

Pantheon Report

Generated at 2018-07-31 23:51:01 (UTC).

Data path: AWS Brazil 2 Ethernet (*local*) → Colombia ppp0 ppp0 (*remote*).

Repeated the test of 17 congestion control schemes 3 times.

Each test lasted for 30 seconds running 1 flow.

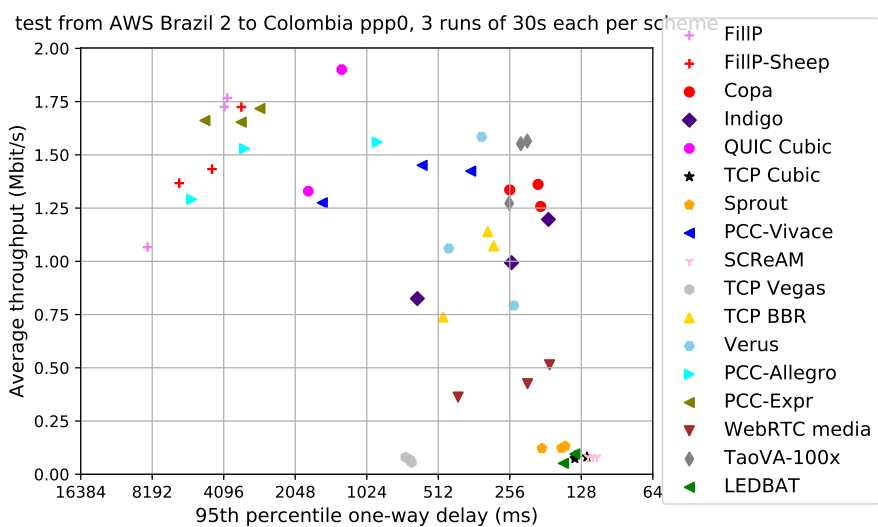
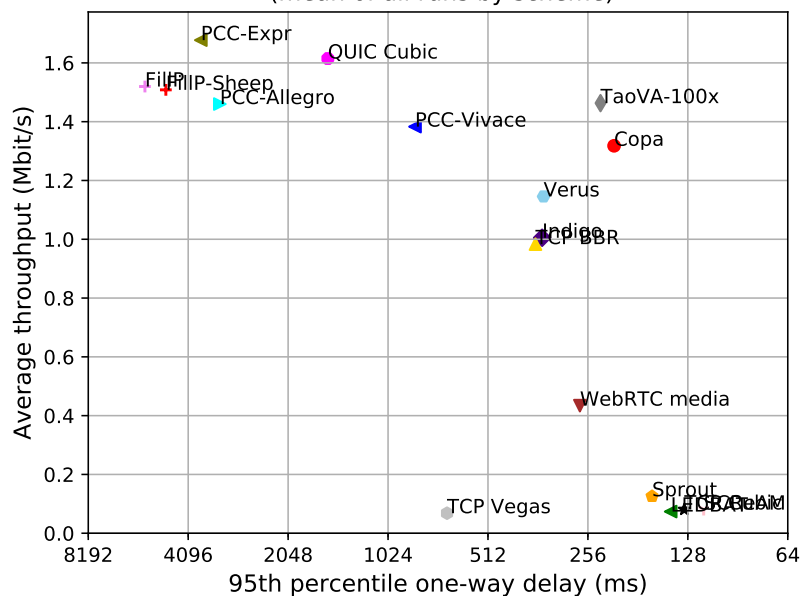
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

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

Git summary:

```
branch: master @ 640164b5b17c7c6561fff57729b3b5935d8596ce
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf5e58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ 6f038ed31259d366f9840f65b82cbe8f464b1b39
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/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quirk @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

test from AWS Brazil 2 to Colombia ppp0, 3 runs of 30s each per scheme
(mean of all runs by 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	0.98	368.31	23.63
Copa	3	1.32	213.51	18.92
TCP Cubic	3	0.08	131.17	20.70
FillP	3	1.52	5529.35	81.03
FillP-Sheep	3	1.51	4782.57	9.54
Indigo	3	1.01	351.67	21.95
LEDBAT	2	0.08	144.19	22.30
PCC-Allegro	3	1.46	3288.32	27.47
PCC-Expr	3	1.68	3752.94	71.57
QUIC Cubic	2	1.61	1554.87	4.54
SCReAM	3	0.08	114.67	0.13
Sprout	3	0.12	164.03	14.38
TaoVA-100x	3	1.46	234.59	22.73
TCP Vegas	3	0.07	680.18	22.50
Verus	3	1.14	348.21	22.01
PCC-Vivace	3	1.38	849.49	1.24
WebRTC media	3	0.43	270.69	3.59

Run 1: Statistics of TCP BBR

Start at: 2018-07-31 23:01:29

End at: 2018-07-31 23:01:59

Local clock offset: -3.122 ms

Remote clock offset: 7.616 ms

Below is generated by plot.py at 2018-07-31 23:50:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.14 Mbit/s

95th percentile per-packet one-way delay: 316.798 ms

Loss rate: 21.03%

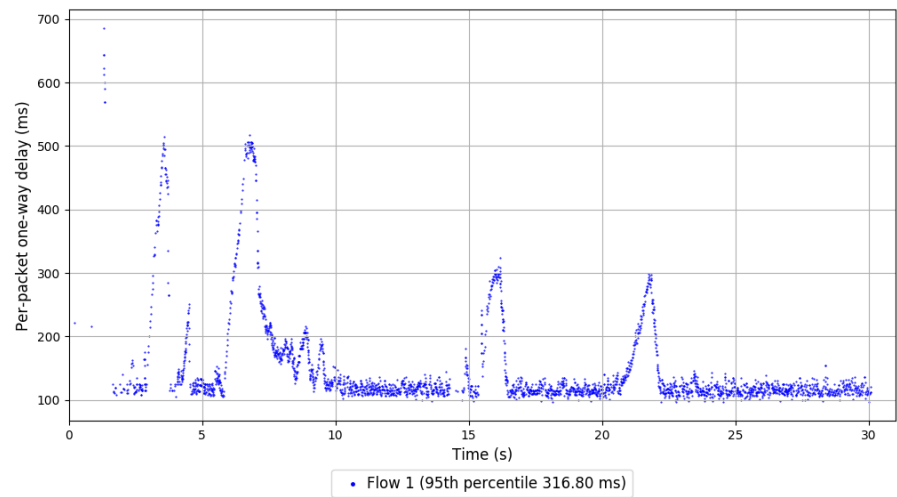
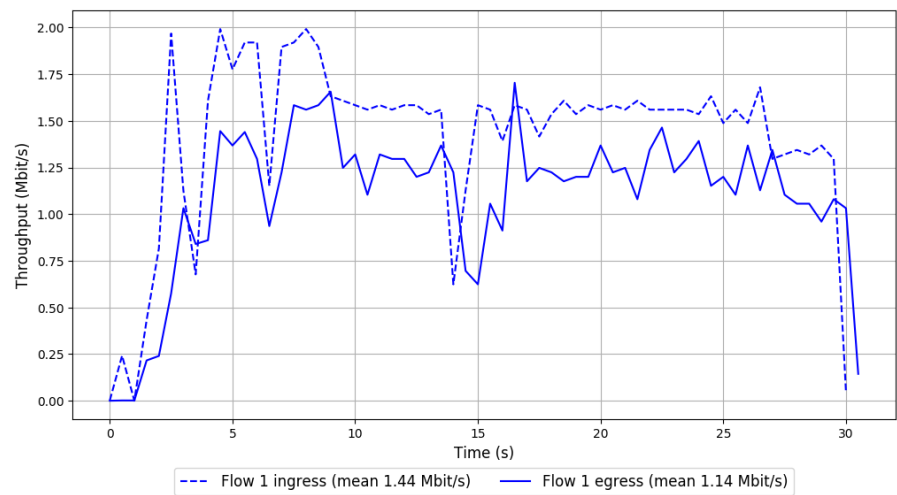
-- Flow 1:

Average throughput: 1.14 Mbit/s

95th percentile per-packet one-way delay: 316.798 ms

Loss rate: 21.03%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-07-31 23:20:33

End at: 2018-07-31 23:21:03

Local clock offset: -2.501 ms

Remote clock offset: 6.632 ms

Below is generated by plot.py at 2018-07-31 23:50:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.74 Mbit/s

95th percentile per-packet one-way delay: 488.906 ms

Loss rate: 27.25%

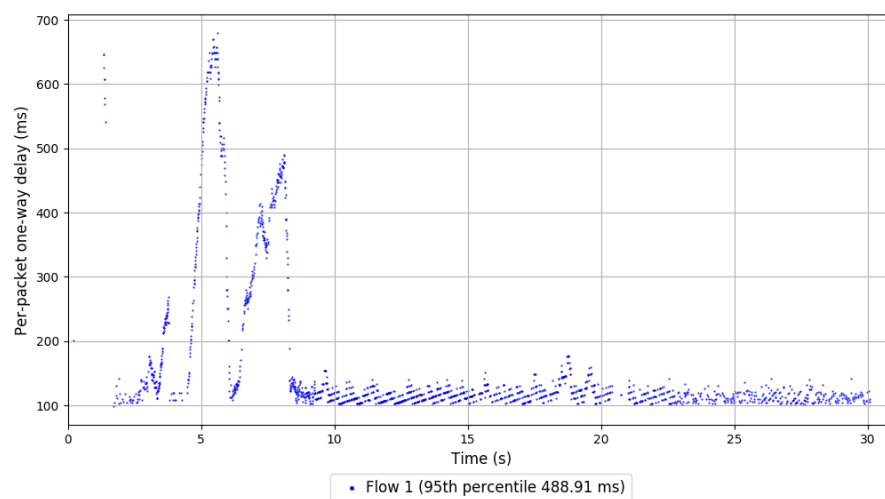
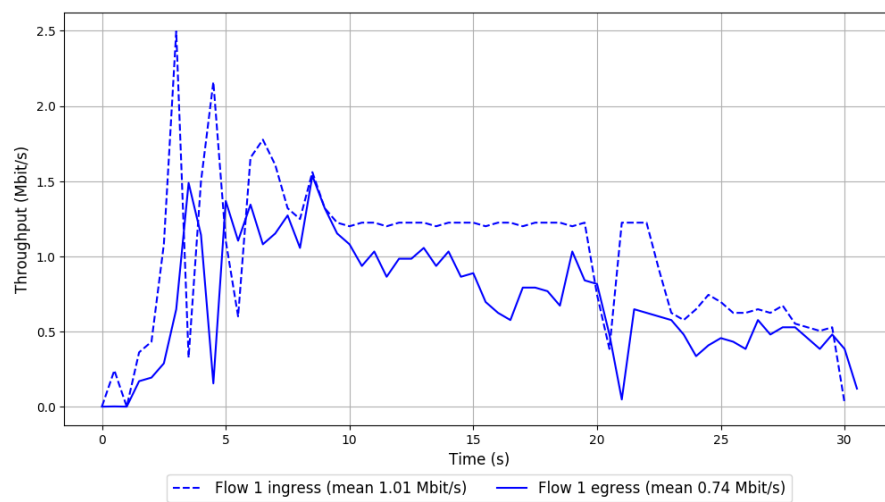
-- Flow 1:

Average throughput: 0.74 Mbit/s

95th percentile per-packet one-way delay: 488.906 ms

Loss rate: 27.25%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-07-31 23:39:42

End at: 2018-07-31 23:40:12

Local clock offset: -1.531 ms

Remote clock offset: 1.172 ms

Below is generated by plot.py at 2018-07-31 23:50:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.07 Mbit/s

95th percentile per-packet one-way delay: 299.225 ms

Loss rate: 22.60%

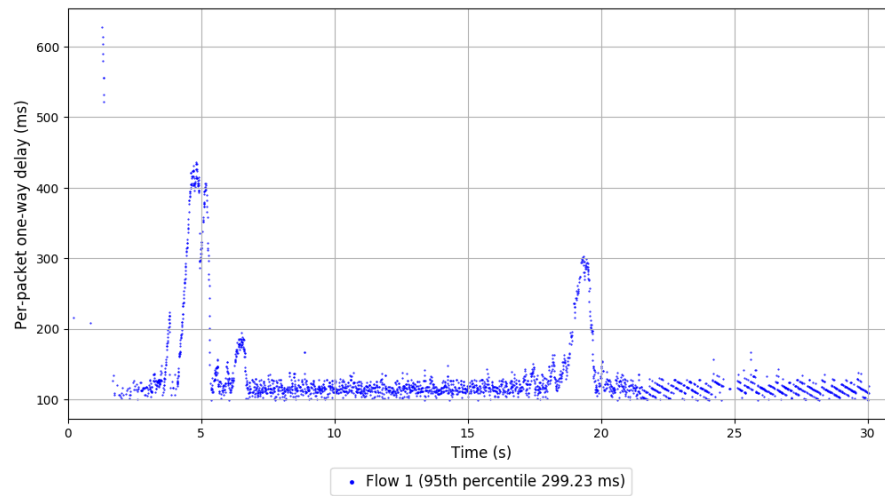
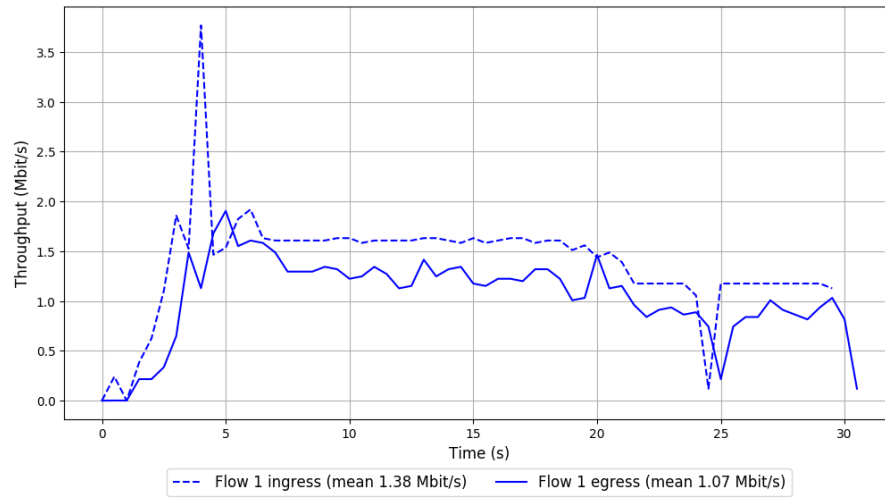
-- Flow 1:

Average throughput: 1.07 Mbit/s

95th percentile per-packet one-way delay: 299.225 ms

Loss rate: 22.60%

Run 3: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-07-31 22:58:06

End at: 2018-07-31 22:58:36

Local clock offset: -4.355 ms

Remote clock offset: 7.384 ms

Below is generated by plot.py at 2018-07-31 23:50:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.36 Mbit/s

95th percentile per-packet one-way delay: 194.651 ms

Loss rate: 17.44%

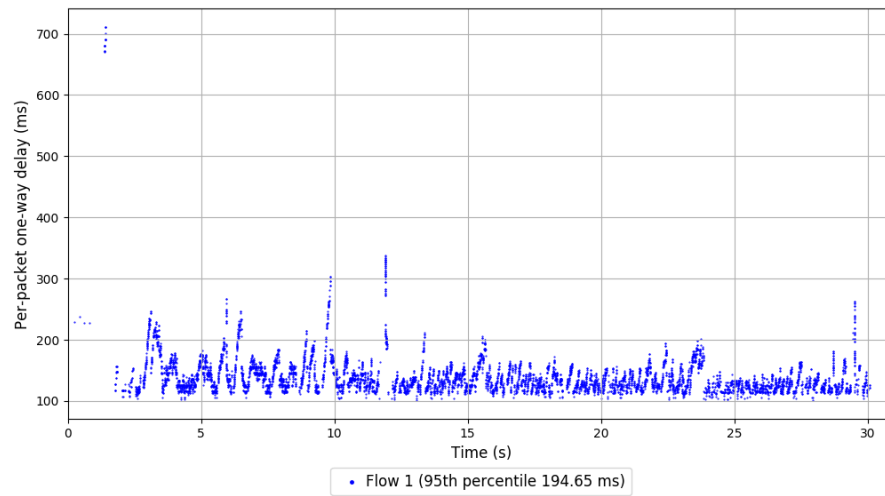
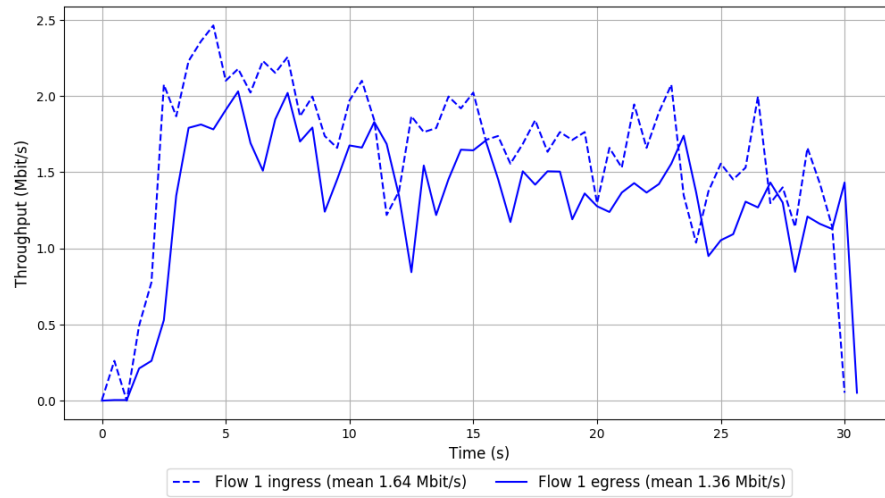
-- Flow 1:

Average throughput: 1.36 Mbit/s

95th percentile per-packet one-way delay: 194.651 ms

Loss rate: 17.44%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2018-07-31 23:17:11

End at: 2018-07-31 23:17:41

Local clock offset: -3.134 ms

Remote clock offset: 5.517 ms

Below is generated by plot.py at 2018-07-31 23:50:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.26 Mbit/s

95th percentile per-packet one-way delay: 189.740 ms

Loss rate: 19.08%

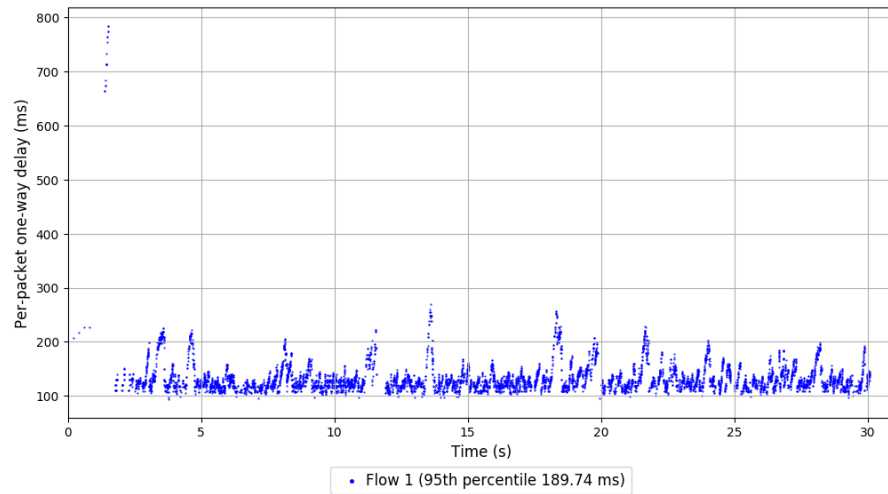
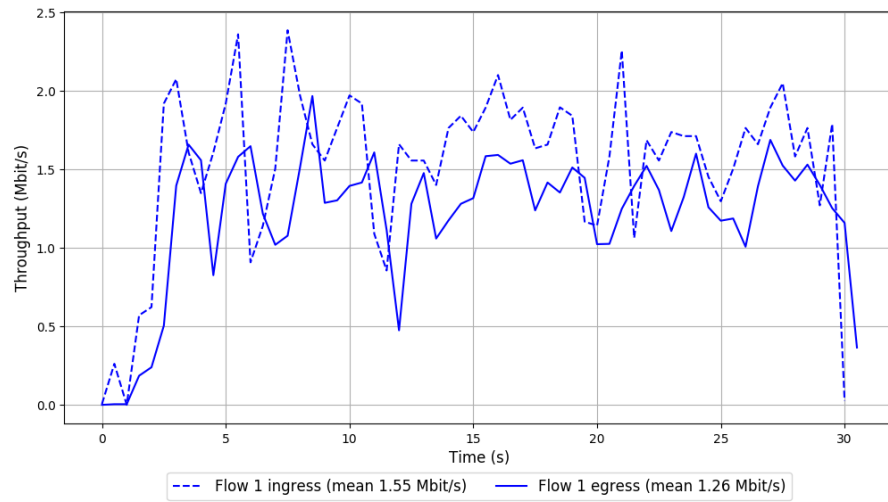
-- Flow 1:

Average throughput: 1.26 Mbit/s

95th percentile per-packet one-way delay: 189.740 ms

Loss rate: 19.08%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-07-31 23:36:19

End at: 2018-07-31 23:36:50

Local clock offset: -2.045 ms

Remote clock offset: 6.102 ms

Below is generated by plot.py at 2018-07-31 23:50:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.34 Mbit/s

95th percentile per-packet one-way delay: 256.144 ms

Loss rate: 20.25%

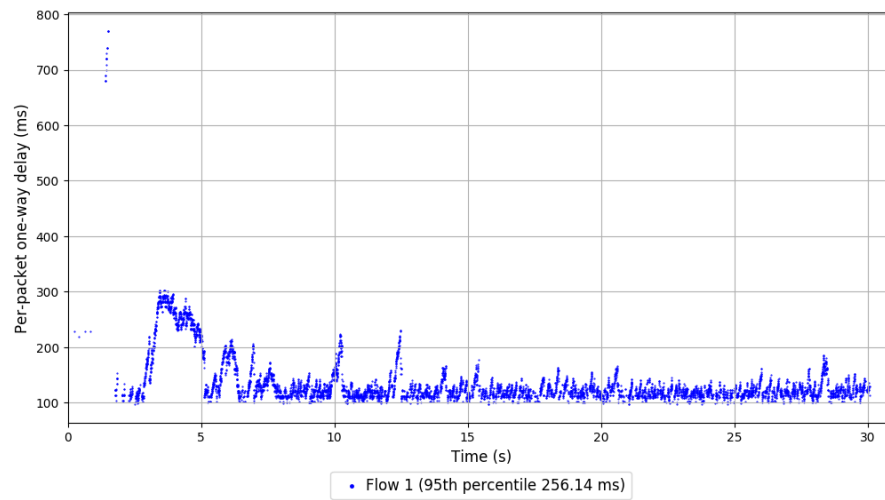
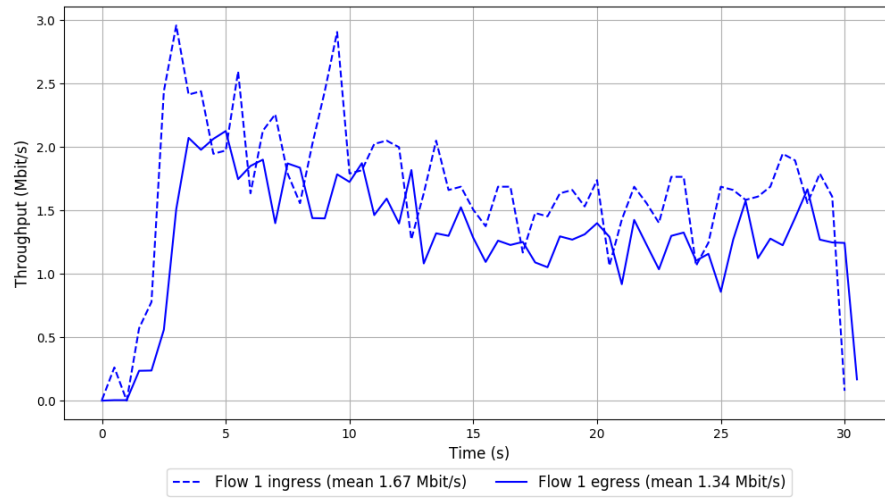
-- Flow 1:

Average throughput: 1.34 Mbit/s

95th percentile per-packet one-way delay: 256.144 ms

Loss rate: 20.25%

Run 3: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-07-31 22:56:59

End at: 2018-07-31 22:57:29

Local clock offset: -4.195 ms

Remote clock offset: 2.133 ms

Below is generated by plot.py at 2018-07-31 23:50:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.08 Mbit/s

95th percentile per-packet one-way delay: 121.247 ms

Loss rate: 20.14%

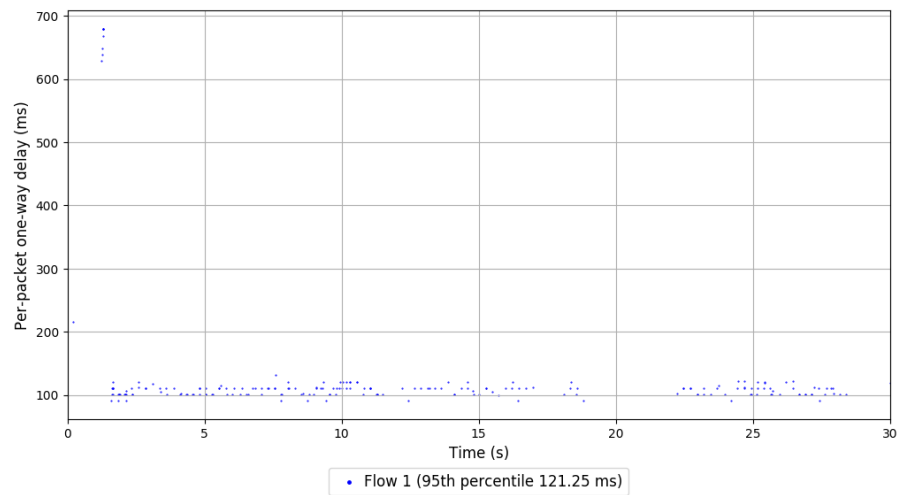
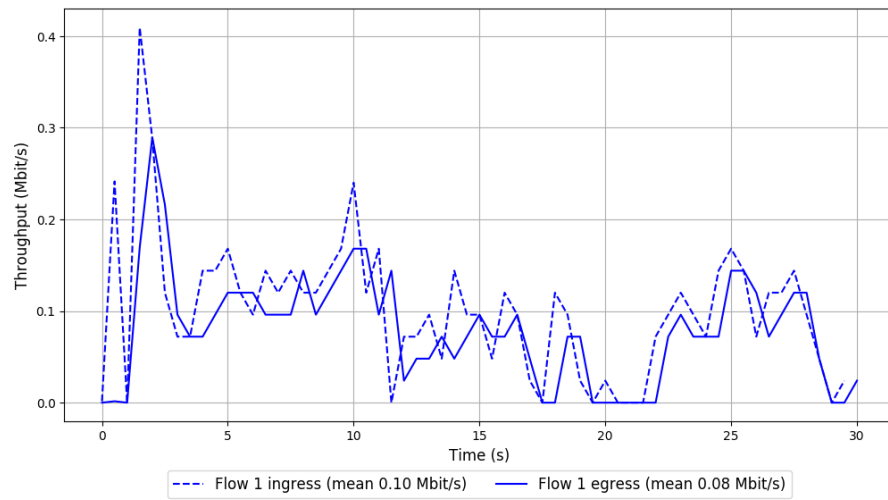
-- Flow 1:

Average throughput: 0.08 Mbit/s

95th percentile per-packet one-way delay: 121.247 ms

Loss rate: 20.14%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-07-31 23:16:04

End at: 2018-07-31 23:16:34

Local clock offset: -3.297 ms

Remote clock offset: 5.569 ms

Below is generated by plot.py at 2018-07-31 23:50:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.07 Mbit/s

95th percentile per-packet one-way delay: 136.169 ms

Loss rate: 21.69%

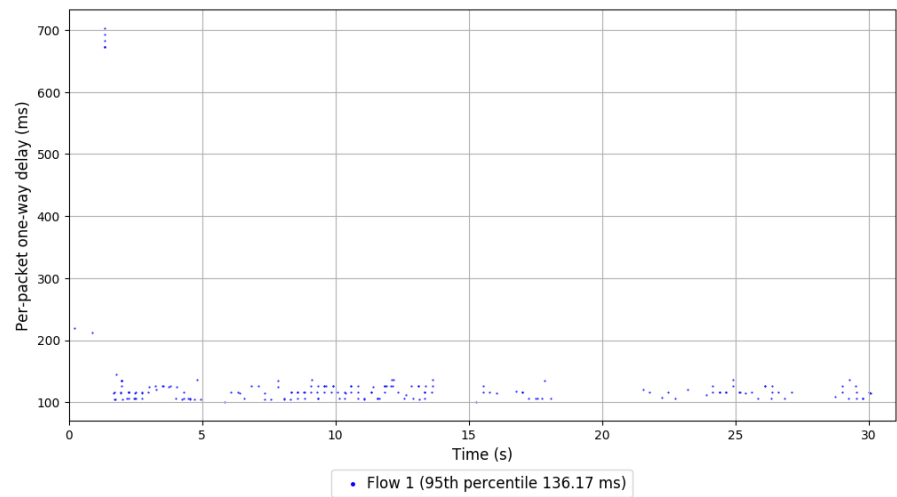
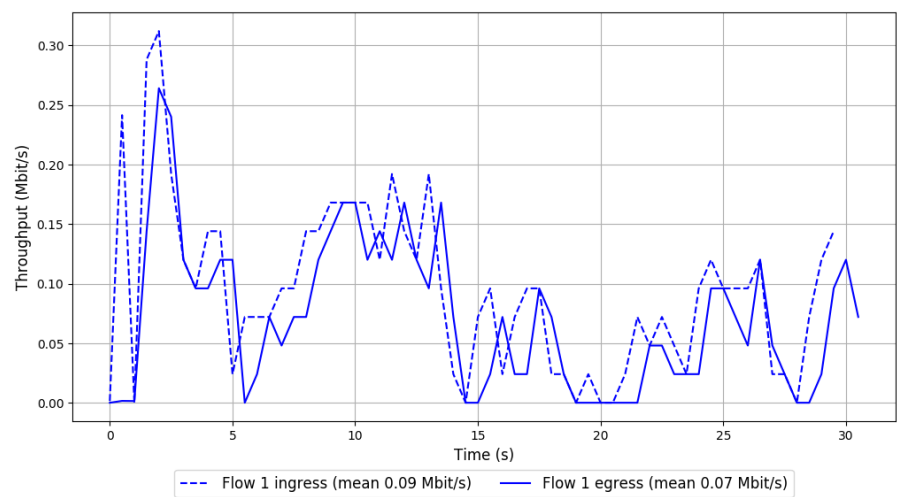
-- Flow 1:

Average throughput: 0.07 Mbit/s

95th percentile per-packet one-way delay: 136.169 ms

Loss rate: 21.69%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2018-07-31 23:35:12

End at: 2018-07-31 23:35:42

Local clock offset: -2.146 ms

Remote clock offset: 5.1 ms

Below is generated by plot.py at 2018-07-31 23:50:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.09 Mbit/s

95th percentile per-packet one-way delay: 136.095 ms

Loss rate: 20.28%

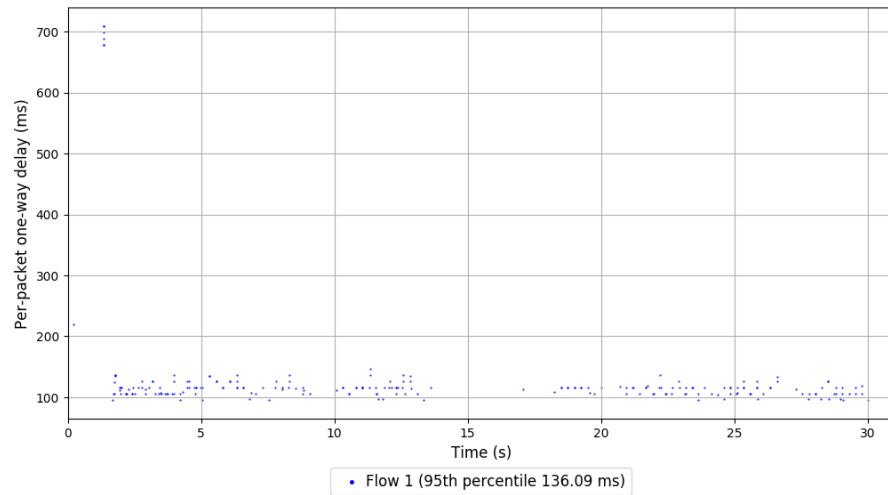
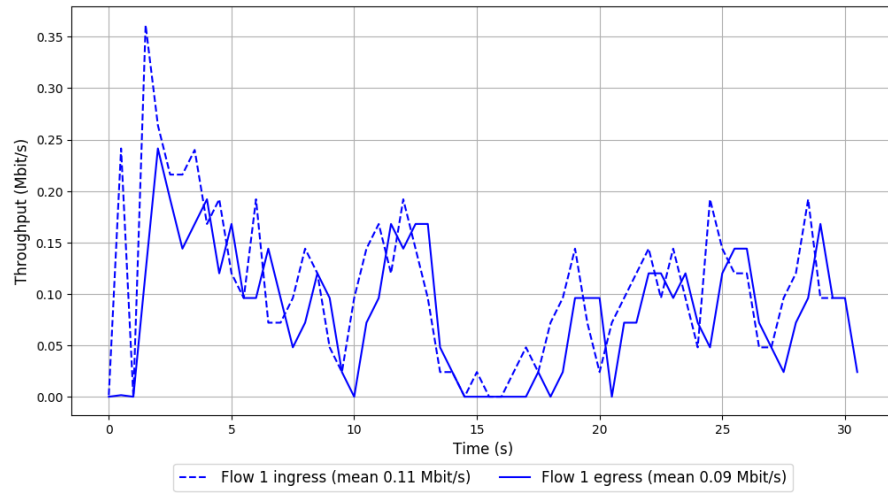
-- Flow 1:

Average throughput: 0.09 Mbit/s

95th percentile per-packet one-way delay: 136.095 ms

Loss rate: 20.28%

Run 3: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-07-31 23:08:13

End at: 2018-07-31 23:08:43

Local clock offset: -3.569 ms

Remote clock offset: 7.887 ms

Below is generated by plot.py at 2018-07-31 23:50:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.07 Mbit/s

95th percentile per-packet one-way delay: 8565.038 ms

Loss rate: 95.89%

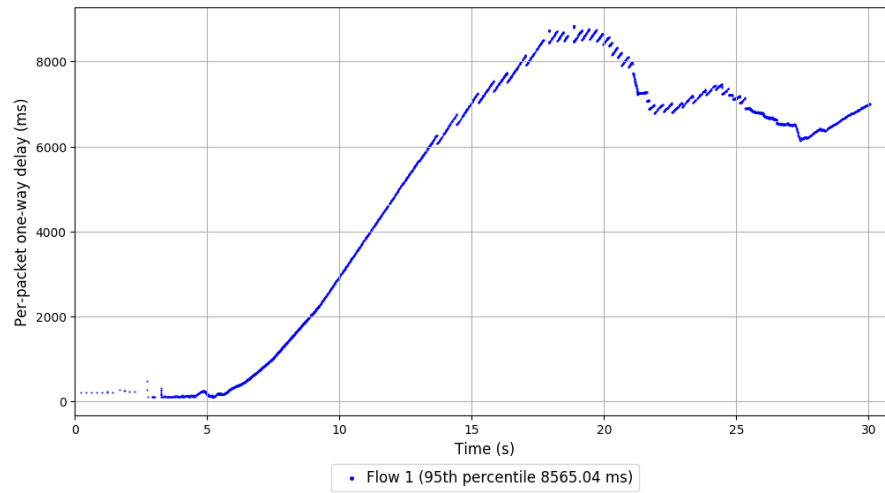
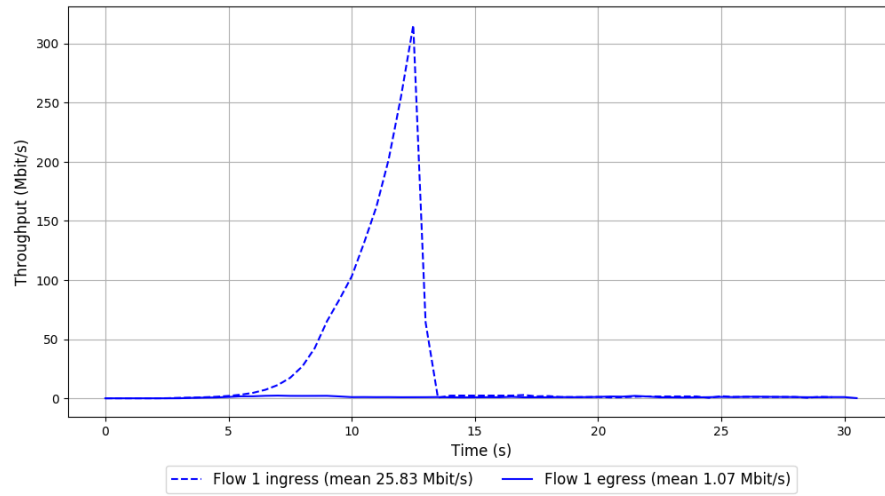
-- Flow 1:

Average throughput: 1.07 Mbit/s

95th percentile per-packet one-way delay: 8565.038 ms

Loss rate: 95.89%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-07-31 23:27:21

End at: 2018-07-31 23:27:51

Local clock offset: -2.575 ms

Remote clock offset: 6.28 ms

Below is generated by plot.py at 2018-07-31 23:50:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.73 Mbit/s

95th percentile per-packet one-way delay: 4064.153 ms

Loss rate: 61.46%

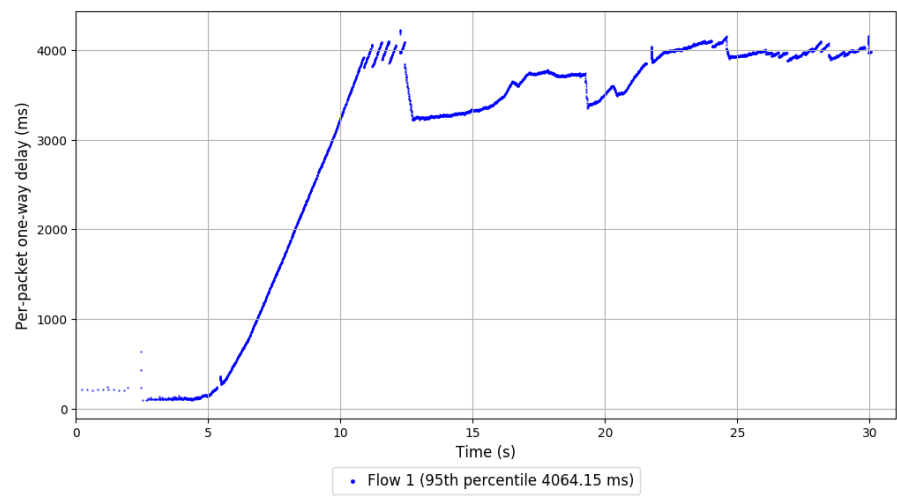
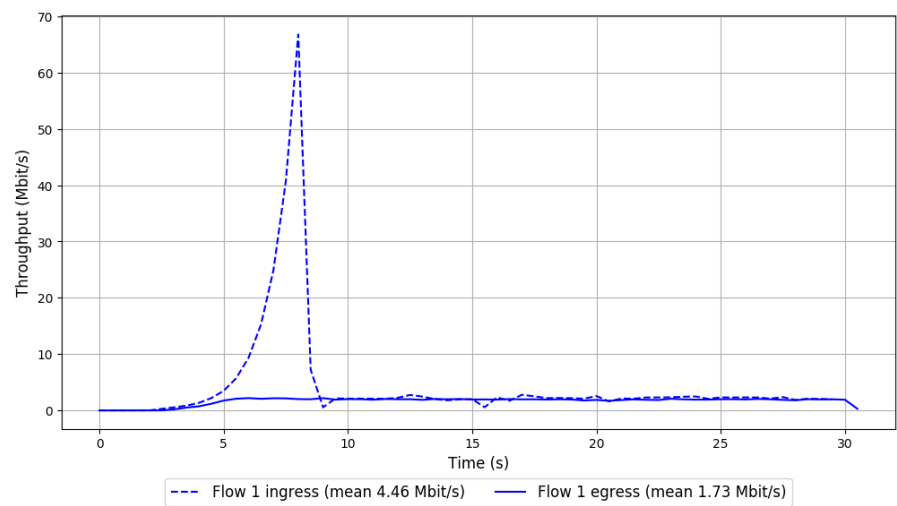
-- Flow 1:

Average throughput: 1.73 Mbit/s

95th percentile per-packet one-way delay: 4064.153 ms

Loss rate: 61.46%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-07-31 23:46:27

End at: 2018-07-31 23:46:57

Local clock offset: -0.163 ms

Remote clock offset: 5.687 ms

Below is generated by plot.py at 2018-07-31 23:50:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.77 Mbit/s

95th percentile per-packet one-way delay: 3958.871 ms

Loss rate: 85.75%

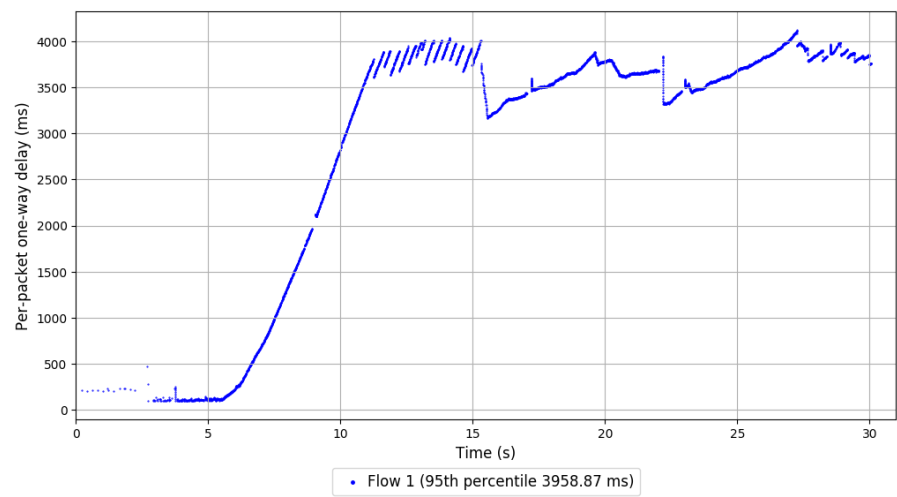
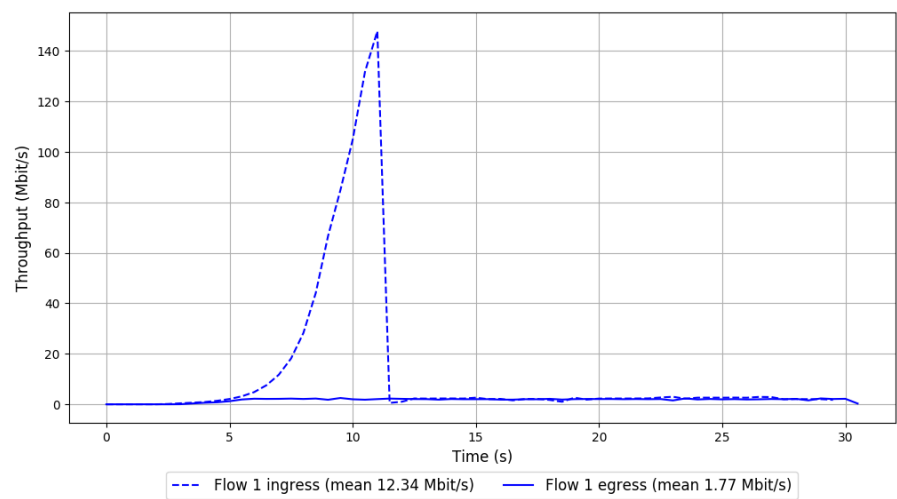
-- Flow 1:

Average throughput: 1.77 Mbit/s

95th percentile per-packet one-way delay: 3958.871 ms

Loss rate: 85.75%

Run 3: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2018-07-31 22:55:52

End at: 2018-07-31 22:56:22

Local clock offset: -4.689 ms

Remote clock offset: 5.787 ms

Below is generated by plot.py at 2018-07-31 23:50:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.72 Mbit/s

95th percentile per-packet one-way delay: 3453.368 ms

Loss rate: 1.87%

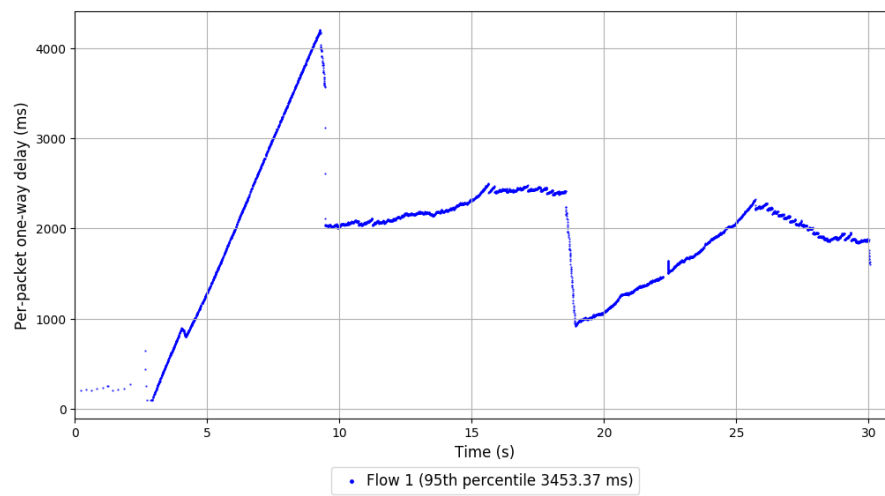
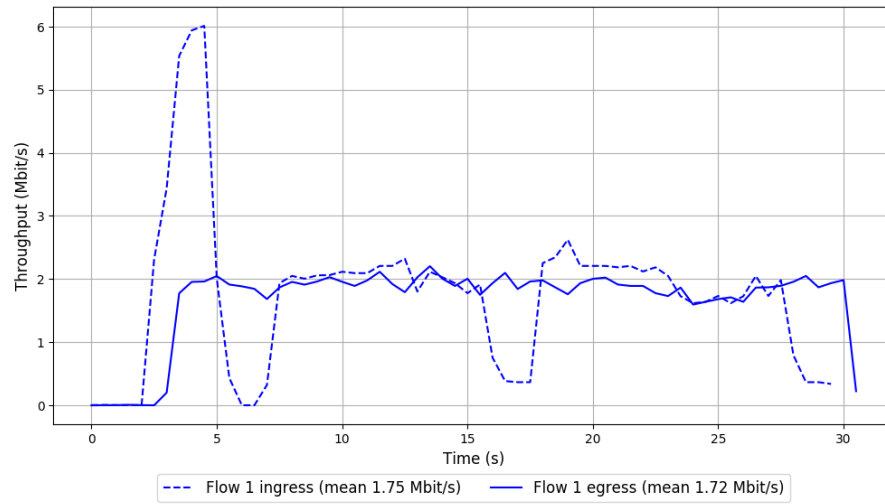
-- Flow 1:

Average throughput: 1.72 Mbit/s

95th percentile per-packet one-way delay: 3453.368 ms

Loss rate: 1.87%

Run 1: Report of FillP-Sheep — Data Link



Run 2: Statistics of FillP-Sheep

Start at: 2018-07-31 23:14:56

End at: 2018-07-31 23:15:26

Local clock offset: -3.46 ms

Remote clock offset: 7.824 ms

Below is generated by plot.py at 2018-07-31 23:50:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.43 Mbit/s

95th percentile per-packet one-way delay: 4589.198 ms

Loss rate: 12.69%

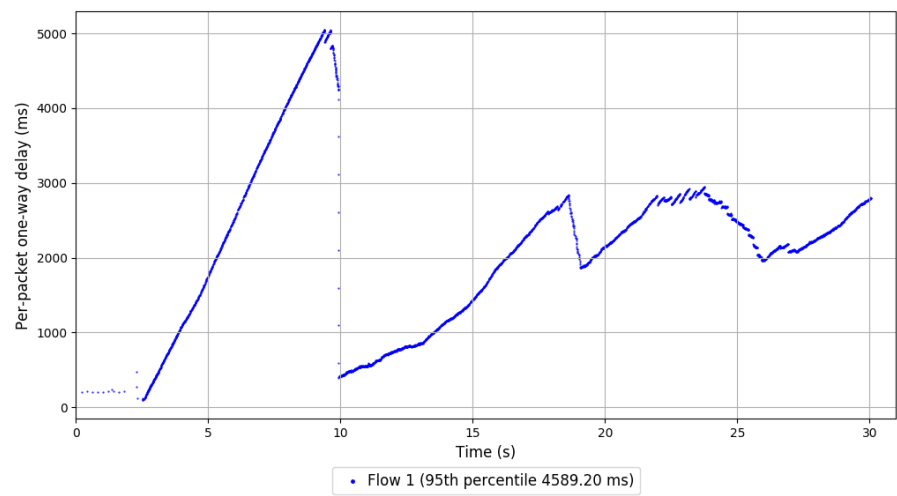
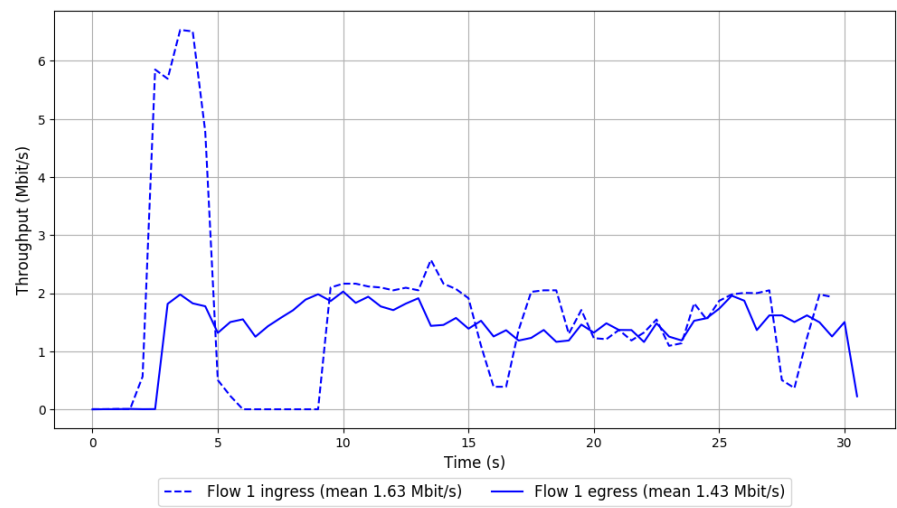
-- Flow 1:

Average throughput: 1.43 Mbit/s

95th percentile per-packet one-way delay: 4589.198 ms

Loss rate: 12.69%

Run 2: Report of FillP-Sheep — Data Link



Run 3: Statistics of FillP-Sheep

Start at: 2018-07-31 23:34:05

End at: 2018-07-31 23:34:35

Local clock offset: -2.308 ms

Remote clock offset: 1.356 ms

Below is generated by plot.py at 2018-07-31 23:50:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.37 Mbit/s

95th percentile per-packet one-way delay: 6305.135 ms

Loss rate: 14.07%

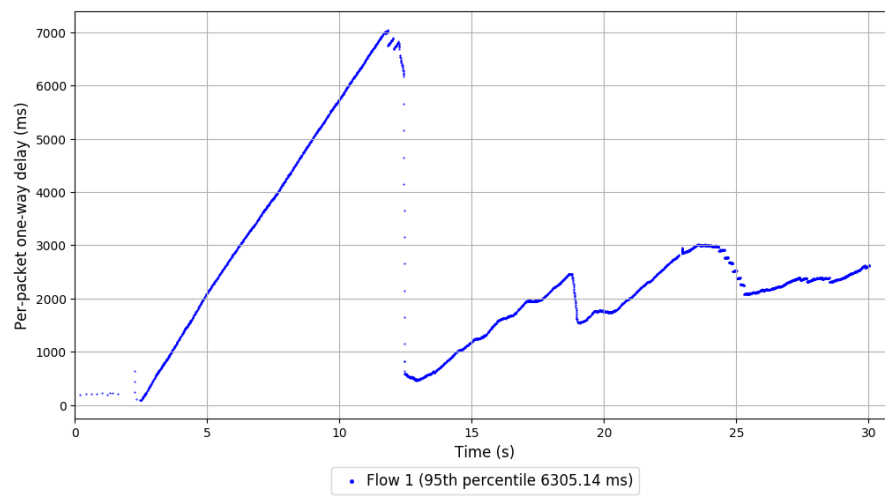
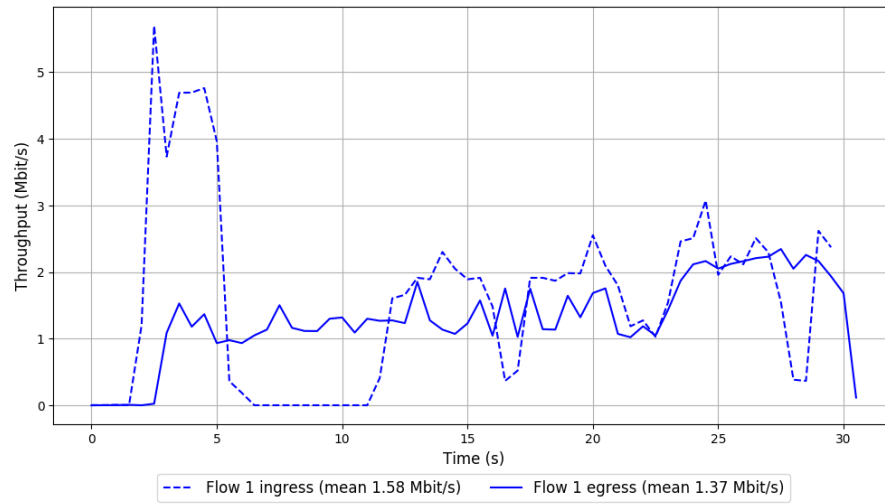
-- Flow 1:

Average throughput: 1.37 Mbit/s

95th percentile per-packet one-way delay: 6305.135 ms

Loss rate: 14.07%

Run 3: Report of FillP-Sheep — Data Link

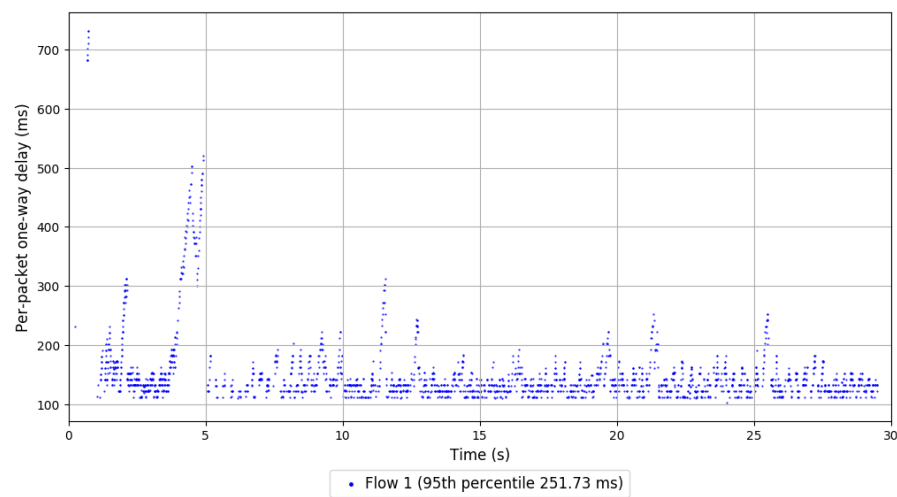
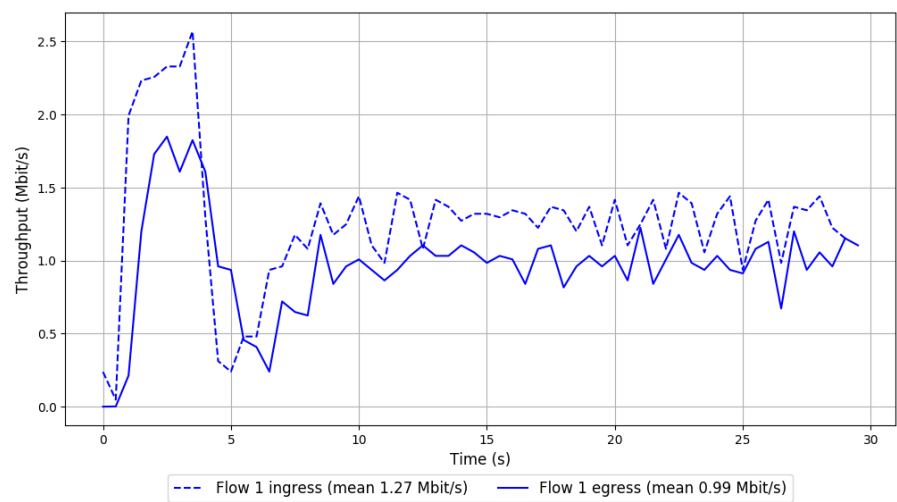


```
Run 1: Statistics of Indigo

Start at: 2018-07-31 23:09:21
End at: 2018-07-31 23:09:51
Local clock offset: -3.151 ms
Remote clock offset: 6.654 ms

# Below is generated by plot.py at 2018-07-31 23:50:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.99 Mbit/s
95th percentile per-packet one-way delay: 251.730 ms
Loss rate: 22.04%
-- Flow 1:
Average throughput: 0.99 Mbit/s
95th percentile per-packet one-way delay: 251.730 ms
Loss rate: 22.04%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-07-31 23:28:29

End at: 2018-07-31 23:28:59

Local clock offset: -2.609 ms

Remote clock offset: 6.285 ms

Below is generated by plot.py at 2018-07-31 23:50:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.20 Mbit/s

95th percentile per-packet one-way delay: 176.015 ms

Loss rate: 22.67%

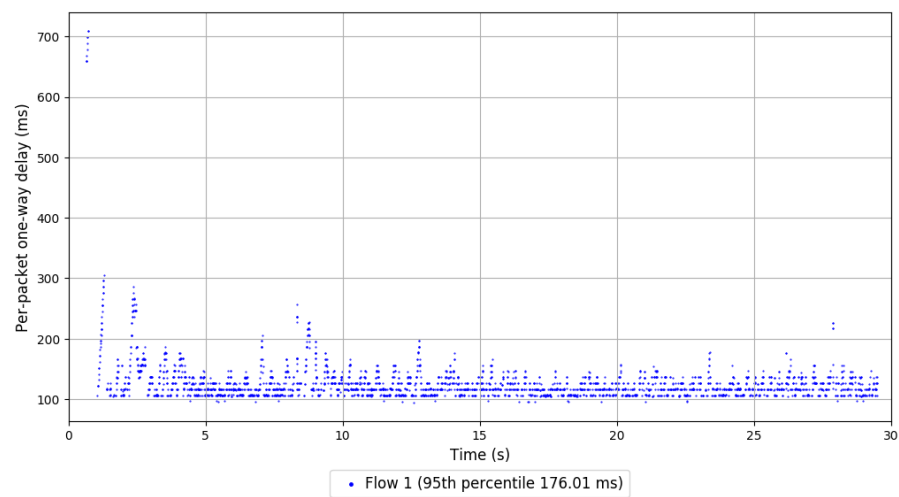
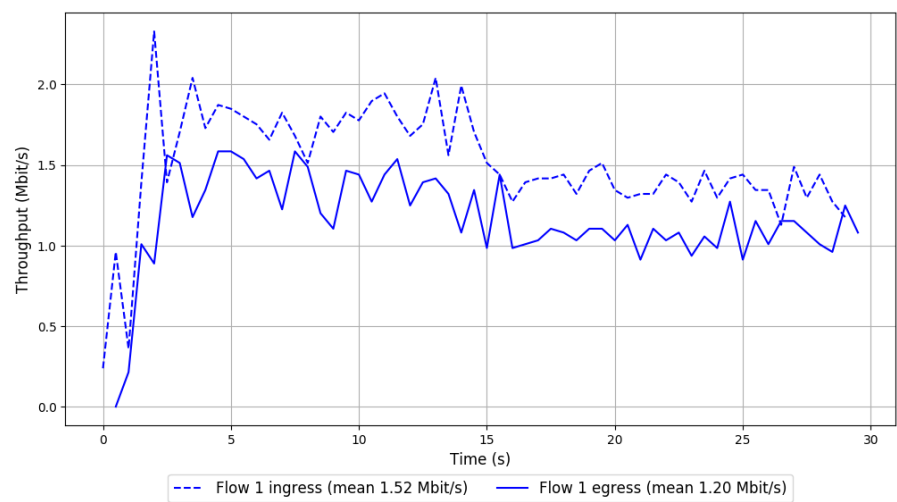
-- Flow 1:

Average throughput: 1.20 Mbit/s

95th percentile per-packet one-way delay: 176.015 ms

Loss rate: 22.67%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-07-31 23:47:34

End at: 2018-07-31 23:48:04

Local clock offset: 0.074 ms

Remote clock offset: 4.752 ms

Below is generated by plot.py at 2018-07-31 23:50:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.83 Mbit/s

95th percentile per-packet one-way delay: 627.265 ms

Loss rate: 21.14%

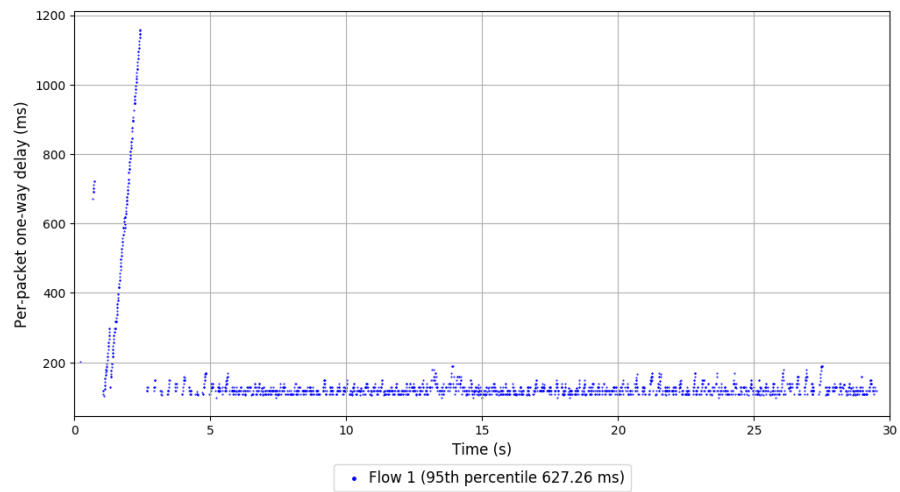
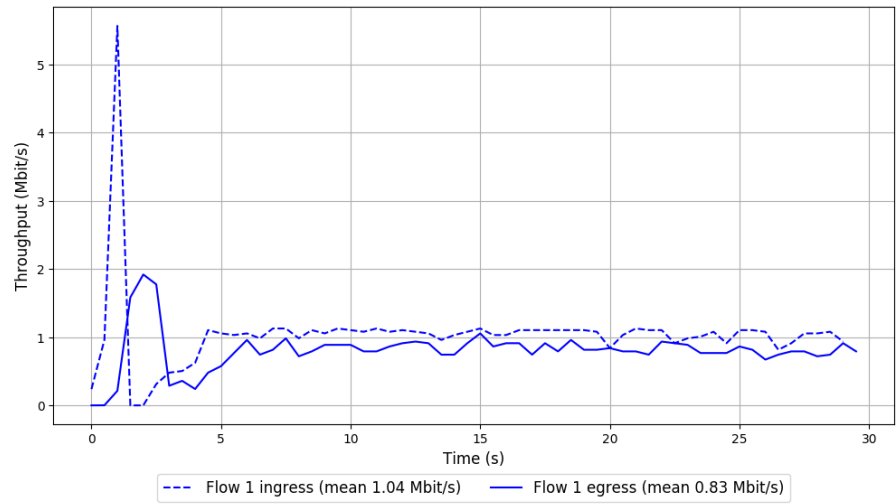
-- Flow 1:

Average throughput: 0.83 Mbit/s

95th percentile per-packet one-way delay: 627.265 ms

Loss rate: 21.14%

Run 3: Report of Indigo — Data Link

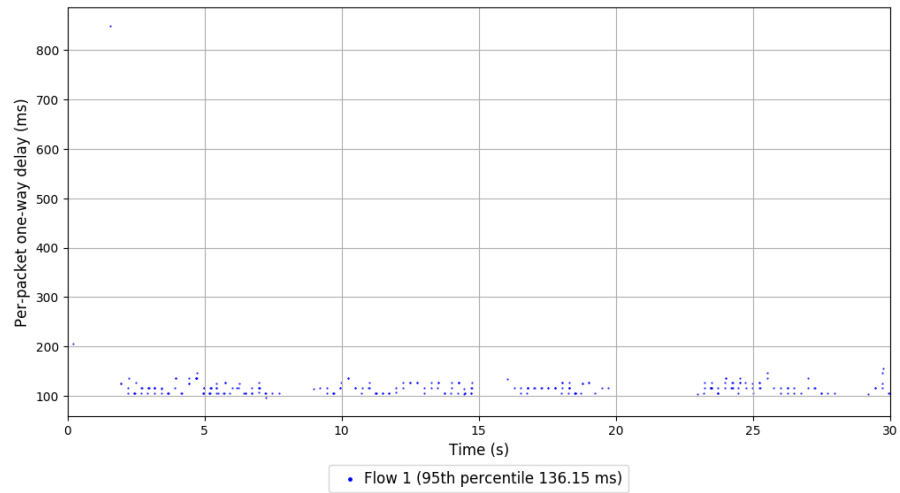
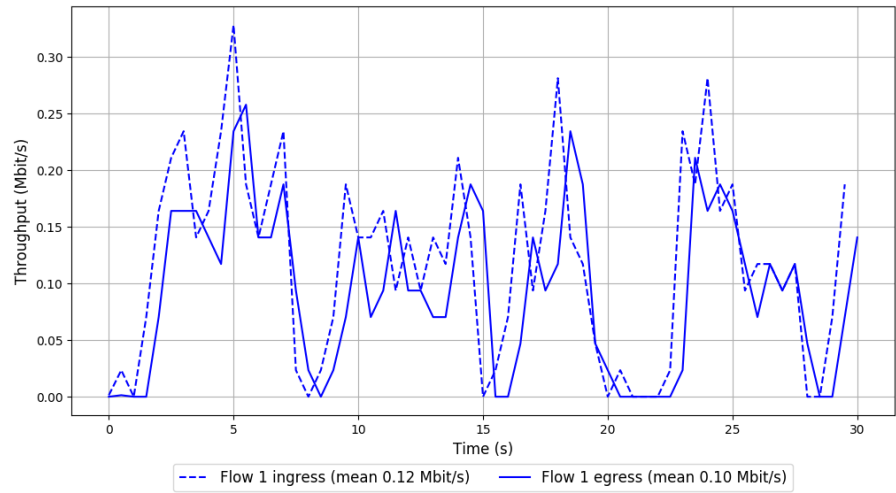


```
Run 1: Statistics of LEDBAT

Start at: 2018-07-31 22:54:45
End at: 2018-07-31 22:55:15
Local clock offset: -4.046 ms
Remote clock offset: 1.841 ms

# Below is generated by plot.py at 2018-07-31 23:50:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 136.146 ms
Loss rate: 19.00%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 136.146 ms
Loss rate: 19.00%
```


Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

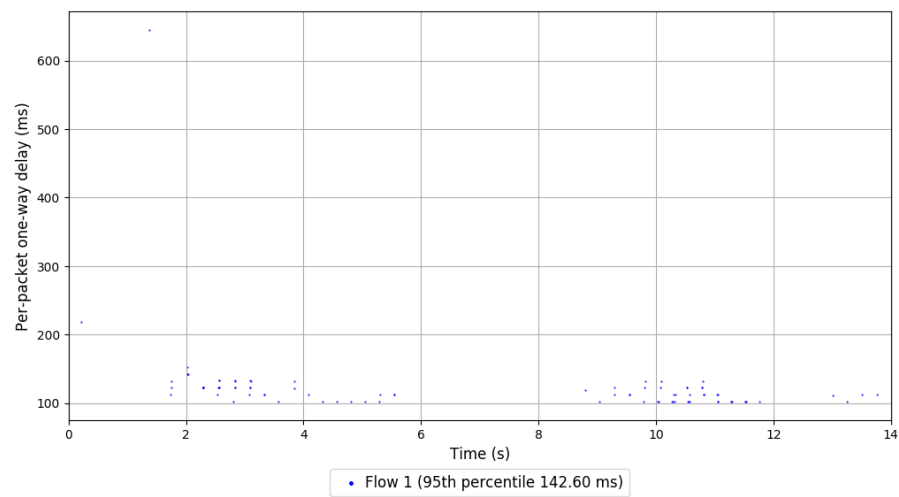
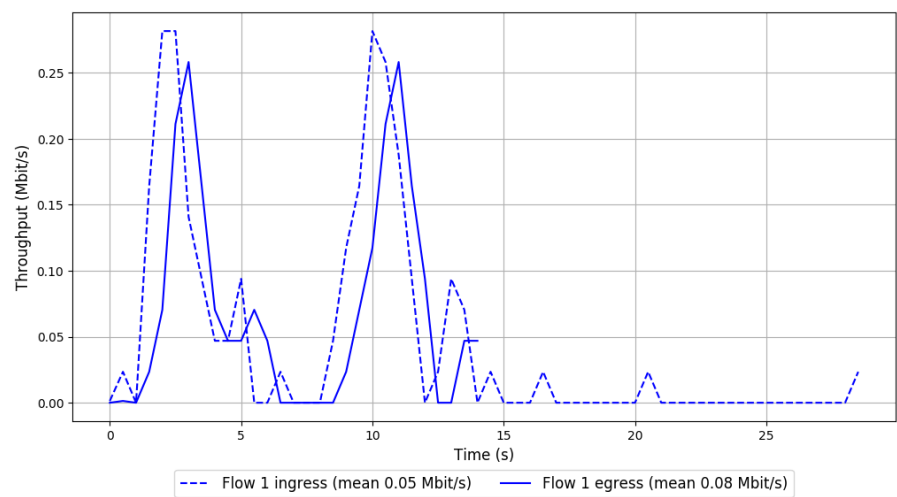
Start at: 2018-07-31 23:13:49

End at: 2018-07-31 23:14:19

Local clock offset: -3.505 ms

Remote clock offset: 2.934 ms

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-07-31 23:32:58

End at: 2018-07-31 23:33:28

Local clock offset: -2.415 ms

Remote clock offset: 6.184 ms

Below is generated by plot.py at 2018-07-31 23:50:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 152.230 ms

Loss rate: 25.59%

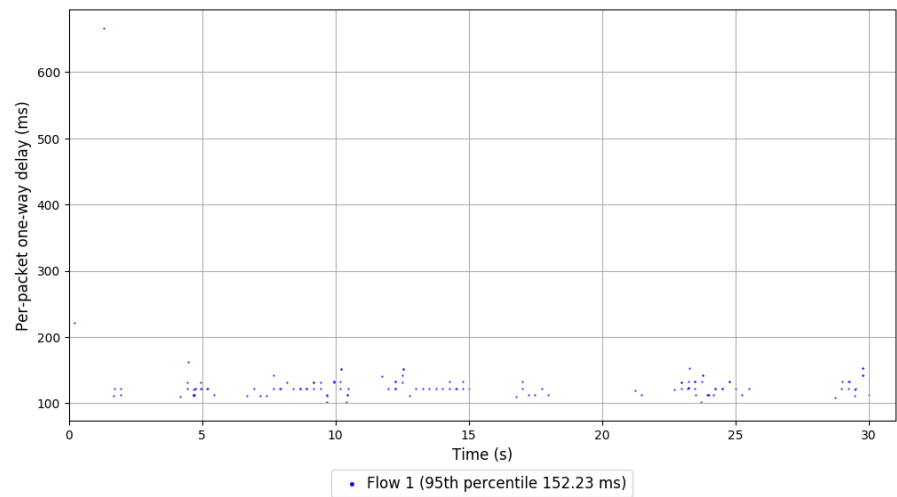
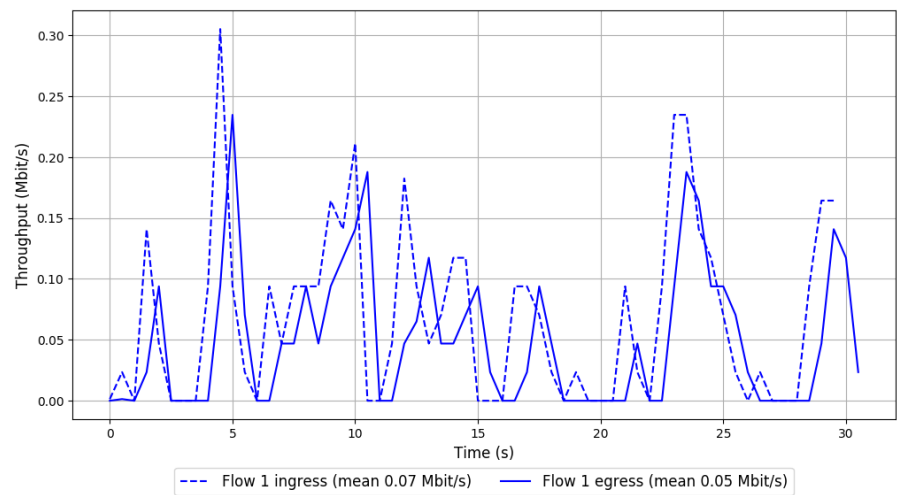
-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 152.230 ms

Loss rate: 25.59%

Run 3: Report of LEDBAT — Data Link



Run 1: Statistics of PCC-Allegro

Start at: 2018-07-31 23:03:43

End at: 2018-07-31 23:04:14

Local clock offset: -4.338 ms

Remote clock offset: 2.881 ms

Below is generated by plot.py at 2018-07-31 23:50:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.56 Mbit/s

95th percentile per-packet one-way delay: 925.754 ms

Loss rate: 20.86%

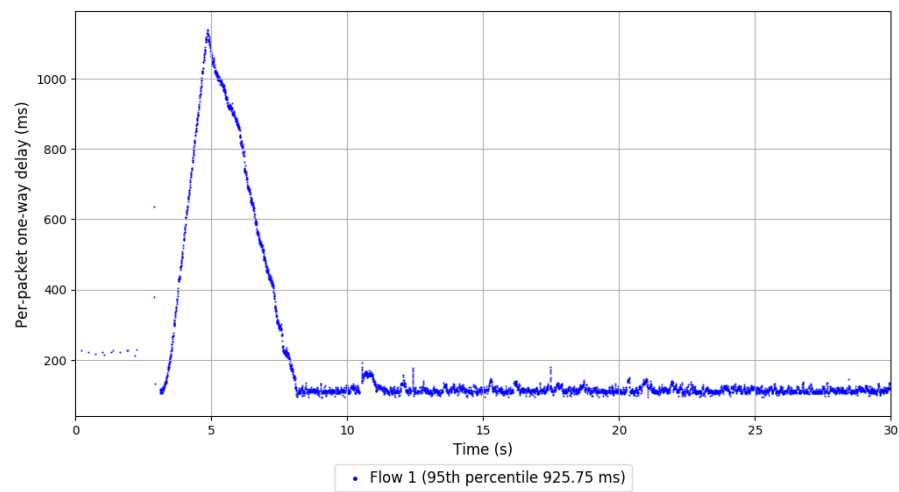
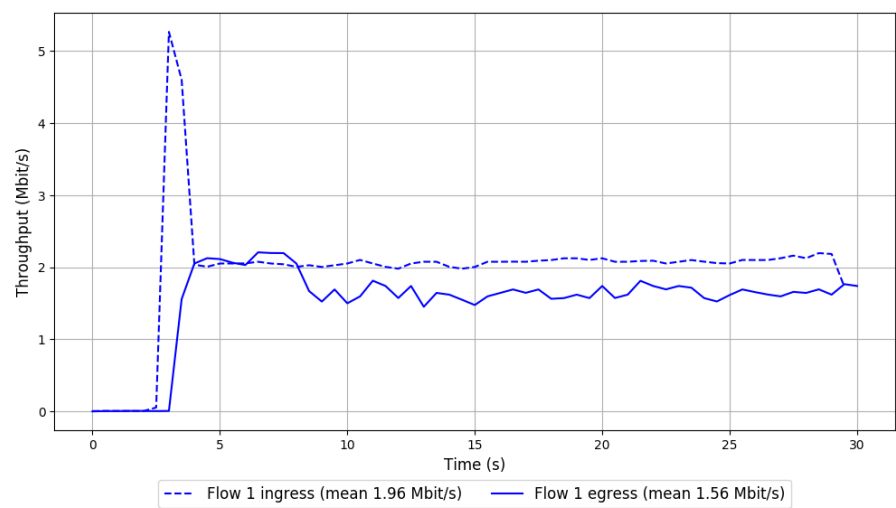
-- Flow 1:

Average throughput: 1.56 Mbit/s

95th percentile per-packet one-way delay: 925.754 ms

Loss rate: 20.86%

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-07-31 23:22:48

End at: 2018-07-31 23:23:18

Local clock offset: -1.908 ms

Remote clock offset: 1.774 ms

Below is generated by plot.py at 2018-07-31 23:50:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.29 Mbit/s

95th percentile per-packet one-way delay: 5590.231 ms

Loss rate: 35.17%

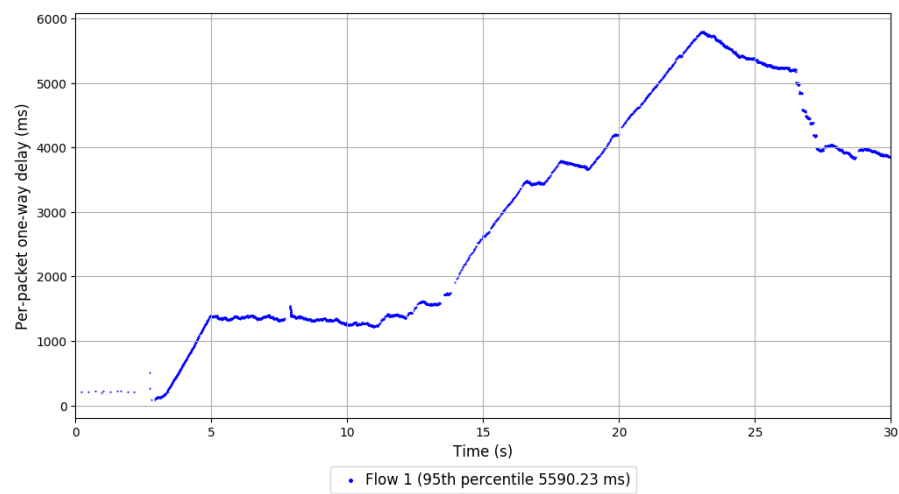
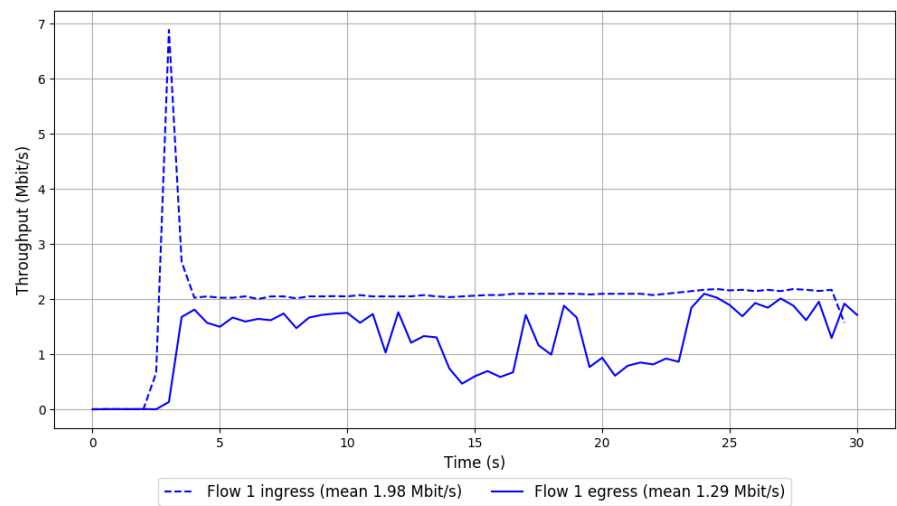
-- Flow 1:

Average throughput: 1.29 Mbit/s

95th percentile per-packet one-way delay: 5590.231 ms

Loss rate: 35.17%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-07-31 23:41:57

End at: 2018-07-31 23:42:27

Local clock offset: -1.057 ms

Remote clock offset: 2.305 ms

Below is generated by plot.py at 2018-07-31 23:50:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.53 Mbit/s

95th percentile per-packet one-way delay: 3348.963 ms

Loss rate: 26.37%

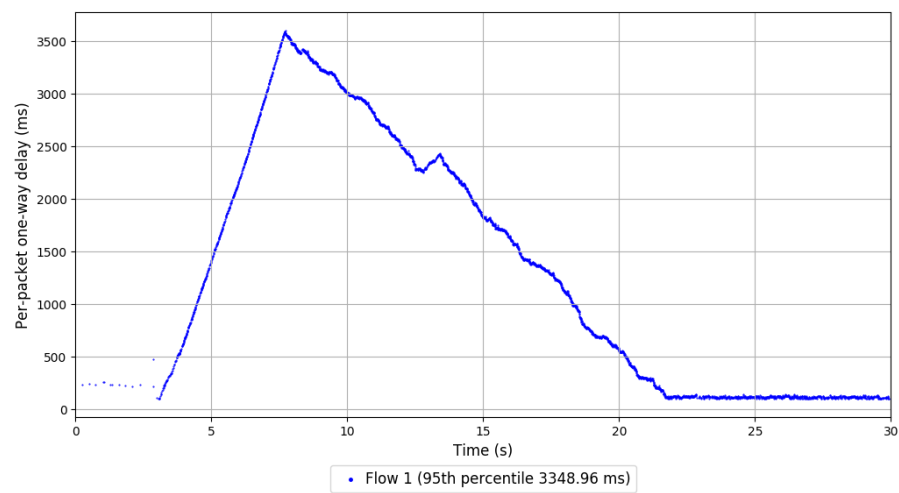
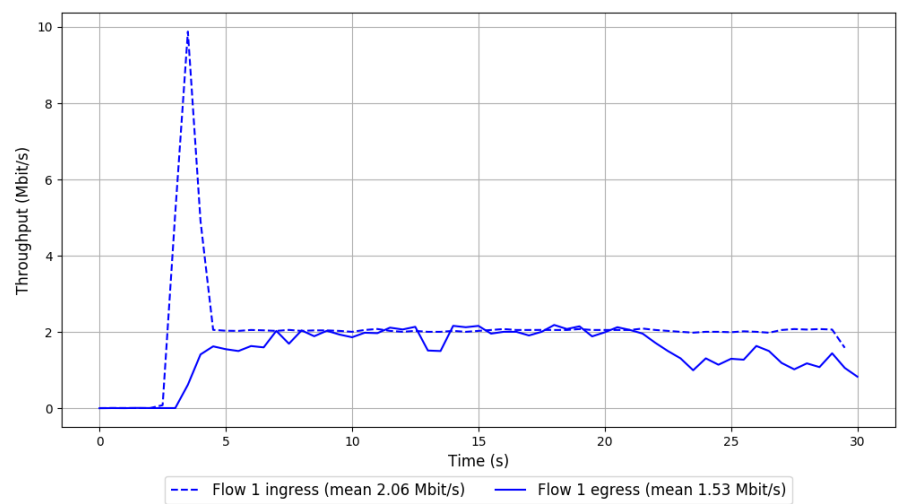
-- Flow 1:

Average throughput: 1.53 Mbit/s

95th percentile per-packet one-way delay: 3348.963 ms

Loss rate: 26.37%

Run 3: Report of PCC-Allegro — Data Link

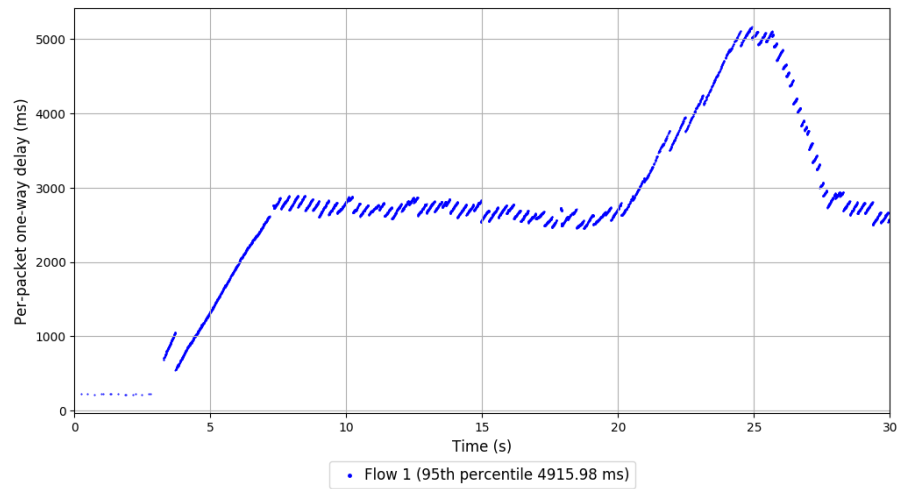
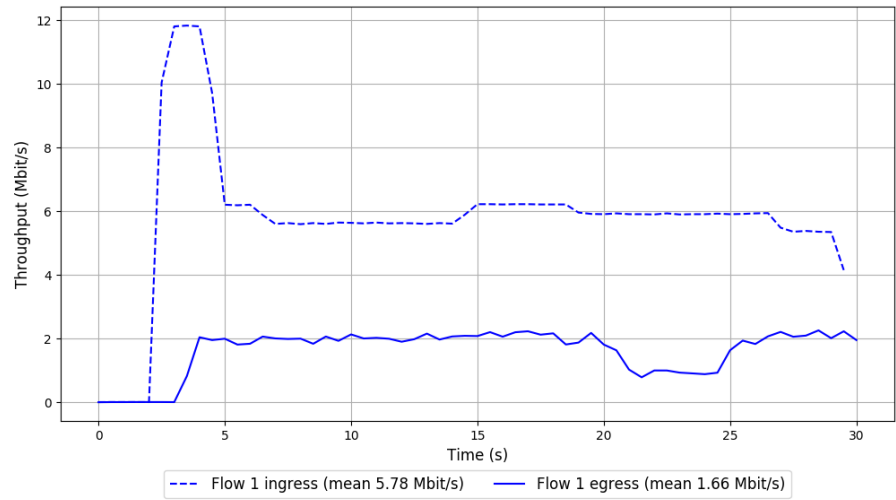


```
Run 1: Statistics of PCC-Expr

Start at: 2018-07-31 22:59:14
End at: 2018-07-31 22:59:44
Local clock offset: -4.085 ms
Remote clock offset: 6.293 ms

# Below is generated by plot.py at 2018-07-31 23:50:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.66 Mbit/s
95th percentile per-packet one-way delay: 4915.983 ms
Loss rate: 71.41%
-- Flow 1:
Average throughput: 1.66 Mbit/s
95th percentile per-packet one-way delay: 4915.983 ms
Loss rate: 71.41%
```

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2018-07-31 23:18:18

End at: 2018-07-31 23:18:48

Local clock offset: -2.891 ms

Remote clock offset: 7.701 ms

Below is generated by plot.py at 2018-07-31 23:50:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.65 Mbit/s

95th percentile per-packet one-way delay: 3457.963 ms

Loss rate: 71.99%

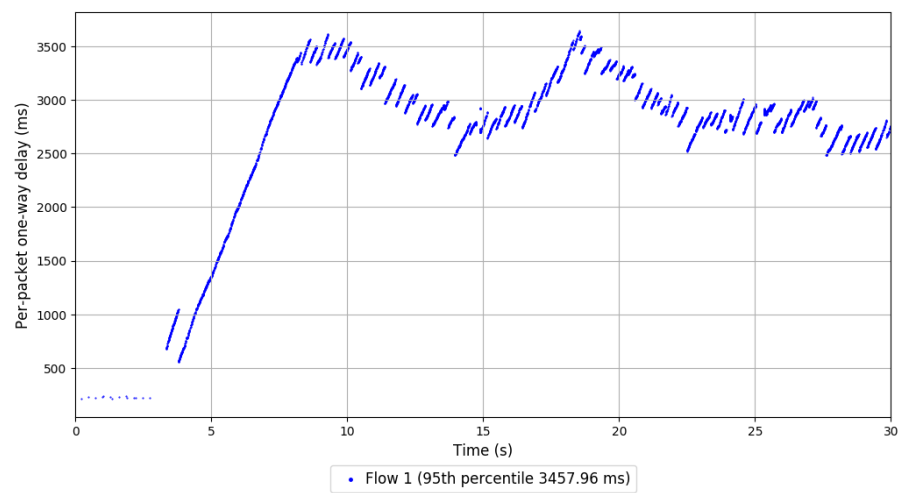
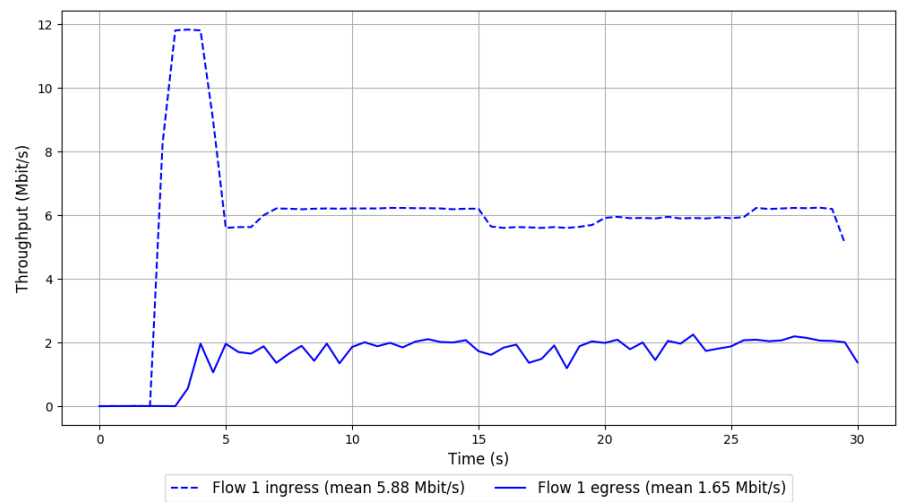
-- Flow 1:

Average throughput: 1.65 Mbit/s

95th percentile per-packet one-way delay: 3457.963 ms

Loss rate: 71.99%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-07-31 23:37:27

End at: 2018-07-31 23:37:57

Local clock offset: -1.853 ms

Remote clock offset: 1.228 ms

Below is generated by plot.py at 2018-07-31 23:50:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.72 Mbit/s

95th percentile per-packet one-way delay: 2884.885 ms

Loss rate: 71.31%

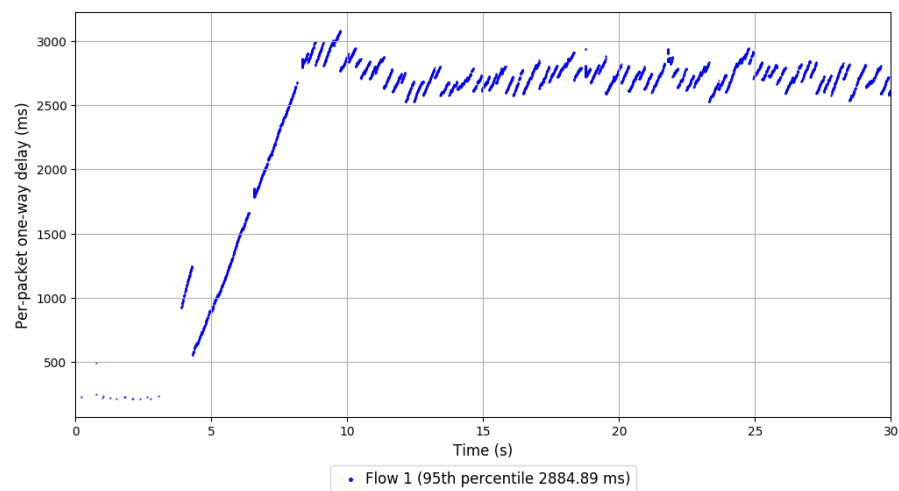
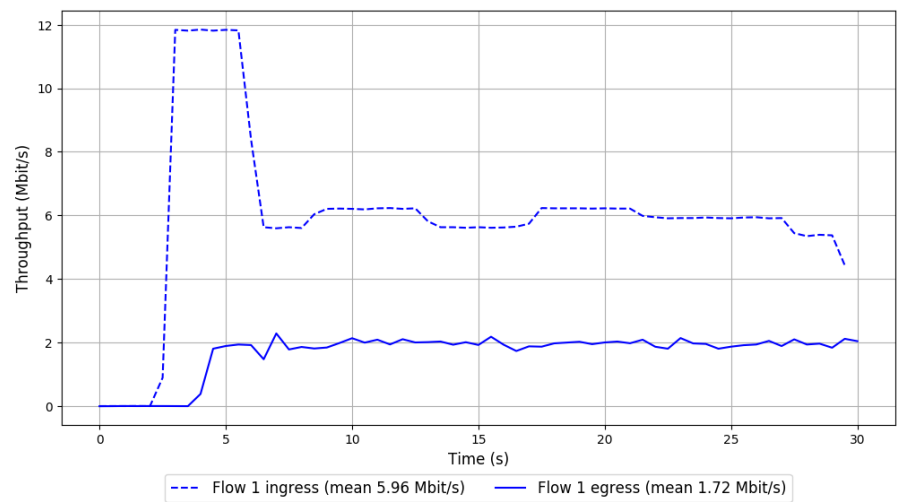
-- Flow 1:

Average throughput: 1.72 Mbit/s

95th percentile per-packet one-way delay: 2884.885 ms

Loss rate: 71.31%

Run 3: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

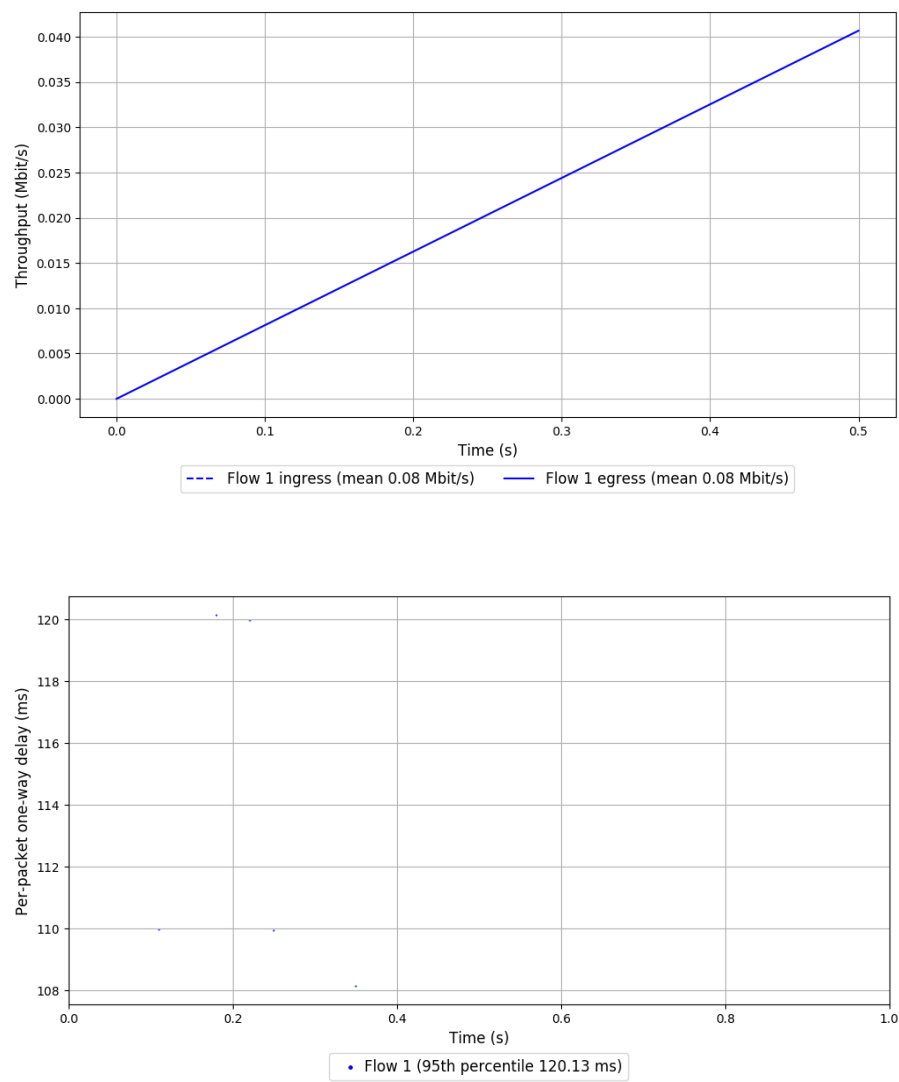
Start at: 2018-07-31 23:00:22

End at: 2018-07-31 23:00:52

Local clock offset: -3.536 ms

Remote clock offset: 6.476 ms

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-07-31 23:19:26

End at: 2018-07-31 23:19:56

Local clock offset: -2.723 ms

Remote clock offset: 2.865 ms

Below is generated by plot.py at 2018-07-31 23:50:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.33 Mbit/s

95th percentile per-packet one-way delay: 1804.251 ms

Loss rate: 4.24%

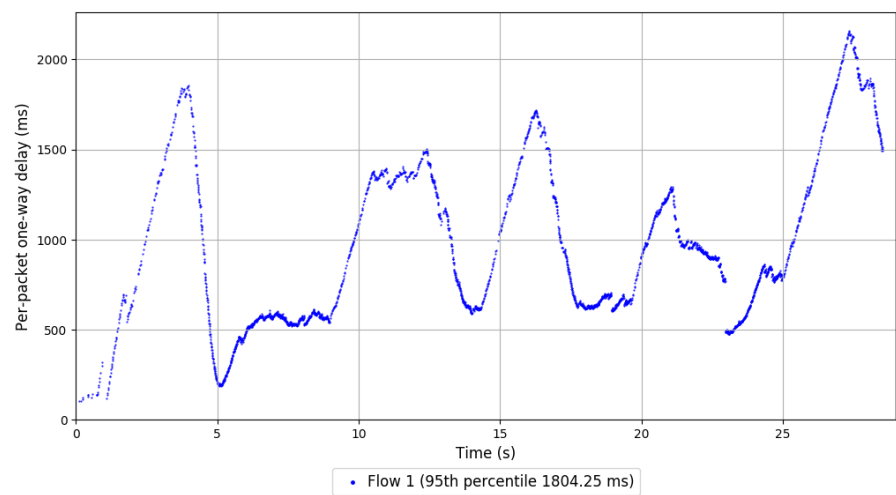
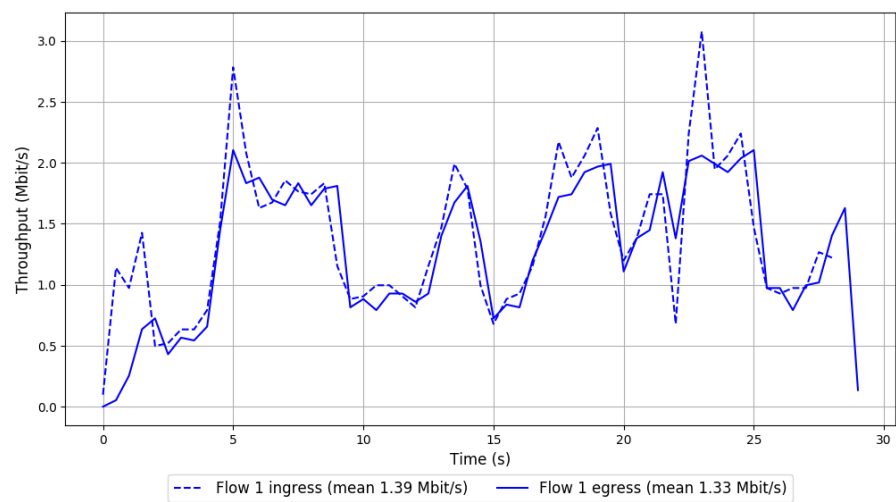
-- Flow 1:

Average throughput: 1.33 Mbit/s

95th percentile per-packet one-way delay: 1804.251 ms

Loss rate: 4.24%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-07-31 23:38:35

End at: 2018-07-31 23:39:05

Local clock offset: -1.678 ms

Remote clock offset: 7.233 ms

Below is generated by plot.py at 2018-07-31 23:50:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.90 Mbit/s

95th percentile per-packet one-way delay: 1305.483 ms

Loss rate: 4.84%

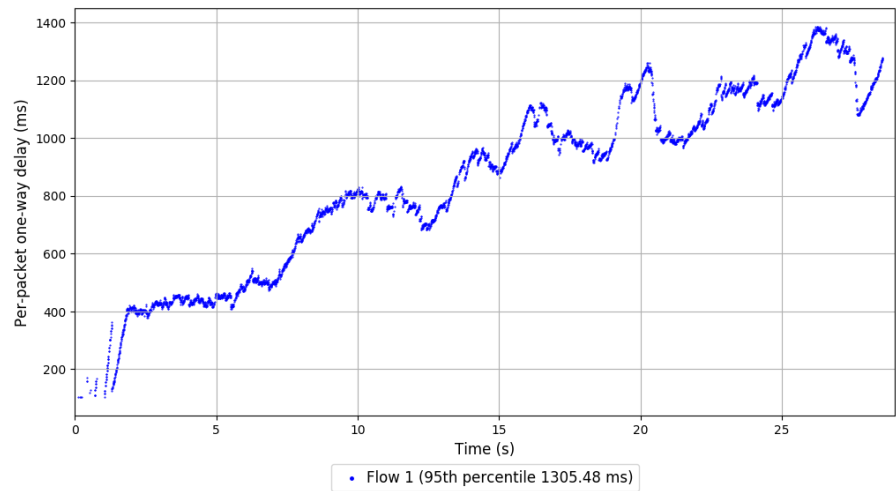
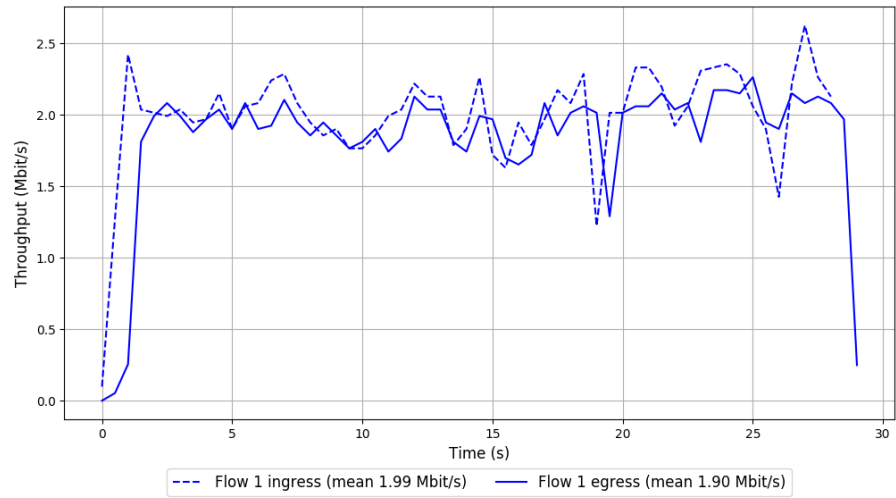
-- Flow 1:

Average throughput: 1.90 Mbit/s

95th percentile per-packet one-way delay: 1305.483 ms

Loss rate: 4.84%

Run 3: Report of QUIC Cubic — Data Link

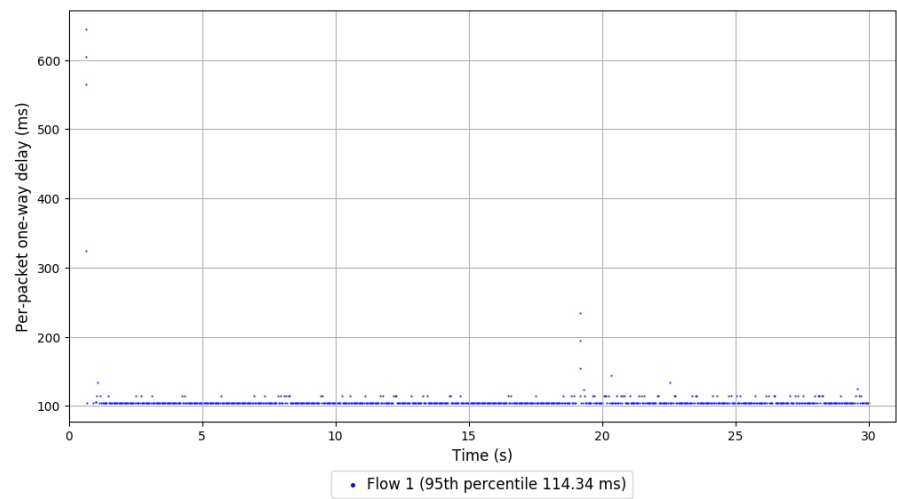
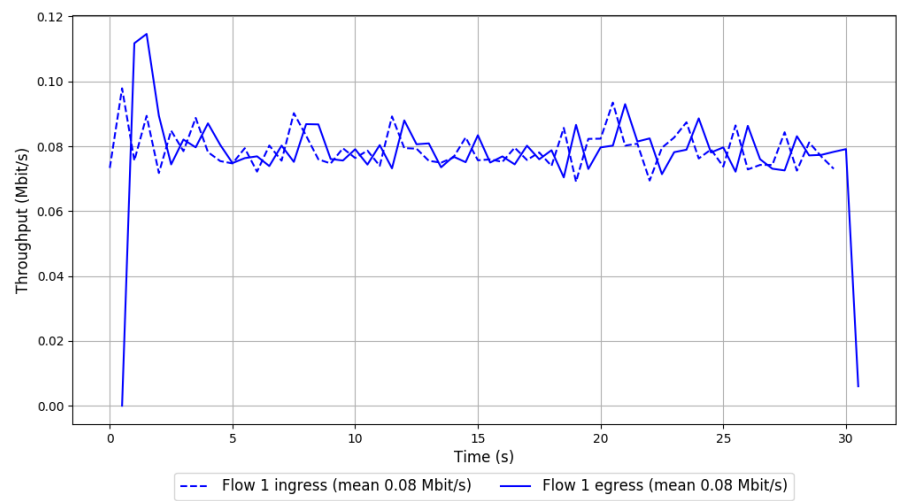


```
Run 1: Statistics of SCReAM

Start at: 2018-07-31 23:10:28
End at: 2018-07-31 23:10:58
Local clock offset: -3.247 ms
Remote clock offset: 1.889 ms

# Below is generated by plot.py at 2018-07-31 23:50:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 114.338 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 114.338 ms
Loss rate: 0.13%
```


Run 1: Report of SReAM — Data Link



Run 2: Statistics of SCReAM

Start at: 2018-07-31 23:29:37

End at: 2018-07-31 23:30:07

Local clock offset: -2.601 ms

Remote clock offset: 5.141 ms

Below is generated by plot.py at 2018-07-31 23:50:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.08 Mbit/s

95th percentile per-packet one-way delay: 119.820 ms

Loss rate: 0.13%

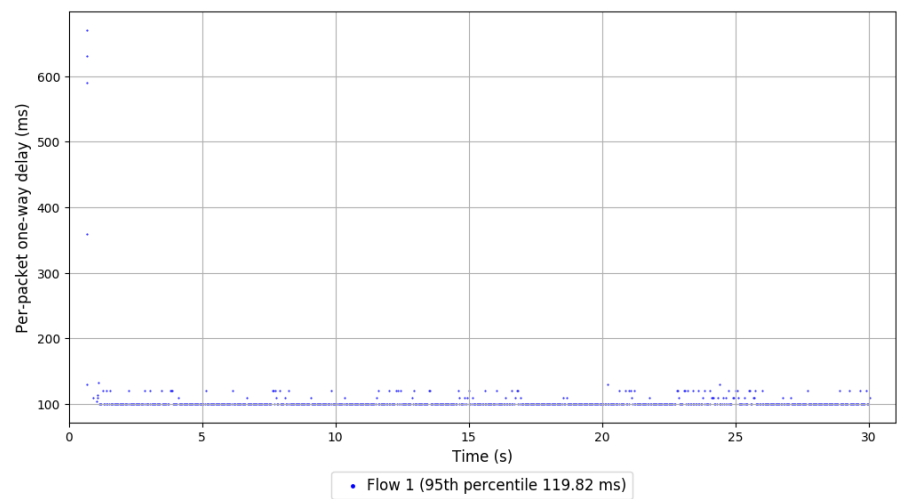
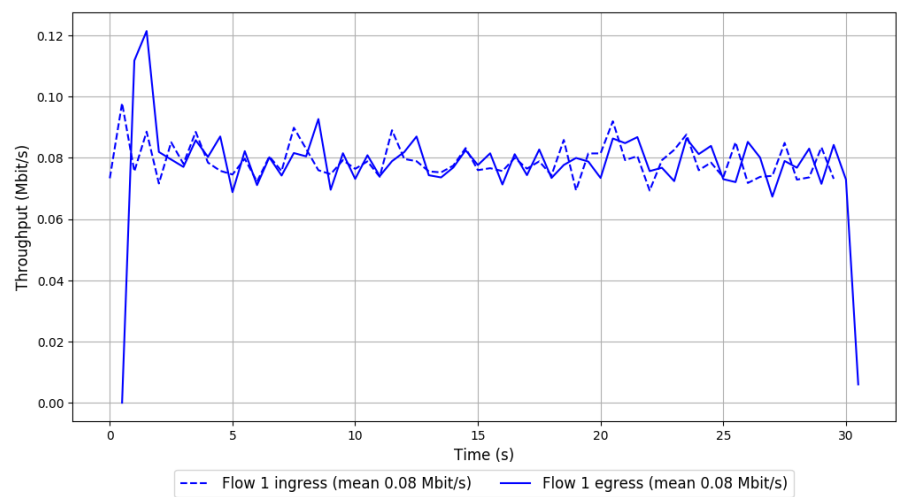
-- Flow 1:

Average throughput: 0.08 Mbit/s

95th percentile per-packet one-way delay: 119.820 ms

Loss rate: 0.13%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2018-07-31 23:48:42

End at: 2018-07-31 23:49:12

Local clock offset: 0.311 ms

Remote clock offset: 4.44 ms

Below is generated by plot.py at 2018-07-31 23:50:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.08 Mbit/s

95th percentile per-packet one-way delay: 109.857 ms

Loss rate: 0.13%

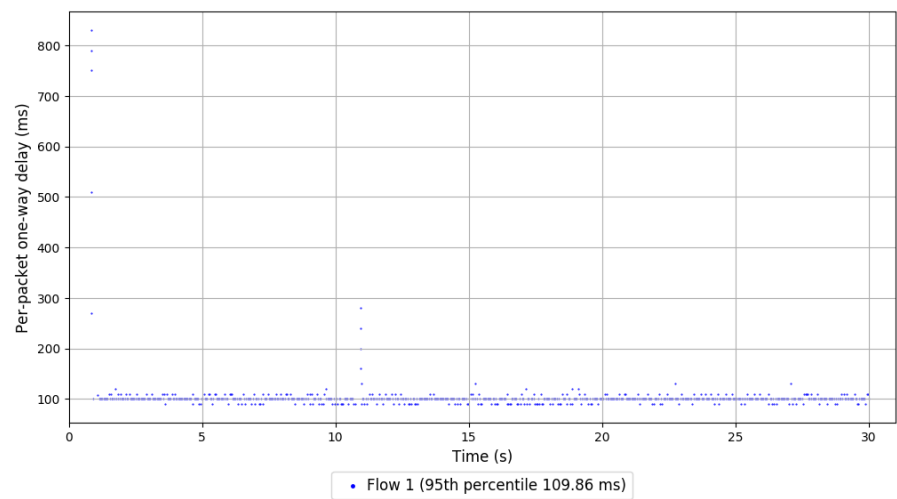
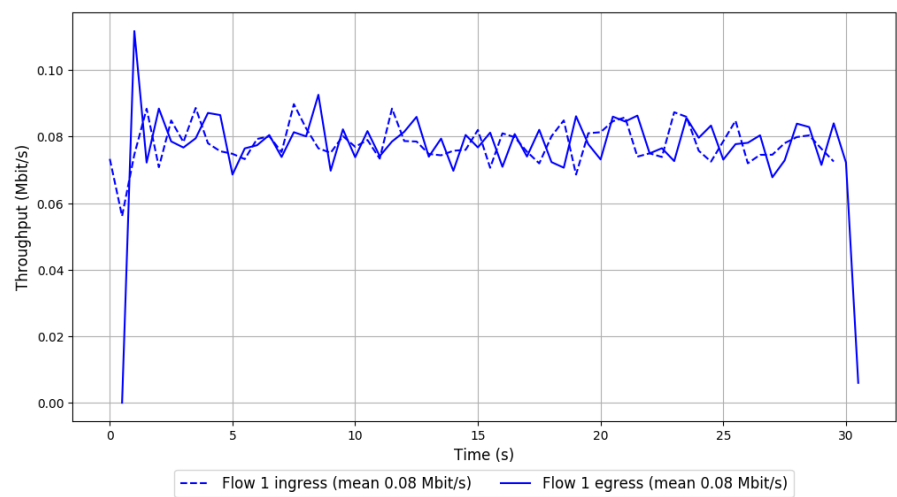
-- Flow 1:

Average throughput: 0.08 Mbit/s

95th percentile per-packet one-way delay: 109.857 ms

Loss rate: 0.13%

Run 3: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-07-31 22:53:38

End at: 2018-07-31 22:54:08

Local clock offset: -1.457 ms

Remote clock offset: 5.226 ms

Below is generated by plot.py at 2018-07-31 23:50:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.12 Mbit/s

95th percentile per-packet one-way delay: 187.450 ms

Loss rate: 14.31%

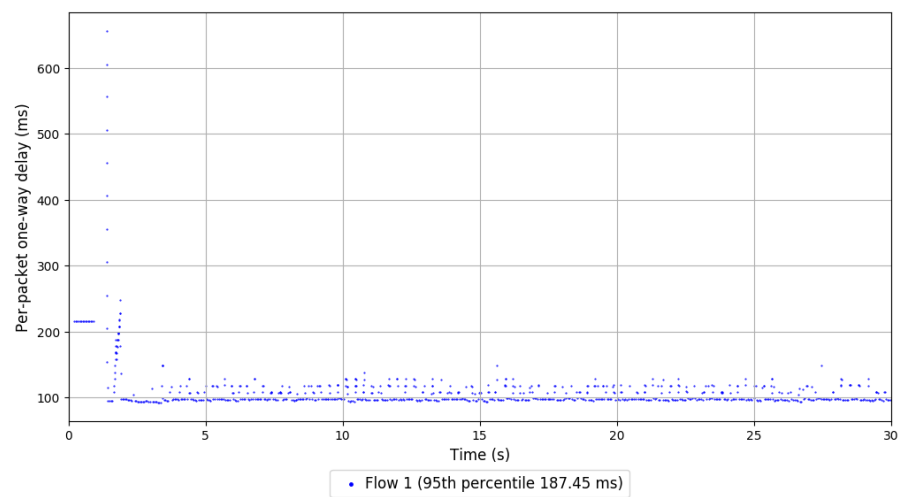
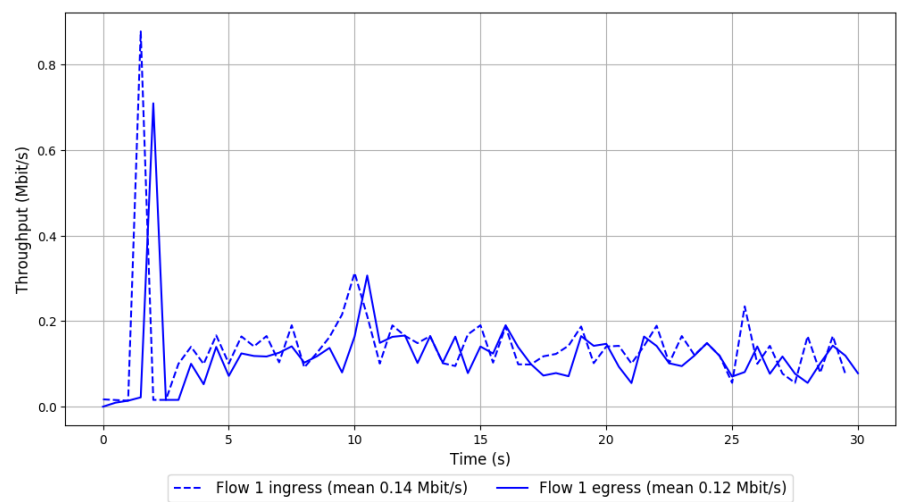
-- Flow 1:

Average throughput: 0.12 Mbit/s

95th percentile per-packet one-way delay: 187.450 ms

Loss rate: 14.31%

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

Start at: 2018-07-31 23:12:42

End at: 2018-07-31 23:13:12

Local clock offset: -3.519 ms

Remote clock offset: 3.018 ms

Below is generated by plot.py at 2018-07-31 23:50:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.13 Mbit/s

95th percentile per-packet one-way delay: 149.707 ms

Loss rate: 14.66%

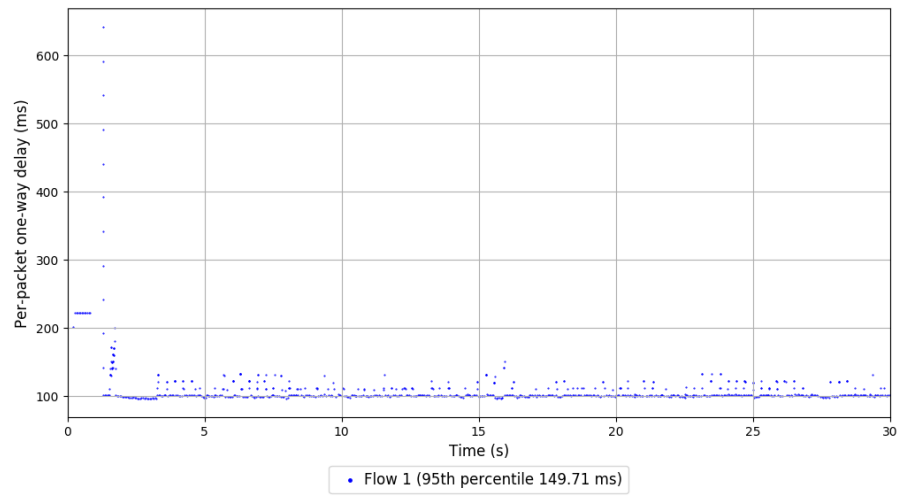
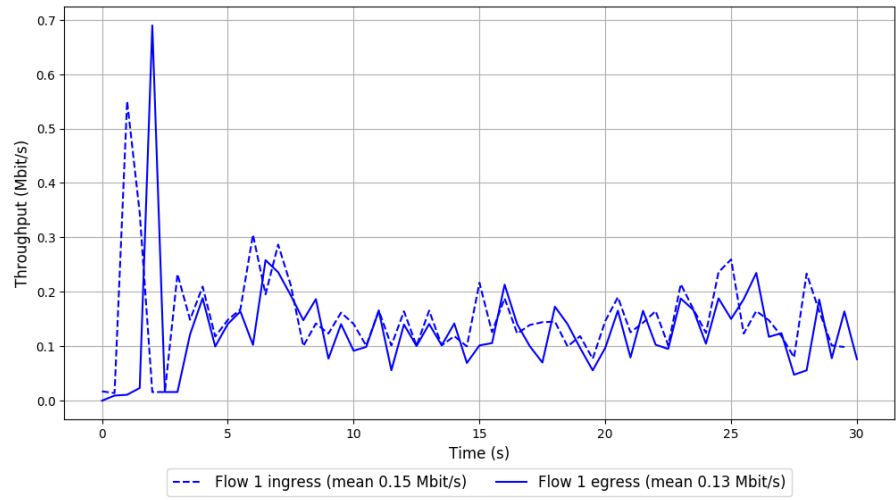
-- Flow 1:

Average throughput: 0.13 Mbit/s

95th percentile per-packet one-way delay: 149.707 ms

Loss rate: 14.66%

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

Start at: 2018-07-31 23:31:51

End at: 2018-07-31 23:32:21

Local clock offset: -2.477 ms

Remote clock offset: 1.419 ms

Below is generated by plot.py at 2018-07-31 23:50:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.12 Mbit/s

95th percentile per-packet one-way delay: 154.948 ms

Loss rate: 14.18%

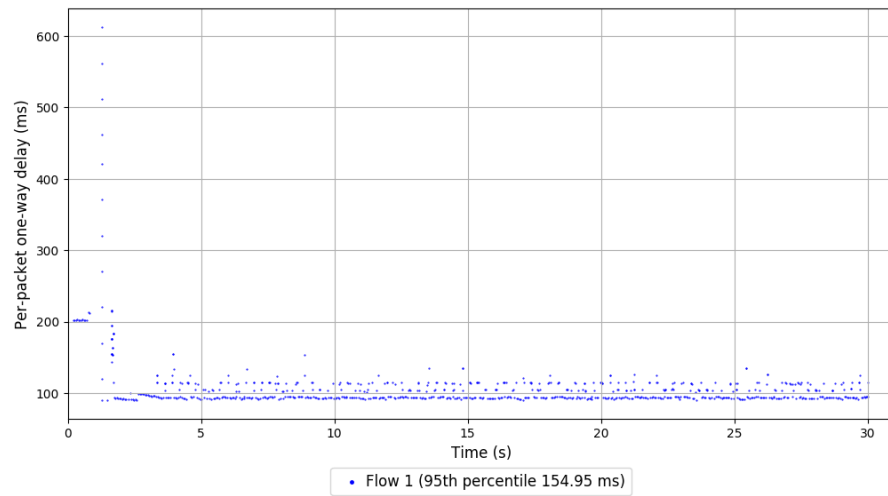
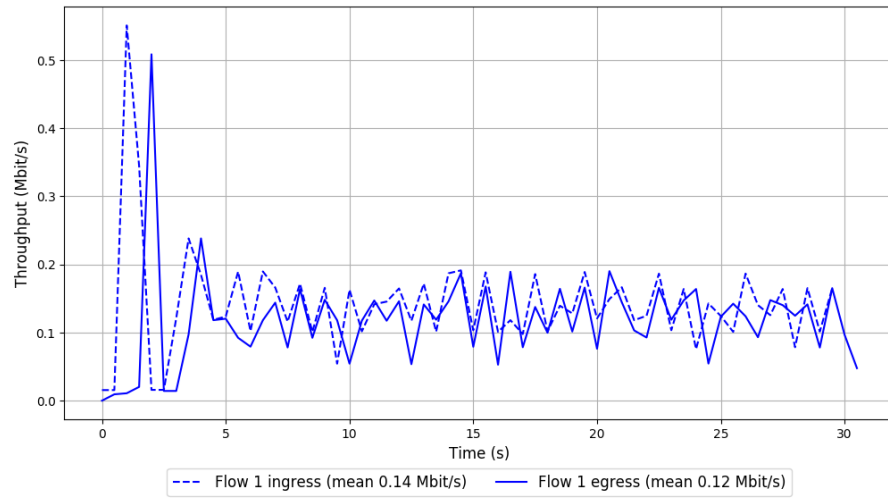
-- Flow 1:

Average throughput: 0.12 Mbit/s

95th percentile per-packet one-way delay: 154.948 ms

Loss rate: 14.18%

Run 3: Report of Sprout — Data Link

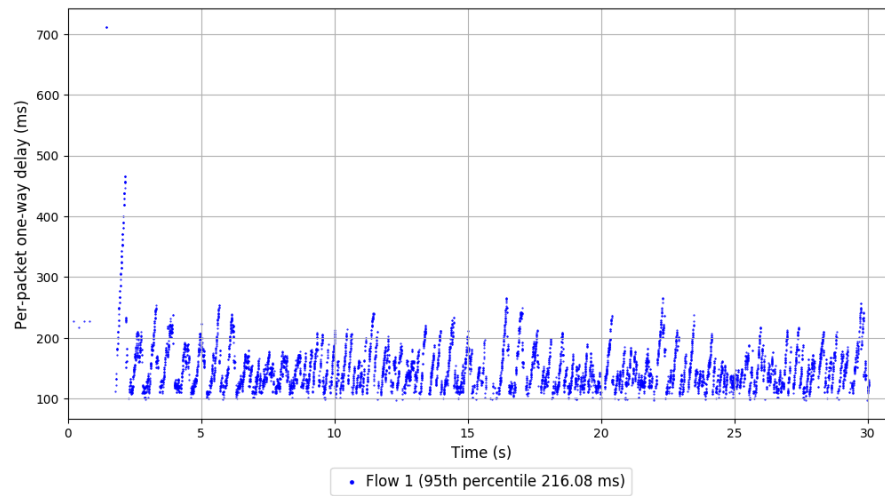
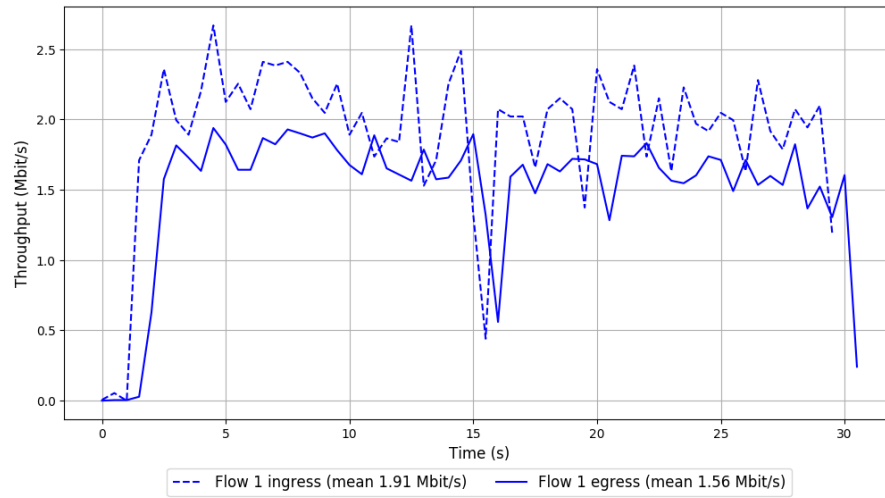


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-07-31 23:02:36
End at: 2018-07-31 23:03:06
Local clock offset: -4.068 ms
Remote clock offset: 6.573 ms

# Below is generated by plot.py at 2018-07-31 23:50:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.56 Mbit/s
95th percentile per-packet one-way delay: 216.080 ms
Loss rate: 18.16%
-- Flow 1:
Average throughput: 1.56 Mbit/s
95th percentile per-packet one-way delay: 216.080 ms
Loss rate: 18.16%
```

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-07-31 23:21:40

End at: 2018-07-31 23:22:11

Local clock offset: -2.127 ms

Remote clock offset: 7.762 ms

Below is generated by plot.py at 2018-07-31 23:50:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.27 Mbit/s

95th percentile per-packet one-way delay: 257.530 ms

Loss rate: 30.07%

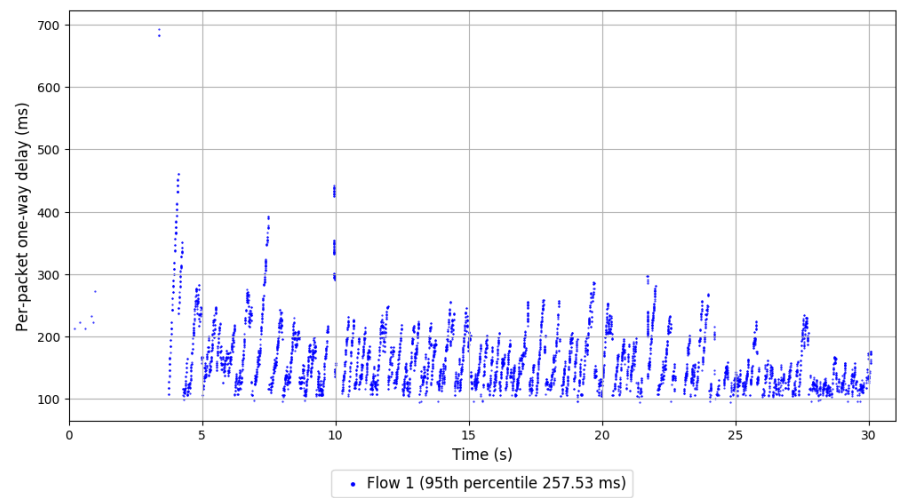
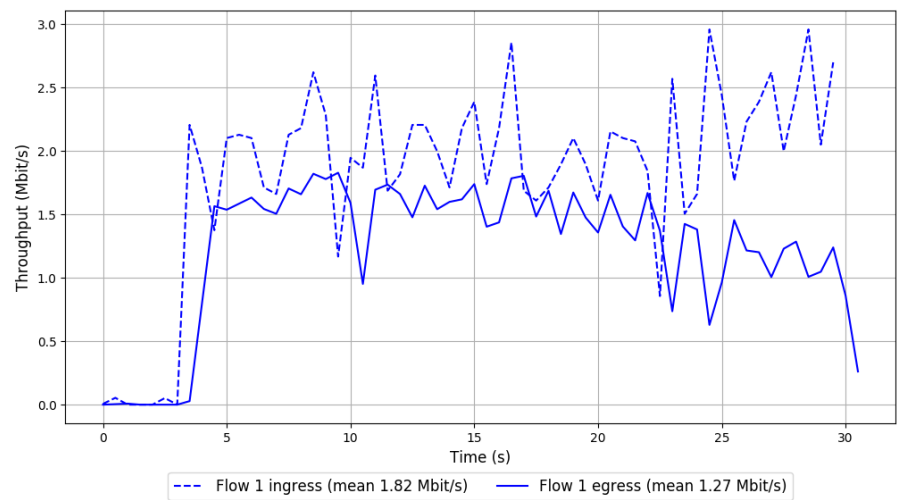
-- Flow 1:

Average throughput: 1.27 Mbit/s

95th percentile per-packet one-way delay: 257.530 ms

Loss rate: 30.07%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-07-31 23:40:50

End at: 2018-07-31 23:41:20

Local clock offset: -1.271 ms

Remote clock offset: 1.057 ms

Below is generated by plot.py at 2018-07-31 23:50:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.55 Mbit/s

95th percentile per-packet one-way delay: 230.154 ms

Loss rate: 19.95%

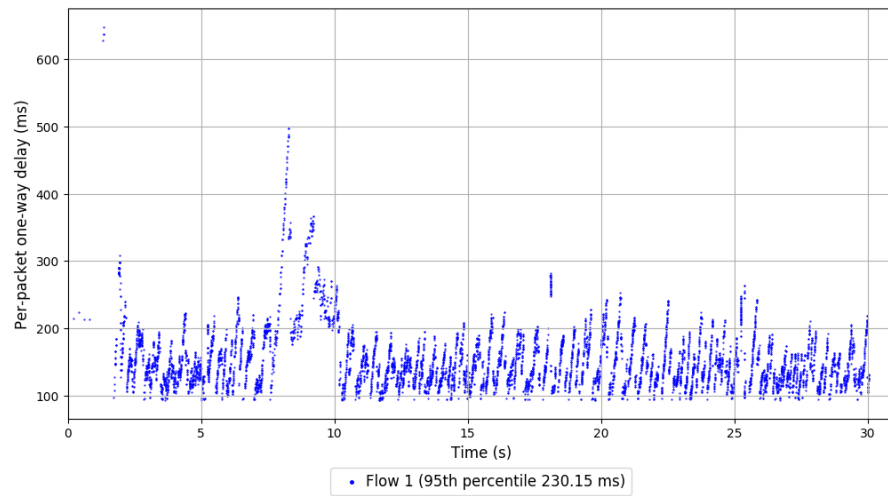
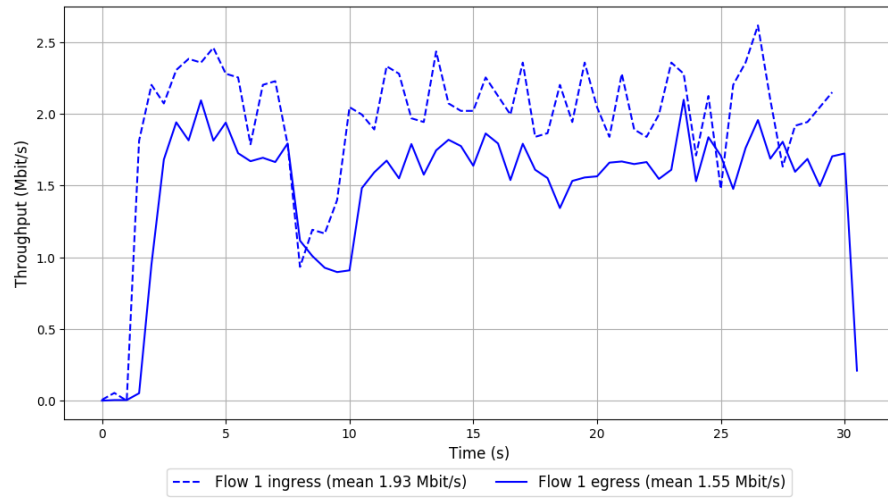
-- Flow 1:

Average throughput: 1.55 Mbit/s

95th percentile per-packet one-way delay: 230.154 ms

Loss rate: 19.95%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-07-31 23:11:35

End at: 2018-07-31 23:12:05

Local clock offset: -3.452 ms

Remote clock offset: 6.687 ms

Below is generated by plot.py at 2018-07-31 23:50:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.08 Mbit/s

95th percentile per-packet one-way delay: 703.376 ms

Loss rate: 20.78%

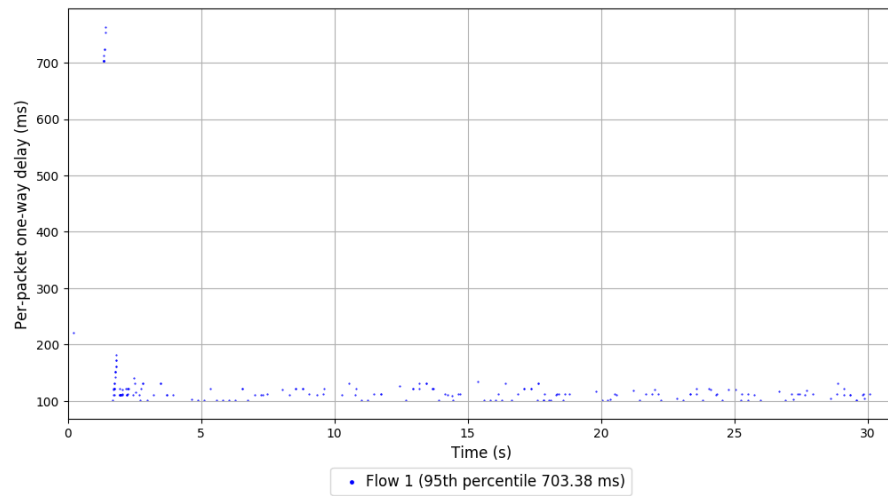
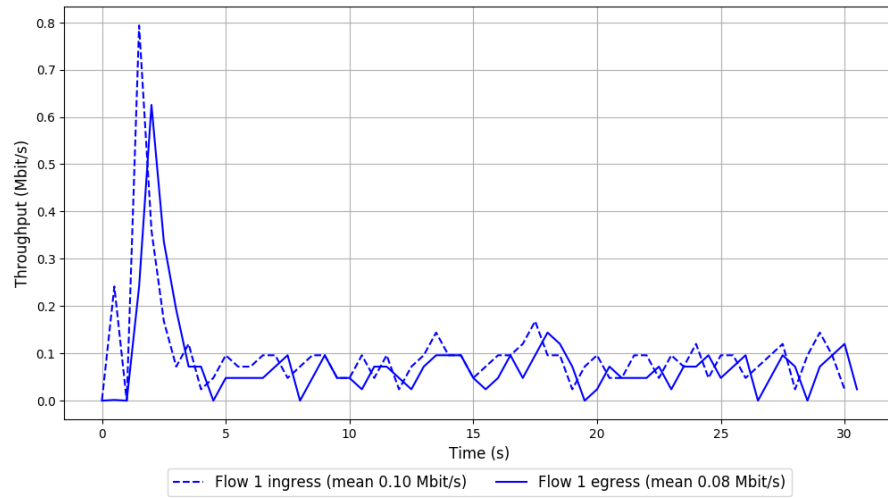
-- Flow 1:

Average throughput: 0.08 Mbit/s

95th percentile per-packet one-way delay: 703.376 ms

Loss rate: 20.78%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-07-31 23:30:44

End at: 2018-07-31 23:31:14

Local clock offset: -2.578 ms

Remote clock offset: 7.412 ms

Below is generated by plot.py at 2018-07-31 23:50:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.06 Mbit/s

95th percentile per-packet one-way delay: 663.009 ms

Loss rate: 26.18%

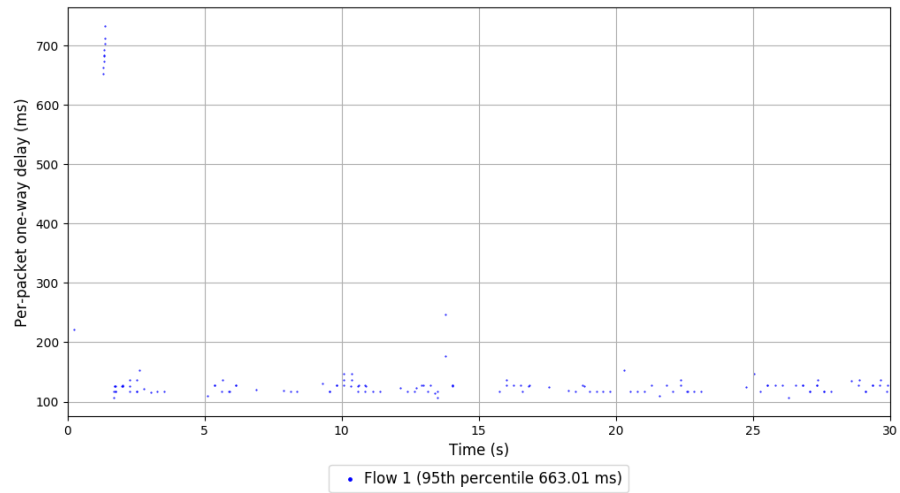
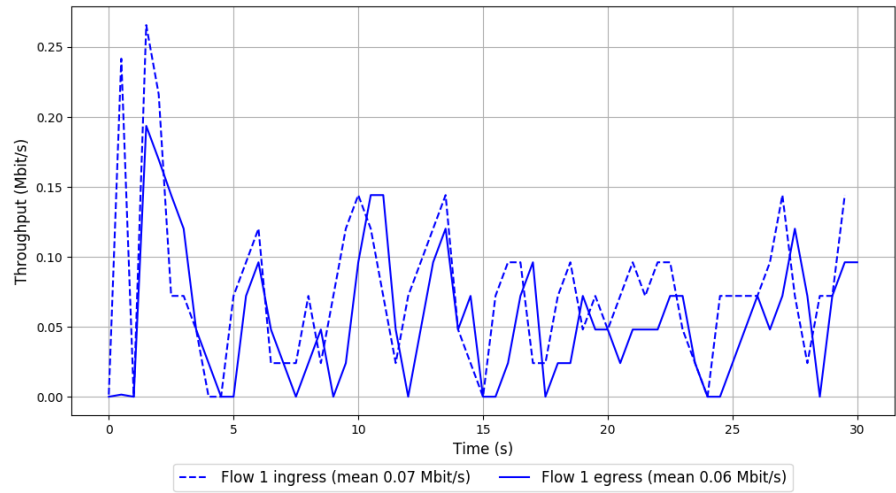
-- Flow 1:

Average throughput: 0.06 Mbit/s

95th percentile per-packet one-way delay: 663.009 ms

Loss rate: 26.18%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2018-07-31 23:49:49

End at: 2018-07-31 23:50:19

Local clock offset: 0.472 ms

Remote clock offset: 1.748 ms

Below is generated by plot.py at 2018-07-31 23:50:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.07 Mbit/s

95th percentile per-packet one-way delay: 674.169 ms

Loss rate: 20.54%

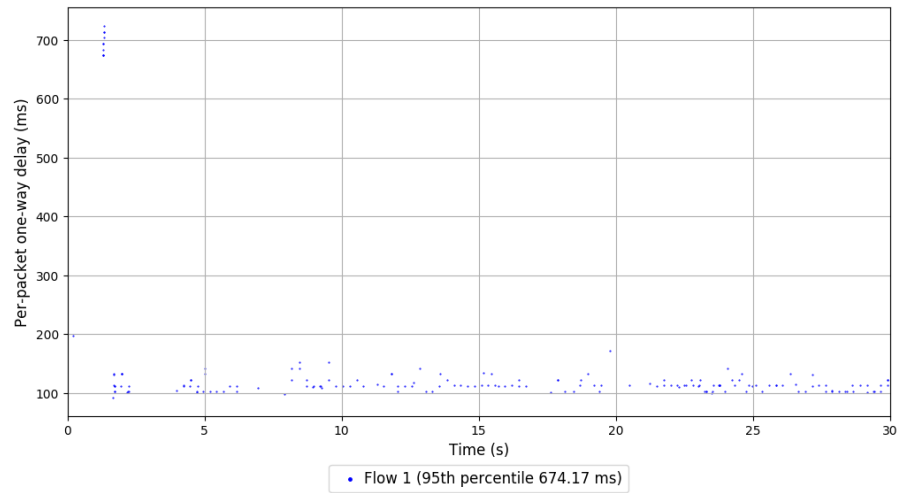
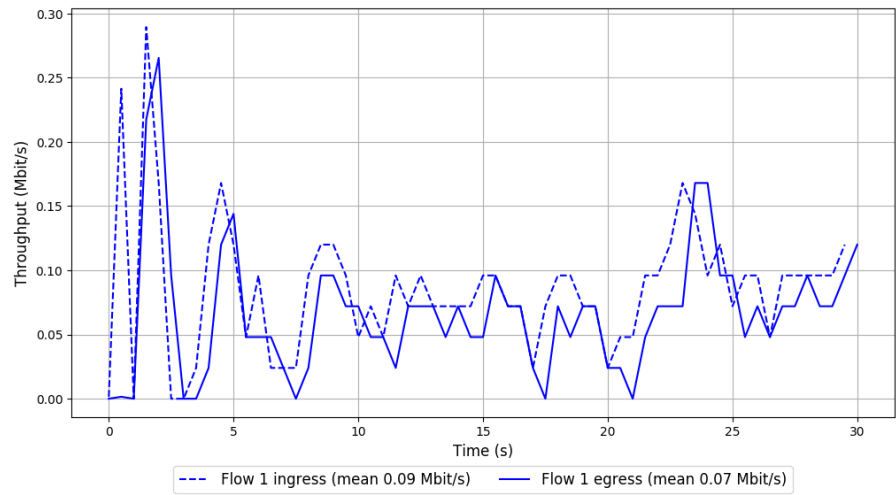
-- Flow 1:

Average throughput: 0.07 Mbit/s

95th percentile per-packet one-way delay: 674.169 ms

Loss rate: 20.54%

Run 3: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-07-31 23:04:51

End at: 2018-07-31 23:05:21

Local clock offset: -4.365 ms

Remote clock offset: 6.566 ms

Below is generated by plot.py at 2018-07-31 23:50:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.58 Mbit/s

95th percentile per-packet one-way delay: 335.920 ms

Loss rate: 20.36%

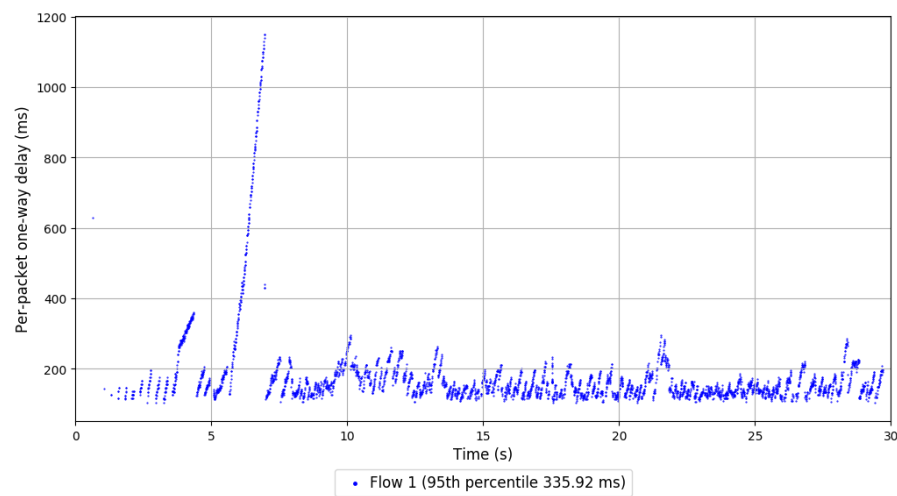
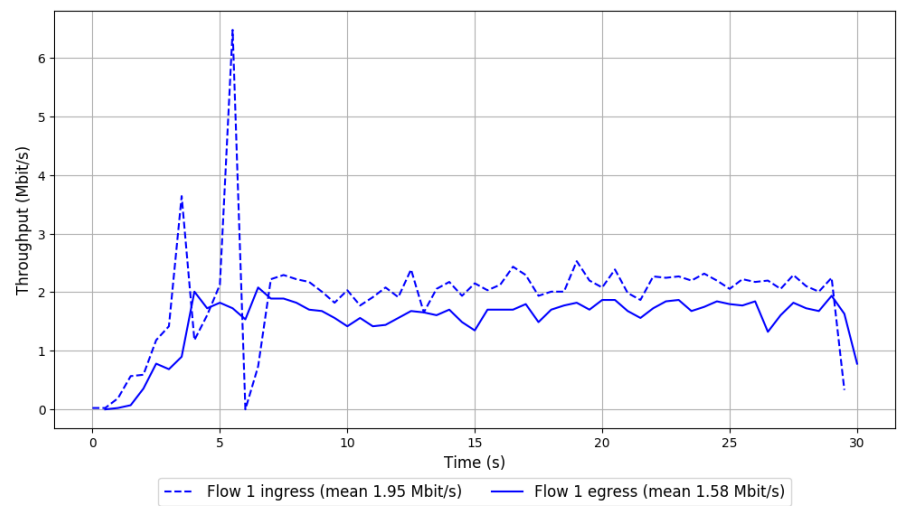
-- Flow 1:

Average throughput: 1.58 Mbit/s

95th percentile per-packet one-way delay: 335.920 ms

Loss rate: 20.36%

Run 1: Report of Verus — Data Link

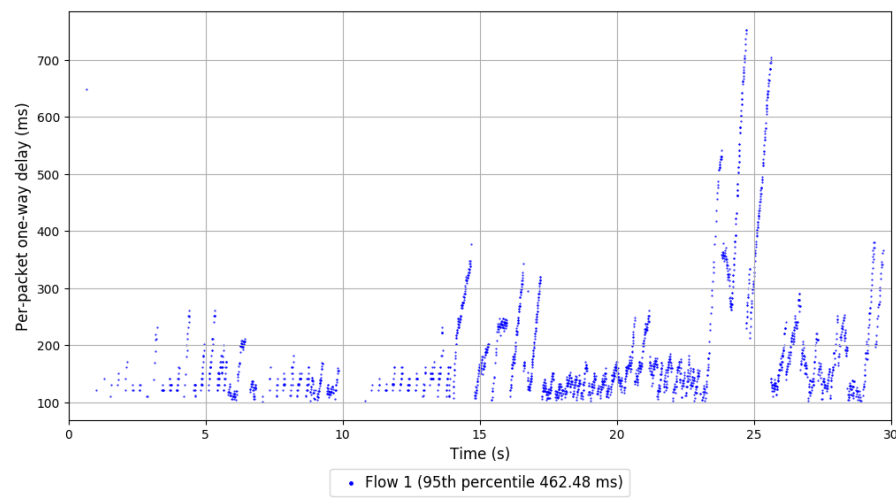
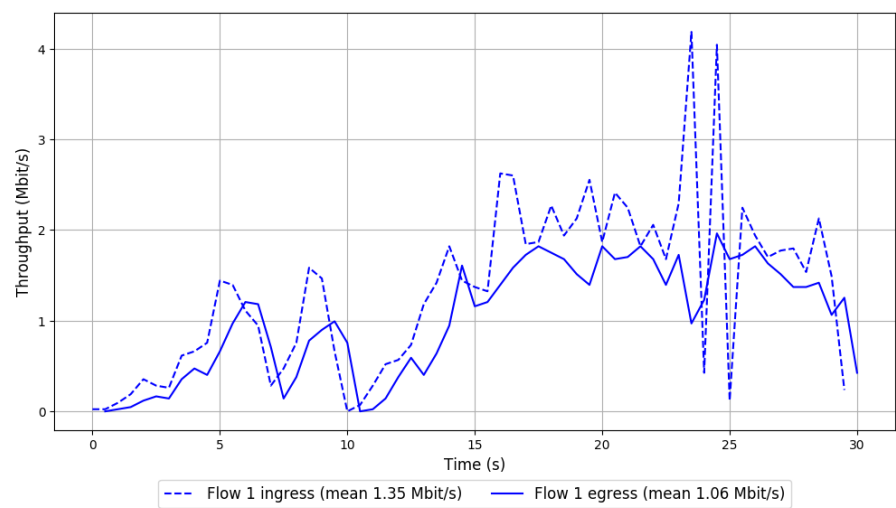


Run 2: Statistics of Verus

Start at: 2018-07-31 23:23:55
End at: 2018-07-31 23:24:25
Local clock offset: -2.163 ms
Remote clock offset: 6.505 ms

Below is generated by plot.py at 2018-07-31 23:50:57
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.06 Mbit/s
95th percentile per-packet one-way delay: 462.477 ms
Loss rate: 22.92%
-- Flow 1:
Average throughput: 1.06 Mbit/s
95th percentile per-packet one-way delay: 462.477 ms
Loss rate: 22.92%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2018-07-31 23:43:05

End at: 2018-07-31 23:43:35

Local clock offset: -0.868 ms

Remote clock offset: 0.979 ms

Below is generated by plot.py at 2018-07-31 23:50:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.79 Mbit/s

95th percentile per-packet one-way delay: 246.234 ms

Loss rate: 22.74%

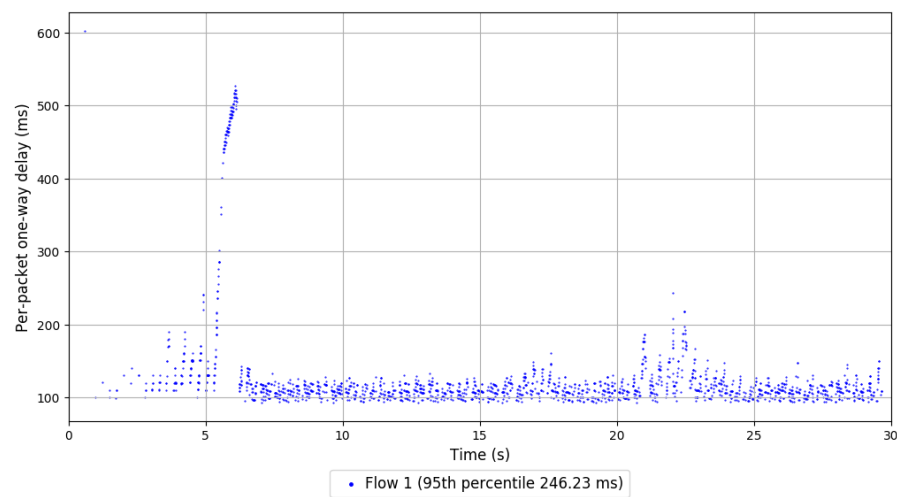
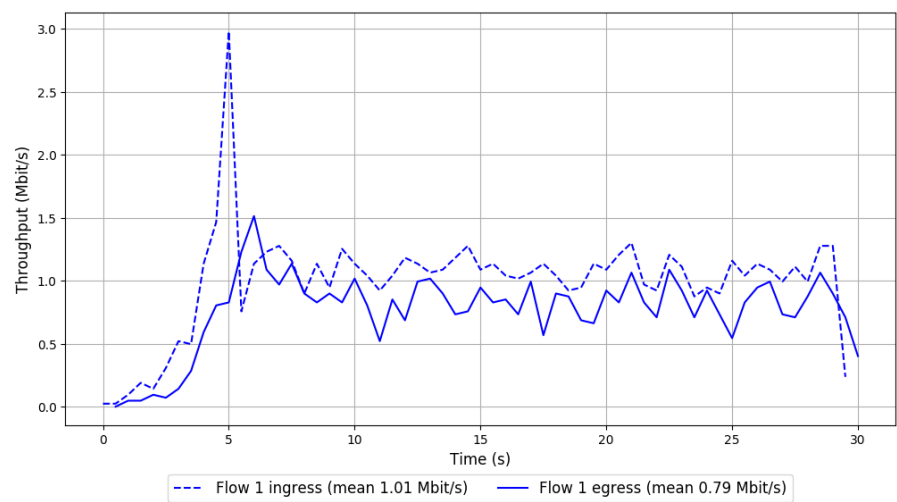
-- Flow 1:

Average throughput: 0.79 Mbit/s

95th percentile per-packet one-way delay: 246.234 ms

Loss rate: 22.74%

Run 3: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-07-31 23:07:06

End at: 2018-07-31 23:07:36

Local clock offset: -3.832 ms

Remote clock offset: 5.603 ms

Below is generated by plot.py at 2018-07-31 23:50:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.42 Mbit/s

95th percentile per-packet one-way delay: 373.994 ms

Loss rate: 0.05%

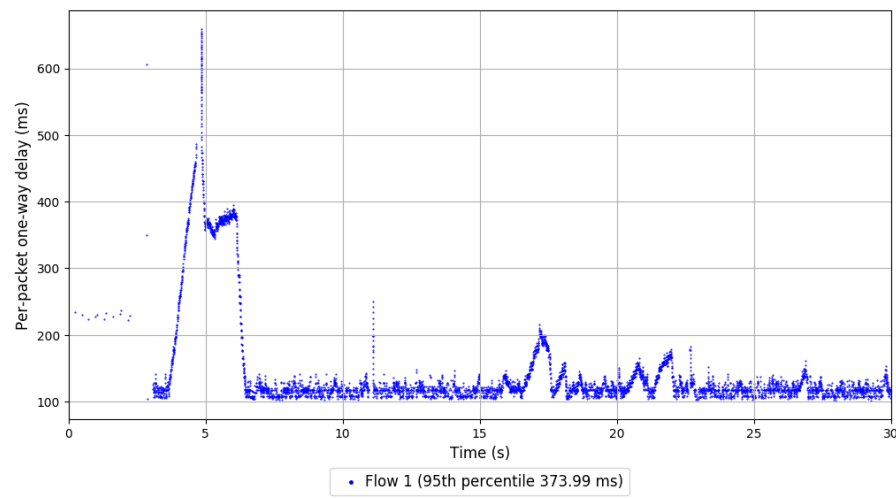
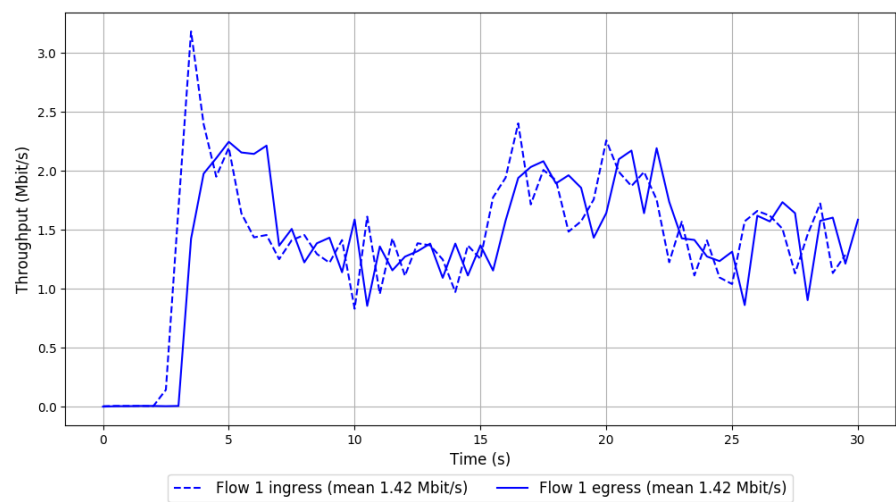
-- Flow 1:

Average throughput: 1.42 Mbit/s

95th percentile per-packet one-way delay: 373.994 ms

Loss rate: 0.05%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-07-31 23:26:14

End at: 2018-07-31 23:26:44

Local clock offset: -2.515 ms

Remote clock offset: 2.68 ms

Below is generated by plot.py at 2018-07-31 23:50:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.45 Mbit/s

95th percentile per-packet one-way delay: 598.726 ms

Loss rate: 0.14%

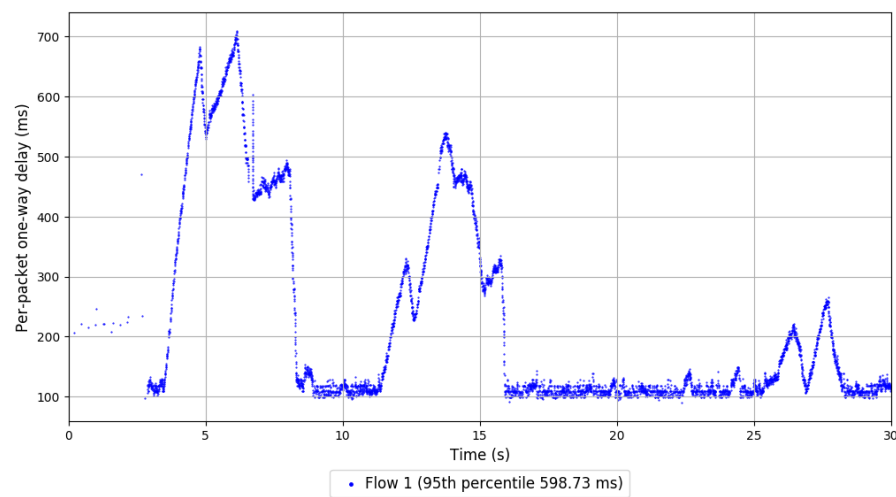
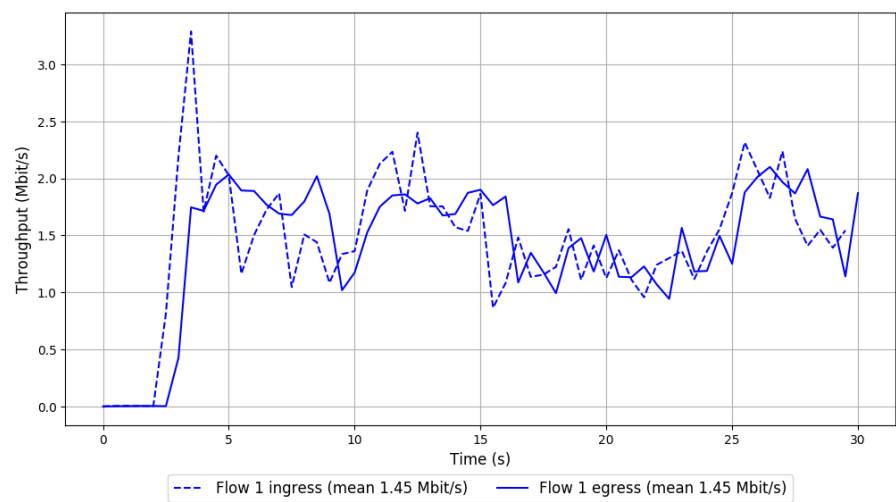
-- Flow 1:

Average throughput: 1.45 Mbit/s

95th percentile per-packet one-way delay: 598.726 ms

Loss rate: 0.14%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-07-31 23:45:19

End at: 2018-07-31 23:45:49

Local clock offset: -0.439 ms

Remote clock offset: 4.748 ms

Below is generated by plot.py at 2018-07-31 23:50:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.28 Mbit/s

95th percentile per-packet one-way delay: 1575.749 ms

Loss rate: 3.52%

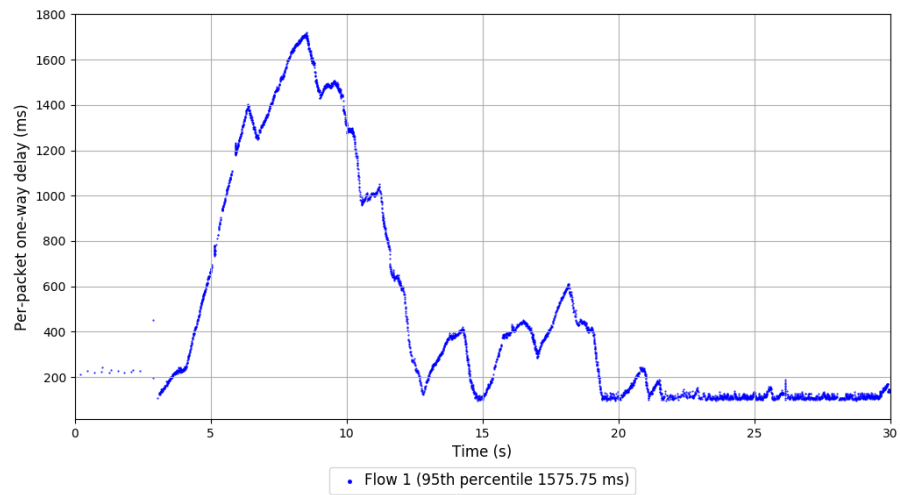
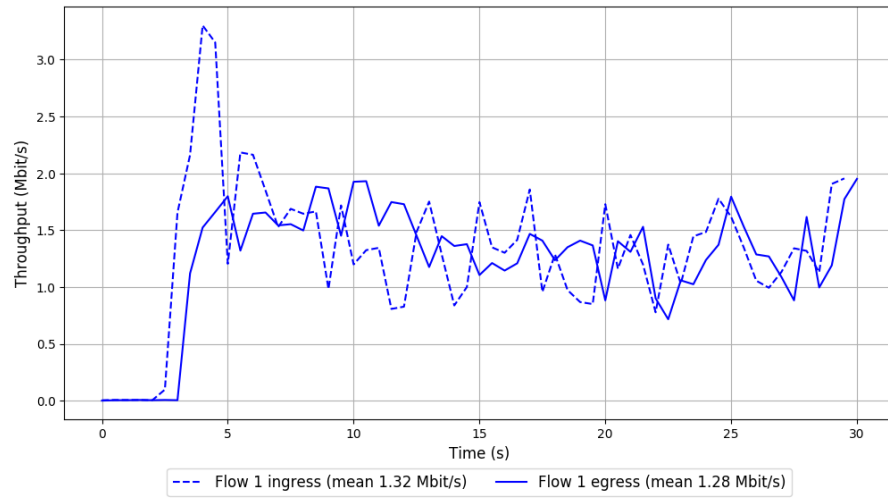
-- Flow 1:

Average throughput: 1.28 Mbit/s

95th percentile per-packet one-way delay: 1575.749 ms

Loss rate: 3.52%

Run 3: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-07-31 23:05:58

End at: 2018-07-31 23:06:28

Local clock offset: -4.156 ms

Remote clock offset: 2.942 ms

Below is generated by plot.py at 2018-07-31 23:50:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.51 Mbit/s

95th percentile per-packet one-way delay: 174.073 ms

Loss rate: 2.37%

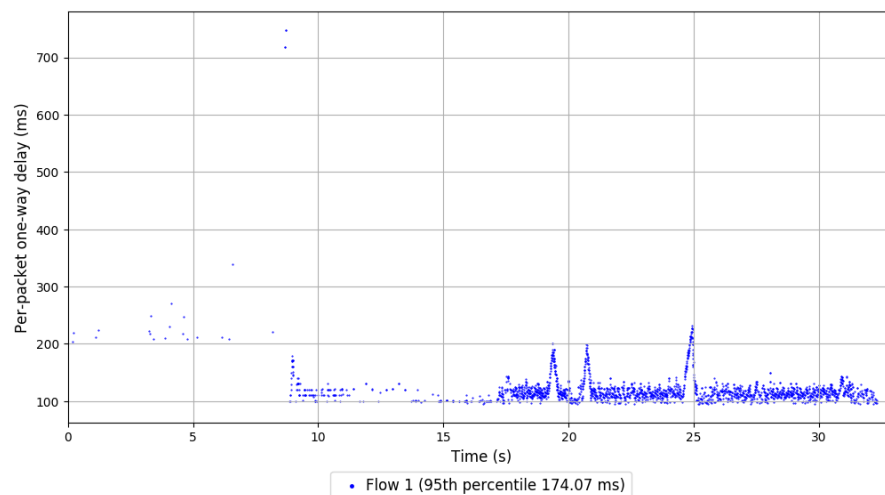
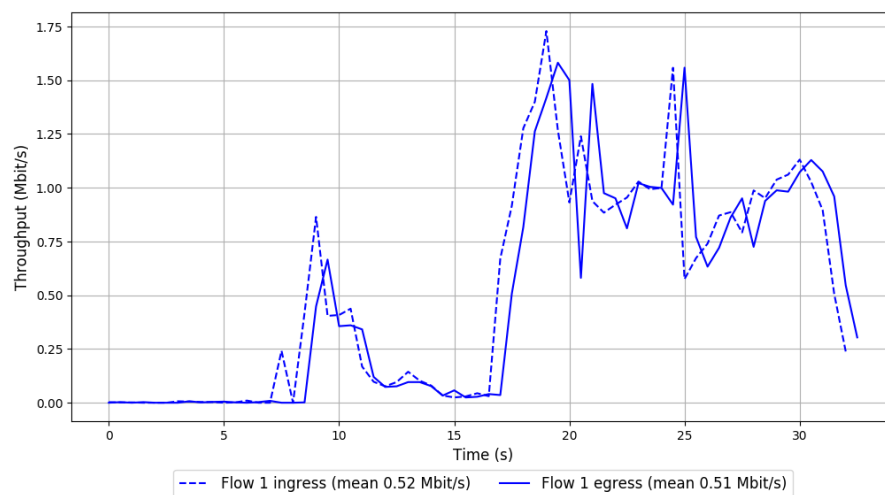
-- Flow 1:

Average throughput: 0.51 Mbit/s

95th percentile per-packet one-way delay: 174.073 ms

Loss rate: 2.37%

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-07-31 23:25:07

End at: 2018-07-31 23:25:37

Local clock offset: -2.371 ms

Remote clock offset: 2.785 ms

Below is generated by plot.py at 2018-07-31 23:50:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.43 Mbit/s

95th percentile per-packet one-way delay: 215.507 ms

Loss rate: 3.76%

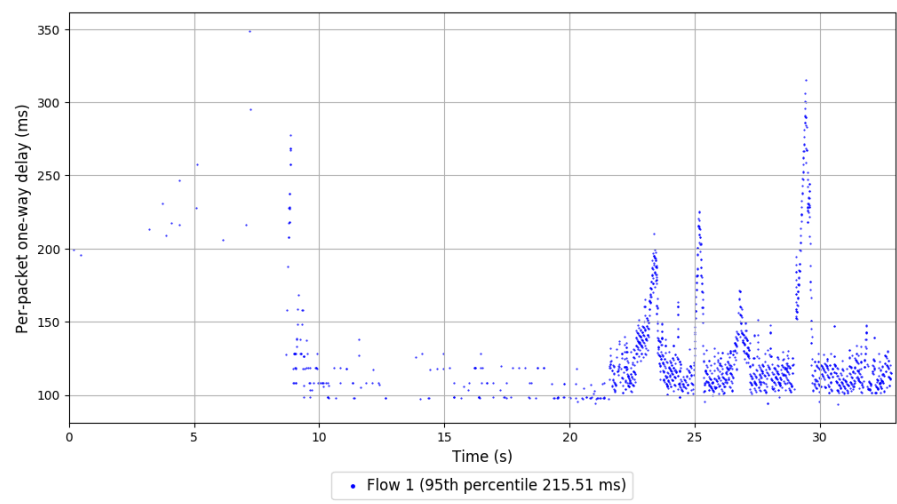
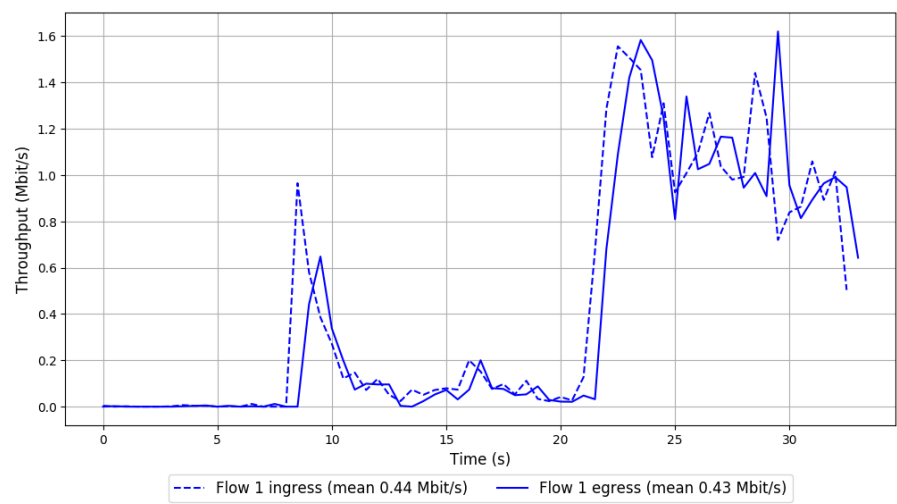
-- Flow 1:

Average throughput: 0.43 Mbit/s

95th percentile per-packet one-way delay: 215.507 ms

Loss rate: 3.76%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-07-31 23:44:12
End at: 2018-07-31 23:44:42
Local clock offset: -0.647 ms
Remote clock offset: 5.89 ms

Below is generated by plot.py at 2018-07-31 23:50:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 422.501 ms
Loss rate: 4.63%
-- Flow 1:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 422.501 ms
Loss rate: 4.63%

Run 3: Report of WebRTC media — Data Link

