



Vidyavardhini's College of Engineering & Technology

Department of Computer Engineering

Experiment No. 2
Use of Sqoop tool
Date of Performance:24/07/2023
Date of Submission:31/07/2023



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

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"
```



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
```

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.

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

7. List Database

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

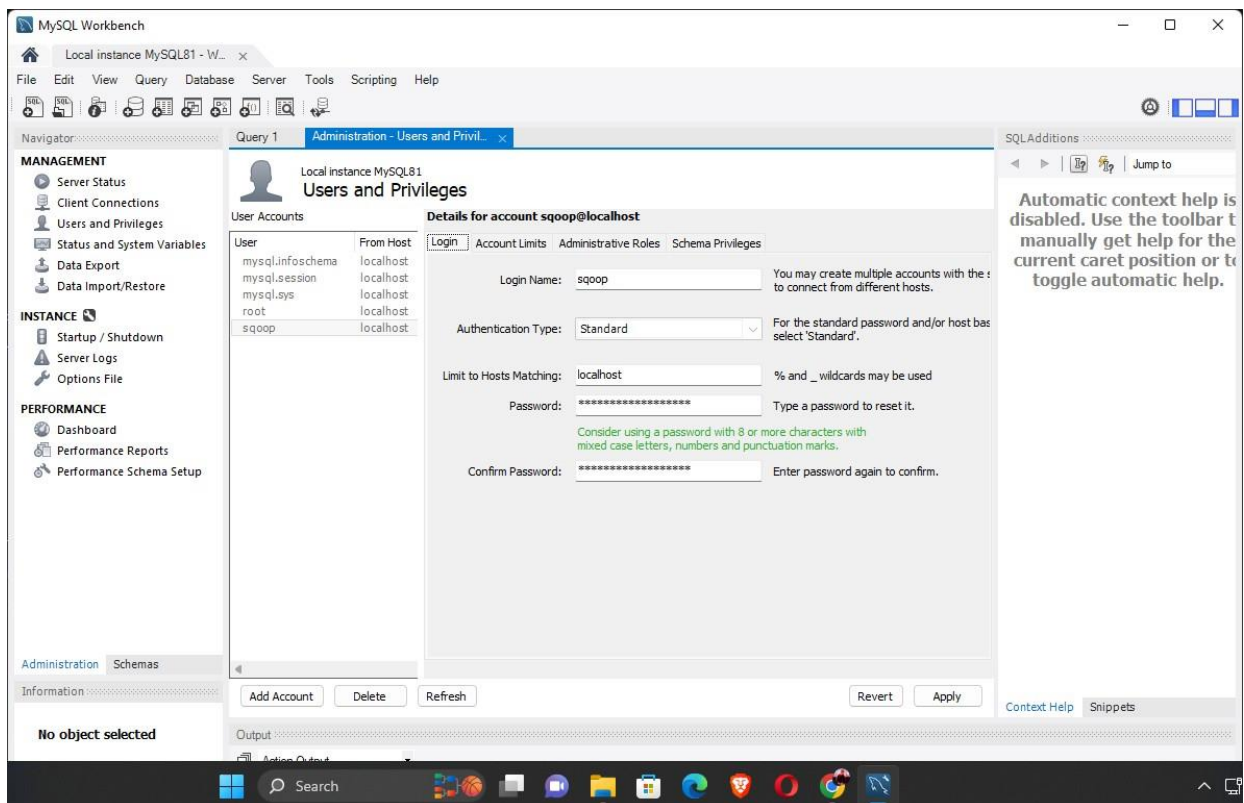
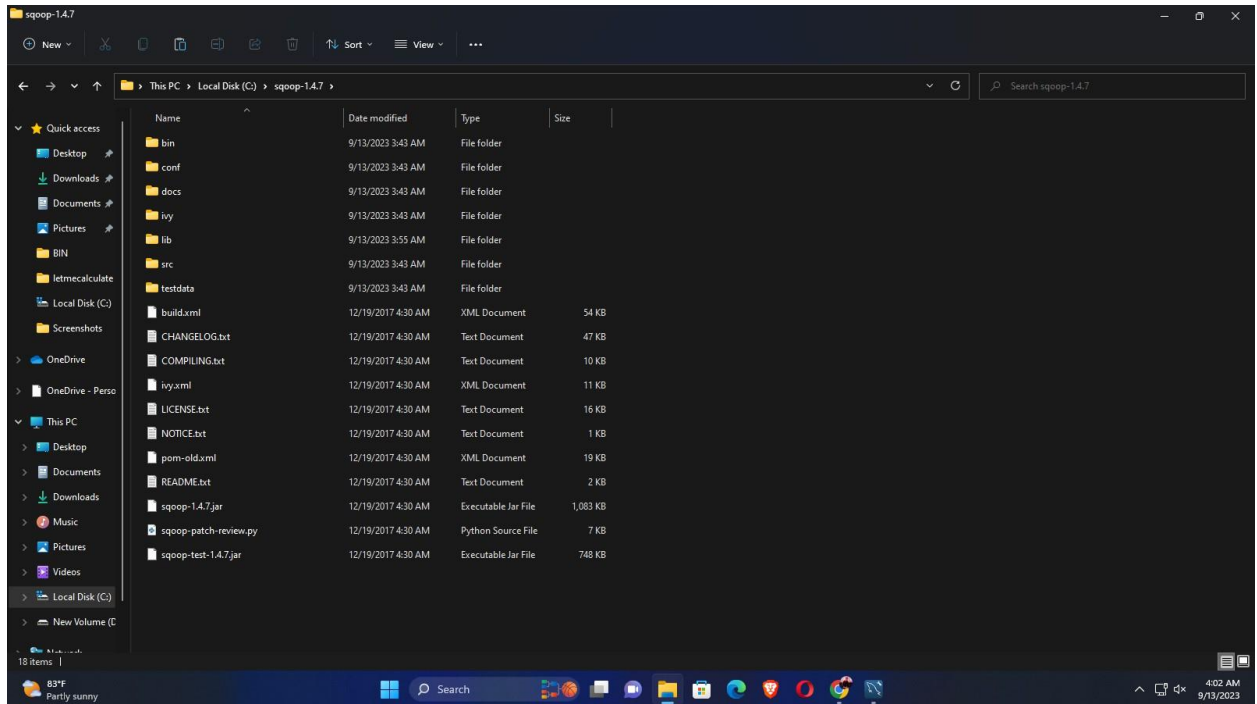
```
>$ sqoop list - database -- connect
```



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OUTPUT:





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The screenshot shows the MySQL Workbench interface with the 'Users and Privileges' window open for the 'sqoop@localhost' account. The 'Global Privileges' tab is selected, displaying a list of privileges with checkboxes. The 'Administrative Roles' tab is also visible.

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 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
<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 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

The screenshot shows the MySQL Workbench interface with the 'Users and Privileges' window open for the 'sqoop@localhost' account. The 'Schema Privileges' tab is selected, displaying a table of schema privileges. The 'Administrative Roles' tab is also visible.

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%':

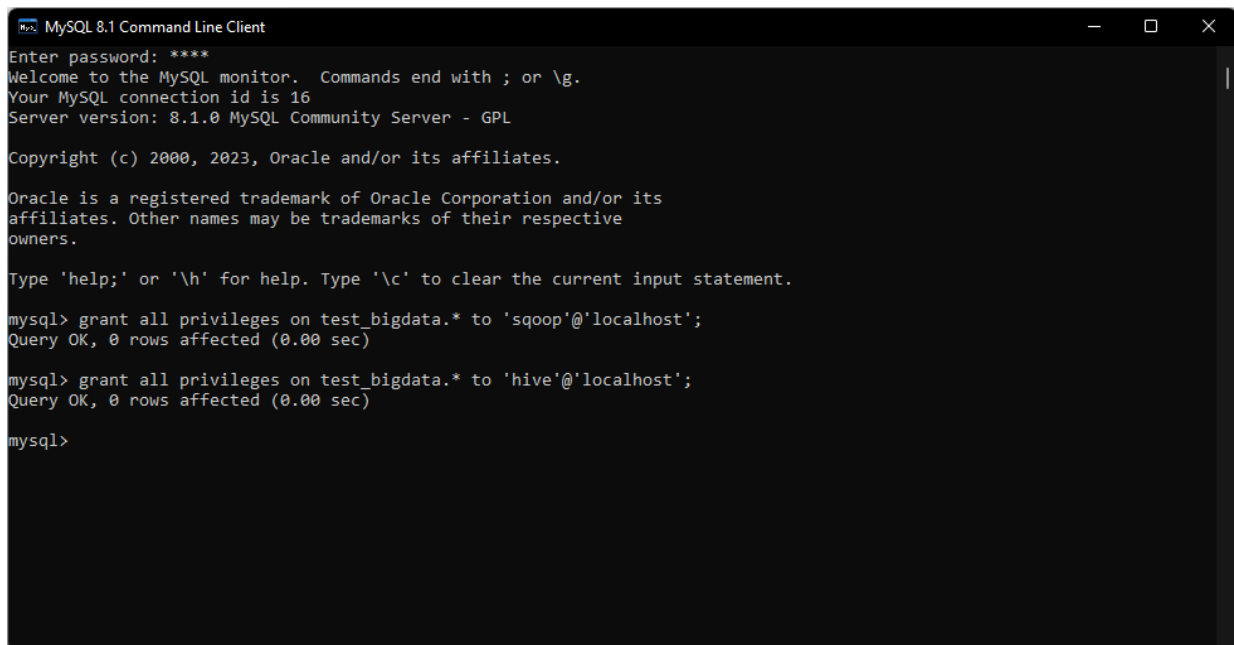
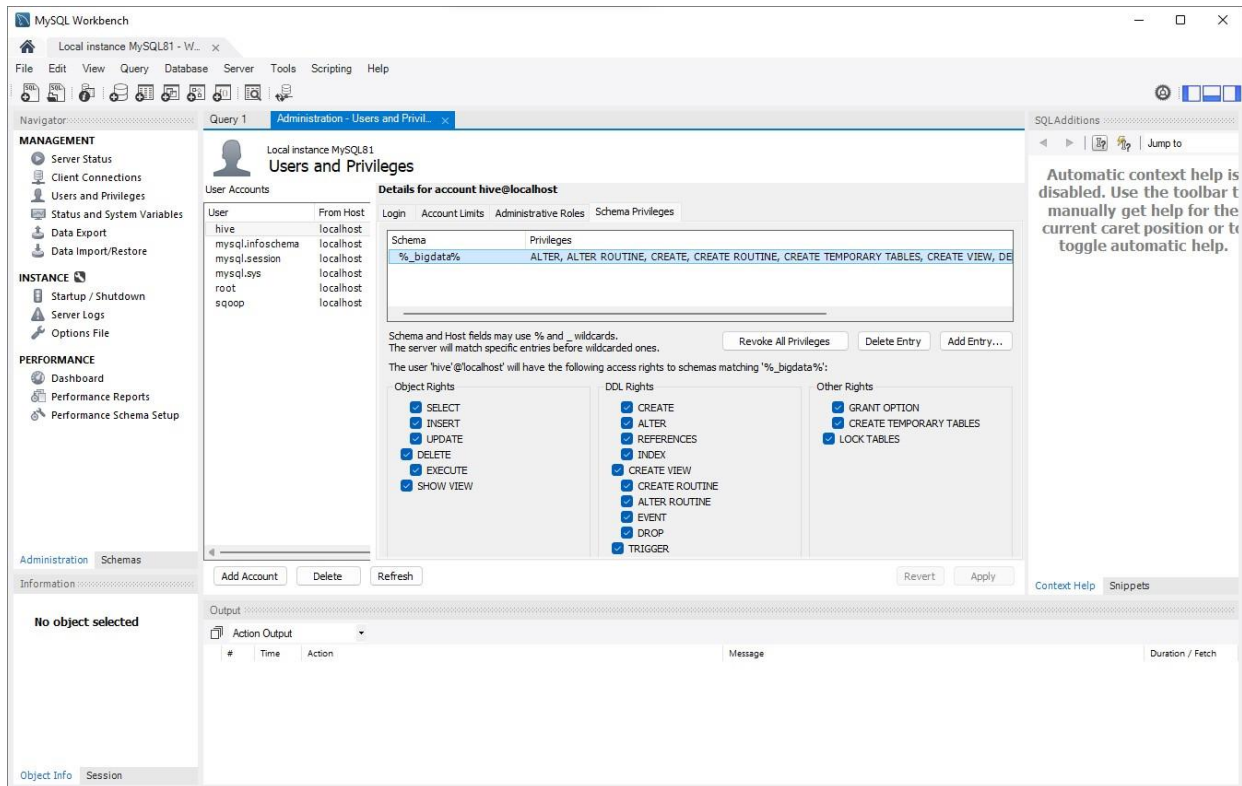
Object Rights	DDL Rights	Other Rights
<input checked="" type="checkbox"/> SELECT	<input checked="" type="checkbox"/> CREATE	<input checked="" type="checkbox"/> GRANT OPTION
<input checked="" type="checkbox"/> INSERT	<input checked="" type="checkbox"/> ALTER	<input checked="" type="checkbox"/> CREATE TEMPORARY TABLES
<input checked="" type="checkbox"/> UPDATE	<input checked="" type="checkbox"/> REFERENCES	<input checked="" type="checkbox"/> LOCK TABLES
<input checked="" type="checkbox"/> DELETE	<input checked="" type="checkbox"/> INDEX	
<input checked="" type="checkbox"/> EXECUTE	<input checked="" type="checkbox"/> CREATE VIEW	
<input checked="" type="checkbox"/> SHOW 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	

The REFERENCES privilege currently is unused.



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```
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 drive
r 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 drive
r is automatically registered via the SPI and manual loading of the driver class is generally unnecessary.

C:\Users\admin>
```

CONCLUSION:

In conclusion, we can affirm that Apache Sqoop is a potent and adaptable tool for the efficient transfer of data between Hadoop and relational databases. Its installation is relatively uncomplicated, involving the setup of essential dependencies and the configuration of connection parameters. Once it's up and running, Sqoop provides a user-friendly commandline interface and can be seamlessly integrated into data workflows, making it a valuable asset for data engineers and analysts. Whether your objective is to ingest data from a database into Hadoop or export data from Hadoop to a relational database, Sqoop streamlines the process, ensuring smooth data movement and thereby enhancing the effectiveness of big data processing and analysis.