Module – 4

CASE STUDY – ELB

Problem Statement:

You work for XYZ Corporation that uses on premise solutions and a limited number of systems. With the increase in requests in their application, the load also increases. So, to handle the load the corporation has to buy more systems almost on a regular basis. Realizing the need to cut down the expenses on systems, they decided to move their infrastructure to AWS.

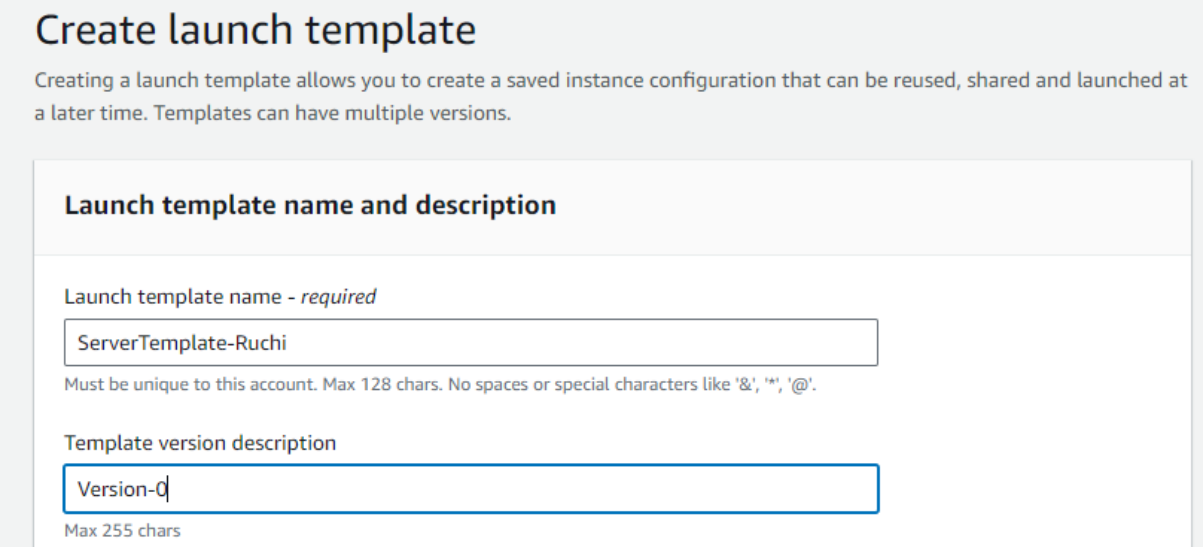
Tasks To Be Performed:

1. Manage the scaling requirements of the company by:
    a. Deploying multiple compute resources on the cloud as soon as the load increases and the CPU utilization exceeds 80%
    b. Removing the resources when the CPU utilization goes under 60%

2. Create a load balancer to distribute the load between compute resources.
3. Route the traffic to the company's domain.

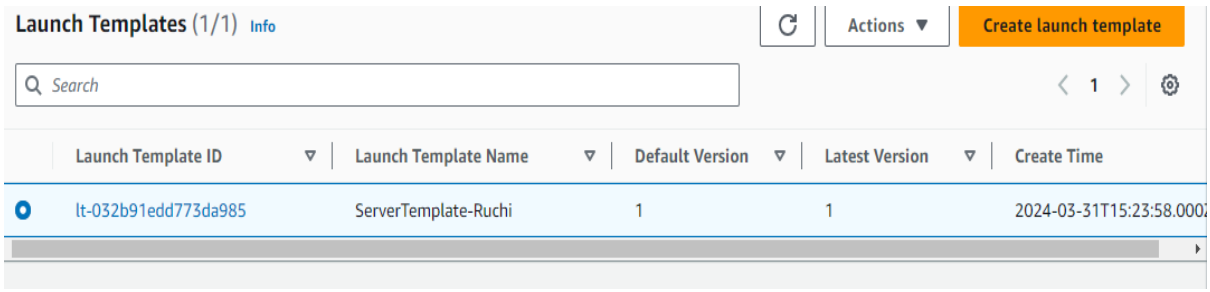
Solutions:

Create Launch template and Configure the details

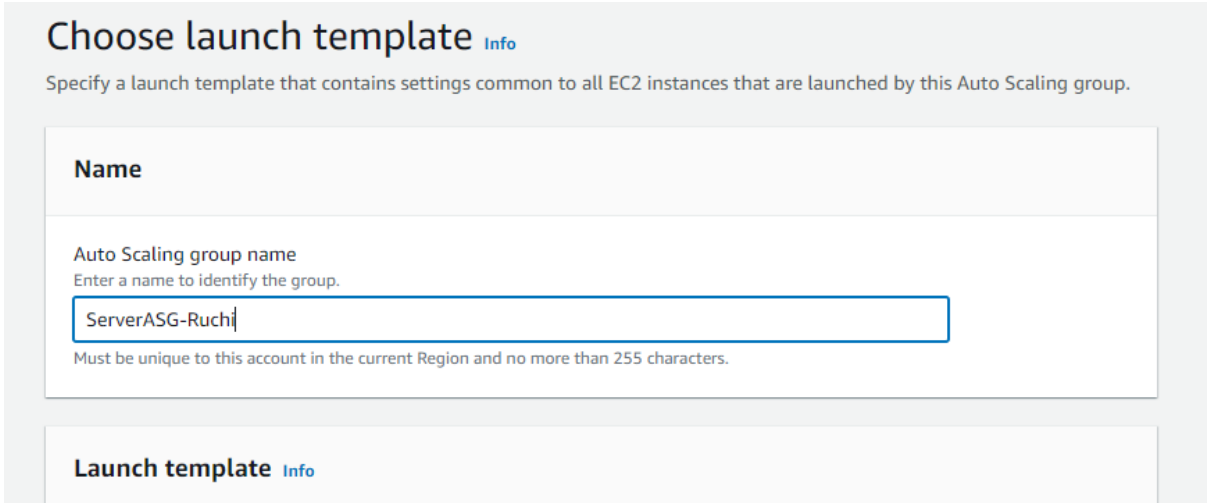


Using User Data Installing apache server and Display Hi Everyone and Click Create Launch Template

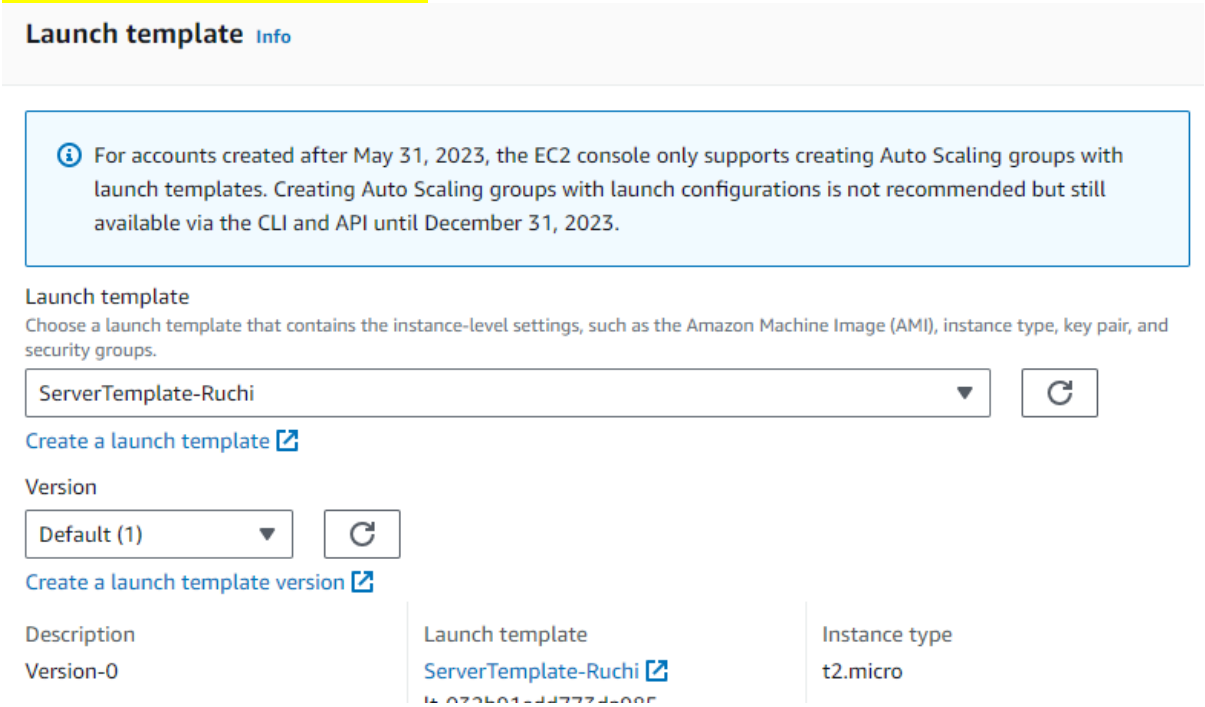
```
#!/bin/bash
sudo apt update -y
sudo apt install apache2 -y
sudo systemctl enable apache2
sudo systemctl start apache2
sudo echo "<center>Hi Everyone<br><h3>This Side Ruchitha</h3></center>" > /var/www/html/index.html
```



Create Auto Scaling Group with Load balancing and target groups



Select the Created Template



Select the VPC and subnets

Network Info

For most applications, you can use multiple Availability Zones and let EC2 Auto Scaling balance your instances ac
the zones. The default VPC and default subnets are suitable for getting started quickly.

VPC

Choose the VPC that defines the virtual network for your Auto Scaling group.

vpc-09e421fda8e59206f
172.31.0.0/16 Default

Create a VPC

Availability Zones and subnets

Define which Availability Zones and subnets your Auto Scaling group can use in the chosen VPC.

Select Availability Zones and subnets

ap-southeast-1a | subnet-0cf105f46bf03a18f
172.31.16.0/20 Default

ap-southeast-1b | subnet-09000fba630e2f3ca
172.31.32.0/20 Default

ap-southeast-1c | subnet-0f757c191c1351ae0
172.31.0.0/20 Default

Create a subnet

Create the load Balancer and Target Group

Attach to a new load balancer

Define a new load balancer to create for attachment to this Auto Scaling group.

Load balancer type

Choose from the load balancer types offered below. Type selection cannot be changed after the load balancer is created. If you need a different type of load balancer than those offered here, visit the Load Balancing console.

- (●) Application Load Balancer — HTTP, HTTPS
- ( ) Network Load Balancer — TCP, UDP, TLS

Load balancer name

Name cannot be changed after the load balancer is created.

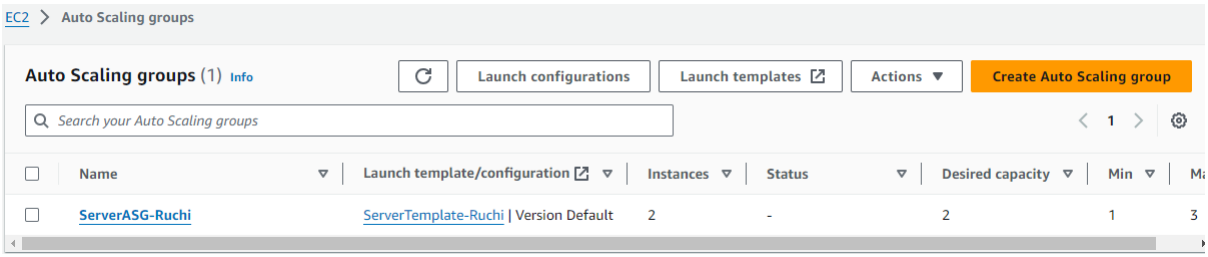
ServerALB-Ruchi

Load balancer scheme

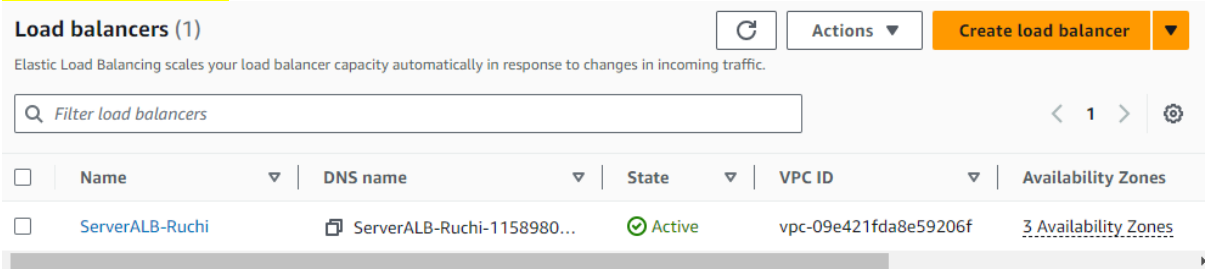
Scheme cannot be changed after the load balancer is created.

- ( ) Internal
- (●) Internet-facing

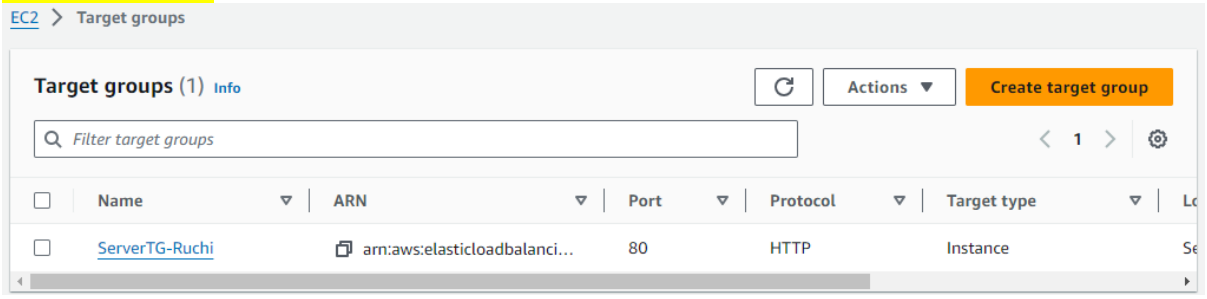
Auto Scaling Group



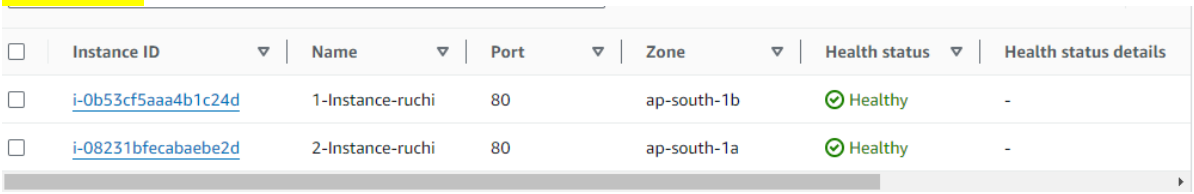
Load Balancers



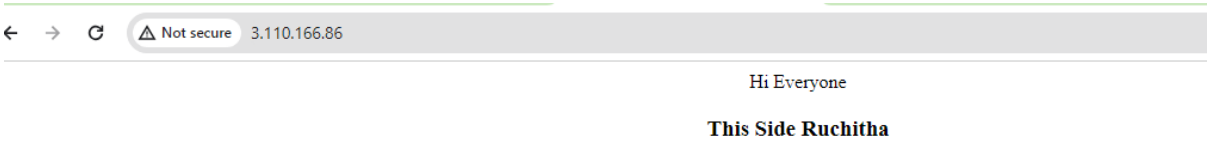
Target Groups



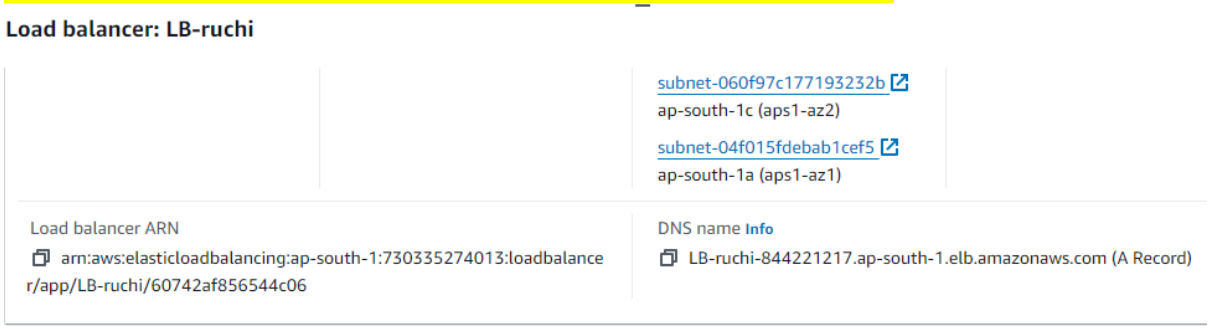
Instances



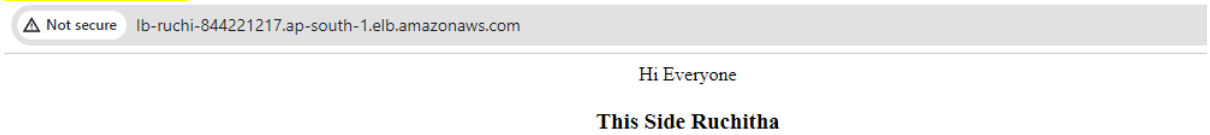
Select the public IP Address and confirm whether Apache server is installed properly



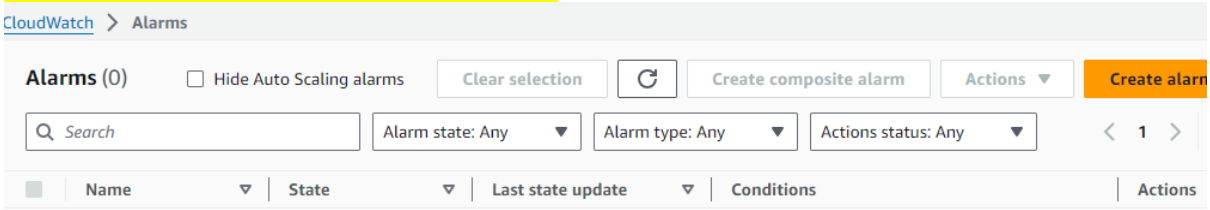
Select the DNS and copy to the browser and check it works



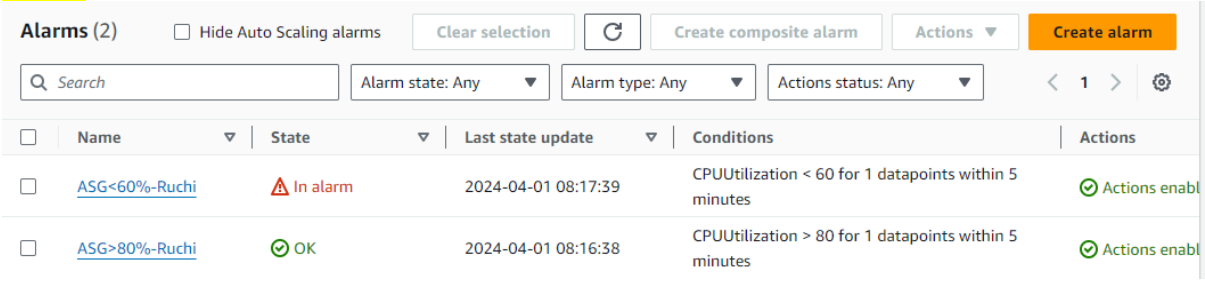
It is working



Go to Cloudwatch and create Alarms

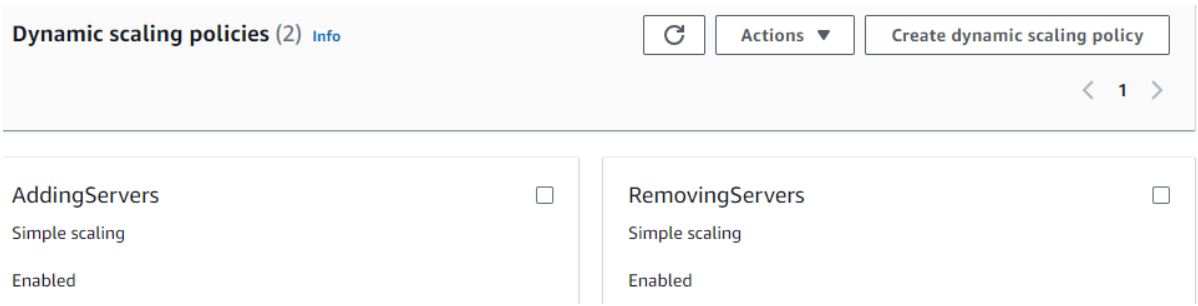


Select Metric browse created ASG and Select CPU utilization, edit to >80% & <60%



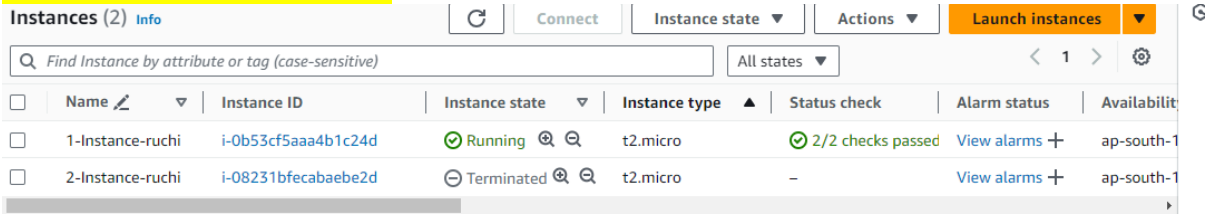
Create dynamic scaling policy for Adding and removing servers with 1 capacity units

EC2>Auto Scaling Policy> Automatic Scaling>create dynamic scaling policy



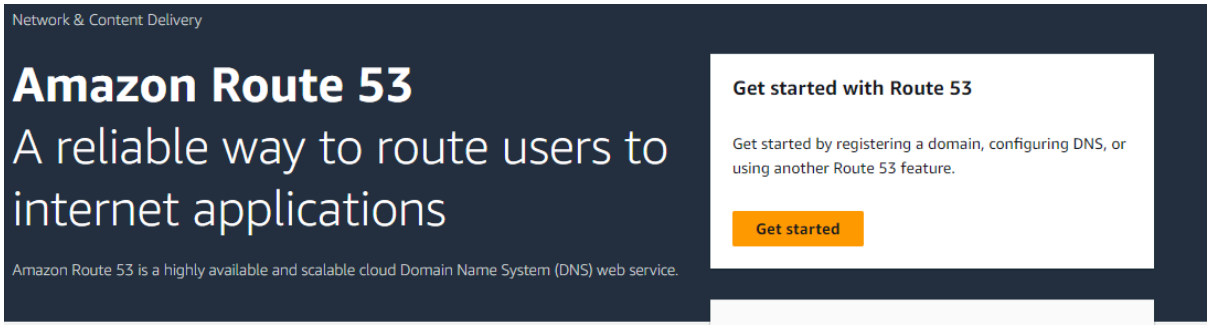
We Selected Simple Scaling to Deleting One Instance because We do not have Load so It will Delete Automatically if load <60 %

1 instance got terminated



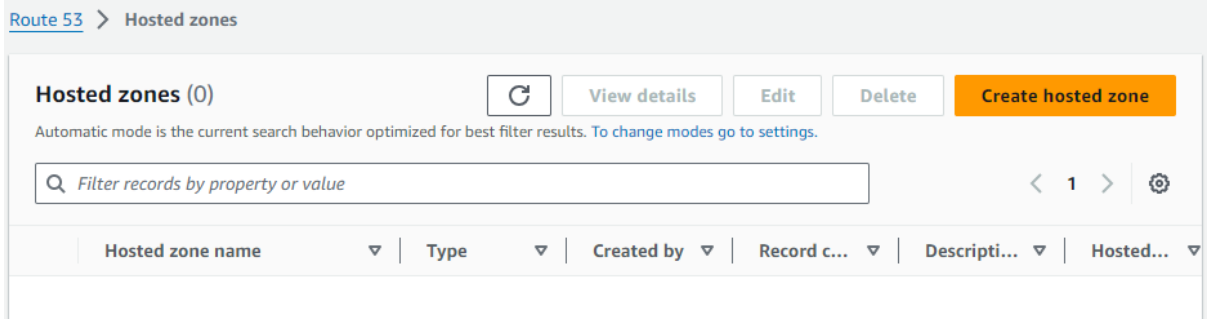
Last part,

Route the server to the company's domain

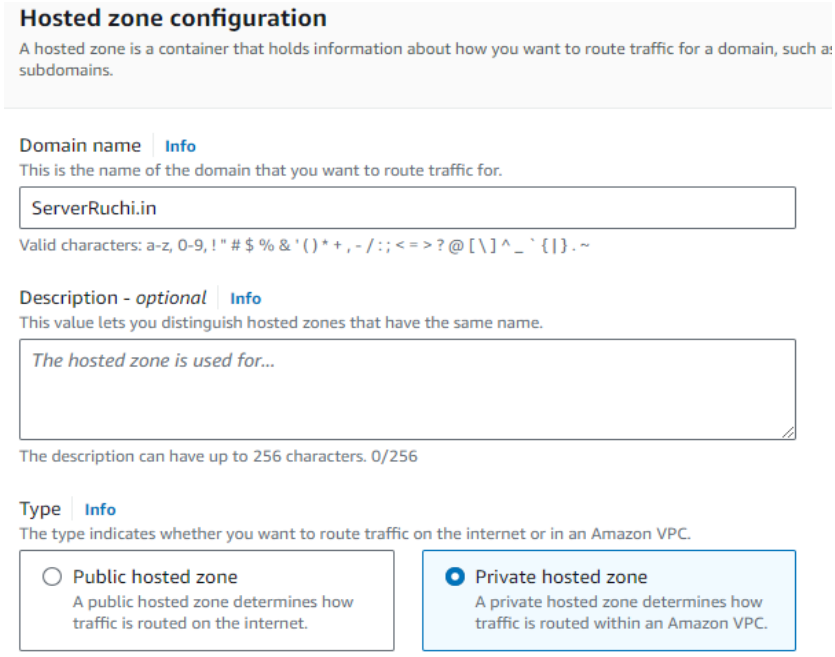


Go to

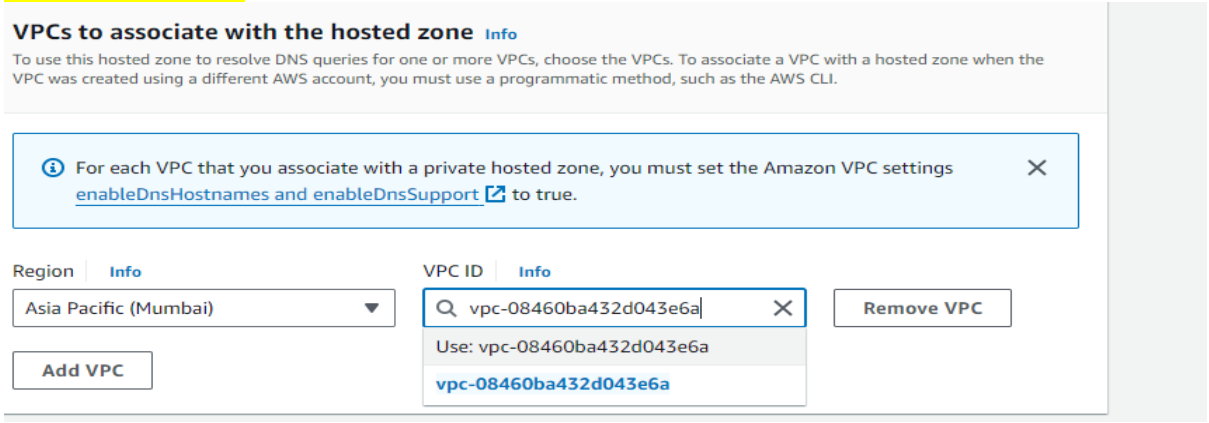
Route 53 > Hosted zones > create hosted zone



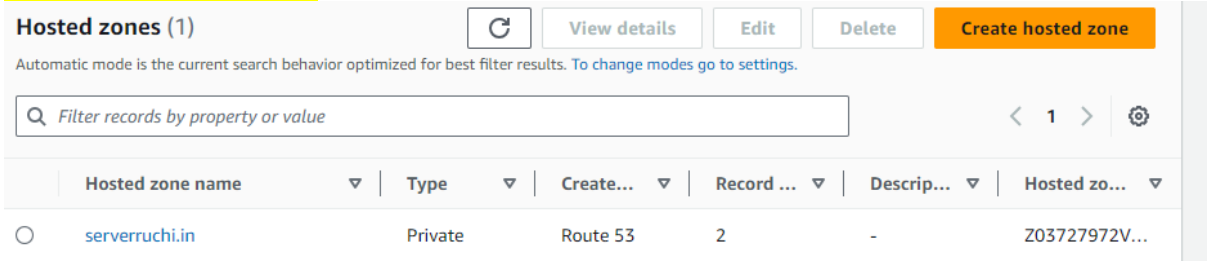
Give Your Domain Name Select Here Private since we have Not Registered any Domain Name to Host Publicly



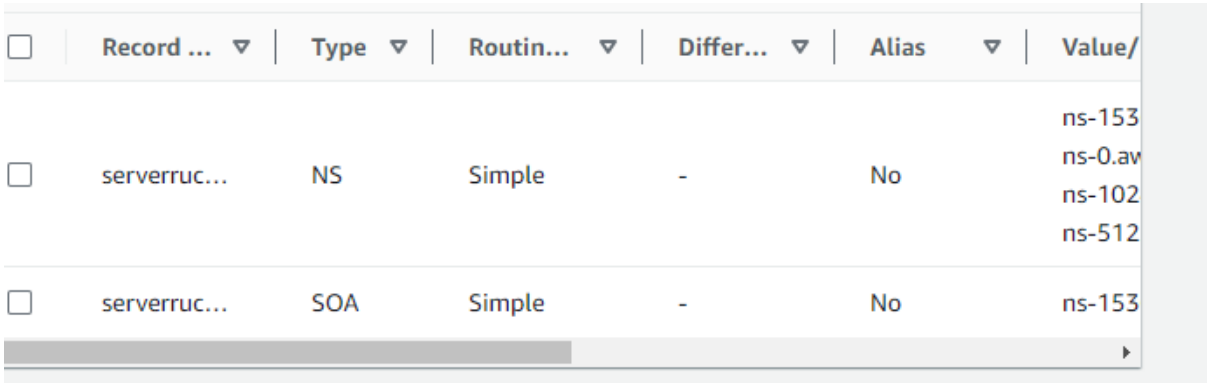
Choose the VPC



Hosted Zone created

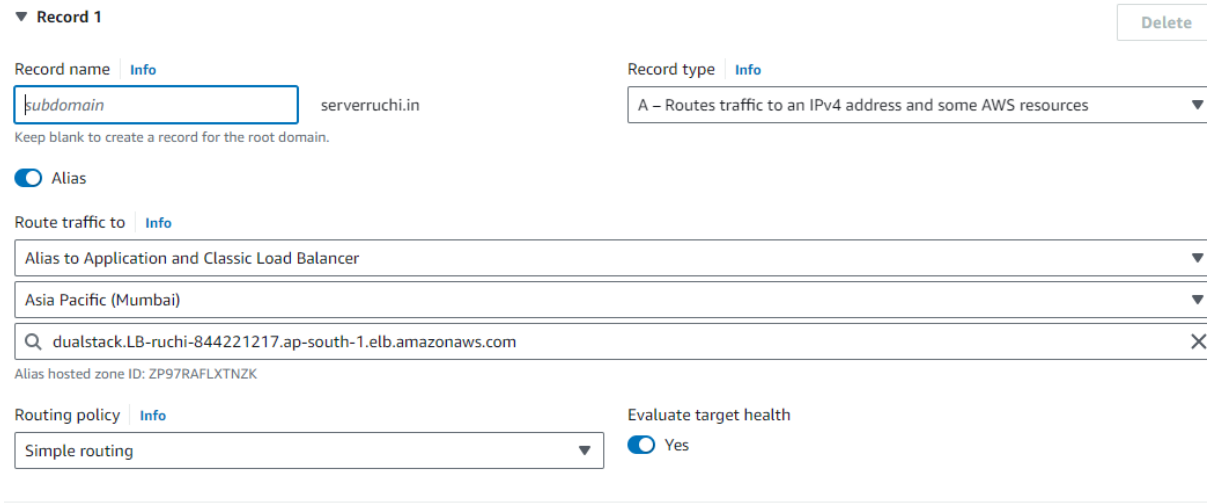


2 records are created, that is Name Server(NS) which brings the traffic and SOA

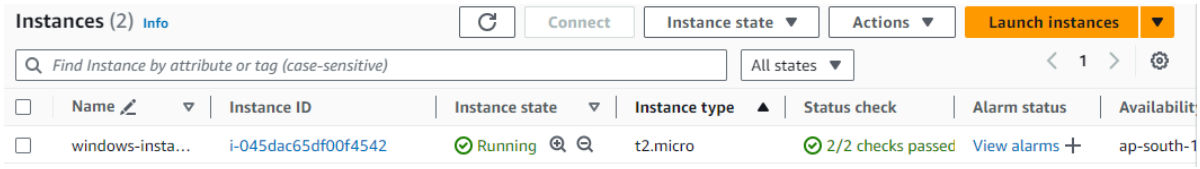


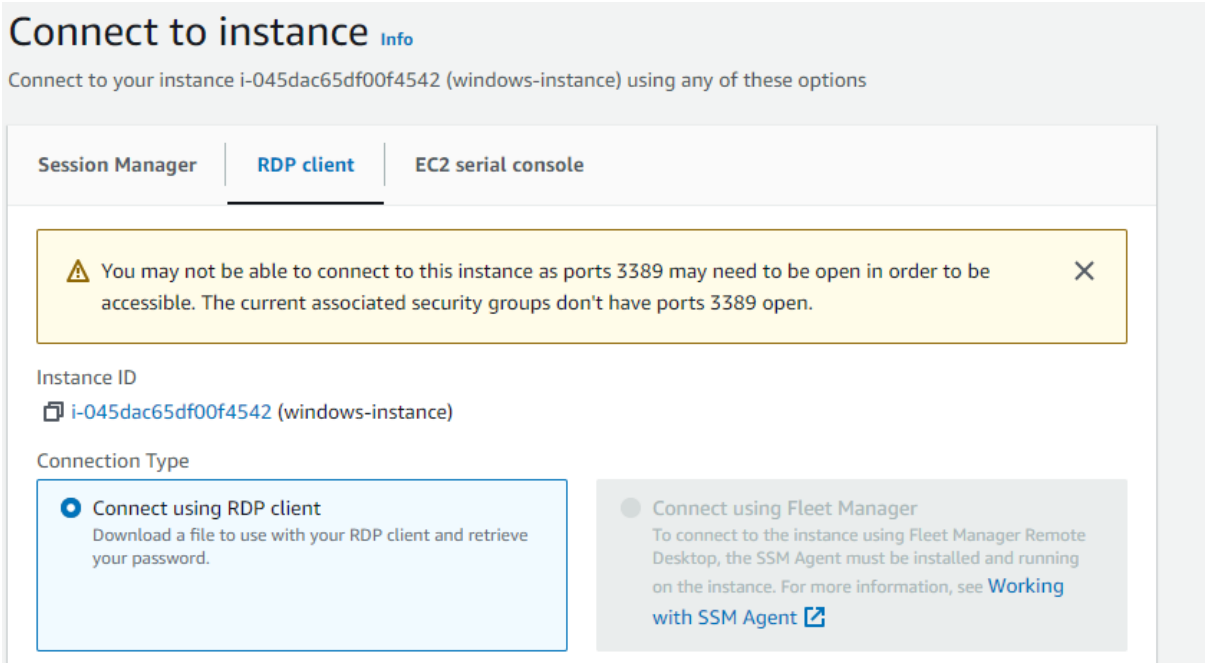
Record ...	Type	Routin...	Differ...	Alias	Value/
serverruc...	NS	Simple	-	No	ns-153 ns-0.aw ns-102 ns-512
serverruc...	SOA	Simple	-	No	ns-153

Create another A Record type

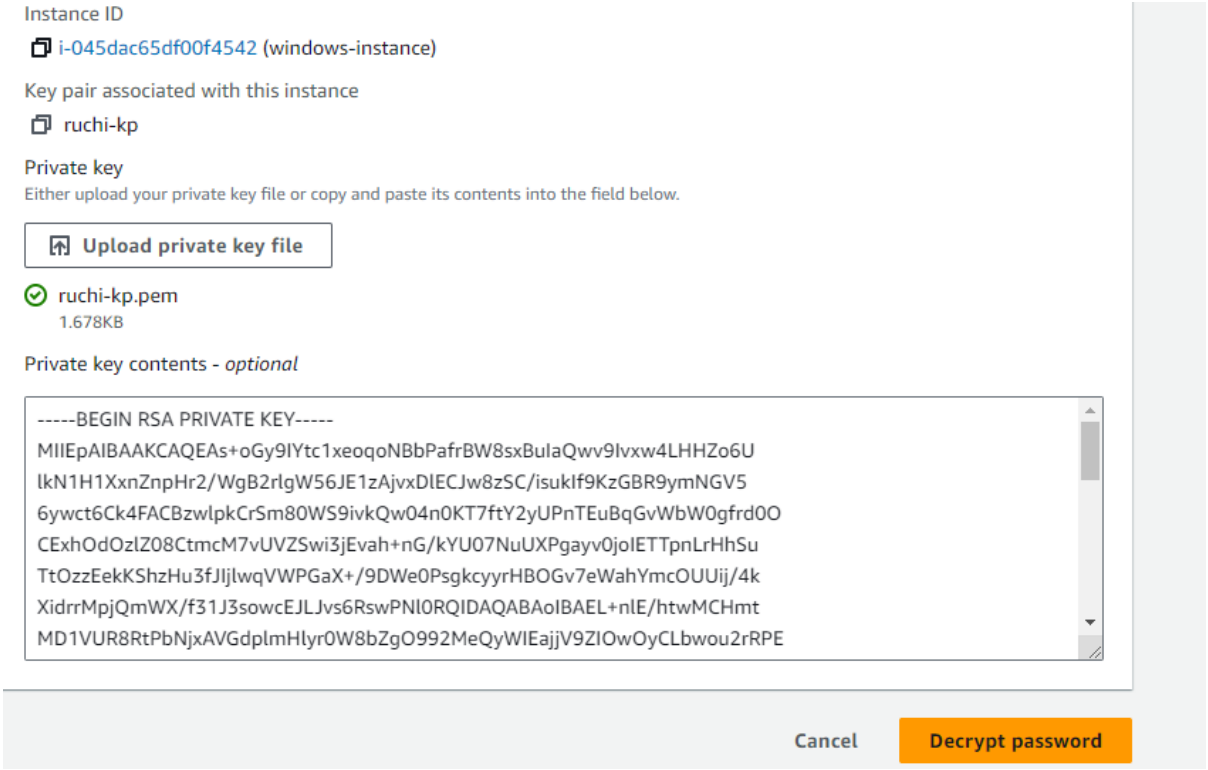


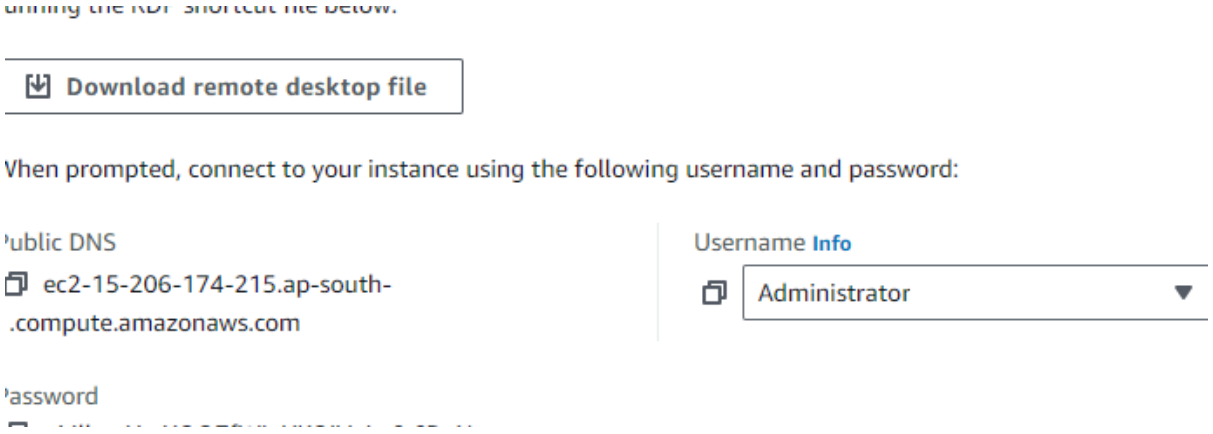
Create new windows instance





Upload the private key to generate password.





With the help of public DNS, Username and password open the web page in your local Remote desktop.