

Tugas Hasil Uji Coba

Sistem Paralel dan Terdistribusi A

Docker Compose



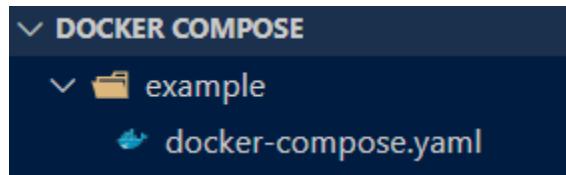
Disusun Oleh :

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10 November 2025

DOCKER COMPOSE

Apa itu Docker Compose?



Docker Compose: Version

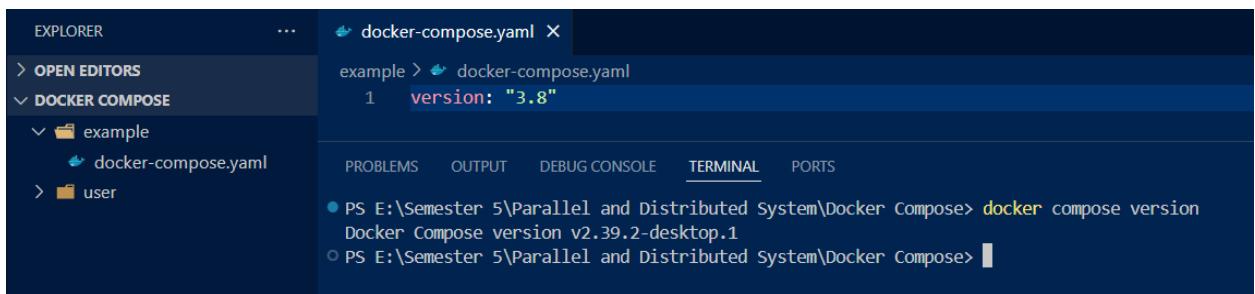
```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS

● PS E:\Semester 5\Parallel and Distributed System\Docker Compose> docker compose version
Docker Compose version v2.39.2-desktop.1
○ PS E:\Semester 5\Parallel and Distributed System\Docker Compose> 
```

CONFIGURATION FILE

Docker Compose: Versi Konfigurasi

Docker Compose: Docker Compose File



The screenshot shows a code editor interface with a dark theme. On the left, the Explorer sidebar displays a tree structure under the 'DOCKER COMPOSE' section, showing 'example' and 'user' folders, each containing a 'docker-compose.yaml' file. The main area shows the content of the 'example/docker-compose.yaml' file:

```
version: "3.8"
```

Below the code editor, the terminal tab is active, showing the command:

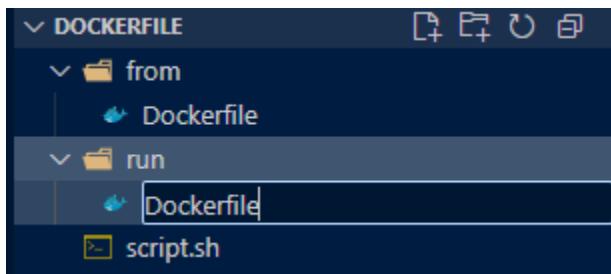
```
PS E:\Semester 5\Parallel and Distributed System\Docker Compose> docker compose version
```

The terminal output shows:

```
Docker Compose version v2.39.2-desktop.1
```

YAML

Pengenalan YAML



A screenshot of a code editor displaying a Dockerfile. The tabs at the top show 'Dockerfile from', 'Dockerfile ...\\run', and 'script.sh'. The code editor shows the following Dockerfile content:

```
from > run > Dockerfile > ...
1  FROM alpine:3
2
3  RUN mkdir hello
4  RUN echo "Hello World" > "/Hello/hello.txt"
5  RUN cat "/Hello/hello.txt"
```

Docker Compose: YAML Attribute

The screenshot shows a terminal window with two panes. The left pane displays a YAML configuration file, and the right pane displays an equivalent JSON configuration file.

Left Pane (YAML):

```
user > user.yaml
1   firstName: Zakaria
2   lastName: Fattawari
3   SS|
```

Right Pane (JSON):

```
user > user.json > ...
1   {
2     "firstName": "Zakaria",
3     "lastName": "Fattawari"
4   }
```

Docker Compose: YAML Array

The image shows a terminal window with two tabs: 'user.yaml' and 'user.json'. Both tabs show the same configuration for a 'user' service.

user.yaml:

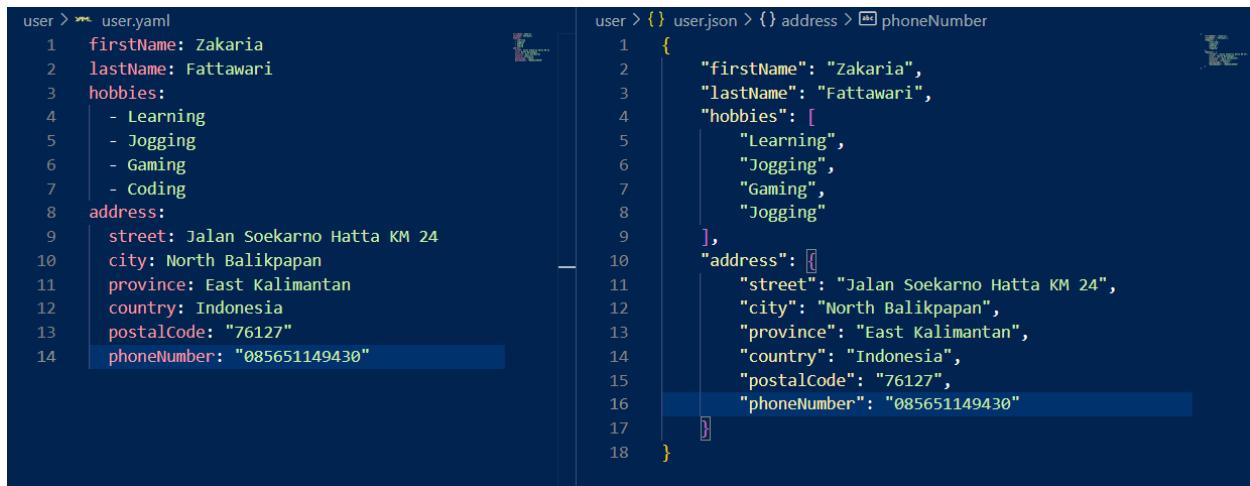
```
1  firstName: Zakaria
2  lastName: Fattawari
3  hobbies:
4    - Learning
5    - Jogging
6    - Gaming
7    - Coding
8
```

user.json:

```
user > {} user.json > [ ] hobbies > abc 3
1  {
2    "firstName": "Zakaria",
3    "lastName": "Fattawari",
4    "hobbies": [
5      "Learning",
6      "Jogging",
7      "Gaming",
8      "Coding"
9    ]
10   }
11 }
```

=

Docker Compose: YAML Nested Object



```
user > user.yaml
1  firstName: Zakaria
2  lastName: Fattawari
3  hobbies:
4    - Learning
5    - Jogging
6    - Gaming
7    - Coding
8  address:
9    street: Jalan Soekarno Hatta KM 24
10   city: North Balikpapan
11   province: East Kalimantan
12   country: Indonesia
13   postalCode: "76127"
14   phoneNumber: "085651149430"

user > {} user.json > {} address > {} phoneNumber
1  {
2    "firstName": "Zakaria",
3    "lastName": "Fattawari",
4    "hobbies": [
5      "Learning",
6      "Jogging",
7      "Gaming",
8      "Jogging"
9    ],
10   "address": [
11     "street": "Jalan Soekarno Hatta KM 24",
12     "city": "North Balikpapan",
13     "province": "East Kalimantan",
14     "country": "Indonesia",
15     "postalCode": "76127",
16     "phoneNumber": "085651149430"
17   ]
18 }
```

Docker Compose: YAML Array Nested Object

The screenshot shows a code editor interface with two tabs: `user.yaml` and `user.json`. The `user.yaml` tab contains the following YAML configuration:

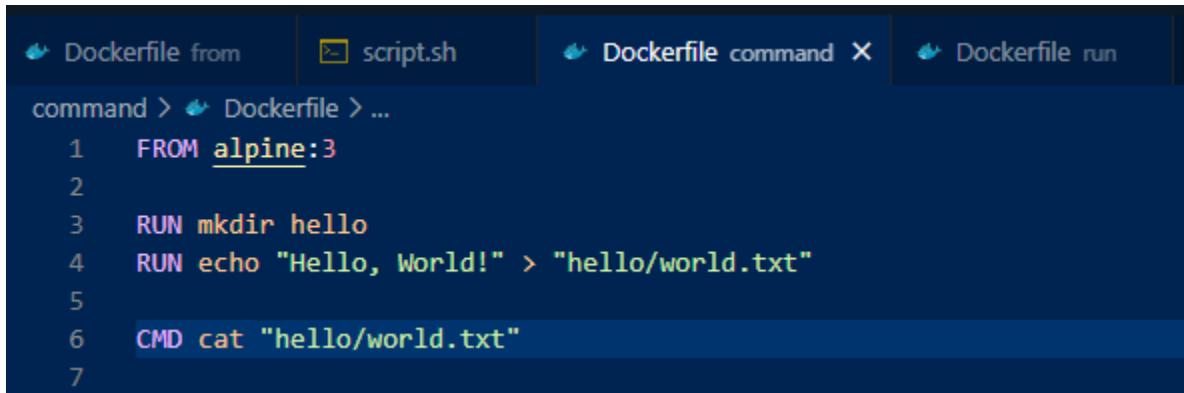
```
user > user.yaml
1   firstName: Zakaria
2   lastName: Fattawari
3   hobbies:
4     - Learning
5     - Jogging
6     - Gaming
7     - Coding
8   address:
9     street: Jalan Soekarno Hatta KM 24
10    city: North Balikpapan
11    province: East Kalimantan
12    country: Indonesia
13    postalCode: "76127"
14    phoneNumber: "085651149430"
15    emails:
16      - zakriafattawari@gmail.com
17      - alathereongemink@gmail.com
18      - 11231092@student.itk.ac.id
19   wallet:
20     - type: cash
21       amount: 540000
22     - type: credit
23       amount: 427000
```

The `user.json` tab contains the corresponding JSON representation of the same data:

```
user > user.json
1   [
2     {
3       "firstName": "Zakaria",
4       "lastName": "Fattawari",
5       "hobbies": [
6         "Learning",
7         "Jogging",
8         "Gaming",
9         "Coding"
10        ],
11       "address": {
12         "street": "Jalan Soekarno Hatta KM 24",
13         "city": "North Balikpapan",
14         "province": "East Kalimantan",
15         "country": "Indonesia",
16         "postalCode": "76127",
17         "phoneNumber": "085651149430",
18         "emails": [
19           "zakriafattawari@gmail.com",
20           "alathereongemink@gmail.com",
21           "11231092@student.itk.ac.id"
22         ],
23         "wallet": [
24           {
25             "type": "cash",
26             "amount": 540000
27           },
28           {
29             "type": "credit",
30             "amount": 427000
31           }
32         ]
33       }
34     ]
35   ]
```

MEMBUAT CONTAINER

Membuat Konfigurasi Kontainer



The screenshot shows a dark-themed Dockerfile editor interface. At the top, there are tabs for "Dockerfile from", "script.sh", "Dockerfile command", and "Dockerfile run". Below the tabs, a breadcrumb navigation bar shows "command > Dockerfile > ...". The main area contains a numbered Dockerfile with the following content:

```
1 FROM alpine:3
2
3 RUN mkdir hello
4 RUN echo "Hello, World!" > "hello/world.txt"
5
6 CMD cat "hello/world.txt"
7
```

Docker Compose: Membuat Container

```
⚡ docker-compose.yaml ✘
example > ⚡ docker-compose.yaml
1   version: "3.8"
2
3     ▷Run All Services
4   services:
5     ▷ Run Service
6     nginx-example:
7       container_name: nginx-example
8       image: nginx:latest
```

```
○ PS E:\Semester 5\Parallel and Distributed System\Docker Compose> cd example
PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker compose create
time="2025-11-10T23:29:26+08:00" level-warning msg="E:\Semester 5\Parallel and Distributed System\\Docker Compose\\example\\docker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Creating 2/2
  ✓ Network example_default Created                               0.1s
  ✓ Container nginx-example Created                           0.1s
PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker container ls
CONTAINER ID IMAGE      COMMAND CREATED STATUS    PORTS NAMES
PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker container ls -a | findstr nginx
9851726e9ab8  nginx:latest          "/docker-entrypoint.???" 4 minutes ago  Created           nginx-example
PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example>
```

The screenshot shows a terminal window with the following content:

```
PS E:\Semester 5\Parallel and Distributed System\Docker Compose> cd example
PS E:\Semester 5\Parallel and Distributed System\Docker Compose> cd example
PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker compose create
time="2025-11-10T23:29:26+08:00" level=warning msg="E:\\Semester 5\\\\Parallel and Distributed System\\\\Docker Compose\\\\example\\\\docker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion" ...
✓ Network example_default Created 0.1s
✓ Container nginx-example Created 0.1s
PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker container ls
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker container ls -a | findstr nginx
9851726e9ab8 nginx:latest "/docker-entrypoint.???" 4 minutes ago created nginx-example
● PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker compose create
time="2025-11-10T23:35:21+08:00" level=warning msg="E:\\Semester 5\\\\Parallel and Distributed System\\\\Docker Compose\\\\example\\\\docker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Creating 1/1
✓ Container nginx-example2 Created 0.1s
● PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker compose create
time="2025-11-10T23:36:03+08:00" level=warning msg="E:\\Semester 5\\\\Parallel and Distributed System\\\\Docker Compose\\\\example\\\\docker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
● PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker container ls -a | findstr nginx
5a83ba264e60 nginx:latest "/docker-entrypoint.???" About a minute ago Created nginx-example2
9851726e9ab8 nginx:latest "/docker-entrypoint.???" 6 minutes ago Created nginx-example
○ PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example>
```

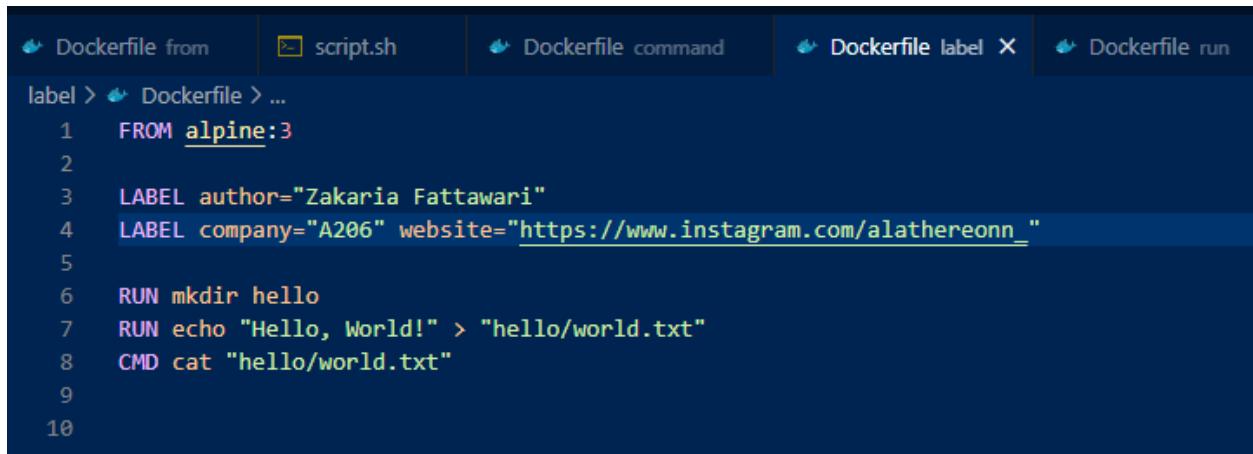
Docker Container: COMMAND

```
● PS E:\Semester 5\Parallel and Distributed System\Dockerfile> docker container create --name command zakariafattawari/command de65b9588f88ba04f95230c1c837c806ccfd83ae8fe4d476dc414ac7a59e0e82
● PS E:\Semester 5\Parallel and Distributed System\Dockerfile> docker container start command
● PS E:\Semester 5\Parallel and Distributed System\Dockerfile> docker container ls
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
● PS E:\Semester 5\Parallel and Distributed System\Dockerfile> docker container ls -a | findstr command de65b9588f88 zakariafattawari/command "/bin/sh -c 'cat \'he??\'' About a minute ago Exited (0) About a minute ago command
● PS E:\Semester 5\Parallel and Distributed System\Dockerfile> docker container logs command Hello, World!
● PS E:\Semester 5\Parallel and Distributed System\Dockerfile> docker container start command
● PS E:\Semester 5\Parallel and Distributed System\Dockerfile> docker container start command
● PS E:\Semester 5\Parallel and Distributed System\Dockerfile> docker container start command
● PS E:\Semester 5\Parallel and Distributed System\Dockerfile> docker container logs command Hello, World!
Hello, World!
Hello, World!
Hello, World!
Hello, World!
○ PS E:\Semester 5\Parallel and Distributed System\Dockerfile>
```

MENJALANKAN CONTAINER

Pemgenalan Menjalankan Container

```
● PS E:\Semester 5\Parallel and Distributed System\Docker Compose> cd example
● PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker compose start
time="2025-11-10T23:37:43+08:00" level=warning msg="E:\\Semester 5\\Parallel and Distributed System\\Docker Compose\\example\\docker-compose.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 2/2
  ✓ Container nginx-example2 Started                               0.4s
  ✓ Container nginx-example Started                               0.4s
● PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker container ls
CONTAINER ID   IMAGE      COMMAND   CREATED          STATUS    PORTS     NAMES
5a83ba264e60   nginx:latest "/docker-entrypoint..."  2 minutes ago   Up 5 seconds   80/tcp    nginx-example2
9851726e9ab8   nginx:latest "/docker-entrypoint..."  8 minutes ago   Up 5 seconds   80/tcp    nginx-example
○ PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example>
```



The screenshot shows a Dockerfile editor interface with the following tabs: Dockerfile from, script.sh, Dockerfile command, Dockerfile label (selected), and Dockerfile run. The Dockerfile content is as follows:

```
label > Dockerfile > ...
1  FROM alpine:3
2
3  LABEL author="Zakaria Fattawari"
4  LABEL company="A206" website="https://www.instagram.com/alathereonn_"
5
6  RUN mkdir hello
7  RUN echo "Hello, World!" > "hello/world.txt"
8  CMD cat "hello/world.txt"
9
10
```

Docker Compose: Melihat Container

```
PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker compose ps
time="2025-11-10T23:40:13+08:00" level=warning msg="E:\\Semester 5\\\\Parallel and Distributed System\\\\Docker Compose\\\\example\\\\docker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
NAME           IMAGE          COMMAND       SERVICE      CREATED        STATUS        PORTS
nginx-example  nginx:latest  "/docker-entrypoint..."  nginx-example  10 minutes ago  Up 2 minutes  80/tcp
nginx-example2 nginx:latest  "/docker-entrypoint..."  nginx-example2  4 minutes ago   Up 2 minutes  80/tcp
PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example>
```

Docker Compose: Menghentikan Container

```
PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker compose stop
time="2025-11-10T23:41:41+08:00" level=warning msg="E:\\Semester 5\\\\Parallel and Distributed System\\\\Docker Compose\\\\example\\\\docker-compose.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Stopping 2/2
  ✓ Container nginx-example2 Stopped
  ✓ Container nginx-example Stopped
0.3s
0.3s
PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker compose ps
time="2025-11-10T23:41:46+08:00" level=warning msg="E:\\Semester 5\\\\Parallel and Distributed System\\\\Docker Compose\\\\example\\\\docker-compose.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
NAME      IMAGE      COMMAND      SERVICE      CREATED      STATUS      PORTS
```

Docker Compose: Menghapus Container

```
PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker compose start
time="2025-11-10T23:43:36+08:00" level=warning msg="E:\\Semester 5\\Parallel and Distributed System\\Docker Compose\\example\\docker-compose.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 2/2
  ✓ Container nginx-example  Started                               0.2s
  ✓ Container nginx-example2 Started                                0.2s
PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker compose ps
time="2025-11-10T23:43:54+08:00" level=warning msg="E:\\Semester 5\\Parallel and Distributed System\\Docker Compose\\example\\docker-compose.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
NAME          IMAGE           COMMAND          SERVICE        CREATED         STATUS          PORTS
nginx-example  nginx:latest  "/docker-entrypoint..."  nginx-example  14 minutes ago  Up 17 seconds  80/tcp
nginx-example2  nginx:latest  "/docker-entrypoint..."  nginx-example2  8 minutes ago   Up 17 seconds  80/tcp
PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker compose down
time="2025-11-10T23:44:00+08:00" level=warning msg="E:\\Semester 5\\Parallel and Distributed System\\Docker Compose\\example\\docker-compose.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 3/3
  ✓ Container nginx-example2 Removed                           0.4s
  ✓ Container nginx-example Removed                           0.3s
  ✓ Network example_default Removed                         0.3s
PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example>
```

PROJECT NAME

Pengenalan Project Name

```
● PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker compose create
time="2025-11-10T23:46:51+08:00" level=warning msg="E:\\Semester 5\\\\Parallel and Distributed System\\\\Docker Compose\\\\example\\\\docker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Creating 3/3
  ✓ Network example_default   Created                               0.0s
  ✓ Container nginx-example2 Created                               0.1s
  ✓ Container nginx-example  Created                               0.1s
● PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker compose ps
time="2025-11-10T23:46:56+08:00" level=warning msg="E:\\Semester 5\\\\Parallel and Distributed System\\\\Docker Compose\\\\example\\\\docker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
NAME      IMAGE      COMMAND      SERVICE      CREATED      STATUS      PORTS
● PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker compose start
time="2025-11-10T23:47:04+08:00" level=warning msg="E:\\Semester 5\\\\Parallel and Distributed System\\\\Docker Compose\\\\example\\\\docker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 2/2
  ✓ Container nginx-example2 Started                           0.2s
  ✓ Container nginx-example Started                           0.2s
● PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker compose ps
time="2025-11-10T23:47:10+08:00" level=warning msg="E:\\Semester 5\\\\Parallel and Distributed System\\\\Docker Compose\\\\example\\\\docker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
NAME      IMAGE      COMMAND      SERVICE      CREATED      STATUS      PORTS
nginx-example  nginx:latest  "/docker-entrypoint..."  nginx-example  19 seconds ago  Up 6 seconds  80/tcp
nginx-example2  nginx:latest  "/docker-entrypoint..."  nginx-example2  19 seconds ago  Up 6 seconds  80/tcp
○ PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example>
```

```
● PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker compose ps
time="2025-11-10T23:47:10+08:00" level=warning msg="E:\\Semester 5\\\\Parallel and Distributed System\\\\Docker Compose\\\\example\\\\docker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
NAME      IMAGE      COMMAND      SERVICE      CREATED      STATUS      PORTS
nginx-example  nginx:latest  "/docker-entrypoint..."  nginx-example  19 seconds ago  Up 6 seconds  80/tcp
nginx-example2  nginx:latest  "/docker-entrypoint..."  nginx-example2  19 seconds ago  Up 6 seconds  80/tcp
○ PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example>
```

SERVICES

Pengenalan SERVICES

```
• docker-compose.yaml X
example > • docker-compose.yaml
1   version: "3.9"
2
3     ▷Run All Services
4   services:
5     ▷ Run Service
6     nginx-example:
7       image: nginx:latest
8       container_name: nginx-example
9
10    ▷ Run Service
11    mongodb-example:
12      image: mongo:latest
13      container_name: mongodb-example
14
```

Docker Compose: SERVICES

```
● PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker compose create
time="2025-11-10T23:54:16+08:00" level=warning msg="E:\\Semester 5\\\\Parallel and Distributed System\\\\Docker Compose\\\\example\\\\docker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Creating 3/3
  ✓ Network example_default    Created                               0.0s
  ✓ Container mongodb-example Created                               0.1s
  ✓ Container nginx-example   Created                               0.1s
● PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker compose start
time="2025-11-10T23:54:29+08:00" level=warning msg="E:\\Semester 5\\\\Parallel and Distributed System\\\\Docker Compose\\\\example\\\\docker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 2/2
  ✓ Container mongodb-example Started                            0.2s
  ✓ Container nginx-example   Started                            0.2s
○ PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example>
```

KOMENTAR

Pengenalan Komentar

```
↳ docker-compose.yaml X
example > ↳ docker-compose.yaml
1   version: "3.9"
2
3     ▷Run All Services
4   services:
5     # contoh nginx bang
6     ▷Run Service
7     nginx-example:
8       image: nginx:latest
9       container_name: nginx-example
10    # kalau yang ini contoh mongodb
11    ▷Run Service
12    mongodb-example:
13      image: mongo:latest
14      container_name: mongodb-example
```

PORT

Pengenalan PORT

```
↳ docker-compose.yaml ×
example > ↳ docker-compose.yaml
1   version: "3.9"
2
3     ▷Run All Services
4   services:
5     # contoh port dengan long syntax
6     ▷Run Service
7     nginx-port1:
8       image: nginx:latest
9       container_name: nginx-port1
10      ports:
11        - protocol: tcp
12          published: 8080
13          target: 80
14      # contoh port dengan short syntax
15      ▷Run Service
16      nginx-port2:
17        image: nginx:latest
18        container_name: nginx-port2
19        ports:
20          - 8081:80
```

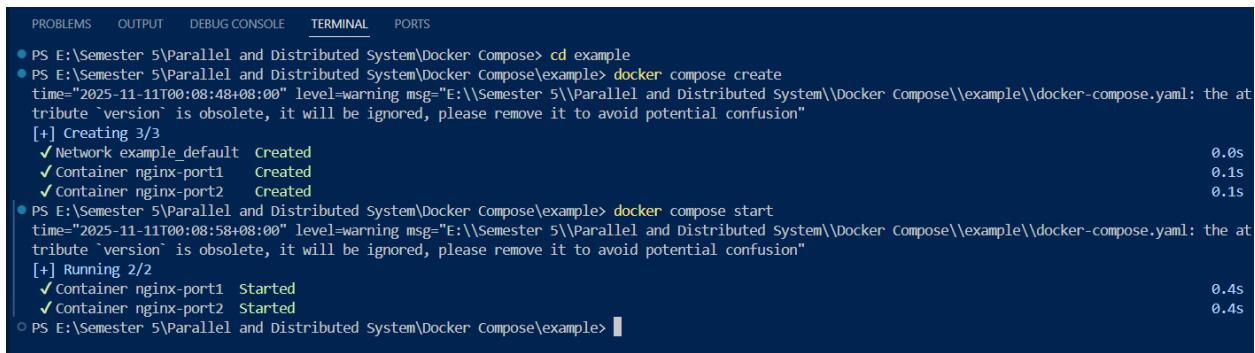
Docker Compose: Short Syntax

```
12  # contoh port dengan short syntax
    ▷ Run Service
13  nginx-port2:
14      image: nginx:latest
15      container_name: nginx-port2
16      ports:
17          - 8081:80
18
```

Docker Compose: Long Syntax

```
4  # contoh port dengan long syntax
  ▷ Run Service
5  nginx-port1:
6    image: nginx:latest
7    container_name: nginx-port1
8    ports:
9      - protocol: tcp
10     published: 8080
11     target: 80
```

Docker Compose: PORT (Menjalankan Container)



The screenshot shows a terminal window with the following command history:

- PS E:\Semester 5\Parallel and Distributed System\ Docker Compose> cd example
- PS E:\Semester 5\Parallel and Distributed System\ Docker Compose\example> docker compose create time="2025-11-11T00:08:48+08:00" level=warning msg="E:\Semester 5\Parallel and Distributed System\ Docker Compose\example\docker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Creating 3/3
 - ✓ Network example_default Created 0.0s
 - ✓ Container nginx-port1 Created 0.1s
 - ✓ Container nginx-port2 Created 0.1s
- PS E:\Semester 5\Parallel and Distributed System\ Docker Compose\example> docker compose start time="2025-11-11T00:08:58+08:00" level=warning msg="E:\Semester 5\Parallel and Distributed System\ Docker Compose\example\docker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 2/2
 - ✓ Container nginx-port1 Started 0.4s
 - ✓ Container nginx-port2 Started 0.4s
- PS E:\Semester 5\Parallel and Distributed System\ Docker Compose\example>

ENVIRONMENT VARIABLE

Pengenalan ENVIRONMENT VARIABLE

```
↳ docker-compose.yaml X
example > ↳ docker-compose.yaml
1   version: "3.9"
2
3     ▷Run All Services
4   services:
5     # kalau yang ini contoh mongodb
6     ▷ Run Service
7     mongodb-example:
8       image: mongo:latest
9       container_name: mongodb-example
10      ports:
11        - 27017:27017
12      environment:
13        MONGO_INITDB_ROOT_USERNAME: alathereon
14        MONGO_INITDB_ROOT_PASSWORD: alathereonn
15        MONGO_INITDB_DATABASE: admin
```

Docker Compose: ENVIRONMENT VARIABLE

```
● PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker compose create
  time="2025-11-11T00:15:23+08:00" level=warning msg="E:\\Semester 5\\\\Parallel and Distributed System\\\\Docker Compose\\\\example\\\\docker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
  [+] Creating 2/2
    ✓ Network example_default   Created                               0.0s
    ✓ Container mongodb-example Created                           0.1s
● PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker compose start
  time="2025-11-11T00:15:29+08:00" level=warning msg="E:\\Semester 5\\\\Parallel and Distributed System\\\\Docker Compose\\\\example\\\\docker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
  [+] Running 1/1
    ✓ Container mongodb-example Started                         0.2s
○ PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example>
```

```
● PS E:\Semester 5\Parallel and Distributed System\Docker Compose\example> docker compose exec mongodb-example env
  time="2025-11-11T00:16:00+08:00" level=warning msg="E:\\Semester 5\\\\Parallel and Distributed System\\\\Docker Compose\\\\example\\\\docker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
  PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin
  HOSTNAME=1ff961a73d03
  TERM=xterm
  MONGO_INITDB_ROOT_PASSWORD=alathereonn
  MONGO_INITDB_DATABASE=admin
  MONGO_INITDB_ROOT_USERNAME=alatheron
  GOSU VERSION=1.18
  JSYAML_VERSION=3.13.1
  JSYAML_CHECKSUM=662e32319bdd378e91f67578e56a34954b0a2e33aca11d70ab9f4826af24b941
  MONGO_PACKAGE=mongodb-org
  MONGO_REPO=repo.mongodb.org
  MONGO_MAJOR=8.0
  MONGO_VERSION=8.0.14
  HOME=/data/db
  GLIBC_TUNABLES=glibc.pthread.rseq=0
```

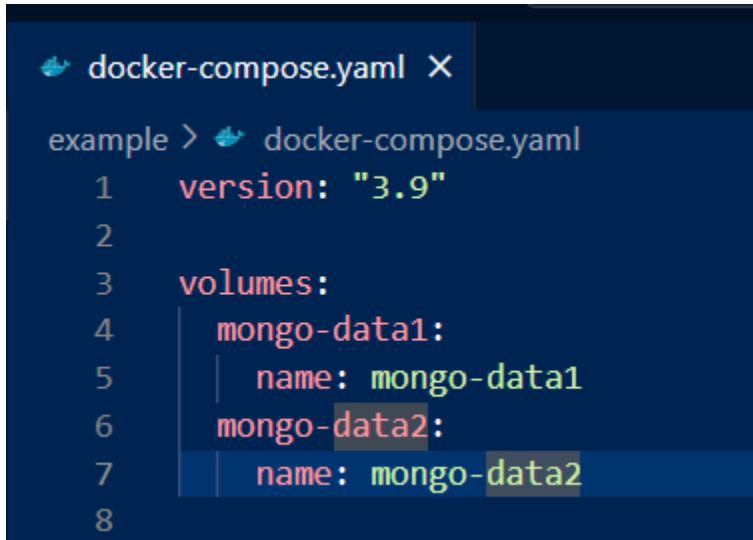
BIND MOUNT

Pengenalan BIND MOUNT

```
↳ docker-compose.yaml X
example > ↳ docker-compose.yaml
1   version: "3.9"
2
3     ▷ Run All Services
4   services:
5     # kalau yang ini contoh mongodb
6     ▷ Run Service
7     mongo1:
8       image: mongo:latest
9       container_name: mongodb1
10      ports:
11        - 27017:27017
12      environment:
13        MONGO_INITDB_ROOT_USERNAME: alathereon
14        MONGO_INITDB_ROOT_PASSWORD: alathereonn
15        MONGO_INITDB_DATABASE: admin
16      volumes:
17        - ./data-mongo1:/data/db
18
19     # mongodb2
20     ▷ Run Service
21     mongo2:
22       image: mongo:latest
23       container_name: mongodb2
24       ports:
25         - 27018:27017
26       environment:
27         MONGO_INITDB_ROOT_USERNAME: alathereon
28         MONGO_INITDB_ROOT_PASSWORD: alathereonn
29         MONGO_INITDB_DATABASE: admin
30       volumes:
31         - type: bind
32           source: ./data-mongodb2
33           target: /data/db
34           read_only: false
```

VOLUME

Pengenalan VOLUME



```
example > docker-compose.yaml X
1   version: "3.9"
2
3   volumes:
4     mongo-data1:
5       name: mongo-data1
6     mongo-data2:
7       name: mongo-data2
8
```

Docker Compose: SHORT SYNTAX VOLUME

```
4  # kalau yang ini contoh mongodb
  ▷ Run Service
5  mongodb1:
6    image: mongo:latest
7    container_name: mongodb1
8    ports:
9      - 27017:27017
10   environment:
11     MONGO_INITDB_ROOT_USERNAME: alathereon
12     MONGO_INITDB_ROOT_PASSWORD: alathereonn
13     MONGO_INITDB_DATABASE: admin
14   volumes:
15     - ./data-mongo1:/data/db
```

Docker Compose: LONG SYNTAX VOLUME

```
17  # mongodb2
18  ▷ Run Service
19  mongodb2:
20      image: mongo:latest
21      container_name: mongodb2
22      ports:
23          - 27018:27017
24      environment:
25          MONGO_INITDB_ROOT_USERNAME: alathereon
26          MONGO_INITDB_ROOT_PASSWORD: alathereonn
27          MONGO_INITDB_DATABASE: admin
28      volumes:
29          - type: bind
30              source: ./data-mongodb2
31              target: /data/db
32              read_only: false
```

Docker Compose: Menghapus VOLUME

NETWORK

Pengenalan NETWORK

```
PS E:\Semester 5\Parallel and Distributed System\ Docker Compose\example> docker inspect mongodb1
[{"Networks": {
    "example_default": {
        "IPAMConfig": null,
        "Links": null,
        "Aliases": [
            "mongodb1",
            "mongodb1"
        ],
        "MacAddress": "16:2f:a7:a7:2b:ff",
        "DriverOpts": null,
        "QoSPriority": 0,
        "NetworkID": "55e7523851aa2f68e5dcaf66aa5e868265256dbe15b60f369ddb5df4ce29fcc0",
        "EndpointID": "93ede2e3538c05f14061218d3a6a2d68632808d5f69dc0d41fb6a46fc55ed31",
        "Gateway": "172.19.0.1",
        "IPAddress": "172.19.0.3",
        "IPPrefixLen": 16,
        "IPv6Gateway": "",
        "GlobalIPv6Address": "",
        "GlobalIPv6PrefixLen": 0,
        "DNSNames": [
            "mongodb1",
            "33458905a091"
        ]
    }
}}
```

```
user > ⌘ Dockerfile > ...
1  FROM golang:1.18-alpine
2
3  RUN mkdir /app
4
5  RUN addgroup -S a206group
6  RUN adduser -S -D -h /app a206user a206group
7  RUN chown -R a206user:a206group /app
8  USER a206user
9
10 COPY main.go /app
11
12 EXPOSE 8080
13 CMD go run /app/main.go
```

Docker Compose: Membuat NETWORK

```
docker-compose.yaml X
example > docker-compose.yaml
1   version: "3.9"
2
3   networks:
4     network-example:
5       name: network-example
6       driver: bridge
7
```

Docker Compose: Menggunakan NETWORK

```
docker-compose.yaml X
example > docker-compose.yaml
1   version: "3.9"
2
3   networks:
4     network_example:
5       name: network_example
6       driver: bridge
7
8     services:
9       # kalau yang ini contoh mongodb
10      > Run Service
11      mongodb1:
12        image: mongo:latest
13        container_name: mongodb1
14        ports:
15          - 27017:27017
16        environment:
17          MONGO_INITDB_ROOT_USERNAME: alathereon
18          MONGO_INITDB_ROOT_PASSWORD: alathereonn
19          MONGO_INITDB_DATABASE: admin
20        networks:
21          - network_example
```

```
PS E:\Semester 5\Parallel and Distributed System\Compose\example> docker inspect mongodb1
[{"Networks": {
    "network_example": {
        "IPAMConfig": null,
        "Links": null,
        "Aliases": [
            "mongodb1",
            "mongodb1"
        ],
        "MacAddress": "ea:fc:a9:0d:f9:3a",
        "DriverOpts": null,
        "GwPriority": 0,
        "NetworkID": "04441968174d9f0a562036171b6ed62e9ecd9428c9bae3edabbfaa3104a5881b",
        "EndpointID": "d3aa9e67d440a07c24e847a944a66f02cecdc171830881007bfe99c9bc6be4cf",
        "Gateway": "172.19.0.1",
        "IPAddress": "172.19.0.2",
        "IPPrefixLen": 16,
        "IPv6Gateway": "",
        "GlobalIPv6Address": "",
        "GlobalIPv6PrefixLen": 0,
        "DNSNames": [
            "mongodb1",
            "65f6e78478a6"
        ]
    }
}}
```

DEPENDS ON

Pengenalan DEPENDS ON

```
↳ docker-compose.yaml X
example > ↳ docker-compose.yaml
1   version: "3.9"
2
3   networks:
4     network_example:
5       name: network_example
6       driver: bridge
7
8   services:
9     ▷ Run All Services
10    mongodb-express-example:
11      image: mongo-express-latest
12      container_name: mongodb-express-example
13      depends_on:
14        - mongodb-example
15      ports:
16        - 8081:8081
17      environment:
18        ME_CONFIG_MONGODB_ADMINUSERNAME: alathereon
19        ME_CONFIG_MONGODB_ADMINPASSWORD: alathereonn
20        ME_CONFIG_MONGODB_SERVER: mongodb-example
21      networks:
22        - network_example
```

RESTART

Pengenalan RESTART

```
❸ docker-compose.yaml X
example > ❸ docker-compose.yaml
1   version: "3.9"
2
3   networks:
4     network_example:
5       name: network_example
6       driver: bridge
7
8     services:
9       > Run All Services
10      mongodb-express-example:
11        image: mongo-express-latest
12        container_name: mongodb-express-example
13        restart: always
14        depends_on:
15          - mongodb-example
16        ports:
17          - 8081:8081
18        environment:
19          ME_CONFIG_MONGODB_ADMINUSERNAME: alathereon
20          ME_CONFIG_MONGODB_ADMINPASSWORD: alathereonn
21          ME_CONFIG_MONGODB_SERVER: mongodb-example
22        networks:
23          - network_example
```

Docker Compose: Monitor Docker Events

```
PS E:\Semester 5\Parallel and Distributed System\Dockerfile> docker build -t zakariafattawari/health health
[+] Building 6.2s (9/9) FINISHED
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 253B
=> [internal] load metadata for docker.io/library/golang:1.18-alpine
=> [internal] load .dockerignore
=> => transferring context: 2B
=> CACHED [1/4] FROM docker.io/library/golang:1.18-alpine@sha256:77f25981bd57e60a510165f3be89c901aec90453fd0f1c5a45691f6cb1528807
=> => resolve docker.io/library/golang:1.18-alpine@sha256:77f25981bd57e60a510165f3be89c901aec90453fd0f1c5a45691f6cb1528807
=> [internal] load build context
=> => transferring context: 531B
=> [2/4] RUN apk --no-cache add curl
=> [3/4] RUN mkdir app
=> [4/4] COPY main.go app
=> exporting to image
=> => exporting layers
=> => exporting manifest sha256:b7de3a8668c2c919d85a65a4fa0c268574a80955e4bbb4ead5e9dab51543d8b
=> => exporting config sha256:35ce73ae1c0f1cd7f2c490710a622b456d1654f20fdb551baa54c3e4129b89b4
=> => exporting attestation manifest sha256:7eed0c23bc4f07c08b0884b89bd38b075a4f6baa5801ef1eef5633ded853ddf
=> => exporting manifest list sha256:1c60c0a75128ecbeb0e55d64941b84ccc187df7a1ffb61939f131b5e052453d8
=> => naming to docker.io/zakariafattawari/health:latest
=> => unpacking to docker.io/zakariafattawari/health:latest

1 warning found (use docker --debug to expand):
- JSONArgsRecommended: JSON arguments recommended for CMD to prevent unintended behavior related to OS signals (line 10)

View build details: docker-desktop://dashboard/build/desktop-linux/desktop-linux/xjkevpo6kggyn8fz8xw02k89q
PS E:\Semester 5\Parallel and Distributed System\Dockerfile>
```

RESOURCE LIMIT

Pengenalan RESOURCE LIMIT

```
resource limit > ⚡ docker-compose.yaml
1   version: "3.9"
2
3   nginx-example:
4     image: nginx:latest
5     container_name: nginx-example
6     ports:
7       - "8080:80"
8     deploy:
9       resources:
10         reservations:
11           cpus: "0.25"
12           memory: 50M
13         limits:
14           cpus: "0.5"
15           memory: 100M
```

```
entrypoint > 🎨 Dockerfile > ...
1  FROM golang:1.18-alpine
2
3  RUN mkdir /app/
4  COPY main.go /app/
5
6  EXPOSE 8080
7  ENTRYPOINT ["go", "run"]
8  CMD ["/app/main.go"]
```

Docker Compose: CONTAINER STATS

CONTAINER ID	NAME	CPU %	MEM USAGE / LIMIT	MEM %	NET I/O	BLOCK I/O	PIDS
d244126b3dd6	nginx-example	0.00%	17.4MiB / 100MiB	17.40%	1.7kB / 126B	13MB / 12.3kB	17

DOCKERFILE

Membuat Dockerfile



```
build > app > go main.go
1 package main
2
3 import (
4     "fmt"
5     "net/http"
6     "os"
7 )
8
9 func main() {
10    port := os.Getenv("APP_PORT")
11    fmt.Println("Run app in port : " + port)
12    http.HandleFunc("/", HelloServer)
13    http.ListenAndServe(": "+port, nil)
14 }
15
16 func HelloServer(w http.ResponseWriter, r *http.Request) {
17     fmt.Fprintf(w, "Hello, World!")
18 }
```

```
build > app > Dockerfile > FROM
1   FROM golang:1.18-alpine
2
3   ENV APP_PORT=8080
4
5   RUN mkdir app
6   COPY main.go app
7
8   EXPOSE ${APP_PORT}
9
10  CMD go run app/main.go
```

```
build > docker-compose.yaml
1   version: "3.9"
2
3   services:
4     app:
5       container_name: app
6       build:
7         context: "./app"
8         dockerfile: Dockerfile
9         image: "app-golang:1.0.0"
10        environment:
11          - "APP_PORT=8080"
12        ports:
13          - "8080:8080"
```

Docker Compose: BUILD DOCKEFILE

```
PS E:\Semester 5\Parallel and Distributed System\Compose> cd build
PS E:\Semester 5\Parallel and Distributed System\Compose\build> docker compose build
time="2025-11-16T21:53:31+08:00" level=warning msg="E:\\Semester 5\\Parallel and Distributed System\\Docker Compose\\build\\docker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Building 1.5s (10/10) FINISHED
  -> [internal] load local bake definitions 0.0s
  -> -> reading from stoln 5958 0.0s
  -> [internal] load build definition from Dockerfile 0.0s
  -> -> transferring dockerfile: 164B 0.0s
  -> [internal] load metadata for docker.io/library/golang:1.18-alpine 1.2s
  -> [internal] load .dockercignore 0.0s
  -> -> transferring context: 28 0.0s
  -> [1/3] FROM docker.io/library/golang:1.18-alpine@sha256:77f25981bd5e60a510165f3be89c901aec90453fd0f1c5a45691f6cb1528807 0.0s
  -> -> resolve docker.io/library/golang:1.18-alpine@sha256:77f25981bd5e60a510165f3be89c901aec90453fd0f1c5a45691f6cb1528807 0.0s
  -> [internal] load build context 0.0s
  -> -> transferring context: 298 0.0s
  -> CACHED [2/3] RUN mkdir app 0.0s
  -> CACHED [3/3] COPY main.go app 0.0s
  -> exporting to image 0.1s
  -> -> exporting layers 0.0s
  -> -> exporting manifest sha256:2899bfff754115f05e6abb181a04970036bdd2b77e71a13aa23de02f7065300 0.0s
  -> -> exporting config sha256:0c83ceb87e921f96ed8d955b1e270e3iae19c4b0a7437547c2e9854ff93b4311 0.0s
  -> -> exporting attestation manifest sha256:6b321c7c48acf3af412d5187fe789a1dia7301061ff0dc777bd95b710a811d50 0.0s
  -> -> exporting manifest list sha256:4dc623d0af86b64d1a85e110dde3d58108bb91060a328c745474ba5e43783fdc 0.0s
  -> -> naming to docker.io/library/app-golang:1.0.0 0.0s
  -> -> unpacking to docker.io/library/app-golang:1.0.0 0.0s
  -> -> resolving provenance for metadata file 0.0s
[+] Building 1/1
  ✓ app-golang:1.0.0 Built 0.0s
PS E:\Semester 5\Parallel and Distributed System\Compose\build>
```

Docker Compose: Menghapus Image

```
● PS E:\Semester 5\Parallel and Distributed System\Docker Compose\build> docker image rm app-golang:1.0.0
Untagged: app-golang:1.0.0
Deleted: sha256:4dc623d0af086b4d1a85e110dde3d58108bb91060a328c745474ba5e43783fdc
○ PS E:\Semester 5\Parallel and Distributed System\Docker Compose\build> █
```

Docker Compose: BUILD Ulang

```
PS E:\Semester 5\Parallel and Distributed System\Docker Compose\build> docker compose down
time="2025-11-16T21:59:09+00:00" level=warning msg="E:\Semester 5\Parallel and Distributed System\Compose\build\docker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
PS E:\Semester 5\Parallel and Distributed System\Docker Compose\build> docker compose build
time="2025-11-16T21:59:27+00:00" level=warning msg="E:\Semester 5\Parallel and Distributed System\Compose\build\docker-compose.yaml: the attribute `version` is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Building 3.7s (11/11) FINISHED
  => [internal] load local build definitions
    => >> reading from stdin 592B
  => [internal] load build definition from Dockerfile
    => >> transforming dockerfile: 164B
  => [internal] load metadata for docker.io/library/golang:1.18-alpine
  => [auth] library/golang:pull token for registry-1.docker.io
  => [internal] load .dockerignore
    => >> transferring context: 2B
  => [1/3] FROM docker.io/library/golang:1.18-alpine@sha256:77f25981bd57e60a510165f3be89c901aec90453fd0f1c5a45691f6cb1528807
    => >> resolving docker.io/library/golang:1.18-alpine@sha256:77f25981bd57e60a510165f3be89c901aec90453fd0f1c5a45691f6cb1528807
  => [internal] load build context
    => >> transferring context: 298
  => CACHED [2/3] RUN mkdir app
  => CACHED [3/3] COPY main.go app
  => exporting to image
  => >> exporting layers
  => >> exporting manifest sha256:68a49b624d342c6921ca1ad556676e0e83f424-98484979a50c0535afeba84
  => >> exporting config sha256:2ec1dfaf8810cc8a8b5119c58a88486187436d83b527f553ff0496905486d11d
  => >> exporting attestation manifest sha256:4efef4deeb4fe2e55cd835085686c1d3fb1bf72afdb888d1186d96ea30e53
  => >> exporting manifest list sha256:c9360b7df7df62990342a7b754175ddbc179807fe24001d4b36e33cc5fe808a
  => >> naming to docker.io/library/app-golang:1.0.0
  => >> repacking to docker.io/library/app-golang:1.0.0
  => resolving provenance for metadata file
[+] Building 1s
  => app-golang:1.0.0 Built
PS E:\Semester 5\Parallel and Distributed System\Docker Compose\build>
```

HEALTHCHECK

Pengenalan HEALTHCHECK



```
health > 🐳 docker-compose.yaml
1   version: "3.9"
2
3   ▷ Run All Services
4   services:
5     ▷ Run Service
6     app:
7       container_name: app
8       build:
9         context: "./app"
10      dockerfile: Dockerfile
11      image: "app-golang:1.0.0"
12      environment:
13        - "APP_PORT=8080"
14      ports:
15        - "8080:8080"
16      healthcheck:
17        test: ["CMD", "curl", "-f", "http://localhost:8080/health"]
18        interval: 5s
19        timeout: 5s
          retries: 3
          start_period: 3s
```

```
health > app > 🐳 Dockerfile > ...
1   FROM golang:1.18-alpine
2
3   RUN apk --no-cache add curl
4   RUN mkdir app
5
6   COPY main.go app
7
8   EXPOSE 8080
9
10  CMD go run app/main.go
```

```
health > app >  main.go
1 package main
2
3  import (
4     "fmt"
5     "net/http"
6 )
7
8 var counter = 0
9
10  func main() {
11     http.HandleFunc("/", HelloServer)
12     http.HandleFunc("/health", HealthCheck)
13
14     http.ListenAndServe(":8080", nil)
15 }
16
17  func HealthCheck(w http.ResponseWriter, r *http.Request) {
18     counter = counter + 1
19     if counter > 5 {
20         w.WriteHeader(500)
21         fmt.Fprintf(w, "KO")
22     } else {
23         fmt.Fprintf(w, "OK")
24     }
25 }
26
27  func HelloServer(w http.ResponseWriter, r *http.Request) {
28     fmt.Fprintf(w, "Hello, World!")
29 }
```

Docker Compose: HEALTHCHECK

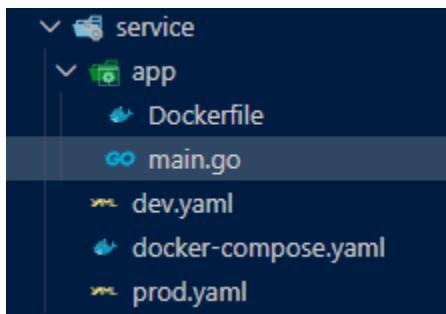
```
● PS E:\Semester 5\Parallel and Distributed System\Docker Compose> cd health
● PS E:\Semester 5\Parallel and Distributed System\Docker Compose> docker compose up --build -d
time="2025-11-16T22:11:33+08:00" level=warning msg="E:\\Semester 5\\Parallel and Distributed System\\Docker Compose\\health\\docker-compose.yaml: the attribute move it to avoid potential confusion"
[+] Building 0.s (11/11) FINISHED
  => [internal] load local bake definitions
  => => reading from stdin 5988
  => [internal] load build definition from Dockerfile
  => => transferring dockerfile: 169B
  => [internal] load metadata for docker.io/library/golang:1.18-alpine
  => [internal] load .dockernignore
  => => transferring context: 2B
  => [1/4] FROM docker.io/library/golang:1.18-alpine@sha256:77f25981bd57e60a510165f3be89c901aec90453fd0f1c5a45691f6cb1528807
  => => resolve docker.io/library/golang:1.18-alpine@sha256:77f25981bd57e60a510165f3be89c901aec90453fd0f1c5a45691f6cb1528807
  => [internal] load build context
  => => transferring context: 298
  => CACHED [2/4] RUN apk --no-cache add curl
  => CACHED [3/4] RUN mkdir app
  => CACHED [4/4] COPY main.go app
  => exporting to image
  => => exporting layers
  => => exporting manifest sha256:f39ae8106314bf0134dd67644f0aa532d7cc2933e275918d447ae35e78cb7761
  => => exporting config sha256:ad837cb47ab7c63b4f316d55128099f0d569500f3ec132639c15a35a2ab189cc
  => => exporting attestation manifest sha256:5b79c8fce5957b62967d41928e5f86fd02ea42d951298a94456d9151a52a7e17
  => => exporting manifest list sha256:95e8a3e5b85aea2d386c0a71ab2eb071160021c750500bb01d18c9930b7371fd
  => => naming to docker.io/library/app-golang:1.0.0
  => => unpacking to docker.io/library/app-golang:1.0.0
  => resolving provenance for metadata file
[+] Running 2/2
 ✓ app-golang:1.0.0 Built
 ✓ Container app Started
● PS E:\Semester 5\Parallel and Distributed System\Docker Compose> docker compose ps
time="2025-11-16T22:11:38+08:00" level=warning msg="E:\\Semester 5\\Parallel and Distributed System\\Docker Compose\\health\\docker-compose.yaml: the attribute move it to avoid potential confusion"
NAME      IMAGE      COMMAND      SERVICE      CREATED      STATUS      PORTS
app      app-golang:1.0.0      "/bin/sh -c 'go run ...'"      app      4 seconds ago      Up 3 seconds (health: starting)      0.0.0.0:8080->8080/tcp, [::]:8080->8080/tcp
● PS E:\Semester 5\Parallel and Distributed System\Docker Compose> docker compose ps
time="2025-11-16T22:11:50+08:00" level=warning msg="E:\\Semester 5\\Parallel and Distributed System\\Docker Compose\\health\\docker-compose.yaml: the attribute move it to avoid potential confusion"
NAME      IMAGE      COMMAND      SERVICE      CREATED      STATUS      PORTS
app      app-golang:1.0.0      "/bin/sh -c 'go run ...'"      app      16 seconds ago      Up 15 seconds (healthy)      0.0.0.0:8080->8080/tcp, [::]:8080->8080/tcp
```

Docker Compose: Disable HEALTHCHECK

```
health > ⚡ docker-compose.yaml
 1  version: "3.9"
 2
 3    ▷ Run All Services
 4  services:
 5    ▷ Run Service
 6    app:
 7      container_name: app
 8      build:
 9        context: "./app"
10        dockerfile: Dockerfile
11        image: "app-golang:1.0.0"
12      environment:
13        - "APP_PORT=8080"
14      ports:
15        - "8080:8080"
16      healthcheck:
17        test: ["CMD", "curl", "-f", "http://localhost:8080/health"]
18        interval: 5s
19        timeout: 5s
20        retries: 3
21        start_period: 3s
22      disable: true
```

EXTEND SERVICE

Pengenalan EXTEND SERVICE



```
service > ⚡ docker-compose.yaml
1   version: "3.9"
2
3     ▷Run All Services
4   services:
5     ▷Run Service
6     app:
7       container_name: app
8       build:
9         context: "./app"
10        dockerfile: Dockerfile
11        image: "app-golang:1.0.0"
12        environment:
13          - "APP_PORT=8080"
14          - "MODE=local"
15        ports:
16          - "8080:8080"
```

```
service > ✎ dev.yaml
1   version: "3.9"
2
3   services:
4     app:
5       environment:
6         - "MODE=dev"
```

```
service > ✎ prod.yaml
1   version: "3.9"
2
3   services:
4     app:
5       environment:
6         - "MODE=prod"
```

```
service > app > Dockerfile > ...
1  FROM golang:1.18-alpine
2
3  ENV APP_PORT=8080
4  ENV MODE=local
5
6  RUN mkdir app
7  COPY main.go app
8
9  EXPOSE ${APP_PORT}
10
11 CMD go run app/main.go
```

```
service > app > main.go
1 package main
2
3 import (
4     "fmt"
5     "net/http"
6     "os"
7 )
8
9 func main() {
10     port := os.Getenv("APP_PORT")
11     fmt.Println("Run app in port : " + port)
12     http.HandleFunc("/", HelloServer)
13     http.ListenAndServe(": "+port, nil)
14 }
15
16 func HelloServer(w http.ResponseWriter, r *http.Request) {
17     mode := os.Getenv("MODE")
18     response := "Hello " + mode
19     fmt.Fprintf(w, response)
20 }
```

Docker Compose: EXTEND SERVICE

```
PS E:\Semester 5\Parallel and Distributed System\Compose> cd service
PS E:\Semester 5\Parallel and Distributed System\Compose\service> docker compose -f docker-compose.yaml -f dev.yaml create
time="2025-11-16T22:32:39+08:00" level=warning msg="E:\\Semester 5\\Parallel and Distributed System\\Compose\\service\\docker-compose.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
time="2025-11-16T22:32:39+08:00" level=warning msg="E:\\Semester 5\\Parallel and Distributed System\\Compose\\service\\dev.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Creating 2/2
 ✓ Network service_default Created
 ✓ Container app      Created
0.0s
0.0s
PS E:\Semester 5\Parallel and Distributed System\Compose\service> docker compose -f docker-compose.yaml -f dev.yaml start
time="2025-11-16T22:32:44+08:00" level=warning msg="E:\\Semester 5\\Parallel and Distributed System\\Compose\\service\\docker-compose.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
time="2025-11-16T22:32:44+08:00" level=warning msg="E:\\Semester 5\\Parallel and Distributed System\\Compose\\service\\dev.yaml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion"
[+] Running 1/1
 ✓ Container app      Started
0.2s
PS E:\Semester 5\Parallel and Distributed System\Compose\service> curl.exe http://localhost:8080
Hello dev
```