AWS EC2 + AMI + EBS Mini Project — Web Server Deployment

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Objective

This mini project demonstrates how to launch an EC2 instance with Ubuntu, configure a web server using Apache and PHP, attach an EBS volume, create an AMI, and then launch a new EC2 instance from that AMI.

We will:
✅ Launch an EC2 instance (Ubuntu)
✅ Install Apache2 + PHP
✅ Attach and mount an EBS volume
✅ Create a simple PHP app
✅ Create an AMI of the configured EC2
✅ Launch a new EC2 from that AMI

Tools Used

- AWS Management Console
- EC2 (Ubuntu 24.04 LTS)
- Amazon EBS
- Amazon AMI
- Apache2 + PHP
- Web browser

Steps and Screenshots

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1 EC2 Instance Launch

- Launched EC2 instance using Ubuntu 24.04 LTS AMI
- Selected t2.micro (Free Tier)
- Configured Security Group: SSH (22), HTTP (80)

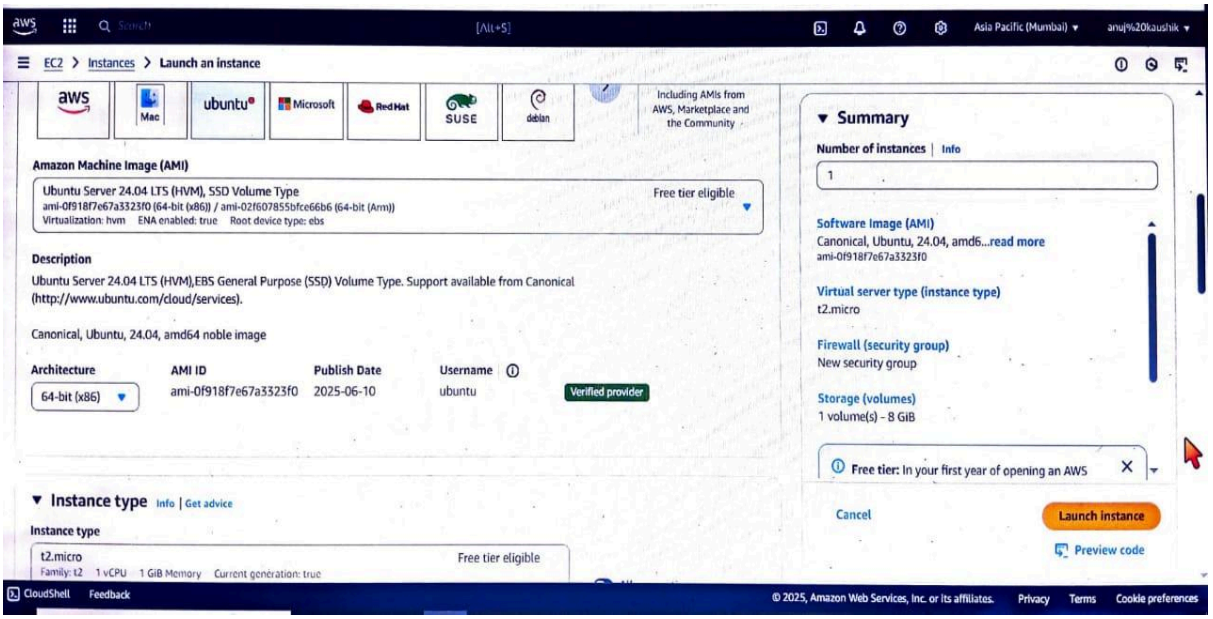

Figure 1: EC2 Instance Launch Page (t2.micro)

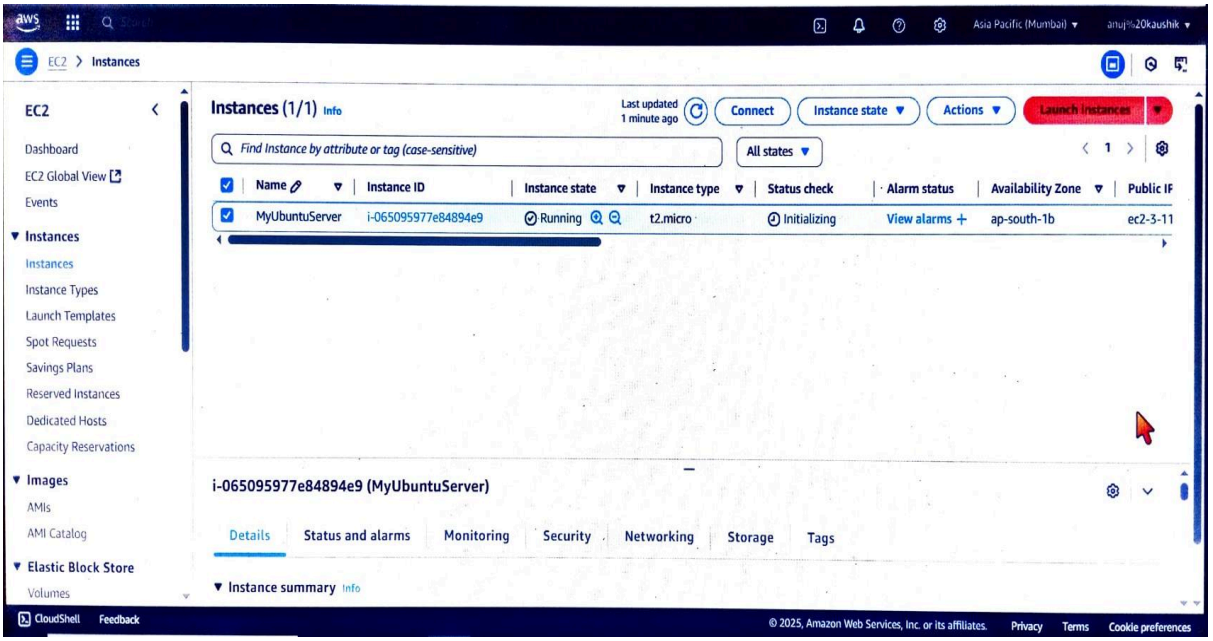

Figure 2: EC2 Instance in Running State

2️⃣ Connect to EC2 & Install Apache + PHP

SSH connection:

```
ssh -i "key.pem" ubuntu@<EC2-Public-IP>
```

Update & install:

```
sudo apt update && sudo apt upgrade -y
sudo apt install apache2 -y
sudo apt install php libapache2-mod-php -y
sudo systemctl status apache2
```

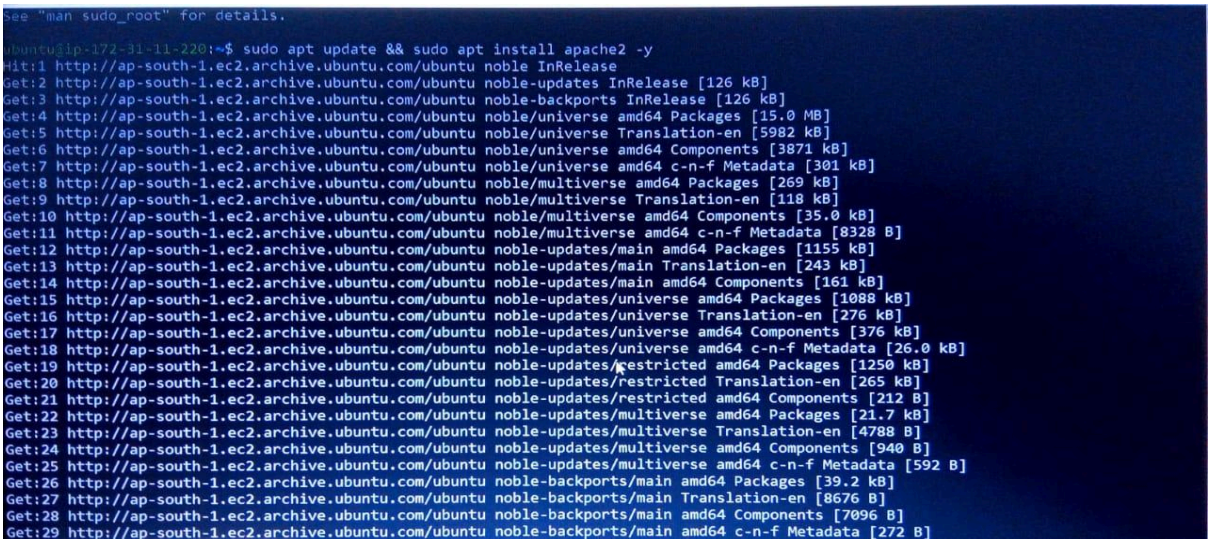

Figure 3: SSH Terminal — Apache Install Output

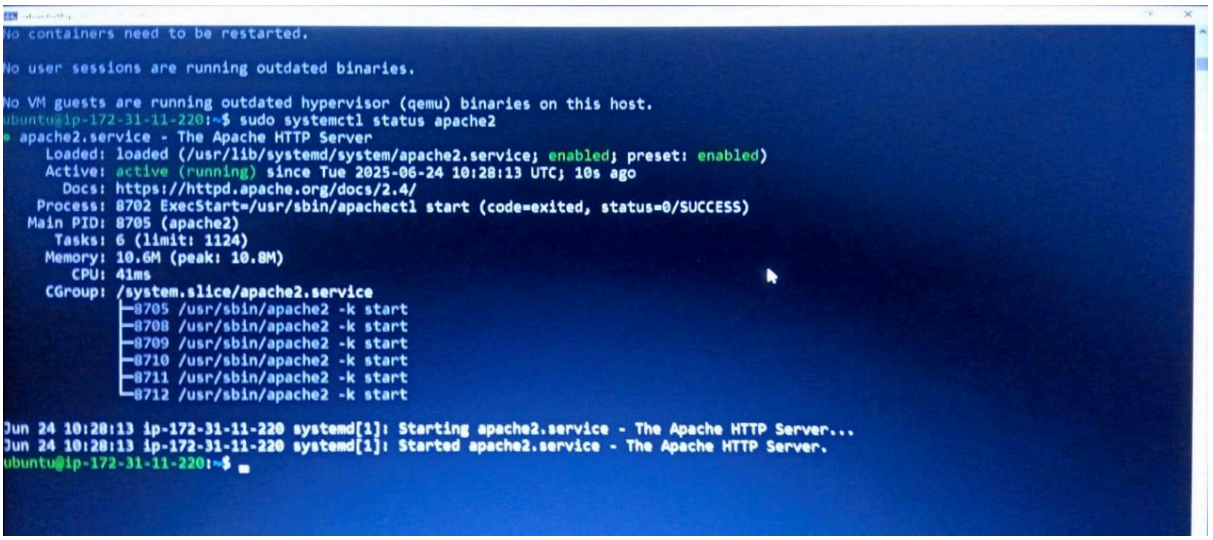

Figure 4: Apache Service Status

3️⃣ EBS Volume Create + Attach + Mount

- Created new EBS volume and attached to EC2
- Verified

```
lsblk
sudo mkfs.ext4 /dev/xvdf
sudo mkdir /data
sudo mount /dev/xvdf /data
sudo df -h
```

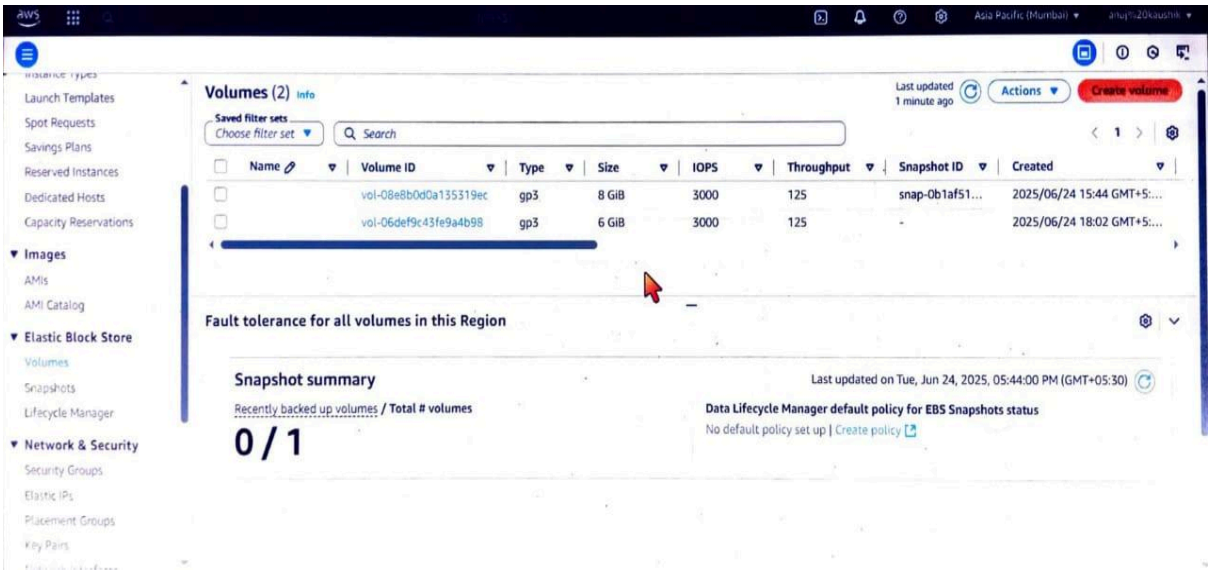

Figure 5: EBS Created and Attached (AWS Console)

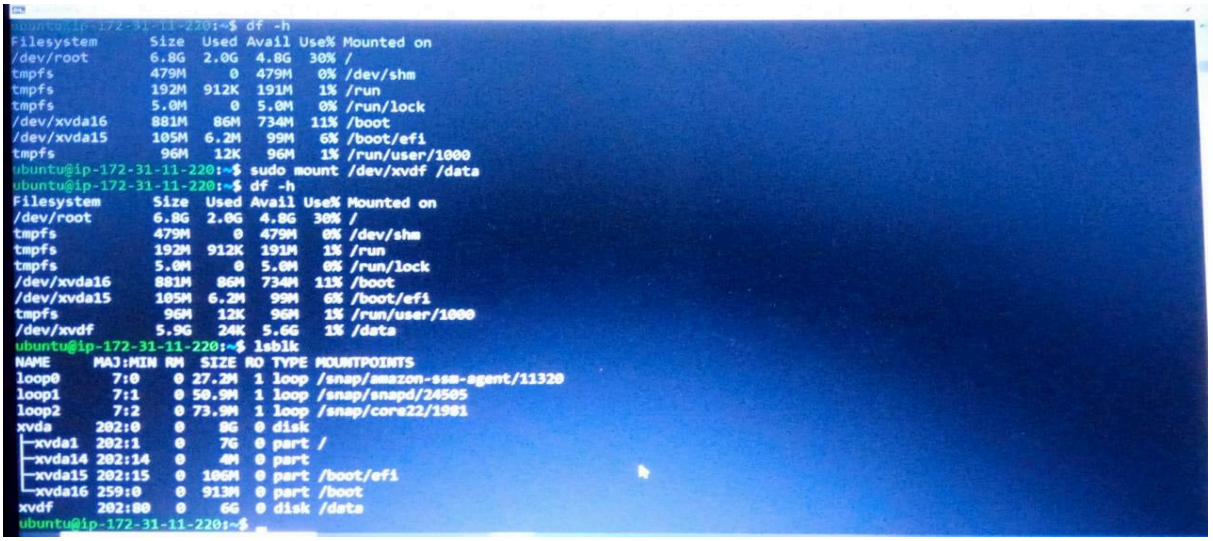

Figure 6: Terminal Output (lsblk and mount)

4️⃣ Simple PHP App

Created index.php:

sudo nano /var/www/html/index.php

Code:

```
<?php
echo "Hello Aryan! EC2 + EBS + AMI is working.";
?>
```

Restart Apache:

sudo systemctl restart apache2

Test in browser:

http://<EC2-Public-IP>

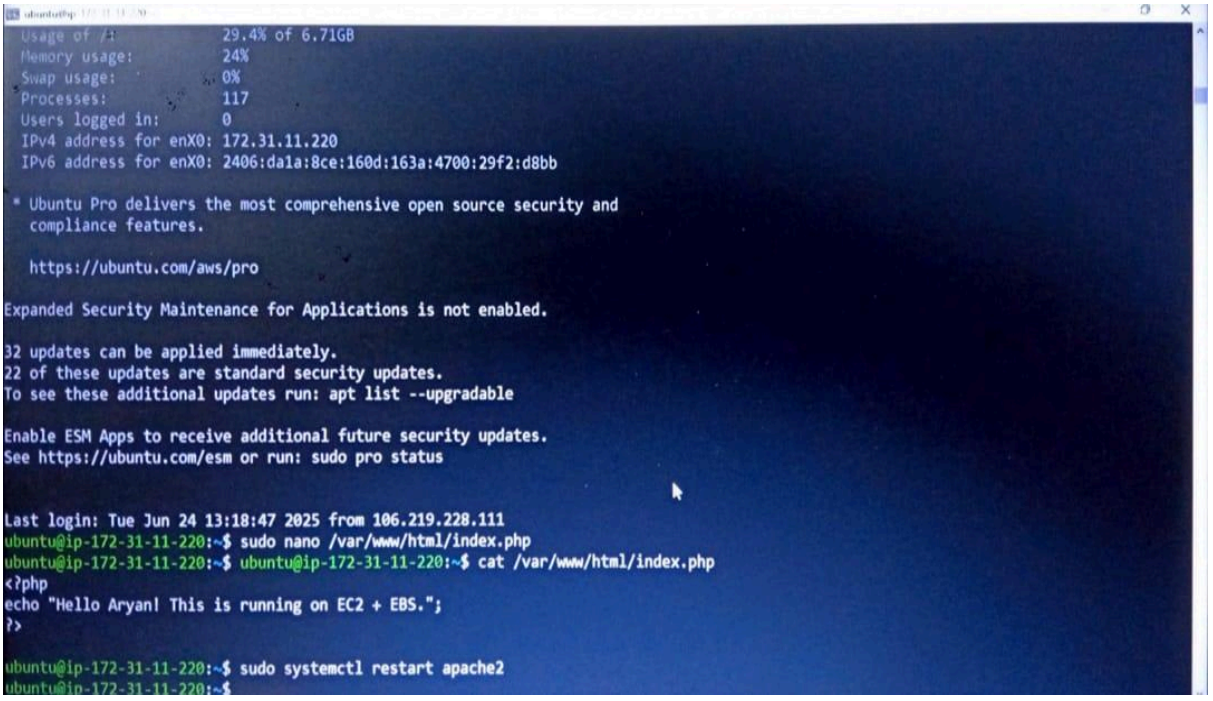

Figure 7: index.php Source Code

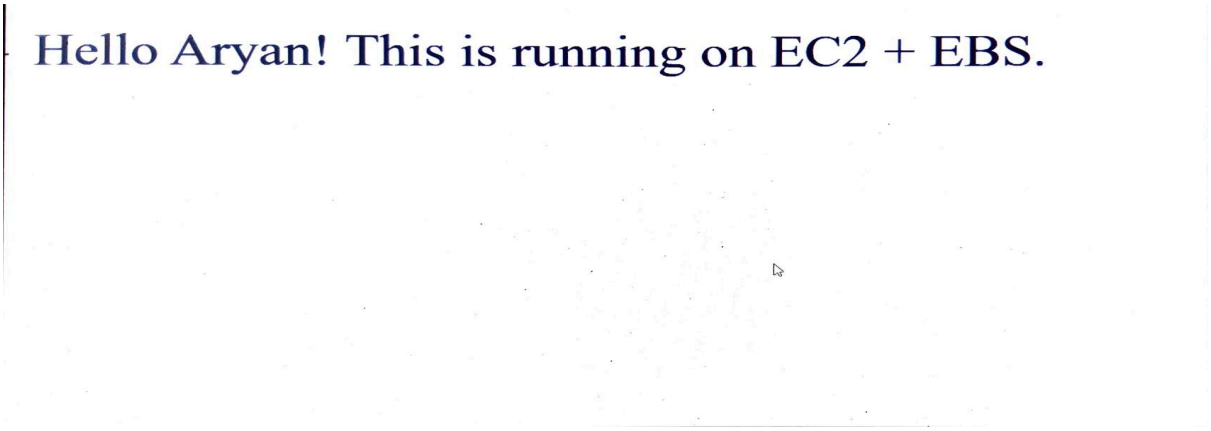

Figure 8: Final App Output in Browser

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5 Create AMI

- EC2 ➔ Actions ➔ Create Image
- Name: Aryan-EC2-PHP-App

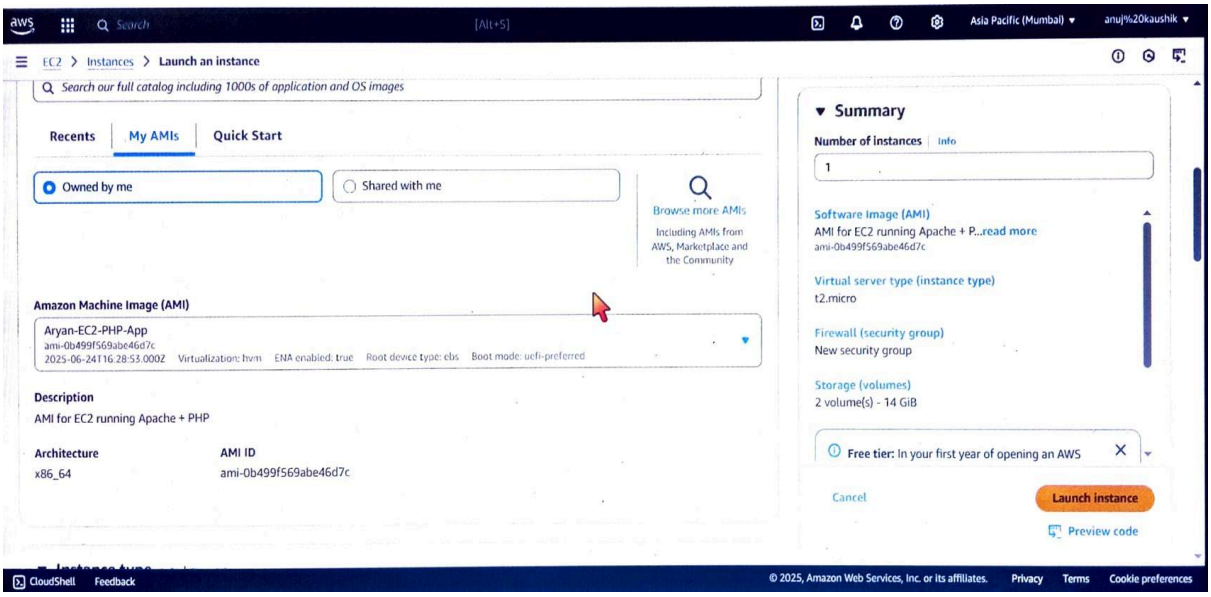

Figure 9: AMI Creation Page

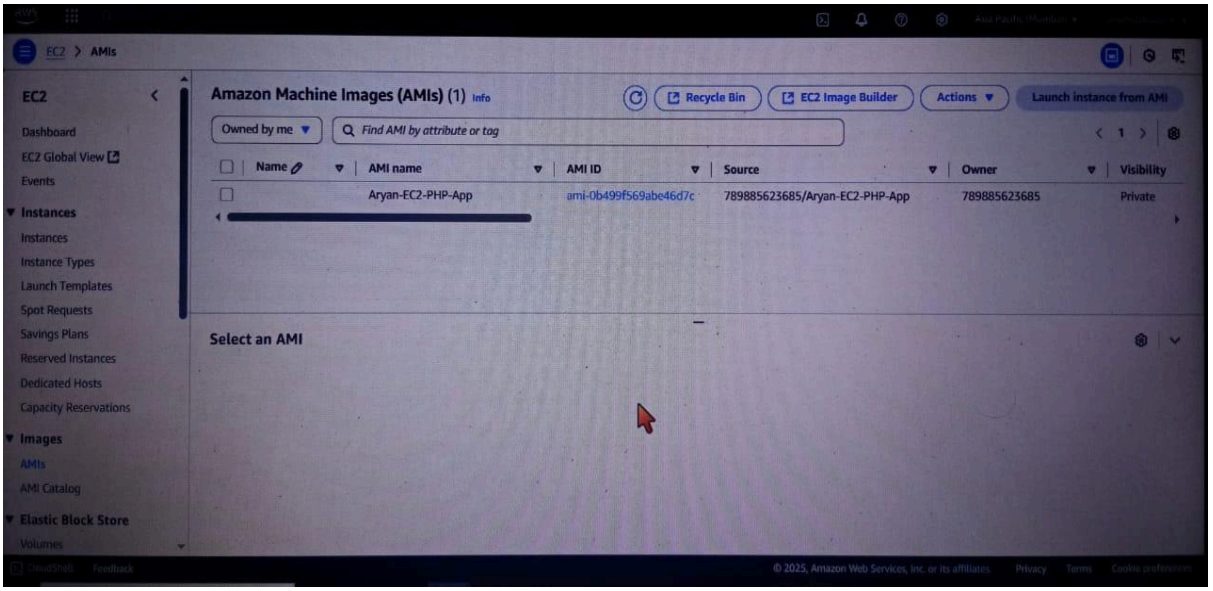

Figure 10: AMI Created and Available in AMIs List

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6 Launch New EC2 From AMI

- Launched EC2 using created AMI
- Connected and verified app

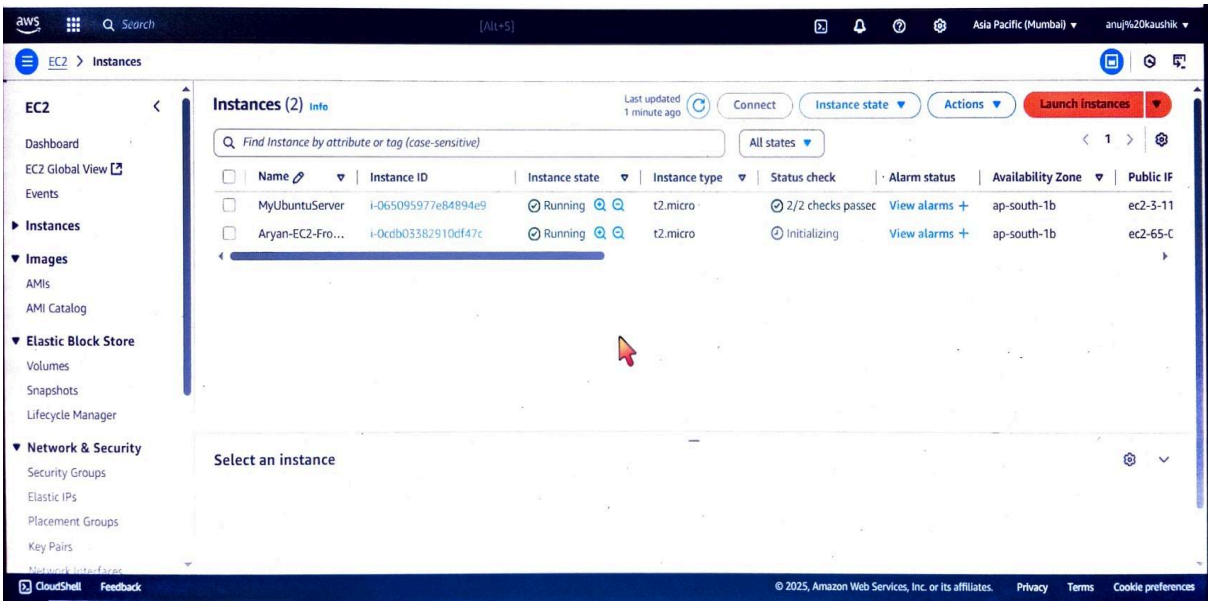

Figure 11: New EC2 Created from AMI

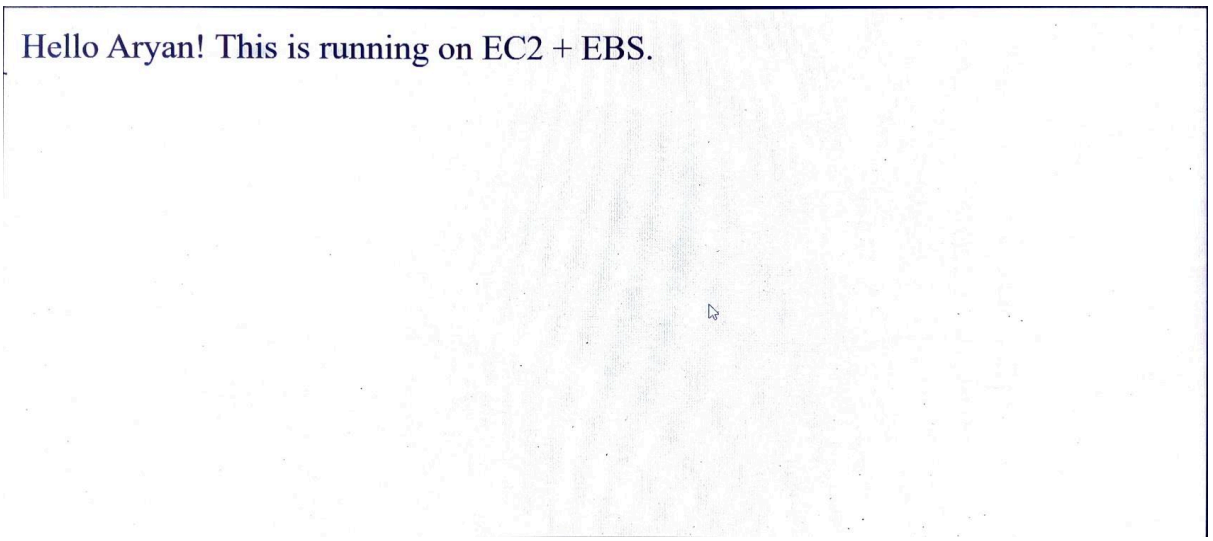

Figure 12: Final App Output in Browser from New EC2

Conclusion

This project successfully demonstrated:
✅ Launching an EC2 instance with Apache2 + PHP
✅ Attaching and using EBS for storage
✅ Creating an AMI for backup/reuse
✅ Launching new EC2 instance using AMI

This ensures that server setups can be replicated quickly and reliably in AWS.