

TWITTER SIMULATOR

PROJECT 4 - PART II

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Running Instructions:

We need two terminals - one to run the twitter engine and the other to run the simulator.

Firstly unzip the project files into a temporary directory and navigate to that directory.

To run the twitter engine/phoenix server:

1. Navigate to the server subdirectory using
cd hello
2. To build the dependencies give the following command
mix deps.get
3. To compile them give the command
mix deps.compile
4. Now navigate to the assets directory using
cd assets
5. Then build the node modules and packages using
npm install
node node_modules/brunch/bin/brunch build
6. Move out of the assets directory to run the phoenix server
mix phx.server

To run the Simulator, follow the below steps:

1. Navigate to the Simulator subdirectory
cd sim
2. To build the dependencies give the following command
mix deps.get
3. To compile them give the command
mix deps.compile

4. On Twitter Simulator give the below command

escript sim client <IP_ADDR_OF_ENGINE> <NO_OF_USERS>

Example: escript sim 10.0.0.83 1000

What is working:

The client connects to the server at the IP provided.

1. JSON based API to show the messages:

We are showing the top 5 tweets per user as displaying all the tweets and retweets for a particular user is not feasible.

2. Phoenix engine to implement websockets:

The phoenix engine must be set up using the given instructions above in order to run the phoenix engine.

3. Client to use websockets:

The client/simulator must be run on a separate terminal to connect to the phoenix server. Once the connection is established, every user is assigned to a websocket.

Performance Metrics:

Users	Avg tweets	Avg tweets(using websockets)
30	125.37	15.83
100	1723.24	96.79
1000	4850.02	119.56
5000	9146.73	89.56

- The requests processed per second are lower when compared to part one as we are using REST APIs which introduces a significant overhead.
- The performance of the system deprecates when the number of users are more as we are using websockets instead of message passing which increases the load on the server significantly.
- We are only showing the top 5 tweets for every user in order to better demonstrate the working of the Simulator and the Websocket performance.