

Pantheon Report

Generated at 2018-01-25 18:19:20 (UTC).

Data path: AWS Brazil 2 Ethernet (*local*) → Colombia 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).

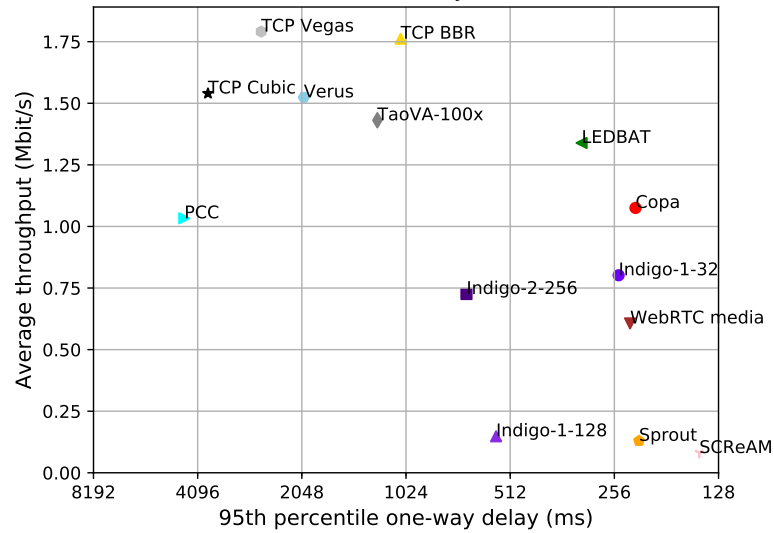
Tested BBR with qdisc of Fair Queuing (**fq**), and other schemes with the default Linux qdisc (**pfifo_fast**).

NTP offsets were measured against **gps.ntp.br** and have been applied to correct the timestamps in logs.

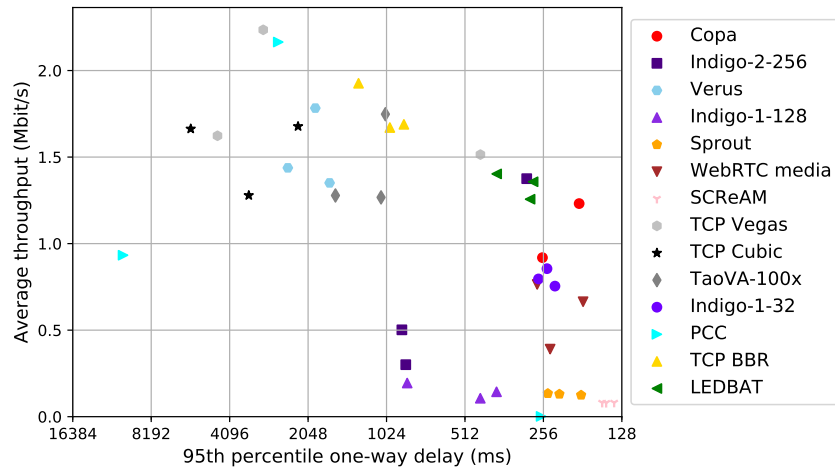
Git summary:

```
branch: master @ f23294ec38436c9f802847d477a41b7343ec76e6
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
  M datagrump/sender.cc
third_party/fixlisp @ ec9585325218d5048c4d4152fa42240af54c6e67
third_party/genericCC @ 80b516c448f795fd6e9675f7177b69c622f07da8
third_party/indigo @ a9b2060d39e4da2e8987e893e3eca2a6c7cd0ab9
third_party/indigo-1-layer-128-unit @ 3ae9e4ef4230db7484501f82ce8b377695f2f66d
third_party/indigo-1-layer-32-unit @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
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-quick @ 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 Brazil 2 Ethernet to Colombia ppp0, 3 runs of 30s each per scheme
(mean of all runs by scheme)



test from AWS Brazil 2 Ethernet to Colombia 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	1.76	1061.36	1.92
TCP Cubic	3	1.54	3824.83	14.98
LEDBAT	3	1.34	318.46	0.63
PCC	3	1.03	4477.09	23.24
QUIC Cubic	0	N/A	N/A	N/A
SCReAM	3	0.08	145.48	0.21
WebRTC media	3	0.60	230.65	0.27
Sprout	3	0.13	217.32	0.22
TaoVA-100x	3	1.43	1239.10	0.61
TCP Vegas	3	1.79	2683.79	8.80
Verus	3	1.52	2021.38	4.60
Copa	2	1.07	222.44	0.18
Indigo-2-256	3	0.73	684.94	0.04
Indigo-1-32	3	0.80	248.86	0.23
Indigo-1-128	3	0.15	562.49	0.36

Run 1: Statistics of TCP BBR

Start at: 2018-01-25 17:32:21

End at: 2018-01-25 17:32:51

Local clock offset: 0.63 ms

Remote clock offset: 0.14 ms

Below is generated by plot.py at 2018-01-25 18:18:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.93 Mbit/s

95th percentile per-packet one-way delay: 1311.463 ms

Loss rate: 2.38%

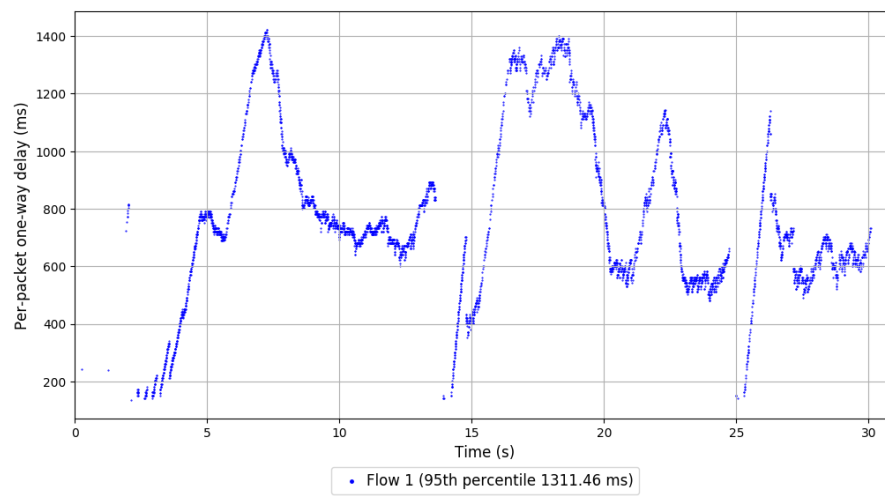
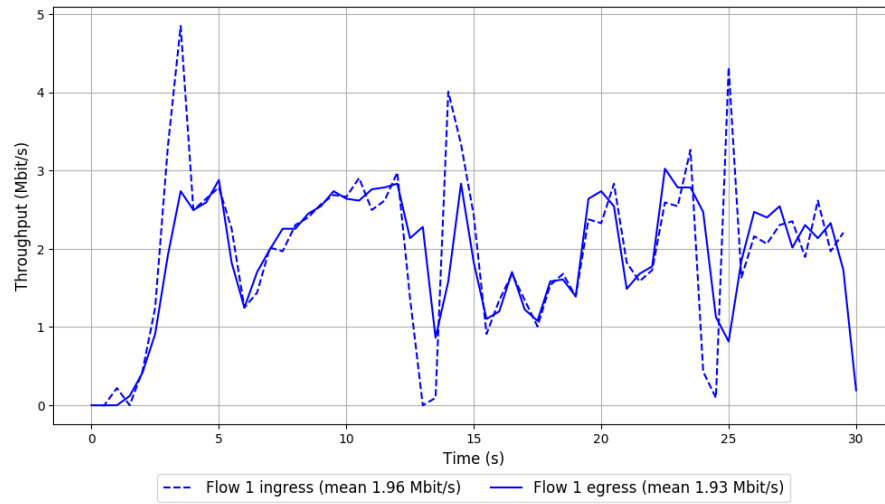
-- Flow 1:

Average throughput: 1.93 Mbit/s

95th percentile per-packet one-way delay: 1311.463 ms

Loss rate: 2.38%

Run 1: Report of TCP BBR — Data Link

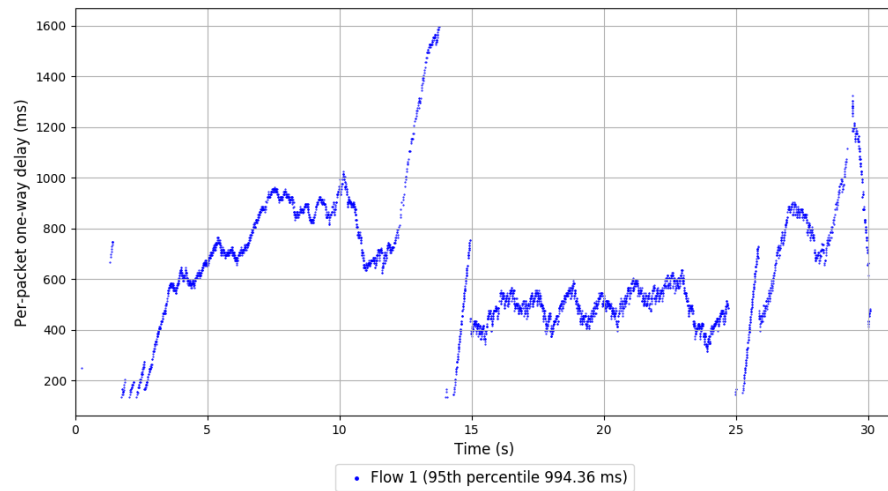
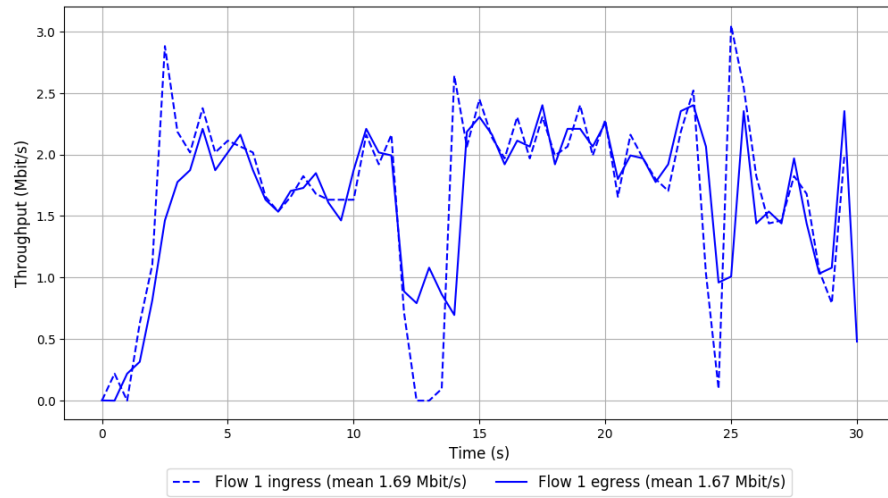


Run 2: Statistics of TCP BBR

Start at: 2018-01-25 17:51:21
End at: 2018-01-25 17:51:52
Local clock offset: 0.848 ms
Remote clock offset: -0.739 ms

Below is generated by plot.py at 2018-01-25 18:18:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.67 Mbit/s
95th percentile per-packet one-way delay: 994.361 ms
Loss rate: 1.56%
-- Flow 1:
Average throughput: 1.67 Mbit/s
95th percentile per-packet one-way delay: 994.361 ms
Loss rate: 1.56%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-01-25 18:10:24

End at: 2018-01-25 18:10:55

Local clock offset: 1.1 ms

Remote clock offset: 0.146 ms

Below is generated by plot.py at 2018-01-25 18:18:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.69 Mbit/s

95th percentile per-packet one-way delay: 878.258 ms

Loss rate: 1.82%

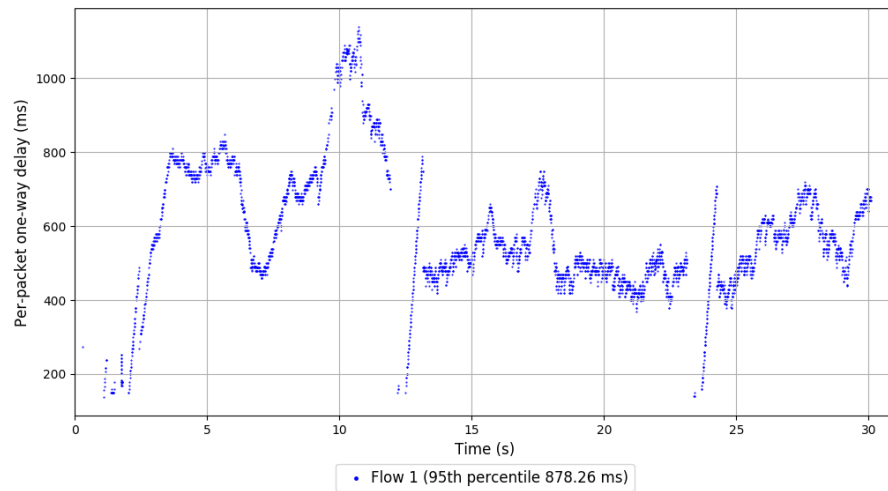
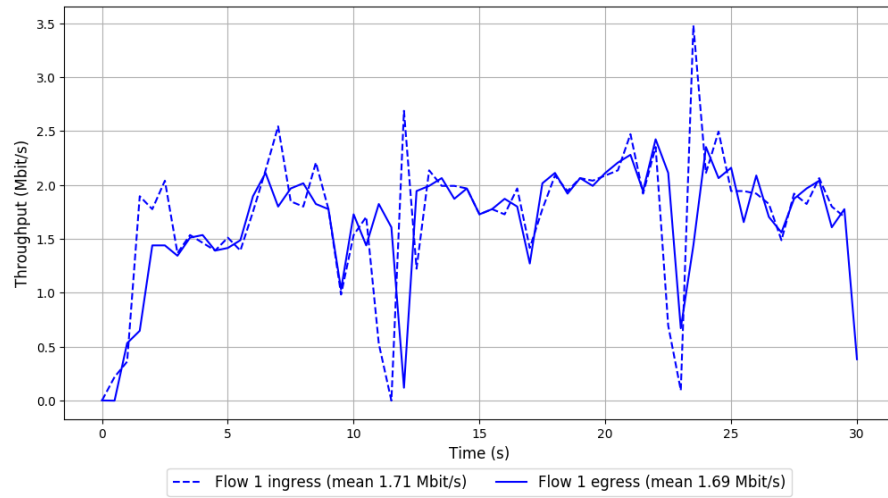
-- Flow 1:

Average throughput: 1.69 Mbit/s

95th percentile per-packet one-way delay: 878.258 ms

Loss rate: 1.82%

Run 3: Report of TCP BBR — Data Link

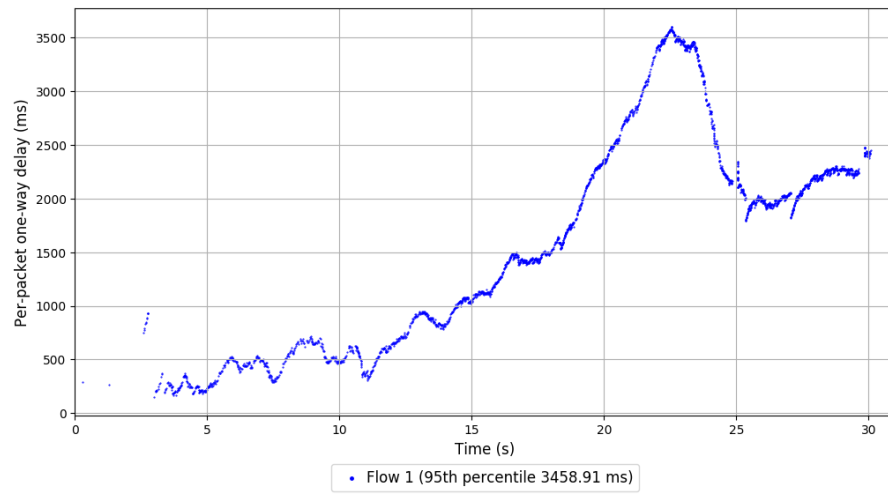
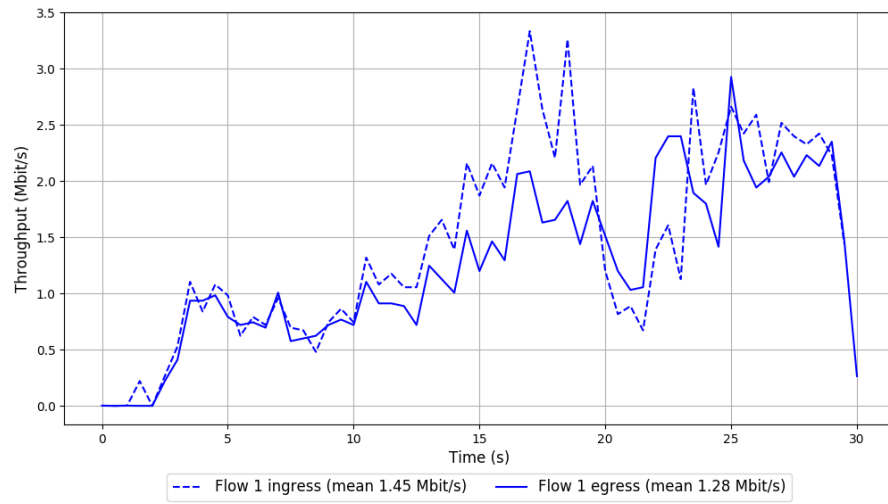


Run 1: Statistics of TCP Cubic

Start at: 2018-01-25 17:37:06
End at: 2018-01-25 17:37:36
Local clock offset: 0.686 ms
Remote clock offset: -4.743 ms

Below is generated by plot.py at 2018-01-25 18:18:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.28 Mbit/s
95th percentile per-packet one-way delay: 3458.909 ms
Loss rate: 12.10%
-- Flow 1:
Average throughput: 1.28 Mbit/s
95th percentile per-packet one-way delay: 3458.909 ms
Loss rate: 12.10%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-01-25 17:56:15

End at: 2018-01-25 17:56:45

Local clock offset: 0.91 ms

Remote clock offset: 0.212 ms

Below is generated by plot.py at 2018-01-25 18:18:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.66 Mbit/s

95th percentile per-packet one-way delay: 5777.601 ms

Loss rate: 19.73%

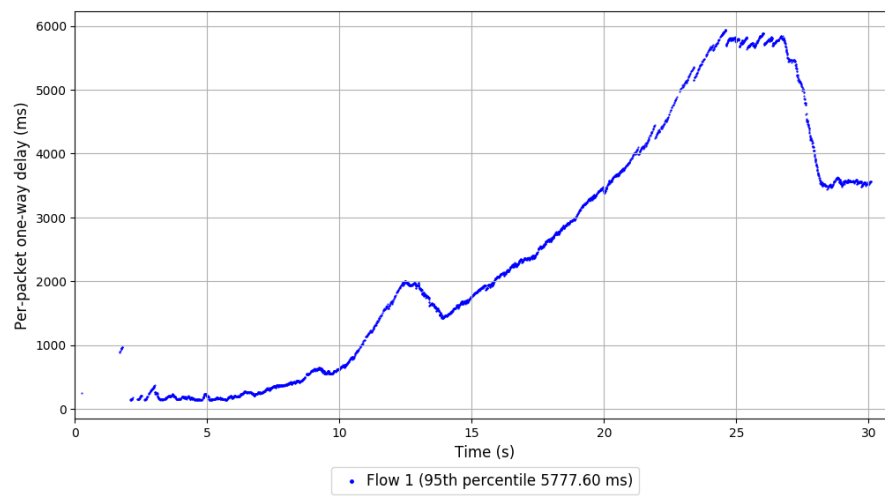
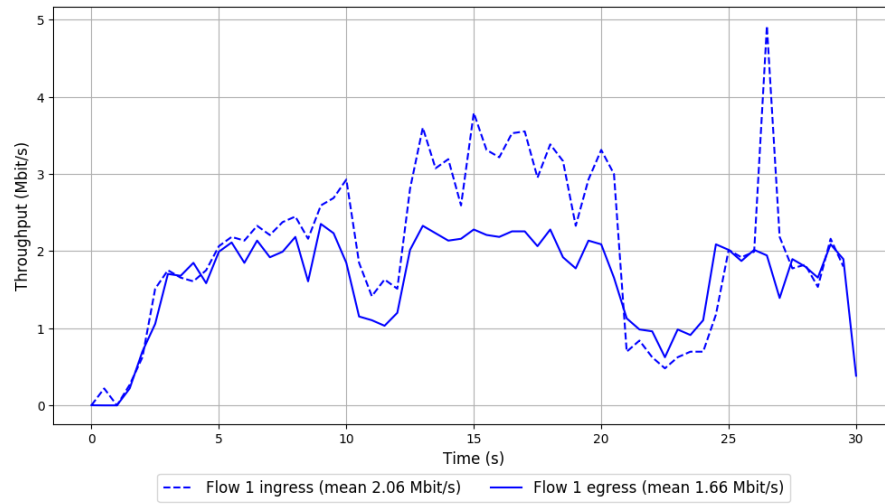
-- Flow 1:

Average throughput: 1.66 Mbit/s

95th percentile per-packet one-way delay: 5777.601 ms

Loss rate: 19.73%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2018-01-25 18:15:09

End at: 2018-01-25 18:15:39

Local clock offset: 1.162 ms

Remote clock offset: 0.183 ms

Below is generated by plot.py at 2018-01-25 18:18:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.68 Mbit/s

95th percentile per-packet one-way delay: 2237.984 ms

Loss rate: 13.11%

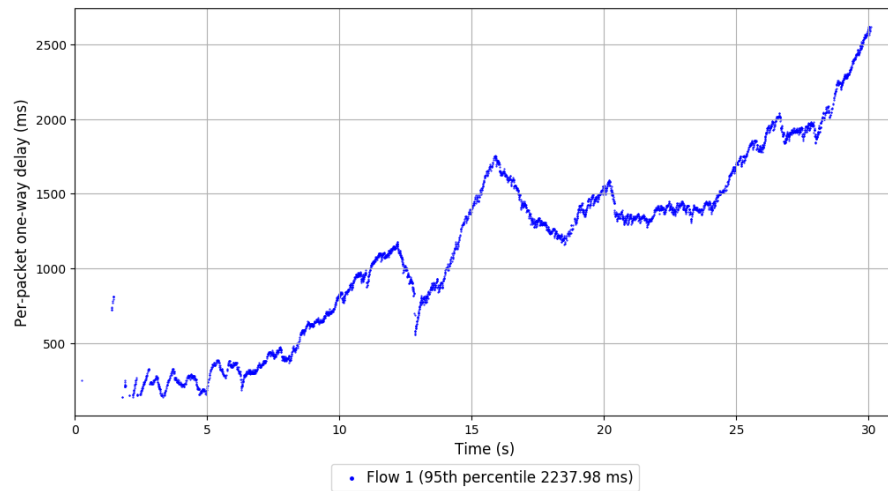
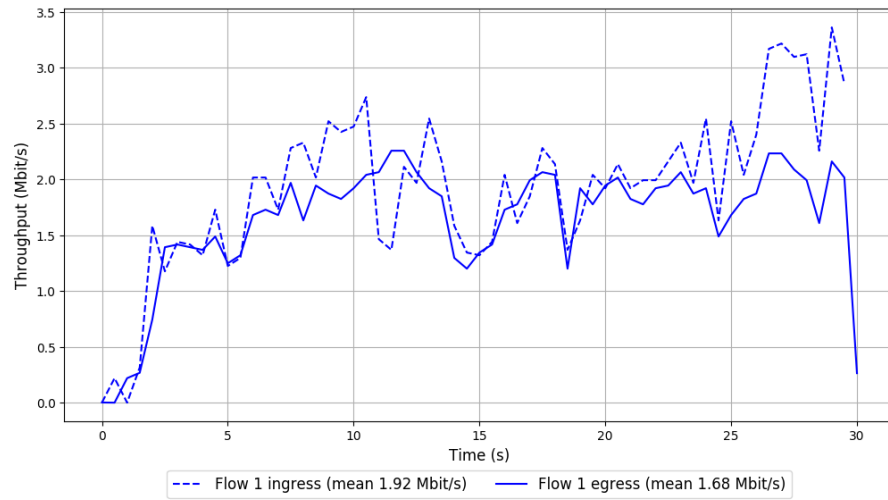
-- Flow 1:

Average throughput: 1.68 Mbit/s

95th percentile per-packet one-way delay: 2237.984 ms

Loss rate: 13.11%

Run 3: Report of TCP Cubic — Data Link

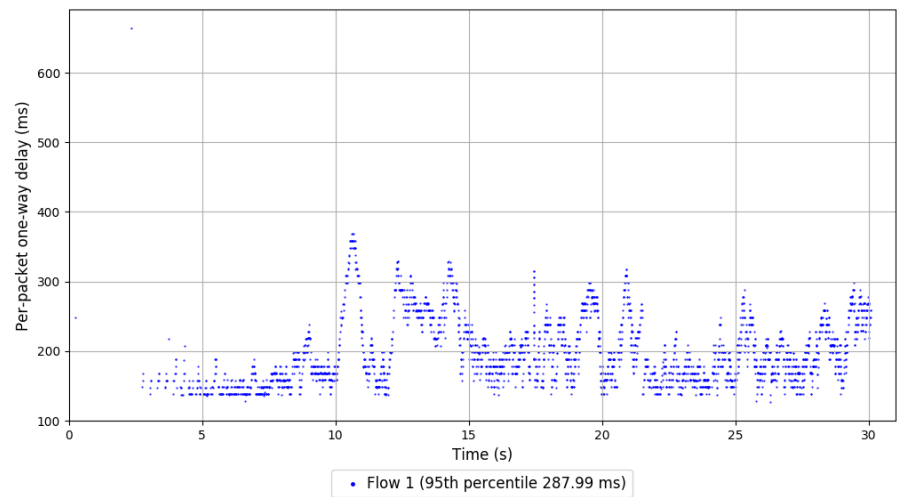
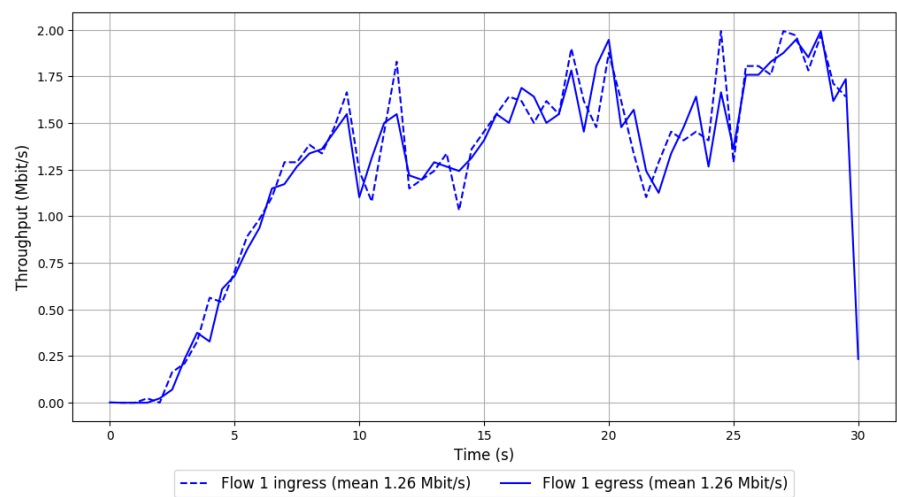


```
Run 1: Statistics of LEDBAT

Start at: 2018-01-25 17:26:22
End at: 2018-01-25 17:26:52
Local clock offset: 0.7 ms
Remote clock offset: -5.136 ms

# Below is generated by plot.py at 2018-01-25 18:18:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.26 Mbit/s
95th percentile per-packet one-way delay: 287.993 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 1.26 Mbit/s
95th percentile per-packet one-way delay: 287.993 ms
Loss rate: 0.68%
```


Run 1: Report of LEDBAT — Data Link

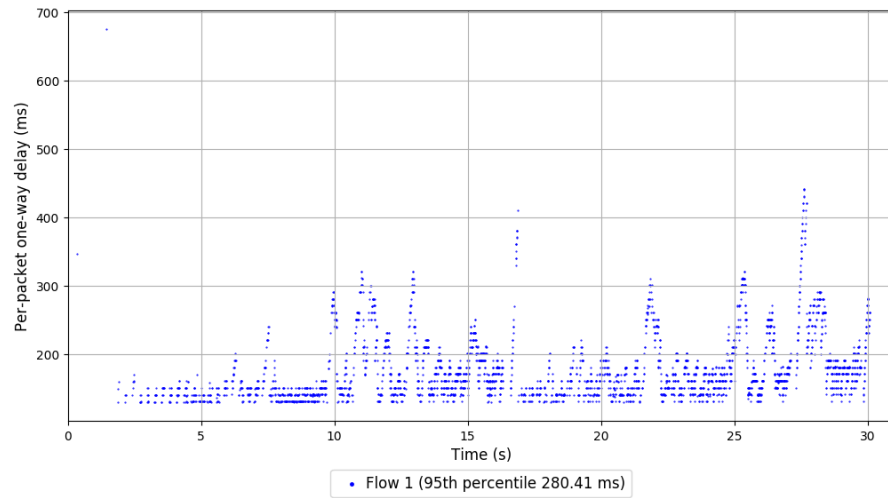
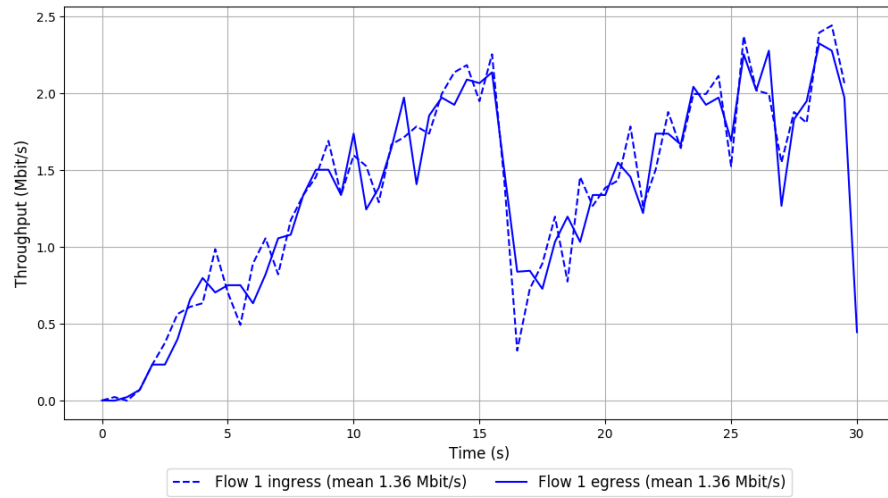


Run 2: Statistics of LEDBAT

Start at: 2018-01-25 17:45:24
End at: 2018-01-25 17:45:54
Local clock offset: 0.761 ms
Remote clock offset: -5.591 ms

Below is generated by plot.py at 2018-01-25 18:18:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.36 Mbit/s
95th percentile per-packet one-way delay: 280.406 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 1.36 Mbit/s
95th percentile per-packet one-way delay: 280.406 ms
Loss rate: 0.75%

Run 2: Report of LEDBAT — Data Link

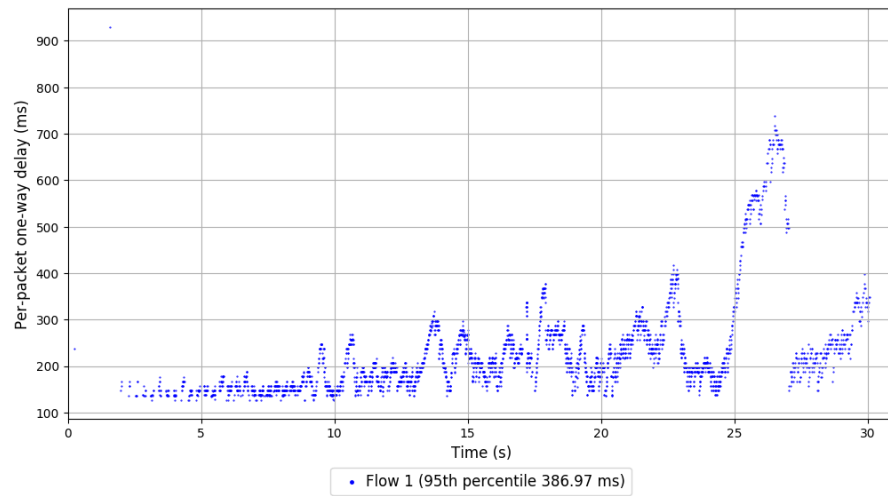
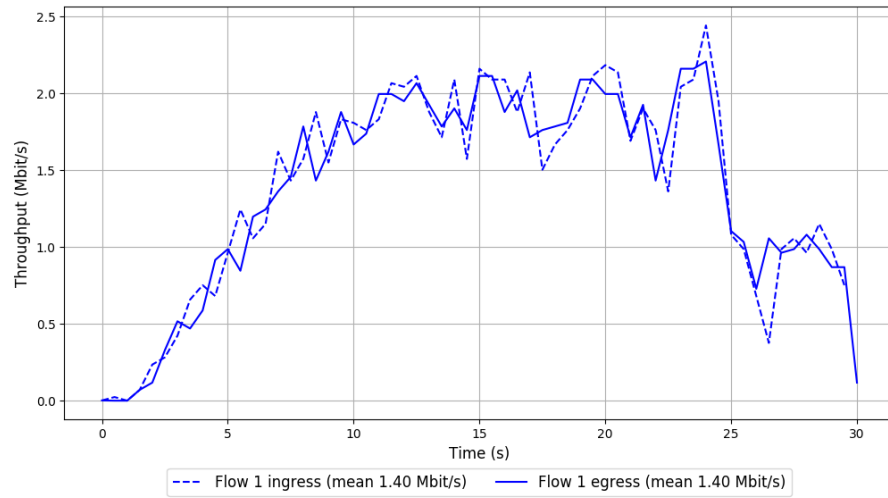


Run 3: Statistics of LEDBAT

Start at: 2018-01-25 18:04:30
End at: 2018-01-25 18:05:00
Local clock offset: 1.019 ms
Remote clock offset: -5.478 ms

Below is generated by plot.py at 2018-01-25 18:18:57
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.40 Mbit/s
95th percentile per-packet one-way delay: 386.971 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 1.40 Mbit/s
95th percentile per-packet one-way delay: 386.971 ms
Loss rate: 0.47%

Run 3: Report of LEDBAT — Data Link

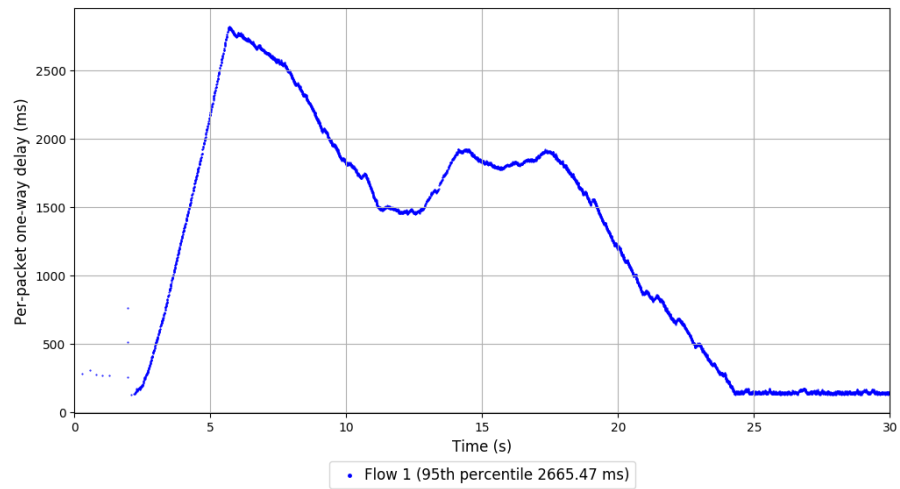
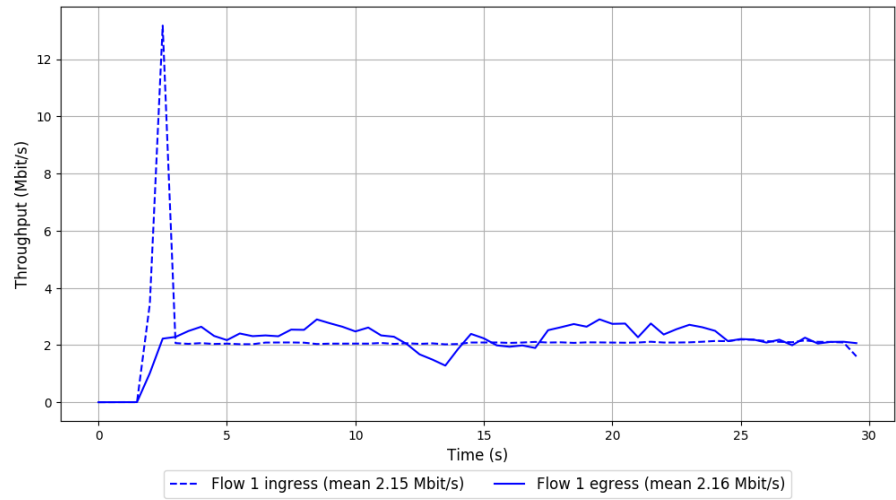


```
Run 1: Statistics of PCC

Start at: 2018-01-25 17:31:09
End at: 2018-01-25 17:31:39
Local clock offset: 0.7 ms
Remote clock offset: 0.143 ms

# Below is generated by plot.py at 2018-01-25 18:19:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.16 Mbit/s
95th percentile per-packet one-way delay: 2665.468 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 2.16 Mbit/s
95th percentile per-packet one-way delay: 2665.468 ms
Loss rate: 0.17%
```

Run 1: Report of PCC — Data Link

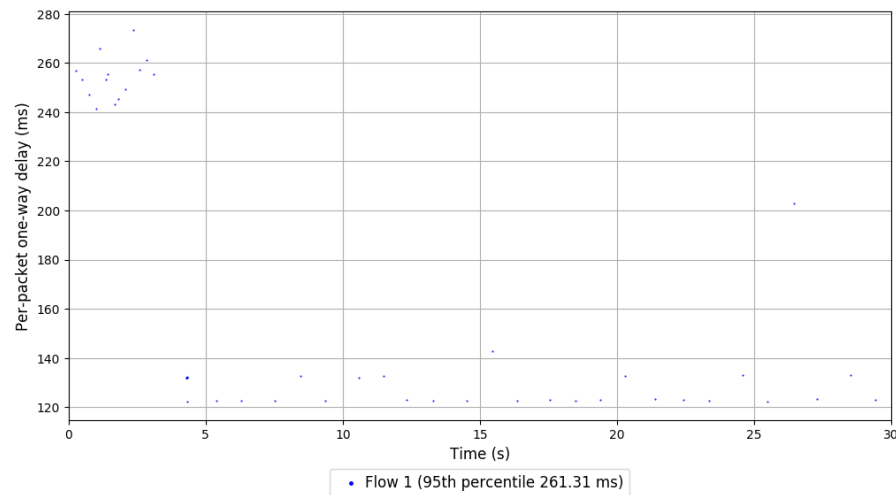
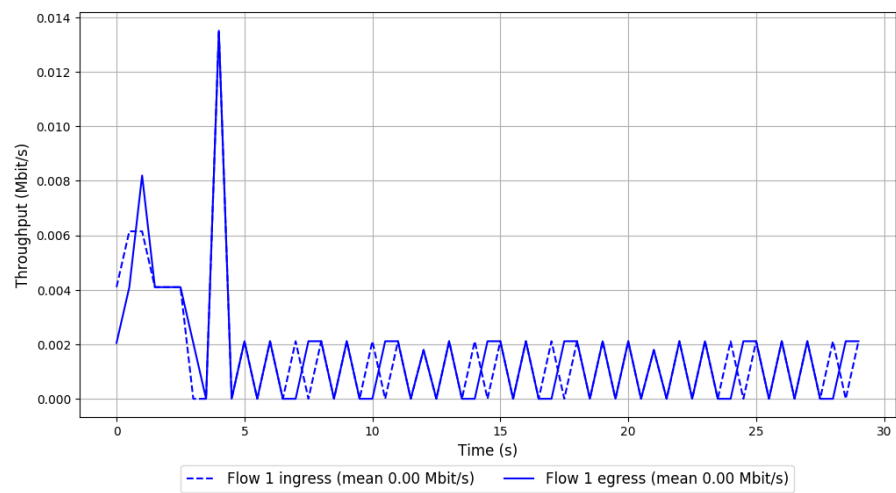


Run 2: Statistics of PCC

Start at: 2018-01-25 17:50:11
End at: 2018-01-25 17:50:41
Local clock offset: 0.786 ms
Remote clock offset: -4.724 ms

Below is generated by plot.py at 2018-01-25 18:19:00
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 261.306 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 261.306 ms
Loss rate: 0.00%

Run 2: Report of PCC — Data Link



Run 3: Statistics of PCC

Start at: 2018-01-25 18:09:13

End at: 2018-01-25 18:09:43

Local clock offset: 1.086 ms

Remote clock offset: 0.25 ms

Below is generated by plot.py at 2018-01-25 18:19:00

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.93 Mbit/s

95th percentile per-packet one-way delay: 10504.484 ms

Loss rate: 69.55%

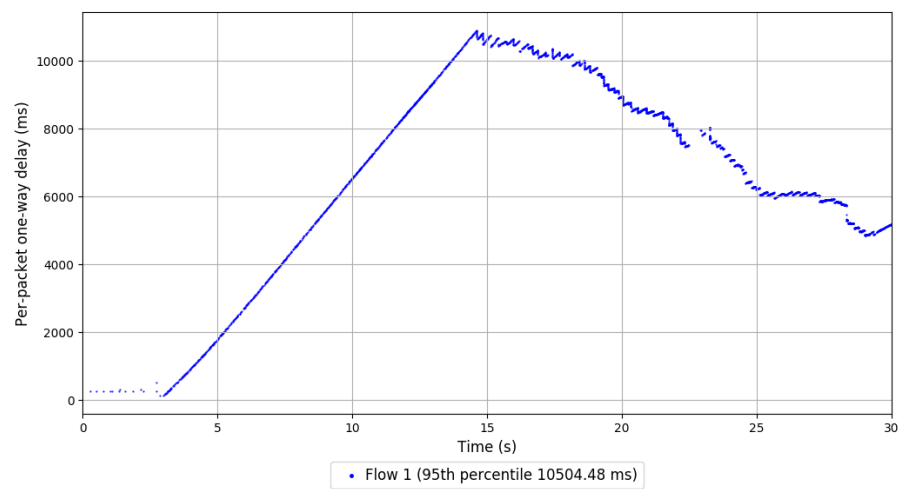
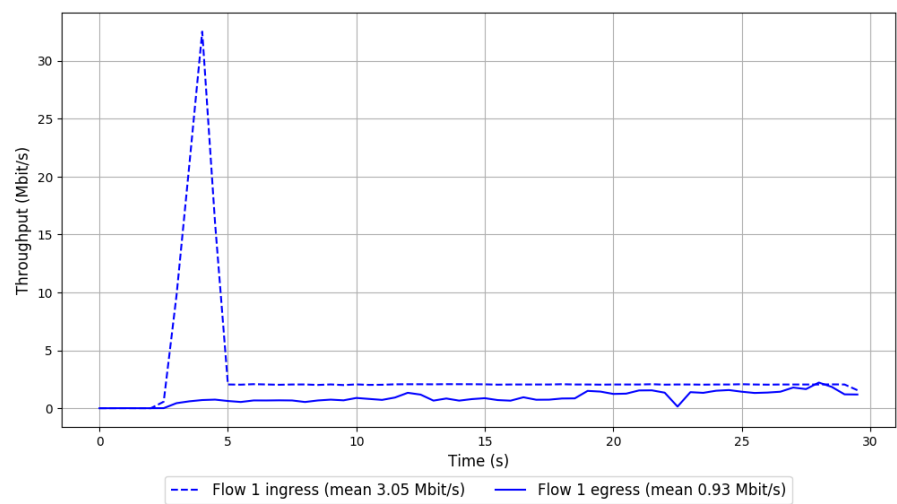
-- Flow 1:

Average throughput: 0.93 Mbit/s

95th percentile per-packet one-way delay: 10504.484 ms

Loss rate: 69.55%

Run 3: Report of PCC — Data Link



Run 1: Statistics of QUIC Cubic

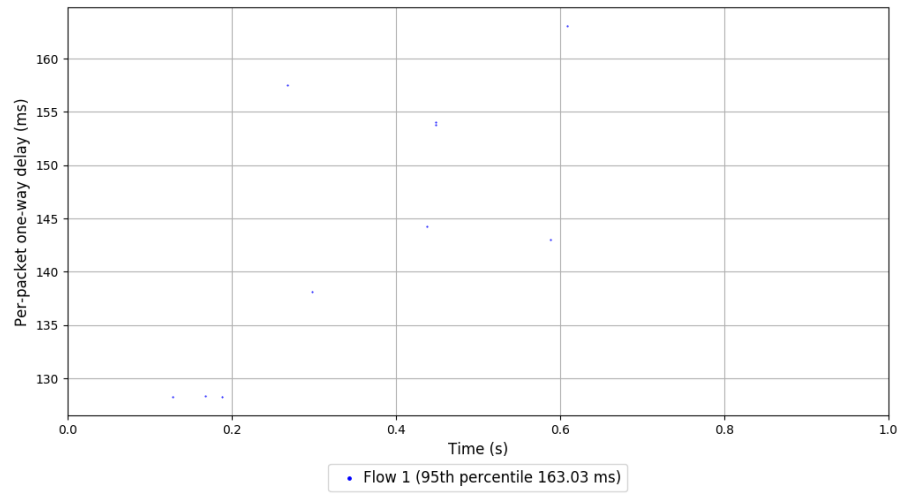
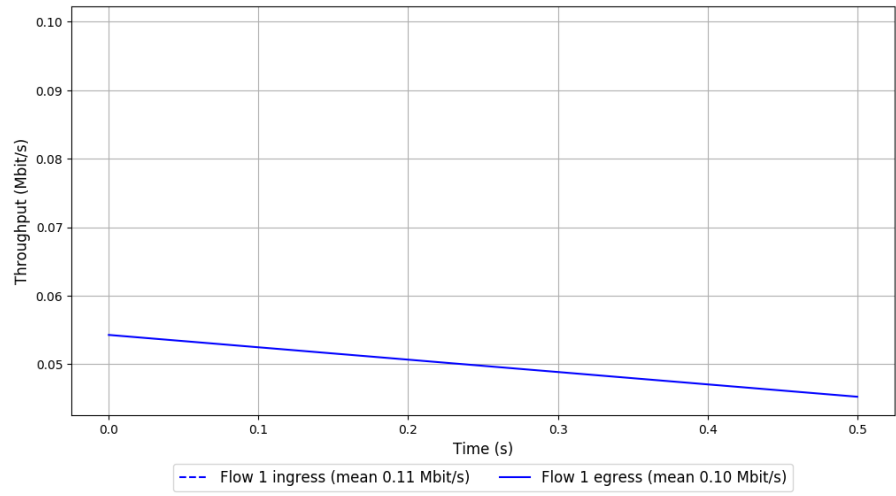
Start at: 2018-01-25 17:24:01

End at: 2018-01-25 17:24:31

Local clock offset: 0.688 ms

Remote clock offset: 0.94 ms

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

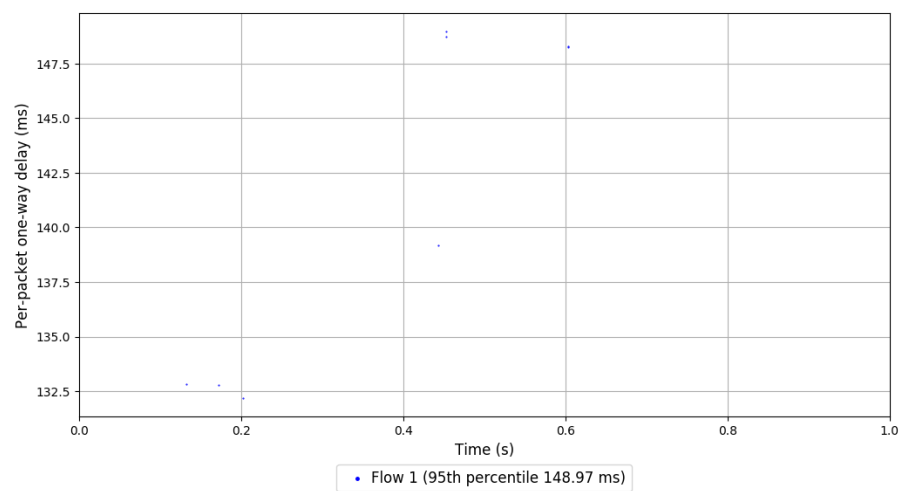
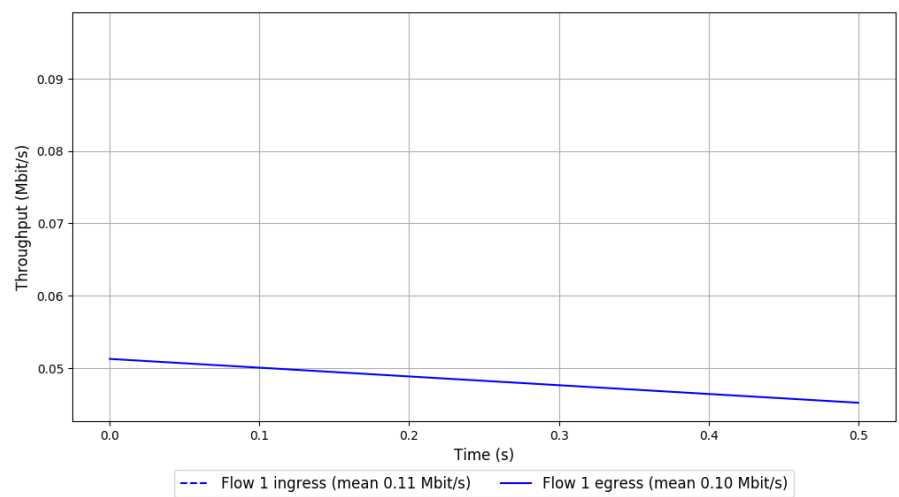
Start at: 2018-01-25 17:43:03

End at: 2018-01-25 17:43:33

Local clock offset: 0.721 ms

Remote clock offset: 0.119 ms

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

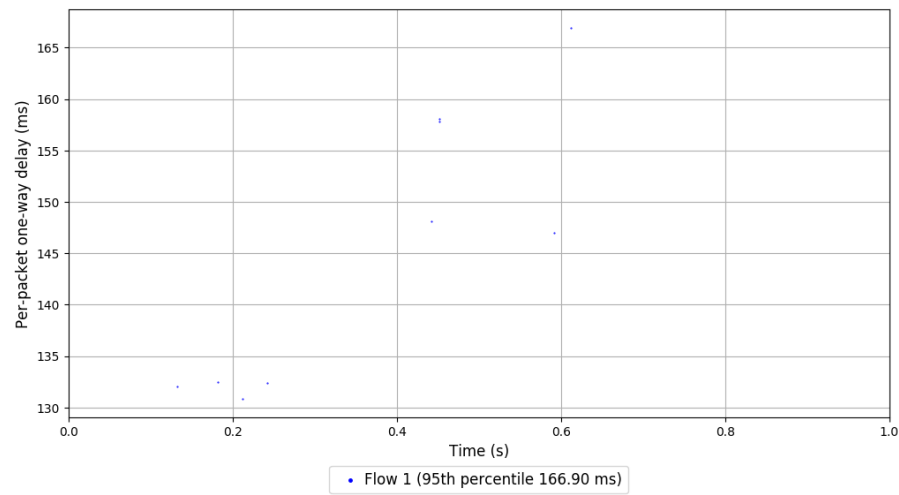
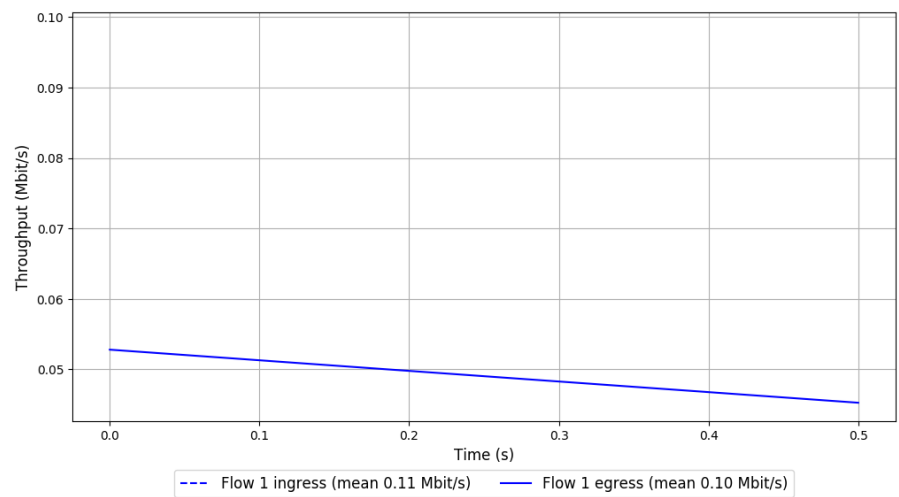
Start at: 2018-01-25 18:02:09

End at: 2018-01-25 18:02:39

Local clock offset: 0.975 ms

Remote clock offset: 1.087 ms

Run 3: Report of QUIC Cubic — Data Link

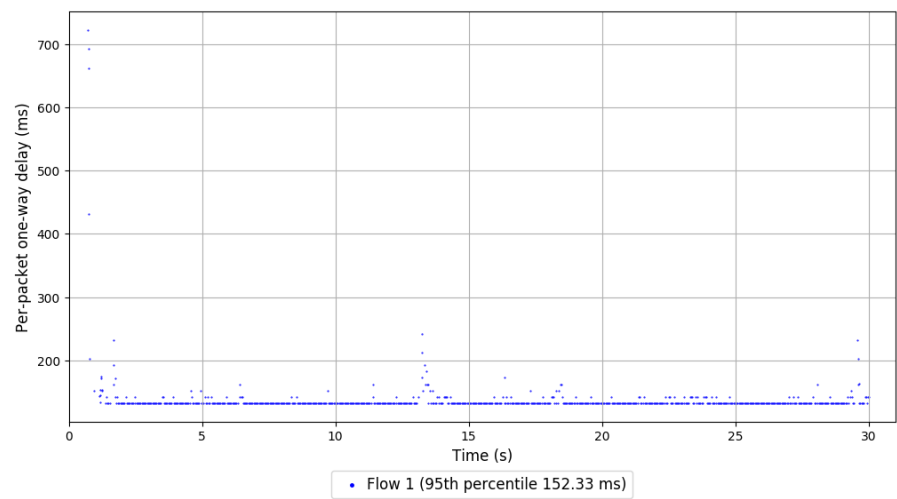
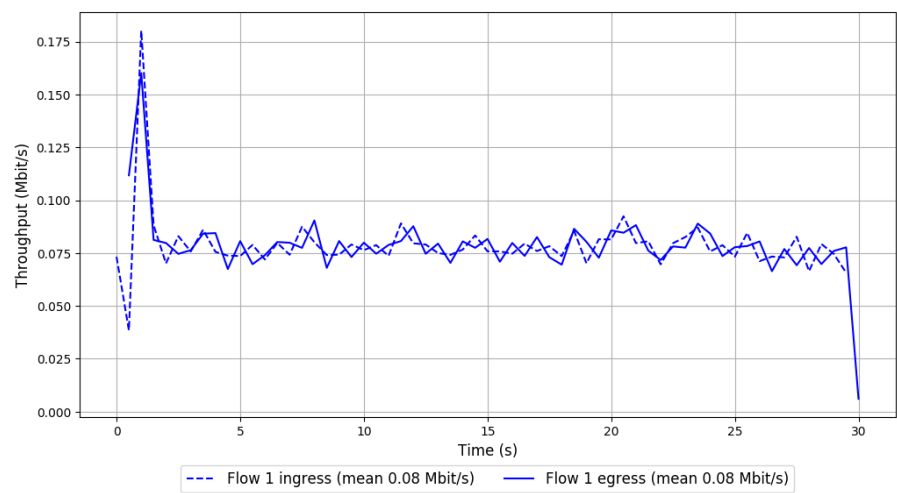


```
Run 1: Statistics of SCReAM

Start at: 2018-01-25 17:39:27
End at: 2018-01-25 17:39:57
Local clock offset: 0.701 ms
Remote clock offset: 0.055 ms

# Below is generated by plot.py at 2018-01-25 18:19:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 152.326 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 152.326 ms
Loss rate: 0.25%
```

Run 1: Report of SReAM — Data Link

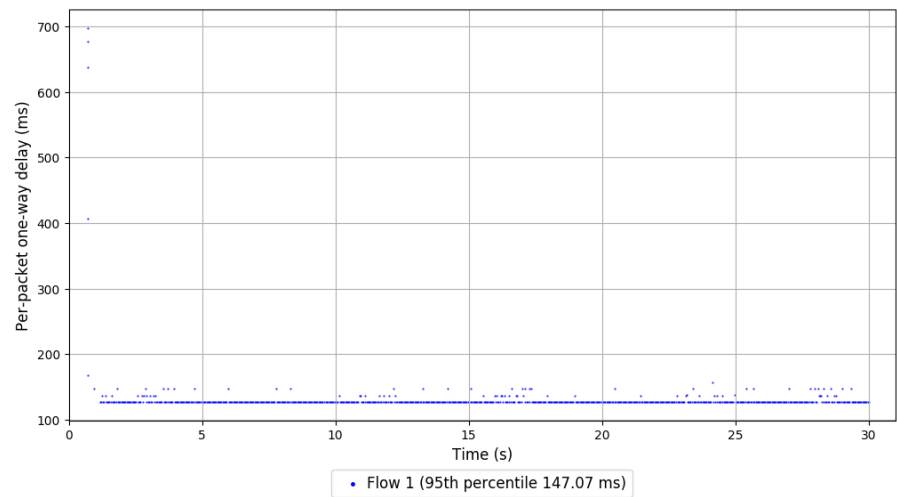
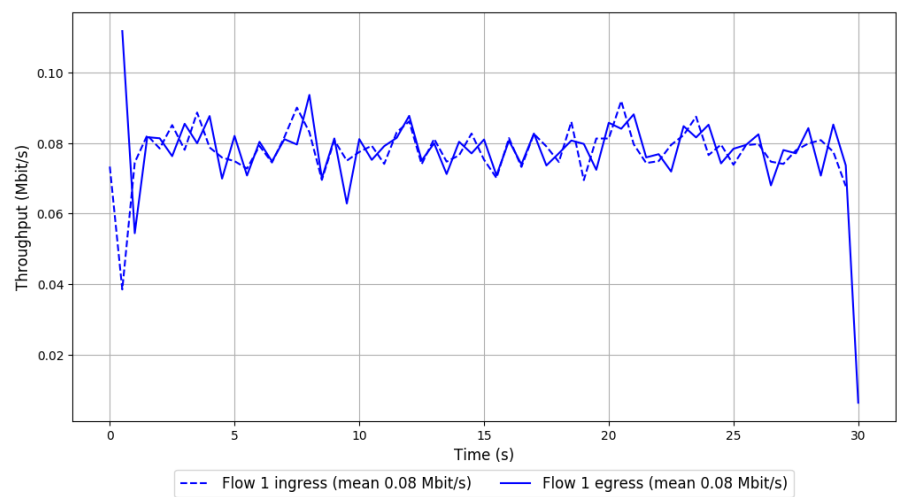


Run 2: Statistics of SCReAM

Start at: 2018-01-25 17:58:37
End at: 2018-01-25 17:59:07
Local clock offset: 0.939 ms
Remote clock offset: -4.619 ms

Below is generated by plot.py at 2018-01-25 18:19:00
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 147.071 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 147.071 ms
Loss rate: 0.26%

Run 2: Report of SReAM — Data Link

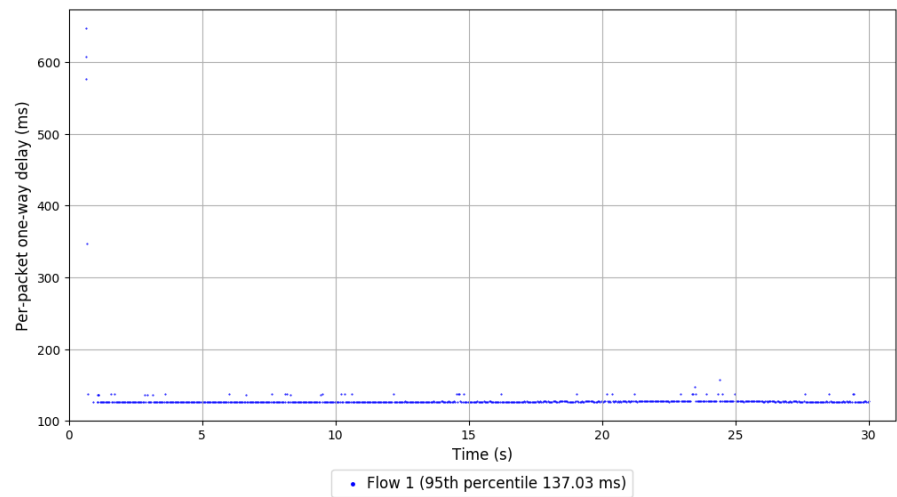
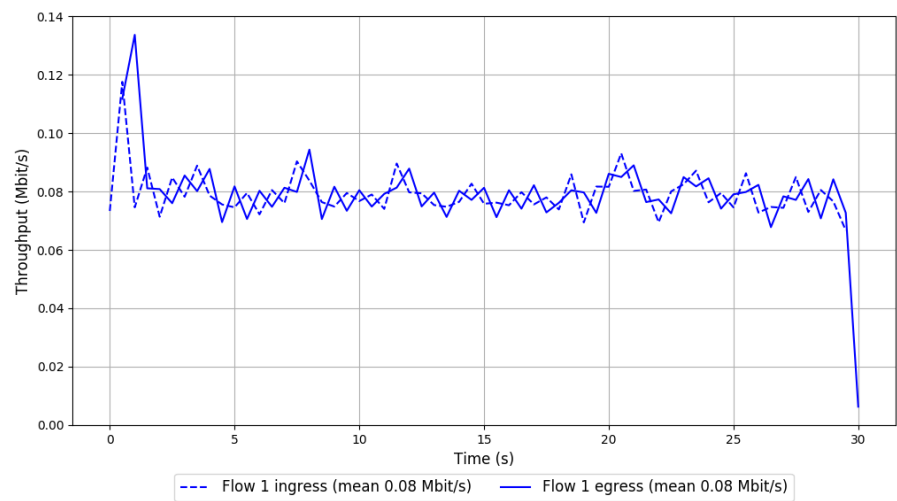


Run 3: Statistics of SCReAM

Start at: 2018-01-25 18:17:30
End at: 2018-01-25 18:18:00
Local clock offset: 1.208 ms
Remote clock offset: -4.618 ms

Below is generated by plot.py at 2018-01-25 18:19:00
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 137.032 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 137.032 ms
Loss rate: 0.13%

Run 3: Report of SReAM — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-01-25 17:38:17

End at: 2018-01-25 17:38:47

Local clock offset: 0.7 ms

Remote clock offset: -4.674 ms

Below is generated by plot.py at 2018-01-25 18:19:02

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.39 Mbit/s

95th percentile per-packet one-way delay: 241.210 ms

Loss rate: 0.19%

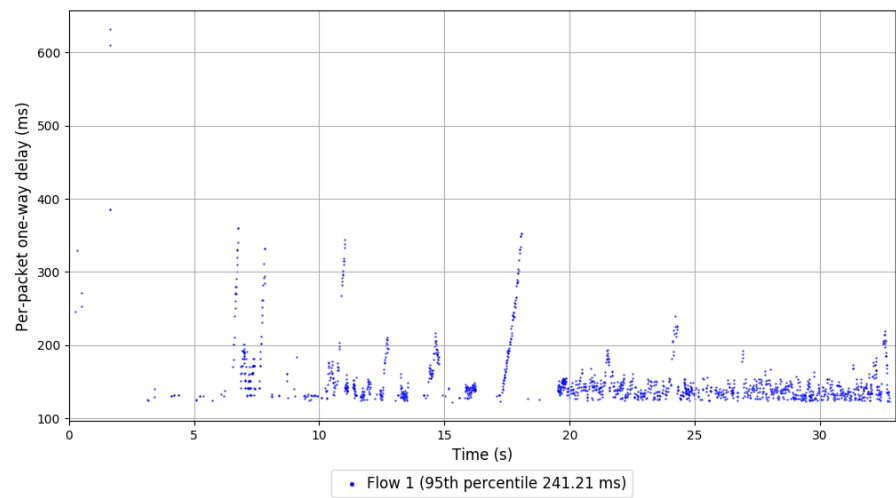
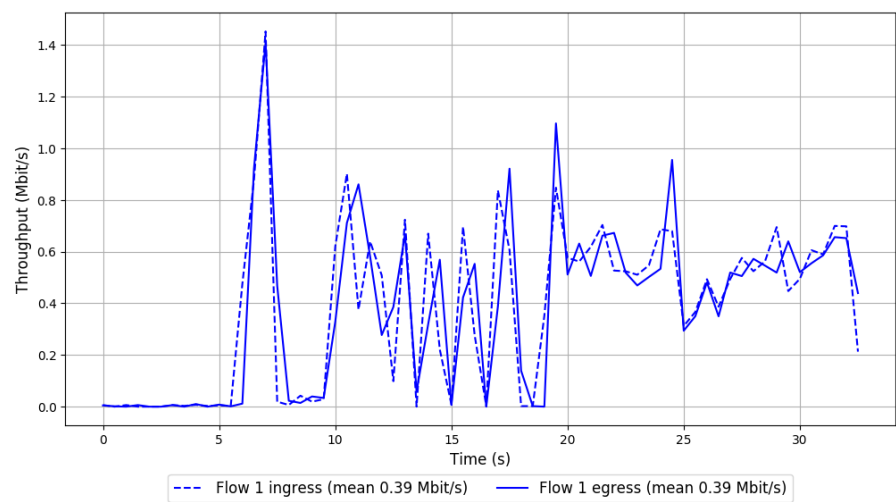
-- Flow 1:

Average throughput: 0.39 Mbit/s

95th percentile per-packet one-way delay: 241.210 ms

Loss rate: 0.19%

Run 1: Report of WebRTC media — Data Link

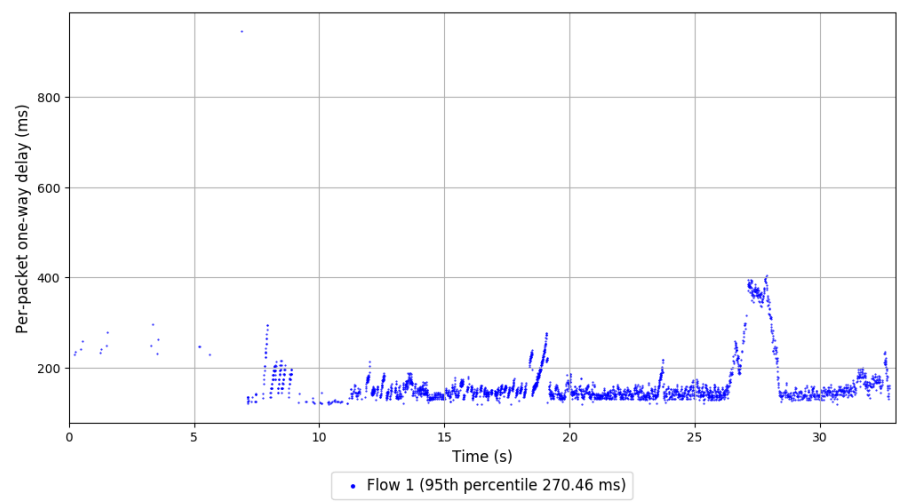
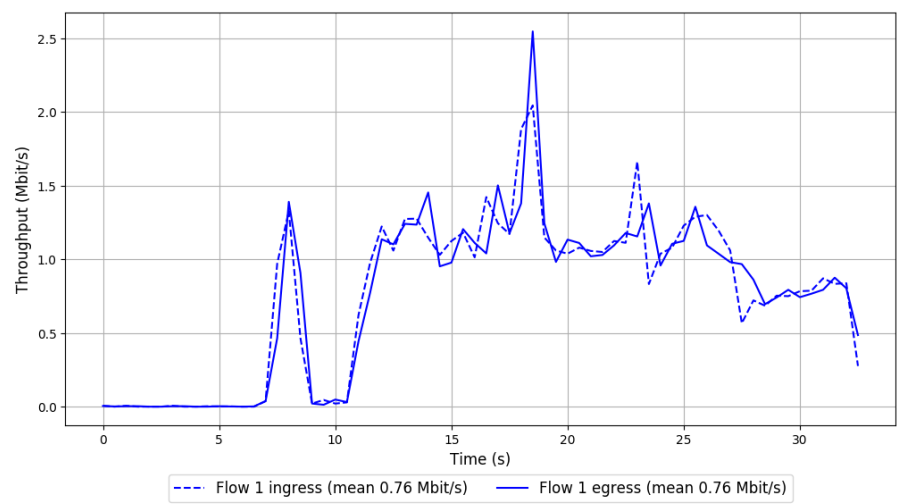


Run 2: Statistics of WebRTC media

Start at: 2018-01-25 17:57:26
End at: 2018-01-25 17:57:56
Local clock offset: 0.926 ms
Remote clock offset: -5.529 ms

Below is generated by plot.py at 2018-01-25 18:19:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.76 Mbit/s
95th percentile per-packet one-way delay: 270.456 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 0.76 Mbit/s
95th percentile per-packet one-way delay: 270.456 ms
Loss rate: 0.25%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-01-25 18:16:20

End at: 2018-01-25 18:16:50

Local clock offset: 1.114 ms

Remote clock offset: 0.207 ms

Below is generated by plot.py at 2018-01-25 18:19:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.66 Mbit/s

95th percentile per-packet one-way delay: 180.283 ms

Loss rate: 0.38%

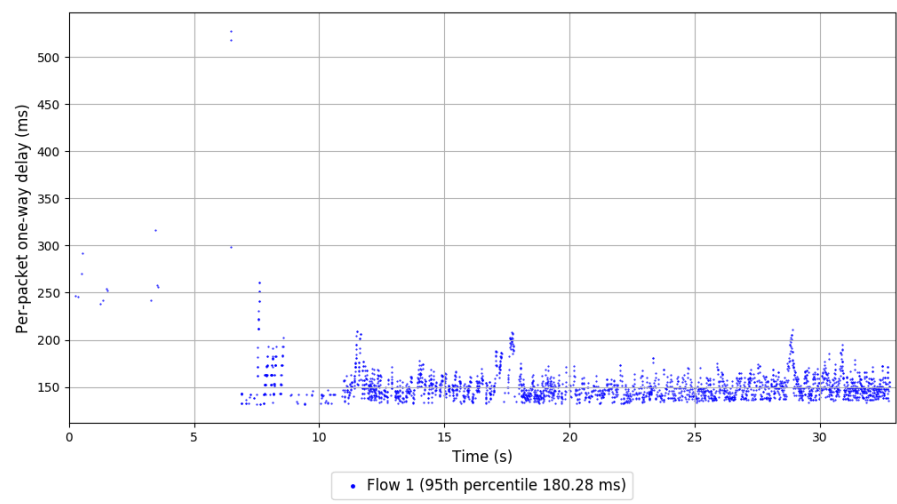
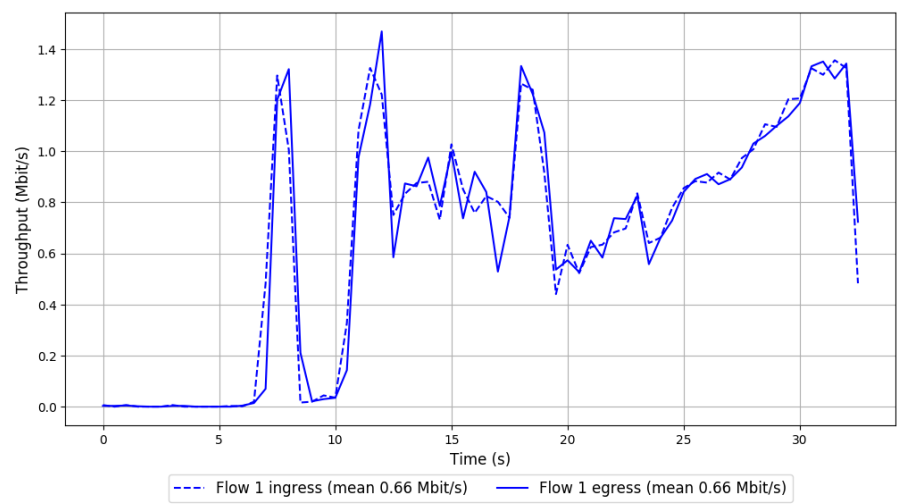
-- Flow 1:

Average throughput: 0.66 Mbit/s

95th percentile per-packet one-way delay: 180.283 ms

Loss rate: 0.38%

Run 3: Report of WebRTC media — Data Link



Run 1: Statistics of Sprout

Start at: 2018-01-25 17:35:55

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

Local clock offset: 0.701 ms

Remote clock offset: 0.098 ms

Below is generated by plot.py at 2018-01-25 18:19:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.13 Mbit/s

95th percentile per-packet one-way delay: 222.273 ms

Loss rate: 0.00%

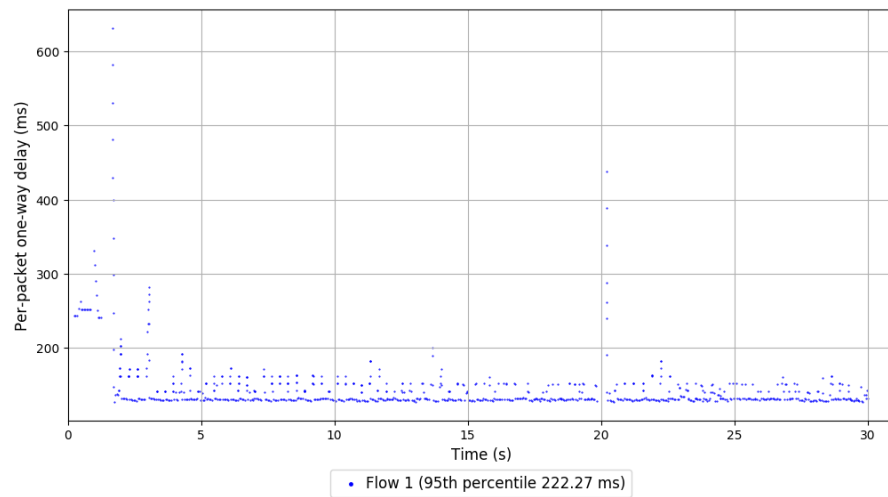
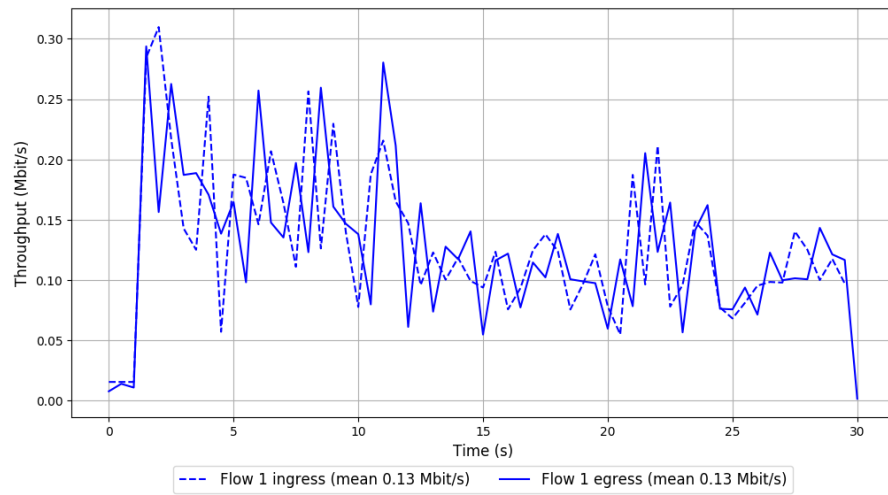
-- Flow 1:

Average throughput: 0.13 Mbit/s

95th percentile per-packet one-way delay: 222.273 ms

Loss rate: 0.00%

Run 1: Report of Sprout — Data Link

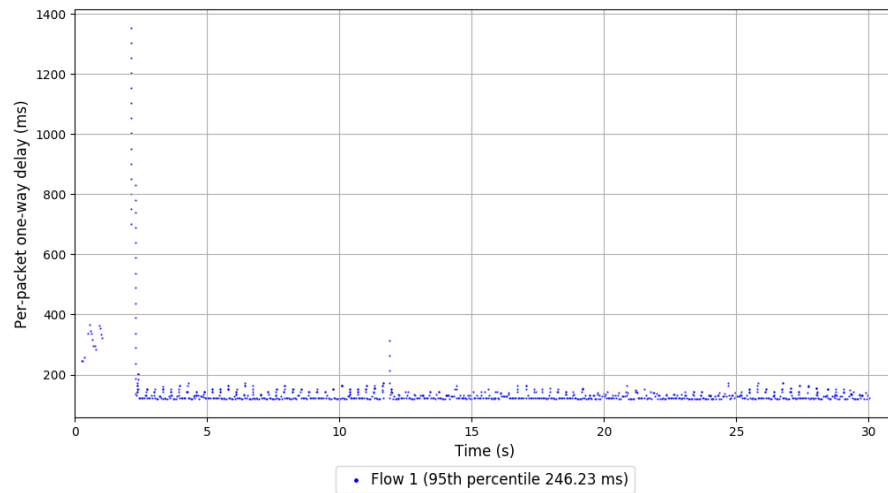
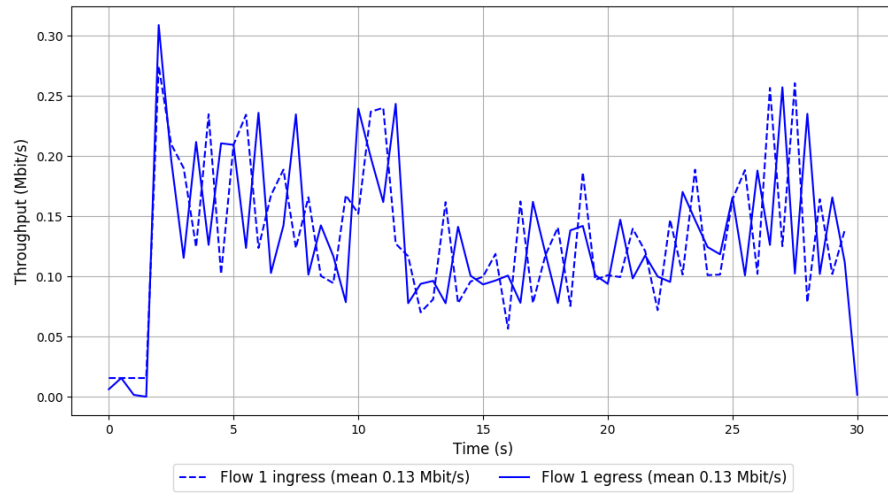


Run 2: Statistics of Sprout

Start at: 2018-01-25 17:55:03
End at: 2018-01-25 17:55:33
Local clock offset: 0.83 ms
Remote clock offset: -4.659 ms

Below is generated by plot.py at 2018-01-25 18:19:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 246.229 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 246.229 ms
Loss rate: 0.36%

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

Start at: 2018-01-25 18:13:57

End at: 2018-01-25 18:14:27

Local clock offset: 1.099 ms

Remote clock offset: 0.147 ms

Below is generated by plot.py at 2018-01-25 18:19:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.12 Mbit/s

95th percentile per-packet one-way delay: 183.466 ms

Loss rate: 0.31%

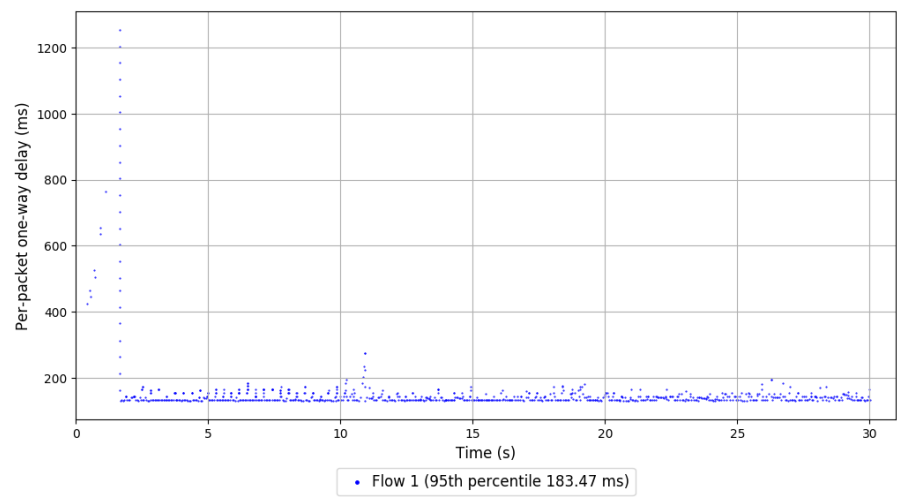
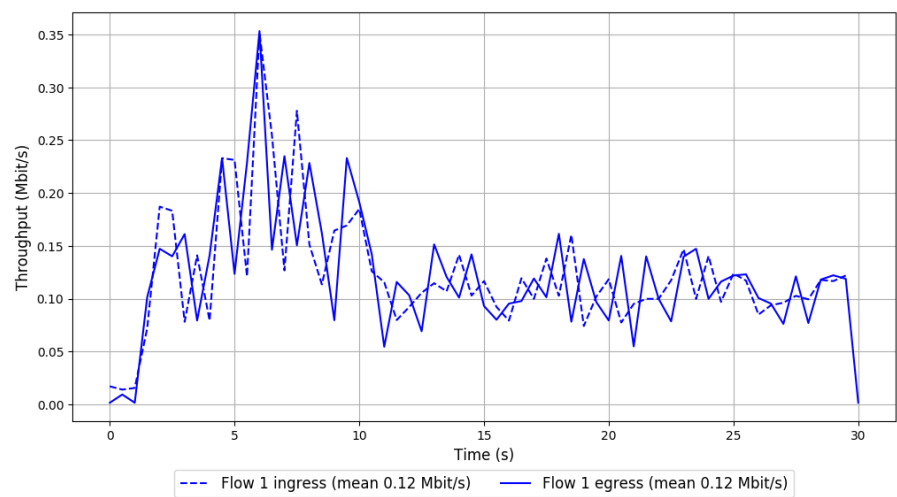
-- Flow 1:

Average throughput: 0.12 Mbit/s

95th percentile per-packet one-way delay: 183.466 ms

Loss rate: 0.31%

Run 3: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2018-01-25 17:25:11

End at: 2018-01-25 17:25:41

Local clock offset: 0.711 ms

Remote clock offset: 0.032 ms

Below is generated by plot.py at 2018-01-25 18:19:05

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.28 Mbit/s

95th percentile per-packet one-way delay: 1608.310 ms

Loss rate: 0.78%

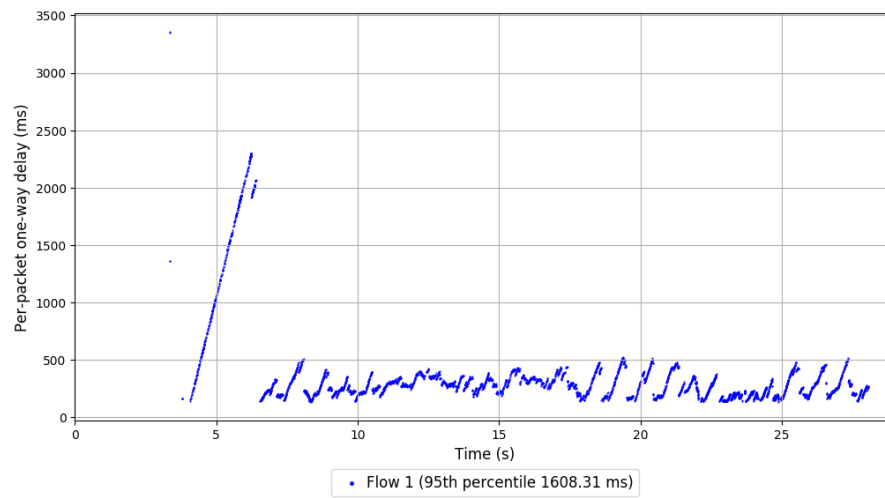
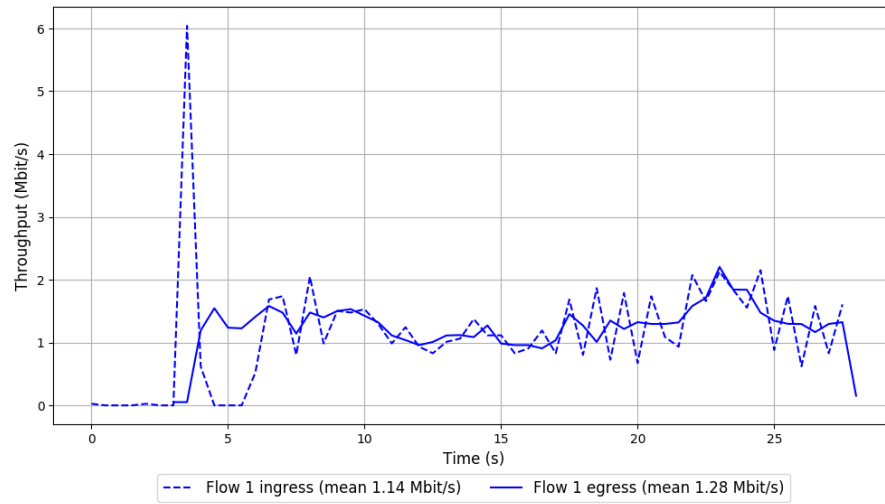
-- Flow 1:

Average throughput: 1.28 Mbit/s

95th percentile per-packet one-way delay: 1608.310 ms

Loss rate: 0.78%

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-01-25 17:44:13

End at: 2018-01-25 17:44:43

Local clock offset: 0.753 ms

Remote clock offset: -4.675 ms

Below is generated by plot.py at 2018-01-25 18:19:08

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.75 Mbit/s

95th percentile per-packet one-way delay: 1034.174 ms

Loss rate: 0.54%

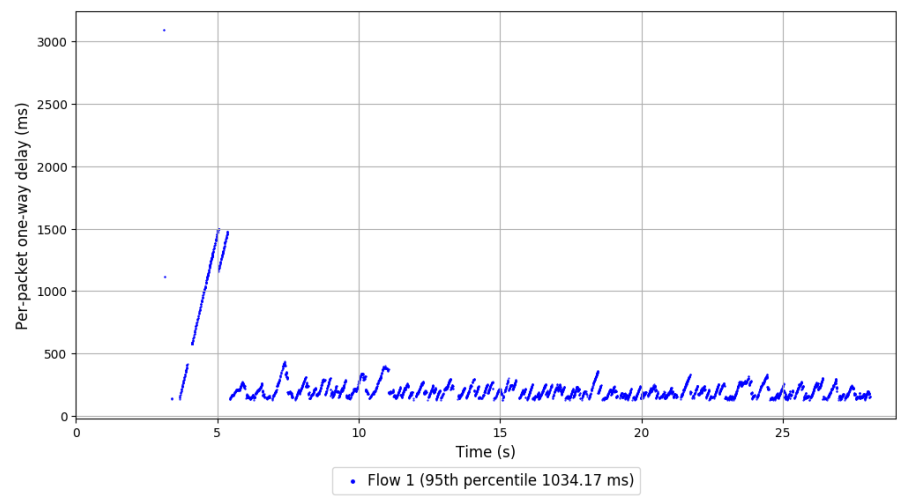
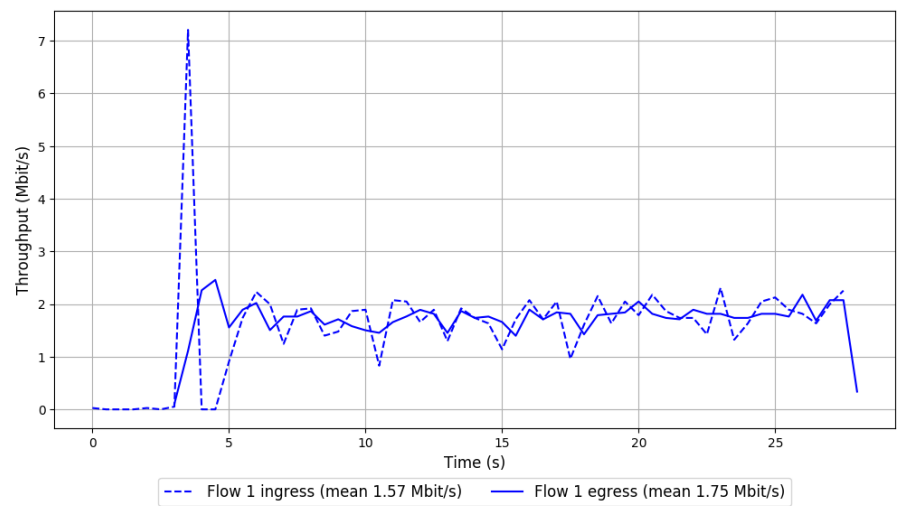
-- Flow 1:

Average throughput: 1.75 Mbit/s

95th percentile per-packet one-way delay: 1034.174 ms

Loss rate: 0.54%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-01-25 18:03:19

End at: 2018-01-25 18:03:49

Local clock offset: 0.936 ms

Remote clock offset: -5.487 ms

Below is generated by plot.py at 2018-01-25 18:19:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.27 Mbit/s

95th percentile per-packet one-way delay: 1074.822 ms

Loss rate: 0.52%

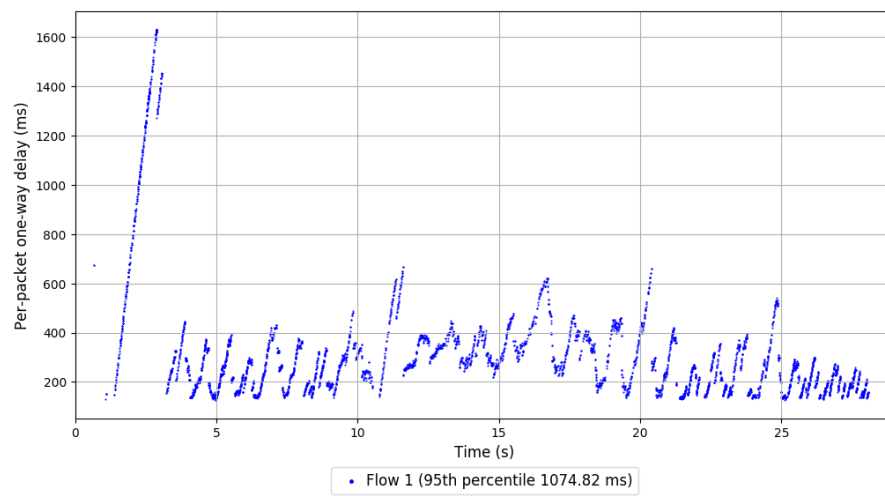
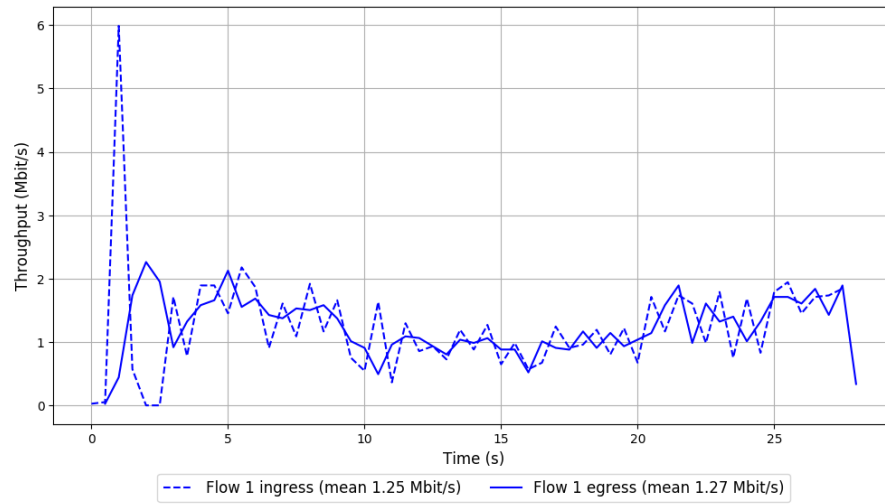
-- Flow 1:

Average throughput: 1.27 Mbit/s

95th percentile per-packet one-way delay: 1074.822 ms

Loss rate: 0.52%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-01-25 17:33:33

End at: 2018-01-25 17:34:03

Local clock offset: 0.692 ms

Remote clock offset: -4.777 ms

Below is generated by plot.py at 2018-01-25 18:19:10

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.24 Mbit/s

95th percentile per-packet one-way delay: 3044.225 ms

Loss rate: 9.39%

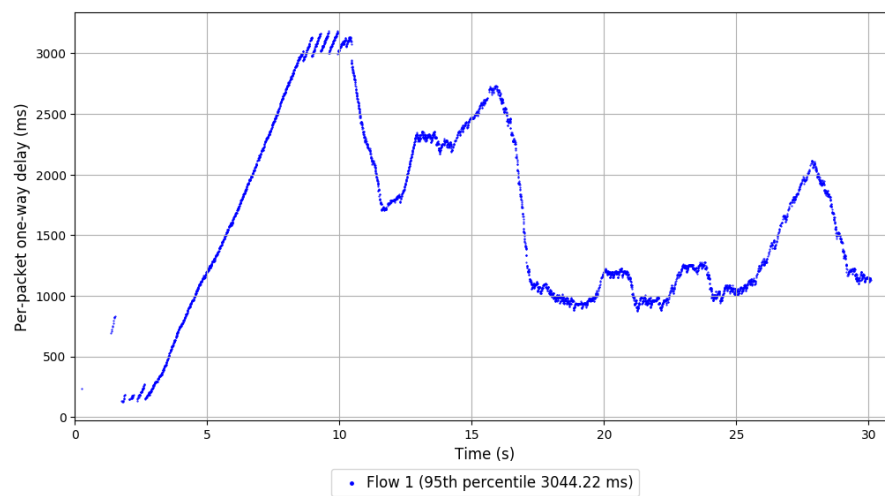
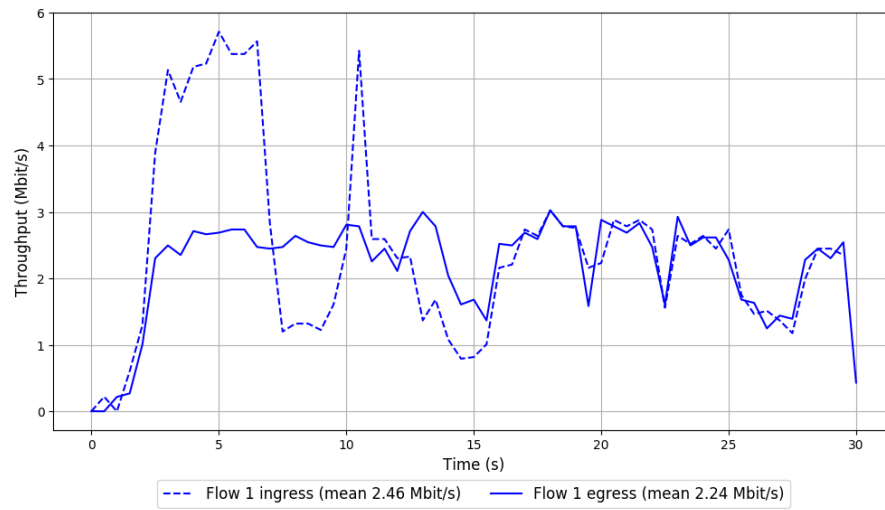
-- Flow 1:

Average throughput: 2.24 Mbit/s

95th percentile per-packet one-way delay: 3044.225 ms

Loss rate: 9.39%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-01-25 17:52:41

End at: 2018-01-25 17:53:11

Local clock offset: 0.874 ms

Remote clock offset: 0.247 ms

Below is generated by plot.py at 2018-01-25 18:19:10

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.51 Mbit/s

95th percentile per-packet one-way delay: 446.702 ms

Loss rate: 0.29%

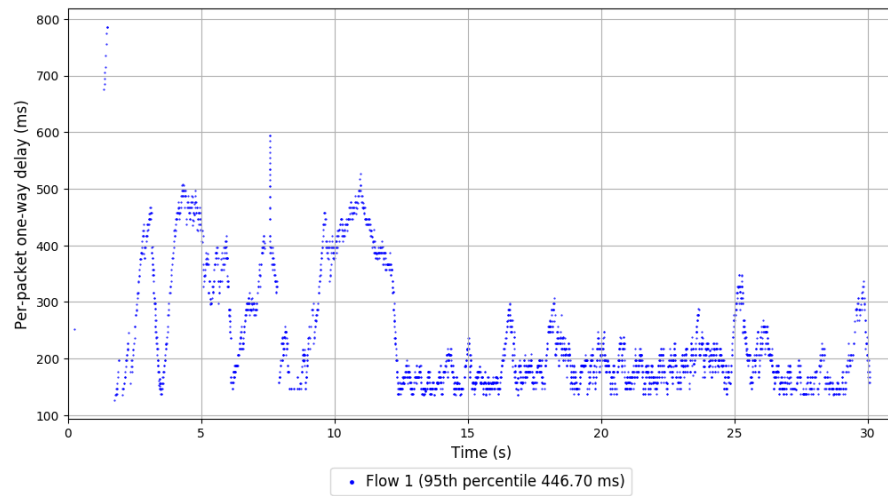
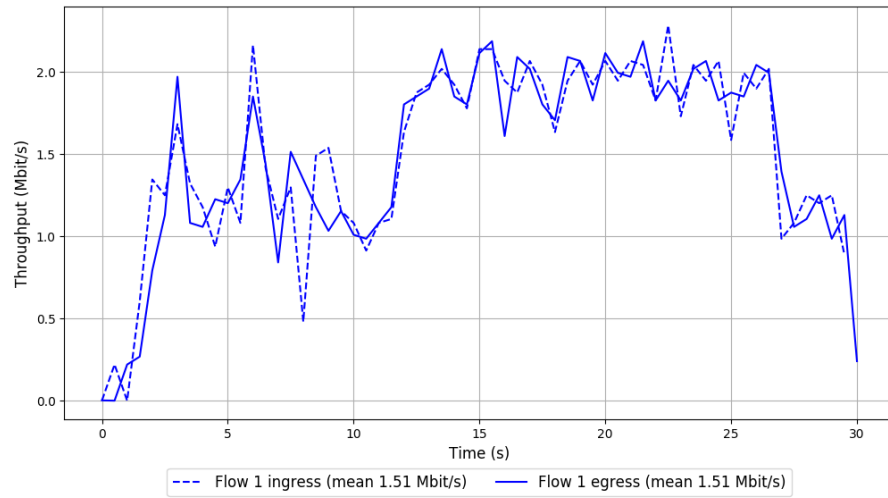
-- Flow 1:

Average throughput: 1.51 Mbit/s

95th percentile per-packet one-way delay: 446.702 ms

Loss rate: 0.29%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2018-01-25 18:11:35

End at: 2018-01-25 18:12:05

Local clock offset: 1.135 ms

Remote clock offset: 0.194 ms

Below is generated by plot.py at 2018-01-25 18:19:10

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.62 Mbit/s

95th percentile per-packet one-way delay: 4560.429 ms

Loss rate: 16.71%

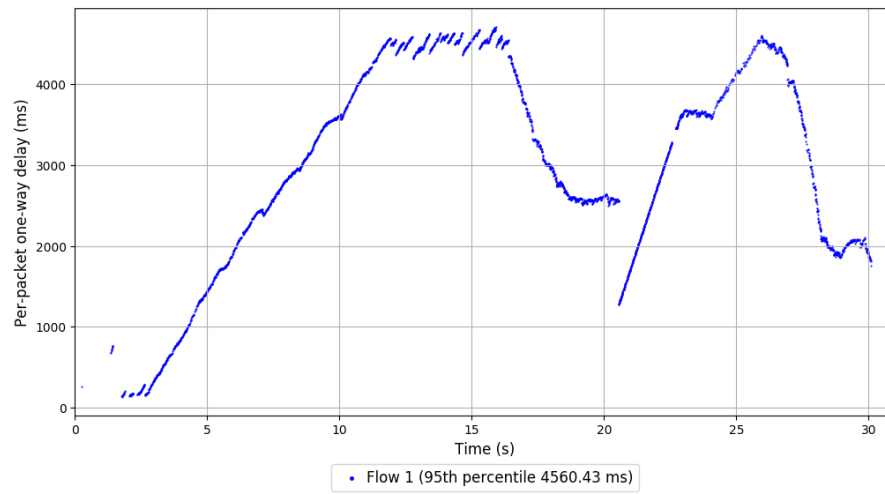
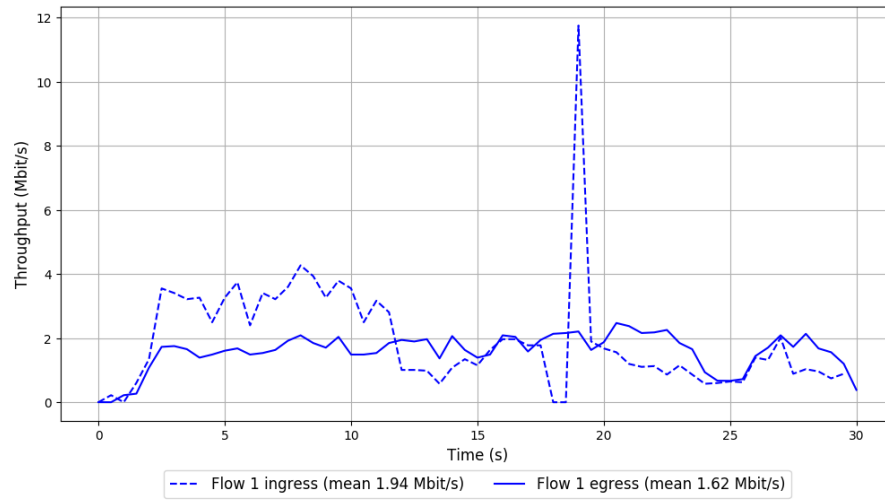
-- Flow 1:

Average throughput: 1.62 Mbit/s

95th percentile per-packet one-way delay: 4560.429 ms

Loss rate: 16.71%

Run 3: Report of TCP Vegas — Data Link

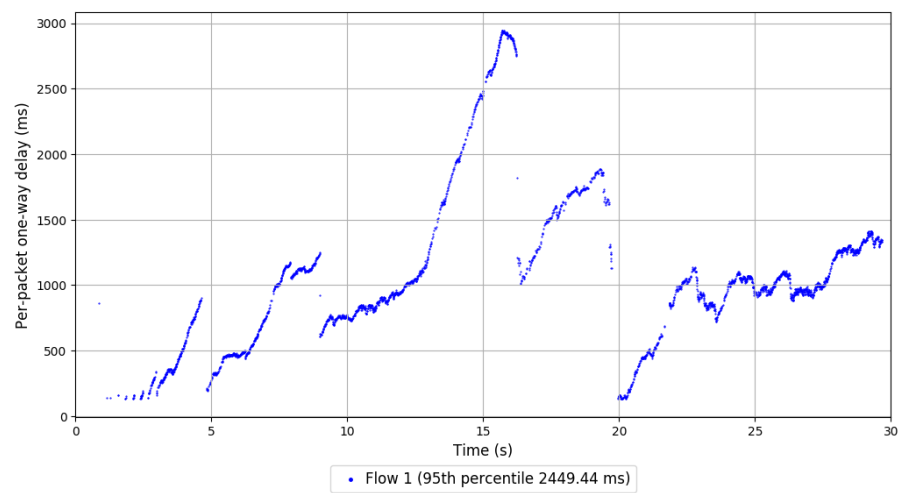
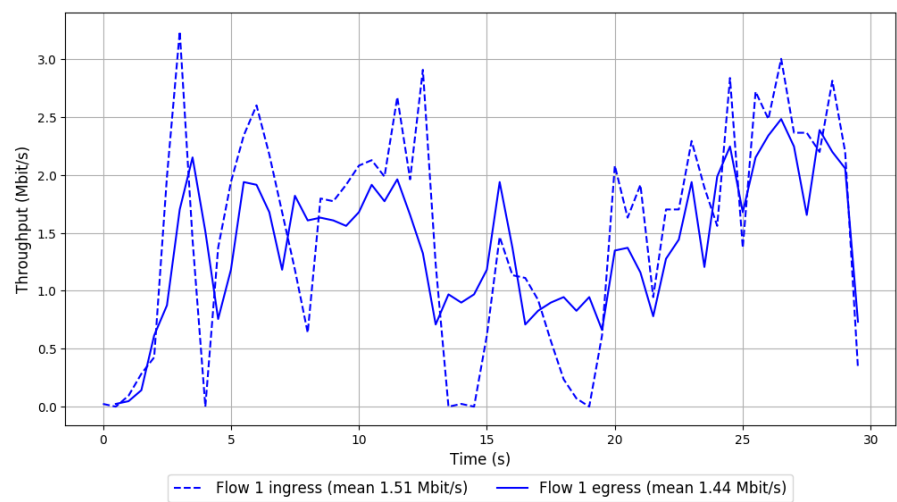


Run 1: Statistics of Verus

Start at: 2018-01-25 17:28:47
End at: 2018-01-25 17:29:17
Local clock offset: 0.688 ms
Remote clock offset: -4.295 ms

Below is generated by plot.py at 2018-01-25 18:19:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.44 Mbit/s
95th percentile per-packet one-way delay: 2449.439 ms
Loss rate: 7.01%
-- Flow 1:
Average throughput: 1.44 Mbit/s
95th percentile per-packet one-way delay: 2449.439 ms
Loss rate: 7.01%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2018-01-25 17:47:49

End at: 2018-01-25 17:48:19

Local clock offset: 0.805 ms

Remote clock offset: 0.219 ms

Below is generated by plot.py at 2018-01-25 18:19:10

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.35 Mbit/s

95th percentile per-packet one-way delay: 1693.316 ms

Loss rate: 3.87%

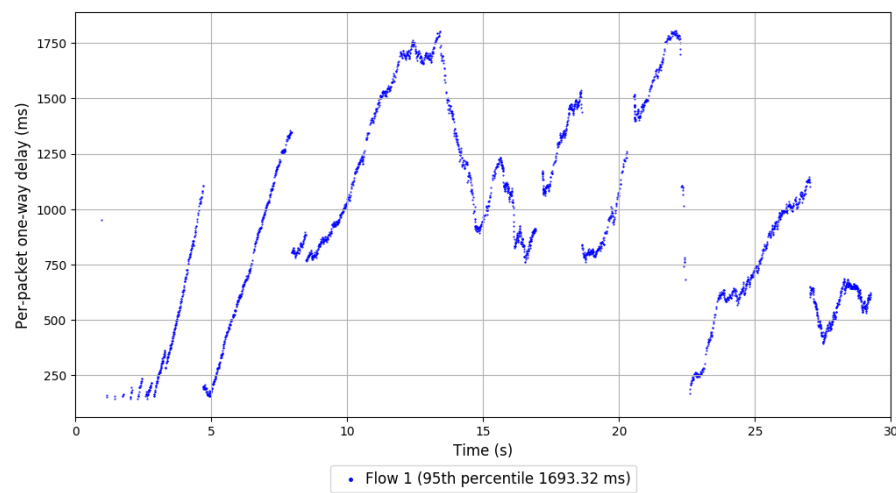
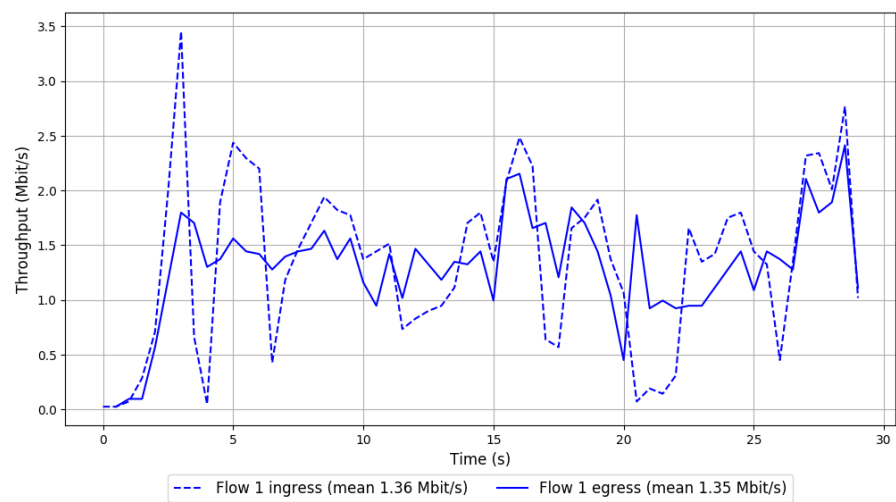
-- Flow 1:

Average throughput: 1.35 Mbit/s

95th percentile per-packet one-way delay: 1693.316 ms

Loss rate: 3.87%

Run 2: Report of Verus — Data Link

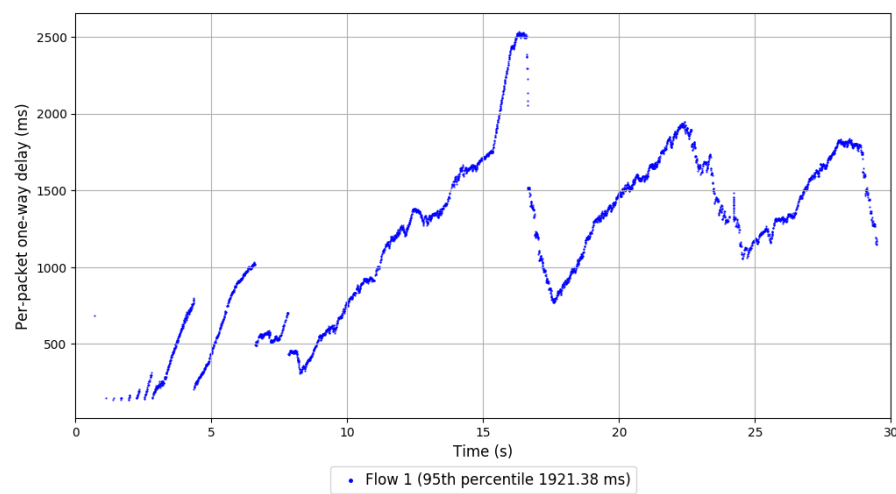
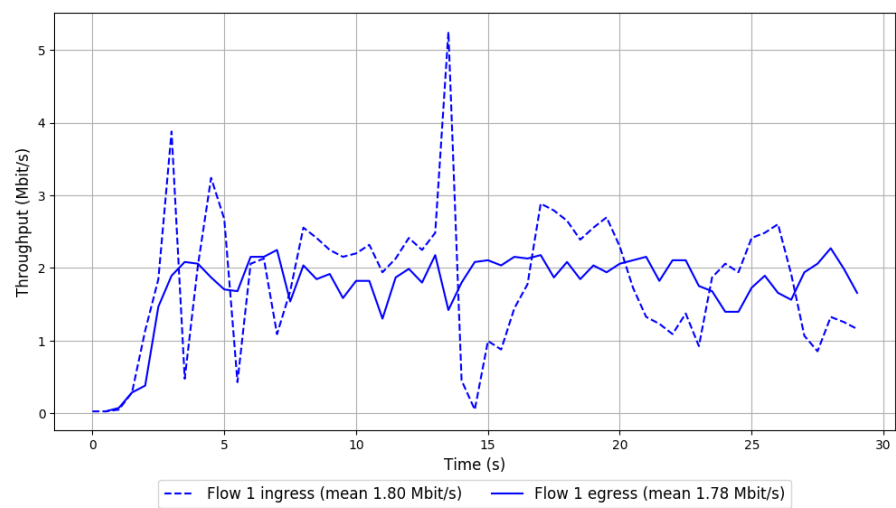


Run 3: Statistics of Verus

Start at: 2018-01-25 18:06:52
End at: 2018-01-25 18:07:22
Local clock offset: 1.02 ms
Remote clock offset: -4.617 ms

Below is generated by plot.py at 2018-01-25 18:19:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.78 Mbit/s
95th percentile per-packet one-way delay: 1921.375 ms
Loss rate: 2.93%
-- Flow 1:
Average throughput: 1.78 Mbit/s
95th percentile per-packet one-way delay: 1921.375 ms
Loss rate: 2.93%

Run 3: Report of Verus — Data Link

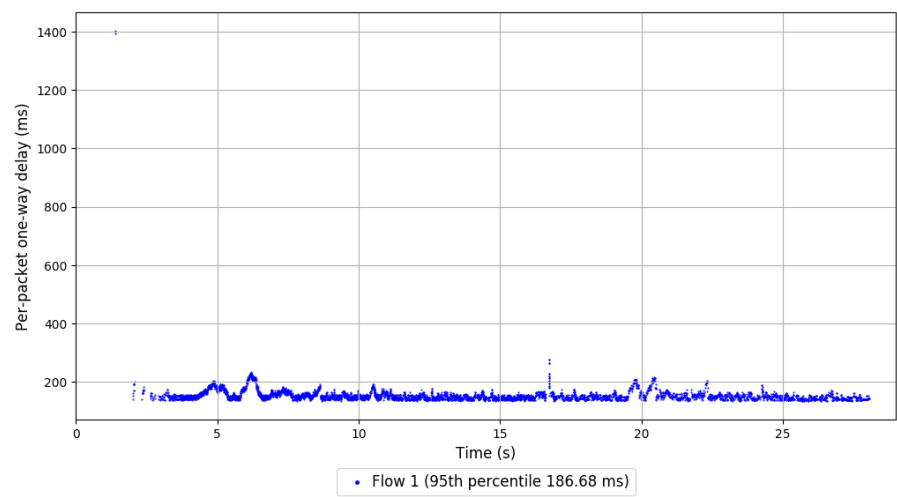
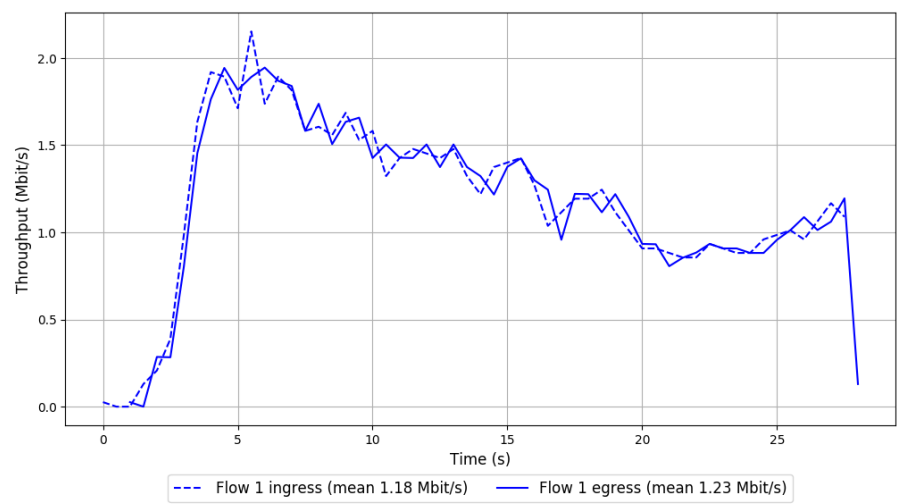


Run 1: Statistics of Copa

Start at: 2018-01-25 17:21:39
End at: 2018-01-25 17:22:09
Local clock offset: 0.633 ms
Remote clock offset: -4.266 ms

Below is generated by plot.py at 2018-01-25 18:19:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.23 Mbit/s
95th percentile per-packet one-way delay: 186.677 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 1.23 Mbit/s
95th percentile per-packet one-way delay: 186.677 ms
Loss rate: 0.20%

Run 1: Report of Copa — Data Link

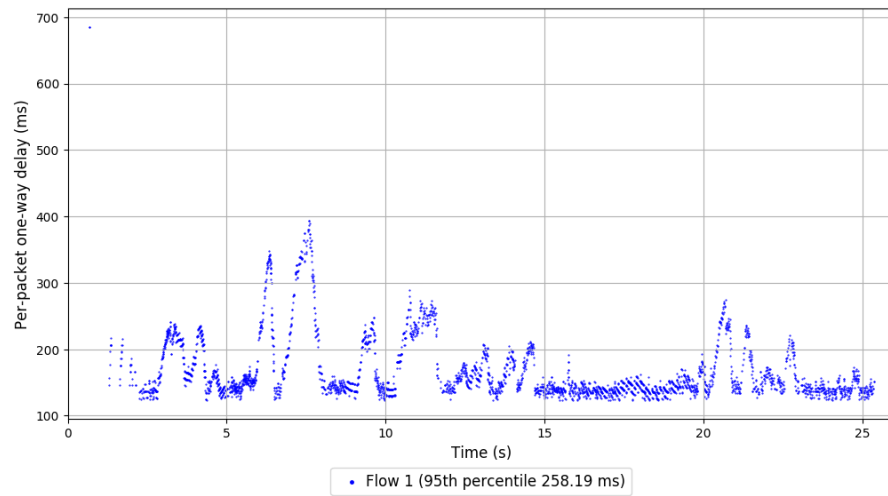
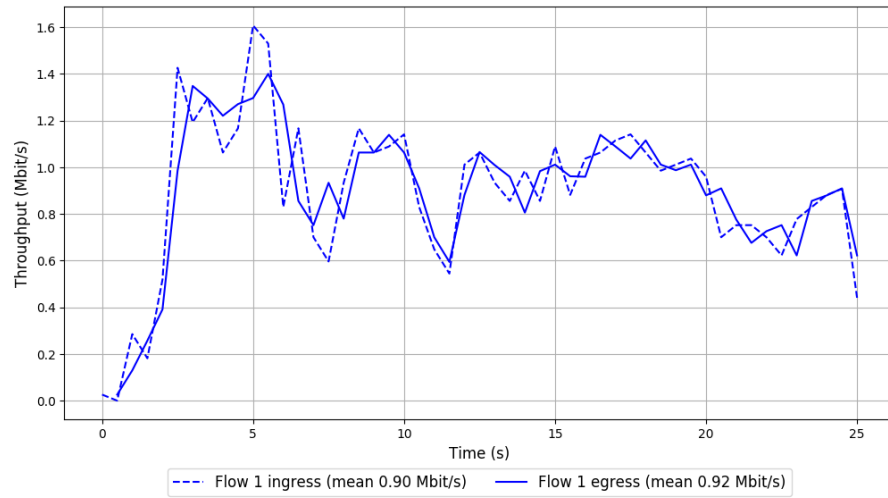


Run 2: Statistics of Copa

Start at: 2018-01-25 17:40:39
End at: 2018-01-25 17:41:09
Local clock offset: 0.709 ms
Remote clock offset: -4.733 ms

Below is generated by plot.py at 2018-01-25 18:19:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.92 Mbit/s
95th percentile per-packet one-way delay: 258.194 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 0.92 Mbit/s
95th percentile per-packet one-way delay: 258.194 ms
Loss rate: 0.17%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

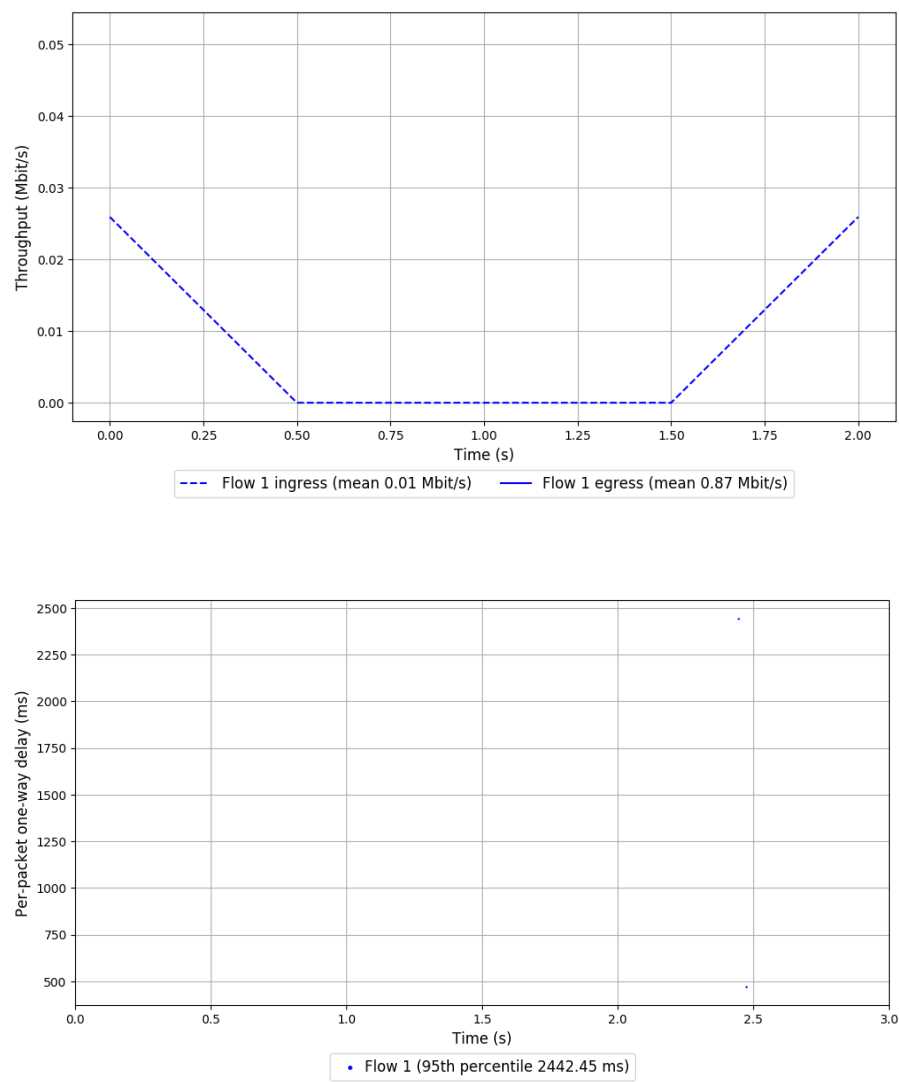
Start at: 2018-01-25 17:59:48

End at: 2018-01-25 18:00:18

Local clock offset: 0.952 ms

Remote clock offset: -5.528 ms

Run 3: Report of Copa — Data Link



Run 1: Statistics of Indigo-2-256

Start at: 2018-01-25 17:22:50

End at: 2018-01-25 17:23:20

Local clock offset: 0.705 ms

Remote clock offset: 0.041 ms

Below is generated by plot.py at 2018-01-25 18:19:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.38 Mbit/s

95th percentile per-packet one-way delay: 296.699 ms

Loss rate: 0.12%

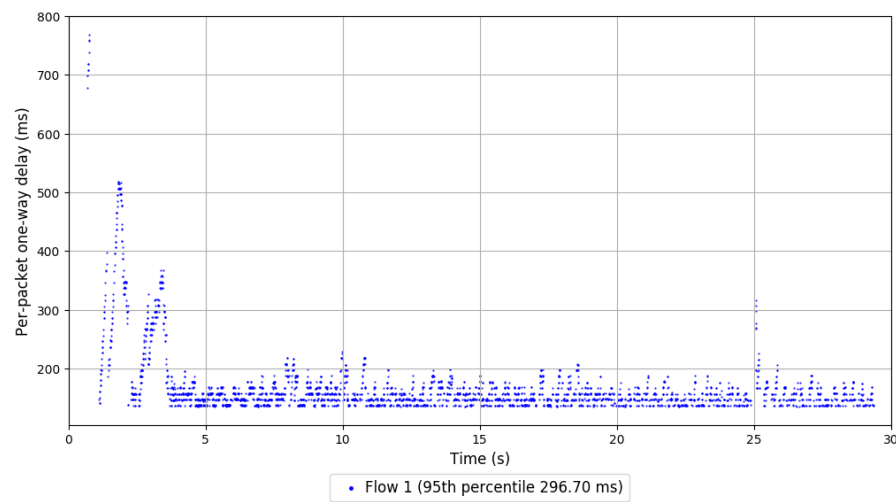
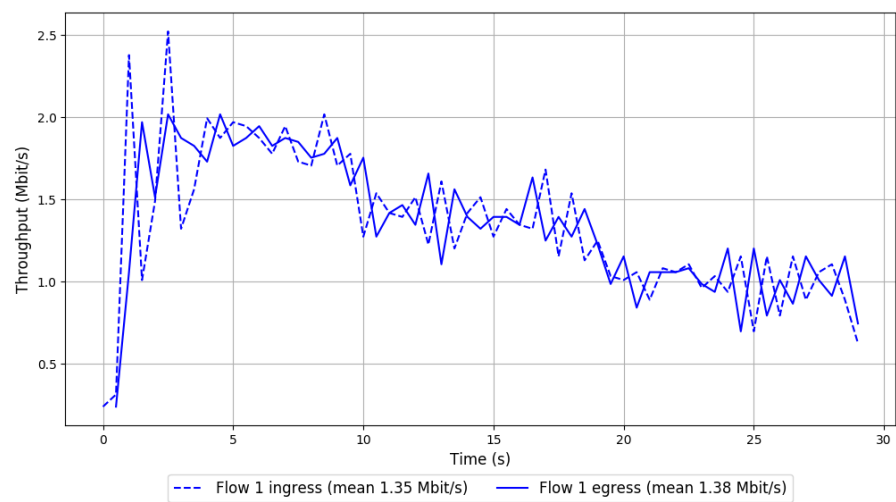
-- Flow 1:

Average throughput: 1.38 Mbit/s

95th percentile per-packet one-way delay: 296.699 ms

Loss rate: 0.12%

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



Run 2: Statistics of Indigo-2-256

Start at: 2018-01-25 17:41:50

End at: 2018-01-25 17:42:20

Local clock offset: 0.706 ms

Remote clock offset: 0.119 ms

Below is generated by plot.py at 2018-01-25 18:19:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.50 Mbit/s

95th percentile per-packet one-way delay: 894.135 ms

Loss rate: 0.00%

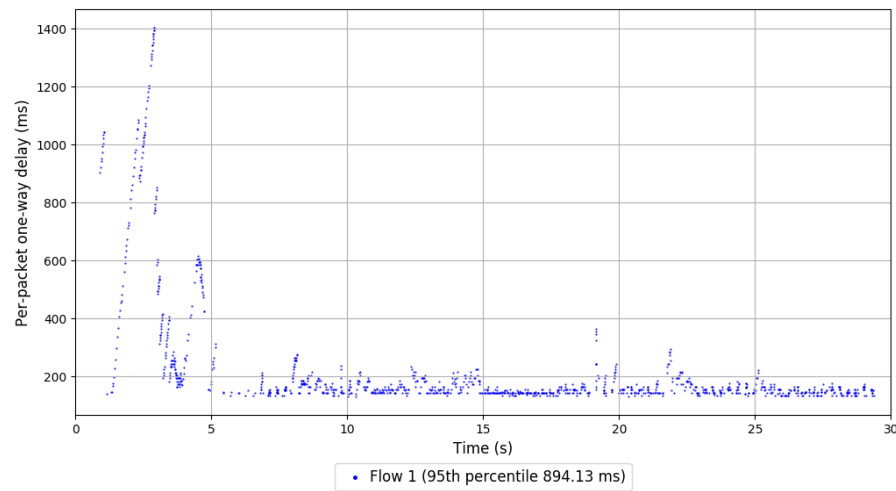
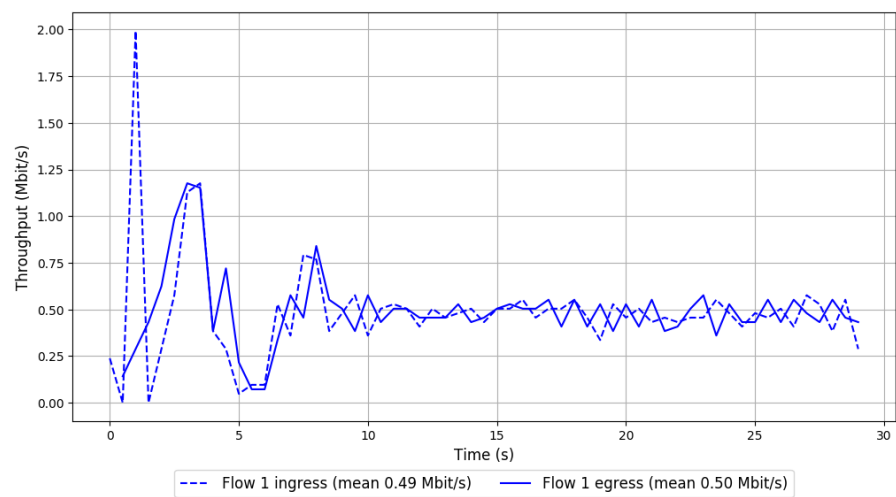
-- Flow 1:

Average throughput: 0.50 Mbit/s

95th percentile per-packet one-way delay: 894.135 ms

Loss rate: 0.00%

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

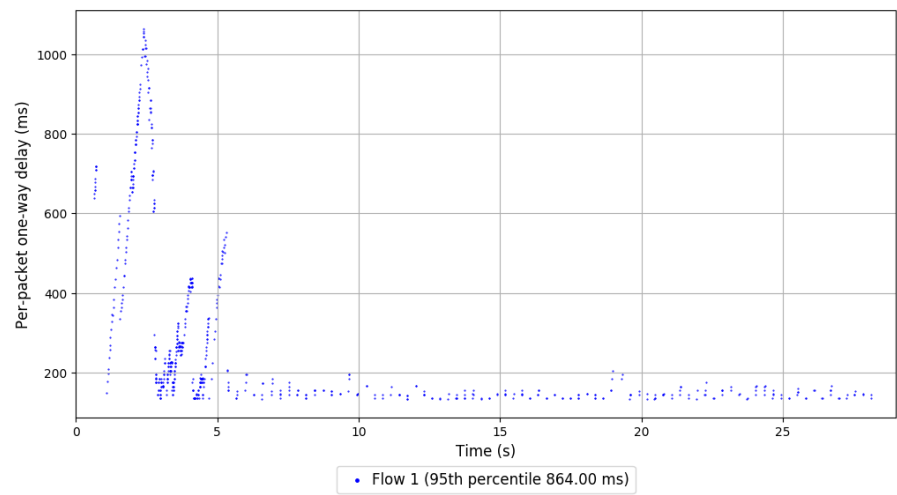
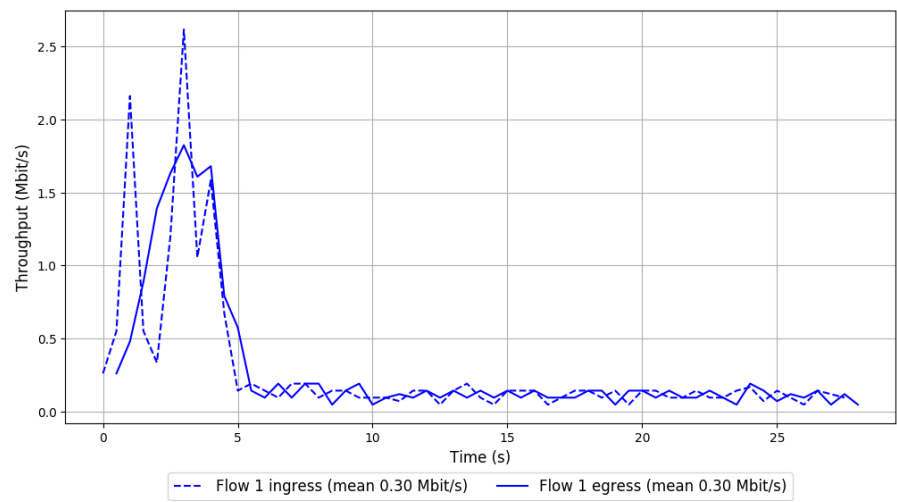


Run 3: Statistics of Indigo-2-256

Start at: 2018-01-25 18:00:58
End at: 2018-01-25 18:01:28
Local clock offset: 0.959 ms
Remote clock offset: -4.673 ms

Below is generated by plot.py at 2018-01-25 18:19:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 863.996 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 863.996 ms
Loss rate: 0.00%

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



Run 1: Statistics of Indigo-1-32

Start at: 2018-01-25 17:27:36

End at: 2018-01-25 17:28:06

Local clock offset: 0.721 ms

Remote clock offset: 0.105 ms

Below is generated by plot.py at 2018-01-25 18:19:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.80 Mbit/s

95th percentile per-packet one-way delay: 267.376 ms

Loss rate: 0.32%

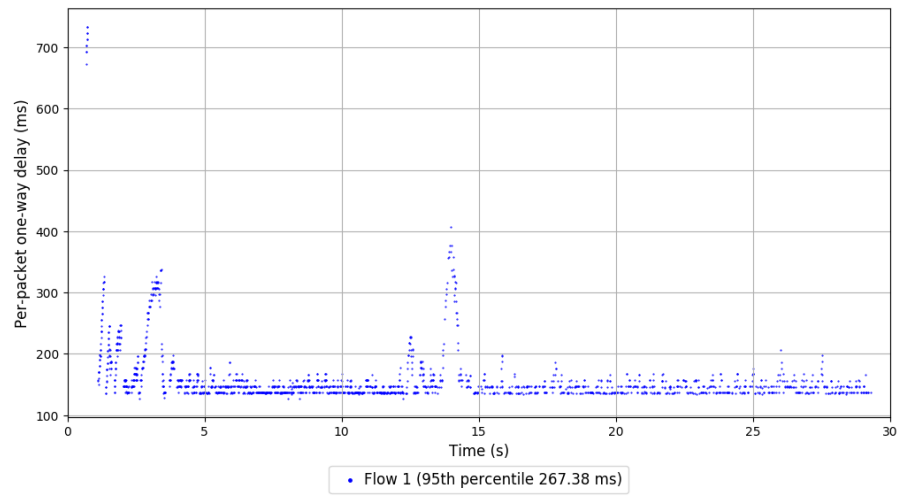
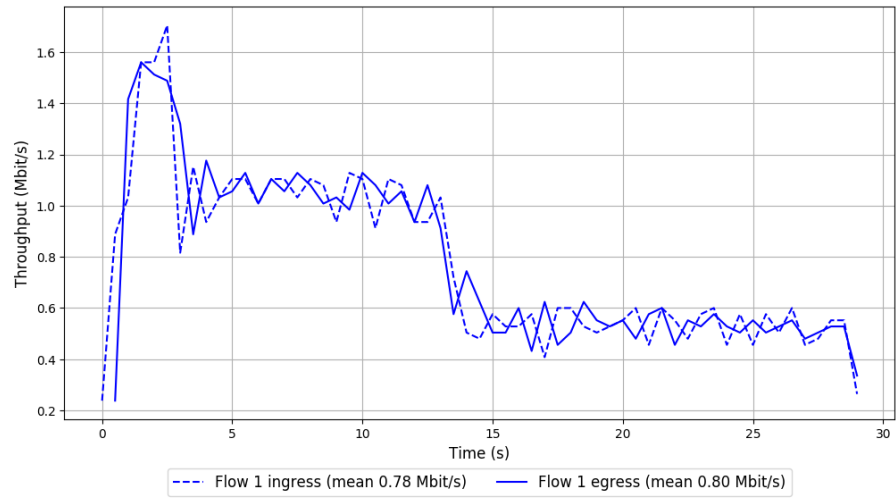
-- Flow 1:

Average throughput: 0.80 Mbit/s

95th percentile per-packet one-way delay: 267.376 ms

Loss rate: 0.32%

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



Run 2: Statistics of Indigo-1-32

Start at: 2018-01-25 17:46:38

End at: 2018-01-25 17:47:08

Local clock offset: 0.78 ms

Remote clock offset: -5.561 ms

Below is generated by plot.py at 2018-01-25 18:19:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.75 Mbit/s

95th percentile per-packet one-way delay: 231.179 ms

Loss rate: 0.16%

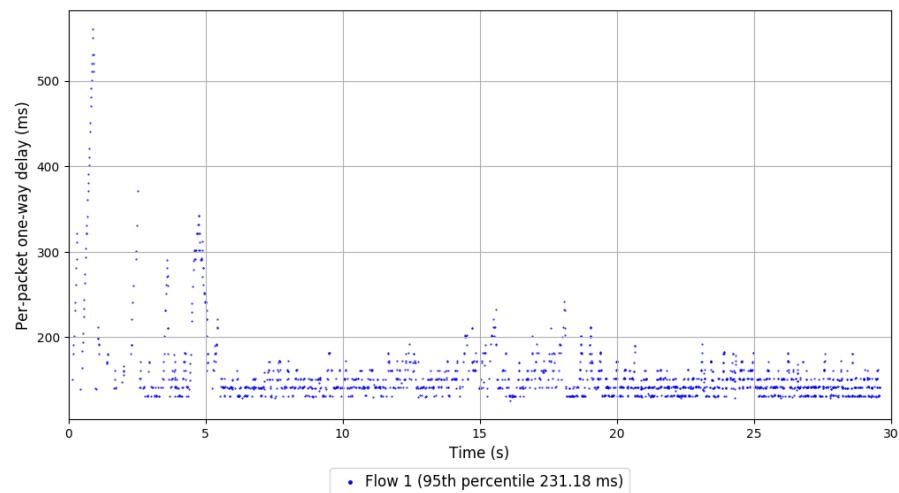
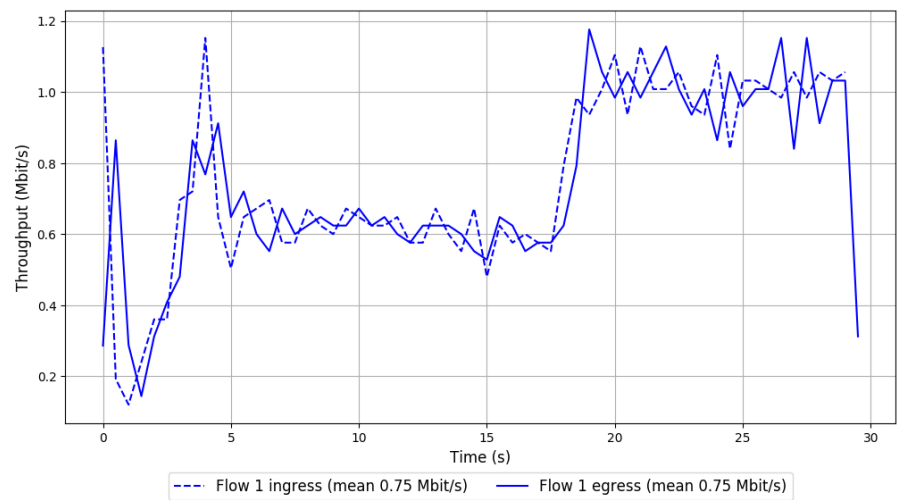
-- Flow 1:

Average throughput: 0.75 Mbit/s

95th percentile per-packet one-way delay: 231.179 ms

Loss rate: 0.16%

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

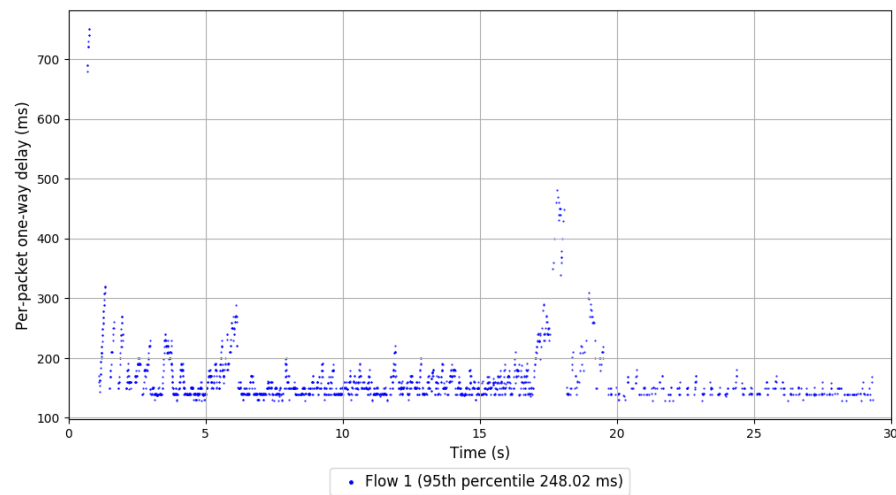
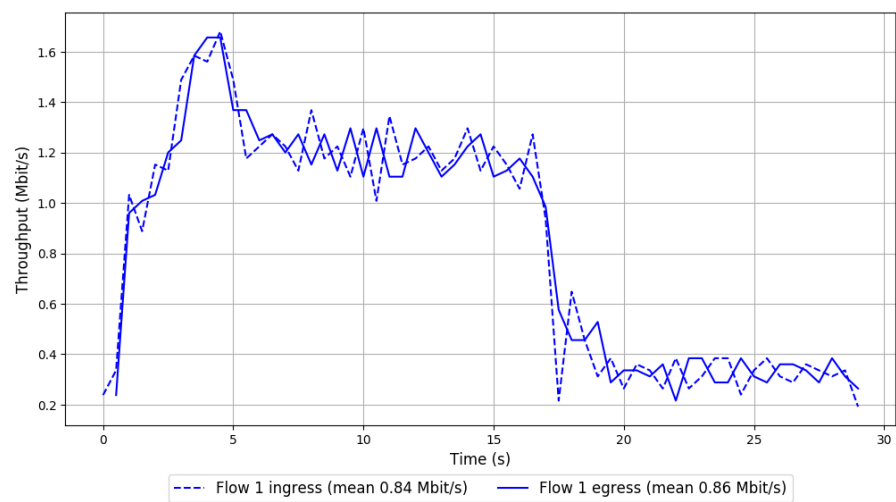


Run 3: Statistics of Indigo-1-32

Start at: 2018-01-25 18:05:41
End at: 2018-01-25 18:06:11
Local clock offset: 1.039 ms
Remote clock offset: -4.577 ms

Below is generated by plot.py at 2018-01-25 18:19:18
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 248.019 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 248.019 ms
Loss rate: 0.20%

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



Run 1: Statistics of Indigo-1-128

Start at: 2018-01-25 17:29:58

End at: 2018-01-25 17:30:28

Local clock offset: 0.626 ms

Remote clock offset: -0.871 ms

Below is generated by plot.py at 2018-01-25 18:19:18

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.11 Mbit/s

95th percentile per-packet one-way delay: 447.084 ms

Loss rate: 0.78%

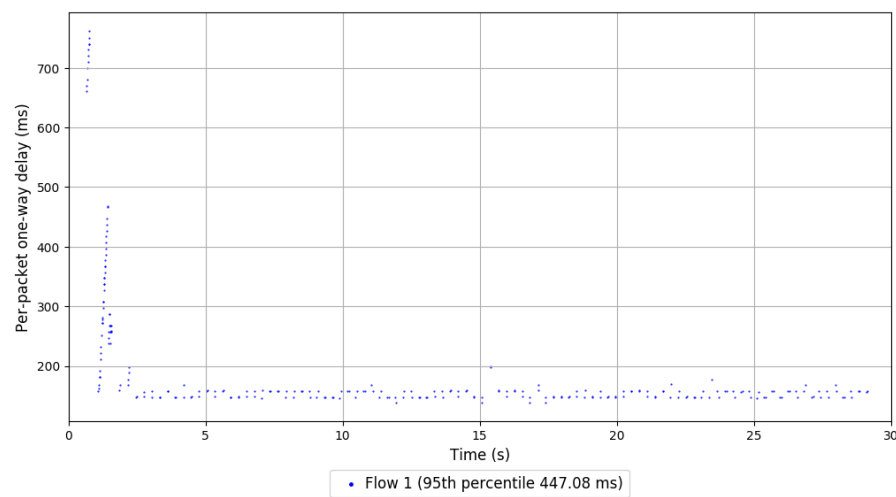
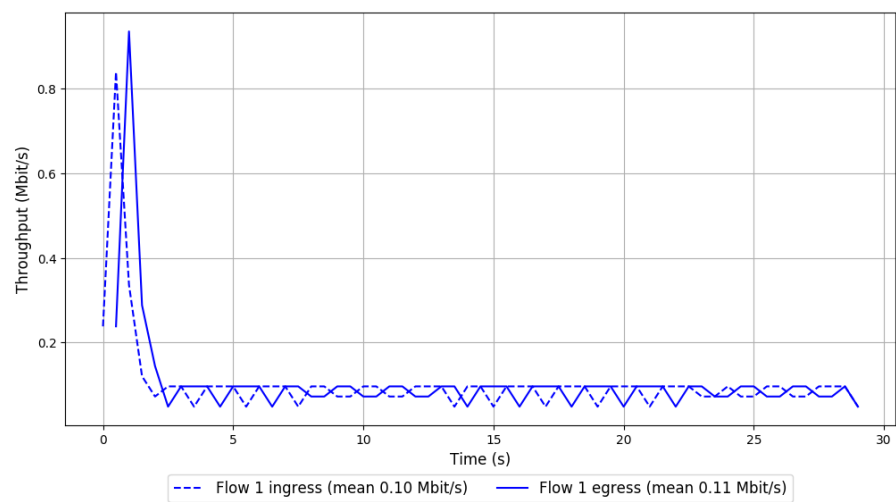
-- Flow 1:

Average throughput: 0.11 Mbit/s

95th percentile per-packet one-way delay: 447.084 ms

Loss rate: 0.78%

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



Run 2: Statistics of Indigo-1-128

Start at: 2018-01-25 17:49:00

End at: 2018-01-25 17:49:30

Local clock offset: 0.801 ms

Remote clock offset: -5.65 ms

Below is generated by plot.py at 2018-01-25 18:19:18

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.19 Mbit/s

95th percentile per-packet one-way delay: 853.001 ms

Loss rate: 0.00%

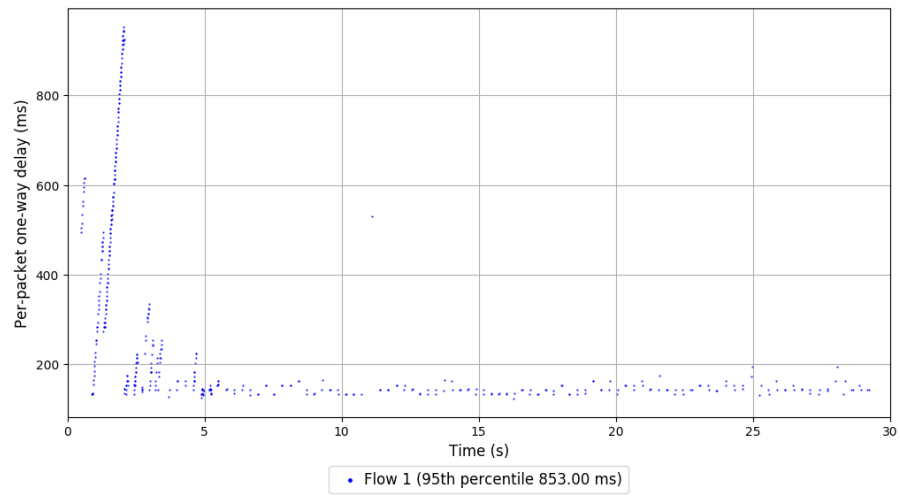
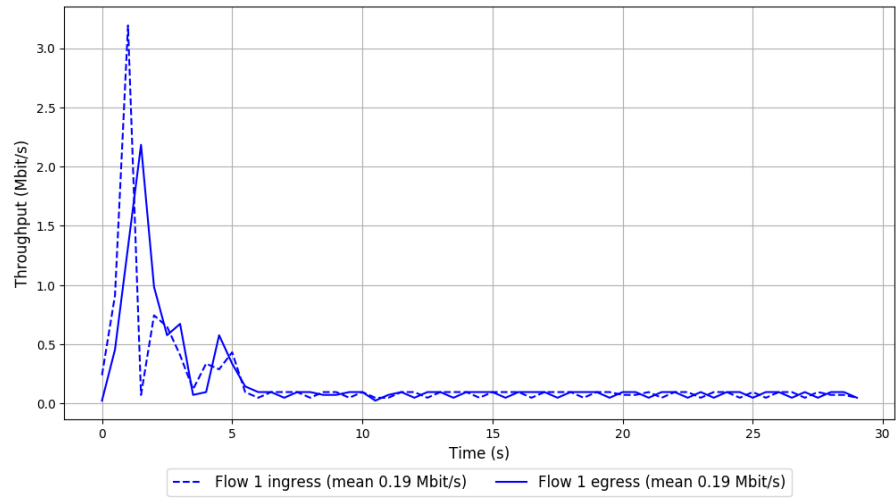
-- Flow 1:

Average throughput: 0.19 Mbit/s

95th percentile per-packet one-way delay: 853.001 ms

Loss rate: 0.00%

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



Run 3: Statistics of Indigo-1-128

Start at: 2018-01-25 18:08:03

End at: 2018-01-25 18:08:33

Local clock offset: 1.053 ms

Remote clock offset: 0.204 ms

Below is generated by plot.py at 2018-01-25 18:19:18

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.14 Mbit/s

95th percentile per-packet one-way delay: 387.374 ms

Loss rate: 0.29%

-- Flow 1:

Average throughput: 0.14 Mbit/s

95th percentile per-packet one-way delay: 387.374 ms

Loss rate: 0.29%

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

