```yaml
version: "3.9"

services:

  db:
    build:
      dockerfile: ./Dockerfile
    environment:
      MYSQL_ROOT_PASSWORD: 12345
    deploy:
      mode: replicated
      replicas: 2

  adminere:
    image: adminer:4.8.1
    restart: always
    ports:
      - 6080:8080
    volumes:
      - ./myfolder:/myfolder
    deploy:
      mode: replicated
      replicas: 1
```

```
  GNU nano 6.2
FROM mariadb:10.10.2

RUN mkdir /test
```

```
root@Ubuntu:/home/lpanda# mkdir sem5
root@Ubuntu:/home/lpanda# cd sem5
root@Ubuntu:/home/lpanda/sem5# nano docker-compose.yaml
root@Ubuntu:/home/lpanda/sem5# nano Dockerfile
root@Ubuntu:/home/lpanda/sem5#



root@Ubuntu:/home/lpanda/sem5# mkdir myfolder
```

```
root@Ubuntu:/home/lpanda/sem5# docker ps
CONTAINER ID    IMAGE      COMMAND    CREATED    STATUS    PORTS      NAMES
root@Ubuntu:/home/lpanda/sem5# docker compose up
[+] Building 0.7s (6/6) FINISHED
 => [db internal] load build definition from Dockerfile
 => => transferring dockerfile: 76B
 => [db internal] load .dockerignore
 => => transferring context: 2B
 => [db internal] load metadata for docker.io/library/mariadb:10.10.2
 => CACHED [db 1/2] FROM docker.io/library/mariadb:10.10.2
 => [db 2/2] RUN mkdir /test
 => [db] exporting to image
 => => exporting layers
 => => writing image sha256:54616163081e4a3ede30ef82ce54e04b9044e41f9cd2aec47cb0361671b05599
 => => naming to docker.io/library/sem5-db
[+] Running 4/4
 ✔ Network sem5_default       Created
 ✔ Container sem5-db-2        Created
 ✔ Container sem5-adminere-1  Created
 ✔ Container sem5-db-1        Created
Attaching to sem5-adminere-1, sem5-db-1, sem5-db-2
sem5-db-1         | 2023-07-22 11:07:17+00:00 [Note] [Entrypoint]: Entrypoint script for MariaDB Server 1:10.10.2+maria~ubu2204 started.
sem5-adminere-1   | [Sat Jul 22 11:07:17 2023] PHP 7.4.33 Development Server (http://[::]:8080) started
sem5-db-1         | 2023-07-22 11:07:17+00:00 [Note] [Entrypoint]: Switching to dedicated user 'mysql'
sem5-db-1         | 2023-07-22 11:07:17+00:00 [Note] [Entrypoint]: Entrypoint script for MariaDB Server 1:10.10.2+maria~ubu2204 started.
sem5-db-1         | 2023-07-22 11:07:18+00:00 [Note] [Entrypoint]: Initializing database files
sem5-db-2         | 2023-07-22 11:07:18+00:00 [Note] [Entrypoint]: Entrypoint script for MariaDB Server 1:10.10.2+maria~ubu2204 started.
sem5-db-2         | 2023-07-22 11:07:18+00:00 [Note] [Entrypoint]: Switching to dedicated user 'mysql'
sem5-db-2         | 2023-07-22 11:07:18+00:00 [Note] [Entrypoint]: Entrypoint script for MariaDB Server 1:10.10.2+maria~ubu2204 started.
sem5-db-2         | 2023-07-22 11:07:18+00:00 [Note] [Entrypoint]: Initializing database files
sem5-db-1         |
sem5-db-1         |
sem5-db-1         | PLEASE REMEMBER TO SET A PASSWORD FOR THE MariaDB root USER !
sem5-db-1         | To do so, start the server, then issue the following command:
sem5-db-1         |
sem5-db-1         | '/usr/bin/mysql_secure_installation'
sem5-db-1         |
sem5-db-1         | which will also give you the option of removing the test
sem5-db-1         | databases and anonymous user created by default.  This is
sem5-db-1         | strongly recommended for production servers.
sem5-db-1         |
sem5-db-1         | See the MariaDB Knowledgebase at https://mariadb.com/kb
sem5-db-1         |
sem5-db-1         | Please report any problems at https://mariadb.org/jira
sem5-db-1         |
sem5-db-1         | The latest information about MariaDB is available at https://mariadb.org/.
sem5-db-1         |
sem5-db-1         | Consider joining MariaDB's strong and vibrant community:
```
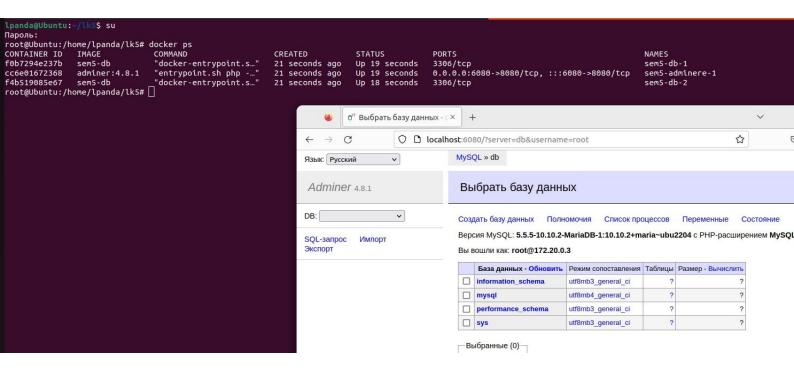
```
lpanda@Ubuntu:~/lk5$ su
Пароль:
root@Ubuntu:/home/lpanda/lk5# docker ps
CONTAINER ID   IMAGE          COMMAND                CREATED         STATUS         PORTS                                         NAMES
f0b7294e237b   sem5-db        "docker-entrypoint.s…" 21 seconds ago  Up 19 seconds  3306/tcp                                      sem5-db-1
cc6e01672368   adminer:4.8.1  "entrypoint.sh php -…" 21 seconds ago  Up 19 seconds  0.0.0.0:6080->8080/tcp, :::6080->8080/tcp     sem5-adminere-1
f4b519085e67   sem5-db        "docker-entrypoint.s…" 21 seconds ago  Up 18 seconds  3306/tcp                                      sem5-db-2
root@Ubuntu:/home/lpanda/lk5#
```

```
lpanda@Ubuntu:~/lk5$ su
Пароль:
root@Ubuntu:/home/lpanda/lk5# docker ps
CONTAINER ID   IMAGE          COMMAND               CREATED         STATUS          PORTS                                           NAMES
f0b7294e237b   sem5-db        "docker-entrypoint.s…"  21 seconds ago  Up 19 seconds   3306/tcp                                        sem5-db-1
cc6e01672368   adminer:4.8.1  "entrypoint.sh php -…"  21 seconds ago  Up 19 seconds   0.0.0.0:6080->8080/tcp, :::6080->8080/tcp       sem5-adminere-1
f4b519085e67   sem5-db        "docker-entrypoint.s…"  21 seconds ago  Up 18 seconds   3306/tcp                                        sem5-db-2
root@Ubuntu:/home/lpanda/lk5#
```

🦊 ⓑ Выбрать базу данных - ⓒ ✕   +   ⌄

← → C   🛡 🗋 localhost:6080/?server=db&username=root   ☆

Язык: Русский ▼   MySQL » db

Adminer 4.8.1   Выбрать базу данных

DB: [▼]   Создать базу данных   Полномочия   Список процессов   Переменные   Состояние

SQL-запрос   Импорт   Версия MySQL: **5.5.5-10.10.2-MariaDB-1:10.10.2+maria~ubu2204** с PHP-расширением **MySQL**
Экспорт
                          Вы вошли как: **root@172.20.0.3**

	База данных - Обновить	Режим сопоставления	Таблицы	Размер - Вычислить
☐	information_schema	utf8mb3_general_ci	?	?
☐	mysql	utf8mb4_general_ci	?	?
☐	performance_schema	utf8mb3_general_ci	?	?
☐	sys	utf8mb3_general_ci	?	?

┌ Выбранные (0) ┐

```
root@Ubuntu:/home/lpanda# docker swarm init
Swarm initialized: current node (nhp2eosyd8najc2p6k4qb37lp) is now a manager.

To add a worker to this swarm, run the following command:

    docker swarm join --token SWMTKN-1-5eb0ujgdf2eukz1c9xtfm5kyk4bhqzvemw88vg5jl1h6lrxrer-7pdglv
uss7ull9fkmz6k39yqz 192.168.0.100:2377

To add a manager to this swarm, run 'docker swarm join-token manager' and follow the instruction
s.
```

```
root@lpanda2:/home/lpanda2# docker swarm join --token SWMTKN-1-5eb0ujgdf2eukz1c9xtfm5kyk4bhqzvem
w88vg5jl1h6lrxrer-7pdglvuss7ull9fkmz6k39yqz 192.168.0.100:2377
This node joined a swarm as a worker.
```

```
root@Ubuntu:/home/lpanda# docker node ls
ID                            HOSTNAME   STATUS   AVAILABILITY   MANAGER STATUS   ENGINE VERSIO
N
nhp2eosyd8najc2p6k4qb37lp *   Ubuntu     Ready    Active         Leader           24.0.4
r5k672752hyrfwett9vn3n9yt     lpanda2    Ready    Active                          20.10.21
```

```
root@Ubuntu:/home/lpanda# docker node update --label-add tokyo r5k672752hyrfwett9vn3n9yt
r5k672752hyrfwett9vn3n9yt
root@Ubuntu:/home/lpanda# docker node ls
ID                            HOSTNAME    STATUS    AVAILABILITY    MANAGER STATUS    ENGINE VERSIO
N
nhp2eosyd8najc2p6k4qb37lp *   Ubuntu      Ready     Active          Leader            24.0.4
r5k672752hyrfwett9vn3n9yt     lpanda2     Ready     Active                            20.10.21
root@Ubuntu:/home/lpanda# docker service create --name nginx --label tokyo --replicas 3 nginx:al
pine
hj5imifx660k2zncc58ln76nd
overall progress: 3 out of 3 tasks
1/3: running
2/3: running
3/3: running
verify: Service converged
```

Left terminal window (Ubuntu [Работает] - Oracle VM VirtualBox):

```
root@Ubuntu:/home/lpanda# docker ps
CONTAINER ID   IMAGE          COMMAND            CREATED        STATUS         PORTS
NAMES
b4f7c911f91c   nginx:alpine   "/docker-entrypoint.…"   2 minutes ago   Up 2 minutes   80/tcp
nginx.3.6onjutyn8l4okhrteknnom87c
root@Ubuntu:/home/lpanda#
```

Right terminal window (Ubuntu2 [Работает] - Oracle VM VirtualBox):

```
root@lpanda2:/home/lpanda2# docker ps
CONTAINER ID   IMAGE          COMMAND            CREATED        STATUS         PORTS
NAMES
f6b5fac73907   nginx:alpine   "/docker-entrypoint.…"   2 minutes ago   Up 2 minutes   80/tcp
nginx.1.uvh8ul8ac3u3sm5sd1sy7875b
00cea932b56e   nginx:alpine   "/docker-entrypoint.…"   2 minutes ago   Up 2 minutes   80/tcp
nginx.2.h3c3t9j4fr5h3vpp0peuqglsh
root@lpanda2:/home/lpanda2#
```