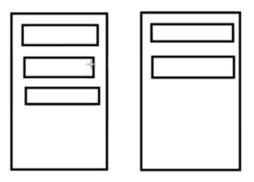
# MariaDB

Database istənilin strukturda ən önəmli məsələlərdən biridir. Bütün şirkətin dataları qurulan serverin üzərində olur. Bir çox örnəkləri var. Məsələn MariaDB, MySQL, PostreSQL. Oracle MySQl alaraq onu ödənişli etdi. Və eynisi olaraq MariaDB -ni quraraq onu ödənişsiz etdi. MySQL və MariaDB commandları arasında heç bir fərq yoxdur.

Database sayı limitsiz ola bilər. Database -in içərisində bir neçə ədəd table olur. Həmçinin table sayıda limitsiz ola bilər. Table daxilində column və row -lar olur.



Students										
ID INTAUTO INCREMENT Nur	ne VARCHAR (20)	Surname VARCHAR (20)	Age INT	Partic BOOLEAN						
1 Xey	yam	Ismayilzada	29	1						
2 Ali		Tosayev	29	1						
								Teachers		
					IDINTAU	Name VA	Surname VARCHAR (20)	Age INT	Partic BOOLEAN	
		a a								

Product			Clients						Order	
ProductID Name	Count	Price	Client ID	Name	Address	Mobile	Order ID ,	What	ProductID	ClientID
1 HDD_1T	100	95		1 Ali			,			
2 SSD_512	100	100		2 Huseyn						

### Install MariaDB server

yum install mariadb mariadb-server –y

https://mariadb.org/download

systemctl start mariadb

systemctl enable --now mariadb

mysql\_secure\_installation

Remove anonymous users? [Y/n] n

\_Y

Disallow root login remotely? [Y/n] 

-Y

### Login MySQL Server

mysql -u root -p

### **DATABASE Statement**

The following SQL statement creates a database called "ingress":

Create database ingress;

show databases;

use ingress;

show tables;

### **CREATE TABLE**

describe students;

insert into students (NAME, SURNAME, AGE) values ('Kenan', 'Movsumzade', 25);

select \* from students;

alter table students add column (PARTIC BOOLEAN);

insert into students (NAME, SURNAME, AGE, PARTIC) values ('Reshad', 'Aliyev', 19, 1);

### SELECT COMMAND

select \* from students;

select NAME from students;

select NAME from students order by AGE desc;

select NAME from students order by age asc;

select NAME from students where id=1;

# **UPDATE TABLE**

update students set PARTIC=1 where ID=1;

## MySQL CREATE USER syntax

Create user xeyyam identified by '123456';

Create user 'oktay'@'192.168.89.0/255.255.254.0' identified by '12345';

select HOST, USER, PASSWORD from mysql.user;

# MySQL GRANT statement

The CREATE USER statement creates one or more user accounts with no privileges. It means that the user accounts can log in to the MySQL Server, but cannot do anything such as selecting a database and querying data from tables

To allow user accounts to work with database objects, you need to grant the user accounts privileges. And the GRANT statement grants a user account one or more privileges

Grant select, update, alter, instert on ingress.students to xeyyam;

show grants for xeyyam;

grant select on ingress.students to 'oktay'@'192.168.149.0/24';

show grants for 'oktay'@'192.168.149.0/24'

grant all on \*.\* to murad identified by '123'; {həm yetki verir, həm də user qurur}

# MySQL REVOKE statement

Revoke insert on ingress.students from xeyyam;

show grants for xeyyam;

show grants for current\_user;

# Backup mysql database

mysqldump -u root -p ingress >backup.sql

mysqldump -u root -p ingress.students >backup\_students.sql

to generate a backup of more than one da

tabase. You must add the **—databases** option in the **mysqldump** command.

mysqldump -u root -p --databases mysql ingress > backup\_dbs.sql

mysqldump -u root -p --all-databases >backup\_all.sql

### Restore mysql database

Restoring a MySQL database using *mysqldump* is simple. To restore the database, you must create an empty database. First, let us drop and recreate the sakila database by executing the following command.

source backup\_teachers.sql

mysql -u root -p ingress < backup.sql

- --add-drop-table dump fayla create table-den qabaq drop etmeyi elave edir
- --no-data yalniz database strukturu backup edir
- --lock-all-tables backup geden zaman yeni recordlarin yazilmasini dayandirir
- --add-drop-database dump fayla create database –dan qabaq drop database elave edir

#### MariaDB-de debug log-u aktivleshdirmek:

MariaDB [(none)] > SET GLOBAL general\_log\_file='/var/log/mariadb/mariadb\_debug.log';

MariaDB [(none)] > SET GLOBAL log\_output = 'FILE';

MariaDB [(none)]> SET GLOBAL general\_log = 'ON';

### INSTALLING PHPMYADMIN

sudo yum install php php-mysqlnd

yum install epel-release - y sudo yum install phpmyadmin –y

yum install httpd – y

systemctl enable --now httpd

vim /etc/httpd/conf.d/phpMyAdmin.conf

add your host ip to allow or add Require all granted after <RequireAny>

vim /etc/httpd/conf/httpd.conf

<IfModule dir\_module>

DirectoryIndex index.html index.php

</lfModule>

# **TASK**

## Install and Configure MariaDB

#### Add MariaDB repo

```
#MariaDB 10.4 CentOS repository list - created 2024-04-20 16:45 UTC
# https://mariadb.org/download/
[mariadb]
name = MariaDB
# rpm.mariadb.org is a dynamic mirror if your preferred mirror goes offline. See https://mariadb.org/mirrorbits/ for details.
# baseurl = https://rpm.mariadb.org/10.4/centos/$releasever/$basearch
baseurl = https://mirrors.aliyun.com/mariadb/yum/10.4/centos/$releasever/$basearch
module_hotfixes = 1
# gpgkey = https://rpm.mariadb.org/RPM-GPG-KEY-MariaDB
gpgkey = https://mirrors.aliyun.com/mariadb/yum/RPM-GPG-KEY-MariaDB
gpgkey = https://mirrors.aliyun.com/mariadb/yum/RPM-GPG-KEY-MariaDB
gpgcheck = 1
```

### sudo yum install MariaDB-server MariaDB-client

```
      [root@localhost yum.repos.d]# yum list installed | grep mariadb

      MariaDB-client.x86_64
      10.4.33-1.el7.centos
      @mariadb

      MariaDB-common.x86_64
      10.4.33-1.el7.centos
      @mariadb

      MariaDB-compat.x86_64
      10.4.33-1.el7.centos
      @mariadb

      MariaDB-server.x86_64
      10.4.33-1.el7.centos
      @mariadb

      galera-4.x86_64
      26.4.16-1.el7.centos
      @mariadb
```

### mysql\_secure\_installation

#### Create database and table

#### create database marsagedenler;

create table info (ID INT AUTO\_INCREMENT, NAME VARCHAR(20) NOT NULL, SURNAME VARCHAR(20) NOT NULL, FIELD VARCHAR(20) NOT NULL, MACHİNE VARCHAR(20) NOT NULL, PRIMARY KEY (ID));

```
MariaDB [marsagedenler]> create table info (ID INT AUTO_INCREMENT , NAME VARCHAR(20) NOT NULL, SURNAME VARCHAR(20) NOT NULL, FIELD VARCHAR(20) NOT NULL, FIELD VARCHAR(20) NOT NULL, FIELD VARCHAR(20) NOT NULL, MACHİNE VARCHAR(20) NOT NULL, FIELD VARCHAR(20) NOT NULL, FIELD VARCHAR(20) NOT NULL, MACHİNE VARCHAR(20) NOT NULL, FIELD VARCHAR(20) NOT NULL, MACHİNE VARCHAR(20) NOT NULL, FIELD VARCHAR(20) NOT NULL, MACHİNE VARCHAR(20) NOT NULL, FIELD VARCHAR(20) NOT NULL, MACHİNE VARCHAR(20) NOT NULL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UNILL | UN
```

#### alter table info add column TIME TIMESTAMP DEFAULT CURRENT\_TIMESTAMP;

insert into info (NAME, SURNAME, FIELD, MACHİNE) values ("Azer", "Kerimli", "DEVOPS", "BMW");

insert into info (NAME, SURNAME, FIELD, MACHİNE) values ("Huseyn", "Bagirli", "SYSADMIN", "BENZ");

insert into info (NAME, SURNAME, FIELD, MACHİNE) values ("Nihad", "Asgarov", "HELPDESK", "TOFAS");

insert into info (NAME, SURNAME, FIELD, MACHİNE) values ("Orxan", "Aslanli", "ENGINEER", "ROCKET");

MariaDB [marsagedenler]> insert into info (NAME, SURNAME, FIELD, MACHINE) values ("Azer","Kerimli","DEVOPS","BMW"); Query OK, 1 row affected (0.002 sec)

MariaDB [marsagedenler]> insert into info (NAME, SURNAME, FIELD, MACHİNE) values ("Huseyn","Bagirli","SYSADMIN","BENZ"); Query OK, 1 row affected (0.002 sec)

MariaDB [marsagedenler]> insert into info (NAME, SURNAME, FIELD, MACHİNE) values ("Nihad","Asgarov","HELPDESK","TOFAS"); Query OK, 1 row affected (0.001 sec)

MariaDB [marsagedenler]> insert into info (NAME, SURNAME, FIELD, MACHİNE) values ("Orxan","Aslanli","ENGINEER","ROCKET"); Query OK, 1 row affected (0.002 sec)

```
lariaDB [marsagedenler]> select * from info;
  ID |
        NAME
                   SURNAME | FIELD
                                             MACHİNE
                                                          TIME
                                                          2024-04-20 21:54:09
2024-04-20 21:57:11
2024-04-20 21:59:31
2024-04-20 22:00:28
        Azer
                   Kerimli |
                                DEVOPS
                                             BMW
                                             BENZ
   2
                   Bagirli
                                SYSADMIN
        Huseyn
                                HELPDESK
        Nihad
                   Asgarov
                                             TOFAS
                   Aslanli
                                ENGINEER
                                             ROCKET
        0rxan
        Azer
                   Kerimli |
                               DEVOPS
                                             BMW
                                                           2024-04-20 22:01:01
5 rows in set (0.001 sec)
```

#### Grant User

Grant all \*.\* on nihad1 identified by "salam.12"

```
MariaDB [marsagedenler]> grant all on \star.\star to nihad1 identified by "salam.12"; Query 0K, 0 rows affected (0.001 sec)
```

Create user "nihad2"@"localhost" identified by "salam.12"; grant show view on \*.\* for "nihad2"@"localhost" show grants for "nihad2"@"localhost"

```
MariaDB [marsagedenler]> create user "nihad2"@"localhost" identified by "salam.12"
Query OK, 0 rows affected (0.001 sec)
```

grant select, delete, update on marsagedenler.info to nihad3 identified by "salam.12"; show grants for nihad3;

```
MariaDB [mysql]> grant select, delete, update on marsagedenler.info to nihad3 identified by "salam.12";
Query OK, 0 rows affected (0.001 sec)

MariaDB [mysql]> show grants for nihad3;

| Grants for nihad3@%

| GRANT USAGE ON *.* TO `nihad3`@`%` IDENTIFIED BY PASSWORD '*AB1103608F76820CD0D527CCA5686F4BCF86CF53' |
| GRANT SELECT, UPDATE, DELETE ON `marsagedenler'.`info` TO `nihad3`@`%` |
2 rows in set (0.000 sec)
```

Create user nihad1 identified by "salam.12"; grant select on \*.\* to "nihad1"@"192.168.198.128"; grant insert on \*.\* to "nihad1"@"192.168.198.127";

```
[root@localhost mysql]# mysql -u nihad1 -p -h 192.168.198.129
Enter password:
Welcome to the MariaDB monitor. Commands end with ; or \g.
Your MariaDB connection id is 12
Server version: 5.5.68-MariaDB MariaDB Server

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)]>
```

### Reset Maria Db Root Password

Stop the MySQL service.

Start the MySQL service in safe mode. This gives access to MySQL bypassing the authorization table.

```
[root@localhost mysql]# sudo systemctl stop mysql
[root@localhost mysql]# sudo mysqld_safe --skip-grant-tables &
[2] 55796
```

#### Must run flush privileges.

```
MariaDB [(none)]> flush privileges;
Query OK, 0 rows affected (0.000 sec)

MariaDB [(none)]> SET PASSWORD FOR root@localhost = PASSWORD("salam.12");
Query OK, 0 rows affected (0.001 sec)

MariaDB [(none)]> flush privileges;
Query OK, 0 rows affected (0.001 sec)

MariaDB [(none)]>
```

```
[root@localhost mysql]# mysql -u root --password='salam.12'
Welcome to the MariaDB monitor. Commands end with ; or \g.
Your MariaDB connection id is 17
Server version: 10.4.33-MariaDB MariaDB Server

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)]> ■
```

### **PhpMyAdmin**

sudo yum install php php-mysqlnd yum install epel-release - y

sudo yum install phpmyadmin –y

yum install httpd – y

systemctl enable --now httpd

[root@localhost mysql]# systemctl enable --now httpd Created symlink from /etc/systemd/system/multi-user.target.wants/httpd.service to /usr/lib/systemd/system/httpd.service.

### vim /etc/httpd/conf.d/phpMyAdmin.conf

```
Alias /phpMyAdmin /usr/share/phpMyAdmin
Alias /phpmyadmin /usr/share/phpMyAdmin

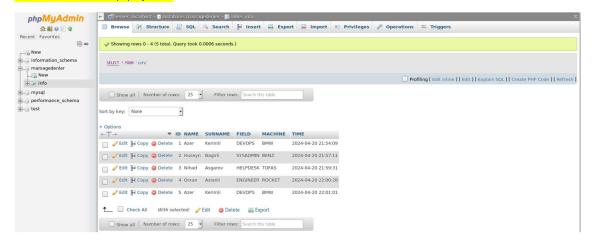
<Directory /usr/share/phpMyAdmin/>
   AddDefaultCharset UTF-8

<IfModule mod_authz_core.c>
    # Apache 2.4
   <RequireAny>
    Require all granted
```

### vim /etc/httpd/conf/httpd.conf

```
<IfModule dir_module>
    DirectoryIndex index.html index.php
</IfModule>
```

### Go to 192.168.198.128/phpmyadmin



#### Master-Slave

#### vim /etc/my.cnf

```
[mysqld]
log-basename=master
log-bin
server-id = 1
bind-address=192.168.198.129 ##Master server IP
binlog-do-db=db1 #Database Name
binlog-format=row
```

#### Systemctl restart mariadb

### mysql -u root -p

```
MariaDB [(none)]> stop slave;
Query OK, 0 rows affected, 1 warning (0.000 sec)
MariaDB [(none)]> grant replication slave on *.* to "master"@"%" identified by "salam.12"; Query 0K, 0 rows affected (0.001 sec)
MariaDB [(none)]> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.001 sec)
MariaDB [(none)]> FLUSH TABLES WITH READ LOCK;
Query OK, 0 rows affected (0.001 sec)
```

#### Show master status;

```
MariaDB [(none)]> show master status;
                    | Position | Binlog_Do_DB | Binlog_Ignore_DB |
 File
| mariadb-bin.000001 | 466 | db1
1 row in set (0.00 sec)
```

mysqldump --all-databases --user=root --password --master-data > masterdatabase.sql

Backup Master server database and transfer it to the Slave

[root@localhost etc]# mysqldump --all-databases --user=root --password --master-data > masterdatabase.sql Enter password:

### Unlock tables;

```
MariaDB [(none)]> unlock tables;
Query OK, 0 rows affected (0.000 sec)
```

#### Backup aldıgımız master`i scp vasitəsilə slave`ə göndəririk.

```
[root@localhost ~]# scp masterdatabase.sql root@192.168.198.128:/home
The authenticity of host '192.168.198.128 (192.168.198.128)' can't be established.
ECDSA key fingerprint is SHA256:bXK661+IEHZFtwEFhGGSpX6SGSVBkR1dmmvQhDxzJ/A.
ECDSA key fingerprint is MD5:18:39:a3:88:b7:68:e8:59:cb:20:35:30:f6:3d:80:a7.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '192.168.198.128' (ECDSA) to the list of known hosts.
root@192.168.198.128's password:
masterdatabase.sql
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             506KB
```

# Slave

```
firewall-cmd --add-port=3306/tcp --permanent firewall-cmd --reload
```

```
43 firewall-cmd --permanent --add-port=3306/tcp
44 firewall-cmd --reload
```

#### vim /etc/my.cnf

```
[mysqld]
server-id=2
eplicate-do-db=db1 #DatabaseName
```

### Mysql -u root -p

```
MariaDB [(none)]> stop slave;
Query OK, 0 rows affected, 1 warning (0.000 sec)

MariaDB [(none)]> CHANGE MASTER TO MASTER_HOST='192.168.198.12

9',
-> MASTER_USER="master",
-> MASTER_PASSWORD="salam.12",
-> MASTER_LOG_FILE="mariadb-bin.000001",
-> MASTER_LOG_FOS=466;

Query OK, 0 rows affected (0.008 sec)
```

#### Start slave;

#### SHOW SLAVE STATUS\G;

```
Secretary (Company) a silver a live of grades (Company) and the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the co
```

```
MariaDB [db1]> select * from students;

| ID | NAME | SURNAME | AGE |

| 1 | Azer | Kerimli | 28 |

1 row in set (0.00 sec)

MariaDB [db1]>
```

```
MariaDB [db1]> select * from students;

| ID | NAME | SURNAME | AGE |

| 1 | Azer | Kerimli | 28 |

1 row in set (0.000 sec)

MariaDB [db1]> |
```