Configuration of eduroam server with FreeRADIUS with SQL

Kindly follow the instructions below to create FreeRADIUS setup

1. Install these package

    # yum install freeradius2 freeradius2-mysql freeradius2-utils mysql-server –y

    ```
    [root@localhost ~]# yum install freeradius2 freeradius2-mysql freeradius2-utils mysql-server -y
    ```

2. To setup MySQL, start the service by running below:

    #service mysqld start

    ```
    [root@localhost ~]# service mysqld start
    ```

3. Now run the following to set your password and security settings:

    /**usr/bin/mysql_secure_installation**

    ```
    [root@localhost ~]# /usr/bin/mysql_secure_installation
    ```

4. Common problems usually arise on cPanel servers but please check our knowledge base for fixing issues on cPanel servers, next we need to create the radius database, type:

    #mysql –u root -p

    ```
    [root@localhost ~]# mysql -u root -p
    ```

5. Then enter your mysql root password to continue…

6. Now create the database and grant all privileges to user radius:

    mysql>**CREATE DATABASE radius;**
    mysql>**GRANT ALL PRIVILEGES ON radius.* TO radius@localhost IDENTIFIED BY "radpass";**
    mysql>**flush privileges;**

7. In certain situations you may need to grant remote access to mysql, to do this please follow the guide below:

   Now it's all most done, we have to import the tables for radius:

   mysql> use radius;
   mysql>SOURCE /etc/raddb/sql/mysql/schema.sql
   mysql>exit

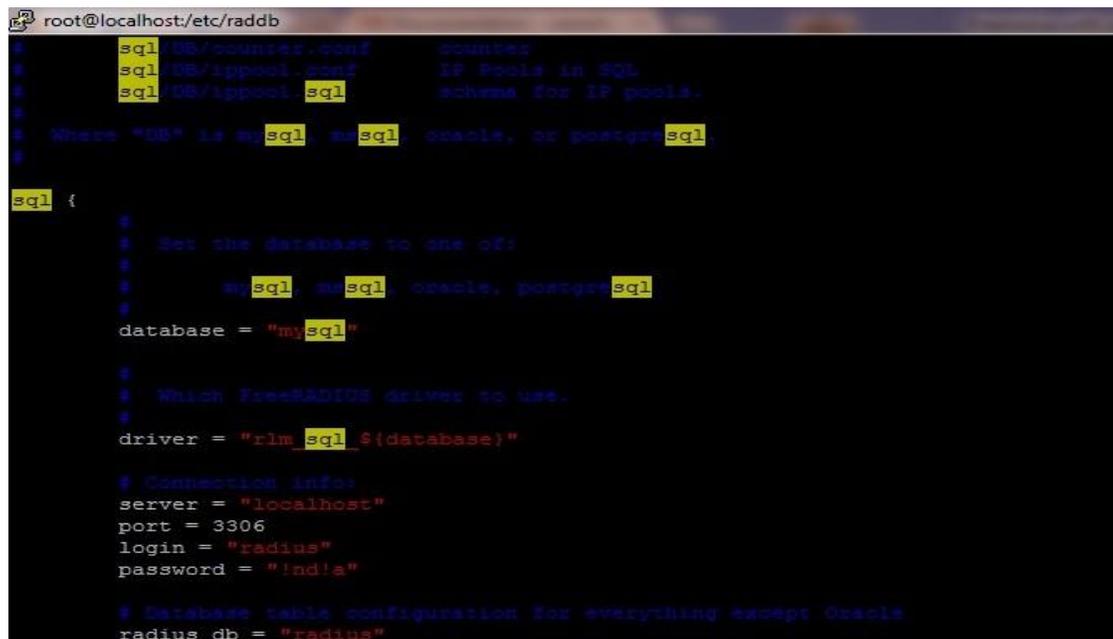   Sql setting has completed, now we have to configure the Radius server. For this,

8. Now have open up **/etc/raddb/sql.conf** and enter your mysql database details you had just created:-

   #vim /etc/raddb/sql.conf

   # Connection info:
   server = "localhost"
   port = 3306
   login = "radius"
   password = "database password"

   # Database table configuration for everything except Oracle

   radius_db = "radius"

9. Now, open the radiusd.conf by following command,

    # vim /etc/raddb/radiusd.conf

    In /etc/raddb/radiusd.conf ,kindly ensure that the line saying, **$INCLUDE sql.conf** is
    uncommented

    $INCLUDE sql.conf

    is uncommented.

    ```
    $INCLUDE sql.conf
    ```

10. Edit /etc/raddb/sites-available/default and uncomment the line containing 'sql' in the
    authorize{} section and 'sql' in the accounting {} section, also uncomment 'sql' under
    session {}.

    ```
    session {
            radutmp

            #
            #  See "Simultaneous Use Checking Queries" in sql.conf
            sql
    }
    ```

11. Edit /etc/raddb/sites-available/inner-tunnel and uncomment the line containing 'sql'
    under "authorize {}" and under session {}.

    ```
    session {
            radutmp

            #
            #  See "Simultaneous Use Checking Queries" in sql.conf
            sql
    }
    ```

12.Open up /etc/raddb/clients.conf through command

#vim /etc/raddb/clients.conf

Enter the clients detail.which will be interact with your radius server.

Example:

```
client IP {
        secret                  = YOUR SECRET HERE
        shortname               = yourVPN
        nastype                 = other
}
```

```
client flr1.eduroam.ernet.in {
        secret                  = !nd!aCP3rn3t
        shortname               = wifi
        nastype                 = other
}
```

13.Open up /etc/raddb/proxy.conf

#vim /etc/raddb/proxy.conf

Enter the National and your domain detail.

Example:

```
realm xyz.in {
        Authhost                = LOCAL
}

realm Default {
        authhost                = National IP
        secret                  = YOUR SECRET HERE
        shortname               = yourVPN
        nostrip
}
```

```
realm ernet.in {
        authhost                = LOCAL
}

realm DEFAULT {
        authhost                = flr1.eduroam.ernet.in
        secret                  = !nd!aCP3rn3t
        nostrip
}
```

14.Now check to see if Radius is working ok or not:

use

#service radiusd start

```
[root@localhost raddb]# service radiusd start
Starting radiusd:                                    [  OK  ]
```

If your radius service start become fail,then you can check the error by using

#radiusd –X

```
[root@localhost raddb]# radiusd -X
```

It will tell the error

15. Add a test user to the radius database, first you need to login to your mysql radius database:

mysql –u root –p yourrootpassword

```
[root@localhost raddb]# mysql -u root -p
```

Switch to the radius database:

use radius;

```
mysql> use radius;
```

Now execute the below commands:

mysql> INSERT INTO `radcheck` (`id`, `username`, `attribute`, `op`, `value`) VALUES (1,'test@domain','User-Password',':=','test');

```
mysql> insert into radcheck values ('1','user@ernet.in','User-Password',':=','1234');
```

Exit from mysql by using

mysql>exit;

```
mysql> exit
```

16. Next test the test user with radtest.

#radtest test@domain test 127.0.0.1 0 sharedsecret

If you see "rad_recv: Access-Accept" then your installation is working fine.

```
[root@localhost raddb]# radtest varun@ernet.in 221188 127.0.0.1 0 testing123
Sending Access-Request of id 120 to 127.0.0.1 port 1812
        User-Name = "varun@ernet.in"
        User-Password = "221188"
        NAS-IP-Address = 127.0.0.1
        NAS-Port = 0
        Message-Authenticator = 0x00000000000000000000000000000000
rad_recv: Access-Accept packet from host 127.0.0.1 port 1812, id=120, length=20
```

17.If you have any problems with FreeRADIUS you can run FreeRADIUS in debug mode to help pinpoint any issues, to do that just do the following:

#service radiusd stop
#radiusd –X

```
[root@localhost raddb]# service radiusd stop
Stopping radiusd:                                        [  OK  ]
[root@localhost raddb]# radiusd –X
```

Now you can see in realtime if your authentication queries are actually reaching the server or the reasons why some users may be rejected authentication.