Introduction to Amazon Auto Scaling

**Lab Details:**

1. AWS Auto Scaling will automatically scale resources as needed to align to your selected scaling strategy, This lab walks you through to use Auto Scaling to automatically launch or terminate EC2’s instances based on user defined policies, schedules and health checks.
2. Duration: 00:55:00 Hrs
3. AWS Region: US East (N. Virginia)

**Tasks:**

1. Login to AWS Management Console.
2. Create an Auto Scaling Launch Configuration
3. Create an Auto Scaling group
4. Test the Auto Scaling Infrastructure.

**Steps:**

1. Launch your lab environment by clicking on **Start Lab** button.
2. Once your lab environment is created successfully your **Console Login** button will be active, Now click on **Console Login** button, this will open your **AWS Console** Account for this lab in a new tab.
3. Navigate to EC2 by clicking on the “services” menu in the top,then click on “EC2” (in the “Compute” section).
4. Create **Launch Configurations**
   1. In the left navigation pane, In **AUTO SCALING**, click **Launch Configurations**.
   2. Click on **Create Launch Configuration**
   3. For the Choose AMI step, Goto My AMIs and choose **autoscale-ami - ami-0d0e82222fdc7b1ac**. Its a pre-configured AMI with web server and a default index.html page.   
      **Note :** If you didn't found the AMI, please uncheck all filters from left panel, like "Owned by me"
   4. For the Choose Instance Type step, select t2.micro instance. Choose Next: Configure details.
   5. For the Configure details step, do the following:
      1. For Name, type a name for your launch configuration.
      2. For Advanced Details, select Assign a public IP address to every instance.
      3. Choose Add Storage.
   6. In Add Storage, No need to change anything just click on Next: Configure Security Groups
   7. Assign a security group:
   8. Configure Security Group-
      1. To add **SSH**,   
         Choose Type: SSH   
         Source: Custom(Allow specific IP address) or Any where(From ALL IP addresses accessible).
      2. For **HTTP**, Click on “Add Rule”,  
         Choose Type: HTTP   
         Source: Custom(Allow specific IP address) or Any where(From ALL IP addresses accessible).
      3. For **HTTPS**, Click on “Add Rule”,  
         Choose Type: HTTPS   
         Source: Custom(Allow specific IP address) or Any where(From ALL IP addresses accessible).
      4. After that click on Review and Launch
   9. click on review.
   10. Now Click on **Create Launch Configuration**
   11. Key pair: We won't need to connect to instances as part of this lab. Therefore, you can select Proceed without a key pair.
   12. Now Click on **Create Launch Configuration**
5. **Create an Auto Scaling Group**
   1. An Auto Scaling group is a collection of EC2 instances, and the core of Amazon EC2 Auto Scaling. When you create an Auto Scaling group, you include information such as the subnets for the instances and the number of instances the group must maintain at all times.
   2. Go to Left menu on EC2 and choose **Auto Scaling Groups**
   3. Click on Create Auto Scaling Group button.
   4. Launch Configuration:Use an existing launch configuration
   5. Now choose the launch configuration which you created in previous steps.
   6. Click on Next Step
   7. For the Configure Auto Scaling group details step, do the following:
      1. For Group name, type a name for your Auto Scaling group.
      2. Keep Group size set to the default value of 2 instance for this tutorial.
      3. Keep Network set to the default VPC for the region.
      4. For Subnet, select one or more subnets for your Auto Scaling instances.
      5. Choose Next: Configure scaling policies.
      6. On the Configure scaling policies page, do the following:
         1. Select Use scaling policies to adjust the capacity of this group.(Scale the Auto Scaling group using step or simple scaling policies)
         2. Scale between "2" and "2" instances. These will be the minimum and maximum size of your group
         3. **Increase Group Size**: Click on add new alarm
         4. **Create Alarm:** Here uncheck send notification checkbox
         5. Increase Group Size:Average of CPU Utilization
         6. Is: ">=" 80 Percent
         7. For at least: 1 consecutive period(s) of 5 Minutes
         8. click on **Create Alarm** button
         9. **Decrease Group Size**: Click on add new alarm
         10. **Create Alarm:** Here uncheck send notification checkbox
         11. Increase Group Size:Average of CPU Utilization
         12. Is: "<=" 80 Percent
         13. For at least: 1 consecutive period(s) of 5 Minutes
         14. click on **Create Alarm** button
         15. Now click on Next: Configuration Notification
      7. Add Notification: No need to change anything go to next step clilck on Next: Configure Tags
      8. Add Tags: Here you can enter tags in key value pair for identication of your autoscaling group.
      9. On the Review page, choose Create Auto Scaling group.
      10. On the Auto Scaling group creation status page, choose Close.
6. Now go to EC2 instanc list, you can see that there are two new running instances, which are created by your autoscaling group. You can identify by there tag name which you given at the time of creating autoscaling group.
7. You have successfully created a autoscaling group with a policy to minmume 2 and maximume 2 instances.
8. **Test Auto Scaling Group** : For testing the auto scaling policy, Go to EC2 instance list and select one of your instance.
9. Now Go to Top Action menu and select Instance State and select Stop
10. This will stop your instance.
11. Once your instance is stopped, after 1-2 min you can see that the as per the auto scaling group policy you stopped instance will be terminating automatically, and a new instance is launched to fullfill the policy condition.
12. You have successfully completed the lab.