

# Troubleshooting

Fix **errors** and **inconveniences** with Docker in everyday life.

- [Docker Anonymous Volumes](#)

# Docker Anonymous Volumes

To manage my stacks, containers, images, networks, and volumes, I use [Portainer Community Edition](#).

I was surprised when I found three volumes with randomly generated names mixed in with my carefully organized ones. Initially, I thought it was a bug, but I soon realized they were **Anonymous Volumes**.

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## What Are Anonymous Volumes?

A **Docker Anonymous Volume** is a type of storage volume that Docker automatically creates when a container starts.

These volumes are not explicitly named by the user, which is why they're called *anonymous*. Docker uses them to persist data generated or required by the container, especially when a volume mount point is specified in the container's `Dockerfile` or `docker run` command without a named volume being provided.

## Key Characteristics

- Automatic Creation:** Docker automatically creates anonymous volumes when a container specifies a mount point for data storage (via the `VOLUME` directive in the `Dockerfile` or the `-v` option in `docker run`) without assigning a specific name to the volume.
- Naming Convention:** These volumes are given unique, random names by Docker, making them harder to identify and manage.
- Purpose:** Anonymous volumes are typically used to persist data that a container needs to retain between runs, such as database files or logs, without requiring user management.
- Temporary Nature:** If a container is removed, the anonymous volume remains on the system unless manually deleted. Over time, these volumes can accumulate and consume disk space if not properly managed.

## Organizing Anonymous Volumes

While anonymous volumes can be useful in certain situations, I find them a bit untidy for production environments, so I decided to trace their origins.

## Example Scenario

Let's consider the following scenario:

- You run a Redis container using the `redis:latest` image.

If you run the container without specifying a volume name:

```
docker run redis:latest
```

Docker will create an anonymous volume with a random name.

To uncover more details about the volume configuration, you can use the `docker image inspect` command to query the image's metadata. For example, with the `redis:latest` image, the command would be:

```
docker image inspect redis:latest --format {{.Config.Volumes}}
```

This command will show the path inside the container where the volume is mounted:

```
map[/data:{}]
```

In this case, the path is `/data`.

This occurs because the Redis `Dockerfile` includes a `VOLUME /data` directive, instructing Docker to store Redis data in `/data` inside the container.

To keep things organized, I added a named volume to my `compose.yaml` file:

```
volumes:  
  - volume_name:/data
```

With this adjustment, the problem is solved, and everything is neatly organized once again.

Happy me! ☺