

## Урок 7. Запуск стека для веб-приложения

### Задание:

- \* Установить Nginx и настроить его на работу с PHP-FPM.
- \* Установить Apache. Настроить обработку PHP. Добиться одновременной работы с Nginx.
- \* Настроить схему обратного прокси для Nginx (динамика - на Apache).
- \* Установить MySQL. Создать новую базу данных и таблицу в ней.
- \* \* Установить пакет phpmyadmin и запустить его веб-интерфейс для управления MySQL.
- \* \* Настроить схему балансировки трафика между несколькими серверами Apache на стороне Nginx с помощью модуля ngx\_http\_upstream\_module.

*\*Все команды были выполнены от root*

```
sudo su
```

### Команда:

```
ss -tulpan
```

### Скриншот (одновременная работа nginx и apache2 на разных портах):

```
udp        UNCONN    0          0          127.0.0.53%lo:53          0.0.0.0:*
users:((("systemd-resolve",pid=543,fd=13))
udp        ESTAB     0          0          192.168.0.249%enp0s3:68    192.168.0.1:67
users:((("NetworkManager",pid=786,fd=25))
udp        UNCONN    0          0          0.0.0.0:631              0.0.0.0:*
users:((("cups-browsed",pid=25396,fd=7))
udp        UNCONN    0          0          [::]:5353                [::]:*
users:((("avahi-daemon",pid=783,fd=13))
udp        UNCONN    0          0          [::]:33050                [::]:*
users:((("avahi-daemon",pid=783,fd=15))
tcp        LISTEN    0          4096         127.0.0.1:32841          0.0.0.0:*
users:((("containerd",pid=907,fd=13))
tcp        LISTEN    0          4096         127.0.0.53%lo:53          0.0.0.0:*
users:((("systemd-resolve",pid=543,fd=14))
tcp        LISTEN    0          128         127.0.0.1:631            0.0.0.0:*
users:((("cupsd",pid=25363,fd=7))
tcp        LISTEN    0          511         0.0.0.0:80               0.0.0.0:*
users:((("nginx",pid=17433,fd=6),("nginx",pid=17432,fd=6),("nginx",pid=17431,fd=6))
tcp        ESTAB     0          0          192.168.0.249:54758       34.117.65.55:443
users:((("firefox",pid=15763,fd=86))
tcp        ESTAB     0          0          192.168.0.249:43442       104.16.249.249:443
users:((("firefox",pid=15763,fd=89))
tcp        LISTEN    0          128         [::]:631                 [::]:*
users:((("cupsd",pid=25363,fd=6))
tcp        LISTEN    0          151         *:3306                   *:*
users:((("mysqld",pid=24610,fd=24))
tcp        LISTEN    0          70          *:33060                  *:*
users:((("mysqld",pid=24610,fd=21))
tcp        LISTEN    0          511         *:8880                   *:*
users:((("apache2",pid=29613,fd=4),("apache2",pid=25596,fd=4),("apache2",pid=25594,fd=4),("apache2",pid=25593,fd=4),("apache2",pid=25592,fd=4),("apache2",pid=25591,fd=4),("apache2",pid=23901,fd=4))
```

Команда:

```
nano /etc/nginx/conf.d/default.conf
```

Скриншот (“конфиг” nginx):

```
server {
    listen      80;
    server_name localhost;

    location / {
        proxy_pass http://localhost:8880;
        proxy_set_header Host $host;
        proxy_set_header X-Forwarded-For $proxy_add_x_forwarded_for;
        proxy_set_header X-Real-IP $remote_addr;
    }

    location ~* ^.+.(jpg|jpeg|gif|png|ico|css|zip|pdf|txt|tar|js)$ {
        root /var/www/html;
    }

    location ~ \.php$ {
        include snippets/fastcgi-php.conf;
        root /var/www/html;
        fastcgi_pass unix:/run/php/php8.1-fpm.sock;
    }
}
```

Команда:

```
nano /etc/apache2/ports.conf
```

Скриншот (“конфиг1” apache2):

```
Listen 8880

<IfModule ssl_module>
    Listen 443
</IfModule>

<IfModule mod_gnutls.c>
    Listen 443
</IfModule>
```

Команда:

```
nano /etc/apache2/sites-enabled/000-default.conf
```

Скриншот ("конфиг2" apache2):

```
<VirtualHost *:8880>
# The ServerName directive sets the request scheme, hostname and port that
# the server uses to identify itself. This is used for virtual host
# redirection URLs. In the context of virtual hosts, the ServerName
# specifies what hostname must appear in the request in order to
# match this virtual host. For the default virtual host, this value
# is not decisive as it is used as a last resort fallback regardless
# of whether there is a registered virtual host that matches the request.
# However, you must set it for any further virtual hosts.
#ServerName www.example.com

ServerAdmin webmaster@localhost
DocumentRoot /var/www/html

# Available loglevels: trace8, ..., trace1, debug, info, notice, warn,
# error, crit, alert, emerg.
# It is also possible to configure the loglevel for particular
# modules, e.g.
#LogLevel info ssl:warn

ErrorLog ${APACHE_LOG_DIR}/error.log
CustomLog ${APACHE_LOG_DIR}/access.log combined

# For most configuration files from conf-available, there exists a
# file in conf-enabled with the same name, but the extension .conf instead
```

## Команды:

```
apt install mysql-server
```

```
mysql
```

```
CREATE DATABASE new_db_for_hw11_07;
```

```
CREATE TABLE new_table (id INT, name TEXT);
```

```
INSERT INTO new_table (id, name) VALUE (1, "Sergey"), (2, "Maksim"), (3, "Andrey");
```

```
SELECT * FROM new_table;
```

## Скриншот (результаты работы с MySQL):

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

```
mysql> CREATE DATABASE new_db_for_hw11_07
```

```
-> ;
```

```
Query OK, 1 row affected (0,05 sec)
```

```
mysql> CREATE TABLE new_table (id INT, name TEXT);
```

```
ERROR 1046 (3D000): No database selected
```

```
mysql> use new_db_for_hw11_07;
```

```
Database changed
```

```
mysql> CREATE TABLE new_table (id INT, name TEXT);
```

```
Query OK, 0 rows affected (0,12 sec)
```

```
mysql> INSERT INTO new_table (id, name) VALUE (1, "Sergey"), (2, "Maksim"), (3, "Andrey");
```

```
Query OK, 3 rows affected (0,06 sec)
```

```
Records: 3 Duplicates: 0 Warnings: 0
```

```
mysql> SELECT * FROM new_table;
```

```
+-----+-----+
```

```
| id | name |
```

```
+-----+-----+
```

```
| 1 | Sergey |
```

```
| 2 | Maksim |
```

```
| 3 | Andrey |
```

```
+-----+-----+
```

```
3 rows in set (0,00 sec)
```

```
mysql> exit
```


```
Bye
```

Скриншот браузера (запрос локалхост nginx и apache2):

\*В странице info.php следующий код: `<?php phpinfo(); ?>`

127.0.0.1/info.php


PHP Version 8.1.2-1ubuntu2.11




|   |   |
|---|---|
| System                                  | Linux vdellinubunPC 5.19.0-43-generic #44~22.04.1-Ubuntu SMP PREEMPT_DYNAMIC Mon May 22 13:39:36 UTC 2 x86_64   |
| Build Date                              | Feb 22 2023 22:56:18  |
| Build System                            | Linux   |
| Server API                              | Apache 2.0 Handler  |
| Virtual Directory Support               | disabled  |
| Configuration File (php.ini) Path       | /etc/php/8.1/apache2  |
| Loaded Configuration File               | /etc/php/8.1/apache2/php.ini  |
| Scan this dir for additional .ini files | /etc/php/8.1/apache2/conf.d   |
| Additional .ini files parsed            | /etc/php/8.1/apache2/conf.d/10-opcache.ini, /etc/php/8.1/apache2/conf.d/10-pdo.ini, /etc/php/8.1/apache2/conf.d/20-calendar.ini, /etc/php/8.1/apache2/conf.d/20-ctype.ini, /etc/php/8.1/apache2/conf.d/20-exif.ini, /etc/php/8.1/apache2/conf.d/20-ffi.ini, /etc/php/8.1/apache2/conf.d/20-fileinfo.ini, /etc/php/8.1/apache2/conf.d/20-ftp.ini, /etc/php/8.1/apache2/conf.d/20-gettext.ini, /etc/php/8.1/apache2/conf.d/20-iconv.ini, /etc/php/8.1/apache2/conf.d/20-phar.ini, /etc/php/8.1/apache2/conf.d/20-posix.ini, /etc/php/8.1/apache2/conf.d/20-readline.ini, /etc/php/8.1/apache2/conf.d/20-shmop.ini, /etc/php/8.1/apache2/conf.d/20-sockets.ini, /etc/php/8.1/apache2/conf.d/20-sysvmsg.ini, /etc/php/8.1/apache2/conf.d/20-sysvsem.ini, /etc/php/8.1/apache2/conf.d/20-sysvshm.ini, /etc/php/8.1/apache2/conf.d/20-tokenizer.ini |
| PHP API                                 | 20210902  |
| PHP Extension                           | 20210902  |
| Zend Extension                          | 420210902   |
| Zend Extension Build                    | API420210902.NTS  |
| PHP Extension Build                     | API20210902.NTS   |
| Debian Build                            | no  |

0.0.0.0:8880/info.php

PHP Version 8.1.2-1ubuntu2.11



|   |   |
|---|---|
| System                                  | Linux vdellinubunPC 5.19.0-43-generic #44~22.04.1-Ubuntu SMP PREEMPT_DYNAMIC Mon May 22 13:39:36 UTC 2 x86_64   |
| Build Date                              | Feb 22 2023 22:56:18  |
| Build System                            | Linux   |
| Server API                              | Apache 2.0 Handler  |
| Virtual Directory Support               | disabled  |
| Configuration File (php.ini) Path       | /etc/php/8.1/apache2  |
| Loaded Configuration File               | /etc/php/8.1/apache2/php.ini  |
| Scan this dir for additional .ini files | /etc/php/8.1/apache2/conf.d   |
| Additional .ini files parsed            | /etc/php/8.1/apache2/conf.d/10-opcache.ini, /etc/php/8.1/apache2/conf.d/10-pdo.ini, /etc/php/8.1/apache2/conf.d/20-calendar.ini, /etc/php/8.1/apache2/conf.d/20-ctype.ini, /etc/php/8.1/apache2/conf.d/20-exif.ini, /etc/php/8.1/apache2/conf.d/20-ffi.ini, /etc/php/8.1/apache2/conf.d/20-fileinfo.ini, /etc/php/8.1/apache2/conf.d/20-ftp.ini, /etc/php/8.1/apache2/conf.d/20-gettext.ini, /etc/php/8.1/apache2/conf.d/20-iconv.ini, /etc/php/8.1/apache2/conf.d/20-phar.ini, /etc/php/8.1/apache2/conf.d/20-posix.ini, /etc/php/8.1/apache2/conf.d/20-readline.ini, /etc/php/8.1/apache2/conf.d/20-shmop.ini, /etc/php/8.1/apache2/conf.d/20-sockets.ini, /etc/php/8.1/apache2/conf.d/20-sysvmsg.ini, /etc/php/8.1/apache2/conf.d/20-sysvsem.ini, /etc/php/8.1/apache2/conf.d/20-sysvshm.ini, /etc/php/8.1/apache2/conf.d/20-tokenizer.ini |
| PHP API                                 | 20210902  |
| PHP Extension                           | 20210902  |
| Zend Extension                          | 420210902   |
| Zend Extension Build                    | API420210902.NTS  |
| PHP Extension Build                     | API20210902.NTS   |
| Debian Build                            | no  |

PHP Version 8.1.2-1ubuntu2.11

|   |   |
|---|---|
| System                                  | Linux vdellinubunPC 5.19.0-43-generic #44~22.04.1-Ubuntu SMP PREEMPT_DYNAMIC Mon May 22 13:39:36 UTC 2 x86_64   |
| Build Date                              | Feb 22 2023 22:56:18  |
| Build System                            | Linux   |
| Server API                              | Apache 2.0 Handler  |
| Virtual Directory Support               | disabled  |
| Configuration File (php.ini) Path       | /etc/php/8.1/apache2  |
| Loaded Configuration File               | /etc/php/8.1/apache2/php.ini  |
| Scan this dir for additional .ini files | /etc/php/8.1/apache2/conf.d   |
| Additional .ini files parsed            | /etc/php/8.1/apache2/conf.d/10-opcache.ini, /etc/php/8.1/apache2/conf.d/10-pdo.ini, /etc/php/8.1/apache2/conf.d/20-calendar.ini, /etc/php/8.1/apache2/conf.d/20-ctype.ini, /etc/php/8.1/apache2/conf.d/20-exif.ini, /etc/php/8.1/apache2/conf.d/20-ffi.ini, /etc/php/8.1/apache2/conf.d/20-fileinfo.ini, /etc/php/8.1/apache2/conf.d/20-ftp.ini, /etc/php/8.1/apache2/conf.d/20-gettext.ini, /etc/php/8.1/apache2/conf.d/20-iconv.ini, /etc/php/8.1/apache2/conf.d/20-phar.ini, /etc/php/8.1/apache2/conf.d/20-posix.ini, /etc/php/8.1/apache2/conf.d/20-readline.ini, /etc/php/8.1/apache2/conf.d/20-shmop.ini, /etc/php/8.1/apache2/conf.d/20-sockets.ini, /etc/php/8.1/apache2/conf.d/20-sysvmsg.ini, /etc/php/8.1/apache2/conf.d/20-sysvsem.ini, /etc/php/8.1/apache2/conf.d/20-sysvshm.ini, /etc/php/8.1/apache2/conf.d/20-tokenizer.ini |
| PHP API                                 | 20210902  |
| PHP Extension                           | 20210902  |
| Zend Extension                          | 420210902   |
| Zend Extension Build                    | API420210902.NTS  |
| PHP Extension Build                     | API20210902.NTS   |
| Debian Build                            | no  |