TwitterViz

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Objective & End Goal

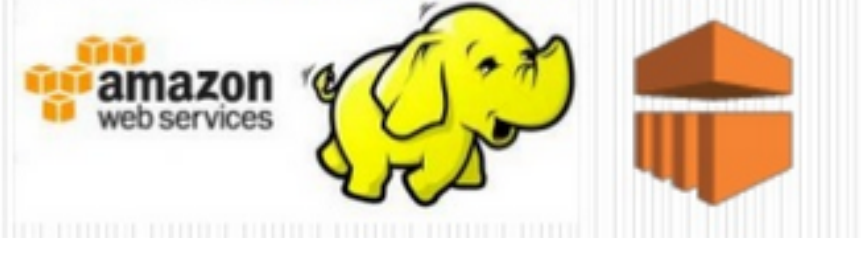
- Analyze the content of tweets about major events over time
  - Hashtags, keywords, images, links
- Spread of location over time
  - How tweets about an event spread and differ over time
- Allow user to analyze the tweets about an event at a deeper level

Twitter Data

- Apollo Project, University of Notre Dame
- Collect Tweets from Twitter in real time that match certain keywords or location preferences

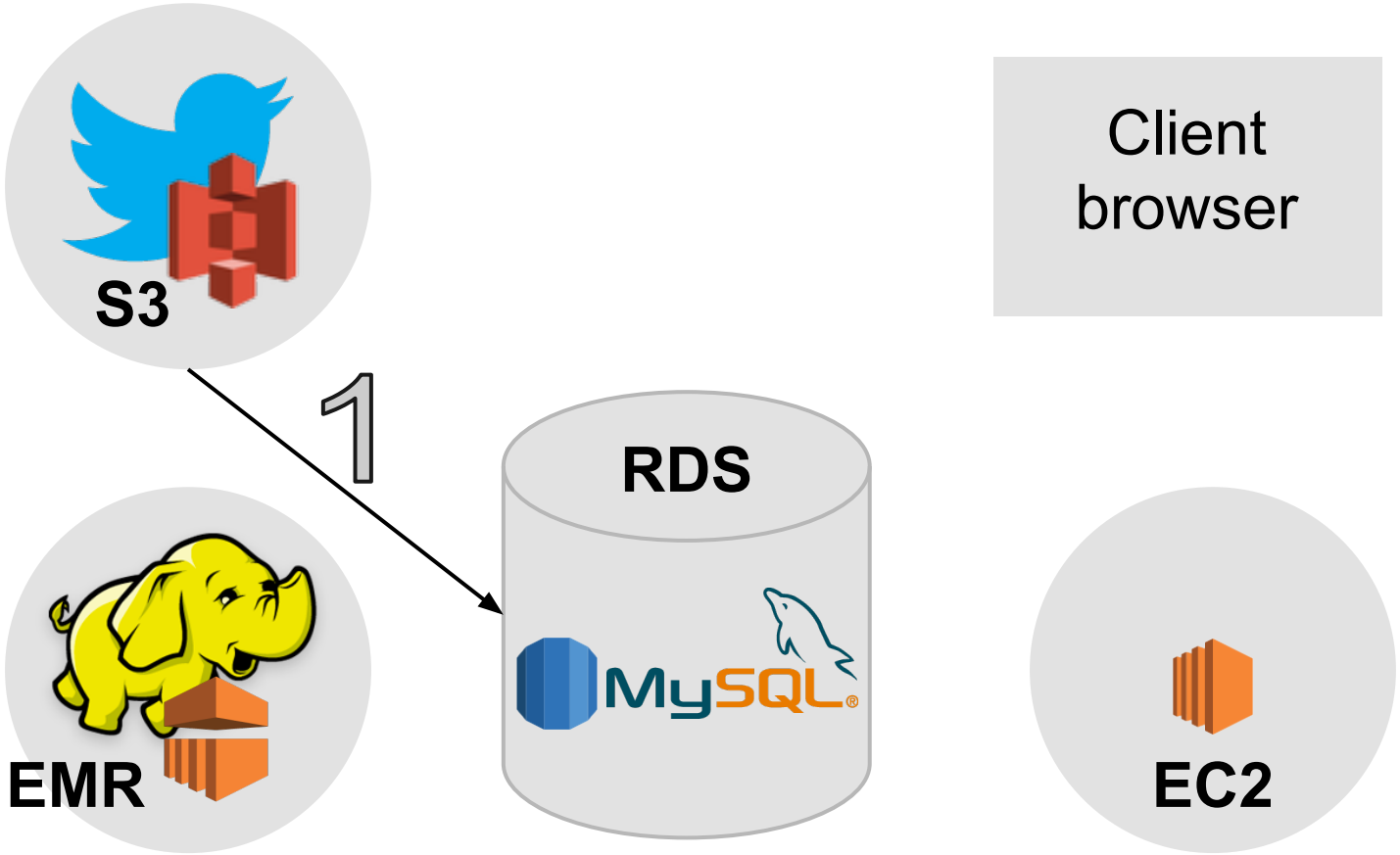
Map-Reduce -> MySQL

- Run MR jobs on AWS Elastic Map Reduce
- Generate aggregate data
  - Ex:Top hashtags segmented by time range
- Place into MySQL Database

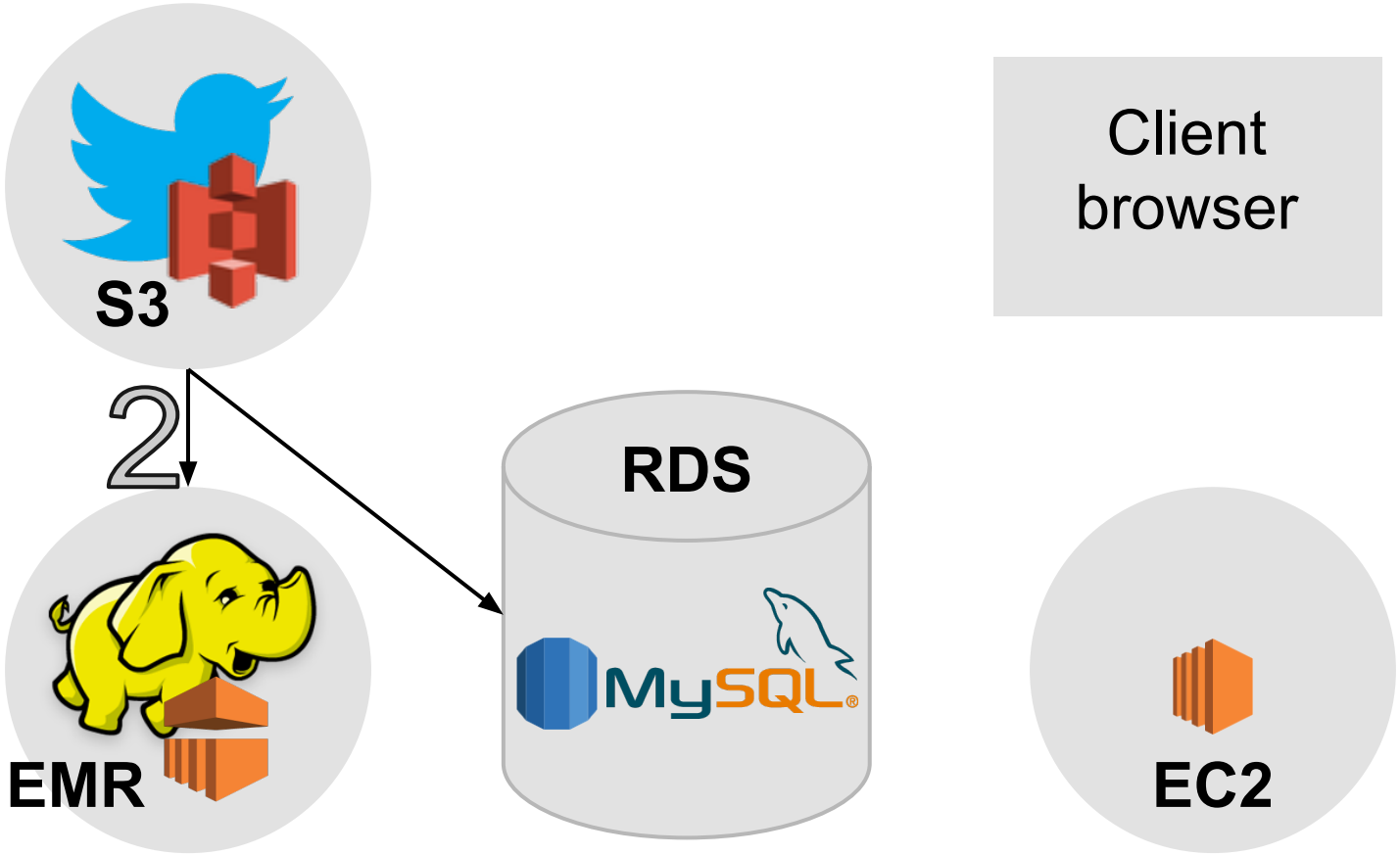


Top #s Table Example

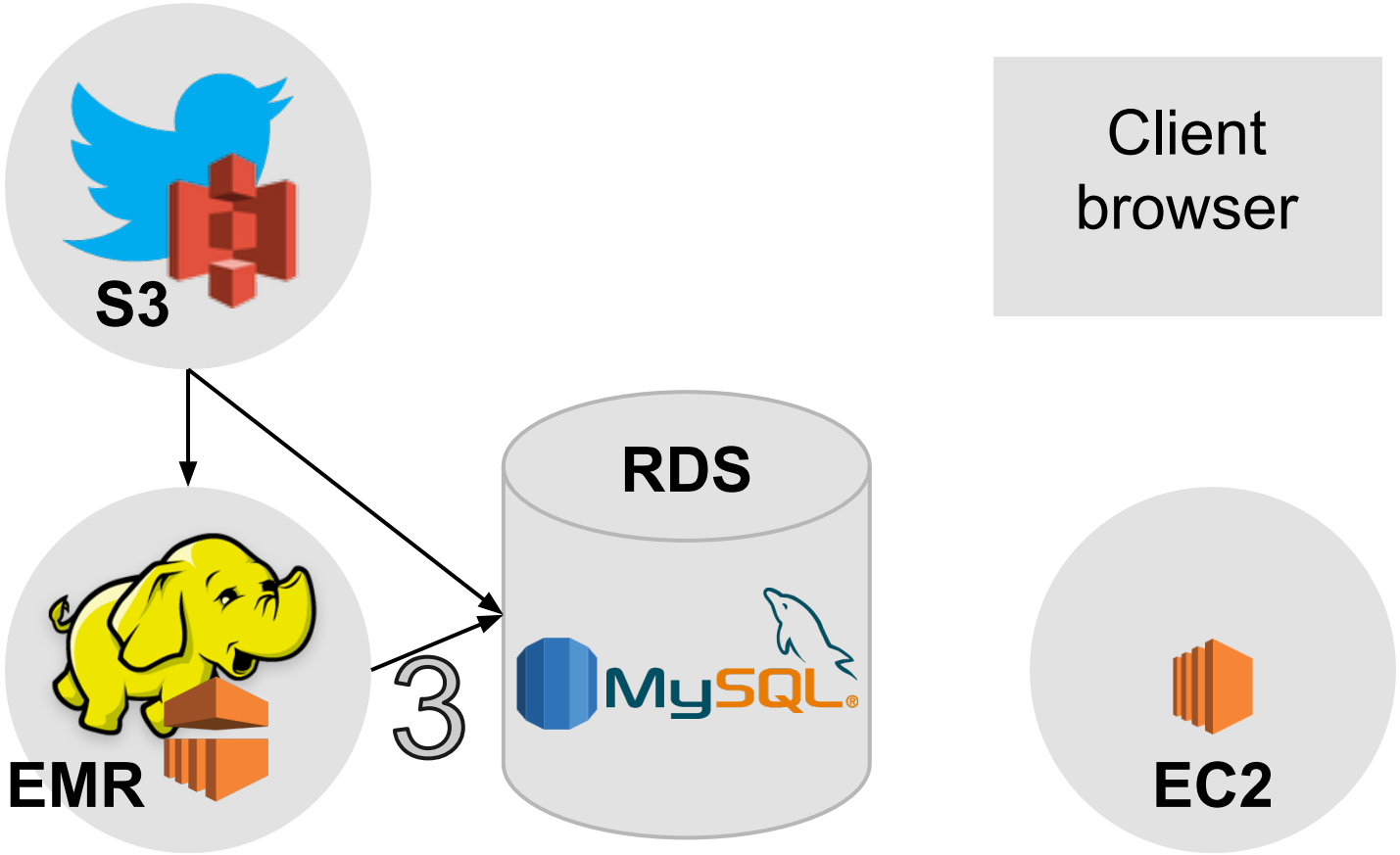
Hashtag	Start Range	End Range	Rank	NumHashtags
#ukraine	2014-02-19 00:00:00	2014-02-25 23:59:59	1	4981
#euromaidan	2014-02-19 00:00:00	2014-02-25 23:59:59	2	2718
#help	2014-03-06 00:00:00	2014-03-12 23:59:59	1	1832
#uarevolution	2014-03-06 00:00:00	2014-03-12 23:59:59	2	1621



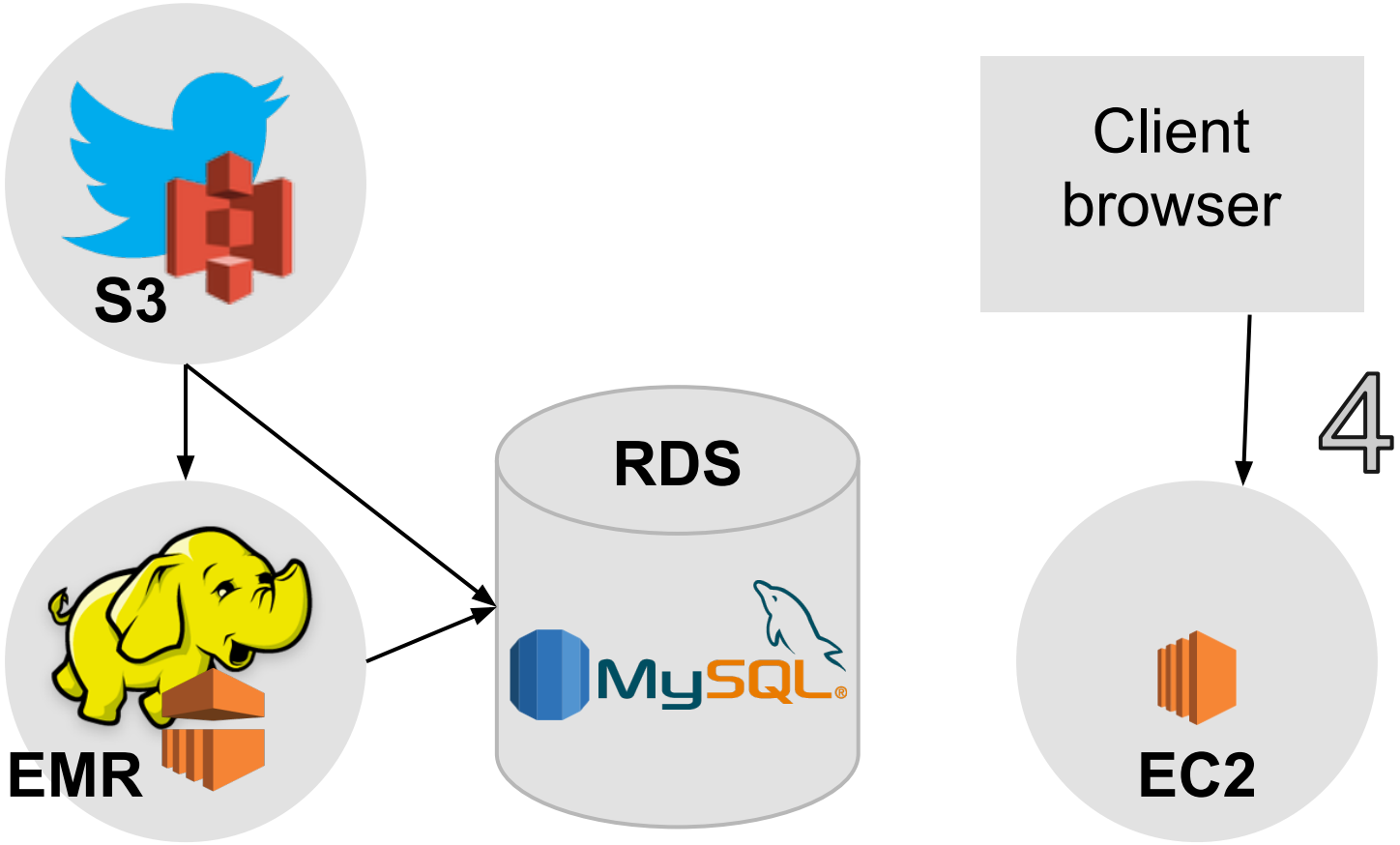
Data Flow



Data Flow



Data Flow



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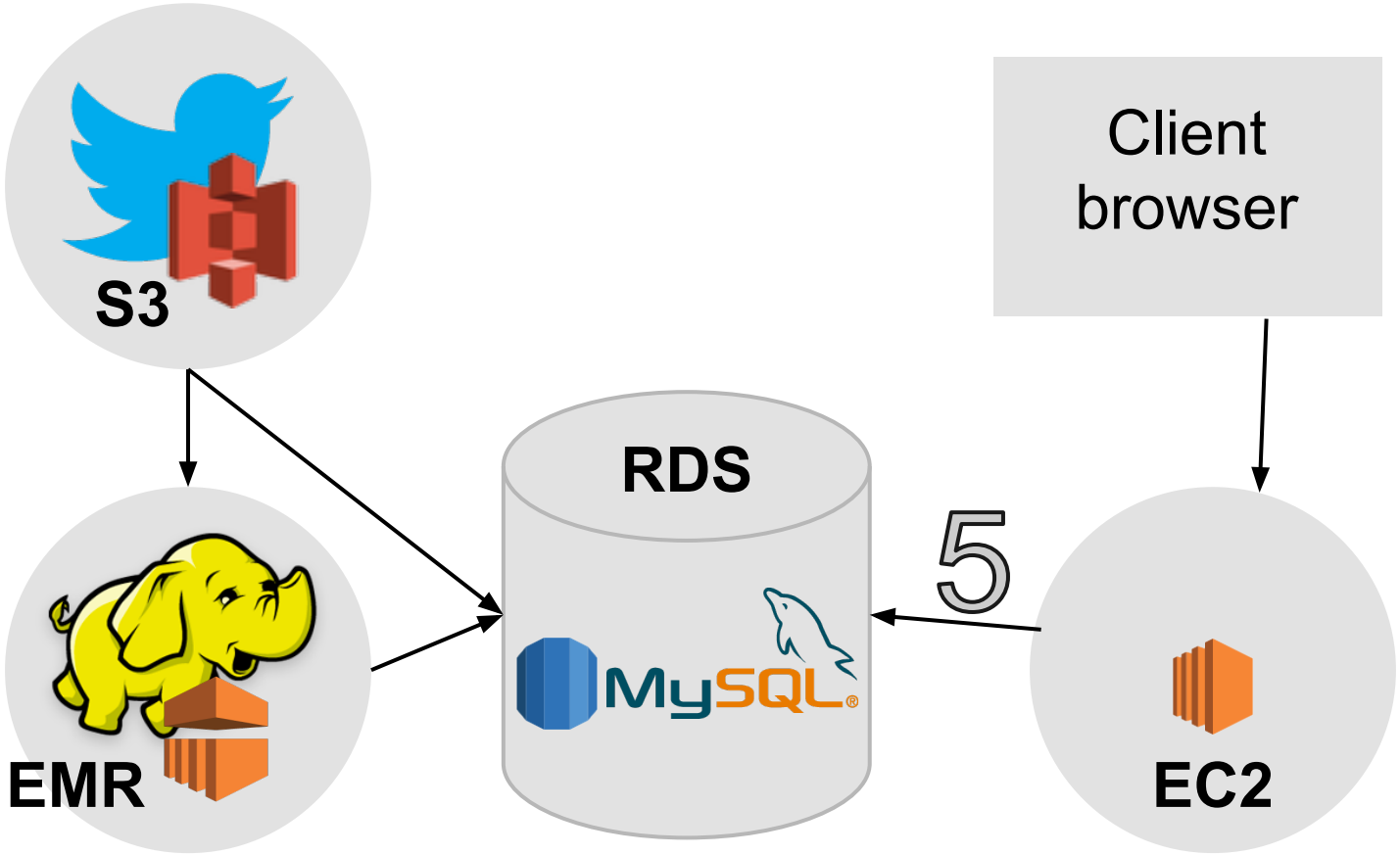
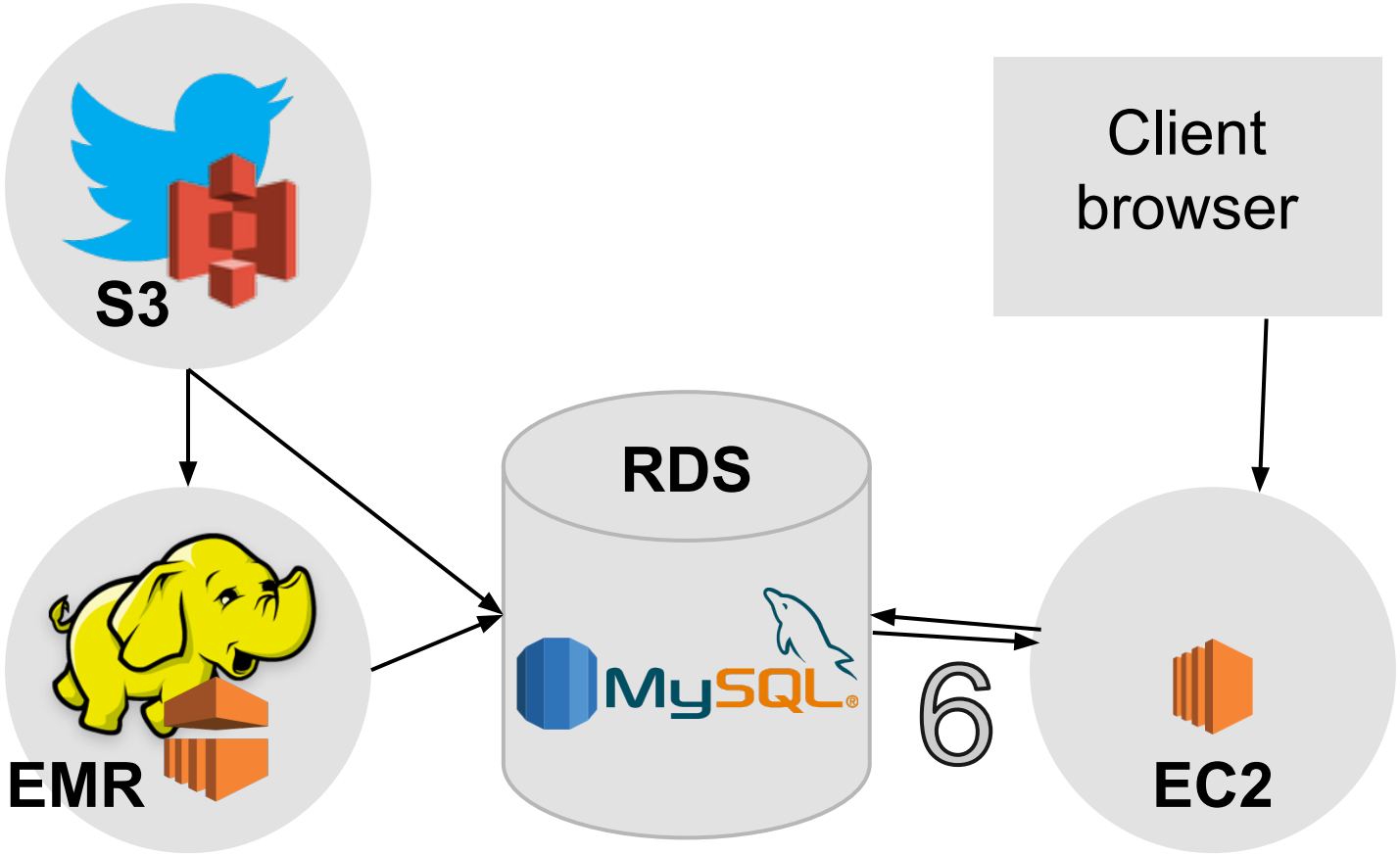
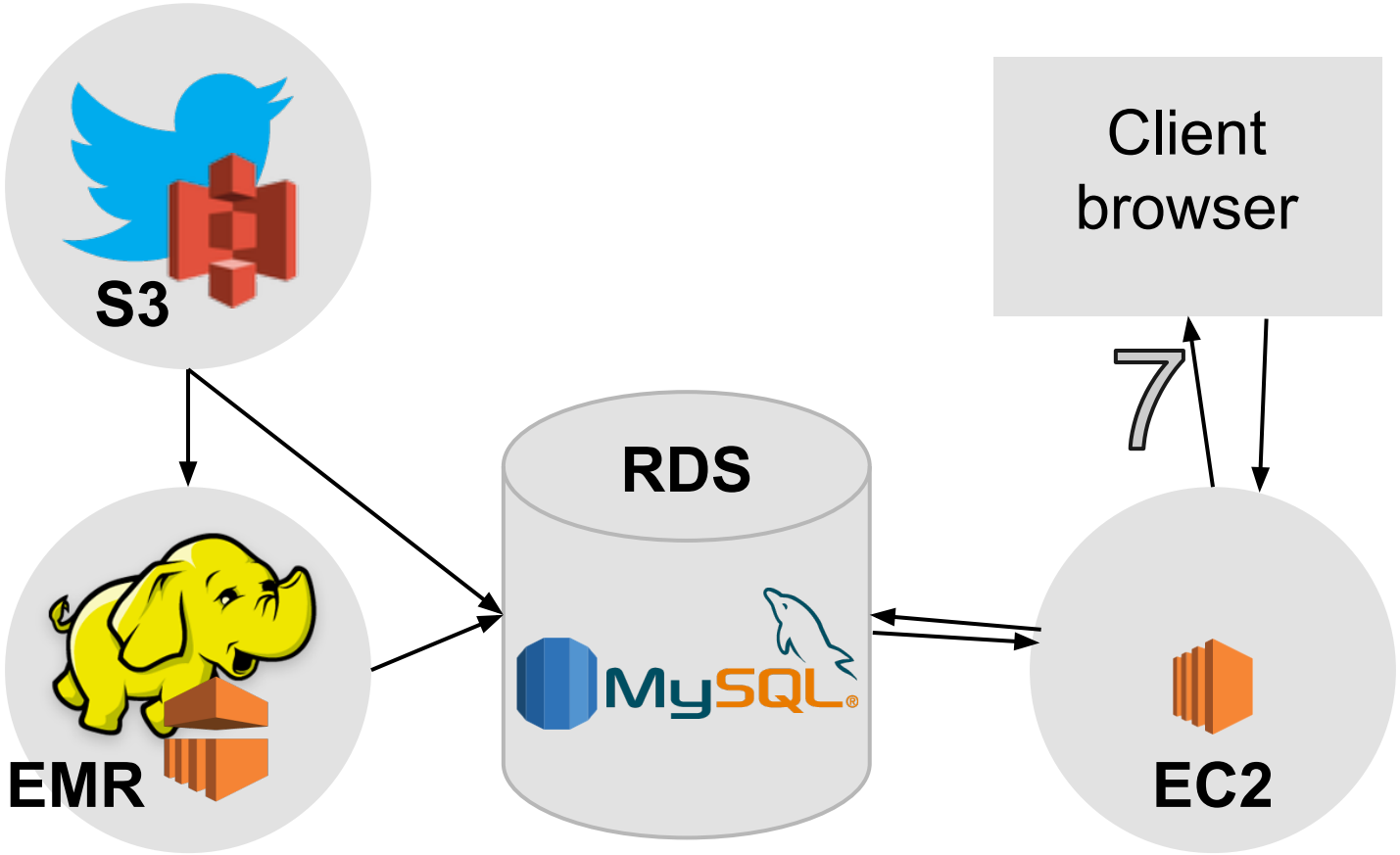


Data Flow



Data Flow



Data Flow

Top Images

Top Hashtags

#Ukraine

#Crimea

#Euromaiden

#help

Top Keywords

Top Links

Web Interface

Current Progress

- Twitter data and Map-Reduce jobs and computation complete
- Data loaded into MySQL Database
  - Top Hashtags, Links, etc. aggregated by time range
- Working on web server and data visualization
- Measure performance and scalability

Measuring Performance & Scalability

- Python Map-Reduce Streaming on EMR vs standalone EC2 instance with pipes
- Reading Apollo Data on EC2 c3.xlarge instance
  - 4 vCPUs, 7.5 GiB

Challenges

- Picking the right time ranges to then find interesting shifts in trends of hashtags, media, keywords, etc. is limited
- Utilizing the small percentage of tweets that have location data to make geographical inferences
- Data cleaning