

Запускаємо три екземпляра logging service та два екземпляра message service. Спершу записуємо 10 повідомлень:

```
Terminal: Local x Local (2) x Local (3) x Local (4) x Local (5) x Local (6) x Local (7) x Local (8) x Local (9) x Local (10) x + v
(env) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3$ curl -X POST http://127.0.0.1:8888/facade -d "msg1"
msg1(env) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3$ curl -X POST http://127.0.0.1:8888/facade -d "msg2"
msg2(env) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3$ curl -X POST http://127.0.0.1:8888/facade -d "msg3"
msg3(env) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3$ curl -X POST http://127.0.0.1:8888/facade -d "msg4"
msg4(env) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3$ curl -X POST http://127.0.0.1:8888/facade -d "msg5"
msg5(env) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3$ curl -X POST http://127.0.0.1:8888/facade -d "msg6"
msg6(env) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3$ curl -X POST http://127.0.0.1:8888/facade -d "msg7"
msg7(env) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3$ curl -X POST http://127.0.0.1:8888/facade -d "msg8"
msg8(env) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3$ curl -X POST http://127.0.0.1:8888/facade -d "msg9"
msg9(env) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3$ curl -X POST http://127.0.0.1:8888/facade -d "msg10"
(env) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3$
```

Консоль facade service:

```
Terminal: Local x Local (2) x Local (3) x Local (4) x Local (5) x Local (6) x Local (7) x Local (8) x Local (9) x Local (10) x
(env) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3$ cd facade-service
(env) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3/facade-service$ python facade_app.py [8000,8001,8002] [8800,8801]
* Serving Flask app 'facade_app' (lazy loading)
* Environment: production
  WARNING: This is a development server. Do not use it in a production deployment.
  Use a production WSGI server instead.
* Debug mode: on
* Running on http://127.0.0.1:8888 (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 785-770-524
127.0.0.1 - - [01/Jun/2022 11:15:54] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [01/Jun/2022 11:15:56] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [01/Jun/2022 11:15:59] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [01/Jun/2022 11:16:03] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [01/Jun/2022 11:16:06] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [01/Jun/2022 11:16:09] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [01/Jun/2022 11:16:12] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [01/Jun/2022 11:16:14] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [01/Jun/2022 11:16:17] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [01/Jun/2022 11:16:19] "POST /facade HTTP/1.1" 200 -
```

Консоль logging service 1:

```
Terminal: Local x Local(2) x Local(3) x Local(4) x Local(5) x Local(6) x Local(7) x Local(8) x Local(9) x Local(10) x
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3$ cd logging-service
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3/logging-service$ python logging_app.py 172.30.0.2:5701 8000
* Serving Flask app 'logging_app' (lazy loading)
* Environment: production
  WARNING: This is a development server. Do not use it in a production deployment.
  Use a production WSGI server instead.
* Debug mode: on
* Running on http://127.0.0.1:8000 (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 785-770-524
msg3
127.0.0.1 - - [01/Jun/2022 11:15:59] "POST /logging HTTP/1.1" 200 -
msg6
127.0.0.1 - - [01/Jun/2022 11:16:09] "POST /logging HTTP/1.1" 200 -
msg7
127.0.0.1 - - [01/Jun/2022 11:16:12] "POST /logging HTTP/1.1" 200 -
```

Консоль logging service 2:

```
Terminal: Local x Local(2) x Local(3) x Local(4) x Local(5) x Local(6) x Local(7) x Local(8) x Local(9) x Local(10) x
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3$ cd logging-service
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3/logging-service$ python logging_app.py 172.30.0.3:5701 8001
* Serving Flask app 'logging_app' (lazy loading)
* Environment: production
  WARNING: This is a development server. Do not use it in a production deployment.
  Use a production WSGI server instead.
* Debug mode: on
* Running on http://127.0.0.1:8001 (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 785-770-524
msg2
127.0.0.1 - - [01/Jun/2022 11:15:56] "POST /logging HTTP/1.1" 200 -
msg5
127.0.0.1 - - [01/Jun/2022 11:16:06] "POST /logging HTTP/1.1" 200 -
msg8
127.0.0.1 - - [01/Jun/2022 11:16:14] "POST /logging HTTP/1.1" 200 -
msg9
127.0.0.1 - - [01/Jun/2022 11:16:17] "POST /logging HTTP/1.1" 200 -
msg10
127.0.0.1 - - [01/Jun/2022 11:16:19] "POST /logging HTTP/1.1" 200 -
```

Консоль logging service 3:

```
Terminal: Local x Local (2) x Local (3) x Local (4) x Local (5) x Local (6) x Local (7) x Local (8) x Local (9) x Local (10) x
(env) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3$ cd logging-service
(env) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3/logging-service$ python logging_app.py 172.30.0.4:5701 8002
* Serving Flask app 'logging_app' (lazy loading)
* Environment: production
  WARNING: This is a development server. Do not use it in a production deployment.
  Use a production WSGI server instead.
* Debug mode: on
* Running on http://127.0.0.1:8002 (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 785-770-524
msg1
127.0.0.1 - - [01/Jun/2022 11:15:54] "POST /logging HTTP/1.1" 200 -
msg4
127.0.0.1 - - [01/Jun/2022 11:16:03] "POST /logging HTTP/1.1" 200 -
```

Консоль messages service 1:

```
Terminal: Local x Local (2) x Local (3) x Local (4) x Local (5) x Local (6) x Local (7) x Local (8) x Local (9) x Local (10) x
(env) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3$ cd messages-service
(env) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3/messages-service$ python messages_app.py 172.30.0.2:5701 8800
* Serving Flask app 'messages_app' (lazy loading)
* Environment: production
  WARNING: This is a development server. Do not use it in a production deployment.
  Use a production WSGI server instead.
* Debug mode: on
* Running on http://127.0.0.1:8800 (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 785-770-524
msg1
127.0.0.1 - - [01/Jun/2022 11:15:54] "POST /messages HTTP/1.1" 200 -
msg2
127.0.0.1 - - [01/Jun/2022 11:15:56] "POST /messages HTTP/1.1" 200 -
msg4
127.0.0.1 - - [01/Jun/2022 11:16:03] "POST /messages HTTP/1.1" 200 -
msg8
127.0.0.1 - - [01/Jun/2022 11:16:14] "POST /messages HTTP/1.1" 200 -
```

Консоль messages service 2:

```
Terminal: Local x Local (2) x Local (3) x Local (4) x Local (5) x Local (6) x Local (7) x Local (8) x Local (9) x Local (10) x
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3/messages-service$ python messages_app.py 172.30.0.3:5701 8801
* Serving Flask app 'messages_app' (lazy loading)
* Environment: production
  WARNING: This is a development server. Do not use it in a production deployment.
  Use a production WSGI server instead.
* Debug mode: on
* Running on http://127.0.0.1:8801 (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 785-770-524
msg3
127.0.0.1 - - [01/Jun/2022 11:15:59] "POST /messages HTTP/1.1" 200 -
msg5
127.0.0.1 - - [01/Jun/2022 11:16:06] "POST /messages HTTP/1.1" 200 -
msg6
127.0.0.1 - - [01/Jun/2022 11:16:09] "POST /messages HTTP/1.1" 200 -
msg7
127.0.0.1 - - [01/Jun/2022 11:16:12] "POST /messages HTTP/1.1" 200 -
msg9
127.0.0.1 - - [01/Jun/2022 11:16:17] "POST /messages HTTP/1.1" 200 -
msg10
127.0.0.1 - - [01/Jun/2022 11:16:19] "POST /messages HTTP/1.1" 200 -
```

Можемо побачити що повідомлення в рандомному порядку розподілилися між серверами. Логінг сервери записують отримані повідомлення в distributed map а меседж сервери зчитують з черги повідомлення записані фасад сервером.

Тепер спробуємо викликати три GET запити:

```
Terminal: Local x Local (2) x Local (3) x Local (4) x Local (5) x Local (6) x Local (7) x Local (8) x Local (9) x Local (10) x + v
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3$ curl -X GET http://127.0.0.1:8888/facade
Logging-service response:
msg4
msg2
msg10
msg1
msg5
msg8
msg3
msg6
msg7
msg9
Messages-service response: msg1
msg2
msg4
msg8
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3$ curl -X GET http://127.0.0.1:8888/facade
Logging-service response:
msg4
msg2
msg10
msg1
msg5
msg8
msg3
msg6
msg7
msg9
Messages-service response: msg1
msg2
msg4
msg8
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3$ curl -X GET http://127.0.0.1:8888/facade

(venv) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3$ curl -X GET http://127.0.0.1:8888/facade
Logging-service response:
msg4
msg2
msg10
msg1
msg5
msg8
msg3
msg6
msg7
msg9
Messages-service response: msg3
msg5
msg6
msg7
msg9
msg10
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3$
```

Можемо побачити що логінг сервіс принтить всі повідомлення, а меседж сервіс перші два рази одну множину повідомлень, а при третьому get запиті другу множину. Це означає що при перших двох запитах facade service звертається до одного екземпляра меседж сервіс а при третьому до другого екземпляра і вони повертають повідомлення які раніше записали собі в пам'ять. Перевіримо ще консолі цих серверів щоб упевнитись:

Консоль messages service 1:

```
Terminal: Local x Local(2) x Local(3) x Local(4) x Local(5) x Local(6) x Local(7) x Local(8) x Local(9) x Local(10) x
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3$ cd messages-service
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3/messages-service$ python messages_app.py 172.30.0.2:5701 8800
* Serving Flask app 'messages_app' (lazy loading)
* Environment: production
  WARNING: This is a development server. Do not use it in a production deployment.
  Use a production WSGI server instead.
* Debug mode: on
* Running on http://127.0.0.1:8800 (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 785-770-524
msg1
127.0.0.1 - - [01/Jun/2022 11:15:54] "POST /messages HTTP/1.1" 200 -
msg2
127.0.0.1 - - [01/Jun/2022 11:15:56] "POST /messages HTTP/1.1" 200 -
msg4
127.0.0.1 - - [01/Jun/2022 11:16:03] "POST /messages HTTP/1.1" 200 -
msg8
127.0.0.1 - - [01/Jun/2022 11:16:14] "POST /messages HTTP/1.1" 200 -
127.0.0.1 - - [01/Jun/2022 11:22:01] "GET /messages HTTP/1.1" 200 -
127.0.0.1 - - [01/Jun/2022 11:22:06] "GET /messages HTTP/1.1" 200 -
```

Консоль messages service 2:

```
Terminal: Local x Local(2) x Local(3) x Local(4) x Local(5) x Local(6) x Local(7) x Local(8) x Local(9) x Local(10) x
(venv) zorya@zorya-virtual-machine:~/Documents/APZ/LAB3/messages-service$ python messages_app.py 172.30.0.3:5701 8801
* Serving Flask app 'messages_app' (lazy loading)
* Environment: production
  WARNING: This is a development server. Do not use it in a production deployment.
  Use a production WSGI server instead.
* Debug mode: on
* Running on http://127.0.0.1:8801 (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 785-770-524
msg3
127.0.0.1 - - [01/Jun/2022 11:15:59] "POST /messages HTTP/1.1" 200 -
msg5
127.0.0.1 - - [01/Jun/2022 11:16:06] "POST /messages HTTP/1.1" 200 -
msg6
127.0.0.1 - - [01/Jun/2022 11:16:09] "POST /messages HTTP/1.1" 200 -
msg7
127.0.0.1 - - [01/Jun/2022 11:16:12] "POST /messages HTTP/1.1" 200 -
msg9
127.0.0.1 - - [01/Jun/2022 11:16:17] "POST /messages HTTP/1.1" 200 -
msg10
127.0.0.1 - - [01/Jun/2022 11:16:19] "POST /messages HTTP/1.1" 200 -
127.0.0.1 - - [01/Jun/2022 11:22:09] "GET /messages HTTP/1.1" 200 -
```

Консоль facade service:

```
Terminal: Local x Local(2) x Local(3) x Local(4) x Local(5) x Local(6) x Local(7) x Local(8) x Local(9) x Local(10) x
(venv) zorya@zorya-virtual-machine:~/Documents/AP2/LAB3/facade-service$ python facade_app.py [8000,8001,8002] [8800,8801]
* Serving Flask app 'facade_app' (lazy loading)
* Environment: production
  WARNING: This is a development server. Do not use it in a production deployment.
  Use a production WSGI server instead.
* Debug mode: on
* Running on http://127.0.0.1:8888 (Press CTRL+C to quit)
* Restarting with stat
* Debugger is active!
* Debugger PIN: 785-770-524
127.0.0.1 - - [01/Jun/2022 11:15:54] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [01/Jun/2022 11:15:56] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [01/Jun/2022 11:15:59] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [01/Jun/2022 11:16:03] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [01/Jun/2022 11:16:06] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [01/Jun/2022 11:16:09] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [01/Jun/2022 11:16:12] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [01/Jun/2022 11:16:14] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [01/Jun/2022 11:16:17] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [01/Jun/2022 11:16:19] "POST /facade HTTP/1.1" 200 -
127.0.0.1 - - [01/Jun/2022 11:22:01] "GET /facade HTTP/1.1" 200 -
127.0.0.1 - - [01/Jun/2022 11:22:06] "GET /facade HTTP/1.1" 200 -
127.0.0.1 - - [01/Jun/2022 11:22:09] "GET /facade HTTP/1.1" 200 -
```