

Можна побачити як розподіляються дані:

```

Group Coordinator Request failed: [Error 15] GroupCoordinatorNotAvailableError
Group Coordinator Request failed: [Error 15] GroupCoordinatorNotAvailableError
Group Coordinator Request failed: [Error 15] GroupCoordinatorNotAvailableError
Group Coordinator Request failed: [Error 15] GroupCoordinatorNotAvailableError
Group Coordinator Request failed: [Error 15] GroupCoordinatorNotAvailableError
Group Coordinator Request failed: [Error 15] GroupCoordinatorNotAvailableError
Heartbeat failed for group messages group because it is rebalancing
^CINFO: Shutting down
INFO: Waiting for application shutdown.
INFO: Application shutdown complete.
INFO: Finished server process [530135]

(.venv)~perry@kali: ~/kpi2m/dsd/Lab4
$ uvicorn messages-service.app.main:app --port 50054
INFO: Started server process [530265]
INFO: Waiting for application startup.
INFO: Application startup complete.
Uvicorn running on http://127.0.0.1:50054 (Press CTRL+C to quit)
Consumed message: {'uid': '322838cb-3c7f-440d-b254-c515f9b4858', 'message': 'msg3'}
Consumed message: {'uid': '14d23b29-543d-440d-b174-004f3de1b1b', 'message': 'msg4'}
Consumed message: {'uid': 'd9d42879-e272-4a8c-968d-7f38ff66de0e', 'message': 'msg5'}
Consumed message: {'uid': '8004-4d31-99f9-b2e9d65c15f8', 'message': 'msg6'}
Consumed message: {'uid': 'cc89641b-7b60-9e02-9607-14d2c8bbf85b', 'message': 'msg7'}
Consumed message: {'uid': 'b3a85787-addr-428c-99f2-88cc5869b03b', 'message': 'msg8'}
Consumed message: {'uid': '988b7f3e-4f29-429b-8a7c-0468f594c0c8', 'message': 'msg10'}

perry@kali:~/kpi2m/dsd/Lab4
$ source ~/kpi2m/dsd/Lab1/.venv/bin/activate

(.venv)~perry@kali:~/kpi2m/dsd/Lab4
$ uvicorn messages-service.app.main:app --port 50055
INFO: Started server process [530105]
INFO: Waiting for application startup.
INFO: Application startup complete.
Uvicorn running on http://127.0.0.1:50055 (Press CTRL+C to quit)
^CINFO: Shutting down
INFO: Waiting for application shutdown.
INFO: Application shutdown complete.
INFO: Finished server process [530165]

(.venv)~perry@kali:~/kpi2m/dsd/Lab4
$ uvicorn messages-service.app.main:app --port 50055
INFO: Started server process [530216]
INFO: Waiting for application startup.
INFO: Application startup complete.
Uvicorn running on http://127.0.0.1:50055 (Press CTRL+C to quit)
Consumed message: {'uid': 'e19c3da3-d56e-4b0f-a31b-97f4b949d5dd', 'message': 'msg1'}
Consumed message: {'uid': '8282-720d-7430-8b31-3639c7618123', 'message': 'msg2'}
Consumed message: {'uid': '6c58b44f-f112-4545-b3e7-e401ba29e350', 'message': 'msg3'}

```

```
INFO: 127.0.0.1:38292 - "POST /send HTTP/1.1" 200 OK
Message 328b38cb-3c7f-440d-bb2a-5c15fb9b4858 sent to Kafka.
gRPC log sent to 127.0.0.1:50052 successfully.
INFO: 127.0.0.1:38292 - "POST /send HTTP/1.1" 200 OK
Message 14d232e9-543d-440d-b174-004ff3ede1b8 sent to Kafka.
gRPC log sent to 127.0.0.1:50053 successfully.
INFO: 127.0.0.1:38292 - "POST /send HTTP/1.1" 200 OK
Message d9d42079-de72-4a8c-968d-df38ff06d8ee sent to Kafka.
gRPC log sent to 127.0.0.1:50052 successfully.
INFO: 127.0.0.1:38292 - "POST /send HTTP/1.1" 200 OK
Message 811b3be0-8b04-4431-a9f9-b2e0d65e1f58 sent to Kafka.
gRPC log sent to 127.0.0.1:50053 successfully.
INFO: 127.0.0.1:38292 - "POST /send HTTP/1.1" 200 OK
Message cc89641b-7b60-4962-9607-1ad2cb8bf05b sent to Kafka.
gRPC log sent to 127.0.0.1:50052 successfully.
INFO: 127.0.0.1:38292 - "POST /send HTTP/1.1" 200 OK
Message 6c50ba4f-f112-4545-b3e7-e4a1ba29e350 sent to Kafka.
gRPC log sent to 127.0.0.1:50051 successfully.
INFO: 127.0.0.1:38292 - "POST /send HTTP/1.1" 200 OK
Message b3485787-addc-428c-99f2-88cc5869b03f sent to Kafka.
gRPC log sent to 127.0.0.1:50053 successfully.
INFO: 127.0.0.1:38292 - "POST /send HTTP/1.1" 200 OK
Message 988b7f3e-4f29-429b-8a7c-0468f504c0c8 sent to Kafka.
gRPC log sent to 127.0.0.1:50052 successfully.
INFO: 127.0.0.1:38292 - "POST /send HTTP/1.1" 200 OK
```

```
--(.venv)~perry@kali:~/kpi2m/dsd/lab4
--$ python kafka_admin.py
Waiting for Kafka brokers to be ready...
Kafka AdminClient connected successfully.
Topic 'messages' created successfully.

--(.venv)~perry@kali:~/kpi2m/dsd/lab4
--$ LOGGING_SERVICE PORT=50051 python logging_service.py
python: can't open file '/home/perry/kpi2m/dsd/lab4/logging_service.py': [Errno 2] No such file or directory

--(.venv)~perry@kali:~/kpi2m/dsd/lab4
--$ cd logging-service/app

--(.venv)~perry@kali:~/kpi2m/dsd/lab4/logging-service/app
--$ LOGGING_SERVICE PORT=50051 python logging_service.py
python: can't open file '/home/perry/kpi2m/dsd/lab4/logging-service/app/logging_service.py': [Errno 2] No such file or directory

--(.venv)~perry@kali:~/kpi2m/dsd/lab4/logging-service/app
--$ LOGGING_SERVICE PORT=50051 python main.py
Logging Service is running on port 50051...
[SAVED] c9f27827-7dd3-4810-a831-3699c7610123: msg2
[SAVED] 6c50ba4f-f112-4545-b3e7-e41ba29e350: msg8

--(.venv)~perry@kali:~/kpi2m/dsd/lab4/logging-service/app
--$ LOGGING_SERVICE PORT=50053 python main.py
Logging Service is running on port 50053...
[SAVED] 14d232e9-543d-440d-b174-004ff3ede1b8: msg4
[SAVED] 811b3be0-8b04-4431-a9f9-b2e0d6e1f58: msg6
[SAVED] b3485787-addc-428c-99f2-88cc5869b037: msg9

--(.venv)~perry@kali:~/kpi2m/dsd/lab4
--$ source ~/kpi2m/dsd/lab1/.venv/bin/activate

--(.venv)~perry@kali:~/kpi2m/dsd/lab4
--$ cd logging-service/app

--(.venv)~perry@kali:~/kpi2m/dsd/lab4/logging-service/app
--$ LOGGING_SERVICE PORT=50052 python main.py
Logging Service is running on port 50052...
[SAVED] e1933da3-d56e-4b0f-a31b-97f4b9f949d5d: msg1
[SAVED] 32ab3bc3-3c7f-4d40-bb2a-5c13f9b4a58: msg3
[SAVED] d94d2879-de72-4a8c-968d-df38ff6d68ee: msg5
[SAVED] cc89641b-7b60-4962-9607-1ad2cb8bf05b: msg7
[SAVED] 980b7f3e-4f29-429b-8a7c-0468f504c0c8: msg10

--(.venv)~perry@kali:~/kpi2m/dsd/lab4
--$ cd logging-service/app

--(.venv)~perry@kali:~/kpi2m/dsd/lab4/config-server
--$ uvicorn config-server:app --host 0.0.0.0 --port 8002 --reload
INFO: Will watch for changes in these directories: ['/home/perry/kpi2m/dsd/lab4/config-server']
INFO: Uvicorn running on http://0.0.0.0:8002 (Press CTRL+C to quit)
INFO: Started reload process [529951] using StatReload
ERROR: Error loading ASGI app. Could not import module "config-server".
^CINFO: Stopping reload process [529951]

--(.venv)~perry@kali:~/kpi2m/dsd/lab4/config-server
--$ uvicorn config-server:app --host 0.0.0.0 --port 8002 --reload
INFO: Will watch for changes in these directories: ['/home/perry/kpi2m/dsd/lab4/config-server']
INFO: Uvicorn running on http://0.0.0.0:8002 (Press CTRL+C to quit)
INFO: Started reload process [529974] using StatReload
INFO: Started server process [529976]
INFO: Waiting for application startup.
INFO: Application startup complete.
INFO: 127.0.0.1:54022 - "GET /services/logging-service HTTP/1.1" 200 OK
INFO: 127.0.0.1:35948 - "GET /services/logging-service HTTP/1.1" 200 OK
INFO: 127.0.0.1:57666 - "GET /services/logging-service HTTP/1.1" 200 OK
INFO: 127.0.0.1:57674 - "GET /services/logging-service HTTP/1.1" 200 OK
INFO: 127.0.0.1:57676 - "GET /services/logging-service HTTP/1.1" 200 OK
INFO: 127.0.0.1:46722 - "GET /services/logging-service HTTP/1.1" 200 OK
INFO: 127.0.0.1:46730 - "GET /services/logging-service HTTP/1.1" 200 OK
INFO: 127.0.0.1:46746 - "GET /services/logging-service HTTP/1.1" 200 OK
INFO: 127.0.0.1:46758 - "GET /services/logging-service HTTP/1.1" 200 OK
INFO: 127.0.0.1:59356 - "GET /services/logging-service HTTP/1.1" 200 OK
```

GET:

```
GET http://localhost:8000/fetch

Params Authorization Headers (6) Body Scripts Settings
Body Cookies Headers (4) Test Results
JSON Preview Visualize
1 {
2   "from_messages_service": {
3     "instance": "127.0.0.1:50054",
4     "messages": [
5       {
6         "uuid": "328b38cb-3c7f-440d-bb2a-5c15f9b4858",
7         "message": "msg3"
8       },
9       {
10        "uuid": "14d232e9-543d-440d-b174-004ff3ede1b8",
11        "message": "msg4"
12      },
13      {
14        "uuid": "d9042079-dc72-4a8c-968d-df38f06d8ea",
15        "message": "msg5"
16      },
17      {
18        "uuid": "811b3be6-8b04-4431-a9f9-b2e0d65e1f58",
19        "message": "msg6"
20      },
21      {
22        "uuid": "cc89641b-7b60-4962-9607-1ad2cb8bf09b",
23        "message": "msg7"
24      },
25      {
26        "uuid": "b3485787-addc-428c-99f2-88cc5869b03f",
27        "message": "msg9"
28      },
29      {
30        "uuid": "988b7f3e-4f29-429b-8a7c-6468f584c0c8",
31        "message": "msg10"
32      }
33    ],
34    "count": 7
35  },
36 }
```

```
1.
  "from_logging_service": {
    "instance": "127.0.0.1:50053",
    "messages": [
      "msg2",
      "msg8",
      "msg1",
      "msg3",
      "msg4",
      "msg6",
      "msg5",
      "msg9",
      "msg7",
      "msg10"
    ],
    "count": 10
  },
}
```

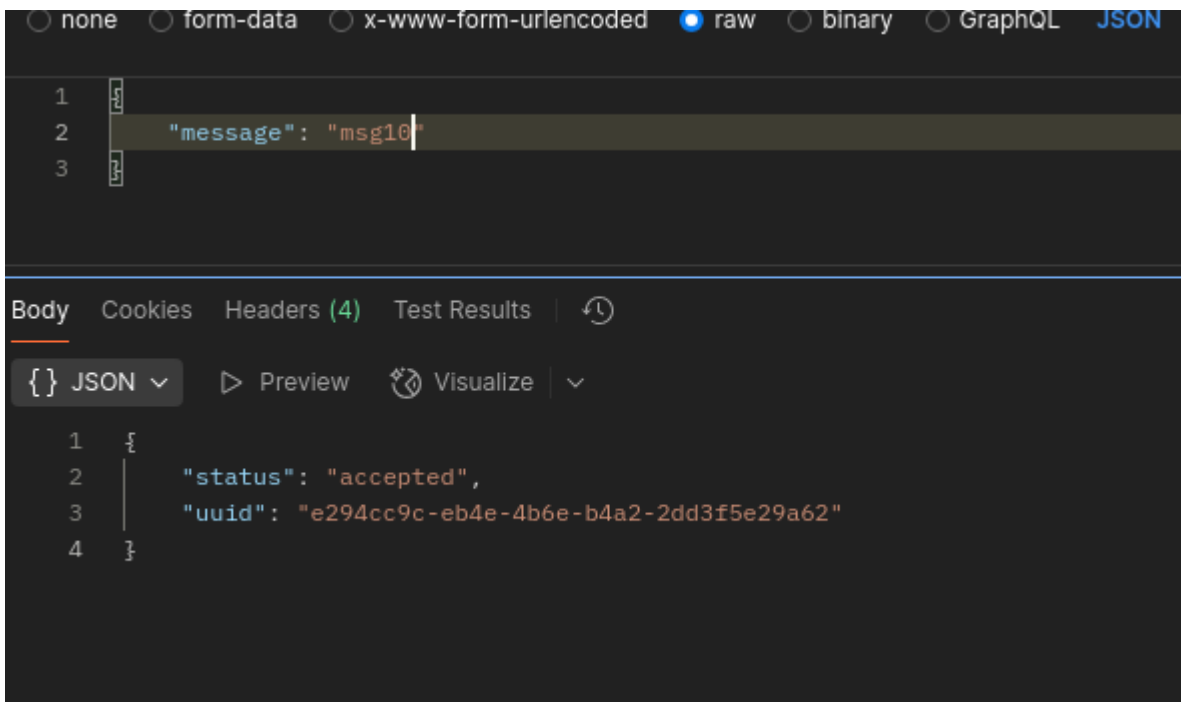
```
GET http://localhost:8000/fetch

Params Authorization Headers (6) Body Scripts Settings
Body Cookies Headers (4) Test Results
JSON Preview Visualize
1 {
2   "from_messages_service": {
3     "instance": "127.0.0.1:50055",
4     "messages": [
5       {
6         "uuid": "e19c3da3-d56e-4b0f-a31b-97f4bf949d5d",
7         "message": "msg1"
8       },
9       {
10        "uuid": "c9f27282-7dd3-4810-a831-3639c7618123",
11        "message": "msg2"
12      },
13      {
14        "uuid": "6c50ba4f-f112-4545-b3e7-e4a1ba29e350",
15        "message": "msg8"
16      }
17    ],
18    "count": 3
19  },
20  "from_logging_service": {
21    "instance": "127.0.0.1:50053",
22    "messages": [
23      "msg2",
24      "msg8",
25      "msg1",
26      "msg3",
27      "msg4",
28      "msg6",
29      "msg5",
30      "msg9",
31      "msg7",
32      "msg10"
33    ],
34    "count": 10
35  },
36 }
```

Перевірка відмовостійкості черги повідомлень

стопнув 2 message-service

додаю 10 повідомлень



```
[appuser@910faf39dd26 ~]$  
[appuser@910faf39dd26 ~]$ kafka-topics --bootstrap-server localhost:9092 --describe --topic messages  
Topic: messages TopicId: bu0vmuTeTgWSAyK8WLVeCw PartitionCount: 2      ReplicationFactor: 3      Configs:  
    Topic: messages Partition: 0    Leader: 3      Replicas: 3,2,1 Isr: 3,2,1  
    Topic: messages Partition: 1    Leader: 1      Replicas: 1,3,2 Isr: 1,3,2  
[appuser@910faf39dd26 ~]$
```

```
(perry@kali) - [~/kpi2m/dsd/lab4]  
$ docker stop kafka3  
kafka3  
(perry@kali) - [~/kpi2m/dsd/lab4]
```

як тільки підняв messages-service, вони отримали повідомлення з черги

```
INFO: Application shutdown complete.
INFO: Finished server process [339992]

(.venv)-[perry@kali: ~]/kp12m/dsd/lab4
$ uvicorn messages-service.app.main:app --port 50054
INFO: Started server process [542247]
INFO: Waiting for application startup.
INFO: Application startup complete.
INFO: Uvicorn running on http://127.0.0.1:50054 (Press CTRL+C to quit)
Consumed message: {'uuid': '28781cee-aea6-481d-be37-7a92a6880609', 'message': 'msg3'}
Consumed message: {'uuid': '614c8ce6-883c-4fc0-9c05-1296340d3d97', 'message': 'msg4'}
Consumed message: {'uuid': '383846f8-f4c5-4fc1-a3b1-144b34df9065', 'message': 'msg9'}
Consumed message: {'uuid': 'e294cc9c-eb4e-4b6e-b4a2-2dd3f5e29a62', 'message': 'msg10'}

(.venv)-[perry@kali: ~]/kp12m/dsd/lab4
$ uvicorn messages-service.app.main:app --port 50055
INFO: Started server process [542248]
INFO: Waiting for application startup.
INFO: Application startup complete.
INFO: Uvicorn running on http://127.0.0.1:50055 (Press CTRL+C to quit)
Consumed message: {'uuid': 'c895dc09-d45a-4865-b184-b7df1a6449d4', 'message': 'msg1'}
Consumed message: {'uuid': 'd5be8c5e-aeeb-4920-9d7d-0e282ef298d2', 'message': 'msg2'}
Consumed message: {'uuid': '969a02b4-4686-4a24-a75a-f95dade1757f', 'message': 'msg5'}
Consumed message: {'uuid': '682a52b1-1be4-4611-b3ff-6a38128825fa', 'message': 'msg6'}
Consumed message: {'uuid': '36307c90-2a39-4c0a-ba2e-0e888f7a329a', 'message': 'msg7'}
Consumed message: {'uuid': '67a49a4d-72ee-4b18-9a74-1d845e25b85b', 'message': 'msg8'}
```

перевіряємо:

```
GET http://localhost:8000/fetch

Params Authorization Headers (6) Body Scripts Settings
Body Cookies Headers (4) Test Results
JSON Preview Visualize
1 {
2   "from_messages_service": {
3     "instance": "127.0.0.1:50055",
4     "messages": [
5       {
6         "uuid": "c895dc09-d45a-4865-b184-b7df1a6449d4",
7         "message": "msg1"
8       },
9       {
10        "uuid": "d5be8c5e-aeeb-4920-9d7d-0e282ef298d2",
11        "message": "msg2"
12      },
13      {
14        "uuid": "969a02b4-4686-4a24-a75a-f95dade1757f",
15        "message": "msg5"
16      },
17      {
18        "uuid": "682a52b1-1be4-4611-b3ff-6a38128825fa",
19        "message": "msg6"
20      },
21      {
22        "uuid": "36307c90-2a39-4c0a-ba2e-0e888f7a329a",
23        "message": "msg7"
24      },
25      {
26        "uuid": "67a49a4d-72ee-4b18-9a74-1d845e25b85b",
27        "message": "msg8"
28      }
29    ]
30  }
```

```
GET http://localhost:8000/fetch

Params Authorization Headers (6) Body Scripts Settings
Body Cookies Headers (4) Test Results
JSON Preview Visualize
1 {
2   "from_messages_service": {
3     "instance": "127.0.0.1:50054",
4     "messages": [
5       {
6         "uuid": "28781cee-aea6-481d-be37-7a92a6880609",
7         "message": "msg3"
8       },
9       {
10        "uuid": "614c8ce6-883c-4fc0-9c05-1296340d3d97",
11        "message": "msg4"
12      },
13      {
14        "uuid": "383846f8-f4c5-4fc1-a3b1-144b34df9065",
15        "message": "msg9"
16      },
17      {
18        "uuid": "e294cc9c-eb4e-4b6e-b4a2-2dd3f5e29a62",
19        "message": "msg10"
20      }
21    ],
22    "count": 4
23  },
24  "from_logging_service": {
25    "instance": "127.0.0.1:50051",
26    "messages": [
27      "msg2",
28    ]
29  }
30 }
```