ACADGILD

Assignment 12

OOZIE and FLUME Twitter Data Analysis

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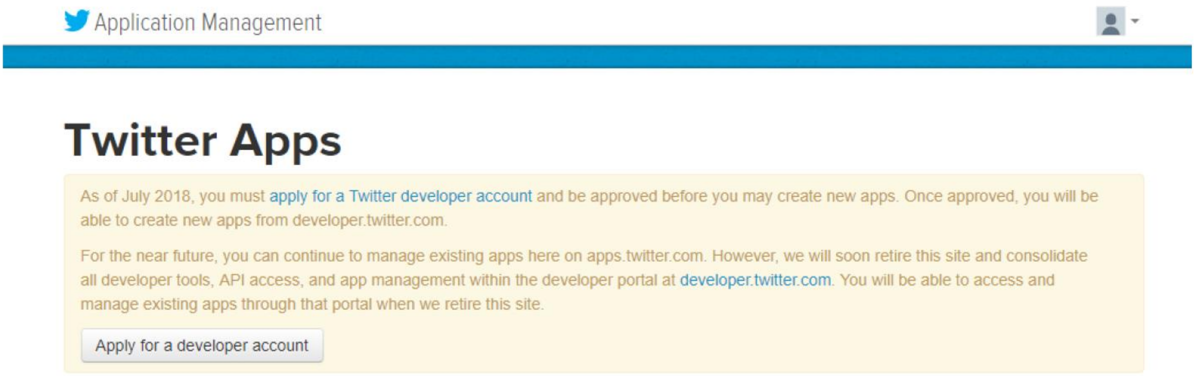
OOZIE and FLUME

1. **Create a flume agent that streams data from Twitter and stores in the HDFS.**

We created account on twitter and then goto the link: **https://apps.twitter.com/app** and click the ‘create new app’ button.



Twitter Apps

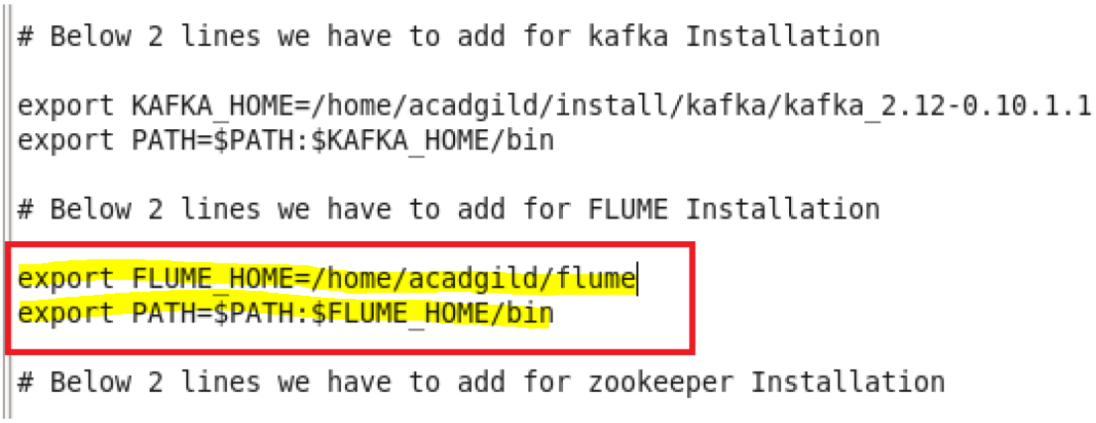
As of July 2018, you must apply for a Twitter developer account and be approved before you may create new apps. Once approved, you will be able to create new apps from developer.twitter.com.

For the near future, you can continue to manage existing apps here on apps.twitter.com. However, we will soon retire this site and consolidate all developer tools, API access, and app management within the developer portal at developer.twitter.com. You will be able to access and manage existing apps through that portal when we retire this site.

Then we have applied for Developer Account. Now we are waiting for approval.
As approval is still pending, we could not create a new application with required details.

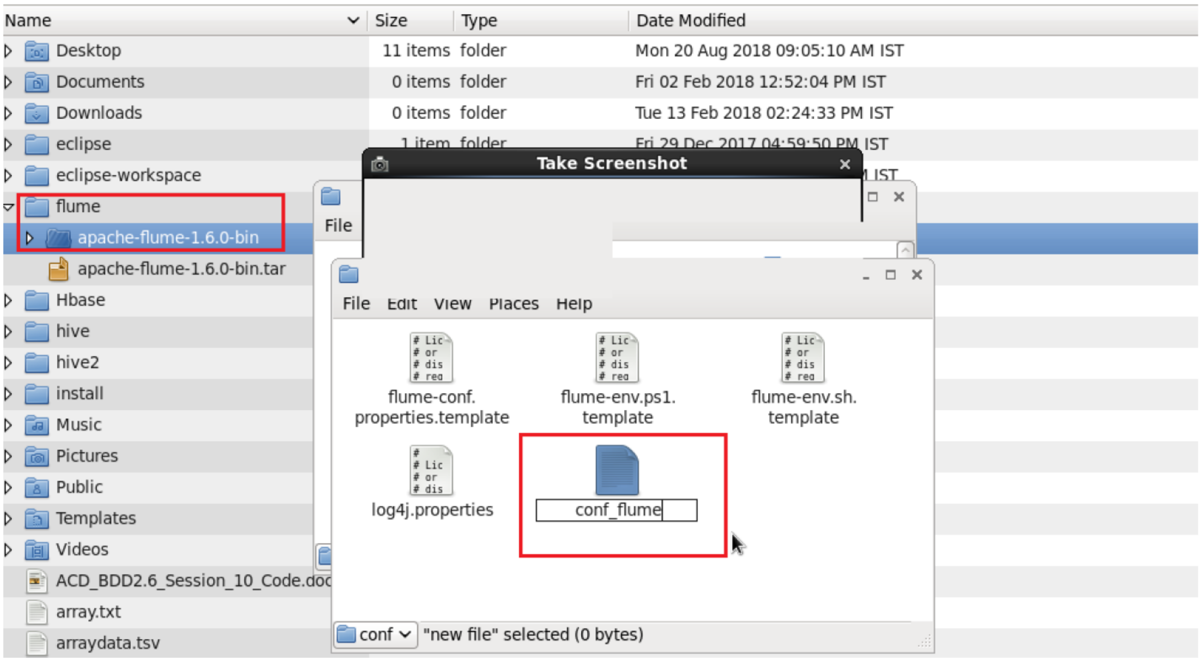
We have downloaded flume tar file from link : **https://drive.google.com/drive/u/0/folders/0B1QaXx7tpw3SWkMwVFBkc3djNFk** and extracted it.

Then we have edited .bashrc file and set the path of flume directory. Then closed the .bashrc file after saving it. And then in the terminal, we have used command **‘source .bashrc’** to update the .bashrc file.



```
# Below 2 lines we have to add for kafka Installation

export KAFKA_HOME=/home/acadgild/install/kafka/kafka_2.12-0.10.1.1
export PATH=$PATH:$KAFKA_HOME/bin

# Below 2 lines we have to add for FLUME Installation

export FLUME_HOME=/home/acadgild/flume
export PATH=$PATH:$FLUME_HOME/bin

# Below 2 lines we have to add for zookeeper Installation
```

We have created a new file **conf_flume** inside the **conf** directory of **apache-flume-1.6.0-bin** folder.



Name	Size	Type	Date Modified
Desktop	11 items	folder	Mon 20 Aug 2018 09:05:10 AM IST
Documents	0 items	folder	Fri 02 Feb 2018 12:52:04 PM IST
Downloads	0 items	folder	Tue 13 Feb 2018 02:24:33 PM IST
eclipse	1 item	folder	Fri 29 Dec 2017 04:59:50 PM IST
eclipse-workspace			IST
flume			
apache-flume-1.6.0-bin			
apache-flume-1.6.0-bin.tar			
Hbase			
hive			
hive2			
install			
Music			
Pictures			
Public			
Templates			
Videos			
ACD_BDD2.6_Session_10_Code.doc			
array.txt			
arraydata.tsv			

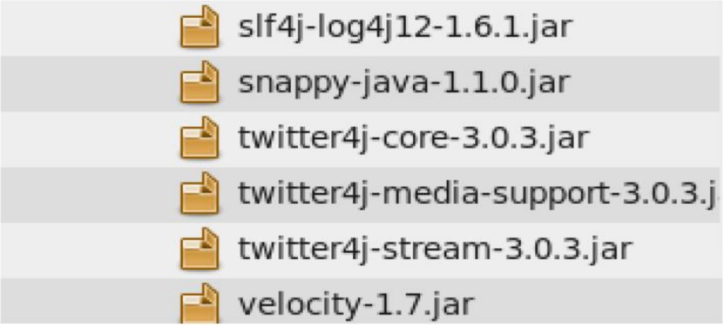
"new file" selected (0 bytes)

We have verified that below jars placed in $FLUME_HOME/lib directory i.e. apache-flume-1.6.0-bin/lib folder :

1. twitter4j-core-X.XX.jar

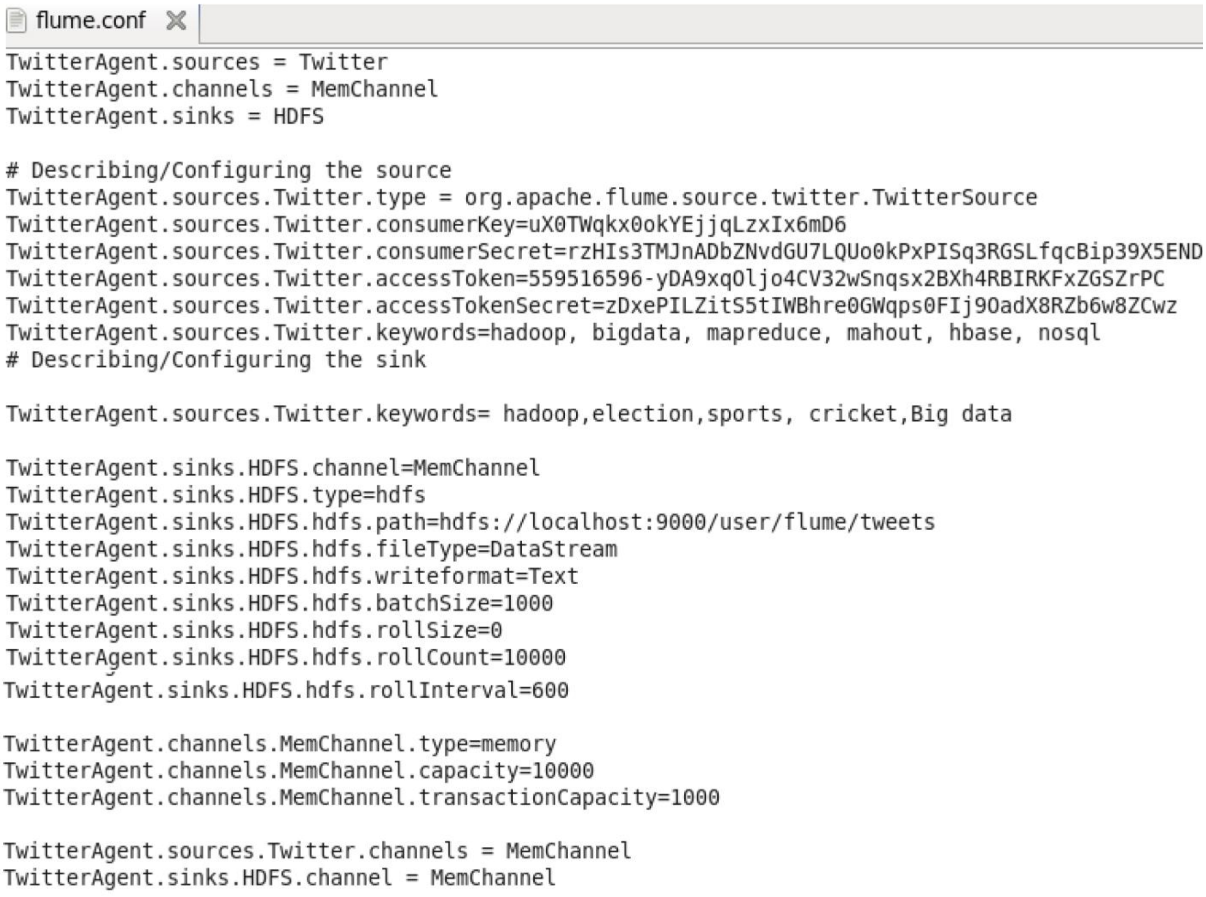
2. twitter4j-stream-X.X.X.jar

3. twitter4j-media-support-X.X.X.jar



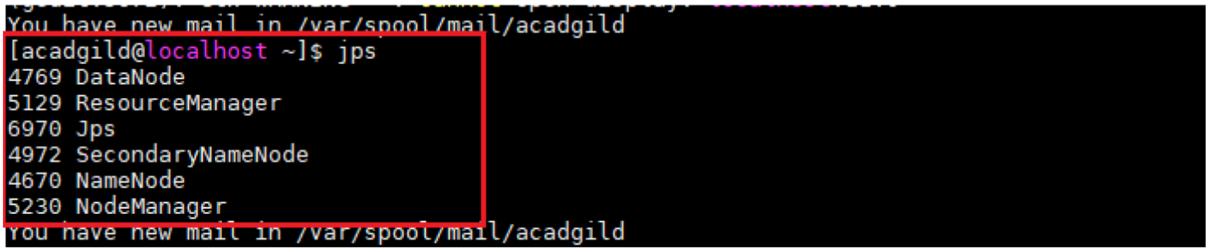
slf4j-log4j12-1.6.1.jar
snappy-java-1.1.0.jar
twitter4j-core-3.0.3.jar
twitter4j-media-support-3.0.3.j
twitter4j-stream-3.0.3.jar
velocity-1.7.jar

We have copied the Flume configuration code from the link https://drive.google.com/open?id=0B1QaXx7tpw3Sb3U4LW9SWlNidkk and pasted it in the newly created file inside the conf directory of **apache-flume-1.6.0-bin** folder. Then we have saved this file as **flume.conf**



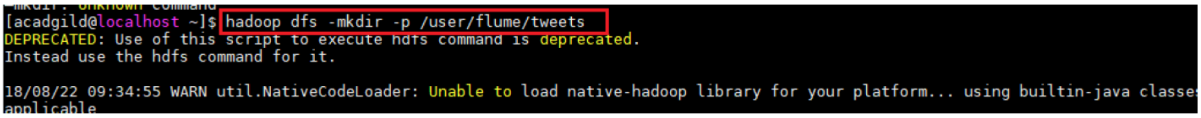
```
TwitterAgent.sources = Twitter
TwitterAgent.channels = MemChannel
TwitterAgent.sinks = HDFS

# Describing/Configuring the source
TwitterAgent.sources.Twitter.type = org.apache.flume.source.twitter.TwitterSource
TwitterAgent.sources.Twitter.consumerKey=uX0TWqkx0okYEjjqLzxIx6mD6
TwitterAgent.sources.Twitter.consumerSecret=rzHIs3TMJnADbZNvdGU7LQUo0kPxPISq3RGSLfqcBip39X5END
TwitterAgent.sources.Twitter.accessToken=559516596-yDA9xqOljo4CV32wSnqsx2BXh4RBIRKFxZGSZrPC
TwitterAgent.sources.Twitter.accessTokenSecret=zDxePILZitS5tIWBhre0GWqps0FIj9OadX8RZb6w8ZCwz
TwitterAgent.sources.Twitter.keywords=hadoop, bigdata, mapreduce, mahout, hbase, nosql
# Describing/Configuring the sink

TwitterAgent.sources.Twitter.keywords= hadoop,election,sports, cricket,Big data

TwitterAgent.sinks.HDFS.channel=MemChannel
TwitterAgent.sinks.HDFS.type=hdfs
TwitterAgent.sinks.HDFS.hdfs.path=hdfs://localhost:9000/user/flume/tweets
TwitterAgent.sinks.HDFS.hdfs.fileType=DataStream
TwitterAgent.sinks.HDFS.hdfs.writeformat=Text
TwitterAgent.sinks.HDFS.hdfs.batchSize=1000
TwitterAgent.sinks.HDFS.hdfs.rollSize=0
TwitterAgent.sinks.HDFS.hdfs.rollCount=10000
TwitterAgent.sinks.HDFS.hdfs.rollInterval=600

TwitterAgent.channels.MemChannel.type=memory
TwitterAgent.channels.MemChannel.capacity=10000
TwitterAgent.channels.MemChannel.transactionCapacity=1000

TwitterAgent.sources.Twitter.channels = MemChannel
TwitterAgent.sinks.HDFS.channel = MemChannel
```

We run jps command to verify all hadoop daemons are running fine.



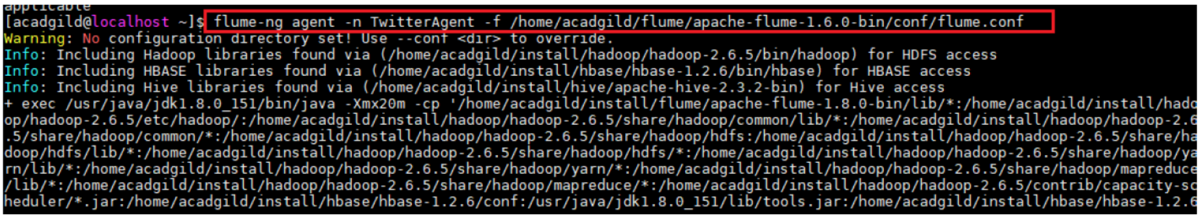
```
You have new mail in /var/spool/mail/acadgild
[acadgild@localhost ~]$ jps
4769 DataNode
5129 ResourceManager
6970 Jps
4972 SecondaryNameNode
4670 NameNode
5230 NodeManager
You have new mail in /var/spool/mail/acadgild
```

We have created a new directory inside HDFS path, where the Twitter tweet data should be stored. **hadoop dfs -mkdir -p /user/flume/tweets**



```
-mkdir: unknown command
[acadgild@localhost ~]$ hadoop dfs -mkdir -p /user/flume/tweets
DEPRECATED: Use of this script to execute hdfs command is deprecated.
Instead use the hdfs command for it.

18/08/22 09:34:55 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classe
applicable
```

To fetch data from Twitter, we are using below command to fetch the twitter tweet data into the HDFS cluster path. **flume-ng agent -n TwitterAgent -f /home/acadgild/flume/apache-flume-1.6.0-bin/conf/flume.conf**



```
applicable
[acadgild@localhost ~]$ flume-ng agent -n TwitterAgent -f /home/acadgild/flume/apache-flume-1.6.0-bin/conf/flume.conf
Warning: No configuration directory set! Use --conf <dir> to override.
Info: Including Hadoop libraries found via (/home/acadgild/install/hadoop/hadoop-2.6.5/bin/hadoop) for HDFS access
Info: Including HBASE libraries found via (/home/acadgild/install/hbase/hbase-1.2.6/bin/hbase) for HBASE access
Info: Including Hive libraries found via (/home/acadgild/install/hive/apache-hive-2.3.2-bin) for Hive access
+ exec /usr/java/jdk1.8.0_151/bin/java -Xmx20m -cp '/home/acadgild/install/flume/apache-flume-1.8.0-bin/lib/*:/home/acadgild/install/hado
op/hadoop-2.6.5/etc/hadoop/:/home/acadgild/install/hadoop/hadoop-2.6.5/share/hadoop/common/lib/*:/home/acadgild/install/hadoop/hadoop-2.6
.5/share/hadoop/common/*:/home/acadgild/install/hadoop/hadoop-2.6.5/share/hadoop/hdfs:/home/acadgild/install/hadoop/hadoop-2.6.5/share/ha
doop/hdfs/lib/*:/home/acadgild/install/hadoop/hadoop-2.6.5/share/hadoop/hdfs/*:/home/acadgild/install/hadoop/hadoop-2.6.5/share/hadoop/ya
rn/lib/*:/home/acadgild/install/hadoop/hadoop-2.6.5/share/hadoop/yarn/*:/home/acadgild/install/hadoop/hadoop-2.6.5/share/hadoop/mapreduce
/lib/*:/home/acadgild/install/hadoop/hadoop-2.6.5/share/hadoop/mapreduce/*:/home/acadgild/install/hadoop/hadoop-2.6.5/contrib/capacity-sc
heduler/*.jar:/home/acadgild/install/hbase/hbase-1.2.6/conf:/usr/java/jdk1.8.0_151/lib/tools.jar:/home/acadgild/install/hbase/hbase-1.2.6
```

To check the contents of the tweet data we can use the following command: **hadoop dfs -ls /user/flume/tweets**

Then to display the tweet data inside the /user/flume/tweets folder we are using below command :
hadoop dfs -cat /user/flume/tweets/<flumeData file name>