Yog Chaudhary
11727095
ADTA 5240 Week 13'th (harvesting, Storing, And Retrieving Data)
Professor: Dr. Zeynep Orhan
University Of North Texas

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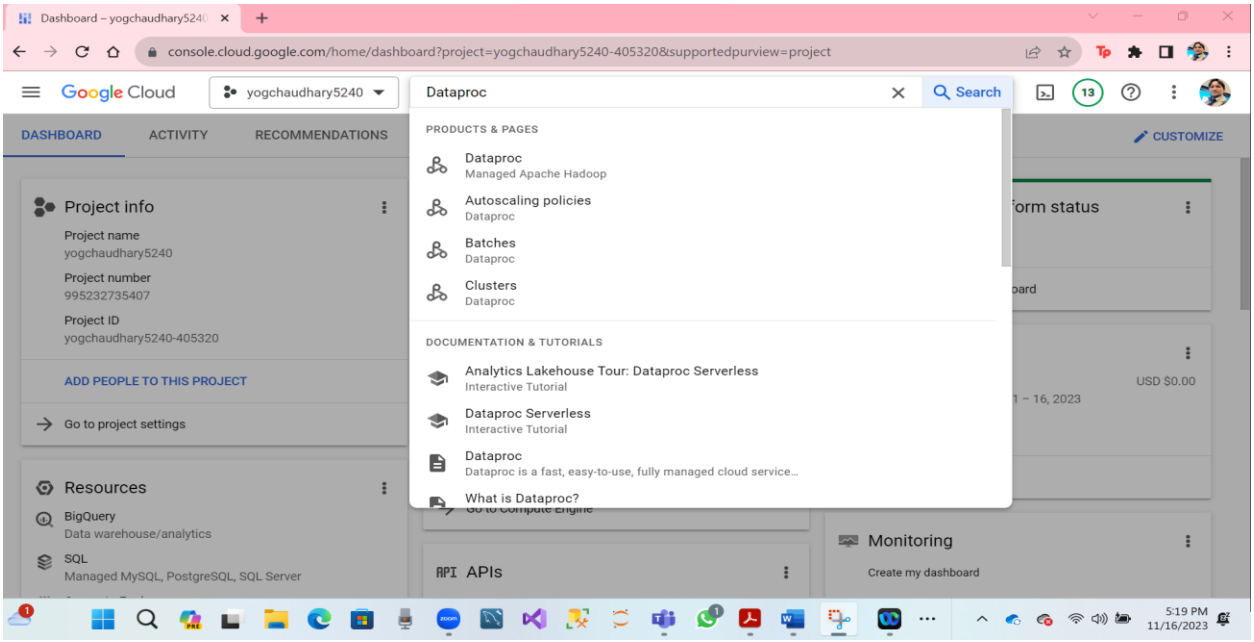
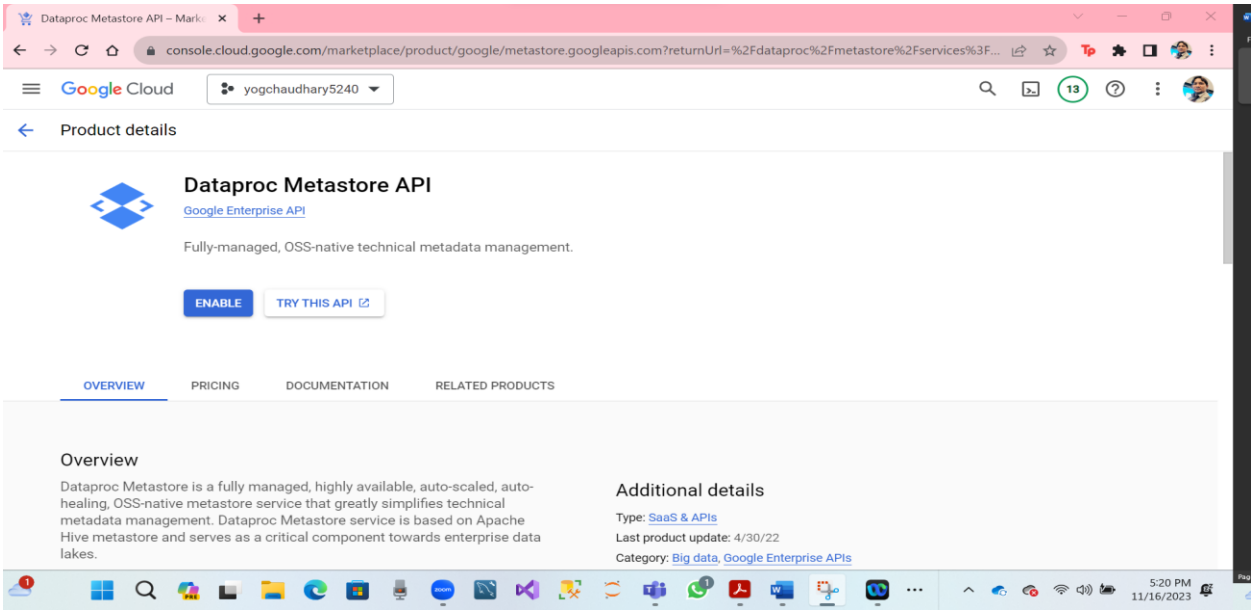
Homework Assignment: Hive Queries

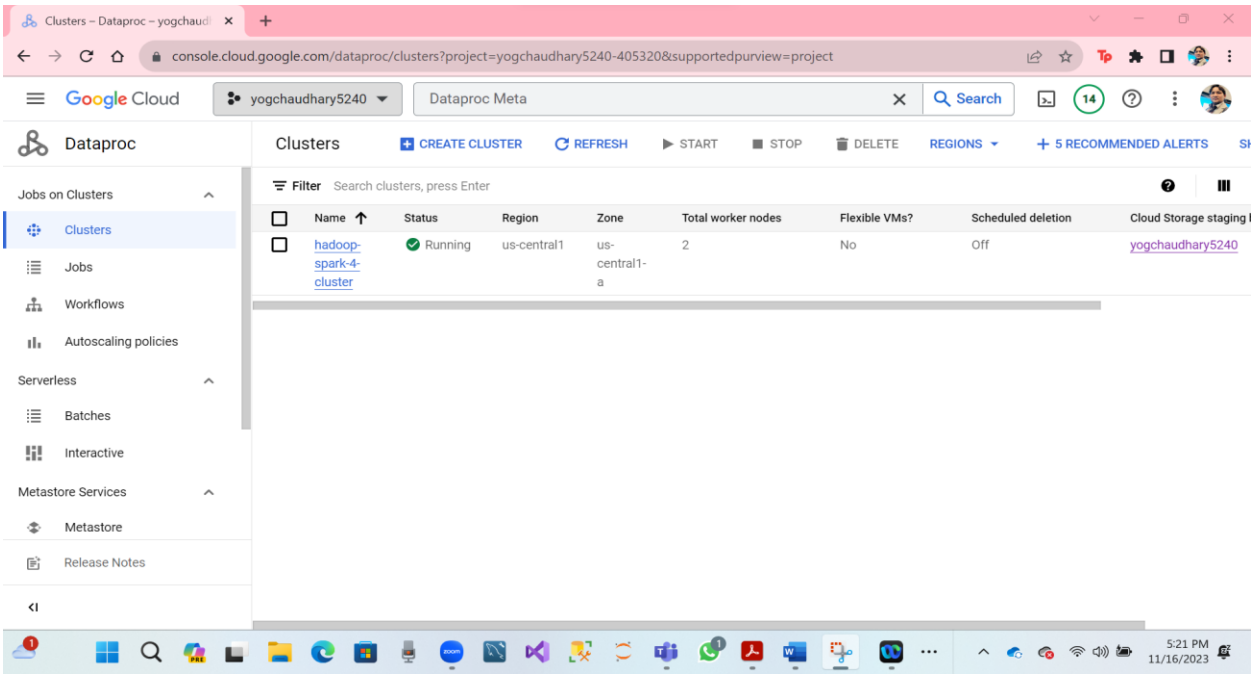
Step 1. For a Google Console.

- I click on three horizontal lines.
- In the search bar I typed Cluster and clicked on Clusters Dataproc.
- Hare screenshot.

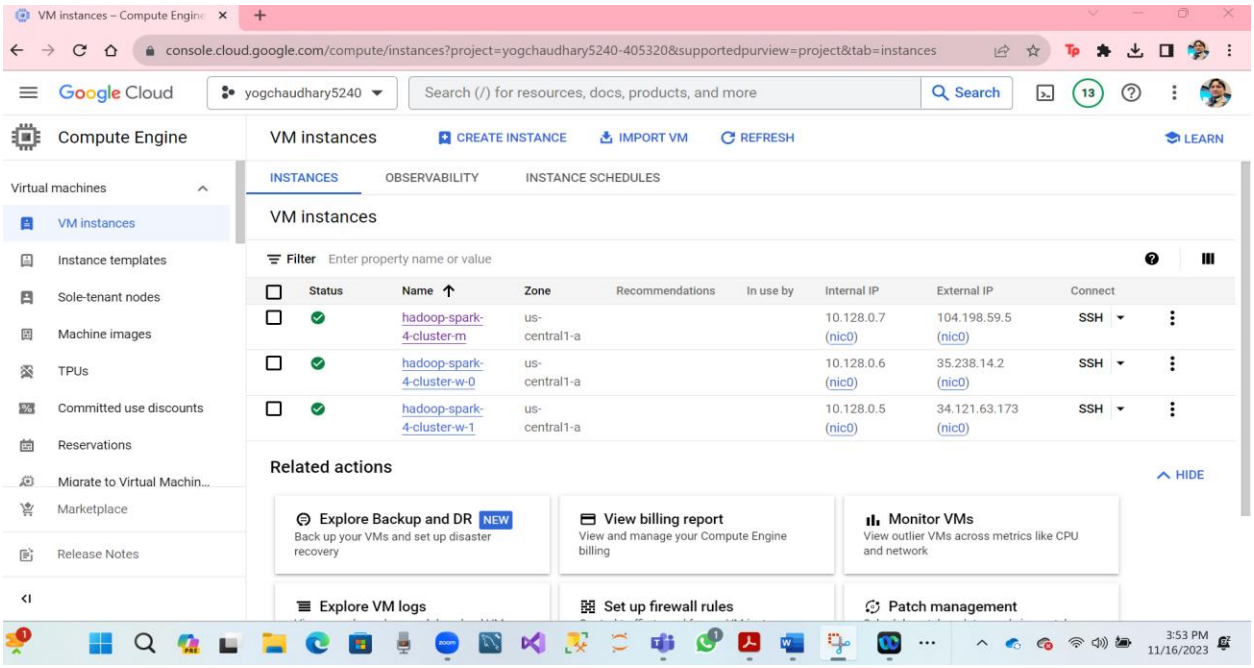


- After clicking on cluster data proc. It will be mentioned that I have previously created, and it will show that was it running.
- Hare screenshot.





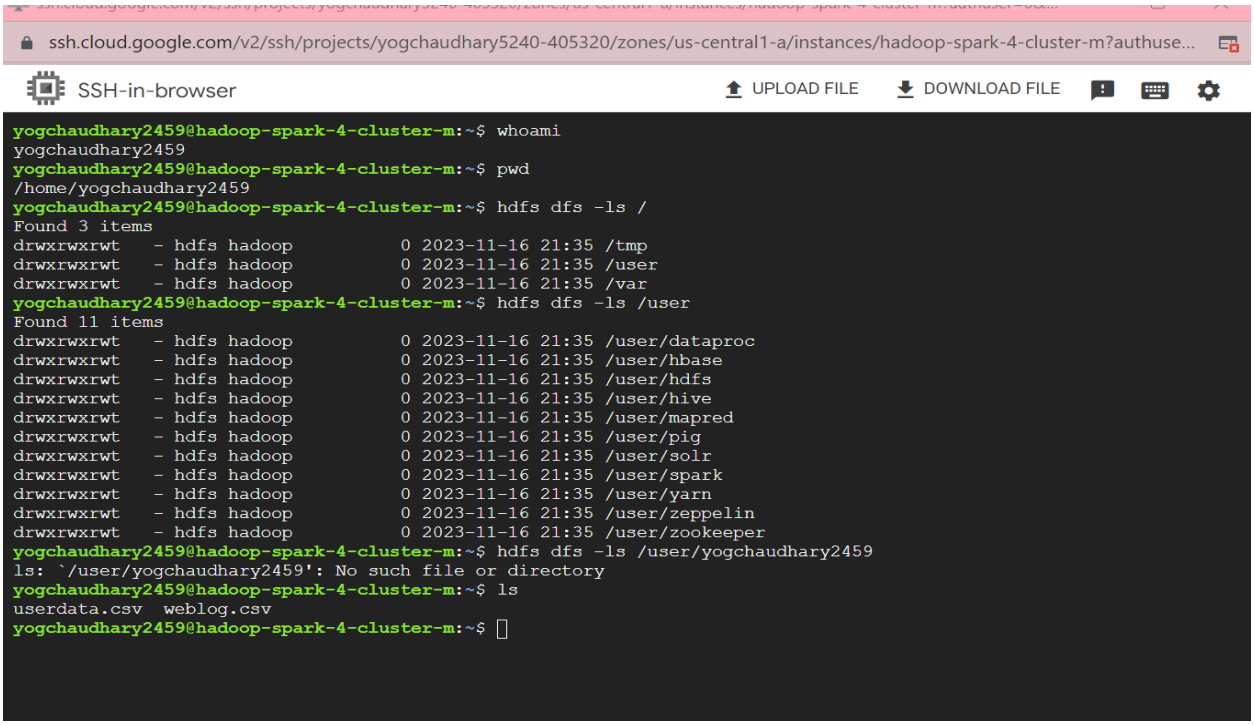
- When I scroll down it will show how the monitoring is changing according to the usage.
- By scrolling up and clicking on the virtual machine the screen will show the cluster details.
- After that I accessed the master node through SSH.
- Click on SSH
- Click on open in a browser.
- Click on the drop-down button next to SSH.
- Click on open in a new browser window.



- Click authorized.

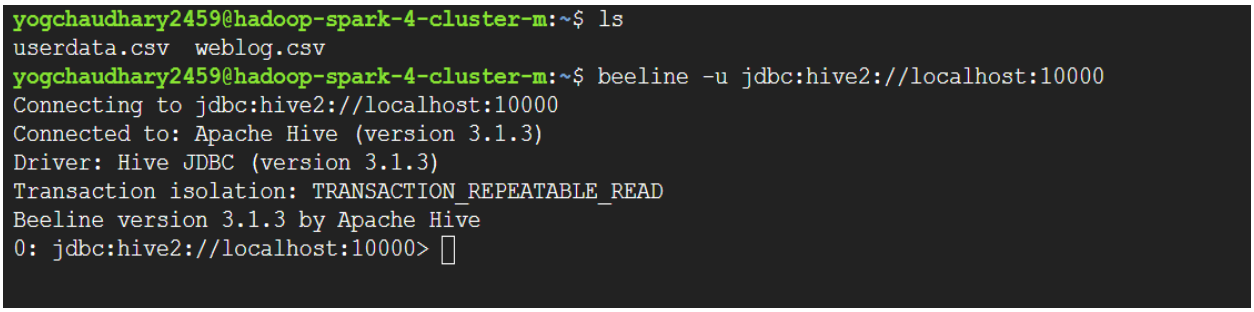
Step 2. We open the SSH terminal. This connected our local to the remote server. We can use an SSH terminal to work with the cluster.

- First basic Linux Commands
- Whoami
- Pwd
- Hdfd dfs -ls /
- Hdfs dfs -ls /user
- Hdfs dfs -ls /user/yogchaudhary2459
- Ls



Step 3. We created the interface commands. It uses the following Hive command.

- beeline -u jdbc:hive2://localhost:10000



Step 4 We Created the following command table names.

- Show tables.
- Hive command ends with Pay attention a semicolon. It will get an error.
- We have not created band any tables (tab_name) in our database in our cluster, .
- Hare screenshot.

```
yogchaudhary2459@hadoop-spark-4-cluster-m:~$ beeline -u jdbc:hive2://localhost:10000
Connecting to jdbc:hive2://localhost:10000
Connected to: Apache Hive (version 3.1.3)
Driver: Hive JDBC (version 3.1.3)
Transaction isolation: TRANSACTION_REPEATABLE_READ
Beeline version 3.1.3 by Apache Hive
0: jdbc:hive2://localhost:10000> show tables;
INFO  : Compiling command(queryId=hive_20231116215951_dde0108d-e0d0-419b-bc38-9fcf20dfc39e): show tables
INFO  : Concurrency mode is disabled, not creating a lock manager
INFO  : Semantic Analysis Completed (retrial = false)
INFO  : Returning Hive schema: Schema(fieldSchemas:[FieldSchema(name:tab_name, type:string, comment:from deseria
lizer)], properties:null)
INFO  : Completed compiling command(queryId=hive_20231116215951_dde0108d-e0d0-419b-bc38-9fcf20dfc39e); Time take
n: 1.095 seconds
INFO  : Concurrency mode is disabled, not creating a lock manager
INFO  : Executing command(queryId=hive_20231116215951_dde0108d-e0d0-419b-bc38-9fcf20dfc39e): show tables
INFO  : Starting task [Stage-0:DDL] in serial mode
INFO  : Completed executing command(queryId=hive_20231116215951_dde0108d-e0d0-419b-bc38-9fcf20dfc39e); Time take
n: 0.046 seconds
INFO  : OK
INFO  : Concurrency mode is disabled, not creating a lock manager
+-----------+
| tab_name  |
+-----------+
+-----------+
No rows selected (1.479 seconds)
0: jdbc:hive2://localhost:10000>
```

Step 5 Create a table (schema) with SQL Commands. Hive can access the data; we need to create a table or schema that maps the database saved in HDFS.

- Using the following script, we will create a very simple table or schema to map the dataset weblog.csv in HDFS. It is best to type this script in a text editor so you can correct any mistakes before copying and pasting into Hive.
- **CREATE EXTERNAL TABLE IF NOT EXISTS weblogs_3 (weblog string) ROW FORMAT DELIMITED STORED AS TEXTFILE LOCATION '/user/yogchaudhary2459/data/weblog/';**

Insert the script:

show tables;

- Hare screenshot

```
0: jdbc:hive2://localhost:10000> CREATE EXTERNAL TABLE IF NOT EXISTS weblogs_3
. . . . . .> (weblog string)
. . . . . .> ROW FORMAT DELIMITED STORED AS TEXTFILE
. . . . . .> LOCATION '/user/yogchaudhary2459/data/weblog/';
INFO  : Compiling command(queryId=hive_20231116230302_c0fe20d1-09cb-43de-840b-fc4c8ba2792e): CREATE EXTERNAL TABLE IF NOT EXISTS weblogs_3
(weblog string)
ROW FORMAT DELIMITED STORED AS TEXTFILE
LOCATION '/user/yogchaudhary2459/data/weblog/'
INFO  : Concurrency mode is disabled, not creating a lock manager
INFO  : Semantic Analysis Completed (retrial = false)
INFO  : Returning Hive schema: Schema(fieldSchemas:null, properties:null)
INFO  : Completed compiling command(queryId=hive_20231116230302_c0fe20d1-09cb-43de-840b-fc4c8ba2792e); Time taken: 0.036 seconds
INFO  : Concurrency mode is disabled, not creating a lock manager
INFO  : Executing command(queryId=hive_20231116230302_c0fe20d1-09cb-43de-840b-fc4c8ba2792e): CREATE EXTERNAL TABLE IF NOT EXISTS weblogs_3
(weblog string)
ROW FORMAT DELIMITED STORED AS TEXTFILE
LOCATION '/user/yogchaudhary2459/data/weblog/'
INFO  : Completed executing command(queryId=hive_20231116230302_c0fe20d1-09cb-43de-840b-fc4c8ba2792e); Time taken: 0.001 seconds
INFO  : OK
INFO  : Concurrency mode is disabled, not creating a lock manager
No rows affected (0.051 seconds)
0: jdbc:hive2://localhost:10000>
```

- We have created tables. And we can see below that the table was created. This allows us to access the data through Hive and make queries.
- Hare screenshot.

```
yogchaudhary2459@hadoop-spark-4-cluster-m:~$ beeline -u jdbc:hive2://localhost:10000
Connecting to jdbc:hive2://localhost:10000
Connected to: Apache Hive (version 3.1.3)
Driver: Hive JDBC (version 3.1.3)
Transaction isolation: TRANSACTION_REPEATABLE_READ
Beeline version 3.1.3 by Apache Hive
0: jdbc:hive2://localhost:10000> show tables;
INFO  : Compiling command(queryId=hive_20231116224700_77ae9c02-5272-4c09-add5-cb1e933298bc): show tables
INFO  : Concurrency mode is disabled, not creating a lock manager
INFO  : Semantic Analysis Completed (retrial = false)
INFO  : Returning Hive schema: Schema(fieldSchemas:[FieldSchema(name:tab_name, type:string, comment:from deserializer)], properties:null)
INFO  : Completed compiling command(queryId=hive_20231116224700_77ae9c02-5272-4c09-add5-cb1e933298bc); Time taken: 0.026 seconds
INFO  : Concurrency mode is disabled, not creating a lock manager
INFO  : Executing command(queryId=hive_20231116224700_77ae9c02-5272-4c09-add5-cb1e933298bc): show tables
INFO  : Starting task [Stage-0:DDL] in serial mode
INFO  : Completed executing command(queryId=hive_20231116224700_77ae9c02-5272-4c09-add5-cb1e933298bc); Time taken: 0.014 seconds
INFO  : OK
INFO  : Concurrency mode is disabled, not creating a lock manager
+------------+
|  tab_name  |
+------------+
| weblogs_3  |
+------------+
1 row selected (0.256 seconds)
0: jdbc:hive2://localhost:10000>
```

Step 6. We used to insert a command to query the tables.

- SELECT * FROM weblogs_3 LIMIT 1;

```
--------------------------------------------------------------------------------
        VERTICES      MODE        STATUS  TOTAL  COMPLETED  RUNNING  PENDING  FAILED  KILLED
--------------------------------------------------------------------------------
Map 1            container     SUCCEEDED      0          0        0        0       0       0
--------------------------------------------------------------------------------
VERTICES: 00/01  [>>--------------------------] 0%    ELAPSED TIME: 0.83 s
--------------------------------------------------------------------------------
+--------------------+
| weblogs_3.weblog   |
+--------------------+
+--------------------+
No rows selected (8.939 seconds)
0: jdbc:hive2://localhost:10000>
```

Step 7. We created a complex table (schema) following the command:

- SELECT userid, COUNT(userid) AS log_count FROM weblog_8 GROUP BY userid ORDER BY log_count DESC LIMIT 5;
- Hare screenshot

```
--------------------------------------------------------------------------------
        VERTICES      MODE        STATUS  TOTAL  COMPLETED  RUNNING  PENDING  FAILED  KILLED
--------------------------------------------------------------------------------
Map 1            container     SUCCEEDED      0          0        0        0       0       0
Reducer 2 ...... container     SUCCEEDED      1          1        0        0       0       0
Reducer 3 ...... container     SUCCEEDED      1          1        0        0       0       0
--------------------------------------------------------------------------------
VERTICES: 02/03  [==========================>>] 100%  ELAPSED TIME: 7.91 s
--------------------------------------------------------------------------------
+----------+-------------+
| userid   | log_count   |
+----------+-------------+
+----------+-------------+
No rows selected (17.457 seconds)
0: jdbc:hive2://localhost:10000>
0: jdbc:hive2://localhost:10000>
```

- Finally, Successfully Hive cluster and now exit.