

Windows Subsystem for Linux" (WSL)

Introduction

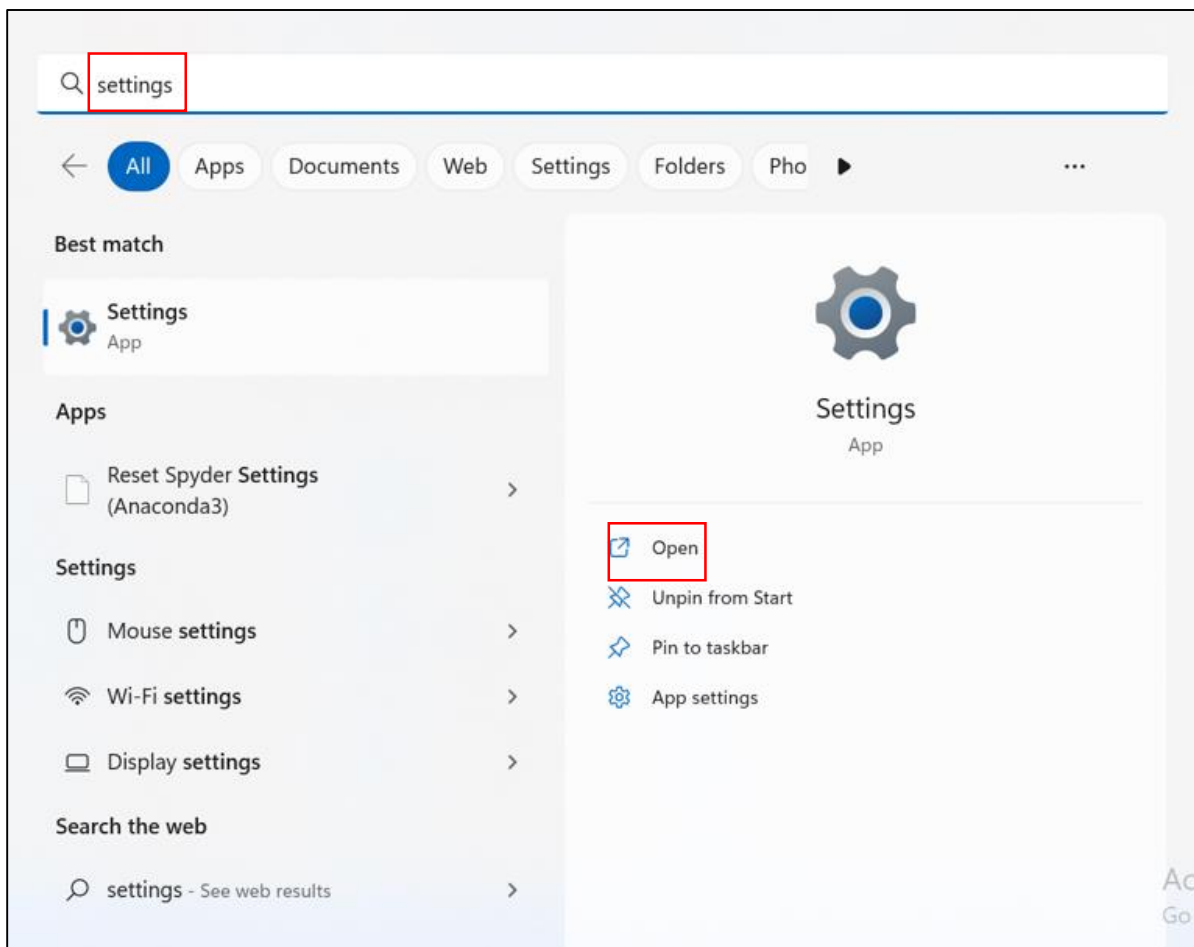
Windows Subsystem for Linux (WSL) is a compatibility layer for running Linux binary executable natively on Windows 10. WSL allows users to run Linux distributions on Windows 10 without needing to create a virtual machine. WSL also provides an environment for developing Linux applications on Windows. WSL makes it possible to run Bash shell scripts, Linux command-line tools, and other Linux applications directly on Windows 10.

Bash and .sh file in Linux:

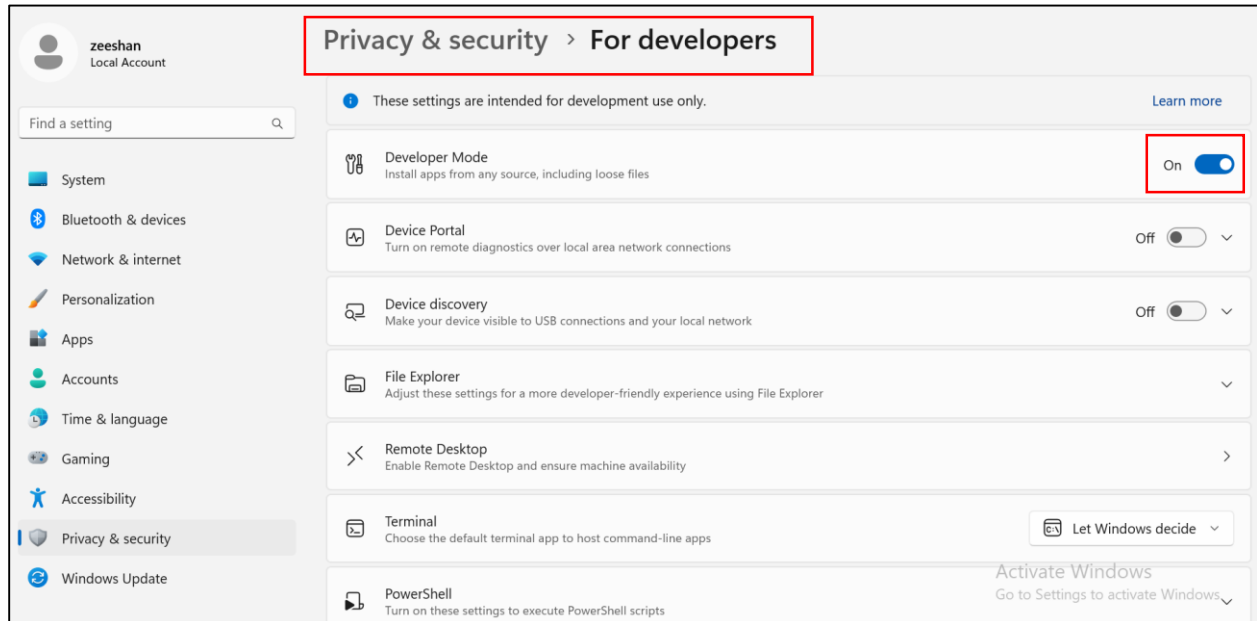
Bash is a Unix shell and command language used in Linux and other Unix-like operating systems. Bash is the default shell on most Linux distributions, and it's used to interpret commands that are typed into a command-line interface. Bash allows users to execute commands, manipulate files and directories, and run shell scripts. A Bash script is a text file that contains a series of commands that are executed in sequence. A Bash file typically has a .sh extension.

How to Setup WSL on Windows?

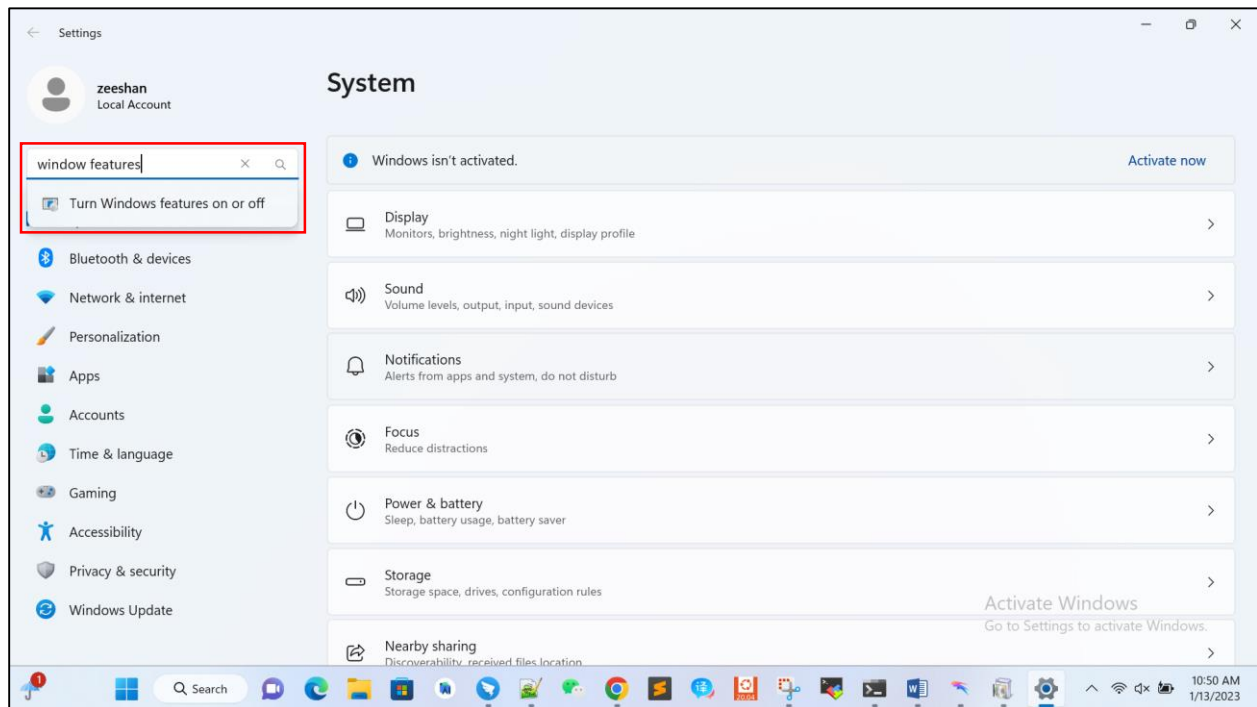
Step 01: Go to windows setup > setting and open



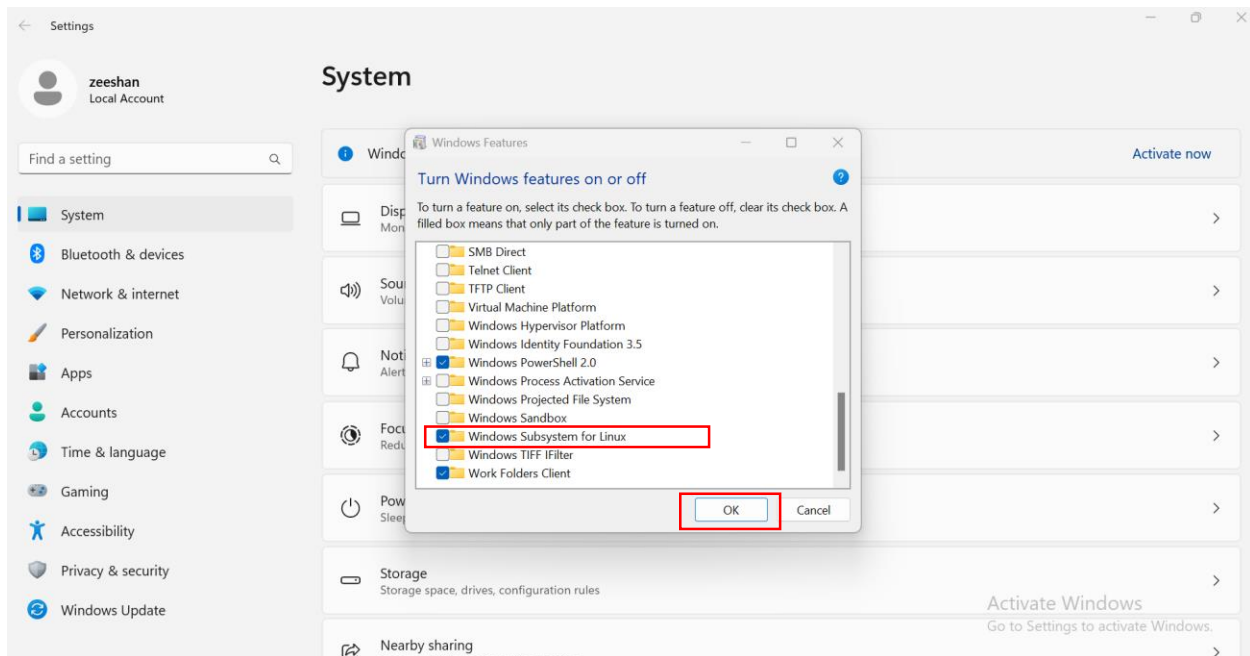
Step 02: Go to Privacy & Security> For developers and turn on developer option



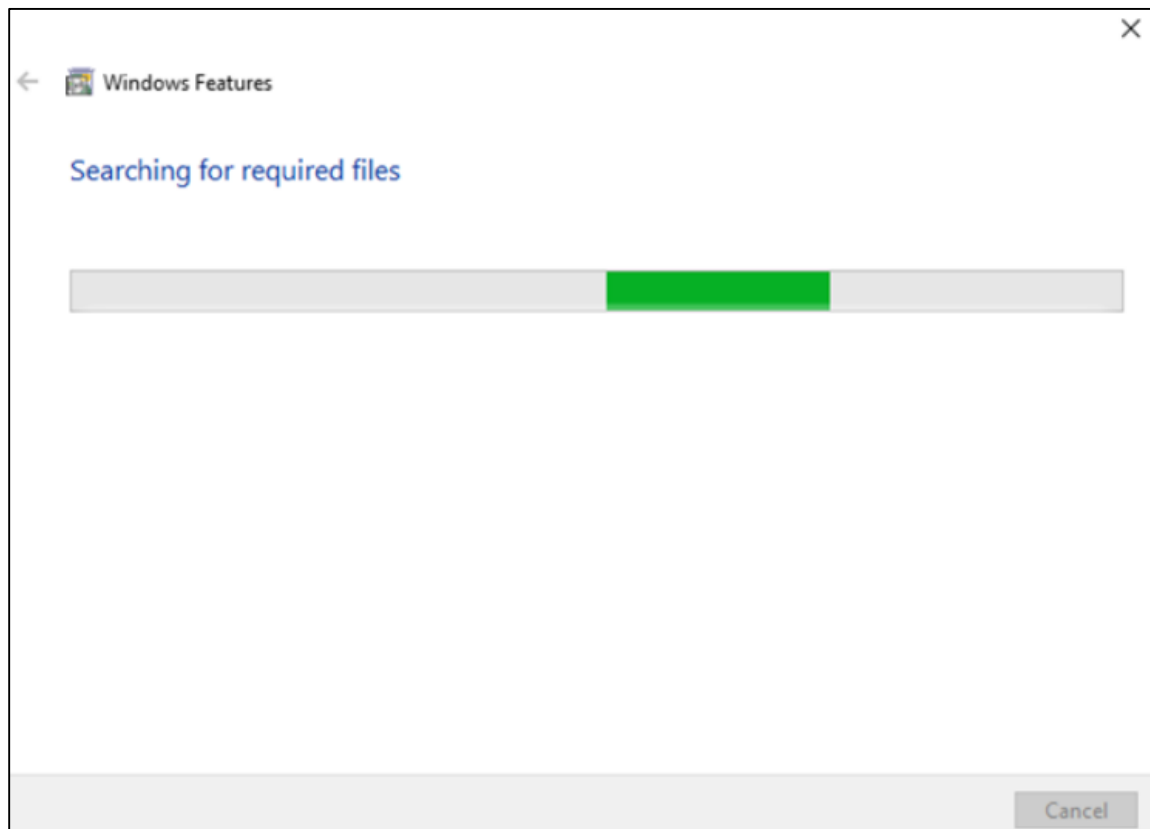
Step 03: Go to settings and search Window features and click “Turn Windows features on or off”



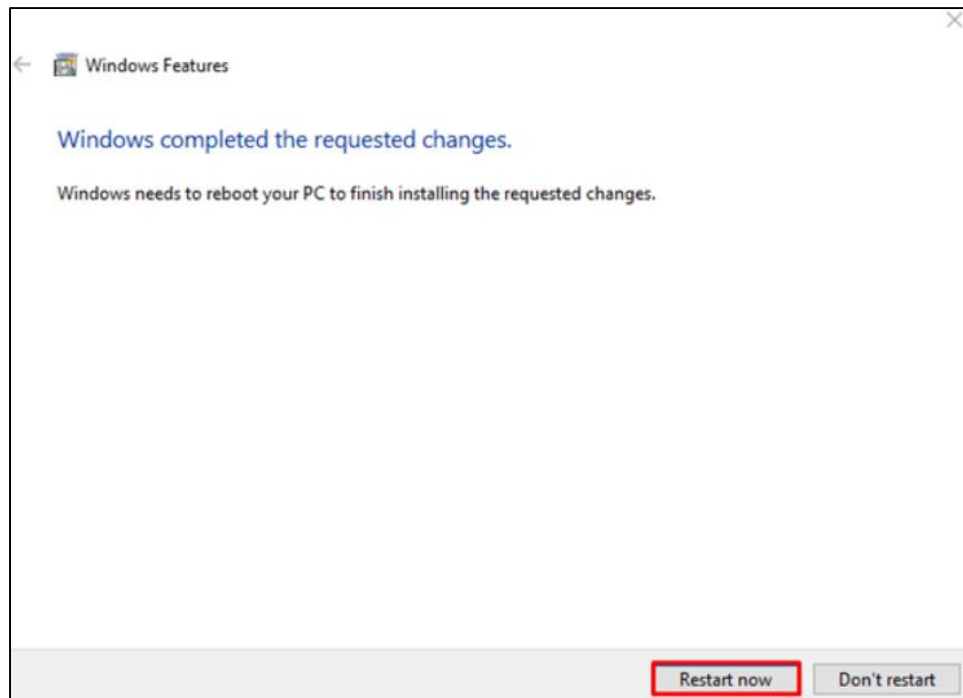
Check “Window Subsystem for Linux” and click OK.



This operation will start enabling WSL on Windows:

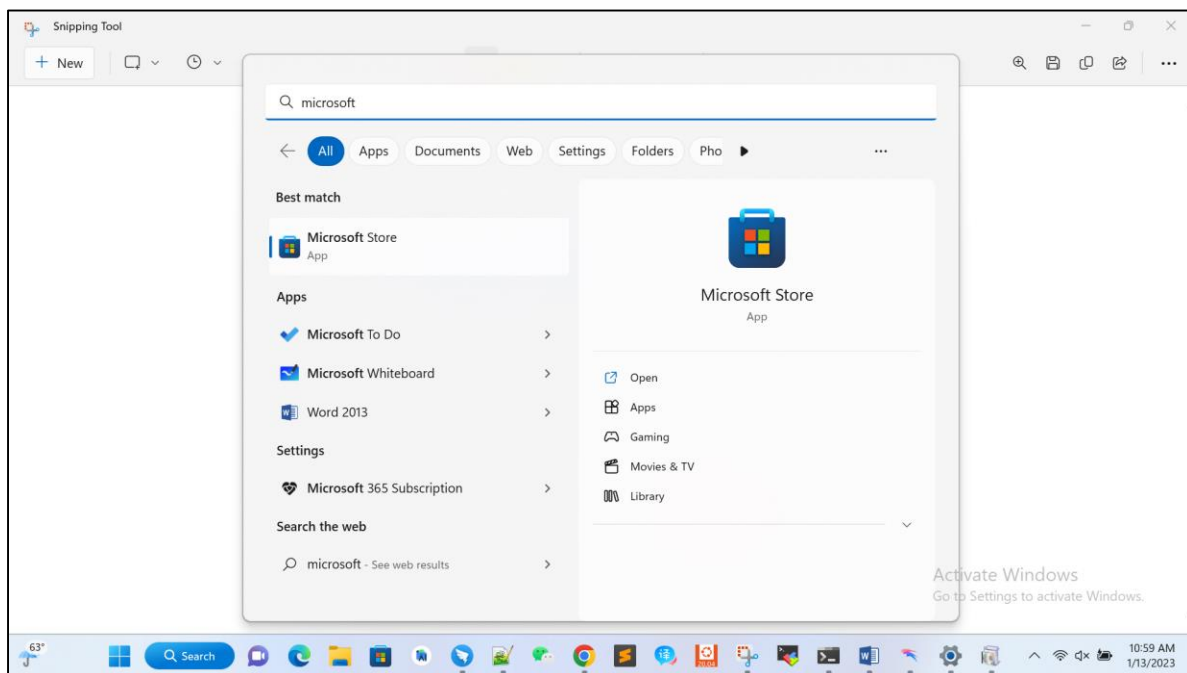


Then, restart the system to take effect of the changes by pressing the “**Restart now**” button:

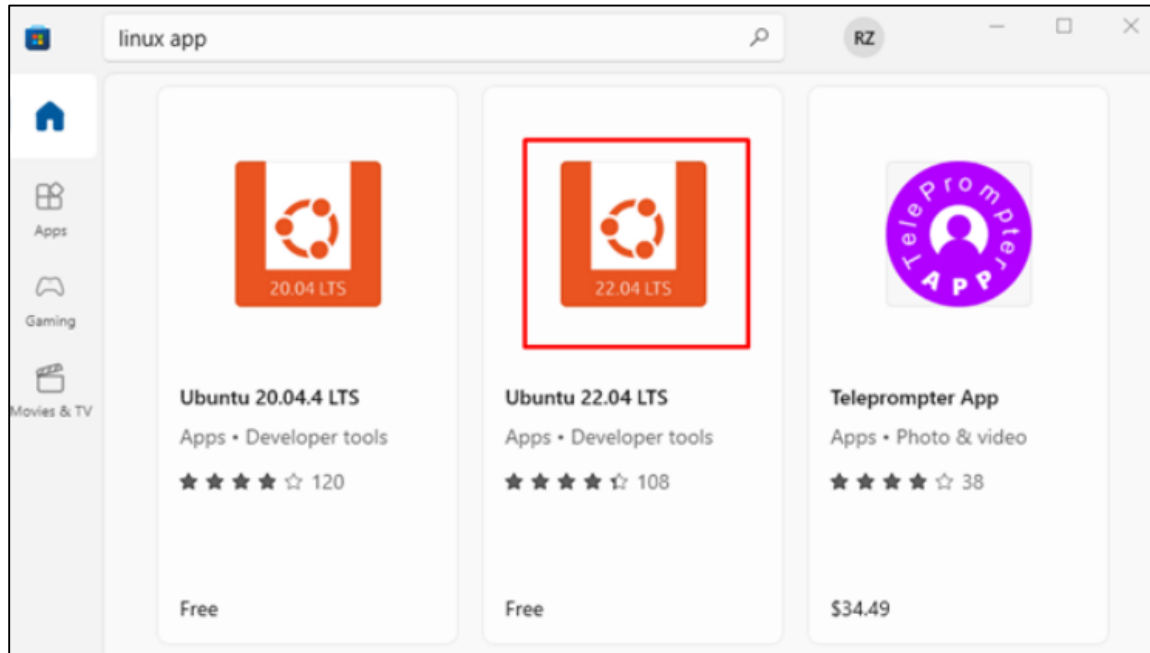


Now we have successfully enabled the WSL on Windows. We have to install Linux-supported tools that help us run Linux commands on Windows.

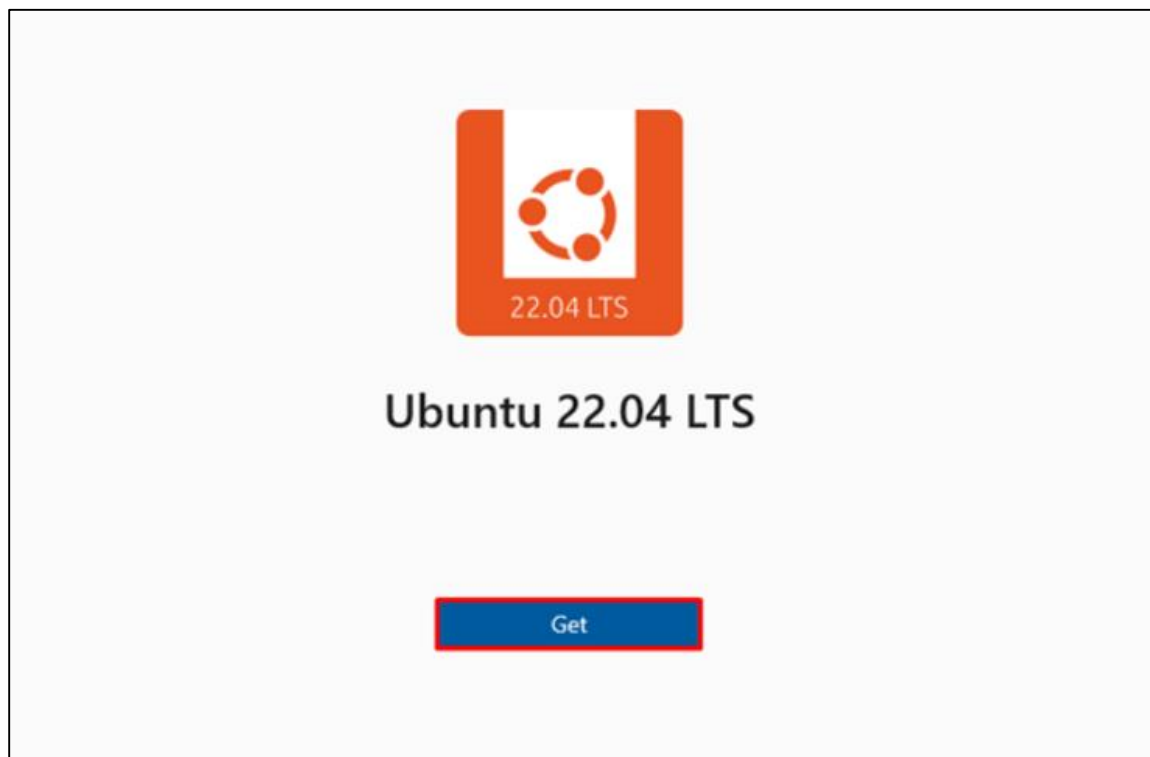
Step 04: install Ubuntu Linux tool from “Microsoft Store” in windows:



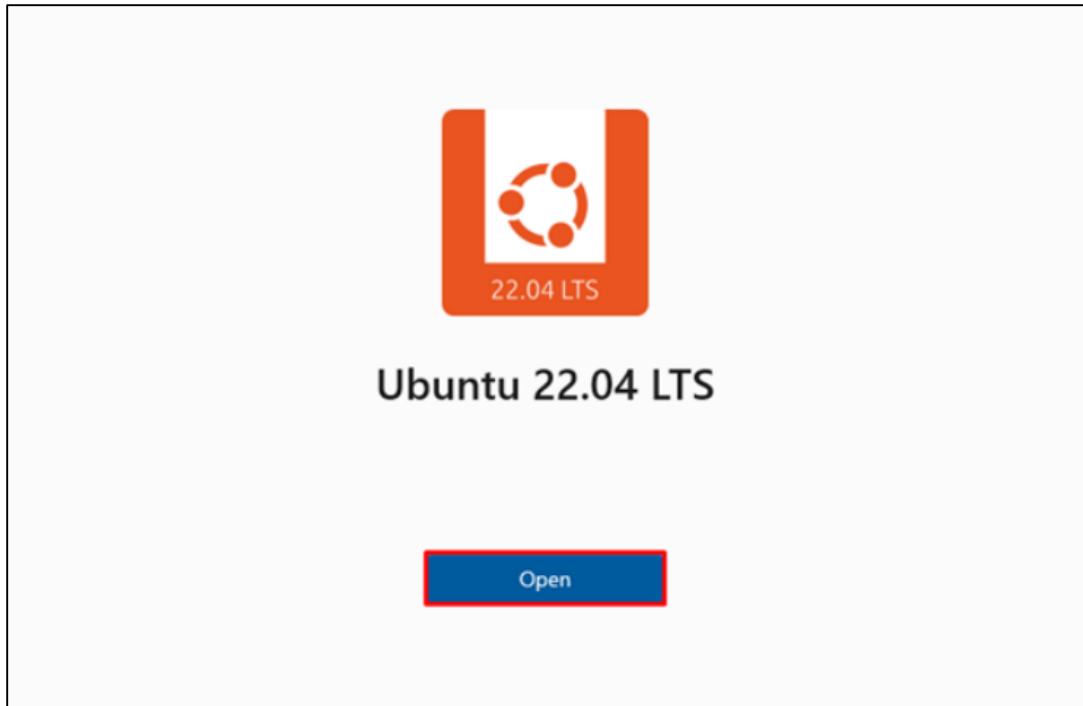
Search for “**Linux app**” in the search bar. Scroll down, select and open Ubuntu 22.04 LTS:



Click on the “**Get**” button to install Ubuntu 22.04 LTS terminal on Windows:



Press the “**Open**” button to open and configure Ubuntu 22.04 LTS on Windows:



Step 4: Setup Ubuntu's Initial Settings

The Ubuntu terminal will open on the screen. Set the username and password:

```
linuxhint@DESKTOP-EKFGVKJ: ~  
Please create a default UNIX user account. The username does not need to match your Windows username.  
For more information visit: https://aka.ms/wslusers  
Enter new UNIX username: linuxhint  
New password:  
Retype new password:  
passwd: password updated successfully  
Installation successful!  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
Welcome to Ubuntu 22.04 LTS (GNU/Linux 4.4.0-19041-Microsoft x86_64)  
  
 * Documentation:  https://help.ubuntu.com  
 * Management:    https://landscape.canonical.com  
 * Support:        https://ubuntu.com/advantage  
/etc/update-motd.d/50-landscape-sysinfo: 17: cannot create /var/lib/landscape/landscape-sysinfo.cache:  
permission denied  
  
0 updates can be applied immediately.  
  
The list of available updates is more than a week old.  
To check for new updates run: sudo apt update  
  
This message is shown once a day. To disable it please create the  
/home/linuxhint/.hushlogin file.  
linuxhint@DESKTOP-EKFGVKJ:~$
```

You have successfully installed “Windows Subsystem for Linux” (WSL)”

Now, to run the Linux prompt go to CMD and type bash:

```
zishan@DESKTOP-OFH8F8H: x + v
Microsoft Windows [Version 10.0.22621.1105]
(c) Microsoft Corporation. All rights reserved.

C:\Users\zeeshan>bash
Welcome to Ubuntu 20.04.5 LTS (GNU/Linux 4.4.0-22621-Microsoft x86_64)

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

System information as of Fri Jan 13 11:11:48 CST 2023

System load:  0.52      Processes:      7
Usage of /home: unknown Users logged in:    0
Memory usage: 49%      IPv4 address for wifi0: 192.168.11.102
Swap usage:   0%

55 updates can be applied immediately.
46 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

This message is shown once a day. To disable it please create the
/home/zishan/.hushlogin file.
zishan@DESKTOP-OFH8F8H:/mnt/c/Users/zeeshan$ ls
3D Objects      README.md      Activate Windows
AndroidStudioProjects  Recent        Go to Settings to activate Windows.
Downloads       Saved Games
```

How to create and run .sh file using bash command

```
zishan@DESKTOP-OFH8F8H: x + v
zishan@DESKTOP-OFH8F8H:~$ mkdir build.sh
zishan@DESKTOP-OFH8F8H:~$ ls
MY_CPP  build.sh  yolov5-opencv-cpp-python
zishan@DESKTOP-OFH8F8H:~$ bash build.sh

Activate Windows
Go to Settings to activate Windows.
```

Linux References:

- [1] <https://linuxhint.com/run-sh-file-windows/>
- [2] https://www.youtube.com/watch?v=i1ZroJzsw90&list=PLH4mzrKSvtSKWjMET-TVf85ZBMz_zvRGW
- [3] <https://www.cyberciti.biz/faq/howto-compile-and-run-c-cplusplus-code-in-linux/>
- [4] <https://devconnected.com/how-to-copy-directory-on-linux/>