Update on RIPE atlas probes at UK HPC sites

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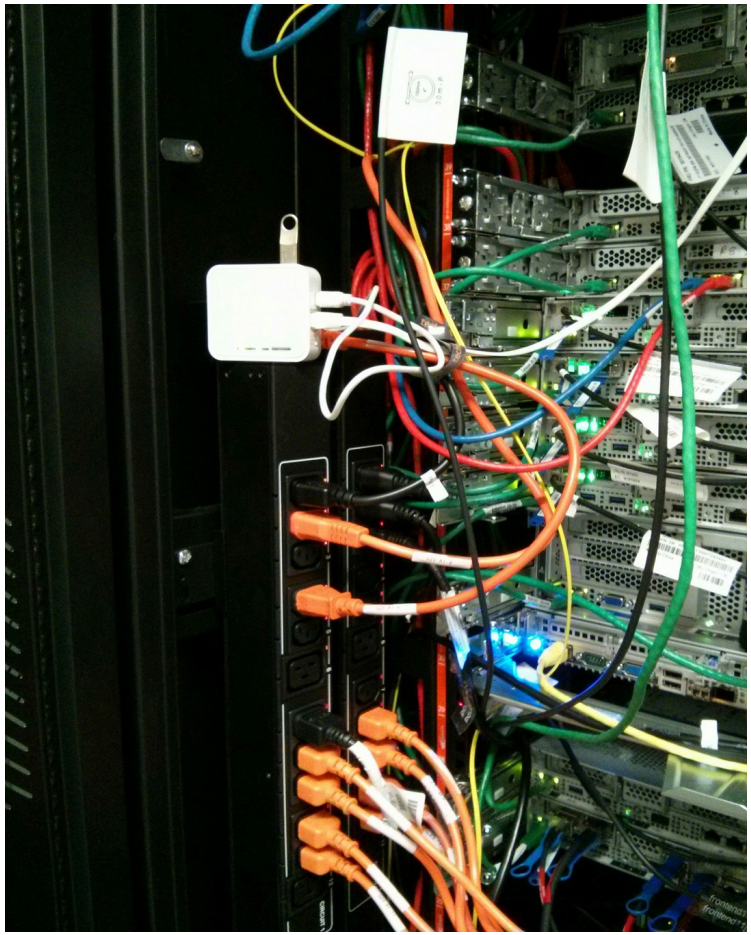
Overview

- Motivation
- RIPE Atlas
  - RIPE
  - Probes
  - Comparison with Perfsonar
- SES sites measurements
  - QMUL → Slough
  - QMUL → SES
- Conclusions

Motivation

- Network monitoring between HPC sites
  - “Standard candle”
  - See Previous talk (in Hull)
- RIPE probe
  - Simple to deploy
  - 10,000 deployed
- Perfsonar
  - More comprehensive
    - Bandwidth and latency
    - Higher frequency of tests
  - More expensive



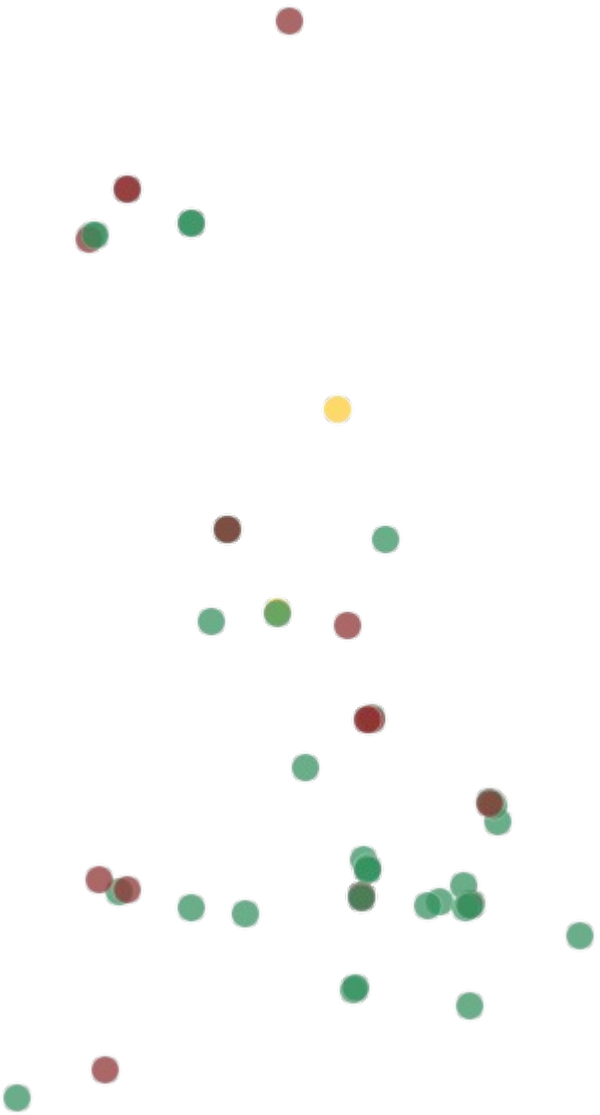
Ripe ATLAS
September 2017

- https://Atlas.ripe.net
- Janet
  - 30 Active probes (green)
  - 3 Disconnected (yellow)
  - 12 Abandoned (red)

Ripe ATLAS
February 2018

- https://Atlas.ripe.net
- Janet (AS 786)
  - 34 (+4) Active probes (green)
  - 2 (-1) Disconnected (yellow)
  - 17 (+5) Abandoned (red)
  - RIPE anchor

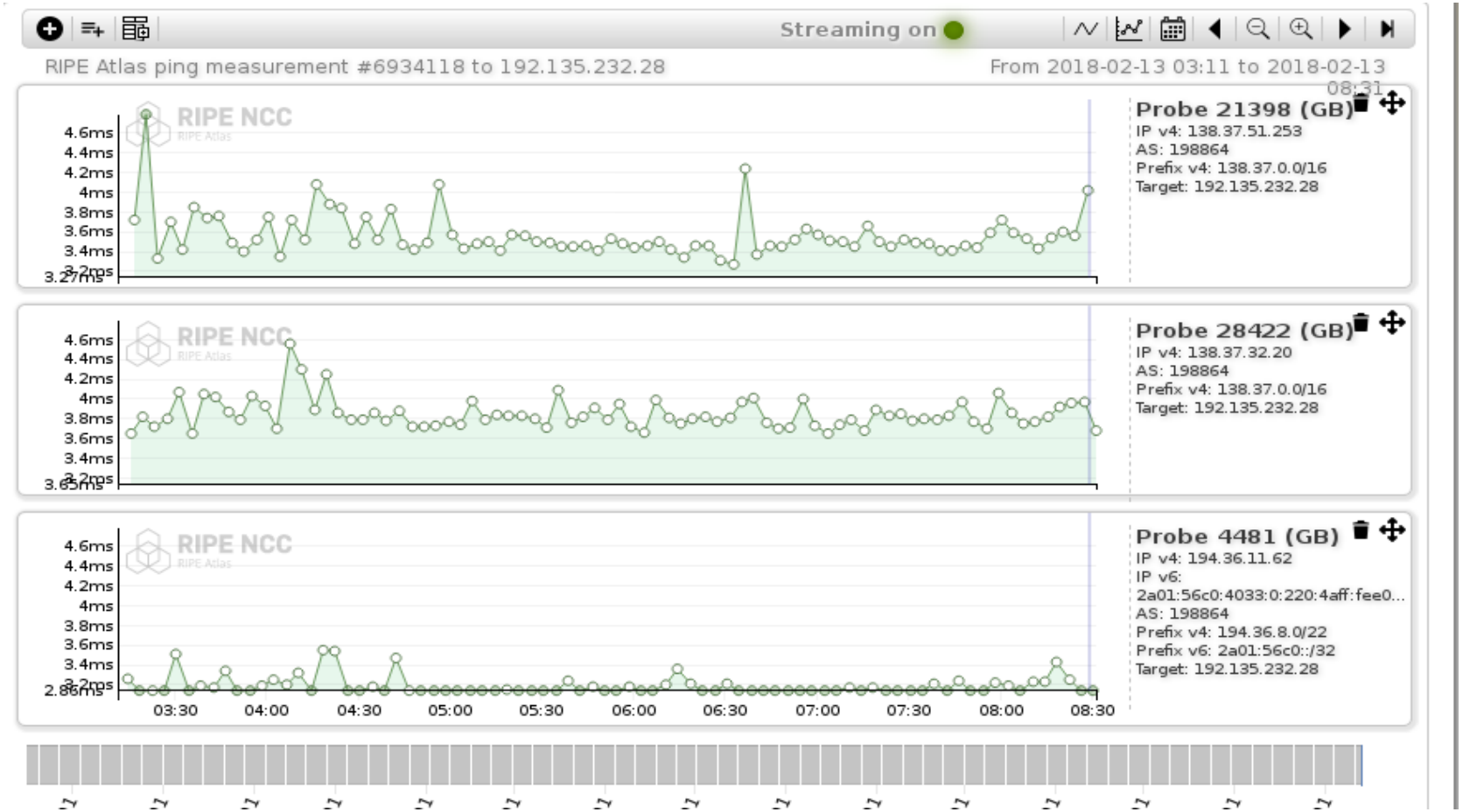
- NB: 4 QMUL probes under AS 198864



Measurements

- Latency (Ping)
- QMUL
  - GridPP (4481)
  - Physics
  - EECS (Computer Science)
  - All To HPC cluster, Slough
- Science and Engineering South
  - RAL
  - Southampton
  - Imperial
  - UCL
  - Diamond

QMUL → QMUL Slough Today

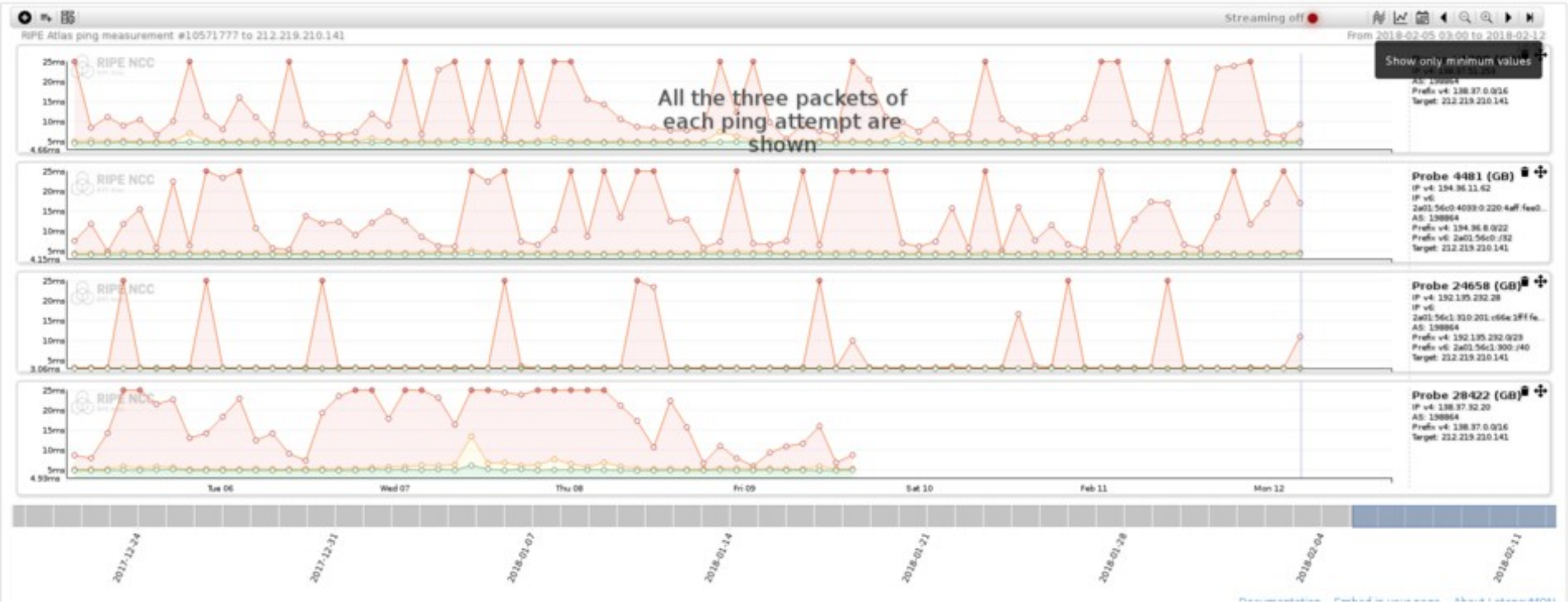


QMUL → QMUL Slough Week

QMUL → QMUL Slough Week

QMUL → QMUL Slough
4 Months

QMUL → RAL


RIPE Atlas ping measurement #10571777 to 212.219.210.141
Streaming off
Show only minimum values
All the three packets of each ping attempt are shown
Probe 4481 (GB)
Probe 24658 (GB)
Probe 28422 (GB)
Tue 06
Wed 07
Thu 08
Fri 09
Sat 10
Feb 11
Mon 12
2017-12-24
2017-12-31
2018-01-07
2018-01-14
2018-01-21
2018-01-28
2018-02-04
2018-02-11

QMUL → Southampton

QMUL → Imperial

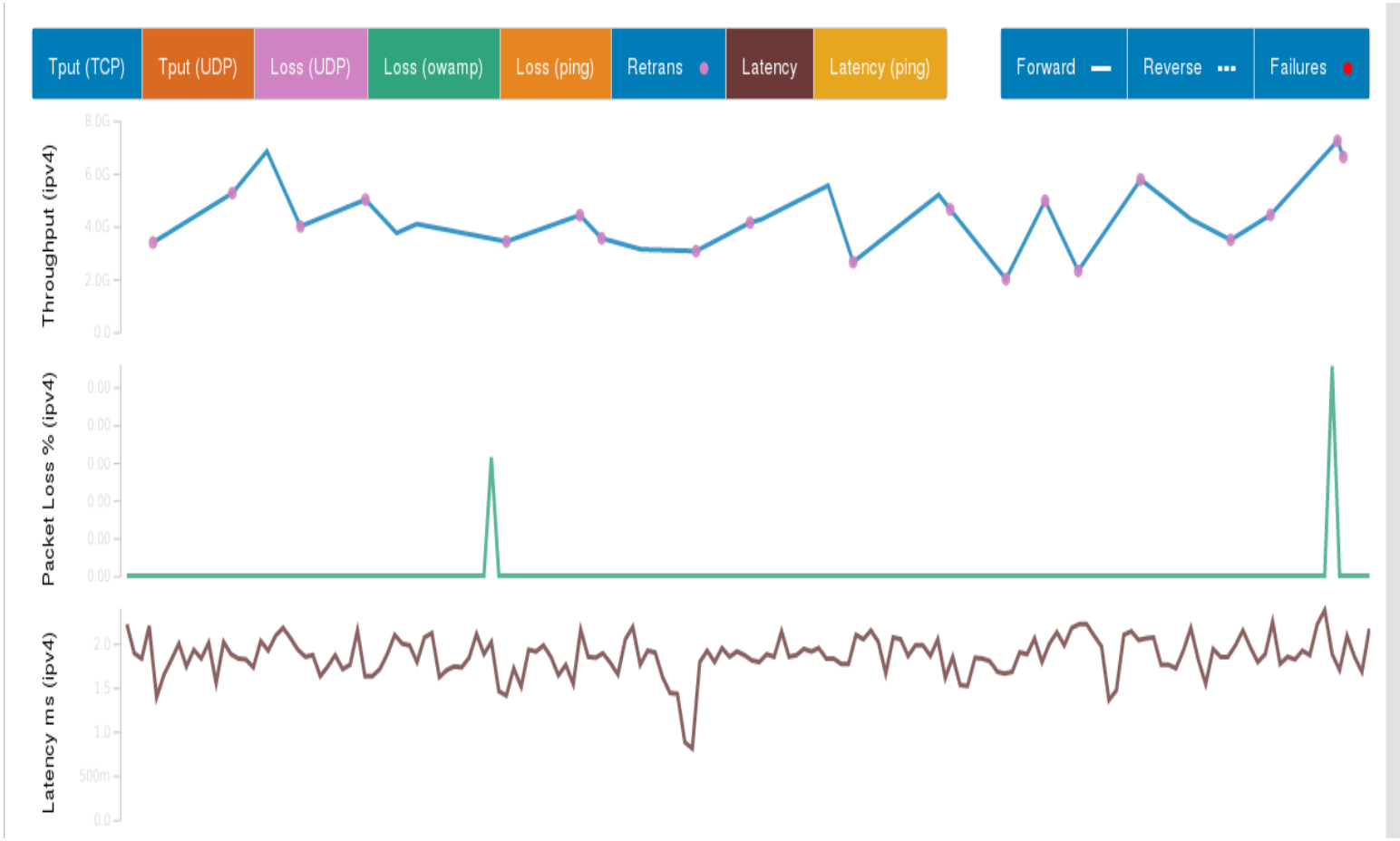
Perfsonar http://ps-dash.dev.ja.net/maddash-webui/index.cgi?dashboard=SES

SES - Latency Testing

Loss rate is <= 0 | Loss rate is >= 0 | Loss rate is >= 0.01 | Unable to retrieve data | Check has not yet run

No problems found in grid

Perfsonar


Tput (TCP)
Tput (UDP)
Loss (UDP)
Loss (owamp)
Loss (ping)
Retrans
Latency
Latency (ping)
Forward
Reverse
Failures
Throughput (ipv4)
8.0G
6.0G
4.0G
2.0G
0.0
Packet Loss % (ipv4)
0.00
Latency ms (ipv4)
2.0
1.5
1.0
500m
0.0

Conclusions
And further work

- Outlier RTT much larger than min/median
  - This was unexpected (and unexplained?)
- Need to expand mesh to be useful
  - Use Janet credits for this
  - Hub and spoke, or full mesh?
  - Export JSON for pretty printing?
  - Perfsonar
- What else is needed?