

Pantheon Report

Generated at 2018-01-25 18:09:56 (UTC).

Data path: AWS India 1 Ethernet (*local*) → India ppp0 (*remote*).

Repeated the test of 15 congestion control schemes 3 times.

Each test lasted for 30 seconds running 1 flow.

Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

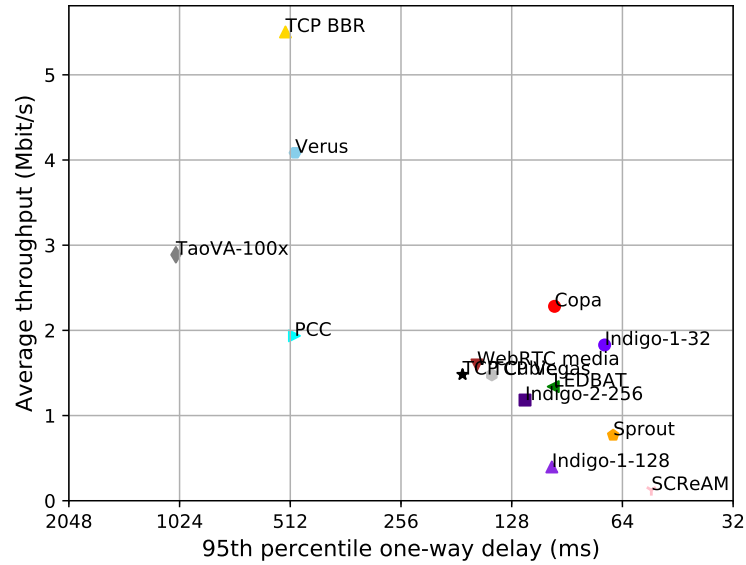
Tested BBR with qdisc of Fair Queuing (**fq**), and other schemes with the default Linux qdisc (**pfifo_fast**).

NTP offsets were measured against **nets.org.sg** and have been applied to correct the timestamps in logs.

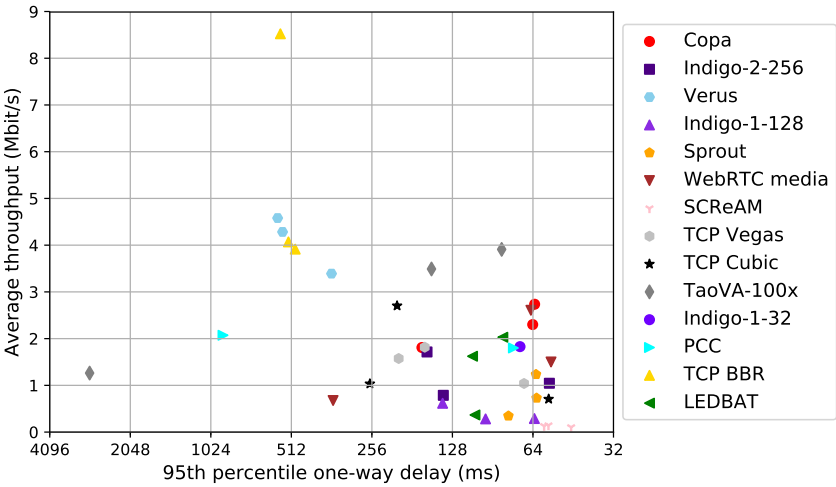
Git summary:

```
branch: master @ f23294ec38436c9f802847d477a41b7343ec76e6
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
  M datagrump/sender.cc
third_party/fillp @ ec9585325218d5048c4d4152fa42240af54c6e67
third_party/genericCC @ 80b516c448f795fd6e9675f7177b69c622f07da8
third_party/indigo @ a9b2060d39e4da2e8987e893e3eca2a6c7cd0ab9
third_party/indigo-1-layer-128-unit @ 3ae9e4ef4230db7484501f82ce8b377695f2f66d
third_party/indigo-1-layer-32-unit @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-1-layer-32-unit-no-calib @ 1f3a7f75b41135ed5b540c0fd3505939528e2a5f
third_party/indigo-no-calib @ 7224f2202e8a044d8306fa0b983ad84360c53d89
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
  M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ fb1053193c2861da659ba9013db26744ccfcf993
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
  M receiver/src/buffer.h
  M receiver/src/core.cpp
  M sender/src/buffer.h
  M sender/src/core.cpp
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream @ c3370fd7bd17265a79aeb34e4016ad23f5965885
third_party/sourdough @ f1a14bffe749737437f61b1eaeab30b267cde681
third_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce
  M src/examples/cellsim.cc
  M src/examples/sproutbt2.cc
  M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
  M src/verus.hpp
  M tools/plot.py
third_party/vivace @ 423cbca3e8ea1d599e7b5cf725835e8a2b6bfac6
third_party/webrtc @ a488197ddd041ace68a42849b2540ad834825f42
```

test from AWS India 1 Ethernet to India ppp0, 3 runs of 30s each per scheme
(mean of all runs by scheme)



test from AWS India 1 Ethernet to India ppp0, 3 runs of 30s each per scheme



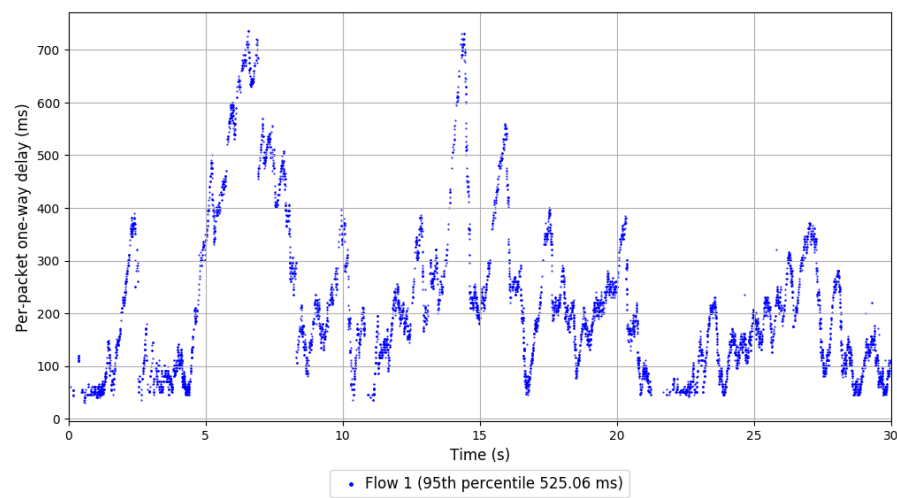
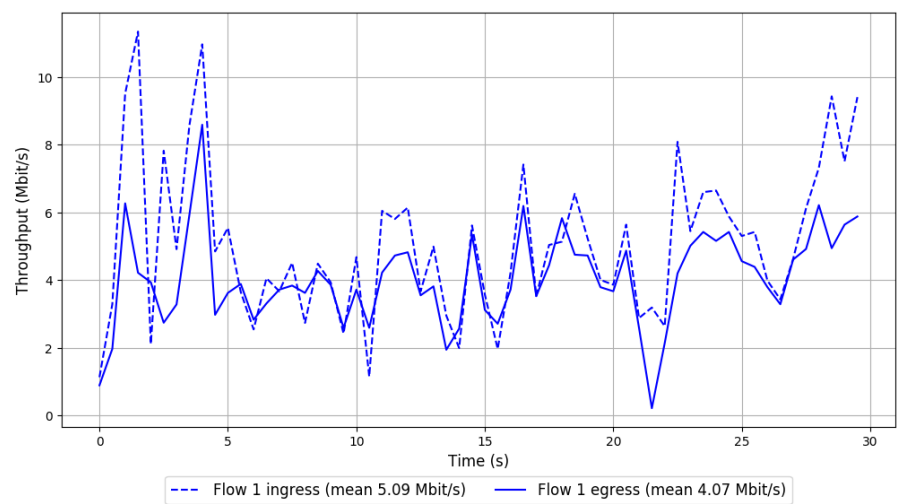
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	5.50	527.67	14.60
TCP Cubic	3	1.48	174.17	3.29
LEDBAT	3	1.34	98.69	5.01
PCC	2	1.94	498.84	7.99
QUIC Cubic	0	N/A	N/A	N/A
SCReAM	3	0.12	53.41	1.27
WebRTC media	3	1.59	159.13	2.00
Sprout	3	0.77	67.81	3.52
TaoVA-100x	3	2.89	1047.94	18.25
TCP Vegas	3	1.48	144.94	3.62
Verus	3	4.08	496.92	9.41
Copa	3	2.28	97.89	1.59
Indigo-2-256	3	1.18	117.76	2.98
Indigo-1-32	1	1.83	71.54	1.35
Indigo-1-128	3	0.40	99.57	1.47

Run 1: Statistics of TCP BBR

Start at: 2018-01-25 17:27:44
End at: 2018-01-25 17:28:14
Local clock offset: 0.786 ms
Remote clock offset: -14.034 ms

Below is generated by plot.py at 2018-01-25 18:09:29
Datalink statistics
-- Total of 1 flow:
Average throughput: 4.07 Mbit/s
95th percentile per-packet one-way delay: 525.063 ms
Loss rate: 20.24%
-- Flow 1:
Average throughput: 4.07 Mbit/s
95th percentile per-packet one-way delay: 525.063 ms
Loss rate: 20.24%

Run 1: Report of TCP BBR — Data Link

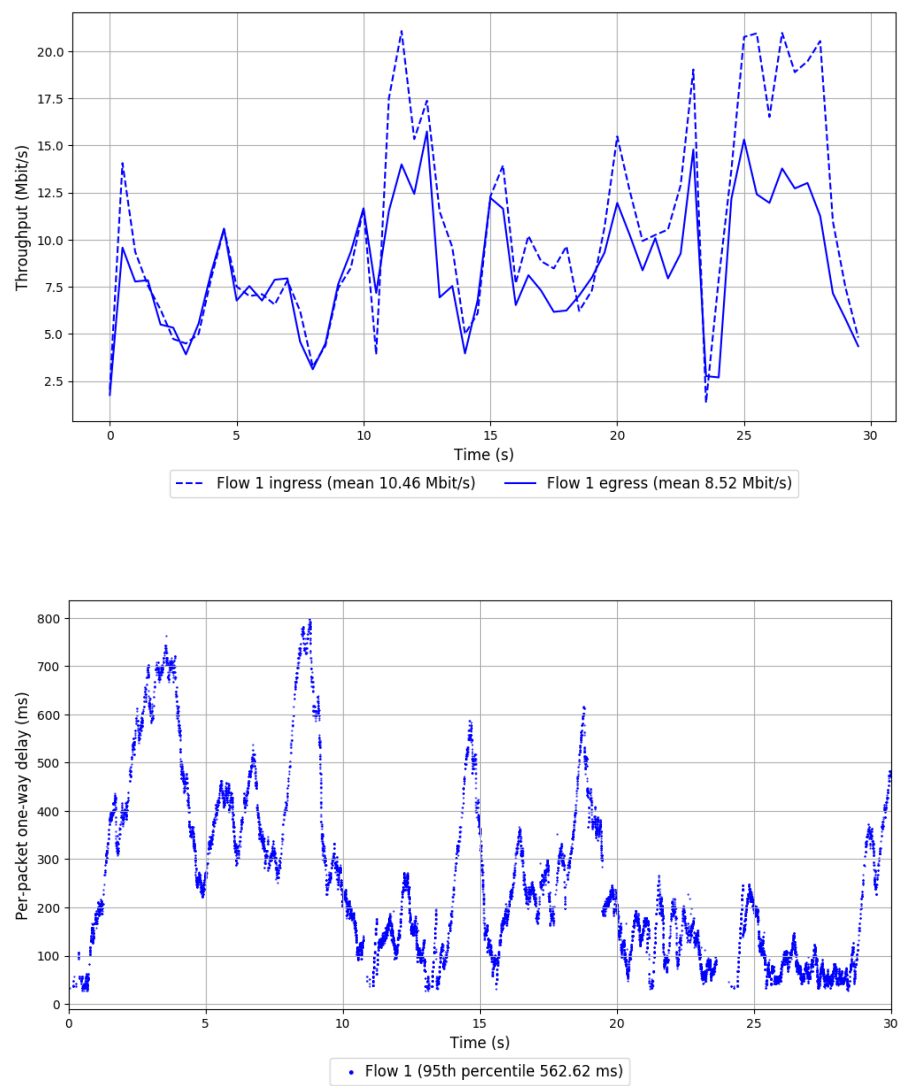


Run 2: Statistics of TCP BBR

Start at: 2018-01-25 17:45:06
End at: 2018-01-25 17:45:36
Local clock offset: 2.699 ms
Remote clock offset: -16.997 ms

Below is generated by plot.py at 2018-01-25 18:09:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 8.52 Mbit/s
95th percentile per-packet one-way delay: 562.616 ms
Loss rate: 18.60%
-- Flow 1:
Average throughput: 8.52 Mbit/s
95th percentile per-packet one-way delay: 562.616 ms
Loss rate: 18.60%

Run 2: Report of TCP BBR — Data Link

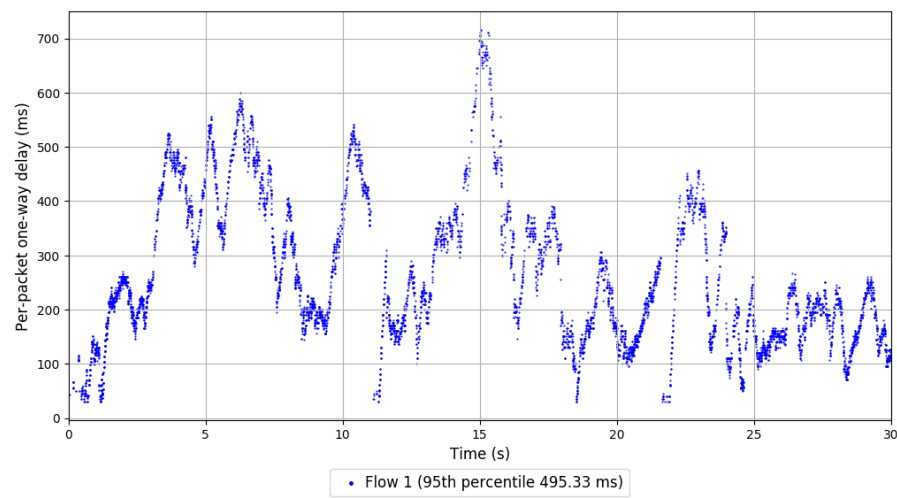
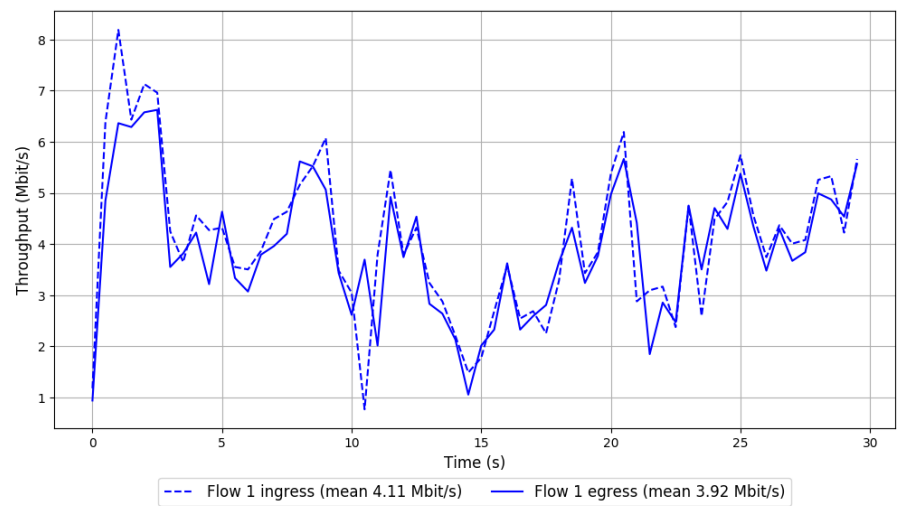


Run 3: Statistics of TCP BBR

Start at: 2018-01-25 18:02:30
End at: 2018-01-25 18:03:00
Local clock offset: 0.898 ms
Remote clock offset: -15.724 ms

Below is generated by plot.py at 2018-01-25 18:09:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.92 Mbit/s
95th percentile per-packet one-way delay: 495.326 ms
Loss rate: 4.97%
-- Flow 1:
Average throughput: 3.92 Mbit/s
95th percentile per-packet one-way delay: 495.326 ms
Loss rate: 4.97%

Run 3: Report of TCP BBR — Data Link

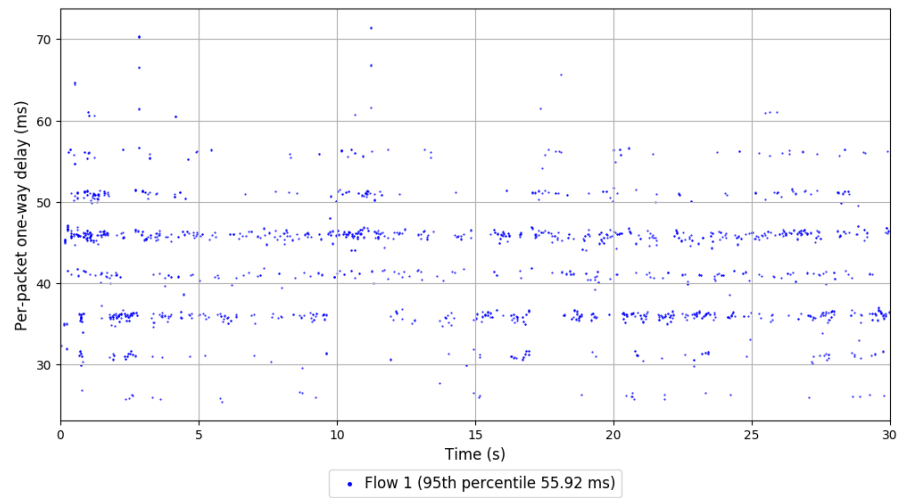
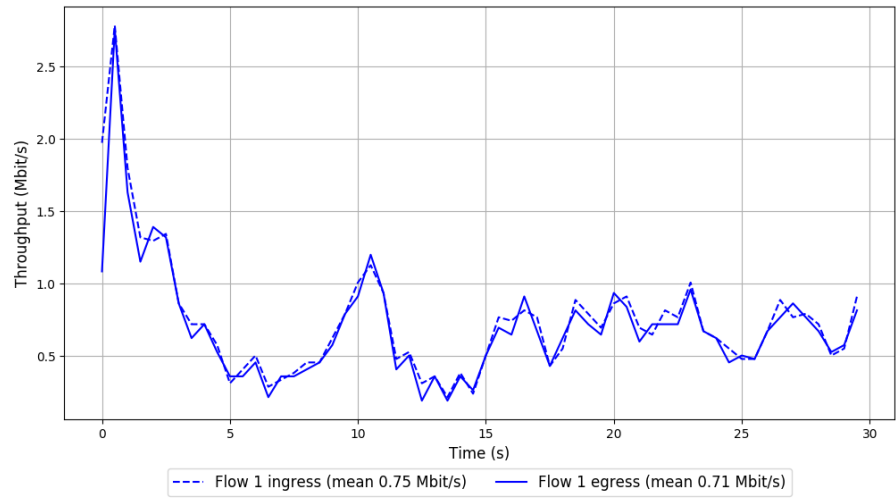


Run 1: Statistics of TCP Cubic

Start at: 2018-01-25 17:26:39
End at: 2018-01-25 17:27:09
Local clock offset: 2.718 ms
Remote clock offset: -16.459 ms

Below is generated by plot.py at 2018-01-25 18:09:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.71 Mbit/s
95th percentile per-packet one-way delay: 55.917 ms
Loss rate: 5.62%
-- Flow 1:
Average throughput: 0.71 Mbit/s
95th percentile per-packet one-way delay: 55.917 ms
Loss rate: 5.62%

Run 1: Report of TCP Cubic — Data Link

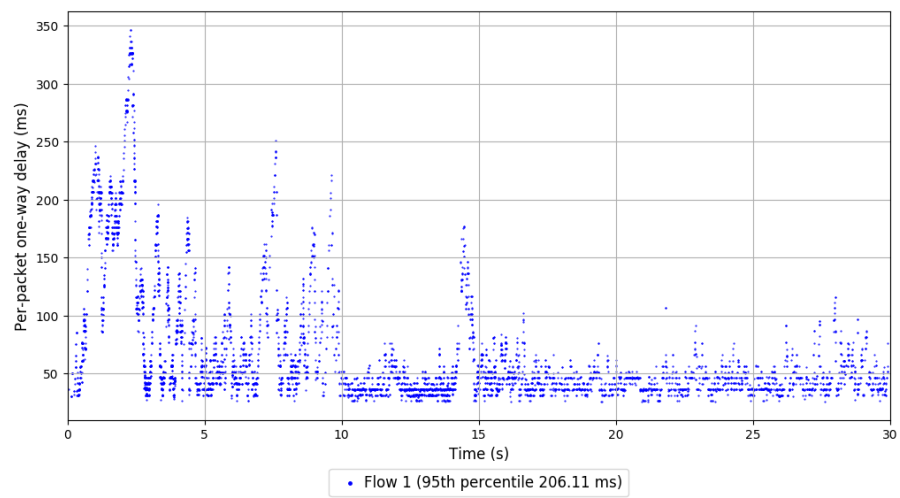
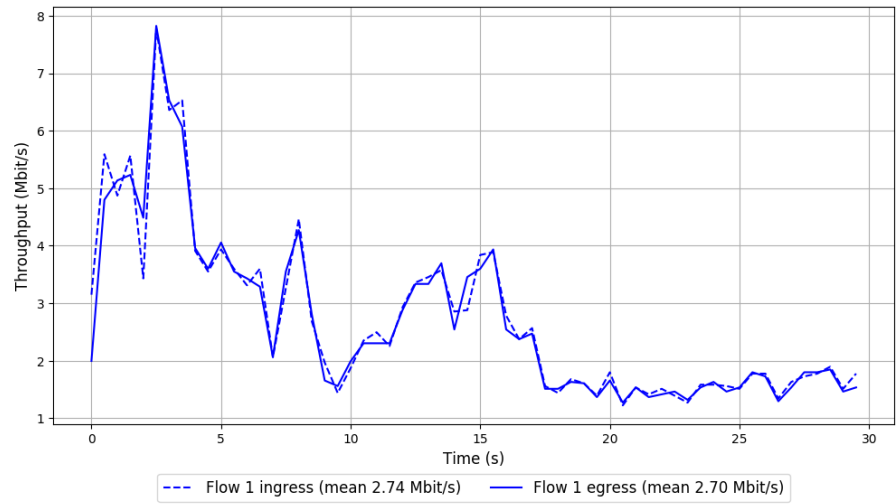


Run 2: Statistics of TCP Cubic

Start at: 2018-01-25 17:44:01
End at: 2018-01-25 17:44:31
Local clock offset: 2.417 ms
Remote clock offset: -18.211 ms

Below is generated by plot.py at 2018-01-25 18:09:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.70 Mbit/s
95th percentile per-packet one-way delay: 206.109 ms
Loss rate: 1.38%
-- Flow 1:
Average throughput: 2.70 Mbit/s
95th percentile per-packet one-way delay: 206.109 ms
Loss rate: 1.38%

Run 2: Report of TCP Cubic — Data Link

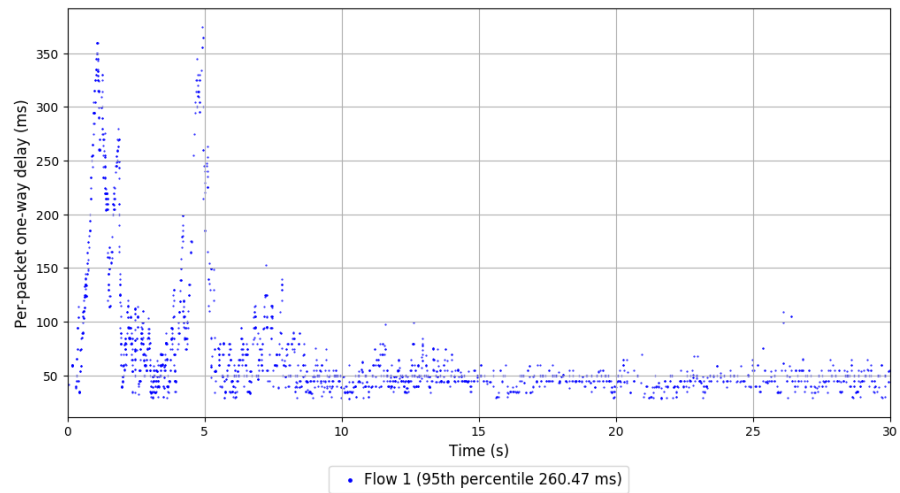
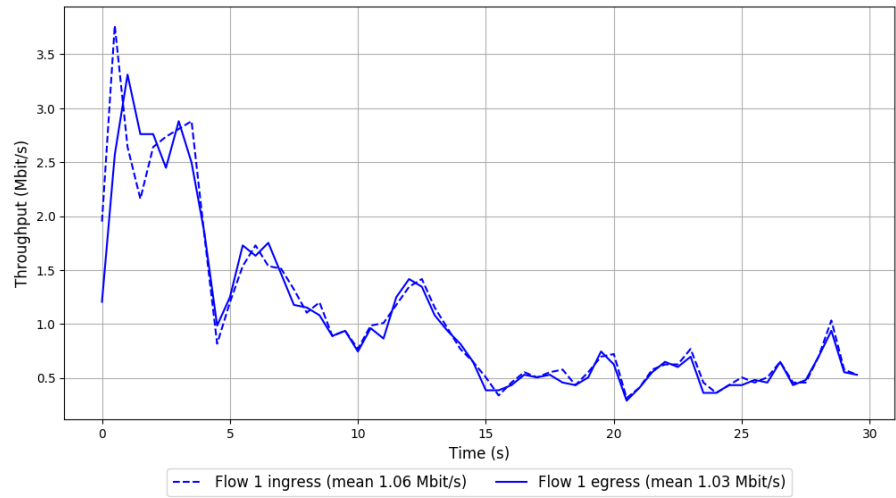


Run 3: Statistics of TCP Cubic

Start at: 2018-01-25 18:01:25
End at: 2018-01-25 18:01:55
Local clock offset: 1.263 ms
Remote clock offset: -15.746 ms

Below is generated by plot.py at 2018-01-25 18:09:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.03 Mbit/s
95th percentile per-packet one-way delay: 260.470 ms
Loss rate: 2.86%
-- Flow 1:
Average throughput: 1.03 Mbit/s
95th percentile per-packet one-way delay: 260.470 ms
Loss rate: 2.86%

Run 3: Report of TCP Cubic — Data Link

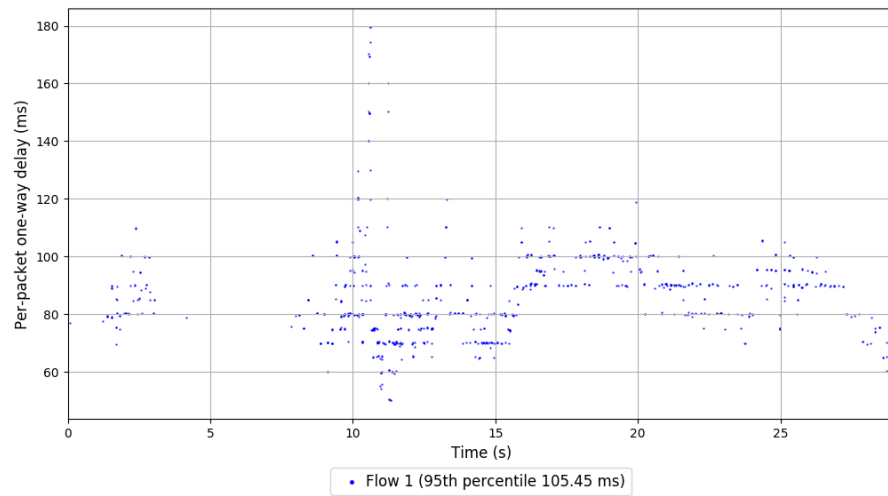
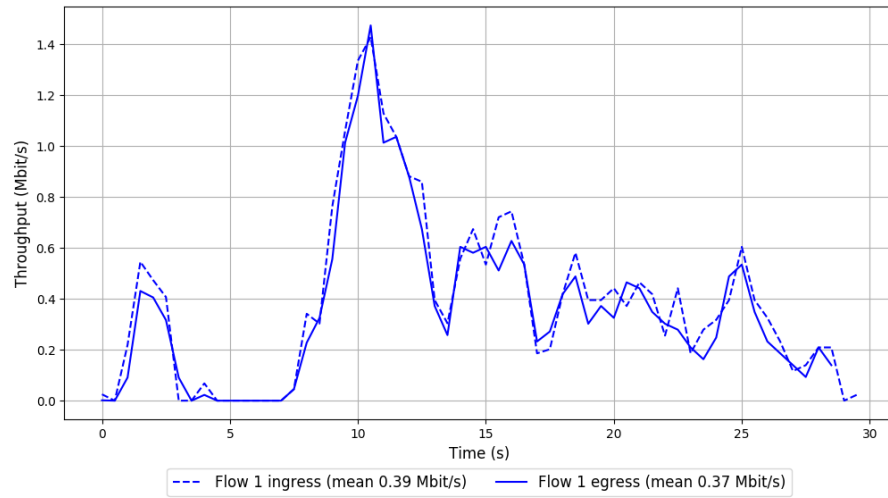


```
Run 1: Statistics of LEDBAT

Start at: 2018-01-25 17:17:56
End at: 2018-01-25 17:18:27
Local clock offset: 2.069 ms
Remote clock offset: -14.982 ms

# Below is generated by plot.py at 2018-01-25 18:09:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 105.453 ms
Loss rate: 9.65%
-- Flow 1:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 105.453 ms
Loss rate: 9.65%
```


Run 1: Report of LEDBAT — Data Link

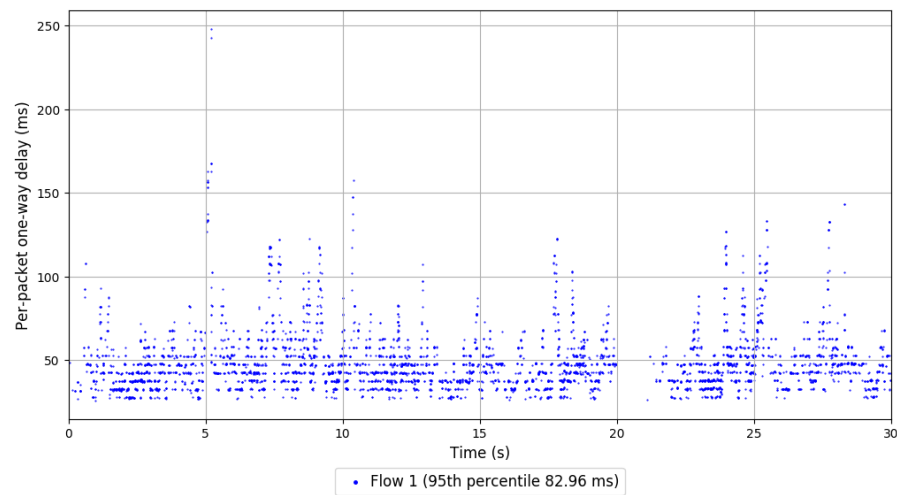
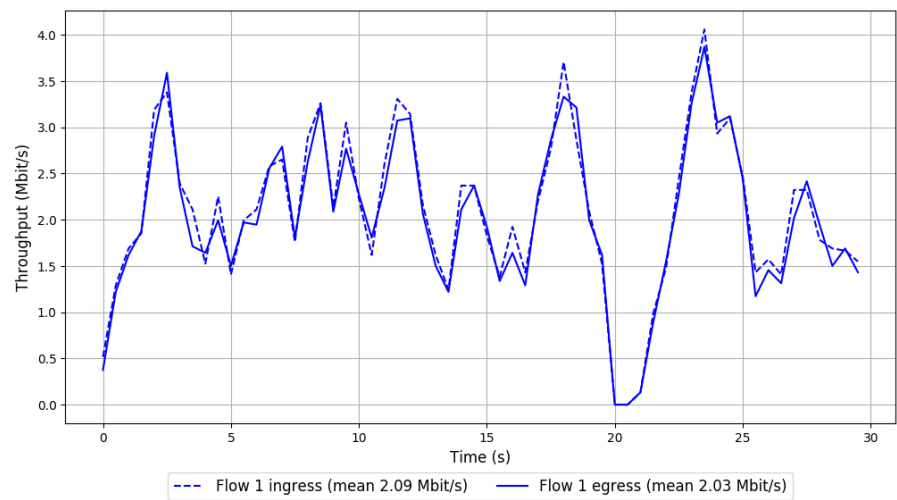


Run 2: Statistics of LEDBAT

Start at: 2018-01-25 17:35:21
End at: 2018-01-25 17:35:51
Local clock offset: 0.469 ms
Remote clock offset: -15.377 ms

Below is generated by plot.py at 2018-01-25 18:09:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.03 Mbit/s
95th percentile per-packet one-way delay: 82.957 ms
Loss rate: 2.92%
-- Flow 1:
Average throughput: 2.03 Mbit/s
95th percentile per-packet one-way delay: 82.957 ms
Loss rate: 2.92%

Run 2: Report of LEDBAT — Data Link

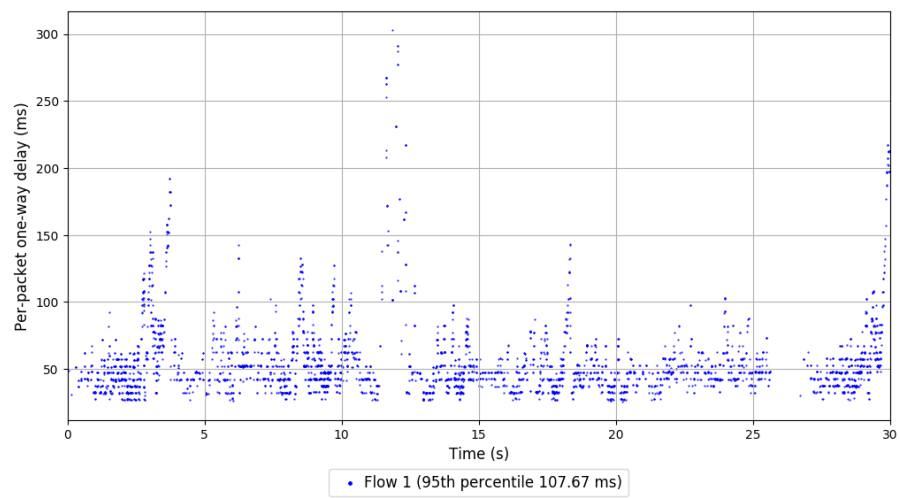
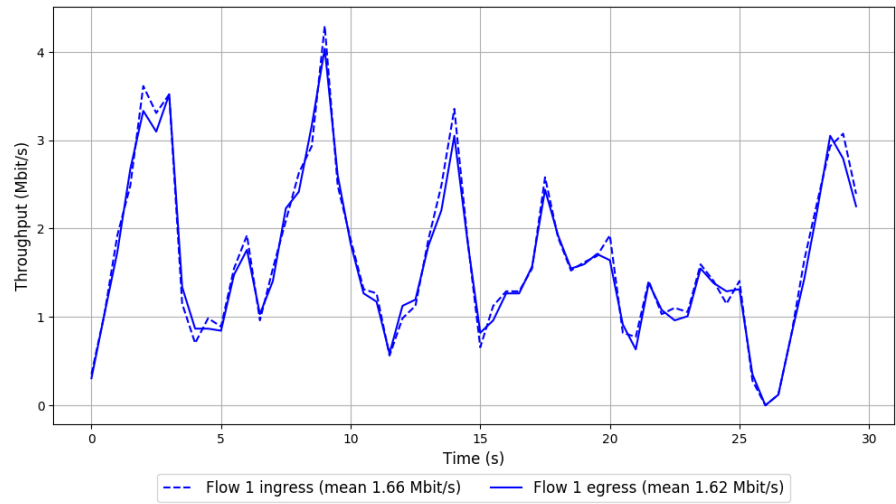


Run 3: Statistics of LEDBAT

Start at: 2018-01-25 17:52:42
End at: 2018-01-25 17:53:13
Local clock offset: 0.823 ms
Remote clock offset: -16.234 ms

Below is generated by plot.py at 2018-01-25 18:09:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.62 Mbit/s
95th percentile per-packet one-way delay: 107.674 ms
Loss rate: 2.45%
-- Flow 1:
Average throughput: 1.62 Mbit/s
95th percentile per-packet one-way delay: 107.674 ms
Loss rate: 2.45%

Run 3: Report of LEDBAT — Data Link

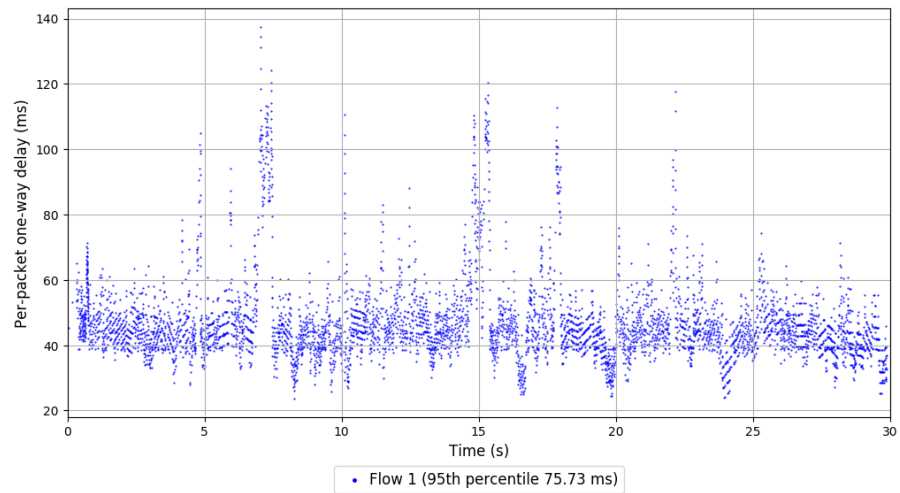
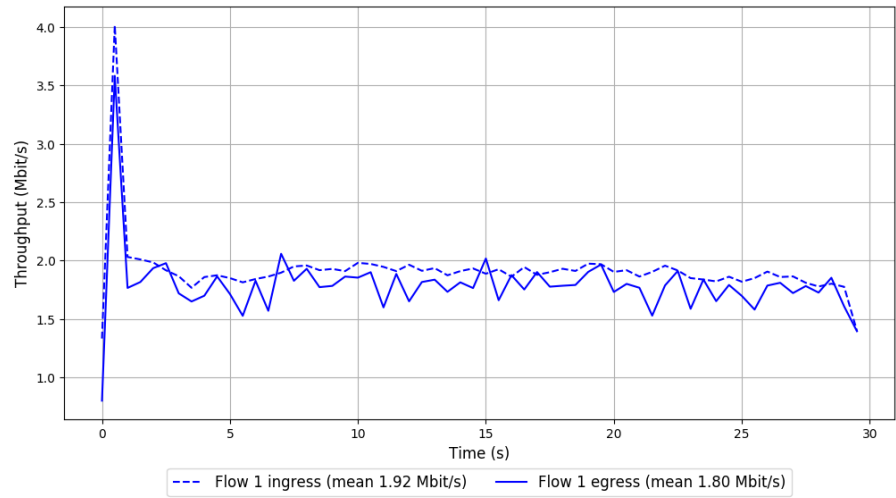


Run 1: Statistics of PCC

Start at: 2018-01-25 17:33:10
End at: 2018-01-25 17:33:40
Local clock offset: 4.1 ms
Remote clock offset: -14.625 ms

Below is generated by plot.py at 2018-01-25 18:09:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.80 Mbit/s
95th percentile per-packet one-way delay: 75.733 ms
Loss rate: 6.51%
-- Flow 1:
Average throughput: 1.80 Mbit/s
95th percentile per-packet one-way delay: 75.733 ms
Loss rate: 6.51%

Run 1: Report of PCC — Data Link

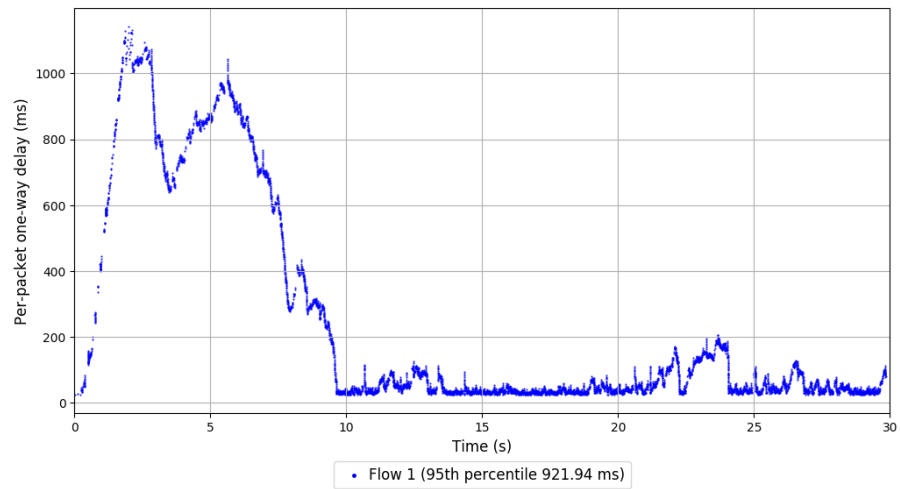
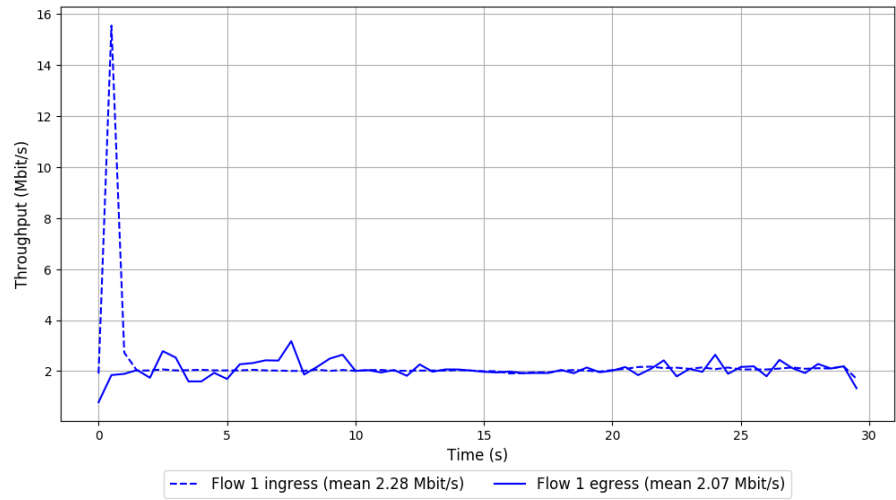


Run 2: Statistics of PCC

Start at: 2018-01-25 17:50:32
End at: 2018-01-25 17:51:02
Local clock offset: 3.856 ms
Remote clock offset: -15.962 ms

Below is generated by plot.py at 2018-01-25 18:09:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.07 Mbit/s
95th percentile per-packet one-way delay: 921.938 ms
Loss rate: 9.47%
-- Flow 1:
Average throughput: 2.07 Mbit/s
95th percentile per-packet one-way delay: 921.938 ms
Loss rate: 9.47%

Run 2: Report of PCC — Data Link



Run 3: Statistics of PCC

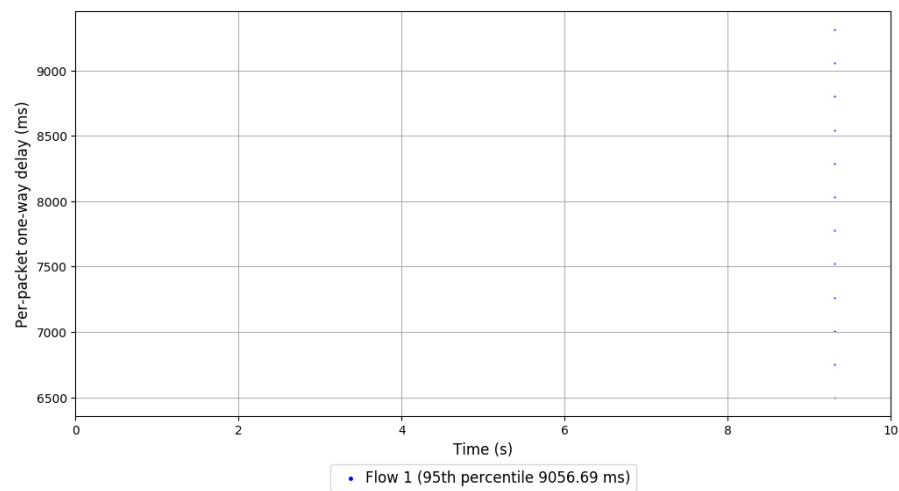
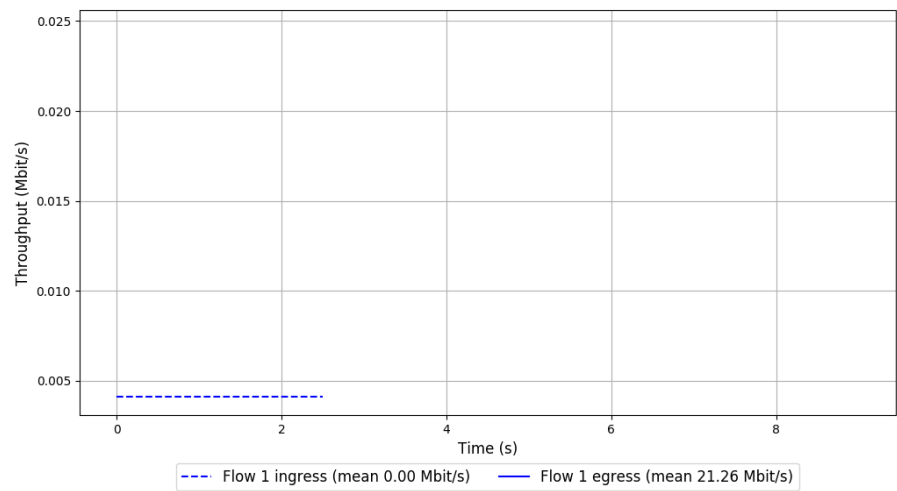
Start at: 2018-01-25 18:07:57

End at: 2018-01-25 18:08:27

Local clock offset: 1.708 ms

Remote clock offset: -16.249 ms

Run 3: Report of PCC — Data Link



Run 1: Statistics of QUIC Cubic

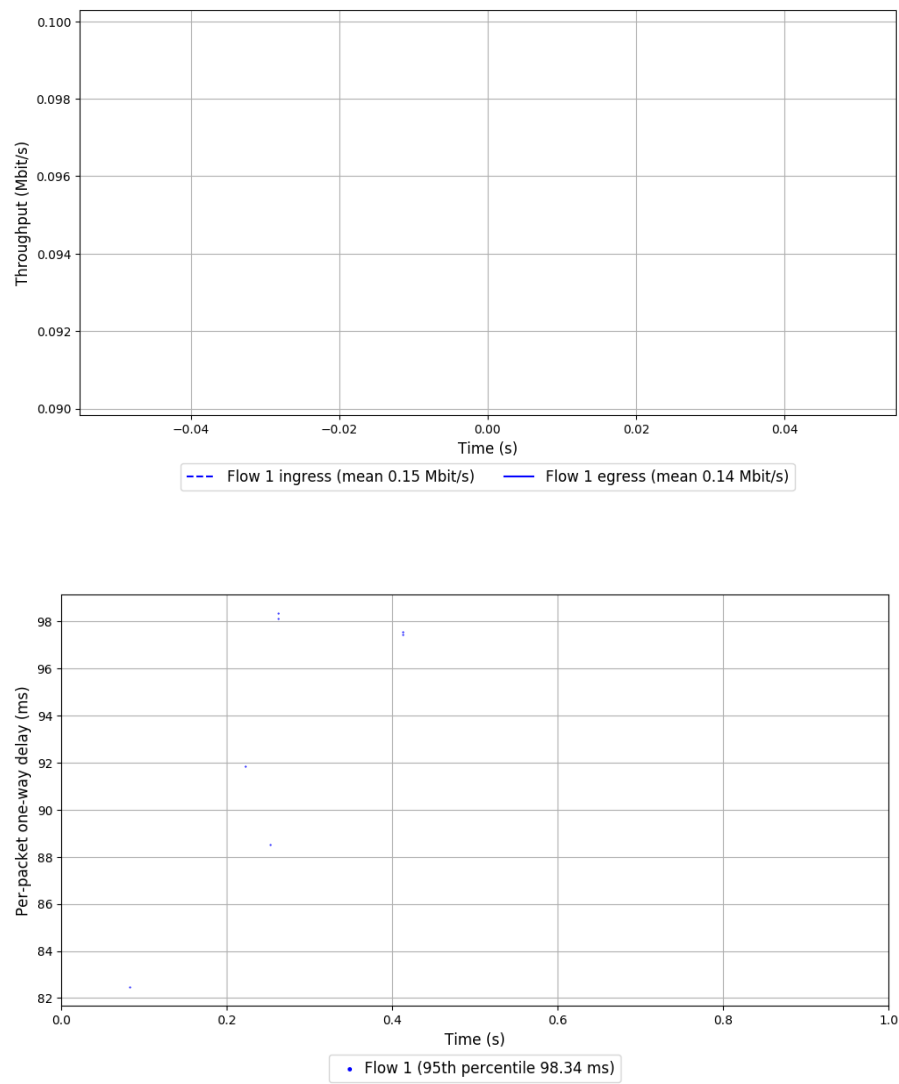
Start at: 2018-01-25 17:19:01

End at: 2018-01-25 17:19:31

Local clock offset: 4.308 ms

Remote clock offset: -13.904 ms

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

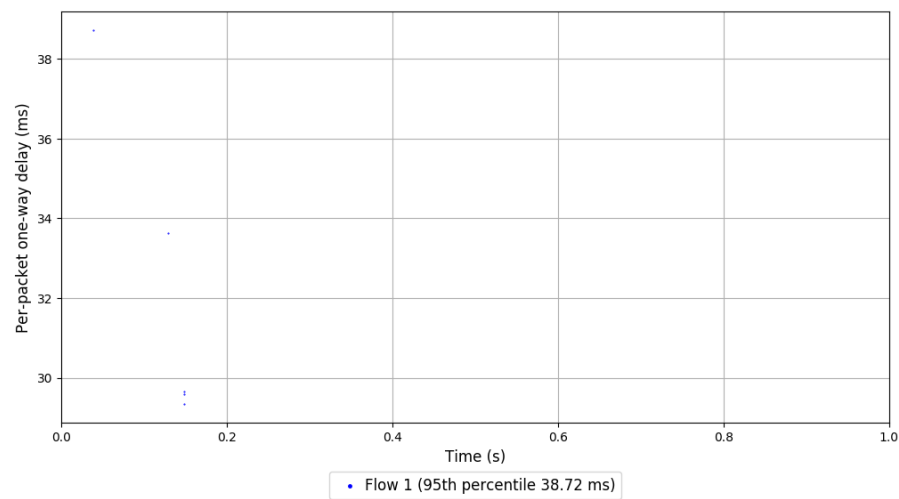
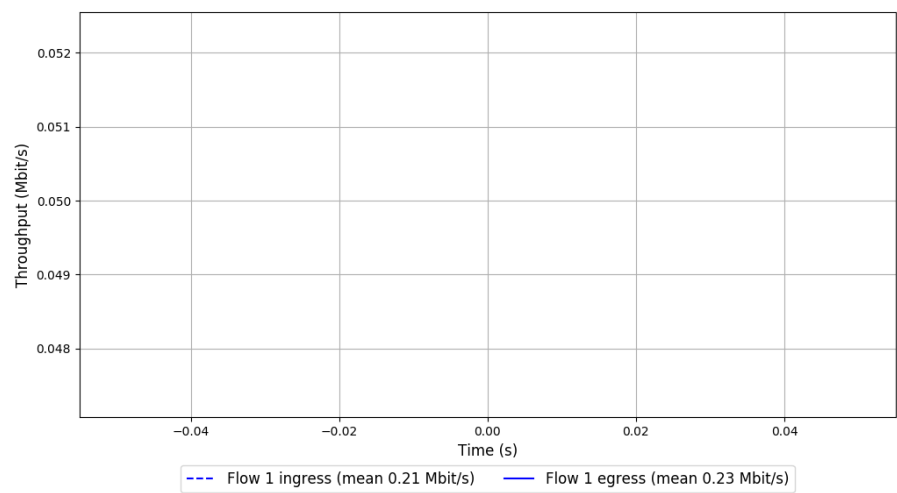
Start at: 2018-01-25 17:36:26

End at: 2018-01-25 17:36:56

Local clock offset: 2.179 ms

Remote clock offset: -16.18 ms

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

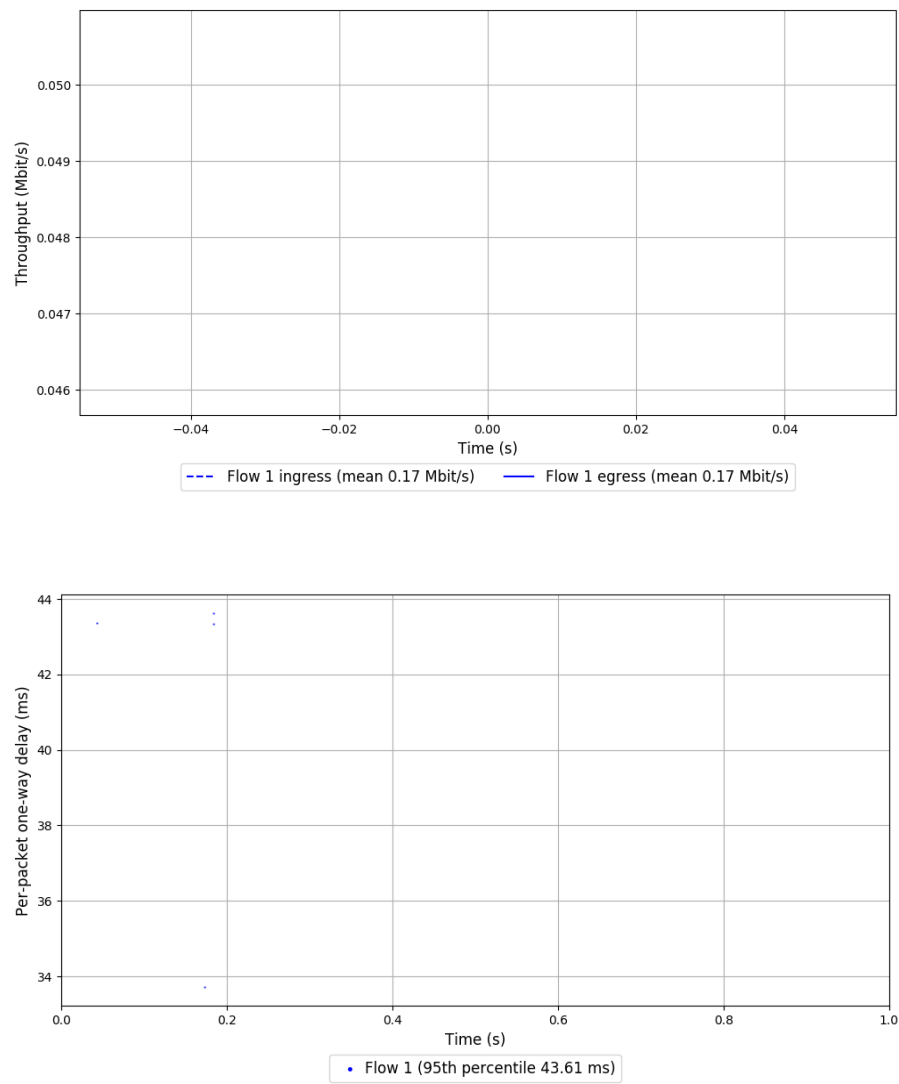
Start at: 2018-01-25 17:53:47

End at: 2018-01-25 17:54:17

Local clock offset: 4.356 ms

Remote clock offset: -15.736 ms

Run 3: Report of QUIC Cubic — Data Link

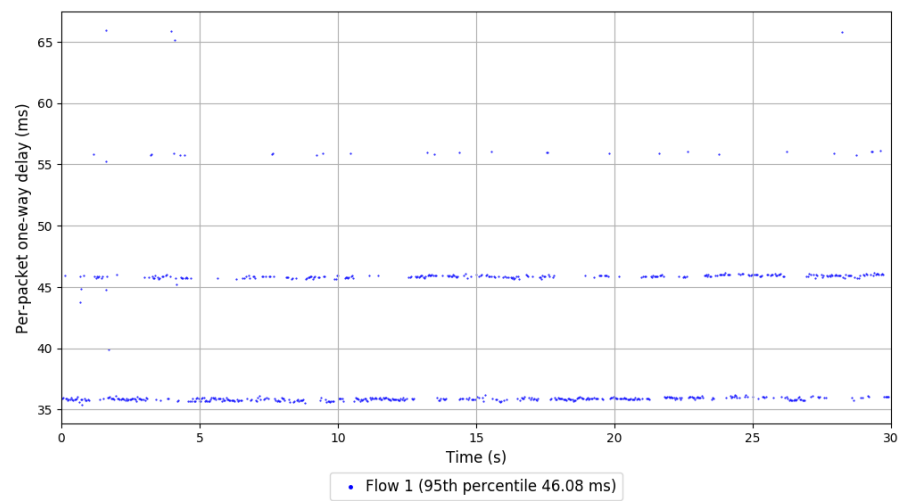
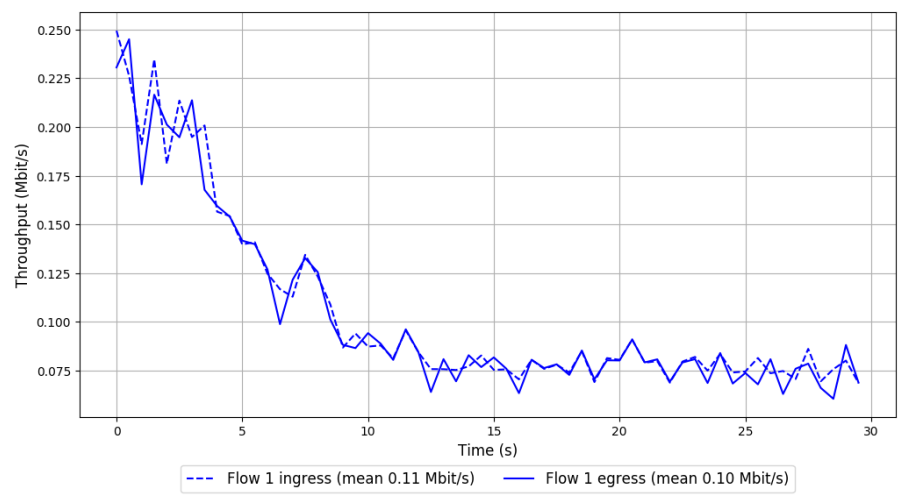


```
Run 1: Statistics of SCReAM

Start at: 2018-01-25 17:24:29
End at: 2018-01-25 17:24:59
Local clock offset: 4.205 ms
Remote clock offset: -14.781 ms

# Below is generated by plot.py at 2018-01-25 18:09:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 46.076 ms
Loss rate: 1.85%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 46.076 ms
Loss rate: 1.85%
```

Run 1: Report of SReAM — Data Link

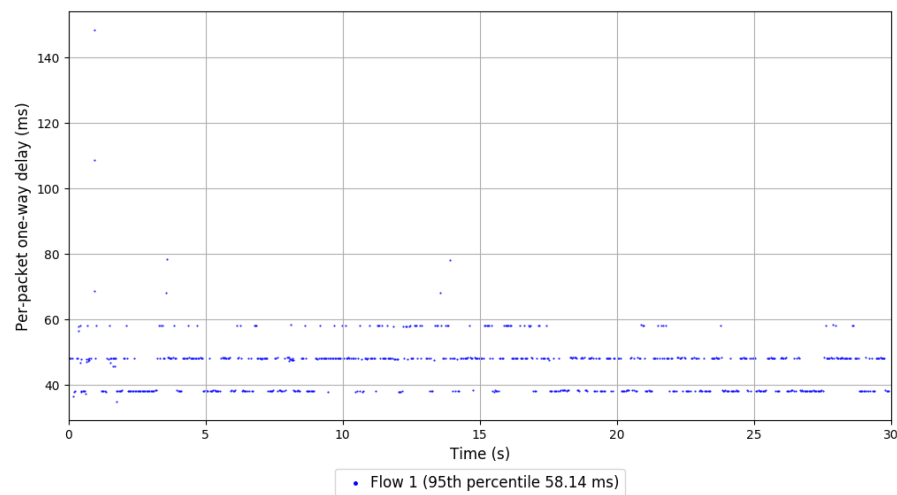
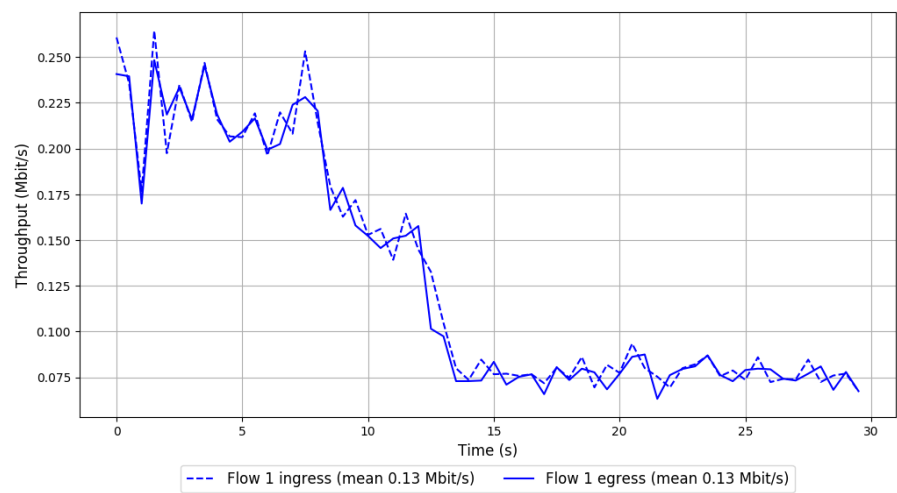


Run 2: Statistics of SCReAM

Start at: 2018-01-25 17:41:51
End at: 2018-01-25 17:42:21
Local clock offset: 3.136 ms
Remote clock offset: -15.205 ms

Below is generated by plot.py at 2018-01-25 18:09:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 58.139 ms
Loss rate: 1.71%
-- Flow 1:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 58.139 ms
Loss rate: 1.71%

Run 2: Report of SReAM — Data Link

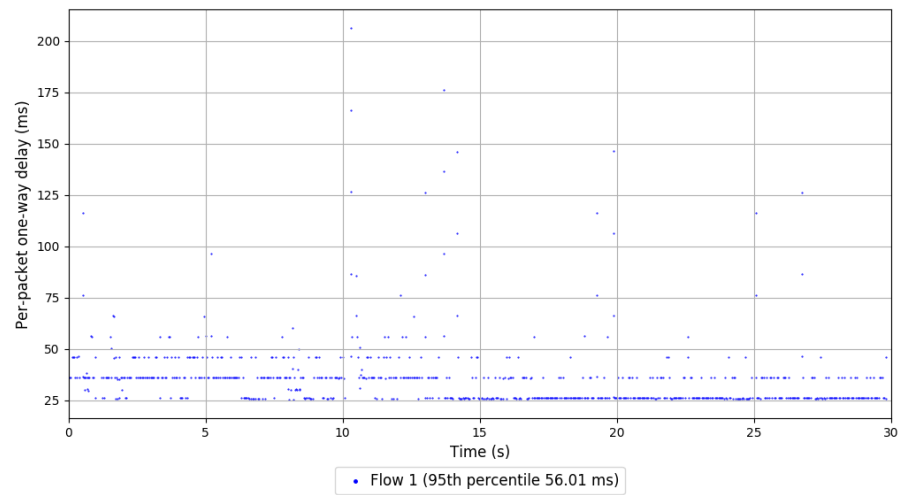
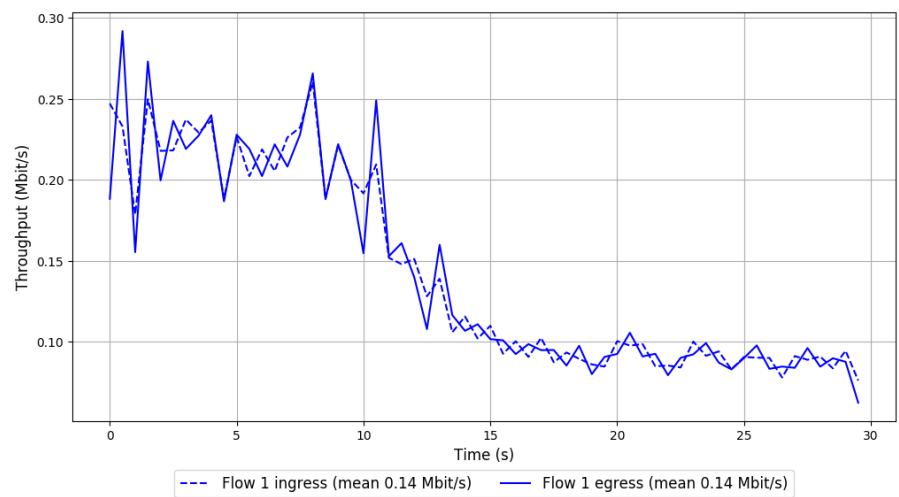


Run 3: Statistics of SCReAM

Start at: 2018-01-25 17:59:13
End at: 2018-01-25 17:59:43
Local clock offset: 2.364 ms
Remote clock offset: -14.399 ms

Below is generated by plot.py at 2018-01-25 18:09:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 56.013 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 56.013 ms
Loss rate: 0.24%

Run 3: Report of SReAM — Data Link

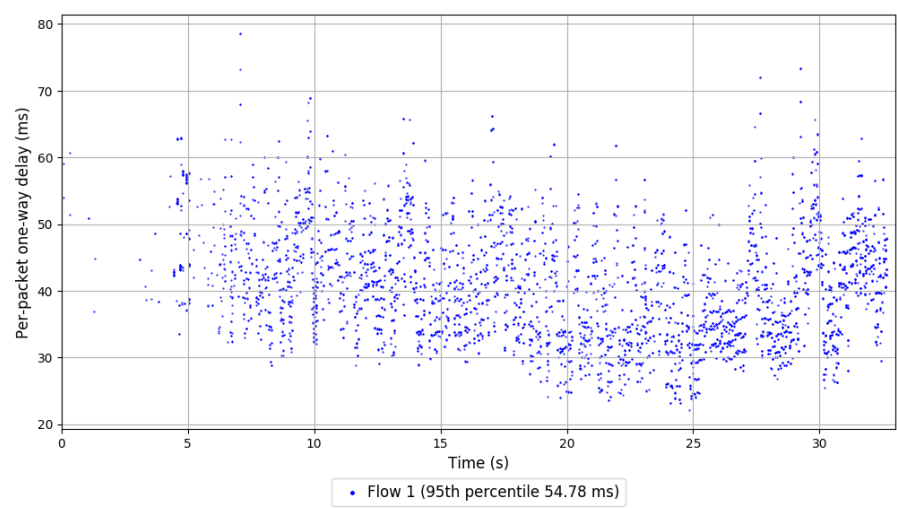
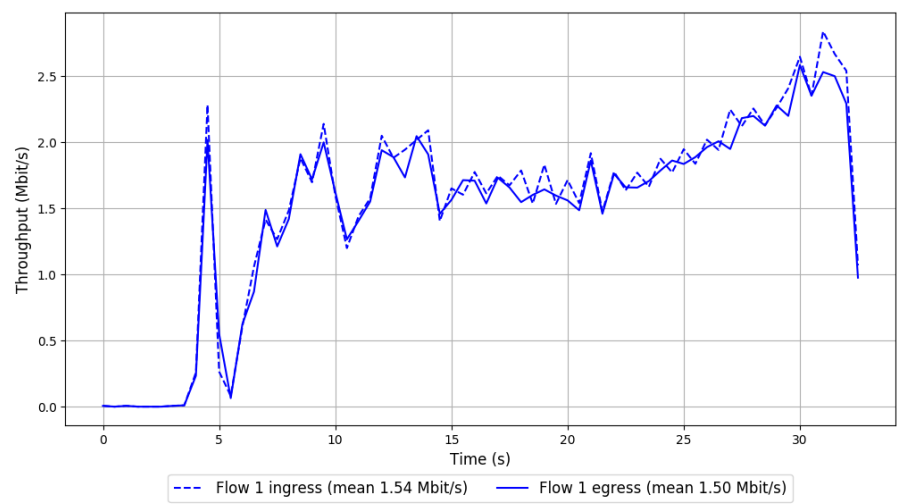


Run 1: Statistics of WebRTC media

Start at: 2018-01-25 17:23:24
End at: 2018-01-25 17:23:54
Local clock offset: 3.973 ms
Remote clock offset: -16.664 ms

Below is generated by plot.py at 2018-01-25 18:09:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.50 Mbit/s
95th percentile per-packet one-way delay: 54.776 ms
Loss rate: 2.89%
-- Flow 1:
Average throughput: 1.50 Mbit/s
95th percentile per-packet one-way delay: 54.776 ms
Loss rate: 2.89%

Run 1: Report of WebRTC media — Data Link

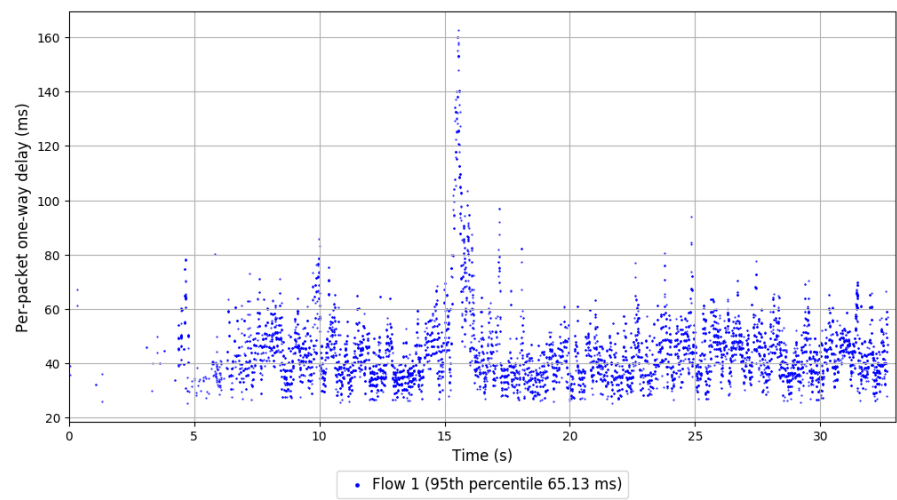
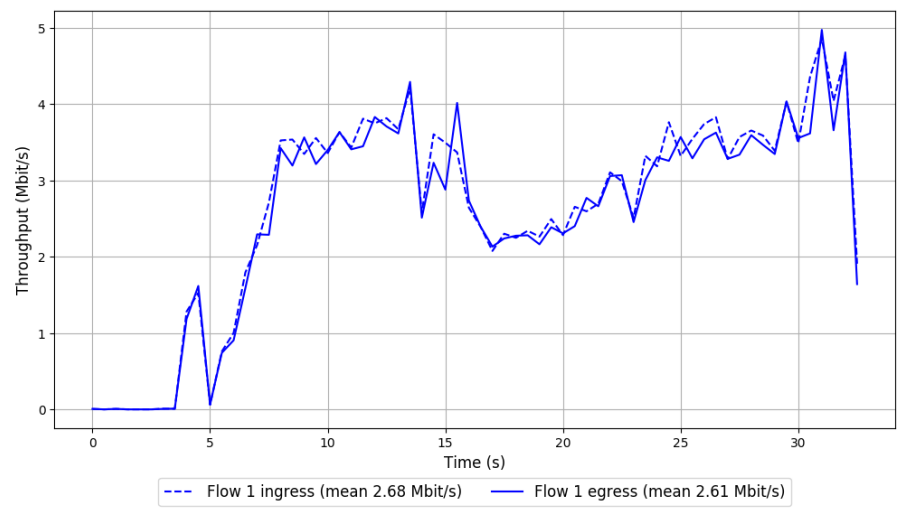


Run 2: Statistics of WebRTC media

Start at: 2018-01-25 17:40:46
End at: 2018-01-25 17:41:16
Local clock offset: 0.63 ms
Remote clock offset: -15.377 ms

Below is generated by plot.py at 2018-01-25 18:09:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.61 Mbit/s
95th percentile per-packet one-way delay: 65.131 ms
Loss rate: 2.81%
-- Flow 1:
Average throughput: 2.61 Mbit/s
95th percentile per-packet one-way delay: 65.131 ms
Loss rate: 2.81%

Run 2: Report of WebRTC media — Data Link

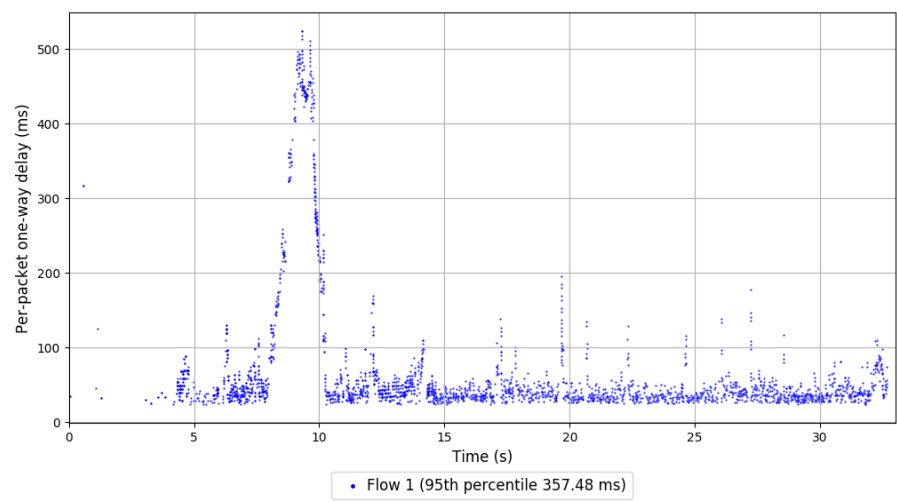
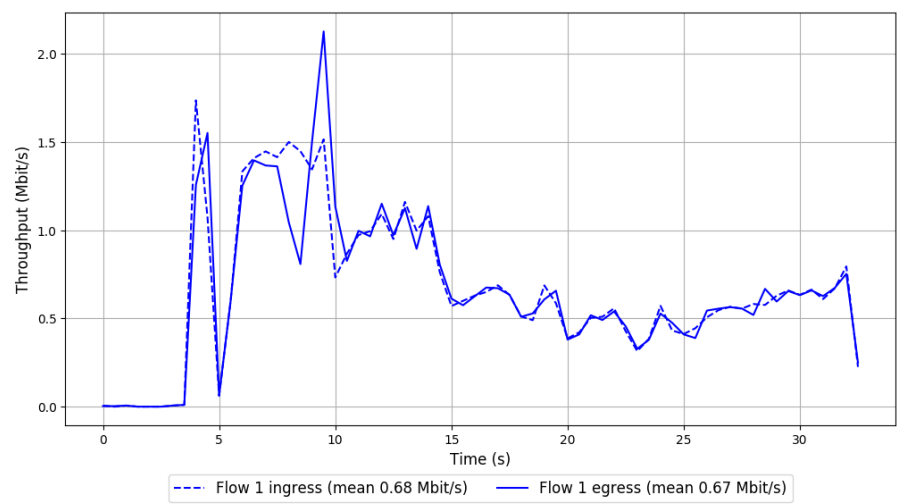


Run 3: Statistics of WebRTC media

Start at: 2018-01-25 17:58:08
End at: 2018-01-25 17:58:38
Local clock offset: 1.655 ms
Remote clock offset: -15.686 ms

Below is generated by plot.py at 2018-01-25 18:09:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 357.475 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 357.475 ms
Loss rate: 0.30%

Run 3: Report of WebRTC media — Data Link

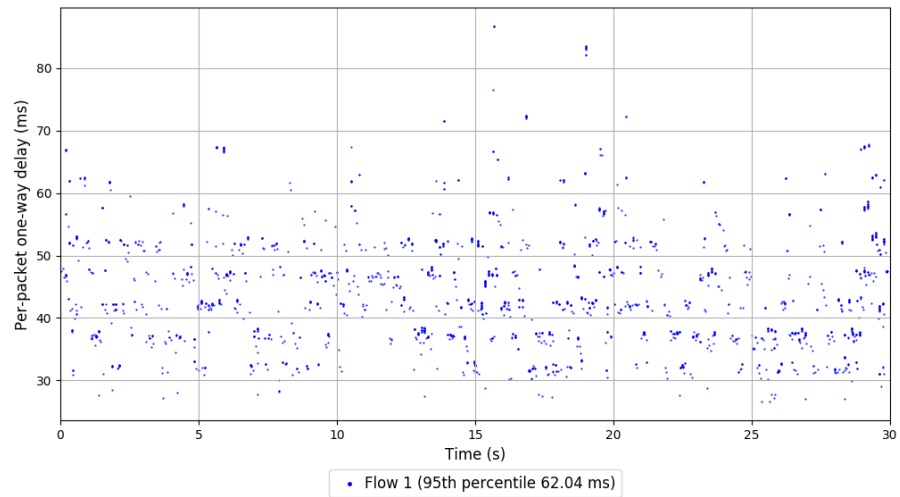
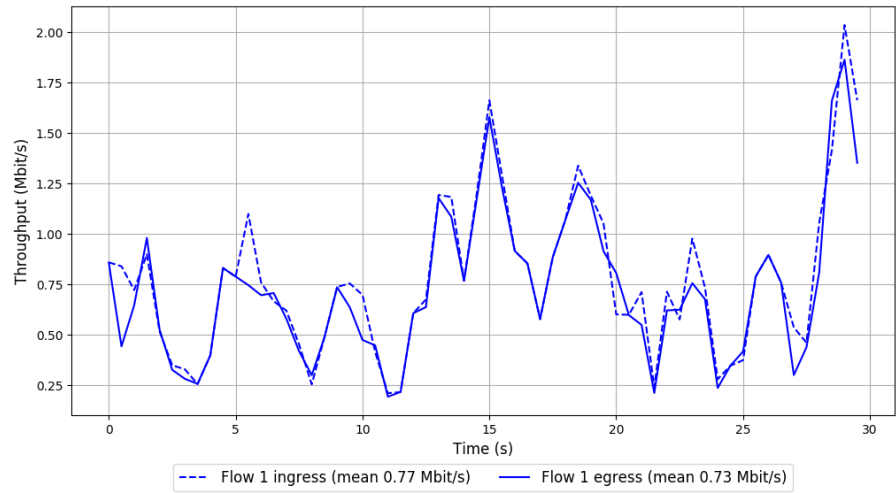


Run 1: Statistics of Sprout

Start at: 2018-01-25 17:25:34
End at: 2018-01-25 17:26:04
Local clock offset: 3.803 ms
Remote clock offset: -13.333 ms

Below is generated by plot.py at 2018-01-25 18:09:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.73 Mbit/s
95th percentile per-packet one-way delay: 62.044 ms
Loss rate: 6.05%
-- Flow 1:
Average throughput: 0.73 Mbit/s
95th percentile per-packet one-way delay: 62.044 ms
Loss rate: 6.05%

Run 1: Report of Sprout — Data Link

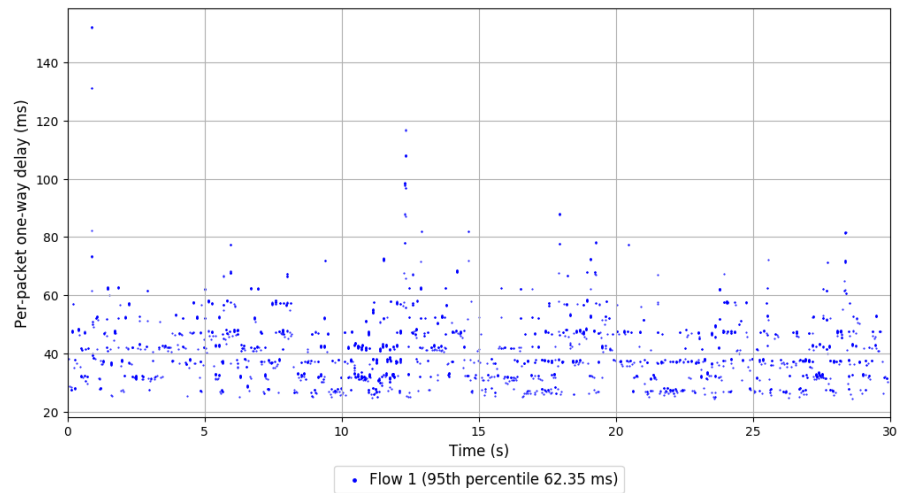
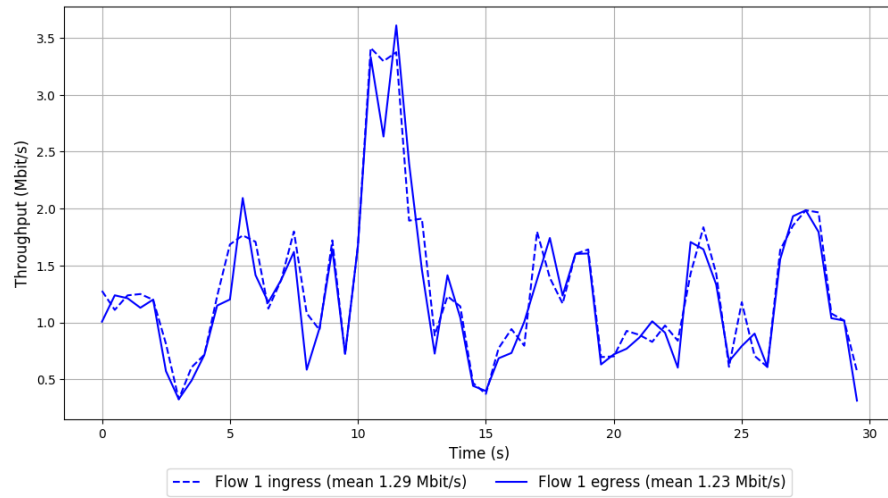


Run 2: Statistics of Sprout

Start at: 2018-01-25 17:42:56
End at: 2018-01-25 17:43:26
Local clock offset: 2.895 ms
Remote clock offset: -15.845 ms

Below is generated by plot.py at 2018-01-25 18:09:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.23 Mbit/s
95th percentile per-packet one-way delay: 62.350 ms
Loss rate: 4.50%
-- Flow 1:
Average throughput: 1.23 Mbit/s
95th percentile per-packet one-way delay: 62.350 ms
Loss rate: 4.50%

Run 2: Report of Sprout — Data Link

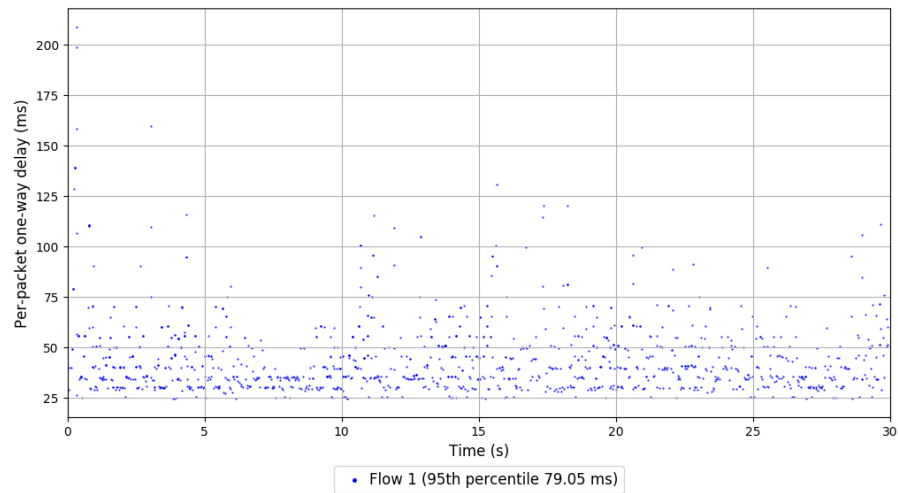
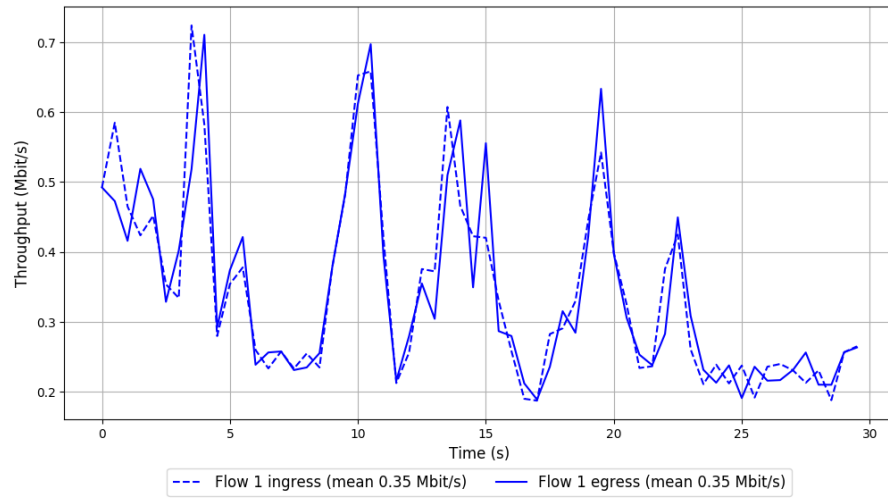


Run 3: Statistics of Sprout

Start at: 2018-01-25 18:00:20
End at: 2018-01-25 18:00:50
Local clock offset: 0.868 ms
Remote clock offset: -15.399 ms

Below is generated by plot.py at 2018-01-25 18:09:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 79.046 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 79.046 ms
Loss rate: 0.01%

Run 3: Report of Sprout — Data Link

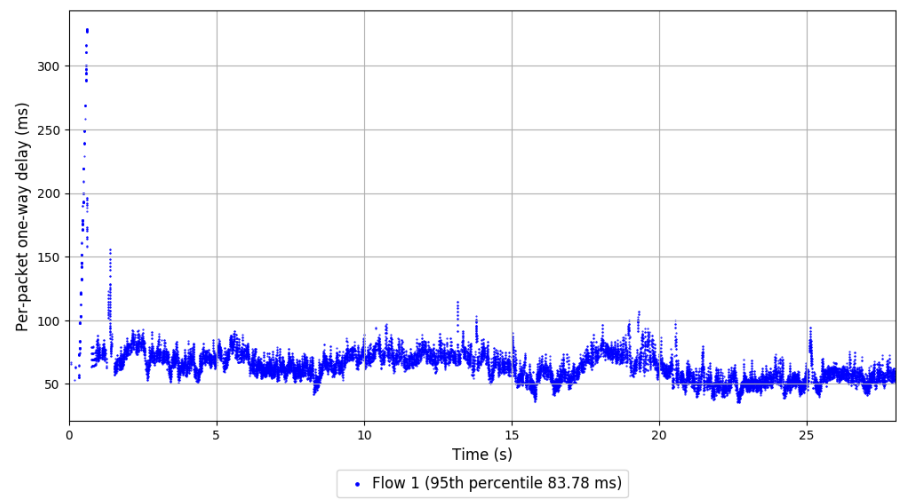
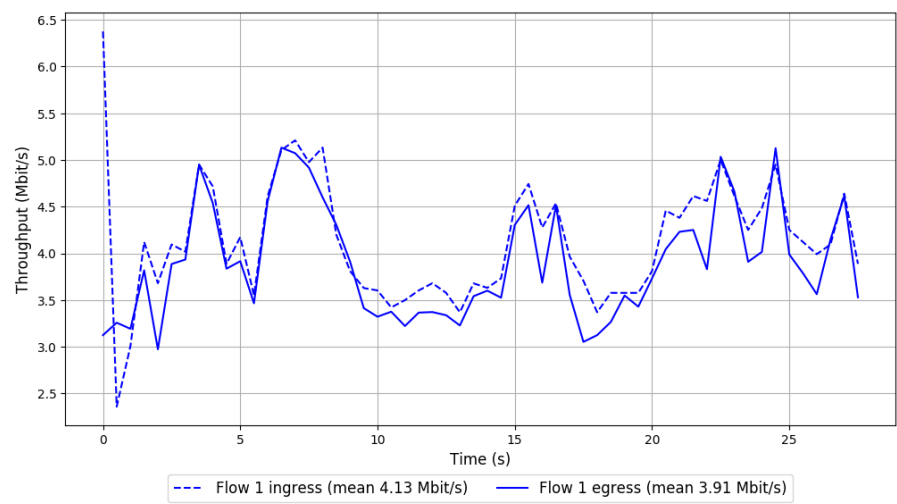


Run 1: Statistics of TaoVA-100x

Start at: 2018-01-25 17:20:06
End at: 2018-01-25 17:20:36
Local clock offset: 2.325 ms
Remote clock offset: -16.663 ms

Below is generated by plot.py at 2018-01-25 18:09:45
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.91 Mbit/s
95th percentile per-packet one-way delay: 83.785 ms
Loss rate: 5.71%
-- Flow 1:
Average throughput: 3.91 Mbit/s
95th percentile per-packet one-way delay: 83.785 ms
Loss rate: 5.71%

Run 1: Report of TaoVA-100x — Data Link

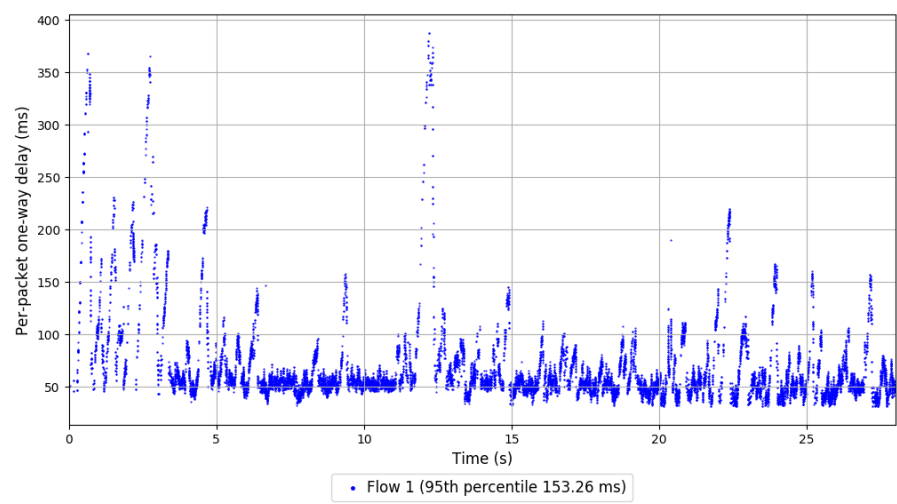
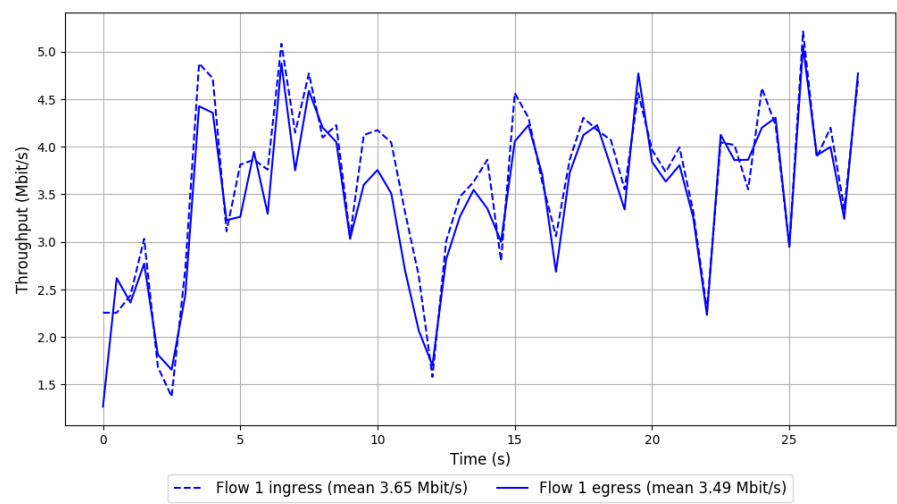


Run 2: Statistics of TaoVA-100x

Start at: 2018-01-25 17:37:30
End at: 2018-01-25 17:38:00
Local clock offset: 1.882 ms
Remote clock offset: -15.155 ms

Below is generated by plot.py at 2018-01-25 18:09:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.49 Mbit/s
95th percentile per-packet one-way delay: 153.264 ms
Loss rate: 4.46%
-- Flow 1:
Average throughput: 3.49 Mbit/s
95th percentile per-packet one-way delay: 153.264 ms
Loss rate: 4.46%

Run 2: Report of TaoVA-100x — Data Link

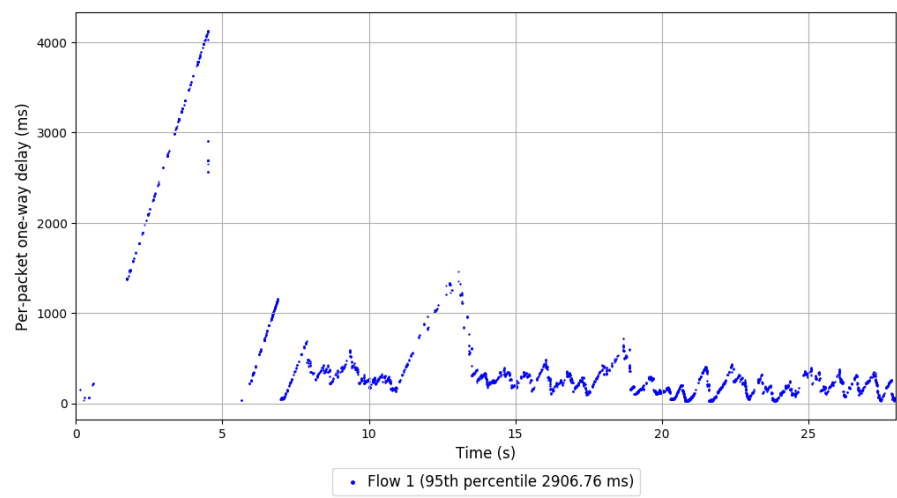
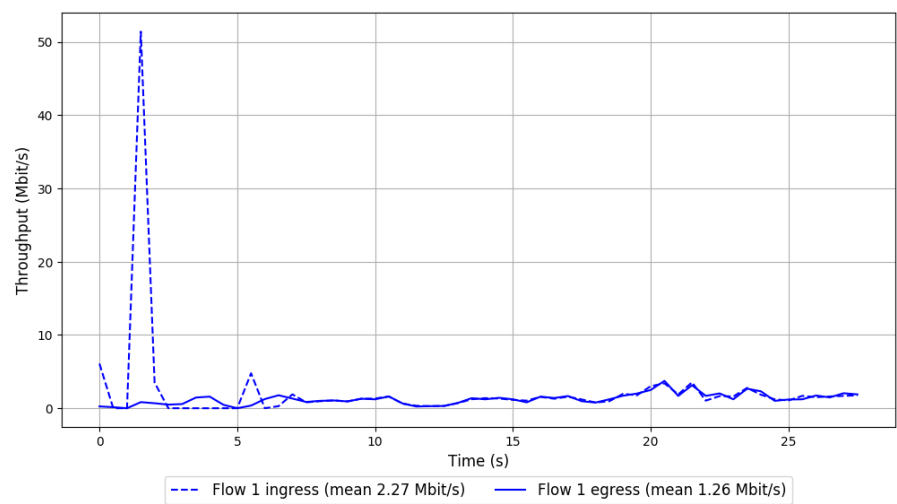


Run 3: Statistics of TaoVA-100x

Start at: 2018-01-25 17:54:53
End at: 2018-01-25 17:55:23
Local clock offset: 3.277 ms
Remote clock offset: -15.514 ms

Below is generated by plot.py at 2018-01-25 18:09:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.26 Mbit/s
95th percentile per-packet one-way delay: 2906.761 ms
Loss rate: 44.59%
-- Flow 1:
Average throughput: 1.26 Mbit/s
95th percentile per-packet one-way delay: 2906.761 ms
Loss rate: 44.59%

Run 3: Report of TaoVA-100x — Data Link

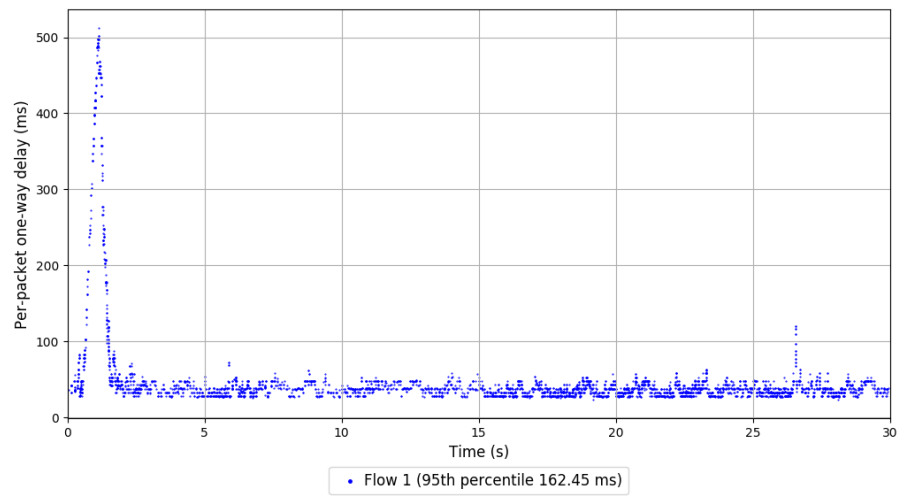
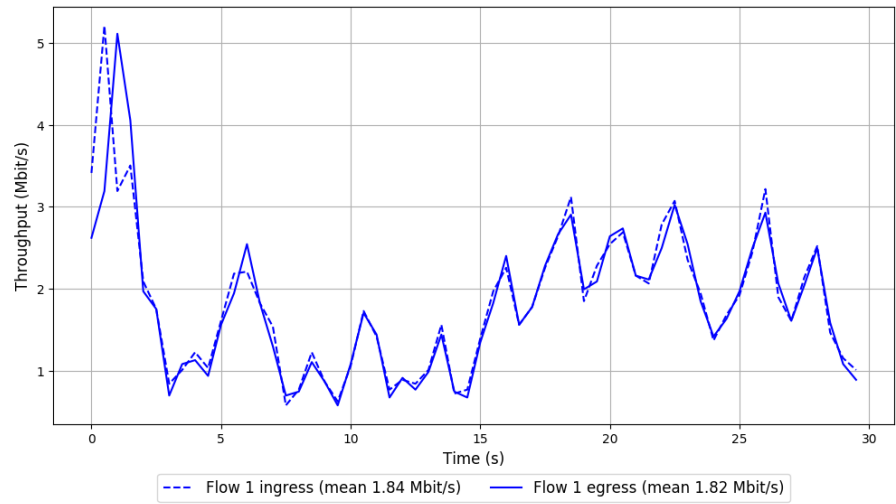


Run 1: Statistics of TCP Vegas

Start at: 2018-01-25 17:28:49
End at: 2018-01-25 17:29:19
Local clock offset: 4.18 ms
Remote clock offset: -14.709 ms

Below is generated by plot.py at 2018-01-25 18:09:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 162.450 ms
Loss rate: 1.67%
-- Flow 1:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 162.450 ms
Loss rate: 1.67%

Run 1: Report of TCP Vegas — Data Link

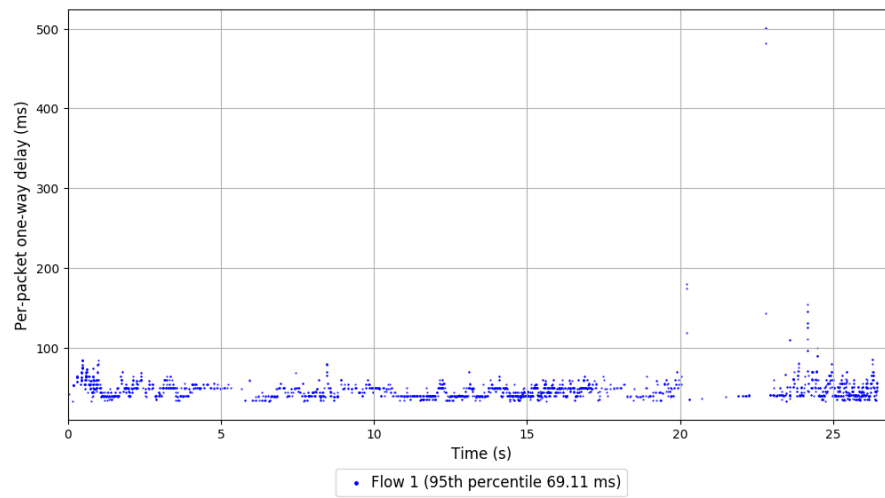
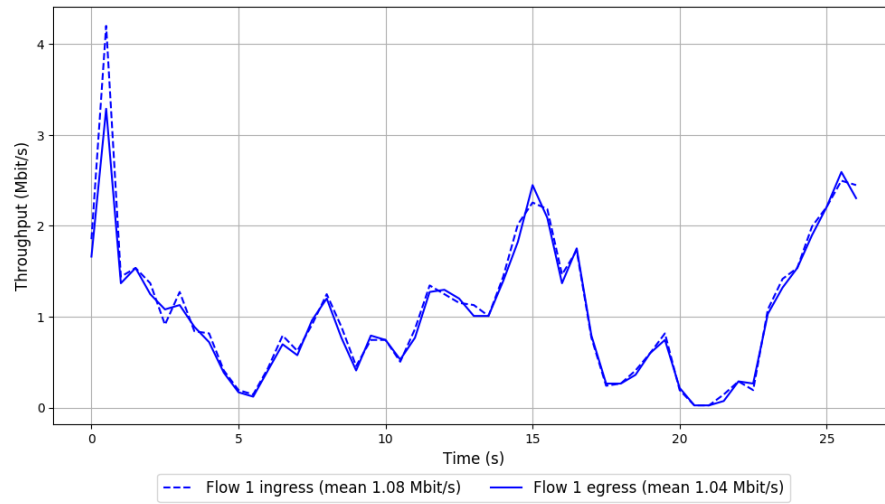


Run 2: Statistics of TCP Vegas

Start at: 2018-01-25 17:46:12
End at: 2018-01-25 17:46:42
Local clock offset: 1.706 ms
Remote clock offset: -16.506 ms

Below is generated by plot.py at 2018-01-25 18:09:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 69.112 ms
Loss rate: 4.19%
-- Flow 1:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 69.112 ms
Loss rate: 4.19%

Run 2: Report of TCP Vegas — Data Link

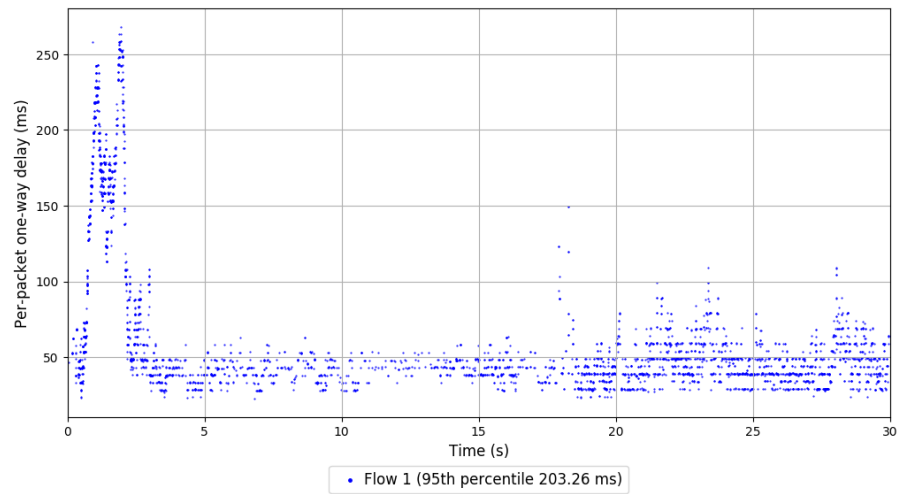
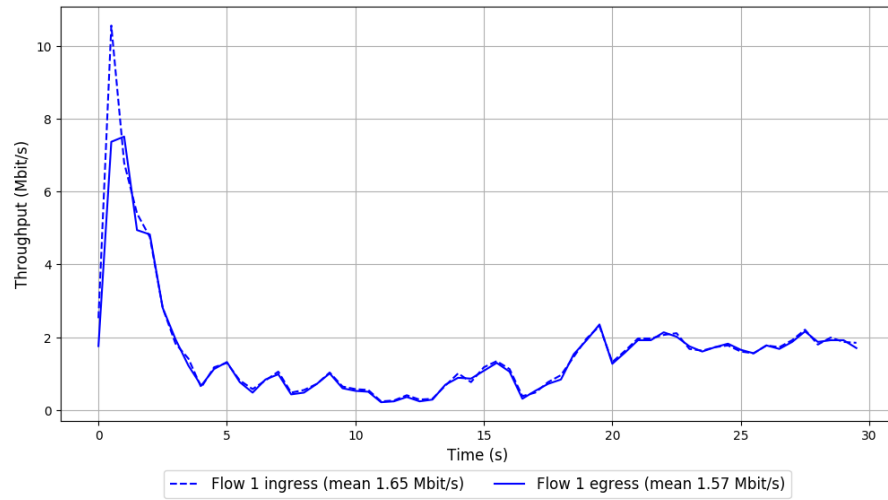


Run 3: Statistics of TCP Vegas

Start at: 2018-01-25 18:03:36
End at: 2018-01-25 18:04:06
Local clock offset: 3.614 ms
Remote clock offset: -15.731 ms

Below is generated by plot.py at 2018-01-25 18:09:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.57 Mbit/s
95th percentile per-packet one-way delay: 203.263 ms
Loss rate: 5.01%
-- Flow 1:
Average throughput: 1.57 Mbit/s
95th percentile per-packet one-way delay: 203.263 ms
Loss rate: 5.01%

Run 3: Report of TCP Vegas — Data Link

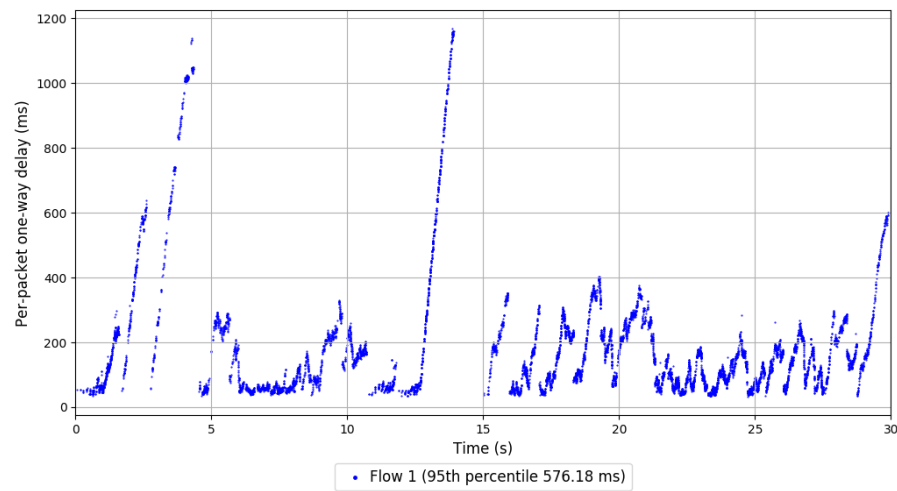
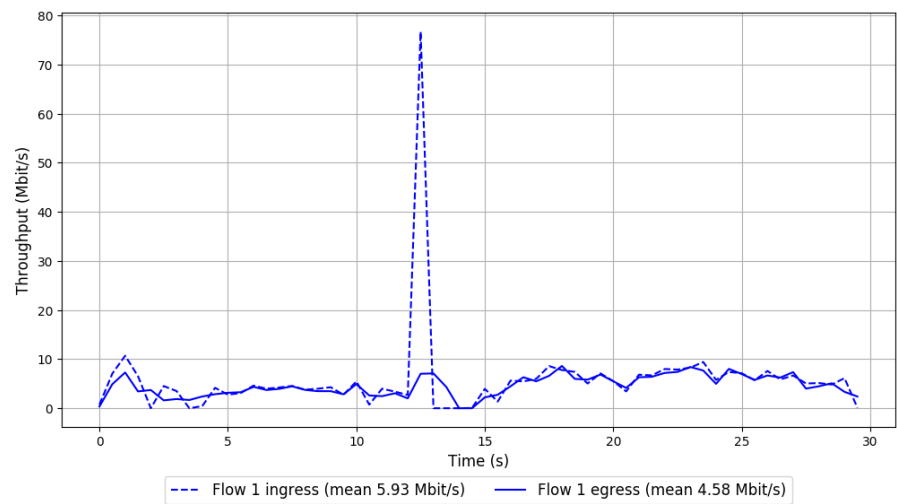


Run 1: Statistics of Verus

Start at: 2018-01-25 17:30:59
End at: 2018-01-25 17:31:29
Local clock offset: 0.922 ms
Remote clock offset: -15.779 ms

Below is generated by plot.py at 2018-01-25 18:09:49
Datalink statistics
-- Total of 1 flow:
Average throughput: 4.58 Mbit/s
95th percentile per-packet one-way delay: 576.178 ms
Loss rate: 21.96%
-- Flow 1:
Average throughput: 4.58 Mbit/s
95th percentile per-packet one-way delay: 576.178 ms
Loss rate: 21.96%

Run 1: Report of Verus — Data Link

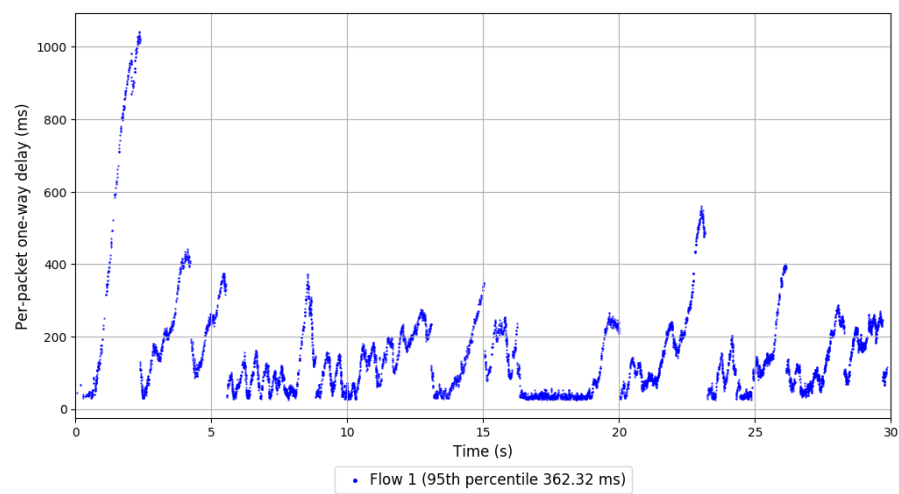
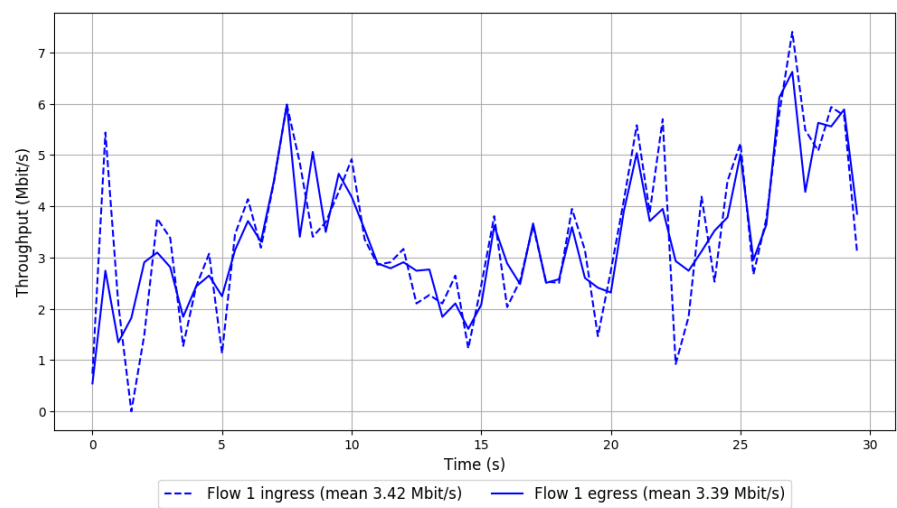


Run 2: Statistics of Verus

Start at: 2018-01-25 17:48:22
End at: 2018-01-25 17:48:52
Local clock offset: 4.165 ms
Remote clock offset: -18.122 ms

Below is generated by plot.py at 2018-01-25 18:09:49
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.39 Mbit/s
95th percentile per-packet one-way delay: 362.317 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 3.39 Mbit/s
95th percentile per-packet one-way delay: 362.317 ms
Loss rate: 1.01%

Run 2: Report of Verus — Data Link

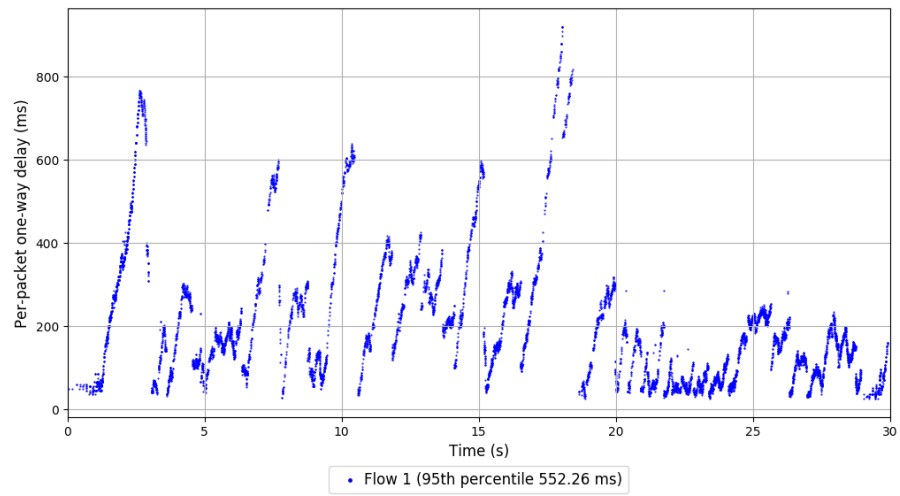
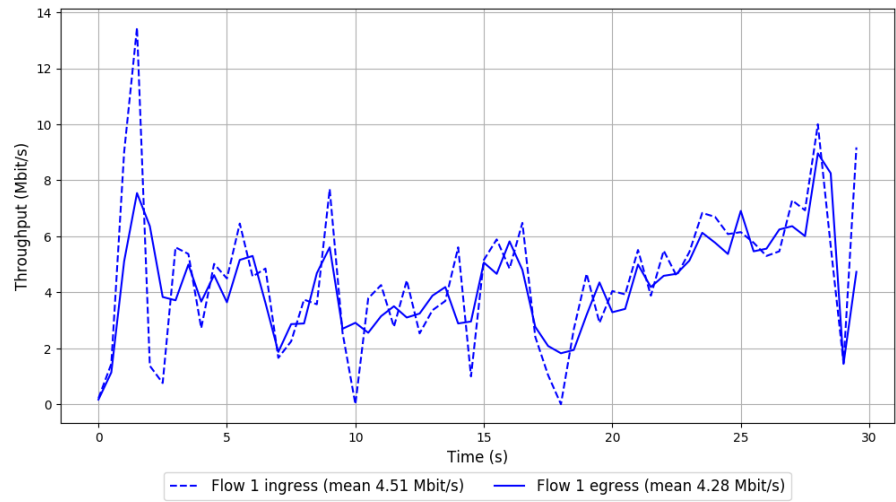


Run 3: Statistics of Verus

Start at: 2018-01-25 18:05:46
End at: 2018-01-25 18:06:16
Local clock offset: 1.417 ms
Remote clock offset: -15.581 ms

Below is generated by plot.py at 2018-01-25 18:09:49
Datalink statistics
-- Total of 1 flow:
Average throughput: 4.28 Mbit/s
95th percentile per-packet one-way delay: 552.264 ms
Loss rate: 5.26%
-- Flow 1:
Average throughput: 4.28 Mbit/s
95th percentile per-packet one-way delay: 552.264 ms
Loss rate: 5.26%

Run 3: Report of Verus — Data Link

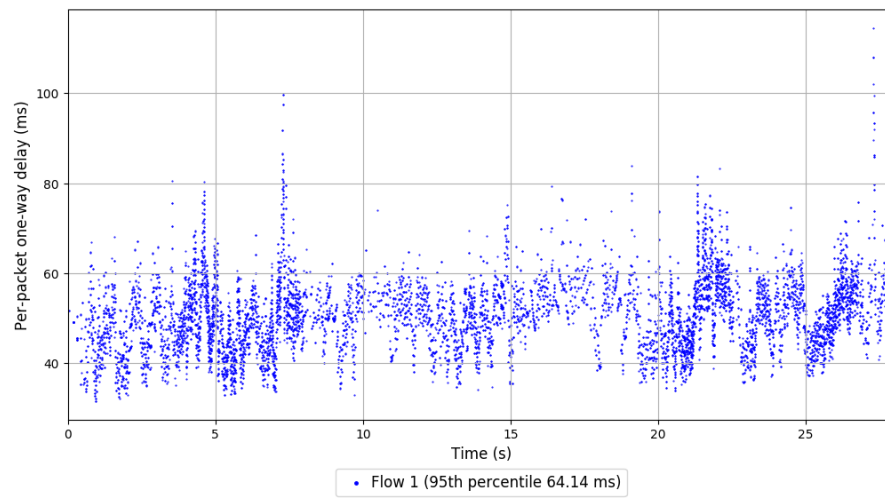
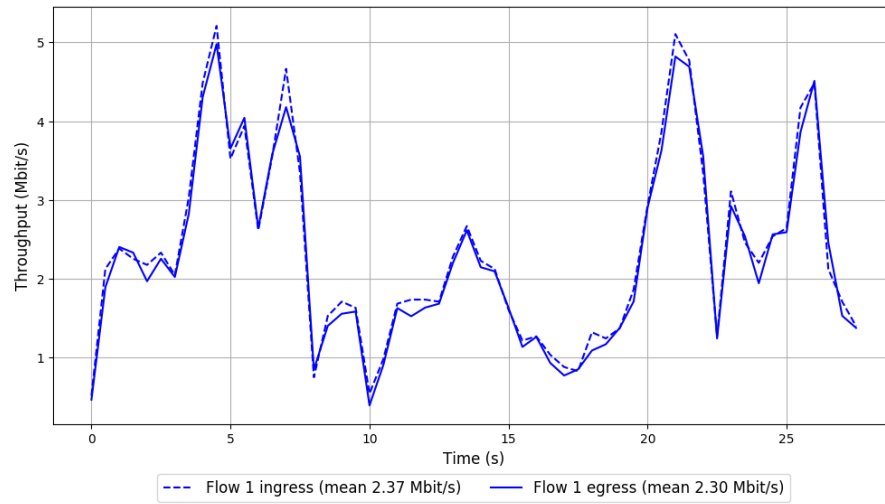


Run 1: Statistics of Copa

Start at: 2018-01-25 17:22:18
End at: 2018-01-25 17:22:48
Local clock offset: 3.636 ms
Remote clock offset: -14.259 ms

Below is generated by plot.py at 2018-01-25 18:09:50
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.30 Mbit/s
95th percentile per-packet one-way delay: 64.144 ms
Loss rate: 2.94%
-- Flow 1:
Average throughput: 2.30 Mbit/s
95th percentile per-packet one-way delay: 64.144 ms
Loss rate: 2.94%

Run 1: Report of Copa — Data Link

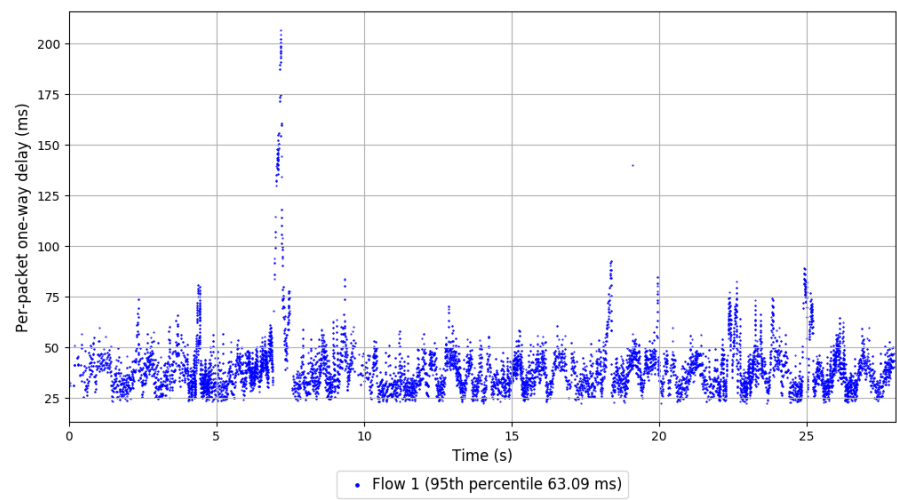
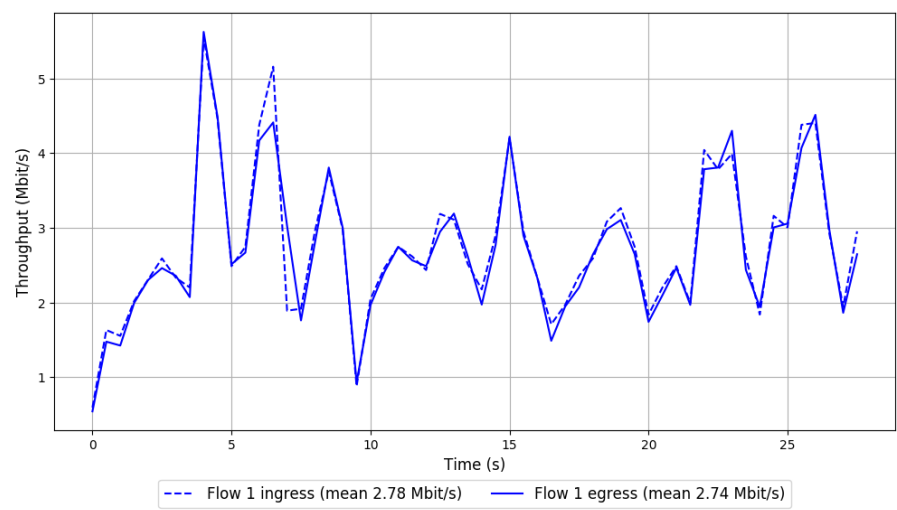


Run 2: Statistics of Copa

Start at: 2018-01-25 17:39:41
End at: 2018-01-25 17:40:11
Local clock offset: 3.782 ms
Remote clock offset: -15.454 ms

Below is generated by plot.py at 2018-01-25 18:09:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.74 Mbit/s
95th percentile per-packet one-way delay: 63.087 ms
Loss rate: 1.74%
-- Flow 1:
Average throughput: 2.74 Mbit/s
95th percentile per-packet one-way delay: 63.087 ms
Loss rate: 1.74%

Run 2: Report of Copa — Data Link

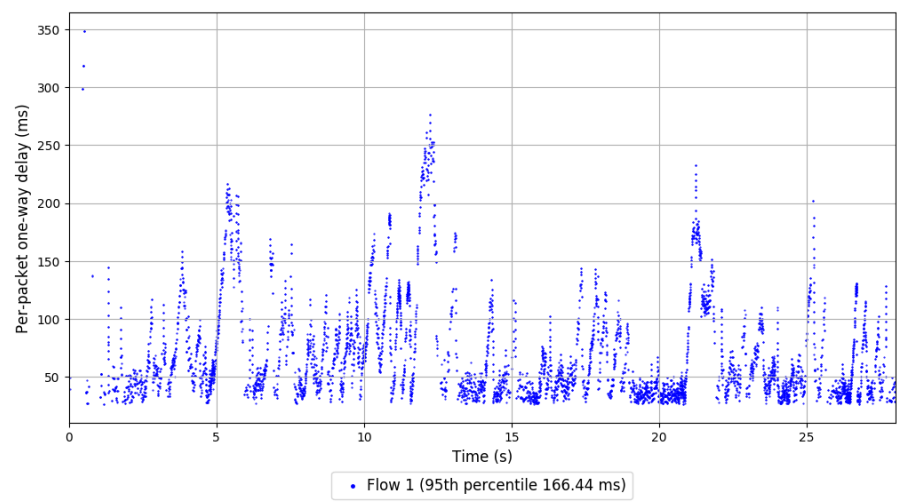
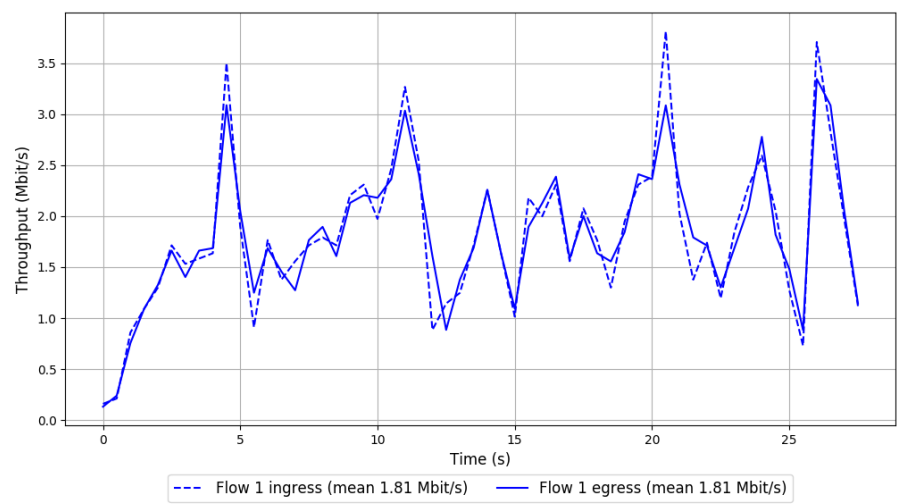


Run 3: Statistics of Copa

Start at: 2018-01-25 17:57:02
End at: 2018-01-25 17:57:32
Local clock offset: 2.233 ms
Remote clock offset: -16.836 ms

Below is generated by plot.py at 2018-01-25 18:09:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.81 Mbit/s
95th percentile per-packet one-way delay: 166.438 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 1.81 Mbit/s
95th percentile per-packet one-way delay: 166.438 ms
Loss rate: 0.10%

Run 3: Report of Copa — Data Link

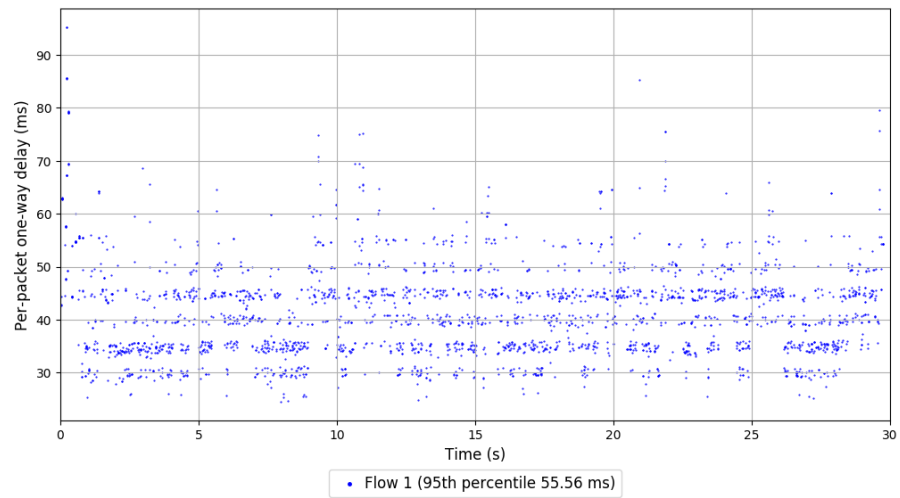
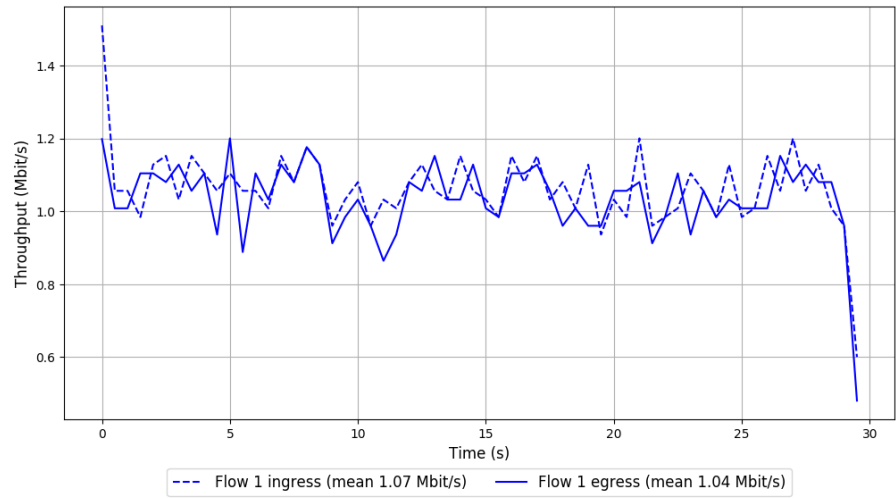


Run 1: Statistics of Indigo-2-256

Start at: 2018-01-25 17:29:54
End at: 2018-01-25 17:30:24
Local clock offset: 3.67 ms
Remote clock offset: -17.19 ms

Below is generated by plot.py at 2018-01-25 18:09:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 55.562 ms
Loss rate: 2.60%
-- Flow 1:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 55.562 ms
Loss rate: 2.60%

Run 1: Report of Indigo-2-256 — Data Link

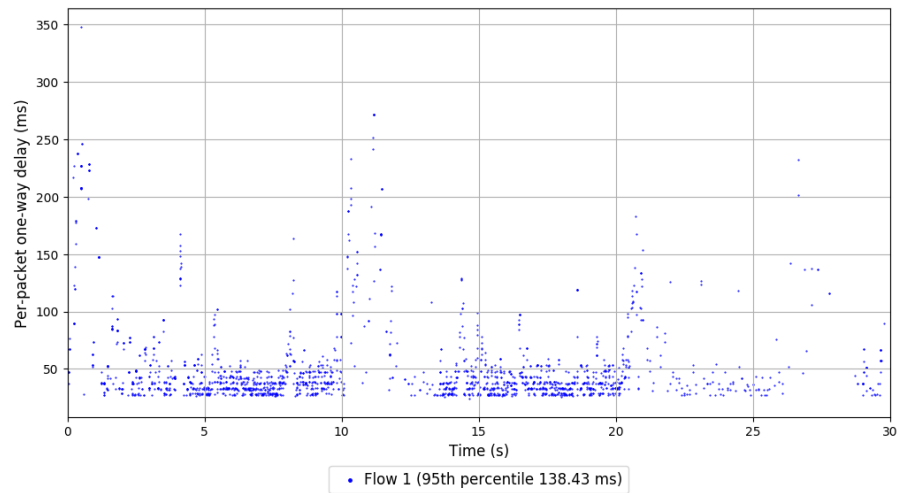
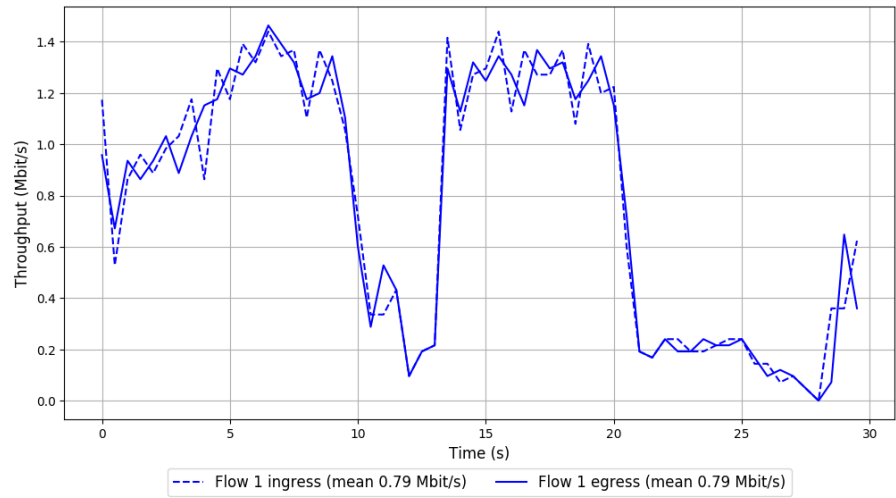


Run 2: Statistics of Indigo-2-256

Start at: 2018-01-25 17:47:17
End at: 2018-01-25 17:47:47
Local clock offset: 3.576 ms
Remote clock offset: -16.817 ms

Below is generated by plot.py at 2018-01-25 18:09:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.79 Mbit/s
95th percentile per-packet one-way delay: 138.434 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 0.79 Mbit/s
95th percentile per-packet one-way delay: 138.434 ms
Loss rate: 0.56%

Run 2: Report of Indigo-2-256 — Data Link

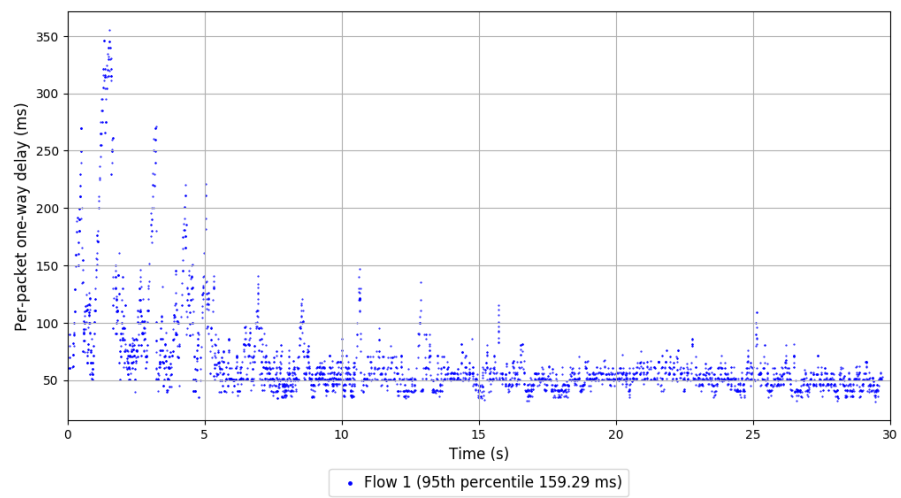
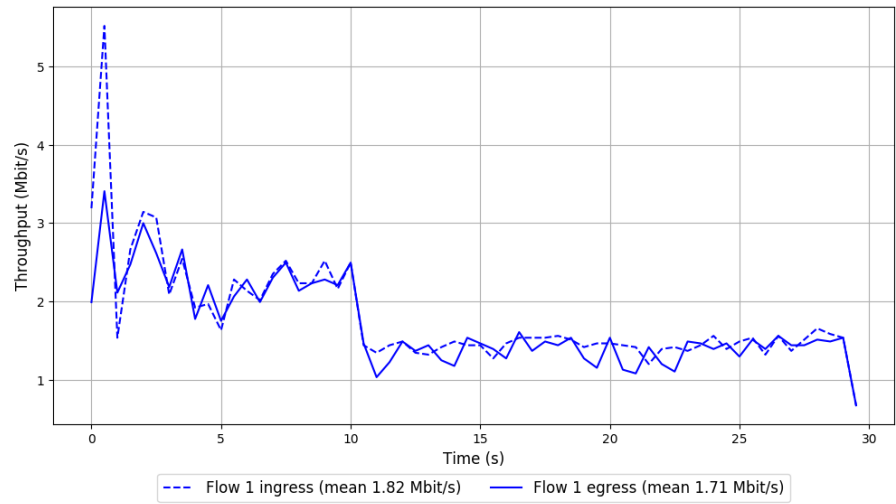


Run 3: Statistics of Indigo-2-256

Start at: 2018-01-25 18:04:41
End at: 2018-01-25 18:05:11
Local clock offset: 1.518 ms
Remote clock offset: -14.831 ms

Below is generated by plot.py at 2018-01-25 18:09:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.71 Mbit/s
95th percentile per-packet one-way delay: 159.294 ms
Loss rate: 5.78%
-- Flow 1:
Average throughput: 1.71 Mbit/s
95th percentile per-packet one-way delay: 159.294 ms
Loss rate: 5.78%

Run 3: Report of Indigo-2-256 — Data Link



Run 1: Statistics of Indigo-1-32

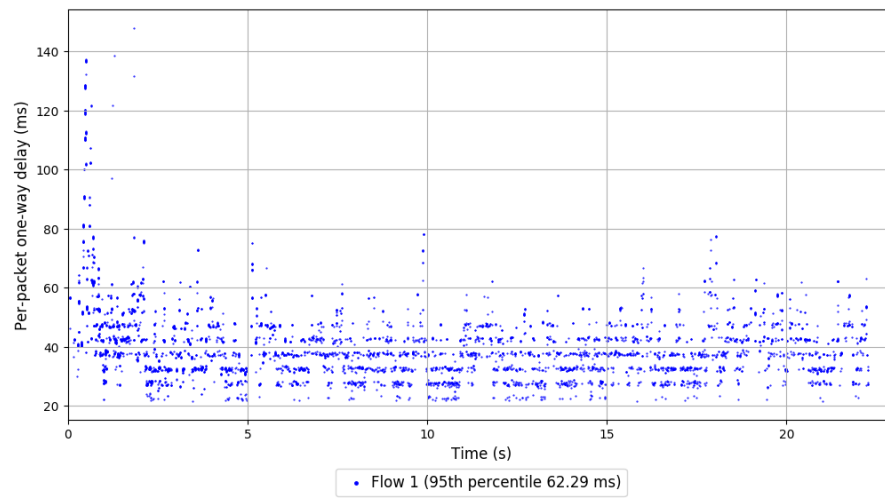
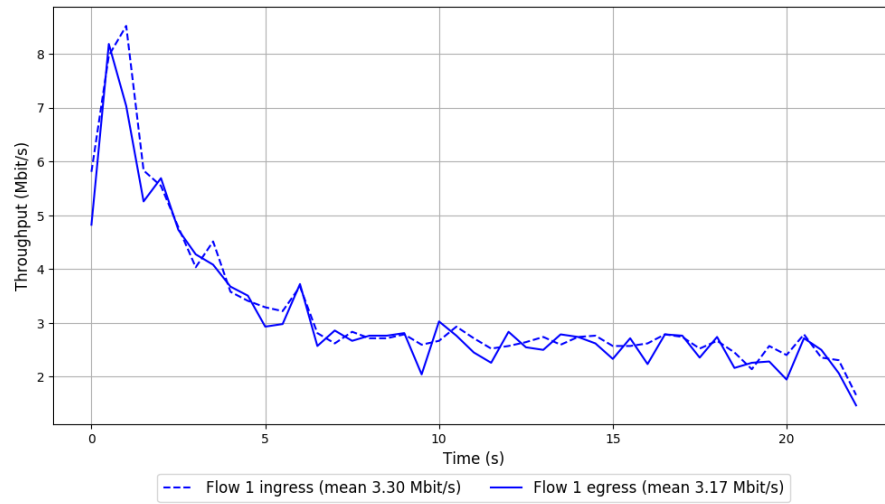
Start at: 2018-01-25 17:32:05

End at: 2018-01-25 17:32:35

Local clock offset: 3.868 ms

Remote clock offset: -15.449 ms

Run 1: Report of Indigo-1-32 — Data Link



Run 2: Statistics of Indigo-1-32

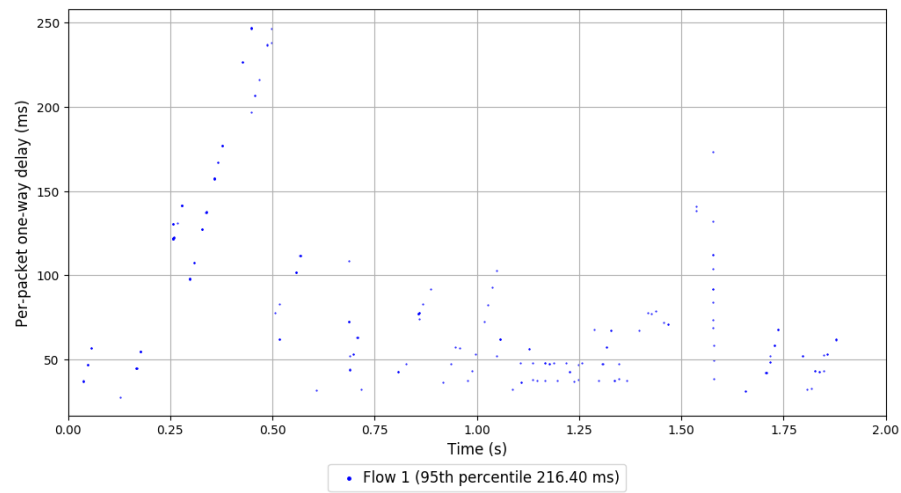
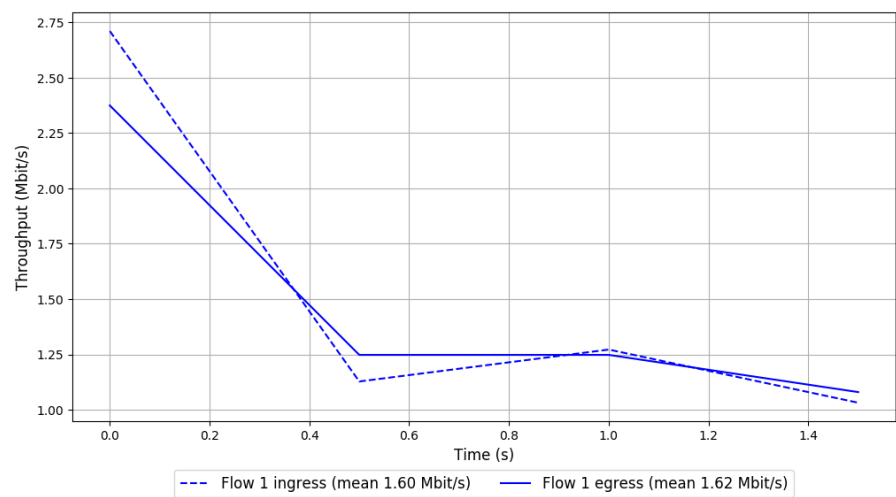
Start at: 2018-01-25 17:49:28

End at: 2018-01-25 17:49:58

Local clock offset: 3.043 ms

Remote clock offset: -18.136 ms

Run 2: Report of Indigo-1-32 — Data Link



Run 3: Statistics of Indigo-1-32

Start at: 2018-01-25 18:06:51

End at: 2018-01-25 18:07:22

Local clock offset: 2.896 ms

Remote clock offset: -14.505 ms

Below is generated by plot.py at 2018-01-25 18:09:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.83 Mbit/s

95th percentile per-packet one-way delay: 71.542 ms

Loss rate: 1.35%

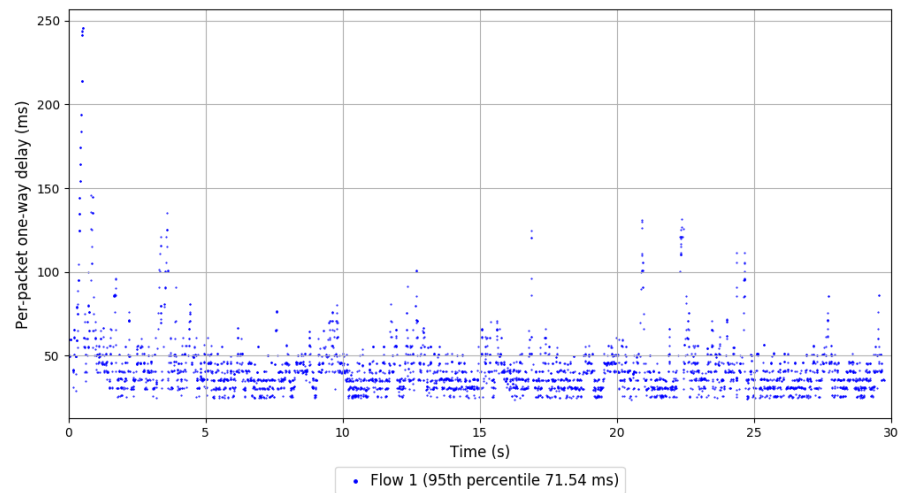
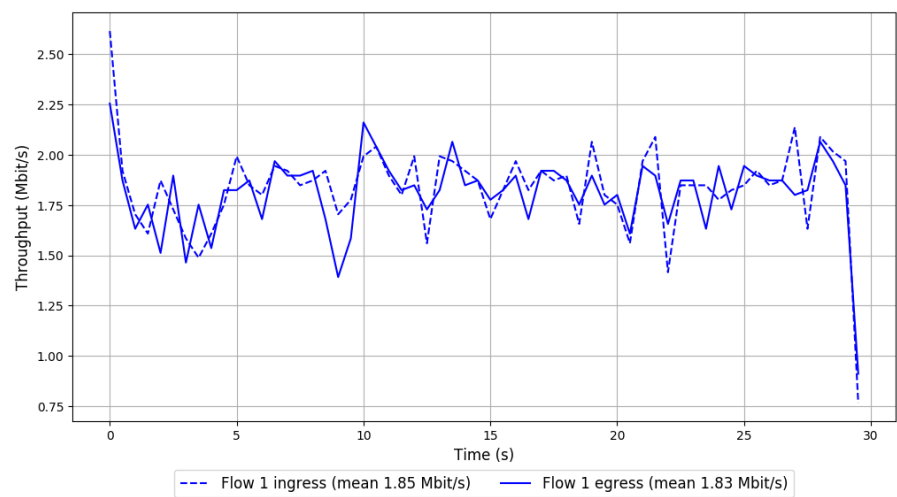
-- Flow 1:

Average throughput: 1.83 Mbit/s

95th percentile per-packet one-way delay: 71.542 ms

Loss rate: 1.35%

Run 3: Report of Indigo-1-32 — Data Link

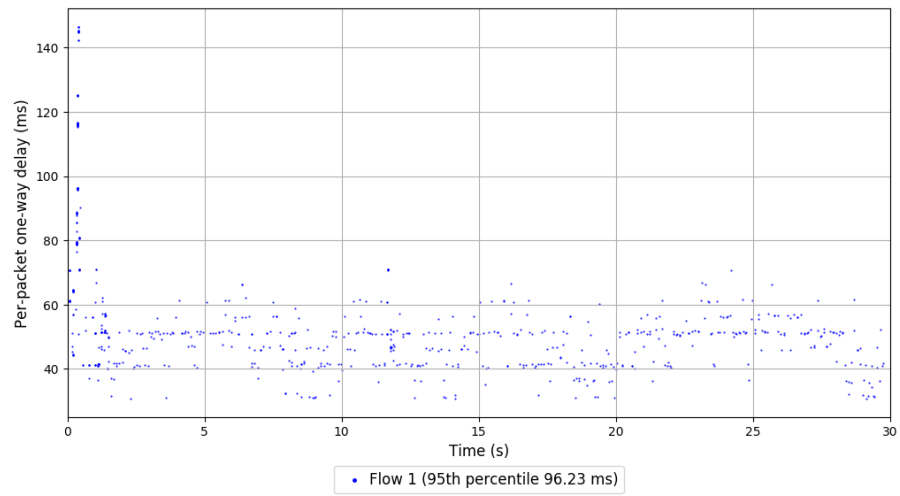
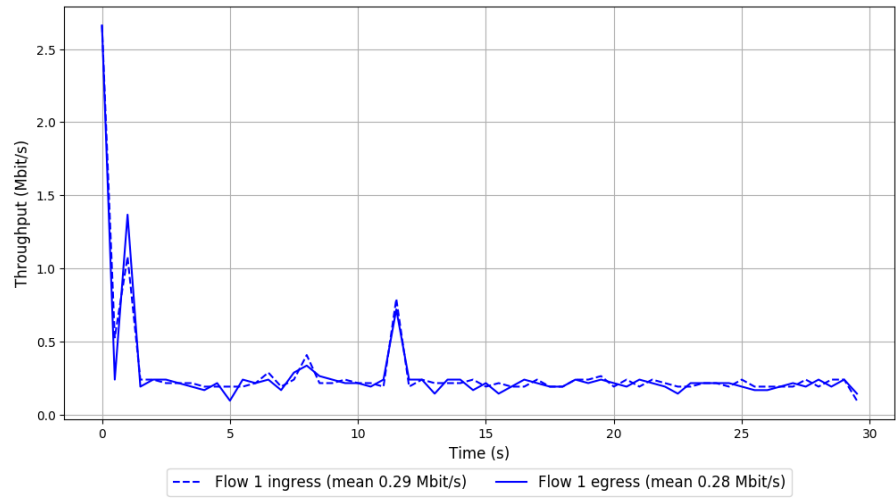


Run 1: Statistics of Indigo-1-128

Start at: 2018-01-25 17:16:52
End at: 2018-01-25 17:17:22
Local clock offset: 0.895 ms
Remote clock offset: -13.728 ms

Below is generated by plot.py at 2018-01-25 18:09:54
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 96.233 ms
Loss rate: 2.37%
-- Flow 1:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 96.233 ms
Loss rate: 2.37%

Run 1: Report of Indigo-1-128 — Data Link

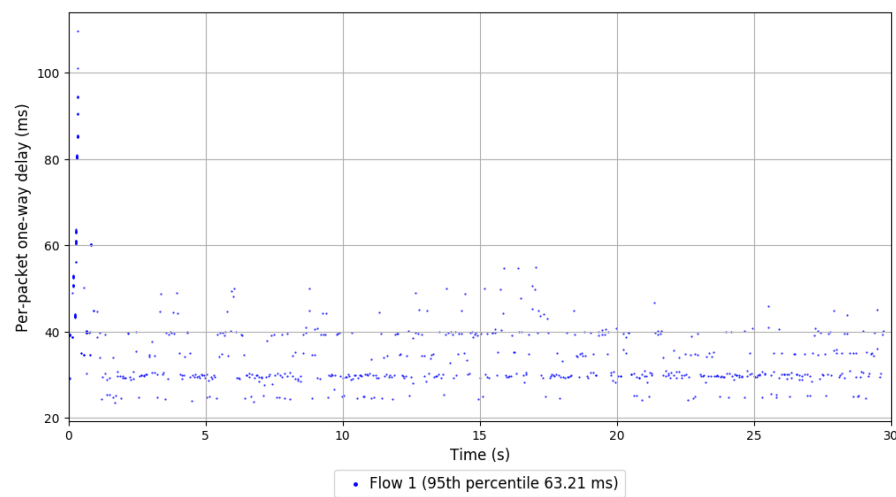
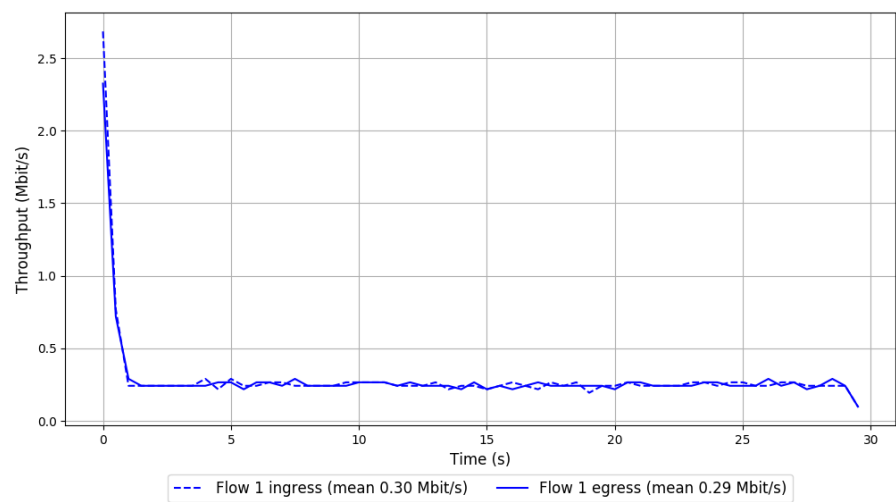


Run 2: Statistics of Indigo-1-128

Start at: 2018-01-25 17:34:16
End at: 2018-01-25 17:34:46
Local clock offset: 1.759 ms
Remote clock offset: -15.847 ms

Below is generated by plot.py at 2018-01-25 18:09:54
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 63.212 ms
Loss rate: 2.05%
-- Flow 1:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 63.212 ms
Loss rate: 2.05%

Run 2: Report of Indigo-1-128 — Data Link



Run 3: Statistics of Indigo-1-128

Start at: 2018-01-25 17:51:38
End at: 2018-01-25 17:52:08
Local clock offset: 4.561 ms
Remote clock offset: -15.269 ms

Below is generated by plot.py at 2018-01-25 18:09:54
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 139.276 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 139.276 ms
Loss rate: 0.00%

Run 3: Report of Indigo-1-128 — Data Link

