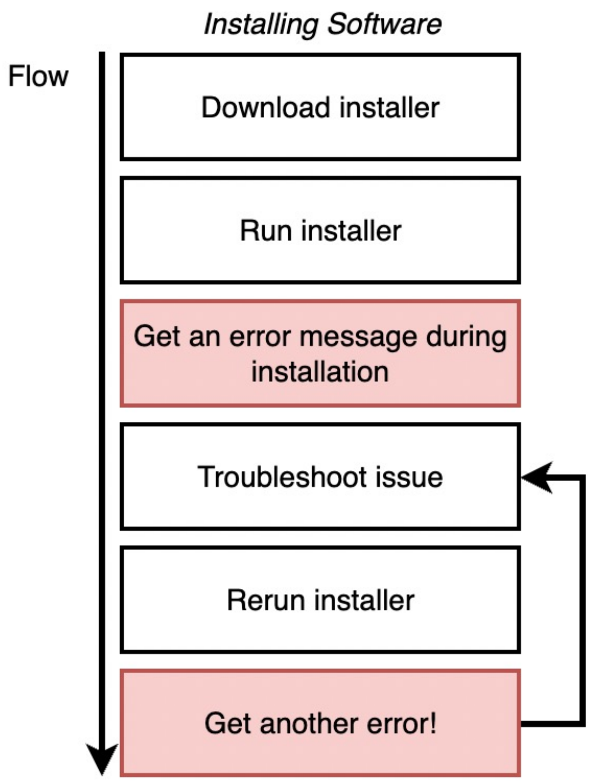
Docker

Build, Test, and Deploy… Quickly!



Installing Software

Flow

Download installer

Run installer

Get an error message during installation

Troubleshoot issue

Rerun installer

Get another error!

Docker makes it really easy to install and run software without worrying about setup or dependencies

How do you install a software on your machine

What are Containers and Docker?

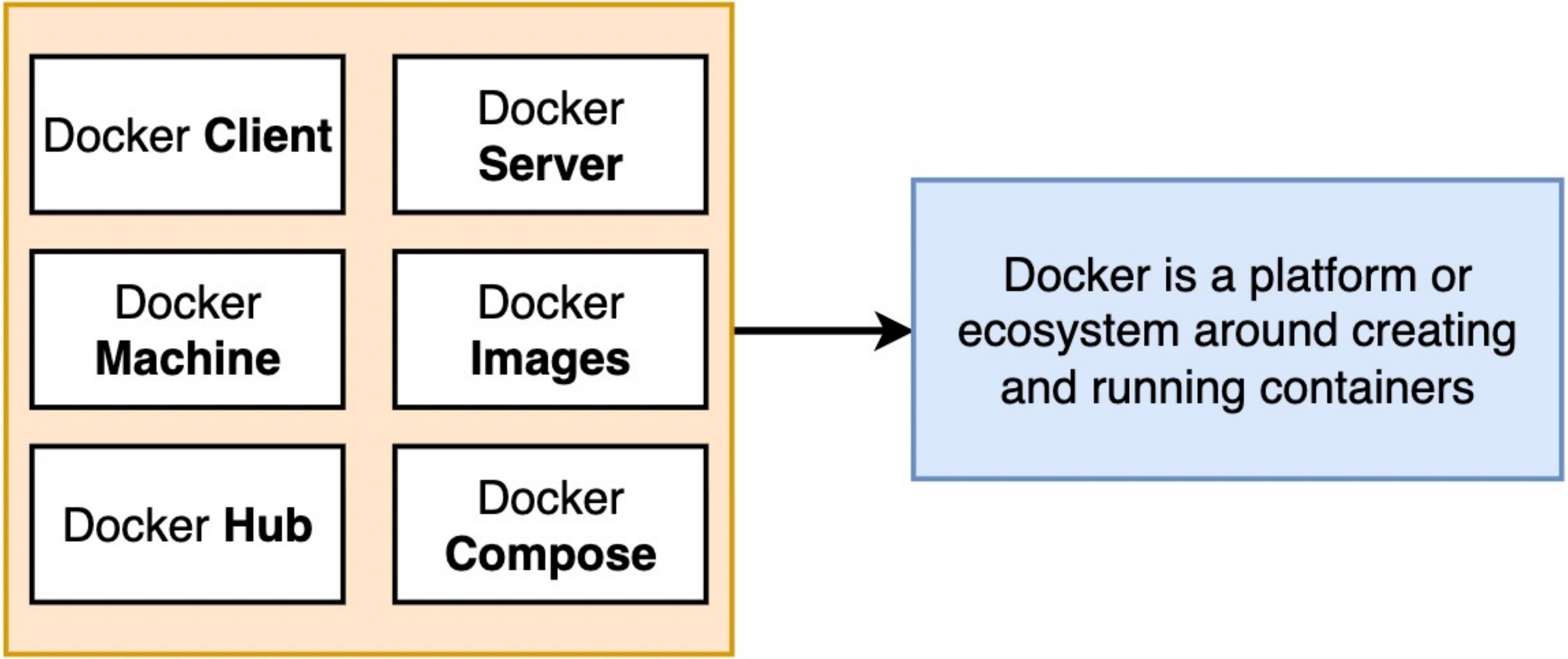
Container

- A container is a loosely isolated environment that allow us to build and run software packages.
- These software packages includes all the dependencies to run application quickly and reliably on any computing environment. We call these packages as container images.

Docker

- Docker is an open-source platform that enabled developers to automate the deployment, scaling and management of application using containerization.
- Containers are lightweight isolated environments that encapsulate an application along with its dependencies, libraries and runtime components.

Docker Ecosystem



Docker **Client**

Docker **Server**

Docker **Machine**

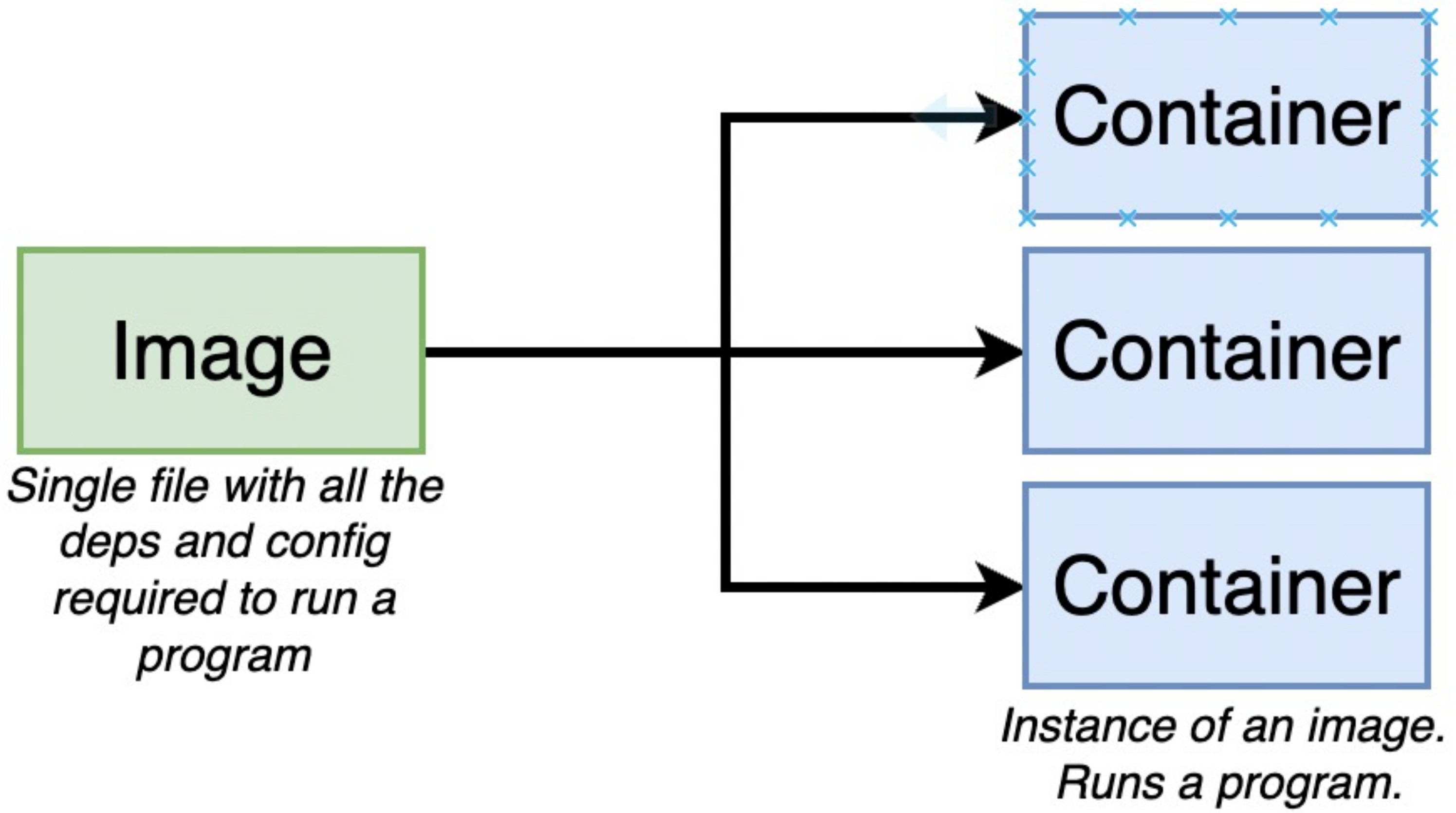
Docker **Images**

Docker **Hub**

Docker **Compose**

Docker is a platform or ecosystem around creating and running containers

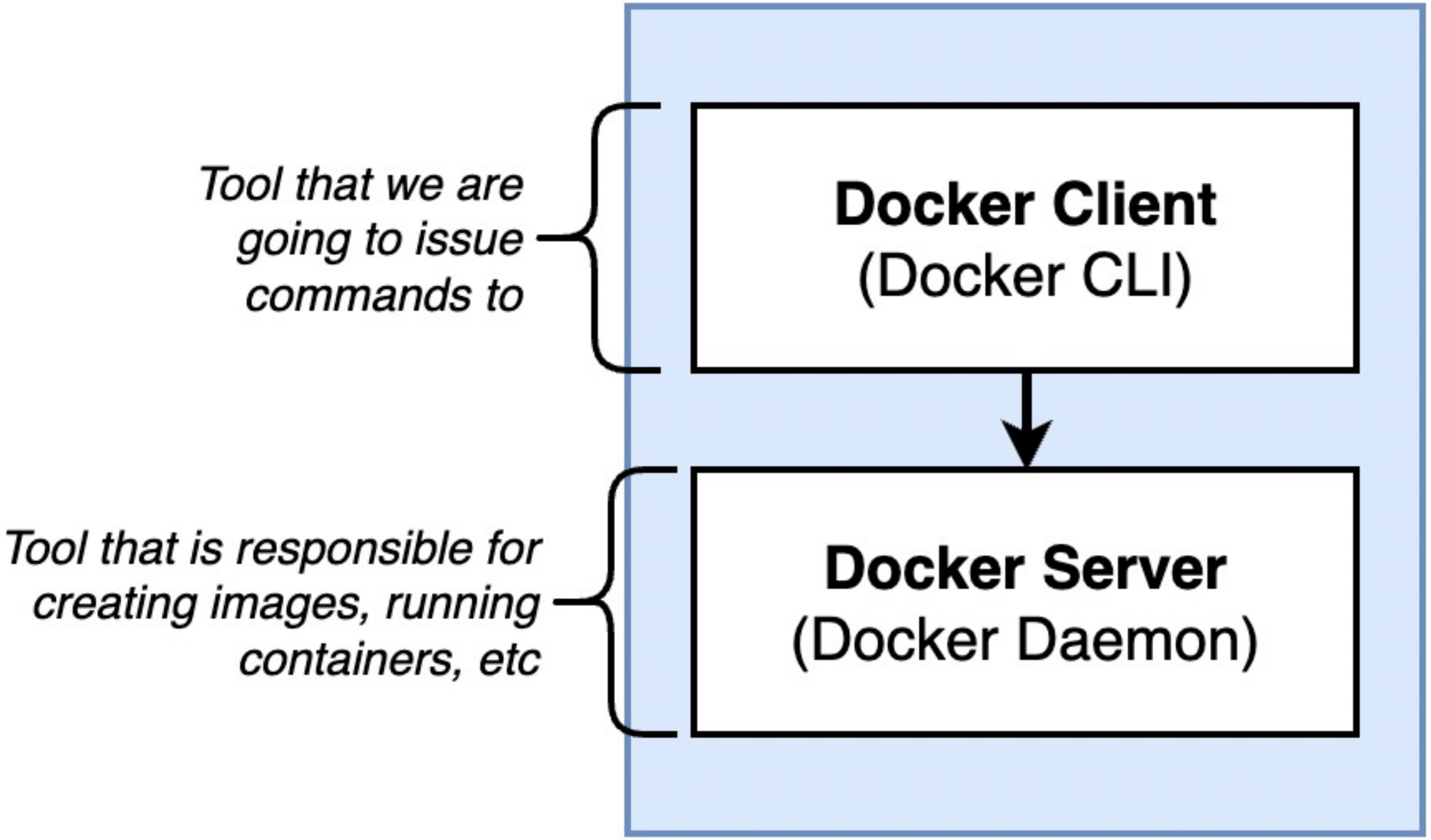
Docker Images



Single file with all the deps and config required to run a program

Instance of an image. Runs a program.

Docker Client And Server



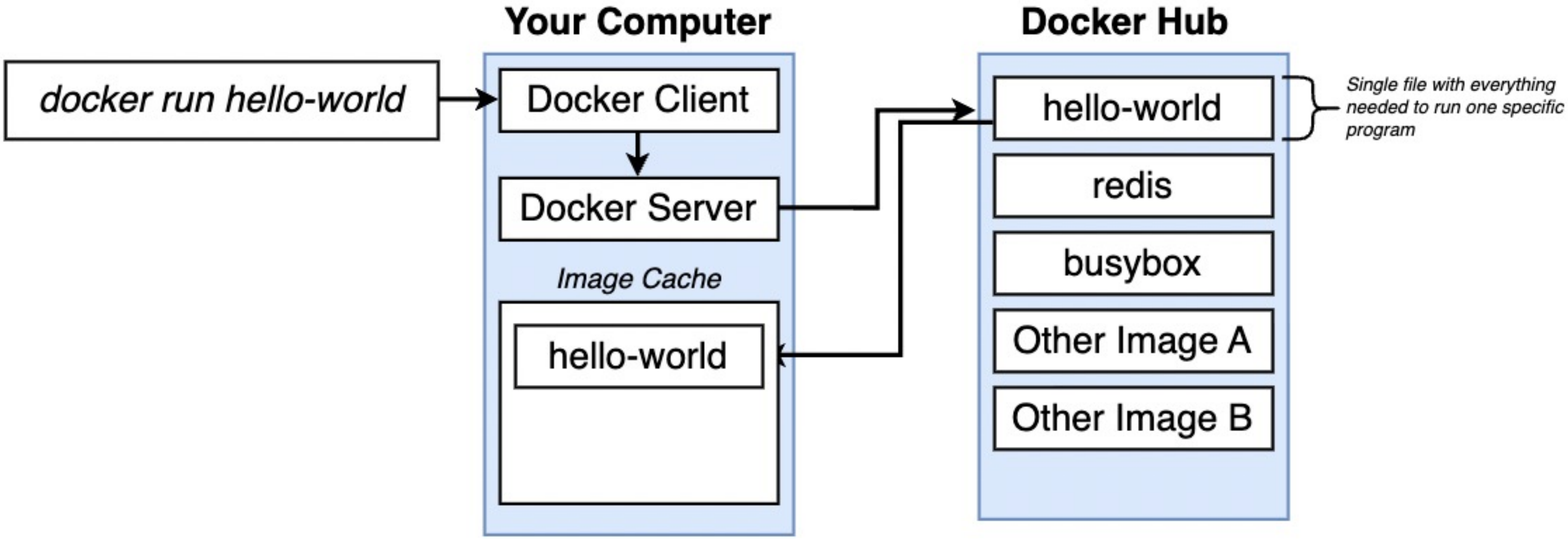
Tool that we are going to issue commands to

Docker Client
(Docker CLI)

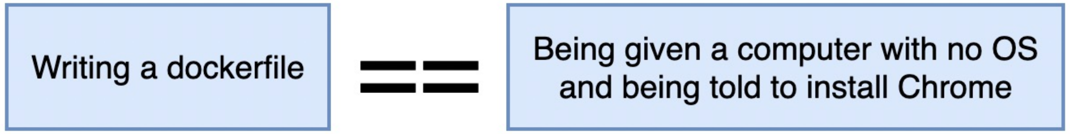
Tool that is responsible for creating images, running containers, etc

Docker Server
(Docker Daemon)

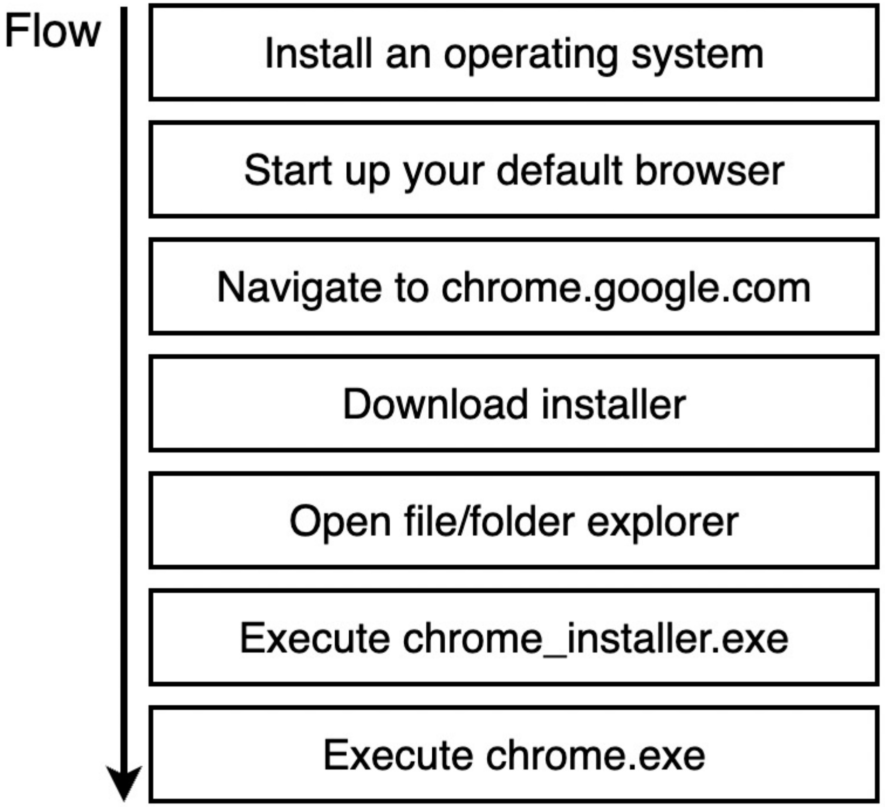
Docker Internals



Dockerfile



Writing a dockerfile == Being given a computer with no OS and being told to install Chrome



Flow

1. Install an operating system
2. Start up your default browser
3. Navigate to chrome.google.com
4. Download installer
5. Open file/folder explorer
6. Execute chrome_installer.exe
7. Execute chrome.exe

Important Docker Commands

Command	Description
docker images	to list all the docker images present in the docker server
docker image inspect [image_id]	to display detailed information about an image
docker image rm [image_id]	to remove image for the given image id
docker build . –t [image_name]	to generate docker image based on a docker file
docker run –p [host_port]:[container_port] [image_name]	to start docker container based on the given image
docker ps	to show all running container
docker ps –a	to show all running and stopped container
docker container start [container_id]	to start the stopped container
docker container pause [container_id]	to pause all process running in a container
docker container unpause [container_id]	to resume/unpause within container

Important Docker Commands

Command	Description
docker container stop [container_id]	to stop running container
docker container kill [container_id]	to kill running container instantly
docker container inspect [container_id]	to inspect all the details for the running container
docker container logs [container_id]	to fetch the logs of given container
docker rm [container_id]	to remove container based on container_id
docker container prune	to removed all stopped containers
docker image push [container_registry/username:tag]	to push an image to the container registry
docker image pull [container_registry/username:tag]	to pull an image from a container registry
docker system prune	remove stopped containers, dangling images, unused networks, volumes and cache
docker compose up | down	to start or remove containers for service defined I compose file