Assignment 11.1

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Transfer data between Mysql and HDFS (Import and Export) using Sqoop

Import: Transfer of data from Mysql to HDFS

Steps:

• Create table in Mysql

create database assignment11; use assignment11; create table employee (id int, name varchar(20), age int, skill varchar(20), salary integer(10));

```
mysql> show databases;
 Database
  information schema
  db1
  metastore
  mysql
 test
6 rows in set (0.00 sec)
mysql> create database assignment11;
Query OK, 1 row affected (0.00 sec)
mysql> use assignment11;
Database changed
mysql> create table employee
    -> (id int, name varchar(20),
-> age int, skill varchar(20),
-> salary integer(10));
Query OK, 0 rows affected (0.01 sec)
mysql> show databases;
 Database
 information schema
  assignment11
  db1
  metastore
  mysql
  test
 rows in set (0.00 sec)
```

Insert Data to created table: 'employee'

```
insert into employee values(1, 'Mohan',25,'Big Data & Hadoop',30000); insert into employee values(2, 'Ramu',27,'Al',50000); insert into employee values(3, 'Ravi',30,'Java',60000); insert into employee values(4, 'Akshith',22,'Automation',35000); insert into employee values(5, 'Shyam',35,'C',40000); insert into employee values(6, 'Priya',28,'.Net',50000); insert into employee values(7, 'Madhu',27,'DBA',70000);
```

Grant all privileges to root user and commit the data.

```
grant all on *.* to 'root'@'localhost' with grant option; flush privileges; commit; exit;
```

```
mysql> select * from employee;
Empty set (0.00 sec)
mysql> insert into employee values(1, 'Mohan',25,'Big Data & Hadoop',30000);
Query OK, 1 row affected (0.00 sec)
mysql> insert into employee values(2, 'Ramu',27,'AI',50000);
Query OK, 1 row affected (0.00 sec)
mysql> insert into employee values(3, 'Ravi',30,'Java',60000);
Query OK, 1 row affected (0.00 sec)
mysql> insert into employee values(4, 'Akshith',22,'Automation',35000);
Query OK, 1 row affected (0.00 sec)
mysql> insert into employee values(5, 'Shyam',35,'C',40000);
Query OK, 1 row affected (0.00 sec)
mysql> insert into employee values(6, 'Priya',28,'.Net',50000);
Query OK, 1 row affected (0.00 sec)
mysql> insert into employee values(7, 'Madhu',27,'DBA',70000);
Query OK, 1 row affected (0.00 sec)
mysql> select * from employee;
                        skill
 id
       name
                                             salary
                 age
        Mohan
                     25 | Big Data & Hadoop
     1
                                                30000
     2
        Ramu
                     27
                          ΑI
                                                50000
     3
         Ravi
                     30
                          Java
                                                60000
     4
         Akshith
                                                35000
                     22
                          Automation
     5
        Shyam
                     35
                                                40000
                          С
        Priya
                                                50000
     6
                     28
                          .Net
        Madhu
                                                70000
                     27
                          DBA
7 rows in set (0.00 sec)
```

Use below query to import data from Mysql table 'employee' to HDFS directory 'sqoopout'

```
sqoop import --connect jdbc:mysql://localhost/assignment11 \
--username 'root' -P --table 'employee' --target-dir '/sqoopout' \
-m 1;
```

```
[acadgild@localhost ~]$ sqoop import --connect jdbc:mysql://localhost/assignmentll \
> --username 'root' -P --table 'employee' --target-dir '/sqoopout' \
> -m 1;
Warning: /usr/local/sqoop/../hcatalog does not exist! HCatalog jobs will fail.
Please set $HCAT_HOME to the root of your HCatalog installation.
Warning: /usr/local/sqoop/../accumulo does not exist! Accumulo imports will fail.
Please set $ACCUMULO_HOME to the root of your Accumulo installation.
Warning: /usr/local/sqoop/../zookeeper does not exist! Accumulo imports will fail.
Please set $ZOOKEEPER_HOME to the root of your Zookeeper installation.
Varning: /usr/local/sqoop/../zookeeper does not exist! Accumulo imports will fail.
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Please set $ZOOKEEPER_HOME to the root of your Zookeeper installation.
Varning: /usr/local/sqoop/../zookeeper installation.
Varning: /usr/local/sqoop/../zookeeper
```

Check the 'sqoopout' directory in HDFS

hadoop fs -ls /sqoopout hadoop fs -cat /sqoopout/part-m-00000

```
[acadgild@localhost bin]$ hadoop fs -ls /sqoopout
17/11/18 19:45:40 WARN util.NativeCodeLoader: Unable to load native-hadoop library for yo
applicable
Found 2 items
-rw-r--r-- 1 acadgild supergroup 0 2017-11-18 19:45 /sqoopout/_SUCCESS
-rw-r--r-- 1 acadgild supergroup 167 2017-11-18 19:45 /sqoopout/part-m-00000
[acadgild@localhost bin]$ hadoop fs -cat /sqoopout/part-m-00000
17/11/18 19:46:03 WARN util.NativeCodeLoader: Unable to load native-hadoop library for yo
applicable
1,Mohan,25,Big Data & Hadoop,30000
2,Ramu,27,AI,50000
3,Ravi,30,Java,60000
4,Akshith,22,Automation,35000
5,Shyam,35,C,40000
6,Priya,28,.Net,50000
7,Madhu,27,DBA,70000
[acadgild@localhost bin]$
```

Export: Transfer of data from HDFS to Mysql

Delete data from table 'employee' in Mysql

use db1;

delete from employee;

```
mysql> select * from employee;
       name
                          skill
  id
                                              | salary
                   age
       Mohan
                     25
                          Big Data & Hadoop
     1
                                                30000
     2
                     27
                           ΑI
                                                50000
         Ramu
     3
                     30
                                                60000
         Ravi
                          Java
     4
         Akshith
                     22
                           Automation
                                                35000
     5
                     35
         Shyam
                                                40000
     6
                      28
         Priya
                          .Net
                                                50000
       Madhu
                      27
                                                70000
                          DBA
 rows in set (0.00 sec)
mysql> delete from employee;
Query OK, 7 rows attected (0.00 sec)
mysql>
```

 Export data using below query from directory '/sqoopout' to table 'employee' in Mysql

sqoop export --connect jdbc:mysql://localhost/assignment11 --username 'root' - P --table 'employee' --export-dir '/sqoopout' --input-fields-terminated-by ',' -m 1 --columns id,name,age,salary

```
[acadgild@localhost ~]s sqoop export --connect jdbc:mysql://localhost/assignmentll --username 'root' -P --table 'employee' --export-dir '/sqoopout' --input-fields-terminated-by ',' -m 1 --columns id,name,age,skill,salary
Warning: /usr/local/sqoop/../hcatalog does not exist! HCatalog jobs will fail.
Please set sHCAT_HOME to the root of your HCatalog installation.
Warning: /usr/local/sqoop/../accumulo does not exist! Accumulo imports will fail.
Please set $ACCUMULO HOME to the root of your Accumulo installation.
Warning: /usr/local/sqoop/../zookeeper does not exist! Accumulo imports will fail.
Please set $CONKEEPER HOME to the root of your Zookeeper installation.
2017-11-18 19:58:37,495 INFO [main] sqoop.Sqoop: Running Sqoop version: 1.4.5
Enter password:
2017-11-18 19:58:38,634 INFO [main] manager.MySQLManager: Preparing to use a MySQL streaming resultset.
2017-11-18 19:58:38,634 INFO [main] manager.SqlManager: gode generation
2017-11-18 19:58:39,240 INFO [main] manager.SqlManager: Executing SQL statement: SELECT t.* FROM 'employee' AS t LIMIT 1
2017-11-18 19:58:39,343 INFO [main] manager.SqlManager: HANDOP MAPRED_HOME is /usr/local/hadopor-2.6.0
Note: /tmp/sqoop-acadgild/compile/Z5832r/b5b6cef8a745e0fif32a0f6aec/employee.java uses or overrides a deprecated API.
```

Check table 'employee' in Mysql for data.

```
mysql -u root use db1;
```

select * from employee;

```
mysql> select * from employee;
                          skill
                                              salary
 id
       name
                  age
        Mohan
                      25
                           Big Data & Hadoop
                                                 30000
     2
         Ramu
                      27
                           ΑI
                                                 50000
                      30
         Ravi
                           Java
                                                 60000
         Akshith
                      22
                           Automation
                                                 35000
     5
         Shyam
                      35
                                                 40000
                      28
                           .Net
                                                 50000
         Priya
         Madhu
                      27
                           DBA
                                                 70000
 rows in set (0.00 sec)
mysql> 🛮
```

Transfer data between Mysql and Hive (Import and Export only selected columns) using Sqoop.

Import: Transfer of data from Mysql to hive.

Create table in Mysql

create database assignment11; use assignment11; create table employee (id int, name varchar(20), age int, skill varchar(20), salary integer(10));

```
mysql> show databases;
 Database
  information schema
  db1
  metastore
  mysql
 test
6 rows in set (0.00 sec)
mysql> create database assignment11;
Query OK, 1 row affected (0.00 sec)
mysql> use assignment11;
Database changed
mysql> create table employee
    -> (id int, name varchar(20),
-> age int, skill varchar(20),
-> salary integer(10));
Query OK, 0 rows affected (0.01 sec)
mysql> show databases;
 Database
 information schema
  assignment11
  db1
  metastore
  mysql
  test
 rows in set (0.00 sec)
```

Insert Data to created table: 'employee'

```
insert into employee values(1, 'Mohan',25,'Big Data & Hadoop',30000); insert into employee values(2, 'Ramu',27,'Al',50000); insert into employee values(3, 'Ravi',30,'Java',60000); insert into employee values(4, 'Akshith',22,'Automation',35000); insert into employee values(5, 'Shyam',35,'C',40000); insert into employee values(6, 'Priya',28,'.Net',50000); insert into employee values(7, 'Madhu',27,'DBA',70000);
```

Grant all privileges to root user and commit the data.

```
grant all on *.* to 'root'@'localhost' with grant option; flush privileges; commit; exit;
```

```
mysql> select * from employee;
Empty set (0.00 sec)
mysql> insert into employee values(1, 'Mohan',25,'Big Data & Hadoop',30000);
Query OK, 1 row affected (0.00 sec)
mysql> insert into employee values(2, 'Ramu',27,'AI',50000);
Query OK, 1 row affected (0.00 sec)
mysql> insert into employee values(3, 'Ravi',30,'Java',60000);
Query OK, 1 row affected (0.00 sec)
mysql> insert into employee values(4, 'Akshith',22,'Automation',35000);
Query OK, 1 row affected (0.00 sec)
mysql> insert into employee values(5, 'Shyam',35,'C',40000);
Query OK, 1 row affected (0.00 sec)
mysql> insert into employee values(6, 'Priya',28,'.Net',50000);
Query OK, 1 row affected (0.00 sec)
mysql> insert into employee values(7, 'Madhu',27,'DBA',70000);
Query OK, 1 row affected (0.00 sec)
mysql> select * from employee;
                        skill
                                             salary
 id
       name
                 age
     1
       Mohan
                     25
                        | Big Data & Hadoop
                                                30000
     2
        Ramu
                     27
                          ΑI
                                                50000
     3
        Ravi
                     30
                          Java
                                               60000
     4
         Akshith
                          Automation
                                                35000
                     22
     5
        Shyam
                                                40000
                     35
                          С
         Priya
                                                50000
     6
                     28
                          .Net
        Madhu
                     27
                          DBA
                                                70000
7 rows in set (0.00 sec)
```

Use below query to transfer data from Mysql table 'employee' to Hive

```
sqoop import \
--connect jdbc:mysql://localhost/assignment11 \
--username 'root' --table 'employee' --target-dir '/sqoopout' \
--hive-import \
-m 1;
```

```
[root@sandbox ~]# sqoop import \
> --connect jdbc:mysql://localhost/assignmentll \
> --username 'root' --table 'employee' --target-dir '/sqoopout' \
> --hive-import \
   7/11/28 02:15:05 INFO mapred.CtientServiceDetegate. Application state to compare the history server
17/11/28 02:16:28 INFO mapreduce.ImportJobBase: Transferred 167 bytes in 905.9278 seconds (0.1843 bytes/sec)
17/11/28 02:16:34 INFO manager.SquManager: Executing SQL statement: SELECT t.* FROM 'employee' AS t LIMIT 1
17/11/28 02:16:34 INFO hive.HiveImport: Loading uploaded data into Hive
17/11/28 02:17:56 INFO hive.HiveImport: Loading uploaded data into Hive
17/11/28 02:17:56 WARN conf.HiveConf: HiveConf of name hive.optimize.mapjoin.mapreduce does not exist
17/11/28 02:17:56 WARN conf.HiveConf: HiveConf of name hive.heapsize does not exist
17/11/28 02:17:56 WARN conf.HiveConf: HiveConf of name hive.server2.enable.impersonation does not exist
17/11/28 02:17:56 WARN conf.HiveConf: HiveConf of name hive.auto.convert.sortmerge.join.noconditionaltask does not exist
    .ogging initialized using configuration in jar:file:/usr/hdp/2.2.0.0-2041/hive/lib/hive-common-0.14.0.2.2.0.0-2041.jar!/hive-log4j.proper
    ime taken: 232.608 seconds
.oading data to table default.employee
able default.employee stats: [numFiles=1, totalSize=167]
  ok
Time taken: 71.856 seconds
[root@sandbox ~]# ■
```

Check out hive:

```
hive> show databases;
OK
default
xademo
Time taken: 13.316 seconds, Fetched: 2 row(s)
hive> use default;
0K
Time taken: 7.769 seconds
hive> show tables;
0K
employee
sample_07
sample 08
Time taken: 2.815 seconds, Fetched: 3 row(s)
hive> select * from employee;
0K
1
        Mohan
                25
                        Big Data & Hadoop
                                                30000
2
                        ΑI
        Ramu
                27
                                50000
                                60000
3
        Ravi
                30
                        Java
4
        Akshith 22
                        Automation
                                        35000
5
        Shyam
                35
                        C
                                40000
                        .Net
6
        Priya
                28
                                50000
        Madhu
                27
                        DBA
                                70000
Time taken: 10.728 seconds, Fetched: 7 row(s)
hive>
```

Export: Transfer of data from hive to Mysql.

 Delete data from table 'employee' in Mysql use db1; delete from employee;

```
mysql> use assignmentll;
Database changed
mysql> show tables;
| Tables_in_assignmentll |
  -----+
| employee
1 row in set (0.00 sec)
mysql> select * from employee;
| id | name | age | skill | sala
                                        | salary |
                   25 | Big Data & Hadoop |
27 | AI
        Mohan
    1
    2
                                            50000
        Ramu
                   30
                        Java
                                            60000
    3
        Ravi
        Akshith
                   22
    4
                        Automation
                                            35000
    5
                   35
                                            40000
        Shyam
                        C
                        .Net
    6
        Priya
                   28
                                            50000
        Madhu
    7
                   27
                        DBA
                                            70000
                        Team Lead
    8
        Suraj
                   28
                                            80000
      Ganesh
                   30 | Manager
                                          100000
 rows in set (0.03 sec)
```

```
mysql> delete from employee;
Query OK, 9 rows affected (0.03 sec)
mysql> select * from employee;
Empty set (0.01 sec)
mysql> 

| |
```

Export data using below query from hive to table 'employee' in Mysql

sqoop export --connect jdbc:mysql://localhost/assignment11 -username root --columns id,name,skill --table employee --export-dir

hdfs://sandbox.hortonworks.com:8020/apps/hive/warehouse/employee --input-fields-terminated-by $\u0001'$ -m 1

```
[root@sandbox -]# sqoop export --connect jdbc:mysql://localhost/assignmentll -username root --columns id,name,skill --table employee --export-dir hdfs://sandbox.hortonworks.com:8020/apps/hive/warehouse/employee --input-fields-terminated-by '\u0001' -m 1 Person to fyour Accumulo installation.
17/12/04 16:26:54 IMFO sqoop.Sqoop: Running Sqoop version: 1.4.5.2.2.0.0-2041
17/12/04 16:26:55 IMFO manager.SqlManager: Using default fetchsize of 1000
17/12/04 16:26:55 IMFO manager.SqlManager: Using default fetchsize of 1000
17/12/04 16:26:55 IMFO manager.SqlManager: Using default fetchsize of 1000
17/12/04 16:26:55 IMFO manager.SqlManager: Executing SQL statement: SELECT t.* FROM 'employee' AS t LIMIT 1
17/12/04 16:26:55 IMFO manager.SqlManager: Executing SQL statement: SELECT t.* FROM 'employee' AS t LIMIT 1
17/12/04 16:26:55 IMFO manager.SqlManager: Executing SQL statement: SELECT t.* FROM 'employee' AS t LIMIT 1
17/12/04 16:26:55 IMFO manager.SqlManager: Executing SQL statement: SELECT t.* FROM 'employee' AS t LIMIT 1
17/12/04 16:26:55 IMFO manager.SqlManager: Executing SQL statement: SELECT t.* FROM 'employee' AS t LIMIT 1
17/12/04 16:26:55 IMFO manager.SqlManager: Writing jar file: /tmp/sqoop-root/comple/ad/179be3475af08e9dd4cce8c9cb0e2d/employee.java uses or overrides a deprecated API.
Note: Recompile with **Xlinit-deprecation for details.
17/12/04 16:27:04 IMFO orm.CompilationManager: Writing jar file: /tmp/sqoop-root/compile/ad/179be3475af08e9dd4cce8c9cb0e2d/employee.jar
17/12/04 16:27:04 IMFO mapreduce.Export/ObBase: Beginning export of employee
SLF43: Class path contains multiple Export/obBase: Beginning export of employee
SLF43: Found binding in [jar:file:/usr/hdp/2.2.0.o.2041/raokeeper/lib/slf4j-log4j12-1.5.1.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF43: Found binding in [jar:file:/usr/hdp/2.2.0.o.2041/raokeeper/lib/slf4j-log4j12-1.6.1.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF43: Found binding in [jar:file:/usr/hdp/2.2.0.o.2041/raokeeper/lib/slf4j-log4j12-1.6.1.jar!/org/slf4j/impl/StaticLogger
```

• Check table 'employee' in Mysql for data.

```
mysql -u root
use db1;
select * from employee;
```

```
mysql> select * from employee;
                 age skill
 id
                                             salary
       name
                     25 | Big Data & Hadoop
     1
       Mohan
                                               30000
    2
                     27
                          ΑI
        Ramu
                                               50000
                     30
                          Java
    3
        Ravi
                                               60000
        Akshith |
                     22
                          Automation
    4
                                               35000
    5
        Shyam
                     35
                          c
                                               40000
                          .Net
    6
                     28
        Priya
                                               50000
        Madhu
     7
                     27
                          DBA
                                               70000
    8
                     28
         Suraj
                          Team Lead
                                               80000
                     30
     9
        Ganesh
                         Manager
                                              100000
 rows in set (0.04 sec)
```