

# **SOLUTION ARCHITECTURE LAB**

**(Course Code: 22UPCSC1E32)**

**A programming laboratory record submitted to Periyar University, Salem**

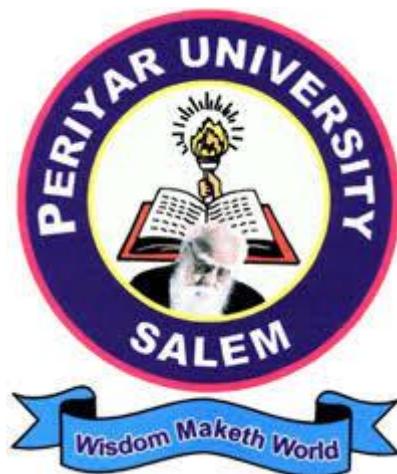
**In partial fulfillment of the requirements for the degree of**

**MASTER OF COMPUTER APPLICATIONS**

**By**

**ELANCHEZHIAN M.**

**[Reg. No.: U22PG507CAP006]**



**DEPARTMENT OF COMPUTER SCIENCE**

**PERIYAR UNIVERSITY**

**(NAAC 'A++' Grade with CGPA 3.61) – NIRF RANK 59 – ARIIA RANK 10**

**PERIYAR PALKALAI NAGAR,**

**SALEM – 636 011.**

**(NOVEMBER - 2023)**

## **CERTIFICATE**

This is to certify that the Programming Laboratory entitled  
**“SOLUTION ARCHITECTURE LAB (22UPCSC1E32)”** is a bonafide record work  
done by Mr. /Ms. \_\_\_\_\_

Register No: \_\_\_\_\_ as partial fulfillment of the  
requirements for the degree of Master of Computer Applications, in the  
Department of Computer Science, Periyar University, Salem, during the Academic  
Year 2023-2024.

Staff In-charge

Head of the Department

Submitted for the practical examination held on.....

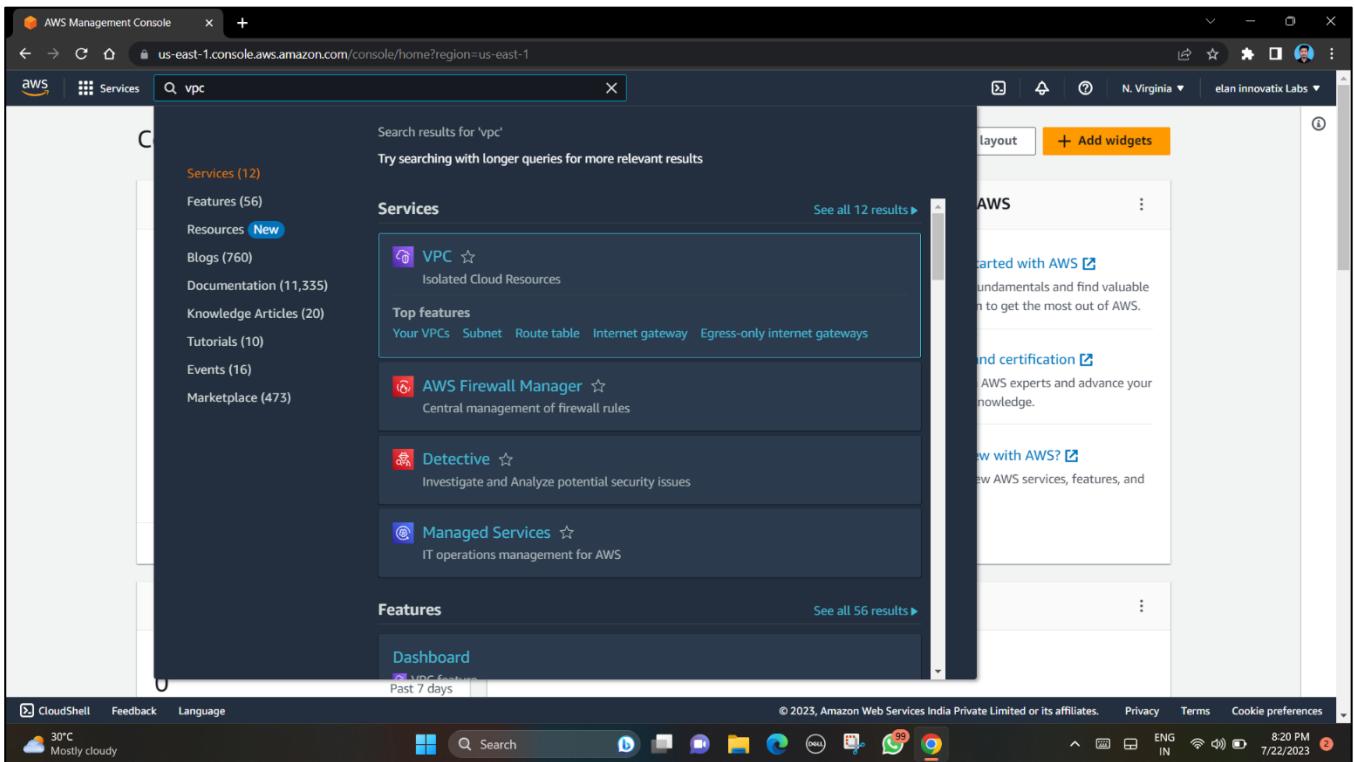
Internal Examiner

External Examiner

## CONTENT

S.NO	DATE	TITLE OF THE PROGRAM	PAGE NO	SIGNATURE
1.		Managing Virtual Private Cloud		
2.		Creating and Configuring Internet Gateways		
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4.		Working with Amazon Elastic Cloud Compute (EC2)		
5.		Connecting EC2 Linux instance using PuTTY, Gitbash and Console		
6.		Recovering and connecting EC2 instance if the SSH key is lost		
7.		Creating and Configuring Elastic Load Balancer		
8.		Scheduling Auto Snapshot of volumes		
9.		Configuring Centralized Log Management using Cloud Watch Log		
10.		Connecting OpenVPN server		

# 1. SOURCE CODE (Managing Virtual Private Cloud):



The screenshot shows the AWS Management Console search results for 'vpc'. The search bar at the top contains 'vpc'. The results are categorized into 'Services' and 'Features'.

**Services** (12 results):

- VPC** (Isolated Cloud Resources): Top features include Your VPCs, Subnet, Route table, Internet gateway, and Egress-only internet gateways.
- AWS Firewall Manager** (Central management of firewall rules)
- Detective** (Investigate and Analyze potential security issues)
- Managed Services** (IT operations management for AWS)

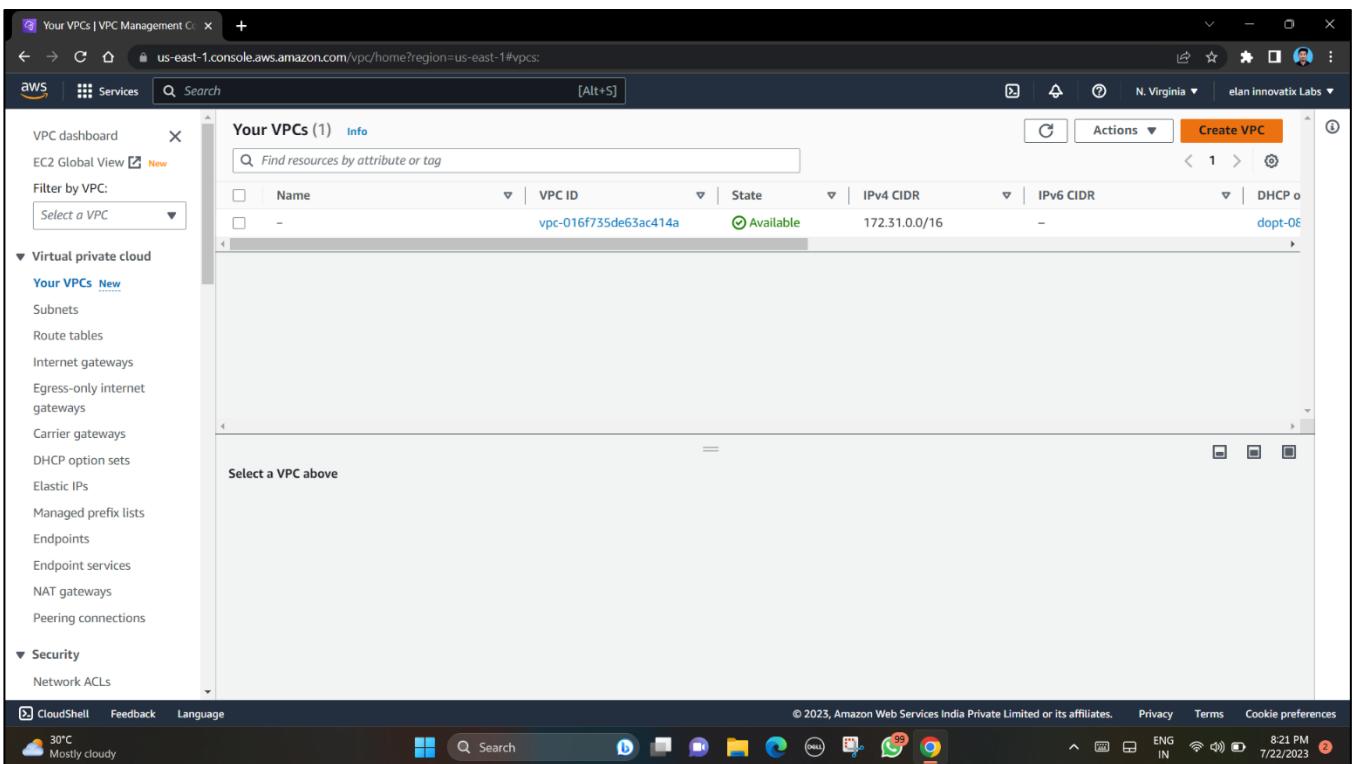
**Features** (56 results):

- Dashboard** (Past 7 days)

On the right side, there is a sidebar with the following sections:

- AWS**: Started with AWS, Fundamentals and find valuable resources to get the most out of AWS.
- Find certification**: AWS experts and advance your knowledge.
- New with AWS?**: New AWS services, features, and updates.

The bottom of the screen shows the Windows taskbar with various pinned icons and the system tray.



The screenshot shows the AWS VPC Management console with the URL [us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#vpcs](https://us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#vpcs).

The left sidebar includes:

- VPC dashboard
- EC2 Global View (New)
- Virtual private cloud
  - Your VPCs** (New)
  - Subnets
  - Route tables
  - Internet gateways
  - Egress-only internet gateways
  - Carrier gateways
  - DHCP option sets
  - Elastic IPs
  - Managed prefix lists
  - Endpoints
  - Endpoint services
  - NAT gateways
  - Peering connections
- Security
  - Network ACLs

The main content area displays 'Your VPCs (1) Info' with a table:

Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR	DHCP options
vpc-016f735de63ac414a	Available	172.31.0.0/16	-	-	dopt-0E

Below the table, it says 'Select a VPC above'.

The bottom of the screen shows the Windows taskbar with various pinned icons and the system tray.

VPC Management Console +

us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#CreateVpc:createMode=vpcOnly

AWS Services Search [Alt+S]

VPC > Your VPCs > Create VPC

### Create VPC Info

A VPC is an isolated portion of the AWS Cloud populated by AWS objects, such as Amazon EC2 instances.

**VPC settings**

Resources to create: Info  
Create only the VPC resource or the VPC and other networking resources.

VPC only  VPC and more

Name tag - optional  
Creates a tag with a key of 'Name' and a value that you specify.

ElanVpc

IPv4 CIDR block: Info  
 IPv4 CIDR manual input  IPAM-allocated IPv4 CIDR block

IPv4 CIDR: 10.0.0.0/16

IPv6 CIDR block: Info  
 No IPv6 CIDR block  IPAM-allocated IPv6 CIDR block  Amazon-provided IPv6 CIDR block  IPv6 CIDR owned by me

Tenancy: Info  
Default

**Tags**  
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

Key: Name Value: optional: ElanVpc Info Remove tag

Add tag You can add 49 more tags

Create VPC

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VPC Management Console +

us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#VpcDetails:VpcId=vpc-0fd7ea29a03f617b2

aws Services Search [Alt+S]

VPC > Your VPCs > vpc-0fd7ea29a03f617b2 / ElanVpc Actions

### Details Info

VPC ID: <a href="#">vpc-0fd7ea29a03f617b2</a>	State: <span style="color: #0072bc;">Available</span>	DNS hostnames: Disabled	DNS resolution: Enabled
Tenancy: Default	DHCP option set: <a href="#">dopt-08af8d8d24a687d7a</a>	Main route table: <a href="#">rtb-05ac21b818d4efa98</a>	Main network ACL: <a href="#">acl-07c37e26901373c00</a>
Default VPC: No	IPv4 CIDR: 10.0.0.0/16	IPv6 pool: -	IPv6 CIDR (Network border group): -
Network Address Usage metrics: Disabled	Route 53 Resolver DNS Firewall rule groups: -	Owner ID: <a href="#">691407528662</a>	-

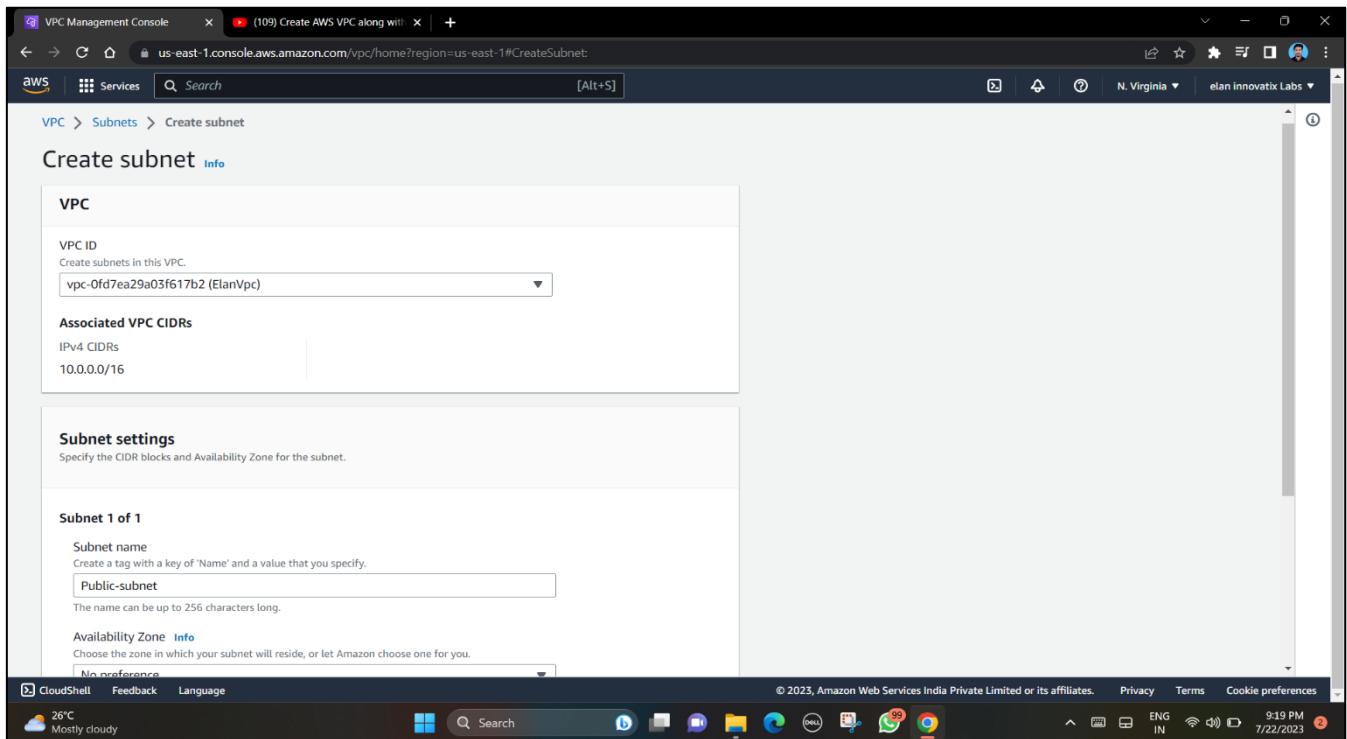
Resource map [New](#) | CIDRs | Flow logs | Tags

### Resource map Info

VPC <span style="color: #0072bc;">Show details</span> Your AWS virtual network ElanVpc	Subnets (0) Subnets within this VPC	Route tables (1) Route network traffic to resources rtb-05ac21b818d4efa98
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## 2. SOURCE CODE (Creating and Configuring Internet Gateways):



VPC Management Console (109) Create AWS VPC along with | +

us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#CreateSubnet:

aws Services Search [Alt+S]

N. Virginia elan innovatix Labs

VPC > Subnets > Create subnet

Create subnet Info

**VPC**

VPC ID  
Create subnets in this VPC.  
vpc-0fd7ea29a03f617b2 (ElanVpc)

Associated VPC CIDRs

IPv4 CIDRs  
10.0.0.0/16

**Subnet settings**  
Specify the CIDR blocks and Availability Zone for the subnet.

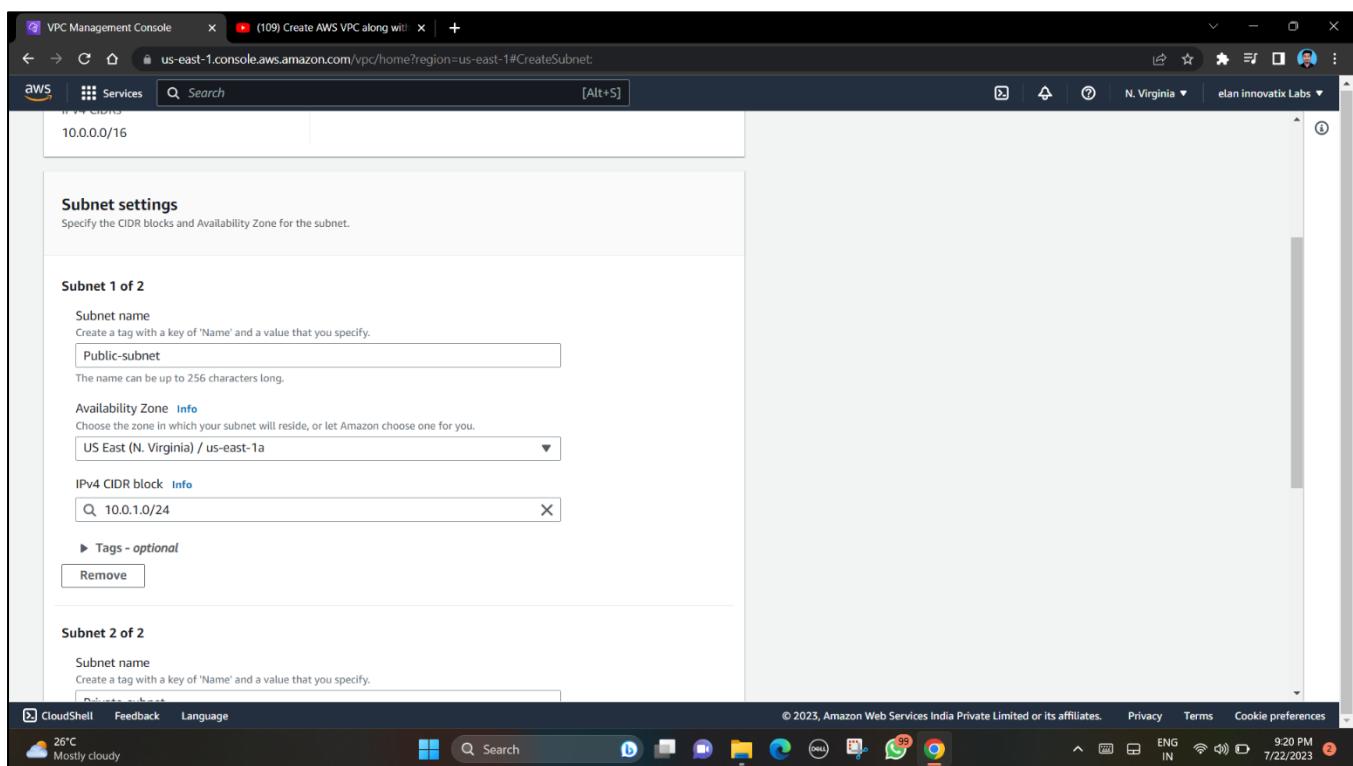
**Subnet 1 of 1**

Subnet name  
Create a tag with a key of 'Name' and a value that you specify.  
Public-subnet

The name can be up to 256 characters long.

Availability Zone Info  
Choose the zone in which your subnet will reside, or let Amazon choose one for you.  
No preference

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VPC Management Console (109) Create AWS VPC along with | +

us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#CreateSubnet:

aws Services Search [Alt+S]

N. Virginia elan innovatix Labs

10.0.0.0/16

**Subnet settings**  
Specify the CIDR blocks and Availability Zone for the subnet.

**Subnet 1 of 2**

Subnet name  
Create a tag with a key of 'Name' and a value that you specify.  
Public-subnet

The name can be up to 256 characters long.

Availability Zone Info  
Choose the zone in which your subnet will reside, or let Amazon choose one for you.  
US East (N. Virginia) / us-east-1a

IPv4 CIDR block Info  
10.0.1.0/24

► Tags - optional  
Remove

**Subnet 2 of 2**

Subnet name  
Create a tag with a key of 'Name' and a value that you specify.  
Public-subnet

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VPC Management Console | (109) Create AWS VPC along with subnets | +

us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#CreateSubnet

aws Services Search [Alt+S]

IPv4 CIDR block [Info](#)  
Q 10.0.1.0/24 X

► Tags - optional  
Remove

**Subnet 2 of 2**

Subnet name  
Create a tag with a key of 'Name' and a value that you specify.  
Private-subnet

The name can be up to 256 characters long.

Availability Zone [Info](#)  
Choose the zone in which your subnet will reside, or let Amazon choose one for you.  
US East (N. Virginia) / us-east-1b

IPv4 CIDR block [Info](#)  
Q 10.0.2.0/24 X

► Tags - optional  
Remove

Add new subnet

Cancel **Create subnet**

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26°C Mostly cloudy

Subnets | VPC Management Console | (109) Create AWS VPC along with subnets | +

us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#subnetsSubnetId=subnet-00fb76cfb9bd3470,subnet-02056a4ab95cd3ca3

aws Services Search [Alt+S]

VPC dashboard EC2 Global View [New](#)

Filter by VPC: [Select a VPC](#)

Virtual private cloud Your VPCs [New](#)

**Subnets**

Route tables  
Internet gateways  
Egress-only internet gateways  
Carrier gateways  
DHCP option sets  
Elastic IPs  
Managed prefix lists  
Endpoints  
Endpoint services  
NAT gateways  
Peering connections

Security Network ACLs

**Subnets (2) [Info](#)**

Find resources by attribute or tag

Subnet ID = subnet-00fb76cfb9bd3470 X Subnet ID = subnet-02056a4ab95cd3ca3 X Clear filters

Name	Subnet ID	State	VPC	IPv4 CIDR
Public-subnet	subnet-00fb76cfb9bd3470	Available	vpc-0fd7ea29a03f617b2   ElanVpc	10.0.1.0/24
Private-subnet	subnet-02056a4ab95cd3ca3	Available	vpc-0fd7ea29a03f617b2   ElanVpc	10.0.2.0/24

Select a subnet

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VPC Management Console (109) Create AWS VPC along with ...

aws Services Search [Alt+S]

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Subnets > subnet-00fb76cfb9bd3470 > Edit subnet settings

### Edit subnet settings Info

**Subnet**

Subnet ID	Name
subnet-00fb76cfb9bd3470	Public-subnet

**Auto-assign IP settings Info**  
Enable the auto-assign IP settings to automatically request a public IPv4 or IPv6 address for a new network interface in this subnet.

Enable auto-assign public IPv4 address Info

Enable auto-assign customer-owned IPv4 address Info  
Option disabled because no customer owned pools found.

**Resource-based name (RBN) settings Info**  
Specify the hostname type for EC2 instances in this subnet and optional RBN DNS query settings.

Enable resource name DNS A record on launch Info

Enable resource name DNS AAAA record on launch Info

Hostname type Info  
 Resource name  
 IP name

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9:34 PM 7/22/2023

Create internet gateway | VPC M...

us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#CreateInternetGateway:

aws Services Search [Alt+S]

N. Virginia elan innovatix Labs

VPC > Internet gateways > Create internet gateway

### Create internet gateway Info

An internet gateway is a virtual router that connects a VPC to the internet. To create a new internet gateway specify the name for the gateway below.

**Internet gateway settings**

Name tag  
Creates a tag with a key of 'Name' and a value that you specify.

**Tags - optional**  
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

Key Value - optional

Add new tag  
You can add 49 more tags.

Cancel

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8:36 PM 8/22/2023

VPC Management Console +

us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#InternetGateway:internetGatewayId=igw-0b47ef0ed65d8df53

aws Services Search [Alt+S]

The following internet gateway was created: igw-0b47ef0ed65d8df53 - elan-igw. You can now attach to a VPC to enable the VPC to communicate with the internet. Attach to a VPC

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VPC dashboard X

EC2 Global View New

Filter by VPC: Select a VPC

Virtual private cloud

Your VPCs New

Subnets

Route tables

Internet gateways Internet gateways

Egress-only internet gateways

Carrier gateways

DHCP option sets

Elastic IPs

Managed prefix lists

Endpoints

Endpoint services

NAT gateways

Peering connections

Security

Network ACLs

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Actions

igw-0b47ef0ed65d8df53 / elan-igw

Details Info

Internet gateway ID igw-0b47ef0ed65d8df53	State Detached	VPC ID -	Owner 691407528662
--	-------------------	-------------	-----------------------

Tags

Manage tags

Key	Value
Name	elan-igw

CloudShell Feedback Language

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Attach internet gateway | VPC M +

us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#AttachInternetGateway:internetGatewayId=igw-0b47ef0ed65d8df53

aws Services Search [Alt+S]

VPC > Internet gateways > Attach to VPC (igw-0b47ef0ed65d8df53) Info

VPC

Attach an internet gateway to a VPC to enable the VPC to communicate with the internet. Specify the VPC to attach below.

Available VPCs

Attach the internet gateway to this VPC.

vpc-0fd7ea29a03f617b2

AWS Command Line Interface command

Cancel Attach internet gateway

CloudShell Feedback Language

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VPC Management Console + New

us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#InternetGateway/internetGatewayId=igw-0b47ef0ed65d8df53

AWS Services Search [Alt+S]

Internet gateway igw-0b47ef0ed65d8df53 successfully attached to vpc-0fd7ea29a03f617b2

EC2 Global View New

Filter by VPC: Select a VPC

VPC dashboard X

Virtual private cloud

- Your VPCs New
- Subnets
- Route tables
- Internet gateways**
- Egress-only internet gateways
- Carrier gateways
- DHCP option sets
- Elastic IPs
- Managed prefix lists
- Endpoints
- Endpoint services
- NAT gateways
- Peering connections

Security

Internet gateways > igw-0b47ef0ed65d8df53

igw-0b47ef0ed65d8df53 / elan-igw

Actions ▼

**Details** **Info**

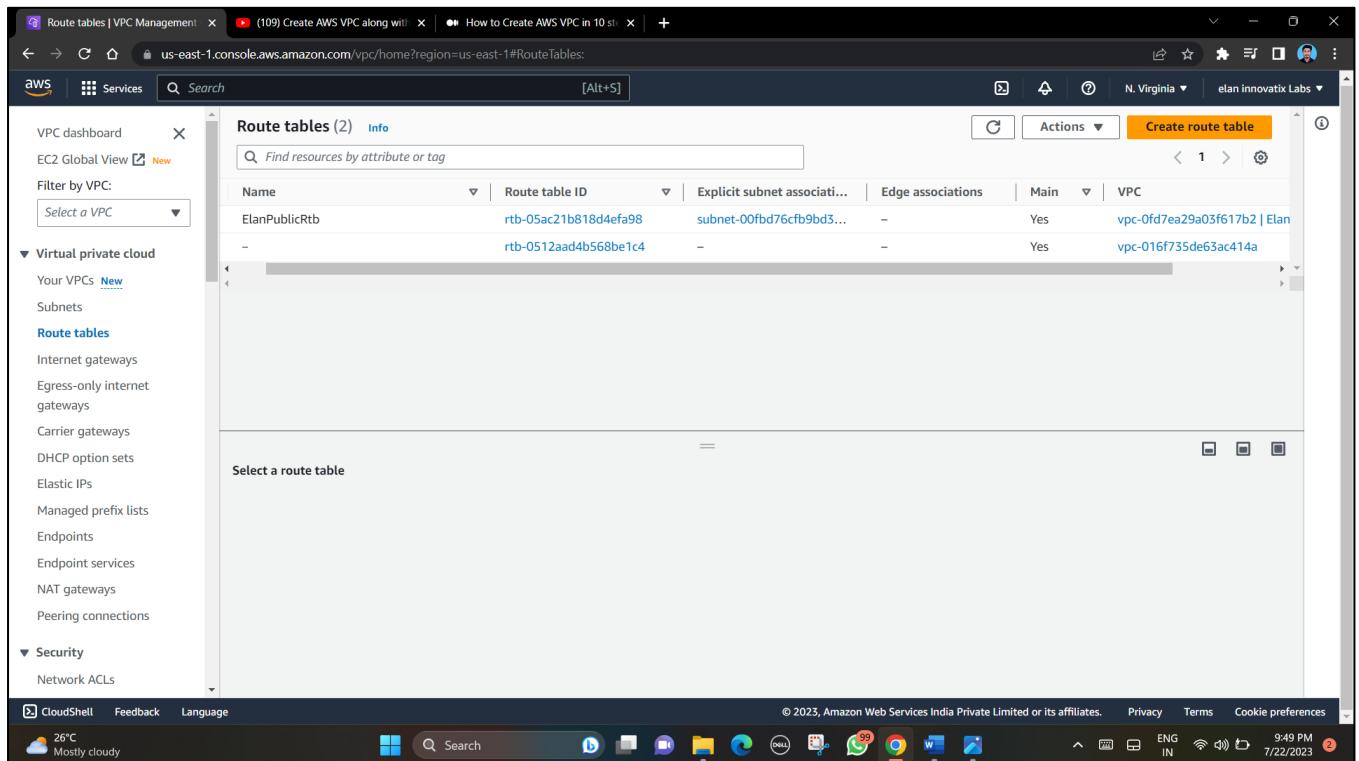
Internet gateway ID igw-0b47ef0ed65d8df53	State Attached	VPC ID vpc-0fd7ea29a03f617b2   ElanVpc	Owner 691407528662
--	-------------------	---	-----------------------

**Tags**

Manage tags

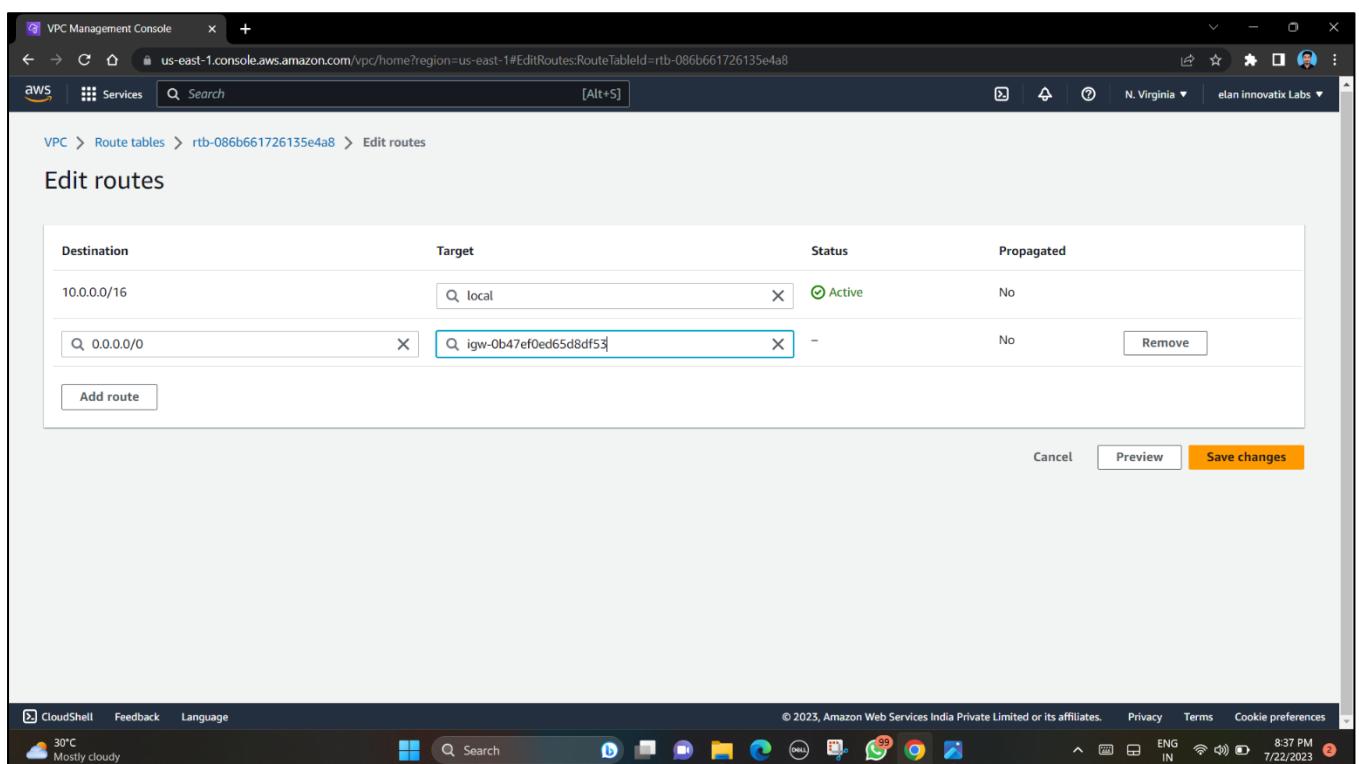
Key	Value
Name	elan-igw

### 3. SOURCE CODE (Configuring Routing Tables):



The screenshot shows the AWS VPC Management Console with the 'Route tables' list. The left sidebar shows 'Route tables' selected under 'Virtual private cloud'. The main table lists two route tables:

Name	Route table ID	Explicit subnet associations	Edge associations	Main	VPC
ElanPublicRtb	rtb-05ac21b818d4efa98	subnet-00fb76cfb9bd3...	-	Yes	vpc-0fd7ea29a03f617b2   Elan
	rtb-0512aad4b568be1c4	-	-	Yes	vpc-016f735de63ac414a



The screenshot shows the 'Edit routes' page for route table 'rtb-086b661726135e4a8'. The left sidebar shows 'Route tables' selected under 'VPC'. The main page displays the current routes:

Destination	Target	Status	Propagated
10.0.0.0/16	local	Active	No
0.0.0.0/0	igw-0b47ef0ed65d8df53	-	No

Buttons at the bottom include 'Add route', 'Cancel', 'Preview', and 'Save changes'.

VPC Management Console (109) Create AWS VPC along with... +

us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#EditRouteTableSubnetAssociations:RouteTableId=rtb-05ac21b818d4efa98

aws Services Search [Alt+S]

VPC > Route tables > rtb-05ac21b818d4efa98 > Edit subnet associations

## Edit subnet associations

Change which subnets are associated with this route table.

**Available subnets (1/2)**

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR	Route table ID
Public-subnet	subnet-00fb76cfb9bd3470	10.0.1.0/24	-	Main (rtb-05ac21b818d4efa98 / ElanP...)
Private-subnet	subnet-02056a4ab95cd3ca3	10.0.2.0/24	-	Main (rtb-05ac21b818d4efa98 / ElanP...)

**Selected subnets**

subnet-00fb76cfb9bd3470 / Public-subnet X

Cancel Save associations

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VPC Management Console (109) Create AWS VPC along with... +

us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#SecurityGroups:

aws Services Search [Alt+S]

Subnets Route tables Internet gateways Egress-only internet gateways Carrier gateways DHCP option sets Elastic IPs Managed prefix lists Endpoints Endpoint services NAT gateways Peering connections Security Network ACLs Security groups DNS firewall Rule groups Domain lists Network Firewall Firewalls

**Security Groups (1/2) Info**

Name	Security group ID	Security group name	VPC ID	Description	Owner
-	sg-02413382232005ca3	default	vpc-016f735de63ac414a	default VPC security group	6914075
<input checked="" type="checkbox"/> -	<input checked="" type="checkbox"/> Edit Name	<input checked="" type="checkbox"/> My-SG	<input checked="" type="checkbox"/> default	<input checked="" type="checkbox"/> vpc-0fd7ea29a03f617b2	<input checked="" type="checkbox"/> default VPC security group

sg-0fa2f2387d Cancel Save

Details Inbound rules Outbound rules Tags

You can now check network connectivity with Reachability Analyzer Run Reachability Analyzer

**Details**

Security group name	Security group ID	Description	VPC ID
default	sg-0fa2f2387d7d6ef6f	default VPC security group	vpc-0fd7ea29a03f617b2
Owner	Inbound rules count	Outbound rules count	
691407528662	1 Permission entry	1 Permission entry	

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Your VPCs | VPC Management C x (109) Create AWS VPC along with x How to Create AWS VPC in 10 st x +

us-east-1.console.aws.amazon.com/vpc/home?region=us-east-1#vpcs: N. Virginia elan innovatix Labs

VPC dashboard EC2 Global View New

Filter by VPC: Select a VPC

Virtual private cloud Your VPCs New

- Subnets
- Route tables
- Internet gateways
- Egress-only internet gateways
- Carrier gateways
- DHCP option sets
- Elastic IPs
- Managed prefix lists
- Endpoints
- Endpoint services
- NAT gateways
- Peering connections

Security Network ACLs

CloudShell Feedback Language 26°C Mostly cloudy

Search

Your VPCs (1/2) Info

Find resources by attribute or tag

Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR	DHCL
vpc-016f735de63ac414a	Available	172.31.0.0/16	-	-	dopt-
<input checked="" type="checkbox"/> ElanVpc	Available	10.0.0.0/16	-	-	dopt-

Actions Create VPC

Details Resource map New CIDRs Flow logs Tags

Resource map Info

VPC Show details Your AWS virtual network ElanVpc

Subnets (2) Subnets within this VPC

us-east-1a Public-subnet

us-east-1b Private-subnet

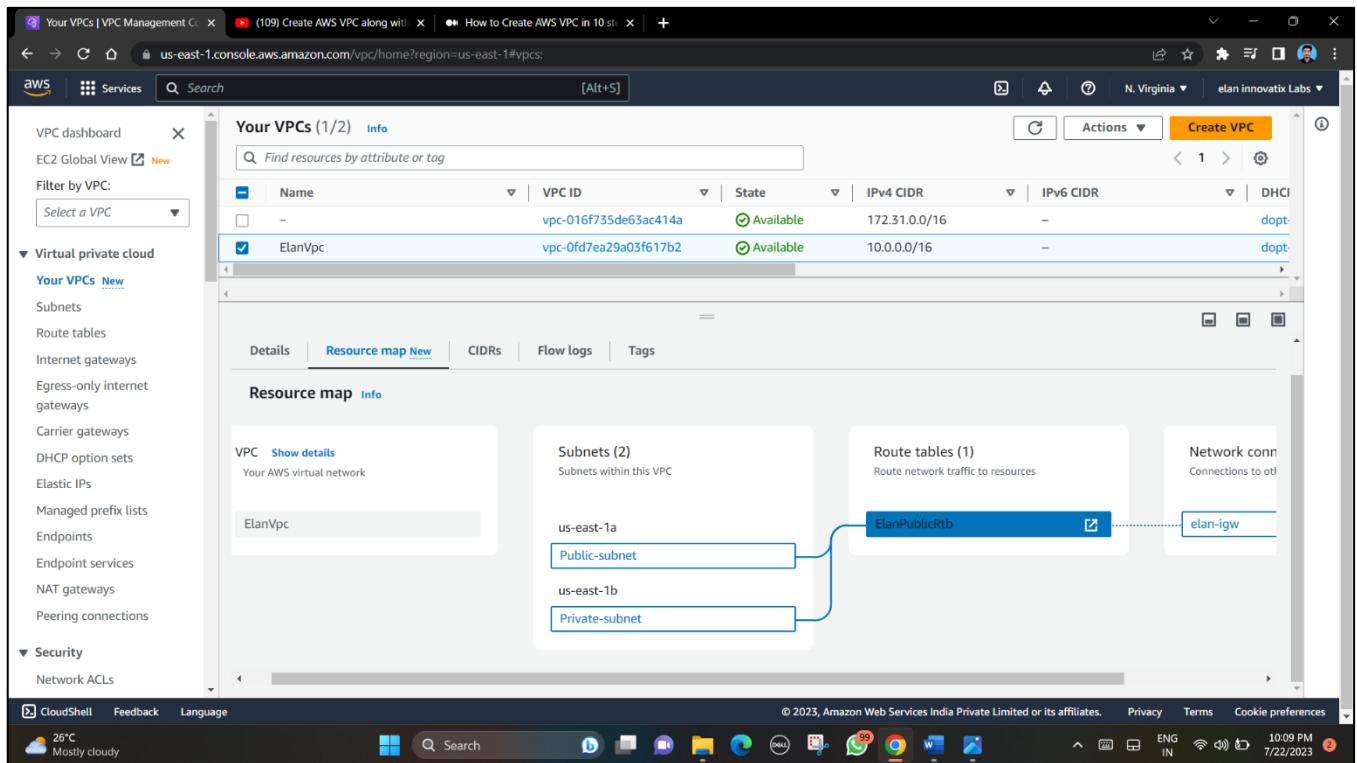
Route tables (1) Route network traffic to resources

ElanPublicRtb

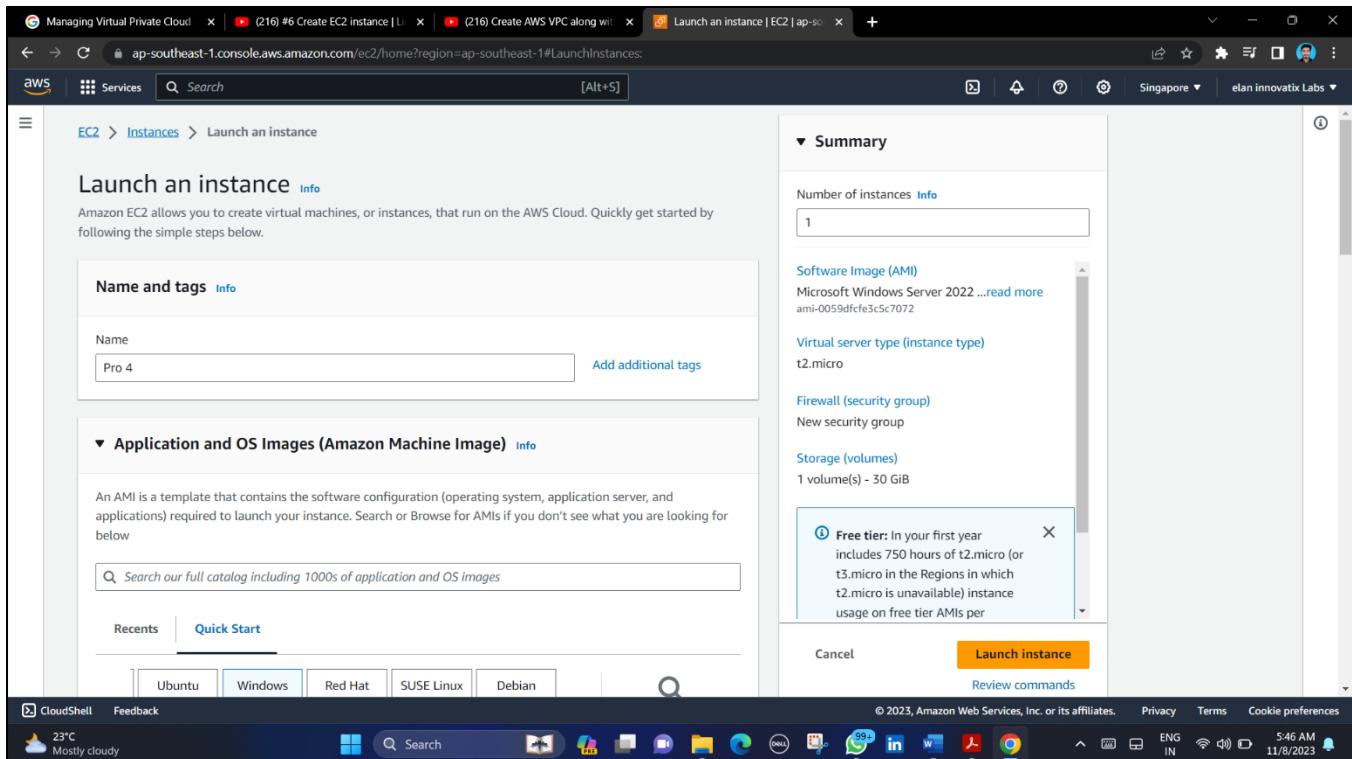
Network conn Connections to other VPCs

elan-igw

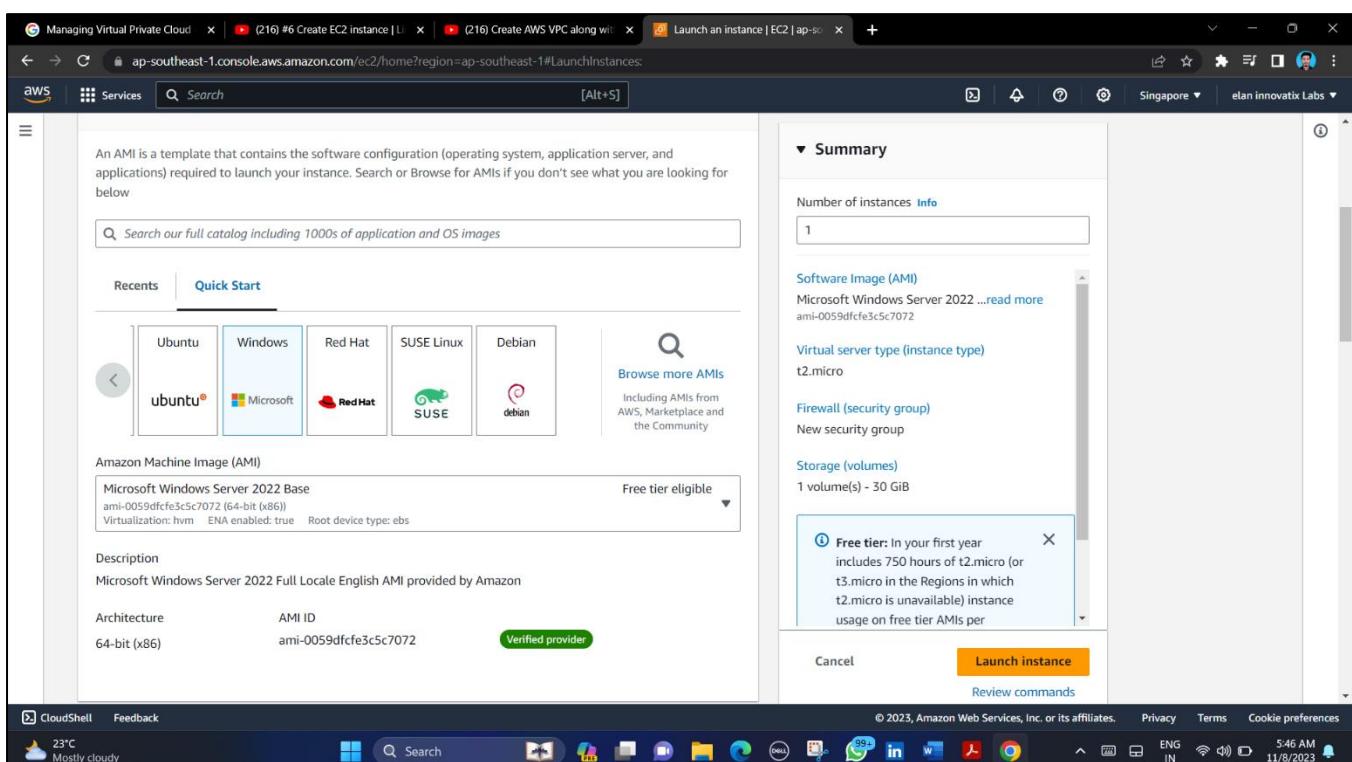
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## 4. SOURCE CODE (Working with Amazon Elastic Cloud Compute (EC2):



The screenshot shows the AWS EC2 'Launch an instance' wizard. The 'Name and tags' step is completed with the name 'Pro 4'. The 'Application and OS Images (Amazon Machine Image)' step shows a search bar and a list of recent AMIs: Ubuntu, Windows, Red Hat, SUSE Linux, and Debian. A tooltip for the 'Free tier' is displayed, stating: 'Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per'.



The screenshot shows the AWS EC2 'Launch an instance' wizard. The 'Amazon Machine Image (AMI)' step is displayed, showing the 'Microsoft Windows Server 2022 Base' AMI (ami-0059dfcfe3c5c7072). The AMI is marked as 'Free tier eligible'. The 'Description' section states: 'Microsoft Windows Server 2022 Full Locale English AMI provided by Amazon'. The 'Architecture' section shows '64-bit (x86)' and 'AMI ID ami-0059dfcfe3c5c7072'. A 'Verified provider' badge is present. A tooltip for the 'Free tier' is visible.

Managing Virtual Private Cloud | (216) #6 Create EC2 instance | (216) Create AWS VPC along with instance | Launch an instance | EC2 | ap-southeast-1#LaunchInstances: ap-southeast-1.console.aws.amazon.com/ec2/home?region=ap-southeast-1#LaunchInstances: [Alt+S]

aws Services Search [Alt+S] Singapore elan innovatix Labs

**Create key pair**

**Key pair name**  
Key pairs allow you to connect to your instance securely.  
demo

The name can include up to 255 ASCII characters. It can't include leading or trailing spaces.

**Key pair type**

RSA RSA encrypted private and public key pair

ED25519 ED25519 encrypted private and public key pair (Not supported for Windows instances)

**Private key file format**

.pem For use with OpenSSH

.ppk For use with PuTTY

**⚠ When prompted, store the private key in a secure and accessible location on your computer. You will need it later to connect to your instance. [Learn more](#)**

Cancel Create key pair

CloudShell Feedback 23°C Mostly cloudy Search 5:46 AM 11/8/2023

Managing Virtual Private Cloud | (216) #6 Create EC2 instance | (216) Create AWS VPC along with instance | Launch an instance | EC2 | ap-southeast-1#LaunchInstances: ap-southeast-1.console.aws.amazon.com/ec2/home?region=ap-southeast-1#LaunchInstances: [Alt+S]

aws Services Search [Alt+S] Singapore elan innovatix Labs

your instance.

**Network settings** Info

Network Info vpc-0a2ca30f5c4f4413d

Subnet Info No preference (Default subnet in any availability zone)

Auto-assign public IP Info

Enable

**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

Common security groups Info

Select security groups

default sg-09485e6be64e5b66d X

VPC: vpc-0a2ca30f5c4f4413d

Security groups that you add or remove here will be added to or removed from all your network interfaces.

**Configure storage** Info Advanced

**Summary**

Number of instances Info

1

Software Image (AMI)

Microsoft Windows Server 2022 ...read more ami-0059dfcfc3e5c7072

Virtual server type (instance type)

t2.micro

Firewall (security group)

default

Storage (volumes)

1 volume(s) - 30 GiB

**Free tier:** In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per

Cancel Launch instance Review commands

CloudShell Feedback 23°C Mostly cloudy Search 5:47 AM 11/8/2023

Managing Virtual Private Cloud | (216) #6 Create EC2 instance | (216) Create AWS VPC along with EC2 | Launch an instance | EC2 | ap-southeast-1#LaunchInstances: ap-southeast-1.console.aws.amazon.com/ec2/home?region=ap-southeast-1#LaunchInstances:

Services Search [Alt+S] Singapore elan innovatix Labs

Create security group Select existing security group

Common security groups [Info](#)  
Select security groups  
default sg-09485e6be64e5b66d VPC: vpc-0a2ca30f5cd4f4413d

Compare security group rules

Number of instances [Info](#)  
1

Software Image (AMI)  
Microsoft Windows Server 2022 ...read more  
ami-0059dfcfe3c5c7072

Virtual server type (instance type)  
t2.micro

Firewall (security group)  
default

Storage (volumes)  
1 volume(s) - 30 GiB

Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per year

Advanced details [Info](#)

Advanced

1x 30 GiB gp2 Root volume (Not encrypted)

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage

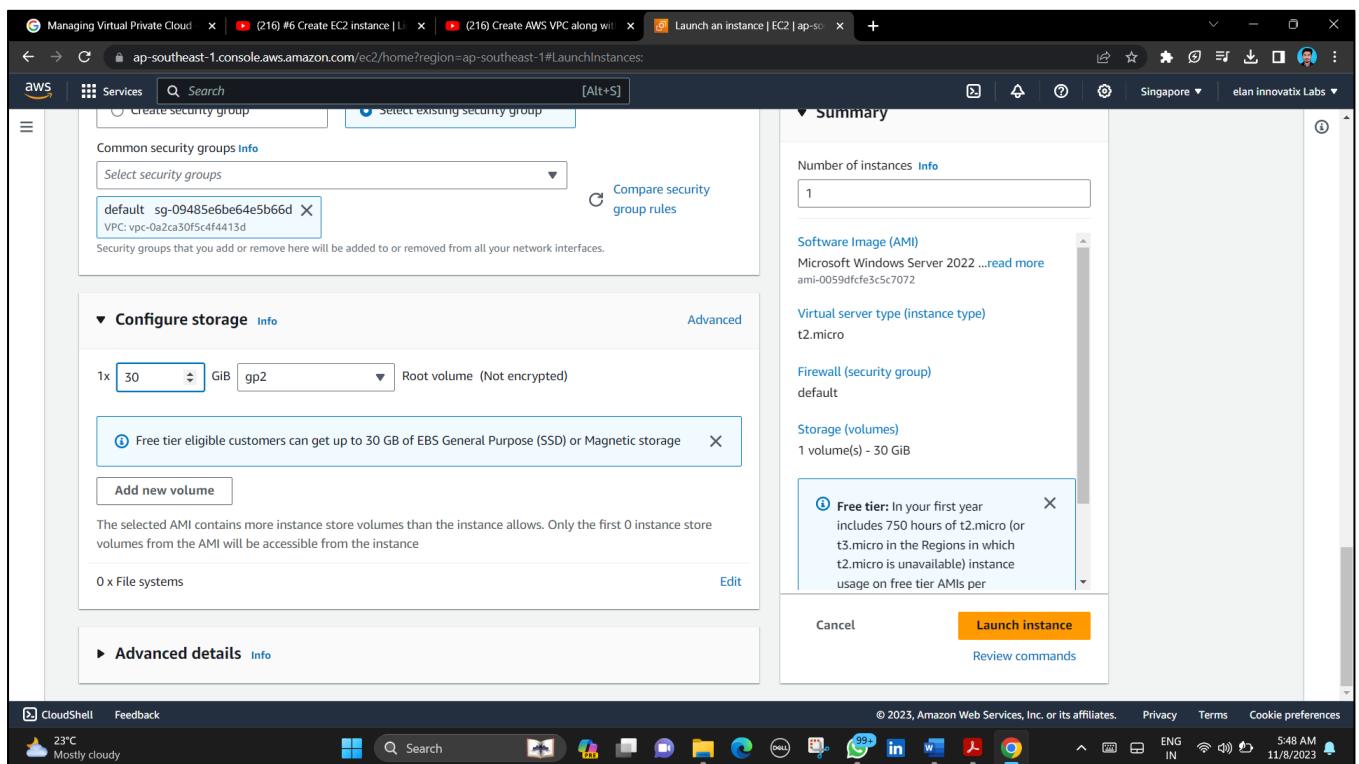
Add new volume

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

0 x File systems Edit

Cancel Launch instance Review commands

CloudShell Feedback 23°C Mostly cloudy Search ENG IN 5:48 AM 11/8/2023



Managing Virtual Private Cloud | (216) #6 Create EC2 instance | (216) Create AWS VPC along with EC2 | Instances | EC2 | ap-southeast-1#Instances: ap-southeast-1.console.aws.amazon.com/ec2/home?region=ap-southeast-1#Instances:

Services Search [Alt+S] Singapore elan innovatix Labs

EC2 Dashboard EC2 Global View Events

Instances Instances Instance Types Launch Templates Spot Requests Savings Plans Reserved Instances Dedicated Hosts Capacity Reservations New

Images AMIs AMI Catalog

Elastic Block Store Volumes Snapshots Lifecycle Manager

Network & Security

CloudShell Feedback 23°C Mostly cloudy Search ENG IN 5:48 AM 11/8/2023

Instances (1/2) [Info](#) Find Instance by attribute or tag (case-sensitive)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
Pro 4	i-0175e479f9905904d	Running	t2.micro	-	No alarms	ap-southeast-1b	ec2-18-142-54-9
OpenVPN	i-021da3a8267308c5e	Stopped	t2.micro	-	No alarms	ap-southeast-1a	-

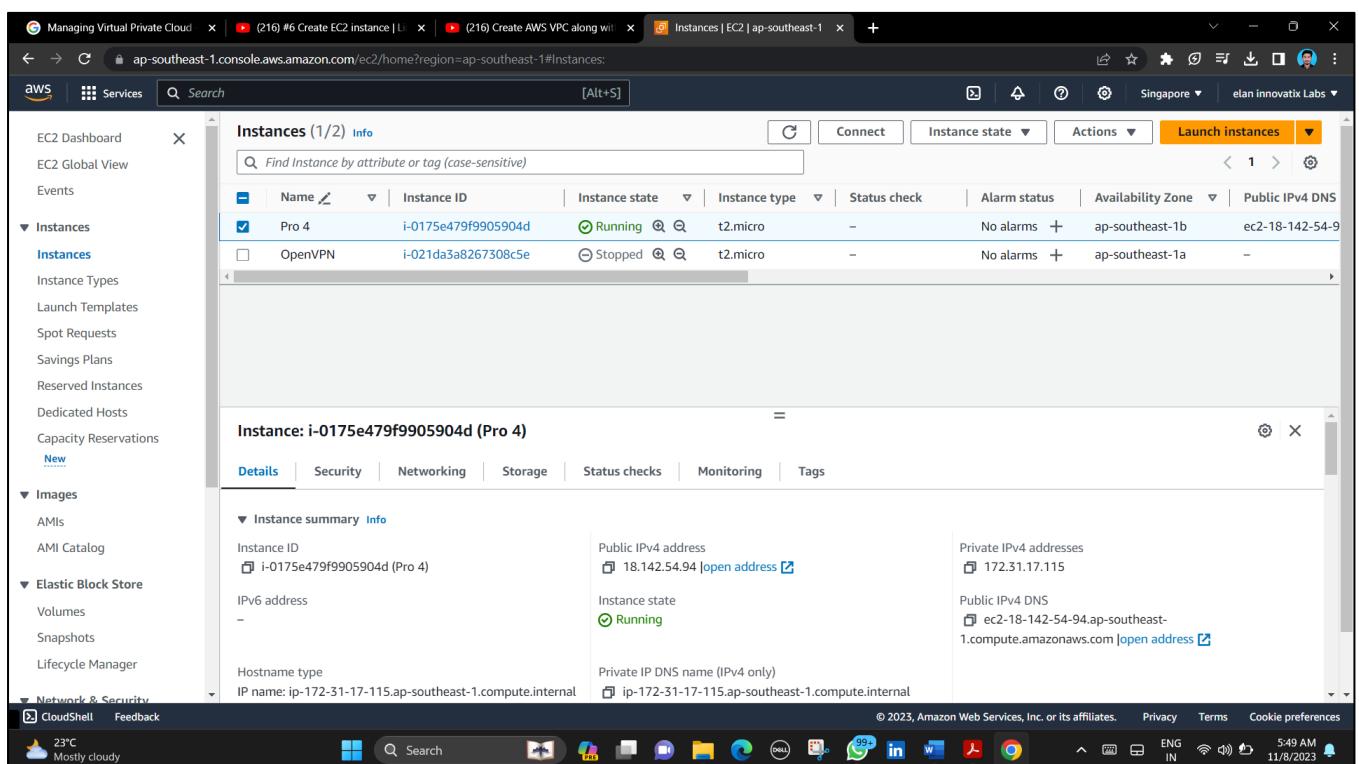
Instance: i-0175e479f9905904d (Pro 4)

Details Security Networking Storage Status checks Monitoring Tags

Instance summary [Info](#)

Instance ID i-0175e479f9905904d (Pro 4)	Public IPv4 address 18.142.54.94 <a href="#">open address</a>	Private IPv4 addresses 172.31.17.115
IPv6 address -	Instance state Running	Public IPv4 DNS ec2-18-142-54-94.ap-southeast-1.compute.amazonaws.com <a href="#">open address</a>
Hostname type IP name: ip-172-31-17-115.ap-southeast-1.compute.internal	Private IP DNS name (IPv4 only) ip-172-31-17-115.ap-southeast-1.compute.internal	

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Managing Virtual Private Cloud | (216) #6 Create EC2 instance | (216) AWS | Episode 35 | Connect to instance | EC2 | ap-southeast-1

ap-southeast-1.console.aws.amazon.com/ec2/home?region=ap-southeast-1#SecurityGroup:group-id=sg-09485e6be64e5b66d

EC2 Services Search [Alt+S]

EC2 Dashboard EC2 Global View Events Instances Instances Instance Types Launch Templates Spot Requests Savings Plans Reserved Instances Dedicated Hosts Capacity Reservations New Images AMIs AMI Catalog Elastic Block Store Volumes Snapshots Lifecycle Manager Network & Security Security Groups Elastic IPs CloudShell Feedback 23°C Mostly cloudy

EC2 Security Groups sg-09485e6be64e5b66d - default

sg-09485e6be64e5b66d - default

Details

Security group name	default	Security group ID	sg-09485e6be64e5b66d	Description	default VPC security group	VPC ID	vpc-0a2ca30f5c4f4413d
Owner	691407528662	Inbound rules count	2 Permission entries	Outbound rules count	1 Permission entry		

Inbound rules Outbound rules Tags

Inbound rules (1/2)

Name	Security group rule...	IP version	Type	Protocol	Port range	Source
-	sgr-0d9bb6f3d2be782...	-	All traffic	All	All	sg-09485e6be64e5b66d
<input checked="" type="checkbox"/>	sgr-0340c264d869ffdd19	IPv4	RDP	TCP	3389	0.0.0.0/0

CloudShell Feedback 23°C Mostly cloudy

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Managing Virtual Private Cloud | (216) #6 Create EC2 instance | (216) Create AWS VPC along with EC2 | (216) Connect to instance | EC2 | ap-southeast-1

ap-southeast-1.console.aws.amazon.com/ec2/home?region=ap-southeast-1#ConnectToInstance:instanceId=i-0175e479f9905904d

EC2 Services Search [Alt+S]

Session Manager RDP client EC2 serial console

Instance ID i-0175e479f9905904d (Pro 4)

Connection Type

Connect using RDP client  
Download a file to use with your RDP client and retrieve your password.

Connect using Fleet Manager  
To connect to the instance using Fleet Manager Remote Desktop, the SSM Agent must be installed and running on the instance. For more information, see Working with SSM Agent

You can connect to your Windows instance using a remote desktop client of your choice, and by downloading and running the RDP shortcut file below:

[Download remote desktop file](#)

When prompted, connect to your instance using the following details:

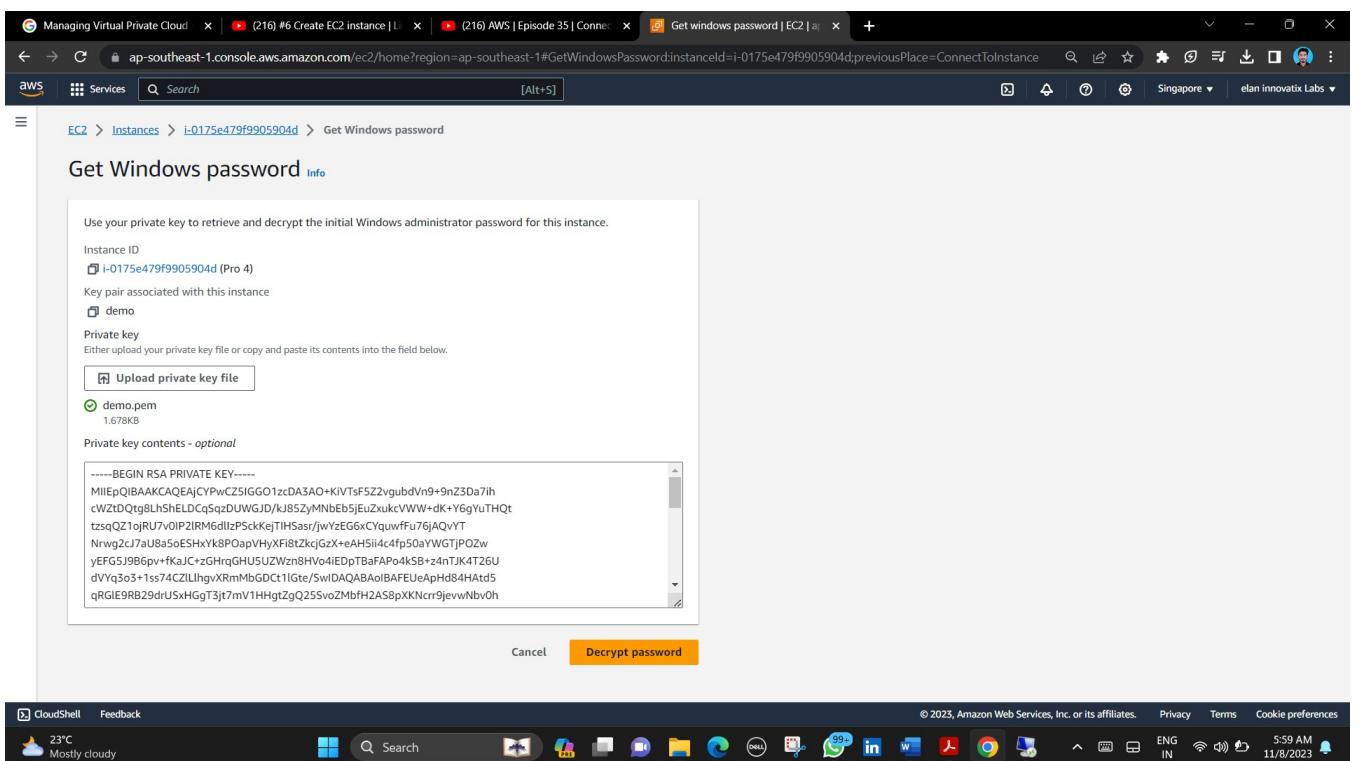
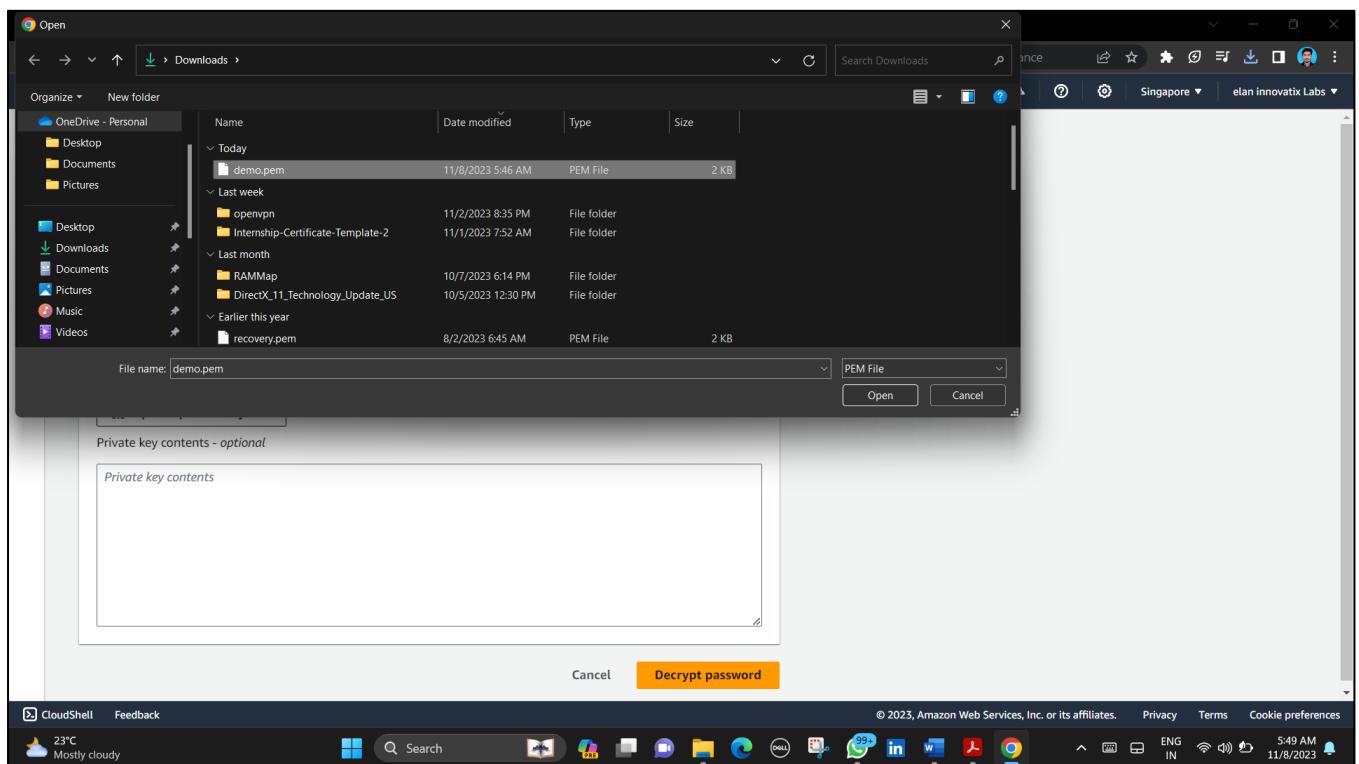
Public DNS ec2-18-142-54-94.ap-southeast-1.compute.amazonaws.com User name Administrator

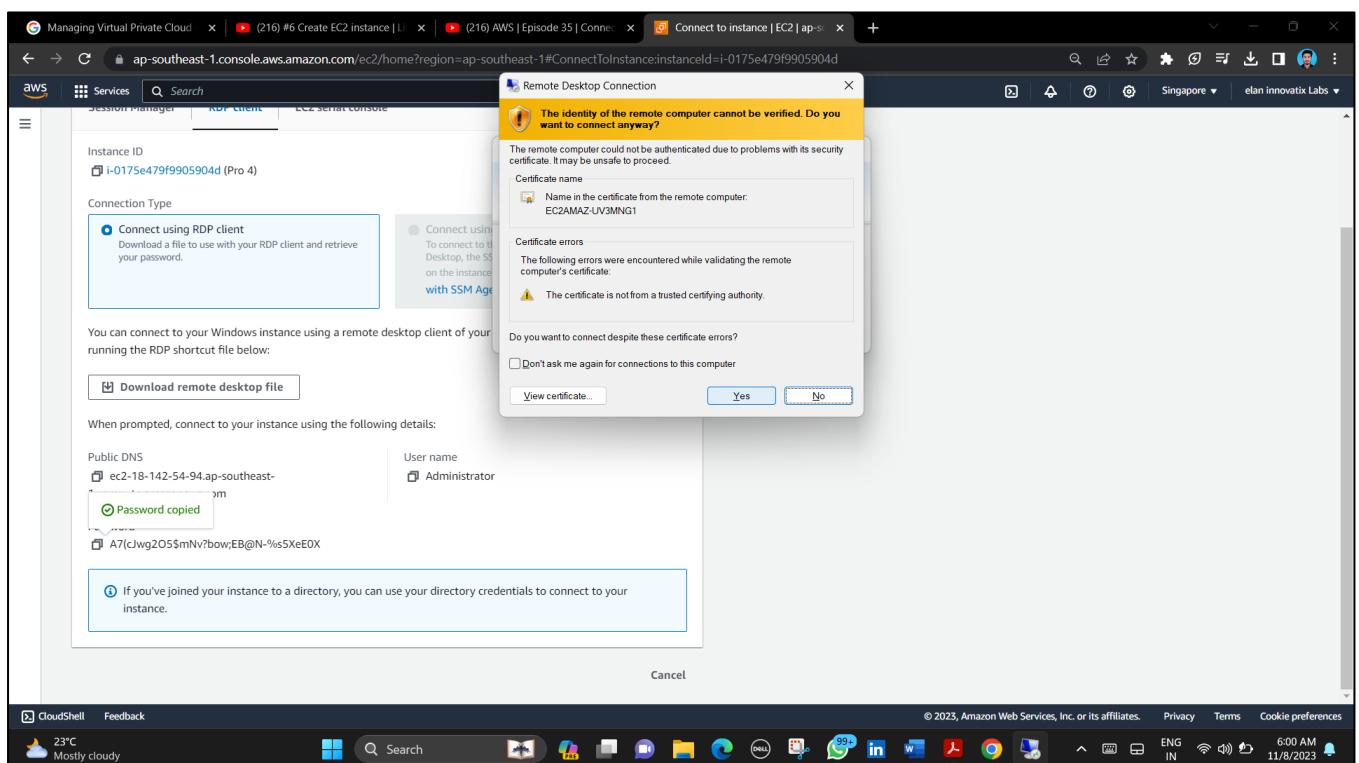
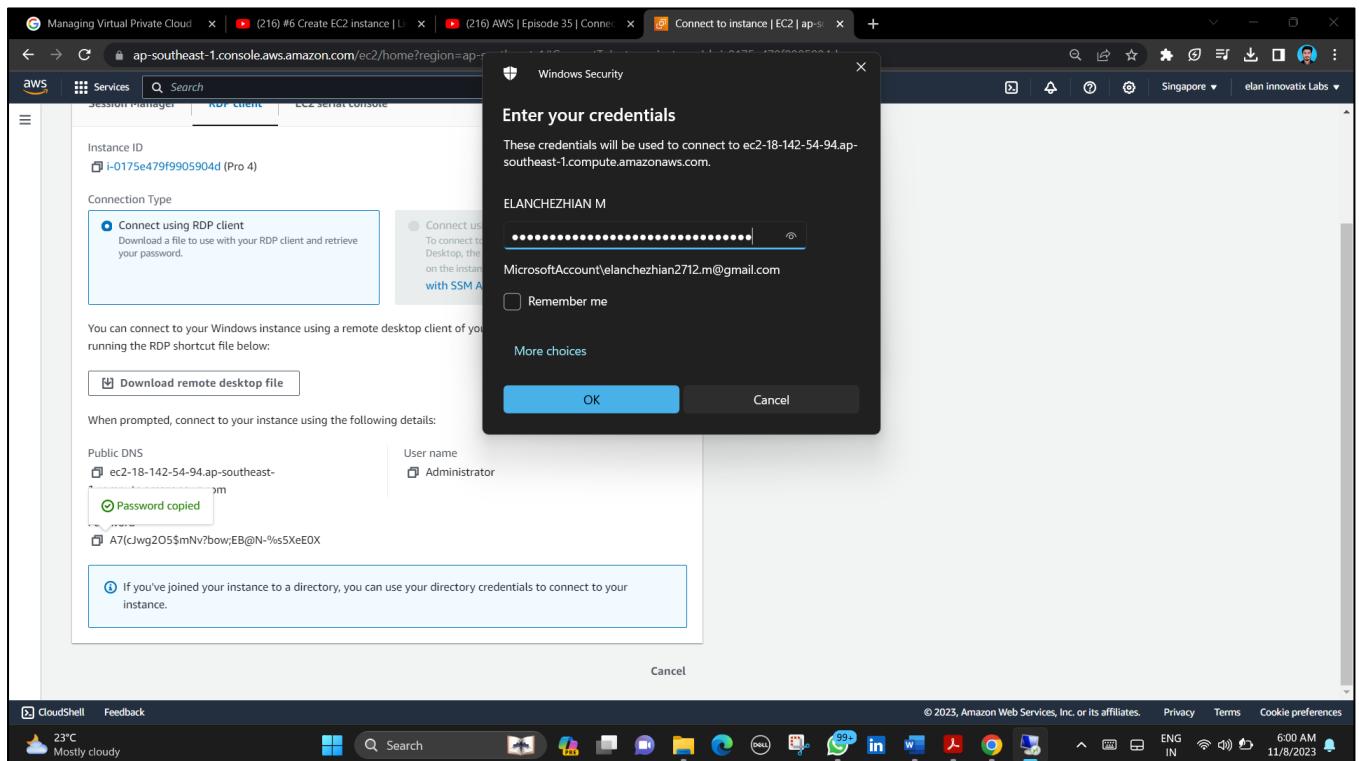
Password Get password

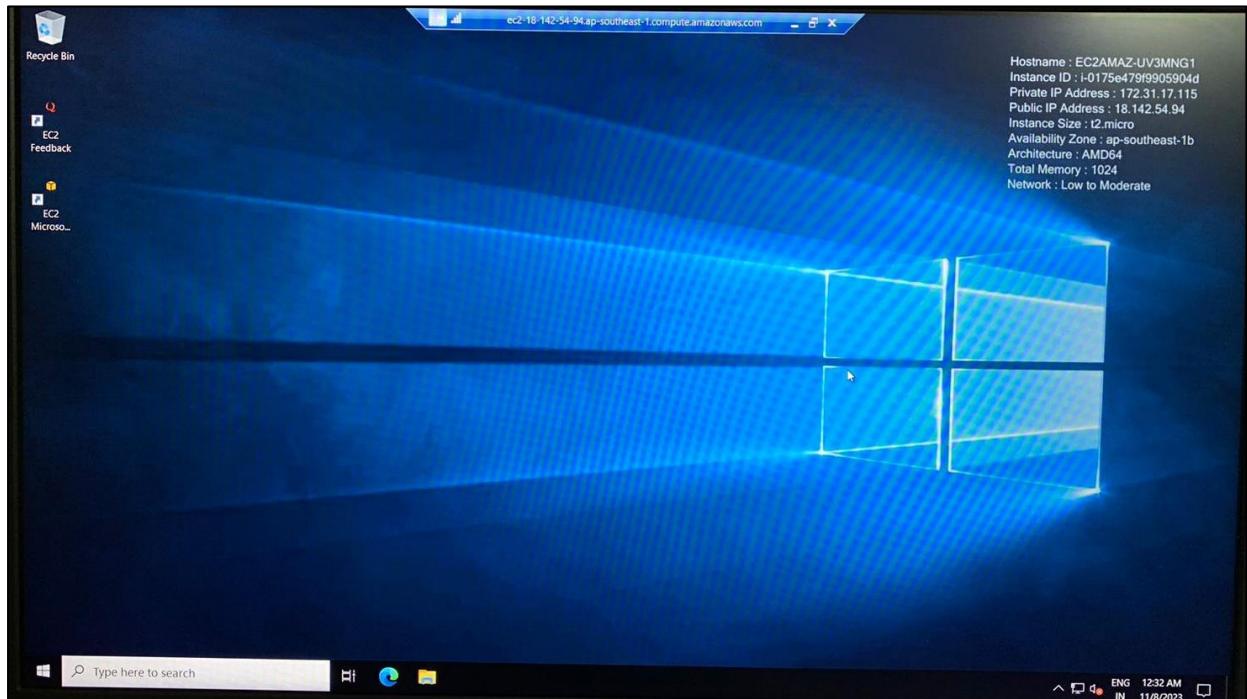
If you've joined your instance to a directory, you can use your directory credentials to connect to your instance.

CloudShell Feedback 23°C Mostly cloudy

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Managing Virtual Private Cloud | (216) #6 Create EC2 instance | (216) AWS | Episode 35 | Connect | Instances | EC2 | ap-southeast-1 | +

aws Services Search [Alt+S]

Successfully stopped i-0175e479f9905904d

Instances (1/2) Info

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4
Pro 4	i-0175e479f9905904d	Stopping	t2.micro	2/2 checks passed	No alarms	ap-southeast-1b	ec2-18-142-54-94.ap-s...	18.142.54.9...
OpenVPN	i-021da3a8267308c5e	Stopped	t2.micro	-	No alarms	ap-southeast-1a	-	-

Instance: i-0175e479f9905904d (Pro 4)

Details | Security | Networking | Storage | Status checks | Monitoring | Tags

Instance summary

Instance ID	i-0175e479f9905904d (Pro 4)	Public IPv4 address	18.142.54.94 [open address]
IPv6 address	-	Instance state	Stopping
Hostname type	IP name: ip-172-31-17-115.ap-southeast-1.compute.internal	Private IP DNS name (IPv4 only)	ip-172-31-17-115.ap-southeast-1.compute.internal
Answer private resource DNS name	IPv4 (A)	Instance type	t2.micro
Auto-assigned IP address	18.142.54.94 [Public IP]	VPC ID	vpc-0a2ca30f5c4f4413d

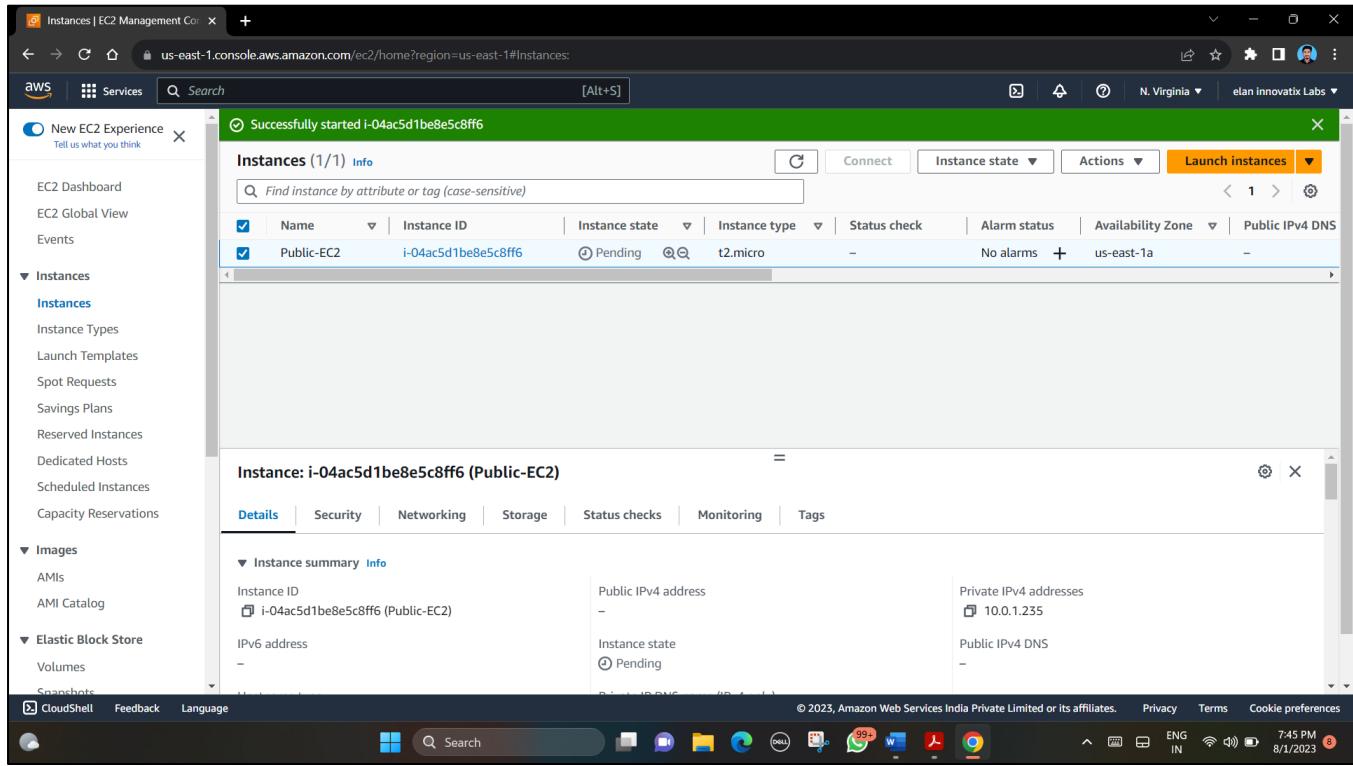
CloudShell Feedback

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ENG IN 6:02 AM 11/8/2023

## 5. SOURCE CODE (Connecting EC2 Linux instance using PuTTY, Gitbash and Console):



Instances (1/1) Info

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
Public-EC2	i-04ac5d1be8e5c8ff6	Pending	t2.micro	-	No alarms	us-east-1a	-

Instance: i-04ac5d1be8e5c8ff6 (Public-EC2)

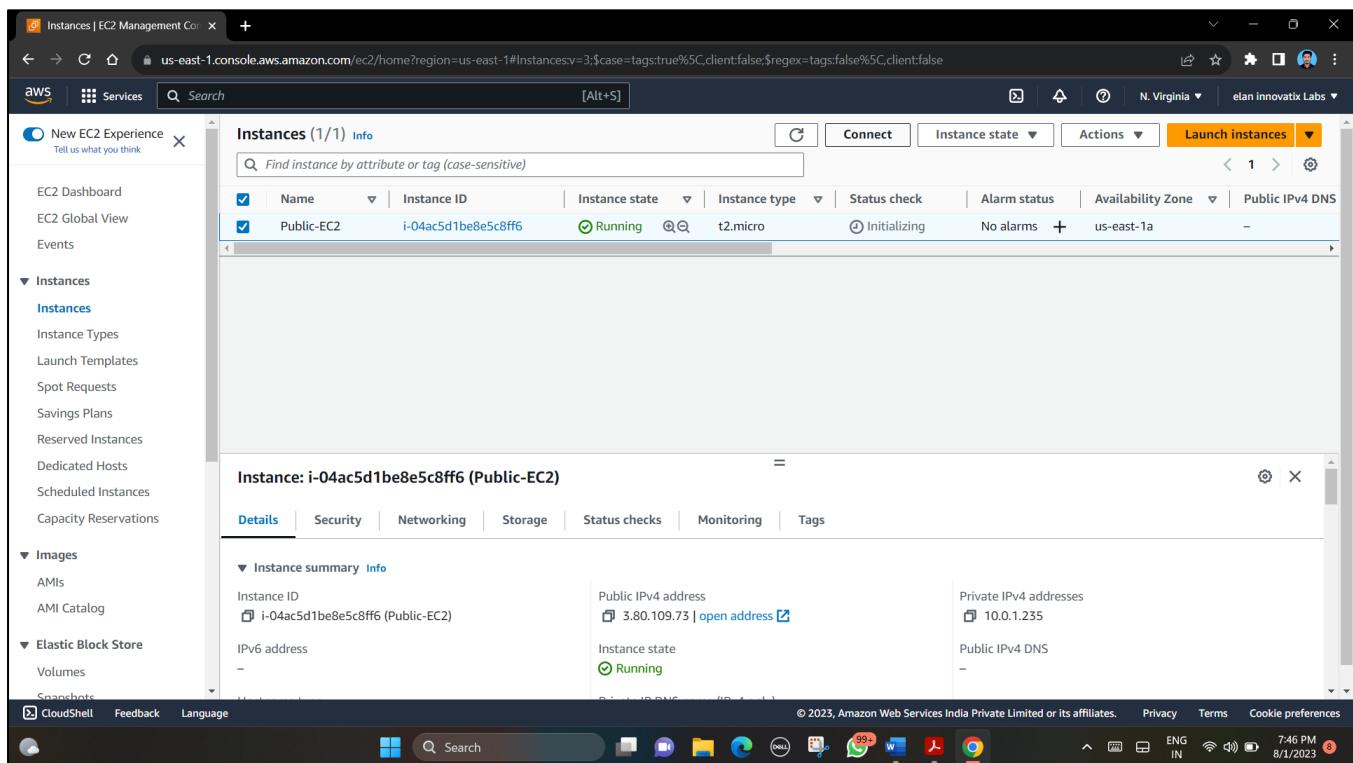
Details Security Networking Storage Status checks Monitoring Tags

Instance summary

Instance ID	Public IPv4 address	Private IPv4 addresses
i-04ac5d1be8e5c8ff6 (Public-EC2)	-	10.0.1.235

IPv6 address Instance state Public IPv4 DNS

- Pending -



Instances (1/1) Info

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
Public-EC2	i-04ac5d1be8e5c8ff6	Running	t2.micro	Initializing	No alarms	us-east-1a	-

Instance: i-04ac5d1be8e5c8ff6 (Public-EC2)

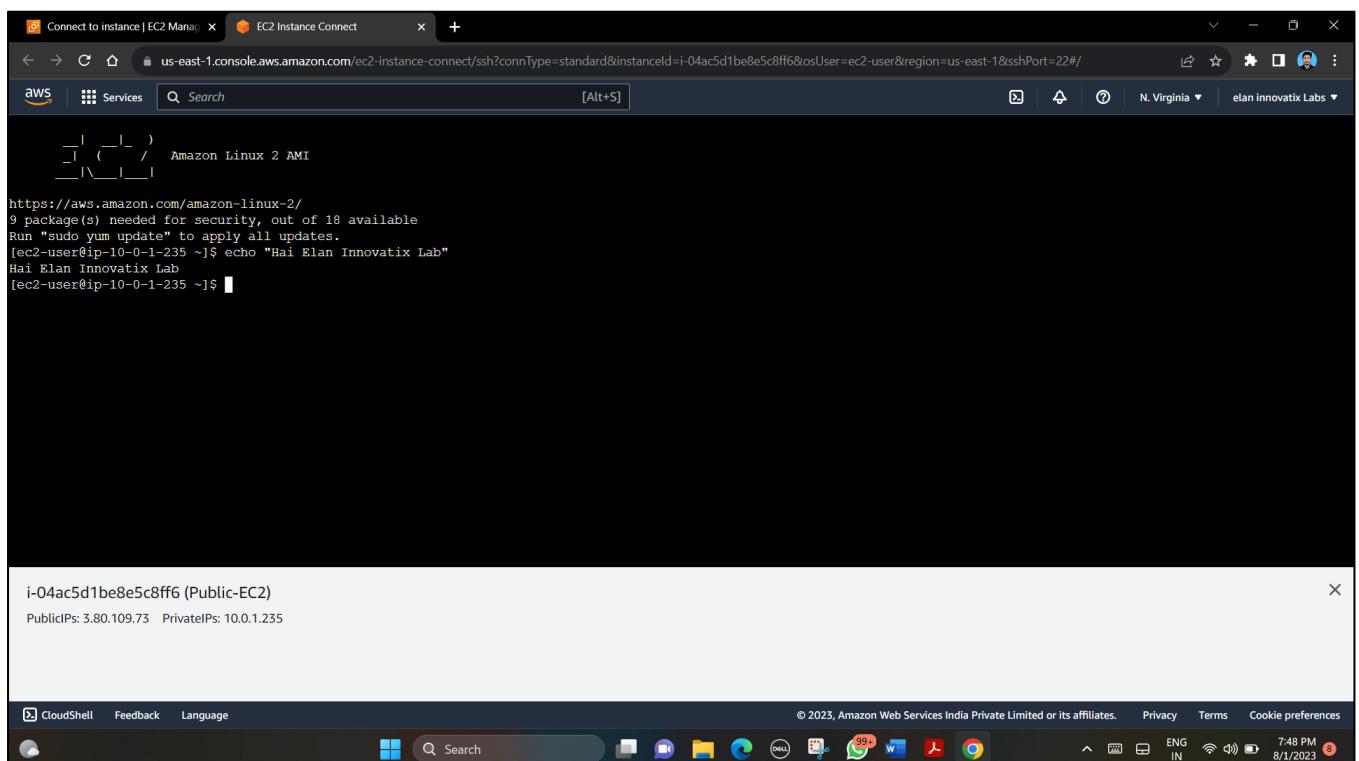
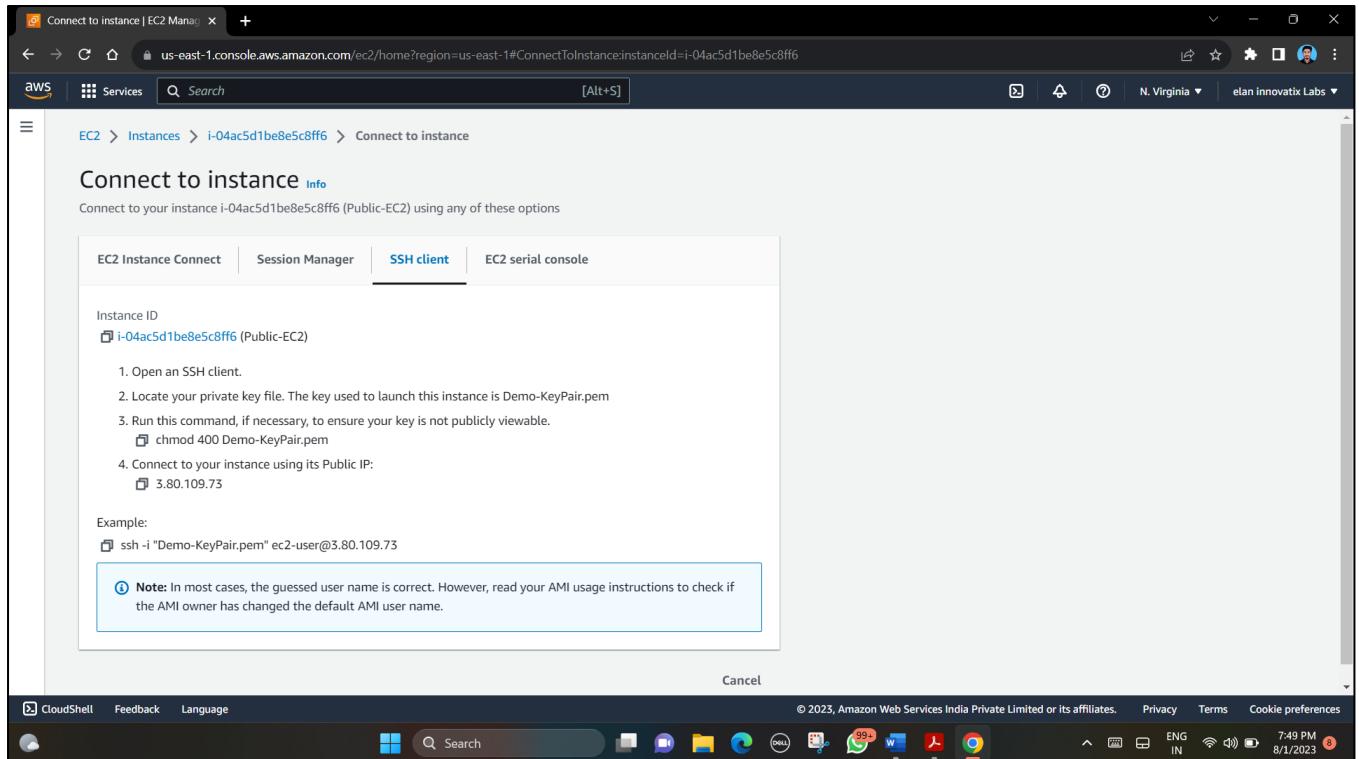
Details Security Networking Storage Status checks Monitoring Tags

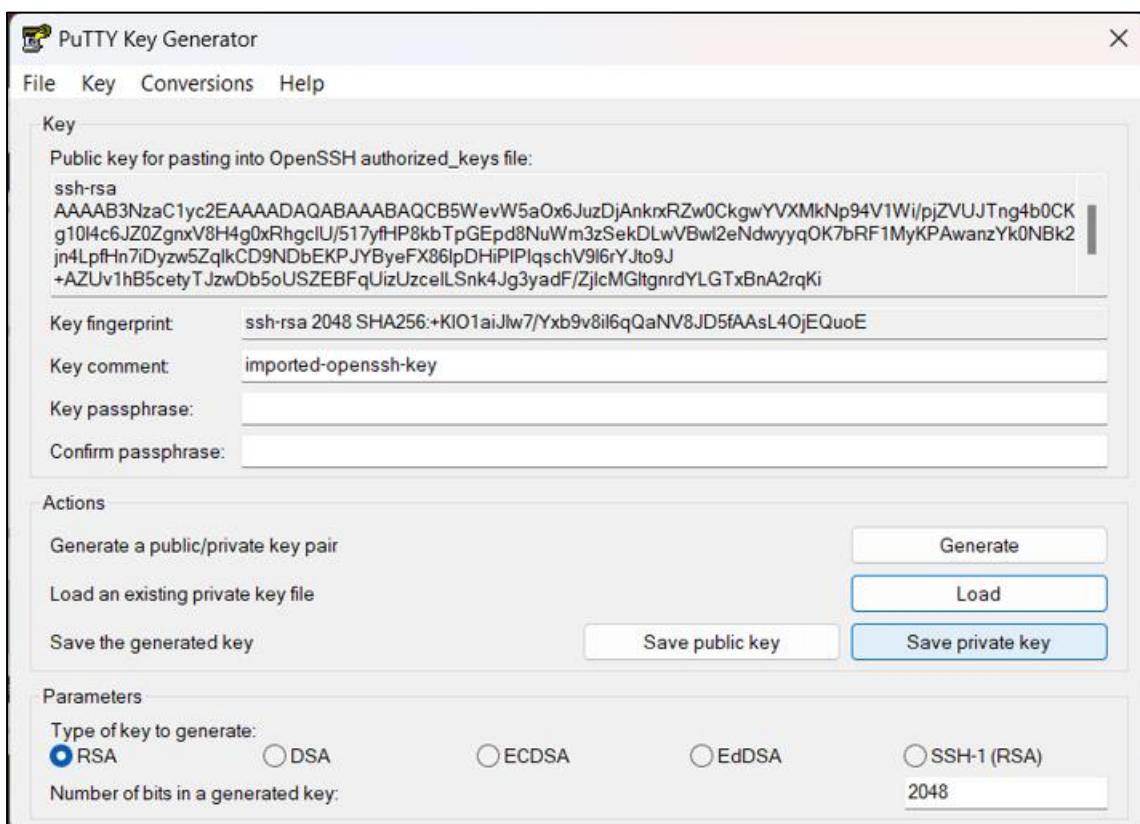
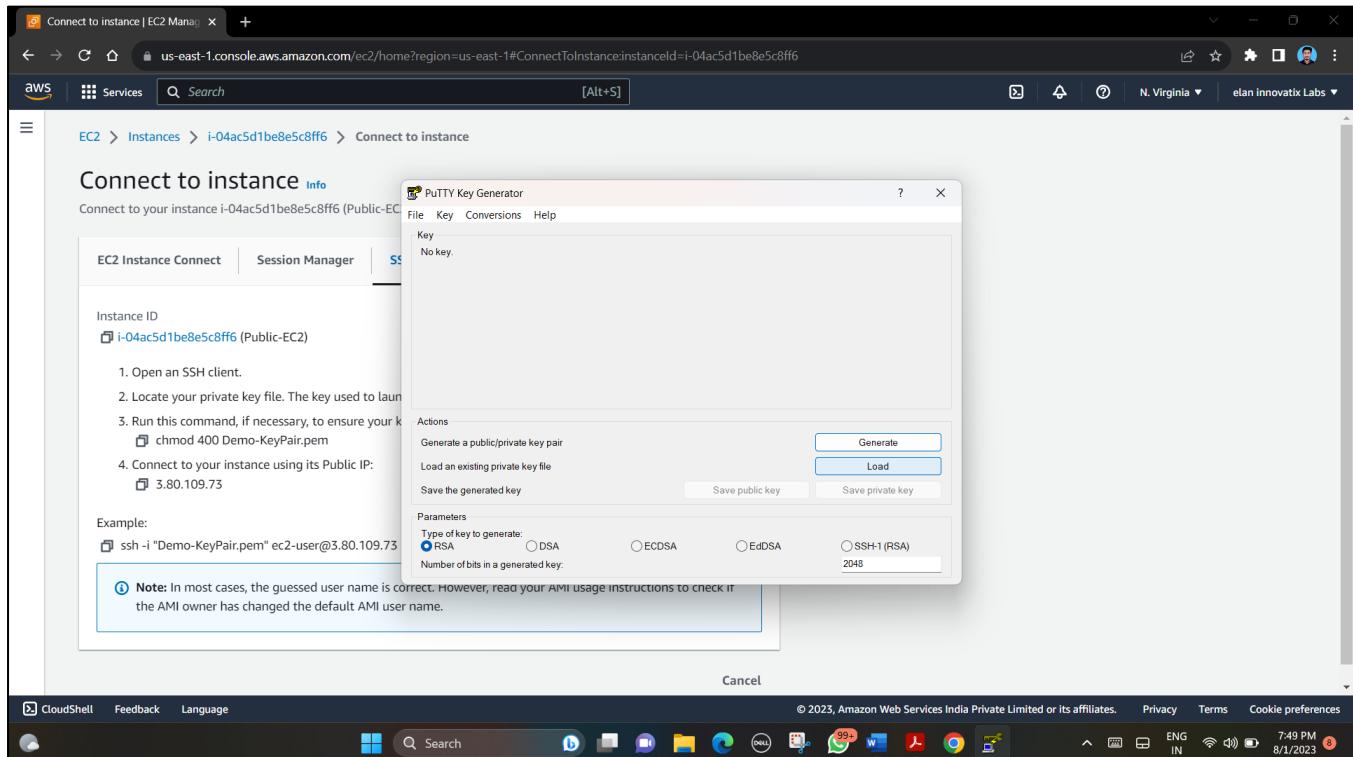
Instance summary

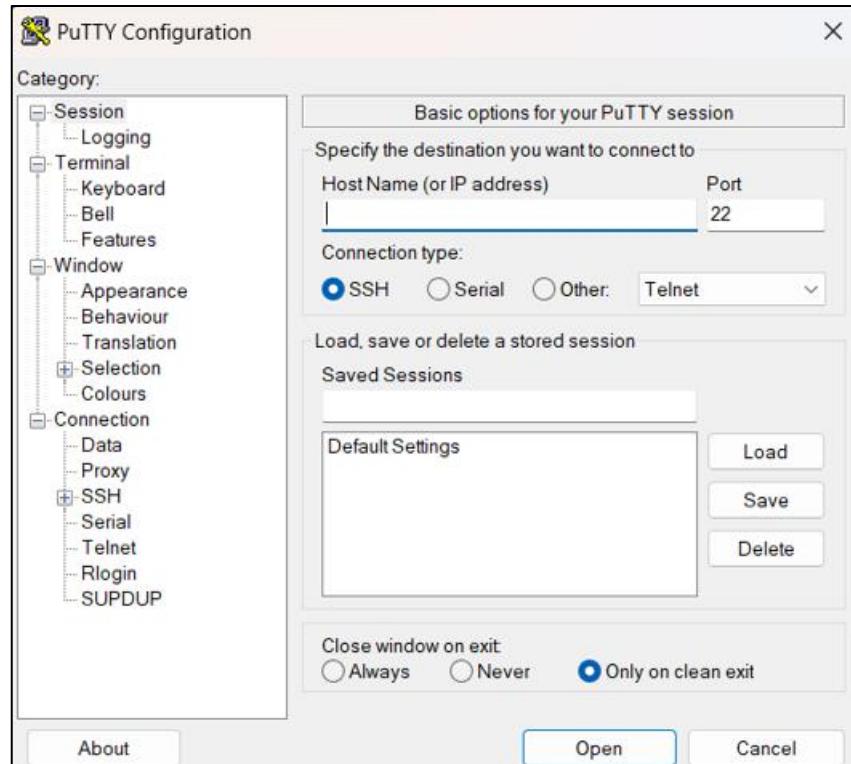
Instance ID	Public IPv4 address	Private IPv4 addresses
i-04ac5d1be8e5c8ff6 (Public-EC2)	3.80.109.73   <a href="#">open address</a>	10.0.1.235

IPv6 address Instance state Public IPv4 DNS

- Running -







The screenshot shows the AWS Management Console with the EC2 Instances page for an instance with ID i-0349d26f9af87a840. A 'Connect to instance' dialog box is open. The 'SSH client' tab is selected. The 'Instance ID' field shows i-0349d26f9af87a840 (lostKeyPair). Below it, instructions for connecting via SSH are listed, including opening an SSH client, locating the private key, running a command to ensure the key is not put into the clipboard, and using the Public DNS. A note says the Public DNS has been copied. The 'EC2 Instance Connect' and 'Session Manager' tabs are also visible. A 'PuTTY Configuration' dialog box is overlaid on the bottom right of the dialog, showing the 'Session' category with the host name field empty and port 22. The 'Open' button is highlighted in blue. The PuTTY configuration dialog has sections for 'Category' (Session, Logging, Terminal, Window, Connection), 'Basic options for your PuTTY session', 'Specify the destination you want to connect to', 'Connection type' (SSH selected), 'Load, save or delete a stored session', 'Default Settings', and 'Close window on exit' (Only on clean exit selected). The PuTTY configuration dialog has 'About' and 'Cancel' buttons at the bottom.

Connect to instance | EC2 Manager

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#ConnectToInstance:instanceId=i-04ac5d1be8e5c8ff6

EC2 Services Search [Alt+S]

EC2 Instances i-04ac5d1be8e5c8ff6 Connect to instance

**Connect to instance** Info

Connect to your instance i-04ac5d1be8e5c8ff6 (Public-EC2) using any of these options

EC2 Instance Connect Session Manager **SSH client** EC2 serial console

Instance ID **i-04ac5d1be8e5c8ff6** (Public-EC2)

1. Open an SSH client.  
2. Locate your private key file. The key used to launch this instance is Demo-KeyPair.pem  
3. Run this command, if necessary, to ensure your key is not publicly viewable.

Public IP copied IO Demo-KeyPair.pem

Connect to your instance using its Public IP:  
3.80.109.73

Example:  
ssh -i "Demo-KeyPair.pem" ec2-user@3.80.109.73

**Note:** In most cases, the guessed user name is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name.

ec2-user@ip-10-0-1-235:~

```
>Login as: ec2-user
Authenticating with public key "Demo-KeyPair"
Last login: Tue Aug 1 14:17:44 2023 from ec2-10-206-107-29.compute-1.amazonaws.com
[ec2-user@ip-10-0-1-235 ~]$ echo "Hai Elanchezhian M"
Hai Elanchezhian M
[ec2-user@ip-10-0-1-235 ~]$
```

Cancel

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Connect to instance | EC2 Manager

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#ConnectToInstance:instanceId=i-07025fee7fe037305

EC2 Services Search [Alt+S]

EC2 Instances i-07025fee7fe037305 Connect to instance

**Connect to instance** Info

Connect to your instance i-07025fee7fe037305 (ElanServer) using any of these options

EC2 Instance Connect Session Manager **SSH client** EC2 serial console

Instance ID **i-07025fee7fe037305** (ElanServer)

1. Open an SSH client.  
2. Locate your private key file. The key used to launch this instance is PublicKey.pem  
3. Run this command, if necessary, to ensure your key is not publicly viewable  
chmod 400 PublicKey.pem  
4. Connect to your instance using its Public DNS:  
ec2-54-211-43-112.compute-1.amazonaws.com

Command copied

ssh -i "PublicKey.pem" ec2-user@ec2-54-211-43-112.compute-1.amazonaws.com

**Note:** In most cases, the guessed user name is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name.

ec2-user@ip-172-31-80-84:~

```
ssh -i "PublicKey.pem" ec2-user@ec2-54-211-43-112.compute-1.amazonaws.com
The authenticity of host 'ec2-54-211-43-112.compute-1.amazonaws.com (54.211.43.112)' can't be established.
ECDSA key fingerprint is SHA256:0vymd7v2H1gJ/94+3D7egK7EKvLOV4CnXhB1vw5tY8.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-54-211-43-112.compute-1.amazonaws.com' (ED25519)
to the list of known hosts.

[ec2-user@ip-172-31-80-84 ~]$ echo "Hai Ela"
Hai Ela
[ec2-user@ip-172-31-80-84 ~]$
```

Cancel

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## 6. SOURCE CODE (Recovering and connecting EC2 instance if the SSH key is lost):

Instances (1/2) **Info**

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
server-with-key	i-0ded382baa5eaa4a6	Stopping	t2.micro	2/2 checks passed	No alarms	us-east-1d	ec2-3-85-235-16
Recovery-server	i-0b755e12e5a28d5dc	Running	t2.micro	2/2 checks passed	No alarms	us-east-1d	ec2-44-203-253-

**Instance: i-0ded382baa5eaa4a6 (server-with-key)**

**Details** **Security** **Networking** **Storage** **Status checks** **Monitoring** **Tags**

**Instance summary**

Instance ID	Public IPv4 address	Private IPv4 addresses
i-0ded382baa5eaa4a6 (server-with-key)	3.85.235.163   <a href="#">open address</a>	172.31.83.36
IPv6 address	Instance state	Public IPv4 DNS
-	Stopping	ec2-3-85-235-163.compute-1.amazonaws.com   <a href="#">open</a>

Volumes (2) **Info**

Zone	Volume state	Alarm status	Attached Instances	Volume status	Encryption	KMS key
	In-use	No alarms	+ i-0ded382baa5eaa4a6 (server-with-key): /dev/xvda (att...	Okay	Not encrypted	-
	In-use	No alarms	+ i-0b755e12e5a28d5dc (Recovery-server): /dev/xvda (att...	Okay	Not encrypted	-

EC2 Management Console

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Volumes:

Services

Search

Capacity Reservations

Images

AMIs

AMI Catalog

Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

Network & Security

Security Groups

Elastic IPs

Placement Groups

Key Pairs

Network Interfaces

Load Balancing

Load Balancers

Target Groups

Auto Scaling

Auto Scaling Groups

CloudShell

Feedback

Language

24°C Partly sunny

Actions

Create volume

Modify volume

Create snapshot

Create snapshot lifecycle policy

Delete volume

Attach volume

Detach volume

Force detach volume

Manage auto-enabled I/O

Manage tags

Fault injection

Volumes (1/2) Info

Search

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot
server-with-key	vol-0f3e792e5005ad8b5	gp3	8 GiB	3000	125	snap-096d
	vol-0b92dcb03df02e14f	gp3	8 GiB	3000	125	snap-096d

Volume ID: vol-0f3e792e5005ad8b5 (server-with-key)

Details Status checks Monitoring Tags

Volume ID vol-0f3e792e5005ad8b5 (server-with-key)	Size 8 GiB	Type gp3	Volume status Okay
AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations.   Learn more	Volume state In-use	IOPS 3000	Throughput 125
Encryption Not encrypted	KMS key ID -	KMS key alias -	KMS key ARN -

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6:52 AM 8/2/2023

EC2 Management Console

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Volumes:

Services

Search

Capacity Reservations

Images

AMIs

AMI Catalog

Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

Network & Security

Security Groups

Elastic IPs

Placement Groups

Key Pairs

Network Interfaces

Load Balancing

Load Balancers

Target Groups

Auto Scaling

Auto Scaling Groups

CloudShell

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Actions

Create volume

Modify volume

Create snapshot

Create snapshot lifecycle policy

Delete volume

Attach volume

Detach volume

Force detach volume

Manage auto-enabled I/O

Manage tags

Fault injection

Volumes (1/2) Info

Search

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot
server-with-key	vol-0f3e792e5005ad8b5	gp3	8 GiB	3000	125	snap-096d
	vol-0b92dcb03df02e14f	gp3	8 GiB	3000	125	snap-096d

Volume ID: vol-0f3e792e5005ad8b5 (server-with-key)

Details Status checks Monitoring Tags

Volume ID vol-0f3e792e5005ad8b5 (server-with-key)	Size 8 GiB	Type gp3	Volume status Okay
AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations.   Learn more	Volume state Available	IOPS 3000	Throughput 125
Encryption Not encrypted	KMS key ID -	KMS key alias -	KMS key ARN -

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6:53 AM 8/2/2023

Attach volume | EC2 Management

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#AttachVolume:volumeId=vol-0f3e792e5005ad8b5

EC2 > Volumes > vol-0f3e792e5005ad8b5 > Attach volume

### Attach volume Info

Attach a volume to an instance to use it as you would a regular physical hard disk drive.

**Basic details**

Volume ID  
vol-0f3e792e5005ad8b5 (server-with-key)

Availability Zone  
us-east-1d

Instance Info  
i-0b755e12e3a28d5dc

Only instances in the same Availability Zone as the selected volume are displayed.

Device name Info  
/dev/sdf

Recommended device names for Linux: /dev/sda1 for root volume. /dev/sdf[1-p] for data volumes.

ⓘ Newer Linux kernels may rename your devices to /dev/xvdf through /dev/xvdp internally, even when the device name entered here (and shown in the details) is /dev/sdf through /dev/sdp.

Cancel

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Connect to instance | EC2 Management

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#ConnectToInstance:instanceId=i-0b755e12e3a28d5dc

EC2 > Instances > i-0b755e12e3a28d5dc > Connect to instance

### Connect to instance Info

Connect to your instance i-0b755e12e3a28d5dc (Recovery-server) using any of these options

EC2 Instance Connect

Instance ID  
i-0b755e12e3a28d5dc (Recovery-server)

1. Open an SSH client.
2. Locate your private key file. The key used to launch this instance is recovery.pem
3. Run this command, if necessary, to ensure your key is not publicly viewable.

ⓘ Public DNS copied recovery.pem

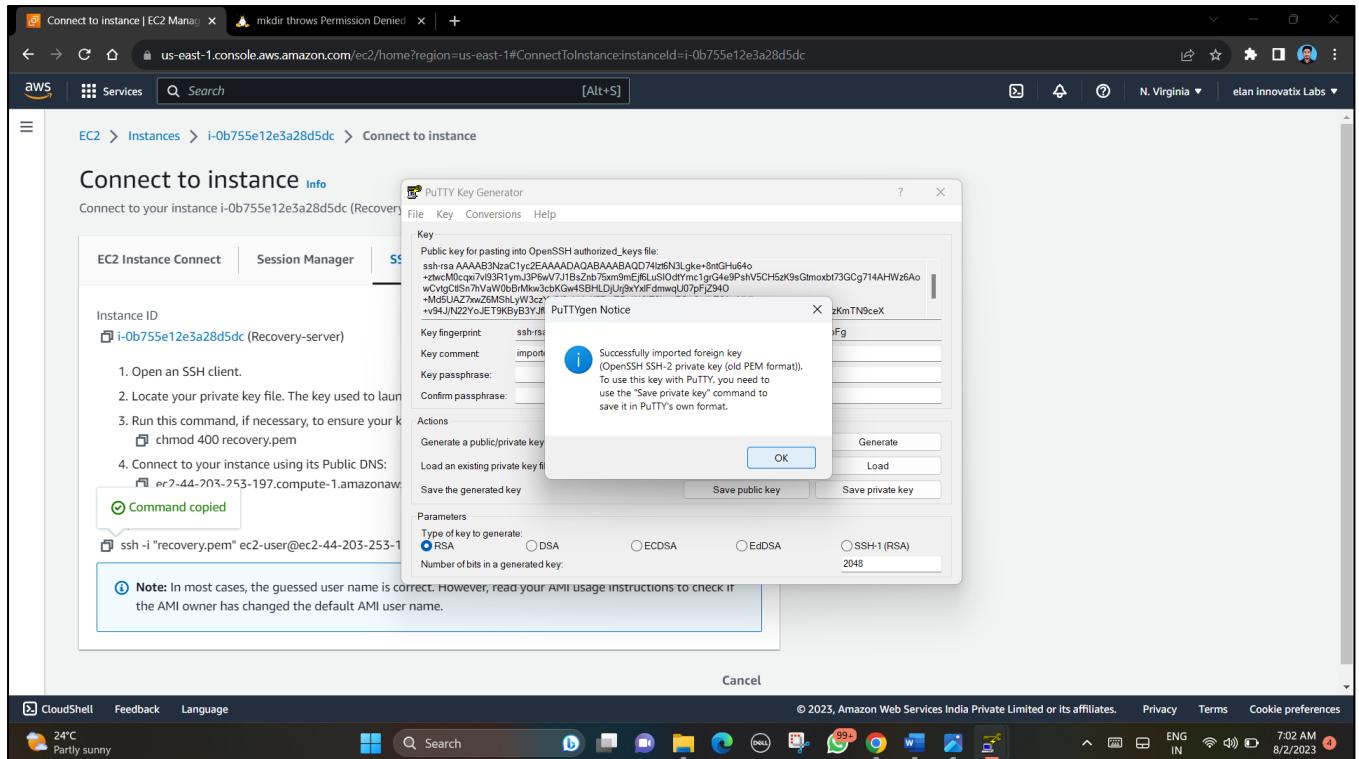
Connect to your instance using its Public DNS:  
ec2-44-203-253-197.compute-1.amazonaws.com

Example:  
ssh -i "recovery.pem" ec2-user@ec2-44-203-253-197.compute-1.amazonaws.com

ⓘ Note: In most cases, the guessed user name is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name.

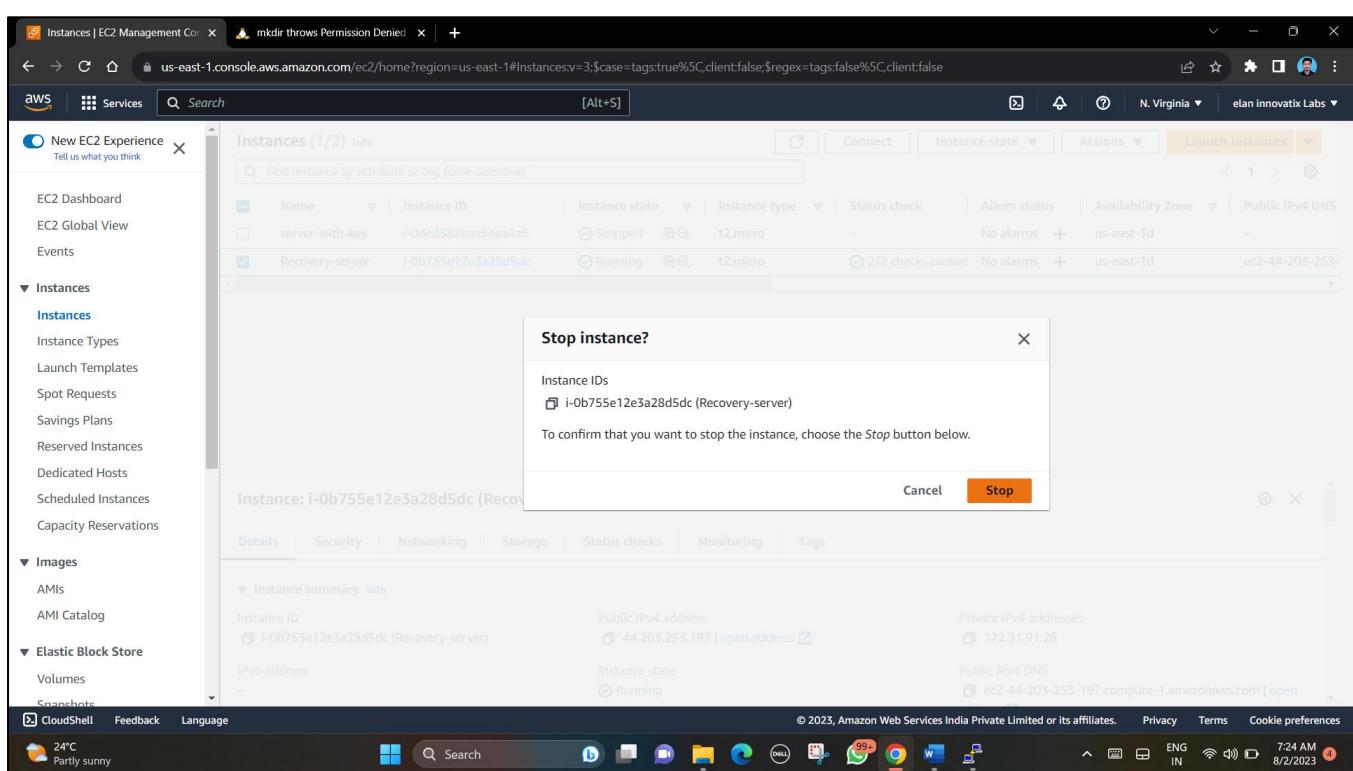
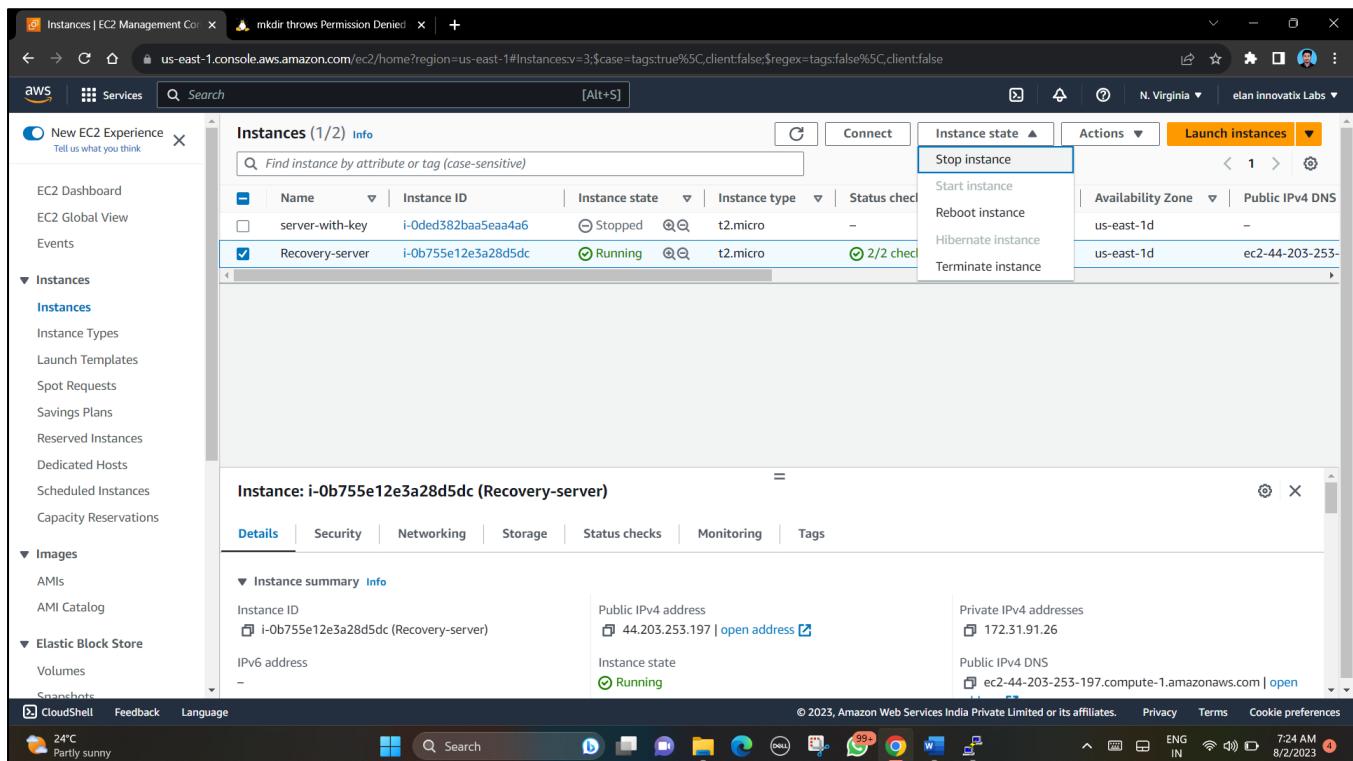
Cancel

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```

root@ip-172-31-91-26:~# ssh -i "recovery.pem" ec2-user@ec2-44-203-253-1
[ec2-user@ip-172-31-91-26:~]# lsblk
NAME  MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
xvda  202:0   0   8G  0  disk
└─xvda1 202:1   0   8G  0  part /
xvda127 259:0   0   1M  0  part
xvda128 259:1   0   10M 0  part
xvdf  202:80   0   8G  0  disk
└─xvdf1 202:81   0   8G  0  part
xvdf127 259:2   0   1M  0  part
xvdf128 259:3   0   10M 0  part
[ec2-user@ip-172-31-91-26:~]# sudo -i
[ec2-user@ip-172-31-91-26:~]# mkdir /mnt/recoveryLost
[ec2-user@ip-172-31-91-26:~]# ls /mnt/recoveryLost
[ec2-user@ip-172-31-91-26:~]# mount -o rw,nouuid /dev/xvdf1 /mnt/recovery
mount: /mnt/recovery: mount point does not exist.
[ec2-user@ip-172-31-91-26:~]# mount -o rw,nouuid /dev/xvdf1 /mnt/recovery
mount: /mnt/recovery: mount point does not exist.
[ec2-user@ip-172-31-91-26:~]# mount -o nouuid /dev/xvdf1 /mnt/recoveryLost
[ec2-user@ip-172-31-91-26:~]# df -h
Filesystem  Size  Used  Avail Use% Mounted on
devtmpfs  4.0M  0  4.0M  0% /dev
tmpfs  475M  0  475M  0% /dev/shm
tmpfs  190M  2.8M  188M  2% /run
/dev/xvda1  8.0G  1.5G  6.5G  19% /
tmpfs  475M  0  475M  0% /tmp
tmpfs  95M  0  95M  0% /run/user/1000
/dev/xvdf1  8.0G  1.5G  6.5G  19% /mnt/recoveryLost
[ec2-user@ip-172-31-91-26:~]# cd /home/ec2-user/.ssh/
[ec2-user@ip-172-31-91-26:~.ssh]# ls
authorized_keys
[ec2-user@ip-172-31-91-26:~.ssh]# cat authorized_keys >> /mnt/recoveryLost/home/ec2-user/.ssh/authorized_keys
[ec2-user@ip-172-31-91-26:~.ssh]# umount /mnt/recoveryLost
[ec2-user@ip-172-31-91-26:~.ssh]# df -h
Filesystem  Size  Used  Avail Use% Mounted on
devtmpfs  4.0M  0  4.0M  0% /dev
tmpfs  475M  0  475M  0% /dev/shm
tmpfs  190M  2.8M  188M  2% /run
/dev/xvda1  8.0G  1.5G  6.5G  19% /
tmpfs  475M  0  475M  0% /tmp
tmpfs  95M  0  95M  0% /run/user/1000
[ec2-user@ip-172-31-91-26:~.ssh]# 
```



Volumes | EC2 Management Con x mkdir throws Permission Denied + us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Volumes:

Successfully attached volume vol-0f3e792e5005ad8b5 to instance i-0b755e12e3a28d5dc.

Volumes (1/2) Info

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created
server-with-key	vol-0f3e792e5005ad8b5	gp3	8 GiB	3000	125	snap-096dd96...	2023/08/02 06:44 GMT+5:...
-	vol-0b92dcb03df02e14f	gp3	8 GiB	3000	125	snap-096dd96...	2023/08/02 06:45 GMT+5:...

Actions Create volume

Detach vol-0f3e792e5005ad8b5?

After you detach a volume, you might still be charged for volume storage. If you no longer need the volume, delete it to stop incurring charges.

Are you sure that you want to detach volume vol-0f3e792e5005ad8b5?

Cancel Detach

Volume ID: vol-0f3e792e5005ad8b5 (server-with-key)

Details Status checks Monitoring

Volume ID: vol-0f3e792e5005ad8b5 (server-with-key)

AWS Compute Optimizer finding: Opt-in to AWS Compute Optimizer for recommendations. | Learn more

Volume state: In-use

IOPS: 3000

Throughput: 125

Encryption: Not encrypted

KMS key ID: -

KMS key alias: -

KMS key ARN: -

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Volumes | EC2 Management Con x + us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Volumes:

Actions Create volume

Modify volume

Create snapshot

Create snapshot lifecycle policy

Delete volume

Attach volume

Detach volume

Force detach volume

Manage auto-enabled I/O

Manage tags

Fault injection

Volumes (1/2) Info

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot
server-with-key	vol-0f3e792e5005ad8b5	gp3	8 GiB	3000	125	snap-096d...
-	vol-0b92dcb03df02e14f	gp3	8 GiB	3000	125	snap-096d...

Volume ID: vol-0f3e792e5005ad8b5 (server-with-key)

Details Status checks Monitoring Tags

Volume ID: vol-0f3e792e5005ad8b5 (server-with-key)

AWS Compute Optimizer finding: Opt-in to AWS Compute Optimizer for recommendations. | Learn more

Volume state: Available

IOPS: 3000

Throughput: 125

Encryption: Not encrypted

KMS key ID: -

KMS key alias: -

KMS key ARN: -

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Attach volume | EC2 Management

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#AttachVolume?volumeId=vol-0f3e792e5005ad8b5

EC2 > Volumes > vol-0f3e792e5005ad8b5 > Attach volume

### Attach volume Info

Attach a volume to an instance to use it as you would a regular physical hard disk drive.

**Basic details**

Volume ID: vol-0f3e792e5005ad8b5 (server-with-key)

Availability Zone: us-east-1d

Instance: Info i-0ded382baa5eaa4a6

Device name: Info /dev/xvda

Recommended device names for Linux: /dev/sda1 for root volume. /dev/sdf[fp] for data volumes.

ⓘ Newer Linux kernels may rename your devices to /dev/xvdf through /dev/xvdp internally, even when the device name entered here (and shown in the details) is /dev/sdf through /dev/sdp.

Cancel **Attach volume**

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Instances | EC2 Management

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:v=3;\$case=tags:true%5C,client:false;\$regex=tags:false%5C,client:false

New EC2 Experience Tell us what you think

EC2 Dashboard

EC2 Global View

Events

Instances

- Instances
- Instance Types
- Launch Templates
- Spot Requests
- Savings Plans
- Reserved Instances
- Dedicated Hosts
- Scheduled Instances
- Capacity Reservations

Images

- AMIs
- AMI Catalog

Elastic Block Store

- Volumes
- Snapshots
- Lifecycle Manager

Network & Security

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### Instances (1/2) Info

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...
server-with-key	i-0ded382baa5eaa4a6	Running	t2.micro	Initializing	No alarms	us-east-1d	ec2-44-212-68-143.co...	44.212.68.143
Recovery-server	i-0b755e12e3a28d5dc	Stopped	t2.micro	-	No alarms	us-east-1d	-	-

### Instance: i-0ded382baa5eaa4a6 (server-with-key)

Details Security Networking Storage Status checks Monitoring Tags

Instance ID: i-0ded382baa5eaa4a6 (server-with-key)

Public IPv4 address copied: 44.212.68.143 | open address

Private IPv4 addresses: 172.31.83.36

Instance state: Running

Public IPv4 DNS: ec2-44-212-68-143.compute-1.amazonaws.com | open address

```

MINGW64:/c/Users/Dell/Downloads

Dell@DESKTOP-58V9CNF MINGW64 ~
$ cd Downloads

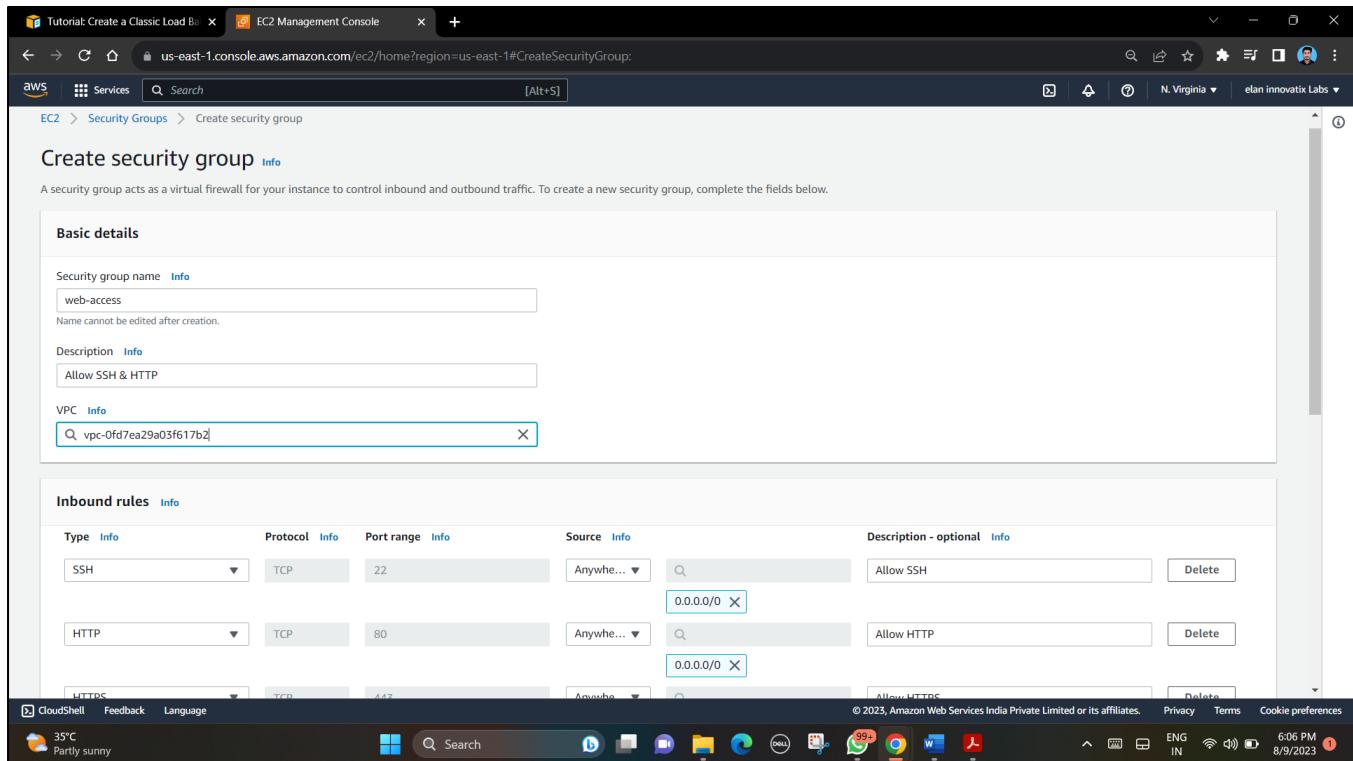
Dell@DESKTOP-58V9CNF MINGW64 ~/Downloads
$ ssh -i recovery.pem ec2-user@44.212.68.143
The authenticity of host '44.212.68.143 (44.212.68.143)' can't be established.
ED25519 key fingerprint is SHA256:eYITF5wxsbSzgG4eBm/SPBkWKH2nNc3Z49koT4c0trw.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '44.212.68.143' (ED25519) to the list of known hosts.

,      #
~\_\_ #####      Amazon Linux 2023
~~\_\_ #####\_
~~\_\_ \#\#\|      https://aws.amazon.com/linux/amazon-linux-2023
~~\_\_ \#/  _\-->
~~\_\_ V~'  _\-->
~~\_\_ _\_  _\_
~~\_\_ /  _\_
~~\_\_ /m,  _\_
Last login: Wed Aug 2 02:01:40 2023 from 18.206.107.28
[ec2-user@ip-172-31-83-36 ~]$ echo "hai"
hai
[ec2-user@ip-172-31-83-36 ~]$ exit
Logout
Connection to 44.212.68.143 closed.

Dell@DESKTOP-58V9CNF MINGW64 ~/Downloads
$
```

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 IP
server-with-key	i-0ded382baa5eaa4a6	Running	t2.micro	2/2 checks passed	No alarms	us-east-1d	ec2-44-212-68-143.co...	44.212.68.143
Recovery-server	i-0b755e12e3a28d5dc	Stopped	t2.micro	-	No alarms	us-east-1d	-	-

## 7. SOURCE CODE (Creating and Configuring Elastic Load Balancer):



**Create security group** Info

A security group acts as a virtual firewall for your instance to control inbound and outbound traffic. To create a new security group, complete the fields below.

**Basic details**

Security group name Info  
web-access

Name cannot be edited after creation.

Description Info  
Allow SSH & HTTP

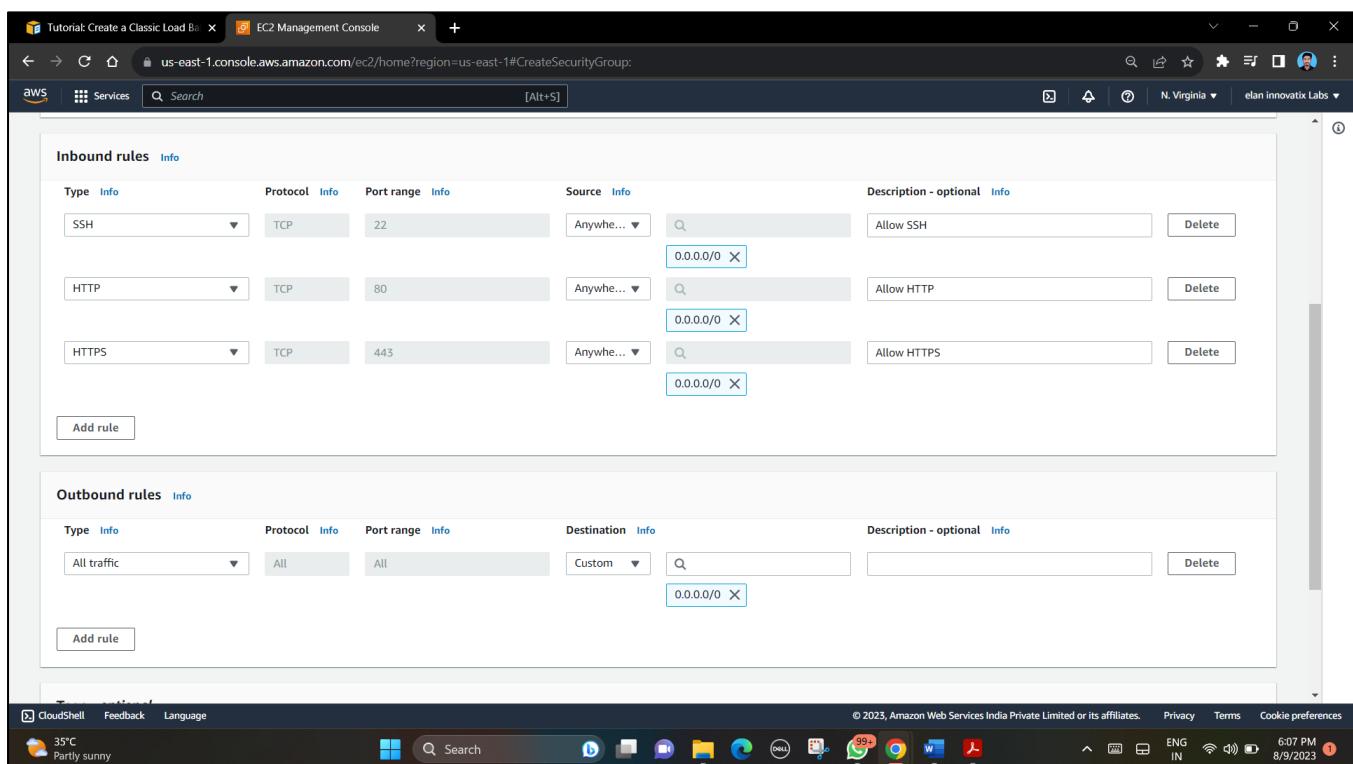
VPC Info  
vpc-0fd7ea29a03f617b2

**Inbound rules** Info

Type <small>Info</small>	Protocol <small>Info</small>	Port range <small>Info</small>	Source <small>Info</small>	Description - optional <small>Info</small>
SSH	TCP	22	Anywhere... <small>Info</small>	Allow SSH
HTTP	TCP	80	Anywhere... <small>Info</small>	Allow HTTP
HTTPS	TCP	443	Anywhere... <small>Info</small>	Allow HTTPS

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**Inbound rules** Info

Type <small>Info</small>	Protocol <small>Info</small>	Port range <small>Info</small>	Source <small>Info</small>	Description - optional <small>Info</small>
SSH	TCP	22	Anywhere... <small>Info</small>	Allow SSH
HTTP	TCP	80	Anywhere... <small>Info</small>	Allow HTTP
HTTPS	TCP	443	Anywhere... <small>Info</small>	Allow HTTPS

Add rule

**Outbound rules** Info

Type <small>Info</small>	Protocol <small>Info</small>	Port range <small>Info</small>	Destination <small>Info</small>	Description - optional <small>Info</small>
All traffic	All	All	Custom	0.0.0.0/0

Add rule

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Tutorial: Create a Classic Load Balancer

EC2 Management Console

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateSecurityGroup:

Services

Search

0.0.0.0/0 X

HTTPS TCP 443 Anywhere... Allow HTTPS Delete

0.0.0.0/0 X

Add rule

**Outbound rules** Info

Type Info Protocol Info Port range Info Destination Info Description - optional Info

All traffic All All Custom 0.0.0.0/0 X

Add rule

**Tags - optional**

A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

No tags associated with the resource.

Add new tag

You can add up to 50 more tags

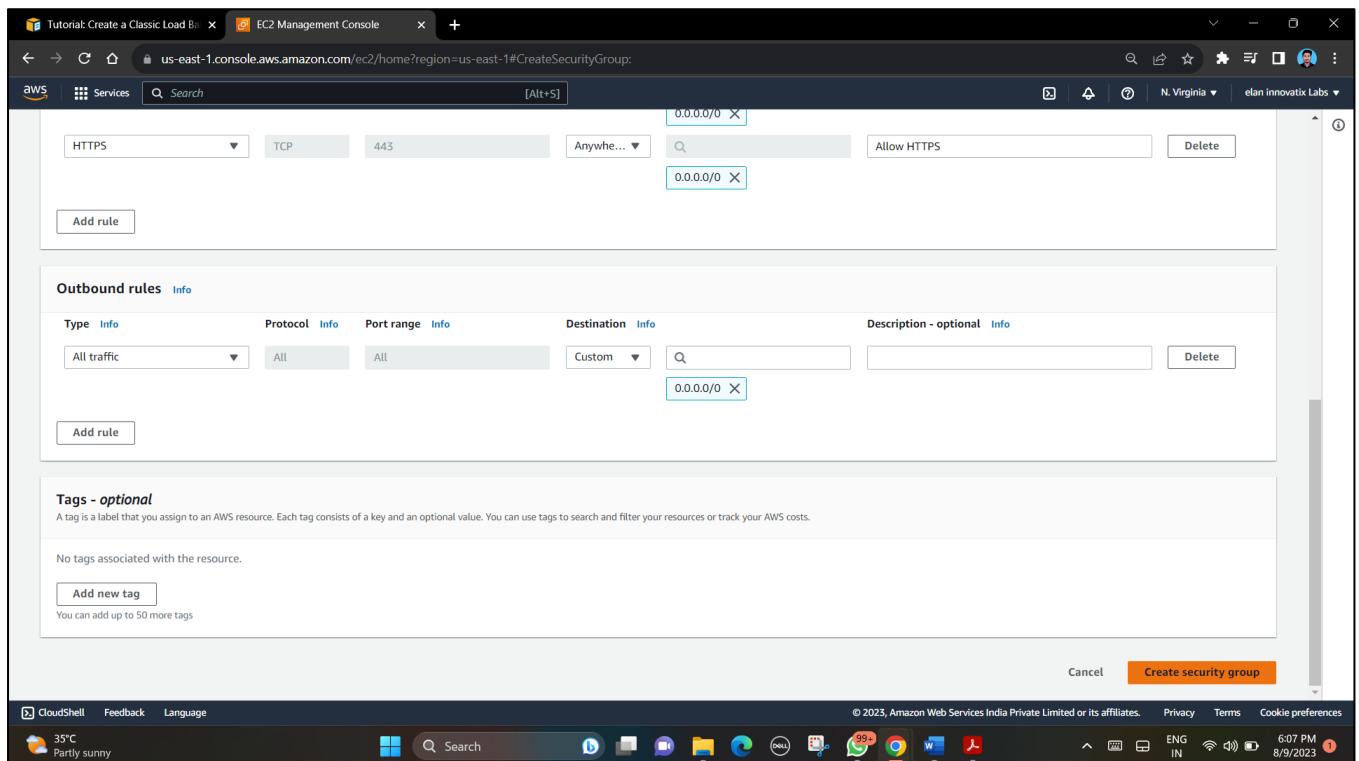
Cancel Create security group

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ENG IN 6:07 PM 8/9/2023



Tutorial: Create a Classic Load Balancer

EC2 Management Console

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#SecurityGroup:groupId=sg-04edbd9879de1abd1

Services

Search

Security group (sg-04edbd9879de1abd1 | web-access) was created successfully

Details

EC2 > Security Groups > sg-04edbd9879de1abd1 - web-access

sg-04edbd9879de1abd1 - web-access

Actions

**Details**

Security group name	Security group ID	Description	VPC ID
web-access	sg-04edbd9879de1abd1	Allow SSH & HTTP	vpc-0fd7ea29a03f617b2
Owner	Inbound rules count	Outbound rules count	
691407528662	3 Permission entries	1 Permission entry	

Inbound rules Outbound rules Tags

You can now check network connectivity with Reachability Analyzer

Run Reachability Analyzer

**Inbound rules (3)**

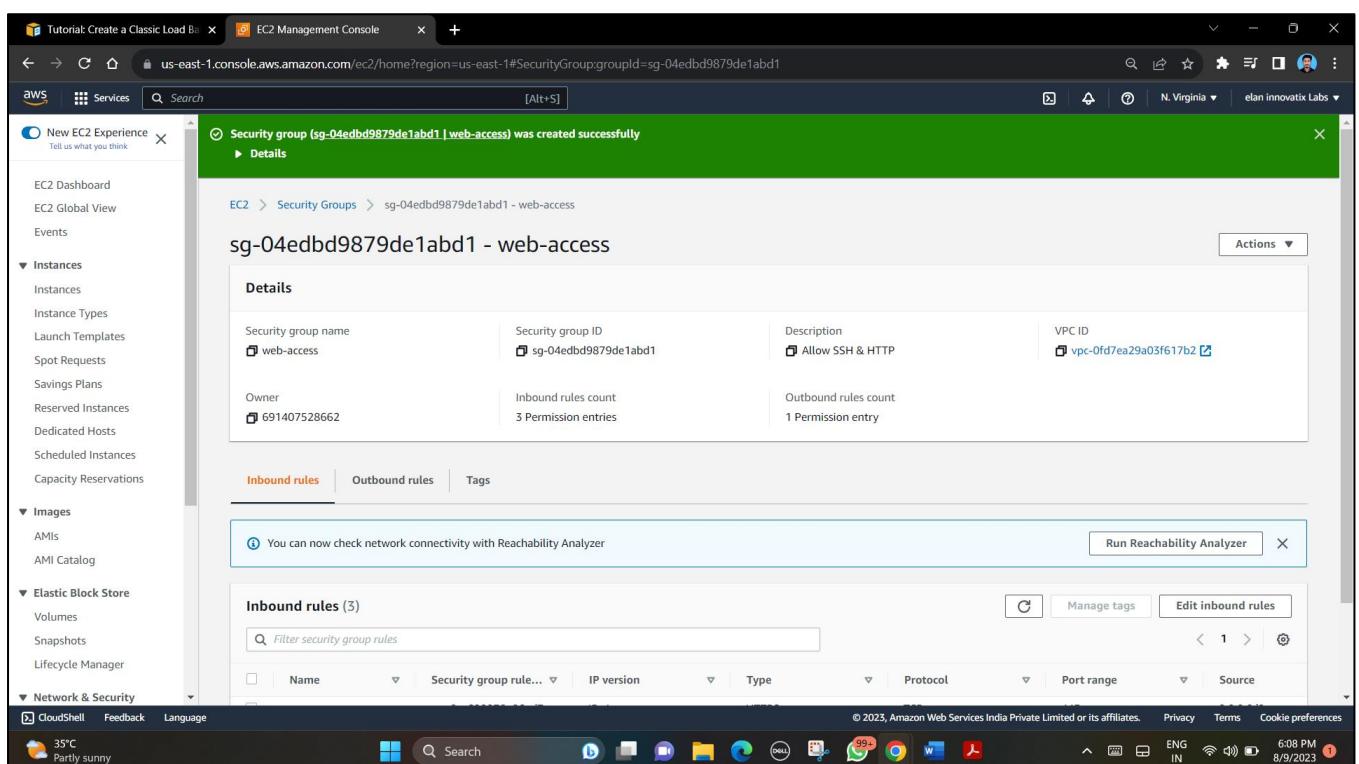
Name	Security group rule...	IP version	Type	Protocol	Port range	Source
Allow SSH	sg-04edbd9879de1abd1	IPv4	tcp	tcp	22	0.0.0.0/0
Allow HTTP	sg-04edbd9879de1abd1	IPv4	tcp	tcp	80	0.0.0.0/0
Allow HTTPS	sg-04edbd9879de1abd1	IPv4	tcp	tcp	443	0.0.0.0/0

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EC2 Management Console

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LaunchInstances:

Name and tags

Name: Machine-1

Application and OS Images (Amazon Machine Image)

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.

Quick Start

Amazon Linux AWS macOS Ubuntu Windows Red Hat SUSE Linux

Amazon Machine Image (AMI)

Amazon Linux 2023 AMI (ami-0f34c5ae932e6f0e4) (64-bit (x86)) / ami-0964ad1dc1edd4bd2f (64-bit (Arm)) Free tier eligible

Description

Amazon Linux 2023 AMI 2023.1.20230725.0 x86\_64 HVM kernel-6.1

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Summary

Number of instances: 1

Software Image (AMI): Amazon Linux 2023 AMI 2023.1.2... read more

Virtual server type (instance type): t2.micro

Firewall (security group): web-access

Storage (volumes): 1 volume(s) - 8 GiB

Cancel Launch instance Review commands

EC2 Management Console

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LaunchInstances:

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

recovery

Create new key pair

Network settings

Network: vpc-016f735de63ac414a

Subnet: No preference (Default subnet in any availability zone)

Auto-assign public IP: Enabled

Firewall (security groups)

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

Common security groups

Select security groups

web-access sg-0e0dc76acbe4b6190 X

VPC: vpc-016f735de63ac414a

Security groups that you add or remove here will be added to or removed from all your network interfaces.

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Summary

Number of instances: 1

Software Image (AMI): Amazon Linux 2023 AMI 2023.1.2... read more

Virtual server type (instance type): t2.micro

Firewall (security group): web-access

Storage (volumes): 1 volume(s) - 8 GiB

Cancel Launch instance Review commands

```

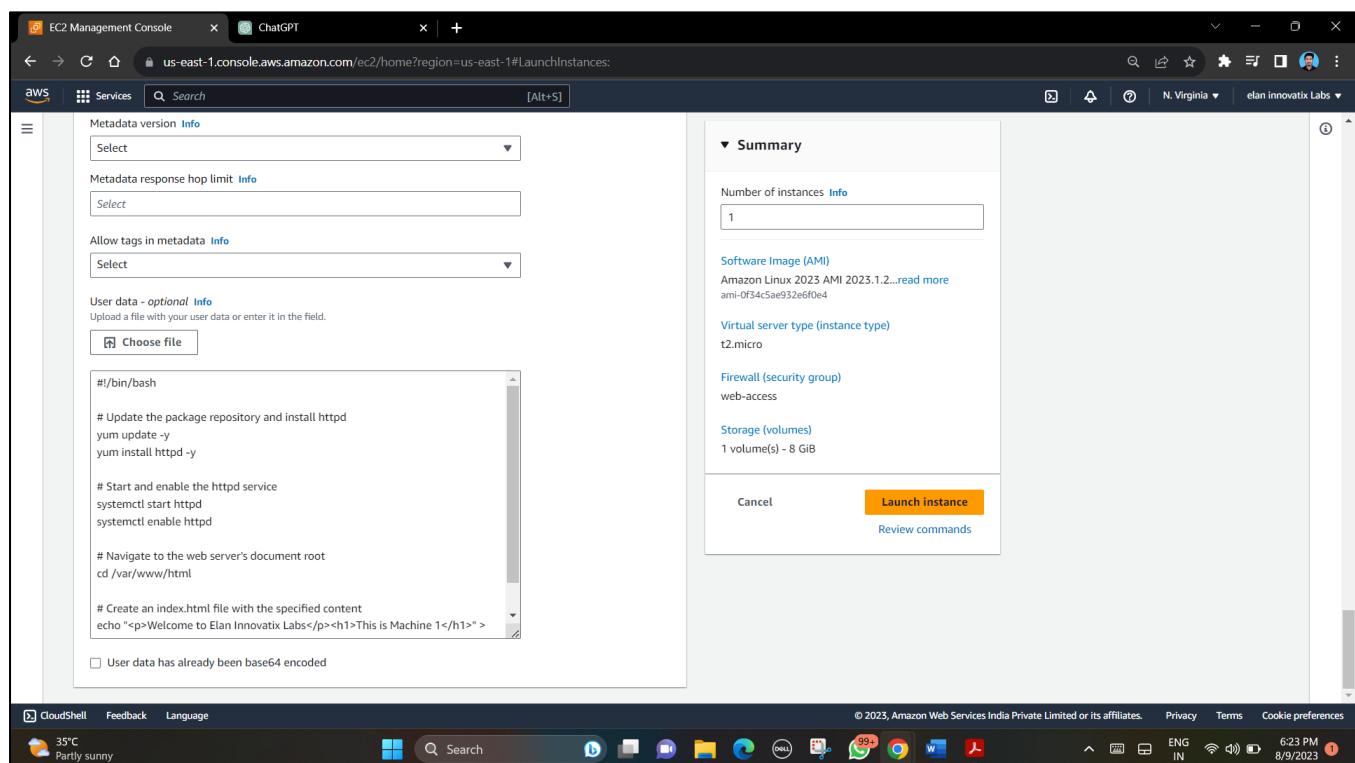
#!/bin/bash
# Update the package repository and install httpd
yum update -y
yum install httpd -y

# Start and enable the httpd service
systemctl start httpd
systemctl enable httpd

# Navigate to the web server's document root
cd /var/www/html

# Create an index.html file with the specified content
echo "<p>Welcome to Elan Innovatix Labs</p><h1>This is Machine 1</h1>" > index.html

```



EC2 Management Console > ChatGPT

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LaunchInstances:

AWS Services Search [Alt+S]

EC2 Instances Launch an instance

Launch an instance Info

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags Info

Name: Machine 2 Add additional tags

Application and OS Images (Amazon Machine Image) 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

Recent AMIs: Amazon Linux, macOS, Ubuntu, Windows, Red Hat, SUSE Linux, Browse more AMIs

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Summary

Number of instances Info: 1

Software Image (AMI): Amazon Linux 2023 AMI 2023.1.2... read more  
ami-0f34c5ae932e6f0e4

Virtual server type (instance type): t2.micro

Firewall (security group): web-access

Storage (volumes): 1 volume(s) - 8 GiB

Cancel **Launch instance** Review commands

Instances | EC2 Management Con

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instancesv=3;\$case=tags:true%5C,client:false;\$regex=tags:false%5C,client:false

New EC2 Experience Tell us what you think

EC2 Dashboard EC2 Global View Events

Instances Instances Instance Types Launch Templates Spot Requests Savings Plans Reserved Instances Dedicated Hosts Scheduled Instances Capacity Reservations

Images AMIs AMI Catalog

Elastic Block Store Volumes Snapshots Lifecycle Manager

Network & Security

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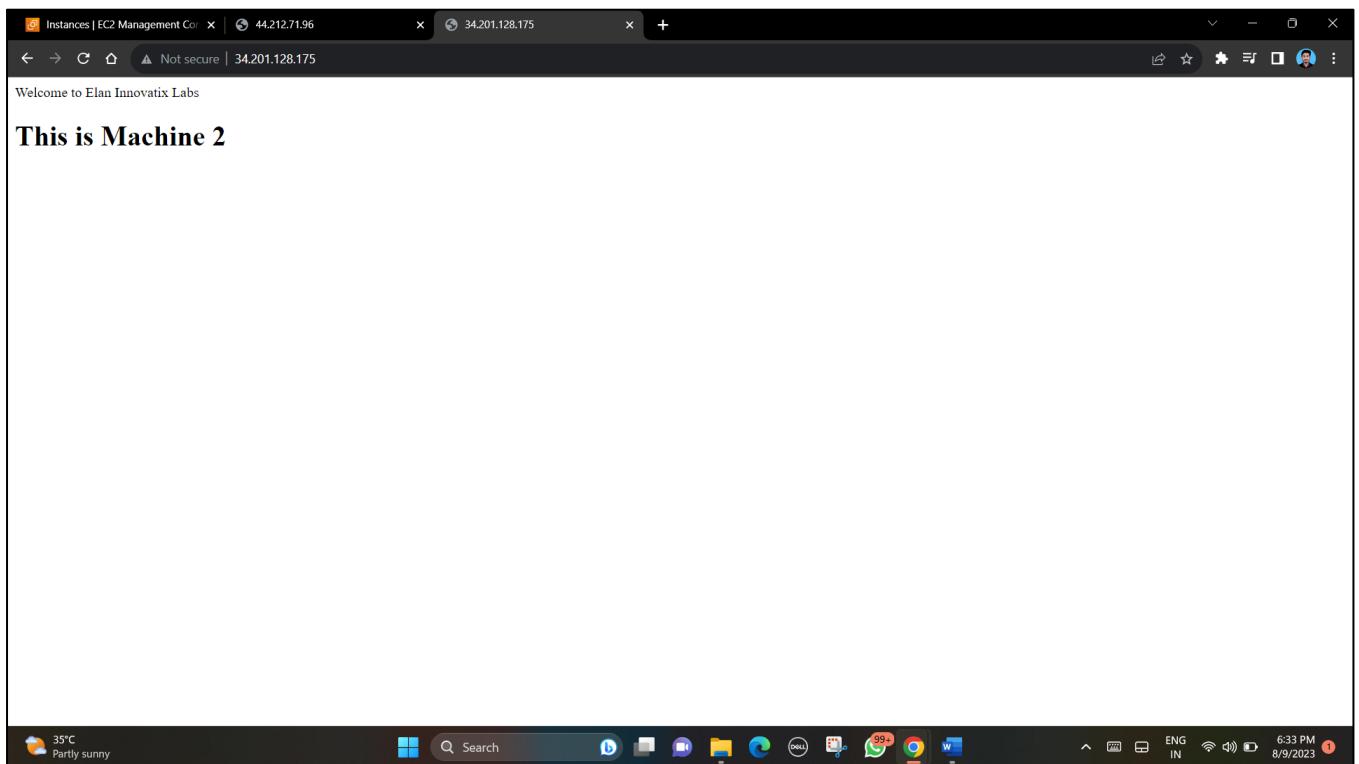
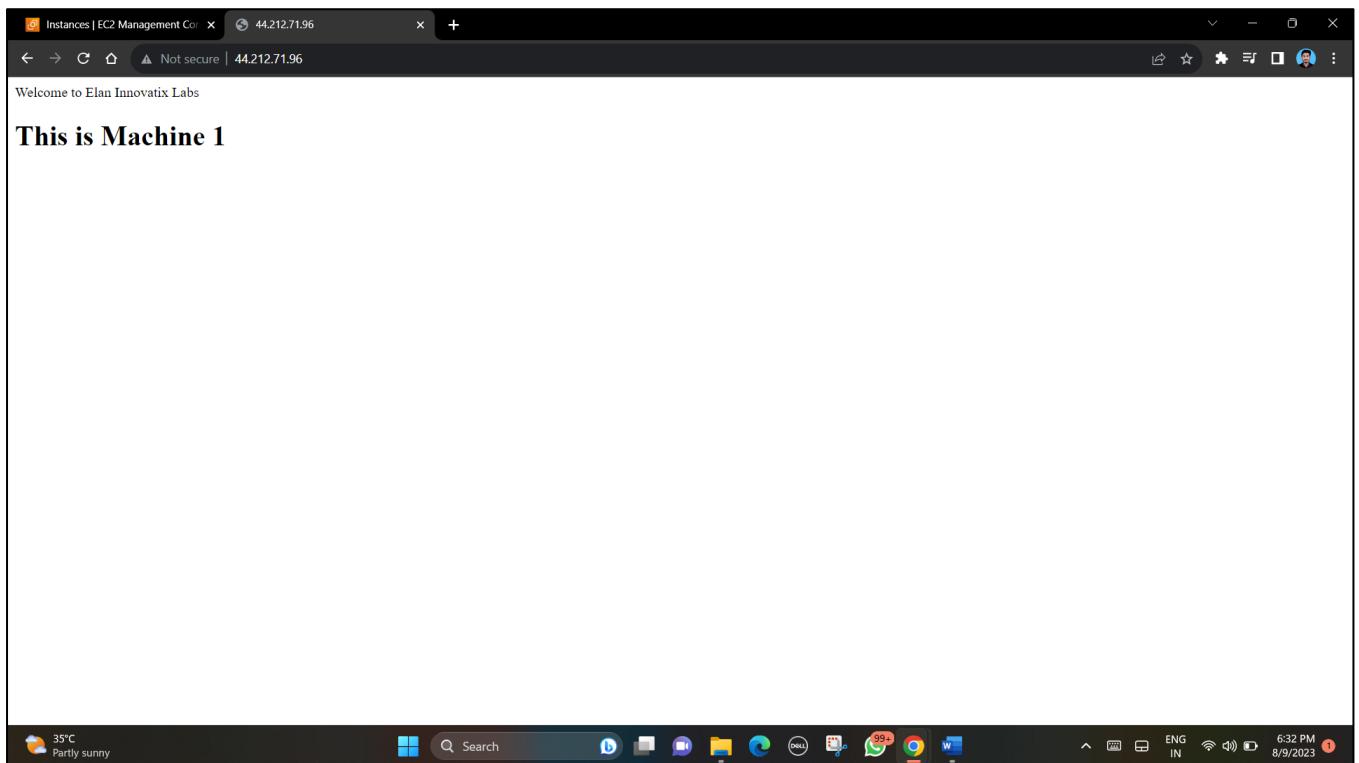
6:30 PM 8/9/2023 ENG IN 6:30 PM 8/9/2023

Instances (4) Info

Find instance by attribute or tag (case-sensitive)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4
server-with-key	i-0ded382baa5eaa4a6	Stopped	t2.micro	-	No alarms	us-east-1d	-	-
Recovery-server	i-0b755e12e3a28d5d	Stopped	t2.micro	-	No alarms	us-east-1d	-	-
Machine 2	i-00c66b95aa1e0252f	Running	t2.micro	Initializing	No alarms	us-east-1d	ec2-34-201-128-175.co...	34.201.128.
Machine-1	i-05732859e1e59ac1d	Running	t2.micro	2/2 checks passed	No alarms	us-east-1d	ec2-44-212-71-96.com...	44.212.71.9

Select an instance



Target groups | EC2 Management x 44.212.71.96 x 34.201.128.175 x +

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#TargetGroups:

AWS Services Search [Alt+S]

EC2 Target groups

Target groups Info

Search or filter target groups

Name ARN Port Protocol Target type Load balancer VPC ID

No target groups

You don't have any target groups in us-east-1

Create target group

0 target groups selected

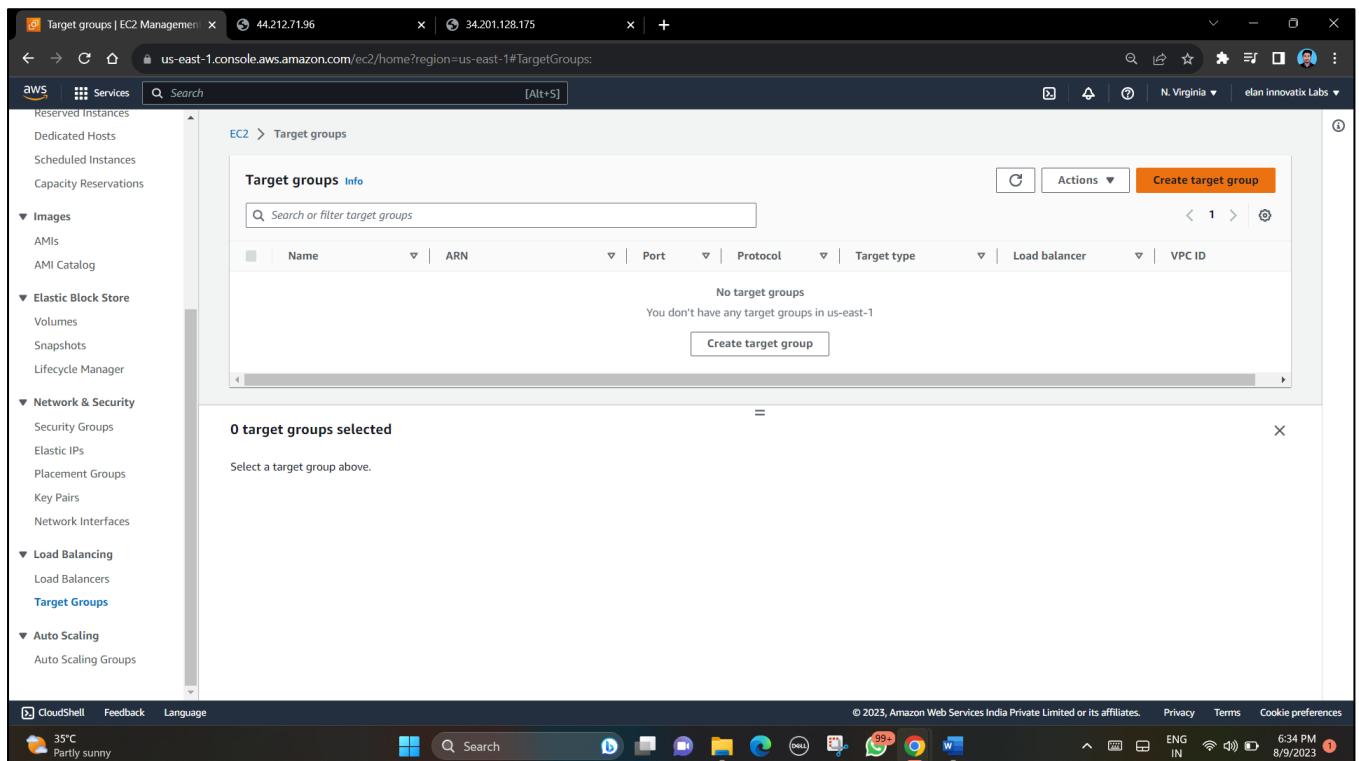
Select a target group above.

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Create target group | EC2 Management x 44.212.71.96 x 34.201.128.175 x +

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateTargetGroup:

AWS Services Search [Alt+S]

Application Load Balancer

- Offers the flexibility for a Network Load Balancer to accept and route TCP requests within a specific VPC.
- Facilitates using static IP addresses and PrivateLink with an Application Load Balancer.

Target group name

TG-1

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

1-65535

VPC

Select the VPC with the instances that you want to include in the target group.

vpc-016f735de63ac414a  
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.

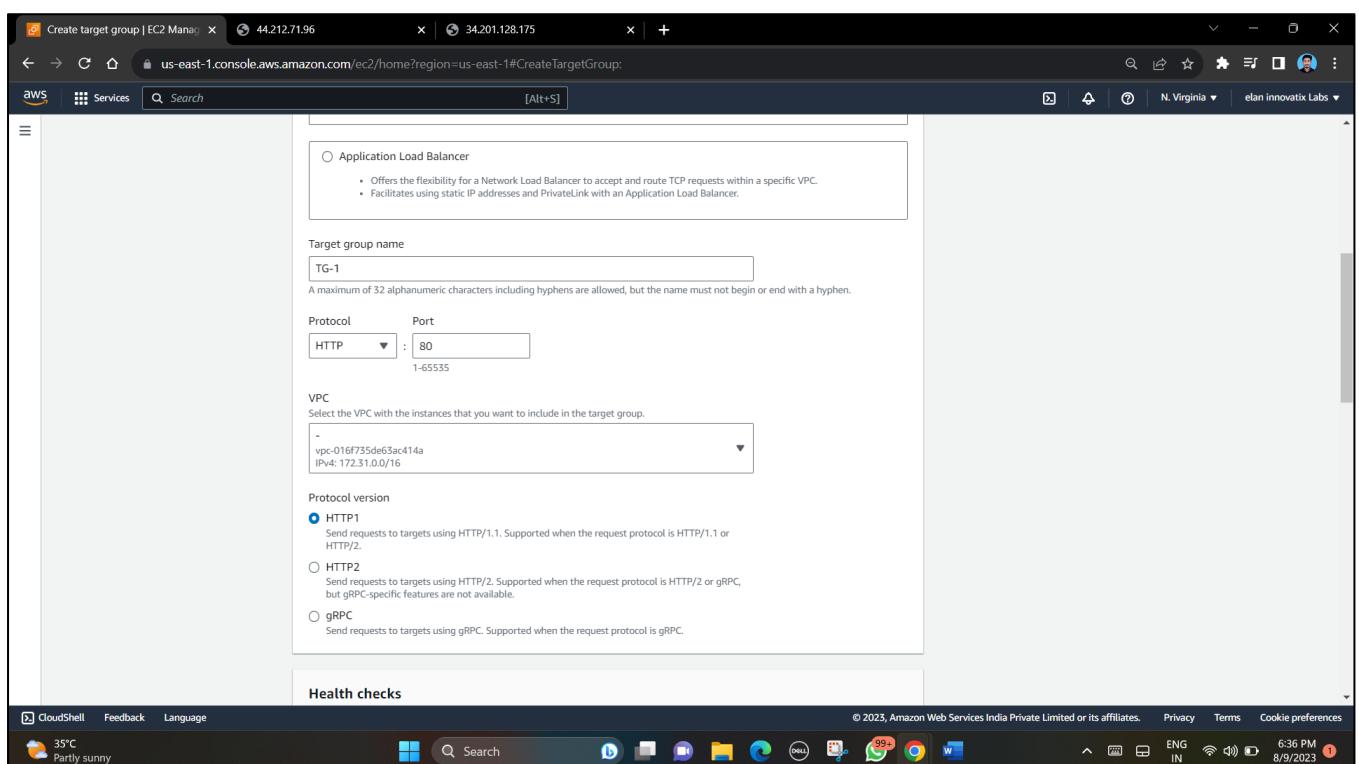
Health checks

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Create target group | EC2 Manager | 44.212.71.96 | 34.201.128.175 | + | us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateTargetGroup: | Search | [Alt+S]

aws Services

Timeout  
The amount of time, in seconds, during which no response means a failed health check.  
5 seconds  
2-120

Interval  
The approximate amount of time between health checks of an individual target.  
30 seconds  
5-300

Success codes  
The HTTP codes to use when checking for a successful response from a target. You can specify multiple values (for example, "200,202") or a range of values (for example, "200-299").  
200

Attributes

Certain default attributes will be applied to your target group. You can view and edit them after creating the target group.

Tags - optional  
Consider adding tags to your target group. Tags enable you to categorize your AWS resources so you can more easily manage them.

Cancel Next

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Create target group | EC2 Manager | 44.212.71.96 | 34.201.128.175 | + | us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateTargetGroup: | Search | [Alt+S]

aws Services

i-05732859e1e59ac1d Machine-1 Running web-access us-east-1d subnet-085045e0e0b8dfb50

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

2 selections are now pending below. Include more or register targets when ready.

Review targets

Targets (2)

Remove	Health status	Instance ID	Name	Port	State	Security groups	Zone	Subnet ID
X	Pending	i-05732859e1e59ac1d	Machine-1	80	Running	web-access	us-east-1d	subnet-085045e0e0b8dfb50
X	Pending	i-00c66b95aa1e0252f	Machine 2	80	Running	web-access	us-east-1d	subnet-085045e0e0b8dfb50

2 pending

Cancel Previous Create target group

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Load balancers | EC2 Management x 44.212.71.96 x 34.201.128.175 x +

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LoadBalancers:

**EC2 > Load balancers**

Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.

Filter by property or value

Name	DNS name	State	VPC ID	Availability Zones	Type	Date created
No load balancers						
You don't have any load balancers in us-east-1						
<a href="#">Create load balancer</a>						

**0 load balancers selected**

Select a load balancer above.

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ENG IN 6:39 PM 8/9/2023

Compare and select load balancer x 44.212.71.96 x 34.201.128.175 x +

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#SelectCreateELBWizard:

**Application Load Balancer** [Info](#)

Choose an Application Load Balancer when you need a flexible feature set for your applications with HTTP and HTTPS traffic. Operating at the request level, Application Load Balancers provide advanced routing and visibility features targeted at application architectures, including microservices and containers.

[Create](#)

**Network Load Balancer** [Info](#)

Choose a Network Load Balancer when you need ultra-high performance, TLS offloading at scale, centralized certificate deployment, support for UDP, and static IP addresses for your applications. Operating at the connection level, Network Load Balancers are capable of handling millions of requests per second securely while maintaining ultra-low latencies.

[Create](#)

**Gateway Load Balancer** [Info](#)

Choose a Gateway Load Balancer when you need to deploy and manage a fleet of third-party virtual appliances that support GENEVE. These appliances enable you to improve security, compliance, and policy controls.

[Create](#)

▶ [Classic Load Balancer - previous generation](#)

CloudShell Feedback Language

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Create application load balancer x 44.212.71.96 x 34.201.128.175 x +

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateALBWizard:

AWS Services Search [Alt+S]

EC2 > Load balancers > Create Application Load Balancer

### Create Application Load Balancer Info

The Application Load Balancer distributes incoming HTTP and HTTPS traffic across multiple targets such as Amazon EC2 instances, microservices, and containers, based on request attributes. When the load balancer receives a connection request, it evaluates the listener rules in priority order to determine which rule to apply, and if applicable, it selects a target from the target group for the rule action.

▶ How Elastic Load Balancing works

**Basic configuration**

Load balancer name Info  
Name must be unique within your AWS account and can't be changed after the load balancer is created.  
 A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.

Scheme Info  
Scheme can't be changed after the load balancer is created.  
 Internet-facing An internet-facing load balancer routes requests from clients over the internet to targets. Requires a public subnet. Learn more  
 Internal An internal load balancer routes requests from clients to targets using private IP addresses.

IP address type Info  
Select the type of IP addresses that your subnets use.  
 IPv4 Recommended for internal load balancers.  
 Dualstack Includes IPv4 and IPv6 addresses.

**Network mapping Info**  
The load balancer routes traffic to targets in the selected subnets, and in accordance with your IP address settings.

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Create application load balancer x 44.212.71.96 x 34.201.128.175 x +

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateALBWizard:

AWS Services Search [Alt+S]

Mappings Info  
Select at least two Availability Zones and one subnet per zone. The load balancer routes traffic to targets in these Availability Zones only. Availability Zones that are not supported by the load balancer or the VPC are not available for selection.

us-east-1a (use1-az4)  
Subnet   
IPv4 address Assigned by AWS

us-east-1b (use1-az6)  
Subnet   
IPv4 address Assigned by AWS

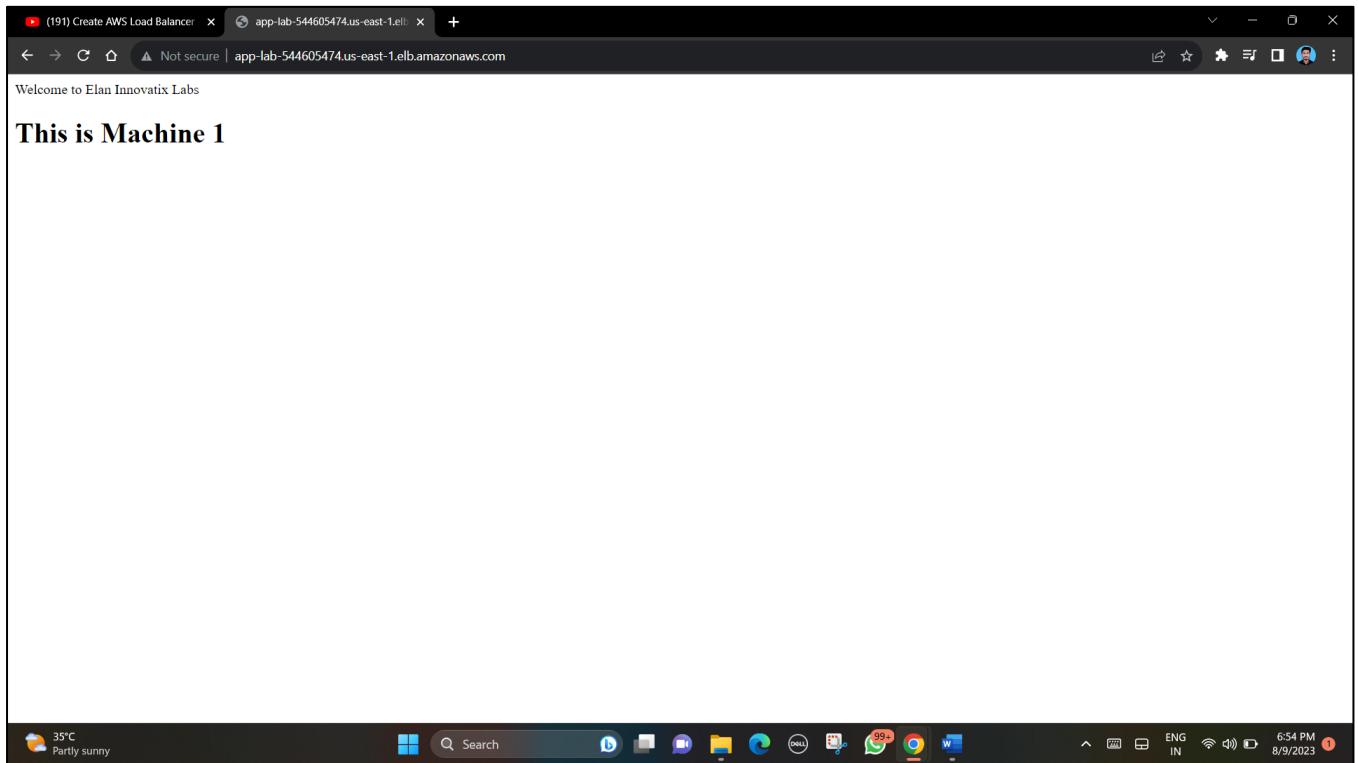
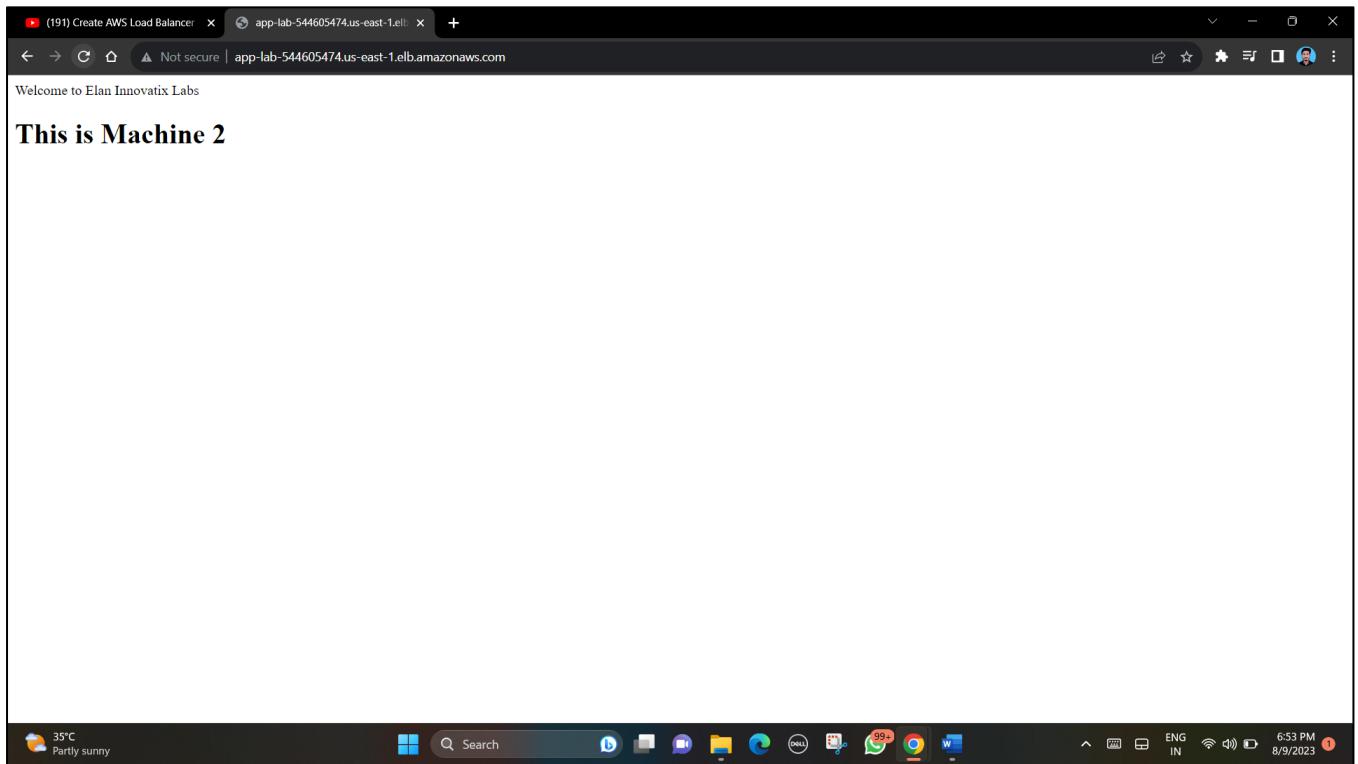
us-east-1c (use1-az1)  
Subnet   
IPv4 address Assigned by AWS

us-east-1d (use1-az2)

CloudShell Feedback Language 35°C Partly sunny 6:41 PM 8/9/2023 © 2023, Amazon Web Services India Private Limited or its affiliates. Privacy Terms Cookie preferences ENG IN

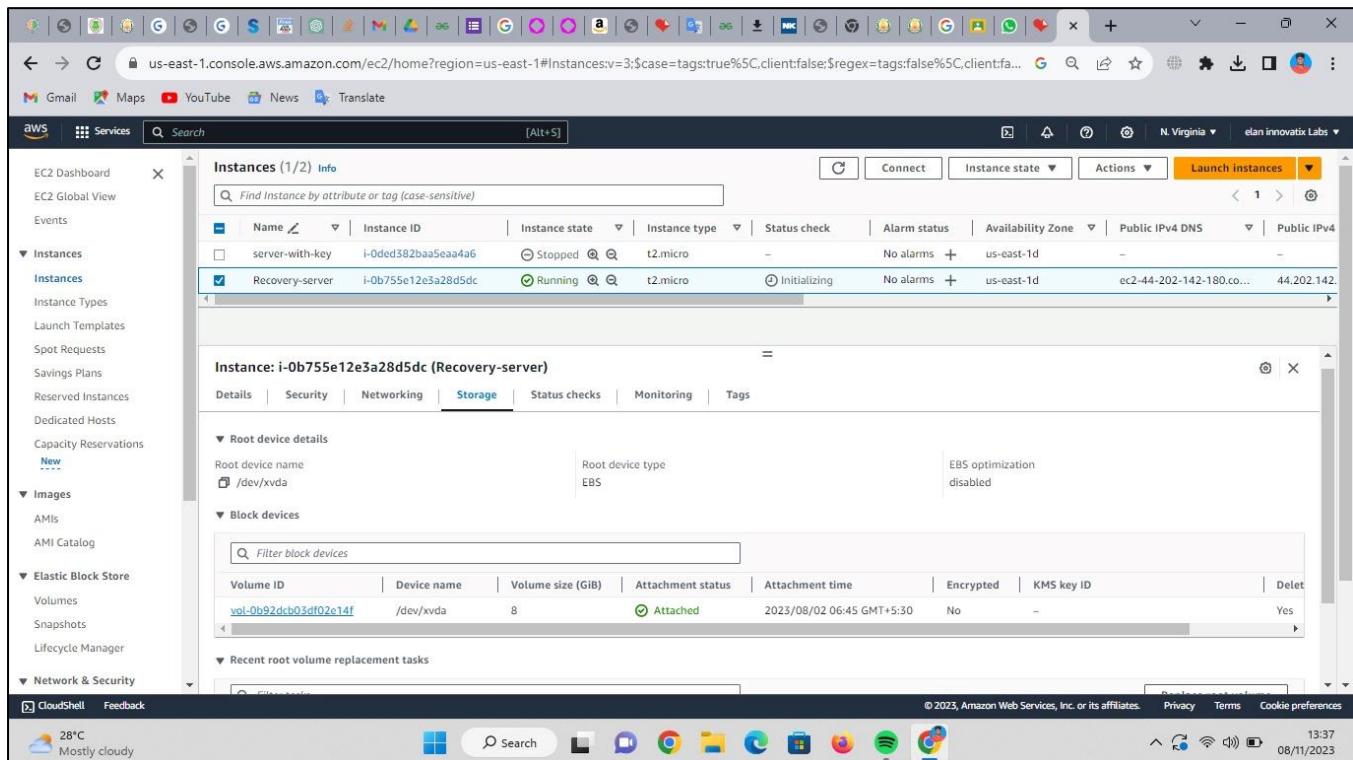


➤ *App-Lb-532196843.us-east-1.elb.amazonaws.com*





## 8. SOURCE CODE (Scheduling Auto Snapshot of volumes):



Instances (1/2) Info

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4
server-with-key	i-0ded382baa56aa4a6	Stopped	t2.micro	-	No alarms	us-east-1d	-	-
Recovery-server	i-0b755e12e3a28d5dc	Running	t2.micro	Initializing	No alarms	us-east-1d	ec2-44-202-142-180.co...	44.202.142...

Instance: i-0b755e12e3a28d5dc (Recovery-server)

Storage

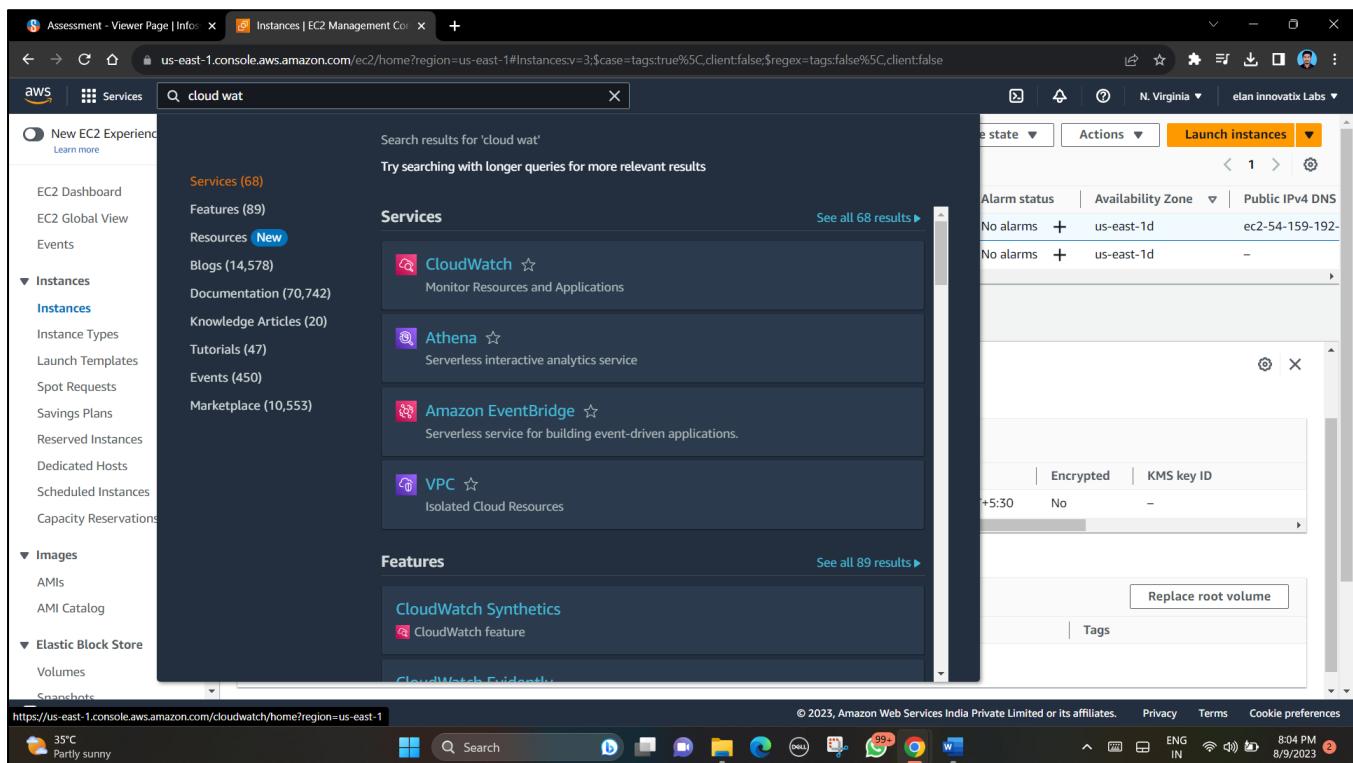
Root device details

Root device name	Root device type	EBS optimization
/dev/xvda	EBS	disabled

Block devices

Volume ID	Device name	Volume size (GiB)	Attachment status	Attachment time	Encrypted	KMS key ID	Delete
vol-0b92db03df02e14f	/dev/xvda	8	Attached	2023/08/02 06:45 GMT+5:30	No	-	Yes

Recent root volume replacement tasks



Search results for 'cloud wat'

Try searching with longer queries for more relevant results

Services

- CloudWatch
- Athena
- Amazon EventBridge
- VPC

Features

- CloudWatch Synthetics
- CloudWatch Evidence

The screenshot shows the AWS CloudWatch home page. The left sidebar lists various CloudWatch services: Alarms, Logs, Metrics, X-Ray traces, Events, Rules, Event Buses, Application monitoring, and Insights. The main content area is titled 'Get started with CloudWatch' and 'Get started with Application Insights'. It features four cards for CloudWatch Metrics (Create alarms), CloudWatch Logs (Create a default dashboard), CloudWatch Metrics (View logs), and CloudWatch Events (View events). Below these, there's a 'Get started with Application Insights' section with a 'Configure Application Insights' button. The bottom of the page shows a 'Cross service dashboard' and a weather widget indicating 28°C and mostly cloudy.

The screenshot shows the AWS Events home page, specifically the 'Create rule' wizard. The left sidebar shows steps: Step 2 (Define schedule), Step 3 (Select target(s)), Step 4 (optional: Configure tags), and Step 5 (Review and create). The main form is titled 'Rule detail' and includes fields for 'Name' (AutoSnap), 'Description - optional' (this snap short of volume), 'Event bus' (default), and 'Rule type' (Schedule, selected). A note about EventBridge Scheduler is present. At the bottom are 'Continue to create rule' and 'Continue in EventBridge Scheduler' buttons. The right sidebar contains a 'Rules' section with a brief description and a 'Learn More' link to various rule creation guides.

us-east-1.console.aws.amazon.com/events/home?region=us-east-1#/rules/create

Amazon EventBridge > Rules > Create rule

Define schedule [Info](#)

Step 1 [Define rule detail](#)

Step 2 [Define schedule](#)

Step 3 [Select target\(s\)](#)

Step 4 - optional [Configure tags](#)

Step 5 [Review and create](#)

Schedule pattern

Choose the schedule type that best meets your needs.

A fine-grained schedule that runs at a specific time, such as 8:00 a.m. PST on the first Monday of every month.

A schedule that runs at a regular rate, such as every 10 minutes.

Rate expression [Info](#)  
Enter a value and the unit of time to run the schedule.

rate(  Minutes [▼](#) )

Value Unit, e.g. mins, hours...

Cancel Previous **Next**

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Perambur Barra... Closed road 13:46 08/11/2023

us-east-1.console.aws.amazon.com/events/home?region=us-east-1#/rules/create

Amazon EventBridge > Rules > Create rule

Select target(s)

Step 4 - optional [Configure tags](#)

Step 5 [Review and create](#)

**Target 1**

Target types

Select an EventBridge event bus, EventBridge API destination (SaaS partner), or another AWS service as a target.

EventBridge event bus

EventBridge API destination

AWS service

Select a target [Info](#)  
Select target(s) to invoke when an event matches your event pattern or when schedule is triggered (limit of 5 targets per rule)

EBS Create Snapshot

Volume ID  
vol-0b92dc03df02e14f

Execution role

EventBridge needs permission to send events to the event bus of the above AWS account. By continuing, you are allowing us to do so.  
EventBridge and AWS Identity and Access Management [Info](#)

Create a new role for this specific resource

Use existing role

Amazon\_EventBridge\_Invoke\_Action\_On\_EBS\_Volume\_472797243

Additional settings

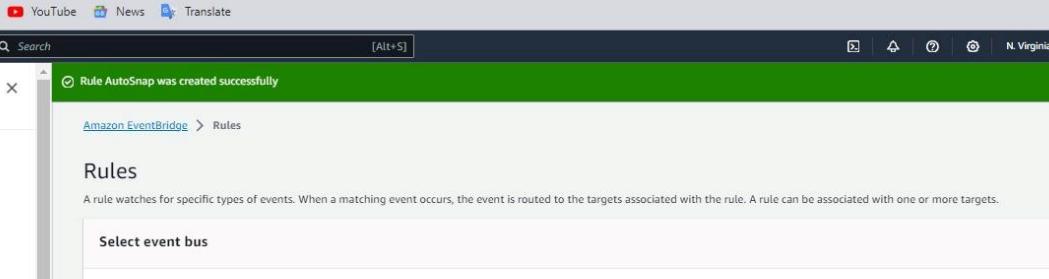
Add another target Cancel Skip to Review and create Previous **Next**

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30°C Mostly cloudy 13:48 08/11/2023

The screenshot shows the AWS EventBridge Rule creation wizard at Step 4: Configure tags - optional. The left sidebar lists steps: Step 1 (Define rule detail), Step 2 (Define schedule), Step 3 (Select target(s)), Step 4 (optional: Configure tags), and Step 5 (Review and create). The main content area is titled "Configure tags - optional" and contains a "Tags" section. It explains that a tag is a label assigned to an AWS resource, consisting of a key and an optional value. It also states that tags can be used to search and filter resources or track AWS costs. A message indicates "No tags associated with the resource." A "Add new tag" button is present, with a note below stating "You can add 50 more tags." On the right, a "Rate expression" panel is visible, explaining that a rate expression starts when the rule is created and runs the rule on a defined interval. It provides examples: "rate(1 minute)" runs the rule every minute and "rate(1 hour)" runs the rule every hour. A "Learn More" link and a "Rate expressions" link are also present. Navigation buttons "Cancel", "Previous", and "Next" are at the bottom.

The screenshot shows the AWS EventBridge Rule creation wizard at Step 4: Configure tag(s). The left sidebar lists steps: Step 1 (Define rule detail), Step 2 (Define schedule), Step 3 (Select target(s)), Step 4 (Configure tag(s)), and Step 5 (Review and create). The main content area is titled "Targets" and shows a table with one row. The row details are: Target Name: "create-snapshot", Type: "EBS Create Snapshot", Arn: "arn:aws:events:us-east-1:691407528662:target/create-snapshot", Input: "Constant", and Role: "Amazon\_EventBridge\_Invoke\_Action\_On\_EBS\_Volume\_472797243". Below the table, it says "Input to target: Constant" and "Additional parameters: --". The "Dead-letter queue (DLQ):" field is empty. On the right, a "Rate expression" panel is visible, explaining that a rate expression starts when the rule is created and runs the rule on a defined interval. It provides examples: "rate(1 minute)" runs the rule every minute and "rate(1 hour)" runs the rule every hour. A "Learn More" link and a "Rate expressions" link are also present. A "Step 4: Configure tag(s)" button is at the top right. Navigation buttons "Cancel", "Previous", and "Create rule" are at the bottom. The bottom of the screen shows the Windows taskbar with various pinned icons and the system tray.



The screenshot shows the AWS EventBridge Rules page. A success message at the top states "Rule AutoSnap was created successfully". The left sidebar shows the "Amazon EventBridge" navigation path. The main content area displays the "Rules" section, which includes a "Select event bus" step and a "Rules (1)" table. The "Rules (1)" table lists a single rule named "AutoSnap" with the ARN "arn:aws:events:us-east-1:691407528662:rule/AutoSnap". The rule is marked as "Enabled".

Name	Status	Type	ARN
AutoSnap	Enabled	Scheduled Standard	arn:aws:events:us-east-1:691407528662:rule/AutoSnap

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Snapshots:

Gmail Maps YouTube News Translate

aws Services Search cloud watch

Snapshots (3) Info

Owned by me Search

Volume size	Description	Storage tier	Snapshot status	Started	Progress	Encryption	KMS key ID	KMS
8 GiB	–	Standard	Pending	2023/11/08 13:51 GMT+5:30	Unavailable (31%)	Not encrypted	–	–
8 GiB	–	Standard	Completed	2023/11/08 13:49 GMT+5:30	Available (100%)	Not encrypted	–	–
8 GiB	–	Standard	Pending	2023/11/08 13:50 GMT+5:30	Unavailable (99%)	Not encrypted	–	–

Select a snapshot above.

CloudShell Feedback 30°C Mostly cloudy 13:51 08/11/2023

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#instances:v=3;\$case=tags:true%5C,client:false;\$regex=tags:false%5C,client:false

Gmail Maps YouTube News Translate

aws Services Search [Alt+S]

Instances (1/2) Info

Find Instance by attribute or tag (case-sensitive)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
server-with-key	i-0ded382baa5eaa4a6	Stopped	t2.micro	–	No alarms	us-east-1d
Recovery-server	i-0b755e12e3a28d5dc	Pending	t2.micro	–	No alarms	us-east-1d

Instance: i-0b755e12e3a28d5dc (Recovery-server)

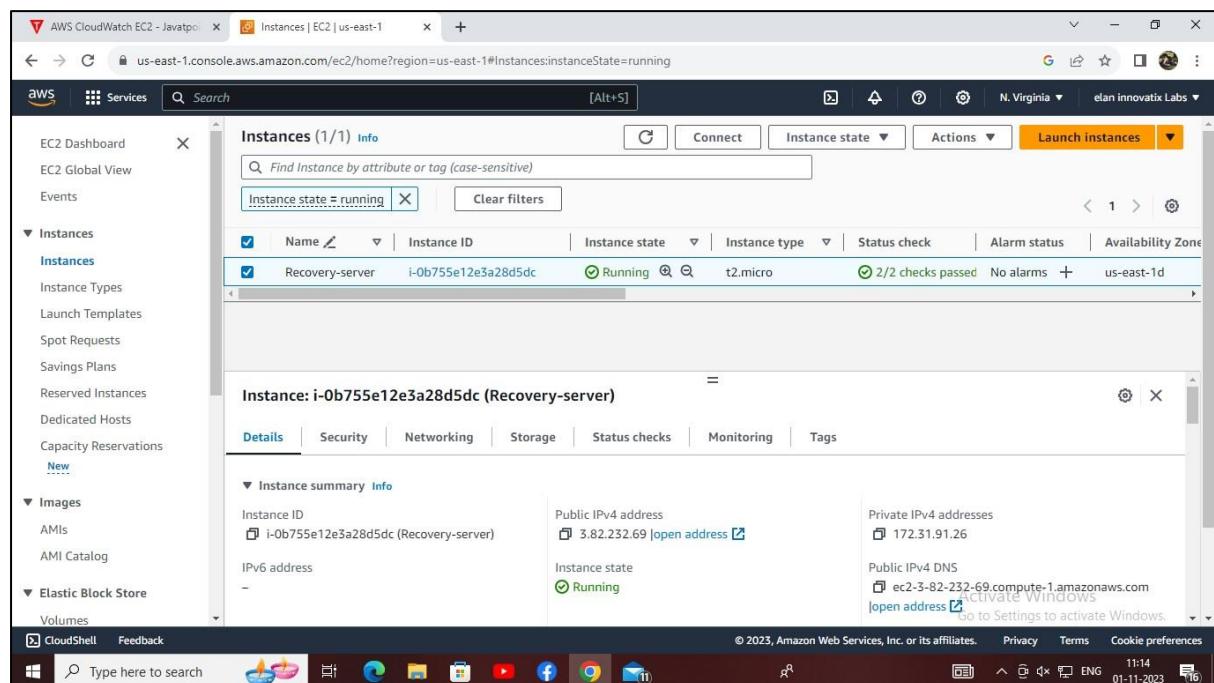
Details Security Networking Storage Status checks Monitoring Tags

Instance summary Info

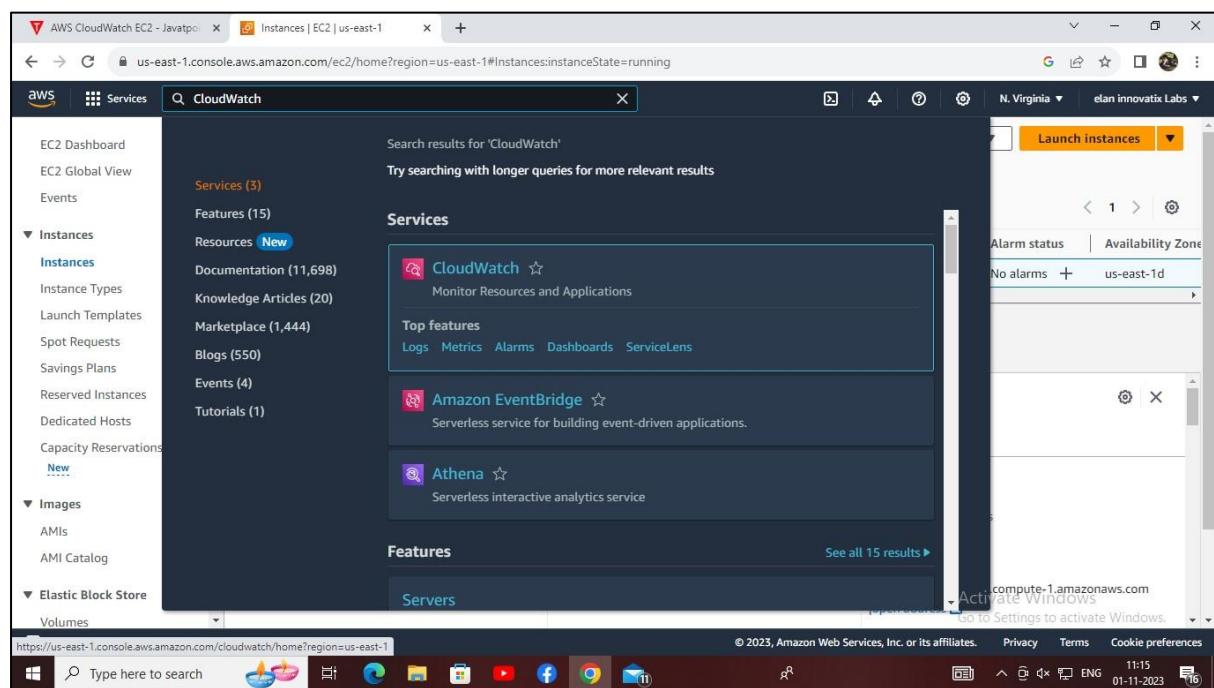
Instance ID	i-0b755e12e3a28d5dc (Recovery-server)	Public IPv4 address	Private IPv4 addresses
IPv6 address	–	–	172.31.91.26
		Instance state	Public IPv4 DNS
		Pending	–

CloudShell Feedback 28°C Mostly cloudy 13:35 08/11/2023

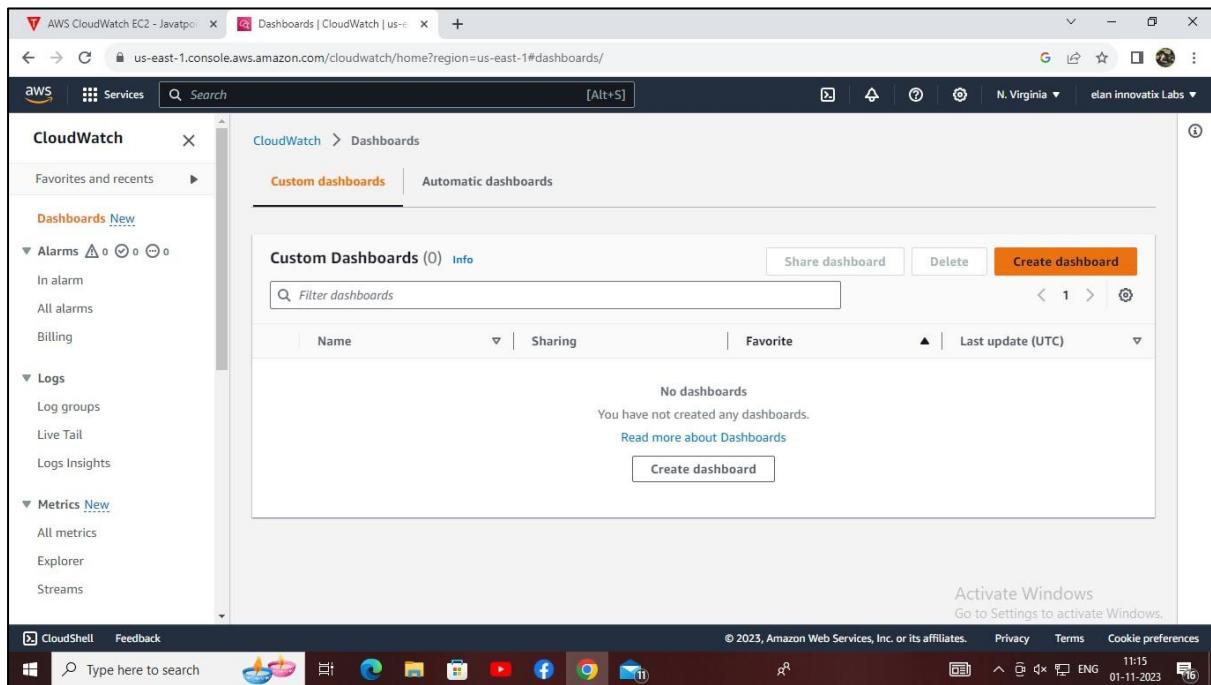
## 9. SOURCE CODE (Configuring Centralized Log Management using Cloud Watch Log)



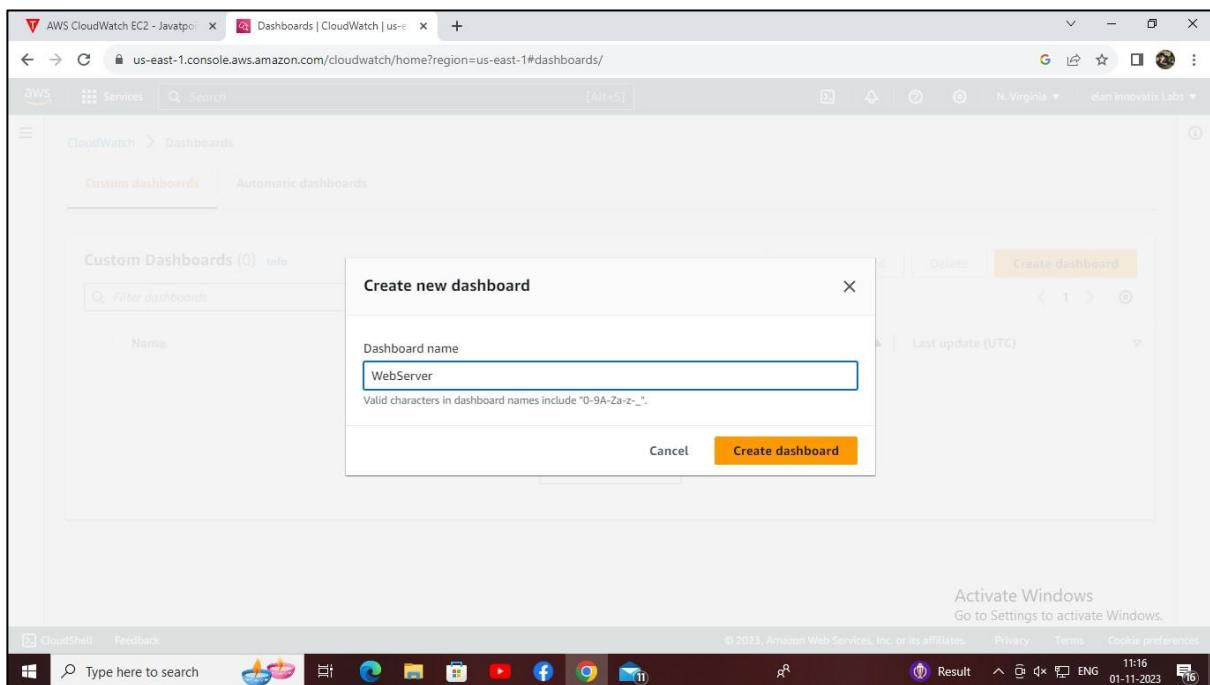
The screenshot shows the AWS CloudWatch EC2 Instances page. The main table displays one instance: 'Recovery-server' (i-0b755e12e3a28d5dc). The instance is running, of type t2.micro, and has 2/2 checks passed. The page includes a sidebar with navigation links for EC2 Dashboard, EC2 Global View, Events, Instances, Images, and Elastic Block Store. The status bar at the bottom shows the URL as <https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:instanceState=running>.



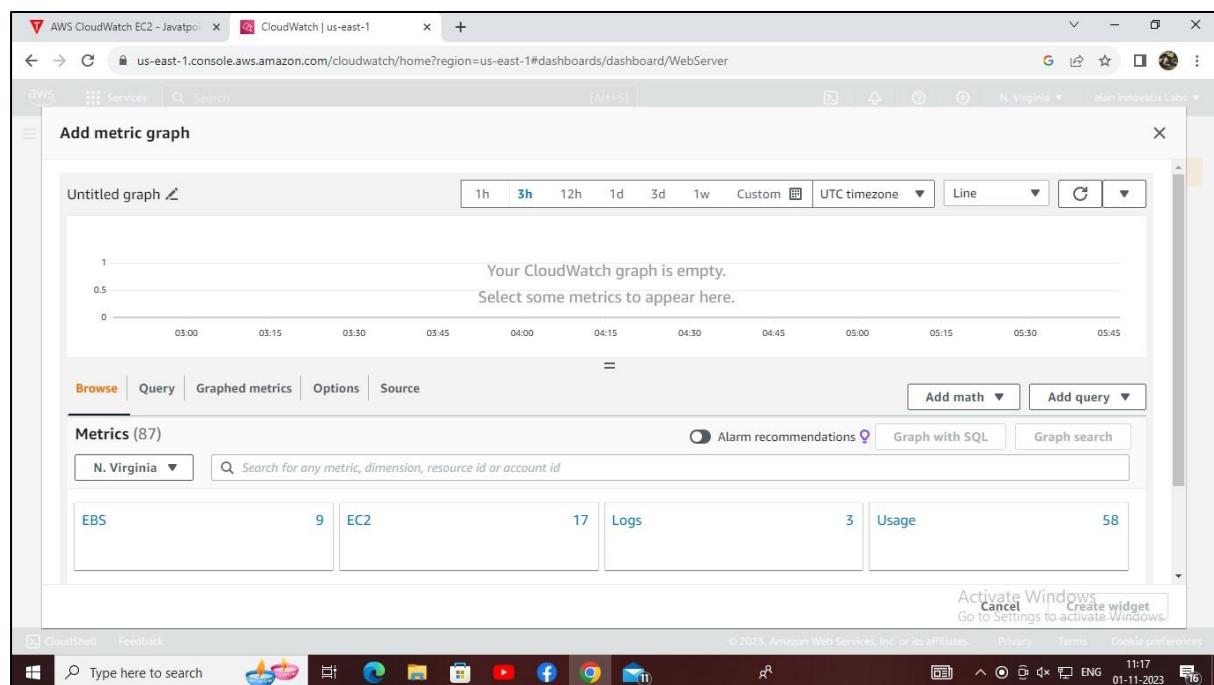
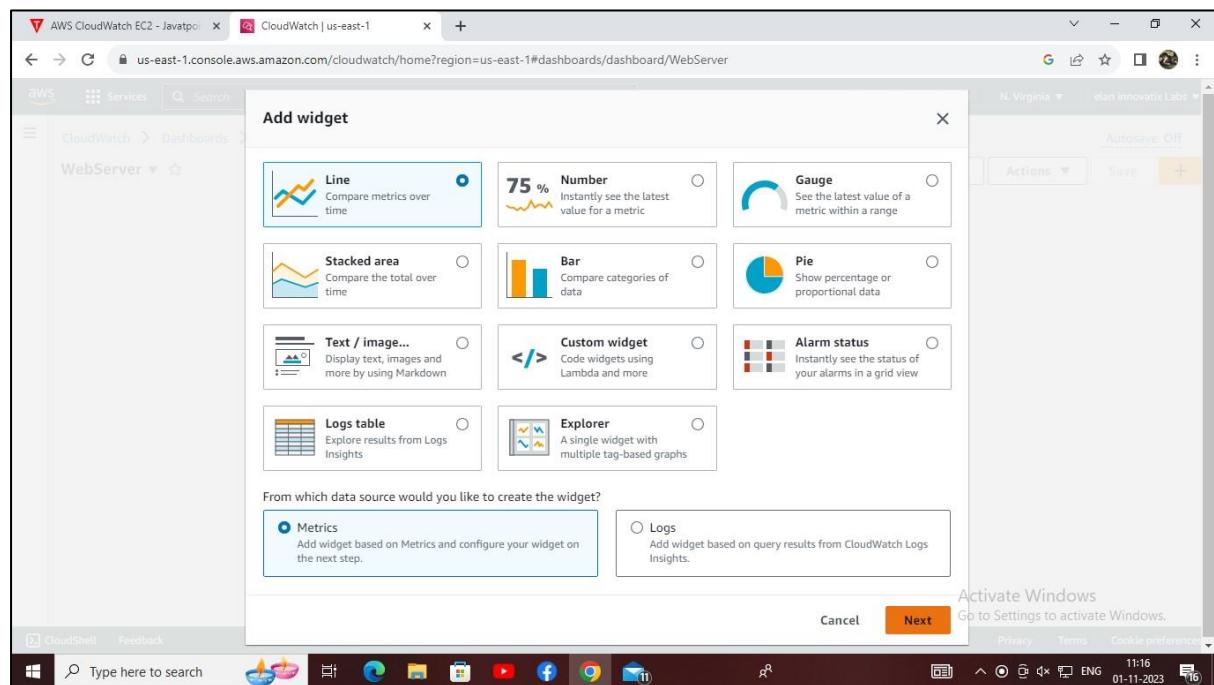
The screenshot shows the AWS CloudWatch search results for 'CloudWatch'. The search bar at the top contains the query 'CloudWatch'. The results are categorized into 'Services' (15), 'Features' (15), and 'Resources' (New). The 'Services' section highlights 'CloudWatch' (Monitor Resources and Applications) and 'Amazon EventBridge' (Serverless service for building event-driven applications). The 'Features' section highlights 'Logs', 'Metrics', 'Alarms', 'Dashboards', 'ServiceLens', and 'Athena' (Serverless interactive analytics service). The status bar at the bottom shows the URL as <https://us-east-1.console.aws.amazon.com/cloudwatch/home?region=us-east-1>.

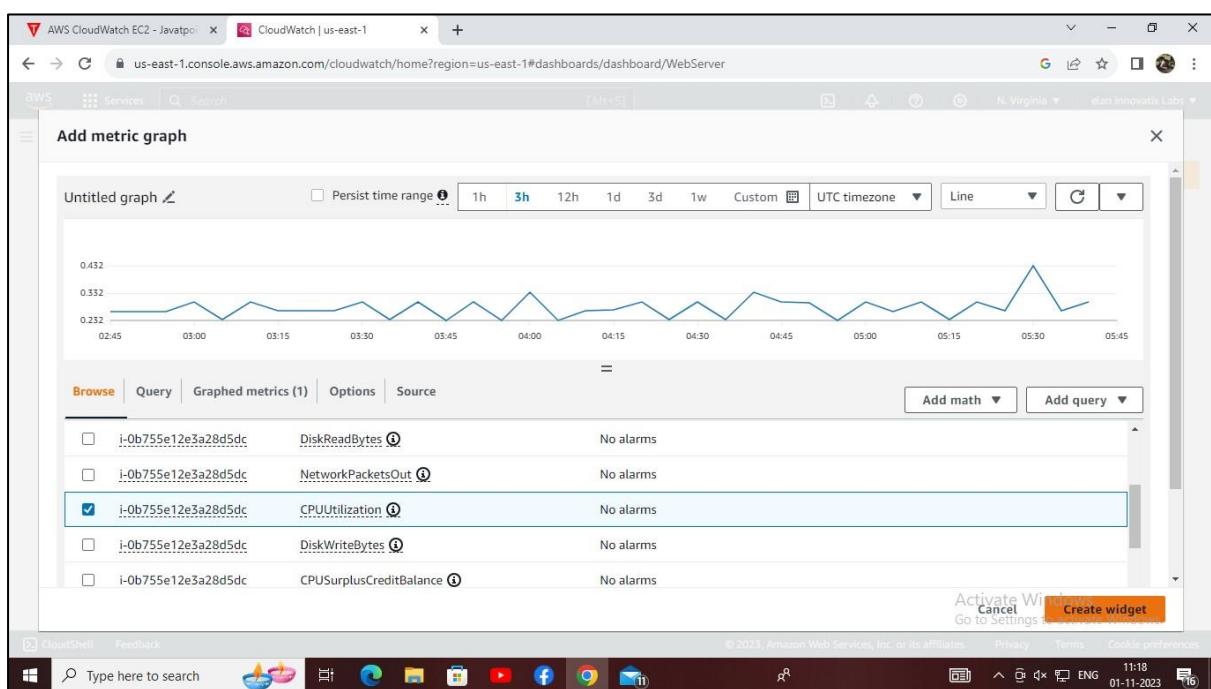
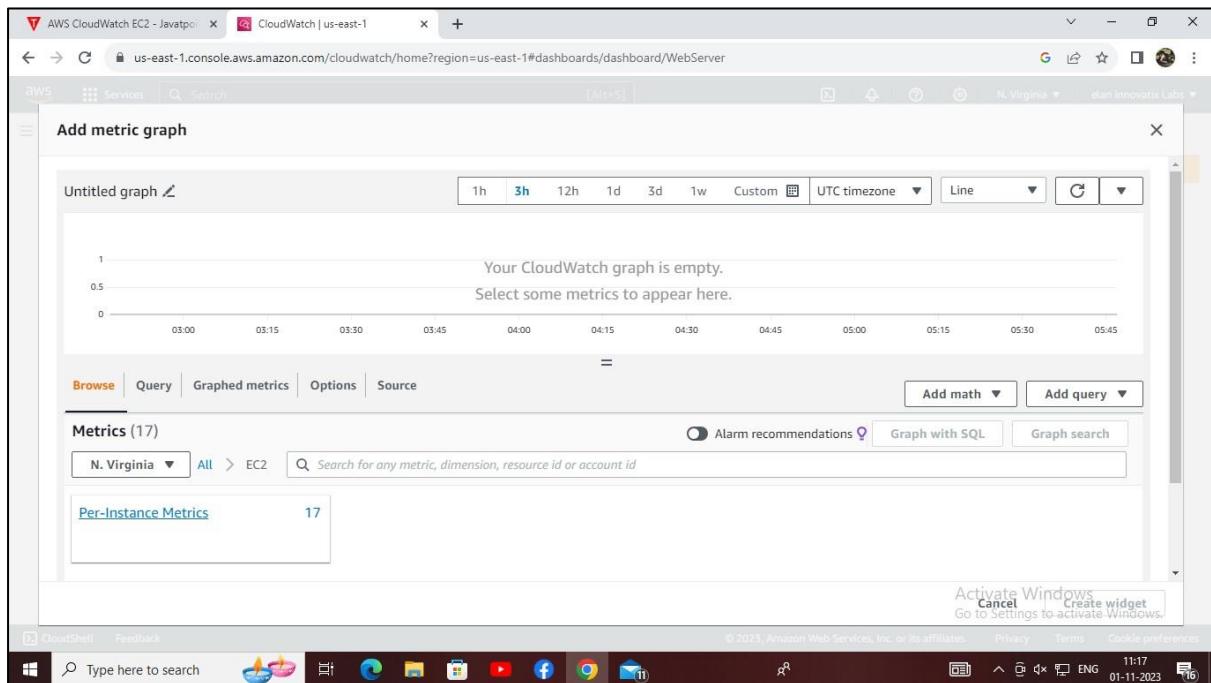


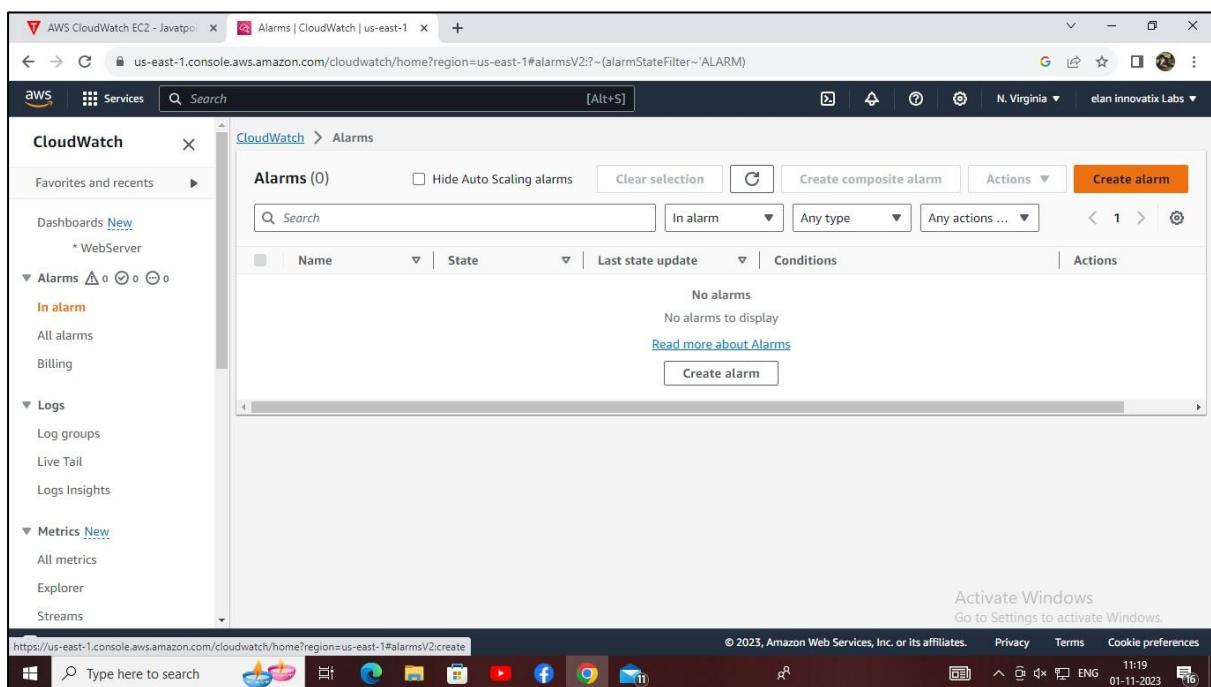
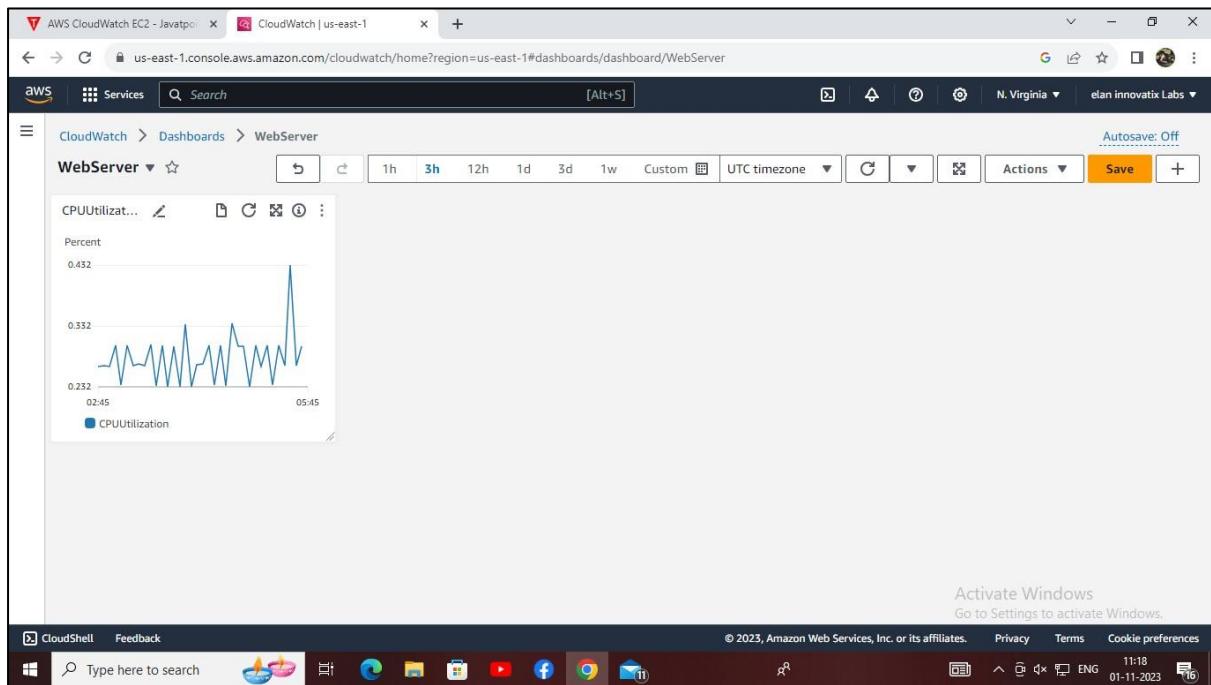
The screenshot shows the AWS CloudWatch Dashboards page. The left sidebar is open, showing sections for CloudWatch, Favorites and recent, Dashboards, Alarms, Logs, and Metrics. The main content area is titled "Custom dashboards" and shows a message: "No dashboards. You have not created any dashboards." There is a "Create dashboard" button at the bottom. The top navigation bar includes the AWS logo, a search bar, and a "CloudWatch" breadcrumb. The bottom navigation bar shows the AWS CloudShell and Feedback links, along with a search bar and various icons.

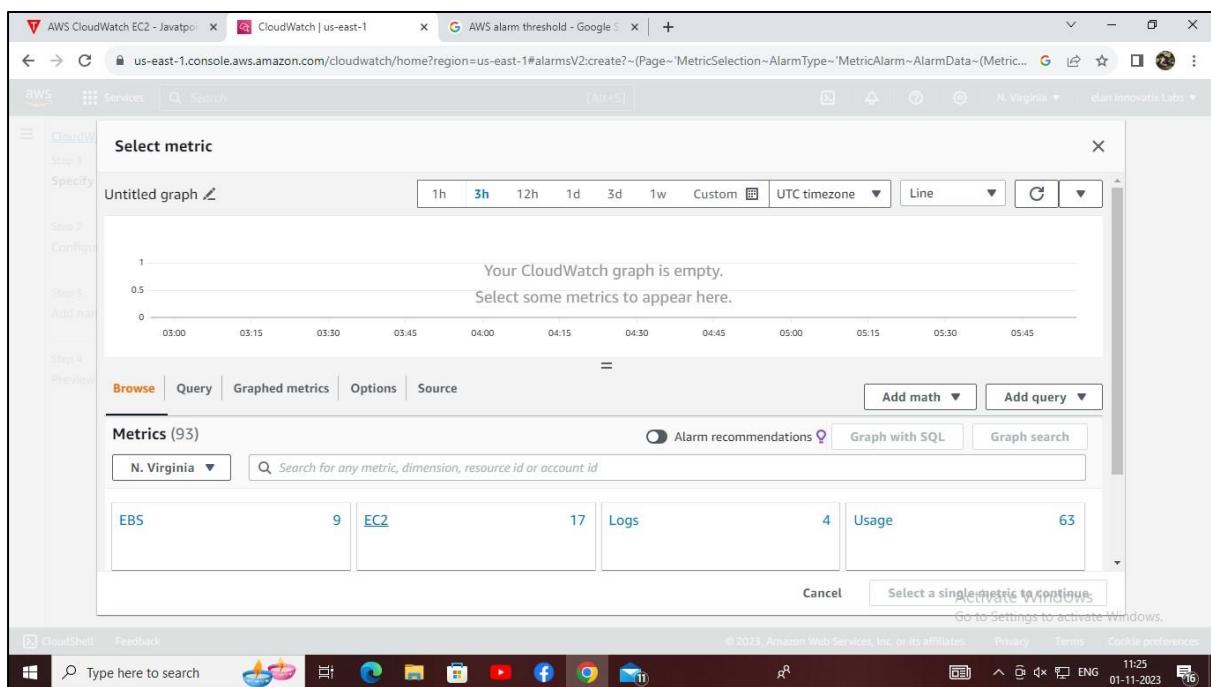
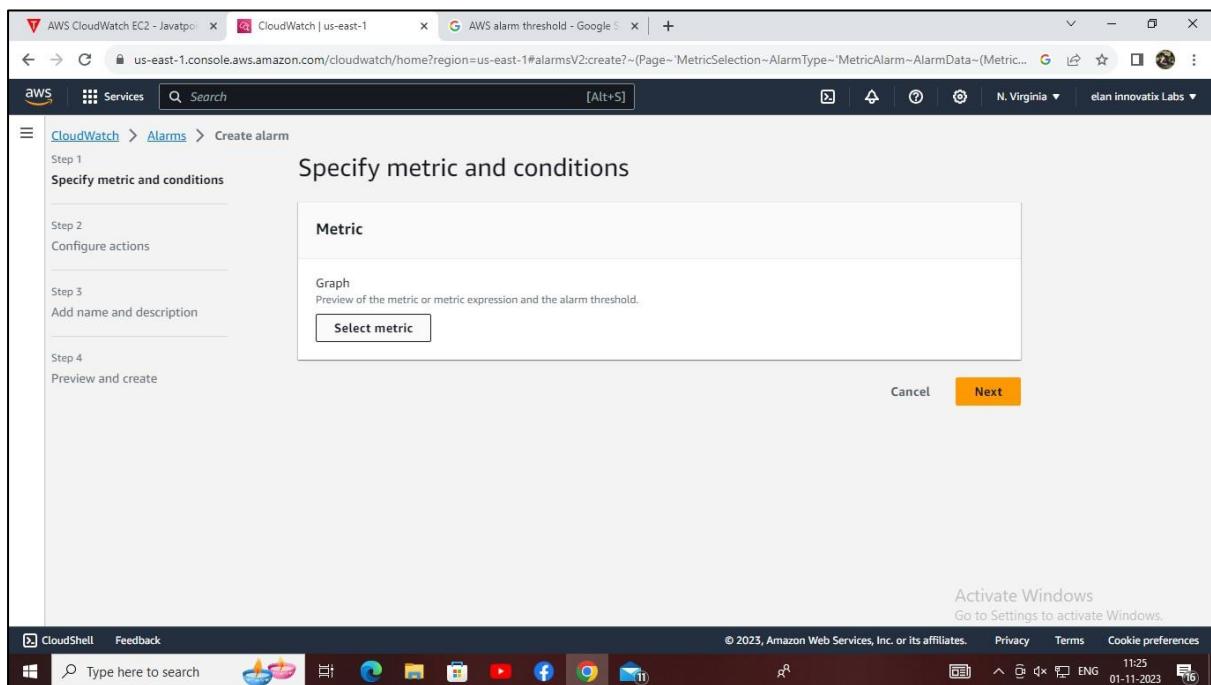


The screenshot shows the AWS CloudWatch Dashboards page with a modal dialog titled "Create new dashboard". The modal has a "Dashboard name" input field containing "WebServer". Below the input field is a note: "Valid characters in dashboard names include '0-9A-Za-z-\_-'." At the bottom of the modal are "Cancel" and "Create dashboard" buttons. The background of the main dashboard page shows the same layout as the first screenshot, with the "Custom dashboards" section and the "Create dashboard" button.









AWS CloudWatch EC2 - Javatpoint | CloudWatch | us-east-1 | AWS alarm threshold - Google | AWS CloudWatch Metrics | us-east-1.console.aws.amazon.com/cloudwatch/home?region=us-east-1#alarmsV2:create?~(Page~MetricSelection~AlarmType~MetricAlarm~AlarmData~(Metric...)

Step 1: Specify the metric

Step 2: Configure the alarm

Step 3: Add metrics

Step 4: Preview and create

CloudWatch Metrics

Select metric

Your CloudWatch graph is empty. Select some metrics to appear here.

Metrics (17)

N. Virginia > EC2 > Per-Instance Metrics

Search for any metric, dimension, resource id or account id

Add math | Add query

Alarm recommendations | Graph with SQL | Graph search

Cancel | Select a single metric to continue | Active Windows

Go to Settings to activate Windows.

CloudShell | Feedback

Type here to search

11:25 01-11-2023

AWS CloudWatch EC2 - Javatpoint | CloudWatch | us-east-1 | AWS alarm threshold - Google | AWS CloudWatch Metrics | us-east-1.console.aws.amazon.com/cloudwatch/home?region=us-east-1#alarmsV2:create?~(Page~MetricSelection~AlarmType~MetricAlarm~AlarmData~(Metric...)

Step 1: Specify the metric

Step 2: Configure the alarm

Step 3: Add metrics

Step 4: Preview and create

CloudWatch Metrics

Select metric

Graphed metrics (1)

N. Virginia > EC2 > Per-Instance Metrics

Search for any metric, dimension, resource id or account id

Add math | Add query

Alarm recommendations | Graph with SQL | Graph search

Cancel | Active Windows | Select metric

Go to Settings to activate Windows.

CloudShell | Feedback

Type here to search

11:20 01-11-2023

AWS CloudWatch EC2 - Javatpoint | CloudWatch | us-east-1 | AWS alarm threshold - Google | us-east-1.console.aws.amazon.com/cloudwatch/home?region=us-east-1#alarmsV2:create?~(Page~'MetricSelection~AlarmType~MetricAlarm~AlarmData~(Name...)

Services Search [Alt+S] N. Virginia elan innovatix Labs

Step 1 Specify metric and conditions Step 2 Configure actions Step 3 Add name and description Step 4 Preview and create

**Metric**

Graph This alarm will trigger when the blue line goes above the red line for 1 datapoints within 5 minutes.

Percent

0.432

0.332

0.232

03:30 04:30 05:30

CPUUtilization

Namespace AWS/EC2

Metric name CPUUtilization

InstanceId i-0b755e12e3a28d5dc

Instance name Recovery-server

Statistic Average

Activate Windows Go to Settings to activate Windows.

CloudShell Feedback Type here to search 11:26 01-11-2023

AWS CloudWatch EC2 - Javatpoint | CloudWatch | us-east-1 | (5) How can I create CloudWatch | us-east-1.console.aws.amazon.com/cloudwatch/home?region=us-east-1#alarmsV2:edit/Pro9?~(Page~'MetricSelection~AlarmType~MetricAlarm~AlarmData~(Name...)

Services Search [Alt+S] N. Virginia elan innovatix Labs

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.

4

Must be a number

Additional configuration

Cancel Skip to Preview and create Next Windows Go to Settings to activate Windows.

CloudShell Feedback Type here to search 11:42 01-11-2023

AWS CloudWatch EC2 - Javatpoint | CloudWatch | us-east-1 | Default\_CloudWatch\_Alarms\_Topic | AWS alarm threshold - Google | +

us-east-1.console.aws.amazon.com/cloudwatch/home?region=us-east-1#alarmsV2:create?~(Page~Actions~AlarmType~MetricAlarm~AlarmData~Namespace~~)

Services Search [Alt+S] N. Virginia elan innovatix Labs

Step 1 Specify metric and conditions

Step 2 Configure actions

Step 3 Add name and description

Step 4 Preview and create

## Configure actions

### Notification

Alarm state trigger Define the alarm state that will trigger this action.

In alarm The metric or expression is outside of the defined threshold.

OK The metric or expression is within the defined threshold.

Insufficient data The alarm has just started or not enough data is available. Remove

Send a notification to the following SNS topic Define the SNS (Simple Notification Service) topic that will receive the notification.

Select an existing SNS topic

Create new topic

Use topic ARN to notify other accounts

Send a notification to...  X

Only email lists for this account are available.

Email (endpoints) elanchezhian2712.m@gmail.com - View in SNS Console View in SNS Console

Activate Windows Go to Settings to activate Windows.

CloudShell Feedback Type here to search 11:29 01-11-2023

AWS CloudWatch EC2 - Javatpoint | Alarms | CloudWatch | us-east-1 | (5) How can I create CloudWatch | +

us-east-1.console.aws.amazon.com/cloudwatch/home?region=us-east-1#alarmsV2:

Services Search [Alt+S] N. Virginia elan innovatix Labs

CloudWatch X

Favorites and recent

CloudWatch Alarms (1) View alarm

CloudWatch > Alarms

Alarms (1) Create alarm

Search Any state Any type Any actions ...

Name	State	Last state update	Conditions	Actions
Pro9	<span style="color: red;">⚠ In alarm</span>	2023-11-01 06:11:49	CPUUtilization < 4 for 1 datapoints within 1 minute	<span style="border: 1px solid #ccc; padding: 2px 5px; border-radius: 4px;">Actions enabled</span>

Activate Windows Go to Settings to activate Windows.

CloudShell Feedback Type here to search 11:42 01-11-2023

AWS CloudWatch EC2 - Javatpc | Instances | EC2 | us-east-1 | (5) How can I create CloudWatch | +

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:v=3;\$case=tagstrue%5C;client:false;\$regex=tags:false%5C;client:false

Services Search [Alt+S] N. Virginia elan innovatix Labs

EC2 Dashboard Instances (2) Info

Find Instance by attribute or tag (case-sensitive)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
server-with-key	i-0ded382baa5eaa4a6	Stopped	t2.micro	-	No alarms +	us-east-1d
Recovery-server	i-0b755e12e3a28d5dc	Stopped	t2.micro	-	No alarms +	us-east-1d

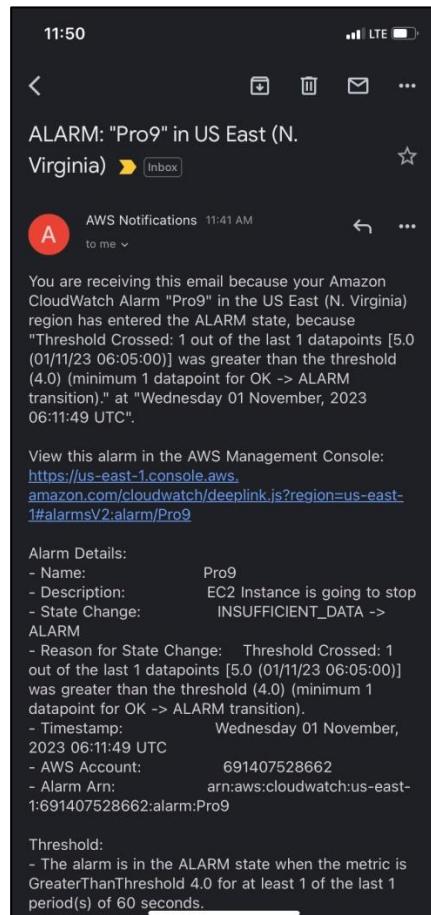
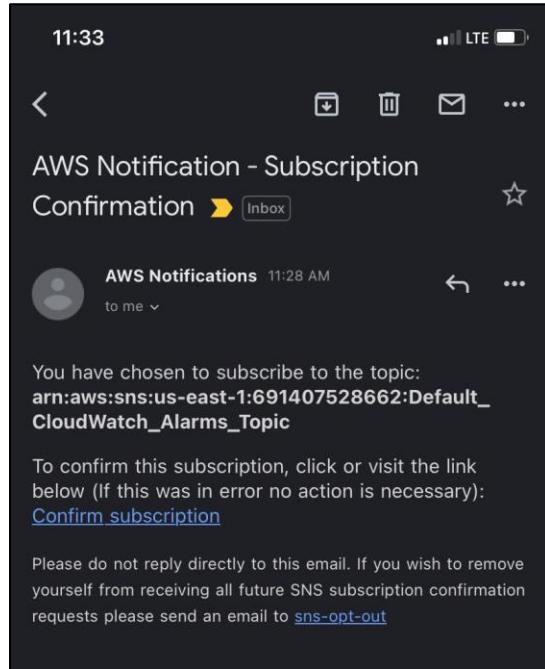
Select an instance

Activate Windows Go to Settings to activate Windows.

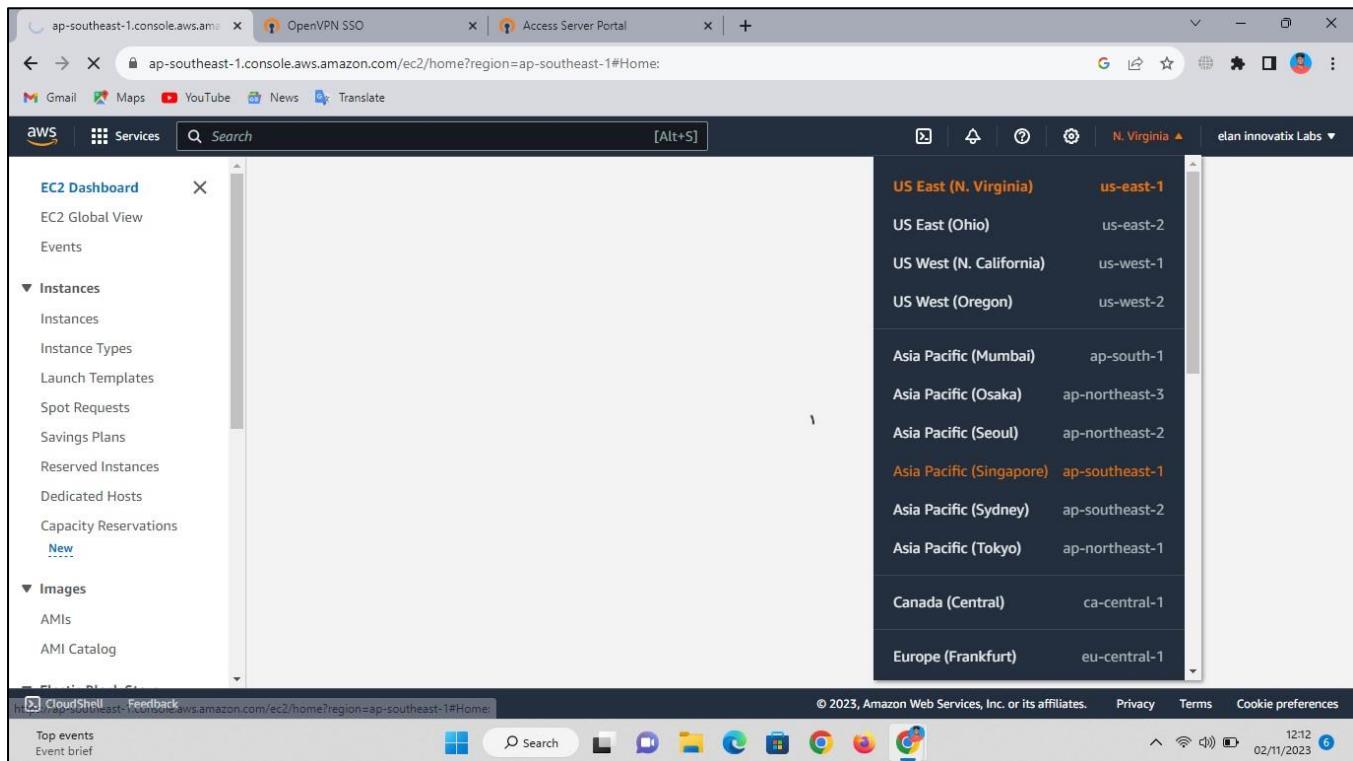
CloudShell Feedback © 2023, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences 11:44 01-11-2023

Type here to search

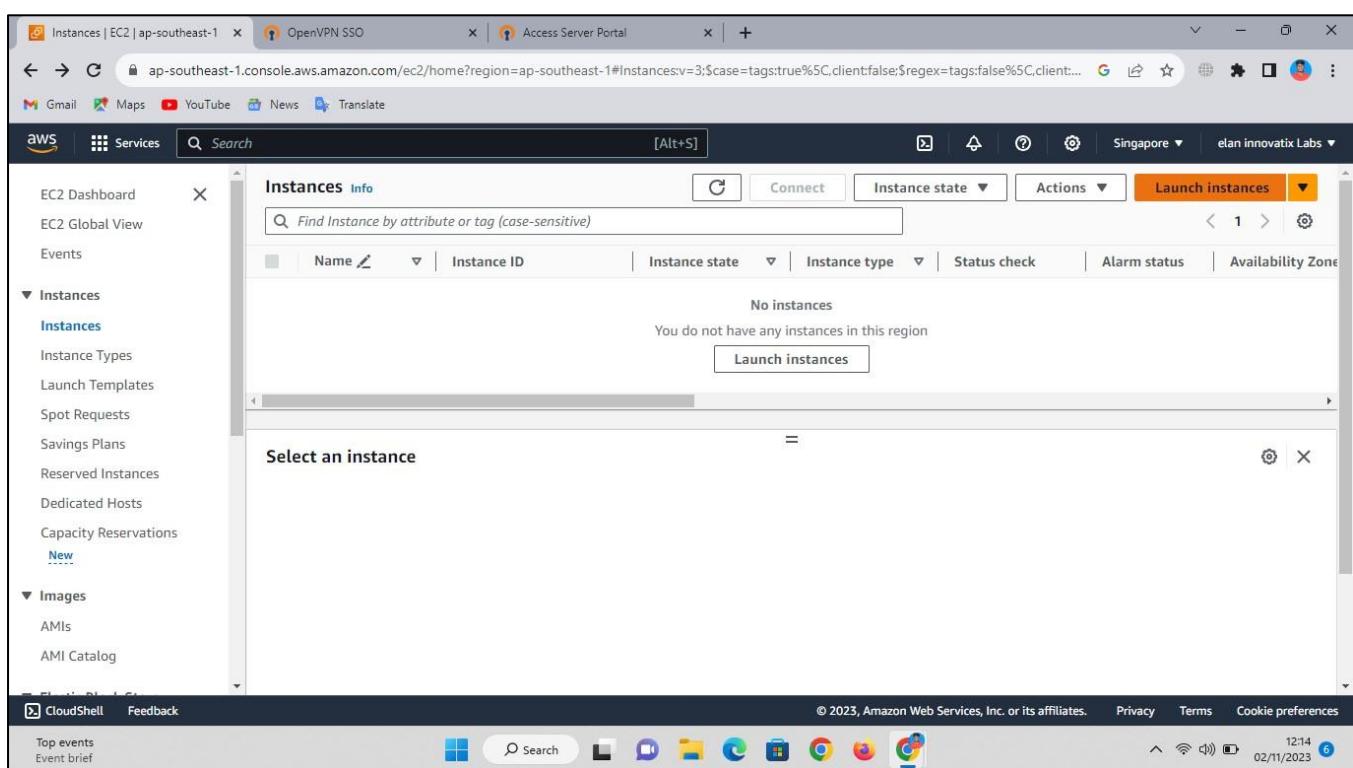
# Alarm:



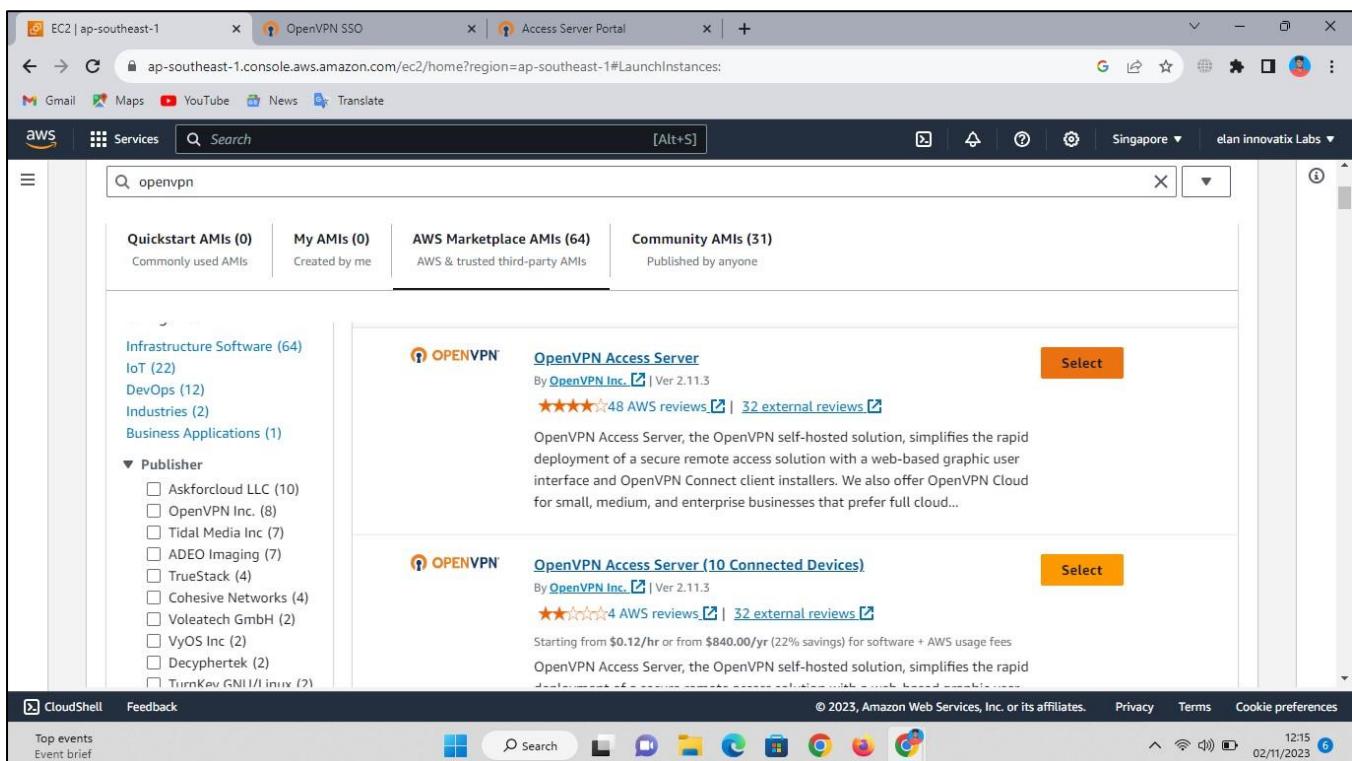
## 10. SOURCE CODE: (Connecting OpenVPN server)



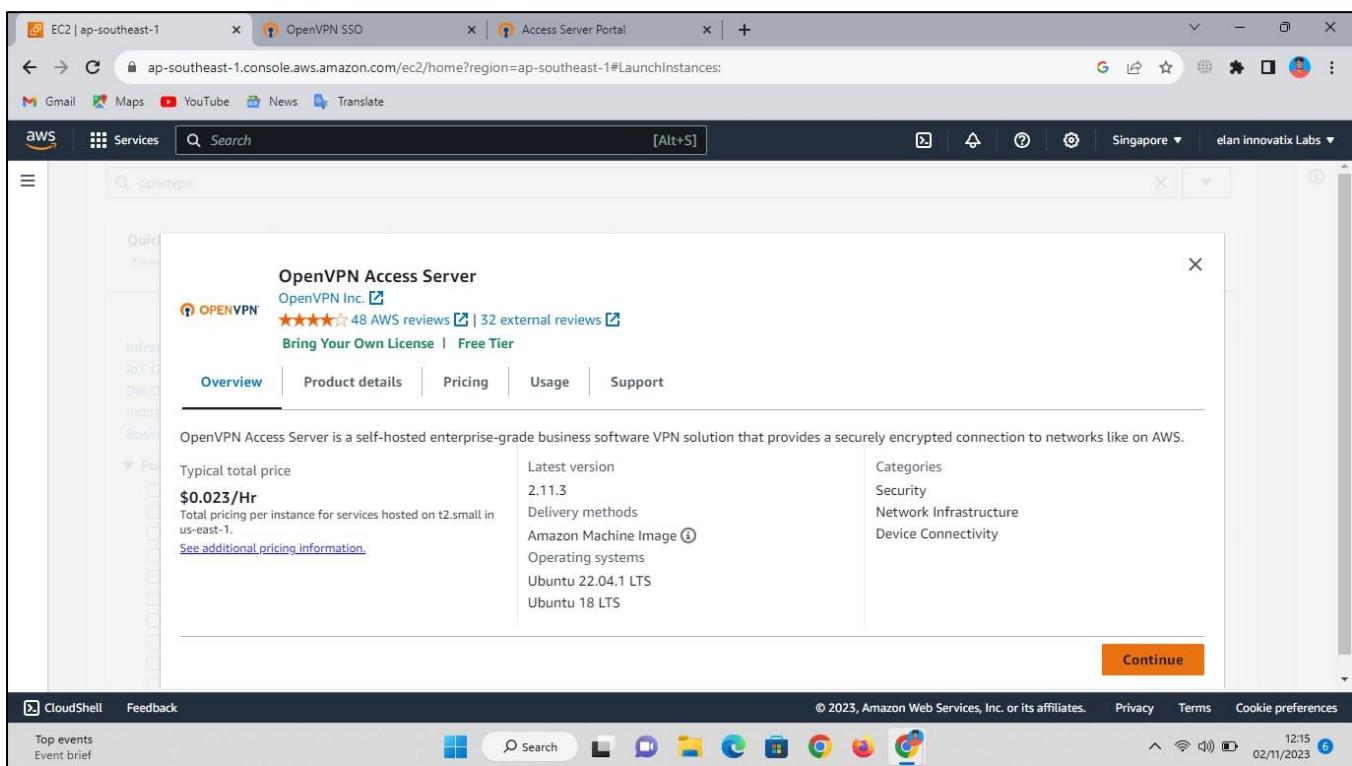
The screenshot shows the AWS EC2 Dashboard. On the left, there is a sidebar with 'Instances' selected, showing sub-options like 'Instances', 'Instance Types', and 'Launch Templates'. On the right, a large dropdown menu lists various AWS regions. The 'US East (N. Virginia)' region is highlighted in orange, and its code 'us-east-1' is shown. Other regions listed include US East (Ohio), US West (N. California), US West (Oregon), Asia Pacific (Mumbai), Asia Pacific (Osaka), Asia Pacific (Seoul), Asia Pacific (Singapore), Asia Pacific (Sydney), Asia Pacific (Tokyo), Canada (Central), and Europe (Frankfurt). The status bar at the bottom shows the URL as 'ap-southeast-1.console.aws.amazon.com/ec2/home?region=ap-southeast-1#Home'.



The screenshot shows the 'Instances' page in the AWS EC2 Dashboard. The sidebar on the left is identical to the previous screenshot. The main area shows a table with the header 'Instances Info' and columns for 'Name', 'Instance ID', 'Instance state', 'Instance type', 'Status check', and 'Availability Zone'. A search bar at the top of the table says 'Find Instance by attribute or tag (case-sensitive)'. Below the table, a message says 'No instances' and 'You do not have any instances in this region'. A 'Launch instances' button is visible. A modal dialog box is open in the foreground with the title 'Select an instance'. The status bar at the bottom shows the URL as 'ap-southeast-1.console.aws.amazon.com/ec2/home?region=ap-southeast-1#Instancesv=3;\$case=tags:true%5C,client:false;\$regex=tags:false%5C,client:...'. The status bar also shows the date and time as '02/11/2023 12:14'.



The screenshot shows the AWS Marketplace search results for 'openvpn'. The search bar at the top contains 'openvpn'. Below the search bar, there are four tabs: 'Quickstart AMIs (0)', 'My AMIs (0)', 'AWS Marketplace AMIs (64)', and 'Community AMIs (31)'. The 'AWS Marketplace AMIs (64)' tab is selected. On the left, there is a sidebar with filters: 'Infrastructure Software (64)', 'IoT (22)', 'DevOps (12)', 'Industries (2)', 'Business Applications (1)', and a 'Publisher' section with checkboxes for Askforcloud LLC (10), OpenVPN Inc. (8), Tidal Media Inc (7), ADEO Imaging (7), TrueStack (4), Cohesive Networks (4), Voleattech GmbH (2), VyOS Inc (2), Decyphertek (2), and TurnKey GNU/Ubuntu (2). The main content area displays two items: 'OpenVPN Access Server' and 'OpenVPN Access Server (10 Connected Devices)'. Each item has a 'Select' button. The 'OpenVPN Access Server' item is described as a self-hosted solution for secure remote access with a web-based interface and OpenVPN Connect client installers. The 'OpenVPN Access Server (10 Connected Devices)' item is described as starting from \$0.12/hr or \$840.00/yr. The bottom of the page includes standard AWS footer links: CloudShell, Feedback, Top events, Event brief, and a date/time stamp: 12:15 02/11/2023.



The screenshot shows the AWS Marketplace product detail page for 'OpenVPN Access Server'. The top navigation bar includes 'EC2 | ap-southeast-1', 'OpenVPN SSO', and 'Access Server Portal'. The search bar contains 'openvpn'. The main content area shows the product title 'OpenVPN Access Server' by 'OpenVPN Inc.' with a 4.8 rating and 48 AWS reviews. It features a 'Bring Your Own License' and 'Free Tier' button. Below this, there are tabs for 'Overview' (selected), 'Product details', 'Pricing', 'Usage', and 'Support'. The 'Overview' tab contains a description of the product as a self-hosted enterprise-grade business software VPN solution. It lists 'Typical total price' as '\$0.023/Hr', 'Latest version' as '2.11.3', 'Delivery methods' as 'Amazon Machine Image', 'Operating systems' as 'Ubuntu 22.04.1 LTS, Ubuntu 18 LTS', and 'Categories' as 'Security, Network Infrastructure, Device Connectivity'. At the bottom right is a 'Continue' button. The bottom of the page includes standard AWS footer links: CloudShell, Feedback, Top events, Event brief, and a date/time stamp: 12:15 02/11/2023.

Application and OS Images (Amazon Machine Image) [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: openvpn

AMI from catalog Quick Start

Amazon Machine Image (AMI)

OpenVPN Access Server QA Image-fe8020db-5343-4c43-9e65-5ed4a825c931 ami-07a19a0c938df5f577

Verified provider

Browse more AMIs

Including AMIs from AWS, Marketplace and the Community

Catalog	Published	Architecture	Virtualization	Root device type	ENA Enabled
AWS	2023-03-08T14:21:35.000Z	x86_64	hvm	ebs	Yes
Marketplace					
AMIs	0Z				

Number of instances [Info](#)  
1

New security group

Storage (volumes)  
1 volume(s) - 8 GiB

**Free tier:** In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million IOPS, 1 GB of bandwidth

Cancel **Launch instance** Review commands

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Top events Event brief 12:16 02/11/2023

Instance type

t2.micro [Free tier eligible](#)  
Family: t2 1 vCPU 1 GiB Memory Current generation: true

All generations

Compare instance types

The AMI vendor recommends using a t2.small instance (or larger) for the best experience with this product.

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

Proceed without a key pair (Not recommended) [Default value](#) [Create new key pair](#)

Network settings [Info](#)

Network [Info](#)  
vpc-0a2ca30f5c4f4413d

Number of instances [Info](#)  
1

New security group

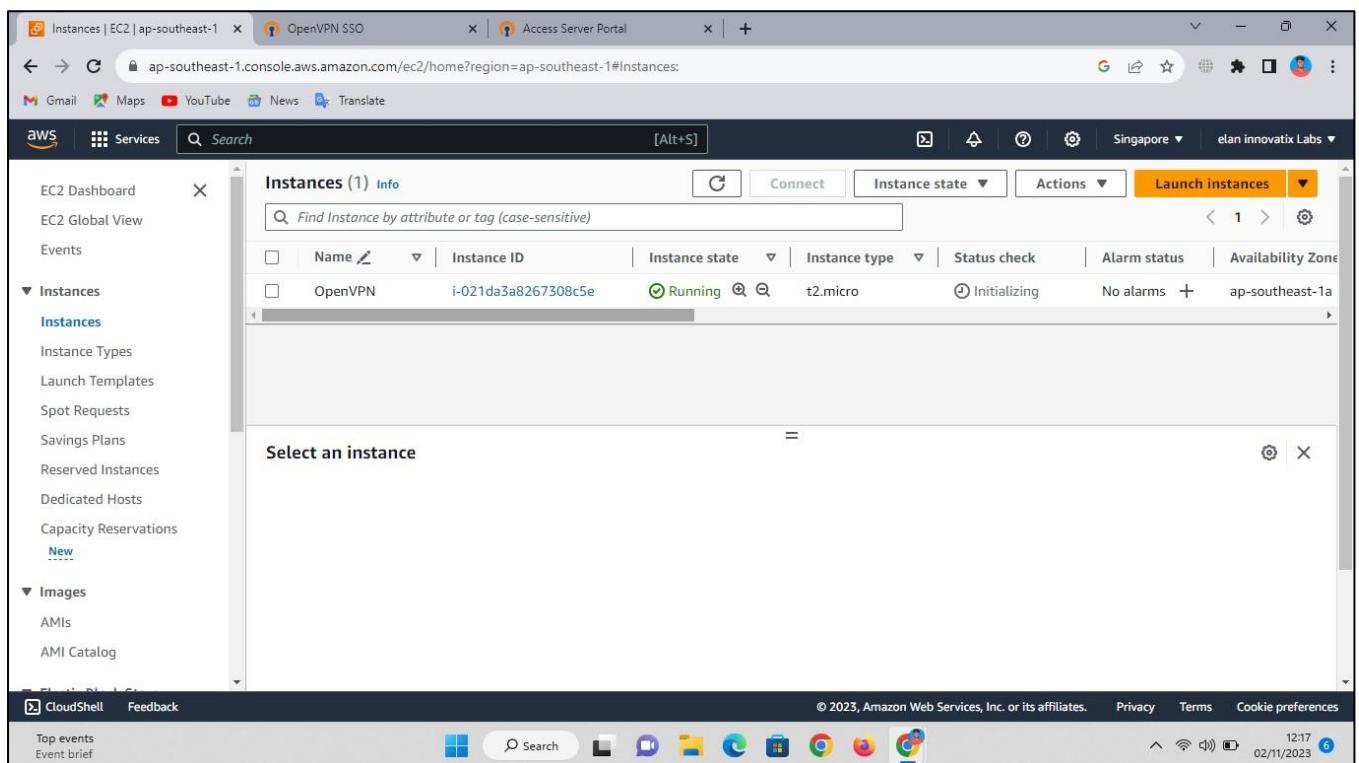
Storage (volumes)  
1 volume(s) - 8 GiB

**Free tier:** In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million IOPS, 1 GB of bandwidth

Cancel **Launch instance** Review commands

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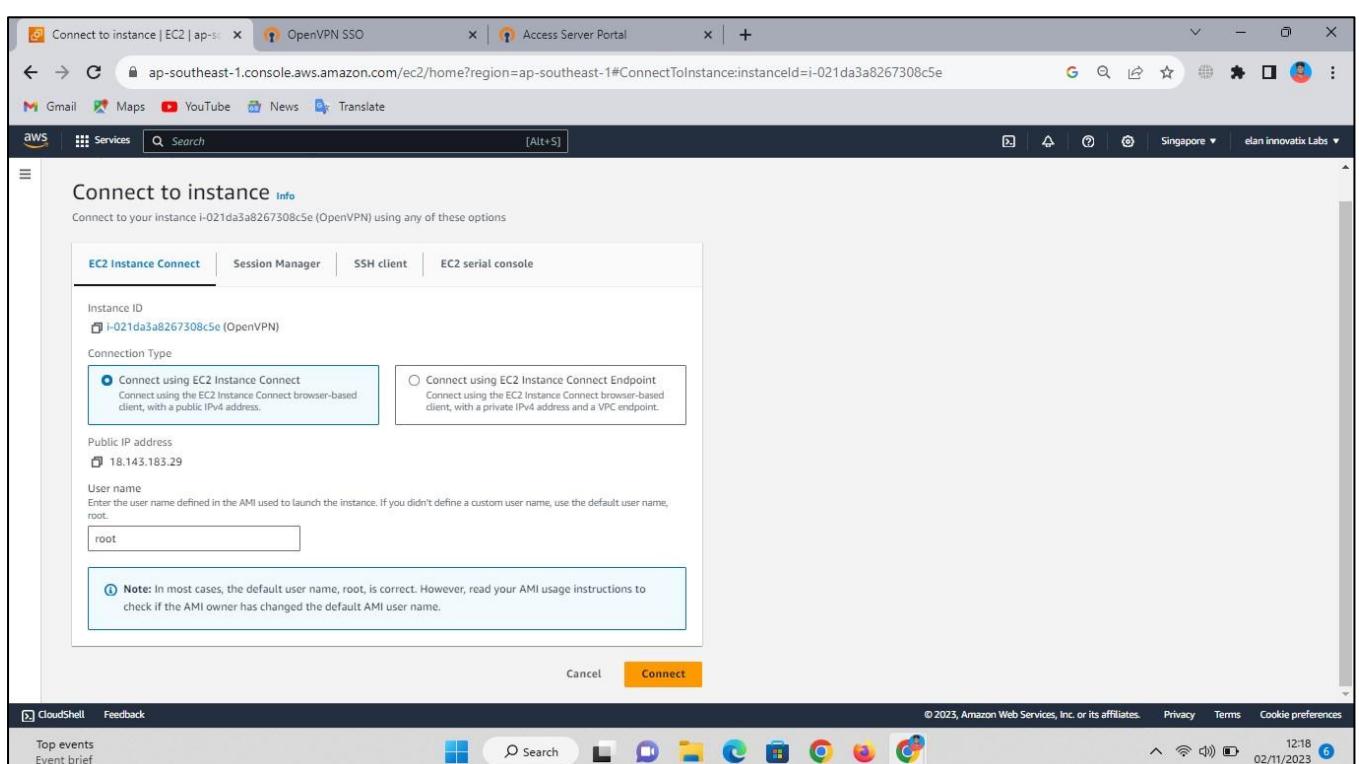
Top events Event brief 12:16 02/11/2023



The screenshot shows the AWS EC2 Instances page. The left sidebar is collapsed. The main content area displays a table of instances. One instance is listed:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
OpenVPN	i-021da3a8267308c5e	Running	t2.micro	Initializing	No alarms	ap-southeast-1a

Below the table, a modal window titled "Select an instance" is open, showing the same instance "OpenVPN".



The screenshot shows the "Connect to instance" dialog box for the instance i-021da3a8267308c5e (OpenVPN). The "EC2 Instance Connect" tab is selected. The dialog includes the following fields and options:

- Instance ID:** i-021da3a8267308c5e (OpenVPN)
- Connection Type:**
  - Connect using EC2 Instance Connect  
Connect using the EC2 Instance Connect browser-based client.
  - Connect using EC2 Instance Connect Endpoint  
Connect using the EC2 Instance Connect browser-based client, with a private IPv4 address and a VPC endpoint.
- Public IP address:** 18.143.183.29
- User name:** root
- Note:** In most cases, the default user name, root, is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name.

At the bottom of the dialog are "Cancel" and "Connect" buttons.

```
Instance details | EC2 | ap-south-1 | Services | OpenVPN SSO | Access Server Portal | + | 
← → C 🔒 ap-southeast-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-021da3a8267308c5e&osUser=root&region=ap-south-1 | 
Gmail Maps YouTube News Translate | 
aws | Services | Search | [Alt+S] | 
software maintenance costs and terms are subject to change after your initial purchase without notice. In case of price decreases or special promotions, OpenVPN Inc. will not retrospectively apply credits or price adjustments toward any licenses that have already been issued. Furthermore, no discounts will be given for license maintenance renewals unless this is specified in your contract with OpenVPN Inc.

Please enter 'yes' to indicate your agreement [no]: yes

Once you provide a few initial configuration settings, OpenVPN Access Server can be configured by accessing its Admin Web UI using your Web browser.

Will this be the primary Access Server node? (enter 'no' to configure as a backup or standby node)
> Press ENTER for default [yes]: 

Please specify the network interface and IP address to be used by the Admin Web UI:
(1) all interfaces: 0.0.0.0
(2) eth0: 172.31.36.207
Please enter the option number from the list above (1- 2).
> Press Enter for default [1]: 

i-021da3a8267308c5e (OpenVPN)
PublicIPs: 18.143.183.29 PrivateIPs: 172.31.36.207

CloudShell Feedback | 
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Top events Event brief | 
12:22 02/11/2023 6
```

```
Instance details | EC2 | ap-south-1 | Services | OpenVPN SSO | Access Server Portal | + | 
← → C 🔒 ap-southeast-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-021da3a8267308c5e&osUser=root&region=ap-south-1 | 
Gmail Maps YouTube News Translate | 
aws | Services | Search | [Alt+S] | 
To initially login to the Admin Web UI, you must use a username and password that successfully authenticates you with the host UNIX system (you can later modify the settings so that RADIUS or LDAP is used for authentication instead).

You can login to the Admin Web UI as "openvpn" or specify a different user account to use for this purpose.

Do you wish to login to the Admin UI as "openvpn"?
> Press ENTER for default [yes]: 
Type a password for the 'openvpn' account (if left blank, a random password will be generated):
Error: New Password must be at least 8 characters.
Type a password for the 'openvpn' account (if left blank, a random password will be generated):
Confirm the password for the 'openvpn' account:

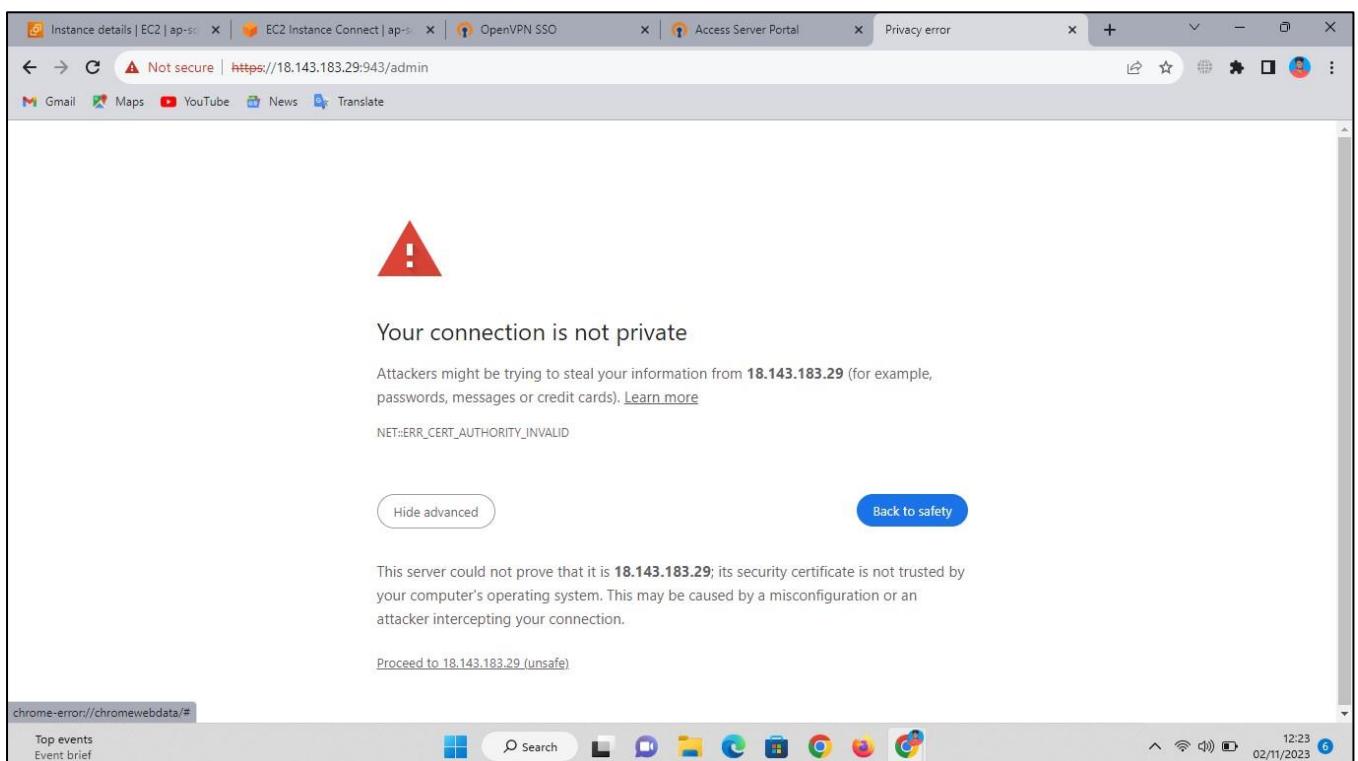
> Please specify your Activation key (or leave blank to specify later): 

Initializing OpenVPN...
Removing Cluster Admin user login...
userdel "admin_c"

i-021da3a8267308c5e (OpenVPN)
PublicIPs: 18.143.183.29 PrivateIPs: 172.31.36.207

CloudShell Feedback | 
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Top events Event brief | 
12:23 02/11/2023 6
```

```
Instance details | EC2 | ap-southeast-1 | EC2 Instance Connect | ap-southeast-1 | OpenVPN SSO | Access Server Portal | Privacy error | + | - | X
← → C 🔒 ap-southeast-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-021da3a8267308c5e&osUser=root&region=ap-southeast-1 | Search | + | - | X
Gmail Maps YouTube News Translate
aws Services Search [Alt+S] | X | A | ? | G | Singapore | elan innovatix Labs
Created symlink /etc/systemd/system/multi-user.target.wants/openvpnas.service → /lib/systemd/system/openvpnas.service.
Starting openvpnas...
NOTE: Your system clock must be correct for OpenVPN Access Server to perform correctly. Please ensure that your time and date are correct on this system.
Initial Configuration Complete!
You can now continue configuring OpenVPN Access Server by directing your Web browser to this URL:
https://18.143.183.29:943/admin
During normal operation, OpenVPN AS can be accessed via these URLs:
Admin UI: https://18.143.183.29:943/admin
Client UI: https://18.143.183.29:943/
To login please use the "openvpn" account with the password you specified during the setup.
See the Release Notes for this release at:
https://openvpn.net/vpn-server-resources/release-notes/
root@ip-172-31-36-207:~# i-021da3a8267308c5e (OpenVPN)
Public IPs: 18.143.183.29 Private IPs: 172.31.36.207
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Top events Event brief 12:23 02/11/2023 6
```



The screenshot shows a web browser window with the URL <https://18.143.183.29:943/admin/>. The page title is "OpenVPN Login". The main content is the "Admin Login" form. It features a logo for "OPENVPN Access Server" with a keyhole icon. The login fields are labeled "username" and "password", both with placeholder text. A "Sign In" button is at the bottom. The footer contains the text "POWERED BY OPENVPN © 2009-2022 OpenVPN Inc. All Rights Reserved". The browser toolbar at the top shows "Instance details | EC2 | ap-south1" and "EC2 Instance Connect | ap-south1". The status bar at the bottom shows "Top events Event brief" and the date "02/11/2023".

The screenshot shows a web browser window with the URL <https://18.143.183.29:943/admin/activation>. The page title is "AS: ip-172-31-36-207". The main content is the "Activation Manager" page. On the left is a sidebar with "OPENVPN Access Server v2.11.3" and a "STATUS" dropdown. The "CONFIGURATION" section is expanded, showing "Activation" (which is underlined and highlighted in orange), "Cluster", "TLS Settings", "Network Settings", "VPN Settings" (which is highlighted in orange), "Advanced VPN", "Web Server", "CWS Settings", "Failover", and "CA Management". The "USER MANAGEMENT" section is collapsed. The main area shows a "Get Activation Key" button, an input field for "Enter Activation Key here", and a message "2 VPN connections allowed". Below this is an "Offline Activation" section. The browser toolbar at the top shows "Instance details | EC2 | ap-south1" and "EC2 Instance Connect | ap-south1". The status bar at the bottom shows "https://18.143.183.29:943/admin/vpn\_settings" and the date "02/11/2023".

Instance details | EC2 | ap-south1 | EC2 Instance Connect | ap-south1 | AS: ip-172-31-36-207 | https://18.143.183.29:943/admin/vpn\_settings

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## VPN Settings

**VPN IP Network**  
Specify the addresses and netmasks for the virtual networks created for VPN clients

**Dynamic IP Address Network**  
When a user does not have a specific VPN IP address configured on the [User Permissions](#) page, the user's VPN client is assigned an address from this network.

Network Address # of Netmask bits  
172.27.224.0 / 20

**Static IP Address Network (Optional)**  
Any static VPN IP addresses specified for particular users on the [User Permissions](#) page must be within this network

Network Address # of Netmask bits  
/ CIDR netmask bits

**Group Default IP Address Network (Optional)**  
When a group does not have a specific Dynamic IP Address pool setting, the dynamic IP address pool for the group will be allocated from this list of subnets.

172.27.240.0/20

Top events Event brief 12:26 02/11/2023 6

Instance details | EC2 | ap-south1 | EC2 Instance Connect | ap-south1 | AS: ip-172-31-36-207 | https://18.143.183.29:943/admin/vpn\_settings

Gmail Maps YouTube News Translate

## USER MANAGEMENT

When a group does not have a specific Dynamic IP Address pool setting, the dynamic IP address pool for the group will be allocated from this list of subnets.

## ROUTING

Should VPN clients have access to private subnets (non-public networks on the server side)?

No Yes, using NAT Yes, using Routing

Specify the private subnets to which all clients should be given access (one per line):  
172.31.0.0/16

Should client Internet traffic be routed through the VPN? Yes

Should clients be allowed to access network services on the VPN gateway IP address? Yes

## DNS Settings

Pushing DNS servers to clients is optional, unless clients' Internet traffic is to be routed through the VPN

Do not alter clients' DNS server settings Yes

Top events Event brief 12:26 02/11/2023 6

Instance details | EC2 | ap-south1 | EC2 Instance Connect | ap-south1 | AS: ip-172-31-36-207 | https://18.143.183.29:943/admin/vpn\_settings

All Rights Reserved

## DNS Settings

Pushing DNS servers to clients is optional, unless clients' Internet traffic is to be routed through the VPN

Do not alter clients' DNS server settings  No

Have clients use the same DNS servers as the Access Server host  No

Have clients use specific DNS servers  Yes

Primary DNS Server: 8.8.8 To use a DNS server running on the Access Server host, use '127.0.0.1'

Secondary DNS Server: 8.8.4.4

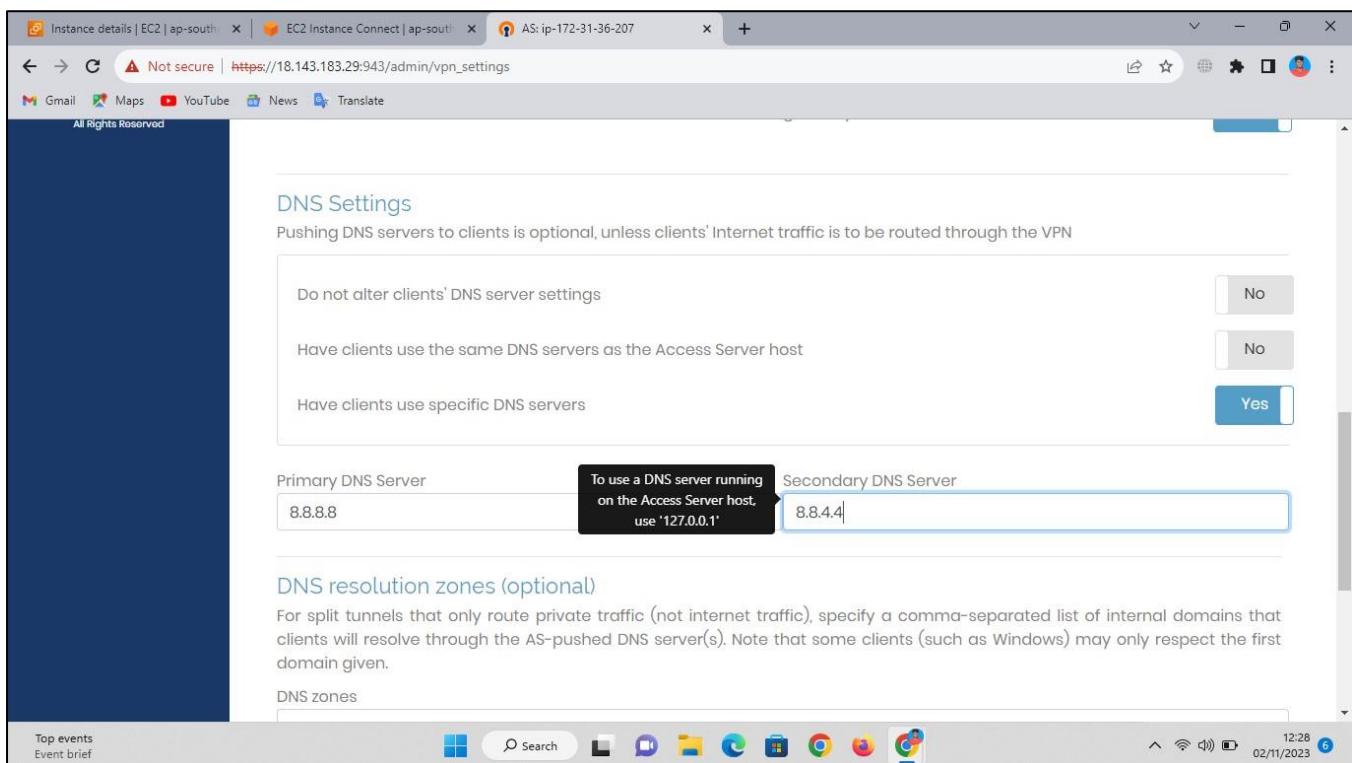
## DNS resolution zones (optional)

For split tunnels that only route private traffic (not internet traffic), specify a comma-separated list of internal domains that clients will resolve through the AS-pushed DNS server(s). Note that some clients (such as Windows) may only respect the first domain given.

DNS zones:

Top events Event brief

12:28 02/11/2023 6



Instance details | EC2 | ap-south1 | EC2 Instance Connect | ap-south1 | AS: ip-172-31-36-207 | https://18.143.183.29:943/admin/vpn\_settings

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## OPENVPN Access Server v2.11.3

### VPN Settings

#### VPN IP Network

Specify the addresses and netmasks for the virtual networks created for VPN clients

**Dynamic IP Address Network**

When a user does not have a specific VPN IP address configured on the [User Permissions](#) page, the user's VPN client is assigned an address from this network.

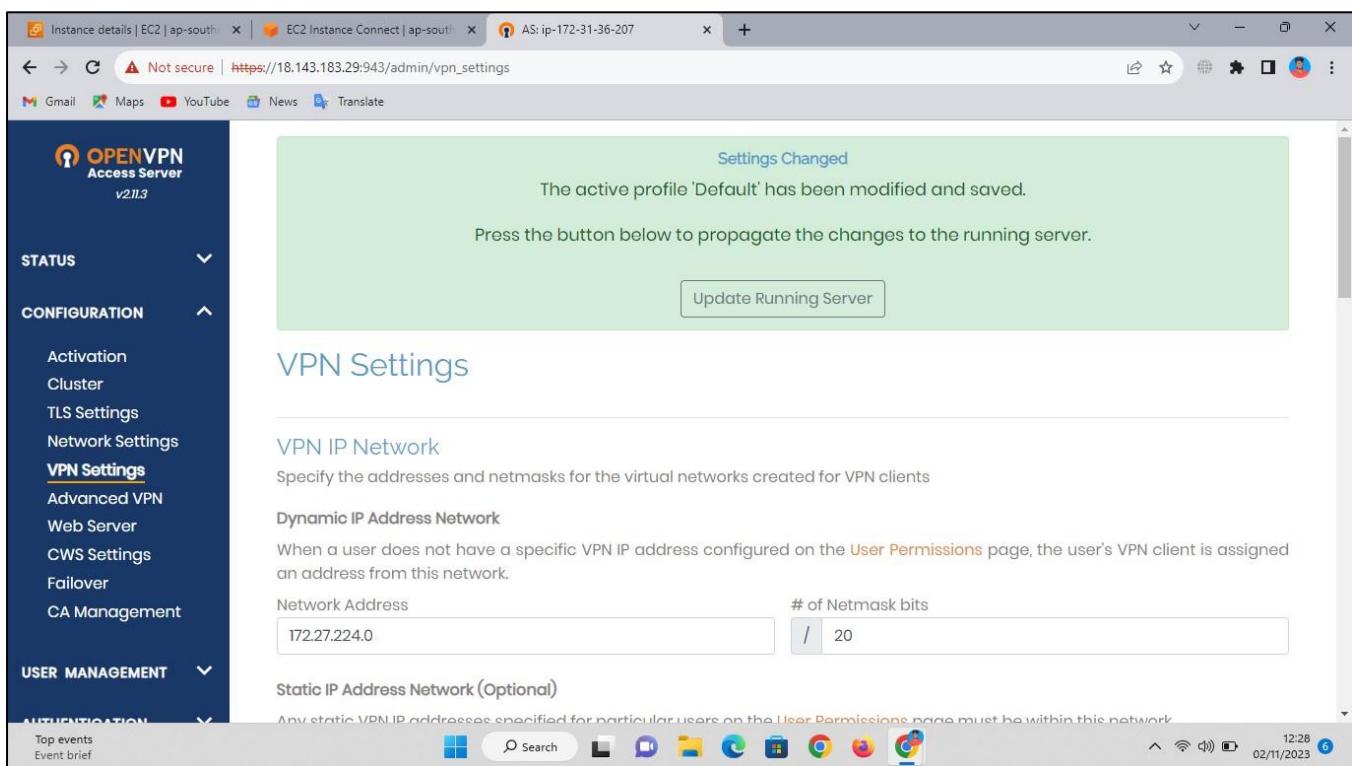
Network Address: 172.27.224.0 # of Netmask bits: 20

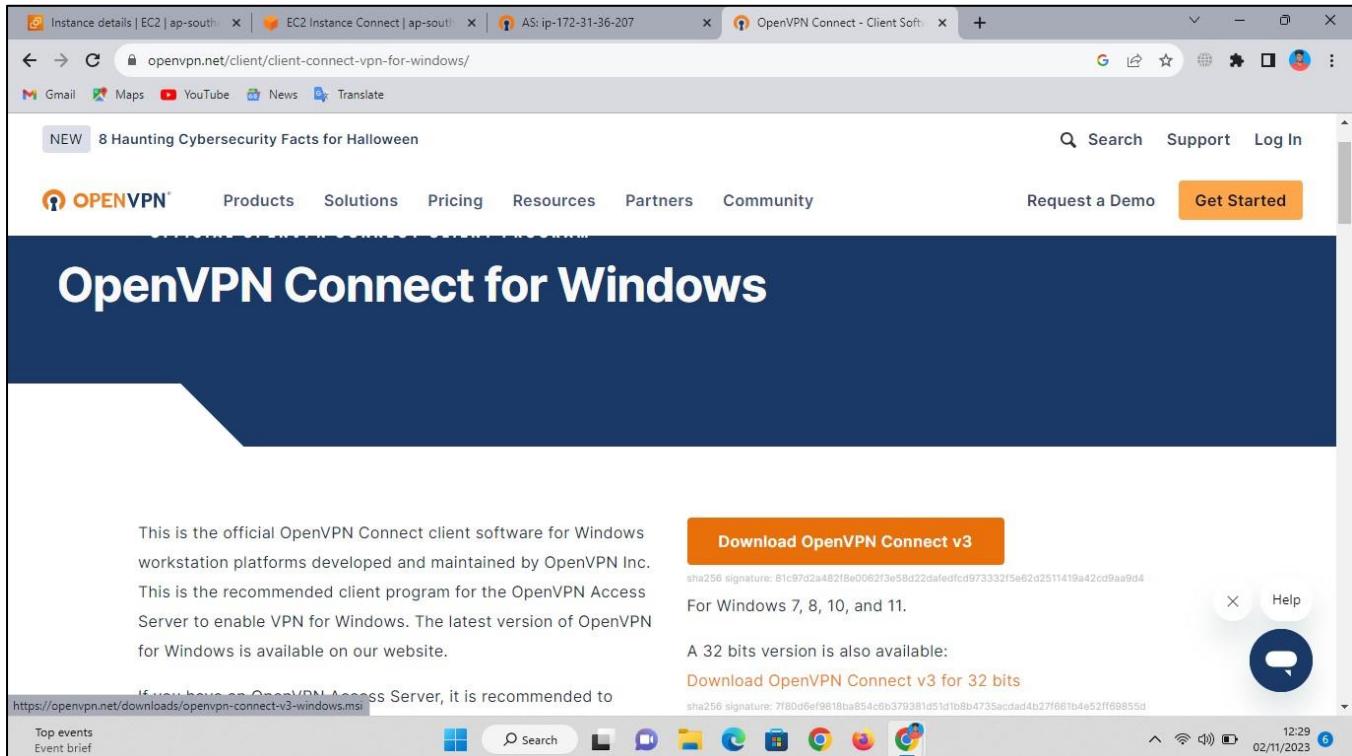
**Static IP Address Network (Optional)**

Any static VPN IP addresses specified for particular users on the [User Permissions](#) page must be within this network.

Top events Event brief

12:28 02/11/2023 6





This is the official OpenVPN Connect client software for Windows workstation platforms developed and maintained by OpenVPN Inc. This is the recommended client program for the OpenVPN Access Server to enable VPN for Windows. The latest version of OpenVPN for Windows is available on our website.

If you have an OpenVPN Access Server, it is recommended to <https://openvpn.net/downloads/openvpn-connect-v3-windows.msi>

Download OpenVPN Connect v3

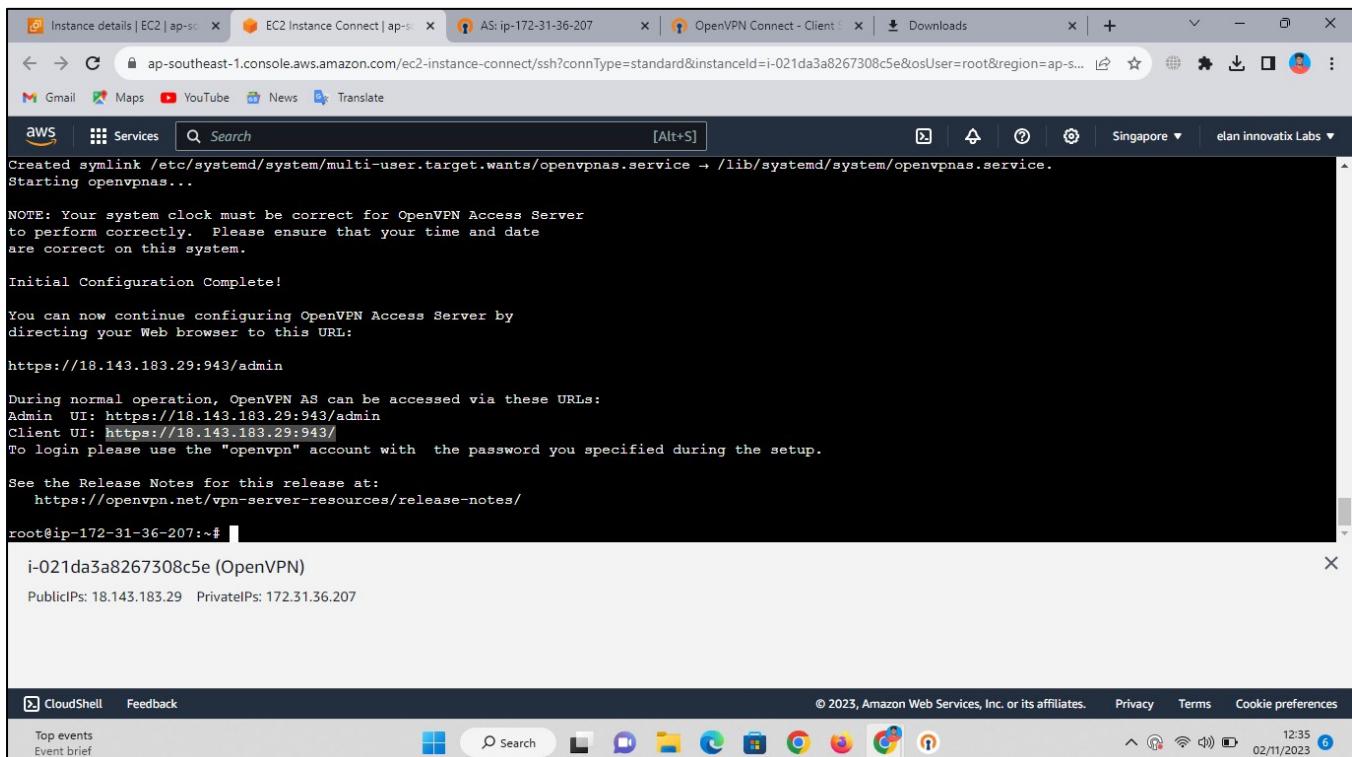
sha256 signature: 81c97d2a482f8e0062f3e58d22dafe0cd973332f5e62d2511419a42cd9aa9d4

For Windows 7, 8, 10, and 11.

A 32 bits version is also available:

Download OpenVPN Connect v3 for 32 bits

sha256 signature: 7fb0d6ef9818ba854c66379381d51d1b8d4735acdad4b27661b4e52ff69855d



```
Created symlink /etc/systemd/system/multi-user.target.wants/openvpnas.service → /lib/systemd/system/openvpnas.service.
Starting openvpnas...

NOTE: Your system clock must be correct for OpenVPN Access Server
to perform correctly. Please ensure that your time and date
are correct on this system.

Initial Configuration Complete!

You can now continue configuring OpenVPN Access Server by
directing your Web browser to this URL:

https://18.143.183.29:943/admin

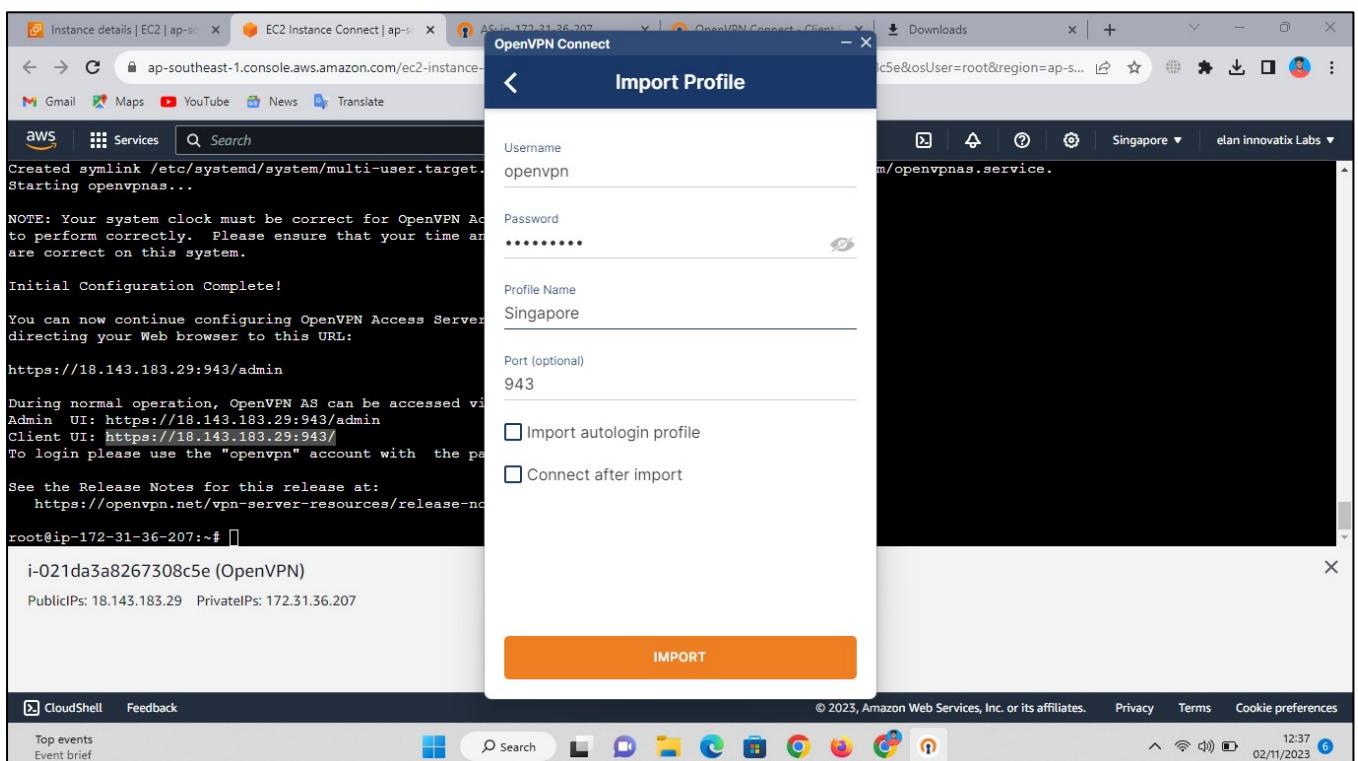
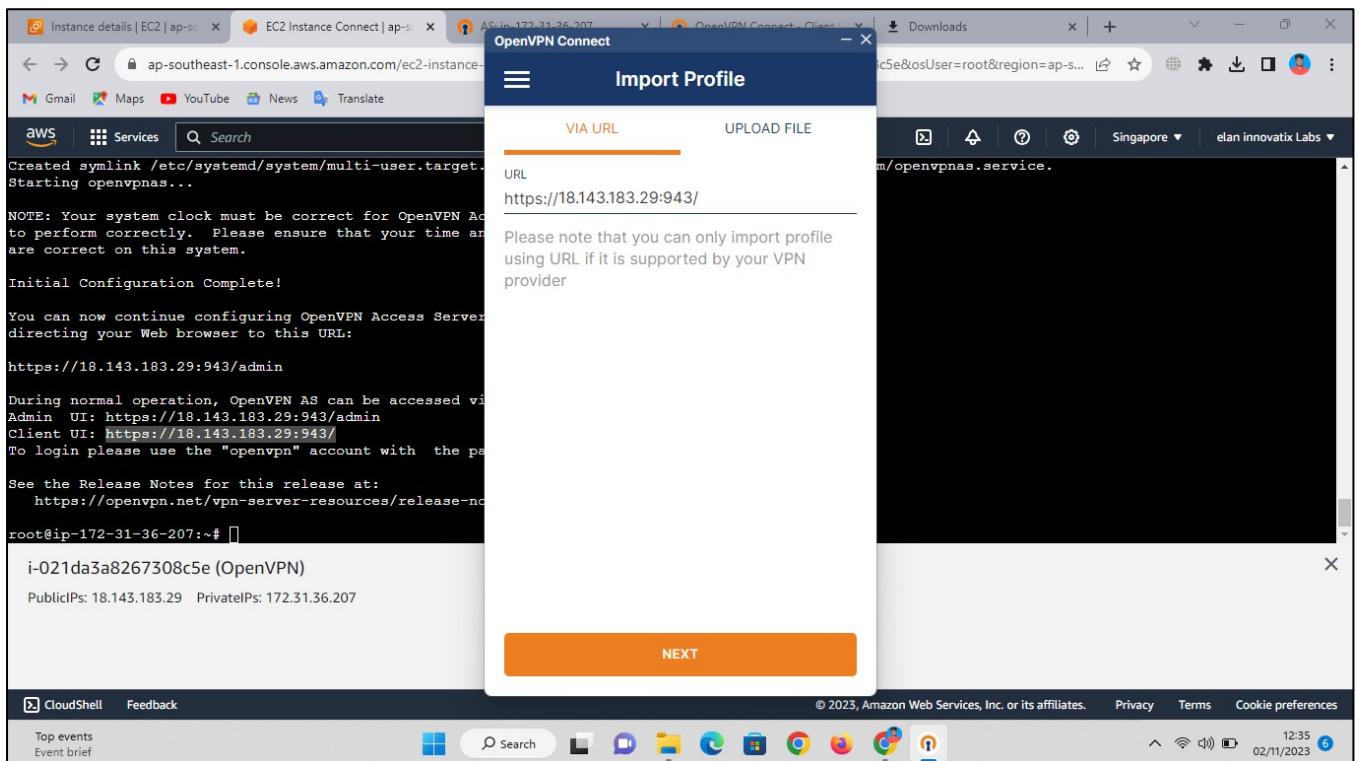
During normal operation, OpenVPN AS can be accessed via these URLs:
Admin UI: https://18.143.183.29:943/admin
Client UI: https://18.143.183.29:943/
To login please use the "openvpn" account with the password you specified during the setup.

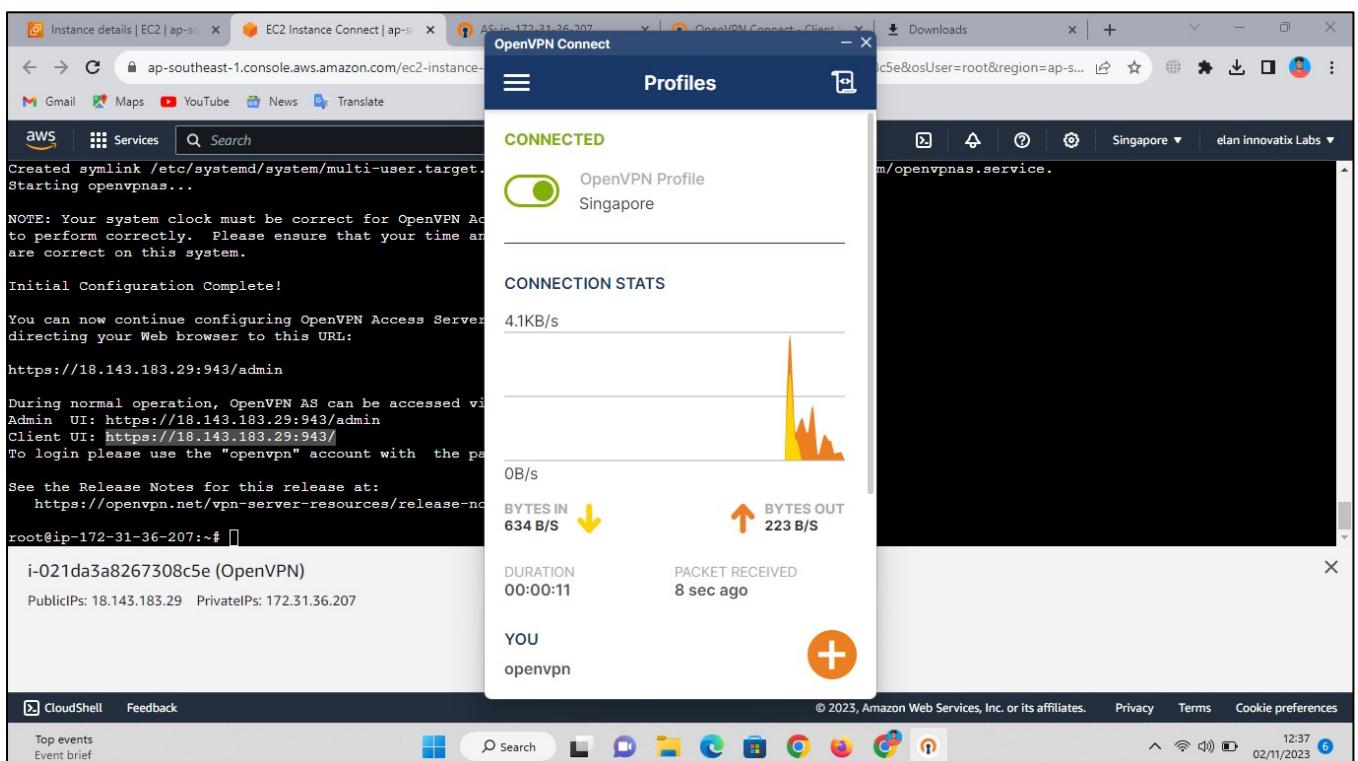
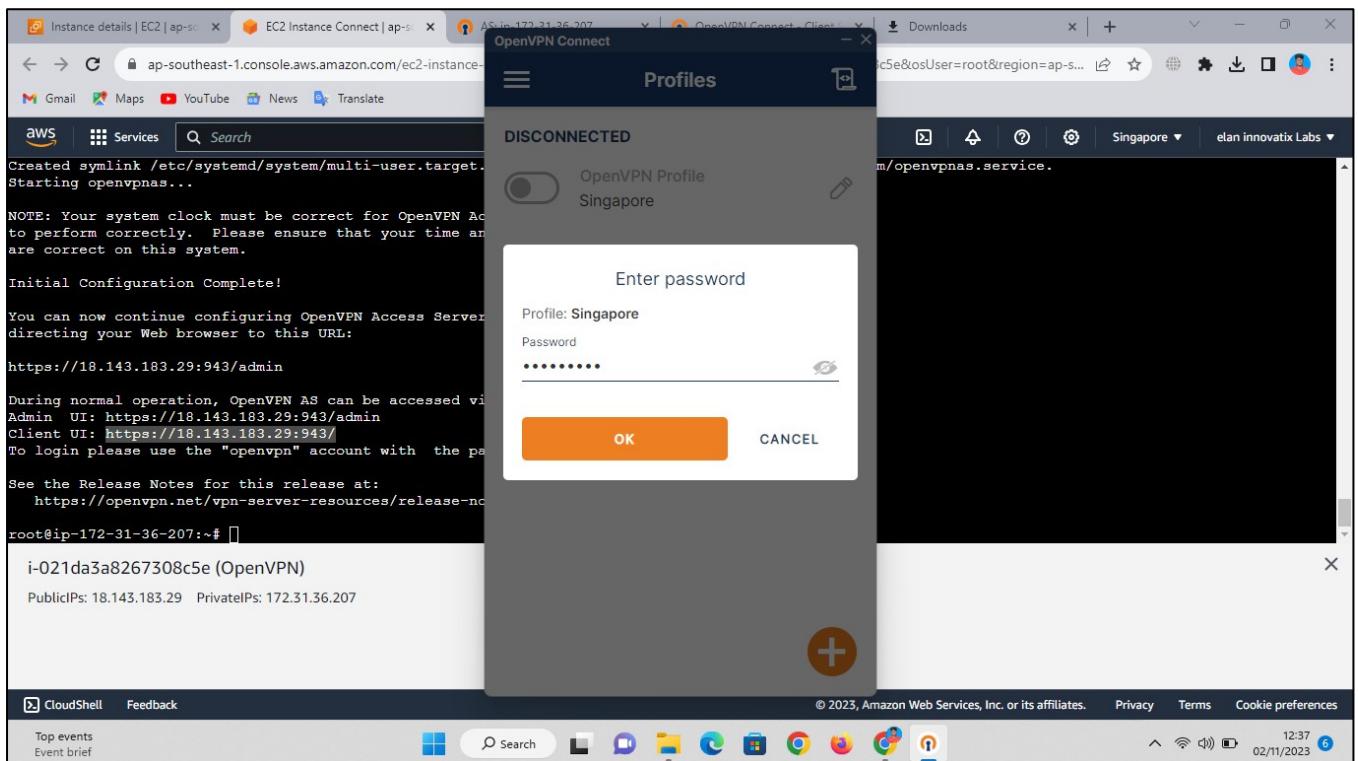
See the Release Notes for this release at:
https://openvpn.net/vpn-server-resources/release-notes/
```

root@ip-172-31-36-207:~#

i-021da3a8267308c5e (OpenVPN)

PublicIPs: 18.143.183.29 PrivateIPs: 172.31.36.207





whatismyipaddress.com/ip/18.143.183.29

Gmail Maps YouTube News Translate

What's My IP Address

Enter Keywords or IP Address...

ABOUT PRESS BLOG SUPPORT

MY IP IP LOOKUP HIDE MY IP VPNS TOOLS LEARN

IP Details For: 18.143.183.29

Decimal: 311408413  
Hostname: ec2-18-143-183-29.ap-southeast-1.compute.amazonaws.com  
ASN: 16509  
ISP: Amazon Data Services  
Singapore  
Services: Datacenter  
Assignment: Likely Static IP  
Country: Singapore  
State/Region: Singapore  
City: Singapore  
Latitude: 1.2900 (1° 17' 23.95" N)  
Longitude: 103.8503 (103° 51' 1.01" E)



[CLICK TO CHECK BLACKLIST STATUS](#)

Latitude and Longitude are often near the center of population. These values are not precise enough to be used to identify a specific location.

Waiting for id.hadron.ad.gt...

Top events Event brief

12:45 02/11/2023 6

Instances | EC2 | ap-southeast-1

ap-southeast-1.console.aws.amazon.com/ec2/home?region=ap-southeast-1#Instances:v=3;\$case=tags:true%5C;client:false;\$regex=tags:false%5C;c...

Gmail Maps YouTube News Translate

aWS Services Search [Alt+S]

EC2 Dashboard EC2 Global View Events

Instances Instances Instance Types Launch Templates Spot Requests Savings Plans Reserved Instances Dedicated Hosts Capacity Reservations New

Images AMIs AMI Catalog

CloudShell Feedback

Instances (1/1) Info

Find instance by attribute or tag (case-insensitive)

Name Instance ID Instance state Instance type Status check Alarm status Availability Zone

OpenVPN i-021da3a8267308c5e Running t2.micro 2/2 checks passed No alarms ap-southeast-1

Stop instance?

Instance IDs i-021da3a8267308c5e (OpenVPN)

To confirm that you want to stop the instance, choose the Stop button below.

Cancel Stop

Instance ID: i-021da3a8267308c5e (OpenVPN) Public IPv4 address: 18.143.183.29 [open address] Private IPv4 addresses: 172.31.36.207

IPv6 address: Instance state: Running Public IPv4 DNS: ec2-18-143-183-29.ap-southeast-1.compute.amazonaws.com

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Top events Event brief

12:46 02/11/2023 6