

# General instructions

## General instructions

- For the entire evaluation process, if you don't know how to check a requirement, or verify anything, the evaluated student has to help you.
- Ensure that all the files required to configure the application are located inside a `srcs` folder. The `srcs` folder must be located at the root of the repository.
- Ensure that a `Makefile` is located at the root of the repository.
- Before starting the evaluation, run this command in the terminal: `"docker stop $(docker ps -qa); docker rm $(docker ps -qa); docker rmi -f $(docker images -qa); docker volume rm $(docker volume ls -q); docker network rm $(docker network ls -q) 2>/dev/null"`
- Read the `docker-compose.yml` file. There mustn't be `'network: host'` in it or `'links:'`. Otherwise, the evaluation ends now.
- Read the `docker-compose.yml` file. There must be `'network(s)'` in it. Otherwise, the evaluation ends now.
- Examine the `Makefile` and all the scripts in which Docker is used. There mustn't be `'--link'` in any of them. Otherwise, the evaluation ends now.

## Mandatory part

*This project consists in setting up a small infrastructure composed of different services using `docker-compose`. Ensure that all the following points are correct.*

## Project overview

- The evaluated person has to explain to you in simple terms:
  - How Docker and `docker-compose` work
  - The difference between a Docker image used with `docker-compose` and without `docker-compose`
  - The benefit of Docker compared to VMs
  - The pertinence of the directory structure required for this project (an example is provided in the subject's PDF file).



Yes



No

## Preliminary tests

- Defense can only happen if the evaluated student or group is present. This way everybody learns by sharing knowledge with each other.
- If no work has been submitted (or wrong files, wrong directory, or wrong filenames), the grade is 0, and the evaluation process ends.
- For this project, you have to clone their Git repository on their station.



Yes



No

- Read the docker-compose.yml file. There mustn't be 'network: host' in it or 'links:'. Otherwise, the evaluation ends now.
- Read the docker-compose.yml file. There must be 'network(s)' in it. Otherwise, the evaluation ends now.
- Examine the Makefile and all the scripts in which Docker is used. There mustn't be '--link' in any of them. Otherwise, the evaluation ends now.
- Examine the Dockerfiles. If you see 'tail -f' or any command run in background in any of them in the ENTRYPOINT section, the evaluation ends now. Same thing if 'bash' or 'sh' are used but not for running a script (e.g, 'nginx & bash' or 'bash').
- If the entrypoint is a script (e.g.,  
ENTRYPOINT ["sh", "my\_entrypoint.sh"],  
ENTRYPOINT ["bash", "my\_entrypoint.sh"]), ensure it runs no program in background (e.g, 'nginx & bash').
- Examine all the scripts in the repository. Ensure none of them runs an infinite loop. The following are a few examples of prohibited commands: 'sleep infinity', 'tail -f /dev/null', 'tail -f /dev/random'
- Run the Makefile.



Yes



No

### Docker Network

- Ensure that docker-network is used by checking the docker-compose.yaml file. Then run the 'docker network ls' command to verify that a network is visible.
- The evaluated student has to give you a simple explanation of docker-network. If any of the above points is not correct, the evaluation process ends now.

✓ Yes

✗ No

### WordPress with php-fpm and its volume

- Ensure that there is a Dockerfile.
- Ensure that there is no NGINX in the Dockerfile.
- Using the 'docker-compose ps' command, ensure that the container was created (using the flag '-p' is authorized if necessary).
- Ensure that there is a Volume. To do so: Run the command 'docker volume ls' then 'docker volume inspect <volume name>'. Verify that the result in the standard output contains the path '/home/login/data/', where login is the login of the evaluated student.
- Ensure that you can add a comment using the available WordPress user.
- Sign in with the administrator account to access the Administration dashboard. The Admin username must not include 'admin' or 'Admin' (e.g., admin, administrator, Admin-login, admin-123, and so forth).
- From the Administration dashboard, edit a page. Verify on the website that the page has been updated. If any of the above points is not correct, the evaluation process ends now.

✓ Yes

✗ No

### Simple setup

- Ensure that NGINX can be accessed by port 443 only. Once done, open the page.
- Ensure that a SSL/TLS certificate is used.
- Ensure that the WordPress website is properly installed and configured (you shouldn't see the WordPress Installation page). To access it, open <https://login.42.fr> in your browser, where login is the login of the evaluated student. You shouldn't be able to access the site via <http://login.42.fr>. If something doesn't work as expected, the evaluation process ends now.

✓ Yes

✗ No

### Docker Basics

- Start by checking the Dockerfiles. There must be one Dockerfile per service. Ensure that the Dockerfiles are not empty files. If it's not the case or if a Dockerfile is missing, the evaluation process ends now.
- Make sure the evaluated student has written their own Dockerfiles and built their own Docker images. Indeed, it is forbidden to use ready-made ones or to use services such as DockerHub.
- Ensure that every container is built from the penultimate stable version of Alpine Linux or from Debian Buster. If a Dockerfile does not start with 'FROM alpine' or 'FROM debian:buster', or any other local image, the evaluation process ends now.
- The Docker images must have the same name as their corresponding service. Otherwise, the evaluation process ends now.
- Ensure that the Makefile has set up all the services via docker-compose. This means that the containers must have been built using docker-compose and that no crash happened. Otherwise, the evaluation process ends.

✓ Yes

✗ No

## **Persistence!**

- This part is pretty straightforward. You have to reboot the virtual machine. Once it has restarted, launch docker-compose again. Then, verify that everything is functional, and that both WordPress and MariaDB are configured. The changes you made previously to the WordPress website should still be here. If any of the above points is not correct, the evaluation process ends now.



## NGINX with SSL/TLS

- Ensure that there is a Dockerfile.
- Using the 'docker-compose ps' command, ensure that the container was created (using the flag '-p' is authorized if necessary).
- Try to access the service via http (port 80) and verify that you cannot connect.
- Open <https://login.42.fr/> in your browser, where login is the login of the evaluated student. The displayed page must be the configured WordPress website (you shouldn't see the WordPress Installation page).
- The use of a TLS v1.2/v1.3 certificate is mandatory and must be demonstrated. The SSL/TLS certificate doesn't have to be recognized. A self-signed certificate warning may appear. If any of the above points is not clearly explained and correct, the evaluation process ends now.

✓ Yes

✗ No

## MariaDB and its volume

- Ensure that there is a Dockerfile.
- Ensure that there is no NGINX in the Dockerfile.
- Using the 'docker-compose ps' command, ensure that the container was created (using the flag '-p' is authorized if necessary).
- Ensure that there is a Volume. To do so: Run the command 'docker volume ls' then 'docker volume inspect <volume name>'. Verify that the result in the standard output contains the path '/home/login/data/', where login is the login of the evaluated student.
- The evaluated student must be able to explain you how to login into the database. Try to login into the SQL database as root but with no password. If the login is successful, the evaluation process ends now.
- Try to login into the SQL database with the user account and its password. Verify that the database is not empty. If any of the above points is not correct, the evaluation process ends now.

✓ Yes

✗ No