Step-by-Step Guide: Setting Up Streamlit on an EC2 Instance

Introduction

This guide provides detailed, step-by-step instructions to set up a Streamlit application on an AWS EC2 instance. Follow these steps to successfully launch your application and make it publicly accessible.

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Chapter 1: Launch an EC2 Instance

1. Log in to the AWS Management Console.

2. Select the Asia Pacific (Mumbai) region (ap-south-1).

3. Go to EC2 and click "Launch Instance".

4. Choose the Amazon Machine Image (AMI): Ubuntu Server 20.04 LTS.

5. Select an instance type (e.g., t2.medium).

6. Configure instance details and add storage if needed.

7. Configure the security group to allow HTTP (port 80) and SSH (port 22) access.

8. Launch the instance and download the key pair for SSH access.

Chapter 2: Connect to Your EC2 Instance via SSH

1. Open a terminal on your local machine.

2. Navigate to the directory where your .pem file is located:

   ```
   cd path/to/your-key-pair.pem
   ```

3. Connect to your instance:

   ```
   ssh -i "your-key-pair.pem" ubuntu@your-ec2-public-dns
   ```

Chapter 3: Install Required Software on the EC2 Instance

1. Update the package list:

   ```
   sudo apt update
   ```

2. Install Python and pip:

   ```
   sudo apt install -y python3-pip
   ```

3. Install Streamlit and Leafmap:

   ```
   pip3 install streamlit leafmap
   ```

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Chapter 4: Transfer Your Application Files to the EC2 Instance

1. Use `scp` to copy your `app.py` file to the EC2 instance:

```
scp -i "path/to/your-key-pair.pem" "path/to/app.py" ubuntu@your-ec2-public-dns:/home/ubuntu/app.py
```

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Chapter 5: Run the Streamlit Application on the EC2 Instance

1. SSH into the EC2 instance (if not already connected):

```
ssh -i "your-key-pair.pem" ubuntu@your-ec2-public-dns
```

2. Navigate to the directory where the `streamliteapp.py` file is located:

```
cd /home/ubuntu
```

3. Run the Streamlit application:

```
nohup streamlit run app.py --server.port 80 --server.headless true --server.enableCORS false &
(you can change the port also ex.Port 8502)
```

Chapter 6: Troubleshooting Common Issues

- **File Not Found Errors:** Ensure the `streamlitapp.py` file exists in the directory from which you are trying to run it.

- **Permission Denied on Port 80:** Use a non-privileged port (e.g., 8502).

- **ModuleNotFoundError for `leafmap`:** Install the `leafmap` module within your virtual environment:

```
pip install leafmap
```

- **TypeError for `get_folium_tile_layer`:** Ensure correct parameters are passed to the `add_raster` method.

Chapter 7: Access and Test the Application

1. Open your web browser and navigate to:

   ```

   http://ec2-13-232-179-183.ap-south-1.compute.amazonaws.com:8502/
   ```