









```

perry@kali:~/kpi2m/dsd/lab2dock
$ docker ps
CONTAINER ID   IMAGE                                COMMAND                  CREATED        STATUS        PORTS                                NAMES
3262d34c9e3a   hazelcast/management-center:5.3    "bash ./bin/mc-start..." 3 minutes ago  Up 3 minutes  8081/tcp, 8443/tcp, 0.0.0.0:8081->8080/tcp, [::]:8081->8080/tcp  hazelcast-mc
a539c72e8bb6   hazelcast/hazelcast:5.3            "hz start"              14 minutes ago  Up 14 minutes  5701/tcp                            hazelcast2
2e6346f11795   hazelcast/hazelcast:5.3            "hz start"              14 minutes ago  Up 14 minutes  5701/tcp                            hazelcast3
73371c287a69   hazelcast/hazelcast:5.3            "hz start"              14 minutes ago  Up 14 minutes  0.0.0.0:5701->5701/tcp, :::5701->5701/tcp  hazelcast1
perry@kali:~/kpi2m/dsd/lab2dock
$

```

Members 


Search  Default View    

Member 	Additio... 	Scripting 	Console 	Stream... 	Slow O... 	Hazelc... 	Owned Partitions 	OS Committed Virtu... 	OS CPU... 
172.19.0.2:5701	No Info	Disabled	Disabled	Enabled	No	5.3.8	90	12.89 GB	11.72 %
172.19.0.4:5701	No Info	Disabled	Disabled	Enabled	No	5.3.8	91	12.89 GB	12.01 %
172.19.0.5:5701	No Info	Disabled	Disabled	Enabled	No	5.3.8	90	12.89 GB	12.00 %

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hazelcast-client > src > main > java > org > example >  Main.java

```

1 package org.example;
2 import com.hazelcast.client.HazelcastClient;
3 import com.hazelcast.client.config.ClientConfig;
4 import com.hazelcast.core.HazelcastInstance;
5 import com.hazelcast.map.IMap;
6
7
8 public class Main {
9     public static void main(String[] args) {
10         ClientConfig clientConfig = new ClientConfig();
11         clientConfig.getNetworkConfig().addAddress("localhost:5701");
12
13         HazelcastInstance client = HazelcastClient.newHazelcastClient(clientConfig);
14
15         IMap<Integer, String> map = client.getMap("my-distributed-map");
16
17         for (int i = 0; i < 1000; i++) {
18             map.put(i, "Value " + i);
19         }
20
21         System.out.println("Вставлено 1000 записів  distributed map.");
22
23         client.shutdown();
24     }
25 }
26

```

```
INFO: hz.client.1 [dev] [5.5.0]
Members [3] {
  Member [172.19.0.2]:5701 - 06ee7e3f-a3ea-4ac2-aa42-38d02806141c
  Member [172.19.0.5]:5701 - 60f114e6-a18b-4aab-b112-3b5721603901
  Member [172.19.0.4]:5701 - 32445e39-3017-4989-9e5d-6c077f3aff0a
}
May 26, 2025 2:29:11 AM com.hazelcast.client.impl.statistics.ClientStatisticsService
INFO: Client statistics is enabled with period 5 seconds.
May 26, 2025 2:29:12 AM com.hazelcast.client.impl.connection.ClientConnectionManager
INFO: hz.client.1 [dev] [5.5.0] Authenticated with server [172.19.0.5]:5701:60f114e6-a18b-4aab-b112-3b5721603901, server version: 5.3.8, local address: /172.19.0.1:36139
May 26, 2025 2:29:12 AM com.hazelcast.client.impl.connection.ClientConnectionManager
INFO: hz.client.1 [dev] [5.5.0] Authenticated with server [172.19.0.2]:5701:06ee7e3f-a3ea-4ac2-aa42-38d02806141c, server version: 5.3.8, local address: /172.19.0.1:35931
Bcraanemo 1000 samwicia y distributed map.
May 26, 2025 2:29:17 AM com.hazelcast.core.LifecycleService
INFO: hz.client.1 [dev] [5.5.0] HazelcastClient 5.5.0 (20240725) is SHUTTING_DOWN
May 26, 2025 2:29:17 AM com.hazelcast.client.impl.connection.ClientConnectionManager
INFO: hz.client.1 [dev] [5.5.0] Removed connection to endpoint: [172.19.0.2]:5701:06ee7e3f-a3ea-4ac2-aa42-38d02806141c, connection: ClientConnection(alive=false, connectionId=3, channel=NioChannel{/172.19.0.1:35931->/172.19.0.2:5701}), remoteAddress=[172.19.0.2]:5701, remoteUid=06ee7e3f-a3ea-4ac2-aa42-38d02806141c, clusterUid=036707a5-4a9e-4a13-9ebb-dd75ab3994dc, lastReadTime=2025-05-26 02:29:17.301, lastWriteTime=2025-05-26 02:29:17.300, closedTime=2025-05-26 02:29:17.304}
May 26, 2025 2:29:17 AM com.hazelcast.client.impl.connection.ClientConnectionManager
INFO: hz.client.1 [dev] [5.5.0] Removed connection to endpoint: [172.19.0.5]:5701:60f114e6-a18b-4aab-b112-3b5721603901, connection: ClientConnection(alive=false, connectionId=2, channel=NioChannel{/172.19.0.1:36139->/172.19.0.5:5701}), remoteAddress=[172.19.0.5]:5701, remoteUid=60f114e6-a18b-4aab-b112-3b5721603901, clusterUid=036707a5-4a9e-4a13-9ebb-dd75ab3994dc, lastReadTime=2025-05-26 02:29:17.300, lastWriteTime=2025-05-26 02:29:17.300, closedTime=2025-05-26 02:29:17.325}
May 26, 2025 2:29:17 AM com.hazelcast.client.impl.connection.ClientConnectionManager
INFO: hz.client.1 [dev] [5.5.0] Removed connection to endpoint: [172.19.0.4]:5701:32445e39-3017-4989-9e5d-6c077f3aff0a, connection: ClientConnection(alive=false, connectionId=1, channel=NioChannel{/127.0.0.1:48983->/localhost/127.0.0.1:5701}), remoteAddress=[172.19.0.4]:5701, remoteUid=32445e39-3017-4989-9e5d-6c077f3aff0a, clusterUid=036707a5-4a9e-4a13-9ebb-dd75ab3994dc, lastReadTime=2025-05-26 02:29:17.297, closedTime=2025-05-26 02:29:17.329}
May 26, 2025 2:29:17 AM com.hazelcast.core.LifecycleService
INFO: hz.client.1 [dev] [5.5.0] HazelcastClient 5.5.0 (20240725) is CLIENT_DISCONNECTED
May 26, 2025 2:29:17 AM com.hazelcast.core.LifecycleService
INFO: hz.client.1 [dev] [5.5.0] HazelcastClient 5.5.0 (20240725) is SHUTDOWN
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 9.083 s
[INFO] Finished at: 2025-05-26T02:29:17+03:00
[INFO] -----
```

Map Statistics (In-Memory Format: BINARY) RESET TIME 1 minute ago → now Default View 🗑️ 📄 +

Member ^	^ Entries	^ Gets	^ Puts	^ Removals	^ Sets	^ Entry Memory	^ Events	^ Hits
172.19.0.2:5701	349	0	348	0	0	45.29 kB	0	0
172.19.0.4:5701	330	0	331	0	0	42.83 kB	0	0
172.19.0.5:5701	321	0	321	0	0	41.66 kB	0	0
TOTAL	1,000	0	1,000	0	0	129.78 kB	0	0

1 - 3 of 3 Rows 10 ^

Відключаю одну ноду:

```
(perry@kali) - [~/kpi2m/dsd/lab2dock]
$ docker stop hazelcast2
hazelcast2
```

Map Statistics (In-Memory Format: BINARY) RESET TIME 1 minute ago → now Default View 🗑️ 📄 +


Member ^	^ Entries	^ Gets	^ Puts	^ Removals	^ Sets	^ Entry Memory	^ Events	^ Hits
172.19.0.2:5701	520	0	348	0	0	67.48 kB	0	0
172.19.0.4:5701	480	0	331	0	0	62.29 kB	0	0
TOTAL	1,000	0	679	0	0	129.78 kB	0	0

1 - 2 of 2 Rows 10 ^

Відключити послідовно дві ноди

```
(perry@kali) - [~/kpi2m/dsd/lab2dock]
$ docker stop hazelcast3
hazelcast3
```

Map Statistics (In-Memory Format: BINARY)

[RESET TIME](#) 1 minute ago → now Default View   


Member ^	Entries ^	Gets ^	Puts ^	Removals ^	Sets ^	Entry Memory ^	Events ^	Hits ^
172.19.0.4:5701	1,000	0	331	0	0	129.78 kB	0	0
TOTAL	1,000	0	331	0	0	129.78 kB	0	0

1 - 1 of 1 Rows 10 ▾

Відключити одночасно дві ноди

```
(perry@kali) - [~/kpi2m/dsd/lab2dock]
$ docker kill -s SIGKILL hazelcast2 hazelcast3
hazelcast2
hazelcast3
```

Map Statistics (In-Memory Format: BINARY)

[RESET TIME](#) 1 minute ago → now Default View   

Member ^	Entries ^	Gets ^	Puts ^	Removals ^	Sets ^	Entry Memory ^	Events ^	Hits ^
172.19.0.4:5701	670	0	331	0	0	86.95 kB	0	0
TOTAL	670	0	331	0	0	86.95 kB	0	0

1 - 1 of 1 Rows 10 ▾

Map Throughput Statistics

[RESET TIME](#) 1 minute ago → now Default View   

ЗНОВУ ПІДНЯВ:

```
(perry@kali) - [~/kpi2m/dsd/lab2dock]
$ docker compose up -d
WARN[0000] /home/perry/kpi2m/dsd/lab2dock/docker-compose.yml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion
[*] Running 4/4
✓ Container hazelcast3 Started
✓ Container hazelcast-mc Running
✓ Container hazelcast1 Running
✓ Container hazelcast2 Started
```

Map Statistics (In-Memory Format: BINARY)

RESET TIME

1 minute ago



now

Default View



Member ^	^ Entries	^ Gets	^ Puts	^ Removals	^ Sets	^ Entry Memory	^ Events	^ Hits
172.19.0.2:5701	167	0	0	0	0	21.67 kB	0	0
172.19.0.4:5701	340	0	331	0	0	44.13 kB	0	0
172.19.0.5:5701	163	0	0	0	0	21.15 kB	0	0
TOTAL	670	0	331	0	0	86.95 kB	0	0

1 - 3 of 3

Rows

10



4, 5, 6:

--- Без блокувань ---

Кінцеве значення: 11918 (Очікувалось: 30000)

Час виконання: 7604 ms

--- Песимістичне блокування ---

Кінцеве значення: 30000 (Очікувалось: 30000)

Час виконання: 20572 ms

--- Оптимістичне блокування ---

Кінцеве значення: 30000 (Очікувалось: 30000)

Час виконання: 6243 ms

Jun 06, 2025 3:35:06 AM com.hazelcast.core.Lifecycle

Bounded queue

```
--- Демонстрація обмеженої черги ---  
5 Producer: запущено.  
2 Consumer-2: запущено.  
0 Consumer-1: запущено.  
0 Producer: надіслав 1, розмір черги: 1  
0 Producer: надіслав 2, розмір черги: 0  
0 Consumer-1: отримав 1  
0 Consumer-2: отримав 2  
0 Consumer-2: отримав 3  
0 Producer: надіслав 3, розмір черги: 0  
0 Consumer-1: отримав 4  
0 Producer: надіслав 4, розмір черги: 0  
0 Consumer-2: отримав 5  
0 Producer: надіслав 5, розмір черги: 0  
0 Consumer-1: отримав 6  
0 Producer: надіслав 6, розмір черги: 0  
0 Consumer-2: отримав 7  
0 Producer: надіслав 7, розмір черги: 0  
0 Producer: надіслав 8, розмір черги: 0  
0 Consumer-1: отримав 8
```

```
0 Producer: надіслав 98, розмір черги: 0  
0 Consumer-2: отримав 99  
0 Producer: надіслав 99, розмір черги: 0  
0 Consumer-1: отримав 100  
0 Producer: надіслав 100, розмір черги: 0  
0 Consumer-2: отримав -1  
0 Consumer-2: отримано сигнал завершення.  
0 Producer: завершив роботу.  
0 Consumer-1: отримав -1  
0 Consumer-1: отримано сигнал завершення.  
0 Усі consumer-и завершили роботу.
```