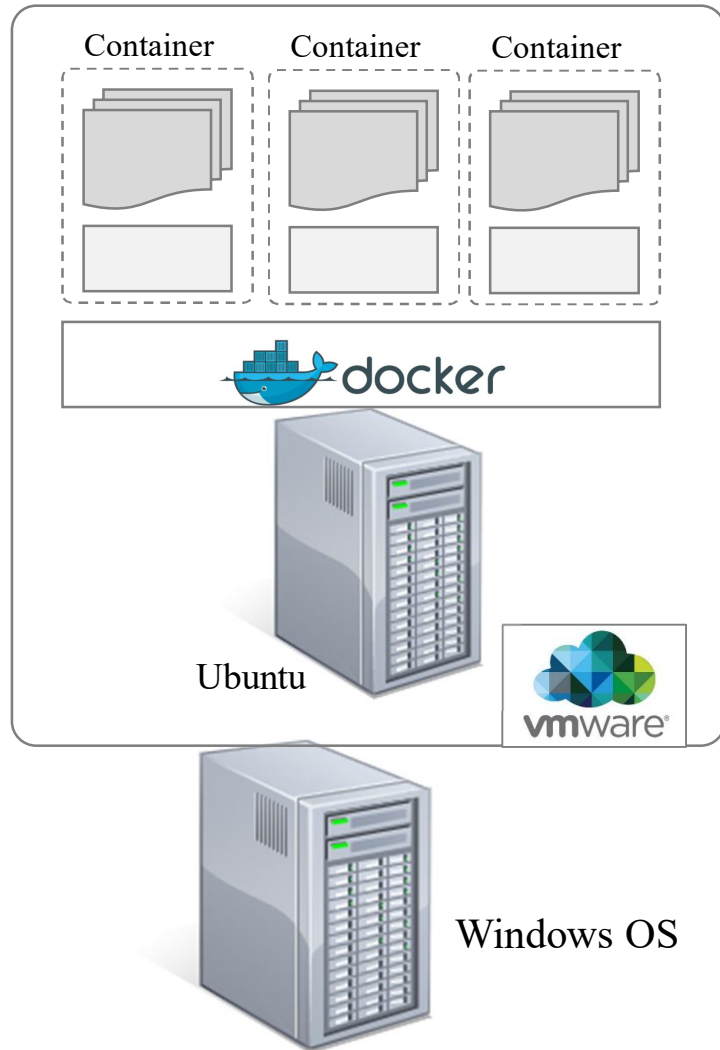
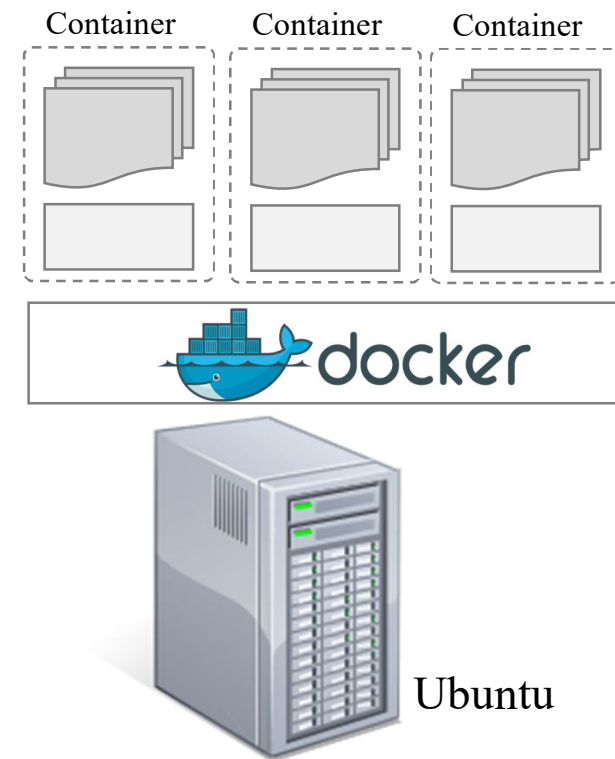


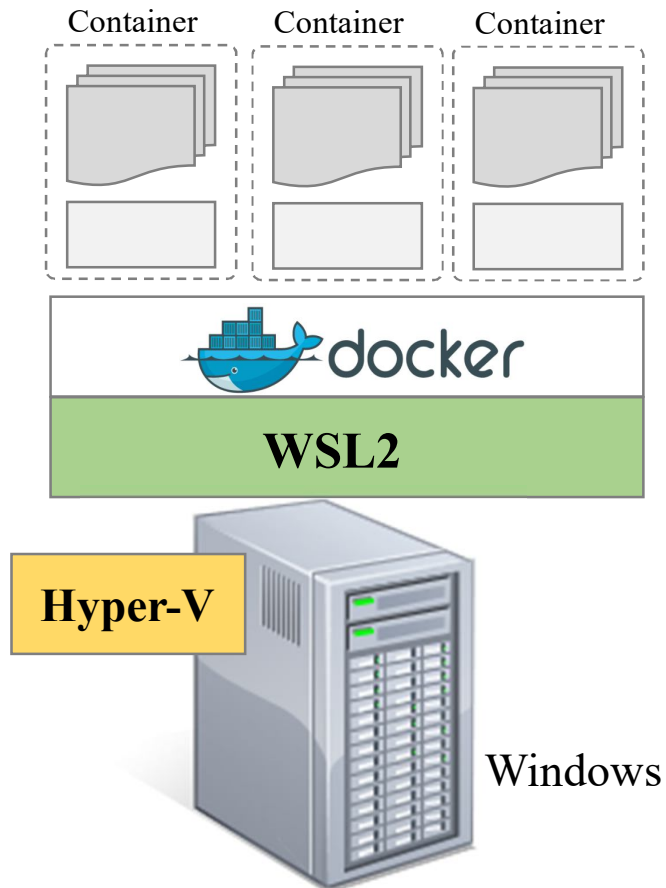
# Docker 실행환경 구성

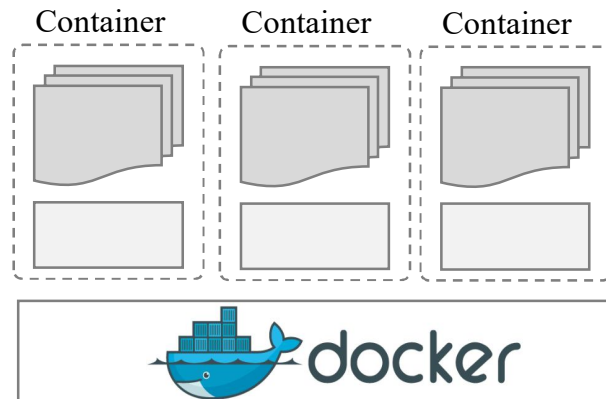


# Linux 환경에서 Docker 설치

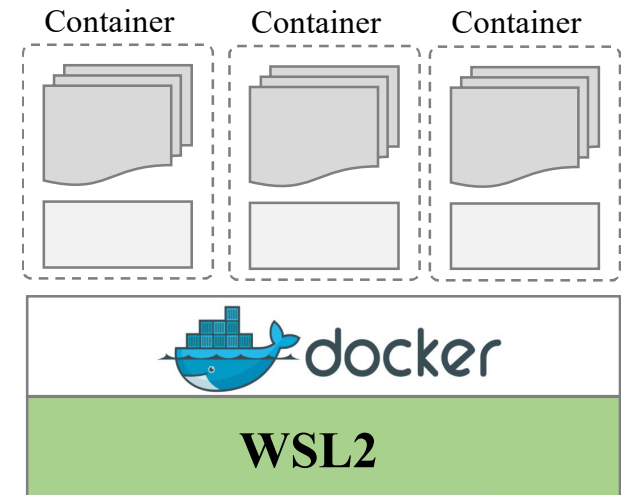


# Windows 환경에서 Docker 설치





Ubuntu

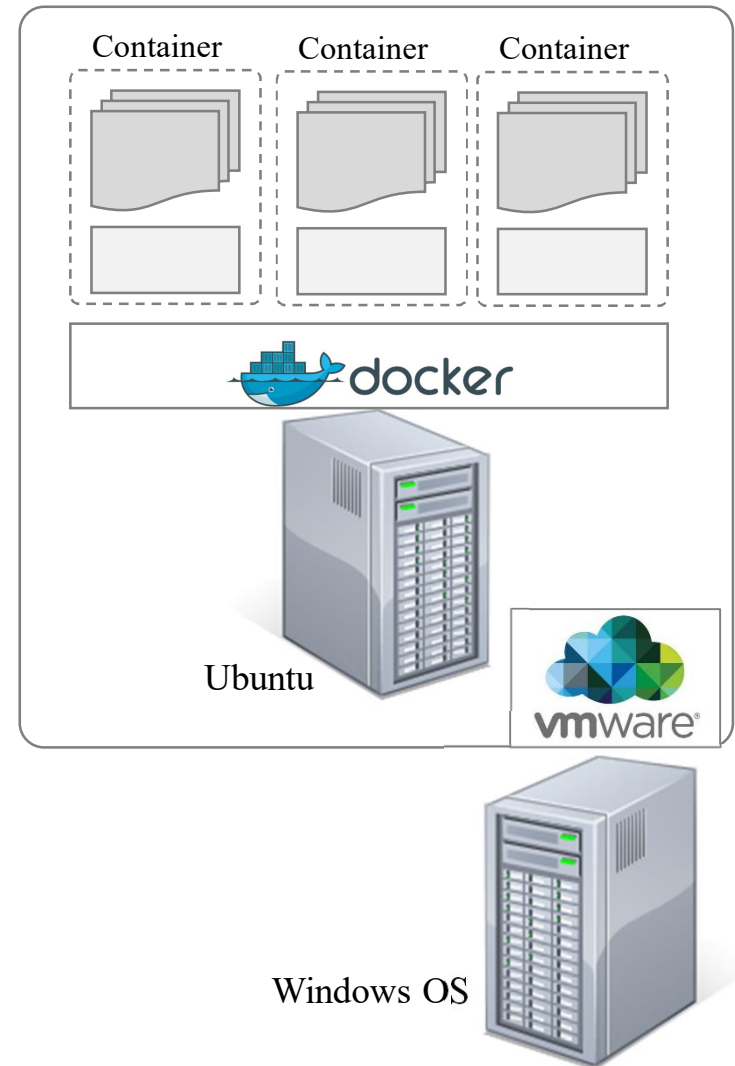


Hyper-V

Windows

# Linux 환경에서 Docker 설치

- 1) VMWare Install
- 2) Ubuntu Install
- 3) Docker Install



<https://docs.docker.com/desktop/install/ubuntu/>

The screenshot shows a web browser displaying the Docker documentation page for installing Docker Engine on Ubuntu. The browser's address bar shows the URL `docs.docker.com/engine/install/ubuntu/`. The page has a blue header with the Docker logo and navigation links: "Get started", "Guides", "Manuals" (which is underlined), and "Reference". A dark blue banner at the top right says "New Docker Hardened Images are now FREE for every developer. Register for the webinar".

On the left side, there is a sidebar menu under the heading "OPEN SOURCE". It lists various operating systems and topics: "Docker Engine", "Install", "Ubuntu" (highlighted), "Debian", "RHEL", "Fedora", "Raspberry Pi OS (32-bit / armhf)", "CentOS", "SLES (s390x)", "Binaries", "Post-installation steps", "Storage", "Networking", "Containers", "CLI", "Daemon", "Manage resources", and "Logs and metrics".

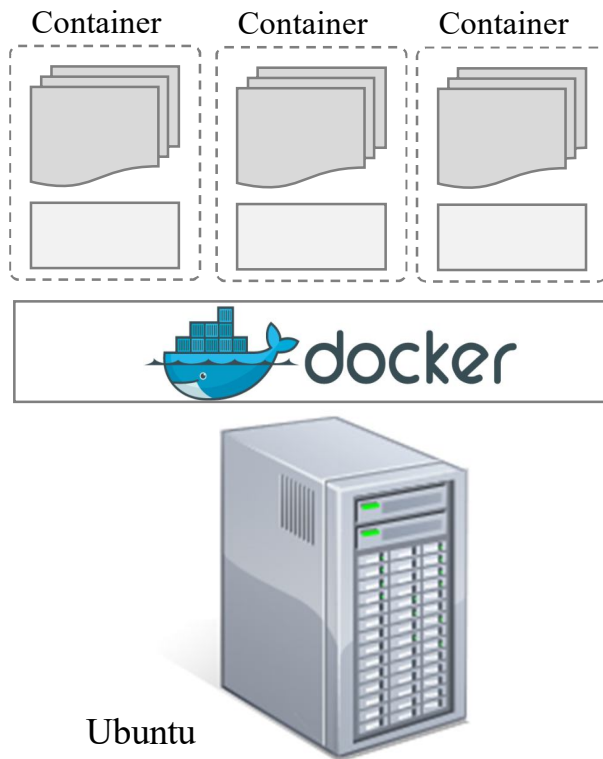
The main content area has a breadcrumb trail: "Home / Manuals / Docker Engine / Install / Ubuntu". The title of the page is "Install Docker Engine on Ubuntu". Below the title, there is a "Page options" button. The text says: "To get started with Docker Engine on Ubuntu, make sure you [meet the prerequisites](#), and then follow the [installation steps](#)."

There are two sub-sections: "Prerequisites" and "Firewall limitations". Under "Firewall limitations", there is a yellow warning box with a warning icon and the text: "Warning: Before you install Docker, make sure you consider the following security implications and firewall incompatibilities."

Below the warning box, there is a list of bullet points:

- If you use `ufw` or `firewalld` to manage firewall settings, be aware that when you expose container ports using Docker, these ports bypass your firewall rules. For more information, refer to [Docker and ufw](#).
- Docker is only compatible with `iptables-nft` and `iptables-legacy`. Firewall rules created with `nft` are not supported on a system with Docker installed. Make sure that any firewall rulesets you use are created with `iptables` or `ip6tables`, and that you add them to the `DOCKER-USER` chain, see [Packet filtering and firewalls](#).

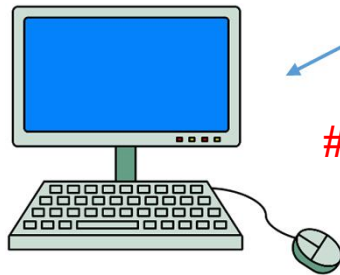
# 리눅스 기반의 Docker 설치 방법



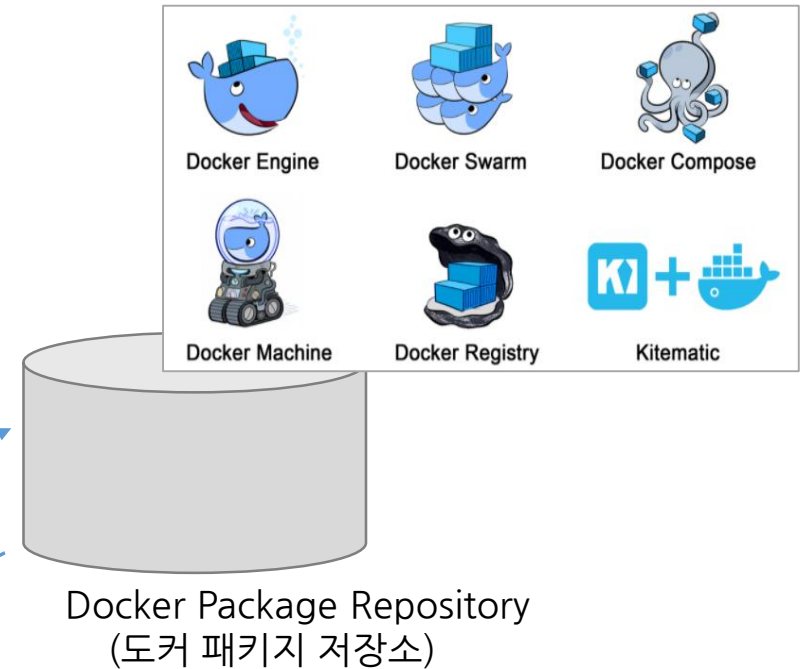
- Repository 를 이용한 설치
- 파일 다운로드 후 설치
  - 네트워크가 연결이 안 될 경우
- Script를 이용한 설치

# Repository를 이용한 Docker Engine 설치

<https://download.docker.com/linux/ubuntu>



`#apt-get install docker-ce docker-ce-cli containerd.io`





## 1단계. Docker 저장소 지정

### ❶ 유틸리티 파일 설치

```
apt-get update
```

```
apt-get install -y ca-certificates curl
```

### ❷ Docker 공식 GPG key 추가 (도커 인증서 저장)

```
install -m 0755 -d /etc/apt/keyrings
```

```
curl -fsSL https://download.docker.com/linux/ubuntu/gpg -o etc/apt/keyrings/docker.asc
```

```
chmod a+r /etc/apt/keyrings/docker.asc
```

### ③ Docker Repository URL 등록

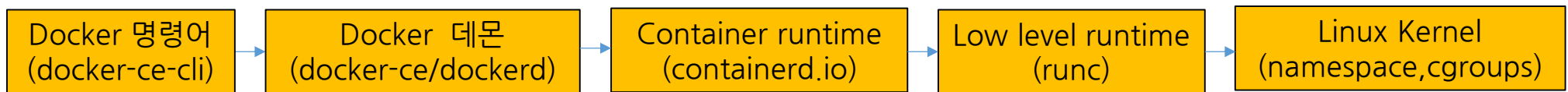
```
echo "deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.asc]  
https://download.docker.com/linux/ubuntu
```

```
$(. /etc/os-release && echo "$VERSION_CODENAME") stable" | tee  
/etc/apt/sources.list.d/docker.list > /dev/null
```

```
apt-get update
```

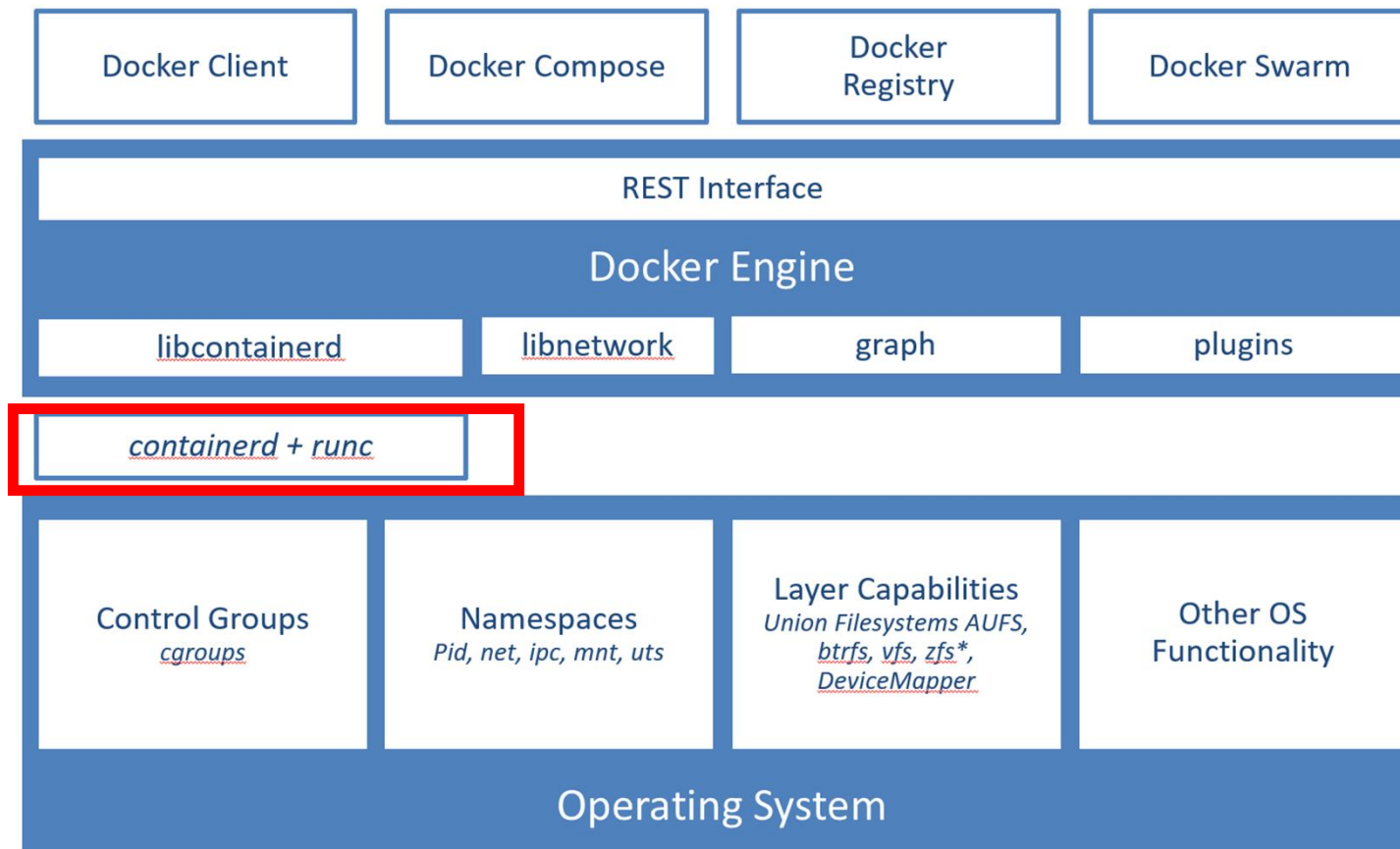
## 2단계. Docker 패키지 설치

apt-get install docker-ce docker-ce-cli containerd.io docker-buildx-plugin docker-compose-plugin

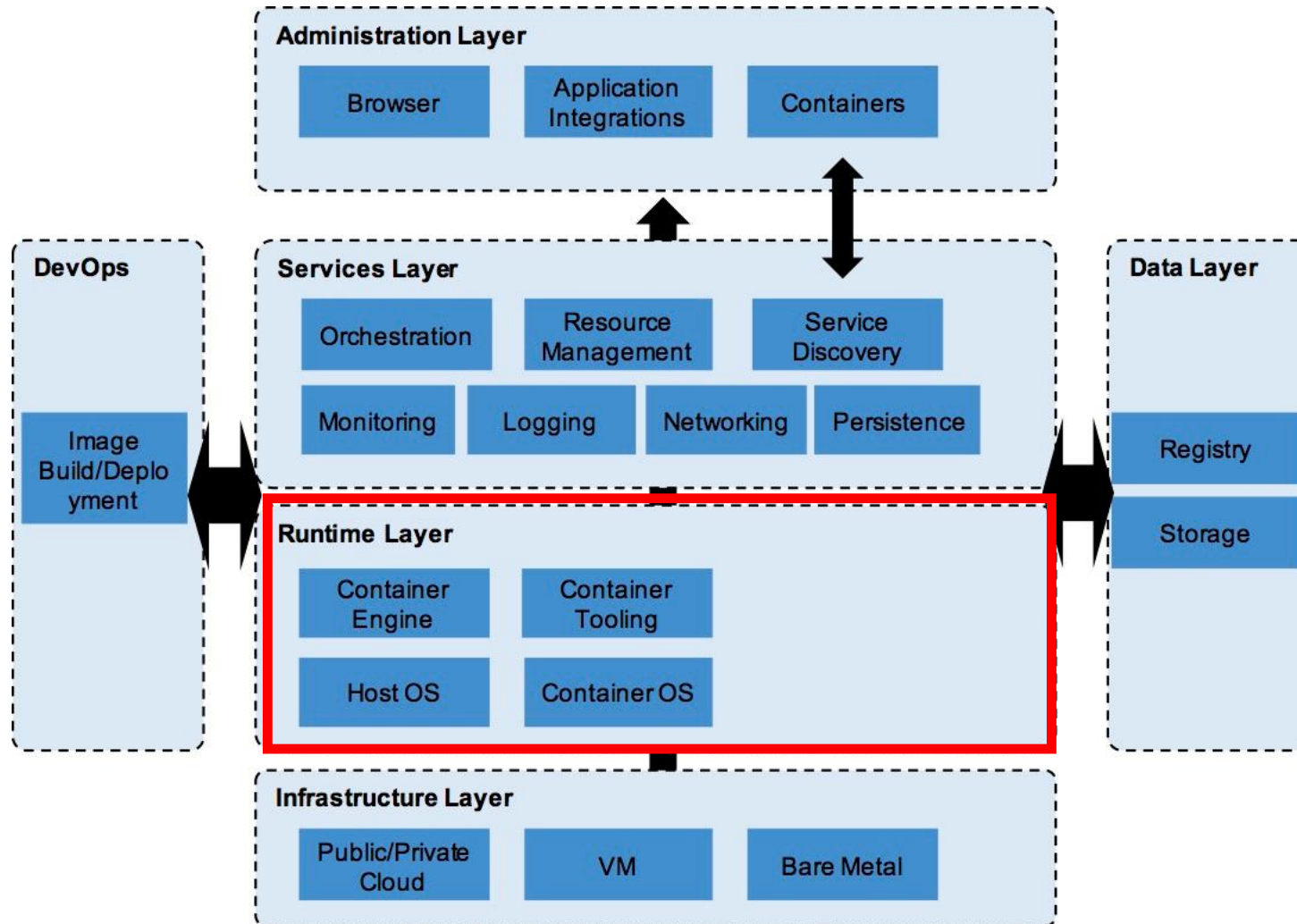


docker-ce-cli	Docker 명령어 도구, docker ps, docker run, docker images 등 사용자와 Docker 데몬(dockerd) 간 인터페이스
docker-ce	Docker Community Edition, Docker 엔진 핵심, dockerd 데몬 제공 컨테이너 생성 / 실행 / 중지 / 삭제, 이미지 관리, 네트워크, 볼륨 제어 systemd 서비스로 동작
containerd.io	컨테이너 런타임 (하부 엔진, 실제 컨테이너 실행 담당) => Docker daemon(프로세스)을 실제로 실행시켜 주는 역할 이미지 pull / push / 저장, 컨테이너 lifecycle 관리, 내부적으로 runc 사용

# Architecture In Linux



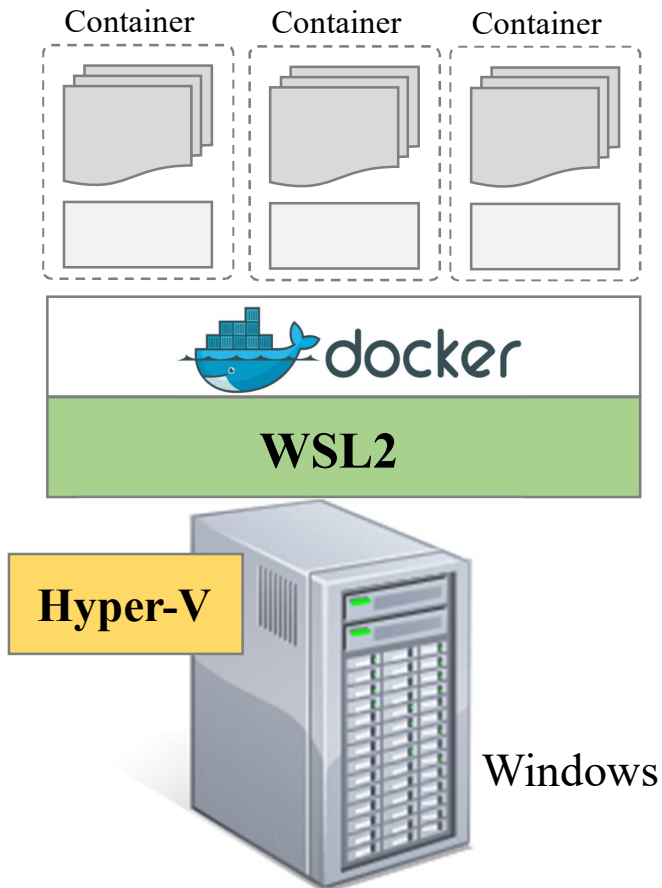
# Container Platform Architecture Reference model



## 3단계. 설치 확인

docker version

# Windows 환경에서 Docker 설치



- 1) Hyper-V 가상화 기능 활성화
- 2) Hub.docker.com 계정 등록
- 3) Docker Desktop 설치
  - WSL2(Windows Subsystem for Linux v.2)를 통해  
리눅스 커널 설치
  - Docker 설치
- 4) Docker 동작 상태 확인

# Docker DeskTop

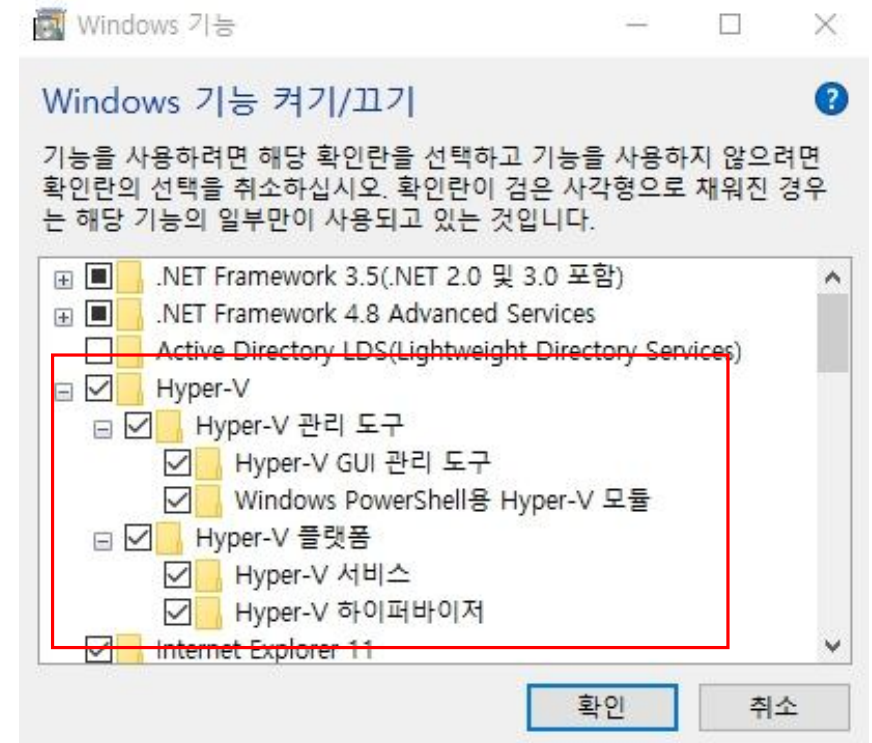
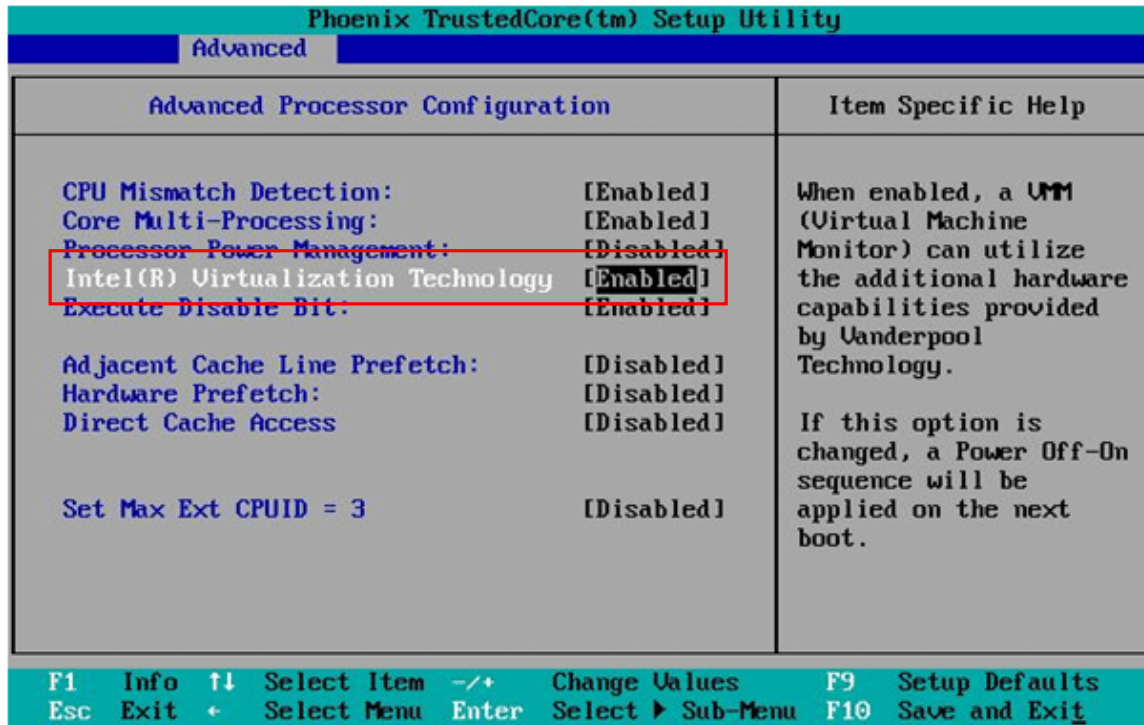
- 컨테이너화된 애플리케이션 및 마이크로서비스를 구축하고 공유할 수 있는 Mac, Linux, Windows 환경용 원클릭 설치 애플리케이션
- 설치된 머신에서 컨테이너, 애플리케이션, 이미지를 관리할 수 있는 간단한 GUI를 제공
- 관련 패키지를 포함
  - Docker Engine, Docker CLI client, Docker Compose, Docker Content Trust, **Kubernetes**, and Credential Helper



# WSL2(Windows Subsystem for Linux 2)

- 윈도우에서 리눅스를 사용할 수 있게 해주는 기능
- 윈도우의 가상화 기능을 활용해서 윈도우 위에서 리눅스를 사용할 수 있게해 줌

# 1단계. Hyper-V 활성화



## systeminfo

```
관리자: 명령 프롬프트

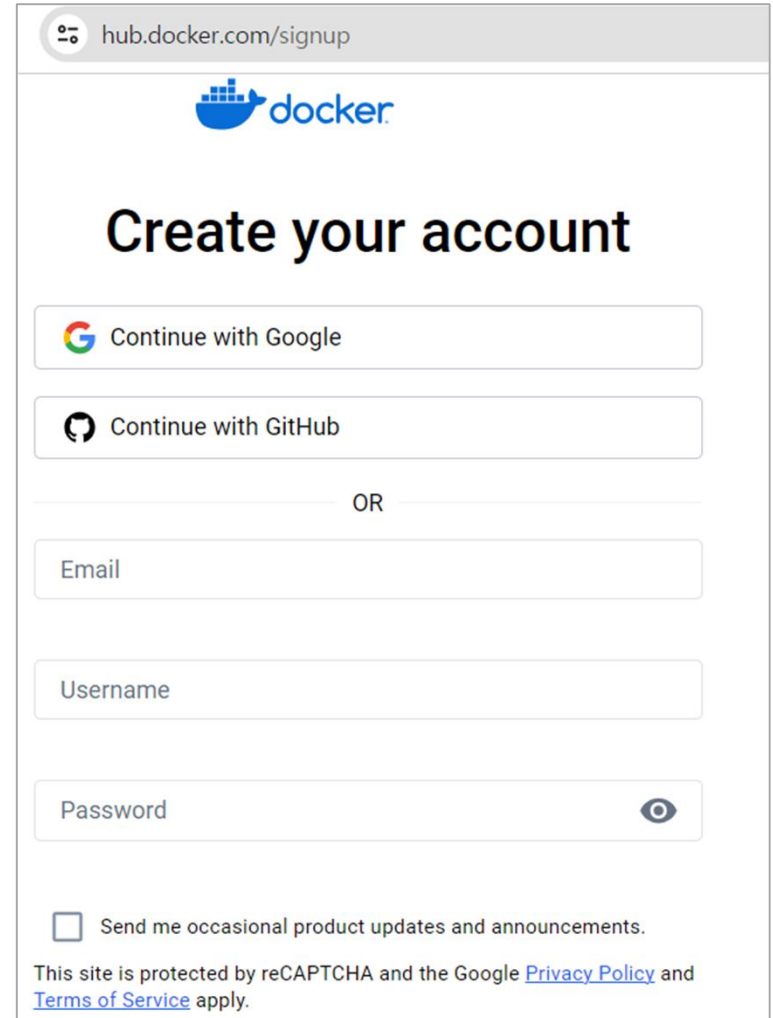
로그온 서버:      \\DESKTOP-M5C3TKU
하픽스:           하픽스 14개 설치됨
                  [01]: KB5013624
                  [02]: KB5013887
                  [03]: KB4537759
                  [04]: KB4557968
                  [05]: KB5003791
                  [06]: KB5006120
                  [07]: KB5007115
                  [08]: KB5014699
                  [09]: KB5006753
                  [10]: KB5007273
                  [11]: KB5011651
                  [12]: KB5014032
                  [13]: KB5014035
                  [14]: KB5005699

네트워크 카드:    NIC 1개 설치됨
                  [01]: Realtek PCIe GbE Family Controller
                  연결 이름: 이더넷
                  DHCP 사용: 예
                  DHCP 서버: 192.168.35.1
                  IP 주소
                  [01]: 192.168.35.70
                  [02]: fe80::80a2:b12c:29b0:2a3d

Hyper-V 요구 사항:
                  VM 모니터 모드 확장: 예
                  펌웨어에 가상화 사용: 아니요
                  두 번째 수준 주소 변환: 예
                  데이터 실행 방지 사용 가능: 예


C:\Windows\system32>
```

## 2단계. Hub.docker.com 계정 등록





The screenshot shows the Docker Hub signup page in a web browser. The address bar displays 'hub.docker.com/signup'. The page features the Docker logo at the top, followed by the heading 'Create your account'. Below this, there are two large buttons for social login: 'Continue with Google' and 'Continue with GitHub'. A horizontal line with the text 'OR' separates these from the standard form fields. The form includes input boxes for 'Email', 'Username', and 'Password'. The 'Password' field has a toggle icon (an eye) to the right. At the bottom, there is a checkbox labeled 'Send me occasional product updates and announcements.' and a footer note stating 'This site is protected by reCAPTCHA and the Google Privacy Policy and Terms of Service apply.'

hub.docker.com/signup

 docker

### Create your account


 Continue with Google

 Continue with GitHub

OR

Email

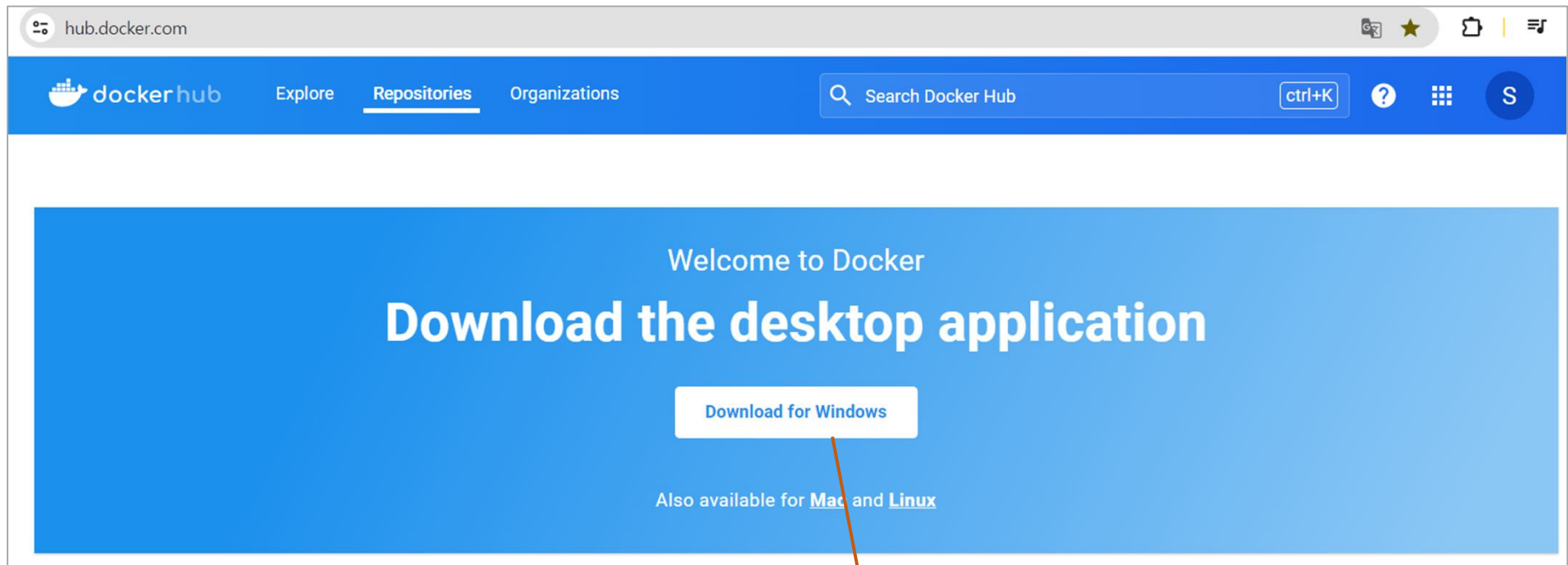
Username

Password 

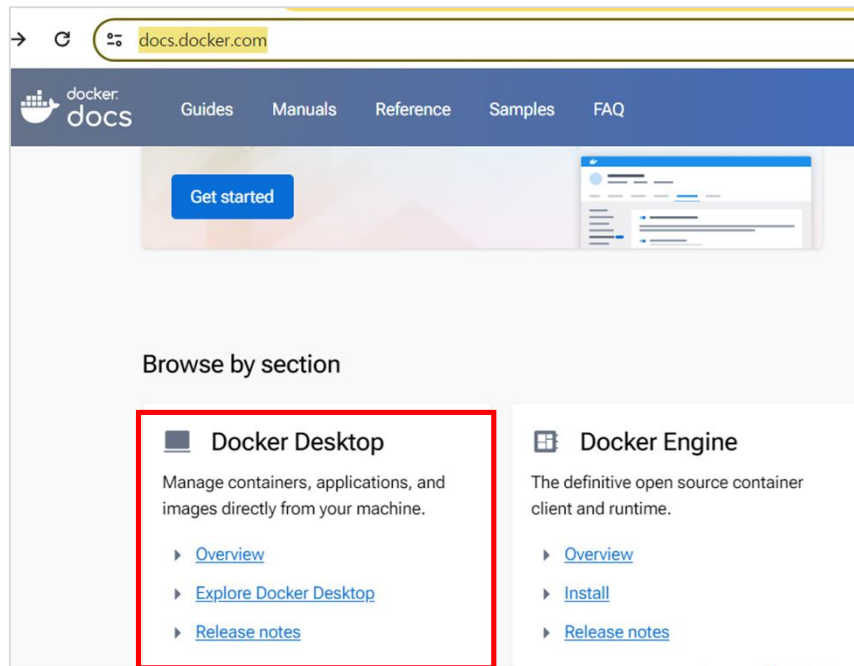
☐ Send me occasional product updates and announcements.

This site is protected by reCAPTCHA and the Google [Privacy Policy](#) and [Terms of Service](#) apply.

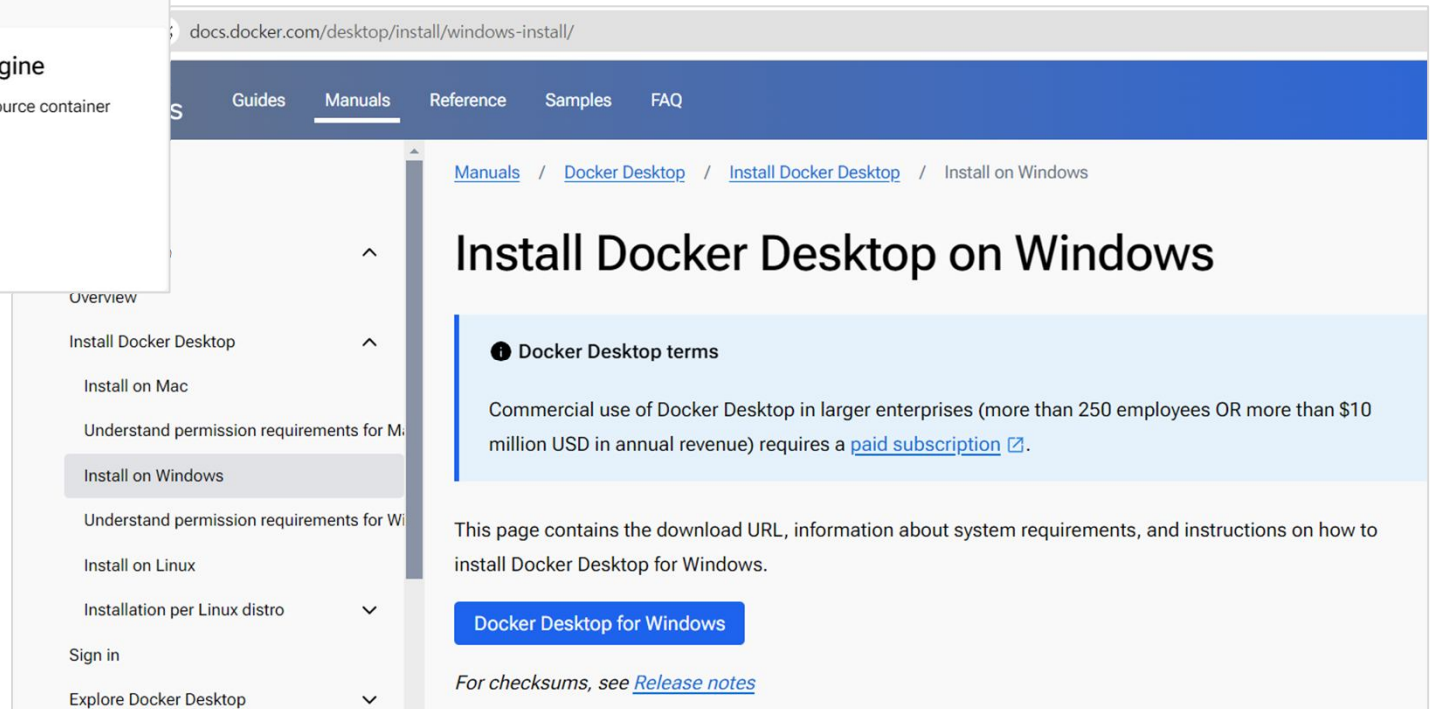
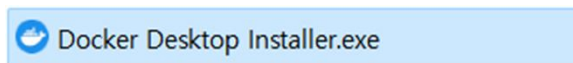
## 3단계. Docker Desktop 다운로드



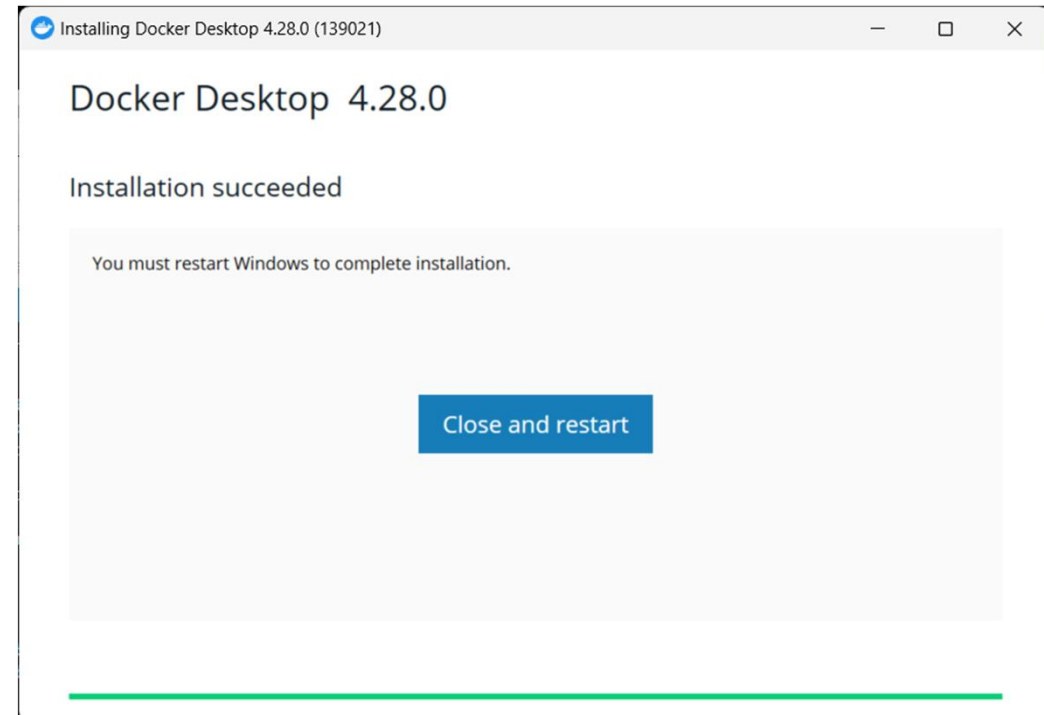
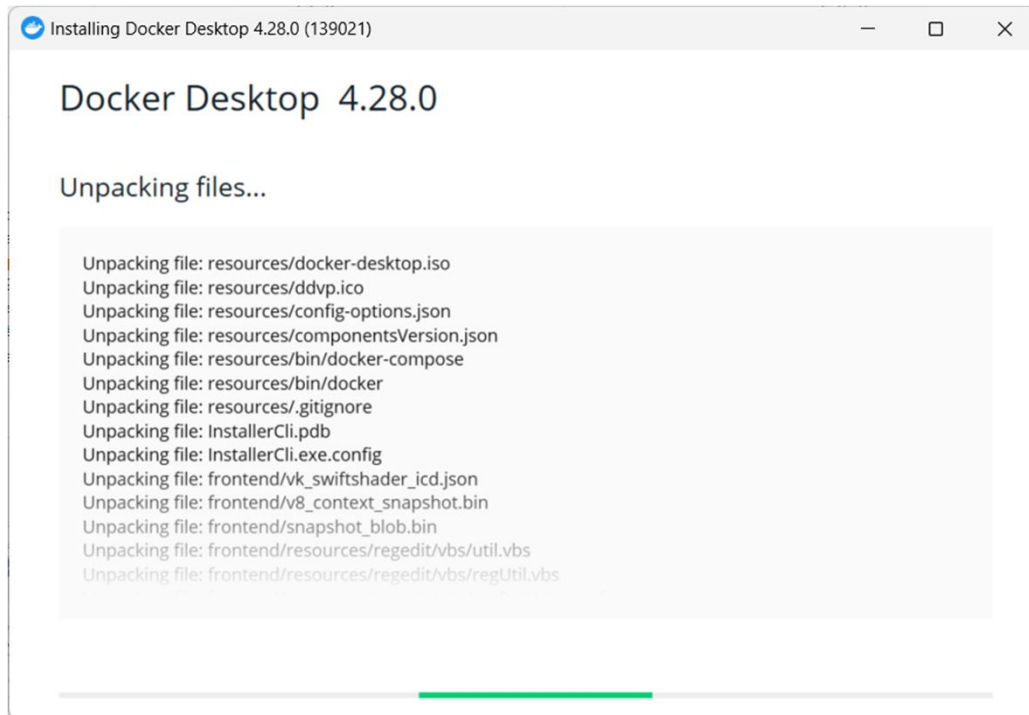
Docker Desktop Installer.exe




<https://docs.docker.com/desktop/install/windows-install/>



## 4단계. Docker Desktop 설치



## 5단계. Docker Hub 로그인 후 Docker Engine 활성화

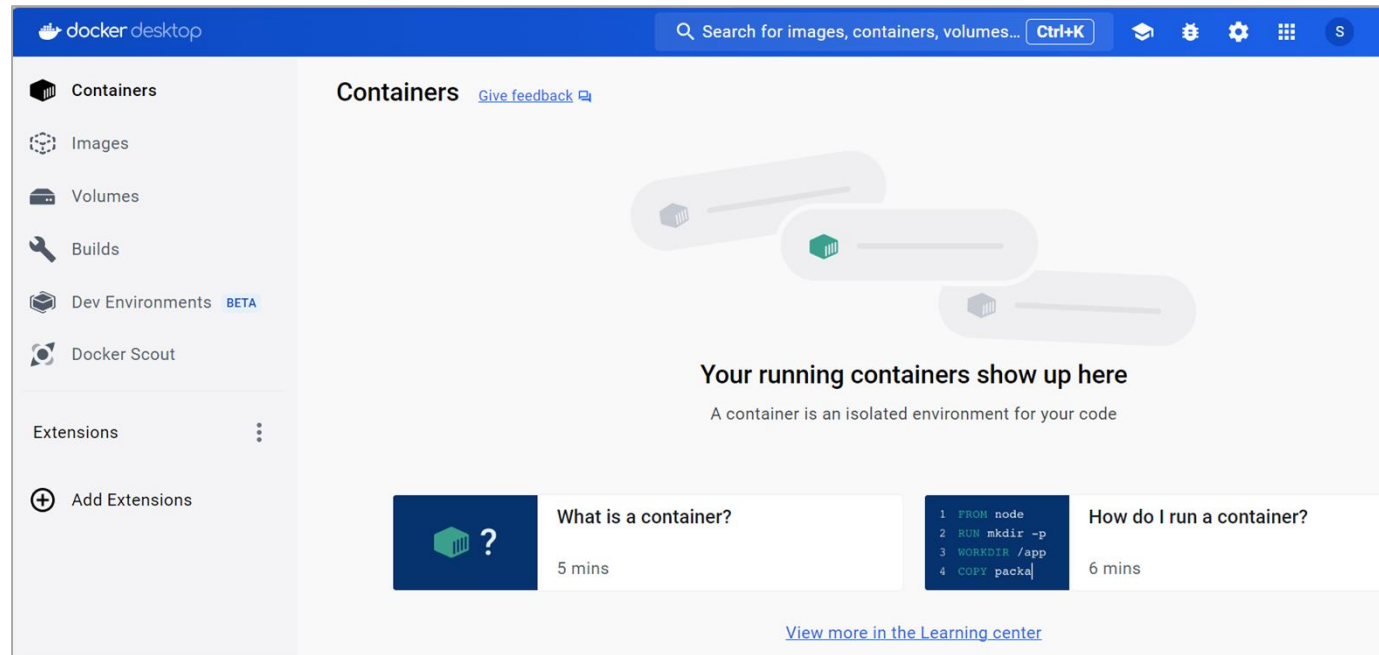


### Sign in

Sign in to Docker to continue to Docker Desktop.

Username or email address

[Continue](#)





## 6단계. PowerShell을 이용한 Docker 확인

```
PS C:\> docker version
Client:
  Cloud integration: v1.0.35+desktop.11
  Version:          25.0.3
  API version:      1.44
  Go version:       go1.21.6
  Git commit:       4debf41
  Built:            Tue Feb  6 21:13:02 2024
  OS/Arch:          windows/amd64
  Context:          default

Server: Docker Desktop 4.28.0 (139021)
Engine:
  Version:          25.0.3
  API version:      1.44 (minimum version 1.24)
  Go version:       go1.21.6
  Git commit:       f417435
  Built:            Tue Feb  6 21:14:25 2024
  OS/Arch:          linux/amd64
```