

Docker Documentation

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1 Structure

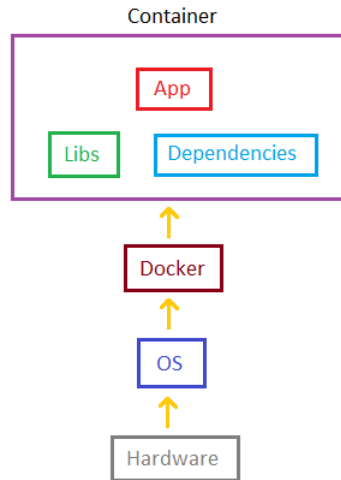


Figure 1: Structure of Docker

A `Dockerfile` is used to create images, and an image is used to deploy an application. A container only lives as long as the process inside it is alive.

2 Commands

Prefix all the following commands with `docker`:

2.1 ps

Lists all the running containers.

Examples:

- `ps` \Rightarrow List all the running containers.
- `ps -a` \Rightarrow List all containers that are currently running or have exited.

2.2 build

Builds a docker image using settings from the `Dockerfile` configuration file.

2.3 run

Starts a docker container with the given image, downloading the image if not already present.

Examples:

- `run <imageName>` \Rightarrow Runs a specific image in a docker container.
- `run <imageName>:<versionNumber>` \Rightarrow Runs a specific image with a specific version number. If no version number is provided, defaults to the latest version.
- `run -d <imageName>` \Rightarrow Runs a specific image in a detached state, i.e. no console output. See 2.10 to see console output.

- `run -p <externalPort>:<internalPort> <imageName>` \Rightarrow Runs a specific image and binds an external port to an internal port, so that users outside of the docker host can access the app using the `externalPort`, which would redirect to the `internalPort` inside the docker host.
- `run -v <localDir>:<dockerDir> <imageName>` \Rightarrow Runs a specific image and persists all changes to the `dockerDir` directory to the `localDir` directory.
- `run -it <imageName>` \Rightarrow Runs a specific image in interactive mode (`-i`) with a pseudo-terminal (`-t`), allowing for user input.

2.4 stop

Stops the running container that matches the container ID.

Example:

- `stop <containerID>` \Rightarrow Stops the container that matches the container ID.

2.5 rm

Removes a container that matches the container ID.

Example:

- `rm <containerID>` \Rightarrow Removes the container that matches the container ID from the local file system.

2.6 rmi

Removes an image that matches the image name.

Example:

- `rmi <imageName>` \Rightarrow Remove a specific image that has been downloaded.

2.7 images

Shows all of the downloaded docker images.

2.8 pull

Download a specific docker image from docker hub.

Example:

- `pull <imageName>` \Rightarrow Download the image with the matching image name.

2.9 exec

Executes a command on a docker container.

Example:

- `exec <containerID> <command>` \Rightarrow Executes a specific command on the matching container ID, where `<command>` can be `ls -la` as an example.

2.10 attach

Attaches the console to the container ID specified.

Example:

- `attach <containerID>` \Rightarrow Attach a console to the container ID specified.

2.11 inspect

Shows detailed information about the container specified.

Example:

- `inspect <containerID>` \Rightarrow Show detailed information about the container with the matching ID.

2.12 logs

Shows the logs of the container that has been specified.

Example:

- `logs <containerID>` \Rightarrow Show logs for container with matching ID.