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Факультет «Информатика и системы управления»

Кафедра ИУ5. Курс «Автоматизация разработки и эксплуатации ПО»

Отчет по лабораторной работе №2

Выполнил:

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План и задачи лабораторной работы:

1. Изучить работу docker-compose на примере проекта test-compose
2. Изучить методы балансировки нагрузки между узлами кластера.
3. Многокомпонентный проект docker-compose

Ход выполнения работы:

1. Изучить работу docker-compose на примере проекта test-compose

Запустим проект test-compose:

```
user@devopsiu5:~/DevOps-main/Labs/Lab3/test-compose$ docker-compose up
```

```
Attaching to test-compose_whale_1
whale_1 | _____
whale_1 | < hello! >
whale_1 | -----
whale_1 | \
whale_1 |  \
whale_1 |      ##      .
whale_1 |      ## ## ## ==
whale_1 |      ## ## ## ===
whale_1 |  /##### \  ===
whale_1 | ~~~ {~~ ~~~~ ~~~ ~~~~ ~~~} / ~~~~ ~~~
whale_1 |      \
whale_1 |      \
whale_1 |      \
whale_1 |      \
test-compose_whale_1 exited with code 0
```

Результат изменения надписи:

```
user@devopsiu5:~/DevOps-main/Labs/Lab3/test-compose$ docker-compose up
Recreating test-compose_whale_1 ... done
Attaching to test-compose_whale_1
whale_1 | _____
whale_1 | < Nozdrova V >
whale_1 | -----
whale_1 | \
whale_1 |  \
whale_1 |      ##      .
whale_1 |      ## ## ## ==
whale_1 |      ## ## ## ===
whale_1 |  /##### \  ===
whale_1 | ~~~ {~~ ~~~~ ~~~ ~~~~ ~~~} / ~~~~ ~~~
whale_1 |      \
whale_1 |      \
whale_1 |      \
whale_1 |      \
test-compose_whale_1 exited with code 0
```

2. Изучить методы балансировки нагрузки между узлами кластера.

Запустим проект haproxy-static-balancer.

Результаты для метода RoundRobin:

```

worker2_1 | 172.20.0.4 - - [27/Oct/2022:15:01:08 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:01:09 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker2_1 | 172.20.0.4 - - [27/Oct/2022:15:01:09 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:01:09 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker2_1 | 172.20.0.4 - - [27/Oct/2022:15:01:10 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:01:10 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker2_1 | 172.20.0.4 - - [27/Oct/2022:15:01:10 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:01:10 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker2_1 | 172.20.0.4 - - [27/Oct/2022:15:01:11 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:01:11 +0000]
rome/105.0.0.0 Safari/537.36" "-"

```

Результаты для метода Weighted RoundRobin с весом 5 для worker1 и весом 2 для worker2:

```

worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:14:24 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:14:24 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker2_1 | 172.20.0.4 - - [27/Oct/2022:15:14:24 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:14:24 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:14:25 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:14:25 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:14:25 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:14:25 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker2_1 | 172.20.0.4 - - [27/Oct/2022:15:14:25 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:14:25 +0000]
rome/105.0.0.0 Safari/537.36" "-"

```

Результаты для метода LeastConnection:

```

worker2_1 | 172.20.0.4 - - [27/Oct/2022:15:28:51 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:28:51 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker2_1 | 172.20.0.4 - - [27/Oct/2022:15:28:51 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:28:51 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker2_1 | 172.20.0.4 - - [27/Oct/2022:15:28:51 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:28:52 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker2_1 | 172.20.0.4 - - [27/Oct/2022:15:28:52 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:28:52 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker2_1 | 172.20.0.4 - - [27/Oct/2022:15:28:52 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:28:52 +0000]
rome/105.0.0.0 Safari/537.36" "-"

```

Результаты для метода Weighted LeastConnection с весом 5 для worker1 и весом 2 для worker2:

```
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:27:07 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:27:07 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:27:07 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:27:07 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:27:08 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker2_1 | 172.20.0.4 - - [27/Oct/2022:15:27:08 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:27:08 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:27:08 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:27:09 +0000]
rome/105.0.0.0 Safari/537.36" "-"
worker1_1 | 172.20.0.4 - - [27/Oct/2022:15:27:09 +0000]
rome/105.0.0.0 Safari/537.36" "-"
```

3. Многокомпонентный проект docker-compose

Текущее состояние базы данных:

```
user@devopsiu5:~/DevOps-main/Labs/Lab3/python-ui-database$ curl localhost:8090
{"favorite_colors": [{"Lancelot": "blue"}, {"Galahad": "yellow"}]}user@devopsiu5:~/DevOps-main/Labs/Lab3/python-ui-database$
```

Добавим запись в таблицу базы данных с помощью phpmyadmin:

☐ Показать все
 | Количество строк: 25
 | Фильтровать строки:

Extra options

name	color
Lancelot	blue
Galahad	yellow
Percival	red

Изменения будут видны при повторном запросе к app:

```
user@devopsiu5:~/DevOps-main/Labs/Lab3/python-ui-database$ curl localhost:8090
{"favorite_colors": [{"Lancelot": "blue"}, {"Galahad": "yellow"}, {"Percival": "red"}]}user@devopsiu5:~/DevOps-main/Labs/Lab3/python-ui-database$
```

Подключимся к базе из внешнего клиента:

```
user@devopsiu5:~/DevOps-main/Labs/Lab3/python-ui-database$ docker run -e MYSQL_HOST=172.17.0.1 -e MYSQL_PORT=32000 -e MYSQL_ROOT_PASSWORD=root -e MYSQL_USER=root -e PORT=5000 -p 8099:5000 -d --name app python-ui-database_app
65d5d97ce6cc827bf072a5d75ef165b97e95d28ee34328379f9f157fc52f4a40
user@devopsiu5:~/DevOps-main/Labs/Lab3/python-ui-database$ curl localhost:8099
{"favorite_colors": [{"Lancelot": "blue"}, {"Galahad": "yellow"}, {"Percival": "red"}]}user@devopsiu5:~/DevOps-main/Labs/Lab3/python-ui-database$
```