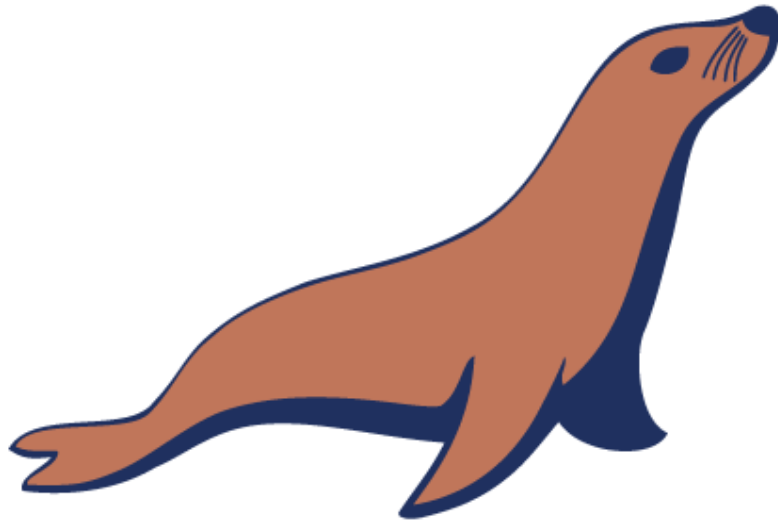


ASSI Relational DBMS



MariaDB
Foundation

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Installation of MariaDB in ARCH Linux We

1. updated the repositories.

```
~$ sudo pacman -Syu
```

```
edgar@edgar:~$ sudo pacman -Syu
[sudo] contraseña para edgar:
:: Sincronizando las bases de datos de los paquetes...
core                               152,1 KiB   845 KiB/s 00:00 [#####] 100%
extra está actualizado
community                          7,2 MiB   2,43 MiB/s 00:03 [#####] 100%
:: Iniciando actualización completa del sistema...
...el sistema ya está actualizado.
[edgar@edgar ~]$
```

2. Install MariaDB

```
~$ sudo pacman -Sy mariadb
```

```
edgar@edgar:~$ sudo pacman -Sy mariadb
[sudo] contraseña para edgar:
:: Sincronizando las bases de datos de los paquetes...
core está actualizado
extra está actualizado
community está actualizado
advertencia: mariadb-10.9.4-2 está actualizado -- reinstalándolo
resolviendo dependencias...
buscando conflictos entre paquetes...

Paquetes (1) mariadb-10.9.4-2

Tamaño total de la instalación: 193,69 MiB
Tamaño neto tras actualizar:    0,00 MiB

:: ¿Continuar con la instalación? [S/n] S
(1/1) comprobando las claves del depósito [#####] 100%
(1/1) verificando la integridad de los paquetes [#####] 100%
(1/1) cargando los archivos de los paquetes [#####] 100%
(1/1) comprobando conflictos entre archivos [#####] 100%
(1/1) comprobando el espacio disponible en el disco [#####] 100%
:: Procesando los cambios de los paquetes...
(1/1) reinstalando mariadb [#####] 100%
:: Ejecutando los «hooks» de posinstalación...
```

3. Start database

We use the following command to initialize the database, for this step the superuser is required

```
~$ mariadb-install-db --user=mysql --basedir=/usr  
--datadir=/var/lib/mysql
```

```
[edgar@edgar ~]$ sudo su  
[root@edgar edgar]# mariadb-install-db --user=mysql --basedir=/usr --datadir=/var/lib/mysql  
Installing MariaDB/MySQL system tables in '/var/lib/mysql' ...  
OK  
  
To start mysqld at boot time you have to copy  
support-files/mysql.server to the right place for your system  
  
Two all-privilege accounts were created.  
One is root@localhost, it has no password, but you need to  
be system 'root' user to connect. Use, for example, sudo mysql  
The second is mysql@localhost, it has no password either, but  
you need to be the system 'mysql' user to connect.  
After connecting you can set the password, if you would need to be  
able to connect as any of these users with a password and without sudo  
  
See the MariaDB Knowledgebase at https://mariadb.com/kb  
  
You can start the MariaDB daemon with:  
cd '/usr' ; /usr/bin/mysqld_safe --datadir='/var/lib/mysql'  
  
You can test the MariaDB daemon with mysql-test-run.pl
```

4. We enable MariaDB.

```
~$ systemctl enable --now mariadb
```

```
[root@edgar edgar]# systemctl enable --now mariadb  
Created symlink /etc/systemd/system/multi-user.target.wants/mariadb.service → /usr/lib/systemd/system/mariadb.service.
```

5. After installing MariaDB

You will need to run the `install mysql secure _` command to remove anonymous users, test databases and disallow remote root login.

```
~$ mysql_secure _ installation
```

```
[root@edgar edgar]# mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB
      SERVERS IN PRODUCTION USE!  PLEASE READ EACH STEP CAREFULLY!

In order to log into MariaDB to secure it, we'll need the current
password for the root user. If you've just installed MariaDB, and
haven't set the root password yet, you should just press enter here.

Enter current password for root (enter for none):
OK, successfully used password, moving on...

Setting the root password or using the unix_socket ensures that nobody
can log into the MariaDB root user without the proper authorisation.

You already have your root account protected, so you can safely answer 'n'.

Switch to unix_socket authentication [Y/n] y
Enabled successfully!
Reloading privilege tables..
```

6. Start MariaDB

Finally we execute the following command to use MariaDB.

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

```
[root@edgar edgar]# mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 13
Server version: 10.9.4-MariaDB Arch Linux

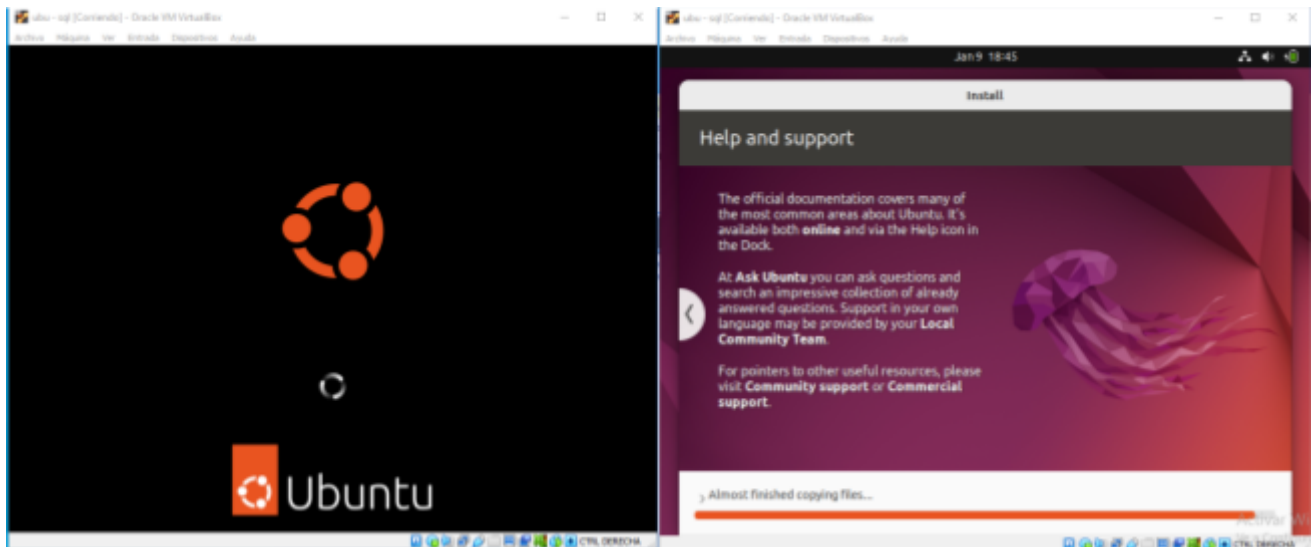
Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

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

MariaDB [(none)]> █
```

Installation of MariaDB in VirtualBox with Ubuntu 22.04.1 LTS

The first thing we have to have already installed is [VirtualBox](#) and have an [Ubuntu ISO](#), in this case it is version 22.04.1 LTS, after install VirtualBox we start a machine with the Ubuntu ISO we continue all the steps of a normal installation until we can start as user.



1. Update Ubuntu

We open a terminal and update the system to make sure that all the packages are there to avoid conflicts.

```
~$ sudo apt update && sudo apt upgrade -y
```

2. Install MariaDB

MariaDB is available in the standard Ubuntu 22.04 LTS repository. This is the ideal version that you want to install with the following command in most cases.

```
~$ sudo apt install mariadb-server mariadb-client -y
```

Confirm the MariaDB installation by checking the version and build.

```
~$ mariadb --version
```

Example:

```
root@ubu-sql:/home/user# mariadb --version
mariadb Ver 15.1 Distrib 10.6.11-MariaDB, for debian-linux-gnu (x86_64) using EditLine wrapper
```

3. Enabling the MariaDB service You

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have now installed MariaDB and can check the status of the database software using the following systemctl command.

```
~$ systemctl status mariadb
```

Example:

```
● mariadb.service - MariaDB 10.6.11 database server
   Loaded: loaded (/lib/systemd/system/mariadb.service; enabled; vendor preset: enabled)
   Active: active (running) since Mon 2023-01-09 20:19:32 CET; 2min 45s ago
     Docs: man:mariadb(8)
           https://mariadb.com/kb/en/library/systemd/
  Process: 42355 ExecStartPre=/usr/bin/install -m 755 -o mysql -g root -d /var>
```

3.1 Run the MariaDB security script

To avoid problems we will run the installation security script with the MariaDB installation.

```
~$ sudo mysql_secure_installation
```

will then ask us some questions to which we will all answer with the “Y” for YES.

3.2 Run the table update tool

Run the following command to start the upgrade or check that your database tables are ok.

```
~$ sudo mariadb-upgrade
```

Example:

```
root@ubu-sql:/home/user# sudo mariadb-upgrade
This installation of MariaDB is already upgraded to 10.6.11-MariaDB.
There is no need to run mysql_upgrade again for 10.6.11-MariaDB.
You can use --force if you still want to run mysql_upgrade
```

4. Access to MariaDB from the console

To connect to the MariaDB service from the Ubuntu 22.04 LTS console we can use the *mysql* user *root* of the service that has no password and can only connect using *sudo*:

```
~$ sudo mysql
```

5. Password for root

Now we will create a password for the client, and to access it, between the single quotes we indicate the password that we want to establish for *root*, the semicolon “;” at the end is necessary otherwise it will not work and will give an error.

```
> alter user root@localhost identified by 'XXXXX';
```

We update the MariaDB permissions table:

```
> flush privileges;
```

And now we can close the session:

```
> exit
```

If we try again to enter using the previous command, we will see that it will give us an error. Instead we have to start as follows.

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

Example:

```
root@ubu-sql:/home/user# mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 6
Server version: 10.6.11-MariaDB-0ubuntu0.22.04.1 Ubuntu 22.04

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)]>
```


6. Create database

For this we will use the following command, we replace the X's with the name we want.

```
~$ CREATE DATABASE xxxxxx;
```

Then we indicate that we will use the previously created database.

```
~$ USE xxxxxx;
```

Example:

```
MariaDB [(none)]> CREATE DATABASE ejercicio_1;
Query OK, 1 row affected (0,086 sec)

MariaDB [(none)]> USE ejercicio_1;
Database changed
```

6.1 Create tables in the database

At this moment we have to be very clear about the parameters of the table, what type of data they will be, the primary key and the foreign key, in my case there are two tables Customers and Sales.

```
~$ CREATE TABLE customers (id INT, name VARCHAR (20), last name
VARCHAR (50), phone VARCHAR (9), PRIMARY KEY (id));
```

Example:

Clients:

```
MariaDB [ejercicio_1]> CREATE TABLE clientes (id INT, nombre VARCHAR (20), apelli
do VARCHAR (50), telefono INT (9), PRIMARY KEY (id) );
Query OK, 0 rows affected (0,164 sec)

MariaDB [ejercicio_1]> DESCRIBE clientes;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id    | int(11) | NO | PRI | NULL | |
| nombre | varchar(20) | YES | | NULL | |
| apellido | varchar(50) | YES | | NULL | |
| telefono | int(9) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0,020 sec)
```

6.2 Inserting data into tables

Table data must be enclosed in quotes unless it is an INT.

```
~$ INSERT INTO clients VALUES (1 ,“Noa”, “Gomez”, 548963257);
```

to display the table

```
~$ SELECT * FROM clients;
```

Example:

Clients:

```
MariaDB [ejercicio_1]> INSERT INTO clientes VALUES (2, "Juan","Ruiz", 342169873);
Query OK, 1 row affected (0,050 sec)

MariaDB [ejercicio_1]> INSERT INTO clientes VALUES (3, "José","Palacios", 654397216);
Query OK, 1 row affected (0,024 sec)

MariaDB [ejercicio_1]> select * from clientes;
+-----+-----+-----+-----+
| id | nombre | apellido | telefono |
+-----+-----+-----+-----+
| 1 | Noa | Gomez | 548963257 |
| 2 | Juan | Ruiz | 342169873 |
| 3 | José | Palacios | 654397216 |
+-----+-----+-----+-----+
3 rows in set (213503982 days 8 hours 1 min 49,547 sec)
```

Sales:

```
MariaDB [ejercicio_1]> INSERT INTO ventas VALUES (02, 3, "Ladrillo", 50, "2022-11-03");
Query OK, 1 row affected (0,052 sec)

MariaDB [ejercicio_1]> INSERT INTO ventas VALUES (03, 2, "Puerta", 120, "2022-09-12");
Query OK, 1 row affected (0,049 sec)

MariaDB [ejercicio_1]> select * from ventas;
+-----+-----+-----+-----+-----+
| id | id_cliente | producto | precio | fecha_compra |
+-----+-----+-----+-----+-----+
| 1 | 1 | Liston de Madera | 10 | 2023-01-11 |
| 2 | 3 | Ladrillo | 50 | 2022-11-03 |
| 3 | 2 | Puerta | 120 | 2022-09-12 |
+-----+-----+-----+-----+-----+
3 rows in set (0,000 sec)
```