



What is Docker ?

Docker is a virtualization software, makes developing and deploying applications much easier.

Docker Images Vs Containers

Images are templates for containers.

Docker Images

- Executable application artifact
- Any services (postgres, npm, node)
- Environment variables, create directories, files etc.

Docker Containers

- A running instance of an image is a container.
- Can run multiple containers from 1 image.

Docker Registries

- A storage and distribution system for Docker images.
- Docker hosts one of the biggest Docker Registry, called "Docker Hub".

Docker Commands

Command	Description
<code>docker images</code> or <code>docker image ls</code>	List all Docker images
<code>docker ps</code>	List running containers
<code>docker pull {imageName}:{tag}</code>	Pull an image from a registry
<code>docker run {imageName}:{tag}</code>	Run a container
<code>docker container prune</code>	Remove all stopped containers
<code>docker logs {containerId/name}</code>	View logs from container
<code>docker stop {containerId/Name}</code>	Stop running container
<code>docker exec -it {containerId/Name} /bin/bash</code>	Open inside a container to debug

Docker Run Commands

```
docker run -d -p {hostPort}:{containerPort} -e {key}={value} --name {containerName} --rm {imageName}:{tag}
```

- `-d` Run container in background and print container ID
- `-p {hostPort}:{containerPort}` Publish a container's port to the host
- `-e {key}={value}` Environment variable
- `--name {containerName}` Assign a name to the container
- `--rm` Delete the container once it stop

Slim & Alpine Images

Slim	Alpine
Small image	Typically smaller image
Debian-based Linux	Alpine Linux

Docker Mounts

- Volumes
 - Bind-mounts
 - Tempfs mounts
- ```
docker run -v {/path/in/host}:{/path/in/container} {imageName}:{tag}
```