

# Docker Cheat Sheet

## Getting Started with Docker

### 1. Check Docker Installation:

```
docker --version
```

## Basic Commands

### 1. Pull an Image from Docker Hub:

```
docker pull <image-name>
```

Example:

```
docker pull ubuntu
```

### 2. List Available Images:

```
docker images
```

### 3. Run a Container:

```
docker run -it <image-name>
```

Example:

```
docker run -it ubuntu
```

### 4. Run a Container in Detached Mode:

```
docker run -d <image-name>
```

**5. Stop a Running Container:**

```
docker stop <container-id>
```

**6. Start a Stopped Container:**

```
docker start <container-id>
```

**7. Remove a Stopped Container:**

```
docker rm <container-id>
```

**8. Remove an Image:**

```
docker rmi <image-name>
```

## Managing Containers

**1. List Running Containers:**

```
docker ps
```

**2. List All Containers (including stopped):**

```
docker ps -a
```

**3. View Container Logs:**

```
docker logs <container-id>
```

**4. Execute a Command in a Running Container:**

```
docker exec -it <container-id> <command>
```

Example:

```
docker exec -it <container-id> bash
```

#### 5. Inspect a Container:

```
docker inspect <container-id>
```

## Networking

#### 1. List Docker Networks:

```
docker network ls
```

#### 2. Create a New Network:

```
docker network create <network-name>
```

#### 3. Connect a Container to a Network:

```
docker network connect <network-name> <container-id>
```

#### 4. Disconnect a Container from a Network:

```
docker network disconnect <network-name> <container-id>
```

## Volumes and Data Management

#### 1. Create a Volume:

```
docker volume create <volume-name>
```

#### 2. List Volumes:

```
docker volume ls
```

### 3. Remove a Volume:

```
docker volume rm <volume-name>
```

### 4. Mount a Volume to a Container:

```
docker run -v <volume-name>:<container-path> <image-name>
```

## Dockerfile and Building Images

### 1. Create a Dockerfile:

Basic structure:

```
FROM <base-image>
MAINTAINER <your-name>
COPY <source> <destination>
RUN <command>
CMD ["<executable>"]
```

### 2. Build an Image from a Dockerfile:

```
docker build -t <image-name>:<tag> .
```

Example:

```
docker build -t myapp:latest .
```

### 3. List Built Images:

```
docker images
```

## Advanced Commands

**1. Tag an Image:**

```
docker tag <image-id> <new-image-name>:<tag>
```

**2. Push an Image to Docker Hub:**

```
docker push <image-name>:<tag>
```

**3. Save an Image to a Tar File:**

```
docker save -o <path-to-output-file> <image-name>
```

**4. Load an Image from a Tar File:**

```
docker load -i <path-to-input-file>
```

**5. Docker Compose:**

- **Start Services:**

```
docker-compose up
```

- **Stop Services:**

```
docker-compose down
```

**6. Scale Services:**

```
docker-compose up --scale <service-name>=<number>
```

**7. View Running Docker Compose Services:**

```
docker-compose ps
```

## Useful Docker Commands

#### 1. Remove All Stopped Containers:

```
docker container prune
```

#### 2. Remove Unused Images:

```
docker image prune
```

#### 3. Remove All Unused Data (containers, networks, images):

```
docker system prune
```

#### 4. Get Docker System Information:

```
docker info
```

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## Docker Run and Delete

```
docker run -p 5000:5000 --rm --name docker-tutorial-container  
abdullahaltowsif/docker-tutorial:latest
```

- `--rm` = removes container once it is stopped from running
- `-p` = defines port external\_port:internal\_port
- `--name` = names a container