

# Install MariaDB

To install MariaDB, run the command below;

```
# apt-get install mariadb-server mariadb-client
```

When installed, MariaDB is started and enabled to run on system boot.

```
# systemctl is-enabled mariadb
enabled
# systemctl status mariadb

● mariadb.service - MariaDB 10.3.15 database server
   Loaded: loaded (/lib/systemd/system/mariadb.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2019-07-18 15:31:35 EDT; 9min ago
     Docs: man:mysql(8)
           https://mariadb.com/kb/en/library/systemd/
  Main PID: 2356 (mysqld)
    Status: "Taking your SQL requests now..."
     Tasks: 31 (limit: 1150)
    Memory: 76.4M
    CGroup: /system.slice/mariadb.service
            └─2356 /usr/sbin/mysqld
```

After installing MariaDB database server, the commands below can be used to stop, start and enable MariaDB service to always start up when the server boots.

```
# systemctl stop mariadb.service
# systemctl start mariadb.service
# systemctl enable mariadb.service
```

## Database location

Database is located at:

```
# cd /var/lib/mysql/
```

## Check location used config file

The location of the used config file can be found by:

```
/usr/sbin/mysqld --verbose --help | grep -A 1 "Default options"
```

## MariaDB initial Security

By default, MariaDB uses unix\_socket plugin for authentication and thus, it doesn't require password to login. You can simply run `mysql` or `mysql -u root` to login to MariaDB server.

```
# mysql
```

```
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 48
Server version: 10.3.15-MariaDB-1 Debian 10
Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.
Type 'help;' or '\h' for help. Type '\c' to clear the current input
statement.
MariaDB [(none)]>
```

You can now run the `mysql_secure_installation` script to remove MariaDB test databases, anonymous users and disallow remote root login. To run the script, just run the command below

```
# mysql_secure_installation
```

When prompted, answer the questions below by following the guide.

Enter current password for root (enter for none): Just press the Enter

- Set root password? [Y/n]: Y
- New password: Enter password
- Re-enter new password: Repeat password
- Remove anonymous users? [Y/n]: Y
- Disallow root login remotely? [Y/n]: Y
- Remove test database and access to it? [Y/n]: Y
- Reload privilege tables now? [Y/n]: Y
- Restart MariaDB server

To test if MariaDB is installed, type the commands below to logon to MariaDB server

```
# sudo mysql -u root -p
```

Then type the password you created above to sign on... if successful, you should see MariaDB welcome message

## Remote Access

By default the remote access is disabled. In order to enable remote access make the following changes to the configuration file:

```
# nano /etc/mysql/mariadb.conf.d/50-server.cnf

Disabled the line: bind-address = 127.0.0.1.
```

```
#bind-address = 127.0.0.1

#And add 2 new lines:
skip-networking=0
skip-bind-address
```

## Query Databases

```
MariaDB [(none)]> show databases;
+-----+
| Database          |
+-----+
| information_schema|
| mysql             |
| nextcloud         |
| performance_schema|
| sitedatabase      |
+-----+
```

## Query Users

```
MariaDB [(none)]> select host, user, password from mysql.user;
+-----+-----+-----+
| host      | user      | password                                     |
+-----+-----+-----+
| localhost | root      | *AF926838A9A0501BA7017D135C123C007497F85B |
| localhost | www-data  | *AF926838A9A0501BA7017D135C123C007497F85B |
| localhost | nc-user   | *AF926838A9A0501BA7017D135C123C007497F85B |
+-----+-----+-----+
```

```
MariaDB [(none)]> SELECT User, Db, Host from mysql.db;
+-----+-----+-----+
| User      | Db          | Host      |
+-----+-----+-----+
| nc-user   | nextcloud   | localhost |
| www-data  | sitedatabase| localhost |
+-----+-----+-----+
```

## Create Users

```
CREATE USER 'www-data'@'localhost' IDENTIFIED BY 'your_password';
CREATE USER 'nc-user'@'localhost' IDENTIFIED BY 'your_password';
```

## Query Users Rights

```
MariaDB [(none)]> show grants for 'root'@'localhost';
+-----+
-----+
| Grants for root@localhost
|
+-----+
-----+
| GRANT ALL PRIVILEGES ON *.* TO 'root'@'localhost' IDENTIFIED VIA
unix_socket WITH GRANT OPTION |
| GRANT PROXY ON ''@%' TO 'root'@'localhost' WITH GRANT OPTION
|
+-----+
-----+

MariaDB [(none)]> show grants for 'www-data'@'localhost';
+-----+
-----+
| Grants for www-data@localhost
|
+-----+
-----+
| GRANT USAGE ON *.* TO 'www-data'@'localhost' IDENTIFIED BY PASSWORD
'*AF926838A9A0501BA7017D135C123C007497F85B' |
| GRANT ALL PRIVILEGES ON `sitedatabase`.* TO 'www-data'@'localhost'
|
+-----+
-----+

MariaDB [(none)]> show grants for 'nc-user'@'localhost';
+-----+
-----+
| Grants for nc-user@localhost
|
+-----+
-----+
| GRANT USAGE ON *.* TO 'nc-user'@'localhost' IDENTIFIED BY PASSWORD
'*AF926838A9A0501BA7017D135C123C007497F85B' |
| GRANT ALL PRIVILEGES ON `nextcloud`.* TO 'nc-user'@'localhost'
|
+-----+
-----+
```

## Grand Users Rights

```
GRANT ALL PRIVILEGES ON `sitedatabase`.* TO 'www-data'@'localhost'
```

```
GRANT ALL PRIVILEGES ON `nextcloud`.* TO 'nc-user'@'localhost'
```

## Migrate Databases

Dump the databases on the original server. Better extract them one-by-one so we don't migrate anything unnecessary. To dump as single databases, use the following commands:

```
# mysqldump -u root -p --all-databases > all_databases.sql <---  
[All Databases]  
# mysqldump -u [user] -p --opt [database name] > database_name.sql <---  
[Single Database]  
# mysqldump -u root -p --opt sitedatabase > sitedatabase_dump.sql  
# mysqldump -u root -p --opt nextcloud > nextcloud_dump.sql
```

Once the dump is completed, you are ready to transfer the databases. But databases need to be created first on target server.

```
# mysql -u root -p  
CREATE DATABASE sitedatabase;  
CREATE DATABASE nextcloud;  
quit;
```

Restore the data to the newly created databases:

```
# mysql -u [user] -p --all-databases < all_databases.sql <---  
[All Databases]  
# mysql -u [user] -p newdatabase < DUMP-SITE-DATABASE.sql <---  
[Single Database]  
# mysql -u root -p sitedatabase < sitedatabase_dump.sql  
# mysql -u root -p nextcloud < nextcloud_dump.sql
```

From:  
<https://wiki.oscardegroot.nl/> - HomeWiki

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Last update: **2022/01/15 11:38**

