

## **Practical: Installation of Java on Unix/Linux Machine (Without VirtualBox)**

**This guide uses WSL (Windows Subsystem for Linux) to simulate a Linux environment directly on Windows.**

Step 1: Enable WSL

1. Open PowerShell as Administrator

2. Run the following command:

```
wsl --install
```

3. Restart your computer when prompted.

4. After restart, choose Ubuntu or install it from the Microsoft Store.

Step 2: Open Ubuntu (WSL)- Search for 'Ubuntu' in Start Menu and open it.- It will initialize and ask for a username and password.

Step 3: Update the Package List

Run the following command:

```
sudo apt update
```

Step 4: Install Java (OpenJDK 8 or 11)- For Java 8:

```
sudo apt install openjdk-8-jdk -y
```

 For Java 11:

```
sudo apt install openjdk-11-jdk -y
```

Step 5: Verify Java Installation

Run:

```
java -version
```

Expected output:

```
openjdk version "1.8.0_xxx" ...
```

Step 6: Set JAVA\_HOME Environment Variable (Optional)

1. Open .bashrc file:

```
nano ~/.bashrc
```

2. Add the following lines at the end:

```
export JAVA_HOME=/usr/lib/jvm/java-8-openjdk-amd64
```

```
export PATH=$JAVA_HOME/bin:$PATH
```

 3. Save and exit

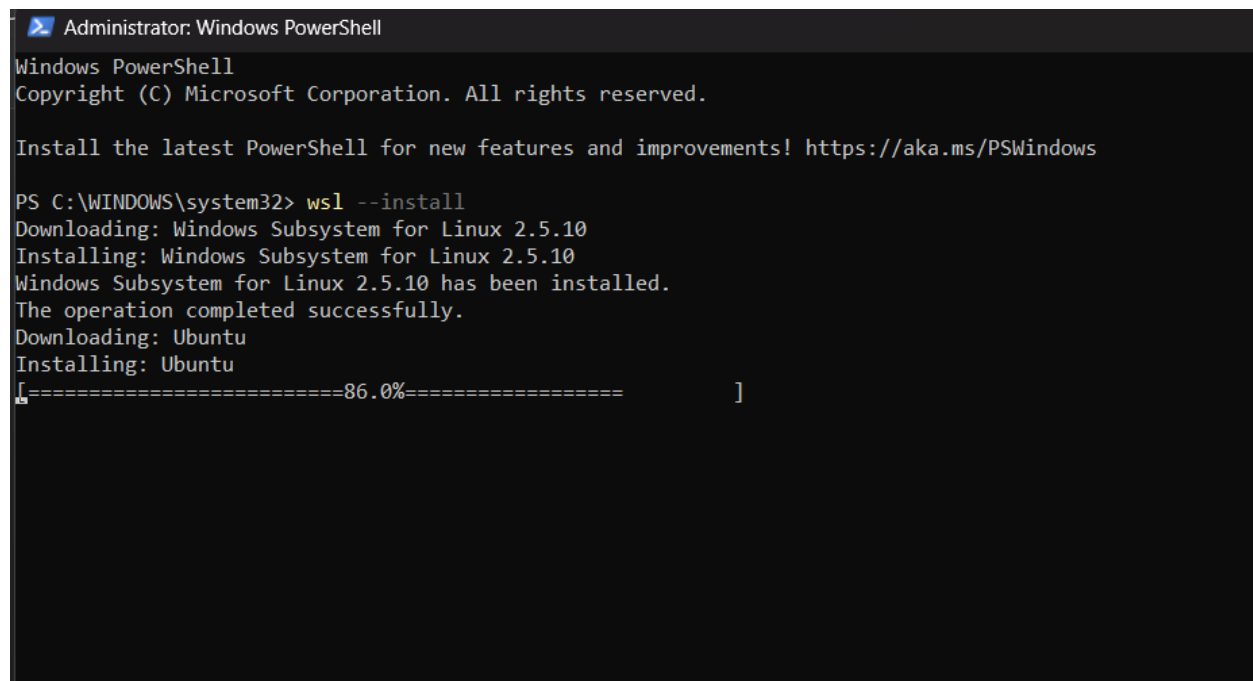
(Ctrl+X, then Y, then Enter)

4. Reload bashrc: `source ~/.bashrc`

5. Verify JAVA\_HOME is set:

```
echo $JAVA_HOME
```

You now have Java installed on a Linux system simulated within Windows without using VirtualBox



```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\WINDOWS\system32> wsl --install
Downloading: Windows Subsystem for Linux 2.5.10
Installing: Windows Subsystem for Linux 2.5.10
Windows Subsystem for Linux 2.5.10 has been installed.
The operation completed successfully.
Downloading: Ubuntu
Installing: Ubuntu
[=====86.0%=====]
```

```
ikshant@LAPTOP-IET5HRJQ: ~$ sudo apt update
[sudo] password for ikshant:
Hit:1 http://archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:4 http://archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:5 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [1075 kB]
Get:6 http://archive.ubuntu.com/ubuntu noble/universe amd64 Packages [15.0 MB]
Get:7 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [186 kB]
Get:8 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [21.6 kB]
Get:9 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [879 kB]
Get:10 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [195 kB]
Get:11 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [52.2 kB]
Get:12 http://security.ubuntu.com/ubuntu noble-security/universe amd64 c-n-f Metadata [17.0 kB]
Get:13 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Packages [1610 kB]
Get:14 http://security.ubuntu.com/ubuntu noble-security/restricted Translation-en [357 kB]
Get:15 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Components [212 B]
Get:16 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Packages [18.5 kB]
Get:17 http://security.ubuntu.com/ubuntu noble-security/multiverse Translation-en [4288 B]
Get:18 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [212 B]
Get:19 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 c-n-f Metadata [380 B]
Get:20 http://archive.ubuntu.com/ubuntu noble/universe Translation-en [5982 kB]
Get:21 http://archive.ubuntu.com/ubuntu noble/universe amd64 Components [3871 kB]
Get:22 http://archive.ubuntu.com/ubuntu noble/universe amd64 c-n-f Metadata [301 kB]
Get:23 http://archive.ubuntu.com/ubuntu noble/multiverse amd64 Packages [269 kB]
Get:24 http://archive.ubuntu.com/ubuntu noble/multiverse Translation-en [118 kB]
Get:25 http://archive.ubuntu.com/ubuntu noble/multiverse amd64 Components [35.0 kB]
Get:26 http://archive.ubuntu.com/ubuntu noble/multiverse amd64 c-n-f Metadata [8328 B]
Get:27 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [1337 kB]
Get:28 http://archive.ubuntu.com/ubuntu noble-updates/main Translation-en [267 kB]
Get:29 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [175 kB]
Get:30 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [1121 kB]
Get:31 http://archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [288 kB]
Get:32 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [377 kB]
Get:33 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [26.0 kB]
Get:34 http://archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Packages [1700 kB]
Get:35 http://archive.ubuntu.com/ubuntu noble-updates/restricted Translation-en [375 kB]
Get:36 http://archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 B]
Get:37 http://archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Packages [33.2 kB]
Get:38 http://archive.ubuntu.com/ubuntu noble-updates/multiverse Translation-en [6772 B]
Get:39 http://archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [940 B]
```

```
ikshant@LAPTOP-IET5HRJQ:~$ java -version
openjdk version "11.0.28" 2025-07-15
OpenJDK Runtime Environment (build 11.0.28+6-post-Ubuntu-1ubuntu124.04.1)
OpenJDK 64-Bit Server VM (build 11.0.28+6-post-Ubuntu-1ubuntu124.04.1, mixed mode, sharing)
ikshant@LAPTOP-IET5HRJQ:~$
```

```
ikshant@LAPTOP-IET5HRJQ: ~$ sudo apt install openjdk-11-jdk -y
2 packages can be upgraded. Run 'apt list --upgradable' to see them.
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-lite
  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 libxxf86dga1 openjdk-11-jdk-headless openjdk-11-jre
  openjdk-11-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-11-demo
  openjdk-11-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-lite
  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 libxxf86dga1 openjdk-11-jdk openjdk-11-jdk-headless
  openjdk-11-jre openjdk-11-jre-headless x11-utils x11proto-dev xorg-sgml-doctools xtrans-dev
0 upgraded, 40 newly installed, 0 to remove and 2 not upgraded.
Need to get 125 MB of archives.
After this operation, 284 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-updates/main amd64 libasound2-data all 1.2.11-1ubuntu0.1 [21.1 kB]
Get:3 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libasound2t64 amd64 1.2.11-1ubuntu0.1 [399 kB]
Get:4 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 alsa-ucm-conf all 1.2.10-1ubuntu5.7 [66.4 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]
Get:14 http://archive.ubuntu.com/ubuntu noble/main amd64 libxcb-shape0 amd64 1.15-1ubuntu2 [6100 B]
Get:15 http://archive.ubuntu.com/ubuntu noble/main amd64 libxft2 amd64 2.3.6-1build1 [45.3 kB]
Get:16 http://archive.ubuntu.com/ubuntu noble/main amd64 libxkbfile1 amd64 1:1.1.0-1build4 [70.0 kB]
Get:17 http://archive.ubuntu.com/ubuntu noble/main amd64 libxv1 amd64 2:1.0.11-1.1build1 [10.7 kB]
Get:18 http://archive.ubuntu.com/ubuntu noble/main amd64 libxxf86dga1 amd64 2:1.1.5-1build1 [11.6 kB]
```