Assisted Practice 15.1: RDD Partitions Using Coalesce Transformation

Problem Scenario: Create an RDD to check the number of partitions after applying the coalesce transformation

Objective: In this demonstration, you will create an RDD and perform coalesce transformation.

Tasks to Perform:

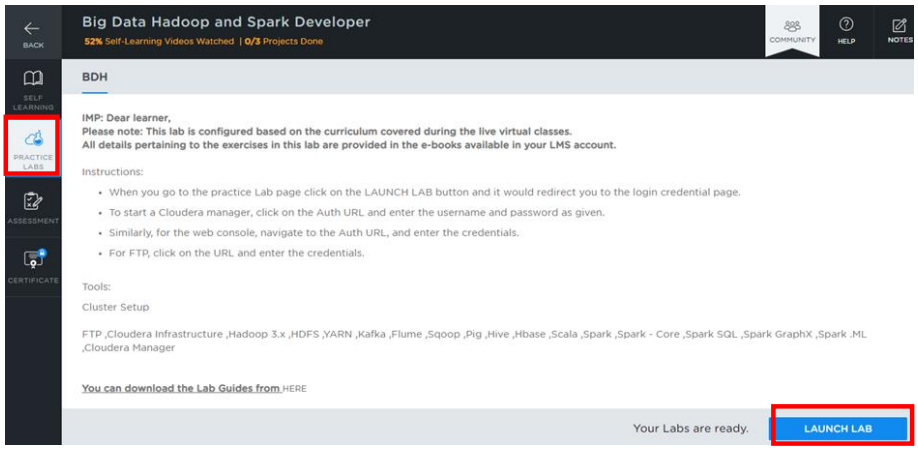
1. Login into the **"webconsole"** and open the PySpark shell
2. Import the required libraries and create a Spark Session
3. Create an RDD using the parallelize method and define eight different values
4. Check the number of partitions using the getNumpartitions function and then use the coalesce function over the given RDD

Steps to Perform:

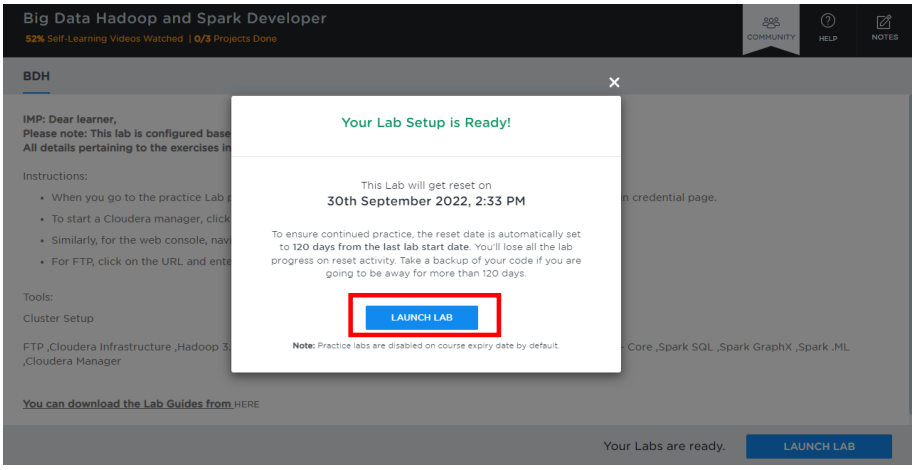
Step 1: Log in to your LMS account

Step 2: Open the course **"Big Data Hadoop and Spark developer"**

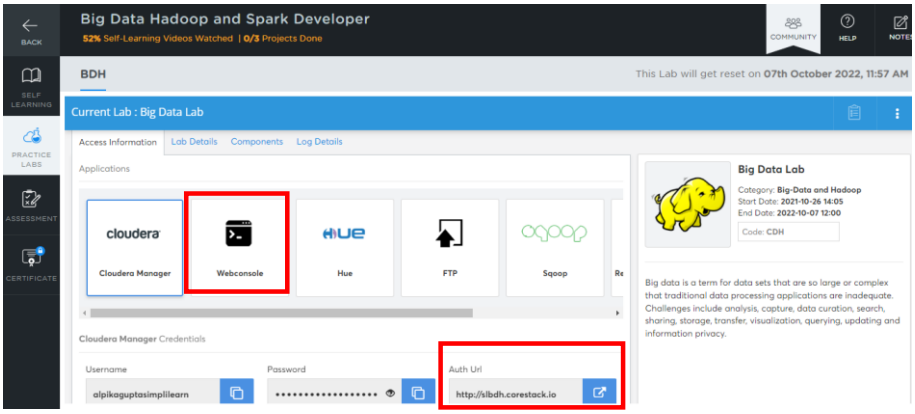
Step 3: On the left side, click on the **"PRACTICE LABS"** tab and click on the **"LAUNCH LAB"** button



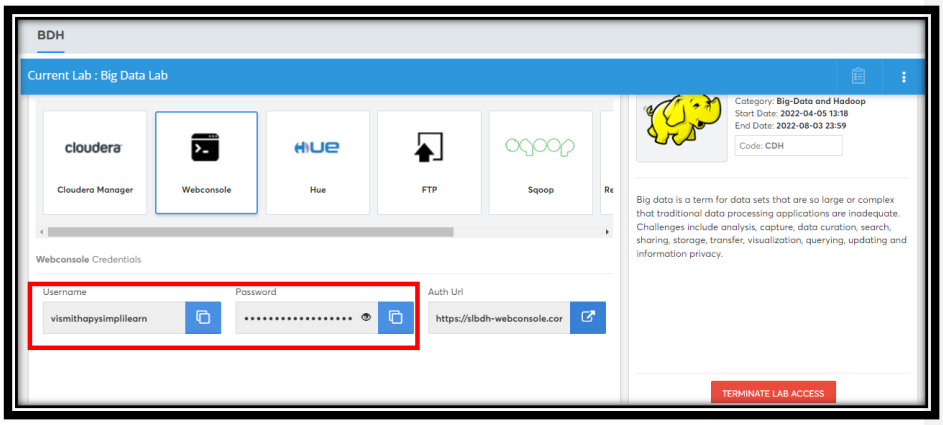
Step 4: Again, click on the **"LAUNCH LAB"** button



Step 5: Click on the lab window and click on "**Webconsole**" and click on the **"Auth Url"**



Step 6: Copy the "**Username**" and the "**Password**" provided to log in to the **"Webconsole"**



Step 7: Paste the "**Username**" and the "**Password**" on the console and click on enter

Note: The password will not be visible when pasted on the console.

Step 8: Enter the **"PySpark"** shell by running the below command.

Command:

pyspark3

```
Password for testdemomay1301mailinator@BDH-ENV.GNE4-RUTX.CLOUDERA.SITE:
[testdemomay1301mailinator@bdh-cluster2-edgenode10 ~]$ pyspark3
Python 3.7.3 (default, Mar 27 2019, 22:11:17)
[GCC 7.3.0] :: Anaconda, Inc. on linux
Type "help", "copyright", "credits" or "license" for more information.
Setting default log level to "WARN".
To adjust logging level use sc.setLogLevel(newLevel). For SparkR, use setLogLevel(newLevel).
22/05/25 01:09:47 WARN util.Utils: Service 'SparkUI' could not bind on port 4040. Attempting port 4041.
22/05/25 01:09:47 WARN util.Utils: Service 'SparkUI' could not bind on port 4041. Attempting port 4042.
22/05/25 01:09:47 WARN util.Utils: Service 'SparkUI' could not bind on port 4042. Attempting port 4043.
22/05/25 01:09:47 WARN util.Utils: Service 'SparkUI' could not bind on port 4043. Attempting port 4044.
22/05/25 01:09:47 WARN util.Utils: Service 'SparkUI' could not bind on port 4044. Attempting port 4045.
Welcome to
      ____              __
     / __/__  ___ _____/ /__
    _\ \/ _ \/ _ `/ __/  '_/
   /__ / .__/\_,_/_/ /_/\_\   version 3.1.2.7.2.12.4-1
      /_/

Using Python version 3.7.3 (default, Mar 27 2019 22:11:17)
Spark context Web UI available at http://bdh-cluster2-edgenode10.bdh-env.gne4-rutx.cloudera.site:4045
Spark context available as 'sc' (master = local[*], app id = local-1653440987724).
SparkSession available as 'spark'.
>>>
```

Step 9: Import the required libraries and create a Spark Session as shown below

```
    _\ \/ _ \/ _ `/ __/  '_/
   /__ / .__/\_,_/_/ /_/\_\   version 3.1.2.7.2.12.4-1
      /_/

Using Python version 3.7.3 (default, Mar 27 2019 22:11:17)
Spark context Web UI available at http://bdh-cluster2-edgenode10.bdh-env.gne4-rutx.cloudera.si
Spark context available as 'sc' (master = local[*], app id = local-1653883814277).
SparkSession available as 'spark'.
>>>
>>> from pyspark import SparkContext
>>> from pyspark.sql import SparkSession
>>>
>>> # Create Spark Session.
... sc = SparkContext = SparkSession \
...     .builder \
...     .appName("Simplilearn Examples") \
...     .getOrCreate() \
...     .sparkContext
>>>
```

Step 10: Create an RDD using parallelize method and define eight different values

Command:

rdd = sc.parallelize((0,1,2,3,4,5,6,7))

rdd.collect()

```
>>> rdd = sc.parallelize((0,1,2,3,4,5,6,7))
>>> rdd.collect()
[0, 1, 2, 3, 4, 5, 6, 7]
>>>
```

Step 11: Check the number of partitions created while creating RDD using the below command:

Command:

rdd.getNumPartitions()

```
>>> rdd.getNumPartitions()
8
>>>
```

Step 12: Next, use coalesce function over the given RDD

Command:

rdd1 = rdd.coalesce(4)

```
>>> rdd1 = rdd.coalesce(4)
>>> rdd1.getNumPartitions()
4
>>>
```

Step 13: Now, as you can see that RDD is partitioned and decreased to 4.

Commented [SB1]: Should this be 'Now, as we can see that'?

Commented [AG2R1]: done