

Experiment No: 2

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Roll No: 19

Batch: A

Topic:	Use of Sqoop tool to transfer data between Hadoop and relational databaseservers. a. Sqoop and MySQL - Installation. To execute basic commands of Hadoop eco system component Sqoop.
Prerequisite:	<ul style="list-style-type: none"> ○ Familiarity with command-line interfaces such as bash ○ Basic knowledge of Relational database management systems. MySQL Basic familiarity with the purpose and operation of Hadoop <ul style="list-style-type: none"> ○
Mapping With COs:	CSL704.3
Objective:	Ingest data using Sqoop.
Outcome :	Students will be able to use the Sqoop tool - for transferring data between Hadoop & relational databases
Instructions:	This experiment is a compulsory experiment. All the students are required to perform this experiment individually.
Deliverables:	<p>SQOOP INSTALLATION</p> <p>Sqoop is a tool designed to transfer data between Hadoop and relational database servers. It is used to import data from relational databases such as MySQL, Oracle to Hadoop HDFS, and export from Hadoop file system to relational databases. The traditional application management system, that is, the interaction of applications with relational database using RDBMS, is one of the sources that generate Big Data. Such Big Data, generated by RDBMS, is stored in Relational Database Servers in the relational database structure.</p> <p>When Big Data storages and analyzers such as MapReduce, Hive, HBase, Cassandra, Pig, etc. of the Hadoop ecosystem came into picture, they required a tool to interact with the relational database servers for importing and exporting the Big Data residing in them. Here, Sqoop occupies a place in the Hadoop ecosystem to provide feasible interaction between relational database server and Hadoop's HDFS.</p> <p>Sqoop: “SQL to Hadoop and Hadoop to SQL”</p> <p>Sqoop is a tool designed to transfer data between Hadoop and relational database servers. It is used to import data from relational databases such as MySQL, Oracle to Hadoop HDFS, and export from Hadoop file system to relational databases. It is provided by the Apache Software Foundation.</p> <p>The following image describes the workflow of Sqoop.</p> <pre> graph LR RDBMS[RDBMS
(Mysql, Oracle, Postgresql, DB2)] --> Import[Import] RDBMS --> Export[Export] Import --> HDFS[Hadoop File System
(HDFS, Hive, HBase)] Export --> HDFS </pre>

Sqoop Import

The import tool imports individual tables from RDBMS to HDFS. Each row in a table is treated as a record in HDFS. All records are stored as text data in text files or as binary data in Avro and Sequence files.

Sqoop Export

The export tool exports a set of files from HDFS back to an RDBMS. The files given as input to Sqoop contain records, which are called as rows in table.

Those are read and parsed into a set of records and delimited with user-specified delimiter.

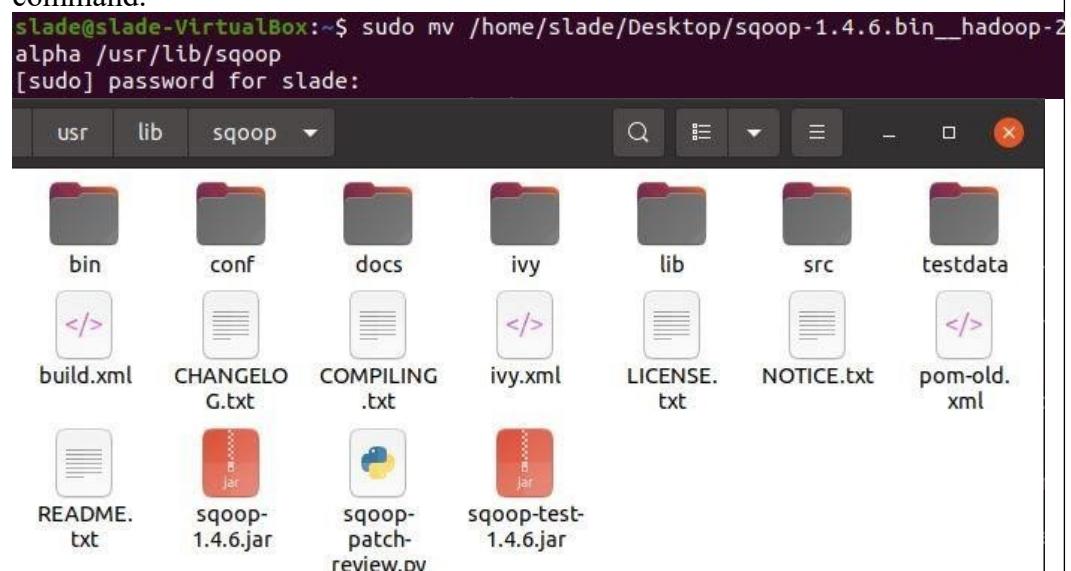
STEPS to install Sqoop : 1.

1. Extract the Sqoop Package from the tar file pasted on the Desktop. The extracted package can be seen, listed in the list of files and folders of the Desktop using the ls command.

ls Desktop

```
slade@slade-VirtualBox:~$ jps
3937 Jps
3844 NodeManager
3284 NameNode
3575 SecondaryNameNode
3417 DataNode
3708 ResourceManager
slade@slade-VirtualBox:~$ ls Desktop
sqoop-1.4.6-bin__hadoop-2.0.4-alpha
```

2. Move this extracted folder (sqoop1.4.6-bin_hadoop2.0.4alpha) from Desktop to the directory /usr/lib/sqoop using the sudo mv command.



3. Sqoop environment can be set up only by appending the following lines by executing nano ~/.bashrc command.

```
slade@slade-VirtualBox:~$ nano ~/.bashrc
```

Append the following lines in this file.

```
export SQOOP_HOME=/usr/lib/sqoop
export PATH=$PATH:
$SQOOP_HOME/bin
Ctrl+X ....Y.. Enter
```

```
#Hadoop variables
export JAVA_HOME=/usr/lib/jvm/java-1.8.0-openjdk-amd64
export HADOOP_INSTALL=/usr/local/hadoop
export PATH=$PATH:$HADOOP_INSTALL/bin
export PATH=$PATH:$HADOOP_INSTALL/sbin
export HADOOP_MAPRED_HOME=$HADOOP_INSTALL
export HADOOP_COMMON_HOME=$HADOOP_INSTALL
export HADOOP_HDFS_HOME=$HADOOP_INSTALL
export YARN_HOME=$HADOOP_INSTALL
export SQOOP_HOME=/usr/lib/sqoop
export PATH=$PATH:$SQOOP_HOME/bin
#End of Hadoop variable declaration
```

4. Now save this bashrc file permanently by the command `source ~/.bashrc`

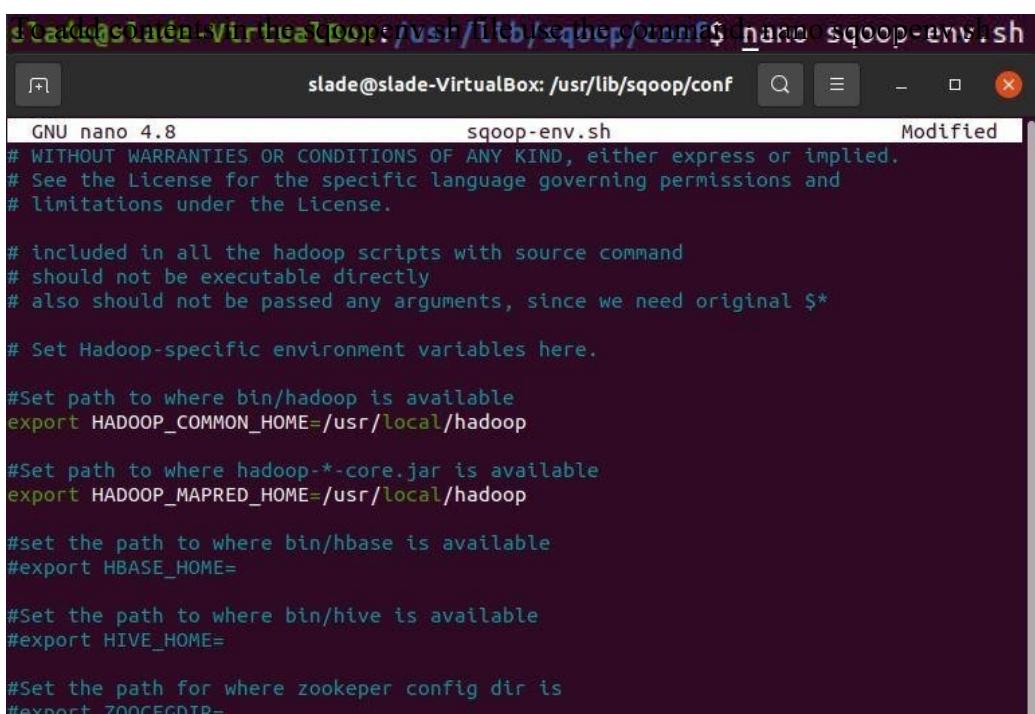
```
slade@slade-VirtualBox:~$ source ~/.bashrc
```

5. To configure Sqoop with Hadoop we need to edit a file sqoopenv.sh which is present in the directory path \$SQOOP_HOME/conf.

```
slade@slade-VirtualBox:~$ cd $SQOOP_HOME/conf
slade@slade-VirtualBox:/usr/lib/sqoop/conf$ ls
oraoop-site-template.xml  sqoop-env-template.sh    sqoop-site.xml
sqoop-env-template.cmd   sqoop-site-template.xml
```

Now move the contents of the template file sqoopenv-template.sh to sqoopenv.sh using the mv command. `mv sqoopenvtemplate.sh sqoop-env.sh`

```
slade@slade-VirtualBox:/usr/lib/sqoop/conf$ mv sqoop-env-template.sh sqoop-env.sh
slade@slade-VirtualBox:/usr/lib/sqoop/conf$ ls
oraoop-site-template.xml  sqoop-env-template.cmd    sqoop-site.xml
sqoop-env.sh               sqoop-site-template.xml
```



```
slade@slade-VirtualBox:/usr/lib/sqoop/conf$ nano sqoop-env.sh
GNU nano 4.8
# included in all the hadoop scripts with source command
# should not be executable directly
# also should not be passed any arguments, since we need original $*
# Set Hadoop-specific environment variables here.

#Set path to where bin/hadoop is available
export HADOOP_COMMON_HOME=/usr/local/hadoop

#Set path to where hadoop-*core.jar is available
export HADOOP_MAPRED_HOME=/usr/local/hadoop

#set the path to where bin/hbase is available
#export HBASE_HOME=

#Set the path to where bin/hive is available
#export HIVE_HOME=

#Set the path for where zookeper config dir is
#export ZOOCFGDIR=
```

Crtl+X...Y ...Enter

6. Now copy, add or download the mysqlconnectorjava5.1.36.tar.gz file onto the Desktop. Extract this file in the same file location.

```
slade@slade-VirtualBox:/usr/lib/sqoop/conf$ cd
slade@slade-VirtualBox:~$ cd Desktop
slade@slade-VirtualBox:~/Desktop$ ls
mysql-connector-java-5.1.36
```

7. Move this extracted file to the location /usr/lib/sqoop/lib using the mv command.

cd Desktop

ls

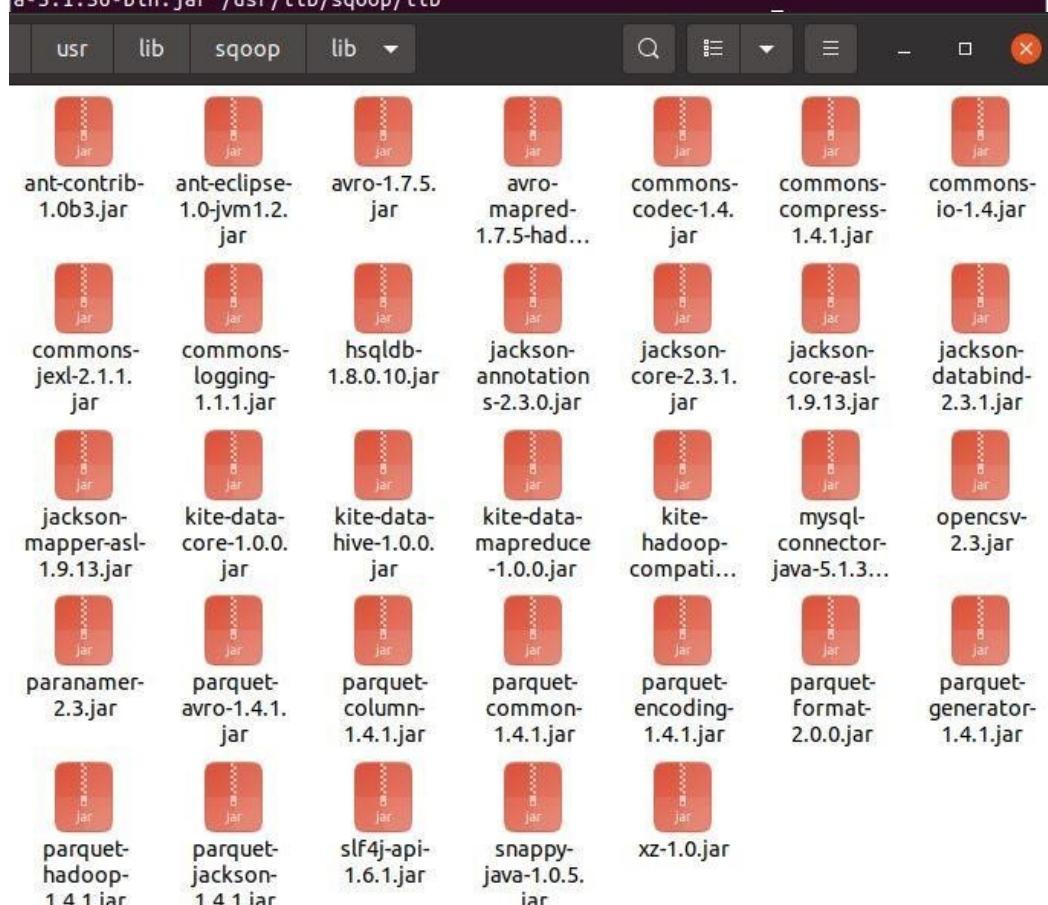
cd mysql•connector•java•5.1.36

ls

mv mysql•connector•java•5.1.36•bin.jar /usr/lib/sqoop/lib

ls /usr/lib/sqoop/lib

```
slade@slade-VirtualBox:~/Desktop$ cd mysql-connector-java-5.1.36
slade@slade-VirtualBox:~/Desktop/mysql-connector-java-5.1.36$ ls
build.xml  COPYING  mysql-connector-java-5.1.36-bin.jar  README.txt
CHANGES  docs  README
src
slade@slade-VirtualBox:~/Desktop/mysql-connector-java-5.1.36$ mv mysql-connector-jav
a-5.1.36-bin.jar /usr/lib/sqoop/lib
```



8. To check if Sqoop has been installed correctly we move to the directory \$SQOOP_HOME/bin and use the command sqoop version to check for sqoop installation success.

cd /usr/lib/sqoop/bin

cd \$SQOOP_HOME/bin

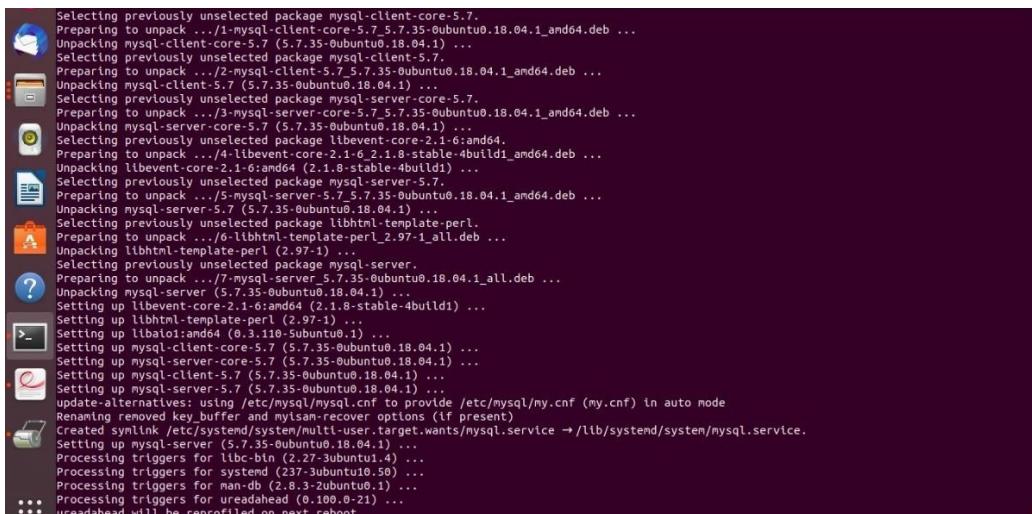
sqoop version

```
slade@slade-VirtualBox:~/Desktop/mysql-connector-java-5.1.36$ cd
slade@slade-VirtualBox:~$ cd /usr/lib/sqoop/bin
slade@slade-VirtualBox:/usr/lib/sqoop/bin$ cd $SQOOP_HOME/bin
slade@slade-VirtualBox:/usr/lib/sqoop/bin$ sqoop version
Warning: /usr/lib/sqoop/..hbbase does not exist! HBase imports will fail.
Please set $HBASE_HOME to the root of your HBase installation.
Warning: /usr/lib/sqoop/..hcatalog does not exist! HCatalog jobs will fail.
Please set $HCAT_HOME to the root of your HCatalog installation.
Warning: /usr/lib/sqoop/..accumulo does not exist! Accumulo imports will fail.
Please set $ACCUMULO_HOME to the root of your Accumulo installation.
Warning: /usr/lib/sqoop/..zookeeper does not exist! Accumulo imports will fail.
Please set $ZOOKEEPER_HOME to the root of your Zookeeper installation.
21/08/17 19:56:47 INFO sqoop.Sqoop: Running Sqoop version: 1.4.6
Sqoop 1.4.6
git commit id c0c5a81723759fa575844a0a1eae8f510fa32c25
Compiled by root on Mon Apr 27 14:38:36 CST 2015
```

STEPS for MYSQL INSTALLATION

- After Sqoop installation MySQL has to be installed as well. Firstly, install all the required libraries using the command sudo apt-get install mysql-server.

```
slade@slade-VirtualBox:~$ sudo apt-get install mysql-server
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  liblomm7 liblomm7 linux-hwe-5.4.0-53 linux-hwe-5.4.0-65 linux-hwe-5.4.0-71
  linux-hwe-5.4-headers-5.4.0-74 python3-click python3-colorama
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  libaio1 libevent-core-2.1-6 libhtml-template-perl mysql-client-5.7 mysql-client-core-5.7 mysql-server-5.7 mysql-server-core-5.7
Suggested packages:
  libipc-sharedcache-perl mailx tinyca
The following NEW packages will be installed:
  libaio1 libevent-core-2.1-6 libhtml-template-perl mysql-client-5.7 mysql-client-core-5.7 mysql-server-5.7 mysql-server-core-5.7
mysql-server-core-5.7
0 upgraded, 8 newly installed, 0 to remove and 101 not upgraded.
Need to get 19.1 MB of archives.
After this operation, 154 MB of additional disk space will be used.
Do you want to continue? [Y/n] ■
```



- To login to the MySQL user, use the following command: mysql -u root -p

```
slade@slade-VirtualBox:~$ sudo mysql -u root -p
Enter password:
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 14
Server version: 5.7.35-0ubuntu0.18.04.1 (Ubuntu)

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affiliates. Other names may be trademarks of their respective
owners.

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

mysql> ■
```

It will be asked to enter the password for the corresponding user. Enter the password. Now the MySQL script will run and the user will be logged in. This verifies the successful completion of the MySQL installation onto the system.

IMPORT/EXPORT

1. We check if all the services are running using the jps command.

```
slade@slade-VirtualBox:~$ jps
3937 Jps
3844 NodeManager
3284 NameNode
3575 SecondaryNameNode
3417 DataNode
3708 ResourceManager
```

2. Then we start the mysql shell as:

```
slade@slade-VirtualBox:~$ sudo mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 14
Server version: 5.7.35-0ubuntu0.18.04.1 (Ubuntu)

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affiliates. Other names may be trademarks of their respective
owners.

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

mysql> 
```

3. We see the list of databases.

```
mysql> show databases;
+-----+
| Database      |
+-----+
| information_schema |
| mysql          |
| performance_schema |
| sys            |
+-----+
4 rows in set (0.00 sec)
```

4. We create a new database or use an existing database according to the need.

```
mysql> create database emp;
Query OK, 1 row affected (0.00 sec)

mysql> show databases;
+-----+
| Database      |
+-----+
| information_schema |
| emp           |
| mysql          |
| performance_schema |
| sys            |
+-----+
5 rows in set (0.01 sec)
```

5. Now we create a table in mysql which we will import into HDFS. create table Faculty (id int primary key, name varchar(10), city varchar(10), salary bigint);

```

mysql> create table Faculty (id int primary key, name varchar(10), city
   -> varchar(10), salary bigint);
Query OK, 0 rows affected (0.30 sec)

mysql> show tables;
+-----+
| Tables_in_emp |
+-----+
| Faculty      |
+-----+
1 row in set (0.00 sec)

mysql> Insert into Faculty values(1, 'Sana', 'Mumbai', 95000);
mysql> Insert into Faculty values(2, 'Riya', 'Pune', 85000);
mysql> Insert into Faculty values(3, 'Karan', 'Jaipur', 55000);
mysql> Insert into Faculty values(4, 'Rahul', 'Delhi', 78000);
mysql> Insert into Faculty values(5, 'Bush', 'Mumbai',
75000); mysql> Insert into Faculty values(6, 'Ram', 'Delhi',
66000); mysql> Insert into Faculty values(7, 'Slade', 'Pune',
71000);
mysql> Insert into Faculty values(1, 'Sana', 'Mumbai', 95000);
Query OK, 1 row affected (0.27 sec)

mysql> Insert into Faculty values(2, 'Riya', 'Pune', 85000);
Query OK, 1 row affected (0.10 sec)

mysql> Insert into Faculty values(3, 'Karan', 'Jaipur', 55000);
Query OK, 1 row affected (0.12 sec)

mysql> Insert into Faculty values(4, 'Rahul', 'Delhi', 78000);
Query OK, 1 row affected (0.08 sec)

mysql> Insert into Faculty values(5, 'Bush', 'Mumbai', 75000);
Query OK, 1 row affected (0.14 sec)

mysql> Insert into Faculty values(6, 'Ram', 'Delhi', 66000);
Query OK, 1 row affected (0.14 sec)

mysql> Insert into Faculty values(7, 'Slade', 'Pune', 71000);
Query OK, 1 row affected (0.27 sec)

```

6. We can output the entries of the table as follows:

```

mysql> select * from Faculty;
+----+-----+-----+-----+
| id | name  | city   | salary |
+----+-----+-----+-----+
| 1  | Sana   | Mumbai | 95000 |
| 2  | Riya   | Pune   | 85000 |
| 3  | Karan  | Jaipur | 55000 |
| 4  | Rahul  | Delhi  | 78000 |
| 5  | Bush   | Mumbai | 75000 |
| 6  | Ram    | Delhi  | 66000 |
| 7  | Slade  | Pune   | 71000 |
+----+-----+-----+-----+
7 rows in set (0.05 sec)

```

8. Now, we grant privileges to the user so that we can perform import function. grant all privileges on *.* to 'root'@'localhost';

```

mysql> grant all privileges on *.* to 'root'@'localhost';
Query OK, 0 rows affected (0.00 sec)

```

9. After that we quit the mysql shell.

```
mysql> quit
Bye
```

TRANSFERRING AN ENTIRE TABLE INTO HADOOP:

10. The command is as follows: sqoop import --connect jdbc:mysql://127.0.0.1:3306/emp --username root --password mySQL12345 --table Faculty -m 1

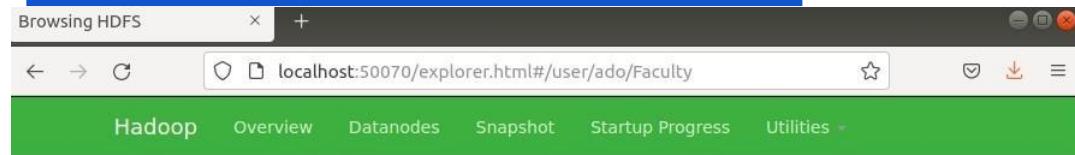
hadoop fs -ls Faculty

```
slade@slade-VirtualBox:~$ hadoop fs -ls Faculty
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.apache.hadoop.security.authentication.util.KerberosUtil
(file:/usr/local/hadoop/share/hadoop/common/lib/hadoop-auth-2.7.7.jar) to method sun.security.krb5
.Config.getInstance()
WARNING: Please consider reporting this to the maintainers of org.apache.hadoop.security.authentic
ation.util.KerberosUtil
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflective access operati
ons
WARNING: All illegal access operations will be denied in a future release
Found 2 items
-rw-r--r-- 1 slade supergroup 0 2021-08-10 20:20 Faculty/_SUCCESS
-rw-r--r-- 1 slade supergroup 137 2021-08-10 20:20 Faculty/part-m-00000
```

We can check the output using the cat command.

```
slade@slade-VirtualBox:~$ hadoop fs -cat Faculty/part-m-00000
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.apache.hadoop.security.authentication.util.KerberosUtil
(file:/usr/local/hadoop/share/hadoop/common/lib/hadoop-auth-2.7.7.jar) to method sun.security.krb5
.Config.getInstance()
WARNING: Please consider reporting this to the maintainers of org.apache.hadoop.security.authentic
ation.util.KerberosUtil
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflective access operati
ons
WARNING: All illegal access operations will be denied in a future release
1,Sana,Mumbai,95000
2,Riya,Pune,85000
3,Karan,Jaipur,55000
4,Rahul,Delhi,78000
5,Bush,Mumbai,75000
6,Ram,Delhi,66000
7,Slade,Pune,71000
```

<http://localhost:50070/explorer.html#/user/slade/Faculty>



Browse Directory

Browse Directory							
/user/ado/Faculty							Go!
Permission	Owner	Group	Size	Last Modified	Replication	Block Size	Name
-rw-r--r--	slade	supergroup	0 B	10/8/2021, 8:20:49 pm	1	128 MB	_SUCCESS
-rw-r--r--	slade	supergroup	137 B	10/8/2021, 8:20:49 pm	1	128 MB	part-m-00000

The screenshot shows the Cloudera Manager HDFS browser interface. A modal window titled "File information - part-m-00000" is open, displaying details about a specific file block. The modal includes fields for "Block ID" (1073741825), "Block Pool ID" (BP-298981721-127.0.1.1-1628566508797), "Generation Stamp" (1001), "Size" (137), and "Availability" (Toshiba). Below this, the file content is shown as a plain text table:

1	Sana	Mumbai,95000
2	Rtya	Pune,85000
3	Karan	Jaitpur,55000
4	Rahul	Delhi,78000
5	Bush	Mumbai,75000
6	Ram	Delhi,66000
7	Adonia	Pune,71000

TRANSFERRING AN ENTIRE TABLE INTO HADOOP:

The command is as follows:

```
sqoop import --connect jdbc:mysql://127.0.0.1:3306/Emp --username root --password root --table Faculty -m 1
```

If `-m 1` is not used then the output is not saved in a single partition. It makes more than 1 partitions in the hdfs.

```

ado@Toshiba:~$ sqoop import --connect jdbc:mysql://127.0.0.1:3306/emp ado@Toshiba:~$ sqoop import --connect jdbc:mysql://127.0.0.1:3306/emp --
username root --password Adonla@12 --table Faculty -m 1 --target-dir /result
Warning: /usr/lib/sqoop/../hbase does not exist! HBase imports will fail.
Please set $HBASE_HOME to the root of your HBase installation.
Warning: /usr/lib/sqoop/../hcatalog does not exist! HCatalog jobs will fail.
Please set $HCAT_HOME to the root of your HCatalog installation.
Warning: /usr/lib/sqoop/../accumulo does not exist! Accumulo imports will fail.
Please set $ACCUMULO_HOME to the root of your Accumulo installation.
Warning: /usr/lib/sqoop/../zookeeper does not exist! Accumulo imports will fail.
Please set $ZOOKEEPER_HOME to the root of your Zookeeper installation.
21/08/10 21:36:38 INFO sqoop.Sqoop: Running Sqoop version: 1.4.6
21/08/10 21:36:38 WARN tool.BaseSqoopTool: Setting your password on the command-line is insecure. Consider using -P instead.
21/08/10 21:36:38 INFO manager.MySQLManager: Preparing to use a MySQL streaming resultset.
21/08/10 21:36:38 INFO tool.CodeGenTool: Beginning code generation
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.
21/08/10 21:36:38 INFO manager.SqlManager: Executing SQL statement: SELECT t.* FROM `Faculty` AS t LIMIT 1
21/08/10 21:36:38 INFO manager.SqlManager: Executing SQL statement: SELECT t.* FROM `Faculty` AS t LIMIT 1
21/08/10 21:36:38 INFO orm.CompilationManager: HADOOP_MAPRED_HOME is /usr/local/hadoop
Note: /tmp/sqoop-ado/compile/77876d659b9ba1ecc1dd4338e1ec3a/Faculty.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
21/08/10 21:36:39 INFO orm.CompilationManager: Writing jar file: /tmp/sqoop-ado/compile/77876d659b9ba1ecc1dd4338e1ec3a/Faculty.jar
21/08/10 21:36:39 WARN manager.MySQLManager: It looks like you are importing from mysql.
21/08/10 21:36:39 WARN manager.MySQLManager: This transfer can be faster! Use the --direct
21/08/10 21:36:39 WARN manager.MySQLManager: option to exercise a MySQL-specific fast path.
21/08/10 21:36:39 INFO manager.MySQLManager: Setting zero DATETIME behavior to convertToNull (mysql)
21/08/10 21:36:39 INFO mapreduce.ImportJobBase: Beginning import of Faculty
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.apache.hadoop.security.authentication.util.KerberosUtil (file:/usr/local/hadoop/share/hadoop/common/lib/hadoop-auth-2.7.1.jar) to method sun.security.krb5.Config.getInstance()
WARNING: Please consider reporting this to the maintainers of org.apache.hadoop.security.authentication.util.KerberosUtil
WARNING: Use -illegal-access=warn to enable warnings of further illegal reflective access operations
WARNING: All illegal access operations will be denied in a future release
21/08/10 21:36:40 INFO Configuration.deprecation: mapred.jar is deprecated. Instead, use mapreduce.job.jar
21/08/10 21:36:40 INFO Configuration.deprecation: mapred.job.tracker is deprecated. Instead, use mapreduce.jobtracker.address
21/08/10 21:36:40 INFO Configuration.deprecation: session.id is deprecated. Instead, use dfs.metrics.session-id
21/08/10 21:36:40 INFO jvm.JvmMetrics: Initializing JVM Metrics with processName=JobTracker, sessionId=
Total committed heap usage (bytes)=132120576
File Input Format Counters
Bytes Read=0
File Output Format Counters
Bytes Written=137
21/08/10 21:36:42 INFO mapred.LocalJobRunner: Finishing task: attempt_local1884076220_0001_m_000000_0
21/08/10 21:36:42 INFO mapred.LocalJobRunner: map task executor complete.
21/08/10 21:36:42 INFO mapreduce.Job: Job job_local1884076220_0001 running in uber mode : false
21/08/10 21:36:42 INFO mapreduce.Job: map 100% reduce 0%
21/08/10 21:36:42 INFO mapreduce.Job: Job job_local1884076220_0001 completed successfully
21/08/10 21:36:42 INFO mapreduce.Job: Counters: 20
File System Counters
FILE: Number of bytes read=19489276
FILE: Number of bytes written=19950174
FILE: Number of read operations=0
FILE: Number of large read operations=0
FILE: Number of write operations=0
HDFS: Number of bytes read=0
HDFS: Number of bytes written=137
HDFS: Number of read operations=4
HDFS: Number of large read operations=0
HDFS: Number of write operations=3
Map -Reduce Framework
Map input records=7
Map output records=7
Input split bytes=87
Spilled Records=0
Failed Shuffles=0
Merged Map outputs=0
GC time elapsed (ms)=3
Total committed heap usage (bytes)=132120576
File Input Format Counters
Bytes Read=0
File Output Format Counters
Bytes Written=137
21/08/10 21:36:42 INFO mapreduce.ImportJobBase: Transferred 137 bytes in 2.0881 seconds (65.6094 bytes/sec)
21/08/10 21:36:42 INFO mapreduce.ImportJobBase: Retrieved 7 records.

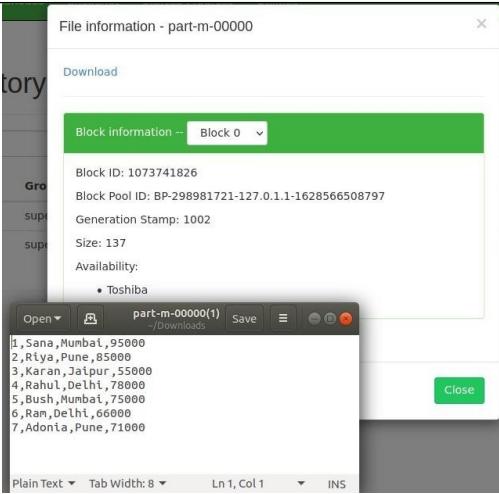
Browsing HDFS
localhost:50070/explorer.html#/
```

Hadoop Overview Datanodes Snapshot Startup Progress Utilities

Browse Directory

/	Go!						
Permission	Owner	Group	Size	Last Modified	Replication	Block Size	Name
drwxr-xr-x	slade	supergroup	0 B	10/8/2021, 9:36:42 pm	0	0 B	result
drwxr-xr-x	slade	supergroup	0 B	10/8/2021, 8:20:48 pm	0	0 B	user

Hadoop, 2018.



Exercises for Students:

SPECIFYING A TARGET DIRECTORY:

- Specify the target directory in HDFS into which we want the output to be saved.

```

Warning: /usr/lib/sqoop/.hbbase does not exist! HBase imports will fail.
Please set SHBASE_HOME to the root of your HBase installation.
Warning: /usr/lib/sqoop/.hcatalog does not exist! HCatalog jobs will fail.
Please set SHCAT_HOME to the root of your HCatalog installation.
Warning: /usr/lib/sqoop/.accumulo does not exist! Accumulo imports will fail.
Please set SACUMULO_HOME to the root of your Accumulo installation.
Warning: /usr/lib/sqoop/.zookeeper does not exist! Zookeeper imports will fail.
Please set ZOOKEEPER_HOME to the root of your Zookeeper installation.
21/08/10 21:36:38 INFO sqoop.Sqoop: Running Sqoop version: 1.4.6
21/08/10 21:36:38 WARN tool.BaseSqoopTool: Setting your password on the command-line is insecure. Consider using -P instead.
21/08/10 21:36:38 INFO manager.MySQLManager: Preparing to use a MySQL streaming resultset.
21/08/10 21:36:38 INFO tool.CodeGenTool: Beginning code generation
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.
21/08/10 21:36:38 INFO manager.SqlManager: Executing SQL statement: SELECT t.* FROM `Faculty` AS t LIMIT 1
21/08/10 21:36:38 INFO manager.SqlManager: Executing SQL statement: SELECT t.* FROM `Faculty` AS t LIMIT 1
21/08/10 21:36:38 INFO orm.CompilationManager: HADOOP_MAPRED_HOME is /usr/local/hadoop
Note: /tmp/sqoop-ado/compile/77876d659bba1eec3a/Faculty.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
21/08/10 21:36:39 INFO orm.CompilationManager: Writing jar file: /tmp/sqoop-ado/compile/77876d659bba1eec3a/Faculty.jar
21/08/10 21:36:39 WARN manager.MySQLManager: It looks like you are importing from mysql.
21/08/10 21:36:39 WARN manager.MySQLManager: This transfer can be faster! Use the --direct
21/08/10 21:36:39 WARN manager.MySQLManager: option to exercise a MySQL-specific fast path.
21/08/10 21:36:39 INFO manager.MySQLManager: Setting zero DATETIME behavior to convertToNull (mysql)
21/08/10 21:36:39 INFO mapreduce.ImportJobBase: Beginning import of Faculty
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.apache.hadoop.security.authentication.util.KerberosUtil (file:/usr/local/hadoop/share/hadoop/common/lib/hadoop-auth-2.7.7.jar) to method sun.security.krb5.config.getInstance()
WARNING: Please consider reporting this to the maintainers of org.apache.hadoop.security.authentication.util.KerberosUtil
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflective access operations
WARNING: All illegal access operations will be denied in a future release
21/08/10 21:36:40 INFO Configuration.deprecation: mapred.jar is deprecated. Instead, use mapreduce.job.jar
21/08/10 21:36:40 INFO Configuration.deprecation: mapred.job.tracker is deprecated. Instead, use mapreduce.jobtracker.address
21/08/10 21:36:40 INFO Configuration.deprecation: session.id is deprecated. Instead, use dfs.metrics.session-id
21/08/10 21:36:40 INFO jvm.JvmMetrics: Initializing JVM Metrics with processName=JobTracker, sessionId=
Total committed heap usage (bytes)=132120576
File Input Format Counters
Bytes Read=0
File Output Format Counters
Bytes Written=137
21/08/10 21:36:42 INFO mapred.LocalJobRunner: Finishing task: attempt_local1884076220_0001_m_000000_0
21/08/10 21:36:42 INFO mapred.LocalJobRunner: map task executor complete.
21/08/10 21:36:42 INFO mapreduce.Job: Job job_local1884076220_0001 running in uber mode : false
21/08/10 21:36:42 INFO mapreduce.Job: map 100% reduce 0%
21/08/10 21:36:42 INFO mapreduce.Job: Job job_local1884076220_0001 completed successfully
21/08/10 21:36:42 INFO mapreduce.Job: Counters: 20
File System Counters
FILE: Number of bytes read=19489276
FILE: Number of bytes written=19950174
FILE: Number of read operations=0
FILE: Number of large read operations=0
FILE: Number of write operations=0
HDFS: Number of bytes read=0
HDFS: Number of bytes written=137
HDFS: Number of read operations=4
HDFS: Number of large read operations=0
HDFS: Number of write operations=3
Map-Reduce Framework
Map input records=7
Map output records=7
Input split bytes=87
Spilled Records=0
Failed Shuffles=0
Merged Map outputs=0
GC time elapsed (ms)=3
Total committed heap usage (bytes)=132120576
File Input Format Counters
Bytes Read=0
File Output Format Counters
Bytes Written=137
21/08/10 21:36:42 INFO mapreduce.ImportJobBase: Transferred 137 bytes in 2.0881 seconds (65.6094 bytes/sec)
21/08/10 21:36:42 INFO mapreduce.ImportJobBase: Retrieved 7 records.

```

The screenshot shows a web-based HDFS file explorer interface. At the top, there's a navigation bar with links for Hadoop, Overview, Datanodes, Snapshot, Startup Progress, and Utilities. Below the bar, a title "Browse Directory" is displayed, followed by a search bar with the path "/". A table lists two files: "result" and "user".

Permission	Owner	Group	Size	Last Modified	Replication	Block Size	Name
drwxr-xr-x	slade	supergroup	0 B	10/8/2021, 9:36:42 pm	0	0 B	result
drwxr-xr-x	slade	supergroup	0 B	10/8/2021, 8:20:48 pm	0	0 B	user

A modal window titled "File information - part-m-00000" is open, showing the details for the "user" file. It includes fields for Block ID (1073741826), Block Pool ID (BP-298981721-127.0.1.1-1628566508797), Generation Stamp (1002), Size (137), and Availability (Toshiba). The file content is displayed as a plain text table:

1,Sana,Mumbai,95000
2,Riya,Pune,85000
3,Karan,Jaipur,55000
4,Rahul,Delhi,78000
5,Bush,Mumbai,75000
6,Ran,Delhi,66000
7,Adonia,Pune,71000

At the bottom of the modal, there are "Open", "Save", and "Close" buttons.

IMPORTING ONLY A SUBSET OF DATA:
2. We will now import only a part of the table Faculty:

```
Warning: /usr/lib/sqoop/../hbase does not exist! HBase imports will fail.
Please set $HBASE_HOME to the root of your HBase installation
Warning: /usr/lib/sqoop/../hcatalog does not exist! HCatalog jobs will fail.
Please set $HCAT_HOME to the root of your HCatalog installation
Warning: /usr/lib/sqoop/../accumulo does not exist! Accumulo imports will fail.
Please set $ACCUMULO_HOME to the root of your Accumulo installation
Warning: /usr/lib/sqoop/../zookeeper does not exist! Accumulo imports will fail.
Please set $ZOOKEEPER_HOME to the root of your Zookeeper installation
21/08/10 21:49:36 INFO sqoop.Sqoop: Running Sqoop version: 1.4.6
21/08/10 21:49:36 WARN tool.BaseSqoopTool: Setting your password on the command-line is insecure. Consider using -P instead.
21/08/10 21:49:36 INFO manager.MySQLManager: Preparing to use a MySQL streaming resultset.
21/08/10 21:49:36 INFO tool.CodeGenTool: Beginning code generation
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.
21/08/10 21:49:36 INFO manager.SqlManager: Executing SQL statement: SELECT t.* FROM `Faculty` AS t LIMIT 1
21/08/10 21:49:36 INFO manager.SqlManager: Executing SQL statement: SELECT t.* FROM `Faculty` AS t LIMIT 1
21/08/10 21:49:36 INFO orm.CompilationManager: HADOOP_MAPRED_HOME is /usr/local/hadoop
Note: /tmp/sqoop-ado/compile/ea8a53962c117324c868c69249e61266/Faculty.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
21/08/10 21:49:37 INFO orm.CompilationManager: Writing jar file: /tmp/sqoop-ado/compile/ea8a53962c117324c868c69249e61266/Faculty.jar
21/08/10 21:49:37 WARN manager.MySQLManager: It looks like you are importing from mysql.
21/08/10 21:49:37 WARN manager.MySQLManager: This transfer can be faster! Use the --direct
21/08/10 21:49:37 WARN manager.MySQLManager: option to exercise a MySQL-specific fast path.
21/08/10 21:49:37 INFO manager.MySQLManager: Setting zero DATEETIME behavior to convertToNull (mysql)
21/08/10 21:49:37 INFO mapreduce.ImportJobBase: Beginning import of Faculty
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.apache.hadoop.security.authentication.util.KerberosUtil (file:/usr/local/hadoop/share/hadoop/common/lib/hadoop-auth-2.7.7.jar) to method sun.security.krb5.Config.getINSTANCE()
WARNING: Please consider reporting this to the maintainers of org.apache.hadoop.security.authentication.util.KerberosUtil
WARNING: Use -Dillegal-access=warn to enable warnings of further illegal reflective access operations
WARNING: All illegal access operations will be denied in a future release
21/08/10 21:49:38 INFO Configuration.deprecation: mapred.jar is deprecated. Instead, use mapreduce.job.jar
21/08/10 21:49:38 INFO Configuration.deprecation: mapred.job.tracker is deprecated. Instead, use mapreduce.job.tracker.address
21/08/10 21:49:38 INFO Configuration.deprecation: session.id is deprecated. Instead, use dfs.metrics.sessionId=
21/08/10 21:49:38 INFO jvm.JvmMetrics: Initializing JVM Metrics with processName=JobTracker, sessionId=
21/08/10 21:49:38 INFO db.DBInputFormat: Using read committed transaction isolation
    Total committed heap usage (bytes)=148897792
File Input Format Counters
  Bytes Read=0
File Output Format Counters
  Bytes Written=81
21/08/10 21:49:39 INFO mapred.LocalJobRunner: Finishing task: attempt_local1279582788_0001_m_000000
21/08/10 21:49:39 INFO mapred.LocalJobRunner: map task executor complete.
21/08/10 21:49:40 INFO mapreduce.Job: Job job_local1279582788_0001 running in uber mode : false
21/08/10 21:49:40 INFO mapreduce.Job: map 100% reduce 0%
21/08/10 21:49:40 INFO mapreduce.Job: Job job_local1279582788_0001 completed successfully
21/08/10 21:49:40 INFO mapreduce.Job: Counters: 20
  File System Counters
    FILE: Number of bytes read=19488346
    FILE: Number of bytes written=19949224
    FILE: Number of read operations=0
    FILE: Number of large read operations=0
    FILE: Number of write operations=0
    HDFS: Number of bytes read=0
    HDFS: Number of bytes written=81
    HDFS: Number of read operations=4
    HDFS: Number of large read operations=0
    HDFS: Number of write operations=3
  Map-Reduce Framework
    Map input records=7
    Map output records=7
    Input split bytes=87
    Spilled Records=0
    Failed Shuffles=0
    Merged Map outputs=0
    GC time elapsed (ns)=0
    Total committed heap usage (bytes)=148897792
Text Editor
File Input Format Counters
  Bytes Read=0
File Output Format Counters
  Bytes Written=81
21/08/10 21:49:40 INFO mapreduce.ImportJobBase: Transferred 81 bytes in 2.062 seconds (39.2817 bytes/sec)
```



Browse Directory

Permission	Owner	Group	Size	Last Modified	Replication	Block Size	Name
drwxr-xr-x	slade	supergroup	0 B	10/8/2021, 9:36:42 pm	0	0 B	result
drwxr-xr-x	slade	supergroup	0 B	10/8/2021, 9:49:39 pm	0	0 B	specificresult
drwxr-xr-x	slade	supergroup	0 B	10/8/2021, 8:20:48 pm	0	0 B	user

Browsing HDFS

localhost:50070/explorer.html#/specificresult

Hadoop Overview Datanodes Snapshot Startup Progress Utilities

Browse Directory

/specificresult

Permission	Owner	Group	Size	Last Modified	Replication	Block Size	Name
-rw-r--r--	slade	supergroup	0 B	10/8/2021, 9:49:39 pm	1	128 MB	_SUCCESS
-rw-r--r--	slade	supergroup	81 B	10/8/2021, 9:49:39 pm	1	128 MB	part-m-00000

Open part-m-00000(3) -/Downloads Save

Sana,Mumbai
Riya,Pune
Karan,Jaipur
Rahul,Delhi
Bush,Mumbai
Ram,Delhi
Adonia,Pune

Plain Text Tab Width: 8 Ln 1, Col 1 INS

PROTECTIN G YOUR PASSWORD:

4. There are two ways of specifying the password. First is to write -P in the command and then specify the password later on.

```
ad@Toshiba:~$ sqoop import --connect jdbc:mysql://127.0.0.1:3306/engineer --username root -P --table engg_student --target-dir /importengine
Warning: /usr/lib/sqoop/../hbase does not exist! HBase imports will fail.
Please set SHBASE_HOME to the root of your HBase installation.
Warning: /usr/lib/sqoop/../hcatalog does not exist! HCatalog jobs will fail.
Please set SHCAT_HOME to the root of your HCatalog installation.
Warning: /usr/lib/sqoop/../accumulo does not exist! Accumulo imports will fail.
Please set SACCUMULO_HOME to the root of your Accumulo installation.
Warning: /usr/lib/sqoop/../zookeeper does not exist! Zookeeper imports will fail.
Please set ZOOKEEPER_HOME to the root of your Zookeeper installation.
21/08/16 19:34:52 INFO sqoop.Sqoop: Running Sqoop version: 1.4.6
Enter password:
21/08/16 19:35:37 INFO manager.MySQLManager: Preparing to use a MySQL streaming resultset.
21/08/16 19:35:37 INFO tool.CodeGenTool: Beginning code generation
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.
21/08/16 19:35:37 INFO manager.SqlManager: Executing SQL statement: SELECT t.* FROM `engg_student` AS t LIMIT 1
21/08/16 19:35:37 INFO manager.SqlManager: Executing SQL statement: SELECT t.* FROM `engg_student` AS t LIMIT 1
21/08/16 19:35:39 INFO orm.CompilationManager: HADOOP_MAPRED_HOME is '/usr/local/hadoop'
Note: /tmp/sqoop-ad0/compile/aeab997d316245f8113f1a4eb4d3b28/engg_student.java uses or overrides a deprecated API.
Note: Recompiling with -Xlint:deprecation for details.
21/08/16 19:35:39 INFO orm.CompilationManager: Writing jar file: /tmp/sqoop-ad0/compile/aeab997d316245f8113f1a4eb4d3b28/engg_student.jar
21/08/16 19:35:39 WARN manager.MySQLManager: It looks like you are importing from mysql.
21/08/16 19:35:39 WARN manager.MySQLManager: This transfer can be faster! Use the --direct
21/08/16 19:35:39 WARN manager.MySQLManager: option to exercise a MySQL-specific fast path.
21/08/16 19:35:39 INFO manager.MySQLManager: Setting zero DATETIME behavior to convertToNull (mysql)
21/08/16 19:35:39 INFO mapreduce.ImportJobBase: Beginning import of engg_student
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.apache.hadoop.security.authentication.util.KerberosUtil (file:/usr/local/hadoop/share/hadoop/common/lib/hadoop-auth-2.7.7.jar) to method sun.security.krb5.Config.getInstance()
WARNING: Please consider reporting this to the maintainers of org.apache.hadoop.security.authentication.util.KerberosUtil
WARNING: Use -illegal-access=warn to enable warnings of further illegal reflective access operations
WARNING: All illegal access operations will be denied in a future release
21/08/16 19:35:39 INFO Configuration.deprecation: mapred.jar is deprecated. Instead, use mapreduce.job.jar
21/08/16 19:35:39 INFO Configuration.deprecation: mapred.job.tracker is deprecated. Instead, use mapreduce.jobtracker.address
21/08/16 19:35:39 INFO Configuration.deprecation: session.id is deprecated. Instead, use dfs.metrics.session-id
21/08/16 19:35:39 INFO jvm.JvmMetrics: Initializing JVM Metrics with processName=JobTracker, sessionId=
21/08/16 19:35:39 INFO db.DBInputFormat: Using read committed transaction isolation
Bytes Written=72
21/08/16 19:35:41 INFO mapred.LocalJobRunner: Finishing task: attempt_local1443023854_0001_m_000001_0
21/08/16 19:35:41 INFO mapred.LocalJobRunner: map task executor complete.
21/08/16 19:35:41 INFO mapreduce.Job: Job job_local1443023854_0001 running in uber mode : false
21/08/16 19:35:41 INFO mapreduce.Job: map 100% reduce 0%
21/08/16 19:35:41 INFO mapreduce.Job: Job job_local1443023854_0001 completed successfully
21/08/16 19:35:41 INFO mapreduce.Job: Counters: 20
File System Counters
FILE: Number of bytes read=38978756
FILE: Number of bytes written=39900500
FILE: Number of read operations=0
FILE: Number of large read operations=0
FILE: Number of write operations=0
HDFS: Number of bytes read=0
HDFS: Number of bytes written=184
HDFS: Number of read operations=11
HDFS: Number of large read operations=0
HDFS: Number of write operations=8
Map-Reduce Framework
Map input records=7
Map output records=7
Input split bytes=221
Spilled Records=0
Failed Shuffles=0
Merged Map outputs=0
GC time elapsed (ms)=0
Total committed heap usage (bytes)=264241152
File Input Format Counters
Bytes Read=0
File Output Format Counters
Bytes Written=128
21/08/16 19:35:41 INFO mapreduce.ImportJobBase: Transferred 184 bytes in 2.1112 seconds (87.1531 bytes/sec)
21/08/16 19:35:41 INFO mapreduce.ImportJobBase: Retrieved 7 records.
```

Implement the Second way of specifying the password is writing thepassword in a file and then specifying the file in the command.

```
ado@Toshiba:~$ hadoop fs -put pass-file /importengineer_sqoop2/pass-file
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.apache.hadoop.security.authentication.util.KerberosUtil (file:/usr/local/hadoop/share/hadoop/common/lib/hadoop-auth-2.7.7.jar) to method sun.security.krb5.Config.getInstance()
WARNING: Please consider reporting this to the maintainers of org.apache.hadoop.security.authentication.util.KerberosUtil
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflective access operations
WARNING: All illegal access operations will be denied in a future release

ado@Toshiba:~$ sqoop import --connect jdbc:mysql://127.0.0.1:3306/engineer --username root -password-file /importengineer_sqoop2/pass-file --table engg_student --target-dir /importengineer_sqoop3 -m 1
Warning: /usr/lib/sqoop/./hbase does not exist! HBase imports will fail.
Please set $HBASE_HOME to the root of your HBase installation.
Warning: /usr/lib/sqoop/./hcatalog does not exist! HCatalog jobs will fail.
Please set $HCAT_HOME to the root of your HCatalog installation.
Warning: /usr/lib/sqoop/./accumulo does not exist! Accumulo imports will fail.
Please set $ACCUMULO_HOME to the root of your Accumulo installation.
Warning: /usr/lib/sqoop/./zookeeper does not exist! Accumulo imports will fail.
Please set $ZOOKEEPER_HOME to the root of your Zookeeper installation.
21/08/16 20:12:32 INFO sqoop.Sqoop: Running Sqoop version: 1.4.6
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.apache.hadoop.security.authentication.util.KerberosUtil (file:/usr/local/hadoop/share/hadoop/common/lib/hadoop-auth-2.7.7.jar) to method sun.security.krb5.Config.getInstance()
WARNING: Please consider reporting this to the maintainers of org.apache.hadoop.security.authentication.util.KerberosUtil
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflective access operations
WARNING: All illegal access operations will be denied in a future release
21/08/16 20:12:33 INFO manager.MySQLManager: Preparing to use a MySQL streaming resultset.
21/08/16 20:12:33 INFO tool.CodeGenTool: Beginning code generation
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.
21/08/16 20:12:33 INFO manager.SqlManager: Executing SQL statement: SELECT t.* FROM `engg_student` AS t LIMIT 1
21/08/16 20:12:33 INFO manager.SqlManager: Executing SQL statement: SELECT t.* FROM `engg_student` AS t LIMIT 1
21/08/16 20:12:33 INFO orm.CompilationManager: HADOOP_MAPRED_HOME is /usr/local/hadoop
Note: /tmp/sqoop-ado/compile/c9129f6c67d1ddcc20b54ff8a0cf3ea/engg_student.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
21/08/16 20:12:34 INFO orm.CompilationManager: Writing jar file: /tmp/sqoop-ado/compile/c9129f6c67d1ddcc20b54ff8a0cf3ea/engg_student.jar
21/08/16 20:12:34 WARN manager.MySQLManager: It looks like you are importing from mysql!
21/08/16 20:12:34 WARN manager.MySQLManager: This transfer can be faster! Use the --direct
21/08/16 20:12:34 WARN manager.MySQLManager: option to exercise a MySQL-specific fast path.
21/08/16 20:12:34 INFO manager.MySQLManager: Setting zero DATETIME behavior to convertIONull (mysql)
21/08/16 20:12:34 INFO mapreduce.ImportJobBase: Beginning import of engg_student
21/08/16 20:12:34 INFO Configuration.deprecation: mapred.jar is deprecated. Instead, use mapreduce.job.jar
21/08/16 20:12:34 INFO Configuration.deprecation: mapred.job.tracker is deprecated. Instead, use mapreduce.jobtracker.address
21/08/16 20:12:34 INFO Configuration.deprecation: session.id is deprecated. Instead, use dfs.metrics.session-id
21/08/16 20:12:34 INFO jvm.JvmMetrics: Initializing JVM Metrics with processName=JobTracker, sessionId=
21/08/16 20:12:34 INFO db.DBInputFormat: Using read committed transaction isolation
```

Total committed heap usage (bytes)=132120576

```

File Input Format Counters
Bytes Read=0
File Output Format Counters
Bytes Written=128
21/08/16 20:12:36 INFO mapred.LocalJobRunner: Finishing task: attempt_local996615860_0001_m_000000_0
21/08/16 20:12:36 INFO mapred.LocalJobRunner: map task executor complete.
21/08/16 20:12:36 INFO mapreduce.Job: Job job_local996615860_0001 running in uber mode : false
21/08/16 20:12:36 INFO mapreduce.Job: map 100% reduce 0%
21/08/16 20:12:36 INFO mapreduce.Job: Job job_local996615860_0001 completed successfully
21/08/16 20:12:36 INFO mapreduce.Job: Counters: 20
  File System Counters
    FILE: Number of bytes read=19489121
    FILE: Number of bytes written=19948517
    FILE: Number of read operations=0
    FILE: Number of large read operations=0
    FILE: Number of write operations=0
    HDFS: Number of bytes read=9
    HDFS: Number of bytes written=128
    HDFS: Number of read operations=7
    HDFS: Number of large read operations=0
    HDFS: Number of write operations=3
  Map-Reduce Framework
    Map input records=7
    Map output records=7
    Input split bytes=87
    Spilled Records=0
    Failed Shuffles=0
    Merged Map outputs=0
    GC time elapsed (ms)=3
  Total committed heap usage (bytes)=132120576
File Input Format Counters
Bytes Read=0
File Output Format Counters
Bytes Written=128
21/08/16 20:12:36 INFO mapreduce.ImportJobBase: Transferred 128 bytes in 2.0928 seconds (61.1623 bytes/sec)
21/08/16 20:12:36 INFO mapreduce.ImportJobBase: Retrieved 7 records.
slade@slade:~$
```

Browsing HDFS +

localhost:50070/explorer.html#/

Hadoop Overview Datanodes Snapshot Startup Progress Utilities

Browse Directory

/

Permission	Owner	Group	Size	Last Modified	Replication	Block Size	Name
drwxr-xr-x	slade	supergroup	0 B	16/8/2021, 8:01:02 pm	0	0 B	importengineer_sqoob1
drwxr-xr-x	slade	supergroup	0 B	16/8/2021, 8:10:45 pm	0	0 B	importengineer_sqoob2
drwxr-xr-x	slade	supergroup	0 B	16/8/2021, 8:12:36 pm	0	0 B	importengineer_sqoob3

Hadoop, 2018.

Browsing HDFS +

localhost:50070/explorer.html#/importengineer_sqoob2

Hadoop Overview Datanodes Snapshot Startup Progress Utilities

Browse Directory

/importengineer_sqoob2

Permission	Owner	Group	Size	Last Modified	Replication	Block Size	Name
-rw-r--r--	slade	supergroup	0 B	16/8/2021, 7:35:41 pm	1	128 MB	_SUCCESS
-rw-r--r--	slade	supergroup	56 B	16/8/2021, 7:35:41 pm	1	128 MB	part-m-00000
-rw-r--r--	slade	supergroup	72 B	16/8/2021, 7:35:41 pm	1	128 MB	part-m-00001
-rw-r--r--	slade	supergroup	9 B	16/8/2021, 8:10:45 pm	1	128 MB	pass-file

Hadoop, 2018.

COMPRESSING IMPORTED DATA:

- Use command to compress the imported data.

`ado@Toshiba:~$ sqoop import --connect jdbc:mysql://127.0.0.1:3306/emp --username root --password Adonta@12 --table Faculty --target-dir /user/ado/snapp_Faculty --compression-codec org.apache.hadoop.io.compress.SnappyCodec`

Warning: /usr/lib/sqoop/./.hbase does not exist! HBase imports will fail.
 Please set \$HBASE_HOME to the root of your HBase installation.
 Warning: /usr/lib/sqoop/./.hcatalog does not exist! HCatalog jobs will fail.
 Please set \$HCAT_HOME to the root of your HCatalog installation.
 Warning: /usr/lib/sqoop/./.accumulo does not exist! Accumulo imports will fail.
 Please set \$ACCUMULO_HOME to the root of your Accumulo installation.
 Warning: /usr/lib/sqoop/./.zookeeper does not exist! Accumulo imports will fail.
 Please set \$ZOOKEEPER_HOME to the root of your Zookeeper installation.

21/08/10 23:31:57 INFO sqoop.Sqoop: Running Sqoop version: 1.4.6
 21/08/10 23:31:57 WARN tool.BaseSqoopTool: Setting your password on the command-line is insecure. Consider using -P instead.
 21/08/10 23:31:57 INFO manager.MySQLManager: Preparing to use a MySQL streaming resultset.
 21/08/10 23:31:57 INFO tool.CodeGenTool: Beginning code generation
 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.
 21/08/10 23:31:57 INFO manager.SqlManager: Executing SQL statement: SELECT t.* FROM `Faculty` AS t LIMIT 1
 21/08/10 23:31:57 INFO manager.SqlManager: Executing SQL statement: SELECT t.* FROM `Faculty` AS t LIMIT 1
 21/08/10 23:31:57 INFO orm.CompilationManager: HADOOP_MAPRED_HOME is /usr/local/hadoop
 Note: /tmp/sqoop-ado/compile/a2aeda7e422d39a463c26b59cd1c93d8/Faculty.java uses or overrides a deprecated API.
 Note: Recompile with -Xlint:deprecation for details.
 21/08/10 23:31:59 INFO orm.CompilationManager: Writing jar file: /tmp/sqoop-ado/compile/a2aeda7e422d39a463c26b59cd1c93d8/Faculty.jar
 21/08/10 23:31:59 WARN manager.MySQLManager: It looks like you are importing from mysql.
 21/08/10 23:31:59 WARN manager.MySQLManager: This transfer can be faster! Use the --direct
 21/08/10 23:31:59 WARN manager.MySQLManager: option to execute a MySQL-specific fast path.
 21/08/10 23:31:59 INFO manager.MySQLManager: Setting zero DATETIME behavior to convertToNull (mysql)
 21/08/10 23:31:59 INFO mapreduce.ImportJobBase: Beginning Import of Faculty
 WARNING: An illegal reflective access operation has occurred
 WARNING: Illegal reflective access by org.apache.hadoop.security.authentication.util.KerberosUtil (file:/usr/local/hadoop/share/hadoop/common/lib/hadoop-auth-2.7.7.jar) to method sun.security.krb5.Config.getInstance()
 WARNING: Please consider reporting this to the maintainers of org.apache.hadoop.security.authentication.util.KerberosUtil
 WARNING: Use -illegal-access=warn to enable warnings of further illegal reflective access operations
 WARNING: All illegal access operations will be denied in a future release
 21/08/10 23:31:59 INFO Configuration.deprecation: mapred.jar is deprecated. Instead, use mapreduce.job.jar
 21/08/10 23:31:59 INFO Configuration.deprecation: mapred.job.tracker is deprecated. Instead, use mapreduce.jobtracker.address
 21/08/10 23:31:59 INFO Configuration.deprecation: session.id is deprecated. Instead, use dfs.metrics.session-id
 21/08/10 23:31:59 INFO jvm.JvmMetrics: Initializing JVM Metrics with processName=JobTracker, sessionId=1408750222234844
 21/08/10 23:31:59 INFO jvm.JvmMetrics: Total committed heap usage (bytes)=132120576
 File Input Format Counters
 Bytes Read=0
 File Output Format Counters
 Bytes Written=48
 21/08/10 23:32:01 INFO mapred.LocalJobRunner: Finishing task: attempt_local3483673_0001_m_000003_0
 21/08/10 23:32:01 INFO mapred.LocalJobRunner: map task executor complete.
 21/08/10 23:32:01 INFO mapreduce.Job: Job job_local3483673_0001 running in uber mode : false
 21/08/10 23:32:01 INFO mapreduce.Job: map 100% reduce 0%
 21/08/10 23:32:01 INFO mapreduce.Job: Job: job_local3483673_0001 completed successfully
 21/08/10 23:32:01 INFO mapreduce.Job: Counters: 20
 File System Counters
 FILE: Number of bytes read=77960848
 FILE: Number of bytes written=79782696
 FILE: Number of read operations=0
 FILE: Number of large read operations=0
 FILE: Number of write operations=0
 HDFS: Number of bytes read=0
 HDFS: Number of bytes written=453
 HDFS: Number of read operations=34
 HDFS: Number of large read operations=0
 HDFS: Number of write operations=24
 Map-Reduce Framework
 Map input records=7
 Map output records=7
 Input split bytes=393
 Spilled Records=0
 Failed Shuffles=0
 Merged Map outputs=0
 GC time elapsed (ms)=2
 Total committed heap usage (bytes)=528482304
 File Input Format Counters
 Bytes Read=0
 File Output Format Counters
 Bytes Written=177
 21/08/10 23:32:01 INFO mapreduce.ImportJobBase: Transferred 453 bytes in 2.0897 seconds (216.7817 bytes/sec)
 21/08/10 23:32:01 INFO mapreduce.ImportJobBase: Retrieved 7 records.
 ado@Toshiba:~\$

Browsing HDFS x +

localhost:50070/explorer.html#/user/ado/snapp_Faculty

Hadoop Overview Datanodes Snapshot Startup Progress Utilities -

Browse Directory

/user/ado/snapp_Faculty								Go!
Permission	Owner	Group	Size	Last Modified	Replication	Block Size	Name	
-rw-r--r--	slade	supergroup	0 B	10/08/2021, 11:32:01 pm	1	128 MB	_SUCCESS	
-rw-r--r--	slade	supergroup	48 B	10/08/2021, 11:32:01 pm	1	128 MB	part-m-00000.snappy	
-rw-r--r--	slade	supergroup	51 B	10/08/2021, 11:32:01 pm	1	128 MB	part-m-00001.snappy	
-rw-r--r--	slade	supergroup	30 B	10/08/2021, 11:32:01 pm	1	128 MB	part-m-00002.snappy	
-rw-r--r--	slade	supergroup	48 B	10/08/2021, 11:32:01 pm	1	128 MB	part-m-00003.snappy	

Hadoop, 2018.

mmm

Exporting DATA FROM HDFS to RELATIONAL DATABASE:

5. Export the data
 Create database engineer

```
ado@Toshiba:~$ mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 25
Server version: 5.7.35-0ubuntu0.18.04.1 (Ubuntu)

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affiliates. Other names may be trademarks of their respective
owners.

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

mysql> create database engineer
      -> ;
Query OK, 1 row affected (0.01 sec)

mysql> create table student;
ERROR 1046 (3D000): No database selected
mysql> use engineer;
Database changed

mysql> use engineer;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> show tables;
+-----+
| Tables_in_engineer |
+-----+
| engg_student        |
+-----+
1 row in set (0.00 sec)

mysql> select * from engg_student;
+-----+-----+-----+-----+
| engg_id | f_name | l_name | dept   |
+-----+-----+-----+-----+
|    51  | Adonia | Seq    | COMPS  |
|    52  | Jaden   | Smith   | MECH   |
|    53  | Jenny   | Vaz    | IT     |
|    54  | John    | Aly    | EXTC   |
|    55  | Ann     | Mary   | COMPS  |
|    56  | Tom     | Thomas | IT     |
|    57  | Nicci   | Ferns  | EXTC   |
+-----+-----+-----+-----+
7 rows in set (0.05 sec)
```

```

ado@Toshiba:~$ sqoop import --connect jdbc:mysql://127.0.0.1:3306/engineer --username root --password Adonia@12 --table engg_student --target-dir /importengineer_sqoop -m 2
Warning: /usr/lib/sqoop/..hbbase does not exist! HBase imports will fail.
Please set SHBASE_HOME to the root of your HBase installation.
Warning: /usr/lib/sqoop/..hcatalog does not exist! HCatalog jobs will fail.
Please set SHCAT_HOME to the root of your HCatalog installation.
Warning: /usr/lib/sqoop/..accumulo does not exist! Accumulo imports will fail.
Please set $ACCUMULO_HOME to the root of your Accumulo installation.
Warning: /usr/lib/sqoop/..zookeeper does not exist! Accumulo imports will fail.
Please set $ZOOKEEPER_HOME to the root of your Zookeeper installation.
21/08/11 23:20:25 INFO sqoop.Sqoop: Running Sqoop version: 1.4.6
21/08/11 23:20:25 WARN tool.BaseSqoopTool: Setting your password on the command-line is insecure. Consider using -P instead.
21/08/11 23:20:26 INFO manager.MySQLManager: Preparing to use a MySQL streaming resultset.
21/08/11 23:20:26 INFO tool.CodeGenTool: Beginning code generation
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.
21/08/11 23:20:26 INFO manager.SqlManager: Executing SQL statement: SELECT t.* FROM `engg_student` AS t LIMIT 1
21/08/11 23:20:26 INFO manager.SqlManager: Executing SQL statement: SELECT t.* FROM `engg_student` AS t LIMIT 1
21/08/11 23:20:26 INFO orm.CompilationManager: HADOOP_MAPRED_HOME is /usr/local/hadoop
Note: /tmp/sqoop-ado/compile/e0f46311396b8ee3fcas5ead35fbdbbd6/engg_student.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
21/08/11 23:20:27 INFO orm.CompilationManager: Writing jar file: /tmp/sqoop-ado/compile/e0f46311396b8ee3fcas5ead35fbdbbd6/engg_student.jar
21/08/11 23:20:27 WARN manager.MySQLManager: It looks like you are importing from mysql.
21/08/11 23:20:27 WARN manager.MySQLManager: This transfer can be faster! Use the --direct
21/08/11 23:20:27 WARN manager.MySQLManager: option to exercise a MySQL-specific fast path.
21/08/11 23:20:27 INFO manager.MySQLManager: Setting zero DATETIME behavior to convertToNull (mysql)
21/08/11 23:20:27 INFO mapreduce.ImportJobBase: Beginning import of engg_student
      File Input Format Counters
        Bytes Read=0
      File Output Format Counters
        Bytes Written=72
21/08/11 23:20:29 INFO mapred.LocalJobRunner: Finishing task: attempt_local2074460199_0001_m_000001_0
21/08/11 23:20:29 INFO mapred.LocalJobRunner: map task executor complete.
21/08/11 23:20:30 INFO mapreduce.Job: Job job_local2074460199_0001 running in uber mode : false
21/08/11 23:20:30 INFO mapreduce.Job: map 100% reduce 0%
21/08/11 23:20:30 INFO mapreduce.Job: Job job_local2074460199_0001 completed successfully
21/08/11 23:20:30 INFO mapreduce.Job: Counters
      File System Counters
        FILE: Number of bytes read=38978756
        FILE: Number of bytes written=39900496
        FILE: Number of read operations=0
        FILE: Number of large read operations=0
        FILE: Number of write operations=0
        HDFS: Number of bytes read=0
        HDFS: Number of bytes written=184
        HDFS: Number of read operations=11
        HDFS: Number of large read operations=0
        HDFS: Number of write operations=8
      Map-Reduce Framework
        Map input records=7
        Map output records=7
        Input split bytes=221
        Spilled Records=0
        Failed Shuffles=0
        Merged Map outputs=0
        GC time elapsed (ns)=0
        Total committed heap usage (bytes)=264241152
      File Input Format Counters
        Bytes Read=0
      File Output Format Counters
        Bytes Written=128
21/08/11 23:20:30 INFO mapreduce.ImportJobBase: Transferred 184 bytes in 2.0544 seconds (89.5641 bytes/sec)
21/08/11 23:20:30 INFO mapreduce.ImportJobBase: Retrieved 7 records.

```

Check table contents

```

ado@Toshiba:~$ hadoop fs -cat /importengineer_sqoop/part-m-00000
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.apache.hadoop.security.authentication.util.KerberosUtil (file:/usr/local/hadoop/share/hadoop/common/lib/hadoop-auth-2.7.7.jar) to method sun.security.krb5.Config.getinstance()
WARNING: Please consider reporting this to the maintainers of org.apache.hadoop.security.authentication.util.KerberosUtil
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflective access operations
WARNING: All illegal access operations will be denied in a future release
51,Adonia,Seq,COMPS
52,Jaden,Smith,MECH
53,Jenny,Vaz,IT
ado@Toshiba:~$ hadoop fs -cat /importengineer_sqoop/part-m-00001
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.apache.hadoop.security.authentication.util.KerberosUtil (file:/usr/local/hadoop/share/hadoop/common/lib/hadoop-auth-2.7.7.jar) to method sun.security.krb5.Config.getinstance()
WARNING: Please consider reporting this to the maintainers of org.apache.hadoop.security.authentication.util.KerberosUtil
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflective access operations
WARNING: All illegal access operations will be denied in a future release
54,John,Aly,EXTC
55,Ann,Mary,COMPS
56,Tom,Thomas,IT
57,Nicci,Ferns,EXTC

```

Create new table for export

```
mysql> desc engg_student;
+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| engg_id | int(11)   | NO   | PRI | NULL    |       |
| f_name  | varchar(30) | NO   |     | NULL    |       |
| l_name  | varchar(30) | NO   |     | NULL    |       |
| dept    | varchar(20) | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql> create table expo_engg(engg_id int NOT NULL,f_name varchar(30)
NOT NULL, l_name varchar(30) NOT NULL, dept varchar(20) NOT NULL, PRIMARY KEY(engg_id));
Query OK, 0 rows affected (0.35 sec)

mysql> desc expo_engg;
+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| engg_id | int(11)   | NO   | PRI | NULL    |       |
| f_name  | varchar(30) | NO   |     | NULL    |       |
| l_name  | varchar(30) | NO   |     | NULL    |       |
| dept    | varchar(20) | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql> select * from expo_engg;
Empty set (0.00 sec)
```

	<pre> ado@Toshiiba:~\$ sqoop import --connect jdbc:mysql://127.0.0.1:3306/engineer --username root --password Adonla@12 --table engg_st kdir /importengineer_sqoop1 -m 2 Warning: /usr/lib/sqoop/../hbase does not exist! HBase imports will fail. Please set SHBASE_HOME to the root of your HBase installation. Warning: /usr/lib/sqoop/../hcatalog does not exist! HCatalog jobs will fail. Please set SHCAT_HOME to the root of your HCatalog installation. Warning: /usr/lib/sqoop/../accumulo does not exist! Accumulo imports will fail. Please set SACUMULO_HOME to the root of your Accumulo installation. Warning: /usr/lib/sqoop/../zookeeper does not exist! Zookeeper imports will fail. Please set ZOOKEEPER_HOME to the root of your Zookeeper installation. 21/08/16 19:21:02 INFO sqoop.Sqoop: Running Sqoop version: 1.4.6 21/08/16 19:21:02 WARN tool.BaseSqoopTool: Setting your password on the command-line is insecure. Consider using -P instead. 21/08/16 19:21:02 INFO manager.MySQLManager: Preparing to use a MySQL streaming resultset. 21/08/16 19:21:02 INFO tool.CodeGenTool: Beginning code generation Loading class 'com.mysql.jdbc.Driver'. This is deprecated. The new driver class is 'com.mysql.cj.jdbc.Driver'. The driver is au listed via the SPI and manual loading of the driver class is generally unnecessary. 21/08/16 19:21:03 INFO manager.SqlManager: Executing SQL statement: SELECT t.* FROM `engg_student` AS t LIMIT 1 21/08/16 19:21:03 INFO manager.SqlManager: Executing SQL statement: SELECT t.* FROM `engg_student` AS t LIMIT 1 21/08/16 19:21:03 INFO orm.CompilationManager: HADOOP_MAPRED_HOME is /usr/local/hadoop Note: /tmp/sqoop-ado/compile/d17765b299c9cc2b1e95f13540044df9/engg_student.java uses or overrides a deprecated API. Note: Recompile with -Xlint:deprecation for details. 21/08/16 19:21:04 INFO org.apache.hadoop.mapreduce.lib.input.FileInputFormat: Total committed heap usage (bytes)=132120576 21/08/16 19:21:04 WARN manager.MySQLManager: It looks like you are importing from mysql. 21/08/16 19:21:04 WARN manager.MySQLManager: This transfer can be faster! Use the --direct 21/08/16 19:21:04 WARN manager.MySQLManager: option to exercise a MySQL-specific fast path. 21/08/16 19:21:04 INFO manager.MySQLManager: Setting zero DATETIME behavior to convertToNull (mysql) 21/08/16 19:21:04 INFO mapreduce.ImportJobBase: Beginning import of engg_student WARNING: An illegal reflective access operation has occurred WARNING: Illegal reflective access by org.apache.hadoop.security.authentication.util.KerberosUtil (file:/usr/local/hadoop/share lib/hadoop-auth-2.7.7.jar) to method sun.security.krb5.Config.getInstance() WARNING: Please consider reporting this to the maintainers of org.apache.hadoop.security.authentication.util.KerberosUtil WARNING: Use -illegal-access=warn to enable warnings of further illegal reflective access operations WARNING: All illegal access operations will be denied in a future release 21/08/16 19:21:04 INFO Configuration.deprecation: mapred.jar [REDACTED] instead, use mapreduce.job.jar 21/08/16 19:21:04 INFO Configuration.deprecation: mapred.job.tracker [REDACTED] instead, use mapreduce.jobtracker.address 21/08/16 19:21:04 INFO jvm.JvmMetrics: Initializing JVM Metrics with processName=JobTracker, sessionId= 21/08/16 19:21:04 INFO mapred.LocalJobRunner: Finishing task: attempt_local1457900323_0001_m_000001_0 21/08/16 19:21:07 INFO mapred.LocalJobRunner: map task executor complete. 21/08/16 19:21:07 INFO mapreduce.Job: Job job_local1457900323_0001 running in uber mode : false 21/08/16 19:21:07 INFO mapreduce.Job: map 100% reduce 0% 21/08/16 19:21:08 INFO mapreduce.Job: Job job_local1457900323_0001 completed successfully 21/08/16 19:21:08 INFO mapreduce.Job: Counters: 20 File System Counters FILE: Number of bytes read=3897856 FILE: Number of bytes written=39900500 FILE: Number of read operations=0 FILE: Number of large read operations=0 FILE: Number of write operations=0 HDFS: Number of bytes read=0 HDFS: Number of bytes written=184 HDFS: Number of read operations=11 HDFS: Number of large read operations=0 HDFS: Number of write operations=8 Map-Reduce Framework Map input records=7 Map output records=7 Input split bytes=221 Spilled Records=0 Failed Shuffles=0 Merged Map outputs=0 GC time elapsed (ms)=0 Total committed heap usage (bytes)=264241152 File Input Format Counters Bytes Read=0 File Output Format Counters Bytes Written=128 21/08/16 19:21:08 INFO mapreduce.ImportJobBase: Transferred 184 bytes in 3.0899 seconds (59.5483 bytes/sec) 21/08/16 19:21:08 INFO mapreduce.ImportJobBase: Retrieved 7 records. </pre>																
	<p>Hadoop Overview Datanodes Snapshot Startup Progress Utilities »</p> <h3>Browse Directory</h3> <p>/</p> <table border="1"> <thead> <tr> <th>Permission</th> <th>Owner</th> <th>Group</th> <th>Size</th> <th>Last Modified</th> <th>Replication</th> <th>Block Size</th> <th>Name</th> </tr> </thead> <tbody> <tr> <td>drwxr-xr-x</td> <td>slade</td> <td>supergroup</td> <td>0 B</td> <td>16/8/2021, 7:21:07 pm</td> <td>0</td> <td>0 B</td> <td>importengineer_sqoop1</td> </tr> </tbody> </table> <p>Hadoop, 2018.</p>	Permission	Owner	Group	Size	Last Modified	Replication	Block Size	Name	drwxr-xr-x	slade	supergroup	0 B	16/8/2021, 7:21:07 pm	0	0 B	importengineer_sqoop1
Permission	Owner	Group	Size	Last Modified	Replication	Block Size	Name										
drwxr-xr-x	slade	supergroup	0 B	16/8/2021, 7:21:07 pm	0	0 B	importengineer_sqoop1										

Browsing HDFS +

localhost:50070/explorer.html#/importengineer_sqoobi

Hadoop Overview Datanodes Snapshot Startup Progress Utilities

Browse Directory

/importengineer_sqoobi

Permission	Owner	Group	Size	Last Modified	Replication	Block Size	Name
-rw-r--r--	slade	supergroup	0 B	16/8/2021, 7:21:07 pm	1	128 MB	_SUCCESS
-rw-r--r--	slade	supergroup	56 B	16/8/2021, 7:21:06 pm	1	128 MB	part-m-00000
-rw-r--r--	slade	supergroup	72 B	16/8/2021, 7:21:06 pm	1	128 MB	part-m-00001

Hadoop, 2018.

```

ado@toshiba:~$ hadoop fs -cat /importengineer_sqoobi/part-m-00000
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.apache.hadoop.security.authentication.util.KerberosUtil (file:/usr/local/hadoop/share/hadoop/common/lib/hadoop-auth-2.7.7.jar) to method sun.security.krb5.Config.getInstance()
WARNING: Please consider reporting this to the maintainers of org.apache.hadoop.security.authentication.util.KerberosUtil
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflective access operations
WARNING: All illegal access operations will be denied in a future release
51,Adonia,Seq,COMPSP
52,Jaden,Smith,MECH
53,Jenny,Vaz,IT
ado@toshiba:~$ hadoop fs -cat /importengineer_sqoobi/part-m-00001
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.apache.hadoop.security.authentication.util.KerberosUtil (file:/usr/local/hadoop/share/hadoop/common/lib/hadoop-auth-2.7.7.jar) to method sun.security.krb5.Config.getInstance()
WARNING: Please consider reporting this to the maintainers of org.apache.hadoop.security.authentication.util.KerberosUtil
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflective access operations
WARNING: All illegal access operations will be denied in a future release
54,John,Aly,EXTC
55,Ann,Mary,COMPSP
56,Tom,Thomas,IT
57,Nicci,Ferns,EXTC
ado@toshiba:~$ sqoop export --connect jdbc:mysql://127.0.0.1:3306/engineer --username root --password Adonia@12 --table expo_engg --export-dir /importengineer_sqoobi
Warning: /usr/lib/sqoop/../hbase does not exist! HBase imports will fail.
Please set $HBASE_HOME to the root of your HBase installation.
Warning: /usr/lib/sqoop/../hcatalog does not exist! HCatalog jobs will fail.
Please set $HCAT_HOME to the root of your HCatalog installation.
Warning: /usr/lib/sqoop/../accumulo does not exist! Accumulo imports will fail.
Please set $ACCUMULO_HOME to the root of your Accumulo installation.
Warning: /usr/lib/sqoop/../zookeeper does not exist! Zookeeper imports will fail.
Please set $ZOOKEEPER_HOME to the root of your Zookeeper installation.
21/08/16 19:25:28 INFO sqoop.Sqoop: Running Sqoop version: 1.4.6
21/08/16 19:25:28 WARN tool.BaseSqoopTool: Setting your password on the command-line is insecure. Consider using -P instead.
21/08/16 19:25:28 INFO manager.MySQLManager: Preparing to use a MySQL streaming resultset.
21/08/16 19:25:28 INFO tool.CodeGenTool: Beginning code generation
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.
21/08/16 19:25:29 INFO manager.SqlManager: Executing SQL statement: SELECT t.* FROM `expo_engg` AS t LIMIT 1
21/08/16 19:25:29 INFO manager.SqlManager: Executing SQL statement: SELECT t.* FROM `expo_engg` AS t LIMIT 1
21/08/16 19:25:29 INFO orm.CompilationManager: HADOOP_MAPRED_HOME is /usr/local/hadoop
Note: /tmp/sqoop-ado/compile/c267a4913bf8a97ab29e8eb46993f7d1/expo_engg.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
21/08/16 19:25:30 INFO orm.CompilationManager: Writing jar file: /tmp/sqoop-ado/compile/c267a4913bf8a97ab29e8eb46993f7d1/expo_engg.jar
21/08/16 19:25:30 INFO mapreduce.ExportJobBase: Beginning export of expo_engg
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by org.apache.hadoop.security.authentication.util.KerberosUtil (file:/usr/local/hadoop/share/hadoop/common/lib/hadoop-auth-2.7.7.jar) to method sun.security.krb5.Config.getInstance()
WARNING: Please consider reporting this to the maintainers of org.apache.hadoop.security.authentication.util.KerberosUtil
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflective access operations
WARNING: All illegal access operations will be denied in a future release
21/08/16 19:25:30 INFO Configuration.deprecation: mapred.jar is deprecated. Instead, use mapreduce.job.jar
21/08/16 19:25:31 INFO Configuration.deprecation: mapred.reduce.tasks.speculative.execution is deprecated. Instead, use mapreduce.reduce.speculative
21/08/16 19:25:31 INFO Configuration.deprecation: mapred.map.tasks.speculative.execution is deprecated. Instead, use mapreduce.map.speculative
21/08/16 19:25:31 INFO Configuration.deprecation: mapred.job.tracker is deprecated. Instead, use mapreduce.jobtracker.address
21/08/16 19:25:31 INFO jvm.JvmMetrics: Initializing JVM Metrics with processName=JobTracker, sessionId=
21/08/16 19:25:31 INFO input.FileInputFormat: Total input paths to process : 2
21/08/16 19:25:31 INFO input.FileInputFormat: Total input paths to process : 2
Total committed heap usage (bytes)=148897792
File Input Format Counters
Bytes Read=0
File Output Format Counters
Bytes Written=0
21/08/16 19:25:32 INFO mapred.LocalJobRunner: Finishing task: attempt_local22259445_0001_m_000002
21/08/16 19:25:32 INFO mapred.LocalJobRunner: map task executor complete.
21/08/16 19:25:33 INFO mapreduce.Job: Job job_local22259445_0001 running in uber mode : false
21/08/16 19:25:33 INFO mapreduce.Job: map 100% reduce 0%
21/08/16 19:25:33 INFO mapreduce.Job: Job job_local22259445_0001 completed successfully
21/08/16 19:25:33 INFO mapreduce.Job: Counters
File System Counters
FILE: Number of bytes read=58470693
FILE: Number of bytes written=59844012
FILE: Number of read operations=0
FILE: Number of large read operations=0
FILE: Number of write operations=0
HDFS: Number of bytes read=486
HDFS: Number of bytes written=0
HDFS: Number of read operations=66
HDFS: Number of large read operations=0
HDFS: Number of write operations=0
Map-Reduce Framework
Map input records=7
Map output records=7
Input split bytes=557
Spilled Records=0
Failed Shuffles=0
Merged Map outputs=0
GC time elapsed (ms)=0
Total committed heap usage (bytes)=446693376
File Input Format Counters
Bytes Read=0
File Output Format Counters
Bytes Written=0
21/08/16 19:25:33 INFO mapreduce.ExportJobBase: Transferred 486 bytes in 2.0199 seconds (240.6027 bytes/sec)
21/08/16 19:25:33 INFO mapreduce.ExportJobBase: Exported 7 records.
ado@toshiba:~$ 
```

```

mysql> show tables;
+-----+
| Tables_in_engineer |
+-----+
| engg_student      |
| expo_engg         |
+-----+
2 rows in set (0.00 sec)

mysql> select * from engg_student;
+-----+-----+-----+-----+
| engg_id | f_name | l_name | dept   |
+-----+-----+-----+-----+
| 51     | Adonia | Seq    | COMPS  |
| 52     | Jaden   | Smith   | MECH   |
| 53     | Jenny   | Vaz    | IT     |
| 54     | John    | Aly    | EXTC   |
| 55     | Ann     | Mary   | COMPS  |
| 56     | Tom     | Thomas | IT     |
| 57     | Nicci   | Ferns  | EXTC   |
+-----+-----+-----+-----+
7 rows in set (0.00 sec)

mysql> select * from expo_engg;;
+-----+-----+-----+-----+
| engg_id | f_name | l_name | dept   |
+-----+-----+-----+-----+
| 51     | Adonia | Seq    | COMPS  |
| 52     | Jaden   | Smith   | MECH   |
| 53     | Jenny   | Vaz    | IT     |
| 54     | John    | Aly    | EXTC   |
| 55     | Ann     | Mary   | COMPS  |
| 56     | Tom     | Thomas | IT     |
| 57     | Nicci   | Ferns  | EXTC   |
+-----+-----+-----+-----+
7 rows in set (0.00 sec)

```

Conclusion:	Students will be able to use Sqoop tool for transferring data between Hadoop & relational databases
References:	http://moodle.dbit.in/ https://www.edureka.co/blog/apache-sqoop-tutorial/ https://dwgeek.com/sqoop-command-with-secure-password.html/