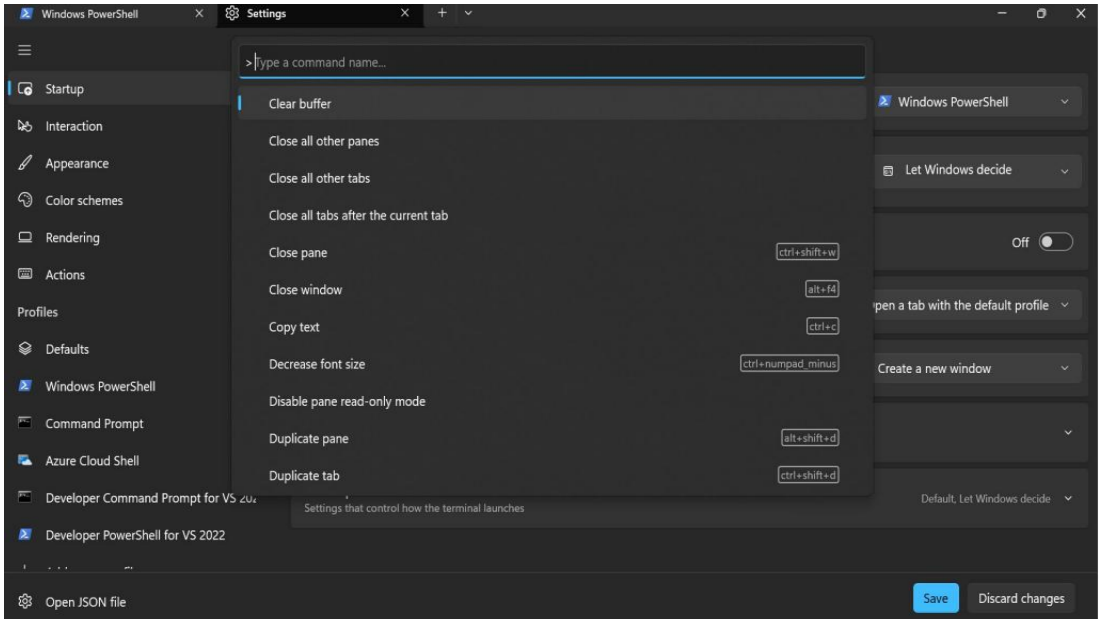
Windows Subsystem for Linux Assignment

Install Windows Terminal :



Download Linux :

- Run the ‘wsl --list --online’ command to display the list of available Linux distros.

```
root@9a4a8a5799315e0: ~
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\Administrator> wsl --set-default-version 2
For information on key differences with WSL 2 please visit https://aka.ms/wsl2
The operation completed successfully.
PS C:\Users\Administrator> wsl --list --online
The following is a list of valid distributions that can be installed.
Install using 'wsl.exe --install <Distro>'.

NAME                            FRIENDLY NAME
Ubuntu                          Ubuntu
Debian                          Debian GNU/Linux
kali-linux                      Kali Linux Rolling
Ubuntu-18.04                    Ubuntu 18.04 LTS
Ubuntu-20.04                    Ubuntu 20.04 LTS
Ubuntu-22.04                    Ubuntu 22.04 LTS
Ubuntu-24.04                    Ubuntu 24.04 LTS
OracleLinux_7_9                 Oracle Linux 7.9
OracleLinux_8_7                 Oracle Linux 8.7
OracleLinux_9_1                 Oracle Linux 9.1
openSUSE-Leap-15.6              openSUSE Leap 15.6
SUSE-Linux-Enterprise-15-SP5    SUSE Linux Enterprise 15 SP5
SUSE-Linux-Enterprise-15-SP6    SUSE Linux Enterprise 15 SP6
openSUSE-Tumbleweed             openSUSE Tumbleweed
```

- To install the default Ubuntu 20.04 distro, enter:
- wsl –install

```
PS C:\Users\Administrator> wsl --install
Ubuntu is already installed.
Launching Ubuntu...
```

Update and Upgrade the Linux :

- Run the following commands as ‘sudo apt update’ and ‘sudo apt upgrade

- sudo apt update

```
root@9a4a8a5799315e0:~# sudo apt update
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
Ign:5 http://91.189.88.152/ubuntu noble InRelease
Ign:6 http://91.189.88.152/ubuntu noble-updates InRelease
Ign:7 http://91.189.88.152/ubuntu noble-security InRelease
Ign:5 http://91.189.88.152/ubuntu noble InRelease
Ign:6 http://91.189.88.152/ubuntu noble-updates InRelease
Ign:7 http://91.189.88.152/ubuntu noble-security InRelease
Ign:5 http://91.189.88.152/ubuntu noble InRelease
Ign:6 http://91.189.88.152/ubuntu noble-updates InRelease
Ign:7 http://91.189.88.152/ubuntu noble-security InRelease
```

- sudo apt upgrade

```
root@9a4a8a5799315e0:~# sudo apt upgrade
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following package was automatically installed and is no longer required:
  libllvm17t64
Use 'sudo apt autoremove' to remove it.
The following upgrades have been deferred due to phasing:
  wsl-setup
0 upgraded, 0 newly installed, 0 to remove and 1 not upgraded.
```

Check for Linux kernal updates from Powershell

- check the updates by running the command as ‘wsl --update’

```
PS C:\Users\Administrator> wsl --update
Checking for updates.
The most recent version of Windows Subsystem for Linux is already installed.
```

Switch Between WSL1 and WSL2

- Run the command as ‘wsl --list –verbose’ to display the installed Linux distros and their WSL version.

```
PS C:\Users\Administrator> wsl --list --verbose
  NAME              STATE           VERSION
* docker-desktop    Stopped         2
  Debian            Stopped         2
  Ubuntu            Running         2
```

- To switch Ubuntu to WSL2, enter: wsl --set-version Ubuntu 2

```
PS C:\Users\Administrator> wsl --set-version Ubuntu 2
For information on key differences with WSL 2 please visit https://aka.ms/wsl2
Conversion in progress, this may take a few minutes.
The operation completed successfully.
```

- To switch back to WSL1, enter: wsl --set-version Ubuntu 1

```
PS C:\Users\Administrator> wsl --set-version Ubuntu 1
Conversion in progress, this may take a few minutes.
The operation completed successfully.
```

Set a Default Linux Distribution:

- To set the default distro, list the Linux installations:

```
PS C:\Users\Administrator> wsl --list
Windows Subsystem for Linux Distributions:
docker-desktop (Default)
Debian
Ubuntu
```

- set a default distribution by using the command ‘wsl --setdefault Ubuntu’.

```
PS C:\Users\Administrator> wsl --setdefault Ubuntu
The operation completed successfully.
```

Run Linux as a Specific User:

- To run the default distribution as a specific user, enter the command in a Windows Powershell terminal.

```
root@9a4a8a5799315e0:/mnt/c/Users/Administrator# adduser mamatha
Adding user `mamatha' ...
Adding new group `mamatha' (1000) ...
Adding new user `mamatha' (1000) with group `mamatha (1000)' ...
Creating home directory `/home/mamatha' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for mamatha
Enter the new value, or press ENTER for the default
        Full Name []:
        Room Number []:
        Work Phone []:
        Home Phone []:
        Other []:
Is the information correct? [Y/n] Y
Adding new user `mamatha' to supplemental / extra groups `users' ...
Adding user `mamatha' to group `users' ...
```

Create a Directory :

- Use the command ‘mkdir D:\backup

```
mamu@9a4a8a5799315e0:/mnt/c/Users/Administrator$ mkdir D:\backup
```

- export one by name to a backup .tar file

```
mamu@9a4a8a5799315e0:/mnt/c/Users/Administrator$ wsl.exe --export Ubuntu D:\backup\ubuntu.tar
E
```

- Unregister that distro to remove it from the drive:

```
PS C:\Users\Administrator> wsl --unregister Ubuntu
Unregistering.
The operation completed successfully.
```

- Enter ‘wsl --list’ to verify the distro has been removed or not.

```
PS C:\Users\Administrator> wsl --list
Windows Subsystem for Linux Distributions:
Debian (Default)
docker-desktop
```

- Import the backup into a new WSL2 distro, such as ‘D:\wsl’:

```
PS C:\Users\Administrator> mkdir D:\wsl


    Directory: D:\


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d-----        04-02-2025     15:58                wsl
```

```
PS C:\Users\Administrator> dir D:\


    Directory: D:\


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d-----        17-12-2024     16:48                apache-jmeter-5.6.3
d-----        04-02-2025     16:11                backup
d-----        13-04-2024     09:32                Selenium
d-----        24-12-2024     13:02                Softwares
d-----        17-12-2024     16:39                spring-tool-suite-4-4.27.0.RELEASE-e4.
                                                  34.0-win32.win32.x86_64
d-----        24-12-2024     12:28                Ubuntu VM
d-----        04-02-2025     15:58                wsl
-a----        04-02-2025     15:56              0 backupubuntu.tar
```

- Run the command ‘wsl --import Ubuntu D:\wsl\ D:\backup\ubuntu.tar’

```
PS C:\Users\Administrator> wsl --import Ubuntu D:\wsl\ D:\backup\ubuntu.tar
Import in progress, this may take a few minutes.
The operation completed successfully.
```

- Ubuntu will use root as the default user. To revert to the user account, enter the following command: ‘ubuntu config –default-user <username>’

```
PS C:\Users\Administrator> ubuntu config --default-user mamatha
```

- Define a user by logging on to the distro and creating/editing /etc/wsl.conf.

```
mamatha@9a4a8a5799315e0: ~
<3>WSL (11) ERROR: CreateProcessParseCommon:800: getpwnam(<mamatha>) failed 17
mamatha@9a4a8a5799315e0:~$ sudo vi /etc/wsl.conf
[sudo] password for mamatha:
```

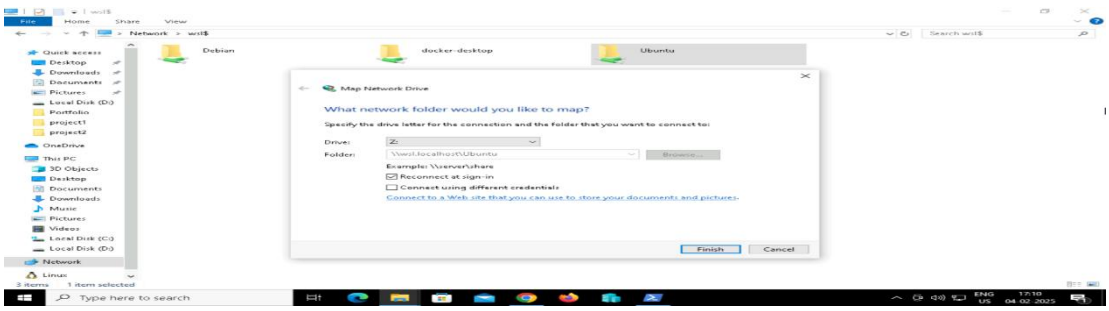
```
Select mamatha@9a4a8a5799315e0: ~
[user]
default=<mamatha
~
~
```

- Run the command in the powershell ‘wsl –terminate <distroname>

```
PS C:\Users\Administrator> wsl --terminate Ubuntu
The operation completed successfully.
```

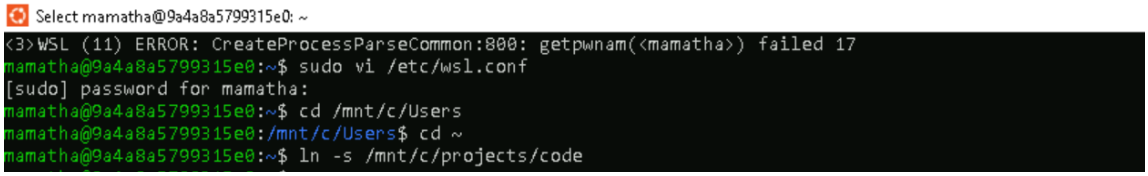
Access Linux Files from Windows:

- Mount the network drive ‘ \\wsl$\Ubuntu\home\<username>’



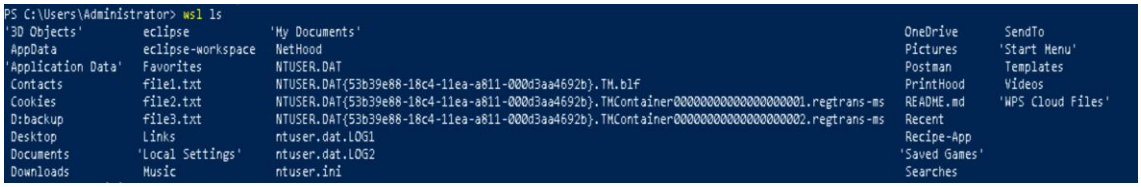
Accessing Windows Files from Linux:

- WSL2 allows to access Windows files through the /mnt/ directory in Linux.
- Create a Symbolic Link to Windows Folder.
- Navigate to the Linux home directory.
- Access the Windows Folder from Linux using ‘cd ~/code’.



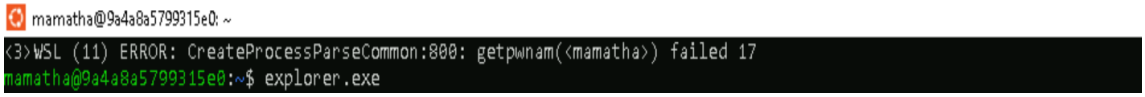
Run Linux Commands from Windows:

- Linux (bash) shell commands can be run from a Windows Powershell or command-line terminal using wsl.



Run Windows Applications from Linux:

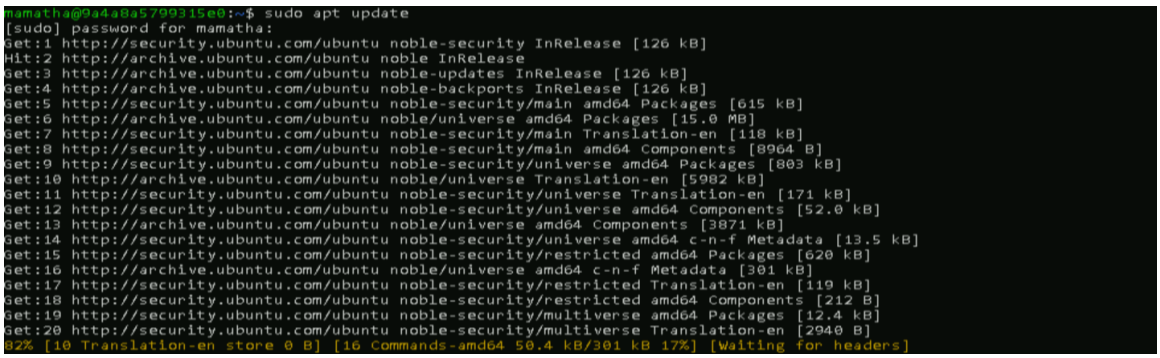
- To open the Windows File Explorer from WSL2, run the following command as ‘explorer.exe



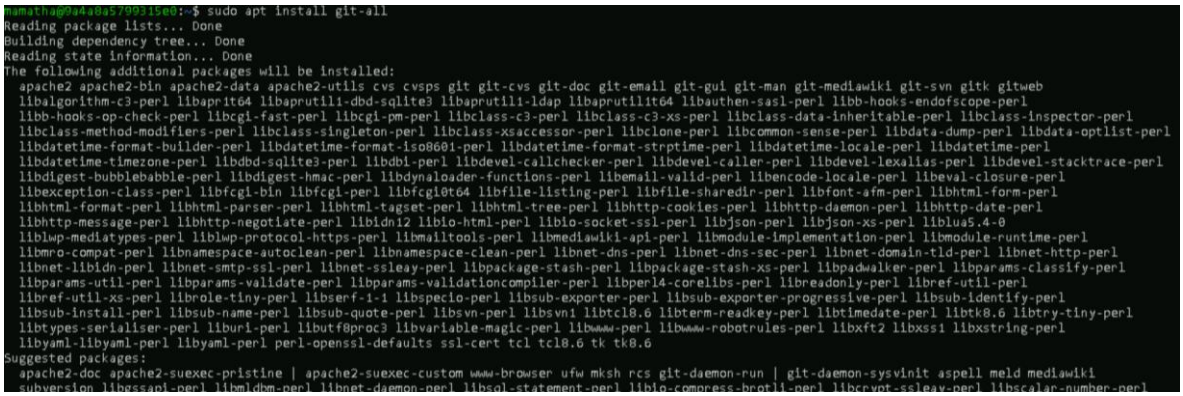
Install Applications:

- Configure Git to Handle Line Endings:

- Update Package Lists

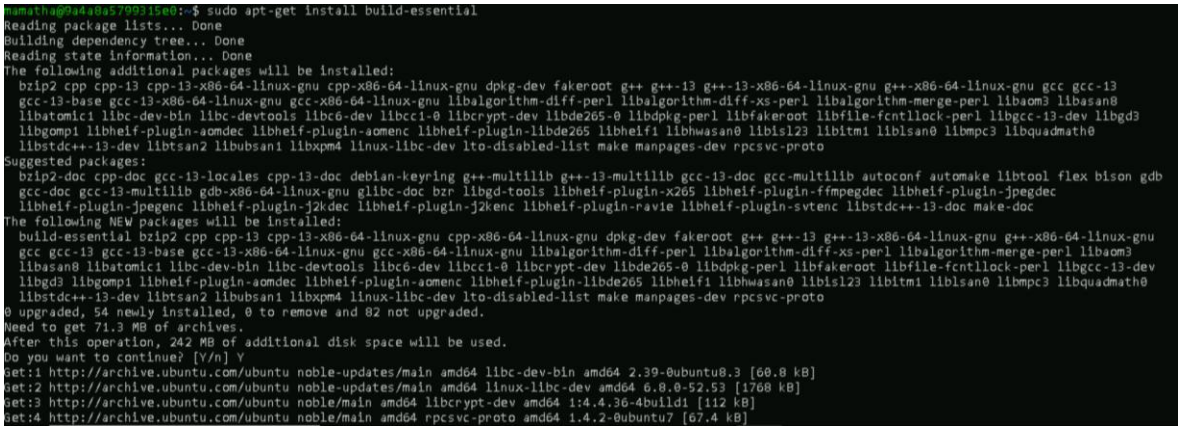


- Install Git using the apt package manager. The git-all package includes all Git-related tools.

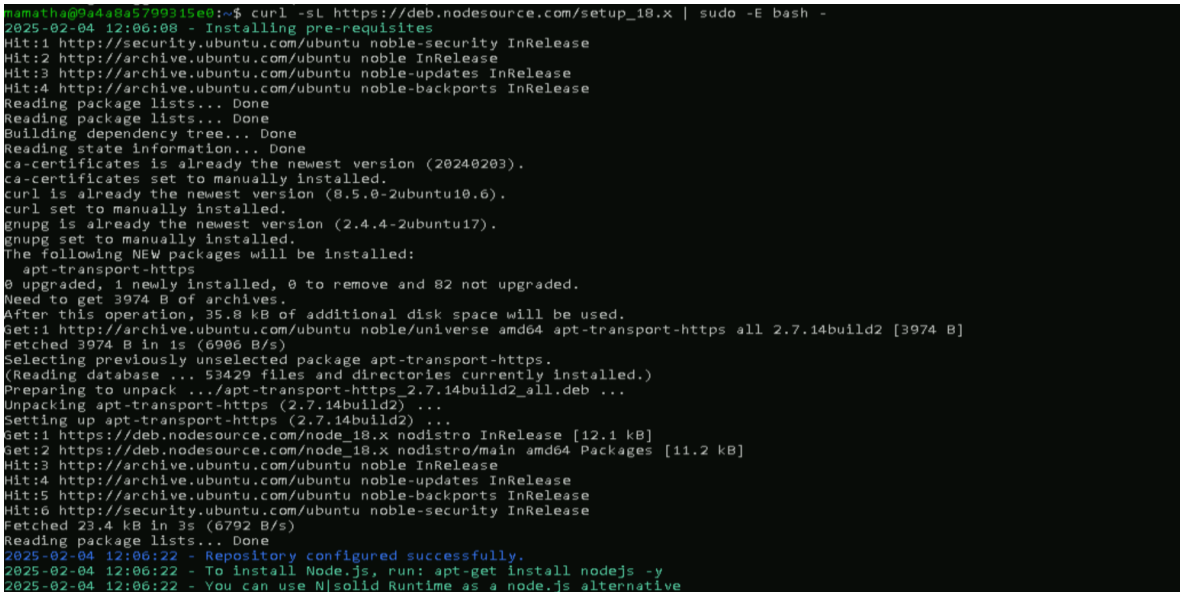


Steps for Installing Node.js on Ubuntu:

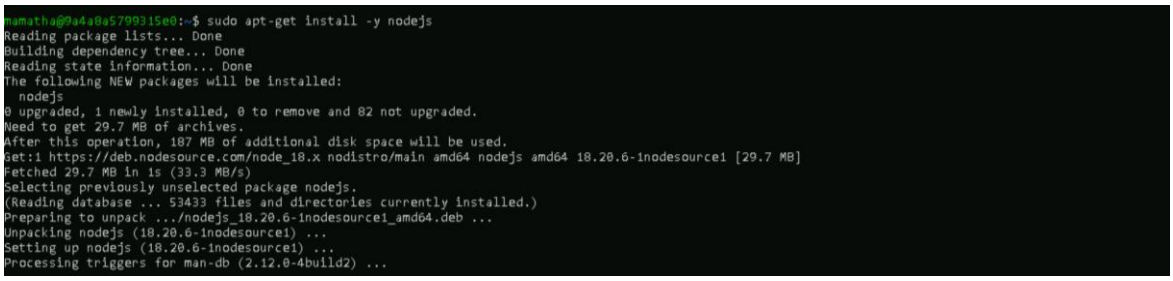
- Before installing Node.js, we need to install the build-essential package.



- Set Up Node.js Repository



- After setting up the repository, install Node.js using the apt-get package manager



Installing Graphical Linux Applications:

- Install a Graphical Linux Application. To install the GNOME text editor run ‘sudo apt install gedit’.
- After the installation is complete, launch the application directly from your WSL2 terminal.