

JOURNAL FOR DOCKER

Introduction to Docker

Docker is a powerful platform designed to make it easier to create, deploy, and run applications by using containers. Containers allow a developer to package up an application with all the parts it needs, such as libraries and other dependencies, and ship it all out as one package. This ensures that the application will run on any other Linux machine regardless of any customized settings that machine might have.

Installing Docker

To begin using Docker, you must first install it on your system. For most users, the Docker Desktop application is the easiest way to start. It includes everything you need to get started running Docker containers on a Mac or Windows:

1. Visit Docker's official website.
2. Download Docker Desktop for your operating system.
3. Follow the installation instructions provided in the setup wizard.

Running a Multi-container Application with Docker Compose

Docker Compose is a tool for defining and running multi-container Docker applications. With Compose, you use a YAML file to configure your application's services, networks, and volumes:

1. **Define Services:** Outline the different components such as a web server, database, or application server in a **docker-compose.yml** file.
2. **Build and Run:** Use **docker-compose up** to start and run your entire application.
3. **Interact and Manage:** Utilize **docker-compose ps** to list running containers, check logs, and manage the container lifecycle.

Here are the screenshots of the terminal

```
Challenge3 — -zsh — 80x24
mehtab@Mehtabs-MacBook-Pro Challenge3 % docker compose ps

WARN[0000] The "DB_USER" variable is not set. Defaulting to a blank string.
WARN[0000] The "DB_PASS" variable is not set. Defaulting to a blank string.
WARN[0000] The "DB_NAME" variable is not set. Defaulting to a blank string.
WARN[0000] The "DB_PASS" variable is not set. Defaulting to a blank string.
WARN[0000] The "NODE_ENV" variable is not set. Defaulting to a blank string.
WARN[0000] The "PORT" variable is not set. Defaulting to a blank string.
WARN[0000] The "DB_HOST" variable is not set. Defaulting to a blank string.
WARN[0000] The "DB_USER" variable is not set. Defaulting to a blank string.
WARN[0000] /Users/mehtab/Downloads/Challenge3/docker-compose.yml: `version` is obsolete
NAME          IMAGE          COMMAND          SERVICE    CREATED   STATUS    PORTS
[mehtab@Mehtabs-MacBook-Pro Challenge3 % docker compose ps
WARN[0000] The "DB_PASS" variable is not set. Defaulting to a blank string.
WARN[0000] The "NODE_ENV" variable is not set. Defaulting to a blank string.
WARN[0000] The "PORT" variable is not set. Defaulting to a blank string.
WARN[0000] The "DB_HOST" variable is not set. Defaulting to a blank string.
WARN[0000] The "DB_USER" variable is not set. Defaulting to a blank string.
WARN[0000] The "DB_PASS" variable is not set. Defaulting to a blank string.
WARN[0000] The "DB_NAME" variable is not set. Defaulting to a blank string.
WARN[0000] The "DB_USER" variable is not set. Defaulting to a blank string.
WARN[0000] /Users/mehtab/Downloads/Challenge3/docker-compose.yml: `version` is obsolete
```

```
Challenge3 — -zsh — 80x24
WARN[0000] The "PORT" variable is not set. Defaulting to a blank string.
WARN[0000] The "DB_HOST" variable is not set. Defaulting to a blank string.
WARN[0000] The "DB_USER" variable is not set. Defaulting to a blank string.
WARN[0000] The "DB_PASS" variable is not set. Defaulting to a blank string.
WARN[0000] /Users/mehtab/Downloads/Challenge3/docker-compose.yml: `version` is obsolete
[+] Building 0.3s (6/6) FINISHED                                docker:desktop-linux
=> [db internal] load build definition from Dockerfile           0.0s
=> => transferring dockerfile: 155B                             0.0s
=> [db internal] load metadata for docker.io/library/mariadb:latest 0.3s
=> [db internal] load .dockerignore                             0.0s
=> => transferring context: 2B                                    0.0s
=> [db internal] load build context                             0.0s
=> => transferring context: 2B                                    0.0s
=> [db 1/2] FROM docker.io/library/mariadb:latest@sha256:78d0c3b8c39b47e 0.0s
=> => resolve docker.io/library/mariadb:latest@sha256:78d0c3b8c39b47e91c 0.0s
=> ERROR [db 2/2] COPY docker/db/init/init.sql /docker-entrypoint-initdb 0.0s
-----
> [db 2/2] COPY docker/db/init/init.sql /docker-entrypoint-initdb.d:
-----
failed to solve: failed to compute cache key: failed to calculate checksum of ref fc3fd807-b4e4-4d7f-9eb9-d7e4741b276a::a7jtl9zila7g4ly8qbvuyh2gb: failed to walk /var/lib/docker/tmp/buildkit-mount978158636/docker/db/init: lstat /var/lib/docker/tmp/buildkit-mount978158636/docker/db/init: no such file or directory
```

```
Challenge3 — -zsh — 80x24
Last login: Thu Apr 25 19:41:15 on ttys001
[mehtab@Mehtabs-MacBook-Pro Challenge3 % docker-compose up
yaml: line 13: found character that cannot start any token
[mehtab@Mehtabs-MacBook-Pro Challenge3 % docker-compose up
WARN[0000] The "DB_PASS" variable is not set. Defaulting to a blank string.
WARN[0000] The "NODE_ENV" variable is not set. Defaulting to a blank string.
WARN[0000] The "PORT" variable is not set. Defaulting to a blank string.
WARN[0000] The "DB_HOST" variable is not set. Defaulting to a blank string.
WARN[0000] The "DB_USER" variable is not set. Defaulting to a blank string.
WARN[0000] The "DB_USER" variable is not set. Defaulting to a blank string.
WARN[0000] The "DB_PASS" variable is not set. Defaulting to a blank string.
WARN[0000] The "DB_NAME" variable is not set. Defaulting to a blank string.
WARN[0000] /Users/mehtab/Downloads/Challenge3/docker-compose.yml: `version` is obsolete
[+] Building 1.7s (6/6) FINISHED                                docker:desktop-linux
=> [db internal] load build definition from Dockerfile           0.0s
=> => transferring dockerfile: 155B                             0.0s
=> [db internal] load metadata for docker.io/library/mariadb:latest 1.6s
=> [db internal] load .dockerignore                             0.0s
=> => transferring context: 2B                                    0.0s
=> [db internal] load build context                             0.0s
=> => transferring context: 2B                                    0.0s
=> CANCELED [db 1/2] FROM docker.io/library/mariadb:latest@sha256:78d0c3 0.0s
=> => resolve docker.io/library/mariadb:latest@sha256:78d0c3b8c39b47e91c 0.0s
```

The hostname is **ec2f3e8d47e5**

When I repeat the operation, performing requests to your application on <http://localhost:8080/api/stats> I notice that the hostname on each occasion is different.

REFERENCES:

<https://docs.docker.com/reference/cli/docker/compose/up/>
<https://www.appsdeveloperblog.com/scaling-with-docker-compose-a-beginners-guide/>
<https://docs.docker.com/compose/environment-variables/>