configure jump server to use SSL for MySQL server 5.7 version

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How to configure Ezeelogin to use SSL for MySQL database connections on ubuntu ?

Overview: This article provides step-by-step instructions to configure Ezeelogin to use SSL for MySQL database connections on Ubuntu, ensuring secure communication between the Ezeelogin jump server and the MySQL server.

Mysql - SSL setup on Ubuntu Mysql server

Step 1. Check the Current SSL/TLS Status

Log into MySQL session

```
root@gateway:~# mysql -u root -p -h 127.0.0.1
```

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

```
mysql> SHOW VARIABLES LIKE '%ssl%';

Output
+---------------+----------+
| Variable_name | Value    |
+---------------+----------+
| have_openssl  | DISABLED |
| have_ssl      | DISABLED |
| ssl_ca        |          |
| ssl_capath    |          |
| ssl_cert      |          |
| ssl_cipher    |          |
| ssl_crl       |          |
| ssl_crlpath   |          |
| ssl_key       |          |
+---------------+----------+
9 rows in set (0.01 sec)
```

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

Step 2. Generate SSL/TLS Certificates and Keys

To enable SSL connections to MySQL, first we need to generate the appropriate certificate and key files

We can use the following command to generate the necessary files.

The files will be created in MySQL's data directory, located at /var/lib/mysql

```
root@gateway:~# mysql_ssl_rsa_setup --uid=mysql
```

Check the generated files by typing:

```
root@gateway:~# find /var/lib/mysql -name '*.pem' -ls

output

 256740 4 -rw-r--r-- 1 mysql mysql 1078 Mar 17 17:24 /var/lib/mysql/server-cert.pem
256735 4 -rw------- 1 mysql mysql 1675 Mar 17 17:24 /var/lib/mysqlsql/ca-key.pem<^>
256739 4 -rw-r--r-- 1 mysql mysql 451 Mar 17 17:24 /var/lib/mysqlsql/public_key.pem<^>
256741 4 -rw------- 1 mysql mysql 1679 Mar 17 17:24 /var/lib/mysqlsql/client-key.pem<^>
256737 4 -rw-r--r-- 1 mysql mysql 1074 Mar 17 17:24 /var/lib/mysqlsql/ca.pem<^>
256743 4 -rw-r--r-- 1 mysql mysql 1078 Mar 17 17:24 /var/lib/mysqlsql/client-cert.pem<^>
256736 4 -rw------- 1 mysql mysql 1675 Mar 17 17:24 /var/lib/mysqlsql/private_key.pem<^>
256738 4 -rw------- 1 mysql mysql 1675 Mar 17 17:24 /var/lib/mysqlsql/server-key.pem<^>
```

Enable SSL Connections on the MySQL Server

Restart the MySQL service

```
root@gateway:~# systemctl restart mysql
```

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

```
root@gateway:~# mysql -u root -p -h 127.0.0.1
```

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

```
mysql> SHOW VARIABLES LIKE '%ssl%';

Output
+---------------+-----------------+
| Variable_name | Value |
+---------------+-----------------+
| have_openssl | YES |
| have_ssl | YES |
| ssl_ca | Ca.pem |
| ssl_capath | |
| ssl_cert | server-cert.pem|
| ssl_cipher | |
| ssl_crl | |
| ssl_crlpath | |
| ssl_key | server-key.pem |
+---------------+-----------------+
9 rows in set (0.01 sec)
```

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

Check the connection details by the following command:

```
root@gateway:~# mysql -u ezlogin_database_username -p -h hostname or ip --ssl-ca=/var/lib/mysql/ca.pem --ssl-cert=/var/lib/mysql/client-cert.pem --ssl-key=/var/lib/mysql/client-key.pem

example :



root@gateway:~# mysql -u ezlogin_xxxx -p -h 10.11.1.11 --ssl-ca=/var/lib/mysql/ca.pem --ssl-cert=/var/lib/mysql/client-cert.pem --ssl-key=/var/lib/mysql/client-key.pem
```

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

```
mysql> s

---------------

. . .

SSL: Cipher in use is DHE-RSA-AES256-SHA

. . .

Connection: 127.0.0.1 via TCP/IP

. . .

----------------
```

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

Step 3. Configure ezeelogin jump server to use SSL for Mysql

Add mysql_ssl_key,mysql_ssl_cert,mysql_ssl_ca to **/usr/local/etc/ezlogin/ez.conf**

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 10.10.1.11
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_ssl_key /var/lib/mysql/client-key.pem
mysql_ssl_cert /var/lib/mysql/client-cert.pem
mysql_ssl_ca /var/lib/mysql/ca.pem
mysql_ssl_capath /var/lib/mysql
mysql_ssl_verify no
```

Note: Make sure that you have changed db_port to 3306 & db_host to the IP Address of your host

Step 4. Change the bind-address & allow the Ezeelogin jump server user to access the database.

Edit the /etc/mysql/mysql.conf.d/mysqld.cnf & change bind-address

```
root@gateway:~# vi /etc/mysql/mysql.conf.d/mysqld.cnf

Change bind-address to host ip(server ip)or 0.0.0.0

bind-address x.x.x.x (Host ip or 0.0.0.0)
```

Restart the MySQL service

```
root@gateway:~# systemctl restart mysql
```

You can find out Ezeelogin jump server **dbname** and mysql **username** from the **ez.conf** file

```
root@gateway:~# cat /usr/local/etc/ezlogin/ez.conf

system_folder /var/www/ezlogin/
force_https no
uri_path /ezlogin/
db_host 10.10.1.11
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_ssl_key /var/lib/mysql/client-key.pem
mysql_ssl_cert /var/lib/mysql/client-cert.pem
mysql_ssl_ca /var/lib/mysql/ca.pem
mysql_ssl_capath /var/lib/mysql
mysql_ssl_verify no
```

Note: Use this command for granting privileges for root " GRANT USAGE ON ezlogin_databasename.* TO 'root'@'Hostname or ip' WITH GRANT OPTION; "

Login to MySQL

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

[Enter password]

mysql> grant all on ezlogin_databasename.* to 'mysql_username'@'%' identified by 'password';

example : mysql > grant all on ezlogin_xxx.* to 'ezlogin_xxxx'@'%' identified by
'dsH)$s5xAE[QgFmfsfgg';

mysql > flush privileges;

mysql > exit
```

Check if you can log in to MySQL using Ezeelogin jump server databases.

```
root@gateway:~# mysql -u ezeelogin_database_username -h 10.11.1.11 -p

Enter Password:

mysql >

mysql > exit
```

Note: If you have any difficulties please **contact support**

Related Articles:

Configure Ezeelogin to use SSL for MySQL version 8 on Ubuntu

Configure ssh jump server to use SSL for Mariadb

Troubleshooting Mysql SSL in Secondary node

configure jump server to use SSL for MySQL

Basic MySQL commands for troubleshooting database related issues in Ezeelogin

Unable to access GUI while using MySQL SSL

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