



# **APACHE NIFI DATAFLOW MANAGEMENT PLATFORM LABS**

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04/08/2017

# NiFi Lab

## Stock Price Monitor and Dashboard

0 0 0 8 1 0

Queued	9 (732 bytes)	
In	0 (0 bytes) → 0	5 min
Read/Write	0 bytes / 0 bytes	5 min
Out	0 → 0 (0 bytes)	5 min

No comments specified

## RDBMS Database Replication

0 0 0 9 2 0

Queued	0 (0 bytes)	
In	0 (0 bytes) → 0	5 min
Read/Write	0 bytes / 0 bytes	5 min
Out	0 → 0 (0 bytes)	5 min

No comments specified

## Mobile Phone Vendors Twitter Sentiment Dashbo...

0 0 0 13 0 0

Queued	100 (541.67 KB)	
In	0 (0 bytes) → 0	5 min
Read/Write	0 bytes / 0 bytes	5 min
Out	0 → 0 (0 bytes)	5 min

No comments specified

## NiFi Cookbook

0 0 0 15 0 0

Queued	0 (0 bytes)	
In	0 (0 bytes) → 0	5 min
Read/Write	0 bytes / 0 bytes	5 min
Out	0 → 0 (0 bytes)	5 min

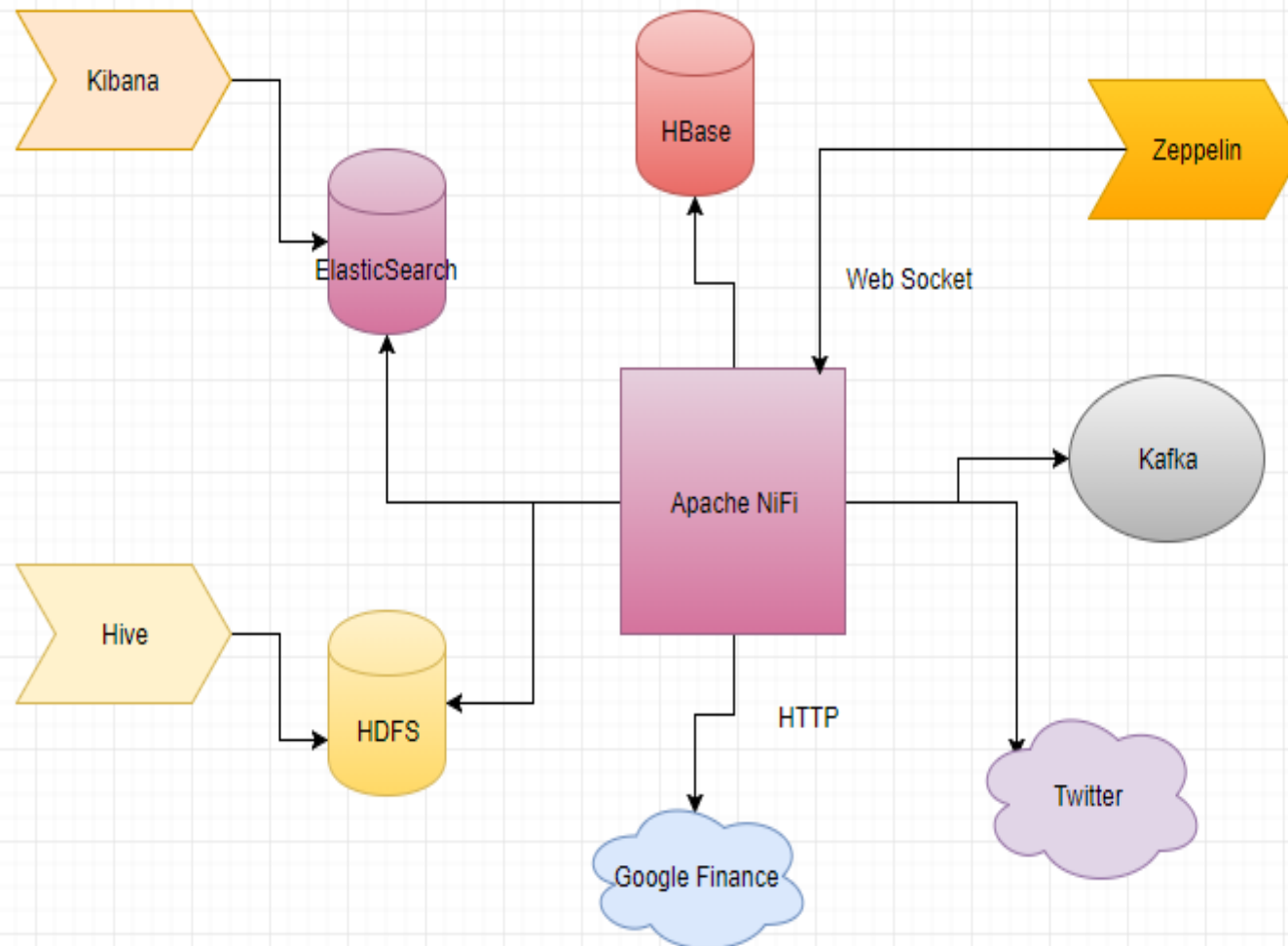
No comments specified

## Real time Data Visualization via NiFi and Web Soc...

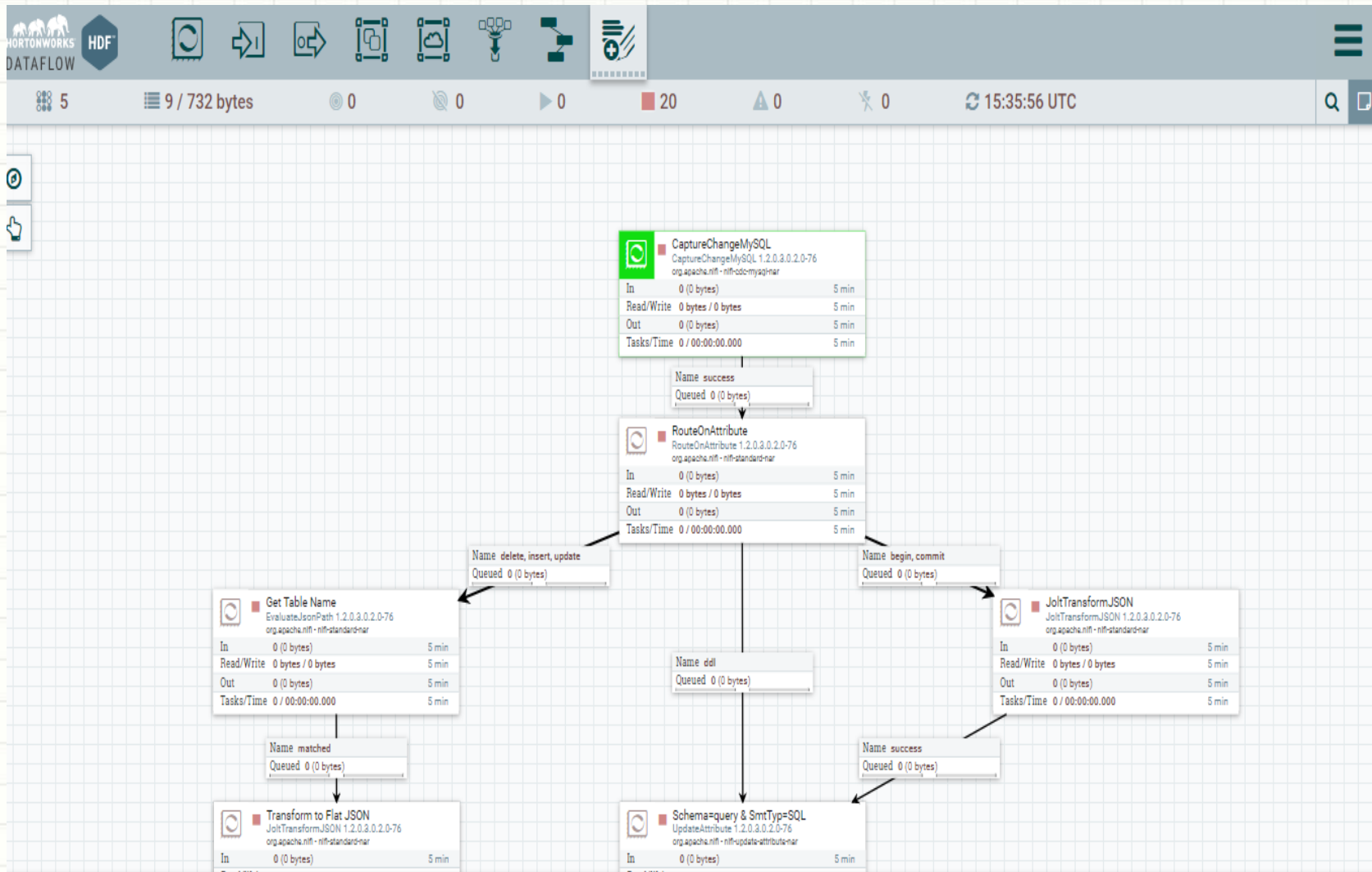
0 0 0 18 0 0

Queued	1 (110 bytes)	
In	0 (0 bytes) → 0	5 min
Read/Write	0 bytes / 0 bytes	5 min
Out	0 → 0 (0 bytes)	5 min

# NiFi Lab



# Lab 1 - Database Replication – NiFi Workflow



# Lab 1 - Database Replication – Capture MySQL

732 bytes

## Configure Processor

SETTINGS SCHEDULING PROPERTIES COMMENTS

Required field +

Property	Value
MySQL Hosts	localhost:3306
MySQL Driver Class Name	com.mysql.jdbc.Driver
MySQL Driver Location(s)	/root/TrainingOnHDP/lib/mysql-connector-java.jar
Username	root
Password	Sensitive value set
Server ID	No value set
Database/Schema Name Pattern	nifi
Table Name Pattern	users
Max Wait Time	30 seconds
Distributed Map Cache Client	CDC MapCache →
Retrieve All Records	true
Include Begin/Commit Events	true
Include DDL Events	true
State Update Interval	0 seconds

CANCEL APPLY

Get Table  
Evaluated: 0  
In: 0 (0 bytes)  
Read/Write: 0 bytes  
Out: 0 (0 bytes)  
Tasks/Time: 0 / 00:00

Transform  
JoltTransform  
org.apache...

TransformJSON  
transformJSON 1.2.0.3.0.2.0-76  
nifi-nifi-standards-ear  
bytes)  
es / 0 bytes  
ytes)  
:00:00.000

base Replication

# Lab 1 - Database Replication- Enforce Order

## Configure Processor

SETTINGS | SCHEDULING | **PROPERTIES** | COMMENTS

Required field

Property		Value
Group Identifier	?	1
Order Attribute	?	cdc.sequence.id
Initial Order	?	0
Maximum Order	?	No value set
Batch Count	?	1000
Wait Timeout	?	10 min
Inactive Timeout	?	30 min

CANCEL | APPLY

LogAttribute  
LogAttribute 1.2.1  
org.apache.nifi - nifi

In  
0 (0 bytes)

Read/Write  
0 bytes / 0 byte

Out  
0 (0 bytes)

Tasks/Time  
0 / 00:00:00.00

# Lab 1 - Database Replication- Put Database

## Configure Processor

SETTINGS

SCHEDULING

PROPERTIES

COMMENTS

Required field



Property		Value	
Record Reader	?	JsonPathReader	→
Statement Type	?	Use statement.type Attribute	
Database Connection Pooling Service	?	MYSQL CDC Backup	→
Catalog Name	?	No value set	
Schema Name	?	No value set	
Table Name	?	\${tableName}	
Translate Field Names	?	true	
Unmatched Field Behavior	?	Ignore Unmatched Fields	
Unmatched Column Behavior	?	Fail on Unmatched Columns	
Update Keys	?	No value set	
Field Containing SQL	?	query	
Quote Column Identifiers	?	false	
Quote Table Identifiers	?	false	
Max Wait Time	?	0 seconds	

CANCEL































APPLY

# Lab 1 - Database Replication- Controller Service

## RDBMS Database Replication Configuration

GENERAL

CONTROLLER SERVICES

Name ^	Type	Bundle	State	Scope
  AvroSchemaRegistry	AvroSchemaRegistry 1.2.0.3.0.2.0-76	org.apache.nifi - nifi-registry-nar	 Disabled	RDBMS Database Replication   
  CDC MapCache	DistributedMapCacheClientService 1.2.0.3.0.2.0-76	org.apache.nifi - nifi-distributed-cach...	 Disabled	RDBMS Database Replication   
  CDC MapCache Server	DistributedMapCacheServer 1.2.0.3.0.2.0-76	org.apache.nifi - nifi-distributed-cach...	 Disabled	RDBMS Database Replication   
   JsonPathReader	JsonPathReader 1.2.0.3.0.2.0-76	org.apache.nifi - nifi-record-serializati...	 Invalid	RDBMS Database Replication  
  MYSQL CDC Backup	DBCPCConnectionPool 1.2.0.3.0.2.0-76	org.apache.nifi - nifi-dbcpc-service-nar	 Disabled	RDBMS Database Replication   



# Lab 1 - Database Replication- Json Reader

## Configure Controller Service

SETTINGS

PROPERTIES

COMMENTS

Required field



Property		Value	
Schema Access Strategy	?	Use 'Schema Name' Property	
Schema Registry	?	AvroSchemaRegistry	→
Schema Name	?	\${schema.name}	
Schema Text	?	\${avro.schema}	
Date Format	?	yyyy-MM-dd	
Time Format	?	HH:mm:ss	
Timestamp Format	?	yyyy-MM-dd HH:mm:ss	
cell	?	\$.cell	🗑
city	?	\$.city	🗑
date_of_birth	?	\$.date_of_birth	🗑
email	?	\$.email	🗑
first	?	\$.first	🗑
gender	?	\$.gender	🗑
id	?	\$.id	🗑

CANCEL

APPLY

# Lab 1 - Database Replication- Schema Registry

**Configure Controller Service**

SETTINGS

PROPERTIES

COMMENTS

Required field +

Property	Value
query	<span>?</span> { "type": "record", "name": "sql", "fields" : [ {"name... <span>✕</span>
users	<span>?</span> { "type": "record", "name": "UserRecord", "fields" : .... <span>✕</span>

CANCEL

APPLY

# Lab 1 - Database Replication- Backup Database

## Configure Controller Service

SETTINGS

PROPERTIES

COMMENTS

Required field



Property		Value
Database Connection URL	?	jdbc:mysql://localhost:3306/nifi_bak
Database Driver Class Name	?	com.mysql.jdbc.Driver
Database Driver Location(s)	?	/root/TrainingOnHDP/lib/mysql-connector-java...
Database User	?	root
Password	?	Sensitive value set
Max Wait Time	?	500 millis
Max Total Connections	?	8
Validation query	?	No value set

CANCEL

APPLY

# Lab 1 - Database Replication- Cache Client

## Configure Controller Service

SETTINGS

PROPERTIES

COMMENTS

Required field

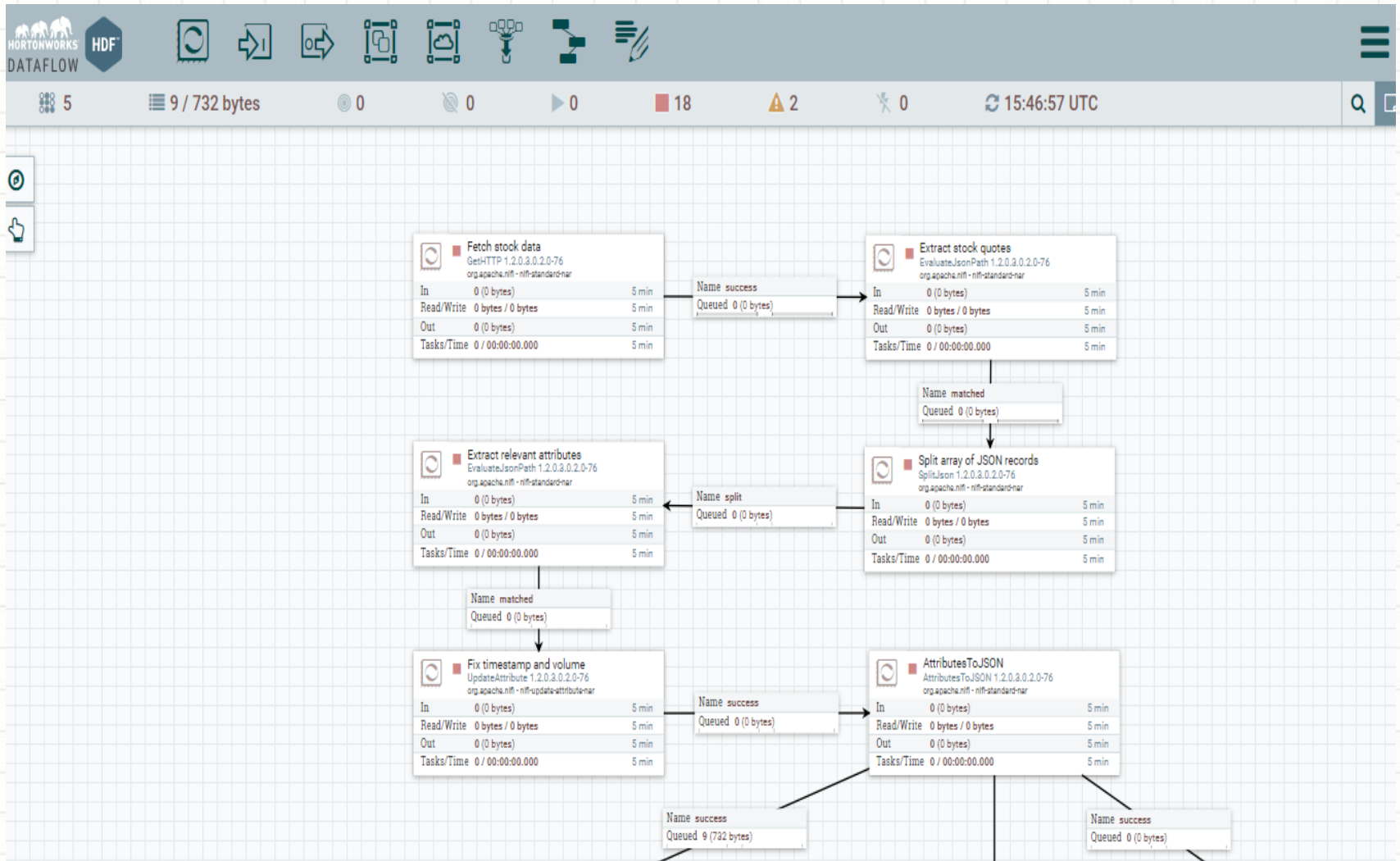


Property		Value	
Server Hostname	?	localhost	
Server Port	?	4557	
SSL Context Service	?	No value set	
Communications Timeout	?	30 secs	

CANCEL

APPLY

# Lab 2 – Stock Price Monitor and Dashboard – NiFi Workflow



# Lab 2 – Stock Price Monitor and Dashboard – Grab Stock Price

## Configure Processor

SETTINGS

SCHEDULING

PROPERTIES

COMMENTS

Required field



Property		Value	
URL	?	http://www.alphavantage.co/query?function=BATCH_S...	
Filename	?	\${UUID()}	
SSL Context Service	?	No value set	
Username	?	No value set	
Password	?	No value set	
Connection Timeout	?	30 sec	
Data Timeout	?	30 sec	
User Agent	?	No value set	
Accept Content-Type	?	No value set	
Follow Redirects	?	true	
Redirect Cookie Policy	?	default	
Proxy Host	?	No value set	
Proxy Port	?	No value set	

CANCEL

APPLY

Read/Write 0 bytes / 0 bytes  
Out 0 (0 bytes)

5 min  
5 min

Read/Write 0 bytes / 0 bytes  
Out 0 (0 bytes)

Read/Write 0 bytes / 0 bytes  
Out 0 (0 bytes)

5 min  
5 min

# Lab 2 – Stock Price Monitor and Dashboard – Send to HBase

## Configure Processor

SETTINGS

SCHEDULING

PROPERTIES

COMMENTS

Required field



Property		Value	
HBase Client Service	?	HBase_1_1_2_ClientService	→
Table Name	?	stocks	
Row Identifier	?	\${symbol}-\${fixed_ts}	
Row Identifier Field Name	?	No value set	
Row Identifier Encoding Strategy	?	String	
Column Family	?	cf	
Timestamp	?	No value set	
Batch Size	?	25	
Complex Field Strategy	?	Text	
Field Encoding Strategy	?	String	

CANCEL

APPLY

# Lab 2 – Stock Price Monitor and Dashboard – Save to ElasticSearch

## Configure Processor

SETTINGS

SCHEDULING

PROPERTIES

COMMENTS

Required field



Property		Value	
Elasticsearch URL	?	http://localhost:9200	
SSL Context Service	?	No value set	
Username	?	No value set	
Password	?	No value set	
Connection Timeout	?	5 secs	
Response Timeout	?	15 secs	
Identifier Attribute	?	No value set	
Index	?	stocks-index	
Type	?	stocks	
Character Set	?	UTF-8	
Batch Size	?	5	
Index Operation	?	index	

CANCEL

APPLY

In 0 (0 bytes)



# Lab 2 – Stock Price Monitor and Dashboard – Hbase Service

**Configure Controller Service**

SETTINGS

PROPERTIES

COMMENTS

Required field +

Property		Value	
Hadoop Configuration Files	?	/etc/hbase/2.6.3.0-235/0/hbase-site.xml	
Kerberos Principal	?	No value set	
Kerberos Keytab	?	No value set	
ZooKeeper Quorum	?	No value set	
ZooKeeper Client Port	?	No value set	
ZooKeeper ZNode Parent	?	No value set	
HBase Client Retries	?	3	
Phoenix Client JAR Location	?	No value set	

CANCEL

APPLY

# Lab 2 – Stock Price Monitor and Dashboard – Elastic Search

The screenshot displays the Kibana web interface. On the left is a dark blue sidebar with navigation links: Discover, Visualize, Dashboard, Timelion, Dev Tools, and Management. The 'Discover' link is active. The main content area shows search results for the 'stocks-index' with 765 hits. At the top right of the main area are buttons for 'New', 'Save', 'Open', and 'Share', along with a search bar containing the query 'Search... (e.g. status:200 AND extension:PHP)' and a 'Uses lucene query syntax' link. Below the search bar is a section titled 'Add a filter +'. The left sidebar also has a section for 'stocks-index\*' with 'Selected Fields' and 'Available Fields'. The 'Selected Fields' list includes: ? \_source, t \_id, t \_index, # \_score, t \_type, @ ds, # price, t symbol, @ ts, and # volume. The 'Available Fields' list includes: t \_id, t \_index, # \_score, t \_type, @ ds, # price, t symbol, @ ts, and # volume. The main content area displays a list of search results, each with a document ID and a JSON object containing fields like volume, symbol, price, ts, \_id, \_type, \_index, \_score, and ds. The results are grouped by document ID.

**kibana**

765 hits

New Save Open Share

Search... (e.g. status:200 AND extension:PHP) Uses lucene query syntax

Discover

Visualize

Dashboard

Timelion

Dev Tools

Management

stocks-index\*

Add a filter +

Selected Fields

? \_source

Available Fields

t \_id

t \_index

# \_score

t \_type

@ ds

# price

t symbol

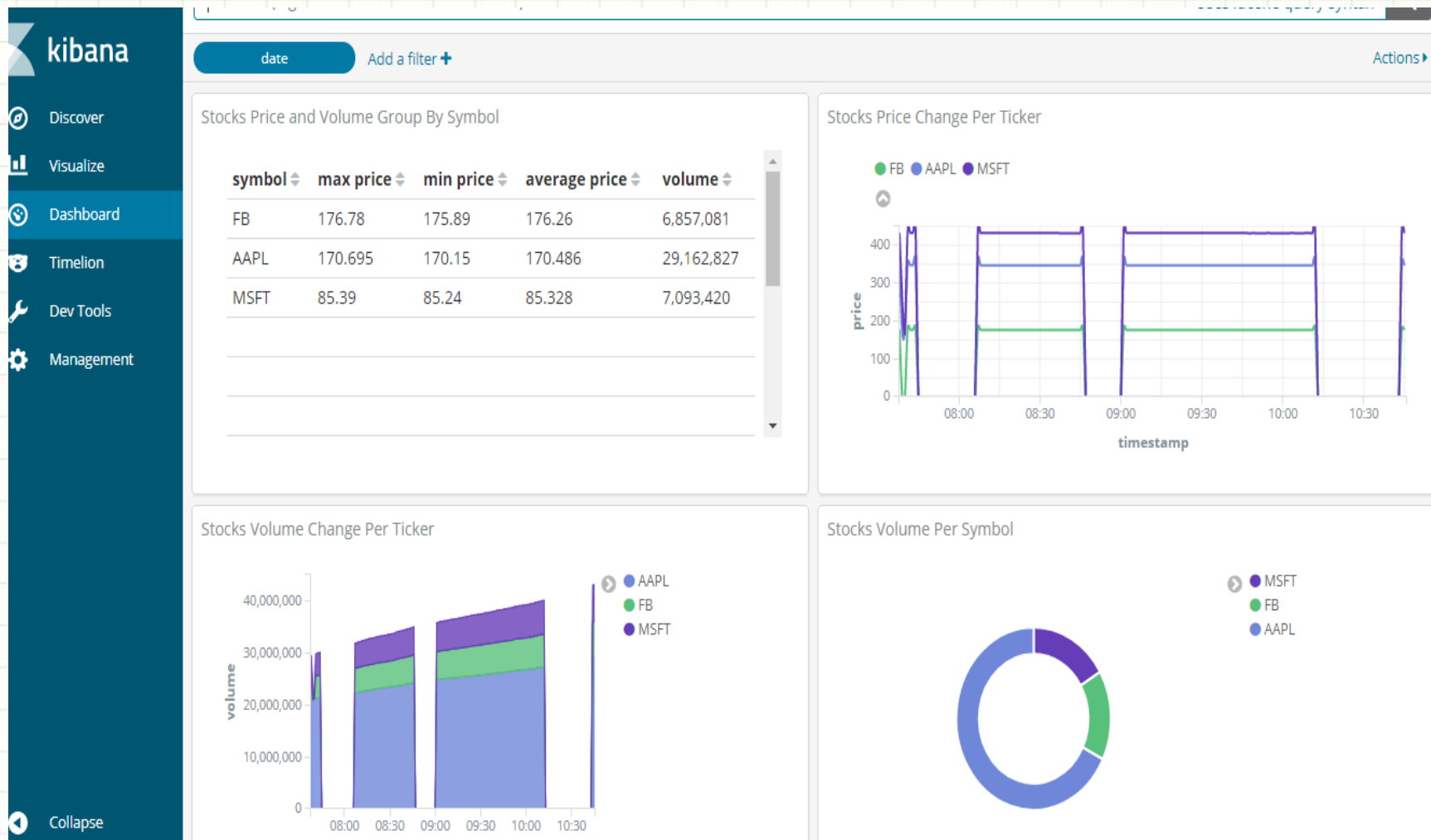
@ ts

# volume

**\_source**

- volume:** 20,999,961 **symbol:** AAPL **price:** 170.53 **ts:** December 26th 2017, 07:38:18.000 **\_id:** oOy8kmABnwN1NIvTSXD7 **\_type:** stocks **\_index:** stocks-index **\_score:** 1 **ds:** 2017-12-26
- volume:** 4,208,681 **symbol:** MSFT **price:** 85.32 **ts:** December 26th 2017, 07:38:47.000 **\_id:** oey8kmABnwN1NIvTSXD7 **\_type:** stock **\_index:** stocks-index **\_score:** 1 **ds:** 2017-12-26
- volume:** 21,003,767 **symbol:** AAPL **price:** 170.53 **ts:** December 26th 2017, 07:38:35.000 **\_id:** ouy8kmABnwN1NIvTSXD7 **\_type:** stocks **\_index:** stocks-index **\_score:** 1 **ds:** 2017-12-26
- volume:** 4,210,351 **symbol:** MSFT **price:** 85.34 **ts:** December 26th 2017, 07:39:16.000 **\_id:** o-y8kmABnwN1NIvTSXD7 **\_type:** stock **\_index:** stocks-index **\_score:** 1 **ds:** 2017-12-26
- volume:** 4,347,007 **symbol:** FB **price:** 176.63 **ts:** December 26th 2017, 07:38:54.000 **\_id:** pOy8kmABnwN1NIvTSXD7 **\_type:** stocks **\_index:** stocks-index **\_score:** 1 **ds:** 2017-12-26
- volume:** 21,035,390 **symbol:** AAPL **price:** 170.505 **ts:** December 26th 2017, 07:39:16.000 **\_id:** pey8kmABnwN1NIvTSnCW **\_type:** stocks **\_index:** stocks-index **\_score:** 1 **ds:** 2017-12-26
- volume:** 4,242,449 **symbol:** MSFT **price:** 85.355 **ts:** December 26th 2017, 07:41:07.000 **\_id:** puy8kmABnwN1NIvTSnCW **\_type:** stock **\_index:** stocks-index **\_score:** 1 **ds:** 2017-12-26

# Lab 2 – Stock Price Monitor and Dashboard – Kibana Dashboard



# Lab 3 – Mobile Vendors Twitter Dashboard – Zeppelin ElasticSearch Interpreter

The screenshot displays the Zeppelin web interface. On the left is a sidebar with a list of services: HBase, Pig, Sqoop, Oozie, ZooKeeper, Falcon, Storm, Flume, Ambari Infra, Atlas, Kafka, Knox, Ranger, Spark2, Zeppelin Notebook (highlighted), NiFi, and Slider. Below this list is an 'Actions' button. The main area shows a configuration window for 'Advanced zeppelin-config'. At the top of this window, it indicates '2 months ago HDP-2.6' and 'admin authored on Fri, Nov 10, 2017 09:17', with 'Discard' and 'Save' buttons. The configuration table lists various settings for the Zeppelin interpreter.

Property	Value	Actions
zeppelin.anonymous.allowed	true	⊕ Ⓢ
zeppelin.config.fs.dir	conf	⊕ Ⓢ
zeppelin.interpreter.config.upgrade	true	⊕ Ⓢ
zeppelin.interpreter.connect.timeout	30000	⊕ Ⓢ
zeppelin.interpreter.dir	interpreter	⊕ Ⓢ
zeppelin.interpreter.group.order	spark,angular,jdbc,livy,md,sh	⊕ Ⓢ
zeppelin.interpreters	org.apache.zeppelin.spark.SparkInterpreter,org.apache.zeppelin.spark.PySparkInterpreter	⊕ Ⓢ Ⓢ
zeppelin.notebook.dir	notebook	⊕ Ⓢ
zeppelin.notebook.homescreen		⊕ Ⓢ
zeppelin.notebook	false	⊕ Ⓢ

# Lab 3 – Mobile Vendors Twitter Dashboard – Zeppelin ElasticSearch Interpreter

elasticsearch %elasticsearch ●

 edit  restart  remov

## Option

The interpreter will be instantiated Globally ▼ in shared ▼ process.

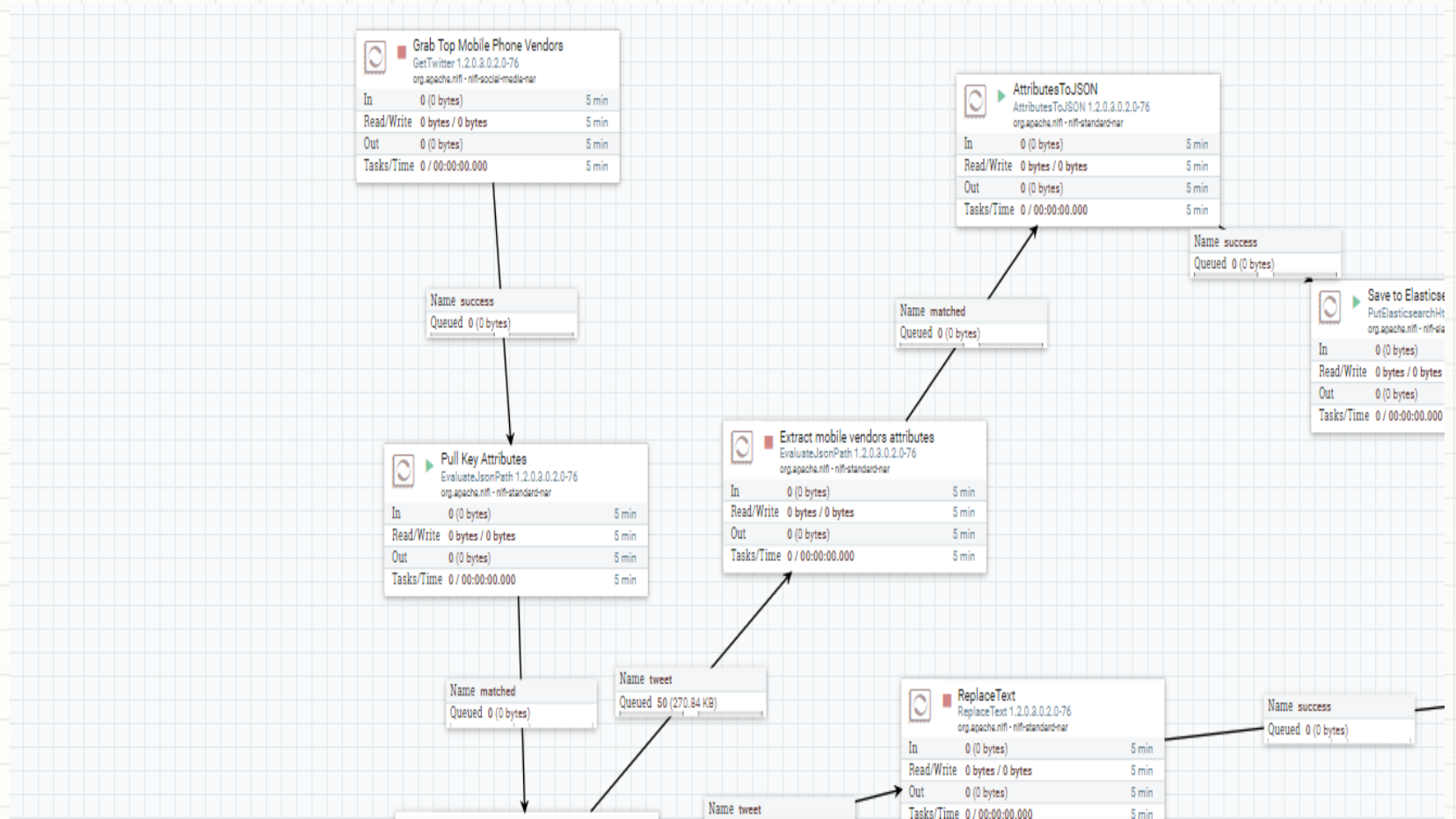
☐ Connect to existing process

☐ Set permission

## Properties

name	value
elasticsearch.basicauth.password	
elasticsearch.basicauth.username	
elasticsearch.client.type	transport
elasticsearch.cluster.name	elasticsearch
elasticsearch.host	localhost
elasticsearch.port	9300
elasticsearch.result.size	10

# Lab 3 – Mobile Vendors Twitter Dashboard – NiFi Workflow



# Lab 3 – Mobile Vendors Twitter Dashboard – NiFi Sentiment Analysis

## Processor Details

SETTINGS

SCHEDULING

PROPERTIES

COMMENTS

Required field

Property		Value	
HTTP Method	?	POST	
Remote URL	?	http://localhost:9000/?properties=%7B%22annotators...	
SSL Context Service	?	No value set	
Connection Timeout	?	5 secs	
Read Timeout	?	15 secs	
Include Date Header	?	True	
Follow Redirects	?	True	
Attributes to Send	?	No value set	
Basic Authentication Username	?	No value set	
Basic Authentication Password	?	No value set	
Proxy Host	?	No value set	
Proxy Port	?	No value set	
Proxy Username	?	No value set	
Proxy Password	?	No value set	

OK

# Lab 3 – Mobile Vendors Twitter Dashboard – NiFi Get Twitter

## Configure Processor

SETTINGS

SCHEDULING

PROPERTIES

COMMENTS

Required field

+

Property	Value	
Twitter Endpoint	<div>?</div> Filter Endpoint	
Consumer Key	<div>?</div> KJ99ZraYHopJEPYG7Sc7bAicU	
Consumer Secret	<div>?</div> Sensitive value set	
Access Token	<div>?</div> 914994728-qYMzik45gks67xjb8SLhkJfUUGWgJUBHR...	
Access Token Secret	<div>?</div> Sensitive value set	
Languages	<div>?</div> No value set	
Terms to Filter On	<div>?</div> Apple iPhone,Samsung,Alcatel,Motorola,Nokia	
IDs to Follow	<div>?</div> No value set	
Locations to Filter On	<div>?</div> No value set	

CANCEL

APPLY



# Lab 3 – Mobile Vendors Twitter Dashboard – NiFi Put HDFS

## Configure Processor

SETTINGS

SCHEDULING

PROPERTIES

COMMENTS

Required field



Property		Value	
Hadoop Configuration Resources	?	/etc/hadoop/2.6.3.0-235/0/core-site.xml	
Kerberos Principal	?	No value set	
Kerberos Keytab	?	No value set	
Kerberos Relogin Period	?	4 hours	
Additional Classpath Resources	?	No value set	
Directory	?	/root/data/tweets_mobile_vendors	
Conflict Resolution Strategy	?	replace	
Block Size	?	No value set	
IO Buffer Size	?	No value set	
Replication	?	1	
Permissions umask	?	No value set	
Remote Owner	?	No value set	
Remote Group	?	No value set	
Compression codec	?	NONE	

CANCEL

APPLY

# Lab 3 – Mobile Vendors Twitter Dashboard – Kibana

**kibana**

7,282 hits

Search... (e.g. status:200 AND extension:PHP)

Uses lucene query syntax

Discover

Visualize

Dashboard

Timelion

Dev Tools

Management

twitters-hedge-funds-index

Add a filter +

Selected Fields

? \_source

Available Fields

t \_id

t \_index

# \_score

t \_type

t coordinates

t created\_at

t geo

t hashtag

t lang

**\_source**

- geo:** **screen\_name:** DeuxTypesDeGens **coordinates:** **created\_at:** Tue Dec 26 23:40:32 +0000 2017 **place:** **source:** <a href="http://about.twitter.com/products/tweetdeck" rel="nofollow">TweetDeck</a> **twitter\_id:** 945801532389421058 **message:** RT @Coque\_L and: Nos Coques M&M's pour iPhone & Samsung à seulement 5,99€ ! La Livraison est Gratuite 📦 Commandez-les ici --& t; https://t.co... **lang:** fr **hashtag:** **\_id:** 0ewy1WABnwN1NivT83Pq **\_type:** twitters-hedge-funds **\_index:** twitters-hedge-funds-i ndex **\_score:** 1
- geo:** **screen\_name:** mariib\_01 **coordinates:** **created\_at:** Tue Dec 26 23:37:49 +0000 2017 **place:** **source:** <a href="http://twi tter.com/download/android" rel="nofollow">Twitter for Android</a> **twitter\_id:** 945800850789855233 **message:** RT @inesrebelop: O q retiramos deste tweet: -Pagar mt por um iPhone é pecado, mas por um Samsung do mesmo preço já não é condenável. -Pesso... **lang:** pt **hashtag:** **\_id:** w0ww1WABnwN1NivTFHM2 **\_type:** twitters-hedge-funds **\_index:** twitters-hedge-funds-index **\_score:** 1
- geo:** **screen\_name:** realCharter **coordinates:** **created\_at:** Tue Dec 26 23:34:30 +0000 2017 **place:** **source:** <a href="http://t witter.com/download/iphone" rel="nofollow">Twitter for iPhone</a> **twitter\_id:** 945800016127578112 **message:** Women literally create life. They are actually magical. Babies come out of them. . . But they wanna go toil away fo... https://t.co/se8ZzVdvJ I **lang:** en **hashtag:** **\_id:** p0wt1WABnwN1NivTcHN6 **\_type:** twitters-hedge-funds **\_index:** twitters-hedge-funds-index **\_score:** 1
- geo:** **screen\_name:** Peruconnection1 **coordinates:** **created\_at:** Tue Dec 26 23:37:58 +0000 2017 **place:** **source:** <a href="htt p://www.ajaymatharu.com/" rel="nofollow">Tweet Old Post</a> **twitter\_id:** 945800886848249857 **message:** ¿Huawei estará listo p

# Lab 4 – NiFi Cookbook

Wait N signals and let M FlowFiles go

0 0 5 1 0 0

Queued 0 (0 bytes)

In 0 (0 bytes) → 0 5 min

Read/Write 0 bytes / 0 bytes 5 min

Out 0 → 0 (0 bytes) 5 min

*No comments specified*

Join CSV files

0 0 0 9 0 0

Queued 0 (0 bytes)

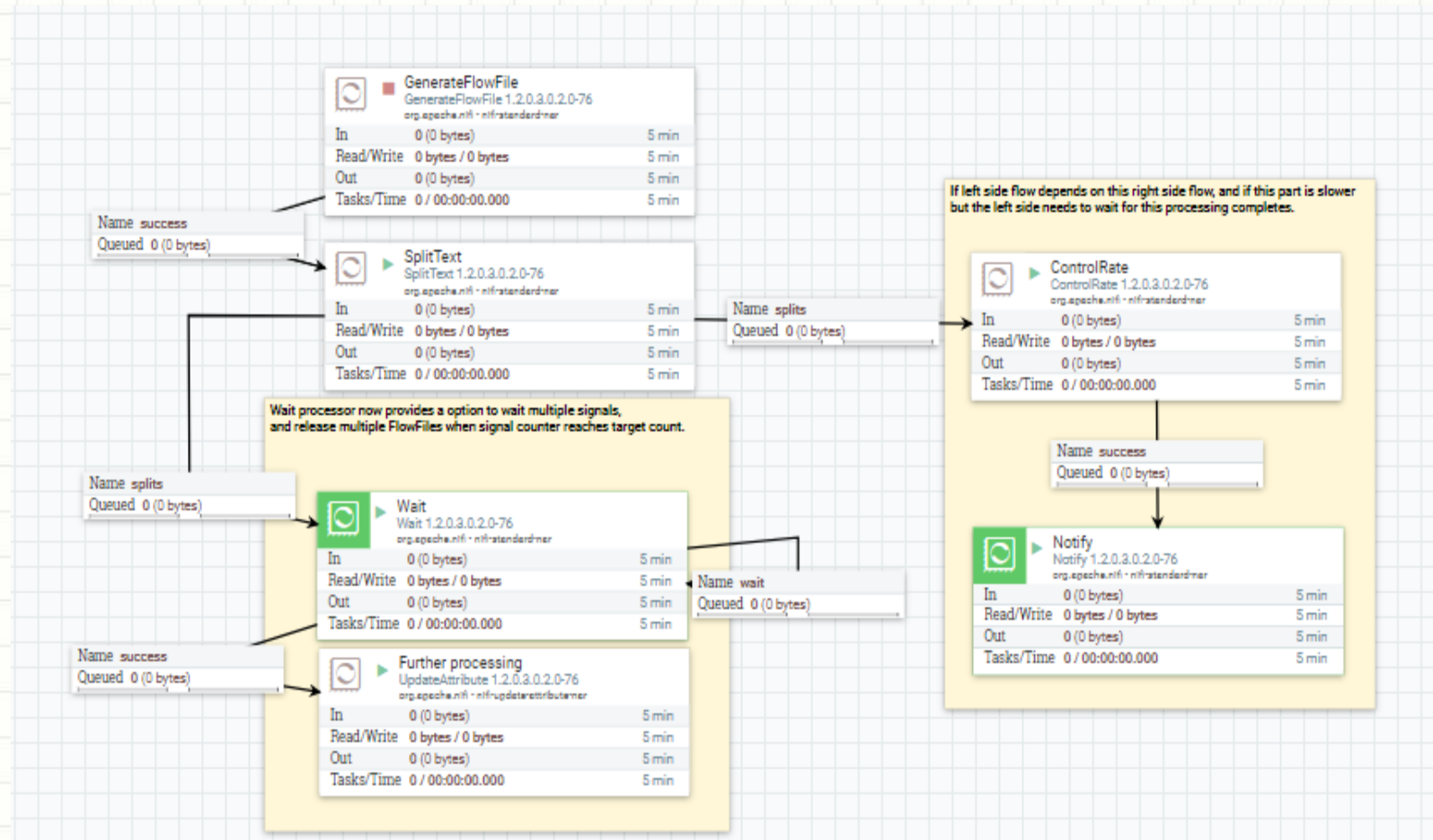
In 0 (0 bytes) → 0 5 min

Read/Write 0 bytes / 0 bytes 5 min

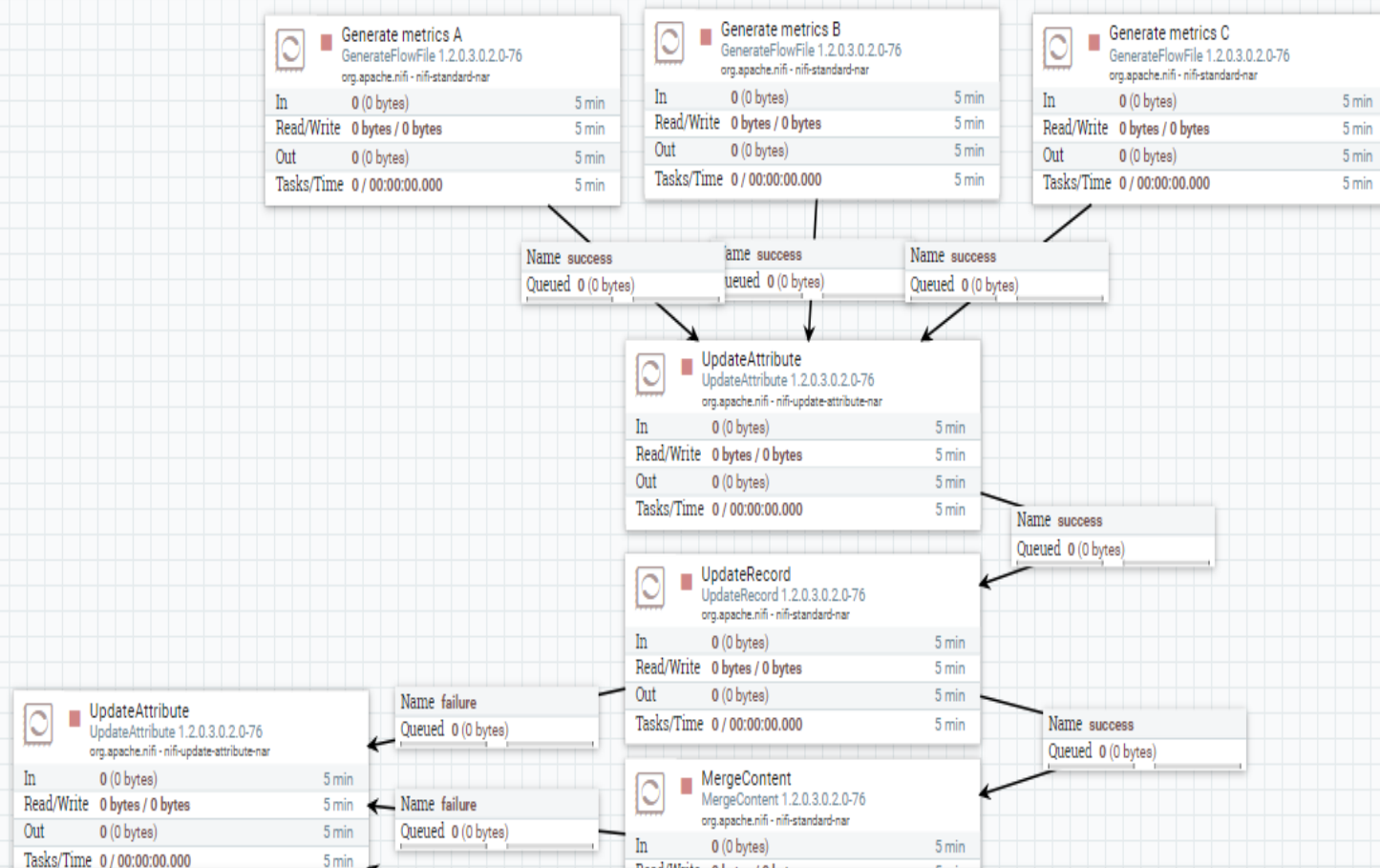
Out 0 → 0 (0 bytes) 5 min

*No comments specified*

# Lab 4 – NiFi Cookbook



# Lab 4 – NiFi Cookbook



# Lab 5 – Real time Data Visualization via NiFi and Web Socket

## WebSocket Notification

0 0 0 0 7 0 0

Queued	1 (110 bytes)	
In	0 (0 bytes) → 0	5 min
Read/Write	0 bytes / 0 bytes	5 min
Out	0 → 0 (0 bytes)	5 min

No comments specified

## UpdateData via File

0 0 0 0 6 0 0

Queued	0 (0 bytes)	
In	0 (0 bytes) → 0	5 min
Read/Write	0 bytes / 0 bytes	5 min
Out	0 → 0 (0 bytes)	5 min

No comments specified

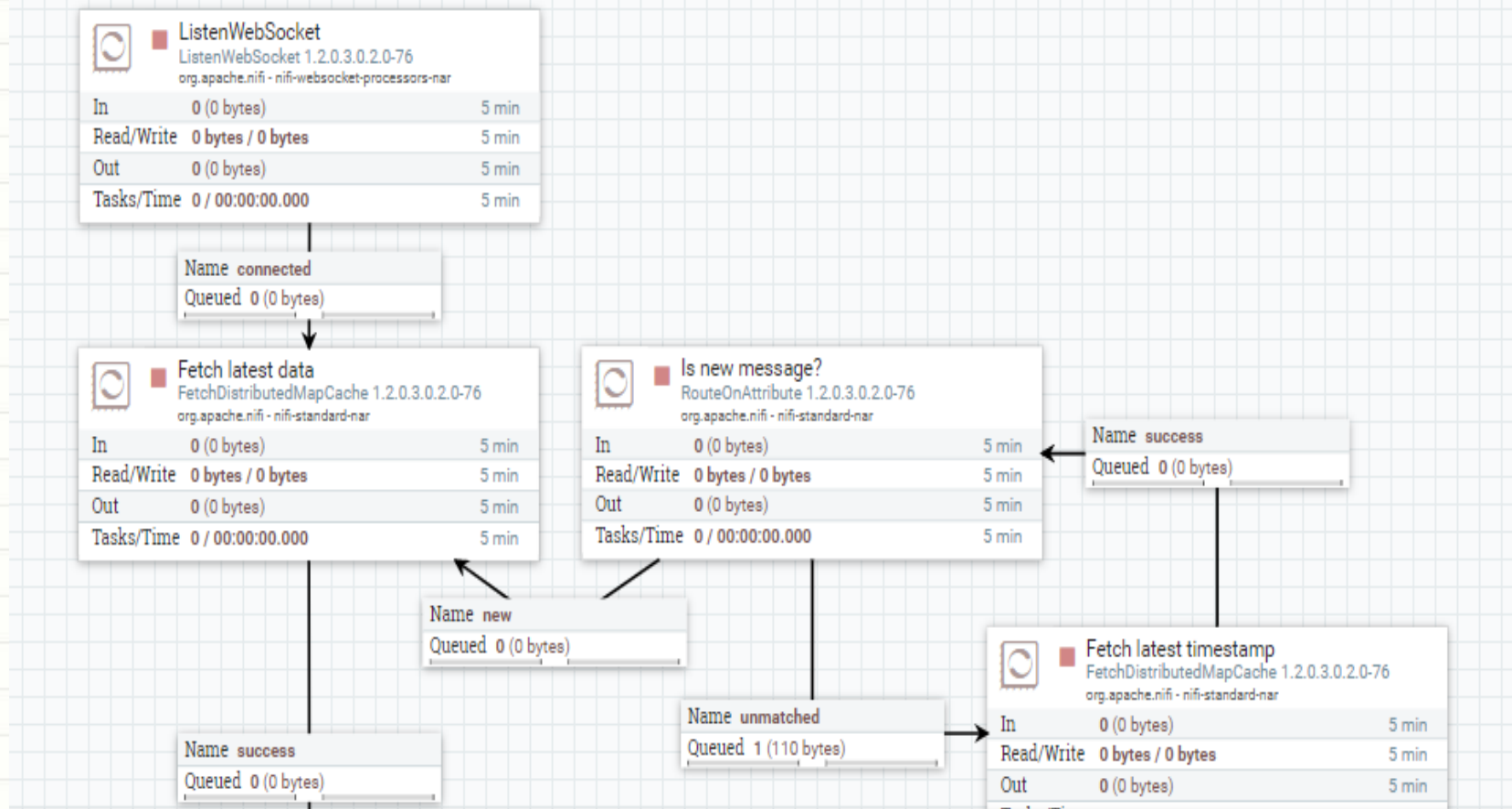
## UpdateData via Kafka

0 0 0 0 5 0 0

Queued	0 (0 bytes)	
In	0 (0 bytes) → 0	5 min
Read/Write	0 bytes / 0 bytes	5 min
Out	0 → 0 (0 bytes)	5 min

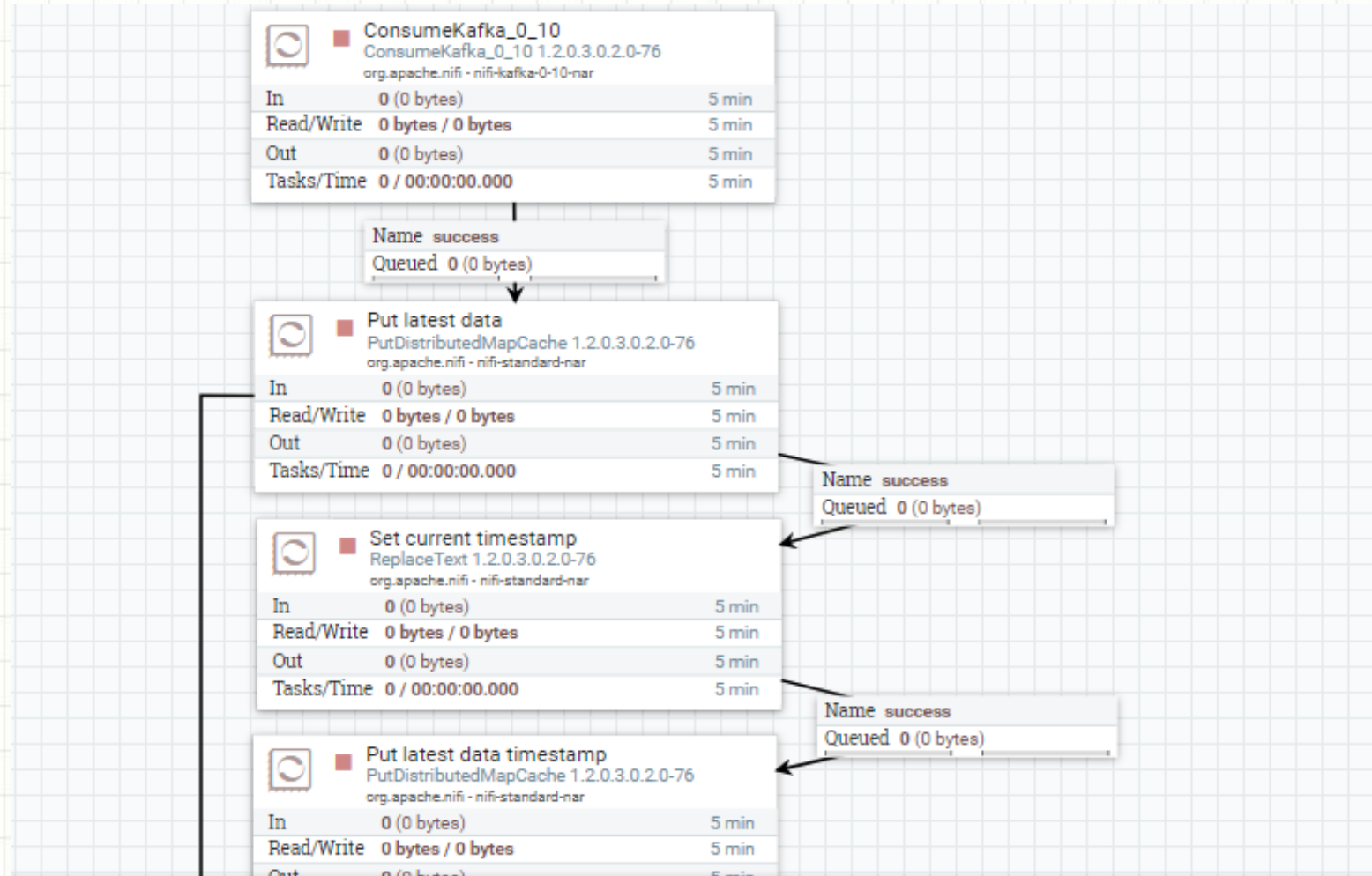
No comments specified

# Lab 5 – Real time Data Visualization via NiFi and Web Socket





# Lab 5 – Real time Data Visualization via NiFi and Web Socket





# Lab 5 – Real time Data Visualization via NiFi and Web Socket

## Configure Processor

SETTINGS

SCHEDULING

PROPERTIES

COMMENTS

Required field

+

Property	Value	
WebSocket Server ControllerService	<div>?</div> JettyWebSocketServer	→
Server URL Path	<div>?</div> /websocket	

CANCEL

APPLY

# Lab 5 – Real time Data Visualization via NiFi and Web Socket

## Configure Processor

SETTINGS

SCHEDULING

PROPERTIES

COMMENTS

Required field



Property		Value	
Kafka Brokers	?	sandbox-hdp.hortonworks.com:6667	▲
Security Protocol	?	PLAINTEXT	
Kerberos Service Name	?	No value set	
Kerberos Principal	?	No value set	
Kerberos Keytab	?	No value set	
SSL Context Service	?	No value set	
Topic Name(s)	?	nifi_websocket	
Topic Name Format	?	names	
Group ID	?	nifi	
Offset Reset	?	latest	
Key Attribute Encoding	?	UTF-8 Encoded	
Message Demarcator	?	No value set	
Max Poll Records	?	10000	
Max Uncommitted Time	?	1 secs	▼

CANCEL

APPLY

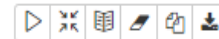
# Lab 5 – Real time Data Visualization via NiFi and Web Socket



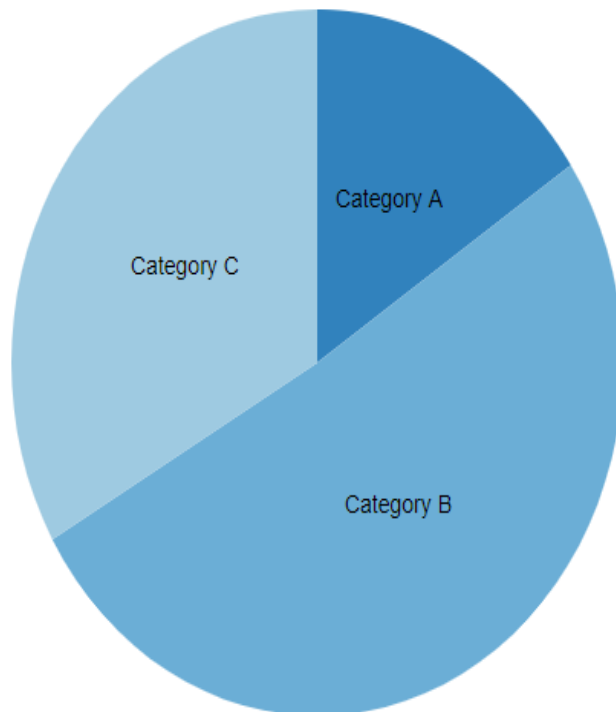
Notebook ▾ Job

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## Real time Data Visualization via NiFi a...



Head



Took 0 sec. Last updated by anonymous at December 27 2017, 5:57:01 AM.