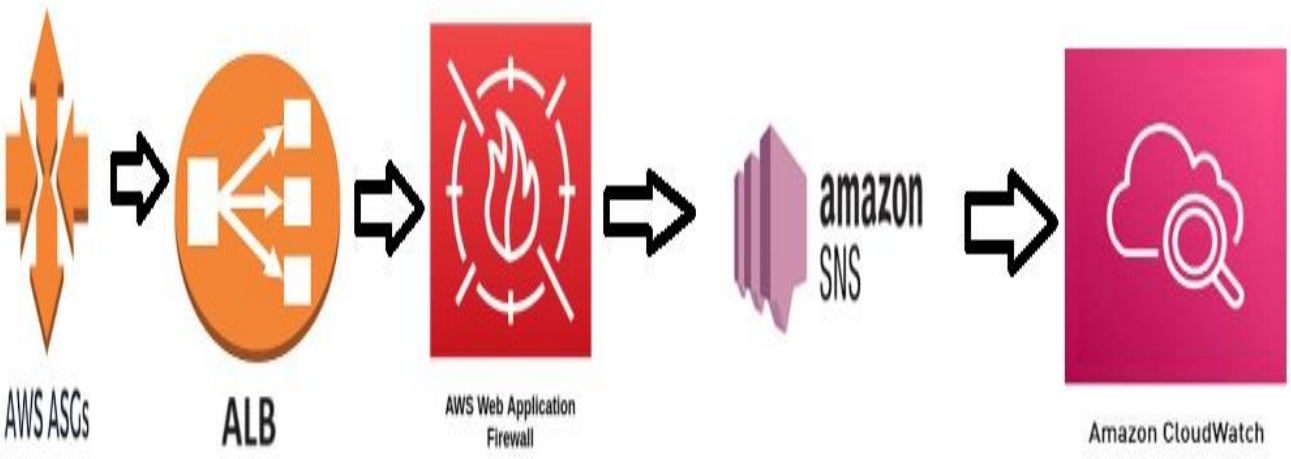
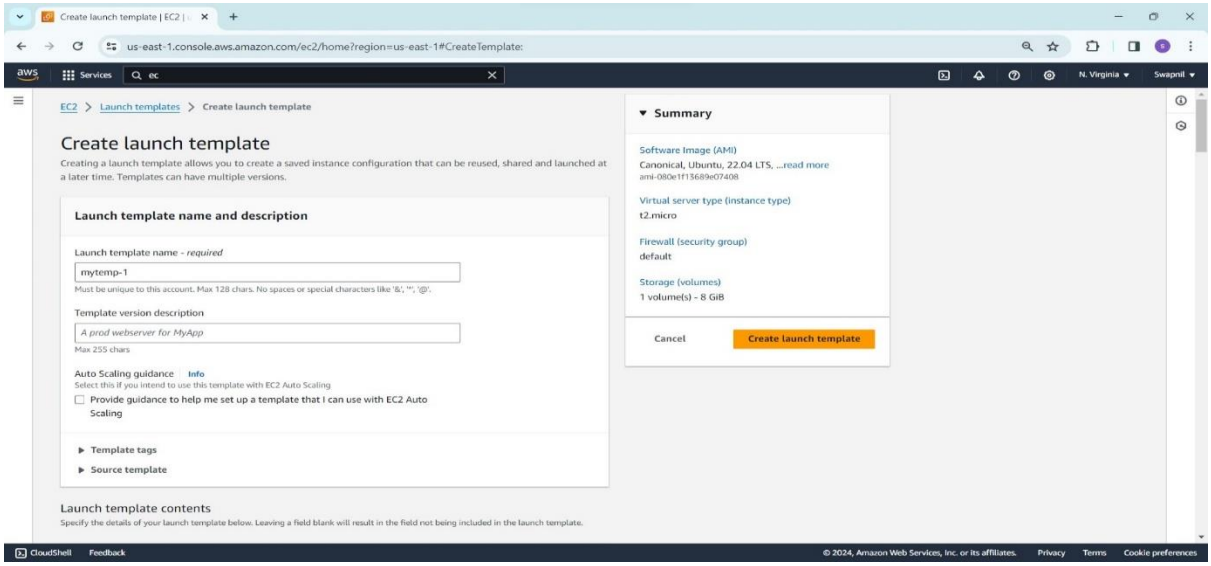
Mini project 1:

Hosting a website on AWS EC2 Instance with Auto Scaling group, Application Load Balancer and Web Application Firewall (WAF) and Monitor with Cloud Watch and Add Simple Notification Service (SNS) for it.



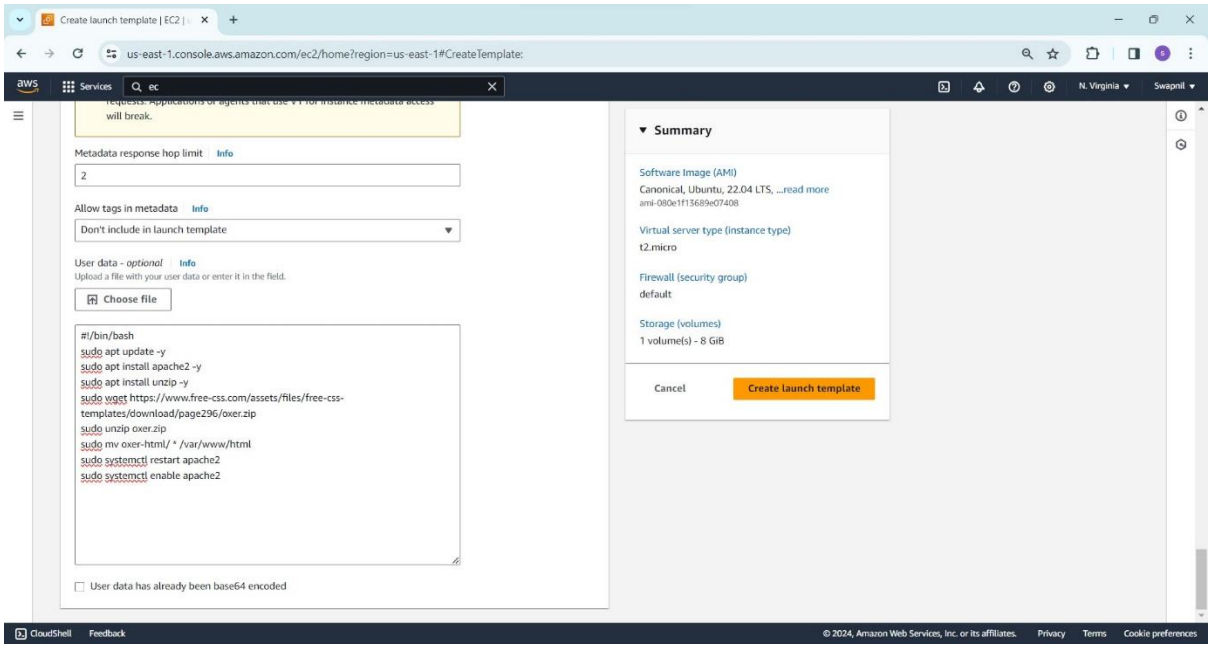
Crate launch template

Step 1: Crate launch template.



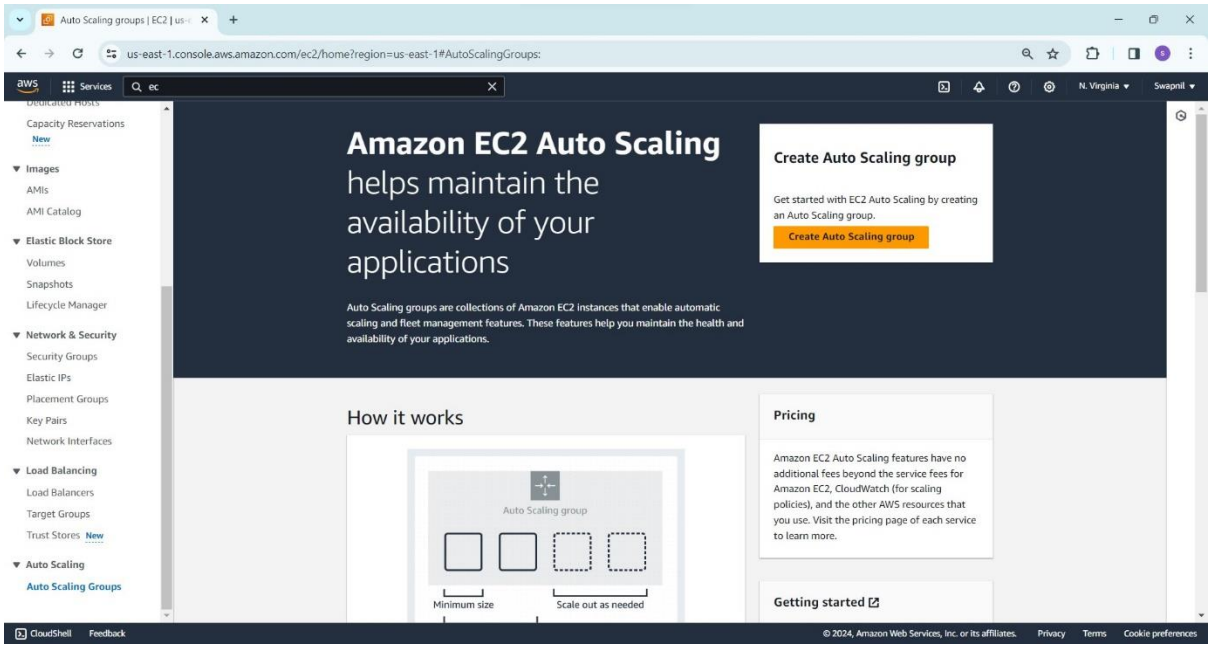
Step 2: Add user data in template

- Add web server(apache2)
- Download the website code file in it.
- Unzip the code file.

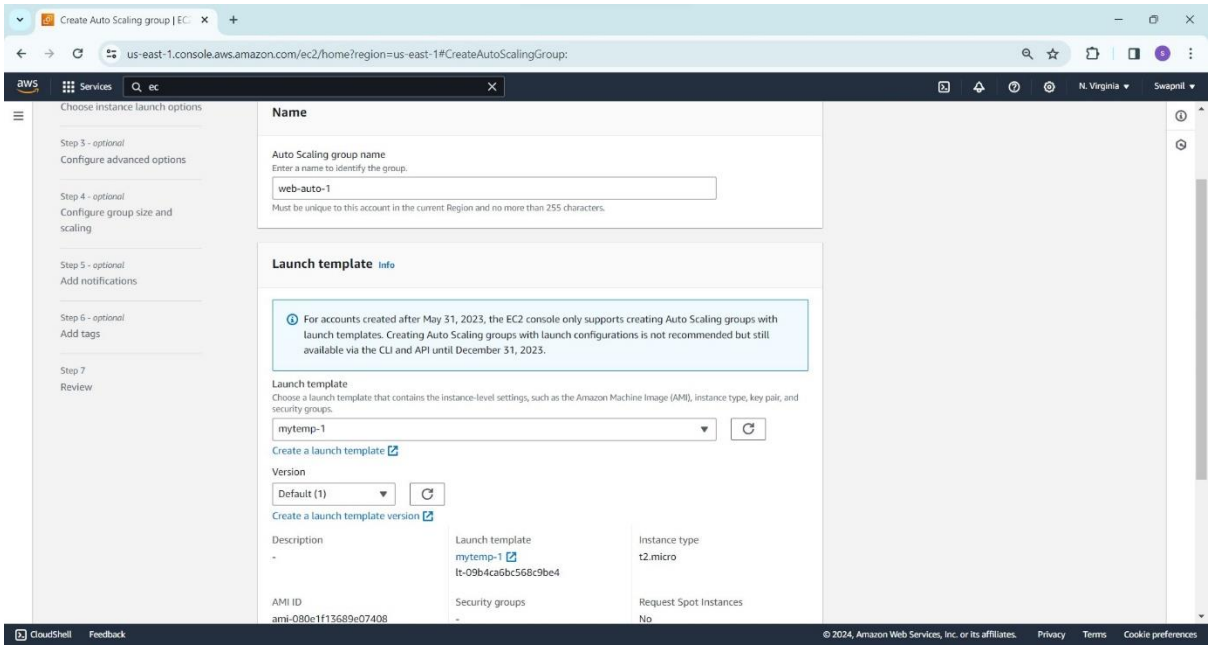


Create auto scaling group from launch template.

Step 3: Create auto scaling group.

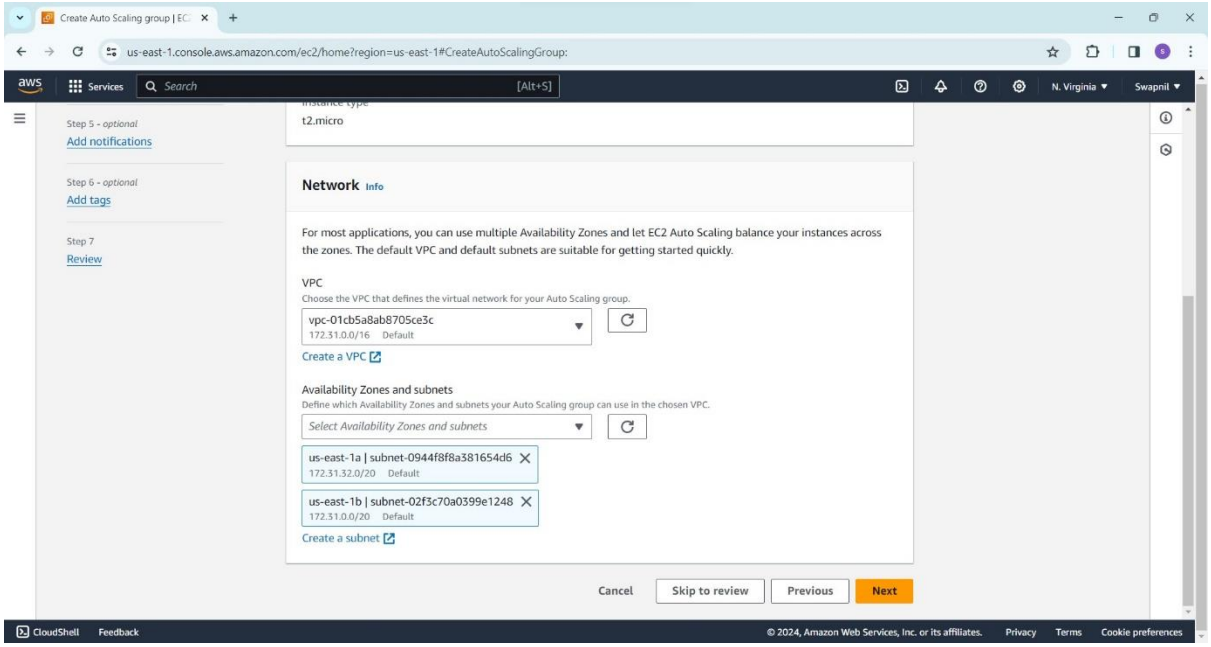


Step 4: Define name and template.



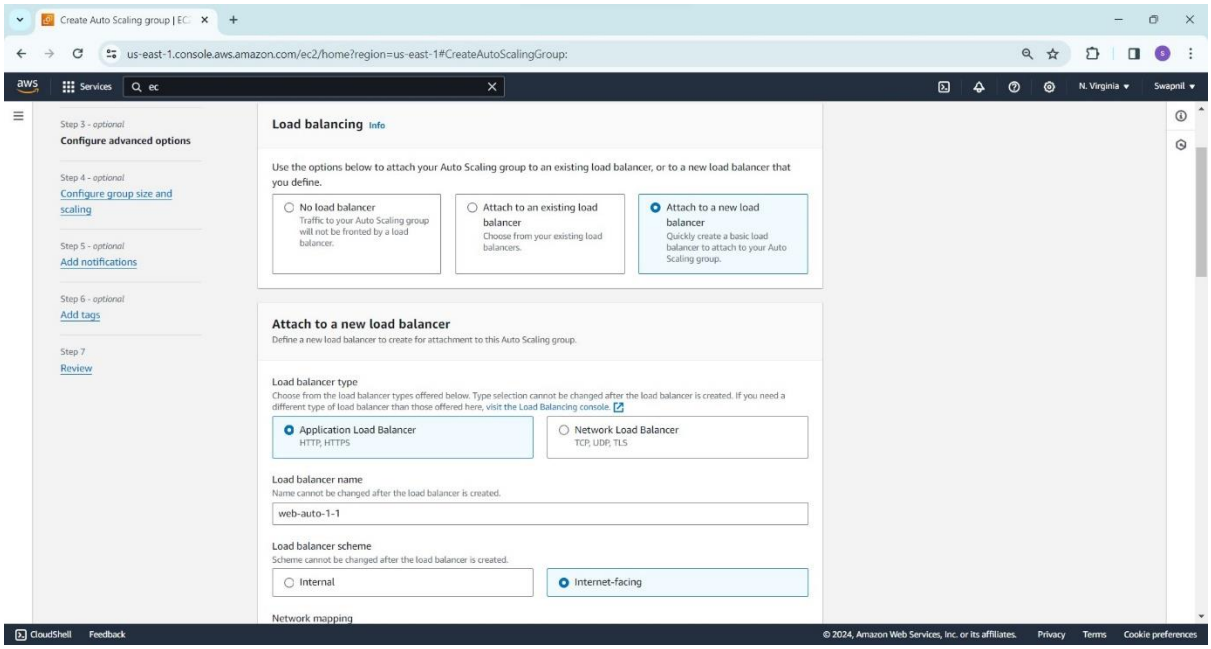
Step 5: Choose instance launch options.

➢Select availability zones and subnets.

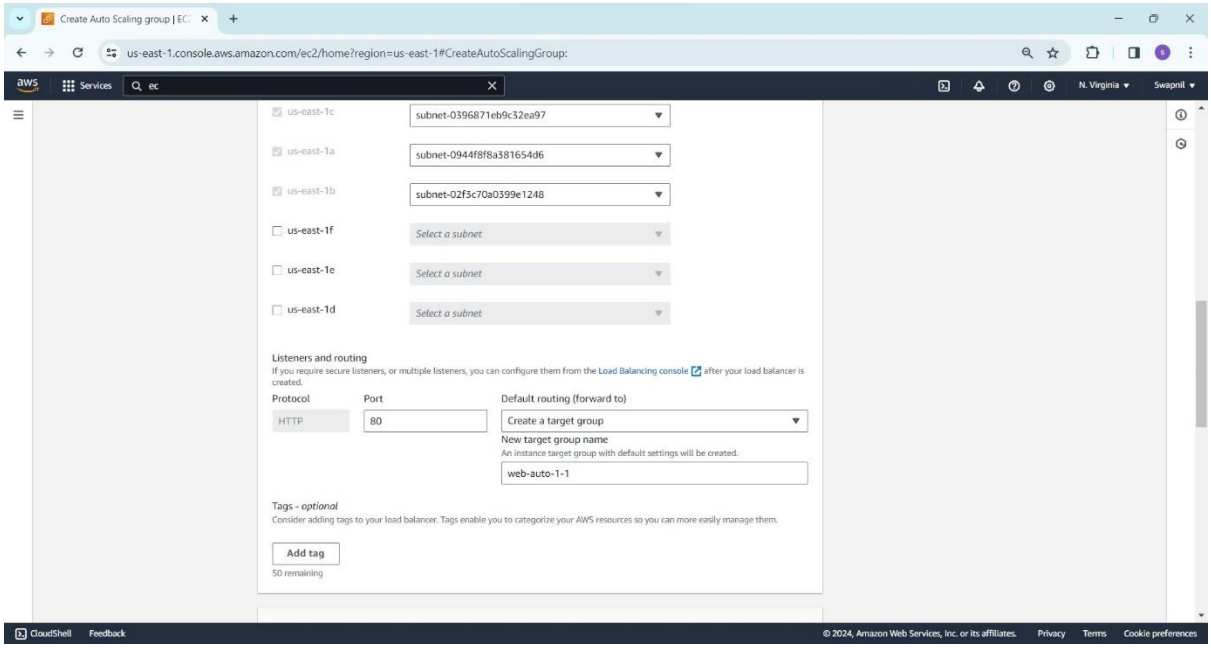


Step 6: Configure advanced options.

➢ Add application Load balancer option.

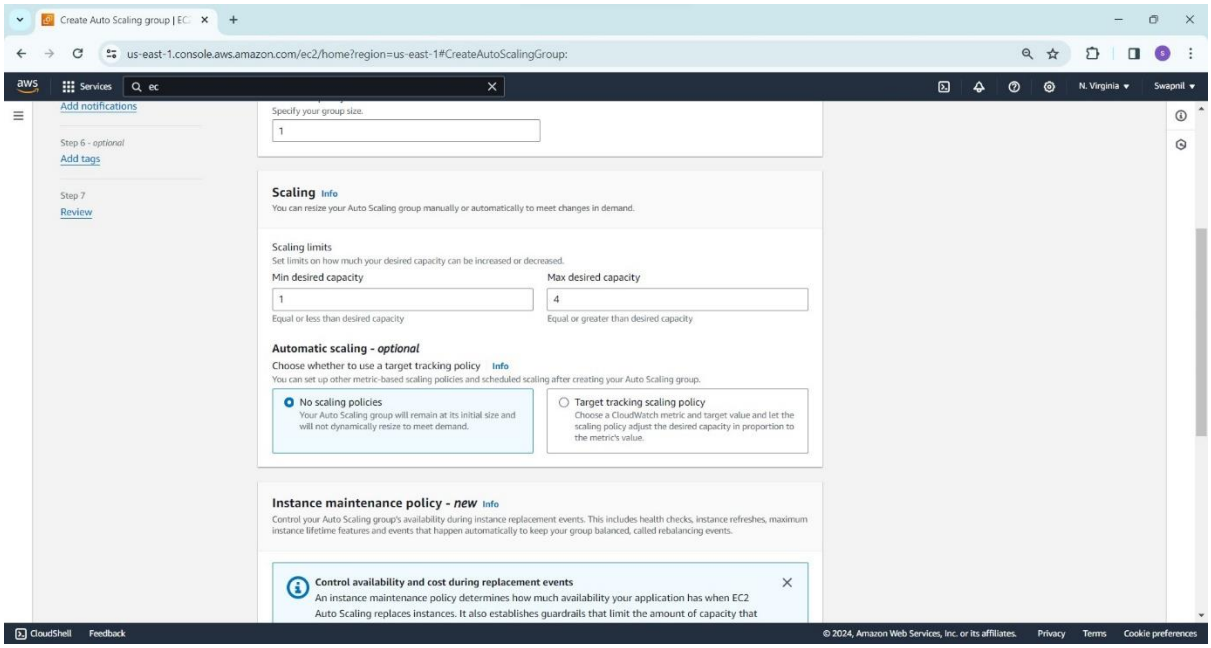


Step 7: Add load balancer and target group



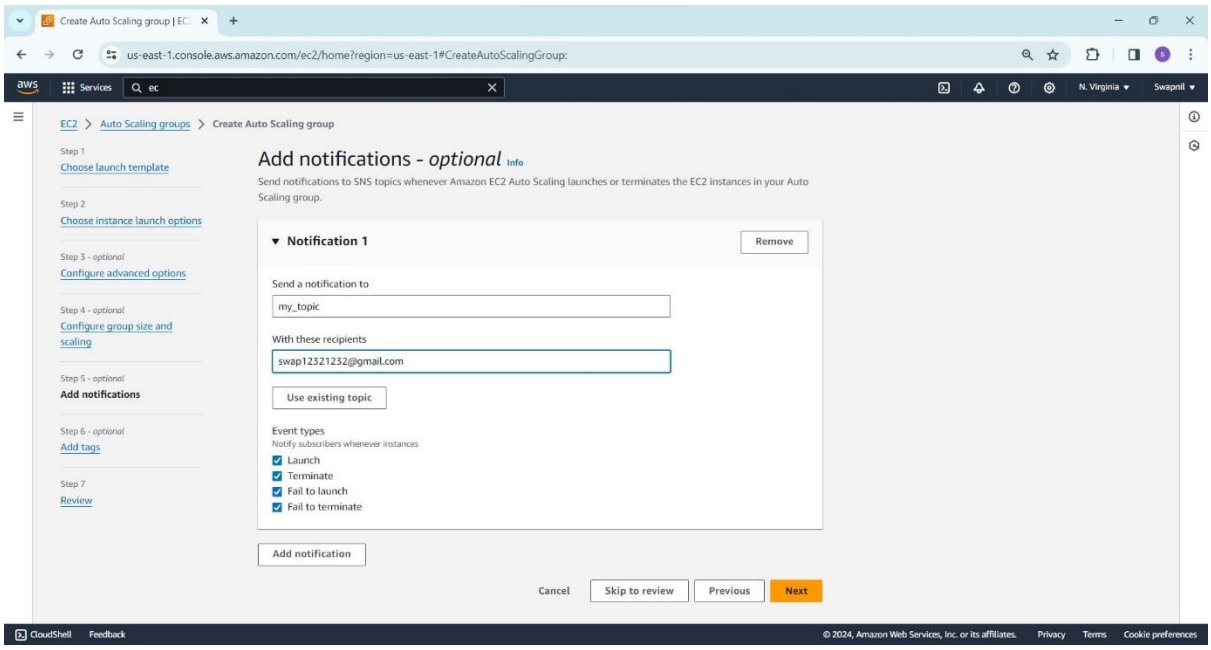
Step 8: Configure group size and scaling.

➢ Select the minimum, desired and maximum capacity.



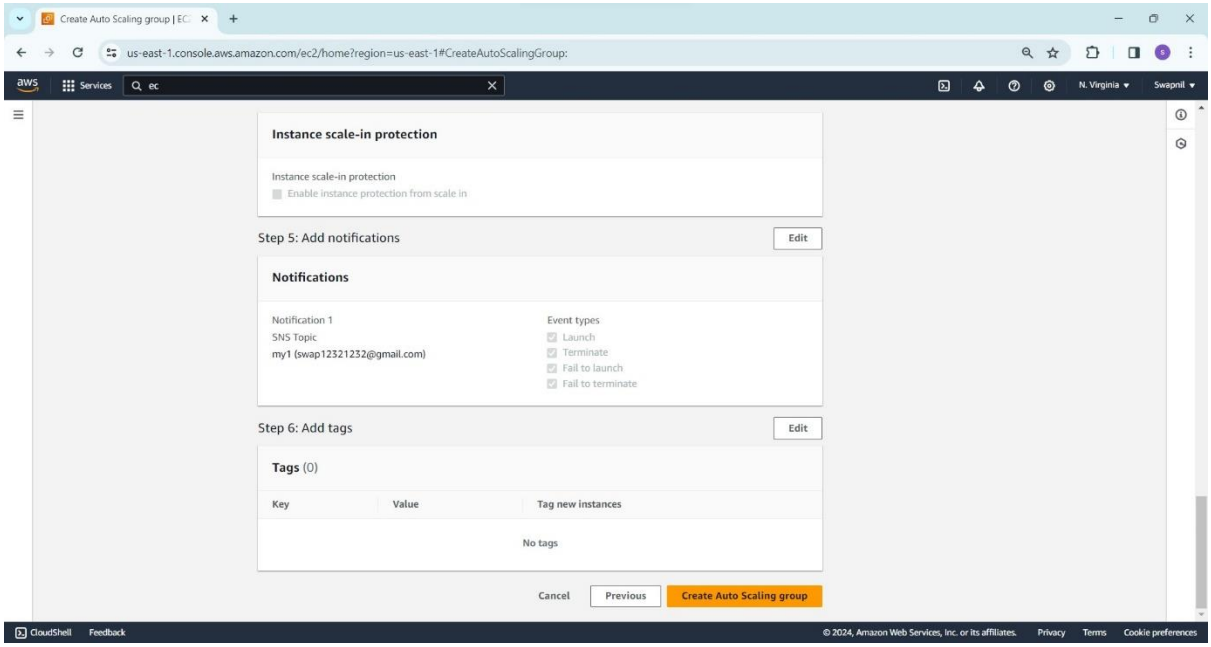
Step 9: Add notifications.

- ➢ Create a new topic.
- ➢ Enter name and endpoint user email.



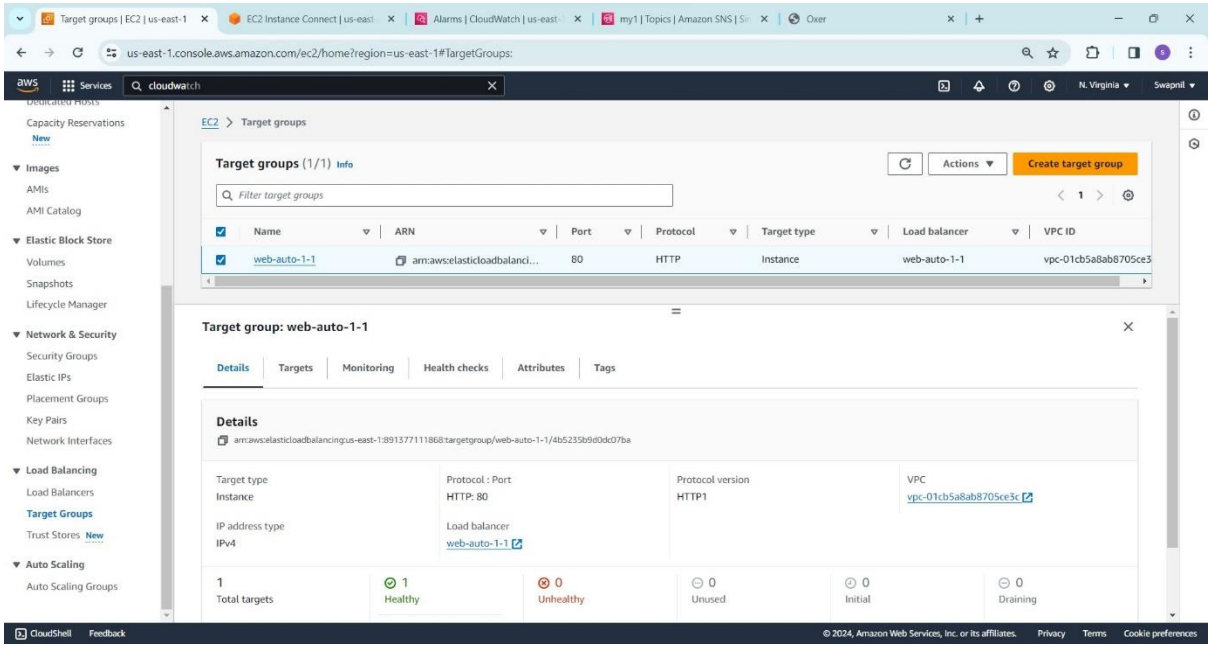
Step 10: Add tags and review.

➢Click on create Auto Scaling groups.

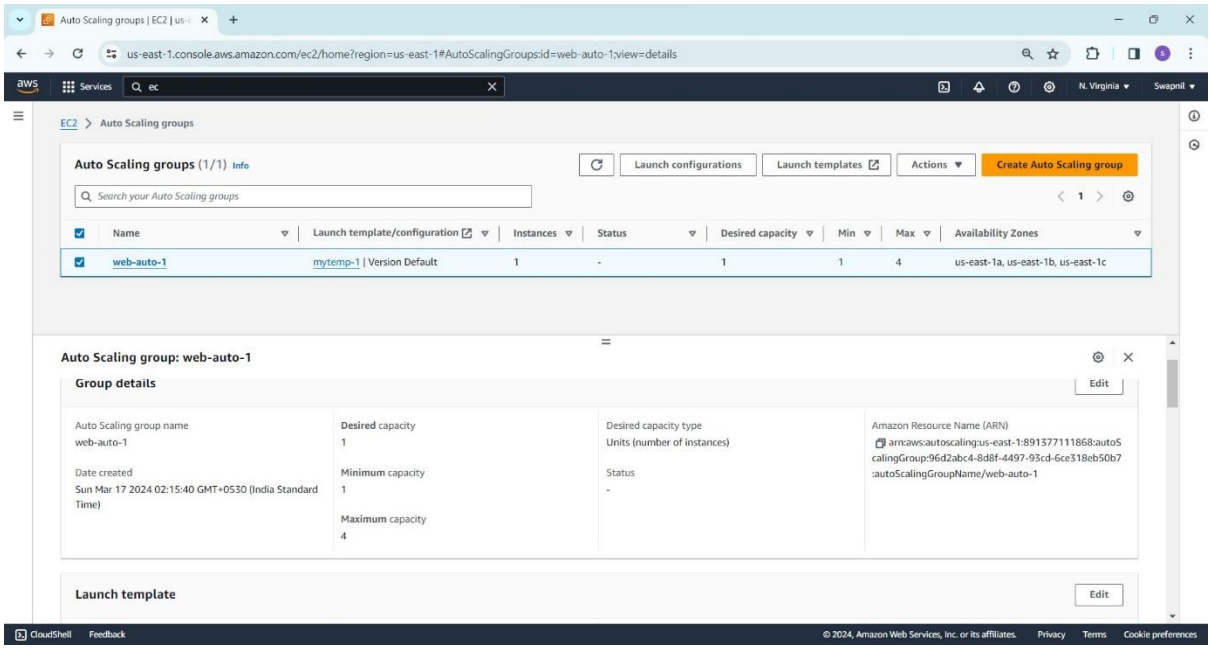


Application load balancer is automatically created

Step 11: New target group is automatically created.



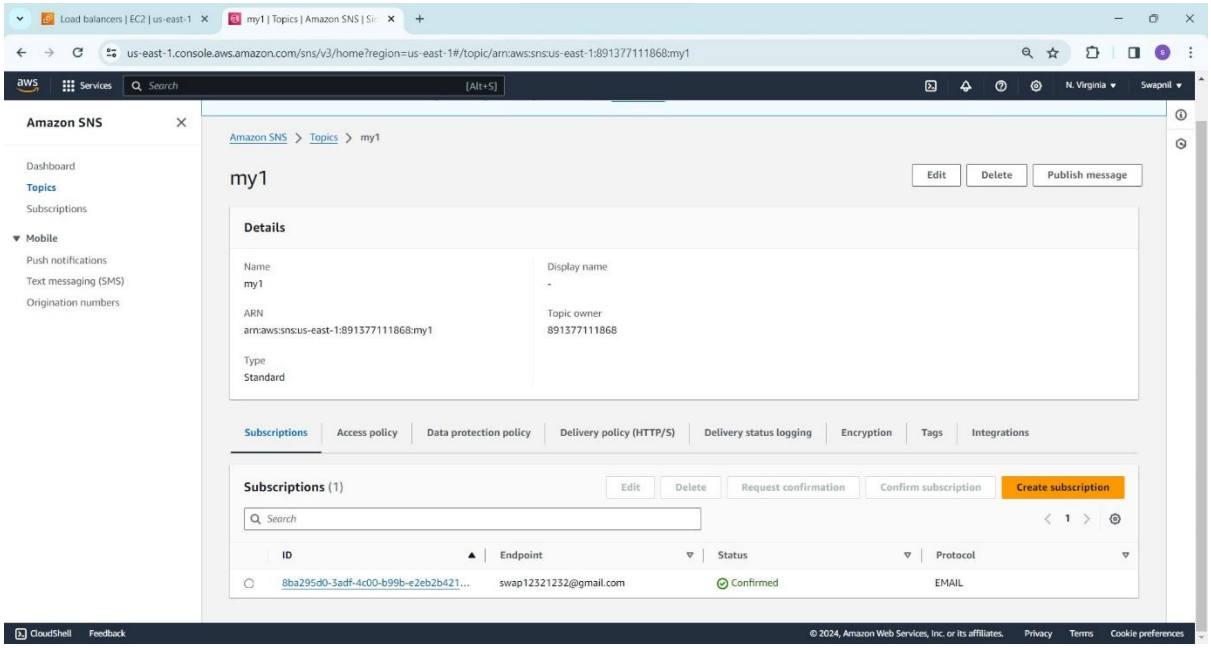
Step 12: New Application Load Balancer is created automatically.



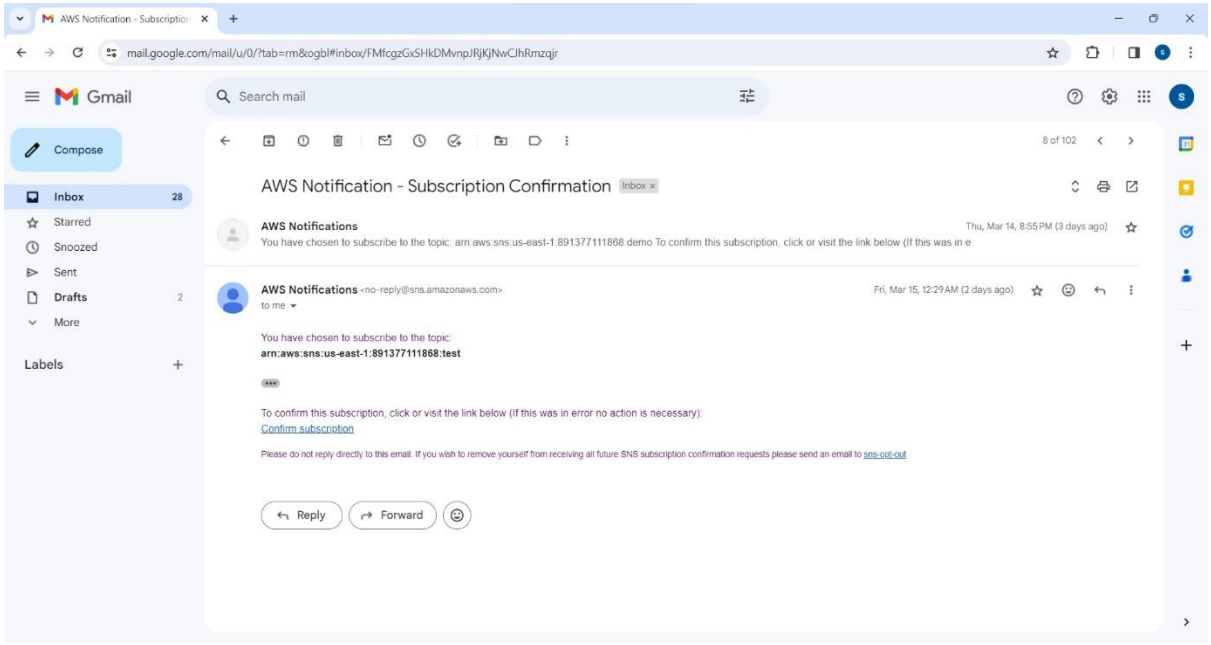
Check Simple Notification Service (SNS)

Step 13: Check SNS service.

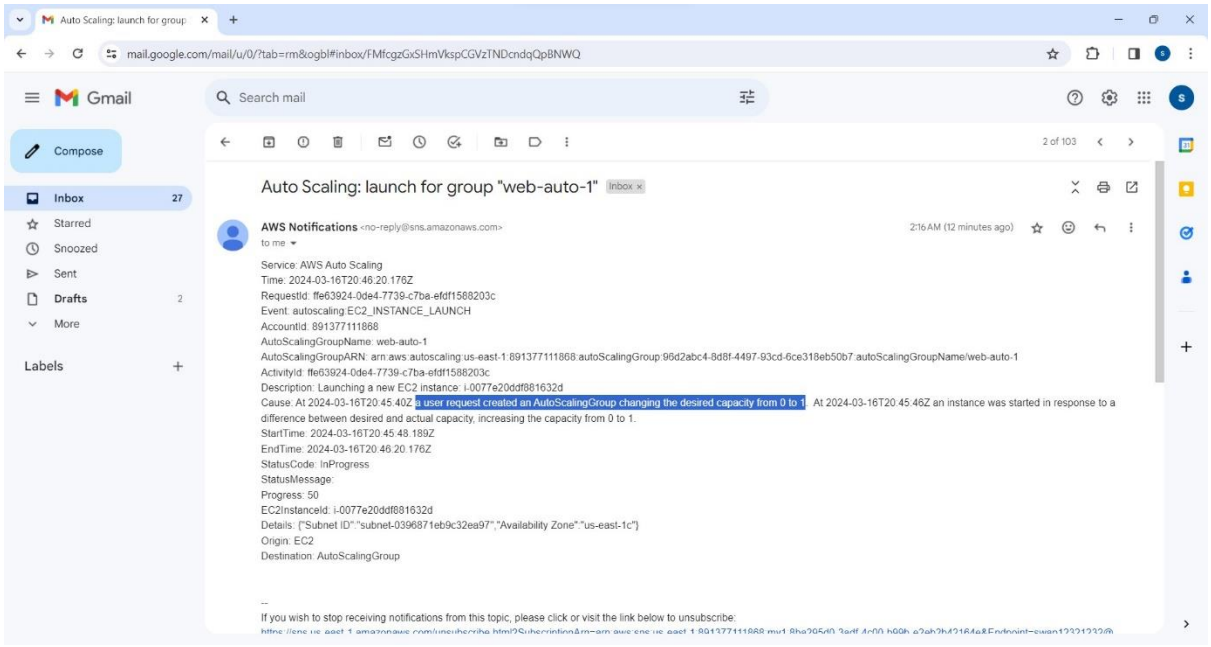
- New topic and subscription is created.



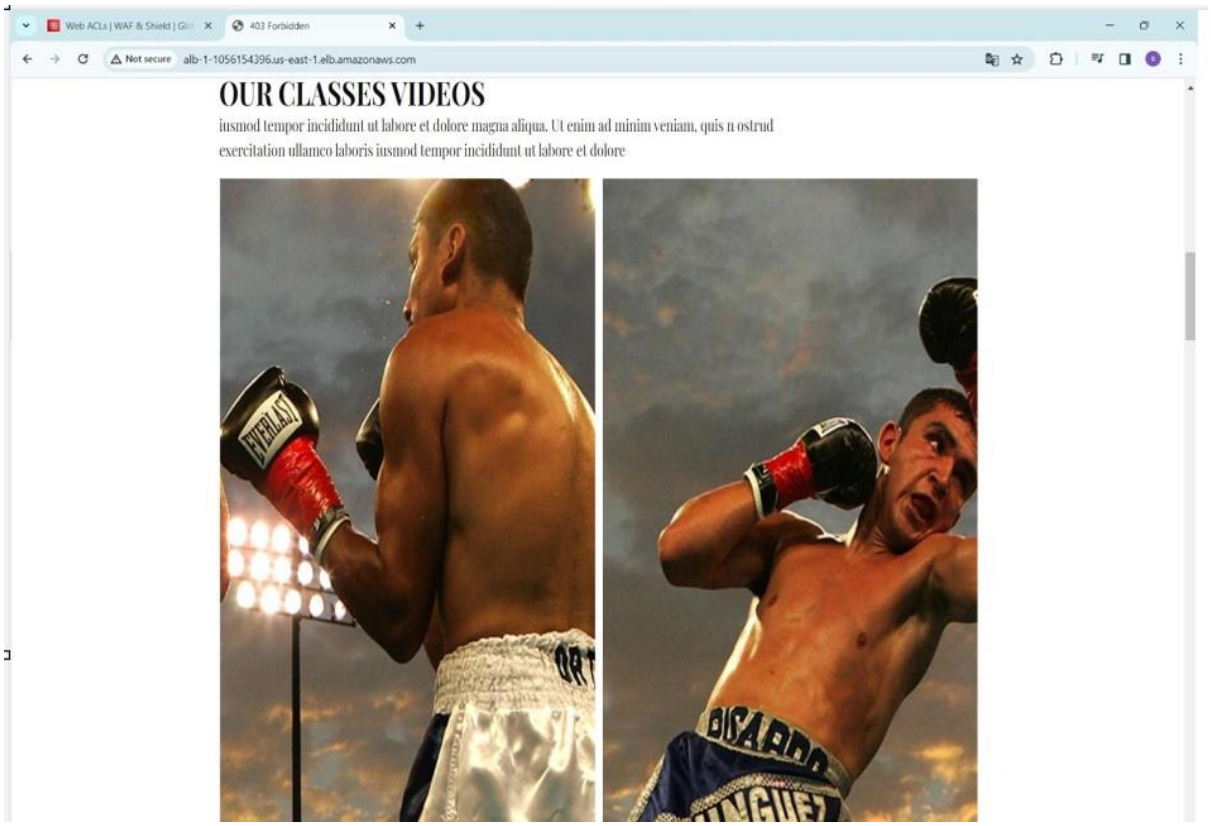
Step 14: Confirm subscription email



Step 15: We get the notification mail of launch an instance.



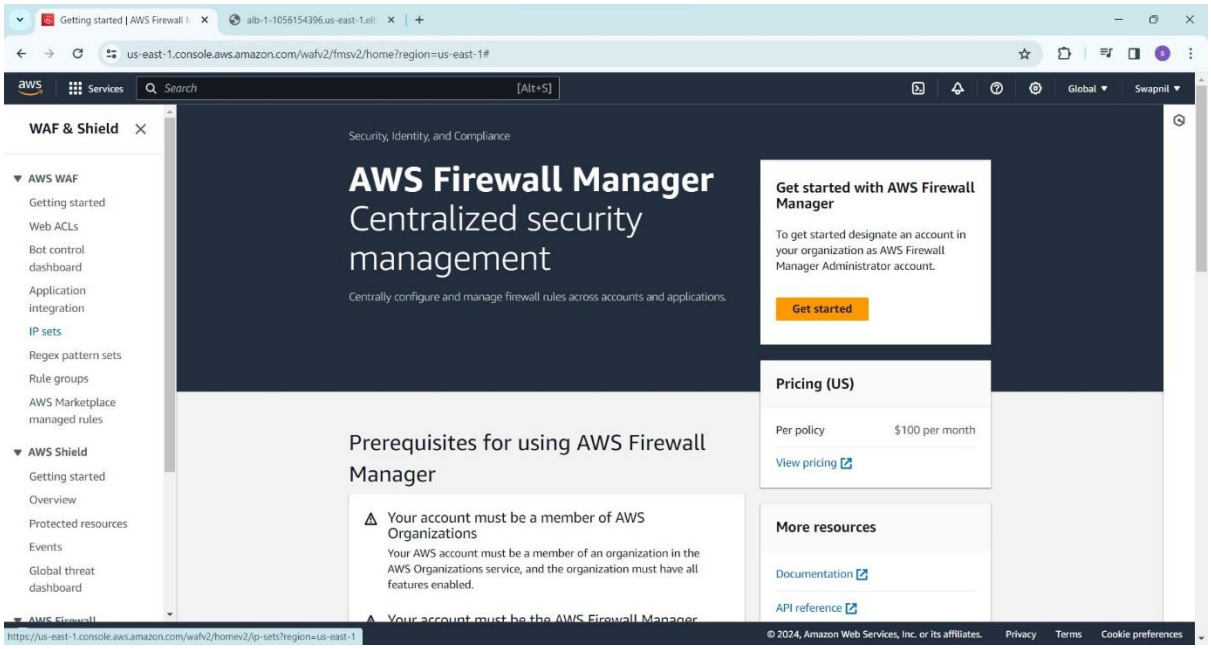
Step 16: Access the webpage though the load balancer DNS.



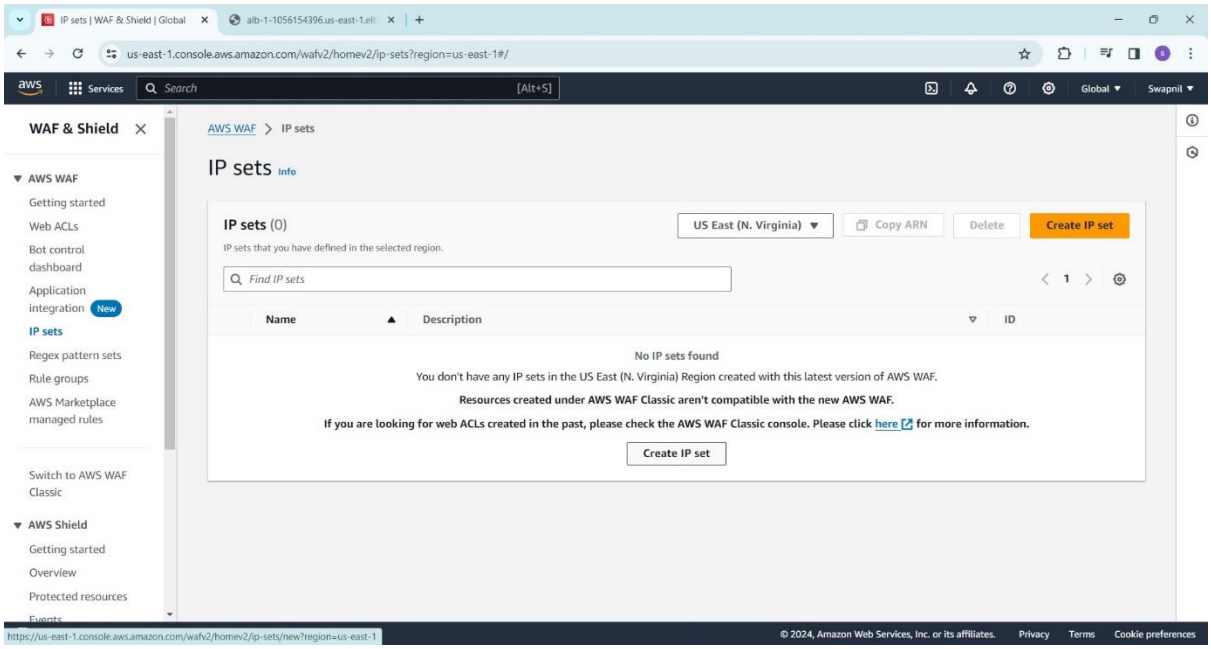
Add web application firewall

Step 17: Add Web Application Firewall (WAF) to load balancer.

- Go to the navigation panel and select WAF.

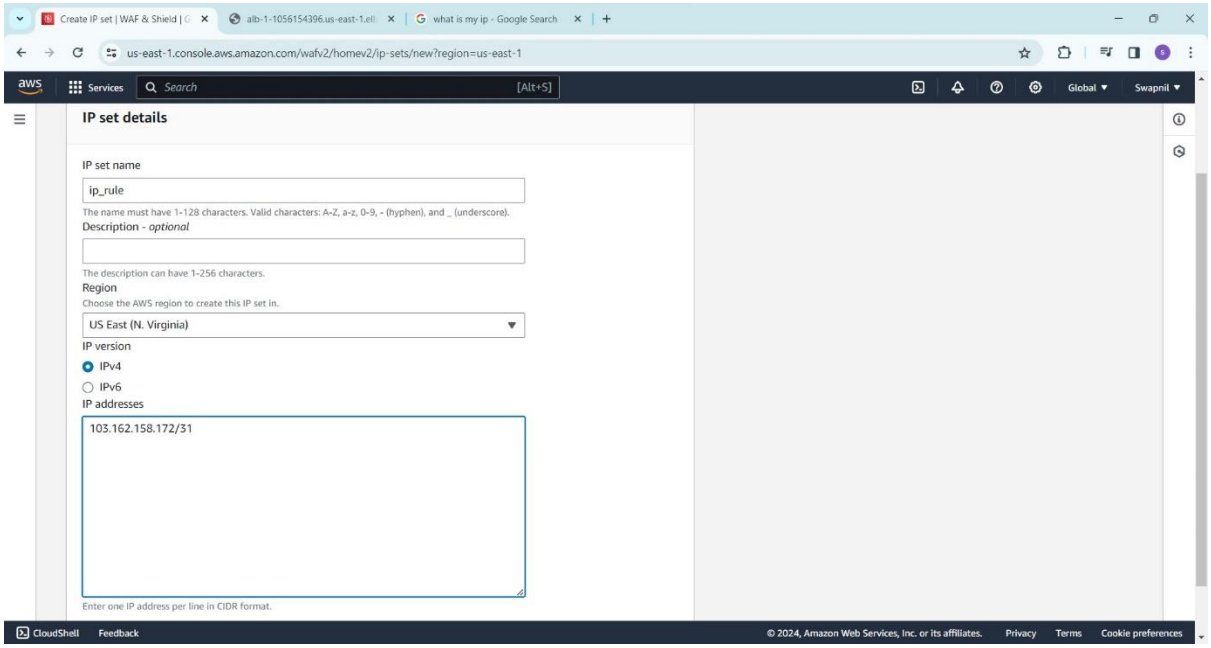


Step 18: Crate IP sets.

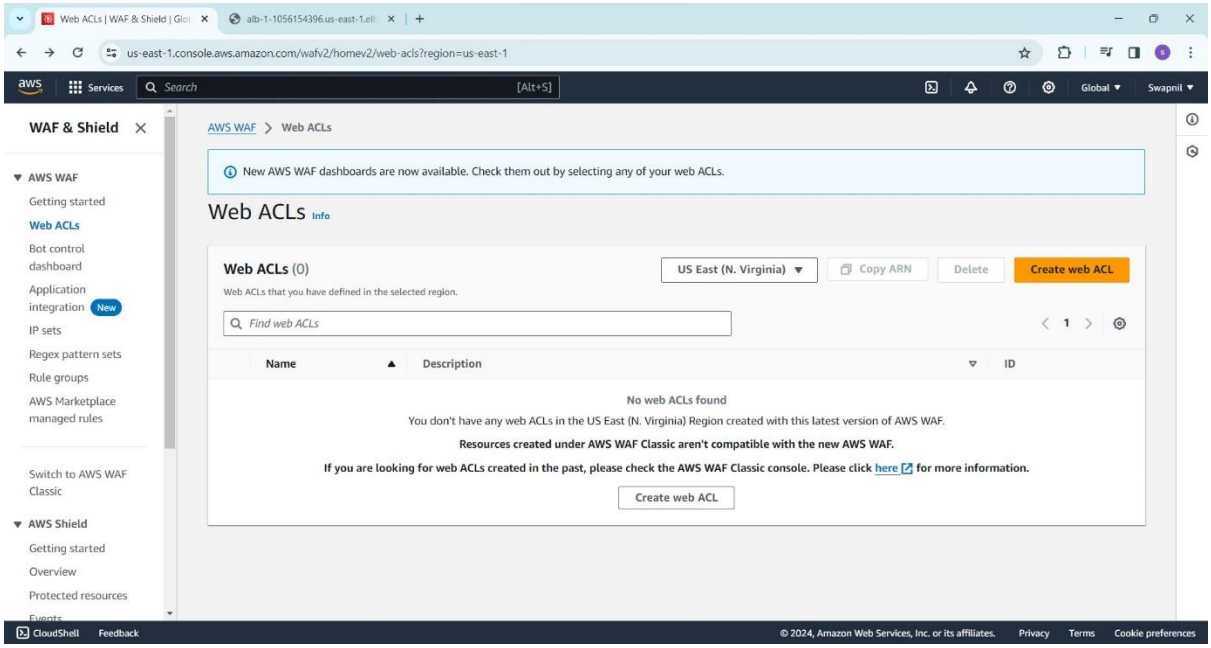


Step 19: IP set details.

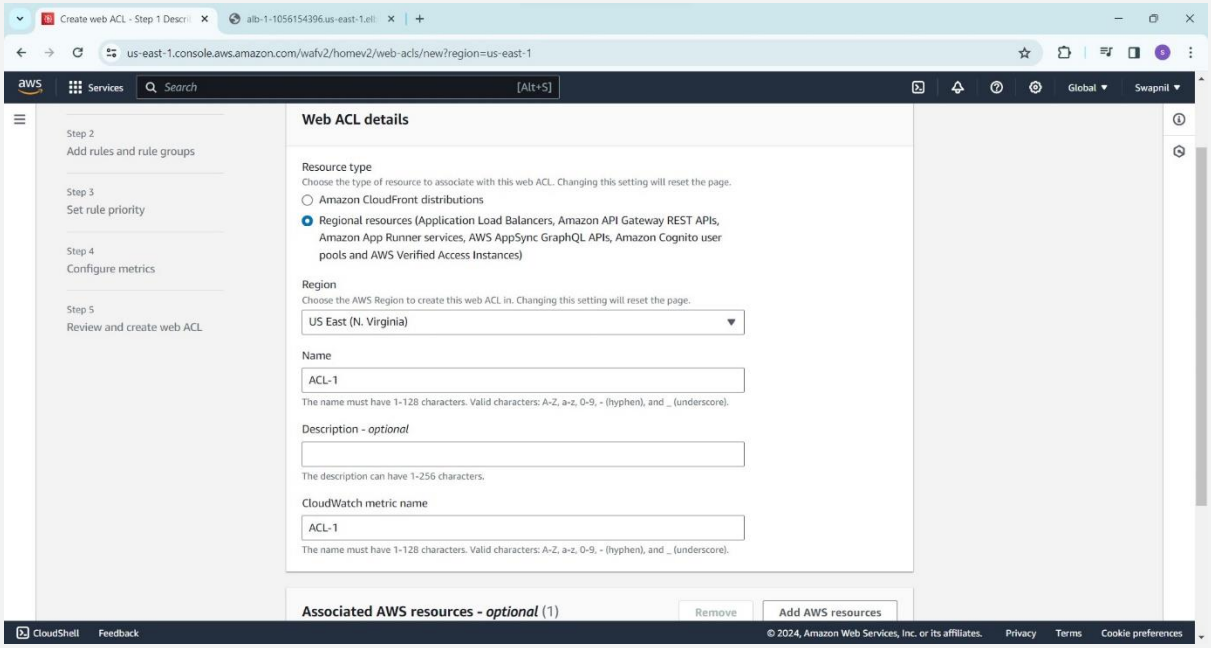
- Enter IP set rule name
- Choose region and IP version
- Add the IP address list



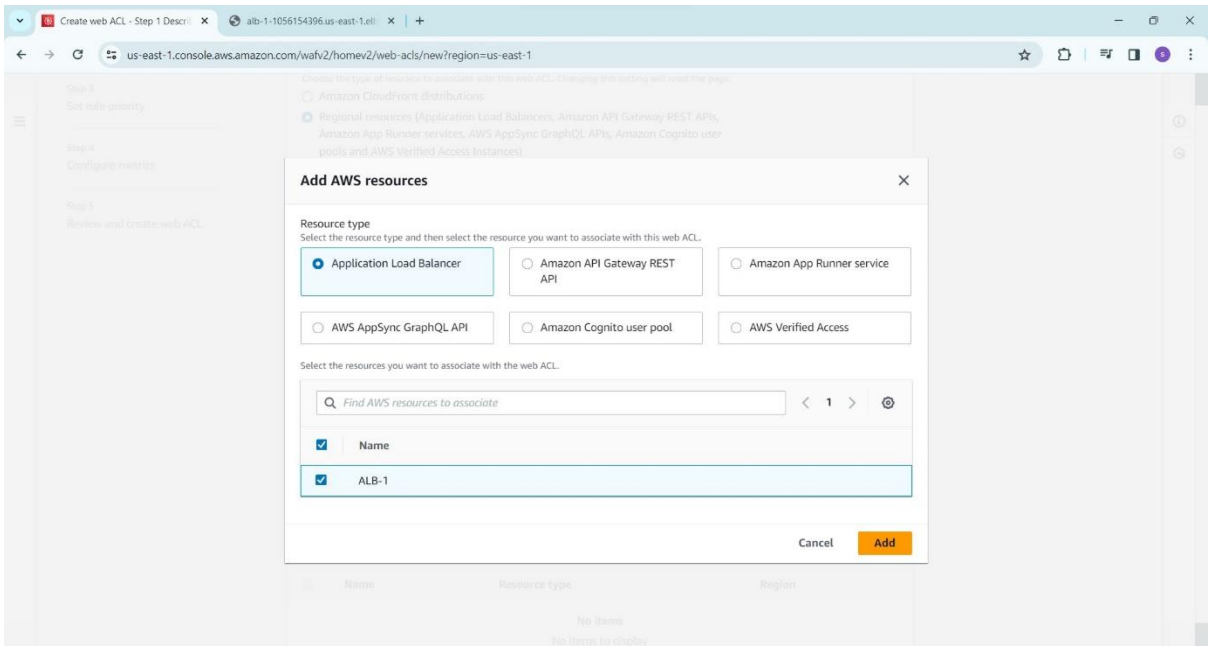
Step 20: Create web ACL (access control list)



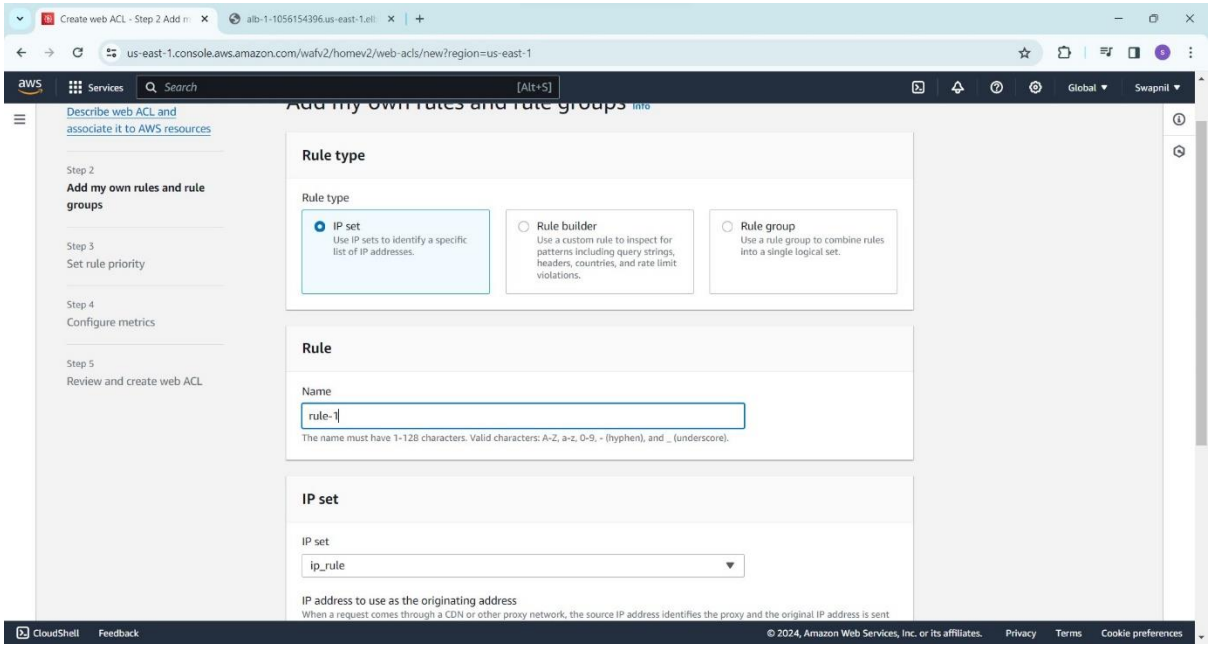
Step 21: Describe web ACL and associate it to AWS resources



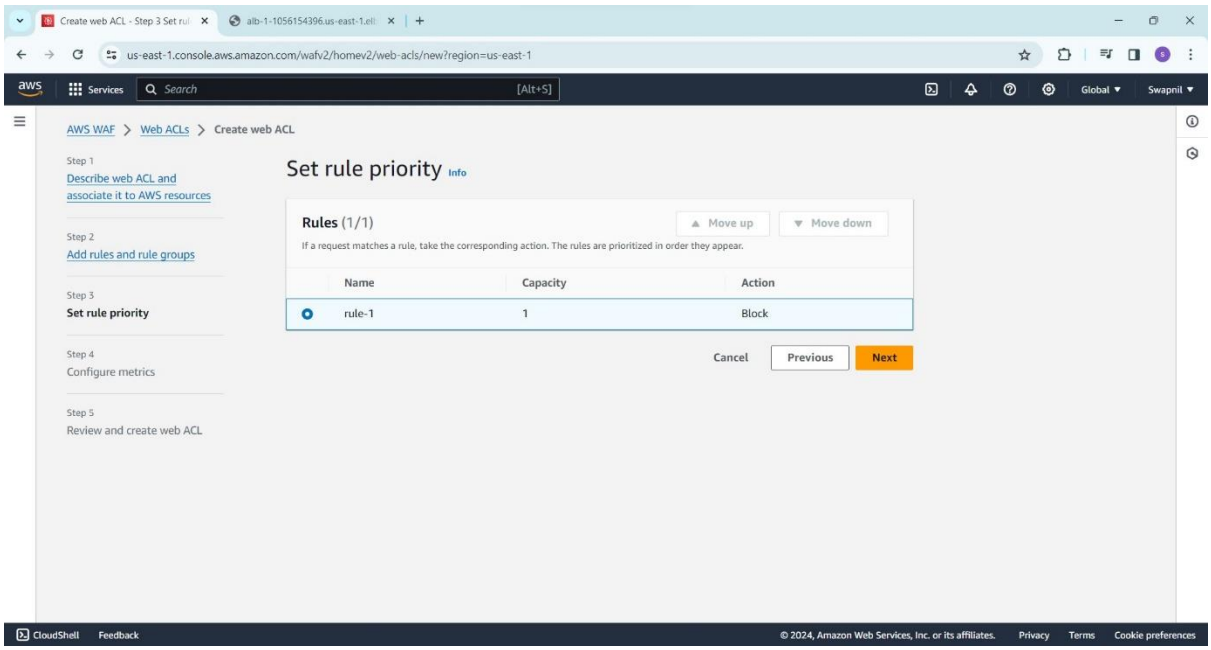
➢ Add AWS resources



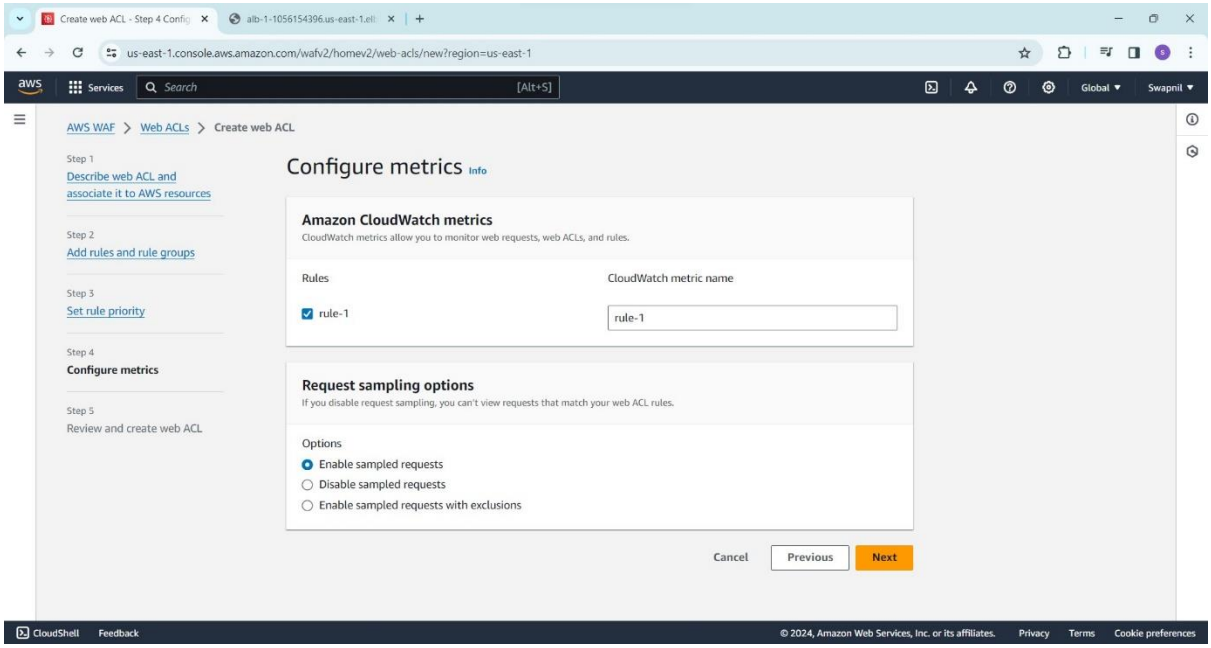
Step 22: Add rule and rule groups



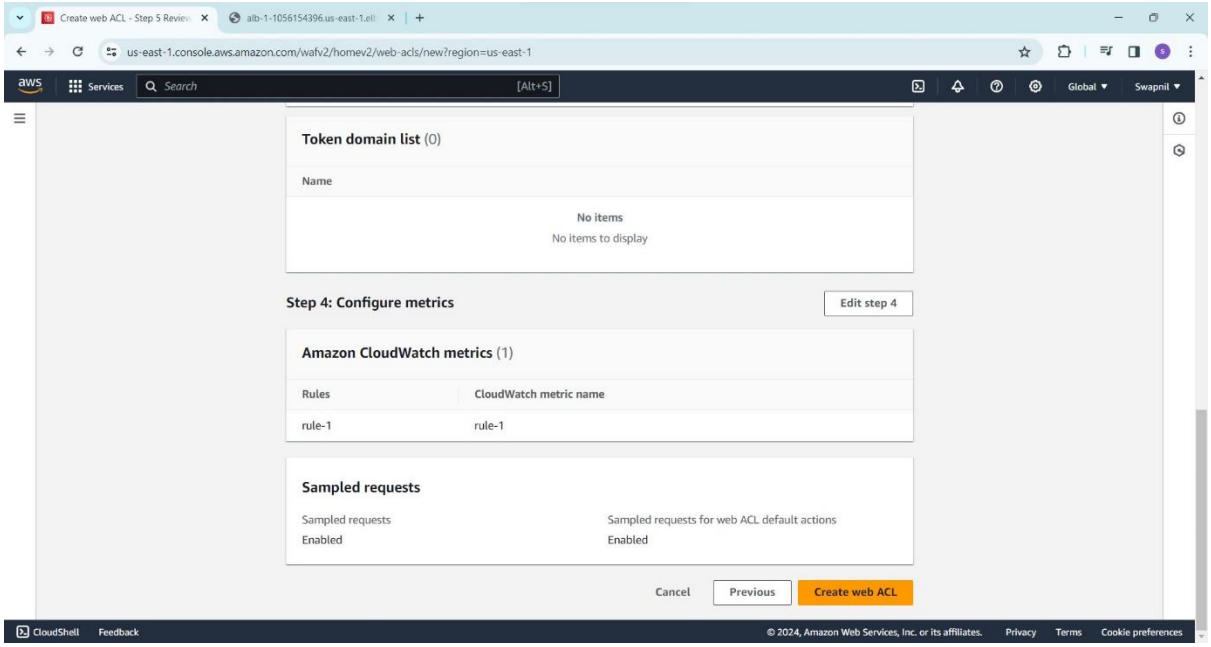
Step 23: Set rule priority.



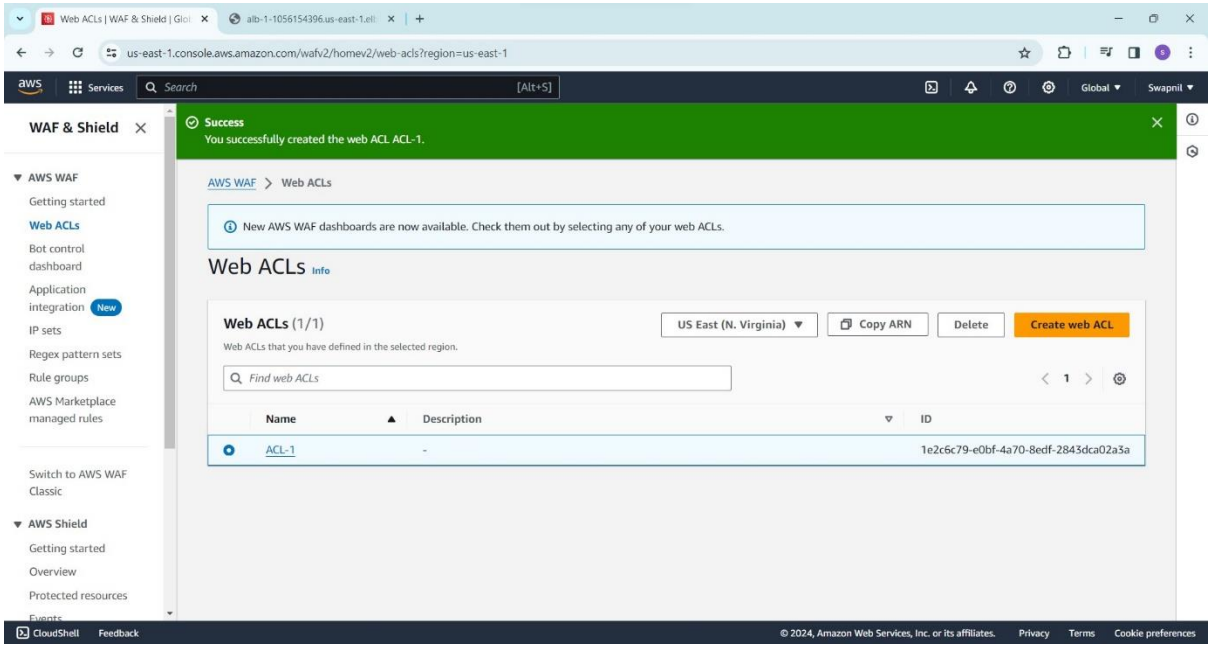
Step 24: Configure metrics



Step 25: Review and create web ACL



Step 26: Web ACL is created

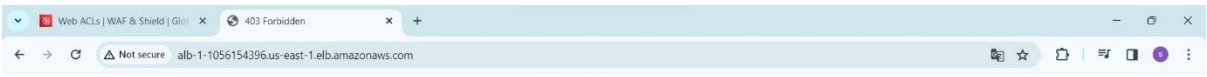


Step 27: Check the result

Try to access a load balancer from the IP which is define in the IP sets rules group

We get 403 forbidden message because WAF block that IP.

403 Forbidden error, it means that you do not have permission to view the requested file or resource.

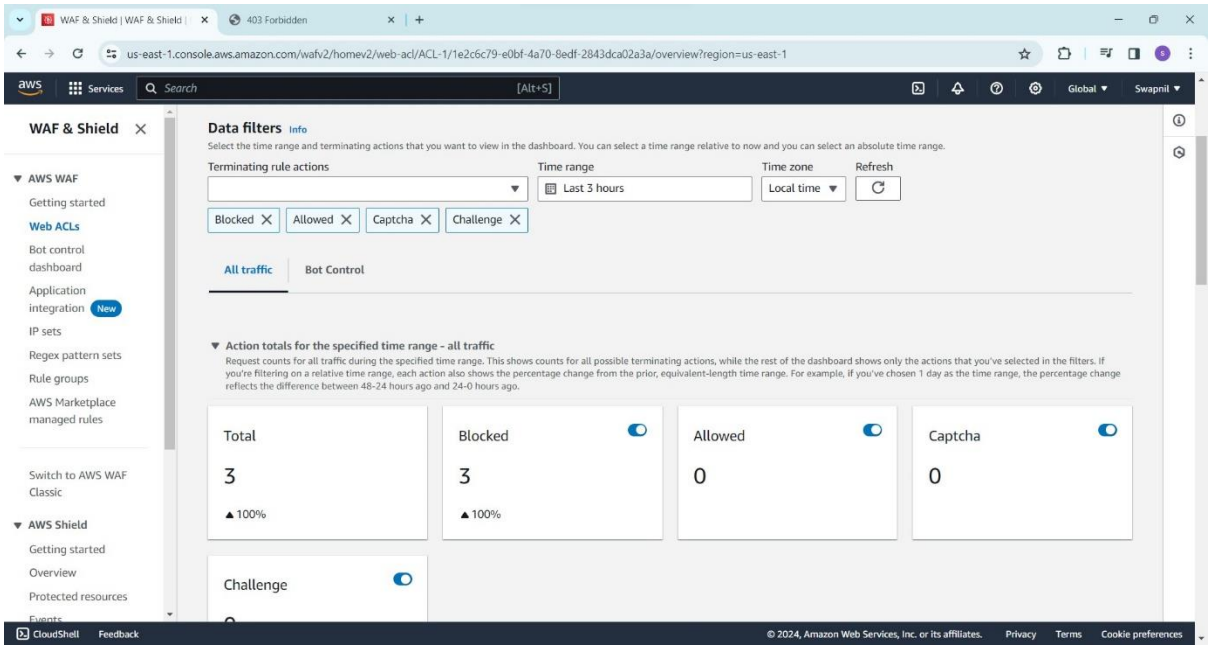


403 Forbidden

Step 28:

From WEB ACL we filter the traffic and check all details

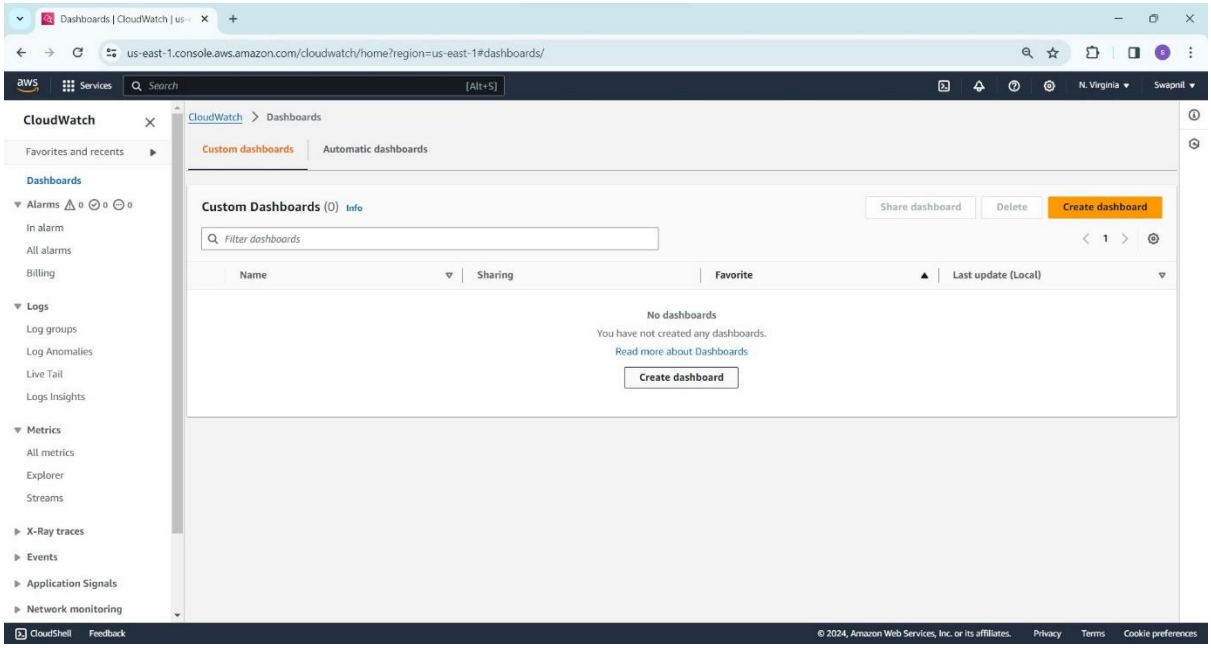
Like blocked, allowed IP, Sample of bot detection, client device types, attack type, top 10 countries, etc.



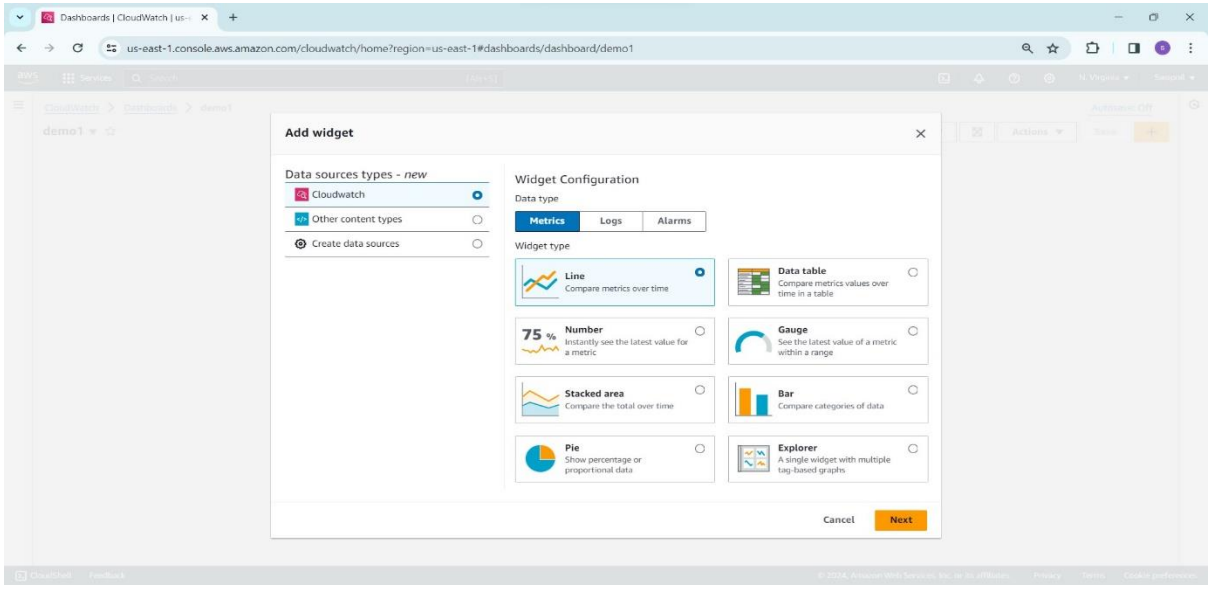
Add cloud watch: monitor the system services from the cloud watch.

Step 29: Create a dashboard.

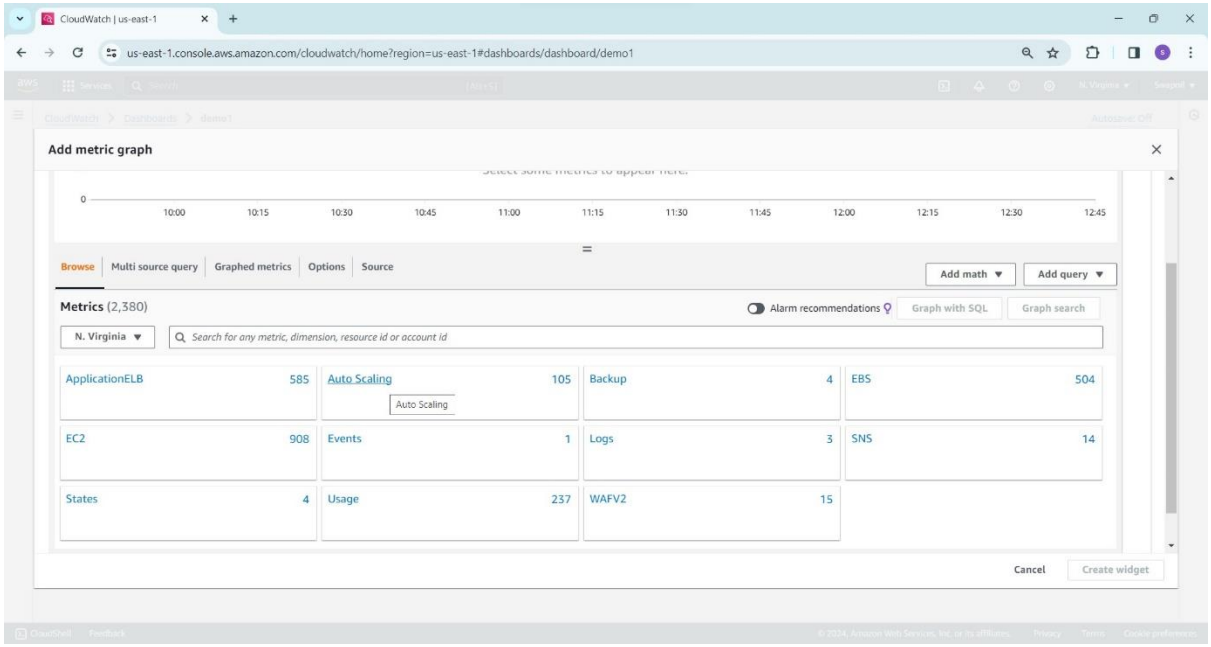
- Define the name to dashboard.



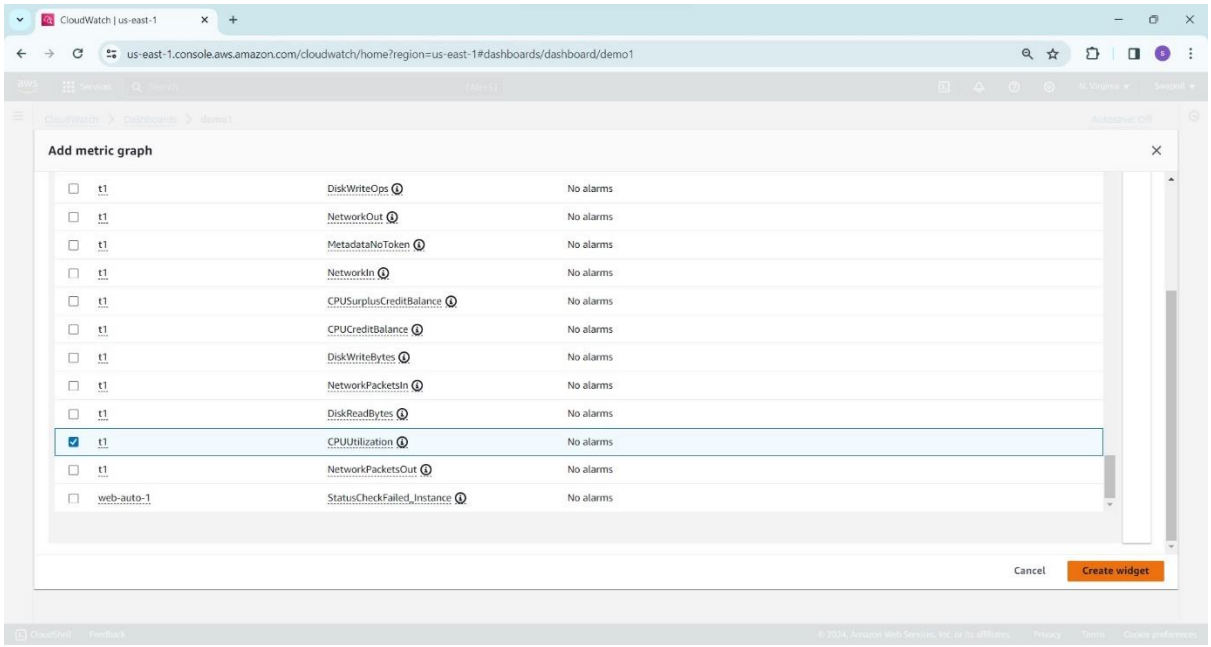
Step 30: Add the widget.



Step 31: Select metrics graph.



Step.32: Add the selected metrics graph to widget.



Step 33: Monitor the system performance.