

迁移 MySQL 数据到 OceanBase 集群

文档控制:

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1. 引言

1.1. 关于此文档

练习目的

本次练习目的掌握从 MySQL 向 OceanBase 迁移数据的基本方法：mysqldump、datax、canal 等。

练习条件

有 服务器，内存资源至少 12G*1 台，部署有 OceanBase 集群。

有 mysql 数据库，有少量业务表和数据（数据量不要求很多）。没有业务表和数据的就推荐使用 sysbenc、 tpcc 或者 tpch 的业务数据。

练习内容

请记录并分享下列内容：

（必选）使用 mysqldump 将 mysql 的表结构和数据同步到 OceanBase 的 MySQL 租户中。

（必选）使用 datax 配置至少一个表的 MySQL 到 OceanBase 的 MySQL 租户的离线同步。

（可选）使用 datax 配置至少一个表的 OceanBase 到 CSV 以及 CSV 到 OceanBase 的离线同步。

（可选）使用 canal 配置 MySQL 的增量同步到 OceanBase 的 MySQL 租户。

1. 2. 参考资料

社区版官网-文档-学习中心-入门教程：[4.2 如何使用 mysqldump 迁移 MySQL 表 OceanBase](#)。

社区版官网-博客-入门实战：[4.2：如何使用 mysqldump 迁移 MySQL 表 OceanBase](#)

2. 测试数据准备

2. 1. 下载 MySQL 测试工具-tpcc

下载地址：

<https://github.com/Percona-Lab/tpcc-mysql>

2. 2. 开始安装 tpcc

```
[root@localhost data]# unzip tpcc-mysql-master.zip
[root@localhost data]# cd tpcc-mysql-master
[root@localhost tpcc-mysql-master]# ls
add_fkey_idx.sql count.sql create_table.sql Dockerfile drop_cons.sql load_multi_schema.sh load.sh README.md schema2 scripts src
[root@localhost tpcc-mysql-master]# cd src/
[root@localhost src]# make
```

```
[root@localhost src]# make
cc -w -O3 -g -I . mysql_config --include` -c load.c
cc -w -O3 -g -I . mysql_config --include` -c support.c
cc load.o support.o mysql_config --libs_r -lrt -o ./tpcc_load
cc -w -O3 -g -I . mysql_config --include` -c main.c
cc -w -O3 -g -I . mysql_config --include` -c getneword.c
cc -w -O3 -g -I . mysql_config --include` -c driver.c
cc -w -O3 -g -I . mysql_config --include` -c sequence.c
cc -w -O3 -g -I . mysql_config --include` -c rthist.c
cc -w -O3 -g -I . mysql_config --include` -c sb_percentile.c
cc -w -O3 -g -I . mysql_config --include` -c neword.c
cc -w -O3 -g -I . mysql_config --include` -c rthist.c
cc -w -O3 -g -I . mysql_config --include` -c ordstat.c
cc -w -O3 -g -I . mysql_config --include` -c delivery.c
cc -w -O3 -g -I . mysql_config --include` -c slev.c
cc main.o tpcc.o driver.o support.o sequence.o rthist.o sb_percentile.o payment.o ordstat.o delivery.o slev.o `mysql_config --libs_r` -lrt -o ./tpcc_start
[root@localhost src]# ls
delivery.c driver.c load.c main.c Makefile neword.o ordstat.o payment.c rthist.c rthist.o sb_percentile.h sequence.c sequence.o slev.o spt_proc.h support.c tpc.h
driver.o load.o main.o neword.c ordstat.c parse_port.h payment.o rthist.h sb_percentile.c sb_percentile.o sequence.h slev.c spt_proc.c spt_proc.o support.o trans_if.h
[root@localhost tpcc-mysql-master]# ls
add_fkey_idx.sql count.sql create_table.sql Dockerfile drop_cons.sql load_multi_schema.sh load.sh README.md schema2 scripts src tpcc_load tpcc_start
[root@localhost tpcc-mysql-master]#
```

注： tpcc 安装只需要 make 即可，这里不需要 make install, 编译完成后会生成 tpcc_load 和 tpcc_start 命令，以供之后生成测试数据。

2. 3. 创建数据库，执行建表脚本

```
[root@localhost data]# mysql -uroot -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 3
Server version: 5.6.36-log MySQL Community Server (GPL)

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Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

root@localhost:mysq3306.sock [(none)]>show databases;
+-----+
| Database      |
+-----+
| information_schema |
| mysql          |
| performance_schema |
| test           |
+-----+
4 rows in set (0.00 sec)

root@localhost:mysq3306.sock [(none)]>create database tpcc_test;
Query OK, 1 row affected (0.00 sec)

root@localhost:mysq3306.sock [(none)]>show databases;
+-----+
| Database      |
+-----+
| information_schema |
| mysql          |
| performance_schema |
| test           |
| tpcc_test      |
+-----+
5 rows in set (0.00 sec)

root@localhost:mysq3306.sock [(none)]>use tpcc_test;
Database changed
root@localhost:mysq3306.sock [tpcc_test]>source /data/tpcc-mysql-master/create_table.sql
```

```
root@localhost:mysql3306.sock [tpcc_test]>source /data/tpcc-mysql-master/create_table.sql
Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected, 1 warning (0.00 sec)

Query OK, 0 rows affected (0.18 sec)

Query OK, 0 rows affected, 1 warning (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected, 1 warning (0.00 sec)

Query OK, 0 rows affected (0.01 sec)

Query OK, 0 rows affected, 1 warning (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected (0.01 sec)

Query OK, 0 rows affected, 1 warning (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected, 1 warning (0.00 sec)

Query OK, 0 rows affected (0.01 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected (0.03 sec)

Query OK, 0 rows affected, 1 warning (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

root@localhost:mysql3306.sock [tpcc_test]>
```

```
root@localhost:mysql3306.sock [tpcc_test]>show tables;
+-----+
| Tables_in_tpcc_test |
+-----+
| customer          |
| district          |
| history           |
| item              |
| new_orders        |
| order_line        |
| orders            |
| stock             |
| warehouse         |
+-----+
9 rows in set (0.00 sec)
```

从图中可以看出，tpcc 共创建了九张表：

customer:客户表；

district:地区表；

history: 历史数据表；

item: 商品表；

new_orders:新订单表；

order_line:发货表；

orders:订单表；

stock:库存表；

warehouse:仓库表；

2. 4. 加载测试数据

```
[root@localhost tpcc-mysql-master]# ./tpcc_load -h192.168.101.86 -P3306 -uroot -d tpcc_test -w 10 -pmysql
```

-w 表示仓库 warehouse, 此处一个仓库对应 10 个地区, 每个地区对应 3000 用户, 数据生成略微有些慢;

```
root@localhost:mysql3306.sock [(none)]>use tpcc_test
Database changed
root@localhost:mysql3306.sock [tpcc_test]>select count(*) from warehouse;
+-----+
| count(*) |
+-----+
|      10 |
+-----+
1 row in set (0.00 sec)

root@localhost:mysql3306.sock [tpcc_test]>select count(*) from district;
+-----+
| count(*) |
+-----+
|     100 |
+-----+
1 row in set (0.00 sec)

root@localhost:mysql3306.sock [tpcc_test]>select count(*) from customer;
+-----+
| count(*) |
+-----+
| 300000 |
+-----+
1 row in set (0.12 sec)

root@localhost:mysql3306.sock [tpcc_test]>
```

出现报错: ./tpcc_load: error while loading shared libraries: libmysqlclient.so.18: cannot open shared object file: No such file or directory

```
[root@localhost tpcc-mysql-master]# ./tpcc_load -h192.168.101.86 -P3306 -uroot -d tpcc_test -w 10 -pmysql
./tpcc_load: error while loading shared libraries: libmysqlclient.so.18: cannot open shared object file: No such file or directory
[root@localhost tpcc-mysql-master]#
```

解决方式:

- 先确认/usr/local/mysql/lib/下是否有 libmysqlclient.so.18 这个文件.

```
[root@localhost tpcc-mysql-master]# ll /usr/local/mysql/lib/
total 362012
-rw-r--r--. 1 7161 31415 17351370 Mar 18 2017 libmysqlclient.a
lrwxrwxrwx. 1 7161 31415          16 Jan  7 14:13 libmysqlclient_r.a --> libmysqlclient.a
lrwxrwxrwx. 1 7161 31415          17 Jan  7 14:13 libmysqlclient_r.so --> libmysqlclient.so
lrwxrwxrwx. 1 7161 31415          20 Jan  7 14:13 libmysqlclient_r.so.18 --> libmysqlclient.so.18
lrwxrwxrwx. 1 7161 31415          24 Jan  7 14:13 libmysqlclient_r.so.18.1.0 --> libmysqlclient.so.18.1.0
lrwxrwxrwx. 1 7161 31415          20 Jan  7 14:13 libmysqlclient.so --> libmysqlclient.so.18
lrwxrwxrwx. 1 7161 31415          24 Jan  7 14:13 libmysqlclient.so.18 --> libmysqlclient.so.18.1.0
-rwxr-xr-x. 1 7161 31415 8171637 Mar 18 2017 libmysqlclient.so.18.1.0
-rw-r--r--. 1 7161 31415 196279334 Mar 18 2017 libmysqld.a
-rw-r--r--. 1 7161 31415 148866172 Mar 18 2017 libmysqld-debug.a
-rw-r--r--. 1 7161 31415 14702 Mar 18 2017 libmysqldservices.a
drwxr-xr-x. 3 root root    4096 Jan  7 14:13 plugin
[root@localhost tpcc-mysql-master]#
```

- 修改 ld.so.conf 文件

```
echo "/usr/local/mysql/lib">>> /etc/ld.so.conf
```

执行 ldconfig 使变更生效即可。

```
[root@localhost tpcc-mysql-master]# echo "/usr/local/mysql/lib">>>/etc/ld.so.conf
[root@localhost tpcc-mysql-master]# ldconfig
```

数据生成完成后, 再创建索引。

注: 一定要先生成数据再添加索引, 如果先创建索引, 数据生成速度会更缓慢!

```
root@localhost:mysql3306.sock [tpcc_test]>source /data/tpcc-mysql-master/add_fkey_idx.sql
```

```
root@localhost:mysqld3306.sock [tpcc_test]>source /data/tpcc-mysql-master/add_fkey_idx.sql
Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected (1.25 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.70 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (1.89 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (8.76 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.02 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.01 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.67 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.54 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.00 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.00 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.00 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.00 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.01 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.00 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.00 sec)
Records: 0 Duplicates: 0 Warnings: 0

Query OK, 0 rows affected (0.00 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

3. 使用 mysqldump 迁移数据

3. 1. 使用 mysqldump 导出业务表结构

```
[root@localhost data]# mysqldump -h192.168.101.86 -uroot -P3306 -pmysql -d tpcc test --compact > tpcc ddl.sql
```

3. 2. 使用 mysqldump 导出业务表数据

```
[root@localhost data]# mysqldump -h192.168.101.86 -uroot -P3306 -pmysql -t tpcc test --compact > tpcc_data.sql
```

3. 3. 导入业务表结构

```
[tpcc_test]> source /data/tpcc_ddl.sql
```

```
root@mysqldb:~# [mysql]>
root@mysqldb 18:35: [mysql]> use tpcc_test;
Database changed
root@mysqldb 18:35: [tpcc_test]> source /data/tpcc_ddl.sql
Query OK, 0 rows affected (0.001 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected, 1 warning (30.191 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected, 1 warning (29.973 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected, 1 warning (30.015 sec)

Query OK, 0 rows affected (0.001 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected, 1 warning (29.973 sec)

Query OK, 0 rows affected (0.001 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected, 1 warning (30.052 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected, 1 warning (29.971 sec)

Query OK, 0 rows affected (0.001 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected, 1 warning (30.241 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)
```

3.4. 导入业务表数据

```
[tpcc test]> source /data/tpcc data.sql
```

```

root@mysql01:~# [tpcc_test]> source /data/tpcc_data.sql
Query OK, 1760 rows affected (0.241 sec)
Records: 1760  Duplicates: 0  Warnings: 0
Query OK, 1762 rows affected (0.241 sec)
Records: 1762  Duplicates: 0  Warnings: 0
Query OK, 1769 rows affected (0.248 sec)
Records: 1769  Duplicates: 0  Warnings: 0
Query OK, 1764 rows affected (0.286 sec)
Records: 1764  Duplicates: 0  Warnings: 0
Query OK, 1755 rows affected (0.355 sec)
Records: 1755  Duplicates: 0  Warnings: 0
Query OK, 1756 rows affected (0.353 sec)
Records: 1756  Duplicates: 0  Warnings: 0
Query OK, 1754 rows affected (0.443 sec)
Records: 1754  Duplicates: 0  Warnings: 0
Query OK, 1755 rows affected (0.229 sec)
Records: 1755  Duplicates: 0  Warnings: 0
Query OK, 1755 rows affected (0.227 sec)
Records: 1755  Duplicates: 0  Warnings: 0
Query OK, 1754 rows affected (0.276 sec)
Records: 1754  Duplicates: 0  Warnings: 0
Query OK, 1769 rows affected (0.297 sec)
Records: 1769  Duplicates: 0  Warnings: 0
Query OK, 1765 rows affected (0.261 sec)
Records: 1765  Duplicates: 0  Warnings: 0
Query OK, 1768 rows affected (0.461 sec)
Records: 1768  Duplicates: 0  Warnings: 0
Query OK, 1769 rows affected (0.666 sec)
Records: 1769  Duplicates: 0  Warnings: 0
Query OK, 1764 rows affected (0.274 sec)
Records: 1764  Duplicates: 0  Warnings: 0
Query OK, 1766 rows affected (0.279 sec)
Records: 1766  Duplicates: 0  Warnings: 0
Query OK, 1754 rows affected (0.281 sec)
Records: 1754  Duplicates: 0  Warnings: 0
Query OK, 1763 rows affected (0.378 sec)
Records: 1763  Duplicates: 0  Warnings: 0

```

3.5. 两端数据量核对

<pre> root@mysql01:~# [tpcc_test]> root@mysql01:~# [tpcc_test]> show tables; +-----+ Tables_in_tpcc_test +-----+ customer district history item new_orders order_line orders stock warehouse +-----+ 9 rows in set (0.003 sec) root@mysql01:~# [tpcc_test]> select count(*) from customer; +-----+ count(*) +-----+ 300000 +-----+ 1 row in set (0.982 sec) root@mysql01:~# [tpcc_test]> select count(*) from district; +-----+ count(*) +-----+ 100 +-----+ 1 row in set (0.065 sec) root@mysql01:~# [tpcc_test]> select count(*) from history; +-----+ count(*) +-----+ 283798 +-----+ 1 row in set (0.363 sec) root@mysql01:~# [tpcc_test]> select count(*) from item; +-----+ count(*) +-----+ 100000 +-----+ 1 row in set (0.189 sec) </pre>	<pre> root@mysql02:~# [tpcc_test]> root@mysql02:~# [tpcc_test]> show tables; +-----+ Tables_in_tpcc_test +-----+ customer district history item new_orders order_line orders stock warehouse +-----+ 9 rows in set (0.00 sec) root@mysql02:~# [tpcc_test]> select count(*) from customer; +-----+ count(*) +-----+ 300000 +-----+ 1 row in set (0.12 sec) root@mysql02:~# [tpcc_test]> select count(*) from district; +-----+ count(*) +-----+ 100 +-----+ 1 row in set (0.00 sec) root@mysql02:~# [tpcc_test]> select count(*) from history; +-----+ count(*) +-----+ 300000 +-----+ 1 row in set (0.15 sec) root@mysql02:~# [tpcc_test]> select count(*) from item; +-----+ count(*) +-----+ 100000 +-----+ 1 row in set (0.02 sec) </pre>
--	---

4. 使用 datax 迁移数据

4.1. 安装部署 datax

下载链接: <http://datax-opensource.oss-cn-hangzhou.aliyuncs.com/datax.tar.gz>

```
[root@master datax]# wget http://datax-opensource.oss-cn-hangzhou.aliyuncs.com/datax.tar.gz
```

解压安装包:

```
[root@master datax]# tar xvzf datax.tar.gz
```

删除 datax 中的隐藏文件:

```
[root@master plugin]# find /data/datax/datax/plugin -name ".*" |xargs rm -rf
```

运行 datax 自带的测试 job 出现报错: File '/usr/local/datax/job/job.json' does not exist

```
[root@master datax]# bin/datax.py /usr/local/datax/job/job.json
DataX (DATAX-OPENSOURCE-3.0), From Alibaba !
Copyright (C) 2010-2017, Alibaba Group. All Rights Reserved.

2022-02-14 14:13:57.582 [main] ERROR Engine -
orgDataX引擎分析,该任务最近报错的原因是:
com.alibabigroup.datax.common.exception.DataXException: Code:[Framework-03], Description:[DataX引擎配置错误, 该问题通常是由于DataX安装错误引起, 请联系您的运维解决 .], , 获取作业配置信息失败:/usr/local/datax/job/job.json
Caused by: java.io.FileNotFoundException: File '/usr/local/datax/job/job.json' does not exist
at org.apache.commons.io.FileUtils.readFileToString(FileUtils.java:299)
at org.apache.commons.io.FileUtils.openInputStream(FileUtils.java:174)
at org.apache.commons.io.FileUtils.readInputStream(FileUtils.java:1748)
at com.alibaba.datax.core.util.ConfigParser.getJobContent(ConfigParser.java:106)
at com.alibaba.datax.core.util.ConfigParser.parseJobConfig(ConfigParser.java:74)
at com.alibaba.datax.core.util.ConfigParser.parse(ConfigParser.java:26)
at com.alibaba.datax.core.Engine.entry(Engine.java:137)
at com.alibaba.datax.core.Engine.main(Engine.java:124)
at com.alibaba.datax.common.exception.DataXException.asDataXException(DataXException.java:33)
at com.alibaba.datax.core.util.ConfigParser.getJobContent(ConfigParser.java:106)
at com.alibaba.datax.core.util.ConfigParser.parseJobConfig(ConfigParser.java:74)
at com.alibaba.datax.core.util.ConfigParser.parse(ConfigParser.java:26)
at com.alibaba.datax.core.Engine.entry(Engine.java:137)
at com.alibaba.datax.core.Engine.main(Engine.java:124)
Caused by: java.io.FileNotFoundException: File '/usr/local/datax/job/job.json' does not exist
at org.apache.commons.io.FileUtils.openInputStream(FileUtils.java:299)
at org.apache.commons.io.FileUtils.readFileToString(FileUtils.java:1711)
at org.apache.commons.io.FileUtils.readInputStream(FileUtils.java:1748)
at com.alibaba.datax.core.util.ConfigParser.getJobContent(ConfigParser.java:106)
... 4 more
```

解决方式：出现报错的原因是解压路径的问题，可以做个软链接：

```
[root@master datax]# ln -s /data/datax/datax /usr/local/datax
```

再次运行测试 job

```
[root@master datax]# cd /usr/local/datax/
```

```
[root@master datax]# bin/datax.py /usr/local/datax/job/job.json
```

测试通过：

```
[root@master datax]# bin/datax.py /usr/local/datax/job/job.json
DataX (DATAX-OPENSOURCE-3.0), From Alibaba !
Copyright (C) 2010-2017, Alibaba Group. All Rights Reserved.

2022-02-14 14:18:36.397 [main] INFO  VMInfo# operatingSystem class => sun.management.OperatingSystemImpl
2022-02-14 14:18:36.406 [main] INFO  Engine  the machine info =>

osInfo: Oracle Corporation 1.8 25.161-b14
jvmInfo:       Linux amd64 3.10.0-862.el7.x86_64
cpu num:      16

totalPhysicalMemory:   -0.00G
freePhysicalMemory:   -0.00G
maxFileDescriptorCount: -1
currentOpenFileDescriptorCount: -1

GC Names          [PS MarkSweep, PS Scavenge]

MEMORY_NAME           | allocation_size           | init_size
PS Eden Space         | 256.00MB                 | 256.00MB
Code Cache            | 240.00MB                 | 2.44MB
Compressed Class Space | 1,024.00MB               | 0.00MB
PS Survivor Space    | 42.50MB                  | 42.50MB
PS Old Gen            | 683.00MB                 | 683.00MB
Metaspace             | -0.00MB                  | 0.00MB

2022-02-14 14:18:36.422 [main] INFO  Engine -
{
  "content": [
    {
      "reader": {
        "name": "streamreader",
        "parameter": {
          "column": [
            {
              "type": "string",
              "value": "DataX"
            },
            {
              "type": "long",
              "value": 19890604
            },
            {
              "type": "date",
              "value": "1989-06-04 00:00:00"
            },
            {
              "type": "bool",
              "value": true
            }
          ]
        }
      }
    }
  ]
}
```

```

        {
            "type": "bytes",
            "value": "test"
        }
    ],
    "sliceRecordCount": 100000
},
"writer": {
    "name": "streamwriter",
    "parameter": {
        "encoding": "UTF-8",
        "print": false
    }
}
},
"setting": {
    "errorLimit": {
        "percentage": 0.02,
        "record": 0
    },
    "speed": {
        "byte": 10485760
    }
}
}

2022-02-14 14:18:36.440 [main] WARN Engine priority set to 0, because NumberFormatException, the value is: null
2022-02-14 14:18:36.442 [main] INFO PerfTrace - PerfTrace jobId:job_-, isEnabled=false, priority=0
2022-02-14 14:18:36.443 [main] INFO JobContainer - JobContainer starts job.
2022-02-14 14:18:36.444 [main] INFO JobContainer - Set jobId = 0
2022-02-14 14:18:36.459 [job-0] INFO JobContainer - JobContainer starts to do prepare ...
2022-02-14 14:18:36.459 [job-0] INFO JobContainer - DataX Reader Job [streamreader] do prepare work .
2022-02-14 14:18:36.460 [job-0] INFO JobContainer - DataX Reader Job [streamreader] do prepare work .
2022-02-14 14:18:36.460 [job-0] INFO JobContainer - JobContainer starts to do split .
2022-02-14 14:18:36.461 [job-0] INFO JobContainer - Job set Max-Byte-Speed to 10485760 bytes.
2022-02-14 14:18:36.462 [job-0] INFO JobContainer - DataX Reader Job [streamreader] splits to [] tasks.
2022-02-14 14:18:36.462 [job-0] INFO JobContainer - JobContainer starts to do split .
2022-02-14 14:18:36.480 [job-0] INFO JobContainer - JobContainer starts to do schedule ...
2022-02-14 14:18:36.485 [job-0] INFO JobContainer - Scheduler starts [1] taskGroups.
2022-02-14 14:18:36.487 [job-0] INFO JobContainer - Running by standalone Mode.
2022-02-14 14:18:36.499 [taskGroup-0] INFO TaskGroupContainer - taskGroupIndex: start [1] channels for [1] tasks.
2022-02-14 14:18:36.499 [taskGroup-0] INFO TaskGroupContainer - taskGroupIndex: set recordSpeedLimit to -1. No bps activated.
2022-02-14 14:18:36.499 [taskGroup-0] INFO Channel - Channel set recordSpeedLimit to -1. No bps activated.
2022-02-14 14:18:36.509 [taskGroup-0] INFO TaskGroupContainer - taskGroup[0] taskId[0] attemptCount[1] is started
2022-02-14 14:18:36.509 [taskGroup-0] INFO TaskGroupContainer - taskGroup[0] taskId[0] is succeeded, used[302]ms
2022-02-14 14:18:36.510 [taskGroup-0] INFO TaskGroupContainer - taskGroup[0] taskId[0] is completed
2022-02-14 14:18:36.516 [job-0] INFO StandaloneJobContainerCommunicator - Total 100000 records, 2600000 bytes | Speed 253.91KB/s, 10000 records/s | Error 0 records, 0 bytes | All Task WaitWriterTime 0.015s | All Task WaitReaderTime 0.027s | Percentage 100.00%
2022-02-14 14:18:46.519 [job-0] INFO HookInvoker - No hook invoked, because base dir not exists or is a file: /data/datax/datax/hook
2022-02-14 14:18:46.520 [job-0] INFO JobContainer -
[total cpu info]=
| totalCpuInfo=-----+-----+-----+
| averageCpu          | maxDeltaCpu      | minDeltaCpu
| -1.00%              | -1.00%           | -1.00%
-----+-----+-----+
[total gc info]=
NAME          | totalGCCount   | maxDeltaGCCount | minDeltaGCCount | totalGCTime     | maxDeltaGCTime  | minDeltaGCTime
PS MarkSweep  | 0              | 0              | 0              | 0.000s         | 0.000s         | 0.000s
PS Scavenge   | 0              | 0              | 0              | 0.000s         | 0.000s         | 0.000s

2022-02-14 14:18:46.520 [job-0] INFO JobContainer - PerfTrace not enable!
2022-02-14 14:18:46.521 [job-0] INFO StandaloneJobContainerCommunicator - Total 1000000 records, 26000000 bytes | Speed 253.91KB/s, 10000 records/s | Error 0 records, 0 bytes | All Task WaitWriterTime 0.015s
# All Task WaitReaderTime 0.027s | Percentage 100.00%
2022-02-14 14:18:46.521 [job-0] INFO JobContainer -
任务启动时间 : 2022-02-14 14:18:36
任务结束时间 : 2022-02-14 14:18:46
耗时 : 00:00:10
任务平均读数 : 253.91KB/s
记录写入速度 : 10000rec/s
读出记录数 : 1000000
读写失败总数 : 0

```

```

[root@master datax]#
2022-02-14 14:18:46.519 [job-0] INFO HookInvoker - No hook invoked, because base dir not exists or is a file: /data/datax/datax/hook
2022-02-14 14:18:46.520 [job-0] INFO JobContainer -
[total cpu info]=
| totalCpuInfo=-----+-----+-----+
| averageCpu          | maxDeltaCpu      | minDeltaCpu
| -1.00%              | -1.00%           | -1.00%
-----+-----+-----+
[total gc info]=
NAME          | totalGCCount   | maxDeltaGCCount | minDeltaGCCount | totalGCTime     | maxDeltaGCTime  | minDeltaGCTime
PS MarkSweep  | 0              | 0              | 0              | 0.000s         | 0.000s         | 0.000s
PS Scavenge   | 0              | 0              | 0              | 0.000s         | 0.000s         | 0.000s

2022-02-14 14:18:46.520 [job-0] INFO JobContainer - PerfTrace not enable!
2022-02-14 14:18:46.521 [job-0] INFO StandaloneJobContainerCommunicator - Total 1000000 records, 26000000 bytes | Speed 253.91KB/s, 10000 records/s | Error 0 records, 0 bytes | All Task WaitWriterTime 0.015s
# All Task WaitReaderTime 0.027s | Percentage 100.00%
2022-02-14 14:18:46.521 [job-0] INFO JobContainer -
任务启动时间 : 2022-02-14 14:18:36
任务结束时间 : 2022-02-14 14:18:46
耗时 : 00:00:10
任务平均读数 : 253.91KB/s
记录写入速度 : 10000rec/s
读出记录数 : 1000000
读写失败总数 : 0

```

4. 2. 生成模板文件

[root@master datax]# python /usr/local/datax/bin/datax.py -r mysqlreader -w oceanbasev10writer > /usr/local/datax/job/my2ob.json

4. 3. 修改模板文件

[root@master datax]# vim job/my2ob.json

```
{
    "job": {
        "setting": {
            "speed": {
                "channel": 4
            },
            "errorLimit": {
                "record": 0,
                "percentage": 0.1
            }
        },
        "content": [
            {

```

```

"reader": {
    "name": "mysqlreader",
    "parameter": {
        "username": "root",
        "password": "mysql",
        "column": [
            "*"
        ],
        "connection": [
            {
                "table": [
                    "new_orders"
                ],
                "jdbcUrl": [
                    "jdbc:mysql://192.168.101.85:3306/tpcc_test?useUnicode=true&characterEncoding=utf8"
                ]
            }
        ]
    }
},
"writer": {
    "name": "oceanbasev10writer",
    "parameter": {
        "obWriteMode": "insert",
        "column": [
            "*"
        ],
        "connection": [
            {
                "jdbcUrl": [
                    "jdbc:oceanbase://192.168.101.66:2883/tpcc_test?useLocalSessionState=true&allowBatch=true&allowMultiQueries=true&rewriteBatchedStatements=true",
                    "table": [
                        "new_orders"
                    ]
                }
            ],
            "username": "root@sys#obdemo",
            "password": "root",
            "writerThreadCount": 10,
            "batchSize": 1000,
            "memstoreThreshold": "0.9"
        }
    }
}

```

```

        }
    ]
}
}

```

4.4. 执行数据同步:

[admin@master datax]\$ bin/datax.py /usr/local/datax/job/my2ob.json

```

[admin@master datax]$ bin/datax.py /usr/local/datax/job/my2ob.json
DataX (DATA-X-OPENSOURCE-3.0). From Alibaba !
Copyright (C) 2010-2017, Alibaba Group. All Rights Reserved.

2022-03-02 15:10:37.628 [main] INFO  VMInfo - VMInfo# operatingSystem class => sun.management.OperatingSystemImpl
2022-03-02 15:10:37.630 [main] INFO  Engine - the machine info =>
osInfo: Oracle Corporation 1.8.25.161-b14
jvmInfo:           Linux amd64 3.10.0-862.el7.x86_64
cpu num:          16

totalPhysicalMemory: -0.00G
freePhysicalMemory: -0.00G
maxFileDescriptorCount: -1
currentOpenFileDescriptorCount: -1

GC Names      [PS MarkSweep, PS Scavenge]
MEMORY_NAME           allocation_size      init_size
PS Eden Space         256.00MB          256.00MB
Code Cache            240.00MB          2.44MB
Compressed Class Space 1,024.00MB        0.00MB
PS Survivor Space    42.50MB          42.50MB
PS Old Gen            683.00MB          683.00MB
Metaspace             -0.00MB          0.00MB

2022-03-02 15:10:37.653 [main] INFO  Engine -
{
    "content": [
        {
            "reader": {
                "name": "mysqlreader",
                "parameter": {
                    "column": [
                        "*"
                    ],
                    "connection": [
                        {
                            "jdbcUrl": [
                                "jdbc:mysql://192.168.101.85:3306/tppc_test?useUnicode=true&characterEncoding=utf8"
                            ],
                            "table": [
                                "new_orders"
                            ]
                        }
                    ],
                    "password": "*****",
                    "username": "root"
                }
            },
            "writer": {
                "name": "oceanbasev10writer",
                "parameter": {
                    "connection": [
                        {
                            "username": "root"
                        },
                        {
                            "writer": {
                                "name": "oceanbasev10writer",
                                "parameter": {
                                    "batchSize": 1000,
                                    "column": [
                                        "*"
                                    ],
                                    "connection": [
                                        {
                                            "jdbcUrl": "jdbc:oceanbase://192.168.101.66:2883/tppc_test?useLocalSessionState=true&allowMultiQueries=true&rewriteBatchedStatements=true",
                                            "table": [
                                                "new_orders"
                                            ]
                                        }
                                    ],
                                    "memstoreThreshold": "0.9",
                                    "obWriterMode": "insert",
                                    "password": "*****",
                                    "username": "rootSys$sysdbdemo",
                                    "writerThreadCount": 10
                                }
                            }
                        }
                    ],
                    "errorLimit": {
                        "percentage": 0.1,
                        "record": 0
                    },
                    "speed": {
                        "channel": 4
                    }
                }
            }
        }
    ],
    "setting": {
        "errorLimit": {
            "percentage": 0.1,
            "record": 0
        }
    }
},
"job": {
    "id": "1",
    "name": "Job 1"
},
"version": "1.0"
}

2022-03-02 15:10:37.668 [main] WARN  Engine - priority set to 0, because NumberFormatException, the value is: null
2022-03-02 15:10:37.670 [main] INFO  JobContainer - PerfEnv#traceId=job_1, isEnabled=false, priority=0
2022-03-02 15:10:37.670 [main] INFO  JobContainer - DataX JobContainer starts job.
2022-03-02 15:10:37.672 [main] INFO  JobContainer - Set jobid: 0
2022-03-02 15:10:37.980 [job-0] INFO  OriginalConfPretreatmentUtil - Available jdbcUrl:jdbc:mysql://192.168.101.85:3306/tppc_test?useUnicode=true&characterEncoding=utf8&yearIsDateType=false&zeroDateTimeBehavior=convertToNull&allowMultiQueries=true
2022-03-02 15:10:37.981 [job-0] INFO  OriginalConfPretreatmentUtil - 他的配置文件中的列配置存在一定的风险，因为你未配置读取数据库表的列，当您的表字段个数、类型有变动时，可能影响任务正确性甚至会运行出错。请检查你的配置并进行修改。
2022-03-02 15:10:38.277 [job-0] INFO  DBUtils - value for query [SHOW VARIABLES LIKE '%ob_compatibility_mode%'] is [MYSQL]
2022-03-02 15:10:38.277 [job-0] INFO  OriginalConfPretreatmentUtil - table:[new_orders] all columns:[no_o_id,no_d_id,no_w_id]

2022-03-02 15:10:38.277 [job-0] WARN  OriginalConfPretreatmentUtil - 他的配置文件中的列信息存在风险，因为你配置的写入数据库表的列为*, 当您的表字段个数、类型有变动时，可能影响任务正确性甚至会运行出错。请检查你的配置并进行修改。
2022-03-02 15:10:38.278 [job-0] INFO  OriginalConfPretreatmentUtil - Write data [
    {
        "id": "1",
        "value": "1"
    }
], which jdbcUrl like [jdbc:oceanbase://192.168.101.66:2883/tppc_test?useLocalSessionState=true&allowMultiQueries=true&rewriteBatchedStatements=true]
2022-03-02 15:10:38.279 [job-0] INFO  JobContainer - DataX Reader Job [mysqlreader] do prepare work ...
2022-03-02 15:10:38.279 [job-0] INFO  JobContainer - DataX Writer Job [oceabasev10writer] do prepare work ...
2022-03-02 15:10:38.298 [job-0] INFO  JobContainer - JobContainer starts to do split ...
2022-03-02 15:10:38.298 [job-0] INFO  JobContainer - JobContainer starts to do split ...
2022-03-02 15:10:38.299 [job-0] INFO  JobContainer - Job set channel-Number to 4 channels.

```

4.5. 两端数据核对

确认两端数据同步一致，没有出现异常，迁移完成。

```
[ladmin@master data]$ obclient -h 192.168.101.66 -uroot@sys#obdemo -P2883 -p -A tpcc_test
Welcome to the OceanBase. Commands end with ; or \g.
Your MySQL connection id is 34
Server version: 5.6.25-rc-log OceanBase 3.1.1 (r14c8615943cb2d25a6f7bf8bdf8677a13a217090a05e) (Built Oct 21 2021 10:33:33)

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MySQL [tpcc_test]> select count(*) from new_orders;
+-----+
| count() |
+-----+
| 450000 |
+-----+
1 row in set (0.050 sec)

[roottidemo ~]#
[roottidemo ~]#
[roottidemo ~]# mysql -uroot -p -e "select count(*) from tpcc_test.new_orders"
Enter password:
+-----+
| count(*) |
+-----+
| 450000 |
+-----+
[roottidemo ~]#
```

4. 6. Datax 数据迁移过程中的报错

1、 JSON 格式报错：

```
[admin@master data]$ bin/datas.py /usr/local/data/job/myJob.json
DataX-OPENSOURCE-3.0, From Alibaba !
Copyright (C) 2010-2017, Alibaba Group. All Rights Reserved.

2022-03-02 14:24:11,661 [main] ERROR Engine -
[引擎智能分析, 请参考最可能的错误原因是:
com.alibaba.datas.common.exception.DataXException: Code:[Common-00], Describe:[您提供的配置文件存在错误信息, 请检查您的作业配置 -] - 配置信息错误, 您提供的配置信息不是合法的JSON格式; syntax error, pos 2 .
请按照JSON的son规则进行修改]
com.alibaba.datas.common.exception.DataXException: DataXException(DataXException.java:26)
    at com.alibaba.datas.common.util.Configuration.(Configuration.java:106)
    at com.alibaba.datas.common.util.Configuration.from(Configuration.java:79)
    at com.alibaba.datas.core.util.Configuration.parseJobConfig(configParser.java:75)
    at com.alibaba.datas.core.util.Configuration.parseJobConfig(configParser.java:20)
    at com.alibaba.datas.core.Parser.parseJobConfig(Parser.java:137)
    at com.alibaba.datas.core.Engine.entry(Engine.java:137)
    at com.alibaba.datas.core.Engine.main(Engine.java:204)
```

解决方式：参阅 DataX 文档，严格按照规定的格式进行修改即可；

2、源端地址填写错误：

```
2023-03-02 14:30:39.565 [main] WARN DriverManager - Test connection of [jdbc:mysql://192.168.1.10:3306/rpc_test] failed, for Code [MySQLErrCode-02], Description:[驱动器连接到IP地址或Port失败或Port是否正确。如果是在中心用户帐户通过DBA从帐户上读取的IP和PORT信息和操作的当前实际信息是一致的。]。一具详细错误信息为: com.mysql.jdbc.exceptions.jdbc4.CommunicationsException: Communications link failure

The last packet sent successfully to the server was 0 milliseconds ago. The driver has not received any packets from the server.

2023-03-02 14:30:39.569 [main] ERROR RetryUtil - Exception when calling callable, actualMsg[DataX无法连接对应的数据库。可能原因是: 1) 配置的ip/port/database/jdbc错误, 无法连接。2) 配置的username/password错误, 权限失败。请稍后尝试连接。]

java.lang.RuntimeException: com.mysql.jdbc.exceptions.jdbc4.CommunicationsException: Communications link failure
    at com.alibaba.data.plugin.rdbms.util.ObUtil$12.call(ObUtil.java:11) [plugin-rdbms-util-0.0.1-SNAPSHOT.jar]
    at com.alibaba.data.plugin.rdbms.util.ObUtil$12.call(ObUtil.java:5) [plugin-rdbms-util-0.0.1-SNAPSHOT.jar]
    at com.alibaba.data.common.util.RetryUtil.retryWithExecuteWith(RetryUtil.java:39) [data-common-0.0.1-SNAPSHOT.jar]
    at com.alibaba.data.common.util.RetryUtil.retryWith(RetryUtil.java:11) [data-common-0.0.1-SNAPSHOT.jar]
    at com.alibaba.data.plugin.rdbms.util.ObUtil$chooseJdbcUrl(ObUtil.java:59) [plugin-rdbms-util-0.0.1-SNAPSHOT.jar]
    at com.alibaba.data.plugin.rdbms.util.ObUtil$chooseJdbcUrl(ObUtil.java:51) [plugin-rdbms-util-0.0.1-SNAPSHOT.jar]
    at com.alibaba.data.plugin.rdbms.reader.util.OriginalConfigPreTreatmentUtil.simpleConfig(OriginalConfigPreTreatmentUtil.java:92) [plugin-rdbms-util-0.0.1-SNAPSHOT.jar]
    at com.alibaba.data.plugin.rdbms.reader.util.OriginalConfigPreTreatmentUtil.doPreTreatment(OriginalConfigPreTreatmentUtil.java:39) [plugin-rdbms-util-0.0.1-SNAPSHOT.jar]
    at com.alibaba.data.plugin.rdbms.reader.util.OriginalConfigPreTreatmentUtil.preTreatment(OriginalConfigPreTreatmentUtil.java:33) [plugin-rdbms-util-0.0.1-SNAPSHOT.jar]
    at com.alibaba.data.plugin.reader.MySqlReader$2db.init(MysqlReader.java:37) [mysql-reader-0.0.1-SNAPSHOT.jar]
    at com.alibaba.data.core.job.JobContainer$1.jobRead(JobContainer.java:67) [data-core-0.0.1-SNAPSHOT.jar]
    at com.alibaba.data.core.job.JobContainer$1.jobRead(JobContainer.java:303) [data-core-0.0.1-SNAPSHOT.jar]
    at com.alibaba.data.core.Engine.startEngine(Engine.java:92) [data-core-0.0.1-SNAPSHOT.jar]
    at com.alibaba.data.core.Engine.startEngine(Engine.java:17) [data-core-0.0.1-SNAPSHOT.jar]
    at com.alibaba.data.core.Engine.startEngine(Engine.java:1) [data-core-0.0.1-SNAPSHOT.jar]

2023-03-02 14:30:40.569 [main] ERROR RetryUtil - Exception when call waitable, actualMsg[DataX无法连接对应的数据库。可能原因是: 1) 配置的ip/port/database/jdbc错误, 无法连接。2) 配置的username/password错误, 权限失败。请稍后尝试连接。]

java.lang.RuntimeException: com.mysql.jdbc.exceptions.jdbc4.CommunicationsException: Communications link failure
    at com.alibaba.data.plugin.rdbms.util.ObUtil$12.call(ObUtil.java:11) [plugin-rdbms-util-0.0.1-SNAPSHOT.jar]
    at com.alibaba.data.plugin.rdbms.util.ObUtil$12.call(ObUtil.java:5) [plugin-rdbms-util-0.0.1-SNAPSHOT.jar]
```

解决方式：排查报错，发现是端口号写错了，3306 写成了 3308，更改即可；

3、用户名填写错误

```
2022-03-02 15:01:11.814 [job-0] INFO OriginalConfPreTreatmentUtil - Available jdbcUrl:jdbc:mysql://192.168.101.0:3306/tpcc_test?useUnicode=true&characterEncoding=UTF8&yearIsDateType=false&zeroDateTimeBeta
2022-03-02 15:01:11.815 [job-0] WARN OriginalConfPreTreatmentUtil - 部分配置存在一定的风险。因为尚未配置读取数据库表的列，当他的表字段个数、类型有变动时，可能影响任务正确性甚至会运行出错。请
2022-03-02 15:01:11.826 [job-0] INFO DBUtil - 这是 ob1_0 jdbc url.
2022-03-02 15:01:11.826 [job-0] INFO DBUtil - this is ob1_0 jdbc url. user@obdemo:oracle@root@sys#obdemo url@dbcoceanbase://192.168.101.66:2883/tpcc?useLocalSessionState=true&allowBatch=true&allowMulti
2022-03-02 15:01:12.030 [job-0] ERROR RetrUtil - Exception when calling callable. 异常Msg:[Code:[DBUtilErrorCode-10], Description:[连接数据库失败。请检查您的 账号、密码、数据库名称、IP、Port或者向 DBA 寻求帮助(注意网络安全环境。]]。 - 具体错误信息为: com.alipay.oceanbase.jdbc.exceptions.MySQLSyntaxErrorException: Access denied for user 'obdemo'@'oracle.root@xxx.xxx.xxx.xxx' (using password: YES)
com.alibaba.data.common.exception.DataAccessException: [DataAccessException.java:26] - [com.alibaba.data.common.exception.DataAccessException@0x1-SNAPSHOT.jar:na]
at com.alibaba.data.plugin.rdbms.util.RdbmsException.asComException(RdbmsException.java:36) ~[plugin:rdbms-util-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.plugin.rdbms.util.DBUtil.access$000(DBUtil.java:394) ~[plugin:rdbms-util-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.plugin.rdbms.util.DBUtil.access$000(DBUtil.java:22) ~[plugin:rdbms-util-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.plugin.rdbms.util.DBUtil$5.call(DBUtil.java:322) ~[plugin:rdbms-util-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.common.util.RetryUtil$Retry.call(RetryUtil.java:154) ~[data-common-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.common.util.RetryUtil$Retry.retry(RetryUtil.java:111) ~[data-common-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.common.util.RetryUtil$Retry.retry(RetryUtil.java:111) ~[data-common-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.plugin.rdbms.util.DBUtil.getConnection(DBUtil.java:159) ~[plugin:rdbms-util-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.plugin.rdbms.util.DBUtil.getConnection(DBUtil.java:803) ~[plugin:rdbms-util-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.common.core.engine.Engine$1.get(Engine.java:104) ~[core-engine-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.common.core.engine.Engine$1.get(Engine.java:204) ~[core-engine-0.0.1-SNAPSHOT.jar:na]
2022-03-02 15:01:13.040 [job-0] ERROR RetrUtil - Exception when calling callable. 请尝试执行第1次重试。本次重试计划等待[1000]ms, 实际等待[1000]ms, 异常Msg:[Code:[DBUtilErrorCode-10], Description:[连接数据
库失败。请检查您的 账号、密码、数据库名称、IP、Port或者向 DBA 寻求帮助(注意网络安全环境。]]。 - 具体错误信息为: com.alipay.oceanbase.jdbc.exceptions.MySQLSyntaxErrorException: Access denied for user 'obde
mo'@'oracle.root@xxx.xxx.xxx.xxx' (using password: YES)
```

解决方式：删除 jdbcURL 中的集群名，把 username 更改为 root@sys#obdemo 即可；

4、数据库名称填错

```
2022-03-02 15:02:20.940 [job-0] INFO OriginalConfPreTreatmentUtil - Available jdbcUrl:jdbc:mysql://192.168.101.0:3306/tpcc_test?useUnicode=true&characterEncoding=UTF8&yearIsDateType=false&zeroDateTimeBeta
2022-03-02 15:02:20.941 [job-0] WARN OriginalConfPreTreatmentUtil - 部分配置存在一定的风险。因为尚未配置读取数据库表的列，当他的表字段个数、类型有变动时，可能影响任务正确性甚至会运行出错。请
2022-03-02 15:02:20.941 [job-0] ERROR RetrUtil - Exception when calling callable. 异常Msg:[Code:[DBUtilErrorCode-10], Description:[连接数据库失败。请检查您的 账号、密码、数据库名称、IP、Port或者向 DBA 寻求帮助(注意网络安全环境。]]。 - 具体错误信息为: com.alipay.oceanbase.jdbc.exceptions.MySQLSyntaxErrorException: Unknown database 'tpcc'
com.alibaba.data.common.exception.DataAccessException: [DataAccessException.java:26] - [com.alibaba.data.common.exception.DataAccessException@0x1-SNAPSHOT.jar:na]
at com.alibaba.data.plugin.rdbms.util.RdbmsException.asComException(RdbmsException.java:36) ~[plugin:rdbms-util-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.plugin.rdbms.util.DBUtil.connect(DBUtil.java:394) ~[plugin:rdbms-util-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.plugin.rdbms.util.DBUtil.access$000(DBUtil.java:22) ~[plugin:rdbms-util-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.plugin.rdbms.util.DBUtil.access$000(DBUtil.java:22) ~[plugin:rdbms-util-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.plugin.rdbms.util.DBUtil$5.call(DBUtil.java:322) ~[plugin:rdbms-util-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.plugin.rdbms.util.DBUtil$5.call(DBUtil.java:319) ~[plugin:rdbms-util-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.common.util.RetryUtil$Retry.call(RetryUtil.java:154) ~[data-common-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.common.util.RetryUtil$Retry.retry(RetryUtil.java:111) ~[data-common-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.common.util.RetryUtil$Retry.retry(RetryUtil.java:111) ~[data-common-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.plugin.rdbms.util.DBUtil.getConnection(DBUtil.java:159) ~[plugin:rdbms-util-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.plugin.rdbms.util.DBUtil.getConnection(DBUtil.java:803) ~[plugin:rdbms-util-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.common.core.engine.Engine$1.get(Engine.java:104) ~[core-engine-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.common.core.engine.Engine$1.get(Engine.java:204) ~[core-engine-0.0.1-SNAPSHOT.jar:na]
2022-03-02 15:02:20.941 [job-0] ERROR RetrUtil - Exception when calling callable. 请尝试执行第1次重试。本次重试计划等待[1000]ms, 实际等待[1000]ms, 异常Msg:[Code:[DBUtilErrorCode-10], Description:[连接数据
库失败。请检查您的 账号、密码、数据库名称、IP、Port或者向 DBA 寻求帮助(注意网络安全环境。]]。 - 具体错误信息为: com.alipay.oceanbase.jdbc.exceptions.MySQLSyntaxErrorException: Unknown database 'tpcc'
```

解决方式：将数据库名称更改为正确的 tpcc_test；

5、写入 OB 时报错：

```
2022-03-02 15:03:16.625 [job-0] INFO RetrUtil - value for query [SHOW VARIABLES LIKE 'ob_compatibility_mode'] is [MySQL]
2022-03-02 15:03:16.626 [job-0] ERROR JobContainer - initJobContainerWithWriter failed.
com.alibaba.data.common.exception.DataAccessException: [Code:[DBUtilErrorCode-06], Description:[执行数据库 Sel 失败。请检查您的 配置的 column/table/where/querySql或者向 DBA 寻求帮助。]]。 - 执行的SQL为: select * from new_orders where l2=1
com.alibaba.data.common.exception.DataAccessException: [Code:[DBUtilErrorCode-06], Description:[执行数据库 Sel 失败。请检查您的 配置的 column/table/where/querySql或者向 DBA 寻求帮助。]]。 - 执行的SQL为: select * from new_orders where l2=1
at com.alibaba.data.plugin.rdbms.util.RdbmsUtil.executeQuery(RdbmsUtil.java:187) ~[plugin:rdbms-util-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.plugin.rdbms.util.RdbmsUtil.executeQuery(RdbmsUtil.java:187) ~[plugin:rdbms-util-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.plugin.rdbms.writer.util.OriginalConfPreTreatmentUtil.doRetract(OriginalConfPreTreatmentUtil.java:105) ~[plugin:rdbms-util-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.plugin.rdbms.writer.util.OriginalConfPreTreatmentUtil.doRetract(OriginalConfPreTreatmentUtil.java:35) ~[plugin:rdbms-util-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.plugin.rdbms.writer.CommondDbmriter.java:41 ~[commondbmriter-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.plugin.rdbms.writer.CommondDbmriter$1.get(CommondDbmriter.java:704) ~[commondbmriter-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.core.job.JobContainer.init(JobContainer.java:304) ~[data-core-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.core.job.JobContainer.init(JobContainer.java:118) ~[data-core-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.core.main.Engine.main(Engine.java:171) ~[data-core-0.0.1-SNAPSHOT.jar:na]
at com.alibaba.data.core.main.Engine.main(Engine.java:204) ~[data-core-0.0.1-SNAPSHOT.jar:na]
2022-03-02 15:03:16.626 [job-0] INFO StandaloneOBContainerCommunicator - Total 0 records, 0 bytes | Speed 0 B/s, 0 records/s | Error 0 records, 0 bytes | All Task WaitWriterTime 0.000s | All Task WaitRe
sponseTime 0.000s | Pending 0 tasks
2022-03-02 15:03:16.770 [job-0] INFO StandaloneOBContainerCommunicator - Total 0 records, 0 bytes | Speed 0 B/s, 0 records/s | Error 0 records, 0 bytes | All Task WaitWriterTime 0.000s | All Task WaitRe
sponseTime 0.000s | Pending 0 tasks
2022-03-02 15:03:16.771 [job-0] ERROR Engine -
```

解决方式：要提前在 OB 数据库中创建 tpcc_test.new_orders 这张表，并与 MySQL 数据库中表结构保持一致，可直接导入 MySQL 的表结构；