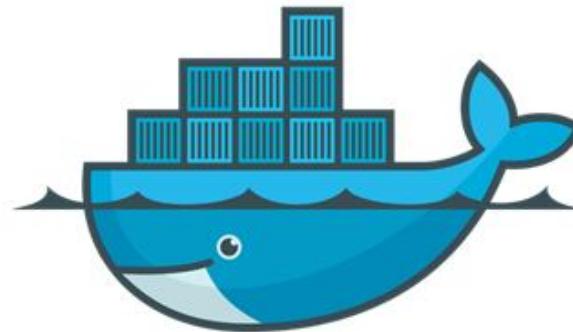


Docker Image & Container



Docker

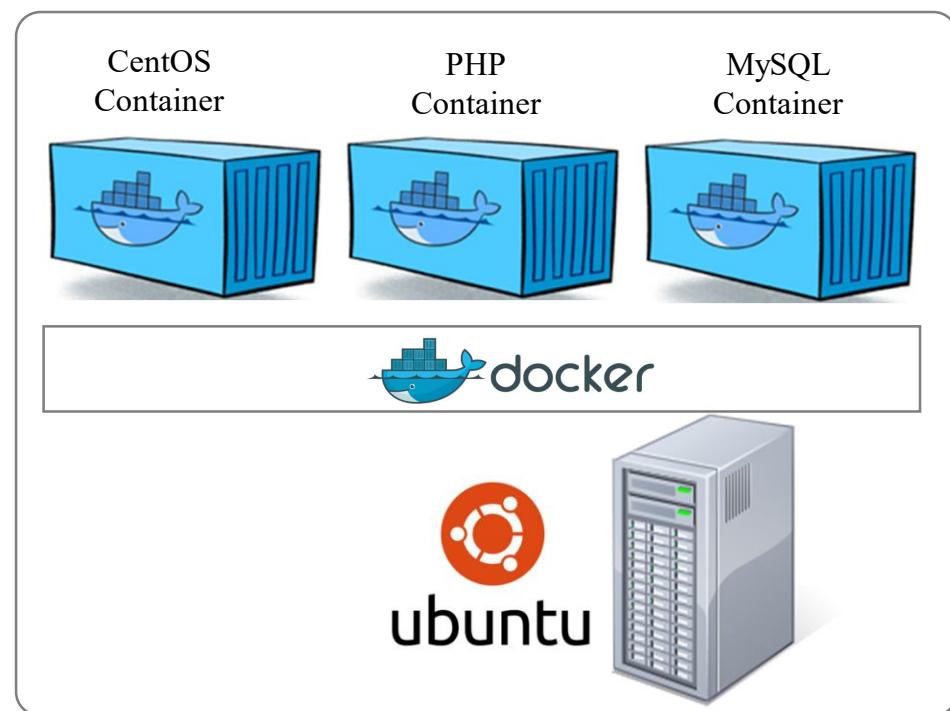
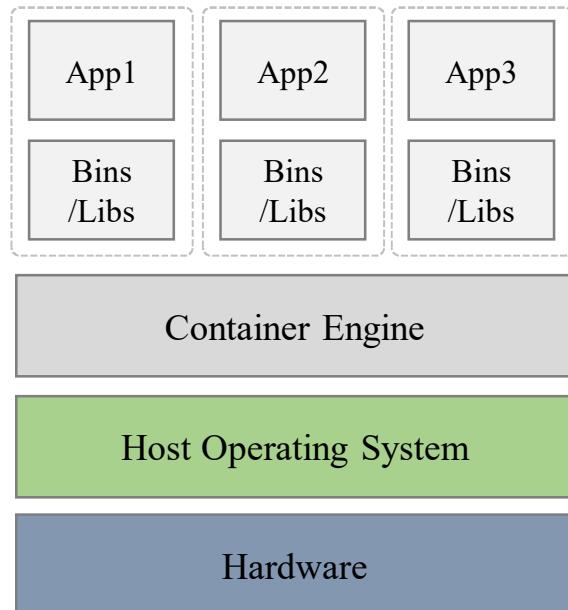
- Linux 상에서 동작하는 가상화 기술
- 가상화 환경에서 운영되는 애플리케이션의 시스템 구축 관리 도구
- 애플리케이션들의 실행 환경을 생성하고 관리하는 도구 (오픈 소스 플랫폼)



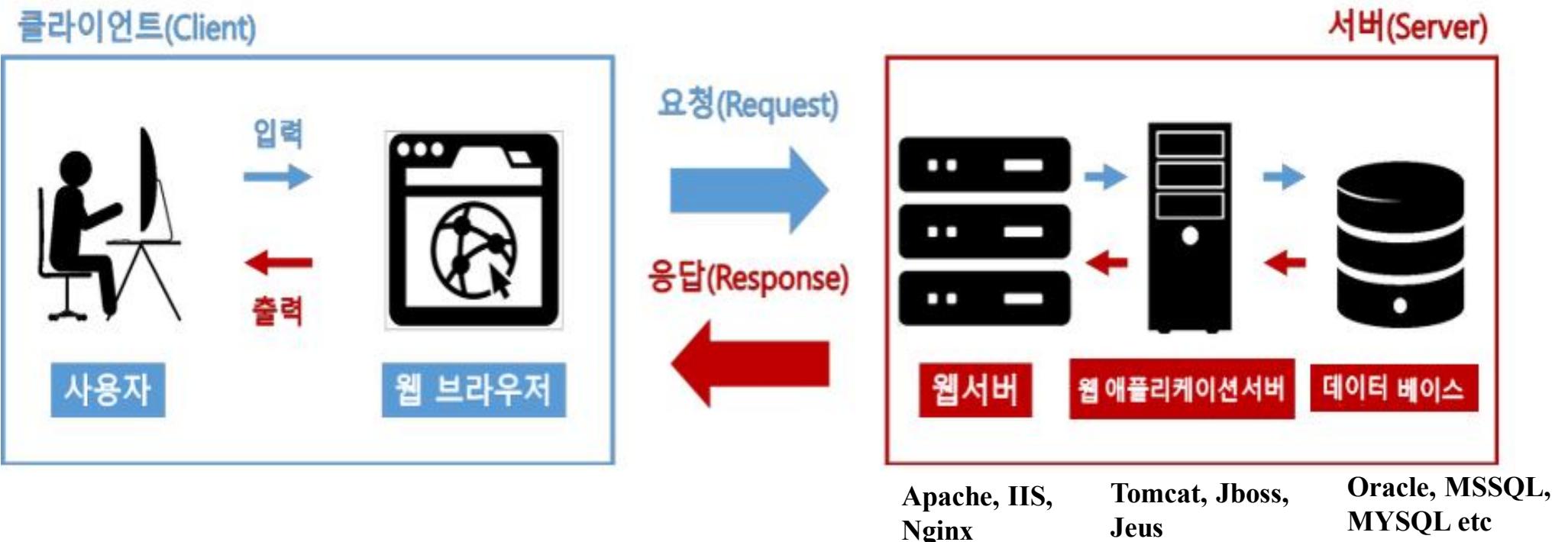
<http://www.docker.com/>

Docker Container

- 하나의 Application(실행파일)과 운영 환경이 모두 들어 있는 독립된 공간
- Container = Applications + Middlewares(라이브러리 파일)



Web System Architecture

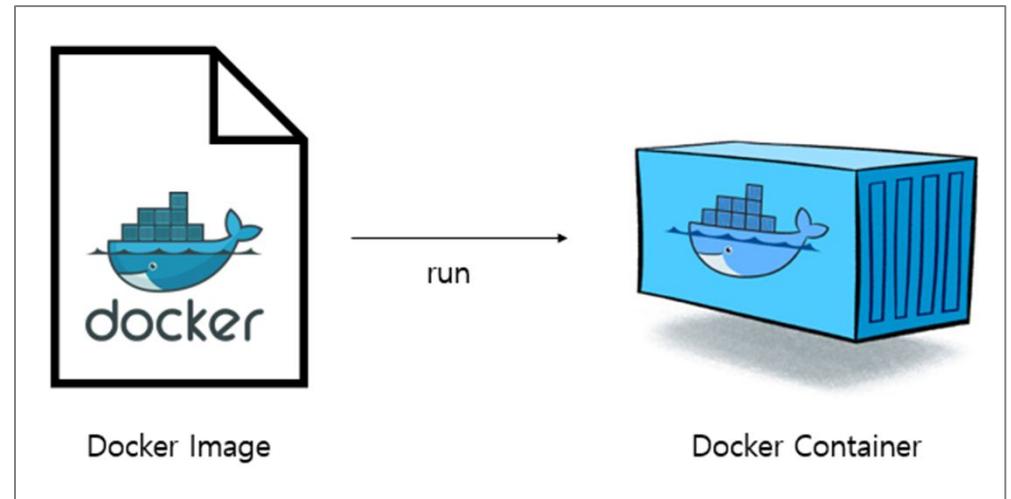


Docker Image

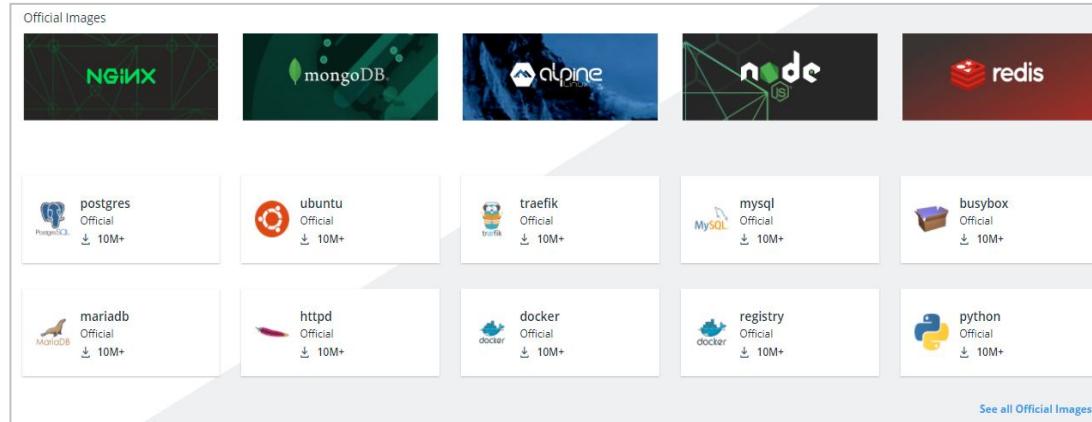
- 도커 서비스 운영에 필요한 서버 프로그램, 소스코드 및 라이브러리, 컴파일된 실행 파일을 묶는 형태
- 컨테이너 생성에 필요한 파일과 환경 설정 값을 가진 상태 파일

Docker Container

- Docker image를 실행(run)한 상태
- Docker image를 기반으로 container가 생성
- 컨테이너 생성에 필요한 파일과 환경설정값을 지닌 것



Docker Hub



- Docker image를 저장하는 원격 스토리지 → Image Registry
- Docker Hub는 Docker에서 운영하는 Docker 이미지 저장소 서비스
→ Docker의 공식 Image Registry
- 수 많은 Docker image가 업로드되어 있으며 Docker client와 기본적으로 연동되어 있음
- 공식 Image 외에도 개인이 개발한 Image를 Docker Hub에서 자유롭게 공개하여 공유할 수 있음
- 요건에 맞는 이미지를 자유롭게 다운 받을 수 있음

hub.docker.com 에 계정 생성

The screenshot shows the Docker Hub sign-up page at <https://hub.docker.com>. The page features a large blue header with the text "Build and Ship any Application Anywhere". Below the header, there's a search bar and navigation links for "Explore", "Pricing", "Sign In", and "Sign Up". A red dashed box highlights the sign-up form area, which includes fields for "Docker ID", "Email", and "Password", along with a checkbox for receiving updates and a reCAPTCHA field. A red arrow points from this form area down to a red box containing a welcome message and a "Verify email address" button. The message reads: "Hey soraland! Thanks for joining Docker. To finish registration, please click the button below to verify your account." It also mentions that once verified, users can download Docker Desktop, create repositories, and invite others to collaborate.

Get Started Today for Free
Already have an account? [Sign In](#)

Docker ID

Email

Password

Send me occasional product updates and announcements.

로봇이 아닙니다. reCAPTCHA

[Sign Up](#)

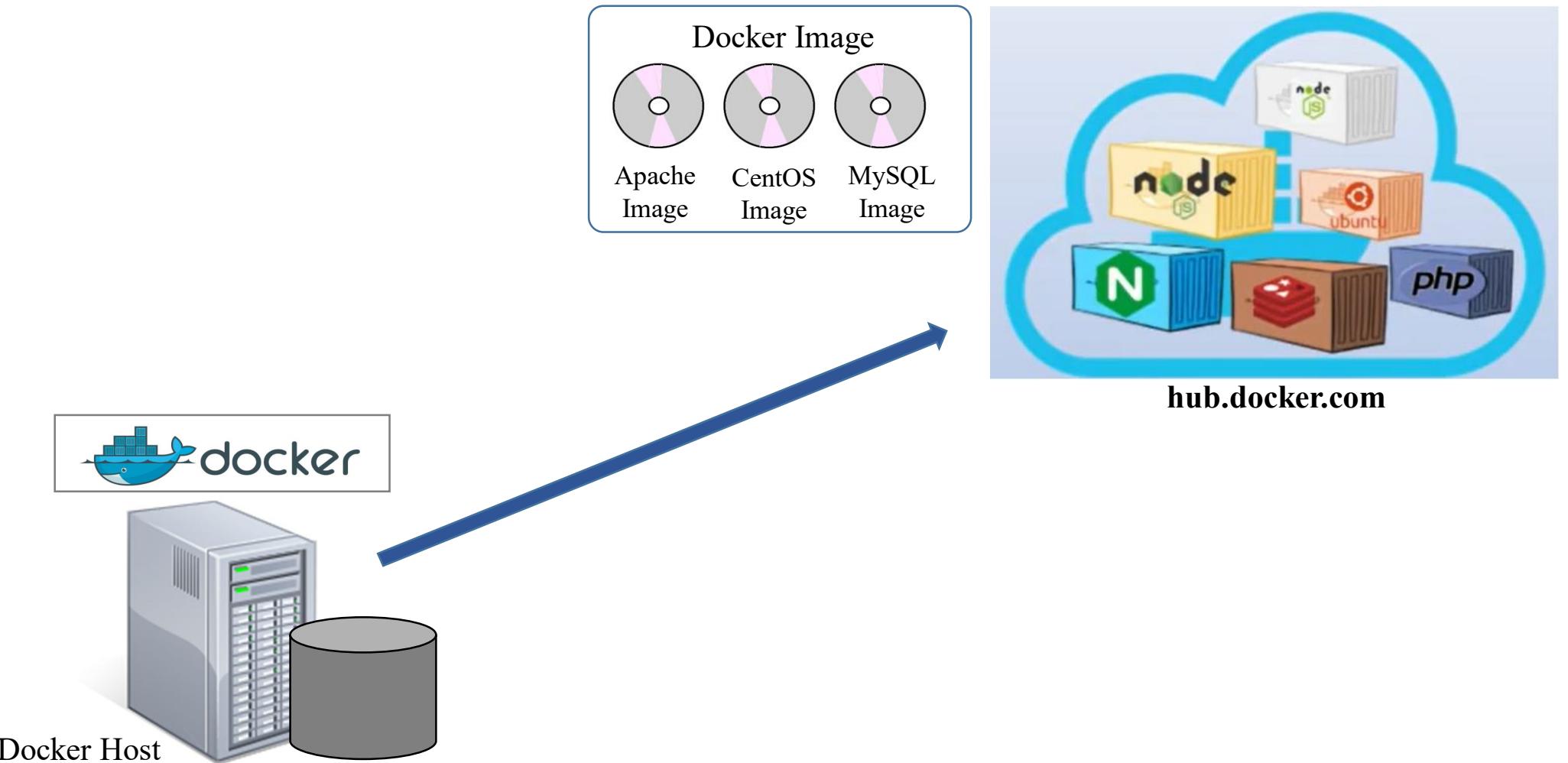
by creating an account, you agree to the [Terms of Service](#),
[Privacy Policy](#), and [Data Processing Terms](#)

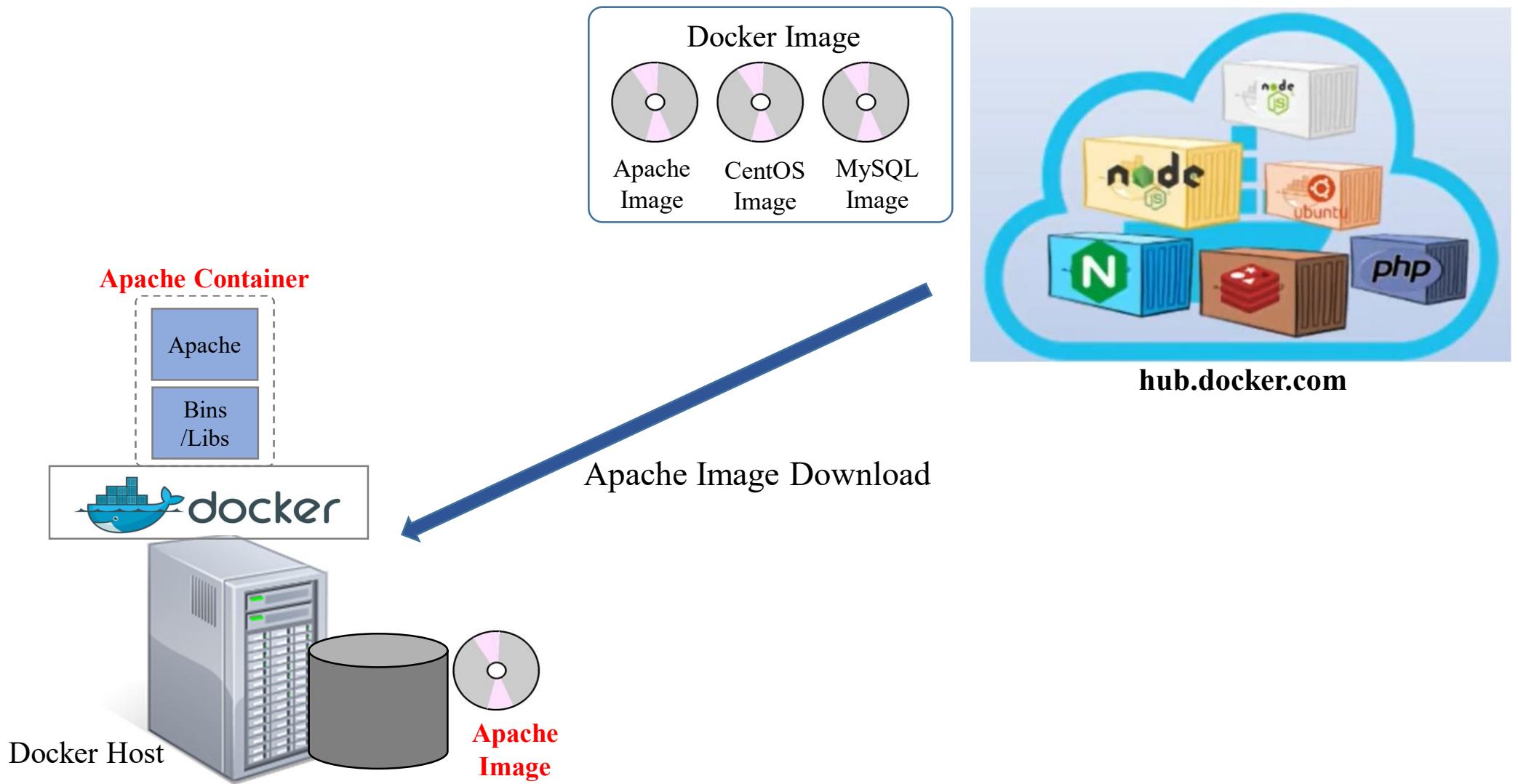
Hey soraland!

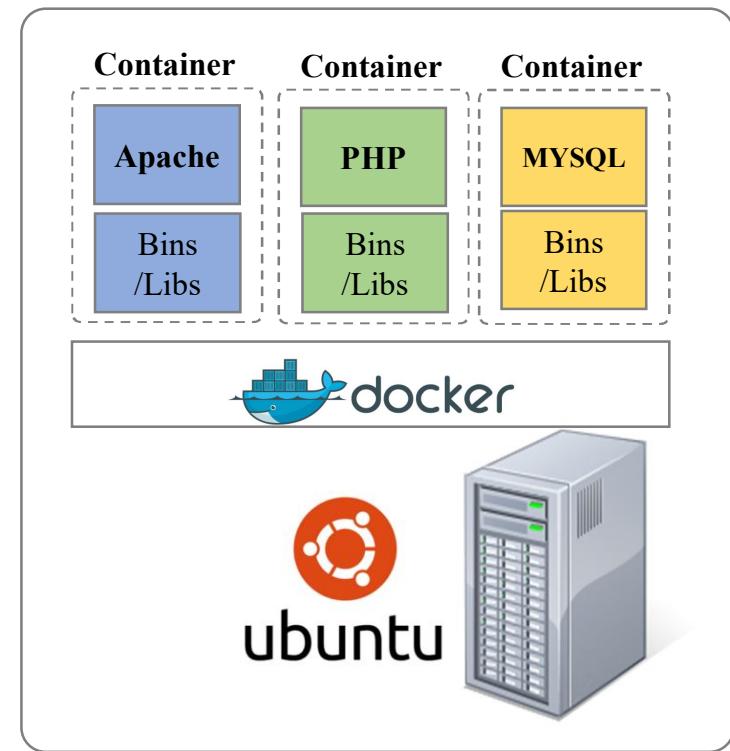
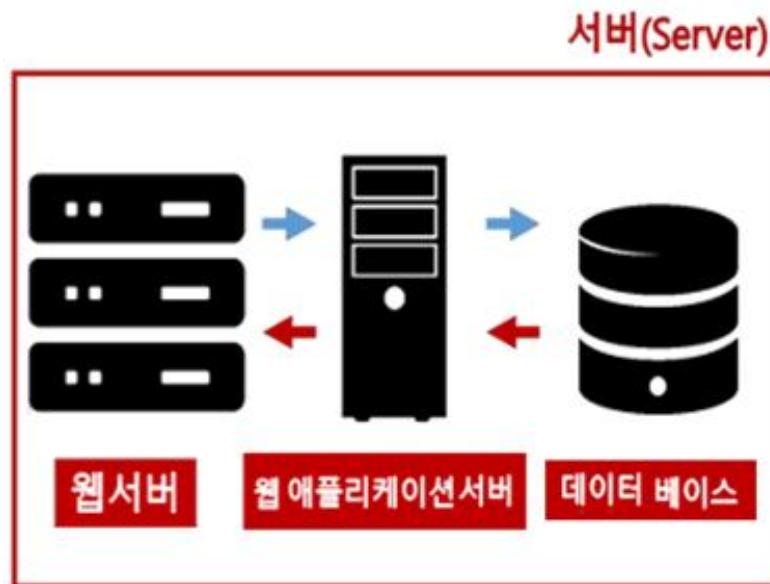
Thanks for joining Docker. To finish registration, please click the button below to verify your account.

[Verify email address](#)

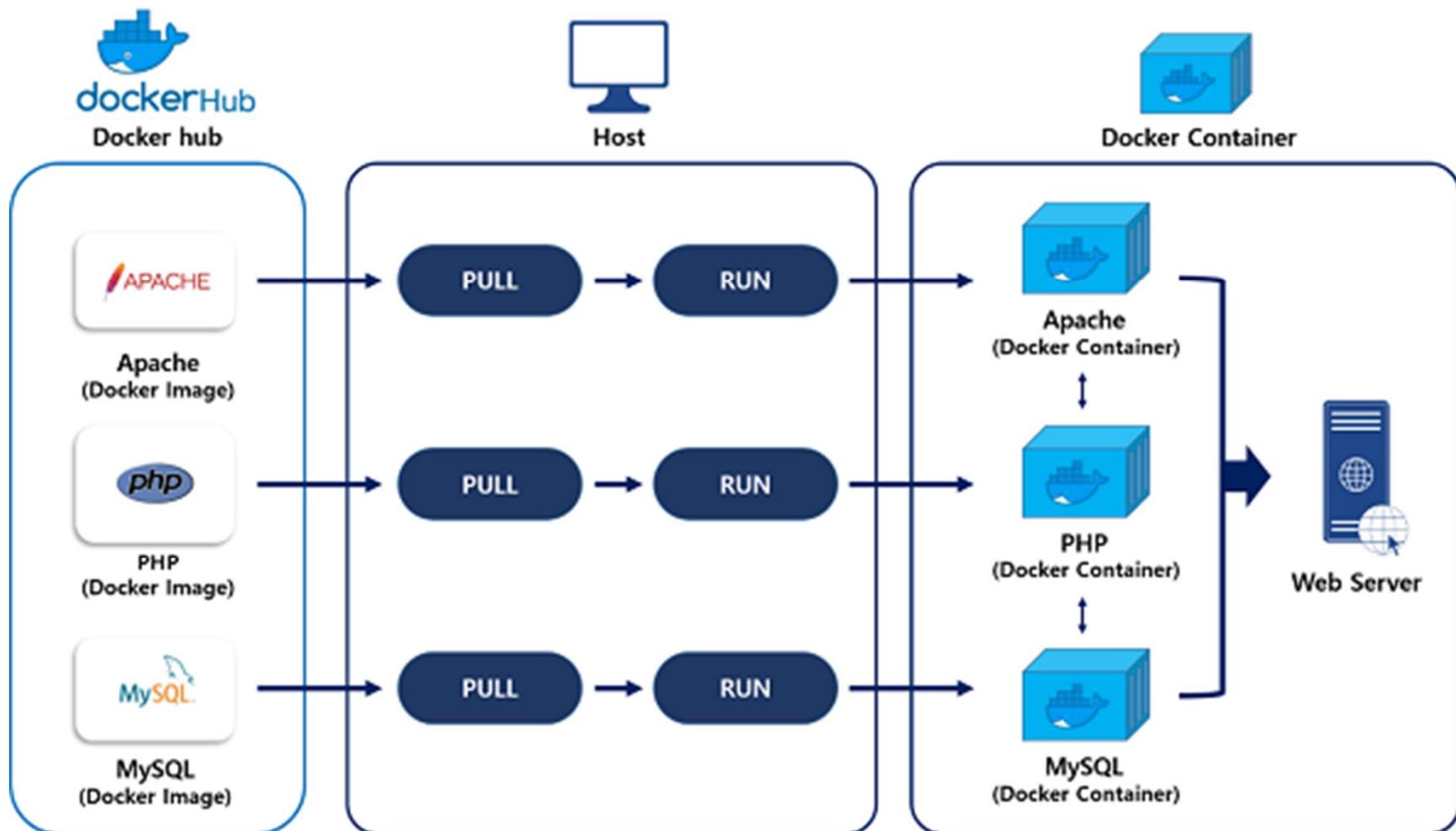
Once verified, you can download Docker Desktop, create repositories and invite others to collaborate with you. If you have any problems, please contact us: hub-support@docker.com





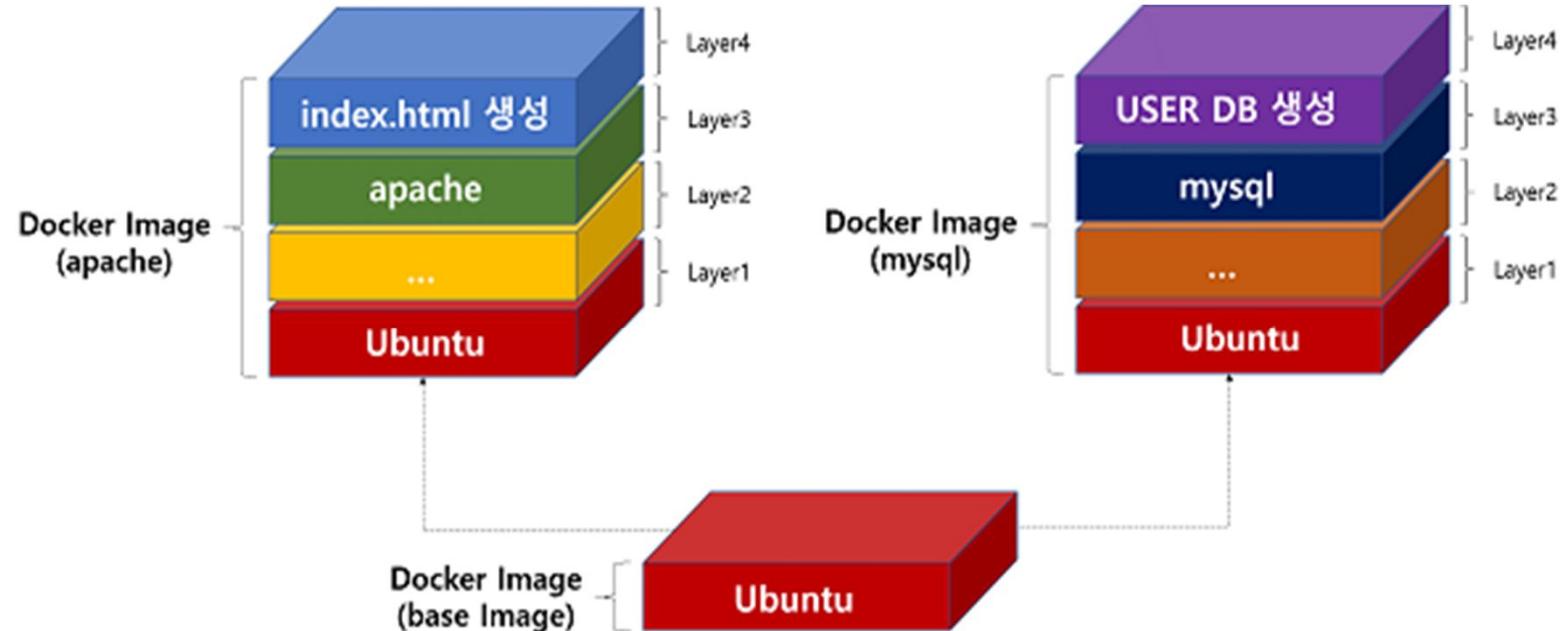


* Docker Host ; Docker 데몬이 동작되고 있는 리눅스 시스템



- 도커 이미지는 Docker hub에 등록하거나 Docker Registry 저장소를 직접 만들어 관리

Docker Image Layer

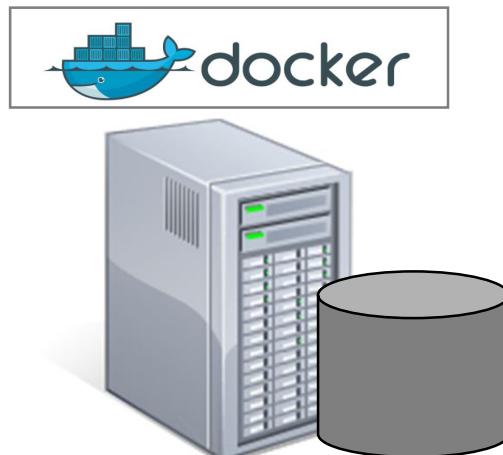


- Docker image는 여러 개의 레이어를 나누어 구성됨
(예) Apache Image = Base Image + Apache Image
- Layer 방식을 사용하면 기존의 image layer를 이용해 다양한 이미지를 새로 만들 수 있다.

Docker Container 생성과 삭제 실습

- Docker 데몬 확인
- Docker Hub에서 Image 검색
- Docker Image 다운로드
- Docker Container 생성하기
- Docker Image와 Container 삭제

① Docker Host 정상 운영 상태확인과 저장된 이미지 검색



Docker Host

- Docker 데몬 확인

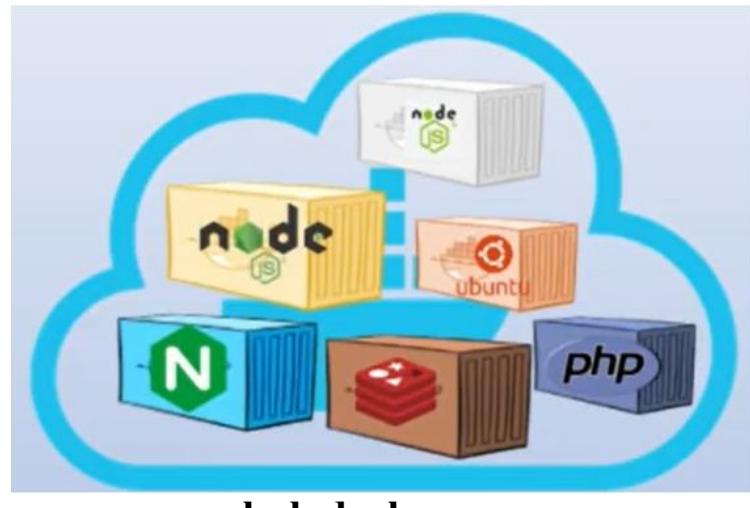
```
#systemctl status docker
```

```
#docker version
```

- 로컬 저장소에 저장된 images 검색

```
#docker images
```

② Docker hub에 저장되어 있는 image들 검색



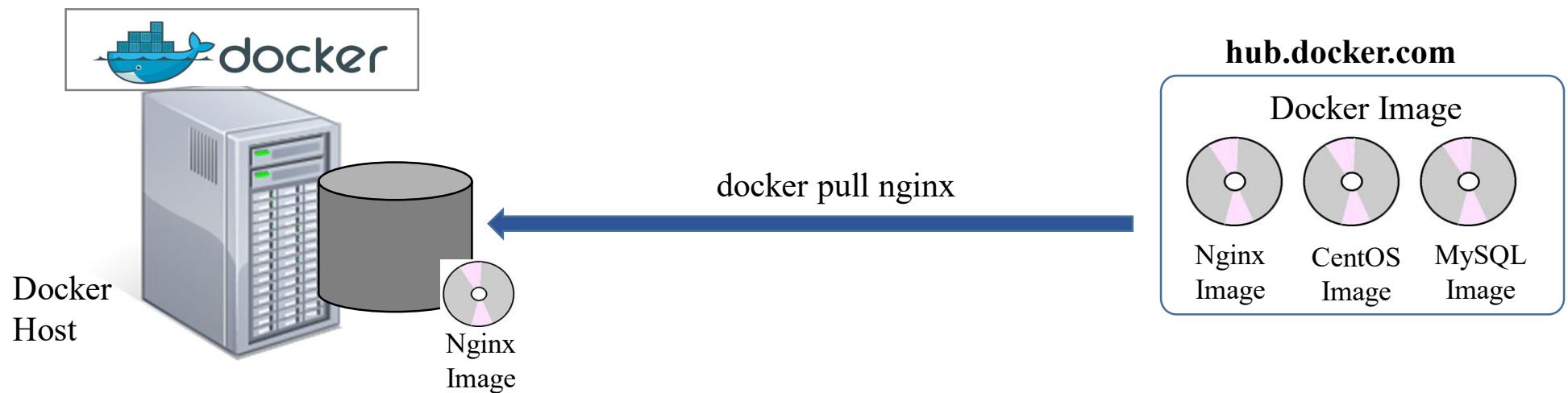
#docker search nginx

③ Docker Hub에서 Image download

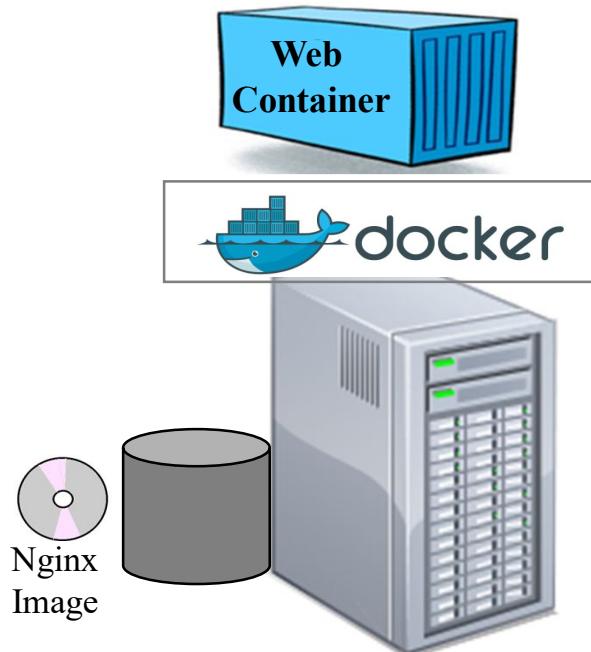
#cd /var/lib/docker/overlay2 ==> Images layer가 들어가 있는 디렉터리

#docker pull nginx

#docker images



④ 컨테이너 생성

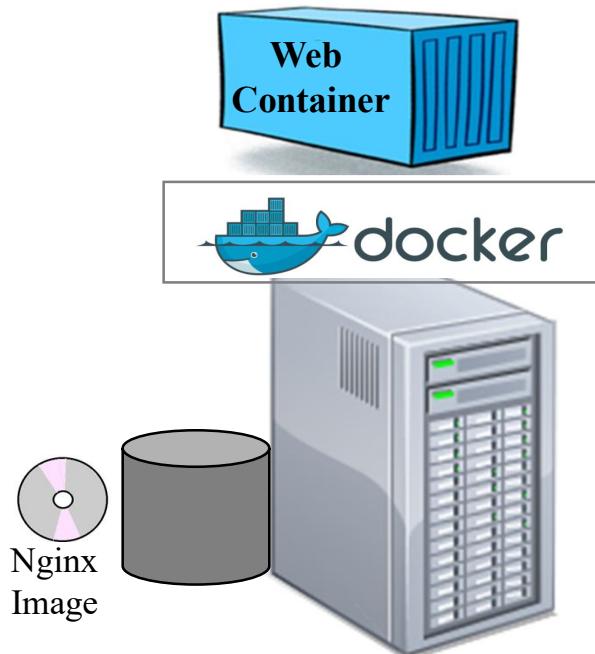


```
#docker run --name web -d -p 80:80 nginx
```

```
#docker ps
```

```
#curl localhost:80
```

⑤ Container 삭제

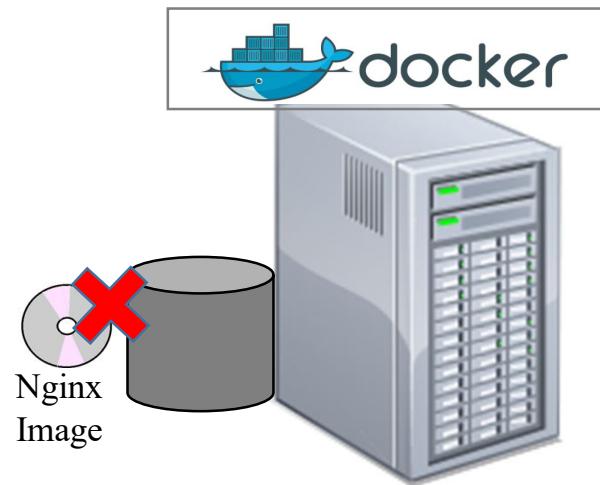


```
#docker ps
```

```
#docker stop web
```

```
#doceker rm web
```

⑥ Image 삭제



#docker images

#docker rmi nginx