

Wsl installation

From 2023 VG151 teaching team, wr

Modified by zzjc

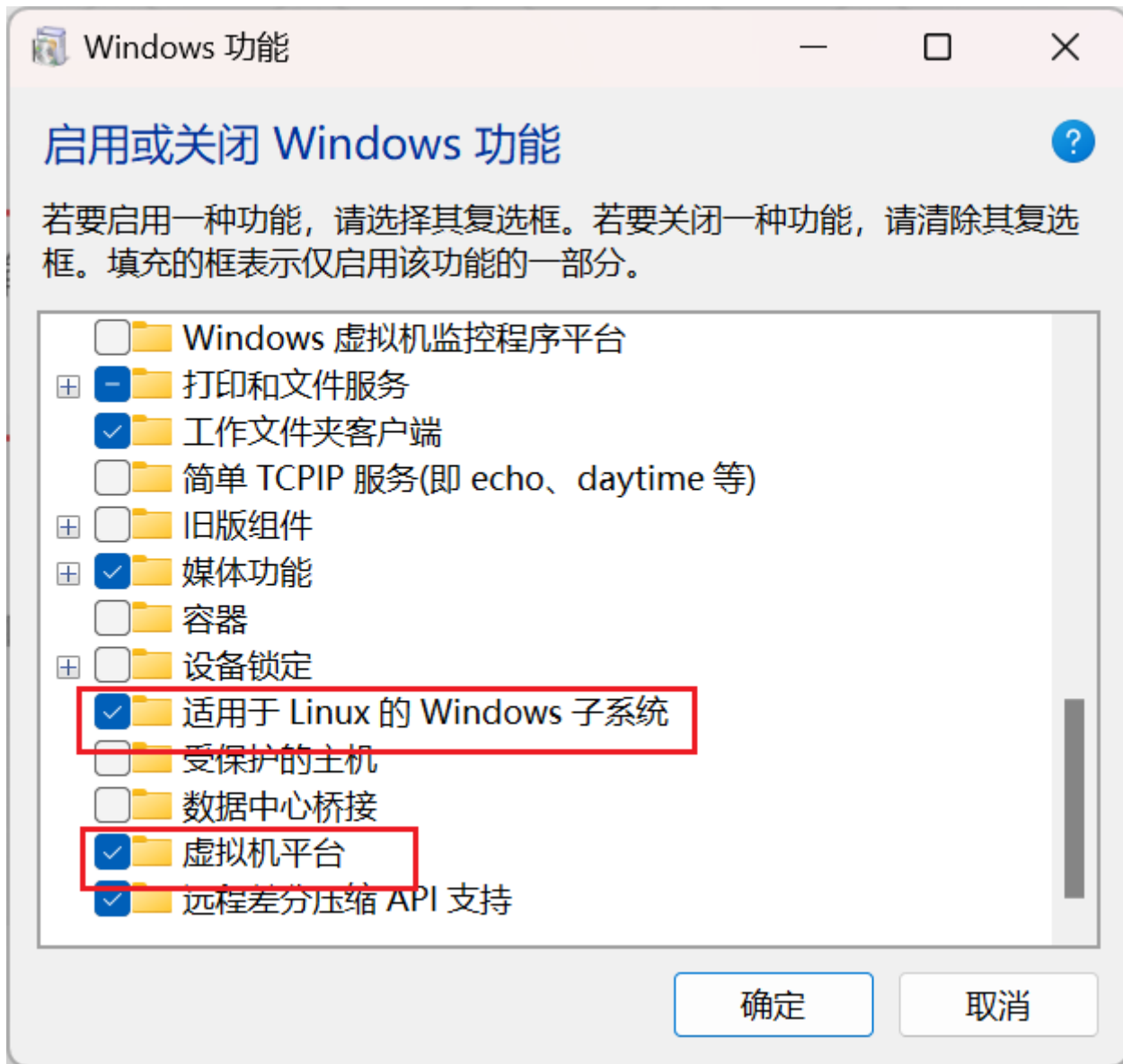
Windows (using wsl)

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
```

A terminal window with a dark background. The command `system32 wsl --set-default-version 2` is entered. The output is in Chinese: "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
- If network is slow, consider use winget to install wsl and turn on your proxy

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**)

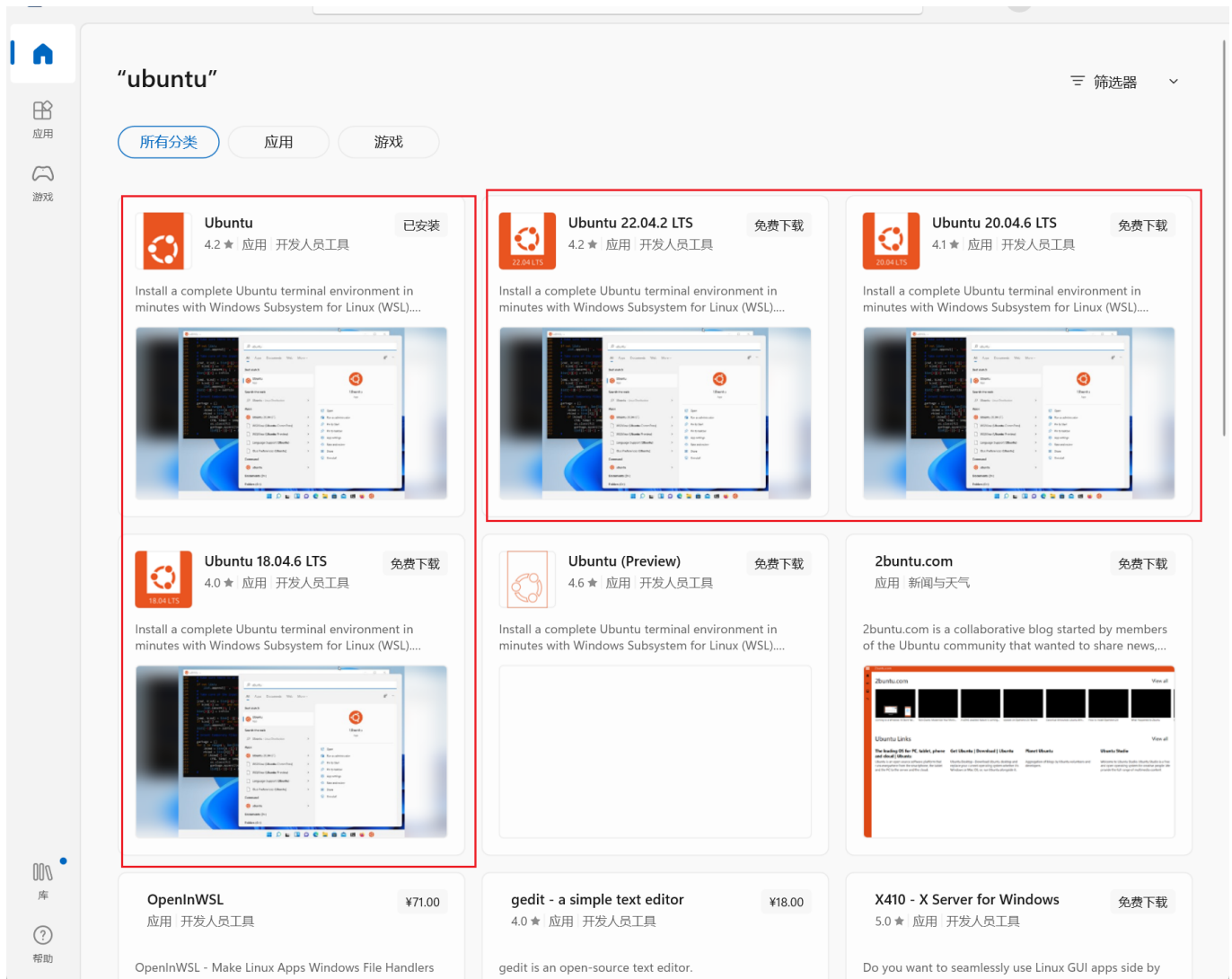
Jbox

I download latest ubuntu, debian and arch packages from ms official website, you can download **one of them**. If you use ubuntu and debian, just click the file and everything will be done automatically. If you use arch, you need to run `wsl --install --from-file <file-path>`. By arch wiki simply run `wsl --install archlinux` is fine, but it is not tested by us.

The following tutorial is from old version, you can check them if you get stuck by previous methods.

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.

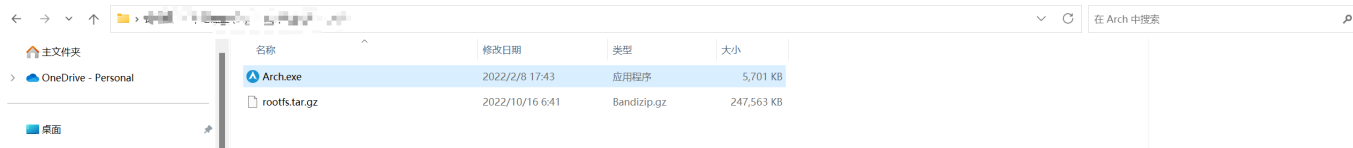
Here, we demonstrate the first method.

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

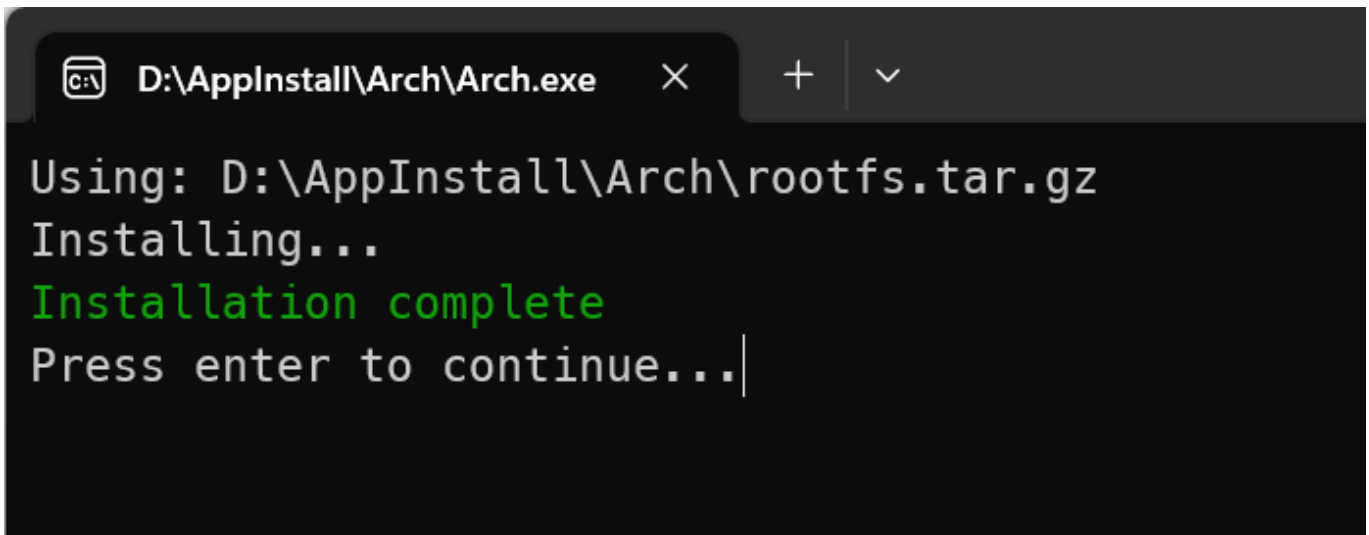
▼ Assets 8

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.



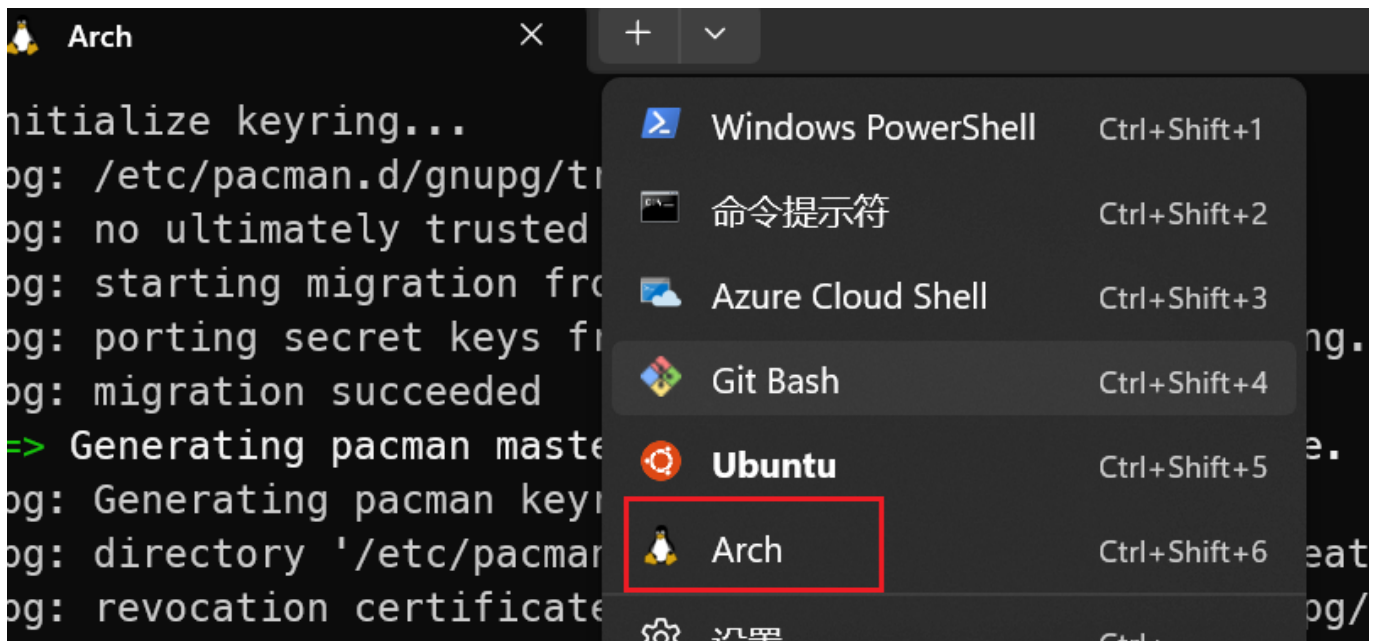
- 3. Run `Arch.exe` to extract the rootfs and register to WSL

A terminal window with a dark background. The title bar shows a file icon, the path 'D:\AppInstall\Arch\Arch.exe', and window controls. The text in the terminal reads: 'Using: D:\AppInstall\Arch\rootfs.tar.gz', 'Installing...', 'Installation complete' (in green), and 'Press enter to continue...|' with a cursor.

```
D:\AppInstall\Arch\Arch.exe
Using: D:\AppInstall\Arch\rootfs.tar.gz
Installing...
Installation complete
Press enter to continue...|
```

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  
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
[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 ~]$ |
```