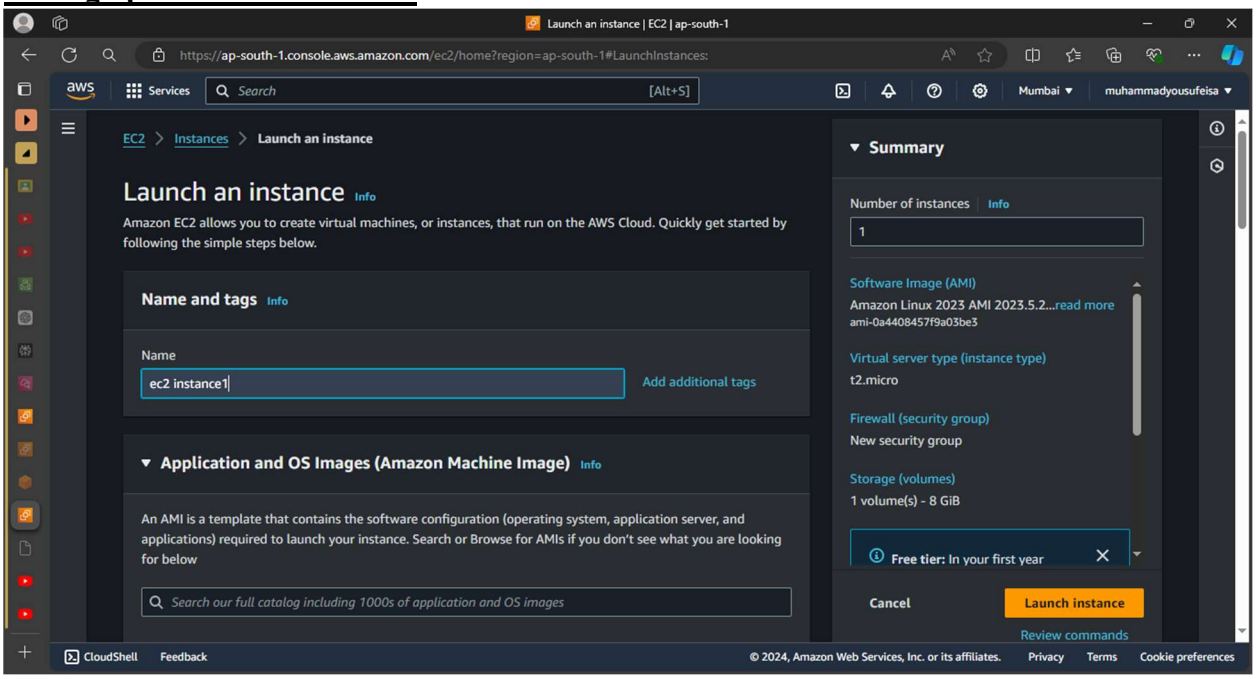
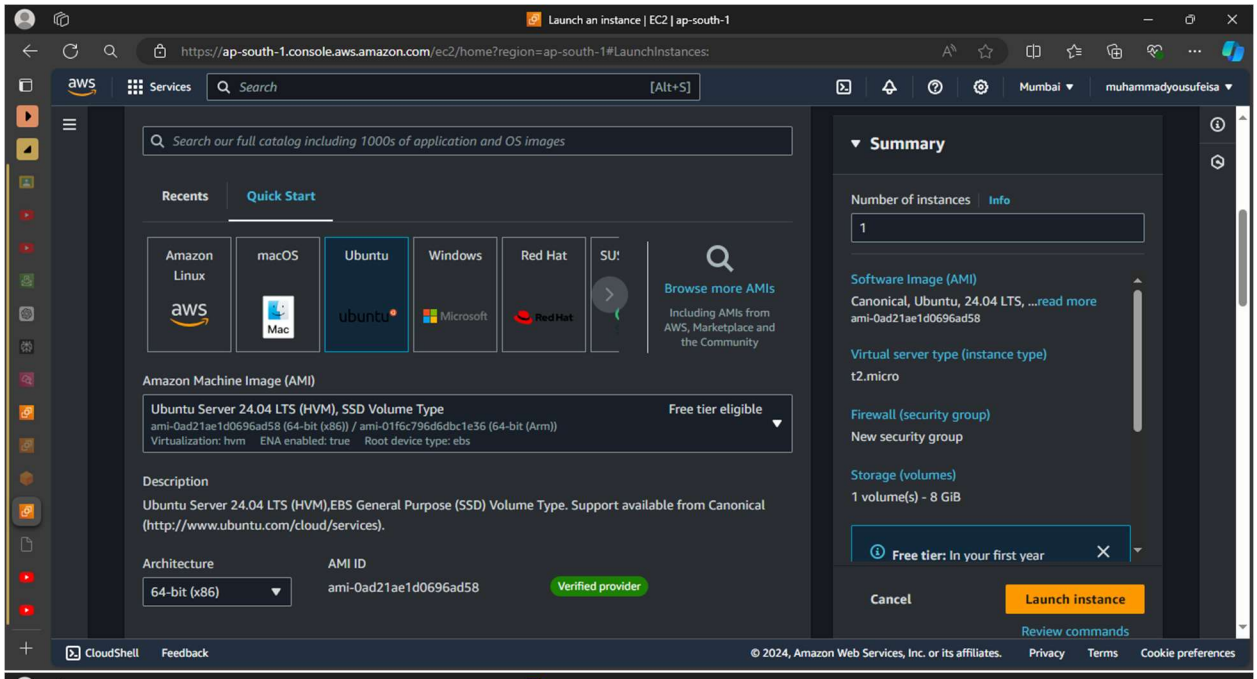
Name: Muhammad Yousuf Eisa
Internship: Cloud Computing
July-batch

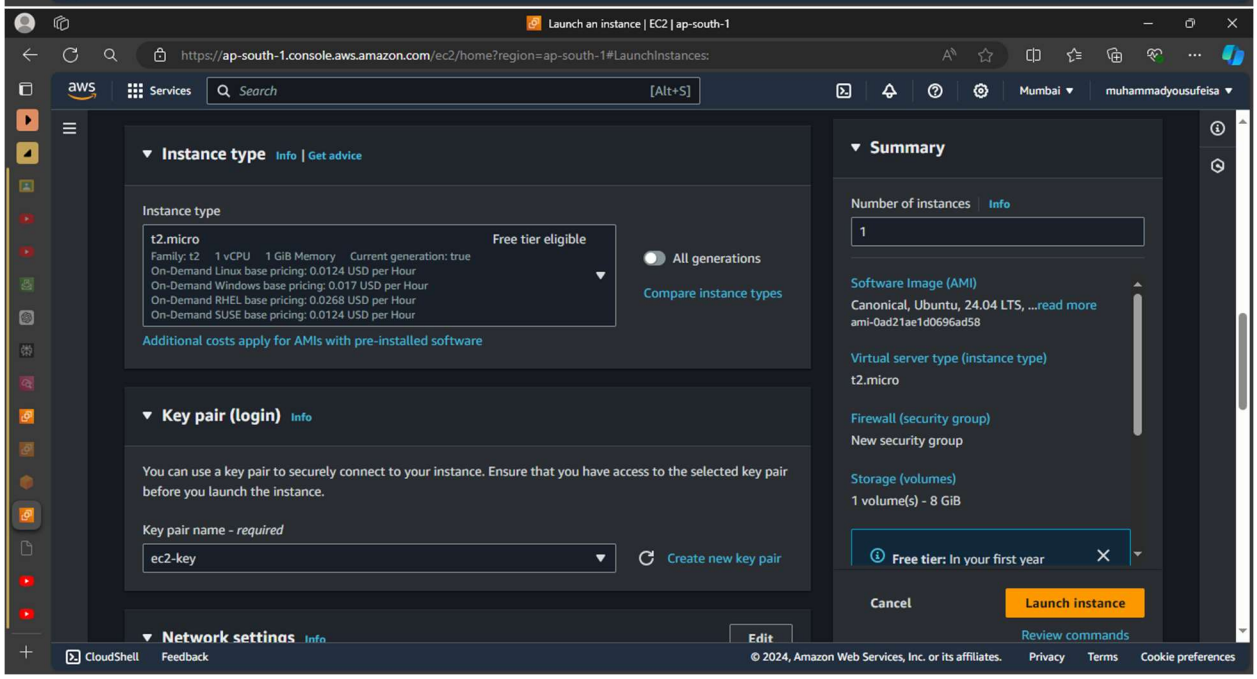
TASK#1:

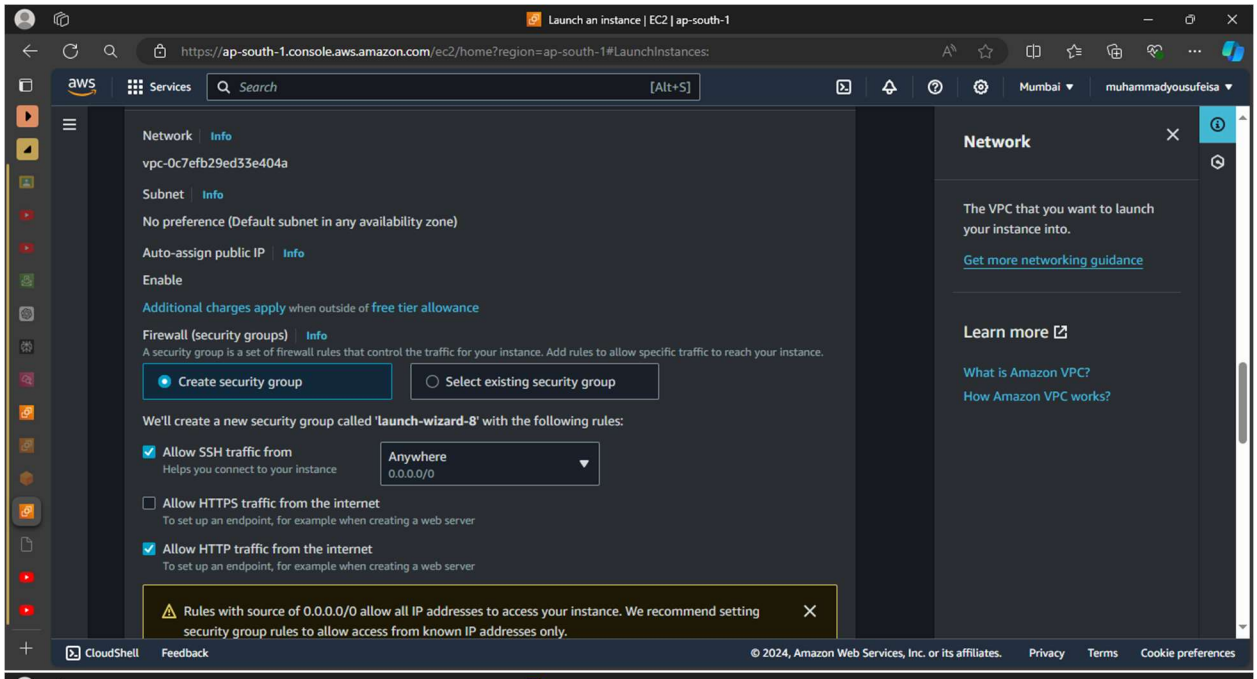
"Main Steps"

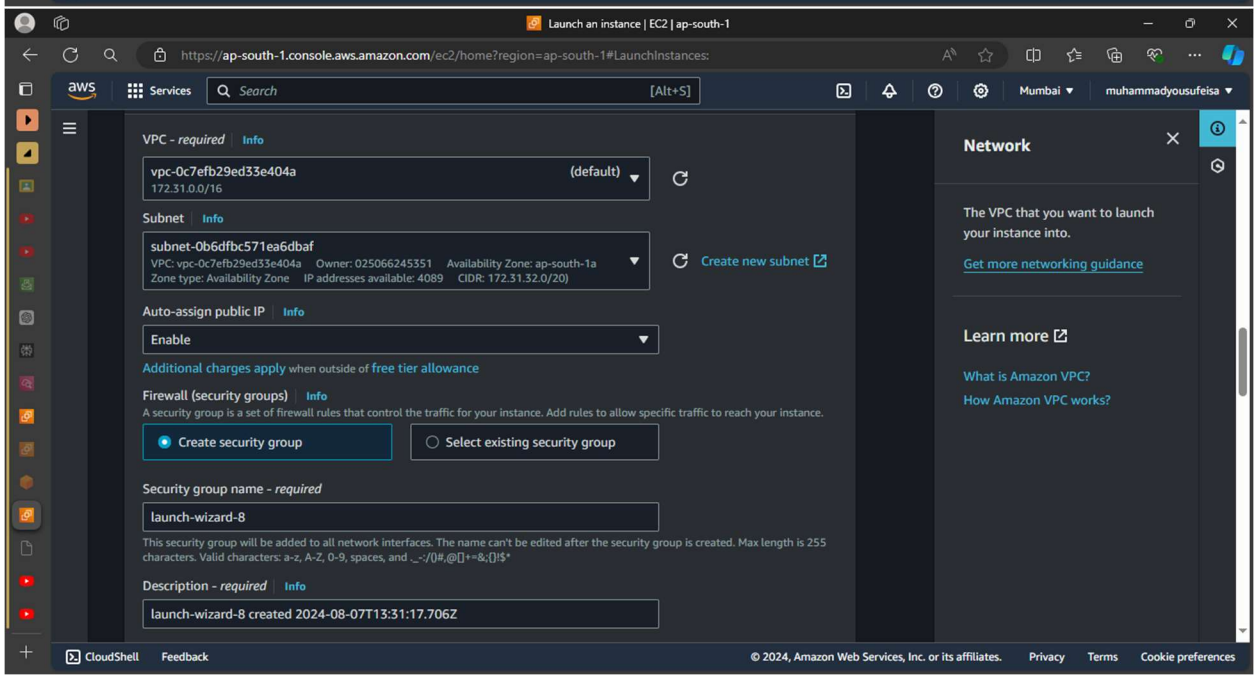
1. **Setting up the EC-2 instances:**

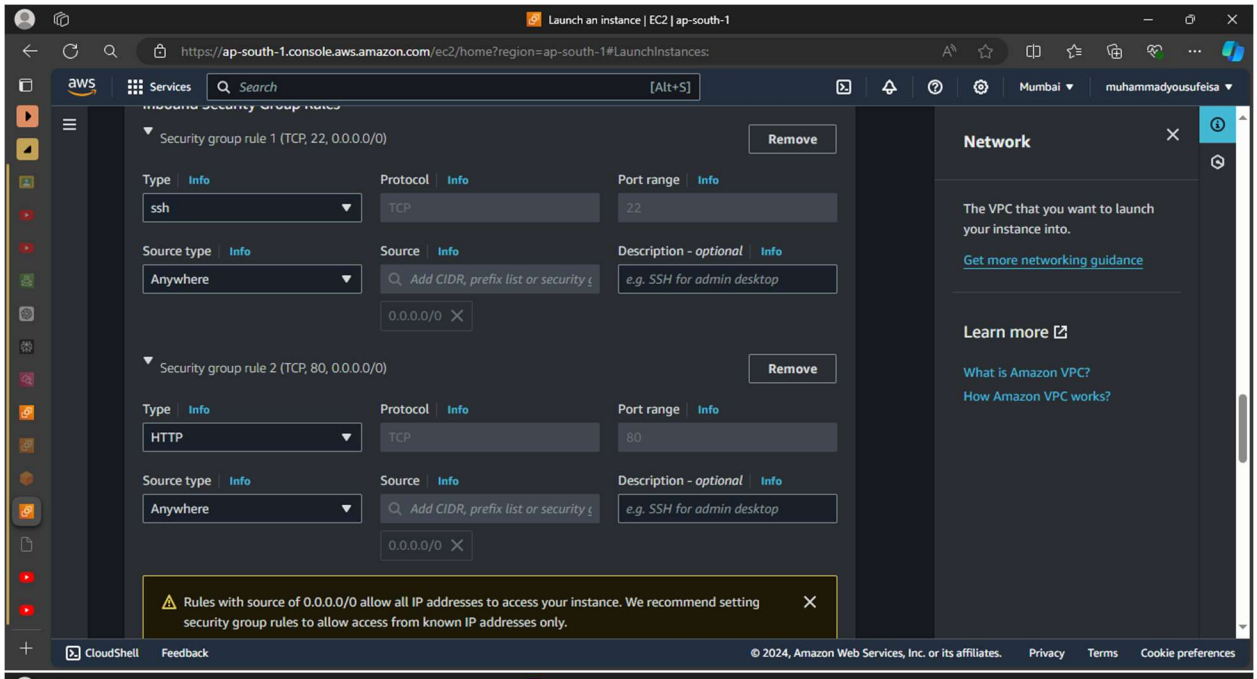


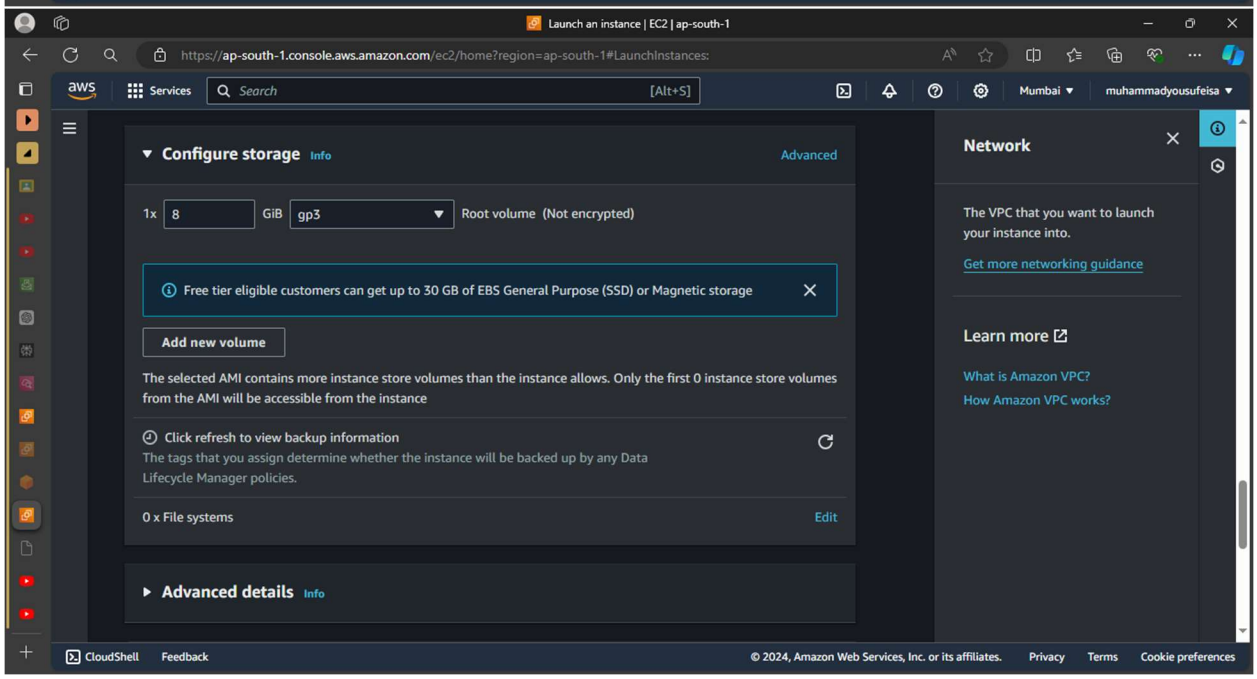

Launch an instance | EC2 | ap-south-1
https://ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#LaunchInstances:
Services
Search
[Alt+S]
Mumbai
muhammadyousufeisa
Search our full catalog including 1000s of application and OS images
Recents
Quick Start
Amazon Linux
macOS
Ubuntu
Windows
Red Hat
Browse more AMIs
Including AMIs from AWS, Marketplace and the Community
Amazon Machine Image (AMI)
Ubuntu Server 24.04 LTS (HVM), SSD Volume Type
Free tier eligible
ami-0ad21ae1d0696ad58 (64-bit (x86)) / ami-01f6c796d6dbc1e36 (64-bit (Arm))
Virtualization: hvm ENA enabled: true Root device type: ebs
Description
Ubuntu Server 24.04 LTS (HVM),EBS General Purpose (SSD) Volume Type. Support available from Canonical (http://www.ubuntu.com/cloud/services).
Architecture
64-bit (x86)
AMI ID
ami-0ad21ae1d0696ad58
Verified provider
Summary
Number of instances | Info
1
Software Image (AMI)
Canonical, Ubuntu, 24.04 LTS, ...read more
ami-0ad21ae1d0696ad58
Virtual server type (instance type)
t2.micro
Firewall (security group)
New security group
Storage (volumes)
1 volume(s) - 8 GiB
Free tier: In your first year
Cancel
Launch instance
Review commands
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

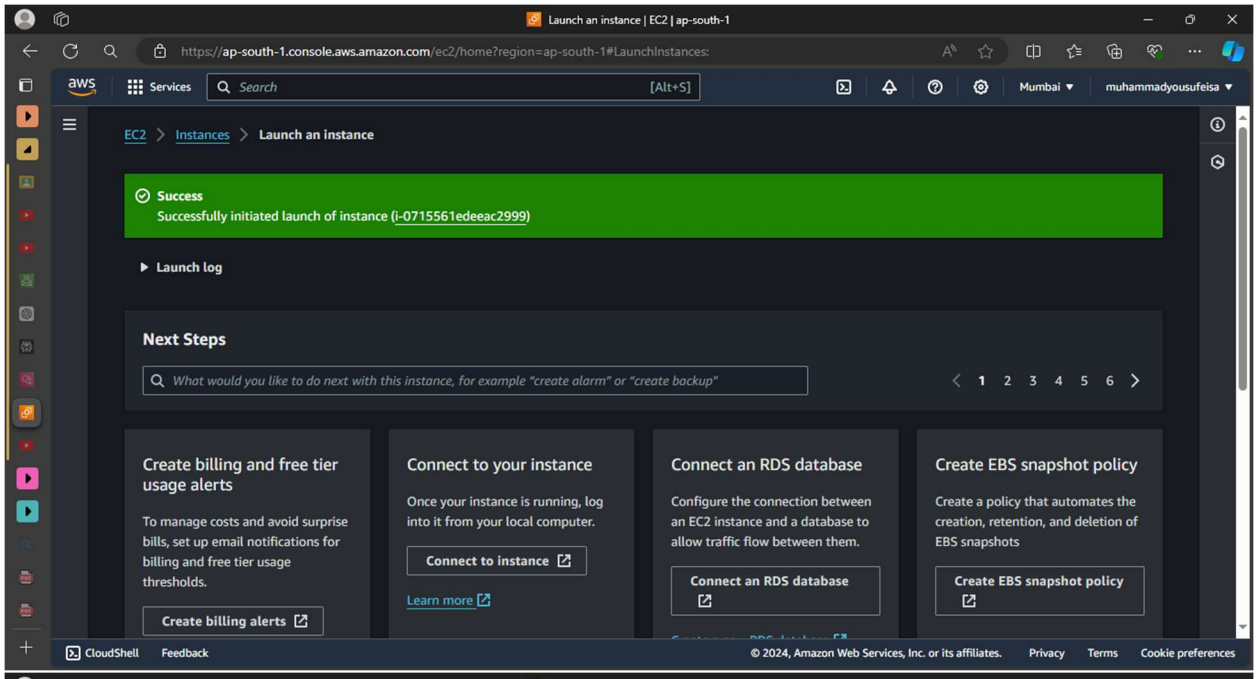

Launch an instance | EC2 | ap-south-1
https://ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#LaunchInstances:
Services
Search
[Alt+S]
Mumbai
muhammadyousufeisa
Instance type Info | Get advice
Instance type
t2.micro
Free tier eligible
Family: t2 1 vCPU 1 GiB Memory Current generation: true
On-Demand Linux base pricing: 0.0124 USD per Hour
On-Demand Windows base pricing: 0.017 USD per Hour
On-Demand RHEL base pricing: 0.0268 USD per Hour
On-Demand SUSE base pricing: 0.0124 USD per Hour
All generations
Compare instance types
Additional costs apply for AMIs with pre-installed software
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 - required
ec2-key
Create new key pair
Network settings Info
Edit
Summary
Number of instances | Info
1
Software Image (AMI)
Canonical, Ubuntu, 24.04 LTS, ...read more
ami-0ad21ae1d0696ad58
Virtual server type (instance type)
t2.micro
Firewall (security group)
New security group
Storage (volumes)
1 volume(s) - 8 GiB
Free tier: In your first year
Cancel
Launch instance
Review commands
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

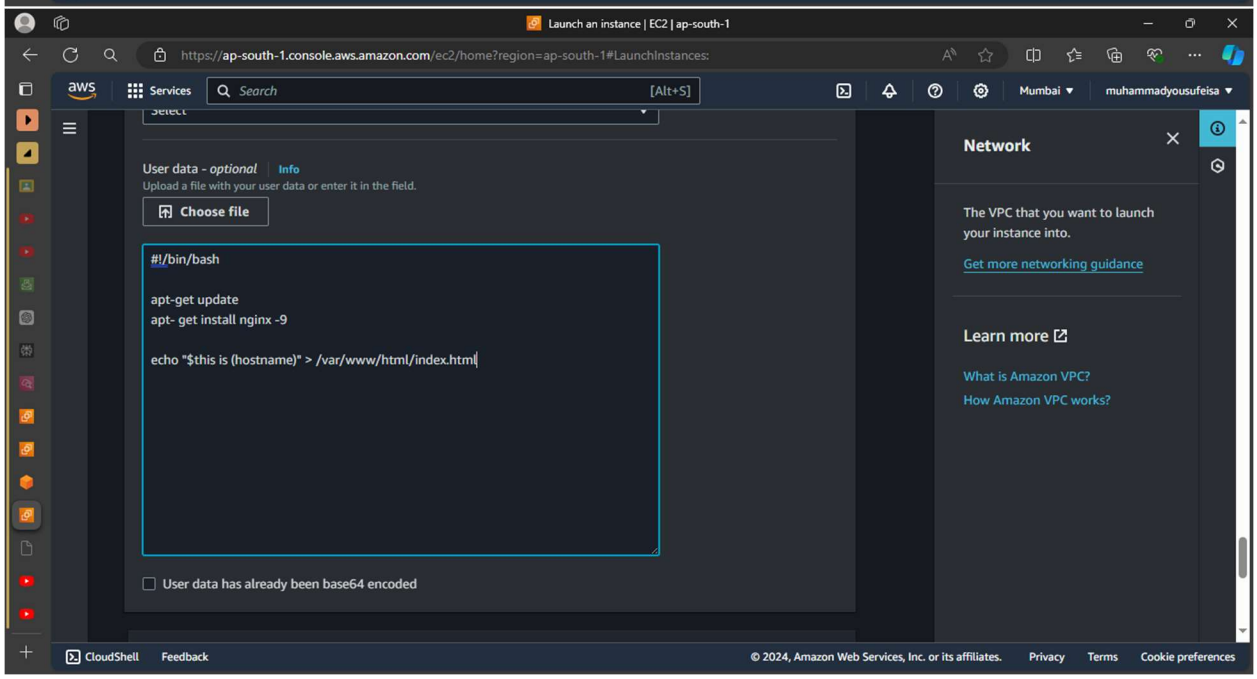

Launch an instance | EC2 | ap-south-1
https://ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#LaunchInstances:
aws
Services
Search
[Alt+S]
Mumbai
muhammadyousufeisa
Network Info
vpc-0c7efb29ed33e404a
Subnet Info
No preference (Default subnet in any availability zone)
Auto-assign public IP Info
Enable
Additional charges apply when outside of free tier allowance
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.
Create security group
Select existing security group
We'll create a new security group called 'launch-wizard-8' with the following rules:
Allow SSH traffic from
Helps you connect to your instance
Anywhere
0.0.0.0/0
Allow HTTPS traffic from the internet
To set up an endpoint, for example when creating a web server
Allow HTTP traffic from the internet
To set up an endpoint, for example when creating a web server
Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.
Network
The VPC that you want to launch your instance into.
Get more networking guidance
Learn more
What is Amazon VPC?
How Amazon VPC works?
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

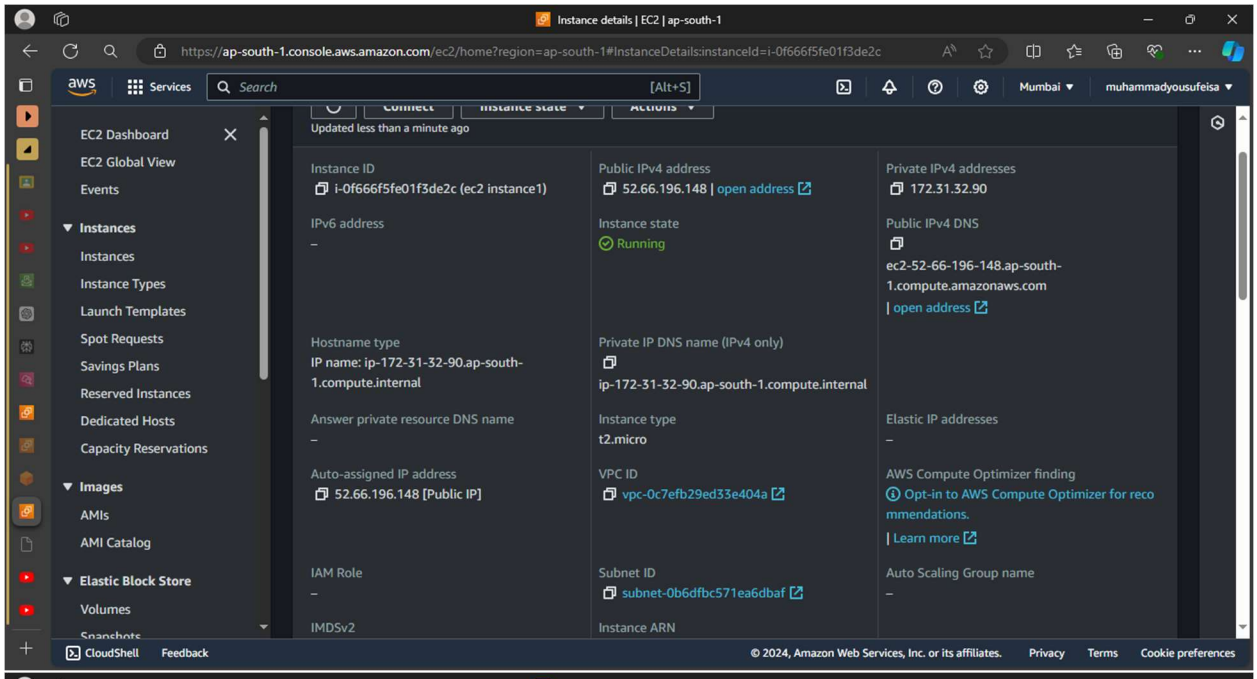

Launch an instance | EC2 | ap-south-1
https://ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#LaunchInstances:
aws
Services
Search
[Alt+S]
Mumbai
muhammadyousufeisa
VPC - required Info
vpc-0c7efb29ed33e404a (default)
172.31.0.0/16
Subnet Info
subnet-0b6dfbc571ea6dbaf
VPC: vpc-0c7efb29ed33e404a Owner: 025066245351 Availability Zone: ap-south-1a
Zone type: Availability Zone IP addresses available: 4089 CIDR: 172.31.32.0/20)
Create new subnet
Auto-assign public IP Info
Enable
Additional charges apply when outside of free tier allowance
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.
Create security group
Select existing security group
Security group name - required
launch-wizard-8
This security group will be added to all network interfaces. The name can't be edited after the security group is created. Max length is 255 characters. Valid characters: a-z, A-Z, 0-9, spaces, and ._-:/()#,@[]+=&;{}!$*
Description - required Info
launch-wizard-8 created 2024-08-07T13:31:17.706Z
Network
The VPC that you want to launch your instance into.
Get more networking guidance
Learn more
What is Amazon VPC?
How Amazon VPC works?
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

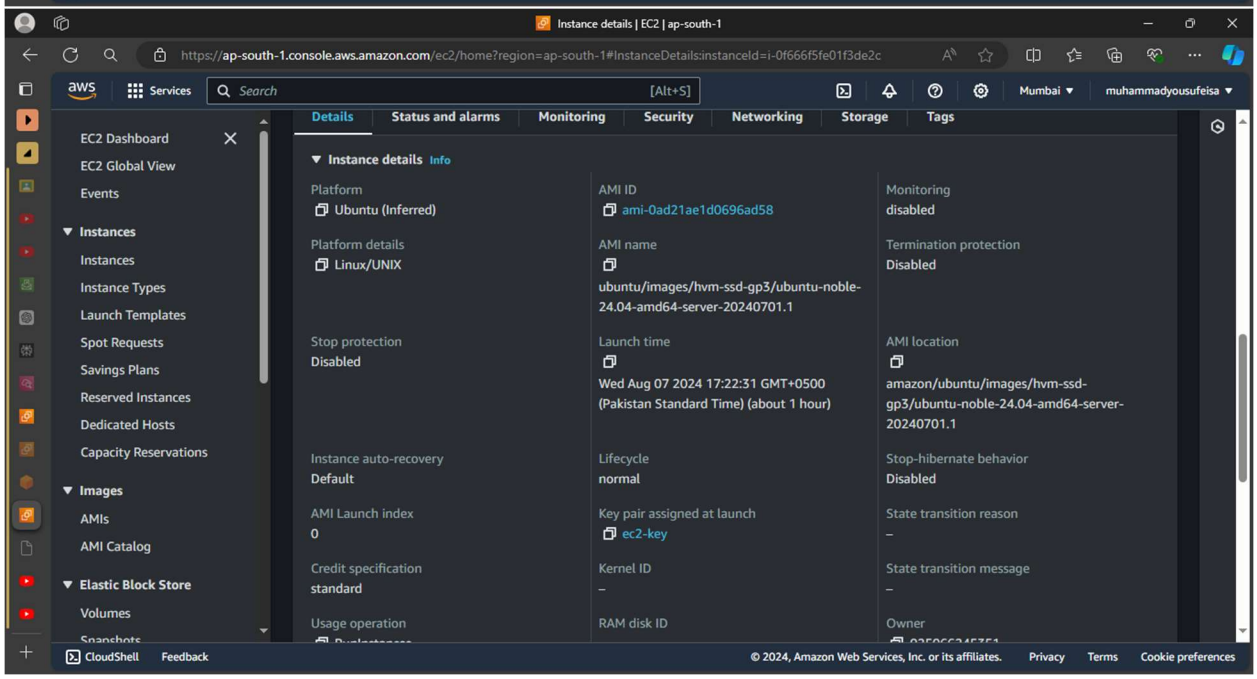

Launch an instance | EC2 | ap-south-1
https://ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#LaunchInstances:
Services
Search
[Alt+S]
Mumbai
muhammadyousufeisa
Security group rule 1 (TCP, 22, 0.0.0.0/0)
Remove
Type Info
ssh
Protocol Info
TCP
Port range Info
22
Source type Info
Anywhere
Source Info
Add CIDR, prefix list or security g
Description - optional Info
e.g. SSH for admin desktop
0.0.0.0/0
Security group rule 2 (TCP, 80, 0.0.0.0/0)
Remove
Type Info
HTTP
Protocol Info
TCP
Port range Info
80
Source type Info
Anywhere
Source Info
Add CIDR, prefix list or security g
Description - optional Info
e.g. SSH for admin desktop
0.0.0.0/0
Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.
Network
The VPC that you want to launch your instance into.
Get more networking guidance
Learn more
What is Amazon VPC?
How Amazon VPC works?
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

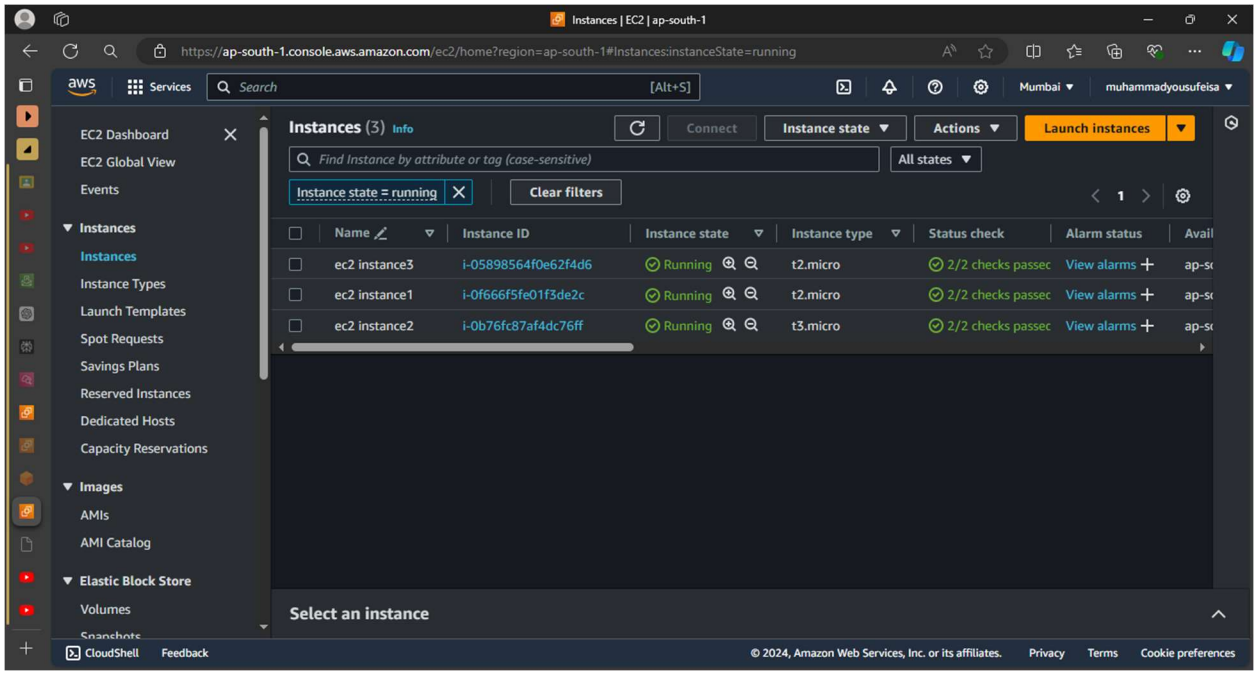

Launch an instance | EC2 | ap-south-1
https://ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#LaunchInstances:
Services
Search
[Alt+S]
Mumbai
muhammadyousufeisa
Configure storage Info
Advanced
1x
8
GiB
gp3
Root volume (Not encrypted)
Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage
Add new volume
The selected AMI contains more instance store volumes than the instance allows. Only the first 0 instance store volumes from the AMI will be accessible from the instance
Click refresh to view backup information
The tags that you assign determine whether the instance will be backed up by any Data Lifecycle Manager policies.
0 x File systems
Edit
Advanced details Info
Network
The VPC that you want to launch your instance into.
Get more networking guidance
Learn more
What is Amazon VPC?
How Amazon VPC works?
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences


Launch an instance | EC2 | ap-south-1
https://ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#LaunchInstances:
Services
Search
[Alt+S]
Mumbai
muhammadyousufeisa
EC2 > Instances > Launch an instance
Success
Successfully initiated launch of instance (i-0715561edeeac2999)
Launch log
Next Steps
What would you like to do next with this instance, for example "create alarm" or "create backup"
1 2 3 4 5 6
Create billing and free tier usage alerts
To manage costs and avoid surprise bills, set up email notifications for billing and free tier usage thresholds.
Create billing alerts
Connect to your instance
Once your instance is running, log into it from your local computer.
Connect to instance
Learn more
Connect an RDS database
Configure the connection between an EC2 instance and a database to allow traffic flow between them.
Connect an RDS database
Create EBS snapshot policy
Create a policy that automates the creation, retention, and deletion of EBS snapshots
Create EBS snapshot policy
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

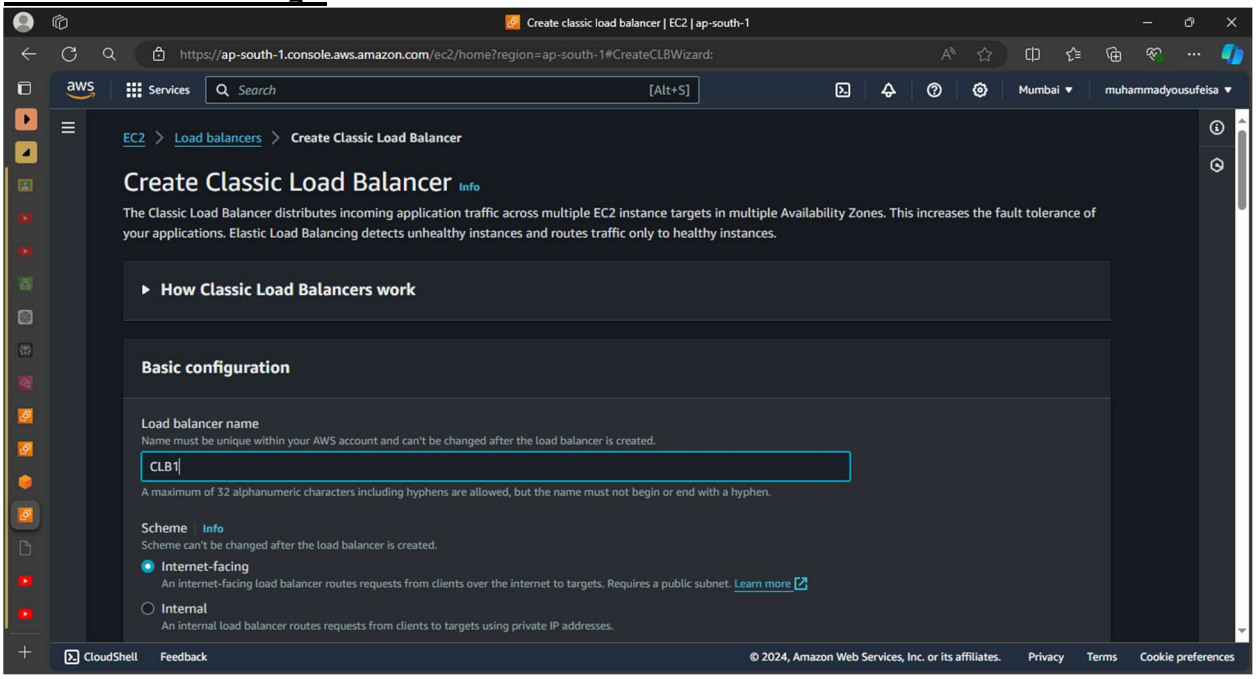

Launch an instance | EC2 | ap-south-1
https://ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#LaunchInstances:
Services
Search
[Alt+S]
Mumbai
muhammadyousufeisa
User data - optional
Info
Upload a file with your user data or enter it in the field.
Choose file
#!/bin/bash
apt-get update
apt- get install nginx -9
echo "$this is (hostname)" > /var/www/html/index.html
User data has already been base64 encoded
Network
The VPC that you want to launch your instance into.
Get more networking guidance
Learn more
What is Amazon VPC?
How Amazon VPC works?
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

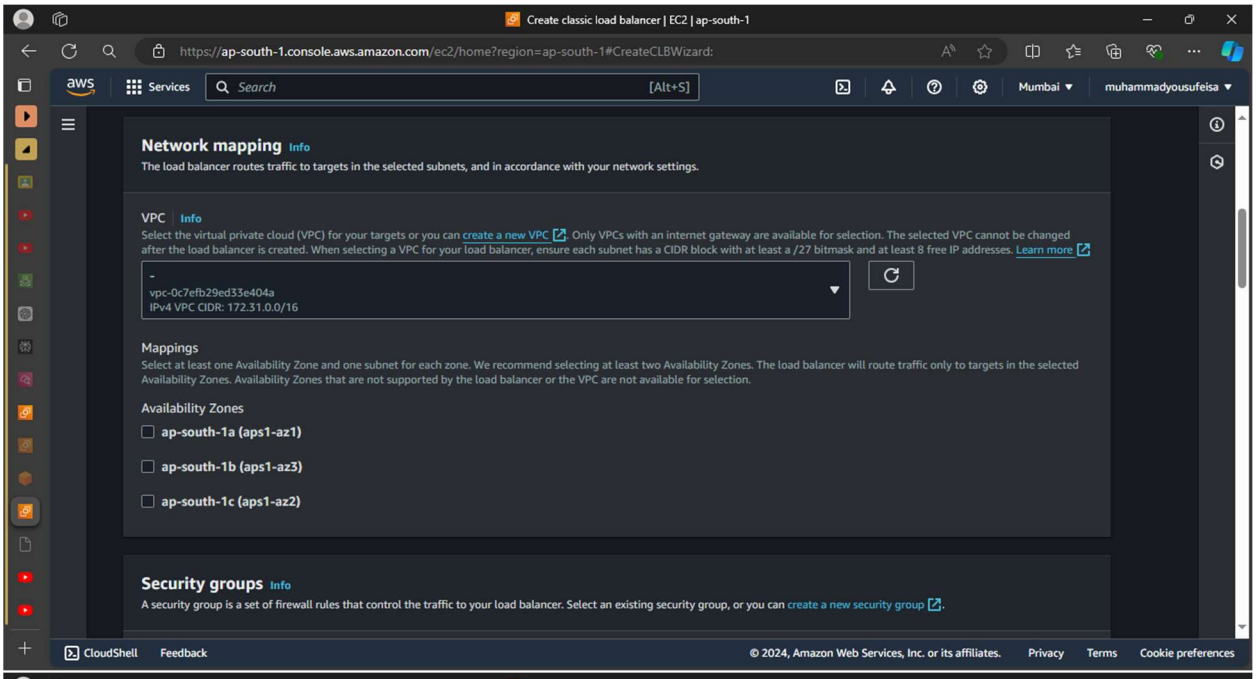

Instance details | EC2 | ap-south-1
https://ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#InstanceDetails:instanceId=i-0f666f5fe01f3de2c
aws
Services
Search
[Alt+S]
Mumbai
muhammadyousufeisa
EC2 Dashboard
EC2 Global View
Events
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
Images
AMIs
AMI Catalog
Elastic Block Store
Volumes
Connect
Instance state
Actions
Updated less than a minute ago
Instance ID
i-0f666f5fe01f3de2c (ec2 instance1)
Public IPv4 address
52.66.196.148 | open address
Private IPv4 addresses
172.31.32.90
IPv6 address
–
Instance state
Running
Public IPv4 DNS
ec2-52-66-196-148.ap-south-1.compute.amazonaws.com | open address
Hostname type
IP name: ip-172-31-32-90.ap-south-1.compute.internal
Private IP DNS name (IPv4 only)
ip-172-31-32-90.ap-south-1.compute.internal
Answer private resource DNS name
–
Instance type
t2.micro
Elastic IP addresses
–
Auto-assigned IP address
52.66.196.148 [Public IP]
VPC ID
vpc-0c7efb29ed33e404a
AWS Compute Optimizer finding
Opt-in to AWS Compute Optimizer for recommendations. | Learn more
IAM Role
–
Subnet ID
subnet-0b6dfbc571ea6dbaf
Auto Scaling Group name
–
IMDSv2
Instance ARN
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

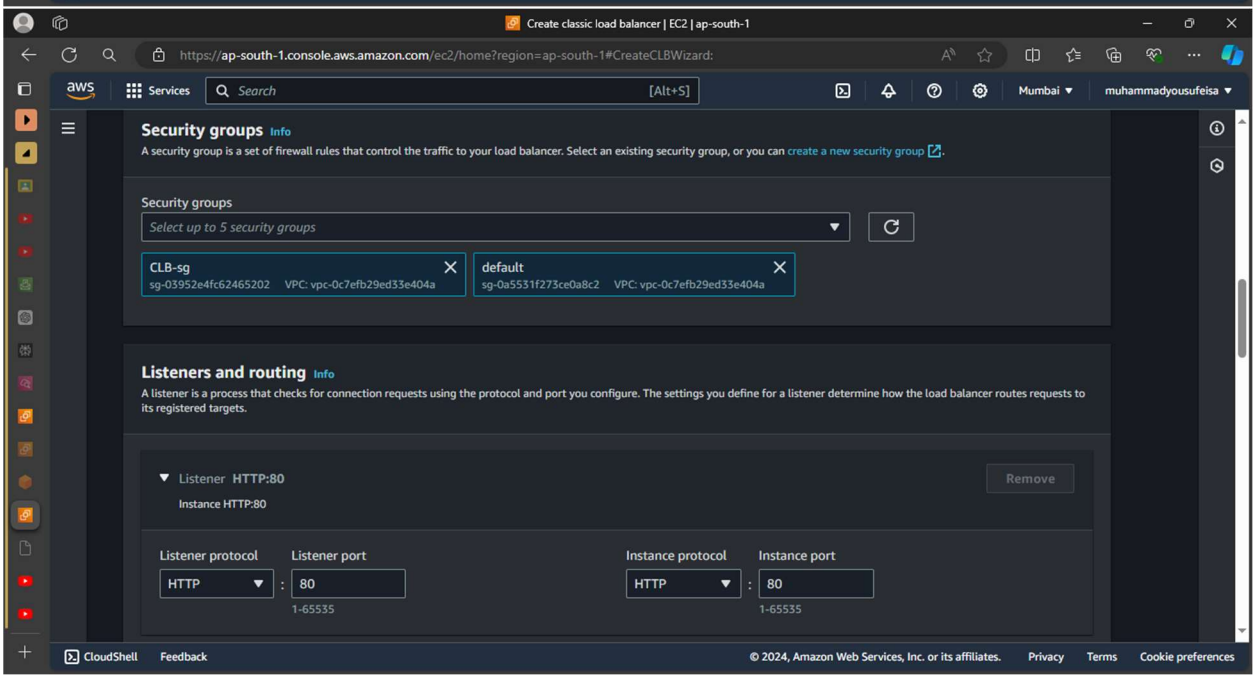

Instance details | EC2 | ap-south-1
https://ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#InstanceDetails:instanceId=i-0f666f5fe01f3de2c
aws
Services
Search
[Alt+S]
Mumbai
muhammadyousufeisa
EC2 Dashboard
EC2 Global View
Events
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
Images
AMIs
AMI Catalog
Elastic Block Store
Volumes
Details
Status and alarms
Monitoring
Security
Networking
Storage
Tags
Instance details Info
Platform
Ubuntu (Inferred)
AMI ID
ami-0ad21ae1d0696ad58
Monitoring
disabled
Platform details
Linux/UNIX
AMI name
ubuntu/images/hvm-ssd-gp3/ubuntu-noble-24.04-amd64-server-20240701.1
Termination protection
Disabled
Stop protection
Disabled
Launch time
Wed Aug 07 2024 17:22:31 GMT+0500 (Pakistan Standard Time) (about 1 hour)
AMI location
amazon/ubuntu/images/hvm-ssd-gp3/ubuntu-noble-24.04-amd64-server-20240701.1
Instance auto-recovery
Default
Lifecycle
normal
Stop-hibernate behavior
Disabled
AMI Launch index
0
Key pair assigned at launch
ec2-key
State transition reason
–
Credit specification
standard
Kernel ID
–
State transition message
–
Usage operation
RAM disk ID
Owner
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

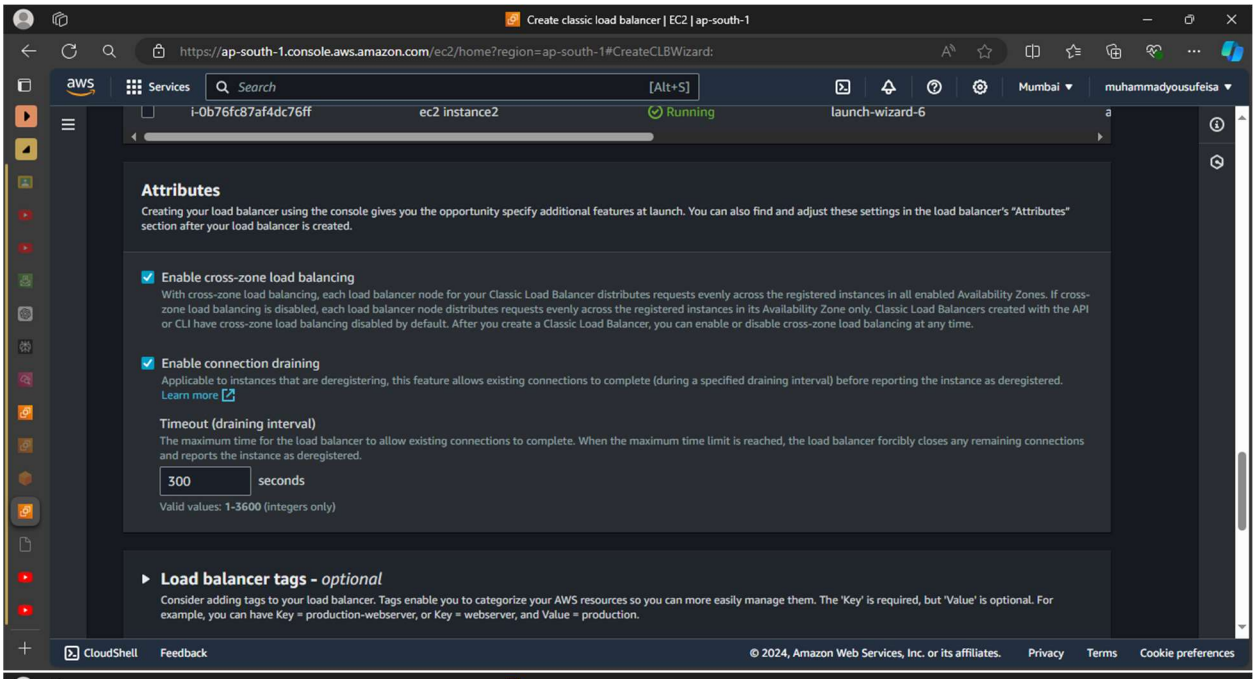


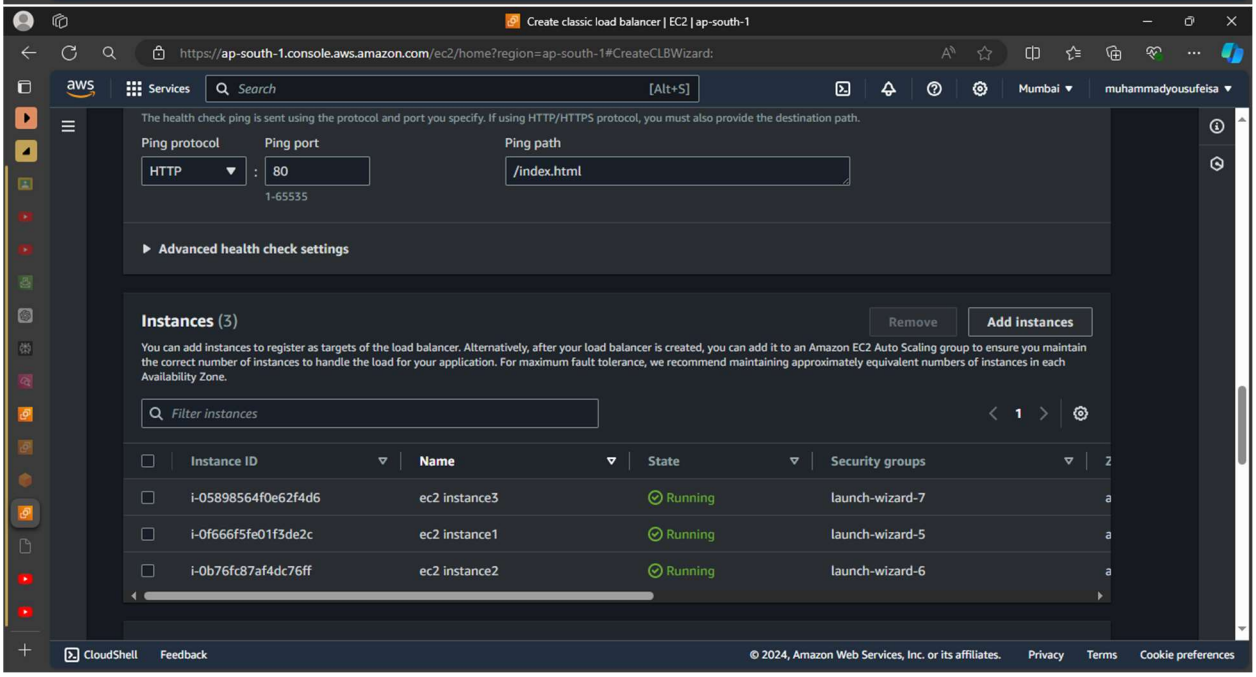
2. Load Balancer settings:

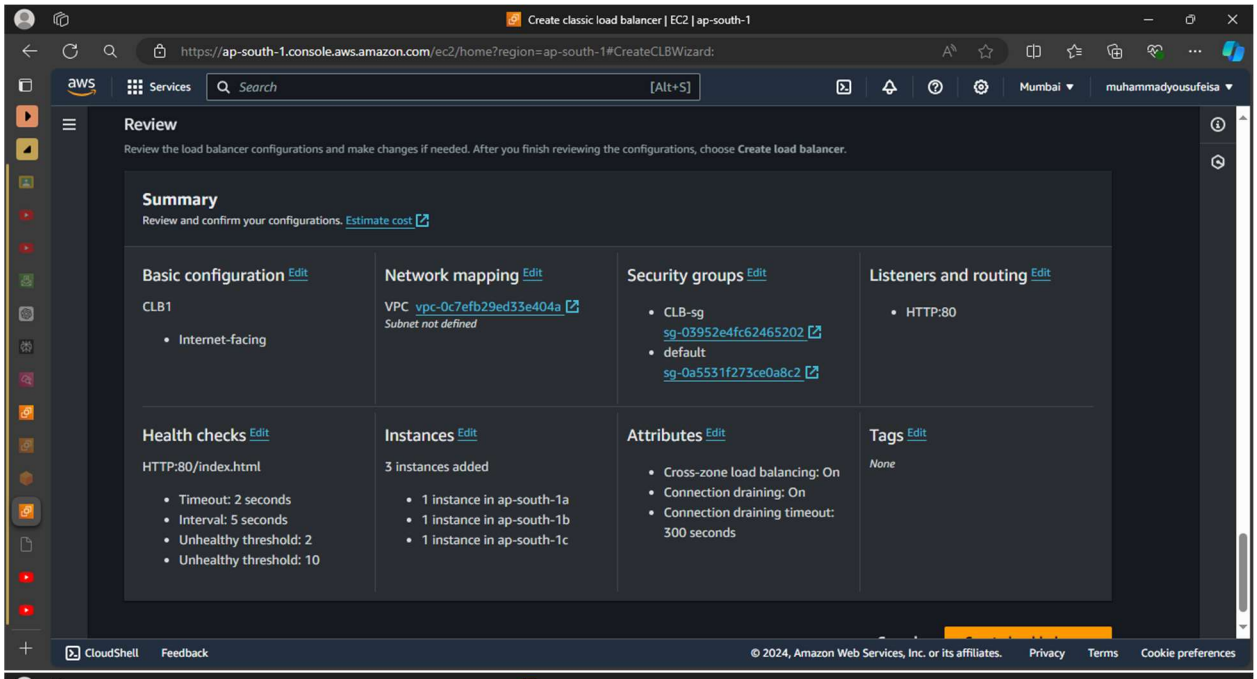


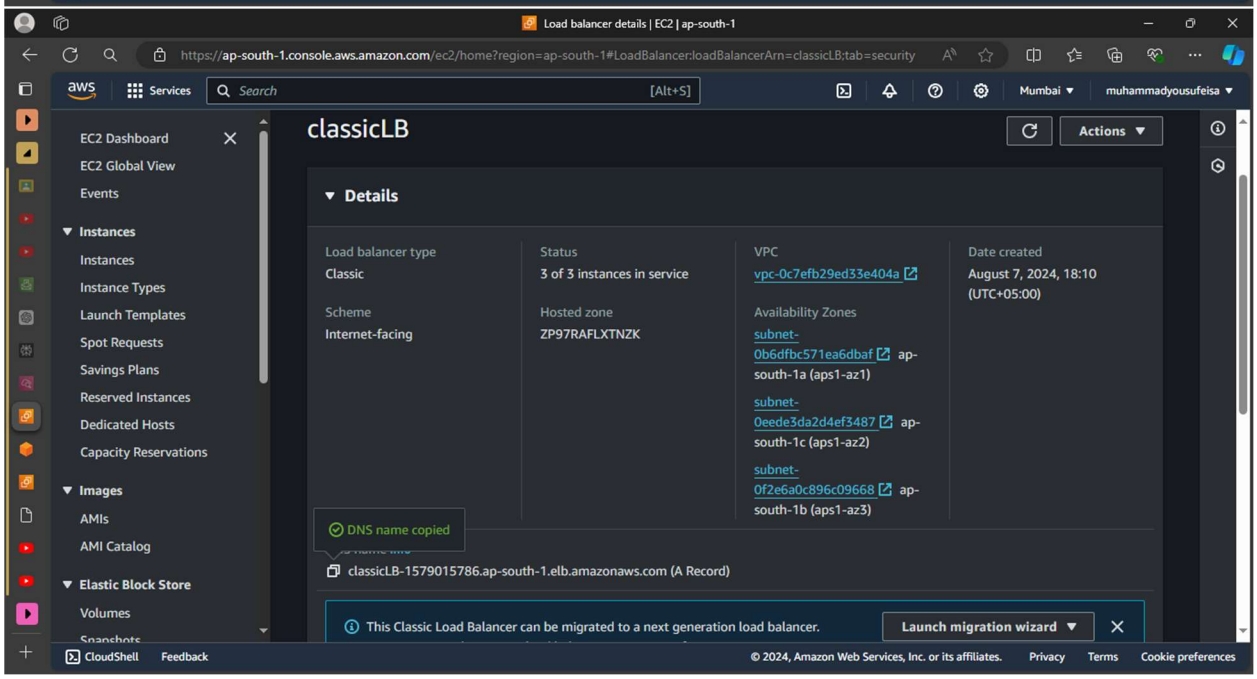

Create classic load balancer | EC2 | ap-south-1
https://ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#CreateCLBWizard:
Services
Search
[Alt+S]
Mumbai
muhammadyousufeisa
Network mapping Info
The load balancer routes traffic to targets in the selected subnets, and in accordance with your network settings.
VPC Info
Select the virtual private cloud (VPC) for your targets or you can create a new VPC. Only VPCs with an internet gateway are available for selection. The selected VPC cannot be changed after the load balancer is created. When selecting a VPC for your load balancer, ensure each subnet has a CIDR block with at least a /27 bitmask and at least 8 free IP addresses. Learn more
-
vpc-0c7efb29ed33e404a
IPv4 VPC CIDR: 172.31.0.0/16
Mappings
Select at least one Availability Zone and one subnet for each zone. We recommend selecting at least two Availability Zones. The load balancer will route traffic only to targets in the selected Availability Zones. Availability Zones that are not supported by the load balancer or the VPC are not available for selection.
Availability Zones
ap-south-1a (aps1-az1)
ap-south-1b (aps1-az3)
ap-south-1c (aps1-az2)
Security groups Info
A security group is a set of firewall rules that control the traffic to your load balancer. Select an existing security group, or you can create a new security group.
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

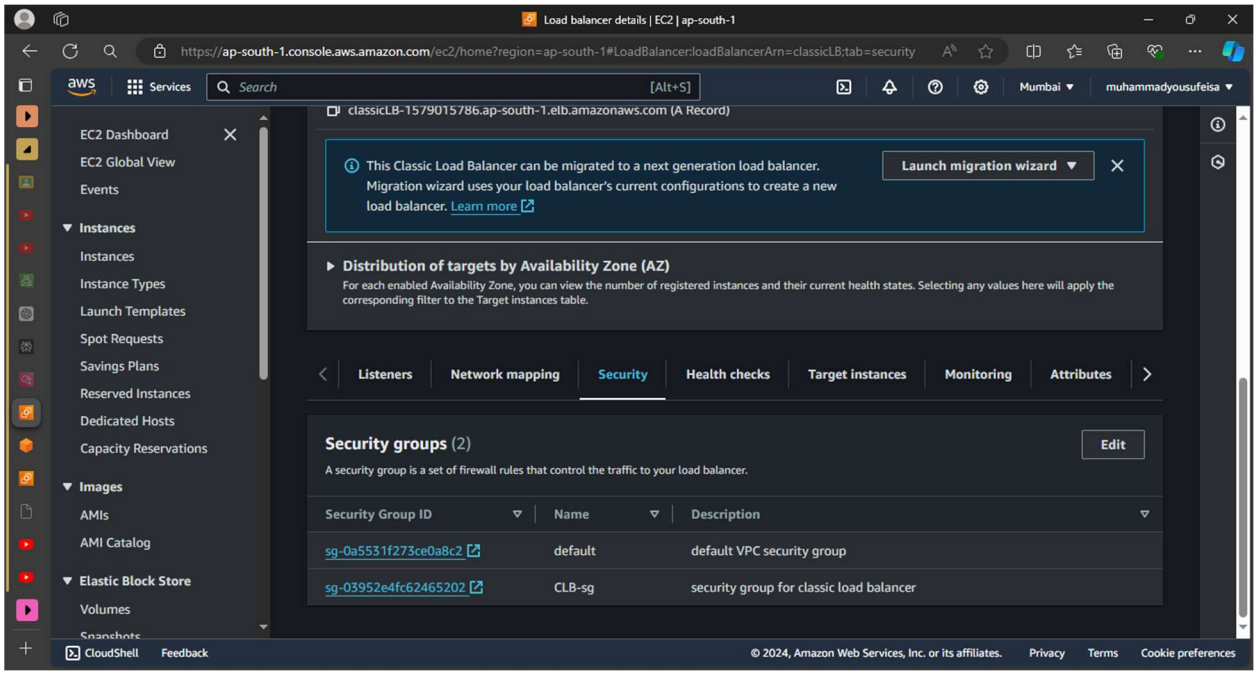

Create classic load balancer | EC2 | ap-south-1
https://ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#CreateCLBWizard:
Services
Search
[Alt+S]
Mumbai
muhammadyousufeisa
Security groups Info
A security group is a set of firewall rules that control the traffic to your load balancer. Select an existing security group, or you can create a new security group.
Security groups
Select up to 5 security groups
CLB-sg
sg-03952e4fc62465202 VPC: vpc-0c7efb29ed33e404a
default
sg-0a5531f273ce0a8c2 VPC: vpc-0c7efb29ed33e404a
Listeners and routing Info
A listener is a process that checks for connection requests using the protocol and port you configure. The settings you define for a listener determine how the load balancer routes requests to its registered targets.
Listener HTTP:80
Remove
Instance HTTP:80
Listener protocol
HTTP
Listener port
80
1-65535
Instance protocol
HTTP
Instance port
80
1-65535
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences


Create classic load balancer | EC2 | ap-south-1
https://ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#CreateCLBWizard:
Services
Search
[Alt+S]
Mumbai
muhammadyousufeisa
i-0b76fc87af4dc76ff
ec2 instance2
Running
launch-wizard-6
Attributes
Creating your load balancer using the console gives you the opportunity specify additional features at launch. You can also find and adjust these settings in the load balancer's "Attributes" section after your load balancer is created.
Enable cross-zone load balancing
With cross-zone load balancing, each load balancer node for your Classic Load Balancer distributes requests evenly across the registered instances in all enabled Availability Zones. If cross-zone load balancing is disabled, each load balancer node distributes requests evenly across the registered instances in its Availability Zone only. Classic Load Balancers created with the API or CLI have cross-zone load balancing disabled by default. After you create a Classic Load Balancer, you can enable or disable cross-zone load balancing at any time.
Enable connection draining
Applicable to instances that are deregistering, this feature allows existing connections to complete (during a specified draining interval) before reporting the instance as deregistered.
Learn more
Timeout (draining interval)
The maximum time for the load balancer to allow existing connections to complete. When the maximum time limit is reached, the load balancer forcibly closes any remaining connections and reports the instance as deregistered.
300
seconds
Valid values: 1-3600 (integers only)
Load balancer tags - optional
Consider adding tags to your load balancer. Tags enable you to categorize your AWS resources so you can more easily manage them. The 'Key' is required, but 'Value' is optional. For example, you can have Key = production-webserver, or Key = webserver, and Value = production.
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

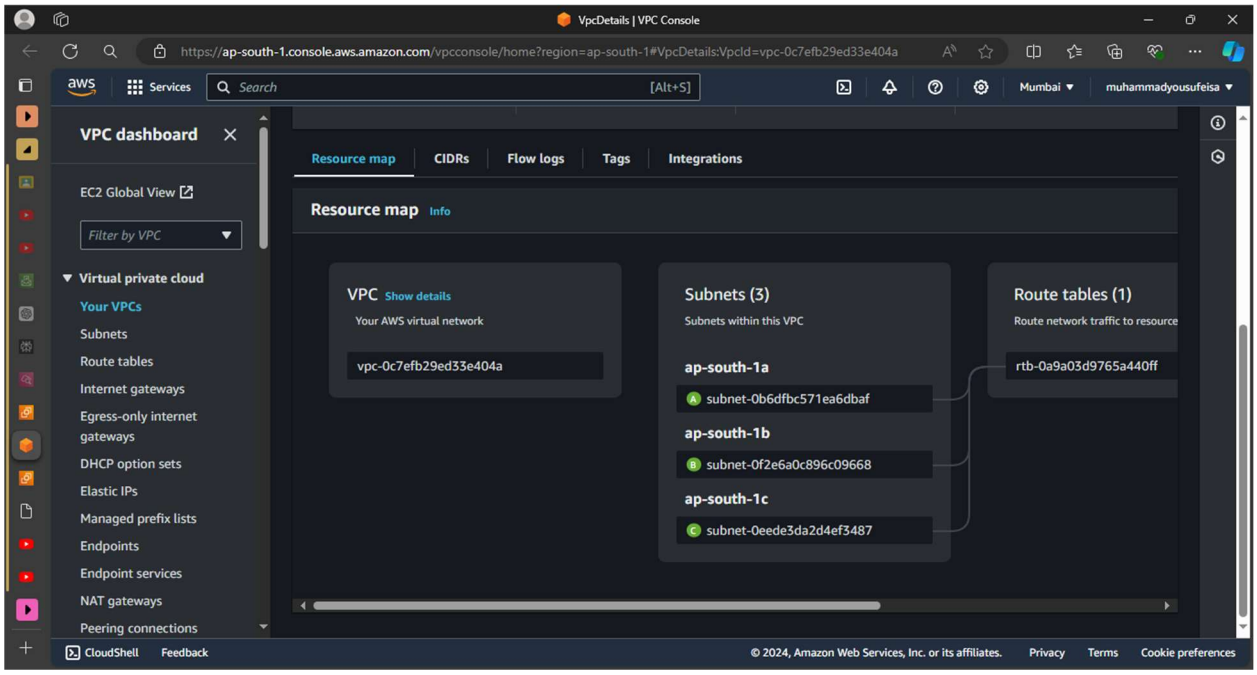

Create classic load balancer | EC2 | ap-south-1
https://ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#CreateCLBWizard:
Services
Search
[Alt+S]
Mumbai
muhammadyousufeisa
The health check ping is sent using the protocol and port you specify. If using HTTP/HTTPS protocol, you must also provide the destination path.
Ping protocol
HTTP
Ping port
80
1-65535
Ping path
/index.html
Advanced health check settings
Instances (3)
Remove
Add instances
You can add instances to register as targets of the load balancer. Alternatively, after your load balancer is created, you can add it to an Amazon EC2 Auto Scaling group to ensure you maintain the correct number of instances to handle the load for your application. For maximum fault tolerance, we recommend maintaining approximately equivalent numbers of instances in each Availability Zone.
Filter instances
1
Instance ID
Name
State
Security groups
i-05898564f0e62f4d6
ec2 instance3
Running
launch-wizard-7
i-0f666f5fe01f3de2c
ec2 instance1
Running
launch-wizard-5
i-0b76fc87af4dc76ff
ec2 instance2
Running
launch-wizard-6
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

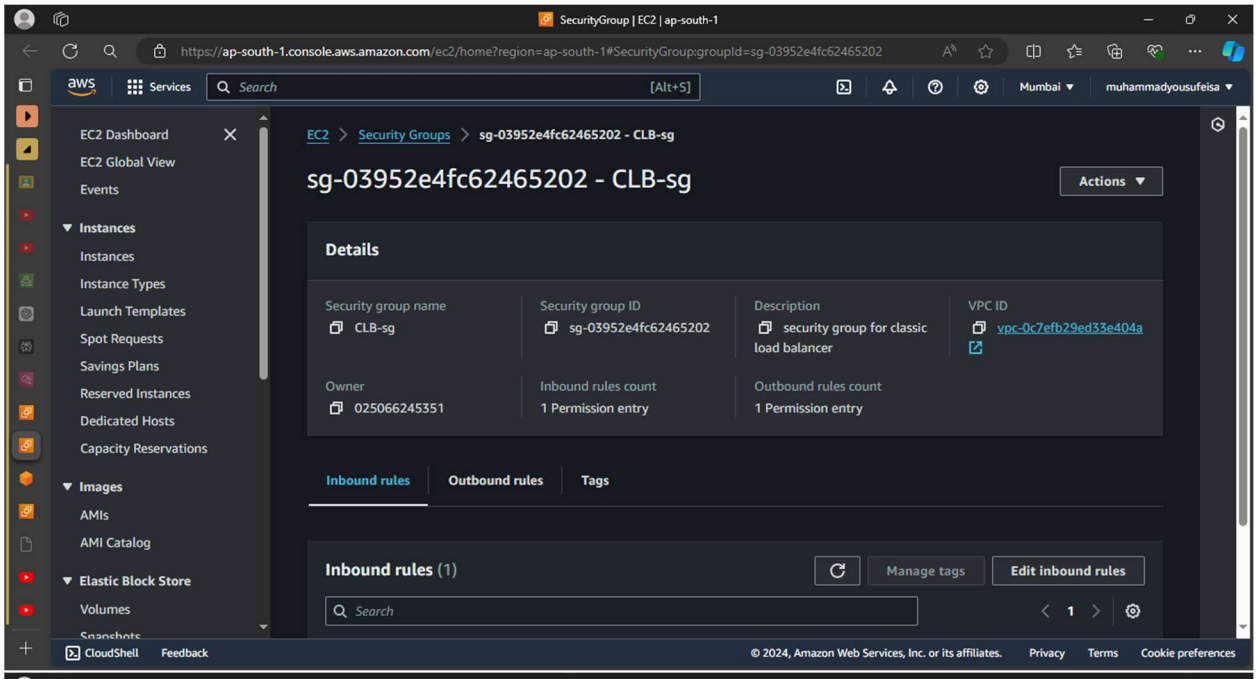

Create classic load balancer | EC2 | ap-south-1
https://ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#CreateCLBWizard:
Services
Search
[Alt+S]
Mumbai
muhammadyousufeisa
Review
Review the load balancer configurations and make changes if needed. After you finish reviewing the configurations, choose Create load balancer.
Summary
Review and confirm your configurations. Estimate cost
Basic configuration Edit
CLB1
Internet-facing
Network mapping Edit
VPC vpc-0c7efb29ed33e404a
Subnet not defined
Security groups Edit
CLB-sg
sg-03952e4fc62465202
default
sg-0a5531f273ce0a8c2
Listeners and routing Edit
HTTP:80
Health checks Edit
HTTP:80/index.html
Timeout: 2 seconds
Interval: 5 seconds
Unhealthy threshold: 2
Unhealthy threshold: 10
Instances Edit
3 instances added
1 instance in ap-south-1a
1 instance in ap-south-1b
1 instance in ap-south-1c
Attributes Edit
Cross-zone load balancing: On
Connection draining: On
Connection draining timeout: 300 seconds
Tags Edit
None
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

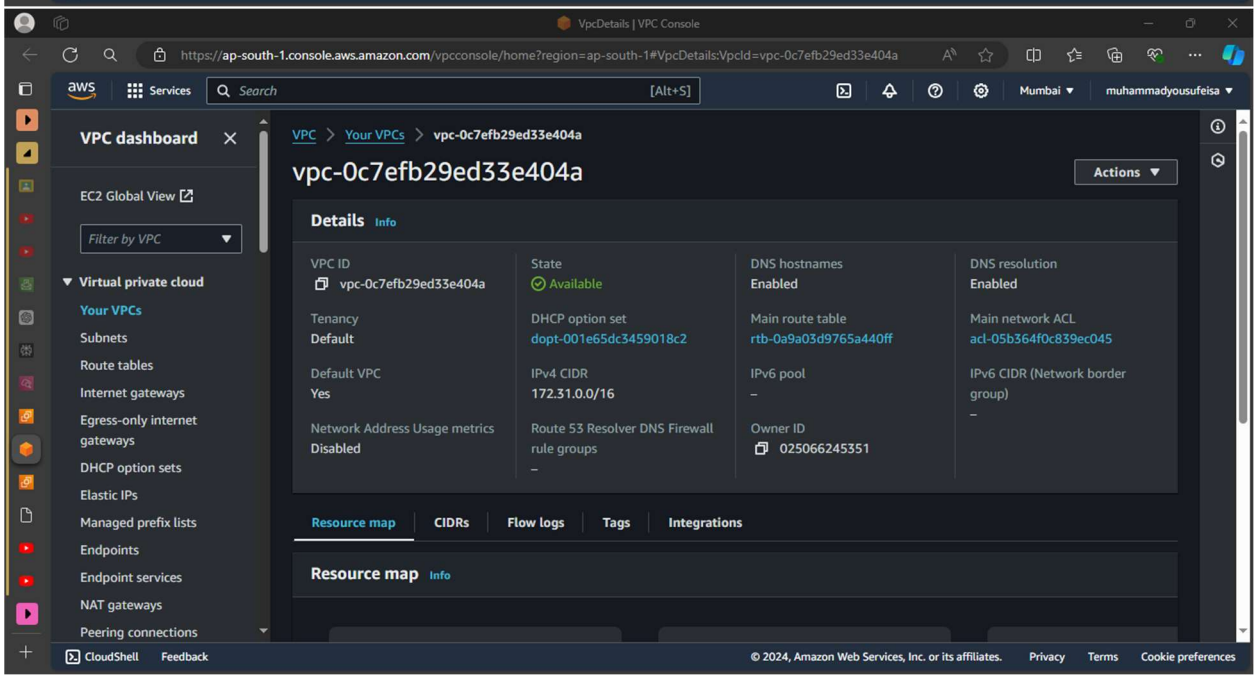

Load balancer details | EC2 | ap-south-1
https://ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#LoadBalancer:loadBalancerArn=classicLB;tab=security
Services
Search
[Alt+S]
Mumbai
muhammadyousufeisa
EC2 Dashboard
EC2 Global View
Events
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
Images
AMIs
AMI Catalog
Elastic Block Store
Volumes
classicLB
Actions
Details
Load balancer type
Classic
Status
3 of 3 instances in service
VPC
vpc-0c7efb29ed33e404a
Date created
August 7, 2024, 18:10 (UTC+05:00)
Scheme
Internet-facing
Hosted zone
ZP97RAFLXTNZK
Availability Zones
subnet-0b6dfbc571ea6dbaf ap-south-1a (aps1-az1)
subnet-0eede3da2d4ef3487 ap-south-1c (aps1-az2)
subnet-0f2e6a0c896c09668 ap-south-1b (aps1-az3)
DNS name copied
classicLB-1579015786.ap-south-1.elb.amazonaws.com (A Record)
This Classic Load Balancer can be migrated to a next generation load balancer.
Launch migration wizard
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences



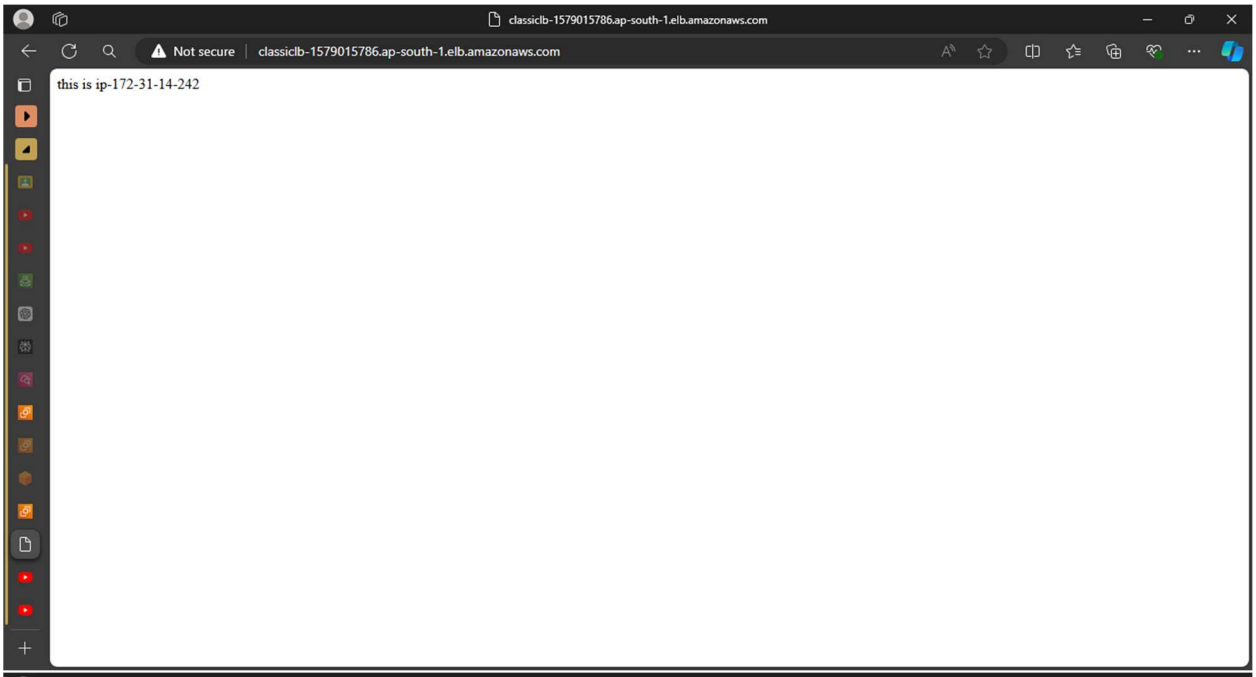
3. Security Groups:

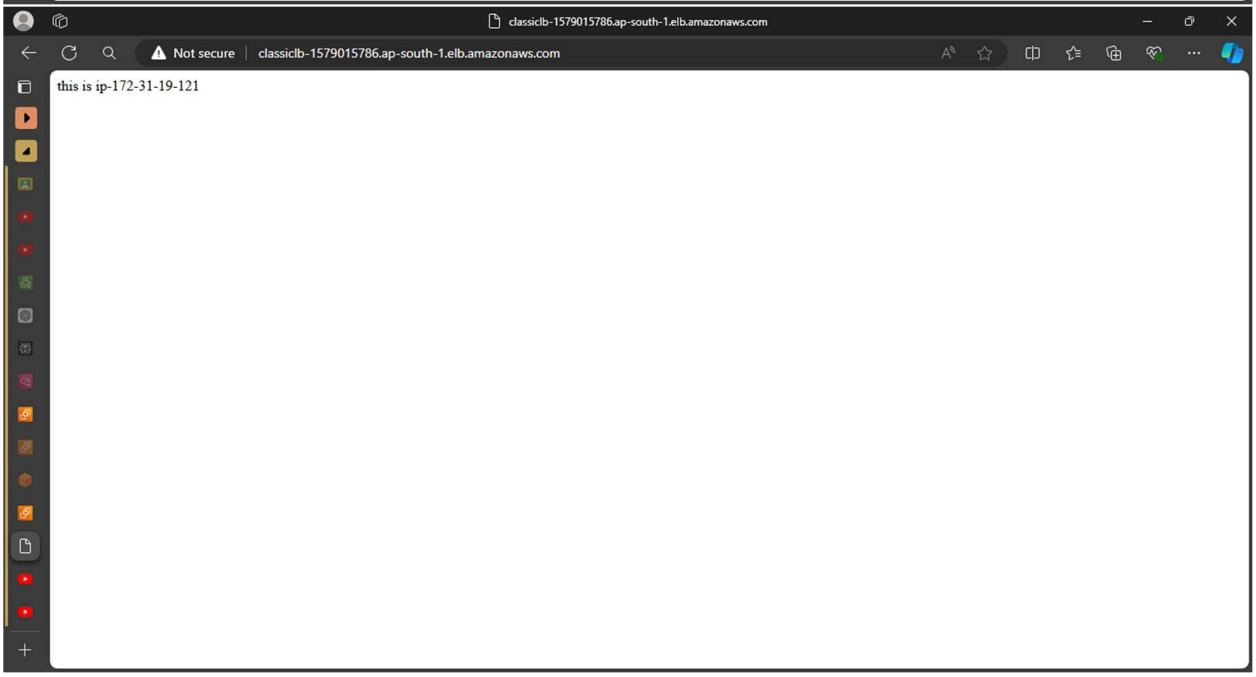


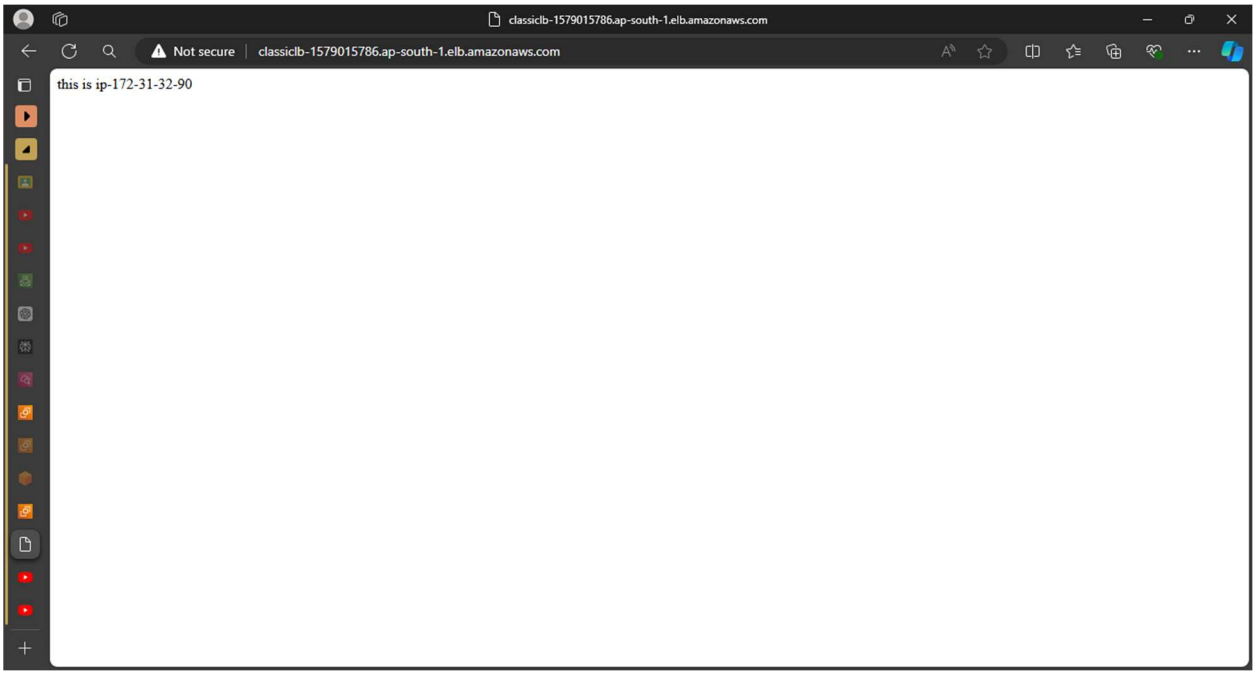




4. Checking load balancer by accessing through DNS:


classiclb-1579015786.ap-south-1.elb.amazonaws.com
Not secure
classiclb-1579015786.ap-south-1.elb.amazonaws.com
this is ip-172-31-14-242


classiclb-1579015786.ap-south-1.elb.amazonaws.com
Not secure
classiclb-1579015786.ap-south-1.elb.amazonaws.com
this is ip-172-31-19-121


classiclb-1579015786.ap-south-1.elb.amazonaws.com
Not secure
classiclb-1579015786.ap-south-1.elb.amazonaws.com
this is ip-172-31-32-90