

Урок 3. Введение в Docker

Задание:

- 1) запустить контейнер с БД, отличной от mariaDB, используя инструкции на сайте: <https://hub.docker.com/>
- 2) добавить в контейнер hostname такой же, как hostname системы через переменную
- 3) заполнить БД данными через консоль
- 4) запустить phpmyadmin (в контейнере) и через веб проверить, что все введенные данные доступны
- 5)* (не обязательно) настроить связку postgresql + adminer

Установка Docker:

```
1) for pkg in docker.io docker-doc docker-compose podman-docker containerd
runc; do sudo apt-get remove $pkg; done

2) # Add Docker's official GPG key:

sudo apt-get update

sudo apt-get install ca-certificates curl gnupg

sudo install -m 0755 -d /etc/apt/keyrings

curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor -
o /etc/apt/keyrings/docker.gpg

sudo chmod a+r /etc/apt/keyrings/docker.gpg

# Add the repository to Apt sources:

echo \

    "deb [arch="$(dpkg --print-architecture)"
signed-by=/etc/apt/keyrings/docker.gpg]
https://download.docker.com/linux/ubuntu \

    "$(. /etc/os-release && echo "$VERSION_CODENAME")" stable" | \

    sudo tee /etc/apt/sources.list.d/docker.list > /dev/null

sudo apt-get update
```

3) `sudo apt-get install docker-ce docker-ce-cli containerd.io docker-buildx-plugin docker-compose-plugin`

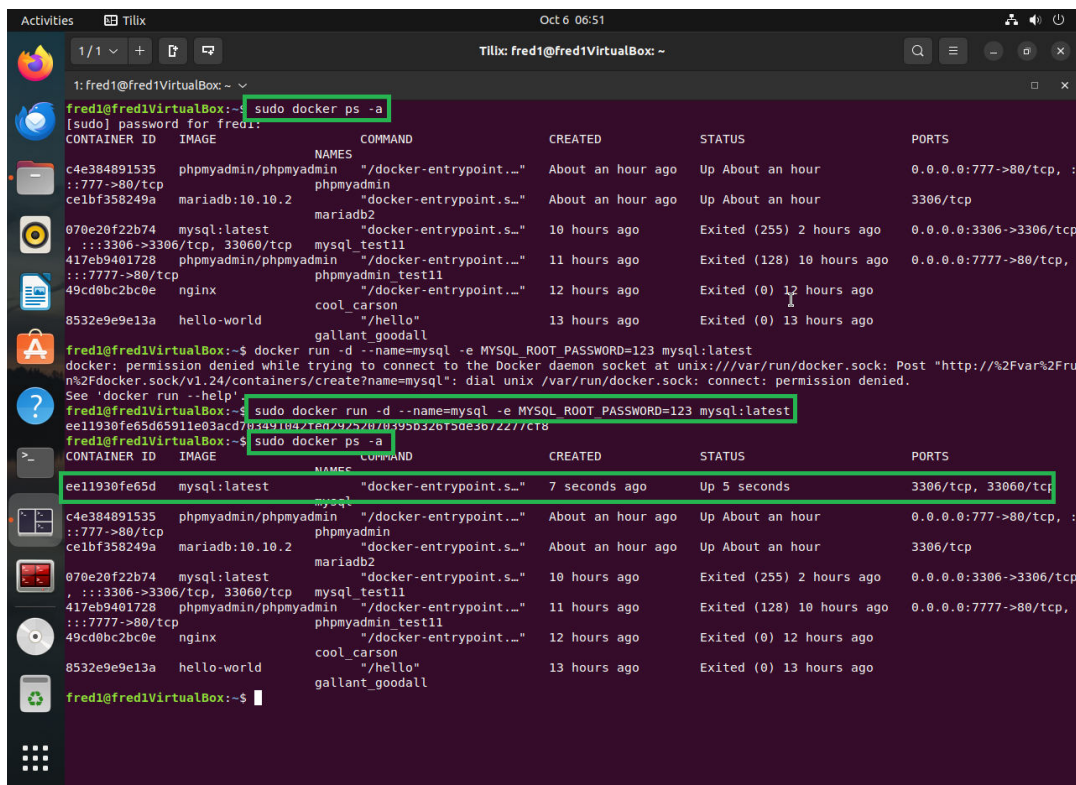
4) `sudo docker run hello-world`

Установка либо запускаем MYSQL:

1) `docker run --name mysql -e MYSQL_ROOT_PASSWORD=123 -d mysql:lates`

либо вот так:

1) `docker run -d --name=mysql -e MYSQL_ROOT_PASSWORD=123 mysql:latest`

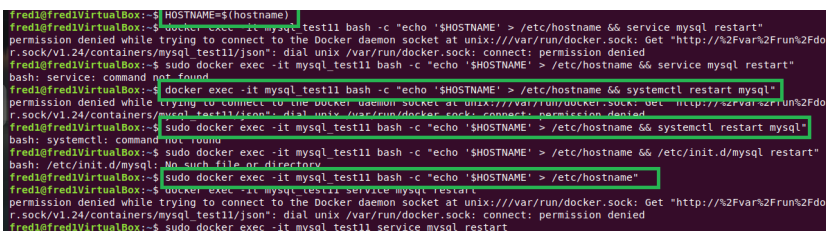


```
1: fred1@fred1VirtualBox: ~  
fred1@fred1VirtualBox:~$ sudo docker ps -a  
[sudo] password for fred1:  
CONTAINER ID   IMAGE          NAMES      COMMAND          CREATED        STATUS        PORTS  
c4e384891535   phpmyadmin/phpmyadmin   "/docker-entrypoint.s..."   About an hour ago   Up About an hour   0.0.0.0:777->80/tcp, :  
:777->80/tcp    phpmyadmin  
ce1bf358249a   mariadb:10.10.2   "docker-entrypoint.s..."   About an hour ago   Up About an hour   3306/tcp  
070e20f22b74   mysql:latest      "docker-entrypoint.s..."   10 hours ago       Exited (255) 2 hours ago   0.0.0.0:3306->3306/tcp  
:3306->3306/tcp mysql_test11  
417eb9401728   phpmyadmin/phpmyadmin   "/docker-entrypoint.s..."   11 hours ago       Exited (128) 10 hours ago   0.0.0.0:7777->80/tcp,  
:7777->80/tcp    phpmyadmin_test11  
49cd0bc2bc0e   nginx             "docker-entrypoint.s..."   12 hours ago       Exited (0) 12 hours ago  
8532e9e9e13a   hello-world       "/hello"                  13 hours ago       Exited (0) 13 hours ago  
gallant_goodall  
fred1@fred1VirtualBox:~$ docker run -d --name=mysql -e MYSQL_ROOT_PASSWORD=123 mysql:latest  
docker: permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Post "http://%2Fvar%2Frun%2Fdocker.sock/v1.24/containers/create?name=mysql": dial unix /var/run/docker.sock: connect: permission denied.  
See 'docker run --help'.  
fred1@fred1VirtualBox:~$ sudo docker run -d --name=mysql -e MYSQL_ROOT_PASSWORD=123 mysql:latest  
eel1930fe65d5911e03acd7834918a77e74757070395032675de3672277cf8  
fred1@fred1VirtualBox:~$ sudo docker ps -a  
CONTAINER ID   IMAGE          NAMES      COMMAND          CREATED        STATUS        PORTS  
eel1930fe65d   mysql:latest    "docker-entrypoint.s..."   7 seconds ago   Up 5 seconds   3306/tcp, 33060/tcp  
c4e384891535   phpmyadmin/phpmyadmin   "/docker-entrypoint.s..."   About an hour ago   Up About an hour   0.0.0.0:777->80/tcp, :  
:777->80/tcp    phpmyadmin  
ce1bf358249a   mariadb:10.10.2   "docker-entrypoint.s..."   About an hour ago   Up About an hour   3306/tcp  
070e20f22b74   mysql:latest      "docker-entrypoint.s..."   10 hours ago       Exited (255) 2 hours ago   0.0.0.0:3306->3306/tcp  
:3306->3306/tcp mysql_test11  
417eb9401728   phpmyadmin/phpmyadmin   "/docker-entrypoint.s..."   11 hours ago       Exited (128) 10 hours ago   0.0.0.0:7777->80/tcp,  
:7777->80/tcp    phpmyadmin_test11  
49cd0bc2bc0e   nginx             "docker-entrypoint.s..."   12 hours ago       Exited (0) 12 hours ago  
8532e9e9e13a   hello-world       "/hello"                  13 hours ago       Exited (0) 13 hours ago  
gallant_goodall  
fred1@fred1VirtualBox:~$
```

этот шаг не обязательно :

2) `HOSTNAME=$(hostname)`

`docker exec -it test11 bash -c "echo '$HOSTNAME' > /etc/hostname && service mysql restart"`



```
fred1@fred1VirtualBox:~$ HOSTNAME=$(hostname)  
fred1@fred1VirtualBox:~$ docker exec -it test11 bash -c "echo '$HOSTNAME' > /etc/hostname && service mysql restart"  
permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Get "http://%2Fvar%2Frun%2Fdocker.sock/v1.24/containers/mysql_test11/json": dial unix /var/run/docker.sock: connect: permission denied  
fred1@fred1VirtualBox:~$ sudo docker exec -it mysql_test11 bash -c "echo '$HOSTNAME' > /etc/hostname && service mysql restart"  
bash: service: command not found  
fred1@fred1VirtualBox:~$ docker exec -it mysql_test11 bash -c "echo '$HOSTNAME' > /etc/hostname && systemctl restart mysql"  
permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Get "http://%2Fvar%2Frun%2Fdocker.sock/v1.24/containers/mysql_test11/json": dial unix /var/run/docker.sock: connect: permission denied  
fred1@fred1VirtualBox:~$ sudo docker exec -it mysql_test11 bash -c "echo '$HOSTNAME' > /etc/hostname && systemctl restart mysql"  
bash: systemctl: command not found  
fred1@fred1VirtualBox:~$ sudo docker exec -it mysql_test11 bash -c "echo '$HOSTNAME' > /etc/hostname && /etc/init.d/mysql restart"  
bash: /etc/init.d/mysql: No such file or directory  
fred1@fred1VirtualBox:~$ sudo docker exec -it mysql_test11 bash -c "echo '$HOSTNAME' > /etc/hostname"  
fred1@fred1VirtualBox:~$ docker exec -it mysql_test11 service mysql restart  
permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Get "http://%2Fvar%2Frun%2Fdocker.sock/v1.24/containers/mysql_test11/json": dial unix /var/run/docker.sock: connect: permission denied  
fred1@fred1VirtualBox:~$ sudo docker exec -it mysql_test11 service mysql restart
```

Заходим в MYSQL и настраиваем базу данных:

3) docker exec -it test11 mysql -uroot -p

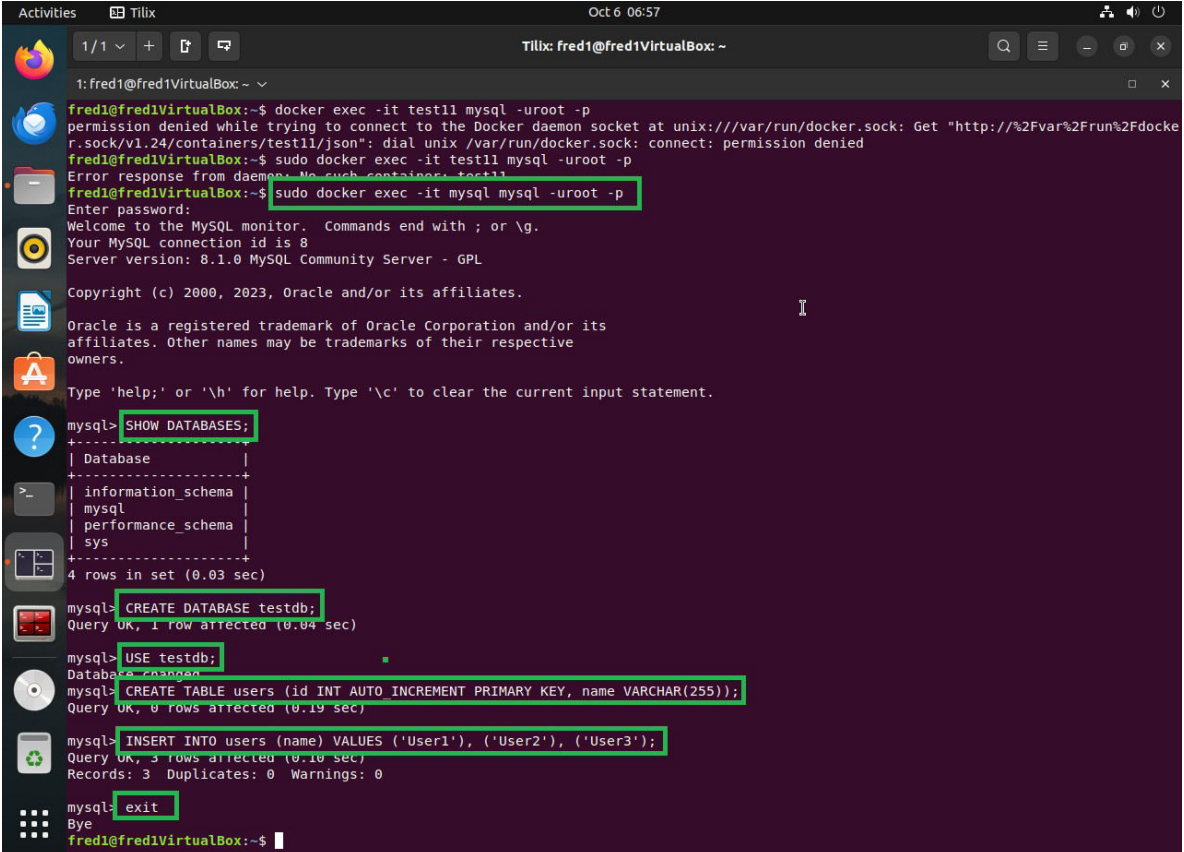
4) CREATE DATABASE testdb;

USE testdb;

CREATE TABLE users (id INT AUTO_INCREMENT PRIMARY KEY, name VARCHAR(255));

INSERT INTO users (name) VALUES ('User1'), ('User2'), ('User3');

exit



```
Activities  Tilix  Oct 6 06:57
1/1  +  [share icon]  [refresh icon]  [close icon]
Tilix: fred1@fred1VirtualBox: ~

fred1@fred1VirtualBox:~$ docker exec -it test11 mysql -uroot -p
permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Get "http://%2Fvar%2Frun%2Fdocker.sock/v1.24/containers/test11/json": dial unix /var/run/docker.sock: connect: permission denied
fred1@fred1VirtualBox:~$ sudo docker exec -it test11 mysql -uroot -p
Error response from daemon: No such container: test11
fred1@fred1VirtualBox:~$ sudo docker exec -it mysql mysql -uroot -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.1.0 MySQL Community Server - GPL

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> SHOW DATABASES;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sys |
+-----+
4 rows in set (0.03 sec)

mysql> CREATE DATABASE testdb;
Query OK, 1 row affected (0.04 sec)

mysql> USE testdb;
Database changed

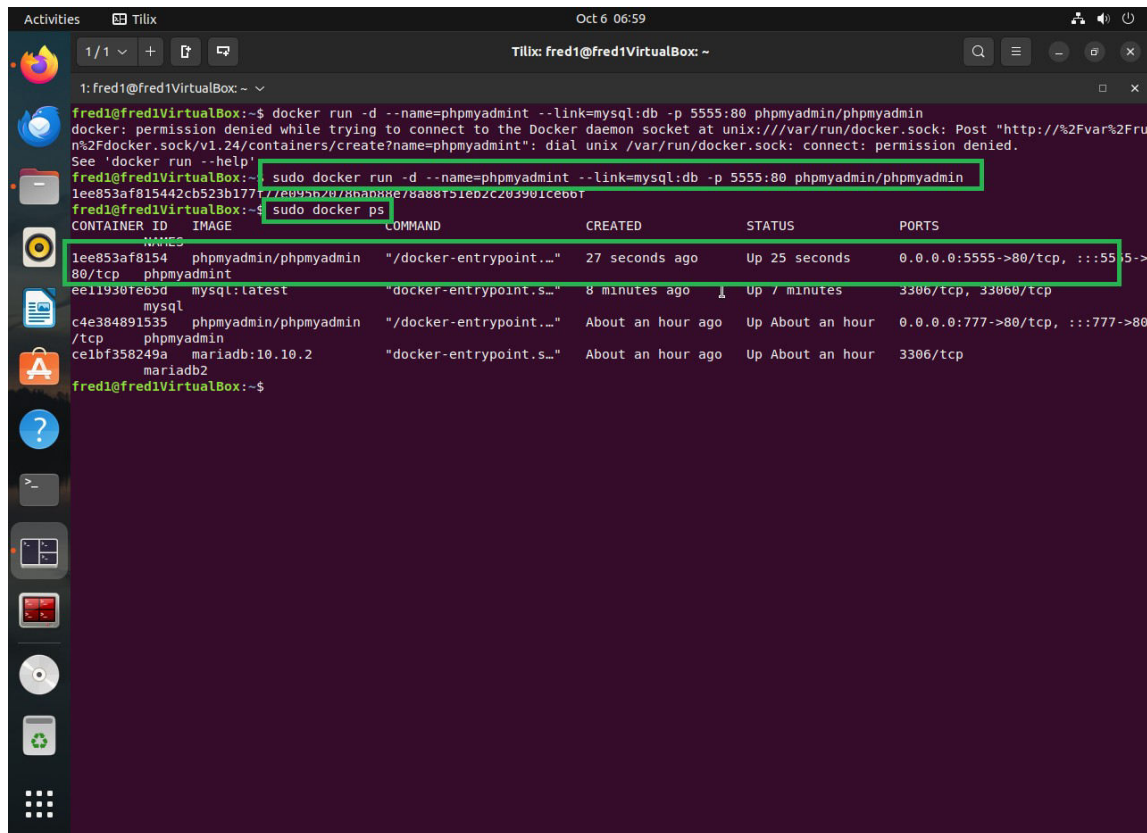
mysql> CREATE TABLE users (id INT AUTO_INCREMENT PRIMARY KEY, name VARCHAR(255));
Query OK, 0 rows affected (0.19 sec)

mysql> INSERT INTO users (name) VALUES ('User1'), ('User2'), ('User3');
Query OK, 3 rows affected (0.10 sec)
Records: 3 Duplicates: 0 Warnings: 0

mysql> exit
Bye
fred1@fred1VirtualBox:~$
```

Устанавливаем либо запускаем PHPMYADMIN:

5) `docker run -d --name=phpmyadmin --link=mysql:db -p 5555:80 phpmyadmin/phpmyadmin`

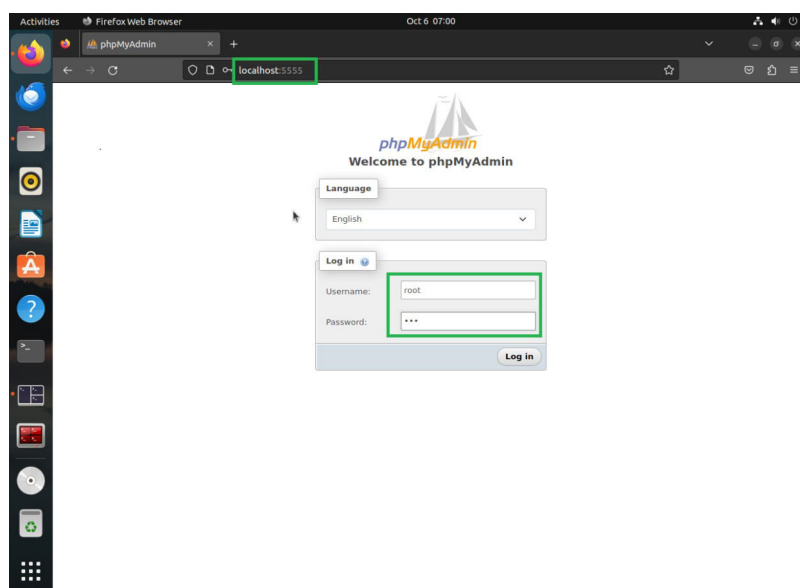


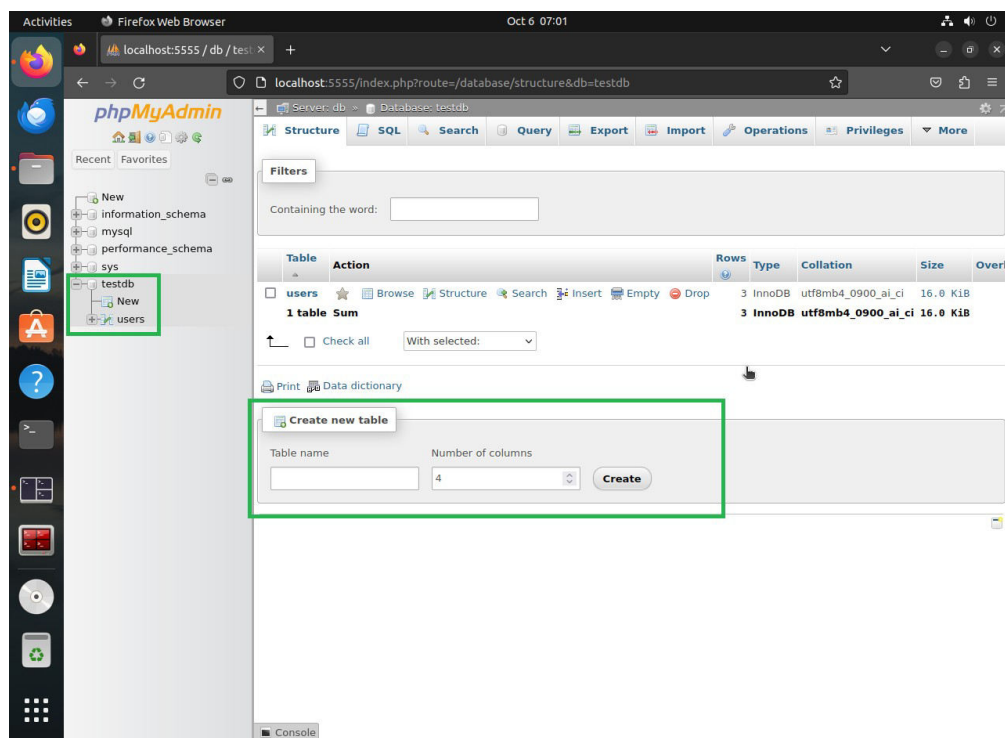
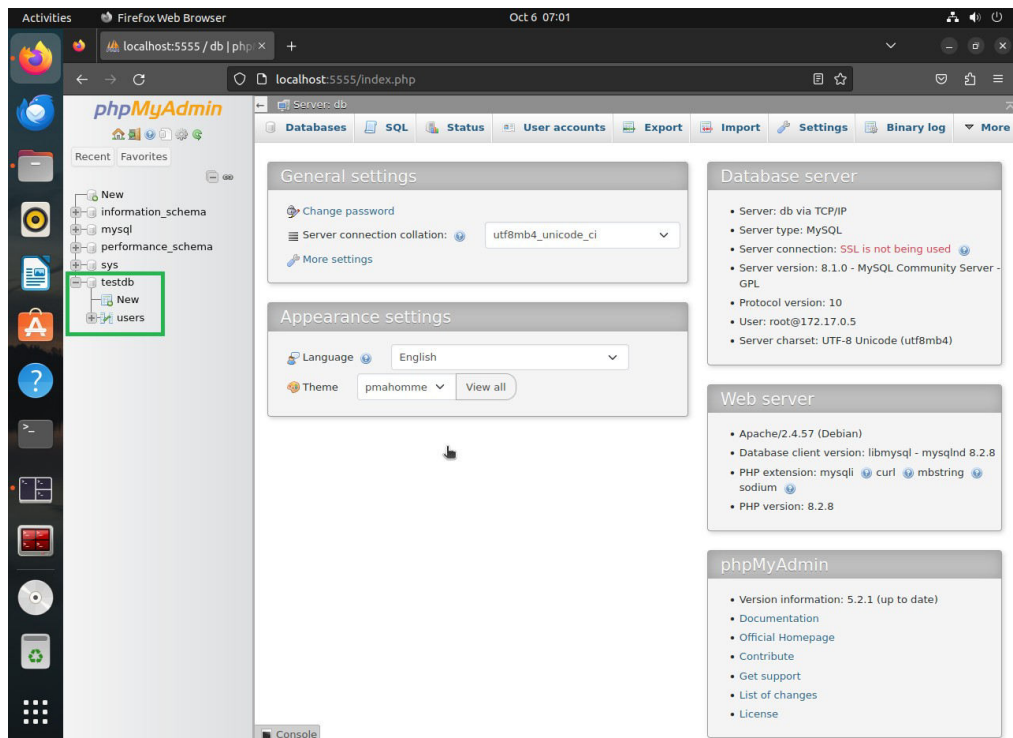
The terminal window shows the execution of the Docker command to run phpmyadmin. The command is: `docker run -d --name=phpmyadmin --link=mysql:db -p 5555:80 phpmyadmin/phpmyadmin`. The output shows the container is created and running. Below the command, a table lists the containers:

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS
1ee853af8154	phpmyadmin/phpmyadmin	"/docker-entrypoint.s..."	27 seconds ago	Up 25 seconds	0.0.0.0:5555->80/tcp, :::5555->80/tcp
ee11938f6b5d	mysql:latest	"docker-entrypoint.s..."	8 minutes ago	Up / minutes	3306/tcp, 33060/tcp
c4e384891535	phpmyadmin/phpmyadmin	"/docker-entrypoint.s..."	About an hour ago	Up About an hour	0.0.0.0:777->80/tcp, :::777->80
celbf358249a	mariadb:10.10.2	"docker-entrypoint.s..."	About an hour ago	Up About an hour	3306/tcp

Заходим в PHPMYADMIN через браузер:

6) <http://localhost:5555>





Задача №5 установить контейнеры postgresql + adminer, настроить связку postgresql + adminer и запустить их

1) Затем создайте Docker-контейнер для PostgreSQL:

```
sudo docker run --name postgres -e POSTGRES_PASSWORD=123 -d -p 5432:5432 postgres
```

2) Заходим в контейнер PostgreSQL:

```
sudo docker exec -it postgres bash
```

3) После входа в контейнер выполните следующую команду для входа в интерактивную оболочку PostgreSQL:

```
psql -U postgres
```

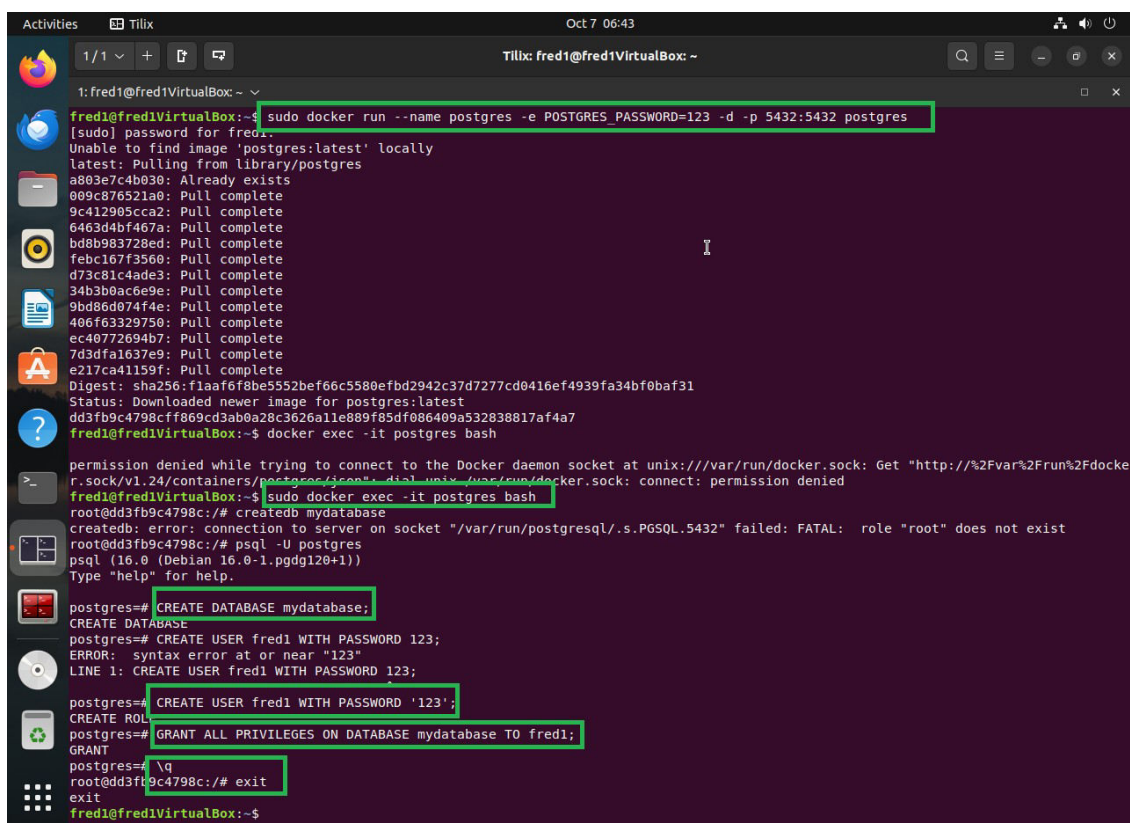
4) Создаем базу данных `mydatabase` и, при необходимости, нового пользователя с правами на эту базу данных:

```
CREATE DATABASE mydatabase;
```

```
CREATE USER fred1 WITH PASSWORD '123';
```

```
GRANT ALL PRIVILEGES ON DATABASE mydatabase TO fred1;
```

```
\q  
exit
```

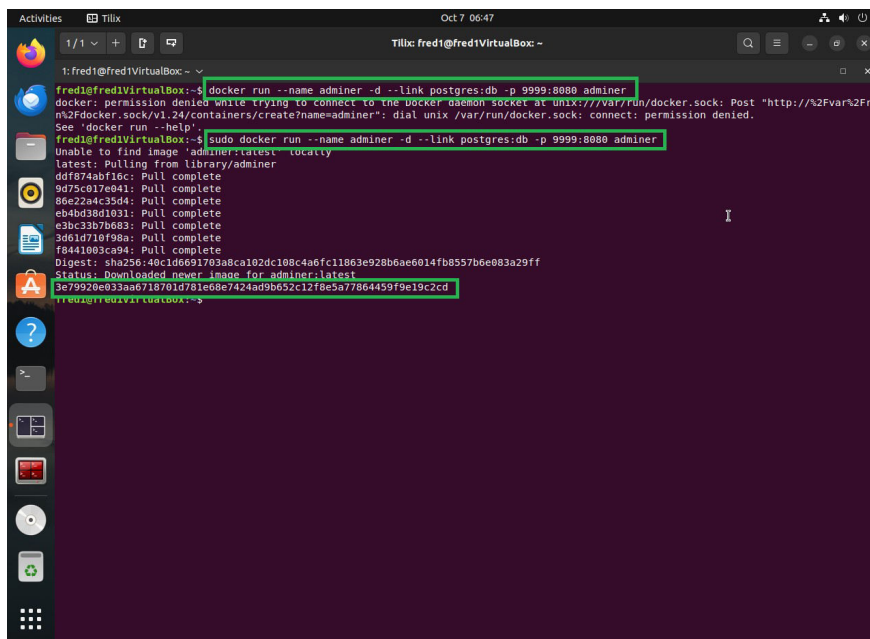


```
Activities Tilix Oct 7 06:43  
Tilix: fred1@fred1VirtualBox: ~  
1: fred1@fred1VirtualBox: ~  
fred1@fred1VirtualBox:~$ sudo docker run --name postgres -e POSTGRES_PASSWORD=123 -d -p 5432:5432 postgres  
[sudo] password for fred1:  
Unable to find image 'postgres:latest' locally  
latest: Pulling from library/postgres  
a803e7c4b030: Already exists  
009c876521a0: Pull complete  
9c412905cca2: Pull complete  
6463d4bf467a: Pull complete  
bd8b983728ed: Pull complete  
febcb67f3560: Pull complete  
d73c81c4ade3: Pull complete  
34b3b0ac6e9e: Pull complete  
9bd86d074f4e: Pull complete  
406f63329750: Pull complete  
ec40772694b7: Pull complete  
7d3dfa1637e9: Pull complete  
e217ca41159f: Pull complete  
Digest: sha256:f1aaf6f8be5552bef66c5580efbd2942c37d727cd0416ef4939fa34bf0baf31  
Status: Downloaded newer image for postgres:latest  
dd3fb9c4798cfff869cd3ab0a28c3626a11e889f85df086409a532838817af4a7  
fred1@fred1VirtualBox:~$ docker exec -it postgres bash  
permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Get "http://%2Fvar%2Frun%2Fdocker.sock/v1.24/containers/postgres/json?context=unix:///var/run/docker.sock: connect: permission denied  
fred1@fred1VirtualBox:~$ sudo docker exec -it postgres bash  
root@dd3fb9c4798c:/# createdb mydatabase  
createdb: error: connection to server on socket "/var/run/postgresql/.s.PGSQL.5432" failed: FATAL: role "root" does not exist  
root@dd3fb9c4798c:/# psql -U postgres  
psql (16.0 (Debian 16.0-1.pgdg120+1))  
Type "help" for help.  
postgres=# CREATE DATABASE mydatabase;  
CREATE DATABASE  
postgres=# CREATE USER fred1 WITH PASSWORD 123;  
ERROR: syntax error at or near "123"  
LINE 1: CREATE USER fred1 WITH PASSWORD 123;  
postgres=# CREATE USER fred1 WITH PASSWORD '123';  
CREATE ROLE  
postgres=# GRANT ALL PRIVILEGES ON DATABASE mydatabase TO fred1;  
GRANT  
postgres=# \q  
root@dd3fb9c4798c:/# exit  
exit  
fred1@fred1VirtualBox:~$
```


5) Теперь создайте Docker-контейнер для Adminer, который позволит вам управлять PostgreSQL через веб-интерфейс:

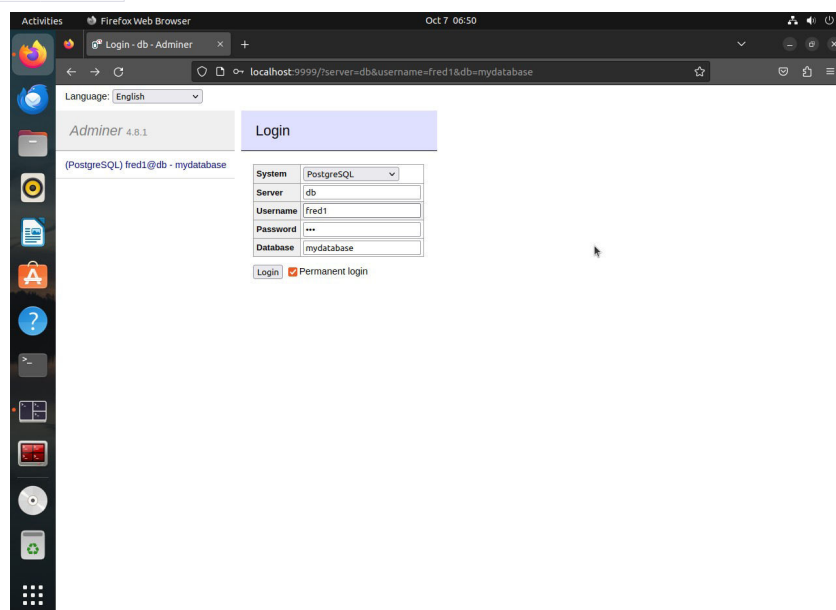
```
sudo docker run --name adminer -d --link postgres:db -p 9999:8080 adminer
```

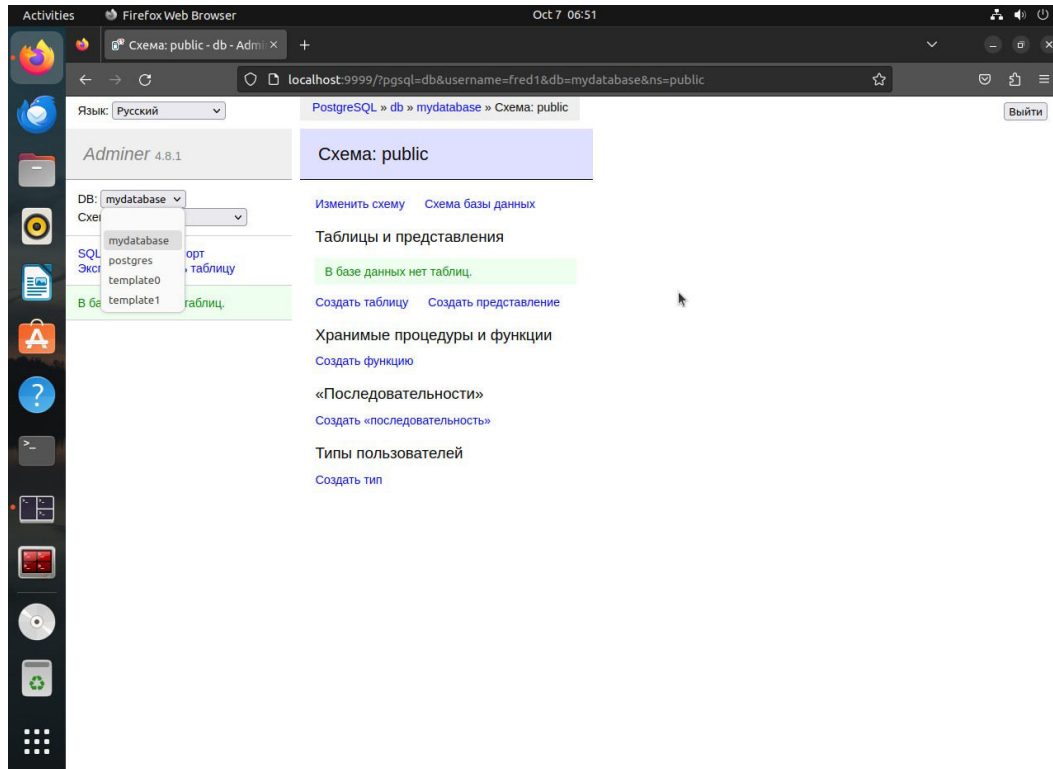
Здесь `--name adminer` устанавливает имя контейнера Adminer, `--link postgres:db` создает ссылку на контейнер PostgreSQL под именем `db`, а `-p 9999:8080` перенаправляет порт Adminer на порт вашей машины, а `-d` запускает контейнер в фоновом режиме.



```
fred1@fred1VirtualBox:~$ docker run --name adminer -d --link postgres:db -p 9999:8080 adminer
docker: permission denied while trying to connect to the docker daemon socket at unix:///var/run/docker.sock: Post "http://%2Fvar%2Frun%2Fdocker.sock/v1.24/containers/create?name=adminer": dial unix /var/run/docker.sock: connect: permission denied.
See 'docker run --help'.
fred1@fred1VirtualBox:~$ sudo docker run --name adminer -d --link postgres:db -p 9999:8080 adminer
Unable to find image 'adminer:latest' locally
latest: Pulling from library/adminer
ddfb74abf16c: Pull complete
9d75c917eb41: Pull complete
86e224c35d4: Pull complete
eb4bd38d1031: Pull complete
e3bc33b7b683: Pull complete
3d61d710f98a: Pull complete
f8441003ca94: Pull complete
Digest: sha256:40c1d6691703a8ca102dc108c4a6fc11863e928b6ae6014fb8557b6e083a29ff
Status: Downloaded newer image for adminer:latest
3e79920e033aa6718701d781e08e7424ad9b652c12f8e5a77864459f9e19c2cd
fred1@fred1VirtualBox:~$
```

6) Теперь открываем Adminer в веб-браузере, перейдем по адресу <http://localhost:9999>. Либо так <http://127.0.0.0:9999/>



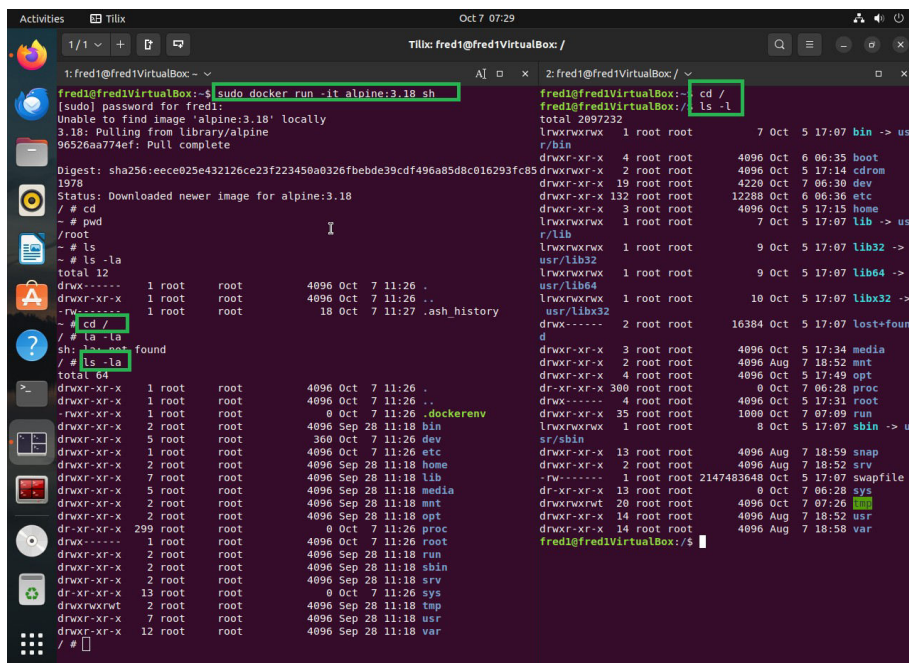


Повторяем команды набранные на семинаре:

1) `sudo docker run -it alpine:3.18 sh`

`_> cd /`

`_> ls -l`




```
Activities Tilix Oct 7 07:35
1: fred1@fred1VirtualBox: ~
total 64
drwxr-xr-x 1 root root 4096 Oct 7 11:26 .
drwxr-xr-x 1 root root 4096 Oct 7 11:26 ..
-rwxr-xr-x 1 root root 0 Oct 7 11:26 .dockerenv
drwxr-xr-x 2 root root 4096 Sep 28 11:18 bin
drwxr-xr-x 5 root root 360 Oct 7 11:26 dev
drwxr-xr-x 1 root root 4096 Oct 7 11:26 etc
drwxr-xr-x 2 root root 4096 Sep 28 11:18 home
drwxr-xr-x 7 root root 4096 Sep 28 11:18 lib
drwxr-xr-x 5 root root 4096 Sep 28 11:18 media
drwxr-xr-x 2 root root 4096 Sep 28 11:18 mnt
drwxr-xr-x 2 root root 4096 Sep 28 11:18 opt
dr-xr-xr-x 299 root root 0 Oct 7 11:26 proc
drwx----- 1 root root 4096 Oct 7 11:26 root
drwxr-xr-x 2 root root 4096 Sep 28 11:18 run
drwxr-xr-x 2 root root 4096 Sep 28 11:18/sbin
drwxr-xr-x 2 root root 4096 Sep 28 11:18/srv
dr-xr-xr-x 13 root root 0 Oct 7 11:26 sys
drwxr-xr-x 2 root root 4096 Sep 28 11:18/tmp
drwxr-xr-x 7 root root 4096 Sep 28 11:18/usr
drwxr-xr-x 12 root root 4096 Sep 28 11:18/var
/ # ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid lft forever preferred lft forever
8: eth0@if9: <BROADCAST,MULTICAST,UP,LOWER_UP,M-DOWN> mtu 1500 qdisc noqueue state UP
    link/ether 02:42:5f:79:93:93 brd ff:ff:ff:ff:ff:ff
    inet 172.17.0.4/16 brd 172.17.255.255 scope global eth0
        valid lft forever preferred lft forever
    vnet0 veth 02:42:5f:79:93:93:11:00:04 brd ff:ff:ff:ff:ff:ff
/ # ping 192.168.1.69
PING 192.168.1.69 (192.168.1.69): 56 data bytes
64 bytes from 192.168.1.69: seq=0 ttl=64 time=0.235 ms
64 bytes from 192.168.1.69: seq=1 ttl=64 time=0.091 ms
64 bytes from 192.168.1.69: seq=2 ttl=64 time=0.055 ms
^Z[1]+ Stopped ping 192.168.1.69
/ # ping 172.17.0.1
PING 172.17.0.1 (172.17.0.1): 56 data bytes
64 bytes from 172.17.0.1: seq=0 ttl=64 time=0.058 ms
64 bytes from 172.17.0.1: seq=1 ttl=64 time=0.084 ms
64 bytes from 172.17.0.1: seq=2 ttl=64 time=0.373 ms
^Z[2]+ Stopped ping 172.17.0.1
/ #
```

```
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc
c fq_codel state UP group default qlen 1000
    link/ether 08:00:27:e9:77:86 brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.69/24 brd 192.168.1.255 scope global dy
        valid lft 82591sec preferred lft 82591sec
    inet6 fe80::506f:c6e0:65d1:2e2f/64 scope link noprefi
route
        valid lft forever preferred lft forever
3: docker0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qd
sc noqueue state UP group default
    link/ether 02:42:5f:79:93:93 brd ff:ff:ff:ff:ff:ff
    inet 172.17.0.1/16 brd 172.17.255.255 scope global doc
        valid lft forever preferred lft forever
    inet6 fe80::42:5fff:fe79:9393/64 scope link
        valid lft forever preferred lft forever
5: veth12b05a@if4: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu
1500 qdisc noqueue master docker0 state UP group default
    link/ether ca:f7:bc:54:a2:00 brd ff:ff:ff:ff:ff:ff lin
k-netnsid 0
    inet6 fe80::c8f7:bcff:fe54:a200/64 scope link
        valid lft forever preferred lft forever
7: vethd1fd3c@if6: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu
1500 qdisc noqueue master docker0 state UP group default
    link/ether 32:8d:92:3d:90:89 brd ff:ff:ff:ff:ff:ff lin
k-netnsid 1
    inet6 fe80::308d:92ff:fe3d:9089/64 scope link
        valid lft forever preferred lft forever
9: veth6aa5b2@if8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu
1500 qdisc noqueue master docker0 state UP group default
    link/ether ea:20:f6:d5:53:49 brd ff:ff:ff:ff:ff:ff lin
k-netnsid 2
    inet6 fe80::e820:f6ff:fed5:5349/64 scope link
        valid lft forever preferred lft forever
fred1@fred1VirtualBox:/$ ping 172.17.0.4
PING 172.17.0.4 (172.17.0.4): 56 data bytes
64 bytes from 172.17.0.4: icmp seq=1 ttl=64 time=0.082 ms
64 bytes from 172.17.0.4: icmp seq=2 ttl=64 time=0.059 ms
64 bytes from 172.17.0.4: icmp seq=3 ttl=64 time=0.134 ms
64 bytes from 172.17.0.4: icmp seq=4 ttl=64 time=0.089 ms
64 bytes from 172.17.0.4: icmp seq=5 ttl=64 time=0.079 ms
^Z
[1]+ Stopped ping 172.17.0.4
fred1@fred1VirtualBox:/$
```

интерактивный режим -it и бэкграунд режим -d

```
Activities Tilix Oct 7 07:45
1: root@fred1VirtualBox: /home/fred1
fred1@fred1VirtualBox:~$ sudo su
[sudo] password for fred1:
root@fred1VirtualBox: /home/fred1# docker ps
CONTAINER ID   IMAGE      COMMAND                  CREATED    STATUS    PORTS
3e79920e033a   adminer   "entrypoint.sh php ..." 56 minutes ago    Up 56 minutes    0.0.0.0:9999->8080/tcp, :::9999->8080/tcp
adminer
dd3fb9c4798c   postgres "docker-entrypoint.s..." About an hour ago    Up About an hour    0.0.0.0:5432->5432/tcp, :::5432->5432/tcp
postgres
root@fred1VirtualBox: /home/fred1# docker ps -a
CONTAINER ID   IMAGE      COMMAND                  CREATED    STATUS    PORTS
a3bf0f163e8d   alpine:3.18 "sh"                    17 minutes ago    Exited (0) 2 minutes ago
wizordty-aryubkoto
3e79920e033a   adminer   "entrypoint.sh php ..." 57 minutes ago    Up 57 minutes    0.0.0.0:9999->8080/tcp, :::9999->8080/tcp
dd3fb9c4798c   postgres "docker-entrypoint.s..." About an hour ago    Up About an hour    0.0.0.0:5432->5432/tcp, :::5432->5432/tcp
1ee853af8154   phpmyadmin/phpmyadmin "docker-entrypoint.s..." 25 hours ago    Exited (255) About an hour ago    0.0.0.0:5555->8080/tcp, :::5555->8080/tcp
ee11930fe65d   mysql:latest "docker-entrypoint.s..." 25 hours ago    Exited (255) About an hour ago    3306/tcp, 33060/tcp
c4e384891535   phpmyadmin/phpmyadmin "docker-entrypoint.s..." 26 hours ago    Exited (255) About an hour ago    0.0.0.0:777->8080/tcp, :::777->8080/tcp
cp, :::777->8080/tcp
ce1bf358249a   mariadb:10.10.2 "docker-entrypoint.s..." 26 hours ago    Exited (255) About an hour ago    3306/tcp
070e20f2b74   mysql:latest "docker-entrypoint.s..." 35 hours ago    Exited (255) 27 hours ago    0.0.0.0:3306->3306/tcp, :::3306->3306/tcp
417eb9401728   phpmyadmin/phpmyadmin "docker-entrypoint.s..." 36 hours ago    Exited (128) 35 hours ago    0.0.0.0:7777->8080/tcp, :::7777->8080/tcp
49cd0bc2bc0e   nginx     "docker-entrypoint.s..." 37 hours ago    Exited (0) 37 hours ago
8532e9e9e13a   hello-world "cool carson"          38 hours ago    Exited (0) 38 hours ago
/hello/
root@fred1VirtualBox: /home/fred1# docker start a3bf0f163e8d
a3bf0f163e8d
root@fred1VirtualBox: /home/fred1# docker ps
CONTAINER ID   IMAGE      COMMAND                  CREATED    STATUS    PORTS
a3bf0f163e8d   alpine:3.18 "sh"                    18 minutes ago    Up 4 seconds
wizordty-aryubkoto
3e79920e033a   adminer   "entrypoint.sh php ..." 58 minutes ago    Up 58 minutes    0.0.0.0:9999->8080/tcp, :::9999->8080/tcp
adminer
dd3fb9c4798c   postgres "docker-entrypoint.s..." About an hour ago    Up About an hour    0.0.0.0:5432->5432/tcp, :::5432->5432/tcp
postgres
root@fred1VirtualBox: /home/fred1#
```

```
Activities  TiliX  Oct 7 07:50
1/1  +  TiliX: root@fred1VirtualBox: /home/fred1

1:root@fred1VirtualBox:/home/fred1 ~
cp c4e384891535  phpmyadmin/phpmyadmin  mysql  "/docker-entrypoint.s..." 26 hours ago  Exited (255) About an hour ago  0.0.0.0:777->80/t
cp, :::777->80/tcp  mariadb:10.10.2  phpmyadmin  "/docker-entrypoint.s..." 26 hours ago  Exited (255) About an hour ago  3306/tcp
c41bf358249a  mariadb:10.10.2  mariadb2  "/docker-entrypoint.s..." 35 hours ago  Exited (255) 27 hours ago  0.0.0.0:3306->330
070e20f22b74  mysql:latest  mysql test11  "/docker-entrypoint.s..." 36 hours ago  Exited (128) 35 hours ago  0.0.0.0:7777->80/
417eb9401728  phpmyadmin/phpmyadmin  "/docker-entrypoint.s..." 37 hours ago  Exited (0) 37 hours ago
tcp, :::7777->80/tcp  phpmyadmin_test11  "/docker-entrypoint.s..." 38 hours ago  Exited (0) 38 hours ago
49cd0bc2bc0e  nginx  cool carson  "/hello" 38 hours ago  Exited (0) 38 hours ago
8532e9e9e13a  hello-world  "/hello" 38 hours ago  Exited (0) 38 hours ago

root@fred1VirtualBox:/home/fred1# docker start a3bf0f163e8d
a3bf0f163e8d
root@fred1VirtualBox:/home/fred1# docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED    STATUS    PORTS
a3bf0f163e8d   alpine:3.18  "sh"                    18 minutes ago    Up 4 seconds
wizardly_aryabhata
3e79920e033a   adminer     "entrypoint.sh php -..." 58 minutes ago    Up 58 minutes    0.0.0.0:9999->8080/tcp, :::9999->8080/tcp
adminer
dd3fb9c4798c   postgres   "docker-entrypoint.s..." About an hour ago    Up About an hour    0.0.0.0:5432->5432/tcp, :::5432->5432/tcp
postgres
root@fred1VirtualBox:/home/fred1# docker exec -it a3bf0f163e8d sh
/ # exit
root@fred1VirtualBox:/home/fred1# docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED    STATUS    PORTS
a3bf0f163e8d   alpine:3.18  "sh"                    23 minutes ago    Up 4 minutes
wizardly_aryabhata
3e79920e033a   adminer     "entrypoint.sh php -..." About an hour ago    Up About an hour    0.0.0.0:9999->8080/tcp, :::9999->8080/tcp
adminer
dd3fb9c4798c   postgres   "docker-entrypoint.s..." About an hour ago    Up About an hour    0.0.0.0:5432->5432/tcp, :::5432->5432/tcp
postgres
root@fred1VirtualBox:/home/fred1# docker stop a3bf0f163e8d
a3bf0f163e8d
root@fred1VirtualBox:/home/fred1# docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED    STATUS    PORTS
3e79920e033a   adminer     "entrypoint.sh php -..." About an hour ago    Up About an hour    0.0.0.0:9999->8080/tcp, :::9999->8080/tcp
adminer
dd3fb9c4798c   postgres   "docker-entrypoint.s..." About an hour ago    Up About an hour    0.0.0.0:5432->5432/tcp, :::5432->5432/tcp
postgres
root@fred1VirtualBox:/home/fred1#
```

sudo docker container rm a3bf0f163e8d — удаление контейнера
sudo docker run -it -h GB ubuntu:23.10 bash
|_>apt update && apt install -y iproute2 # установка ip a

```
Activities  TiliX  Oct 7 08:05
1/1  +  TiliX: root@GB: /

1:root@GB:/ ~
fred1@fred1VirtualBox:~$ sudo docker run -it -h GB ubuntu:23.10 bash
[sudo] password for fred1:
Unable to find image 'ubuntu:23.10' locally
23.10: Pulling from library/ubuntu
97e98d3adb77: Pull complete
Digest: sha256:282510723f2be541c2facce0f7e918641bedd90936f8a76f6f38b7110e299d5c
Status: Downloaded newer image for ubuntu:23.10
root@GB:/# pwd
/
root@GB:/# ls
bin boot dev etc home lib lib64 media mnt opt proc root run sbin srv sys usr var
root@GB:/# hostname
GB
root@GB:/# ip a
bash: ip: command not found
root@GB:/# apt update && apt install -y iproute2
Get:1 http://archive.ubuntu.com/ubuntu mantic-updates InRelease [90.7 kB]
Get:2 http://security.ubuntu.com/ubuntu mantic-security InRelease [90.7 kB]
Get:3 http://archive.ubuntu.com/ubuntu mantic-updates InRelease [90.7 kB]
Get:4 http://archive.ubuntu.com/ubuntu mantic-backports InRelease [90.7 kB]
Get:5 http://archive.ubuntu.com/ubuntu mantic/multiverse amd64 Packages [293 kB]
Get:6 http://archive.ubuntu.com/ubuntu mantic/restricted amd64 Packages [229 kB]
Get:7 http://archive.ubuntu.com/ubuntu mantic/main amd64 Packages [1825 kB]
Get:8 http://archive.ubuntu.com/ubuntu mantic/universe amd64 Packages [18.8 MB]
Fetched 21.7 MB in 9s (2545 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
3 packages can be upgraded. Run 'apt list --upgradable' to see them.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  krb5-locales libatm1 libbpf1 libbsd0 libcap2-bin libelf1 libgssapi-krb5-2 libk5crypto3 libkeyutils1 libkrb5-3 libkrb5support0
  liblmn10 libpam-cap libssl3 libtirpc-common libtirpc3 libxtables12
Suggested packages:
  iproute2-doc python3:any krb5-doc krb5-user
The following NEW packages will be installed:
  iproute2 krb5-locales libatm1 libbpf1 libbsd0 libcap2-bin libelf1 libgssapi-krb5-2 libk5crypto3 libkeyutils1 libkrb5-3
  libkrb5support0 liblmn10 libpam-cap libssl3 libtirpc-common libtirpc3 libxtables12
0 upgraded, 18 newly installed, 0 to remove and 3 not upgraded.
Need to get 4132 kB of archives.
After this operation, 13.3 MB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu mantic/main amd64 libelf1 amd64 0.189-4 [56.3 kB]
Get:2 http://archive.ubuntu.com/ubuntu mantic/main amd64 libbpf1 amd64 1:1.2.2-2 [158 kB]
Get:3 http://archive.ubuntu.com/ubuntu mantic/main amd64 libbsd0 amd64 0.11.7-4 [41.4 kB]
```

часть 2 , семинар

```
169 sudo docker run --name mariadb3 -e MARIADB_ROOT_PASSWORD=123 -v  
/home/fred1/mydb5:/var/lib/mysql -d mariadb:10.10.2
```

```
170 sudo docker exec -it mariadb3 bash
```

```
171 sudo docker exec -it mariadb3 bash
```

```
172 clear
```

```
173 sudo docker ps
```

```
174 sudo docker run --name phpmyadmin3 -d --link mariadb3:db -p 999:80  
phpmyadmin/phpmyadmin
```

```
175 curl 127.0.0.1:999
```

The screenshot shows a terminal window with two panes. The left pane shows the execution of several Docker commands and the output of the 'top' command. The right pane shows the output of 'pwd' and 'mkdir' commands inside a container.

```
1: root@27bb97b8c96d: /  
fred1@fred1VirtualBox:~$ sudo docker run --name mariadb3 -e MARIADB_ROOT_PASSWORD=123  
-v /home/fred1/mydb5:/var/lib/mysql -d mariadb:10.10.2  
[sudo] password for fred1:  
27bb97b8c96d0c929a765bf71e51e85c105b4b283a362220338b4e4be5630aea  
fred1@fred1VirtualBox:~$ sudo docker exec -it mariadb3 bash  
Error response from daemon: No such container: mariadb3  
fred1@fred1VirtualBox:~$ sudo docker exec -it mariadb3 bash  
root@27bb97b8c96d:/# top  
top - 12:38:34 up 2:10, 0 users, load average: 0.35, 0.41, 0.39  
Tasks: 3 total, 1 running, 2 sleeping, 0 stopped, 0 zombie  
%Cpu(s): 1.8 us, 3.4 sy, 0.0 ni, 93.6 id, 0.0 wa, 0.0 hi, 1.1 si, 0.0 st  
MiB Mem : 5816.2 total, 950.1 free, 1536.2 used, 3329.8 buff/cache  
MiB Swap: 2048.0 total, 2048.0 free, 0.0 used, 3907.2 avail Mem  


| PID | USER  | PR | NI | VIRT    | RES   | SHR   | S | %CPU | %MEM | TIME+   | COMMAND |
|-----|-------|----|----|---------|-------|-------|---|------|------|---------|---------|
| 148 | root  | 20 | 0  | 7760    | 3584  | 3072  | R | 0.3  | 0.1  | 0:00.01 | top     |
| 1   | mysql | 20 | 0  | 1480452 | 99768 | 22784 | S | 0.0  | 1.7  | 0:01.29 | mariadb |
| 140 | root  | 20 | 0  | 5044    | 3712  | 3328  | S | 0.0  | 0.1  | 0:00.06 | bash    |


```

```
fred1@fred1VirtualBox:~/mydb5$ pwd  
/home/fred1  
fred1@fred1VirtualBox:~$ mkdir mydb5  
fred1@fred1VirtualBox:~$ cd mydb5  
fred1@fred1VirtualBox:~/mydb5$ pwd  
/home/fred1/mydb5  
fred1@fred1VirtualBox:~/mydb5$
```



```
Activities  Tilix  Oct 7 08:45
1: fred1@fred1VirtualBox: ~
root@27bb97b8c96d: /# mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 3
Server version: 10.10.2-MariaDB-1:10.10.2+maria-ubu2204 mariadb.org binary distrib
ution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> SHOW DATABASES;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sys |
+-----+
4 rows in set (0.004 sec)

MariaDB [(none)]> CREATE DATABASE GB
-> ;
Query OK, 1 row affected (0.000 sec)

MariaDB [(none)]> SHOW DATABASES;
+-----+
| Database |
+-----+
| GB |
| information_schema |
| mysql |
| performance_schema |
| sys |
+-----+
5 rows in set (0.003 sec)

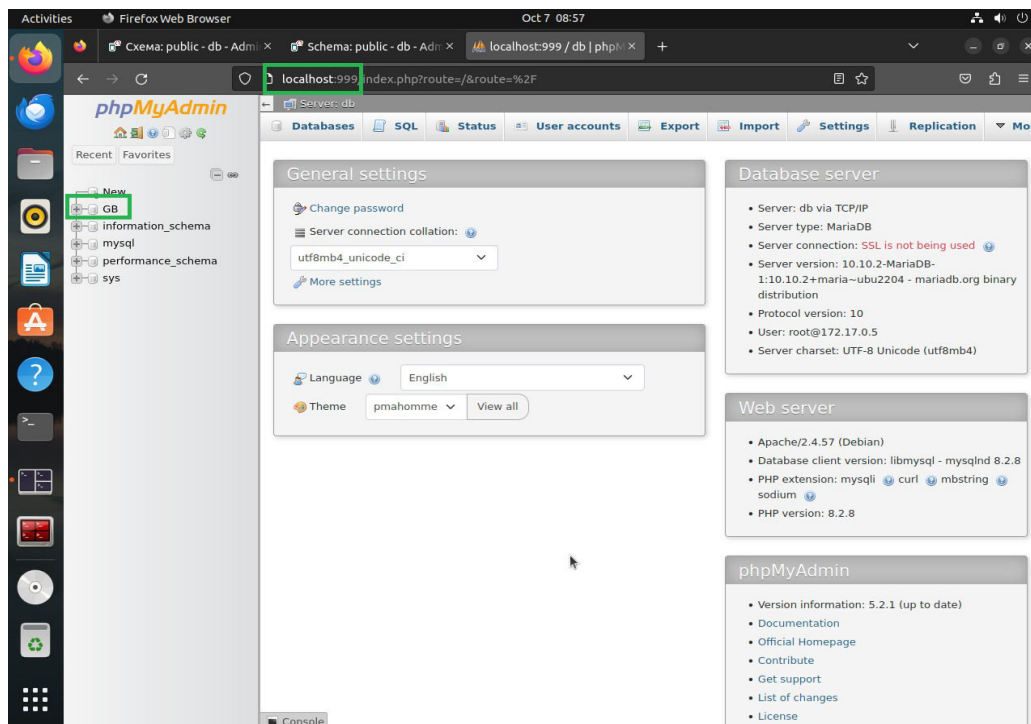
MariaDB [(none)]> exit
Bye
root@27bb97b8c96d: /# exit
exit
There are stopped jobs.
root@27bb97b8c96d: /# exit
exit

2: fred1@fred1VirtualBox: ~/mydb5
fred1@fred1VirtualBox:~/mydb5$ ls -l
total 159376
-rw-rw---- 1 vboxadd vboxsf 16842752 Oct 7 08:33
aria_log.000000001
-rw-rw---- 1 vboxadd vboxsf 52 Oct 7 08:33
aria_log_control
-rw-rw---- 1 vboxadd vboxsf 9 Oct 7 08:33
ddl_recovery.log
drwx----- 2 vboxadd vboxsf 4096 Oct 7 08:42
GB
-rw-rw---- 1 vboxadd vboxsf 868 Oct 7 08:33
ib_buffer_pool
-rw-rw---- 1 vboxadd vboxsf 12582912 Oct 7 08:33
ibdata1
-rw-rw---- 1 vboxadd vboxsf 100663296 Oct 7 08:35
ib_logfile0
-rw-rw---- 1 vboxadd vboxsf 12582912 Oct 7 08:33
ibtmp1
-rw-rw---- 1 vboxadd vboxsf 0 Oct 7 08:33
multi-master.info
drwx----- 2 vboxadd vboxsf 4096 Oct 7 08:33
mysql
-rw-rw---- 1 vboxadd vboxsf 15 Oct 7 08:33
mysql_upgrade.info
drwx----- 2 vboxadd vboxsf 4096 Oct 7 08:33
performance_schema
drwx----- 2 vboxadd vboxsf 12288 Oct 7 08:33
sys
fred1@fred1VirtualBox:~/mydb5$
```

```
Activities  Tilix  Oct 7 08:56
1: fred1@fred1VirtualBox: ~
fred1@fred1VirtualBox:~$ sudo docker ps
CONTAINER ID   IMAGE      NAMES      COMMAND                  CREATED        STATUS        PORTS
27bb97b8c96d   mariadb:10.10.2   mariadb3   "docker-entrypoint.s..." 14 minutes ago Up 14 minutes 3306/tcp
3e79920e033a   adminer      adminer    "entrypoint.sh php -..." 2 hours ago   Up 2 hours    0.0.0.0:9999->8080/tcp, :
::9999->8080/tcp   adminer
dd3fb9c4798c   postgres    postgres   "docker-entrypoint.s..." 2 hours ago   Up 2 hours    0.0.0.0:5432->5432/tcp, :
::5432->5432/tcp   postgres

fred1@fred1VirtualBox:~$ sudo docker run --name phpmyadmin3 -d --link mariadb3:db -p 999:80 phpmyadmin/phpmyadmin
63d91609bd3e5b8164f1729e25516a92805c512dc8afell1b6fa79af133e87f51
fred1@fred1VirtualBox:~$
```

```
Activities  Tilix  Oct 7 08:56
Tilix: fred1@fred1VirtualBox: ~
fred1@fred1VirtualBox:~$ sudo docker ps
CONTAINER ID   IMAGE      COMMAND                  CREATED    STATUS    PORTS
27bb97b8c96d   mariadb:10.10.2   "docker-entrypoint.s..." 14 minutes ago    Up 14 minutes    3306/tcp
3e79920e033a   adminer        "entrypoint.sh php -..." 2 hours ago      Up 2 hours      0.0.0.0:9999->8080/tcp,
dd3fb9c4798c   postgres      "docker-entrypoint.s..." 2 hours ago      Up 2 hours      0.0.0.0:5432->5432/tcp,
fred1@fred1VirtualBox:~$ sudo docker run --name phpmyadmin3 -d --link mariadb3:db -p 999:80 phpmyadmin/phpmyadmin
63d91609bd3e5b8164f1729e25516a92805c512dc8afell1b6fa79af133e87f51
fred1@fred1VirtualBox:~$ curl 127.0.0.1:999
<!doctype html>
<html lang="en" dir="ltr">
<head>
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">
<meta name="referrer" content="no-referrer">
<meta name="robots" content="noindex,nofollow,notranslate">
<meta name="google" content="notranslate">
<style id="cfs-style">html{display: none;}</style>
<link rel="icon" href="favicon.ico" type="image/x-icon">
<link rel="shortcut icon" href="favicon.ico" type="image/x-icon">
<link rel="stylesheet" type="text/css" href="/themes/pmahomme/jquery/jquery-ui.css">
<link rel="stylesheet" type="text/css" href="/js/vendor/codemirror/lib/codemirror.css?v=5.2.1">
<link rel="stylesheet" type="text/css" href="/js/vendor/codemirror/addon/hint/show-hint.css?v=5.2.1">
<link rel="stylesheet" type="text/css" href="/js/vendor/codemirror/addon/lint/lint.css?v=5.2.1">
<link rel="stylesheet" type="text/css" href="/themes/pmahomme/css/theme.css?v=5.2.1">
<title>phpMyAdmin</title>
<script data-cfasync="false" type="text/javascript" src="/js/vendor/jquery/jquery.min.js?v=5.2.1"></script>
<script data-cfasync="false" type="text/javascript" src="/js/vendor/jquery/jquery-migrate.min.js?v=5.2.1"></script>
<script data-cfasync="false" type="text/javascript" src="/js/vendor/sprintf.js?v=5.2.1"></script>
<script data-cfasync="false" type="text/javascript" src="/js/vendor/jquery/jquery-ui.min.js?v=5.2.1"></script>
<script data-cfasync="false" type="text/javascript" src="/js/dist/keyhandler.js?v=5.2.1"></script>
<script data-cfasync="false" type="text/javascript" src="/js/vendor/jquery/jquery-ui.min.js?v=5.2.1"></script>
<script data-cfasync="false" type="text/javascript" src="/js/dist/name-conflict-fixes.js?v=5.2.1"></script>
<script data-cfasync="false" type="text/javascript" src="/js/vendor/bootstrap/bootstrap.bundle.min.js?v=5.2.1"></script>
<script data-cfasync="false" type="text/javascript" src="/js/vendor/js.cookie.js?v=5.2.1"></script>
<script data-cfasync="false" type="text/javascript" src="/js/vendor/jquery/jquery.validate.min.js?v=5.2.1"></script>
<script data-cfasync="false" type="text/javascript" src="/js/vendor/jquery/jquery-ui-timepicker-addon.js?v=5.2.1"></script>
<script data-cfasync="false" type="text/javascript" src="/js/vendor/jquery/jquery.debounce-1.0.6.js?v=5.2.1"></script>
<script data-cfasync="false" type="text/javascript" src="/js/dist/main.config.js?v=5.2.1"></script>
```



СПАСИБО, ВСЕГО ХОРОШЕГО ;)