STEP-BY-STEP GUIDE TO DEPLOY A WEB APPLICATION ON AN EC2 INSTANCE USING NGINX

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Follow these steps to install an Nginx server on your EC2 instance, host your web application, and access it via a browser.

STEP 1: Install Nginx Server on Your EC2 Instance

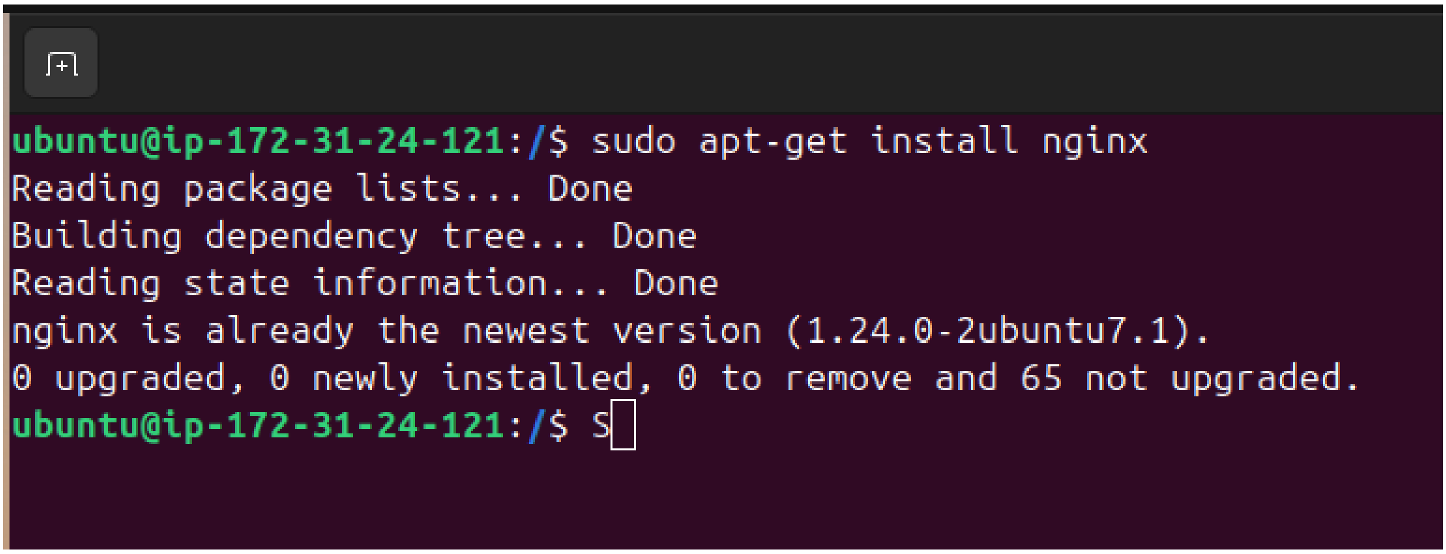
1. Connect to your EC2 instance using SSH:

```
ssh -i /path/to/your-key.pem ubuntu@your-ec2-public-ip
```

2. Update the package list and install Nginx:

```
sudo apt update
```

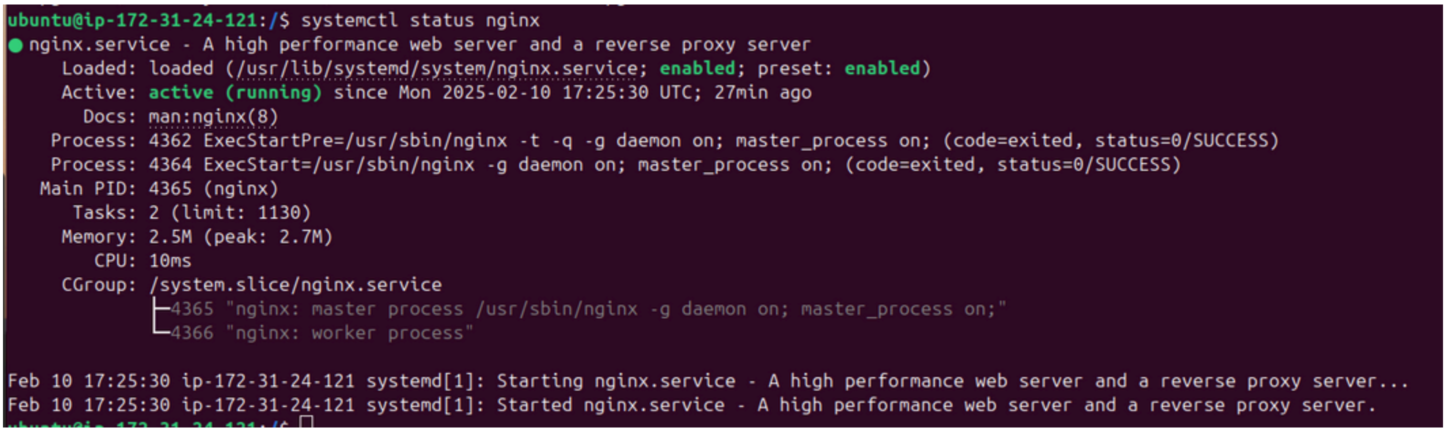
```
sudo apt install nginx
```



```
ubuntu@ip-172-31-24-121:/$ sudo apt-get install nginx
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
nginx is already the newest version (1.24.0-2ubuntu7.1).
0 upgraded, 0 newly installed, 0 to remove and 65 not upgraded.
ubuntu@ip-172-31-24-121:/$ S
```

STEP 2: Check the Status of the Nginx Server

1. After installation, check if Nginx is running:



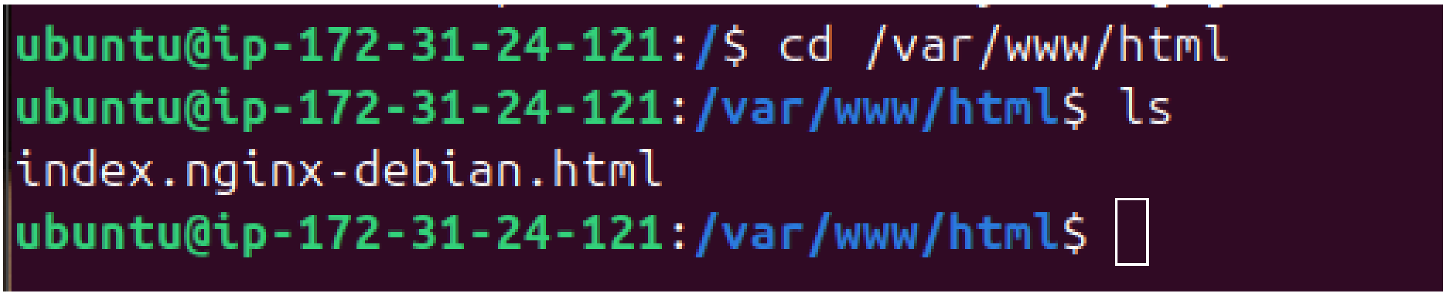
```
ubuntu@ip-172-31-24-121:/$ systemctl status nginx
● nginx.service - A high performance web server and a reverse proxy server
     Loaded: loaded (/usr/lib/systemd/system/nginx.service; enabled; preset: enabled)
     Active: active (running) since Mon 2025-02-10 17:25:30 UTC; 27min ago
       Docs: man:nginx(8)
    Process: 4362 ExecStartPre=/usr/sbin/nginx -t -q -g daemon on; master_process on; (code=exited, status=0/SUCCESS)
    Process: 4364 ExecStart=/usr/sbin/nginx -g daemon on; master_process on; (code=exited, status=0/SUCCESS)
   Main PID: 4365 (nginx)
      Tasks: 2 (limit: 1130)
     Memory: 2.5M (peak: 2.7M)
        CPU: 10ms
     CGroup: /system.slice/nginx.service
             ├─4365 "nginx: master process /usr/sbin/nginx -g daemon on; master_process on;"
             └─4366 "nginx: worker process"

Feb 10 17:25:30 ip-172-31-24-121 systemd[1]: Starting nginx.service - A high performance web server and a reverse proxy server...
Feb 10 17:25:30 ip-172-31-24-121 systemd[1]: Started nginx.service - A high performance web server and a reverse proxy server.
```

- If Nginx is active and running, you'll see active (running) in the output.
- If Nginx is not running, start it manually:

sudo systemctl start nginx

STEP 3: Add Your index.html File to the Nginx HTML Folder

1. Navigate to the default Nginx HTML directory:

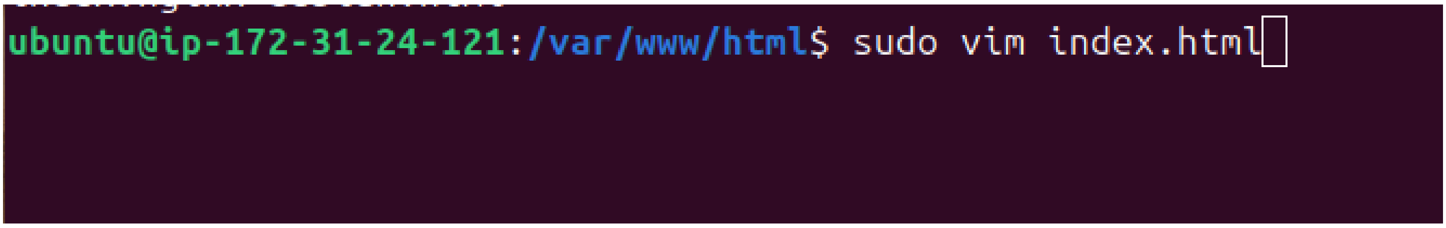


```
ubuntu@ip-172-31-24-121:/$ cd /var/www/html
ubuntu@ip-172-31-24-121:/var/www/html$ ls
index.nginx-debian.html
ubuntu@ip-172-31-24-121:/var/www/html$ 
```

2. Replace the default index.nginx-debian.html file with your index.html file:

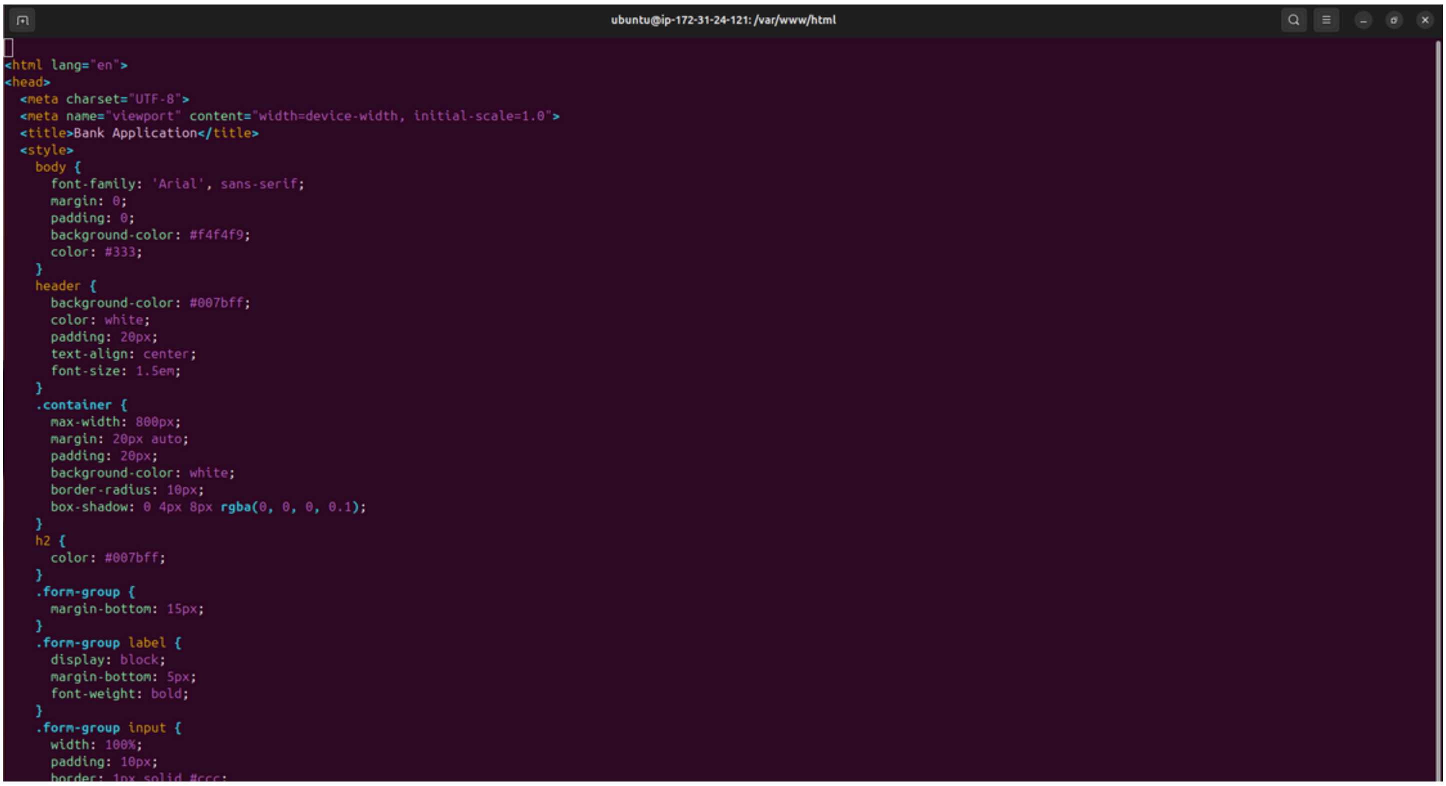
STEP 4: Create the index.html File

1. Open the index.html file in a text editor (e.g., nano or vim):



```
ubuntu@ip-172-31-24-121:/var/www/html$ sudo vim index.html
```

2. Paste your HTML code into the file. For example:



```
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Bank Application</title>
  <style>
    body {
      font-family: 'Arial', sans-serif;
      margin: 0;
      padding: 0;
      background-color: #f4f4f9;
      color: #333;
    }
    header {
      background-color: #007bff;
      color: white;
      padding: 20px;
      text-align: center;
      font-size: 1.5em;
    }
    .container {
      max-width: 800px;
      margin: 20px auto;
      padding: 20px;
      background-color: white;
      border-radius: 10px;
      box-shadow: 0 4px 8px rgba(0, 0, 0, 0.1);
    }
    h2 {
      color: #007bff;
    }
    .form-group {
      margin-bottom: 15px;
    }
    .form-group label {
      display: block;
      margin-bottom: 5px;
      font-weight: bold;
    }
    .form-group input {
      width: 100%;
      padding: 10px;
      border: 1px solid #ccc;
```

3. Save and exit the file.

STEP 5: Copy Code from GitHub (Optional)

If your HTML code is hosted on GitHub, you can clone the repository or download the file directly:

- Install git if it's not already installed:

sudo apt install git -y

- Clone the repository:

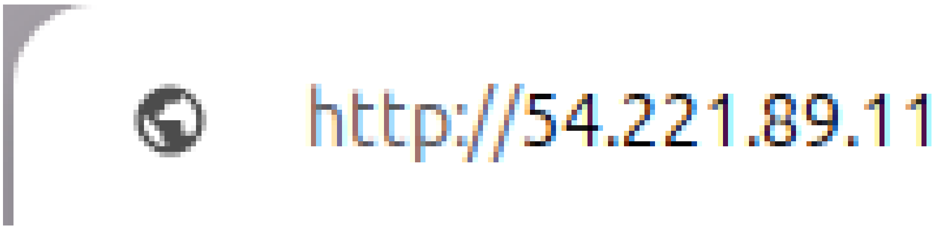
git clone https://github.com/JayeshGurav/LinuxAssignment/tree/nginx-server

- Move the index.html file to the Nginx HTML directory

Move the index.html file to the Nginx HTML directory

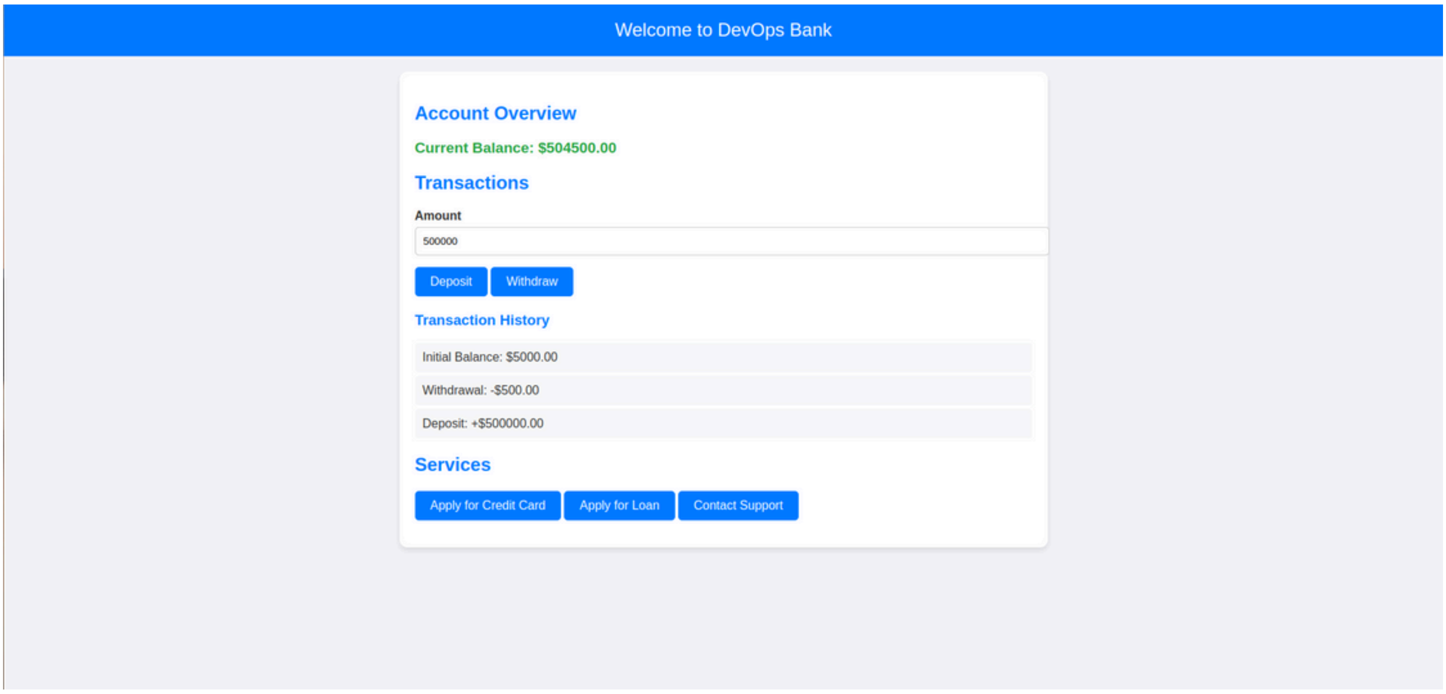
STEP 6: Access Your Web Application

1. Open your browser and enter your EC2 instance's public IPv4 address in the address bar:



http://54.221.89.11

2. If everything is set up correctly, you'll see your web application hosted on the Nginx server.



Welcome to DevOps Bank

Account Overview

Current Balance: $504500.00

Transactions

Amount

500000

Transaction History

Initial Balance: $5000.00

Withdrawal: -$500.00

Deposit: +$500000.00

Services

Notes:

- **Firewall Configuration**: Ensure that your EC2 instance's security group allows inbound traffic on port 80 (HTTP) and port 443 (HTTPS if using SSL).
- **Domain Configuration**: If you have a custom domain, you can point it to your EC2 instance's public IP and configure Nginx to serve your site using the domain name.
- **SSL Setup**: For secure connections, install an SSL certificate using Let's Encrypt or a similar service.