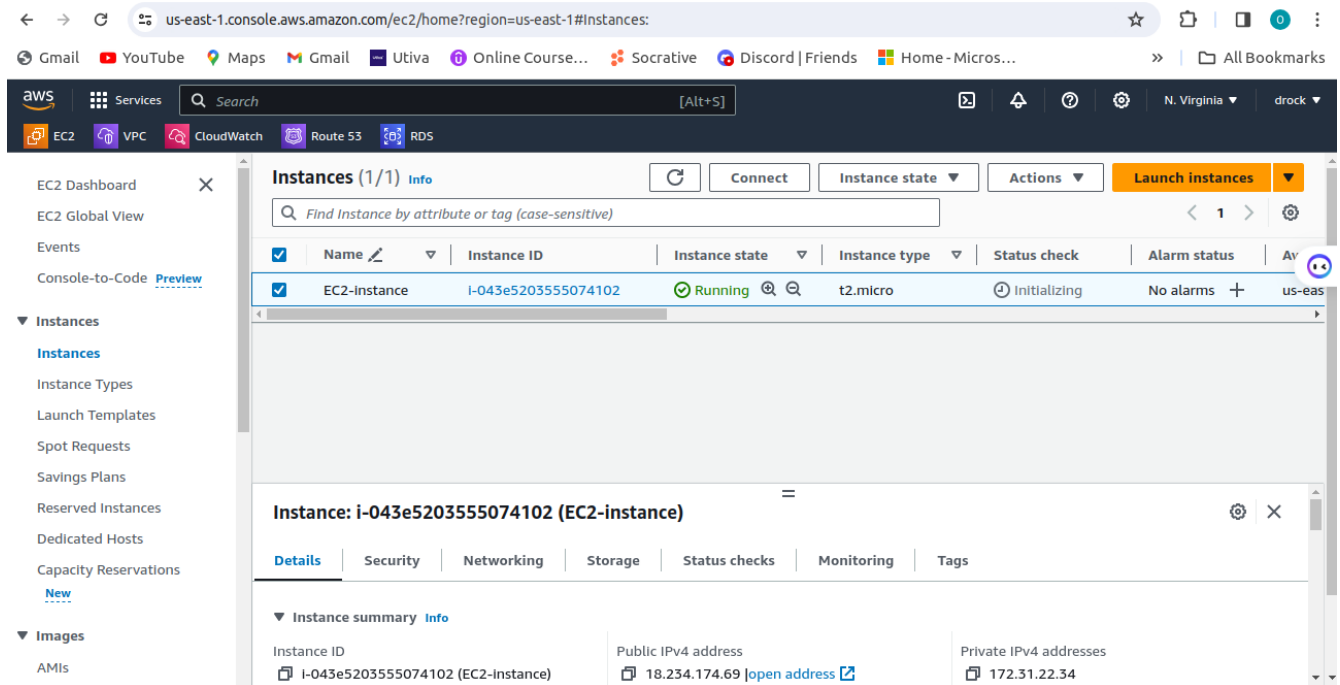
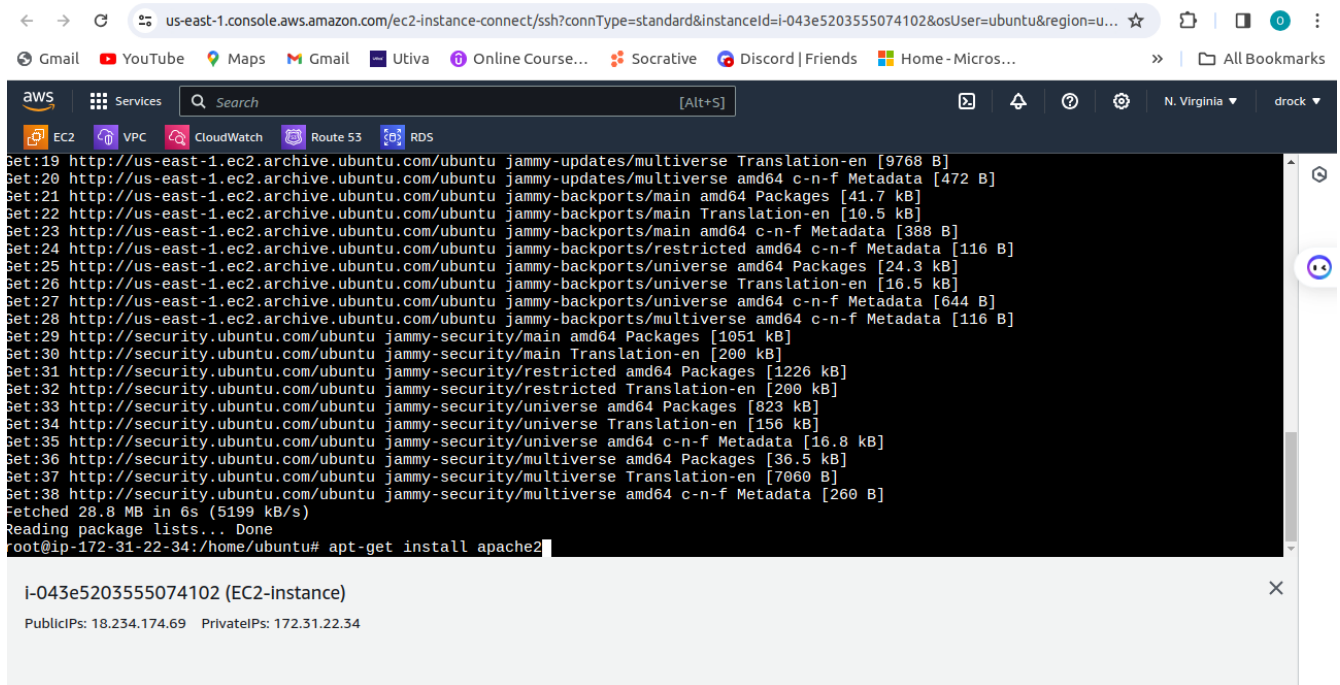


LAUNCH AN EC2 INSTANCE

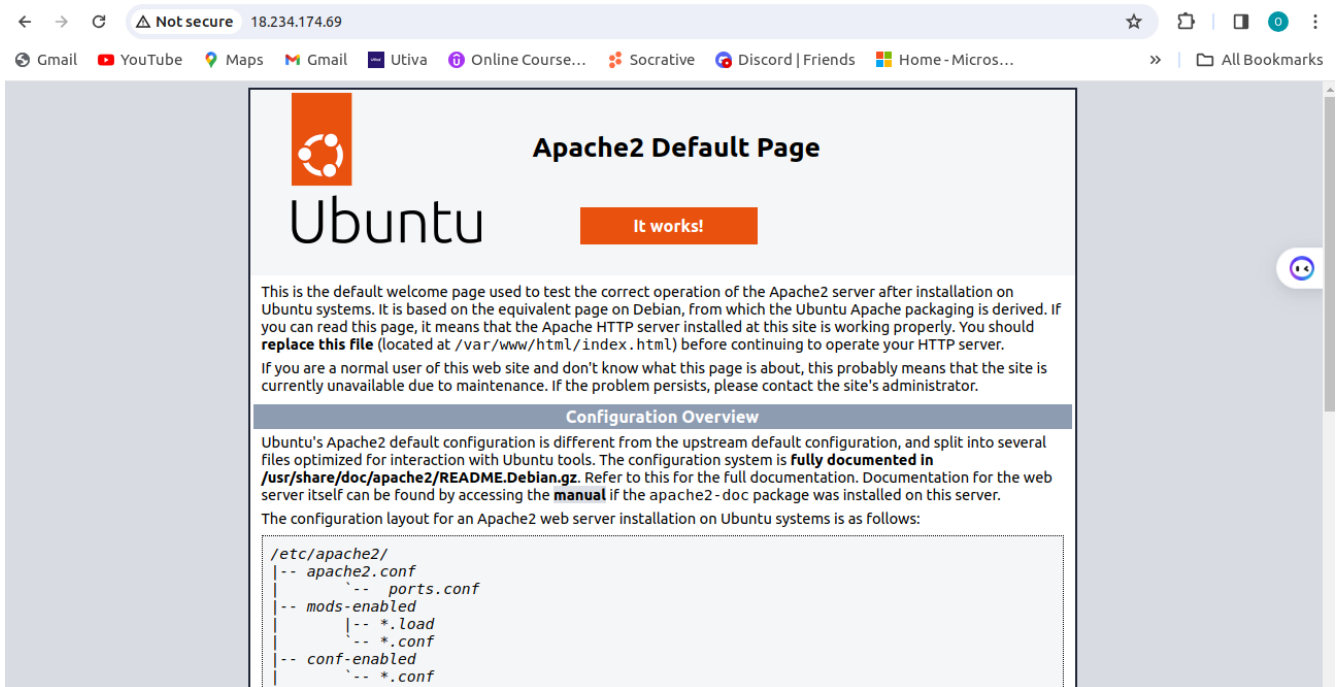


The screenshot shows the AWS Management Console for the us-east-1 region. The left sidebar contains navigation links for EC2 Dashboard, EC2 Global View, Events, Console-to-Code, and a list of services including EC2, VPC, CloudWatch, Route 53, and RDS. The main content area displays the 'Instances (1/1)' page. A table lists the instance 'EC2-Instance' with ID 'i-043e5203555074102', which is in a 'Running' state. Below the table, the 'Instance: i-043e5203555074102 (EC2-instance)' details panel is open, showing the instance summary, public IPv4 address (18.234.174.69), and private IPv4 addresses (172.31.22.34).

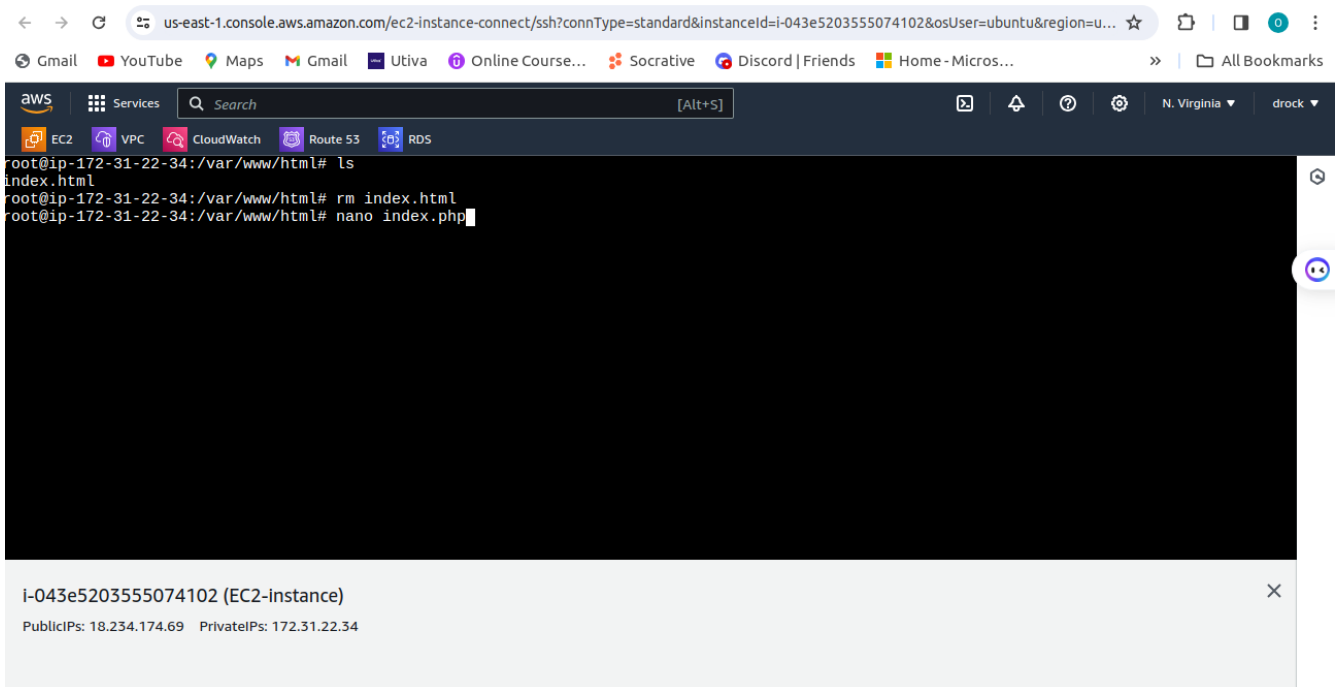
INSTALL APACHE2



The screenshot shows the AWS Management Console for the us-east-1 region. The left sidebar contains navigation links for EC2 Dashboard, EC2 Global View, Events, Console-to-Code, and a list of services including EC2, VPC, CloudWatch, Route 53, and RDS. The main content area displays the 'Instances (1/1)' page. A table lists the instance 'EC2-Instance' with ID 'i-043e5203555074102', which is in a 'Running' state. Below the table, the 'Instance: i-043e5203555074102 (EC2-instance)' details panel is open, showing the instance summary, public IPv4 address (18.234.174.69), and private IPv4 addresses (172.31.22.34). The terminal output shows the command 'apt-get install apache2' being executed.



REMOVE INDEX.HTML AND ADD INDEX.PHP



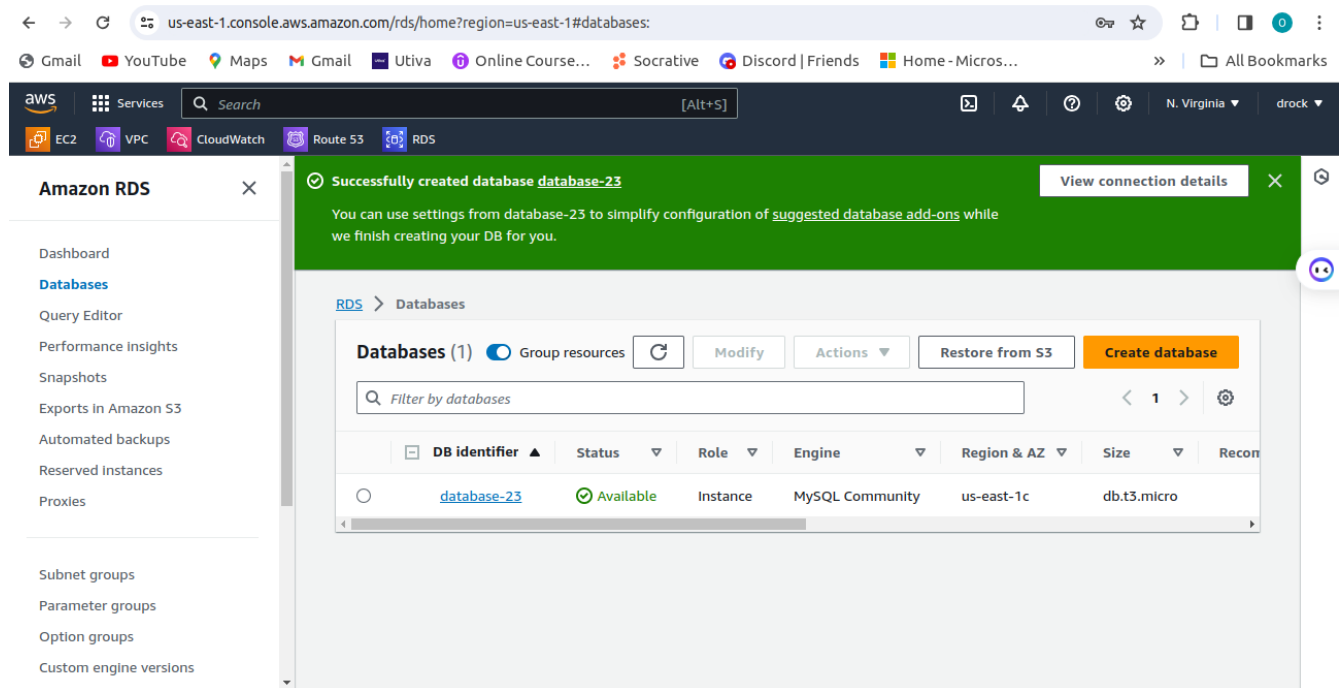
CONTENT OF INDEX.PHP FILE

[illegible]

A screenshot of a web browser's address bar. It features navigation buttons (back, forward, refresh) on the left, a central address field containing the IP address '18.234.174.69' with a lock icon and a star icon, and additional icons (bookmark, tabs, menu) on the right.

```
connect_error) { die("Connection failed: " . $conn->connect_error); } if(isset($_POST['firstname']) && isset($_POST['email'])) { $sql = "INSERT INTO data (firstname,email) VALUES ('".$_POST['firstname']."','".$_POST['email']."')"; if ($conn->query($sql) === TRUE) { echo "New record created successfully"; } else { echo "Error: " . $conn->error; } $conn->close(); } ?>
```

CREATE RDS: (USE SAME VPC AS USED IN THE EC2)



```
sudo add-apt-repository -y ppa:ondrej/php
```

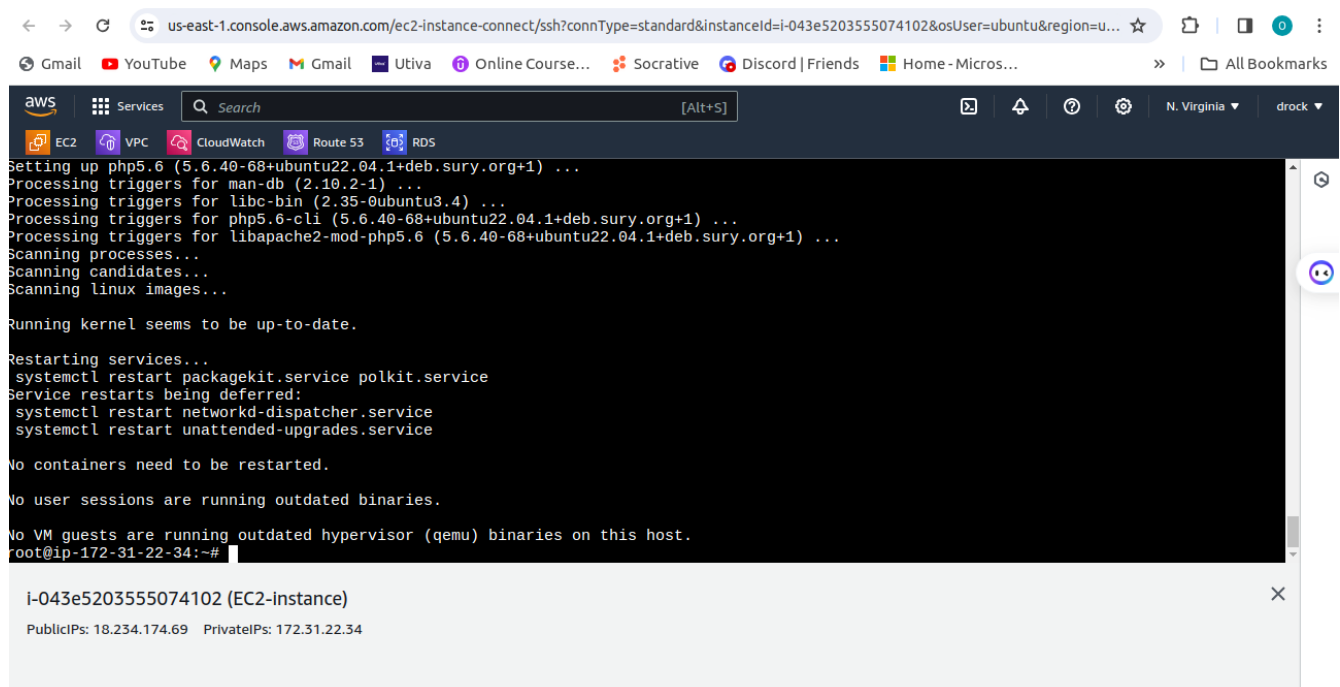
```
sudo apt install php5.6 mysql-client php5.6-mysqli
```

These are to do the following:

PPA Addition

Install PHP

Install mysql client



COPY ENDPOINT

The screenshot shows the Amazon RDS console in the 'us-east-1' region. The left sidebar contains a navigation menu with options like Dashboard, Databases, Query Editor, Performance Insights, Snapshots, Exports in Amazon S3, Automated backups, Reserved Instances, Proxies, Subnet groups, Parameter groups, Option groups, and Custom engine versions. The main content area is titled 'Connectivity & security' and is divided into three columns: Endpoint & port, Networking, and Security.

Endpoint & port	Networking	Security
Endpoint database-23.ckputbn4kdx4.us-east-1.rds.amazonaws.com	Availability Zone us-east-1c	VPC security groups default (sg-0d4ef0215310b3ca3) Active
Port 3306	VPC vpc-026bee67a18a8c8c4	Publicly accessible No
	Subnet group default-vpc-026bee67a18a8c8c4	Certificate authority Info rds-ca-2019
	Subnets	

and connect to the database:

The screenshot shows a terminal window on an EC2 instance. The user runs the command `mysql -h database-23.ckputbn4kdx4.us-east-1.rds.amazonaws.com -u admin -p`. The terminal output shows the MySQL prompt, the user's password, and a successful connection to the MySQL database. The terminal also displays the MySQL version (8.0.35) and the source distribution. Below the terminal window, a notification box shows the instance ID `i-043e5203555074102` and its public and private IP addresses.

```
root@ip-172-31-22-34:~# mysql -h database-23.ckputbn4kdx4.us-east-1.rds.amazonaws.com -u admin -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 35
Server version: 8.0.35 Source distribution

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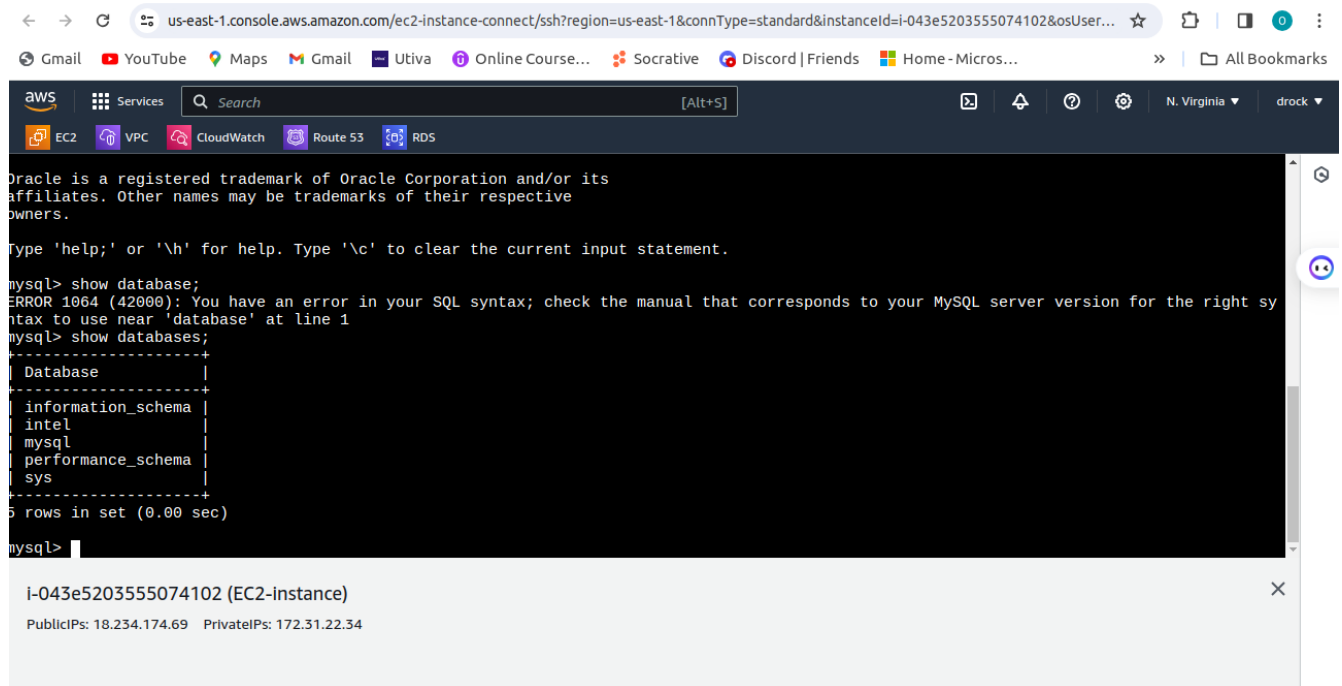
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```

i-043e5203555074102 (EC2-instance)
PublicIPs: 18.234.174.69 PrivateIPs: 172.31.22.34

‘intel’ is visible when ‘show databases; command is ran’



Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

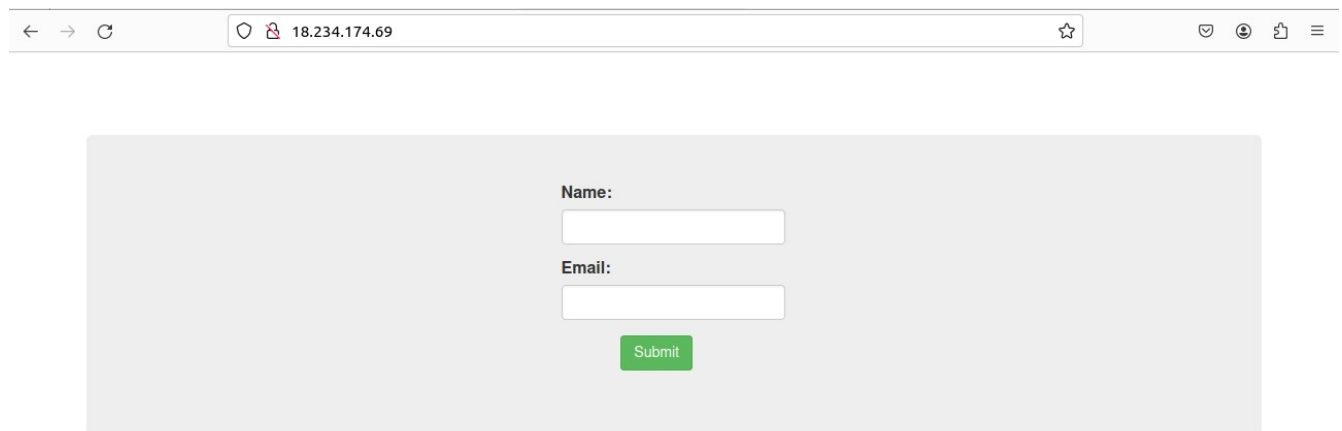
```
mysql> show database;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'database' at line 1
mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| intel      |
| mysql      |
| performance_schema |
| sys        |
+-----+
5 rows in set (0.00 sec)

mysql>
```

i-043e5203555074102 (EC2-instance)

PublicIPs: 18.234.174.69 PrivateIPs: 172.31.22.34

IF PUBLIC IP IS REFRESHED NOW; THE ERROR IS REDUCED ON THE PAGE



← → ↻ 18.234.174.69 ☆

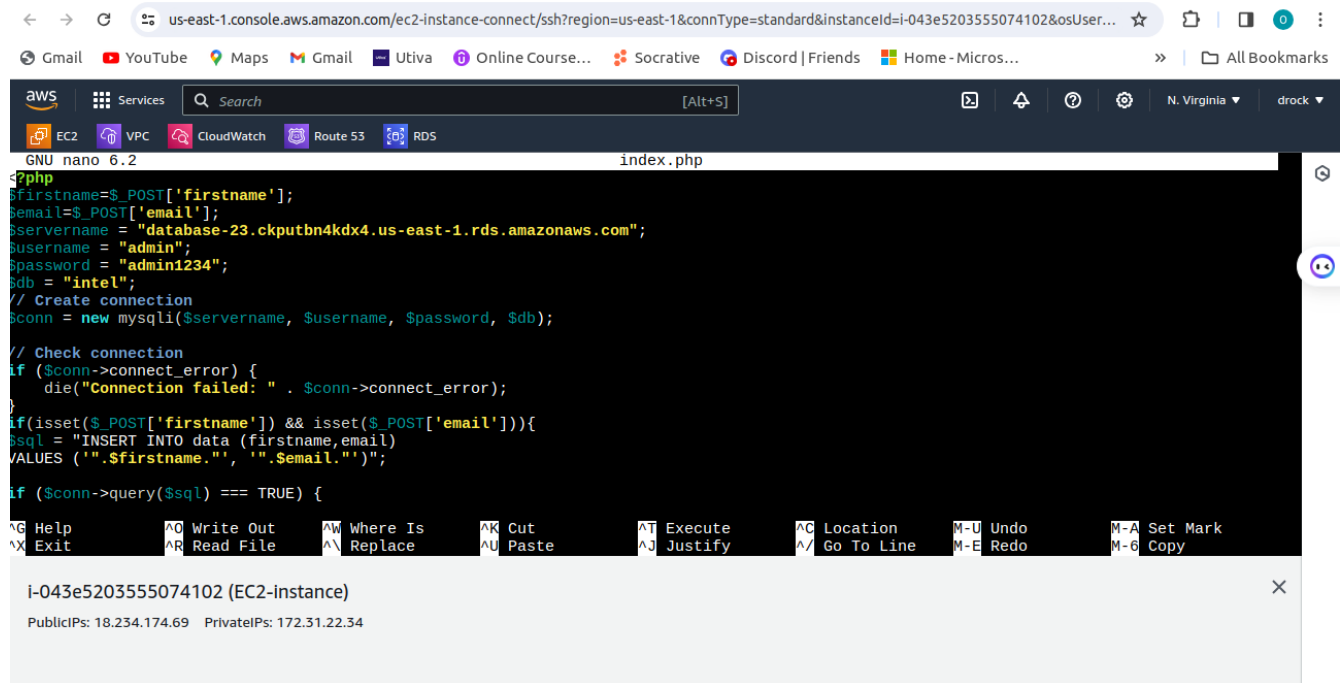
Name:

Email:

Submit

Connection failed: php_network_getaddresses: getaddrinfo failed: Name or service not known

TO CONNECT PHP TO THE RDS: we need to edit the .php file
:endpoint;username and password.



The screenshot shows an AWS console terminal window for an EC2 instance. The terminal is running the nano text editor, editing a file named index.php. The code in the file is as follows:

```
#!/usr/bin/perl
use strict;
use warnings;

my $hostname = "database-23.ckputbn4kdx4.us-east-1.rds.amazonaws.com";
my $username = "admin";
my $password = "admin1234";
my $db = "intel";

// Create connection
my $conn = new mysqli($hostname, $username, $password, $db);

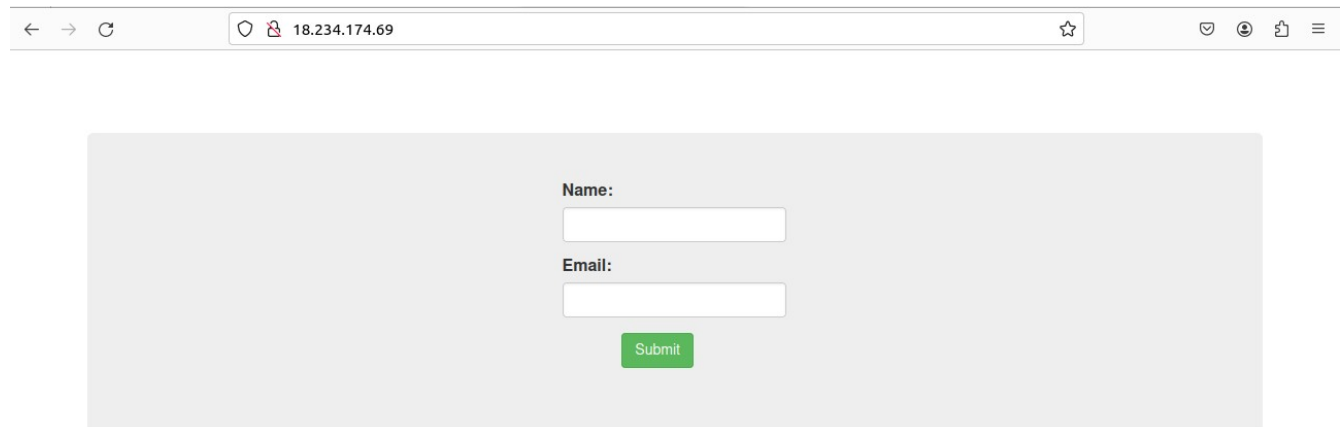
// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}

if(isset($_POST['firstname']) && isset($_POST['email'])){
    $sql = "INSERT INTO data (firstname,email)
VALUES ('".$_POST['firstname']."', '".$_POST['email']."')";

    if ($conn->query($sql) === TRUE) {
        echo "New record created successfully";
    } else {
        echo "Error: " . $conn->error . "  
";
    }
}
```

Below the terminal window, a summary box for the EC2 instance i-043e5203555074102 is visible, showing its Public IP as 18.234.174.69 and Private IP as 172.31.22.34.

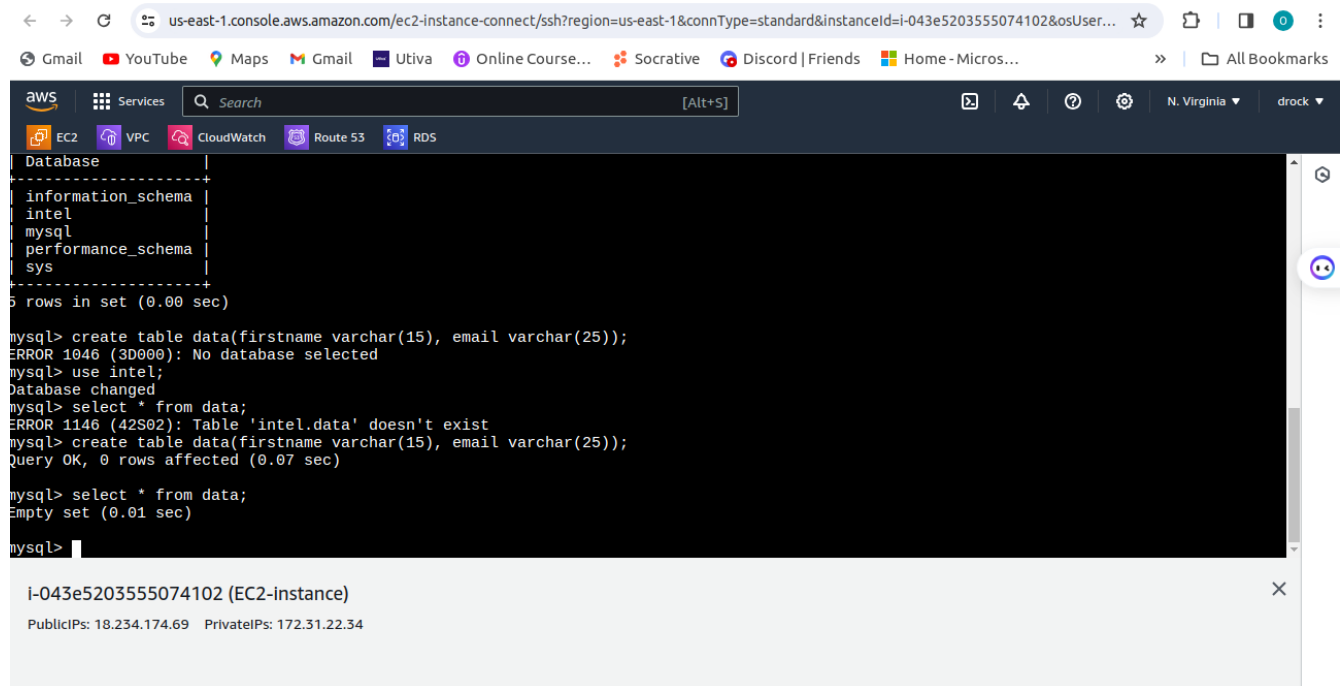
ERROR PREVIOUSLY SEEN ON RUNNING PUBLIC IP ON THE BROWSER DISAPPEAR



The screenshot shows a web browser window with the address bar displaying the public IP 18.234.174.69. The browser content shows a simple web form with the following elements:

- A label "Name:" followed by a text input field.
- A label "Email:" followed by a text input field.
- A green "Submit" button below the input fields.

NEXT ASSIGNMENT IS TO CREATE DATA



The screenshot shows the AWS Management Console interface. At the top, there's a navigation bar with the AWS logo, a search bar, and various service icons (EC2, VPC, CloudWatch, Route 53, RDS). Below the navigation bar, a terminal window for an EC2 instance is open. The terminal displays the following commands and output:

```
Database
+-----+
| information_schema |
| intel              |
| mysql              |
| performance_schema |
| sys                |
+-----+
5 rows in set (0.00 sec)

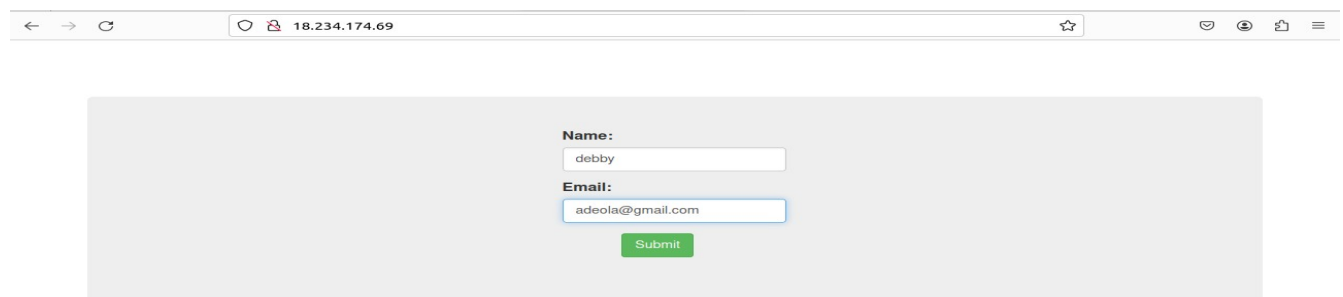
mysql> create table data(firstname varchar(15), email varchar(25));
ERROR 1046 (3D000): No database selected
mysql> use intel;
Database changed
mysql> select * from data;
ERROR 1146 (42S02): Table 'intel.data' doesn't exist
mysql> create table data(firstname varchar(15), email varchar(25));
Query OK, 0 rows affected (0.07 sec)

mysql> select * from data;
Empty set (0.01 sec)

mysql>
```

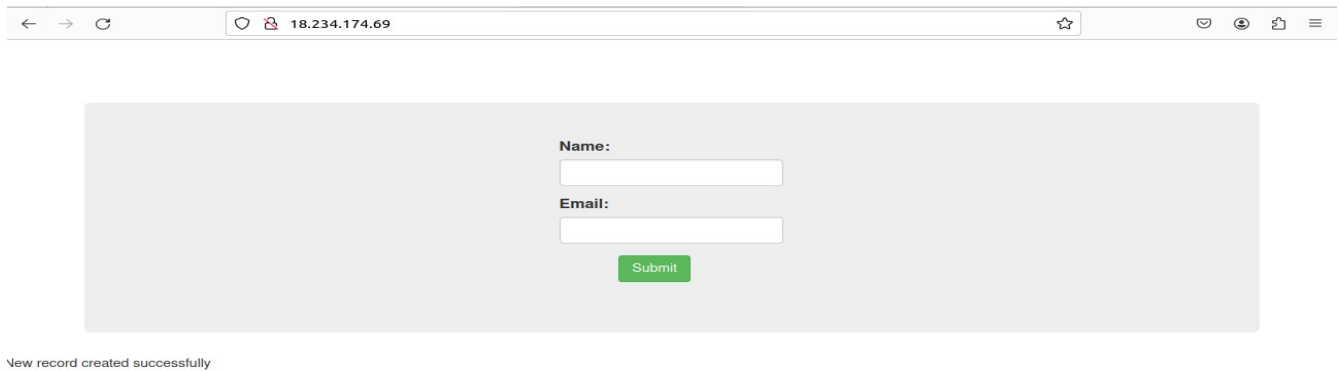
Below the terminal window, the instance details are shown: i-043e5203555074102 (EC2-instance). Public IPs: 18.234.174.69, Private IPs: 172.31.22.34.

DATA ADDED ON THE PHP PAGE CAN NOW BE VIEWED IN THE DATABASE



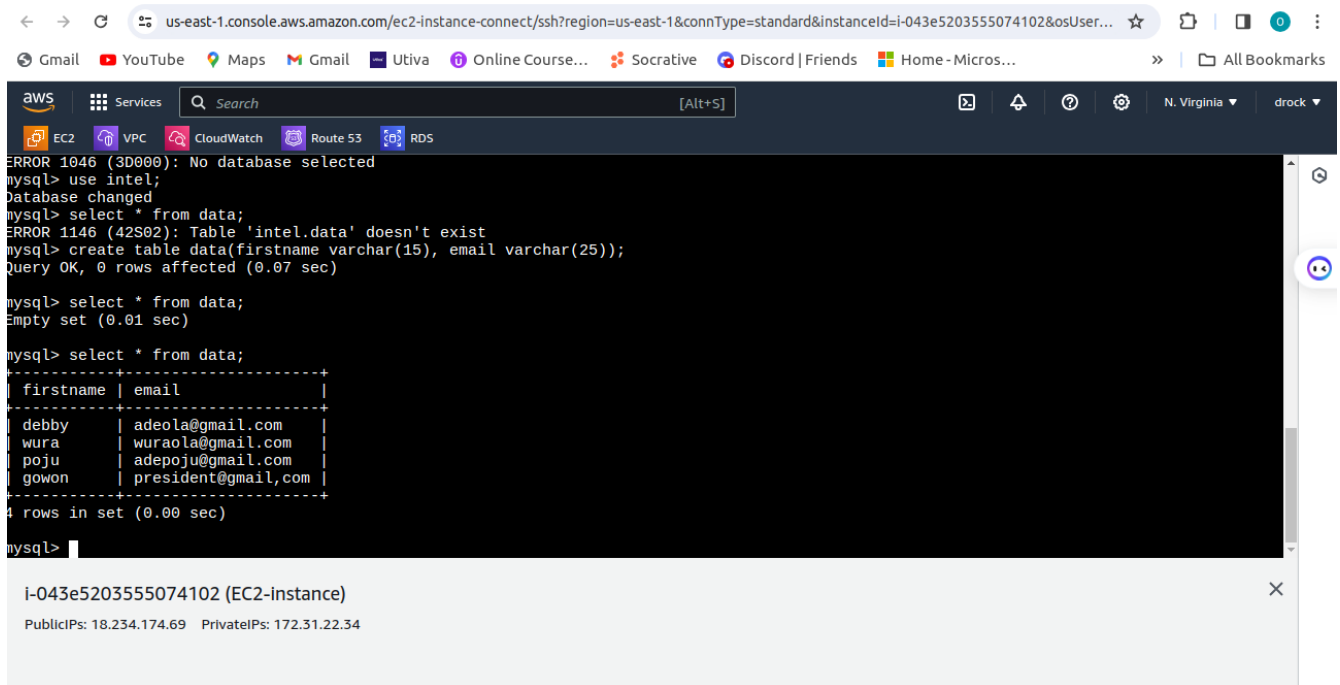
The screenshot shows a web browser window with the address bar displaying 18.234.174.69. The page content is a simple form with two input fields: "Name:" and "Email:". The "Name:" field contains the text "debby" and the "Email:" field contains the text "adeola@gmail.com". Below the fields is a green "Submit" button.

ITS ADDED SUCCESSFULLY



A screenshot of a web browser window. The address bar shows the URL `18.234.174.69`. The main content area displays a simple form with two input fields labeled "Name:" and "Email:". Below these fields is a green "Submit" button. At the bottom of the page, a message states "New record created successfully".

SELECT * FROM DATE; to view information added to the php site.



A screenshot of an AWS Management Console terminal window. The terminal shows the following commands and output:

```
mysql> use intel;
Database changed
mysql> select * from data;
ERROR 1146 (42S02): Table 'intel.data' doesn't exist
mysql> create table data(firstname varchar(15), email varchar(25));
Query OK, 0 rows affected (0.07 sec)

mysql> select * from data;
Empty set (0.01 sec)

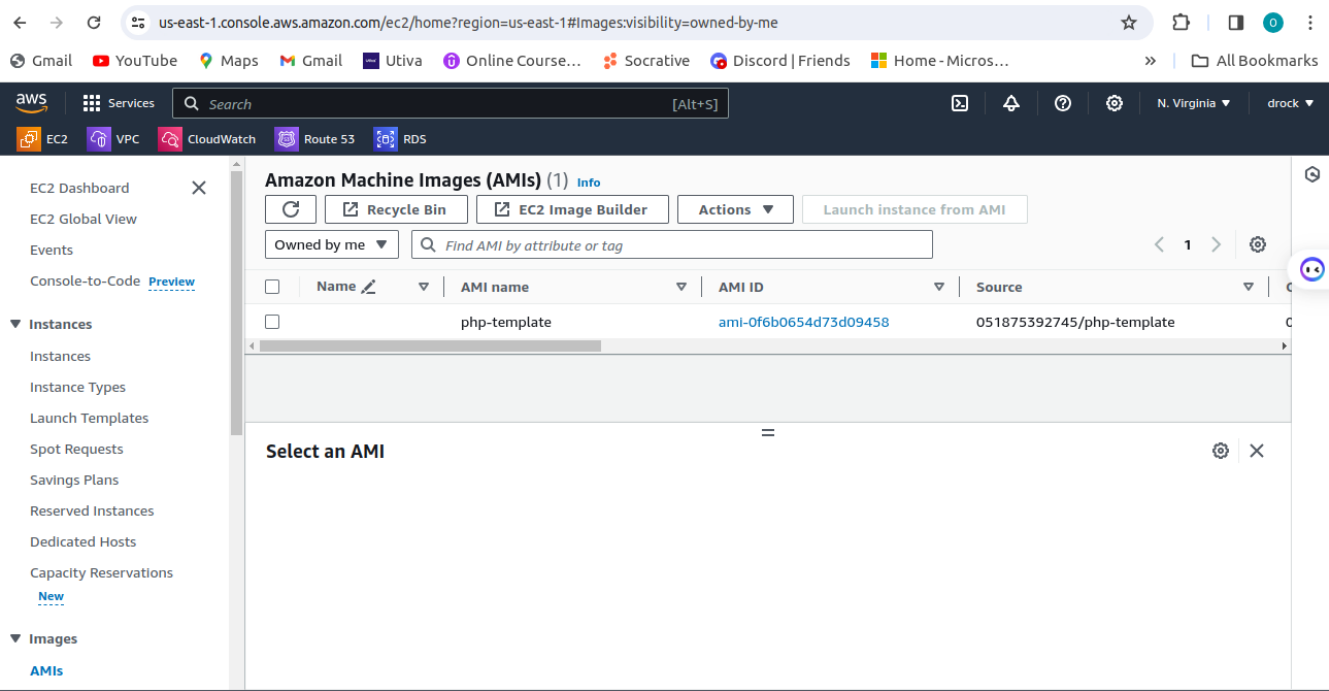
mysql> select * from data;
+-----+-----+
| firstname | email |
+-----+-----+
| debby     | adeola@gmail.com |
| wura      | wuraola@gmail.com |
| poju      | adepoju@gmail.com |
| gowon     | president@gmail.com |
+-----+-----+
4 rows in set (0.00 sec)

mysql>
```

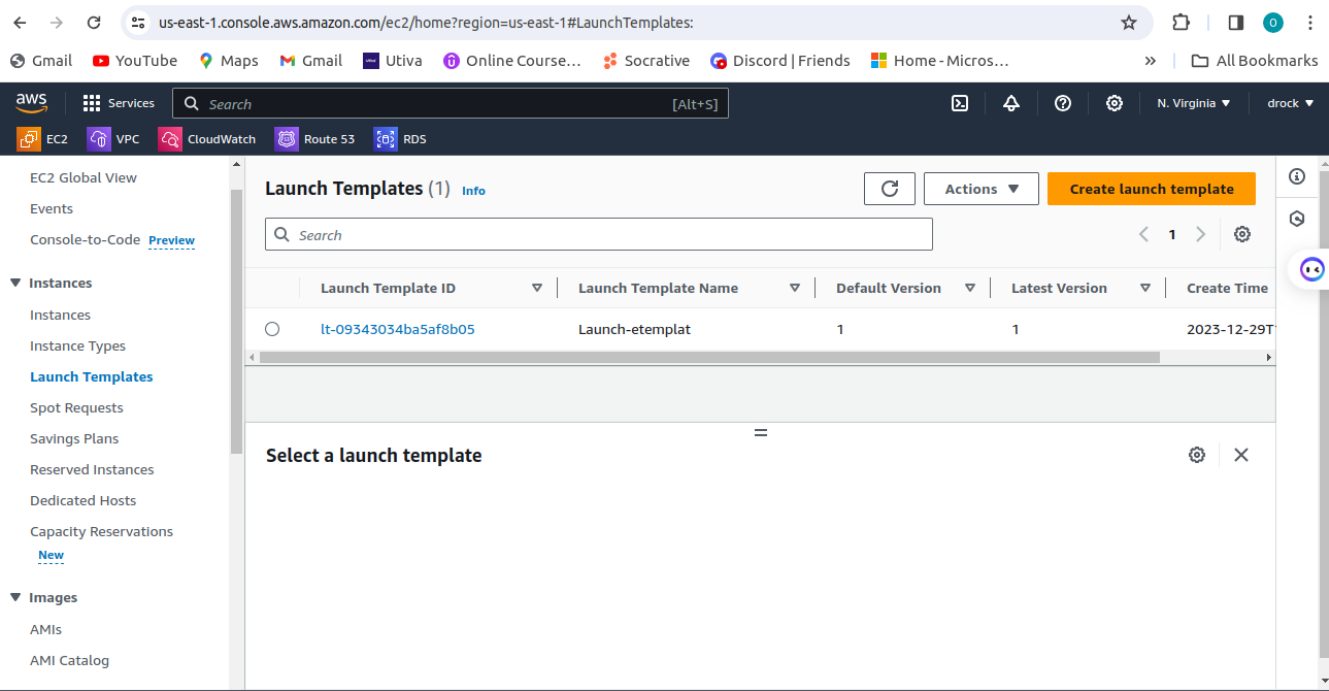
Below the terminal output, the instance details are shown: `i-043e5203555074102 (EC2-instance)` with PublicIPs: 18.234.174.69 and PrivateIPs: 172.31.22.34.

CREATE TEMPLATE

AMI



LAUNCH TEMPLATE



AUTO SCALING GROUP

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

Services Search [Alt+S]

EC2 VPC CloudWatch Route 53 RDS

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

Step 7: Review

Name

Auto Scaling group name

Enter a name to identify the group.

subby-asg

Must be unique to this account in the current Region and no more than 255 characters.

Launch template Info

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.

Launch template

Choose a launch template that contains the instance-level settings, such as the Amazon Machine Image (AMI), instance type, key pair, and security groups.

Launch-etemplat

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

Services Search [Alt+S]

EC2 VPC CloudWatch Route 53 RDS

EC2 > Auto Scaling groups

Auto Scaling groups (1) Info

Launch configurations Launch templates Actions Create Auto Scaling group

Search your Auto Scaling groups

	Name	Launch template/configuration	Instances	Status	Desired capacity	Min
<input type="checkbox"/>	subby-asg	Launch-etemplat Version Default	2	-	2	1

0 Auto Scaling groups selected

TARGET GROUP AND LOAD BALANCER GOT CREATED

The screenshot shows the AWS Management Console for the us-east-1 region, specifically the 'Target groups' page under the 'EC2' section. The left-hand navigation pane lists various services, with 'Load Balancing' and 'Target Groups' highlighted. The main content area displays 'Target groups (1)' with a search bar and a table containing one entry: 'subby-asg-1'. Below the table, a message states '0 target groups selected' and 'Select a target group above.'.

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

Target groups (1) Info

Filter target groups

<input type="checkbox"/>	Name	ARN	Port	Protocol	Target type
<input type="checkbox"/>	subby-asg-1	arn:aws:elasticloadbalanci...	80	HTTP	Instance

0 target groups selected

Select a target group above.

The screenshot shows the AWS Management Console for the us-east-1 region, specifically the 'Load balancers' page under the 'EC2' section. The left-hand navigation pane lists various services, with 'Load Balancing' and 'Load Balancers' highlighted. The main content area displays 'Load balancers (1)' with a search bar and a table containing one entry: 'subby-asg-1'. Below the table, a message states '0 load balancers selected' and 'Select a load balancer above.'.

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

Load balancers (1)

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

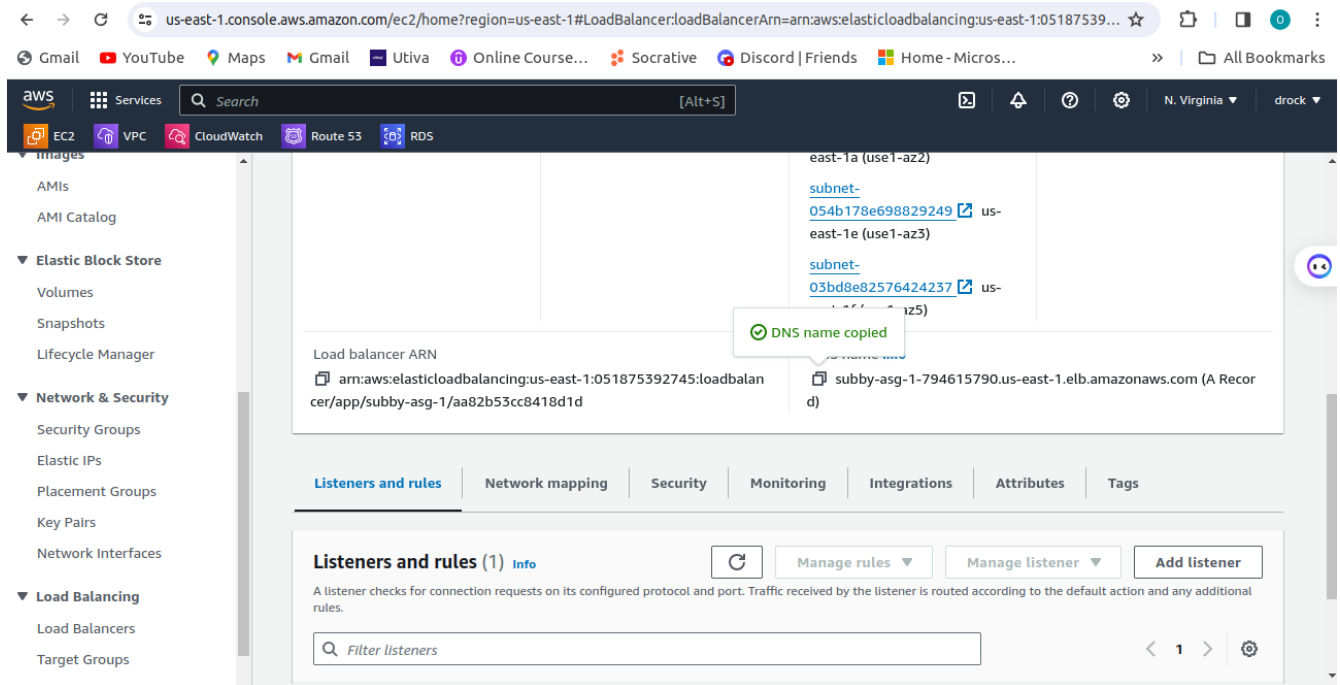
Filter load balancers

<input type="checkbox"/>	Name	DNS name	State	VPC ID	Availability Zones
<input type="checkbox"/>	subby-asg-1	subby-asg-1-794615790.u...	Active	vpc-026bee67a18a8c8...	6 Availability Zones

0 load balancers selected

Select a load balancer above.

DNS OF LOAD BALANCER IS COPIED



Name:

Email:

Submit

EFFECT OF AUTO SCALING GROUP

us-east-1#instances:

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

Services Search [Alt+S]

EC2 EC2 VPC CloudWatch Route 53 RDS

EC2 Dashboard ×

EC2 Global View

Events

Console-to-Code [Preview](#)

▼ Instances

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Capacity Reservations

[New](#)

▼ Images

AMIs

Instances (1/3) Info

Find Instance by attribute or tag (case-sensitive)

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Av
<input checked="" type="checkbox"/>	EC2-Instance	i-043e5203555074102	Running	t2.micro	2/2 checks passed	No alarms	us-east-1
<input type="checkbox"/>		i-0b3a04a0467076c85	Running	t2.micro	2/2 checks passed	No alarms	us-east-1
<input type="checkbox"/>		i-079203c5f1a57d8bc	Running	t2.micro	2/2 checks passed	No alarms	us-east-1

Instance: i-043e5203555074102 (EC2-instance)

Details Security Networking Storage Status checks Monitoring Tags

▼ Instance summary Info

Instance ID	Public IPv4 address	Private IPv4 addresses
i-043e5203555074102 (EC2-Instance)	18.234.174.69 open address	172.31.22.34