

Iteration 1

Repository with the code - [Github link](#)

Code execution

1. Build images and start containers:
docker compose up --build --force-recreate
2. Send X messages to the main server, Y of them at a time
python client/client_post.py X Y
Example: **python client/client_post.py 50 12** - send 50 messages, 12 messages at a time
3. Retrieve all the messages stored by the main server:
python client/client_get.py

Results illustration

Sending 50 messages, 12 at a time:

```
• (distr_sys) (iter 1) UCU_DataEngineering/ucu-1-distr-systems$ python client/client_post.py 50 12
Sent 50 messages with 50 successes.
12 simultaneous messages at a time.
```

Loggs of the main server. Server records how long it awaited the backup response:

```
logs > main_docker_1.log
1 2024-10-13 16:55:00,586 - INFO - [86fe9b17-0ba2-4997-a8df-71a197a4fad4] - POST request: Message 3/50;
2 2024-10-13 16:55:00,591 - INFO - [d11b05a7-afd1-443a-824d-6cfc7f9fe4a4] - POST request: Message 9/50;
3 2024-10-13 16:55:00,594 - INFO - [96c4bbf2-370c-4b5e-aeff-e68e2557699e] - POST request: Message 2/50;
4 2024-10-13 16:55:00,599 - INFO - [04df8608-667a-4297-b9c2-ff338f8d6467] - POST request: Message 5/50;
5 2024-10-13 16:55:00,603 - INFO - [8e969672-7669-4ead-b06f-e9deff8a53e3] - POST request: Message 4/50;
6 2024-10-13 16:55:00,608 - INFO - [60712aeb-3d22-4d72-bca9-e944c51cf31f] - POST request: Message 7/50;
7 2024-10-13 16:55:00,615 - INFO - [18ab051a-f1f6-454e-aa8f-6fdf46e8cae5] - POST request: Message 8/50;
8 2024-10-13 16:55:00,621 - INFO - [6548bd20-fcca-4dd0-a631-0a8866b8f1a4] - POST request: Message 6/50;
9 2024-10-13 16:55:00,642 - INFO - [fcdca27b-2bc8-4a3f-9f57-4ce29278502c] - POST request: Message 1/50;
10 2024-10-13 16:55:00,649 - INFO - [ad5af220-186c-4592-8fb6-44723ba97761] - POST request: Message 12/50;
11 2024-10-13 16:55:00,656 - INFO - [cb3c7c9e-4fc7-4f08-8f80-acf77c4deff6] - POST request: Message 10/50;
12 2024-10-13 16:55:00,663 - INFO - [c9e6f02f-f96a-4037-bebc-656cd8ecac72] - POST request: Message 11/50;
13 2024-10-13 16:55:01,075 - INFO - [60712aeb-3d22-4d72-bca9-e944c51cf31f] - Backed up message to backup_server_1:8011. Time taken: 0.46 sec
14 2024-10-13 16:55:02,289 - INFO - [d11b05a7-afd1-443a-824d-6cfc7f9fe4a4] - Backed up message to backup_server_1:8011. Time taken: 1.70 sec
15 2024-10-13 16:55:02,620 - INFO - [8e969672-7669-4ead-b06f-e9deff8a53e3] - Backed up message to backup_server_1:8011. Time taken: 2.01 sec
16 2024-10-13 16:55:02,689 - INFO - [6548bd20-fcca-4dd0-a631-0a8866b8f1a4] - Backed up message to backup_server_1:8011. Time taken: 2.06 sec
17 2024-10-13 16:55:02,784 - INFO - [c9e6f02f-f96a-4037-bebc-656cd8ecac72] - Backed up message to backup_server_1:8011. Time taken: 2.11 sec
18 2024-10-13 16:55:02,876 - INFO - [d11b05a7-afd1-443a-824d-6cfc7f9fe4a4] - Backed up message to backup_server_2:8012. Time taken: 0.59 sec
19 2024-10-13 16:55:02,881 - INFO - [6d75ea61-031d-4745-8e84-0b650c69c750] - POST request: Message 13/50;
```

Loggs of the backup server (one of two):

```
loggs > backup_server_1.log
1 2024-10-13 16:55:00,692 - INFO - [dda5b7d4-e002-4b94-aaec-7ac7ac3fc309] - POST request: Message 6/50;
2 2024-10-13 16:55:00,696 - INFO - [63a4780f-b8e5-4c81-9753-dd79d68573e4] - POST request: Message 4/50;
3 2024-10-13 16:55:00,701 - INFO - [3ef846b3-15c9-4150-a21b-3b1b562b0ac2] - POST request: Message 5/50;
4 2024-10-13 16:55:00,719 - INFO - [5e2c936d-4dba-46b4-a30d-0c1d5a3a46ab] - POST request: Message 2/50;
5 2024-10-13 16:55:00,727 - INFO - [7b2ad644-ad40-425f-8d8b-ae38330c1a1f] - POST request: Message 3/50;
6 2024-10-13 16:55:00,736 - INFO - [b362541d-59b5-437b-b144-de3910e867f2] - POST request: Message 9/50;
7 2024-10-13 16:55:00,739 - INFO - [3938d0dd-439c-4233-a616-f42df502b07a] - POST request: Message 7/50;
8 2024-10-13 16:55:00,744 - INFO - [db825038-8532-491f-887f-ea85cf95026a] - POST request: Message 8/50;
9 2024-10-13 16:55:00,749 - INFO - [18b92721-38ad-4759-af57-5a019c9db88a] - POST request: Message 1/50;
10 2024-10-13 16:55:00,755 - INFO - [cd787dba-20bc-457a-86d4-4814f63da25d] - POST request: Message 12/50;
11 2024-10-13 16:55:00,760 - INFO - [1bb1b4a0-a353-400d-a333-1ac01243e3ce] - POST request: Message 10/50;
12 2024-10-13 16:55:00,765 - INFO - [6866d5cb-8e93-4a4c-bdae-2de1d1b293c2] - POST request: Message 11/50;
13 2024-10-13 16:55:02,889 - INFO - [6e9089b3-4619-458d-9a3d-e9395a559b30] - POST request: Message 13/50;
14 2024-10-13 16:55:03,197 - INFO - [9b2e5b35-c1a6-46d4-996c-096f4b87b158] - POST request: Message 14/50;
15 2024-10-13 16:55:04,157 - INFO - [9f2cd7d2-4279-4f66-8974-54de33537b32] - POST request: Message 15/50;
16 2024-10-13 16:55:04,786 - INFO - [47f290d7-f0b2-4191-b1db-db8ddd3a77b5] - POST request: Message 16/50;
17 2024-10-13 16:55:05,247 - INFO - [1936fbb8-54cf-4a3e-b874-cb43badcbcdf] - POST request: Message 17/50;
18 2024-10-13 16:55:05,681 - INFO - [51cb68b1-782d-4167-b5a4-cc7c9084f656] - POST request: Message 18/50;
19 2024-10-13 16:55:05,708 - INFO - [4f1d5288-ed2a-4674-85a2-9d9018cc1dc2] - POST request: Message 19/50;
```

Retrieve messages from the main server:

```
(distr_sys) (iter_1) UCUC_DataEngineering/ucuc-1-distr-systems$ python client/client_get.py
Stored messages:
Message 3/50; Message 9/50; Message 2/50; Message 5/50; Message 4/50; Message 7/50; Message 8/50; Message 6/50; Message 1/50;
Message 12/50; Message 10/50; Message 11/50; Message 13/50; Message 14/50; Message 15/50; Message 16/50; Message 17/50; Message
18/50; Message 19/50; Message 20/50; Message 21/50; Message 22/50; Message 23/50; Message 24/50; Message 25/50; Message 26/50;
Message 27/50; Message 28/50; Message 29/50; Message 30/50; Message 31/50; Message 32/50; Message 33/50; Message 34/50; Messa
ge 35/50; Message 36/50; Message 37/50; Message 38/50; Message 39/50; Message 40/50; Message 41/50; Message 42/50; Message 43/5
0; Message 44/50; Message 45/50; Message 46/50; Message 47/50; Message 48/50; Message 49/50; Message 50/50;
(distr_sys) (iter_1) UCUC_DataEngineering/ucuc-1-distr-systems$
```