

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

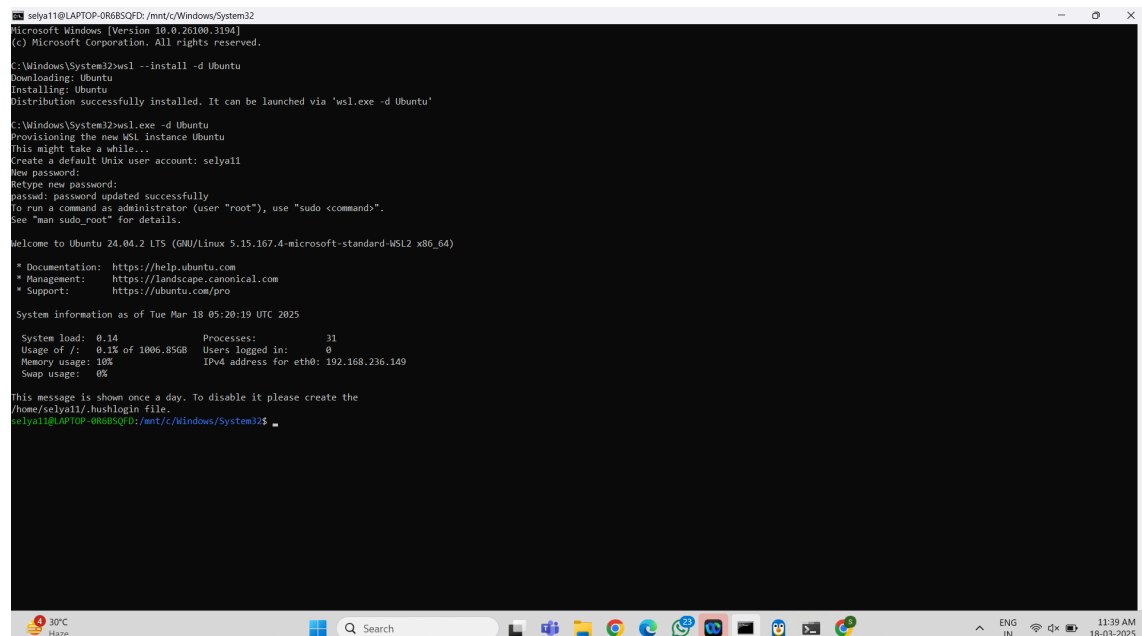
1. Open **Command Prompt** or **PowerShell** and run:
2. `wsl --install -d Ubuntu`

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`



```
selya11@LAPTOP-0R68SQFD: /mnt/c/Windows/System32
Microsoft Windows [Version 10.0.26100.3194]
(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: selya11
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 05:20:19 UTC 2025

System load:  0.14               Processes:    31
Usage of /:   0.1% of 1006.85GB   Users logged in: 0
Memory usage: 10%               IPv4 address for eth0: 192.168.236.149
Swap usage:   0%

This message is shown once a day. To disable it please create the
/home/selya11/.hushlogin file.
selya11@LAPTOP-0R68SQFD: /mnt/c/Windows/System32$
```

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.

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
```

```
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

selya11@LAPTOP-0R6BSQFD:~$ java --version
Command 'java' not found, but can be installed with:
sudo apt install openjdk-17-jre-headless # version 17.0.12+7-1ubuntu2~24.04, or
sudo apt install openjdk-21-jre-headless # version 21.0.4+7-1ubuntu2~24.04
sudo apt install default-jre             # version 2:1.17-75
```

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`

```
selya11@LAPTOP-0R6BSQFD:~$ sudo more /var/lib/jenkins/secrets/initialAdminPassword
7fb054e591b84b5e84f1555783c05105
selya11@LAPTOP-0R6BSQFD:~$ ^C
selya11@LAPTOP-0R6BSQFD:~$ sudo systemctl start jenkins
selya11@LAPTOP-0R6BSQFD:~$ sudo systemctl enable jenkins
Synchronizing state of jenkins.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable jenkins
selya11@LAPTOP-0R6BSQFD:~$ sudo systemctl status jenkins
jenkins.service - Jenkins Continuous Integration Server
   Loaded: loaded (/usr/lib/systemd/system/jenkins.service; enabled; preset: enabled)
   Active: active (running) since Tue 2025-03-18 05:34:15 UTC; 5min ago
     Main PID: 2428 (java)
       Tasks: 55 (Limit: 4583)
      Memory: 870.6M (?)
    CGroup: /system.slice/jenkins.service
            └─2428 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --httpPort=8080

Mar 18 05:38:31 LAPTOP-0R6BSQFD jenkins[2428]: 2025-03-18 05:38:31.260+0000 [id=101] INFO h.m.UpdateCenter$UpdateCenterConfiguration#download
Mar 18 05:38:33 LAPTOP-0R6BSQFD jenkins[2428]: 2025-03-18 05:38:33.898+0000 [id=101] INFO h.model.UpdateCenter$DownloadJob#run: Installation
Mar 18 05:38:33 LAPTOP-0R6BSQFD jenkins[2428]: 2025-03-18 05:38:33.899+0000 [id=101] INFO h.model.UpdateCenter$DownloadJob#run: Starting the
Mar 18 05:38:33 LAPTOP-0R6BSQFD jenkins[2428]: 2025-03-18 05:38:33.899+0000 [id=101] INFO h.m.UpdateCenter$UpdateCenterConfiguration#download
Mar 18 05:38:36 LAPTOP-0R6BSQFD jenkins[2428]: 2025-03-18 05:38:36.408+0000 [id=101] INFO h.model.UpdateCenter$DownloadJob#run: Installation
Mar 18 05:38:36 LAPTOP-0R6BSQFD jenkins[2428]: 2025-03-18 05:38:36.408+0000 [id=101] INFO h.model.UpdateCenter$DownloadJob#run: Starting the
Mar 18 05:38:36 LAPTOP-0R6BSQFD jenkins[2428]: 2025-03-18 05:38:36.408+0000 [id=101] INFO h.m.UpdateCenter$UpdateCenterConfiguration#download
Mar 18 05:39:35 LAPTOP-0R6BSQFD jenkins[2428]: 2025-03-18 05:39:35.414+0000 [id=101] INFO h.model.UpdateCenter$DownloadJob#run: Installation
Mar 18 05:39:35 LAPTOP-0R6BSQFD jenkins[2428]: 2025-03-18 05:39:35.414+0000 [id=101] INFO h.model.UpdateCenter$DownloadJob#run: Starting the
Mar 18 05:39:35 LAPTOP-0R6BSQFD jenkins[2428]: 2025-03-18 05:39:35.415+0000 [id=101] INFO h.m.UpdateCenter$UpdateCenterConfiguration#download
```

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`

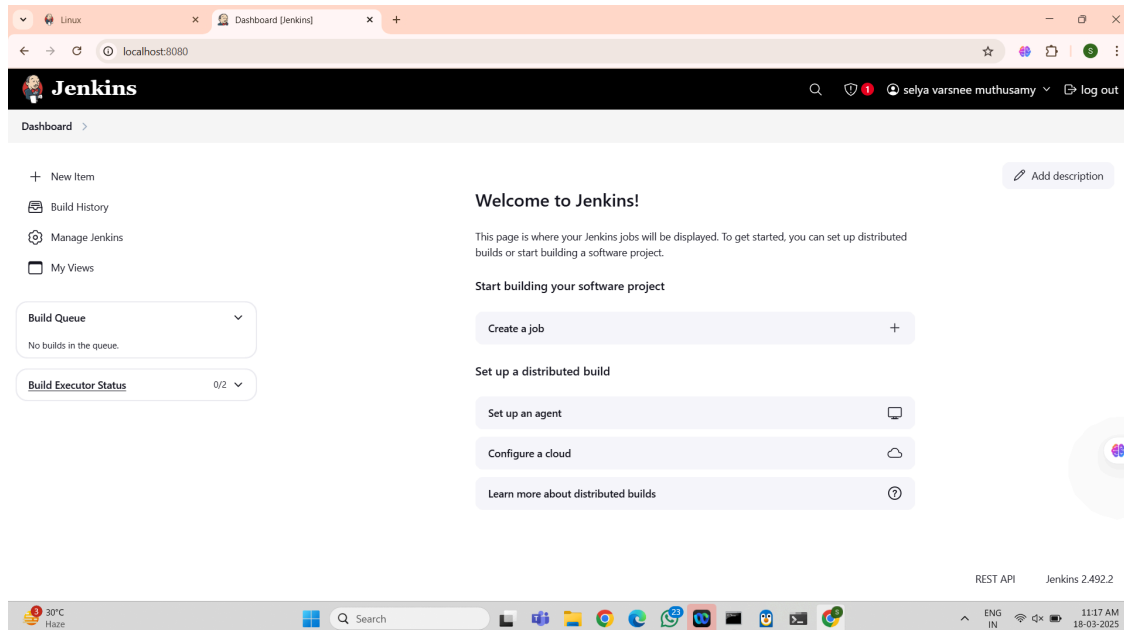
Look for lines mentioning *"Jenkins is fully up and running"* and the URL.

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

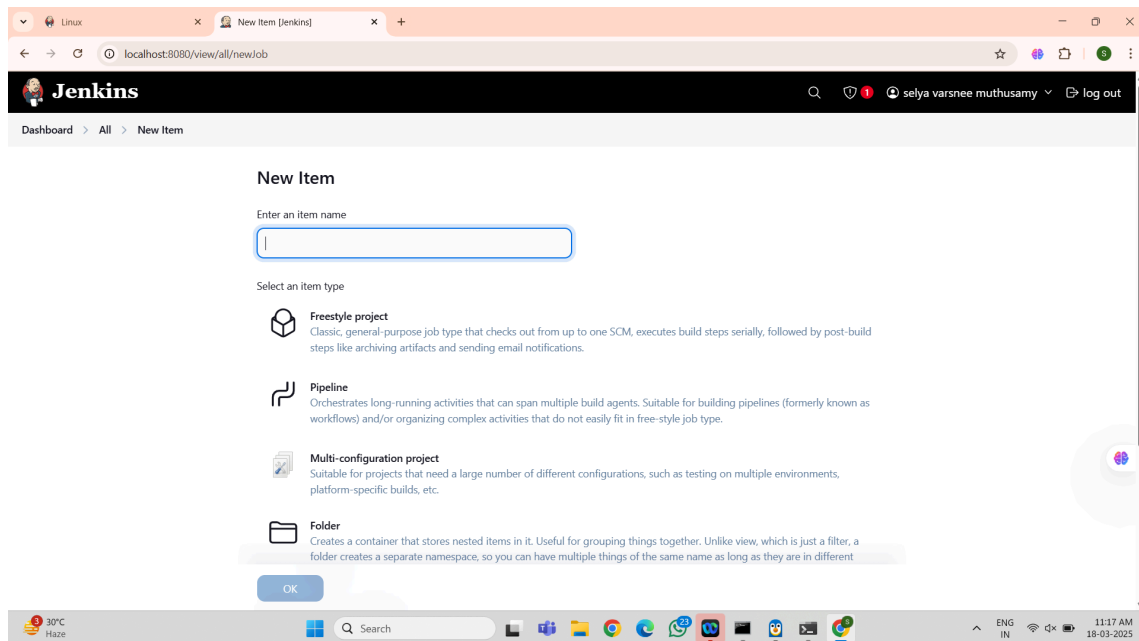
Save and exit.

```
selya11@LAPTOP-0R6BSQFD:~$ sudo visudo
[sudo] password for selya11:
selya11@LAPTOP-0R6BSQFD:~$ |
```

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
```

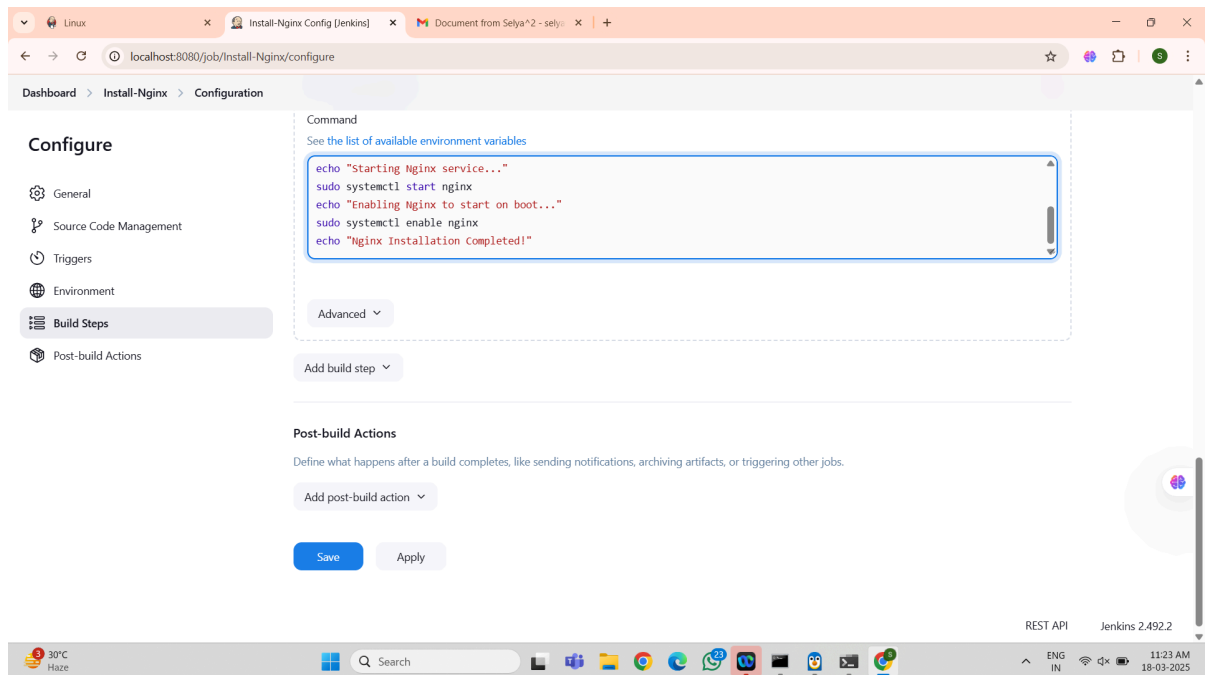
```
echo "Enabling Nginx to start on boot..."
```

```
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)"*.

```
selya11@LAPTOP-0R6BSQFD:~$ 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 Tue 2025-03-18 06:03:47 UTC; 13min ago
```

2. Open Nginx in Browser

`http://<VM_IP>`

You should see the default Nginx welcome page.

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.

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!