How to Implement GTID Replication in MySQL 5.7

GTID Replication

* What is GTID?
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* Adding new slave to GTID replication.

What is GTID ?

GTID is a global transaction identifier which consists of two parts separated by a column:

{source\_id:transaction\_id} source\_id: server's UUID. transaction\_id: sequence number. *b9b4712a-df64-11e3-b391-60672090eb04:3*

GTID Benefits

●Setting up MySQL replication is so simple now!

●Consistency is guaranteed between master and slaves.

●Simple to determine inconsistency

●Fail-over process become much easier.

●Automatic fail-over script is not a pain now.

GTID Important Variables

●gtid-mode: ON|OFF

●enforce-gtid-consistency: prevent executing the non-transactionally safe statements.

●gtid-purged: transactions have been purged from the binary logs.

●gtid-executed: transactions already executed on the server.

●gtid-next: GTID for the next transaction.

GTID Replication Implementation

Master's side configurations.

Slave's side configurations.

Master's side configurations

Add the following variables to my.cnf:

[mysqld]

server-id = 1

log\_bin = mysql-bin

binlog\_format = ROW

gtid\_mode = on

enforce\_gtid\_consistency

log\_slave\_updates

bind\_address = 0.0.0.0

Restart MySQL to apply the configuration changes:

$ service mysql restart

Create a MySQL user to be used by the slave:

GRANT REPLICATION SLAVE ON \*.\* TO 'slave\_user\_name'@'slave\_ip' IDENTIFIED BY 'password';

GRANT REPLICATION SLAVE ON \*.\* TO 'slave\_user'@' 192.168.227.148' IDENTIFIED BY 'pwd123';

Slave's side configurations

Add the following variables to my.cnf:

[mysqld]

server\_id = 2

log\_bin = mysql-bin

binlog\_format = ROW

skip\_slave\_start

gtid\_mode = on

enforce\_gtid\_consistency

log\_slave\_updates

Restart MySQL to apply the configuration changes:

$service mysql restart

Execute the CHANGE MASTER TO command:

SQL> CHANGE MASTER TO MASTER\_HOST='master\_ip',MASTER\_PORT=3306,MASTER\_USER=' slave\_user',

MASTER\_PASSWORD='pwd123',MASTER\_AUTO\_POSITION=1;

SQL>CHANGE MASTER TO MASTER\_HOST='192.168.111.242', MASTER\_PORT=3306, MASTER\_USER='slave\_user', MASTER\_PASSWORD='pwd123', MASTER\_AUTO\_POSITION=1;

Slave's side configurations

Start the replication:

SQL> START SLAVE;

Checking the replication !!

Check the replication status:

SQL> SHOW SLAVE STATUS\G

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 1. row \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Slave\_IO\_State: Waiting for master to send event

Master\_Host: 192.168.111.242

Master\_User: slave\_user

Master\_Port: 3306

Connect\_Retry: 60

Master\_Log\_File: mysql-bin.000104

Read\_Master\_Log\_Pos: 1509

Relay\_Log\_File: slavebox-relay-bin.000017

Relay\_Log\_Pos: 454

Relay\_Master\_Log\_File: mysql-bin.000104

Slave\_IO\_Running: Yes

Slave\_SQL\_Running: Yes

Replicate\_Do\_DB:

Replicate\_Ignore\_DB:

Replicate\_Do\_Table:

Replicate\_Ignore\_Table:

Replicate\_Wild\_Do\_Table:

Replicate\_Wild\_Ignore\_Table:

Last\_Errno: 0

Last\_Error:

Skip\_Counter: 0

Exec\_Master\_Log\_Pos: 1509

Relay\_Log\_Space: 964

Until\_Condition: None

Until\_Log\_File:

Until\_Log\_Pos: 0

Master\_SSL\_Allowed: No

Master\_SSL\_CA\_File:

Master\_SSL\_CA\_Path:

Master\_SSL\_Cert:

Master\_SSL\_Cipher:

Master\_SSL\_Key:

Seconds\_Behind\_Master: 0

Master\_SSL\_Verify\_Server\_Cert: No

Last\_IO\_Errno: 0

Last\_IO\_Error:

Last\_SQL\_Errno: 0

Last\_SQL\_Error:

Replicate\_Ignore\_Server\_Ids:

Master\_Server\_Id: 1

Master\_UUID: 9b842257-58fb-11e9-aaed-000c293cc4f8

Master\_Info\_File: /var/lib/mysql/master.info

SQL\_Delay: 0

SQL\_Remaining\_Delay: NULL

Slave\_SQL\_Running\_State: Slave has read all relay log; waiting for more updates

Master\_Retry\_Count: 86400

Master\_Bind:

Last\_IO\_Error\_Timestamp:

Last\_SQL\_Error\_Timestamp:

Master\_SSL\_Crl:

Master\_SSL\_Crlpath:

Retrieved\_Gtid\_Set: 9b842257-58fb-11e9-aaed-000c293cc4f8:1-188

Executed\_Gtid\_Set: 9b842257-58fb-11e9-aaed-000c293cc4f8:1-188,

ee399f0b-5ab1-11e9-a694-000c299ac84b:1-478

Auto\_Position: 1

Replicate\_Rewrite\_DB:

Channel\_Name:

Master\_TLS\_Version:

1 row in set (0.00 sec)

Adding new slave to GTID Replication

Backup the master server:

shell> mysqldump -u root -p --all-databases –flush-privileges --single-transaction --flush-logs --triggers --routines –events --hex-blob > /backupdir/full\_dbs\_bkup.sql

Modify the new slave's my.cnf as described above.

Restore the master backup file on the slave.

Use change master to with MASTER\_AUTO\_POSITION=1

Start the slave.