

## Opening the Hive:

```
[hduser@localhost ~]$ hive --service metastore
ls: cannot access /usr/local/spark/lib/spark-assembly-*.jar: No such file or directory
Starting Hive Metastore Server
22/07/01 09:57:07 WARN conf.HiveConf: HiveConf of name hive.mapjoin.optimized.keys does not exist
22/07/01 09:57:07 WARN conf.HiveConf: HiveConf of name hive.optimize.multigroupby.common.distincts does not exist
22/07/01 09:57:07 WARN conf.HiveConf: HiveConf of name hive.mapjoin.lazy.hashtable does not exist
22/07/01 09:57:07 WARN conf.HiveConf: HiveConf of name hive.server2.thrift.http.min.worker.threads does not exist
22/07/01 09:57:07 WARN conf.HiveConf: HiveConf of name hive.server2.thrift.http.max.worker.threads does not exist
22/07/01 09:57:07 WARN conf.HiveConf: HiveConf of name hive.server2.logging.operation.verbose does not exist
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/usr/local/hadoop/share/hadoop/common/lib/slf4j-log4j12-1.7.10.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/usr/local/hbase/lib/Phoenix-4.11.0-HBase-0.98-client.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/usr/local/hbase/lib/slf4j-log4j12-1.6.4.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.slf4j.impl.Log4jLoggerFactory]
Loading class `com.mysql.jdbc.Driver'. This is deprecated. The new driver class is `com.mysql.cj.jdbc.Driver'. The driver is automatically registered via the
SPI and manual loading of the driver class is generally unnecessary.
```

## UDTF: Explode and Lateral Views

```
[hduser@localhost ~]$ gedit explodeAndLateralView.txt
[hduser@localhost ~]$ cat explodeAndLateralView.txt
1,Mahesh,30,cricket,badminton,hockey
2,Arjun,32,baseball,carrom,football
3,Venkatesh,40,chess,badminton,running
4,Gopal,50,chess,carrom,cricket
[hduser@localhost ~]$
```

```
[hduser@localhost ~]$ hdfs dfs -put explodeAndLateralView.txt /user/hduser/hive_practice
22/07/01 10:02:22 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
[hduser@localhost ~]$ hdfs dfs -ls explodeAndLateralView.txt /user/hduser/hive_practice
22/07/01 10:02:36 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
ls: `explodeAndLateralView.txt': No such file or directory
Found 1 items
-rw-r--r--  1 hduser supergroup          144 2022-07-01 10:02 /user/hduser/hive_practice/explodeAndLateralView.txt
```

```
hive> create table players(id int,name string,age int,games array<string>) row format delimited fields terminated by ',' collection items terminated by ':';
OK
Time taken: 0.372 seconds
hive> load data inpath '/user/hduser/hive_practice/explodeAndLateralView.txt' into table players;
Loading data to table default.players
Table default.players stats: [numFiles=1, totalSize=144]
OK
Time taken: 0.851 seconds
hive> select * from players;
OK
1      Mahesh  30      ["cricket","badminton","hockey"]
2      Arjun   32      ["baseball","carrom","football"]
3      Venkatesh 40      ["chess","badminton","running"]
4      Gopal   50      ["chess","carrom","cricket"]
Time taken: 0.241 seconds, Fetched: 4 row(s)
```

```
hive> select explode(games) from players;
OK
cricket
badminton
hockey
baseball
carrom
football
chess
badminton
running
chess
carrom
cricket
```

```
hive> select id,name,gamesList from players lateral view explode(games) virtualList as gamesList;
OK
1      Mahesh  cricket
1      Mahesh  badminton
1      Mahesh  hockey
2      Arjun   baseball
2      Arjun   carrom
2      Arjun   football
3      Venkatesh chess
3      Venkatesh badminton
3      Venkatesh running
4      Gopal   chess
4      Gopal   carrom
4      Gopal   cricket
Time taken: 0.277 seconds, Fetched: 12 row(s)
```

## Virtual Table:

```
hive> create view SampleViewPlayers as select * from players where name = "Mahesh";
OK
Time taken: 0.461 seconds
```

```
hive> select * from SampleViewPlayers;
OK
1      Mahesh  30      ["cricket","badminton","hockey"]
Time taken: 0.285 seconds, Fetched: 1 row(s)
```

## Arrays and Maps in Hive table:

```
[hduser@localhost ~]$ gedit explodeAndLateralView.txt
[hduser@localhost ~]$ cat explodeAndLateralView.txt
1,Mahesh,30,cricket:badminton:hockey
2,Arjun,32,baseball:carrom:football
3,Venkatesh,40,chess:badminton:running
4,Gopal,50,chess:carrom:cricket
[hduser@localhost ~]$ gedit ArraysAndMaps.txt
[hduser@localhost ~]$ cat ArrayAndMaps.txt
cat: ArrayAndMaps.txt: No such file or directory
[hduser@localhost ~]$ cat ArraysAndMaps.txt
1,Ganesh,15,maths:physics,maths#65:physics#50
2,Ramu,16,science:hindi,science#70:hindi#75
3,Sriram,15,telugu:english,telugu#60:english#80
4,Mohan,16,maths:science,maths#90:science#56
```

```
[hduser@localhost ~]$ hdfs dfs -put ArraysAndMaps.txt /user/hduser/hive_practice
22/07/01 10:25:18 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
[hduser@localhost ~]$ hdfs dfs -ls ArraysAndMaps.txt /user/hduser/hive_practice
22/07/01 10:25:28 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
ls: 'ArraysAndMaps.txt': No such file or directory
Found 1 items
-rw-r--r-- 1 hduser supergroup 184 2022-07-01 10:25 /user/hduser/hive_practice/ArraysAndMaps.txt
```

```
hive> load data inpath '/user/hduser/hive_practice/ArraysAndMaps.txt' into table studentsAndMarks;
Loading data to table practice.studentsandmarks
Table practice.studentsandmarks stats: [numFiles=1, totalSize=184]
OK
Time taken: 0.866 seconds
hive> select * from studentAndMarks;
FAILED: SemanticException [Error 10001]: Line 1:14 Table not found 'studentAndMarks'
hive> select * from studentsAndMarks;
OK
1      Ganesh  15      ["maths","physics"]      {"maths":65,"physics":50}
2      Ramu    16      ["science","hindi"]      {"science":70,"hindi":75}
3      Sriram  15      ["telugu","english"]     {"telugu":60,"english":80}
4      Mohan   16      ["maths","science"]      {"maths":90,"science":56}
NULL   NULL    NULL    NULL    NULL
```

```
hive> select name,marks['maths'] from studentsAndMarks;
OK
Ganesh  65
Ramu    NULL
Sriram  NULL
Mohan   90
NULL    NULL
Time taken: 0.226 seconds, Fetched: 5 row(s)
```

## External Table and Overriding Warehouse Location:

```
[hduser@localhost ~]$ cat externalTable.txt
1,Kumar,23,Hyderabad
2,Suresh,32,Mumbai
3,Gaithonde,45,Pune
4,Manasa,40,Chennai
[hduser@localhost ~]$
```

```
[hduser@localhost ~]$ hdfs dfs -ls /user/hduser/hive_practice
22/07/01 10:40:09 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
Found 1 items
-rw-r--r-- 1 hduser supergroup 80 2022-07-01 10:38 /user/hduser/hive_practice/externalTable.txt
[hduser@localhost ~]$
```

```
hive> create external table externalTable(id int,name string,age int, place string) row format delimited fields terminated by ',' location '/user/hduser/warehouseOverriden';
OK
Time taken: 0.278 seconds
hive> load data inpath '/user/hduser/hive_practice/externalTable.txt' into table externalTable;
Loading data to table practice.externaltable
Table practice.externaltable stats: [numFiles=1, numRows=0, totalSize=80, rawDataSize=0]
OK
Time taken: 0.792 seconds
hive> select * from externalTable;
OK
1      Kumar   23      Hyderabad
2      Suresh  32      Mumbai
3      Gaithonde 45      Pune
4      Manasa  40      Chennai
Time taken: 0.1 seconds, Fetched: 4 row(s)
```

```
[hduser@localhost ~]$ hdfs dfs -put externalTable.txt /user/hduser/hive_practice
22/07/01 10:55:52 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
```

```
[hduser@localhost ~]$ hdfs dfs -ls /user/hduser/warehouseOverriden
22/07/01 10:56:57 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
Found 1 items
-rw-r--r-- 1 hduser supergroup 80 2022-07-01 10:38 /user/hduser/warehouseOverriden/externalTable.txt
```

```
[hduser@localhost ~]$ hdfs dfs -ls /user/hive/warehouse/practice.db/
22/07/01 10:56:16 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
Found 2 items
drwxr-xr-x - hduser supergroup 0 2022-06-30 11:40 /user/hive/warehouse/practice.db/employee
drwxr-xr-x - hduser supergroup 0 2022-07-01 10:27 /user/hive/warehouse/practice.db/studentsandmarks
[hduser@localhost ~]$
```

## Beeline Connection using Embedded Mode:

```
[hduser@localhost ~]$ beeline
ls: cannot access /usr/local/spark/lib/spark-assembly-*.jar: No such file or directory
Beeline version 1.2.2 by Apache Hive
beeline> !connect jdbc:hive2://
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/usr/local/hbase/lib/phenix-4.11.0-HBase-0.98-client.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/usr/local/hbase/lib/slf4j-log4j12-1.6.4.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/usr/local/hadoop/share/hadoop/common/lib/slf4j-log4j12-1.7.10.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.slf4j.impl.Log4jLoggerFactory]
Connecting to jdbc:hive2://
Enter username for jdbc:hive2://: scott
Enter password for jdbc:hive2://: *****
```

```
0: jdbc:hive2://> select * from employee;
OK
+-----+-----+-----+-----+
| employee.id | employee.name | employee.age | employee.salary |
+-----+-----+-----+-----+
| 1           | Likhith       | 23          | 50000           |
| 2           | Mahesh        | 45          | 89000           |
| 3           | Suresh        | 50          | 65000           |
| 4           | Prasad        | 34          | 50000           |
| 5           | Sundar        | 49          | 75000           |
| 1           | Likhith       | 23          | 50000           |
| 2           | Mahesh        | 45          | 89000           |
| 3           | Suresh        | 50          | 65000           |
| 4           | Prasad        | 34          | 50000           |
| 5           | Sundar        | 49          | 75000           |
+-----+-----+-----+-----+
10 rows selected (0.772 seconds)
0: jdbc:hive2://> █
```

## Using Struct data type in Hive:

```
[hduser@localhost ~]$ gedit structExample.txt
[hduser@localhost ~]$ cat structExample.txt
1,mahesh,car:20000:Hyd
2,Suresh,auto:30000:Pune

[hduser@localhost ~]$ █
```

```
0: jdbc:hive2://> create table structDemo(id int,name string,details struct<vehicle:string,amount:int>) row format delimited fields terminated by ',' collecti
on items terminated by ':';
OK
No rows affected (0.712 seconds)
0: jdbc:hive2://> load data local inpath 'structExample.txt' into table structDemo;
Loading data to table practice.structdemo
Table practice.structdemo stats: [numFiles=1, totalSize=83]
OK
No rows affected (2.143 seconds)
0: jdbc:hive2://> select * from structDemo;
OK
22/07/01 11:35:04 [main]: WARN lazy.LazyStruct: Extra bytes detected at the end of the row! Ignoring similar problems.
22/07/01 11:35:04 [main]: WARN lazy.LazyStruct: Extra bytes detected at the end of the row! Ignoring similar problems.
+-----+-----+-----+
| structdemo.id | structdemo.name | structdemo.details |
+-----+-----+-----+
| 1             | mahesh          | {"vehicle":"car","amount":20000} |
| 2             | Suresh          | {"vehicle":"auto","amount":30000} |
| NULL          | NULL            | NULL                |
+-----+-----+-----+
3 rows selected (0.431 seconds)
```