

# Docker Commands Guide

This guide provides an organized and detailed overview of essential Docker commands categorized by their functionalities. Each section includes explanations and usage examples for better understanding.

## 1. Basic Docker Commands

Command	Description	Example
<b>docker --version</b>	Displays the installed Docker version.	docker --version
<b>docker info</b>	Shows system-wide information about Docker.	docker info
<b>docker help</b>	Lists available Docker commands or gets help on a specific command.	docker help run

## 2. Working with Images

Command	Description	Example
<b>docker images</b>	Lists all Docker images present on the system.	docker images
<b>docker pull &lt;image&gt;</b>	Downloads an image from a Docker registry (like Docker Hub).	docker pull ubuntu
<b>docker build -t &lt;name&gt; .</b>	Builds a Docker image from a Dockerfile in the current directory.	docker build -t myapp .
<b>docker rmi &lt;image&gt;</b>	Removes one or more Docker images.	docker rmi ubuntu
<b>docker tag &lt;image&gt; &lt;new-tag&gt;</b>	Tags an image with a new name.	docker tag myapp myrepo/myapp:latest
<b>docker save -o &lt;file&gt; &lt;image&gt;</b>	Saves an image to a tar file.	docker save -o myapp.tar myapp
<b>docker load -i &lt;file&gt;</b>	Loads an image from a tar file.	docker load -i myapp.tar

### 3. Working with Containers

Command	Description	Example
<code>docker ps</code>	Lists all running containers.	<code>docker ps</code>
<code>docker ps -a</code>	Lists all containers, including stopped ones.	<code>docker ps -a</code>
<code>docker run &lt;image&gt;</code>	Creates and starts a container from an image.	<code>docker run -it ubuntu</code>
<code>docker start &lt;container&gt;</code>	Starts a stopped container.	<code>docker start my_container</code>
<code>docker stop &lt;container&gt;</code>	Stops a running container.	<code>docker stop my_container</code>
<code>docker restart &lt;container&gt;</code>	Restarts a container.	<code>docker restart my_container</code>
<code>docker rm &lt;container&gt;</code>	Removes one or more containers.	<code>docker rm my_container</code>
<code>docker exec -it &lt;container&gt; &lt;command&gt;</code>	Runs a command inside a running container.	<code>docker exec -it my_container bash</code>
<code>docker logs &lt;container&gt;</code>	Displays logs of a container.	<code>docker logs my_container</code>
<code>docker inspect &lt;container&gt;</code>	Provides detailed information about a container.	<code>docker inspect my_container</code>
<code>docker attach &lt;container&gt;</code>	Attaches to a running container's standard input/output.	<code>docker attach my_container</code>

### 4. Volumes and Data Management

Command	Description	Example
<code>docker volume create &lt;volume&gt;</code>	Creates a new Docker volume.	<code>docker volume create my_volume</code>
<code>docker volume ls</code>	Lists all Docker volumes.	<code>docker volume ls</code>
<code>docker volume rm &lt;volume&gt;</code>	Removes a specified volume.	<code>docker volume rm my_volume</code>
<code>docker run -v &lt;volume&gt;:&lt;path&gt;</code>	Mounts a volume to a specific path inside a container.	<code>docker run -v my_volume:/app/data ubuntu</code>

## 5. Networking

Command	Description	Example
<b>docker network ls</b>	Lists all Docker networks.	docker network ls
<b>docker network create</b> <b>&lt;network&gt;</b>	Creates a new network.	docker network create my_network
<b>docker network connect</b> <b>&lt;network&gt; &lt;container&gt;</b>	Connects a container to a specified network.	docker network connect my_network my_container
<b>docker network disconnect</b> <b>&lt;network&gt; &lt;container&gt;</b>	Disconnects a container from a specified network.	docker network disconnect my_network my_container
<b>docker network rm</b> <b>&lt;network&gt;</b>	Removes a specified network.	docker network rm my_network

## 6. Docker Compose

Command	Description	Example
<b>docker-compose up</b>	Starts all services defined in the docker-compose.yml file.	docker-compose up
<b>docker-compose down</b>	Stops and removes containers defined in the Compose file.	docker-compose down
<b>docker-compose ps</b>	Lists running containers managed by Docker Compose.	docker-compose ps
<b>docker-compose logs</b>	Displays logs for services managed by Docker Compose.	docker-compose logs
<b>docker-compose build</b>	Builds services defined in the Compose file.	docker-compose build

## 7. System Management

Command	Description	Example
<b>docker system df</b>	Shows disk usage by Docker.	docker system df
<b>docker system prune</b>	Removes unused data (images, containers, volumes, etc.).	docker system prune
<b>docker stats</b>	Displays real-time resource usage statistics for containers.	docker stats

## 8. Tagging and Pushing Images

Command	Description	Example
<b>docker tag</b> <image> <repo>:<tag>	Tags an image for pushing to a Docker registry.	docker tag myapp myrepo/myapp:v1.0
<b>docker push</b> <repo>:<tag>	Pushes an image to a Docker registry.	docker push myrepo/myapp:v1.0
<b>docker login</b>	Authenticates with a Docker registry.	docker login
<b>docker logout</b>	Logs out from a Docker registry.	docker logout