31 MAY 2017

TSX: STABLE, LONG-TERM ANALYSIS OF PERFORMANCE METRICS

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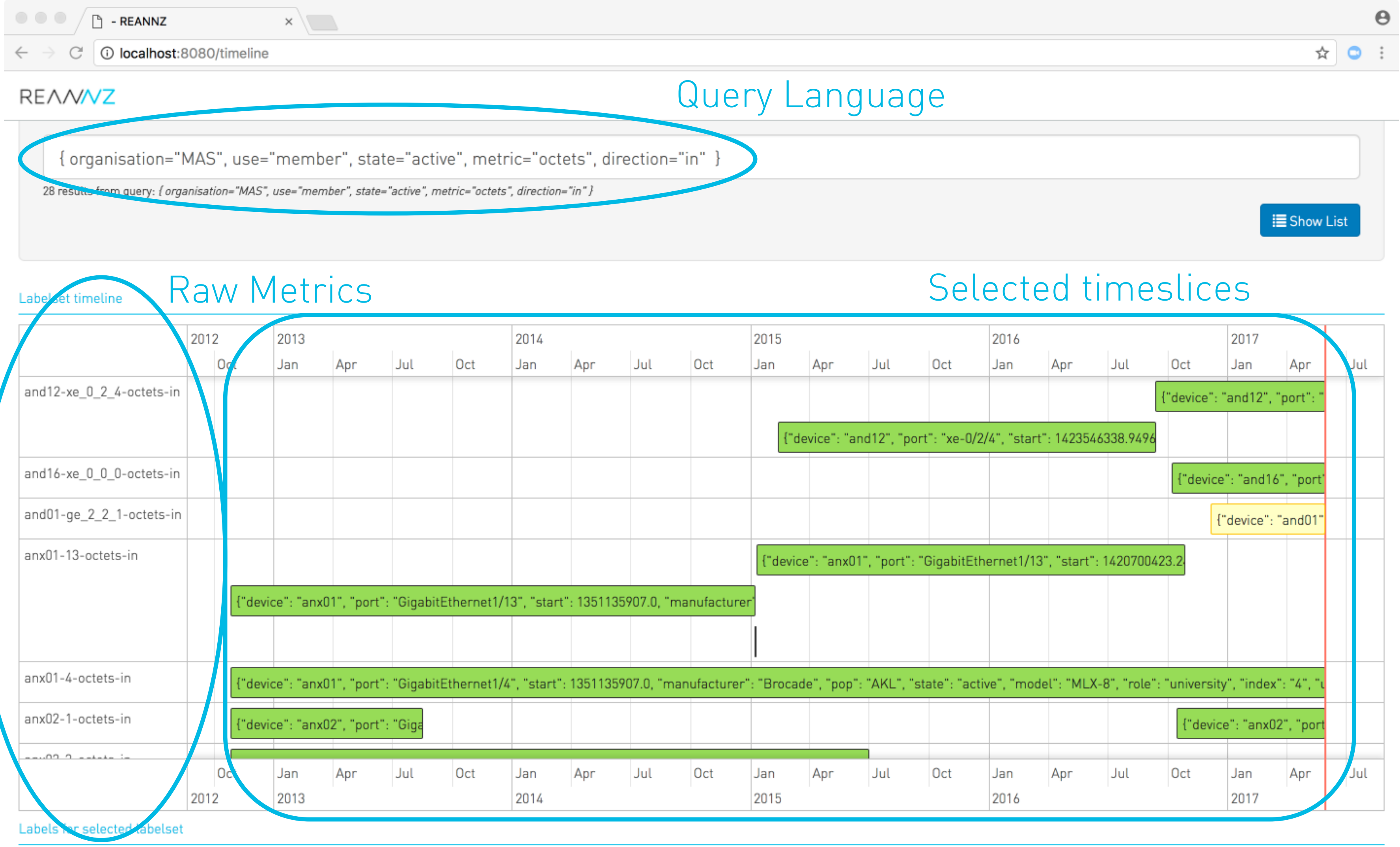
REANNZ

THE PROBLEM

- Questions you want to ask of your network measurements
  - "Total traffic entering the network"
  - "Combined usage of all universities"
  - "How much traffic exits the network in Wellington"
- Questions you actually ask of your network measurements
  - "Sum octets in from device and01, snmp interface id 534 from 2016-05-04 23:45:43 until 2016-07-04 12:34:54 and octets in from device anx01, snmp interface id 45 from 2016-03-02 12:45:32 until 2016-05-04 23:45:42"
- Networks keep changing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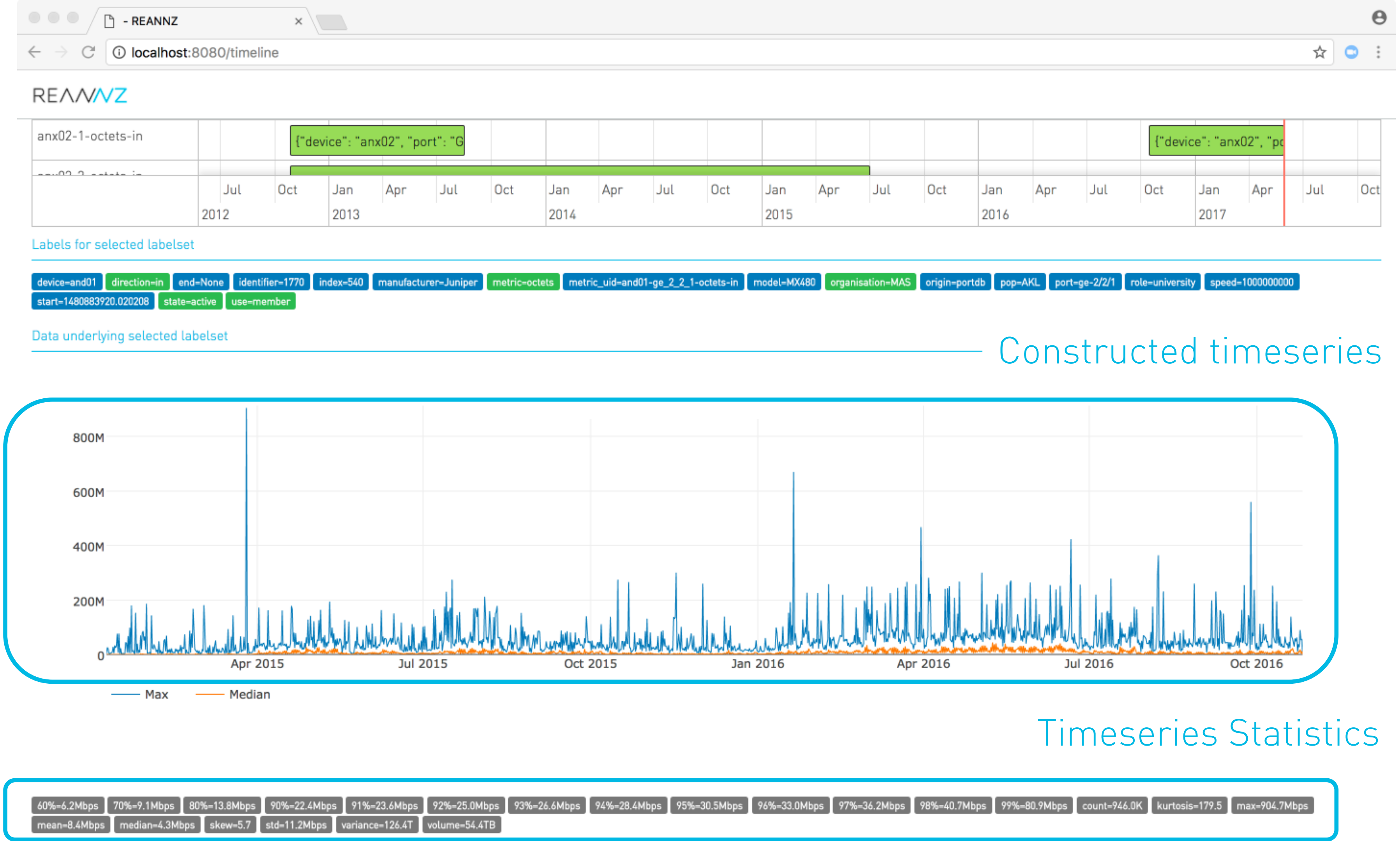
localhost:8080/timeline
REANNZ
Query Language
{ organisation="MAS", use="member", state="active", metric="octets", direction="in" }
28 results from query: { organisation="MAS", use="member", state="active", metric="octets", direction="in" }
Show List
Raw Metrics
Selected timeslices
Labelset timeline
2012 2013 2014 2015 2016 2017
Oct Jan Apr Jul Oct Jan Apr Jul Oct Jan Apr Jul Oct Jan Apr Jul Oct Jan Apr Jul
and12-xe_0_2_4-octets-in
{"device": "and12", "port": "
{"device": "and12", "port": "xe-0/2/4", "start": 1423546338.9496
and16-xe_0_0_0-octets-in
{"device": "and16", "port"
and01-ge_2_2_1-octets-in
{"device": "and01"
anx01-13-octets-in
{"device": "anx01", "port": "GigabitEthernet1/13", "start": 1420700423.2
{"device": "anx01", "port": "GigabitEthernet1/13", "start": 1351135907.0, "manufacturer"
anx01-4-octets-in
{"device": "anx01", "port": "GigabitEthernet1/4", "start": 1351135907.0, "manufacturer": "Brocade", "pop": "AKL", "state": "active", "model": "MLX-8", "role": "university", "index": "4",
anx02-1-octets-in
{"device": "anx02", "port": "Giga
{"device": "anx02", "port
Labels for selected labelset


- REANNZ
localhost:8080/timeline
REANNZ
anx02-1-octets-in
{"device": "anx02", "port": "G
{"device": "anx02", "pc
Jul Oct Jan Apr Jul Oct Jan Apr Jul Oct Jan Apr Jul Oct Jan Apr Jul Oct Jan Apr Jul Oct
2012 2013 2014 2015 2016 2017
Labels for selected labelset
device=and01 direction=in end=None identifier=1770 index=540 manufacturer=Juniper metric=octets metric_uid=and01-ge_2_2_1-octets-in model=MX480 organisation=MAS origin=portdb pop=AKL port=ge-2/2/1 role=university speed=1000000000
start=1480883920.020208 state=active use=member
Data underlying selected labelset
Constructed timeseries
800M
600M
400M
200M
0
Apr 2015 Jul 2015 Oct 2015 Jan 2016 Apr 2016 Jul 2016 Oct 2016
Max
Median
Timeseries Statistics
60%=6.2Mbps 70%=9.1Mbps 80%=13.8Mbps 90%=22.4Mbps 91%=23.6Mbps 92%=25.0Mbps 93%=26.6Mbps 94%=28.4Mbps 95%=30.5Mbps 96%=33.0Mbps 97%=36.2Mbps 98%=40.7Mbps 99%=80.9Mbps count=946.0K kurtosis=179.5 max=904.7Mbps
mean=8.4Mbps median=4.3Mbps skew=5.7 std=11.2Mbps variance=126.4T volume=54.4TB

HOW HAS THIS HELPED REANNZ?

- Labels can be updated if corrections are needed
  - "Oh, we forgot to change the customer details attached to that port"
  - Raw metrics don't change – just fix the labels so different slices are used
- New labels can be added
  - We would like to report on traffic by region of the country
- Statistics are now all calculated at full resolution
  - All data is interpolated and aligned before being combined
  - Maximum and percentiles can be calculated correctly for any time period
- Can now report on over 5 years of historical data

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