Provisioned – MSK(kafka Cluster With Producer & Consumer

1 . Create an Amazon MSK cluster :-

- my task is to insert and consume some data through msk(kafka).
- Create MSK cluster by logging into aws console (https://aws.amazon.com/console/)
- select coustom create and give cluster name as "**my-msk-cluster**"
- select cluster type as **provisioned** and Apache Kafka version **2.8.1**
- select **kafka.t3.small** broker type , brokers per zone is "**1" ,**total number of zones "**3".**
- Amazon EBS Storage per broker = **100 gb**
- then give **next** in the bottom of page .
- select default **vpc** and **AZ's** and **subnets.**
- then created sec-grp **(**msk-kafka-sg**)**

```
22-----------0.0.0.0/0 or <vpn ip> or <my ip>.
80-----------0.0.0.0/0(internet).
```

- then check **Unauthenticated access & Plaintext** then **next.**
- then directly create the **cluster.**

2 . Create client machine and assign IAM role :-

- then created EC2 **msk-ec2** selecting **t2-micro** with Amazon linux 2 AMI giving the default settings. with assosiating **IAM role.**
- install **Java** on the ec2 by running the following command:

```
sudo yum install java-11 -y
```

- Run the following command to download **Apache Kafka.**

```
wget https://archive.apache.org/dist/kafka/2.8.1/kafka_2.12-2.8.1.tgz
```

1. Run the following command in the directory where you downloaded the **TAR file** in the previous step to get **kafka_2.12-2.8.1 file**.

```
tar -xzf kafka_2.12-2.8.1.tgz
```

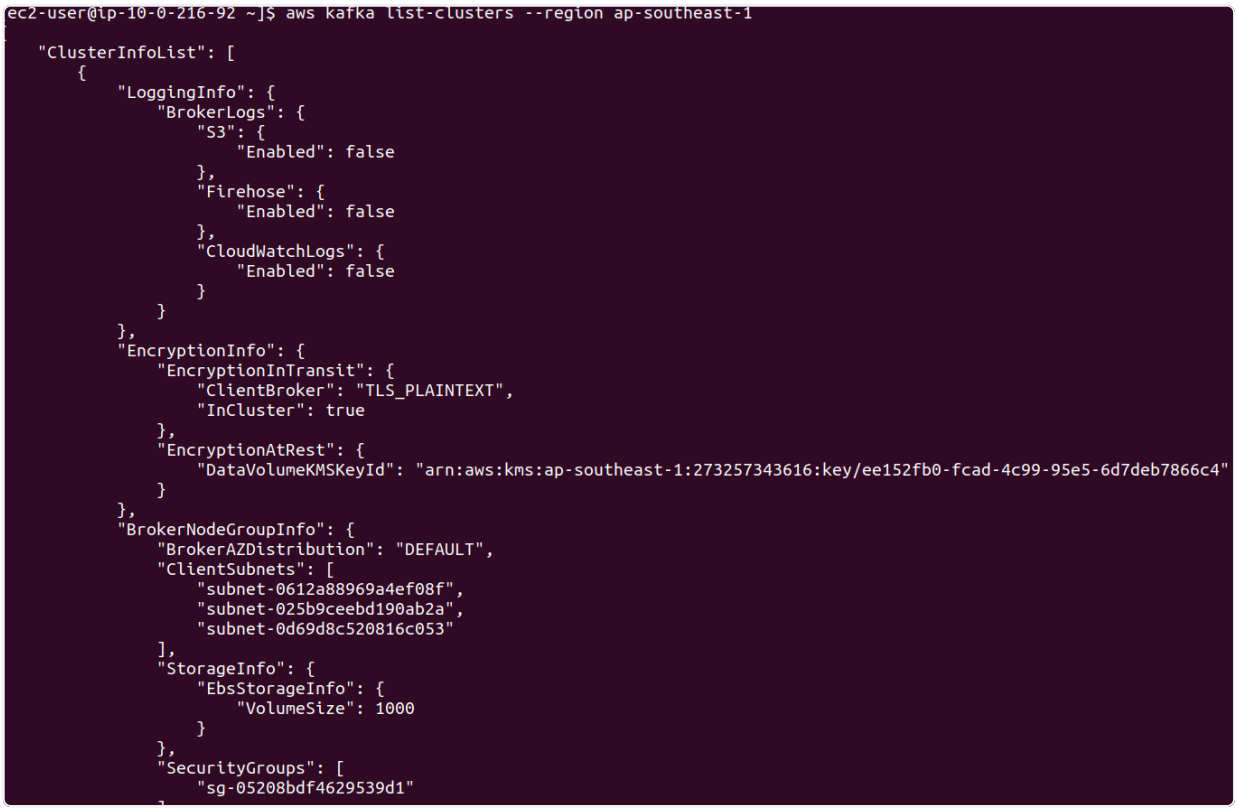
- Go to the `kafka_2.12-2.8.1/libs` directory, then run the following command to download the Amazon MSK IAM JAR file. The Amazon MSK IAM JAR makes it possible for the client machine to access the cluster.

```
wget https://github.com/aws/aws-msk-iam-auth/releases/download/v1.1.1/aws-msk-iam-auth-1.1.1-all.jar
```

- Go to the `kafka_2.12-2.8.1/bin` directory. Copy the following property settings and paste them into a new file. Name the file `client.properties` and save it.

```
security.protocol=SASL_SSL
sasl.mechanism=AWS_MSK_IAM
sasl.jaas.config=software.amazon.msk.auth.iam.IAMLoginModule required;
sasl.client.callback.handler.class=software.amazon.msk.auth.iam.IAMClientCallbackHandler
```

- wait untill the cluster changes into **Active** status.
- (**aws kafka list-clusters --region <your region>)** with this command check the list of clusters in perticular region. (aws kafka list-clusters --region ap-southeast-1)
- will get this as output:-



clusters is (ap-southeast-1)

3 . Create a Topic :-

```
( /home/ec2-user/kafka_2.12-2.8.1/bin/kafka-topics.sh --create --bootstrap-server <<bootstrap server address>> --replication-factor 3 --partitions 1 --topic <Our topic name> )
```

4 . List Topics using

```
( /home/ec2-user/kafka_2.12-2.8.1/bin/kafka-topics.sh --bootstrap-server <<bootstrap server address>> --list )
```

- by using the privious command i got these topics **__amazon_msk_canary**
  __consumer_offsets
  mskcluster

5 . Produce Topic :-

```
( /home/ec2-user/kafka_2.12-2.8.1/bin/kafka-console-producer.sh --bootstrap-server <<bootstrap server address>> --topic <Our topic name> )
```

6 . Consume topic :-

```
( /home/ec2-user/kafka_2.12-2..8.1/bin/kafka-console-consumer.sh --bootstrap-server <<bootstrap server address> --topic <Our topic name> --from-beginning )
```

- duplicate the same ec2 and login into that then make one ec2 as **producer** and another as **consumer** , among both for one ec2 use **produce** command and in dublicate ec2 use consumer command .
- then try to enter data into into producer , we can see the same data in consumer too updating then and there .
- if the consumer getting the data from producer the task is sucessfull.

- hence the task got completed sucessfully.....!