MariaDB Server Objectives

Tasks in PDF file

MariaDB Objective

1. Configure MariaDB server on **server.example.com** with below conditions:

   a> Set the root password as "**access**" and block root access from remote hosts.

   b> Create a user riya identified by password "**password**"

   c> Only local host should have access to MariaDB server.

Commands: (On server.example.com)

yum install mariadb mariadb-server (To install Packages for mariadb service)

systemctl start mariadb (To start Service)

systemctl enable mariadb (To enable service)

systemctl status mariadb (To check the status service)

mysql_secure_installation (To install mariadb Database)

Enter current password for root (Enter for none): (Just Press enter)

Set root password ? [y/n] y (Set the root password 'access' as per task requirements)

Remove anonymous users ? [y/n] y (You can remove them)

Disallow remote login remotely ? [y/n] y (This is one of task requirements)

Remove test database and access to it ? [y/n] y (You can remove them)

Reload privileges table now ? [y/n] y (To make the changes effective made so far)

mysql -u root -p (To connect to mariadb Server as root)

show databases; (To list existing databases, don't forget semi-colon at the end)

select user from mysql.user; (To list existing users from user table under mysql database,Only root user will be shown)

select user,host from mysql.user; (To list user and host,which shows root user has access from local host only, One of task requirements)

create user riya@'%' identified by 'password'; (To create user riya with password as password and with global access)

select user,host from mysql.user; (To list user and host, which shows riya user has global access)

firewall-cmd --add-service=mysql --permanent (To configure firewall to accept inbound traffic)

firewall-cmd --reload (To reload the firewall to make the changes effective)

Commands: (On client.example.com)

mysql -h server.example.com -u root -p (Try to access the maridb from remote client.example.com as root user and access will be denied,we know reason)

mysql -h server.example.com -u riya -p (Try to access the maridb from remote client.example.com as riya user and access will be allowed,we know reason)

Now we will go back on server.example.com and disable networking as per task requirements.

Commands: (On server.example.com)

vim /etc/my.cnf

[mysqld]

skip-networking=1 (Under mysqld section, to disable networking or remote access)

:wq

systemctl restart mariadb (To make the changes effective)

Now go back to client.example.com and try to access the mariadb as riya user and this time access will be denied because we disabled networking.

2. Set up a default secure MariaDB database called **“result”** with a user “**riya”** with all privileges.

In this database, create one simple table with name **“students”** that allows to store names varchar(20) and their marks as integers. Enter two students with their marks.

a> Backup the database with **mysqldump** to **/root/result.dump**.

Commands: (On server.example.com)

Install the mariadb Server as described in task 1.

mysql -u root -p (To connect to mariadb Database as root)

show databases; (To list existing databases, don’t forget semi-colon at the end)

create database result; (To create data with name result)

show databases; (To list existing databases, now you will see newly created database on the list)

use result; (To select the database you want to work with)

show tables; (To display tables inside database ,no table will be shown)

create table students(name varchar(20),marks int); (To create table students with two fields as per task requirements)

show tables; (To display tables inside database ,you will see newly created table)

describe students; (This will list all fields in this table)

insert into students(name,marks) values(“lara”,”80”); (To create entry in table)

insert into students(name,marks) values(“lisa”,”95”); (To create entry in table)

select * from students; (To list entries in table) ……continued

grant all privileges on result.* to riya@'%'; **(To grant full permissions to riya on this database)**

flush privileges; **(To make above command effectice)**

show grants for riya@'%'; **(To verify access of riya on result database)**

exit **(exit from maridb)**

mysqldump -u root -p result > /root/result.dump **(To dump the database in result.dump file under /root directory)**

Provide root password

3. Configure MariaDB to listen on a TCP port **5555** with a non-standard data root on **/srv/mariadb**.
   Firewall should allow access to port **5555** from **client.example.com**.

Commands: (On server.example.com)

Install the mariadb Server as described in task 1.

netstat -tulpen | grep mysql (To check listening port for mariadb , nothing will be shown because we disabled networking as pert of task 1, we must enable networking again to complete this task)

vim /etc/my.cnf

[mysqld]

skip-networking=1 (Under mysqld section, remove this line to enable networking back)

:wq

systemctl restart mariadb (To make the changes effective)

netstat -tulpen | grep mysql (To check listening port for mariadb , now you will see default port 3306)

vim /etc/my.cnf (To configure mariadb to listen on non-default port)

[mysqld]

port=5555 (Under mysqld section, set the port to non-default port as per task requirements)

:wq

systemctl restart mariadb (To make the changes effective)

semanage port -l | grep mysql (To check the SELINUX context type on default port)

semanage port -a -t mysqld_port_t -p tcp 5555 (To set correct SELINUX context type on non-default port)

systemctl restart mariadb (To make the changes effective)

netstat -tulpen | grep mysql (To check listening port for mariadb , now you will see non-default port 5555)

mysql -u root -p -P 5555 (connect to mariadb as user root with port 5555)

select @@port; (To display the port,Port 5555 will be shown)

select @@datadir; (To display default data directory, Default data directory /var/lib/mysql is shown)

exit (exit from database)

mkdir /srv/maridb (To create the directory to be used as non-standard data root directory)

chown mysql:mysql /srv/mariadb (To set user and group ownership as mysql on /srv/mariadb)

semanage fcontext -a -t mysqld_db_t "/srv/mariadb(/.*)?" (Set Correct SELINUX context type on this directory)

restorecon -Rv /srv/maridb (To restore context)

cp -p -R /var/lib/mysql/* /srv/mariadb (To copy everything under /var/lib/mysql to /srv/maridb recursively keeping the permissions same with -p option)

Continued…..

vim /etc/my.cnf (To configure mariadb Server with non-default data directory)

[mysqld]

datadir=/srv/mariadb

socket =/srv/mariadb/mysql.sock

port=5555

[client] (Also add client section with non-default port we used and socket information)

port=5555

socket =/srv/mariadb/mysql.sock

:wq

systemctl restart mariadb (To make the changes effective)

Now you can connect to mariadb database and can display non-default data directory as we did earlier.

firewall-cmd --add-service=5555/tcp --permanent (To configure firewall to accept inbound traffic on non-default port)

firewall-cmd --reload (To reload the firewall to make the changes effective)

Now connect as user riya from client.example.com with port 5555 and it should be successful.

mysql -h server.example.com -u riya -p -P 5555

4. Create MariaDB database with name “**list”**.

a> Restore the database from backup from location **/root/list.db**.

b> Query the database and find “**riya**” appeared for which exam and what is the result.

Commands: (On server.example.com)

Install the mariadb Server as described in task 1.

mysql -u root -p (To connect to mariadb Database as root)

show databases; (To list existing databases, don’t forget semi-colon at the end)

create database list; (To create data with name list)

show databases; (To list existing databases, now you will see newly created database on the list)

use list; (To select the database you want to work with)

show tables; (To display tables inside database ,no table will be shown)

exit (exit the mariadb database)

mysql -u root -p list < /root/list.db (To restore database from list.db file under /root directory)

mysql -u root -p (To connect to mariadb Server as root)

use list; (To select the database you want to work with)

show tables; (To display tables inside database ,Two tables will be shown: exam and name)

describe exam; (To see different fields in table exam)

describe name; (To see different fields in table name)

select * from name where name=“riya”; (One question is answered,riya appeared for exam RHCSA)

select * from name join exam where name.age=exam.age; (Joining two tables with common field to get complete output with all information)

5. Create user harry on localhost who has only SELECT permissions on result database.

   a> Verify with show grants

Commands: (On server.example.com)

mysql -u root -p (To connect to mariadb Database as root)

create user harry@localhost identified by 'password'; (To create user harry with scope on local host only)

select user,host from mysql.user; (To list the mariadb users ,you will find harry in list scoped to local host)

grant SELECT on result.* to harry@loaclhost.; (To provide harry SELECT permissions on result database)

flush privileges; (To make above definition effective)

show grants for harry@localhost; (To display harry permissions on database)

6. Configure the mariaDB to listen on eth0 interface only.

Commands: (On server.example.com)

Install the mariadb Server as described in task 1.

netstat -tulpen | grep mysql (You will notice maridb is listening on non-default port for all interfaces, not bind to specific interface)

vim /etc/my.cnf

[mysqld]

bind-address=192.168.122.10 (To bind the maridb to listen on 192.168.122.20:5555 combination)

:wq

systemctl restart mariadb (To make the changes effective)

netstat -tulpen | grep mysql (You will notice maridb is listening on non-default port for eth0 interface only)