

TP Noté Docker – 01/12/2023
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TASK 1 :

-Pour télécharger l'image :

Commande utilisée :

```
docker pull prestashop/prestashop:latest
```

-Ensuite, nous avons créé le network :

Commande utilisée :

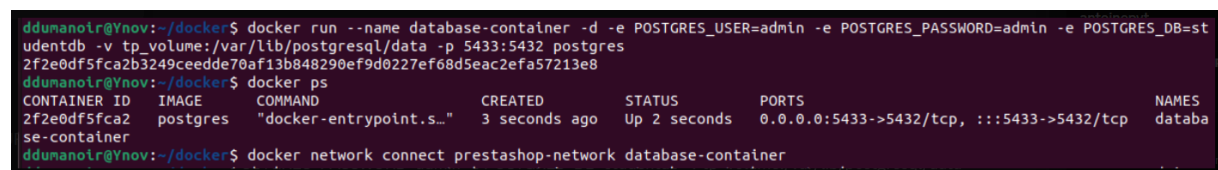
```
docker network create prestashop_network
```

-Nous créons un container avec la base de données.

Commandes utilisées :

```
docker run --name database-container -d -e POSTGRES_USER=admin -e POSTGRES_PASSWORD=admin -e POSTGRES_DB=studentdb -v tp_volume:/var/lib/postgresql/data -p 5433:5432 postgres
```

```
docker network connect prestashop-network database-container
```



```
ddumanoir@Ynov:~/docker$ docker run --name database-container -d -e POSTGRES_USER=admin -e POSTGRES_PASSWORD=admin -e POSTGRES_DB=studentdb -v tp_volume:/var/lib/postgresql/data -p 5433:5432 postgres
2f2e0df5fca2b3249ceedde70af13b848290ef9d0227ef68d5eac2efa57213e8
ddumanoir@Ynov:~/docker$ docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS        PORTS                               NAMES
2f2e0df5fca2   postgres "docker-entrypoint.s..." 3 seconds ago  Up 2 seconds  0.0.0.0:5433->5432/tcp, :::5433->5432/tcp  databa
se-container
ddumanoir@Ynov:~/docker$ docker network connect prestashop-network database-container
```

-Nous créons le front-end Prestashop (on a utilisé une autre image plus adapté).

Commande utilisée :

```
docker run --name prestashop-container --network prestashop-network -e PRESTASHOP_DATABASE_PASSWORD=admin -d prestashop/prestashop
```

-On se connecte ensuite dans le container(front end prestashop)pour installer la base de données :

Commandes utilisées :

```
docker exec -it prestashop-container bash
```

```
apt-get update
```

```
apt-get install postgresql-client
```

```
psql -h database-container -U admin -d studentdb -W
```

```

ddumanoir@Ynov:~/docker$ docker run --name prestashop-container --network prestashop-network -e PRESTASHOP_DATABASE_PASSWORD=admin -d prestashop/prestashop
Unable to find image 'prestashop/prestashop:latest' locally
latest: Pulling from prestashop/prestashop
a803e7c4b030: Pull complete
84313b8f4350: Pull complete
94f42c54df3f: Pull complete
fac86b32c028: Pull complete
e326747c51cb: Pull complete
2241eb3f28be: Pull complete
82dc7266c2a7: Pull complete
03466a4f1518: Pull complete
cd65d11b092a: Pull complete
cea53147c430: Pull complete
d70222ea3c2a: Pull complete
573cf5bb7fa1: Pull complete
05a21f22b3ef: Pull complete
69b6682cef76: Pull complete
df6afb38cd6: Pull complete
648b56fab1e7: Pull complete
6a477b6e6c67: Pull complete
85b3e6fb5238: Pull complete
56d09d835ca3: Pull complete
ef2451c0f597: Pull complete
2b3cb1cd78db: Pull complete
f7e55e482850: Pull complete
9095eba13757: Pull complete
b11a645ec861: Pull complete
b9a0496e02be: Downloading [=====>] 22.08MB/82.63MB
b9a0496e02be: Pull complete
9f8132ecfa88: Pull complete
Digest: sha256:e7321ad71ad001c10942db594947d2b5d5f287a4fff6287a62dc53509f42c4de
Status: Downloaded newer image for prestashop/prestashop:latest
7ad27f9c5d79a2722e8964dc5d761677c8b1f88d27dd83f0a1a8a9d8c766d162ah

```

```

ddumanoir@Ynov:~/docker$ docker exec -it prestashop-container bash
root@2ad22f95d29a:/var/www/html# psql -h database-container -U admin -d studentdb -W
bash: psql: command not found
root@2ad22f95d29a:/var/www/html# apt-get update
Get:1 http://deb.debian.org/debian bookworm InRelease [151 kB]
Get:2 http://deb.debian.org/debian bookworm-updates InRelease [52.1 kB]
Get:3 http://deb.debian.org/debian-security bookworm-security InRelease [48.0 kB]
Get:4 http://deb.debian.org/debian bookworm/main amd64 Packages [8780 kB]
Get:5 http://deb.debian.org/debian bookworm-updates/main amd64 Packages [6668 B]
Get:6 http://deb.debian.org/debian-security bookworm-security/main amd64 Packages [106 kB]
Fetched 9144 kB in 1min 3s (145 kB/s)
Reading package lists... Done
root@2ad22f95d29a:/var/www/html# apt-get install postgresql-client
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libpq5 netbase postgresql-client-15 postgresql-client-common sensible-utils
Suggested packages:
  postgresql-15 postgresql-doc-15
The following NEW packages will be installed:
  libpq5 netbase postgresql-client postgresql-client-15 postgresql-client-common sensible-utils
0 upgraded, 6 newly installed, 0 to remove and 27 not upgraded.
Need to get 1961 kB of archives.
After this operation, 9208 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://deb.debian.org/debian bookworm/main amd64 netbase all 6.4 [12.8 kB]
Get:2 http://deb.debian.org/debian bookworm/main amd64 sensible-utils all 0.0.17+nmu1 [19.0 kB]
Get:3 http://deb.debian.org/debian-security bookworm-security/main amd64 libpq5 amd64 15.5-0+deb12u1 [187 kB]
Get:4 http://deb.debian.org/debian bookworm/main amd64 postgresql-client-common all 248 [35.1 kB]
Get:5 http://deb.debian.org/debian-security bookworm-security/main amd64 postgresql-client-15 amd64 15.5-0+deb12u1 [1697 kB]
Get:6 http://deb.debian.org/debian bookworm/main amd64 postgresql-client all 15+248 [10.1 kB]
Fetched 1961 kB in 22s (88.8 kB/s)
debconf: delaying package configuration, since apt-utils is not installed

```

On voit qu'on se connecte à la base de données via le conteneur prestashop :

```

root@2ad22f95d29a:/var/www/html# psql -h database-container -U admin -d studentdb -W
Password:
psql (15.5 (Debian 15.5-0+deb12u1), server 16.1 (Debian 16.1-1.pgdg120+1))
WARNING: psql major version 15, server major version 16.
        Some psql features might not work.
Type "help" for help.

studentdb=#

```

TASK 2 :

-Ensuite, nous avons créé les réseaux :

Commandes utilisées :

```
docker network create --subnet=10.0.0.0/24 ynov-frontend-network
```

```
docker network create --subnet=10.0.1.0/24 ynov-backend-network
```

```
ddumanoir@Ynov:~/docker$ docker network create --subnet=10.0.0.0/24 ynov-frontend-network
252e544c625070e86760fadcd971316b23f234dc7237bc2cec7da72ce26baae6
ddumanoir@Ynov:~/docker$ docker network create --subnet=10.0.1.0/24 ynov-backend-network
32cc4153b7e8cc5a7974f43014e212425f71c4aa55c94ebe6ecb2558d43e602d
```

-Nous avons connecté chaque container à leurs réseaux respectifs en le déconnectant du réseau auxquels ils étaient déjà reliés (dans le but de les mettre dans deux réseaux distinctifs) :

Commandes utilisées :

```
docker network connect ynov-frontend-network prestashop-container
```

```
docker network connect ynov-backend-network database-container
```

```
docker network disconnect prestashop-network prestashop-container
```

```
docker network disconnect prestashop-network database-container
```

-Nous avons ensuite procédé à la création du routeur puis nous l'avons connecté au réseau.

Commandes utilisées :

```
docker run --name gateway-container --network ynov-frontend-network --cap-add NET_ADMIN --
cap-add SYS_MODULE --sysctl net.ipv4.ip_forward=1 -v /lib/modules:/lib/modules:ro -d nginx:latest
```

```
docker network connect ynov-backend-network gateway-container
```

```
ddumanoir@Ynov:~/docker$ docker run --name gateway-container --network ynov-frontend-network --cap-add NET_ADMIN --cap-add SYS_MODULE
--sysctl net.ipv4.ip_forward=1 -v /lib/modules:/lib/modules:ro -d nginx:latest
63324cc6539a37b37fc8ebab3528360eafcfb828b6cfa237a5167afbcac8b6bb
ddumanoir@Ynov:~/docker$ docker network connect ynov-backend-network gateway-container
```

```

{
  "Name": "ynov-frontend-network",
  "Id": "252e544c625070e86760fadcd971316b23f234dc7237bc2cec7da72ce26baae6",
  "Created": "2023-12-07T10:48:10.634886729+01:00",
  "Scope": "local",
  "Driver": "bridge",
  "EnableIPv6": false,
  "IPAM": {
    "Driver": "default",
    "Options": {},
    "Config": [
      {
        "Subnet": "10.0.0.0/24"
      }
    ]
  },
  "Internal": false,
  "Attachable": false,
  "Ingress": false,
  "ConfigFrom": {
    "Network": ""
  },
  "ConfigOnly": false,
  "Containers": {
    "2ad22f95d29a722c496405d261677ccb81f88423d483fe01a8e9d8c766d1620b": {
      "Name": "prestashop-container",
      "EndpointID": "e84e95929328a2433bf169c4b61db321ac756eb5316c6c29e74af1acfdc89b3d",
      "MacAddress": "02:42:0a:00:00:02",
      "IPv4Address": "10.0.0.2/24",
      "IPv6Address": ""
    },
    "63324cc6539a37b37fc8ebab3528360eafcfb828b6cfa237a5167afbcac8b6bb": {
      "Name": "gateway-container",
      "EndpointID": "c9340510439e8573e88db41e431f7b020e5ff396194cd432646d0beca2990595",
      "MacAddress": "02:42:0a:00:00:03",
      "IPv4Address": "10.0.0.3/24",
      "IPv6Address": ""
    }
  }
}

```

```

{
  "Name": "ynov-backend-network",
  "Id": "32cc4153b7e8cc5a7974f43014e212425f71c4aa55c94ebe6ecb2558d43e602d",
  "Created": "2023-12-07T10:48:58.173007345+01:00",
  "Scope": "local",
  "Driver": "bridge",
  "EnableIPv6": false,
  "IPAM": {
    "Driver": "default",
    "Options": {},
    "Config": [
      {
        "Subnet": "10.0.1.0/24"
      }
    ]
  },
  "Internal": false,
  "Attachable": false,
  "Ingress": false,
  "ConfigFrom": {
    "Network": ""
  },
  "ConfigOnly": false,
  "Containers": {
    "2f2e0df5fca2b3249ceedde70af13b848290ef9d0227ef68d5eac2efa57213e8": {
      "Name": "database-container",
      "EndpointID": "bc8bd660154bbe8e5937a259f6eded3cf404b0dc29c457db31b0f688c320e28e",
      "MacAddress": "02:42:0a:00:01:02",
      "IPv4Address": "10.0.1.2/24",
      "IPv6Address": ""
    },
    "63324cc6539a37b37fc8ebab3528360eafcfb828b6cfa237a5167afbcac8b6bb": {
      "Name": "gateway-container",
      "EndpointID": "861cf8203f804b4eb4a0f75c007b167e89b8e41c1f1b247184990c65ef02b2dd",
      "MacAddress": "02:42:0a:00:01:03",
      "IPv4Address": "10.0.1.3/24",
      "IPv6Address": ""
    }
  }
}

```

-Nous avons installé le module ip sur le conteneur comme il n'existait pas :

Commandes utilisées :

Docker exec -it gateway-container bash

apt-get update

apt-get install -y iproute2

exit

```
ddumanoir@Ynov:~$ docker exec -it gateway-container bash
root@14435c3301a1:/# apt-get update
apt-get install -y iproute2
```

-Nous installons également la commande ping pour essayer de ping la base de données puis prestashop depuis la passerelle :

Commandes utilisées :

docker exec -it gateway-container bash

apt-get update

apt-get install -y iproute2

apt-get install -y iputils-ping

exit

```
root@63324cc6539a:/# ping 10.0.1.2
PING 10.0.1.2 (10.0.1.2) 56(84) bytes of data.
64 bytes from 10.0.1.2: icmp_seq=1 ttl=64 time=0.259 ms
64 bytes from 10.0.1.2: icmp_seq=2 ttl=64 time=0.061 ms
64 bytes from 10.0.1.2: icmp_seq=3 ttl=64 time=0.059 ms
^C
--- 10.0.1.2 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2040ms
rtt min/avg/max/mdev = 0.059/0.126/0.259/0.093 ms
root@63324cc6539a:/# ping 10.0.0.2
PING 10.0.0.2 (10.0.0.2) 56(84) bytes of data.
64 bytes from 10.0.0.2: icmp_seq=1 ttl=64 time=0.253 ms
64 bytes from 10.0.0.2: icmp_seq=2 ttl=64 time=0.060 ms
64 bytes from 10.0.0.2: icmp_seq=3 ttl=64 time=0.098 ms
^C
--- 10.0.0.2 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2036ms
```