

Docker Cheat Sheet



Installation

Install Docker Engine (<https://docs.docker.com/engine/install/>, Linux only) or Docker Desktop (<https://docs.docker.com/desktop/>, Linux, macOS and Windows).

Container commands

Command	Description
<code>docker run <image></code>	Create and run a new container
<code>docker run -p 8080:80 <image></code>	Publish container port 80 to host port 8080
<code>docker run -d <image></code>	Run a container in the background
<code>docker run -v <host>:<container> <image></code>	Mount a host directory to a container
<code>docker ps</code>	List currently running containers
<code>docker ps --all</code>	List all containers (running or stopped)
<code>docker logs <container_name></code>	Fetch the logs of a container
<code>docker logs -f <container_name></code>	Fetch and follow the logs of a container
<code>docker stop <container_name></code>	Stop a running container
<code>docker start <container_name></code>	Start a stopped container
<code>docker rm <container_name></code>	Remove a container

Executing commands in a container

Command	Description
<code>docker exec <container_name> <command></code>	Execute a command in a running container
<code>docker exec -it <container_name> bash</code>	Open a shell in a running container

Image commands

Command	Description
<code>docker build -t <image> .</code>	Build a new image from the Dockerfile in the current directory and tag it
<code>docker images</code>	List local images
<code>docker rmi <image></code>	Remove an image

Container registry commands

Command	Description
<code>docker login</code>	Login to Docker Hub
<code>docker login <server></code>	Login to another container registry
<code>docker logout</code>	Logout of Docker Hub
<code>docker logout <server></code>	Logout of another container registry
<code>docker push <image></code>	Upload an image to a registry
<code>docker pull <image></code>	Download an image from a registry
<code>docker search <image></code>	Search Docker Hub for images

System commands

Command	Description
<code>docker system df</code>	Show Docker disk usage
<code>docker system prune</code>	Remove unused data
<code>docker system prune -a</code>	Remove all unused data

Docker Compose

Command	Description
<code>docker compose up</code>	Create and start containers
<code>docker compose up -d</code>	Create and start containers in background
<code>docker compose up --build</code>	Rebuild images before starting containers
<code>docker compose stop</code>	Stop services
<code>docker compose down</code>	Stop and remove containers and networks
<code>docker compose ps</code>	List running containers
<code>docker compose logs</code>	View the logs of all containers
<code>docker compose logs <service></code>	View the logs of a specific service
<code>docker compose logs -f</code>	View and follow the logs
<code>docker compose pull</code>	Pull the latest images
<code>docker compose build</code>	Build or rebuild services
<code>docker compose build --pull</code>	Pull latest images before building

Dockerfile instructions

Instruction	Description
FROM <image>	Set the base image
FROM <image> AS <name>	Set the base image and name the build stage
RUN <command>	Execute a command as part of the build process
RUN ["exec", "param1", "param2"]	Execute a command as part of the build process
CMD ["exec", "param1", "param2"]	Execute a command when the container starts
ENTRYPOINT ["exec", "param1"]	Configure the container to run as an executable
ENV <key>=<value>	Set an environment variable
EXPOSE <port>	Expose a port
COPY <src> <dest>	Copy files from source to destination
COPY --from=<name> <src> <dest>	Copy files from a build stage to destination
WORKDIR <path>	Set the working directory
VOLUME <path>	Create a mount point
USER <user>	Set the user
ARG <name>	Define a build argument
ARG <name>=<default>	Define a build argument with a default value
LABEL <key>=<value>	Set a metadata label
HEALTHCHECK <command>	Set a healthcheck command

See <https://docs.docker.com/engine/reference/builder/> for the full Dockerfile reference.

Example compose.yaml

Note: this file used to be called docker-compose.yaml, but now compose.yaml is preferred.

```
services:
  service1:
    image: <image>
    build: .
    volumes:
      - ./code:ro
    ports:
      - "8000:80"
    environment:
      KEY: value
```

Docker Compose file reference

Key	Description
name	Set the name of the project
services	A list of services defined in the file
services.<name>.image	Set the image to use or build
services.<name>.build	Build context and options
services.<name>.build.context	Build context (default is the current directory)
services.<name>.build.dockerfile	Dockerfile to use (default is Dockerfile)
services.<name>.build.target	Build stage to use
services.<name>.build.args	Build arguments
services.<name>.command	Override the default command for the container
services.<name>.entrypoint	Override the default entrypoint for the container
services.<name>.volumes	Mount volumes in the container
services.<name>.ports	Publish container ports to the host
services.<name>.environment	Set environment variables in the container
services.<name>.restart	Restart policy (no/always/on-failure/unless-stopped)
services.<name>.scale	Set the number of containers to run
services.<name>.networks	List of networks to connect the container to
services.<name>.depends_on	List of services to start before this service
services.<name>.labels	Set metadata labels for the container
networks	A list of networks defined in the file
networks.<name>.driver	Set the network driver
networks.<name>.external	Don't create the network, use an existing one
volumes	A list of volumes defined in the file
volumes.<name>.name	Set the name of the volume
volumes.<name>.driver	Set the volume driver
configs	A list of configs defined in the file
secrets	A list of secrets defined in the file

See <https://docs.docker.com/compose/compose-file/> for the full Docker Compose file reference.