

Docker file Components

Dockerfile Instructions:

FROM: Defines the base image for your Docker image. This is essential as it sets the foundation for your environment.

COPY: Copies files and directories from your Docker host (your computer) into the container's filesystem.

ADD: Similar to COPY, but with added functionality:

Downloads files from URLs and adds them to the container.

Automatically extracts compressed files (e.g., .tar, .zip) when added.

RUN: Executes commands within the container during the image building process. Used for installing packages, setting up configurations, and other build-time tasks.

Container Execution:

CMD: Specifies the default command to run when a container is created from the image. Think of it as the "main" process of your container.

ENTRYPOINT: Similar to CMD, but with higher priority. It's more difficult to override, making it suitable for defining the primary executable of your container. ENTRYPOINT will take precedence over CMD.

WORKDIR: Sets the working directory inside the container.

Subsequent commands will be executed from this directory.

Metadata & Configuration:

LABEL: Adds metadata to your Docker image. Useful for providing descriptions, version information, or any relevant details.

EXPOSE: Documents which ports the container will listen on at runtime. It does not publish the ports but serves as documentation for port mapping.

AUTHOR: Specifies the author of the Dockerfile.

ARG: Defines build-time variables. These variables are only accessible during the image building process and are not available within the container.

ENV: Sets environment variables that persist within the container. These variables can be accessed by applications running inside the container.

Important Note: `LABEL`, `AUTHOR`, and `EXPOSE` are primarily used for documentation purposes. They provide information about the image but do not directly affect its functionality.