



# **DOCKER COMMANDS**

## 1. Basic Docker Commands

- ❖ **docker --version**: Check the installed version of Docker.
- ❖ **docker help**: Get a list of all Docker commands and options.

## 2. Working with Docker Images

- ❖ **Docker push <username>/<image>:<tag>**: Upload a Docker image to Docker Hub
- ❖ **docker pull <image>**: Download a Docker image from Docker Hub.
- ❖ **docker images**: List all downloaded Docker images on your system.
- ❖ **docker rmi <image>**: Remove a Docker image from your system.

## 3. Building Images

- ❖ **docker build -t <name>:<tag> .**: Build a Docker image from a Dockerfile in the current directory.
- ❖ **docker build -f <path\_to\_dockerfile> -t <name>:<tag> .**: Build an image from a specific Dockerfile.

## 4. Running Docker Containers

- ❖ **docker run <image>**: Run a container from a Docker image.
- ❖ **docker run -it <image>**: Run a container interactively.
- ❖ **docker run -d <image>**: Run a container in detached mode.
- ❖ **docker run -v <host\_dir>:<container\_dir> <image>**: Mount a host directory to a container.
- ❖ **docker run --gpus all <image>**: Run a container with GPU access.
- ❖ **docker run -p <host\_port>:<container\_port> <image>**: Expose container ports to the host.

## 5. Managing Containers

- ❖ **docker ps**: List running containers.
- ❖ **docker ps -a**: List all containers, including stopped ones.
- ❖ **docker start <container>**: Start a stopped container.
- ❖ **docker stop <container>**: Stop a running container.
- ❖ **docker restart <container>**: Restart a container.
- ❖ **docker rm <container>**: Remove a stopped container.

## 6. Container Interaction

- ❖ **docker exec -it <container> <command>**: Run a command inside a running container.
- ❖ **docker logs <container>**: View the logs from a container.

## 7. Managing Volumes and Data Persistence

- ❖ **docker volume create <volume\_name>**: Create a Docker volume.
- ❖ **docker volume ls**: List all Docker volumes.
- ❖ **docker run -v <volume\_name>:<container\_dir> <image>**: Mount a volume to a running container.
- ❖ **docker volume rm <volume\_name>**: Remove a volume.

## 8. Networking

- ❖ **docker network ls**: List Docker networks.
- ❖ **docker network create <network\_name>**: Create a new Docker network.
- ❖ **docker run --network <network\_name> <image>**: Run a container on a specific network.

## 9. Docker Compose Commands (For Multi-Container Projects)

- ❖ **docker-compose up**: Start all services defined in the docker-compose.yml file.
- ❖ **docker-compose down**: Stop and remove all containers and networks defined in the docker-compose.yml file.
- ❖ **docker-compose build**: Build services defined in the docker-compose.yml file.
- ❖ **docker-compose logs**: View logs of services managed by Docker Compose.

## 10. Dockerfile Essentials

- ❖ **FROM**: Set the base image.
- ❖ **RUN**: Execute commands to install dependencies.
- ❖ **WORKDIR**: Set the working directory inside the container.
- ❖ **COPY**: Copy files from the host system to the container.
- ❖ **CMD**: Define the command that runs when the container starts.
- ❖ **EXPOSE**: Specify the port on which the container listens for connections.