

micro_mq

Git: https://github.com/hannusia/software_architecture_labs/tree/micro_hazelcast

Встановлюємо усі необхідні dependency:

```
pip install -r requirements.txt
```

Запускаємо мережу hazelcast із трьома нодами(в окремих терміналах):

```
docker network create hazelcast-network
docker run -it --network hazelcast-network --rm -e HZ_CLUSTERNAME=my-cluster -p 5701:5701 hazelcast/hazelcast:5.0.
docker run --name my-second-member --network hazelcast-network -e HZ_CLUSTERNAME=my-cluster -p 5702:5701 hazelcast/hazelca
docker run --name my-third-member --network hazelcast-network -e HZ_CLUSTERNAME=my-cluster -p 5703:5701 hazelcast/hazelcas
```

Запускаємо три екземпляри logging-service, facade-service та messages-service:

```
python facade_app.py [all the ports that are being used for logging services]
python logging_app.py [ip address of the cluster member to which you wish to connect] [port to use]
python messages_app.py [ip address of the cluster member to which you wish to connect] [port to use]
```

Запускаємо усі сервіси та записуємо 10 повідомлень:

```
> curl -X POST http://127.0.0.1:8888/facade -d "Message 1: In the city where darkness falls"
Message 1: In the city where darkness falls
> curl -X POST http://127.0.0.1:8888/facade -d "Message 2: The lights are dancing a dance of chaos"
Message 2: The lights are dancing a dance of chaos
> curl -X POST http://127.0.0.1:8888/facade -d "Message 3: Colorful neon signs"
Message 3: Colorful neon signs
> curl -X POST http://127.0.0.1:8888/facade -d "Message 4: The empty eyes which hover in them"
Message 4: The empty eyes which hover in them
> curl -X POST http://127.0.0.1:8888/facade -d "Message 5: I am crushed by the silence falling like a veil"
Message 5: I am crushed by the silence falling like a veil
> curl -X POST http://127.0.0.1:8888/facade -d "Message 6: Only the silence of the lost souls that were taken away (No way)"
Message 6: Only the silence of the lost souls that were taken away (No way)
> curl -X POST http://127.0.0.1:8888/facade -d "Message 7: I'm getting numb as if I'm paralyzed"
Message 7: I'm getting numb as if I'm paralyzed
> curl -X POST http://127.0.0.1:8888/facade -d "Message 8: Oh-na (Oh-na), oh-na"
Message 8: Oh-na (Oh-na), oh-na
> curl -X POST http://127.0.0.1:8888/facade -d "Message 9: Fix on"
Message 9: Fix on
> curl -X POST http://127.0.0.1:8888/facade -d "Message 10: No one seems to have disappeared"
Message 10: No one seems to have disappeared
```

Вміст консолей logging service:

```

> cd logging-service
> python logging_app.py 172.22.0.2:5701 8000
* Serving Flask app 'logging_app'
* Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on http://127.0.0.1:8000
Press CTRL+C to quit
* Restarting with stat
* Debugger is active!
* Debugger PIN: 129-714-927
127.0.0.1 - - [31/May/2023 02:51:02] "GET / HTTP/1.1" 404 -
127.0.0.1 - - [31/May/2023 02:51:02] "GET /favicon.ico HTTP/1.1" 404 -
Message 1: In the city where darkness falls
127.0.0.1 - - [31/May/2023 03:01:32] "POST /logging HTTP/1.1" 200 -
Message 2: The lights are dancing a dance of chaos
127.0.0.1 - - [31/May/2023 03:01:58] "POST /logging HTTP/1.1" 200 -
Message 3: Colorful neon signs
127.0.0.1 - - [31/May/2023 03:02:21] "POST /logging HTTP/1.1" 200 -

```

```

> cd logging-service
> python logging_app.py 172.22.0.3:5701 8001
* Serving Flask app 'logging_app'
* Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on http://127.0.0.1:8001
Press CTRL+C to quit
* Restarting with stat
* Debugger is active!
* Debugger PIN: 129-714-927
Message 4: The empty eyes which hover in them
127.0.0.1 - - [31/May/2023 03:02:36] "POST /logging HTTP/1.1" 200 -
Message 5: I am crushed by the silence falling like a veil
127.0.0.1 - - [31/May/2023 03:04:11] "POST /logging HTTP/1.1" 200 -
Message 6: Only the silence of the lost souls that were taken away (No way)
127.0.0.1 - - [31/May/2023 03:04:26] "POST /logging HTTP/1.1" 200 -
Message 8: Oh-na (Oh-na), oh-na
127.0.0.1 - - [31/May/2023 03:05:02] "POST /logging HTTP/1.1" 200 -

```

```

> cd logging-service
> python logging_app.py 172.22.0.4:5701 8002
* Serving Flask app 'logging_app'
* Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on http://127.0.0.1:8002
Press CTRL+C to quit
* Restarting with stat
* Debugger is active!
* Debugger PIN: 129-714-927
Message 7: I'm getting numb as if I'm paralyzed
127.0.0.1 - - [31/May/2023 03:04:43] "POST /logging HTTP/1.1" 200 -
Message 9: Fix on
127.0.0.1 - - [31/May/2023 03:05:18] "POST /logging HTTP/1.1" 200 -
Message 10: No one seems to have disappeared
127.0.0.1 - - [31/May/2023 03:05:34] "POST /logging HTTP/1.1" 200 -

```

Вміст конsoleй messages service:

```

> cd messages-service
> python messages_app.py 172.22.0.2:5701 8800
* Serving Flask app 'messages_app'
* Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on http://127.0.0.1:8800
Press CTRL+C to quit
* Restarting with stat
* Debugger is active!
* Debugger PIN: 129-714-927
Message 1: In the city where darkness falls
127.0.0.1 - - [31/May/2023 03:01:32] "POST /messages HTTP/1.1" 200 -
Message 6: Only the silence of the lost souls that were taken away (No way)
127.0.0.1 - - [31/May/2023 03:04:26] "POST /messages HTTP/1.1" 200 -
Message 7: I'm getting numb as if I'm paralyzed
127.0.0.1 - - [31/May/2023 03:04:43] "POST /messages HTTP/1.1" 200 -
Message 9: Fix on
127.0.0.1 - - [31/May/2023 03:05:18] "POST /messages HTTP/1.1" 200 -
Message 10: No one seems to have disappeared
127.0.0.1 - - [31/May/2023 03:05:34] "POST /messages HTTP/1.1" 200 -

```

```

> cd messages-service
> python messages_app.py 172.22.0.3:5701 8801
* Serving Flask app 'messages_app'
* Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on http://127.0.0.1:8801
Press CTRL+C to quit
* Restarting with stat
* Debugger is active!
* Debugger PIN: 129-714-927
Message 2: The lights are dancing a dance of chaos
127.0.0.1 - - [31/May/2023 03:01:58] "POST /messages HTTP/1.1" 200 -
Message 3: Colorful neon signs
127.0.0.1 - - [31/May/2023 03:02:21] "POST /messages HTTP/1.1" 200 -
Message 4: The empty eyes which hover in them
127.0.0.1 - - [31/May/2023 03:02:36] "POST /messages HTTP/1.1" 200 -
Message 5: I am crushed by the silence falling like a veil
127.0.0.1 - - [31/May/2023 03:04:11] "POST /messages HTTP/1.1" 200 -
Message 8: Oh-na (Oh-na), oh-na
127.0.0.1 - - [31/May/2023 03:05:02] "POST /messages HTTP/1.1" 200 -

```

Повідомлення рандомно розподілилися між серверами. Logging сервери записують отримані повідомлення в distributed map, а message сервери зчитують повідомлення з черги, записані facade сервісом.

Відправляємо GET запити:

```

> curl -X GET http://127.0.0.1:8888/facade
Logging-service response:
Message 4: The empty eyes which hover in them
Message 5: I am crushed by the silence falling like a veil
Message 9: Fix on
Message 7: I'm getting numb as if I'm paralyzed
Message 2: The lights are dancing a dance of chaos
Message 1: In the city where darkness falls
Message 6: Only the silence of the lost souls that were taken away (No way)
Message 3: Colorful neon signs
Message 8: Oh-na (Oh-na), oh-na
Message 10: No one seems to have disappeared
Messages-service response: Message 1: In the city where darkness falls
Message 6: Only the silence of the lost souls that were taken away (No way)
Message 7: I'm getting numb as if I'm paralyzed
Message 9: Fix on
Message 10: No one seems to have disappeared
> curl -X GET http://127.0.0.1:8888/facade
Logging-service response:
Message 4: The empty eyes which hover in them
Message 5: I am crushed by the silence falling like a veil
Message 9: Fix on
Message 7: I'm getting numb as if I'm paralyzed
Message 2: The lights are dancing a dance of chaos
Message 1: In the city where darkness falls
Message 6: Only the silence of the lost souls that were taken away (No way)
Message 3: Colorful neon signs
Message 8: Oh-na (Oh-na), oh-na
Message 10: No one seems to have disappeared
Messages-service response: Message 1: In the city where darkness falls
Message 6: Only the silence of the lost souls that were taken away (No way)
Message 7: I'm getting numb as if I'm paralyzed
Message 9: Fix on
Message 10: No one seems to have disappeared

```

```

> curl -X GET http://127.0.0.1:8888/facade
Logging-service response:
Message 4: The empty eyes which hover in them
Message 5: I am crushed by the silence falling like a veil
Message 9: Fix on
Message 7: I'm getting numb as if I'm paralyzed
Message 2: The lights are dancing a dance of chaos
Message 1: In the city where darkness falls
Message 6: Only the silence of the lost souls that were taken away (No way)
Message 3: Colorful neon signs
Message 8: Oh-na (Oh-na), oh-na
Message 10: No one seems to have disappeared
Messages-service response: Message 2: The lights are dancing a dance of chaos
Message 3: Colorful neon signs
Message 4: The empty eyes which hover in them
Message 5: I am crushed by the silence falling like a veil
Message 8: Oh-na (Oh-na), oh-na

```

```
~/ucu/software_architecture/lab4
```

Для усіх трьох запитів logging сервіс виводить усі повідомлення, а messages сервіс для перших двох запитів повертає одну множину повідомлень, а для третього іншу. Це означає, що facade сервіс при перших двох запитах звертається до першого messages сервісу, а для третього до другого сервісу.

Консоль messages-service 1:

```

> cd messages-service
> python messages_app.py 172.22.0.2:5701 8800
* Serving Flask app 'messages_app'
* Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on http://127.0.0.1:8800
Press CTRL+C to quit
* Restarting with stat
* Debugger is active!
* Debugger PIN: 129-714-927
Message 1: In the city where darkness falls
127.0.0.1 - - [31/May/2023 03:01:32] "POST /messages HTTP/1.1" 200 -
Message 6: Only the silence of the lost souls that were taken away (No way)
127.0.0.1 - - [31/May/2023 03:04:26] "POST /messages HTTP/1.1" 200 -
Message 7: I'm getting numb as if I'm paralyzed
127.0.0.1 - - [31/May/2023 03:04:43] "POST /messages HTTP/1.1" 200 -
Message 9: Fix on
127.0.0.1 - - [31/May/2023 03:05:18] "POST /messages HTTP/1.1" 200 -
Message 10: No one seems to have disappeared
127.0.0.1 - - [31/May/2023 03:05:34] "POST /messages HTTP/1.1" 200 -
127.0.0.1 - - [31/May/2023 03:20:59] "GET /messages HTTP/1.1" 200 -
127.0.0.1 - - [31/May/2023 03:21:07] "GET /messages HTTP/1.1" 200 -

```

Консоль messages-service 2:

```

> cd messages-service
> python messages_app.py 172.22.0.3:5701 8801
* Serving Flask app 'messages_app'
* Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on http://127.0.0.1:8801
Press CTRL+C to quit
* Restarting with stat
* Debugger is active!
* Debugger PIN: 129-714-927
Message 2: The lights are dancing a dance of chaos
127.0.0.1 - - [31/May/2023 03:01:58] "POST /messages HTTP/1.1" 200 -
Message 3: Colorful neon signs
127.0.0.1 - - [31/May/2023 03:02:21] "POST /messages HTTP/1.1" 200 -
Message 4: The empty eyes which hover in them
127.0.0.1 - - [31/May/2023 03:02:36] "POST /messages HTTP/1.1" 200 -
Message 5: I am crushed by the silence falling like a veil
127.0.0.1 - - [31/May/2023 03:04:11] "POST /messages HTTP/1.1" 200 -
Message 8: Oh-na (Oh-na), oh-na
127.0.0.1 - - [31/May/2023 03:05:02] "POST /messages HTTP/1.1" 200 -
127.0.0.1 - - [31/May/2023 03:16:01] "GET /messages HTTP/1.1" 200 -
127.0.0.1 - - [31/May/2023 03:20:26] "GET /messages HTTP/1.1" 200 -
127.0.0.1 - - [31/May/2023 03:20:31] "GET /messages HTTP/1.1" 200 -

```

Консоль facade-service:

```
* Detected change in '/home/hannusia/ucu/software_architecture/lab4/facade-service/facade_app.py', reloading
* Restarting with stat
* Debugger is active!
* Debugger PIN: 129-714-927
127.0.0.1 - - [31/May/2023 03:01:32] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [31/May/2023 03:01:58] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [31/May/2023 03:02:21] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [31/May/2023 03:02:36] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [31/May/2023 03:04:11] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [31/May/2023 03:04:26] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [31/May/2023 03:04:43] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [31/May/2023 03:05:02] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [31/May/2023 03:05:18] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [31/May/2023 03:05:34] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [31/May/2023 03:16:01] "GET /facade HTTP/1.1" 200 -
127.0.0.1 - - [31/May/2023 03:20:26] "GET /facade HTTP/1.1" 200 -
127.0.0.1 - - [31/May/2023 03:20:31] "GET /facade HTTP/1.1" 200 -
127.0.0.1 - - [31/May/2023 03:20:59] "GET /facade HTTP/1.1" 200 -
127.0.0.1 - - [31/May/2023 03:21:07] "GET /facade HTTP/1.1" 200 -
█
```

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