Day -1 DevOps Training

Installing and Setting Up WSL with Ubuntu on Windows 11

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:

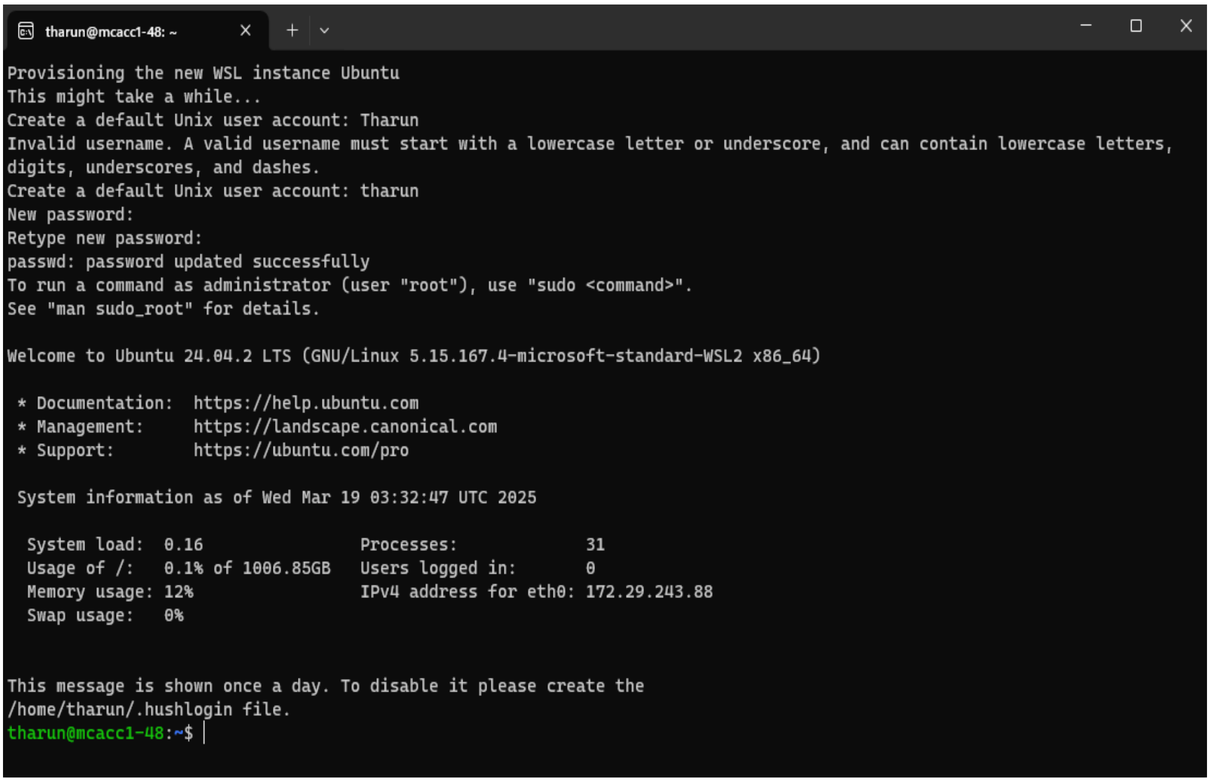
```
wsl --unregister Ubuntu
```

Access Windows Files in WSL:

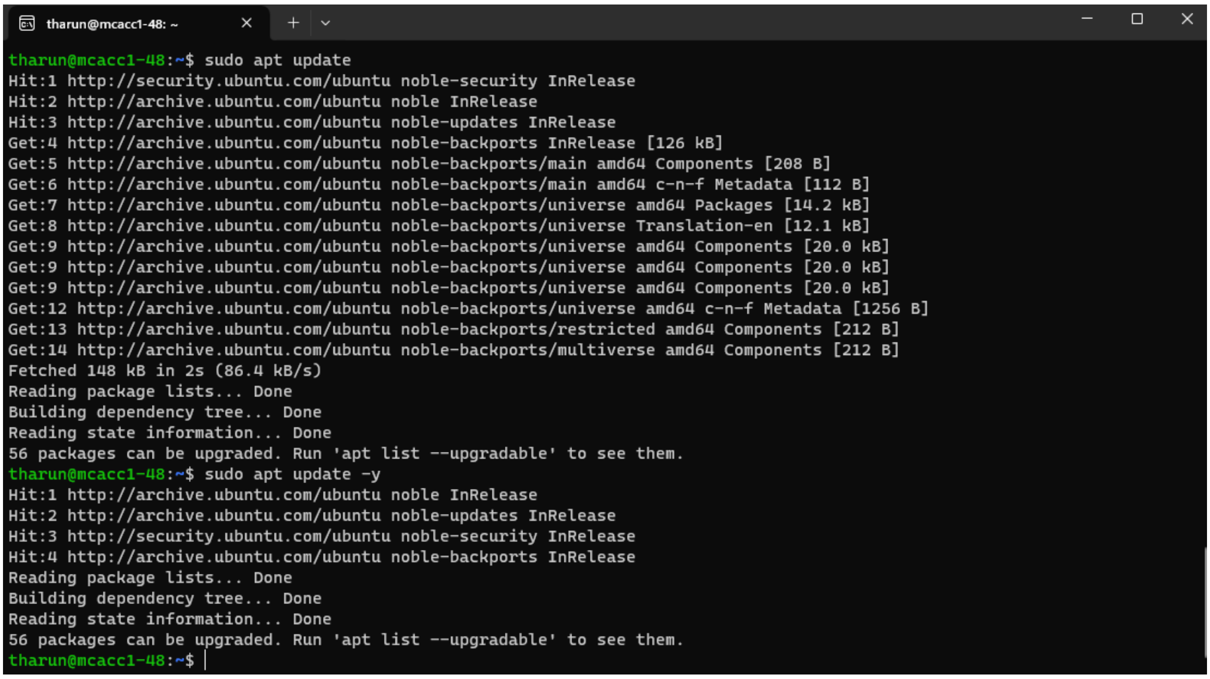
```
cd /mnt/c
```

Conclusion

You have successfully installed and set up WSL with Ubuntu on Windows 11. You can now use the Ubuntu terminal to run Linux commands and manage your system efficiently.



```
Provisioning the new WSL instance Ubuntu
This might take a while...
Create a default Unix user account: Tharun
Invalid username. A valid username must start with a lowercase letter or underscore, and can contain lowercase letters,
digits, underscores, and dashes.
Create a default Unix user account: tharun
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 Wed Mar 19 03:32:47 UTC 2025

  System load:  0.16                Processes:             31
  Usage of /:   0.1% of 1006.85GB   Users logged in:       0
  Memory usage: 12%                 IPv4 address for eth0: 172.29.243.88
  Swap usage:   0%


This message is shown once a day. To disable it please create the
/home/tharun/.hushlogin file.
tharun@mcacc1-48:~$
```



```
tharun@mcacc1-48:~$ sudo apt update
Hit:1 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:2 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Get:4 http://archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:5 http://archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [208 B]
Get:6 http://archive.ubuntu.com/ubuntu noble-backports/main amd64 c-n-f Metadata [112 B]
Get:7 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 Packages [14.2 kB]
Get:8 http://archive.ubuntu.com/ubuntu noble-backports/universe Translation-en [12.1 kB]
Get:9 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [20.0 kB]
Get:9 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [20.0 kB]
Get:9 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [20.0 kB]
Get:12 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 c-n-f Metadata [1256 B]
Get:13 http://archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [212 B]
Get:14 http://archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 B]
Fetched 148 kB in 2s (86.4 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
56 packages can be upgraded. Run 'apt list --upgradable' to see them.
tharun@mcacc1-48:~$ sudo apt update -y
Hit:1 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:3 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:4 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
56 packages can be upgraded. Run 'apt list --upgradable' to see them.
tharun@mcacc1-48:~$
```

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/debianstable 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

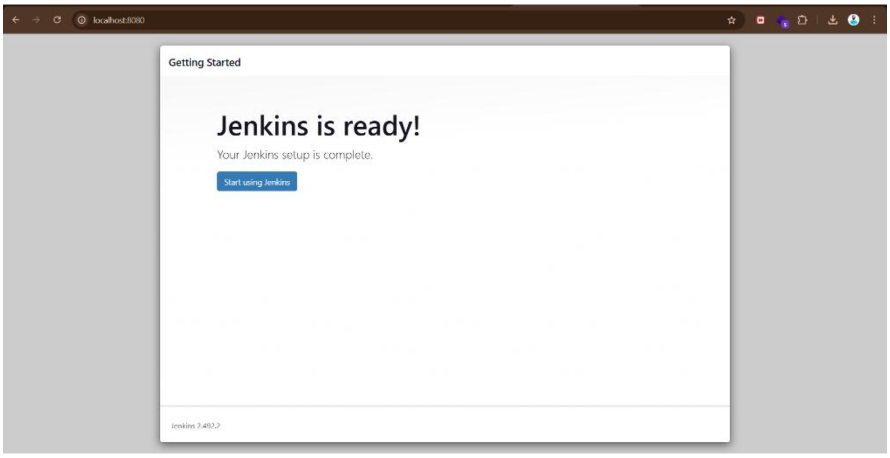
```
http://<VM_IP>
```

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.

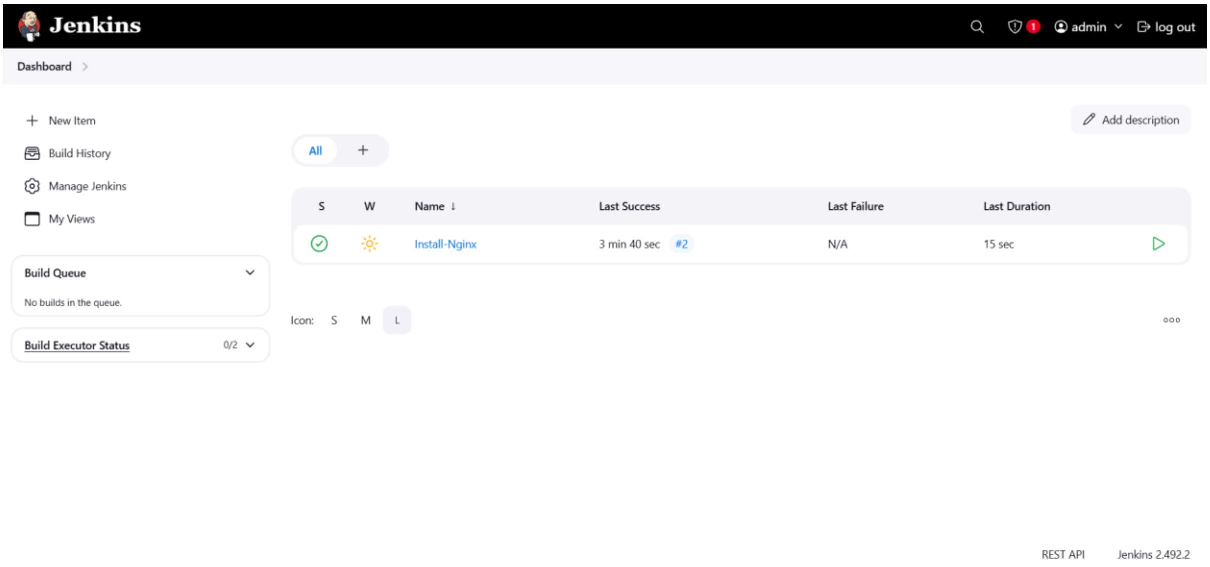
Now, your Jenkins automation is ready to deploy Nginx effortlessly!



Jenkins is ready!

Your Jenkins setup is complete.

Jenkins 2.492.2



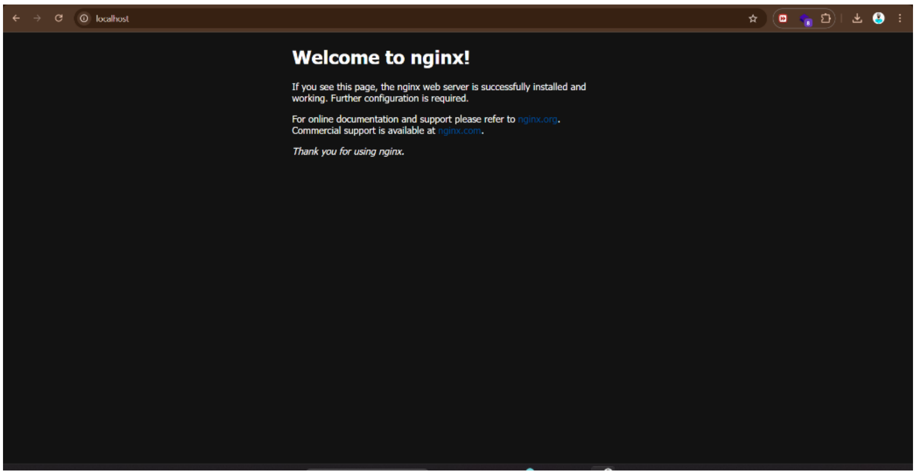
Build Queue

No builds in the queue.

Build Executor Status 0/2

S	W	Name ↓	Last Success	Last Failure	Last Duration
✓	☀	Install-Nginx	3 min 40 sec #2	N/A	15 sec

REST API Jenkins 2.492.2



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.