MySQL 5.7.18多源复制搭建

**1.1     实验概要**

**1.1.1  实验假设**

本实验假设已经完成操作系统和MySQL安装部署。

**1.1.2  实验目的**

MySQL5.7的多源复制技术搭建部署，然后简单测试。

**1.1.3  环境信息**

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| --- | --- | --- | --- |
| 操作系统 | MySQL版本 | 服务器地址 | 服务器角色 |
| CentOS 7 | 5.7.18 | 192.168.102.23 | source 1 |
| CentOS 7 | 5.7.18 | 192.168.102.24 | source 2 |
| CentOS 7 | 5.7.18 | 192.168.102.25 | target |

**1.1.4  实验规划**

|  |  |  |  |
| --- | --- | --- | --- |
| 服务器地址 | 服务器角色 | MySQL库 | 账户 |
| 192.168.102.23 | source 1 | emily | repl23 |
| 192.168.102.24 | source 2 | evelyn | repl24 |
| 192.168.102.25 | target |  |  |

source 1.emilyàtarget

source 2.evelynàtarget

username:

source 1:repl23

source 2:repl24

**1.2     实验操作**

**1.2.1  源端备份数据库**

分别从source1和source2分别备份出emily和evelyn库，然后分别copy到target中。其中操作步骤如下：

source 1：

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| --- |
| ##备份  [root@dsm-db-102023 11:26:50 /root]  #mysqldump -uroot –pmysql --single-transaction --master-data=2 --databases emily > /root/dump/emily.sql  ##传输  [root@dsm-db-102023 11:34:38 /root/dump]  #scp /root/dump/emily.sql root@192.168.102.25:/root/dump/ |

source 2：

|  |
| --- |
| ##备份  [root@test-mysql-10224 11:19:47 /root]  #mysqldump -uroot -pmysql --single-transaction --master-data=2 --databases evelyn > /root/dump/evelyn.sql  ##传输  [root@dsm-db-102023 11:34:38 /root/dump]  #scp /root/dump/emily.sql root@192.168.102.25:/root/dump/ |

**1.2.2  创建同步账户**

分别在source1和source2中创建同步账户repl23、repl24

source1

|  |
| --- |
| root@192.168.102.23:3306 [emily]>create user repl23 identified by "repl";  root@192.168.102.23:3306 [(none)]>grant replication slave on \*.\* to 'repl23'@'%'; |

source2

|  |
| --- |
| root@192.168.102.24:3306 [evelyn]>create user repl24 identified by "repl";  root@192.168.102.24:3306 [evelyn]>grant replication slave on \*.\* to 'repl24'@'%'; |

**1.2.3  目标端恢复数据库**

|  |
| --- |
| ## 恢复evelyn库  root@192.168.102.25:3306 [(none)]>reset master  [root@dsm-db-102025 14:01:24 /root/dump]  #mysql -uroot -pmysql < evelyn.sql  ## 查看gtid\_purged  root@192.168.102.25:3306 [(none)]>show global variables like '%gtid\_purged%';  +---------------+------------------------------------------+  | Variable\_name | Value                                    |  +---------------+------------------------------------------+  | gtid\_purged   | 921a9068-24d2-11e7-99b5-005056b59593:1-287,  bd783f44-258f-11e7-914b-005056b5d312:1-28071 |  +---------------+------------------------------------------+    ## 恢复emily库  root@192.168.102.25:3306 [(none)]>reset master  [root@dsm-db-102025 14:21:22 /root/dump]  #mysql -uroot -pmysql < /root/dump/emily.sql;  ##设置source1和source2的gtid\_purged  root@192.168.102.25:3306 [(none)]>show variables like '%gtid\_purged%';  +---------------+------------------------------------------+  | Variable\_name | Value                                    |  +---------------+------------------------------------------+  | gtid\_purged   | 7937ac78-3c39-11e7-b59e-005056b5d25f:1-4 |  +---------------+------------------------------------------+  ## set global gtid\_purged='921a9068-24d2-11e7-99b5-005056b59593:1-287,bd783f44-258f-11e7-914b-005056b5d312:1-28071,7937ac78-3c39-11e7-b59e-005056b5d25f:1-4';    root@192.168.102.25:3306 [(none)]>reset master;  Query OK, 0 rows affected (0.01 sec)    root@192.168.102.25:3306 [(none)]>set global gtid\_purged='921a9068-24d2-11e7-99b5-005056b59593:1-287,bd783f44-258f-11e7-914b-005056b5d312:1-28071,7937ac78-3c39-11e7-b59e-005056b5d25f:1-4';  Query OK, 0 rows affected (0.00 sec)    root@192.168.102.25:3306 [(none)]>show variables like '%gtid\_purged%';  +---------------+------------------------------------------------------------------------------------------------------------------------------------+  | Variable\_name | Value                                                                                                                              |  +---------------+------------------------------------------------------------------------------------------------------------------------------------+  | gtid\_purged   | 7937ac78-3c39-11e7-b59e-005056b5d25f:1-4,  921a9068-24d2-11e7-99b5-005056b59593:1-287,  bd783f44-258f-11e7-914b-005056b5d312:1-28071 |  +---------------+------------------------------------------------------------------------------------------------------------------------------------+  1 row in set (0.01 sec)    root@192.168.102.25:3306 [(none)]> |

**1.2.4  修改MySQL存储方式**

修改MySQL存储master-info和relay-info的方式，即从文件存储改为表存储

|  |
| --- |
| ## 在线修改  STOP SLAVE;  SET GLOBAL master\_info\_repository = 'TABLE';  SET GLOBAL relay\_log\_info\_repository = 'TABLE';  ##修改配置文件  [mysqld]  master\_info\_repository=TABLE  relay\_log\_info\_repository=TABLE |

**1.2.5  同步操作**

* change master

登录slave进行同步操作，分别change master到两台master主机，多源复制需要标注

FOR CHANNEL ‘CHANNEL\_NAME’区分

|  |
| --- |
| ##source 1  root@192.168.102.25:3306 [(none)]>CHANGE MASTER TO MASTER\_HOST='192.168.102.23',MASTER\_USER='repl23', MASTER\_PASSWORD='repl',master\_auto\_position=1 FOR CHANNEL 'repl23';  ##source 2  root@192.168.102.25:3306 [(none)]>CHANGE MASTER TO MASTER\_HOST='192.168.102.24',MASTER\_USER='repl24', MASTER\_PASSWORD='repl',master\_auto\_position=1 FOR CHANNEL 'repl24'; |

* 启动slave

启动所有同步: start slave;

启动单个同步: start slave for channel ‘channel\_name’;

|  |
| --- |
| ##启动source 1  root@192.168.102.25:3306 [(none)]>start slave for channel 'repl23';  ##启动source 2  root@192.168.102.25:3306 [(none)]>start slave for channel 'repl24'; |

* 检查slave状态

检查所有slave: show slave status\G;

检查单个slave: show slave status for chennel ‘channel\_name’\G;

|  |
| --- |
| ## source 1  root@192.168.102.25:3306 [(none)]>show slave status for channel 'repl23'\G;  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 1. row \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Slave\_IO\_State: Waiting for master to send event Master\_Host: 192.168.102.23 Master\_User: repl23 Master\_Port: 3306 Connect\_Retry: 60 Master\_Log\_File: mysql-bin.000002 Read\_Master\_Log\_Pos: 2849 Relay\_Log\_File: relay-bin-repl23.000008 Relay\_Log\_Pos: 454 Relay\_Master\_Log\_File: mysql-bin.000002 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: 2849 Relay\_Log\_Space: 749 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: 233306 Master\_UUID: 7937ac78-3c39-11e7-b59e-005056b5d25f Master\_Info\_File: mysql.slave\_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: 7937ac78-3c39-11e7-b59e-005056b5d25f:5-13 Executed\_Gtid\_Set: 7937ac78-3c39-11e7-b59e-005056b5d25f:1-13, 921a9068-24d2-11e7-99b5-005056b59593:1-287, bd783f44-258f-11e7-914b-005056b5d312:1-28090 Auto\_Position: 1 Replicate\_Rewrite\_DB:  Channel\_Name: repl23 Master\_TLS\_Version:  1 row in set (0.00 sec)  ERROR:  No query specified |

|  |
| --- |
| ##source 2  root@192.168.102.25:3306 [(none)]>show slave status for channel 'repl24'\G;  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 1. row \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*                 Slave\_IO\_State:                    Master\_Host: 192.168.102.24                    Master\_User: repl24                    Master\_Port: 3306                  Connect\_Retry: 60                Master\_Log\_File: mysql-bin.000040            Read\_Master\_Log\_Pos: 185363                 Relay\_Log\_File: relay-bin-repl24.000003                  Relay\_Log\_Pos: 454          Relay\_Master\_Log\_File: mysql-bin.000040               Slave\_IO\_Running: No              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: 185363                Relay\_Log\_Space: 4318                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: NULL  Master\_SSL\_Verify\_Server\_Cert: No                  Last\_IO\_Errno: 1595                  Last\_IO\_Error: Relay log write failure: could not queue event from master                 Last\_SQL\_Errno: 0                 Last\_SQL\_Error:    Replicate\_Ignore\_Server\_Ids:               Master\_Server\_Id: 243306                    Master\_UUID: bd783f44-258f-11e7-914b-005056b5d312               Master\_Info\_File: mysql.slave\_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: 170519 16:12:33       Last\_SQL\_Error\_Timestamp:                 Master\_SSL\_Crl:             Master\_SSL\_Crlpath:             Retrieved\_Gtid\_Set: bd783f44-258f-11e7-914b-005056b5d312:28072-28088              Executed\_Gtid\_Set: 7937ac78-3c39-11e7-b59e-005056b5d25f:1-11,  921a9068-24d2-11e7-99b5-005056b59593:1-287,  bd783f44-258f-11e7-914b-005056b5d312:1-28088                  Auto\_Position: 1           Replicate\_Rewrite\_DB:                   Channel\_Name: repl24             Master\_TLS\_Version:  1 row in set (0.00 sec)    ERROR:  No query specified |

**1.2.6  验证同步**

|  |
| --- |
| ##source 1  root@192.168.102.23:3306 [emily]>insert into emily(id,name)values(2,'evelyn');  Query OK, 1 row affected (0.00 sec)    root@192.168.102.23:3306 [emily]>select \* from emily;  +------+--------+  | id   | name   |  +------+--------+  |    1 | emily  |  |    2 | evelyn |  +------+--------+  2 rows in set (0.00 sec)    ##target验证    root@192.168.102.25:3306 [emily]>select \* from emily;  +------+--------+  | id   | name   |  +------+--------+  |    1 | emily  |  |    2 | evelyn |  +------+--------+  2 rows in set (0.00 sec) |

|  |
| --- |
| ## source 2  root@192.168.102.24:3306 [evelyn]>insert into evelyn(id,name)values(2,'emily');  Query OK, 1 row affected (1.00 sec)    root@192.168.102.24:3306 [evelyn]>select \* from evelyn;  +------+--------+  | id   | name   |  +------+--------+  |    1 | evelyn |  |    2 | emily  |  +------+--------+  2 rows in set (0.00 sec)  ## target端  root@192.168.102.25:3306 [evelyn]>select \* from evelyn;  +------+--------+  | id   | name   |  +------+--------+  |    1 | evelyn |  |    2 | emily  |  +------+--------+  2 rows in set (0.00 sec) |

**1.2.7  监控**

|  |
| --- |
| root@192.168.102.25:3306 [evelyn]>  select \* from performance\_schema.replication\_connection\_status\G;  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 1. row \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*               CHANNEL\_NAME: repl23                 GROUP\_NAME:                SOURCE\_UUID: 7937ac78-3c39-11e7-b59e-005056b5d25f                  THREAD\_ID: 71              SERVICE\_STATE: ON  COUNT\_RECEIVED\_HEARTBEATS: 78   LAST\_HEARTBEAT\_TIMESTAMP: 2017-05-19 17:37:05   RECEIVED\_TRANSACTION\_SET: 7937ac78-3c39-11e7-b59e-005056b5d25f:5-13          LAST\_ERROR\_NUMBER: 0         LAST\_ERROR\_MESSAGE:       LAST\_ERROR\_TIMESTAMP: 0000-00-00 00:00:00  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 2. row \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*               CHANNEL\_NAME: repl24                 GROUP\_NAME:                SOURCE\_UUID: bd783f44-258f-11e7-914b-005056b5d312                  THREAD\_ID: 73              SERVICE\_STATE: ON  COUNT\_RECEIVED\_HEARTBEATS: 13   LAST\_HEARTBEAT\_TIMESTAMP: 2017-05-19 17:37:09   RECEIVED\_TRANSACTION\_SET: bd783f44-258f-11e7-914b-005056b5d312:28072-28090          LAST\_ERROR\_NUMBER: 0         LAST\_ERROR\_MESSAGE:       LAST\_ERROR\_TIMESTAMP: 0000-00-00 00:00:00  2 rows in set (0.00 sec)    ERROR:  No query specified |

|  |
| --- |
| root@192.168.102.25:3306 [emily]>  select \* from performance\_schema.replication\_connection\_configuration\G;  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 1. row \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*                   CHANNEL\_NAME: repl23                           HOST: 192.168.102.23                           PORT: 3306                           USER: repl23              NETWORK\_INTERFACE:                  AUTO\_POSITION: 1                    SSL\_ALLOWED: NO                    SSL\_CA\_FILE:                    SSL\_CA\_PATH:                SSL\_CERTIFICATE:                     SSL\_CIPHER:                        SSL\_KEY:  SSL\_VERIFY\_SERVER\_CERTIFICATE: NO                   SSL\_CRL\_FILE:                   SSL\_CRL\_PATH:      CONNECTION\_RETRY\_INTERVAL: 60         CONNECTION\_RETRY\_COUNT: 86400             HEARTBEAT\_INTERVAL: 30.000                    TLS\_VERSION:  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 2. row \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*                   CHANNEL\_NAME: repl24                           HOST: 192.168.102.24                           PORT: 3306                           USER: repl24              NETWORK\_INTERFACE:                  AUTO\_POSITION: 1                    SSL\_ALLOWED: NO                    SSL\_CA\_FILE:                    SSL\_CA\_PATH:                SSL\_CERTIFICATE:                     SSL\_CIPHER:                        SSL\_KEY:  SSL\_VERIFY\_SERVER\_CERTIFICATE: NO                   SSL\_CRL\_FILE:                   SSL\_CRL\_PATH:      CONNECTION\_RETRY\_INTERVAL: 60         CONNECTION\_RETRY\_COUNT: 86400             HEARTBEAT\_INTERVAL: 30.000                    TLS\_VERSION:  2 rows in set (0.00 sec)    ERROR:  No query specified |

**1.2.8  跳过事务**

|  |
| --- |
| ##GTID  STOP SLAVE FOR CHANNEL ‘CHANNEL\_NAME’;  SET SESSION GTID\_NEXT=’’;  BEGIN;COMMIT;  SET SESSION GTID\_NEXT=’AUTOMATIC’;  START SLAVE FOR CHANNEL ‘CHANNEL\_NAME’;  ## binlog+position  stop slave sql\_thread FOR CHANNEL ‘CHANNEL\_NAME’;;  set global sql\_slave\_skip\_counter=1;  start slave sql\_thread FOR CHANNEL ‘CHANNEL\_NAME’;;      ##  root@192.168.102.25:3306 [(none)]>set session gtid\_next='bd783f44-258f-11e7-914b-005056b5d312:28083';  Query OK, 0 rows affected (0.00 sec)    root@192.168.102.25:3306 [(none)]>begin;commit;  Query OK, 0 rows affected (0.00 sec)    root@192.168.102.25:3306 [(none)]>set session gtid\_next=automatic;  Query OK, 0 rows affected (0.00 sec)    root@192.168.102.25:3306 [(none)]>start slave for channel 'repl24';  Query OK, 0 rows affected (0.00 sec) |

**1.2.9  遇见错误**

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| --- |
| 1、  Last\_IO\_Error: Relay log write failure: could not queue event from master  ##repl24  Last\_IO\_Error: Fatal error: Failed to run 'after\_read\_event' hook          ##repl23  stop slave  start slave  最后发现是开启一个源开启了半同步复制，一个源没有开题半同步复制。  2、  清除slave信息  reset slave  ## 创建多源复制过程中，发现有一个slave没有channel\_name，使用如下语句清除slave信息  reset slave all for channel '';  3、  root@192.168.102.24:3306 [evelyn]>uninstall plugin rpl\_semi\_sync\_master;  Query OK, 0 rows affected (0.01 sec)  root@192.168.102.24:3306 [evelyn]>uninstall plugin rpl\_semi\_sync\_slave;  Query OK, 0 rows affected (0.00 sec) |

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