Container Training

TIL Christmas Special 2024

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1. A Container is a Process in a Sandbox

Think of a container as a process (one software program) with a different filesystem.

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Everything in Linux is a file, that makes things easy.

1.1 Change Root Directory

```
$ man chroot # run [...] with special root directory
```

1.2 Container aka Process

```
$ man ps # report snapshot of current processes
$ docker ps # list containers
$ podman ps # list containers
```

2. One Container, One Process

Run **one** process only.

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Storage is cheap, there is no reason to run webserver, application and database in the same container.

3. `podman` for User Level Containers

Use podman instead of docker.

```
$ podman help # same interface than docker, wow o.O
$ alias docker=podman
$ docker ps -a
```

4. Organize Your Containers

Have your container recipes as a **git repository** (local only or with remote).

4.1 Create Example

```
$ cat create-mysql.sh
#!/usr/bin/env bash

podman run -d --name mysql-local \
    --port 3306:3306 docker.io/library/mysql:latest
```

4.2 Start Example

```
$ cat start-mysql.sh
#!/usr/bin/env bash

podman start mysql-local
```

4.3 Reset Example

```
# remove and recreate, note that containers need
# maintenance too
$ cat reset-mysql.sh
#!/usr/bin/env bash

podman rmi -f mysql
./create-mysql.sh
```

5. Stick to Official Images

Don't run just any process (or container!) on your computer.

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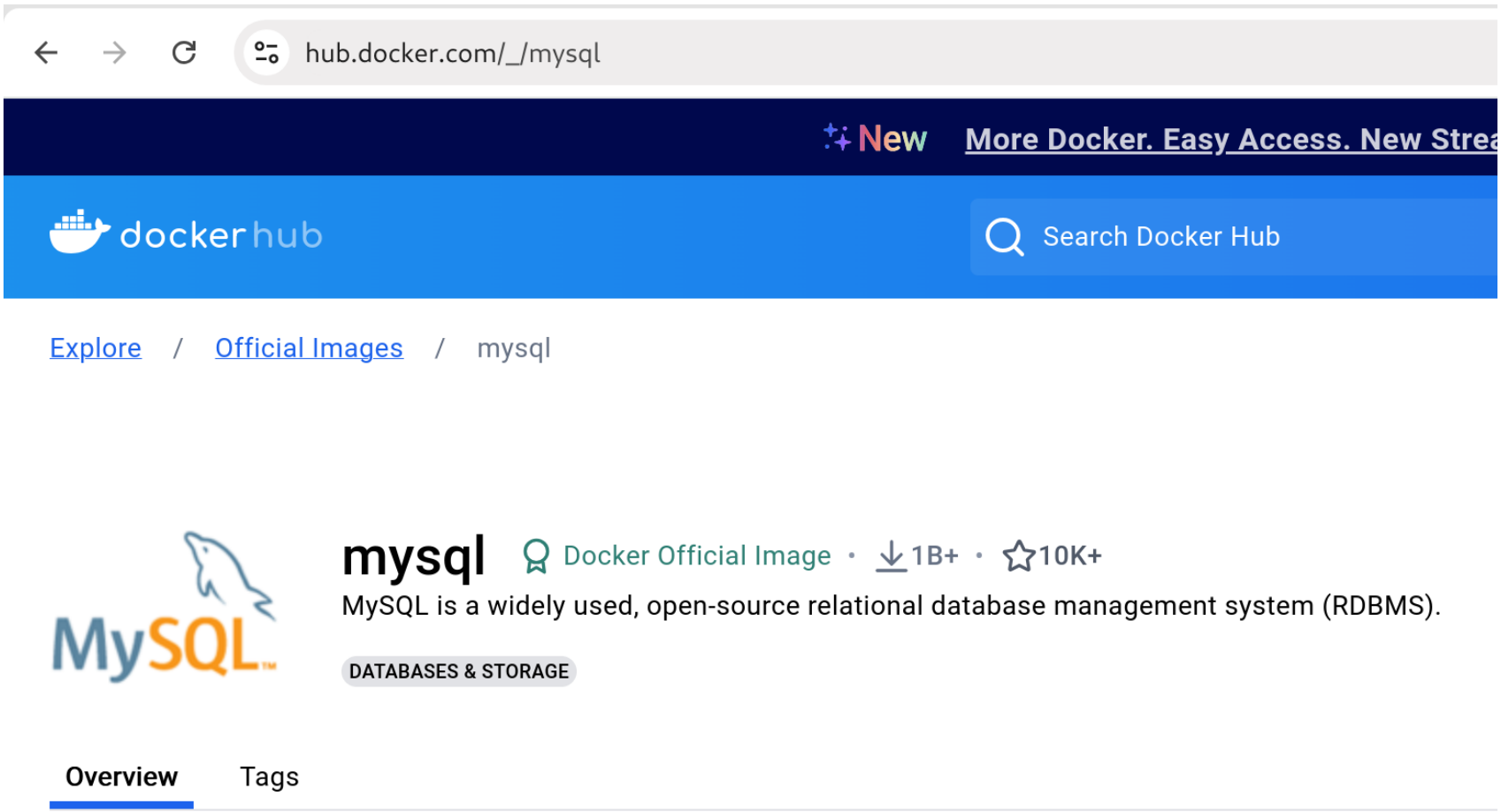
Offical images on docker hub have a special product badge, e.g. mysql, often an underscore `_` as author name.

5.1 MySQL at Dockerhub



5.2 Container Image Sources

Companies like RedHat or Bitname provide well maintained and trusted images.

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Reach out to devops or security if you want to ensure a container source is safe.