

[DevOps] Laboratorium 1 Sprawozdanie

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Ćwiczenia do wykonania

1. Zainstaluj Docker w systemie linuxowym
2. Zarejestruj się w Docker Hub i zapoznaj z sugerowanymi obrazami
3. Pobierz hello-world, busybox, ubuntu lub fedorę, mysql
4. Uruchom busybox
 - Pokaż efekt uruchomienia kontenera
 - Podłącz się do kontenera interaktywnie i wywołaj numer wersji
5. Uruchom "system w kontenerze"
 - Zaprezentuj PID1 w kontenerze i procesy dockera na hoście
 - Zaktualizuj pakiety
 - Wyjdź
6. Stwórz własnoręcznie, zbuduj i uruchom prosty plik Dockerfile bazujący na wybranym systemie i sklonuj nasze repo.
 - Kieruj się dobrymi praktykami: https://docs.docker.com/develop/develop-images/dockerfile_best-practices/
 - Upewnij się że obraz będzie miał git'a
 - Uruchom w trybie interaktywnym i zweryfikuj że jest tam ściągnięte nasze repozytorium
7. Pokaż uruchomione (!= "działające") kontenery, wyczyść je.
8. Wyczyść obrazy
9. Dodaj stworzone pliki Dockerfile do folderu swojego katalogu Lab01 w repo.

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```
[/ # exit
[root@localhost MD02024]# sudo docker run hello-world

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
1. The Docker client contacted the Docker daemon.
2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
   (amd64)
3. The Docker daemon created a new container from that image which runs the
   executable that produces the output you are currently reading.
4. The Docker daemon streamed that output to the Docker client, which sent it
   to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
$ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
https://hub.docker.com/

For more examples and ideas, visit:
https://docs.docker.com/get-started/

[root@localhost MD02024]# █
```

Ad 4 a) i b)

```
[root@localhost MD02024]# docker pull busybox
Using default tag: latest
latest: Pulling from library/busybox
3f4d90098f5b: Pull complete
Digest: sha256:3fbc632167424a6d997e74f52b878d7cc478225cffac6bc977eedfe51c7f4e79
Status: Downloaded newer image for busybox:latest
docker.io/library/busybox:latest
[root@localhost MD02024]# docker run -it busybox

/ #
/ # version
sh: version: not found
/ # busybox --help
BusyBox v1.36.1 (2023-07-17 18:29:09 UTC) multi-call binary.
BusyBox is copyrighted by many authors between 1998-2015.
Licensed under GPLv2. See source distribution for detailed
copyright notices.
```

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```
[root@localhost MD02024]# docker ps -a
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS   NAMES
33d06049c69   hello-world "/hello"               2 minutes ago Exited (0) 2 minutes ago           vigorous_khayyam
d202a5a711e3   busybox    "sh"                   4 minutes ago Exited (130) 2 minutes ago       frosty_napier
275d127f32d6   hello-world "/hello"               2 hours ago   Exited (0) 2 hours ago           beautiful_curie

[root@localhost MD02024]# systemctl status docker
● docker.service - Docker Application Container Engine
   Loaded: loaded (/usr/lib/systemd/system/docker.service; disabled; preset: disabled)
   Drop-In: /usr/lib/systemd/system/service.d
           └─10-timeout-abort.conf
   Active: active (running) since Sat 2023-10-21 12:20:41 CEST; 2h 20min ago
   TriggeredBy: ● docker.socket
   Docs: https://docs.docker.com
   Main PID: 12849 (dockerd)
   Tasks: 11
   Memory: 32.1M
   CPU: 10.243s
   CGroup: /system.slice/docker.service
           └─12849 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock

paź 21 12:20:41 localhost.localdomain dockerd[12849]: time="2023-10-21T12:20:41.504551959+02:00" level=info msg="Firewalld: interface docker0 already part of docke
paź 21 12:20:41 localhost.localdomain dockerd[12849]: time="2023-10-21T12:20:41.667397899+02:00" level=info msg="Loading containers: done."
paź 21 12:20:41 localhost.localdomain dockerd[12849]: time="2023-10-21T12:20:41.713862052+02:00" level=info msg="Docker daemon" commit=1a79695 graphdriver=overlay2
paź 21 12:20:41 localhost.localdomain dockerd[12849]: time="2023-10-21T12:20:41.713385863+02:00" level=info msg="Daemon has completed initialization"
paź 21 12:20:41 localhost.localdomain dockerd[12849]: time="2023-10-21T12:20:41.791113312+02:00" level=info msg="API listen on /run/docker.sock"
paź 21 12:20:41 localhost.localdomain systemd[1]: Started docker.service - Docker Application Container Engine.
paź 21 12:21:10 localhost.localdomain dockerd[12849]: time="2023-10-21T12:21:10.183738515+02:00" level=info msg="ignoring event" container=275d127f32d6ea8cdaa1746
paź 21 14:38:28 localhost.localdomain dockerd[12849]: time="2023-10-21T14:38:28.509598948+02:00" level=info msg="ignoring event" container=d202a5a711e369701f9cf50
paź 21 14:38:28 localhost.localdomain dockerd[12849]: time="2023-10-21T14:38:28.546961783+02:00" level=warning msg="failed to close stdin: task d202a5a711e369701f9
paź 21 14:38:46 localhost.localdomain dockerd[12849]: time="2023-10-21T14:38:46.012361827+02:00" level=info msg="ignoring event" container=33d06049c6910a6437ffa3
[root@localhost MD02024]#
```

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```
[[root@localhost Lab01]# cat dockerfile
FROM alpine:latest

RUN apk update && apk add git

RUN git clone https://github.com/InzynieriaOprogramowaniaAGH/MD02024.git /my_repository

WORKDIR /my_repository

[root@localhost Lab01]#
```

```
[[root@localhost Lab01]# docker build -t dockerfile .
[+] Building 28.1s (8/8) FINISHED
=> [internal] load build definition from dockerfile
=> => transferring dockerfile: 264B
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [internal] load metadata for docker.io/library/alpine:latest
=> [1/4] FROM docker.io/library/alpine:latest
=> [2/4] RUN apk update && apk add git
=> [3/4] RUN git clone https://github.com/InzynieriaOprogramowaniaAGH/MD02024.git /my_repository
=> [4/4] WORKDIR /my_repository
=> exporting to image
=> => exporting layers
=> => writing image sha256:6ca9790be44cb727dd60d74c8313cb79f92b1f9ff00eca856b8de6f0f87e4ff5
=> => naming to docker.io/library/dockerfile
[[root@localhost Lab01]# docker run -it dockerfile
[/my_repository # ls
README.md  READMEs
[/my_repository # git status
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean
[/my_repository #
```