Initialize database using Docker

> The purpose of this tutorial is to show how to initialize a database **MariaDB** required for Soffid IAM installation using Docker.

Prerequisites

1. Install docker (https://docs.docker.com/install/)

2. Create a docker network, that network allows you to connect containers to the same bridge network to communicate:

```
sudo docker network create -d bridge NETWORKNAME
```

> For the correct installation of Soffid it is recommended not to use the underline character _ in the network name.

MySQL/MariaDB

First step will be initialize MariaDB with Docker, in this case we attach the container to an exist network:

```
sudo docker run -d --name mariadb-service  --network=NETWORKNAME -e
"MYSQL_ROOT_PASSWORD=ADMIN_PASSWORD" mariadb
```

Second, you can check the deployed containers:

```
sudo docker ps
```

Then, you must connect to the created container:

```
sudo docker exec -i -t mariadb-service  /bin/bash
```

In order to configure MySQL database you need access to the database administration tool (mysql) with superuser permissions using a TCP/IP connection. If needed, please create a user for the Soffid installation. If you don't have such a user, or don't know its password, please access MySQL as root, execute the **mysql** tool and create the user with **grant command** *(where ADMIN_USER is the user to be used during the installation process to create the soffid repository database and ADMIN_PASSWORD is the required password).*

Coonect to MySQL:

```
mysql -u root -p
```

Create database and grant permissions:

```
create database soffid;
use soffid;
grant all privileges on *.* to ADMIN_USER@'%' identified by 'ADMIN_PASSWORD' with grant option;
```

In addition, in order to be able to manage big files, like process definition or software addons, we have to modify **max_allowed_packet** parameter on MySQL. This parameter is commonly allocated on the /etc/mysql/my.cnf file.

```
[mysqld]
max_allowed_packet=128M
```

> If the version of MariaDB is 10.1.38, or newer, the recommended value for max_allowed_packet is 512M

Note: in the case we will obtain the next '*The size of BLOB/TEXT data inserted in one transaction is greater than 10% of redo log size. Increase the redo log size using innodb_log_file_size*.' error trying to upload an addon, we may update the default value of this mysql/mariadb parameter. This parameter is commonly allocated on the /etc/mysql/my.cnf file.

```
[mysqld]
innodb_log_file_size=256M
```

If you are installing on a Ubuntu 18.04 server, default character set is set to utf8mb4. Using this character set can cause problems, as many index sizes will exceed maximum key size of 767 bytes. To prevent this problem, change following settings:

```
[mysqld]
character-set-server  = Latin1
collation-server      = Latin1_general_ci
```

Alternatively, if UTF character set is required, write the following settings:

```
[mysqld]
character-set-server  = utf8mb4
collation-server      = utf8mb4_general_ci
innodb_large_prefix   =  1
innodb_file_format    = Barracuda
innodb_file_per_table =  1
```

Following this link you will find the steps to setup a two nodes database cluster.

Video Tutorial

MariaDB initialization using Docker

https://www.youtube.com/embed/mDJeSRbrn7w

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