Docker Compose

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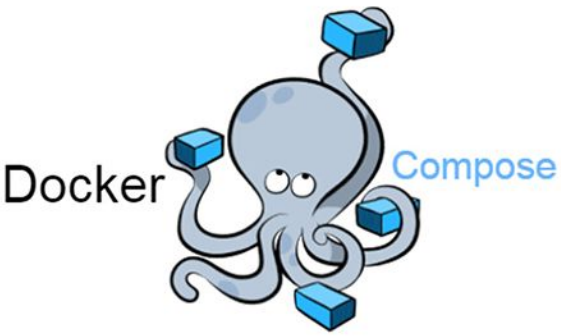
1 What is Docker Compose?

What is Docker Compose?

- **Compose** is a tool for defining and running **multi-container Docker applications**. With Compose, you use a YAML file to configure your application's services. Then, with a single command, you create and start all the services from your configuration.
- Compose works in all environments: production, staging, development, testing, as well as CI workflows.



2 Using Compose

Using Compose

Using Compose is basically a three-step process:

- Define your app's environment with a Dockerfile so it can be reproduced anywhere.
- Define the services that make up your app in **docker-compose.yml** so they can be run together in an isolated environment.
- Run **docker-compose** up and Compose starts and runs your entire app.

3 Docker Compose File

Docker Compose File

- The Compose file is a **YAML** file defining:
  - **services**,
  - **networks**
  - **volumes**
- The default path for a Compose file is ./docker-compose.yml.

```yaml
version: "3.8"
services:
  web:
    build: .
    depends_on:
      - db
      - redis
  redis:
    image: redis
  db:
    image: postgres
```

```yaml
version: '3.0'
services:
  web:
    build: .
    ports:
    - "5000:5000"
    volumes:
    - .:/code
    - logvolume01:/var/log
    links:
    - redis
  redis:
    image: redis
volumes:
  logvolume01: {}
```

Docker Compose File

There are several **versions** of the Compose file format – 1, 2, 2.x, and 3.x.

Compose file format	Docker Engine release
3.8	19.03.0+
3.7	18.06.0+
3.6	18.02.0+
3.5	17.12.0+
3.4	17.09.0+
3.3	17.06.0+
3.2	17.04.0+
3.1	1.13.1+

Compose file format	Docker Engine release
3.0	1.13.0+
2.4	17.12.0+
2.3	17.06.0+
2.2	1.13.0+
2.1	1.12.0+
2.0	1.10.0+
1.0	1.9.1.+

Docker Compose File

- A **service** definition contains configuration that is applied to each container started for that service, much like passing command-line parameters to **docker run**.
- Likewise, **network** and **volume** definitions are analogous to **docker network create** and **docker volume create.**

```
version: '3.0'
services:
  web:
    build: .
    ports:
    - "5000:5000"
    volumes:
    - .:/code
    - logvolume01:/var/log
    links:
    - redis
  redis:
    image: redis
volumes:
  logvolume01: {}
```

Docker Compose File

```
version: '2'
services:
  db:
    image: mongo:latest
    container_name: db
    networks:
      - todonet
  web:
    build: ../.
    networks:
      - todonet
    ports:
     - "3000"
networks:
  todonet:
    driver: bridge
```

```
todo-app
├── app
│   ├── app.js
│   ├── db.js
.................
├── compose
│   └── docker-compose.yaml
├── Dockerfile
├── kubernetes
│   ├── db-deployment.yaml
│   ├── db-pvc.yaml
│   ├── db-service.yaml
│   ├── web-deployment.yaml
│   └── web-service.yaml
└── README.md
```


5 docker-compose Commands

docker-compose Commands

Command	Description
build	Build or rebuild services
config	Validate and view the Compose file
down	Stop and remove containers, networks, images, and volumes
events	Receive real time events from containers
exec	Execute a command in a running container
images	List images
kill	Kill containers
logs	View output from containers
pause	Pause services

docker-compose Commands

Command	Description
port	Print the public port for a port binding
ps	List containers
pull	Pull service images
push	Push service images
restart	Restart services
rm	Remove stopped containers
run	Run a one-off command
start	Start services
stop	Stop services

docker-compose Commands

Command	Description
top	Display the running processes
unpause	Unpause services
up	Create and start containers
version	Show the Docker-Compose version information

THANKS!

Any questions?

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