

# Docker in a Docker (DinD)

Internal reference: topics/04-1.md

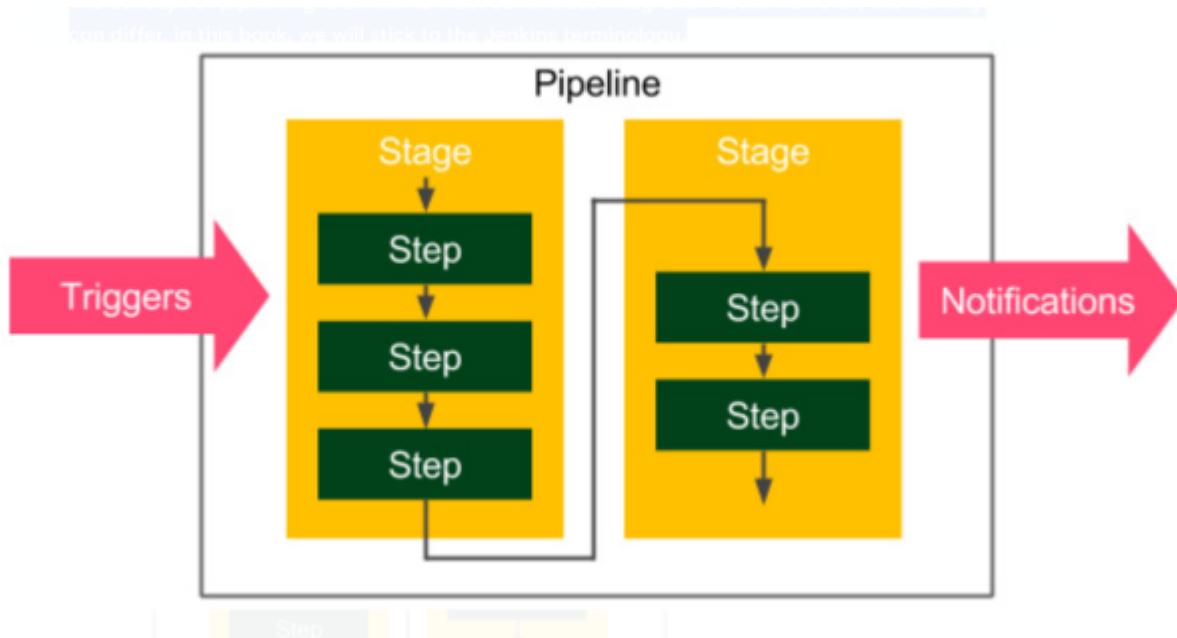
## Introduction

Here are a few use cases to run docker inside a docker container.

- One potential use case for docker in docker is for the CI/CD pipeline, where you need to build and push docker images to a container registry after a successful code build.
- Modern CI/CD systems support Docker-based agents or runners where you can run all the build steps inside a container and build container images inside a container agent.
- Building Docker images with a VM is pretty straightforward. However, when you plan to use Jenkins Docker-based dynamic agents for your CI/CD pipelines, docker in docker comes as a must-have functionality.
- Sandboxed environments.
- For experimental purposes on your local development workstation.

## How it works

DinD creates a child container inside a Docker container. For this, you need either an official docker image with `dind` tag. The `dind` image is baked with the required utilities for Docker to run inside a docker container. Or you build it with a Dockerfile with more control for all added packages and configuration (see Exercises in this course)



## Example with ready-to-use image

(1) Create a container named i.e. dind-test with docker:dind image from Docker-Hub.

```
docker run --privileged -d --name dind-test docker:dind
```

(2) Log in to the container using exec.

```
docker exec -it dind-test /bin/sh
```

(3) When you list the docker images, you should see the Ubuntu image along with other docker images in your host.

```
docker images
```

(4) Now create a Dockerfile inside the test directory.

```
mkdir test && cd test
```

(5) Create a Dockerfile

```
nano Dockerfile
```

(6) Copy the following Dockerfile contents to test the image build from within the container.

```
FROM ubuntu:18.04
LABEL maintainer=Hans Muster <hmuster@example.com>
RUN apt-get update && \
    apt-get -qy full-upgrade && \
    apt-get install -qy curl && \
    curl -sSL https://get.docker.com/ | sh
```

(7) Build the Dockerfile

```
docker build -t test-image .
```



Daniel Garavaldi

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