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## Introduction

Il s'agit d'un TP de fin de module docker, en m2 DataEng - Paris Ynov Campus.

Participants au projet :

- Boutaina BELGHITI
- Shadrack BODJE
- Ibrahim CHOUAY

Lien du sujet : Sujet [Docker](#)

Notre Github : [Lien Github](#)

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## Étapes - Commandes

### Machine Virtuelle

NB : Nous avons déjà notre machine virtuelle configurée en accès par pont, avec l'iso ubuntu server (disponible via ce [lien](#)) et qui fonctionne en ssh avec notre machine hardware.

```
System information as of jeu. 21 déc. 2023 09:10:58 UTC

System load:                0.3603515625
Usage of /:                  65.3% of 9.75GB
Memory usage:               11%
Swap usage:                 0%
Processes:                  115
Users logged in:            0
IPv4 address for br-094b3347849c: 172.18.0.1
IPv4 address for br-5ed16a23c48d: 172.19.0.1
IPv4 address for docker0:    172.17.0.1
IPv4 address for enp0s3:     192.168.1.78
IPv6 address for enp0s3:     2a01:e0a:230:e490:a00:27ff:fe63:f437

* Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s
  just raised the bar for easy, resilient and secure K8s cluster deployment.

https://ubuntu.com/engage/secure-kubernetes-at-the-edge

La maintenance de sécurité étendue pour Applications n'est pas activée.

43 mises à jour peuvent être appliquées immédiatement.
Pour afficher ces mises à jour supplémentaires, exécuter : apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

Last login: Thu Dec 14 10:23:26 UTC 2023 on tty1
shad@ynovserver:~$ ls
composetest  prestashop
shad@ynovserver:~$ mkdir docker_tp
shad@ynovserver:~$ cd docker_tp
-bash: cd: too many arguments
shad@ynovserver:~$ cd docker_tp/
shad@ynovserver:~/docker_tp$ ls
shad@ynovserver:~/docker_tp$ _
```

### Connexion SSH

```
Windows PowerShell  shad@ynovserver: ~/docker_tp  +  -  □  ×

https://ubuntu.com/engage/secure-kubernetes-at-the-edge

La maintenance de sécurité étendue pour Applications n'est pas activée.

43 mises à jour peuvent être appliquées immédiatement.
Pour afficher ces mises à jour supplémentaires, exécuter : apt list --upgradable

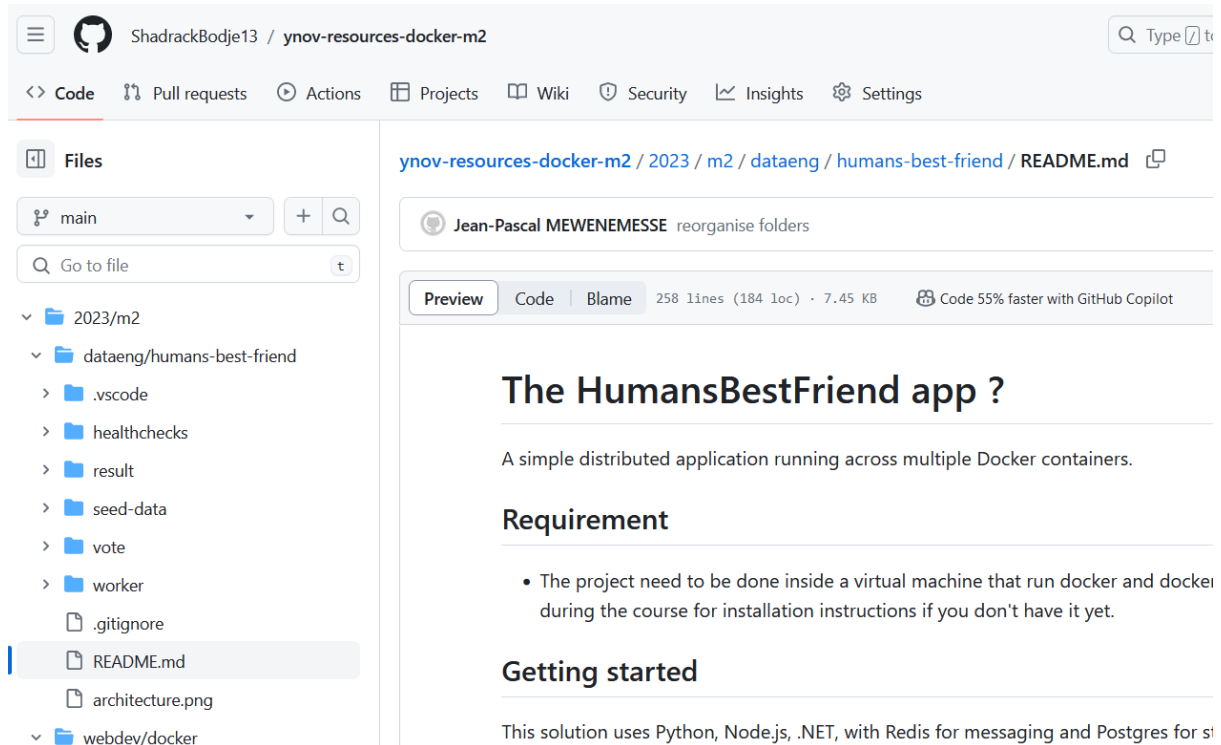
Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

Last login: Thu Dec 21 09:11:00 2023
shad@ynovserver:~$ ls
composetest  docker_tp  prestashop
shad@ynovserver:~$ cd docker_tp
shad@ynovserver:~/docker_tp$
```

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Fork Github du prof :

Importer notre github dans la machine virtuelle



Création du dossier ( Work Directory )

git clone de l'élément fork

```
shad@ynovserver:~/docker_tp$ git clone https://github.com/ShadrackBodje13/ynov-resources-docker-m2/
Cloning into 'ynov-resources-docker-m2'...
remote: Enumerating objects: 402, done.
remote: Counting objects: 100% (26/26), done.
remote: Compressing objects: 100% (20/20), done.
remote: Total 402 (delta 4), reused 20 (delta 2), pack-reused 376
Receiving objects: 100% (402/402), 11.55 MiB | 8.97 MiB/s, done.
Resolving deltas: 100% (59/59), done.
shad@ynovserver:~/docker_tp$
```

Ajout des DockerFiles et docker-compose.build.yml dans le dossier du travail.

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```
Docker TP SSH 1  Windows PowerShell
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2$ cd 2023
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023$ ls
m2
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023$ cd m2/
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2$ ls
dataeng webdev
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2$ cd dataeng/
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng$ ls
humans-best-friend
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng$ cd humans-be
st-friend/
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-f
riend$ ls
architecture.png healthchecks README.md result seed-data vote worker
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-f
riend$
```

Création du dockerfilebuild.yaml

```
Docker TP SSH 1  shad@ynovserver: ~/prestash...
networks:
  - humansbestfriend-network

db:
  image: postgres:15-alpine
  volumes:
    - "db-data:/var/lib/postgresql/data"
    - "/healthchecks:/healthchecks"
  healthcheck:
    test: /healthchecks/postgres.sh
    interval: "5s"
  networks:
    - humansbestfriend-network

redis:
  image: redis
  networks:
    - humansbestfriend-network
  volumes:
    - "/healthchecks:/healthchecks"
  healthcheck:
    test: /healthchecks/redis.sh
    interval: "5s"

networks:
  humansbestfriend-network:
    external: true
```

Résultat du build

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```

shad@ynovserver: ~/prestashk
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$ vim docker-compose-build.yml
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$ docker compose -f docker-compose-build.yml build
[+] Building 11.7s (13/36)
=> extracting sha256:b5a0d5c14ba9ece1eedc5137c468d9a123372b0af2ed2c8c4446137730c90e5b 6.7s
=> sha256:0f0fbcdac8325e1d159fbc6d9b3910e65deadeaa651a2f6a4108c3d8234568b 45.09MB / 180.94MB 10.6s
[worker stage-1 1/3] FROM mcr.microsoft.com/dotnet/runtime:7.0qsha256:b41a241da8624e65544dd83bcc642152f10a751082d1eala91 10.8s
=> sha256:198cbf45efc0a2a5d64766ec547cb7bfa859b6e3a178543558a1beb358eb09bf 1.16kB / 1.16kB 0.0s
=> sha256:337945a71cfdb1635ab48144281b3575dd6726b568343e01d9f711ab07dda5e 1.92kB / 1.92kB 0.0s
=> sha256:b5a0d5c14ba9ece1eedc5137c468d9a123372b0af2ed2c8c4446137730c90e5b 31.42MB / 31.42MB 3.8s
=> sha256:4c0e626219de4a070331daff1eff6932a03a31333a6ff72d7b8b592a2e80d5b0 14.97MB / 14.97MB 2.5s
=> sha256:ccb4ba5eb726748e965e773dafacfb6ab92eb14745c7bcad9861d77d81b2372cfe 32.46MB / 32.46MB 2.7s
=> sha256:bd4f2c2d9548601f6df118ad7dd4f984a15a0aa258c56b4b77945fa07a6978e7 155B / 155B 2.8s
=> extracting sha256:b5a0d5c14ba9ece1eedc5137c468d9a123372b0af2ed2c8c4446137730c90e5b 6.7s
[worker internal] load build context 0.1s
=> transferring context: 7.07kB 0.0s
[result 1/7] FROM docker.io/library/node:18-slim@sha256:fe687021c06383a2bc5eaf6db29b627ed28a55f6bdfbcea108f0c624b783c37 8.6s
=> resolve docker.io/library/node:18-slim@sha256:fe687021c06383a2bc5eaf6db29b627ed28a55f6bdfbcea108f0c624b783c37 0.2s
=> sha256:fe687021c06383a2bc5eaf6db29b627ed28a55f6bdfbcea108f0c624b783c37 1.21kB / 1.21kB 0.0s
=> sha256:8e04602828ddd8c394c701f265c048f2a7cf9cbf112635ba26cec2d06936f17b 1.37kB / 1.37kB 0.0s
=> sha256:d3cfe7487840f27b6353a237fca9e79c4d55f6a3d5ce3caf7c1459596cf457f8d 7.62kB / 7.62kB 0.0s
=> sha256:a1f07e9783172863d339127a05502c5eacd1e6b09eb7b2f4aa7b6fc87e2dd81 20.97MB / 29.13MB 8.2s
=> sha256:ebd7ac832a7be4bd07f5ad6f4bcb6db1f5b02de7a8e07b40627142f61a9b1b9d 3.36kB / 3.36kB 6.9s
=> sha256:9d5fc5b38df6ebdd70895cf78cd4e3de9aef9dc55ed5c79c294506661a0e8e4 7.07MB / 38.57MB 8.2s
[result internal] load build context 0.2s
=> transferring context: 278.07kB 0.1s
[vote base 1/5] FROM docker.io/library/python:3.11-slim@sha256:8f64a677f103d981cf3008d6f9fd1bde61acdd7927f165f4e37ea3f8b883 8.2s

```

## Affichage des images

```
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$ docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
humans-best-friend-worker	latest	b9fc15113aa6	42 seconds ago	194MB
humans-best-friend-seed-data	latest	46e127af3cd9	48 seconds ago	129MB
humans-best-friend-result	latest	cf8bb927a07b	54 seconds ago	224MB
humans-best-friend-vote	latest	aed12f5ca88e	About a minute ago	154MB

## Création des registres

```
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$ docker run -d -p 5005:5000 --restart always --name registry registry:2
7408d679452bd25d7e56bbfeef1f3edb6a4e2b0fd3bbded88c96d19bedc81d730
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$ curl localhost:5005/v2/_catalog
{"repositories": []}
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$ shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$ docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
humans-best-friend-worker   latest             b9fc15113aa6       15 minutes ago     194MB
humans-best-friend-seed-data latest             46e127af3cd9       16 minutes ago     129MB
humans-best-friend-result   latest             cf8bb927a07b       16 minutes ago     224MB
humans-best-friend-vote     latest             aed12f5ca88e       16 minutes ago     154MB
composetest-web           latest             2628a67d6920       7 days ago         214MB
redis                   alpine             d2d4688fcebe       13 days ago        41MB
prestashop-mariadb        latest             b6f99e92ec9c       2 weeks ago        404MB
registry                2                  909c3ff012b7       2 weeks ago        25.4MB
nginx                   latest             a6bd71f48f68       4 weeks ago        187MB
prestashop-prestashop     latest             6386290965f1       2 months ago       1.42GB
hello-world             latest             9c7a54a9a43c       7 months ago       13.3kB
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$
```

adresse du registre :

7408d679452bd25d7e56b0feef1f3edb6a4e2b0fd3bbbed88c96d19bedc81d730

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## HumansBestFriend

### M2 DATA ENG

```
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$ docker tag humans-best-friend-worker:latest localhost:5000/worker:latest
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$ docker tag humans-best-friend-vote:latest localhost:5000/vote:latest
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$ docker tag humans-best-friend-seed-data:latest localhost:5000/seed-data:latest
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$ docker tag humans-best-friend-result:latest localhost:5000/result:latest
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$ docker tag humans-best-friend-postgres:15-alpine localhost:5000/postgres:15-alpine
Error response from daemon: No such image: humans-best-friend-postgres:15-alpine
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$ docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
humans-best-friend-worker	latest	b9fc15113aa6	30 minutes ago	194MB
localhost:5000/worker	latest	b9fc15113aa6	30 minutes ago	194MB
humans-best-friend-seed-data	latest	46e127af3cd9	30 minutes ago	129MB
localhost:5000/seed-data	latest	46e127af3cd9	30 minutes ago	129MB
humans-best-friend-result	latest	cf8bb927a07b	30 minutes ago	224MB
localhost:5000/result	latest	cf8bb927a07b	30 minutes ago	224MB
localhost:5000/vote	latest	aed12f5ca88e	30 minutes ago	154MB
humans-best-friend-vote	latest	aed12f5ca88e	30 minutes ago	154MB
composetest-web	latest	2628a67d6920	7 days ago	214MB
redis	alpine	d2d4688fceb6	13 days ago	41MB
prestashop-mariadb	latest	b6f99e92ec9c	2 weeks ago	404MB
registry	2	909c3ff012b7	2 weeks ago	25.4MB
nginx	latest	a6bd71f48f68	4 weeks ago	187MB
prestashop-prestashop	latest	6386290965f1	2 months ago	1.42GB
hello-world	latest	9c7a54a9a43c	7 months ago	13.3kB

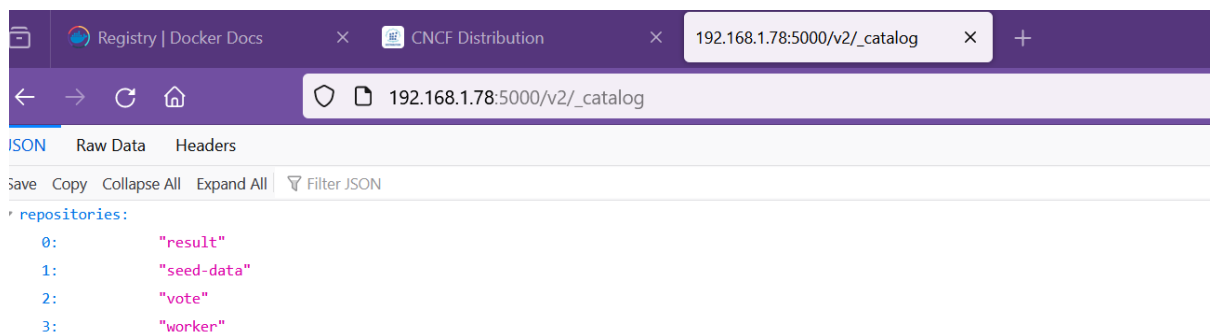
## Push des éléments

```
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$ docker push localhost:5000/worker:latest
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$ curl localhost:5000/v2/_catalog
{"repositories":[]}
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$
docker push localhost:5000/worker:latest
docker push localhost:5000/vote:latest
docker push localhost:5000/seed-data:latest
docker push localhost:5000/result:latest
The push refers to repository [localhost:5000/worker]
eb4d22cdbfad: Pushed
919975385dc2: Pushed
5ee537aacfb3: Pushed
7c73e219acdd: Pushed
d47be6633206: Pushed
e6cd39d4cea4: Pushed
latest: digest: sha256:bc76876d8164edf181b775538498e146428376db1bc14009fe41d6fd549f1250 size: 1577
The push refers to repository [localhost:5000/vote]
78d359fc6659: Pushed
86a3909a817c: Pushed
3dc6c7273808: Pushed
```

## Curl des éléments

```
7292cf786aa8: Mounted from seed-data
latest: digest: sha256:cdb44af3b21c475545fefbaddb3de6af5efd49c6570c2da72eaa7d4531416f4a size: 2625
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$ curl localhost:5000/v2/_catalog
{"repositories":["result","seed-data","vote","worker"]}
```

## Affichage du catalog sur le site 182.168.1.78/5000/V2/\_catalog



```
Registry | Docker Docs
CNCF Distribution
192.168.1.78:5000/v2/_catalog

192.168.1.78:5000/v2/_catalog

JSON Raw Data Headers
Save Copy Collapse All Expand All Filter JSON
repositories:
  0: "result"
  1: "seed-data"
  2: "vote"
  3: "worker"
```

## Nos images sont bien créées

# RENDU TP DOCKER 21/12/2024

## HumansBestFriend

### M2 DATA ENG

## Docker compose

### Création du fichier compose.yml

```
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$ touch compose.yml
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$ vim compose.yml
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$
```

### Contenu du compose.yml

```
version: '3'
services:
  vote:
    image: localhost:5000/vote
    ports:
      - "5001:80"
  result:
    image: localhost:5000/result
    ports:
      - "5002:80"
  seed-data:
    image: localhost:5000/seed-data
  worker:
    image: localhost:5000/worker
```

### Run du docker compose étant à la racine du projet

```
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$ docker compose up -d
[+] Running 5/5
✓ Network humans-best-friend_default      Created           0.2s
✓ Container humans-best-friend-vote-1     Started           0.3s
✓ Container humans-best-friend-result-1   Started           0.3s
✓ Container humans-best-friend-seed-data-1 Started           0.3s
✓ Container humans-best-friend-worker-1   Started           0.3s
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$
```

### Docker ps

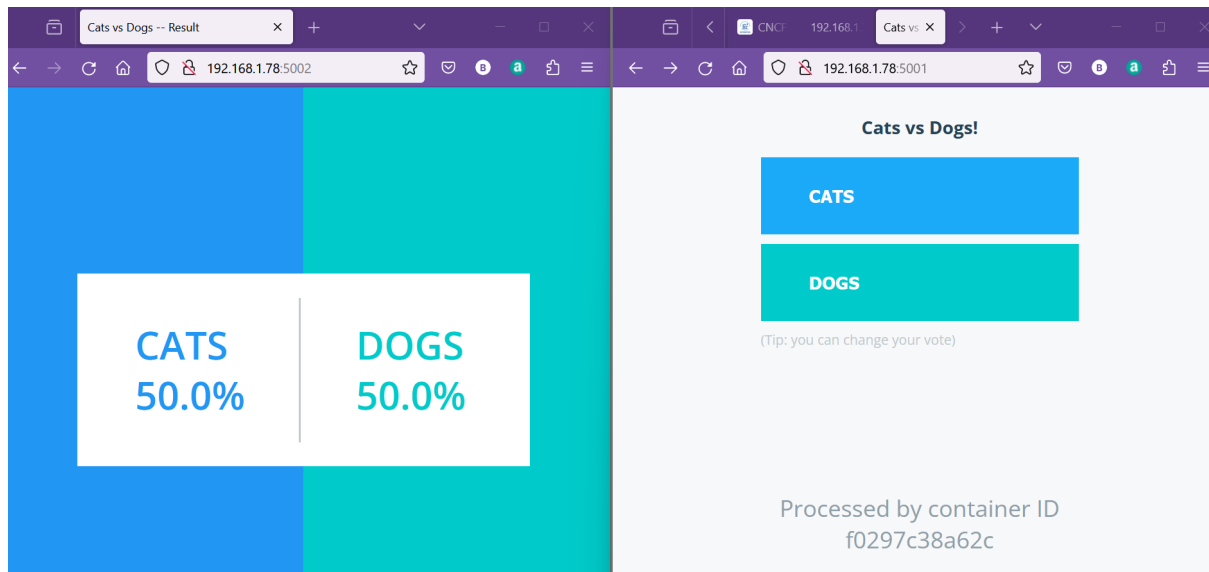
```
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$ docker ps
CONTAINER ID   IMAGE                                COMMAND                  CREATED        STATUS        PORTS
b3e18ebc21e6   localhost:5000/worker               "dotnet Worker.dll"     42 seconds ago Up 38 seconds
humans-best-friend-worker-1
78850c6f0ff1   localhost:5000/result               "/usr/bin/tini -- no..." 42 seconds ago Up 37 seconds  0.0.0.0:5002->80/tcp, :::5002->80/tc
humans-best-friend-result-1
f0297c38a62c   localhost:5000/vote                 "unicorn app:app -b..." 42 seconds ago Up 37 seconds  0.0.0.0:5001->80/tcp, :::5001->80/tc
humans-best-friend-vote-1
0f5f51effb19   registry:2                           "/entrypoint.sh /etc..." 53 minutes ago Up 53 minutes  0.0.0.0:5000->5000/tcp, :::5000->5000/tcp
```

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## HumansBestFriend

### M2 DATA ENG

## Testes des sites



## Ifconfig

```
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$ sudo apt-get update
[sudo] password for shad:
Atteint :1 http://fr.archive.ubuntu.com/ubuntu jammy InRelease
Réception de :2 http://fr.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Réception de :3 https://download.docker.com/linux/ubuntu jammy InRelease [48,8 kB]
Réception de :4 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Réception de :5 http://fr.archive.ubuntu.com/ubuntu jammy-backports InRelease [109 kB]
Réception de :6 http://fr.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1 263 kB]
Réception de :7 http://fr.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [260 kB]
Réception de :8 http://fr.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1 020 kB]
Réception de :9 http://fr.archive.ubuntu.com/ubuntu jammy-updates/universe Translation-en [226 kB]
Réception de :10 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [1 051 kB]
Réception de :11 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [200 kB]
Réception de :12 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [823 kB]
Réception de :13 http://security.ubuntu.com/ubuntu jammy-security/universe Translation-en [156 kB]
5 384 ko réceptionnés en 3s (1 836 ko/s)
Reading package lists... Done
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
iproute2 est déjà la version la plus récente (5.15.0-1ubuntu2).
iproute2 passé en « installé manuellement ».
0 mis à jour, 0 nouvellement installés, 0 à enlever et 54 non mis à jour.
shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$ shad@ynovserver:~/docker_tp/ynov-resources-docker-m2/2023/m2/dataeng/humans-best-friend$
```



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Commande pour installer PING

```
apt update -y
apt install -y iputils-ping
apt install -y inetutils-traceroute
apt install -y iproute2
apt install -y curl telnet dnsutils vim
```

Ping success between humans-best-friend-worker-1 and humans-best-friend-result-1

```
root@78850c6f0ff1:/usr/local/app# ping b3e18ebc21e6
PING b3e18ebc21e6 (172.20.0.3) 56(84) bytes of data:
64 bytes from humans-best-friend-worker-1.humans-best-friend_default (172.20.0.3): icmp_seq=1 ttl=64 time=2.53 ms
64 bytes from humans-best-friend-worker-1.humans-best-friend_default (172.20.0.3): icmp_seq=2 ttl=64 time=0.087 ms
64 bytes from humans-best-friend-worker-1.humans-best-friend_default (172.20.0.3): icmp_seq=3 ttl=64 time=0.049 ms
64 bytes from humans-best-friend-worker-1.humans-best-friend_default (172.20.0.3): icmp_seq=4 ttl=64 time=0.063 ms
64 bytes from humans-best-friend-worker-1.humans-best-friend_default (172.20.0.3): icmp_seq=5 ttl=64 time=0.072 ms
64 bytes from humans-best-friend-worker-1.humans-best-friend_default (172.20.0.3): icmp_seq=6 ttl=64 time=0.065 ms
64 bytes from humans-best-friend-worker-1.humans-best-friend_default (172.20.0.3): icmp_seq=7 ttl=64 time=0.080 ms
64 bytes from humans-best-friend-worker-1.humans-best-friend_default (172.20.0.3): icmp_seq=8 ttl=64 time=0.054 ms
```

## Conclusion :

En conclusion, l'accès réussi aux interfaces de vote et de résultats témoigne du déploiement réussi de l'application HumansBestFriend. En travaillant sur ce projet, nous avons appliqué nos connaissances sur docker, comment on crée des images/containers, l'utilisation d'une machine virtuelle et la manipulation des ports.