

Assignment:

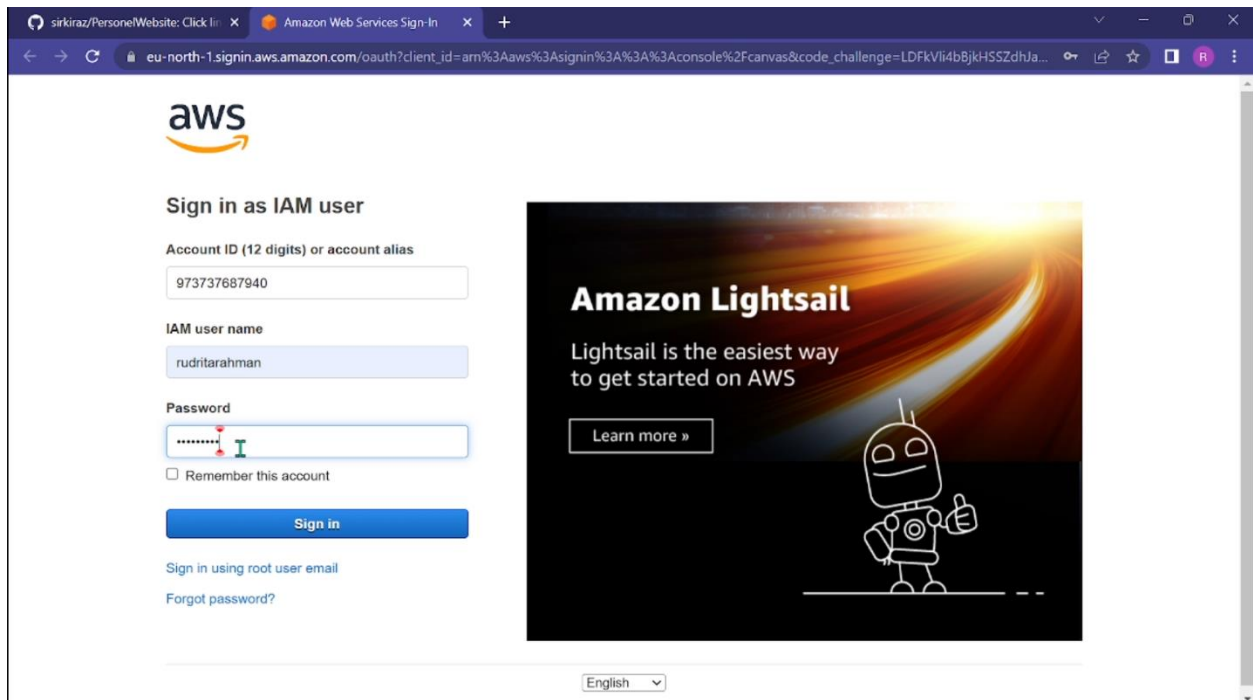
You need to submit a recording with a small report (screenshots with descriptions and commands used) of your step by step process of 'hosting a website in AWS cloud'.

The web hosting should be done in :

- (a) Ubuntu Linux OS.
- (b) Should be enabled SSH from your IP only.
- (c) The target website needs to be downloaded from any GitHub repo.
- (d) Apache2 environment needs to be set up for web hosting.

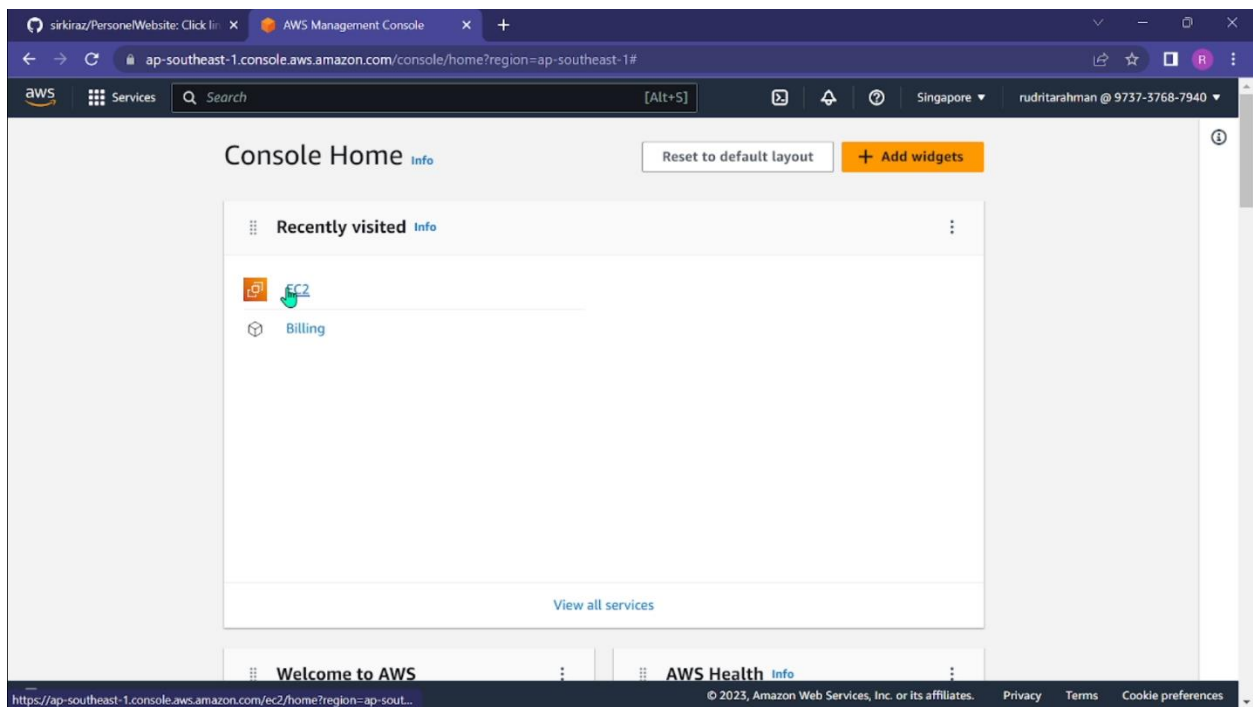
Please follow the following steps to complete the given assignment:

Step 1:



The screenshot shows the AWS Sign-in page for an IAM user. The page has a white background with the AWS logo at the top left. The main heading is "Sign in as IAM user". Below this, there are three input fields: "Account ID (12 digits) or account alias" with the value "973737687940", "IAM user name" with the value "rudritarahman", and "Password" with masked characters. There is a checkbox for "Remember this account" and a blue "Sign in" button. Below the button, there are links for "Sign in using root user email" and "Forgot password?". On the right side, there is a promotional banner for "Amazon Lightsail" with the text "Lightsail is the easiest way to get started on AWS" and a "Learn more »" button. The banner features a stylized robot character. At the bottom center, there is a language dropdown menu set to "English".

Step 2:



The screenshot shows the AWS Management Console Home page. The top navigation bar includes the AWS logo, a "Services" link, a search bar, and a user profile dropdown for "rudritarahman @ 9737-3768-7940". The main content area is titled "Console Home" and includes a "Reset to default layout" button and an "Add widgets" button. Below this, there is a "Recently visited" section with a list of services: "EC2" (with a green checkmark) and "Billing". A "View all services" link is at the bottom of this section. The footer contains a "Welcome to AWS" message, an "AWS Health" link, and copyright information: "© 2023, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences".

Step 3:

The screenshot shows the AWS Management Console for the Asia Pacific (Singapore) Region. The 'Resources' section displays a grid of EC2 resources: Instances (running) 0, Elastic IPs 1, Load balancers 0, Snapshots 0, Auto Scaling Groups 0, Instances 1, Placement groups 0, Volumes 1, Dedicated Hosts 0, Key pairs 3, and Security groups 5. A 'Launch instance' button is visible. The 'Account attributes' section shows supported platforms, default VPC, and settings. The 'Service health' section shows the AWS Health Dashboard. The 'Explore AWS' section provides information on reducing AWS costs.

Resources		
Instances (running)	0	
Elastic IPs	1	
Load balancers	0	
Snapshots	0	
Auto Scaling Groups	0	
Instances	1	
Placement groups	0	
Volumes	1	
Dedicated Hosts	0	
Key pairs	3	
Security groups	5	

Step 4:

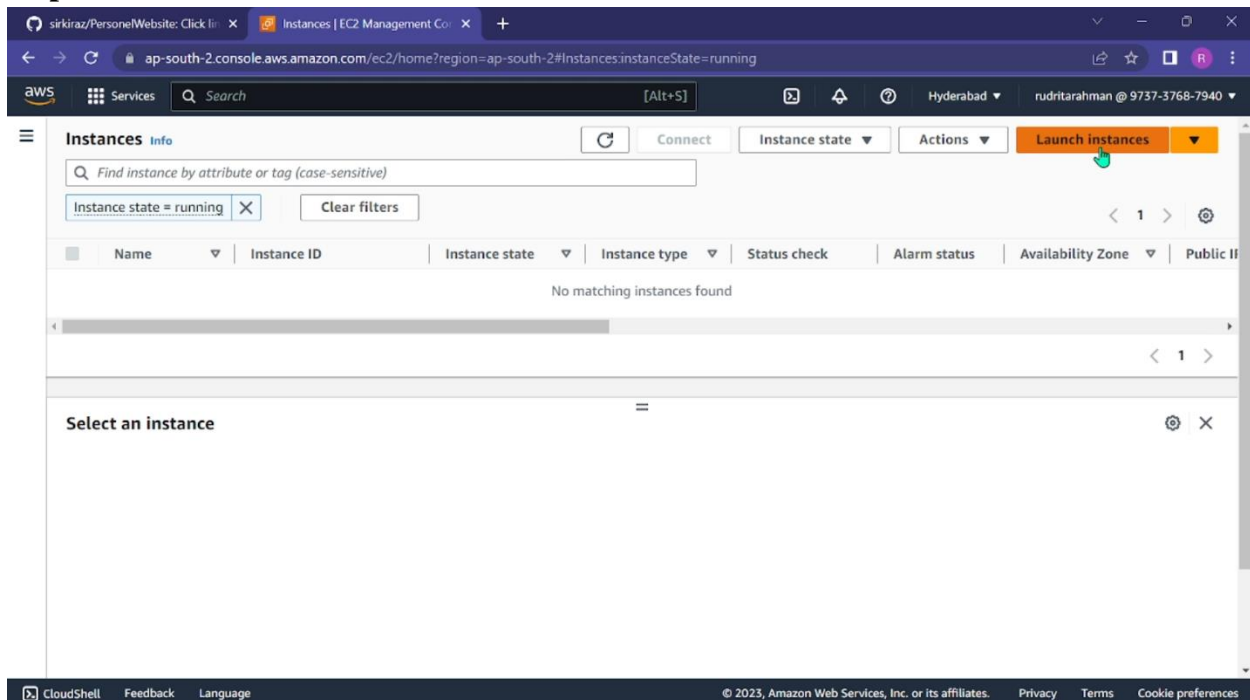
The screenshot shows the AWS Management Console for the Asia Pacific (Singapore) Region. The 'Instances' section displays a table with columns: Name, Instance ID, Instance state, and Instance type. A dropdown menu is open, showing a list of regions and availability zones. The 'Launch instances' button is visible. The 'Select an instance' section is also visible.

Name	Instance ID	Instance state	Instance type
No matching instances			

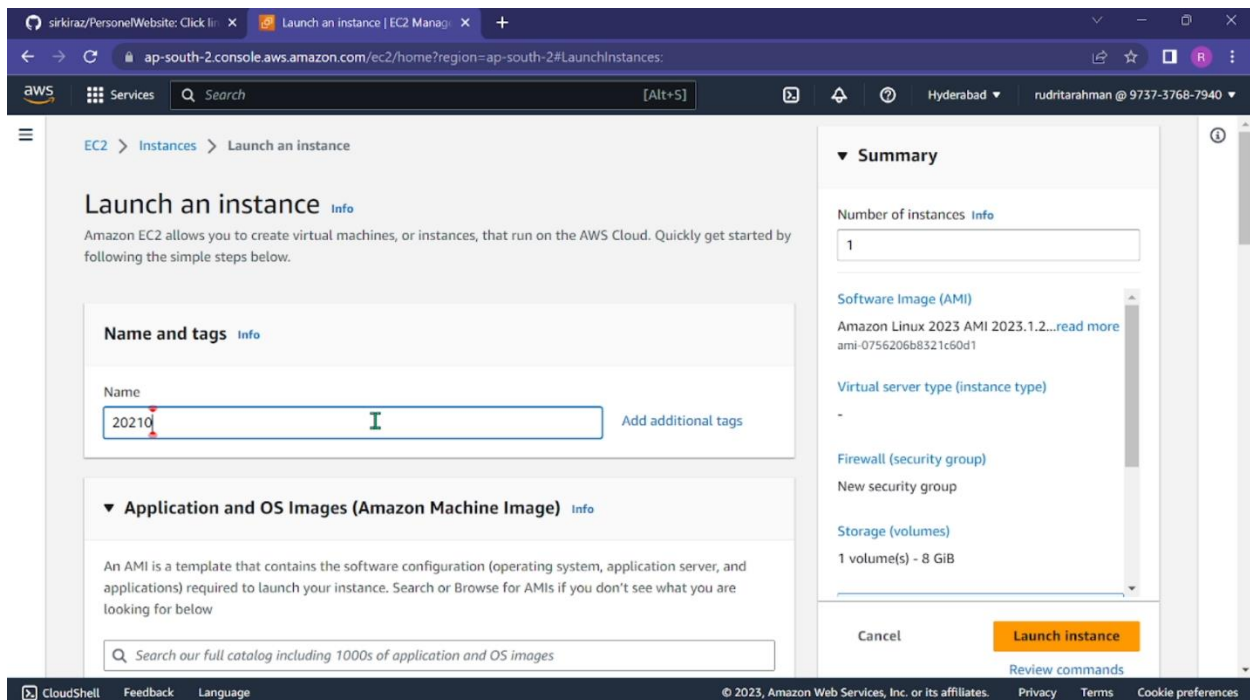
Regions and Availability Zones:

- US East (N. Virginia) us-east-1
- US East (Ohio) us-east-2
- US West (N. California) us-west-1
- US West (Oregon) us-west-2
- Asia Pacific (Hong Kong) ap-east-1
- Asia Pacific (Hyderabad) ap-south-2
- Asia Pacific (Jakarta) ap-southeast-3
- Asia Pacific (Melbourne) ap-southeast-4
- Asia Pacific (Mumbai) ap-south-1
- Asia Pacific (Osaka) ap-northeast-3
- Asia Pacific (Seoul) ap-northeast-2
- Asia Pacific (Singapore) ap-southeast-1
- Asia Pacific (Sydney) ap-southeast-2
- Asia Pacific (Tokyo) ap-northeast-1

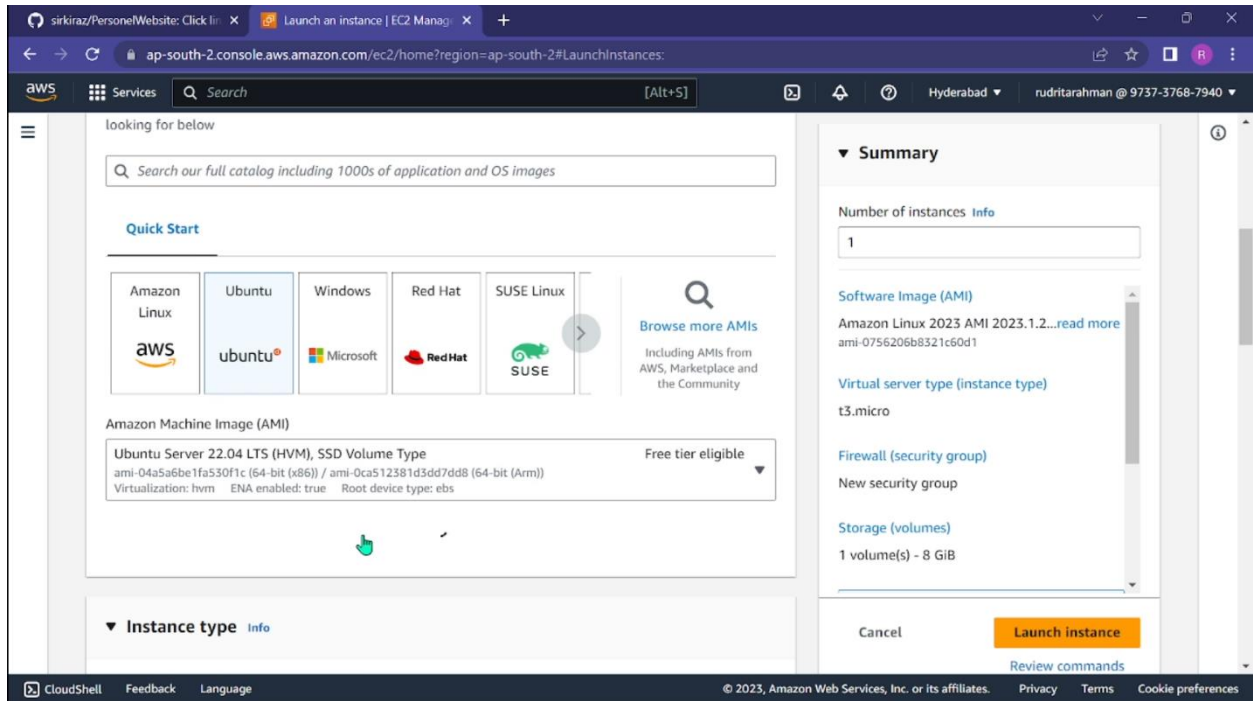
Step 5:



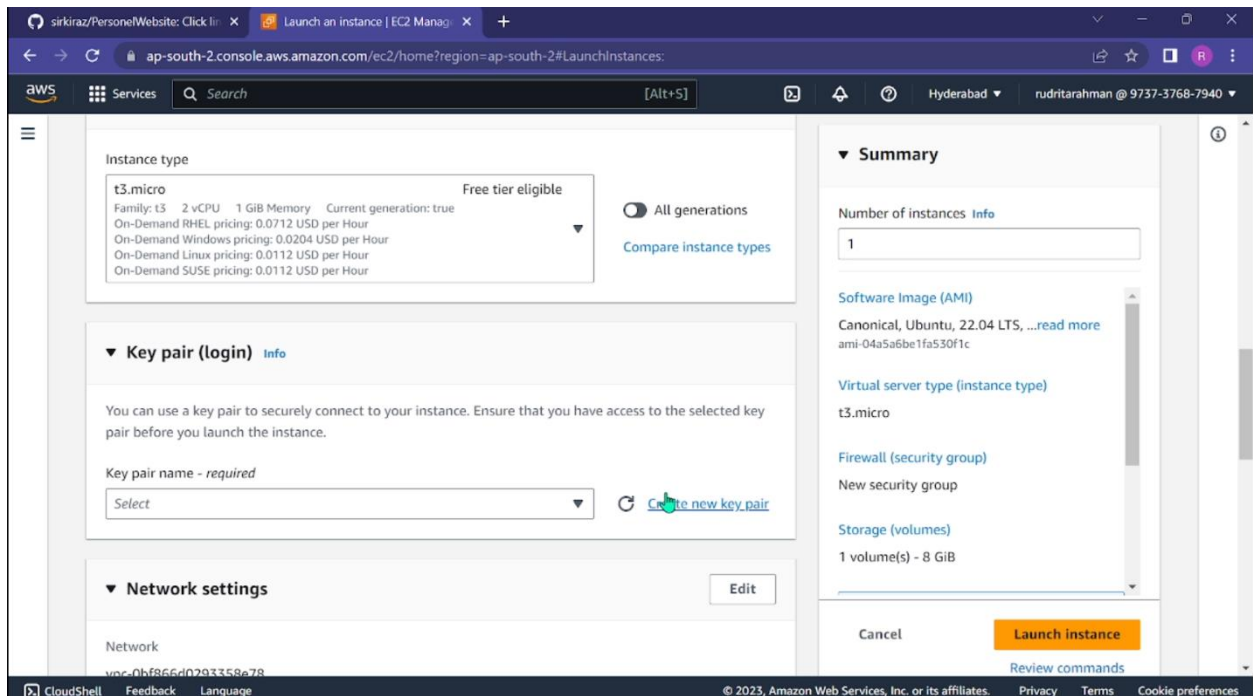
Step 6:



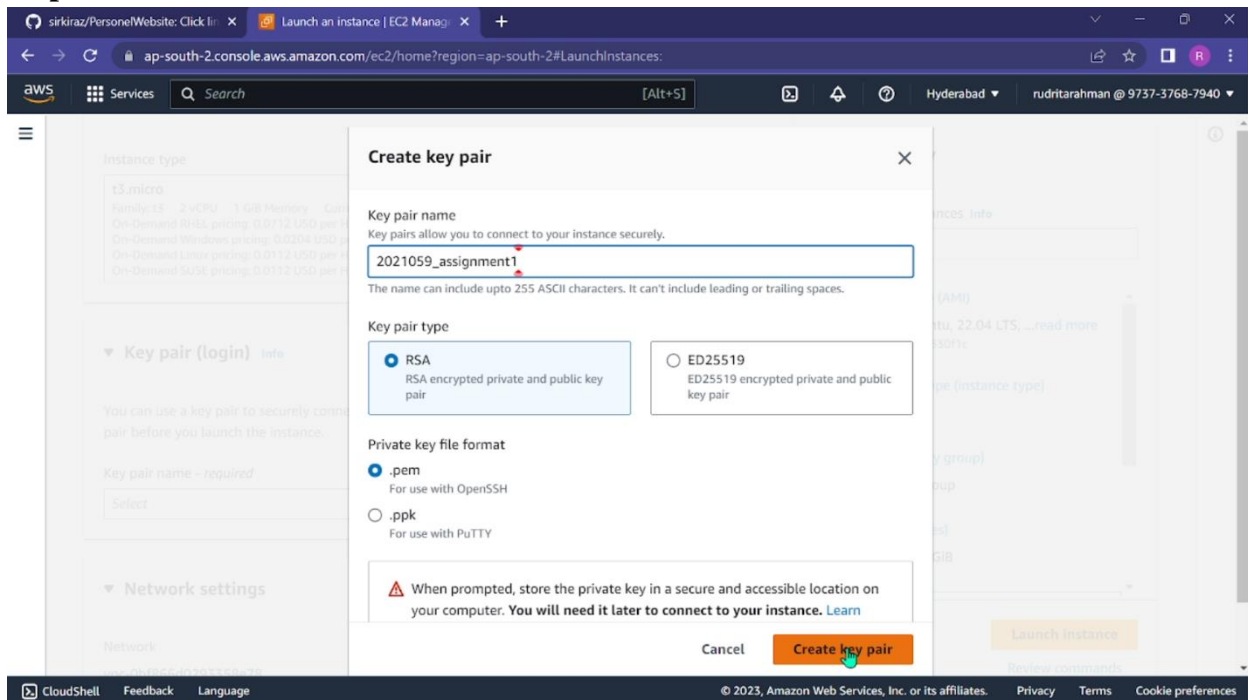
Step 7:



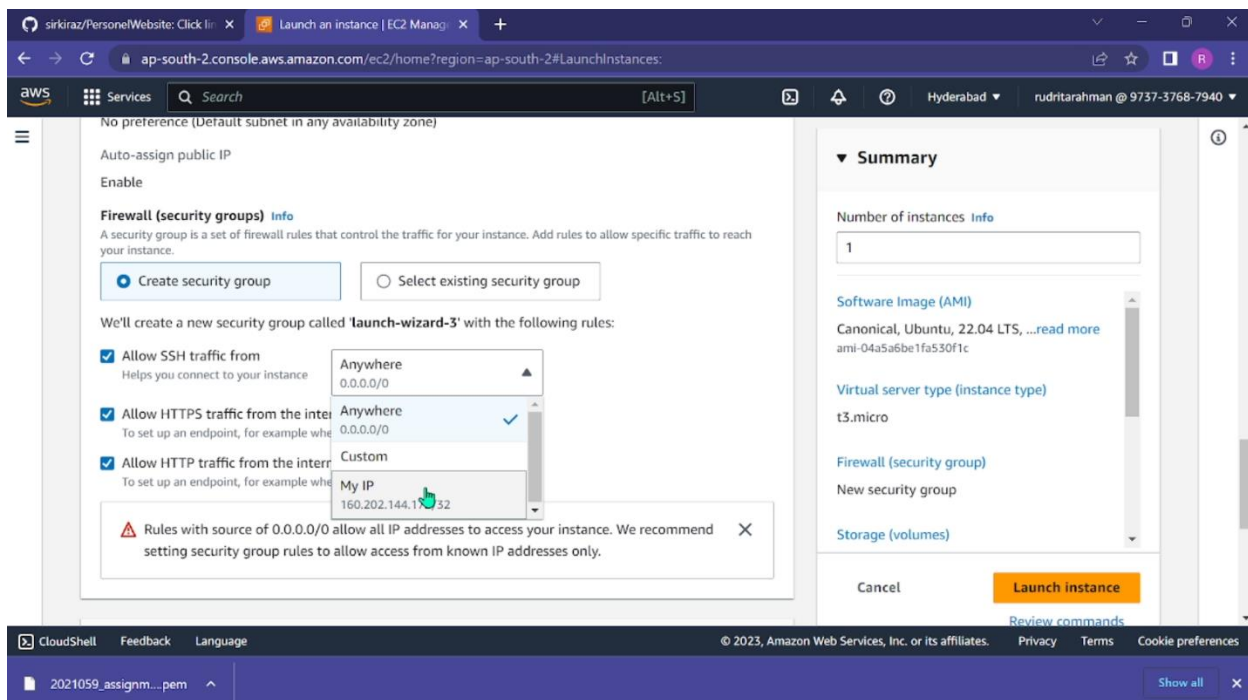
Step 8:



Step 9:



Step 10:



Step 11:

The screenshot shows the 'Launch instance' wizard in the AWS Management Console, specifically the 'Network settings' step. The left pane displays the following configuration:

- Network:** vpc-0bf866d0293358e78
- Subnet:** No preference (Default subnet in any availability zone)
- Auto-assign public IP:** Enable
- 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
- Rules:** We'll create a new security group called 'launch-wizard-3' with the following rules:
 - ☒ Allow SSH traffic from: Helps you connect to your instance. My IP: 160.202.144.172/32
 - ☒ Allow HTTPS traffic from the internet

The right pane shows the 'Summary' section with the following details:

- Number of instances:** 1
- Software Image (AMI):** Canonical, Ubuntu, 22.04 LTS, ...read more (ami-04a5a6be1fa530f1c)
- Virtual server type (instance type):** t3.micro
- Firewall (security group):** New security group
- Storage (volumes):** (Collapsed)

At the bottom, there are 'Cancel' and 'Launch instance' buttons, along with a 'Review commands' link. The footer shows the AWS logo, 'CloudShell', 'Feedback', 'Language', and copyright information for 2023.

Step 12:

The screenshot shows the 'Launch instance' wizard in the AWS Management Console, specifically the 'Firewall (security groups)' step. The left pane displays the following configuration:

- Subnet:** No preference
- Auto-assign public IP:** Enable
- 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:** 2021059_assignment1
- Description - required:** 2021059_assignment1 created 2023-07-15T16:11:42.666Z
- Inbound Security Group Rules:**
 - Security group rule 1 (TCP, 22, 160.202.144.172/32)

The right pane shows the 'Summary' section with the following details:

- Number of instances:** 1
- Software Image (AMI):** Canonical, Ubuntu, 22.04 LTS, ...read more (ami-04a5a6be1fa530f1c)
- Virtual server type (instance type):** t3.micro
- Firewall (security group):** New security group
- Storage (volumes):** 1 volume(s) - 8 GiB

At the bottom, there are 'Cancel' and 'Launch instance' buttons, along with a 'Review commands' link. The footer shows the AWS logo, 'CloudShell', 'Feedback', 'Language', and copyright information for 2023.

Step 13:

Source type: My IP
Name: 160.202.144.172/32
Description: e.g. SSH for admin desktop

Security group rule 2 (TCP, 443, 0.0.0.0/0)
Type: HTTPS
Protocol: TCP
Port range: 443
Source type: Anywhere
Source: 0.0.0.0/0
Description: e.g. SSH for admin desktop

Security group rule 3 (TCP, 80, 0.0.0.0/0)
Type: HTTP
Protocol: TCP
Port range: 80
Source type: Anywhere
Source: 0.0.0.0/0
Description: e.g. SSH for admin desktop

Summary

- Number of instances: 1
- Software Image (AMI): Canonical, Ubuntu, 22.04 LTS, ...read more
ami-04a5a6be1fa530f1c
- Virtual server type (instance type): t3.micro
- Firewall (security group): New security group
- Storage (volumes): 1 volume(s) - 8 GiB

Cancel Launch instance Review commands

Step 14:

Security group rule 3 (TCP, 80, 0.0.0.0/0)
Type: HTTP
Protocol: TCP
Port range: 80
Source type: Anywhere
Source: 0.0.0.0/0
Description: e.g. SSH for admin desktop

Add security group rule

Configure storage
1x 8 GiB gp2 Root volume (Not encrypted)

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage

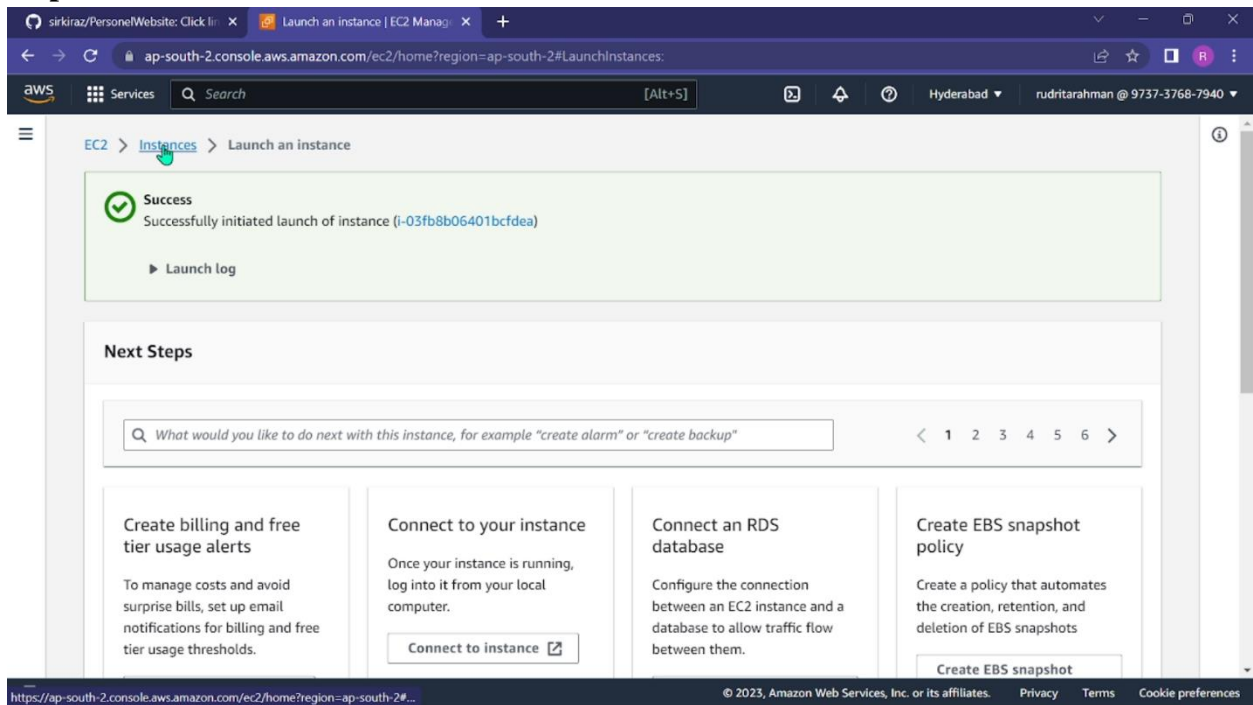
Add new volume

Summary

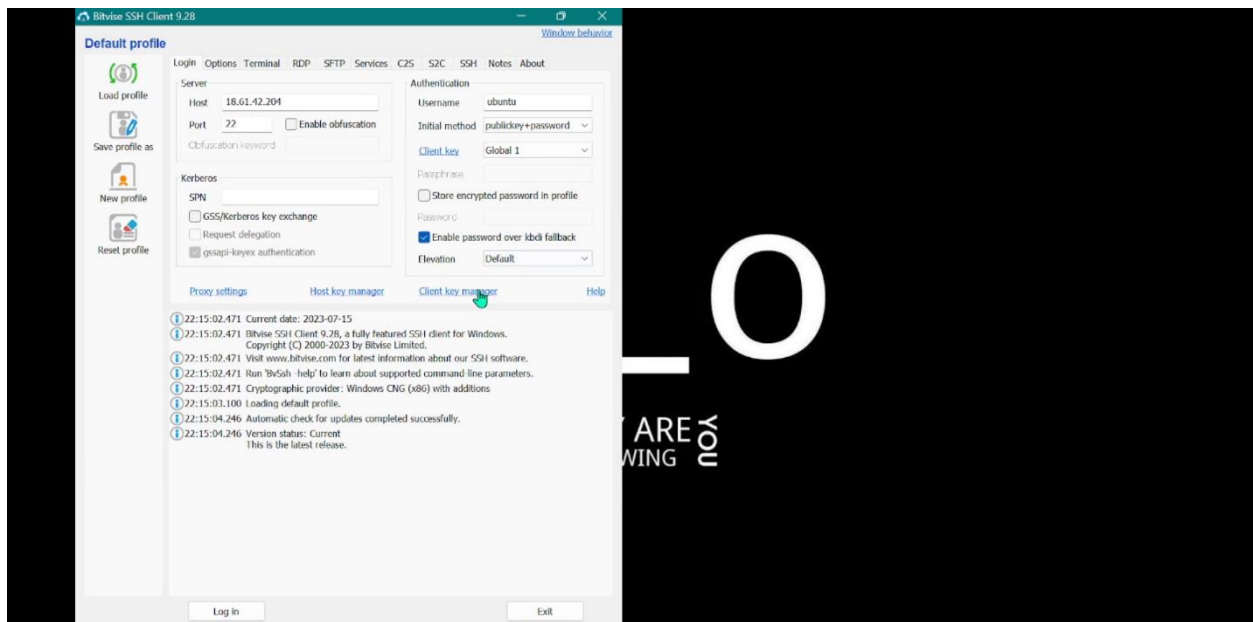
- Number of instances: 1
- Software Image (AMI): Canonical, Ubuntu, 22.04 LTS, ...read more
ami-04a5a6be1fa530f1c
- Virtual server type (instance type): t3.micro
- Firewall (security group): New security group
- Storage (volumes): 1 volume(s) - 8 GiB

Cancel Launch instance Review commands

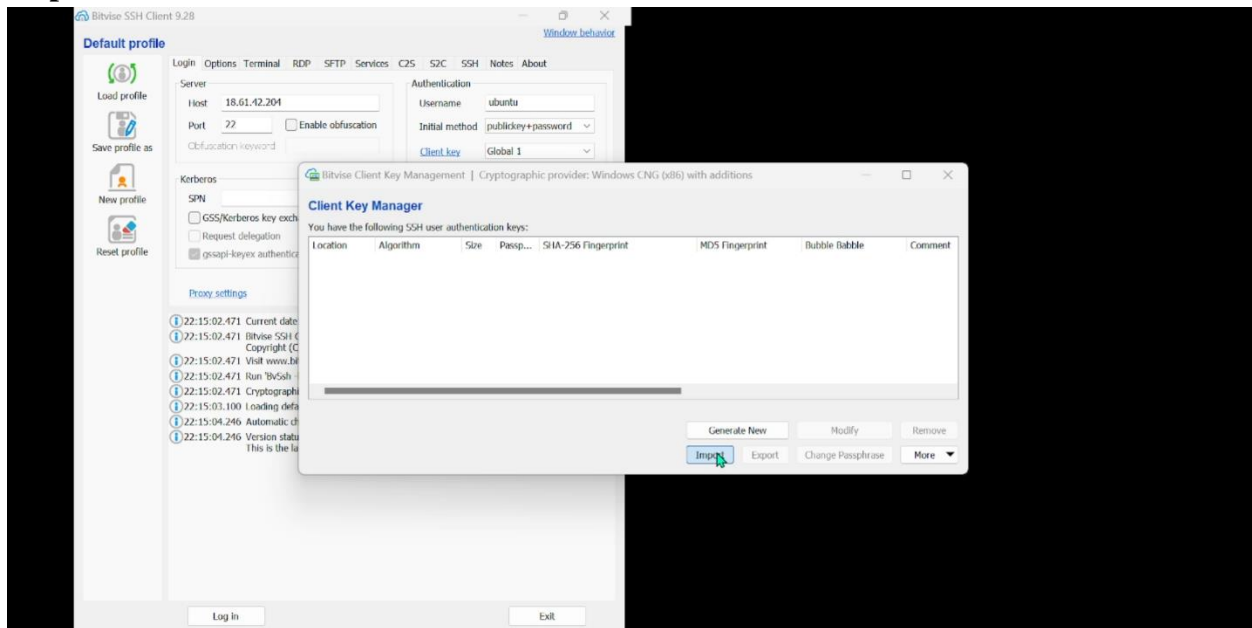
Step 15:



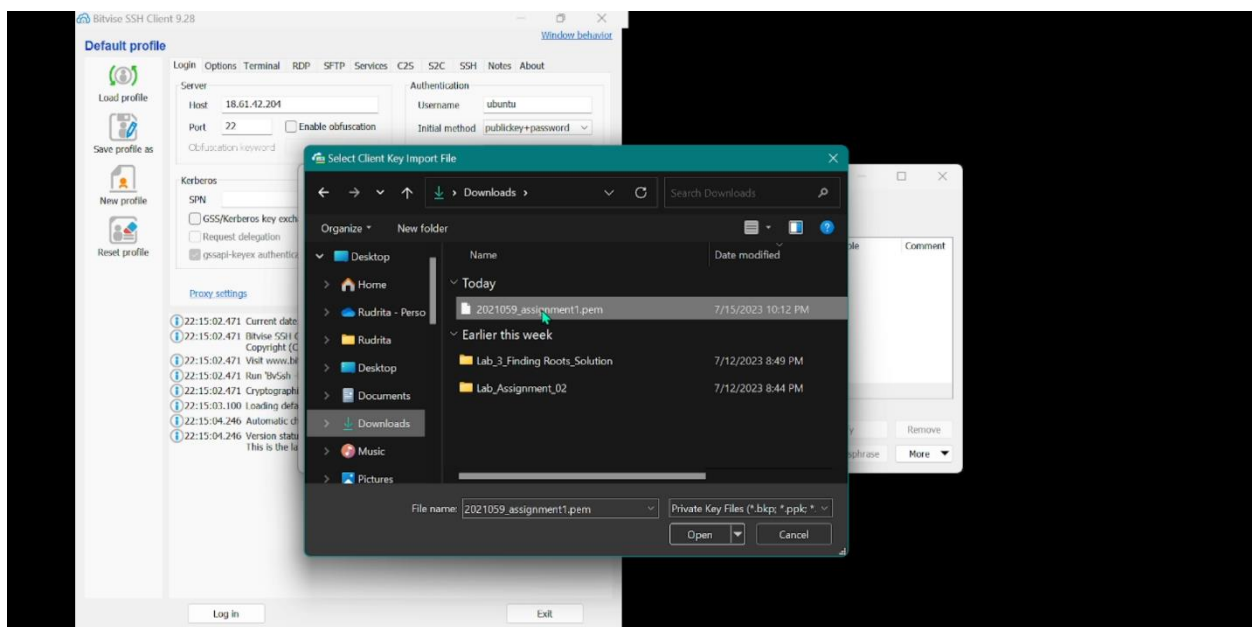
Step 16:



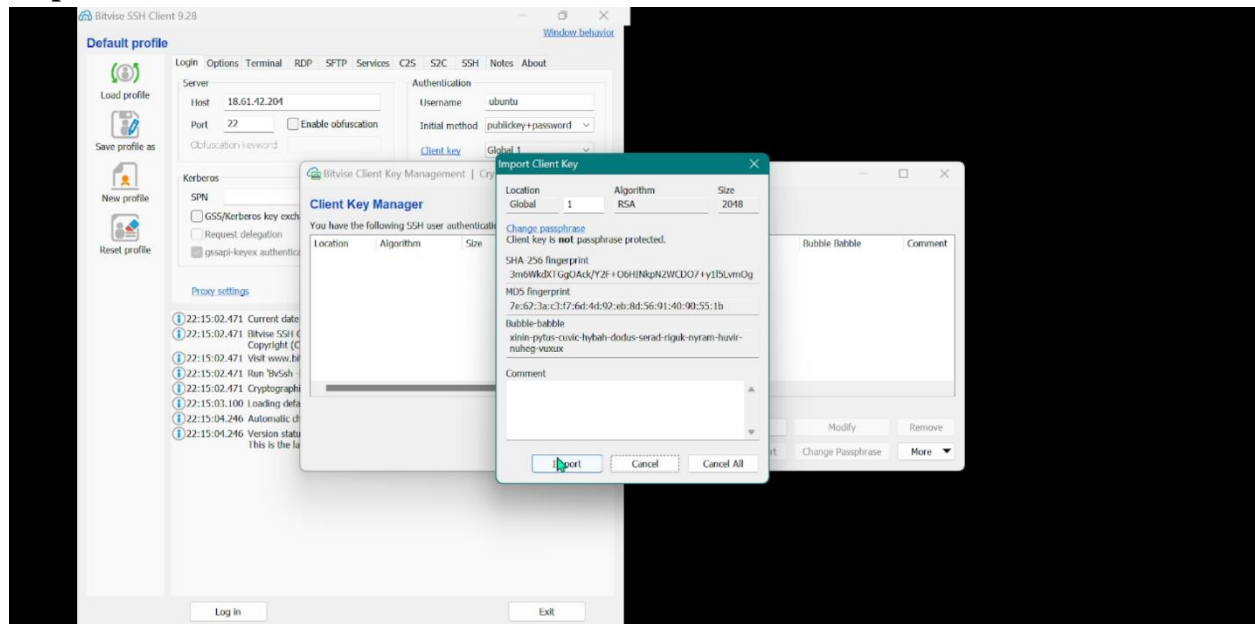
Step 17:



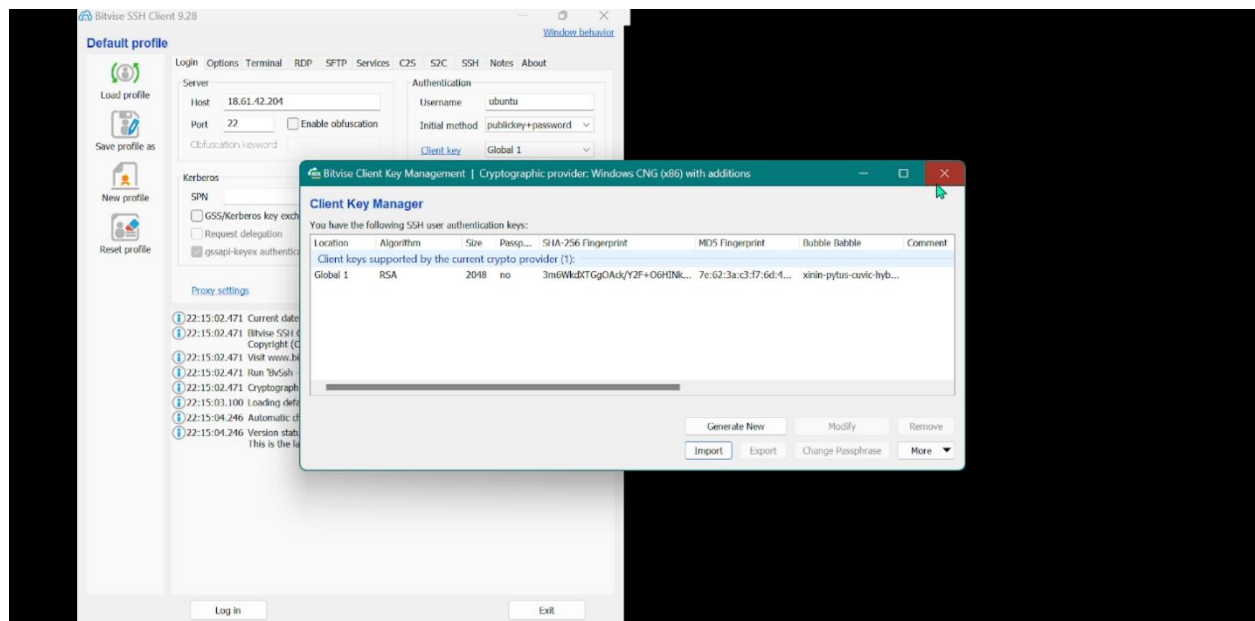
Step 18:



Step 19:



Step 20:



Step 21:

The screenshot shows the AWS Management Console for the 'ap-south-2' region. The 'Instances' page displays a list of EC2 instances. The instance 'i-03fb8b06401bcfdea' (named '2021059_assi...') is in a 'Running' state. The console shows a list of instances and a detailed view of the selected instance.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
2021059_Assi...	i-0af6d1483adacbe20	Stopped	t3.micro	-	No alarms	ap-south-2c	-
2021059_assi...	i-03fb8b06401bcfdea	Running	t3.micro	-	No alarms	ap-south-2c	ec2-18-61-72-99.ap-south-2.compute.amazonaws.com

Instance: i-03fb8b06401bcfdea (2021059_assignment1)

Details | Security | Networking | Storage | Status checks | Monitoring | Tags

Instance summary info

Instance ID: i-03fb8b06401bcfdea (2021059_assignment1)

IPv6 address: -

Public IPv4 address: 18.61.72.99 | [open address](#)

Instance state: Running

Private IPv4 addresses: 172.31.25.19

Public IPv4 DNS: ec2-18-61-72-99.ap-south-2.compute.amazonaws.com | [open address](#)

Step 22:

The screenshot shows the Bitvise SSH Client 9.28 interface. The 'Default profile' tab is active, showing connection settings for a server at 18.61.72.99. The 'Authentication' section shows the username 'ubuntu' and the initial method 'publickey+password'. The 'Client key' is set to 'Global 1'. The 'Password' field is empty. The 'Elevation' is set to 'Default'. The 'Log' button is highlighted.

Default profile

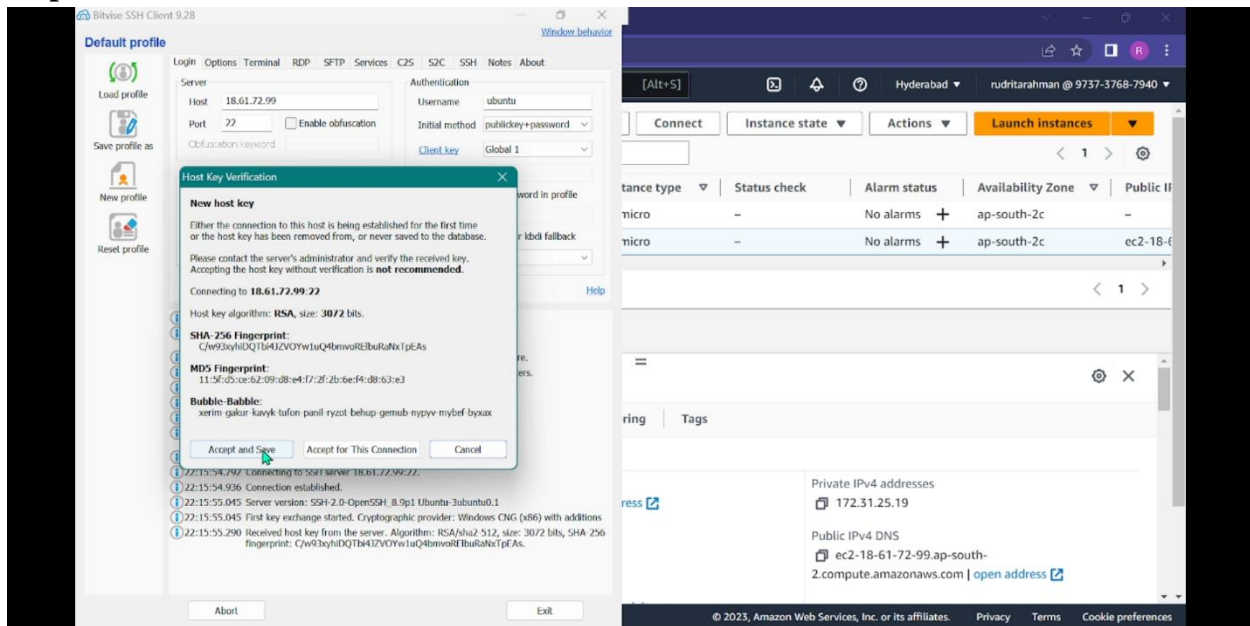
Server: 18.61.72.99

Port: 22

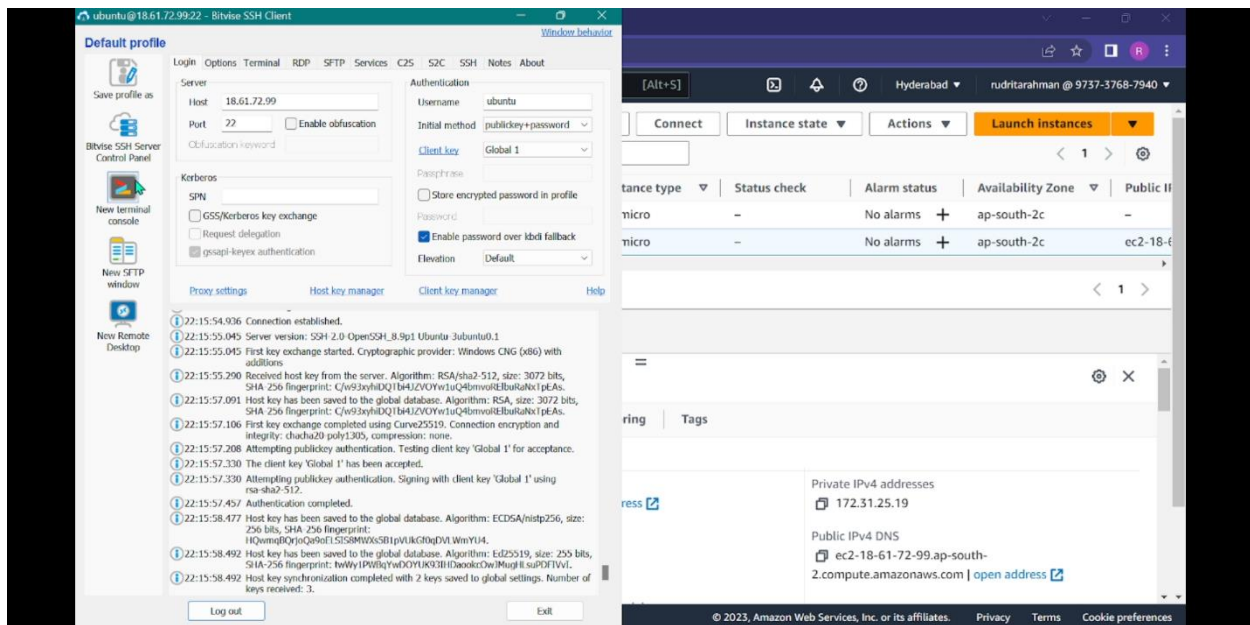
Authentication: Username: ubuntu, Initial method: publickey+password, Client key: Global 1, Password: , Elevation: Default

Log

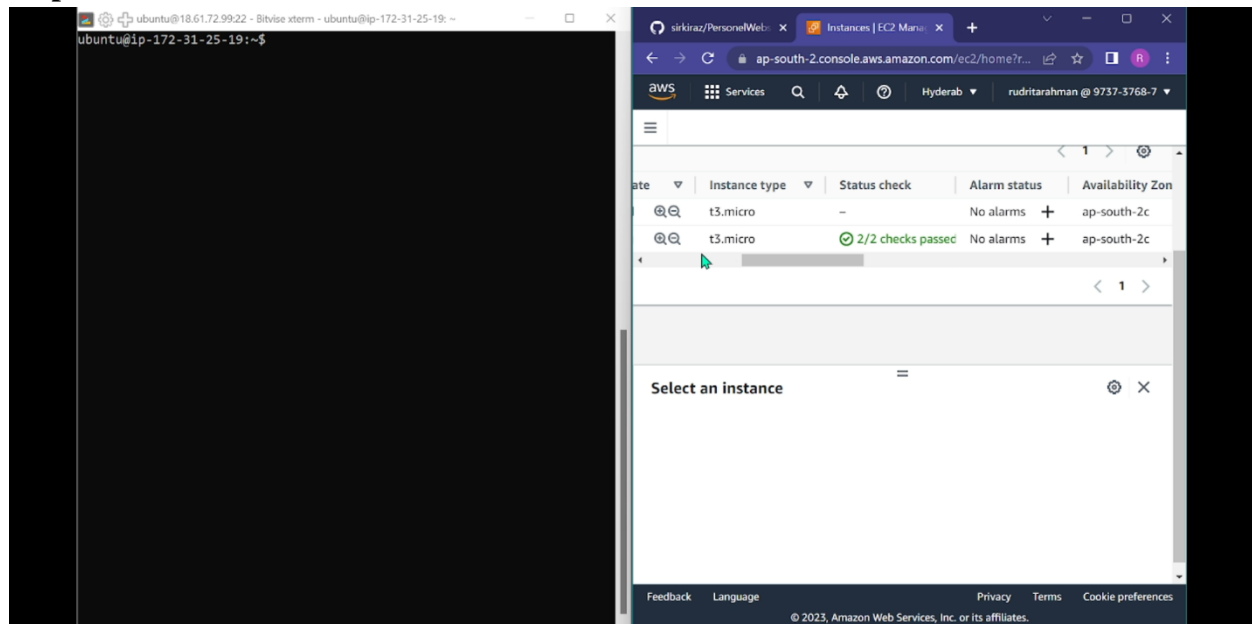
Step 23:



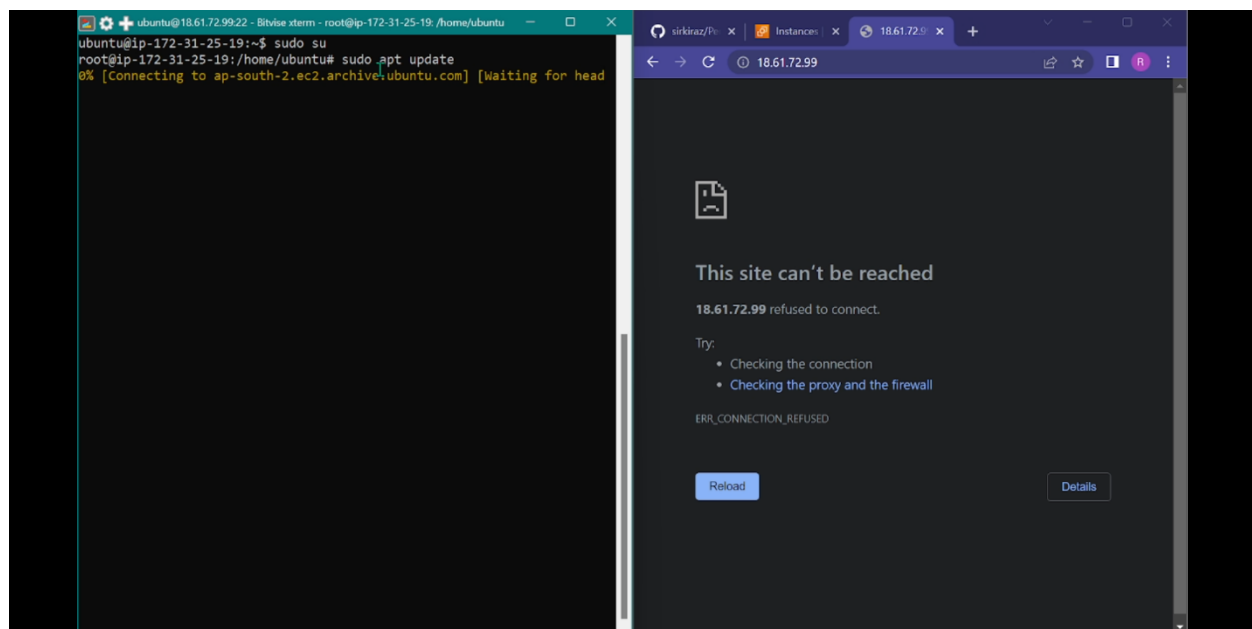
Step 24:



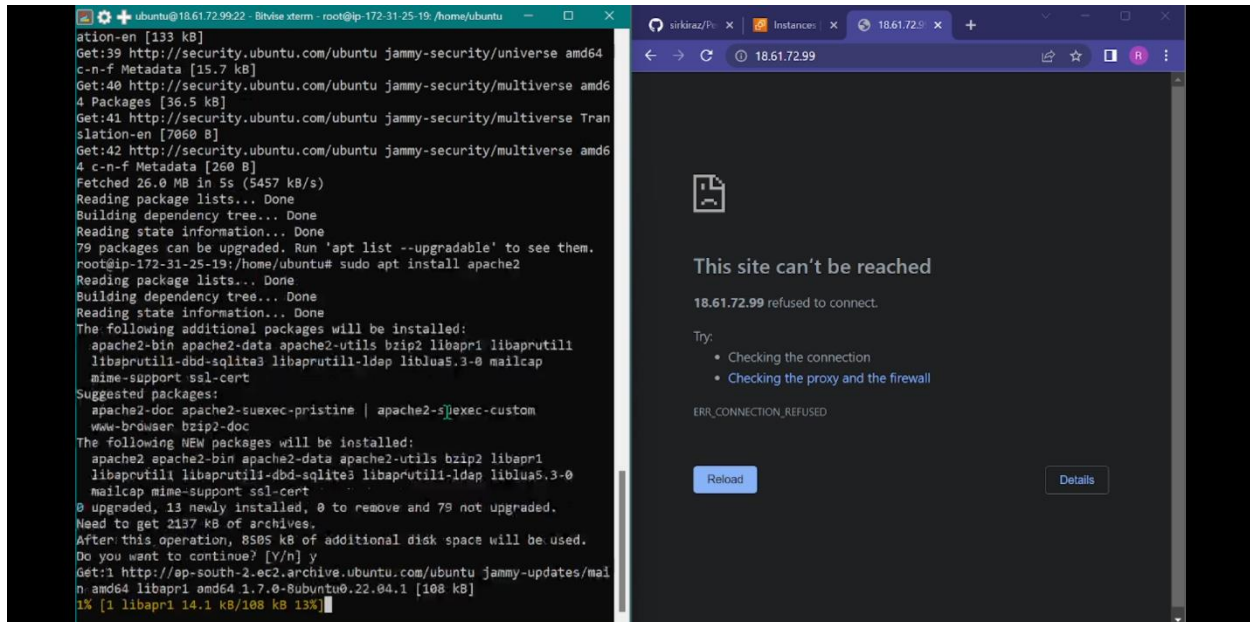
Step 25:



Step 26:



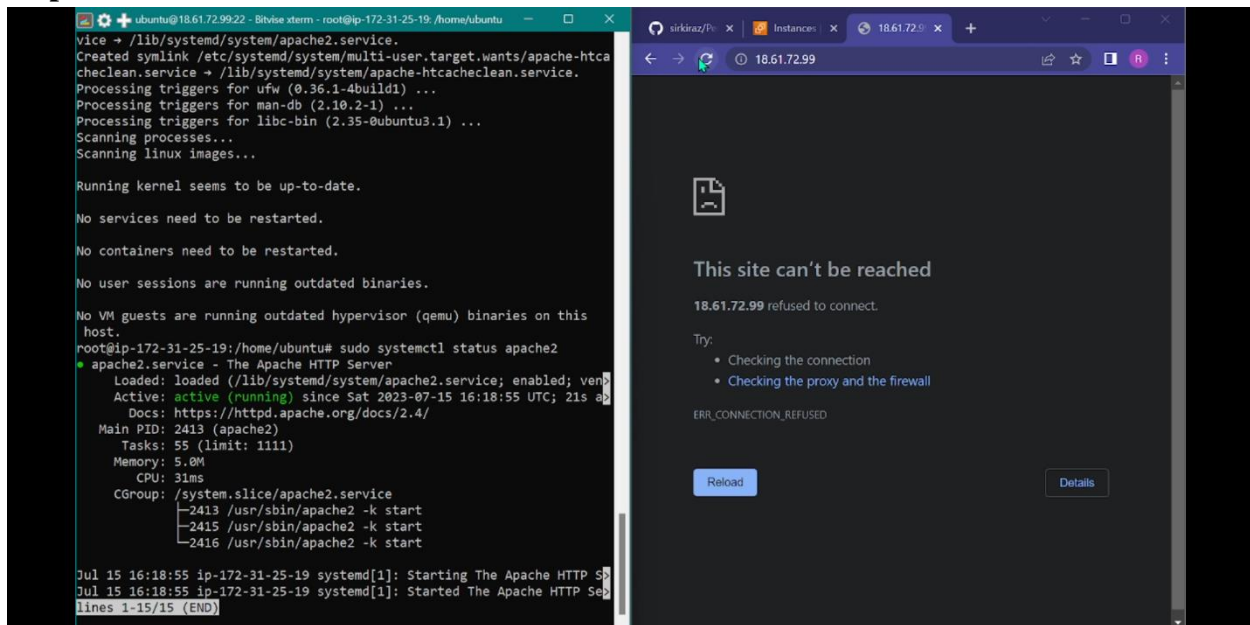
Step 27:



The terminal window shows the process of installing Apache2 on Ubuntu. It starts with a command to update the package list, followed by a command to install Apache2. The terminal output shows the progress of the installation, including the fetching of packages, building the dependency tree, and the installation of the Apache2 package. The browser window shows a connection error to the IP address 18.61.72.99, indicating that the Apache2 service is not yet running.

```
ubuntu@18.61.72.99:~$ sudo apt update
Get:1 http://security.ubuntu.com/ubuntu jammy-security/universe amd64
c-n-f Metadata [15.7 kB]
Get:2 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64
4 Packages [36.5 kB]
Get:3 http://security.ubuntu.com/ubuntu jammy-security/multiverse Tran
slation-en [7060 B]
Get:4 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64
c-n-f Metadata [260 B]
Fetched 26.0 MB in 5s (5457 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
79 packages can be upgraded. Run 'apt list --upgradable' to see them.
root@ip-172-31-25-19:/home/ubuntu# sudo 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 bzip2 libapr1 libaprutil1
  libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.3-0 mailcap
  mime-support ssl-cert
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom
  www-browser bzip2-doc
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils bzip2 libapr1
  libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.3-0
  mailcap mime-support ssl-cert
0 upgraded, 13 newly installed, 0 to remove and 79 not upgraded.
Need to get 2187 kB of archives.
After this operation, 8595 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://op-south-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main
amd64 libapr1 amd64 1.7.0-8ubuntu0.22.04.1 [108 kB]
1% [1 libapr1 14.1 kB/108 kB 13%]
```

Step 28:

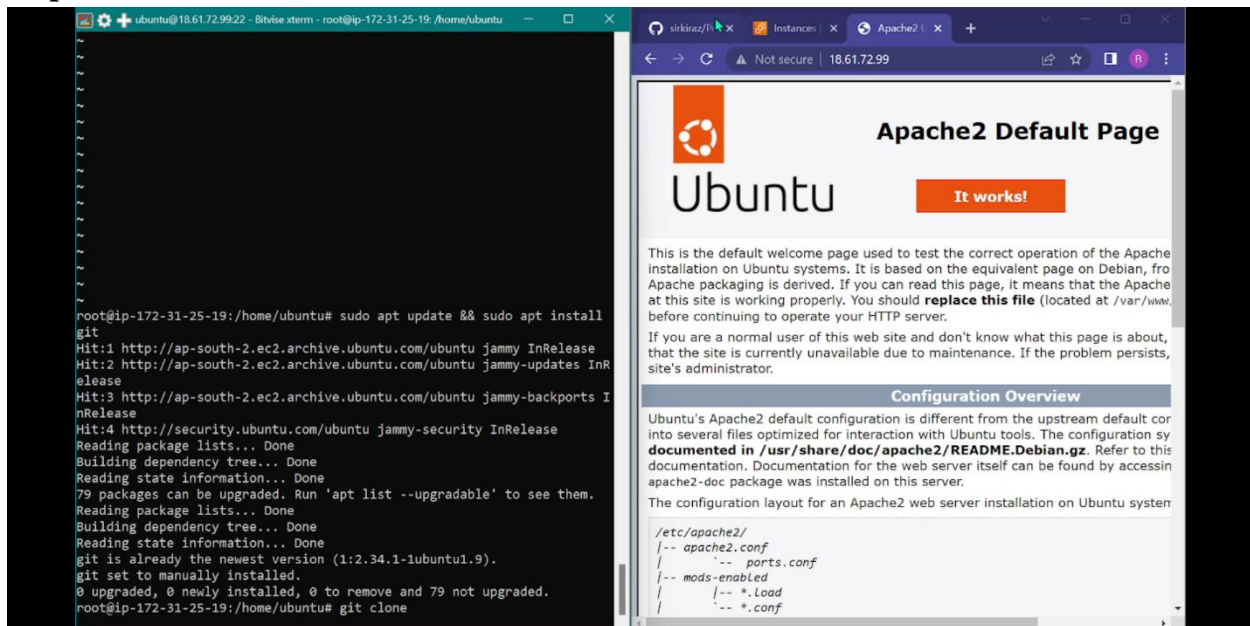


The terminal window shows the process of starting the Apache2 service. It starts with a command to check the status of the service, followed by a command to start the service. The terminal output shows the status of the service, including the loaded state, active state, and the tasks being executed. The browser window shows a connection error to the IP address 18.61.72.99, indicating that the Apache2 service is not yet running.

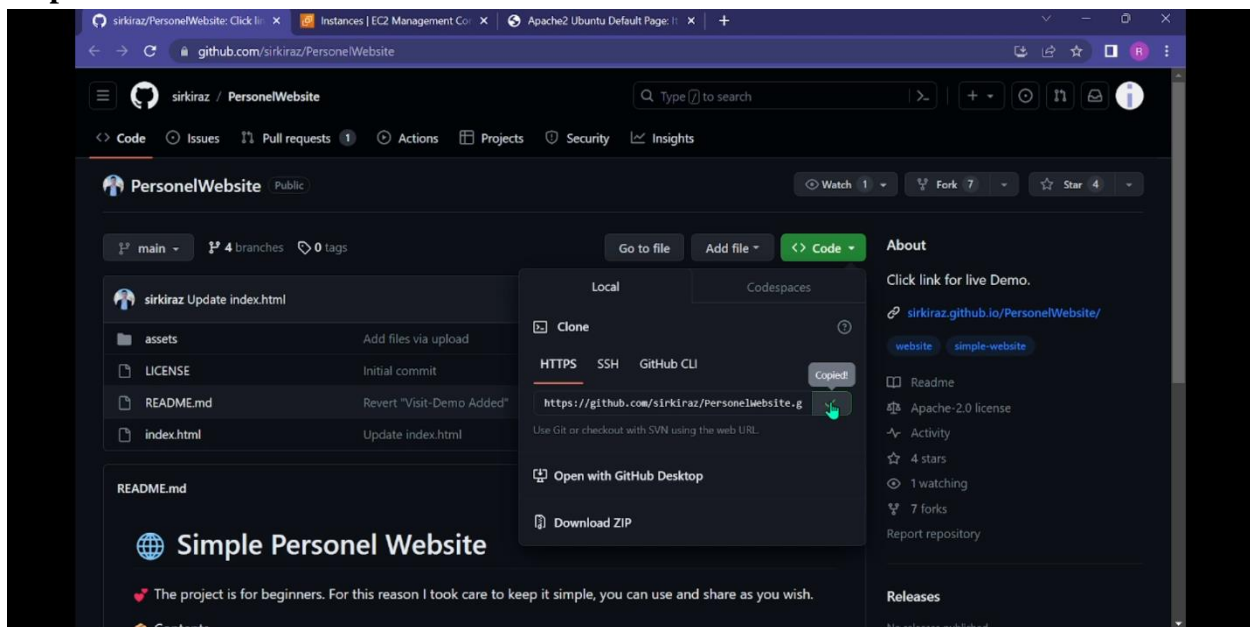
```
ubuntu@18.61.72.99:~$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor
   Active: active (running) since Sat 2023-07-15 16:18:55 UTC; 21s ago
   Docs: https://httpd.apache.org/docs/2.4/
   Main PID: 2413 (apache2)
   Tasks: 55 (limit: 1111)
   Memory: 5.0M
   CPU: 31ms
   CGroup: /system.slice/apache2.service
           └─2413 /usr/sbin/apache2 -k start
             └─2415 /usr/sbin/apache2 -k start
               └─2416 /usr/sbin/apache2 -k start

Jul 15 16:18:55 ip-172-31-25-19 systemd[1]: Starting The Apache HTTP S
Jul 15 16:18:55 ip-172-31-25-19 systemd[1]: Started The Apache HTTP S
lines 1-15/15 (END)
```

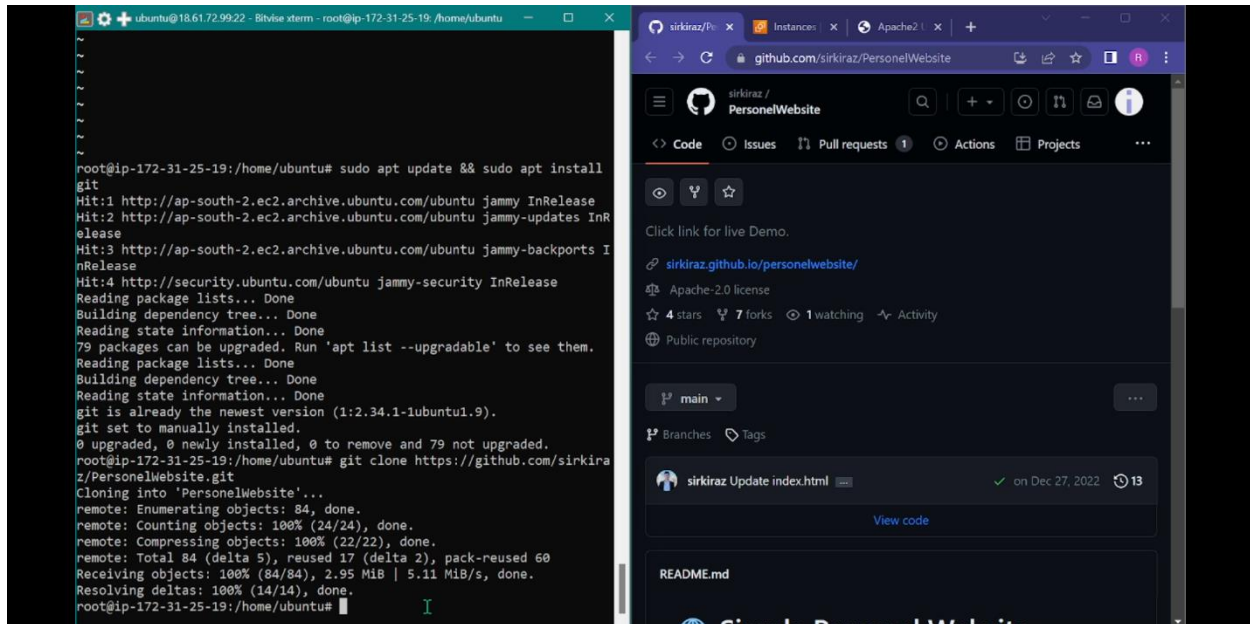
Step 29:



Step 30:



Step 31:

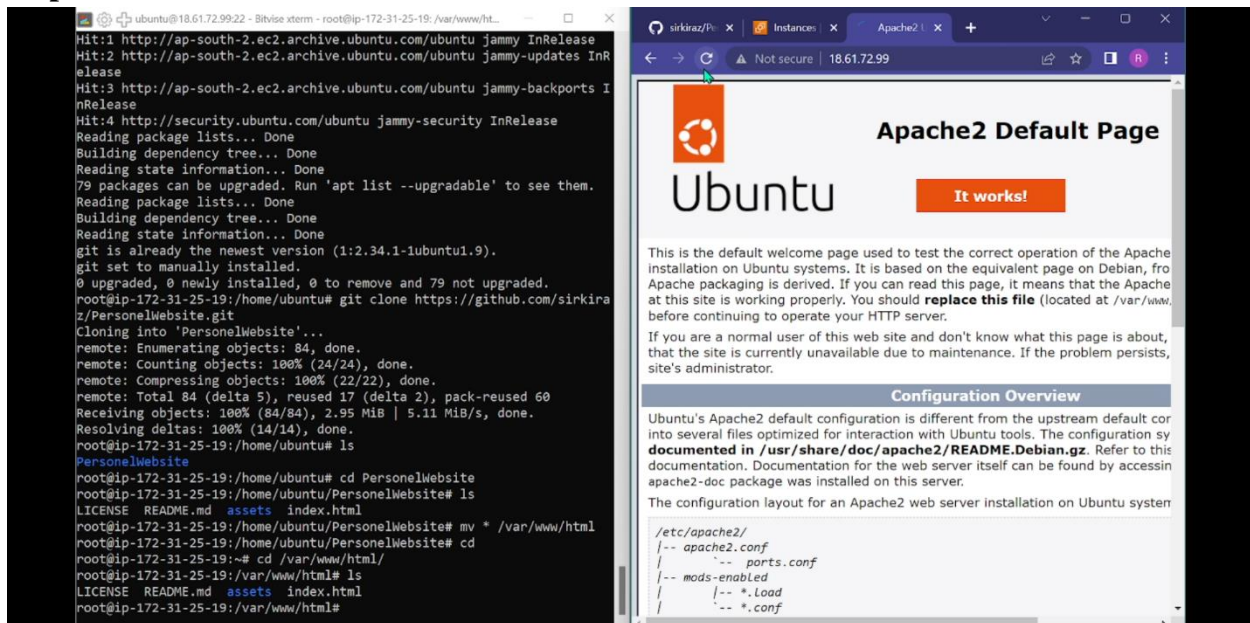


The screenshot shows a terminal window on the left and a web browser on the right. The terminal window displays the following commands and output:

```
root@ip-172-31-25-19:/home/ubuntu# sudo apt update && sudo apt install git
Hit:1 http://ap-south-2.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://ap-south-2.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://ap-south-2.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Hit:4 http://security.ubuntu.com/ubuntu jammy-security InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
79 packages can be upgraded. Run 'apt list --upgradable' to see them.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
git is already the newest version (1:2.34.1-1ubuntu1.9).
0 upgraded, 0 newly installed, 0 to remove and 79 not upgraded.
root@ip-172-31-25-19:/home/ubuntu# git clone https://github.com/sirkiraz/PersonelWebsite.git
Cloning into 'PersonelWebsite'...
remote: Enumerating objects: 84, done.
remote: Counting objects: 100% (24/24), done.
remote: Compressing objects: 100% (22/22), done.
remote: Total 84 (delta 5), reused 17 (delta 2), pack-reused 60
Receiving objects: 100% (84/84), 2.95 MiB | 5.11 MiB/s, done.
Resolving deltas: 100% (14/14), done.
root@ip-172-31-25-19:/home/ubuntu#
```

The web browser shows the GitHub repository page for `sirkiraz/PersonelWebsite`. The page includes a link to the live demo, the repository license (Apache-2.0), and a list of branches and tags. The main branch is selected, and the commit history shows a recent update on Dec 27, 2022.

Step 32:

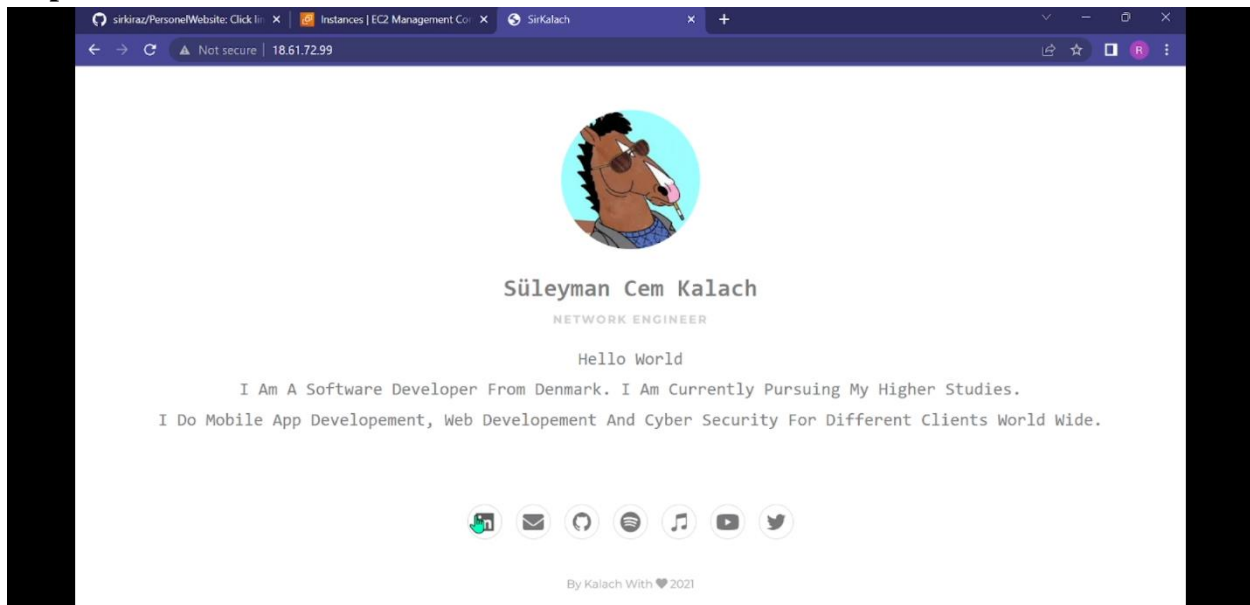


The screenshot shows a terminal window on the left and a web browser on the right. The terminal window displays the following commands and output:

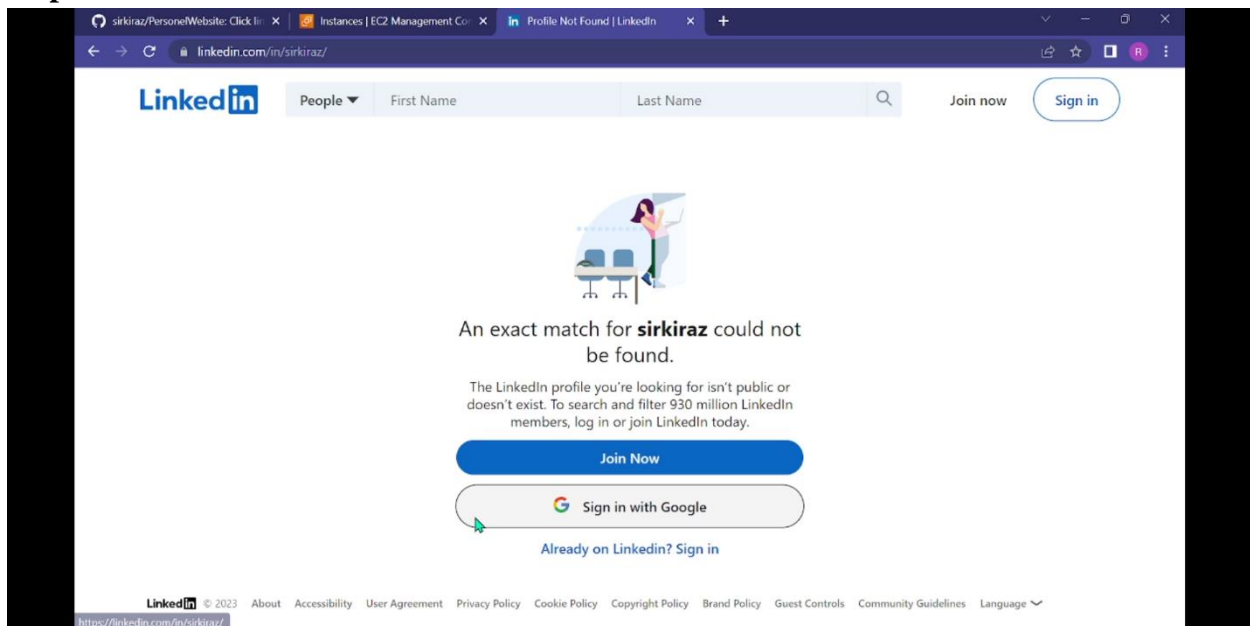
```
root@ip-172-31-25-19:/home/ubuntu# cd PersonelWebsite
root@ip-172-31-25-19:/home/ubuntu/PersonelWebsite# ls
LICENSE README.md assets index.html
root@ip-172-31-25-19:/home/ubuntu/PersonelWebsite# mv * /var/www/html
root@ip-172-31-25-19:/home/ubuntu/PersonelWebsite# cd
root@ip-172-31-25-19:/# cd /var/www/html/
root@ip-172-31-25-19:/var/www/html# ls
LICENSE README.md assets index.html
root@ip-172-31-25-19:/var/www/html#
```

The web browser shows the Apache2 Default Page. The page features the Ubuntu logo and the text "It works!". Below this, there is a section titled "Configuration Overview" which provides information about the default configuration files and how to access the documentation.

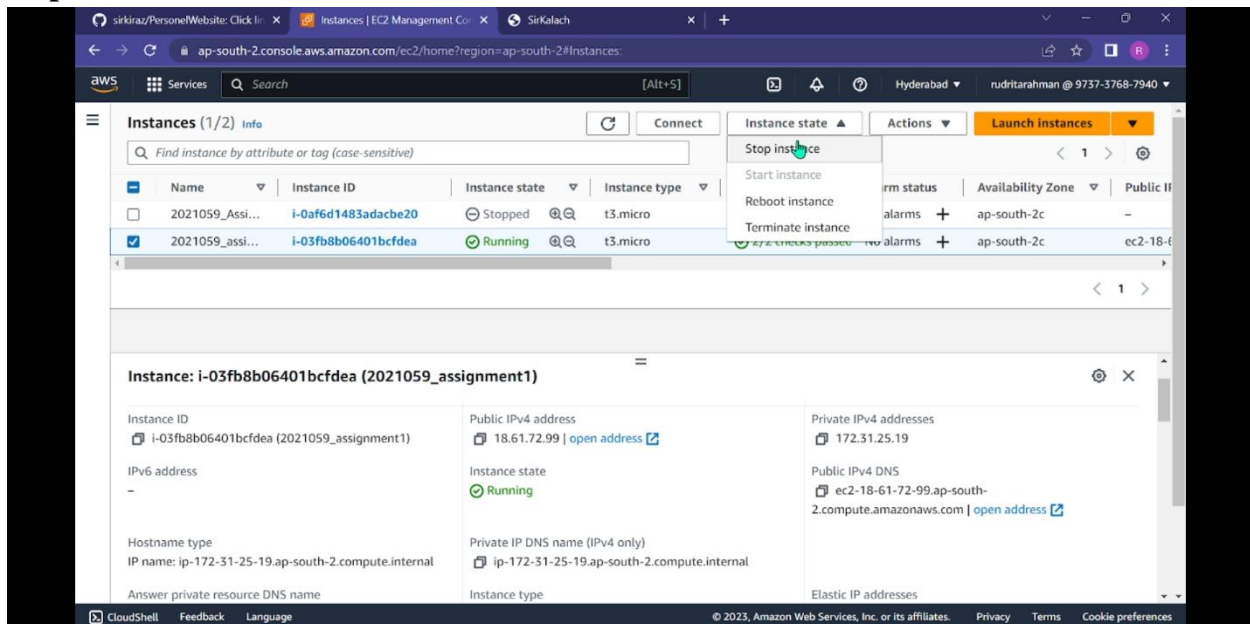
Step 33:



Step 34:



Step 35:



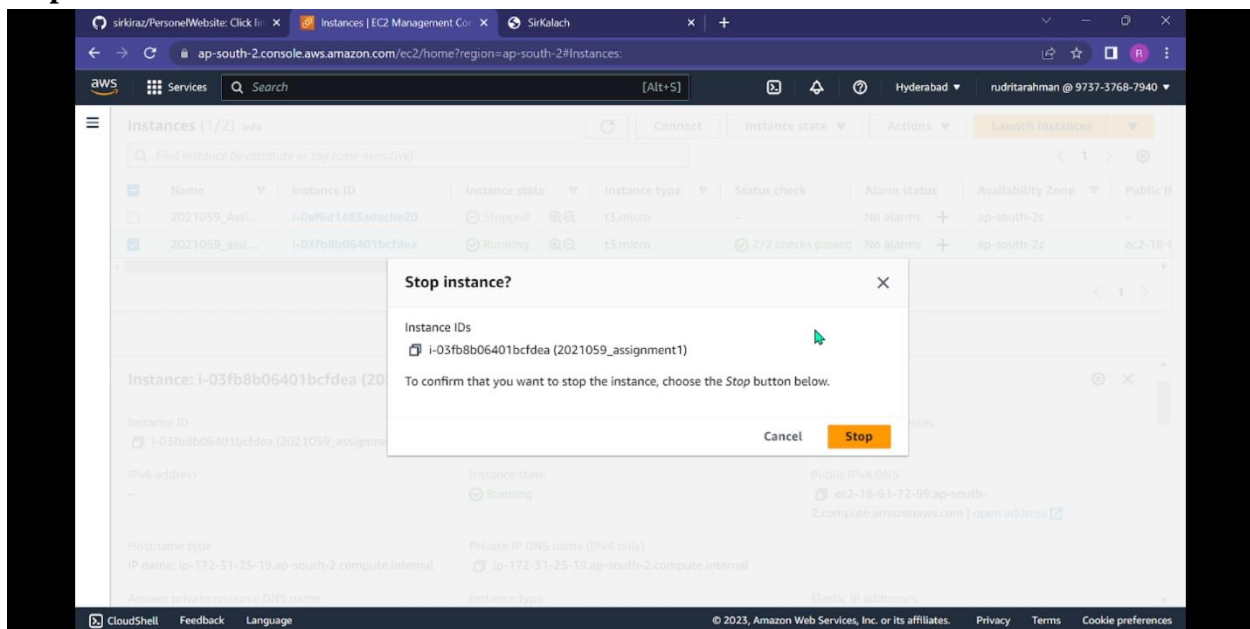
The screenshot shows the AWS Management Console for the 'ap-south-2' region. The 'Instances' page displays a list of two EC2 instances. The instance 'i-03fb8b06401bcfdea' (named '2021059_assignment1') is in the 'Running' state. The 'Instance state' dropdown menu is open, showing options: 'Stop instance', 'Start instance', 'Reboot instance', and 'Terminate instance'. The 'Stop instance' option is highlighted.

Name	Instance ID	Instance state	Instance type
2021059_Assi...	i-0af6d1483adacbe20	Stopped	t3.micro
2021059_assi...	i-03fb8b06401bcfdea	Running	t3.micro

Instance: i-03fb8b06401bcfdea (2021059_assignment1)

Property	Value
Instance ID	i-03fb8b06401bcfdea (2021059_assignment1)
Public IPv4 address	18.61.72.99 open address
Private IPv4 addresses	172.31.25.19
Instance state	Running
Public IPv4 DNS	ec2-18-61-72-99.ap-south-2.compute.amazonaws.com open address
Private IP DNS name (IPv4 only)	ip-172-31-25-19.ap-south-2.compute.internal
IP name	ip-172-31-25-19.ap-south-2.compute.internal
Answer private resource DNS name	
Instance type	t3.micro

Step 36:



The screenshot shows the same AWS Management Console page, but with a 'Stop instance?' confirmation dialog box open. The dialog box contains the instance ID 'i-03fb8b06401bcfdea (2021059_assignment1)' and a message: 'To confirm that you want to stop the instance, choose the Stop button below.' There are 'Cancel' and 'Stop' buttons at the bottom of the dialog.

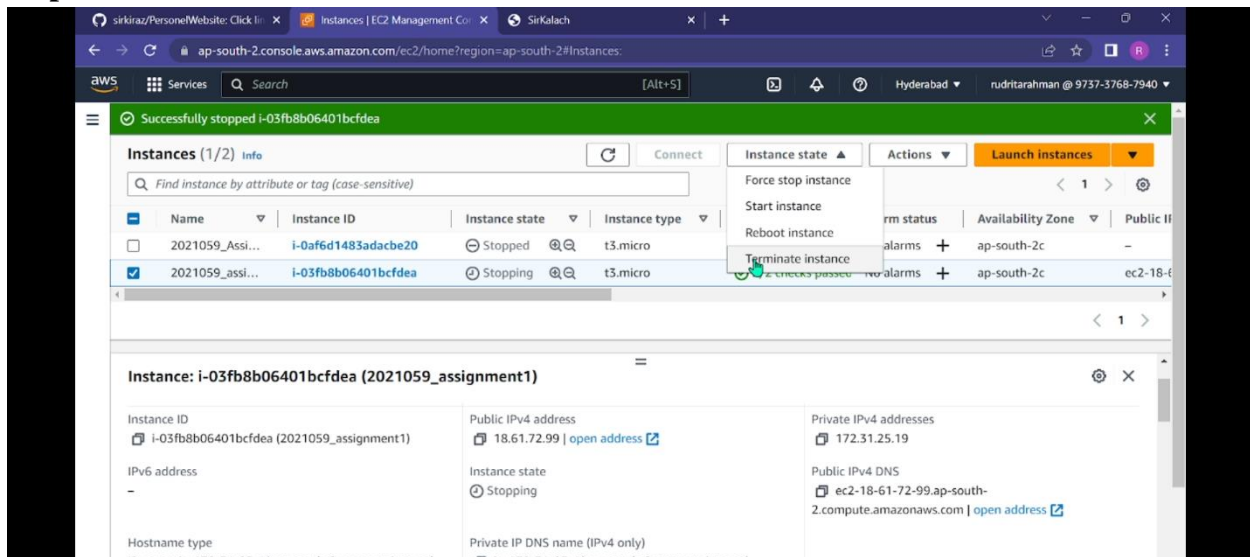
Stop instance?

Instance IDs
i-03fb8b06401bcfdea (2021059_assignment1)

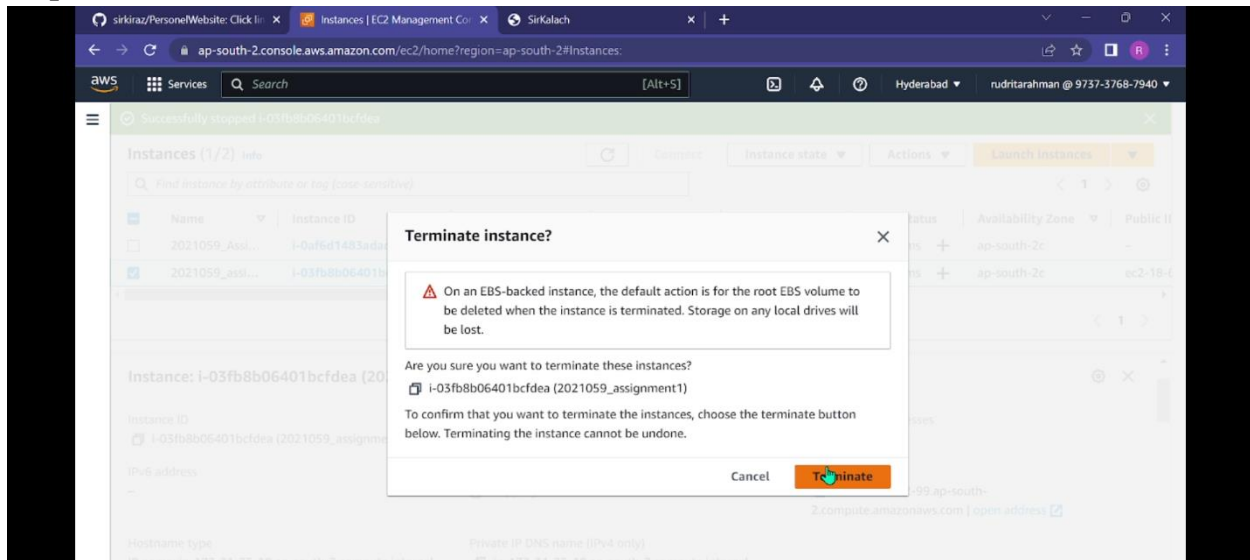
To confirm that you want to stop the instance, choose the Stop button below.

Cancel Stop

Step 37:



Step 38:



Commands:

```
sudo su
```

```
sudo apt update
```

```
sudo apt install apache2
```

```
sudo systemctl status apache2
```

```
sudo apt update && sudo apt install git
```

```
git clone https://github.com/sirkiraz/PersonelWebsite.git # add GitHub link
```

```
ls
```

```
cd PersonelWebsite # Folder name
```

```
ls
```

```
mv * /var/www/html
```

```
cd
```

```
cd /var/www/html/
```

```
ls
```

```
/var/www/html#
```