

In this first tech post I want to start with an outline of a series of posts about Docker.

Most of these questions are going to be useful when building Magma.

I) What is a Container?

II) Specifics on turning software into Docker images.

III) What are the differences between all the different Docker things?

↳ Docker Swarm

↳ Docker Compose

↳ Docker CLI ...

IV) A section of cool textbook stuff

I) a container is basically just an application, isolated with its dependencies. Containers share resources with the host.

- Little overhead
- Portability
- Lightweight
- Very Easy for End User

Docker is a Container Engine allowing for management of the containers.

II) I plan on using rust for most projects so assume that is the lang.

There are 3 basic steps for creating images;

i) Create a Con. from an Existing image.

ii) Modify the filesystem of the Con.

↳ These changes are recorded on a

new **UFS (Union File System)** layer.

iii) Commit the changes to the Con.

UFS;

Essentially, changes are recorded in layers and when files are read it searches top down. When files are deleted in a layer it hides all lower layer versions of that file. More commonly files on a read-only layer get modified, the file is copied to the top-layer before changes are made.

When a new layer is commit, an ID is generated. The layers metadata contains its ID, the layer below ID and execution context.

Images are stacks of layers referencing the one before it.

These are the general of Image Creation but in the second post I will have the inventory service example and Dockerfile things.