

Load data from Kafka to Hadoop

Steps to load data from Kafka

1. Establishing Spark Session:

```
spark =  
SparkSession.builder.appName("KafkaRead").getOrCreate()  
spark.sparkContext.setLogLevel('ERROR')
```

2. Reading data from Kafka Server & Topic given:

```
lines = spark.readStream.format("kafka") \  
    .option("kafka.bootstrap.servers", "18.211.252.152:9092") \  
    .option("subscribe", "de-capstone3") \  
    .option("failOnDataLoss", "false") \  
    .option("startingOffsets", "earliest") \  
    .load()
```

3. Casting raw data as string and aliasing:

```
kafkaDF = lines.selectExpr("cast(key as string)", "cast(value as string)")
```

4. Writing data in json file:

```
output = kafkaDF \  
    .writeStream \  
    .outputMode("append") \  
    .format("json") \  
    .option("truncate", "false") \  
    .option("path", "/user/hadoop/clickStreamData/") \  
    .option("checkpointLocation", "/user/hadoop/clickstream_checkpoint/") \  
    .start()  
  
output.awaitTermination()
```

Steps to run `spark_kafka_to_local.py` file:

1. Logged in to the EMR instance and below command is executed to download Spark-SQL-Kafka jar file. This jar is used to run the Spark Streaming-Kafka codes

```
wget https://ds-spark-sql-kafka-jar.s3.amazonaws.com/spark-sql-kafka-0-10_2.11-2.3.0.jar
```

2. Kafka version is set using the following command:

```
export SPARK_KAFKA_VERSION=0.10
```

3. Submitted the spark job using command below:

```
spark-submit --packages org.apache.spark:spark-sql-kafka-0-10_2.11:2.4.5 spark_kafka_to_local.py
```

```

C:\Users\user> hadoop@ip-172-31-89-245:~$
KeyboardInterrupt
[hadoop@ip-172-31-89-245 ~]$ spark-submit --packages org.apache.spark:spark-sql-kafka-0-10_2.11:2.4.5 spark_kafka_to_local.py
Ivy Default Cache set to: /home/hadoop/.ivy2/cache
The jars for the packages stored in: /home/hadoop/.ivy2/jars
:: loading settings :: url = jar:file:/usr/lib/spark/jars/ivy-2.4.0.jar!/org/apache/ivy/core/settings/ivysettings.xml
org.apache.spark#spark-sql-kafka-0-10_2.11 added as a dependency
:: resolving dependencies :: org.apache.spark#spark-submit-parent-5355c2cf-3d1a-4fc0-9581-c13b92733a3d;1.0
  confs: [default]
    found org.apache.spark#spark-sql-kafka-0-10_2.11:2.4.5 in central
    found org.apache.kafka#kafka-clients:2.0.0 in central
    found org.lz4#lz4-java:1.4.0 in central
    found org.xerial.snappy#snappy-java:1.1.7.3 in central
    found org.slf4j#slf4j-api:1.7.16 in central
    found org.spark-project.spark#unused:1.0.0 in central
:: resolution report :: resolve 506ms :: artifacts dl 11ms
  :: modules in use:
    org.apache.kafka#kafka-clients:2.0.0 from central in [default]
    org.apache.spark#spark-sql-kafka-0-10_2.11:2.4.5 from central in [default]
    org.lz4#lz4-java:1.4.0 from central in [default]
    org.slf4j#slf4j-api:1.7.16 from central in [default]
    org.spark-project.spark#unused:1.0.0 from central in [default]
    org.xerial.snappy#snappy-java:1.1.7.3 from central in [default]
-----
|               |             modules              | artifacts |
|               | number| search|dwnlded|evicted|| number|dwnlded| |
|---|---|---|---|---|---|---|---|---|
|               | default | 6 | 0 | 0 | 0 || 6 | 0 |
|-----|-----|-----|-----|-----|-----|-----|
:: retrieving :: org.apache.spark#spark-submit-parent-5355c2cf-3d1a-4fc0-9581-c13b92733a3d
  confs: [default]
  0 artifacts copied, 6 already retrieved (0kB/10ms)
File "/home/hadoop/spark_kafka_to_local.py", line 29
  Writing kafka data into json file
      ^
SyntaxError: invalid syntax
22/07/20 13:48:54 INFO ShutdownHookManager: Shutdown hook called
22/07/20 13:48:54 INFO ShutdownHookManager: Deleting directory /mnt/tmp/spark-26e096be-06ea-4bc5-8e04-8970a241e5be
[hadoop@ip-172-31-89-245 ~]$ spark-submit --packages org.apache.spark:spark-sql-kafka-0-10_2.11:2.4.5 spark_kafka_to_local.py
Ivy Default Cache set to: /home/hadoop/.ivy2/cache
The jars for the packages stored in: /home/hadoop/.ivy2/jars
:: loading settings :: url = jar:file:/usr/lib/spark/jars/ivy-2.4.0.jar!/org/apache/ivy/core/settings/ivysettings.xml
org.apache.spark#spark-sql-kafka-0-10_2.11 added as a dependency
:: resolving dependencies :: org.apache.spark#spark-submit-parent-fe07a780-82d2-4648-9a33-13d765e6a5ae;1.0
  confs: [default]

```

```
hadoop@ip-172-31-89-245:~$
22/07/20 13:50:08 INFO BlockManagerMaster: Registering BlockManager BlockManagerId(driver, ip-172-31-89-245.ec2.internal, 43257, None)
22/07/20 13:50:08 INFO BlockManagerMasterEndpoint: Registering block manager ip-172-31-89-245.ec2.internal:43257 with 1028.8 MB RAM, BlockManagerId(driver, i
p-172-31-89-245.ec2.internal, 43257, None)
22/07/20 13:50:08 INFO BlockManagerMaster: Registered BlockManager BlockManagerId(driver, ip-172-31-89-245.ec2.internal, 43257, None)
22/07/20 13:50:08 INFO BlockManager: external shuffle service port = 7337
22/07/20 13:50:08 INFO BlockManager: Initialized BlockManager: BlockManagerId(driver, ip-172-31-89-245.ec2.internal, 43257, None)
22/07/20 13:50:08 INFO YarnSchedulerBackend$YarnSchedulerEndpoint: ApplicationMaster registered as NettyRpcEndpointRef(spark-client://YarnAM)
22/07/20 13:50:08 INFO JettyUtils: Adding filter org.apache.hadoop.yarn.server.webproxy.amfilter.AmIpFilter to /metrics/json.
22/07/20 13:50:09 INFO EventLoggingListener: Logging events to hdfs://var/log/spark/apps/application_1658324257852_0002
22/07/20 13:50:09 INFO Utils: Using initial executors = 50, max of spark.dynamicAllocation.initialExecutors, spark.dynamicAllocation.minExecutors and spark.e
xecutor.instances
22/07/20 13:50:09 INFO YarnClientSchedulerBackend: SchedulerBackend is ready for scheduling beginning after reached minRegisteredResourcesRatio: 0.0
22/07/20 13:50:09 INFO SharedState: loading hive config file: file:/etc/spark/conf/dist/hive-site.xml
22/07/20 13:50:09 INFO SharedState: Setting hive.metastore.warehouse.dir ('null') to the value of spark.sql.warehouse.dir ('hdfs://user/spark/warehouse').
22/07/20 13:50:09 INFO SharedState: Warehouse path is 'hdfs://user/spark/warehouse'.
22/07/20 13:50:09 INFO JettyUtils: Adding filter org.apache.hadoop.yarn.server.webproxy.amfilter.AmIpFilter to /SQL.
22/07/20 13:50:09 INFO JettyUtils: Adding filter org.apache.hadoop.yarn.server.webproxy.amfilter.AmIpFilter to /SQL/json.
22/07/20 13:50:09 INFO JettyUtils: Adding filter org.apache.hadoop.yarn.server.webproxy.amfilter.AmIpFilter to /SQL/execution.
22/07/20 13:50:09 INFO JettyUtils: Adding filter org.apache.hadoop.yarn.server.webproxy.amfilter.AmIpFilter to /SQL/execution/json.
22/07/20 13:50:09 INFO JettyUtils: Adding filter org.apache.hadoop.yarn.server.webproxy.amfilter.AmIpFilter to /static/sql.
22/07/20 13:50:10 INFO StateStoreCoordinatorRef: Registered StateStoreCoordinator endpoint
^CTraceback (most recent call last):
  File "/home/hadoop/spark_kafka_to_local.py", line 39, in <module>
    output.awaitTermination()
  File "/usr/lib/spark/python/lib/pyspark.zip/pyspark/sql/streaming.py", line 103, in awaitTermination
  File "/usr/lib/spark/python/lib/py4j-0.10.7-src.zip/py4j/java_gateway.py", line 1255, in __call__
  File "/usr/lib/spark/python/lib/py4j-0.10.7-src.zip/py4j/java_gateway.py", line 985, in send_command
  File "/usr/lib/spark/python/lib/py4j-0.10.7-src.zip/py4j/java_gateway.py", line 1152, in send_command
  File "/usr/lib64/python3.7/socket.py", line 589, in readinto
    return self._sock.recv_into(b)
  File "/usr/lib/spark/python/lib/pyspark.zip/pyspark/context.py", line 278, in signal_handler
KeyboardInterrupt
hadoop@ip-172-31-89-245:~$ hadoop fs -ls
Found 3 items
drwxr-xr-x - hadoop hadoop 0 2022-07-20 13:51 .sparkStaging
drwxr-xr-x - hadoop hadoop 0 2022-07-20 13:50 clickStreamData
drwxr-xr-x - hadoop hadoop 0 2022-07-20 13:50 clickstream_checkpoint
hadoop@ip-172-31-89-245:~$ hadoop fs -ls clickStreamData
Found 2 items
drwxr-xr-x - hadoop hadoop 0 2022-07-20 13:50 clickStreamData/_spark_metadata
-rw-r--r-- 1 hadoop hadoop 1255605 2022-07-20 13:50 clickStreamData/part-00000-5a2ed863-4f8c-4bac-b6be-e9d4952c100d-c000.json
hadoop@ip-172-31-89-245:~$ ls
spark_kafka_to_local.py spark_local_flatten.py spark-sql-kafka-0-10_2.11-2.3.0.jar
hadoop@ip-172-31-89-245:~$
```

Steps to flatten the data and load into Hadoop:

1. Establishing spark connection

```
spark=SparkSession \
    .builder \
    .appName('transformKafkaData') \
    .master('yarn') \
    .getOrCreate()
```

2. Reading extracted data:

```
df=spark.read.json('/user/hadoop/clickStreamData/')
```

3. Flattening of raw data and store into respective columns in a dataframe:

```
flatten_df=df.withColumn("value",
F.split(F.regexp_replace(F.regexp_replace((F.regexp_replace("value",'\\{|}',""))
),'\\:',' ',''),'\\\"|\"','").cast("string"),','))\
.withColumn("customer_id", F.element_at("value",2))\
.withColumn("app_version", F.element_at("value",4))\
.withColumn("OS_version",F.element_at("value",6))\
.withColumn("lat",F.element_at("value",8))\
.withColumn("lon", F.element_at("value",10))\
.withColumn("page_id", F.element_at("value",12))\
.withColumn("button_id",F.element_at("value",14))\
.withColumn("is_button_click",F.element_at("value",16))\
.withColumn("is_page_view",F.element_at("value",18))\
.withColumn("is_scroll_up",F.element_at("value",20))\
.withColumn("is_scroll_down",F.element_at("value",22))\
.withColumn("date_hour",F.element_at("value",24))\
.withColumn("minutes",F.element_at("value",25))\
.withColumn("seconds",F.element_at("value",26))\
.drop("value")
```

4. To concatenate date_hour, minutes and seconds column to make it into timestamp format:

```
flatten_df=flatten_df.select("*",F.concat(col("date_hour"),F.lit(":")
,col("minutes"),F.lit(":"),col("seconds")).alias("timestamp"))
```

5. To remove extra characters \n from timestamp column:

```
flatten_df =
flatten_df.select("*").withColumn("timestamp",F.expr("substring(timestamp, 1,
length(timestamp)-2))).drop("date_hour").drop("minutes").drop("seconds")
```

6. To write the flattened dataframe in csv file:

```
flatten_df.write.option("header", "true").csv('/user/hadoop/
clickStream_flatten_data/')
```

7. Command to run spark_local_flatten.py file:

```
spark-submit spark_local_flatten.py
```

```
hadoop@ip-172-31-89-245:~$ at java.lang.Thread.run(Thread.java:750)
[hadoop@ip-172-31-89-245 ~]$ spark-submit spark_local_flatten.py
22/07/20 13:52:56 INFO SparkContext: Running Spark version 2.4.5-amzn-0
22/07/20 13:52:56 INFO SparkContext: Submitted application: transformKafkaData
22/07/20 13:52:56 INFO SecurityManager: Changing view acls to: hadoop
22/07/20 13:52:56 INFO SecurityManager: Changing modify acls to: hadoop
22/07/20 13:52:56 INFO SecurityManager: Changing view acls groups to:
22/07/20 13:52:56 INFO SecurityManager: Changing modify acls groups to:
22/07/20 13:52:56 INFO SecurityManager: SecurityManager: authentication disabled; ui acls disabled; users with view permissions: Set(hadoop); groups with view permissions: Set(); users with modify permissions: Set(hadoop); groups with modify permissions: Set()
22/07/20 13:52:56 INFO Utils: Successfully started service 'sparkDriver' on port 42075.
22/07/20 13:52:56 INFO SparkEnv: Registering MapOutputTracker
22/07/20 13:52:56 INFO SparkEnv: Registering BlockManagerMaster
22/07/20 13:52:56 INFO BlockManagerMasterEndpoint: Using org.apache.spark.storage.DefaultTopologyMapper for getting topology information
22/07/20 13:52:56 INFO BlockManagerMasterEndpoint: BlockManagerMasterEndpoint up
22/07/20 13:52:56 INFO DiskBlockManager: Created local directory at /mnt/tmp/blockmgr-a2022508-4b7f-4efb-a144-925da52f7027
22/07/20 13:52:56 INFO MemoryStore: MemoryStore started with capacity 1028.8 MB
22/07/20 13:52:57 INFO SparkEnv: Registering OutputCommitCoordinator
22/07/20 13:52:57 INFO Utils: Successfully started service 'SparkUI' on port 4040.
22/07/20 13:52:57 INFO SparkUI: Bound SparkUI to 0.0.0.0, and started at http://ip-172-31-89-245.ec2.internal:4040
22/07/20 13:52:57 INFO Utils: Using initial executors = 50, max of spark.dynamicAllocation.initialExecutors, spark.dynamicAllocation.minExecutors and spark.executor.instances
22/07/20 13:52:58 INFO RMProxy: Connecting to ResourceManager at ip-172-31-89-245.ec2.internal/172.31.89.245:8032
22/07/20 13:52:58 INFO Client: Requesting a new application from cluster with 1 NodeManagers
22/07/20 13:52:58 INFO Client: Verifying our application has not requested more than the maximum memory capability of the cluster (8192 MB per container)
22/07/20 13:52:58 INFO Client: Will allocate AM container, with 896 MB memory including 384 MB overhead
22/07/20 13:52:58 INFO Client: Setting up container launch context for our AM
22/07/20 13:52:58 INFO Client: Setting up the launch environment for our AM container
22/07/20 13:52:58 INFO Client: Preparing resources for our AM container
22/07/20 13:52:58 WARN Client: Neither spark.yarn.jars nor spark.yarn.archive is set, falling back to uploading libraries under SPARK_HOME.
22/07/20 13:53:01 INFO Client: Uploading resource file:/mnt/tmp/spark-5ffcce5f-7f0e-4d19-b5f3-f3c4cdd7c691/_spark_libs_698612333779150397.zip -> hdfs://ip-172-31-89-245.ec2.internal:8020/user/hadoop/.sparkStaging/application_1658324257852_0003/_spark_libs_698612333779150397.zip
22/07/20 13:53:02 INFO Client: Uploading resource file:/etc/spark/conf/hive-site.xml -> hdfs://ip-172-31-89-245.ec2.internal:8020/user/hadoop/.sparkStaging/application_1658324257852_0003/hive-site.xml
22/07/20 13:53:02 INFO Client: Uploading resource file:/usr/lib/spark/python/lib/pyspark.zip -> hdfs://ip-172-31-89-245.ec2.internal:8020/user/hadoop/.sparkStaging/application_1658324257852_0003/pyspark.zip
22/07/20 13:53:02 INFO Client: Uploading resource file:/usr/lib/spark/python/lib/py4j-0.10.7-src.zip -> hdfs://ip-172-31-89-245.ec2.internal:8020/user/hadoop/.sparkStaging/application_1658324257852_0003/py4j-0.10.7-src.zip
22/07/20 13:53:02 INFO Client: Uploading resource file:/mnt/tmp/spark-5ffcce5f-7f0e-4d19-b5f3-f3c4cdd7c691/_spark_conf_1486980818810018452.zip -> hdfs://ip-172-31-89-245.ec2.internal:8020/user/hadoop/.sparkStaging/application_1658324257852_0003/_spark_conf_1486980818810018452.zip
22/07/20 13:53:02 INFO SecurityManager: Changing view acls to: hadoop
22/07/20 13:53:02 INFO SecurityManager: Changing modify acls to: hadoop
22/07/20 13:53:02 INFO SecurityManager: Changing view acls groups to:
22/07/20 13:53:02 INFO SecurityManager: Changing modify acls groups to:
```

```
hadoop@ip-172-31-89-245:~$ spark-submit spark_local_flatten.py
22/07/20 13:53:28 INFO ContextCleaner: Cleaned accumulator 43
22/07/20 13:53:28 INFO ContextCleaner: Cleaned accumulator 59
22/07/20 13:53:28 INFO ContextCleaner: Cleaned accumulator 58
22/07/20 13:53:28 INFO ContextCleaner: Cleaned accumulator 49
22/07/20 13:53:28 INFO ContextCleaner: Cleaned accumulator 57
22/07/20 13:53:28 INFO ContextCleaner: Cleaned accumulator 42
22/07/20 13:53:28 INFO ContextCleaner: Cleaned accumulator 41
22/07/20 13:53:28 INFO ContextCleaner: Cleaned accumulator 63
22/07/20 13:53:28 INFO ContextCleaner: Cleaned accumulator 46
22/07/20 13:53:28 INFO ContextCleaner: Cleaned accumulator 62
22/07/20 13:53:28 INFO ContextCleaner: Cleaned accumulator 54
22/07/20 13:53:28 INFO ContextCleaner: Cleaned accumulator 50
22/07/20 13:53:28 INFO SparkContext: Invoking stop() from shutdown hook
22/07/20 13:53:28 INFO SparkUI: Stopped Spark web UI at http://ip-172-31-89-245.ec2.internal:4040
22/07/20 13:53:28 INFO YarnClientSchedulerBackend: Interrupting monitor thread
22/07/20 13:53:28 INFO YarnClientSchedulerBackend: Shutting down all executors
22/07/20 13:53:28 INFO YarnSchedulerBackend$YarnDriverEndpoint: Asking each executor to shut down
22/07/20 13:53:28 INFO SchedulerExtensionServices: Stopping SchedulerExtensionServices
(serviceOption=None,
services=List(),
started=false)
22/07/20 13:53:28 INFO YarnClientSchedulerBackend: Stopped
22/07/20 13:53:28 INFO MapOutputTrackerMasterEndpoint: MapOutputTrackerMasterEndpoint stopped!
22/07/20 13:53:28 INFO MemoryStore: MemoryStore cleared
22/07/20 13:53:28 INFO BlockManager: BlockManager stopped
22/07/20 13:53:28 INFO BlockManagerMaster: BlockManagerMaster stopped
22/07/20 13:53:28 INFO OutputCommitCoordinator$OutputCommitCoordinatorEndpoint: OutputCommitCoordinator stopped!
22/07/20 13:53:28 INFO SparkContext: Successfully stopped SparkContext
22/07/20 13:53:28 INFO ShutdownHookManager: Shutdown hook called
22/07/20 13:53:28 INFO ShutdownHookManager: Deleting directory /mnt/tmp/spark-cf4beccc-8f3e-4327-923a-2cdecle6fcfa
22/07/20 13:53:28 INFO ShutdownHookManager: Deleting directory /mnt/tmp/spark-5ffcce5f-7f0e-4d19-b5f3-f3c4cdd7c691/pyspark-21801177-29af-48c4-9085-340870268135
22/07/20 13:53:28 INFO ShutdownHookManager: Deleting directory /mnt/tmp/spark-5ffcce5f-7f0e-4d19-b5f3-f3c4cdd7c691
[hadoop@ip-172-31-89-245 ~]$ hadoop fs -ls
Found 4 items
drwxr-xr-x - hadoop hadoop 0 2022-07-20 13:53 .sparkStaging
drwxr-xr-x - hadoop hadoop 0 2022-07-20 13:50 clickStreamData
drwxr-xr-x - hadoop hadoop 0 2022-07-20 13:53 clickStream_flatten_data
drwxr-xr-x - hadoop hadoop 0 2022-07-20 13:50 clickStream_checkpoint
[hadoop@ip-172-31-89-245 ~]$ hadoop fs -ls clickStream_flatten_data
Found 2 items
-rw-r--r-- 1 hadoop hadoop 0 2022-07-20 13:53 clickStream_flatten_data/_SUCCESS
-rw-r--r-- 1 hadoop hadoop 454733 2022-07-20 13:53 clickStream_flatten_data/part-00000-bd4158e2-11f9-4f5c-a72b-f21c1ced6e27-c000.csv
[hadoop@ip-172-31-89-245 ~]$
```


8. Screenshot of the data:

```

hadoop@ip-172-31-82-109:~$
13693978,4.1.1,Android,31.4655185,-8.804781,de545711-3914-4450-8c11-b17b8dabb5e1,a95dd57b-779f-49db-819d-b6960483e554,Yes,No,No,2020-09-03 06:11:56
84440606,3.4.10,Android,10.601181,-128.515860,de545711-3914-4450-8c11-b17b8dabb5e1,e1e99492-17ae-11eb-adc1-0242ac120002,Yes,No,Yes,2020-09-27 15:38:58
95135390,4.1.31,Android,26.9599465,-44.482476,b328829e-17ae-11eb-adc1-0242ac120002,fcba68aa-1231-11eb-adc1-0242ac120002,No,Yes,Yes,2020-07-04 19:45:24
5368235,4.4.4,Android,-31.549140,-68.117357,de545711-3914-4450-8c11-b17b8dabb5e1,e1e99492-17ae-11eb-adc1-0242ac120002,No,No,No,2020-03-02 02:47:15
88008848,3.4.27,iOS,-28.881725,-13.445781,e7bc5fb2-1231-11eb-adc1-0242ac120002,fcba68aa-1231-11eb-adc1-0242ac120002,No,Yes,Yes,2020-07-11 16:57:48
25953352,1.4.39,Android,-44.8535825,21.583993,e7bc5fb2-1231-11eb-adc1-0242ac120002,a95dd57b-779f-49db-819d-b6960483e554,Yes,Yes,Yes,2020-09-16 01:08:09
74499368,4.3.36,Android,-3.6755858,71.570194,b328829e-17ae-11eb-adc1-0242ac120002,a95dd57b-779f-49db-819d-b6960483e554,No,No,No,2020-10-31 17:45:17
67837880,1.2.2,iOS,80.6604375,-107.514705,b328829e-17ae-11eb-adc1-0242ac120002,e1e99492-17ae-11eb-adc1-0242ac120002,No,No,No,2020-06-02 08:00:39
66340838,1.4.12,Android,29.845680,13.237669,e7bc5fb2-1231-11eb-adc1-0242ac120002,e1e99492-17ae-11eb-adc1-0242ac120002,No,Yes,Yes,2020-02-22 03:22:15
25556534,3.4.21,Android,-71.1693235,106.296479,b328829e-17ae-11eb-adc1-0242ac120002,fcba68aa-1231-11eb-adc1-0242ac120002,Yes,Yes,Yes,2020-04-11 02:43:05
71934255,4.4.19,Android,30.791291,149.144682,e7bc5fb2-1231-11eb-adc1-0242ac120002,e1e99492-17ae-11eb-adc1-0242ac120002,No,Yes,No,2020-02-23 15:49:35
91124640,4.1.1,Android,3.6346725,-174.664812,e7bc5fb2-1231-11eb-adc1-0242ac120002,fcba68aa-1231-11eb-adc1-0242ac120002,No,No,Yes,2020-03-05 15:51:05
22354331,3.4.25,Android,-67.422789,41.484604,e7bc5fb2-1231-11eb-adc1-0242ac120002,a95dd57b-779f-49db-819d-b6960483e554,No,No,No,2020-06-29 17:40:33
24561396,4.1.6,iOS,-40.7626955,-159.885739,de545711-3914-4450-8c11-b17b8dabb5e1,fcba68aa-1231-11eb-adc1-0242ac120002,No,No,Yes,2020-02-07 19:48:31
15596609,2.4.12,iOS,-72.1381485,-40.040386,e7bc5fb2-1231-11eb-adc1-0242ac120002,fcba68aa-1231-11eb-adc1-0242ac120002,No,Yes,No,2020-02-20 01:51:41
91765699,4.4.3,Android,-15.242505,-108.412877,b328829e-17ae-11eb-adc1-0242ac120002,fcba68aa-1231-11eb-adc1-0242ac120002,Yes,No,No,2020-07-24 12:23:01
97278161,1.2.4,Android,-52.4582685,92.090323,de545711-3914-4450-8c11-b17b8dabb5e1,e1e99492-17ae-11eb-adc1-0242ac120002,No,No,Yes,2020-02-15 21:11:41
86307402,2.4.20,iOS,-27.603681,132.654253,e7bc5fb2-1231-11eb-adc1-0242ac120002,a95dd57b-779f-49db-819d-b6960483e554,Yes,Yes,No,2020-02-27 04:44:22
89445384,2.3.29,Android,-74.4209645,-171.230004,de545711-3914-4450-8c11-b17b8dabb5e1,e1e99492-17ae-11eb-adc1-0242ac120002,No,Yes,No,2020-03-09 06:06:38
23303502,2.1.33,Android,-72.527739,-177.178381,de545711-3914-4450-8c11-b17b8dabb5e1,e1e99492-17ae-11eb-adc1-0242ac120002,Yes,No,Yes,2020-09-17 21:43:14
81061658,3.3.1,iOS,32.2349333,154.313783,de545711-3914-4450-8c11-b17b8dabb5e1,e1e99492-17ae-11eb-adc1-0242ac120002,Yes,No,Yes,2020-03-30 04:32:53
19416541,2.1.17,iOS,39.9260585,106.127469,e7bc5fb2-1231-11eb-adc1-0242ac120002,fcba68aa-1231-11eb-adc1-0242ac120002,No,No,Yes,2020-01-25 16:44:03
15047706,2.4.27,iOS,-77.420046,140.420046,b328829e-17ae-11eb-adc1-0242ac120002,a95dd57b-779f-49db-819d-b6960483e554,No,Yes,No,2020-04-25 16:12:37
52497528,3.2.2,iOS,39.007903,-46.259543,b328829e-17ae-11eb-adc1-0242ac120002,a95dd57b-779f-49db-819d-b6960483e554,No,Yes,No,2020-05-24 16:05:43
9378698,3.1.11,Android,0.224584,-8.528708,de545711-3914-4450-8c11-b17b8dabb5e1,e1e99492-17ae-11eb-adc1-0242ac120002,Yes,Yes,Yes,2020-09-26 12:26:34
22360184,3.1.11,Android,-53.9895835,15.754777,b328829e-17ae-11eb-adc1-0242ac120002,a95dd57b-779f-49db-819d-b6960483e554,Yes,No,No,2020-05-20 21:32:54
44585909,2.4.37,iOS,-20.985865,-156.438967,b328829e-17ae-11eb-adc1-0242ac120002,a95dd57b-779f-49db-819d-b6960483e554,Yes,No,No,2020-02-07 00:57:01
54823887,4.3.2,iOS,-48.6597475,-63.722102,e7bc5fb2-1231-11eb-adc1-0242ac120002,fcba68aa-1231-11eb-adc1-0242ac120002,No,Yes,Yes,2020-03-08 14:03:15
21621758,2.2.22,iOS,-56.263185,83.993608,e7bc5fb2-1231-11eb-adc1-0242ac120002,fcba68aa-1231-11eb-adc1-0242ac120002,No,Yes,No,2020-09-01 02:46:47
33090503,3.1.4,Android,-53.8831745,150.937367,e7bc5fb2-1231-11eb-adc1-0242ac120002,fcba68aa-1231-11eb-adc1-0242ac120002,No,No,No,2020-02-10 07:12:55
84336917,1.3.19,iOS,29.6107005,91.528804,de545711-3914-4450-8c11-b17b8dabb5e1,e1e99492-17ae-11eb-adc1-0242ac120002,Yes,No,Yes,2020-07-30 05:04:13
68796997,2.3.29,iOS,43.2997955,-42.645686,b328829e-17ae-11eb-adc1-0242ac120002,e1e99492-17ae-11eb-adc1-0242ac120002,Yes,Yes,Yes,2020-10-17 20:00:19
83923237,1.3.12,iOS,40.7522335,-105.599661,de545711-3914-4450-8c11-b17b8dabb5e1,fcba68aa-1231-11eb-adc1-0242ac120002,Yes,No,No
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