

Docker Swarm

A)

```
PS C:\Users\mark1\Documents\distributed systems\db> docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
a91cad7c7550	postgres:14.15-alpine3.21	"docker-entrypoint.s..."	18 minutes ago	Up 18 minutes	5432/tcp	my_stack_db_movie.1.sm4ljt7nm8w1hr11jo345i865
200b9926de3a	postgres:14.15-alpine3.21	"docker-entrypoint.s..."	18 minutes ago	Up 18 minutes	5432/tcp	my_stack_db_movie.2.y73s4w3dac4wf1a85p3rbc8r-j
9b8757b42266	postgres:14.15-alpine3.21	"docker-entrypoint.s..."	18 minutes ago	Up 18 minutes	5432/tcp	my_stack_db_movie.3.nw1u3u0hze28kogj8324cw23p
9b163e14dece	h4cjjj/movie-front:latest	"docker-entrypoint.s..."	19 minutes ago	Up 18 minutes		my_stack_movie-front.3.91k3rkvh4zjhjzryaxh0dgivx
f84334f7ea1b	h4cjjj/movie-front:latest	"docker-entrypoint.s..."	19 minutes ago	Up 18 minutes		my_stack_movie-front.1.m20jmeazvyfbkmbbkcplis9nd
5d275c67eab0	h4cjjj/movie-front:latest	"docker-entrypoint.s..."	19 minutes ago	Up 18 minutes		my_stack_movie-front.2.us3pai4nqfwkz428mr4vy6lcv
bea6e2f6862f	h4cjjj/webfluxfilmsdb:latest	"java -jar webflux.j..."	19 minutes ago	Up 19 minutes	8084/tcp	my_stack_webflux.2.l818fupql3blnpdde0z467j2y
441d370e1a01	h4cjjj/webfluxfilmsdb:latest	"java -jar webflux.j..."	19 minutes ago	Up 19 minutes	8084/tcp	my_stack_webflux.1.rkkuztd0cnncmjo2gb120afms
ab6fff852ab9	h4cjjj/webfluxfilmsdb:latest	"java -jar webflux.j..."	19 minutes ago	Up 19 minutes	8084/tcp	my_stack_webflux.3.2tao6sx4173so2g8g1x7dbz7l

```
PS C:\Users\mark1\Documents\distributed systems\db> docker service ls
```

ID	NAME	MODE	REPLICAS	IMAGE	PORTS
4mcq1ud0333fe	my_stack_db_movie	replicated	3/3	postgres:14.15-alpine3.21	*:5433->5432/tcp
rjyzycfg5eo6	my_stack_movie-front	replicated	3/3	h4cjjj/movie-front:latest	*:3000->3000/tcp
ntk3ff5yobhx	my_stack_webflux	replicated	3/3	h4cjjj/webfluxfilmsdb:latest	*:8084->8084/tcp

B)

apache benchmark

```
PS C:\Users\mark1> ab -n 100 -c 10 http://localhost:3000/
This is ApacheBench, Version 2.3 <$Revision: 1913912 $>
Copyright 1996 Adam Twiss, Zeus Technology Ltd, http://www.zeustech.net/
Licensed to The Apache Software Foundation, http://www.apache.org/

Benchmarking localhost (be patient).....done


Server Software:
Server Hostname:      localhost
Server Port:          3000


Document Path:        /
Document Length:       37773 bytes

Concurrency Level:     10
Time taken for tests:   1.188 seconds
Complete requests:      100
Failed requests:         0
Total transferred:      3805700 bytes
HTML transferred:       3777300 bytes
Requests per second:    84.14 [#/sec] (mean)
Time per request:       118.845 [ms] (mean)
Time per request:       11.884 [ms] (mean, across all concurrent requests)
Transfer rate:          3127.20 [Kbytes/sec] received






Connection Times (ms)
              min    mean[+/-sd] median    max
Connect:        0      0   0.4      0      2
Processing:    57     92  27.8     84     265
Waiting:       55     89  27.6     81     262
Total:         58     92  27.8     84     265


Percentage of the requests served within a certain time (ms)
 50%      84
 66%     100
 75%     104
 80%     107
 90%     116
 95%     151
 98%     155
 99%     265
100%     265 (longest request)
```

front 1



my_stack_movie-front.1.m20jmeazvyfbkmbbkpc1is9nd

 [h4cjjj/movie-front:latest](#)

Logs

Inspect

Bind mounts

Exec

Files

Stats

2025-01-13 15:38:03

GET /watchlist 200 in 276ms

2025-01-13 15:38:05

GET /favicon.ico 200 in 28ms

2025-01-13 15:38:11

GET /watchlist 200 in 43ms

2025-01-13 16:14:56

GET /api/auth/session 200 in 122ms

2025-01-13 16:21:40

GET / 200 in 74ms

2025-01-13 16:21:40

GET / 200 in 113ms

2025-01-13 16:21:40

GET / 200 in 114ms

2025-01-13 16:21:40

GET / 200 in 118ms

2025-01-13 16:21:40

GET / 200 in 56ms

2025-01-13 16:21:40

GET / 200 in 71ms

2025-01-13 16:21:40

GET / 200 in 82ms

2025-01-13 16:21:40

GET / 200 in 97ms

2025-01-13 16:21:40

GET / 200 in 84ms

2025-01-13 16:21:40

GET / 200 in 82ms

2025-01-13 16:21:40

GET / 200 in 88ms

2025-01-13 16:21:40

GET / 200 in 69ms

2025-01-13 16:21:40

GET / 200 in 68ms

2025-01-13 16:21:40

GET / 200 in 72ms

2025-01-13 16:21:40

GET / 200 in 61ms

2025-01-13 16:21:40

GET / 200 in 70ms

2025-01-13 16:21:40

GET / 200 in 97ms

2025-01-13 16:21:41

GET / 200 in 86ms

2025-01-13 16:21:41

GET / 200 in 89ms

2025-01-13 16:21:41

GET / 200 in 59ms

2025-01-13 16:21:41

GET / 200 in 60ms

2025-01-13 16:21:41

GET / 200 in 71ms

2025-01-13 16:21:41

GET / 200 in 54ms

2025-01-13 16:21:41

GET / 200 in 61ms

2025-01-13 16:21:41

GET / 200 in 63ms

2025-01-13 16:21:41

GET / 200 in 54ms

2025-01-13 16:21:41

GET / 200 in 64ms

2025-01-13 16:21:41

GET / 200 in 68ms

2025-01-13 16:21:41

GET / 200 in 65ms

2025-01-13 16:21:41

GET / 200 in 60ms

2025-01-13 16:21:41

GET / 200 in 70ms


2025-01-13 16:21:41

GET / 200 in 67ms



2025-01-13 16:21:41

GET / 200 in 57ms

front 2



my_stack_movie-front.2.us3pai4nqfwkz428mr4vy6lcw

 5d275c67eab0  [h4cjjj/movie-front:latest](#)

Logs

Inspect

Bind mounts


Exec

Files

Stats

2025-01-13 15:38:12	GET /favicon.ico 200 in 25ms
2025-01-13 15:38:14	✓ Compiled /watchlist in 257ms
2025-01-13 15:38:14	GET /watchlist 200 in 292ms
2025-01-13 16:15:18	GET /api/auth/session 200 in 88ms
2025-01-13 16:21:40	GET / 200 in 76ms
2025-01-13 16:21:40	GET / 200 in 84ms
2025-01-13 16:21:40	GET / 200 in 99ms
2025-01-13 16:21:40	GET / 200 in 83ms
2025-01-13 16:21:40	GET / 200 in 76ms
2025-01-13 16:21:40	GET / 200 in 89ms
2025-01-13 16:21:40	GET / 200 in 107ms
2025-01-13 16:21:40	GET / 200 in 93ms
2025-01-13 16:21:40	GET / 200 in 90ms
2025-01-13 16:21:40	GET / 200 in 107ms
2025-01-13 16:21:40	GET / 200 in 102ms
2025-01-13 16:21:40	GET / 200 in 90ms
2025-01-13 16:21:40	GET / 200 in 102ms
2025-01-13 16:21:40	GET / 200 in 99ms
2025-01-13 16:21:40	GET / 200 in 147ms
2025-01-13 16:21:41	GET / 200 in 148ms
2025-01-13 16:21:41	GET / 200 in 150ms
2025-01-13 16:21:41	GET / 200 in 150ms
2025-01-13 16:21:41	GET / 200 in 116ms
2025-01-13 16:21:41	GET / 200 in 101ms
2025-01-13 16:21:41	GET / 200 in 99ms
2025-01-13 16:21:41	GET / 200 in 97ms
2025-01-13 16:21:41	GET / 200 in 97ms
2025-01-13 16:21:41	GET / 200 in 108ms
2025-01-13 16:21:41	GET / 200 in 96ms
2025-01-13 16:21:41	GET / 200 in 102ms
2025-01-13 16:21:41	GET / 200 in 93ms
2025-01-13 16:21:41	GET / 200 in 94ms
2025-01-13 16:21:41	GET / 200 in 98ms
2025-01-13 16:21:41	GET / 200 in 93ms
2025-01-13 16:21:41	GET / 200 in 88ms
2025-01-13 16:21:41	GET / 200 in 79ms
2025-01-13 16:21:41	GET / 200 in 66ms

front 3



my_stack_movie-front.3.91k3rkvh4zjhjzryaxh0dgivx

9b163e14dece

[h4cjjj/movie-front:latest](#)

Logs

Inspect

Bind mounts

Exec

Files

Stats

2025-01-13 16:21:40 GET / 200 in 53ms

2025-01-13 16:21:40 GET / 200 in 66ms

2025-01-13 16:21:40 GET / 200 in 57ms

2025-01-13 16:21:40 GET / 200 in 65ms

2025-01-13 16:21:40 GET / 200 in 75ms

2025-01-13 16:21:40 GET / 200 in 66ms

2025-01-13 16:21:40 GET / 200 in 68ms

2025-01-13 16:21:40 GET / 200 in 79ms

2025-01-13 16:21:40 GET / 200 in 74ms

2025-01-13 16:21:40 GET / 200 in 62ms

2025-01-13 16:21:40 GET / 200 in 84ms

2025-01-13 16:21:40 GET / 200 in 97ms

2025-01-13 16:21:41 GET / 200 in 98ms

2025-01-13 16:21:41 GET / 200 in 64ms

2025-01-13 16:21:41 GET / 200 in 63ms

2025-01-13 16:21:41 GET / 200 in 72ms

2025-01-13 16:21:41 GET / 200 in 70ms

2025-01-13 16:21:41 GET / 200 in 58ms

2025-01-13 16:21:41 GET / 200 in 67ms

2025-01-13 16:21:41 GET / 200 in 68ms

2025-01-13 16:21:41 GET / 200 in 71ms

2025-01-13 16:21:41 GET / 200 in 68ms

2025-01-13 16:21:41 GET / 200 in 65ms

2025-01-13 16:21:41 GET / 200 in 68ms

2025-01-13 16:21:41 GET / 200 in 71ms

2025-01-13 16:21:41 GET / 200 in 74ms

2025-01-13 15:37:30 Auth error: TypeError: Cannot read properties of undefined (reading 'toString')

2025-01-13 15:37:30 at Object.authorize (src/app/api/auth/[...nextauth]/route.ts:49:40)

2025-01-13 15:37:30 47 | const userData = await userRes.json();

2025-01-13 15:37:30 48 | return {

2025-01-13 15:37:30 > 49 | id: userData.id.toString(),

2025-01-13 15:37:30 | ^

2025-01-13 15:37:30 50 | name: userData.username,

2025-01-13 15:37:30 51 | email: userData.email,

2025-01-13 15:37:30 52 | accessToken: loginData.token,

2025-01-13 16:21:41 GET / 200 in 67ms

2025-01-13 16:21:41 GET / 200 in 58ms

Γ)

Εγγραφή στην σελίδα

```
PS C:\Users\mark1> docker exec -it my_stack_db_movie.3.nw1u3u0hzez8kogj8324cw23p bash
9b8757b42266:/# psql -h localhost -U postgres
psql (14.15)
Type "help" for help.

postgres=# SELECT * FROM users;
 id | username | email | password | created_at
-----+-----+-----+-----+-----
(0 rows)

postgres=# SELECT * FROM users;
 id | username | email | password | created_at
-----+-----+-----+-----+-----
(0 rows)

postgres=# SELECT * FROM users;
 id | username | email | password | created_at
-----+-----+-----+-----+-----
 1 | test2 | cleavest2@protonmail.com | kkXcf8qq8QZCvnj6qnVRhJwAJsNNhocx7aEyHzocdX8= | 2025-01-13 14:44:14.247208
(1 row)

postgres=#
```

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

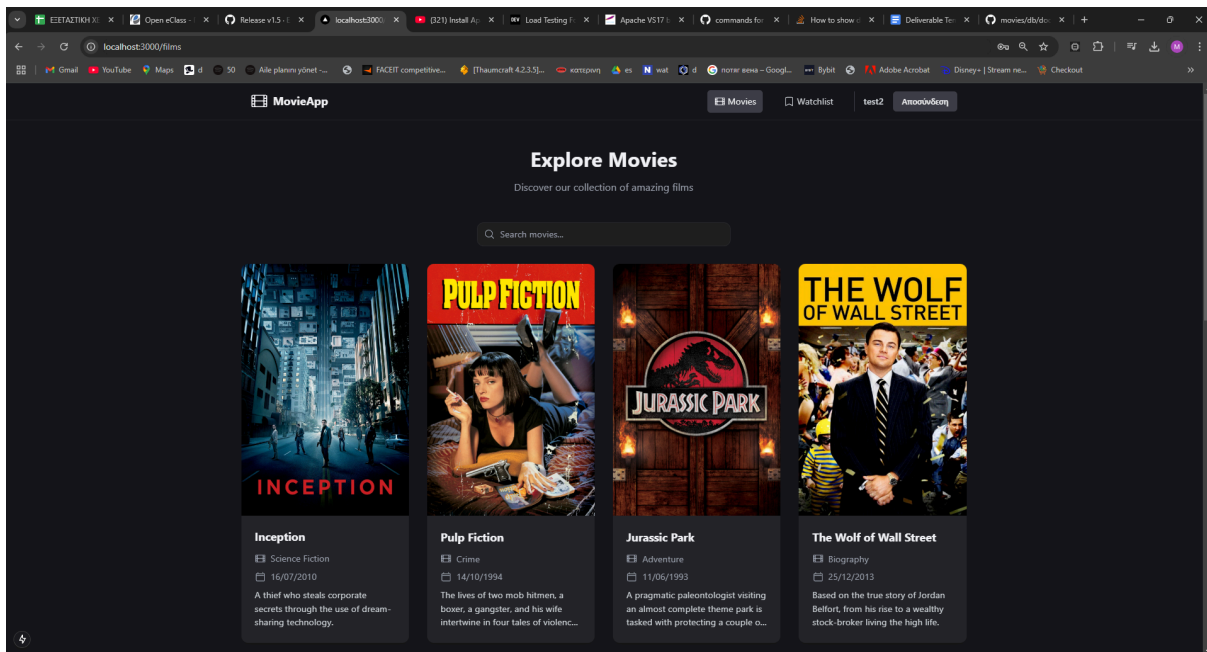
PS C:\Users\mark1> docker exec -it my_stack_db_movie.1.sm4ljt7nm8w1hr11jo345i865 bash
a91cad7c7550:/# psql -h localhost -U postgres
psql (14.15)
Type "help" for help.

postgres=# SELECT * FROM users;
 id | username | email | password | created_at
-----+-----+-----+-----+-----
 1 | test | cleavest@protonmail.com | kkXcf8qq8QZCvnj6qnVRhJwAJsNNhocx7aEyHzocdX8= | 2025-01-13 13:37:26.015985
(1 row)

postgres=#
```

Δ)

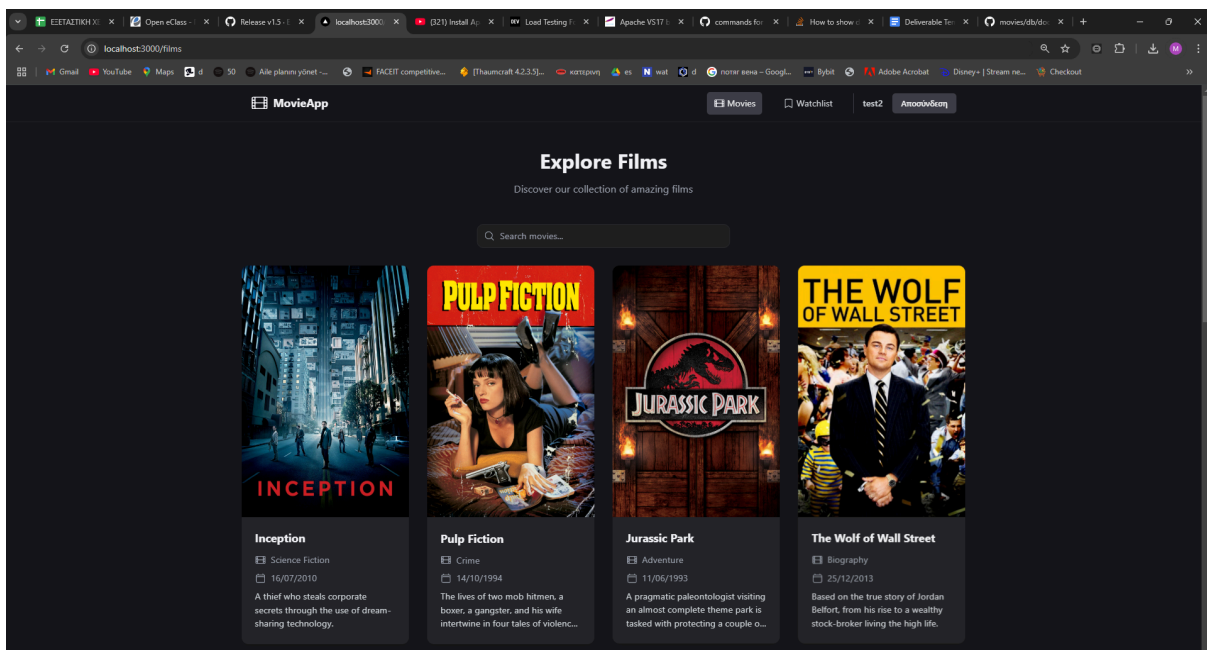
πριν



αλλαγή του κωδικα(Explore Movies -> Explore Films)

```
PS C:\Users\mark1\Documents\distributed systems\db> docker stack deploy -c docker-compose.yaml my_stack
Since --detach=false was not specified, tasks will be created in the background.
In a future release, --detach=false will become the default.
Updating service my_stack_webflux (id: ntk3ff5yobhxzpa508pxgw0k)
Updating service my_stack_movie-front (id: rjzyzcfg5eo6ogqp6mtc7r3qn)
Updating service my_stack_db_movie (id: 4mcq1ud033feqaooo01a40a2y)
PS C:\Users\mark1\Documents\distributed systems\db>
```

μετά



E)

change docker-compose replica

```
docker-compose.yml
1  version: '3.8'
2
3  services:
4    db_movie:
5      image: postgres:14.15-alpine3.21
6      environment:
7        POSTGRES_USER: postgres
8        POSTGRES_PASSWORD: postgres
9        POSTGRES_DB: postgres
10     deploy:
11       replicas: 1
12     ports:
13       - 5433:5432
14     volumes:
15       - ./database.sql:/docker-entrypoint-initdb.d/database.sql
16   webflux:
17     image: h4cjjj/webfluxfilmsdb
18     deploy:
19       replicas: 1
20     ports:
21       - 8084:8084
22     depends_on:
23       - db_movie
24   movie-front:
25     image: h4cjjj/movie-front
26     deploy:
27       replicas: 1
28     ports:
29       - 3000:3000
```

update

```
PS C:\Users\mark1\Documents\distributed systems\db> docker stack deploy -c docker-compose.yml my_stack
tack
Since --detach=false was not specified, tasks will be created in the background.
Since --detach=false was not specified, tasks will be created in the background.
In a future release, --detach=false will become the default.
In a future release, --detach=false will become the default.
Updating service my_stack_db_movie (id: 4mcq1ud033feqaooo01a40a2y)
Updating service my_stack_webflux (id: ntk3ff5yobhxzpa5o8pxgw0k)
Updating service my_stack_webflux (id: ntk3ff5yobhxzpa5o8pxgw0k)
Updating service my_stack_movie-front (id: rjzyzcfg5eo6ogqp6mtc7r3qn)
PS C:\Users\mark1\Documents\distributed systems\db>
```

```
PS C:\Users\mark1\Documents\distributed systems\db> docker service ls
ID            NAME                MODE                REPLICAS    IMAGE                                  PORTS
4mcq1ud033fe  my_stack_db_movie   replicated          1/1         postgres:14.15-alpine3.21           *:5433->5432/tcp
rjzyzcfg5eo6  my_stack_movie-front replicated          1/1         h4cjjj/movie-front:latest           *:3000->3000/tcp
ntk3ff5yobhx  my_stack_webflux    replicated          1/1         h4cjjj/webfluxfilmsdb:latest        *:8084->8084/tcp
PS C:\Users\mark1\Documents\distributed systems\db>
```


remove

```
PS C:\Users\mark1\Documents\distributed systems\db> docker stack rm my_stack
Removing service my_stack_db_movie
Removing service my_stack_movie-front
Removing service my_stack_webflux
Removing network my_stack_default
PS C:\Users\mark1\Documents\distributed systems\db> |
```

```
PS C:\Users\mark1> docker ps -a
CONTAINER ID   IMAGE                                NAMES      COMMAND                  CREATED        STATUS        PORTS
cbf2a33488cc   gcr.io/k8s-minikube/kicbase:v0.0.45 minikube   "/usr/local/bin/entr..." 44 hours ago  Exited (255) 25 hours ago  127.0.0.1:32768->22/tcp, 127.0.0.1:32769->2376/tcp, 127.0.0.1:32770->5000/tcp, 127.0.0.1:32771->8443/tcp, 127.0.0.1:32772->32443/tcp
78bd89421023   c37b8fe3fe7b                        "docker-entr...         45 hours ago  Exited (1) 45 hours ago
20710b11acc9   hdcjji/webfluxfilmsdb              front      "java -jar webflux.j..." 45 hours ago  Exited (143) 45 hours ago
86afd67cdSaa   postgres:14.15-alpine3.21          db_movie   "docker-entr...         45 hours ago  Exited (0) 45 hours ago
PS C:\Users\mark1> |
```