Containerization. Docker. Lection 3.

Docker Compose

Install Docker Compose

You can run Compose on macOS, Windows, and 64-bit Linux.

Prerequisites

Docker Compose relies on Docker Engine for any meaningful work, so make sure you have Docker Engine installed either locally or remote, depending on your setup.

On desktop systems like Docker Desktop for Mac and Windows, Docker Compose is included as part of those desktop installs.

On Linux systems, first install the Docker Engine for your OS as described earlier.

After that follow instructions (below pages) to install Compose on Linux systems.

To run Compose as a non-root user, see Manage Docker as a non-root user.

Docker Compose

On Linux, you can download the Docker Compose binary from the Compose repository release page on GitHub. Follow the instructions from the link, which involve running the curl command in your terminal to download the binaries. These step-by-step instructions are also included below.

Run this command to download the current stable release of Docker Compose:

```
sudo curl -L "https://github.com/docker/compose/releases/download/1.27.4/docker-compose-$(uname -s) \
-$(uname -m)" -o /usr/local/bin/docker-compose
```

Apply executable permissions to the binary:

```
sudo chmod +x /usr/local/bin/docker-compose
```

Docker Compose

You can use Docker Compose to easily run WordPress in an isolated environment built with Docker containers. This quick-start guide demonstrates how to use Compose to set up and run WordPress. Before starting, make sure you have Compose installed.

Define the project

1. Create an empty project directory.

You can name the directory something easy for you to remember. This directory is the context for your application image. The directory should only contain resources to build that image. This project directory contains a ***docker-compose.yml*** file which is complete in itself for a good starter wordpress project.

2. Change into your project directory.

For example, if you named your directory my_wordpress:

cd my_wordpress/

Docker Compose

Create a **docker-compose.yml** file that starts your WordPress blog and a separate MySQL instance with a volume mount for data persistence:

```
version: '3.3'
services:
  db:
    image: mysql:5.7
    volumes:
      - db_data:/var/lib/mysql
    restart: always
    environment:
      MYSQL_ROOT_PASSWORD: somewordpress
      MYSQL_DATABASE: wordpress
      MYSQL_USER: wordpress
      MYSQL_PASSWORD: wordpress
  wordpress:
    depends_on:
      - db
    image: wordpress:latest
    ports:
      - "8000:80"
    restart: always
    environment:
      WORDPRESS_DB_HOST: db:3306
      WORDPRESS_DB_USER: wordpress
      WORDPRESS_DB_PASSWORD: wordpress
      WORDPRESS_DB_NAME: wordpress
volumes:
   db_data: {}
```

Docker Compose

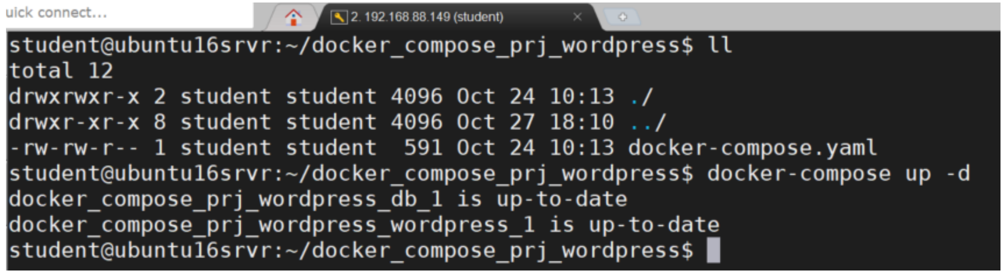
Build the project

In order to buil the project, run following command from your project directory.

docker-compose up -d

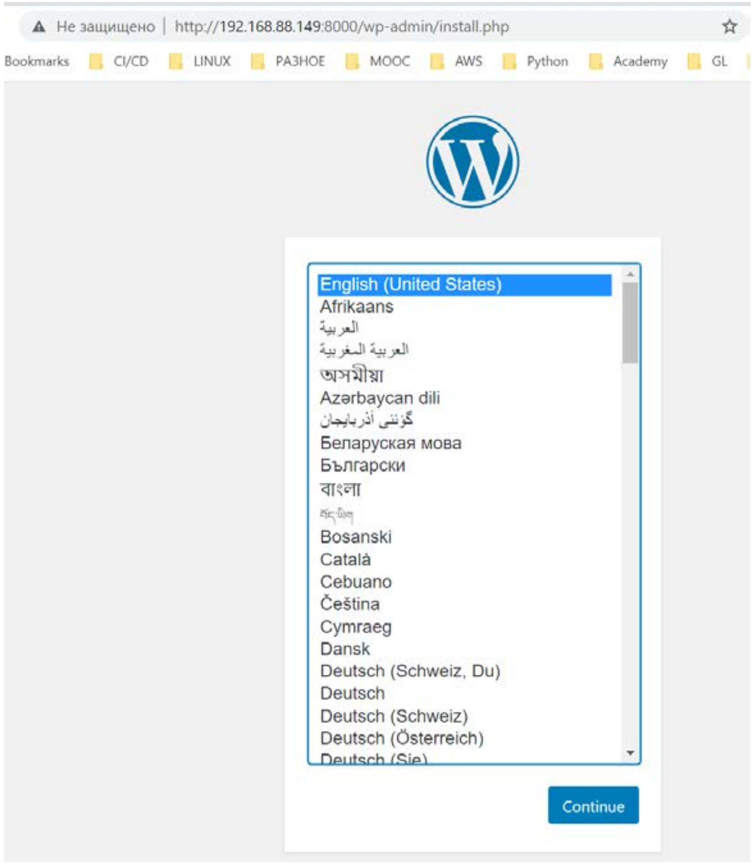
This runs docker-compose up in detached mode, pulls the needed Docker images, and starts the wordpress and database containers, as shown in the example below.

```
$ docker-compose up -d
Creating network "my_wordpress_default" with the default driver
Pulling db (mysql:5.7)...
5.7: Pulling from library/mysql
efd26ecc9548: Pull complete
a3ed95caeb02: Pull complete
...
Digest: sha256:34a0aca88e85f2efa5edff1cea77cf5d3147ad93545dbec99cfe705b03c520de
Status: Downloaded newer image for mysql:5.7
Pulling wordpress (wordpress:latest)...
latest: Pulling from library/wordpress
efd26ecc9548: Already exists
a3ed95caeb02: Pull complete
589a9d9a7c64: Pull complete
...
Digest: sha256:ed28506ae44d5def89075fd5c01456610cd6c64006addfe5210b8c675881aff6
Status: Downloaded newer image for wordpress:latest
Creating my_wordpress_db_1
Creating my_wordpress_wordpress_1
```



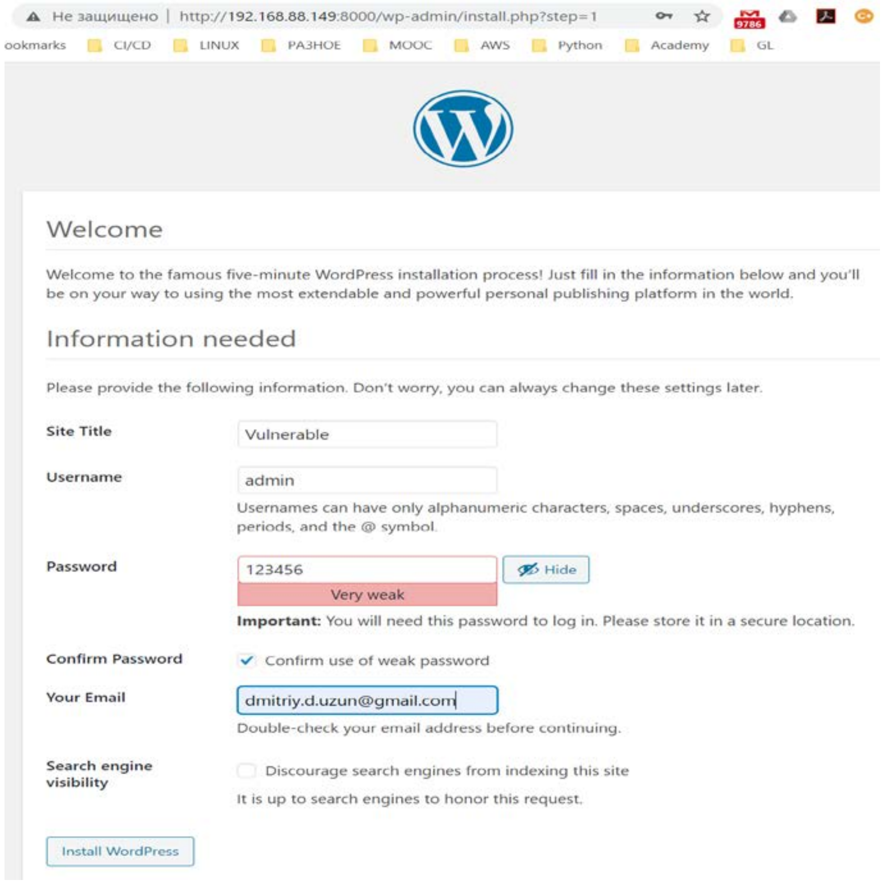
```
student@ubuntu16srvr:~/docker_compose_prj_wordpress$ ll
total 12
drwxrwxr-x 2 student student 4096 Oct 24 10:13 ./
drwxr-xr-x 8 student student 4096 Oct 27 18:10 ../
-rw-rw-r-- 1 student student  591 Oct 24 10:13 docker-compose.yaml
student@ubuntu16srvr:~/docker_compose_prj_wordpress$ docker-compose up -d
docker_compose_prj_wordpress_db_1 is up-to-date
docker_compose_prj_wordpress_wordpress_1 is up-to-date
student@ubuntu16srvr:~/docker_compose_prj_wordpress$
```

Docker Compose. Wordpress realization



Не защищено | http://192.168.88.149:8000/wp-admin/install.php

English (United States)
Afrikaans
العربية
العربية المغربية
অসমীয়া
Azərbaycan dili
گؤنئی آذربایجان
Беларуская мова
Български
বাংলা
བོད་ཡིག
Bosanski
Català
Cebuano
Čeština
Cymraeg
Dansk
Deutsch (Schweiz, Du)
Deutsch
Deutsch (Schweiz)
Deutsch (Österreich)
Deutsch (Sie)



Не защищено | http://192.168.88.149:8000/wp-admin/install.php?step=1

Welcome

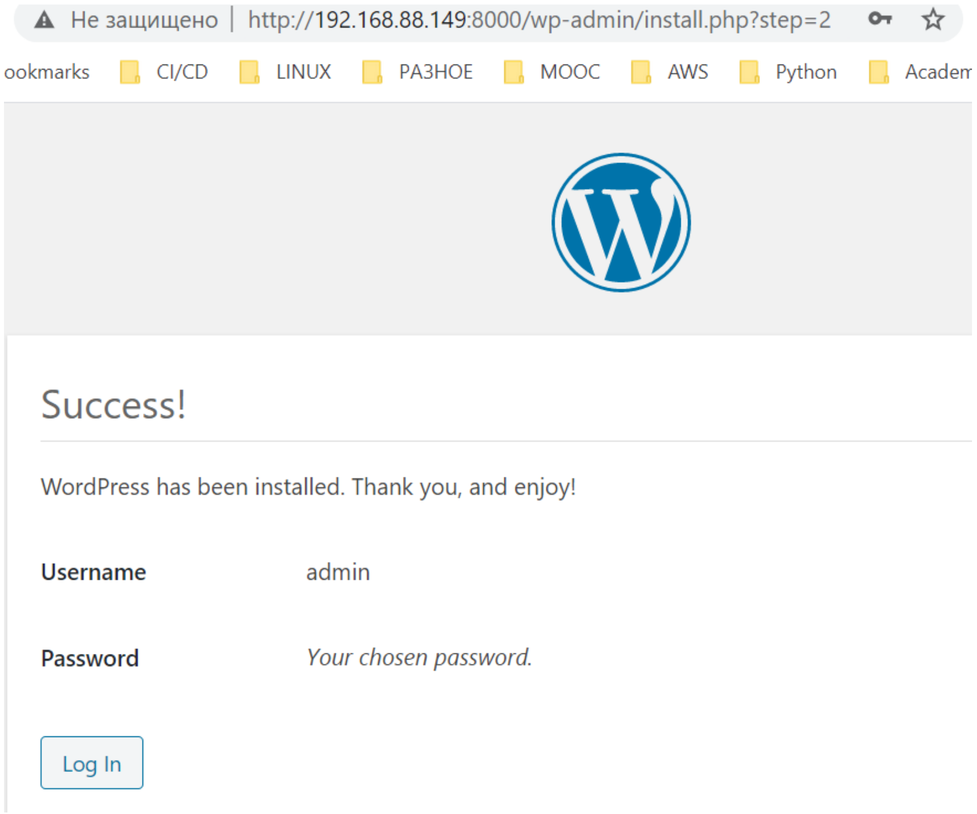
Welcome to the famous five-minute WordPress installation process! Just fill in the information below and you'll be on your way to using the most extendable and powerful personal publishing platform in the world.

Information needed

Please provide the following information. Don't worry, you can always change these settings later.

Site Title	Vulnerable
Username	admin Usernames can have only alphanumeric characters, spaces, underscores, hyphens, periods, and the @ symbol.
Password	123456 Hide Very weak **Important:** You will need this password to log in. Please store it in a secure location.
Confirm Password	✓ Confirm use of weak password
Your Email	dmitriy.d.uzun@gmail.com Double-check your email address before continuing.
Search engine visibility	☐ Discourage search engines from indexing this site It is up to search engines to honor this request.

Docker Compose. Wordpress realization



Не защищено | http://192.168.88.149:8000/wp-admin/install.php?step=2

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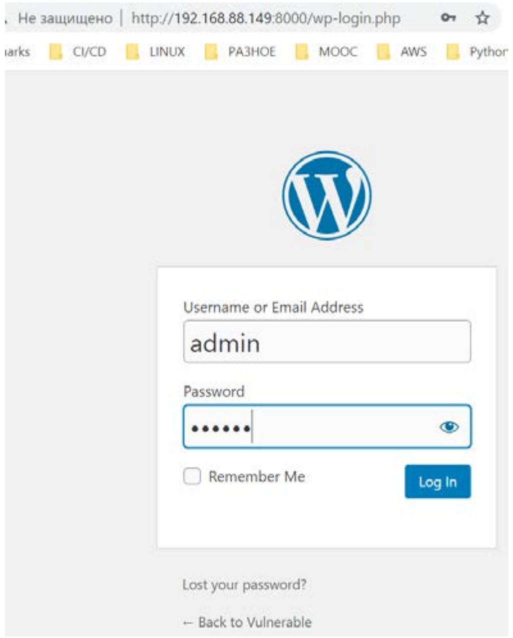
Success!

WordPress has been installed. Thank you, and enjoy!

Username	admin
Password	*Your chosen password.*

Log In



Не защищено | http://192.168.88.149:8000/wp-login.php

arks CI/CD LINUX PA3HOE MOOC AWS Pythor

Username or Email Address

admin

Password

••••••

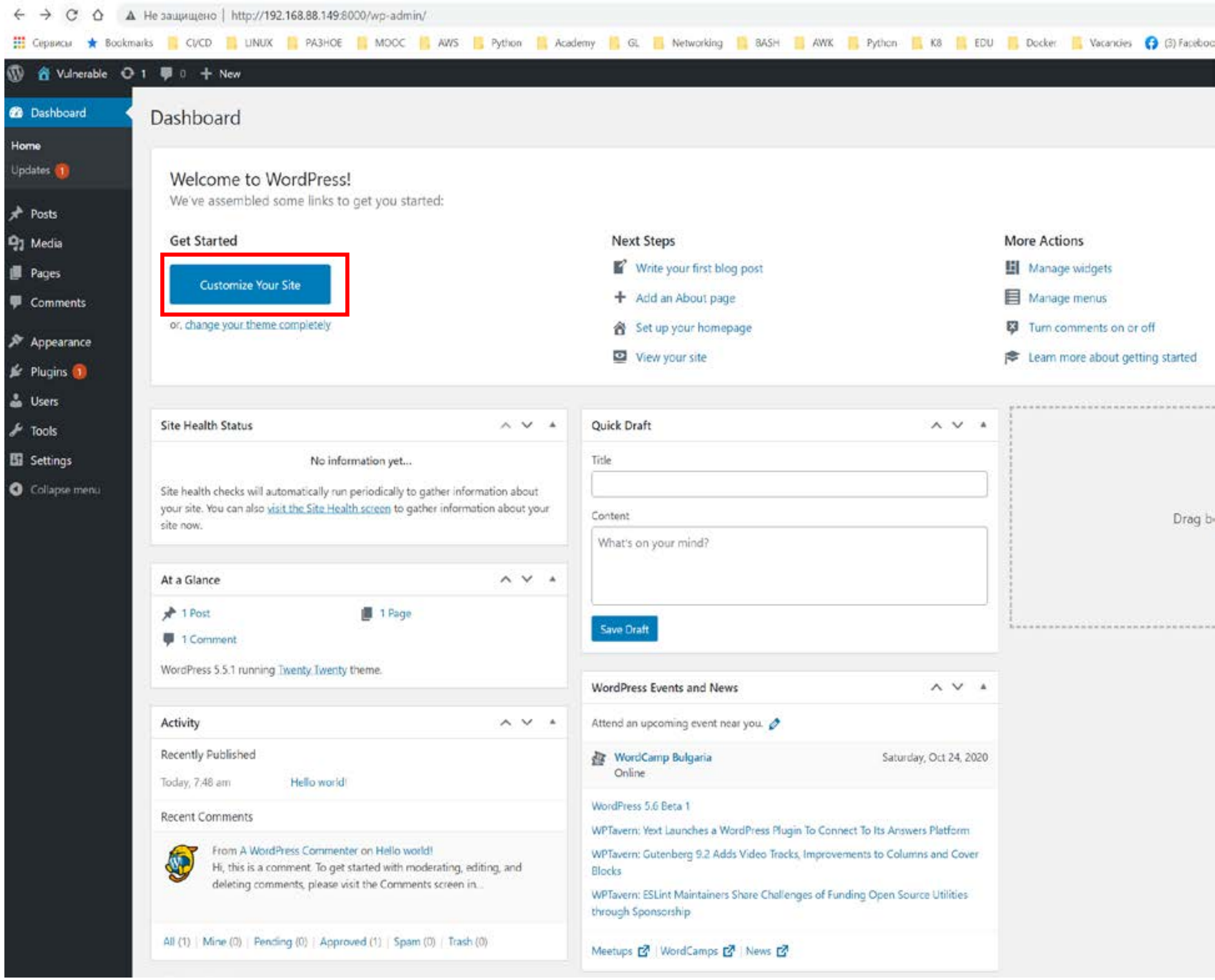
Remember Me

Log In

Lost your password?

← Back to Vulnerable

Docker Compose. Wordpress realization



Dashboard

Welcome to WordPress!

We've assembled some links to get you started:

Get Started

Customize Your Site

or, change your theme completely

Next Steps

- Write your first blog post
- Add an About page
- Set up your homepage
- View your site

More Actions

- Manage widgets
- Manage menus
- Turn comments on or off
- Learn more about getting started

Site Health Status

No information yet...

Site health checks will automatically run periodically to gather information about your site. You can also visit the Site Health screen to gather information about your site now.

At a Glance

1 Post 1 Page

1 Comment

WordPress 5.5.1 running Twenty Twenty theme.

Activity

Recently Published

Today, 7:48 am Hello world!

Recent Comments

From A WordPress Commenter on Hello world!

Hi, this is a comment. To get started with moderating, editing, and deleting comments, please visit the Comments screen in...

All (1) | Mine (0) | Pending (0) | Approved (1) | Spam (0) | Trash (0)

Quick Draft

Title

Content

What's on your mind?

Save Draft

WordPress Events and News

Attend an upcoming event near you.

WordCamp Bulgaria Online — Saturday, Oct 24, 2020

WordPress 5.6 Beta 1

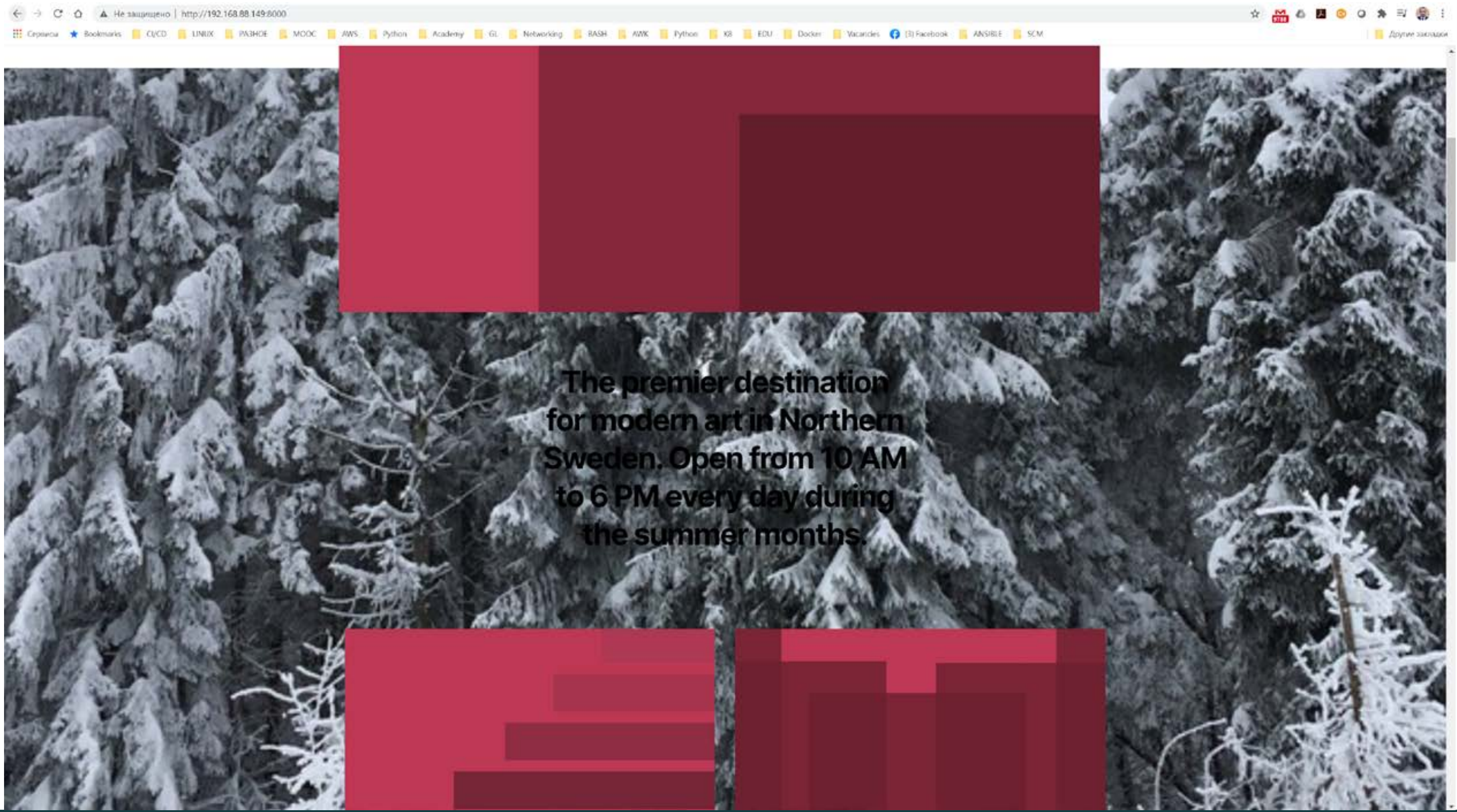
WPTavern: Yext Launches a WordPress Plugin To Connect To Its Answers Platform

WPTavern: Gutenberg 9.2 Adds Video Tracks, Improvements to Columns and Cover Blocks

WPTavern: ESLint Maintainers Share Challenges of Funding Open Source Utilities through Sponsorship

Meetups | WordCamps | News

Docker Compose. Wordpress realization



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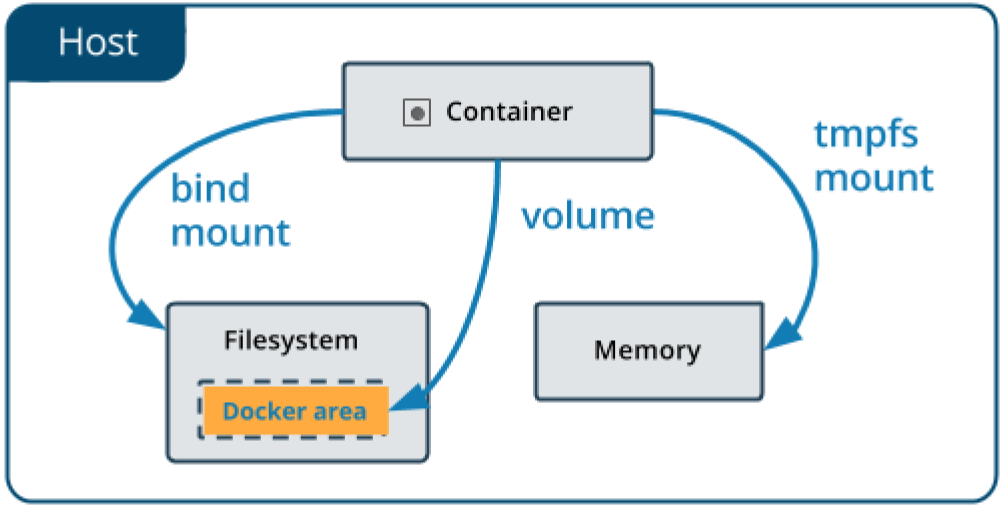
Docker Compose. Use volumes

Volumes are the preferred mechanism for persisting data generated by and used by Docker containers. While bind mounts are dependent on the directory structure and OS of the host machine, volumes are completely managed by Docker. Volumes have several advantages over bind mounts:

- Volumes are easier to back up or migrate than bind mounts.
- You can manage volumes using Docker CLI commands or the Docker API.
- Volumes work on both Linux and Windows containers.
- Volumes can be more safely shared among multiple containers.
- Volume drivers let you store volumes on remote hosts or cloud providers, to encrypt the contents of volumes, or to add other functionality.
- New volumes can have their content pre-populated by a container.
- Volumes on Docker Desktop have much higher performance than bind mounts from Mac and Windows hosts.
- Volumes are often a better choice than persisting data in a container’s writable layer, because a volume does not increase the size of the containers using it, and the volume’s contents exist outside the lifecycle of a given container.

Docker Compose. Use volumes

If your container generates non-persistent state data, consider using a **tmpfs mount** to avoid storing the data anywhere permanently, and to increase the container's performance by avoiding writing into the container's writable layer.



Docker Compose. Use volumes

Create and manage volumes

You can create and manage volumes outside the scope of any container.

Create a volume:

$ docker volume create my-vol

List volumes:

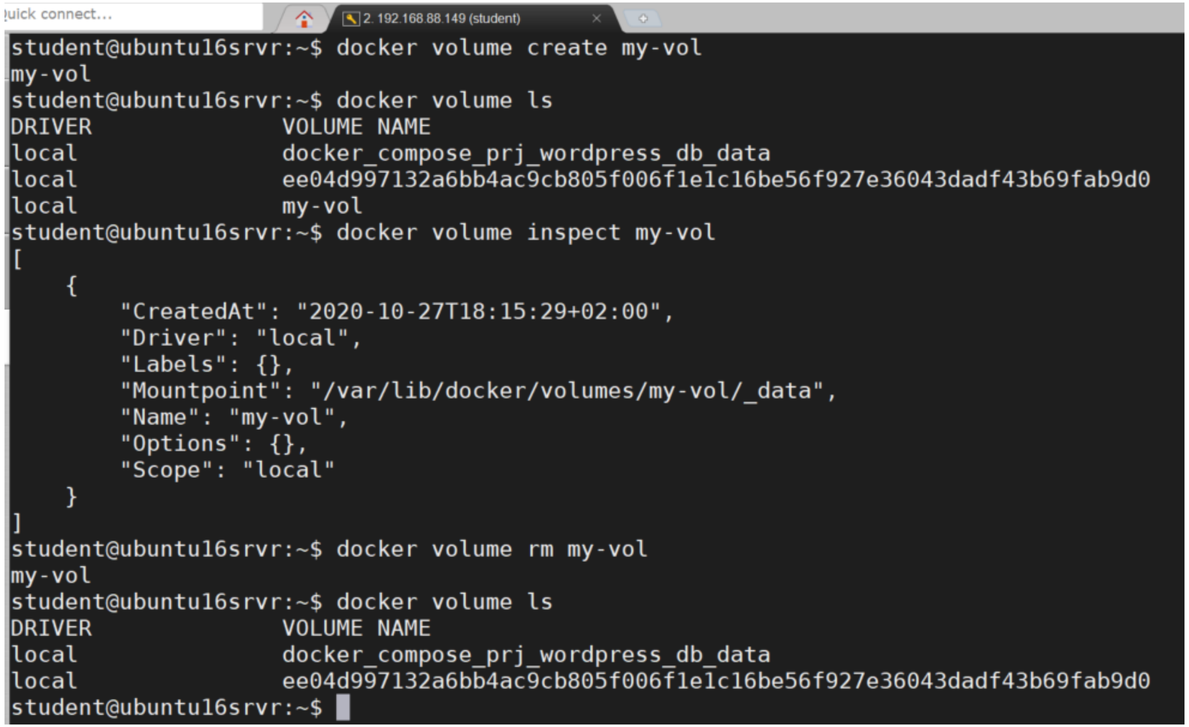
$ docker volume ls

Inspect a volume:

$ docker volume inspect my-vol

Remove a volume:

$ docker volume rm my-vol



```
student@ubuntu16srvr:~$ docker volume create my-vol
my-vol
student@ubuntu16srvr:~$ docker volume ls
DRIVER              VOLUME NAME
local               docker_compose_prj_wordpress_db_data
local               ee04d997132a6bb4ac9cb805f006f1e1c16be56f927e36043dadf43b69fab9d0
local               my-vol
student@ubuntu16srvr:~$ docker volume inspect my-vol
[
    {
        "CreatedAt": "2020-10-27T18:15:29+02:00",
        "Driver": "local",
        "Labels": {},
        "Mountpoint": "/var/lib/docker/volumes/my-vol/_data",
        "Name": "my-vol",
        "Options": {},
        "Scope": "local"
    }
]
student@ubuntu16srvr:~$ docker volume rm my-vol
my-vol
student@ubuntu16srvr:~$ docker volume ls
DRIVER              VOLUME NAME
local               docker_compose_prj_wordpress_db_data
local               ee04d997132a6bb4ac9cb805f006f1e1c16be56f927e36043dadf43b69fab9d0
student@ubuntu16srvr:~$ 
```

Q&A

Thank you!