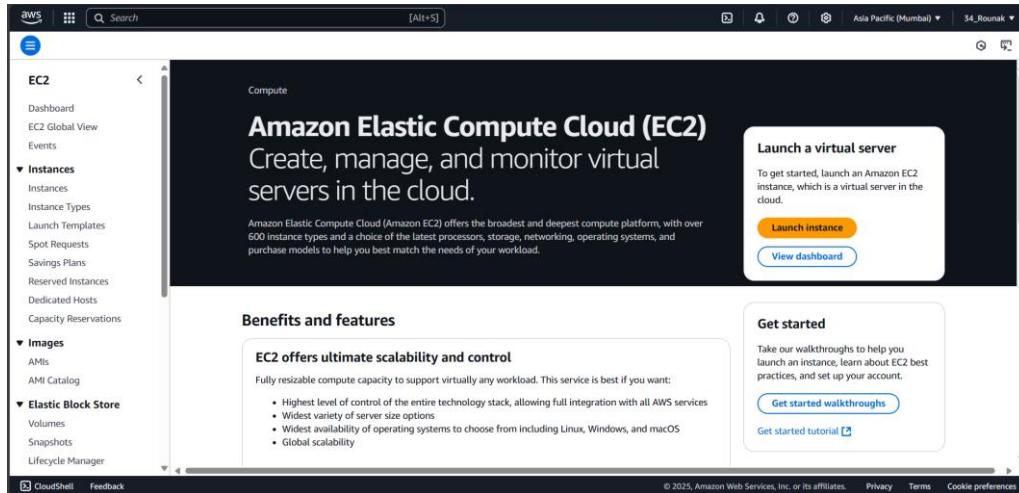


## Assignment number: 14

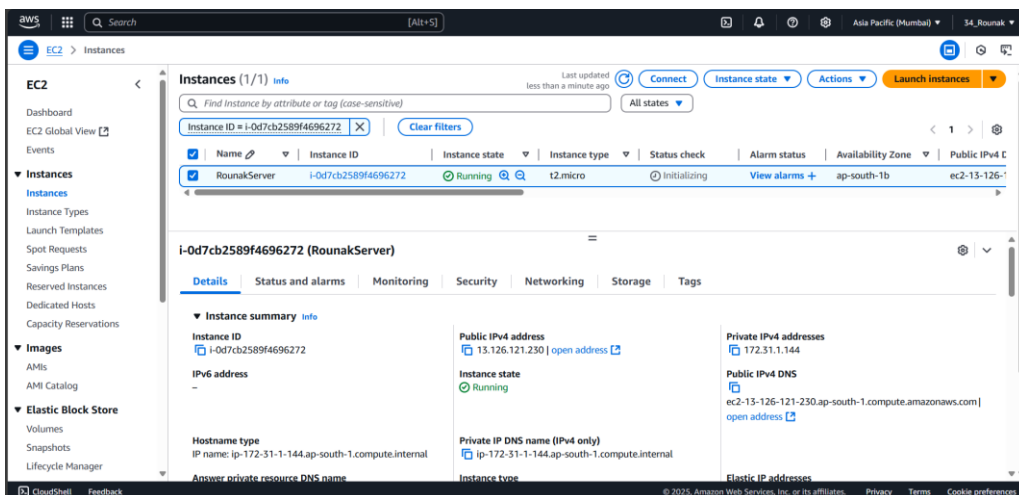
**Problem definition:** Create an Elastic IP for an Instance.

Step 1: Sign in to your AWS account as the root user.

Step 2: Log in to the AWS Management Console, use the search bar to search for “EC2,” and click on the EC2 service. Click on “Launch instance”.

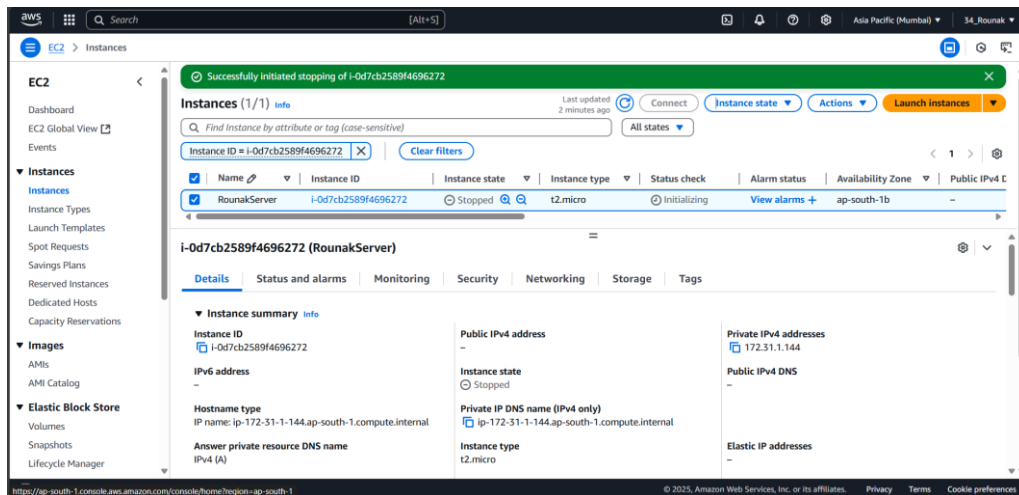


Step 3: In the **Name and Tags** section, enter a descriptive name for your instance. Under **Application and OS Images**, choose **Ubuntu**. Ensure that the selected instance type meets your requirements. In the **Key pair (login)** section, select your pre-existing key pair. Next, in **Network settings**, under **Security group** choose **Select an existing security group** and attach the group that already defines your inbound/outbound rules. Click on “Launch instance”. Once the instance is launched, you should see it listed under **Instances**.

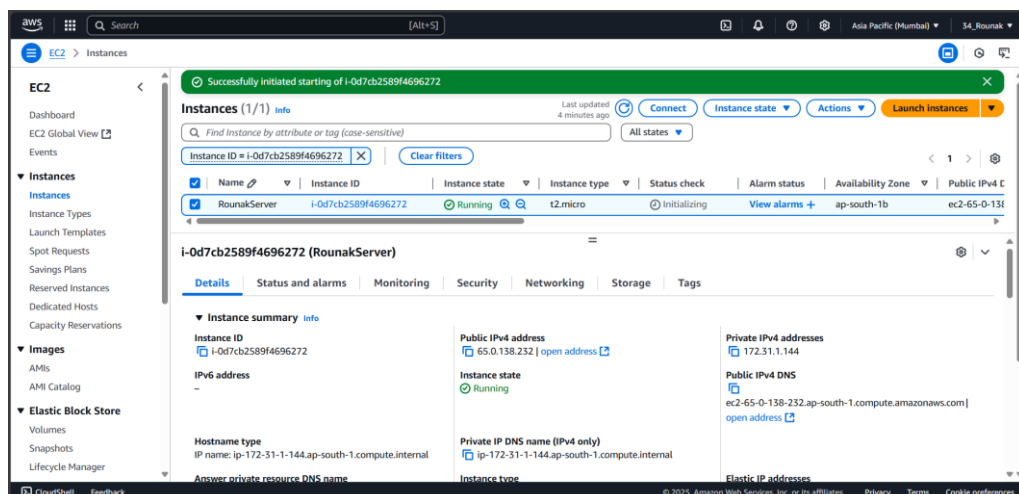


Step 4: Ensure the instance is in the “running” state before proceeding. Click on the **Instance ID** to view more details. In the EC2 details, click on the **Public IPv4 address** and copy it. Save this IP address in a text file for future comparison (in our case, the **Public IPv4 address** is 13.126.121.230).

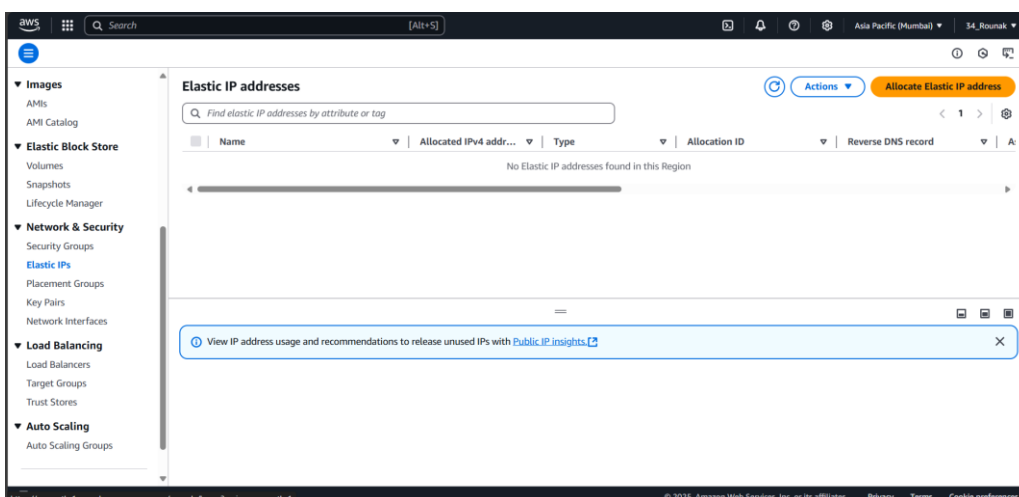
Step 5: With the instance selected, open the **Instance State** dropdown menu. Click **Stop Instance** to temporarily stop the instance (put it in a sleep state).

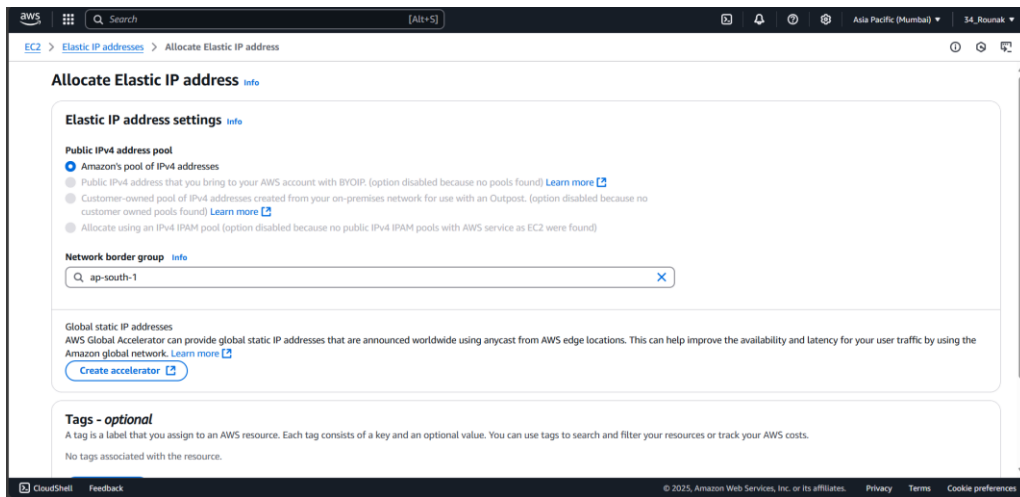


Step 6: After the instance stops, open the **Instance State** dropdown menu and click **Start Instance** to restart it. Once the instance is running again, check the **Public IPv4 address**. Save this new IP address and compare it with the previous one from Step 4. You will observe that the public IP address has changed after the stop/start cycle (in our case, now the **Public IPv4 address** is 65.0.138.232).

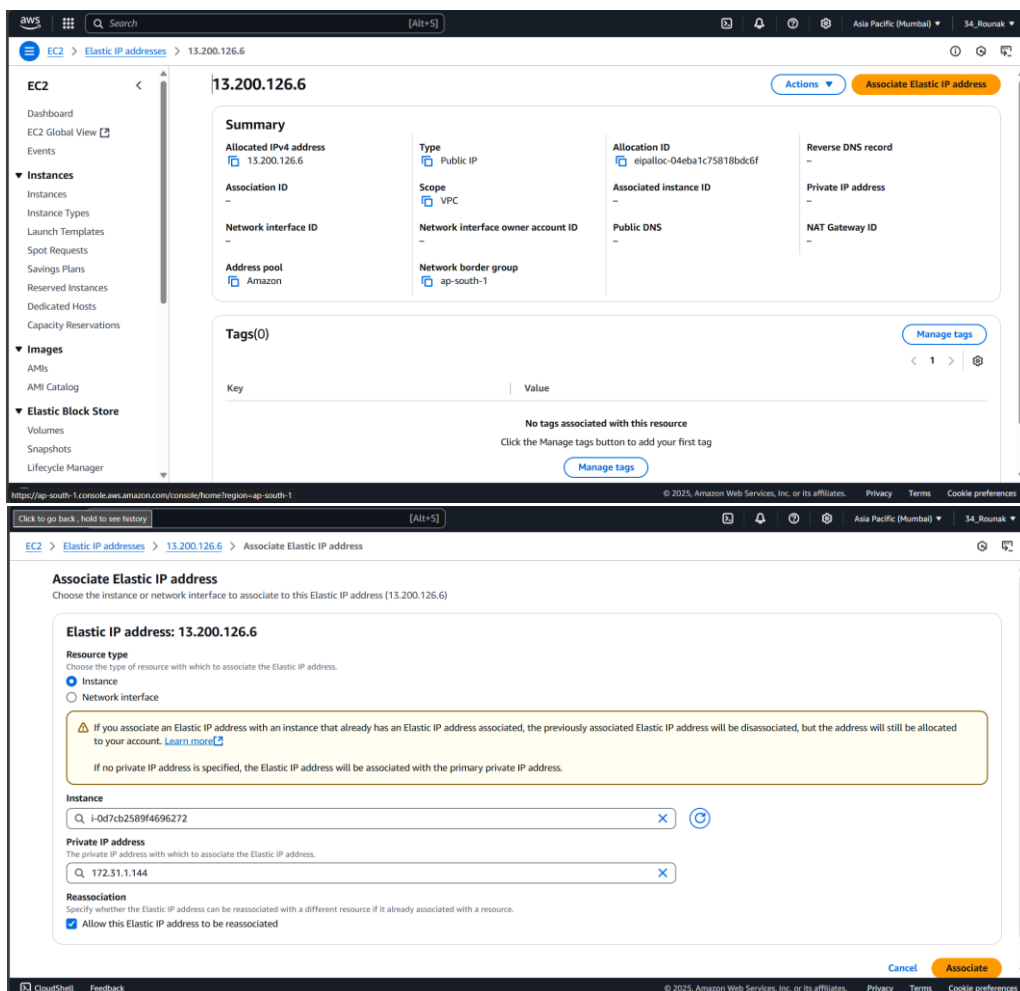


Step 7: From the EC2 Dashboard sidebar, click on **Elastic IPs**. Click on the **Allocate Elastic IP address** button at the top right corner. Choose **Amazon's pool of IPv4 addresses** under the **Public IPv4 Address pool**. Click **Allocate** to generate a new Elastic IP address.

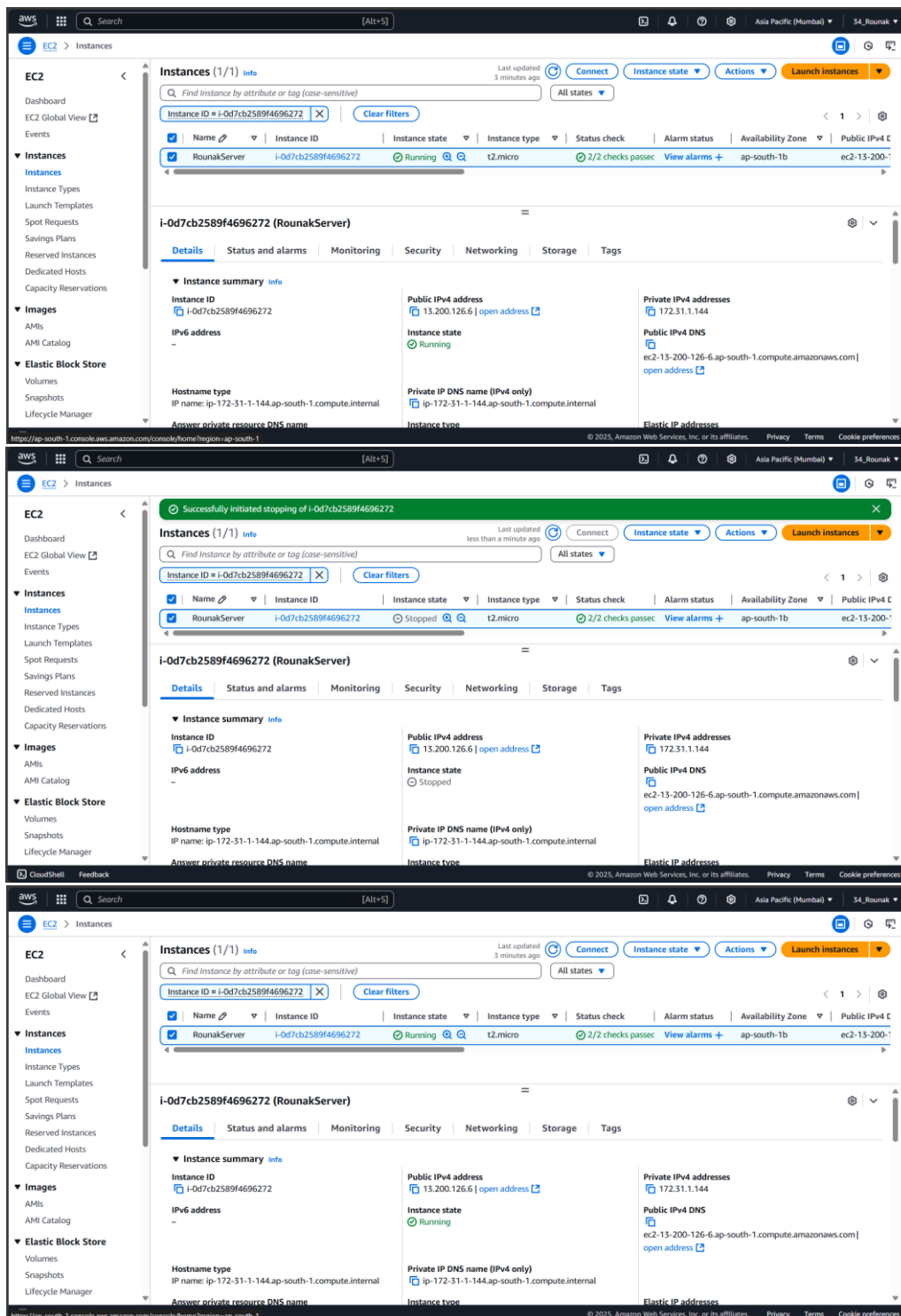




Step 8: Click on the newly allocated Elastic IP to open its details. Click on **Associate Elastic IP address**. Set the resource type to **Instance**. Select your instance from the dropdown list. Choose the private IP address associated with your instance (usually the primary private IP). Check the option **Reassociation**. Click on **Associate** to bind the Elastic IP to your instance.



Step 9: Copy the Elastic IP address you just associated. Stop and start your EC2 instance again as in Steps 4-6. After restarting, verify the Public IPv4 address displayed for your instance. It should match the Elastic IP assigned earlier and remain constant through restarts.



## **Conclusion:**

In conclusion, this assignment effectively demonstrated how to create and associate an Elastic IP address with an AWS EC2 instance. By allocating an Elastic IP from Amazon's pool and attaching it to the instance, we ensured the public IP address remains static even after stopping and restarting the instance. This provides a reliable and consistent endpoint, which is essential for hosting applications, maintaining DNS configurations, and ensuring uninterrupted remote access. This process highlights the importance of Elastic IPs in managing AWS resources efficiently.