

Pantheon Report

Generated at 2018-08-09 00:49:27 (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.

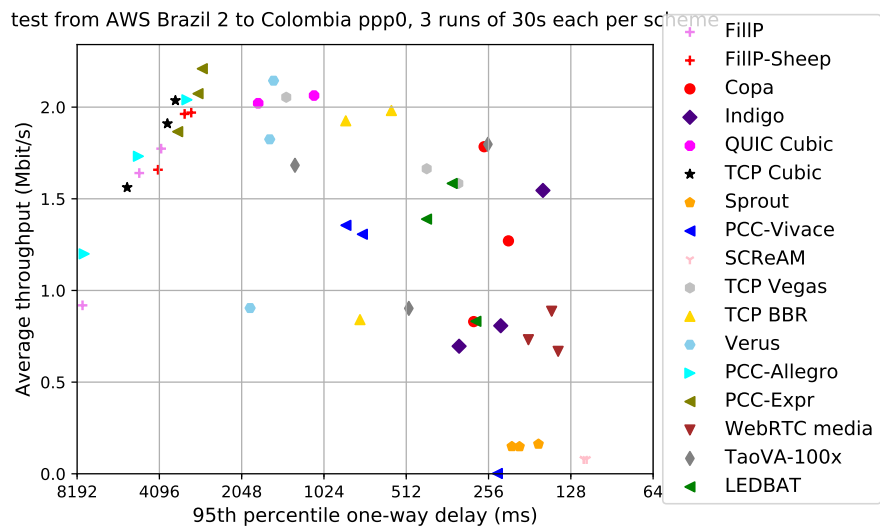
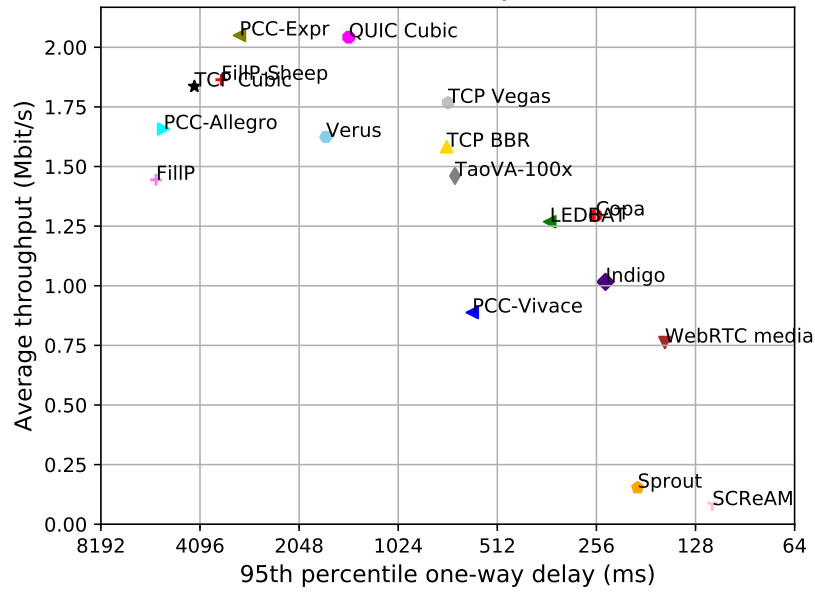
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

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

Git summary:

```
branch: master @ 7772df3413f4b07ba0096dfdd8e9d4c6dca623e3
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-quick @ 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	1.58	729.53	1.21
Copa	3	1.29	257.44	0.18
TCP Cubic	3	1.84	4259.78	16.51
FillP	3	1.44	5571.41	90.81
FillP-Sheep	3	1.86	3529.63	4.54
Indigo	3	1.02	240.30	0.14
LEDBAT	3	1.27	354.76	0.57
PCC-Allegro	3	1.66	5284.05	68.29
PCC-Expr	3	2.05	3108.09	65.58
QUIC Cubic	2	2.04	1447.55	4.33
SCReAM	3	0.08	113.80	0.09
Sprout	3	0.15	191.90	0.00
TaoVA-100x	3	1.46	688.53	0.28
TCP Vegas	3	1.76	722.70	0.92
Verus	3	1.62	1696.86	3.59
PCC-Vivace	3	0.89	610.03	0.77
WebRTC media	3	0.76	158.61	0.17

Run 1: Statistics of TCP BBR

Start at: 2018-08-08 23:54:06

End at: 2018-08-08 23:54:36

Local clock offset: -2.087 ms

Remote clock offset: 4.156 ms

Below is generated by plot.py at 2018-08-09 00:48:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.84 Mbit/s

95th percentile per-packet one-way delay: 756.035 ms

Loss rate: 1.18%

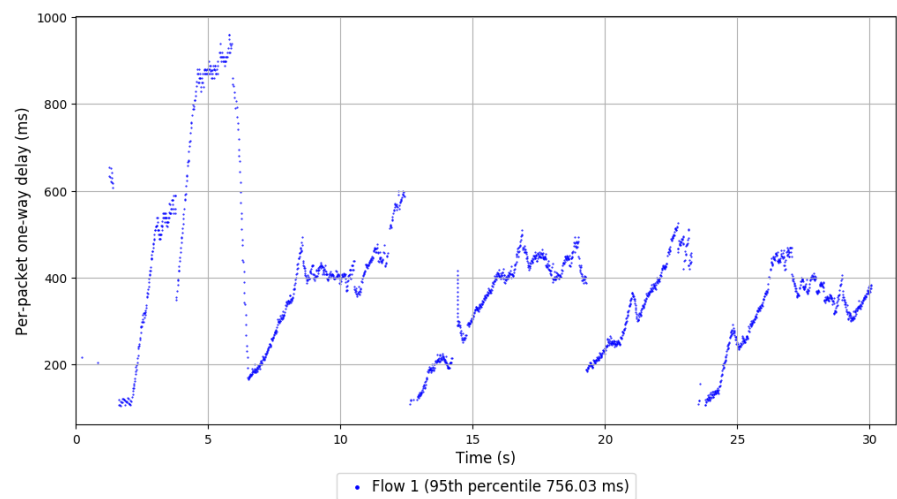
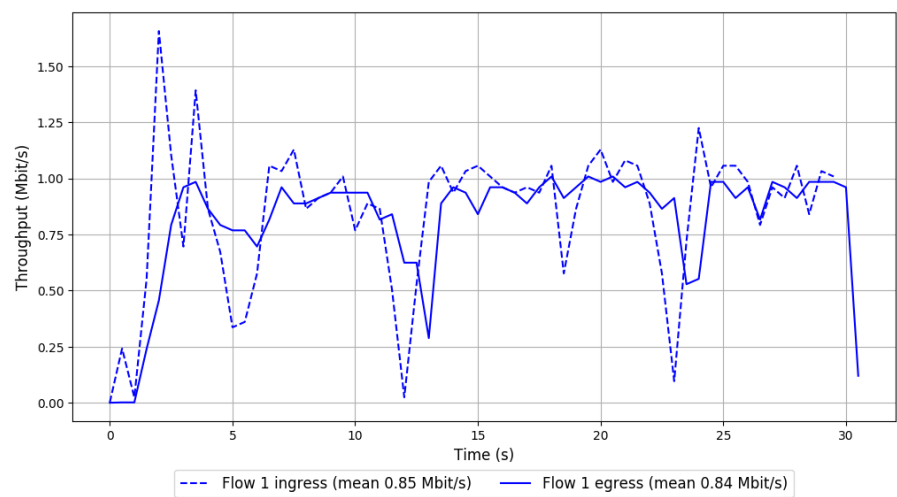
-- Flow 1:

Average throughput: 0.84 Mbit/s

95th percentile per-packet one-way delay: 756.035 ms

Loss rate: 1.18%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-08-09 00:13:14

End at: 2018-08-09 00:13:44

Local clock offset: -7.381 ms

Remote clock offset: 4.302 ms

Below is generated by plot.py at 2018-08-09 00:48:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.93 Mbit/s

95th percentile per-packet one-way delay: 852.311 ms

Loss rate: 1.32%

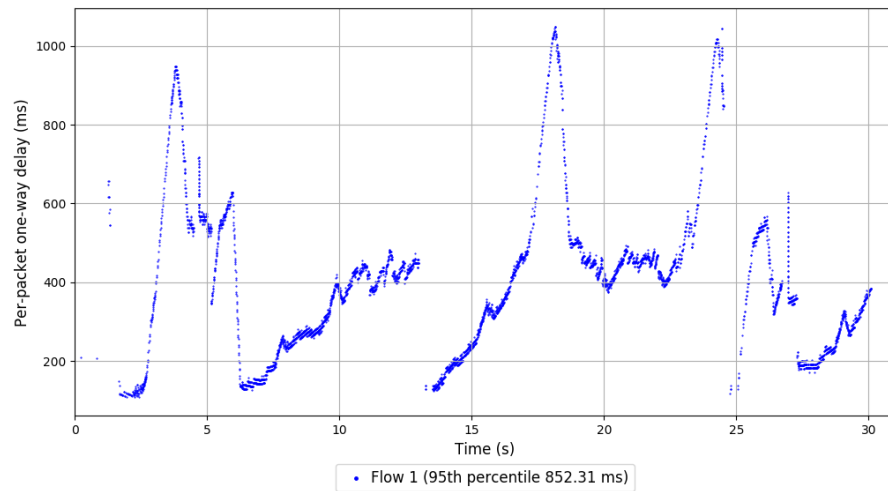
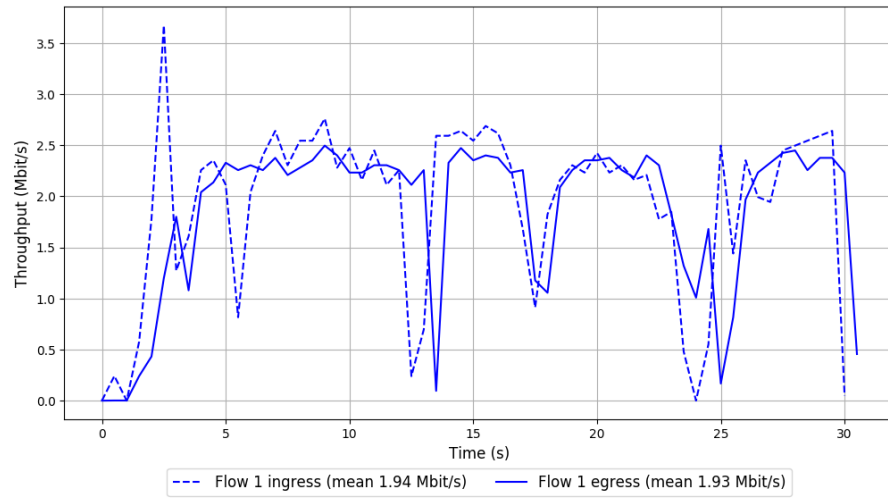
-- Flow 1:

Average throughput: 1.93 Mbit/s

95th percentile per-packet one-way delay: 852.311 ms

Loss rate: 1.32%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-08-09 00:32:24

End at: 2018-08-09 00:32:54

Local clock offset: -3.959 ms

Remote clock offset: 4.063 ms

Below is generated by plot.py at 2018-08-09 00:48:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.98 Mbit/s

95th percentile per-packet one-way delay: 580.246 ms

Loss rate: 1.12%

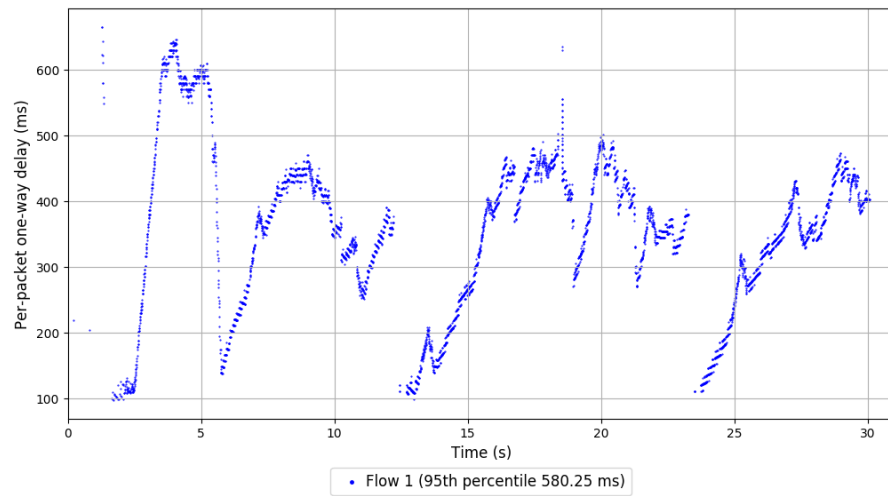
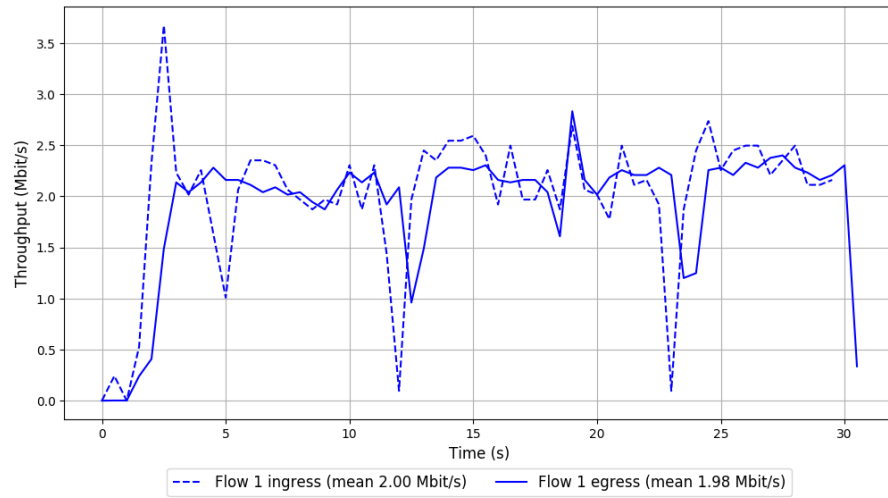
-- Flow 1:

Average throughput: 1.98 Mbit/s

95th percentile per-packet one-way delay: 580.246 ms

Loss rate: 1.12%

Run 3: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-08-09 00:07:36

End at: 2018-08-09 00:08:06

Local clock offset: -5.539 ms

Remote clock offset: 0.79 ms

Below is generated by plot.py at 2018-08-09 00:48:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.27 Mbit/s

95th percentile per-packet one-way delay: 216.501 ms

Loss rate: 0.10%

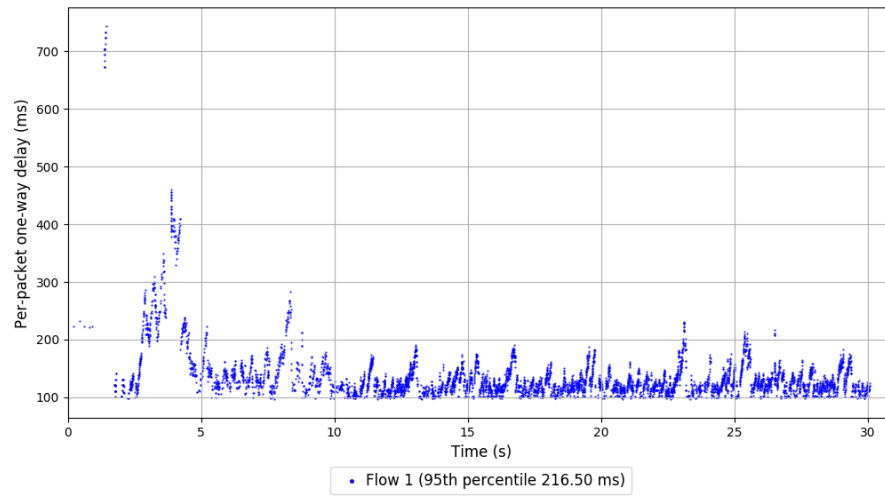
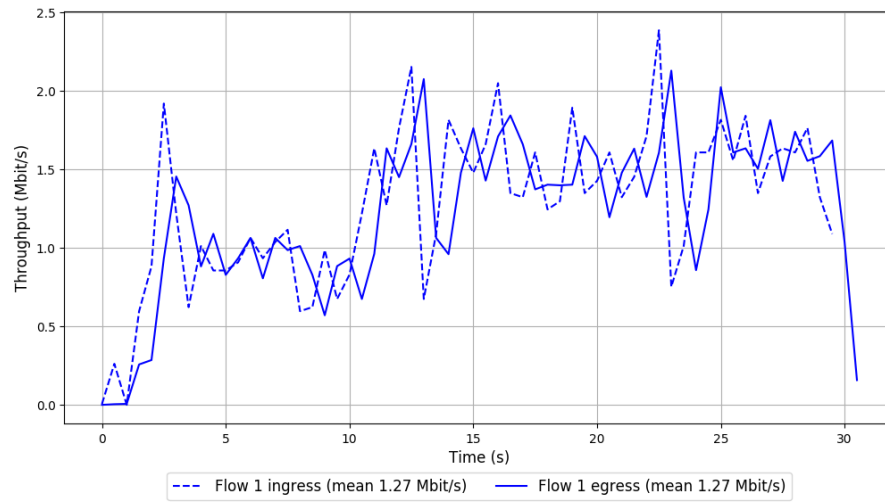
-- Flow 1:

Average throughput: 1.27 Mbit/s

95th percentile per-packet one-way delay: 216.501 ms

Loss rate: 0.10%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2018-08-09 00:26:46

End at: 2018-08-09 00:27:16

Local clock offset: -4.4 ms

Remote clock offset: 4.269 ms

Below is generated by plot.py at 2018-08-09 00:48:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.83 Mbit/s

95th percentile per-packet one-way delay: 290.092 ms

Loss rate: 0.20%

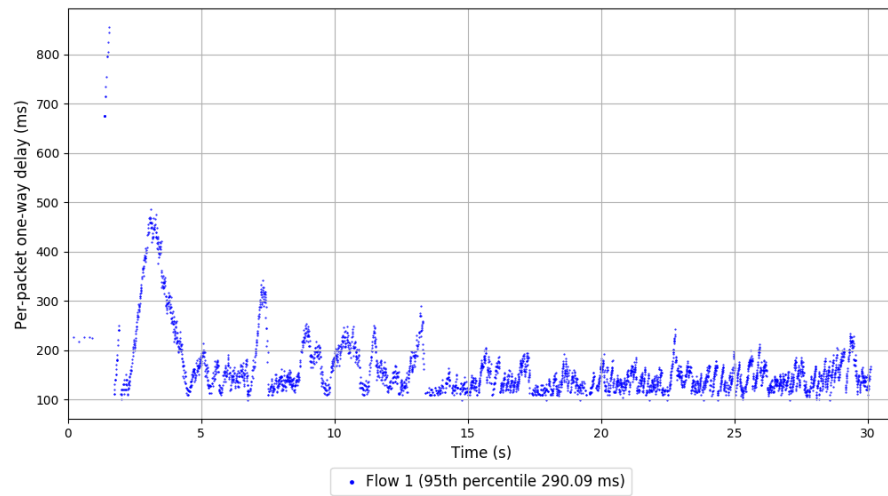
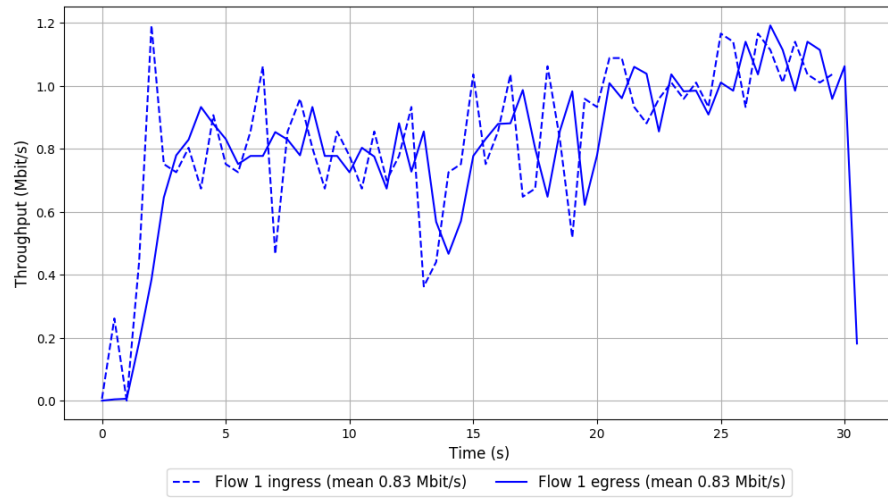
-- Flow 1:

Average throughput: 0.83 Mbit/s

95th percentile per-packet one-way delay: 290.092 ms

Loss rate: 0.20%

Run 2: Report of Copa — Data Link

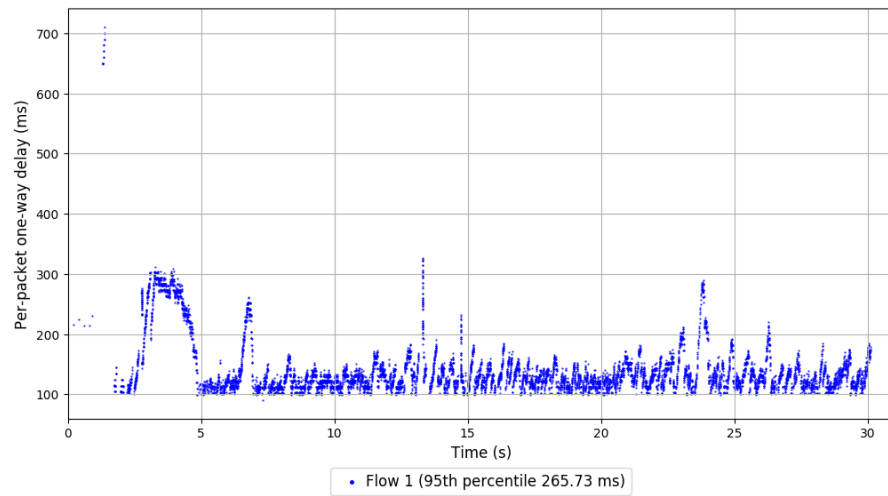
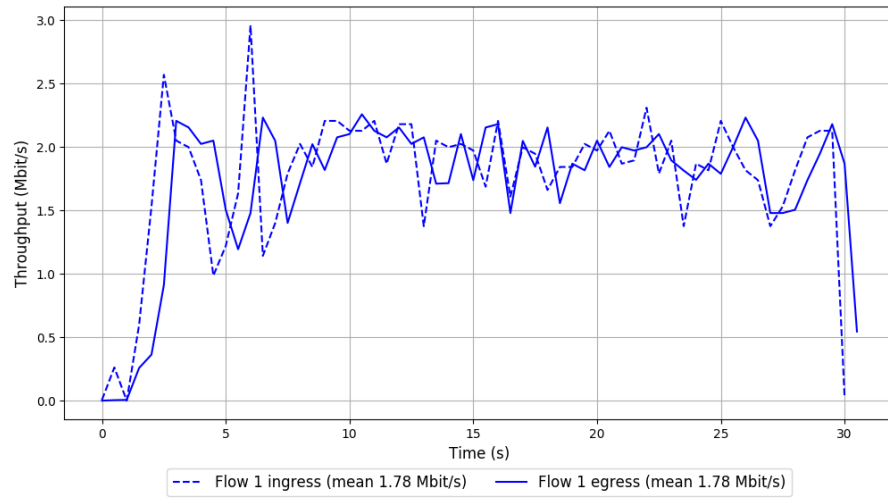


Run 3: Statistics of Copa

Start at: 2018-08-09 00:45:56
End at: 2018-08-09 00:46:26
Local clock offset: -4.116 ms
Remote clock offset: 2.665 ms

Below is generated by plot.py at 2018-08-09 00:48:55
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.78 Mbit/s
95th percentile per-packet one-way delay: 265.727 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 1.78 Mbit/s
95th percentile per-packet one-way delay: 265.727 ms
Loss rate: 0.24%

Run 3: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-08-09 00:09:52

End at: 2018-08-09 00:10:22

Local clock offset: -6.485 ms

Remote clock offset: 0.581 ms

Below is generated by plot.py at 2018-08-09 00:48:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.56 Mbit/s

95th percentile per-packet one-way delay: 5373.213 ms

Loss rate: 20.37%

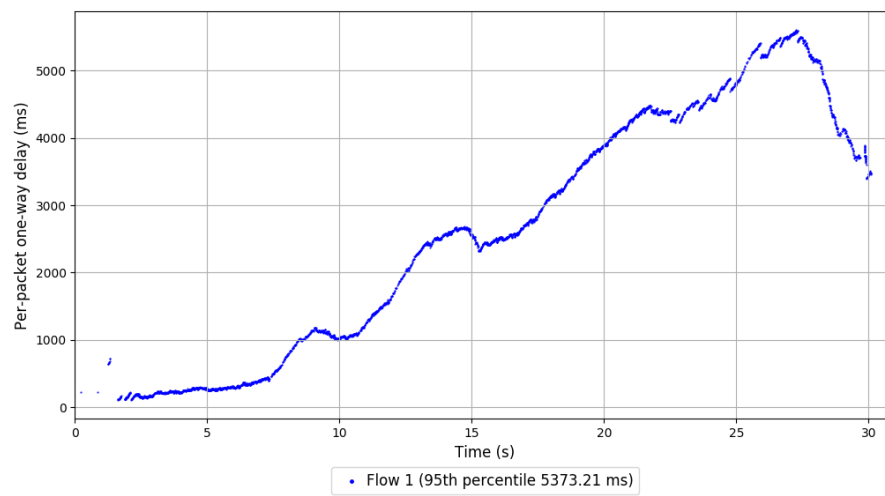
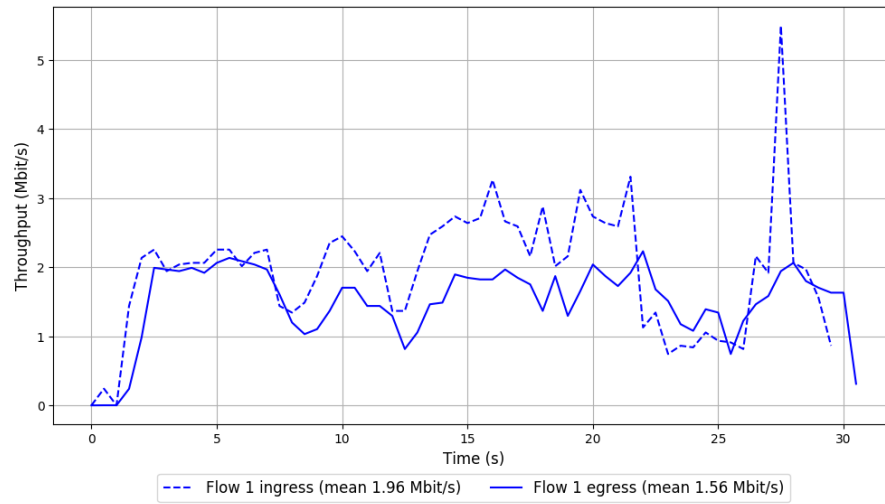
-- Flow 1:

Average throughput: 1.56 Mbit/s

95th percentile per-packet one-way delay: 5373.213 ms

Loss rate: 20.37%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-08-09 00:29:01

End at: 2018-08-09 00:29:31

Local clock offset: -4.151 ms

Remote clock offset: 5.132 ms

Below is generated by plot.py at 2018-08-09 00:48:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.91 Mbit/s

95th percentile per-packet one-way delay: 3827.832 ms

Loss rate: 14.40%

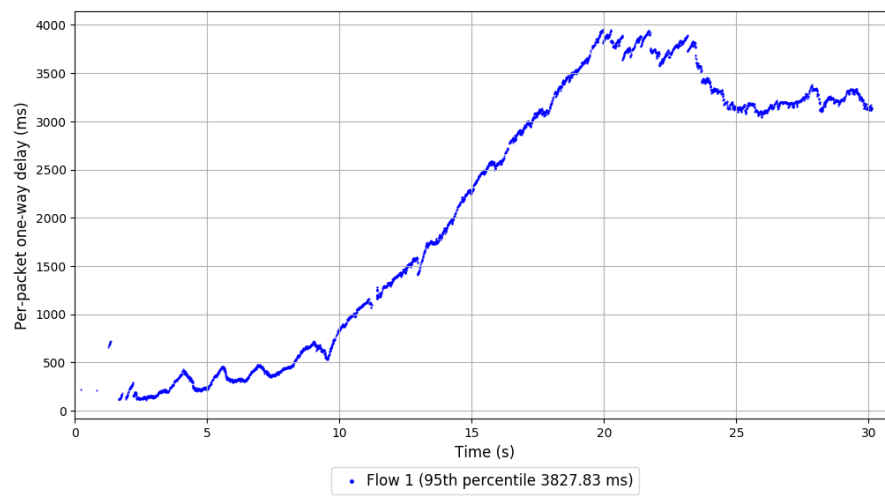
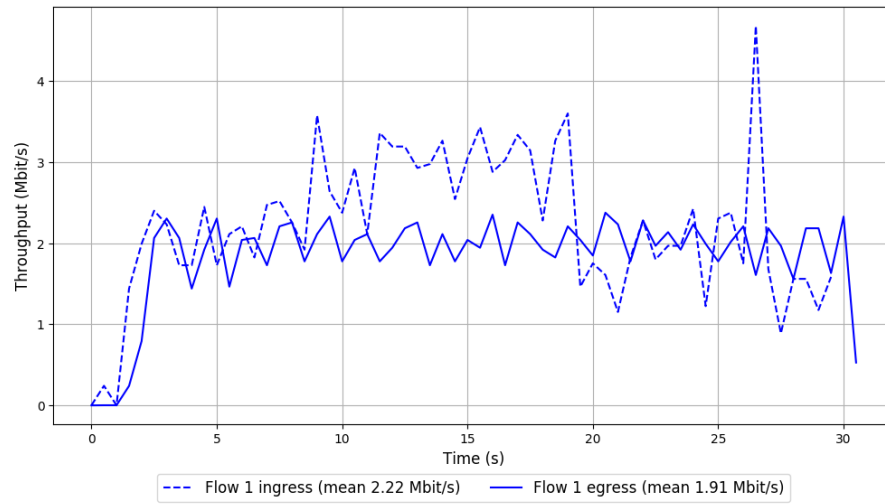
-- Flow 1:

Average throughput: 1.91 Mbit/s

95th percentile per-packet one-way delay: 3827.832 ms

Loss rate: 14.40%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2018-08-09 00:48:12

End at: 2018-08-09 00:48:42

Local clock offset: -4.874 ms

Remote clock offset: 2.595 ms

Below is generated by plot.py at 2018-08-09 00:48:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.04 Mbit/s

95th percentile per-packet one-way delay: 3578.298 ms

Loss rate: 14.75%

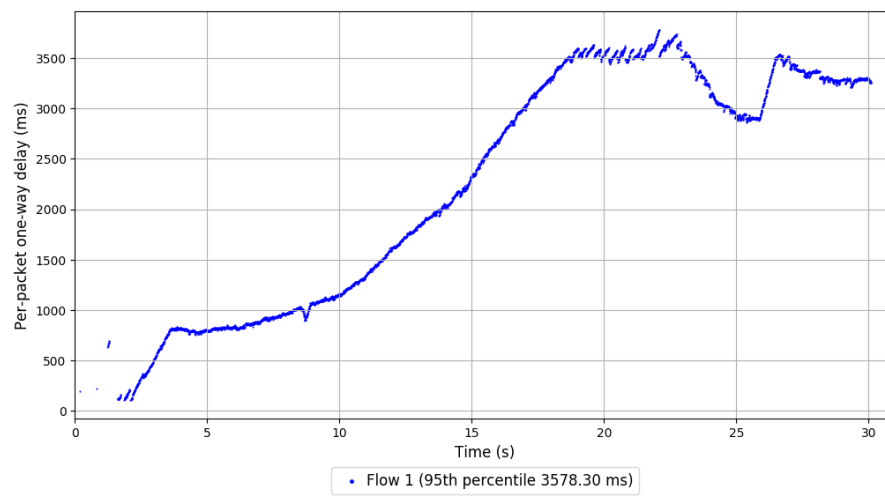
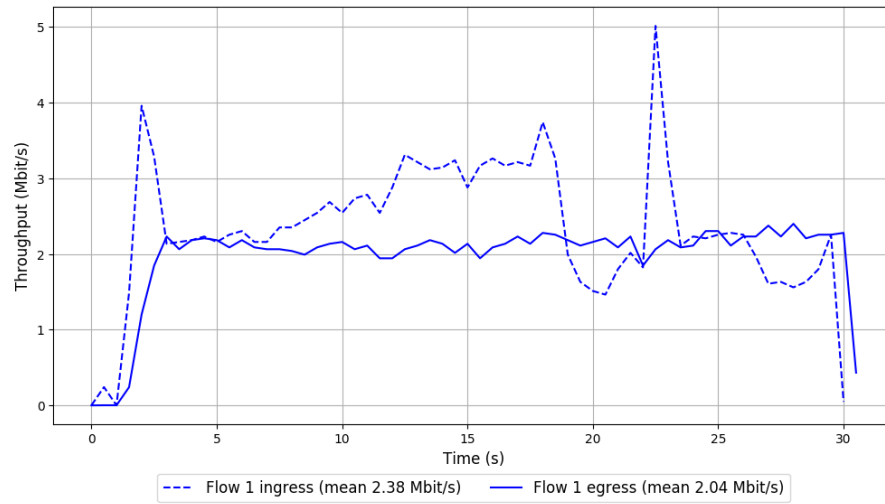
-- Flow 1:

Average throughput: 2.04 Mbit/s

95th percentile per-packet one-way delay: 3578.298 ms

Loss rate: 14.75%

Run 3: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-08-09 00:06:29

End at: 2018-08-09 00:06:59

Local clock offset: -5.035 ms

Remote clock offset: 3.556 ms

Below is generated by plot.py at 2018-08-09 00:49:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.77 Mbit/s

95th percentile per-packet one-way delay: 4035.561 ms

Loss rate: 87.17%

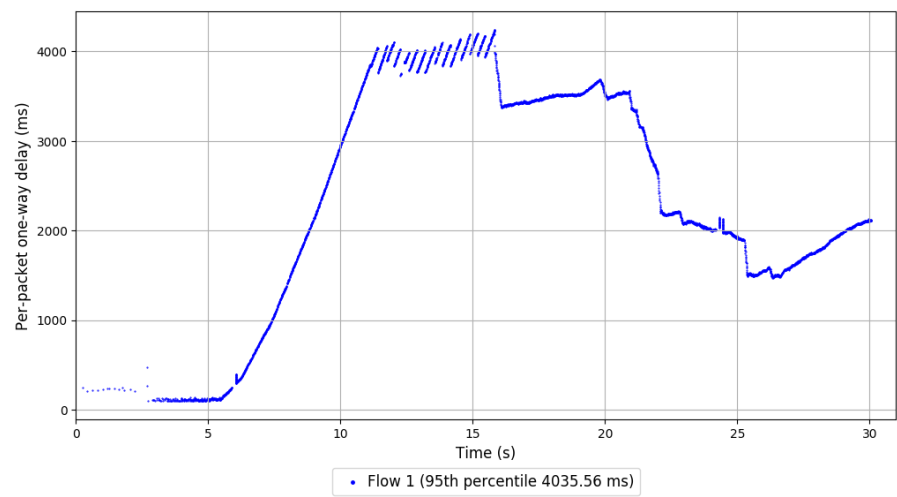
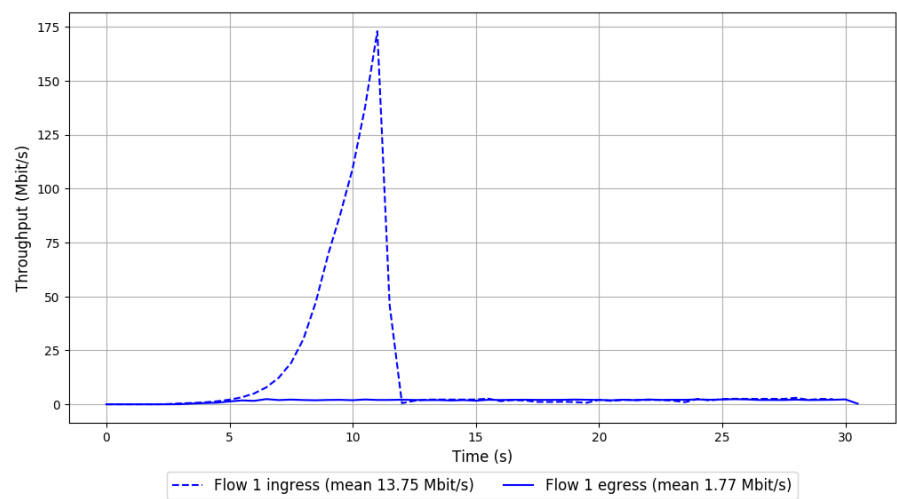
-- Flow 1:

Average throughput: 1.77 Mbit/s

95th percentile per-packet one-way delay: 4035.561 ms

Loss rate: 87.17%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-08-09 00:25:38

End at: 2018-08-09 00:26:08

Local clock offset: -4.608 ms

Remote clock offset: 0.381 ms

Below is generated by plot.py at 2018-08-09 00:49:13

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.92 Mbit/s

95th percentile per-packet one-way delay: 7826.172 ms

Loss rate: 96.50%

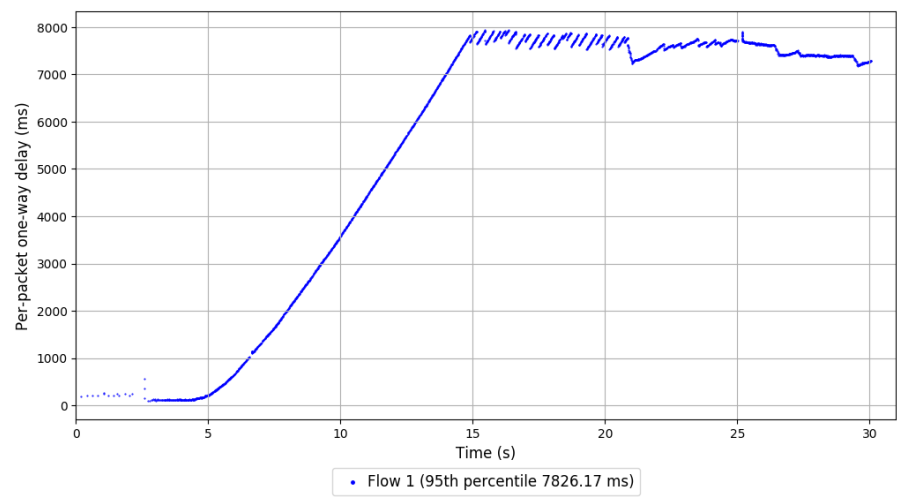
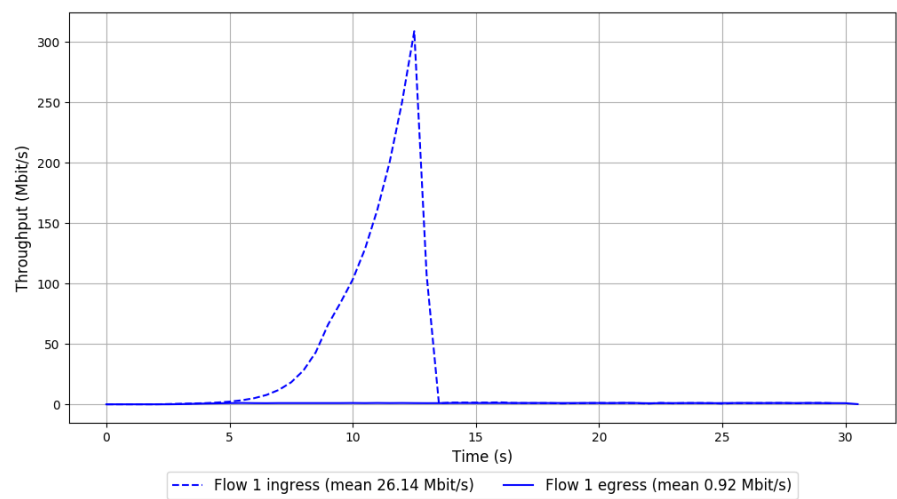
-- Flow 1:

Average throughput: 0.92 Mbit/s

95th percentile per-packet one-way delay: 7826.172 ms

Loss rate: 96.50%

Run 2: Report of FillP — Data Link

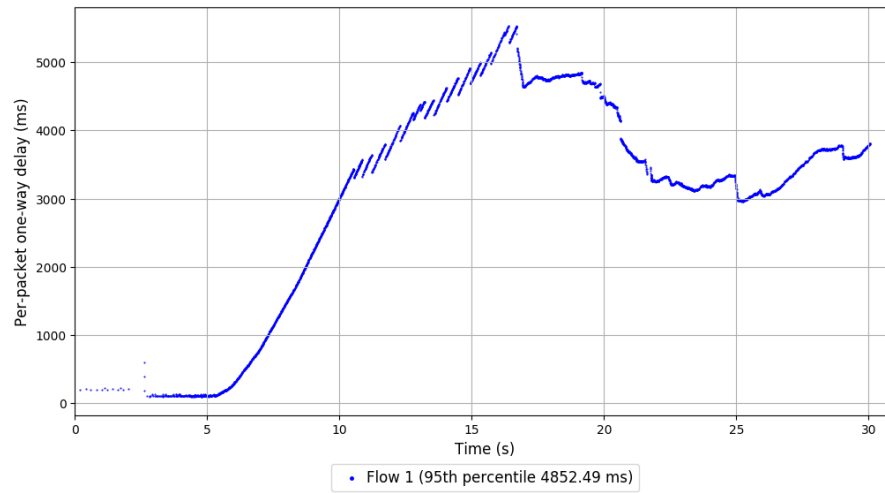
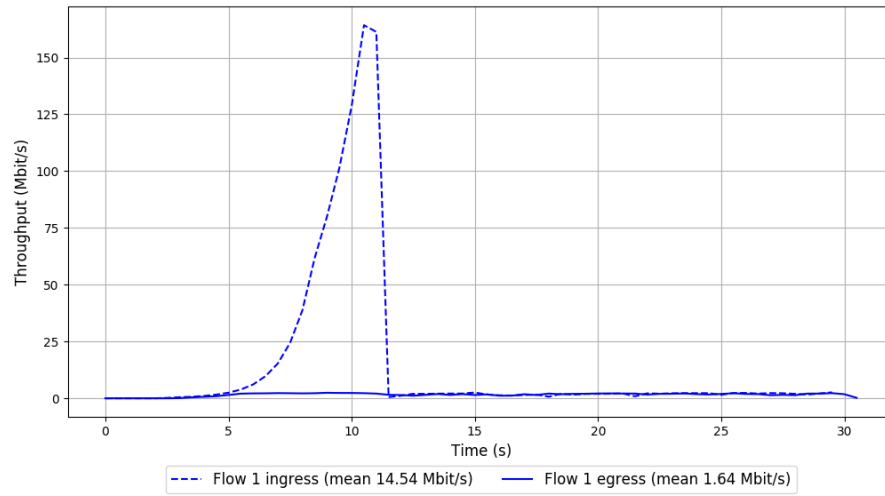


Run 3: Statistics of FillP

Start at: 2018-08-09 00:44:49
End at: 2018-08-09 00:45:19
Local clock offset: -4.074 ms
Remote clock offset: -1.108 ms

Below is generated by plot.py at 2018-08-09 00:49:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.64 Mbit/s
95th percentile per-packet one-way delay: 4852.487 ms
Loss rate: 88.76%
-- Flow 1:
Average throughput: 1.64 Mbit/s
95th percentile per-packet one-way delay: 4852.487 ms
Loss rate: 88.76%

Run 3: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2018-08-09 00:08:44

End at: 2018-08-09 00:09:14

Local clock offset: -6.127 ms

Remote clock offset: 0.745 ms

Below is generated by plot.py at 2018-08-09 00:49:13

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.66 Mbit/s

95th percentile per-packet one-way delay: 4145.397 ms

Loss rate: 8.14%

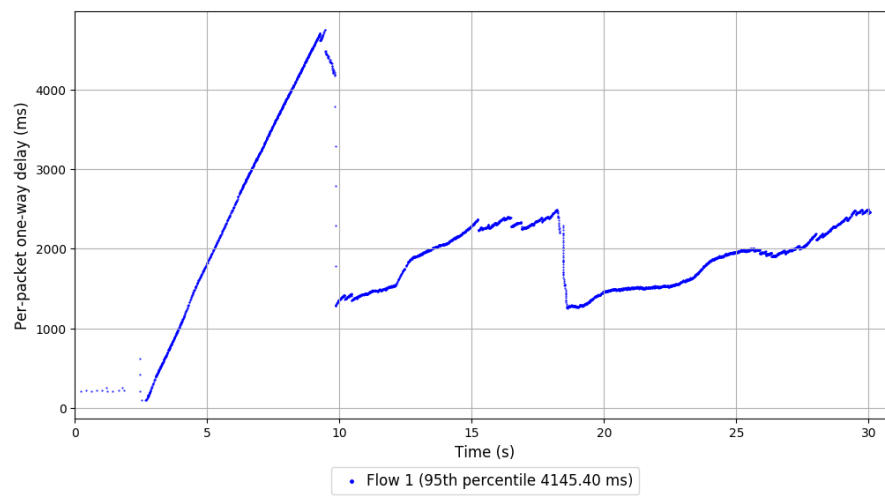
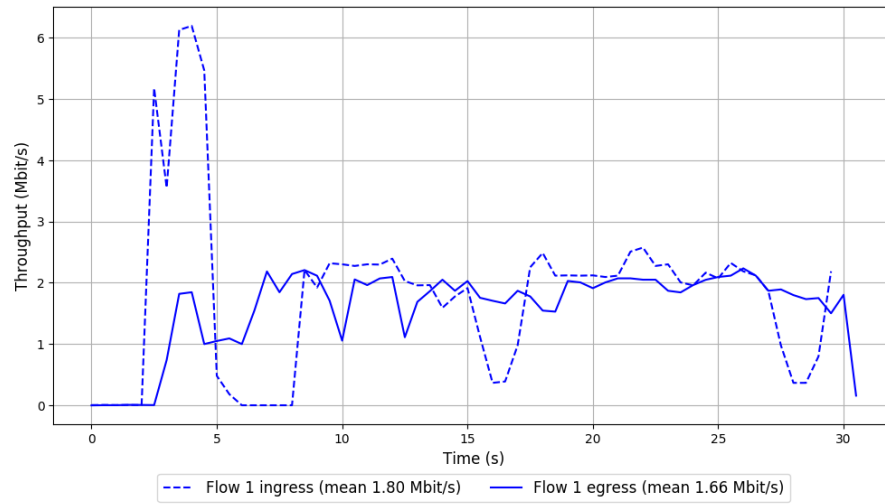
-- Flow 1:

Average throughput: 1.66 Mbit/s

95th percentile per-packet one-way delay: 4145.397 ms

Loss rate: 8.14%

Run 1: Report of FillP-Sheep — Data Link



Run 2: Statistics of FillP-Sheep

Start at: 2018-08-09 00:27:53

End at: 2018-08-09 00:28:23

Local clock offset: -4.269 ms

Remote clock offset: 3.021 ms

Below is generated by plot.py at 2018-08-09 00:49:13

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.96 Mbit/s

95th percentile per-packet one-way delay: 3311.231 ms

Loss rate: 2.17%

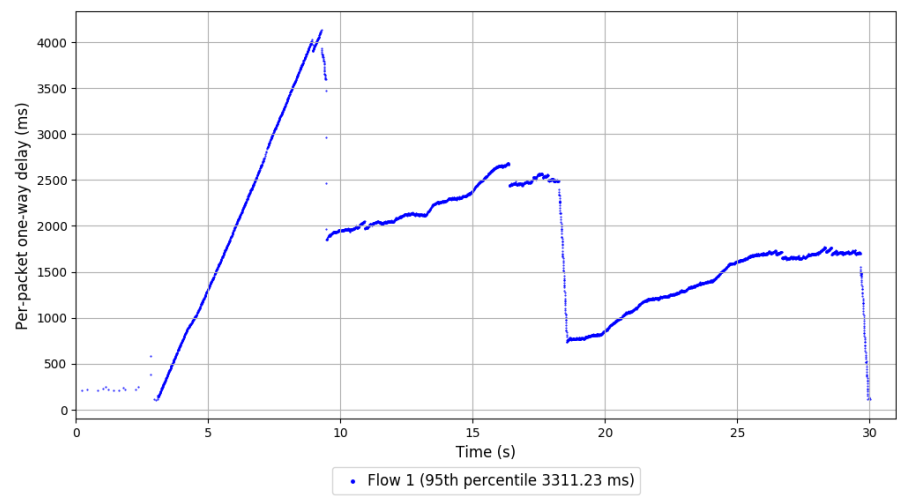
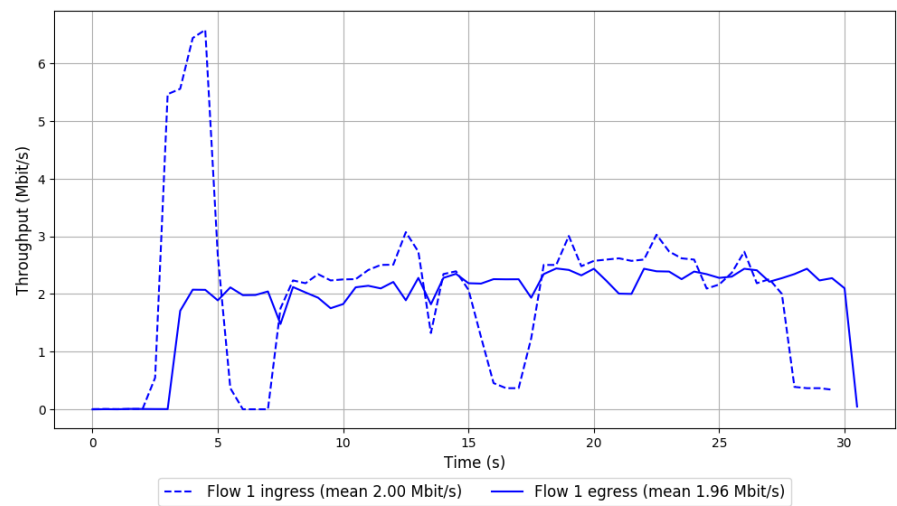
-- Flow 1:

Average throughput: 1.96 Mbit/s

95th percentile per-packet one-way delay: 3311.231 ms

Loss rate: 2.17%

Run 2: Report of FillP-Sheep — Data Link



Run 3: Statistics of FillP-Sheep

Start at: 2018-08-09 00:47:04

End at: 2018-08-09 00:47:34

Local clock offset: -4.575 ms

Remote clock offset: -1.12 ms

Below is generated by plot.py at 2018-08-09 00:49:13

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.97 Mbit/s

95th percentile per-packet one-way delay: 3132.248 ms

Loss rate: 3.31%

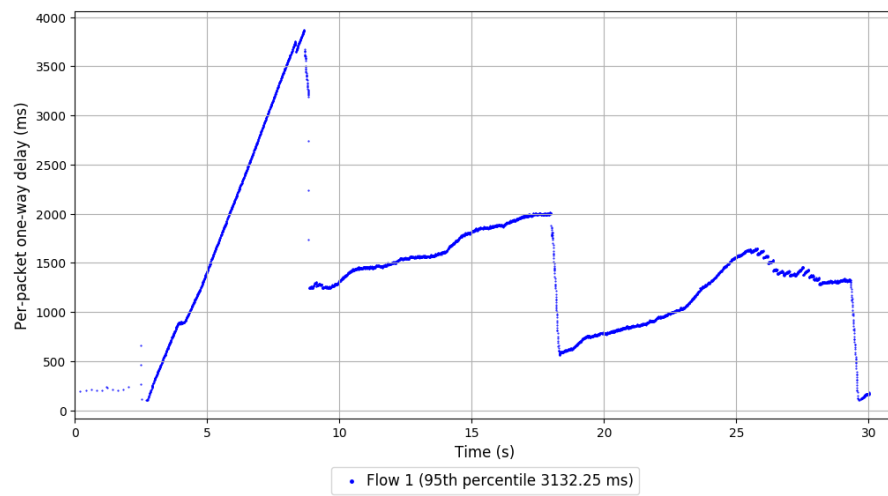
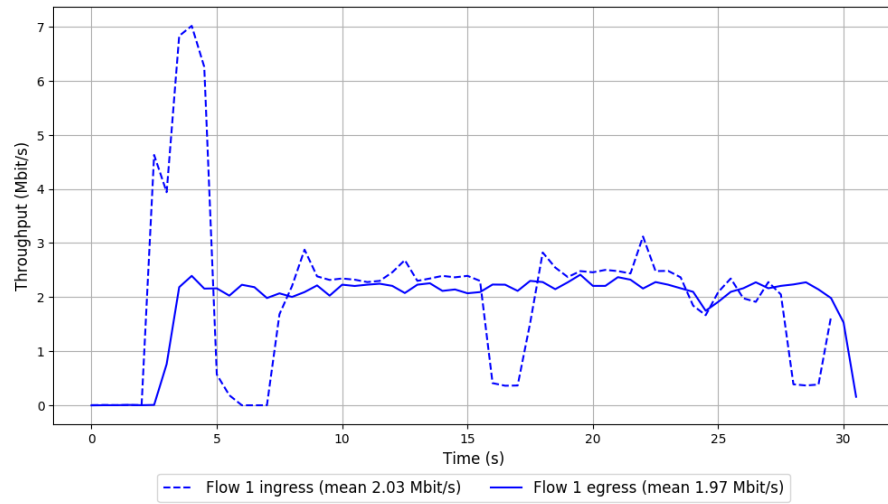
-- Flow 1:

Average throughput: 1.97 Mbit/s

95th percentile per-packet one-way delay: 3132.248 ms

Loss rate: 3.31%

Run 3: Report of FillP-Sheep — Data Link

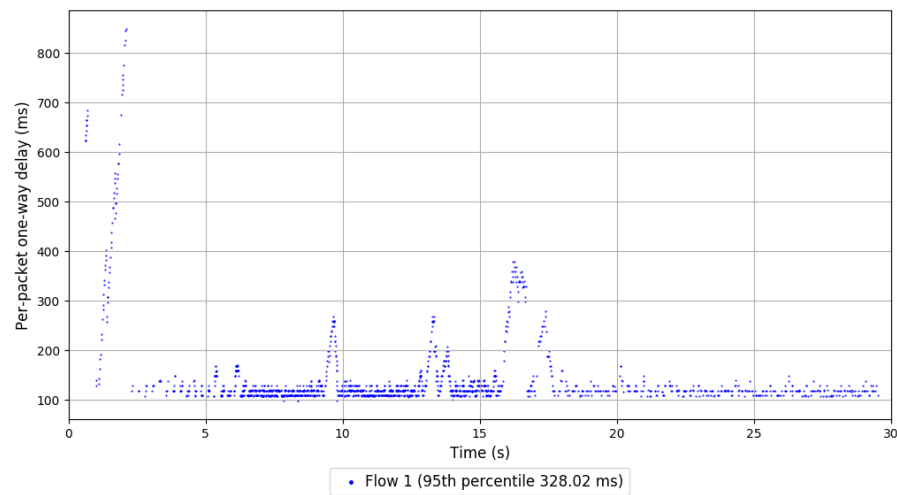
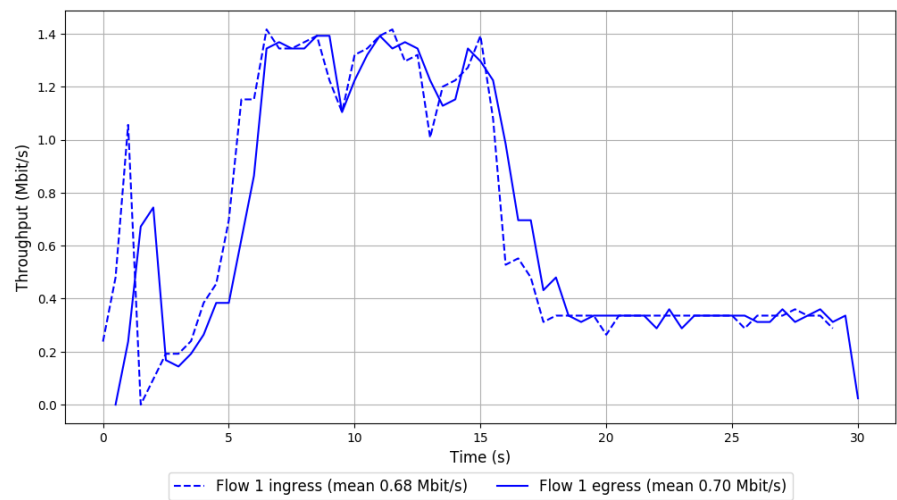


```
Run 1: Statistics of Indigo

Start at: 2018-08-08 23:52:59
End at: 2018-08-08 23:53:29
Local clock offset: -2.176 ms
Remote clock offset: 4.316 ms

# Below is generated by plot.py at 2018-08-09 00:49:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.70 Mbit/s
95th percentile per-packet one-way delay: 328.021 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 0.70 Mbit/s
95th percentile per-packet one-way delay: 328.021 ms
Loss rate: 0.06%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-08-09 00:12:07

End at: 2018-08-09 00:12:37

Local clock offset: -7.127 ms

Remote clock offset: 3.357 ms

Below is generated by plot.py at 2018-08-09 00:49:13

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.55 Mbit/s

95th percentile per-packet one-way delay: 161.896 ms

Loss rate: 0.05%

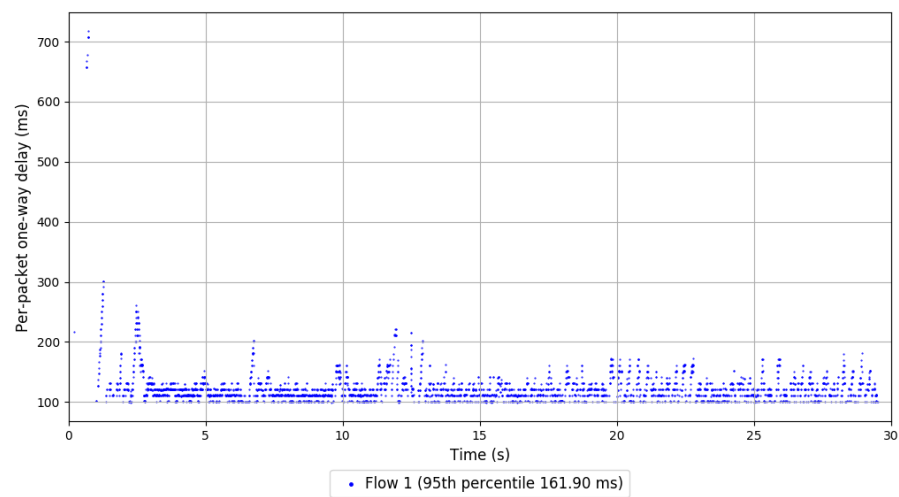
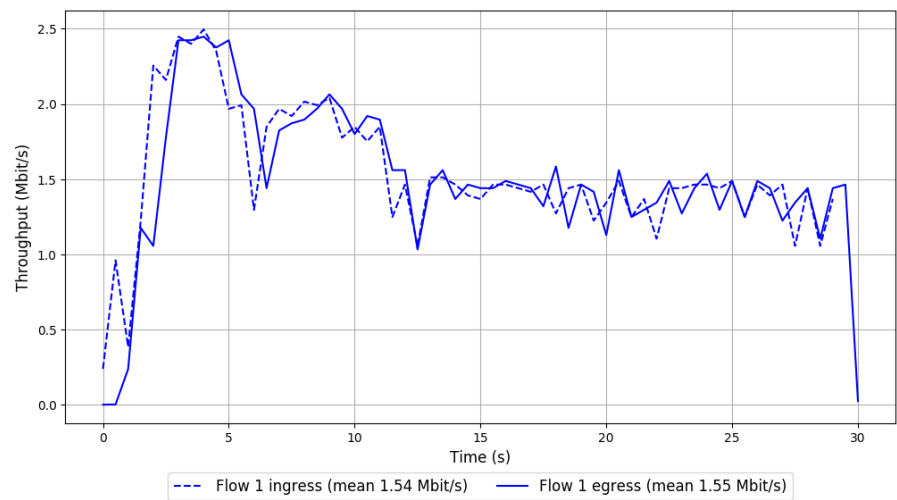
-- Flow 1:

Average throughput: 1.55 Mbit/s

95th percentile per-packet one-way delay: 161.896 ms

Loss rate: 0.05%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-08-09 00:31:16

End at: 2018-08-09 00:31:46

Local clock offset: -4.006 ms

Remote clock offset: 0.277 ms

Below is generated by plot.py at 2018-08-09 00:49:13

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.81 Mbit/s

95th percentile per-packet one-way delay: 230.996 ms

Loss rate: 0.30%

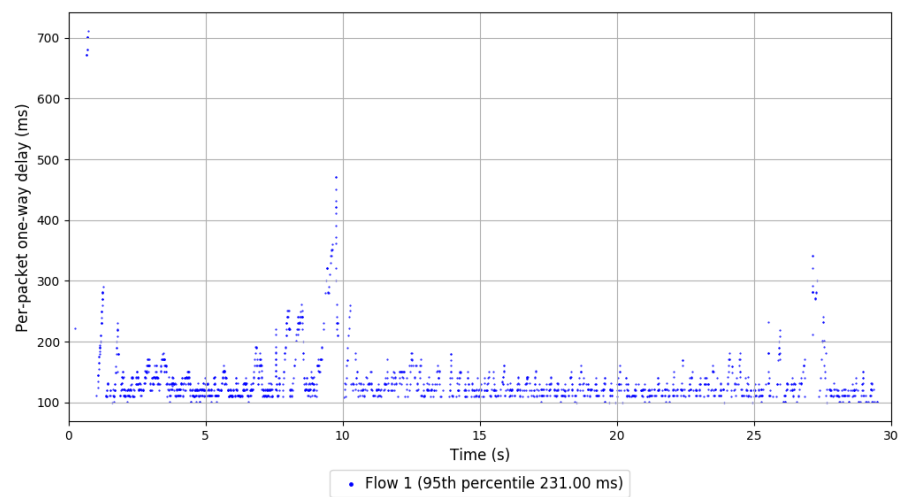
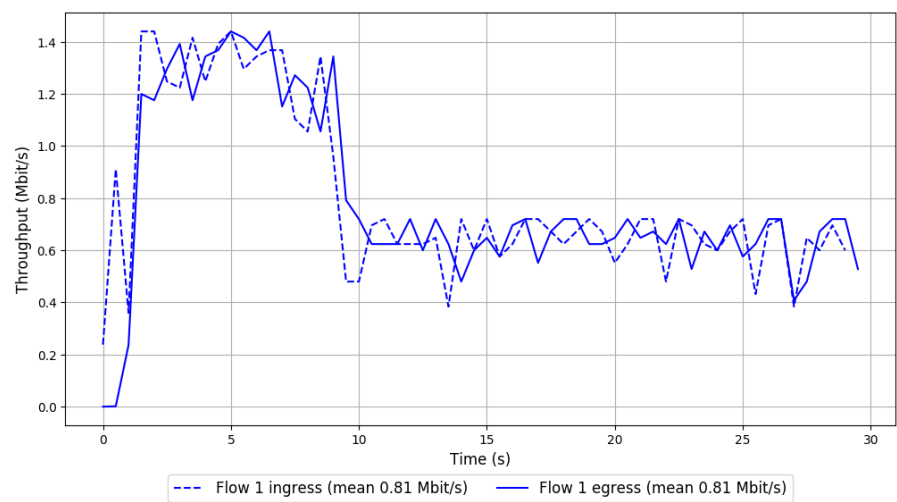
-- Flow 1:

Average throughput: 0.81 Mbit/s

95th percentile per-packet one-way delay: 230.996 ms

Loss rate: 0.30%

Run 3: Report of Indigo — Data Link

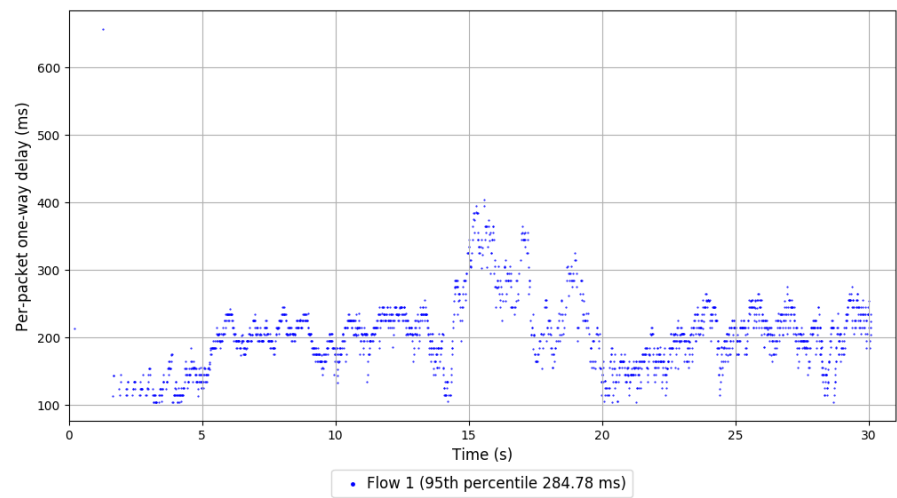
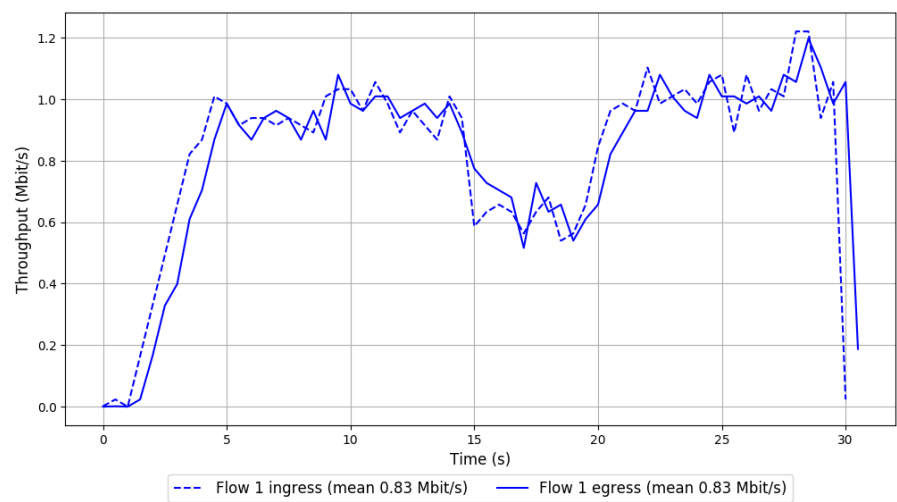


```
Run 1: Statistics of LEDBAT

Start at: 2018-08-08 23:56:21
End at: 2018-08-08 23:56:51
Local clock offset: -2.058 ms
Remote clock offset: 1.234 ms

# Below is generated by plot.py at 2018-08-09 00:49:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 284.781 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 284.781 ms
Loss rate: 0.66%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-08-09 00:15:30

End at: 2018-08-09 00:16:00

Local clock offset: -7.824 ms

Remote clock offset: 0.662 ms

Below is generated by plot.py at 2018-08-09 00:49:13

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.39 Mbit/s

95th percentile per-packet one-way delay: 431.686 ms

Loss rate: 0.65%

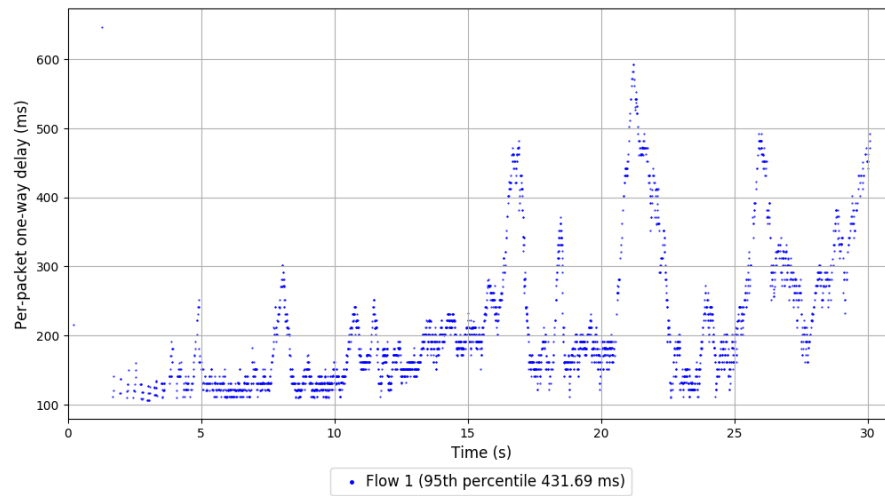
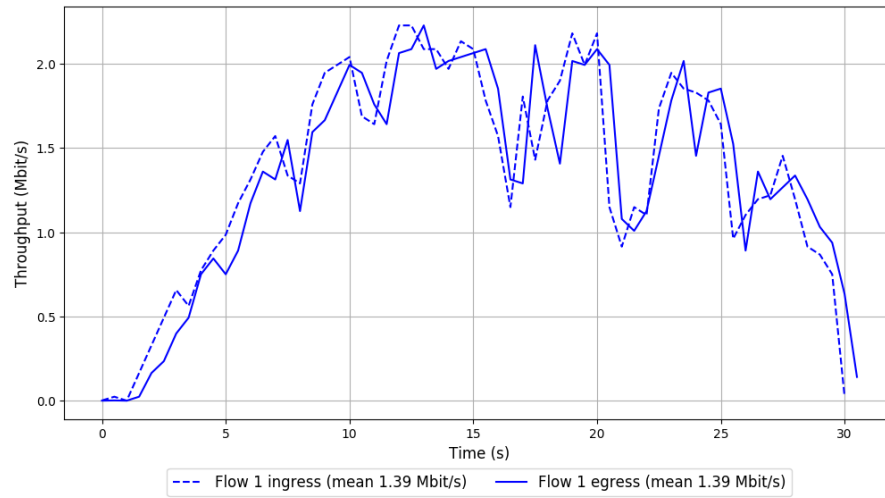
-- Flow 1:

Average throughput: 1.39 Mbit/s

95th percentile per-packet one-way delay: 431.686 ms

Loss rate: 0.65%

Run 2: Report of LEDBAT — Data Link

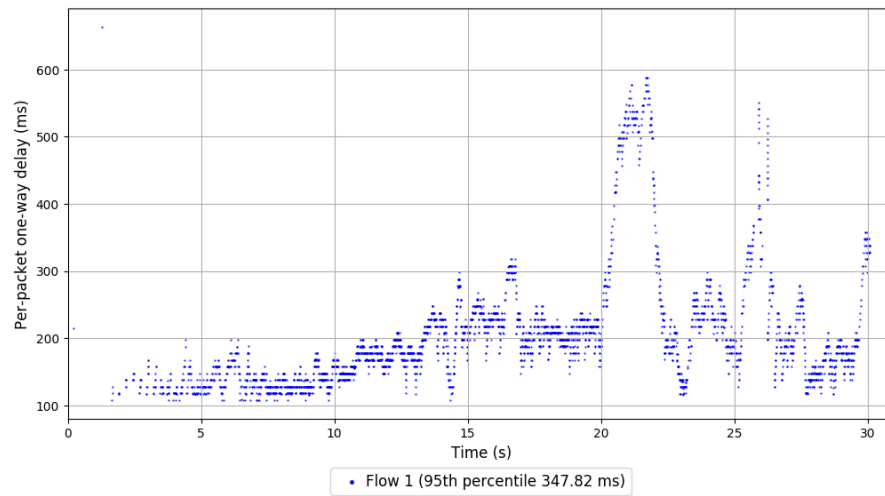
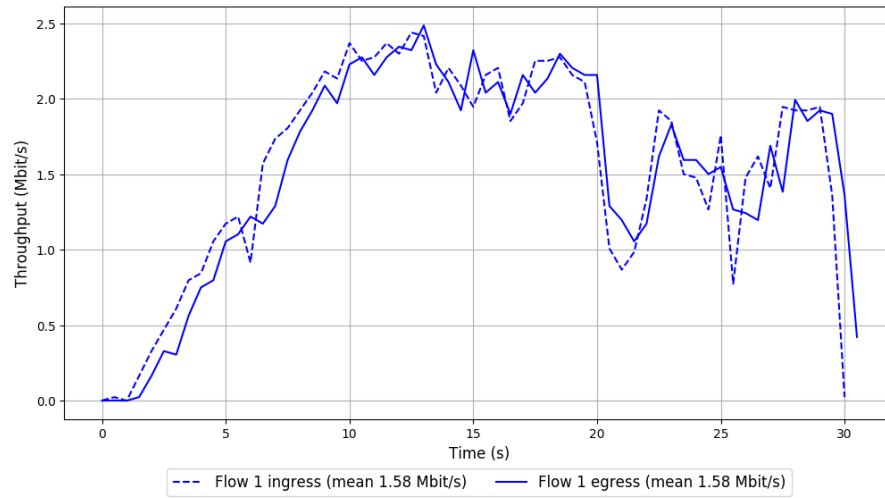


Run 3: Statistics of LEDBAT

Start at: 2018-08-09 00:34:39
End at: 2018-08-09 00:35:10
Local clock offset: -3.893 ms
Remote clock offset: -0.824 ms

Below is generated by plot.py at 2018-08-09 00:49:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.58 Mbit/s
95th percentile per-packet one-way delay: 347.825 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 1.58 Mbit/s
95th percentile per-packet one-way delay: 347.825 ms
Loss rate: 0.39%

Run 3: Report of LEDBAT — Data Link

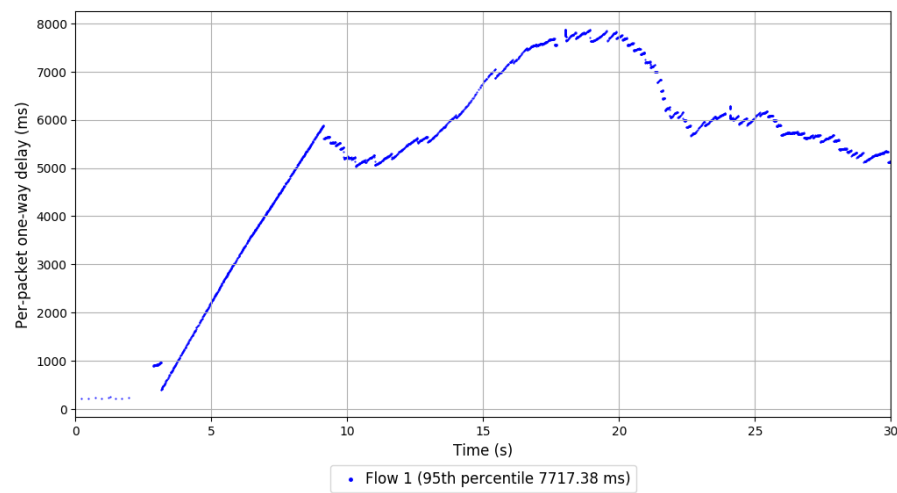
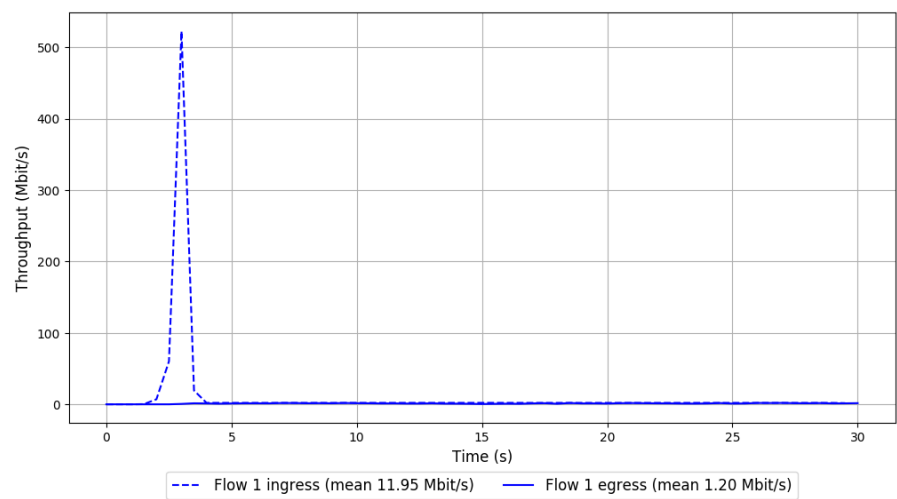


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-08-09 00:00:51
End at: 2018-08-09 00:01:21
Local clock offset: -2.048 ms
Remote clock offset: 1.022 ms

# Below is generated by plot.py at 2018-08-09 00:49:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 7717.380 ms
Loss rate: 90.01%
-- Flow 1:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 7717.380 ms
Loss rate: 90.01%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-08-09 00:20:00

End at: 2018-08-09 00:20:30

Local clock offset: -6.079 ms

Remote clock offset: 4.319 ms

Below is generated by plot.py at 2018-08-09 00:49:13

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.73 Mbit/s

95th percentile per-packet one-way delay: 4887.709 ms

Loss rate: 56.14%

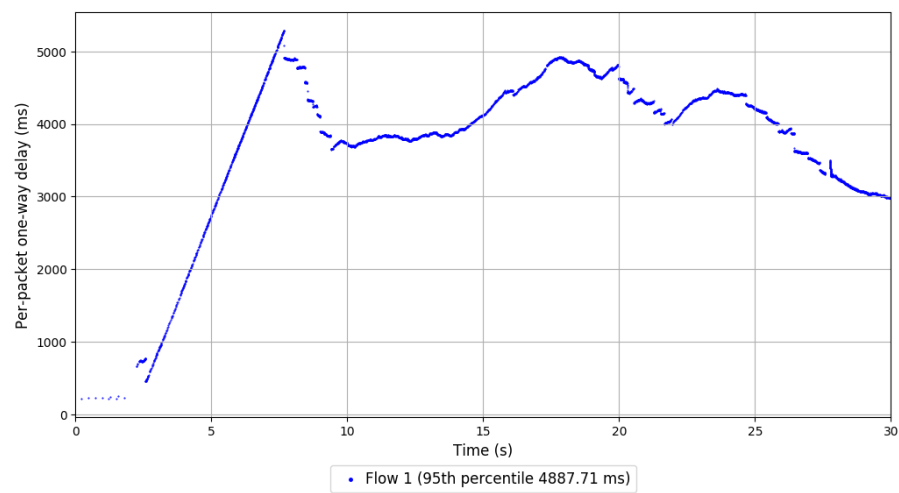
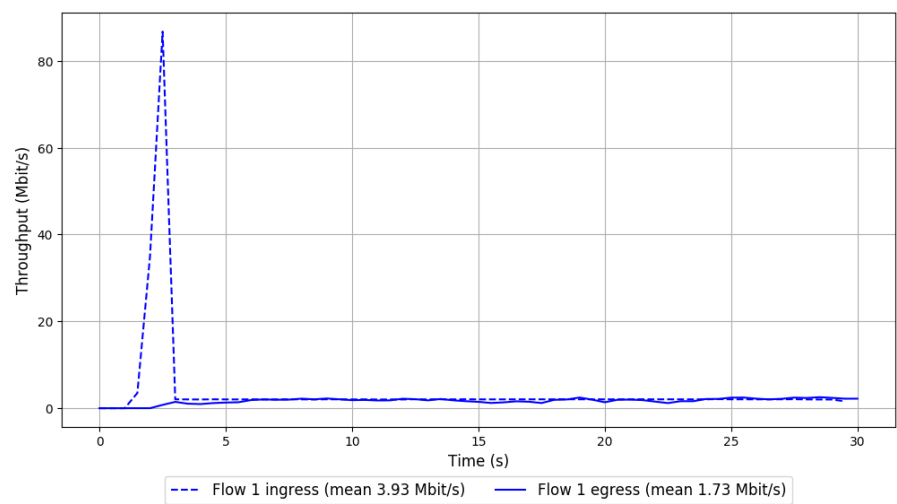
-- Flow 1:

Average throughput: 1.73 Mbit/s

95th percentile per-packet one-way delay: 4887.709 ms

Loss rate: 56.14%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-08-09 00:39:10

End at: 2018-08-09 00:39:40

Local clock offset: -3.9 ms

Remote clock offset: 5.069 ms

Below is generated by plot.py at 2018-08-09 00:49:13

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.04 Mbit/s

95th percentile per-packet one-way delay: 3247.061 ms

Loss rate: 58.72%

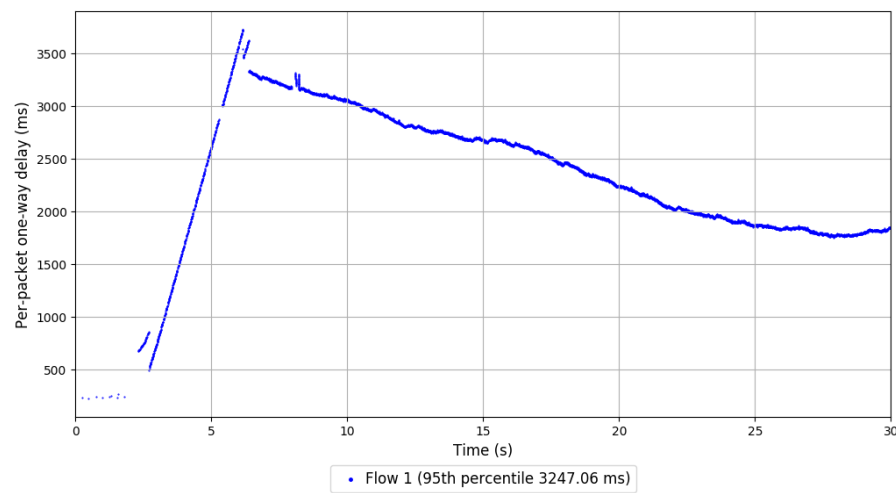
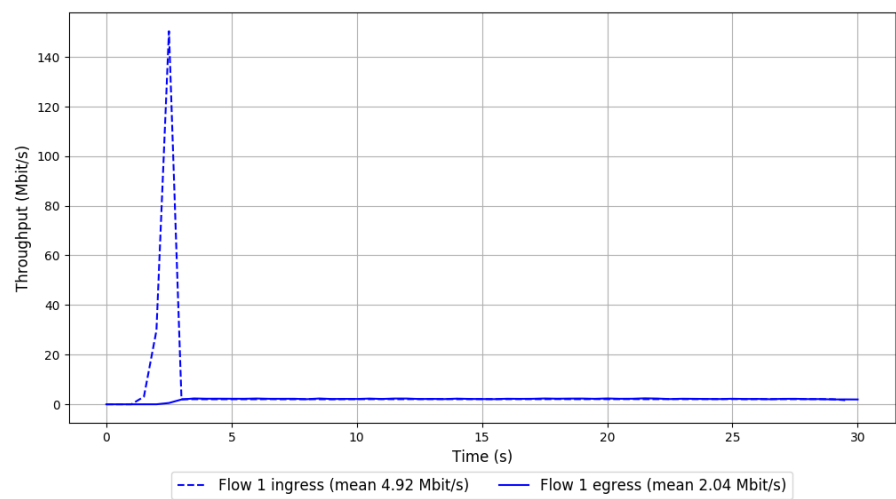
-- Flow 1:

Average throughput: 2.04 Mbit/s

95th percentile per-packet one-way delay: 3247.061 ms

Loss rate: 58.72%

Run 3: Report of PCC-Allegro — Data Link

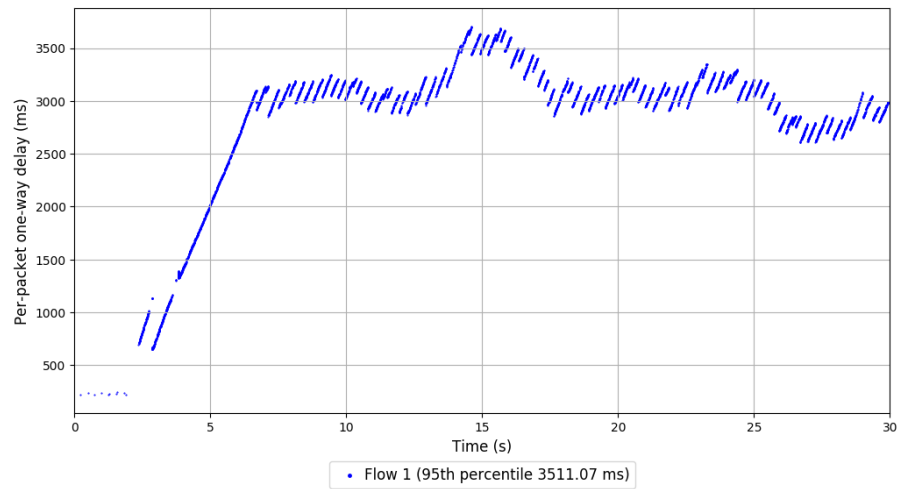
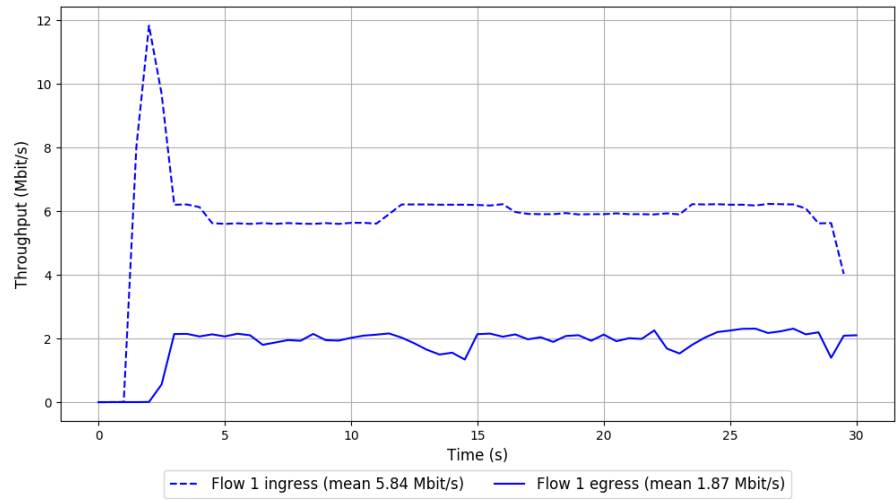


Run 1: Statistics of PCC-Expr

Start at: 2018-08-09 00:03:06
End at: 2018-08-09 00:03:36
Local clock offset: -2.053 ms
Remote clock offset: -0.254 ms

Below is generated by plot.py at 2018-08-09 00:49:14
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 3511.074 ms
Loss rate: 68.19%
-- Flow 1:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 3511.074 ms
Loss rate: 68.19%

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2018-08-09 00:22:15

End at: 2018-08-09 00:22:45

Local clock offset: -5.262 ms

Remote clock offset: 0.406 ms

Below is generated by plot.py at 2018-08-09 00:49:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.21 Mbit/s

95th percentile per-packet one-way delay: 2854.382 ms

Loss rate: 62.95%

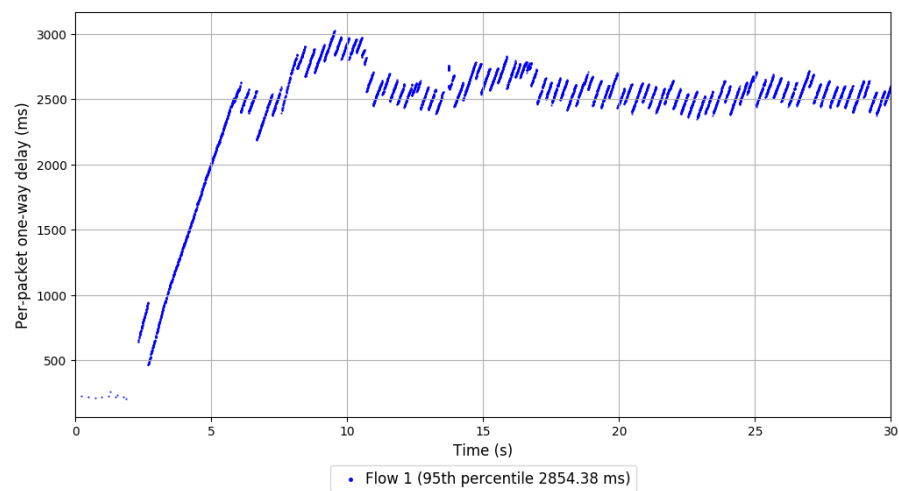
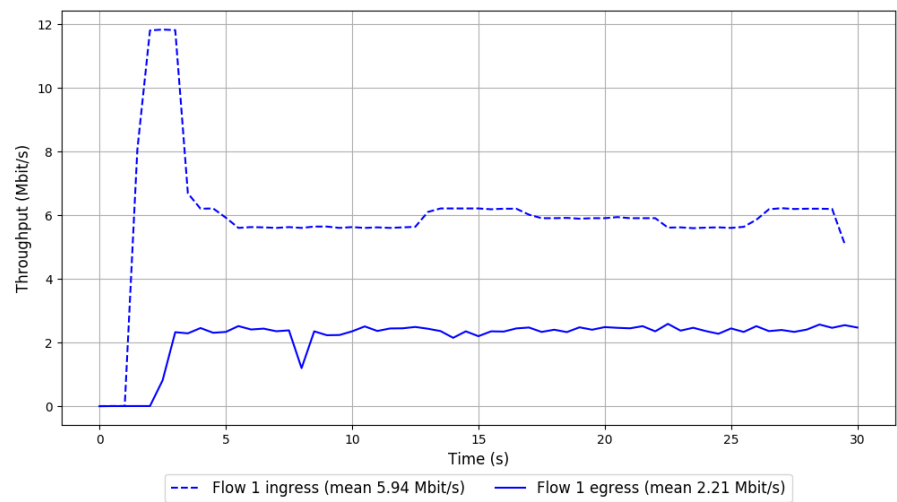
-- Flow 1:

Average throughput: 2.21 Mbit/s

95th percentile per-packet one-way delay: 2854.382 ms

Loss rate: 62.95%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-08-09 00:41:26

End at: 2018-08-09 00:41:56

Local clock offset: -3.945 ms

Remote clock offset: 3.881 ms

Below is generated by plot.py at 2018-08-09 00:49:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.07 Mbit/s

95th percentile per-packet one-way delay: 2958.819 ms

Loss rate: 65.61%

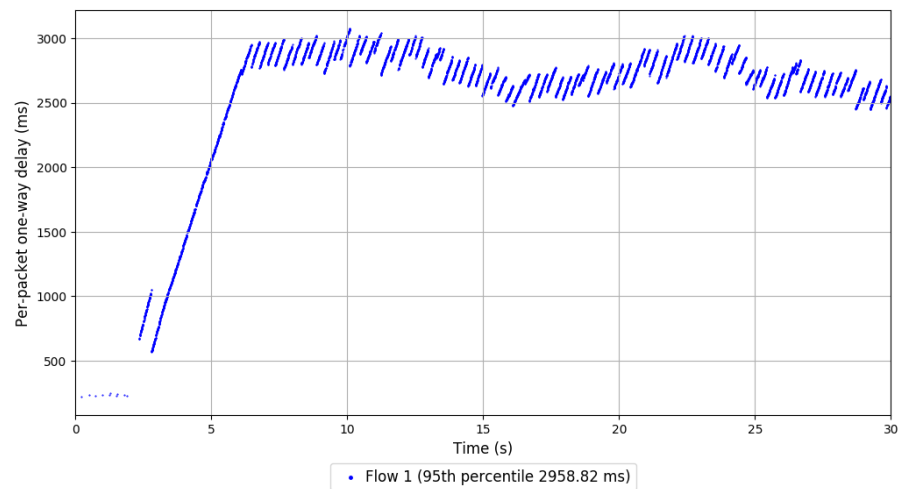
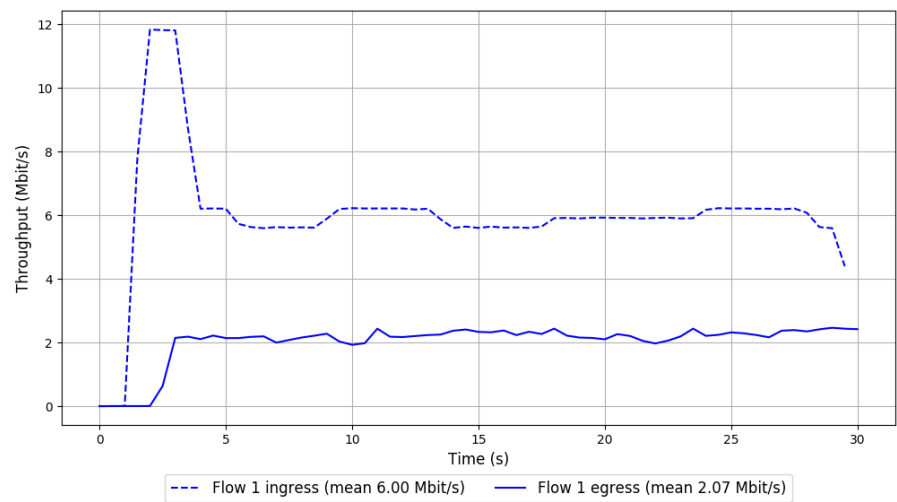
-- Flow 1:

Average throughput: 2.07 Mbit/s

95th percentile per-packet one-way delay: 2958.819 ms

Loss rate: 65.61%

Run 3: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

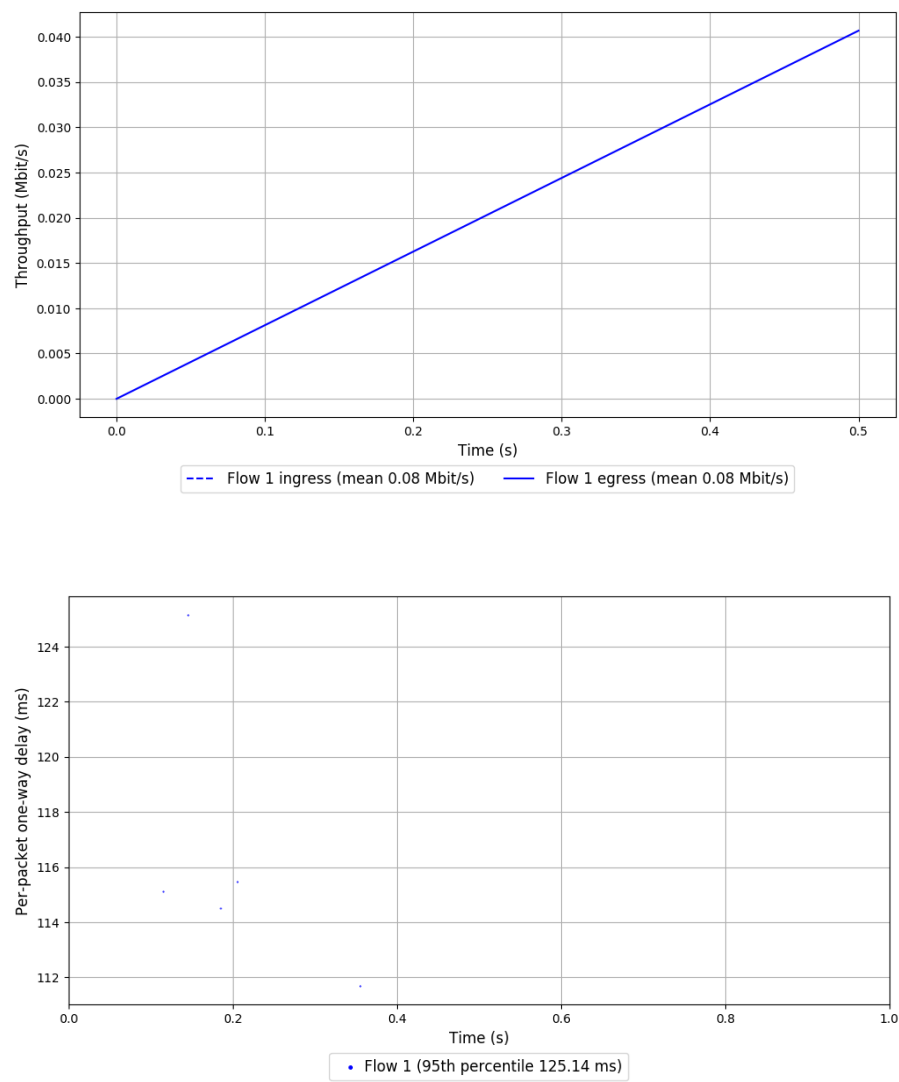
Start at: 2018-08-08 23:59:44

End at: 2018-08-09 00:00:14

Local clock offset: -2.11 ms

Remote clock offset: 6.014 ms

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-08-09 00:18:53

End at: 2018-08-09 00:19:23

Local clock offset: -6.414 ms

Remote clock offset: 0.475 ms

Below is generated by plot.py at 2018-08-09 00:49:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.06 Mbit/s

95th percentile per-packet one-way delay: 1113.052 ms

Loss rate: 3.72%

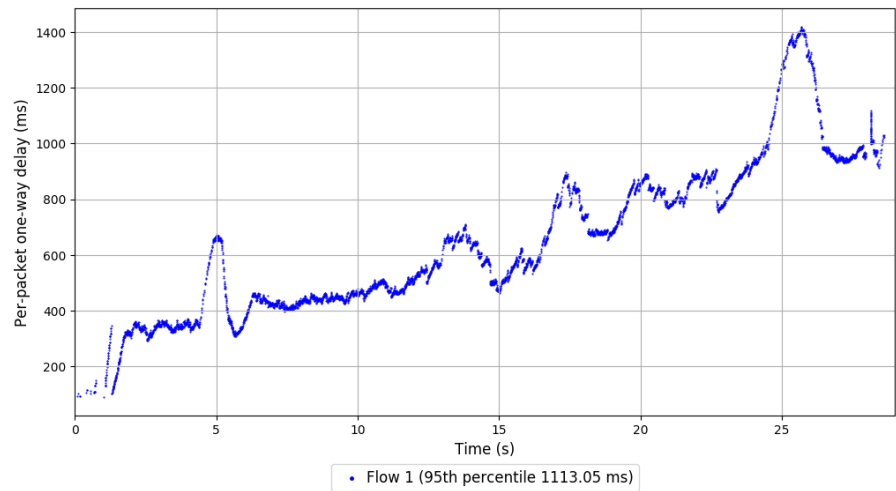
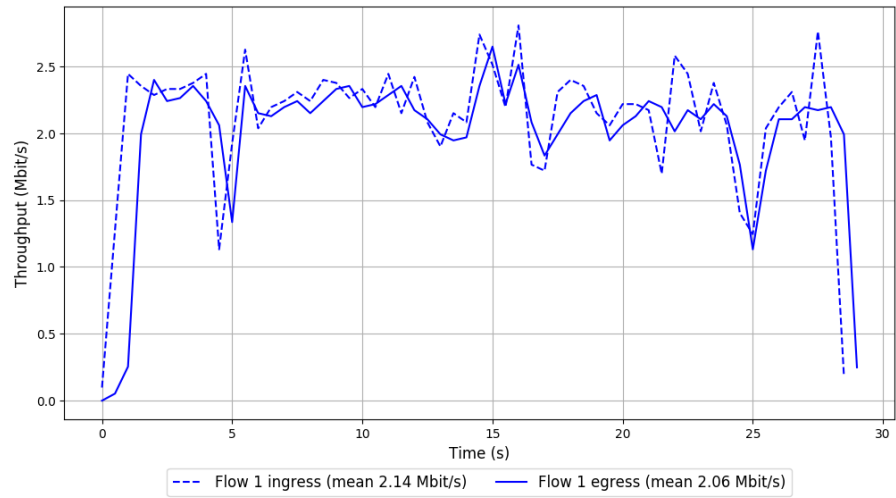
-- Flow 1:

Average throughput: 2.06 Mbit/s

95th percentile per-packet one-way delay: 1113.052 ms

Loss rate: 3.72%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-08-09 00:38:03

End at: 2018-08-09 00:38:33

Local clock offset: -3.866 ms

Remote clock offset: -0.851 ms

Below is generated by plot.py at 2018-08-09 00:49:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.02 Mbit/s

95th percentile per-packet one-way delay: 1782.039 ms

Loss rate: 4.95%

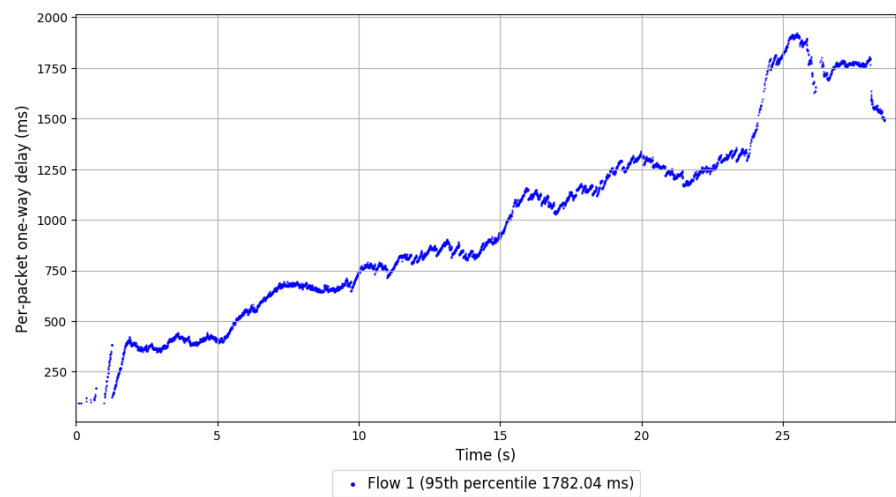
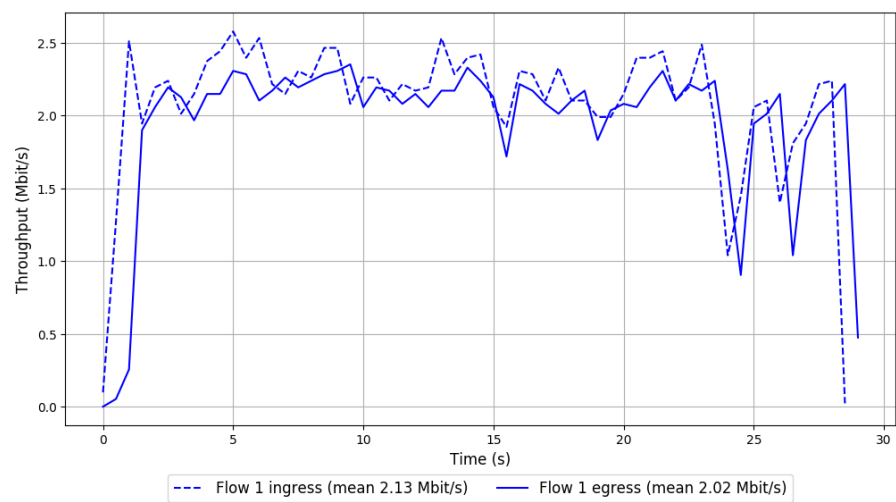
-- Flow 1:

Average throughput: 2.02 Mbit/s

95th percentile per-packet one-way delay: 1782.039 ms

Loss rate: 4.95%

Run 3: Report of QUIC Cubic — Data Link

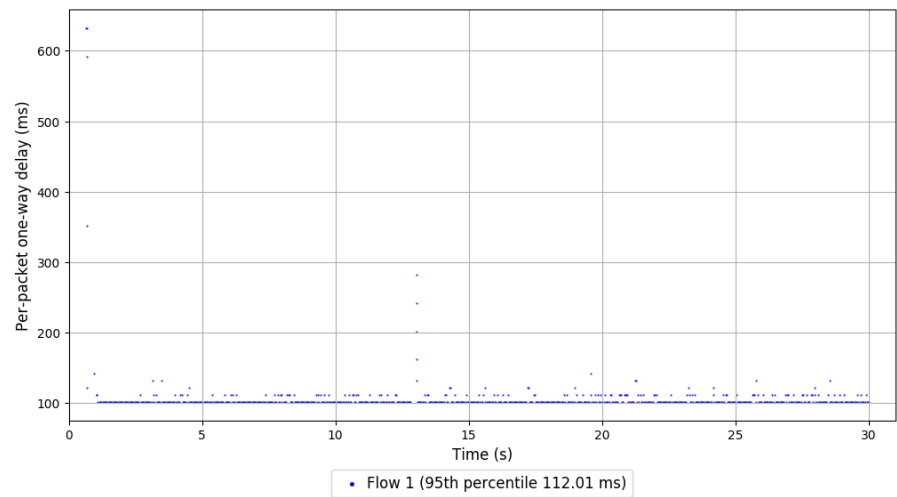
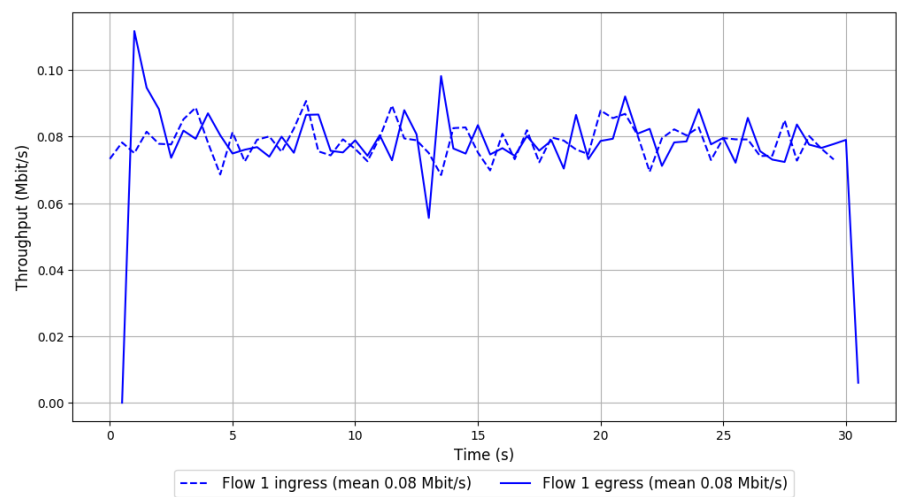


Run 1: Statistics of SCReAM

Start at: 2018-08-09 00:05:21
End at: 2018-08-09 00:05:51
Local clock offset: -4.36 ms
Remote clock offset: -0.155 ms

Below is generated by plot.py at 2018-08-09 00:49:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 112.007 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 112.007 ms
Loss rate: 0.13%

Run 1: Report of SReAM — Data Link



Run 2: Statistics of SCReAM

Start at: 2018-08-09 00:24:30

End at: 2018-08-09 00:25:01

Local clock offset: -4.741 ms

Remote clock offset: 0.38 ms

Below is generated by plot.py at 2018-08-09 00:49:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.08 Mbit/s

95th percentile per-packet one-way delay: 114.644 ms

Loss rate: 0.00%

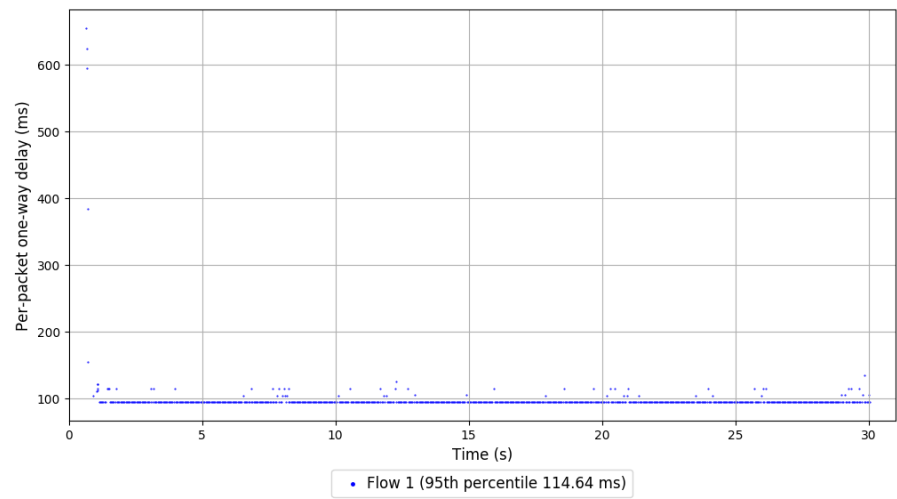
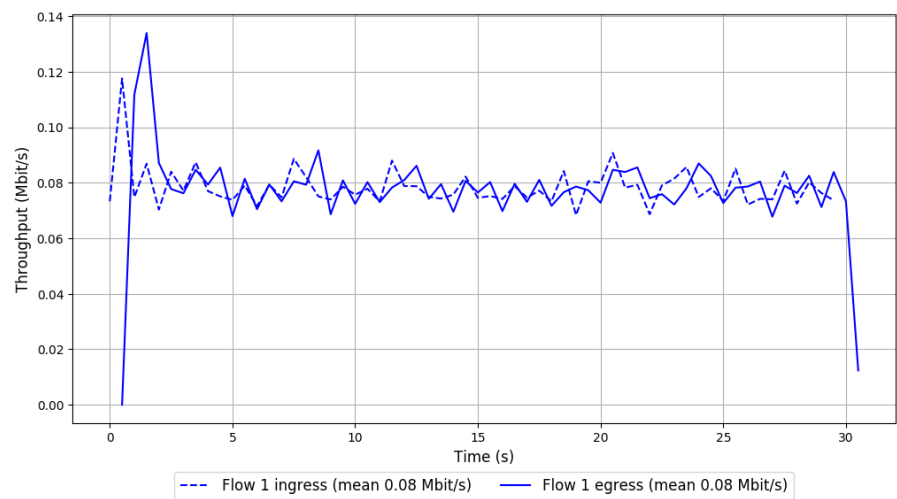
-- Flow 1:

Average throughput: 0.08 Mbit/s

95th percentile per-packet one-way delay: 114.644 ms

Loss rate: 0.00%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2018-08-09 00:43:41

End at: 2018-08-09 00:44:11

Local clock offset: -4.077 ms

Remote clock offset: 0.084 ms

Below is generated by plot.py at 2018-08-09 00:49:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.08 Mbit/s

95th percentile per-packet one-way delay: 114.736 ms

Loss rate: 0.13%

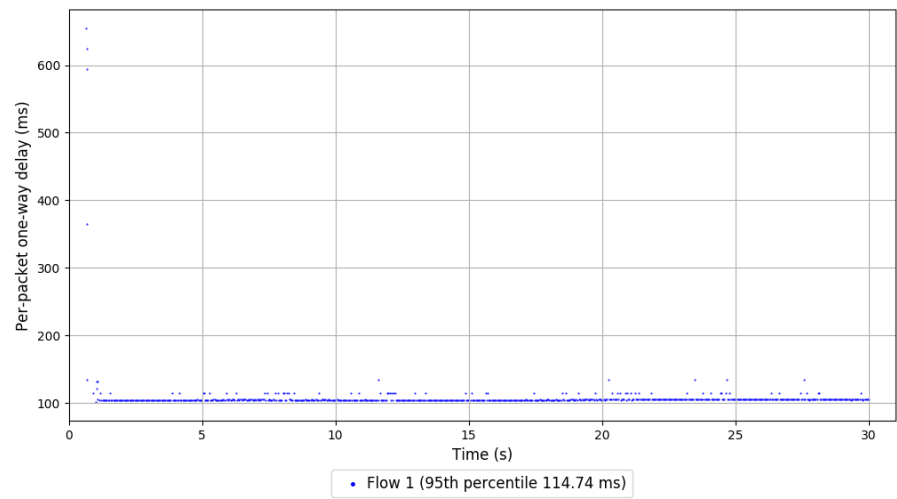
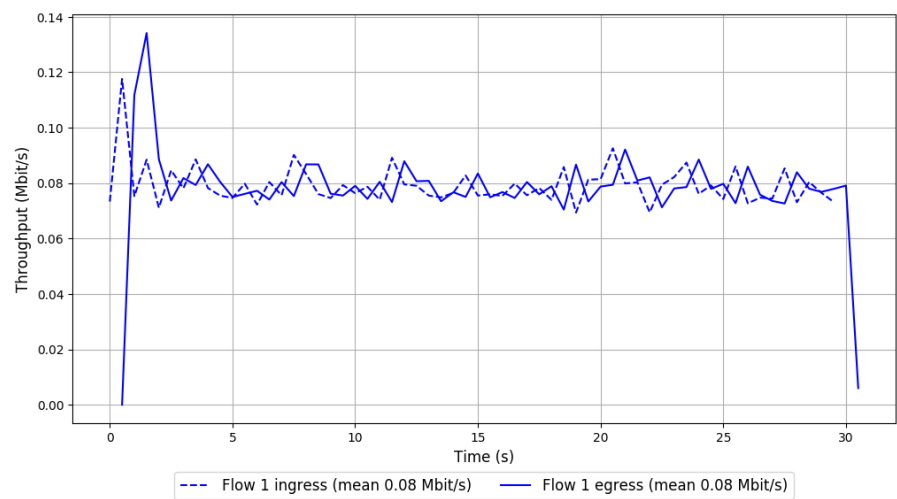
-- Flow 1:

Average throughput: 0.08 Mbit/s

95th percentile per-packet one-way delay: 114.736 ms

Loss rate: 0.13%

Run 3: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-08-08 23:51:52

End at: 2018-08-08 23:52:22

Local clock offset: -2.144 ms

Remote clock offset: 0.776 ms

Below is generated by plot.py at 2018-08-09 00:49:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.15 Mbit/s

95th percentile per-packet one-way delay: 210.331 ms

Loss rate: 0.00%

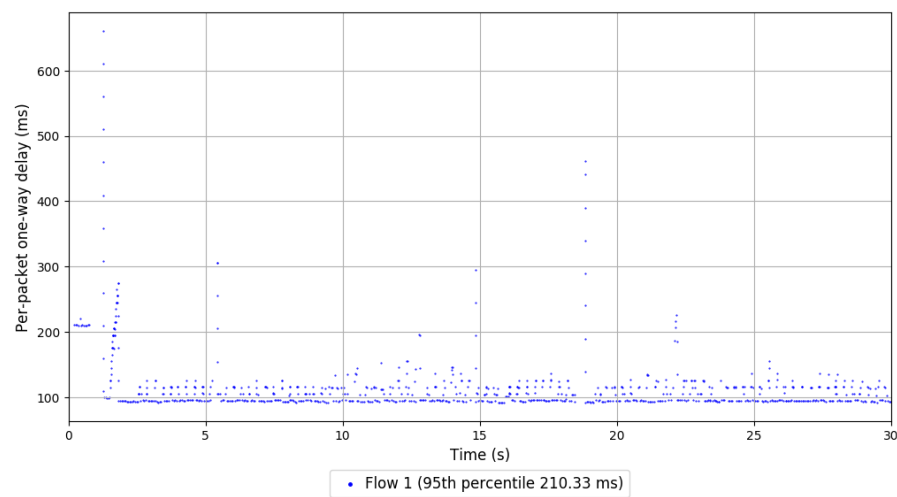
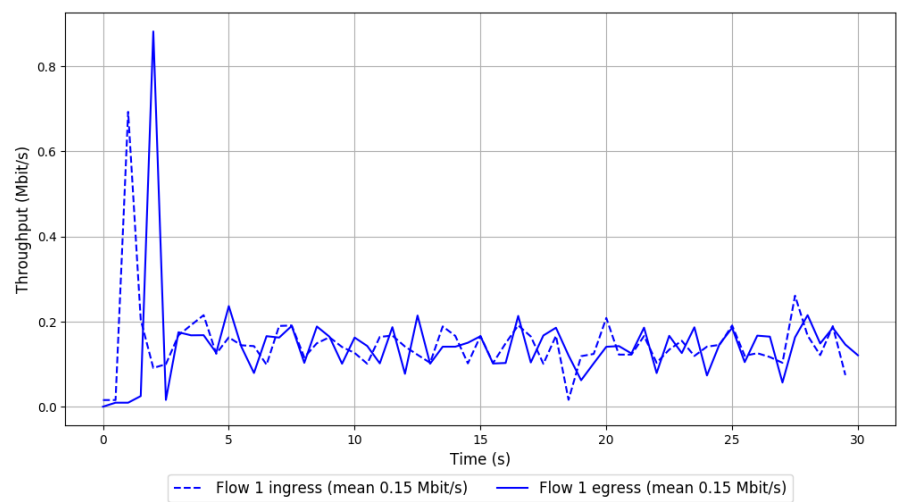
-- Flow 1:

Average throughput: 0.15 Mbit/s

95th percentile per-packet one-way delay: 210.331 ms

Loss rate: 0.00%

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

Start at: 2018-08-09 00:11:00

End at: 2018-08-09 00:11:30

Local clock offset: -6.806 ms

Remote clock offset: 0.669 ms

Below is generated by plot.py at 2018-08-09 00:49:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.16 Mbit/s

95th percentile per-packet one-way delay: 168.109 ms

Loss rate: 0.00%

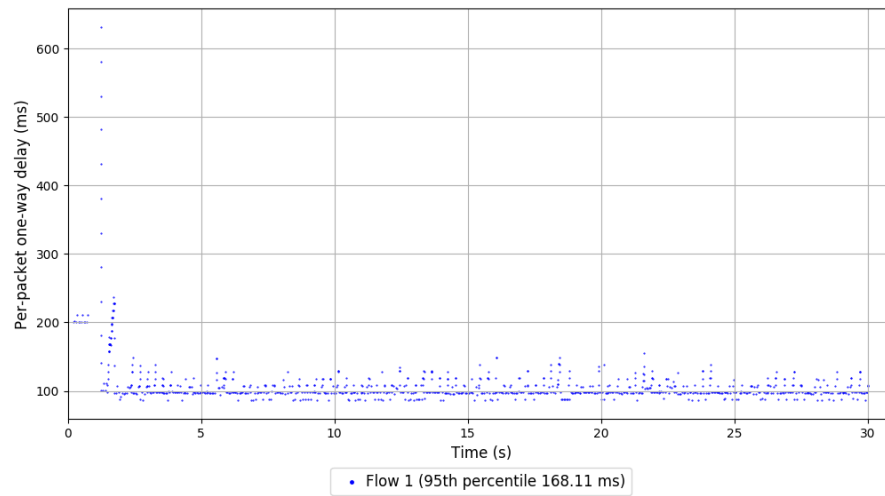
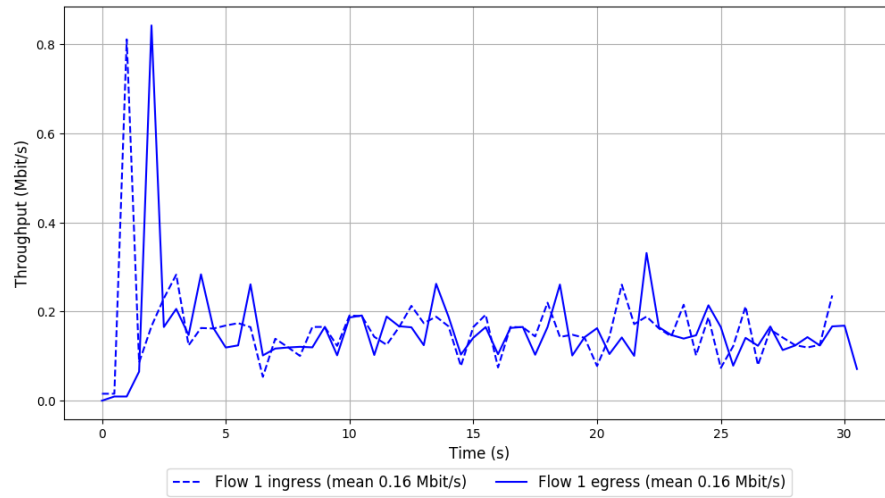
-- Flow 1:

Average throughput: 0.16 Mbit/s

95th percentile per-packet one-way delay: 168.109 ms

Loss rate: 0.00%

Run 2: Report of Sprout — Data Link

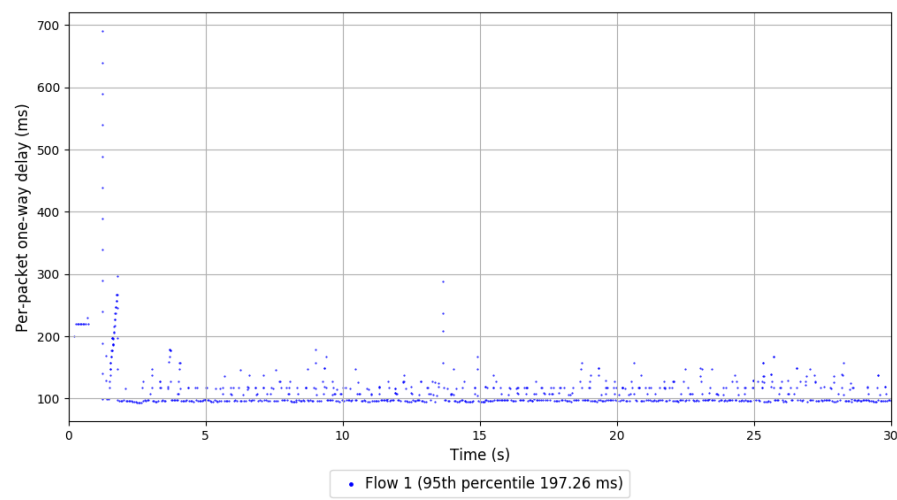
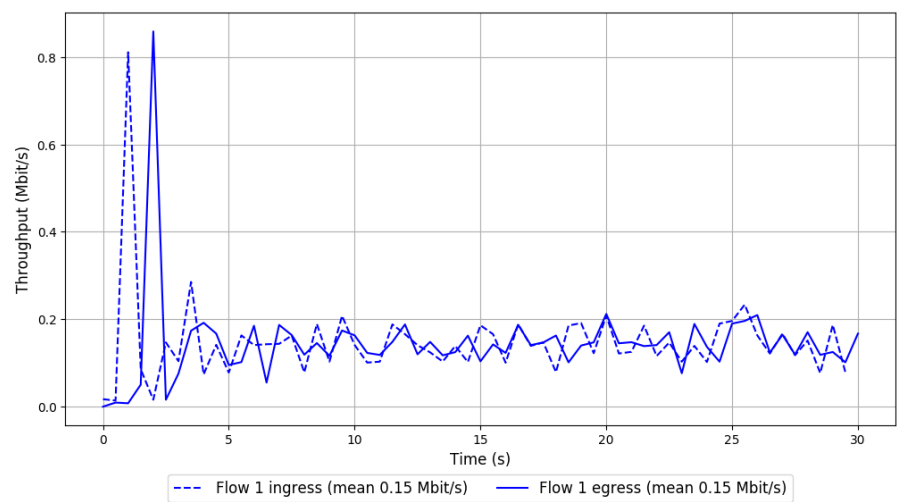


Run 3: Statistics of Sprout

Start at: 2018-08-09 00:30:09
End at: 2018-08-09 00:30:39
Local clock offset: -4.066 ms
Remote clock offset: -0.874 ms

Below is generated by plot.py at 2018-08-09 00:49:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 197.260 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 197.260 ms
Loss rate: 0.00%

Run 3: Report of Sprout — Data Link

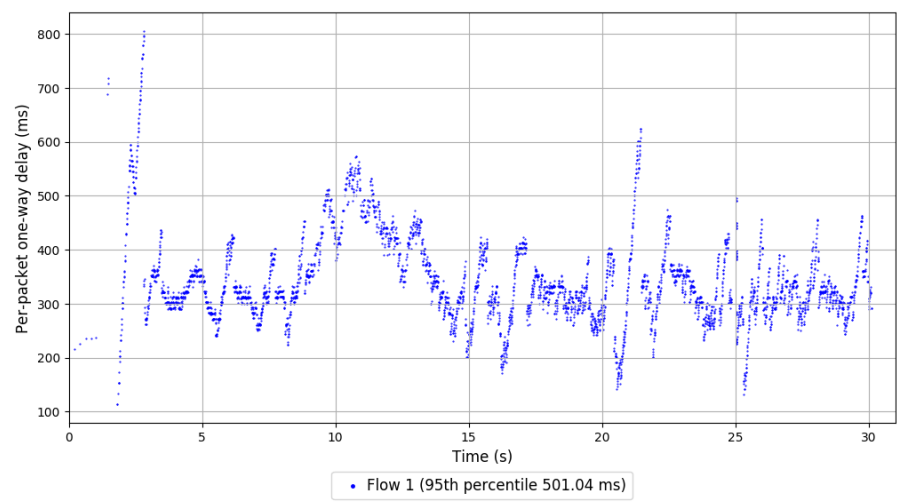
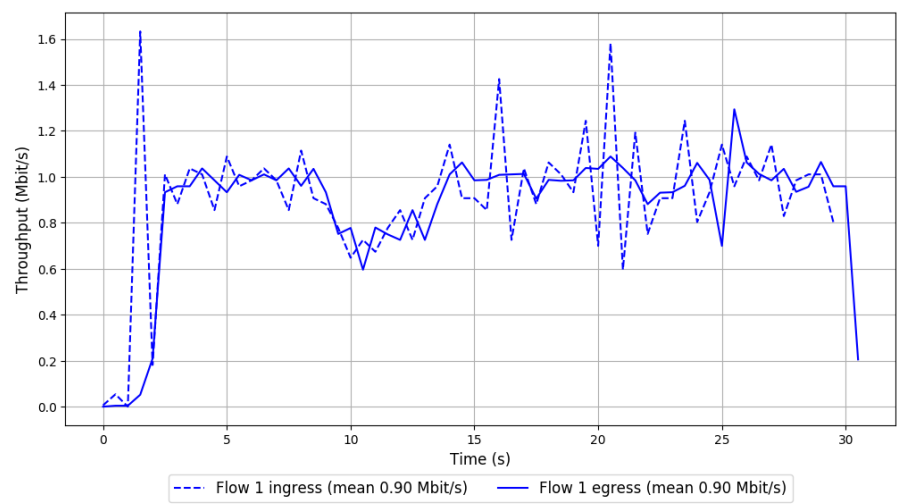


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-08-08 23:57:28
End at: 2018-08-08 23:57:58
Local clock offset: -2.056 ms
Remote clock offset: 5.013 ms

# Below is generated by plot.py at 2018-08-09 00:49:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.90 Mbit/s
95th percentile per-packet one-way delay: 501.037 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 0.90 Mbit/s
95th percentile per-packet one-way delay: 501.037 ms
Loss rate: 0.57%
```

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-08-09 00:16:37

End at: 2018-08-09 00:17:07

Local clock offset: -7.574 ms

Remote clock offset: 5.414 ms

Below is generated by plot.py at 2018-08-09 00:49:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.68 Mbit/s

95th percentile per-packet one-way delay: 1307.175 ms

Loss rate: 0.26%

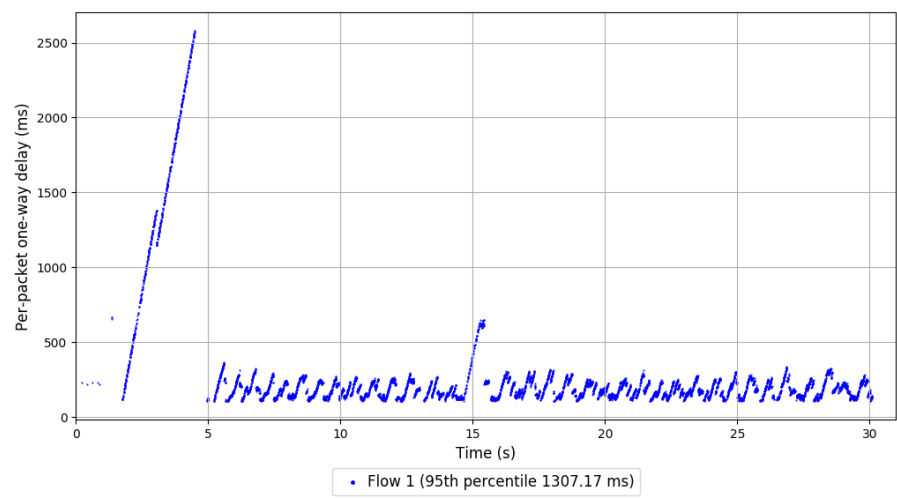
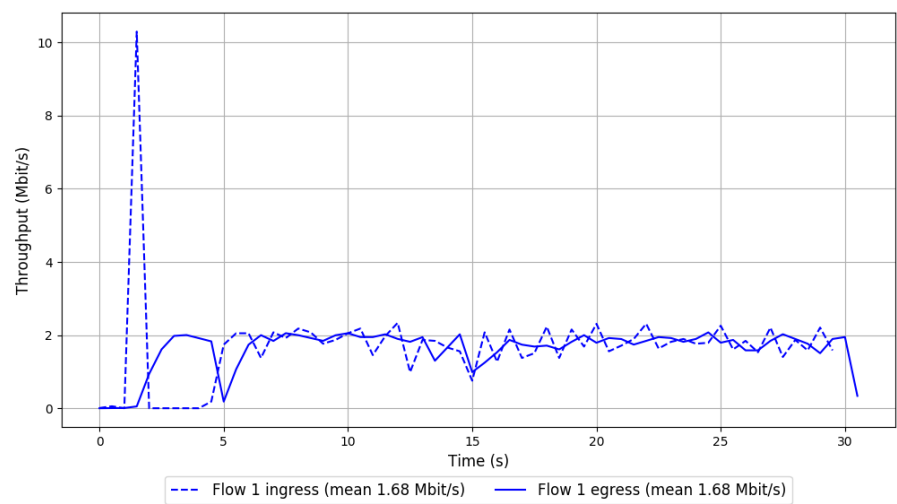
-- Flow 1:

Average throughput: 1.68 Mbit/s

95th percentile per-packet one-way delay: 1307.175 ms

Loss rate: 0.26%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-08-09 00:35:47

End at: 2018-08-09 00:36:17

Local clock offset: -3.886 ms

Remote clock offset: 0.284 ms

Below is generated by plot.py at 2018-08-09 00:49:22

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.80 Mbit/s

95th percentile per-packet one-way delay: 257.391 ms

Loss rate: 0.00%

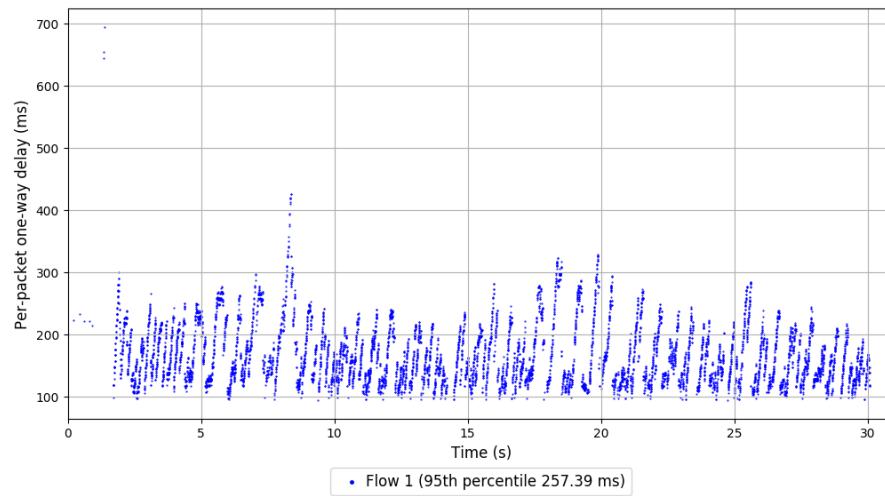
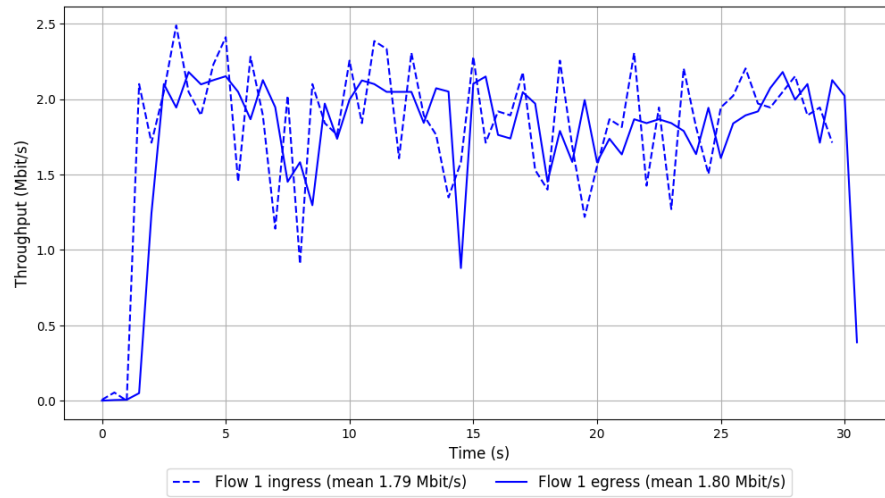
-- Flow 1:

Average throughput: 1.80 Mbit/s

95th percentile per-packet one-way delay: 257.391 ms

Loss rate: 0.00%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-08-08 23:55:14

End at: 2018-08-08 23:55:44

Local clock offset: -2.088 ms

Remote clock offset: 1.395 ms

Below is generated by plot.py at 2018-08-09 00:49:22

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.58 Mbit/s

95th percentile per-packet one-way delay: 330.232 ms

Loss rate: 0.25%

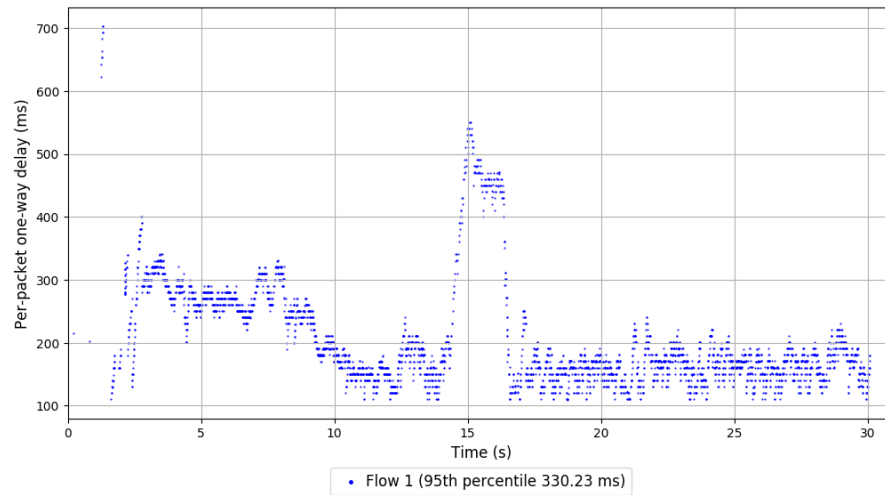
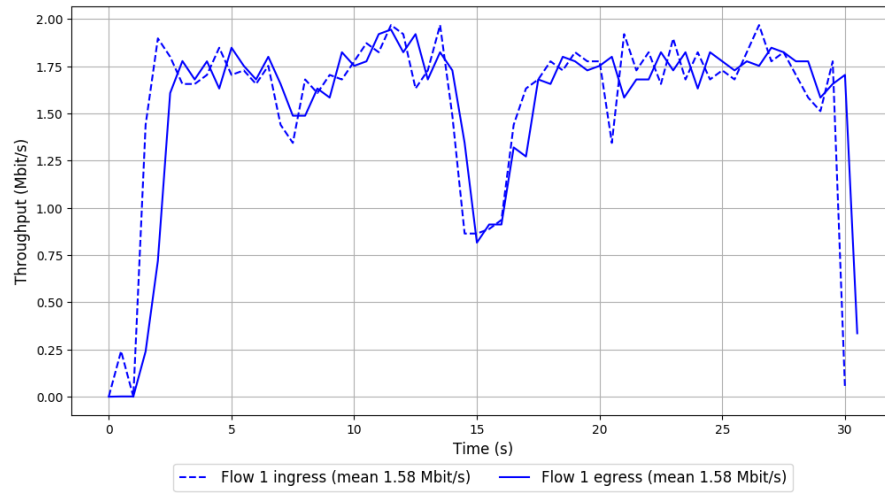
-- Flow 1:

Average throughput: 1.58 Mbit/s

95th percentile per-packet one-way delay: 330.232 ms

Loss rate: 0.25%

Run 1: Report of TCP Vegas — Data Link

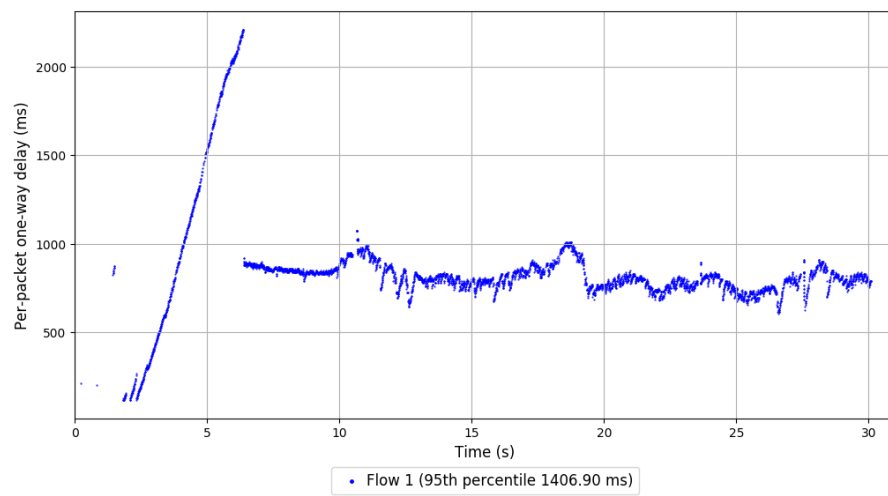
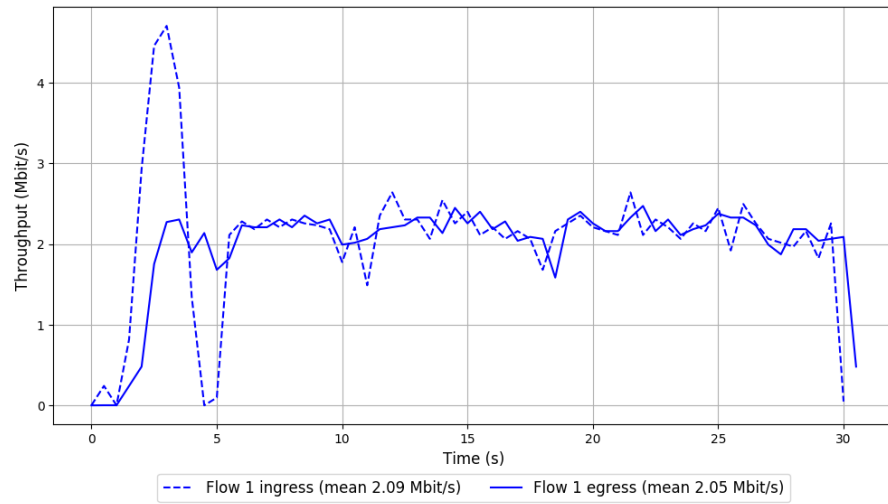


Run 2: Statistics of TCP Vegas

Start at: 2018-08-09 00:14:22
End at: 2018-08-09 00:14:52
Local clock offset: -7.629 ms
Remote clock offset: -0.365 ms

Below is generated by plot.py at 2018-08-09 00:49:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 1406.900 ms
Loss rate: 2.33%
-- Flow 1:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 1406.900 ms
Loss rate: 2.33%

Run 2: Report of TCP Vegas — Data Link

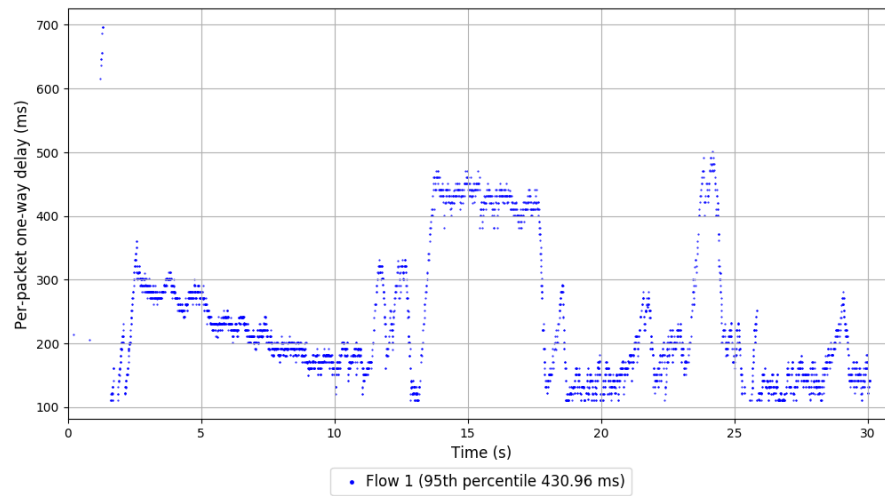
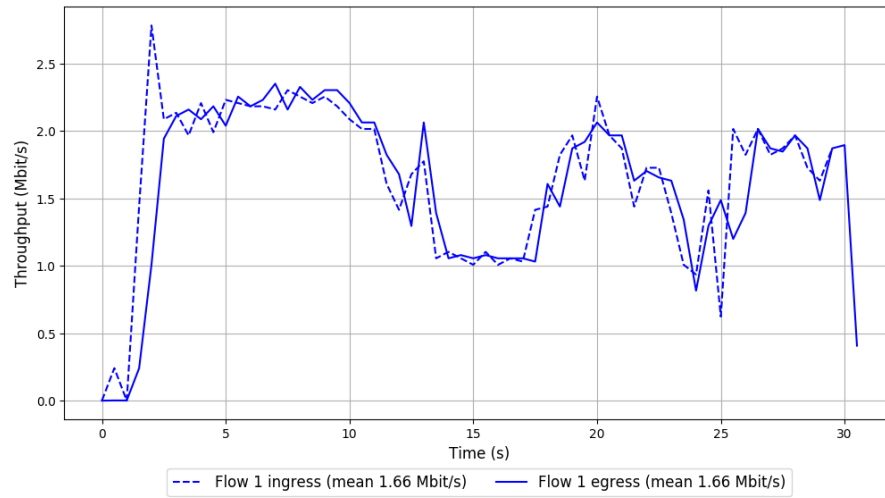


Run 3: Statistics of TCP Vegas

Start at: 2018-08-09 00:33:32
End at: 2018-08-09 00:34:02
Local clock offset: -3.986 ms
Remote clock offset: -0.878 ms

Below is generated by plot.py at 2018-08-09 00:49:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.66 Mbit/s
95th percentile per-packet one-way delay: 430.965 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 1.66 Mbit/s
95th percentile per-packet one-way delay: 430.965 ms
Loss rate: 0.17%

Run 3: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-08-08 23:58:36

End at: 2018-08-08 23:59:06

Local clock offset: -2.065 ms

Remote clock offset: 5.046 ms

Below is generated by plot.py at 2018-08-09 00:49:22

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.90 Mbit/s

95th percentile per-packet one-way delay: 1907.588 ms

Loss rate: 4.84%

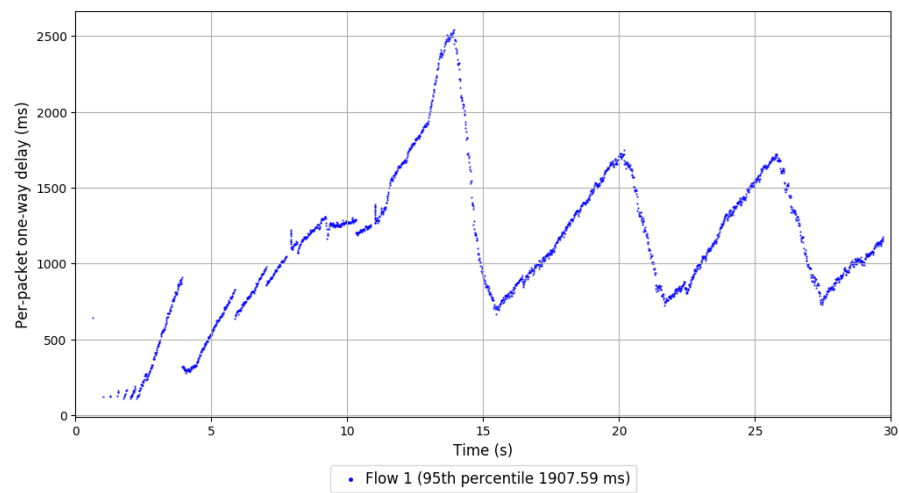
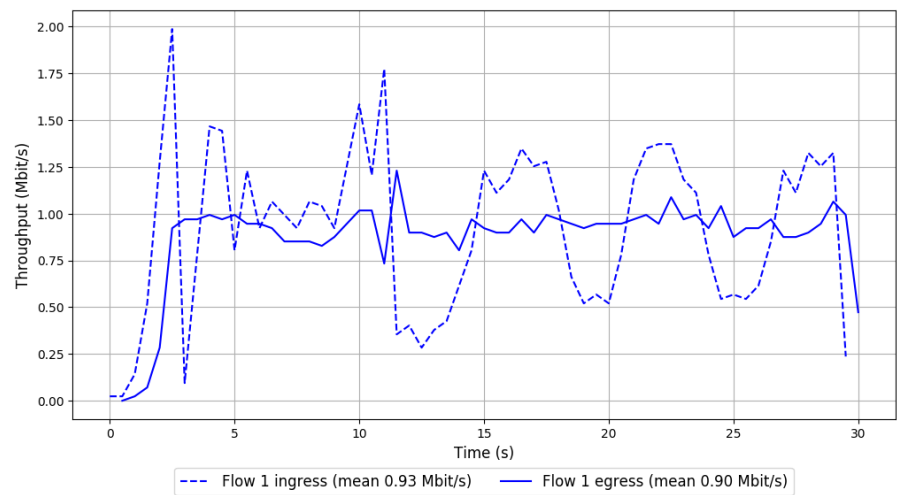
-- Flow 1:

Average throughput: 0.90 Mbit/s

95th percentile per-packet one-way delay: 1907.588 ms

Loss rate: 4.84%

Run 1: Report of Verus — Data Link

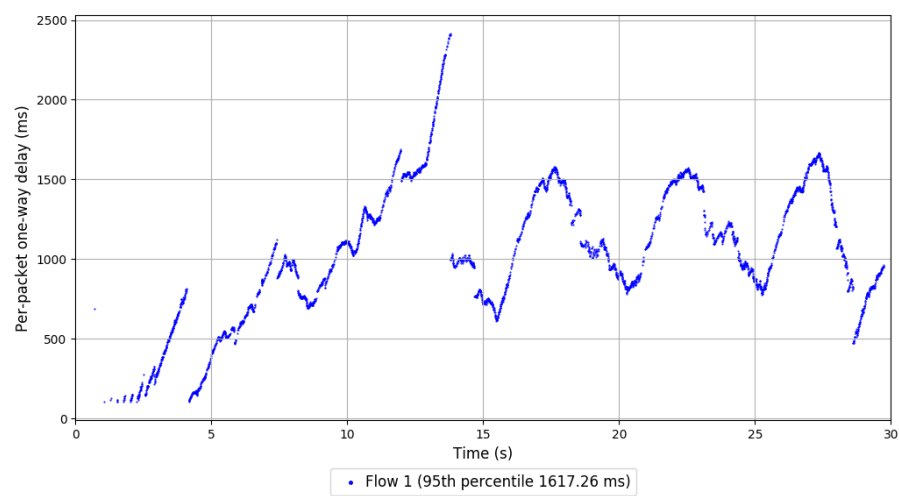
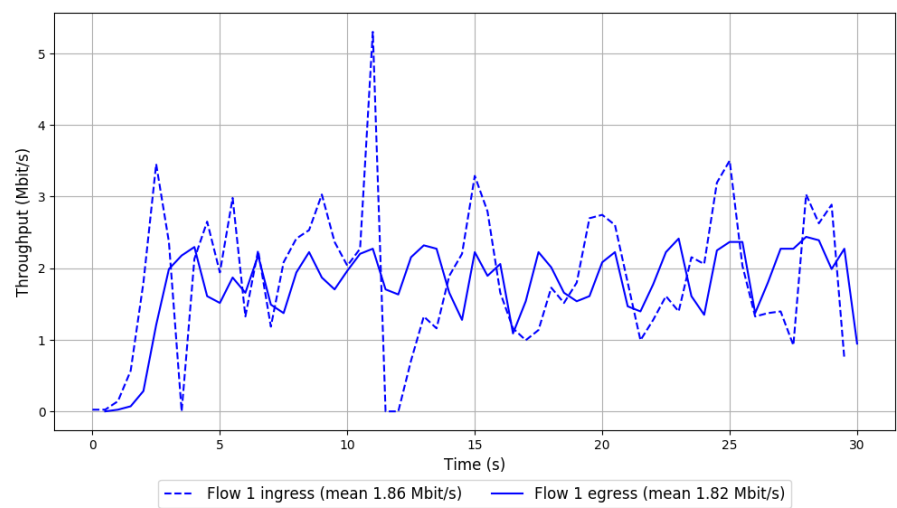


Run 2: Statistics of Verus

Start at: 2018-08-09 00:17:45
End at: 2018-08-09 00:18:15
Local clock offset: -6.921 ms
Remote clock offset: 4.282 ms

Below is generated by plot.py at 2018-08-09 00:49:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 1617.259 ms
Loss rate: 4.11%
-- Flow 1:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 1617.259 ms
Loss rate: 4.11%

Run 2: Report of Verus — Data Link

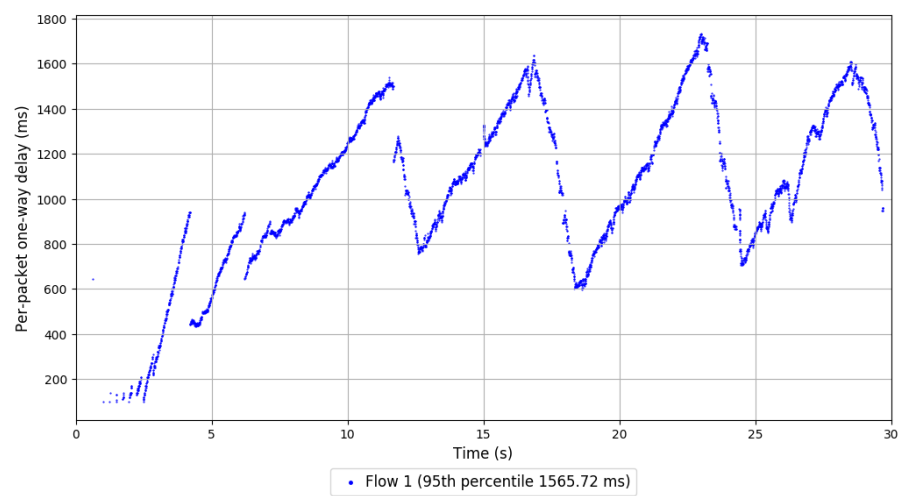
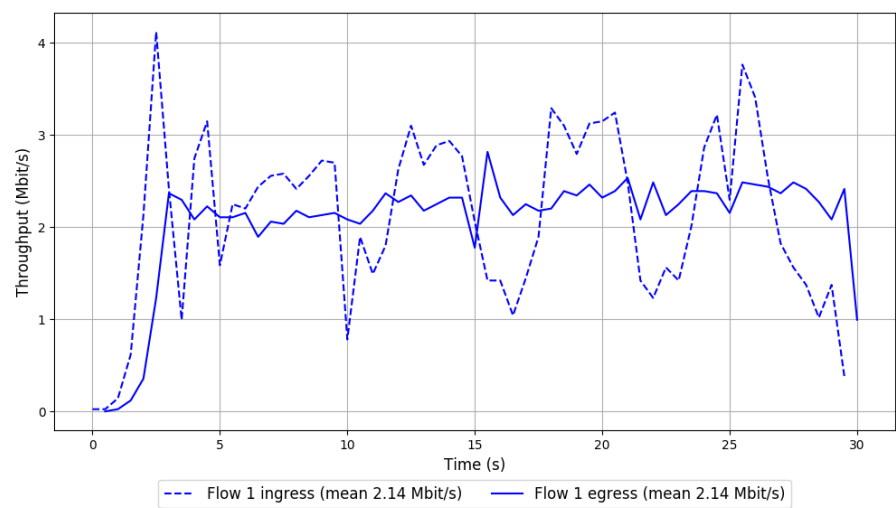


Run 3: Statistics of Verus

Start at: 2018-08-09 00:36:55
End at: 2018-08-09 00:37:25
Local clock offset: -3.876 ms
Remote clock offset: 2.846 ms

Below is generated by plot.py at 2018-08-09 00:49:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.14 Mbit/s
95th percentile per-packet one-way delay: 1565.724 ms
Loss rate: 1.81%
-- Flow 1:
Average throughput: 2.14 Mbit/s
95th percentile per-packet one-way delay: 1565.724 ms
Loss rate: 1.81%

Run 3: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-08-09 00:01:58

End at: 2018-08-09 00:02:28

Local clock offset: -2.044 ms

Remote clock offset: 1.007 ms

Below is generated by plot.py at 2018-08-09 00:49:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.36 Mbit/s

95th percentile per-packet one-way delay: 851.252 ms

Loss rate: 1.41%

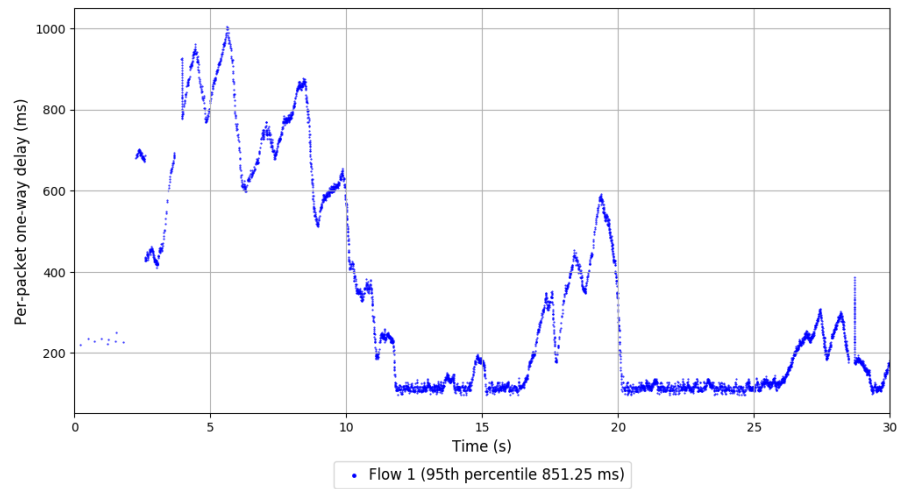
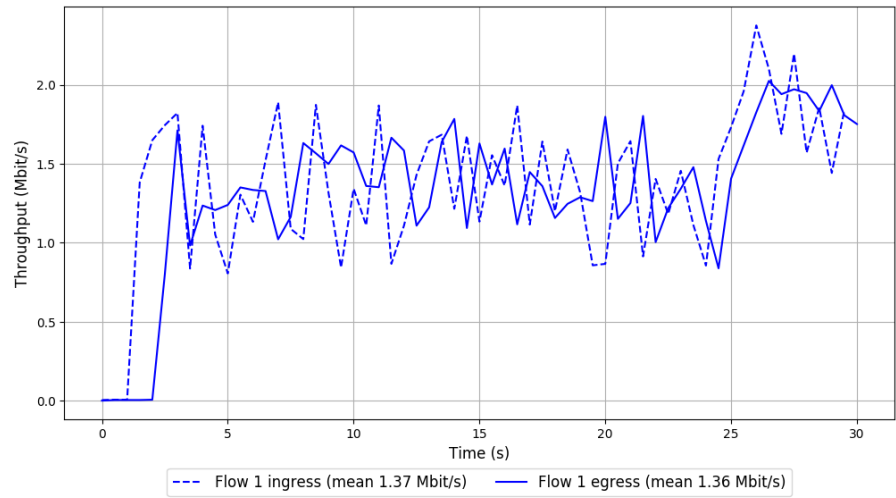
-- Flow 1:

Average throughput: 1.36 Mbit/s

95th percentile per-packet one-way delay: 851.252 ms

Loss rate: 1.41%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-08-09 00:21:08

End at: 2018-08-09 00:21:38

Local clock offset: -5.685 ms

Remote clock offset: -0.65 ms

Below is generated by plot.py at 2018-08-09 00:49:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 237.679 ms

Loss rate: 0.00%

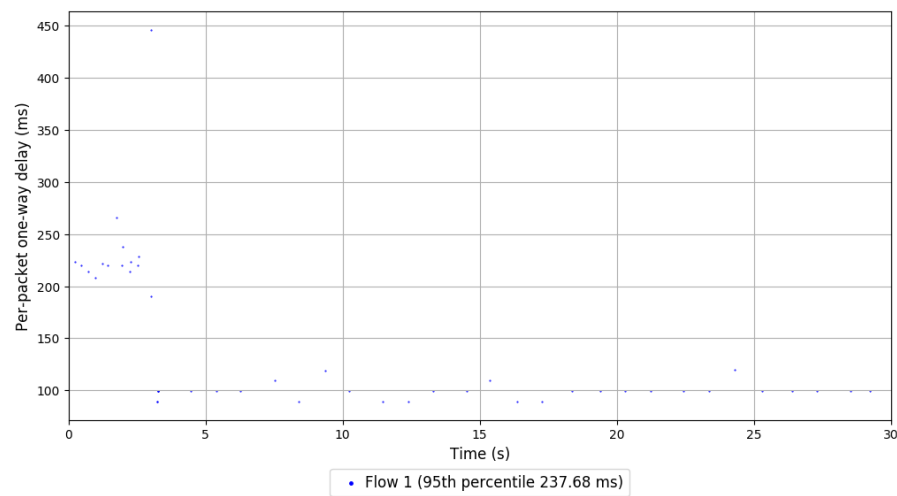
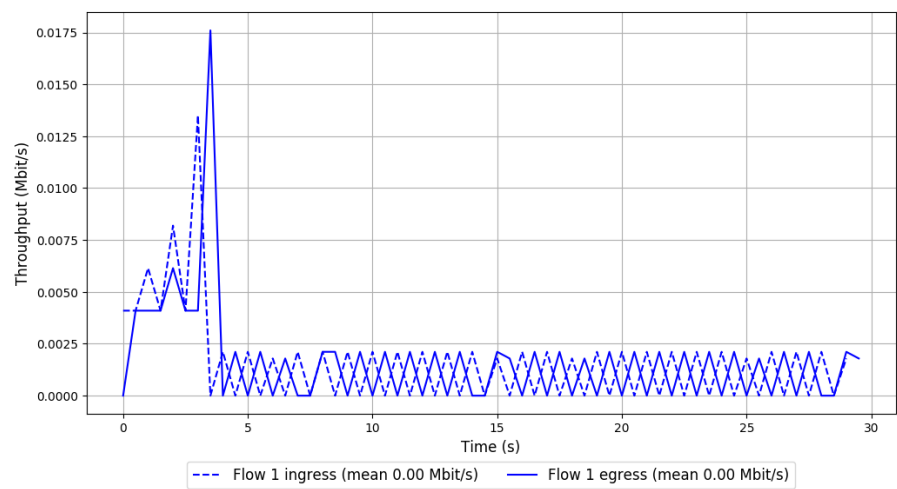
-- Flow 1:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 237.679 ms

Loss rate: 0.00%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-08-09 00:40:18

End at: 2018-08-09 00:40:48

Local clock offset: -3.914 ms

Remote clock offset: 3.898 ms

Below is generated by plot.py at 2018-08-09 00:49:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.31 Mbit/s

95th percentile per-packet one-way delay: 741.171 ms

Loss rate: 0.90%

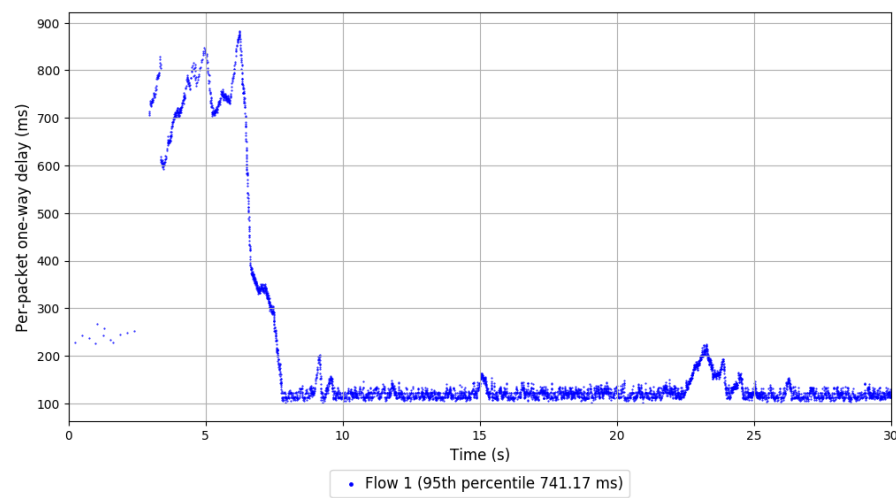
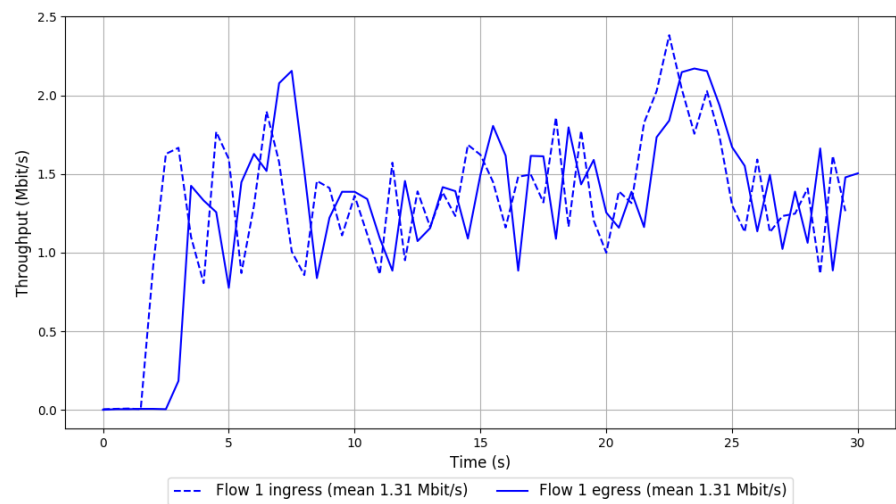
-- Flow 1:

Average throughput: 1.31 Mbit/s

95th percentile per-packet one-way delay: 741.171 ms

Loss rate: 0.90%

Run 3: Report of PCC-Vivace — Data Link

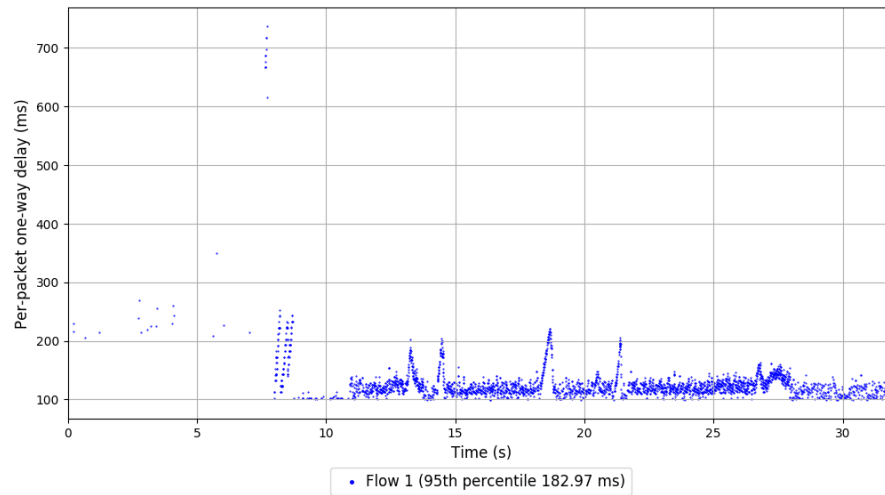
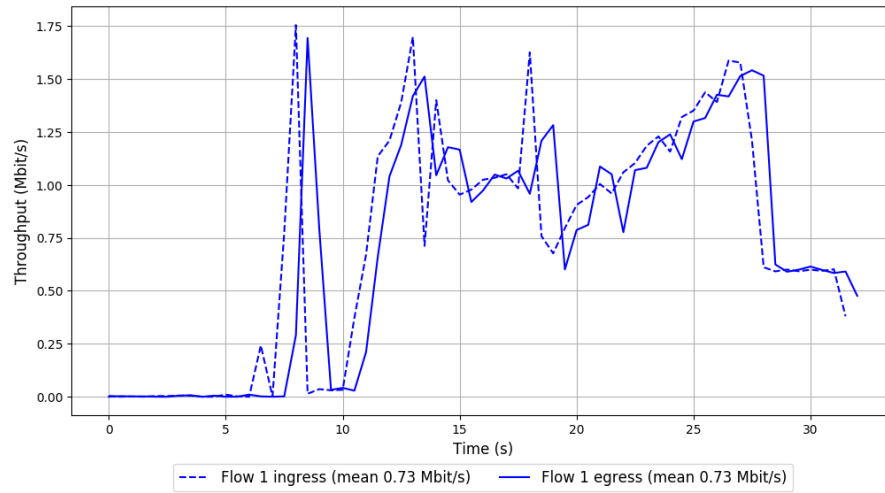


```
Run 1: Statistics of WebRTC media

Start at: 2018-08-09 00:04:14
End at: 2018-08-09 00:04:44
Local clock offset: -3.361 ms
Remote clock offset: 4.688 ms

# Below is generated by plot.py at 2018-08-09 00:49:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.73 Mbit/s
95th percentile per-packet one-way delay: 182.965 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 0.73 Mbit/s
95th percentile per-packet one-way delay: 182.965 ms
Loss rate: 0.09%
```

Run 1: Report of WebRTC media — Data Link

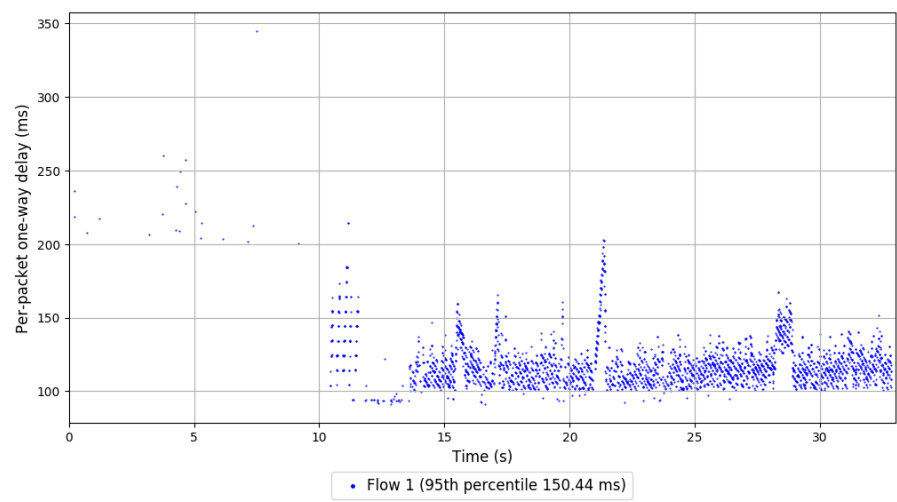
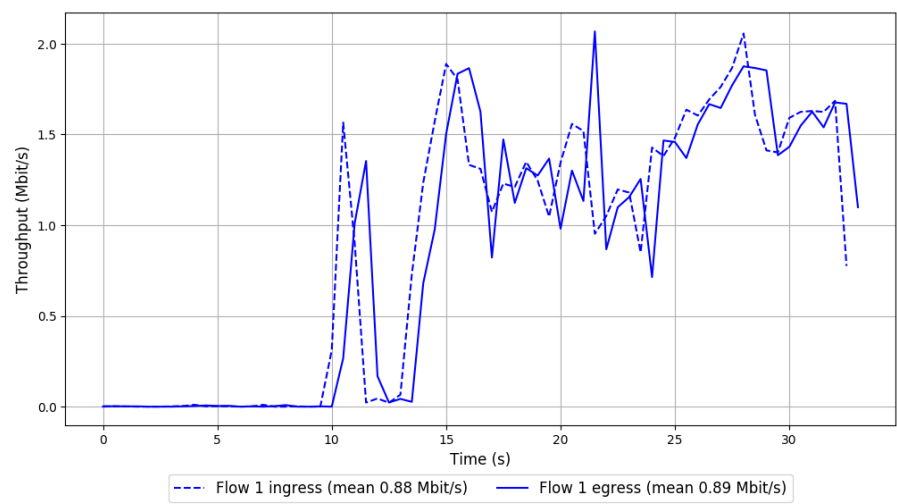


Run 2: Statistics of WebRTC media

Start at: 2018-08-09 00:23:23
End at: 2018-08-09 00:23:53
Local clock offset: -4.981 ms
Remote clock offset: -0.704 ms

Below is generated by plot.py at 2018-08-09 00:49:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.89 Mbit/s
95th percentile per-packet one-way delay: 150.443 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 0.89 Mbit/s
95th percentile per-packet one-way delay: 150.443 ms
Loss rate: 0.09%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-08-09 00:42:34

End at: 2018-08-09 00:43:04

Local clock offset: -3.99 ms

Remote clock offset: 0.216 ms

Below is generated by plot.py at 2018-08-09 00:49:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.67 Mbit/s

95th percentile per-packet one-way delay: 142.424 ms

Loss rate: 0.32%

-- Flow 1:

Average throughput: 0.67 Mbit/s

95th percentile per-packet one-way delay: 142.424 ms

Loss rate: 0.32%

Run 3: Report of WebRTC media — Data Link

