

Use NYC Taxi Trip Record Data To Calculate Performance KPIs

Practical Exam



Goal

NYC.gov provides monthly exports of NYC taxi trip records:

- http://www.nyc.gov/html/tlc/html/about/trip_record_data.shtml
- Latest Full Dumps:
 - https://s3.amazonaws.com/nyc-tlc/trip+data/yellow_tripdata_2018-06.csv
 - https://s3.amazonaws.com/nyc-tlc/trip+data/yellow_tripdata_2018-05.csv
 - https://s3.amazonaws.com/nyc-tlc/trip+data/yellow_tripdata_2018-04.csv
 - ...

```
1,2018-01-01 00:21:05,2018-01-01 00:24:23,1,.50,1,N,41,24,2,4.5,0.5,0.5,0,0,0.3,5.8
1,2018-01-01 00:44:55,2018-01-01 01:03:05,1,2.70,1,N,239,140,2,14,0.5,0.5,0,0,0.3,15.3
1,2018-01-01 00:08:26,2018-01-01 00:14:21,2,.80,1,N,262,141,1,6,0.5,0.5,1,0,0.3,8.3
1,2018-01-01 00:20:22,2018-01-01 00:52:51,1,10.20,1,N,140,257,2,33.5,0.5,0.5,0,0,0.3,34.8
1,2018-01-01 00:09:18,2018-01-01 00:27:06,2,2.50,1,N,246,239,1,12.5,0.5,0.5,2.75,0,0.3,16.55
1,2018-01-01 00:29:29,2018-01-01 00:32:48,3,.50,1,N,143,143,2,4.5,0.5,0.5,0,0,0.3,5.8
1,2018-01-01 00:38:08,2018-01-01 00:48:24,2,1.70,1,N,50,239,1,9,0.5,0.5,2.05,0,0.3,12.35
1,2018-01-01 00:49:29,2018-01-01 00:51:53,1,.70,1,N,239,238,1,4,0.5,0.5,1,0,0.3,6.3
[...]
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yellow_tripdata_2018-06.csv

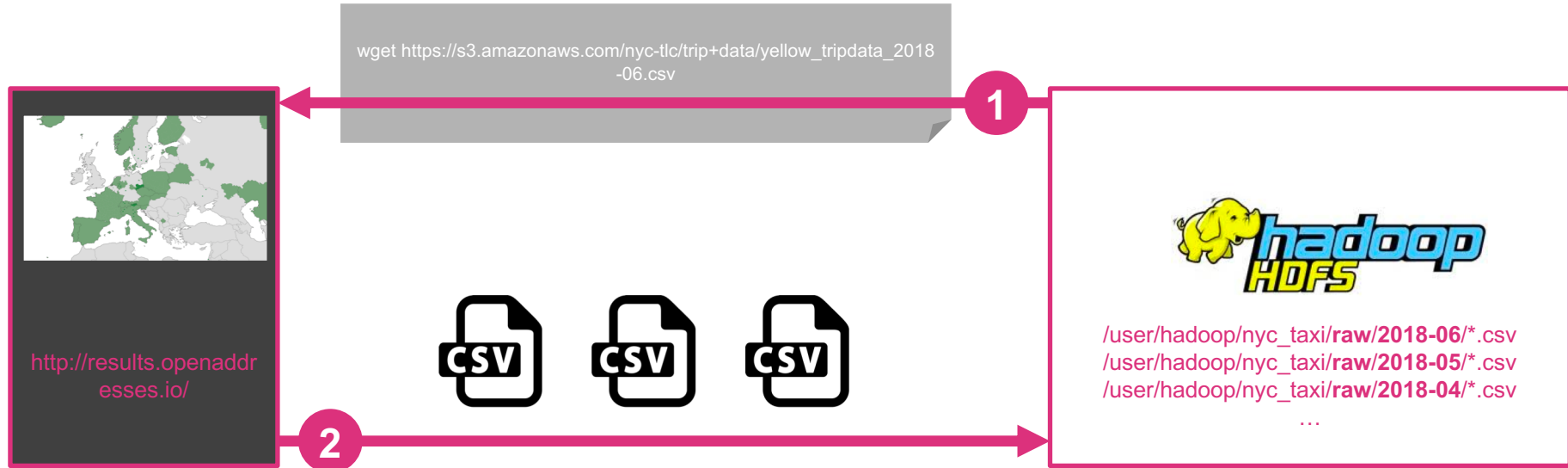
Goal

We want to make use of this data to calculate some KPIs

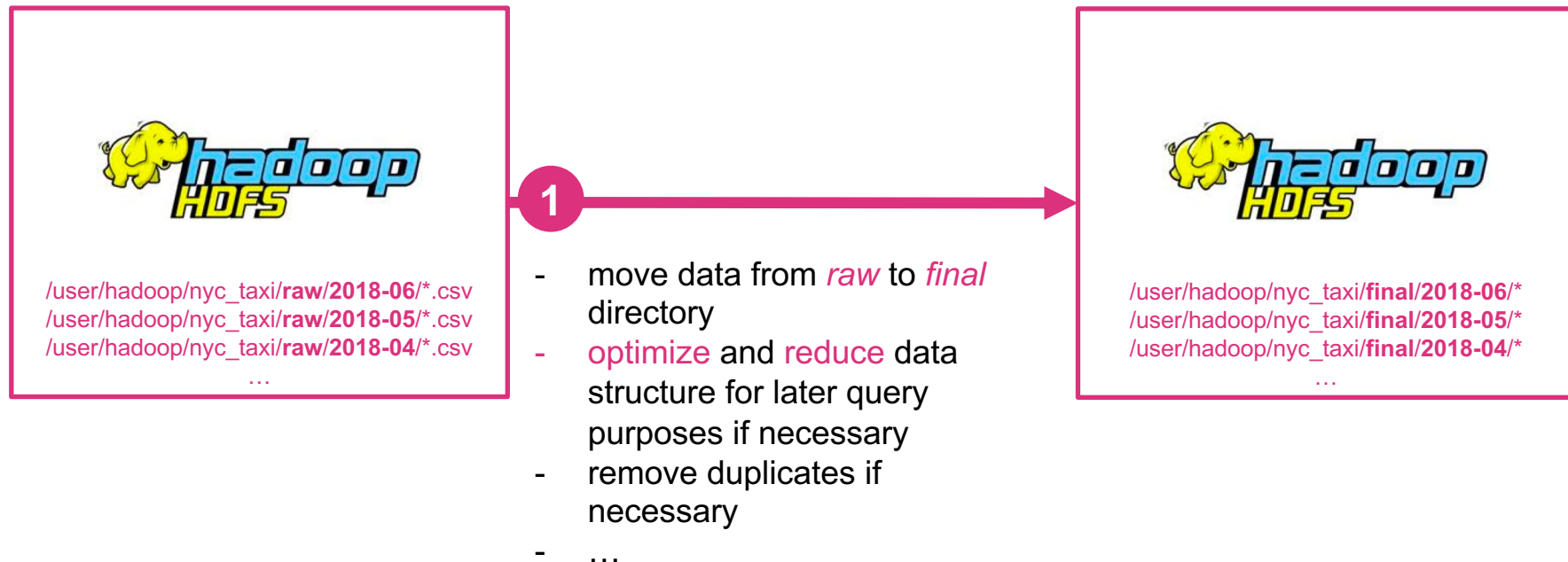
Workflow:

- **Gather data** from http://www.nyc.gov/html/tlc/html/about/trip_record_data.shtml
- **Save raw data** (CSV files) to HDFS (partitioned by YYYY-MM)
- **Optimize, reduce and clean raw data** and save it to **final** directory on HDFS
- **Calculate KPIs** and **Export** them to an **Excel File**
- The whole data workflow **must be implemented** within an ETL **workflow tool** (e.g. Pentaho Data Integration or Airflow) and **run automatically**

Dataflow: 1. Get TLC NYC Taxi Data



Dataflow: 2. Raw To Final Transfer



Dataflow: 3. Calculate And Export KPIs



/user/hadoop/opencellid/final/*

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- calculate KPIs and export them to Excel
- use *Hive*, *Python*, *Spark* or *PySpark*



Dataflow: 4. KPIs To Calculate

