Assignment 14

Create an elastic IP for an instance.

✅ Objective

Learn how to create and assign an **Elastic IP** to an EC2 instance so that its public IP remains **static**, even if the instance is stopped and started again.

□ Why Elastic IP?

When you stop and restart an EC2 instance, the **public IPv4 address changes**. This is a problem if:

- You're hosting a website or application.
- You're using a custom domain that points to that IP.

To prevent this, **Elastic IP** acts as a **static IP** that you can attach to any EC2 instance, ensuring consistent access.

🛠 Steps to Perform the Lab

A. Create an EC2 Instance

1. **Login to AWS Console** → Go to **EC2 Dashboard**.
2. Click **"Instances (Running)"** > Click **"Launch Instance"**.
3. **Name your instance**
   Under *Name and tags*, enter:
   ➤ `Snehaec2WebServer` (or any preferred name)
4. **Choose OS Image (AMI)**
   ➤ Under *Application and OS Images*, select:
   - **Quick Start**
   - **Ubuntu** (Free Tier Eligible)
5. **Create or Select a Key Pair**
   - Choose an existing key pair or click **Create new key pair**
   - Give a name like `snehaa1234`
   - Select:
     - **Key pair type**: RSA
     - **File format**: .pem
   - Click **Create key pair** and download the `.pem` file
6. **Choose Instance Type**
   ➤ Keep default: `t2.micro` (Free Tier Eligible)
7. **Configure Security Group (Firewall Rules)**
   Select *Create security group* and **check all three options**:
   - ✅ Allow SSH (for connecting to instance)
   - ✅ Allow HTTPS (secure web access)
   - ✅ Allow HTTP (web access)
8. **Launch Instance**

- Review summary
- Click **Launch Instance**
- On confirmation page, click **"View all instances"**

B. Observe Public IP Change on Restart

1. **Copy current Public IPv4 address** of your instance
   ➤ Found in instance details pane
2. **Stop the instance**
   ➤ Actions > Instance state > Stop instance
3. **Start the instance again**
   ➤ Actions > Instance state > Start instance
4. **Check the Public IPv4 address again**
   ➤ You'll notice it has **changed**
   ✓ Confirms why Elastic IP is needed.

C. Allocate an Elastic IP

1. On left menu, go to:
   ➤ **Network & Security > Elastic IPs**
2. Click **Allocate Elastic IP address**
3. Keep default settings and click **Allocate**

D. Associate Elastic IP with Instance

1. Select the newly allocated IP
   ➤ Click **"Associate Elastic IP address"**
2. In the form that opens:
   - **Resource Type**: Select `Instance`
   - **Instance**: Select your current running EC2 instance
   - **Private IP**: Keep default
   - ✓ Check **"Allow this Elastic IP address to be reassociated"**
3. Click **Associate**

E. Verify Elastic IP Behavior

1. **Copy current Public IPv4 address** (this is now your **Elastic IP**)
2. **Stop and start the instance again** as before

3. **Check the Public IPv4 address again**
   ➤ You'll see **it hasn't changed this time** ✓
   🔒 Success! Your instance now has a static IP.

F. Clean Up (Optional)

If you want to remove the Elastic IP:

1. **Disassociate Elastic IP**
   ➤ Go to **Elastic IPs** > Select IP > Actions > **Disassociate Elastic IP**
2. **Release Elastic IP**
   ➤ After disassociation, select again > Actions > **Release Elastic IP**

🎯 Summary

Without Elastic IP	With Elastic IP
Public IP changes after restart	Static IP remains the same
Manual DNS update needed	No DNS changes required
Less reliable for hosted apps	Ideal for hosting apps/websites