

## CSP 554—Big Data Technologies Assignment – 2

### 1. Creating new key pair to connect with AWS EMR cluster.

aws Services Search for services, features, blogs, docs, and more [Option+S]

Successfully deleted 1 key pairs

EC2 > Key pairs > Create key pair

### Create key pair [Info](#)

**Key pair**  
A key pair, consisting of a private key and a public key, is a set of security credentials that you use to prove your identity when connecting to an instance.

**Name**  
emr-key-pair  
The name can include up to 255 ASCII characters. It can't include leading or trailing spaces.

**Key pair type** [Info](#)  
☒ RSA  
☐ ED25519

**Private key file format**  
☒ .pem  
For use with OpenSSH  
☐ .ppk  
For use with PuTTY

**Tags (Optional)**  
No tags associated with the resource.  
[Add tag](#)  
You can add 50 more tags.

Cancel [Create key pair](#)

### 2. Providing the required permission to the .pem file.

```
➔ Downloads chmod 400 emr-key-pair.pem
➔ Downloads ls -l emr-key-pair.pem
-r-----@ 1 rishabhjain staff 1674 Jan 21 17:54 emr-key-pair.pem
➔ Downloads |
```

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### 3. Creating the AWS-EMR cluster by following steps in “AWS EMR instruction” document.

Below is the screen shot for step 5 (1-5)

The screenshot displays the AWS Management Console interface for creating a new Amazon EMR cluster. The console is organized into several sections:

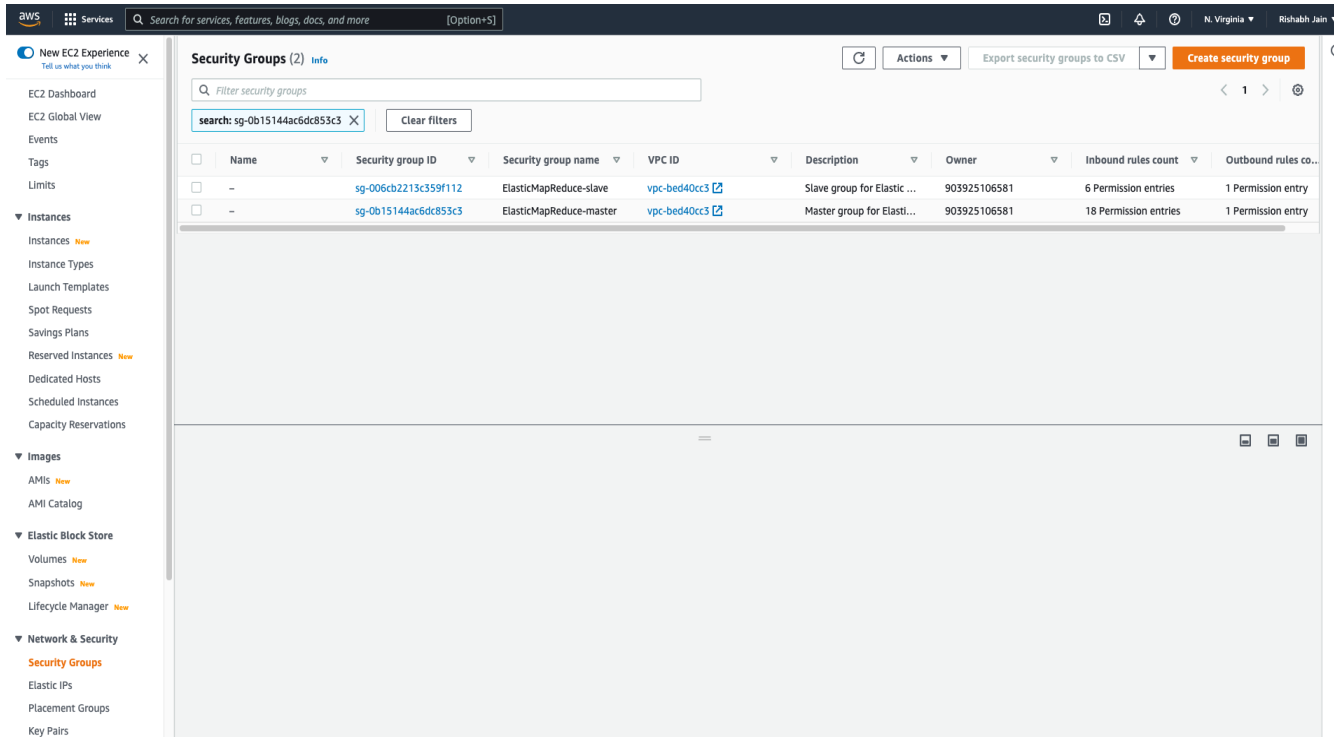
- General Configuration:** The cluster name is set to "My First EMR cluster". The logging checkbox is checked. The S3 folder is set to "s3://aws-logs-903925106581-us-east-1/elasticmapreduce/". The launch mode is set to "Cluster".
- Software configuration:** The release label is set to "emr-5.34.0". The applications are set to "Core Hadoop: Hadoop 2.10.1, Hive 2.3.8, Hue 4.9.0, Mahout 0.13.0, Pig 0.17.0, and Tez 0.9.2".
- Hardware configuration:** The instance type is set to "m4.large". The number of instances is set to "2" (1 master and 1 core nodes). The cluster scaling checkbox is unchecked. The auto-termination checkbox is checked, and the cluster will be terminated when it is idle after 1 hour and 0 minutes.
- Security and access:** The EC2 key pair is set to "emr-key-pair". The permissions are set to "Default". The EMR role is set to "EMR\_DefaultRole".

### 4. Screen shot when cluster is starting: -

The screenshot displays the AWS Management Console interface for the "My First EMR cluster". The cluster is in the "Starting" state. The console shows the following details:

- Summary:** The cluster ID is "j-2Q8TZT7NCDV5C". The creation date is "2022-01-23 23:47 (UTC-6)". The elapsed time is "0 seconds". The after last step completes, the cluster waits. The termination protection is "Off". The tags are "View All / Edit". The master public DNS is "--".
- Configuration details:** The release label is "emr-5.34.0". The Hadoop distribution is "Amazon 2.10.1". The applications are "Hive 2.3.8, Hue 4.9.0, Mahout 0.13.0, Pig 0.17.0, Tez 0.9.2". The log URI is "s3://aws-logs-903925106581-us-east-1/elasticmapreduce/". The EMRFS consistent view is "Disabled". The custom AMI ID is "--".
- Application user interfaces:** The persistent user interfaces are "--". The on-cluster user interfaces are "--".
- Network and hardware:** The availability zone is "--". The subnet ID is "subnet-00a4e20a". The master is "Provisioning 1 m4.large". The core is "Provisioning 1 m4.large". The task is "--". The cluster scaling is "Not enabled". The auto-termination is "Terminate if idle for 1 hour".
- Security and access:** The key name is "emr-key-pair". The EC2 instance profile is "EMR\_EC2\_DefaultRole". The EMR role is "EMR\_DefaultRole". The visible to all users is "All". The security groups for Master are "--". The security groups for Core & Task are "--".

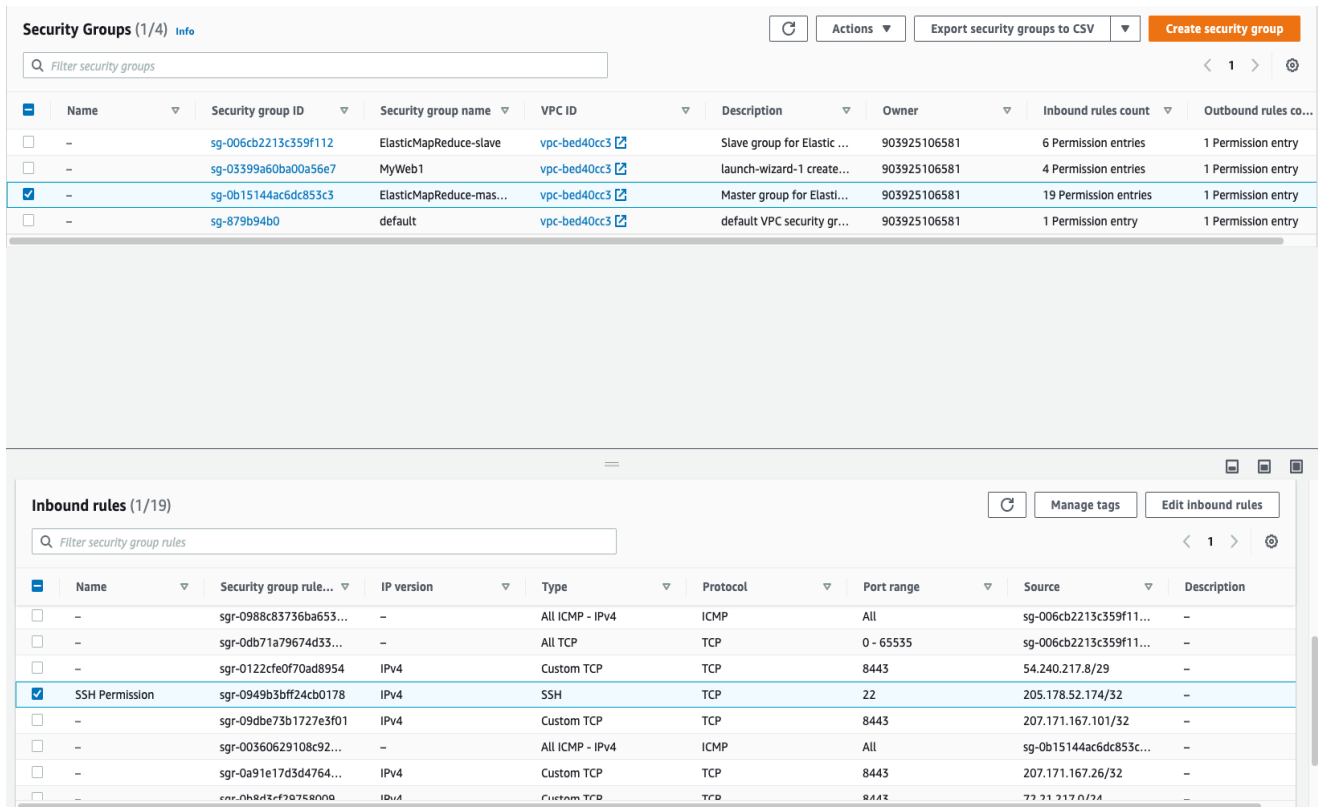
## 5. Security Group dashboard screen shot



The screenshot shows the AWS Management Console's Security Groups dashboard. The left sidebar contains navigation links for EC2 Dashboard, EC2 Global View, Events, Tags, Limits, Instances, Images, Elastic Block Store, and Network & Security. The main panel displays a table of security groups with columns: Name, Security group ID, Security group name, VPC ID, Description, Owner, Inbound rules count, and Outbound rules count. Two security groups are listed: sg-006cb2213c359f112 (ElasticMapReduce-slave) and sg-0b15144ac6dc853c3 (ElasticMapReduce-master).

Name	Security group ID	Security group name	VPC ID	Description	Owner	Inbound rules count	Outbound rules count
sg-006cb2213c359f112	sg-006cb2213c359f112	ElasticMapReduce-slave	vpc-bed40cc3	Slave group for Elastic ...	903925106581	6 Permission entries	1 Permission entry
sg-0b15144ac6dc853c3	sg-0b15144ac6dc853c3	ElasticMapReduce-master	vpc-bed40cc3	Master group for Elast...	903925106581	18 Permission entries	1 Permission entry

## 6. SSH inbound rule added to master node



The screenshot shows the AWS Management Console's Security Groups dashboard, specifically the 'Inbound rules' section for the security group sg-0b15144ac6dc853c3. The table lists inbound rules with columns: Name, Security group rule..., IP version, Type, Protocol, Port range, Source, and Description. An SSH rule is highlighted, showing it allows SSH traffic (TCP) on port 22 from the source 205.178.52.174/32.

Name	Security group rule...	IP version	Type	Protocol	Port range	Source	Description
SSH Permission	sg-0949b3bff24cb0178	IPv4	SSH	TCP	22	205.178.52.174/32	-

9. (2 points) Execute the following `hdfs` command to list the files or directories that are listed (also indicating which is a file and which a directory):

`hadoop fs -ls /`

Sol) Command executed = “`hadoop fs -ls /`”

```
Desktop — hadoop@ip-172-31-79-144:~ — ssh -i ~/Desktop/emr-key-pair.pem hadoop@ec2-3-235-74-138.compute-1.amazonaws.com — 147x50
[hadoop@ip-172-31-79-144 ~]$ ls
rishabhjain.txt
[hadoop@ip-172-31-79-144 ~]$ hadoop fs -ls /
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/usr/lib/hadoop/lib/slf4j-log4j12-1.7.25.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/usr/share/aws/emr/emrfs/lib/slf4j-log4j12-1.7.12.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.slf4j.impl.Log4jLoggerFactory]
Found 4 items
drwxr-xr-x - hdfs hdfsadmingroup 0 2022-01-24 05:55 /apps
drwxrwxrwt - hdfs hdfsadmingroup 0 2022-01-24 05:57 /tmp
drwxr-xr-x - hdfs hdfsadmingroup 0 2022-01-24 05:55 /user
drwxr-xr-x - hdfs hdfsadmingroup 0 2022-01-24 05:55 /var
```

10. (2 points) Execute a command (you needed to figure out which one) to list the files and directories under the `hdfs` directory listed below:

`/user`

Sol) Command executed = “`hadoop fs -ls /user`”

```
Desktop — hadoop@ip-172-31-79-144:~ — ssh -i ~/Desktop/emr-key-pair.pem hadoop@ec2-3-235-74-138.compute-1.amazonaws.com — 147x50
[hadoop@ip-172-31-79-144 ~]$ hadoop fs -ls /user
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/usr/lib/hadoop/lib/slf4j-log4j12-1.7.25.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/usr/share/aws/emr/emrfs/lib/slf4j-log4j12-1.7.12.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.slf4j.impl.Log4jLoggerFactory]
Found 6 items
drwxrwxrwx - hadoop hdfsadmingroup 0 2022-01-24 05:55 /user/hadoop
drwxr-xr-x - mapred mapred 0 2022-01-24 05:55 /user/history
drwxrwxrwx - hdfs hdfsadmingroup 0 2022-01-24 05:55 /user/hive
drwxrwxrwx - hue hue 0 2022-01-24 05:55 /user/hue
drwxrwxrwx - oozie oozie 0 2022-01-24 05:57 /user/oozie
drwxrwxrwx - root hdfsadmingroup 0 2022-01-24 05:55 /user/root
[hadoop@ip-172-31-79-144 ~]$
```

11. (2 points) Execute a command to create the following HDFS directory:

`/user/csp554`

Sol) Command executed = “`hadoop fs -mkdir /user/csp554`”

```
Desktop — hadoop@ip-172-31-79-144:~ — ssh -i ~/Desktop/emr-key-pair.pem hadoop@ec2-3-235-74-138.compute-1.amazonaws.com — 147x50
[hadoop@ip-172-31-79-144 ~]$ hadoop fs -mkdir /user/csp554
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/usr/lib/hadoop/lib/slf4j-log4j12-1.7.25.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/usr/share/aws/emr/emrfs/lib/slf4j-log4j12-1.7.12.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.slf4j.impl.Log4jLoggerFactory]
[hadoop@ip-172-31-79-144 ~]$ hadoop fs -ls /user
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/usr/lib/hadoop/lib/slf4j-log4j12-1.7.25.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/usr/share/aws/emr/emrfs/lib/slf4j-log4j12-1.7.12.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.slf4j.impl.Log4jLoggerFactory]
Found 7 items
drwxr-xr-x - hadoop hdfsadmingroup 0 2022-01-24 06:55 /user/csp554
drwxrwxrwx - hadoop hdfsadmingroup 0 2022-01-24 05:55 /user/hadoop
drwxr-xr-x - mapred mapred 0 2022-01-24 05:55 /user/history
drwxrwxrwx - hdfs hdfsadmingroup 0 2022-01-24 05:55 /user/hive
drwxrwxrwx - hue hue 0 2022-01-24 05:55 /user/hue
drwxrwxrwx - oozie oozie 0 2022-01-24 05:57 /user/oozie
drwxrwxrwx - root hdfsadmingroup 0 2022-01-24 05:55 /user/root
[hadoop@ip-172-31-79-144 ~]$
```

**12. (2 points) Execute a command to create the following HDFS directory:**

**/user/csp554-2**

**Sol)** Command executed = “hadoop fs -mkdir /user/csp554-2”

```
Desktop — hadoop@ip-172-31-79-144:~ ssh -i ~/Desktop/emr-key-pair.pem hadoop@ec2-3-235-74-138.compute-1.amazonaws.com — 147x50
[hadoop@ip-172-31-79-144 ~]$ hadoop fs -mkdir /user/csp554-2
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/usr/lib/hadoop/lib/slf4j-log4j12-1.7.25.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/usr/share/aws/emr/emrfs/lib/slf4j-log4j12-1.7.12.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.slf4j.impl.Log4jLoggerFactory]
[hadoop@ip-172-31-79-144 ~]$ hadoop fs -ls /user
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/usr/lib/hadoop/lib/slf4j-log4j12-1.7.25.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/usr/share/aws/emr/emrfs/lib/slf4j-log4j12-1.7.12.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.slf4j.impl.Log4jLoggerFactory]
Found 8 items
drwxr-xr-x - hadoop hdfsadmin group 0 2022-01-24 06:55 /user/csp554
drwxr-xr-x - hadoop hdfsadmin group 0 2022-01-24 06:57 /user/csp554-2
drwxrwxrwx - hadoop hdfsadmin group 0 2022-01-24 05:55 /user/hadoop
drwxr-xr-x - mapred mapred 0 2022-01-24 05:55 /user/history
drwxrwxrwx - hdfs hdfsadmin group 0 2022-01-24 05:55 /user/hive
drwxrwxrwx - hue hue 0 2022-01-24 05:55 /user/hue
drwxrwxrwx - oozie oozie 0 2022-01-24 05:57 /user/oozie
drwxrwxrwx - root hdfsadmin group 0 2022-01-24 05:55 /user/root
[hadoop@ip-172-31-79-144 ~]$
```

**13. (2 points) Execute a command that copies a given local file to the given hdfs directory:**

**Source local file:** /home/hadoop/myname.txt (where the actual name is your name as described above)

**Destination HDFS directory:** /user/csp554

**Sol)** Command executed = “hadoop fs -put /home/hadoop/rishabhjain.txt /user/csp554” .

We can also use command “hadoop fs -copyFromLocal /home/hadoop/rishabhjain.txt /user/csp554”.

```
Desktop — hadoop@ip-172-31-78-161:~ ssh -i ~/Desktop/emr-key-pair.pem hadoop@ec2-3-238-249-142.compute-1.amazonaws.com — 147
[hadoop@ip-172-31-78-161 ~]$ hadoop fs -put /home/hadoop/rishabhjain.txt /user/csp554
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/usr/lib/hadoop/lib/slf4j-log4j12-1.7.25.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/usr/share/aws/emr/emrfs/lib/slf4j-log4j12-1.7.12.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.slf4j.impl.Log4jLoggerFactory]

[hadoop@ip-172-31-78-161 ~]$ hadoop fs -ls /user/csp554
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/usr/lib/hadoop/lib/slf4j-log4j12-1.7.25.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/usr/share/aws/emr/emrfs/lib/slf4j-log4j12-1.7.12.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.slf4j.impl.Log4jLoggerFactory]
Found 1 items
-rw-r--r-- 1 hadoop hdfsadmin group 22 2022-01-24 07:33 /user/csp554/rishabhjain.txt

[hadoop@ip-172-31-78-161 ~]$ hadoop fs -cat /user/csp554/rishabhjain.txt
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/usr/lib/hadoop/lib/slf4j-log4j12-1.7.25.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/usr/share/aws/emr/emrfs/lib/slf4j-log4j12-1.7.12.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.slf4j.impl.Log4jLoggerFactory]
this is the name file
[hadoop@ip-172-31-78-161 ~]$
```

**14. (2 points) Copy a file from one hdfs directory to another hdfs directory and write down the command**

**Source hdfs file:** /user/csp554/myname.txt (where the actual name is your name as described above)

**Destination HDFS directory:** /user/csp554-2

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**Sol)** Command executed = “hadoop fs -cp /user/csp554/rishabhjain.txt /user/csp554-2”

```
Desktop — hadoop@ip-172-31-78-161:~ — ssh -i ~/Desktop/emr-key-pair.pem hadoop@ec2-3-238-249-142.compute-1.amazonaws.com — 147x50
[hadoop@ip-172-31-78-161 ~]$ hadoop fs -cp /user/csp554/rishabhjain.txt /user/csp554-2
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/usr/lib/hadoop/lib/slf4j-log4j12-1.7.25.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/usr/share/aws/emr/emrfs/lib/slf4j-log4j12-1.7.12.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.slf4j.impl.Log4jLoggerFactory]

[hadoop@ip-172-31-78-161 ~]$ hadoop fs -ls /user/csp554-2
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/usr/lib/hadoop/lib/slf4j-log4j12-1.7.25.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/usr/share/aws/emr/emrfs/lib/slf4j-log4j12-1.7.12.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.slf4j.impl.Log4jLoggerFactory]
Found 1 items
-rw-r--r-- 1 hadoop hdfsadmin group 22 2022-01-24 07:42 /user/csp554-2/rishabhjain.txt

[hadoop@ip-172-31-78-161 ~]$ hadoop fs -cat /user/csp554-2/rishabhjain.txt
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/usr/lib/hadoop/lib/slf4j-log4j12-1.7.25.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/usr/share/aws/emr/emrfs/lib/slf4j-log4j12-1.7.12.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.slf4j.impl.Log4jLoggerFactory]
this is the name file
[hadoop@ip-172-31-78-161 ~]$
```

15. (2 points) Copy the object myid.txt you uploaded to an S3 bucket into the Hadoop master node Linux file system. The actual object includes your student id as above.

aws s3 cp s3://mybucket/myid.txt /home/hadoop/myid.txt

**Sol)** Command executed = “aws s3 cp s3:// a20495530-csp554/A20495530.txt /home/hadoop/ A20495530.txt”

```
[hadoop@ip-172-31-78-161 ~]$ aws s3 cp s3://a20495530-csp554/A20495530.txt /home/hadoop/A20495530.txt
download: s3://a20495530-csp554/A20495530.txt to ./A20495530.txt
[hadoop@ip-172-31-78-161 ~]$ ls
A20495530.txt rishabhjain.txt
[hadoop@ip-172-31-78-161 ~]$ cat A20495530.txt
this is the id file
[hadoop@ip-172-31-78-161 ~]$
```

16. (2 points) Copy the same object myid.txt you created in an S3 bucket into HDFS into the directory /users/csp554

hadoop fs -cp s3://mybucket/myid.txt hdfs:///user/csp554-2

Note, the three slashes after the “hdfs:”

After you executed the above command, execute another command (you needed to figure out which one) to list the files and directories under the hdfs directory listed below:

/user/csp554-2

**Sol)** Command executed = “hadoop fs -cp s3://a20495530-csp554/A20495530.txt hdfs:///user/csp554-2”

```
[hadoop@ip-172-31-78-161 ~]$ hadoop fs -cp s3://a20495530-csp554/A20495530.txt hdfs:///user/csp554-2
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/usr/lib/hadoop/lib/slf4j-log4j12-1.7.25.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/usr/share/aws/emr/emrfs/lib/slf4j-log4j12-1.7.12.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.slf4j.impl.Log4jLoggerFactory]
22/01/24 07:51:53 INFO s3n.S3NativeFileSystem: Opening 's3://a20495530-csp554/A20495530.txt' for reading
```



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```
[hadoop@ip-172-31-78-161 ~]$ hadoop fs -ls /user/csp554-2
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/usr/lib/hadoop/lib/slf4j-log4j12-1.7.25.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/usr/share/aws/emr/emrfs/lib/slf4j-log4j12-1.7.12.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.slf4j.impl.Log4jLoggerFactory]
Found 2 items
-rw-r--r-- 1 hadoop hdfsadmin group 20 2022-01-24 07:51 /user/csp554-2/A20495530.txt
-rw-r--r-- 1 hadoop hdfsadmin group 22 2022-01-24 07:42 /user/csp554-2/rishabhjain.txt
[hadoop@ip-172-31-78-161 ~]$
```

17. (2 points) Execute a command to show the contents of the myid.txt file in the hdfs directory /user/csp554-2

Clue: look up about how to use the “cat” command in the file system shell document.

Sol) Command executed = “hadoop fs -cat /user/csp554-2/A20495530.txt”

```
[hadoop@ip-172-31-78-161 ~]$ hadoop fs -cat /user/csp554-2/A20495530.txt
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/usr/lib/hadoop/lib/slf4j-log4j12-1.7.25.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/usr/share/aws/emr/emrfs/lib/slf4j-log4j12-1.7.12.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.slf4j.impl.Log4jLoggerFactory]
this is the id file
[hadoop@ip-172-31-78-161 ~]$
```

18. (2 points) Execute a command to remove the myid.txt file in the hdfs directory /user/csp554-2

Clue: look up about how to use the “rm” command in the file system shell document.

Sol) Command executed = “hadoop fs -rm /user/csp554-2/A20495530.txt”

```
[hadoop@ip-172-31-78-161 ~]$ hadoop fs -rm /user/csp554-2/A20495530.txt
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/usr/lib/hadoop/lib/slf4j-log4j12-1.7.25.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/usr/share/aws/emr/emrfs/lib/slf4j-log4j12-1.7.12.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.slf4j.impl.Log4jLoggerFactory]
Deleted /user/csp554-2/A20495530.txt
[hadoop@ip-172-31-78-161 ~]$
```

```
[hadoop@ip-172-31-78-161 ~]$ hadoop fs -ls /user/csp554-2
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/usr/lib/hadoop/lib/slf4j-log4j12-1.7.25.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/usr/share/aws/emr/emrfs/lib/slf4j-log4j12-1.7.12.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.slf4j.impl.Log4jLoggerFactory]
Found 1 items
-rw-r--r-- 1 hadoop hdfsadmin group 22 2022-01-24 07:42 /user/csp554-2/rishabhjain.txt
[hadoop@ip-172-31-78-161 ~]$
```