# 🐧 Mini Project: Linux Fundamentals – EC2 Setup & Server Access

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## 🧱 Objective

Simulate connecting to a cloud-based Linux server (Ubuntu EC2 instance on AWS) using SSH, install packages using Linux commands, and verify their functionality — laying a foundation for DevOps or cloud administration.

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## ✅ Step-by-Step Execution Report

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### 🔹 Step 1: AWS Account Setup

1. Visit [https://aws.amazon.com](https://aws.amazon.com)

2. Create a new AWS account using your email.

3. Complete identity verification and payment method steps.

4. Log into the AWS Management Console.

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### 🔹 Step 2: Launch an EC2 Instance (Linux Server)

1. In AWS Console, search for \*\*EC2\*\* under “Services”.

2. Click \*\*“Launch instance”\*\* → name it (e.g., `linux-fundamentals`).

3. Select an Ubuntu AMI (e.g., Ubuntu Server 22.04 LTS).

4. Choose instance type: `t2.micro` (Free tier eligible).

5. Create or select an existing key pair (`ubuntu.pem`) — download it and keep safe.

6. Accept default network and storage settings.

7. Click \*\*Launch Instance\*\*.

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### 🔹 Step 3: Install Terminal Tool (if on Windows)

- Recommended tool: \*\*MobaXterm\*\* (Download [here](https://mobaxterm.mobatek.net/))

- Alternatively: Git Bash, PuTTY, or Windows PowerShell

- macOS: Use built-in \*\*Terminal\*\*

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### 🔹 Step 4: Connect to the EC2 Server via SSH

1. Move to your `.pem` key location:

```bash

cd ~/Downloads

```

2. Change permissions to secure the key file:

```bash

chmod 400 ubuntu.pem

```

3. Extract EC2 \*\*public IP address\*\* from AWS Console

4. Connect using SSH:

```bash

ssh -i "ubuntu.pem" ubuntu@<your-ec2-public-ip>

```

✅ You should now be inside the remote server environment (e.g., Ubuntu CLI)

### 🔹 Step 5: Update System Packages

```bash

sudo apt update

sudo apt upgrade -y

```

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### 🔹 Step 6: Install & Use `tree` Command

1. Install tree utility:

```bash

sudo apt install tree

```

2. Use it to explore directories:

```bash

tree ~/Downloads

```

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### 🔹 Step 7: Remove Software

```bash

sudo apt remove tree

```

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### 🔹 Step 8: Bonus Practice (Try More Commands)

- Install and use other packages (e.g., nginx)

```bash

sudo apt install nginx

sudo systemctl status nginx

```

- Navigate directories:

```bash

cd /

ls -la

```

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### 🔹 Final Outcome

You should be able to:

- Access a Linux server remotely

- Use basic Linux navigation and package management

- Install and remove packages like a DevOps engineer in training

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## 📁 Suggested Documentation Additions

You can now include:

- Screenshots of your EC2 dashboard and terminal

- Output of `tree` and `ls` commands

- Notes on SSH protocol and key permissions