# TP3
## Twitter Analytics with Hadoop

**What's the difference between TP2 and TP3 ?**

- With the TP2, you work with a data Warehouse. Data come from a cloudant noSQL (couchDB) DB. The data process was done with R program. Several matrix of solving are needed to produce an output visualization.
- With TP3, you don't use a DB. The Twitter stream is captured into a file on a HDFS. Further, functions from BigInsights are applied on the file to extract data to work with. After, final data are analyzed with hadoop to produce a dataViz.

**Goal :** Try to find trends into tweets**.**

Solution : Make an application with node JS, node RED, IBM HDFS, IBM insights

**You need :**

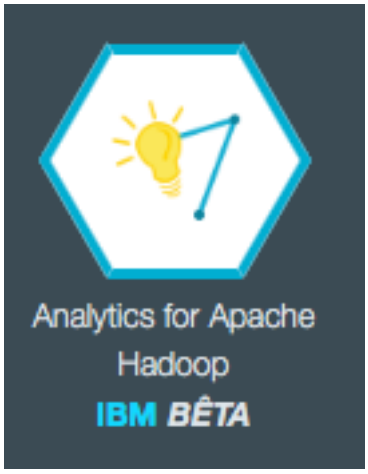
- 10 minutes to build an application to produce dataViz solution ! with BigInsights
- Non stop twitter public stream stored into a file an a HDFS.
- No infrastructure to deploy !
- No code to produce !
- That's bluemix solution ! Let's start !

**1. Create a nodeRED starter application**

Search in boilerplates !

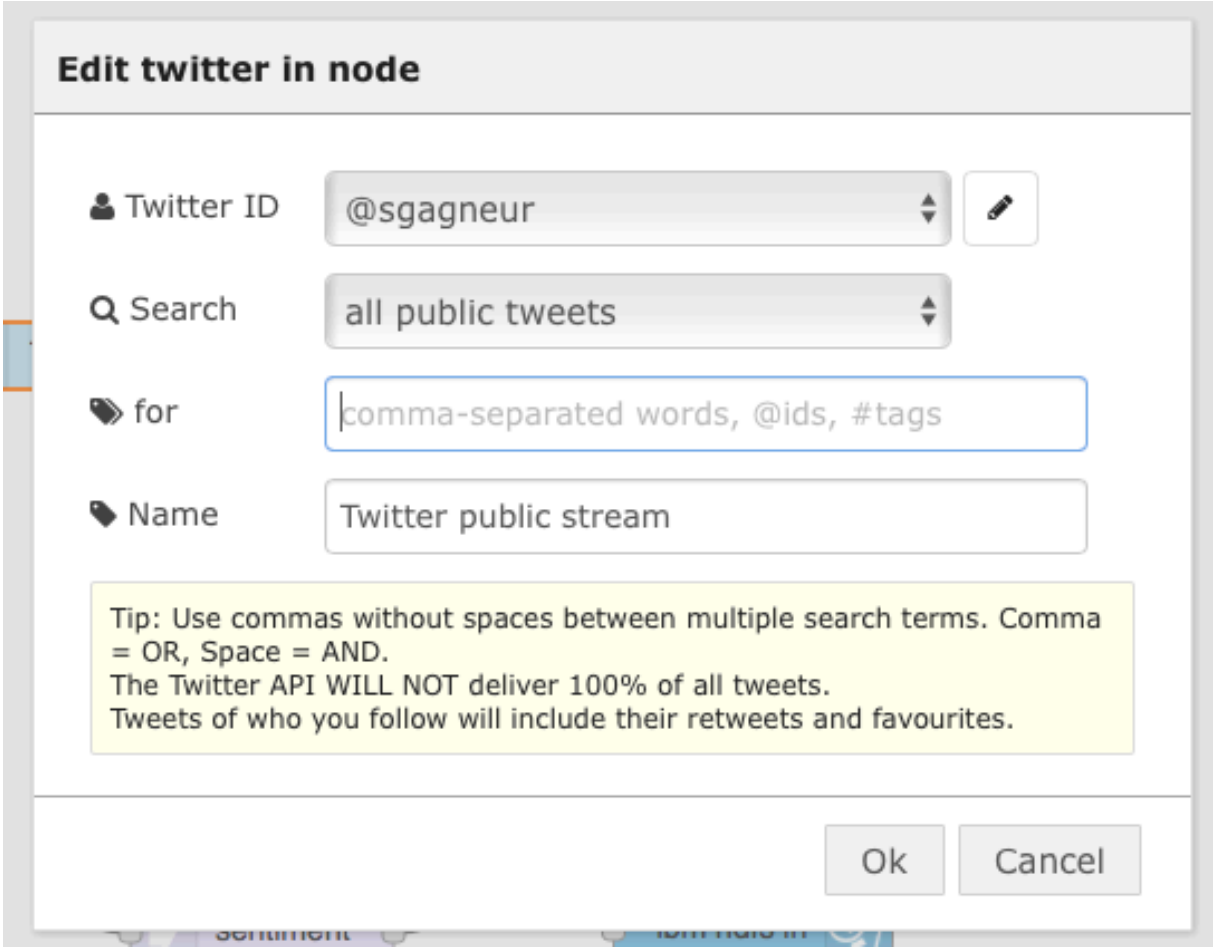
**2. Add a service**


Add IBM Analytics Hadoop




**3. Add twitter service**

Go to nodeRED flow editor, and add social function « twitter »

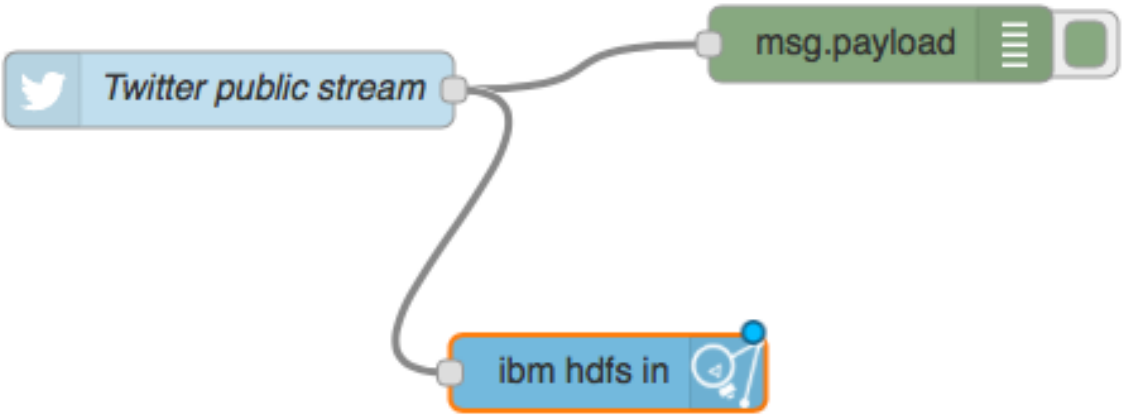



« for » textbox can store comma-separated words, @id, #tags, so you can write words, counts, or hashtags that you want retrieve into tweets. It's just like a first filter.

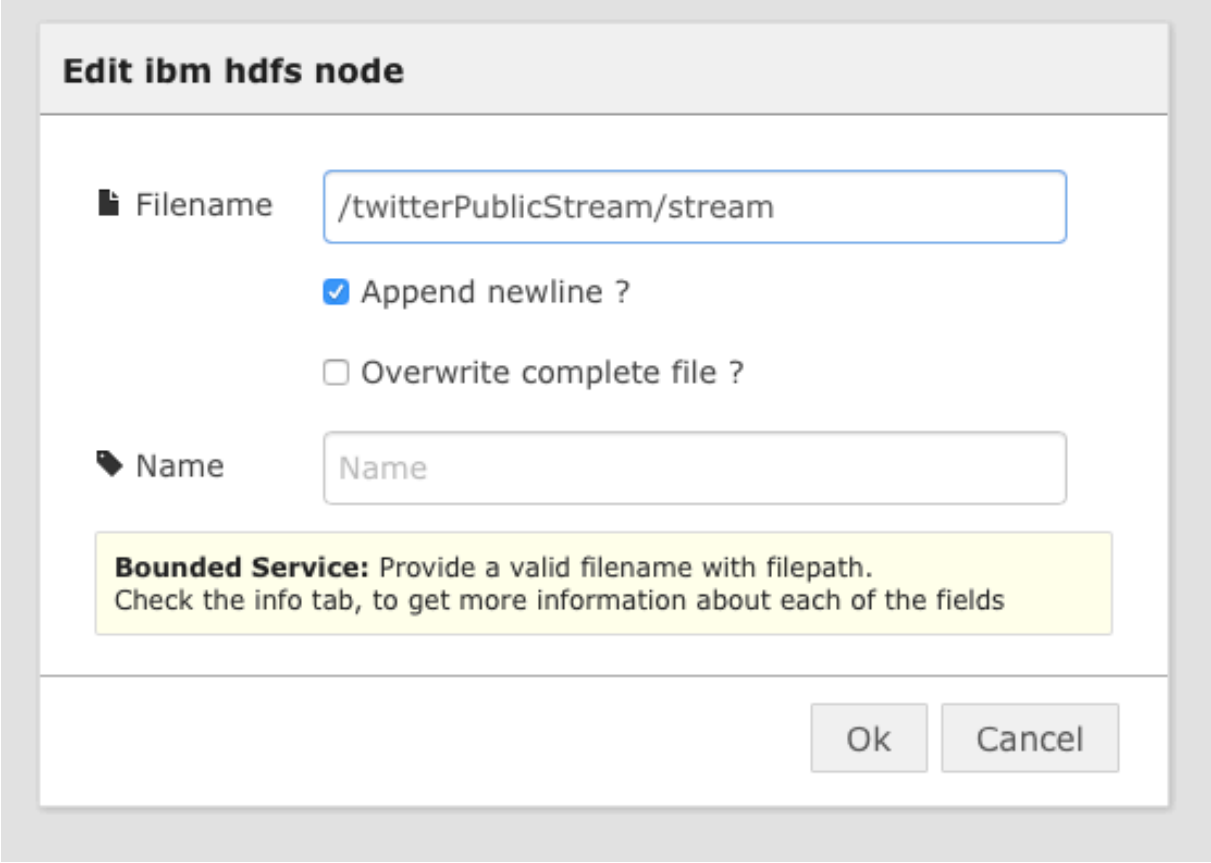
You can connect debug function to see the twitter public stream

Add, IBM hdfs from storage section :

Now, your flow editor must look like :




The IBM HDFS component must have following properties :




Be careful : the filename must start with / !!!!!! it's VERY IMPORTANT.
The « stream » file will be stored in the following folder : /usr/biblumix/twitter Public/.

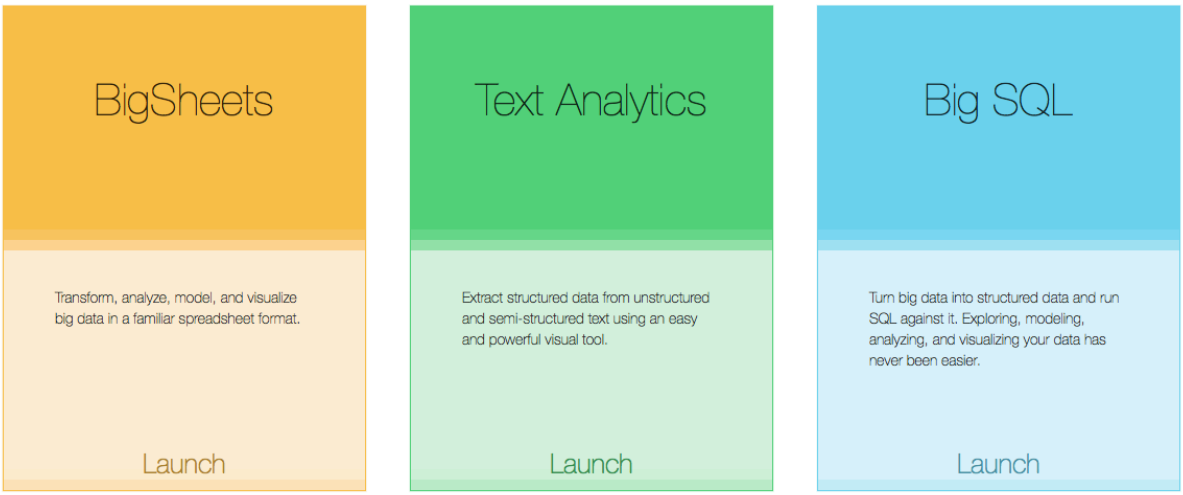
**4. Use Hadoop**

Go to your app.
Press Launch Button (select Analytics fo Apache Hadoop service)

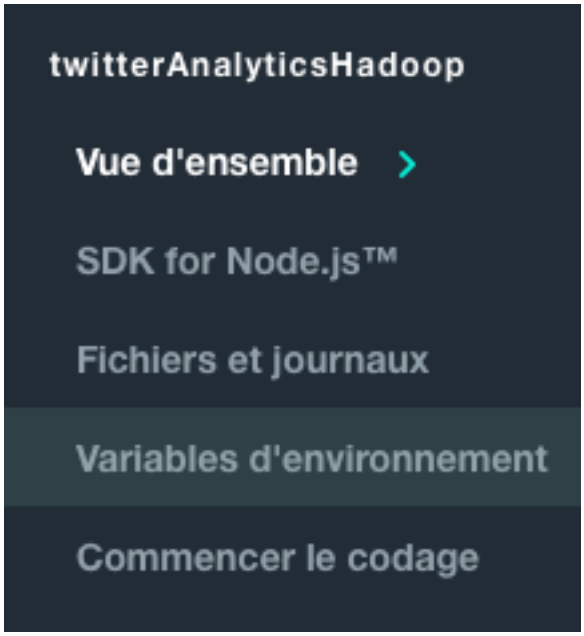

After launch, BigInsights Start page must appear !

If start page can't be open, you must solve the problem.

**5. How to open BigInsights Start page ?**




If a problem exists go to VCAP variables and read available URL for BigInsights :



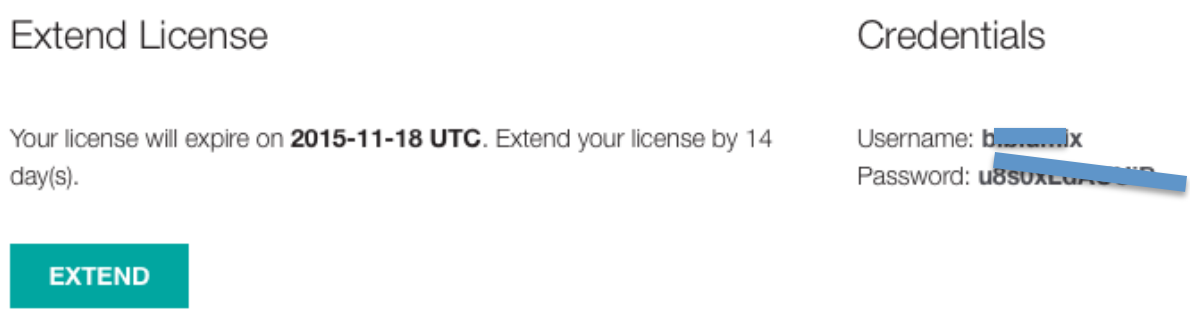
Available URL to go to BigInsights :

"BigInsightsHomeUrl": https://bi-hadoop-prod-2081.services.dal.bluemix.net:8443/gateway/default/BigInsightsWeb/index.html

Put ID and Password, you can read them in VCAP values :

"userid": "biblumix",
"password": "balbalfafe",

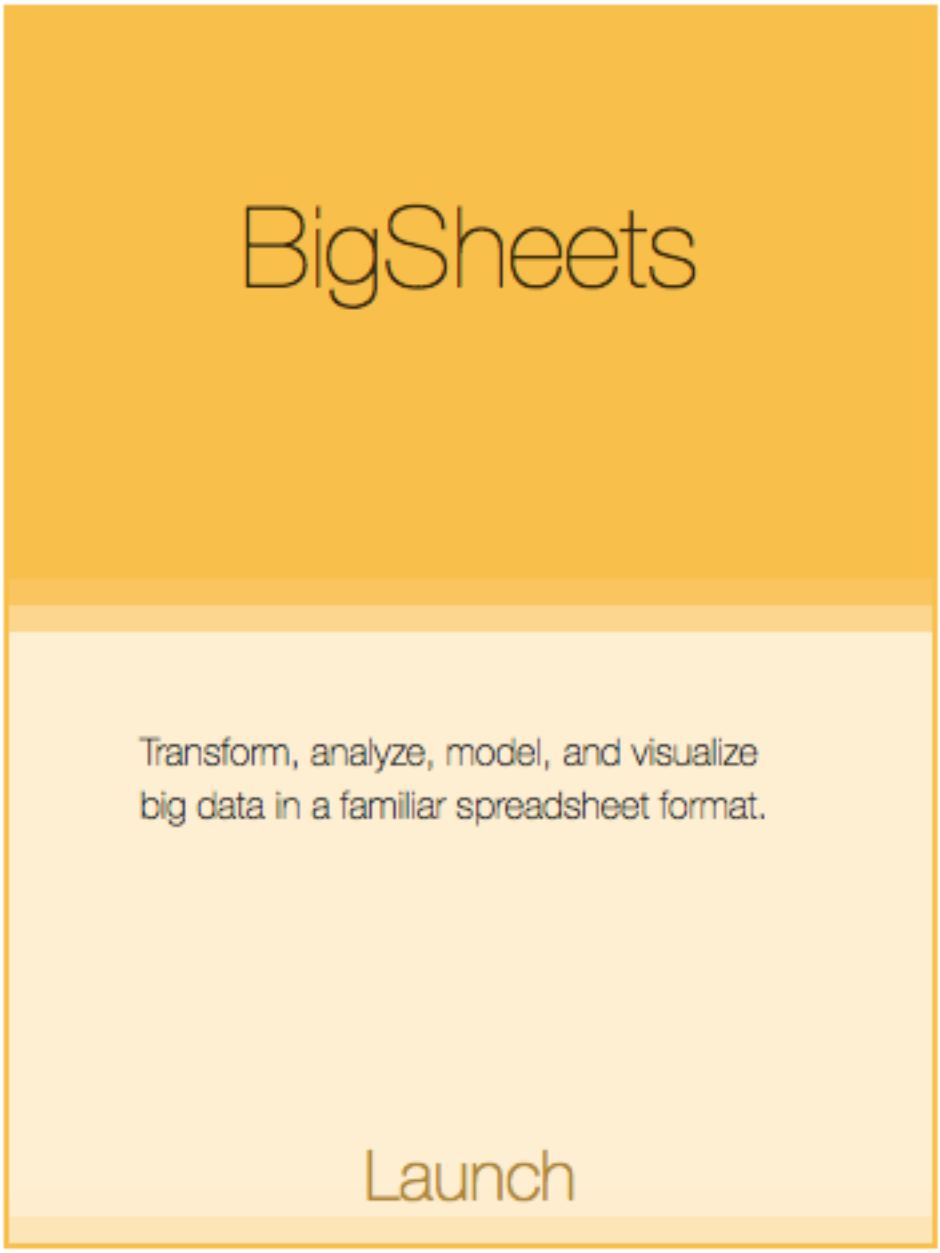
Or in the start page on the service.



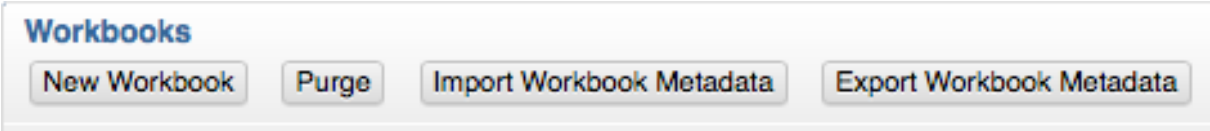

**6. Manage HDFS**

Open BigInsights start page :

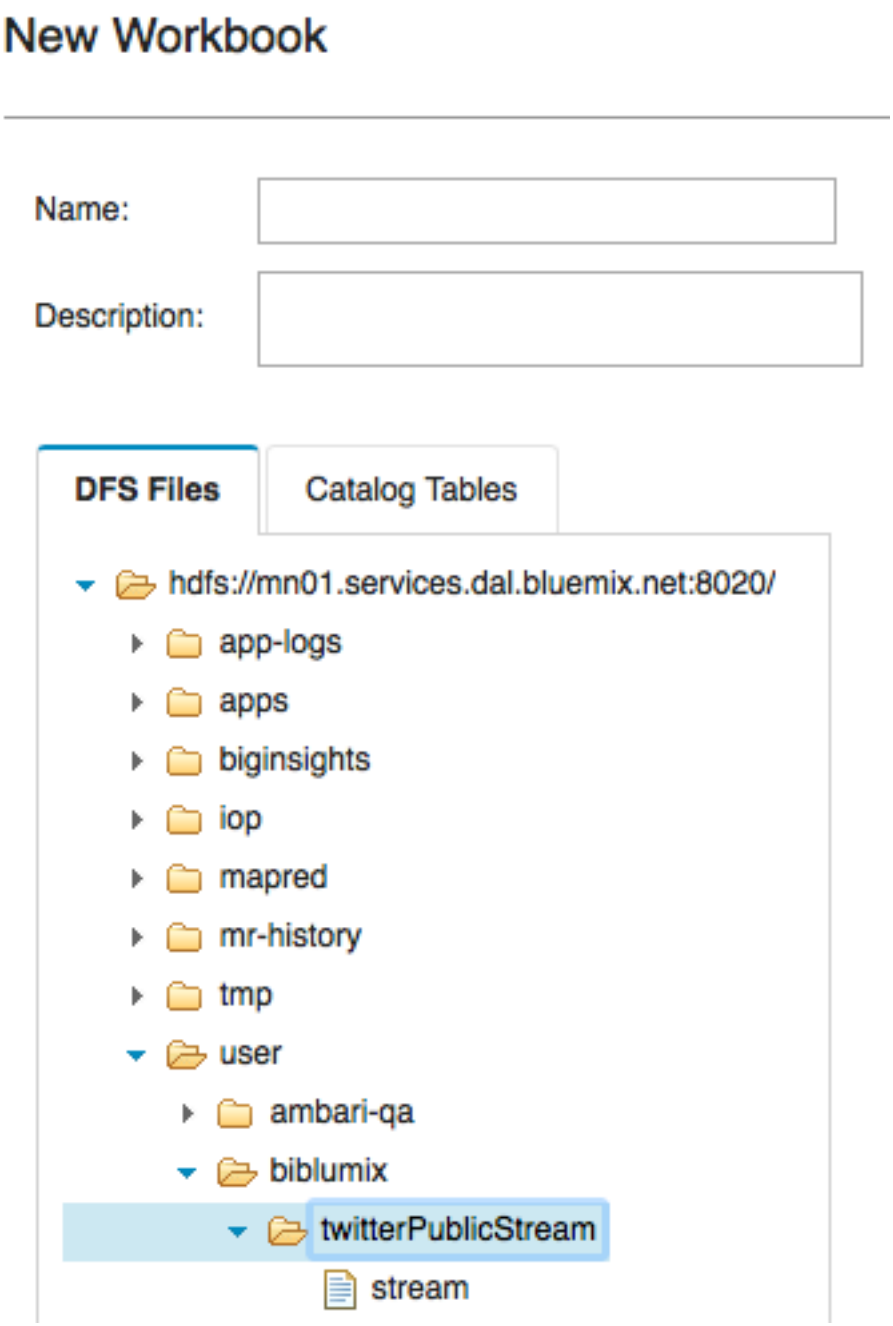
Launch BigSheets :



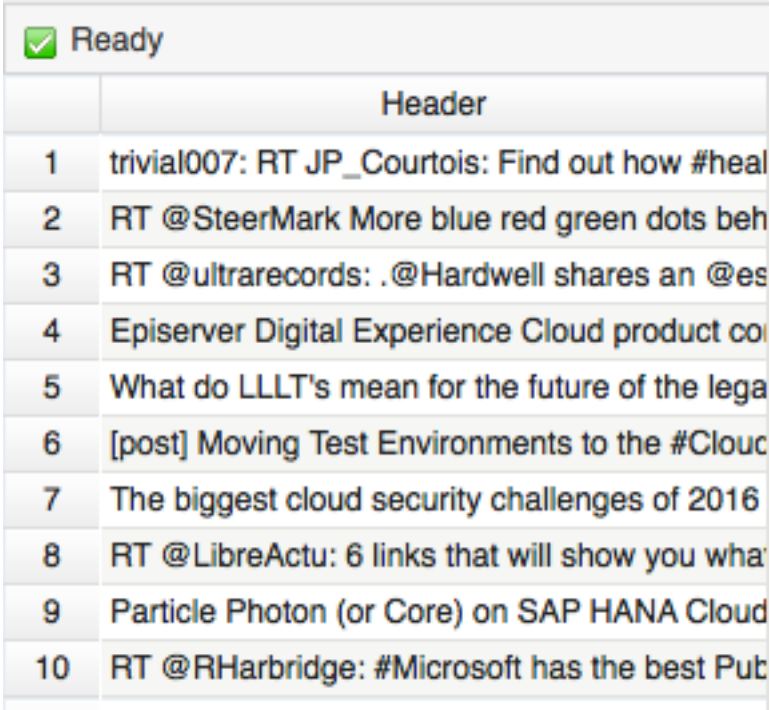

create a new workbook :




Select your file in HDFS :



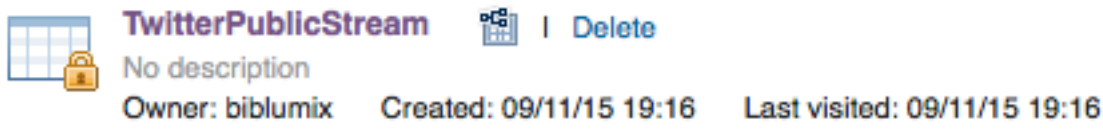

Now, you can see data from twitter :



Ready

| | Header |
|---|---|
| 1 | trivial007: RT JP_Courtois: Find out how #heal |
| 2 | RT @SteerMark More blue red green dots beh |
| 3 | RT @ultrarecords: .@Hardwell shares an @es |
| 4 | Episerver Digital Experience Cloud product co |
| 5 | What do LLLT's mean for the future of the lega |
| 6 | [post] Moving Test Environments to the #Clouc |
| 7 | The biggest cloud security challenges of 2016 |
| 8 | RT @LibreActu: 6 links that will show you wha |
| 9 | Particle Photon (or Core) on SAP HANA Cloud |
| 10 | RT @RHarbridge: #Microsoft has the best Pub |

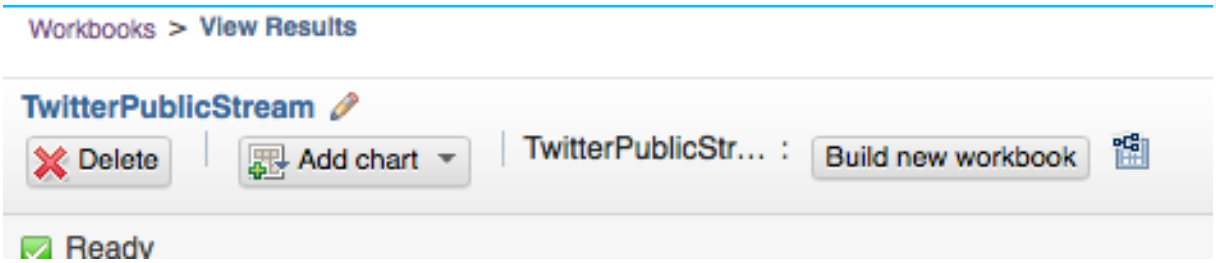
Save the workbook with a name :



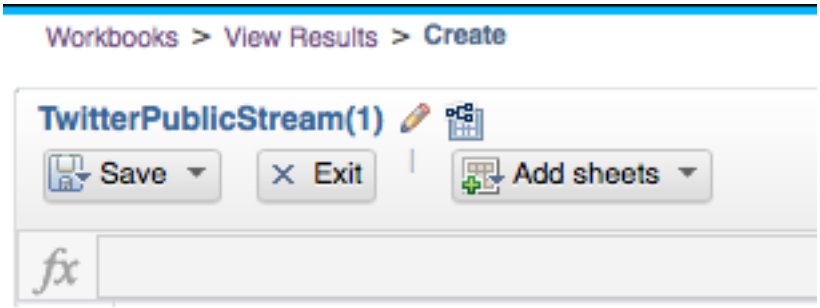

**7. Analyze**

We will use a Watson/NLP (Natural Language Processing). It's a leverage for extracting company names out of the tweets.

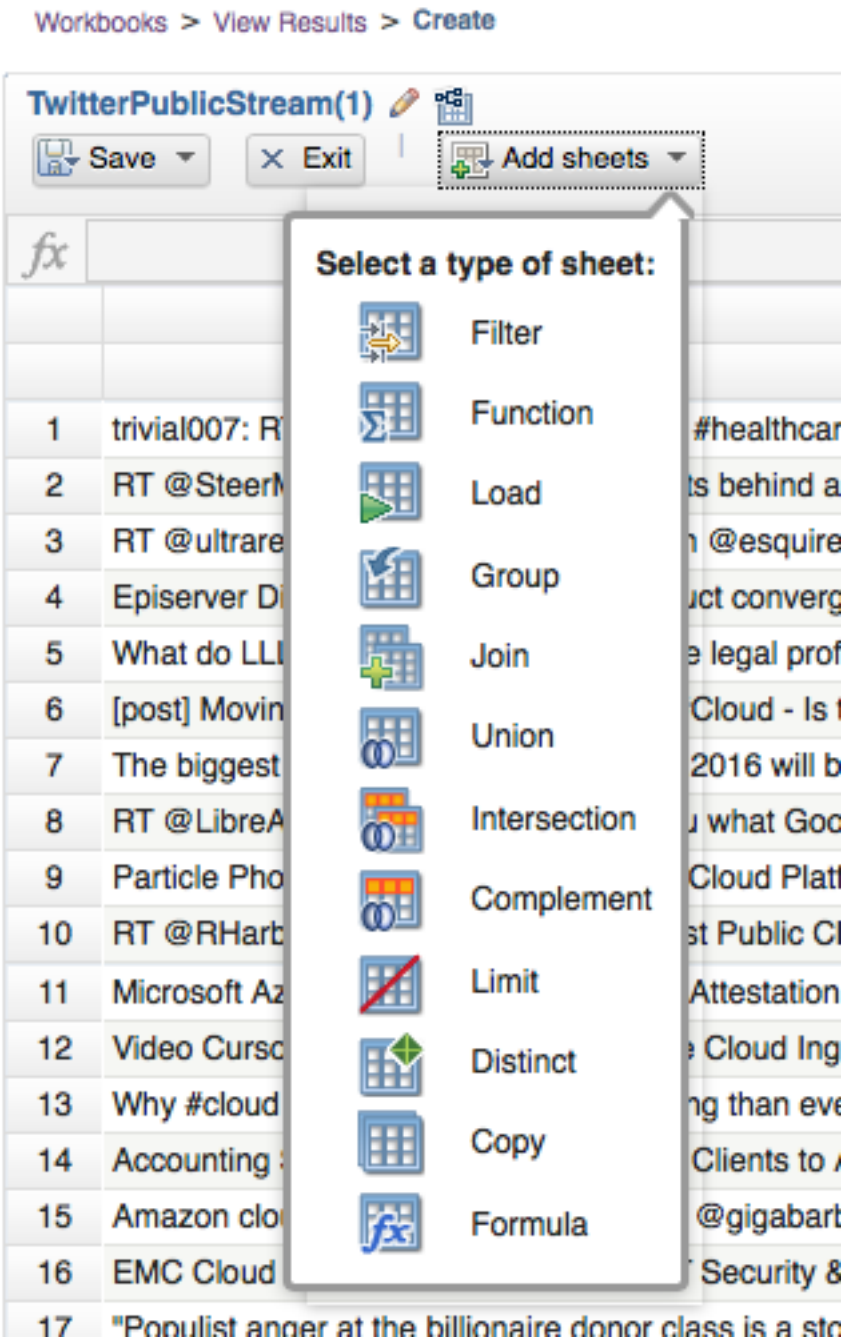
Open your workbook :



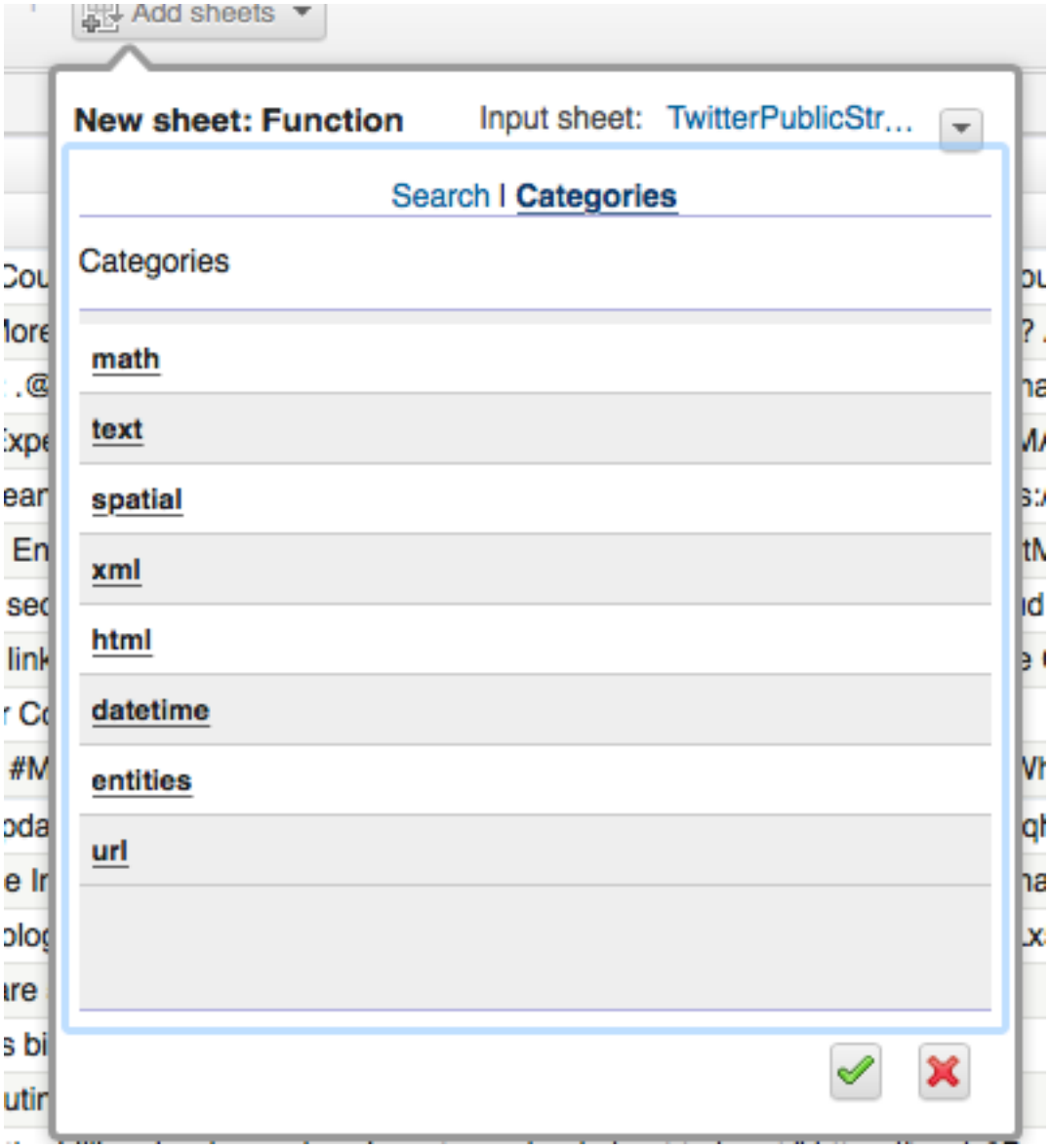

Buid a new workBook :



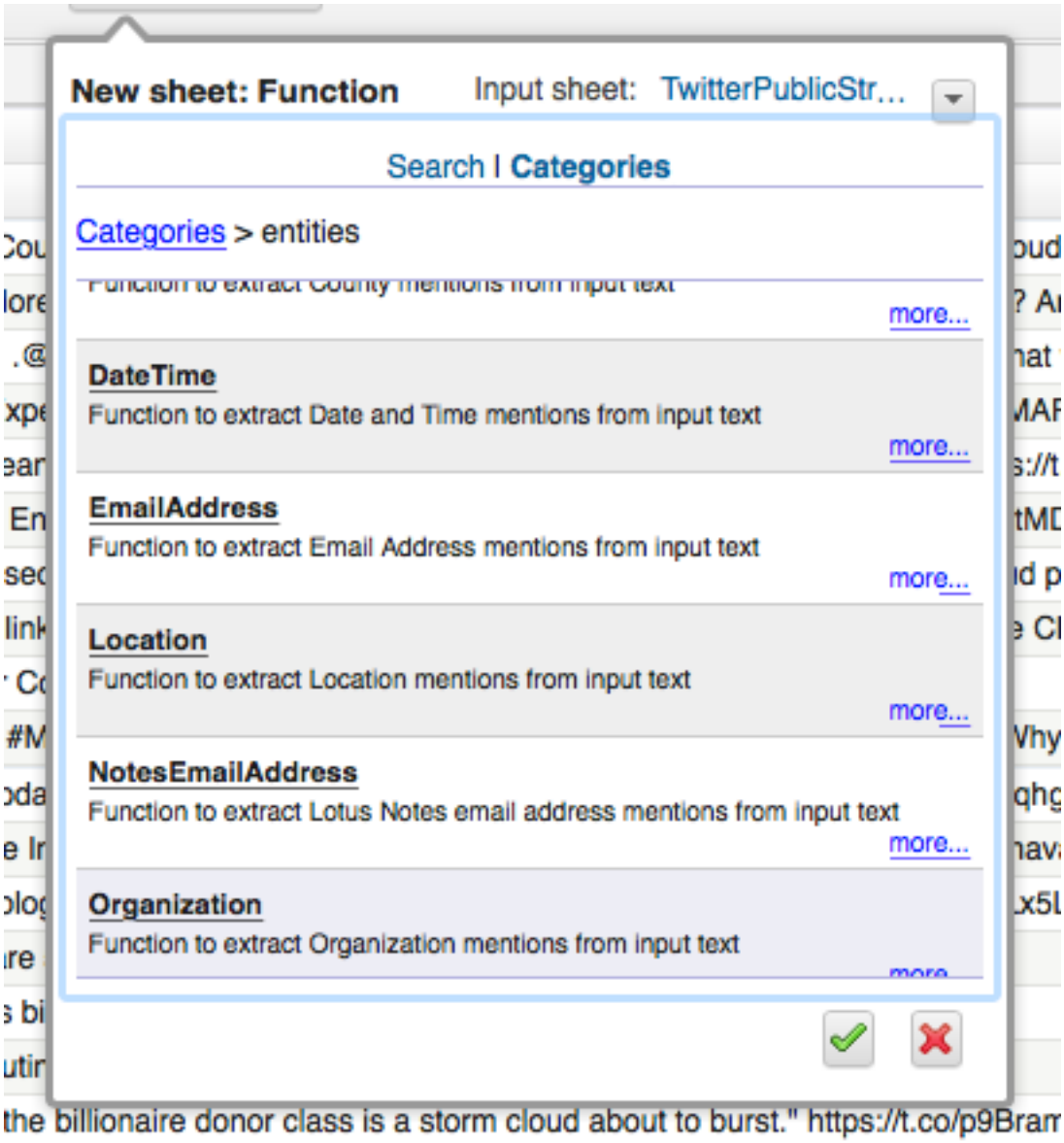

Add new sheets :



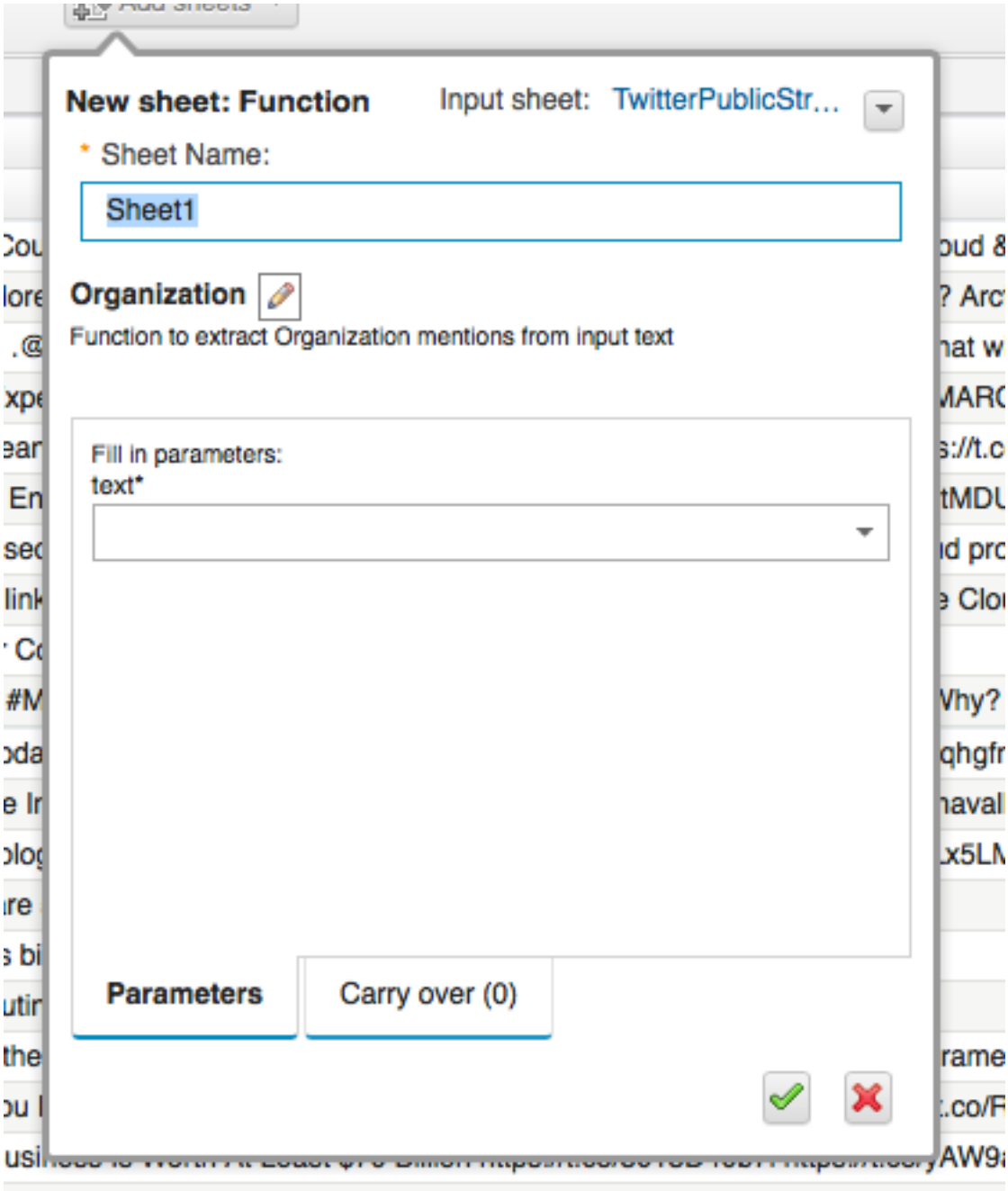

Choose Functions :



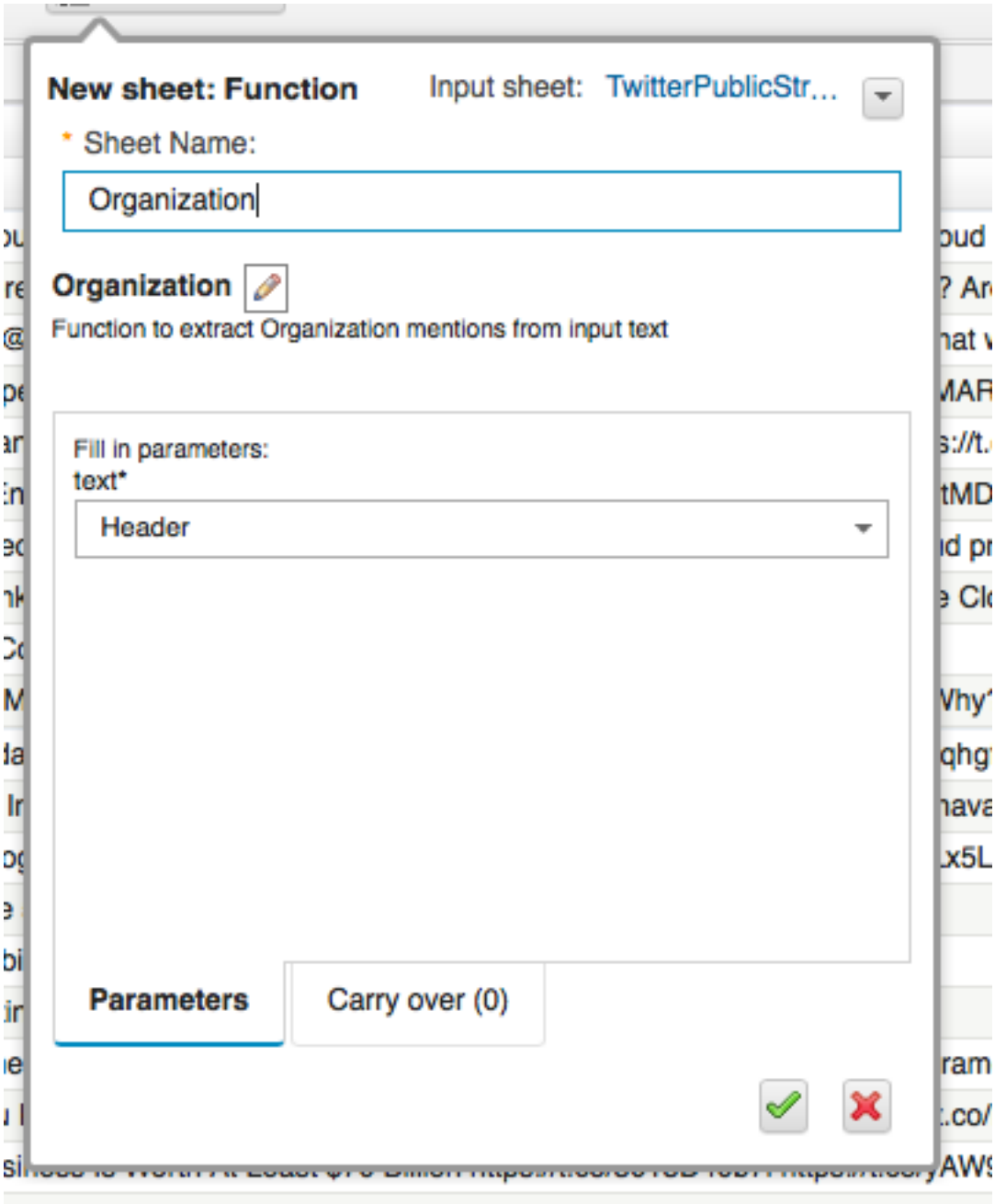

Choose entities :




Choose Organization :




You can name the Sheet :

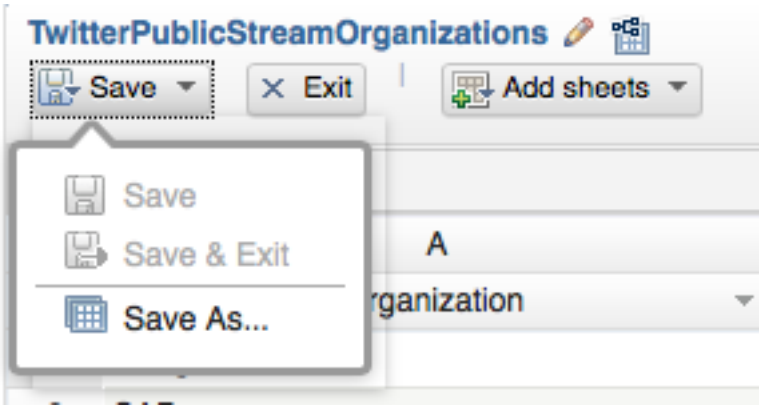



select Header as "Fill in parameter" and accept by clicking on the green hook

And voilà ! An nice job from Watson !

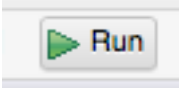
| | A |
|---|---|
| | organization |
| 1 | Google |
| 2 | SAP |
| 3 | Microsoft |
| 4 | Microsoft |
| 5 | Microsoft |
| 6 | Adobe |
| 7 | EMC |
| 8 | Adobe |
| 9 | Microsoft |
| 10 | Microsoft |
| 11 | Verizon |
| 12 | Apple |
| 13 | Accenture |
| 14 | Trans-Pacific Partnership |
| 15 | Juniper Networks |
| 16 | Verizon |
| 17 | SYNNEX |
| 18 | Microsoft |
| 19 | Akamai Technologies |
| 20 | SPSS |
| 21 | Oracle |
| 22 | Oracle |

Click on Save&Exit, or Save and Exist

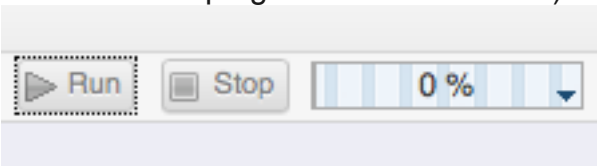



Save & exit will cause a MapReduce job. It will start to analyze all collected tweets on HDFS.

When you press exit button only, you must click run button for updating data and start MapReduce job.



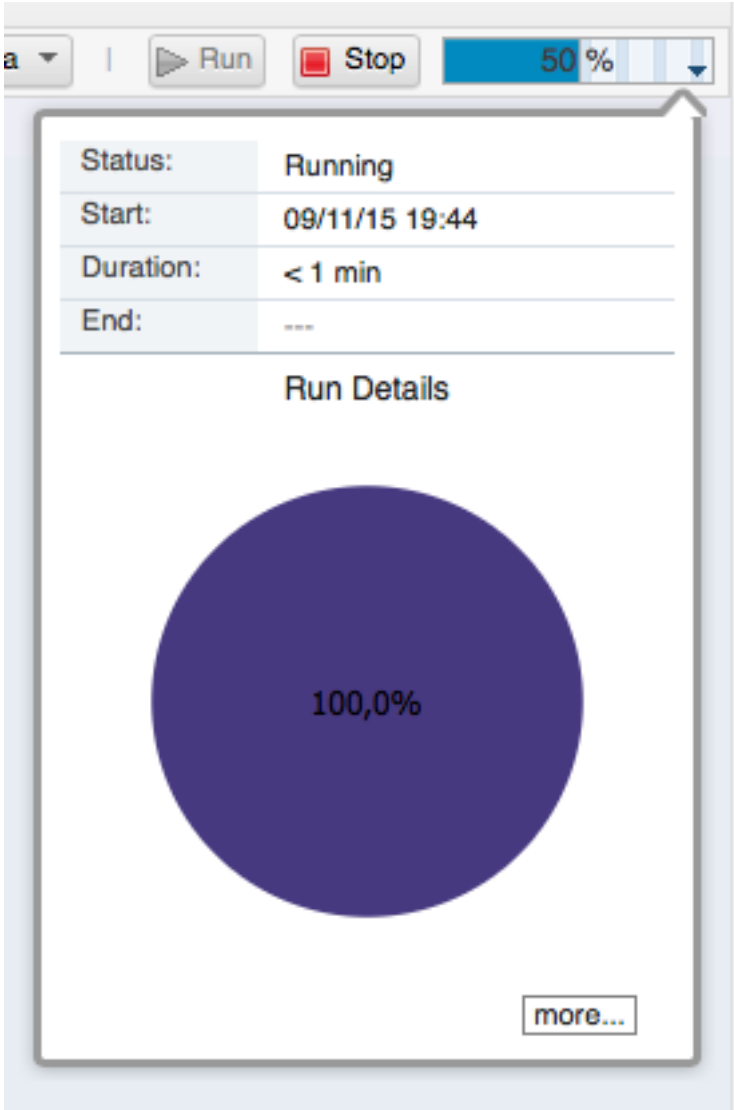

(wait until the progress bar on the top right side shows 100%)



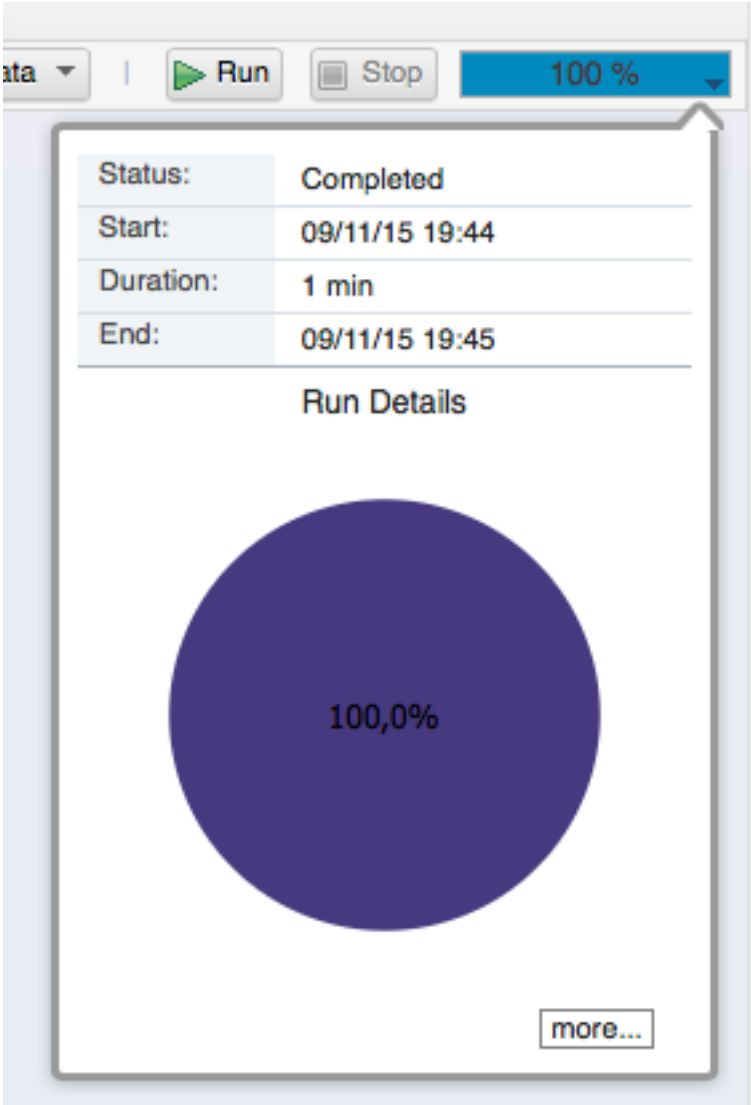

After starting run, you can stop it :


or wait for the end of the job :

You can check job during progress :


Run
Stop
50 %
Status:
Running
Start:
09/11/15 19:44
Duration:
< 1 min
End:
---
Run Details
100,0%
more...

Job is ended :

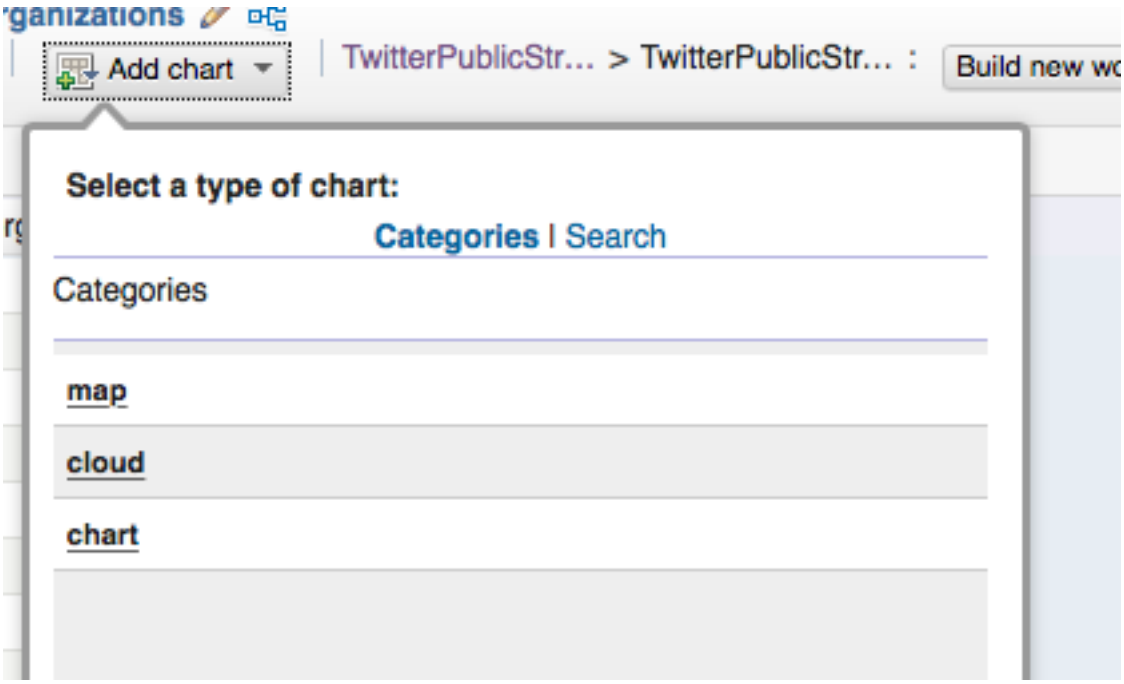



you can run it once again !

**8. DataViz**

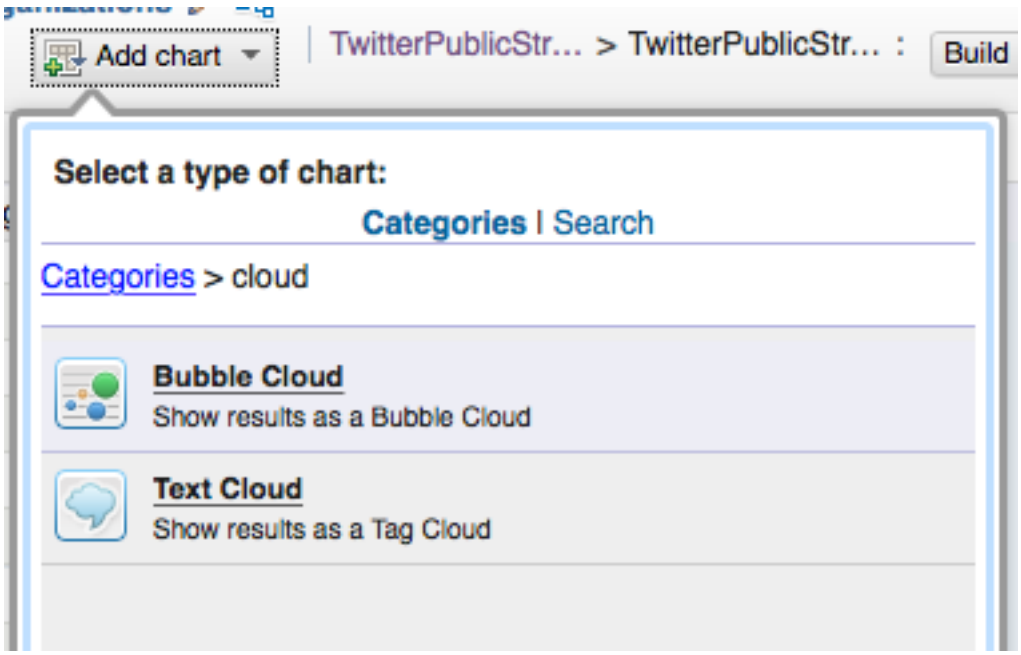
You can now visualize your data from mapReduce.

Select add chart :



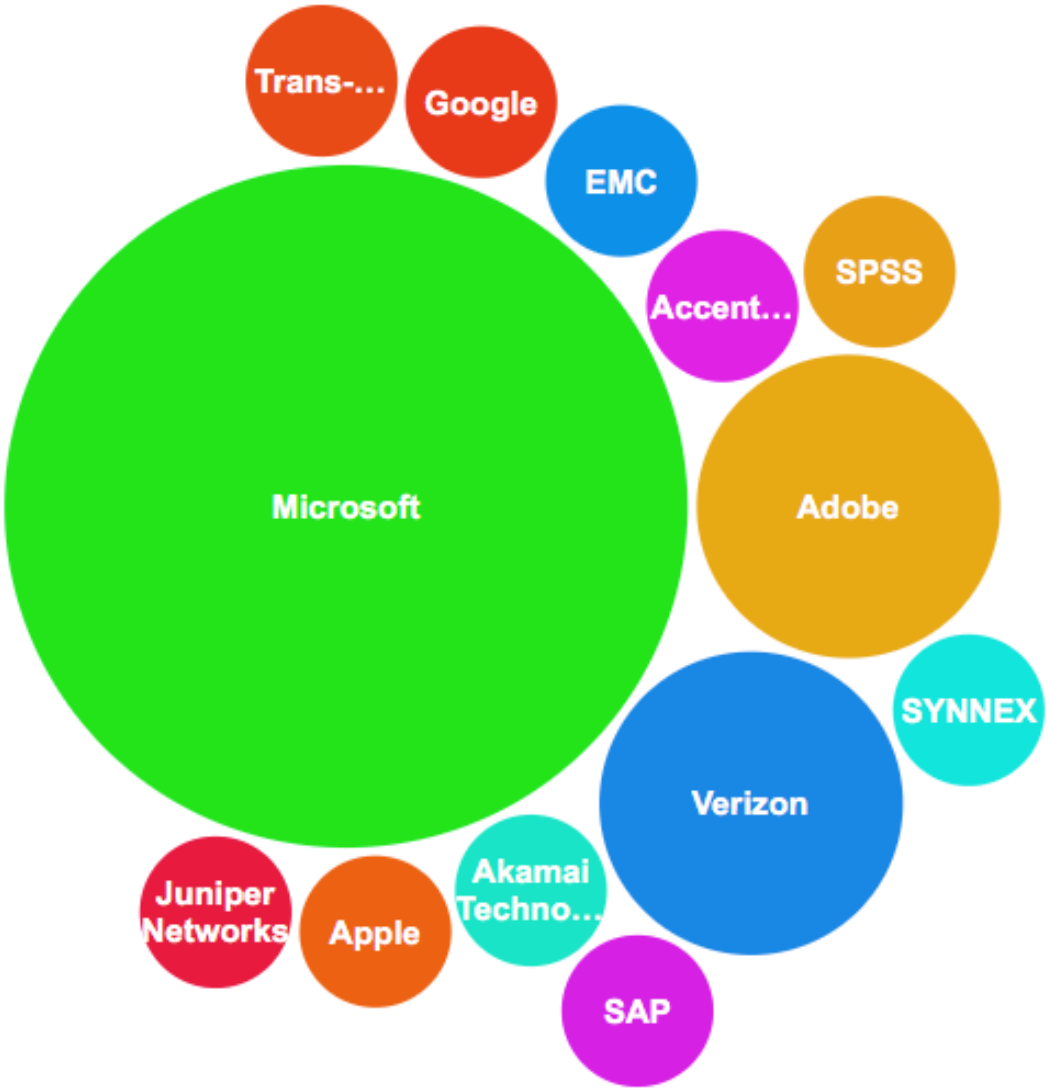

add cloud chart to see nice bubbles !

Select Bubble cloud chart to finish work :



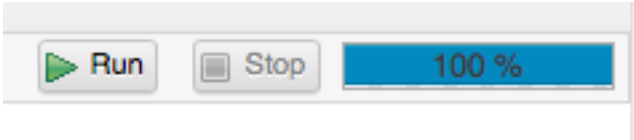

And you visualize a nice bubble chart due to Hadoop and mapReduce :

Before the process, the bubble chart looks like to :

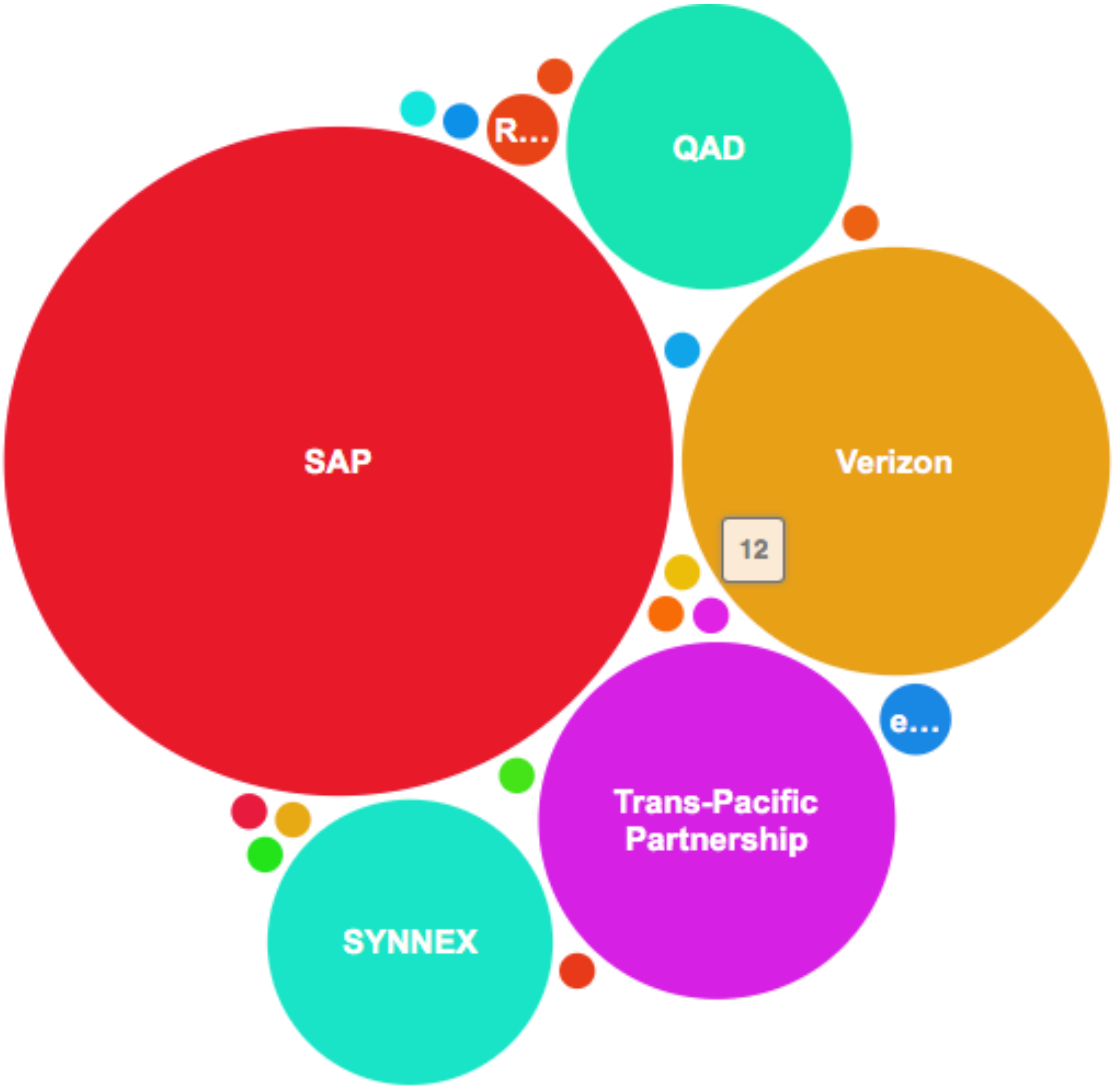



---

process !




After the process :




**9. New exercise**

Try to produce a text cloud as new work :

The result can be the following :