Assignment 11.3

Problem Statement :-

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

Solution:-

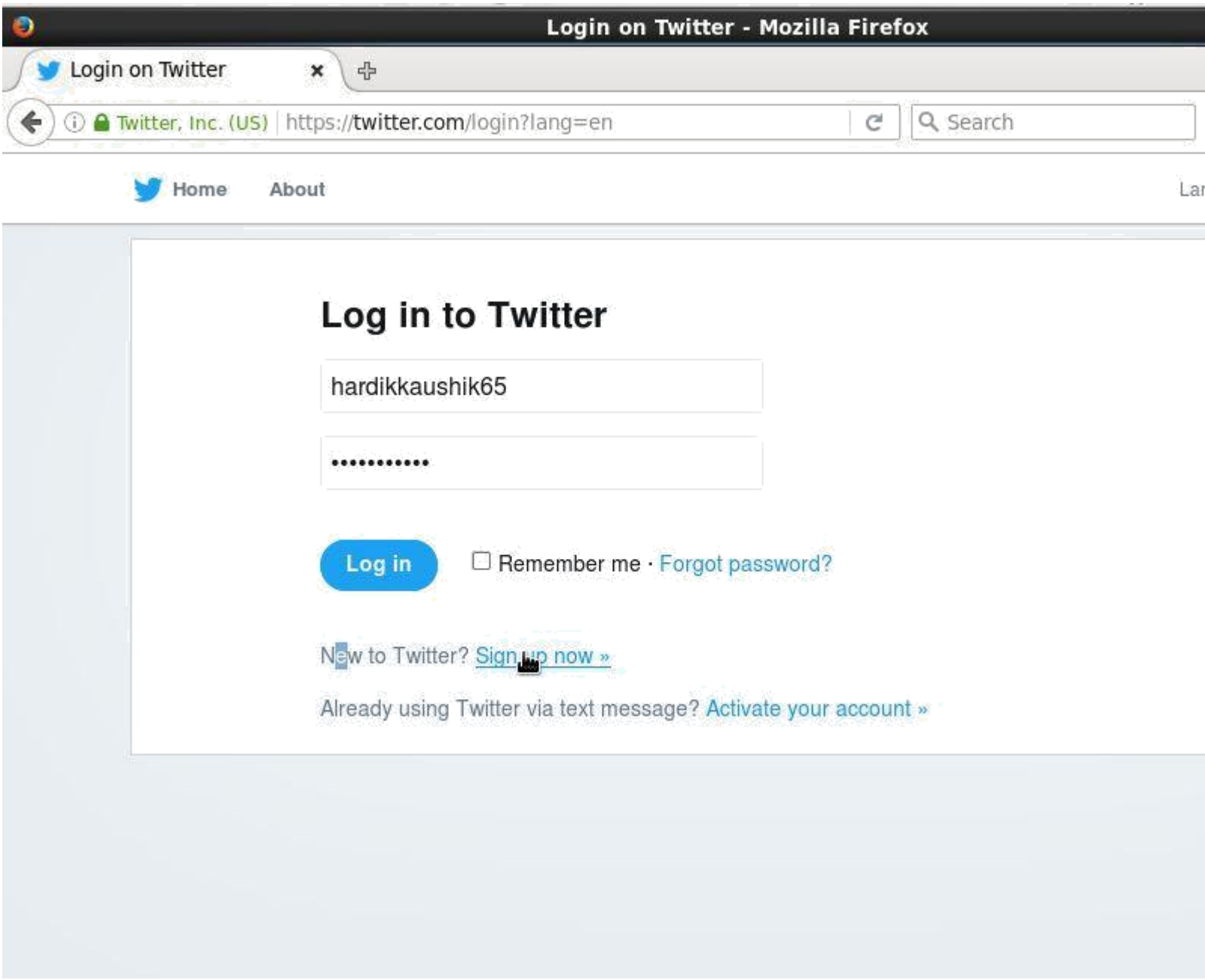
To stream data to our database from twitter we should have the following pre-requisites.

- Twitter account
- Hadoop cluster

Make sure you have below jars placed in your $**FLUME_HOME/lib/conf directory**:

- twitter4j-core-X.XX.jar
- twitter4j-stream-X.X.X.jar
- twitter4j-media-support-X.X.X.jar

If the above prerequisites are available we can move to our further step.



Go to the following link and click the ‘create new app’ button.

https://apps.twitter.com/app

Application Management

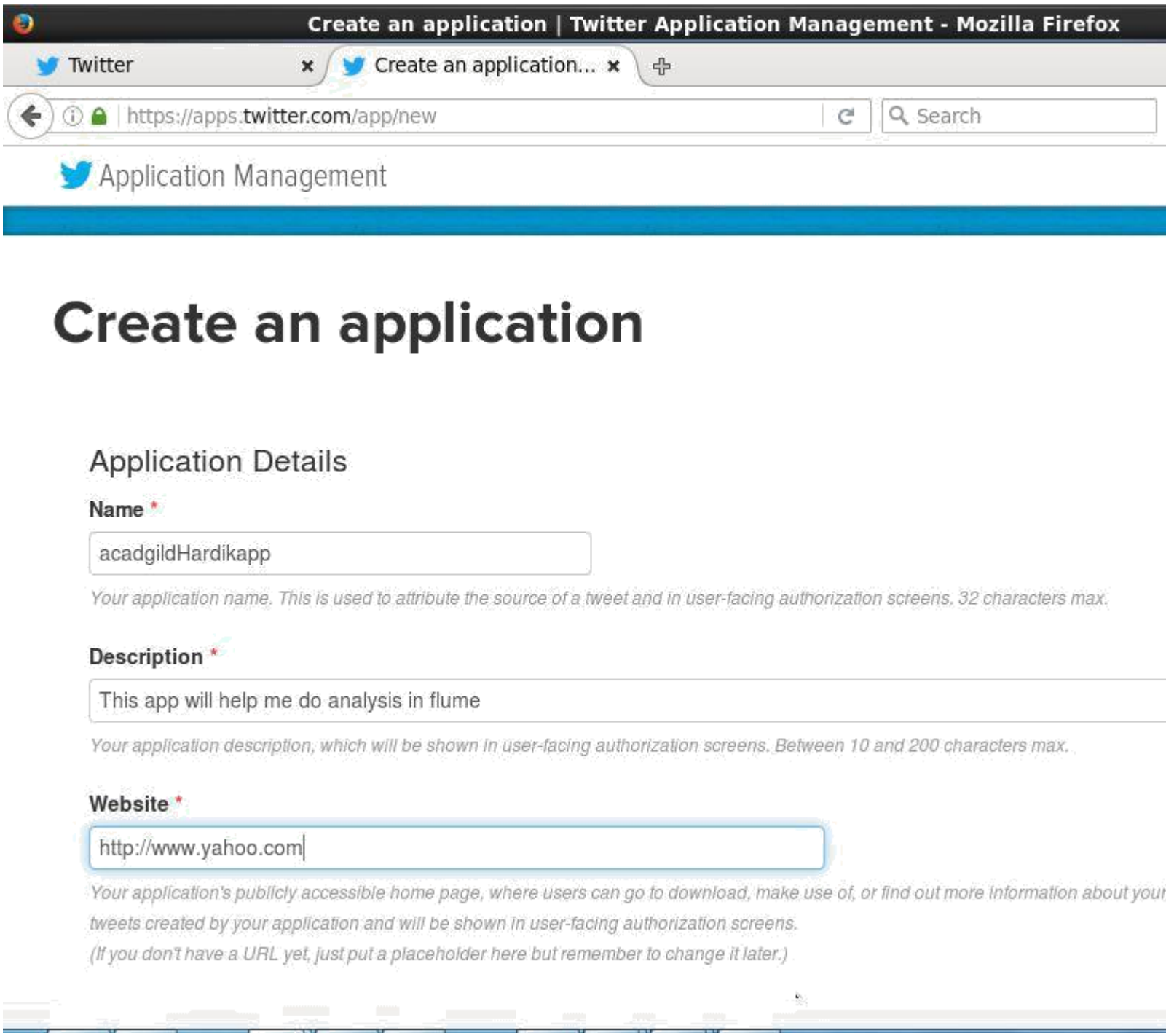
Twitter Apps

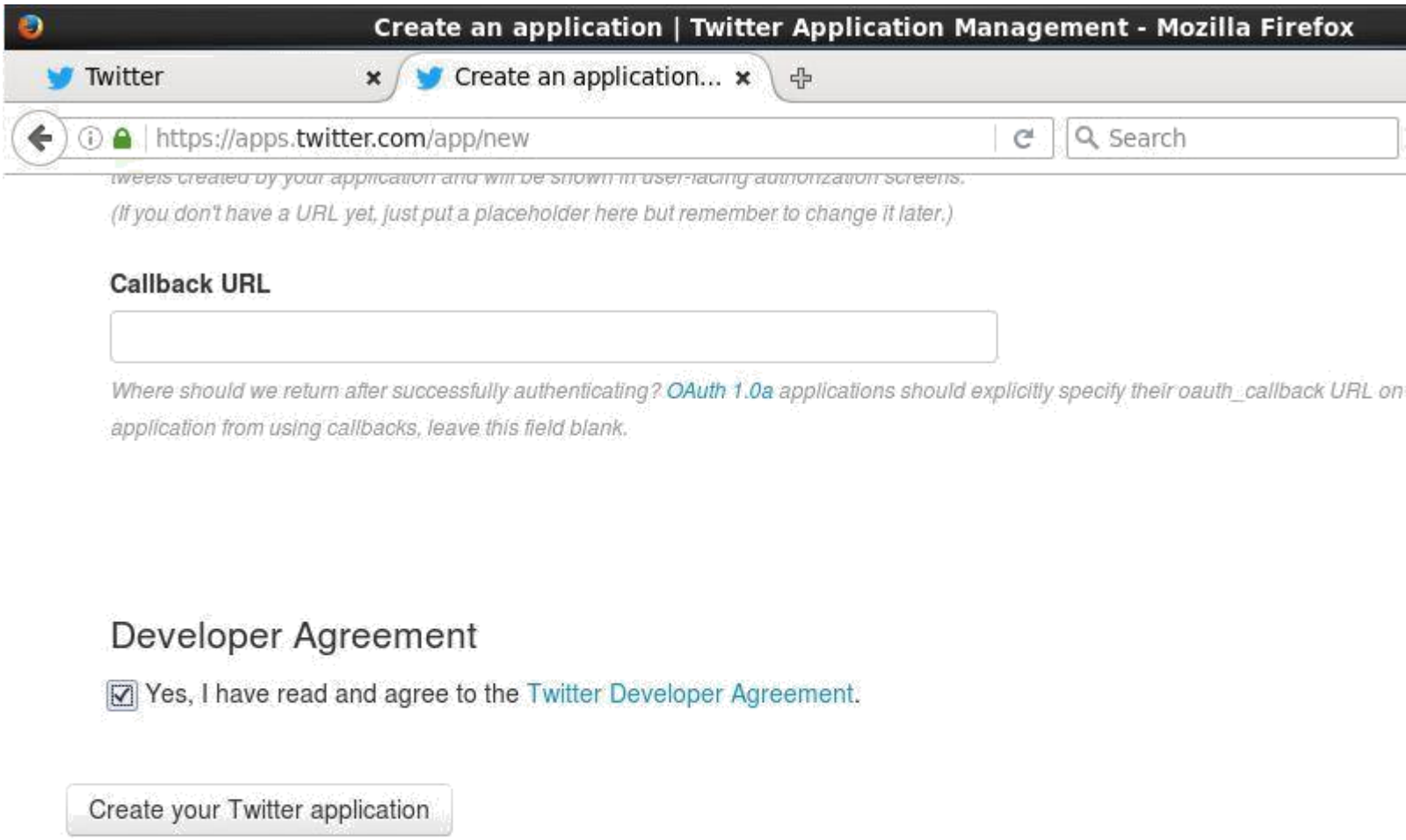
You don't currently have any Twitter Apps.

Create New App

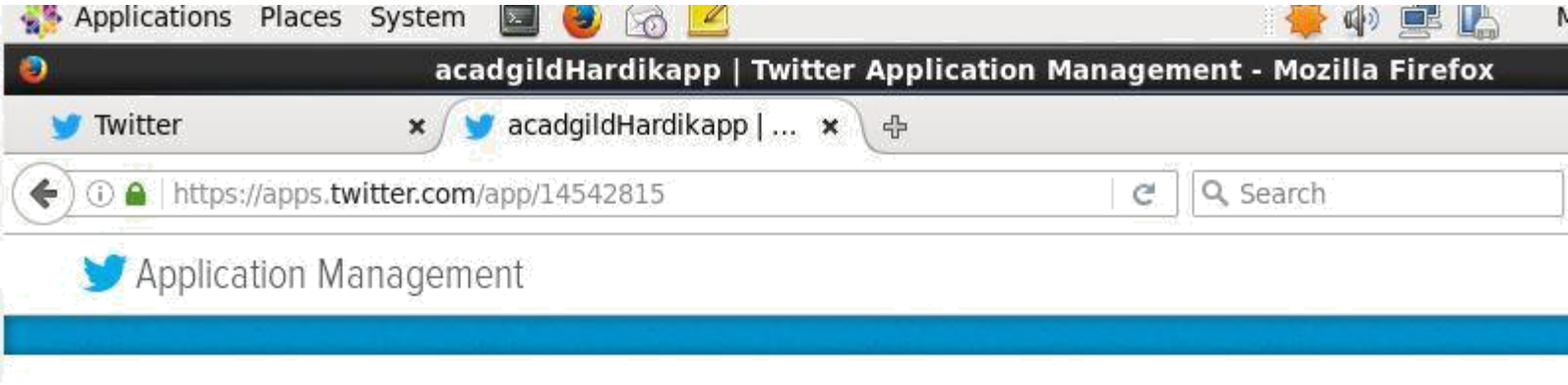
Tweet

About Terms Privacy Cookies


Create an application | Twitter Application Management - Mozilla Firefox
Twitter
Create an application...
https://apps.twitter.com/app/new
Search
Application Management
Create an application
Application Details
Name *
acadgildHardikapp
Your application name. This is used to attribute the source of a tweet and in user-facing authorization screens. 32 characters max.
Description *
This app will help me do analysis in flume
Your application description, which will be shown in user-facing authorization screens. Between 10 and 200 characters max.
Website *
http://www.yahoo.com
Your application's publicly accessible home page, where users can go to download, make use of, or find out more information about your
tweets created by your application and will be shown in user-facing authorization screens.
(If you don't have a URL yet, just put a placeholder here but remember to change it later.)



Select the 'Keys and Access Token' tab.



Application Management

Your application has been created. Please take a moment to review and adjust your application's settings.

acadgildHardikapp

Details | Settings | Keys and Access Tokens | Permissions

This app will help me do analysis in flume

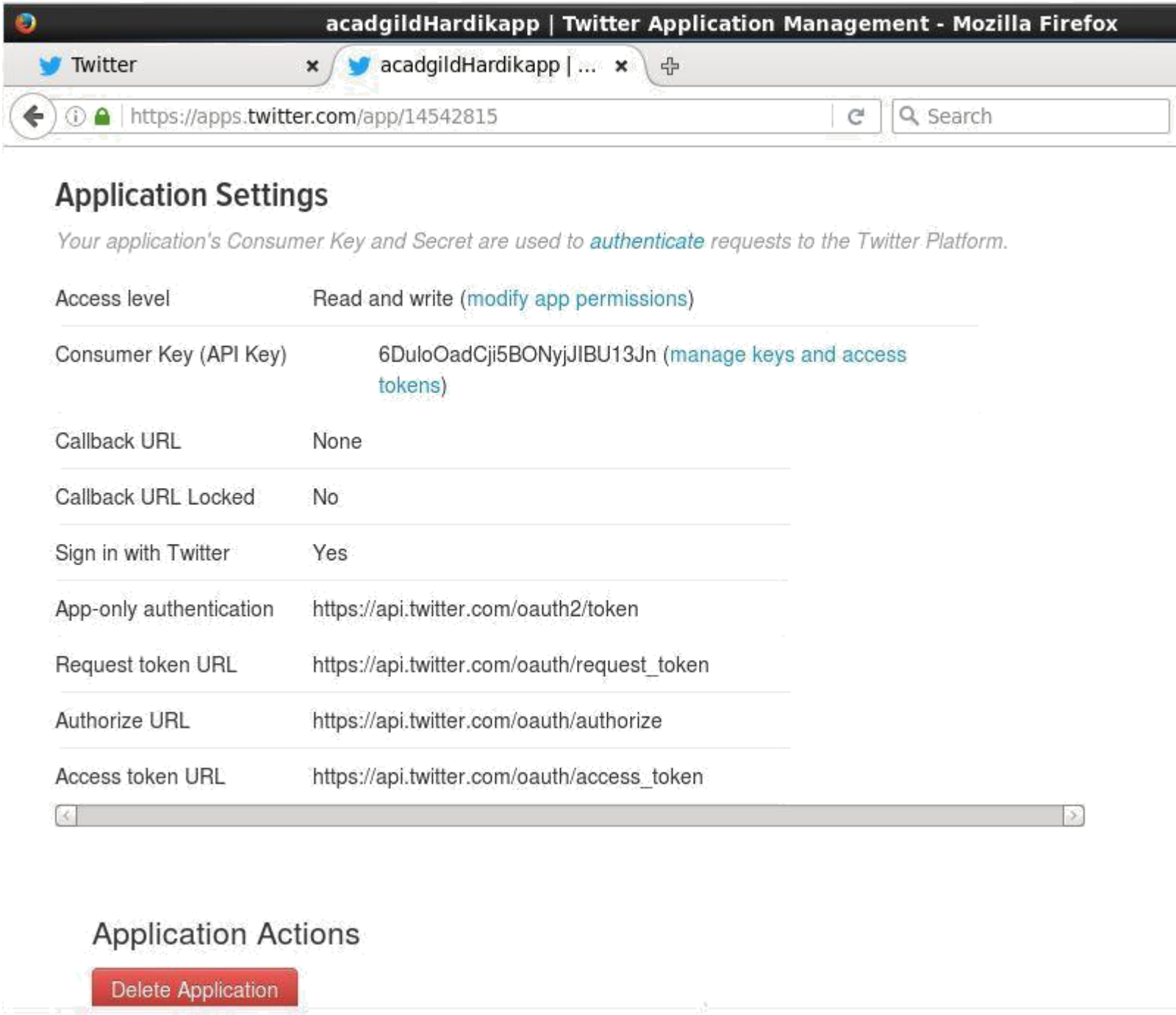
http://www.yahoo.com

Organization

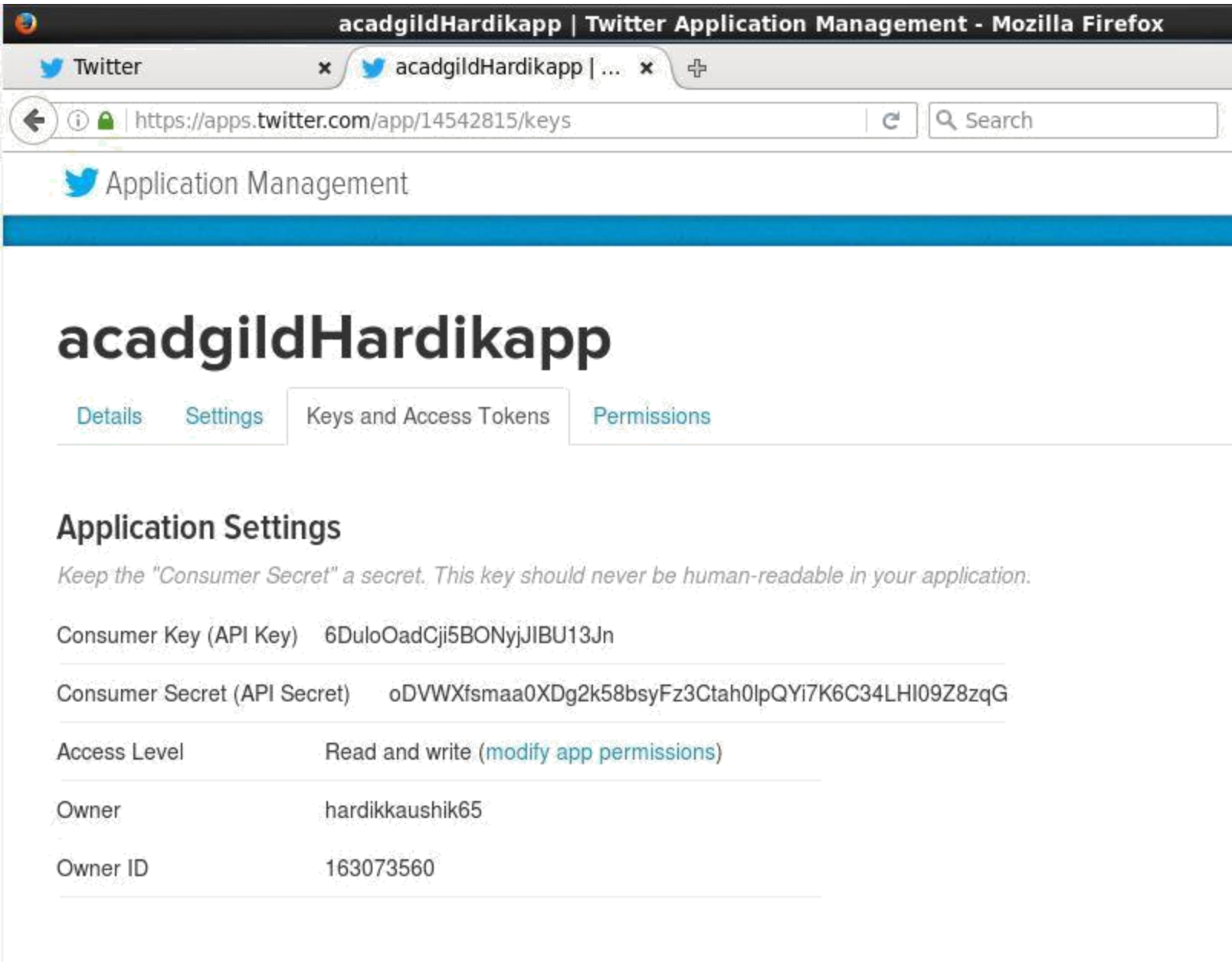
Information about the organization or company associated with your application. This information is optional.

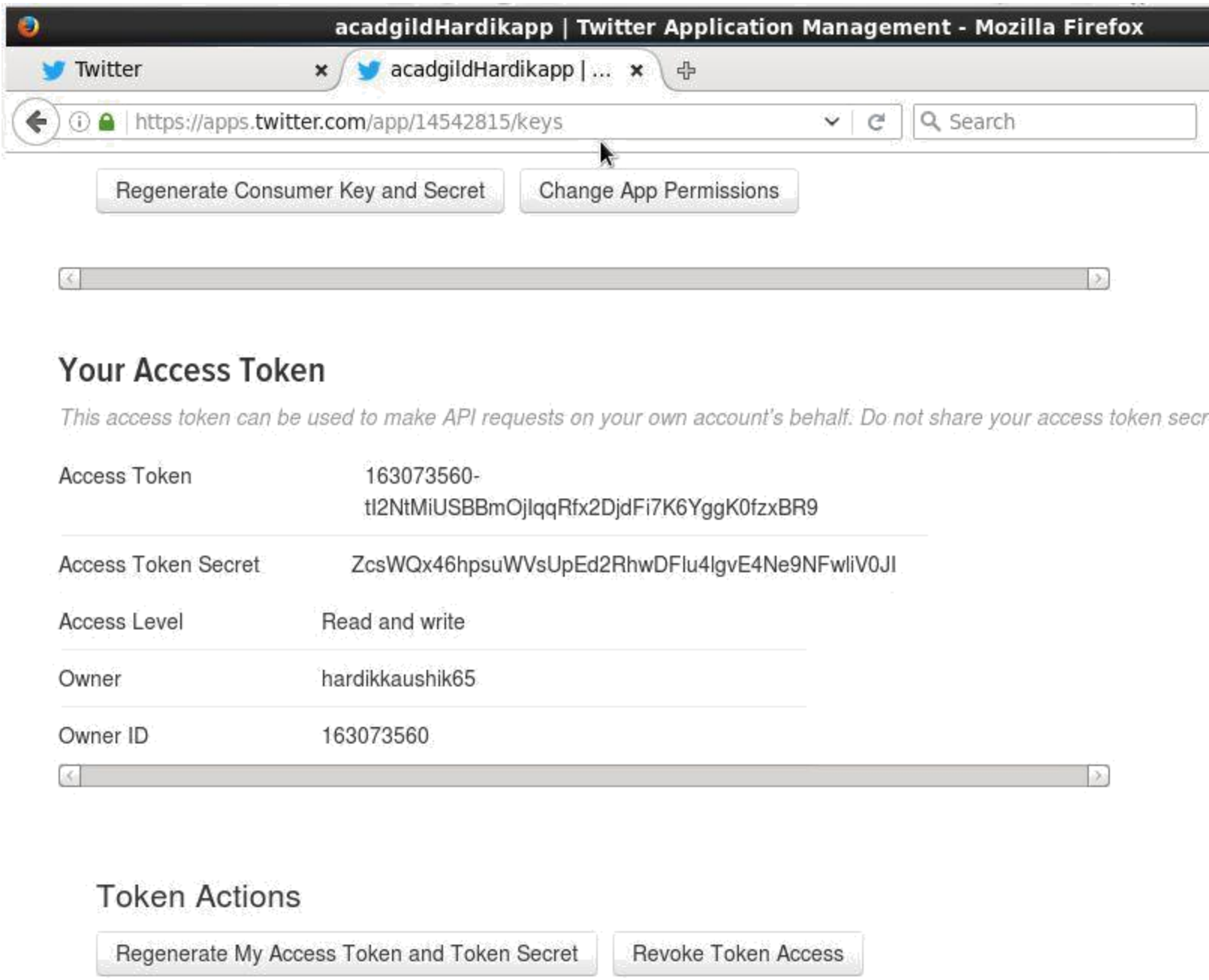
Organization	None
Organization website	None

Application Settings



Copy the consumer key and the consumer secret code, Scroll down further and select the ‘create my access token’ button.


acadgildHardikapp | Twitter Application Management - Mozilla Firefox
Twitter
acadgildHardikapp | ...
https://apps.twitter.com/app/14542815/keys
Search
Application Management
acadgildHardikapp
Details
Settings
Keys and Access Tokens
Permissions
Application Settings
Keep the "Consumer Secret" a secret. This key should never be human-readable in your application.
Consumer Key (API Key) 6DuloOadCji5BONyjJIBU13Jn
Consumer Secret (API Secret) oDVWXfsmaa0XDg2k58bsyFz3Ctah0lpQYi7K6C34LHI09Z8zqG
Access Level Read and write (modify app permissions)
Owner hardikkaushik65
Owner ID 163073560



Copy the Flume configuration code from the below link and paste it in the newly created file in the location,

/home/acadgild/apache-flume-1.6.0-bin/conf/flume_twitter.conf

https://drive.google.com/open?id=0B1QaXx7tpw3Sb3U4LW9SWlNidkk

Update the newly created file with twitter **api** keys like consumer key, Consumer token, Access token and the access token secret code and with the **key words.**

```
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=6DuloOadcji5BONyjJIBU13Jn
TwitterAgent.sources.Twitter.consumerSecret=oDVWXfsmaa0XDg2k58bsyFz3Ctah0IpQYi7K6C34LHI09Z8zqG
TwitterAgent.sources.Twitter.accessToken=163073560-tl2NtMiUSBBmOjlqqRfx2DjdFi7k6YggK0fzxBR9
TwitterAgent.sources.Twitter.accessTokenSecret=ZcsWQx46hpsuWVsUpEd2RhwDFlu4lgvE4Ne9NFwliV0JI
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
```

Create a new directory inside HDFS path, where the Twitter tweet data should be stored.

Hadoop dfs –mkdir /user/acadgild/hadoop/tweets

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

Java HotSpot(TM) Client VM warning: You have loaded library /home/acadgild/hadoop-2.7.2/lib/native/libhadoop.so.1.0.0 which m
e stack guard now.
It's highly recommended that you fix the library with 'execstack -c <libfile>', or link it with '-z noexecstack'.
17/11/30 10:03:57 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java cl
[acadgild@localhost lib]$
[acadgild@localhost lib]$
[acadgild@localhost lib]$ hadoop fs -ls /user/acadgild/hadoop
Java HotSpot(TM) Client VM warning: You have loaded library /home/acadgild/hadoop-2.7.2/lib/native/libhadoop.so.1.0.0 which m
e stack guard now.
It's highly recommended that you fix the library with 'execstack -c <libfile>', or link it with '-z noexecstack'.
17/11/30 10:04:19 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java cl
Found 14 items
drwxr-xr-x   - acadgild supergroup          0 2017-10-12 21:15 /user/acadgild/hadoop/InvalidDataMR
drwxr-xr-x   - acadgild supergroup          0 2017-10-12 18:46 /user/acadgild/hadoop/InvalidRecord2
drwxr-xr-x   - acadgild supergroup          0 2017-10-12 17:44 /user/acadgild/hadoop/InvalidRecordsoutput
drwxr-xr-x   - acadgild supergroup          0 2017-10-31 17:26 /user/acadgild/hadoop/OnidaTV
drwxr-xr-x   - acadgild supergroup          0 2017-10-31 17:41 /user/acadgild/hadoop/TV
drwxr-xr-x   - acadgild supergroup          0 2017-10-31 17:49 /user/acadgild/hadoop/TV1
-rw-r--r--   1 acadgild supergroup       1958 2017-10-13 18:56 /user/acadgild/hadoop/WordCount.txt
-rw-r-----   1 acadgild supergroup        237 2017-09-25 11:10 /user/acadgild/hadoop/max-temp.txt
drwxr-xr-x   - acadgild supergroup          0 2017-09-24 14:31 /user/acadgild/hadoop/maxout
-rw-r--r--   1 acadgild supergroup      21007 2017-09-24 14:25 /user/acadgild/hadoop/sample_temperature_dataset.csv
-rw-r--r--   1 acadgild supergroup      26204 2017-11-26 02:06 /user/acadgild/hadoop/student.txt
-rw-r--r--   1 acadgild supergroup       2938 2017-10-31 17:47 /user/acadgild/hadoop/television.txt
drwxr-xr-x   - acadgild supergroup          0 2017-11-30 10:03 /user/acadgild/hadoop/tweets
-rw-r--r--   1 acadgild supergroup        300 2017-09-24 14:16 /user/acadgild/hadoop/word-count.txt
[acadgild@localhost lib]$
```

For fetching data from Twitter, Use the below command to fetch the twitter tweet data into the HDFS cluster path.

flume-ng agent -n TwitterAgent -f /home/acadgild/hadoop/apache-flume-1.6.0-bin/conf/acadgild.conf

```
6172 Jps
[acadgild@localhost lib]$ flume-ng agent -n TwitterAgent -f /home/acadgild/apache-flume-1.6.0-bin/conf/flume_twitter.conf
Warning: No configuration directory set! Use --conf <dir> to override.
Info: Including Hadoop libraries found via (/home/acadgild/hadoop-2.7.2/bin/hadoop) for HDFS access
```

The above command will start fetching data from Twitter and steams it into the HDFS given path.

```
17/11/30 10:12:30 INFO hdfs.HDFSDataStream: Serializer = TEXT, UseRawLocalFileSystem = false
17/11/30 10:12:30 INFO hdfs.BucketWriter: Creating hdfs://localhost:9000/user/acadgild/hadoop/tweets/FlumeData.1512016950366.tmp
Java HotSpot(TM) Client VM warning: You have loaded library /home/acadgild/hadoop-2.7.2/lib/native/libhadoop.so.1.0.0 which might have disabled stack guard. The VM will try to fix th
e stack guard now.
It's highly recommended that you fix the library with 'execstack -c <libfile>', or link it with '-z noexecstack'.
17/11/30 10:12:31 WARN util.NativeCodeLoader: Unable to load native-hadoop library for your platform... using builtin-java classes where applicable
17/11/30 10:12:33 INFO twitter.TwitterSource: Processed 100 docs
17/11/30 10:12:35 INFO twitter.TwitterSource: Processed 200 docs
17/11/30 10:12:39 INFO twitter.TwitterSource: Processed 300 docs
17/11/30 10:12:42 INFO twitter.TwitterSource: Processed 400 docs
17/11/30 10:12:44 INFO twitter.TwitterSource: Processed 500 docs
17/11/30 10:12:47 INFO twitter.TwitterSource: Processed 600 docs
17/11/30 10:12:50 INFO twitter.TwitterSource: Processed 700 docs
17/11/30 10:12:53 INFO twitter.TwitterSource: Processed 800 docs
17/11/30 10:12:56 INFO twitter.TwitterSource: Processed 900 docs
17/11/30 10:13:00 INFO twitter.TwitterSource: Processed 1,000 docs
17/11/30 10:13:00 INFO twitter.TwitterSource: Total docs indexed: 1,000, total skipped docs: 0
17/11/30 10:13:00 INFO twitter.TwitterSource:     31 docs/second
17/11/30 10:13:00 INFO twitter.TwitterSource: Run took 32 seconds and processed:
17/11/30 10:13:00 INFO twitter.TwitterSource:     0.008 MB/sec sent to index
17/11/30 10:13:00 INFO twitter.TwitterSource:     0.259 MB text sent to index
17/11/30 10:13:00 INFO twitter.TwitterSource: There were 0 exceptions ignored:
17/11/30 10:13:03 INFO twitter.TwitterSource: Processed 1,100 docs
17/11/30 10:13:06 INFO twitter.TwitterSource: Processed 1,200 docs
17/11/30 10:13:08 INFO twitter.TwitterSource: Processed 1,300 docs
17/11/30 10:13:12 INFO twitter.TwitterSource: Processed 1,400 docs
17/11/30 10:13:15 INFO twitter.TwitterSource: Processed 1,500 docs
```

Once, the tweet data started streaming it into the given HDFS path we can use ‘Ctrl+c’ command to stop the streaming process.

To check the contents of the tweet data we can use the following command:

hadoop fs -cat /user/acadgild/hadoop/tweets/FlumeData.1512016950366

We can observe from the above image that we have successfully fetched twitter data into our HDFS cluster directory using Flume.