CIRCONUS

PERFORMANCE MONITORING – REVOLUTIONIZED

State of the MQ

Brian Clapper OSCON 2012

Background

- Complex system with many moving parts
- Not all need updates “right now”
- Needed an asynchronous communication tool

More Background

- Started out with RabbitMQ
- Clustered setup
- Hit performance wall at around 1K msgs/sec (6KB size)
- Started looking into alternatives

Initial Contenders

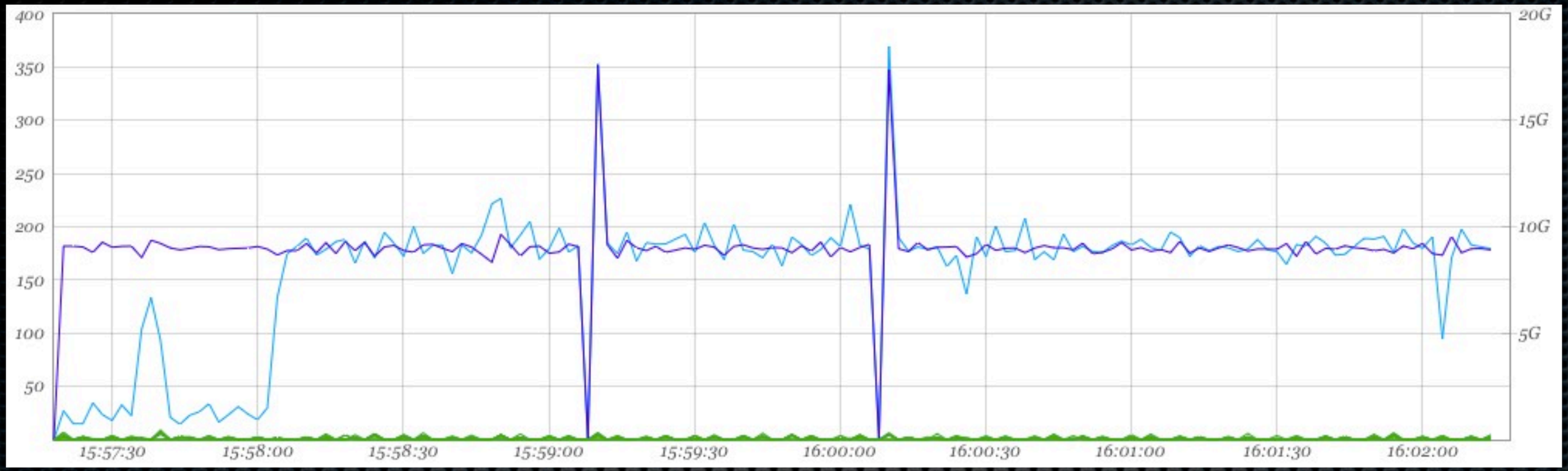
- Kafka
- Kestrel
- 0MQ
- Redis
- Keep upgrading RabbitMQ and hope for the best

Test Bed

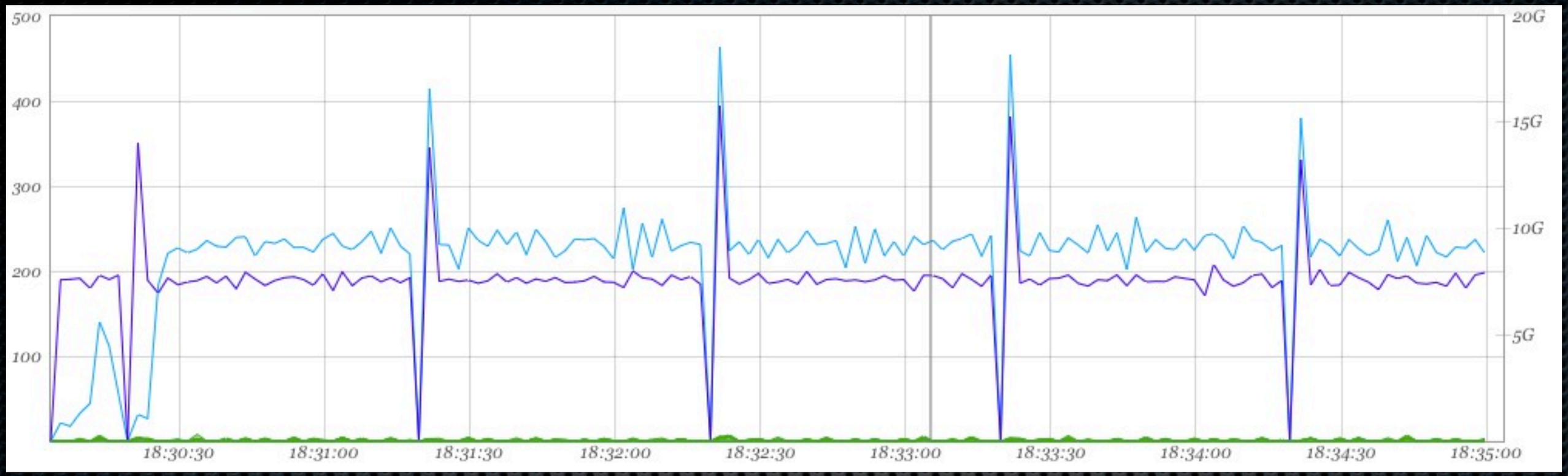
- 4 core 2.6Ghz CPU
- 32GB RAM
- 6 x 15K drives (3 mirrored pairs in zpool)
- Gigabit Ethernet
- 1 producer 1 consumer on different box
- 2.1K and 33 byte average message size

RabbitMQ

- Erlang R15B Rabbit 2.8.4
- Full featured, mature, brokered
- Topic, Fanout, Direct, Header exchanges
- Durability of exchanges, queues and messages
- Wide adoption, lots of clients



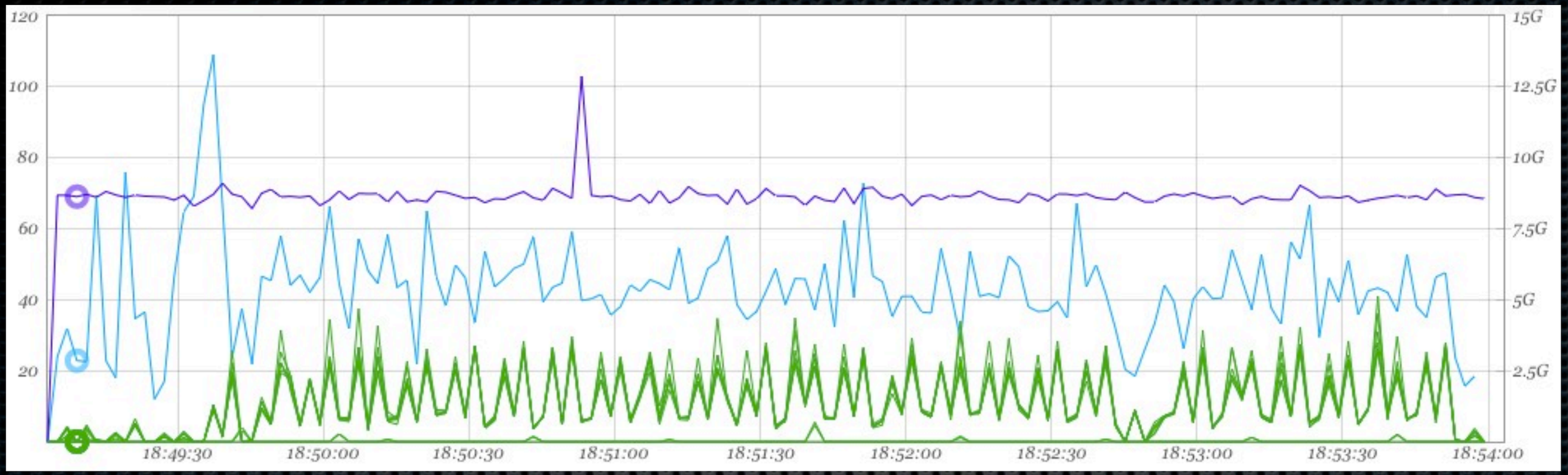
Low	High	Average
721.75	2400.17	2124.29



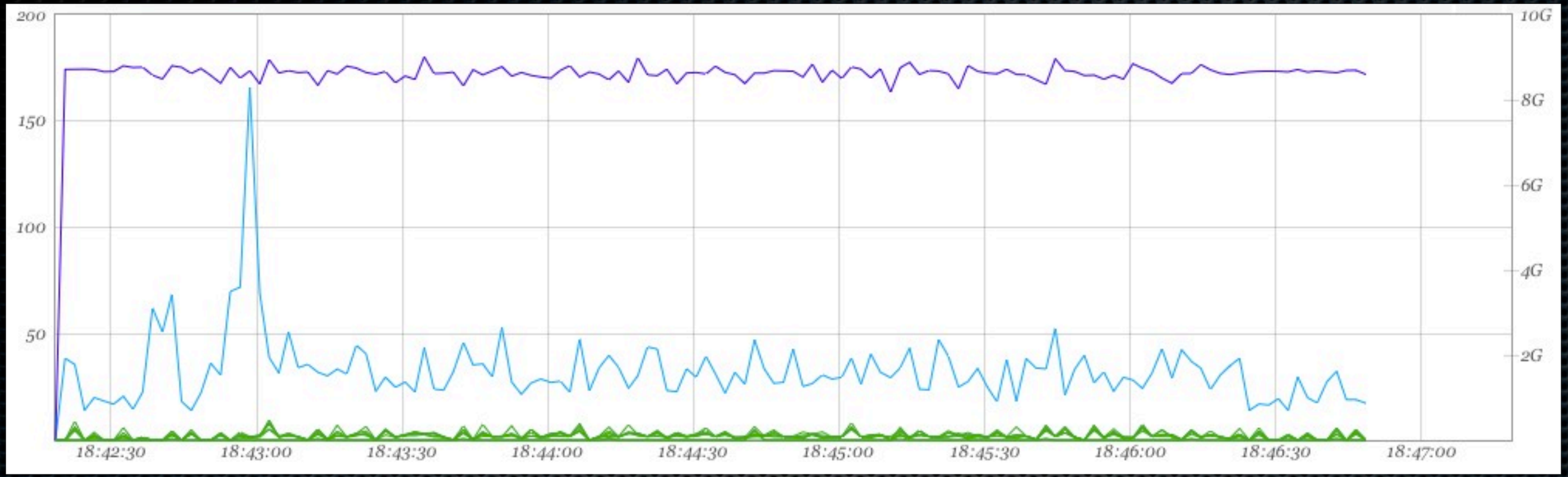
Low	High	Average
5780.63	6677.59	6446.62

Kafka

- 0.7.1
- From Linkedin currently in Apache incubator
- All message are written to disk
- Few clients, fewer that actually work



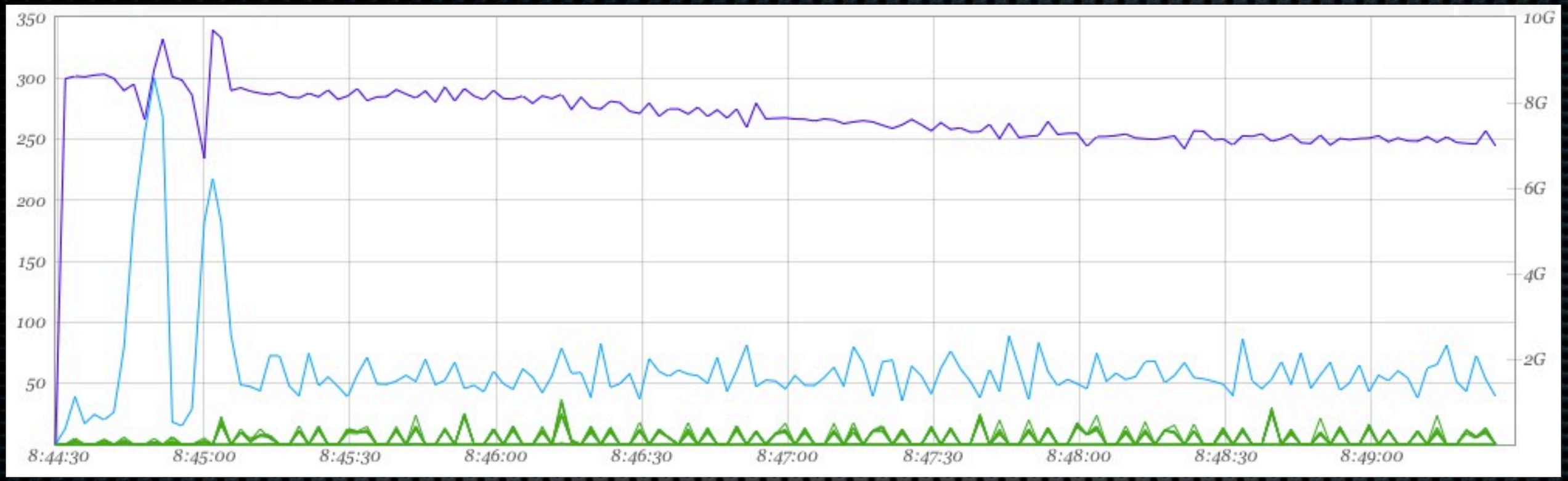
	Low	High	Average
Producer	1010.77	9578.02	8223.98
Consumer	75.94	2362.98	461.69



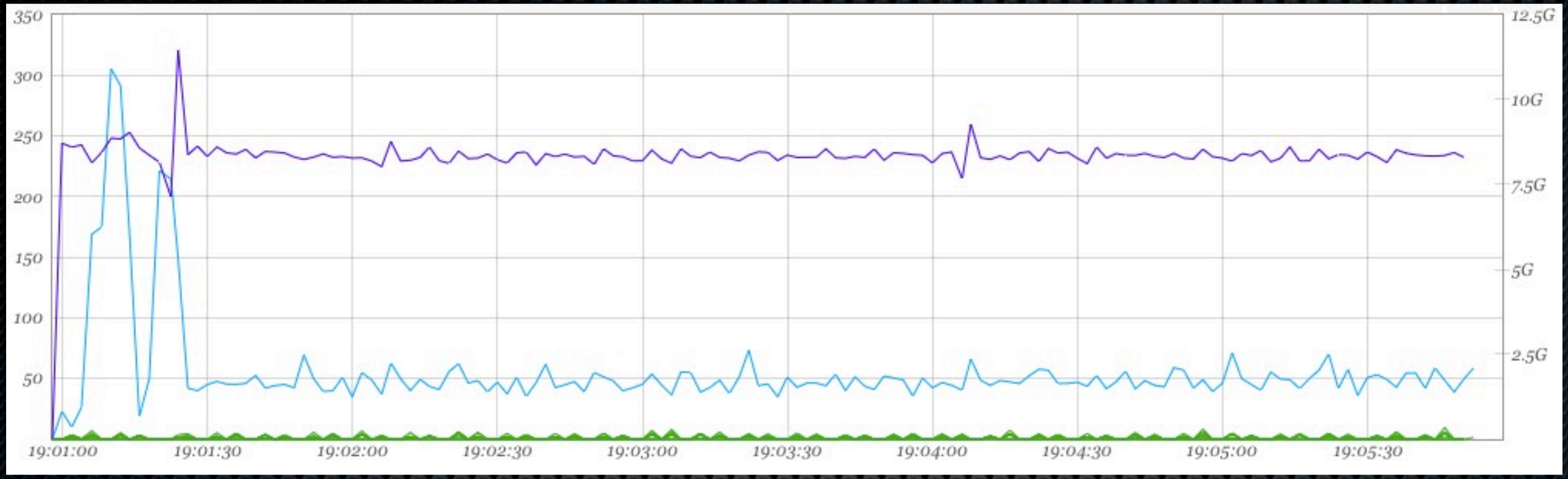
	Low	High	Average
Producer	12814.88	13334.22	13176.79
Consumer	74.90	21985.55	2918.29

Kestrel

- 2.1.3 (2.3.1 current)
- Based on Ruby MQ Starling
- Messages stored in RAM and journaled to disk
- Memcache protocol
- Decent client selection



Low	High	Average
1445.60	3225.96	2885.51

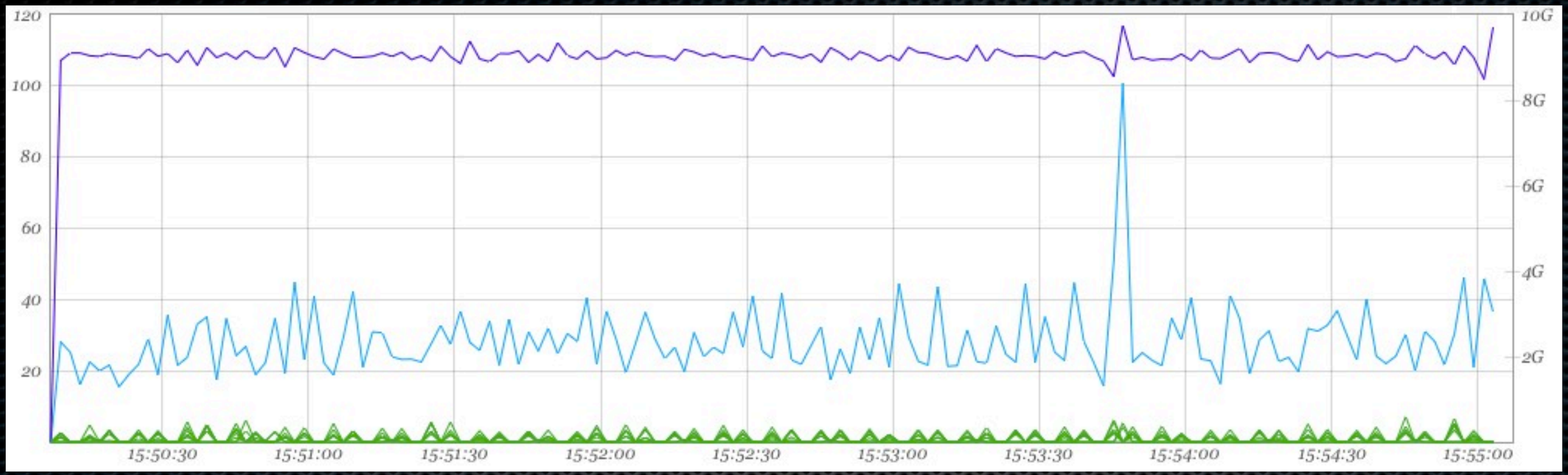


Low	High	Average
1679.52	3965.36	3796.66

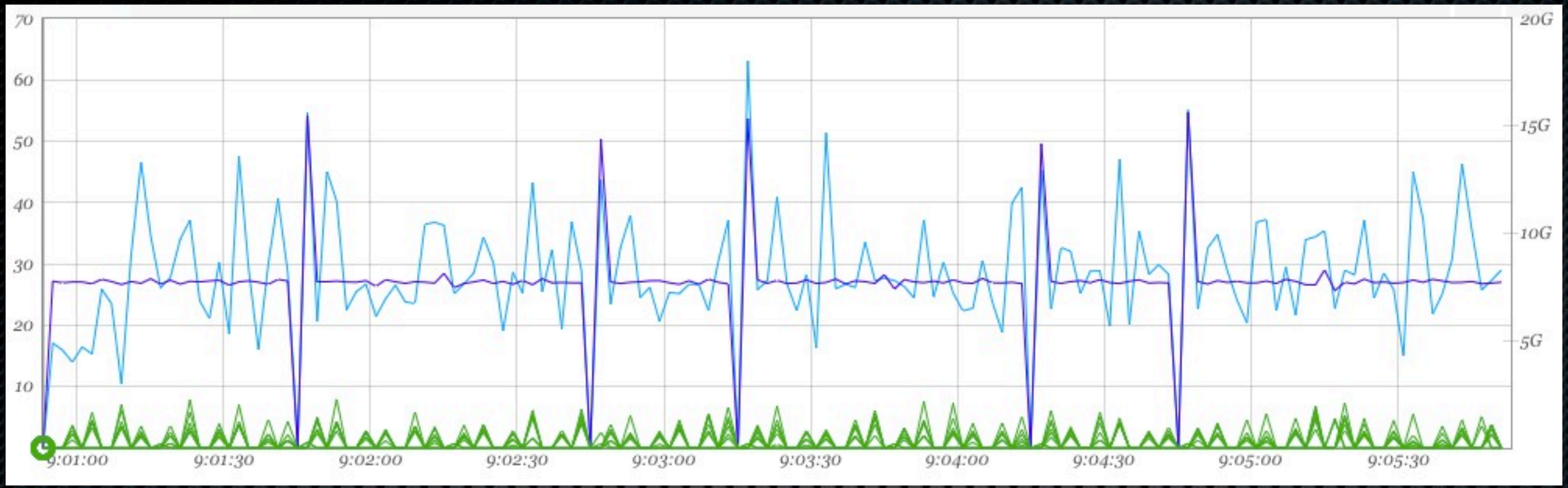
Redis

- 2.4.15
- C

- Messages stored in memory
- No way to turn off “acknowledgements”
- Large adoption, lots of clients



Low	High	Average
1720	4454	4145.76



Low	High	Average
5142	7856	7378.15

0MQ

- C++
- Not Brokered
- Hides all the complexity from you

Artur Bergman
@crucially

Following

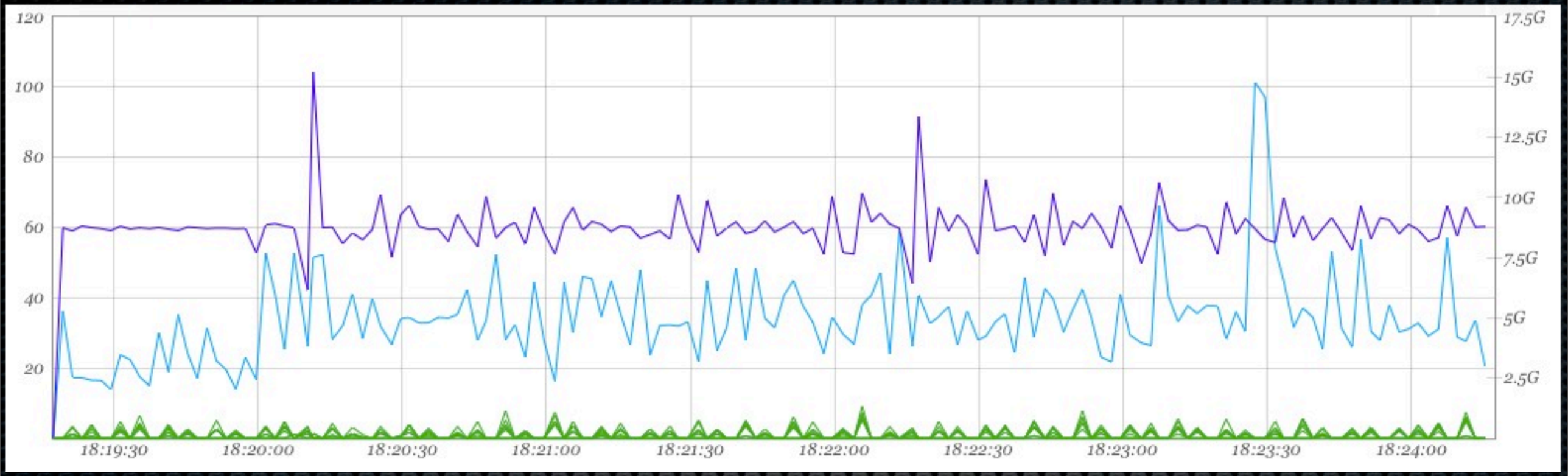
Let it be clear, zeromq is useful if you are so stupid you don't understand <socket.h>

Reply Retweet Favorited

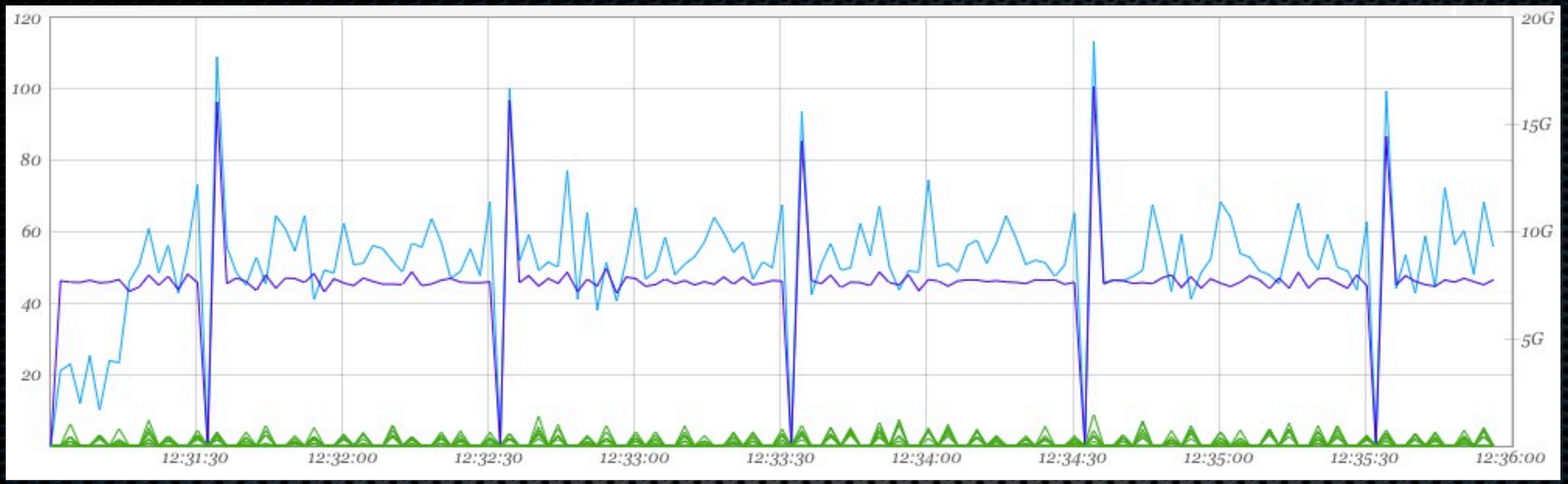
Conclusions?

fq

- C
- Brokered
- https://github.com/postwait/fq



Low	High	Average
11548.21	24024.47	21205.95



Low	High	Average
39292.11	134681.70	101423.13

- https://github.com/neophenix/StateOfTheMQ
- Kafka Perl lib - https://github.com/neophenix/Kafka
- fq - https://github.com/postwait/fq