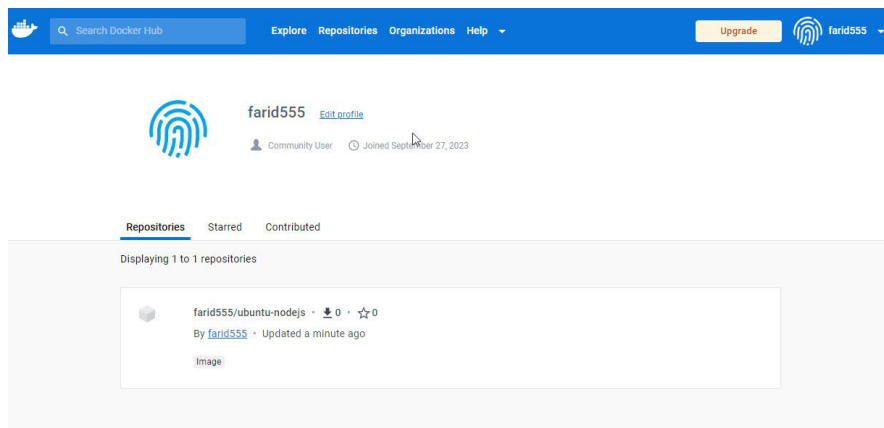
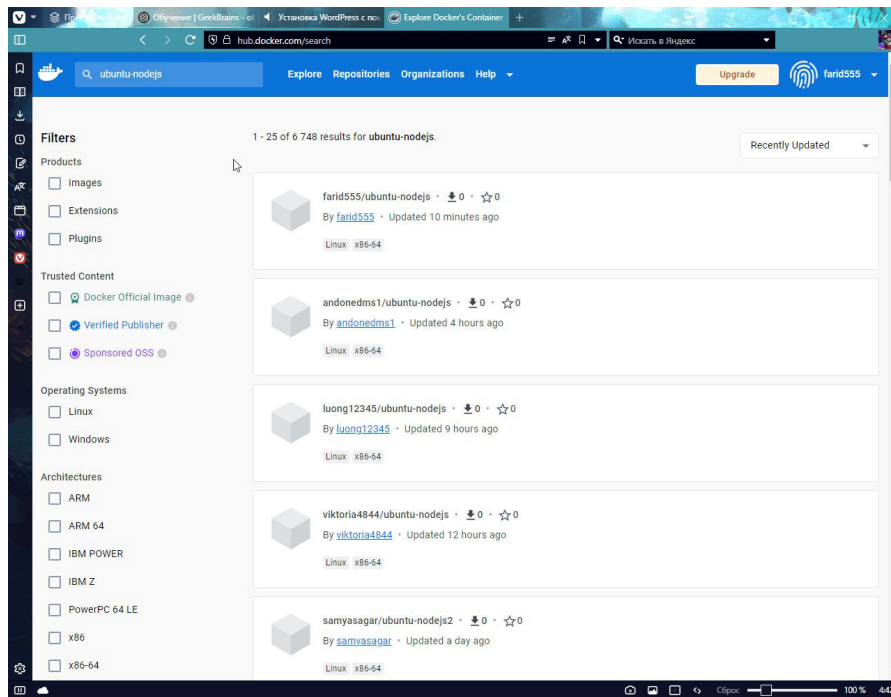


Урок 7. Запуск веб-приложения из контейнеров

Задание

1) Установить в виртуальную машину или VDS Docker, настроить набор контейнеров через docker compose по [инструкции](#).

Часть с настройкой certbot и HTTPS опустить, если у вас нет настоящего домена и белого IP.



```

PS C:\Users\FredI> ssh fred@192.168.1.68
fred@192.168.1.68's password:
Last login: Wed Sep 27 01:48:22 2023 from 192.168.1.66
fred@fredVirtualBox:~$ sudo apt update
[sudo] пароль для fred:
Судя:1 http://archive.ubuntu.com/ubuntu jammy InRelease
Судя:2 http://archive.ubuntu.com/ubuntu jammy-updates InRelease
Судя:3 http://archive.ubuntu.com/ubuntu jammy-backports InRelease
Судя:4 http://security.ubuntu.com/ubuntu jammy-security InRelease
Иги:5 http://packages.linuxmint.com victoria InRelease
Судя:6 http://packages.linuxmint.com victoria Release
Чтение списков пакетов... Готово
Построение дерева зависимостей... Готово
Чтение информации о состоянии... Готово
Может быть обновлён 191 пакет. Запустите «apt list --upgradable» для их показа.
fred@fredVirtualBox:~$ sudo apt install apt-transport-https ca-certificates curl software-properties-common
Чтение списков пакетов... Готово
Построение дерева зависимостей... Готово
Чтение информации о состоянии... Готово
Уже установлен пакет ca-certificates самой новой версии (20230311ubuntu0.22.04.1).
Следующие НОВЫЕ пакеты будут установлены:
  apt-transport-https software-properties-common
Следующие пакеты будут обновлены:
  curl libcurl4
Обновлено 2 пакетов, установлено 2 новых пакетов, для удаления отмечено 0 пакетов, и 189 пакетов не обновлено.
Необходимо скачать 496 kB архивов.
После данной операции объём занятого дискового пространства возрастет на 185 kB.
Пол:1 http://archive.ubuntu.com/ubuntu jammy-updates/universe amd64 apt-transport-https all 2.4.10 [1,510 B]
Пол:2 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 curl amd64 7.81.0-1ubuntu1.13 [194 kB]
Пол:3 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libcurl4 amd64 7.81.0-1ubuntu1.13 [290 kB]
Пол:4 http://packages.linuxmint.com victoria/upstream amd64 software-properties-common all 2.2.3 [9,856 B]
Получено 496 kB за 10с (47,5 kB/s)
Выбор ранее не выбранного пакета apt-transport-https.
(Чтение базы данных ... на данный момент установлено 537248 файлов и каталогов.)
Подготовка к распаковке ./apt-transport-https_2.4.10_all.deb ...
Распаковывается apt-transport-https (2.4.10) ...
Подготовка к распаковке ./curl_7.81.0-1ubuntu1.13_amd64.deb ...
Распаковывается curl (7.81.0-1ubuntu1.13) на замену (7.81.0-1ubuntu1.10) ...
Подготовка к распаковке ./libcurl4_7.81.0-1ubuntu1.13_amd64.deb ...
Распаковывается libcurl4:amd64 (7.81.0-1ubuntu1.13) на замену (7.81.0-1ubuntu1.10) ...
Выбор ранее не выбранного пакета software-properties-common.
Подготовка к распаковке ./software-properties-common_2.2.3_all.deb ...
Распаковывается software-properties-common (2.2.3) ...

```

```

Настраивается пакет software-properties-common (2.2.3) ...
Настраивается пакет libcurl4:amd64 (7.81.0-1ubuntu1.13) ...
Настраивается пакет curl (7.81.0-1ubuntu1.13) ...
Обрабатываются триггеры для man-db (2.10.2-1) ...
Обрабатываются триггеры для libc-bin (2.35-0ubuntu3.1) ...
fred@fredVirtualBox:~$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -
Warning: apt-key is deprecated. Manage keyring files in trusted.gpg.d instead (see apt-key(8)).
OK
fred@fredVirtualBox:~$ sudo add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu bionic stable"
fred@fredVirtualBox:~$ sudo apt update
Судя:1 http://archive.ubuntu.com/ubuntu jammy InRelease
Иги:2 http://packages.linuxmint.com victoria InRelease
Судя:3 http://archive.ubuntu.com/ubuntu jammy-updates InRelease
Пол:4 https://download.docker.com/linux/ubuntu bionic InRelease [64,4 kB]
Судя:5 http://security.ubuntu.com/ubuntu jammy-security InRelease
Судя:6 http://archive.ubuntu.com/ubuntu jammy-backports InRelease
Судя:7 http://packages.linuxmint.com victoria Release
Пол:8 https://download.docker.com/linux/ubuntu bionic/stable amd64 Packages [39,0 kB]
Получено 103 kB за 2с (50,5 kB/s)
Чтение списков пакетов... Готово
Построение дерева зависимостей... Готово
Чтение информации о состоянии... Готово
Может быть обновлено 189 пакетов. Запустите «apt list --upgradable» для их показа.
W: https://download.docker.com/linux/ubuntu/dists/bionic/InRelease: Key is stored in legacy trusted.gpg keyring (/etc/apt/trusted.gpg), see the DEPRECATION section in apt-key(8) for details.
fred@fredVirtualBox:~$ apt-cache policy docker-ce
docker-ce:
  Установлен: (отсутствует)
  Кандидат: 5:24.0.2-1-ubuntu.18.04-bionic
  Таблица версий:
    5:24.0.2-1-ubuntu.18.04-bionic 500
    500 https://download.docker.com/linux/ubuntu bionic/stable amd64 Packages
    5:24.0.1-1-ubuntu.18.04-bionic 500
    500 https://download.docker.com/linux/ubuntu bionic/stable amd64 Packages
    5:24.0.0-1-ubuntu.18.04-bionic 500
    500 https://download.docker.com/linux/ubuntu bionic/stable amd64 Packages
    5:23.0.6-1-ubuntu.18.04-bionic 500
    500 https://download.docker.com/linux/ubuntu bionic/stable amd64 Packages
    5:23.0.5-1-ubuntu.18.04-bionic 500
    500 https://download.docker.com/linux/ubuntu bionic/stable amd64 Packages

```

```

18.06.0-ce-3-0-ubuntu 500
500 https://download.docker.com/linux/ubuntu bionic/stable amd64 Packages
18.03.1-ce-3-0-ubuntu 500
500 https://download.docker.com/linux/ubuntu bionic/stable amd64 Packages
fred@fredVirtualBox:~$ sudo apt install docker-ce
Чтение списков пакетов... Готово
Построение дерева зависимостей... Готово
Чтение информации о состоянии... Готово
Будут установлены следующие дополнительные пакеты:
  containerd.io docker-buildx-plugin docker-ce-cli docker-ce-rootless-extras docker-compose-plugin libslirp0 pigz slirp4netns
Предлагаемые пакеты:
  aufs-tools cgroupfs-mount | cgroup-lite
Следующие НОВЫЕ пакеты будут установлены:
  containerd.io docker-buildx-plugin docker-ce docker-ce-cli docker-ce-rootless-extras docker-compose-plugin libslirp0 pigz slirp4netns
Обновлено 0 пакетов, установлено 9 новых пакетов, для удаления отмечено 0 пакетов, и 189 пакетов не обновлено.

```

```

fred@fredVirtualBox:~$ sudo systemctl status docker
docker.service - Docker Application Container Engine
   Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2023-09-28 03:41:52 +04; 37s ago
   TriggeredBy: ● docker.socket
     Docs: https://docs.docker.com
    Main PID: 9020 (dockerd)
      Tasks: 10
     Memory: 27.6M
        CPU: 1.353s
     CGroup: /system.slice/docker.service
             └─9020 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock

сен 28 03:41:51 fredVirtualBox systemd[1]: Starting Docker Application Container Engine...
сен 28 03:41:51 fredVirtualBox dockerd[9020]: time="2023-09-28T03:41:51.277742154+04:00" level=info msg="Starting up"
сен 28 03:41:51 fredVirtualBox dockerd[9020]: time="2023-09-28T03:41:51.28038060+04:00" level=info msg="detected 127.0.0.53 nameserver, ..."
сен 28 03:41:51 fredVirtualBox dockerd[9020]: time="2023-09-28T03:41:51.602720124+04:00" level=info msg="Loading containers: start."
сен 28 03:41:52 fredVirtualBox dockerd[9020]: time="2023-09-28T03:41:52.534957592+04:00" level=info msg="Loading containers: done."

```

```

fred1@fred1VirtualBox: ~$ sudo systemctl status docker
* docker.service - Docker Application Container Engine
   Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2023-09-28 03:41:52 +04; 37s ago
   TriggeredBy: ● docker.socket
   Docs: https://docs.docker.com
   Main PID: 9020 (dockerd)
   Tasks: 10
   Memory: 27.6M
   CPU: 1.353s
   CGroup: /system.slice/docker.service
           └─9020 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock

сен 28 03:41:51 fred1VirtualBox systemd[1]: Starting Docker Application Container Engine...
сен 28 03:41:51 fred1VirtualBox dockerd[9020]: time="2023-09-28T03:41:51.277742154+04:00" level=info msg="Starting up"
сен 28 03:41:51 fred1VirtualBox dockerd[9020]: time="2023-09-28T03:41:51.284038968+04:00" level=info msg="detected 127.0.0.53 nameserver, a
сен 28 03:41:51 fred1VirtualBox dockerd[9020]: time="2023-09-28T03:41:51.602730134+04:00" level=info msg="Loading containers: start."
сен 28 03:41:52 fred1VirtualBox dockerd[9020]: time="2023-09-28T03:41:52.534997582+04:00" level=info msg="Loading containers: done."
сен 28 03:41:52 fred1VirtualBox dockerd[9020]: time="2023-09-28T03:41:52.696686713+04:00" level=info msg="Docker daemon" commit=659604f gra
сен 28 03:41:52 fred1VirtualBox dockerd[9020]: time="2023-09-28T03:41:52.698865572+04:00" level=info msg="Daemon has completed initializati
сен 28 03:41:52 fred1VirtualBox dockerd[9020]: time="2023-09-28T03:41:52.807994226+04:00" level=info msg="API listen on /run/docker.sock"
сен 28 03:41:52 fred1VirtualBox systemd[1]: Started Docker Application Container Engine.
lines 1-21/21 (END)
[1]: Остановлен sudo systemctl status docker
fred1@fred1VirtualBox: ~$ sudo usermod -aG docker ${USER}
fred1@fred1VirtualBox: ~$ exit
выход
Есть остановленные задания.
fred1@fred1VirtualBox: ~$ exit
выход
less: malloc.c:2617: sysmalloc: Assertion `(old_top == initial_top (av) && old_size == 0) || ((unsigned long) (old_size) >= MINSIZE && prev
inuse (old_top) && ((unsigned long) old_end & (pagesize - 1)) == 0)' failed.
Connection to 192.168.1.68 closed.
PS C:\Users\fred1> ssh fred1@192.168.1.68
fred1@192.168.1.68's password:
Last login: Thu Sep 28 07:42:45 2023 from 192.168.1.64
fred1@fred1VirtualBox: ~$ su - ${USER}
Пароль:
su: Сбой при проверке подлинности
fred1@fred1VirtualBox: ~$ su - ${USER}
Пароль:
fred1@fred1VirtualBox: ~$ id -nG
fred1 adm cdrom sudo dip plugdev lpadmin sambashare docker
fred1@fred1VirtualBox: ~$ docker
Usage: docker [OPTIONS] COMMAND
A self-sufficient runtime for containers

```

```

fred1@fred1VirtualBox: ~$ docker docker-subcommand --help
Usage: docker [OPTIONS] COMMAND
A self-sufficient runtime for containers

Common Commands:
  run       Create and run a new container from an image
  exec      Execute a command in a running container
  ps        List containers
  build     Build an image from a Dockerfile

```

```

for more help on how to use Docker, head to https://docs.docker.com/go/guides/
fred1@fred1VirtualBox: ~$ docker info
Client: Docker Engine - Community
Version: 24.0.2
Context: default
Debug Mode: false
Plugins:

```

```

fred1@fred1VirtualBox: ~$ docker run hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
719385e32844: Pull complete
Digest: sha256:4f53e2564790c8e7856ec08e384732aa38dc43c52f02952483e3f003afb23db
Status: Downloaded newer image for hello-world:latest

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/

fred1@fred1VirtualBox: ~$

```

```
fred1@fred1VirtualBox: ~$ docker search ubuntu
```

NAME	DESCRIPTION	STARS	OFFICIAL	AUTOMATED
ubuntu	Ubuntu is a Debian-based Linux operating sys...	16441	[OK]	
webspHERE-liberty	WebSphere Liberty multi-architecture images ..	297	[OK]	
open-liberty	Open Liberty multi-architecture images based...	62	[OK]	
neurodebian	NeuroDebian provides neuroscience research s...	104	[OK]	
ubuntu-debootstrap	DEPRECATED; use "ubuntu" instead	52	[OK]	
ubuntu-upstart	DEPRECATED, as is Upstart (find other proces...	115	[OK]	
ubuntu/nginx	Nginx, a high-performance reverse proxy & we...	100		
ubuntu/squid	Squid is a caching proxy for the Web. Long-t...	67		
ubuntu/cortex	Cortex provides storage for Prometheus. Long...	4		
ubuntu/apache2	Apache, a secure & extensible open-source HT...	60		
ubuntu/kafka	Apache Kafka, a distributed event streaming ..	35		
ubuntu/mysql	MySQL open source fast, stable, multi-thread...	53		
ubuntu/bind9	BIND 9 is a very flexible, full-featured DNS...	62		
ubuntu/prometheus	Prometheus is a systems and service monitori...	51		
ubuntu/zookeeper	ZooKeeper maintains configuration informatio...	12		
ubuntu/postgres	PostgreSQL is an open source object-relatio...	31		
ubuntu/redis	Redis, an open source key-value store. Long...	19		
ubuntu/grafana	Grafana, a feature rich metrics dashboard & ..	9		
ubuntu/memcached	Memcached, in-memory keyvalue store for smal...	5		
ubuntu/dotnet-aspnet	Chiselled Ubuntu runtime image for ASP.NET a...	11		
ubuntu/dotnet-deps	Chiselled Ubuntu for self-contained .NET & A...	11		
ubuntu/prometheus-alertmanager	Alertmanager handles client alerts from Prom...	9		
ubuntu/dotnet-runtime	Chiselled Ubuntu runtime image for .NET apps...	10		
ubuntu/cassandra	Cassandra, an open source NoSQL distributed ...	2		
ubuntu/telegraf	Telegraf collects, processes, aggregates & w...	4		

```
fred1@fred1VirtualBox: ~$ docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
445a6a12be2b: Pull complete
Digest: sha256:aabed3296a3d45ceded1dc866a24476c4d7e093aa806263c27ddaadbdc3c1054
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest
fred1@fred1VirtualBox: ~$ docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
ubuntu	latest	c6b84b685f35	6 weeks ago	77.8MB
hello-world	latest	9c7a54a9a43c	4 months ago	13.3kB

```
fred1@fred1VirtualBox: ~$
```

```
fred1@fred1VirtualBox: ~$ docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
ubuntu	latest	c6b84b685f35	6 weeks ago	77.8MB
hello-world	latest	9c7a54a9a43c	4 months ago	13.3kB

```
fred1@fred1VirtualBox: ~$ docker run -it ubuntu
root@f031ff32416a:/# apt update
Get:1 http://archive.ubuntu.com/ubuntu jammy InRelease [270 kB]
Get:2 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:3 http://archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:4 http://archive.ubuntu.com/ubuntu jammy-backports InRelease [109 kB]
Get:5 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [1137 kB]
Get:6 http://archive.ubuntu.com/ubuntu jammy/restricted amd64 Packages [164 kB]
Get:7 http://archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [266 kB]
Get:8 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [44.0 kB]
Get:9 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [998 kB]
Get:10 http://archive.ubuntu.com/ubuntu jammy/main amd64 Packages [1792 kB]
Get:11 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [1014 kB]
Get:12 http://archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [17.5 MB]
Get:13 http://archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1264 kB]
Get:14 http://archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [1158 kB]
Get:15 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1284 kB]
Get:16 http://archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [49.9 kB]
Get:17 http://archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [50.4 kB]
Get:18 http://archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [28.1 kB]
Fetched 27.3 MB in 9s (3010 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
4 packages can be upgraded. Run 'apt list --upgradable' to see them.
root@f031ff32416a:/# apt install nodejs
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  ca-certificates javascript-common libbrotli1 libcares2 libicu70 libjs-highlight.js libnghttp2-14 libnode72 libuv1 nodejs-doc openssl
Suggested packages:
  apache2 | lighttpd | httpd npm
The following NEW packages will be installed:
  ca-certificates javascript-common libbrotli1 libcares2 libicu70 libjs-highlight.js libnghttp2-14 libnode72 libuv1 nodejs nodejs-doc openssl
```

```
Processing triggers for ca-certificates (20230311ubuntu0.12.04.1) ...
Updating certificates in /etc/ssl/certs...
0 added, 0 removed; done.
Running hooks in /etc/ca-certificates/update.d...
done.
root@f031ff32416a:/# node -v
v12.22.9
root@f031ff32416a:/# exit
exit
fred1@fred1VirtualBox: ~$ docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
f031ff32416a	ubuntu	"/bin/bash"	7 minutes ago	Exited (0) 32 seconds ago		romantic_keldysh
23368a121ca2	hello-world	"/hello"	15 minutes ago	Exited (0) 15 minutes ago		mystifying_galois

```
fred1@fred1VirtualBox: ~$ docker start aabed3296a
Error response from daemon: No such container: aabed3296a
Error: failed to start containers: aabed3296a
fred1@fred1VirtualBox: ~$ docker start f031ff32416a
f031ff32416a
fred1@fred1VirtualBox: ~$ docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
f031ff32416a	ubuntu	"/bin/bash"	8 minutes ago	Up 9 seconds		romantic_keldysh

```
fred1@fred1VirtualBox: ~$
```

```

fred1@fred1VirtualBox: $ docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS    NAMES
fred1@fred1VirtualBox: $ docker ps -a
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS    NAMES
f031ff32416a   ubuntu   "/bin/bash"   7 minutes ago   Exited (0) 32 seconds ago   romantic_keldysh
23368a121ca2   hello-world   "/hello"   15 minutes ago   Exited (0) 15 minutes ago   mystifying_galois
fred1@fred1VirtualBox: $ docker start aabed3296a
Error response from daemon: No such container: aabed3296a
Error: failed to start containers: aabed3296a
fred1@fred1VirtualBox: $ docker start f031ff32416a
f031ff32416a
fred1@fred1VirtualBox:~$ docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS    NAMES
f031ff32416a   ubuntu   "/bin/bash"   8 minutes ago   Up 9 seconds   romantic_keldysh
fred1@fred1VirtualBox: $ docker stop romantic_keldysh
romantic_keldysh
fred1@fred1VirtualBox: $ docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS    NAMES
fred1@fred1VirtualBox: $ docker rm mystifying_galois
mystifying_galois
fred1@fred1VirtualBox: $

```

```

fred1@fred1VirtualBox: $ docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS    NAMES
fred1@fred1VirtualBox: $ docker ps -a
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS    NAMES
f031ff32416a   ubuntu   "/bin/bash"   7 minutes ago   Exited (0) 32 seconds ago   romantic_keldysh
23368a121ca2   hello-world   "/hello"   15 minutes ago   Exited (0) 15 minutes ago   mystifying_galois
fred1@fred1VirtualBox: $ docker start aabed3296a
Error response from daemon: No such container: aabed3296a
Error: failed to start containers: aabed3296a
fred1@fred1VirtualBox: $ docker start f031ff32416a
f031ff32416a
fred1@fred1VirtualBox:~$ docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS    NAMES
f031ff32416a   ubuntu   "/bin/bash"   8 minutes ago   Up 9 seconds   romantic_keldysh
fred1@fred1VirtualBox: $ docker stop romantic_keldysh
romantic_keldysh
fred1@fred1VirtualBox: $ docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS    NAMES
fred1@fred1VirtualBox: $ docker rm mystifying_galois
mystifying_galois
fred1@fred1VirtualBox: $ docker commit -m "first commit" -a "farid555" f031ff32416a farid555/ubuntu-nodejs
sha256:2b94b3efaaa13b3ff9c9aed173a74a91131479a1c26e394f5bc3c7c41a455dfdd
fred1@fred1VirtualBox: $ docker images
REPOSITORY    TAG       IMAGE ID   CREATED   SIZE
farid555/ubuntu-nodejs   latest    2b94b3efaaa1   38 seconds ago   206MB
ubuntu         latest    c6b84b685f35   6 weeks ago      77.8MB
hello-world    latest    9c7a54a9a43c   4 months ago     13.3kB
fred1@fred1VirtualBox: $

```

```

fred1@fred1VirtualBox: $ docker commit -m "first commit" -a "farid555" f031ff32416a farid555/ubuntu-nodejs
sha256:2b94b3efaaa13b3ff9c9aed173a74a91131479a1c26e394f5bc3c7c41a455dfdd
fred1@fred1VirtualBox: $ docker images
REPOSITORY    TAG       IMAGE ID   CREATED   SIZE
farid555/ubuntu-nodejs   latest    2b94b3efaaa1   38 seconds ago   206MB
ubuntu         latest    c6b84b685f35   6 weeks ago      77.8MB
hello-world    latest    9c7a54a9a43c   4 months ago     13.3kB
fred1@fred1VirtualBox: $ docker login -u docker-registry-username
Password:
Error response from daemon: Get "https://registry-1.docker.io/v2/": unauthorized: incorrect username or password
fred1@fred1VirtualBox: $ docker login -u farid555
Password:
WARNING! Your password will be stored unencrypted in /home/fred1/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
fred1@fred1VirtualBox: $

```

```

fred1@fred1VirtualBox: $ docker images
REPOSITORY    TAG       IMAGE ID   CREATED   SIZE
farid555/ubuntu-nodejs   latest    2b94b3efaaa1   38 seconds ago   206MB
ubuntu         latest    c6b84b685f35   6 weeks ago      77.8MB
hello-world    latest    9c7a54a9a43c   4 months ago     13.3kB
fred1@fred1VirtualBox: $ docker login -u docker-registry-username
Password:
Error response from daemon: Get "https://registry-1.docker.io/v2/": unauthorized: incorrect username or password
fred1@fred1VirtualBox: $ docker login -u farid555
Password:
WARNING! Your password will be stored unencrypted in /home/fred1/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
fred1@fred1VirtualBox: $ docker push farid555/ubuntu-nodejs
Using default tag: latest
The push refers to repository [docker.io/farid555/ubuntu-nodejs]
2237fca49803: Pushed
dc0585a4b8b7: Mounted from library/ubuntu
latest: digest: sha256:76cf60a71158564d1ca3dff0984dba7133f97b17a646f8f3bf1b760730614add size: 741
fred1@fred1VirtualBox: $

```


Установка Docker

- 1) sudo apt update
- 2) sudo apt install apt-transport-https ca-certificates curl software-properties-common
- 3) curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -
- 4) sudo add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu bionic stable"
- 5) sudo apt update
- 6) apt-cache policy docker-ce
- 7) sudo apt install docker-ce
- 8) sudo systemctl status docker

Использование команды Docker без sudo

- 9) sudo usermod -aG docker \${USER}
- 10) su - \${USER}
- 11) id -nG

Использование команды Docker

docker [option] [command] [arguments]

- 12) docker

docker docker-subcommand --help

- 13) docker info

Работа с образами Docker

- 14) docker run hello-world
- 15) docker search ubuntu
- 16) docker pull ubuntu
- 17) docker images

Запуск контейнера Docker

- 18) docker run -it ubuntu
- 19) [root@d9b100f2f636:/#](#) apt update
- 20) [root@d9b100f2f636:/#](#) apt install nodejs
- 21) [root@d9b100f2f636:/#](#) node -v

Управление контейнерами Docker

22) docker ps

23) docker ps -a

d9b100f2f636_ubuntu_"/bin/bash"_About an hour ago_Exited (0)_8 minutes ago_sharp_volhard

01c950718166_hello-world_"/hello"_About an hour ago_Exited (0)_About an hour ago_festive_williams

24) docker ps -l

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS
d9b100f2f636	ubuntu	"/bin/bash"	About an hour ago	Exited (0)	10 minutes ago
NAMES					
sharp_volhard					

25) docker start d9b100f2f636

26) docker stop sharp_volhard

27) docker rm festive_williams

Сохранение изменений в контейнере в образ Docker

28) docker commit -m "first commit" -a "farid555" d9b100f2f636 farid555/ubuntu-nodejs

29) docker images

Отправка контейнеров Docker в репозиторий Docker

30) docker login -u farid555

31) docker push farid555/ubuntu-nodejs

Установка Docker Compose

```
fred@fredVirtualBox:~$ systemctl status docker
● docker.service - Docker Application Container Engine
   Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2023-09-28 16:06:49 +04; 6min ago
     TriggeredBy: ● docker.socket
       Docs: https://docs.docker.com
        Main PID: 1011 (dockerd)
          Tasks: 10
         Memory: 100.6M
            CPU: 3.988s
        CGroup: /system.slice/docker.service
               └─1011 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock

sen 28 16:06:43 fredVirtualBox dockerd[1011]: time="2023-09-28T16:06:43.897715547+04:00" level=info msg="Starting up"
sen 28 16:06:43 fredVirtualBox dockerd[1011]: time="2023-09-28T16:06:43.924593063+04:00" level=info msg="detected 127.0.0.53 nameserver, a"
sen 28 16:06:44 fredVirtualBox dockerd[1011]: time="2023-09-28T16:06:44.625519101+04:00" level=info msg="[graphdriver] using prior storage"
sen 28 16:06:44 fredVirtualBox dockerd[1011]: time="2023-09-28T16:06:44.682757708+04:00" level=info msg="Loading containers: start."
sen 28 16:06:48 fredVirtualBox dockerd[1011]: time="2023-09-28T16:06:48.268019490+04:00" level=info msg="Default bridge (docker0) is assign"
sen 28 16:06:48 fredVirtualBox dockerd[1011]: time="2023-09-28T16:06:48.656091372+04:00" level=info msg="Loading containers: done."
sen 28 16:06:49 fredVirtualBox dockerd[1011]: time="2023-09-28T16:06:49.421078597+04:00" level=info msg="Docker daemon" commit=659604f gra
sen 28 16:06:49 fredVirtualBox dockerd[1011]: time="2023-09-28T16:06:49.426391102+04:00" level=info msg="Daemon has completed initializati"
sen 28 16:06:49 fredVirtualBox dockerd[1011]: time="2023-09-28T16:06:49.751967444+04:00" level=info msg="API listen on /run/docker.sock"
sen 28 16:06:49 fredVirtualBox systemd[1]: Started Docker Application Container Engine.

[1]: Octanonen ~$ systemctl status docker
fred@fredVirtualBox:~$ sudo curl -L https://github.com/docker/compose/releases/download/1.21.2/docker-compose -'uname -s' -'uname -m' -o /usr
/local/bin/docker-compose
(sudo) rapam: gnu: fred:
% Total    % Received % Xferd Average Speed   Time    Time     Time  Current
           Dload  Upload  Total   Spent    Left   Speed
100 10.2M  100 10.2M    0     0  610K   0  0:00:17  0:00:17  0:00:00  550K
fred@fredVirtualBox:~$ sudo chmod +x /usr/local/bin/docker-compose
fred@fredVirtualBox:~$ docker-compose --version
docker-compose version 1.21.2, build a133471
fred@fredVirtualBox:~$
```

```
fred@fredVirtualBox:~$ docker run --rm hello-world
fred@fredVirtualBox:~$ pwd
/home/fred1
fred@fredVirtualBox:~$ ls
bin  boot  dev  etc  home  lib  lib64  media  mnt  opt  root  run  sbin  srv  tmp  usr  var
fred@fredVirtualBox:~$ mkdir hello-world
fred@fredVirtualBox:~$ cd hello-world
fred@fredVirtualBox:~/hello-world$ nano docker-compose.yml
fred@fredVirtualBox:~/hello-world$ docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
farid555/ubuntu-nodejs  latest             2b94b3efaa1        12 hours ago       206MB
ubuntu               latest             c6884b685f35       6 weeks ago        77.8MB
hello-world          latest             9c7a54a0a43c       4 months ago       13.3kB
fred@fredVirtualBox:~/hello-world$ docker-compose up
ERROR: Can't find a suitable configuration file in this directory or any
parent. Are you in the right directory?

Supported filenames: docker-compose.yml, docker-compose.yaml

fred@fredVirtualBox:~/hello-world$ nano docker-compose.yml
fred@fredVirtualBox:~/hello-world$ fred@fredVirtualBox:~/hello-world$ nano docker-compose.yml
fred@fredVirtualBox:~/hello-world$ nano docker-compose.yml
fred@fredVirtualBox:~/hello-world$ docker-compose up
Creating hello-world_my-test_1 ...
Attaching to hello-world_my-test_1
my-test_1      | Hello from Docker!
my-test_1      | This message shows that your installation appears to be working correctly.
my-test_1      |
my-test_1      | To generate this message, Docker took the following steps:
my-test_1      | 1. The Docker client contacted the Docker daemon.
my-test_1      | 2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
my-test_1      |    (amd64)
my-test_1      | 3. The Docker daemon created a new container from that image which runs the
my-test_1      |    executable that produces the output you are currently reading.
my-test_1      | 4. The Docker daemon streamed that output to the Docker client, which sent it
my-test_1      |    to your terminal.
my-test_1      |
my-test_1      | To try something more ambitious, you can run an Ubuntu container with:
my-test_1      | $ docker run -it ubuntu bash
my-test_1      |
my-test_1      | Share images, automate workflows, and more with a free Docker ID:
my-test_1      | https://hub.docker.com/
my-test_1      |
my-test_1      | For more examples and ideas, visit:
```

```
GNU nano 6.2
my-test:
image: hello-world
```

```
fred@fredVirtualBox:~/hello-world$ docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
farid555/ubuntu-nodejs  latest             2b94b3efaa1        12 hours ago       206MB
ubuntu               latest             c6884b685f35       6 weeks ago        77.8MB
hello-world          latest             9c7a54a0a43c       4 months ago       13.3kB
fred@fredVirtualBox:~/hello-world$ docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
fred@fredVirtualBox:~/hello-world$ docker ps -a
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
81ad14f3145   hello-world  "/hello"   About a minute ago   Exited (0) About a minute ago   hello-world_my-test_1
f031ff32416a   ubuntu     "/bin/bash"   12 hours ago        Exited (137) 12 hours ago        romantic_keldysh
fred@fredVirtualBox:~/hello-world$
```



```
fred1@fred1VirtualBox: /hello-world $ docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
farid55/ubuntu-nodejs latest             2b94b3efaaa1       12 hours ago       206MB
ubuntu               latest             c6b84b685f35       6 weeks ago        77.8MB
hello-world          latest             9c7a54a9a43c       4 months ago       13.3kB

fred1@fred1VirtualBox: /hello-world $ docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS              NAMES
81a1d14f3145       hello-world        "/hello"            About a minute ago  Exited (0) About a minute ago  81a1d14f3145       hello-world_my-test_1
f031ff32416a       ubuntu             "/bin/bash"         12 hours ago       Exited (137) 12 hours ago      f031ff32416a       romantic_keldysh

fred1@fred1VirtualBox: /hello-world $ docker rm 81a1d14
81a1d14
fred1@fred1VirtualBox: /hello-world $ docker rmi hello-world_my-test_1
Error response from daemon: No such image: hello-world_my-test_1:latest
fred1@fred1VirtualBox: /hello-world $ docker rmi hello-world
Untagged: hello-world:latest
Deleted: sha256:9c7a54a9a43cca047013b82af109fe963fde787f63f9e016fdc3384590c2823d
Deleted: sha256:01bb4fce3eb1b56b05adf99594dafd31907a5aadac736e36b27595c8b92f07f1

fred1@fred1VirtualBox: /hello-world $ docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS              NAMES
f031ff32416a       ubuntu             "/bin/bash"         13 hours ago       Exited (137) 12 hours ago      f031ff32416a       romantic_keldysh

fred1@fred1VirtualBox: /hello-world $ docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
farid55/ubuntu-nodejs latest             2b94b3efaaa1       12 hours ago       206MB
ubuntu               latest             c6b84b685f35       6 weeks ago        77.8MB

fred1@fred1VirtualBox: /hello-world $
```

- 1) systemctl status docker
- 2) sudo curl -L https://github.com/docker/compose/releases/download/1.21.2/docker-compose-`uname -s`-`uname -m` -o /usr/local/bin/docker-compose
- 3) sudo chmod +x /usr/local/bin/docker-compose
- 4) docker-compose --version

Запуск контейнера с помощью Docker Compose

- 5) pwd
 - 6) ls
 - 7) mkdir hello-world
 - 8) cd hello-world
 - 9) sudo nano docker-compose.yml
 - 10)
- my-test:

image: hello-world

- 11) docker images
 - 12) docker-compose up
- Creating hello-world_my-test_1 ... done
Attaching to hello-world_my-test_1
my-test_1 |

my-test_1 | Hello from Docker!

my-test_1 | This message shows that your installation appears to be working correctly.

my-test_1 |

- 13) docker ps

- 14) docker ps -a

```
fred1@fred1VirtualBox: ~/hello-world $ docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS              NAMES
81a1d14f3145       hello-world        "/hello"            About a minute ago  Exited (0) About a minute ago  81a1d14f3145       hello-world_my-test_1
f031ff32416a       ubuntu             "/bin/bash"         12 hours ago       Exited (137) 12 hours ago      f031ff32416a       romantic_keldysh
```

Удаление образа (необязательно)

15) `docker rm 81a1d14`

16) `docker rmi hello-world`

Untagged: hello-world:latest

Untagged: hello-world@sha256:4f53e2564790c8e7856ec08e384732aa38dc43c52f02952483e3f003afbf23db

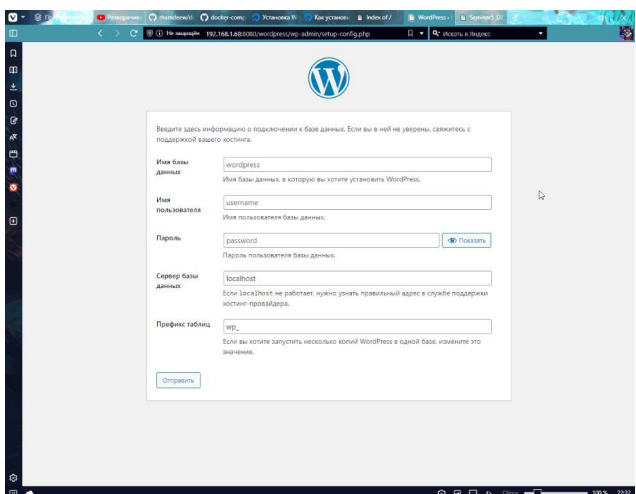
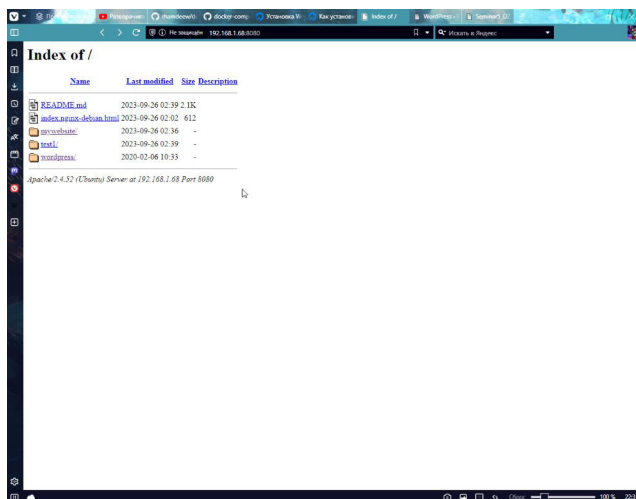
Deleted: sha256:9c7a54a9a43cca047013b82af109fe963fde787f63f9e016fdc3384500c2823d

Deleted: sha256:01bb4fce3eb1b56b05adf99504dafd31907a5aadac736e36b27595c8b92f07f1

17) `docker ps -a`

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
f031ff32416a	ubuntu	"/bin/bash"	13 hours ago	Exited (137) 12 hours ago		romantic_keldysh

немного wordpress -а , открыл страницу в windows-е



[illegible]

```
GNU nano 6.2 docker-compose.yml
version: '3'

services:
  db:
    image: mysql:8.0
    container_name: db
    restart: unless-stopped
    env_file: .env
    environment:
      - MYSQL_DATABASE=wordpress
    volumes:
      - dbdata:/var/lib/mysql
    command: '--default-authentication-plugin=mysql_native_password'
    networks:
      - app-network

  wordpress:
    depends_on:
      - db
    image: wordpress:5.1.1-fpm-alpine
    container_name: wordpress
    restart: unless-stopped
    env_file: .env
    environment:
      - WORDPRESS_DB_HOST=db:3306
      - WORDPRESS_DB_USER=$MYSQL_USER
      - WORDPRESS_DB_PASSWORD=$MYSQL_PASSWORD
      - WORDPRESS_DB_NAME=wordpress
    volumes:
      - wpdata:/var/www/html
    networks:
      - app-network

  webserver:
    depends_on:
      - wordpress
    image: nginx:1.15.12-alpine
    container_name: webserver
    restart: unless-stopped
    ports:
      - "80:80"
    volumes:
      - wpdata:/var/www/html
      - ./nginx-conf/etc/nginx/conf.d
```

```

root@fedora19:~# docker-compose up -d
Creating network 'wordpress_default' with the default driver
Creating volume 'wordpress_certbot-etc' with default driver
Creating volume 'wordpress_wordpress' with default driver
Creating volume 'wordpress_dbdata' with default driver
Pulling db (mysql:5.6)...
5.6: Pulling from library/mysql
5262579e845: Extracting [=====>] 41.75MB/44.96MB
74b1676e29b: Download complete
9eeb3c7837cf: Download complete
c6f5d3670db7: Download complete
6c5636929c3e: Download complete
323a74fd36b: Download complete
130c1b8be71: Downloading [=====>] 44.55MB/58.51MB
924142d477c: Download complete
c1bf03962c9: Download complete

```

```

fred@fredVirtualBox: ~$ docker-compose ps

```

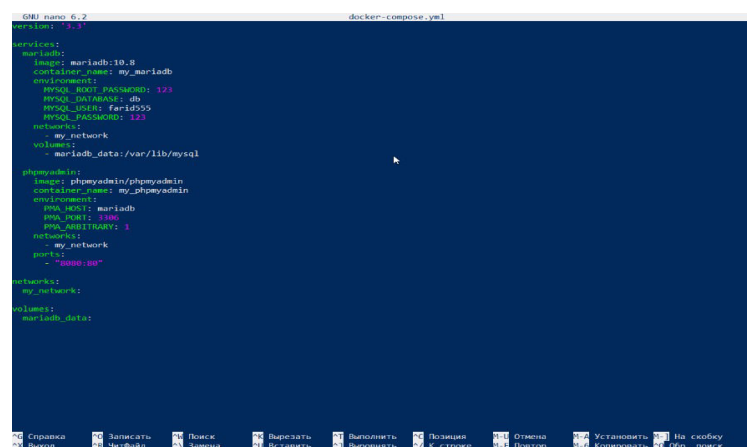
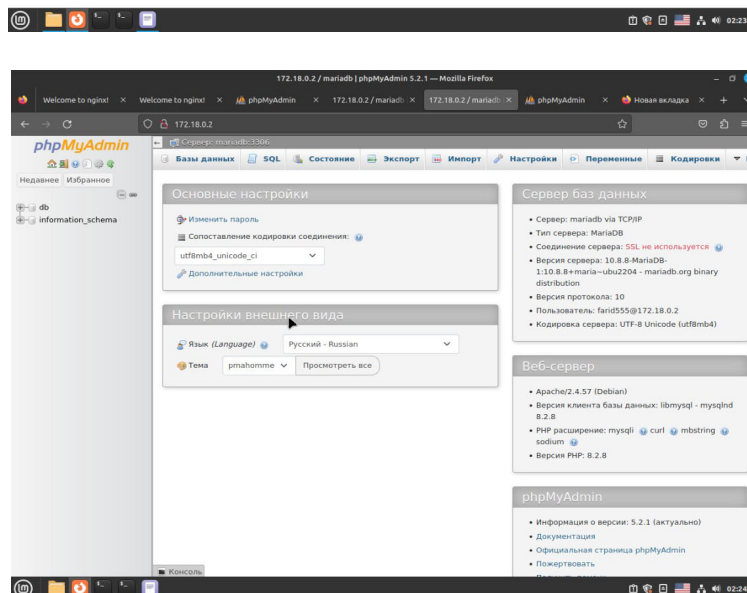
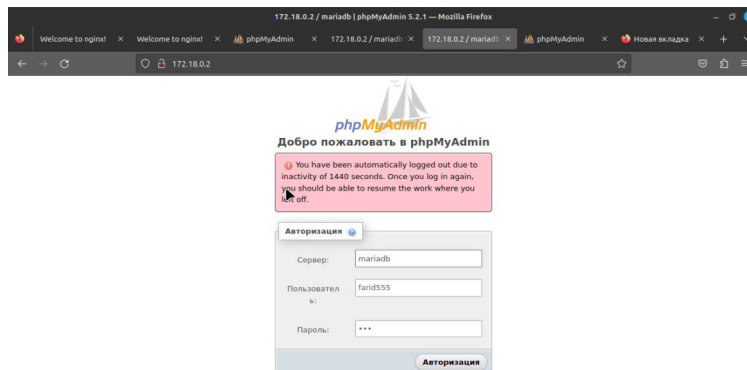
Name	Command	State	Ports
certbot	certbot certonly --webroot ...	Exit 1	
db	docker-entrypoint.sh --def ...	Up	3306/tcp, 33060/tcp
webserver	nginx -g daemon off;	Up	0.0.0.0:443->443/tcp, :::443->443/tcp, 80/tcp
wordpress	docker-entrypoint.sh php-fpm	Up	9080/tcp

```

fred@fredVirtualBox: ~$ docker-compose

```

2) Запустить два контейнера, связанные одной сетью (используя документацию).
Первый контейнер БД (например, образ mariadb:10.8), второй контейнер — phpmyadmin.
Получить доступ к БД в первом контейнере через второй контейнер (веб-интерфейс phpmyadmin).



```
farid@farid555:~$ pwd
/home/farid
farid@farid555:~$ ls
my_wordpress_project  test  test01  Бэкап  Документы  Загрузки  Изображения  Музыка  Программы
farid@farid555:~$ mkdir my_db_project
farid@farid555:~$ cd my_db_project
farid@farid555:~/my_db_project$ nano docker-compose.yml
farid@farid555:~/my_db_project$ docker-compose up -d
permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Get "http
/v1.24/containers/json?all=1&filters=%7B%22label%22%3A%7B%22com.docker.compose.config-hash%22%3Atrue%2C%22com.d
project%22%3Atrue%7D%7D": dial unix /var/run/docker.sock: connect: permission denied
farid@farid555:~/my_db_project$ sudo docker-compose up -d
[+] phpmyadmin Error
[+] mariadb Error
Error response from daemon: Get "https://registry-1.docker.io/v2/": EOF
farid@farid555:~/my_db_project$ sudo docker-compose up -d

[1]+  Остановлен sudo systemctl status docker
farid@farid555:~/my_db_project$ sudo systemctl restart docker

farid@farid555:~/my_db_project$ sudo systemctl restart docker
[+] Restarting [1]+ my_db_project$ sudo docker-compose up -d
[+] phpmyadmin 38 layers [0B/0B] 0B/0B Pulled
[+] faef57eae888 Pull complete
[+] 989a1d6c052e Pull complete
[+] 0705c9c2f22d Pull complete
[+] 621478e042ce Pull complete
```

- 1) mkdir my_db_project
- 2) cd my_db_project
- 2) nano docker-compose.yml
- 3) docker-compose up -d
- 4) sudo systemctl restart docker
- 5) sudo systemctl status docker
- 6) sudo docker-compose up -d
- 7) sudo docker ps -a

Результат

Текст команд, которые применялись при выполнении задания.

При наличии: часть конфигурационных файлов, которые решают задачу.

Скриншоты результата запуска контейнеров (веб-интерфейс).

Присылаем в формате текстового документа: задание и команды для решения (без вывода).

Формат — PDF (один файл на все задания).

Спасибо , всего хорошего !)

Урок 8. Скрипты Bash

Задание

1) Написать скрипт очистки директорий.

На вход принимает путь к директории.

Если директория существует, то удаляет в ней все файлы с расширениями .bak, .tmp, .backup.

Если директории нет, то выводит ошибку.

```
#!/bin/bash
```

```
# Проверяем, передан ли путь к директории
```

```
if [ -z "$1" ]; then
```

```
    echo "Ошибка: Пожалуйста, укажите путь к директории."
```

```
    exit 1
```

```
fi
```

```
# Проверяем, существует ли директория
```

```
if [ ! -d "$1" ]; then
```

```
    echo "Ошибка: Директория $1 не существует."
```

```
    exit 1
```

```
fi
```

```
# Переходим в указанную директорию
```

```
cd "$1" || exit 1
```

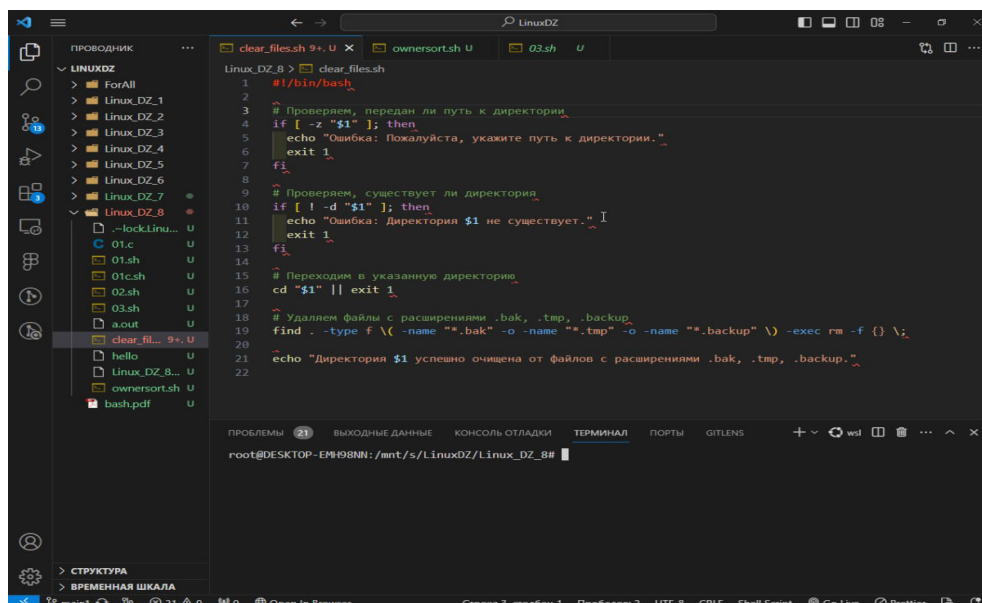
```
# Удаляем файлы с расширениями .bak, .tmp, .backup
```

```
find . -type f \( -name "*.bak" -o -name "*.tmp" -o -name "*.backup" \) -exec rm -f {} \;
```

```
echo "Директория $1 успешно очищена от файлов с расширениями .bak, .tmp, .backup."
```

1) `chmod +x clear_files.sh`

2) `bash clear_files.sh /home/farid/test01`



2) Создать скрипт ownersort.sh, который в заданной папке копирует файлы в директории, названные по имени владельца каждого файла.

Учтите, что файл должен принадлежать соответствующему владельцу.

Результат

Код скриптов в текстовом виде (каждый скрипт в отдельном файле).

Кодировка файлов UTF-8.

```
#!/bin/bash

# Проверяем, передан ли путь к исходной папке
if [ -z "$1" ]; then
    echo "Ошибка: Пожалуйста, укажите путь к исходной папке."
    exit 1
fi

# Проверяем, существует ли исходная папка
if [ ! -d "$1" ]; then
    echo "Ошибка: Исходная папка $1 не существует."
    exit 1
fi

# Переходим в исходную папку
cd "$1" || exit 1

# Перебираем файлы в исходной папке
for file in *; do
    # Проверяем, является ли элемент файлом (не директорией)
    if [ -f "$file" ]; then
        # Получаем имя владельца файла
        owner=$(stat -c "%U" "$file")

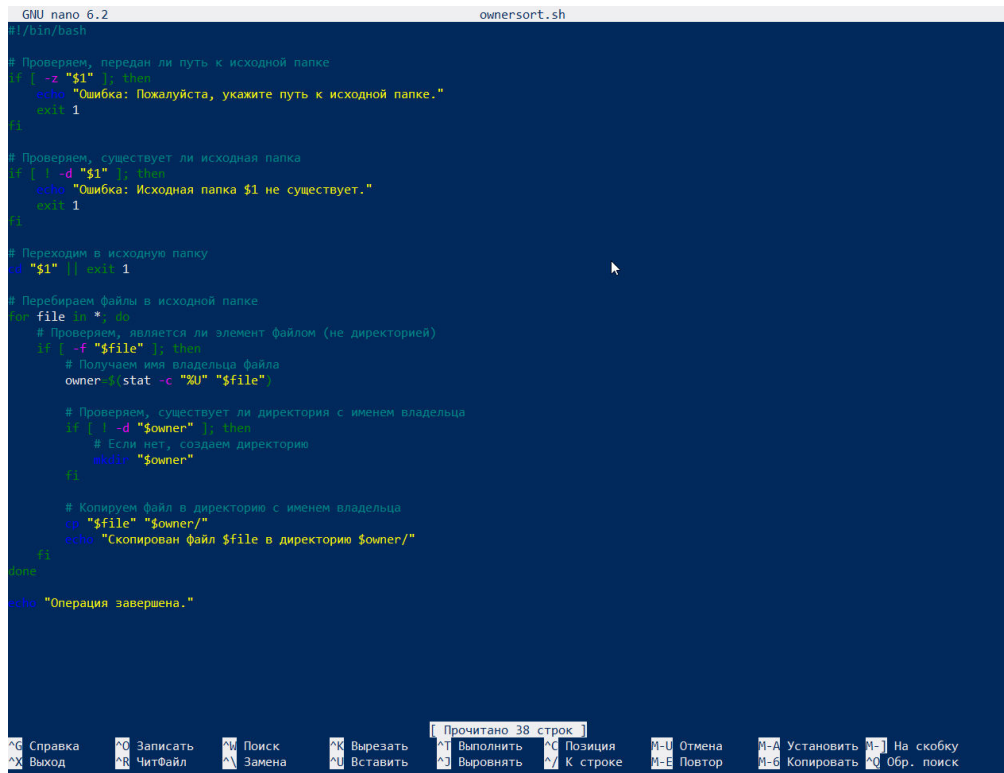
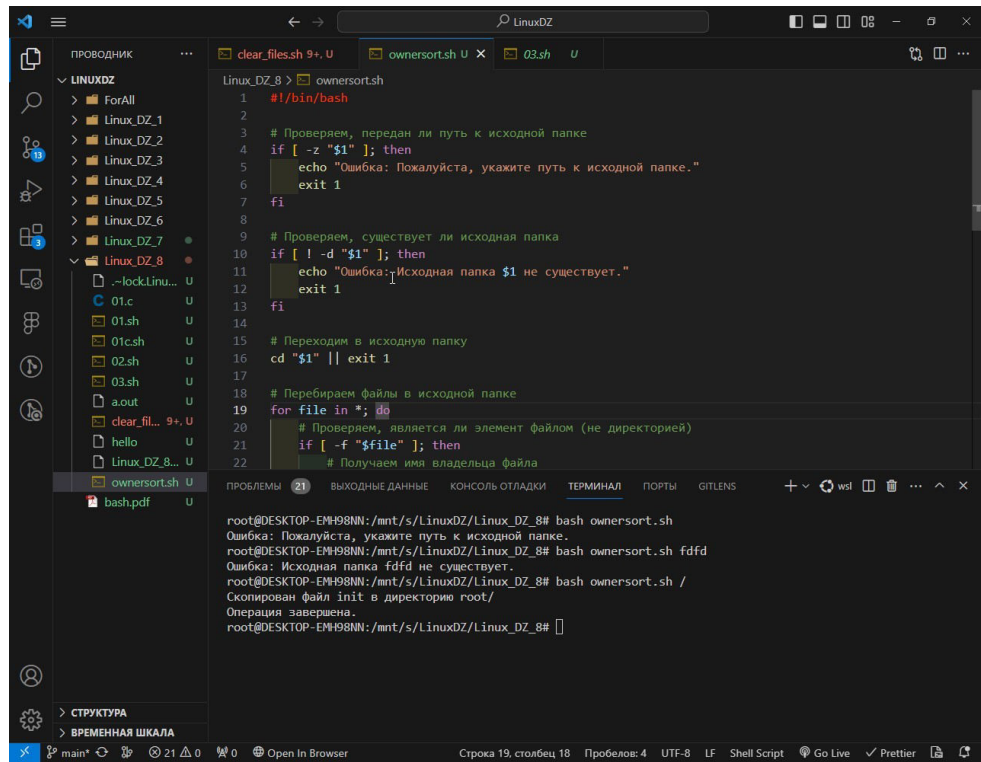
        # Проверяем, существует ли директория с именем владельца
        if [ ! -d "$owner" ]; then
            # Если нет, создаем директорию
            mkdir "$owner"
        fi

        # Копируем файл в директорию с именем владельца
        cp "$file" "$owner/"
        echo "Скопирован файл $file в директорию $owner/"
    fi
done

echo "Операция завершена."
```

1) chmod +x ownersort.sh

2) ./ownersort.sh /home/farid/test01



```
GNU nano 6.2 clear_files.sh *
#!/bin/bash

# Проверяем, передан ли путь к директории
if [ -z "$1" ]; then
    echo "Ошибка: Пожалуйста, укажите путь к директории."
    exit 1
fi

# Проверяем, существует ли директория
if [ ! -d "$1" ]; then
    echo "Ошибка: Директория $1 не существует."
    exit 1
fi

# Переходим в указанную директорию
cd "$1" || exit 1

# Удаляем файлы с расширениями .bak, .tmp, .backup
find . -type f \( -name "*.bak" -o -name "*.tmp" -o -name "*.backup" \) -exec rm -f {} \;

echo "Директория $1 успешно очищена от файлов с расширениями .bak, .tmp, .backup."
```

⌘ Справка ⌘ Записать ⌘ Поиск ⌘ Вырезать ⌘ Выполнить ⌘ Позиция ⌘ Отмена ⌘ Установить ⌘ На скобку
⌘ Выход ⌘ ЧитФайл ⌘ Замена ⌘ Вставить ⌘ Выровнять ⌘ К строке ⌘ Повтор ⌘-6 Копировать ⌘ Обр. поиск

Спасибо всего хорошего !)