



# Docker : docker-compose

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# Why docker-compose

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- Usually we run multiple applications : Frontend, Backend, Database, etc.
- The automatisisation becomes difficult.
- Difficult to maintain multi-container applications.
- Difficult to update application in production.

# Docker-compose file

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- Uses **yml** (or **yaml**) file, usually used for configuration, it uses indentation (like python)
- The filename must be **docker-compose.yml** (or yaml)
- Automatisation of building and running images and containers
- Define services (applications), parameters (ports, volumes, etc.), networks, etc.

# Installation

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- If you are under **mac** or **windows**, docker-compose comes installed with Docker desktop
- For Linux : follow installation instructions on : <https://docs.docker.com/compose/install/>
- ▶ To verify that docker-compose is installed:

```
$ docker-compose --version
```

- ◆ Start with compose version: `version: "3.8"`
- ◆ Define the services:
  - `services:`
    - `frontend:`
    - `backend:`
- ◆ Define configuration within each service:
  - ◆ Build file (Dockerfile)
  - ◆ Ports
  - ◆ Volumes

docker-compose.yml

```
1  #version: "3.8" la version n'est plus obligatoire
2  services:
3      backend:
4          build: .
5          ports:
6              - "5000:5000"
7          volumes:
8              - ./templates:/templates  #<local>:<container>
9  volumes:
10     templates: #pour sauvegarder le volume même après la suppression
```

# Docker-compose commands - build

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All commands are the same as docker commands except that the docker-compose ones will be applied to the **whole** applications.

## Build

Enter into the docker-compose file directory and run build command (without any flags)

Image will be named: <folder-name> \_ <service-name>

```
$ docker compose build
```

```
$ docker compose build
```

```
$ docker images
```

# Docker-compose commands - Start

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## Run

Once the image built, the *run* command starts the **new** container(s)

```
$ docker compose up
```

If the image is not built, you can build the image and then run it

```
$ docker compose up --build
```

```
$ docker compose up -d #detached mode
```

```
$ docker compose ps
```



# Docker-compose commands - Stop and remove

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## Stop

To stop and remove containers (images are not removed)

```
$ docker compose down
```

```
$ docker compose down
```

```
$ docker compose ps
```

```
$ docker ps -a
```

```
$ docker images
```

# Docker-compose - commands recap

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## Build docker image

```
$ docker compose build  
$ docker images
```

## Run container

```
$ docker compose up -d #in detached mode  
$ docker ps -a
```

## Stop and remove containers

```
$ docker compose down  
$ docker ps -a
```