

# Basic Docker Commands

Understanding the basic commands in Docker is crucial for managing containers, images, networks, and volumes. Here's an introduction to some essential Docker commands that will help you get started with Docker.

## Managing Containers

- **Run a Container:**

```
1 docker run [OPTIONS] IMAGE [COMMAND] [ARG...]
```

- This command creates and starts a container. Use various options like `-d` for detached mode, `--name` to name your container, or `-p` to map a port.

- **List Containers:**

```
1 docker ps [OPTIONS]
```

- To see all running containers. Use `-a` to see all containers, including stopped ones.

- **Stop a Container:**

```
1 docker stop [OPTIONS] CONTAINER [CONTAINER...]
```

- Stops one or more running containers.

- **Remove a Container:**

```
1 docker rm [OPTIONS] CONTAINER [CONTAINER...]
```

- Removes one or more stopped containers.

## Managing Images

- **Pull an Image:**

```
1 docker pull [OPTIONS] NAME[:TAG|@DIGEST]
```

- Downloads an image from a registry (e.g., Docker Hub).

- **List Images:**

```
1 docker images [OPTIONS] [REPOSITORY[:TAG]]
```

- Lists images you have locally.

- **Build an Image:**

```
1 docker build [OPTIONS] PATH | URL | -
```

- Builds an image from a Dockerfile.

- **Remove an Image:**

```
1 docker rmi [OPTIONS] IMAGE [IMAGE...]
```

- Removes one or more images.

## Managing Networks

- **List Networks:**

```
1 docker network ls
```

- Lists all networks

- **Inspect Network:**

```
1 docker network inspect [OPTIONS] NETWORK [NETWORK...]
```

- Displays detailed information on one or more networks.

- **Create a Network:**

```
1 docker network create [OPTIONS] NETWORK
```

- Creates a new network.

- **Remove a Network:**

```
1 docker network rm NETWORK [NETWORK...]
```

- Removes one or more networks.

## Managing Volumes

- **Create a Volume:**

```
1 docker volume create [OPTIONS] [VOLUME]
```

- Creates a new volume for persistent or shared data.

- **List Volumes:**

```
1 docker volume ls
```

- Lists all volumes.

- **Inspect a Volume:**

```
1 docker volume inspect [OPTIONS] VOLUME [VOLUME...]
```

- Displays detailed information on one or more volumes.

- **Remove a Volume:**

```
1 docker volume rm [OPTIONS] VOLUME [VOLUME...]
```

- Removes one or more volumes.

## Additional Commands

- **Docker Exec:**

```
1 docker exec [OPTIONS] CONTAINER COMMAND [ARG...]
```

- Runs a command in a running container.

- **Docker Logs:**

```
1 docker logs [OPTIONS] CONTAINER
```

- Fetches the logs of a container.

- **Docker Compose:**

```
1 docker-compose [OPTIONS] COMMAND [ARGS...]
```

- Used to define and run multi-container Docker applications. With a single command, you can create and start all the services defined in a `docker-compose.yml` file.