



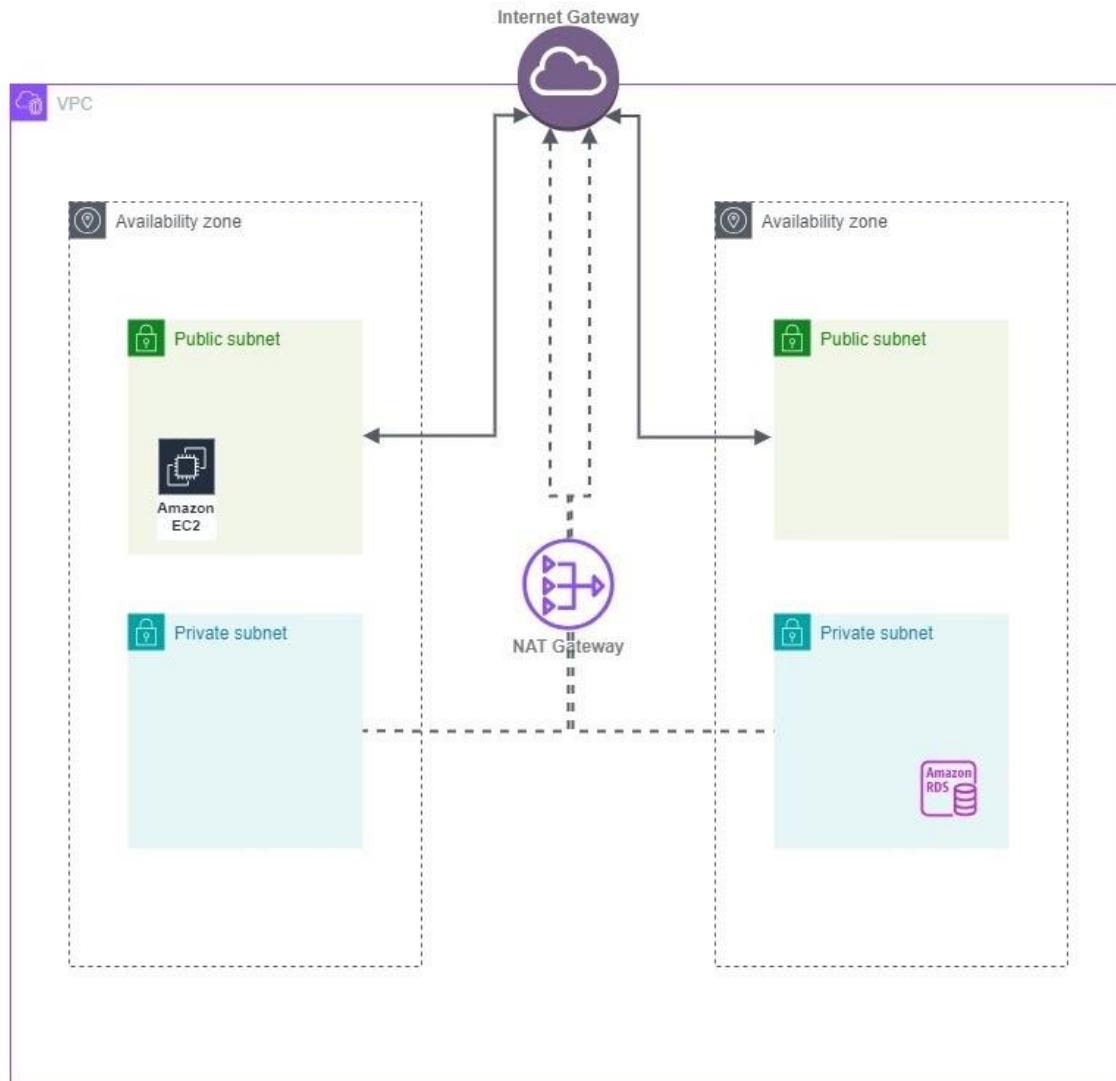
IT4090 - Cloud Computing

Assignment 3

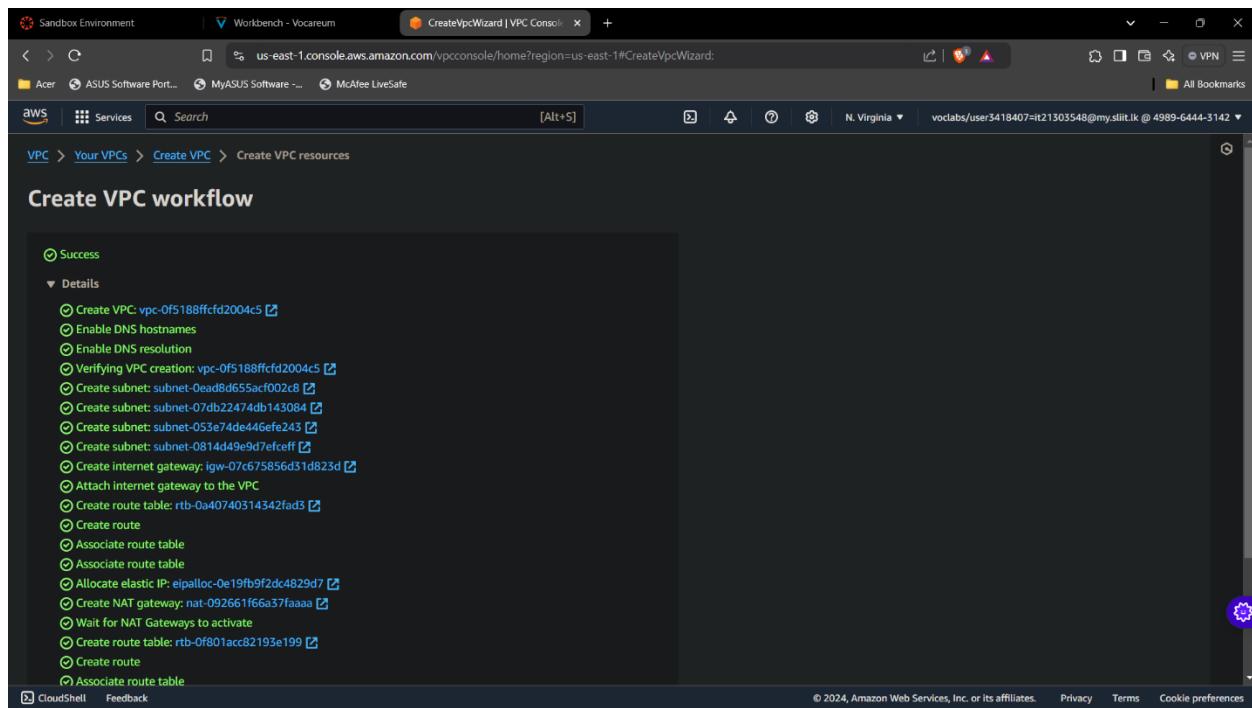
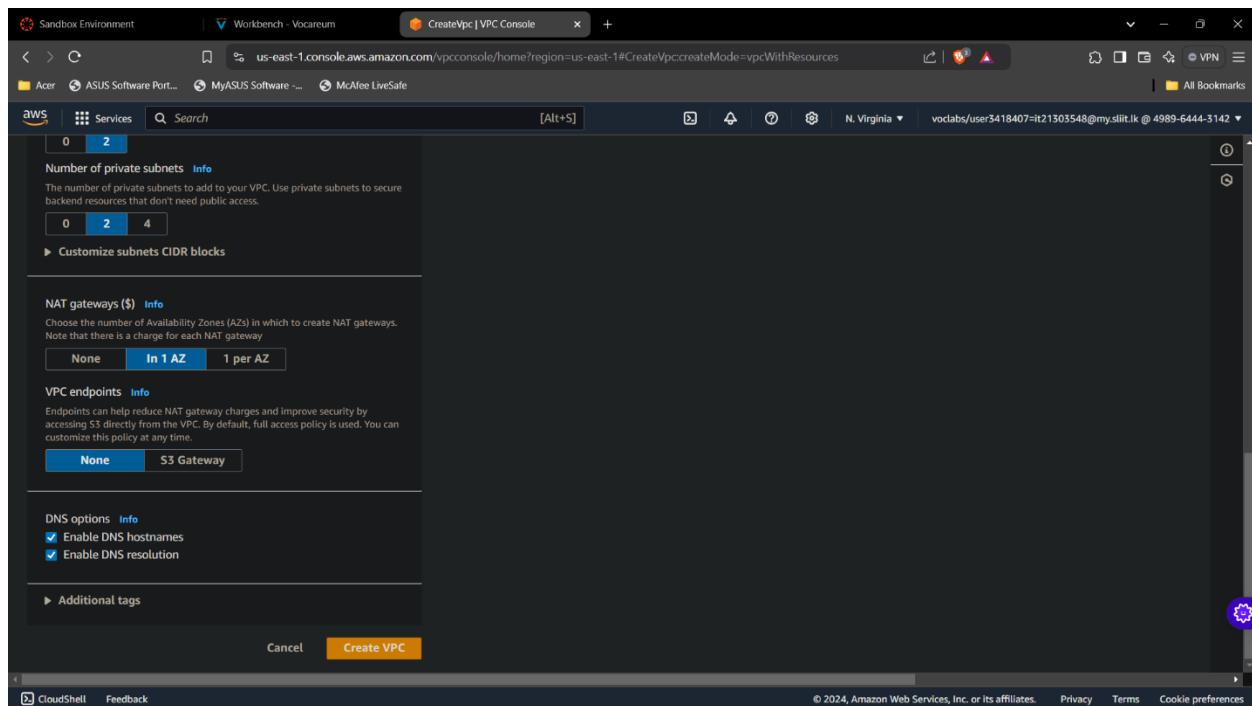
IT21303548 – Gunasekara W.M.W.A.G.T.N.A

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1. Architecture Diagram



2. Create a VPC



Sandbox Environment | Workbench - Vocareum | VpcDetails | VPC Console | +

us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#VpcDetails:VpcId=vpc-0f5188ffcf2004c5

Acer ASUS Software Port... MyASUS Software ... McAfee LiveSafe

aws Services Search [Alt+S] N. Virginia voclabs/user3418407=it21303548@my.slit.lk @ 4989-6444-3142 All Bookmarks

VPC dashboard ×

EC2 Global View Filter by VPC

Virtual private cloud Your VPCs 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

VPC Your VPCs > vpc-0f5188ffcf2004c5 / it21303548-vpc

Details Info

VPC ID vpc-0f5188ffcf2004c5	State Available	DNS hostnames Enabled	DNS resolution Enabled
Tenancy Default	DHCP option set dopt-07ab4b8b06b09cc8	Main route table rtb-092b5701b8197e067	Main network ACL acl-03ee882e5642f94f4
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 498964443142	

Resource map CIDs Flow logs Tags Integrations

Resource map Info

VPC Show details Subnets (4) Route tables (4) Netw

Your AWS virtual network Subnets within this VPC Route network traffic to resources

it21303548-vpc

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Sandbox Environment | Workbench - Vocareum | VpcDetails | VPC Console | +

us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#VpcDetails:VpcId=vpc-0f5188ffcf2004c5

Acer ASUS Software Port... MyASUS Software ... McAfee LiveSafe

aws Services Search [Alt+S] N. Virginia voclabs/user3418407=it21303548@my.slit.lk @ 4989-6444-3142 All Bookmarks

VPC dashboard ×

EC2 Global View Filter by VPC

Virtual private cloud Your VPCs 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

VPC Your VPCs > vpc-0f5188ffcf2004c5 / it21303548-vpc

Details Info

No	10.0.0.0/16	-	-
Network Address Usage metrics Disabled	Route 53 Resolver DNS Firewall rule groups -	Owner ID 498964443142	

Resource map CIDs Flow logs Tags Integrations

Resource map Info

VPC Show details Subnets (4) Route tables (4) Netw

Your AWS virtual network Subnets within this VPC Route network traffic to resources

it21303548-vpc

Subnets (4)

Subnets within this VPC

Route tables (4)

Route network traffic to resources

us-east-1a

- it21303548-subnet-public1-us-east-1a
- it21303548-subnet-private1-us-east-1a

us-east-1b

- it21303548-subnet-public2-us-east-1b
- it21303548-subnet-private2-us-east-1b

Route tables

- it21303548-rtb-public
- it21303548-rtb-private2-us-east-1b
- rtb-092b5701b8197e067
- it21303548-rtb-private1-us-east-1a

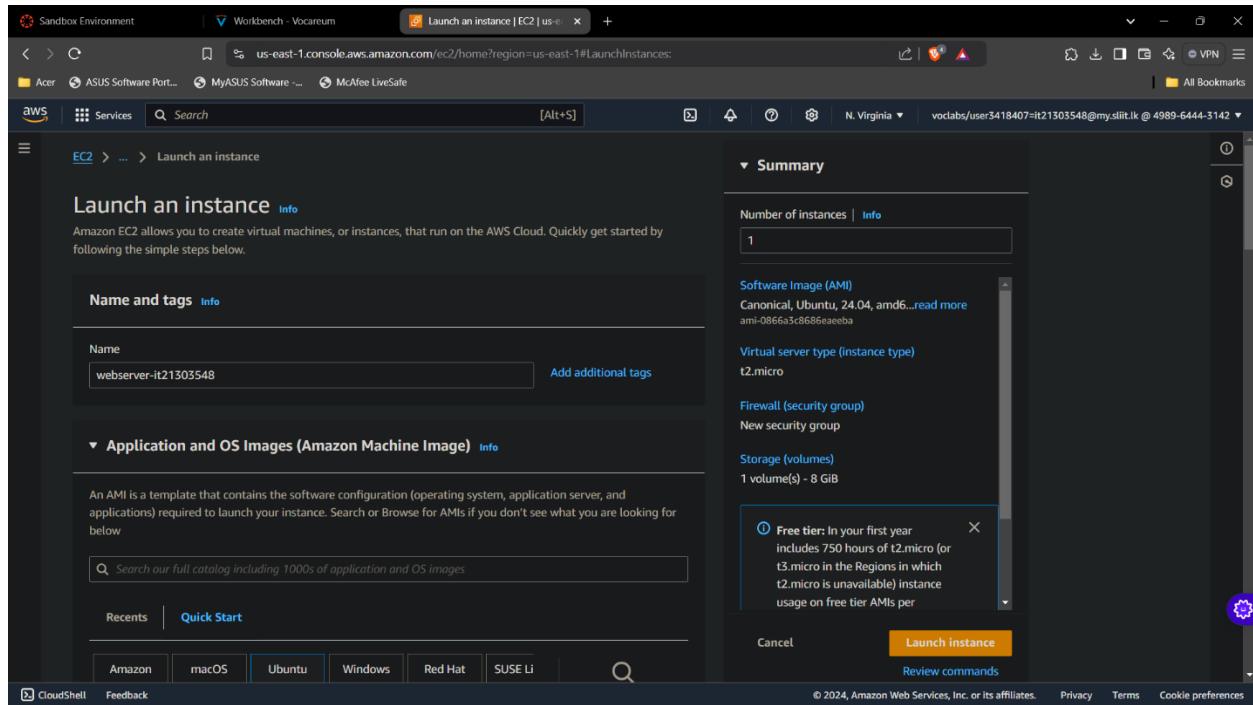
Netw

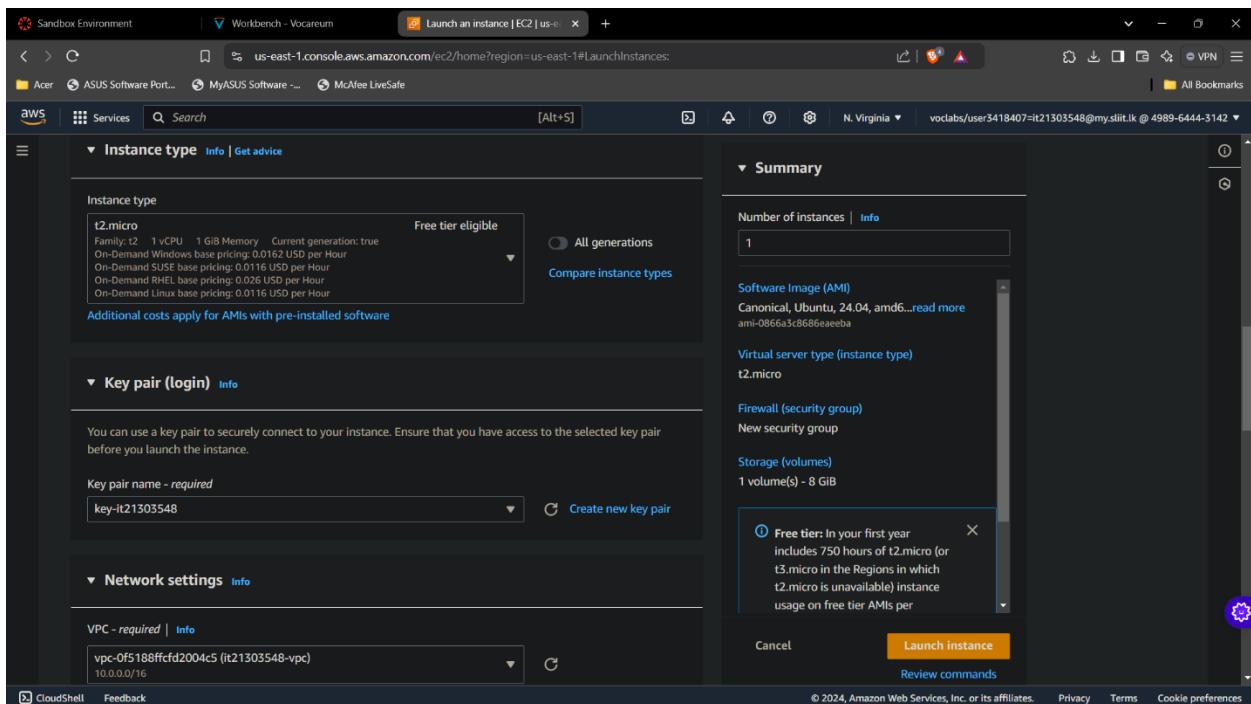
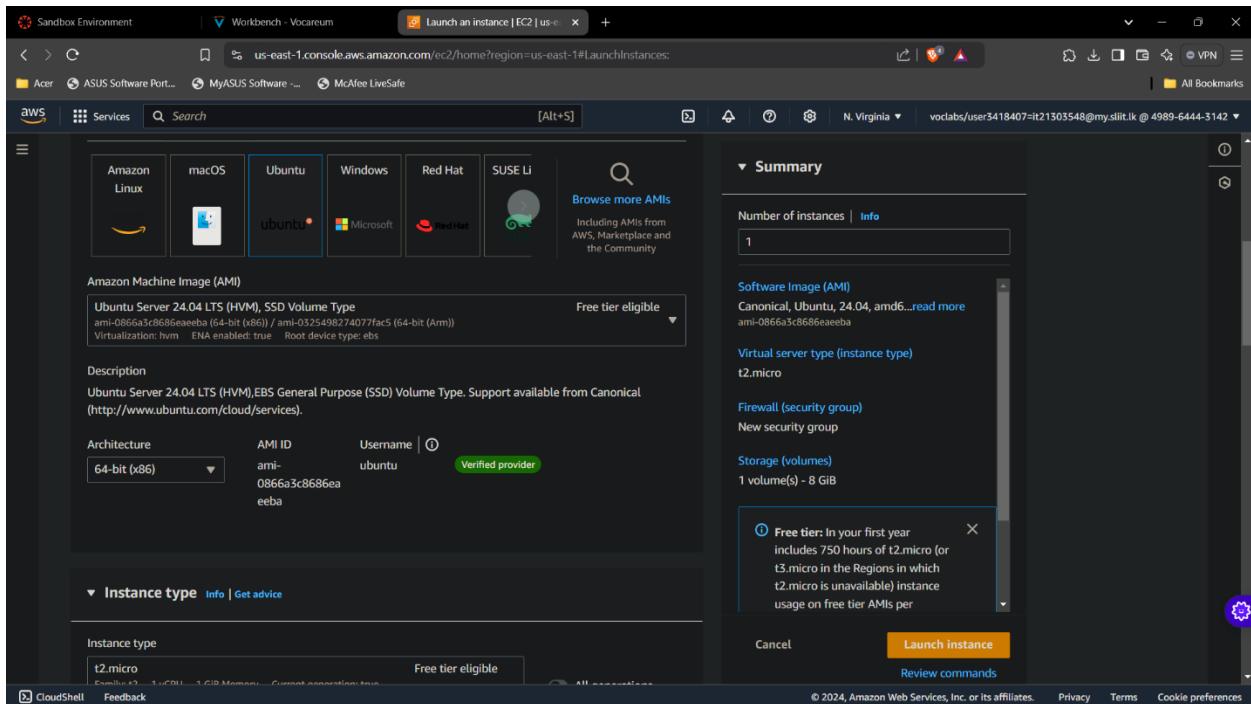
Connec

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3. Create an EC2

a) Connect to the Instance





Network settings

VPC - required

vpc-0f518ffcf2004c5 (it21303548-vpc) 10.0.0.0/16

Subnet

subnet-0ead8d655acf0028 it21303548-subnet-public-1-us-east-1a

VPC: vpc-0f518ffcf2004c5 Owner: 408964443142 Availability Zone: us-east-1a Zone type: Availability Zone IP addresses available: 4090 CIDR: 10.0.0.0/20

Auto-assign public IP

Enable

Additional charges apply when outside of free tier allowance

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

Security group name - required

webserviceSG-it21303548

This security group will be added to all network interfaces. The name can't be edited after the security group is created. Max length is 255 characters. Valid characters: a-z, A-Z, 0-9, spaces, and _~!@#\$%^&*()

Description - required

Security Group Of Assignment 3

Inbound Security Group Rules

Security group rule 1 (TCP, 22, 0.0.0.0/0)

Type: ssh Protocol: TCP Port range: 22

Source type: Anywhere

Description: e.g. SSH for admin desktop

0.0.0.0/0

⚠️ Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Summary

Number of instances: 1

Software Image (AMI): Canonical, Ubuntu, 24.04, amd64...read more

Virtual server type (instance type): t2.micro

Firewall (security group): New security group

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

Free tier: In your first year 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

Launch instance

Description - required

Security Group Of Assignment 3

Inbound Security Group Rules

Security group rule 1 (TCP, 22, 0.0.0.0/0)

Type: ssh Protocol: TCP Port range: 22

Source type: Anywhere

Description: e.g. SSH for admin desktop

0.0.0.0/0

⚠️ Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Configure storage

Advanced

1x 8 GiB gp3 Root volume (Not encrypted)

Summary

Number of instances: 1

Software Image (AMI): Canonical, Ubuntu, 24.04, amd64...read more

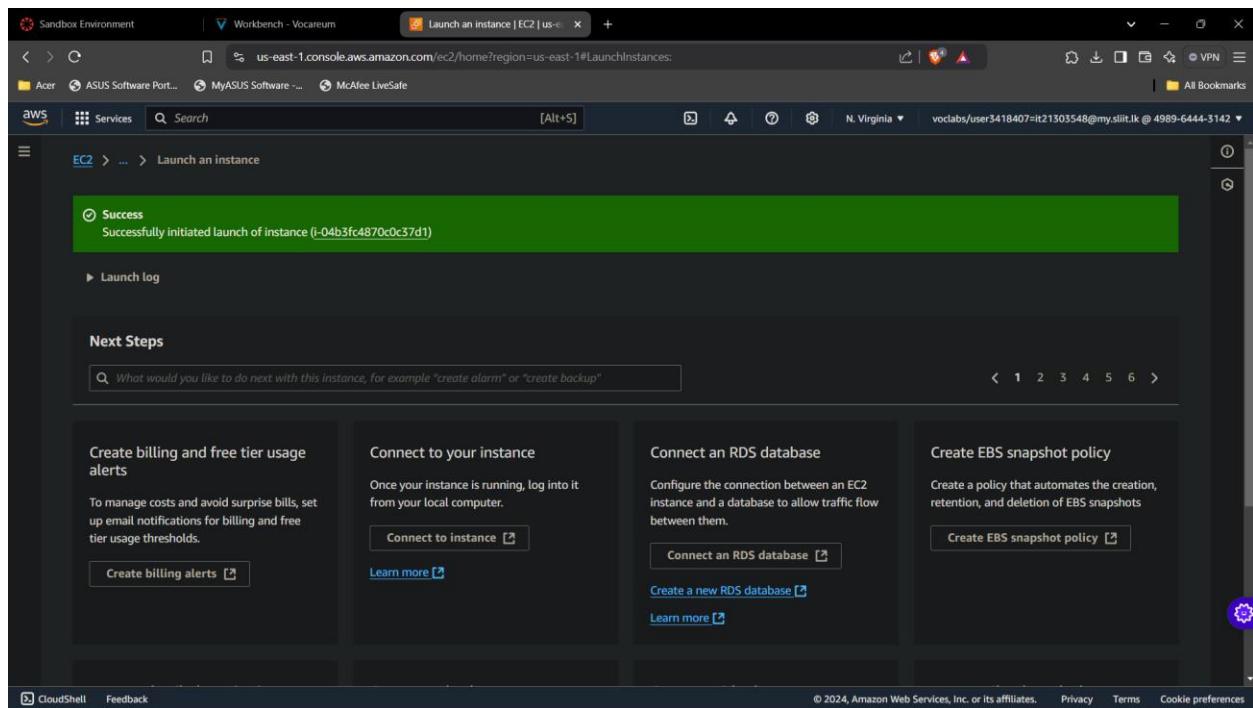
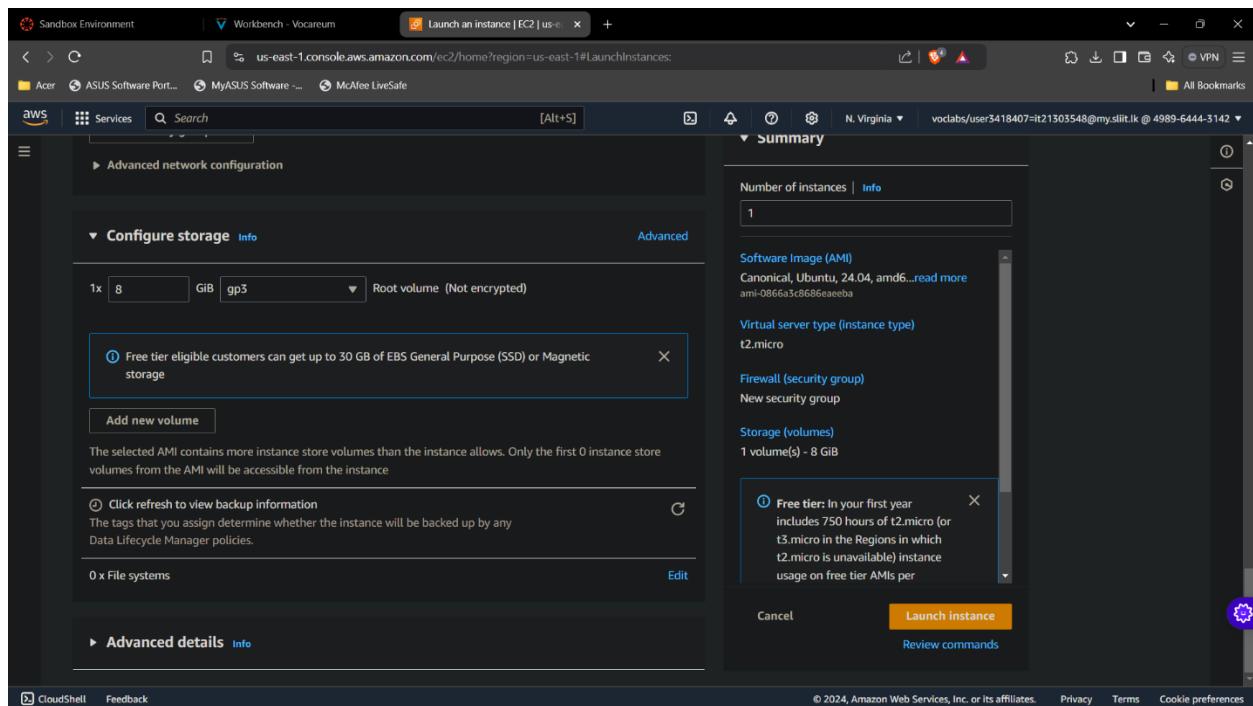
Virtual server type (instance type): t2.micro

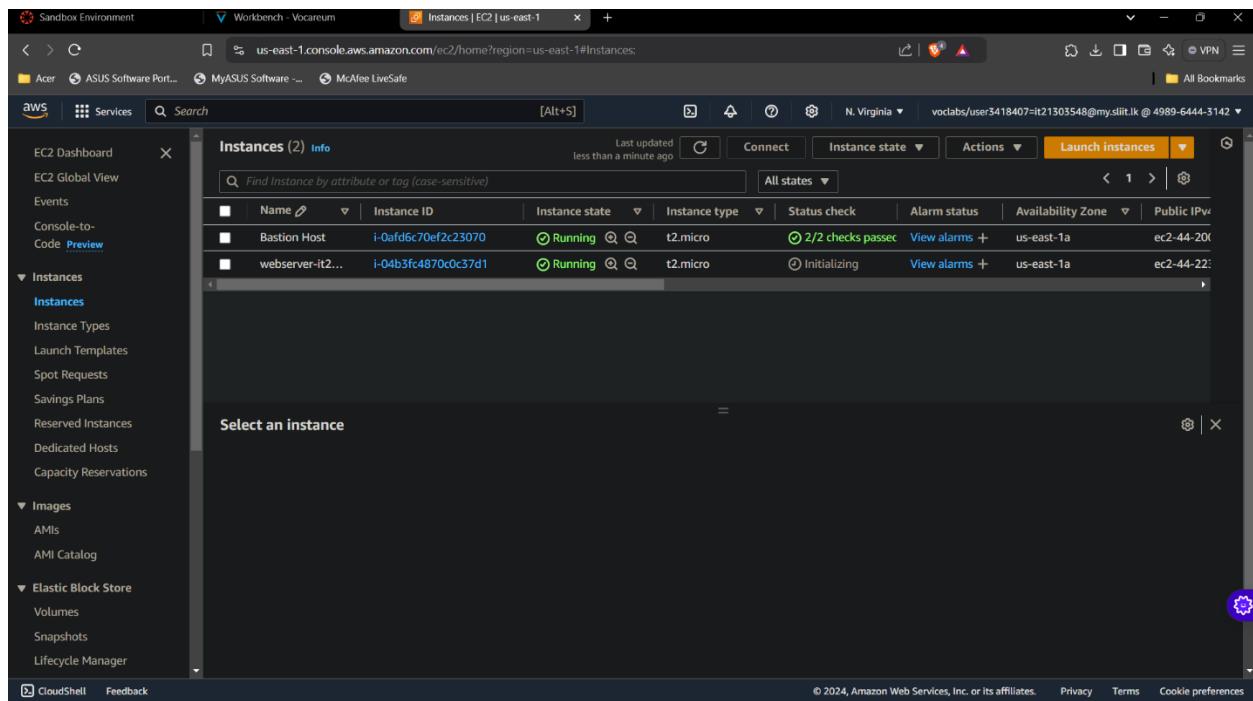
Firewall (security group): New security group

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

Free tier: In your first year 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

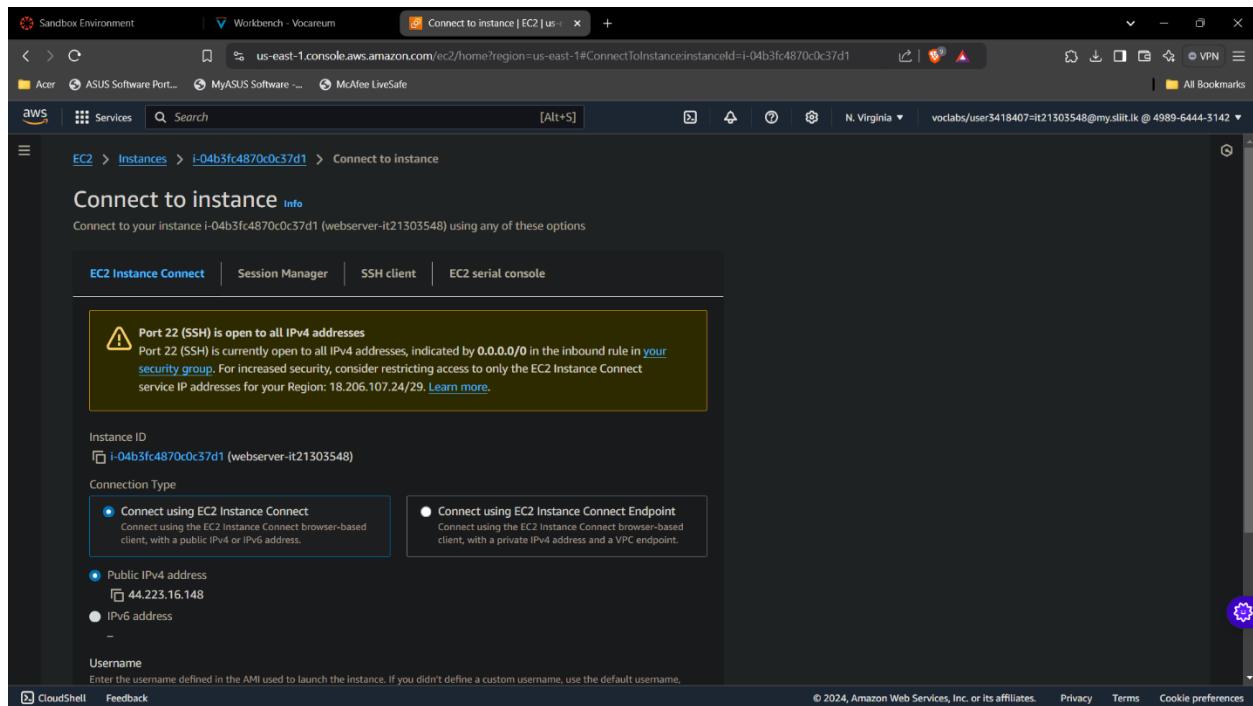
Launch instance





The screenshot shows the AWS EC2 Instances page. The left sidebar is collapsed. The main content area displays a table of instances. The first instance, 'Bastion Host', is selected and highlighted in blue. It has an instance ID of i-0af6c70ef2c23070, is in a 'Running' state, and is a t2.micro type. The second instance, 'webserver-it2...', has an instance ID of i-04b3fc4870c0c37d1, is also in a 'Running' state, and is a t2.micro type. The table includes columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, and Public IP. A search bar at the top allows filtering by instance attribute or tag. A 'Launch instances' button is visible at the top right. The bottom of the page shows the AWS footer with links to CloudShell, Feedback, and cookie preferences.

b) Add Inbound Rule



The screenshot shows the 'Connect to instance' page for the selected EC2 instance. The top navigation bar shows the instance ID: i-04b3fc4870c0c37d1. The main content area is titled 'Connect to instance' and contains a warning message: 'Port 22 (SSH) is open to all IPv4 addresses'. It explains that port 22 is currently open to all IPv4 addresses, indicated by 0.0.0.0/0 in the inbound rule of the security group. It advises increasing security by restricting access to only the EC2 Instance Connect service IP addresses for the region: 18.206.107.24/29. Below the message, there are four connection options: 'EC2 Instance Connect', 'Session Manager', 'SSH client', and 'EC2 serial console'. Under 'EC2 Instance Connect', there are two options: 'Connect using EC2 Instance Connect' (selected) and 'Connect using EC2 Instance Connect Endpoint'. Under 'Connection Type', there are three options: 'Public IPv4 address' (selected, showing 44.223.16.148), 'IPv6 address' (radio button), and a dropdown menu. At the bottom, there is a 'Username' field with a placeholder: 'Enter the username defined in the AMI used to launch the instance. If you didn't define a custom username, use the default username.' The AWS footer is at the bottom.

Edit inbound rules Info

Inbound rules control the incoming traffic that's allowed to reach the instance.

Inbound rules Info

Security group rule ID	Type <small>Info</small>	Protocol <small>Info</small>	Port range <small>Info</small>	Source <small>Info</small>	Description - optional <small>Info</small>
sgr-0578209f11d15b093	SSH	TCP	22	Custom	<input type="text" value="0.0.0.0"/> <input type="button" value="Delete"/>
-	HTTP	TCP	80	Anywh...	<input type="text" value="0.0.0.0"/> <input type="button" value="Delete"/>

Add rule

⚠ Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Cancel **Preview changes** **Save rules**

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sg-0209ee0591538bd18 - webserverSG-it21303548

Details

Security group name	Security group ID	Description	VPC ID
webserverSG-it21303548	sg-0209ee0591538bd18	Security Group Of Assignment 3	vpc-0f518ffcfcd2004c5
Owner	Inbound rules count	Outbound rules count	
498964443142	2 Permission entries	1 Permission entry	

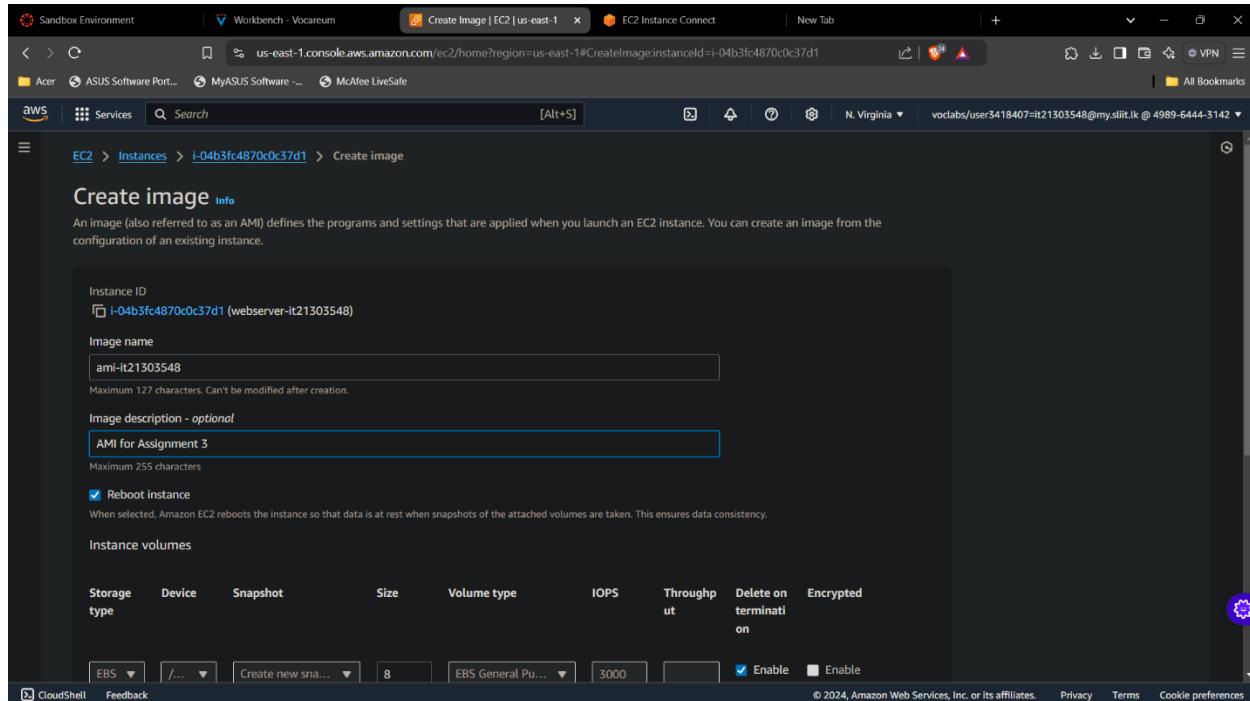
Inbound rules (2)

Name	Security group rule...	IP version	Type	Protocol	Port range
sgr-03a3ff7ced85bee2b	IPv4	HTTP	TCP	80	
sgr-0578209f11d15b0...	IPv4	SSH	TCP	22	

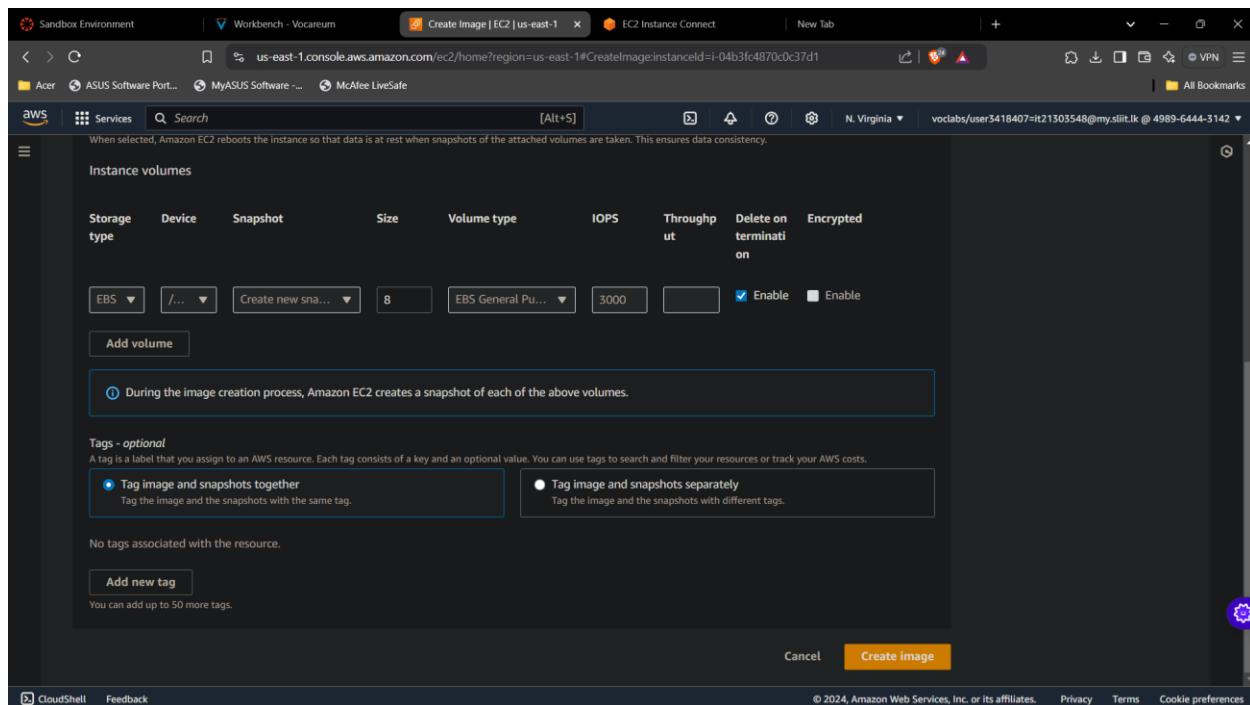
Actions

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4. Create An Image (AMI)



The screenshot shows the 'Create image' wizard on the AWS Management Console. The instance ID is 'i-04b3fc4870c0c37d1'. The image name is 'ami-it21303548'. The image description is 'AMI for Assignment 3'. The 'Reboot instance' checkbox is checked. The instance volumes table shows one volume: an 8 GB EBS General Purpose volume with 3000 IOPS. The 'Enable' checkboxes for both volume and snapshot are checked. The status bar at the bottom indicates '© 2024, Amazon Web Services, Inc. or its affiliates.' and links for 'Privacy', 'Terms', and 'Cookie preferences'.



The screenshot shows the 'Create image' wizard with advanced configuration options. The 'Instance volumes' table is identical to the previous screenshot. A note at the bottom of the volume section states: 'During the image creation process, Amazon EC2 creates a snapshot of each of the above volumes.' The 'Tags - optional' section contains two radio button options: 'Tag image and snapshots together' (selected) and 'Tag image and snapshots separately'. The 'Add new tag' button is visible. The status bar at the bottom indicates '© 2024, Amazon Web Services, Inc. or its affiliates.' and links for 'Privacy', 'Terms', and 'Cookie preferences'.

Currently creating AMI ami-07d413148323236dc from instance i-04b3fc4870c0c37d1. Check that the AMI status is 'Available' before deleting the instance or carrying out other actions related to this AMI.

Instances (1/2) Info

Last updated less than a minute ago

Actions **Launch Instances**

Details **Status and alarms** **Monitoring** **Security** **Networking** **Storage** **Tags**

Instance summary Info

Instance ID i-04b3fc4870c0c37d1 (webserver-it21303548)	Public IPv4 address 44.223.16.148 open address	Private IPv4 addresses 10.0.5.142
IPv6 address -	Instance state Running	Public IPv4 DNS ec2-44-223-16-148.compute-1.amazonaws.com open address
Hostname type IP name: ip-10-0-5-142.ec2.internal	Private IP DNS name (IPv4 only) ip-10-0-5-142.ec2.internal	

Amazon Machine Images (AMIs) (1/1) Info

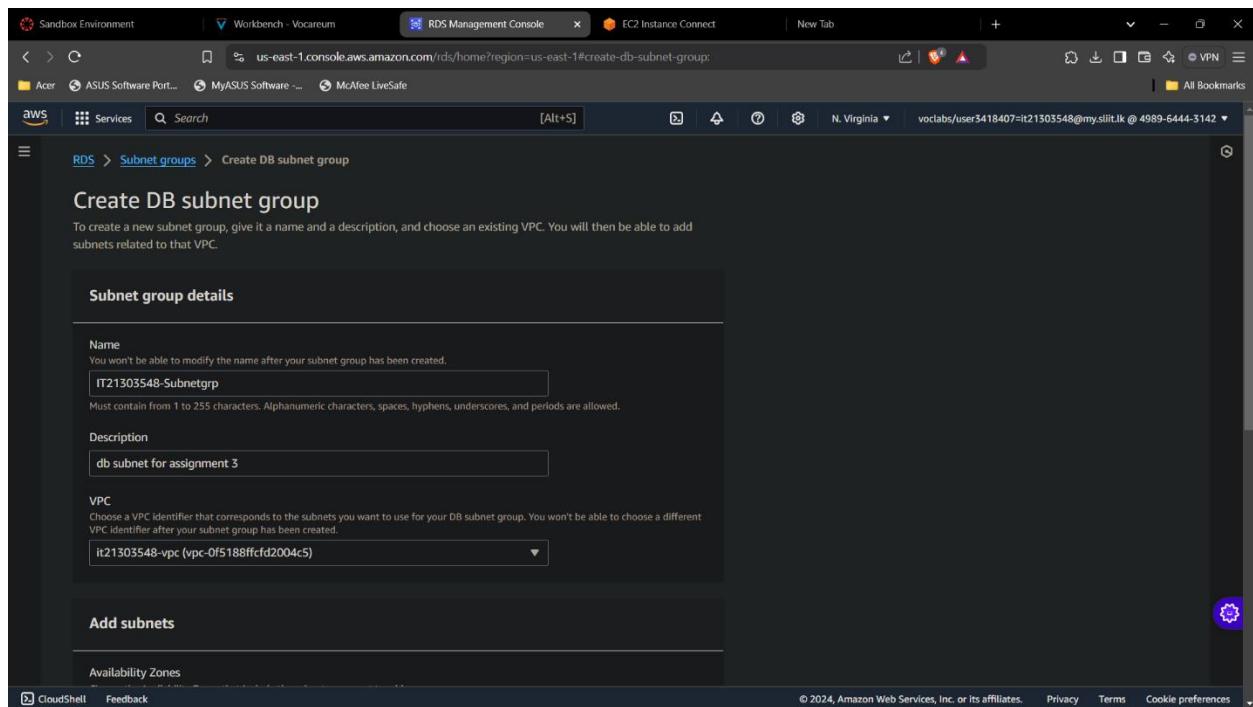
Actions **Launch Instance from AMI**

Details **Permissions** **Storage** **Tags**

AMI ID ami-07d413148323236dc	Image type machine	Platform details Linux/UNIX	Root device type EBS
AMI name ami-it21303548	Owner account ID 498964443142	Architecture x86_64	Usage operation RunInstances
Root device name /dev/sda1	Status Pending	Source 498964443142/ami-it21303548	Virtualization type hvm
Boot mode uefi-preferred	State reason -	Creation date -	Kernel ID -

5. Create Database

a) Create new Subnet Group



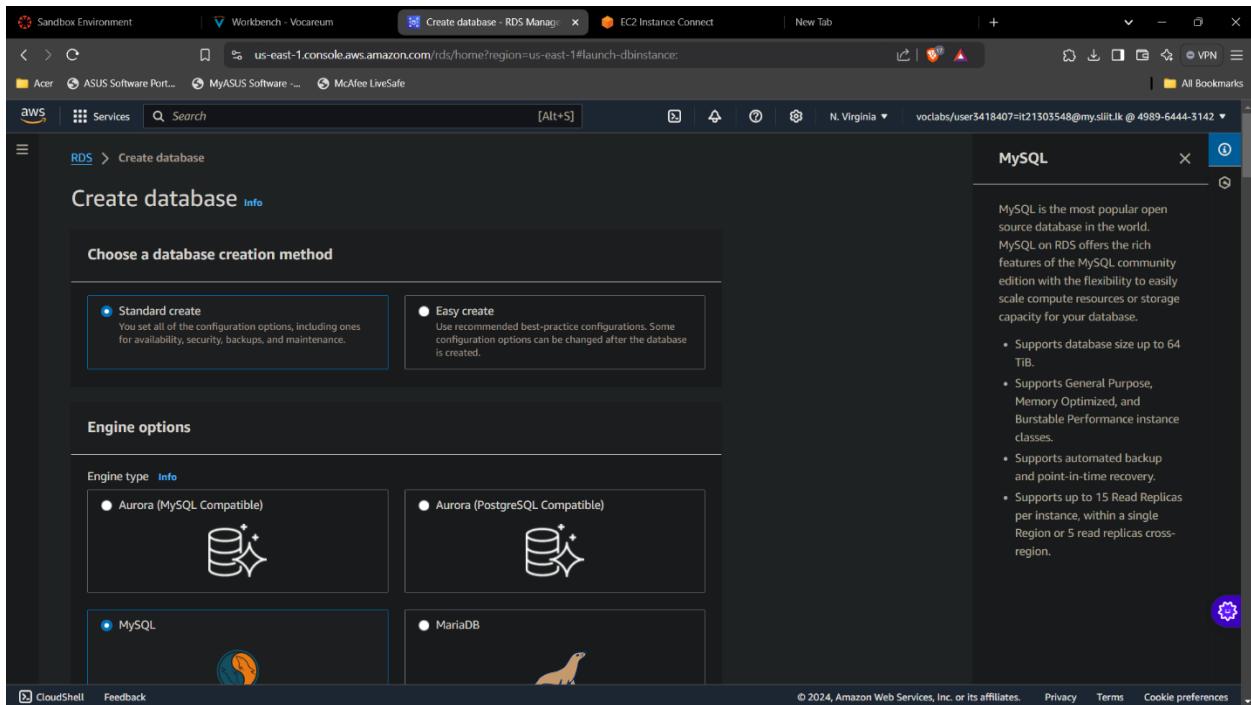
The screenshot shows the 'Add subnets' step in the AWS RDS Management Console. The 'Availability Zones' section shows 'us-east-1a' and 'us-east-1b' selected. The 'Subnets' section shows 'subnet-053e74de446efef243 (10.0.128.0/20)' and 'subnet-0814d49e9d7efceff (10.0.144.0/20)' selected. A note indicates that for Multi-AZ DB clusters, 3 subnets in 3 different Availability Zones are required. The 'Subnets selected (2)' table lists the selected subnets with their CIDR blocks.

Availability zone	Subnet ID	CIDR block
us-east-1a	subnet-053e74de446efef243	10.0.128.0/20
us-east-1b	subnet-0814d49e9d7efceff	10.0.144.0/20

The screenshot shows the 'Subnet Groups - RDS Manager' page in the AWS RDS Management Console. A success message 'Successfully created it21303548-Subnetgrp. View subnet group' is displayed. The 'Subnet groups (1)' table shows the newly created subnet group 'it21303548-Subnetgrp' with a description 'db subnet for assignment 3', status 'Complete', and VPC 'vpc-0f5188ffcf2004c5'.

Name	Description	Status	VPC
it21303548-Subnetgrp	db subnet for assignment 3	Complete	vpc-0f5188ffcf2004c5

b) Create Database



The screenshot shows the 'Create database' page in the AWS RDS console. The 'Standard create' method is selected. The 'Engine options' section shows 'MySQL' as the chosen engine type. The right sidebar provides information about MySQL, including its popularity and various features.

Create database Info

Choose a database creation method

Standard create
You set all of the configuration options, including ones for availability, security, backups, and maintenance.

Easy create
Use recommended best-practice configurations. Some configuration options can be changed after the database is created.

Engine options

Engine type Info

Aurora (MySQL Compatible) 

Aurora (PostgreSQL Compatible) 

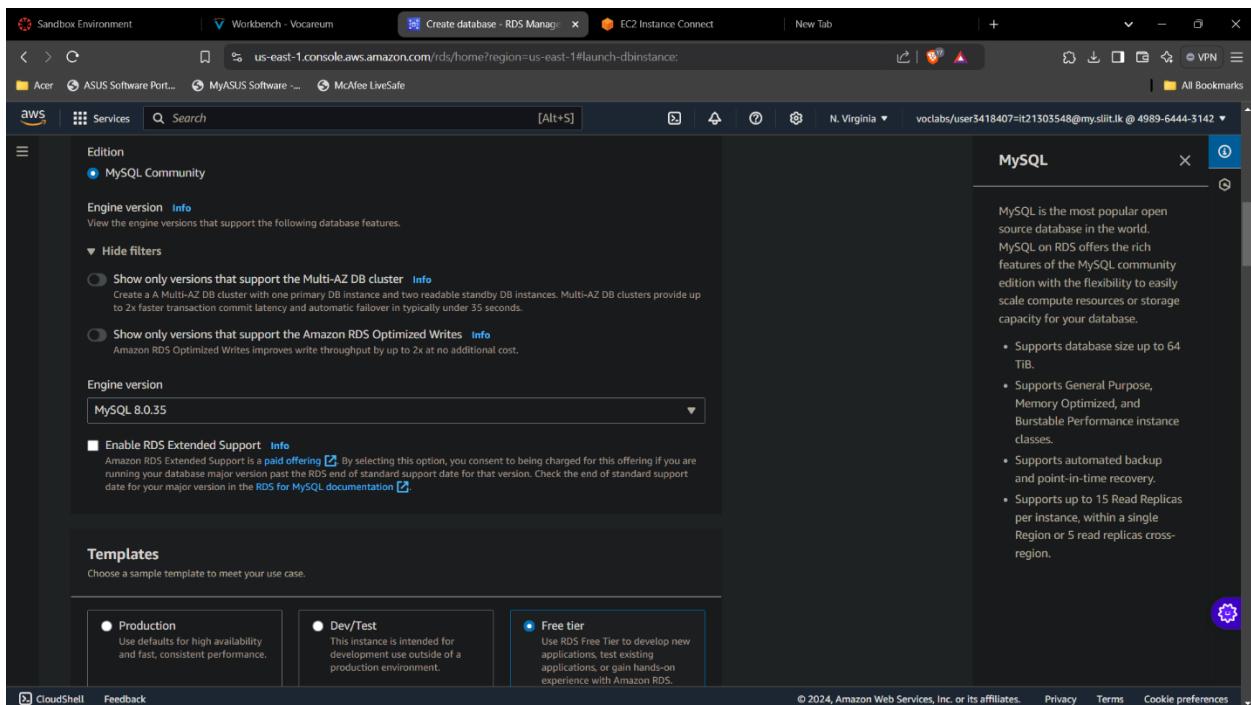
MySQL 

MariaDB 

MySQL

MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.

- Supports database size up to 64 TiB.
- Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
- Supports automated backup and point-in-time recovery.
- Supports up to 15 Read Replicas per instance, within a single Region or 5 read replicas cross-region.



The screenshot shows the 'Create database' page in the AWS RDS console. The 'MySQL Community' edition is selected. The 'Engine version' dropdown is set to 'MySQL 8.0.35'. The right sidebar provides information about MySQL, including its popularity and various features.

Edition

MySQL Community

Engine version Info

MySQL 8.0.35

Enable RDS Extended Support Info

Amazon RDS Extended Support is a paid offering. By selecting this option, you consent to being charged for this offering if you are running your database major version past the RDS end of standard support date for that version. Check the end of standard support date for your major version in the [RDS for MySQL documentation](#).

Templates

Choose a sample template to meet your use case.

Production
Use defaults for high availability and fast, consistent performance.

Dev/Test
This instance is intended for development use outside of a production environment.

Free tier
Use RDS Free Tier to develop new applications, test existing applications, or gain hands-on experience with Amazon RDS.

MySQL

MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.

- Supports database size up to 64 TiB.
- Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
- Supports automated backup and point-in-time recovery.
- Supports up to 15 Read Replicas per instance, within a single Region or 5 read replicas cross-region.

Templates
Choose a sample template to meet your use case.

Free tier
Use RDS Free Tier to develop new applications, test existing applications, or gain hands-on experience with Amazon RDS.

Availability and durability

Deployment options [Info](#)
The deployment options below are limited to those supported by the engine you selected above.

- Multi-AZ DB Cluster**
Creates a DB cluster with a primary DB instance and two read-only standby DB instances, with each DB instance in a different Availability Zone (AZ). Provides high availability, data redundancy and increases capacity to serve read workloads.
- Multi-AZ DB instance (not supported for Multi-AZ DB cluster snapshot)**
Creates a primary DB instance and a standby DB instance in a different AZ. Provides high availability and data redundancy, but the standby DB instance doesn't support connections for read workloads.
- Single DB instance (not supported for Multi-AZ DB cluster snapshot)**
Creates a single DB instance with no standby DB instances.

Settings

DB instance identifier [Info](#)

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Settings

DB instance identifier [Info](#)
Type a name for your DB instance. The name must be unique across all DB instances owned by your AWS account in the current AWS Region.

database-it21303548

The DB instance identifier is case-insensitive, but is stored as all lowercase (as in "mydbinstance"). Constraints: 1 to 60 alphanumeric characters or hyphens. First character must be a letter. Can't contain two consecutive hyphens. Can't end with a hyphen.

Credentials Settings

Master username [Info](#)
Type a login ID for the master user of your DB instance.

admin

1 to 16 alphanumeric characters. The first character must be a letter.

Credentials management
You can use AWS Secrets Manager or manage your master user credentials.

Managed in AWS Secrets Manager - most secure
RDS generates a password for you and manages it throughout its lifecycle using AWS Secrets Manager.

Self managed
Create your own password or have RDS create a password that you manage.

Auto generate password
Amazon RDS can generate a password for you, or you can specify your own password.

Master password [Info](#)

Password strength Strong

Minimum constraints: At least 8 printable ASCII characters. Can't contain any of the following symbols: / \ * @

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Master password | Info
Confirm master password | Info

Instance configuration
The DB instance configuration options below are limited to those supported by the engine that you selected above.

DB instance class | Info
▼ Hide filters

- Show instance classes that support Amazon RDS Optimized Writes | Info
- Include previous generation classes
- Standard classes (includes m classes)
- Memory optimized classes (includes r and x classes)
- Burstable classes (includes t classes)

db.t3.micro
2 vCPUs 1 GiB RAM Network: Up to 2,085 Mbps

MySQL

MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.

- Supports database size up to 64 TiB.
- Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
- Supports automated backup and point-in-time recovery.
- Supports up to 15 Read Replicas per instance, within a single Region or 5 read replicas cross-region.

Storage | Info
Provisioned IOPS SSD (io2) storage volumes are now available.

General Purpose SSD (gp3)
Performance scales independently from storage

Allocated storage | Info
20 GiB

Minimum: 20 GiB. Maximum: 6,144 GiB

After you modify the storage for a DB instance, the status of the DB instance will be in storage-optimization. Your instance will remain available as the storage-optimization operation completes. [Learn more](#)

Advanced settings
Baseline IOPS of 3,000 IOPS and storage throughput of 125 Mbps are included for allocated storage less than 400 GiB.

Storage autoscaling

Connectivity | Info

Compute resource
Choose whether to set up a connection to a compute resource for this database. Setting up a connection will automatically change connectivity settings so that the compute resource can connect to this database.

Don't connect to an EC2 compute resource | Connect to an EC2 compute resource

MySQL

MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.

- Supports database size up to 64 TiB.
- Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
- Supports automated backup and point-in-time recovery.
- Supports up to 15 Read Replicas per instance, within a single Region or 5 read replicas cross-region.

Compute resource
Choose whether to set up a connection to a compute resource for this database. Setting up a connection will automatically change connectivity settings so that the compute resource can connect to this database.

- Don't connect to an EC2 compute resource**
Don't set up a connection to a compute resource for this database. You can manually set up a connection to a compute resource later.
- Connect to an EC2 compute resource**
Set up a connection to an EC2 compute resource for this database.

Virtual private cloud (VPC) Info
Choose the VPC. The VPC defines the virtual networking environment for this DB instance.

it21303548-vpc (vpc-0f5188ffcf02004c5)
4 Subnets, 2 Availability Zones

Only VPCs with a corresponding DB subnet group are listed.

After a database is created, you can't change its VPC.

DB subnet group Info
Choose the DB subnet group. The DB subnet group defines which subnets and IP ranges the DB instance can use in the VPC that you selected.

it21303548-subnetgrp
2 Subnets, 2 Availability Zones

Public access Info
Amazon RDS assigns a public IP address to the database. Amazon EC2 instances and other resources outside of the VPC can connect to your database. Resources inside the VPC can also connect to the database. Choose one or more VPC security groups that specify which resources can connect to the database.

- Yes**
- No**

Supports database size up to 64 TiB.
Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
Supports automated backup and point-in-time recovery.
Supports up to 15 Read Replicas per instance, within a single Region or 5 read replicas cross-region.

VPC security group (firewall) Info
Choose one or more VPC security groups to allow access to your database. Make sure that the security group rules allow the appropriate incoming traffic.

- Choose existing**
Choose existing VPC security groups
- Create new**
Create new VPC security group

Existing VPC security groups
Choose one or more options
webserverSG-it21303548

Availability Zone Info
us-east-1a

RDS Proxy
RDS Proxy is a fully managed, highly available database proxy that improves application scalability, resiliency, and security.

- Create an RDS Proxy Info**
RDS automatically creates an IAM role and a Secrets Manager secret for the proxy. RDS Proxy has additional costs. For more information, see [Amazon RDS Proxy pricing](#).

Certificate authority - optional Info
Using a server certificate provides an extra layer of security by validating that the connection is being made to an Amazon database. It does so by checking the server certificate that is automatically installed on all databases that you provision.

rds-ca-rsa2048-g1 (default)
Expiry: May 26, 2061

If you don't select a certificate authority, RDS chooses one for you.

Additional configuration

Supports database size up to 64 TiB.
Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
Supports automated backup and point-in-time recovery.
Supports up to 15 Read Replicas per instance, within a single Region or 5 read replicas cross-region.

The screenshot shows the AWS RDS MySQL creation wizard. The current step is 'Additional configuration'. On the left, there are sections for 'Tags - optional' (with a note that tags are case-sensitive key-value pairs) and 'Database authentication' (with options for Password authentication, Password and IAM database authentication, and Password and Kerberos authentication). On the right, a sidebar titled 'MySQL' provides an overview of the MySQL database, its features, and a bulleted list of benefits. The sidebar also includes a 'MySQL' icon and a gear icon for settings.

The screenshot shows the AWS RDS MySQL creation wizard. The current step is 'Monitoring'. It includes options for 'Enable Enhanced Monitoring' (checked), 'Granularity' (set to 60 seconds), and 'Monitoring Role' (set to 'default'). Below this is the 'Additional configuration' section, which contains notes about database options, encryption, and backup. At the bottom, there is an 'Estimated monthly costs' section stating that the Amazon RDS Free Tier is available for 12 months. The sidebar on the right is identical to the previous screenshot, providing information about MySQL and its features.

The screenshot shows the Amazon RDS console with a red error message at the top: "Failed to turn on Enhanced Monitoring for database null because of missing permissions. User: arn:aws:sts::498964443142:assumed-role/voclabs/user3418407=it21303548@my.slit.lk is not authorized to perform: iam:CreateRole on resource: arn:aws:iam::498964443142:role/rds-monitoring-role because no identity-based policy allows the iam:CreateRole action". Below the message, there is a tooltip: "Consider creating a Blue/Green Deployment to minimize downtime during upgrades. You may want to consider using Amazon RDS Blue/Green Deployments and minimize your downtime during upgrades. A Blue/Green Deployment provides a staging environment for changes to production databases." The main table shows a single database entry: "database-it21303548" (Status: Creating, Instance: MySQL Community, Region: us-east-1a, Engine: db.t3.micro).

6. Create Launch Template

The screenshot shows the "Create launch template" wizard in the Amazon EC2 console. The "Summary" section includes the following details:

- Software Image (AMI):** AMI for Assignment 3 (ami-07d413148323236dc)
- Virtual server type (instance type):** t2.micro
- Firewall (security group):** webserverSG-it21303548
- Storage (volumes):** 1 volume(s) - 8 GiB

A tooltip for the "Free tier" is displayed: "Free tier: In your first year includes 750 hours of t2.micro (or t3.micro if unavailable) instance usage on free tier AMIs per month, 750 hours of public IPv4 address usage per month, 30 GiB of EBS storage, 2 million IOs, 1 GB of snapshots, and 100 GB of data."

Launch template contents

Specify the details of your launch template below. Leaving a field blank will result in the field not being included in the launch template.

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

Recents | My AMIs | Quick Start

Don't include in launch template | Owned by me | Shared with me

Amazon Machine Image (AMI)

ami-it21303548
ami-07d413148323236dc
2024-10-06T20:26:11.000Z Virtualization: hvm ENA enabled: true Root device type: ebs

Description
AMI for Assignment 3

Summary

Software Image (AMI)
AMI for Assignment 3
ami-07d413148323236dc

Virtual server type (instance type)
t2.micro

Firewall (security group)
webserverSG-it21303548

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, 750 hours of public IPv4 address usage per month, 30 GiB of EBS storage, 2 million IOs, 1 GB of snapshots, and 100 GB of

Create launch template

Architecture
x86_64

Instance type Info | Get advice Advanced

t2.micro
Family: t2 1 vCPU 1 GiB Memory Current generation: true
On-Demand Windows base pricing: 0.0162 USD per Hour
On-Demand SUSE base pricing: 0.0116 USD per Hour
On-Demand RHEL base pricing: 0.026 USD per Hour
On-Demand Linux base pricing: 0.0116 USD per Hour

All generations | Compare instance types

Additional costs apply for AMIs with pre-installed software

Key pair (login) Info

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name
key-it21303548

Summary

Software Image (AMI)
AMI for Assignment 3
ami-07d413148323236dc

Virtual server type (instance type)
t2.micro

Firewall (security group)
webserverSG-it21303548

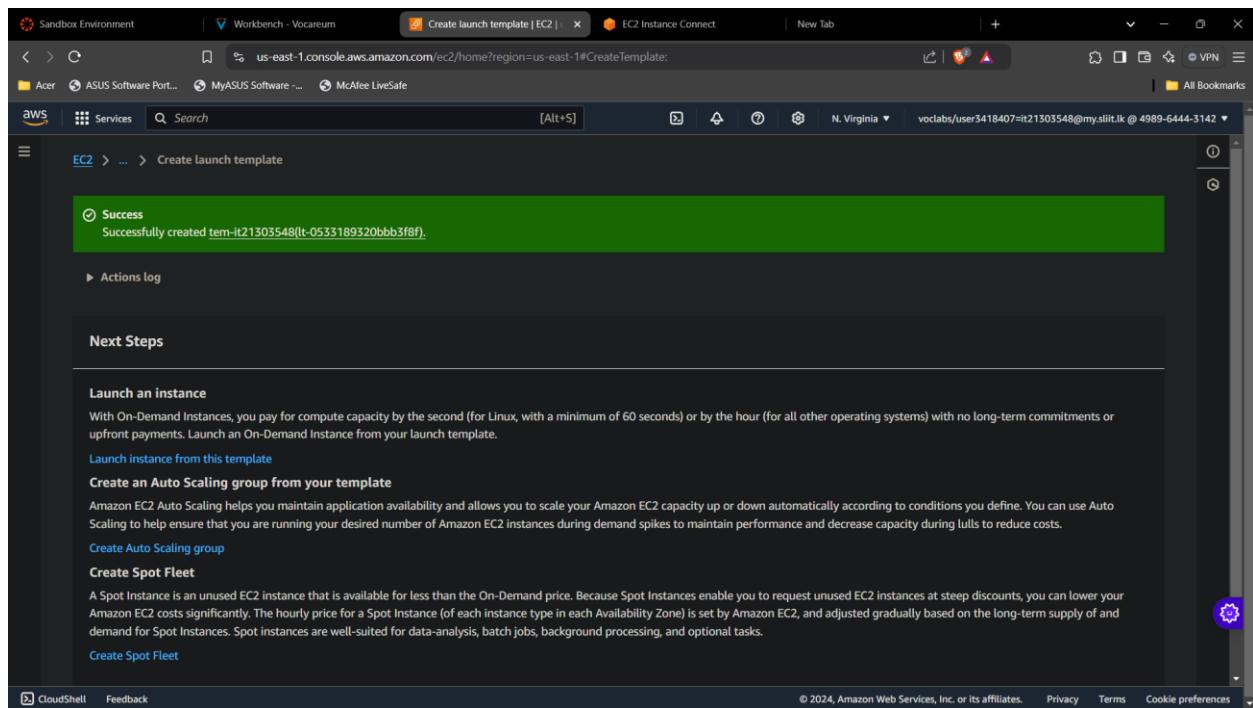
Storage (volumes)
1 volume(s) - 8 GiB

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, 750 hours of public IPv4 address usage per month, 30 GiB of EBS storage, 2 million IOs, 1 GB of snapshots, and 100 GB of

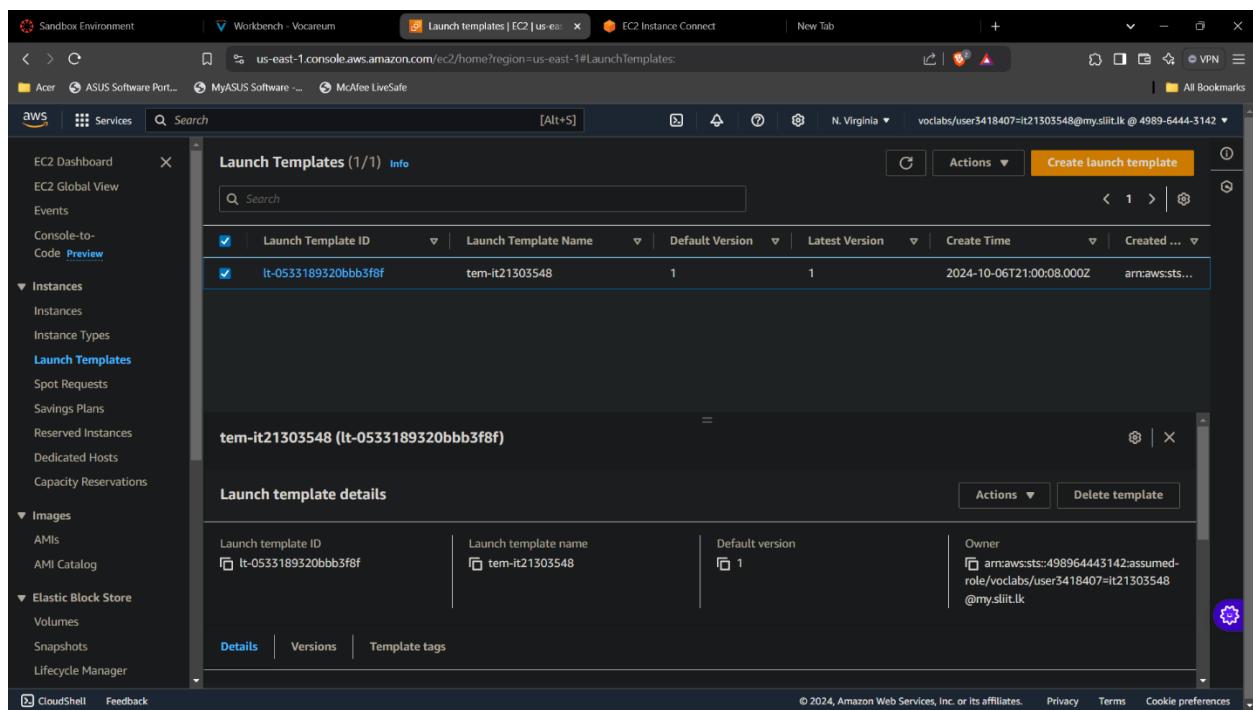
Create launch template

The screenshot shows the AWS CloudFormation 'Create launch template' interface. The 'Network settings' section is open, displaying a subnet named 'it21303548-subnet-public1-us-east-1a' with the ID 'subnet-0ead8d655acf002c8'. It includes fields for VPC, Owner, Availability Zone, and IP addresses. Below this, there are tabs for 'Select existing security group' and 'Create security group'. The 'Common security group' dropdown shows 'webserverSG-it21303548 sg-0209ee0591538bd18'. The 'Storage (volumes)' section is also visible, showing an EBS volume of 8 GiB. A modal window titled 'Free tier' provides details about instance usage and storage limits for the first year.

The screenshot shows the AWS CloudFormation 'Create launch template' interface. The 'Storage (volumes)' section is open, showing a single EBS volume of 8 GiB. A modal window titled 'Free tier' provides details about instance usage and storage limits for the first year. The 'Resource tags' section is also visible, showing a note that no tags are currently included. A modal window titled 'Free tier' provides details about instance usage and storage limits for the first year.

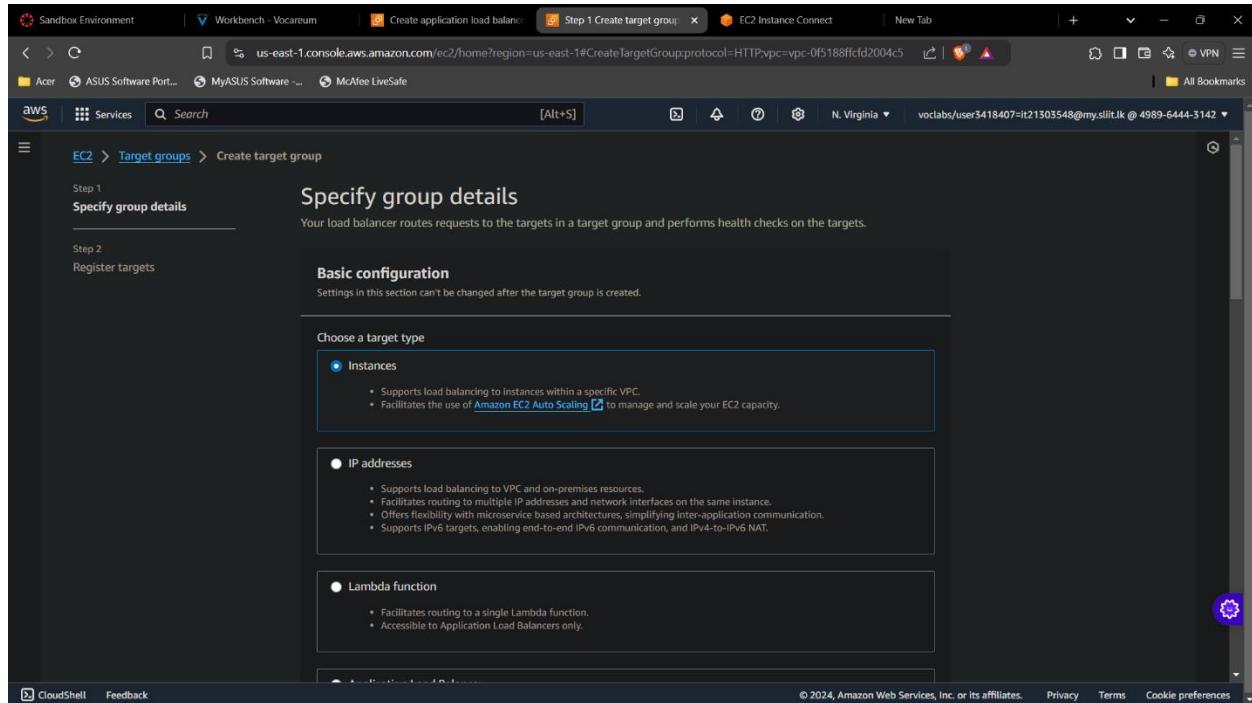


The screenshot shows the AWS EC2 'Create launch template' page. At the top, there is a green success message box that says: 'Success' and 'Successfully created tem-it21303548(lt-0533189320bbb3f8f)'. Below this, there is a 'Next Steps' section with several links: 'Launch an instance', 'Launch instance from this template', 'Create an Auto Scaling group from your template', 'Create Auto Scaling group', 'Create Spot Fleet', and 'Create Spot Fleet'. At the bottom of the page, there are links for 'CloudShell', 'Feedback', and the copyright notice '© 2024, Amazon Web Services, Inc. or its affiliates.'

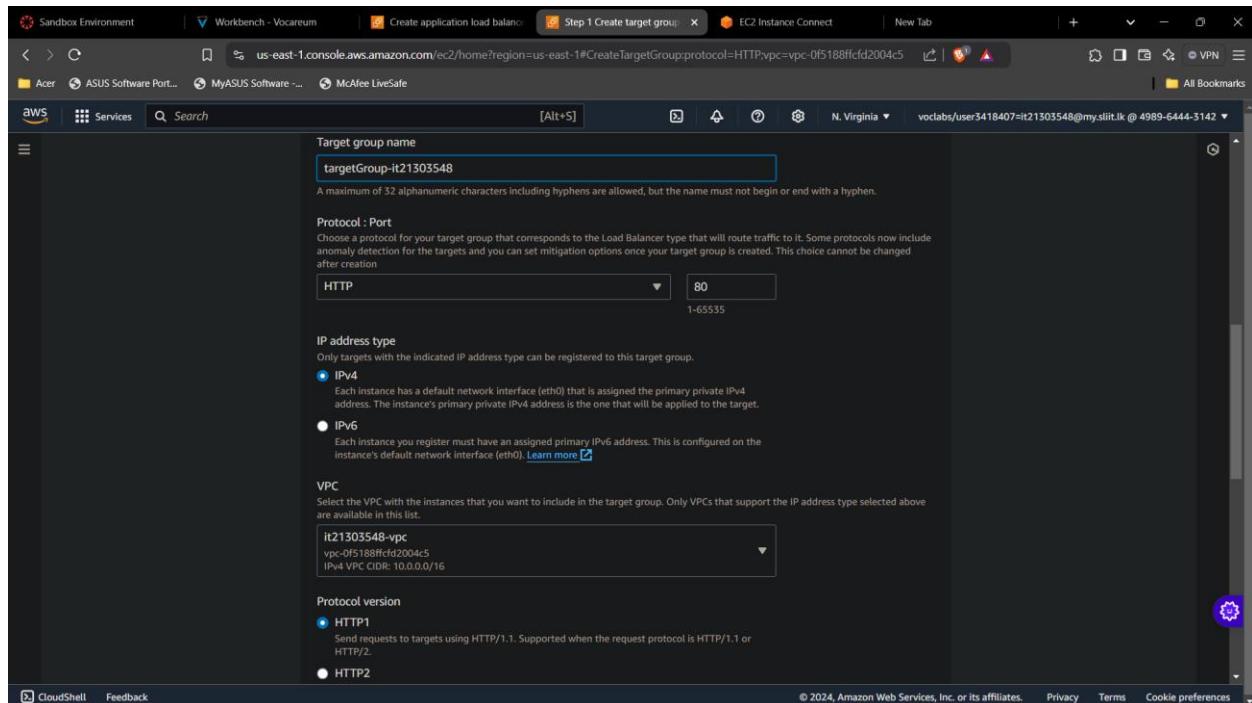


The screenshot shows the AWS EC2 'Launch Templates' page. The left sidebar shows navigation options like 'EC2 Dashboard', 'EC2 Global View', 'Events', 'Console-to-Code', 'Instances', 'Launch Templates', 'Images', and 'Elastic Block Store'. The main area displays a table titled 'Launch Templates (1/1) Info' with one entry: 'Launch Template ID: lt-0533189320bbb3f8f', 'Launch Template Name: tem-it21303548', 'Default Version: 1', 'Latest Version: 1', 'Create Time: 2024-10-06T21:00:08.000Z', and 'Owner: arn:aws:sts::498964443142:assumed-role/voclabs/user3418407=it21303548@my.slilt.lk'. Below the table, there is a 'Launch template details' section with tabs for 'Details', 'Versions', and 'Template tags'. At the bottom of the page, there are links for 'CloudShell', 'Feedback', and the copyright notice '© 2024, Amazon Web Services, Inc. or its affiliates.'

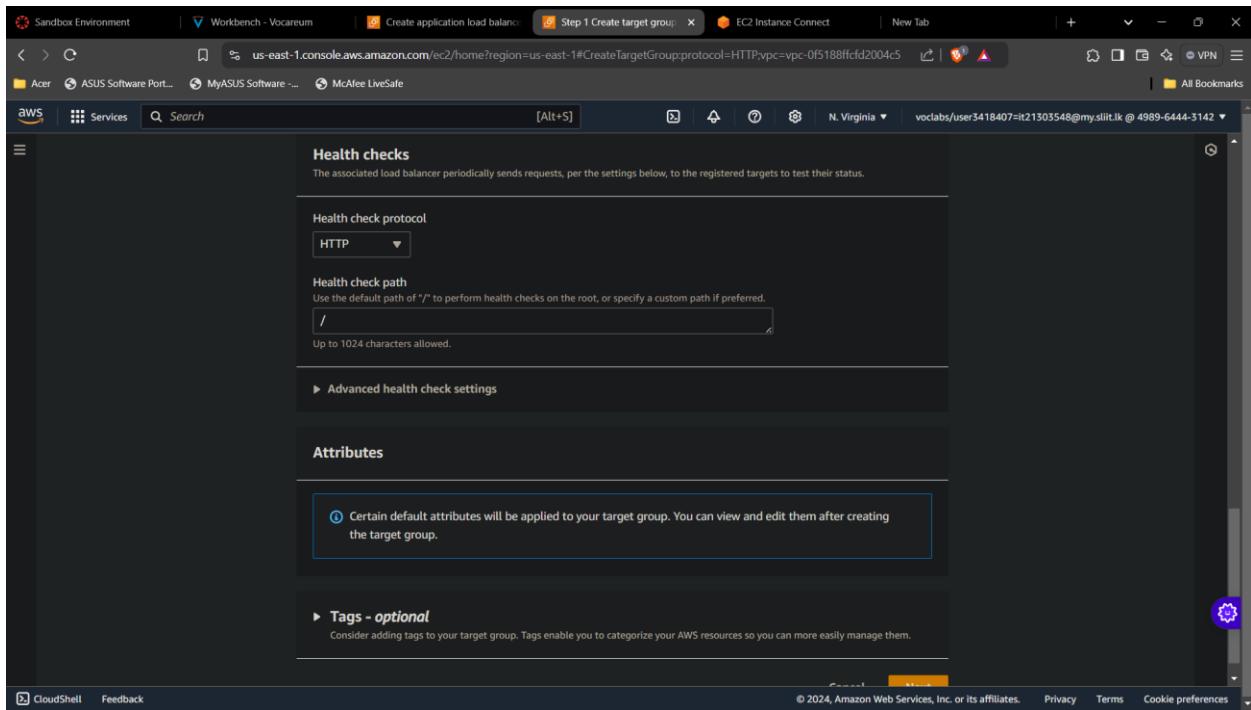
7. Create Load Balancer



The screenshot shows the 'Create target group' wizard, Step 1: Specify group details. The 'Instances' option is selected under 'Choose a target type'. Other options like 'IP addresses' and 'Lambda function' are also shown. The 'Basic configuration' section is visible at the top.



The screenshot shows the 'Create target group' wizard, Step 1: Specify group details. The 'targetGroup-it21303548' name is entered in the 'Target group name' field. The 'Protocol : Port' section shows 'HTTP' selected with port 80. The 'IP address type' section shows 'IPv4' selected. The 'VPC' section shows 'it21303548-vpc' selected. The 'Protocol version' section shows 'HTTP1' selected.



Health checks

The associated load balancer periodically sends requests, per the settings below, to the registered targets to test their status.

Health check protocol

HTTP

Health check path

Use the default path of "/" to perform health checks on the root, or specify a custom path if preferred.

/

Up to 1024 characters allowed.

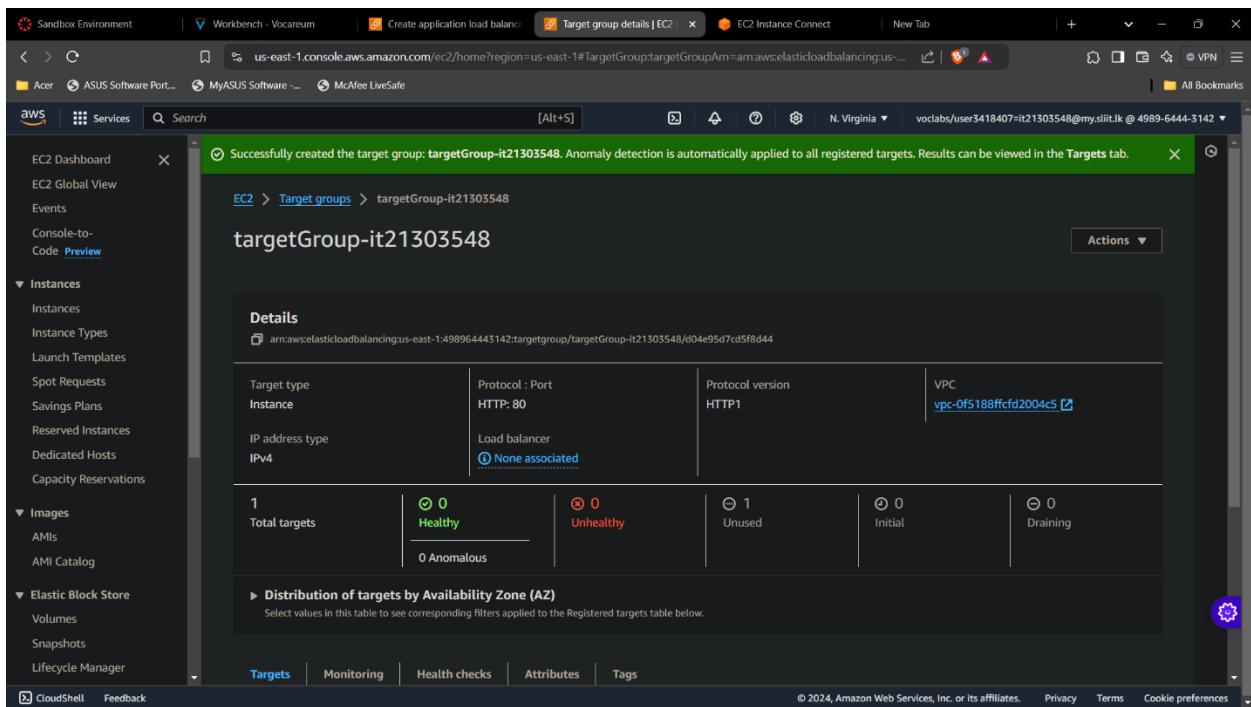
Advanced health check settings

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.



Successfully created the target group: targetGroup-it21303548. Anomaly detection is automatically applied to all registered targets. Results can be viewed in the Targets tab.

EC2 > Target groups > targetGroup-it21303548

targetGroup-it21303548

Actions ▾

Details

arn:aws:elasticloadbalancing:us-east-1:498964443142:targetgroup/targetGroup-it21303548/d04e95d7cd5f8d44

Target type	Protocol : Port	Protocol version	VPC
Instance	HTTP: 80	HTTP1	vpc-0f5188ffcf2004c5

Total targets	Healthy	Unhealthy	Unused	Initial	Draining
1	0	0	1	0	0

0 Anomalous

Distribution of targets by Availability Zone (AZ)

Select values in this table to see corresponding filters applied to the Registered targets table below.

Targets | Monitoring | Health checks | Attributes | Tags

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 Application Load Balancers work

Basic configuration

Load balancer name
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. Compatible with the IPv4 and Dualstack IP address types.

Load balancer IP address type Info
Select the front-end IP address type to assign to the load balancer. The VPC and subnets mapped to this load balancer must include the selected IP address types. Public IPv4 addresses have an additional cost.

IPv4
Includes only IPv4 addresses.

Dualstack
Includes IPv4 and IPv6 addresses.

Dualstack without public IPv4
Includes a public IPv6 address, and private IPv4 and IPv6 addresses. Compatible with **internet-facing** load balancers only.

CloudShell Feedback

Load balancer IP address type Info
Select the front-end IP address type to assign to the load balancer. The VPC and subnets mapped to this load balancer must include the selected IP address types. Public IPv4 addresses have an additional cost.

IPv4
Includes only IPv4 addresses.

Dualstack
Includes IPv4 and IPv6 addresses.

Dualstack without public IPv4
Includes a public IPv6 address, and private IPv4 and IPv6 addresses. Compatible with **internet-facing** load balancers only.

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

VPC Info
The load balancer will exist and scale within the selected VPC. The selected VPC is also where the load balancer targets must be hosted unless routing to Lambda or on-premises targets, or if using VPC peering. To confirm the VPC for your targets, view [target groups](#). For a new VPC, [create a VPC](#).

vpc-0f5188ffcf2004c5
IPv4 VPC CIDR: 10.0.0.0/16

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.

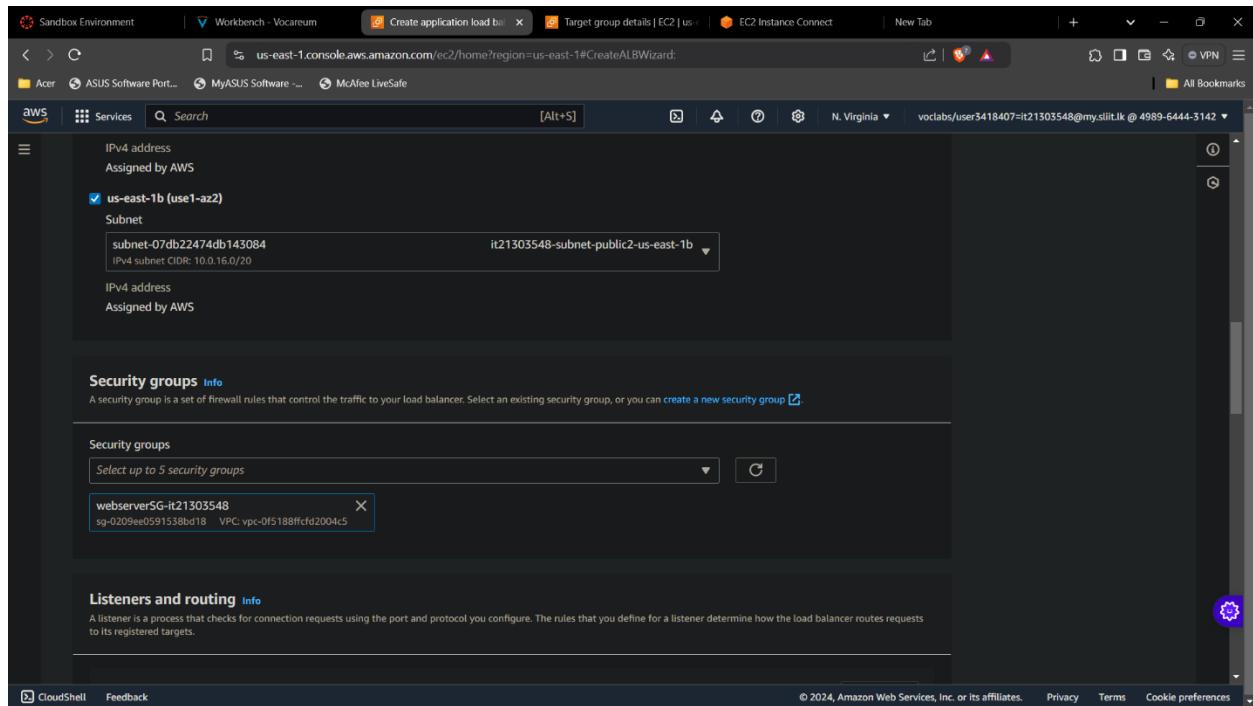
Availability Zones

- us-east-1a (use1-az1)**

Subnet

<input type="text" value="subnet-0ead8d65acf002c8"/> IPv4 subnet CIDR: 10.0.0.0/20	<input type="text" value="it21303548-subnet-public1-us-east-1a"/> IPv6 subnet CIDR: 2601:641:1000::/64
---	---

CloudShell Feedback



Sandbox Environment | Workbench - Vocareum | Create application load balancer | Target group details | EC2 | us-east-1 | EC2 Instance Connect | New Tab | + | - | X

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

Acer ASUS Software Port... MyASUS Software ... McAfee LiveSafe

aws Services Search [Alt+S] N. Virginia voclabs/user3418407=it21303548@my.sliit.lk @ 4989-6444-3142

IPv4 address
Assigned by AWS

us-east-1b (use1-az2)

Subnet

subnet-07db22474db143084 it21303548-subnet-public2-us-east-1b

IPv4 address
Assigned by AWS

Security groups Info

A security group is a set of firewall rules that control the traffic to your load balancer. Select an existing security group, or you can [create a new security group](#).

Security groups

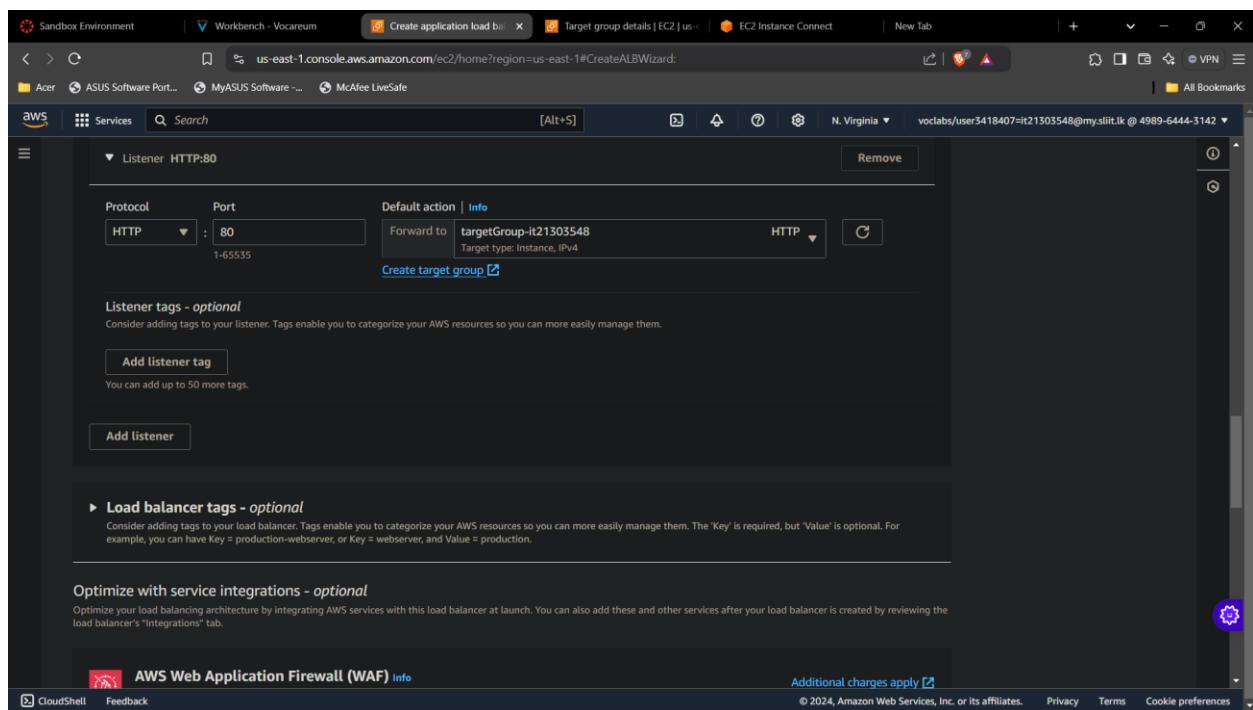
Select up to 5 security groups

webserverSG-it21303548 sg-0209ee0591538bd18 VPC vpc-0f5188ffcf2004c5

Listeners and routing Info

A listener is a process that checks for connection requests using the port and protocol you configure. The rules that you define for a listener determine how the load balancer routes requests to its registered targets.

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Sandbox Environment | Workbench - Vocareum | Create application load balancer | Target group details | EC2 | us-east-1 | EC2 Instance Connect | New Tab | + | - | X

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

Acer ASUS Software Port... MyASUS Software ... McAfee LiveSafe

aws Services Search [Alt+S] N. Virginia voclabs/user3418407=it21303548@my.sliit.lk @ 4989-6444-3142

▼ Listener HTTP:80

Protocol Port Default action Info

HTTP : 80 Forward to targetGroup-it21303548 HTTP

1-65535 Target type: Instance, IPv4

Create target group

Listener tags - optional

Consider adding tags to your listener. Tags enable you to categorize your AWS resources so you can more easily manage them.

Add listener tag

You can add up to 50 more tags.

Add listener

Load balancer tags - optional

Consider adding tags to your load balancer. Tags enable you to categorize your AWS resources so you can more easily manage them. The 'Key' is required, but 'Value' is optional. For example, you can have Key = production-webserver, or Key = webserver, and Value = production.

Optimize with service integrations - optional

Optimize your load balancing architecture by integrating AWS services with this load balancer at launch. You can also add these and other services after your load balancer is created by reviewing the load balancer's "Integrations" tab.

AWS Web Application Firewall (WAF) Info Additional charges apply

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AWS Web Application Firewall (WAF) Info
Optimizes: Security

AWS Global Accelerator Info
Optimizes: Performance, Availability, Security

Review
Review the load balancer configurations and make changes if needed. After you finish reviewing the configurations, choose **Create load balancer**.

Summary
Review and confirm your configurations. [Estimate cost](#)

Basic configuration	Security groups	Network mapping	Listeners and routing
loadBal-it21303548 <ul style="list-style-type: none">Internet-facingIPv4	<ul style="list-style-type: none">webserver5G-it21303548 sg-0209ee0591538bd18	VPC vpc-0f5188ffcf2004c5 it21303548-vpc <ul style="list-style-type: none">us-east-1a subnet-0ead8d655acf002cbit21303548-subnet-public1-us-east-	<ul style="list-style-type: none">HTTP:80 defaults to targetGroup-h21303548

Successfully created load balancer: loadBal-it21303548
It might take a few minutes for your load balancer to fully set up and route traffic. Targets will also take a few minutes to complete the registration process and pass initial health checks.

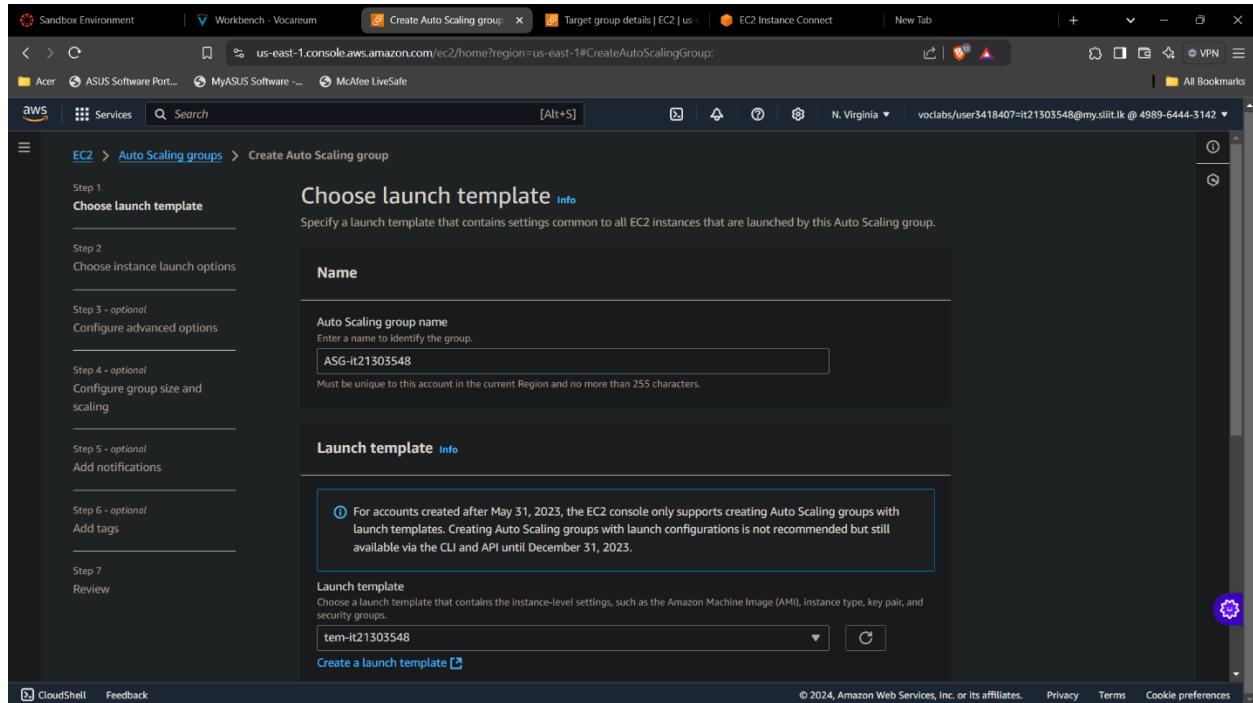
EC2 > Load balancers > loadBal-it21303548

loadBal-it21303548

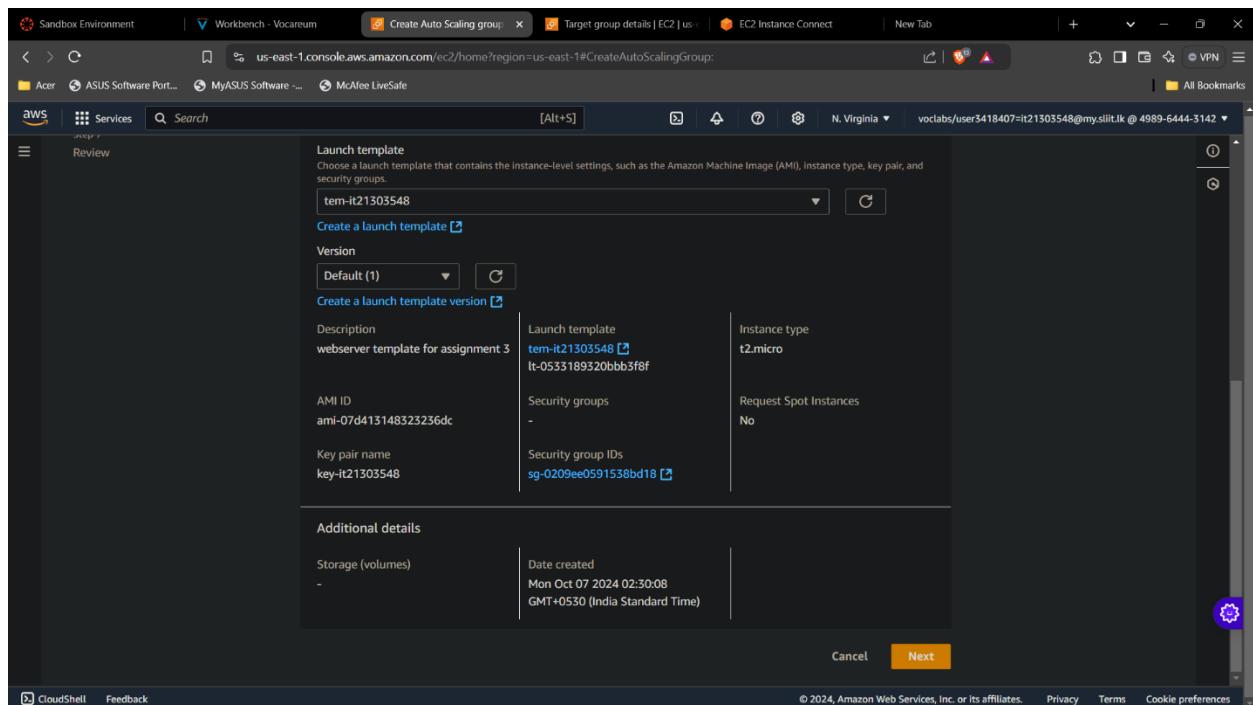
Details

Load balancer type Application	Status Provisioning	VPC vpc-0f5188ffcf2004c5	Load balancer IP address type IPv4
Scheme Internet-facing	Hosted zone Z355XD0TRQ7X7K	Availability Zones subnet-0ead8d655acf002cb us-east-1a (use1-az1) subnet-07db22474db143084 us-east-1b (use1-az2)	Date created October 7, 2024, 02:39 (UTC+05:30)
Load balancer ARN arn:aws:elasticloadbalancing:us-east-1:498964443142:loadbalancer/app/loadBal-it21303548/55439dff93def9	DNS name loadBal-it21303548-2045692336.us-east-1.elb.amazonaws.com (A Record)		

8. Create Auto Scaling Group



The screenshot shows the 'Create Auto Scaling group' wizard on the AWS EC2 console. The current step is 'Step 1: Choose launch template'. The left sidebar lists steps 1 through 7. The main area is titled 'Choose launch template' and contains a sub-section for 'Auto Scaling group name'. The 'Name' field is populated with 'ASG-it21303548'. A note states: 'Must be unique to this account in the current Region and no more than 255 characters.' Below this is a 'Launch template' section with a note: 'For accounts created after May 31, 2023, the EC2 console only supports creating Auto Scaling groups with launch templates. Creating Auto Scaling groups with launch configurations is not recommended but still available via the CLI and API until December 31, 2023.' A dropdown menu shows 'tem-it21303548' and a 'Create a launch template' button.

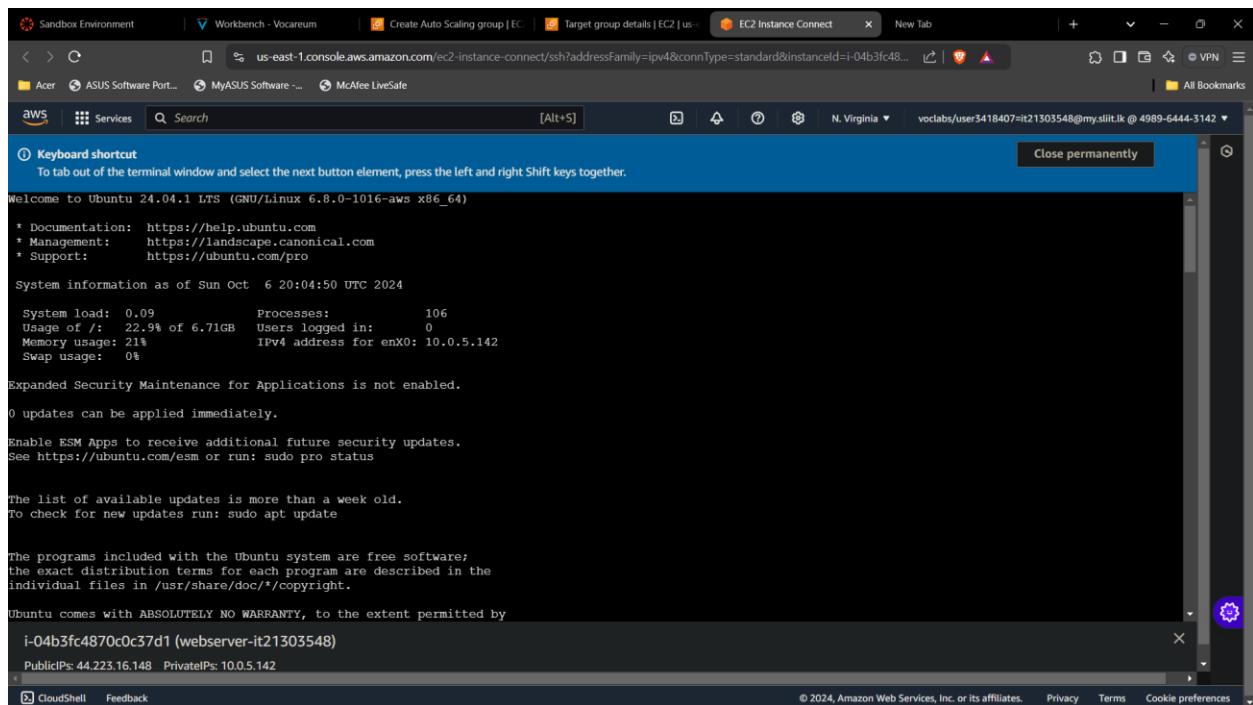


The screenshot shows the 'Create Auto Scaling group' wizard on the AWS EC2 console, currently on the 'Review' step. The left sidebar shows 'Step 7: Review'. The main area displays the configuration for the Auto Scaling group. It includes a 'Launch template' section with 'tem-it21303548' selected, and a note: 'Choose a launch template that contains the instance-level settings, such as the Amazon Machine Image (AMI), instance type, key pair, and security groups.' Below this are sections for 'Version' (Default (1)), 'Create a launch template version' (button), 'Description' (webserver template for assignment 3), 'Launch template' (tem-it21303548), 'Instance type' (t2.micro), 'AMI ID' (ami-07d413148323236dc), 'Security groups' (empty), 'Request Spot Instances' (No), 'Key pair name' (key-it21303548), 'Security group IDs' (sg-0209ee0591538bd18), 'Additional details' (Storage (volumes) empty, Date created: Mon Oct 07 2024 02:30:08 GMT+0530 (India Standard Time)), and a 'Next' button at the bottom right.

The screenshot shows the AWS EC2 Create Auto Scaling group wizard, Step 1: Choose instance launch options. The left sidebar lists steps: Step 1 (Choose launch template), Step 2 (Choose instance launch options), Step 3 - optional (Configure advanced options), Step 4 - optional (Configure group size and scaling), Step 5 - optional (Add notifications), Step 6 - optional (Add tags), and Step 7 (Review). The main content area is titled "Choose instance launch options" and includes a sub-section "Instance type requirements". It shows a launch template "lt-0533189320bb3f8f" with version "Default" and description "webserver template for assignment 3". The "Override launch template" button is visible. Below this is a "Network" section with a VPC dropdown set to "vpc-0f518ffcf2004c5 (lt21305548-vpc)". The bottom of the screen shows the AWS navigation bar and a footer with copyright information.

The screenshot shows the AWS EC2 Create Auto Scaling group wizard, Step 7: Review. The left sidebar shows "Step 7" and "Review". The main content area displays a summary of the configuration. It includes a note about using multiple Availability Zones and the selected VPC "vpc-0f518ffcf2004c5 (lt21305548-vpc)". Below this is a "Create a VPC" section with a dropdown menu showing "us-east-1a | subnet-0ead8d655acf002c8 (lt21305548-subnet-public1-us-east-1a) 10.0.0.0/20" and "us-east-1b | subnet-07db22474db143084 (lt21305548-subnet-public2-us-east-1b) 10.0.16.0/20". A "Create a subnet" button is also present. A red error message at the bottom states: "Invalid launch template specified in Step 1: You are not authorized to perform this operation". Buttons for "Cancel", "Skip to review", "Previous", and "Next" are at the bottom. The AWS navigation bar and footer are visible.

9. Code



```
Welcome to Ubuntu 24.04.1 LTS (GNU/Linux 6.8.0-1016-aws x86_64)

* Documentation: https://help.ubuntu.com
* Management: https://landscape.canonical.com
* Support: https://ubuntu.com/pro

System information as of Sun Oct 6 20:04:50 UTC 2024

System load: 0.09      Processes:          106
Usage of /: 22.9% of 6.71GB  Users logged in: 0
Memory usage: 21%          IPv4 address for enX0: 10.0.5.142
Swap usage: 0%          Swap: 0B

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

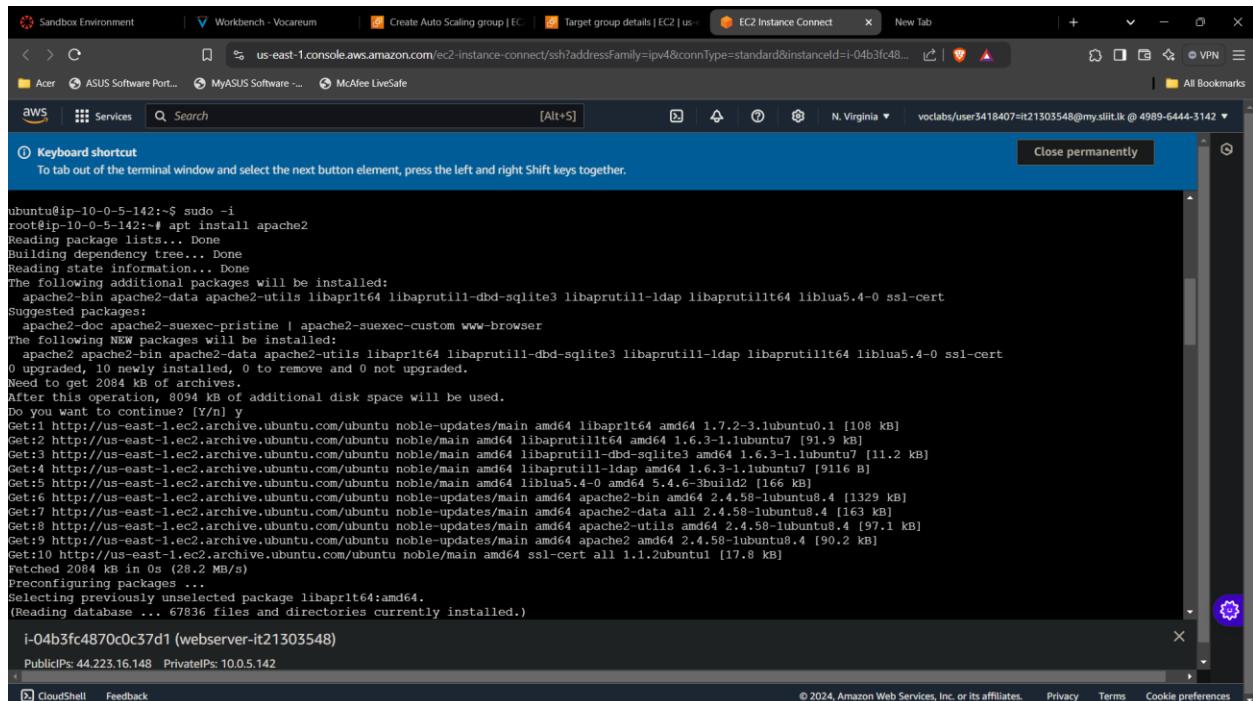
Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by

i-04b3fc4870c0c37d1 (webserver-it21303548)
PublicIPs: 44.223.16.148  PrivateIPs: 10.0.5.142
```



```
ubuntu@ip-10-0-5-142:~$ sudo -i
root@ip-10-0-5-142:~# apt install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap libaprutil1t64 liblubua5.4-0 ssl-cert
Suggested packages:
  apache2-doc apache2-pristine | apache2-suexec-custom www-browser
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap libaprutil1t64 liblubua5.4-0 ssl-cert
0 upgraded, 10 newly installed, 0 to remove and 0 not upgraded.
Need to get 2084 kB of archives.
After this operation, 8094 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 libaprilt64 amd64 1.7.2-3.1ubuntu0.1 [108 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1t64 amd64 1.6.3-1.1ubuntu7 [91.9 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.3-1.1ubuntu7 [11.2 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1-ldap amd64 1.6.3-1.1ubuntu7 [9116 B]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 liblubua5.4-0 amd64 5.4.6-3build2 [166 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 apache2-bin amd64 2.4.58-1ubuntu8.4 [1329 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 apache2-bin all 2.4.58-1ubuntu8.4 [163 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 apache2-utils amd64 2.4.58-1ubuntu8.4 [97.1 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 apache2 amd64 2.4.58-1ubuntu8.4 [90.2 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 ssl-cert all 1.1.2ubuntul [17.8 kB]
Fetched 2084 kB in 0s (28.2 MB/s)
Preconfiguring packages ...
Selecting previously unselected package libaprilt64:amd64.
(Reading database ... 67836 files and directories currently installed.)

i-04b3fc4870c0c37d1 (webserver-it21303548)
PublicIPs: 44.223.16.148  PrivateIPs: 10.0.5.142
```

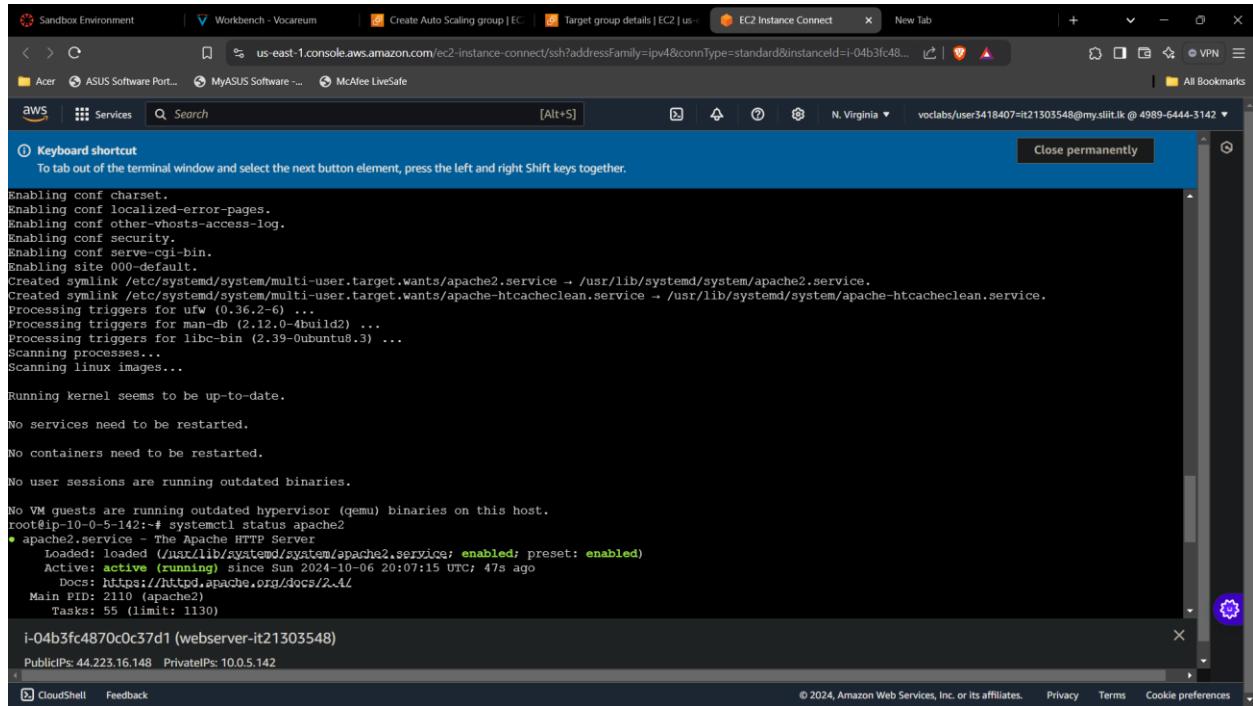
```
Fetched 2084 kB in 0s (28.2 MB/s)
Preconfiguring packages ...
Selecting previously unselected package libaprilt64:amd64.
(Reading database ... 67836 files and directories currently installed.)
Preparing to unpack .../0-libaprilt64_1.7.2-3.lubuntu0.1_amd64.deb ...
Unpacking libaprilt64:amd64 (1.7.2-3.lubuntu0.1) ...
Selecting previously unselected package libaprutil1t64:amd64.
Preparing to unpack .../1-libaprutil1t64_1.6.3-1.lubuntu7_amd64.deb ...
Unpacking libaprutil1t64:amd64 (1.6.3-1.lubuntu7) ...
Selecting previously unselected package libaprutil1t64-sqlite3:amd64.
Preparing to unpack .../2-libaprutil1t64-sqlite3_1.6.3-1.lubuntu7_amd64.deb ...
Unpacking libaprutil1t64-sqlite3:amd64 (1.6.3-1.lubuntu7) ...
Selecting previously unselected package libaprutil1l-dap:amd64.
Preparing to unpack .../3-libaprutil1l-dap_1.6.3-1.lubuntu7_amd64.deb ...
Unpacking libaprutil1l-dap (1.6.3-1.lubuntu7) ...
Selecting previously unselected package liblulu5.4:0:amd64.
Preparing to unpack .../4-liblulu5.4:0:5.4.6-3build2_amd64.deb ...
Unpacking liblulu5.4:0:amd64 (5.4.6-3build2) ...
Selecting previously unselected package apache2-bin.
Preparing to unpack .../5-apache2-bin_2.4.58-lubuntu8.4_amd64.deb ...
Unpacking apache2-bin (2.4.58-lubuntu8.4) ...
Selecting previously unselected package apache2-data.
Preparing to unpack .../6-apache2-data_2.4.58-lubuntu8.4_all.deb ...
Unpacking apache2-data (2.4.58-lubuntu8.4) ...
Selecting previously unselected package apache2-utils.
Preparing to unpack .../7-apache2-utils_2.4.58-lubuntu8.4_amd64.deb ...
Unpacking apache2-utils (2.4.58-lubuntu8.4) ...
Selecting previously unselected package apache2.
Preparing to unpack .../8-apache2_2.4.58-lubuntu8.4_amd64.deb ...
Unpacking apache2 (2.4.58-lubuntu8.4) ...
i-04b3fc4870c0c37d1 (webserver-it21303548)

PublicIPs: 44.223.16.148 PrivateIPs: 10.0.5.142
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Selecting previously unselected package ssl-cert.
Preparing to unpack .../9-ssl-cert_1.1.2ubuntu1_all.deb ...
Unpacking ssl-cert (1.1.2ubuntu1) ...
Setting up ssl-cert (1.1.2ubuntu1) ...
Created symlink /etc/systemd/system/multi-user.target.wants/ssl-cert.service → /usr/lib/systemd/system/ssl-cert.service.
Setting up libapr4:amd64 (1.7.2-3.lubuntu0.1) ...
Setting up liblulu5.4:0:amd64 (5.4.6-3build2) ...
Setting up apache2-data (2.4.58-lubuntu8.4) ...
Setting up libaprutil1t64:amd64 (1.6.3-1.lubuntu7) ...
Setting up libaprutil1l-dap:amd64 (1.6.3-1.lubuntu7) ...
Setting up libaprutil1t64-sqlite3:amd64 (1.6.3-1.lubuntu7) ...
Setting up apache2-utils (2.4.58-lubuntu8.4) ...
Setting up apache2-bin (2.4.58-lubuntu8.4) ...
Enabling module mpm_event.
Enabling module authz_core.
Enabling module authz_host.
Enabling module authn_core.
Enabling module auth_basic.
Enabling module access_compat.
Enabling module authn_file.
Enabling module authz_user.
Enabling module alias.
Enabling module dir.
Enabling module autoindex.
Enabling module env.
Enabling module mime.
Enabling module negotiation.
Enabling module setenvif.
Enabling module filter.

i-04b3fc4870c0c37d1 (webserver-it21303548)

PublicIPs: 44.223.16.148 PrivateIPs: 10.0.5.142
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Enabling conf charset.
Enabling conf localized-error-pages.
Enabling conf other-vhosts-access-log.
Enabling conf security.
Enabling conf serve-cgi-bin.
Enabling site 000-default.
Created symlink /etc/systemd/system/multi-user.target.wants/apache2.service → /usr/lib/systemd/system/apache2.service.
Created symlink /etc/systemd/system/multi-user.target.wants/apache-htcacheclean.service → /usr/lib/systemd/system/apache-htcacheclean.service.
Processing triggers for ufw (0.36.2-6) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for libc-bin (2.39-0ubuntu8.3) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

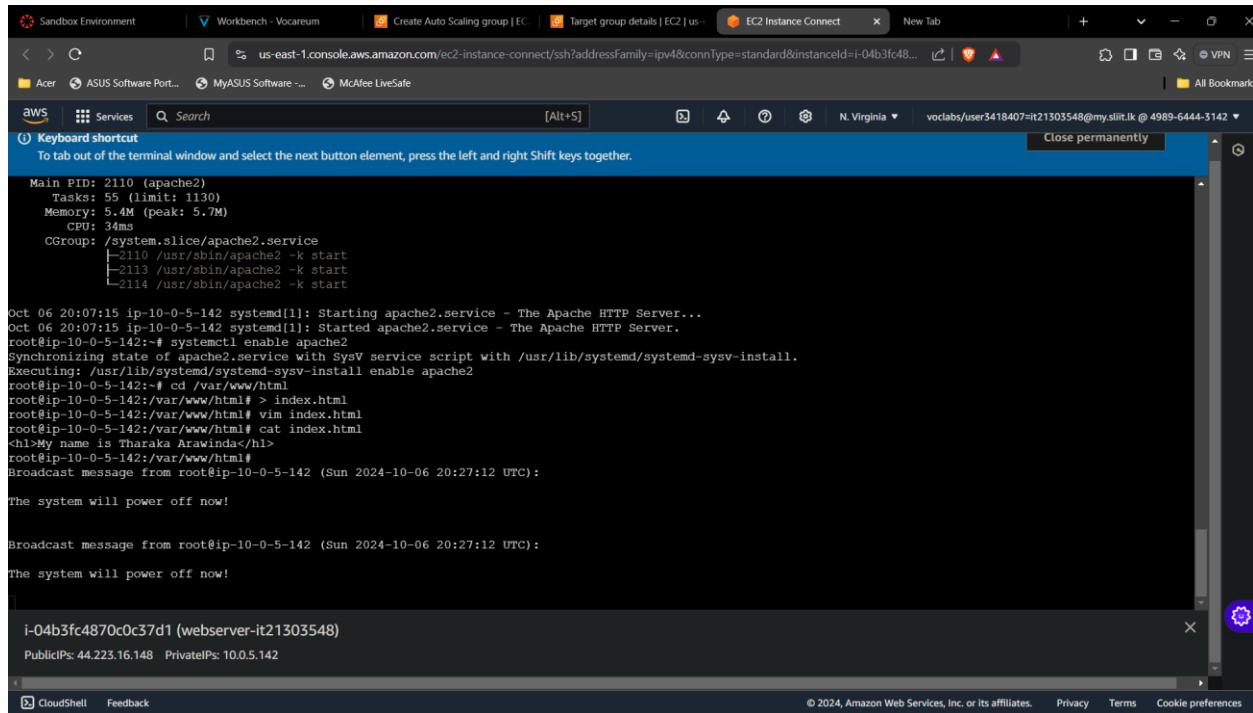
No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
root@ip-10-0-5-142:~# systemctl status apache2
● apache2.service - The Apache HTTP Server
  Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
  Active: active (running) since Sun 2024-10-06 20:07:15 UTC; 47s ago
    Docs: https://httpd.apache.org/docs/2.4/
   Main PID: 2110 (apache2)
     Tasks: 55 (limit: 1130)

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Main PID: 2110 (apache2)
Tasks: 55 (limit: 1130)
Memory: 5.4M (peak: 5.7M)
CPU: 34ms
CGroup: /system.slice/apache2.service
└─2110 /usr/sbin/apache2 -k start
  ├─2113 /usr/sbin/apache2 -k start
  ├─2114 /usr/sbin/apache2 -k start

Oct 06 20:07:15 ip-10-0-5-142 systemd[1]: Starting apache2.service - The Apache HTTP Server...
Oct 06 20:07:15 ip-10-0-5-142 systemd[1]: Started apache2.service - The Apache HTTP Server.
root@ip-10-0-5-142:~# systemctl enable apache2
Synchronizing state of apache2.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
executing: /usr/lib/systemd/systemd-sysv-install enable apache2
root@ip-10-0-5-142:~# cd /var/www/html
root@ip-10-0-5-142:/var/www/html# > index.html
root@ip-10-0-5-142:/var/www/html# vim index.html
root@ip-10-0-5-142:/var/www/html# cat index.html
<h1>My name is Tharaka Arawinda</h1>
root@ip-10-0-5-142:/var/www/html#
Broadcast message from root@ip-10-0-5-142 (Sun 2024-10-06 20:27:12 UTC):

The system will power off now!

Broadcast message from root@ip-10-0-5-142 (Sun 2024-10-06 20:27:12 UTC):

The system will power off now!

i-04b3fc4870c0c37d1 (webserver-it21303548)

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```