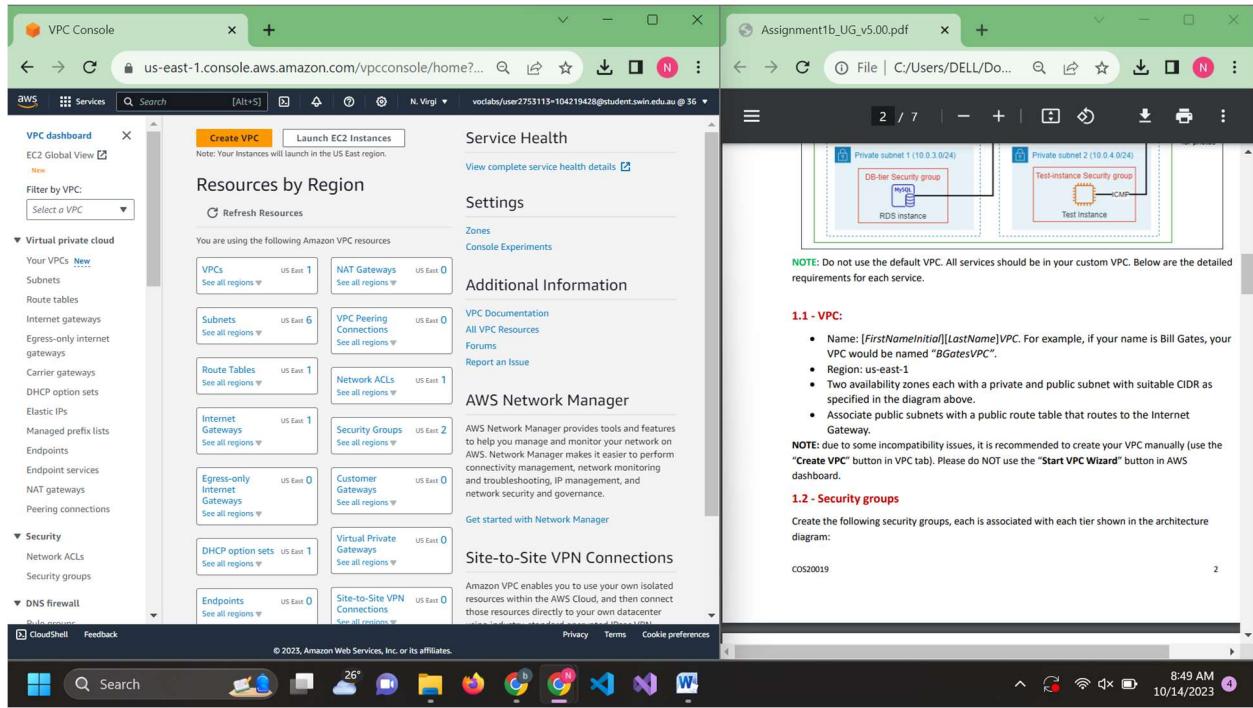
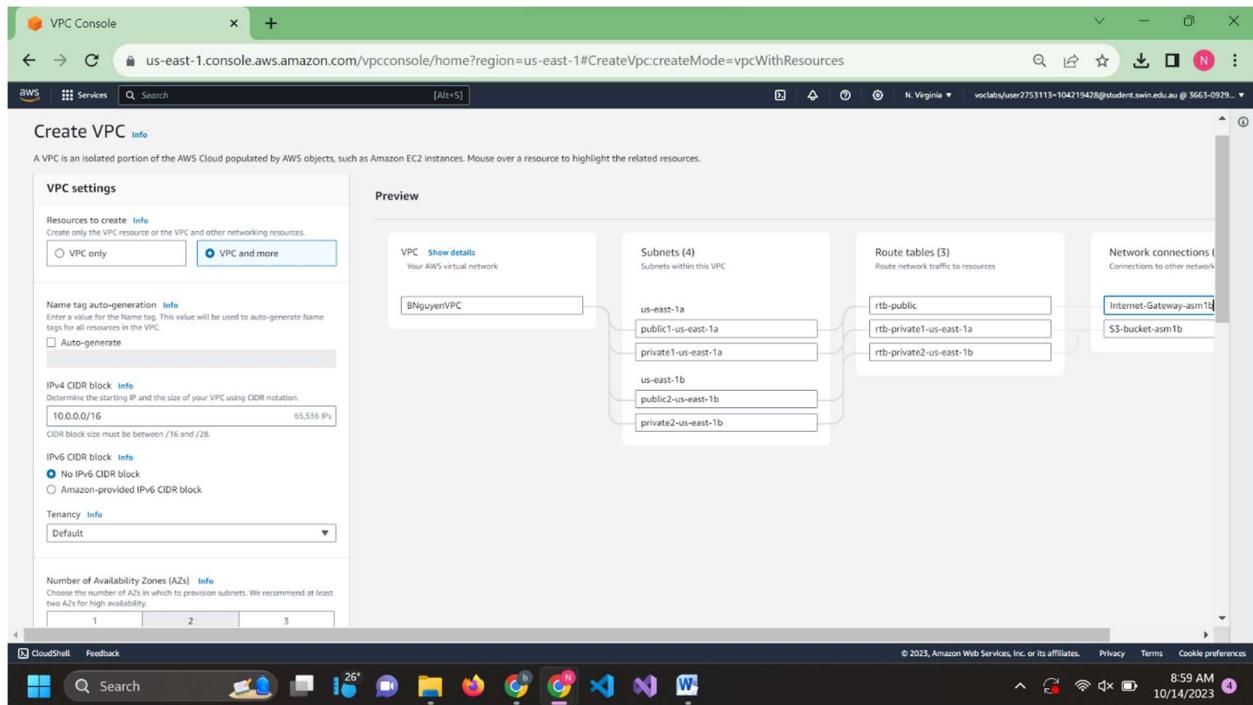


Step 1: Access VPC control panel



Step 2: Create a VPC



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VPC Console

us-east-1.console.amazonaws.com/vpcconsole/home?region=us-east-1#CreateVpc:createMode=vpcWithResources

Services Search [Alt+S]

N. Virginia vocabs/user2753115-104219428@student.swin.edu.au @ 3665-0929...

First availability zone: us-east-1a
Second availability zone: us-east-1b

Number of public subnets: 0
Number of private subnets: 2

Customize subnets CIDR blocks:

- Public subnet CIDR block in us-east-1a: 10.0.1.0/24 (256 IPs)
- Public subnet CIDR block in us-east-1b: 10.0.2.0/24 (256 IPs)
- Private subnet CIDR block in us-east-1a: 10.0.3.0/24 (256 IPs)
- Private subnet CIDR block in us-east-1b: 10.0.4.0/24 (256 IPs)

NAT gateways (\$): Info
Choose the number of Availability Zones (AZs) in which to create NAT gateways.
Note that there is a charge for each NAT gateway.

Subnets (4): Subnets within this VPC

- us-east-1a
 - public1-us-east-1a
 - private1-us-east-1a
- us-east-1b
 - public2-us-east-1b
 - private2-us-east-1b

Route tables (3): Route network traffic to resources

- rtb-public
- rtb-private1-us-east-1a
- rtb-private2-us-east-1b

Network connections (2): Connections to other networks

- Internet-Gateway-as1b
- S3-bucket-as1b

CloudShell Feedback 9:00 AM 10/14/2023

VPC Console

us-east-1.console.amazonaws.com/vpcconsole/home?region=us-east-1#CreateVpc:createMode=vpcWithResources

Services Search [Alt+S]

N. Virginia vocabs/user2753115-104219428@student.swin.edu.au @ 3665-0929...

Public subnet CIDR block in us-east-1a: 10.0.1.0/24 (256 IPs)

Public subnet CIDR block in us-east-1b: 10.0.2.0/24 (256 IPs)

Private subnet CIDR block in us-east-1a: 10.0.3.0/24 (256 IPs)

Private subnet CIDR block in us-east-1b: 10.0.4.0/24 (256 IPs)

NAT gateways (\$): Info
Choose the number of Availability Zones (AZs) in which to create NAT gateways.
Note that there is a charge for each NAT gateway.

Subnets (4): Subnets within this VPC

- us-east-1a
 - public1-us-east-1a
 - private1-us-east-1a
- us-east-1b
 - public2-us-east-1b
 - private2-us-east-1b

Route tables (3): Route network traffic to resources

- rtb-public
- rtb-private1-us-east-1a
- rtb-private2-us-east-1b

Network connections (2): Connections to other networks

- Internet-Gateway-as1b
- S3-bucket-as1b

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Your VPCs (1/2) Info

Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR	DHCP option set	Main route table
vpc-0ac460d15db259b83	vpc-0ac460d15db259b83	Available	172.31.0.0/16	-	dopt-0d5e1208699117...	rtb-0157444c4c22b6a40
BNguyenVPC	vpc-0a77c0d690062c346	Available	10.0.0.0/16	-	dopt-0d5e1208699117...	-

vpc-0ac460d15db259b83

Details Resource map New CIDRs Flow logs Tags Integrations

Details

VPC ID: vpc-0ac460d15db259b83 State: Available

Tenancy: Default DHCP option set: dopt-0d5e1208699117669

Default VPC: No IPv4 CIDR: 172.31.0.0/16

Network Address Usage metrics: Disabled Route 53 Resolver DNS Firewall rule groups: Failed to load rule groups

DNS hostnames: Enabled Main route table: rtb-059ea74fcf49c85b5

IPv6 pool: - Owner ID: 366309293917

DNS resolution: Enabled Main network ACL: acl-01756c6b6a5d98d20

IPv6 CIDR (Network border group): -

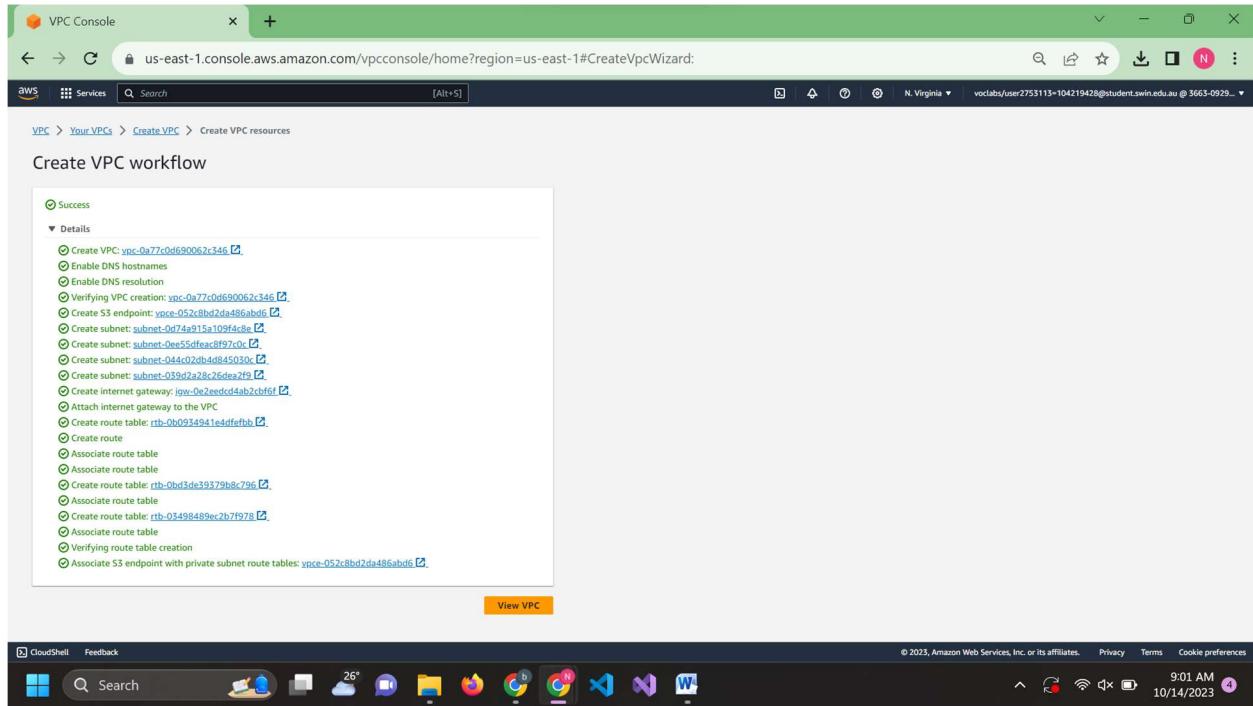
Resource map

VPC Subnets (4) Route tables (4) Network connections (2)

Subnets within this VPC: us-east-1a, public1-us-east-1a, private1-us-east-1a, us-east-1b, public2-us-east-1b, private2-us-east-1b

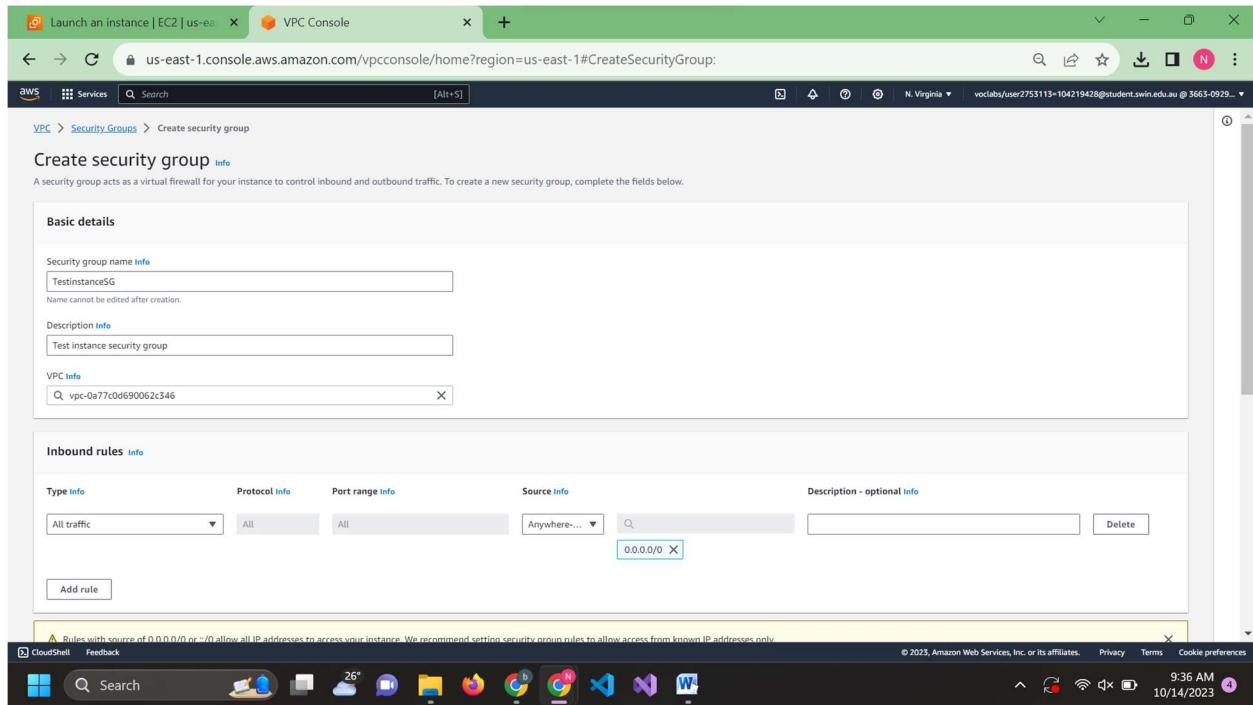
Route tables: rtb-private2-us-east-1b, rtb-059ea74fcf49c85b5, rtb-public, rtb-private1-us-east-1a

Network connections: Internet-Gateway-asmlb, S3-bucket-asmlb



Step 3: Create security group. Access through the left navigation panel

3.1: TestInstanceSG



3.2:WebServerSG

The screenshot shows the AWS VPC Console interface for creating a new security group. The security group name is set to "WebServerSG". The inbound rules section contains three entries:

- HTTP (TCP, port 80) from Anywhere to 0.0.0.0/0
- SSH (TCP, port 22) from Anywhere to 0.0.0.0/0
- All ICMP - IPv4 (ICMP, All) from Custom to sg-0315456b79134a99e

The outbound rules section is currently empty.

3.3:DBServerSG

The screenshot shows the AWS VPC Console interface for creating a new security group. The security group name is set to "DBServerSG". The inbound rules section contains one entry:

- MySQL/Aurora (TCP, port 3306) from Custom to sg-0bc0ddae683173557

The outbound rules section is currently empty.

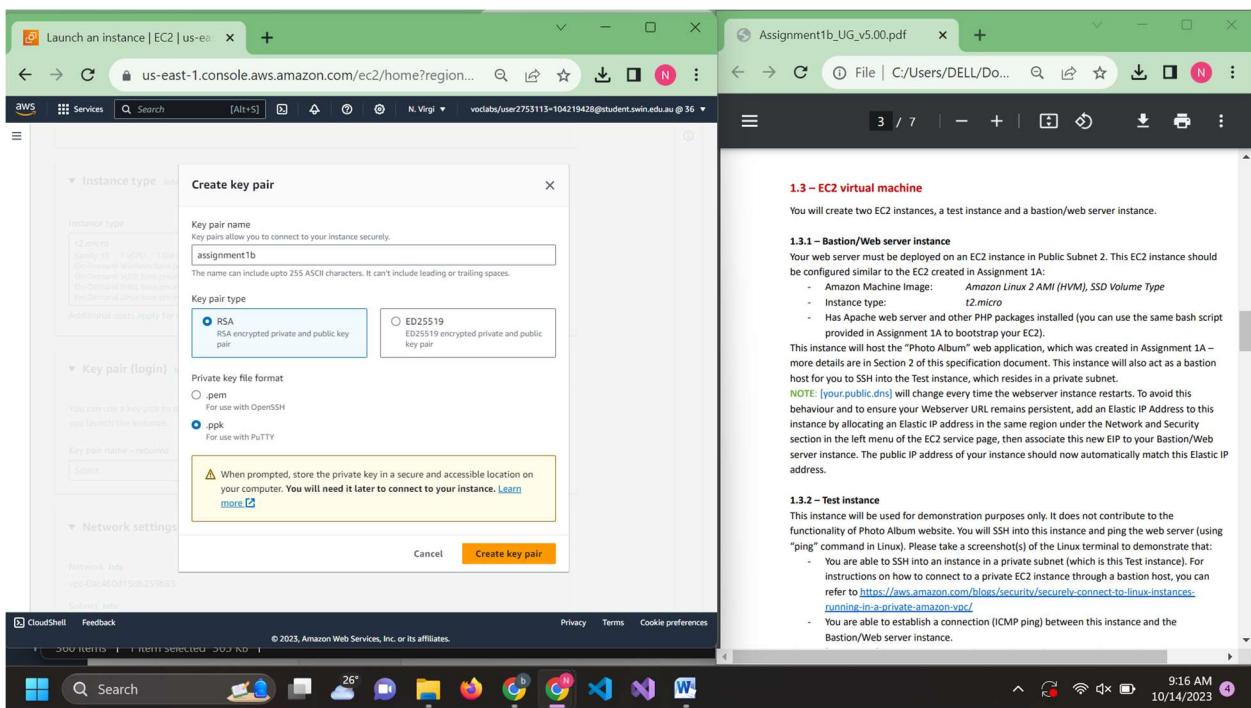
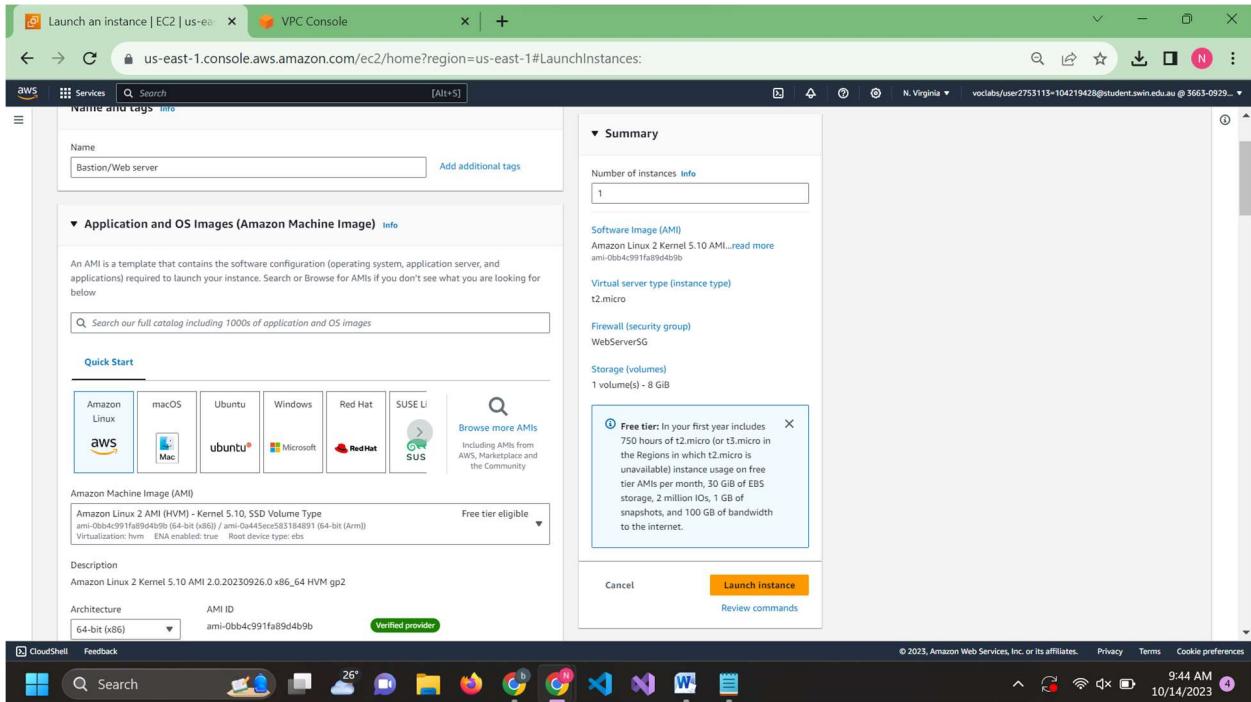
The screenshot shows two windows side-by-side. On the left is the AWS VPC Console displaying a list of security groups (sg-00c45605c471a0dab, sg-09697125f09a02b4, sg-007f1a0544c0f00b, sg-09e8294d75d8a370, sg-08909aa6b5f861620, sg-039805562b0fb9db9) associated with various VPC IDs and security group names. On the right is a document titled "Assignment1b_UG_v5.00.pdf" which includes a section on "1.2 - Security groups" and a table mapping security group names to protocols and sources.

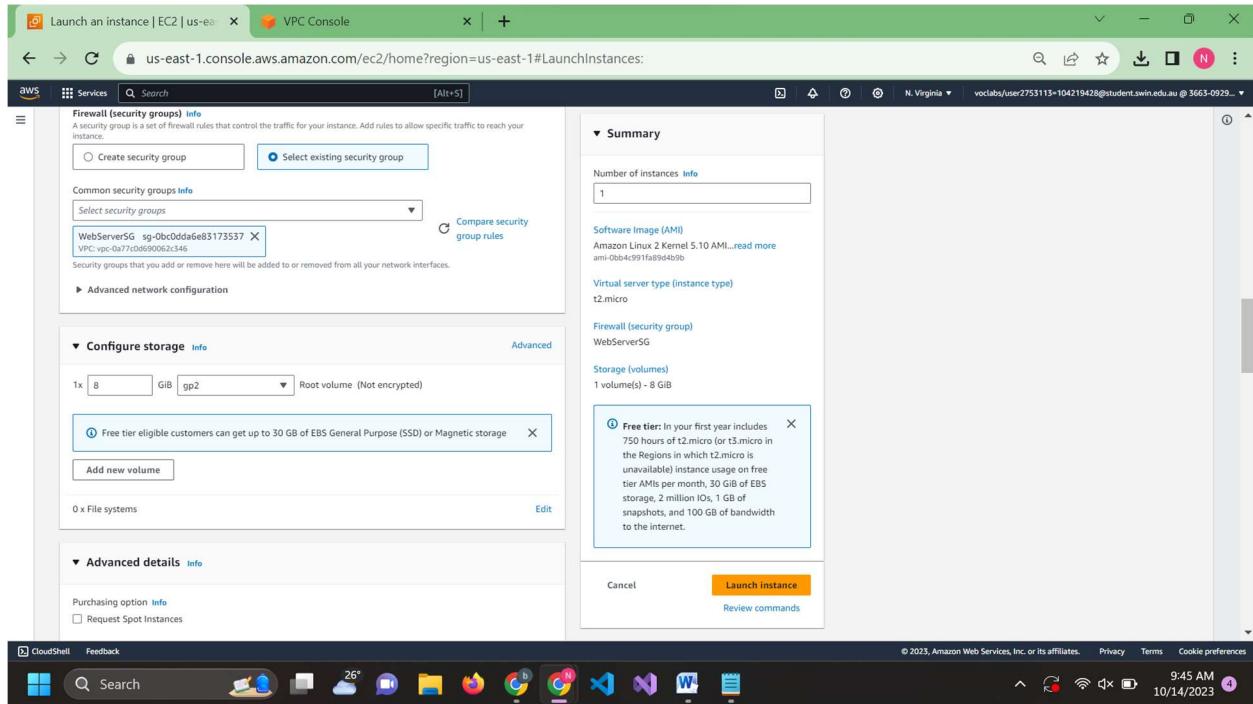
Security group name	Protocols	Source
TestInstanceSG	All traffic	Anywhere
WebServerSG	HTTP (80), SSH (22)	Anywhere
DBServerSG	ICMP	TestInstanceSG
	MySQL (3306)	WebServerSG

Step 4: Create 2 EC2 instance

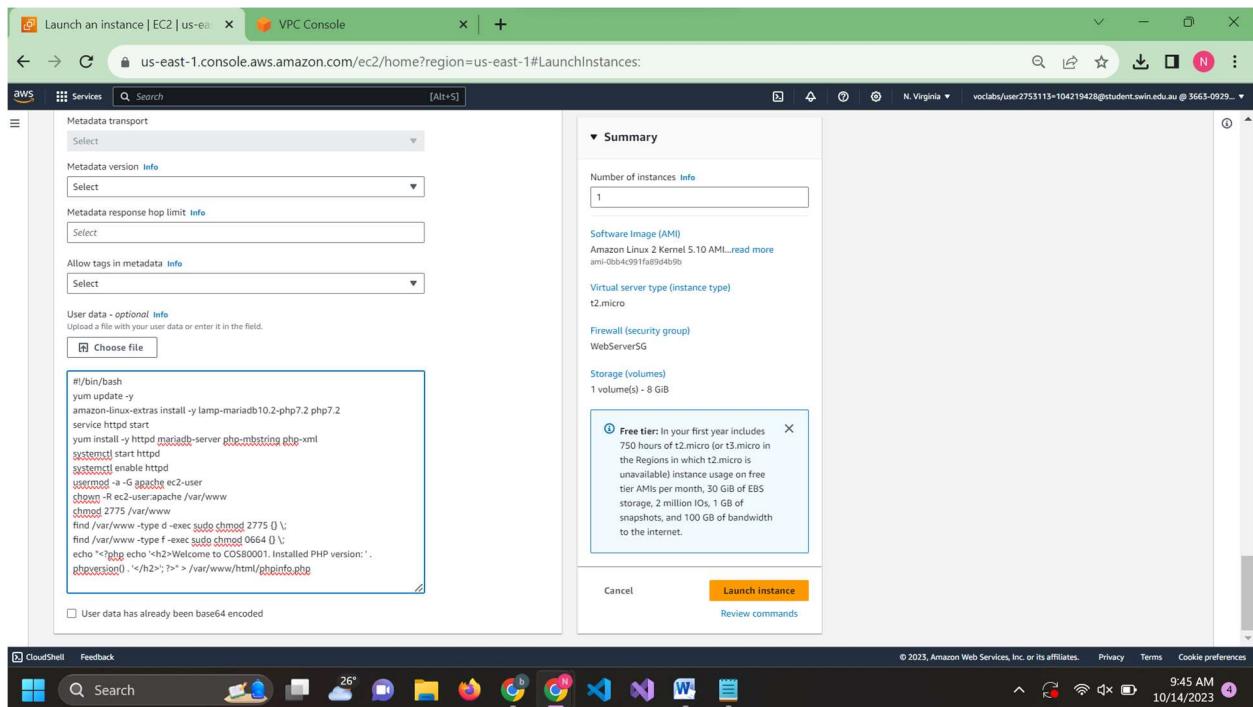
4.1: Bastion/Web server EC2

The screenshot shows the "Launch an instance | EC2 | us-east-1" wizard. It's on the "Step 1: Set instance type" page. The selected instance type is "t2.micro". Other options include "All generations" and "Compare instance types". The "Summary" section shows 1 instance being launched. The "Software Image (AMI)" is set to "Amazon Linux 2 Kernel 5.10 AMI...". The "Virtual server type (instance type)" is "t2.micro". Under "Network settings", the VPC is set to "vpc-0a77c0d690062c346 (BNGuyenVPC)", Subnet is "public2-us-east-1b", and Auto-assign public IP is "Disable". A tooltip for the "Free tier" indicates it covers 750 hours of t2.micro usage per month. The "Launch Instance" button is highlighted.

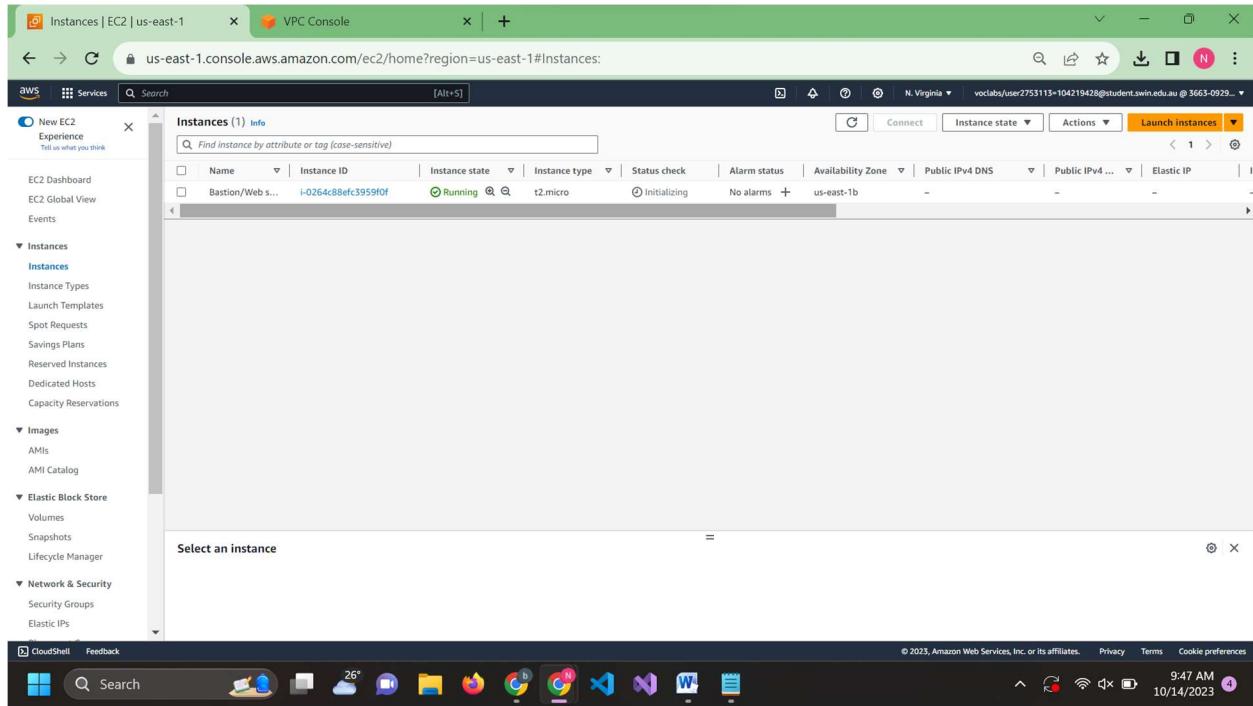




Reuse the script from asm1a to setup



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Open left navigation panel and choose Elastic IP Address and choose Allocate Elastic IP Address

The screenshot shows the AWS VPC Console with the 'Allocate Elastic IP address' dialog open. The dialog lists an 'Amazon's pool of IPv4 addresses' and a 'Global static IP addresses' section. On the right, a PDF document titled 'Assignment1b_UG_v5.00.pdf' is open, detailing the configuration of EC2 instances, including the creation of a Bastion/Web server instance and a Test instance.

The screenshot shows two windows side-by-side. On the left is the AWS EC2 console under the 'us-east-1' region. A modal window titled 'Elastic IP address allocated successfully.' is open, showing the allocation of the IP address 52.202.86.40. Below this, the 'Elastic IP addresses (1/1)' table lists the single allocated IP. On the right is a Microsoft Word document titled 'Assignment1b_UG_v5.00.pdf'. The document contains instructions for creating EC2 instances, specifically detailing the configuration of a Bastion/Web server instance.

Select the created elastic IP and choose Action -> Allocate Elastic IP Address and add the Bastion/... EC2 instance to it

This screenshot shows the 'Associate Elastic IP address' dialog box from the AWS EC2 console. It prompts the user to choose an instance or network interface to associate with the selected Elastic IP address (52.202.86.40). The dialog includes fields for selecting the resource type (Instance) and specifying a private IP address (Q_1-0264c88efc3959f0). The right side of the screen displays the same 'Assignment1b_UG_v5.00.pdf' document as in the previous screenshot, providing further instructions for the EC2 setup.

Elastic IP address associated successfully.
Elastic IP address 52.202.86.40 has been associated with instance i-0264c88efc3959f0f

Elastic IP addresses (1/1)

Name	Allocated IPv4 address	Type	Allocated
-	52.202.86.40	Public IP	eipalloc

Assignment1b_UG_v5.00.pdf

1.3 – EC2 virtual machine

You will create two EC2 instances, a test instance and a bastion/web server instance.

1.3.1 – Bastion/Web server instance

Your web server must be deployed on an EC2 instance in Public Subnet 2. This EC2 instance should be configured similar to the EC2 created in Assignment 1A:

- Amazon Machine Image: Amazon Linux 2 AMI (HVM), SSD Volume Type
- Instance type: t2.micro
- Has Apache web server and other PHP packages installed (you can use the same bash script provided in Assignment 1A to bootstrap your EC2).

This instance will host the "Photo Album" web application, which was created in Assignment 1A – more details are in Section 2 of this specification document. This instance will also act as a bastion host for you to SSH into the Test instance, which resides in a private subnet.

NOTE: [your.public.dns] will change every time the webserver instance restarts. To avoid this behaviour and to ensure your Webserver URL remains persistent, add an Elastic IP Address to this instance by allocating an Elastic IP address in the same region under the Network and Security section in the left menu of the EC2 service page, then associate this new EIP to your Bastion/Web server instance. The public IP address of your instance should now automatically match this Elastic IP address.

1.3.2 – Test instance

This instance will be used for demonstration purposes only. It does not contribute to the functionality of Photo Album website. You will SSH into this instance and ping the web server (using "ping" command in Linux). Please take a screenshot(s) of the Linux terminal to demonstrate that:

- You are able to SSH into an instance in a private subnet (which is this Test instance). For instructions on how to connect to a private EC2 instance through a bastion host, you can refer to <https://aws.amazon.com/blogs/security/securly-connect-to-linux-instances-running-in-a-private-amazon-vpc/>
- You are able to establish a connection (ICMP ping) between this instance and the Bastion/Web server instance.

The configuration of this instance is entirely your choice. This instance does not host the web application.

4.2: Test instance. Since it is not specified how this is config I left it the same as Bastion but different security group and no script

Name and tags

Name: Test Instance

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.

Search our full catalog including 1000s of application and OS images

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

Quick Start: Browse more AMIs

Amazon Machine Image (AMI)

Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type

Free tier eligible

Assignment1b_UG_v5.00.pdf

1.3 – EC2 virtual machine

You will create two EC2 instances, a test instance and a bastion/web server instance.

1.3.1 – Bastion/Web server instance

Your web server must be deployed on an EC2 instance in Public Subnet 2. This EC2 instance should be configured similar to the EC2 created in Assignment 1A:

- Amazon Machine Image: Amazon Linux 2 AMI (HVM), SSD Volume Type
- Instance type: t2.micro
- Has Apache web server and other PHP packages installed (you can use the same bash script provided in Assignment 1A to bootstrap your EC2).

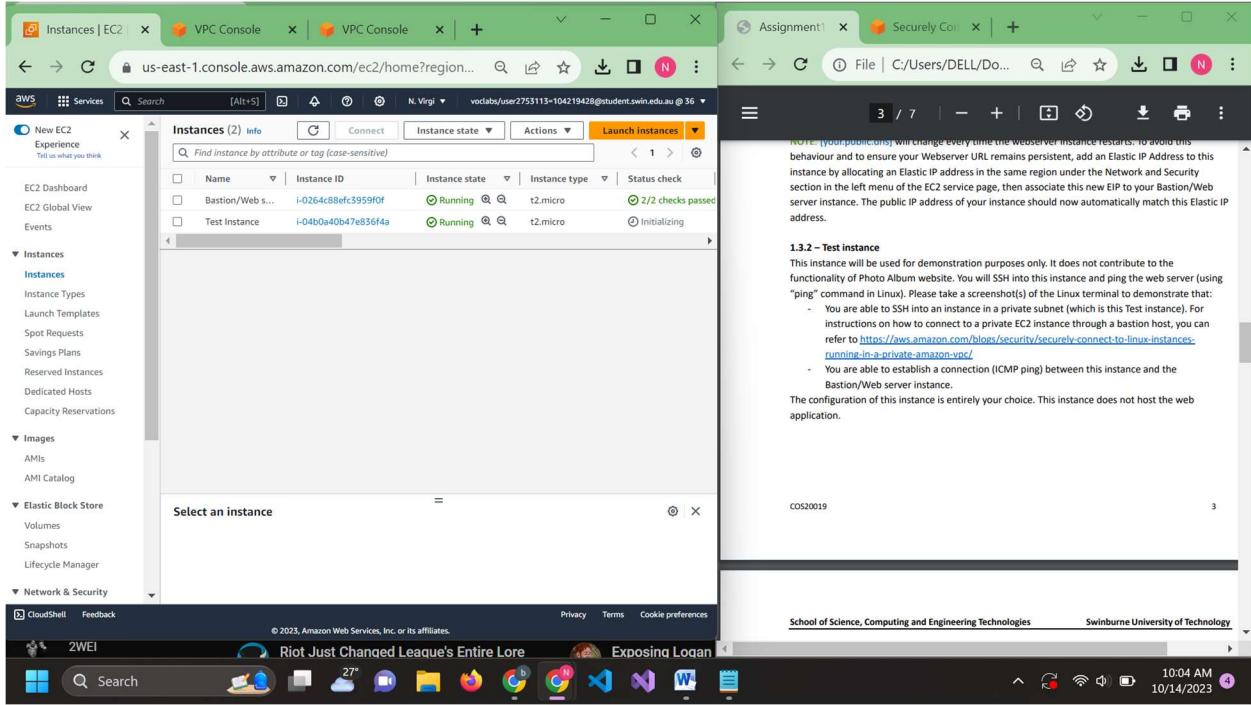
This instance will host the "Photo Album" web application, which was created in Assignment 1A – more details are in Section 2 of this specification document. This instance will also act as a bastion host for you to SSH into the Test instance, which resides in a private subnet.

NOTE: [your.public.dns] will change every time the webserver instance restarts. To avoid this behaviour and to ensure your Webserver URL remains persistent, add an Elastic IP Address to this instance by allocating an Elastic IP address in the same region under the Network and Security section in the left menu of the EC2 service page, then associate this new EIP to your Bastion/Web server instance. The public IP address of your instance should now automatically match this Elastic IP address.

Security group name	Protocols	Source
TestInstanceSG	All traffic	Anywhere
WebServerSG	HTTP (80), SSH (22)	Anywhere
	ICMP	TestInstanceSG
DBServerSG	MySQL (3306)	WebServerSG

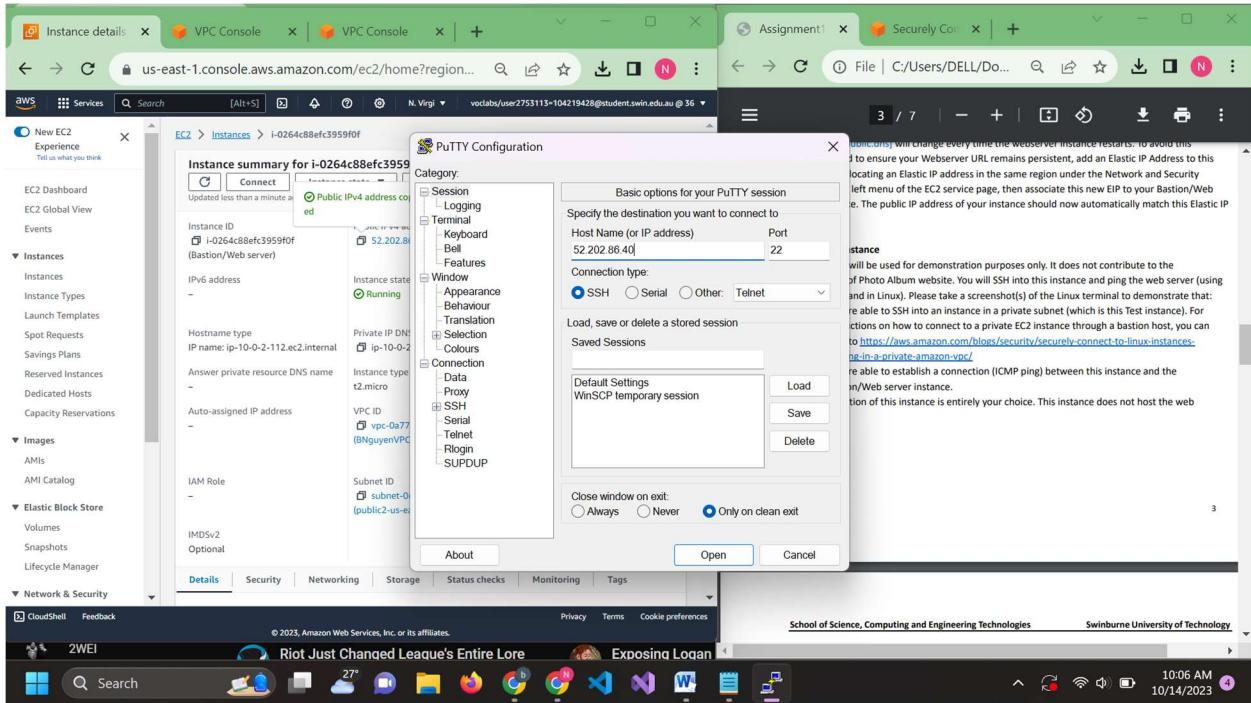
I Config-ed the subnet wrong so I have to comeback and config it again with the right private subnet but forgot to take the screenshot

Platform	AMI ID	Monitoring
Amazon Linux (Inferred)	ami-0bb4c991fa89d4b9b	disabled
Platform details	AMI name	Termination protection
Linux/UNIX	amzn2-ami-kernel-5.10-hvm-2.0.20230926.0-x86_64-gp2	Disabled
Stop protection	Launch time	AMI location
Disabled	Sat Oct 14 2023 15:53:59 GMT+0700 (Giờ Đông Dương) (11 minutes)	amazon/amzn2-ami-kernel-5.10-hvm-2.0.20230926.0-x86_64-gp2
Instance auto-recovery	Lifecycle	Stop-hibernate behavior
Default	normal	Disabled

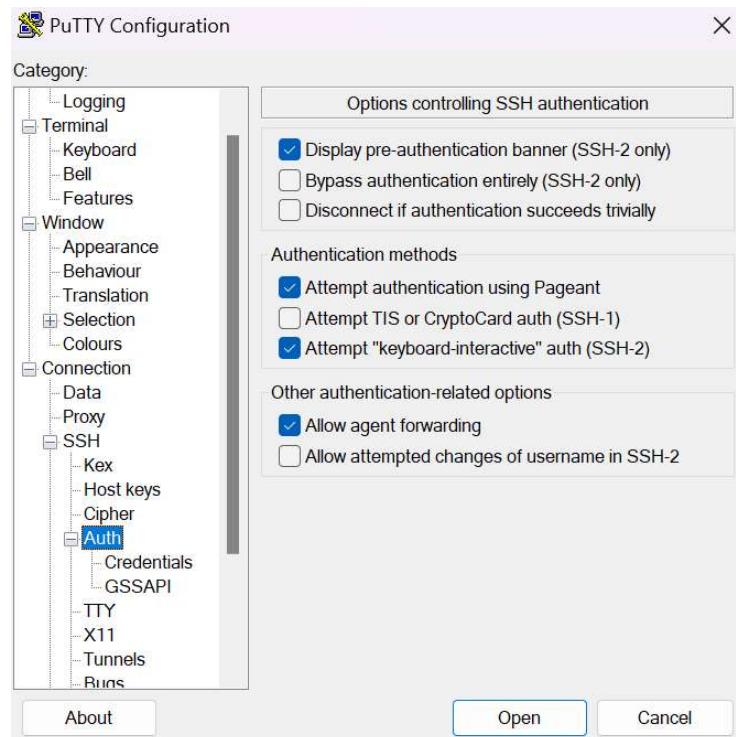
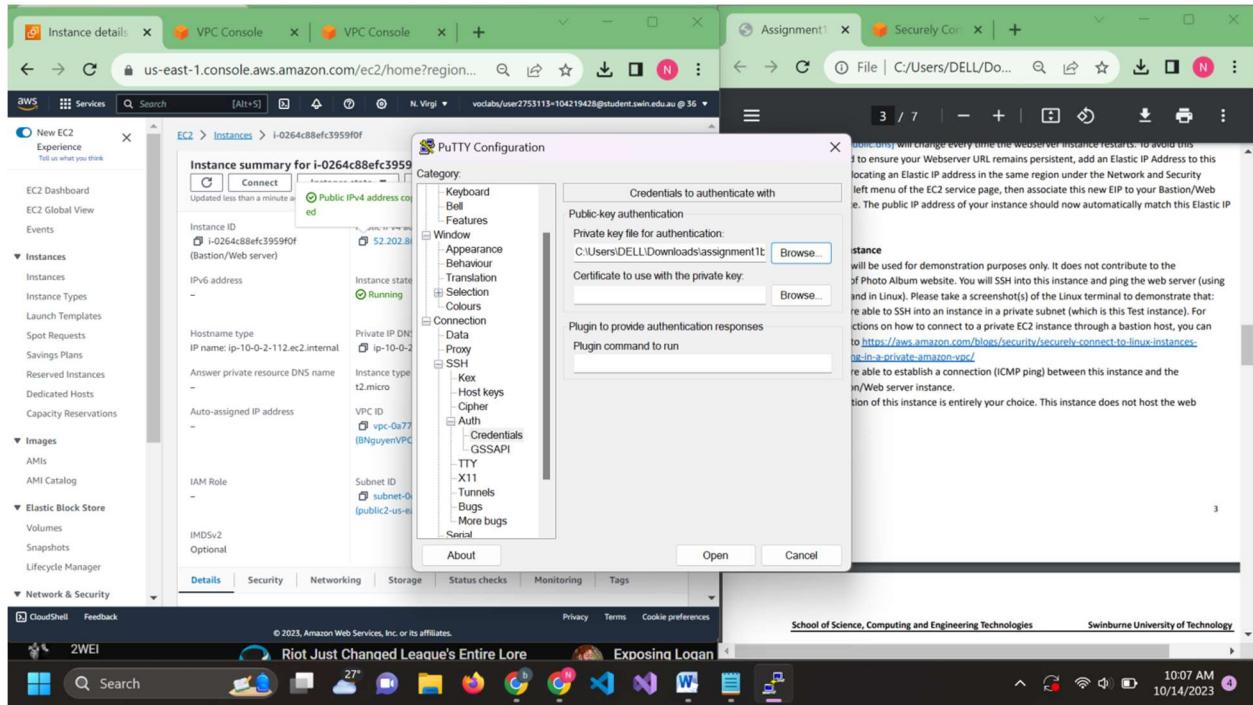


4.2.2: Test it using putty

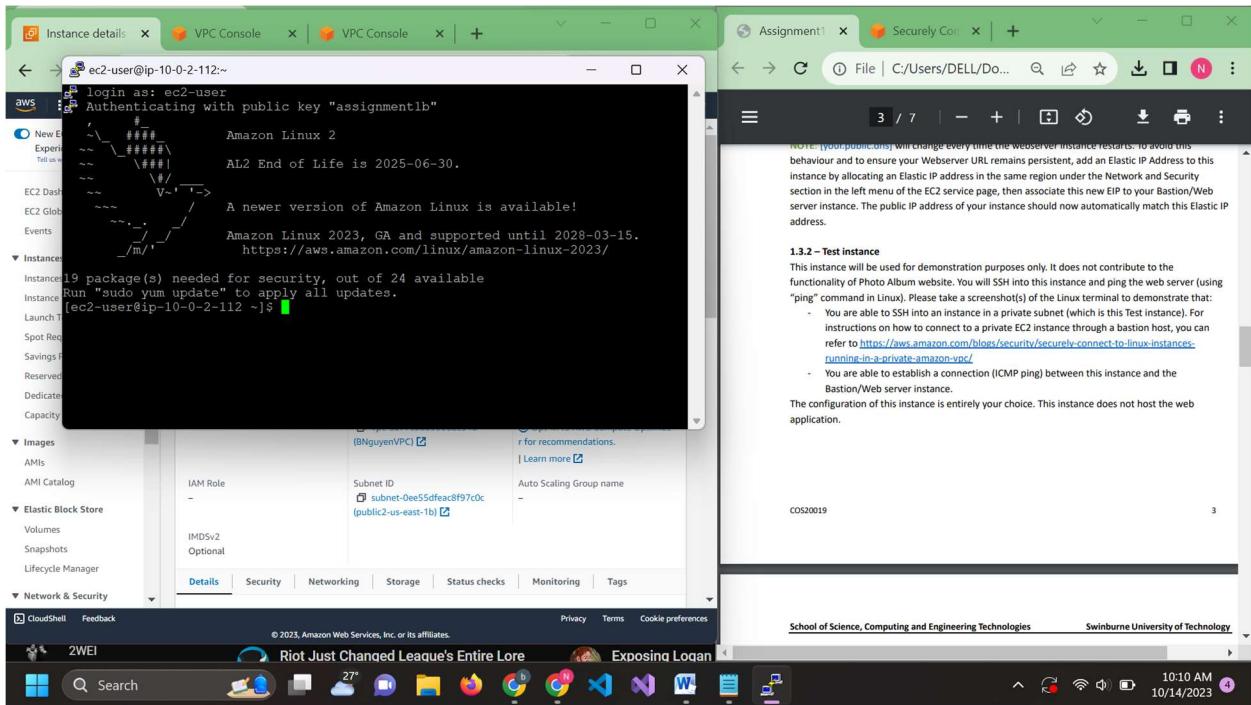
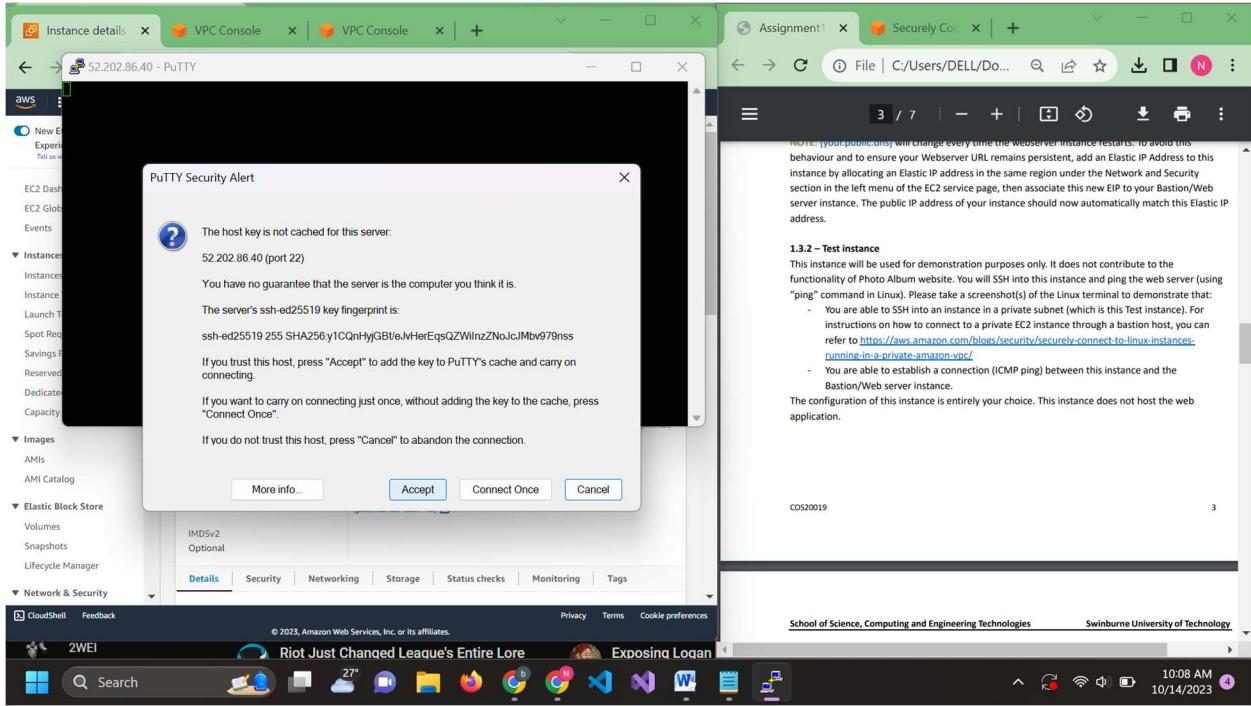
Copy Bastion public IPV4 and use it as hostname



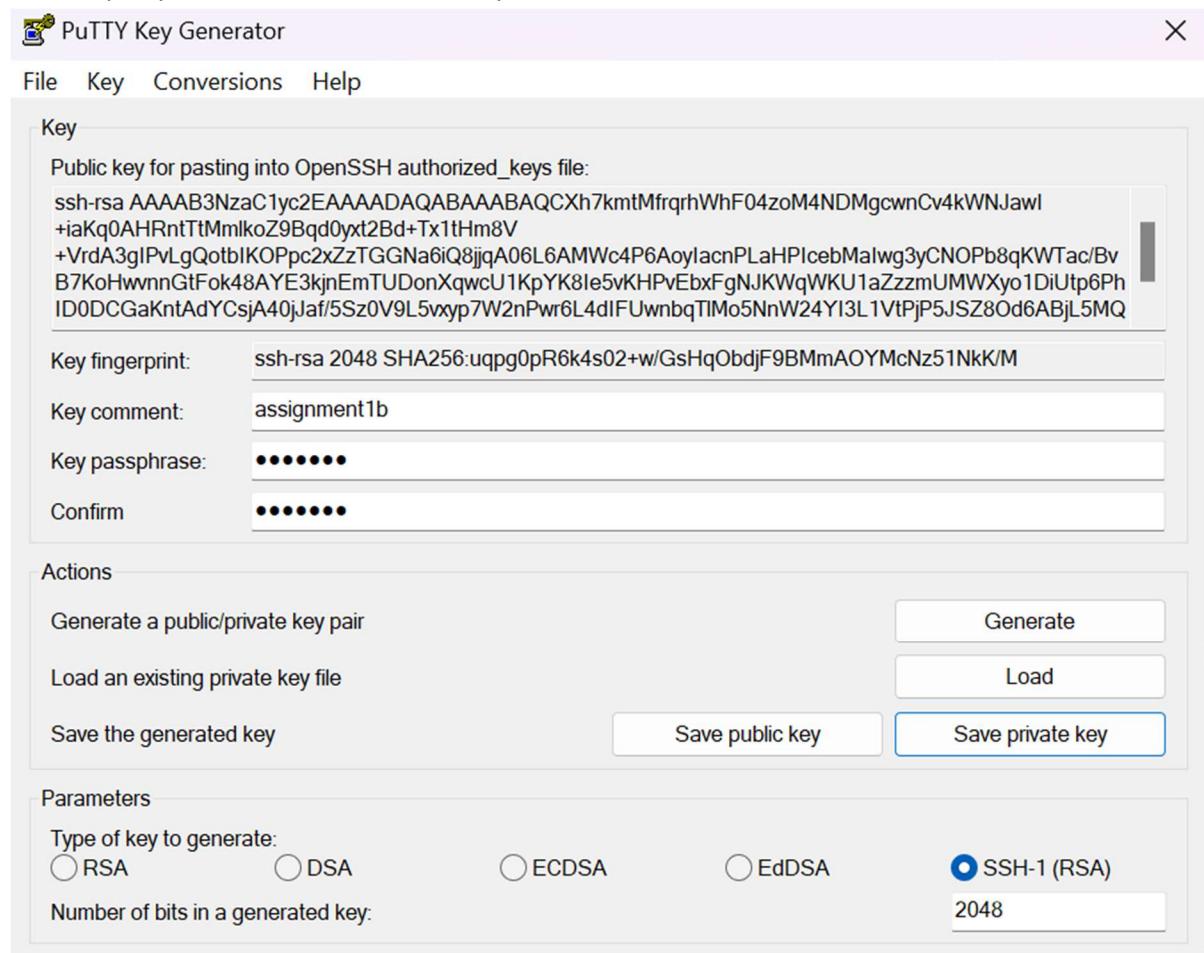
Use the keypair u created when creating Bastion



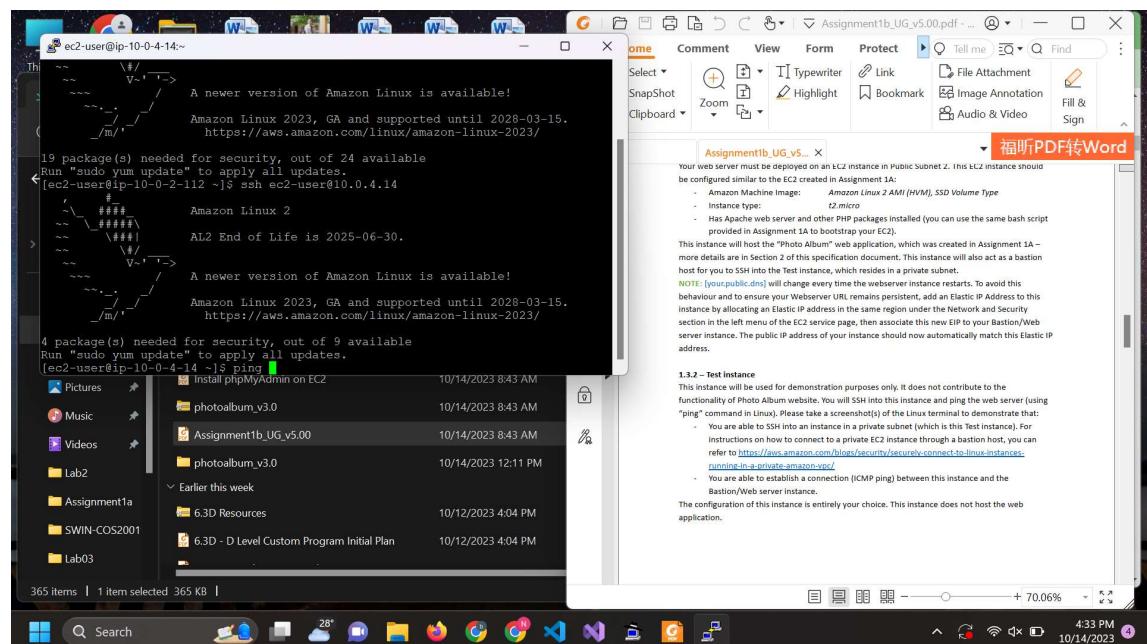
Accept



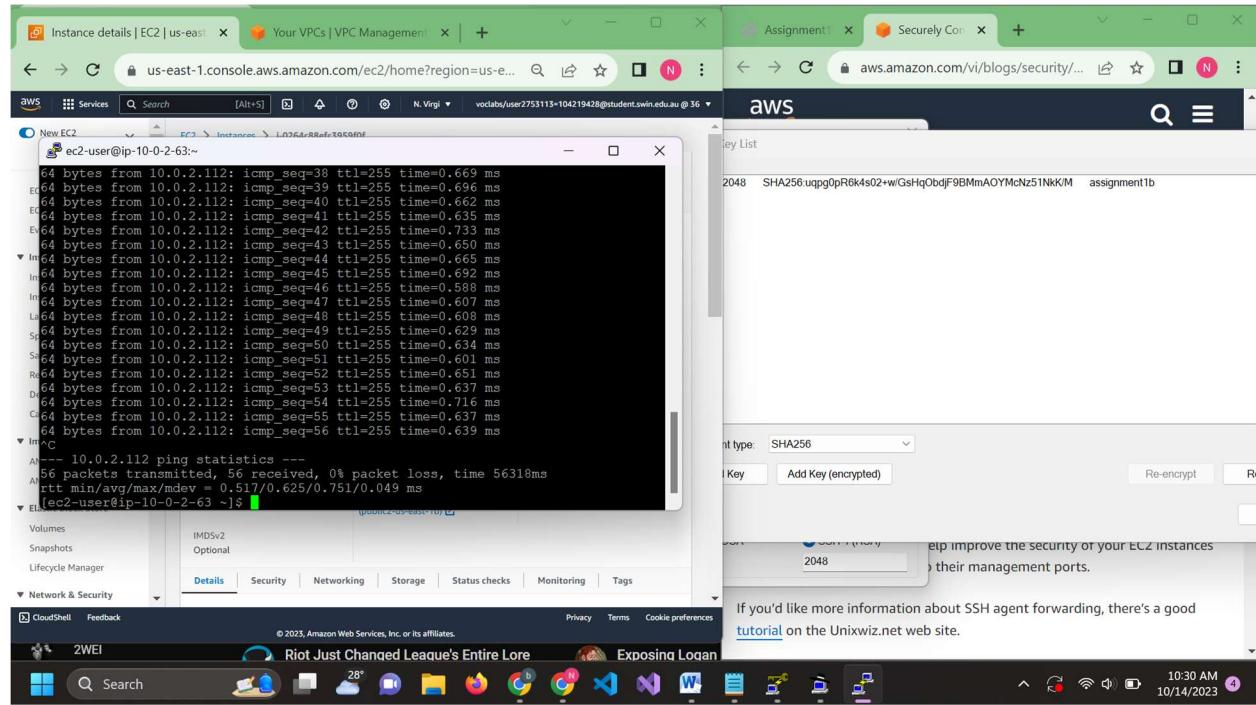
Go into puttyGen convert the created key



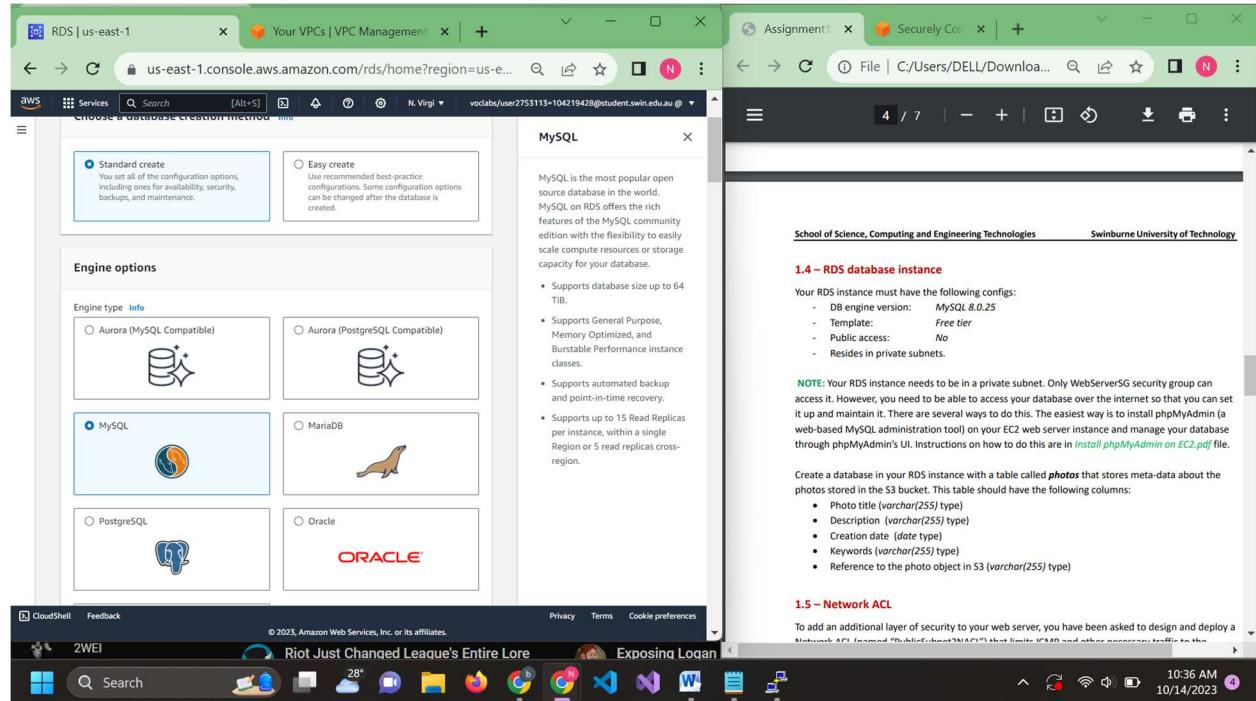
Go into putty and enter ssh ec2-user@10.0.4.14 (10.0.4.14 is the Test instance private ipv4)



Ping Bastion using its private IPv4



Step 5: Create RDS database instance



User: admin

Password: lickmya707

So I forgot to config subnet and put it in the database so let create the subnet group first

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Select all the correspond private subnet

The screenshot shows the 'Add subnets' configuration page for creating a DB subnet group. On the left, the navigation pane includes 'Dashboard', 'Databases', 'Query Editor', 'Performance insights', 'Snapshots', 'Exports in Amazon S3', 'Automated backups', 'Reserved instances', 'Proxies', 'Subnet groups' (selected), 'Parameter groups', 'Option groups', 'Custom engine versions', and 'Zero-ETL integrations'. The main area has two sections: 'Availability Zones' and 'Subnets'. Under 'Availability Zones', 'us-east-1a', 'us-east-1b', 'us-east-1c', and 'us-east-1d' are listed. Under 'Subnets', 'subnet-044c02db4d845030c (10.0.3.0/24)' and 'subnet-039d2a28c26dea2f9 (10.0.4.0/24)' are selected. A note states: 'For Multi-AZ DB clusters, you must select 3 subnets in 3 different Availability Zones.' The 'Subnets selected' section shows two entries: 'us-east-1a' with 'subnet-044c02db4d845030c' and '10.0.3.0/24', and 'us-east-1b' with 'subnet-039d2a28c26dea2f9' and '10.0.4.0/24'. At the bottom are 'Cancel' and 'Create' buttons.

Config the database again but change the connectivity section

The screenshot shows the 'Launch DB instance' configuration page. The left sidebar lists 'Virtual private cloud (VPC) Info', 'DB subnet group - Info', 'Public access', 'VPC security group (firewall) - Info', and 'Existing VPC security groups'. The right sidebar contains a detailed description of MySQL and a list of features: '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.', and 'Supports up to 15 Read Replicas per instance, within a single Region or 5 read replicas cross-region.' The main configuration area includes fields for 'Choose the VPC' (set to 'BNguyenVPC'), 'DB subnet group' (set to 'assignment1bdb-sg'), 'Public access' (radio button 'Yes' selected), 'VPC security group (firewall)' (radio button 'Choose existing' selected, showing 'DBServerSG' as the choice), and 'Availability Zone' (set to 'us-east-1a'). At the bottom are 'CloudShell', 'Feedback', and standard Windows taskbar icons.

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The screenshot shows the AWS RDS console with the following details:

- Left sidebar:** Shows the navigation menu for Amazon RDS, including Databases, Subnet groups, Parameter groups, Option groups, Custom engine versions, and Zero-ETL integrations.
- Middle pane:** Displays a series of success messages:
 - Successfully deleted DB instance assignment1bdb
 - Successfully created assignment1bdb-SG. View subnet group
 - Creating database assignment1b-db
Your database might take a few minutes to launch.
You can use settings from assignment1bdb to simplify configuration of suggested database add-ons while we finish creating your DB for you.
 - Successfully created database assignment1bdb
You can use settings from assignment1bdb to simplify configuration of suggested database add-ons while we finish creating your DB for you.
 - Introducing Aurora I/O-Optimized
Aurora's I/O-Optimized is a new cluster storage configuration that offers predictable pricing for all applications and improved price-performance, with up to 40% costs savings for I/O-intensive applications.
- Bottom pane:** Shows the "Databases (1)" list with one entry:

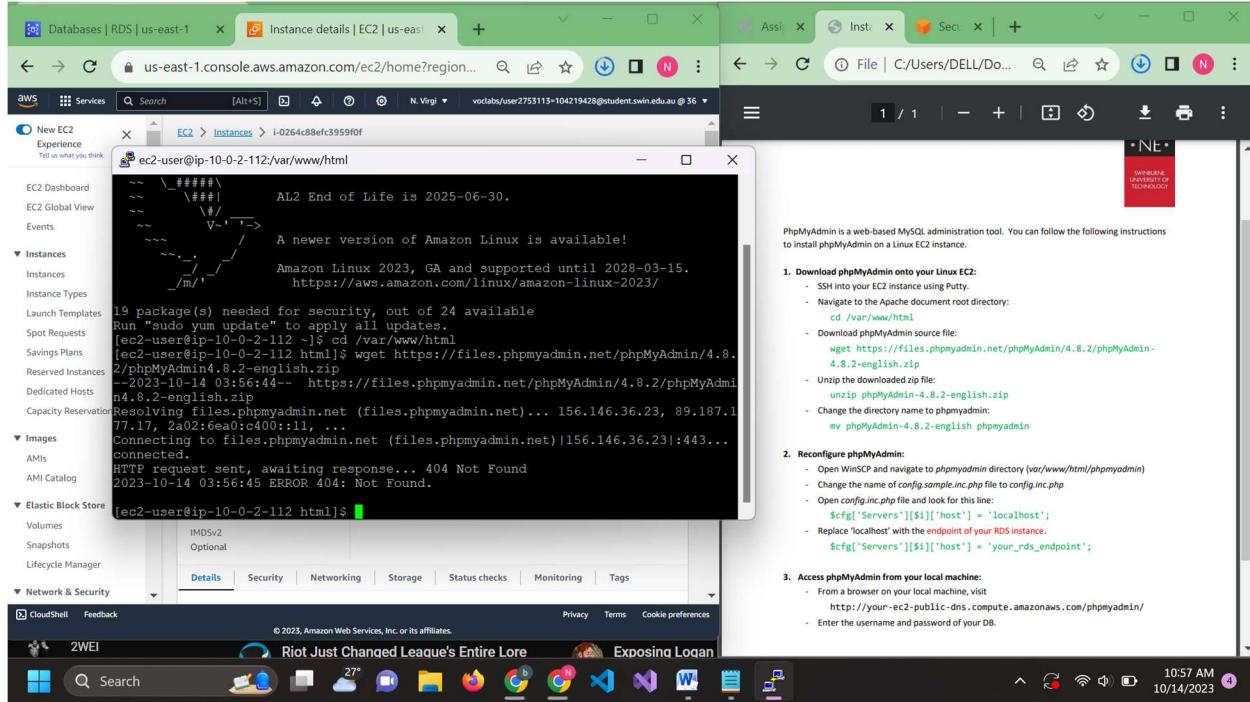
DB identifier	Status	Role	Engine	Region & AZ	Size	Actions	CPU	Current activity	Maintenance	VPC
assignment1b-db	Creating	Instance	MySQL Community	us-east-1a	db.t3.micro	-	-	-	none	vpc-0a7c0d690062c346

Access Putty again this time use Bastion public ipv4

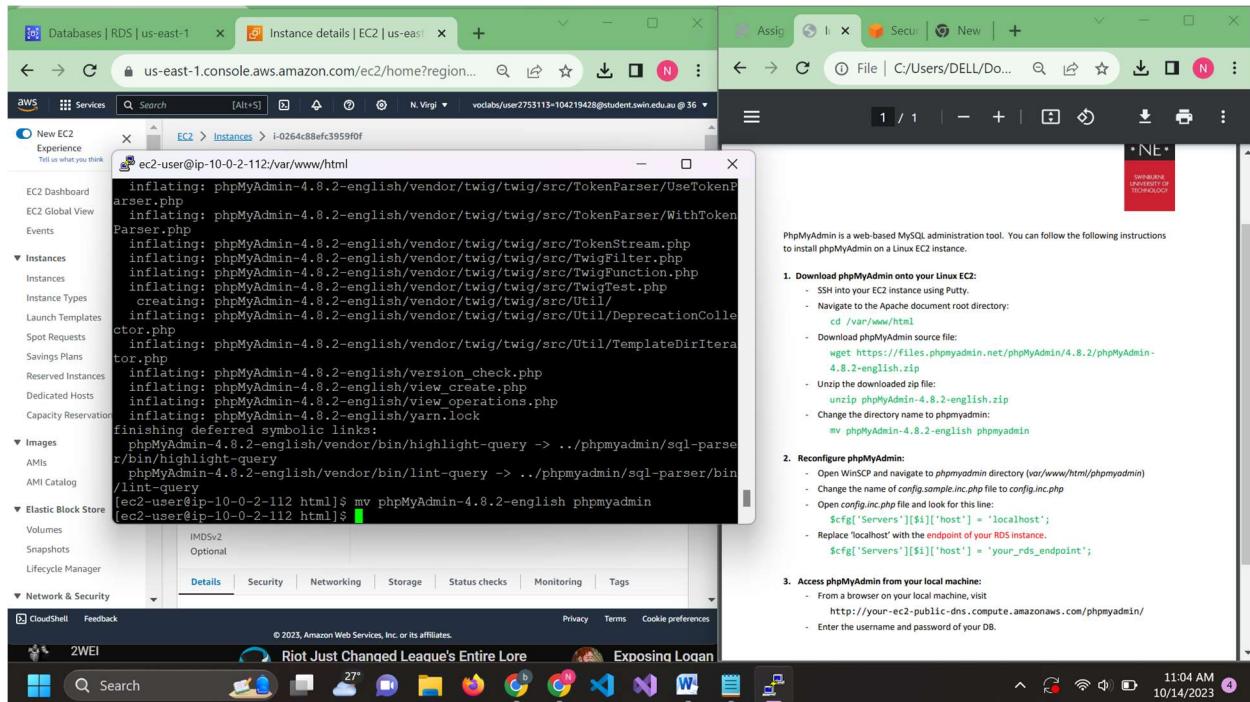
The screenshot shows the AWS EC2 instance details page and a terminal session on the instance:

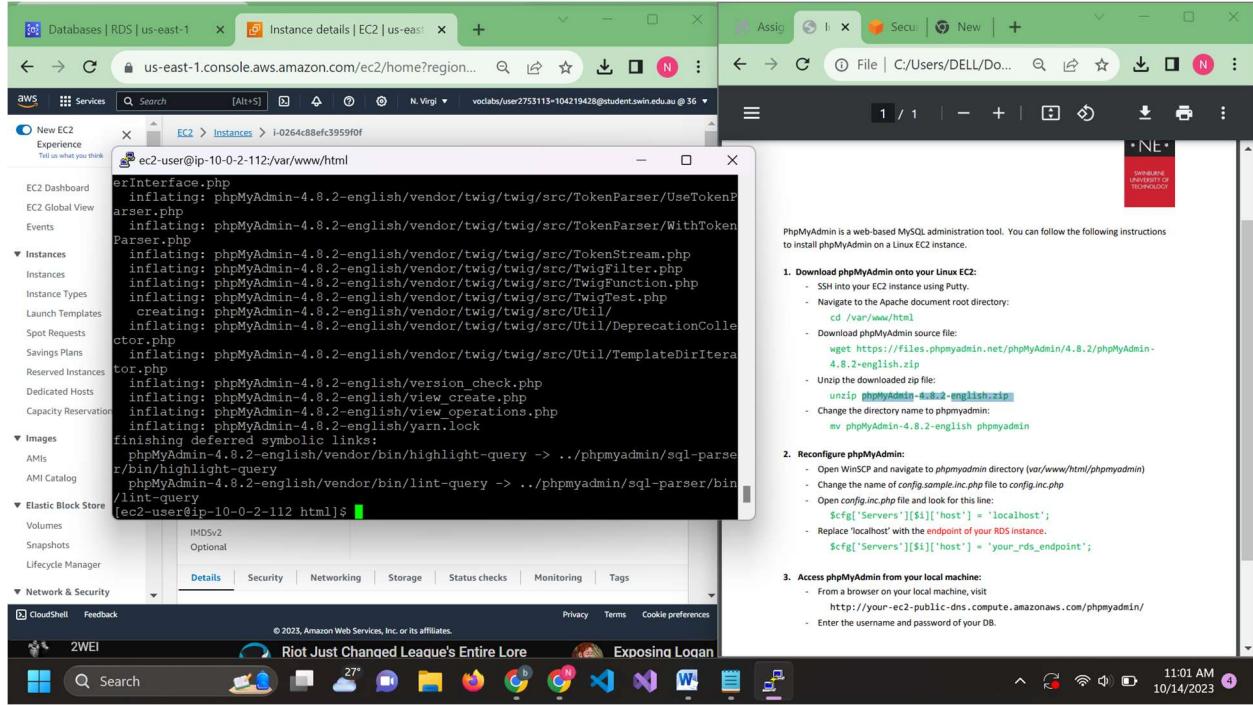
- Left sidebar:** Shows the navigation menu for EC2, including Instances, Images, and Elastic Block Store.
- Middle pane:** Shows the instance details for i-0264c88efc3959f01, including the IMDSv2 optional status.
- Terminal Session:** Displays a terminal window titled "ec2-user@ip-10-0-2-112:~". The session shows the user is authenticating with a public key and provides a welcome message for Amazon Linux 2. It also displays a notice about a newer version of Amazon Linux available and a package update message.
- Right pane:** Shows a "File | C:/Users/DELL/Downloads/" file browser window.

To fix this u need to copy the directory from the pdf into a text editor so the “-“ is not missing(I forgot to take the screenshot of that)

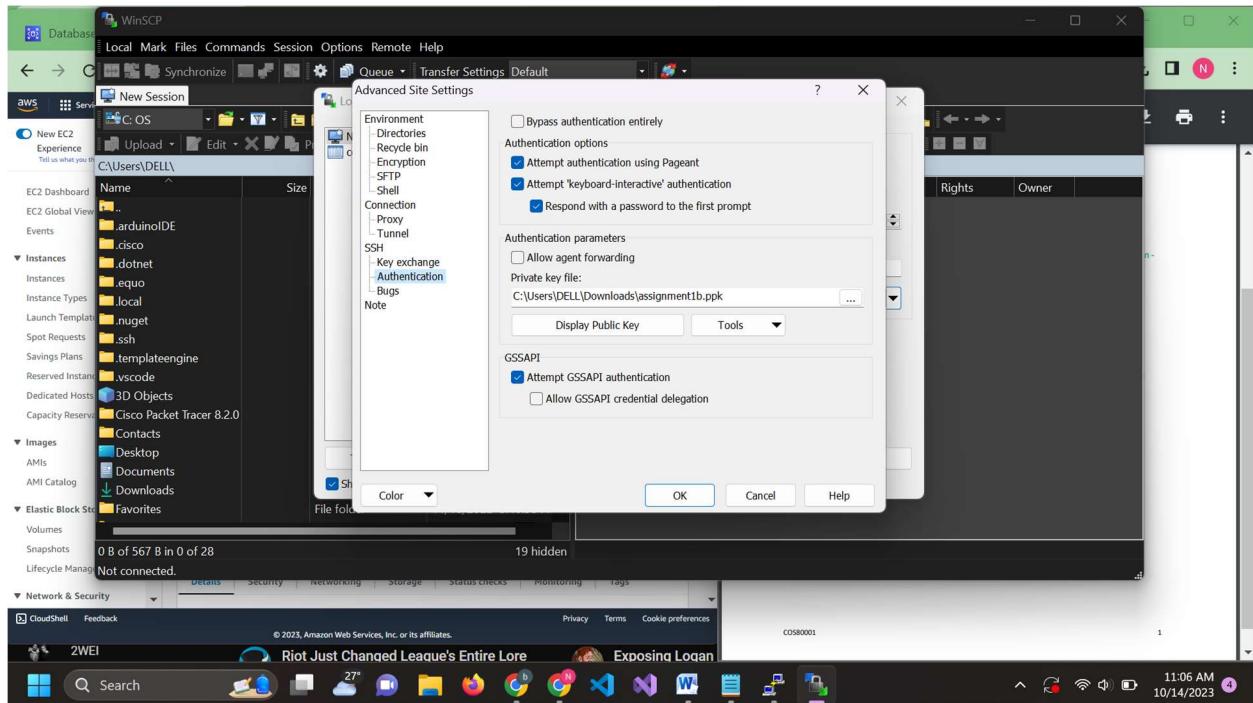


Unzip the file

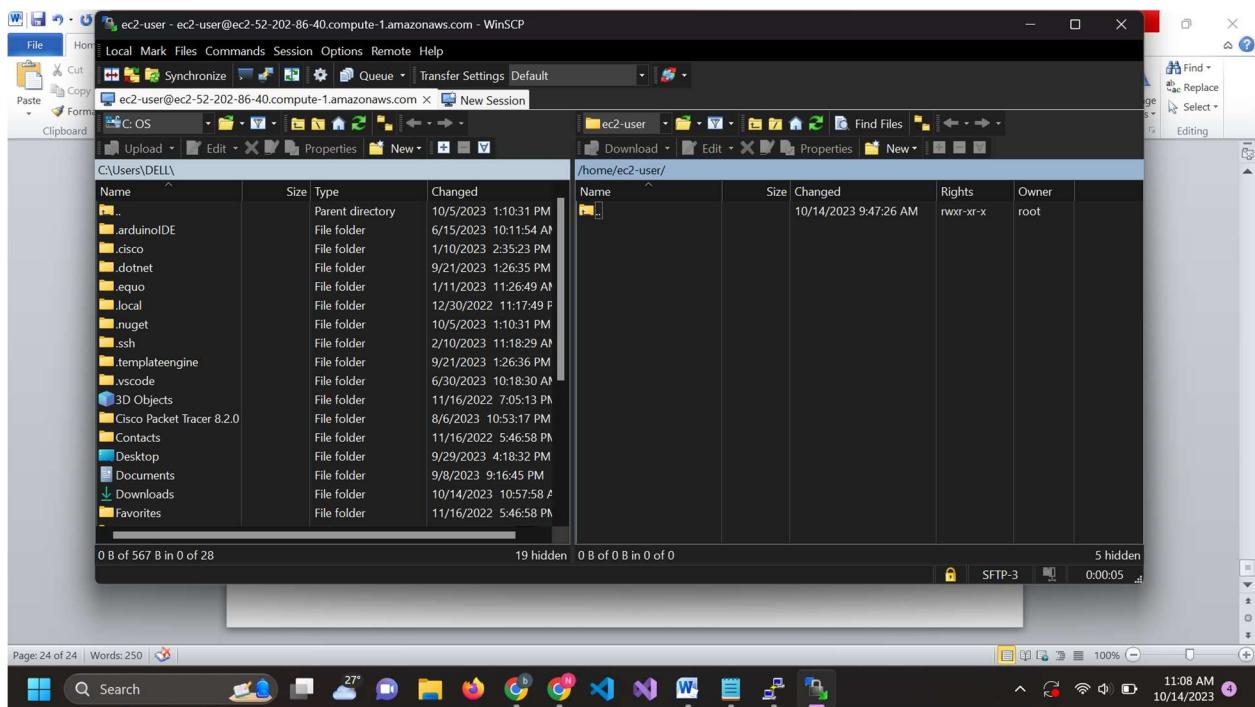
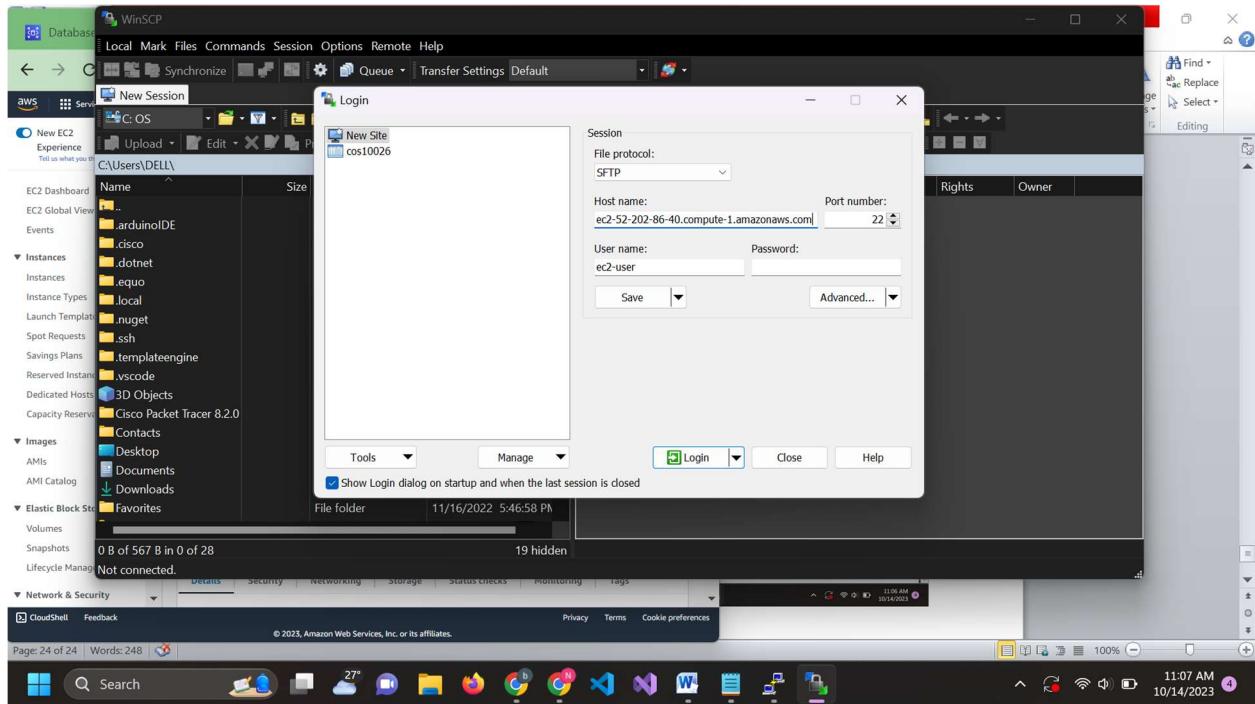




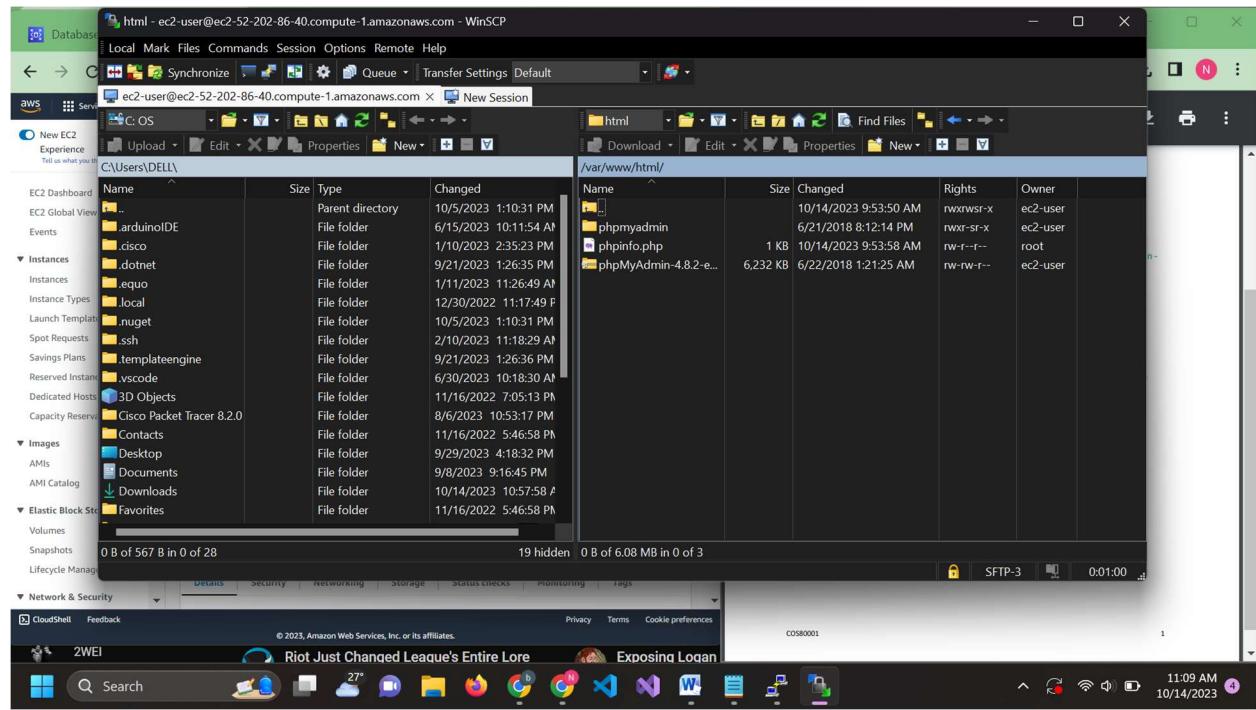
Go into WinSCP to access the Bastion using public DNS



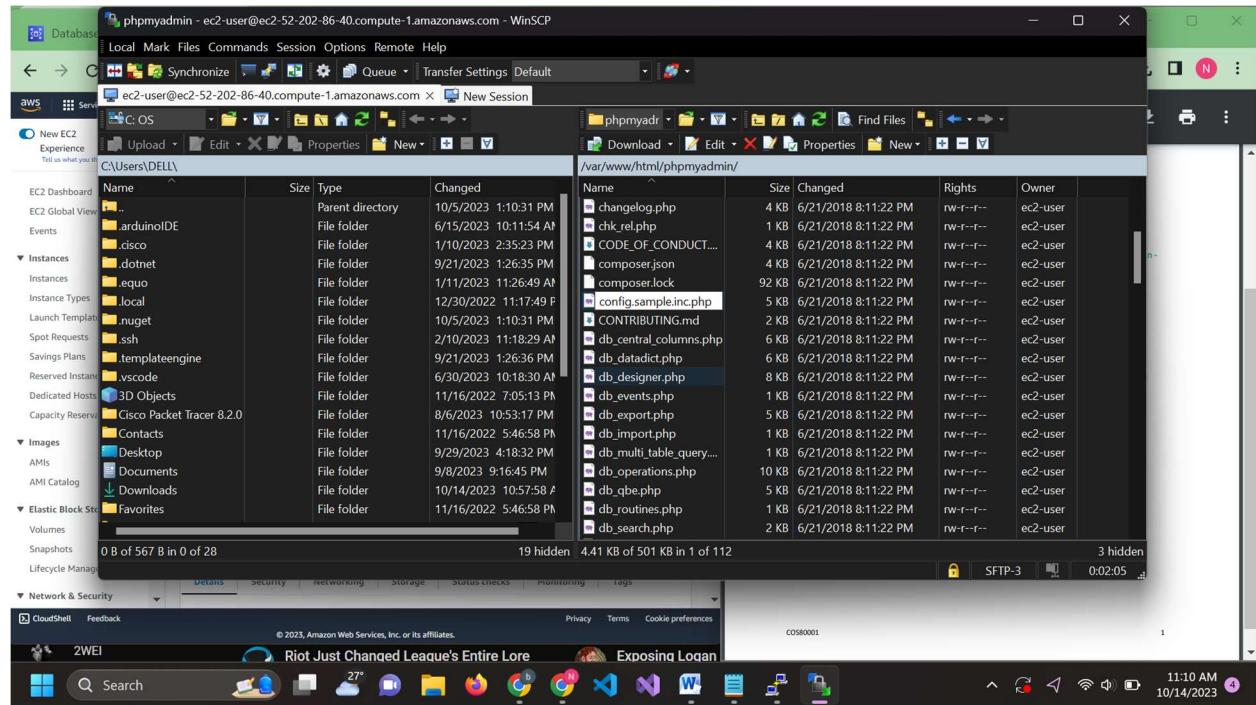
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Access this directory



Change config.sample.inc.php to config.inc.php



Change the code line from localhost to your rds endpoint

```

$ i = 0;
Amazon
    /**
     * First server
     */
    $i++;
    /* Authentication type */
    $cfg['Servers'][$i]['auth_type'] = 'cookie';
    /* Server parameters */
    $cfg['Servers'][$i]['host'] = 'assignment1b-db.corquhibelng.us-east-1.rds.amazonaws.com';
    $cfg['Servers'][$i]['compress'] = false;
    $cfg['Servers'][$i]['AllowNoPassword'] = false;
Proxies
    /**
     * phpMyAdmin configuration storage settings.
    */
Subnet
    /* User used to manipulate with storage */
    Option
        // $cfg['Servers'][$i]['controlhost'] = '';
        // $cfg['Servers'][$i]['controlport'] = '';
        // $cfg['Servers'][$i]['controluser'] = 'pma';
        // $cfg['Servers'][$i]['controlpass'] = 'pmapass';

Events
    /* Storage database and tables */
    Event
        // $cfg['Servers'][$i]['pmadb'] = 'phpmyadmin';
        // $cfg['Servers'][$i]['bookmarktable'] = 'pma_bookmark';
        // $cfg['Servers'][$i]['relation'] = 'pma_relation';
        // $cfg['Servers'][$i]['table_info'] = 'pma_table_info';
        // $cfg['Servers'][$i]['table_coords'] = 'pma_table_coords';
        // $cfg['Servers'][$i]['table_coords'] = 'pma_table_coords';
CloudShell Line: 32/154 Column: 91 Encoding: 1252 (ANSI - L)
© 2023, Amazon Web Services, Inc. or its affiliates.
2WEI Riot Just Changed League's Entire Lore Exposing Logan 11:14 AM 10/14/2023

```

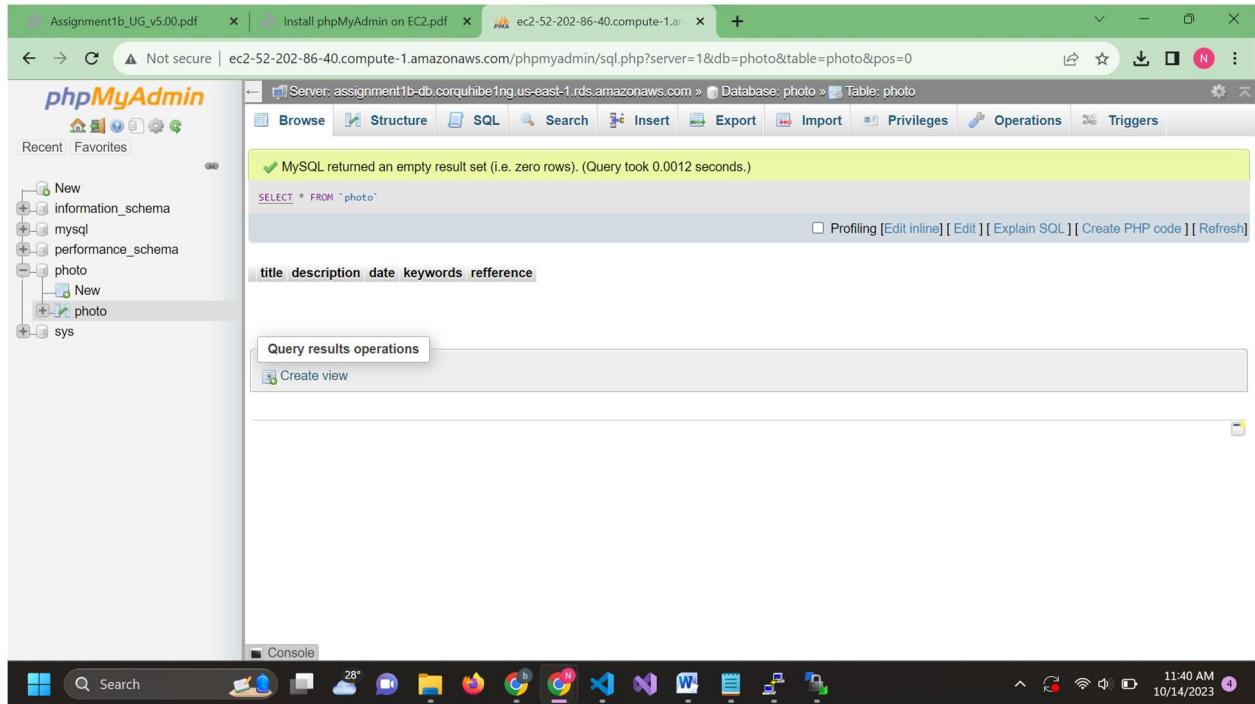
Enter using your public dns to test if it working(I'm not sure why I don't have to enter password for my rds)

The screenshot shows a Windows desktop environment. On the left, there is a CloudShell window with a command-line interface. In the center, there is an AWS CloudShell window showing the EC2 instance details for an instance named 'i-0264c88efc3959f0f'. The instance is running and has a public IPv4 address of 52.202.86.40. On the right, a web browser is open to a test page at <http://ec2-52-202-86-40.compute-1.amazonaws.com>. The page displays a red header with 'Test Page' and a message stating: 'This page is used to test the proper operation of the Apache HTTP server after it has been installed. If you can read this page, it means that the Apache HTTP server installed at this site is working properly.' Below this, there are sections for 'If you are a member of the general public:' and 'If you are the website administrator:', both containing explanatory text. At the bottom right of the browser window, there is a 'Powered by APACHE' logo.

Endpoint link with /phpmyadmin : <http://ec2-52-202-86-40.compute-1.amazonaws.com/phpmyadmin/>

The screenshot shows two browser windows side-by-side. The left window is the AWS RDS console for a database named 'assignment1b-db.coruhibe1ng.us-east-1.rds.amazonaws.com'. It displays connectivity and security details, including the endpoint, port (3306), VPC (BNguyenVPC), and subnet group (assignment1bdb-sg). The right window is the phpMyAdmin login interface, showing the 'Welcome to phpMyAdmin' logo and a 'Log in' form with 'Username: admin' and 'Password:'. The taskbar at the bottom shows various application icons.

This screenshot is similar to the one above, showing the AWS RDS console on the left and the phpMyAdmin interface on the right. The RDS details remain the same, and the phpMyAdmin interface shows the 'General settings' tab with options like 'Change password', 'Server connection collation' set to 'utf8mb4_unicode_ci', and 'Appearance settings' for theme and font size. The taskbar at the bottom is visible.



The table above is created using SQL command

```
CREATE TABLE photo (
    title VARCHAR(255),
    description VARCHAR(255),
    date DATE,
    keywords VARCHAR(255),
    refrence VARCHAR(255),
);
```

Step 6: Create S3 bucket

The image consists of three vertically stacked screenshots of the AWS S3 Bucket Creation wizard.

Screenshot 1: General configuration

- Bucket name:** `asm1b`
- AWS Region:** `US East (N. Virginia) us-east-1`
- Copy settings from existing bucket - optional:** Only the bucket settings in the following configuration are copied. A `Choose bucket` button is present.

Screenshot 2: Object Ownership

- Object Ownership:** `Info`
- Control ownership of objects written to this bucket from other AWS accounts and the use of access control lists (ACLs). Object ownership determines who can specify access to objects.**
- ACLs disabled (recommended):** All objects in this bucket are owned by this account. Access to this bucket and its objects is specified using only policies.
- ACLs enabled:** Objects in this bucket can be owned by other AWS accounts. Access to this bucket and its objects can be specified using ACLs.
- Object Ownership:** `Bucket owner enforced`

Screenshot 3: Block public access

- Public access is granted to buckets and objects through access control lists (ACLs), bucket policies, access point policies, or all. In order to ensure that public access to this bucket and its objects is blocked, turn on Block all public access. These settings apply only to this bucket and its access points. AWS recommends that you turn on Block all public access, but before applying any of these settings, ensure that your applications will work correctly without public access. If you require some level of public access to this bucket or objects within, you can customize the individual settings below to suit your specific storage use cases. [Learn more](#)**
- Block all public access:** Turning this setting on is the same as turning on all four settings below. Each of the following settings are independent of one another.
 - Block public access to buckets and objects granted through new access control lists (ACLs):** S3 will block public access permissions applied to newly added buckets or objects, and prevent the creation of new public access ACLs for existing buckets and objects. This setting doesn't change any existing permissions that allow public access to S3 resources using ACLs.
 - Block public access to buckets and objects granted through any access control lists (ACLs):** S3 will ignore all ACLs that grant public access to buckets and objects.
 - Block public access to buckets and objects granted through new public bucket or access point policies:** S3 will block new buckets and access point policies that grant public access to buckets and objects. This setting doesn't change any existing policies that allow public access to S3 resources.
 - Block public and cross-account access to buckets and objects through any public bucket or access point policies:** S3 will ignore public and cross-account access for buckets or access points with policies that grant public access to buckets and objects.
- Warning:** Turning off block all public access might result in this bucket and the objects within becoming public. AWS recommends that you turn on block all public access, unless public access is required for specific and verified use cases such as static website hosting.
 - I acknowledge that the current settings might result in this bucket and the objects within becoming public.** A checked checkbox is shown.

The screenshot shows the AWS S3 Management Console interface. At the top, there are tabs for RDS | us-east-1, Instance details | EC2 | us-east-1, and S3 Management Console. The main content area is titled "Amazon S3 > Buckets". A section titled "Account snapshot" provides storage usage and activity trends. Below it, a table lists the bucket "asm1bphoto" with details: Name (asm1bphoto), AWS Region (US East (N. Virginia) us-east-1), Access (Objects can be public), and Creation date (October 14, 2023, 11:40:15 (UTC+07:00)). Action buttons for Copy ARN, Empty, Delete, and Create bucket are available. A search bar at the top allows finding buckets by name. The bottom of the screen shows the Windows taskbar with various pinned icons like File Explorer, Edge, and Filezilla.

Step 7: Create network ACLs

The screenshot shows two windows side-by-side. On the left is the AWS VPC Create network ACL wizard. It has a "Network ACL settings" step where the name is set to "PublicSubnet2NACL" and the VPC is "BNguyenVPC". Below this, there's a "Tags" section with a table for adding tags, and a "Create network ACL" button. On the right is a Microsoft Word document titled "Photo Album Website Requirements". It includes sections for "1.5 – Network ACL" (describing a security layer for the web server), "2. Functional requirements of Photo Album website" (listing requirements like allowing SSH traffic from anywhere), and a note about allowing ICMP traffic only from the subnet containing the test instance. The document also includes a footer with copyright information and a page number of 4.

The screenshot shows two windows side-by-side. The left window is the AWS VPC Network ACLs console, displaying a success message: "You successfully created acl-074deaf274c6da33e / PublicSubnet2NACL". It lists three Network ACLs: "acl-01736c6b6a3d98d20" (4 Subnets), "acl-0b81796d203c78a83" (6 Subnets), and "PublicSubnet2NACL" (acl-074deaf274c6da33e). The right window is a Microsoft Word document titled "Assignment 1" containing requirements for a Photo Album website, specifically regarding Network ACLs.

Choose the Network acl you created and go into Action to edit inbound/outbound and subnet association so it can be access from anywhere

7.1: Inbound

The screenshot shows the "Edit inbound rules" page for the "PublicSubnet2NACL" Network ACL. The table lists the following inbound rules:

Rule number	Type	Protocol	Port range	Source	Allow/Deny
3	SSH (22)	TCP (6)	22	0.0.0.0/0	Allow
4	All ICMP - IPv4	ICMP (1)	All	0.0.0.0/0	Allow
1	HTTP (80)	TCP (6)	80	0.0.0.0/0	Allow
2	HTTPS (443)	TCP (6)	443	0.0.0.0/0	Allow
5	All TCP	TCP (6)	All	0.0.0.0/0	Allow
*	All traffic	All	All	0.0.0.0/0	Deny

Buttons at the bottom include "Add new rule", "Sort by rule number", "Cancel", "Preview changes", and "Save changes".

7.2: Outbound

7.3: Subnet

The screenshot shows the AWS VPC Network ACLs console. A success message at the top states: "You have successfully updated subnet associations for acl-074deaf274c6da33e / PublicSubnet2NACL." Below this, a table lists three Network ACLs:

Name	Network ACL ID	Associated with	Default	VPC ID	Inbound rules count	Outbound rules count
acl-01736c6b6a3d98d20	3 Subnets		Yes	vpc-0a77c0d690062c346 / BNguyenVPC	2 Inbound rules	2 Outbound rules
acl-0b81796d203c78a83	6 Subnets		Yes	vpc-0ac460d15db259b83	2 Inbound rules	2 Outbound rules
PublicSubnet2NACL	acl-074deaf274c6da33e	subnet-039d2a28c26dea2f9 / private2-us-east-1b	No	vpc-0a77c0d690062c346 / BNguyenVPC	6 Inbound rules	6 Outbound rules

Below the table, a detailed view of the selected Network ACL (acl-074deaf274c6da33e) is shown. It includes tabs for Details, Inbound rules, Outbound rules, Subnet associations, and Tags. The Details tab shows the following information:

- Network ACL ID: acl-074deaf274c6da33e
- Associated with: subnet-039d2a28c26dea2f9 / private2-us-east-1b
- Default: No
- VPC ID: vpc-0a77c0d690062c346 / BNguyenVPC
- Owner: 366309293917

Step 8: upload photo into your S3 bucket

The screenshot shows the AWS S3 upload interface and a Microsoft Word document side-by-side.

AWS S3 Upload Interface:

- The left window shows the "Upload" screen with a message: "Add the files and folders you want to upload to S3. To upload a file larger than 160GB, use the AWS CLI, AWS SDK or Amazon S3 REST API. [Learn more](#)".
- A dashed box indicates where files can be dragged and dropped or added via "Add files" or "Add folder".
- The "Files and folders" section shows three files:

Name	Folder	Type	Size
dark<-cosmic-jhin-sp...	-	image/jpeg	250.7 KB
jhin-dark<-cosmic-lo...	-	image/jpeg	399.7 KB
jhin-empyrean-lol...	-	image/jpeg	513.5 KB
- The "Destination" section shows the destination as "s3://asm1bphoto".

Microsoft Word Document:

- The right window is a Microsoft Word document titled "COS2019". It contains the following text:

anywhere in this assignment.

School of Science, Computing and Engineering Technologies Swinburne University of Technology

All objects (photos) in this S3 bucket must become publicly available. To accomplish this task, you MUST use an appropriate access policy to enable public access to all available objects in this S3 bucket.

NOTE: marks will be deducted if S3 bucket objects have been individually configured to be publicly available.

2.2 – Photo meta-data in RDS Database

The meta-data of the photos stored in the S3 bucket is stored in a database table, which has been created in Section 1.4. You need to populate the table with a few records. Below is an example of a record:

 - Photo title: Swinburne Logo
 - Description: Logo of Swinburne uni
 - Creation date: 2021-08-09
 - Keywords: logo, university
 - Object URL in S3: <https://photo-bucket.s3.amazonaws.com/swinburnelogo.jpg>

2.3 – Photo Album website functionality

The website must be able to list all the photos (stored in the S3 bucket) along with their meta-data

8.2: Edit bucket policy

The screenshot shows two side-by-side browser windows. The left window is the AWS S3 console 'Bucket policy' editor, displaying a success message: 'Successfully edited bucket policy.' It shows the JSON policy code. The right window is a code editor with the same JSON policy code, which is:

```

1  {
2   "Version": "2012-10-17",
3   "Statement": [
4     {
5       "Effect": "Allow",
6       "Principal": "*",
7       "Action": "s3:GetObject",
8       "Resource": "arn:aws:s3:::my-bucket/*"
9     }
10  ]
11 }

```

Below the code in the right window, there is a note: 'Save the changes you've made to the bucket's policy and your bucket will have public read access enabled.'

Below the code editor, a numbered list continues:

5. (Optional) - If you need to access your bucket with HTTP requests from the browser, you have to update the bucket's [Cross-origin resource sharing \(CORS\) options](#) to allow your frontend's requests
- In the 'Permissions' tab of your S3 bucket, scroll down to the 'Cross-origin resource sharing (CORS)' section and click on the 'Edit' button

Step 9: Put your photo into the database to test it

9.1 copy photo url

<https://asm1bphoto.s3.amazonaws.com/dark-cosmic-jhin-splash-art-lol-4K-87.jpg>

The screenshot shows two side-by-side browser windows. The left window is the AWS S3 'Properties' view for the file 'dark-cosmic-jhin-splash-art-lol-4K-87.jpg'. It shows details like Owner, AWS Region, Last modified, Size, Type, Key, and Object URL. The Object URL is: <https://asm1bphoto.s3.amazonaws.com/dark-cosmic-jhin-splash-art-lol-4K-87.jpg>. The right window is a web browser displaying a photo album website for 'School of Science, Computing and Engineering Technologies, Swinburne University of Technology'. It includes sections for 'Photo meta-data in RDS Database' and 'Photo Album website functionality'. The URL for the photo is: <https://photo-bucket.s3.amazonaws.com/swinburnelogo.jpg>.

Insert it into the table in your database using sql

The screenshot shows the phpMyAdmin interface for a MySQL database named 'photo'. The 'photo' table is selected. In the SQL tab, the following query is entered:

```
1: INSERT INTO photo (title, description, date, keywords, refference)
2: VALUES ('Jhin', 'Jhin waalpaper', '2023-10-14', 'Jhin, darkstar,wallpaper',
   'https://asm1bphoto.s3.amazonaws.com/dark-cosmic-jhin-splash-art-lol-4K-87.jpg')
```

The 'Columns' panel on the right lists the table's columns: title, description, date, keywords, and refference. Below the SQL input field, there are several buttons: SELECT*, SELECT, INSERT, UPDATE, DELETE, Clear, Format, Get auto-saved query, Bind parameters, Delimiter, Show this query here again, Retain query box, Rollback when finished, Enable foreign key checks, and Go. The status bar at the bottom indicates the time is 12:07 PM on 10/14/2023.

The screenshot shows the phpMyAdmin interface after the SQL query has been executed. A message in the top status bar says 'Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.' The 'photo' table is selected, and the results of the query are displayed in the main pane:

```
SELECT * FROM `photo`
```

The results table shows one row:

title	description	date	keywords	refference
Jhin	Jhin waalpaper	2023-10-14	Jhin, darkstar,wallpaper	https://asm1bphoto.s3.amazonaws.com/dark-cosmic-jh...

Below the results, there are buttons for Query results operations: Print, Copy to clipboard, Export, Display chart, and Create view. The status bar at the bottom indicates the time is 12:09 PM on 10/14/2023.

Edit constant.php

The screenshot shows a code editor window with the file `constants.php` open. The code defines several variables:

```
33 // [ACTION REQUIRED] your full name
34 define('STUDENT_NAME', 'Nguyen Gia Binh');
35 // [ACTION REQUIRED] your Student ID
36 define('STUDENT_ID', '104219428');
37 // [ACTION REQUIRED] your tutorial session
38 define('TUTORIAL_SESSION', 'Saturday 12:00AM');
39
40 // [ACTION REQUIRED] name of the S3 bucket that stores images
41 define('BUCKET_NAME', 'asm1bphoto');
42 // [ACTION REQUIRED] region of the above bucket
43 define('REGION', 'us-east-1');
44 // no need to update this const
45 define('S3_BASE_URL', 'https://.BUCKET_NAME.'.s3.amazonaws.com/');
46
47 // [ACTION REQUIRED] name of the database that stores photo meta-data (note that this is not the DB identifier of the RDS instance)
48 define('DB_NAME', 'photo');
49 // [ACTION REQUIRED] endpoint of RDS instance
50 define('DB_ENDPOINT', 'assignment1b-db.corquhibeing.us-east-1.rds.amazonaws.com');
51 // [ACTION REQUIRED] username of your RDS instance
52 define('DB_USERNAME', 'admin');
53 // [ACTION REQUIRED] password of your RDS instance
54 define('DB_PWD', 'lickmya707');
55
56 // [ACTION REQUIRED] name of the DB table that stores photo's meta-data
57 define('DB_PHOTO_TABLE_NAME', 'photo');
58 // The table above has 5 columns:
```

The status bar at the bottom indicates the file is in "Restricted Mode".

The screenshot shows a code editor window with the file `constants.php` open. The code defines variables related to a database table:

```
56 define('DB_PWD', 'lickmya707');
57
58 // [ACTION REQUIRED] name of the DB table that stores photo's meta-data
59 define('DB_PHOTO_TABLE_NAME', 'photo');
60 // The table above has 5 columns:
61 // [ACTION REQUIRED] name of the column in the above table that stores photo's titles
62 define('DB_PHOTO_TITLE_COL_NAME', 'title');
63 // [ACTION REQUIRED] name of the column in the above table that stores photo's descriptions
64 define('DB_PHOTO_DESCRIPTION_COL_NAME', 'description');
65 // [ACTION REQUIRED] name of the column in the above table that stores photo's creation dates
66 define('DB_PHOTO_CREATIONDATE_COL_NAME', 'date');
67 // [ACTION REQUIRED] name of the column in the above table that stores photo's keywords
68 define('DB_PHOTO_KEYWORDS_COL_NAME', 'keywords');
69 // [ACTION REQUIRED] name of the column in the above table that stores photo's links in S3
70 define('DB_PHOTO_S3REFERENCE_COL_NAME', 'refference');
71 ?>
```

A tooltip from the "Snipping Tool" is visible in the bottom right corner, stating "Screenshot copied to clipboard and saved Select here to mark up and share the image".

Upload files to your bucket

Files and folders (5 Total, 6.7 KB)

Name	Folder	Type	Size
constants.php	-	-	2.9 KB
album.php	-	-	1.0 KB
defaultstyle.css	-	text/css	388.0 B
mydb.php	-	-	1.2 KB
photo.php	-	-	1.2 KB

Destination

Destination
s3://asm1bphoto

Destination details

Bucket settings that impact new objects stored in the specified destination.

Permissions

CloudShell Feedback Privacy Terms Cookie preferences

Page: 37 of 37 Words: 384

Upload succeeded

View details below.

Upload: status

The information below will no longer be available after you navigate away from this page.

Summary

Destination	Succeeded	Failed
s3://asm1bphoto	5 files, 6.7 KB (100.00%)	0 files, 0 B (0%)

Files and folders (5 Total, 6.7 KB)

Find by name

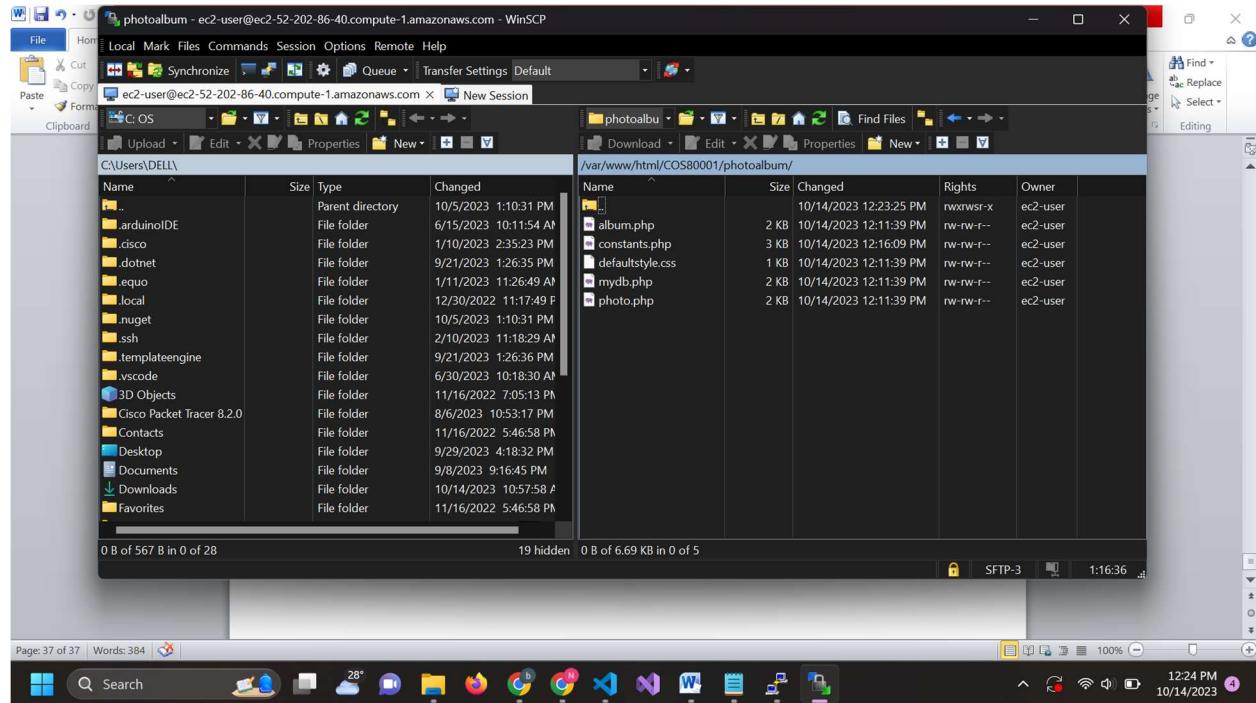
CloudShell Feedback Privacy Terms Cookie preferences

Restricted Mode Live Share

Ln 70, Col 55 Spaces: 4 UTF-8 LF PHP

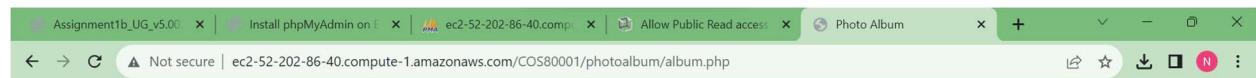
12:18 PM 10/14/2023

Upload the files into the directory in WinSCP



Access it through your local browser using Bastion public DNS

<http://ec2-52-202-86-40.compute-1.amazonaws.com/COS80001/photoalbum/album.php>



Student name: Nguyen Gia Binh

Student ID: 104219428

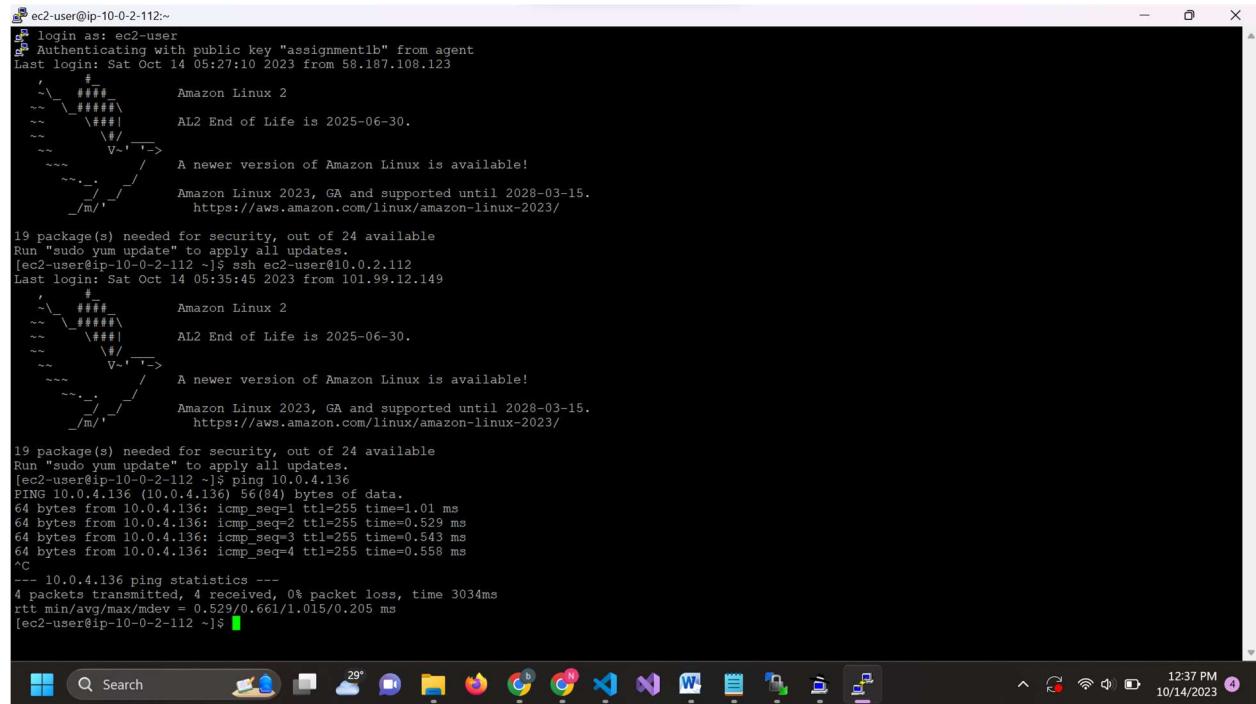
Tutorial session: Saturday 12:00AM

Uploaded photos:

Photo	Name	Description	Creation date	Keywords
	Jhin	Jhin waalpaper	2023-10-14	Jhin, darkstar,wallpaper



Step 10 : Ping Test from Bastion (login using Bastion public elastic IP, ssh Bastion private IP and ping Testinstance using it private Ipv4) (there is a change in Test Instance ipv4 because I accidentally delete it so I created it again)



The screenshot shows a Windows desktop environment. At the top is a black terminal window titled "ec2-user@ip-10-0-2-112:~". The terminal displays several messages:

- Login as: ec2-user
- Authenticating with public key "assignment1b" from agent
- Last login: Sat Oct 14 05:27:10 2023 from 58.187.108.123
- Amazon Linux 2
- AL2 End of Life is 2025-06-30.
- A newer version of Amazon Linux is available!
- Amazon Linux 2023, GA and supported until 2028-03-15.
- https://aws.amazon.com/linux/amazon-linux-2023/
- 19 package(s) needed for security, out of 24 available
- Run "sudo yum update" to apply all updates.
- Last login: Sat Oct 14 05:35:45 2023 from 101.99.12.149
- Amazon Linux 2
- AL2 End of Life is 2025-06-30.
- A newer version of Amazon Linux is available!
- Amazon Linux 2023, GA and supported until 2028-03-15.
- https://aws.amazon.com/linux/amazon-linux-2023/
- 19 package(s) needed for security, out of 24 available
- Run "sudo yum update" to apply all updates.
- (ec2-user@ip-10-0-2-112 ~]\$ ping 10.0.4.136
- PING 10.0.4.136 (10.0.4.136) 56(84) bytes of data.
- 64 bytes from 10.0.4.136: icmp_seq=1 ttl=255 time=1.01 ms
- 64 bytes from 10.0.4.136: icmp_seq=2 ttl=255 time=0.529 ms
- 64 bytes from 10.0.4.136: icmp_seq=3 ttl=255 time=0.543 ms
- 64 bytes from 10.0.4.136: icmp_seq=4 ttl=255 time=0.558 ms
-
- 10.0.4.136 ping statistics --
- 4 packets transmitted, 4 received, 0% packet loss, time 3034ms
- rtt min/avg/max/mdev = 0.529/0.661/1.015/0.205 ms

The taskbar at the bottom shows various pinned icons including File Explorer, Edge, and other application icons. The system tray shows the date (10/14/2023), time (12:37 PM), battery level (4%), and signal strength.