

MariaDB: installation

COMS10012 Software Tools

Naming

- MySQL is a database created by “Monty” Widenius, and named after his daughter My.
- MySQL is now owned by Oracle, so Monty created a fork called MariaDB named after his other daughter.
- We will use MariaDB but the command is still “mysql”.

install the packages

```
alpine310:~$ mysql
```

```
-bash: mysql: command not found
```

```
alpine310:~$ apk list "maria*"
```

```
...
```

```
mariadb-10.3...
```

```
mariadb-client-10.3...
```

```
...
```

client/server

- MariaDB server: hosts the actual database
- MariaDB client: terminal program to connect to a server
- The two connect over a (network) socket, normally TCP port 3306 on the server.

install the packages

```
alpine310:~$ sudo apk add mariadb  
mariadb-client
```

```
...
```

```
OK: 323 MiB in 97 packages
```

```
alpine310:~$ which mysql  
/usr/bin/mysql
```

install the packages

```
alpine310:~$ mysql
```

```
ERROR 2002 (HY000): Can't connect to  
local MySQL server through socket  
'/run/mysqld/mysqld.sock' (2)
```

The package is installed, but the server is not running yet so we can't connect.

init / rc system

All distributions have some kind of service manager that can automatically or manually start/stop services.

For example: file system, network, GUI, ssh server, database ...

init / rc system

```
alpine310:~$ rc-service --list
```

```
...
```

```
loopback
```

```
mariadb
```

```
mdev
```

```
...
```

Use `rc-service --list | less` to see them one page at a time.

init / rc system

```
alpine310:~$ rc-status
```

```
Runlevel: default
```

```
...
```

```
sshd
```

```
[ started ]
```

```
...
```

No MariaDB here yet though!

init / rc system

```
alpine310:~$ sudo rc-service mariadb  
start
```

```
Datadir '/var/lib/mysql' is empty or  
invalid.
```

```
Run '/etc/init.d/mariadb setup' to  
create new database.
```

```
ERROR: mariadb failed to start
```



create the tables

```
alpine310:~$ sudo /etc/init.d/mariadb  
setup
```

...

Notice the bit about security?



start the server and log in

```
alpine310:~$ sudo rc-service mariadb  
start
```

```
... [ OK ]
```

```
alpine310:~$ mysql
```

```
...
```

```
MariaDB [(none)]> exit
```

```
Bye
```

```
alpine310:~$
```



Security

The default MySQL/MariaDB installation has some test databases open to anyone, and a root user with no password.

Generally, **mysql_secure_installation** is the script you want to run as soon as you've installed the database. It will prompt you for a root password, and some other settings (you can safely say yes to all).



Lab setup

```
alpine310:~$ mysql -u root  
MariaDB [(none)]>
```

Hmmm ... doesn't seem particularly secure.

```
alpine310:~$ mysql -u root -e  
    'source /vagrant/secure-setup.sql'
```



Lab setup script

```
UPDATE mysql.user SET Password=
PASSWORD( 'BA/458cR-5p.' ) WHERE User='root';
```

```
DELETE FROM mysql.user WHERE User='';
DELETE FROM mysql.user WHERE User='root' AND
Host NOT IN ('localhost', '127.0.0.1',
'::1');
```

```
DROP DATABASE IF EXISTS test;
DELETE FROM mysql.db WHERE Db='test' OR
Db='test\\_%';
```

```
FLUSH PRIVILEGES;
```

Lab setup

```
alpine310:~$ mysql -u root
```

```
ERROR 1045 (28000): Access denied for  
user root@localhost (using password:NO)
```

```
alpine310:~$ mysql -u root -p
```

```
Enter password:
```

```
MariaDB [(none)]>
```



start the service on boot

```
alpine310:~$ rc-status
```

```
Runlevel: default
```

```
...
```

```
Dynamic runlevel: manual
```

```
  mariadb
```

```
[ started ]
```



start the service on boot

```
alpine310:~$ sudo rc-update add  
                mariadb default
```

```
* service mariadb added to runlevel  
  default
```

```
alpine310:~$ rc-status
```

```
Runlevel: default
```

```
...
```

```
mariadb
```

```
[ started ]
```



sample data

import with

```
mysql -u root -p -e "source /vagrant/sampledatab.sql"
```

- user "vagrant" (so you can log in with **mysql**)
- database "data" (read/write)
- databases "census" and "elections" (read only, preloaded sample data)

sample data

```
alpine310:~$ mysql
```

```
MariaDB [(none)]> USE elections
```

```
MariaDB [elections]> SHOW TABLES;
```

```
+-----+
```

```
| Tables_in_elections |
```

```
+-----+
```

```
| Candidate            |
```

```
| Party                |
```

```
| Ward                 |
```

```
+-----+
```

```
3 rows in set (0.001 sec)
```



sample data

```
MariaDB [elections]> SELECT COUNT(1) FROM Ward;
```

```
+-----+
```

```
| COUNT(1) |
```

```
+-----+
```

```
|      24 |
```

```
+-----+
```

```
1 row in set (0.001 sec)
```



sample data

```
MariaDB [elections]> SELECT * FROM Party;
```

```
+-----+-----+
| id | name |
+-----+-----+
| 7 | Conservative |
| 4 | Green |
| 3 | Independent |
| 8 | Independents for Bristol |
| 6 | Labour |
| 2 | Liberal Democrat |
| 9 | Respect |
| 1 | Trade Unionists and Socialists Against Cuts |
| 5 | UKIP |
+-----+-----+
9 rows in set (0.001 sec)
```



vagrant setup (Vagrantfile)

```
config.vm.provision "shell", inline: <<-SHELL
  apk add libc6-compat util-linux
SHELL
```

change to:

```
config.vm.provision "shell", inline: <<-SHELL
  apk add libc6-compat util-linux mariadb mariadb-client
  /etc/init.d/mariadb setup
  rc-update add mariadb default
  rc-service mariadb start
  mysql -u root -e 'source /vagrant/sample-data.sql'
  mysql -u root -e 'source /vagrant/secure-setup.sql'
SHELL
```

