Deploying a Python Application with Nginx Proxy

Introduction

This project provides a comprehensive guide to deploying a Python application in a production environment with a proxy server. It walks through setting up the development and server environment, installing necessary dependencies, configuring the application, and integrating a proxy server (such as Nginx) to efficiently route and manage incoming traffic. By following this guide, the application can achieve improved performance, scalability, and security.

Features

- Production-Ready Deployment – Configured to run smoothly in a production environment.
- Proxy Server Integration – Uses Nginx (or Apache) to efficiently manage and route incoming requests.
- Environment Management – Supports virtual environments and .env configuration for secure and isolated setups.
- Security and Performance – Proxy setup improves request handling, security headers, and overall app performance.

Prerequisites

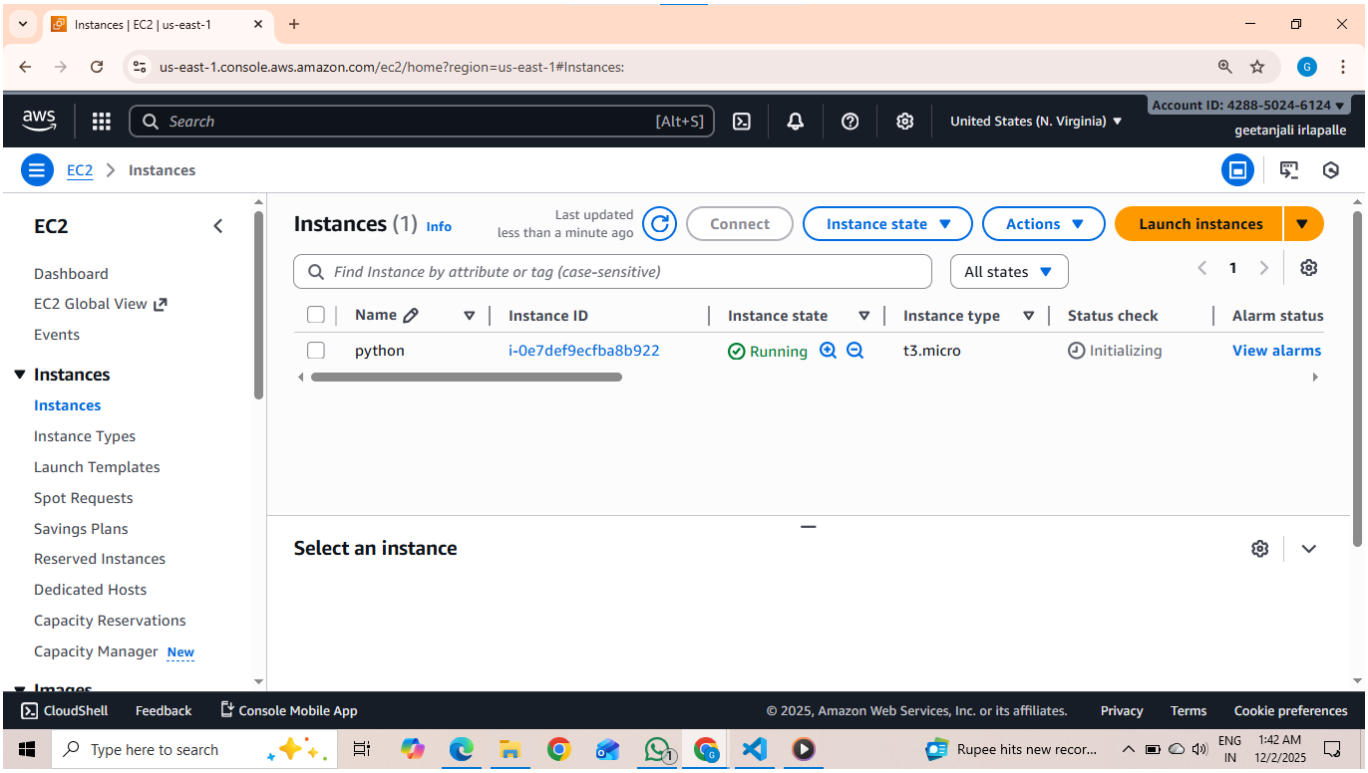
Before deploying this Python application, ensure the following are installed and configured:

- Python 3.x – The application requires Python 3 or higher.
- Pip – Python package manager to install dependencies.
- Git (optional) – For cloning the repository.
- Virtual Environment (venv) – Recommended for isolating project dependencies.
- Proxy Server – Nginx or Apache for handling and routing incoming requests.

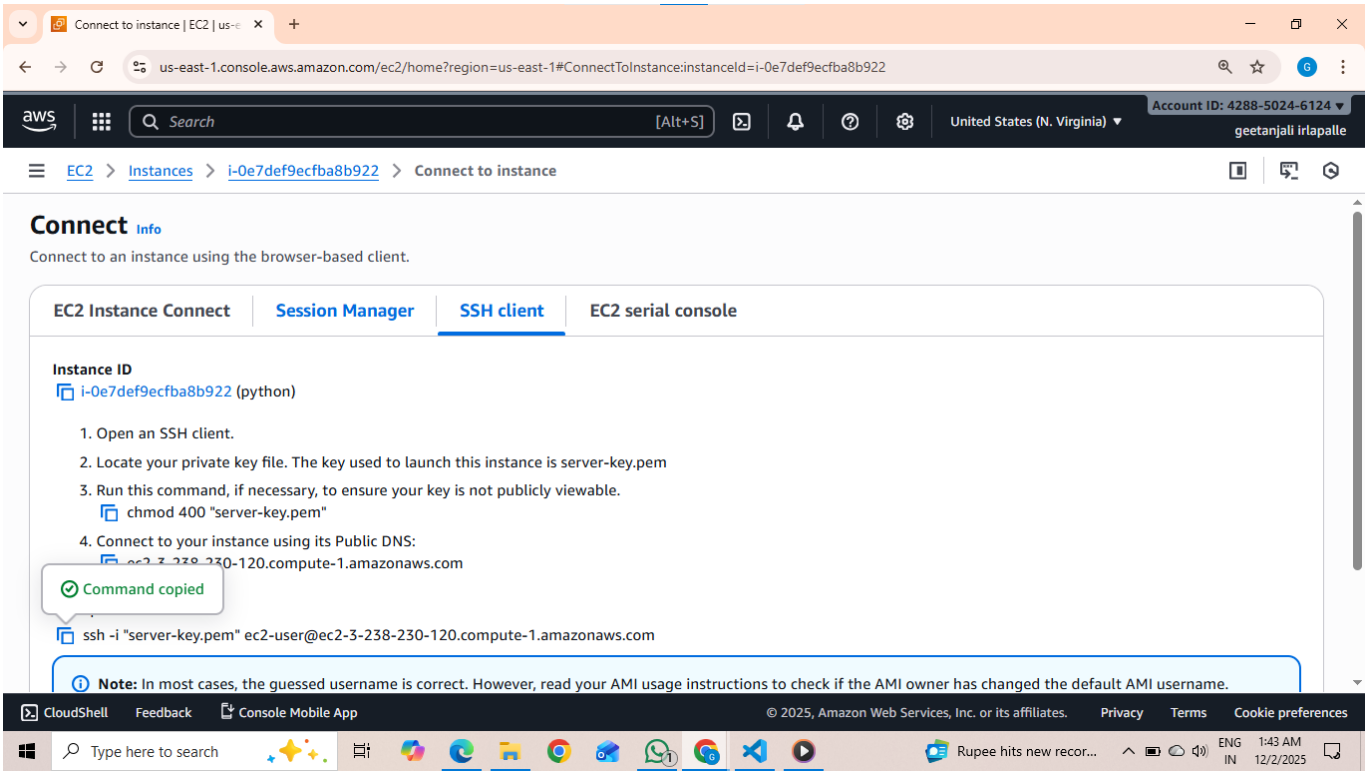
Steps to Deploy

Step 1: Launch EC2 instance and Establishing a secure connection to your EC2 instance

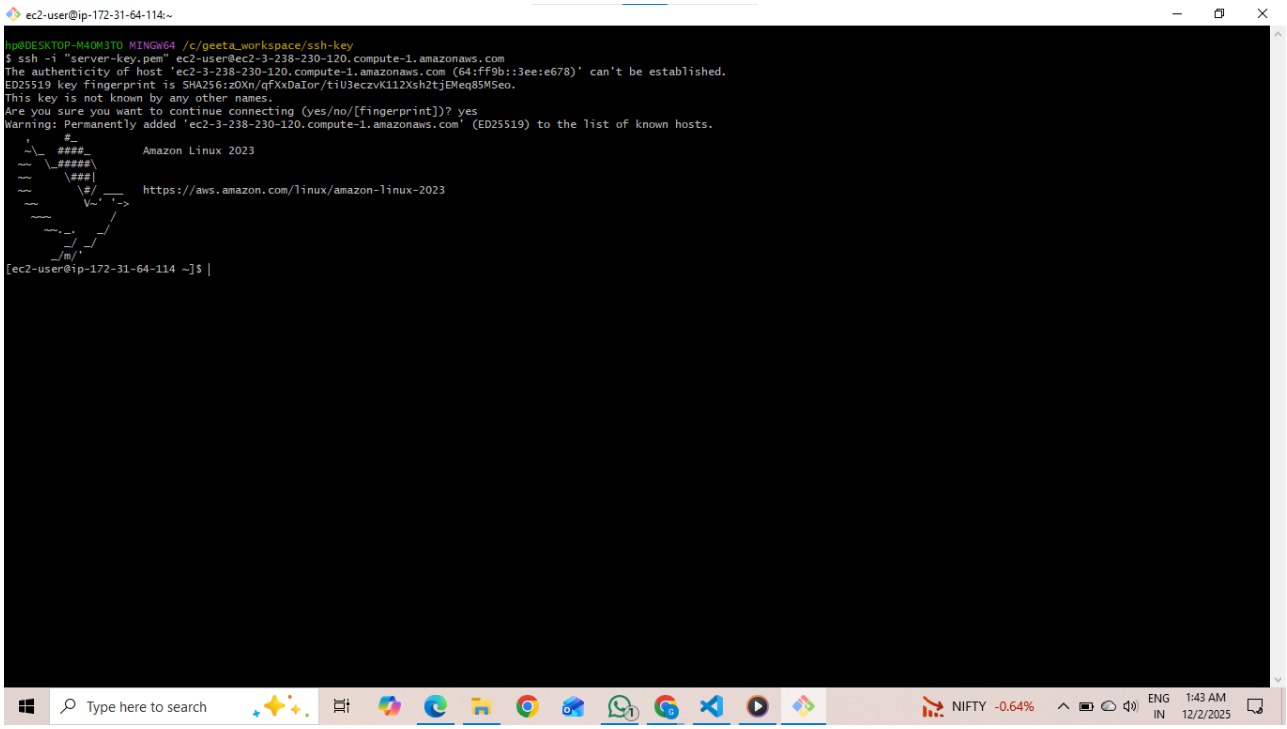
1. Launch instance



2. Copy the SSH command



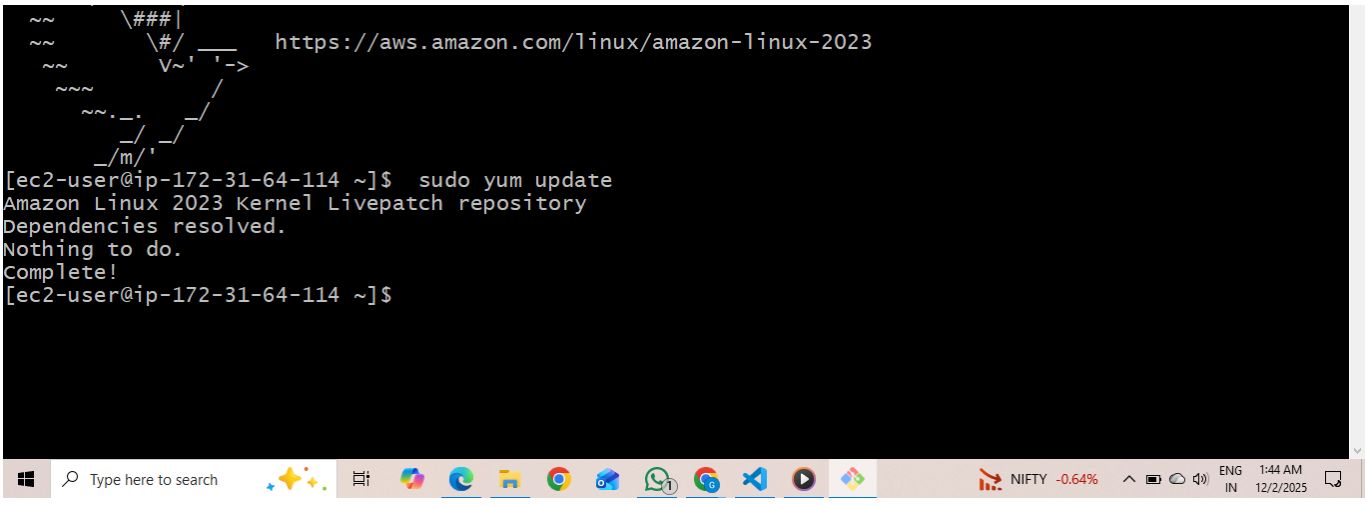
3. Paste command in Git bash



Step 2: Update Packages and Install Python

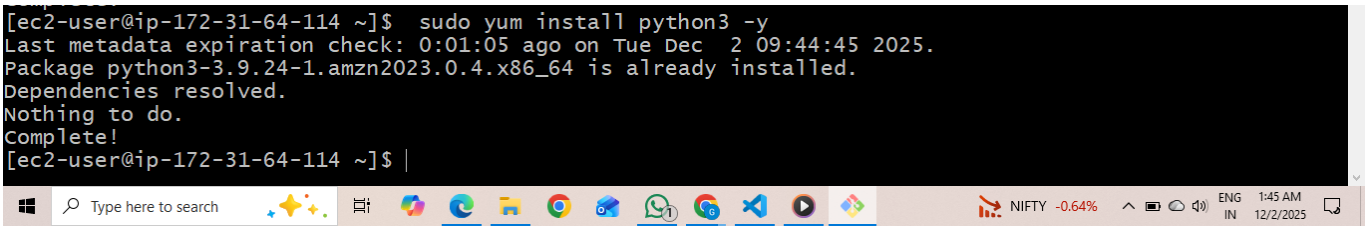
update

```
sudo yum update
```



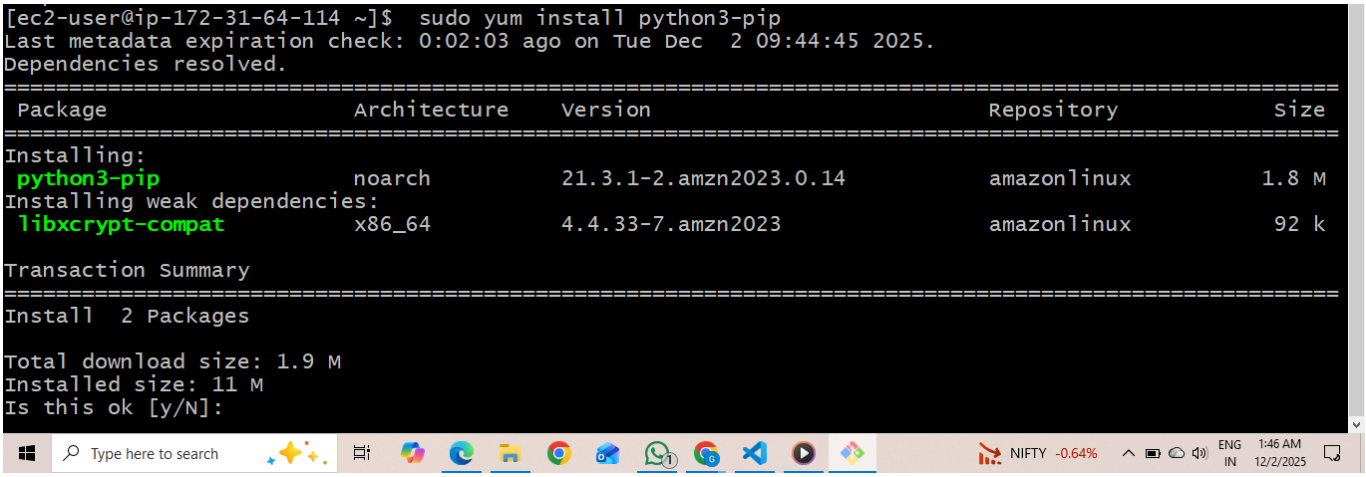
install python

```
sudo yum install python3 -y
```



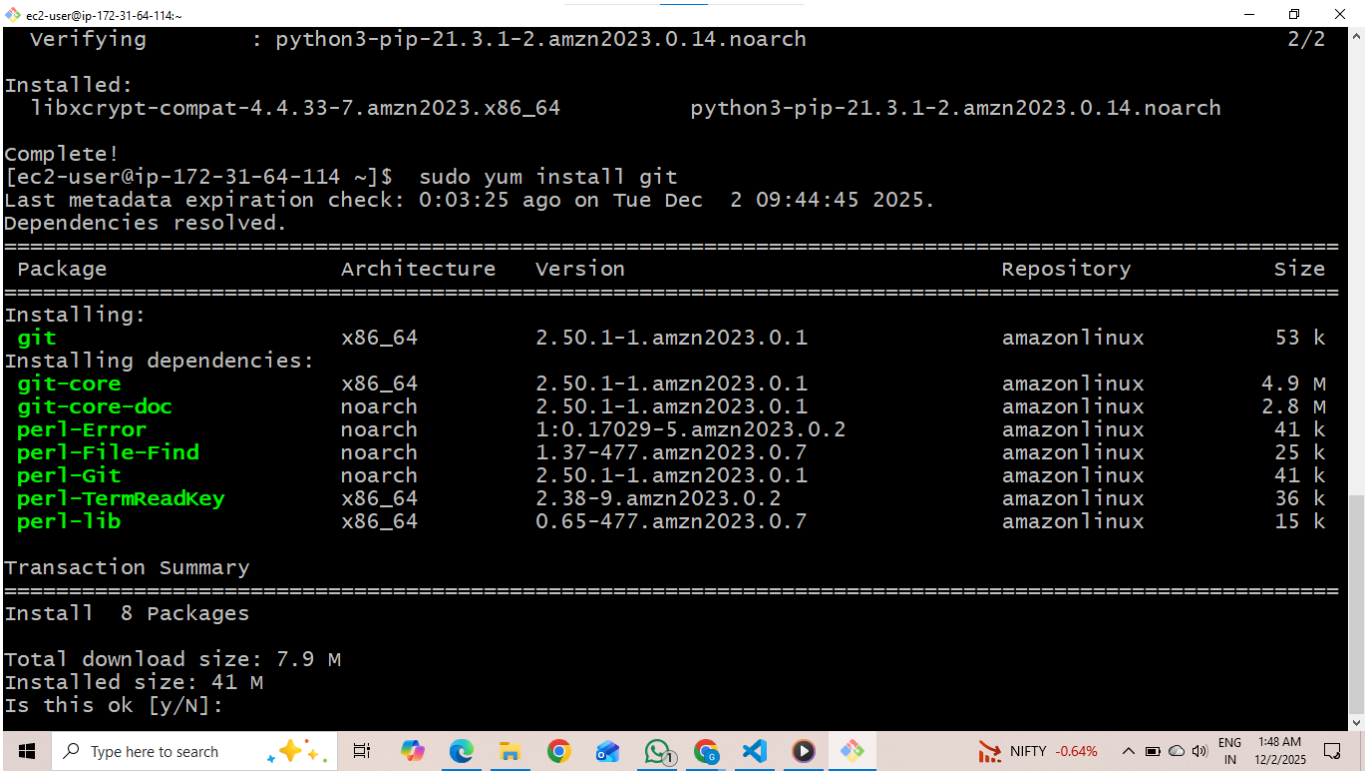
install pip

```
sudo yum install python3-pip
```



Step 3: Upload/Clone Your Application

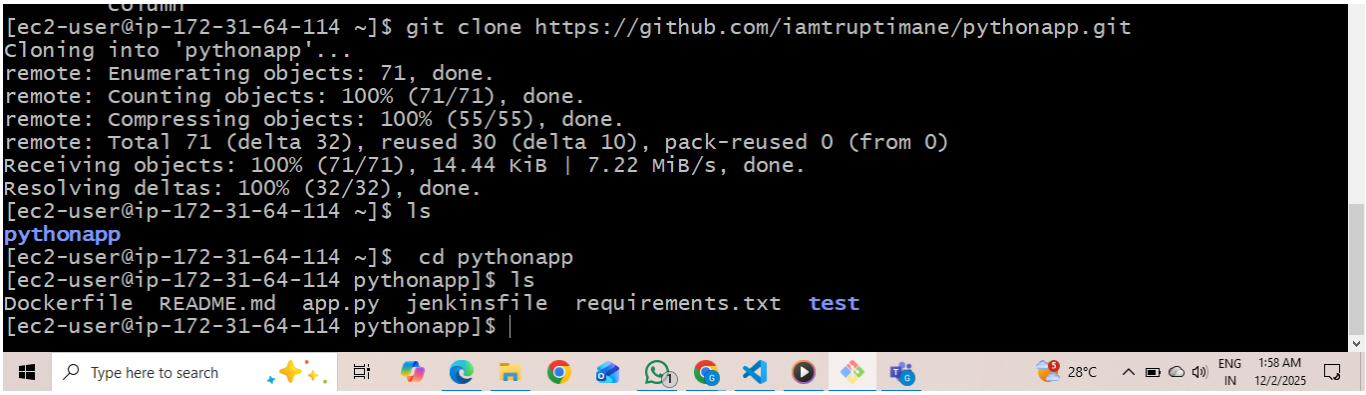
1. Install git sudo yum install git -y



2. Clone the Application and go inside the project folder (pythonapp)

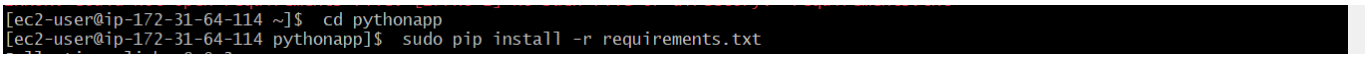
clone git application

git clone



Go inside the projrct folder

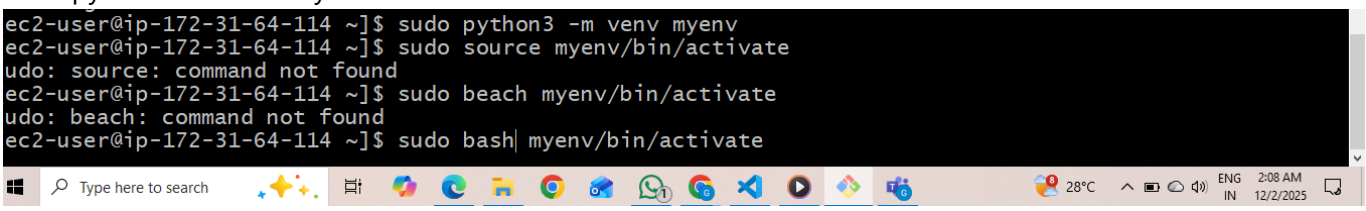
cd pythonapp



Step 4: Create a virtual environment and run activate file.

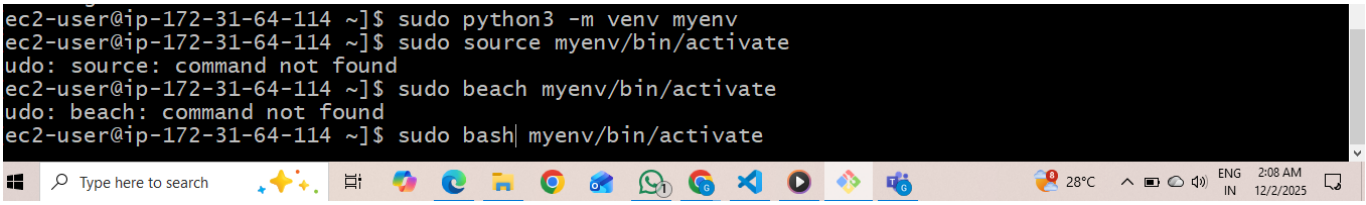
create virtual environment

sudo python3 -m venv myenv



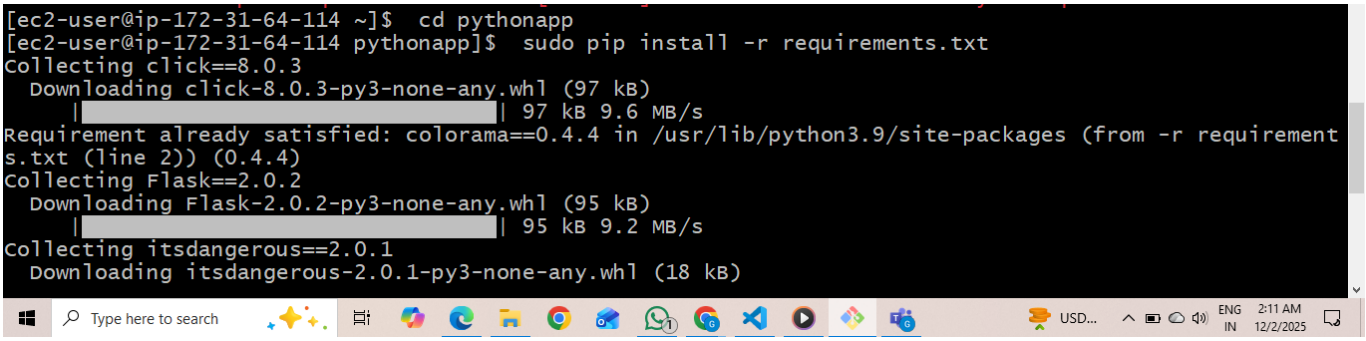
activate file

sudo source myenv/bin/activate



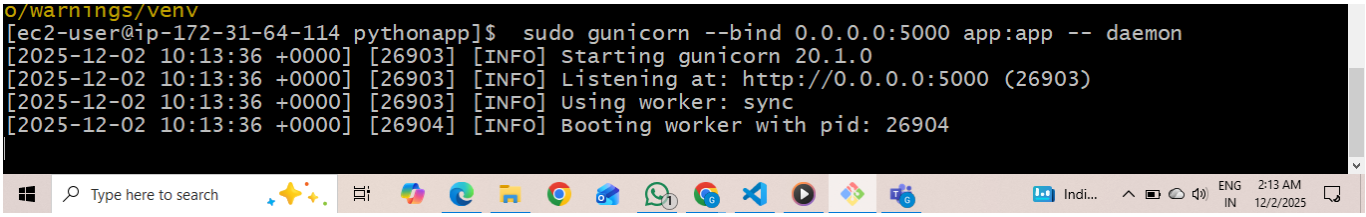
Step 5: Install Dependency.

sudo pip install -r requirement.txt



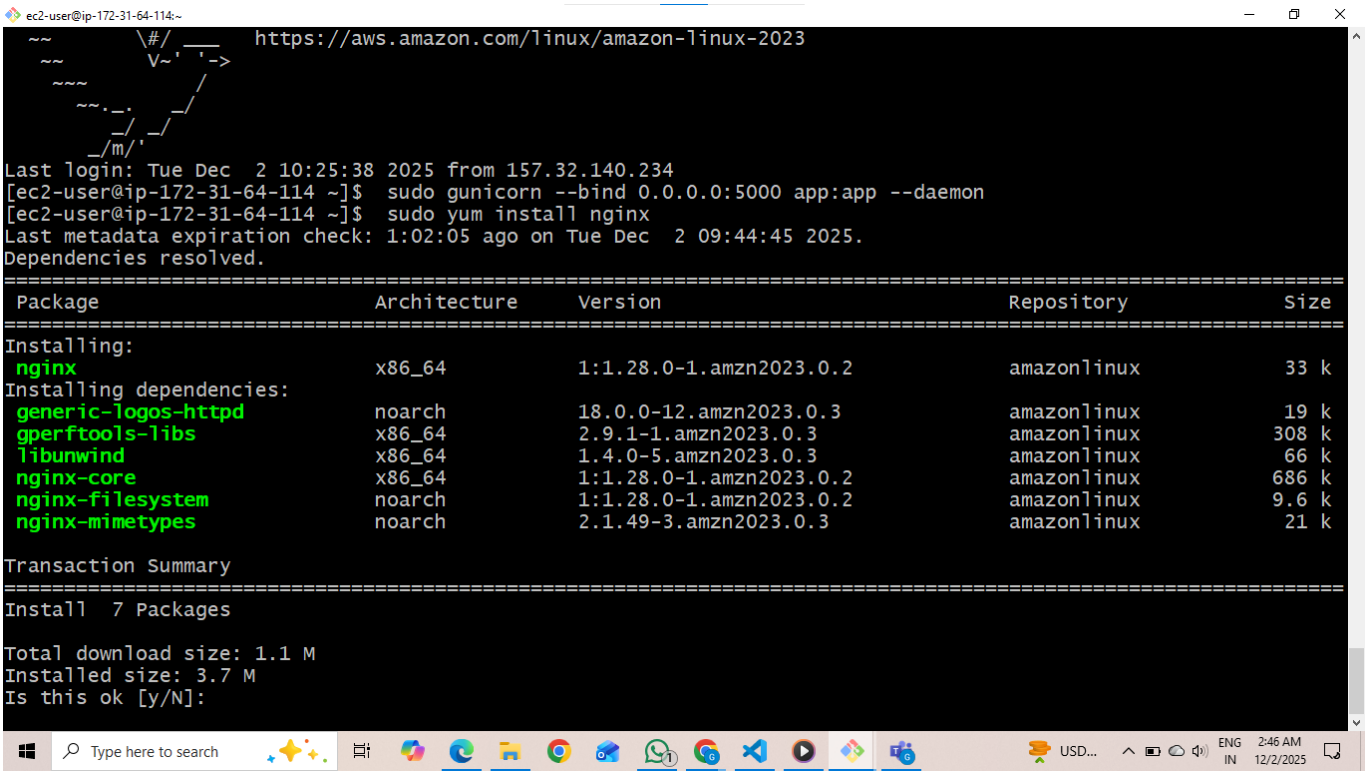
Step 6: Keep the App Running on background.

sudo gunicorn --bind 0.0.0.0:5000 <file_name>:app -- daemon

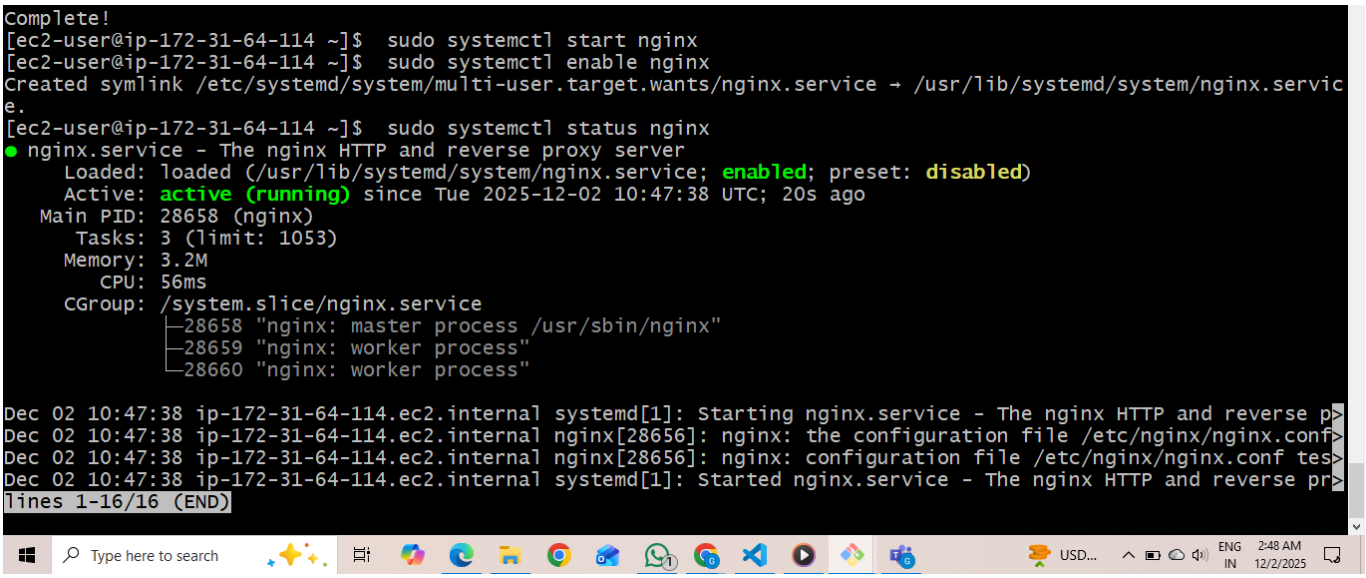


Step 7: Create Proxy Server

1. Configuring Nginx as Proxy. sudo yum install nginx



2. Start, enable and check status of nginx sudo systemctl start nginx sudo systemctl enable nginx sudo systemctl status nginx



3. Create a server block for your app

    1. open nginx.conf sudo vim nginx.conf

    2. Edit and add server block

```
location = /50x.html {
}
location /{
        proxy-pass http://localhost:5000;
}
}
```

Step 8: Testing the Deployment

Copy the public IP and paste it in any browser.

successfully deployed python application through jenkins!!!!!!!!, added webhook