

# Project 1

## Problem Statement:

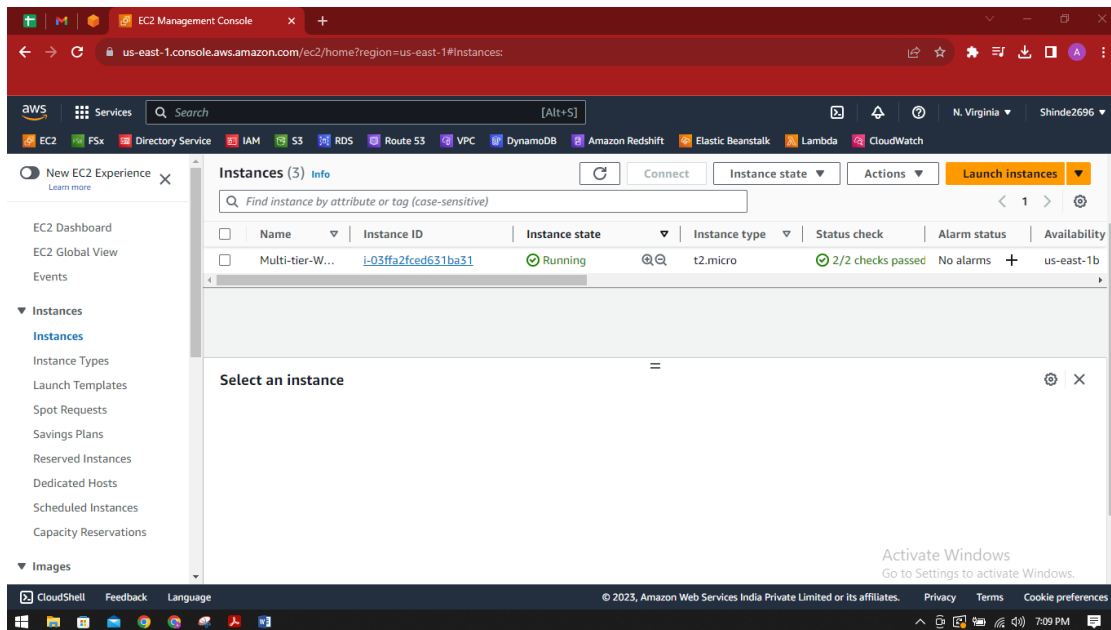
Company ABC wants to move their product to AWS. They have the following things set up right now:

1. MySQL DB
2. Website (PHP)

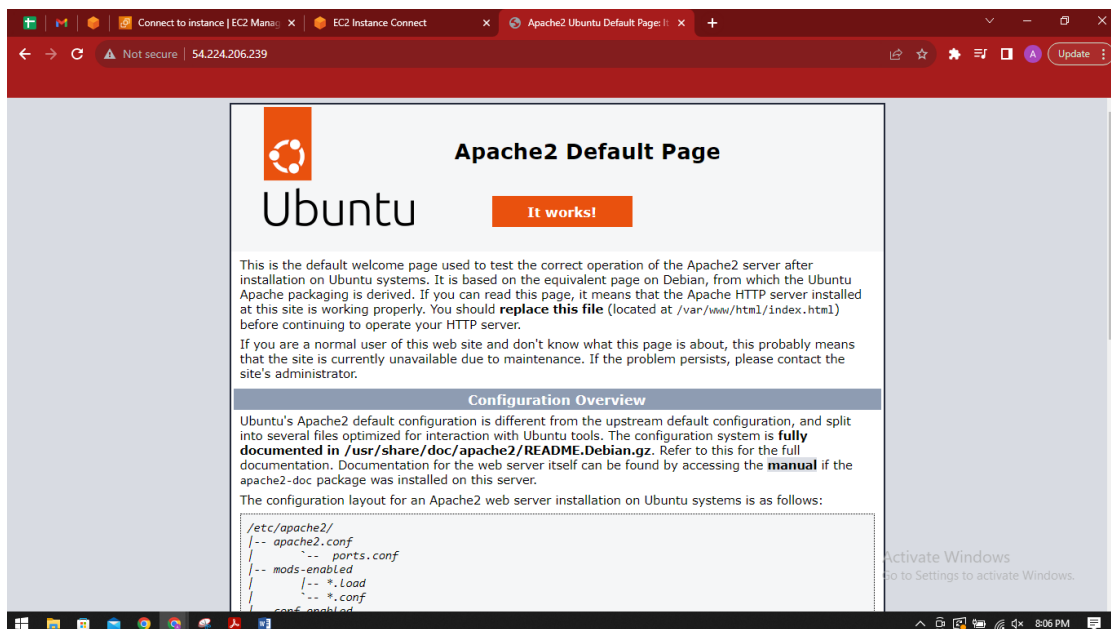
The company wants high availability on this product, therefore wants Auto Scaling to be enabled on this website.

Solution :

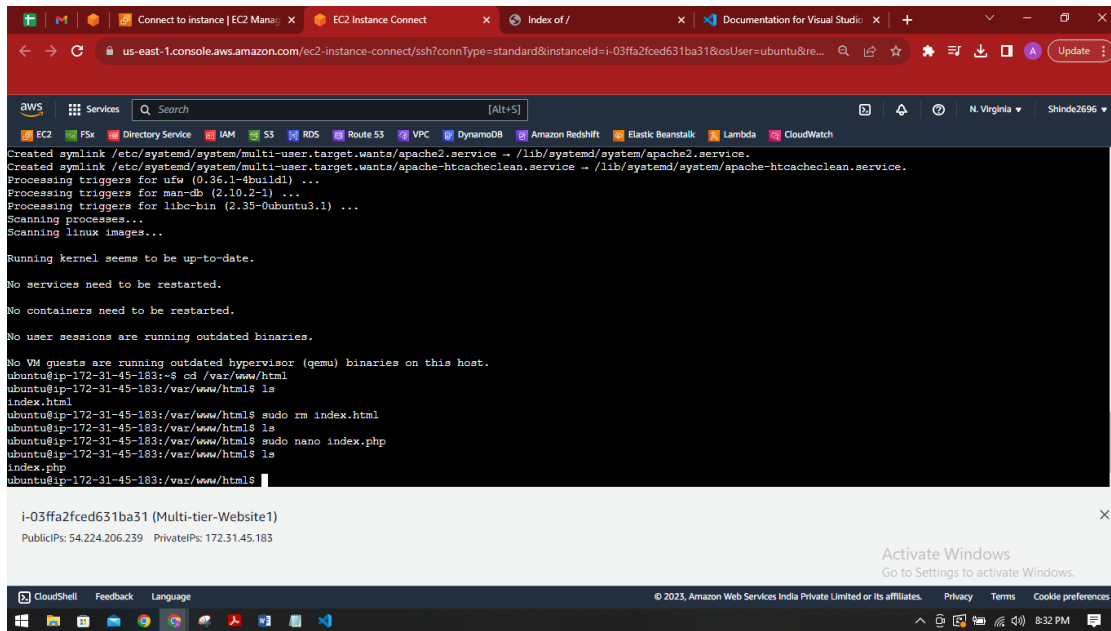
Created an Instance using Ubuntu as it is more reliable.



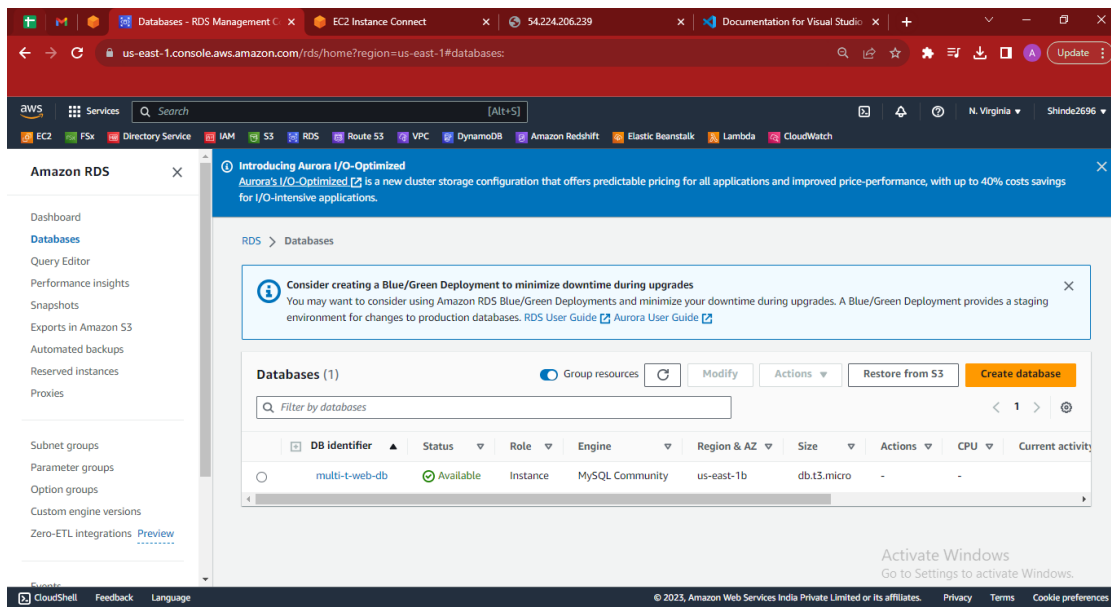
Then updated it Ubuntu and then installed the Apache page.



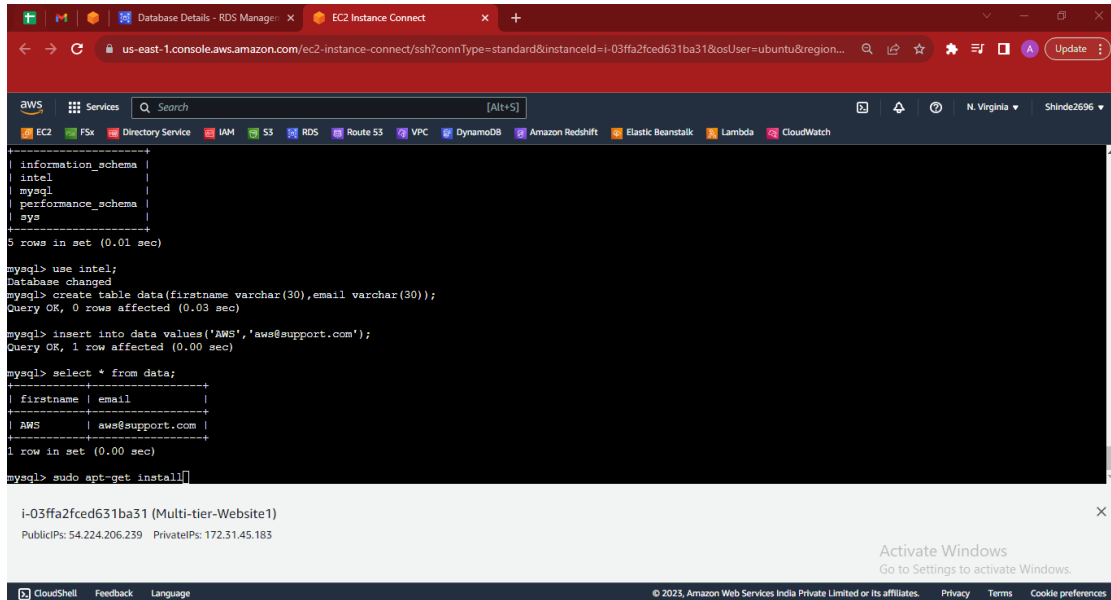
Remove the index.html file from the directory and then created a new file with the commands given in the code zip file and then saved it.



To store the information of the website, we created Database



Then in the instance connected installed MySQL, then created a table named 'data' and then inserted values in it.



The screenshot shows the AWS CloudShell interface with a terminal window. The terminal output is as follows:

```
mysql> show databases;
+-----+
| information_schema |
| intel               |
| mysql               |
| performance_schema |
| sys                 |
+-----+
5 rows in set (0.01 sec)

mysql> use intel;
Database changed
mysql> create table data(firstname varchar(30),email varchar(30));
Query OK, 0 rows affected (0.03 sec)

mysql> insert into data values('AWS','aws@support.com');
Query OK, 1 row affected (0.00 sec)

mysql> select * from data;
+-----+-----+
| firstname | email |
+-----+-----+
| AWS       | aws@support.com |
+-----+-----+
1 row in set (0.00 sec)

mysql> sudo apt-get install[]
```

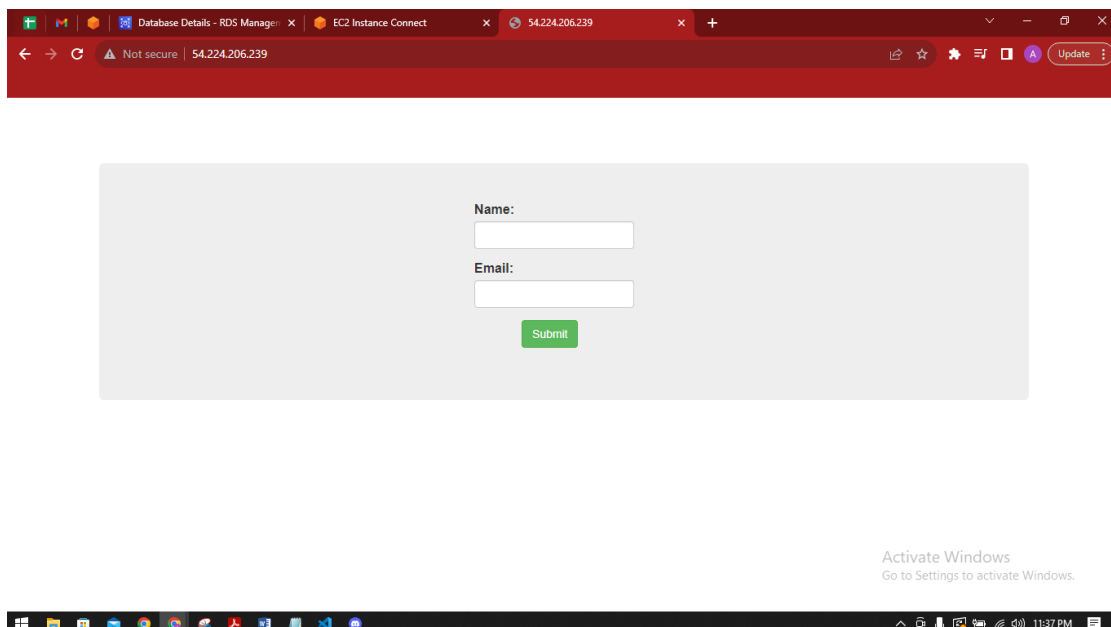
Below the terminal, the instance details are shown: i-03ffa2fcd631ba31 (Multi-tier-Website1), PublicIPs: 54.224.206.239, PrivateIPs: 172.31.45.183. An "Activate Windows" watermark is visible in the bottom right corner.

Installed the MySQL and php repository using following commands

**'sudo add-apt-repository -y ppa:ondrej/php'**

**'sudo apt install php5.6 mysql-client php5.6-mysqli'**

And then connected using the Public IP



The screenshot shows a web browser window with the address bar displaying "54.224.206.239". The page content is a simple form with the following elements:

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

An "Activate Windows" watermark is visible in the bottom right corner. The Windows taskbar at the bottom shows the time as 11:37 PM.

So after that we went to the instances and then as shown below we created image of the instance

The screenshot shows the AWS Management Console for the 'us-east-1' region. The 'Instances' page is active, displaying a table with one instance: 'Multi-tier-Website1' (ID: i-03ffa2fced631ba31), which is in the 'Running' state. An 'Actions' menu is open for this instance, showing options like 'Connect', 'View details', and 'Create image'. The 'Create image' option is highlighted. Below the table, the 'Instance summary' for 'Multi-tier-Website1' is shown, including its ID, IP addresses, and status.

Name	Instance ID	Instance state	Instance type	Status check	Alarm
Multi-tier-Website1	i-03ffa2fced631ba31	Running	t2.micro	2/2 checks passed	No alarm

**Instance: i-03ffa2fced631ba31 (Multi-tier-Website1)**

**Instance summary**

- Instance ID: i-03ffa2fced631ba31 (Multi-tier-Website1)
- Public IPv4 address: 54.224.206.239 | [open address](#)
- Private IPv4 addresses: 172.31.45.183
- Public IPv4 DNS: ec2-54-224-206-239.compute-1.amazonaws.com | [open address](#)
- Instance state: Running
- IPv6 address: -

The screenshot shows the 'Create Image' wizard in the AWS Management Console. The 'Storage type' is set to 'EBS', and the 'Volume type' is 'EBS General Purpose S...'. The 'Tags' section is expanded, showing a tag 'Multi-tier-Website1' with the key 'Name'. The 'Create image' button is visible at the bottom right.

**Create Image**

Storage type: EBS | Volume type: EBS General Purpose S... | Create new snapshot from: 8 | Enable: ☒

Tags - optional

Tag image and snapshots together (selected) | Tag image and snapshots separately

Key: Name | Value: Multi-tier-Website1

**Create image**

The screenshot shows the 'Amazon Machine Images (AMIs)' page in the AWS Management Console. A table lists the AMIs, with one entry: 'Multi-tier-Website1' (ID: ami-010f13c6b5faaba79). The 'Details' tab is selected for this AMI, showing its configuration.

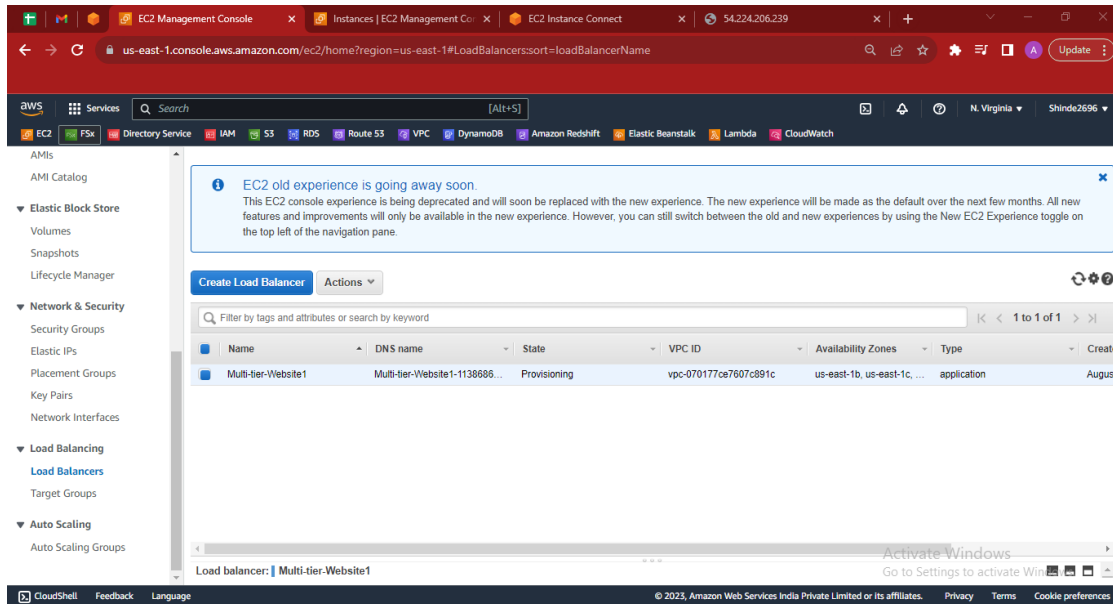
Name	AMI ID	AMI name	Source	Owner	Visibility
Multi-tier-Website1	ami-010f13c6b5faaba79	Multi-tier-Website1	337755599619/Multi-tier-Website1	337755599619	Private

**AMI ID: ami-010f13c6b5faaba79 (Multi-tier-Website1)**

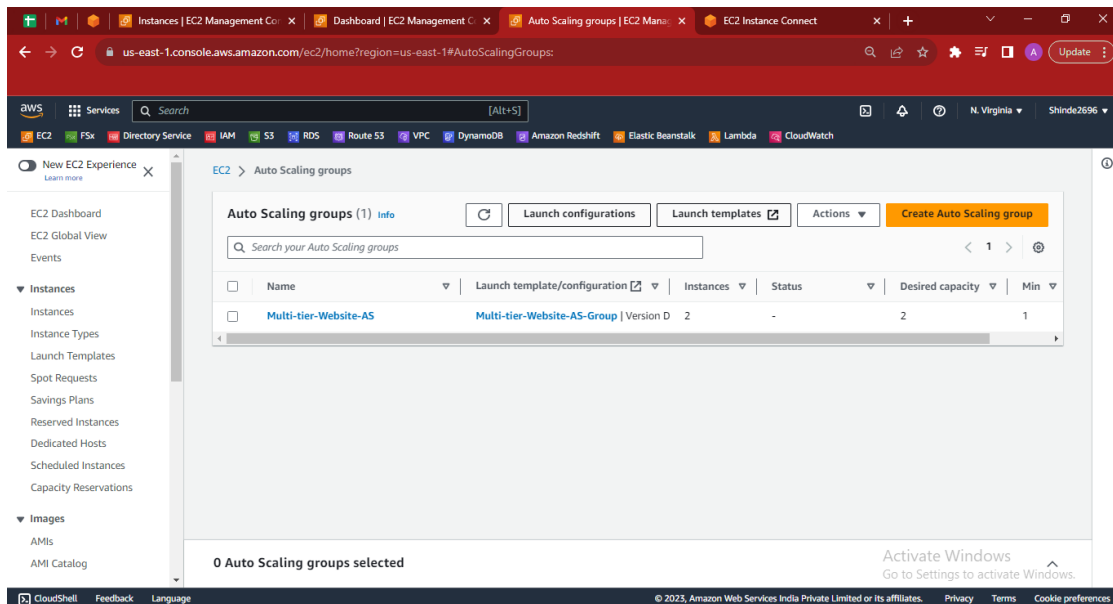
**Details**

- AMI ID: ami-010f13c6b5faaba79 (Multi-tier-Website1)
- Image type: machine
- Platform details: Linux/UNIX
- Root device type: EBS
- AMI name: Multi-tier-Website1
- Owner account ID: 337755599619
- Architecture: x86\_64
- Usage operation: RunInstances
- Root device name: /dev/sda1
- Status: Pending
- Source: 337755599619/Multi-tier-Website1
- Virtualization type: hvm

In order to map and for a smooth flow created application load balancer and a target group, so that the load can be evenly distributed among the Instances



Then created the Auto scaling group in order create and delete instances as per the requirements



Added the data from the page and it has been reflected in the database

The image shows two screenshots. The top screenshot is a web browser window displaying a form with the following fields:

- Name:
- Email:
- 

The bottom screenshot is a terminal window running MySQL. The output shows the following commands and results:

```
mysql> use intel
Reading table information for completion of table and column names
You can turn off this feature with -A

Database changed
mysql> select * from data;
+-----+-----+
| firstname | email |
+-----+-----+
| AWS      | aws@support.com |
| shinde   | shinde123 |
| akash    | akashs@gmail.com |
+-----+-----+
3 rows in set (0.00 sec)

mysql>
```

The terminal window also shows the instance ID `i-03ffa2fced631ba31` (Multi-tier-Website1) and its public and private IP addresses.

Hence we have created the instances and then the load balancers and the mapping of the load balancers too, to the Auto scaling group in order for a smooth work flow of the website, and created a database too in order to save the data provided on the website.