

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
```

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