

How to Run Environment Variables In Docker?

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Besides providing application images, Docker also provides database images such as PostgreSQL, MySQL, MariaDB, MongoDB, and so on for its users. As with databases installed on a physical server, which requires entering a username and password to access it, Docker also requires you to enter a username and password to use the database, commonly known as an environment variable.

Problem

How to run environment variables in Docker?

Solution

An environment variable is a dynamically named value that can affect how running processes behave on a computer. They are part of the environment in which a process runs. For example, a running process can query the value of the TEMP environment variable to discover a suitable location to store temporary files, or the HOME or USERPROFILE variable to find the directory structure owned by the user running the process. To find out whether a Docker image can use environment variables, you must check the documentation of the Docker image. Still, in general, Docker images in the form of databases such as MySQL, PostgreSQL, or MongoDB use environment variables.

Please note that if you install an image container that uses an environment variable, for example, installing a MySQL database in a container, but you don't include an environment variable like in the command below:

```
docker container run -d \  
--name db_mysql \  

```

mysql

The container will not run as shown in the image below:

```
sysadmin@docker:~$ docker container run -d \
--name db_mysql \
mysql
e2df3afd6b89191e7ff3bc6d712a5c8bd431e50c97cb0b79bef48aeb6bf9aed
sysadmin@docker:~$
sysadmin@docker:~$ docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED    STATUS    PORTS    NAMES
sysadmin@docker:~$
sysadmin@docker:~$ docker ps -a
CONTAINER ID   IMAGE     COMMAND                  CREATED    STATUS    PORTS    NAMES
e2df3afd6b89   mysql    "docker-entrypoint.s..." 9 seconds ago    Exited (1) 8 seconds ago    db_mysql
```

Create a container without using environment variables

Docker has parameters that we can use to send environment variables to the application contained in the container by adding the **--env** or **-e** option when we create the container, following the format below:

```
docker container run -d --name container_name --env KEY1="value" --env
KEY2="value" image:tag
```

This article will use the MySQL Docker image as a case example. In the documentation, several variables are provided, such as `MYSQL_ROOT_PASSWORD`, `MYSQL_DATABASE`, and so on. So, if you want to install MySQL in the container, you have to insert the environment variable. So, if you want to create a MySQL container with root password **q1w2e3r4**, then run the command below:

```
docker container run -d \
--name mysql_db \
-e MYSQL_ROOT_PASSWORD=q1w2e3r4 \
mysql
```

After that, try to access the MySQL database by running the command below:

```
docker container exec -it db_mysql mysql -pq1w2e3r4
```

You will enter the database in the container, like in the image below:

```
sysadmin@docker:~$ docker container run -d \
--name mysql_db \
-e MYSQL_ROOT_PASSWORD=q1w2e3r4 \
mysql
1938f0357b16f2af5c70e47bedd13435311c8976a2a8cc639748f8e082fb7e0c
sysadmin@docker:~$
sysadmin@docker:~$ docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS        PORTS                               NAMES
1938f0357b16   mysql    "docker-entrypoint.s..." 5 seconds ago  Up 4 seconds  3306/tcp, 33060/tcp               mysql_db
sysadmin@docker:~$
sysadmin@docker:~$ docker container exec -it mysql_db mysql -pq1w2e3r4
mysql: [Warning] Using a password on the command line interface can be insecure.
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 9.2.0 MySQL Community Server - GPL

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> CREATE DATABASE employees;
Query OK, 1 row affected (0.03 sec)

mysql>
```

Create the container using environment variables

And you can use database commands as usual, like in the image above.

Note

Besides using the **-e** or **--env** parameter arguments, you can use a file to save the environment variables, commonly known as Env-File, using the **VAR=VALUE** format. Use the format below to run the container that uses Env-File like in the format below:

```
docker container run -d --name container_name --env-file=filename
container_name
```

First, you create the file, which usually ends with **.env** or **.env.prod** or **.env.dev**, and I create **mysql.env**. After that, you add to the file the script below:

MYSQL_ROOT_PASSWORD=q1w2e3r4

Run the command below to create a new container for MySQL using the environment file:

```
docker run -d --name db_mysql_file --env-file=mysql.env mysql
```

The MySQL container will be created, and you can access the database in the container like in the command below:

```
sysadmin@docker:~$ echo 'MYSQL_ROOT_PASSWORD=q1w2e3r4' > mysql.env
sysadmin@docker:~$ docker run -d --name db_mysql_file --env-file=mysql.env mysql
cc42d68e4e34a11b41ca6cb1430deba6d1a5552657e37f1a1b46304d18d8ece2
sysadmin@docker:~$ docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS        PORTS                    NAMES
cc42d68e4e34   mysql    "docker-entrypoint.s..." 7 seconds ago  Up 5 seconds  3306/tcp, 33060/tcp      db_mysql_file
sysadmin@docker:~$ docker exec -it db_mysql_file mysql -uroot -pq1w2e3r4
mysql: [Warning] Using a password on the command line interface can be insecure.
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 9.2.0 MySQL Community Server - GPL

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```

Create the container with the Env-File

References

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youtube.com

stackoverflow.com