

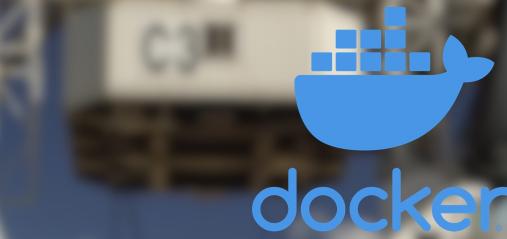
[Hands-on] 00. Environment setup

실습을 위한 환경구성 가이드입니다.

Windows 환경에 대한 설명이며, MacOS는 관련 문서의 Mac 부분을 참조하세요.

Docker desktop on Windows (Kubernetes 포함)

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



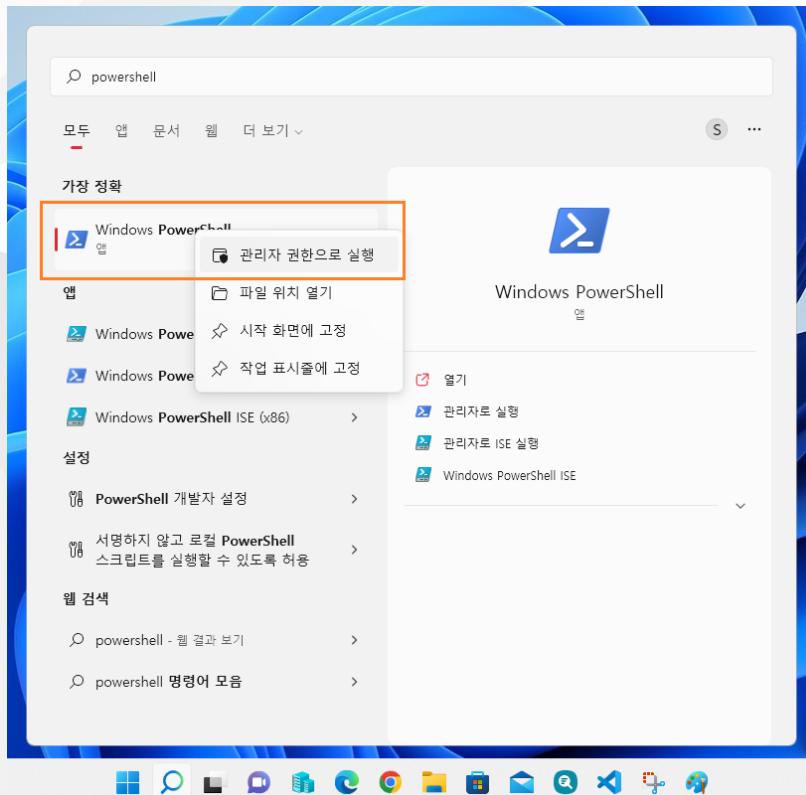
kubernetes

1. Linux 환경 준비 : WSL2

먼저 윈도우즈에 리눅스 환경을 준비합니다.

여러가지 방법 중 WSL2를 이용해서 준비해 보겠습니다.

PowerShell을 관리자 권한으로 실행.

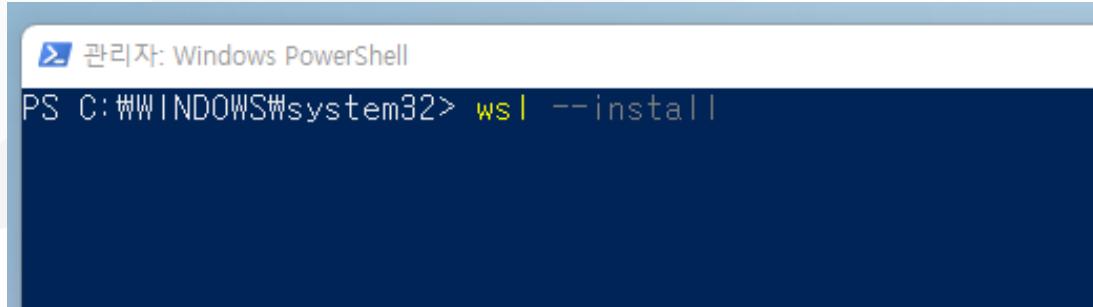


Docker & Kubernetes - [Hands-on] 00. Environment setup

PowerShell에서 `wsl --install` 실행

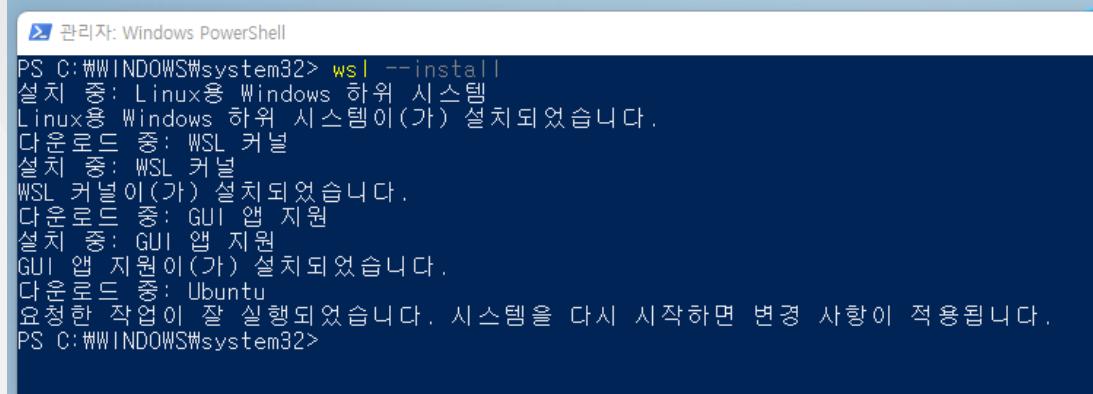
조건 : Windows 10 버전 2004 이상(빌드 19041 이상) 또는 Windows 11

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>
```

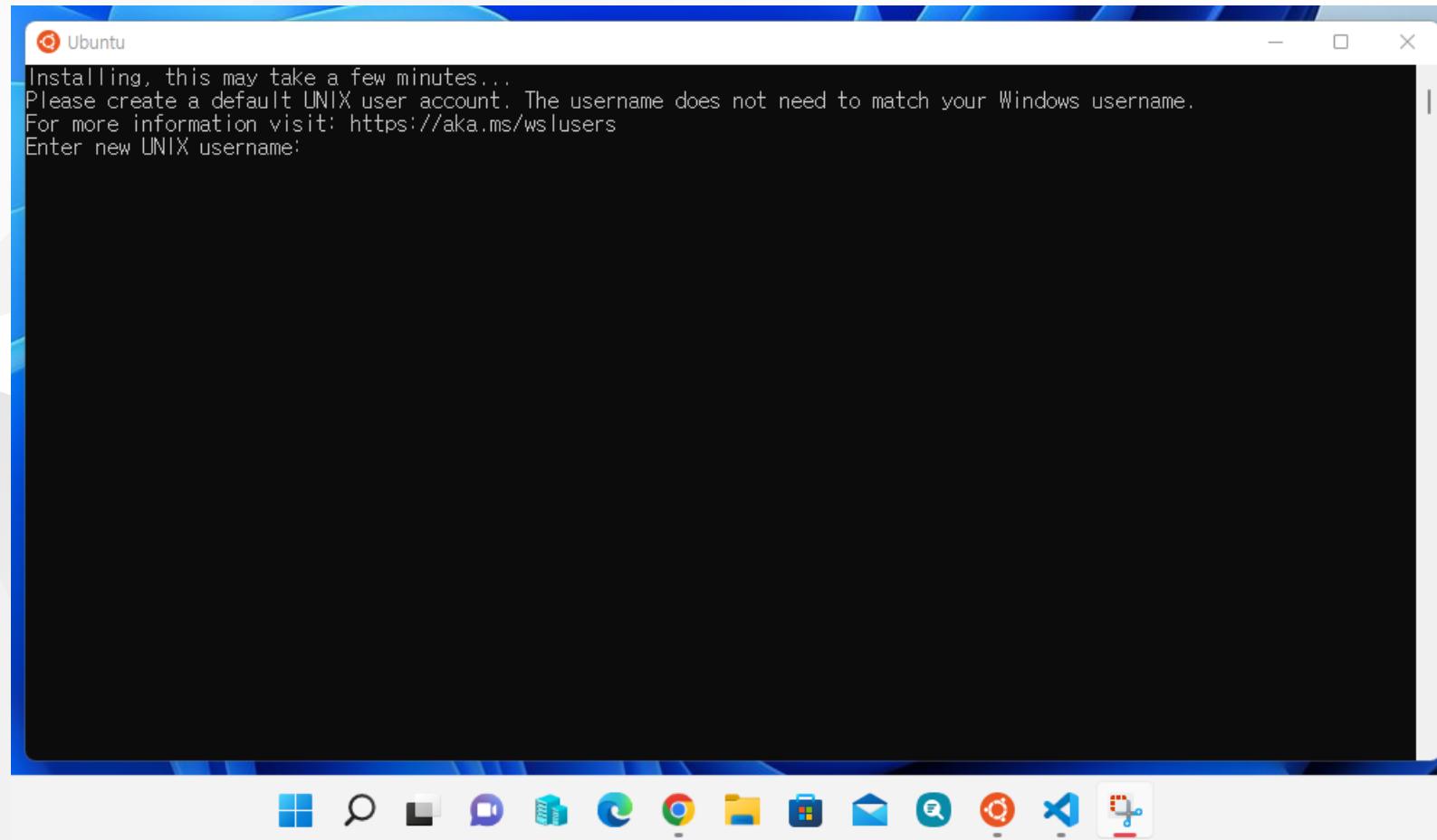
Default 리눅스 배포판은 Ubuntu입니다.

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

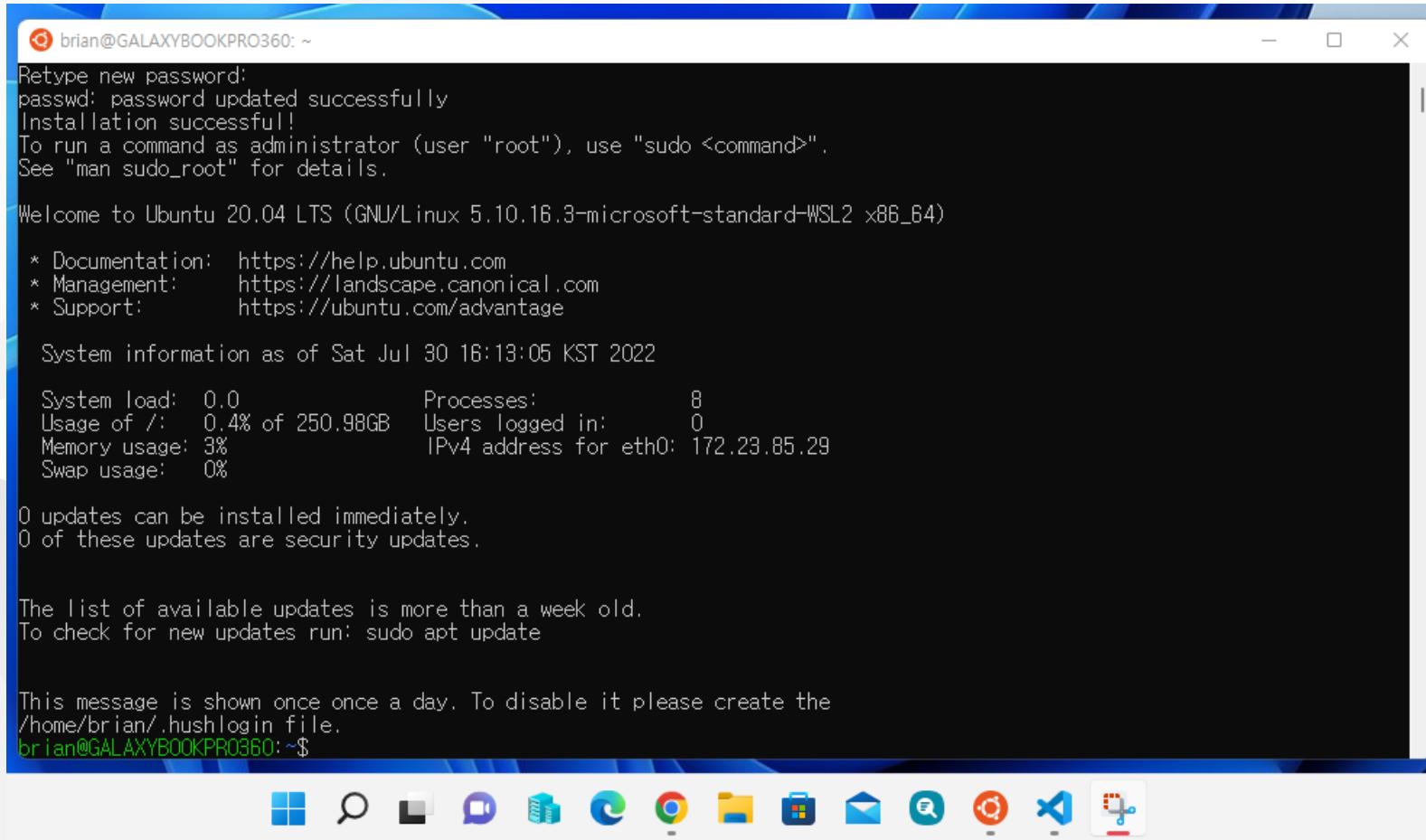
Docker & Kubernetes - [Hands-on] 00. Environment setup

시스템 재시작 후 아래와 같은 창이 자동으로 열립니다.

리눅스 사용자 계정과 암호를 설정합니다.



Docker & Kubernetes - [Hands-on] 00. Environment setup



brian@GALAXYBOOKPRO360: ~

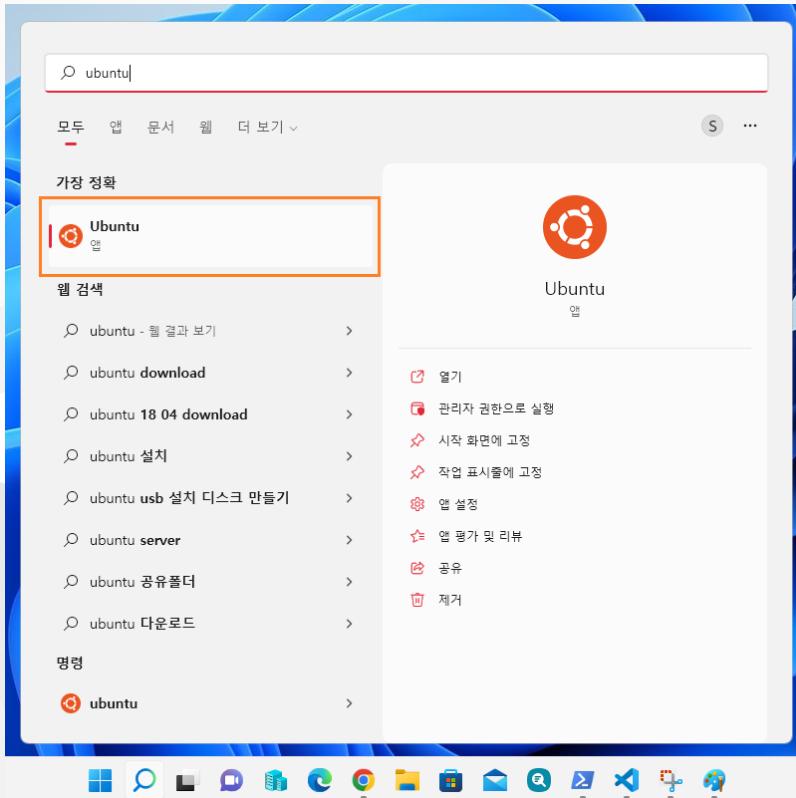
```
Retype new password:  
passwd: password updated successfully  
Installation successful!  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
Welcome to Ubuntu 20.04 LTS (GNU/Linux 5.10.16.3-microsoft-standard-WSL2 x86_64)  
  
 * Documentation: 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 output of the 'apt-get install' command, which includes a password confirmation, installation success message, and system configuration. It then shows the standard Ubuntu 20.04 LTS welcome screen with documentation links, management, and support information. Following this, it provides system information as of July 30, 2022, at 16:13:05 KST, including load average, memory usage, swap usage, and network information. It then informs the user about available updates, stating there are none immediately available. Finally, it provides instructions to check for new updates using 'sudo apt update'. A note at the bottom indicates the message is shown once a day and can be disabled by creating a '.hushlogin' file in the home directory. The terminal prompt 'brian@GALAXYBOOKPRO360: ~\$' is visible at the bottom.

여기까지 하면 리눅스(Ubuntu) 환경은 준비가 됐습니다.

Docker & Kubernetes - [Hands-on] 00. Environment setup

이제 필요할 때는 아래와 같이 시작메뉴의 **Ubuntu**를 실행하면 됩니다.



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

A screenshot of a Windows terminal window titled "Windows PowerShell". The window shows a command prompt with the path "PS C:\Users\brian>". The user has typed the command "wsl --shutdown" and pressed Enter. The terminal then displays the output "PS C:\Users\brian>" again, indicating the command was successfully executed.

Docker & Kubernetes - [Hands-on] 00. Environment setup

[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

The screenshot shows the Microsoft Store page for the Windows Terminal app. At the top, there's a navigation bar with 'Microsoft' and 'Windows 앱' (Windows App) selected. Below the navigation, there are links for '개발자 도구' (Developer Tools) and 'Windows Terminal'. On the right side, there are buttons for '개발자' (Developer) and '로그인' (Log in). The main content area features a large thumbnail of the Windows Terminal application showing multiple tabs of command-line output. To the right of the thumbnail, there's a blue button labeled '스토어 앱에서 다운로드' (Download from the Store) and a link '무료' (Free). Below the download button, there's a section titled '자세한 정보' (More info) with the text '86 언어로 사용 가능' (Available in 86 languages). Further down, it lists the developer as 'Microsoft Corporation' and categories as 'Developer and IT' and 'App badge' (Endpoint Manager). A 'FARC 3+' badge is also present. At the bottom left, there's a '설명' (Description) section with text about the app's features and a note that it's an open-source project. The bottom right corner of the page has a small '7'.

Windows Terminal
Microsoft Corporation
★★★★★ 93 | 개발자 도구

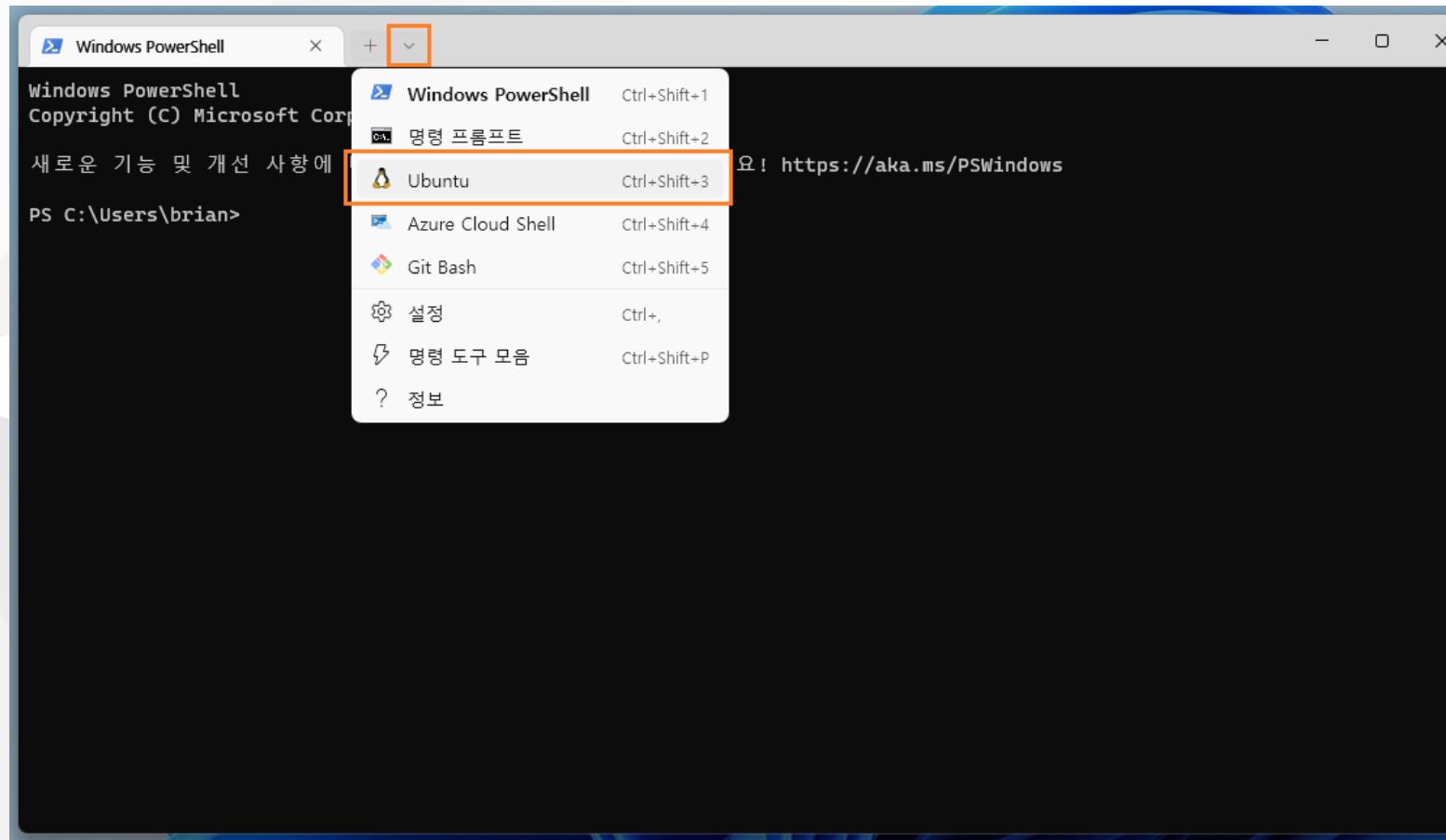
설명

Windows 터미널은 명령 프롬프트, PowerShell 및 WSL과 같은 명령 줄 도구 및 셸 사용자를 위한 최신의 빠르고 효율적이며 강력한 생산성의 터미널 통합 프로그램입니다. 주요 기능으로는 여러 탭, 창, 유니 코드 및 UTF-8 문자 지원, GPU 가속 텍스트 렌더링 엔진 및 사용자 정의 테마, 스타일 및 구성을 있습니다.

이것은 오픈 소스 프로젝트이며 커뮤니티 참여를 환영합니다. 참여하려면 <https://github.com/microsoft/terminal>을 방문하십시오.

Docker & Kubernetes - [Hands-on] 00. Environment setup

Windows terminal에서는 아래와 같이 **Ubuntu**을 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". A sidebar on the left lists various Docker documentation sections. The main content area starts with a note about Docker Desktop terms and a "Download Docker Desktop for Windows" button, which is highlighted with a red box. Below this, there's a "System requirements" section and a "WSL 2 backend" section with a bulleted list of system requirements.

Estimated reading time: 10 minutes

① Update to the Docker Desktop terms
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.

Welcome to Docker Desktop for Windows. This page contains information about Docker Desktop for Windows system requirements, download URL, instructions to install and update Docker Desktop for Windows.

② Download Docker Desktop for Windows

Docker Desktop for Windows

For checksums, see [Release notes](#)

System requirements

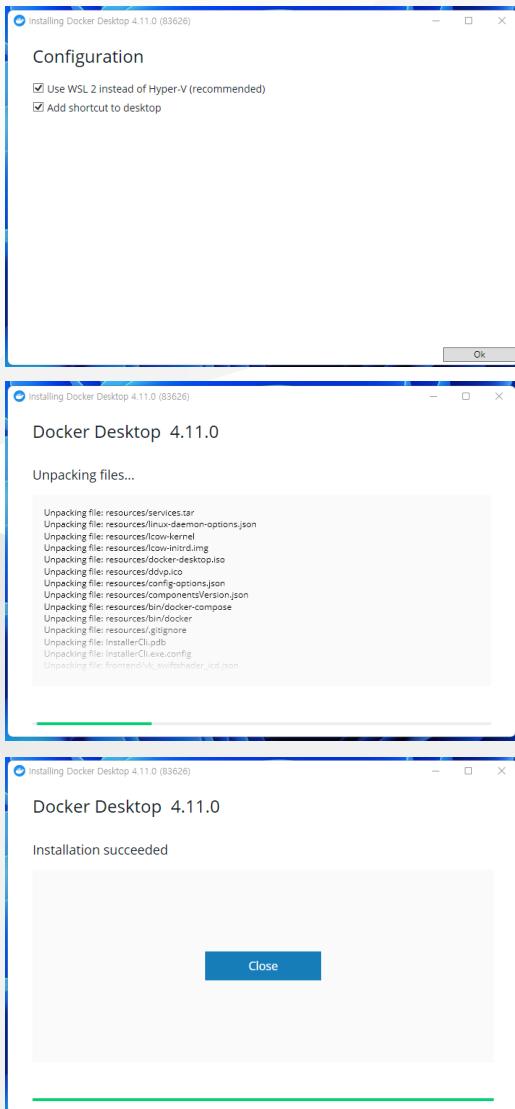
Your Windows machine must meet the following requirements to successfully install Docker Desktop.

WSL 2 backend Hyper-V backend and Windows containers

WSL 2 backend

- Windows 11 64-bit: Home or Pro version 21H2 or higher, or Enterprise or Education version 21H2 or higher.
- Windows 10 64-bit: Home or Pro 21H1 (build 19043) or higher, or Enterprise or Education 20H2 (build 19042) or higher.
- Enable the WSL 2 feature on Windows. For detailed instructions, refer to the [Microsoft documentation](#).
- The following hardware prerequisites are required to successfully run WSL 2 on Windows 10 or Windows 11:
 - 64-bit processor with [Second Level Address Translation \(SLAT\)](#)
 - 4GB system RAM

Docker & Kubernetes - [Hands-on] 00. Environment setup



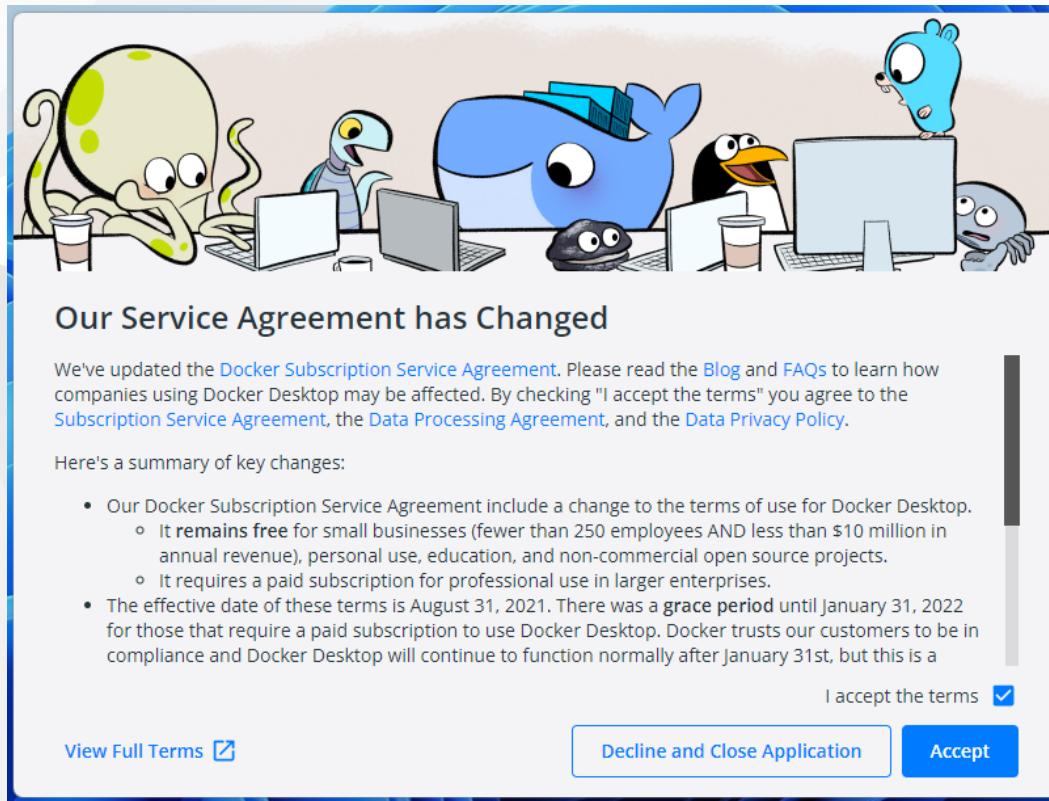
여기까지 하면 설치완료 (工作总结)

Docker & Kubernetes - [Hands-on] 00. Environment setup

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

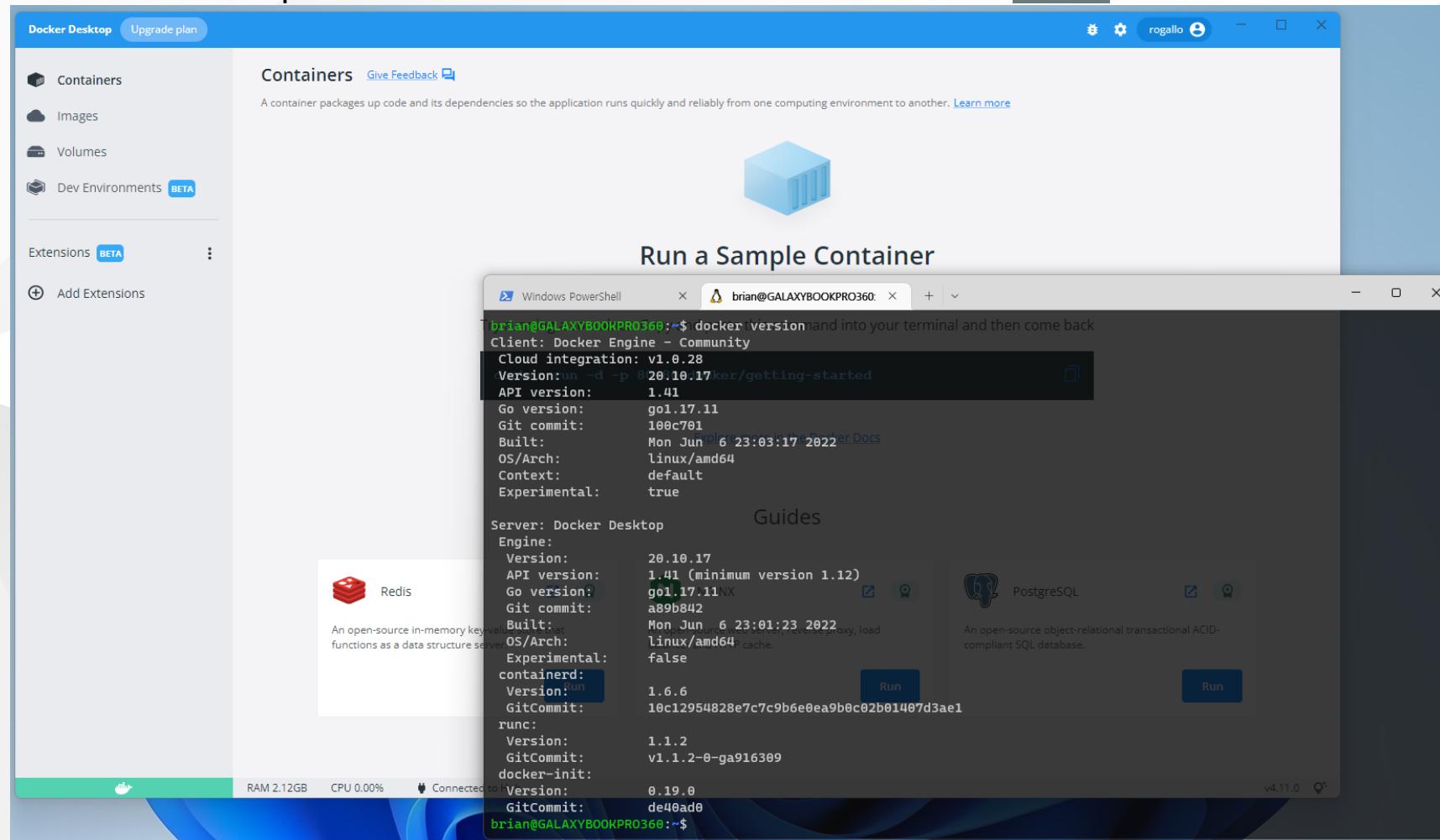
확인 후 시작합니다.

- **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**.



Docker & Kubernetes - [Hands-on] 00. Environment setup

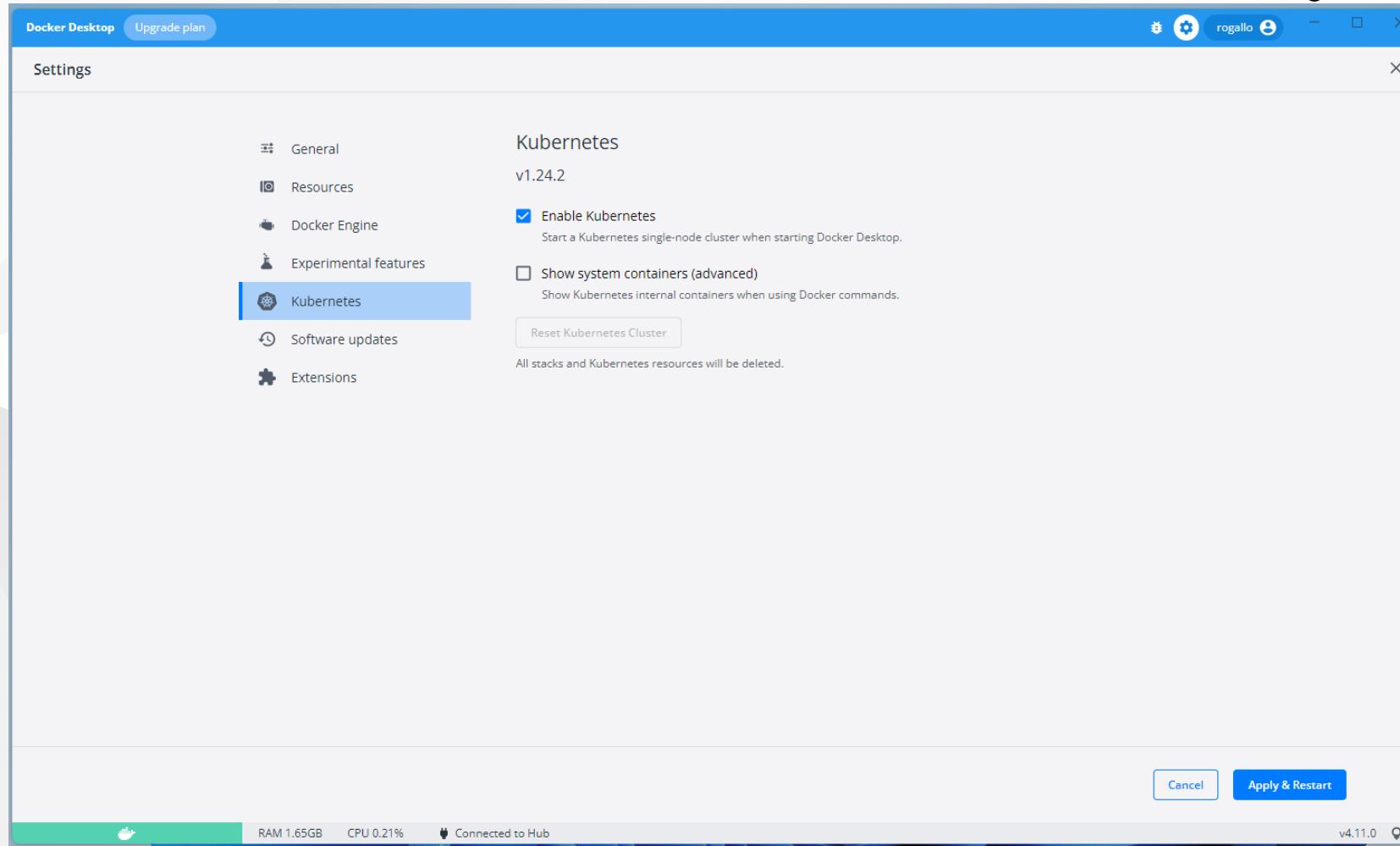
Docker Desktop 실행 후 Windows terminal에서 아래와 같이 docker 명령어를 실행할 수 있습니다.



여기까지 하면 Docker 환경은 준비가 됐습니다.

Docker & Kubernetes - [Hands-on] 00. Environment setup

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

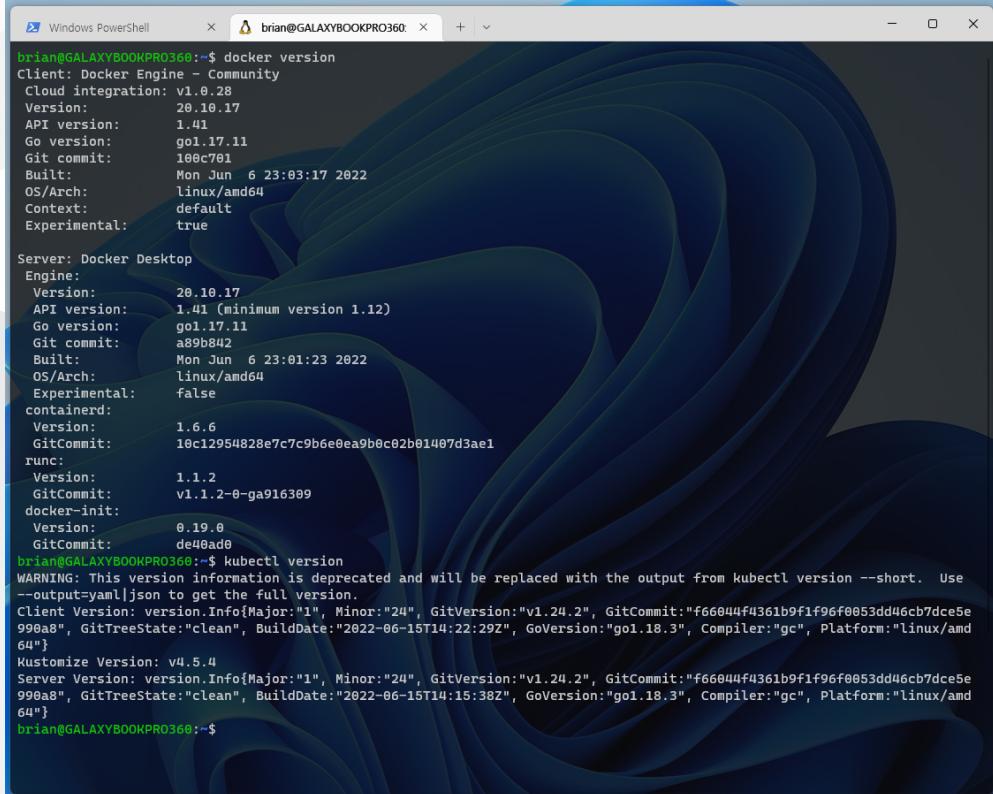


Docker & Kubernetes - [Hands-on] 00. Environment setup

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:        de4bad0
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:~$
```

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