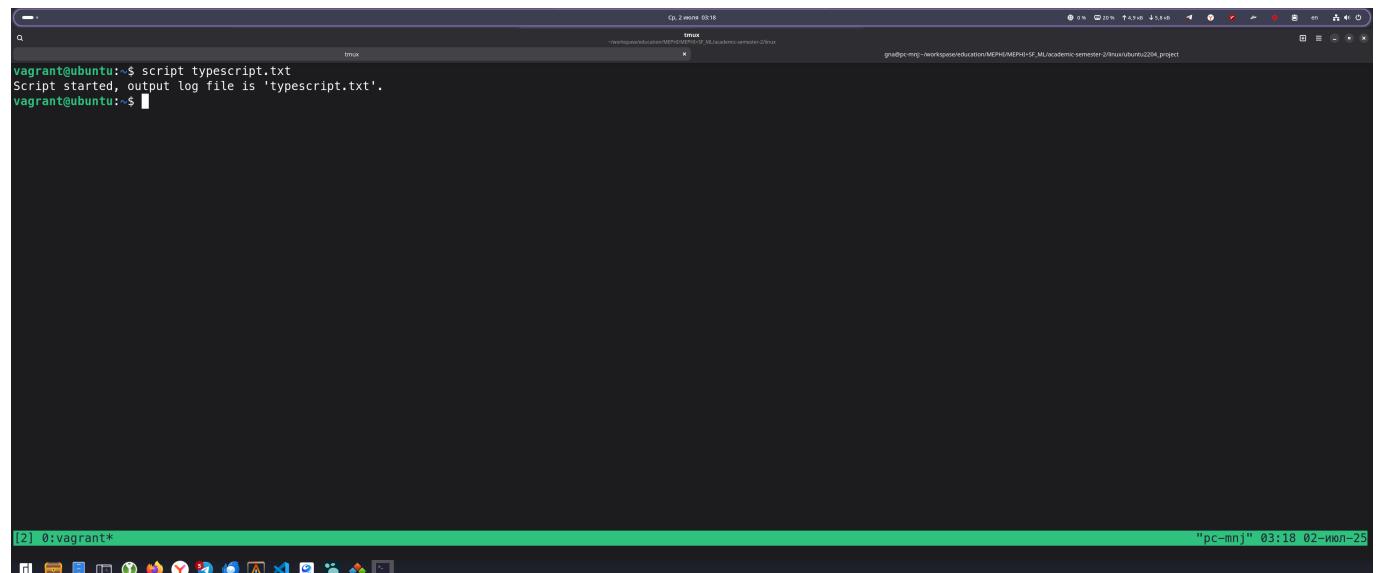
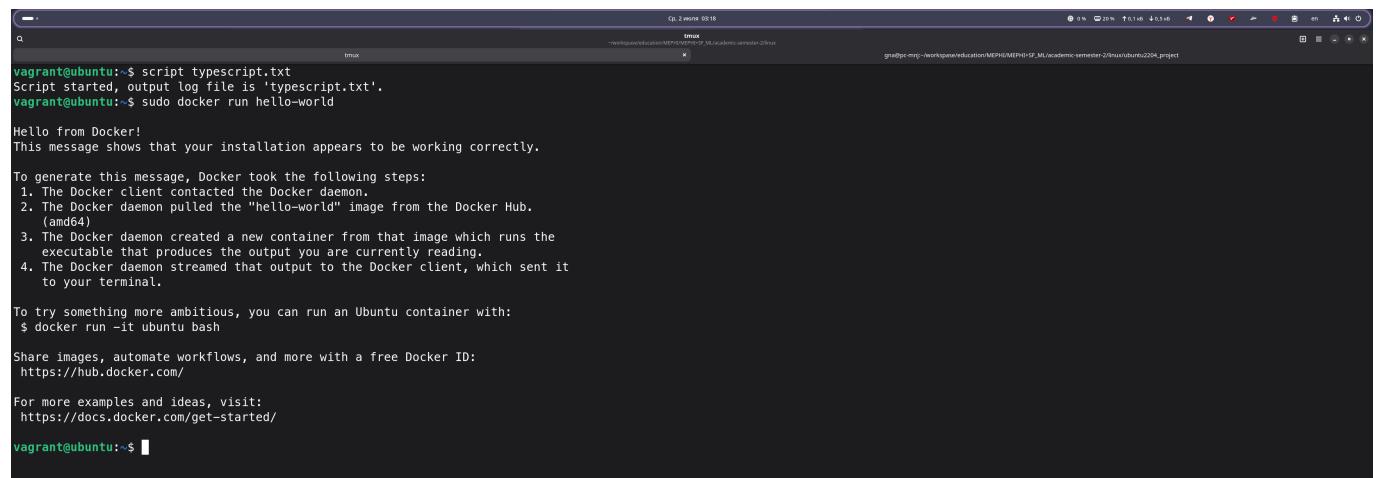


# Домашняя работа № 9

Выполнил: Груданов Николай Алексеевич



```
vagrant@ubuntu:~$ script typescript.txt
Script started, output log file is 'typescript.txt'.
vagrant@ubuntu:~$
```



```
vagrant@ubuntu:~$ script typescript.txt
Script started, output log file is 'typescript.txt'.
vagrant@ubuntu:~$ 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/
```



```
vagrant@ubuntu:~$ sudo docker image ls
REPOSITORY TAG IMAGE ID CREATED SIZE
hello-world latest 74cc54e27dc4 5 months ago 10.1kB
vagrant@ubuntu:~$ 
```

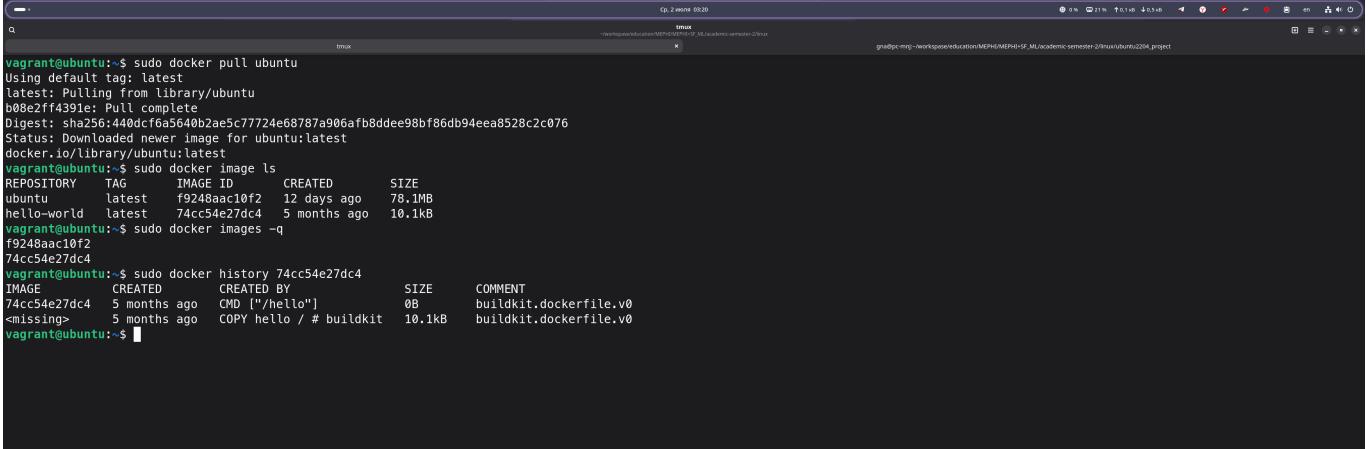
[2] 0:vagrant\* "pc-mnj" 03:19 02-июл-25

```
vagrant@ubuntu:~$ sudo docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
b08e2ff4391e: Pull complete
Digest: sha256:440dcfcf6a5640b2ae5c77724e68787a906afb8ddee98bf86db94eea8528c2c076
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest
vagrant@ubuntu:~$ sudo docker image ls
REPOSITORY TAG IMAGE ID CREATED SIZE
ubuntu latest f9248aac10f2 12 days ago 78.1MB
hello-world latest 74cc54e27dc4 5 months ago 10.1kB
vagrant@ubuntu:~$ 
```

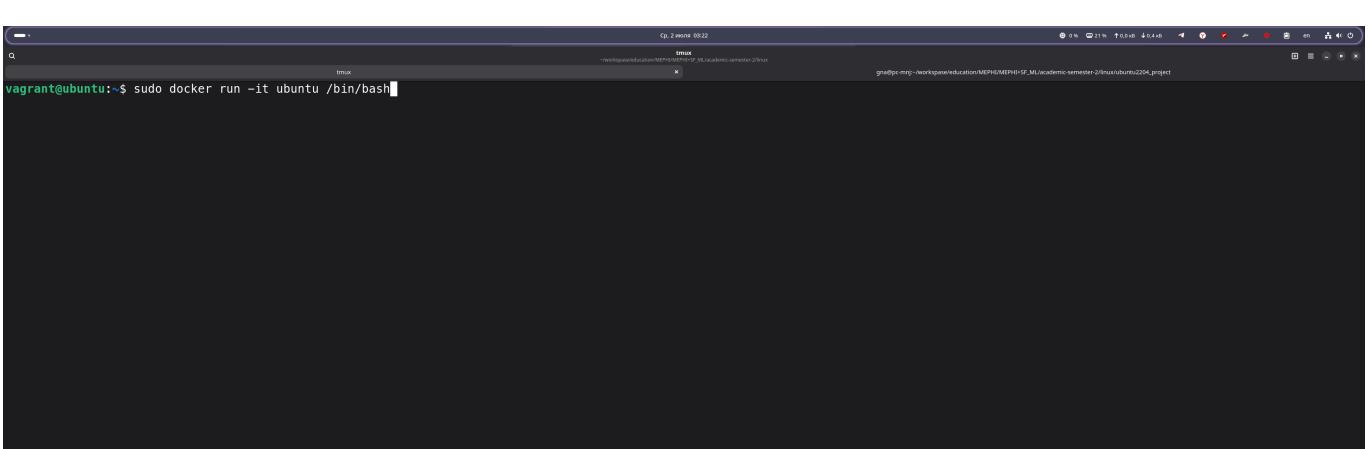
[2] 0:vagrant\* "pc-mnj" 03:20 02-июл-25

```
vagrant@ubuntu:~$ sudo docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
b08e2ff4391e: Pull complete
Digest: sha256:440dcfcf6a5640b2ae5c77724e68787a906afb8ddee98bf86db94eea8528c2c076
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest
vagrant@ubuntu:~$ sudo docker image ls
REPOSITORY TAG IMAGE ID CREATED SIZE
ubuntu latest f9248aac10f2 12 days ago 78.1MB
hello-world latest 74cc54e27dc4 5 months ago 10.1kB
vagrant@ubuntu:~$ sudo docker images -q
f9248aac10f2
74cc54e27dc4
vagrant@ubuntu:~$ 
```

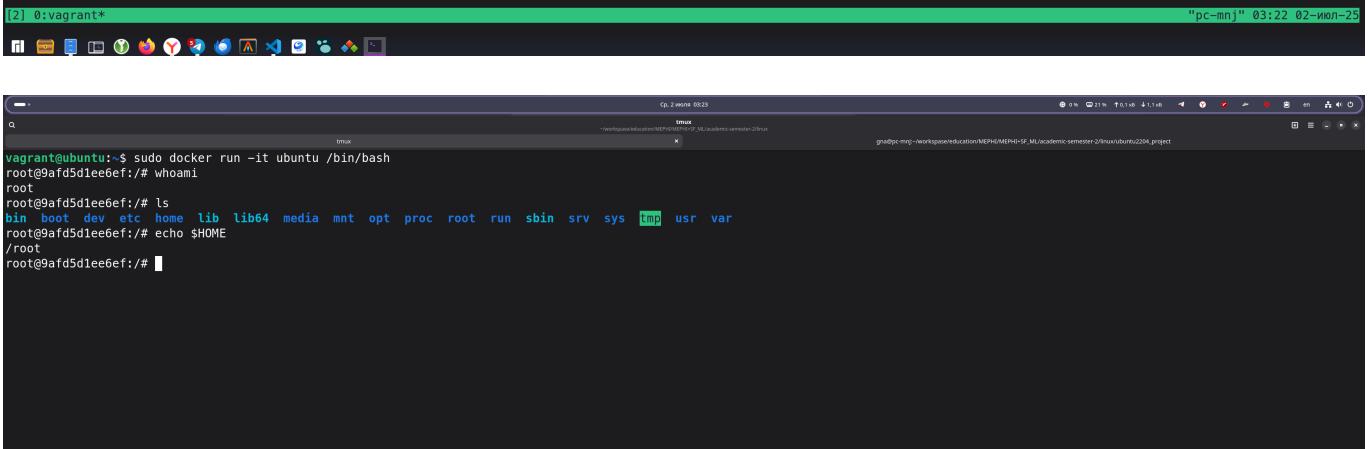
[2] 0:vagrant\* "pc-mnj" 03:20 02-июл-25



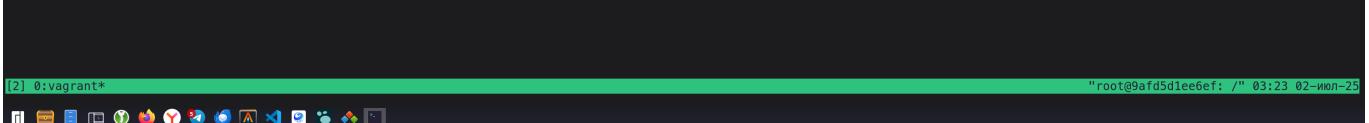
```
vagrant@ubuntu:~$ sudo docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
b08e2ff4391e: Pull complete
Digest: sha256:440dcf6a5640b2aec5c77724e68787a986afb8ddee98bf86db94eea8528c2c076
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest
vagrant@ubuntu:~$ sudo docker image ls
REPOSITORY          TAG      IMAGE ID      CREATED        SIZE
ubuntu              latest   f9248aac10f2   12 days ago   78.1MB
hello-world         latest   74cc54e27dc4   5 months ago  10.1kB
vagrant@ubuntu:~$ sudo docker images -q
f9248aac10f2
74cc54e27dc4
vagrant@ubuntu:~$ sudo docker history 74cc54e27dc4
IMAGE            CREATED     CREATED BY          SIZE      COMMENT
74cc54e27dc4   5 months ago  CMD ["hello"]    0B        buildkit.dockerfile.v0
<missing>       5 months ago  COPY hello / # buildkit  10.1kB  buildkit.dockerfile.v0
vagrant@ubuntu:~$
```



```
vagrant@ubuntu:~$ sudo docker run -it ubuntu /bin/bash
```



```
vagrant@ubuntu:~$ sudo docker run -it ubuntu /bin/bash
root@9af5d1ee6ef:/# whoami
root
root@9af5d1ee6ef:/# ls
bin  boot  dev  etc  home  lib  lib64  media  mnt  opt  proc  root  run  sbin  srv  sys  tmp  usr  var
root@9af5d1ee6ef:/# echo $HOME
/root
root@9af5d1ee6ef:/#
```



```
[2] 0:vagrant*
"root@9af5d1ee6ef: /" 03:23 02-июл-25
```

```
vagrant@ubuntu:~$ sudo docker run -d -it ubuntu sleep 99999
47225f68f8fa:f58f0ab635adc8b337e2b0d43f3303cf64fb7b5f3f74272cf8
vagrant@ubuntu:~$ sudo docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
47225f68f8fa ubuntu "sleep 99999" 5 seconds ago Up 4 seconds sad_tesla
vagrant@ubuntu:~$ 
```

```
[2] 0:vagrant*                                     "root@9af5d1ee6ef: /" 03:24 02-июл-25
[1] 0:vagrant*                                     "root@9af5d1ee6ef: /" 03:24 02-июл-25
```

```
vagrant@ubuntu:~$ sudo docker run -d -it ubuntu sleep 99999
47225f68f8fa:f58f0ab635adc8b337e2b0d43f3303cf64fb7b5f3f74272cf8
vagrant@ubuntu:~$ sudo docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
47225f68f8fa ubuntu "sleep 99999" 5 seconds ago Up 4 seconds sad_tesla
vagrant@ubuntu:~$ sudo docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
892006ba26b hello-world "/hello" Less than a second ago Exited (0) Less than a second ago
47225f68f8fa ubuntu "sleep 99999" 36 seconds ago Up 36 seconds
9af5d1ee6ef ubuntu "/bin/bash" 2 minutes ago Exited (0) 57 seconds ago
9d2c999d6831 hello-world "/hello" 6 minutes ago Exited (0) 6 minutes ago
vagrant@ubuntu:~$ sudo docker ps -qa
892006ba26b
47225f68f8fa
9af5d1ee6ef
9d2c999d6831
vagrant@ubuntu:~$ 
```

```
[2] 0:vagrant*                                     "root@9af5d1ee6ef: /" 03:25 02-июл-25
[1] 0:vagrant*                                     "root@9af5d1ee6ef: /" 03:25 02-июл-25
```

```
vagrant@ubuntu:~$ sudo docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
892006ba26b hello-world "/hello" Less than a second ago Exited (0) Less than a second ago
47225f68f8fa ubuntu "sleep 99999" About a minute ago Up About a minute
9af5d1ee6ef ubuntu "/bin/bash" 3 minutes ago Exited (0) About a minute ago
9d2c999d6831 hello-world "/hello" 7 minutes ago Exited (0) 7 minutes ago
vagrant@ubuntu:~$ sudo docker top 47225f68f8fa
UID      PID    PPID   C      STIME    TTY      TIME     CMD
root    2283    2260   0      00:24    pts/0    00:00:00  sleep 99999
vagrant@ubuntu:~$ 
```

```
[2] 0:vagrant*                                     "root@9af5d1ee6ef: /" 03:26 02-июл-25
[1] 0:vagrant*                                     "root@9af5d1ee6ef: /" 03:26 02-июл-25
```

```
Cp 2 weiss 08:36
vagrant@ubuntu:~$ sudo docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
892006ba26b hello-world "/hello" Less than a second ago Exited (0) Less than a second ago
47225f68f8fa ubuntu "sleep 99999" About a minute ago Up About a minute
9af5d1ee6ef ubuntu "/bin/bash" 3 minutes ago Exited (0) About a minute ago
9dc999d6831 hello-world "/hello" 7 minutes ago Exited (0) 7 minutes ago
vagrant@ubuntu:~$ sudo docker top 47225f68f8fa
UID PID PPID C STIME TTY TIME CMD
root 2283 2260 0 00:24 pts/0 00:00:00 sleep 99999
vagrant@ubuntu:~$ sudo docker stop 47225f68f8fa
47225f68f8fa
vagrant@ubuntu:~$ sudo docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
892006ba26b hello-world "/hello" Less than a second ago Exited (0) Less than a second ago
47225f68f8fa ubuntu "sleep 99999" 11 minutes ago Exited (137) 9 minutes ago
9af5d1ee6ef ubuntu "/bin/bash" 13 minutes ago Exited (0) 11 minutes ago
9dc999d6831 hello-world "/hello" 17 minutes ago Exited (0) 17 minutes ago
vagrant@ubuntu:~$ sudo docker start 47225f68f8fa
47225f68f8fa
vagrant@ubuntu:~$ sudo docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
892006ba26b hello-world "/hello" Less than a second ago Exited (0) Less than a second ago
47225f68f8fa ubuntu "sleep 99999" 11 minutes ago Up 2 seconds
9af5d1ee6ef ubuntu "/bin/bash" 13 minutes ago Exited (0) 12 minutes ago
9dc999d6831 hello-world "/hello" 17 minutes ago Exited (0) 17 minutes ago
vagrant@ubuntu:~$
```

[2] 0:vagrant\* "root@9af5d1ee6ef: /" 03:36 02-июн-25

```
Cp 2 weiss 08:37
vagrant@ubuntu:~$ sudo docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
892006ba26b hello-world "/hello" Less than a second ago Exited (0) Less than a second ago
47225f68f8fa ubuntu "sleep 99999" 12 minutes ago Up 26 seconds
9af5d1ee6ef ubuntu "/bin/bash" 14 minutes ago Exited (0) 12 minutes ago
9dc999d6831 hello-world "/hello" 18 minutes ago Exited (0) 18 minutes ago
vagrant@ubuntu:~$ sudo docker stats 47225f68f8fa --no-stream
CONTAINER ID NAME CPU % MEM USAGE / LIMIT MEM % NET I/O BLOCK I/O PIDS
47225f68f8fa sad_tesla 0.00% 348KiB / 1.918GiB 0.02% 946B / 126B 0B / 0B 1
vagrant@ubuntu:~$
```

[2] 0:vagrant\* "root@9af5d1ee6ef: /" 03:37 02-июн-25

```
Cp 2 weiss 08:38
vagrant@ubuntu:~$ sudo docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
892006ba26b hello-world "/hello" Less than a second ago Exited (0) Less than a second ago
47225f68f8fa ubuntu "sleep 99999" 12 minutes ago Up 26 seconds
9af5d1ee6ef ubuntu "/bin/bash" 14 minutes ago Exited (0) 12 minutes ago
9dc999d6831 hello-world "/hello" 18 minutes ago Exited (0) 18 minutes ago
vagrant@ubuntu:~$ sudo docker stats 47225f68f8fa --no-stream
CONTAINER ID NAME CPU % MEM USAGE / LIMIT MEM % NET I/O BLOCK I/O PIDS
47225f68f8fa sad_tesla 0.00% 348KiB / 1.918GiB 0.02% 946B / 126B 0B / 0B 1
vagrant@ubuntu:~$ sudo docker exec -it 47225f68f8fa /bin/bash
root@47225f68f8fa:/#
```

[2] 0:vagrant\* "root@47225f68f8fa: /" 03:38 02-июн-25

```

vagrant@ubuntu:~$ sudo docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
892006ba26b hello-world "/hello" Less than a second ago Exited (0) Less than a second ago
47225f68f8fa ubuntu "sleep 99999" 12 minutes ago Up 26 seconds
9af5d1ee6ef ubuntu "/bin/bash" 14 minutes ago Exited (0) 12 minutes ago
9d2c999d6831 hello-world "/hello" 18 minutes ago Exited (0) 18 minutes ago
vagrant@ubuntu:~$ sudo docker stats 47225f68f8fa --no-stream
CONTAINER ID NAME CPU % MEM USAGE / LIMIT MEM % NET I/O BLOCK I/O PIDS
47225f68f8fa sad_tesla 0.00% 348KiB / 1.91GiB 0.02% 946B / 126B 0B / 0B 1
vagrant@ubuntu:~$ sudo docker exec -it 47225f68f8fa /bin/bash
root@47225f68f8fa:~# exit
vagrant@ubuntu:~$ sudo docker pause 47225f68f8fa
47225f68f8fa
vagrant@ubuntu:~$ sudo docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
892006ba26b hello-world "/hello" Less than a second ago Exited (0) Less than a second ago
47225f68f8fa ubuntu "sleep 99999" 15 minutes ago Up 3 minutes (Paused)
9af5d1ee6ef ubuntu "/bin/bash" 17 minutes ago Exited (0) 15 minutes ago
9d2c999d6831 hello-world "/hello" 21 minutes ago Exited (0) 21 minutes ago
vagrant@ubuntu:~$ sudo docker unpause 47225f68f8fa
47225f68f8fa
vagrant@ubuntu:~$ sudo docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
892006ba26b hello-world "/hello" Less than a second ago Exited (0) Less than a second ago
47225f68f8fa ubuntu "sleep 99999" 15 minutes ago Up 3 minutes
9af5d1ee6ef ubuntu "/bin/bash" 17 minutes ago Exited (0) 15 minutes ago
9d2c999d6831 hello-world "/hello" 21 minutes ago Exited (0) 21 minutes ago
vagrant@ubuntu:~$ 

```

[2] 0:vagrant\* "root@47225f68f8fa: /" 03:40 02-июн-25

```

vagrant@ubuntu:~$ sudo docker rm -f 47225f68f8fa
47225f68f8fa
vagrant@ubuntu:~$ sudo docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
892006ba26b hello-world "/hello" Less than a second ago Exited (0) Less than a second ago
9af5d1ee6ef ubuntu "/bin/bash" 18 minutes ago Exited (0) 16 minutes ago
9d2c999d6831 hello-world "/hello" 22 minutes ago Exited (0) 22 minutes ago
vagrant@ubuntu:~$ 

```

[2] 0:vagrant\* "root@47225f68f8fa: /" 03:40 02-июн-25

```

vagrant@ubuntu:~$ sudo apt install git -y

```

[2] 0:vagrant\* "root@47225f68f8fa: /" 03:41 02-июн-25

```
vagrant@ubuntu:~$ sudo apt install git -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
git is already the newest version (1:2.34.1-1ubuntu1.12).
git set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 22 not upgraded.
vagrant@ubuntu:~$
```

[2] 0:vagrant\* "root@47225f68f8fa: /" 03:41 02-июл-25

```
vagrant@ubuntu:~$ sudo apt install git -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
git is already the newest version (1:2.34.1-1ubuntu1.12).
git set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 22 not upgraded.
vagrant@ubuntu:~$ git clone https://github.com/docker/getting-started.git
Cloning into 'getting-started'...
remote: Enumerating objects: 987, done.
remote: Counting objects: 100% (13/13), done.
remote: Compressing objects: 100% (12/12), done.
remote: Total 987 (delta 6), reused 1 (delta 1), pack-reused 974 (from 2)
Receiving objects: 100% (987/987), 5.29 MiB | 7.66 MiB/s, done.
Resolving deltas: 100% (524/524), done.
vagrant@ubuntu:~$
```

[2] 0:vagrant\* "root@47225f68f8fa: /" 03:41 02-июл-25

```
vagrant@ubuntu:~$ sudo apt install git -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
git is already the newest version (1:2.34.1-1ubuntu1.12).
git set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 22 not upgraded.
vagrant@ubuntu:~$ git clone https://github.com/docker/getting-started.git
Cloning into 'getting-started'...
remote: Enumerating objects: 987, done.
remote: Counting objects: 100% (13/13), done.
remote: Compressing objects: 100% (12/12), done.
remote: Total 987 (delta 6), reused 1 (delta 1), pack-reused 974 (from 2)
Receiving objects: 100% (987/987), 5.29 MiB | 7.66 MiB/s, done.
Resolving deltas: 100% (524/524), done.
vagrant@ubuntu:~$ cd getting-started/app
vagrant@ubuntu:~/getting-started/app$ ls -lA
total 156K
-rw-rw-r-- 1 vagrant vagrant 645 Jul 2 00:41 package.json
drwxrwxr-x 4 vagrant vagrant 4.0K Jul 2 00:41 spec
drwxrwxr-x 5 vagrant vagrant 4.0K Jul 2 00:41 src
-rw-rw-r-- 1 vagrant vagrant 144K Jul 2 00:41 yarn.lock
vagrant@ubuntu:~/getting-started/app$
```

[2] 0:vagrant\* "root@47225f68f8fa: /" 03:44 02-июл-25

```
vagrant@ubuntu:~/getting-started/app$ nvim Dockerfile
```

```
FROM node:18-alpine
WORKDIR /app
COPY .
RUN yarn install --production
CMD ["node", "src/index.js"]
EXPOSE 3000
```

```
vagrant@ubuntu:~/getting-started/app$ nvim Dockerfile
vagrant@ubuntu:~/getting-started/app$ cat Dockerfile
FROM node:18-alpine
WORKDIR /app
COPY .
RUN yarn install --production
CMD ["node", "src/index.js"]
EXPOSE 3000
```

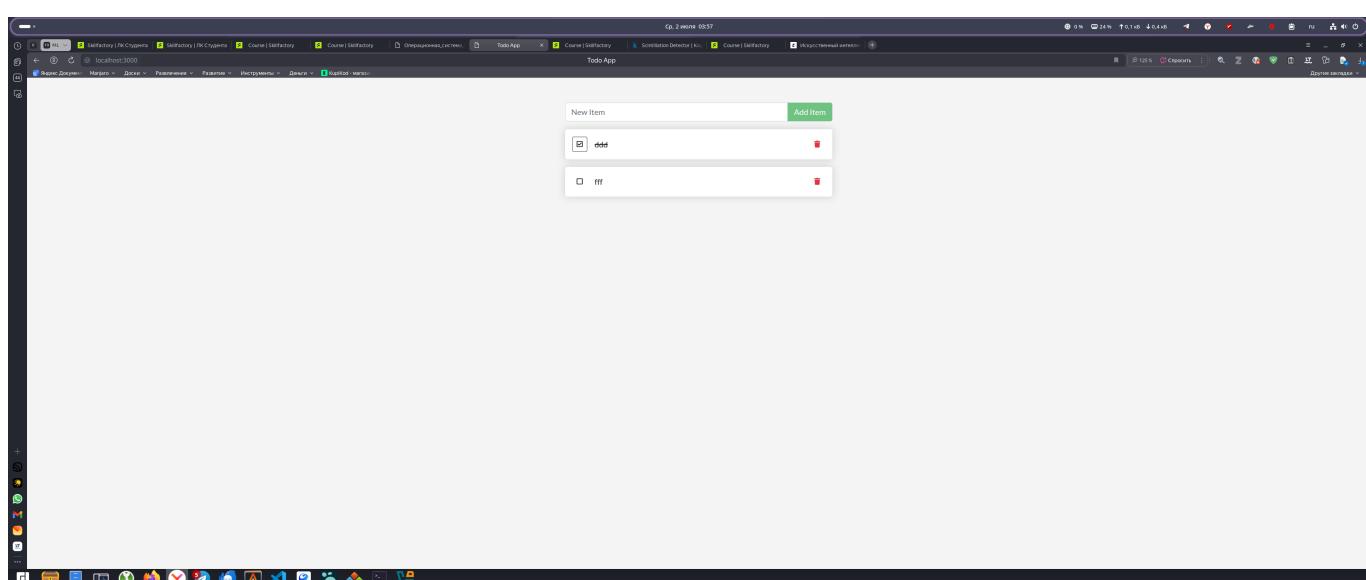
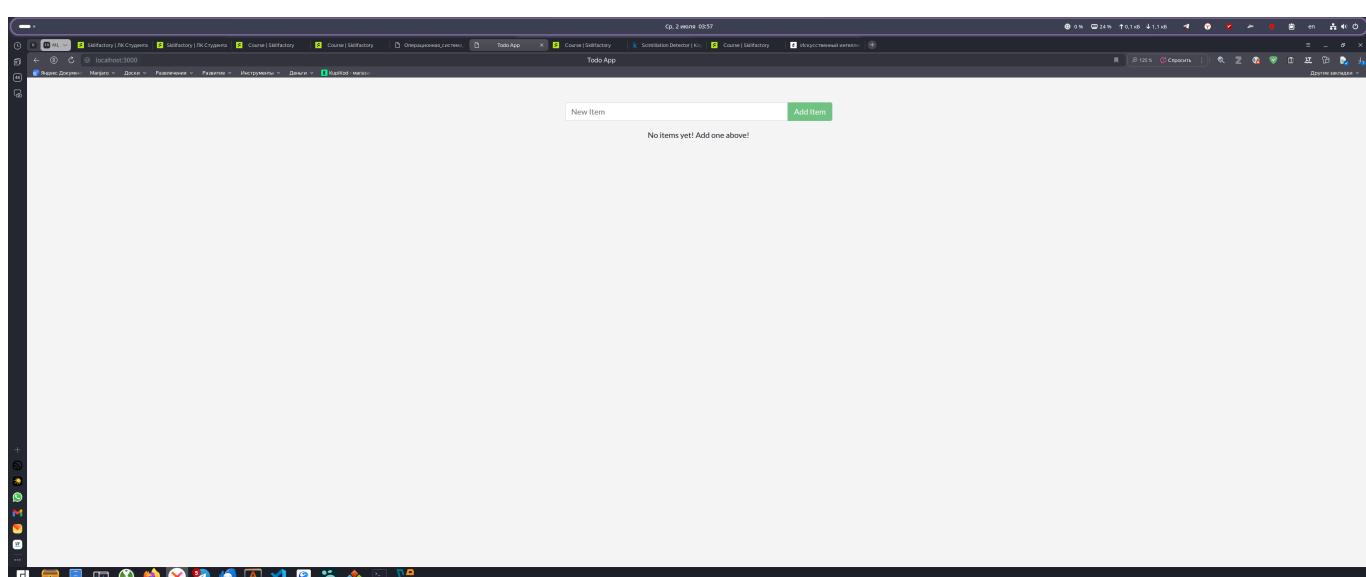
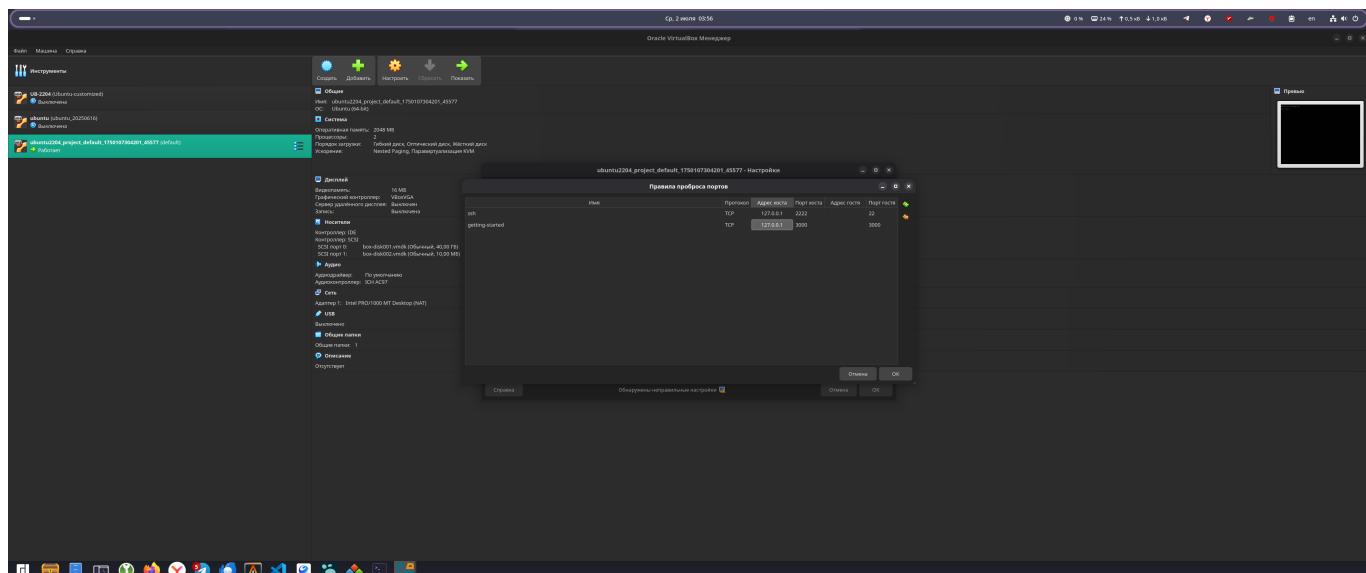
```
vagrant@ubuntu:~/getting-started/app$ sudo docker build -t getting-started .
```

```
[+] Building 12.6s (9/9) FINISHED
--> [internal] load build definition from Dockerfile
--> transferring dockerfile: 151B
--> [internal] load metadata for docker.io/library/node:18-alpine
--> [internal] load .dockerrcignore
--> transferring context: 2B
[1/4] FROM docker.io/library/node:18-alpine@sha256:8d6421d663b4c28fd3ebc498332f249011d118945588d0a35cb9bc4b8ca09d9e
--> sha256:8d6421d663b4c28fd3ebc498332f249011d118945588d0a35cb9bc4b8ca09d9e 7.67kB / 7.67kB
--> sha256:929bb4d7c782f04ffef15cf78548ffed452b6569f87c73ff666ad553a7554f0006 1.72kB / 1.72kB
--> sha256:e77c6cd71886ecc802ad5cdecfe3a01ea27d1fb96162bf03d3710839bbdd4 6.18kB / 6.18kB
--> sha256:18232174bc917411d73da96d85011092101a032a93a388b79e9699c2d5cb70 3.64MB / 3.64MB
--> sha256:d71dde834b5c203d162902e6b8994cb2309ae049a0eabc4fe101b2b5a3d0e 40.01MB / 40.01MB
--> sha256:1e5aa489ccce5c0826c540ab0b6d4b6b491c96eda01837f430bd47f0d26702d6e3 1.26MB / 1.26MB
--> sha256:25f2da82641908f65c3a74d89409d6b1b62ccfaab220b9ea70b80d5a2e0549 4.46B / 4.46B
--> extracting sha256:1e5aa489ccce5c0826c540ab0b6d4b6b491c96eda01837f430bd47f0d26702d6e3
--> extracting sha256:25f2da82641908f65c3a74d89409d6b1b62ccfaab220b9ea70b80d5a2e0549
--> [internal] load build context
--> transferring context: 4.59MB
--> [2/4] WORKDIR /app
--> [3/4] COPY . .
--> [4/4] RUN yarn install --production
--> exporting to image
--> exporting layers
--> writing image sha256:c1fb47acb2e50063ab3e312c2e7e811dbf1b0fc11c5a4b0e5424064bbf7cf33c
--> naming to docker.io/library/getting-started
vagrant@ubuntu:~/getting-started/app$
```

"root@47225f68f8fa: /" 03:47 02-июл-25

```
vagrant@ubuntu:~/getting-started/app$ sudo docker run -dp 3000:3000 getting-started
d63f82f22715a51ad7fe2883dde4e495ba061a36c151abfac714a6c41df2bb
vagrant@ubuntu:~/getting-started/app$ sudo docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
892006ba26b hello-world "/hello" Less than a second ago Exited (0) Less than a second ago
d63f82f22715 getting-started "docker-entrypoint.s..." 9 seconds ago Up 8 seconds 0.0.0.0:3000->3000/tcp, ::1:3000->3000/tcp frosty_babbage
9af5d1ee6ef ubuntu "bin/bash" 32 minutes ago Exited (0) 30 minutes ago reverent_beaver
9dc999d6831 hello-world "/hello" 36 minutes ago Exited (0) 36 minutes ago keen_lalande
vagrant@ubuntu:~/getting-started/app$
```

"root@47225f68f8fa: /" 03:54 02-июл-25



```

vagrant@ubuntu:~/getting-started/app$ sudo docker run -dp 3000:3000 getting-started
d63f82f22715a51d7fe2883dde4e45bad061ac36c151abfac714a6c4fdf2bb
vagrant@ubuntu:~/getting-started/app$ sudo docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
892006ba26b hello-world "/hello" Less than a second ago Exited (0) Less than a second ago
d63f82f22715 getting-started "docker-entrypoint.s..." 9 seconds ago Up 8 seconds 0.0.0.0:3000->3000/tcp, [::]:3000->3000/tcp hopeful_edison
9af5d1ee6ef ubuntu "/bin/bash" 32 minutes ago Exited (0) 30 minutes ago frosty_babbage
9d2c999d6831 hello-world "/hello" 36 minutes ago Exited (0) 36 minutes ago reverent_beaver
vagrant@ubuntu:~/getting-started/app$ sudo docker stop d63f82f22715
d63f82f22715
vagrant@ubuntu:~/getting-started/app$ sudo docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
892006ba26b hello-world "/hello" Less than a second ago Exited (0) Less than a second ago
d63f82f22715 getting-started "docker-entrypoint.s..." 4 minutes ago Exited (0) 1 second ago
9af5d1ee6ef ubuntu "/bin/bash" 36 minutes ago Exited (0) 35 minutes ago
9d2c999d6831 hello-world "/hello" 40 minutes ago Exited (0) 40 minutes ago
keen_lalande
vagrant@ubuntu:~/getting-started/app$ 

```

```

[2] 0:vagrant*                                     "root@47225f68f8fa: /" 03:59 02-июн-25

```

```

vagrant@ubuntu:~/getting-started/app$ sudo docker network create todo-app
bc636073802f0e1d09ba988a96a035089aa1ce34ede206c3eb2afa0c74af1b4c
vagrant@ubuntu:~/getting-started/app$ 

```

```

[2] 0:vagrant*                                     "root@47225f68f8fa: /" 04:05 02-июн-25

```

```

vagrant@ubuntu:~/getting-started/app$ sudo docker network create todo-app
bc636073802f0e1d09ba988a96a035089aa1ce34ede206c3eb2afa0c74af1b4c
vagrant@ubuntu:~/getting-started/app$ sudo docker run -d \
--network todo-app --network-alias mysql \
-v todo-mysql-data:/var/lib/mysql \
-e MYSQL_ROOT_PASSWORD=secret \
-e MYSQL_DATABASE=todos \
mysql:8.0
Unable to find image 'mysql:8.0' locally
8.0: Pulling from library/mysql
3d2798b2072a: Downloading [=====] 15.71MB/49.5MB
314d9502df6c: Download complete
79935e3fcf39a: Download complete
808046425533: Downloading [=====] 4.127MB/6.814MB
f8070e4772c5: Download complete
e8496612335a: Download complete
36001d754a06: Waiting
8a94b59cf5d8: Waiting
5d26a4e5137d: Waiting
77e7cef7dec: Waiting
5cel1d8b94336: Waiting

```

```

[2] 0:vagrant*                                     "root@47225f68f8fa: /" 04:06 02-июн-25

```

```
vagrant@ubuntu:~/getting-started/app$ sudo docker network create todo-app
bc636073802f0e1d09ba988a96a035089aa1ce34ede206e3eb2fa0c74af1b4c
vagrant@ubuntu:~/getting-started/app$ sudo docker run -d \
--network todo-app --network-alias mysql \
-v todo-mysql-data:/var/lib/mysql \
-e MYSQL_ROOT_PASSWORD=secret \
-e MYSQL_DATABASE=todos \
mysql:8.0
Unable to find image 'mysql:8.0' locally
8.0: Pulling from library/mysql
3d2798b2072a: Pull complete
314d9582df61: Pull complete
79935e3fc39a: Pull complete
808046425533: Pull complete
f8070e4772c5: Pull complete
e8496612335a: Pull complete
36001d754a06: Pull complete
8a94b59cf5d8: Pull complete
5d26a4e5137d: Pull complete
77e7cef7dec: Pull complete
5ced18b94336: Pull complete
Digest: sha256:4445b2668d41143cb50e471ee207f8822006249b6859b24f7e12479684def5d9
Status: Downloaded newer image for mysql:8.0
c438174e32d84768e24248a93888a054cbc15bef629f352a031523f706702951
vagrant@ubuntu:~/getting-started/app$
```

[2] 0:vagrant\* "root@47225f68f8fa: /" 04:06 02-июн-25

```
vagrant@ubuntu:~/getting-started/app$ sudo docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
892006bb26b hello-world "/hello" Less than a second ago Exited (0) Less than a second ago
c438174e32d8 mysql:8.0 "docker-entrypoint.s..." 24 seconds ago Up 23 seconds 3306/tcp, 33060/tcp hopeful_edison
d63f82f22715 getting-started "docker-entrypoint.s..." 12 minutes ago Exited (0) 7 minutes ago hopeful_cannon
9afad5d1ee6ef ubuntu "/bin/bash" 44 minutes ago Exited (0) 42 minutes ago frosty_babbage
9d2c999d6831 hello-world "/hello" 48 minutes ago Exited (0) 48 minutes ago reverent_beaver
keen_lalande
vagrant@ubuntu:~/getting-started/app$ sudo docker exec -it c438174e32d8 mysql -u root -p
Enter password:
ERROR 1045 (28000): Access denied for user 'root'@'localhost' (using password: YES)
vagrant@ubuntu:~/getting-started/app$ sudo docker exec -it c438174e32d8 mysql -u root -p
Enter password:
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 8.0.42 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>
```

[2] 0:vagrant\* "root@47225f68f8fa: /" 04:08 02-июн-25

```
9d2c999d6831 hello-world "/hello" 48 minutes ago Exited (0) 48 minutes ago
vagrant@ubuntu:~/getting-started/app$ sudo docker exec -it c438174e32d8 mysql -u root -p
Enter password:
ERROR 1045 (28000): Access denied for user 'root'@'localhost' (using password: YES)
vagrant@ubuntu:~/getting-started/app$ sudo docker exec -it c438174e32d8 mysql -u root -p
Enter password:
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 8.0.42 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 |
| todos |
+-----+
5 rows in set (0.01 sec)

mysql>
```

[2] 0:vagrant\* "root@47225f68f8fa: /" 04:08 02-июн-25

```

4fe72e03ed63: Pull complete
6825d4104fcf: Pull complete
b402f437feal: Pull complete
777b2eb9c233: Pull complete
f97746911927: Pull complete
c486e6f5a450: Pull complete
4f4fb700ef54: Pull complete
1fffbfc3fee40: Pull complete
9739e82eeb67: Pull complete
60a997354655: Pull complete
44718f283b64: Pull complete
8a84d69553b4: Pull complete
e3d67c957395: Pull complete
b71379f7ad56: Pull complete
Digest: sha256:7f08c4aff13ff61a35d30e30c5clea8396eac6ab4ce19fd02d5a4b3b5d0d09a2
Status: Downloaded newer image for nicolaka/netshoot:latest
      dP      dP      dP
      88      88      88
88d888b. .d8888b. d8888P .d8888b. .d8888b. .d8888b. d8888P
88' `88 88ooooo8 88  Y8ooooo. 88' `88 88' `88 88' `88 88
88 88 88.. 88 88 88 88 88 88. 88 88. 88 88
dP   dP `88888P` dP   `88888P` dP   dP `88888P` `88888P` dP

Welcome to Netshoot! (github.com/nicolaka/netshoot)
Version: 0.14

```

```

6aled97bc504 ~ [2] 0:vagrant* "root@6aled97bc504:~" 04:10 02-июн-25

```

```

88 88 88... 88 88 88 88 88 88 88 88 88 88
dP   dP `88888P` dP   `88888P` dP   dP `88888P` `88888P` dP

Welcome to Netshoot! (github.com/nicolaka/netshoot)
Version: 0.14

```

```

6aled97bc504 ~ dig mysql
; <>> DiG 9.20.10 <>> mysql
;; global options: +cmd
;; Got answer:
;; ->>HEADER<- opcode: QUERY, status: NOERROR, id: 53051
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 0
;; QUESTION SECTION:
;mysql.           IN      A
;; ANSWER SECTION:
mysql.        600    IN      A      172.18.0.2
;; Query time: 0 msec
;; SERVER: 127.0.0.1#53(127.0.0.11) (UDP)
;; WHEN: Wed Jul 02 01:10:58 UTC 2025
;; MSG SIZE rcvd: 44

6aled97bc504 ~ [2] 0:vagrant* "root@6aled97bc504:~" 04:11 02-июн-25

```

```

6aled97bc504 ~ dig mysql
; <>> DiG 9.20.10 <>> mysql
;; global options: +cmd
;; Got answer:
;; ->>HEADER<- opcode: QUERY, status: NOERROR, id: 53051
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 0
;; QUESTION SECTION:
;mysql.           IN      A
;; ANSWER SECTION:
mysql.        600    IN      A      172.18.0.2
;; Query time: 0 msec
;; SERVER: 127.0.0.1#53(127.0.0.11) (UDP)
;; WHEN: Wed Jul 02 01:10:58 UTC 2025
;; MSG SIZE rcvd: 44

6aled97bc504 ~ exit
vagrant@ubuntu:~/getting-started/app$ [2] 0:vagrant* "exit" 04:11 02-июн-25

```

```

Cop 2 session 0@12
tmux
~ /vagrant/education/MEPH/MEPHIS-MU/Academic-semester-2/linux/ubuntu2204/project

; <>> DiG 9.20.10 <>> mysql
;; global options: +cmd
;; Got answer:
;; -->>HEADER<-- opcode: QUERY, status: NOERROR, id: 53051
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 0

;; QUESTION SECTION:
;mysql.           IN      A

;; ANSWER SECTION:
mysql.        600     IN      A       172.18.0.2

;; Query time: 0 msec
;; SERVER: 127.0.0.1#53(127.0.0.11) (UDP)
;; WHEN: Wed Jul 02 01:10:58 UTC 2025
;; MSG SIZE rcvd: 44

6aled97bc504 ➜ ~ exit
vagrant@ubuntu:~/getting-started/app$ sudo docker stop $(sudo docker ps -q)
c438174e32d8
vagrant@ubuntu:~/getting-started/app$ sudo docker ps -a
CONTAINER ID   IMAGE          COMMAND       CREATED      STATUS        PORTS     NAMES
892006ba26b   hello-world   "/hello"     Less than a second ago   Exited (0)  Less than a second ago
6aled97bc504   nicolaka/netshoot "zsh"       2 minutes ago   Exited (0)  30 seconds ago
c438174e32d8   mysql:8.0     "docker-entrypoint.s..."  5 minutes ago   Exited (0)  8 seconds ago
d63f82f22715   getting-started "docker-entrypoint.s..."  17 minutes ago   Exited (0)  12 minutes ago
9afdf5d1ee6f   ubuntu         "/bin/bash"   49 minutes ago   Exited (0)  47 minutes ago
9d2c999d6831   hello-world   "/hello"    53 minutes ago   Exited (0)  53 minutes ago
vagrant@ubuntu:~/getting-started/app$ [2] 0:vagrant*                                     "exit" 04:12 02-июн-25
[2] 0:vagrant*                                     "exit" 04:12 02-июн-25

```

```

Cop 2 session 0@13
tmux
~ /vagrant/education/MEPH/MEPHIS-MU/Academic-semester-2/linux/ubuntu2204/project

vagrant@ubuntu:~/getting-started/app$ sudo docker compose version
Docker Compose version v2.37.3
vagrant@ubuntu:~/getting-started/app$ [2] 0:vagrant*                                     "exit" 04:13 02-июн-25
[2] 0:vagrant*                                     "exit" 04:13 02-июн-25

```

```

Cop 2 session 0@15
tmux
~ /vagrant/education/MEPH/MEPHIS-MU/Academic-semester-2/linux/ubuntu2204/project

vagrant@ubuntu:~/getting-started/app$ sudo docker compose version
Docker Compose version v2.37.3
vagrant@ubuntu:~/getting-started/app$ nvim docker-compose.yml
vagrant@ubuntu:~/getting-started/app$ cat docker-compose.yml
services:
  app:
    image: node:18-alpine
    command: sh -c "yarn install && yarn run dev"
    ports:
      - 3000:3000
    working_dir: /app
    volumes:
      - .:/app
    environment:
      MYSQL_HOST: mysql
      MYSQL_USER: root
      MYSQL_PASSWORD: secret
      MYSQL_DB: todos

  mysql:
    image: mysql:8.0
    volumes:
      - todo-mysql-data:/var/lib/mysql
    environment:
      MYSQL_ROOT_PASSWORD: secret
      MYSQL_DATABASE: todos

  volumes:
    todo-mysql-data:
vagrant@ubuntu:~/getting-started/app$ [2] 0:vagrant*                                     "exit" 04:14 02-июн-25
[2] 0:vagrant*                                     "exit" 04:14 02-июн-25

```

```

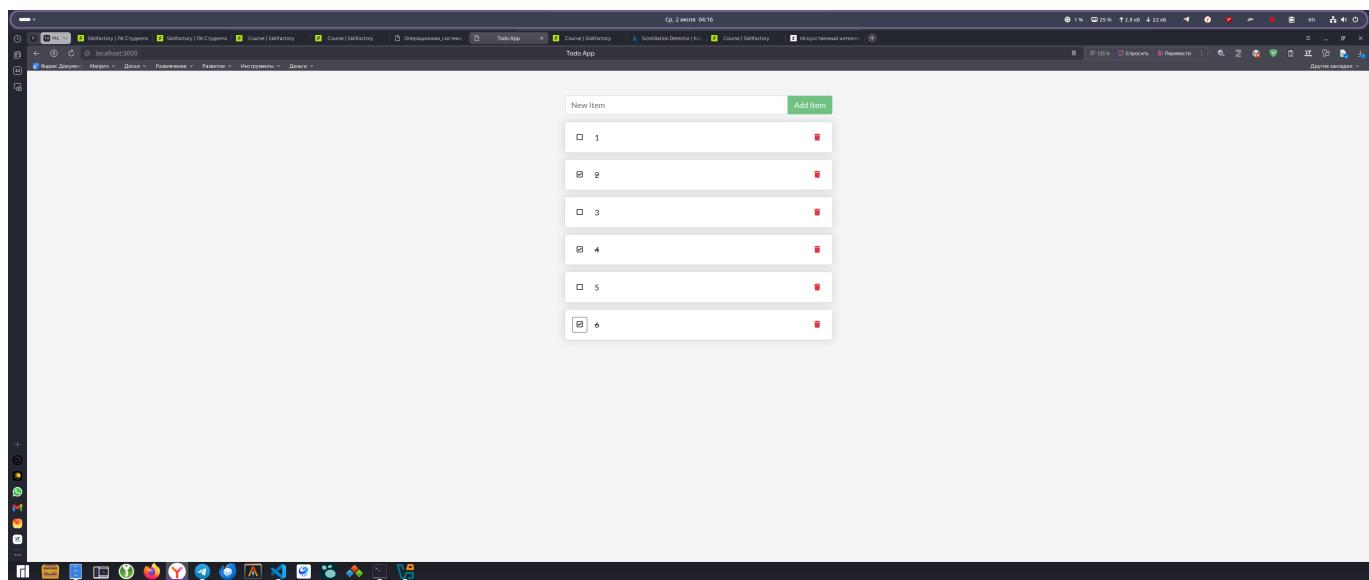
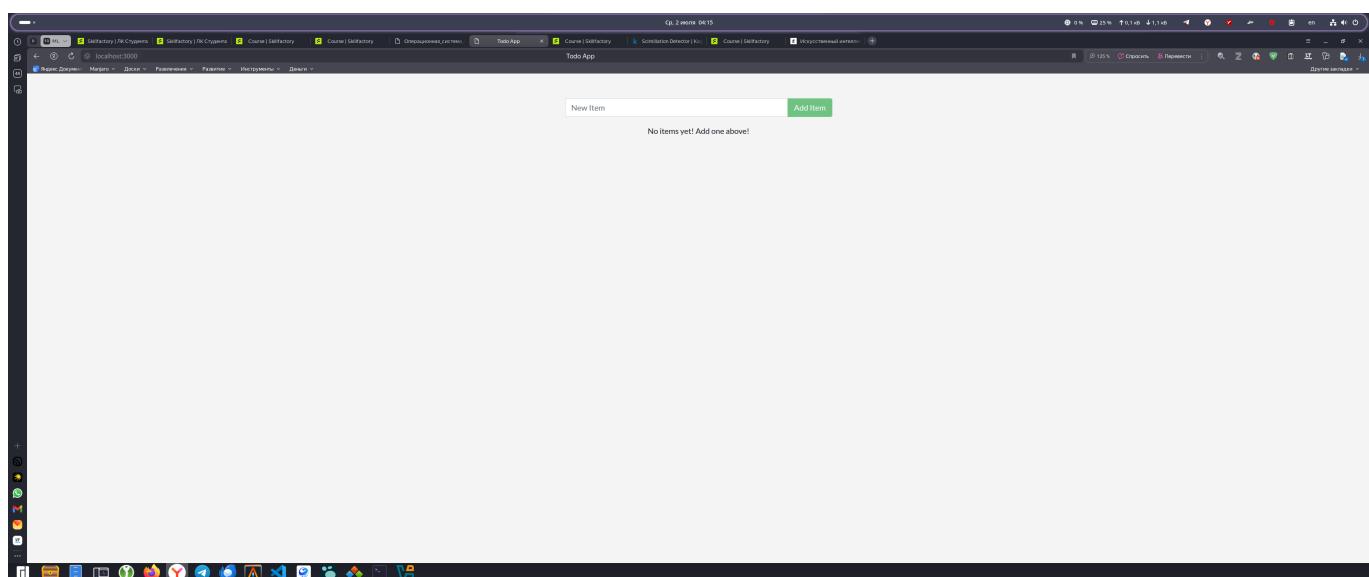
cp 2 язист 04:15
tmux
- ./app
environment:
  MYSQL_HOST: mysql
  MYSQL_USER: root
  MYSQL_PASSWORD: secret
  MYSQL_DB: todos

mysql:
image: mysql:8.0
volumes:
  - todo-mysql-data:/var/lib/mysql
environment:
  MYSQL_ROOT_PASSWORD: secret
  MYSQL_DATABASE: todos

volumes:
  todo-mysql-data:

vagrant@ubuntu:~/getting-started/app$ sudo docker compose up -d
[+] Running 5/5
✓ app Pulled
✓ f18232174bc9 Already exists
✓ dd71dde834b5 Already exists
✓ le5a4c89ce5 Already exists
✓ 25ff2da83641 Already exists
[+] Running 4/4
✓ Network app_default Created
✓ Volume "app_todo-mysql-data" Created
✓ Container app-app-1 Started
✓ Container app-mysql-1 Started
vagrant@ubuntu:~/getting-started/app$ [2] 0:vagrant* "exit" 04:15 02-июл-25

```



The screenshot shows a terminal window titled 'tmux' with two panes. The left pane displays the Docker Compose configuration file for a MySQL database:

```
mysql:
  image: mysql:8.0
  volumes:
    - todo-mysql-data:/var/lib/mysql
  environment:
    MYSQL_ROOT_PASSWORD: secret
    MYSQL_DATABASE: todos

volumes:
  todo-mysql-data:
```

The right pane shows the command-line output of running 'sudo docker compose up -d' followed by 'sudo docker compose down -v'. The output indicates that 5 services were started and 4 were stopped.

```
vagrant@ubuntu:~/getting-started/app$ sudo docker compose up -d
[+] Running 5/5
 ✓ app Pulled
 ✓ f18232174bc9 Already exists
 ✓ dd71ddc834b5 Already exists
 ✓ 1e5a4c89ce5 Already exists
 ✓ 25ff2da83641 Already exists
[+] Running 4/4
 ✓ Network app_default      Created          0.05
 ✓ Volume "app_todo-mysql-data" Created        0.05
 ✓ Container app-app-1      Started         0.15
 ✓ Container app-mysql-1     Started         0.15
vagrant@ubuntu:~/getting-started/app$ sudo docker compose down -v
[+] Running 4/4
 ✓ Container app-app-1      Removed         0.25
 ✓ Container app-mysql-1     Removed         0.95
 ✓ Volume app_todo-mysql-data Removed        0.05
 ✓ Network app_default      Removed         0.25
vagrant@ubuntu:~/getting-started/app$ [2] 0:vagrant* "exit" 04:17 02-июн-25
```