

WSL Installation Guidance

Created by TechJI and 2023 151 TA Team.



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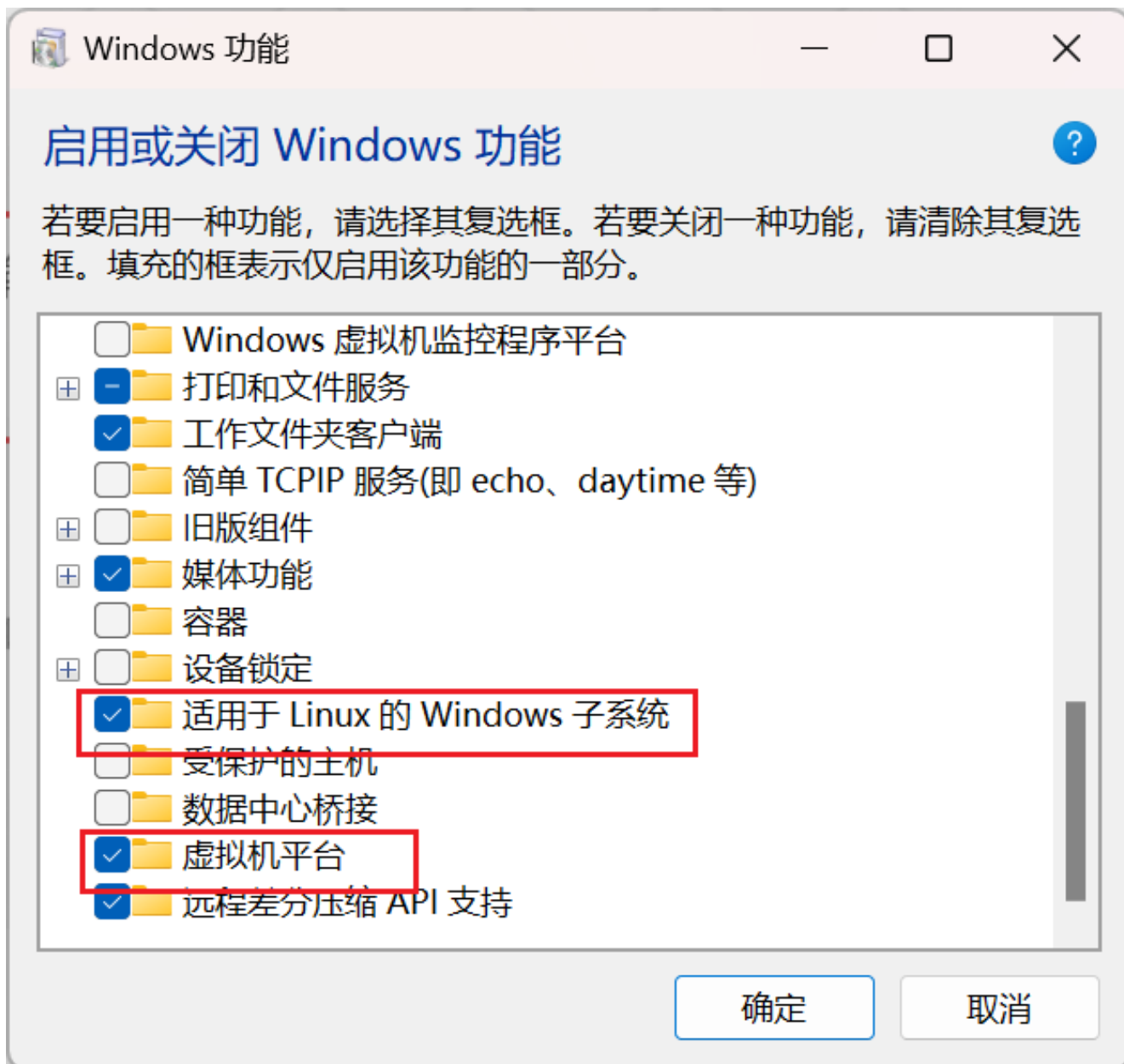
Windows (using wsl)

Requirements

- Windows 10 1709 Fall Creators Update 64bit or later.
- Windows Subsystem for Linux feature is enabled.

1. To enable Linux feature





Then run on Powershell with administrator

```
dism.exe /online /enable-feature /featurename:Microsoft-Windows-Subsystem-Linux /all /norestart
```

部署映像服务和管理工具
版本: 10.0.22621.1

映像版本: 10.0.22621.2134

启用一个或多个功能

[=====100.0%=====]
操作成功完成。

Reminder

When you use WSL2, Hyper-V is enabled, which is **NOT** compatible with other vm platforms like VMWare and VirtualBox.

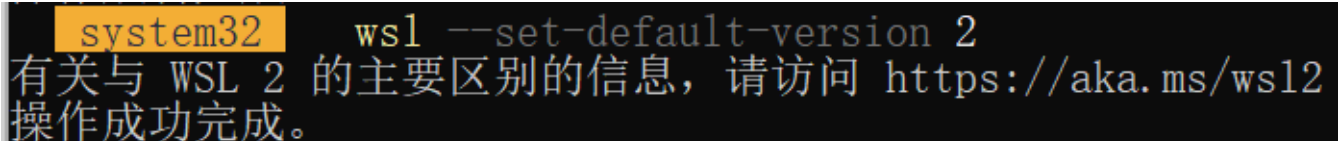
Think twice before using it.

2. Check whether your PC support WSL2:

- In cmd run `systeminfo`
- Scroll down to Hyper-V section
- If there are 4 "Yes" OR "A hypervisor has been detected. Features required for Hyper-V will not be displayed." ("已检测到虚拟机监控程序。将不显示 Hyper-V 所需的功能。"), then your PC is OK
- Otherwise it's not OK, please use WSL1 or other vm platform

3. Setup wsl2

```
wsl --set-default-version 2
```



```
system32 wsl --set-default-version 2
有关与 WSL 2 的主要区别的信息, 请访问 https://aka.ms/wsl2
操作成功完成。
```

Case 1: No error

- Just enjoy your WSL2

Case 2: Error with link <https://aka.ms/wsl2kernel> attached

- Go to <https://aka.ms/wsl2kernel> and download a patch
- start wsl2 again

Case 3: Error telling you Hyper-V is not enabled

- Go to Control Panel (控制面板) > Programs (程序) > Turn Windows features on or off (启用或关闭 Windows 功能)
- Find Hyper-V

Case 3.1: No Hyper-V Settings

- You should check whether your PC support WSL2. See above.

Case 3.2: All 4 settings in Hyper-V can be ticked

- Tick all settings
- Restart your PC
- Try to start wsl2 again

Case 3.3: Some of the settings can't be ticked

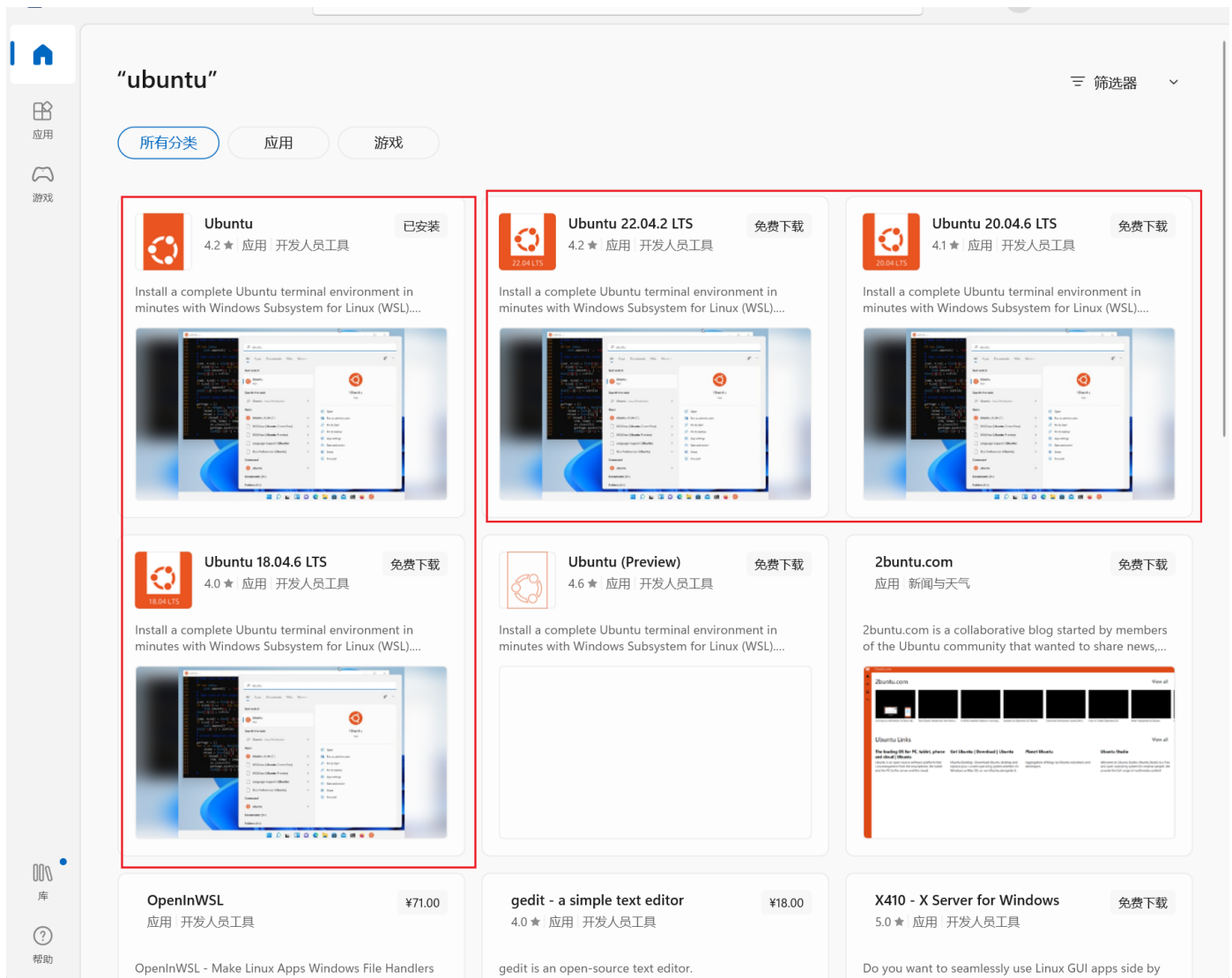
This might be an issue with your hardware. Please refer to section "How to Enable Hardware Virtualization in BIOS" in <https://www.makeuseof.com/windows-11-enable-hyper-v/> and try to enable hardware virtualization. (My laptop thinkpad has this issue)

Case 3.4 Otherwise

- Search online with error message on your screen (better go to stackoverflow/microsoft doc/github issues)
 - Just use WSL1. It has no big issue.
4. Install Linux (Ubuntu/arch, you only need choose **one**)

Ubuntu

Go to Microsoft Store and search "Ubuntu"



Download one of them.

Open your terminal and choose `ubuntu`.

Setup your user name and password.

```

Installing, this may take a few minutes...
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: Jaking
adduser: Please enter a username matching the regular expression configured
via the NAME_REGEX[_SYSTEM] configuration variable. Use the '--force-badname'
option to relax this check or reconfigure NAME_REGEX.
Enter new UNIX username: Jaking --force-badname
adduser: Please enter a username matching the regular expression configured
via the NAME_REGEX[_SYSTEM] configuration variable. Use the '--force-badname'
option to relax this check or reconfigure NAME_REGEX.
Enter new UNIX username: root
adduser: The user 'root' already exists.
Enter new UNIX username: [REDACTED]
Enter new UNIX password: [REDACTED]
Retype new UNIX password: [REDACTED]
passwd: password updated successfully
Installation successful!
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

```

run

```

$ sudo apt update
$ sudo apt install build-essential
$ gcc --version

```

```

hydraallen@Hydraallen ~$ gcc --version
gcc (Ubuntu 11.4.0-1ubuntu1~22.04) 11.4.0
Copyright (C) 2021 Free Software Foundation, Inc.
This is free software; see the source for copying conditions. There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

```

Arch

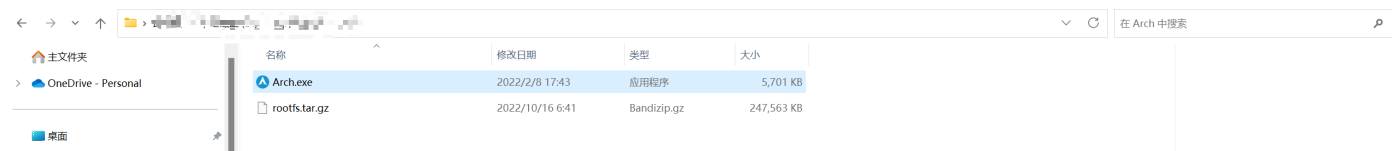
You may refer to the official website.

Here, we demonstrate the first method.

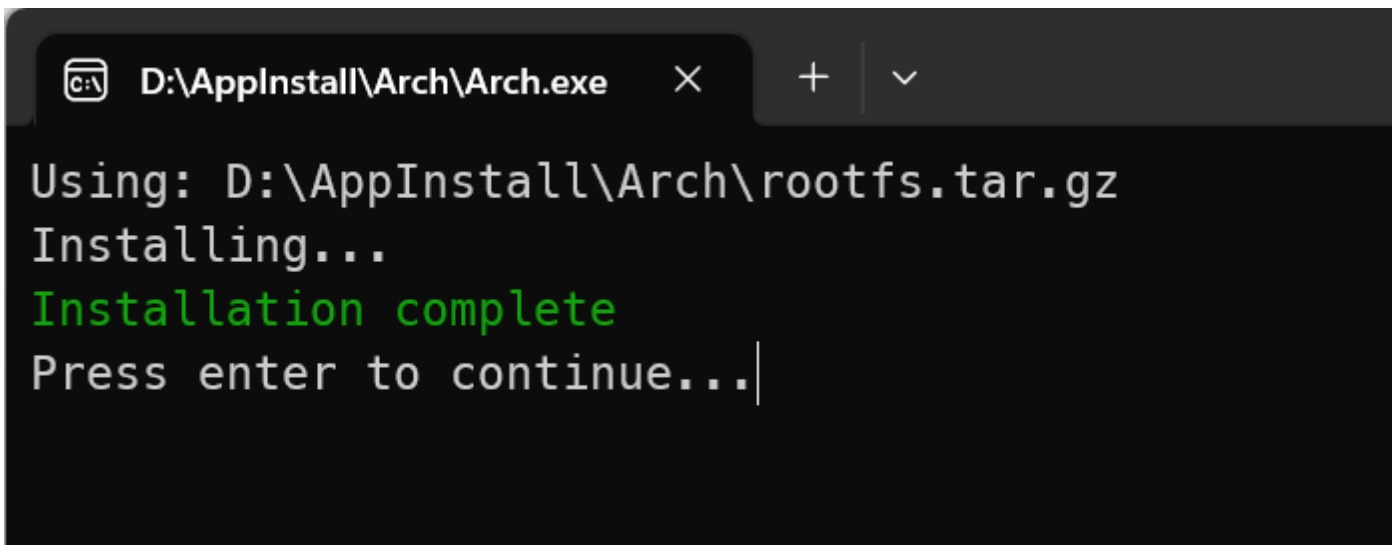
1. [Download](#) the installer zip.

| ▼ Assets 8 | | |
|---|-----------|--------------|
|  Arch.zip | 242 MB | Oct 16, 2022 |
|  ArchWSL-AppX_22.10.16.0_x64.appx | 244 MB | Oct 16, 2022 |
|  ArchWSL-AppX_22.10.16.0_x64.cer | 828 Bytes | Oct 16, 2022 |
|  ArchWSL_Online-AppX_22.10.16.0_x64.appx | 2.31 MB | Oct 16, 2022 |
|  ArchWSL_Online-AppX_22.10.16.0_x64.cer | 828 Bytes | Oct 16, 2022 |
|  Arch_Online.zip | 2.15 MB | Oct 16, 2022 |
|  Source code (zip) | | Oct 16, 2022 |
|  Source code (tar.gz) | | Oct 16, 2022 |

2. Extract all files in zip file to the same directory. Please extract to a folder that you have write permission. For example, `C:\Program Files` cannot be used since the rootfs cannot be modified there.

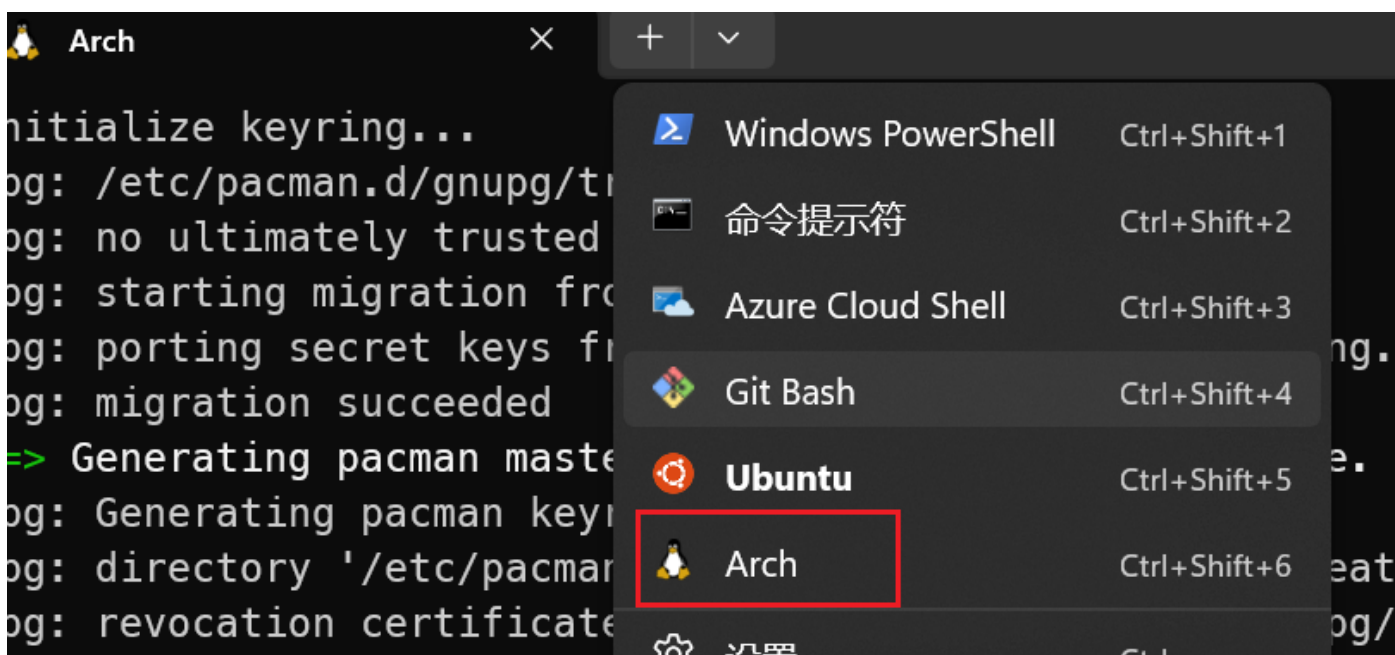


3. Run `Arch.exe` to extract the rootfs and register to WSL



As a side note, the executable name is what is used as the WSL instance name. If you rename it, you can have multiple installs.

4. Open your terminal and choose `arch`.



5. Setting the root password

passwd

```
root@Hydraallen:~  
[root@Hydraallen ~]# passwd  
New password:  
Retype new password:  
passwd: password updated successfully  
[root@Hydraallen ~]# |
```

6. Set up the default user

```
$ echo "%wheel ALL=(ALL) ALL" > /etc/sudoers.d/wheel  
$ useradd -m -G wheel -s /bin/bash {username}  
$ passwd {username}
```

```
[root@Hydraallen ~]# useradd -m -G wheel -s /bin/bash Hydraallen --badname  
[root@Hydraallen ~]# passwd Hydraallen  
New password:  
Retype new password:  
passwd: password updated successfully  
[root@Hydraallen ~]# |
```

```
$ exit  
$ Arch.exe config --default-user {username}
```

```
pwsh in Arch  Hydraallen@Hydraallen:~  
Arch ls  
目录: D:\AppInstall\Arch  
  
Mode                LastWriteTime         Length Name  
----                -  
-a-----         2022/2/8          17:43          5837824 Arch.exe  
-a-----         2023/9/12           0:20      904921088 ext4.vhdx  
-a-----         2022/10/16           6:41      253504152 rootfs.tar.gz  
  
Wang Rui  Arch  ./Arch.exe config --default-user Hydraallen in pwsh at 00:20:12
```

If the default user has not been changed ([issue #7](#)), please reboot the computer or alternatively, restart the LxssManager in an Admin command prompt. *Please refer to the official documentation.*

7. initialize the keyring

```
$ sudo pacman-key --init
$ sudo pacman-key --populate
$ sudo pacman -Sy archlinux-keyring
$ sudo pacman -Su
```

```
Hydraallen@Hydraallen:~$ sudo pacman-key --init

We trust you have received the usual lecture from the local System
Administrator. It usually boils down to these three things:

    #1) Respect the privacy of others.
    #2) Think before you type.
    #3) With great power comes great responsibility.

[sudo] password for Hydraallen:
[Hydraallen@Hydraallen ~]$ sudo pacman-key --populate
==> Appending keys from archlinux.gpg...
==> Updating trust database...
gpg: next trustdb check due at 2023-09-30
[Hydraallen@Hydraallen ~]$ sudo pacman -Sy archlinux-keyring
:: Synchronizing package databases...
   core                               129.3 KiB   41.6 KiB/s   00:03 [#####] 100%
  extra                               8.3 MiB   1882 KiB/s   00:04 [#####] 100%
community                           45.0 B    16.0 B/s     00:03 [#####] 100%
resolving dependencies...
looking for conflicting packages...

Packages (1) archlinux-keyring-20230821-2

Total Download Size:   1.14 MiB
Total Installed Size:  1.62 MiB
Net Upgrade Size:      0.05 MiB

:: Proceed with installation? [Y/n] Y
```

8. Install gcc

```
$ sudo pacman -S gcc
```

```
[Hydraallen@Hydraallen ~]$ sudo pacman -S gcc
resolving dependencies...
looking for conflicting packages...

Packages (5) binutils-2.41-3  jansson-2.14-2  libisl-0.26-1  libmpc-1.3.1-1  gcc-13.2.1-3

Total Download Size:   55.42 MiB
Total Installed Size: 231.10 MiB

:: Proceed with installation? [Y/n] |
```

9. test gcc

```
$ gcc --version
```



```
[Hydraallen@Hydraallen ~]$ gcc --version
gcc (GCC) 13.2.1 20230801
Copyright (C) 2023 Free Software Foundation, Inc.
This is free software; see the source for copying conditions.  There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

[Hydraallen@Hydraallen ~]$ |
```

Reference

1. <https://learn.microsoft.com/en-gb/windows/wsl/install> If your windows version is old, please follow <https://learn.microsoft.com/engb/windows/wsl/install-manual>