Hewlett Packard Enterprise

SMOKE TEST

HDF 3.3.1

Date Prepared: July 2019

Hewlett Packard Enterprise

Document Information

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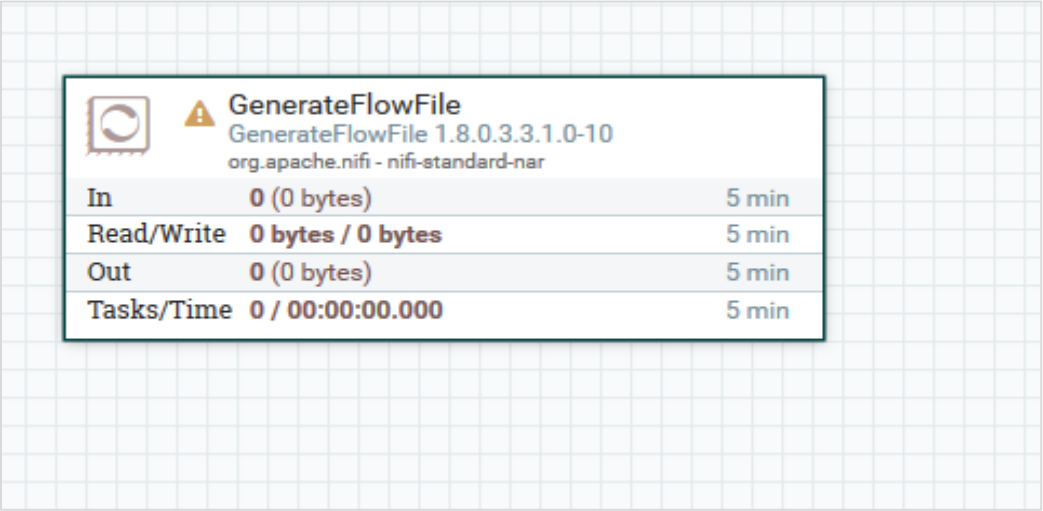
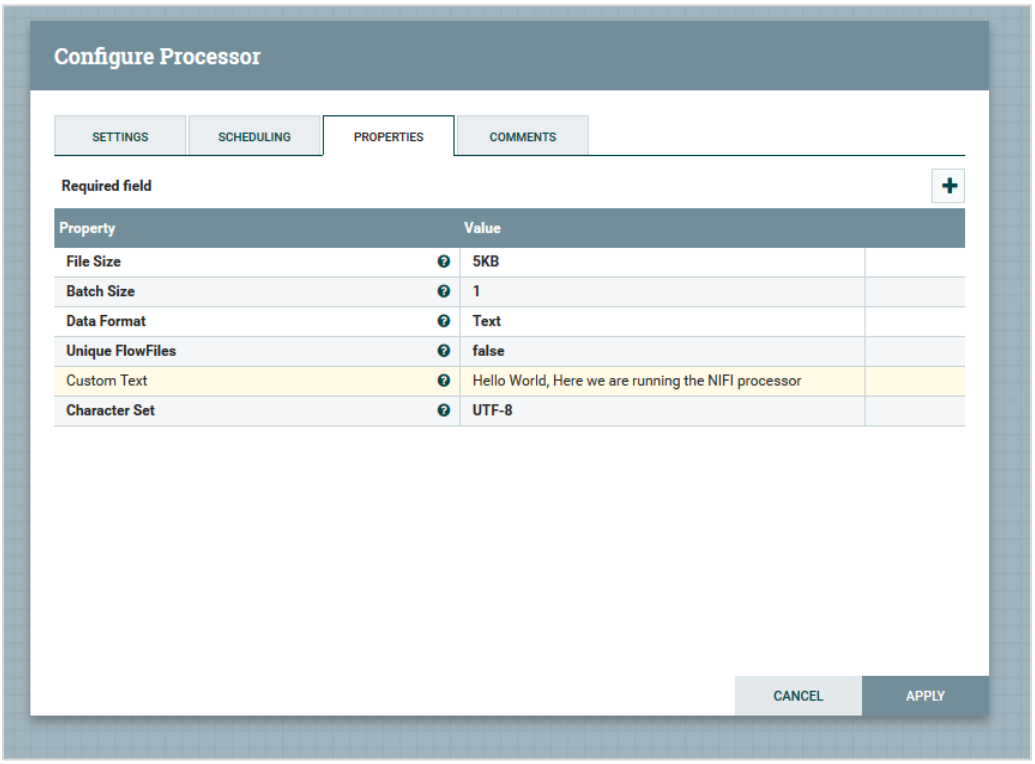
1 TESTING NIFI

We will use NIFI UI to create a HelloWorld dataflow.

1.1 Select a GenerateFlowFile processor in NIFI UI



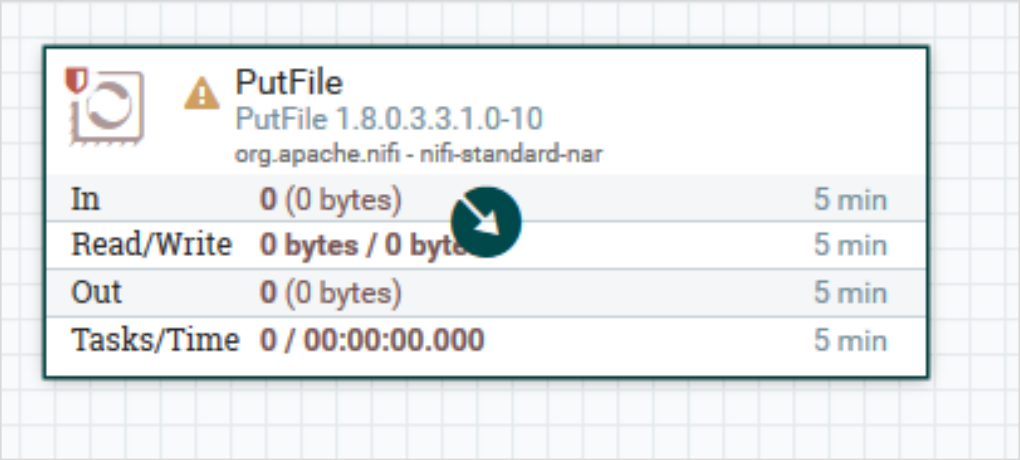
1.2 Configure GenerateFlowFile processor to generate the data



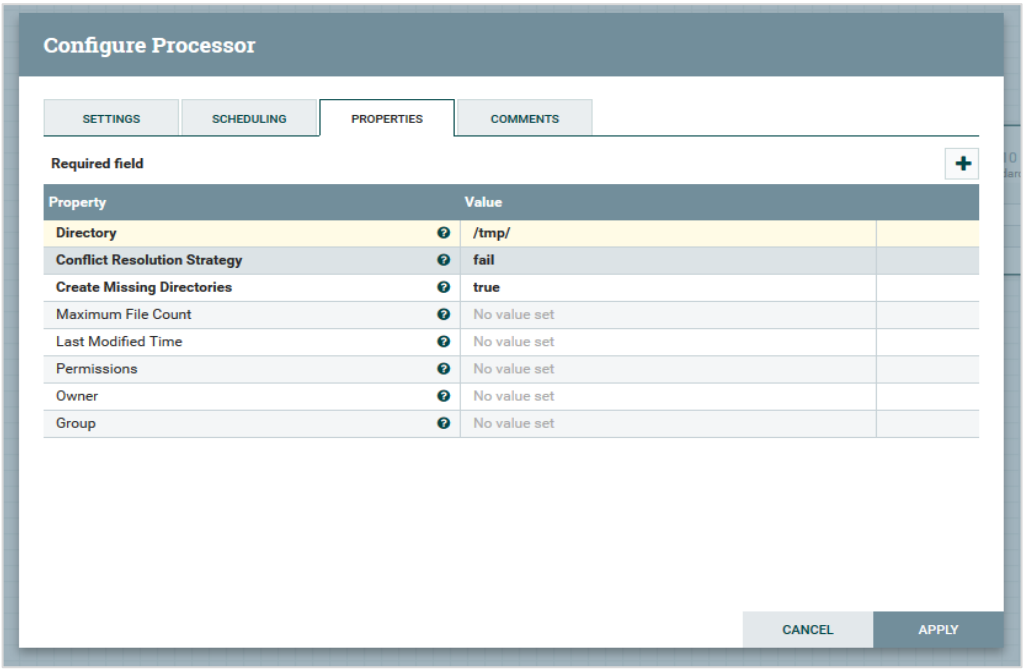
Following are the configuration you need to perform for GenerateFlowFile processor:

- Set the file size
- Enter custom text in Custom Text section

1.3 Select a PutFile processor in NIFI UI



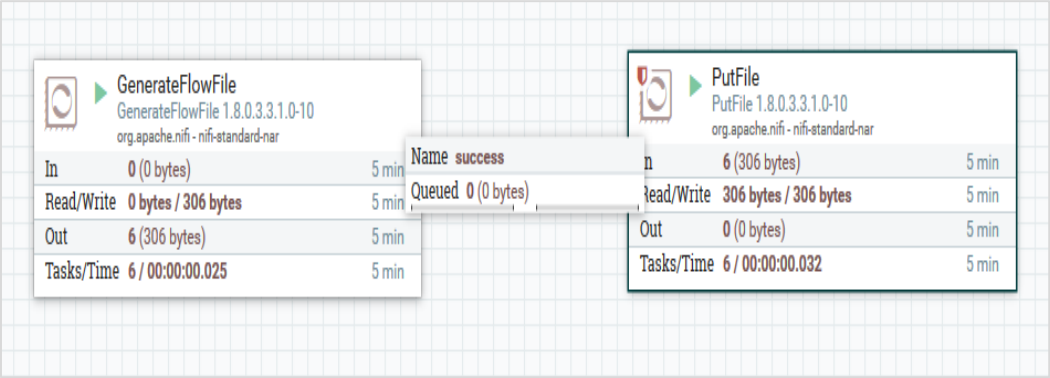
1.4 Configure PutFile processor to store generated data from GenerateFlowFile processor



You need to perform following configuration for PutFile processor:

- Enter a location where you want to store generated data from GenerateFlowFile processor. (Ex. /tmp/)

1.5 Connect and run the processors



1.6 Verify the data

Go to NIFI container and check into **/tmp** directory, if the data is stored or not.

```
ls /tmp/
```

```
[bluedata@bluedata-6670 ~]$ ls /tmp/
0f415ed5-b405-422c-89a6-69bd68f17bcf  6ae13641-8aef-4eab-9e0a-bc53e70a3f1d  bds-20190616225559.log                ee11a6ce-974d-4276-bd1f-5b4b54495e66
1c96755c-209b-4690-b8b5-71e9186d50fc  6f5eef59-f810-4a31-a838-ced3e4f86650  bd_vagent_bundle.517.log              efc2534f-e25f-412d-a0f5-309bc920b95a
2019466d-1b12-44f9-83f2-033252867b9f  7852fa6c-d820-41f1-bb38-34158882a2d0  cfa81c94-579d-48fb-917b-abb48bfd6e04  fe448eb1-b30b-493a-af79-4cb05730d89c
23994186-4bef-4f26-9638-074eb4b9e20b  787f475d-c6a4-4f2a-ab98-e786f0cd5212  d6c6e001-57c2-41f5-aabc-ebdc894122f0  hsperfdata_mynifiuser
3540a303-9e91-42ad-a66c-ada17c3f1673  87111caa-0238-4323-867b-9602378bbc5c  dbbab28a-5666-4f93-b992-904a7265fe63  hsperfdata_registry
358ef550-c2cc-42fb-837e-e71b75422b2e  8c0c012e-ed1c-4eab-9027-903d5b49f2b7  de538e75-172d-4631-9684-cda97eb5d315  hsperfdata_root
4f44eda8-5801-43ae-965d-fded68baa078  8d970764-d334-4f9d-b964-3c2f6c1e428d  e3a9c207-d4dc-44df-88a5-90f30e6ad659  jna-551163445
647c88ff-ea0f-4536-9612-2ce45f79992c  a2c32c88-76bb-4210-a9ad-f1f43d3c44b6  e9e1a5f6-915e-4438-aa4d-c25ea7985a37  snappy-1.0.5-libsnappyjava.so
65b8d7ee-9635-4de4-9d2e-8622f8504fb1  a477f930-f8b8-4873-8cbd-a2e73a10e849  ec394c58-beda-469a-a17f-fd83a262ef70
[bluedata@bluedata-6670 ~]$
```

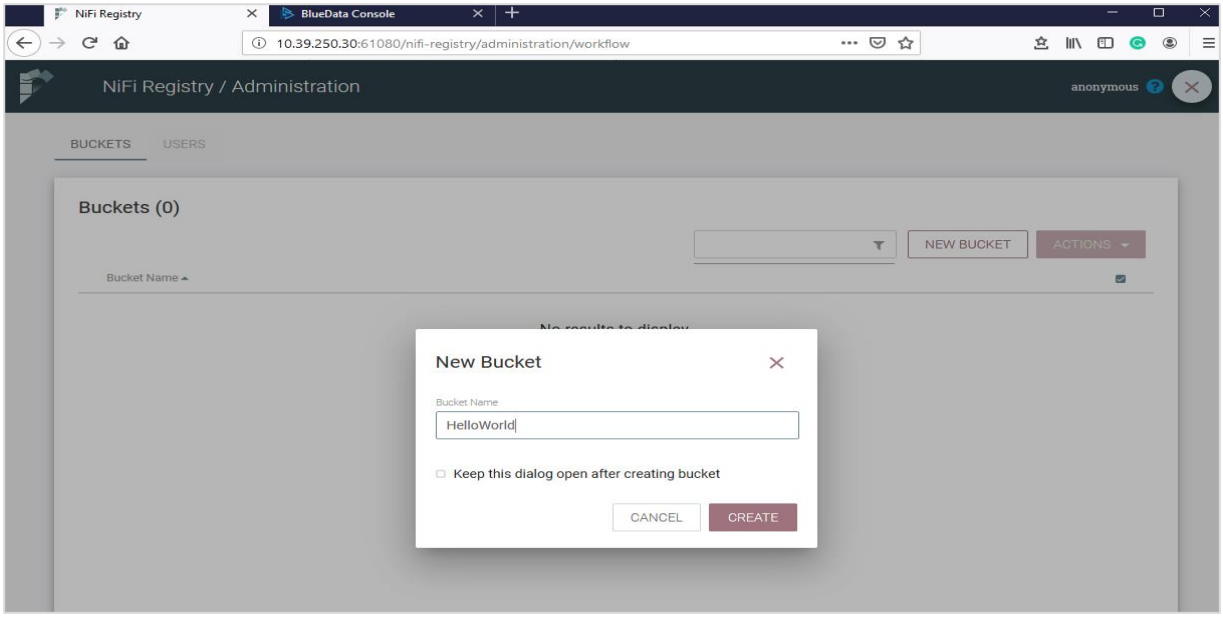
Use **cat** command to check the stored data.

```
[bluedata@bluedata-6670 ~]$ cat /tmp/0f415ed5-b405-422c-89a6-69bd68f17bcf
Hello World, Here we are running the NIFI processor[bluedata@bluedata-6670 ~]$
[bluedata@bluedata-6670 ~]$
```

2 TESTING NIFI REGISTRY

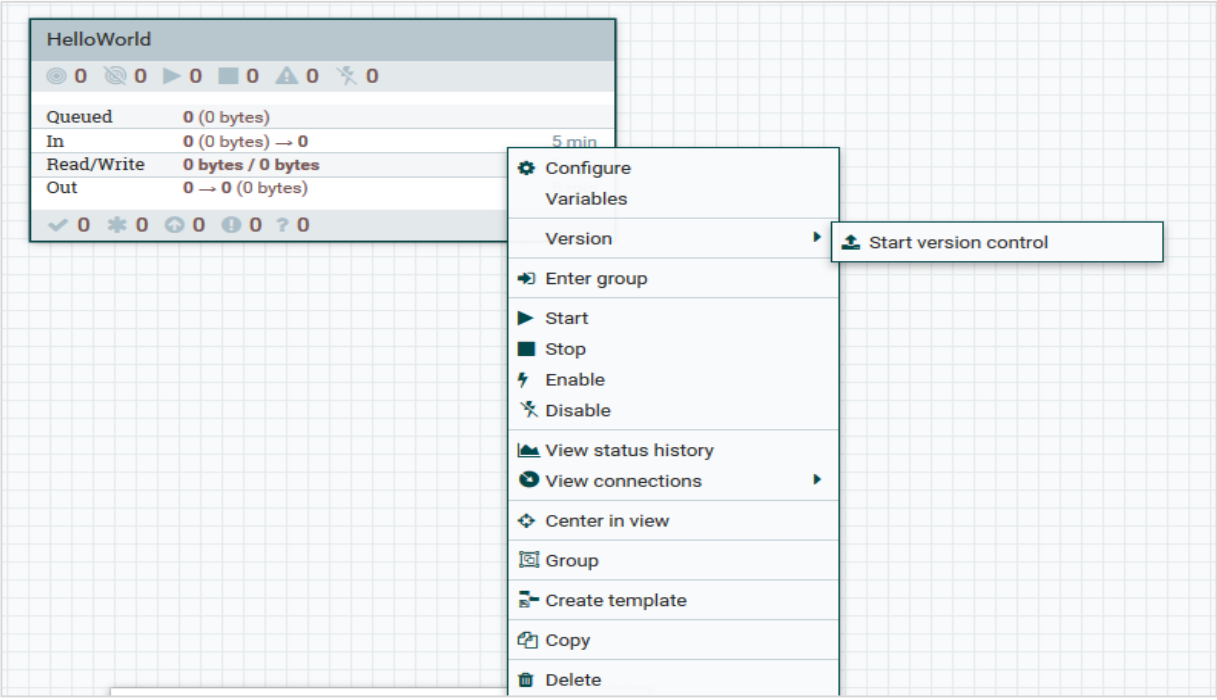
Here we will test the NIFI Registry service. Go to the NIFI Registry UI and create a bucket called **HelloWorld**.

2.1 Create HelloWorld bucket in NIFI Registry UI



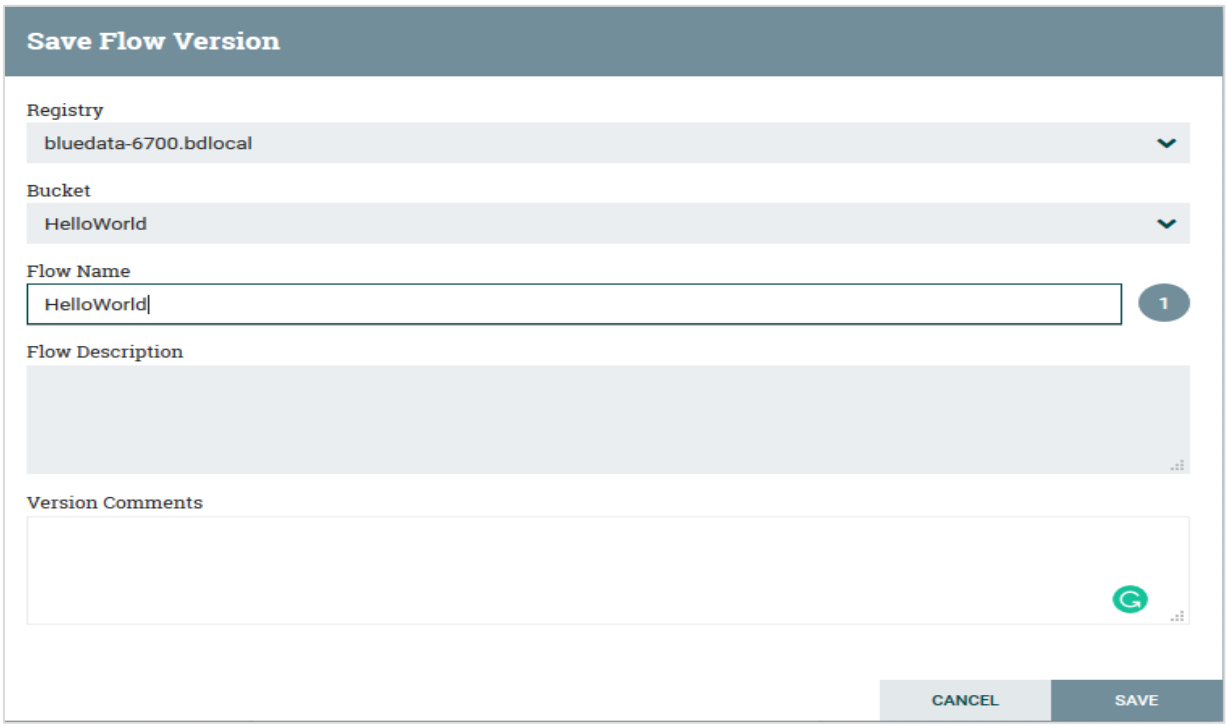
2.2 Create a process group

Create a HelloWorld process group in NIFI UI and start version control.



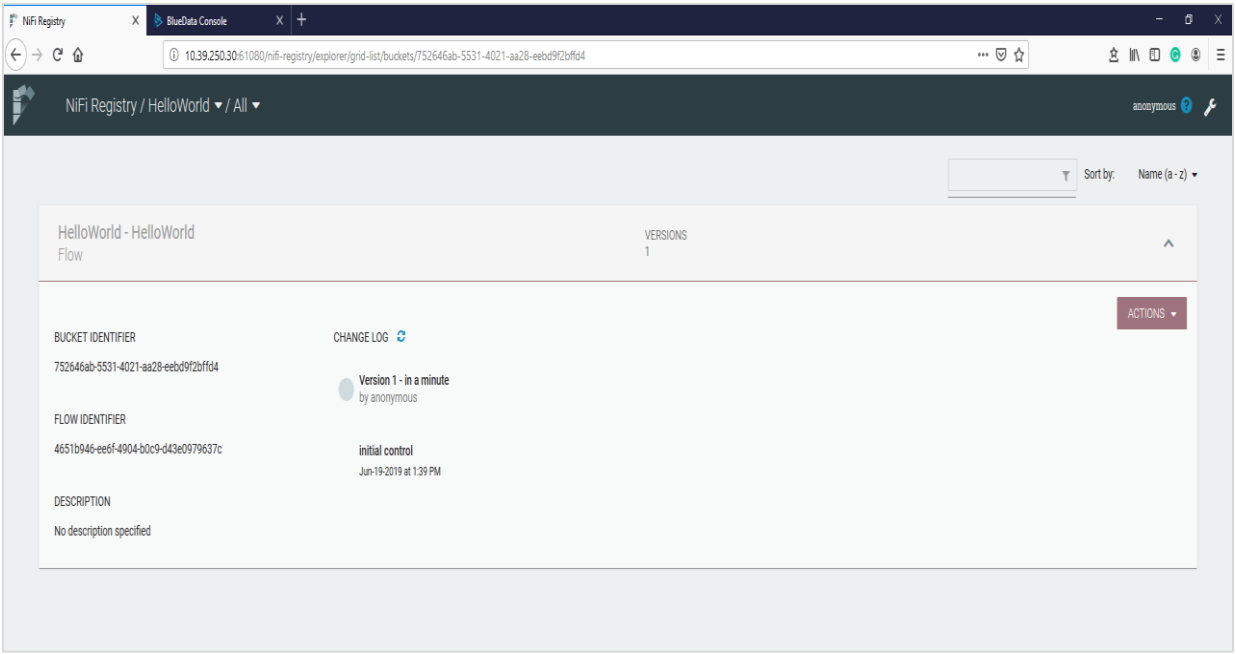
2.3 Configure a process group

Configure HelloWorld process group for storing it into bucket HelloWorld in NIFI Registry.



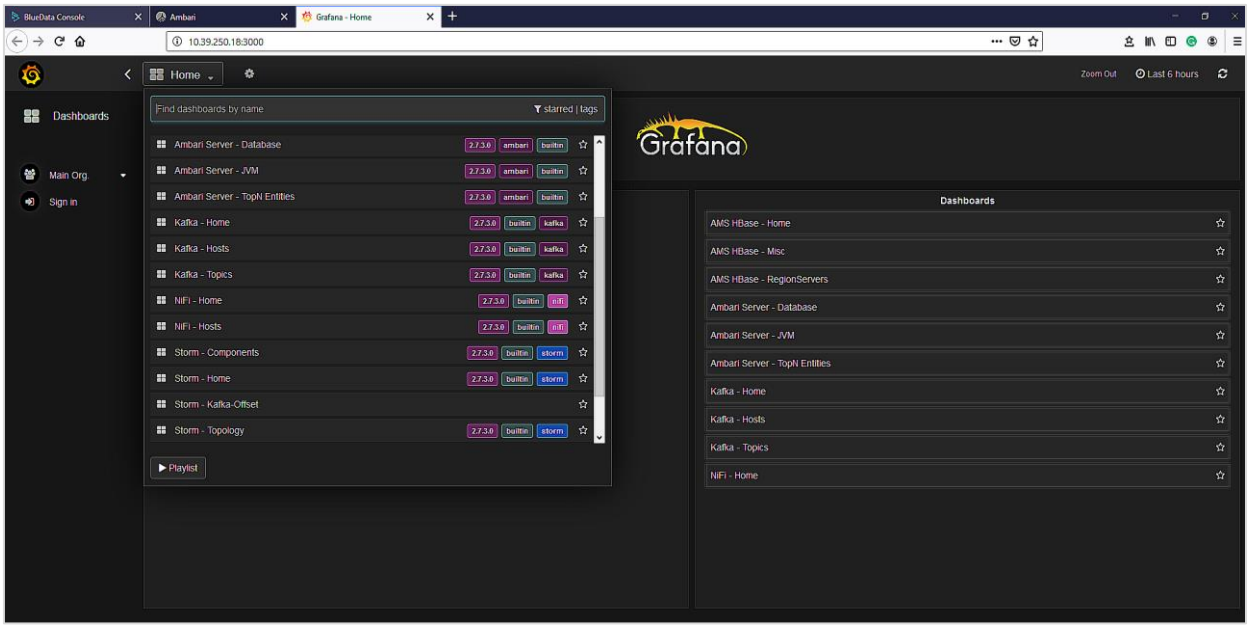
2.4 Verify version control

Go to the NIFI Registry UI. Select HelloWorld bucket and check if version control started for process group HelloWorld.


NiFi Registry
BlueData Console
10.39.250.30:61080/nifi-registry/explorer/grid-list/buckets/752646ab-5531-4021-aa28-eebd9f2bffd4
NiFi Registry / HelloWorld / All
anonymous
Sort by:
Name (a - z)
HelloWorld - HelloWorld
Flow
VERSIONS
1
ACTIONS
BUCKET IDENTIFIER
752646ab-5531-4021-aa28-eebd9f2bffd4
FLOW IDENTIFIER
4651b946-ee6f-4904-b0c9-d43e0979637c
DESCRIPTION
No description specified
CHANGE LOG
Version 1 - in a minute
by anonymous
initial control
Jun-19-2019 at 1:39 PM

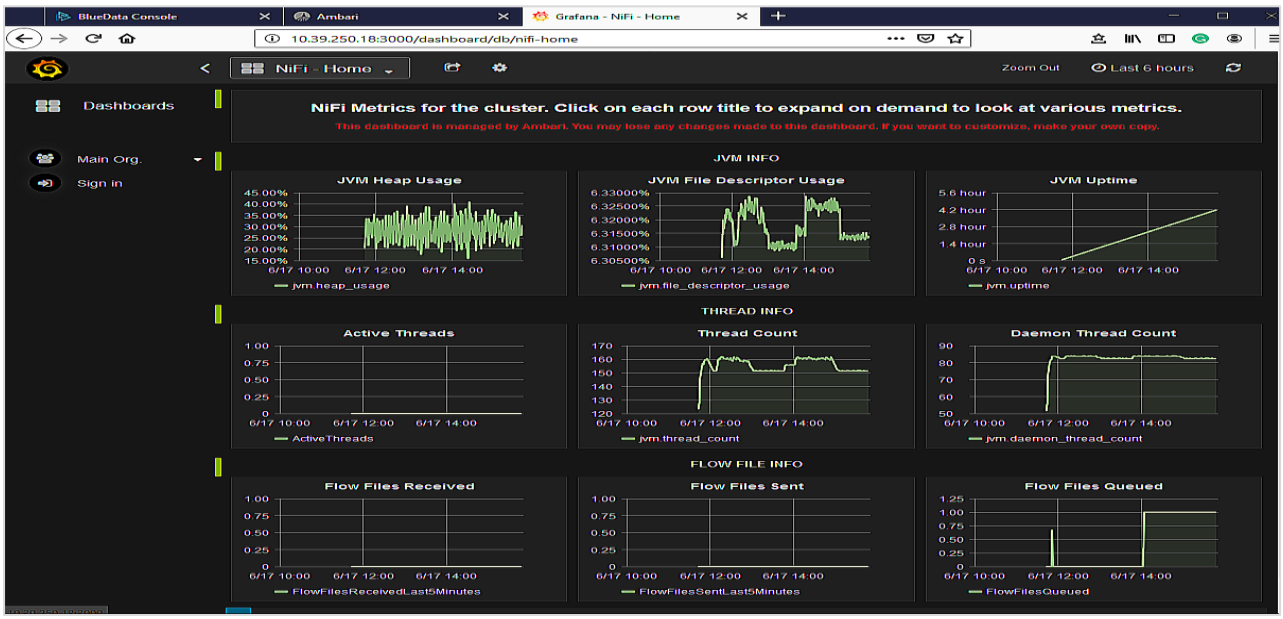
3 TESTING GRAFANA

Go to the Grafana UI and click on the search icon. Here you can see the components which is deployed into the HDF cluster.



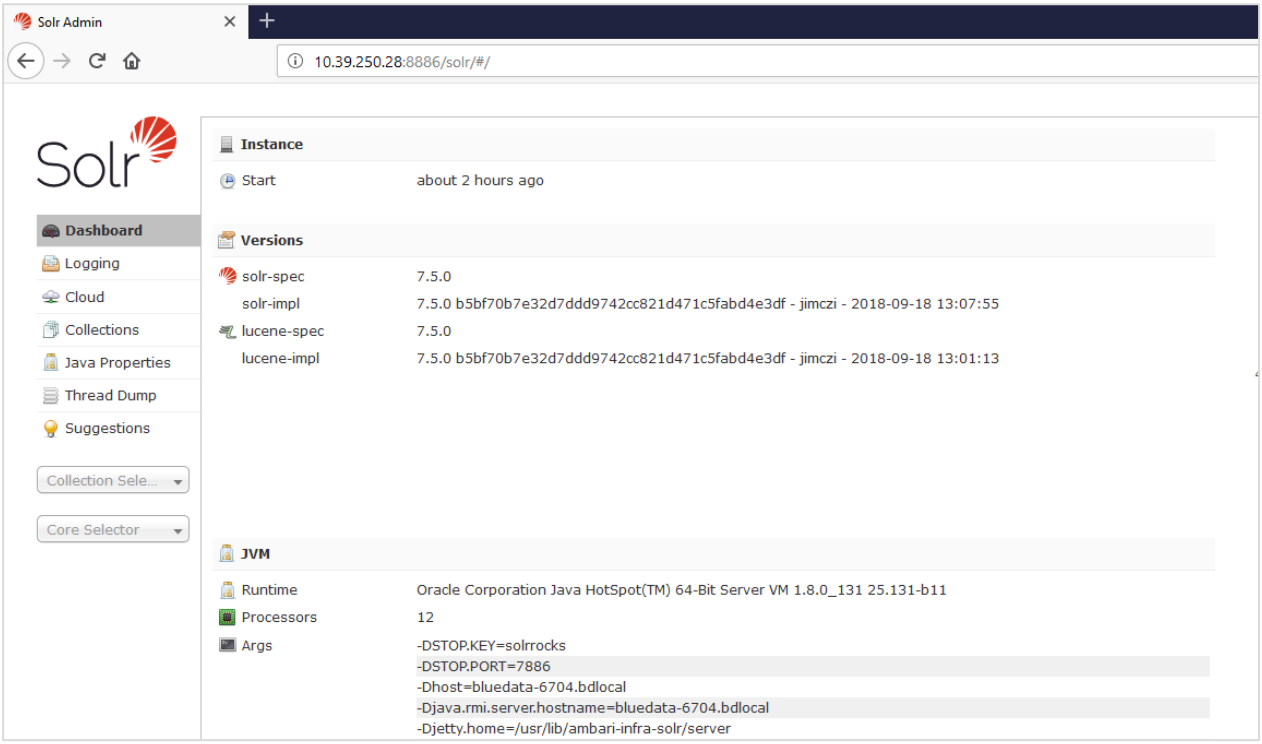
3.1 Selection of component

NIFI – Home component is selected in Grafana UI, and you can see the resources usages by the NIFI service.



4 TESTING SOLR

4.1 Go to the Solr Admin UI in HDF cluster

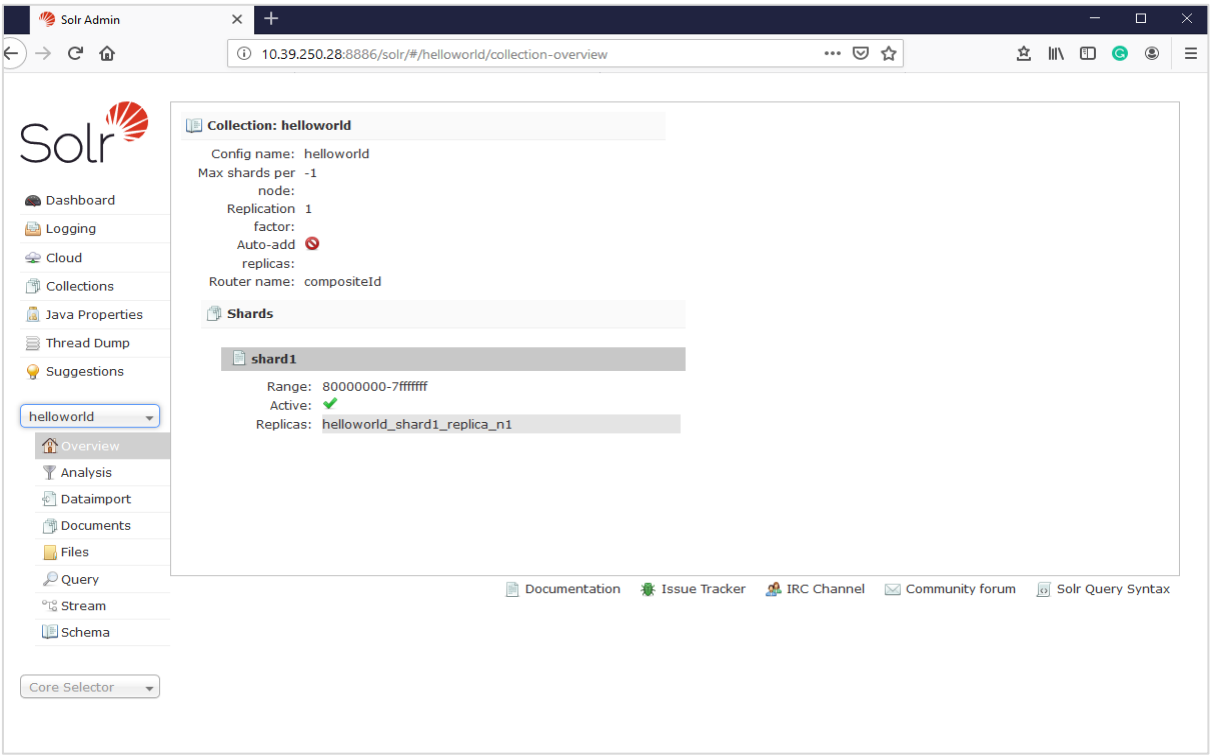


4.2 Go to the Solr container and create a new collection

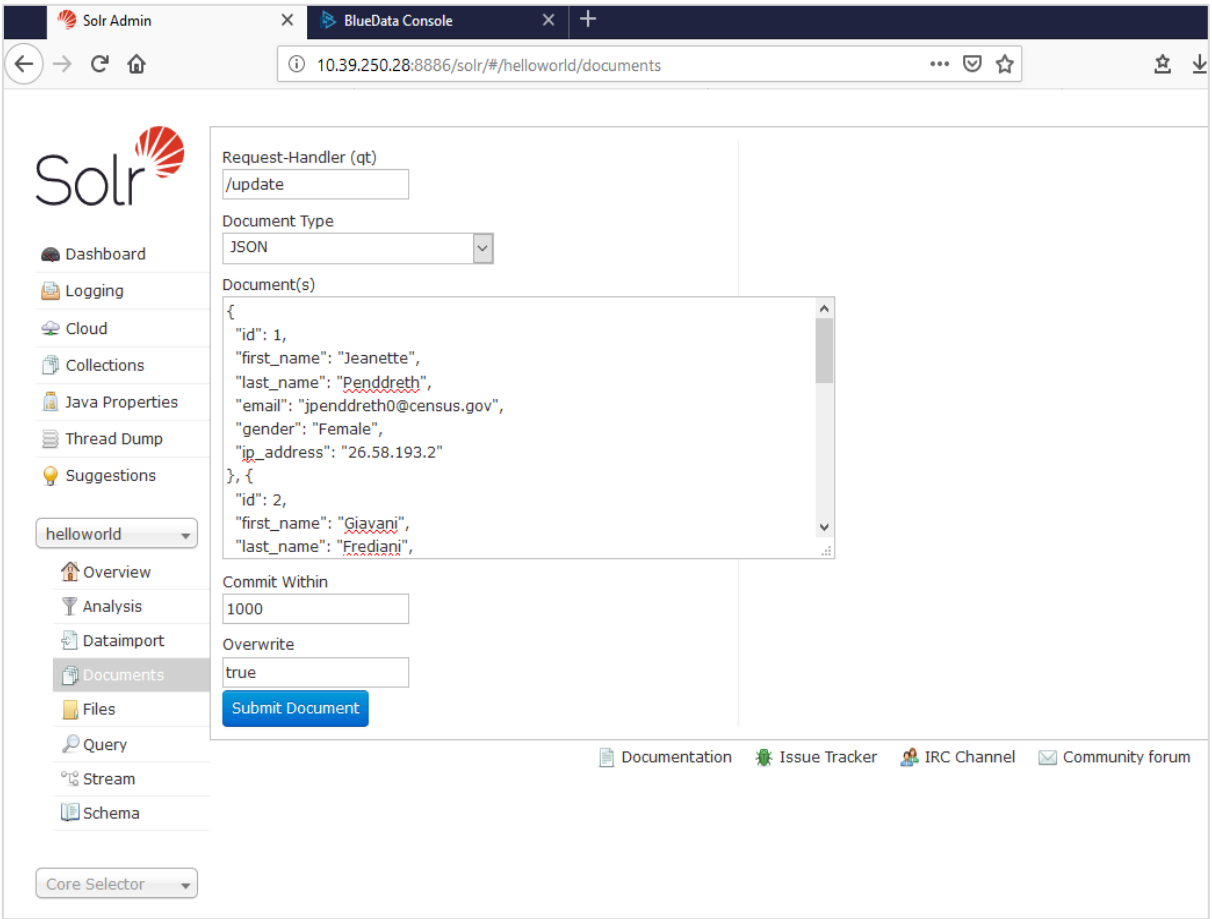
```
./bin/solr create -c helloworld
```

```
[bluedata@bluedata-6704 ambari-infra-solr]$
[bluedata@bluedata-6704 ambari-infra-solr]$ ./bin/solr create -c helloworld
WARNING: Using _default configset with data driven schema functionality. NOT RECOMMENDED for production use.
         To turn off: bin/solr config -c helloworld -p 8886 -action set-user-property -property update.autoCreateFields -value false
INFO  - 2019-06-17 23:20:42.271; org.apache.solr.util.configuration.SSLCredentialProviderFactory; Processing SSL Credential Provider chain: env;
sysprop
Created collection 'helloworld' with 1 shard(s), 1 replica(s) with config-set 'helloworld'
[bluedata@bluedata-6704 ambari-infra-solr]$
```

4.3 Verify HelloWorld collection creation in Solr Admin UI



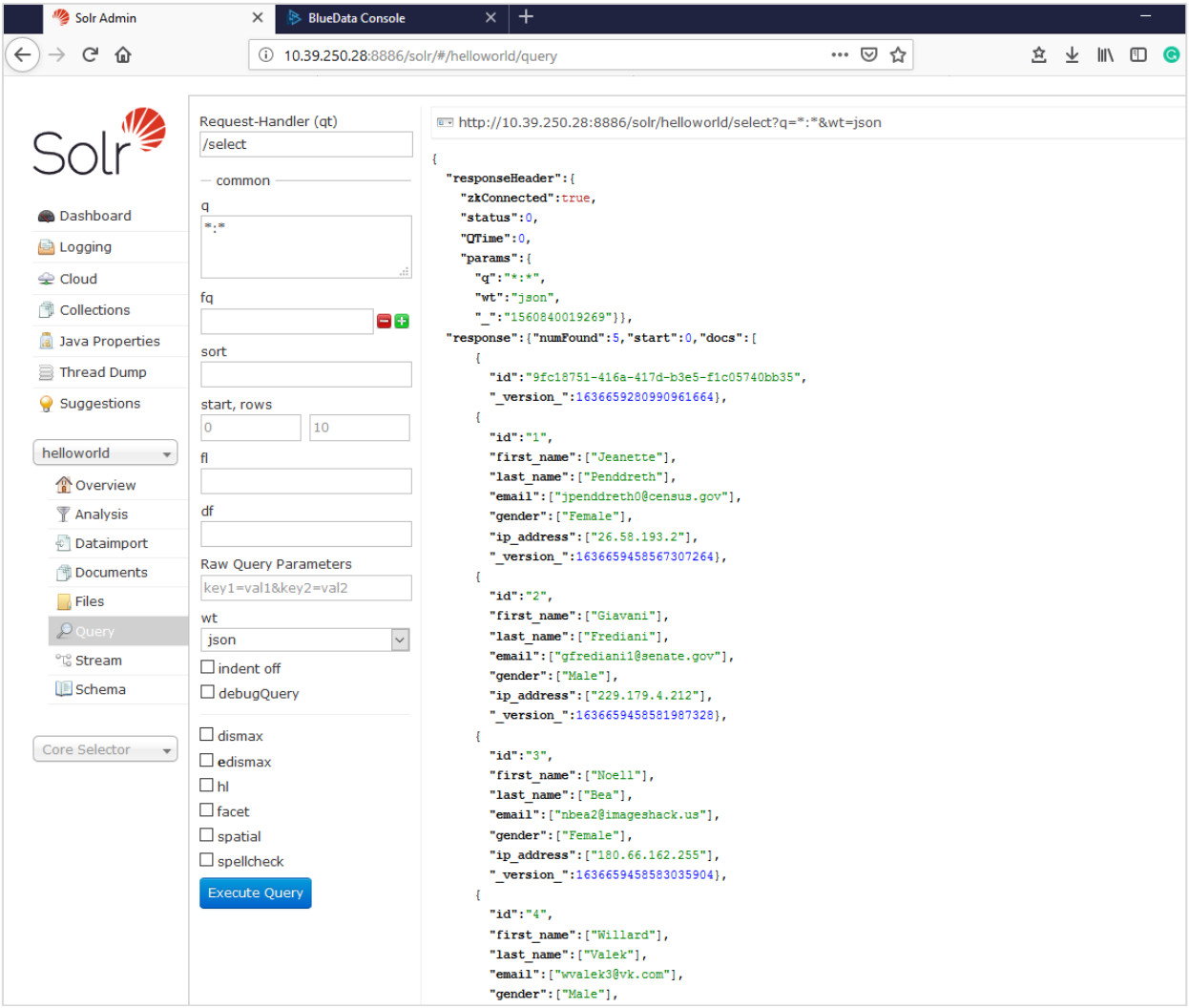
4.4 Place some example JSON data in HelloWorld collection



Perform below steps to store JSON data into HelloWorld collection:

- Select document type as JSON
- Place some example JSON data in document(s) section in HelloWorld collection and click on **Submit Document**

4.5 Fetch JSON data from HelloWorld collection



Perform below step to fetch JSON data from HelloWorld collection:

- Select wt as JSON and click on execute query

5 TESTING KAFKA

Go inside the Kafka container and follow the below steps.

5.1 Create a new Kafka topic

Create new Kafka topic inside the Kafka container.

5.2 Create a new topic

Execute the below command to create a new topic “SDS”

bin/Kafka-topics --create --zookeeper <ip address of zookeeper>:2181 --replication-factor 1 --partitions 1 --topic SDS

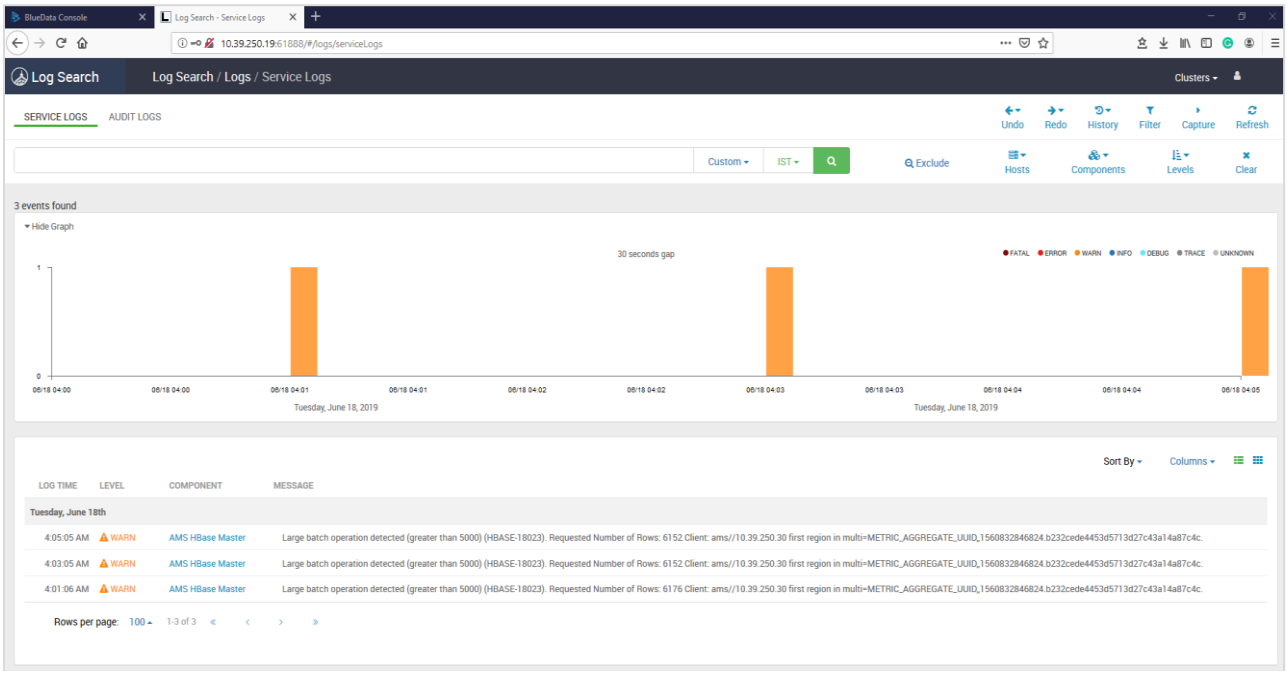
```
[bluedata@bluedata-6711 kafka]$ ls bin/
connect-distributed.sh        kafka-configs.sh             kafka-delegation-tokens.sh  kafka-preferred-replica-elec
connect-standalone.sh         kafka-console-consumer.sh    kafka-delete-records.sh     kafka-producer-perf-test.sh
kafka                         kafka-console-producer.sh    kafka-dump-log.sh           kafka-reassign-partitions.sh
kafka-acls.sh                 kafka-consumer-groups.sh     kafka-log-dirs.sh           kafka-replica-verification.s
kafka-broker-api-versions.sh  kafka-consumer-perf-test.sh  kafka-mirror-maker.sh       kafka-run-class.sh
[bluedata@bluedata-6711 kafka]$
[bluedata@bluedata-6711 kafka]$ ./bin/kafka-topics.sh --create --zookeeper 10.39.250.17,10.39.250.30,10.39.250.28:2
181 --replication-factor 1 --partitions 1 --topic SDS
Created topic "SDS".
[bluedata@bluedata-6711 kafka]$
```

6 TESTING LOG SEARCH

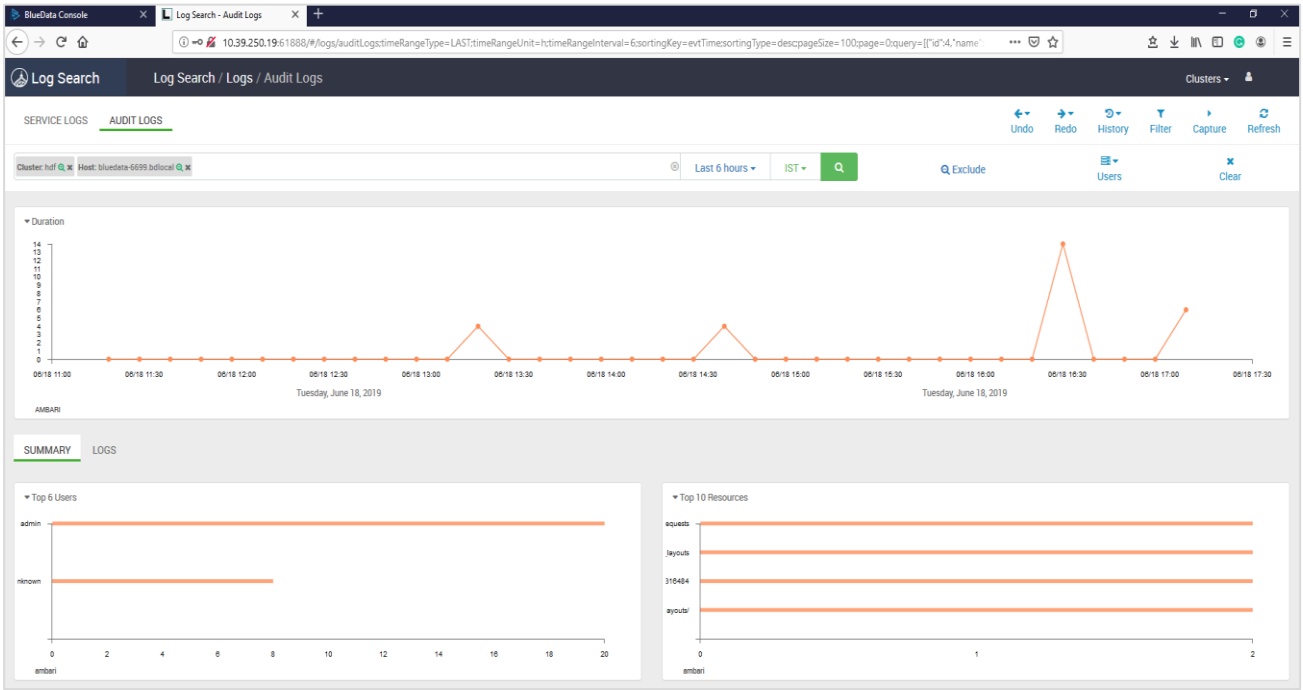
Go to the Log search UI in HDF cluster, enter username/password – admin/admin.

In Log search you can track service and audit logs for HDF component.

6.1 Log search dashboard for service logs

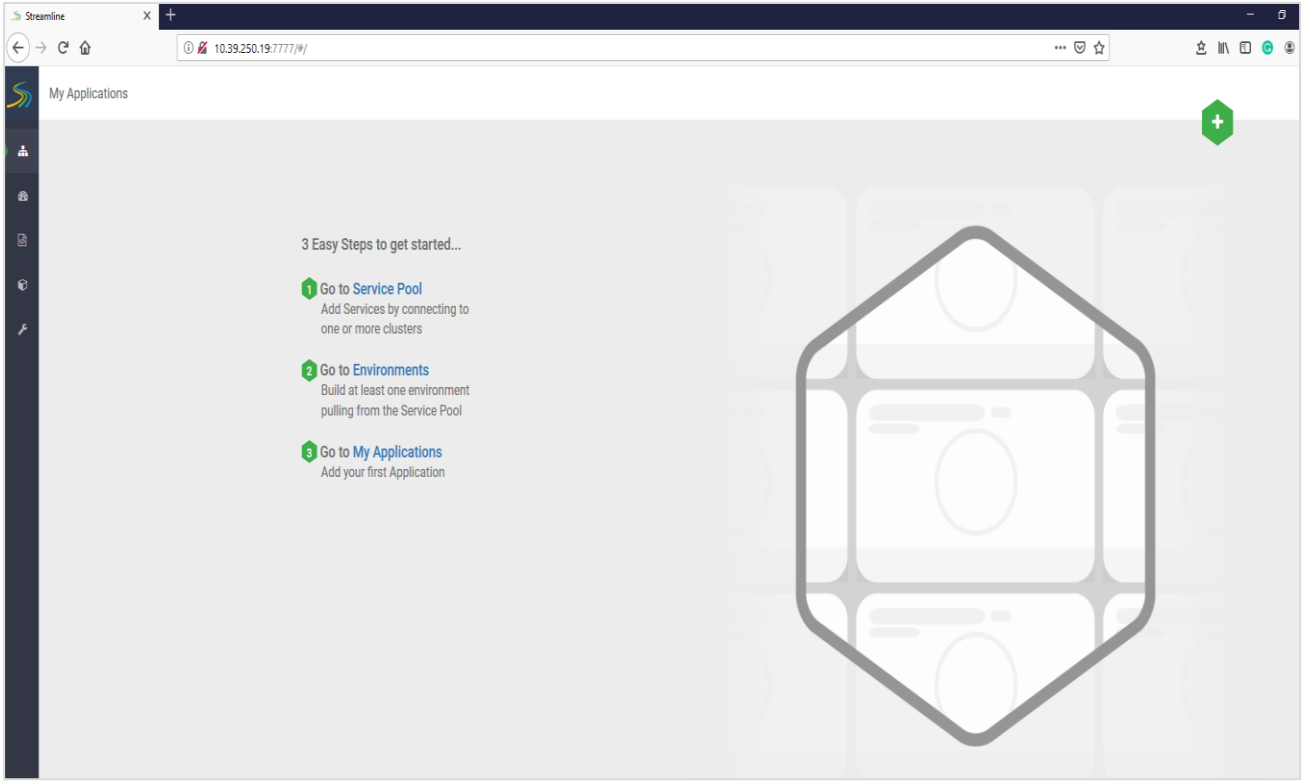


6.2 Log search dashboard for audit logs

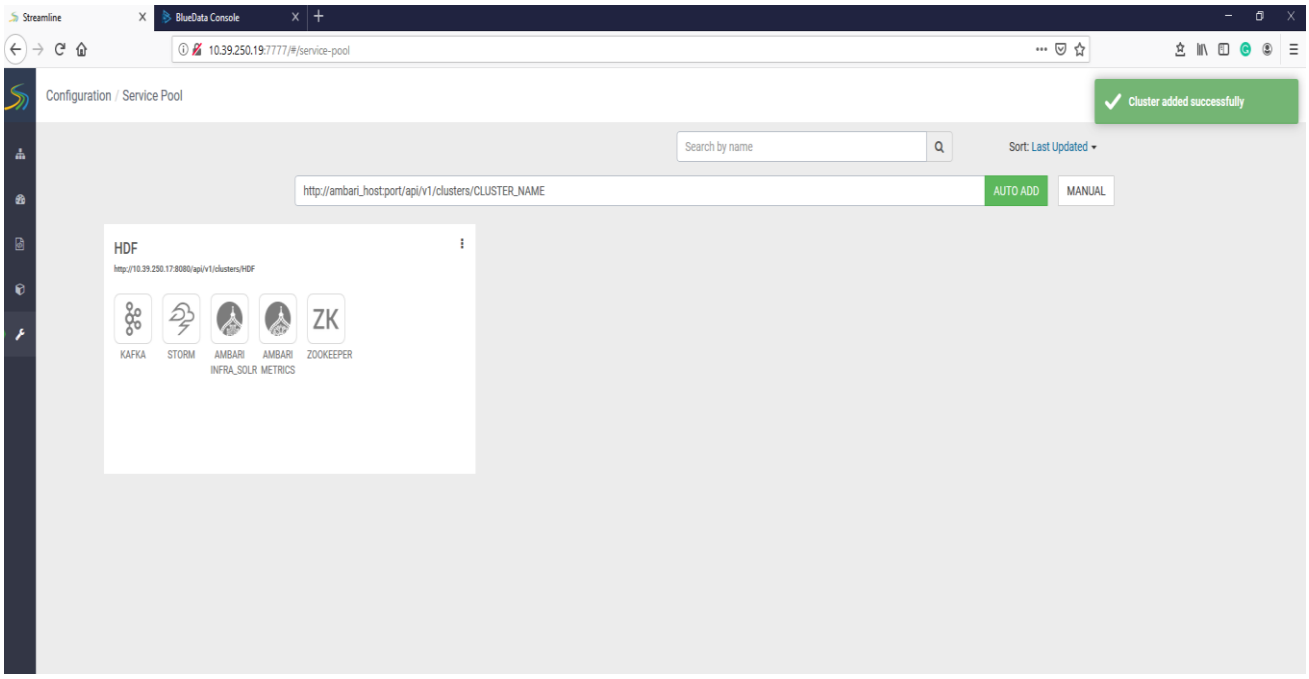


7 TESTING STREAMING ANALYTICS MANAGER

7.1 Go to the Streamline UI



7.2 Create a service pool

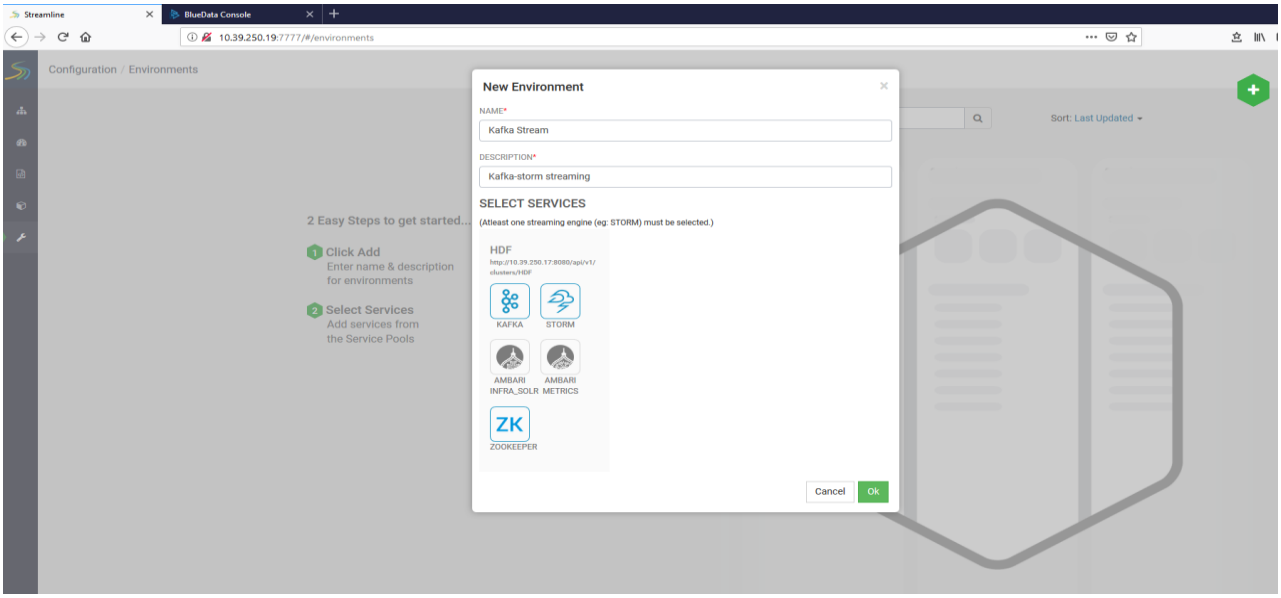


Perform below steps to create a service pool for HDF Cluster:

Enter url for HDF cluster into url bar and click on AUTO ADD button.

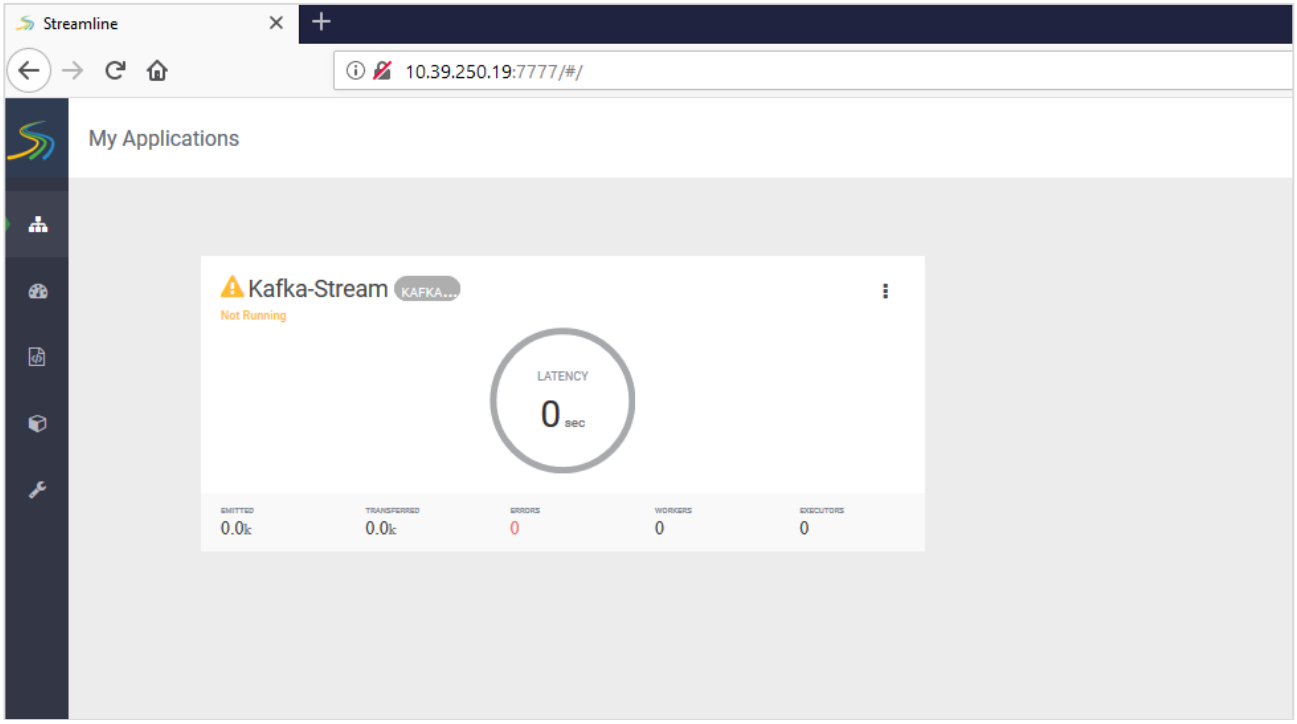
(Ex.: http://<ip address of ambari server>:8080/api/v1/clusters/HDF)

7.3 Create a new environment for HDF cluster from service pool



7.4 Create a new application for your environment

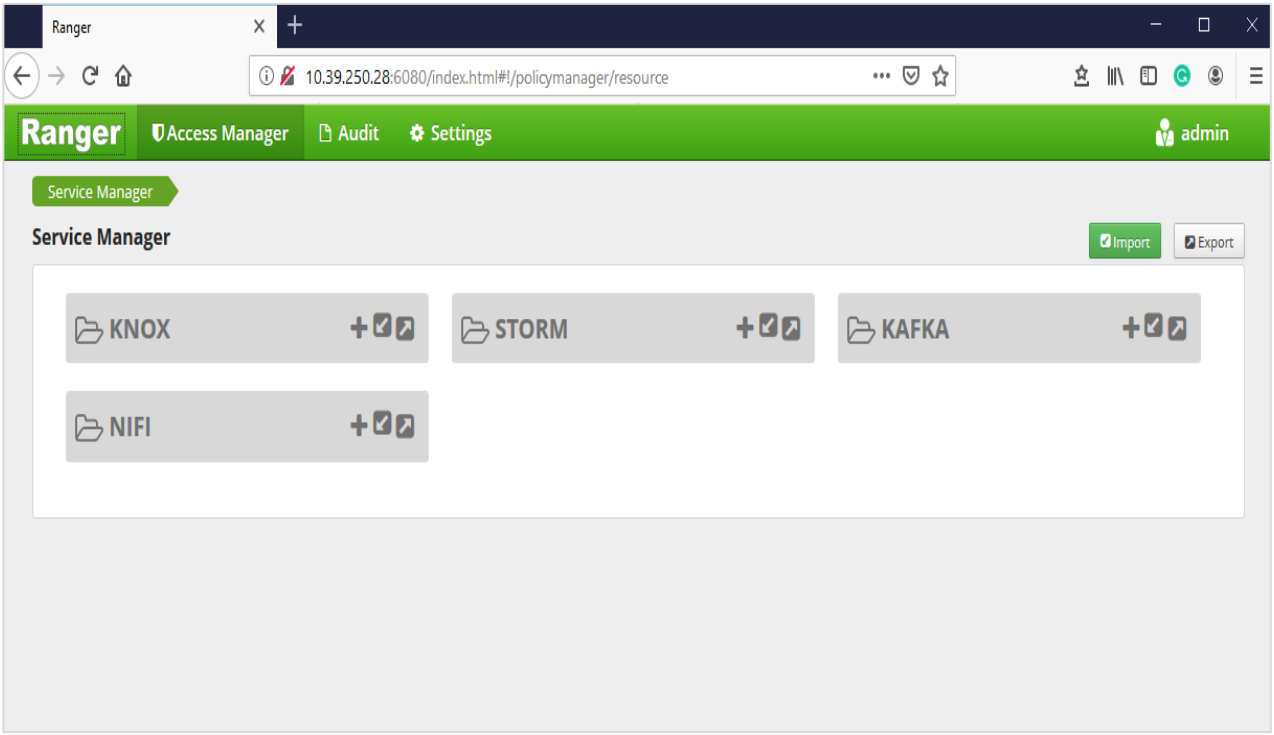
Here you can create and design your application. After running your appilcation you can verify your application under application section.

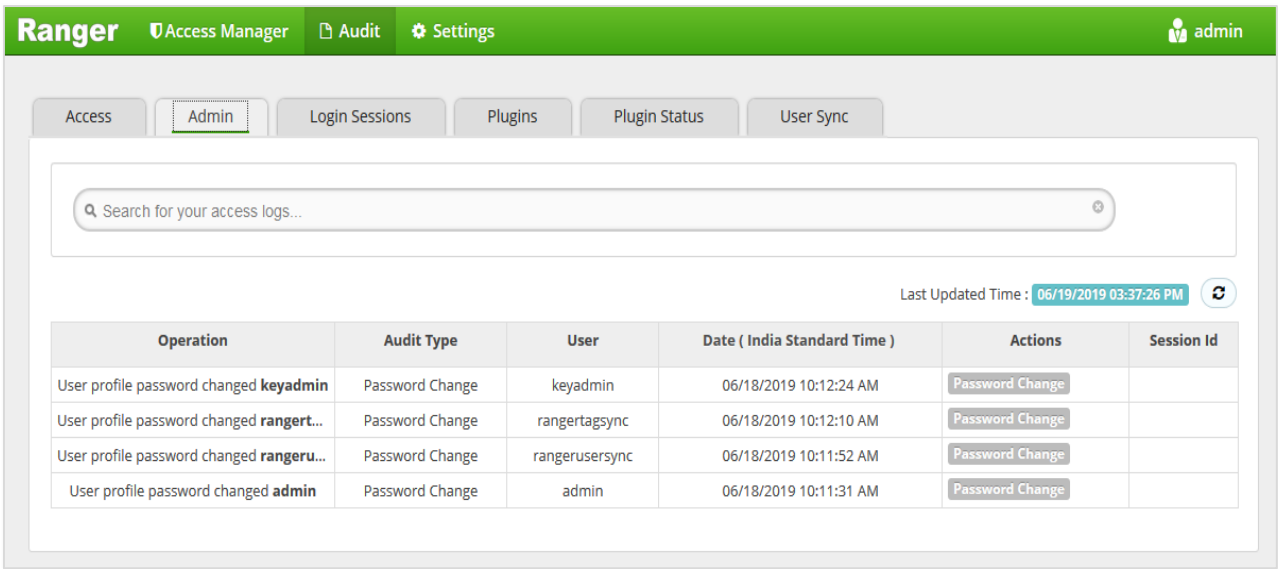

Streamline
10.39.250.19:7777/#/
My Applications
Kafka-Stream
KAFKA...
Not Running
LATENCY
0 sec
EMITTED
0.0k
TRANSFERRED
0.0k
ERRORS
0
WORKERS
0
EXECUTORS
0

8 TESTING RANGER

Go to the Ranger UI in HDF cluster, enter username and password in login screen.

Service manager is available for Knox, Storm, Kafka and NIFI services. With the help of Ranger, you can create resource and tag based polices for different-different services.





9 TESTING STORM

Here we will create a WordCount topology for Storm. We will download a WordCount example and create a WordCount topology.

9.1 Download Storm WordCount example

Execute the below command to download Storm WordCount example

```
git clone https://github.com/ADMIcloud/examples.git
```

```
[bluedata@bluedata-6896 ~]$
[bluedata@bluedata-6896 ~]$ git clone https://github.com/ADMIcloud/examples.git
Cloning into 'examples'...
remote: Enumerating objects: 152, done.
remote: Total 152 (delta 0), reused 0 (delta 0), pack-reused 152
Receiving objects: 100% (152/152), 34.88 KiB | 0 bytes/s, done.
Resolving deltas: 100% (34/34), done.
[bluedata@bluedata-6896 ~]$
[bluedata@bluedata-6896 ~]$
```

9.2 Change directory to the storm-example

```
cd examples/storm-example/
```

```
[bluedata@bluedata-6896 ~]$ ls
examples  vagent.bin
[bluedata@bluedata-6896 ~]$ cd examples/storm-example/
[bluedata@bluedata-6896 storm-example]$
[bluedata@bluedata-6896 storm-example]$
[bluedata@bluedata-6896 storm-example]$
```

9.3 Building jar

Execute the below command to build jar for Storm WordCount example.

```
mvn clean install
```

```
[bluedata@bluedata-6896 storm-example]$
[bluedata@bluedata-6896 storm-example]$ mvn clean install
[INFO] Scanning for projects...
[INFO]
[INFO] ------------------------------------------------------------------------
[INFO] Building storm-example 1.0
[INFO] ------------------------------------------------------------------------
[INFO]
[INFO] --- maven-clean-plugin:2.4.1:clean (default-clean) @ storm-example ---
[INFO]
```

Note: After executing this command a new directory target will be created where you can find Strom

WordCount example jar file. Use ls command to verify.

```
[bluedata@bluedata-6896 storm-example]$ ls
pom.xml  src  target
[bluedata@bluedata-6896 storm-example]$
[bluedata@bluedata-6896 storm-example]$
[bluedata@bluedata-6896 storm-example]$ ls target/
archive-tmp  classes  generated-sources  maven-archiver  maven-status  storm-example-1.0.jar  storm-example-1.0-jar-with-dependencies.jar  surefire
[bluedata@bluedata-6896 storm-example]$
```

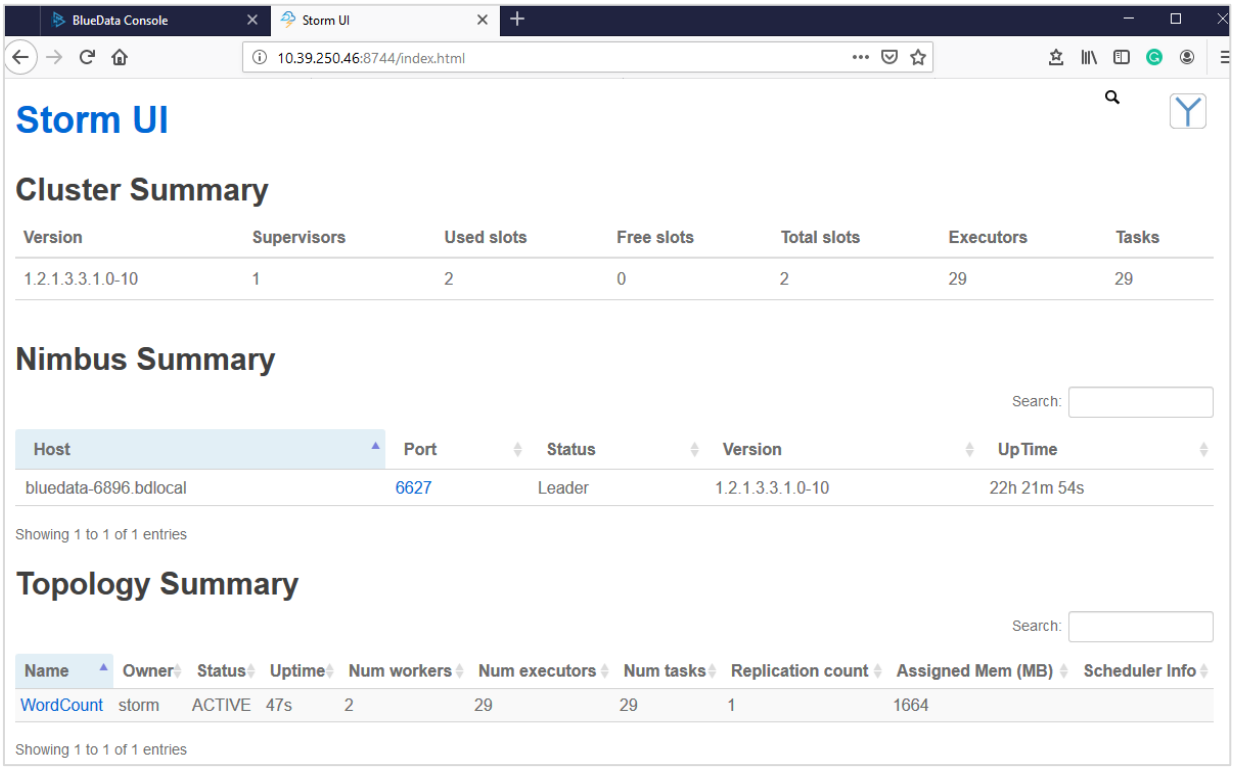
9.4 Create topology for Storm WordCount example

Execute the below command to create topology for Storm WordCount example.

```
./bin/storm jar /home/bluedata/examples/storm-example/target/storm-example-1.0-jar-with-dependencies.jar admicloud.storm.WordCount.WordCountTopology WordCount
```

```
[bluedata@bluedata-6896 storm]$ ./bin/storm jar /home/bluedata/examples/storm-example/target/storm-example-1.0-jar-with-dependencies.jar admicloud.s
torm.wordcount.WordCountTopology WordCount
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/usr/hdf/3.3.1.0-10/storm/lib/log4j-slf4j-impl-2.8.2.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/home/bluedata/examples/storm-example/target/storm-example-1.0-jar-with-dependencies.jar!/org/slf4j/impl/StaticLog
gerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.apache.logging.slf4j.Log4jLoggerFactory]
Running: /usr/java/default/bin/java -Ddaemon.name= -Dstorm.options= -Dstorm.home=/usr/hdf/3.3.1.0-10/storm -Dstorm.log.dir=/var/log/storm -Djava.lib
rary.path=/usr/local/lib:/opt/local/lib:/usr/lib -Dstorm.conf.file= -cp /usr/hdf/3.3.1.0-10/storm/*:/usr/hdf/3.3.1.0-10/storm/lib/*:/usr/hdf/3.3.1.0
-10/storm/extlib/*:/home/bluedata/examples/storm-example/target/storm-example-1.0-jar-with-dependencies.jar:/usr/hdf/current/storm-supervisor/conf:/
usr/hdf/3.3.1.0-10/storm/bin -Dstorm.jar=/home/bluedata/examples/storm-example/target/storm-example-1.0-jar-with-dependencies.jar -Dstorm.dependency
.jars= -Dstorm.dependency.artifacts={} admicloud.storm.wordcount.WordCountTopology WordCount
SLF4J: Class path contains multiple SLF4J bindings.
SLF4J: Found binding in [jar:file:/usr/hdf/3.3.1.0-10/storm/lib/log4j-slf4j-impl-2.8.2.jar!/org/slf4j/impl/StaticLoggerBinder.class]
SLF4J: Found binding in [jar:file:/home/bluedata/examples/storm-example/target/storm-example-1.0-jar-with-dependencies.jar!/org/slf4j/impl/StaticLog
gerBinder.class]
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanation.
SLF4J: Actual binding is of type [org.apache.logging.slf4j.Log4jLoggerFactory]
741  [main] WARN  o.a.s.u.Utils - STORM-VERSION new 1.2.1.3.3.1.0-10 old null
777  [main] INFO  o.a.s.StormSubmitter - Generated ZooKeeper secret payload for MD5-digest: -6269264375147352907:-8793272926567057743
894  [main] INFO  o.a.s.u.NimbusClient - Found leader nimbus : bluedata-6896.bdlocal:6627
918  [main] INFO  o.a.s.s.a.AuthUtils - Got AutoCreds []
921  [main] INFO  o.a.s.u.NimbusClient - Found leader nimbus : bluedata-6896.bdlocal:6627
941  [main] INFO  o.a.s.StormSubmitter - Uploading dependencies - jars...
942  [main] INFO  o.a.s.StormSubmitter - Uploading dependencies - artifacts...
942  [main] INFO  o.a.s.StormSubmitter - Dependency Blob keys - jars : [] / artifacts : []
947  [main] INFO  o.a.s.StormSubmitter - Uploading topology jar /home/bluedata/examples/storm-example/target/storm-example-1.0-jar-with-dependencies
.jar to assigned location: /hadoop/storm/nimbus/inbox/stormjar-a9a53b08-926d-4bb0-a096-08654df6cbad.jar
Start uploading file '/home/bluedata/examples/storm-example/target/storm-example-1.0-jar-with-dependencies.jar' to '/hadoop/storm/nimbus/inbox/storm
jar-a9a53b08-926d-4bb0-a096-08654df6cbad.jar' (165697 bytes)
[==================================================] 165697 / 165697
File '/home/bluedata/examples/storm-example/target/storm-example-1.0-jar-with-dependencies.jar' uploaded to '/hadoop/storm/nimbus/inbox/stormjar-a9a
53b08-926d-4bb0-a096-08654df6cbad.jar' (165697 bytes)
967  [main] INFO  o.a.s.StormSubmitter - Successfully uploaded topology jar to assigned location: /hadoop/storm/nimbus/inbox/stormjar-a9a53b08-926d-
4bb0-a096-08654df6cbad.jar
967  [main] INFO  o.a.s.StormSubmitter - Submitting topology WordCount in distributed mode with conf {"storm.zookeeper.topology.auth.scheme":"digest
","storm.zookeeper.topology.auth.payload":"-6269264375147352907:-8793272926567057743","topology.workers":3,"topology.debug":true}
967  [main] WARN  o.a.s.u.Utils - STORM-VERSION new 1.2.1.3.3.1.0-10 old 1.2.1.3.3.1.0-10
1201 [main] INFO  o.a.s.StormSubmitter - Finished submitting topology: WordCount
```

9.5 Verify WordCount topology from Storm UI



Note: Under Topology Summary WordCount topology is created.