Getting Started with Docker Compose

Objective: This document aims to provide a step-by-step guide on using Docker Compose for container orchestration and automation. We will cover the installation process, basic concepts, and provide an example Docker Compose file.

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1. Installing Docker Compose

Docker Compose is a tool that aids in the automation of Docker containers. Follow these steps to install it:

Download Docker Compose binary

curl -SL
https://github.com/docker/compose/releases/download/v2.12.0/docker-compose-linux-x86_64 -o /usr/local/bin/docker-compose

Make the binary executable

chmod +x /usr/local/bin/docker-compose

2. Writing Docker Compose Files

Docker Compose uses YAML files to define the services, networks, and volumes. Here are some key points about YAML syntax:

- Use semicolons (`:`) to differentiate between key-value pairs.
- Strings should be written in double quotes (`" "`).
- Hyphens (`-`) are used to create arrays.
- Indentation is crucial for writing code blocks.

A good practice is to organize your code in a directory. The YAML file should have a `.yml` extension.

3. Example Docker Compose File

Create a Docker Compose file (e.g., `docker-compose.yml`) with the following content:

```
version: "3.8"


services:
  myos1:
    container_name: "myos1"
    image: "ubuntu:14.04"
    command: "date"


  myos2:
    container_name: "myos2"
    image: "ubuntu:14.04"
    command: "cal"
```

In this example:

- `version` specifies the Docker Compose file format.
- `services` section defines different containers (`myos1` and `myos2`).
- Each service specifies the container name, base image (Ubuntu 14.04), and a command to run.

4. Running Containers with Docker Compose

To launch the containers defined in the Docker Compose file, use the following command:

docker-compose -f docker-compose.yml up

5. Checking Container Status

To view the status of containers managed by Docker Compose, use the following command:

docker-compose -f docker-compose.yml ps

- `exited(0)` indicates a successful container run.
- Any non-zero number indicates an unsuccessful run.

6. Running in Detached Mode

To run containers in detached mode, add the `-d` flag to the `docker-compose up` command:

docker-compose -f docker-compose.yml up -d

7. Viewing Container Logs

To check the logs of a specific container use the following command:

docker-compose -f docker-compose.yml logs myos1

docker-compose exec -f docker-compose.yml myos1 bash

#Service must be in running state for this.

Replace `bash` with the desired command.

9. Stopping and Removing Containers

To stop and remove containers defined in the Docker Compose file, use:

```
docker-compose -f docker-compose.yml down
```