Configure ssh jump server to use SSL for Mariadb

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How to configure Ezeelogin PAM solutions to use SSL for Mariadb

Overview: This article explains how to configure SSL for MariaDB on the Ezeelogin SSH jump server. It includes checking the SSL status, generating certificates, configuring Ezeelogin, and verifying the connection to ensure secure database access.

Mysql-<mark>SSL</mark> setup on Mariadb Server

Step 1: Check the Current SSL/TLS Status

Log into a Mariadb server with following command

```
root@gateway:~# mysql -u root -p
```

Show the state of the SSL/TLS variables by typing:

```
MariaDB [(none)]> show variables like '%ssl%';
-------show variables like '%ssl%'
------
+-----+
| Variable_name | Value |
+----+
| have_openssl | YES |
| have_ssl | DISABLED |
| ssl_ca | |
```

```
| ssl_capath | |
| ssl_cert | |
| ssl_cipher | |
| ssl_crl | |
| ssl_crlpath | |
| ssl_key | |
| version_ssl_library | OpenSSL 3.0.2 15 Mar 2022 |
+-----+
| 10 rows in set (0.004 sec)
```

The **have_ssl** variable is marked as DISABLED. This means that SSL functionality has been compiled into the server, but it is not yet enabled

Step 2: Generate SSL/TLS Certificates and Keys

Create a clean environment

```
root@gateway:~# mkdir /etc/certs && cd /etc/certs
```

Create the CA certificate

```
root@gateway:~#openssl genrsa 2048 > ca-key.pem
root@gateway:~#openssl req -new -x509 -nodes -days 3600
```

-key ca-key.pem -out ca.pem

Create the server certificate, remove passphrase, and sign it

```
root@gateway:~#openssl req -newkey rsa:2048 -days 3600
-nodes -keyout server-key.pem -out server-req.pem

root@gateway:~#openssl rsa -in server-key.pem -out server-key.pem

root@gateway:~#openssl x509 -req -in server-req.pem -days 3600
-CA ca.pem -CAkey ca-key.pem -set_serial 01 -out server-cert.pem
```

Create the client certificate, remove passphrase, and sign it

```
root@gateway:~#openssl req -newkey rsa:2048 -days 3600
-nodes -keyout client-key.pem -out client-req.pem

root@gateway:~#openssl rsa -in client-key.pem -out client-key.pem

root@gateway:~#openssl x509 -req -in client-req.pem -days 3600
-CA ca.pem -CAkey ca-key.pem -set_serial 01 -out client-cert.pem
```

After generating the certificates, verify them:

```
root@gateway:~# openssl verify -CAfile ca.pem server-cert.pem client-cert.pem

output

server-cert.pem: OK

client-cert.pem: Ok
```

Enable SSL for Mariadb

Modify the Mariadb configuration file '/etc/mysql/mariadb.conf.d/50-server.cnf'

In the '[mysqld]' section, paste the configuration below.

```
root@gateway:~# vi /etc/mysql/mariadb.conf.d/50-server.cnf
ssl-ca=/etc/certs/ca.pem
ssl-cert=/etc/certs/server-cert.pem
```

```
ssl-key=/etc/certs/server-key.pem
```

Restart the MySQL service

root@gateway:~# systemctl restart mariadb

After restarting, open up a new MySQL session using the same command as before.

```
root@gateway:~# mysql -u root -p
```

Check state of the SSL/TLS variables by typing:

```
MariaDB [(none)]> show variables like '%ssl%';
-------show variables like '%ssl%'
------
+-----+
| Variable_name | Value |
+-----+
| have_openssl | YES |
```

The have_openssl and have_ssl variables read "YES" instead of "DISABLED" this time.

Now you can login to Mariadb server with following command and grant Ezeelogin user to access the Ezeelogin database. you can refer the <u>article to retrieve Ezeelogin database</u> credentials.

Replace ezlogin_databasename,ezlogin_db_username and ez_db_password with your Ezeelogin database username.

```
root@gateway:~# mysql -u root -p

[Enter password]

MariaDB [(none)]> create user 'ezlogin_db_username'@'127.0.0.1' identified by 'ez_db_password';

MariaDB [(none)]> grant all on ezlogin_databasename.* to 'ezlogin_db_username'@'127.0.0.1'
```

with grant option;	
MariaDB [(none)]> flush privileges;	
MariaDB [(none)]> exit	

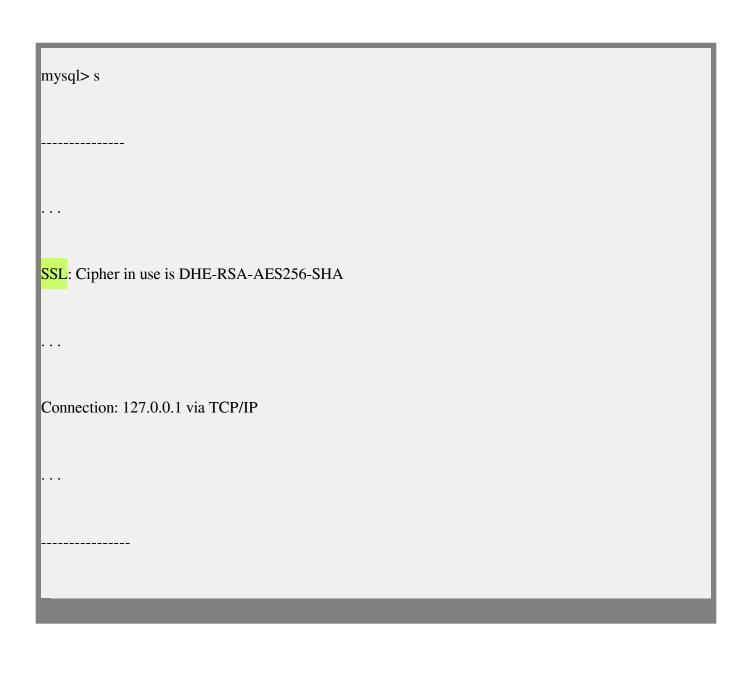
Check the connection details by the following command:

```
root@gateway ~]# mysql -u ezlogin_db_username -p -h 127.0.0.1 --ssl-ca=/etc/certs/ca.pem --ssl-cert=/etc/certs/client-cert.pem --ssl-key=/etc/certs/client-key.pem

example :

root@gateway~]# mysql -u ezlogin_xxxx -p -h 127.0.0.1 --ssl-ca=/etc/certs/ca.pem --ssl-cert=/etc/certs/client-cert.pem --ssl-key=/etc/certs/client-key.pem
```

In Case the certificate verification has been failed, refer SSL certificate failed with



SSL cipher is displayed, indicating that SSL is being used to secure our connection.

Step 3: Configure ezeelogin jump server to use SSL for Mariadb

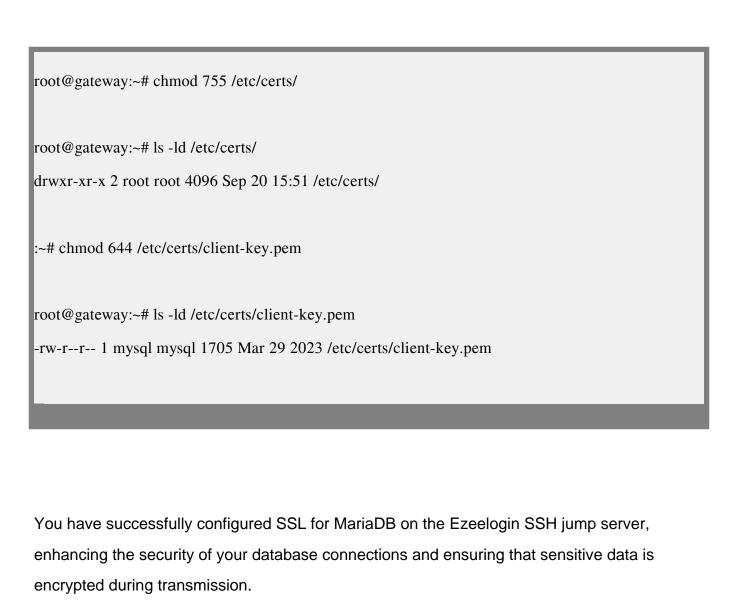
Add mysql_ssl_key, mysql_ssl_cert, mysql_ssl_ca and change db_hos, db_port to /usr/local/etc/ezlogin/ez.conf as follows

Edit the /usr/local/etc/ezlogin/ez.conf file add the following

```
root@gateway:~# vi /usr/local/etc/ezlogin/ez.conf
#Add the following
system_folder /var/www/ezlogin/
force_https no
uri_path /ezlogin/
db_host 127.0.0.1
db_port 3306
db_name ezlogin_qzms
db_user ezlogin_edcjwz
db_pass dsH)$s5xAE[QgFms
db_prefix aqvo_
cookie_encryption_key ASvs8^pnu^^X9
cookie_name lcrrfs
cookie_path /ezlogin/
www_folder /var/www/html/ezlogin/
admin_user admin
mysql_encrypt yes
mysql_<mark>ssl</mark>_key /etc/certs/client-key.pem
mysql_<mark>ssl</mark>_cert /etc/certs/client-cert.pem
mysql_<mark>ssl</mark>_ca /etc/certs/ca.pem
mysql_<mark>ssl</mark>_capath /etc/certs/
mysql_<mark>ssl</mark>_verify no
```

Make sure that you have changed db_port to 3306 & db_host to 127.0.0.1 of your host
Step 4: Change the bind address & allow the Ezeelogin jump server user to access the database.
Edit the /etc/mysql/mariadb.conf.d/50-server.cnf & change bind-address
root@gateway:~# vi /etc/mysql/mariadb.conf.d/50-server.cnf
Change bind-address to host ip or 0.0.0.0
bind-address 0.0.0.0
Restart the Mariadb service
root@gateway:~# systemctl restart mariadb

Step 5: Check and correct the permission of /etc/certs directory and client-key.pem



Make sure to grant the secondary IP to access primary node and the primary IP to the secondary node when configuring the cluster. Replace the secondary IP and

root@gateway:~# mysql -u root -p

[Enter password]

primary IP with the appropriate IPs.

MariaDB [(none)]> create user 'ezlogin_db_username'@'secondary IP or primary IP' identified by
'ez_db_password';
MariaDB [(none)]> grant all on ezlogin_databasename.* to 'ezlogin_db_username'@'secondary IP
or primary IP' with grant option;
MariaDB [(none)]> flush privileges;
MariaDB [(none)]> exit
If you have any difficulties please contact support

Related Articles:

Configure ssh jump server to use SSL for MySQL

Install Master/Slave Ezeelogin with MySQL SSL

Unable to access GUI while using MySQL SSL

failed to connect to database: Error: TLS/SSL error: Permission denied

Online URL:

https://www.ezeelogin.com/kb/article/configure-ssh-jump-server-to-use-ssl-for-mariadb-736.html