

STEP 7 :- Now we create a Auto Scaling Group

STEP 1 :- Create a vpc.

- Login into AWS console
- Console home – click on VPC
- Then click on create VPC
- Click on vpc and more

- Then we give a name for vpc
- We choose no.of avalibility zones (AZs) , no.of public subnets is also equal to AZs
- Number of private subnets is 0 (Zero)
- VPC endpoints – none
- Then click on create VPC
- VPC is created then click on your vpc we see that eg:vpc id vpc-09abcf8212b4ee407

STEP 2 :- Edit the inbound & outbound rules

- Open security groups which is attach with the existing vpc
- First we edit the inbound rules (adding rules)
- Types is HTTP & SSH source id is anywhere ipv4
- Then save the rules
- Also edit the outbound rules
- Types is HTTP & ALL TCP source id is anywhere ipv4
- Then save the rules

STEP 3 :- Create a instance

- Open the **EC2 console**
- In the EC2 Dashboard click **Launch instance**
- Choose an AMI -- Amazon Linux 2 AMI
- Choose instance type Select **t2.micro**
- Select a key pair (for SSH access)

- Choose existing VPC & Security groups
- click **Launch instance**. Wait a minute for the instance state to change to **running**.
- Then we got a ip address of instance. Copy that and paste with port id 80 in any web browser
  eg:-123.26.78/80
- Then we see **it works**

STEP 4 :- create image & template

- With the instance selected, click **Actions → Image and templates → Create image**.
- **Image name:** e.g. my-ec2-backup
- **Description:** e.g. Backup of my EC2 web server
- Click **Create image** when done.
- With the instance selected, click **Actions → Image and templates → Create template from instance.**
- **Template name:** e.g my-ec2-template
- **Description:** Created from my EC2 instance backup
- Select **MY AMIS** owned by me,Select the AMI you created earlier (for example: my-ec2-backup).
- click **Create launch template**.

STEP 5 :- Create a load balancer (CLB)

- Click **Create Load Balancer**.

- Choose Load Balancer Type – Choose **Classic Load Balancer** and click **Create**.
- **Name:** CLB
- **Scheme:** internet-facing (for public web access)
- **Network mapping :** vpc is existing one i.e vpc-09abcf8212b4ee407
- **Availability Zones and subnets :** click on 3 AZs
- **Security groups** added which is attached with VPC
- Then click **create load balancer**
- We get **DNS** CLB-1167751471.ap-south-1.elb.amazonaws.com
- Copy & paste in any web browser we get our application

STEP 6 :- Simple Notification Service

- Open SNS Console
- Go to topic and click create topic
- Choose topic type **Standard** – best for most use cases (multi-subscriber, high throughput)
- **Name:** priya
- Click create topic
- Now we click **Create subscription**.
- **Protocol:** Email
- **Endpoint:** our email address (rena101@gmail.com)
- Confirm the Subscription , we receive an email from **AWS Notifications** — click **Confirm subscription**.
- Click **create subscription**

STEP 7 :- Create Auto Scaling Group

- Click **Create Auto Scaling group**.
- **Name:** my-auto-scaling-group
- **Launch template:** select the one we created earlier (example: my-ec2-template)
- Then click next
- Choose Network **VPC:** select our existing VPC 09abcf8212b4ee407
- **Subnets:** choose **two or more Availability Zones (AZs)** for high availability
- Then click **Next**.
- Configure Load Balancing **(Optional)**
- Select Attach to an existing load balancer
- Choose from Classic Load Balancers
- Attach to a Classic Load Balancer (**CLB**)
- Then click **Next**.
- Configure Group Size and Scaling Policies
- **Desired capacity:** 3
- **Minimum capacity:** 2
- **Maximum capacity:** 4
- Monitoring Enable group metrics collection within CloudWatch
- Then click **Next**.
- Choose **Add notification (optional)**
- Select your **SNS topic** (e.g.priya)
- Then click **Next.**

- Add Tags **(Optional)**
- Click Next.
- Verify : Go to **EC2 → Instances**
- You’ll see new instances launched by your Auto Scaling Group. (They’ll have the Name tag or "launched by ASG")
- If you stop or terminate one manually, ASG will automatically launch a **new** one..!
