

Assignment 1b

COS20019

Cloud Computing Architecture

Tran Thanh Minh

103809048

1. Create VPC with subnets specified in the diagram

The screenshot shows the AWS VPC console. On the left, the 'Customize AZs' section is expanded, showing the configuration for two availability zones (us-east-1a and us-east-1b). The 'Number of public subnets' is set to 2, and the 'Number of private subnets' is set to 4. The 'Customize subnets CIDR blocks' section shows the following configurations:

Subnet Type	CIDR Block	IPs
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

The 'Preview' section on the right shows a diagram of the VPC configuration. It includes a VPC named 'TMinhVPC-vpc', four subnets (two public and two private), three route tables (one public, one private, and one for the VPC), and a network connection to the internet via a NAT gateway.

2. Config 3 security groups from the table

The screenshot shows the AWS Security Groups console. The table below lists the security groups created for the assignment:

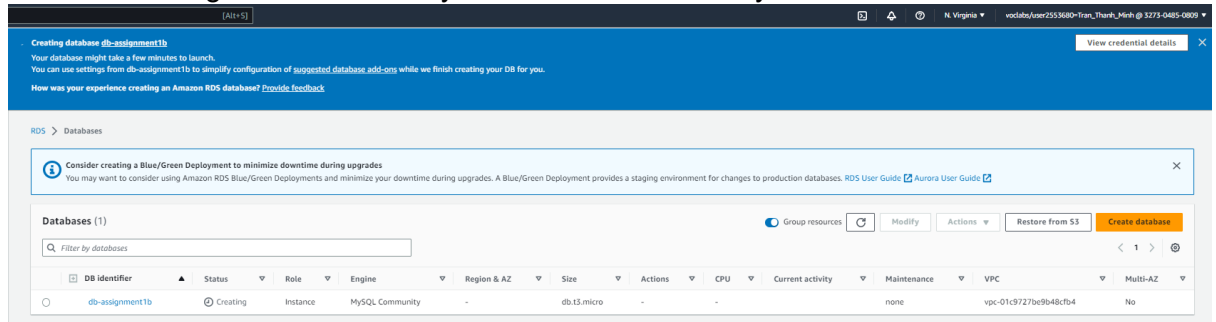
Name	Security group ID	Security group name	VPC ID	Description	Owner	Inbound rules count	Outbound rules count
--	sg-0173a949a0e9e7518	DBServerSG	vpc-0bc2f345f6da2be28	Assignment 1b, MySQL	327304850809	1 Permission entry	1 Permission entry
--	sg-00b504416847a9caa	WebServer-SG	vpc-0bc2f345f6da2be28	for assignment 1a	327304850809	3 Permission entries	1 Permission entry
--	sg-0e3d890e5260ec665	WebServerSG	vpc-0bc2f345f6da2be28	Assignment 1b, HTTP, ...	327304850809	3 Permission entries	1 Permission entry
--	sg-0c7e43c9f90e59525	TestInstanceSG	vpc-0bc2f345f6da2be28	Assignment 1b, all traffic	327304850809	1 Permission entry	1 Permission entry
--	sg-0981a9ed3a06ea707	default	vpc-01c9727be9b48cfb4	default VPC security gr...	327304850809	1 Permission entry	1 Permission entry
--	sg-0a24fe98f093b91a0	default	vpc-0bc2f345f6da2be28	default VPC security gr...	327304850809	1 Permission entry	1 Permission entry
--	sg-09ad0080d7d1c139	launch-wizard-1	vpc-0bc2f345f6da2be28	launch-wizard-1 create...	327304850809	1 Permission entry	1 Permission entry

3. Create 2 Instance (Web/Bastion and Test) and allocate the Elastic IP addresses so that it won't change every time restart the instance

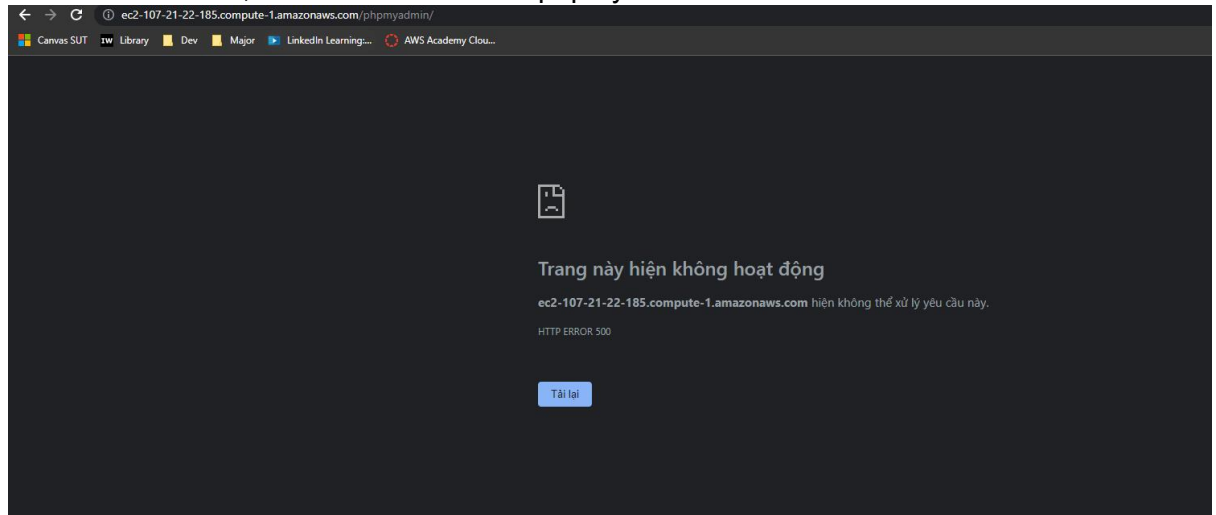
The screenshot shows the AWS Elastic IP console. The table below lists the Elastic IP addresses allocated for the assignment:

Name	Allocated IPv4 address	Type	Allocation ID	Reverse DNS record	Associated instance ID	Private IP address	Association ID	Network interface owner account
--	3.230.8.151	Public IP	eipalloc-04257982f6919899	--	i-00296058d897d0330	10.0.2.46	eipassoc-064fc26a24c643fde	327304850809

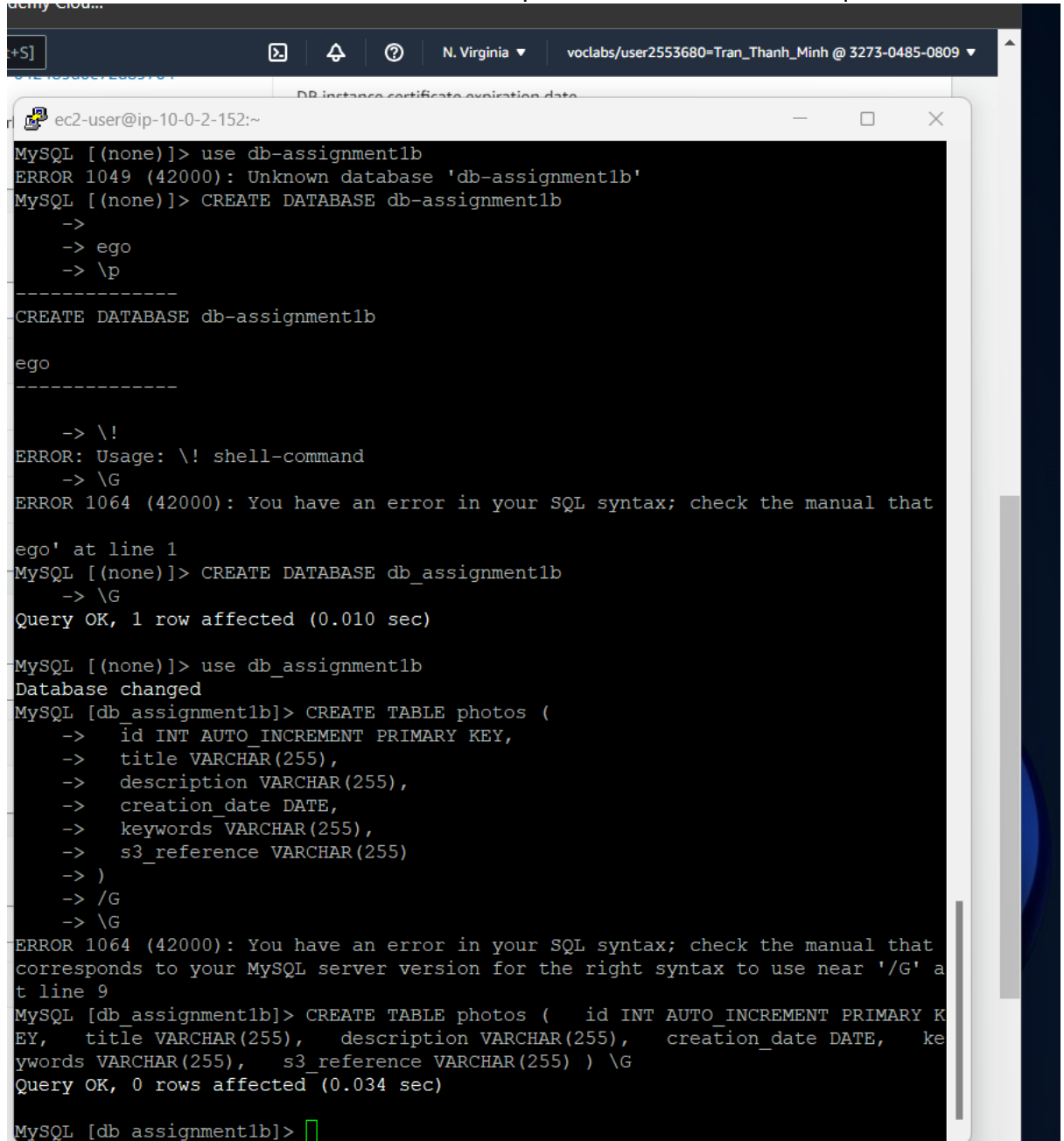
4. Create DB assignment1b and only WebServerSG can only access it



5. Due to some error, I can't connect to the phpmyadmin



6. I have use the Amazon CLI to create DB and photo table based on the requirements



The screenshot shows a terminal window with a dark background. At the top, there's a header bar with a search icon, a bell icon, a question mark icon, and text indicating the location 'N. Virginia' and a user ID 'voclabs/user2553680=Tran_Thanh_Minh @ 3273-0485-0809'. Below this, the terminal prompt is 'ec2-user@ip-10-0-2-152:~'. The user enters a series of MySQL commands. First, 'use db-assignment1b' results in an 'ERROR 1049 (42000): Unknown database 'db-assignment1b''. Then, 'CREATE DATABASE db-assignment1b' is entered, followed by a prompt for a password. The user enters 'ego', but then enters '\!' which causes an 'ERROR: Usage: \! shell-command'. After entering '\G', an 'ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'ego' at line 1' is shown. The user then enters 'CREATE DATABASE db_assignment1b' followed by '\G', which succeeds with 'Query OK, 1 row affected (0.010 sec)'. Next, 'use db_assignment1b' is entered, resulting in 'Database changed'. Then, the user enters 'CREATE TABLE photos (' followed by column definitions: 'id INT AUTO_INCREMENT PRIMARY KEY,', 'title VARCHAR(255),', 'description VARCHAR(255),', 'creation_date DATE,', 'keywords VARCHAR(255),', 's3_reference VARCHAR(255)', and ')'. This is followed by '\G', which results in an 'ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near '/G' at line 9'. Finally, the user enters the full 'CREATE TABLE photos (' statement followed by '\G', which succeeds with 'Query OK, 0 rows affected (0.034 sec)'. The terminal ends with the prompt 'MySQL [db_assignment1b]>' and a green cursor.

```
MySQL [(none)]> use db-assignment1b
ERROR 1049 (42000): Unknown database 'db-assignment1b'
MySQL [(none)]> CREATE DATABASE db-assignment1b
->
-> ego
-> \p
-----
CREATE DATABASE db-assignment1b
ego
-----
-> \!
ERROR: Usage: \! shell-command
-> \G
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that
ego' at line 1
MySQL [(none)]> CREATE DATABASE db_assignment1b
-> \G
Query OK, 1 row affected (0.010 sec)

MySQL [(none)]> use db_assignment1b
Database changed
MySQL [db_assignment1b]> CREATE TABLE photos (
-> id INT AUTO_INCREMENT PRIMARY KEY,
-> title VARCHAR(255),
-> description VARCHAR(255),
-> creation_date DATE,
-> keywords VARCHAR(255),
-> s3_reference VARCHAR(255)
-> )
-> /G
-> \G
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that
corresponds to your MySQL server version for the right syntax to use near '/G' a
t line 9
MySQL [db_assignment1b]> CREATE TABLE photos ( id INT AUTO_INCREMENT PRIMARY K
EY, title VARCHAR(255), description VARCHAR(255), creation_date DATE, ke
ywords VARCHAR(255), s3_reference VARCHAR(255) ) \G
Query OK, 0 rows affected (0.034 sec)

MySQL [db_assignment1b]> 
```

7. I have configured the bucket policy to allow access from anywhere inside this bucket

The screenshot shows the AWS IAM console interface for configuring a bucket policy. At the top, there's a section for "Block all public access" which is currently "Off". Below this, the "Bucket policy" section is active, showing a JSON policy document. The policy allows "PublicRead" actions on the bucket and its objects. The "Resource" field is set to "arn:aws:s3:::bucket-assignment1b/*".

```
{
  "Version": "2012-10-17",
  "Id": "ExamplePolicy01",
  "Statement": [
    {
      "Sid": "PublicRead",
      "Effect": "Allow",
      "Principal": "*",
      "Action": [
        "s3:GetObject",
        "s3:GetBucketLocation",
        "s3:ListBucket"
      ],
      "Resource": [
        "arn:aws:s3:::bucket-assignment1b/*",
        "arn:aws:s3:::bucket-assignment1b"
      ]
    }
  ]
}
```

8. I have populated some sample data

```
MySQL [db assignment1b]> INSERT INTO photos (title, description, creation_date, keywords, s3_reference)
-> VALUES
-> ('museum', 'textures of museum', '2023-06-15', 'Lisbon', 'https://bucket-assignment1b.s3.amazonaws.com/ivan-rohovchenko-r3XpW3Vxzrc-unsplash.jpg'),
-> ('sea', 'ocean water', '2023-06-09', 'Sony', 'https://bucket-assignment1b.s3.amazonaws.com/robert-linde-r-eg2-Kme25do-unsplash.jpg'),
-> ('scene', 'Place at Italia', '2022-12-30', 'BZ Italia', 'https://bucket-assignment1b.s3.amazonaws.com/fabrizio-coco-gvBIohdCRUQ-unsplash.jpg'), ('beach', 'Place at somewhere', '2022-12-30', 'Beach', 'https://bucket-assignment1b.s3.amazonaws.com/thilak-mohan-HJfNXurUgFc-unsplash.jpg');
Query OK, 4 rows affected (0.006 sec)
Records: 4  Duplicates: 0  Warnings: 0

MySQL [db assignment1b]>
```

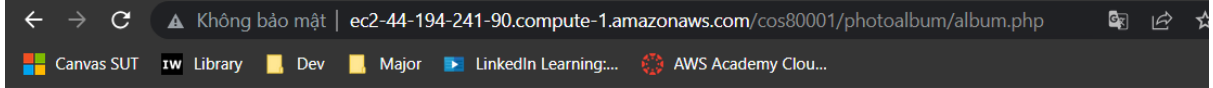
9. Create network ACL and config it based on the requirements

The screenshot shows the AWS VPC console interface for editing inbound rules for a Network ACL. The table lists four rules:

Rule number	Type	Protocol	Port range	Source	Allow/Deny	Remove
102	SSH (22)	TCP (6)	22	0.0.0.0/0	Allow	Remove
100	Custom ICMP - IPv4	ALL	N/A	10.0.4.0/24	Allow	Remove
101	HTTP (80)	TCP (6)	80	0.0.0.0/0	Allow	Remove
*	All traffic	ALL	ALL	0.0.0.0/0	Deny	Remove

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

10. The result after uploading the image and open the [album.php](#)







Student name: Tran Thanh Minh

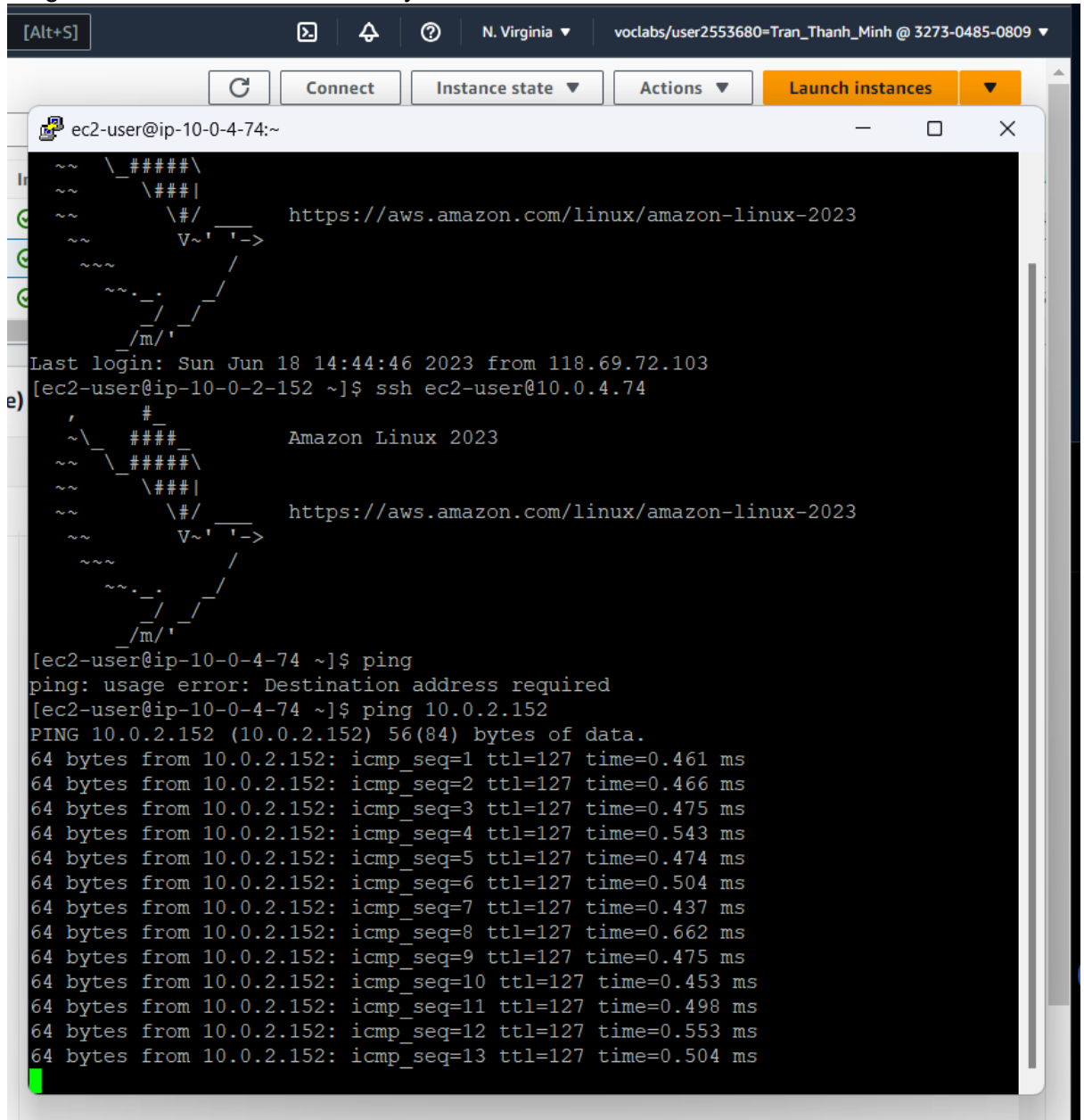
Student ID: 103809048

Tutorial session: Friday 1:00 PM

Uploaded photos:

Photo	Name	Description	Creation date	Keywords
	museum	textures of museum	2023-06-15	Lisbon
	sea	ocean water	2023-06-09	Sony
	scene	Place at Italia	2022-12-30	BZ Italia
	beach	Place at somewhere	2022-12-30	Beach

11. Ping the Web instance successfully from the test instance



The screenshot shows a terminal window titled "ec2-user@ip-10-0-4-74:~" within the AWS Management Console. The terminal displays the following commands and output:

```
ec2-user@ip-10-0-4-74:~$ ssh ec2-user@10.0.4.74
Last login: Sun Jun 18 14:44:46 2023 from 118.69.72.103
ec2-user@ip-10-0-2-152 ~]$ ping
ping: usage error: Destination address required
ec2-user@ip-10-0-4-74 ~]$ ping 10.0.2.152
PING 10.0.2.152 (10.0.2.152) 56(84) bytes of data.
64 bytes from 10.0.2.152: icmp_seq=1 ttl=127 time=0.461 ms
64 bytes from 10.0.2.152: icmp_seq=2 ttl=127 time=0.466 ms
64 bytes from 10.0.2.152: icmp_seq=3 ttl=127 time=0.475 ms
64 bytes from 10.0.2.152: icmp_seq=4 ttl=127 time=0.543 ms
64 bytes from 10.0.2.152: icmp_seq=5 ttl=127 time=0.474 ms
64 bytes from 10.0.2.152: icmp_seq=6 ttl=127 time=0.504 ms
64 bytes from 10.0.2.152: icmp_seq=7 ttl=127 time=0.437 ms
64 bytes from 10.0.2.152: icmp_seq=8 ttl=127 time=0.662 ms
64 bytes from 10.0.2.152: icmp_seq=9 ttl=127 time=0.475 ms
64 bytes from 10.0.2.152: icmp_seq=10 ttl=127 time=0.453 ms
64 bytes from 10.0.2.152: icmp_seq=11 ttl=127 time=0.498 ms
64 bytes from 10.0.2.152: icmp_seq=12 ttl=127 time=0.553 ms
64 bytes from 10.0.2.152: icmp_seq=13 ttl=127 time=0.504 ms
```

The terminal window also shows a decorative ASCII art logo of a cat in the background. The AWS Management Console interface at the top includes a navigation bar with the region "N. Virginia" and the user "voclabs/user2553680=Tran_Thanh_Minh @ 3273-0485-0809". The console also features buttons for "Connect", "Instance state", "Actions", and "Launch instances".