

DEVOPS

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`

Step 2: Install Ubuntu

1. Open **Command Prompt** or **PowerShell** and run:
2. `wsl --install -d Ubuntu`
3. `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.

Install Jenkins on Ubuntu

Update package lists

```
sudo apt update -y
```

```
# Install Java (Required for  
Jenkins) sudo apt install -y  
openjdk-17-jdk
```

```
#verify java  
version java -  
version
```

Add Jenkins GPG Key

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

Add the 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
```

Install Jenkins

```
sudo apt update -y  
sudo apt install -y jenkins
```

Start and enable Jenkins

```
service sudo systemctl start  
jenkins
```

Step 4: Add Jenkins Repository 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
```

```
cat copy the localhost:8080 admin path
```

```
display the password
```

=>By default, Jenkins runs as a system user (jenkins). If your script requires sudo, you must allow the Jenkins user to run commands without a password.

```
sudo visudo
```

Add the following line at the end:

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

Save and exit.

```
aravind@Aravind:~$ sudo apt update -y
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
Hit:4 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
55 packages can be upgraded. Run 'apt list --upgradable' to see them.
aravind@Aravind:~$ sudo apt install -y openjdk-17-jdk
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  alsa-topology-conf alsa-ucm-conf ca-certificates-java fonts-dejavu-extra java-common libasound2-data libasound2t64 libatk-wrapper-java
  libatk-wrapper-java-jni libgif7 libice-dev libice6 libnspr4 libnss3 libpcsc-lite1 libpthread-stubs0-dev libsm-dev libsm6 libx11-dev libxau-dev libxaw7
  libxcb-shape0 libxcb1-dev libxdmcp-dev libxft2 libxkbfile1 libxmu6 libxpm4 libxt-dev libxt6t64 libxv1 libxxf86dgal openjdk-17-jdk-headless
  openjdk-17-jre openjdk-17-jre-headless x11-utils x11proto-dev xorg-sgml-doctools xtrans-dev
Suggested packages:
  default-jre alsa-utils libasound2-plugins libice-doc pcscd libsm-doc libx11-doc libxcb-doc libxt-doc openjdk-17-demo openjdk-17-source visualvm
  libnss-mdns fonts-ipafont-gothic fonts-ipafont-mincho fonts-wqy-microhei | fonts-wqy-zenhei fonts-indic mesa-utils
Recommended packages:
  luit
The following NEW packages will be installed:
  alsa-topology-conf alsa-ucm-conf ca-certificates-java fonts-dejavu-extra java-common libasound2-data libasound2t64 libatk-wrapper-java
  libatk-wrapper-java-jni libgif7 libice-dev libice6 libnspr4 libnss3 libpcsc-lite1 libpthread-stubs0-dev libsm-dev libsm6 libx11-dev libxau-dev libxaw7
  libxcb-shape0 libxcb1-dev libxdmcp-dev libxft2 libxkbfile1 libxmu6 libxpm4 libxt-dev libxt6t64 libxv1 libxxf86dgal openjdk-17-jdk
  openjdk-17-jdk-headless openjdk-17-jre openjdk-17-jre-headless x11-utils x11proto-dev xorg-sgml-doctools xtrans-dev
0 upgraded, 40 newly installed, 0 to remove and 55 not upgraded.
Need to get 128 MB of archives.
After this operation, 298 MB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu noble/main amd64 alsa-topology-conf all 1.2.5.1-2 [15.5 kB]
Get:2 http://archive.ubuntu.com/ubuntu noble/main amd64 libasound2-data all 1.2.11-1build2 [21.0 kB]
Get:3 http://archive.ubuntu.com/ubuntu noble/main amd64 libasound2t64 amd64 1.2.11-1build2 [399 kB]
Get:4 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 alsa-ucm-conf all 1.2.10-1ubuntu5.4 [64.8 kB]
Get:5 http://archive.ubuntu.com/ubuntu noble/main amd64 ca-certificates-java all 20240118 [11.6 kB]
Get:6 http://archive.ubuntu.com/ubuntu noble/main amd64 fonts-dejavu-extra all 2.37-8 [1947 kB]
Get:7 http://archive.ubuntu.com/ubuntu noble/main amd64 java-common all 0.75+exp1 [6798 B]
Get:8 http://archive.ubuntu.com/ubuntu noble/main amd64 libice6 amd64 2:1.0.10-1build3 [41.4 kB]
Get:9 http://archive.ubuntu.com/ubuntu noble/main amd64 libsm6 amd64 2:1.2.3-1build3 [15.7 kB]
Get:10 http://archive.ubuntu.com/ubuntu noble/main amd64 libxt6t64 amd64 1:1.2.1-1.2build1 [171 kB]
Get:11 http://archive.ubuntu.com/ubuntu noble/main amd64 libxmu6 amd64 2:1.1.3-3build2 [47.6 kB]
Get:12 http://archive.ubuntu.com/ubuntu noble/main amd64 libxpm4 amd64 1:3.5.17-1build2 [36.5 kB]
Get:13 http://archive.ubuntu.com/ubuntu noble/main amd64 libxaw7 amd64 2:1.0.14-1build2 [187 kB]
```

```
Mar 18 14:59:52 Aravind jenkins[3151]: 64d3d6fb2c714adbbb2bd8fe5ae04d00
Mar 18 14:59:52 Aravind jenkins[3151]: This may also be found at: /var/lib/jenkins/secrets/initialAdminPassword
Mar 18 14:59:52 Aravind jenkins[3151]: *****
Mar 18 14:59:52 Aravind jenkins[3151]: *****
Mar 18 14:59:52 Aravind jenkins[3151]: *****
Mar 18 14:59:59 Aravind jenkins[3151]: 2025-03-18 14:50:59.480+0000 [id=34] INFO jenkins.InitReactorRunner$1#onAttained: Completed initializa
Mar 18 14:59:59 Aravind jenkins[3151]: 2025-03-18 14:50:59.510+0000 [id=25] INFO hudson.lifecycle.Lifecycle#onReady: Jenkins is fully up and
Mar 18 14:59:59 Aravind systemd[1]: Started jenkins.service - Jenkins Continuous Integration Server.
Mar 18 14:51:01 Aravind jenkins[3151]: 2025-03-18 14:51:01.768+0000 [id=70] INFO h.m.DownloadService$Downloadable#load: Obtained the updated
Mar 18 14:51:01 Aravind jenkins[3151]: 2025-03-18 14:51:01.768+0000 [id=70] INFO hudson.util.Retrier#start: Performed the action check update>
aravind@Aravind:~$ sudo systemctl stop jenkins
aravind@Aravind:~$ sudo systemctl start jenkins
aravind@Aravind:~$ 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
aravind@Aravind:~$ 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 14:57:09 UTC; 50s ago
     Main PID: 3465 (java)
       Tasks: 61 (Limit: 4575)
      Memory: 654.1M ()
     CGroup: /system.slice/jenkins.service
             └─3465 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --httpPort=8080

Mar 18 14:57:02 Aravind jenkins[3465]: Jenkins initial setup is required. An admin user has been created and a password generated.
Mar 18 14:57:02 Aravind jenkins[3465]: Please use the following password to proceed to installation:
Mar 18 14:57:02 Aravind jenkins[3465]: 64d3d6fb2c714adbbb2bd8fe5ae04d00
Mar 18 14:57:02 Aravind jenkins[3465]: This may also be found at: /var/lib/jenkins/secrets/initialAdminPassword
Mar 18 14:57:02 Aravind jenkins[3465]: *****
Mar 18 14:57:02 Aravind jenkins[3465]: *****
Mar 18 14:57:02 Aravind jenkins[3465]: *****
Mar 18 14:57:09 Aravind jenkins[3465]: 2025-03-18 14:57:09.427+0000 [id=32] INFO jenkins.InitReactorRunner$1#onAttained: Completed initializa
Mar 18 14:57:09 Aravind jenkins[3465]: 2025-03-18 14:57:09.461+0000 [id=25] INFO hudson.lifecycle.Lifecycle#onReady: Jenkins is fully up and
Mar 18 14:57:09 Aravind systemd[1]: Started jenkins.service - Jenkins Continuous Integration Server.
aravind@Aravind:~$ sudo nano /etc/nginx/sites-available/jenkins
[sudo] password for aravind:
aravind@Aravind:~$ sudo nginx -t
sudo: nginx: command not found
aravind@Aravind:~$ sudo nano /etc/nginx/sites-available/jenkins
aravind@Aravind:~$ sudo visudo
visudo: /etc/sudoers.tmp unchanged
aravind@Aravind:~$ sudo visudo
```

2. Access Jenkins Web Interface

Jenkins will be available at <http://localhost: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>

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:

```
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://localhost:80>

You should see the default Nginx welcome page

Customize Jenkins

Plugins extend Jenkins with additional features to support many different needs.

Install suggested plugins

Install plugins the Jenkins community finds most useful.

Select plugins to install

Select and install plugins most suitable for your needs.

Jenkins 2.501

Getting Started

Getting Started

✓ Folders	✓ OWASP Markup Formatter	⌚ Build Timeout	⌚ Credentials Binding	** Ionicons API
⌚ Timestampers	⌚ Workspace Cleanup	⌚ Ant	⌚ Gradle	Folders
⌚ Pipeline	⌚ GitHub Branch Source	⌚ Pipeline: GitHub Groovy Libraries	⌚ Pipeline Graph View	OWASP Markup Formatter
⌚ Git	⌚ SSH Build Agents	⌚ Matrix Authorization Strategy	⌚ PAM Authentication	** ASM API
⌚ LDAP	⌚ Email Extension	⌚ Mailer	⌚ Dark Theme	** JSON Path API
				** Struts
				** Pipeline: Step API
				** Token Macro
				** - required dependency

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Getting Started

Create First Admin User

Username

aravind

Password

Confirm password

Full name

ARAVINDHASAMY R


E-mail address

aravind110304@gmail.com

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Skip and continue as admin


Save and Continue


 Jenkins


🔍 🛡️ 🔴 👤 ARAVINDHASAMY R 📄 log out

Dashboard >

+ New Item

 Build History

 Manage Jenkins

 My Views

Build Queue

No builds in the queue.

Build Executor Status

0/2

Welcome to Jenkins!

This page is where your Jenkins jobs will be displayed. To get started, you can set up distributed builds or start building a software project.

Start building your software project

Create a job

Set up a distributed build

Set up an agent

Configure a cloud

Learn more about distributed builds

Add description

REST API

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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.

