AWS Lab 35

EC2 - Auto Scaling Group

Overview of the lab

In this lab you will learn how to create a launch template & auto scaling group configuration to maintain / scale out or scale in instances based on demand

Scaling

Two Types

- **Vertical Scaling** - increasing or decreasing the capacity of instance (scale up / scale down)
- **Horizontal Scaling** - increasing or decreasing the number of instance(s) (scale out / scale in)

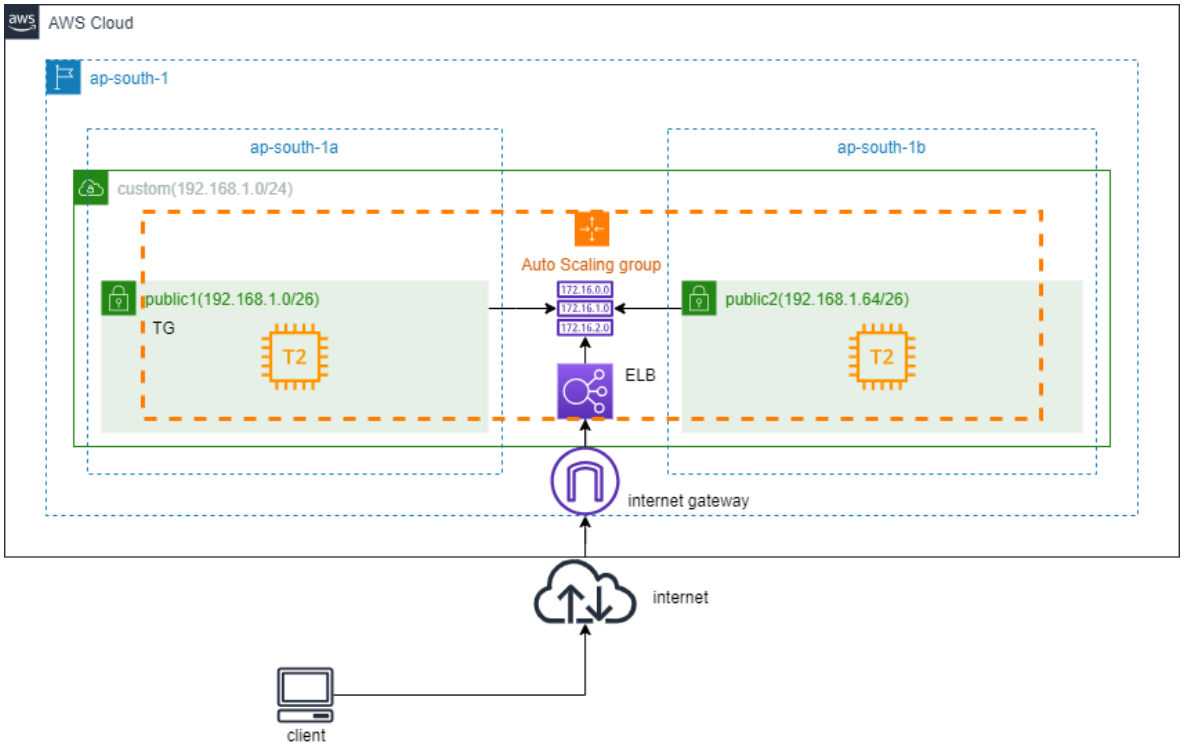
Auto Scaling Group (ASG)

It is a feature within EC2 which maintains the numbers of instances at a given time or horizontally scales (scaling out or scaling in) based on demand (configured metrics and threshold)

Launch Template

It is a configuration which defines the properties of the instances (ami, instance type, security group etc) for launching instance(s) when scaling event happens

Architecture



Step by Step Lab

Create Launch Template

1. In EC2 management console Click on Launch Templates and Create launch template
2. Launch template name and description
   - 2.1. Launch template name - demo-template
   - 2.2. Template version description - demo
   - 2.3. Auto Scaling guidance - check
3. Launch template contents
   - 3.1. Application and OS Images - RedHat
   - 3.2. Instance type - t2.micro

3.3. Key pair - Select the existing key

3.4. Network settings - Firewall - select existing security group (custom-vpc security group)

4. In Advanced Details(scroll down to bottom), copy the below bash script in userdata section

```
#!/bin/bash
dnf install httpd -y
systemctl start httpd
systemctl enable httpd
echo $HOSTNAME is within asg > /var/www/html/index.html
```

5. Click on Create launch template

Create Auto Scaling Group

6. Click on Create Auto Scaling group
7. Choose launch template
   7.1. Auto Scaling group name - demo-asg
   7.2. Launch template - demo-template
   7.3. Click on Next
8. Choose instance launch options
   8.1. Network
      8.1.1. VPC - custom-vpc
      8.1.2. Availability Zones and subnets - custom-vpc-public1 & custom-vpc-public2
      8.1.3. Click on Next
9. Configure advanced options

9.1. Load balancing - Attach to a new load balancer

9.2. Load balancer type - Application Load Balancer

9.3. Load balancer name - demo-alb

9.4. Load balancer scheme - Internet-facing

9.5. Availability Zones and subnets - custom-vpc-public1 & custom-vpc-public2

9.6. Listeners and routing - Default routing - Create a target group

9.6.1. New target group name - demo-tg

9.7. Health checks -

9.7.1. Turn on Elastic Load Balancing health checks

9.7.2. Health check grace period - 120 seconds

9.8. Click on Next

10. Configure group size and scaling

10.1. Group size - Desired capacity - 2

10.2. Scaling - Min - 1 Max - 4

10.3. Automatic scaling - Target tracking scaling policy

10.4. Instance warmup - 120

10.5. Click on Next

11. Add notifications

11.1. Add notification

11.2. Select the SNS Topic - demo-topic

11.3. Click on Next

12. Add tags - Click on Next

13. Review and Create Auto Scaling group