

[Hands-on] 00. Environment setup

실습을 위한 환경구성 가이드입니다.

Windows 환경에 대한 설명이며, MacOS는 관련 문서의 Mac부분을
참조하세요.

Docker desktop on Windows (Kubernetes 포함)

1. Linux 환경 준비 : WSL2 설치 (Ubuntu 포함)
2. Docker desktop for Windows 설치



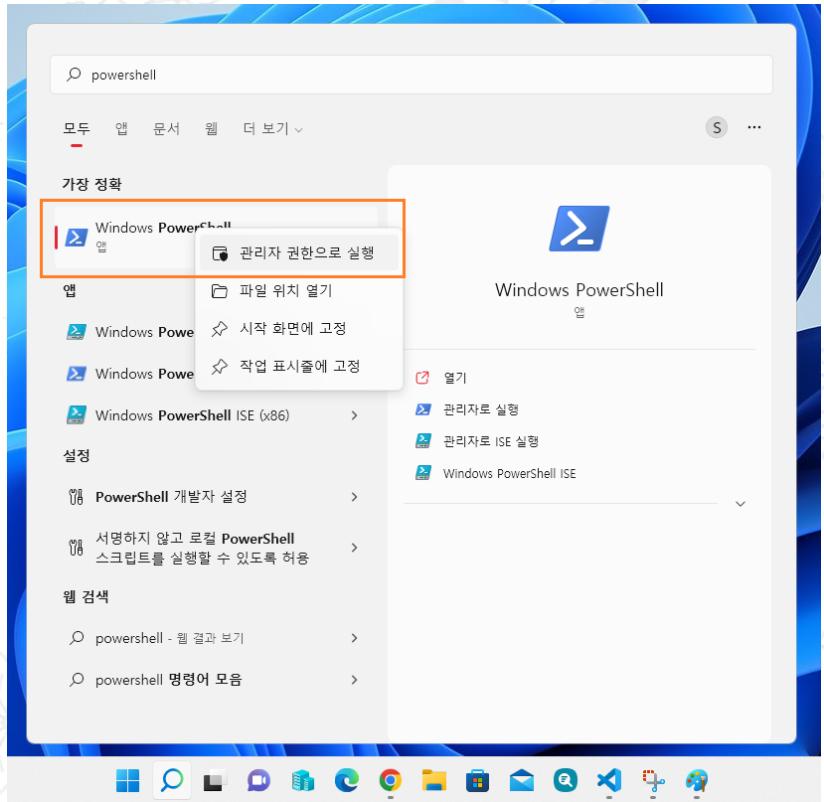
kubernetes

1. Linux 환경 준비 : WSL2

먼저 윈도우즈에 리눅스 환경을 준비합니다.

여러가지 방법 중 WSL2를 이용해서 준비해 보겠습니다.

PowerShell을 관리자 권한으로 실행.



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PowerShell에서 `wsl --install` 실행

조건 : Windows 10 버전 2004 이상(빌드 19041 이상) 또는 Windows 11

위 조건에 해당하지 않는 경우 [WSL 수동설치](#) 를 참고하세요.

```
관리자: Windows PowerShell
PS C:\WINDOWS\system32> wsl --install
```

완료 후 시스템 재시작

```
관리자: Windows PowerShell
PS C:\WINDOWS\system32> wsl --install
설치 중: Linux용 Windows 하위 시스템
Linux용 Windows 하위 시스템이(가) 설치되었습니다.
다운로드 중: WSL 커널
설치 중: WSL 커널
WSL 커널이(가) 설치되었습니다.
다운로드 중: GUI 앱 지원
설치 중: GUI 앱 지원
GUI 앱 지원이(가) 설치되었습니다.
다운로드 중: Ubuntu
요청한 작업이 잘 실행되었습니다. 시스템을 다시 시작하면 변경 사항이 적용됩니다.
PS C:\WINDOWS\system32>
```

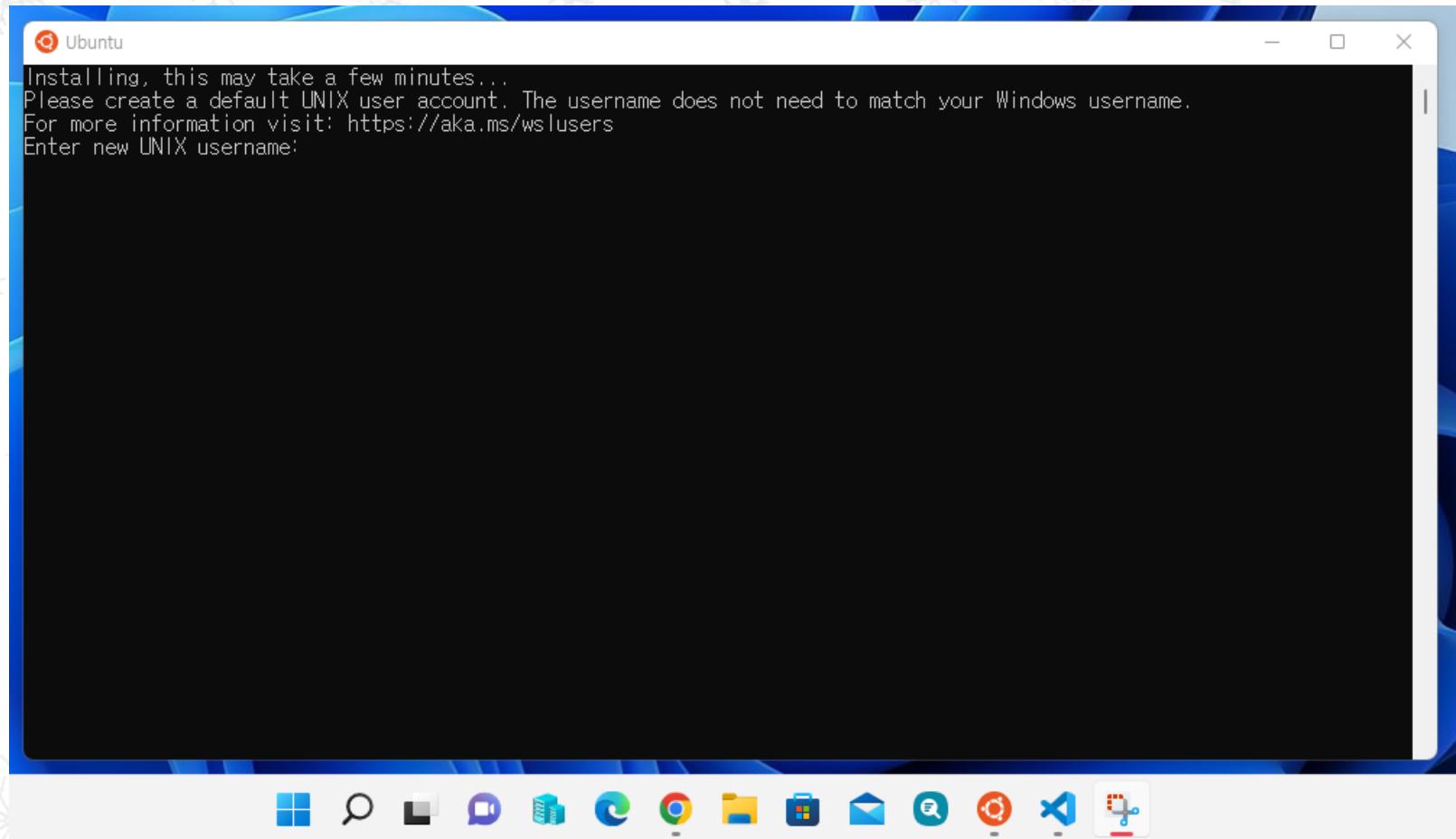
Default 리눅스 배포판은 Ubuntu입니다.

다른 배포판을 설치하려면 [설치된 기본 Linux 배포판 변경](#) 를 참조하세요.

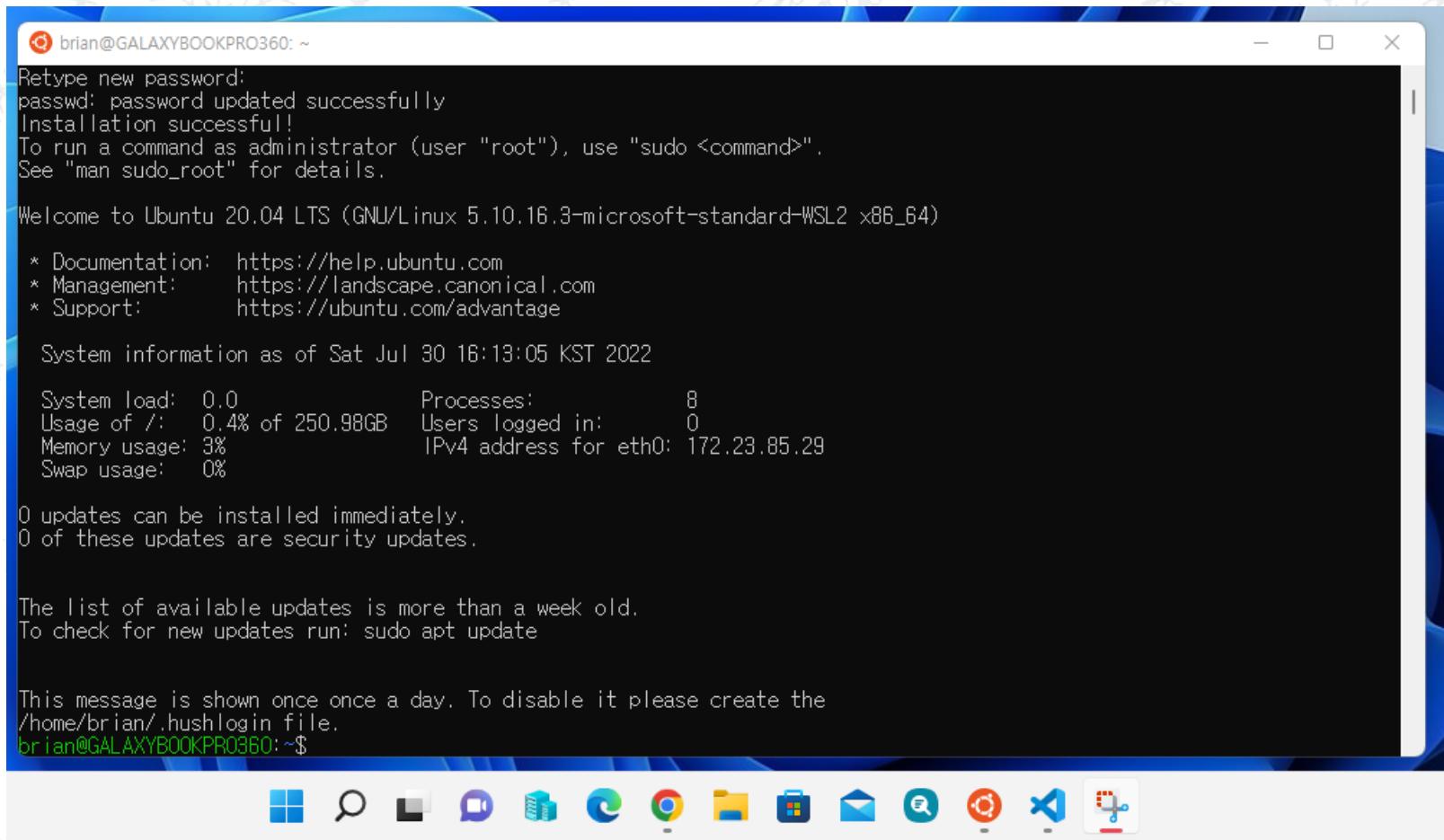
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시스템 재시작 후 아래와 같은 창이 자동으로 열립니다.

리눅스 사용자 계정과 암호를 설정합니다.



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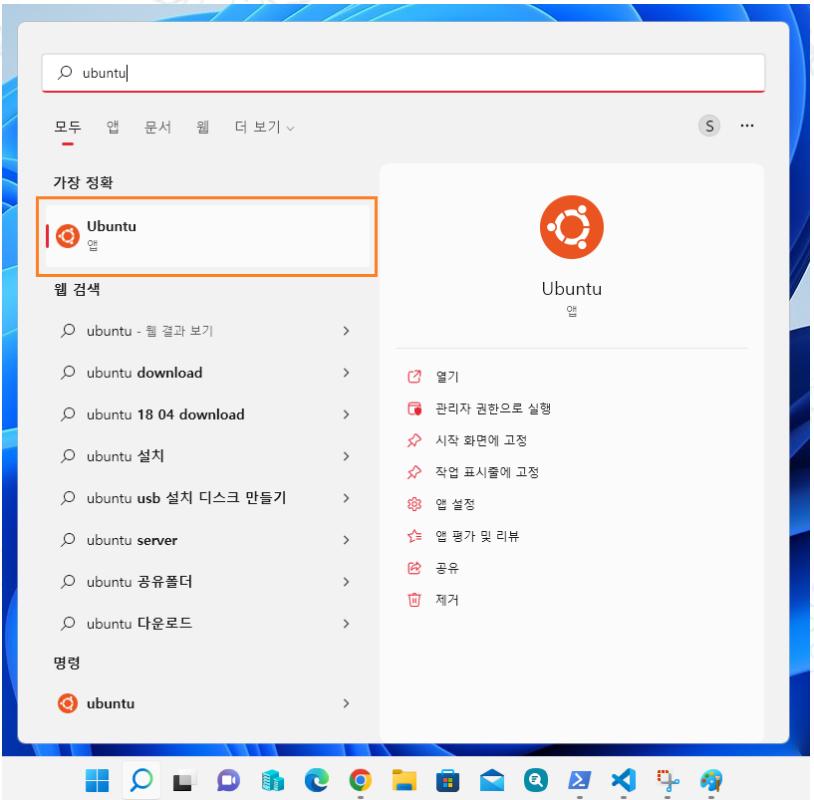
brian@GALAXYBOOKPRO360: ~
Retype new password:
passwd: password updated successfully
Installation successful!
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
Welcome to Ubuntu 20.04 LTS (GNU/Linux 5.10.16.3-microsoft-standard-WSL2 x86_64)
* Documentation: <https://help.ubuntu.com>
* Management: <https://landscape.canonical.com>
* Support: <https://ubuntu.com/advantage>
System information as of Sat Jul 30 16:13:05 KST 2022
System load: 0.0 Processes: 8
Usage of /: 0.4% of 250.98GB Users logged in: 0
Memory usage: 3% IPv4 address for eth0: 172.23.85.29
Swap usage: 0%
0 updates can be installed immediately.
0 of these updates are security updates.
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 once a day. To disable it please create the
/home/brian/.hushlogin file.
brian@GALAXYBOOKPRO360: ~\$

The screenshot shows a terminal window titled 'brian@GALAXYBOOKPRO360: ~'. It displays the initial setup steps for Ubuntu 20.04 LTS running in WSL2, including password updating, installation success, and system information. It also shows a message about available updates and a note about disabling the daily update check. The bottom of the window shows the command 'brian@GALAXYBOOKPRO360: ~\$'.

여기까지 하면 리눅스(Ubuntu) 환경은 준비가 됐습니다.

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이제 필요할 때는 아래와 같이 시작메뉴의 Ubuntu를 실행하면 됩니다.



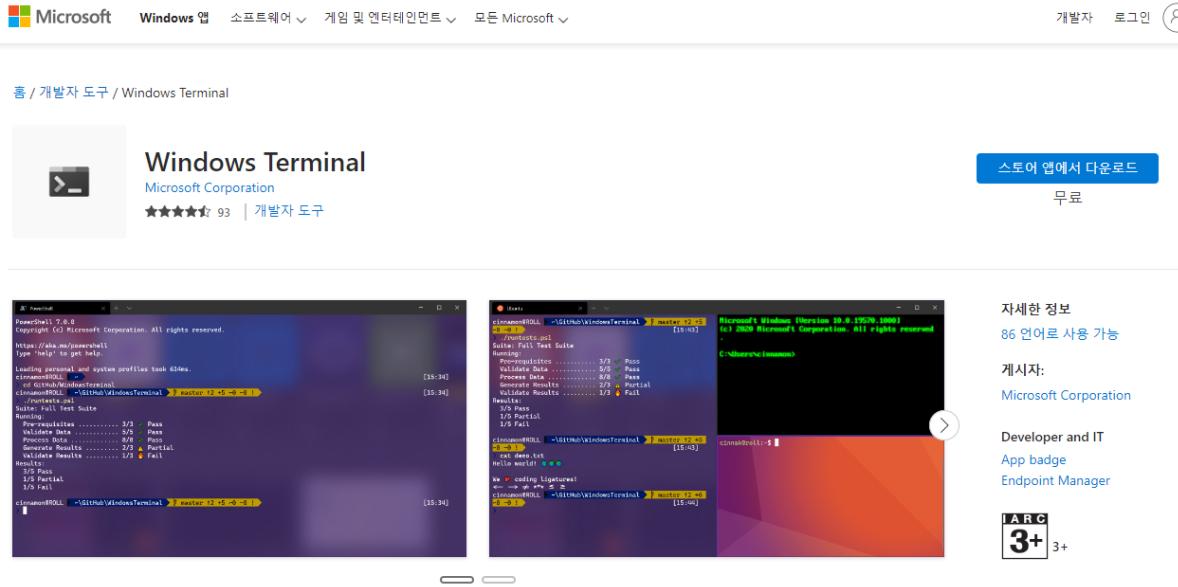
사용을 마치고 리눅스를 종료하려면 PowerShell에서 `wsl --shutdown` 명령어를 실행하면 됩니다.

A screenshot of a Windows terminal window titled 'Windows PowerShell'. The window has a blue header bar with the title. The main area is dark blue and displays the command 'wsl --shutdown' being typed in. After the command is run, the output 'PS C:\Users\brian>' appears again, indicating the system has shutdown.

[선택사항] Windows terminal

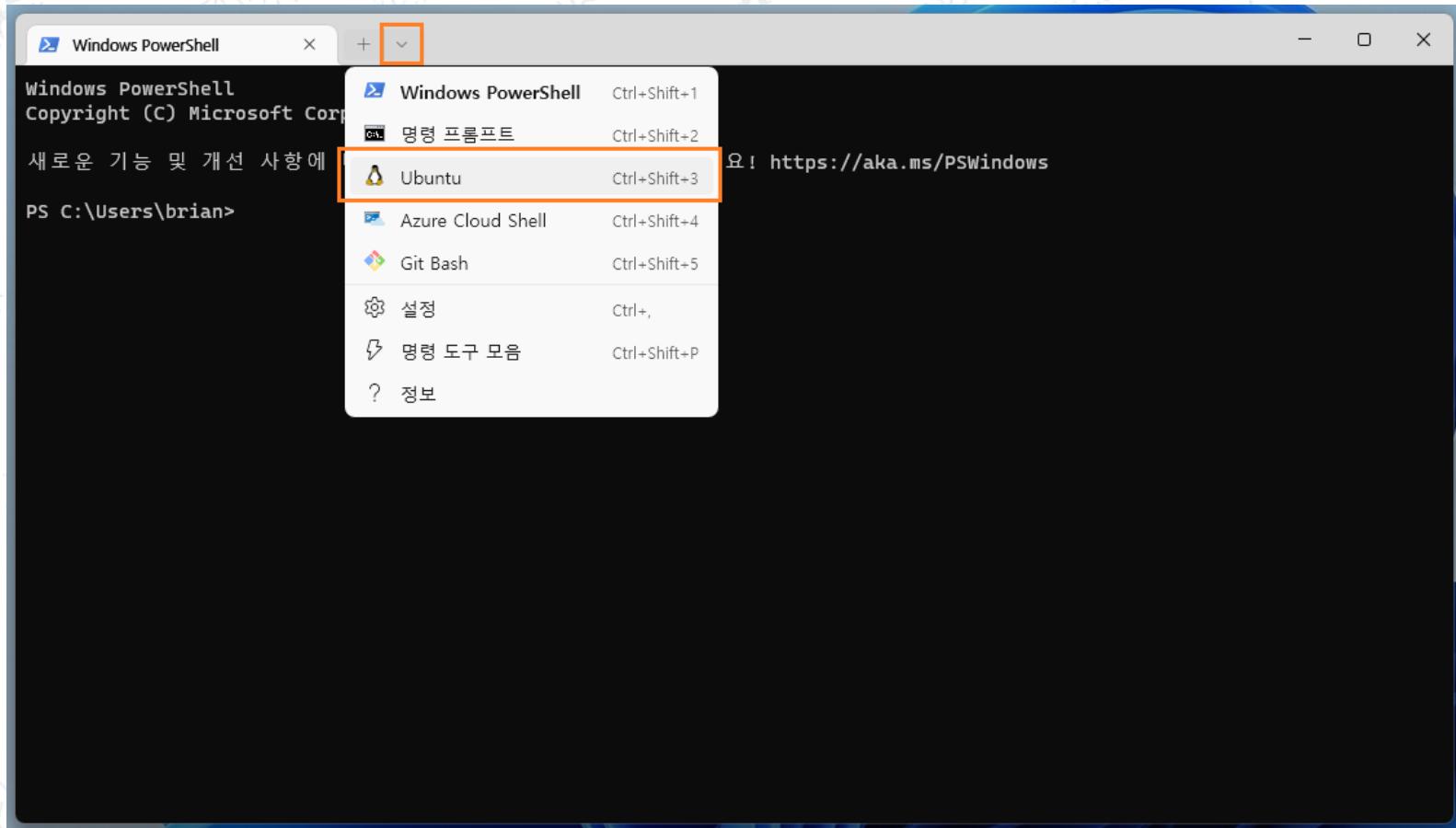
여러가지 명령줄 도구나 Shell을 편리하게 사용하려면, 이 를을 사용하는 것을 추천드립니다.
하나의 를로 PowerShell, Ubuntu shell 등을 탭으로 구분하여 실행할 수 있습니다.

설치 -> Microsoft store에서 설치



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Windows terminal에서는 아래와 같이 Ubuntu를 실행하면 됩니다. (v 버튼 > Ubuntu)



종료는 PowerShell에서 `wsl --shutdown`

2. Docker desktop 설치

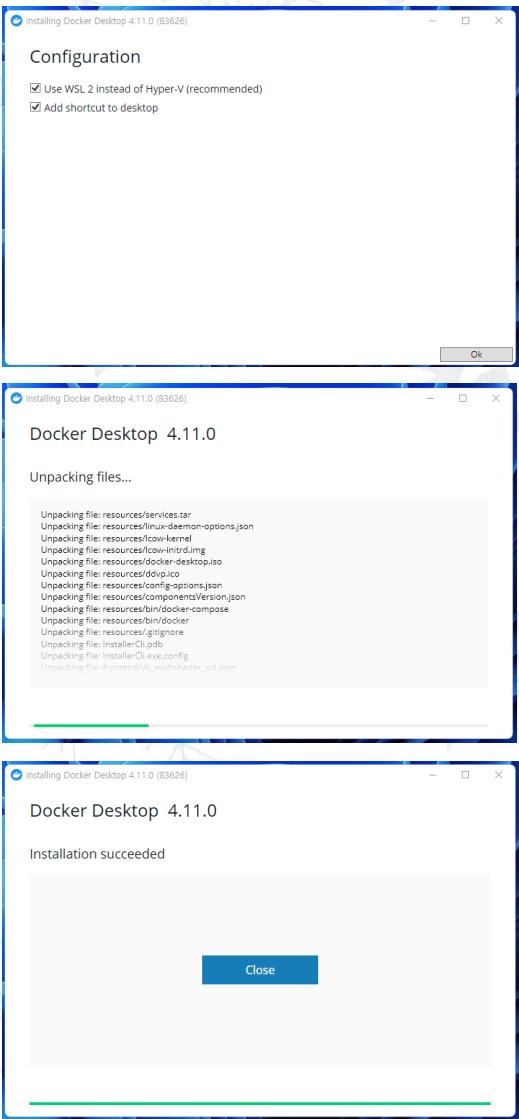
사전조건 : WSL2 설치완료, 리눅스 배포판(e.g. Ubuntu) 설치완료

리눅스가 준비됐으면, 이제 Docker desktop을 설치합니다.

설치 가이드 페이지에서 설치파일을 다운로드 하여 실행합니다.

The screenshot shows the Docker Docs website with the URL [https://docs.docker.com/manuals/docker-desktop/install-docker-desktop/install-on-windows/](#). The page title is "Install Docker Desktop on Windows". The left sidebar is titled "Docker Desktop" and includes links for Overview, Install Docker Desktop (selected), Install on Mac, Install on Apple silicon, Install on Windows (selected), Install on Linux, Installation per Linux distro, Quick Start Guide and sign in, Explore Docker Desktop, Change settings, Troubleshoot and diagnose, Additional resources, Dev Environments (Beta), Extensions (Beta), Extensions SDK (Beta), FAQs, Give feedback, Release notes, Previous versions, Docker Engine, Docker Build, and Docker Compose. The main content area starts with a note about Docker Desktop terms and a warning about commercial use. It then welcomes users to Docker Desktop for Windows and provides system requirements. A prominent blue button labeled "Docker Desktop for Windows" is highlighted with a red box. Below it, there's a note about checksums and release notes. The "System requirements" section lists the Windows machine must meet certain requirements to successfully install Docker Desktop. Under "WSL 2 backend", it specifies Windows 11 or higher and lists hardware prerequisites including a 64-bit processor with SLAT and 4GB system RAM. At the bottom, there are tabs for "WSL 2 backend" (selected) and "Hyper-V backend and Windows containers".

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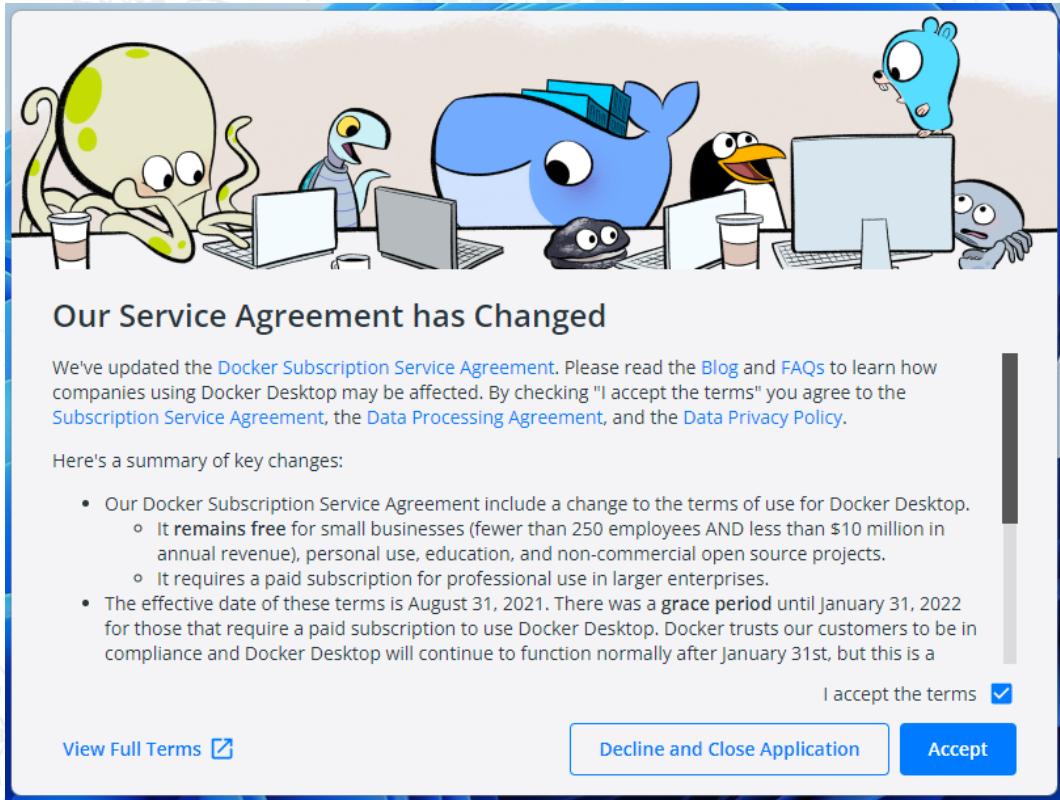


여기까지 하면 설치완료 (ง ▽)

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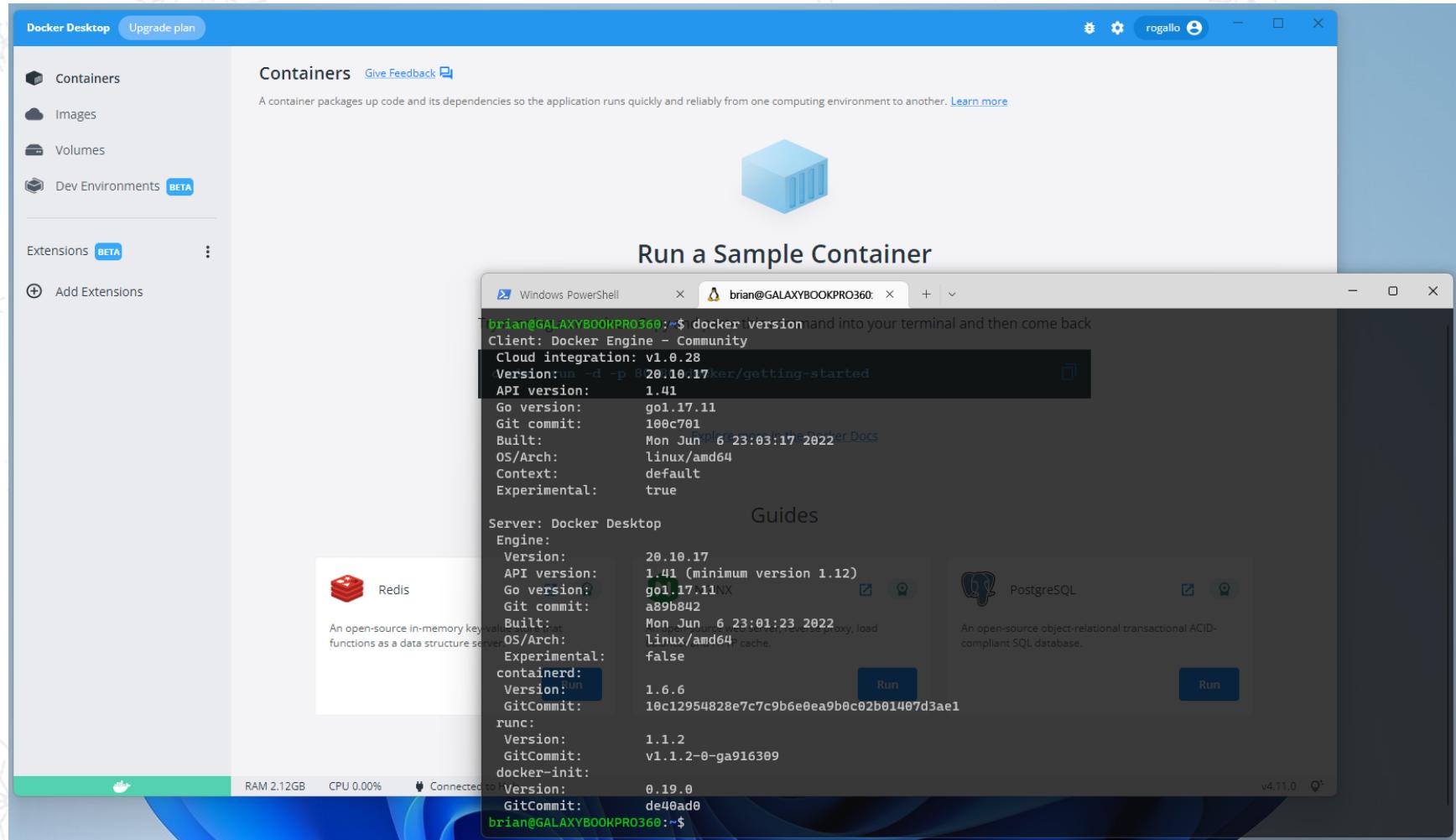
설치완료 후 처음 실행하면 아래 그림과 같은 Service agreement 페이지가 열립니다.
확인 후 시작합니다.

- 주의 : Commercial use of Docker Desktop in larger enterprises (more than 250 employees OR more than \$10 million USD in annual revenue) now requires a paid subscription.



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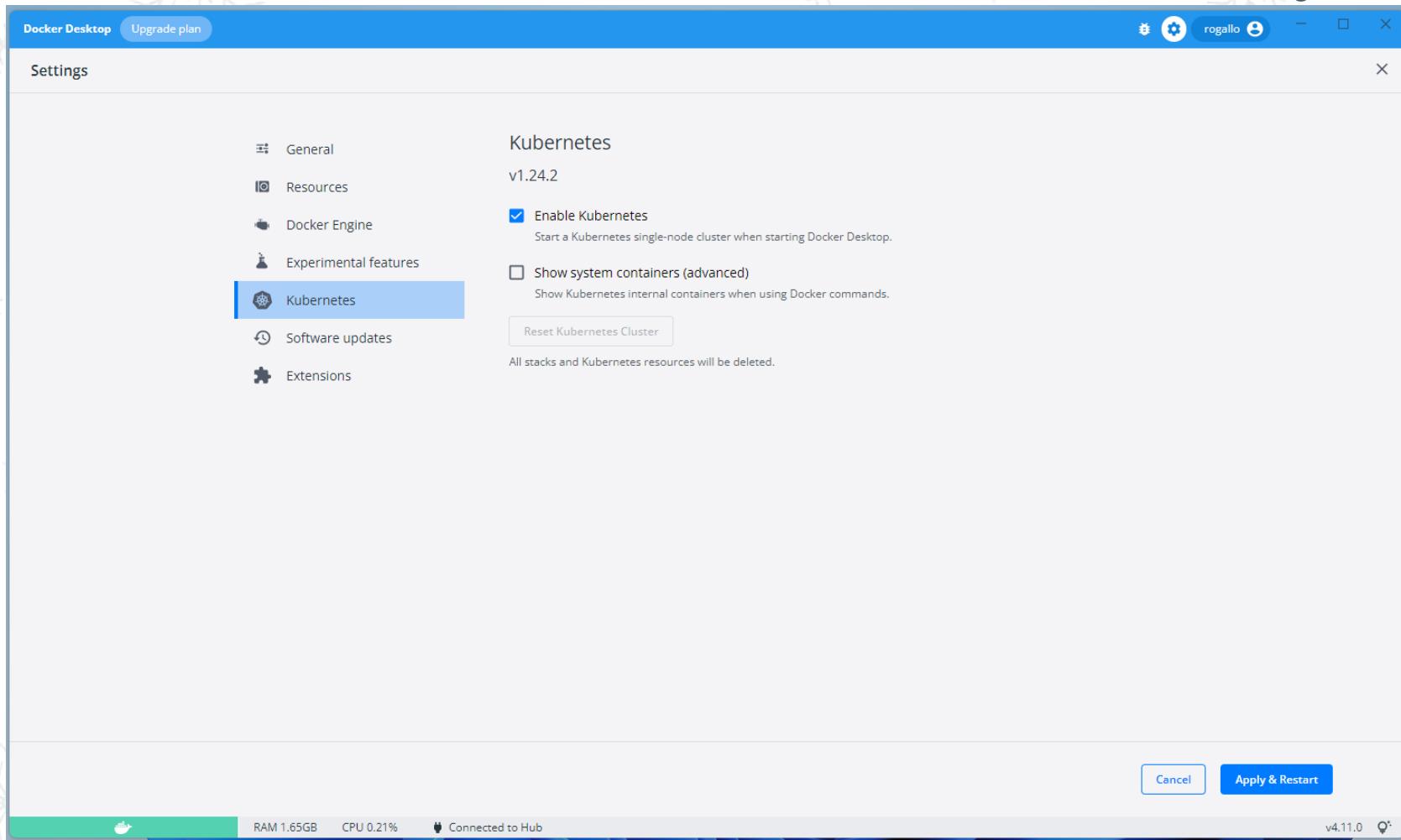
Docker Desktop 실행 후 Windows terminal에서 아래와 같이 docker 명령어를 실행할 수 있습니다.



여기까지 하면 Docker 환경은 준비가 됐습니다.

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설정에서 Kubernetes를 Enable로 하면 Kubernetes 실습을 해볼 수 있습니다. (Single-node cluster)

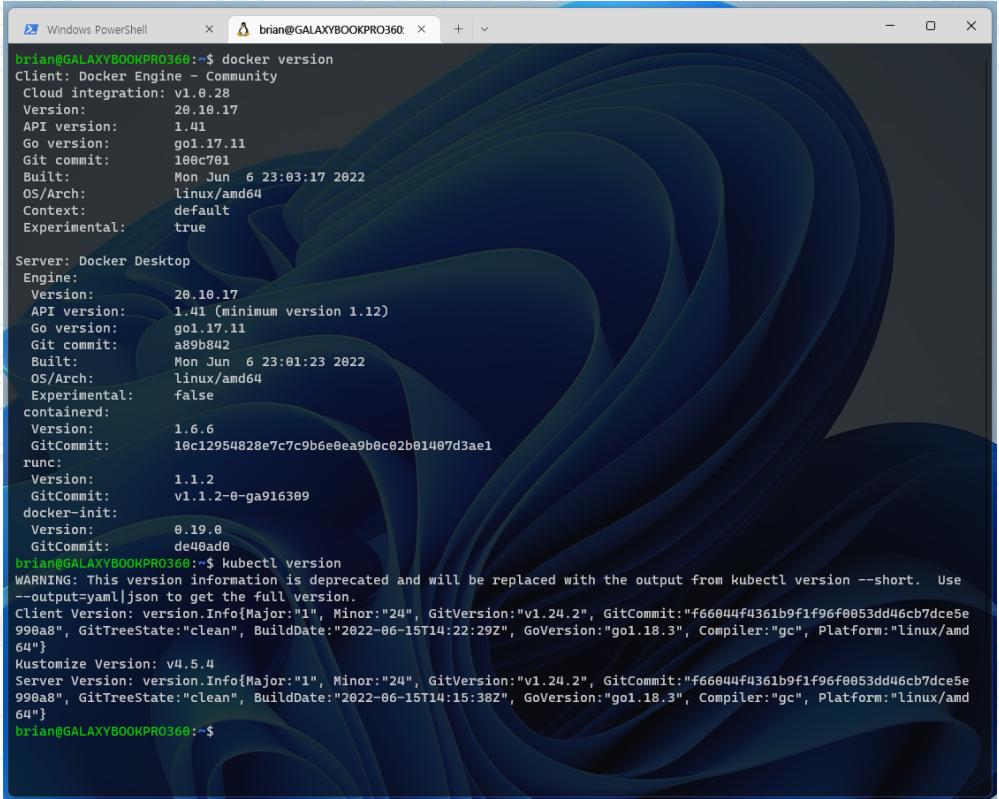


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모든 설치와 설정이 정상적으로 되고나면, 아래 그림처럼

- docker
- kubectl

명령어를 실행할 수 있습니다.



```
brian@GALAXYBOOKPRO360:~$ docker version
Client: Docker Engine - Community
  Cloud integration: v1.0.28
    Version: 20.10.17
      API version: 1.41
      Go version: go1.17.11
      Git commit: 10ec701
      Built: Mon Jun 6 23:03:17 2022
      OS/Arch: linux/amd64
      Context: default
      Experimental: true

Server: Docker Desktop
  Engine:
    Version: 20.10.17
      API version: 1.41 (minimum version 1.12)
      Go version: go1.17.11
      Git commit: a89b842
      Built: Mon Jun 6 23:01:23 2022
      OS/Arch: linux/amd64
      Experimental: false
  containerd:
    Version: 1.6.6
      GitCommit: 10c12954828e7c7c9b6e0ea9b0c02b01407d3ae1
  runc:
    Version: 1.1.2
      GitCommit: v1.1.2-0-ga916309
  docker-init:
    Version: 0.19.0
      GitCommit: de40ad0
brian@GALAXYBOOKPRO360:~$ kubectl version
WARNING: This version information is deprecated and will be replaced with the output from kubectl version --short. Use --output=yaml|json to get the full version.
Client Version: version.Info{Major:"1", Minor:"24", GitVersion:"v1.24.2", GitCommit:"f66044f4361b9f1f96f0053dd46cb7dce5e990ab", GitTreeState:"clean", BuildDate:"2022-06-15T14:22:29Z", GoVersion:"go1.18.3", Compiler:"gc", Platform:"linux/amd64"}
Kustomize Version: v4.5.4
Server Version: version.Info{Major:"1", Minor:"24", GitVersion:"v1.24.2", GitCommit:"f66044f4361b9f1f96f0053dd46cb7dce5e990ab", GitTreeState:"clean", BuildDate:"2022-06-15T14:15:38Z", GoVersion:"go1.18.3", Compiler:"gc", Platform:"linux/amd64"}  
brian@GALAXYBOOKPRO360:~$
```