

Assignment No: 10

Problem Statement: Deploy a project from GitHub to EC2 by creating a new security group and user data.

Solution:

To deploy a project from GitHub to EC2 by creating a new security group and user data, the steps are-

1.Login to AWS console and select EC2.From there select **Security Groups** under **Networks & Security** section and then click on **create security groups**.

2.Enter **Security group name**, **Description** and add **Inbound rules** as **Custom TCP,SSH,HTTP** and **HTTPS** with the required port range and source.

The screenshot shows the 'Create security group' page in the AWS console. The 'Basic details' section includes fields for 'Security group name' (archak_security), 'Description' (archak_security), and 'VPC' (vpc-07d384cd1a1ec5feb). The 'Inbound rules' section displays a table with four rules: Custom TCP (port 4000), SSH (port 22), HTTP (port 80), and HTTPS (port 443). Each rule has a source of 'Anywhere...' and a destination of '0.0.0.0/0'. There are 'Delete' buttons for each rule.

3.Now launch an instance on EC2 using the same security groups.

4.Provide instance name ,ubuntu as OS, key pair and in **Network settings Firewall** part select the **existing security group**. From the dropdown select newly created security group.

The screenshot shows the 'Launch an instance' page in the AWS console. The 'Name and tags' section includes a field for 'Name' (archak_instance). The 'Application and OS Images (Amazon Machine Image)' section shows a search bar and a list of AMIs, with 'Ubuntu Server 24.04 LTS (HVM), 55D Volume Type' selected. The 'Summary' section displays the configuration: 'Number of instances' (1), 'Software image (AMI)' (Canonical, Ubuntu, 24.04, amd64...), 'Virtual server type (instance type)' (t2.micro), 'Firewall (security group)' (archak_security), and 'Storage (volumes)' (1 volume(s) - 8 GiB). A 'Free tier' notification is visible at the bottom right.

5. In advanced settings option's **User data part** add some commands. Then click launch instance.

6. Now copy the **public IPv4 address** of the created instance(43.205.136.64).

The screenshot displays the AWS Management Console interface for EC2 instances. The top navigation bar shows the AWS logo, search bar, and user profile. The left sidebar contains the navigation menu with categories like EC2, Dashboard, Events, and Instances. The main content area is titled 'Instances (1/1)' and includes a table of instances. The table has columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, Public IPv4 DNS, and Public IP. One instance, 'archak_instance', is listed with ID 'i-0f77d27e8dc3f399a' and is in a 'Running' state. Below the table, the 'Details' tab is selected, showing the 'Instance summary' section. This section includes fields for Instance ID, IPv6 address, and Hostname type. A tooltip is visible over the 'Public IPv4 address copied' button, indicating that the public IP address has been copied to the clipboard.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IP
archak_instance	i-0f77d27e8dc3f399a	Running	t2.micro	Initializing	View alarms +	ap-south-1a	ec2-43-205-136-64.ap-...	43.205

Instance summary

Instance ID: i-0f77d27e8dc3f399a

IPv6 address: -

Hostname type: -

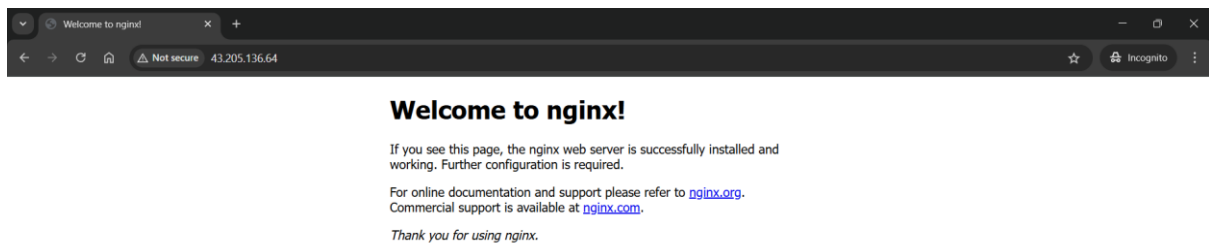
Public IPv4 address copied

Private IPv4 addresses: 172.31.41.251

Public IPv4 DNS: ec2-43-205-136-64.ap-south-1.compute.amazonaws.com

Private IP DNS name (IPv4 only): -

7. Paste the IP address in an incognito web browser.



8. Finally paste IP address as IP address as (IP:4000) i.e. 43.205.136.64:4000 to find the deployed project in EC2.



The commands used in point no. 5 under User Data part are-

```
#!/bin/bash
```

```
apt-get update
```

```
apt-get install -y nginx
```

```
systemctl start nginx
```

```
systemctl enable nginx
```

```
apt-get install -y git
```

```
curl -SL https://deb.nodesource.com/setup_16.x|sudo -E bash -
```

```
apt-get install -y nodejs
```

```
git clone http://github.com/sudip7407/Repo1.git
```

```
cd Repo1
```

```
npm install
```

```
node index.js
```