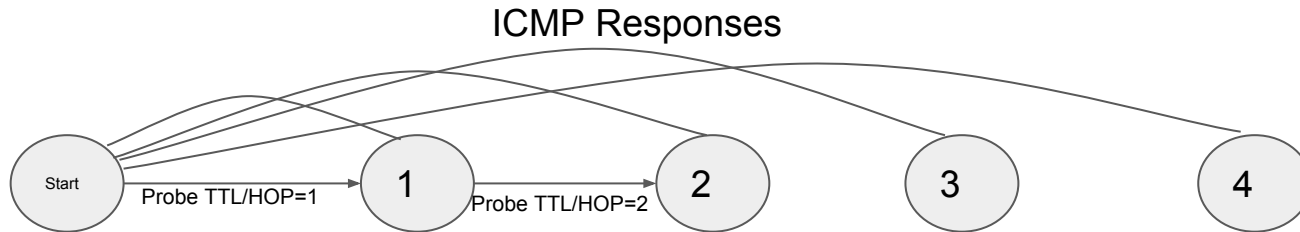


BIG data with small dataset..

IETF95 Hackathon

Problem

Data set with various ICMP traceroutes measurements to analyze them with the objective of finding some useful way to measure the health of these routes, for future correlation with streaming UDPs and quality improvement.

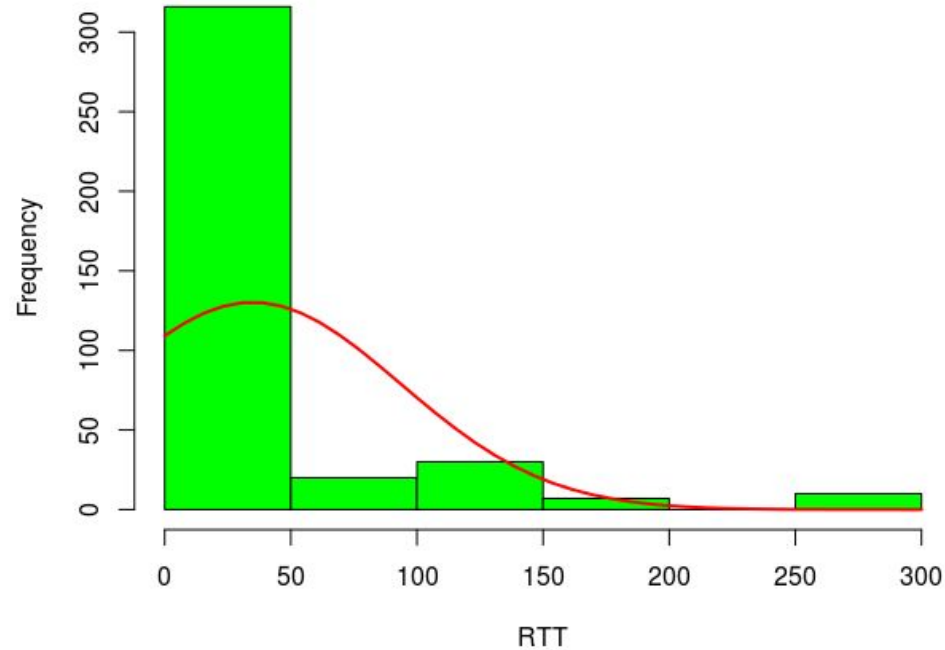


Dataset

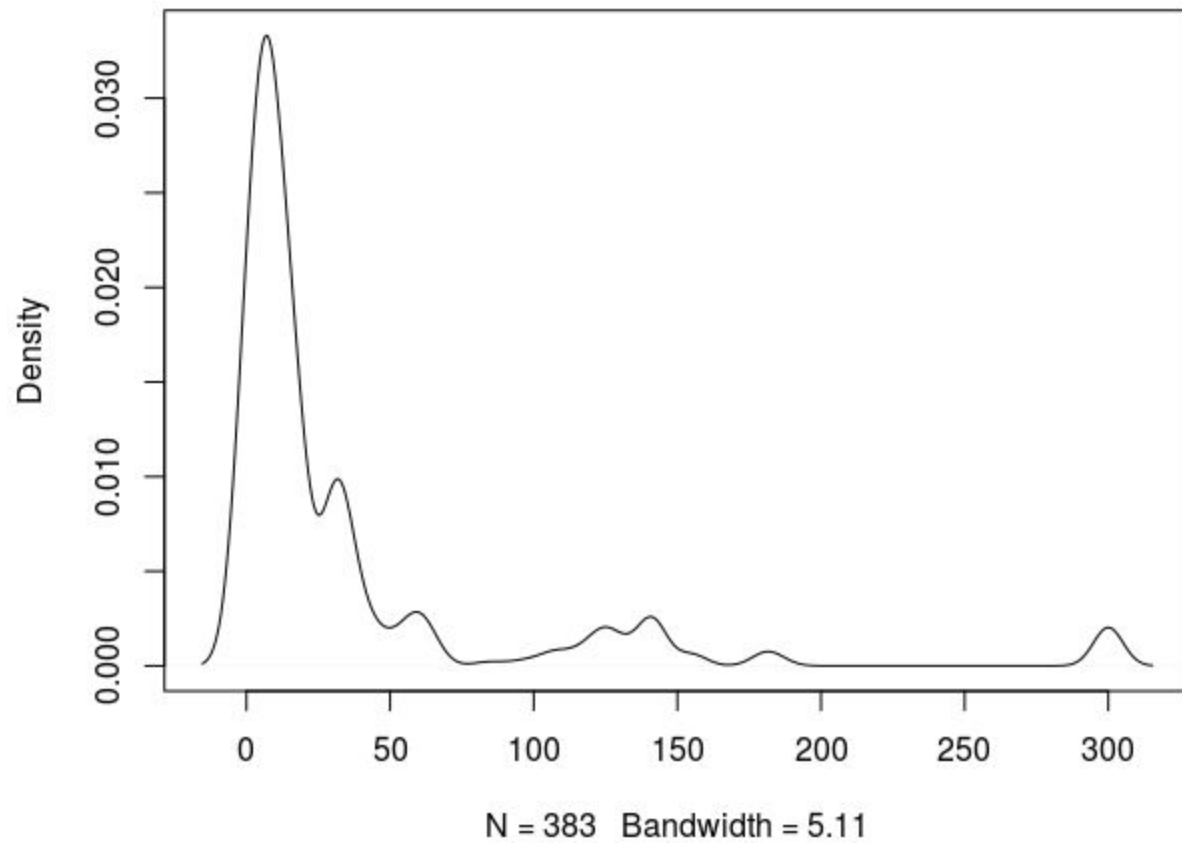
to_ip	from_ip	timestamp	hop	ip	id	lost_pkts	max_rtt	min_rtt	num_samples	sum_rtt	version
139.130.4.5	192.168.1.113	2016-03-11 13:55:57	8	202.40.148.229	...	0	43288	43288	1	43288	PALib v0.0.2
139.130.4.5	192.168.1.113	2016-03-11 13:55:57	9	202.84.249.25	...	0	181991	181991	1	181991	PALib v0.0.2
139.130.4.5	192.168.1.113	2016-03-11 13:55:57	10	202.40.149.174	...	0	185557	185557	1	185557	PALib v0.0.2
139.130.4.5	192.168.1.113	2016-03-11 13:55:57	11	202.84.249.38	...	0	362313	362313	1	362313	PALib v0.0.2
139.130.4.5	192.168.1.113	2016-03-11 13:55:57	12	203.50.13.97	...	0	417789	417789	1	417789	PALib v0.0.2
139.130.4.5	192.168.1.113	2016-03-11 13:55:57	13	203.50.6.92	...	0	361407	361407	1	361407	PALib v0.0.2
139.130.4.5	192.168.1.113	2016-03-11 13:55:57	14	203.50.20.250	...	0	376800	376800	1	376800	PALib v0.0.2

histogram

Histogram with Normal Curve



density



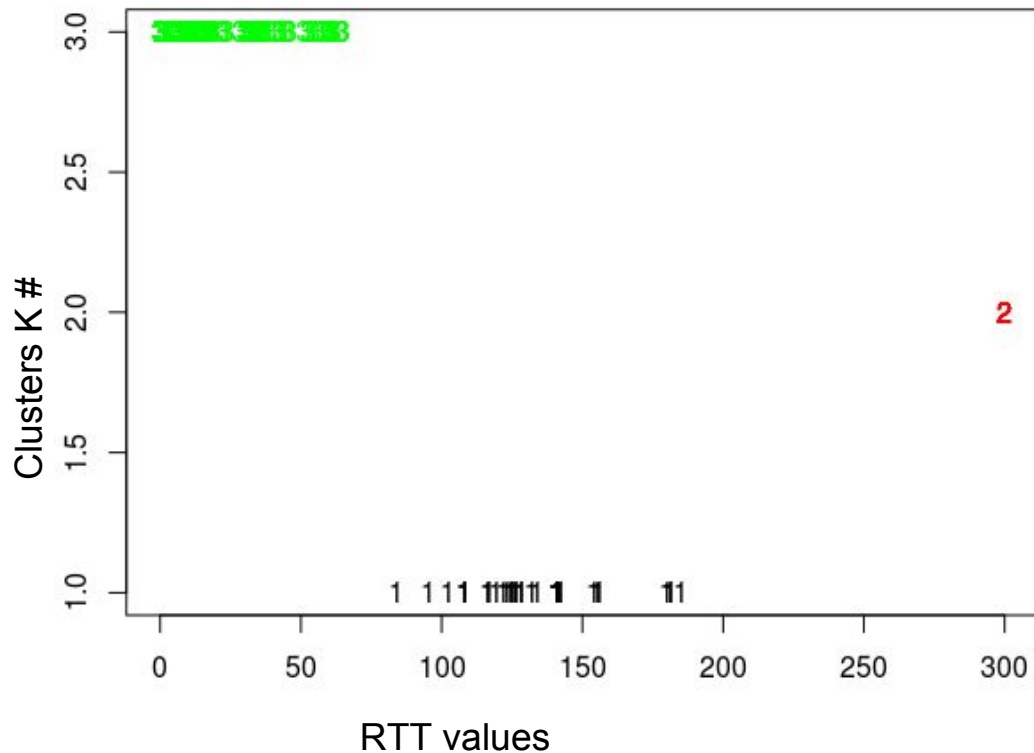
Hierarchical clustering over RTT

Cluster Dendrogram

$K = 3$

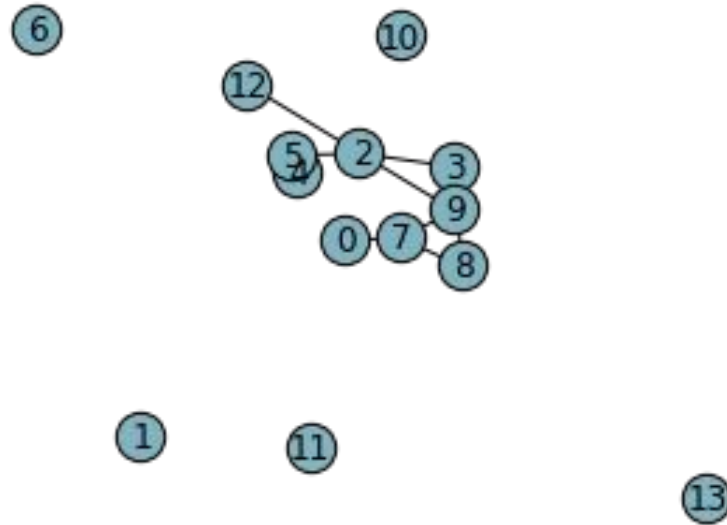


Cluster centers



	Cluster centers (average RTT values)	# of points
k1	134.25	39
k2	300	10
k3	15.33	334

Clustering by communities



Pagerank (With RTT as weight)

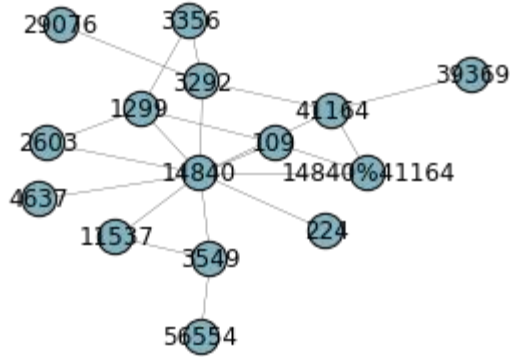
PageRank for graph:

====

0) 193.156.90.1	0.421165062817
1) 82.96.54.5	0.101036180775
2) 202.40.148.229	0.051778594589
3) 190.216.88.9	0.0497543102252
4) 202.84.141.129	0.0426693149519
5) 202.40.149.174	0.0413197920427
6) 109.105.97.142	0.02917408586
7) 62.115.141.51	0.0200648062229
8) 80.232.88.44	0.012305049495
9) 4.68.72.25	0.0102807651312
10) 193.156.90.70	0.0102807651312
11) 80.91.245.134	0.0102807651312

.....

ISPs (Playing with AS number)



Inter AS latency

109:	26.6666666667 ms	(15 samples)
2603:	90.6666666667 ms	(9 samples)
56554:	1.0 ms	(3 samples)
14840:	51.1805555556 ms	(72 samples)
41164:	7.2888888889 ms	(45 samples)
3356:	34.25 ms	(8 samples)
39369:	154.0 ms	(2 samples)
1299:	32.6 ms	(5 samples)
4637:	222.0 ms	(3 samples)
3549:	141.0 ms	(3 samples)
224:	8.71428571429 ms	(7 samples)
3292:	24.6923076923 ms	(13 samples)

Participants

- Pål-Erik Martinsen
- Ana Laura Diedrichs
- Nicolás Butler
- Gerardo Rada
- Agustín Formoso