



Vidyavardhini's College of Engineering & Technology
Department of Computer Engineering

Experiment No. 2
Use of Sqoop tool
Date of Performance:31/07/2023
Date of Submission:07/08/2023



AIM: To install SQOOP and execute basic commands of Hadoop eco system componentSqoop.

THEORY:

Installation and configuration of SQOOP

1) Download SQOOP from <https://sqoop.apache.org>

2) Unzip and Install SQOOP

After Downloading the SQOOP, we need to Unzip the sqoop-1.4.7.bin_hadoop-2.6.0.tar.gz file.

3) Create a folder and move the final extracted file in it.

4) Set up the environment variables

a. Set SQOOP_HOME

b. Set up path variable

5) Configure SQOOP

Basic SQOOP commands:

1. List Table This command lists the particular table of the database in MYSQL server.

```
sqoop list - tables --connect jdbc:mysql://localhost/payment --username gatner
```

2. Target directory

This command import table in a specific directory in HDFS. -m denotes mapper argument. They have an integer value.

```
$ sqoop import --connect jdbc:mysql://localhost/inventory --username jony -table inventory --m 1 --target-dir/inv
```

3. sqoop-eval This command runs quickly SQL queries of the respective database.



```
$ sqoop eval --connect --query "SQLQuery"
```

CSL702: Big Data Analytics Lab

4. sqoop – version This command displays version of the sqoop.

```
$ sqoop version      sqoop {revnumber}
```

5. sqoop-job

This command allows us to create a job, the parameters that are created can be invoked at any time. They take options like (–create,–delete,–show,–exit).

```
$ sqoop job --create --import --connect --table
```

```
$ sqoop codegen --connect -table
```

6. code gen

This Sqoop command creates java class files which encapsulate the imported records. All the java files are recreated, and new versions of a class are generated. They generate code to interact with database records. Retrieves a list of all the columns and their datatypes.

7. List Database This Sqoop command lists have all the available database in the RDBMS server.

```
>$ sqoop list - database -- connect
```



Vidyavardhini's College of Engineering & Technology

Department of Computer Engineering

OUTPUT:

The image displays two screenshots. The top screenshot shows a Windows File Explorer window for the directory 'sqoop-1.4.7'. It lists various files and folders including 'bin', 'conf', 'docs', 'ivy', 'lib', 'src', 'testdata', 'build.xml', 'CHANGLOG.txt', 'COMPILING.txt', 'ivy.xml', 'LICENSE.txt', 'NOTICE.txt', 'pom-old.xml', 'README.txt', 'sqoop-1.4.7.jar', 'sqoop-patch-review.py', and 'sqoop-test-1.4.7.jar'. The bottom screenshot shows the MySQL Workbench interface for 'Local instance MySQL81 - W...'. The 'Users and Privileges' tab is active, showing a table of user accounts and a detailed configuration for the 'sqoop@localhost' account. The configuration includes fields for Login Name, Authentication Type, Limit to Hosts Matching, Password, and Confirm Password.

User	From Host
mysql.infoschema	localhost
mysql.session	localhost
mysql.sys	localhost
root	localhost
sqoop	localhost

Details for account sqoop@localhost

Login | Account Limits | Administrative Roles | Schema Privileges

You may create multiple accounts with the same login name to connect from different hosts.

Login Name: sqoop

Authentication Type: Standard

For the standard password and/or host based authentication, you must specify a password.

Limit to Hosts Matching: localhost

% and _ wildcards may be used

Password: *****

Type a password to reset it.

Consider using a password with 8 or more characters with mixed case letters, numbers and punctuation marks.

Confirm Password: *****

Enter password again to confirm.

Buttons: Add Account, Delete, Refresh, Revert, Apply



Vidyavardhini's College of Engineering & Technology

Department of Computer Engineering

MySQL Workbench - Local instance MySQL81 - W... x

File Edit View Query Database Server Tools Scripting Help

Navigator: Administration - Users and Priv... x

Local instance MySQL81
Users and Privileges

User Accounts

User	From Host
mysql.infoschema	localhost
mysql.session	localhost
mysql.sys	localhost
root	localhost
sqoop	localhost

Details for account sqoop@localhost

Role Description

Role	Description
<input type="checkbox"/> DBA	grants the rights to
<input type="checkbox"/> MaintenanceAdmin	grants rights need
<input type="checkbox"/> ProcessAdmin	rights needed to as
<input type="checkbox"/> UserAdmin	grants rights to cre
<input type="checkbox"/> SecurityAdmin	rights to manage lo
<input type="checkbox"/> MonitorAdmin	minimum set of rig
<input checked="" type="checkbox"/> DBManager	grants full rights o
<input checked="" type="checkbox"/> DBDesigner	rights to create and
<input type="checkbox"/> ReplicationAdmin	rights needed to se
<input checked="" type="checkbox"/> BackupAdmin	minimal rights need

Global Privileges

Global Privileges
<input checked="" type="checkbox"/> ALTER
<input checked="" type="checkbox"/> ALTER ROUTINE
<input checked="" type="checkbox"/> CREATE
<input checked="" type="checkbox"/> CREATE ROUTINE
<input type="checkbox"/> CREATE TABLESPACE
<input checked="" type="checkbox"/> CREATE TEMPORARY TABLES
<input checked="" type="checkbox"/> CREATE USER
<input checked="" type="checkbox"/> CREATE VIEW
<input checked="" type="checkbox"/> DELETE
<input checked="" type="checkbox"/> DROP
<input type="checkbox"/> EVENT
<input type="checkbox"/> EXECUTE
<input type="checkbox"/> FILE
<input checked="" type="checkbox"/> GRANT OPTION
<input checked="" type="checkbox"/> INDEX
<input checked="" type="checkbox"/> INSERT
<input checked="" type="checkbox"/> LOCK TABLES
<input type="checkbox"/> PROCESS
<input type="checkbox"/> REFERENCES

Revoke All Privileges

Add Account Delete Refresh Revert Apply

Output

Context Help Snippets

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

MySQL Workbench - Local instance MySQL81 - W... x

File Edit View Query Database Server Tools Scripting Help

Navigator: Administration - Users and Priv... x

Local instance MySQL81
Users and Privileges

User Accounts

User	From Host
mysql.infoschema	localhost
mysql.session	localhost
mysql.sys	localhost
root	localhost
sqoop	localhost

Details for account sqoop@localhost

Schema Privileges

Schema	Privileges
%_bigdata%	ALTER, ALTER ROUTINE, CREATE, CREATE ROUTINE, CREATE TEMPORARY TABLES, CREATE VIEW, DE

Schema and Host fields may use % and _ wildcards.
The server will match specific entries before wildcarded ones.

The user 'sqoop@localhost' will have the following access rights to schemas matching '%_bigdata%':

Object Rights

Object Rights
<input checked="" type="checkbox"/> SELECT
<input checked="" type="checkbox"/> INSERT
<input checked="" type="checkbox"/> UPDATE
<input checked="" type="checkbox"/> DELETE
<input checked="" type="checkbox"/> EXECUTE
<input checked="" type="checkbox"/> SHOW VIEW

DDL Rights

DDL Rights
<input checked="" type="checkbox"/> CREATE
<input checked="" type="checkbox"/> ALTER
<input checked="" type="checkbox"/> REFERENCES
<input checked="" type="checkbox"/> INDEX
<input checked="" type="checkbox"/> CREATE VIEW
<input checked="" type="checkbox"/> CREATE ROUTINE
<input checked="" type="checkbox"/> ALTER ROUTINE
<input checked="" type="checkbox"/> EVENT
<input checked="" type="checkbox"/> DROP
<input checked="" type="checkbox"/> TRIGGER

Other Rights

Other Rights
<input checked="" type="checkbox"/> GRANT OPTION
<input checked="" type="checkbox"/> CREATE TEMPORARY TABLES
<input checked="" type="checkbox"/> LOCK TABLES

The REFERENCES privilege currently is unused.

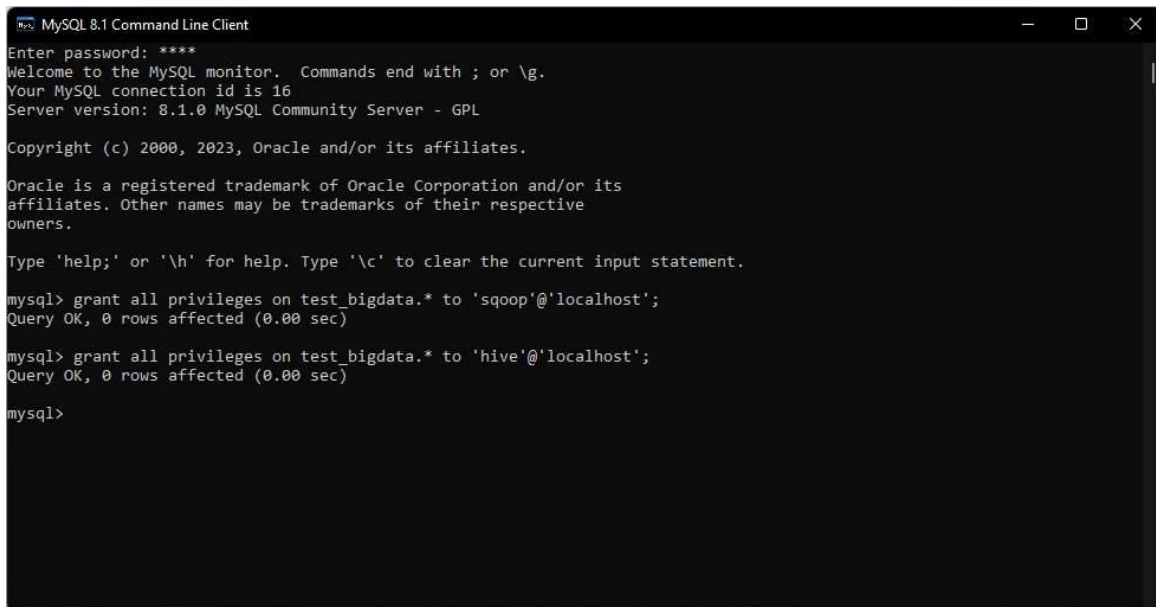
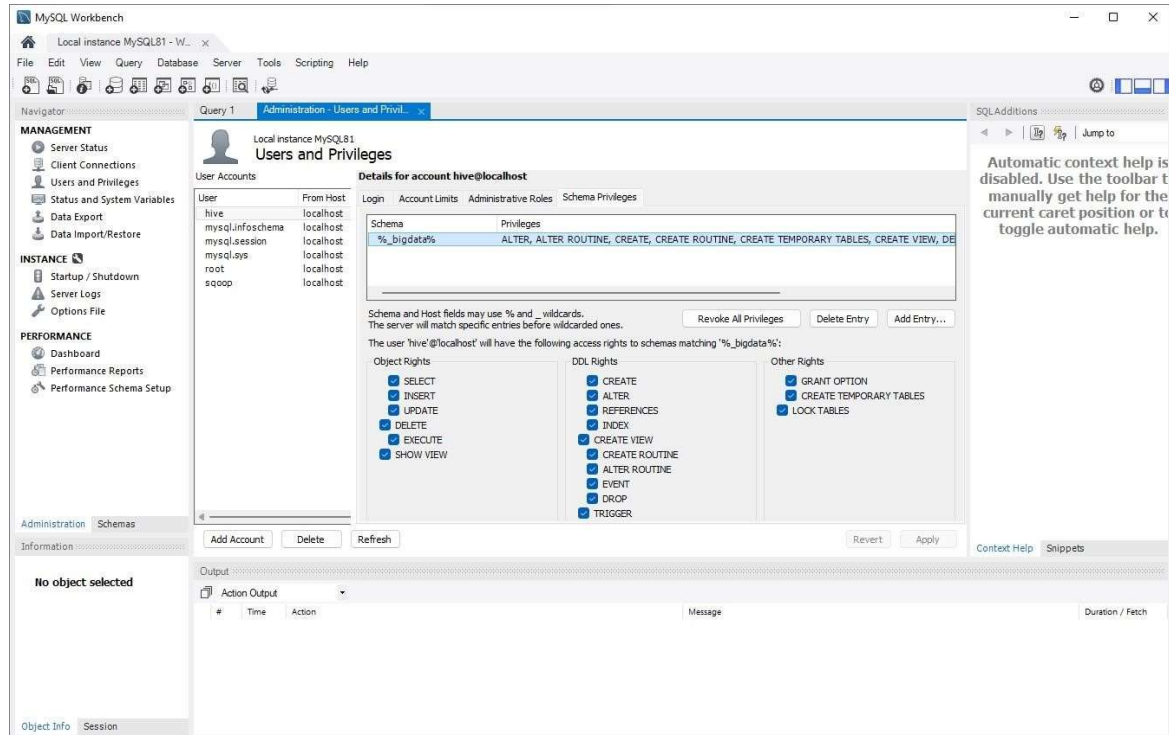
Revoke All Privileges Delete Entry Add Entry...

Add Account Delete Refresh Revert Apply

Output

Context Help Snippets

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.





```
Command Prompt
Microsoft Windows [Version 10.0.22000.2295]
(c) Microsoft Corporation. All rights reserved.

C:\Users\admin>echo %SQOOP_HOME%
C:\sqoop-1.4.7

C:\Users\admin>sqoop list-databases --connect jdbc:mysql://localhost/ --username sqoop -P
Warning: HBASE_HOME and HBASE_VERSION not set.
Warning: HCAT_HOME not set
Warning: HCATALOG_HOME does not exist HCatalog imports will fail.
Please set HCATALOG_HOME to the root of your HCatalog installation.
Warning: ACCUMULO_HOME not set.
Warning: ZOOKEEPER_HOME not set.
Warning: HBASE_HOME does not exist HBase imports will fail.
Please set HBASE_HOME to the root of your HBase installation.
Warning: ACCUMULO_HOME does not exist Accumulo imports will fail.
Please set ACCUMULO_HOME to the root of your Accumulo installation.
Warning: ZOOKEEPER_HOME does not exist Accumulo imports will fail.
Please set ZOOKEEPER_HOME to the root of your Zookeeper installation.
2023-09-13 04:22:22,757 INFO sqoop.Sqoop: Running Sqoop version: 1.4.7
Enter password:
2023-09-13 04:22:26,809 INFO manager.MySQLManager: Preparing to use a MySQL streaming resultset.
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.
mysql
information_schema
performance_schema
sys
C:\Users\admin>
```

```
Command Prompt
No such sqoop tool: list. See 'sqoop help'.

C:\Users\admin>sqoop list-tables --connect jdbc:mysql://localhost/ --username sqoop -P
Warning: HBASE_HOME and HBASE_VERSION not set.
Warning: HCAT_HOME not set
Warning: HCATALOG_HOME does not exist HCatalog imports will fail.
Please set HCATALOG_HOME to the root of your HCatalog installation.
Warning: ACCUMULO_HOME not set.
Warning: ZOOKEEPER_HOME not set.
Warning: HBASE_HOME does not exist HBase imports will fail.
Please set HBASE_HOME to the root of your HBase installation.
Warning: ACCUMULO_HOME does not exist Accumulo imports will fail.
Please set ACCUMULO_HOME to the root of your Accumulo installation.
Warning: ZOOKEEPER_HOME does not exist Accumulo imports will fail.
Please set ZOOKEEPER_HOME to the root of your Zookeeper installation.
2023-09-13 04:25:49,023 INFO sqoop.Sqoop: Running Sqoop version: 1.4.7
Enter password:
2023-09-13 04:25:53,985 INFO manager.MySQLManager: Preparing to use a MySQL streaming resultset.
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.

C:\Users\admin>
```



CONCLUSION:

The focus of the experiment was on setting up and making effective use of Sqoop, a crucial element within the Hadoop ecosystem. It proficiently demonstrated the wide array of capabilities that Sqoop offers, which encompass establishing connections with diverse databases, facilitating the import and export of data between Hadoop and relational databases, and performing data transformations during the data transfer process. The experiment vividly illustrated Sqoop's capacity for parallel data transfer and its seamless integration with other Hadoop components. Overall, this experiment underscored the pivotal role played by Sqoop in bridging the gap between Hadoop's distributed storage and relational databases, positioning it as an indispensable tool for organizations dealing with diverse data sources. Mastery of Sqoop empowers data professionals with the necessary expertise to streamline data workflows and harness the full potential of big data projects.