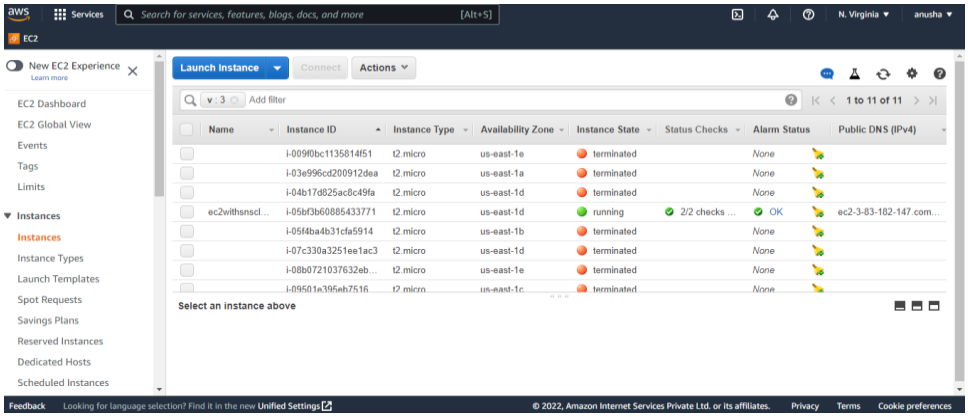
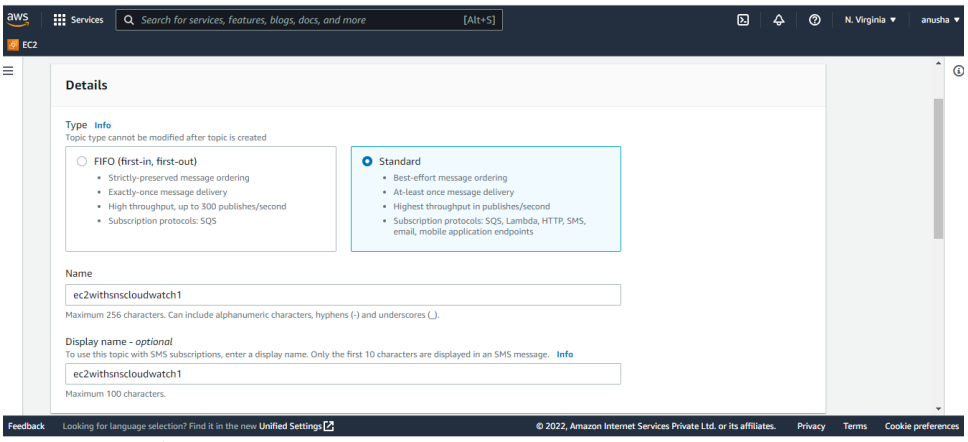
CloudWatch Integration with EC2, SNS, ASG, ALB

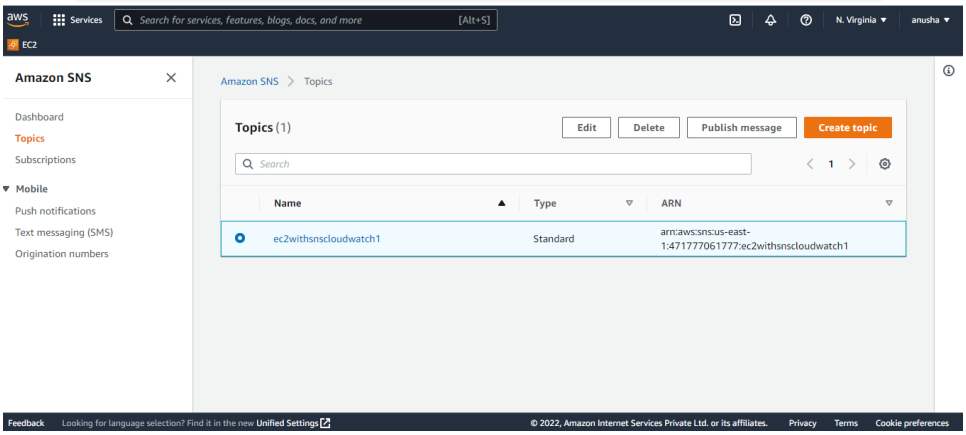
1. Login aws account
2. To create ec2 instance



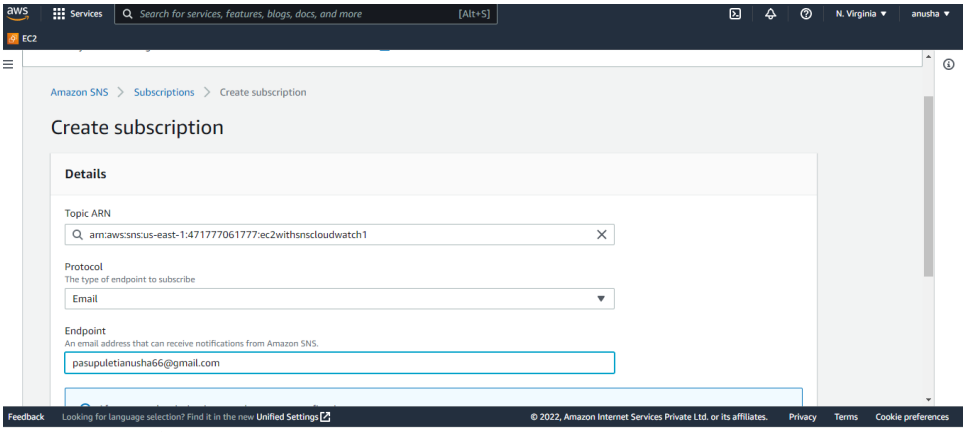
3. create SNS topic>>my topic>>ec2withsnscloudwatch1>>next

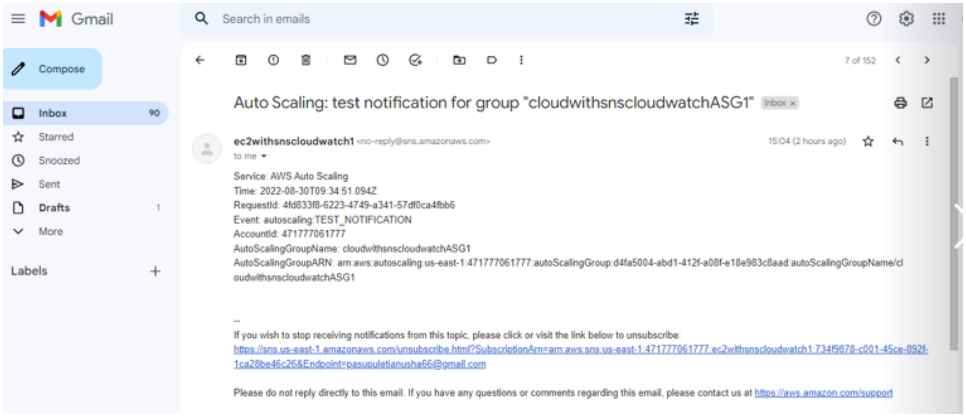


4.Topic is successfully created

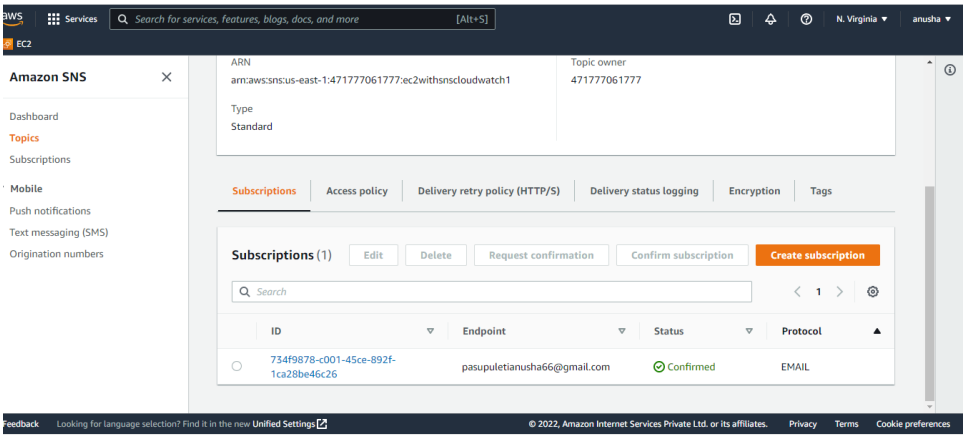


5.To add subscription>>select protocol>>email>>next

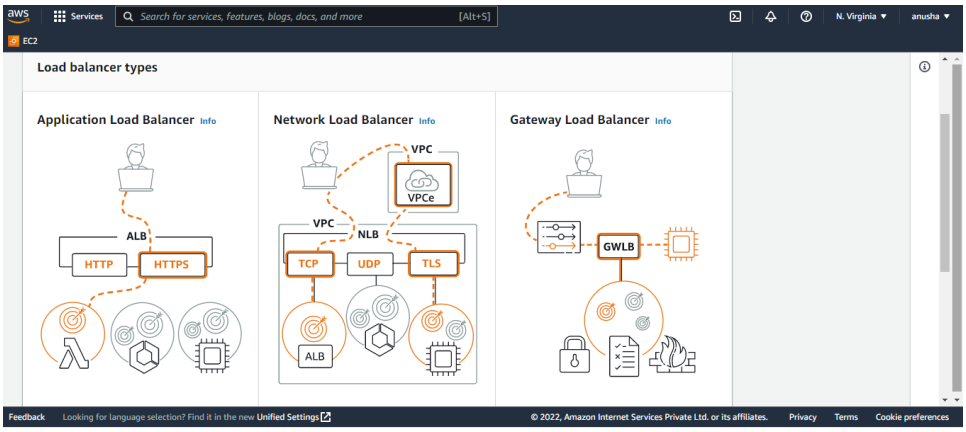


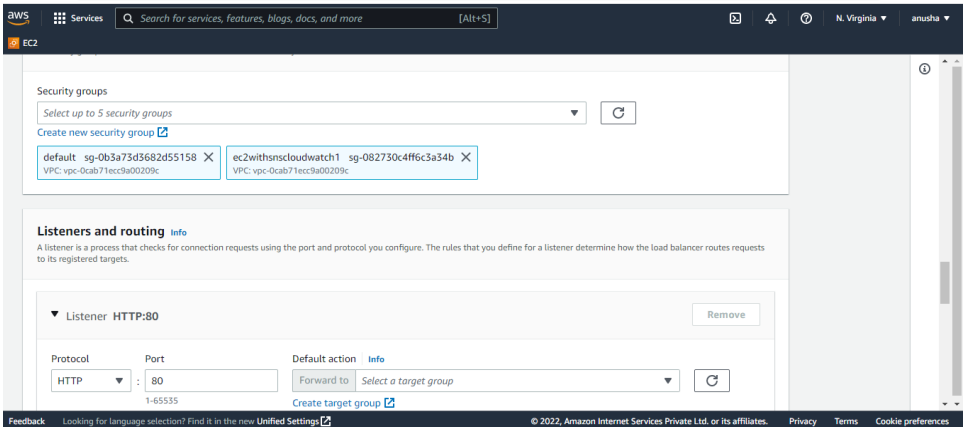


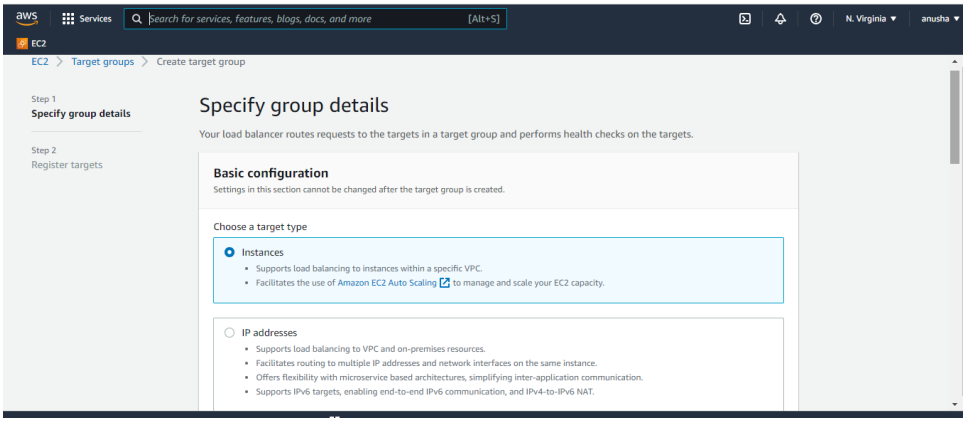
6. subscription is successfully confirmed

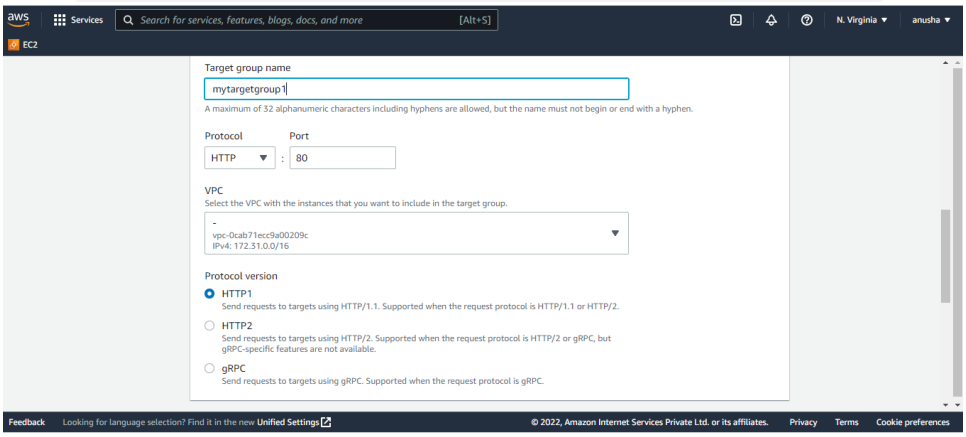


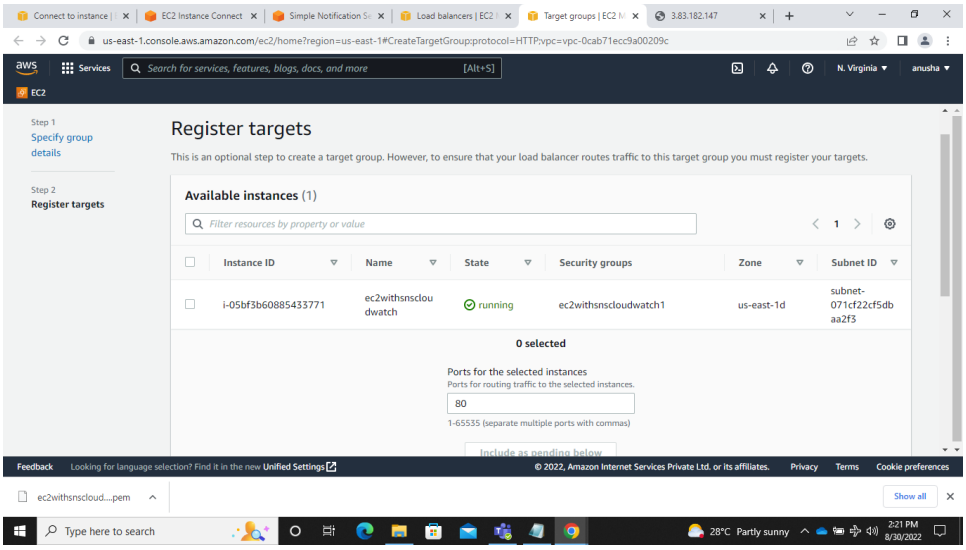
7. To create load balancer>>you can choose application load balance>>and attach target group

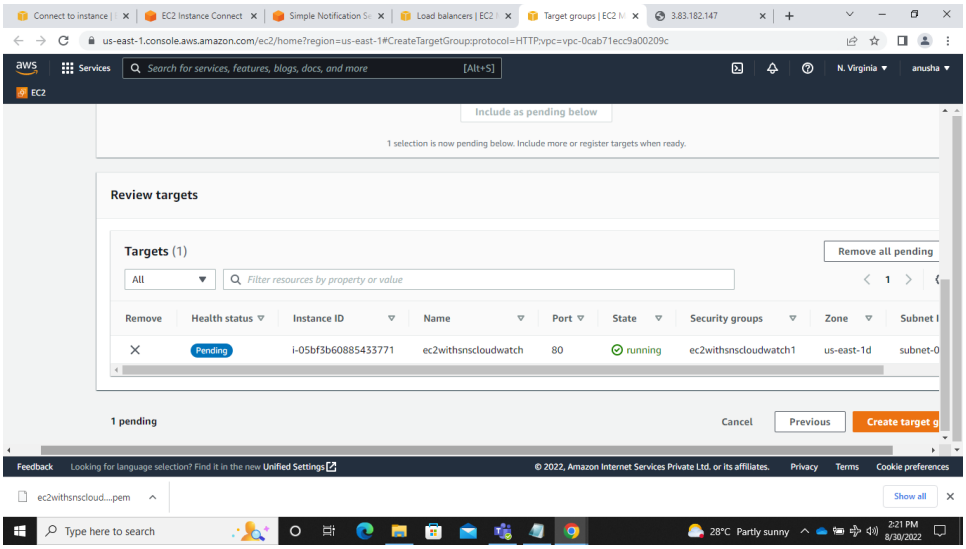

Load balancer types
Application Load Balancer Info
ALB
HTTP
HTTPS
Network Load Balancer Info
VPC
VPCe
VPC
NLB
TCP
UDP
TLS
ALB
Gateway Load Balancer Info
GWLB

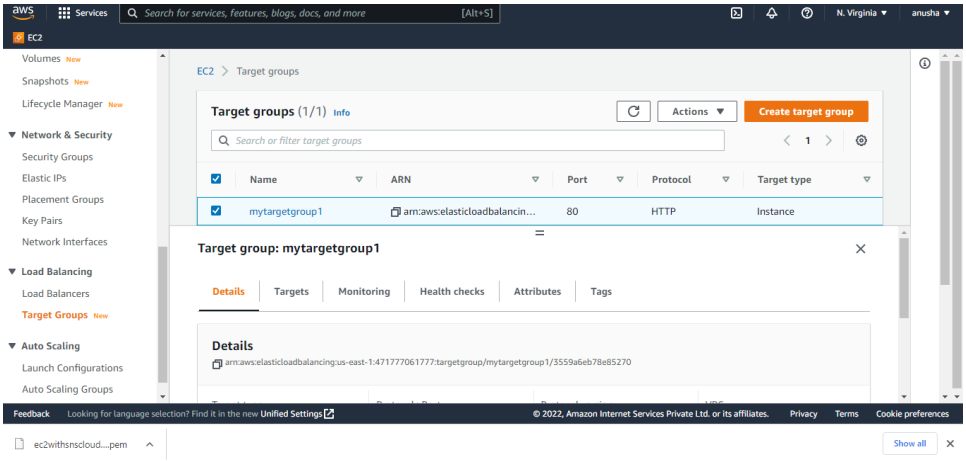

Security groups
Select up to 5 security groups
Create new security group
default sg-0b3a73d3682d55158
ec2withsnscloudwatch1 sg-082730c4ff6c3a34b
Listeners and routing Info
A listener is a process that checks for connection requests using the port and protocol you configure. The rules that you define for a listener determine how the load balancer routes requests to its registered targets.
Listener HTTP:80
Remove
Protocol
Port
Default action Info
HTTP
80
1-65535
Forward to
Select a target group
Create target group


EC2 > Target groups > Create target group
Step 1
Specify group details
Step 2
Register targets
Specify group details
Your load balancer routes requests to the targets in a target group and performs health checks on the targets.
Basic configuration
Settings in this section cannot be changed after the target group is created.
Choose a target type
Instances
Supports load balancing to instances within a specific VPC.
Facilitates the use of Amazon EC2 Auto Scaling to manage and scale your EC2 capacity.
IP addresses
Supports load balancing to VPC and on-premises resources.
Facilitates routing to multiple IP addresses and network interfaces on the same instance.
Offers flexibility with microservice based architectures, simplifying inter-application communication.
Supports IPv6 targets, enabling end-to-end IPv6 communication, and IPv4-to-IPv6 NAT.

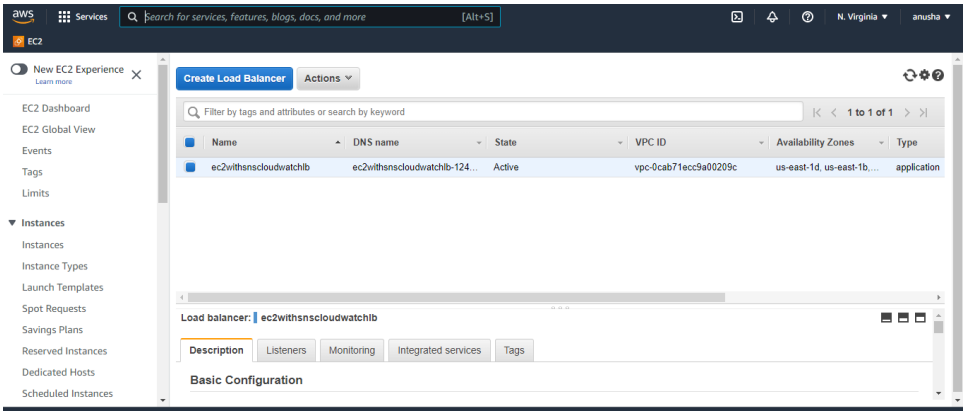

Target group name
mytargetgroup1
A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.
Protocol
Port
HTTP
80
VPC
Select the VPC with the instances that you want to include in the target group.
vpc-0cab71ecc9a00209c
IPv4: 172.31.0.0/16
Protocol version
HTTP1
Send requests to targets using HTTP/1.1. Supported when the request protocol is HTTP/1.1 or HTTP/2.
HTTP2
Send requests to targets using HTTP/2. Supported when the request protocol is HTTP/2 or gRPC, but gRPC-specific features are not available.
gRPC
Send requests to targets using gRPC. Supported when the request protocol is gRPC.


Step 1
Specify group details
Step 2
Register targets
Register targets
This is an optional step to create a target group. However, to ensure that your load balancer routes traffic to this target group you must register your targets.
Available instances (1)
Filter resources by property or value
Instance ID
Name
State
Security groups
Zone
Subnet ID
i-05bf3b60885433771
ec2withsnscloudwatch
running
ec2withsnscloudwatch1
us-east-1d
subnet-071cf22cf5dbaa2f3
0 selected
Ports for the selected instances
Ports for routing traffic to the selected instances.
80
1-65535 (separate multiple ports with commas)
Include as pending below


Include as pending below
1 selection is now pending below. Include more or register targets when ready.
Review targets
Targets (1)
Remove all pending
All
Filter resources by property or value
Remove
Health status
Instance ID
Name
Port
State
Security groups
Zone
Pending
i-05bf3b60885433771
ec2withsnscloudwatch
80
running
ec2withsnscloudwatch1
us-east-1d
1 pending
Cancel
Previous
Create target

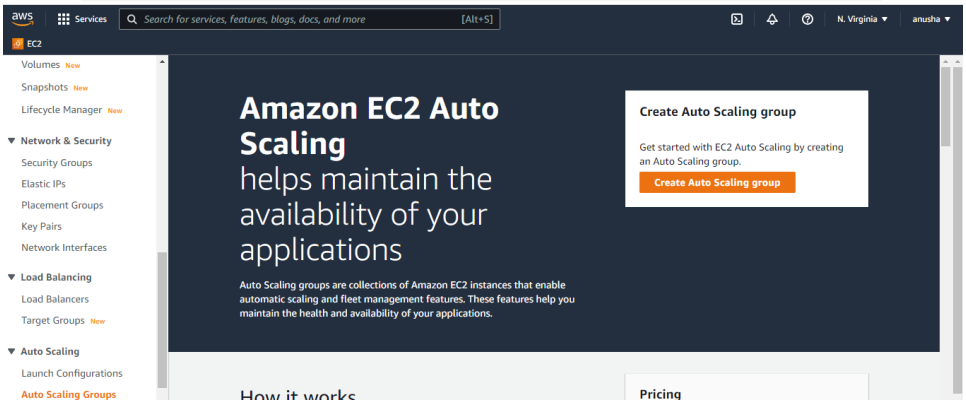


8.successfully load balancer is created



9. Create auto scaling group with exiting load balancer>>

Before creating ASG >>create launch template with existing instance AMI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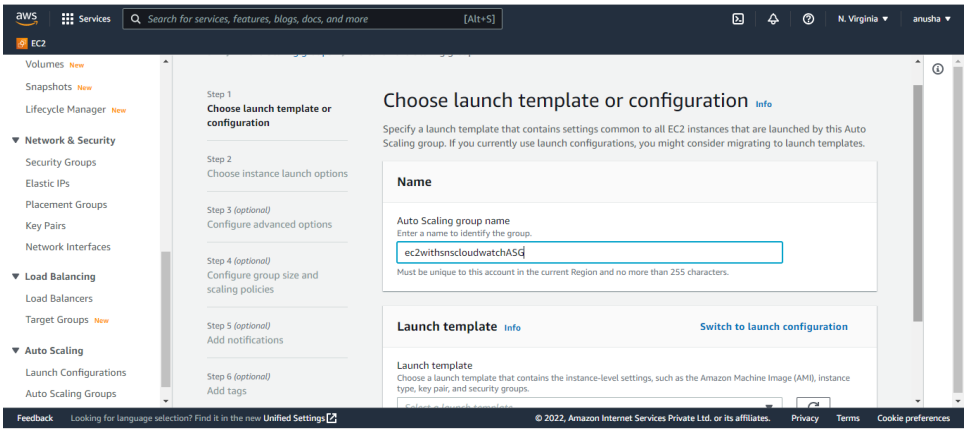
EC2
Volumes New
Snapshots New
Lifecycle Manager New
Network & Security
Security Groups
Elastic IPs
Placement Groups
Key Pairs
Network Interfaces
Load Balancing
Load Balancers
Target Groups New
Auto Scaling
Launch Configurations
Auto Scaling Groups
Amazon EC2 Auto Scaling
helps maintain the availability of your applications
Auto Scaling groups are collections of Amazon EC2 instances that enable automatic scaling and fleet management features. These features help you maintain the health and availability of your applications.
Create Auto Scaling group
Get started with EC2 Auto Scaling by creating an Auto Scaling group.
Create Auto Scaling group
How it works
Pricing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EC2
Volumes New
Snapshots New
Lifecycle Manager New
Network & Security
Security Groups
Elastic IPs
Placement Groups
Key Pairs
Network Interfaces
Load Balancing
Load Balancers
Target Groups New
Auto Scaling
Launch Configurations
Auto Scaling Groups
Step 1
Choose launch template or configuration
Step 2
Choose instance launch options
Step 3 (optional)
Configure advanced options
Step 4 (optional)
Configure group size and scaling policies
Step 5 (optional)
Add notifications
Step 6 (optional)
Add tags
Choose launch template or configuration Info
Specify a launch template that contains settings common to all EC2 instances that are launched by this Auto Scaling group. If you currently use launch configurations, you might consider migrating to launch templates.
Name
Auto Scaling group name
Enter a name to identify the group.
ec2withsnscloudwatchASG
Must be unique to this account in the current Region and no more than 255 characters.
Launch template Info
Switch to launch configuration
Launch template
Choose a launch template that contains the instance-level settings, such as the Amazon Machine Image (AMI), instance type, key pair, and security groups.
Feedback
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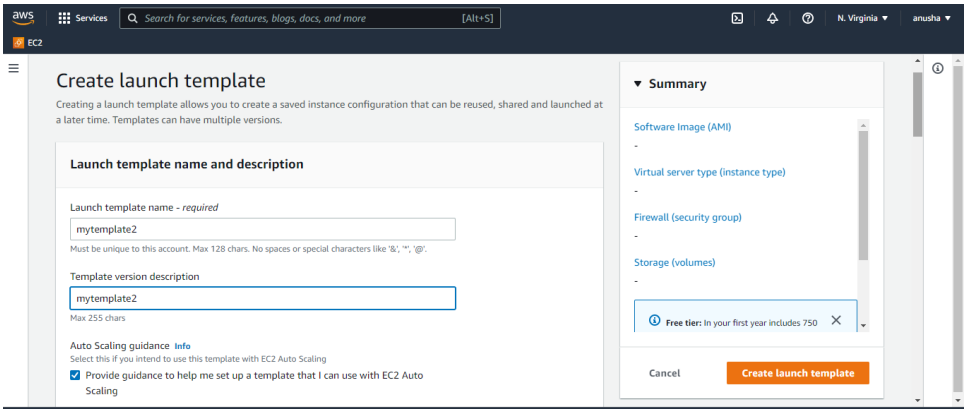
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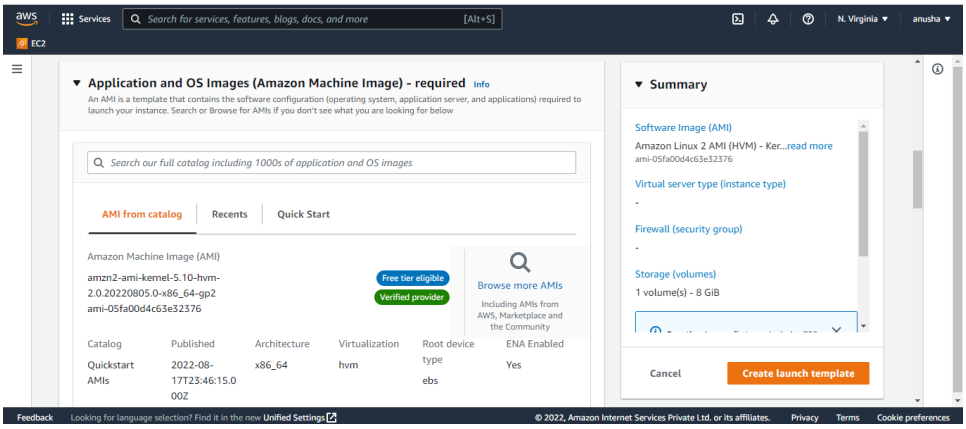
EC2
Create launch template
Creating a launch template allows you to create a saved instance configuration that can be reused, shared and launched at a later time. Templates can have multiple versions.
Launch template name and description
Launch template name - required
mytemplate2
Must be unique to this account. Max 128 chars. No spaces or special characters like '&', '*', '@'.
Template version description
mytemplate2
Max 255 chars
Auto Scaling guidance Info
Select this if you intend to use this template with EC2 Auto Scaling
Provide guidance to help me set up a template that I can use with EC2 Auto Scaling
Summary
Software Image (AMI)
-
Virtual server type (instance type)
-
Firewall (security group)
-
Storage (volumes)
-
Free tier: In your first year includes 750
Cancel
Create launch template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EC2
Application and OS Images (Amazon Machine Image) - required Info
An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below
Search our full catalog including 1000s of application and OS images
AMI from catalog
Recents
Quick Start
Amazon Machine Image (AMI)
amzn2-ami-kernel-5.10-hvm-2.0.20220805.0-x86_64-gp2
ami-05fa00d4c63e32376
Free tier eligible
Verified provider
Browse more AMIs
Including AMIs from AWS, Marketplace and the Community
Catalog
Published
Architecture
Virtualization
Root device type
ENA Enabled
Quickstart AMIs
2022-08-17T23:46:15.000Z
x86_64
hvm
ebs
Yes
Summary
Software Image (AMI)
Amazon Linux 2 AMI (HVM) - Ker...read more
ami-05fa00d4c63e32376
Virtual server type (instance type)
-
Firewall (security group)
-
Storage (volumes)
1 volume(s) - 8 GiB
Cancel
Create launch template
Feedback
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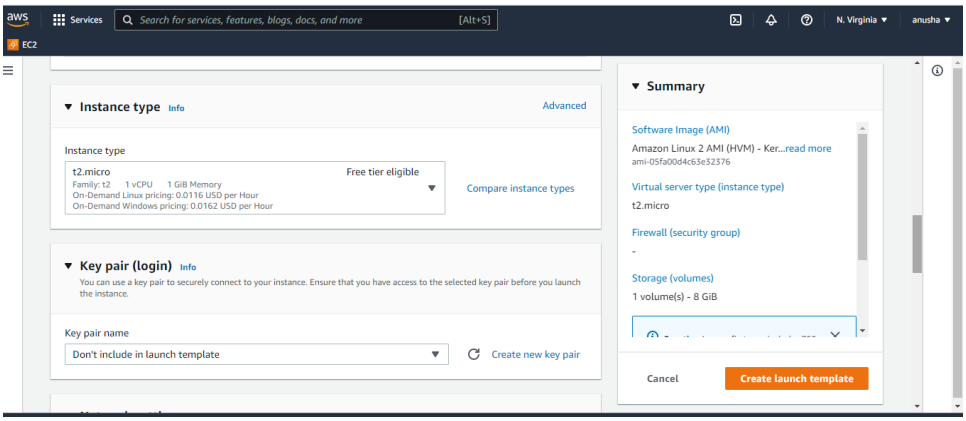
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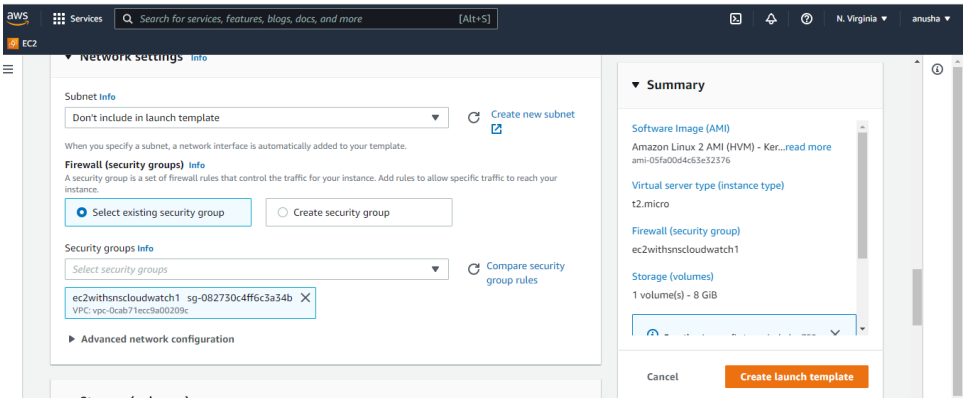
EC2
Instance type Info
Advanced
Instance type
t2.micro
Free tier eligible
Family: t2 1 vCPU 1 GiB Memory
On-Demand Linux pricing: 0.0116 USD per Hour
On-Demand Windows pricing: 0.0162 USD per Hour
Compare instance types
Key pair (login) Info
You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.
Key pair name
Don't include in launch template
Create new key pair
Summary
Software Image (AMI)
Amazon Linux 2 AMI (HVM) - Ker...read more
ami-05fa00d4c63e32376
Virtual server type (instance type)
t2.micro
Firewall (security group)
-
Storage (volumes)
1 volume(s) - 8 GiB
Cancel
Create launch template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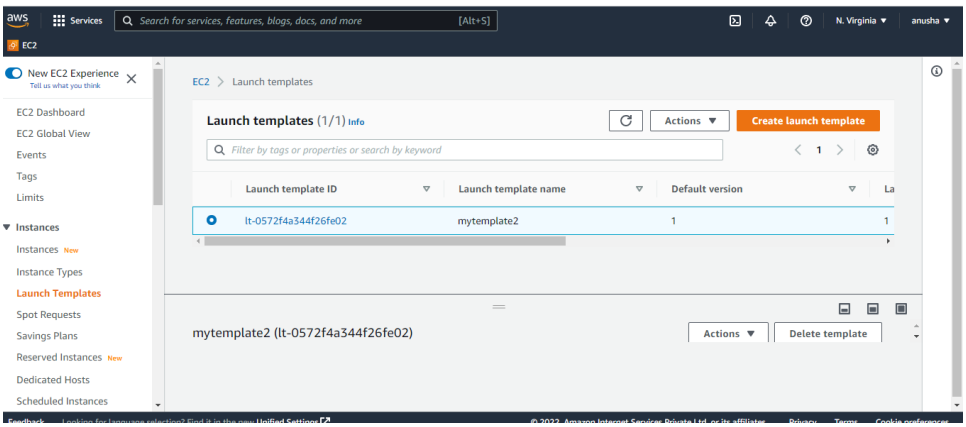
EC2
Network settings Info
Subnet Info
Don't include in launch template
Create new subnet
When you specify a subnet, a network interface is automatically added to your template.
Firewall (security groups) Info
A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.
Select existing security group
Create security group
Security groups Info
Select security groups
Compare security group rules
ec2withsnscloudwatch1 sg-082730c4ff6c3a34b
VPC: vpc-0cab71ecc9a00209c
Advanced network configuration
Summary
Software Image (AMI)
Amazon Linux 2 AMI (HVM) - Ker...read more
ami-05fa00d4c63e32376
Virtual server type (instance type)
t2.micro
Firewall (security group)
ec2withsnscloudwatch1
Storage (volumes)
1 volume(s) - 8 GiB
Cancel
Create launch template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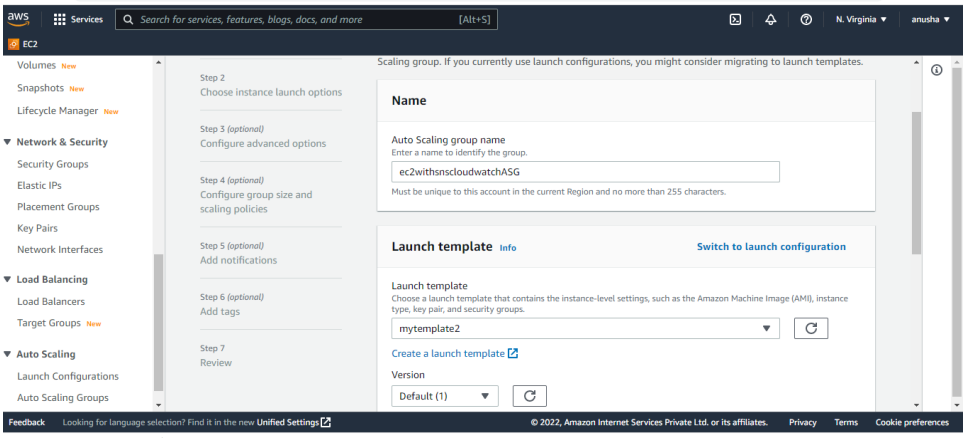
EC2
New EC2 Experience
Tell us what you think
EC2 Dashboard
EC2 Global View
Events
Tags
Limits
Instances
Instances New
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances New
Dedicated Hosts
Scheduled Instances
EC2 > Launch templates
Launch templates (1/1) Info
Actions
Create launch template
Filter by tags or properties or search by keyword
Launch template ID
Launch template name
Default version
lt-0572f4a344f26fe02
mytemplate2
1
mytemplate2 (lt-0572f4a344f26fe02)
Actions
Delete template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EC2
Volumes New
Snapshots New
Lifecycle Manager New
Network & Security
Security Groups
Elastic IPs
Placement Groups
Key Pairs
Network Interfaces
Load Balancing
Load Balancers
Target Groups New
Auto Scaling
Launch Configurations
Auto Scaling Groups
Step 2
Choose instance launch options
Step 3 (optional)
Configure advanced options
Step 4 (optional)
Configure group size and scaling policies
Step 5 (optional)
Add notifications
Step 6 (optional)
Add tags
Step 7
Review
Scaling group. If you currently use launch configurations, you might consider migrating to launch templates.
Name
Auto Scaling group name
Enter a name to identify the group.
ec2withsnscloudwatchASG
Must be unique to this account in the current Region and no more than 255 characters.
Launch template Info
Switch to launch configuration
Launch template
Choose a launch template that contains the instance-level settings, such as the Amazon Machine Image (AMI), instance type, key pair, and security groups.
mytemplate2
Create a launch template
Version
Default (1)
Feedback
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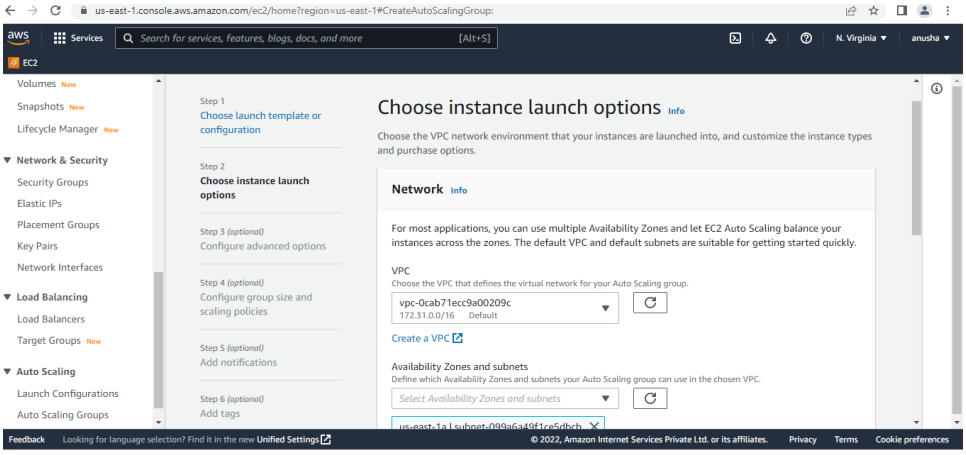
us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateAutoScalingGroup:
aws
Services
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EC2
Volumes New
Snapshots New
Lifecycle Manager New
Network & Security
Security Groups
Elastic IPs
Placement Groups
Key Pairs
Network Interfaces
Load Balancing
Load Balancers
Target Groups New
Auto Scaling
Launch Configurations
Auto Scaling Groups
Step 1
Choose launch template or configuration
Step 2
Choose instance launch options
Step 3 (optional)
Configure advanced options
Step 4 (optional)
Configure group size and scaling policies
Step 5 (optional)
Add notifications
Step 6 (optional)
Add tags
Choose instance launch options Info
Choose the VPC network environment that your instances are launched into, and customize the instance types and purchase options.
Network Info
For most applications, you can use multiple Availability Zones and let EC2 Auto Scaling balance your instances across 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-0cab71ecc9a00209c
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
Feedback
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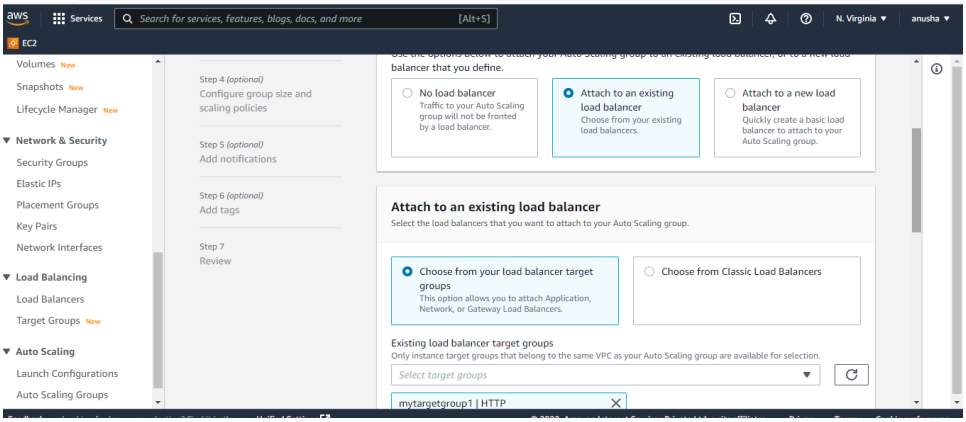
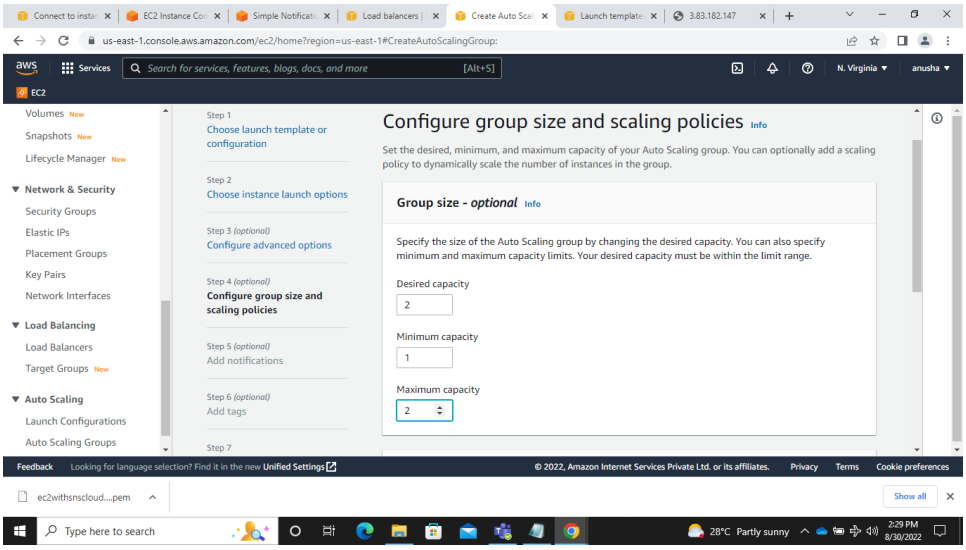
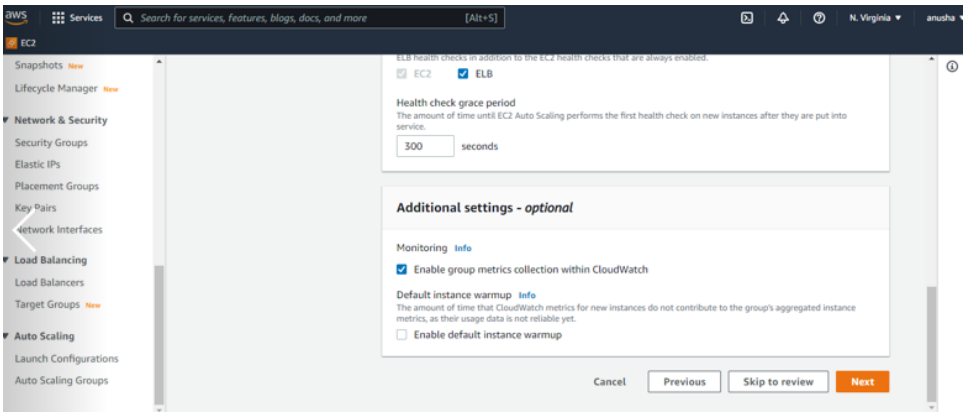
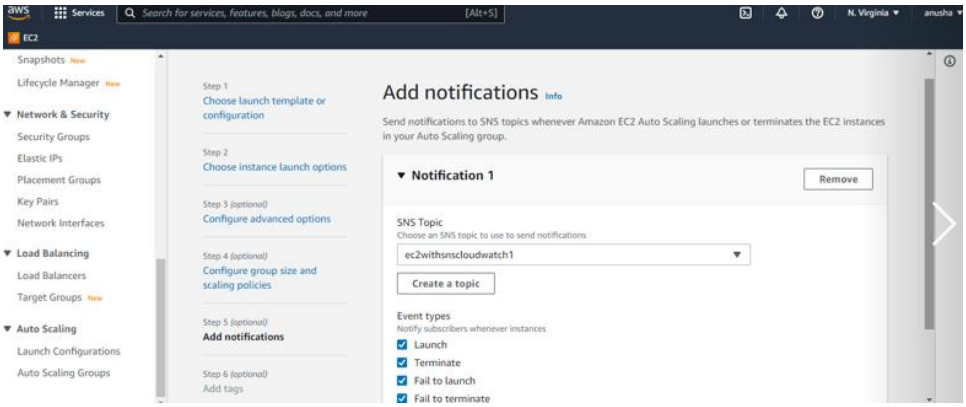
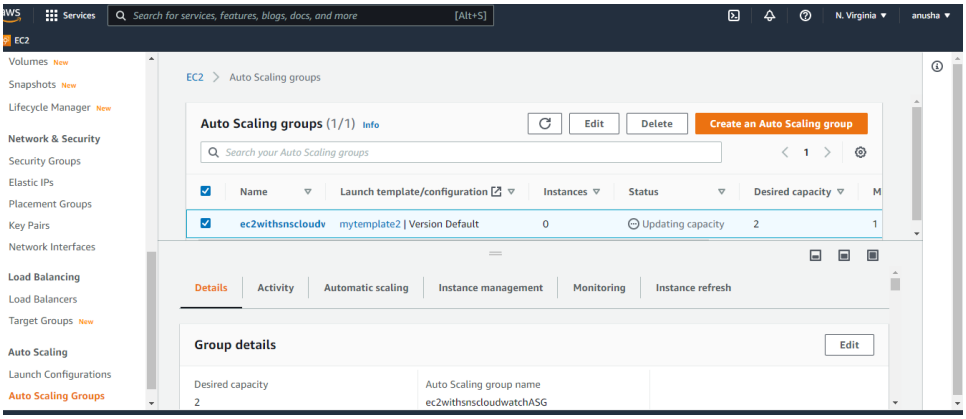


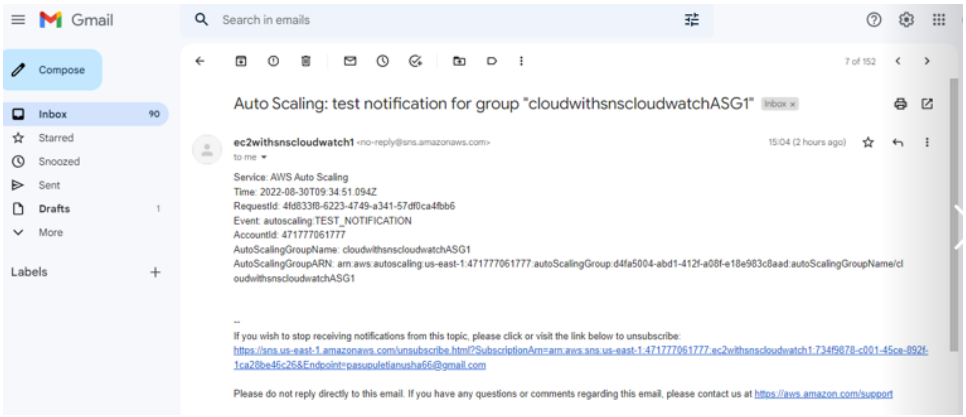




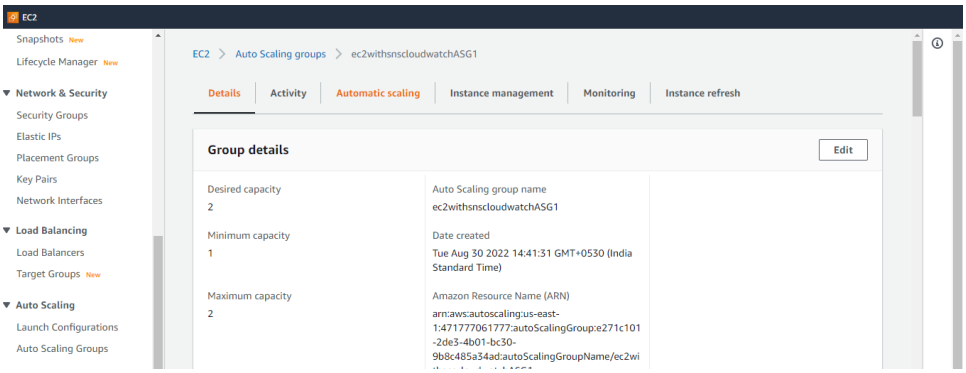
10.Add SNS notification with existing topic>>which is created above



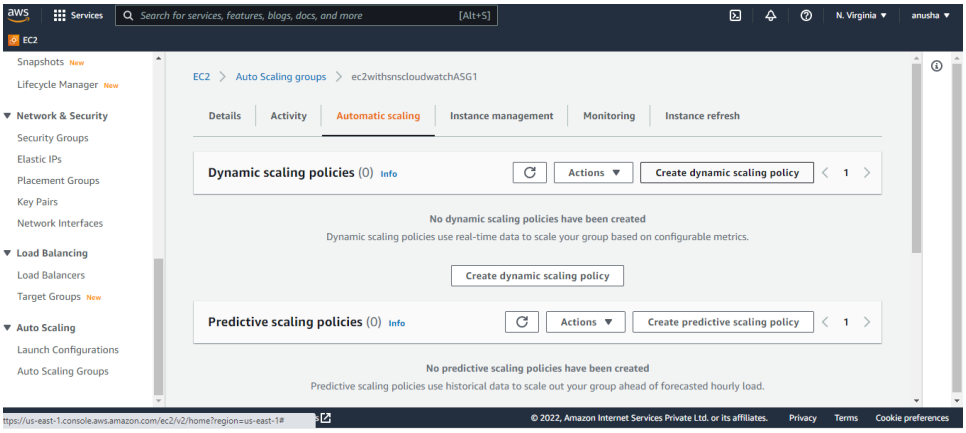


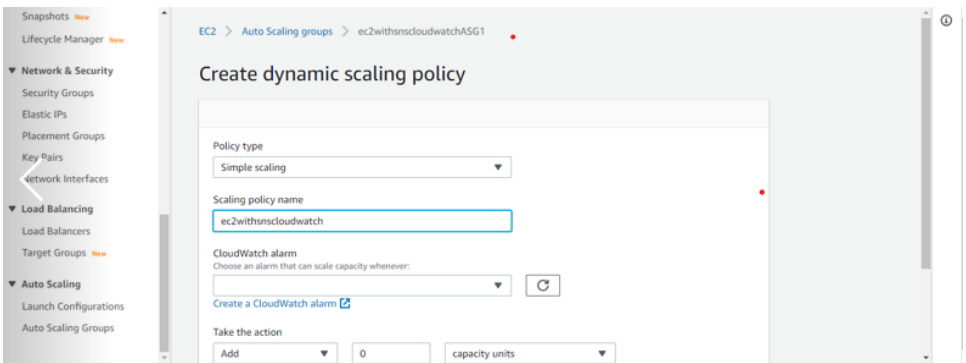


11. Received SNS notification from ASG

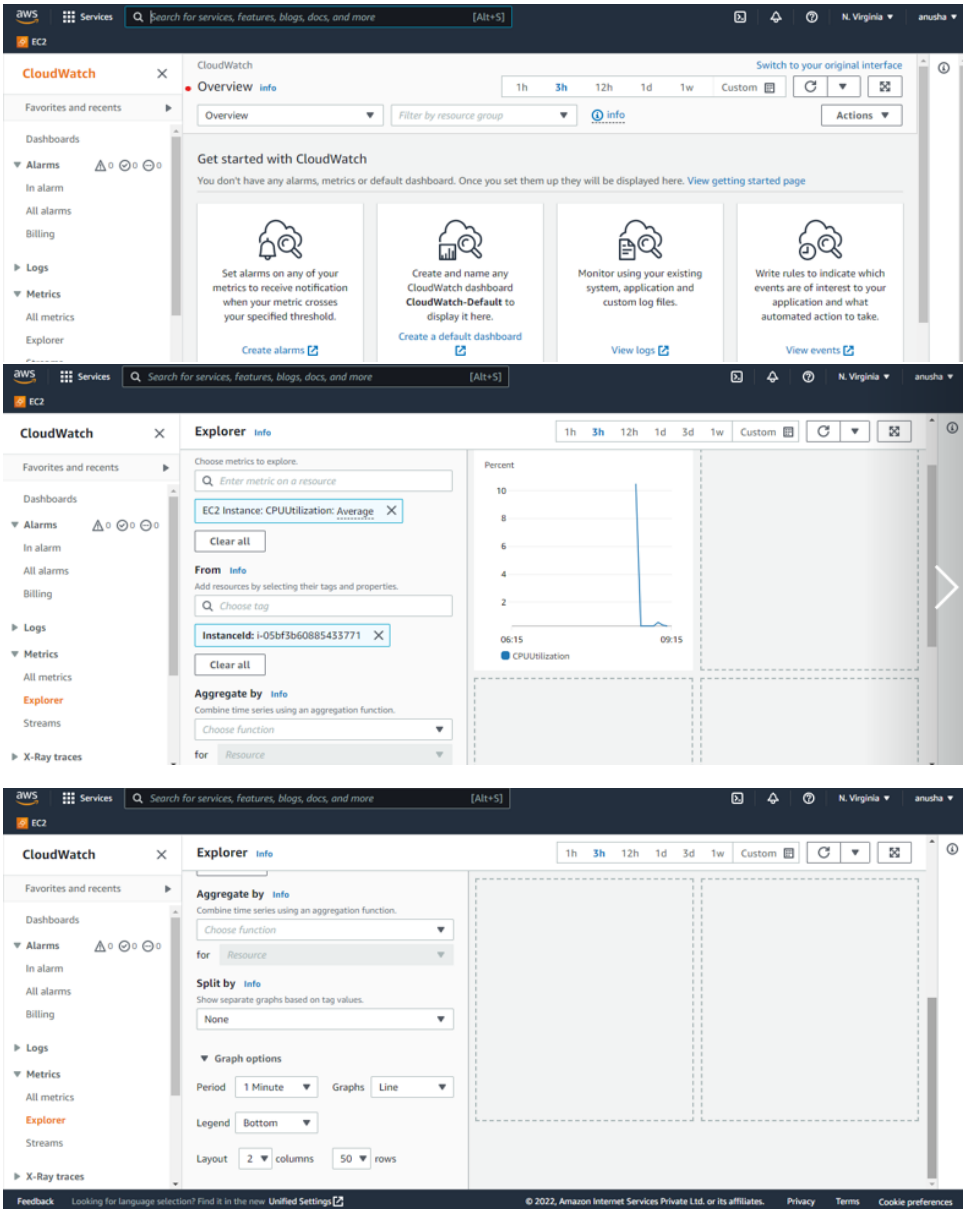


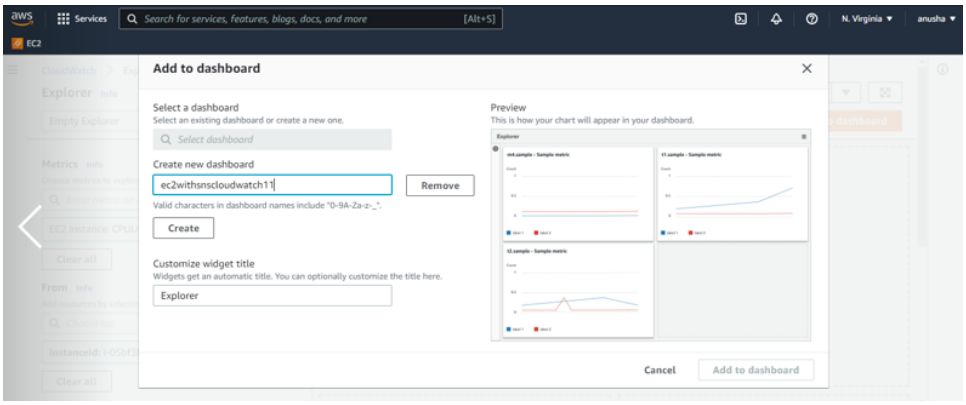
12. Create dynamic policy

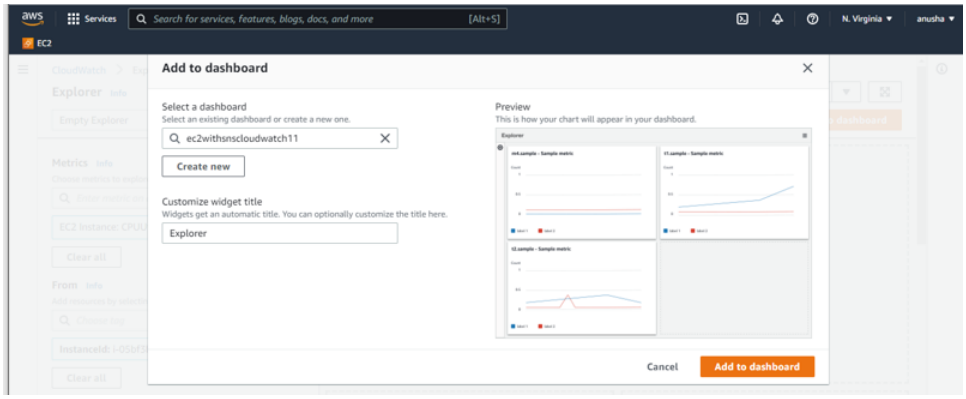


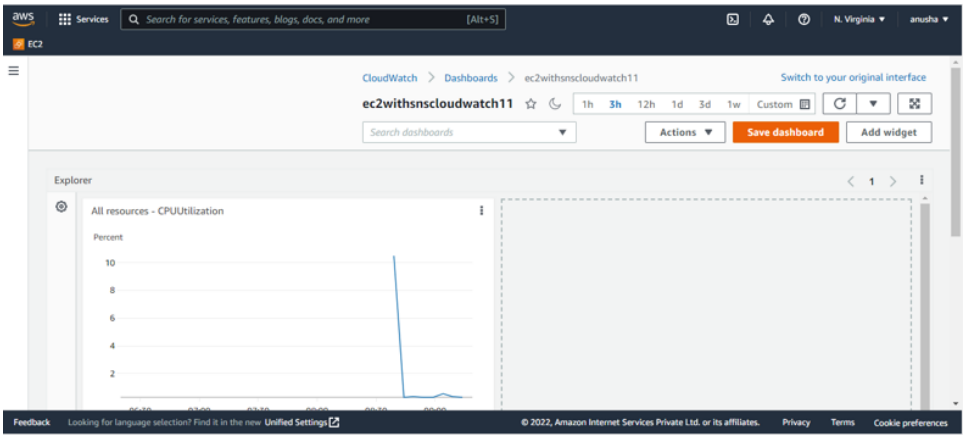


12. Create metric>>Add to dashboard

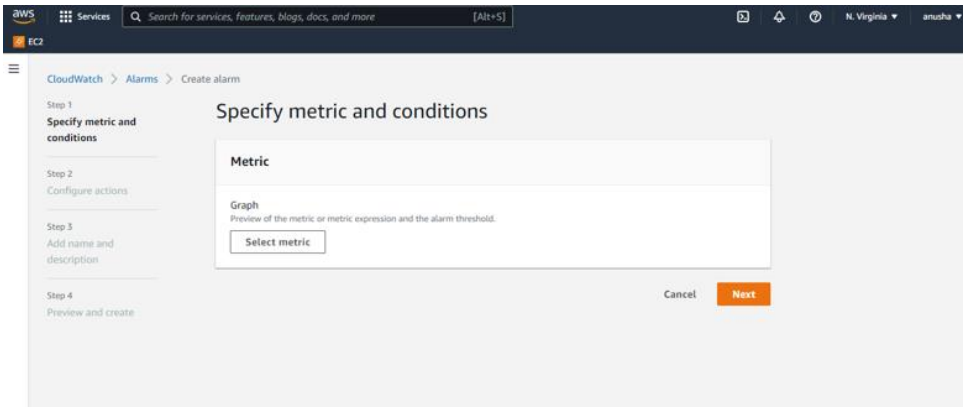


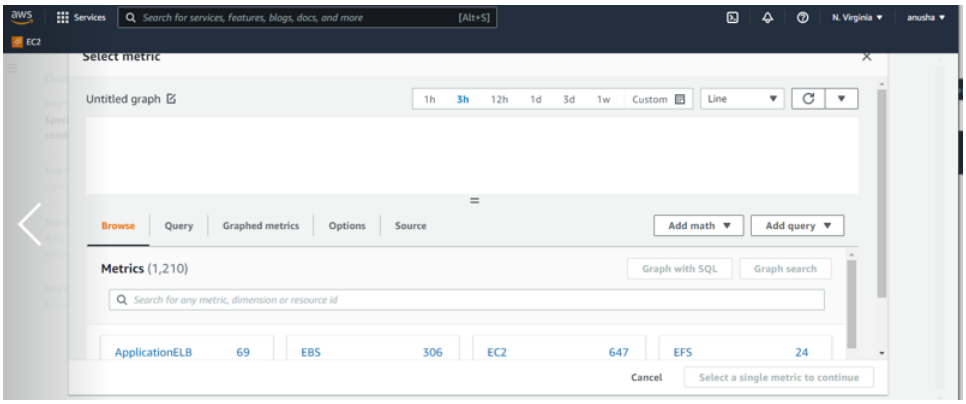


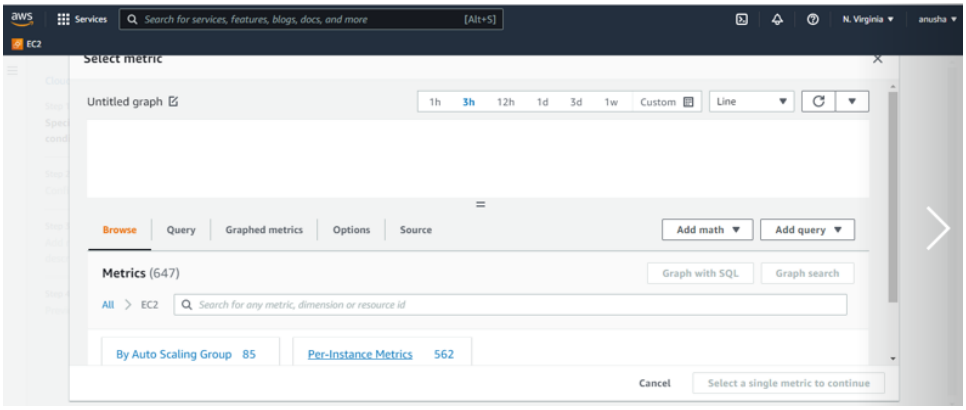


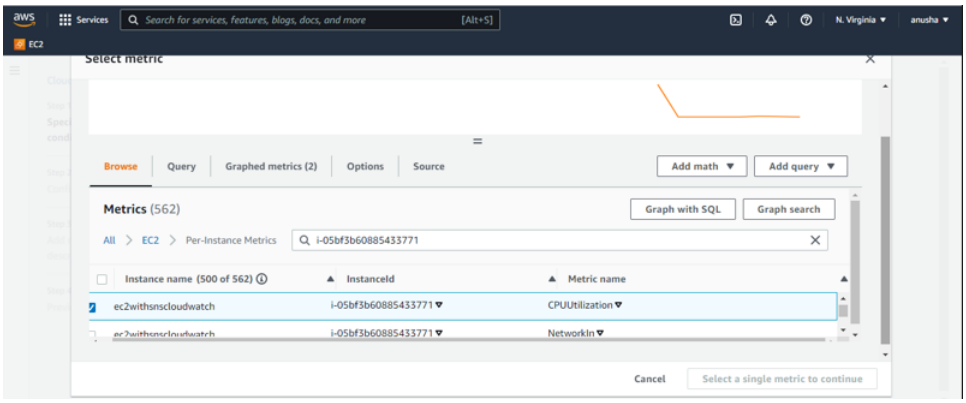


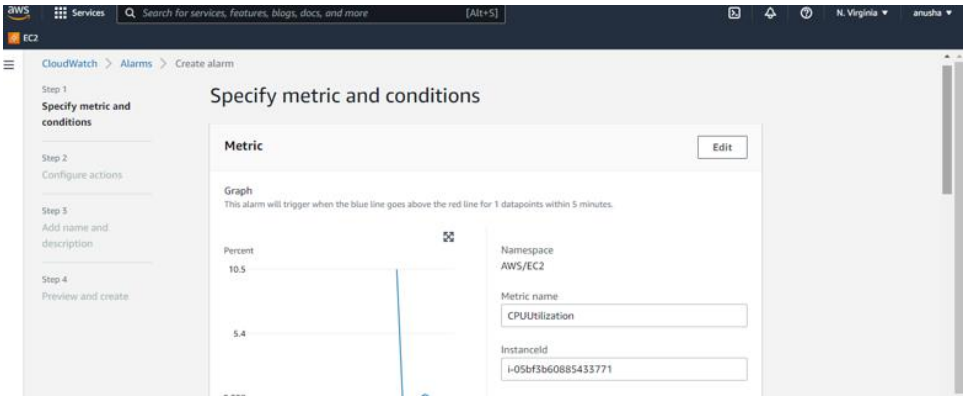
13. Create alarm for instance cpu utilization

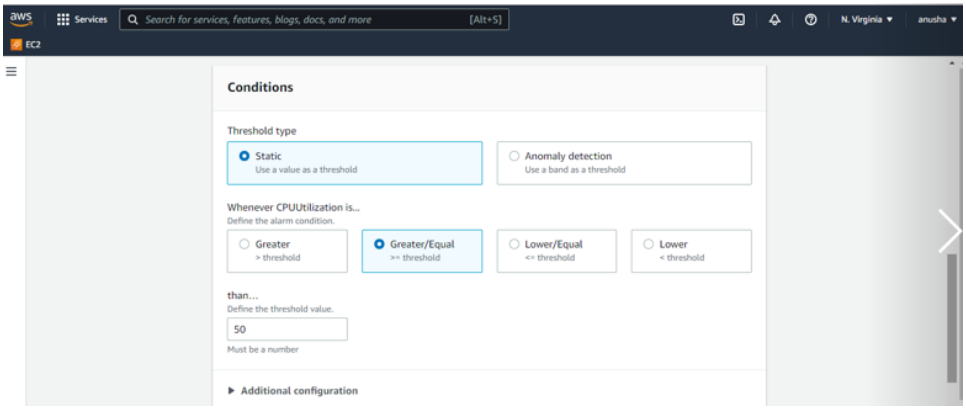

Services
Search for services, features, blogs, docs, and more
[Alt+S]
N. Virginia
anusha
EC2
CloudWatch > Alarms > Create alarm
Step 1
Specify metric and conditions
Step 2
Configure actions
Step 3
Add name and description
Step 4
Preview and create
Specify metric and conditions
Metric
Graph
Preview of the metric or metric expression and the alarm threshold.
Select metric
Cancel
Next

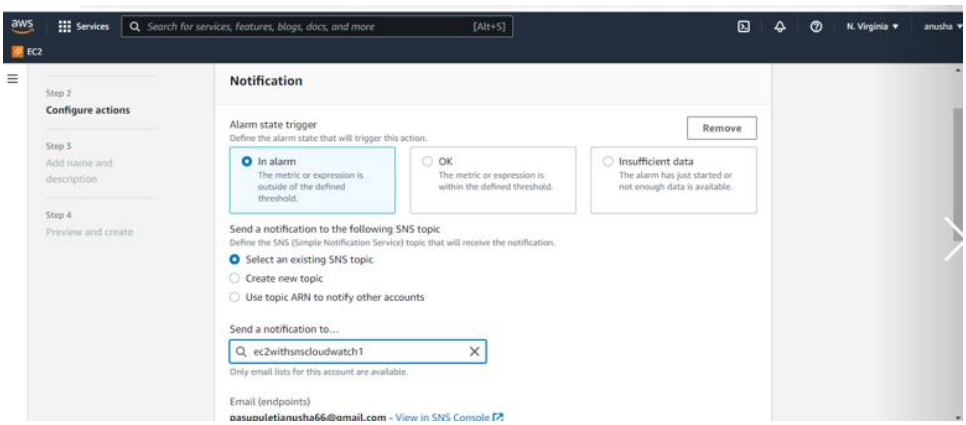

Services
Search for services, features, blogs, docs, and more
[Alt+S]
N. Virginia
anusha
EC2
Select metric
Untitled graph
1h
3h
12h
1d
3d
1w
Custom
Line
Browse
Query
Graphed metrics
Options
Source
Add math
Add query
Metrics (1,210)
Graph with SQL
Graph search
Search for any metric, dimension or resource id
ApplicationELB 69
EBS 306
EC2 647
EFS 24
Cancel
Select a single metric to continue


Services
Search for services, features, blogs, docs, and more
[Alt+S]
N. Virginia
anusha
EC2
Select metric
Untitled graph
1h
3h
12h
1d
3d
1w
Custom
Line
Browse
Query
Graphed metrics
Options
Source
Add math
Add query
Metrics (647)
Graph with SQL
Graph search
All > EC2
Search for any metric, dimension or resource id
By Auto Scaling Group 85
Per-Instance Metrics 562
Cancel
Select a single metric to continue

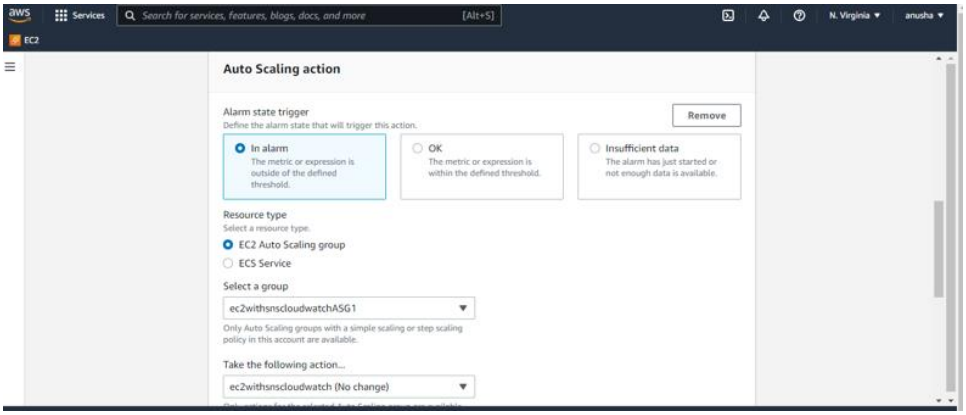

Select metric
Browse
Query
Graphed metrics (2)
Options
Source
Add math
Add query
Metrics (562)
Graph with SQL
Graph search
All
EC2
Per-Instance Metrics
i-05bf3b60885433771
Instance name (500 of 562)
InstanceId
Metric name
ec2withsnscloudwatch
i-05bf3b60885433771
CPUUtilization
NetworkIn
Cancel
Select a single metric to continue

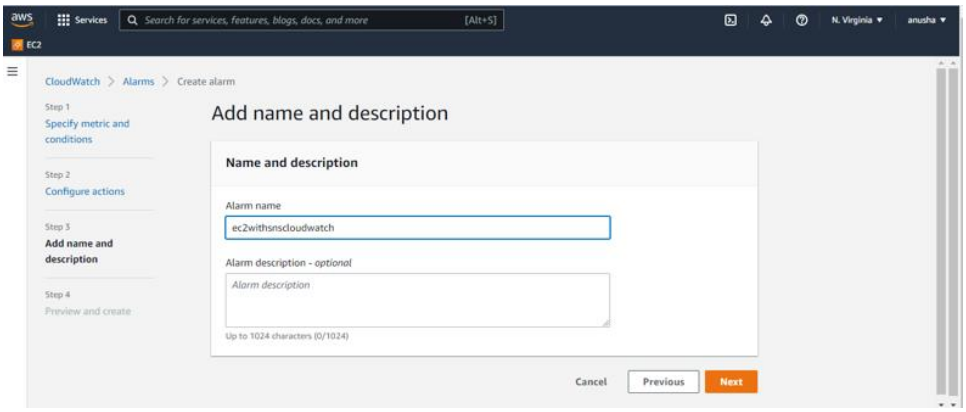

CloudWatch
Alarms
Create alarm
Step 1
Specify metric and conditions
Step 2
Configure actions
Step 3
Add name and description
Step 4
Preview and create
Specify metric and conditions
Metric
Edit
Graph
This alarm will trigger when the blue line goes above the red line for 1 datapoints within 5 minutes.
Percent
10.5
5.4
Namespace
AWS/EC2
Metric name
CPUUtilization
InstanceId
i-05bf3b60885433771

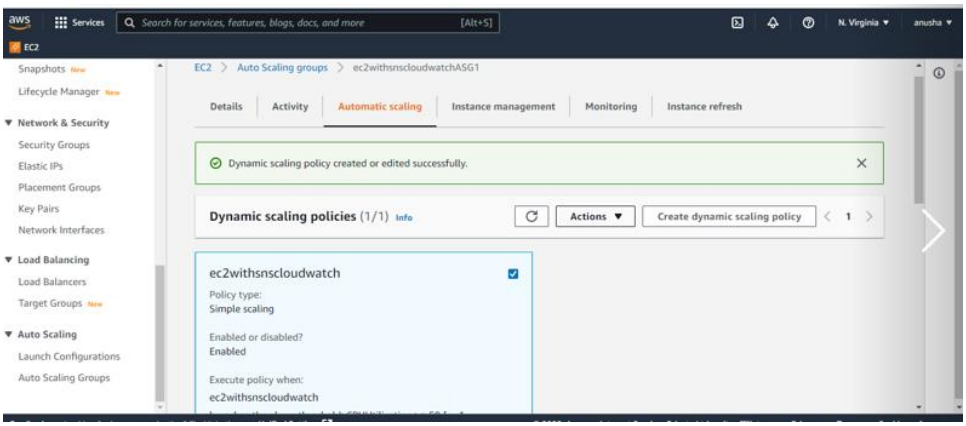

Conditions
Threshold type
Static
Use a value as a threshold
Anomaly detection
Use a band as a threshold
Whenever CPUUtilization is...
Define the alarm condition.
Greater
> threshold
Greater/Equal
>= threshold
Lower/Equal
<= threshold
Lower
< threshold
than...
Define the threshold value.
50
Must be a number
Additional configuration

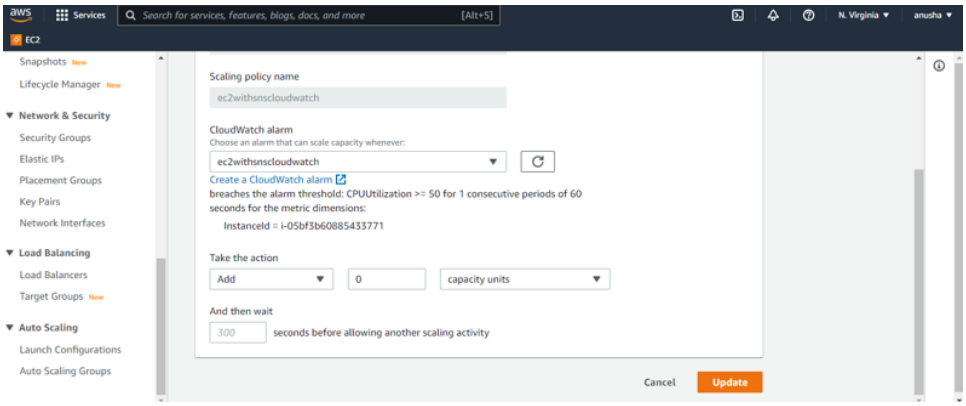


14. Add autoscaling group here

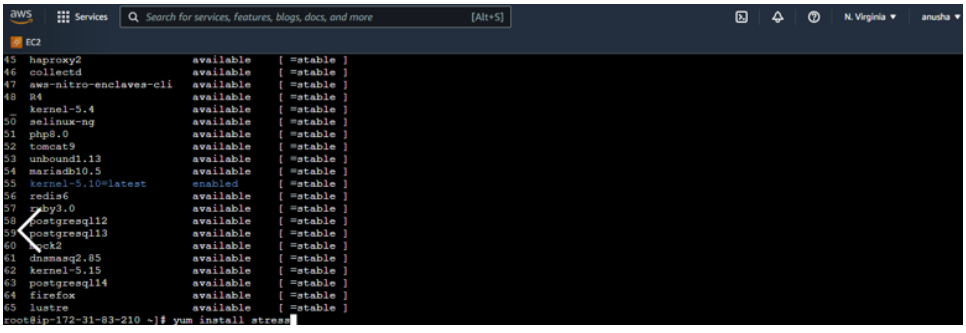


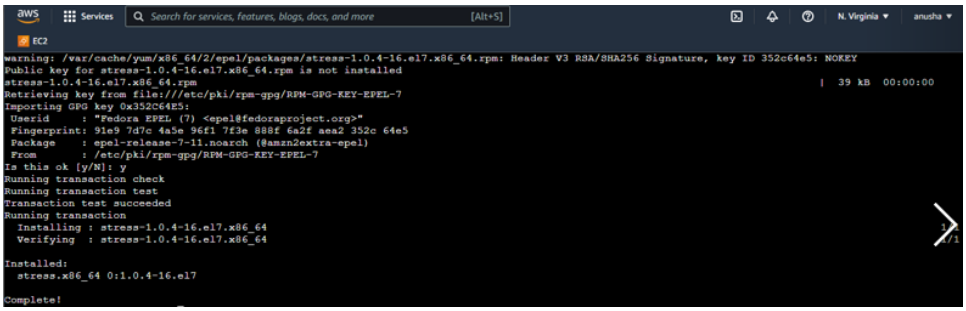


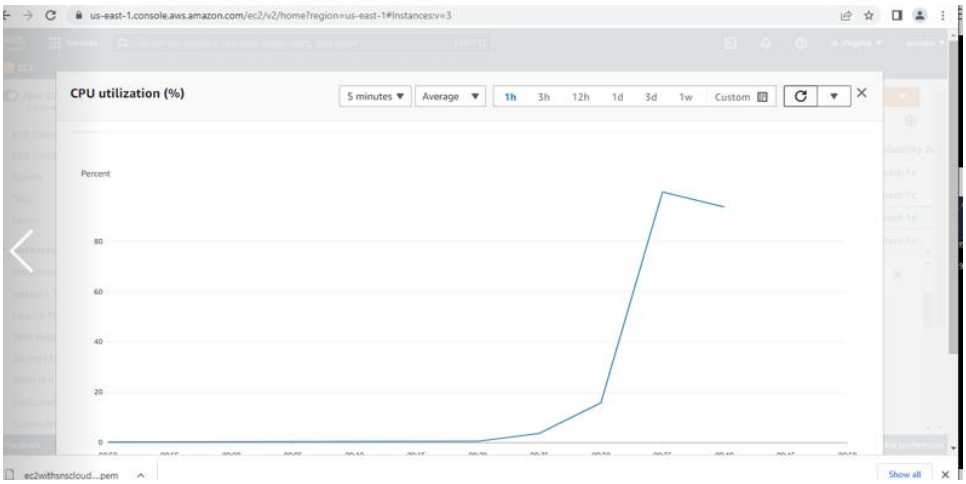




15. Connect ec2 instance gives stress







16. Received SNS notification from cloud watch due to insufficient data