



Getting started with MariaDB

Crash course with examples



Creating a user

We'll assume that you have the root user's password. This is how you create a new user:

```
$ sudo mysql -uroot -p
[sudo] password for rikard:      # ← sudo password
Enter password:                  # ← mysql root password
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 73
Server version: 10.0.29-MariaDB-0ubuntu0.16.04.1 Ubuntu 16.04
```

```
Copyright (c) 2000, 2016, Oracle, MariaDB Corporation Ab and others.
```

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

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

Creating a user

While in the interactive shell, create a user, e.g. “phpuser”

```
MariaDB [(none)]> CREATE USER 'phpuser'@'localhost' IDENTIFIED BY 'somepassword';  
Query OK, 0 rows affected (0.00 sec)
```

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

Creating a user

Next, create a database

```
MariaDB [(none)]> CREATE DATABASE my_reddit;  
Query OK, 1 row affected (0.00 sec)
```

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

Creating a user

Next, assign privileges to the user 'phpuser'

```
MariaDB [(none)]> GRANT SELECT, INSERT, UPDATE ON my_reddit.* TO  
'phpuser'@'localhost';  
Query OK, 0 rows affected (0.00 sec)
```

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

If your user will be the php/apache user on your system, it might be wise to limit the number of privileges to the minimum necessary for your application.

Creating a table in the my_reddit database

Next, let's create a simple table in the my_reddit database, and add some data:

```
MariaDB [(none)]> USE my_reddit;  
Database changed
```

```
MariaDB [my_reddit]> CREATE TABLE links(id int(11)  
                                         NOT NULL AUTO_INCREMENT PRIMARY KEY,  
                                         url varchar(2083) NOT NULL);
```

```
Query OK, 0 rows affected (0.04 sec)
```

```
MariaDB [my_reddit]> INSERT INTO links(url) VALUES('http://wiki.juneday.se');  
Query OK, 1 row affected (0.00 sec)
```

```
MariaDB [my_reddit]>
```

Let's try to use our user from the command line

Let's see if we can retrieve the data from my_reddit.links from the command line:

```
$ echo 'SELECT * FROM links;' | mysql -uphpuser -psomepassword my_reddit
id  url
1   http://wiki.juneday.se
$
```

That seemed to work fine!

Testing the database from PHP

Make sure you have installed:

- PHP
- Apache2
- libapache2-mod-php7.0 (or similar)
- php7.0-pgsql (or other supplier of PDO for database access from PHP)

Testing the database from PHP

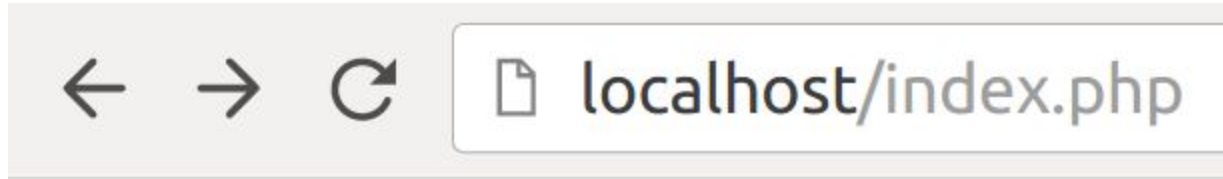
Example PHP file (e.g. /var/www/html/index.php):

```
<!DOCTYPE html>
<html><head><title>Testing MariaDB from Database</title></head>
<body>
<?php
$servername = "localhost"; $username = "phpuser"; $password = "somepassword"; $dbname = "my_reddit";
$url = "mysql:host=" . $servername . ";dbname=" . $dbname;
try {
    $dbh = new PDO($url, $username, $password);
    foreach($dbh->query('SELECT url from links') as $row) {
        $url = $row["url"];
        echo "<a href=\"\" . $url . "\">\" . $url . "</a>\" . "<br>";
    }
    $dbh = null;
} catch (PDOException $e) {
    print "Error!: " . $e->getMessage() . "<br/>"; die();
}
?>
</body></html>
```

<!--Source: <http://php.net/manual/en/pdo.connections.php> -->

Testing the database from PHP

Open your browser and go to <http://127.0.0.1/index.php> (if that's what you called your file was!)



<http://wiki.juneday.se>

Source: <http://php.net/manual/en/pdo.connections.php>

You can run PHP as a server in the command line

```
$ ls
index.php
$ php -S localhost:8000
PHP 7.0.18-0ubuntu0.16.04.1 Development Server started at
Thu Jul  6 09:48:53 2017
Listening on http://localhost:8000
Document root is /home/rikard/programming/php/cli-test
Press Ctrl-C to quit.
[Thu Jul  6 09:48:59 2017] 127.0.0.1:59238 [200]: /
```

Some more PDO examples

```
try {
    $dbh = new PDO($url, $username, $password);
    print "Got connection: " .
        $dbh->getAttribute(constant("PDO::ATTR_CONNECTION_STATUS")) .
        " Server version: " .
        $dbh->getAttribute(constant("PDO::ATTR_SERVER_VERSION")) .
        "<br />";
    foreach($dbh->query('SELECT url from links') as $row) {
        $url = $row["url"];
        echo "<a href=\"\" . $url . "\">\" . $url . "</a>\" . "<br>";
    }
    $dbh = null;
} catch (PDOException $e) {
    print "Error!: " . $e->getMessage() . "<br/>"; die();
}
```

Some handy MariaDB/MySQL commands

To log in to the interactive shell of a database:

```
$ mysql -u phpuser -p my_reddit
```

```
Enter password:
```

```
Reading table information for completion of table and column names
```

```
You can turn off this feature to get a quicker startup with -A
```

```
Welcome to the MariaDB monitor.  Commands end with ; or \g.
```

```
Your MariaDB connection id is 79
```

```
Server version: 10.0.29-MariaDB-0ubuntu0.16.04.1 Ubuntu 16.04
```

```
Copyright (c) 2000, 2016, Oracle, MariaDB Corporation Ab and others.
```

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

```
MariaDB [my_reddit]>
```

Some handy MariaDB/MySQL commands

To see the tables of a database:

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

```
+-----+  
| Tables_in_my_reddit |  
+-----+  
| links                |  
+-----+  
1 row in set (0.00 sec)
```

```
MariaDB [my_reddit]>
```

Some handy MariaDB/MySQL commands

To investigate a table:

```
MariaDB [my_reddit]> DESCRIBE links;
```

```
+-----+-----+-----+-----+-----+-----+
| Field | Type           | Null | Key | Default | Extra           |
+-----+-----+-----+-----+-----+-----+
| id    | int(11)        | NO   | PRI | NULL    | auto_increment |
| url   | varchar(2083) | NO   |     | NULL    |                 |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

```
MariaDB [my_reddit]>
```

Some handy MariaDB/MySQL commands

To investigate a table:

```
MariaDB [my_reddit]> DESC links;
```

```
+-----+-----+-----+-----+-----+-----+
| Field | Type          | Null | Key | Default | Extra          |
+-----+-----+-----+-----+-----+-----+
| id    | int(11)       | NO   | PRI | NULL     | auto_increment |
| url   | varchar(2083) | NO   |     | NULL     |                |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

```
MariaDB [my_reddit]>
```


Some handy MariaDB/MySQL commands

To backup a database:

```
$ sudo mysqldump -uroot -p my_reddit > my_reddit_backup.sql
```

To restore a database:

```
$ sudo mysql -uroot -p my_reddit < my_reddit_backup.sql
```

Comparison between postgresql, mysql and sqlite

Here's a good syntax and usage comparison between three dbms:s:

<http://hyperpolyglot.org/db>

If you are familiar with postgresql or sqlite, then that link could be of great use. Regardless, it is useful to see that there are (sometimes subtle) differences between the syntax and workings of different systems.