



# Using Multipass as replacement for WSL2

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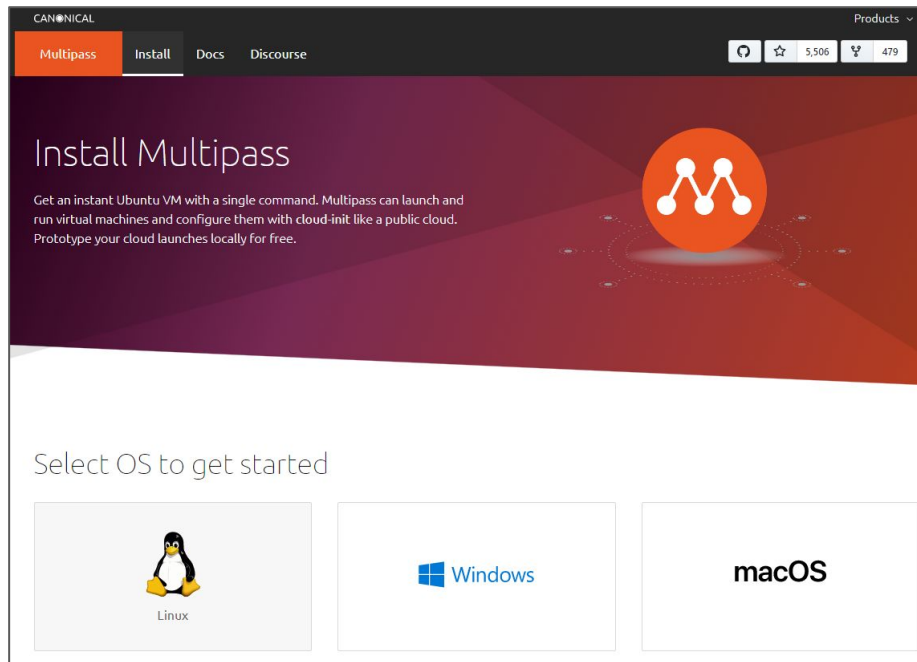




# Multipass??

<https://multipass.run/>

- a lightweight VM manager.
- a CLI to launch and manage VMs.
- for Windows, Mac and Linux .
- support for cloud-init.





# Windows Hyper-v

Is Hyper-V necessary or not for WSL2?

- <https://github.com/MicrosoftDocs/WSL/issues/899>

Using Hyper-V with Oracle VM VirtualBox

- <https://docs.oracle.com/en/virtualization/virtualbox/6.0/admin/hyperv-support.html>

VMware Workstation 15.5 Now Supports Host Hyper-V Mode

- <https://blogs.vmware.com/workstation/2020/05/vmware-workstation-now-supports-hyper-v-mode.html>

And Multipass, Docker Desktop, ...



# Multipass has preset Ubuntu images

LTS and more.

```
PS C:\Users\myoin> multipass find
Image           Aliases      Version      Description
core            core16       20200818     Ubuntu Core 16
core18          core18       20211124     Ubuntu Core 18
snapcraft:core18  18.04       20201111     Snapcraft builder for Core 18
snapcraft:core20  20.04       20210921     Snapcraft builder for Core 20
snapcraft:core22  22.04       20220426     Snapcraft builder for Core 22
18.04           bionic      20221014     Ubuntu 18.04 LTS
20.04           focal       20221018     Ubuntu 20.04 LTS
22.04           jammy,lts   20221018     Ubuntu 22.04 LTS
appliance:adguard-home  20200812     Ubuntu AdGuard Home Appliance
appliance:mosquitto    20200812     Ubuntu Mosquitto Appliance
appliance:nextcloud    20200812     Ubuntu Nextcloud Appliance
appliance:openhabs     20200812     Ubuntu openHAB Home Appliance
appliance:plexmediaserver 20200812     Ubuntu Plex Media Server Appliance
anbox-cloud-appliance  latest       Anbox Cloud Appliance
charm-dev             latest       A development and testing environment for charmers
docker                latest       A Docker environment with Portainer and related tools
jellyfin              latest       Jellyfin is a Free Software Media System that puts you in
  control of managing and streaming your media.
minikube               latest       minikube is local Kubernetes
PS C:\Users\myoin> |
```



# Multi VM with Same OS version.

WSL2 can't.

```
PS C:\Users\myoin> wsl -l -v
  NAME      STATE      VERSION
* Ubuntu    Running     2
PS C:\Users\myoin> wsl --install -d Ubuntu
Ubuntu은(는) 이미 설치되어 있습니다.
Ubuntu 실행 중...
PS C:\Users\myoin>
```

```
myoinbong@MYO5800X: ~
```

```
myoinbong@MYO5800X: ~$
```

Multipass can.

```
PS C:\Users\myoin> multipass list
Name      State      IPv4      Image
primary   Running    172.27.235.123  Ubuntu 22.04 LTS
DB         Running    172.27.225.176  Ubuntu 22.04 LTS
WAS        Running    172.27.229.19   Ubuntu 22.04 LTS
PS C:\Users\myoin> multipass launch 22.04 -n Backup
Launched: Backup
Skipping mount due to disabled mounts feature
PS C:\Users\myoin> multipass list
Name      State      IPv4      Image
primary   Running    172.27.235.123  Ubuntu 22.04 LTS
Backup     Running    172.27.237.167  Ubuntu 22.04 LTS
DB         Running    172.27.225.176  Ubuntu 22.04 LTS
WAS        Running    172.27.229.19   Ubuntu 22.04 LTS
PS C:\Users\myoin> |
```



# Multipass has preset Ubuntu images

LTS and more.

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core            core16       20200818     Ubuntu Core 16
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snapcraft:core22  22.04       20220426     Snapcraft builder for Core 22
18.04           bionic      20221014     Ubuntu 18.04 LTS
20.04           focal       20221018     Ubuntu 20.04 LTS
22.04           jammy,lts   20221018     Ubuntu 22.04 LTS
appliance:adguard-home  20200812     Ubuntu AdGuard Home Appliance
appliance:mosquitto     20200812     Ubuntu Mosquitto Appliance
appliance:nextcloud     20200812     Ubuntu Nextcloud Appliance
appliance:openhbab      20200812     Ubuntu openHAB Home Appliance
appliance:plexmediaserver 20200812     Ubuntu Plex Media Server Appliance
anbox-cloud-appliance    latest       Anbox Cloud Appliance
charm-dev                latest       A development and testing environment for charmers
docker                   latest       A Docker environment with Portainer and related tools
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  control of managing and streaming your media.
minikube                 latest       minikube is local Kubernetes
PS C:\Users\myoin> |
```



# Working across Windows and Ubuntu - WSL2

\$ wsl --distribution <Distribution Name> --user <User Name> <command>

\$ wsl <command>

```
PS C:\Users\myoin> wsl --distribution Ubuntu --user myoinbong cat /etc/issue
Ubuntu 20.04.3 LTS \n \l

PS C:\Users\myoin> wsl cat /etc/issue
Ubuntu 20.04.3 LTS \n \l

PS C:\Users\myoin> |
```



# Working across Windows and Ubuntu - Multipass

\$ multipass exec <Options> <Instance Name> -- <command>

\$ multipass exec <Instance Name> -- <command>

```
PS C:\Users\myoin> multipass exec primary cat /etc/issue
Ubuntu 22.04.1 LTS \n \l

PS C:\Users\myoin> multipass exec primary -- ls -al
total 36
drwxr-x--- 4 ubuntu ubuntu 4096 Nov  1 03:50 .
drwxr-xr-x 3 root    root   4096 Nov  1 03:25 ..
-rw----- 1 ubuntu ubuntu   5 Nov  1 03:26 .bash_history
-rw-r--r-- 1 ubuntu ubuntu  220 Jan  7  2022 .bash_logout
-rw-r--r-- 1 ubuntu ubuntu 3771 Jan  7  2022 .bashrc
drwx----- 2 ubuntu ubuntu 4096 Nov  1 03:25 .cache
-rw-r--r-- 1 ubuntu ubuntu  807 Jan  7  2022 .profile
```





# Default Directory

## WSL

- C:\Users\<User>

```
PS C:\Users\myoin> wsl ls -al
total 12128
drwxrwxrwx 1 myoinbong myoinbong 4096 Nov  1 03:09 .
dr-xr-xr-x 1 myoinbong myoinbong 4096 Sep 28 23:17 ..
drwxrwxrwx 1 myoinbong myoinbong 4096 Nov  1 03:09 .VirtualBox
drwxrwxrwx 1 myoinbong myoinbong 4096 May 26 00:41 .dotnet
drwxrwxrwx 1 myoinbong myoinbong 4096 Jun 29 18:05 .ms-ad
drwxrwxrwx 1 myoinbong myoinbong 4096 May 26 00:18 .nuget
drwxrwxrwx 1 myoinbong myoinbong 4096 May 26 00:21 .templateengine
-rwxrwxrwx 1 myoinbong myoinbong 527 Jan 27 2022 .vivaldi_reporting_data
drwxrwxrwx 1 myoinbong myoinbong 4096 Apr 28 2022 .vscode
drwxrwxrwx 1 myoinbong myoinbong 4096 Sep 28 23:33 AppData
```

## Multipass

- /home/ubuntu

```
PS C:\Users\myoin> multipass exec primary -- ls -al
total 36
drwxr-x--- 4 ubuntu ubuntu 4096 Nov  1 03:50 .
drwxr-xr-x 3 root  root  4096 Nov  1 03:25 ..
-rw----- 1 ubuntu ubuntu  5 Nov  1 03:26 .bash_history
-rw-r--r-- 1 ubuntu ubuntu 220 Jan  7 2022 .bash_logout
-rw-r--r-- 1 ubuntu ubuntu 3771 Jan  7 2022 .bashrc
drwx----- 2 ubuntu ubuntu 4096 Nov  1 03:25 .cache
-rw-r--r-- 1 ubuntu ubuntu 807 Jan  7 2022 .profile
drwx----- 2 ubuntu ubuntu 4096 Nov  1 03:25 .ssh
-rw-r--r-- 1 ubuntu ubuntu  0 Nov  1 03:50 .sudo_as_admin_successful
-rw----- 1 ubuntu ubuntu 703 Nov  1 03:50 .viminfo
```



# docker without docker desktop

## WSL2

- install docker on WSL2
- sudo permission setting
- docker context setting
- dockerd start
- install docker client
- environment parameter setting
- end.

## Multipass

- install docker preset Ubuntu
- multipass alias setting
- end.



# docker without docker desktop

## WSL2

- install docker on WSL2
- sudo permission setting
- docker context setting
- dockerd start
- install docker client
- environment parameter setting
- end.

## Multipass

- install docker preset Ubuntu
- (jump)
- (jump)
- (jump)
- multipass alias setting
- (jump)
- end.



# docker without docker desktop

## WSL2

- install docker on WSL2
- sudo permission setting
- docker context setting
- dockerd start
- install docker client
- environment parameter setting
- end.

## Multipass

- install docker preset Ubuntu

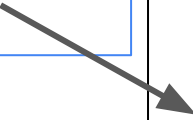


Image	Aliases	Version
Description		
charm-dev		latest
A development and testing environment for charmers		
docker		latest
A Docker environment with Portainer and related tools		
jellyfin		latest
Jellyfin is a Free Software Media System that puts you in control of managing and streaming your media.		
minikube		latest
minikube is local Kubernetes		



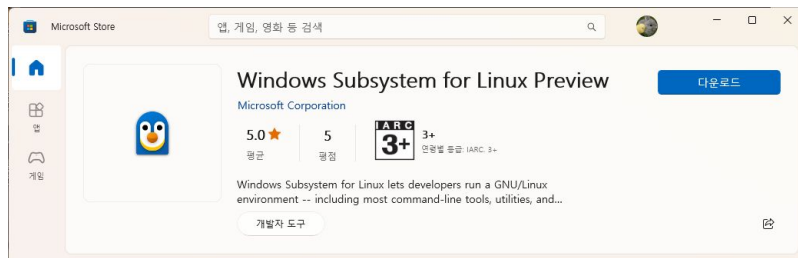
# docker without docker desktop

## WSL2

- install docker on WSL2
- sudo permission setting
- docker context setting
- **dockerd start**
- install docker client
- environment parameter setting
- end.

## Preview support systemd!

- Windows 11 build or higher  
(Windows build number 22000 or higher)





# docker without docker desktop

## WSL2

- install docker on WSL2
- sudo permission setting
- docker context setting
- **dockerd start**
- install docker client
- environment parameter setting
- end.

## Multipass

- Just VM as usual.

Start "primary" (Running)  
Open Shell  
Stop

WAS (Running) ▶  
DB (Running) ▶  
Backup (Running) ▶  
About ▶



# docker without docker desktop

## WSL2

- install docker on WSL2
- sudo permission setting
- docker context setting
- dockerd start
- install docker client
- environment parameter setting
- end.

## Multipass

- install docker preset Ubuntu
- (jump)
- (jump)
- (jump)
- multipass alias setting
- (jump)
- end.





# Multipass Alias

\$ multipass alias <instance name>:<command>

- PATH=%PATH%;C:/Users/<User>/AppData/local/multipass/bin

```
PS C:\Users\myoin> multipass alias docker:docker
You'll need to add the script alias folder to your path for aliases to work
without prefixing with 'multipass'. For now, you can just do:
```

In PowerShell:

```
$ENV:PATH="$ENV:PATH;C:/Users/myoin/AppData/local/multipass/bin"
```

Or in Command Prompt:

```
PATH=%PATH%;C:/Users/myoin/AppData/local/multipass/bin
```





# We need practice a little.

Some commands.

- find, list
- launch, shell
- delete, purge
- exec
- alias, unalias

Any Questions?



Thank you!





# user home directory

```
PS C:\Users\myoin> wsl ~ ls -al
total 36
drwxr-xr-x 4 myoinbong myoinbong 4096 Nov  1 03:50 .
drwxr-xr-x 3 root      root      4096 Mar  3 2022 ..
-rw----- 1 myoinbong myoinbong  573 Nov  1 03:49 .bash_history
-rw-r--r-- 1 myoinbong myoinbong  220 Mar  3 2022 .bash_logout
-rw-r--r-- 1 myoinbong myoinbong 3771 Mar  3 2022 .bashrc
drwxr-xr-x 3 myoinbong myoinbong 4096 Nov  1 02:49 .config
drwxr-xr-x 2 myoinbong myoinbong 4096 Mar  3 2022 .landscape
-rw-r--r-- 1 myoinbong myoinbong    0 Nov  1 02:48 .motd_shown
-rw-r--r-- 1 myoinbong myoinbong  807 Mar  3 2022 .profile
-rw-r--r-- 1 myoinbong myoinbong    0 Mar 31 2022 .sudo_as_admin_successful
-rw----- 1 myoinbong myoinbong  703 Nov  1 03:50 .viminfo
PS C:\Users\myoin> multipass exec primary -- ls -al
total 36
drwxr-x--- 4 ubuntu ubuntu 4096 Nov  1 03:50 .
drwxr-xr-x 3 root   root   4096 Nov  1 03:25 ..
-rw----- 1 ubuntu ubuntu   5 Nov  1 03:26 .bash_history
-rw-r--r-- 1 ubuntu ubuntu 220 Jan  7 2022 .bash_logout
-rw-r--r-- 1 ubuntu ubuntu 3771 Jan  7 2022 .bashrc
drwx----- 2 ubuntu ubuntu 4096 Nov  1 03:25 .cache
-rw-r--r-- 1 ubuntu ubuntu  807 Jan  7 2022 .profile
drwx----- 2 ubuntu ubuntu 4096 Nov  1 03:25 .ssh
-rw-r--r-- 1 ubuntu ubuntu    0 Nov  1 03:50 .sudo_as_admin_successful
-rw----- 1 ubuntu ubuntu  703 Nov  1 03:50 .viminfo
PS C:\Users\myoin> |
```



## Reference link

- <https://multipass.run>
- <https://multipass.run/docs>
- <https://multipass.run/docs/docker-tutorial>
- <https://netmarble.engineering/docker-on-multipass-as-replacement-for-wsl2/>
- <https://netmarble.engineering/docker-on-wsl2-without-docker-desktop/>