

Dockerfile

What is Dockerfile

- Text configuration for docker image
- Can be used to create docker images programmatically
- Can be shared

Syntax

Comment

INSTRUCTION arguments

E.g.

This is a dockerfile for my app

RUN apt-get update && apt-get install nginx

Instruction Types

- ENV
- FROM
- WORKDIR
- ADD
- COPY
- EXPOSE
- VOLUME
- USER

FROM

- Specifies base image to use
- Can optionally take image tag. Uses **latest** if not specified
- Must be first instruction after comment

FROM ubuntu:latest

MAINTAINER

- Author/Maintainer Information
- Accepts Name followed by Email Address

e.g.

MAINTAINER Gourav Shah <gs@initcron.org>

RUN

- Accepts command or sequence of commands to run
- Will create a new layer and commit

Syntax:

RUN <command>

Layering is a key concept which allows docker to push/pull incremental updates to the image.

RUN commands create caches for each layer which can then be reused for any similar instructions used later.

CMD

- Only one CMD instruction per Dockerfile
- Used to provide default program to be executed after launching container

Syntax:

- `CMD ["executable","param1","param2"]`
- `CMD ["param1","param2"]`
- `CMD command param1 param2`

EXPOSE

- Ports to map
- Used to link containers together
- Are read when using docker run -P

Syntax:

```
EXPOSE <port>  
{<port>...}
```


ENV

- Sets environment variables
- Used by subsequent run instructions

Syntax

- ENV <key>
<value>

ADD

- Copies files to containers
- Source directories should be present inside build directory (current working dir)
- Can also copy remote urls
- Syntax
- `ADD <src>... <dest>`

COPY

- Copies files to container
- Does not accept remote path
- `COPY <src>... <dest>`

ENTRYPOINT

- Decides what to run after container is created

Syntax:

- `ENTRYPOINT ["executable", "param1", "param2"]`
- `ENTRYPOINT command param1 param2`

VOLUME

- Mount local directory to container
- Syntax
VOLUME ["/data"]

USER

- User to execute commands as
- Applies to RUN, CMD, ENTRYPOINT

WORKDIR

- Working/build directory path
- Can be used multiple times
- Syntax
WORKDIR
<path>

You think you know enough ?

Take a test here

<https://docs.docker.com/userguide/level1/>

Exercise

Dockerize Node.js App by creating a docker file for it and image.

https://docs.docker.com/engine/examples/nodejs_web_app/