DevOps Training-Day-1

Installing and Setting Up WSL with Ubuntu on Windows 10

Step 1: Enable WSL

Before installing Ubuntu, ensure that WSL is enabled on your Windows

system. **Enable WSL Feature**

1. Open **PowerShell** as Administrator and run:
2. wsl --install

This installs the default Linux distribution and enables necessary

components. 3. If WSL is already installed but not enabled, use:

4. dism.exe /online /enable-feature /featurename:Microsoft-Windows-Subsystem-Linux /all /norestart
5. Enable the Virtual Machine Platform feature (required for WSL 2): 6. dism.exe /online /enable-feature /featurename:VirtualMachinePlatform /all /norestart 7. Restart your computer to apply changes.

Step 2: Install Ubuntu

1. Open **Command Prompt** or **PowerShell** and run:
2. wsl --install -d Ubuntu

If the installation fails due to timeout issues, retry the command after shutting down

WSL: wsl --shutdown

wsl --install -d Ubuntu

3. Once installed, start Ubuntu:
4. wsl.exe -d Ubuntu

Step 3: Set Up Ubuntu

When Ubuntu runs for the first time, it will ask you to create a new user account.

1. **Enter a username** (must start with a lowercase letter or underscore, and contain only lowercase letters, digits, underscores, and dashes).
2. **Set a password** (enter and confirm the password). If passwords do not match, you will need to retry.
3. Once successful, Ubuntu will be set up and ready to use.

Step 4: Verify Installation

To check the installed distributions and their versions:
wsl -l -v

To verify Ubuntu is running:

wsl -d Ubuntu

Step 5: Configure Ubuntu

Update System Packages

After logging in, update the package list and upgrade installed packages:

```
sudo apt update && sudo apt upgrade -y
```

Set Default WSL Version

To use WSL 2 as the default version for future installations:

```
wsl --set-default-version 2
```

To check the current WSL version:

```
wsl -l -v
```

To convert an existing installation to WSL 2:

```
wsl --set-version Ubuntu 2
```

Step 6: Enable .hushlogin to Suppress Login Message

To disable the daily login message, create a .hushlogin file in your home
directory: touch ~/.hushlogin

Additional Commands

Restart WSL:

```
wsl --shutdown
```

Uninstall a Distribution:

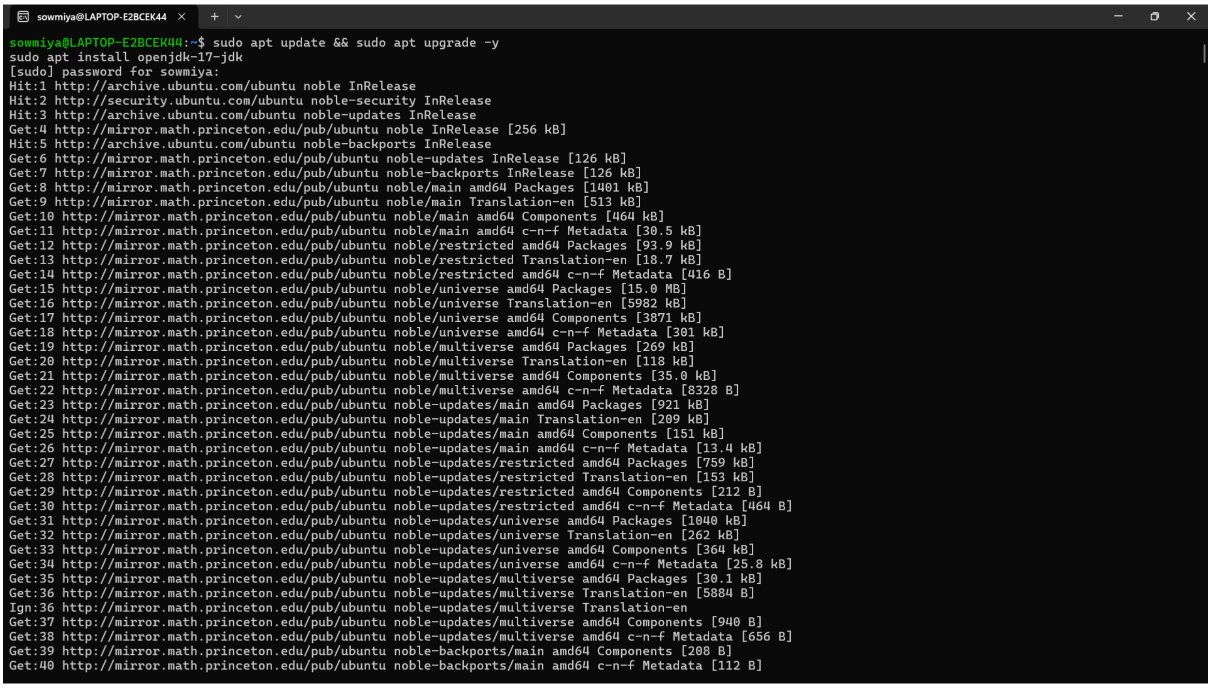
```
wsl --unregister Ubuntu
```

Access Windows Files in WSL:

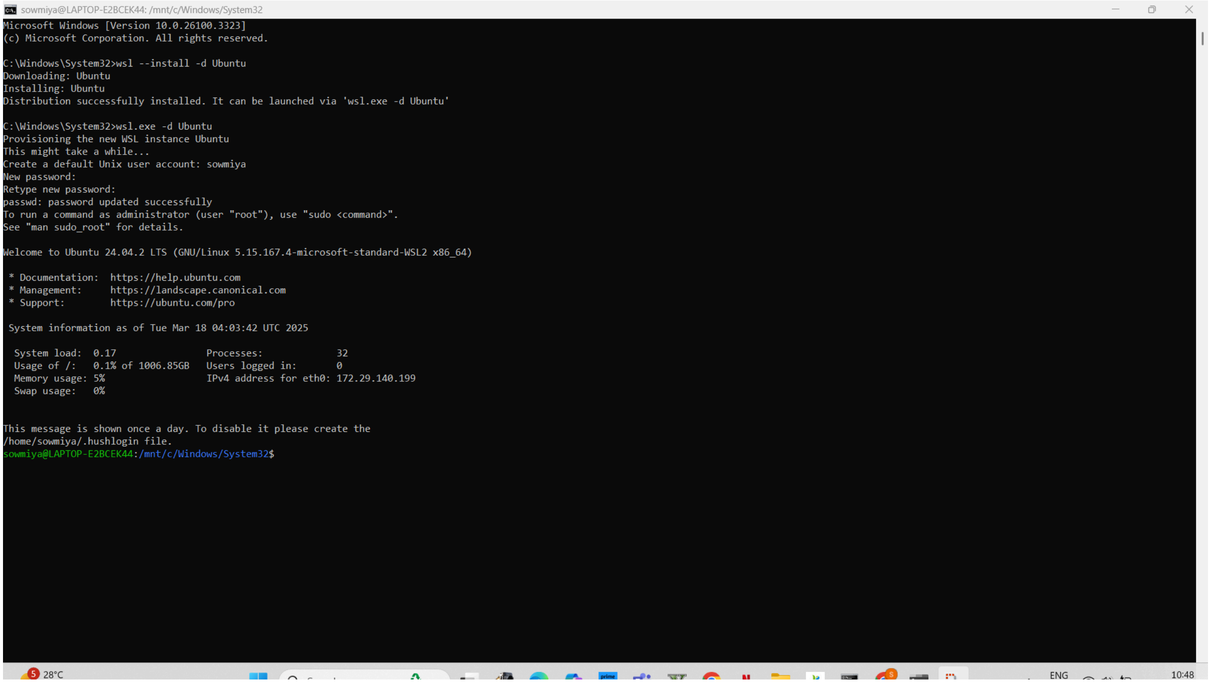
```
cd /mnt/c
```

Conclusion

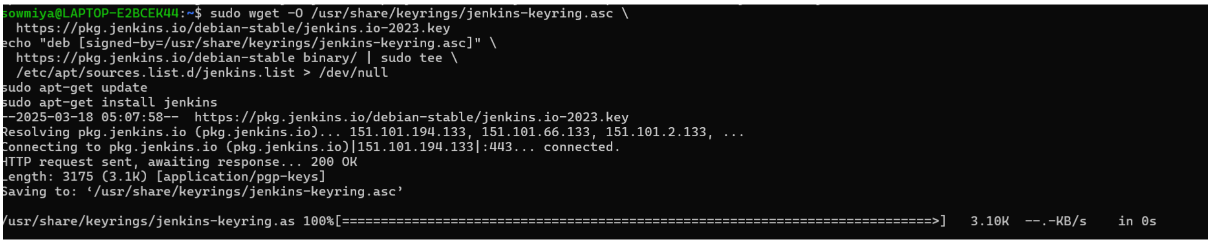
You have successfully installed and set up WSL with Ubuntu on Windows 10. You can now use the Ubuntu terminal to run Linux commands and manage your system efficiently.



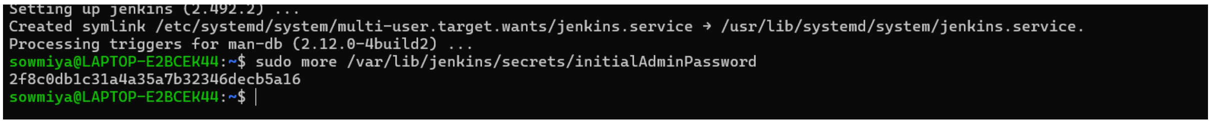
```
sowmiya@LAPTOP-E2BCEK44:~$ sudo apt update && sudo apt upgrade -y
sudo apt install openjdk-17-jdk
[sudo] password for sowmiya:
Hit:1 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Get:4 http://mirror.math.princeton.edu/pub/ubuntu noble InRelease [256 kB]
Hit:5 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Get:6 http://mirror.math.princeton.edu/pub/ubuntu noble-updates InRelease [126 kB]
Get:7 http://mirror.math.princeton.edu/pub/ubuntu noble-backports InRelease [126 kB]
Get:8 http://mirror.math.princeton.edu/pub/ubuntu noble/main amd64 Packages [1401 kB]
Get:9 http://mirror.math.princeton.edu/pub/ubuntu noble/main Translation-en [513 kB]
Get:10 http://mirror.math.princeton.edu/pub/ubuntu noble/main amd64 Components [464 kB]
Get:11 http://mirror.math.princeton.edu/pub/ubuntu noble/main amd64 c-n-f Metadata [30.5 kB]
Get:12 http://mirror.math.princeton.edu/pub/ubuntu noble/restricted amd64 Packages [93.9 kB]
Get:13 http://mirror.math.princeton.edu/pub/ubuntu noble/restricted Translation-en [18.7 kB]
Get:14 http://mirror.math.princeton.edu/pub/ubuntu noble/restricted amd64 c-n-f Metadata [416 B]
Get:15 http://mirror.math.princeton.edu/pub/ubuntu noble/universe amd64 Packages [15.0 MB]
Get:16 http://mirror.math.princeton.edu/pub/ubuntu noble/universe Translation-en [5982 kB]
Get:17 http://mirror.math.princeton.edu/pub/ubuntu noble/universe amd64 Components [3871 kB]
Get:18 http://mirror.math.princeton.edu/pub/ubuntu noble/universe amd64 c-n-f Metadata [301 kB]
Get:19 http://mirror.math.princeton.edu/pub/ubuntu noble/multiverse amd64 Packages [269 kB]
Get:20 http://mirror.math.princeton.edu/pub/ubuntu noble/multiverse Translation-en [118 kB]
Get:21 http://mirror.math.princeton.edu/pub/ubuntu noble/multiverse amd64 Components [35.0 kB]
Get:22 http://mirror.math.princeton.edu/pub/ubuntu noble/multiverse amd64 c-n-f Metadata [8328 B]
Get:23 http://mirror.math.princeton.edu/pub/ubuntu noble-updates/main amd64 Packages [921 kB]
Get:24 http://mirror.math.princeton.edu/pub/ubuntu noble-updates/main Translation-en [209 kB]
Get:25 http://mirror.math.princeton.edu/pub/ubuntu noble-updates/main amd64 Components [151 kB]
Get:26 http://mirror.math.princeton.edu/pub/ubuntu noble-updates/main amd64 c-n-f Metadata [13.4 kB]
Get:27 http://mirror.math.princeton.edu/pub/ubuntu noble-updates/restricted amd64 Packages [759 kB]
Get:28 http://mirror.math.princeton.edu/pub/ubuntu noble-updates/restricted Translation-en [153 kB]
Get:29 http://mirror.math.princeton.edu/pub/ubuntu noble-updates/restricted amd64 Components [212 B]
Get:30 http://mirror.math.princeton.edu/pub/ubuntu noble-updates/restricted amd64 c-n-f Metadata [464 B]
Get:31 http://mirror.math.princeton.edu/pub/ubuntu noble-updates/universe amd64 Packages [1040 kB]
Get:32 http://mirror.math.princeton.edu/pub/ubuntu noble-updates/universe Translation-en [262 kB]
Get:33 http://mirror.math.princeton.edu/pub/ubuntu noble-updates/universe amd64 Components [364 kB]
Get:34 http://mirror.math.princeton.edu/pub/ubuntu noble-updates/universe amd64 c-n-f Metadata [25.8 kB]
Get:35 http://mirror.math.princeton.edu/pub/ubuntu noble-updates/multiverse amd64 Packages [30.1 kB]
Get:36 http://mirror.math.princeton.edu/pub/ubuntu noble-updates/multiverse Translation-en [5884 B]
Ign:36 http://mirror.math.princeton.edu/pub/ubuntu noble-updates/multiverse Translation-en
Get:37 http://mirror.math.princeton.edu/pub/ubuntu noble-updates/multiverse amd64 Components [940 B]
Get:38 http://mirror.math.princeton.edu/pub/ubuntu noble-updates/multiverse amd64 c-n-f Metadata [656 B]
Get:39 http://mirror.math.princeton.edu/pub/ubuntu noble-backports/main amd64 Components [208 B]
Get:40 http://mirror.math.princeton.edu/pub/ubuntu noble-backports/main amd64 c-n-f Metadata [112 B]
```



```
Microsoft Windows [Version 10.0.26100.3323]
(c) Microsoft Corporation. All rights reserved.

C:\Windows\System32>wsl --install -d Ubuntu
Downloading: Ubuntu
Installing: Ubuntu
Distribution successfully installed. It can be launched via 'wsl.exe -d Ubuntu'

C:\Windows\System32>wsl.exe -d Ubuntu
Provisioning the new WSL instance Ubuntu
This might take a while...
Create a default Unix user account: sowmiya
New password:
Retype new password:
passwd: password updated successfully
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

Welcome to Ubuntu 24.04.2 LTS (GNU/Linux 5.15.167.4-microsoft-standard-WSL2 x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

 System information as of Tue Mar 18 04:03:42 UTC 2025

  System load:  0.17               Processes:             32
  Usage of /:   0.1% of 1006.85GB   Users logged in:       0
  Memory usage: 5%                 IPv4 address for eth0: 172.29.140.199
  Swap usage:   0%


This message is shown once a day. To disable it please create the
/home/sowmiya/.hushlogin file.
sowmiya@LAPTOP-E2BCEK44:/mnt/c/Windows/System32$
```



```
sowmiya@LAPTOP-E2BCEK44:~$ sudo wget -O /usr/share/keyrings/jenkins-keyring.asc \
  https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key
echo "deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc]" \
  https://pkg.jenkins.io/debian-stable binary/ | sudo tee \
  /etc/apt/sources.list.d/jenkins.list > /dev/null
sudo apt-get update
sudo apt-get install jenkins
--2025-03-18 05:07:58--  https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key
Resolving pkg.jenkins.io (pkg.jenkins.io)... 151.101.194.133, 151.101.66.133, 151.101.2.133, ...
Connecting to pkg.jenkins.io (pkg.jenkins.io)|151.101.194.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 3175 (3.1K) [application/pgp-keys]
Saving to: ‘/usr/share/keyrings/jenkins-keyring.asc’

/usr/share/keyrings/jenkins-keyring.as 100%[=========================================================================>]   3.10K  --.-KB/s    in 0s
```



```
Setting up jenkins (2.492.2) ...
Created symlink /etc/systemd/system/multi-user.target.wants/jenkins.service → /usr/lib/systemd/system/jenkins.service.
Processing triggers for man-db (2.12.0-4build2) ...
sowmiya@LAPTOP-E2BCEK44:~$ sudo more /var/lib/jenkins/secrets/initialAdminPassword
2f8c0db1c31a4a35a7b32346decb5a16
sowmiya@LAPTOP-E2BCEK44:~$ |
```

Step-by-Step Guide to Creating a Freestyle Job in Jenkins to Install Nginx on a Local Ubuntu VM

Prerequisites for Setting Up a Freestyle Job to Install Nginx in Jenkins

Before creating the Freestyle Job, ensure that the following prerequisites are met: **1. Install Jenkins on Ubuntu (If Not Installed)**

If Jenkins is not installed on your Ubuntu VM, follow these steps:

Step 1: Update Package Lists

```
sudo apt update -y
```

Step 2: Install Java (Required for Jenkins)

```
sudo apt install -y openjdk-17-jdk
```

Step 3: Verify Java Version

```
java -version
```

Step 4: Add Jenkins Repository Key

(Note: The apt-key add command is deprecated in newer Ubuntu versions. Use the correct method below.)

Correct Way to Add Jenkins Repository (Without apt-key)
Step 4.1: Add Jenkins GPG Key

```
wget -q -O- https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key | sudo tee
/usr/share/keyrings/jenkinskeyring.asc > /dev/null
```

Step 4.2: Add Jenkins Repository

```
echo "deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc] https://pkg.jenkins.io/debian
stable binary/" |

sudo tee /etc/apt/sources.list.d/jenkins.list > /dev/null
```

Step 5: Install Jenkins

```
sudo apt update -y

sudo apt install -y jenkins
```

Step 6: Start and Enable Jenkins Service

```
sudo systemctl start jenkins

sudo systemctl enable jenkins
```

Step 7: Check Jenkins Status

```
sudo systemctl status jenkins
```

2. Access Jenkins Web Interface

Jenkins will be available at http://<VM_IP>:8080

To Get the Jenkins Server URL, Follow These Steps:

Method 1: Check the Default URL

By default, Jenkins runs on port 8080. Open in a browser:

http://<your-server-ip>:8080

If you're on the same machine as Jenkins, use:

```
http://localhost:8080
```

Method 2: Get Server IP Address

```
hostname -I
```

or

```
ip a | grep inet
```

Method 3: Check Jenkins Logs (If Unable to Access)

```
sudo journalctl -u jenkins --no-pager --lines=50
```

Look for lines mentioning *"Jenkins is fully up and running"* and the URL.

3. Access Jenkins Web Interface and Log In

1. Open a browser and go to http://<JENKINS_SERVER_IP>:8080
2. Enter the username (admin) and the admin password retrieved from the following command:

```
sudo cat /var/lib/jenkins/secrets/initialAdminPassword
```

3. Choose *Install Suggested Plugins* (recommended) or manually select plugins.

4. Ensure Sudo Access for Jenkins User

Jenkins runs as a system user (jenkins). If your script requires sudo, allow Jenkins to execute commands without a password:

```
sudo visudo
```

Add the following line at the end of the file:

```
jenkins ALL=(ALL) NOPASSWD: ALL
```

Save and exit.

Step-by-Step Guide to Creating a Freestyle Job in Jenkins to Install

Nginx Step 1: Create a New Freestyle Job

1. Click on **New Item** from the Jenkins Dashboard.
2. Enter a name for the job, e.g., *Install-Nginx*.
3. Select **Freestyle project**.
4. Click **OK**.

Step 2: Configure the Job

Add Build Step

1. Scroll down to **Build** → Click *Add build step* → Select **Execute shell**.
2. Paste the following script in the command box:

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

```
echo "Updating package lists..."

sudo apt update -y


echo "Installing Nginx..."

sudo apt install -y nginx


echo "Starting Nginx service..."

sudo systemctl start nginx
echo "Enabling Nginx to start on boot..."

sudo systemctl enable nginx


echo "Nginx Installation Completed!"
```

Step 3: Save and Run the Job

1. Click **Save**.
2. Click **Build Now**.
3. Check the **Console Output** to verify the installation.

Step 4: Verify the Installation

1. Check Nginx Status

```
systemctl status nginx
```

If running, you should see output like *"active (running)"*.

2. Open Nginx in Browser

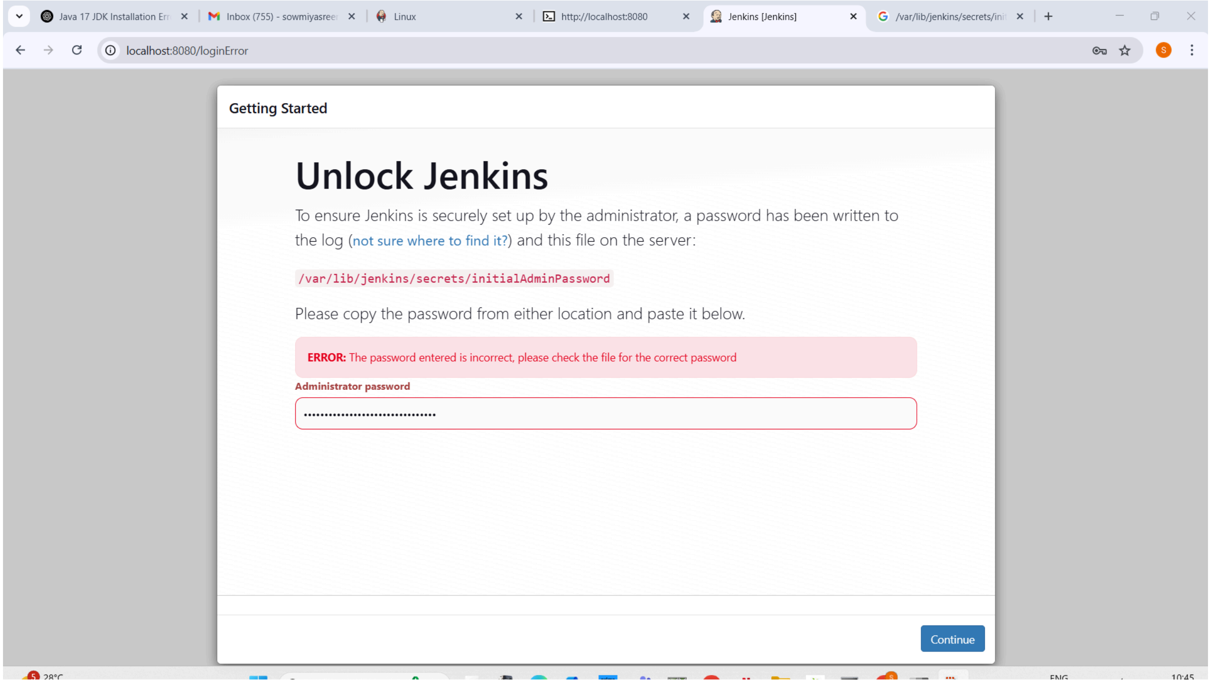
```
http://<VM_IP>
```

You should see the default Nginx welcome page.

Conclusion

You have successfully set up a Jenkins Freestyle Job to install Nginx on a local Ubuntu VM. This guide covers everything from Jenkins installation, configuration, and running the job to verify that Nginx is installed and running correctly.

Now, your Jenkins automation is ready to deploy Nginx effortlessly!


Java 17 JDK Installation Err
Inbox (755) - sowmiyasree
Linux
http://localhost:8080
Jenkins [Jenkins]
/var/lib/jenkins/secrets/ini
localhost:8080/loginError

Getting Started

Unlock Jenkins

To ensure Jenkins is securely set up by the administrator, a password has been written to the log (not sure where to find it?) and this file on the server:

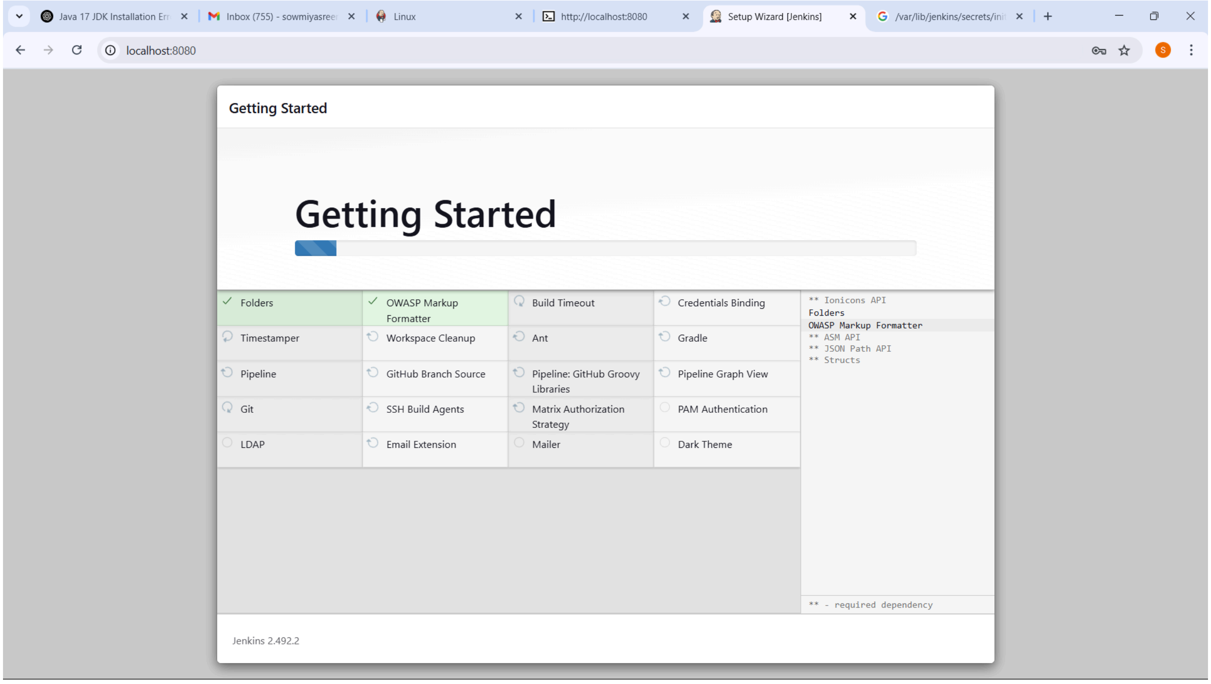
`/var/lib/jenkins/secrets/initialAdminPassword`

Please copy the password from either location and paste it below.

ERROR: The password entered is incorrect, please check the file for the correct password

Administrator password

••••••••••••••••••••••••••••••••


Java 17 JDK Installation Err
Inbox (755) - sowmiyasree
Linux
http://localhost:8080
Setup Wizard [Jenkins]
/var/lib/jenkins/secrets/ini
localhost:8080

Getting Started

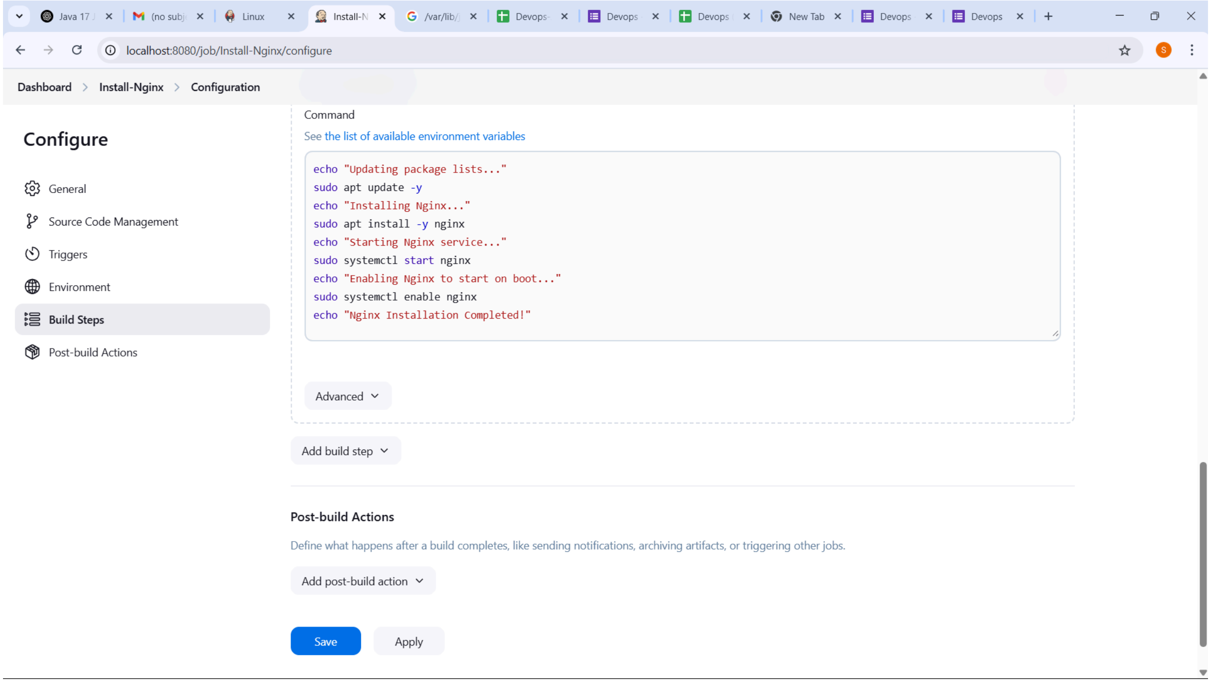
Getting Started

✓ Folders	✓ OWASP Markup Formatter	Build Timeout	Credentials Binding
Timestamper	Workspace Cleanup	Ant	Gradle
Pipeline	GitHub Branch Source	Pipeline: GitHub Groovy Libraries	Pipeline Graph View
Git	SSH Build Agents	Matrix Authorization Strategy	PAM Authentication
LDAP	Email Extension	Mailer	Dark Theme

```
** Ionicons API
Folders
OWASP Markup Formatter
** ASM API
** JSON Path API
** Structs
```

```
** - required dependency
```

Jenkins 2.492.2



localhost:8080/job/Install-Nginx/configure

Dashboard > Install-Nginx > Configuration

Configure

- General
- Source Code Management
- Triggers
- Environment
- Build Steps
- Post-build Actions

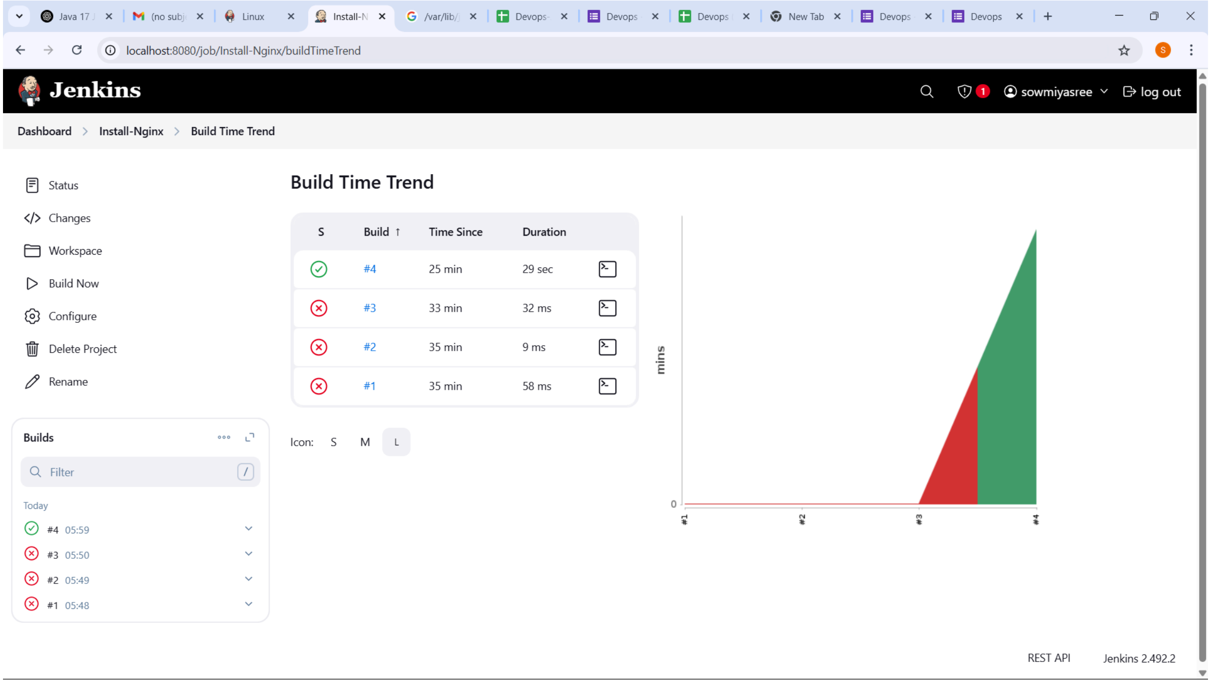
Command

See the list of available environment variables

```
echo "Updating package lists..."
sudo apt update -y
echo "Installing Nginx..."
sudo apt install -y nginx
echo "Starting Nginx service..."
sudo systemctl start nginx
echo "Enabling Nginx to start on boot..."
sudo systemctl enable nginx
echo "Nginx Installation Completed!"
```

Post-build Actions

Define what happens after a build completes, like sending notifications, archiving artifacts, or triggering other jobs.



localhost:8080/job/Install-Nginx/buildTimeTrend

Dashboard > Install-Nginx > Build Time Trend

- Status
- Changes
- Workspace
- Build Now
- Configure
- Delete Project
- Rename

Build Time Trend

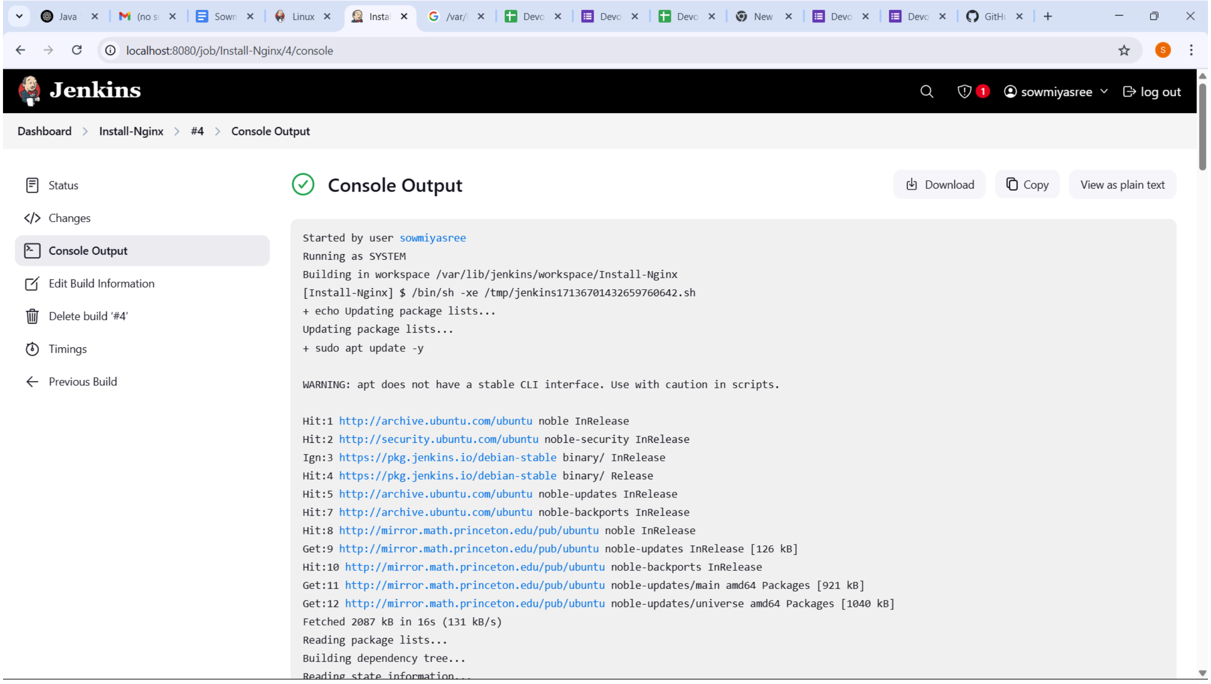
S	Build ↑	Time Since	Duration
✓	#4	25 min	29 sec
✗	#3	33 min	32 ms
✗	#2	35 min	9 ms
✗	#1	35 min	58 ms

Builds

Today

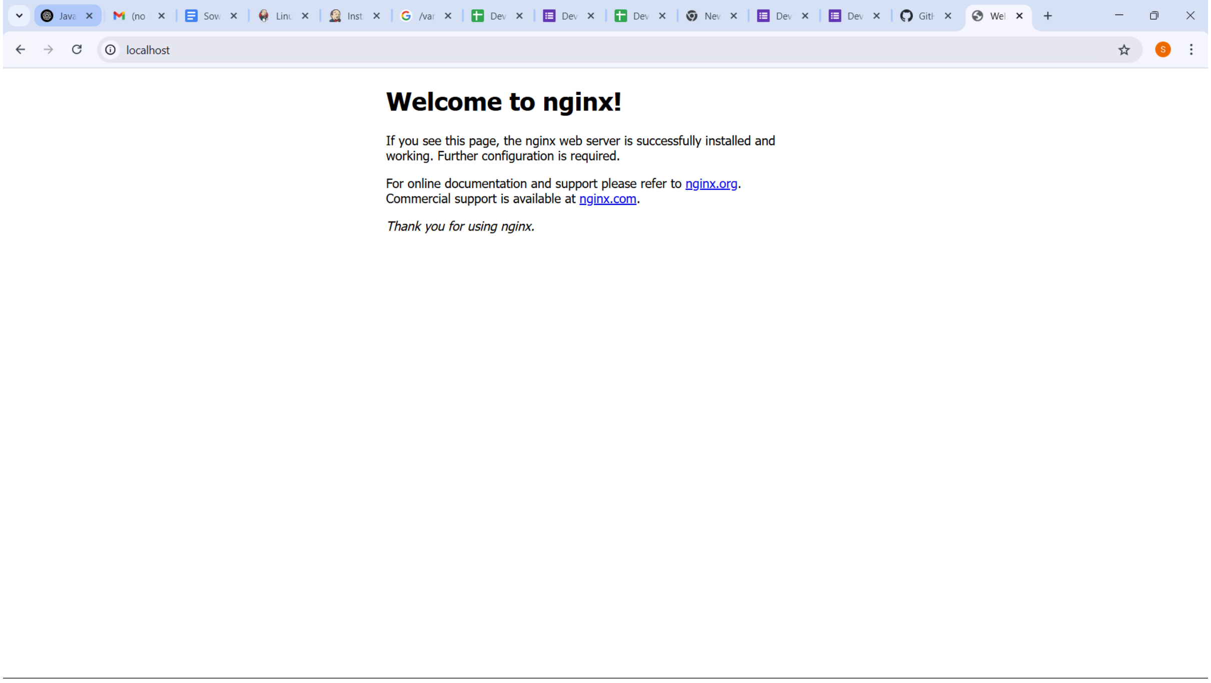
✓	#4	05:59
✗	#3	05:50
✗	#2	05:49
✗	#1	05:48

REST API Jenkins 2.492.2



Console Output

```
Started by user sowmiyasree
Running as SYSTEM
Building in workspace /var/lib/jenkins/workspace/Install-Nginx
[Install-Nginx] $ /bin/sh -xe /tmp/jenkins17136701432659760642.sh
+ echo Updating package lists...
Updating package lists...
+ sudo apt update -y

WARNING: apt does not have a stable CLI interface. Use with caution in scripts.

Hit:1 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://security.ubuntu.com/ubuntu noble-security InRelease
Ign:3 https://pkg.jenkins.io/debian-stable binary/ InRelease
Hit:4 https://pkg.jenkins.io/debian-stable binary/ Release
Hit:5 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:7 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Hit:8 http://mirror.math.princeton.edu/pub/ubuntu noble InRelease
Get:9 http://mirror.math.princeton.edu/pub/ubuntu noble-updates InRelease [126 kB]
Hit:10 http://mirror.math.princeton.edu/pub/ubuntu noble-backports InRelease
Get:11 http://mirror.math.princeton.edu/pub/ubuntu noble-updates/main amd64 Packages [921 kB]
Get:12 http://mirror.math.princeton.edu/pub/ubuntu noble-updates/universe amd64 Packages [1040 kB]
Fetched 2087 kB in 16s (131 kB/s)
Reading package lists...
Building dependency tree...
Reading state information...
```



Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.