

TASK – 19

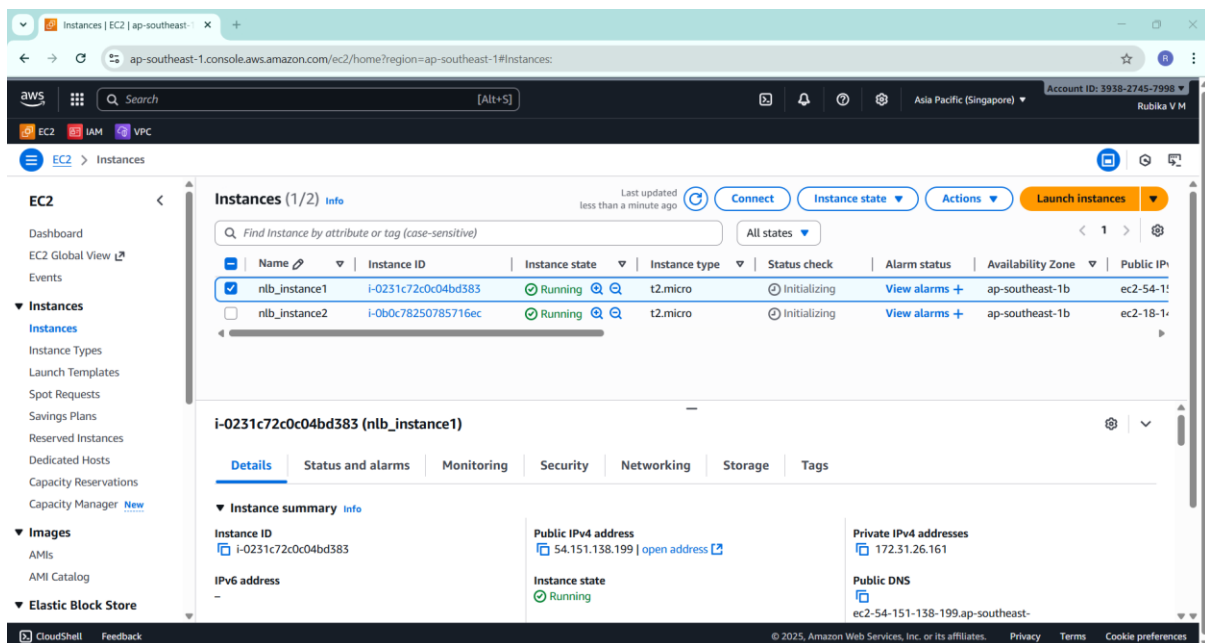
Elastic load balancer

Elastic Load Balancing (ELB) in AWS is a service that automatically distributes incoming application traffic across multiple targets, such as EC2 instances, containers, and IP addresses, within one or more Availability Zones. It enhances application availability and fault tolerance by ensuring that no single target is overwhelmed with traffic and by routing requests only to healthy targets.

Network load balancer

An AWS Network Load Balancer (NLB) is a high-performance load balancer that operates at the transport layer (OSI Layer 4) to distribute TCP, UDP, and TLS traffic across targets like EC2 instances and containers. It can handle millions of requests per second with ultra-low latency, making it ideal for high-throughput, network-intensive applications like gaming, streaming.

Creation of instance



The screenshot displays the AWS Management Console for the 'Instances' page in the 'ap-southeast-1' region. The left sidebar shows the navigation menu with 'Instances' selected. The main content area shows a list of two instances, 'nlb_instance1' and 'nlb_instance2', both in a 'Running' state. Below the list, the details for 'nlb_instance1' are expanded, showing its Instance ID, Public IPv4 address, Private IPv4 addresses, and Instance state.

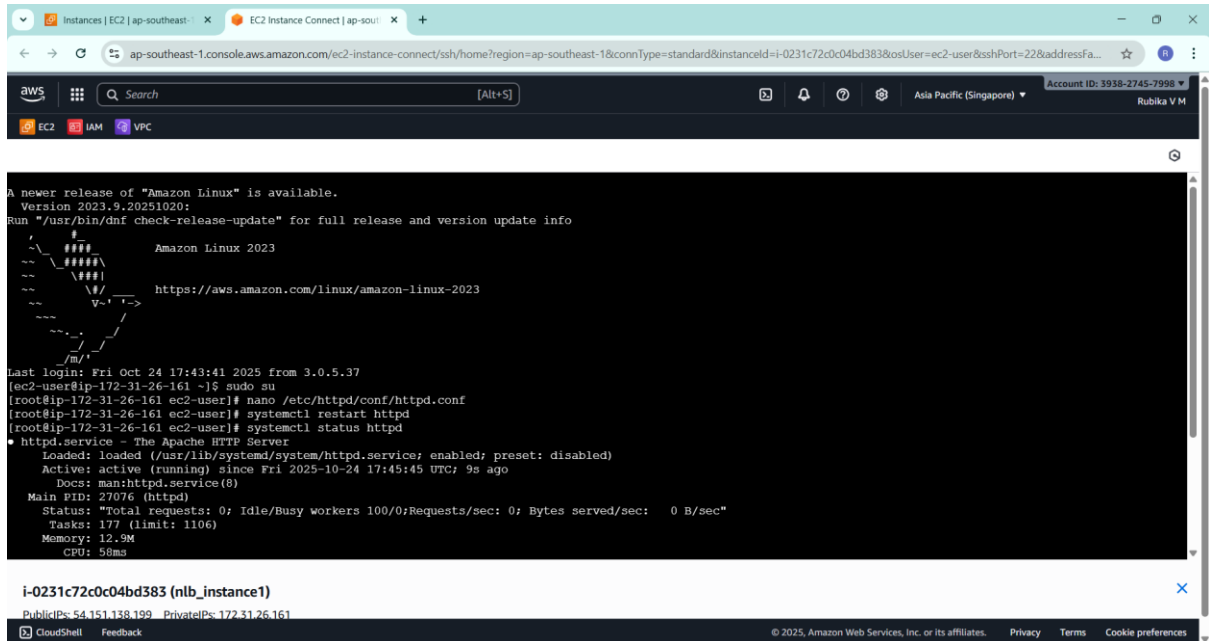
Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
nlb_instance1	i-0231c72c0c04bd383	Running	t2.micro	Initializing	View alarms +	ap-southeast-1b	ec2-54-151-138-199.ap-southeast-
nlb_instance2	i-0b0c78250785716ec	Running	t2.micro	Initializing	View alarms +	ap-southeast-1b	ec2-18-1...

i-0231c72c0c04bd383 (nlb_instance1)

Instance summary

Instance ID	Public IPv4 address	Private IPv4 addresses
i-0231c72c0c04bd383	54.151.138.199 open address	172.31.26.161
IPv6 address	Instance state	Public DNS
-	Running	ec2-54-151-138-199.ap-southeast-

Changing port number in instance 1



```
A newer release of "Amazon Linux" is available.
Version 2023.9.20251020:
Run "/usr/bin/dnf check-release-update" for full release and version update info

Amazon Linux 2023
https://aws.amazon.com/linux/amazon-linux-2023

Last login: Fri Oct 24 17:43:41 2025 from 3.0.5.37
[ec2-user@ip-172-31-26-161 ~]$ sudo su
[root@ip-172-31-26-161 ec2-user]# nano /etc/httpd/conf/httpd.conf
[root@ip-172-31-26-161 ec2-user]# systemctl restart httpd
[root@ip-172-31-26-161 ec2-user]# systemctl status httpd
• httpd.service - The Apache HTTP Server
  Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; preset: disabled)
  Active: active (running) since Fri 2025-10-24 17:45:45 UTC; 9s ago
  Docs: man:httpd.service(8)
  Main PID: 27076 (httpd)
  Status: "Total requests: 0; Idle/Busy workers 100/0; Requests/sec: 0; Bytes served/sec: 0 B/sec"
  Tasks: 177 (limit: 1106)
  Memory: 12.9M
  CPU: 58ms
```

i-0231c72c0c04bd383 (nlb_instance1)

Public IPs: 54.151.138.199 Private IPs: 172.31.26.161

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54.151.138.199/84

← → ↻ ⚠ Not secure 54.151.138.199:84 ☆ 🛒 Incognito ⋮

This is my NLB_1

Changing port number in instance 2

A newer release of "Amazon Linux" is available.
Version 2023.9.20251020:
Run "/usr/bin/dnf check-release-update" for full release and version update info

```
Amazon Linux 2023
https://aws.amazon.com/linux/amazon-linux-2023

last login: Fri Oct 24 17:49:09 2025 from 3.0.5.36
[ec2-user@ip-172-31-16-201 ~]$ sudo su
[root@ip-172-31-16-201 ec2-user]# nano /etc/httpd/conf/httpd.conf
[root@ip-172-31-16-201 ec2-user]# nano /etc/httpd/conf/httpd.conf
[root@ip-172-31-16-201 ec2-user]# systemctl restart httpd
[root@ip-172-31-16-201 ec2-user]# systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; preset: disabled)
   Active: active (running) since Fri 2025-10-24 17:55:48 UTC; 8s ago
     Docs: man:httpd.service(8)
   Main PID: 27386 (httpd)
   Status: "Started, listening on: port 85"
   Tasks: 177 (limit: 1106)
   Memory: 12.9M
```

i-0b0c78250785716ec (nlb_instance2)
Public IP: 18.142.230.113 Private IP: 172.31.16.201

18.142.230.11385
This is my NLB_2

Creation of Target group

Target groups (2) Info

<input type="checkbox"/>	Name	ARN	Port	Protocol	Target type	Load balancer	VPC ID
<input type="checkbox"/>	mytarget-2	arn:aws:elasticloadbalancin...	85	HTTP	Instance	None associated	vpc-00az
<input type="checkbox"/>	mytarget-1	arn:aws:elasticloadbalancin...	84	HTTP	Instance	None associated	vpc-00az

0 target groups selected

Select a target group above.

Creation of load balancer

The screenshot shows the AWS Management Console for the 'Load balancers' section. The left sidebar contains navigation links for Elastic Block Store, Network & Security, Load Balancing, and Auto Scaling. The main content area displays a table of load balancers with columns for Name, State, Type, Scheme, IP address type, VPC ID, and Availability Zones. A single load balancer, 'my-nlb', is shown with a state of 'Active'. Below the table, the 'Details' tab for 'my-nlb' is active, showing various configuration details in a grid layout.

Name	State	Type	Scheme	IP address type	VPC ID	Availability Zones
my-nlb	Active	network	Internet-facing	IPv4	vpc-00aa32b792ae81dee	3 Availability Zones

Load balancer: my-nlb

Details

Load balancer type Network	Status Active	VPC vpc-00aa32b792ae81dee	Load balancer IP address type IPv4
Scheme Internet-facing	Hosted zone ZKVM4W9LS7TM	Availability Zones subnet-00b1afc1e5e29345	Date created October 24, 2025, 23:38 (UTC+05:30)

The screenshot shows the 'Edit inbound rules' page in the AWS Management Console. The breadcrumb trail indicates the path: EC2 > Security Groups > sg-0600719b3d855d960 - default > Edit inbound rules. The page title is 'Edit inbound rules' with an 'Info' link. A sub-header states: 'Inbound rules control the incoming traffic that's allowed to reach the instance.' Below this, a table lists the inbound rules. Two rules are currently defined, both of type 'Custom TCP'. The first rule is for port 85 and the second for port 84, both with a source of '0.0.0.0/0'. There are 'Delete' buttons for each rule and an 'Add rule' button at the bottom left. At the bottom right, there are 'Cancel', 'Preview changes', and 'Save rules' buttons.

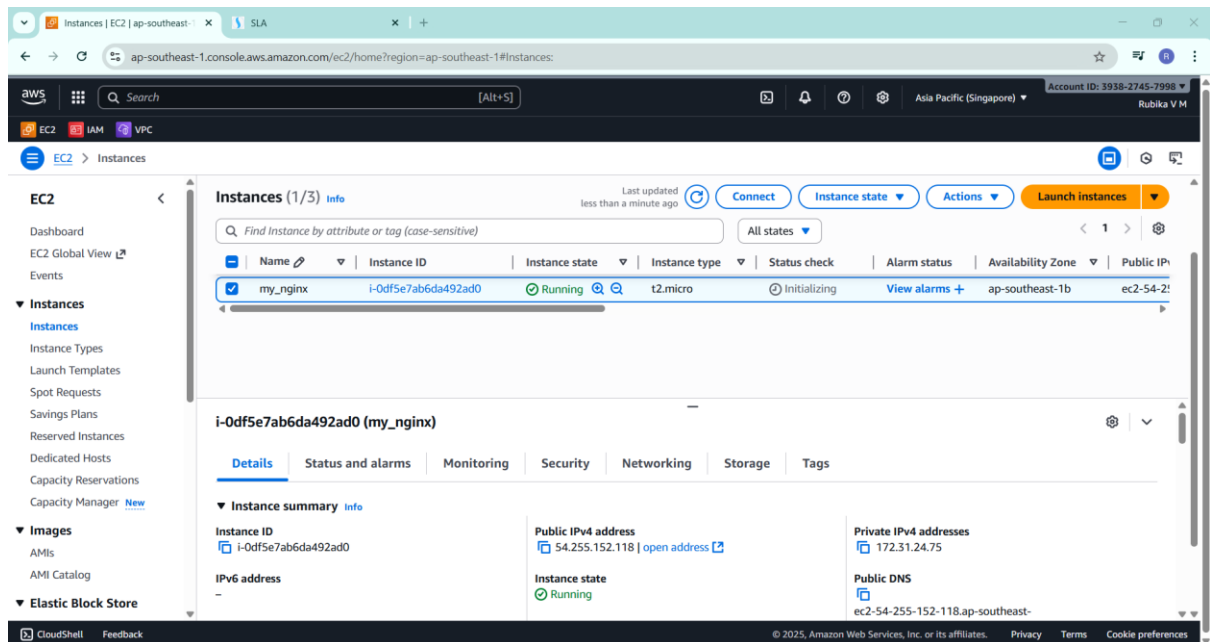
Security group rule ID	Type	Protocol	Port range	Source	Description - optional
sgr-08333561c575c9f3e	Custom TCP	TCP	85	0.0.0.0/0	
sgr-02c252968eba36f5f	Custom TCP	TCP	84	0.0.0.0/0	

Check for outcome through DNS

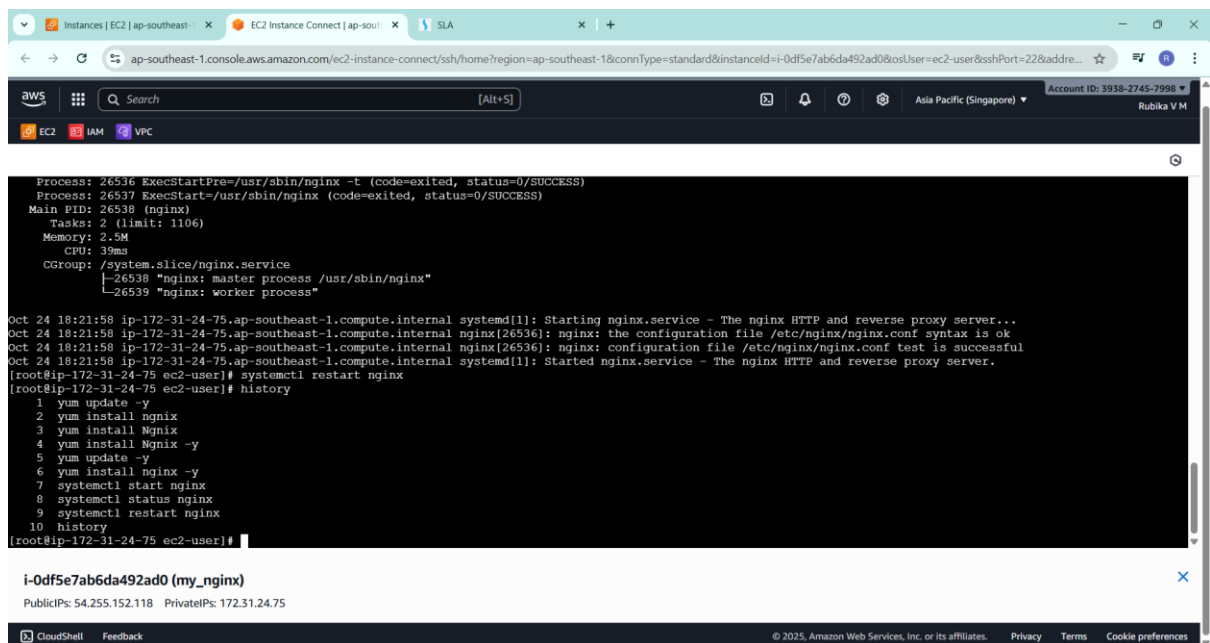


Hosting Nginx:

Creation of instance



Installing the package of Nginx



Output



Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.