

Pantheon Report

Generated at 2018-08-09 08:14:03 (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 3 flows with 10-second interval between two flows.

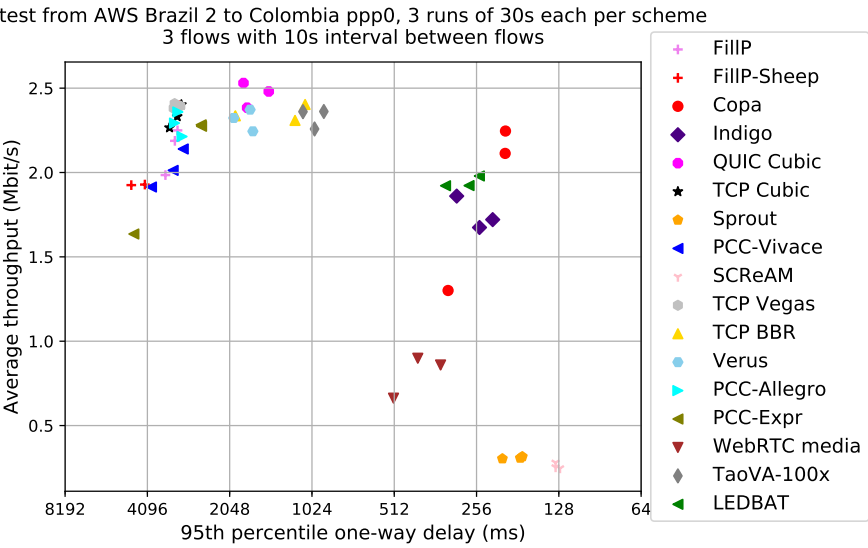
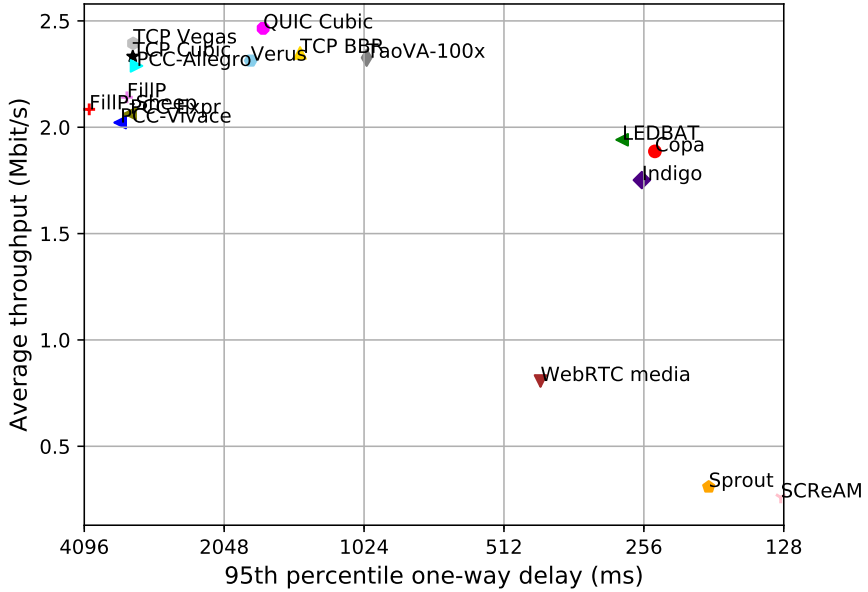
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

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 @ d0153f8e594aa89e93b032143cedbdf90c077e64d
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
 3 flows with 10s interval between flows (mean of all runs by scheme)



scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	3	1.50	0.87	0.88	1368.60	1409.27	1308.68	2.01	4.06	9.72
Copa	3	1.16	0.78	0.61	238.78	244.87	244.77	0.10	0.29	0.79
TCP Cubic	3	2.24	0.15	0.06	3223.84	3068.42	3179.29	12.17	36.32	54.28
FillP	3	1.75	0.71	0.04	3286.54	3320.71	3276.39	85.57	65.02	86.00
FillP-Sheep	3	1.40	1.14	0.05	3929.47	3688.85	3750.49	35.86	61.38	98.26
Indigo	3	1.03	0.72	0.76	237.25	257.42	373.71	0.16	0.38	0.43
LEDBAT	3	1.39	0.64	0.37	268.73	318.50	435.11	0.24	0.56	4.63
PCC-Allegro	3	1.54	0.95	0.49	3123.95	3164.12	3137.05	63.31	66.73	41.17
PCC-Expr	3	2.06	0.00	0.00	3263.67	2977.02	3280.65	63.13	51.98	55.49
QUIC Cubic	3	1.84	0.77	0.33	1625.98	1735.74	1847.30	4.20	9.06	23.89
SCReAM	3	0.08	0.17	0.18	126.36	130.88	130.81	0.09	0.19	0.34
Sprout	3	0.14	0.16	0.17	227.10	175.48	175.37	0.78	0.14	0.64
TaoVA-100x	3	1.31	1.03	0.99	560.28	1116.65	1210.35	0.52	1.45	2.36
TCP Vegas	3	1.87	0.83	0.06	3146.25	3184.26	3132.23	11.91	39.69	49.35
Verus	3	2.30	0.01	0.01	1795.90	1697.60	1718.09	3.86	3.25	6.67
PCC-Vivace	3	1.20	1.23	0.00	3417.80	3444.36	3428.23	16.14	22.96	10.65
WebRTC media	3	0.37	0.36	0.09	352.52	430.20	547.59	0.13	0.10	0.99

Run 1: Statistics of TCP BBR

Start at: 2018-08-09 07:27:03

End at: 2018-08-09 07:27:33

Local clock offset: -5.943 ms

Remote clock offset: 1.1 ms

Below is generated by plot.py at 2018-08-09 08:13:21

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.31 Mbit/s

95th percentile per-packet one-way delay: 1181.077 ms

Loss rate: 2.38%

-- Flow 1:

Average throughput: 1.45 Mbit/s

95th percentile per-packet one-way delay: 1171.093 ms

Loss rate: 1.69%

-- Flow 2:

Average throughput: 1.00 Mbit/s

95th percentile per-packet one-way delay: 1191.445 ms

Loss rate: 3.20%

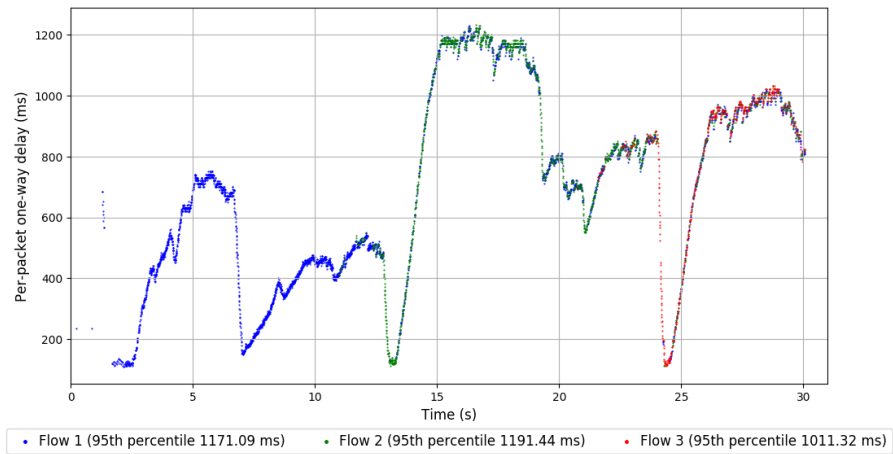
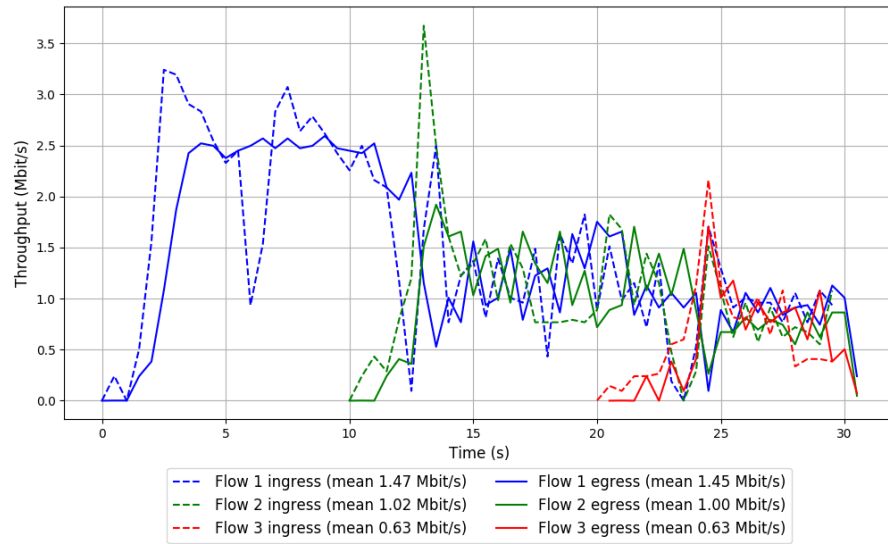
-- Flow 3:

Average throughput: 0.63 Mbit/s

95th percentile per-packet one-way delay: 1011.321 ms

Loss rate: 4.63%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-08-09 07:47:25

End at: 2018-08-09 07:47:55

Local clock offset: -8.461 ms

Remote clock offset: 0.79 ms

Below is generated by plot.py at 2018-08-09 08:13:22

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.40 Mbit/s

95th percentile per-packet one-way delay: 1084.861 ms

Loss rate: 2.27%

-- Flow 1:

Average throughput: 1.55 Mbit/s

95th percentile per-packet one-way delay: 1075.046 ms

Loss rate: 1.15%

-- Flow 2:

Average throughput: 0.94 Mbit/s

95th percentile per-packet one-way delay: 1095.006 ms

Loss rate: 3.09%

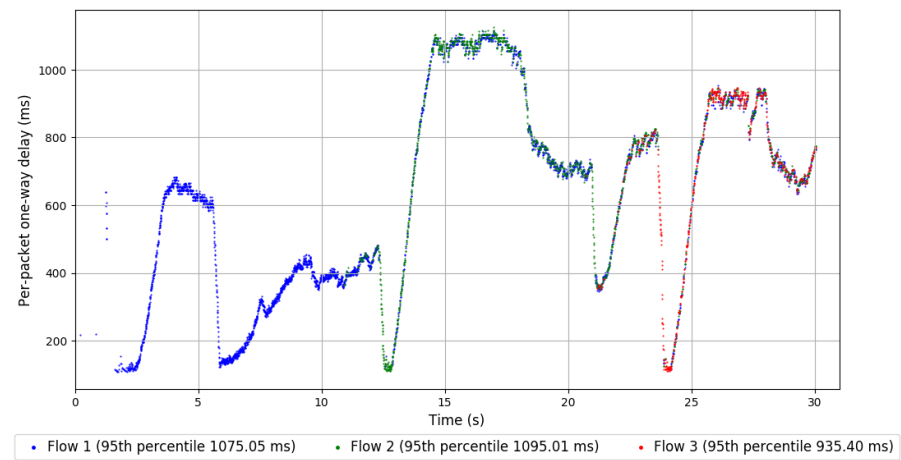
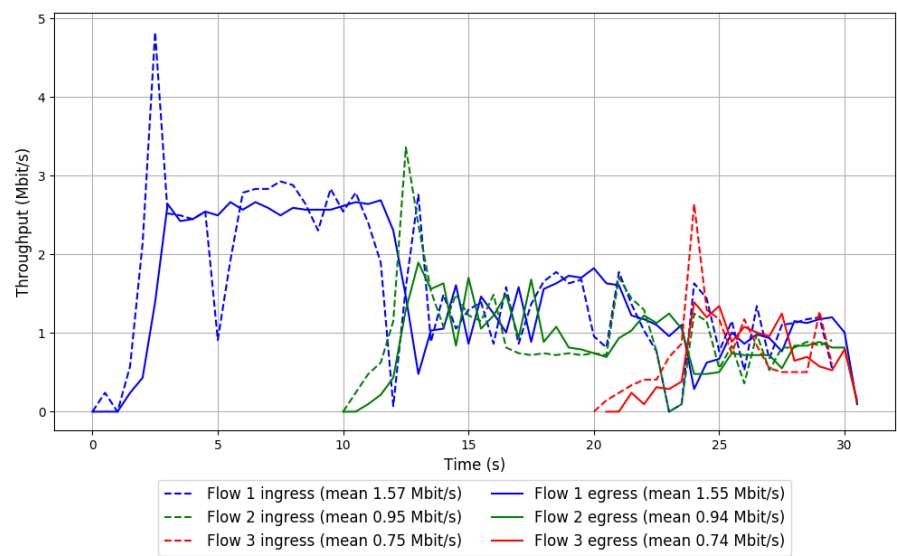
-- Flow 3:

Average throughput: 0.74 Mbit/s

95th percentile per-packet one-way delay: 935.399 ms

Loss rate: 7.24%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-08-09 08:07:48

End at: 2018-08-09 08:08:18

Local clock offset: -7.018 ms

Remote clock offset: 6.398 ms

Below is generated by plot.py at 2018-08-09 08:13:22

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.34 Mbit/s

95th percentile per-packet one-way delay: 1952.184 ms

Loss rate: 6.49%

-- Flow 1:

Average throughput: 1.50 Mbit/s

95th percentile per-packet one-way delay: 1859.673 ms

Loss rate: 3.20%

-- Flow 2:

Average throughput: 0.67 Mbit/s

95th percentile per-packet one-way delay: 1941.356 ms

Loss rate: 5.89%

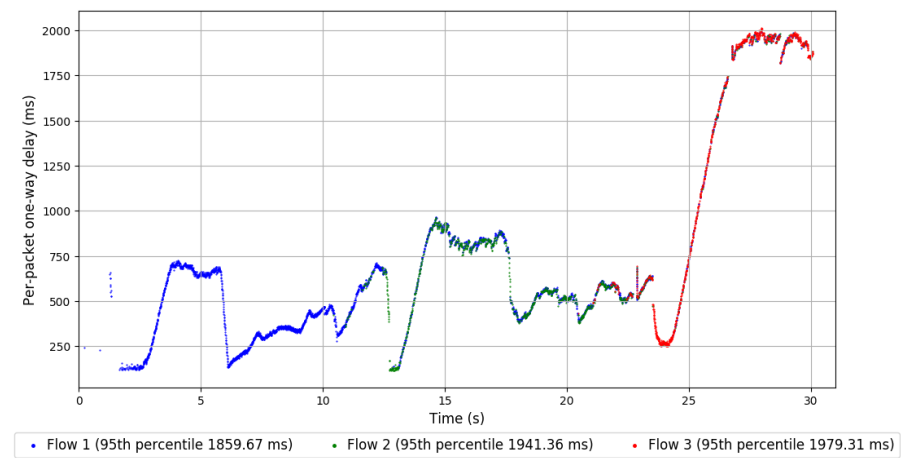
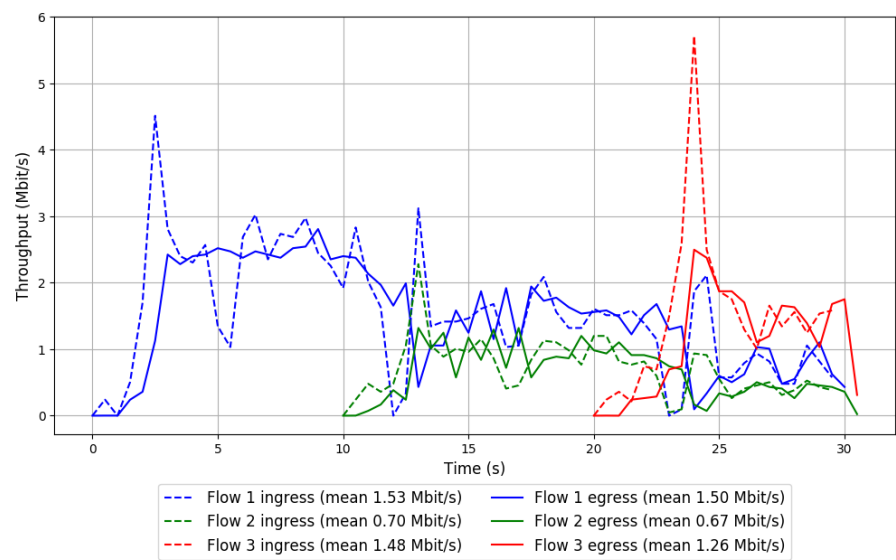
-- Flow 3:

Average throughput: 1.26 Mbit/s

95th percentile per-packet one-way delay: 1979.309 ms

Loss rate: 17.30%

Run 3: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-08-09 07:30:38

End at: 2018-08-09 07:31:08

Local clock offset: -7.297 ms

Remote clock offset: 5.362 ms

Below is generated by plot.py at 2018-08-09 08:13:22

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.30 Mbit/s

95th percentile per-packet one-way delay: 325.374 ms

Loss rate: 0.20%

-- Flow 1:

Average throughput: 0.78 Mbit/s

95th percentile per-packet one-way delay: 331.400 ms

Loss rate: 0.06%

-- Flow 2:

Average throughput: 0.57 Mbit/s

95th percentile per-packet one-way delay: 320.437 ms

Loss rate: 0.22%

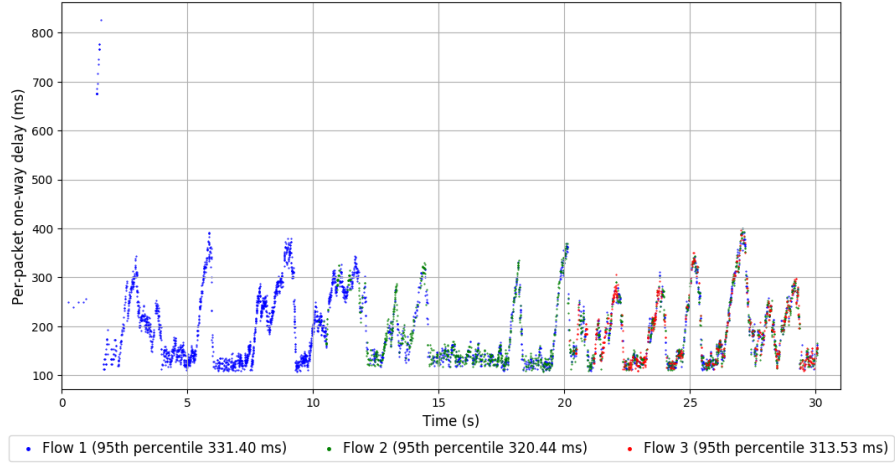
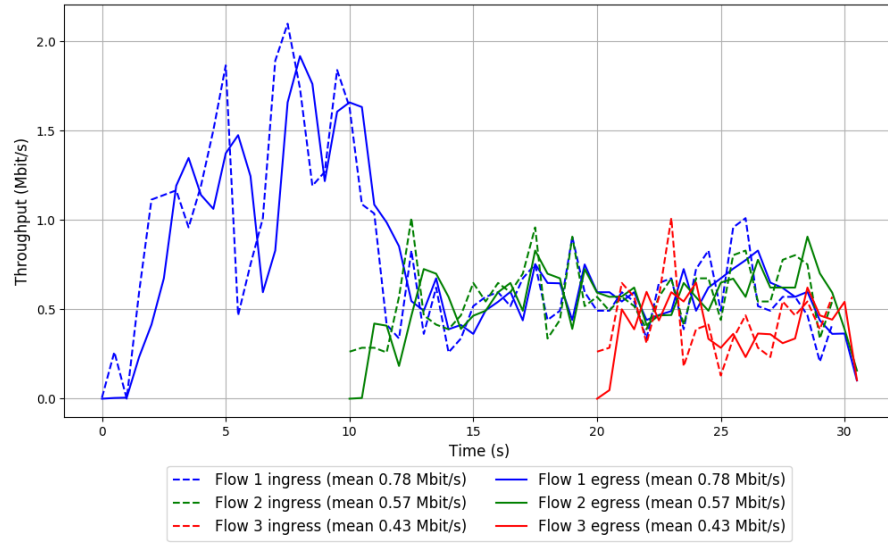
-- Flow 3:

Average throughput: 0.43 Mbit/s

95th percentile per-packet one-way delay: 313.532 ms

Loss rate: 0.90%

Run 1: Report of Copa — Data Link

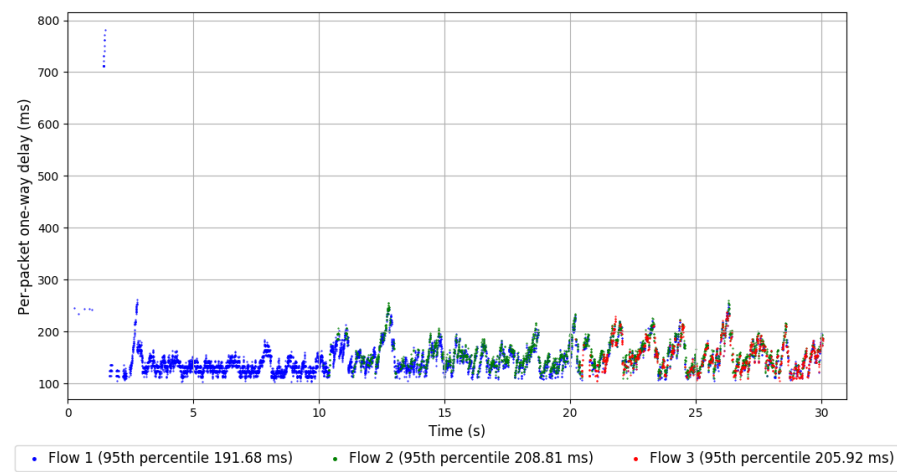
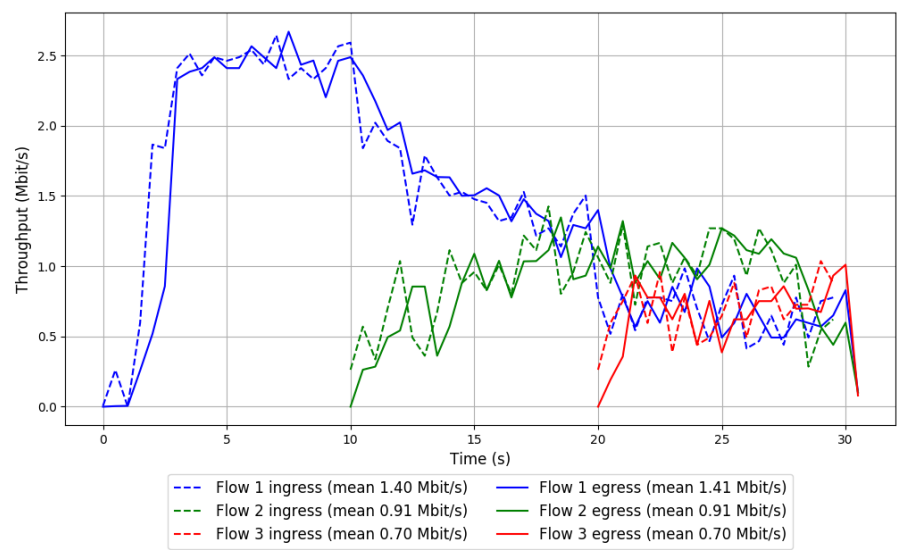


Run 2: Statistics of Copa

Start at: 2018-08-09 07:51:01
End at: 2018-08-09 07:51:31
Local clock offset: -7.808 ms
Remote clock offset: 0.961 ms

Below is generated by plot.py at 2018-08-09 08:13:23
Datalink statistics
-- Total of 3 flows:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 200.618 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 1.41 Mbit/s
95th percentile per-packet one-way delay: 191.684 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 0.91 Mbit/s
95th percentile per-packet one-way delay: 208.814 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 0.70 Mbit/s
95th percentile per-packet one-way delay: 205.920 ms
Loss rate: 1.10%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-08-09 08:11:24

End at: 2018-08-09 08:11:54

Local clock offset: -7.041 ms

Remote clock offset: 1.588 ms

Below is generated by plot.py at 2018-08-09 08:13:23

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.11 Mbit/s

95th percentile per-packet one-way delay: 201.155 ms

Loss rate: 0.18%

-- Flow 1:

Average throughput: 1.30 Mbit/s

95th percentile per-packet one-way delay: 193.248 ms

Loss rate: 0.10%

-- Flow 2:

Average throughput: 0.86 Mbit/s

95th percentile per-packet one-way delay: 205.344 ms

Loss rate: 0.30%

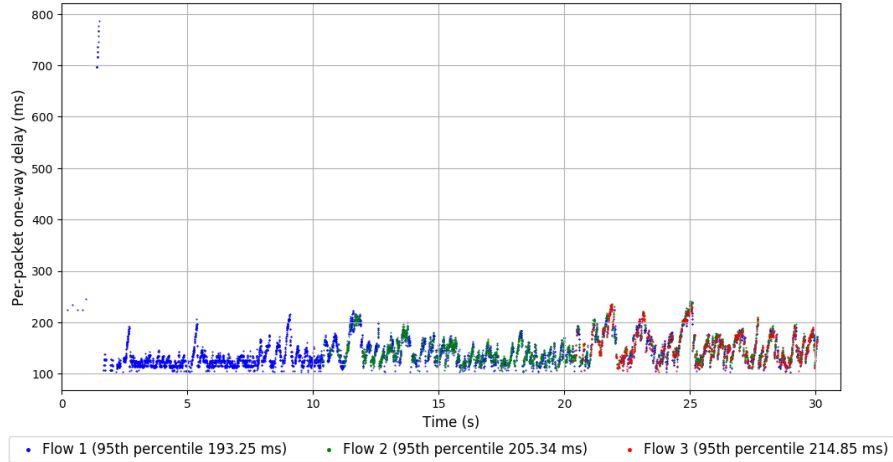
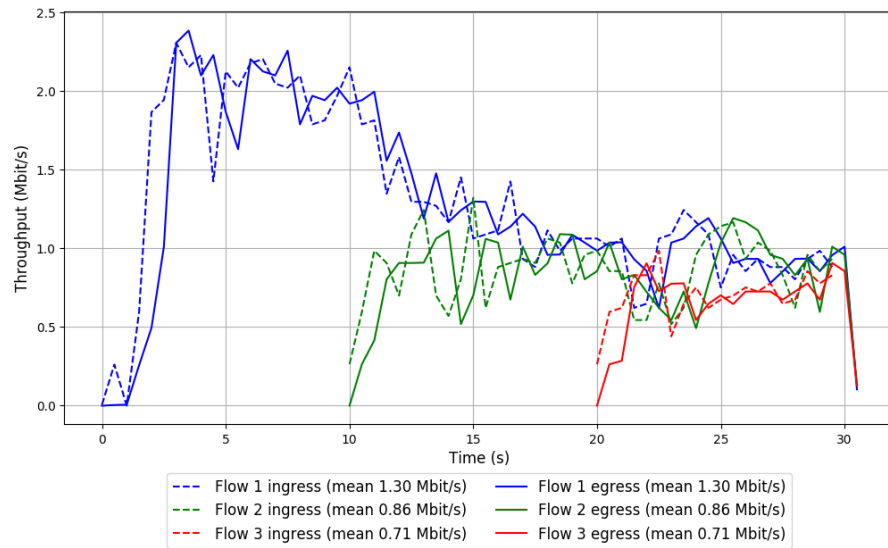
-- Flow 3:

Average throughput: 0.71 Mbit/s

95th percentile per-packet one-way delay: 214.849 ms

Loss rate: 0.37%

Run 3: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-08-09 07:22:15

End at: 2018-08-09 07:22:45

Local clock offset: -5.298 ms

Remote clock offset: 0.365 ms

Below is generated by plot.py at 2018-08-09 08:13:23

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.40 Mbit/s

95th percentile per-packet one-way delay: 3075.868 ms

Loss rate: 12.95%

-- Flow 1:

Average throughput: 2.38 Mbit/s

95th percentile per-packet one-way delay: 3084.848 ms

Loss rate: 12.25%

-- Flow 2:

Average throughput: 0.02 Mbit/s

95th percentile per-packet one-way delay: 2638.781 ms

Loss rate: 49.07%

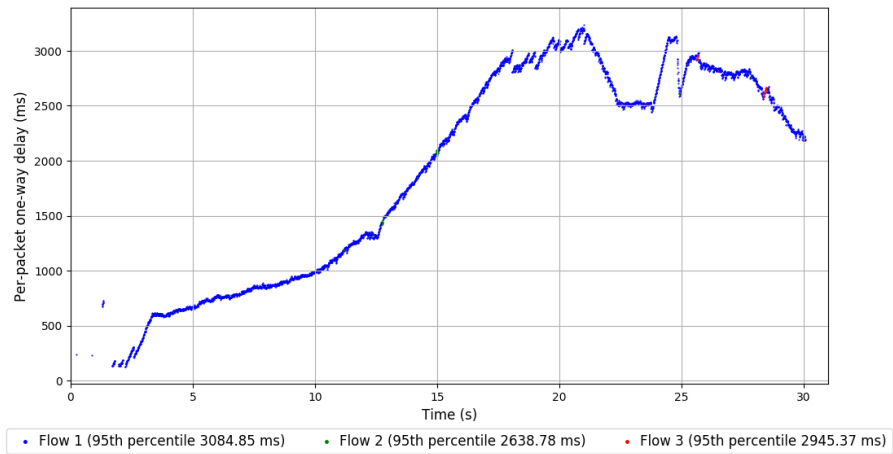
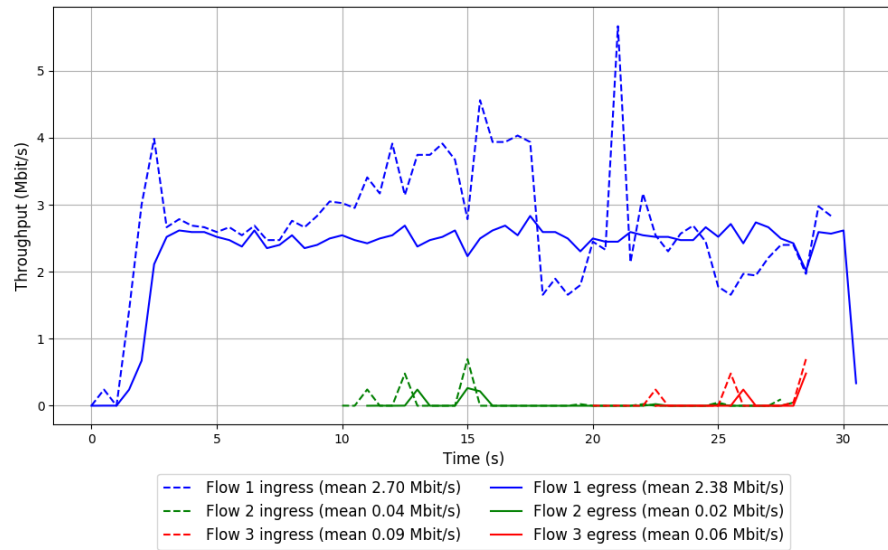
-- Flow 3:

Average throughput: 0.06 Mbit/s

95th percentile per-packet one-way delay: 2945.373 ms

Loss rate: 50.57%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-08-09 07:42:38

End at: 2018-08-09 07:43:08

Local clock offset: -8.562 ms

Remote clock offset: 5.491 ms

Below is generated by plot.py at 2018-08-09 08:13:23

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.33 Mbit/s

95th percentile per-packet one-way delay: 3186.143 ms

Loss rate: 13.55%

-- Flow 1:

Average throughput: 2.27 Mbit/s

95th percentile per-packet one-way delay: 3186.143 ms

Loss rate: 12.43%

-- Flow 2:

Average throughput: 0.09 Mbit/s

95th percentile per-packet one-way delay: 3176.597 ms

Loss rate: 34.43%

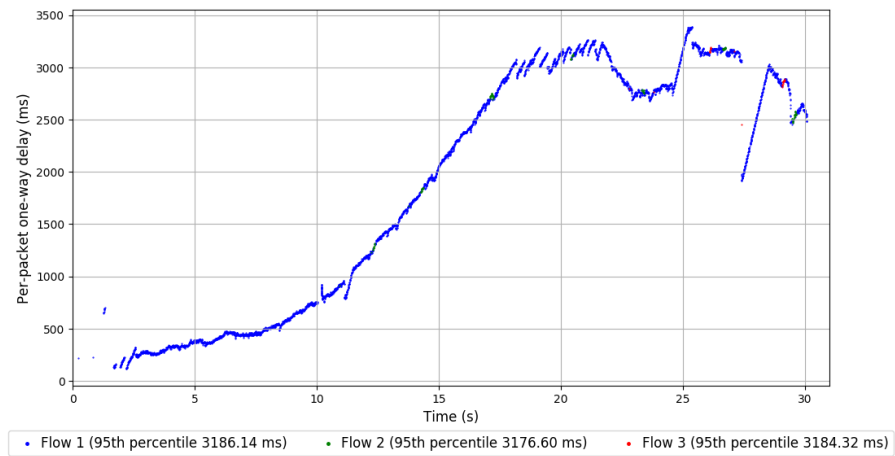
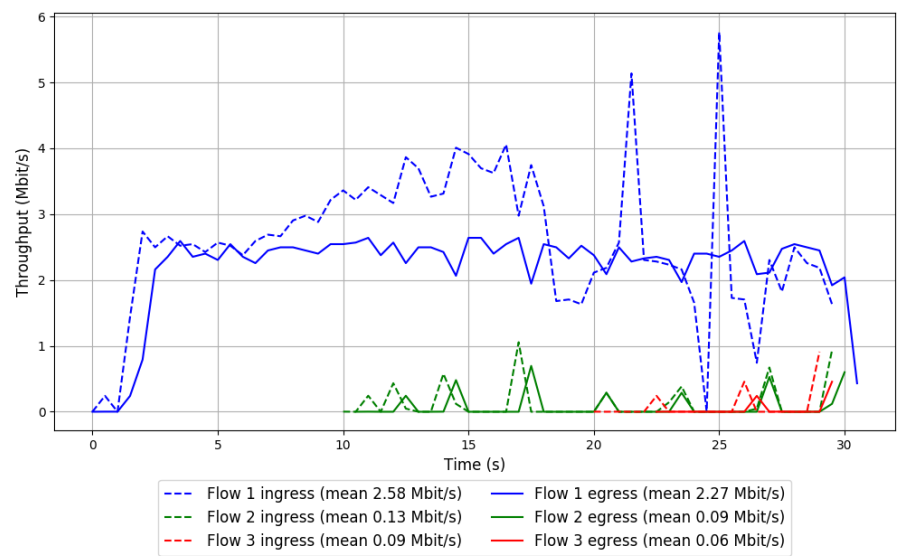
-- Flow 3:

Average throughput: 0.06 Mbit/s

95th percentile per-packet one-way delay: 3184.318 ms

Loss rate: 56.46%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

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

End at: 2018-08-09 08:03:31

Local clock offset: -7.042 ms

Remote clock offset: 1.439 ms

Below is generated by plot.py at 2018-08-09 08:13:25

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.27 Mbit/s

95th percentile per-packet one-way delay: 3400.464 ms

Loss rate: 13.66%

-- Flow 1:

Average throughput: 2.06 Mbit/s

95th percentile per-packet one-way delay: 3400.537 ms

Loss rate: 11.84%

-- Flow 2:

Average throughput: 0.34 Mbit/s

95th percentile per-packet one-way delay: 3389.893 ms

Loss rate: 25.45%

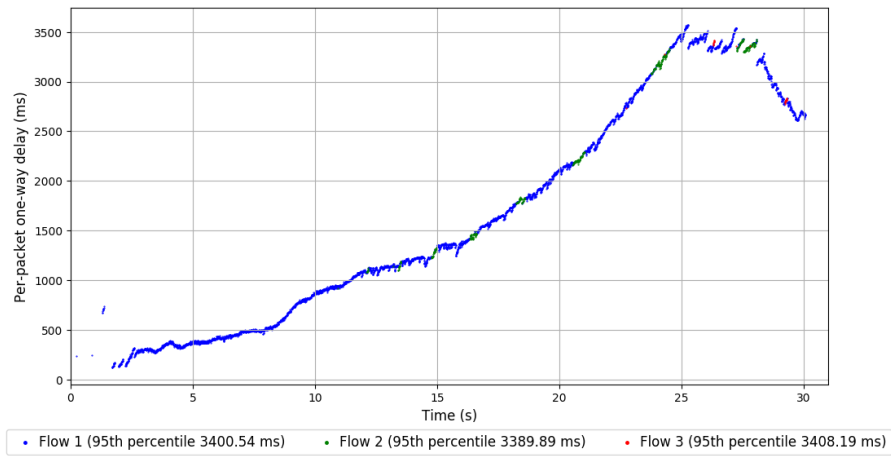
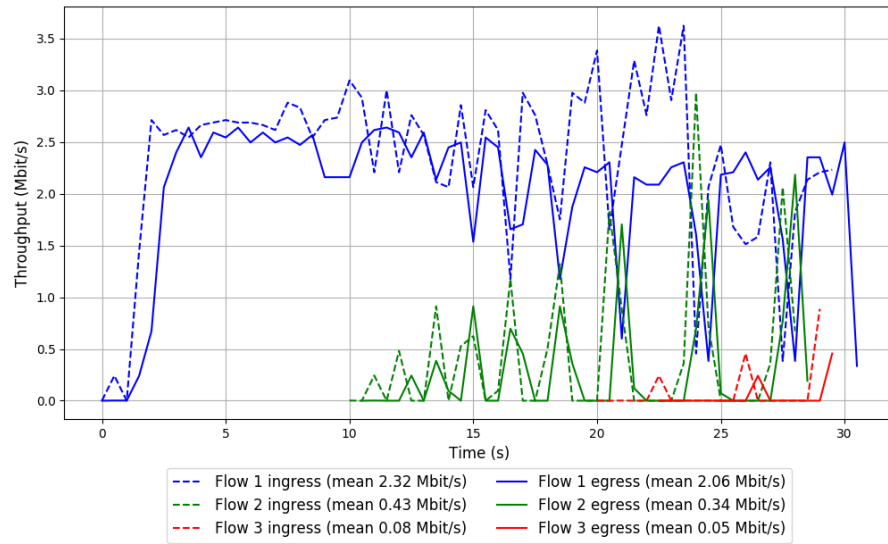
-- Flow 3:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 3408.192 ms

Loss rate: 55.80%

Run 3: Report of TCP Cubic — Data Link

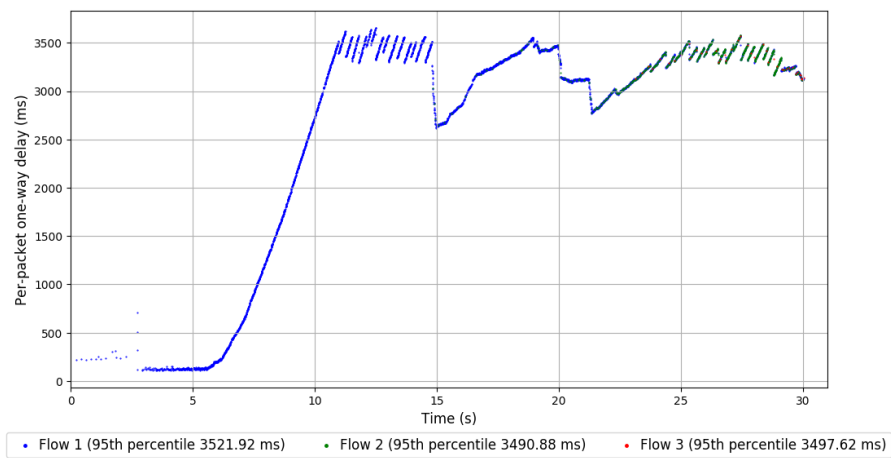
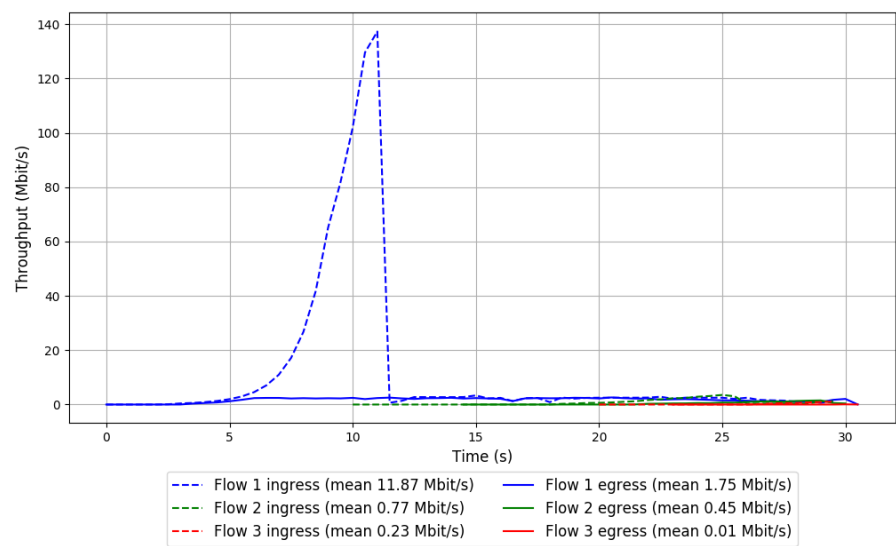


```
Run 1: Statistics of FillP

Start at: 2018-08-09 07:16:11
End at: 2018-08-09 07:16:41
Local clock offset: -2.635 ms
Remote clock offset: 0.35 ms

# Below is generated by plot.py at 2018-08-09 08:13:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 3518.569 ms
Loss rate: 84.14%
-- Flow 1:
Average throughput: 1.75 Mbit/s
95th percentile per-packet one-way delay: 3521.920 ms
Loss rate: 85.30%
-- Flow 2:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 3490.882 ms
Loss rate: 55.42%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 3497.616 ms
Loss rate: 96.31%
```

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-08-09 07:36:38

End at: 2018-08-09 07:37:08

Local clock offset: -8.053 ms

Remote clock offset: 5.45 ms

Below is generated by plot.py at 2018-08-09 08:13:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.19 Mbit/s

95th percentile per-packet one-way delay: 3249.717 ms

Loss rate: 82.50%

-- Flow 1:

Average throughput: 1.78 Mbit/s

95th percentile per-packet one-way delay: 3150.781 ms

Loss rate: 83.72%

-- Flow 2:

Average throughput: 0.74 Mbit/s

95th percentile per-packet one-way delay: 3316.752 ms

Loss rate: 73.23%

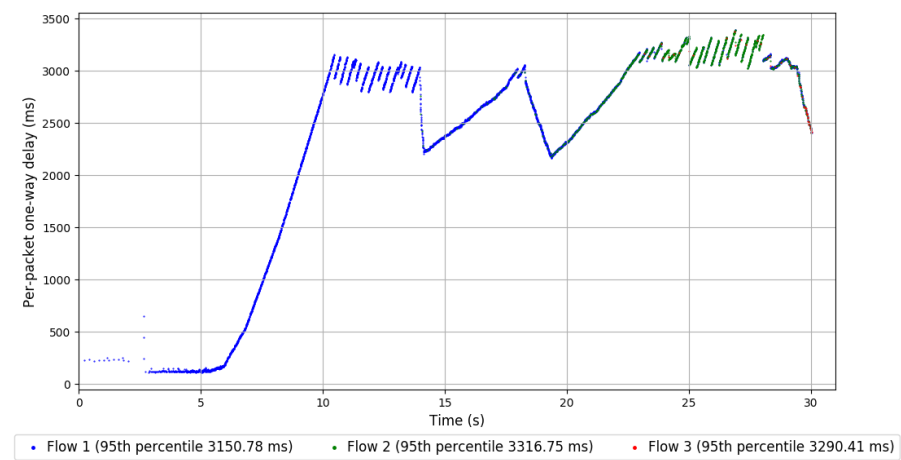
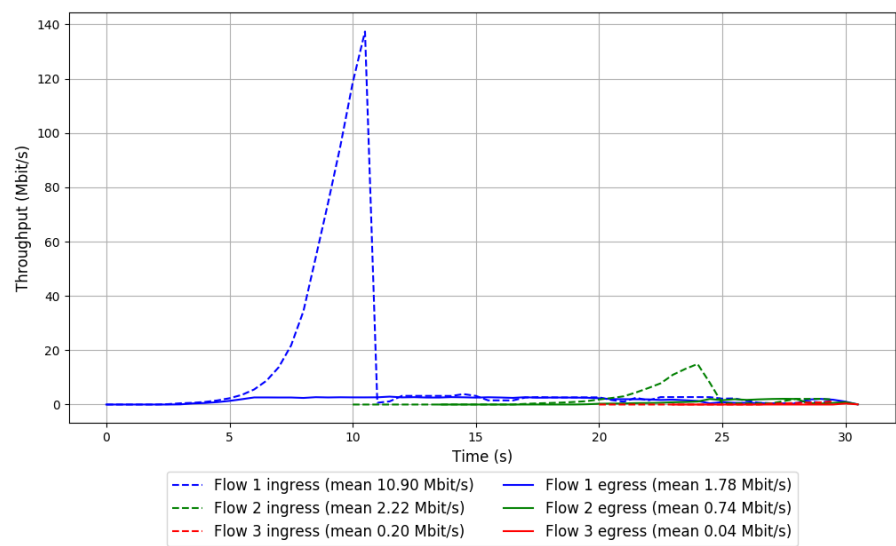
-- Flow 3:

Average throughput: 0.04 Mbit/s

95th percentile per-packet one-way delay: 3290.415 ms

Loss rate: 87.85%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-08-09 07:57:01

End at: 2018-08-09 07:57:31

Local clock offset: -7.25 ms

Remote clock offset: 5.973 ms

Below is generated by plot.py at 2018-08-09 08:13:35

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.25 Mbit/s

95th percentile per-packet one-way delay: 3178.041 ms

Loss rate: 85.60%

-- Flow 1:

Average throughput: 1.73 Mbit/s

95th percentile per-packet one-way delay: 3186.916 ms

Loss rate: 87.68%

-- Flow 2:

Average throughput: 0.95 Mbit/s

95th percentile per-packet one-way delay: 3154.486 ms

Loss rate: 66.41%

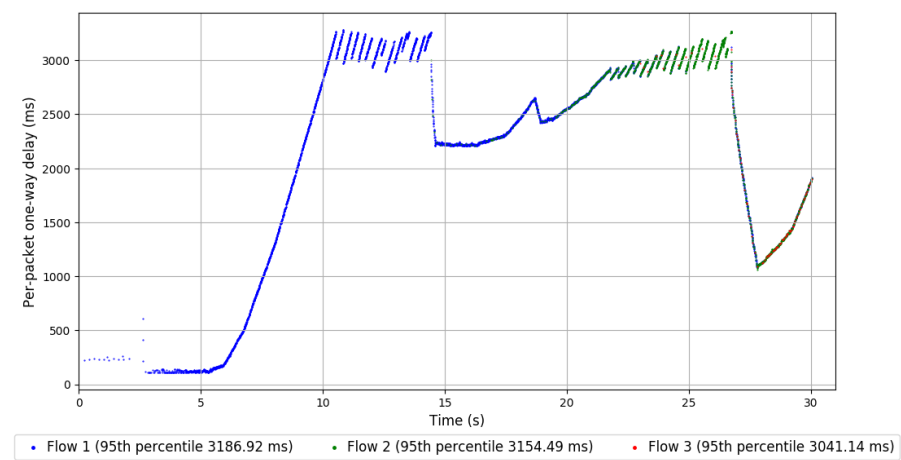
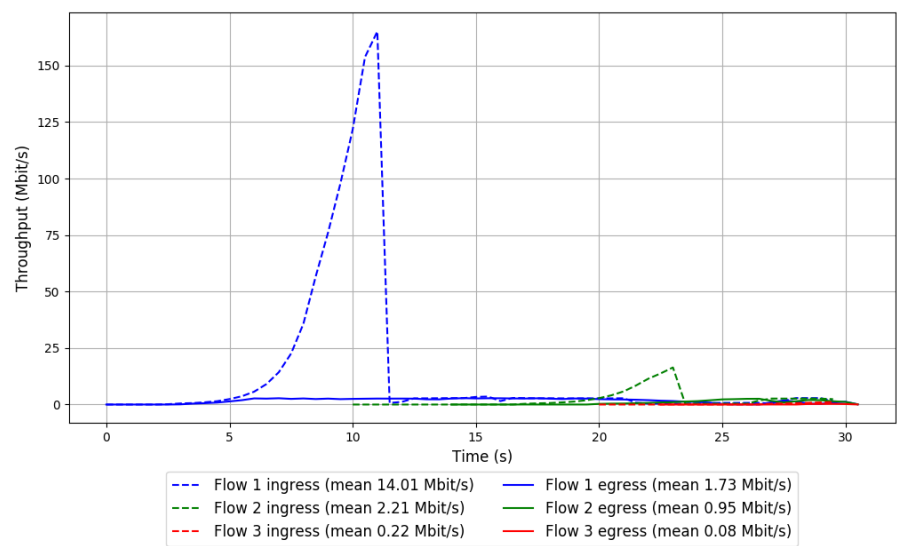
-- Flow 3:

Average throughput: 0.08 Mbit/s

95th percentile per-packet one-way delay: 3041.140 ms

Loss rate: 73.84%

Run 3: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2018-08-09 07:29:26

End at: 2018-08-09 07:29:56

Local clock offset: -6.943 ms

Remote clock offset: 5.508 ms

Below is generated by plot.py at 2018-08-09 08:13:35

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.40 Mbit/s

95th percentile per-packet one-way delay: 3113.946 ms

Loss rate: 44.31%

-- Flow 1:

Average throughput: 1.53 Mbit/s

95th percentile per-packet one-way delay: 3097.547 ms

Loss rate: 27.08%

-- Flow 2:

Average throughput: 1.32 Mbit/s

95th percentile per-packet one-way delay: 3129.836 ms

Loss rate: 44.15%

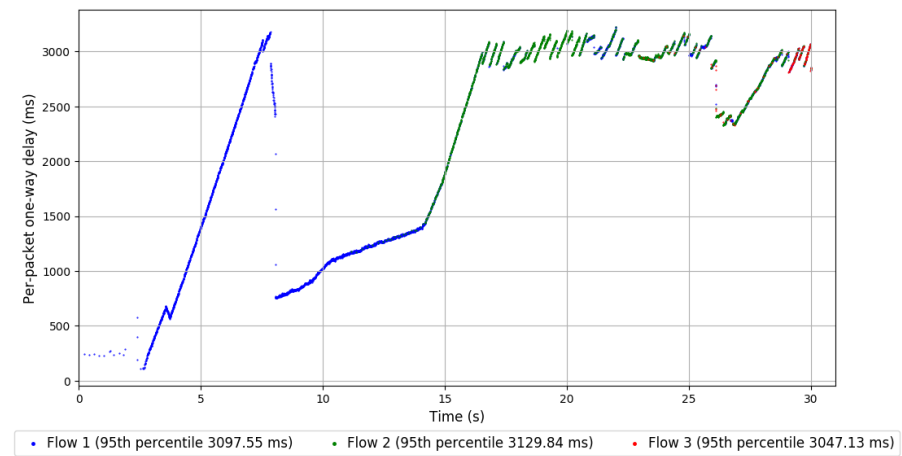
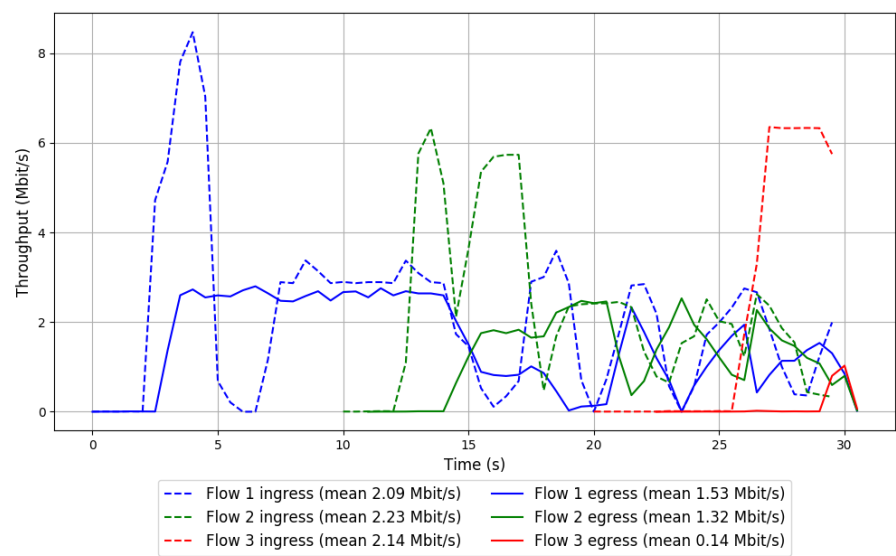
-- Flow 3:

Average throughput: 0.14 Mbit/s

95th percentile per-packet one-way delay: 3047.134 ms

Loss rate: 95.31%

Run 1: Report of FillP-Sheep — Data Link



Run 2: Statistics of FillP-Sheep

Start at: 2018-08-09 07:49:49

End at: 2018-08-09 07:50:19

Local clock offset: -7.991 ms

Remote clock offset: 0.956 ms

Below is generated by plot.py at 2018-08-09 08:13:35

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.93 Mbit/s

95th percentile per-packet one-way delay: 4184.301 ms

Loss rate: 51.74%

-- Flow 1:

Average throughput: 1.29 Mbit/s

95th percentile per-packet one-way delay: 3973.270 ms

Loss rate: 30.21%

-- Flow 2:

Average throughput: 1.08 Mbit/s

95th percentile per-packet one-way delay: 4291.725 ms

Loss rate: 66.71%

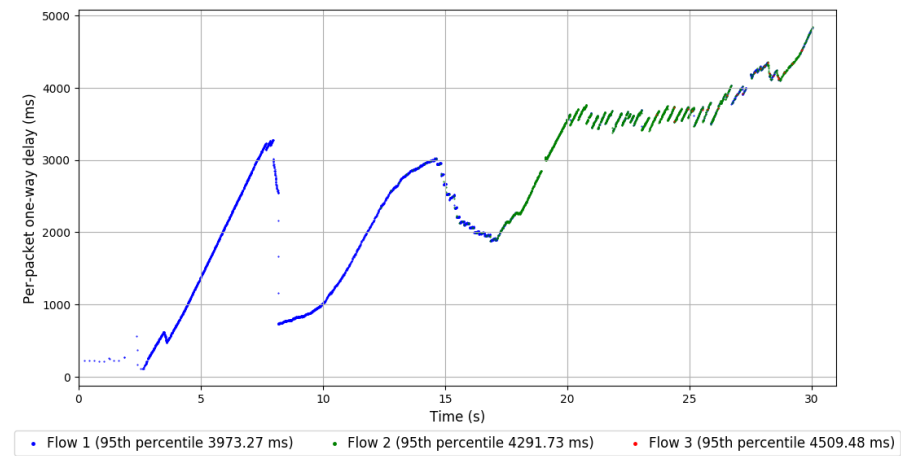
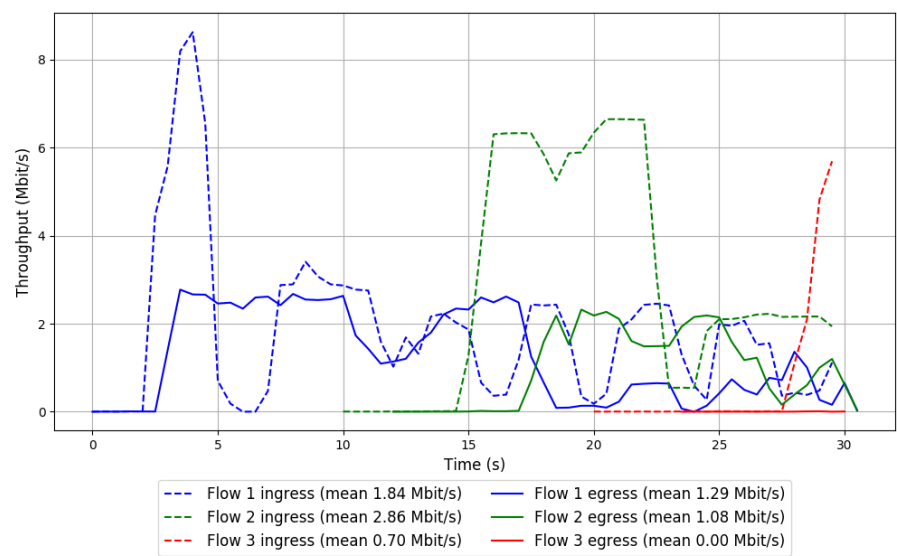
-- Flow 3:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 4509.485 ms

Loss rate: 99.67%

Run 2: Report of FillP-Sheep — Data Link



Run 3: Statistics of FillP-Sheep

Start at: 2018-08-09 08:10:12

End at: 2018-08-09 08:10:42

Local clock offset: -7.105 ms

Remote clock offset: 6.35 ms

Below is generated by plot.py at 2018-08-09 08:13:35

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.93 Mbit/s

95th percentile per-packet one-way delay: 4690.792 ms

Loss rate: 63.43%

-- Flow 1:

Average throughput: 1.37 Mbit/s

95th percentile per-packet one-way delay: 4717.600 ms

Loss rate: 50.29%

-- Flow 2:

Average throughput: 1.02 Mbit/s

95th percentile per-packet one-way delay: 3644.976 ms

Loss rate: 73.28%

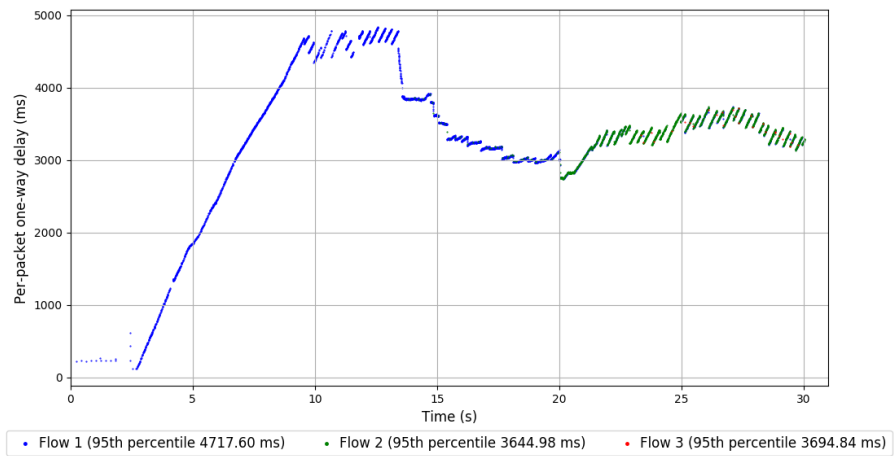
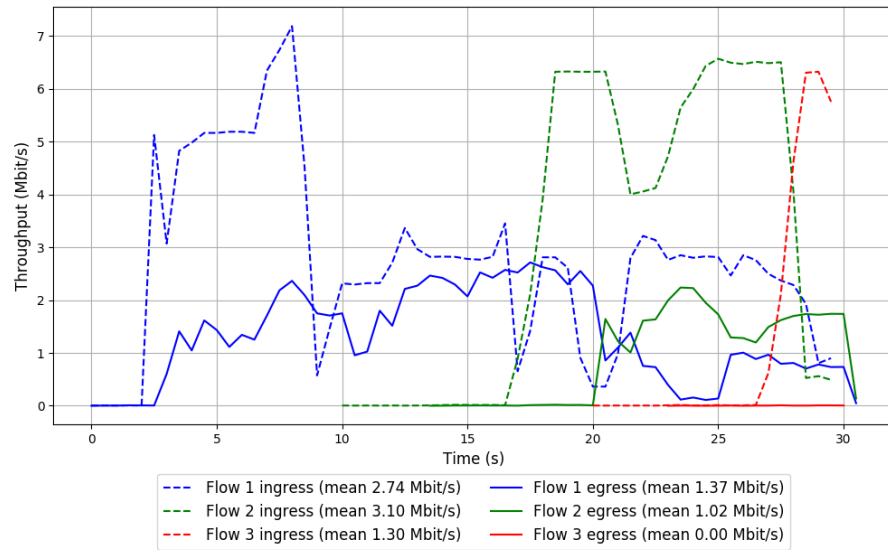
-- Flow 3:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 3694.844 ms

Loss rate: 99.80%

Run 3: Report of FillP-Sheep — Data Link

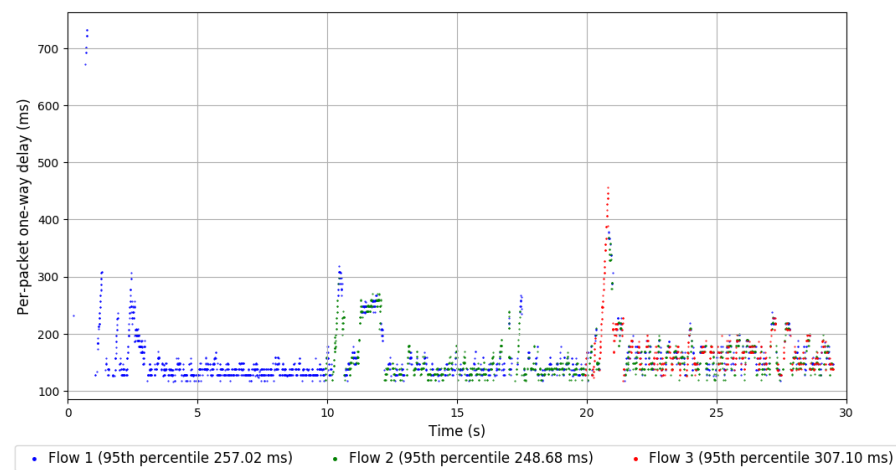
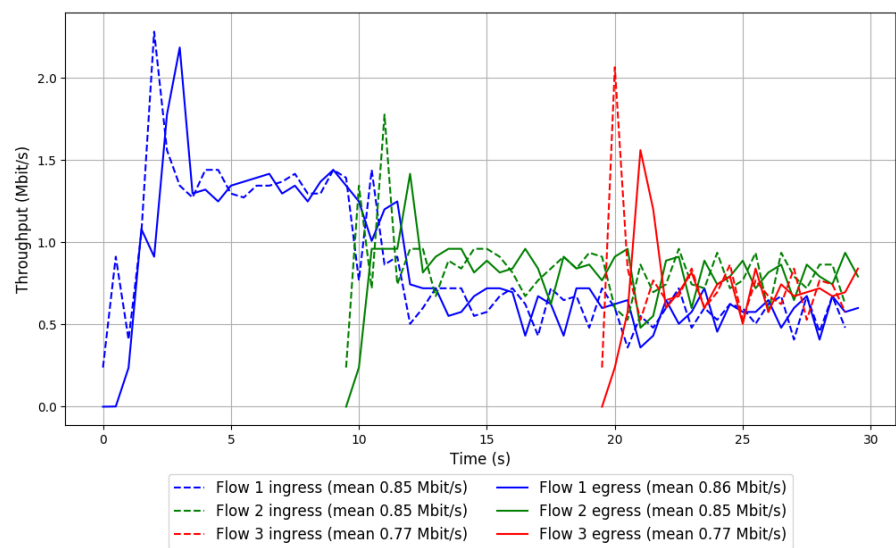


```
Run 1: Statistics of Indigo

Start at: 2018-08-09 07:20:58
End at: 2018-08-09 07:21:28
Local clock offset: -4.913 ms
Remote clock offset: 5.4 ms

# Below is generated by plot.py at 2018-08-09 08:13:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.67 Mbit/s
95th percentile per-packet one-way delay: 249.702 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 257.016 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 0.85 Mbit/s
95th percentile per-packet one-way delay: 248.683 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 0.77 Mbit/s
95th percentile per-packet one-way delay: 307.102 ms
Loss rate: 0.16%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-08-09 07:41:26

End at: 2018-08-09 07:41:56

Local clock offset: -8.508 ms

Remote clock offset: 5.448 ms

Below is generated by plot.py at 2018-08-09 08:13:35

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.86 Mbit/s

95th percentile per-packet one-way delay: 302.585 ms

Loss rate: 0.15%

-- Flow 1:

Average throughput: 1.22 Mbit/s

95th percentile per-packet one-way delay: 222.050 ms

Loss rate: 0.17%

-- Flow 2:

Average throughput: 0.61 Mbit/s

95th percentile per-packet one-way delay: 291.411 ms

Loss rate: 0.00%

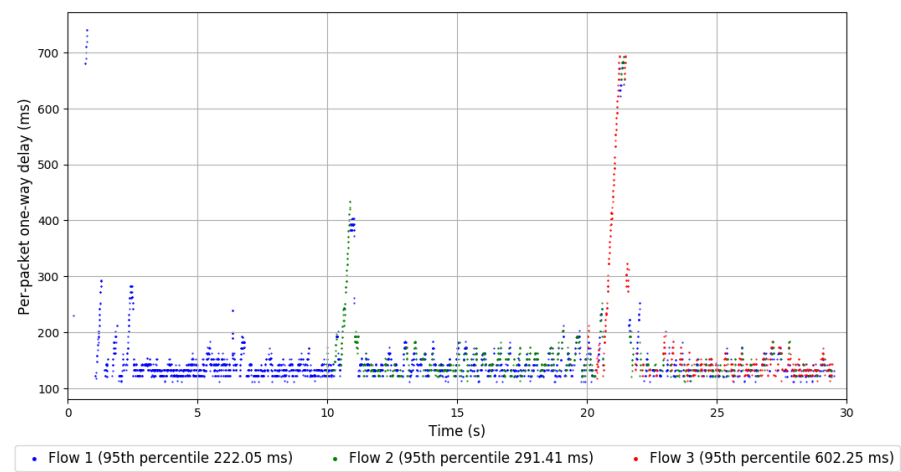
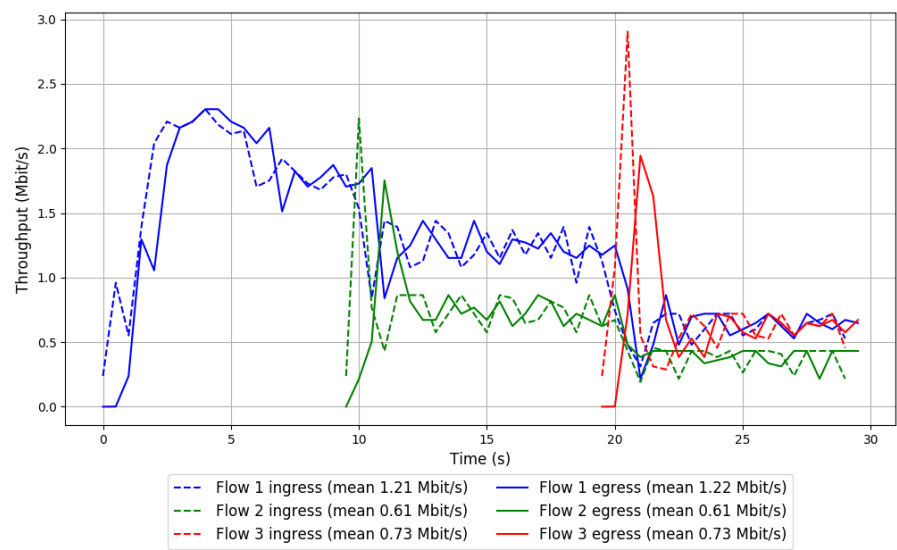
-- Flow 3:

Average throughput: 0.73 Mbit/s

95th percentile per-packet one-way delay: 602.248 ms

Loss rate: 0.34%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-08-09 08:01:49

End at: 2018-08-09 08:02:19

Local clock offset: -7.079 ms

Remote clock offset: 6.332 ms

Below is generated by plot.py at 2018-08-09 08:13:35

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.72 Mbit/s

95th percentile per-packet one-way delay: 223.440 ms

Loss rate: 0.43%

-- Flow 1:

Average throughput: 1.00 Mbit/s

95th percentile per-packet one-way delay: 232.671 ms

Loss rate: 0.16%

-- Flow 2:

Average throughput: 0.70 Mbit/s

95th percentile per-packet one-way delay: 232.161 ms

Loss rate: 0.78%

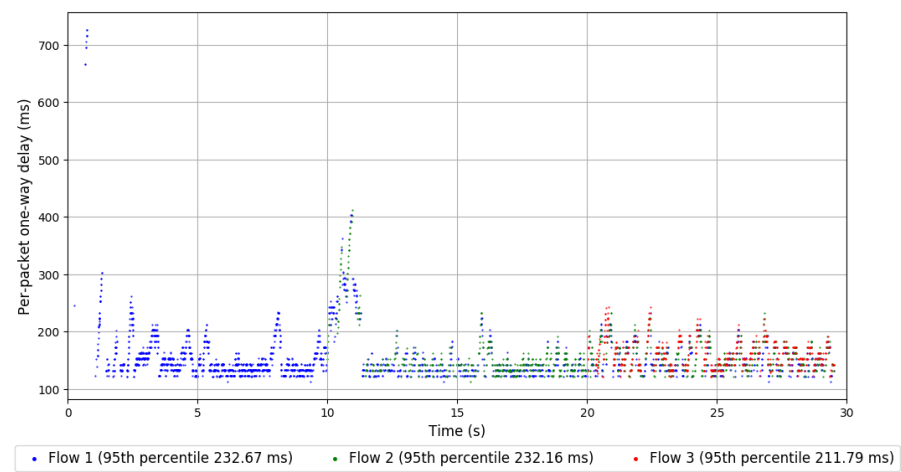
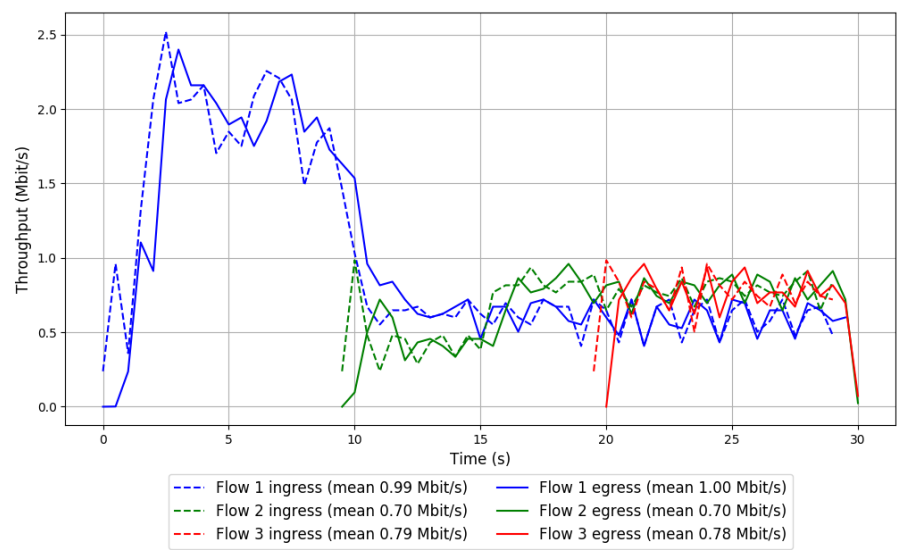
-- Flow 3:

Average throughput: 0.78 Mbit/s

95th percentile per-packet one-way delay: 211.786 ms

Loss rate: 0.80%

Run 3: Report of Indigo — Data Link

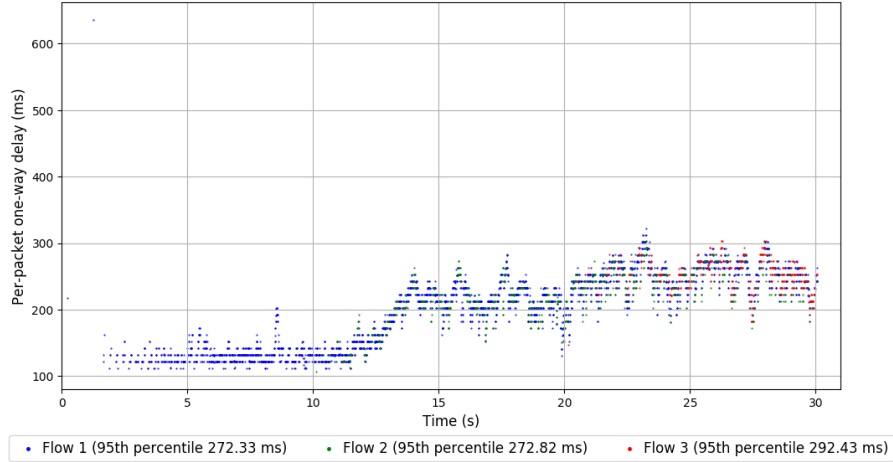
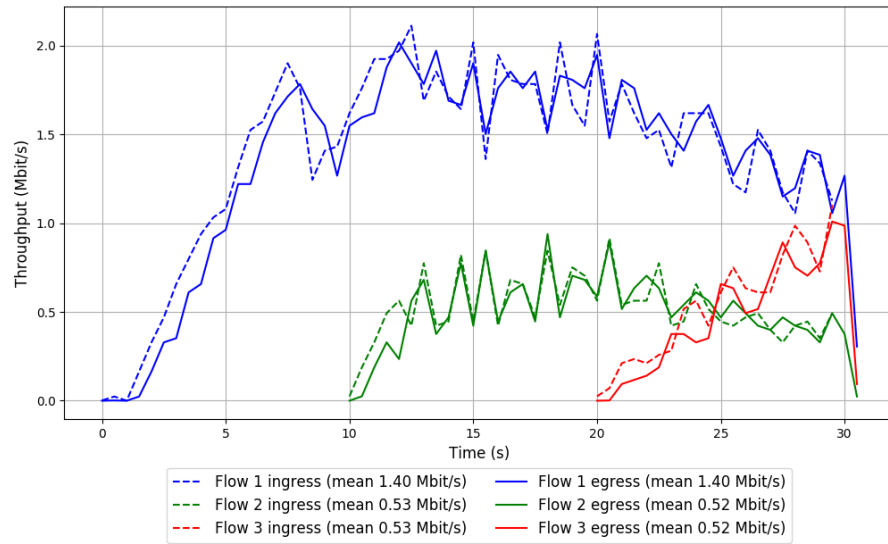


```
Run 1: Statistics of LEDBAT

Start at: 2018-08-09 07:13:47
End at: 2018-08-09 07:14:17
Local clock offset: -2.573 ms
Remote clock offset: 0.252 ms

# Below is generated by plot.py at 2018-08-09 08:13:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: 272.756 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 1.40 Mbit/s
95th percentile per-packet one-way delay: 272.333 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 0.52 Mbit/s
95th percentile per-packet one-way delay: 272.822 ms
Loss rate: 1.00%
-- Flow 3:
Average throughput: 0.52 Mbit/s
95th percentile per-packet one-way delay: 292.429 ms
Loss rate: 3.34%
```


Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-08-09 07:34:14

End at: 2018-08-09 07:34:44

Local clock offset: -7.759 ms

Remote clock offset: 0.575 ms

Below is generated by plot.py at 2018-08-09 08:13:35

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.98 Mbit/s

95th percentile per-packet one-way delay: 250.073 ms

Loss rate: 0.47%

-- Flow 1:

Average throughput: 1.26 Mbit/s

95th percentile per-packet one-way delay: 241.199 ms

Loss rate: 0.19%

-- Flow 2:

Average throughput: 0.87 Mbit/s

95th percentile per-packet one-way delay: 260.217 ms

Loss rate: 0.34%

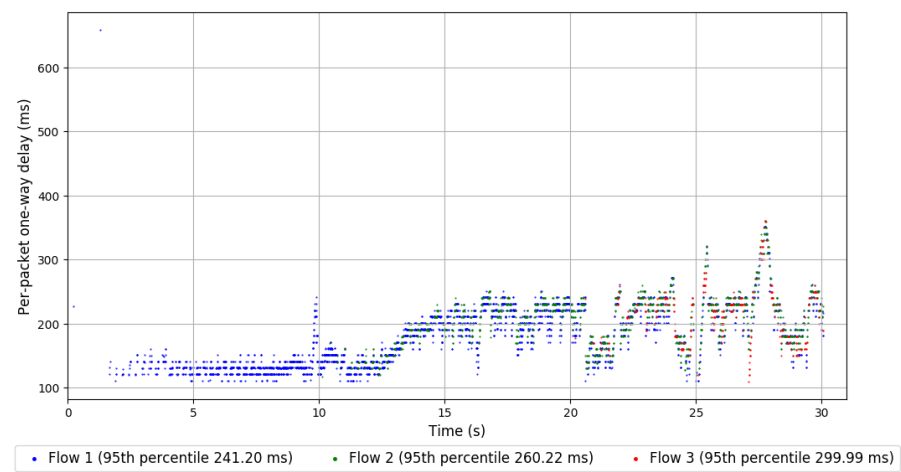
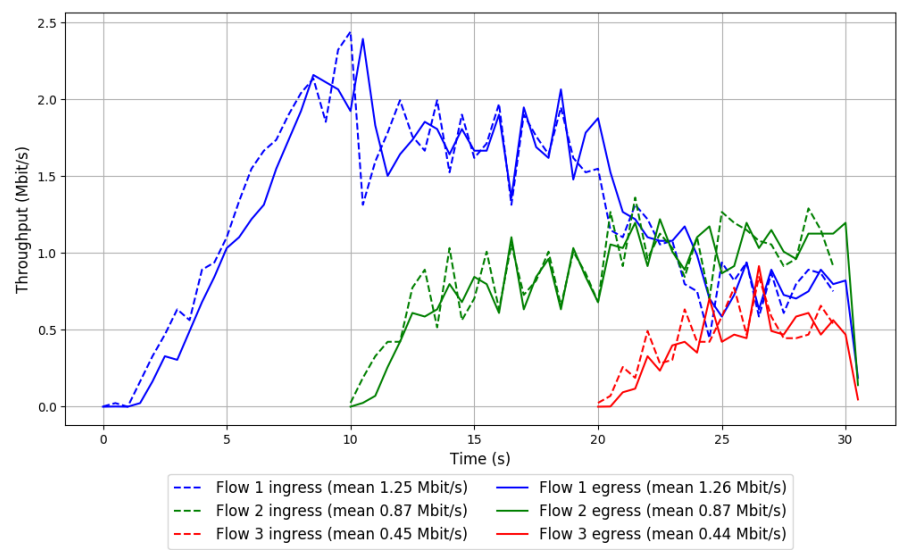
-- Flow 3:

Average throughput: 0.44 Mbit/s

95th percentile per-packet one-way delay: 299.994 ms

Loss rate: 3.42%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-08-09 07:54:37

End at: 2018-08-09 07:55:07

Local clock offset: -7.44 ms

Remote clock offset: 1.188 ms

Below is generated by plot.py at 2018-08-09 08:13:35

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.92 Mbit/s

95th percentile per-packet one-way delay: 332.516 ms

Loss rate: 0.37%

-- Flow 1:

Average throughput: 1.52 Mbit/s

95th percentile per-packet one-way delay: 292.644 ms

Loss rate: 0.15%

-- Flow 2:

Average throughput: 0.54 Mbit/s

95th percentile per-packet one-way delay: 422.466 ms

Loss rate: 0.33%

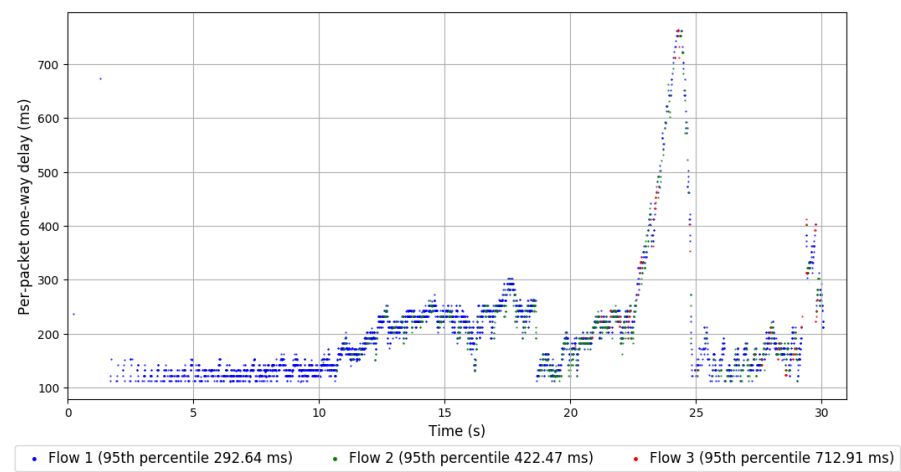
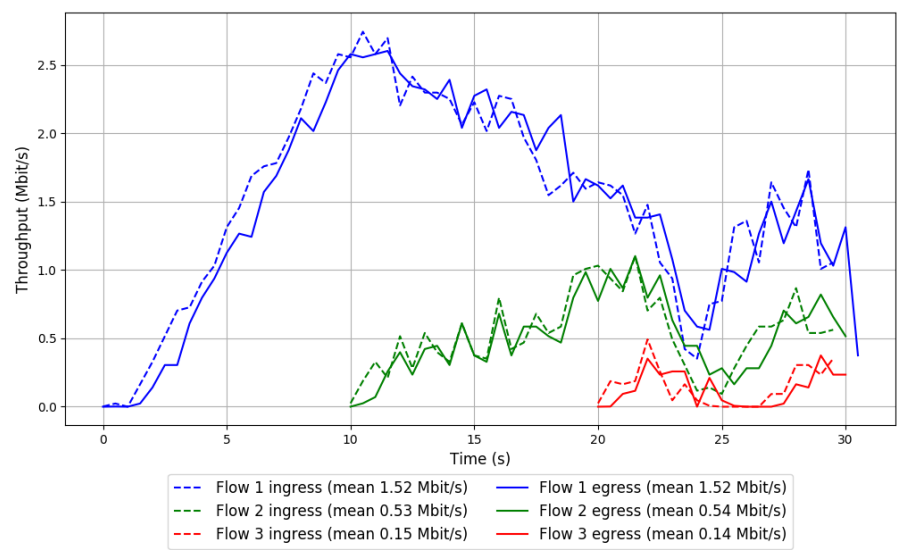
-- Flow 3:

Average throughput: 0.14 Mbit/s

95th percentile per-packet one-way delay: 712.909 ms

Loss rate: 7.13%

Run 3: Report of LEDBAT — Data Link

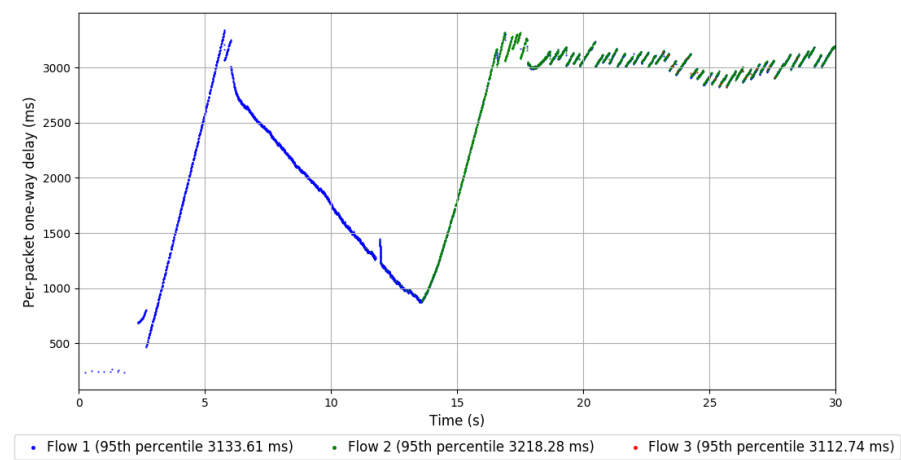
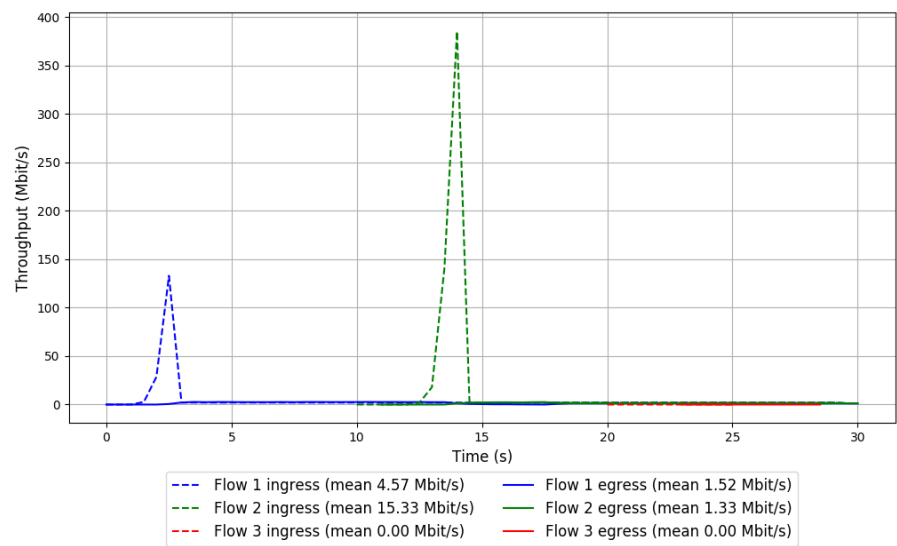


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-08-09 07:23:27
End at: 2018-08-09 07:23:57
Local clock offset: -5.561 ms
Remote clock offset: 5.42 ms

# Below is generated by plot.py at 2018-08-09 08:13:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.36 Mbit/s
95th percentile per-packet one-way delay: 3168.358 ms
Loss rate: 84.10%
-- Flow 1:
Average throughput: 1.52 Mbit/s
95th percentile per-packet one-way delay: 3133.608 ms
Loss rate: 66.81%
-- Flow 2:
Average throughput: 1.33 Mbit/s
95th percentile per-packet one-way delay: 3218.275 ms
Loss rate: 91.85%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 3112.745 ms
Loss rate: 4.60%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-08-09 07:43:49

End at: 2018-08-09 07:44:19

Local clock offset: -8.634 ms

Remote clock offset: 0.714 ms

Below is generated by plot.py at 2018-08-09 08:13:42

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.21 Mbit/s

95th percentile per-packet one-way delay: 3057.734 ms

Loss rate: 70.05%

-- Flow 1:

Average throughput: 1.76 Mbit/s

95th percentile per-packet one-way delay: 3010.451 ms

Loss rate: 52.40%

-- Flow 2:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 2996.956 ms

Loss rate: 10.63%

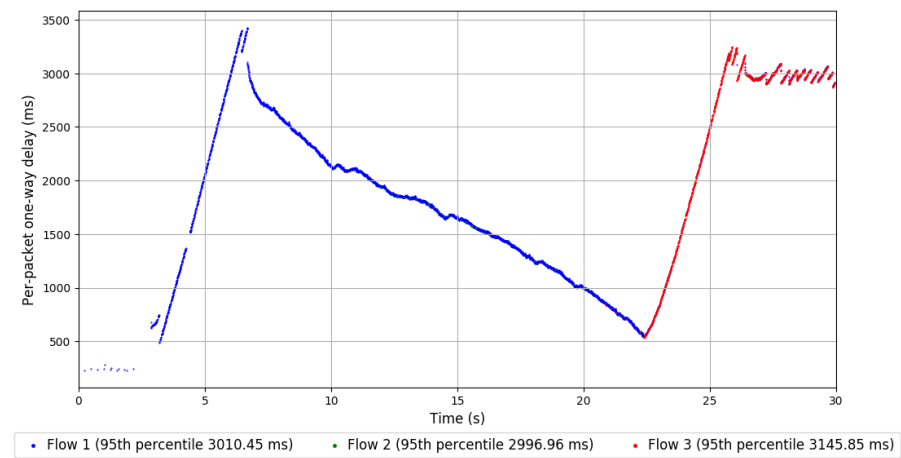
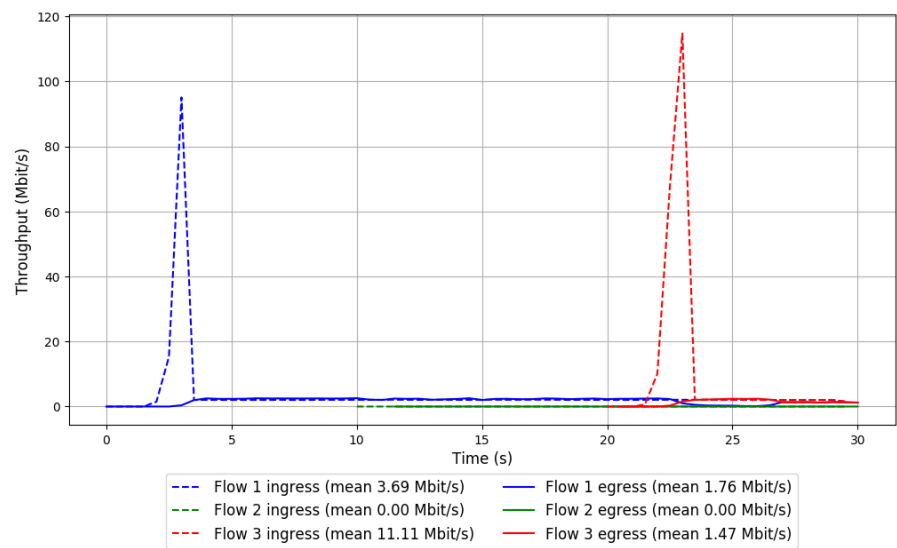
-- Flow 3:

Average throughput: 1.47 Mbit/s

95th percentile per-packet one-way delay: 3145.854 ms

Loss rate: 87.84%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-08-09 08:04:12

End at: 2018-08-09 08:04:42

Local clock offset: -7.031 ms

Remote clock offset: 1.46 ms

Below is generated by plot.py at 2018-08-09 08:14:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.29 Mbit/s

95th percentile per-packet one-way delay: 3259.151 ms

Loss rate: 95.02%

-- Flow 1:

Average throughput: 1.34 Mbit/s

95th percentile per-packet one-way delay: 3227.782 ms

Loss rate: 70.71%

-- Flow 2:

Average throughput: 1.53 Mbit/s

95th percentile per-packet one-way delay: 3277.122 ms

Loss rate: 97.71%

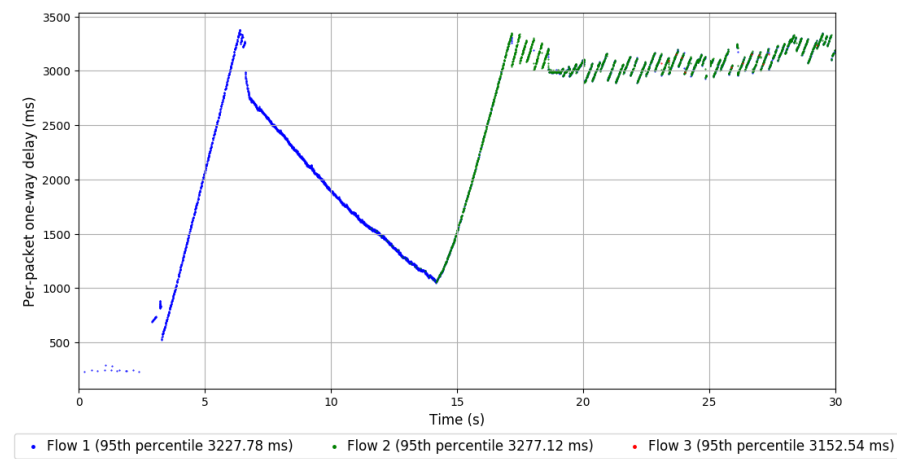
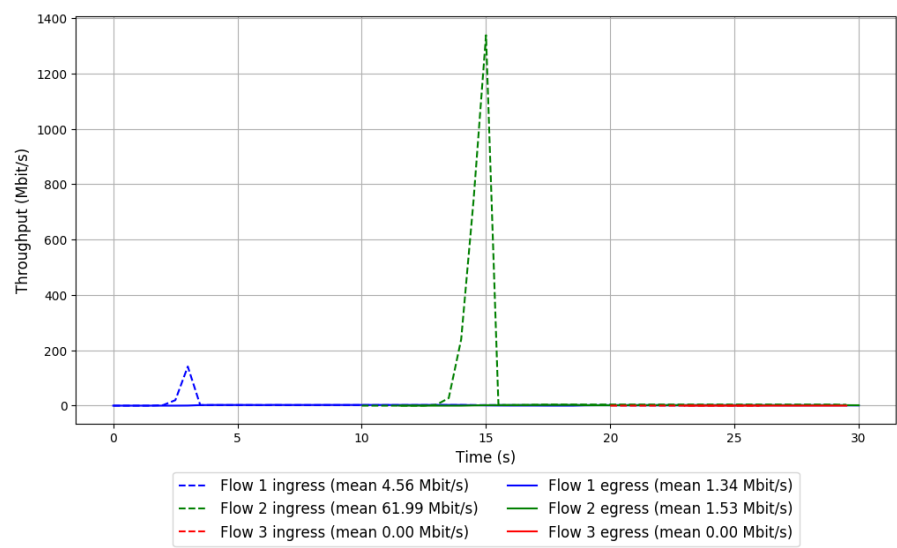
-- Flow 3:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 3152.539 ms

Loss rate: 31.07%

Run 3: Report of PCC-Allegro — Data Link

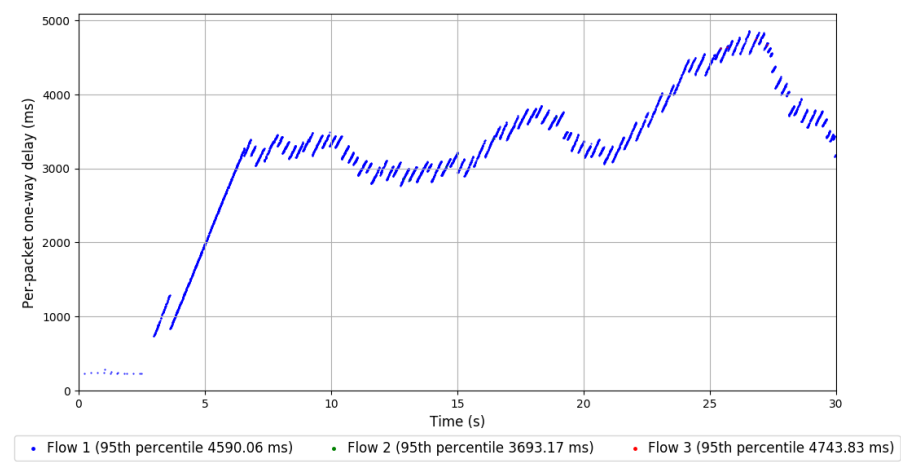
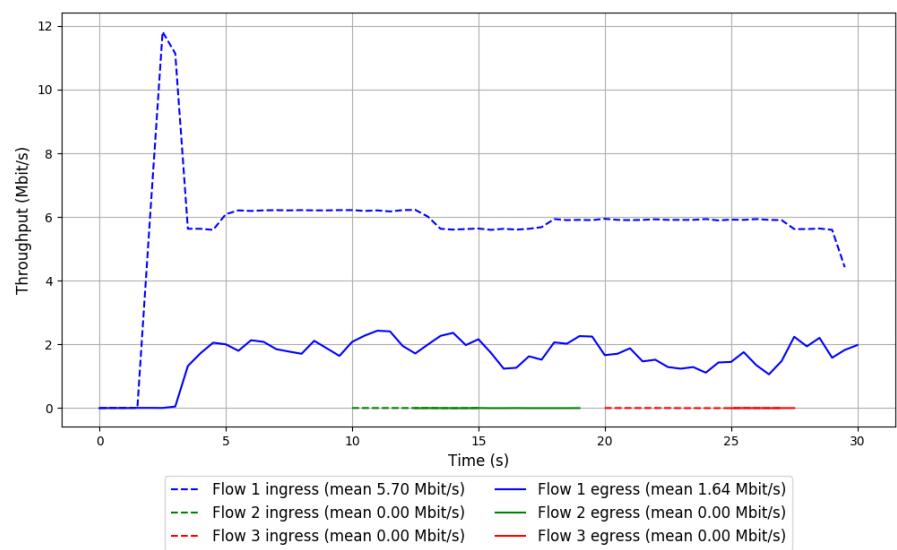


```
Run 1: Statistics of PCC-Expr

Start at: 2018-08-09 07:14:59
End at: 2018-08-09 07:15:29
Local clock offset: -2.565 ms
Remote clock offset: 0.311 ms

# Below is generated by plot.py at 2018-08-09 08:14:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.64 Mbit/s
95th percentile per-packet one-way delay: 4591.956 ms
Loss rate: 71.47%
-- Flow 1:
Average throughput: 1.64 Mbit/s
95th percentile per-packet one-way delay: 4590.065 ms
Loss rate: 71.47%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 3693.167 ms
Loss rate: 61.85%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 4743.826 ms
Loss rate: 76.30%
```

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2018-08-09 07:35:26

End at: 2018-08-09 07:35:56

Local clock offset: -7.938 ms

Remote clock offset: 5.379 ms

Below is generated by plot.py at 2018-08-09 08:14:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.27 Mbit/s

95th percentile per-packet one-way delay: 2596.094 ms

Loss rate: 59.27%

-- Flow 1:

Average throughput: 2.27 Mbit/s

95th percentile per-packet one-way delay: 2596.094 ms

Loss rate: 59.27%

-- Flow 2:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 2560.663 ms

Loss rate: 47.20%

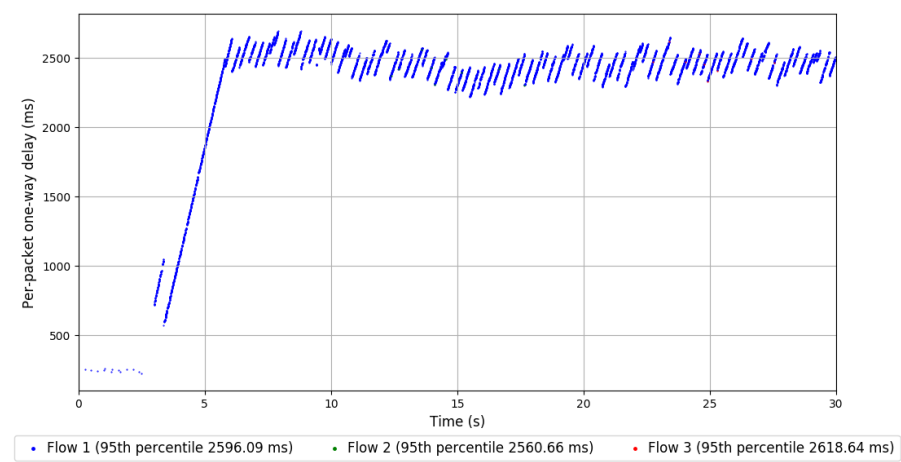
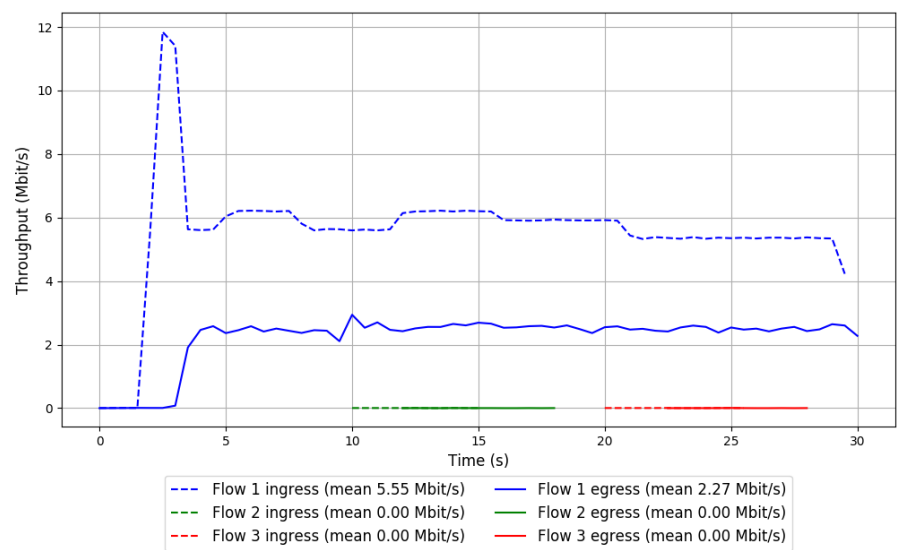
-- Flow 3:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 2618.636 ms

Loss rate: 50.57%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-08-09 07:55:49

End at: 2018-08-09 07:56:19

Local clock offset: -7.378 ms

Remote clock offset: 1.125 ms

Below is generated by plot.py at 2018-08-09 08:14:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.28 Mbit/s

95th percentile per-packet one-way delay: 2604.870 ms

Loss rate: 58.64%

-- Flow 1:

Average throughput: 2.28 Mbit/s

95th percentile per-packet one-way delay: 2604.849 ms

Loss rate: 58.65%

-- Flow 2:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 2677.224 ms

Loss rate: 46.88%

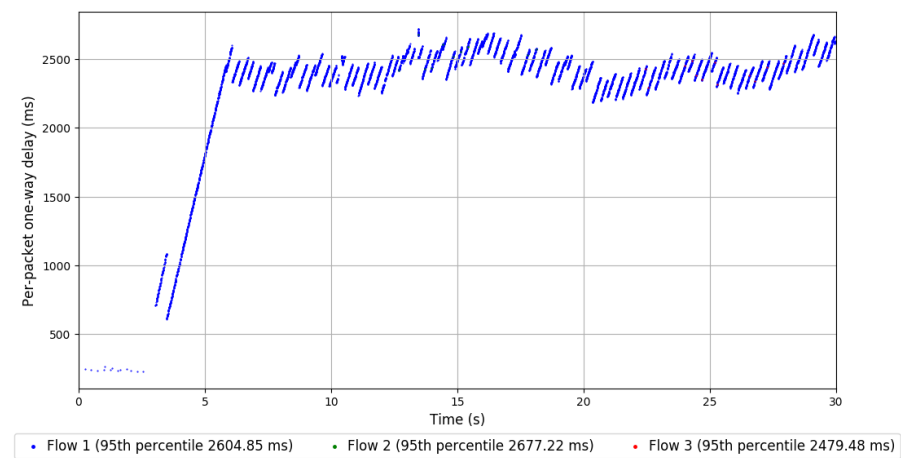
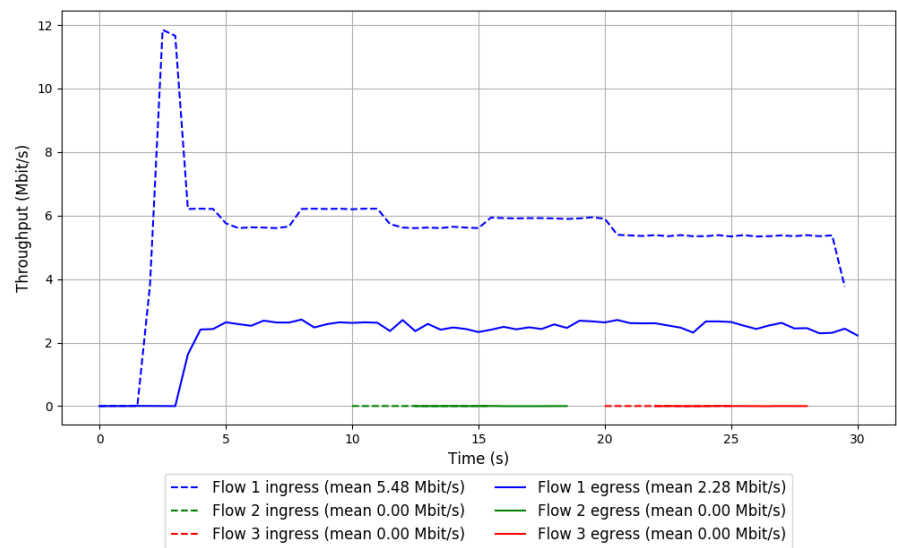
-- Flow 3:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 2479.479 ms

Loss rate: 39.59%

Run 3: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-08-09 07:18:35

End at: 2018-08-09 07:19:05

Local clock offset: -3.95 ms

Remote clock offset: 0.327 ms

Below is generated by plot.py at 2018-08-09 08:14:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.38 Mbit/s

95th percentile per-packet one-way delay: 1768.084 ms

Loss rate: 6.52%

-- Flow 1:

Average throughput: 1.83 Mbit/s

95th percentile per-packet one-way delay: 1751.474 ms

Loss rate: 4.51%

-- Flow 2:

Average throughput: 0.67 Mbit/s

95th percentile per-packet one-way delay: 1778.938 ms

Loss rate: 9.60%

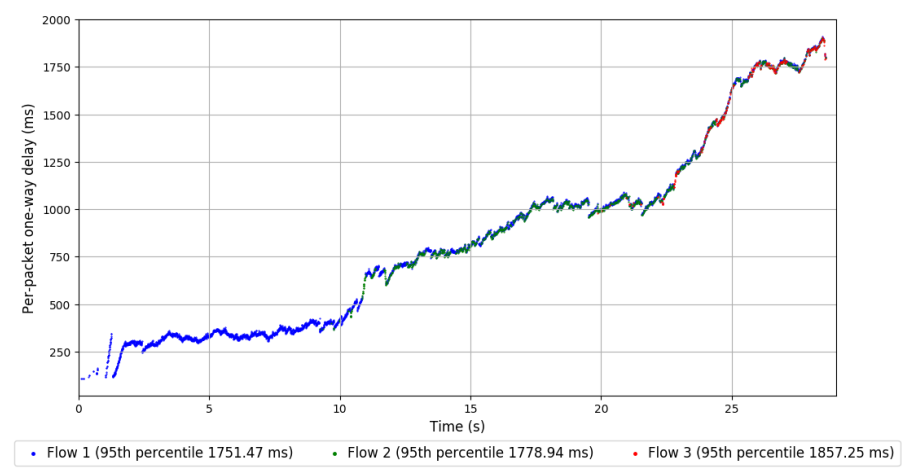
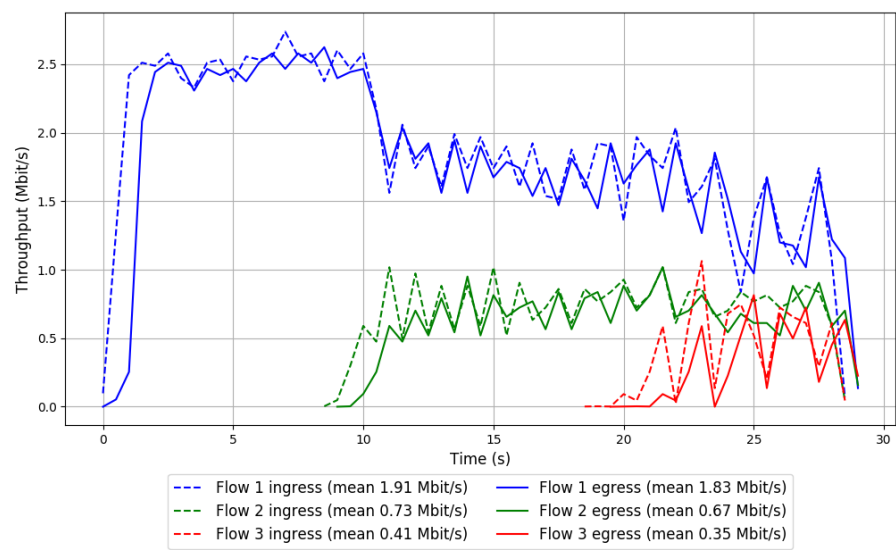
-- Flow 3:

Average throughput: 0.35 Mbit/s

95th percentile per-packet one-way delay: 1857.250 ms

Loss rate: 23.17%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-08-09 07:39:02

End at: 2018-08-09 07:39:32

Local clock offset: -8.225 ms

Remote clock offset: 0.435 ms

Below is generated by plot.py at 2018-08-09 08:14:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.48 Mbit/s

95th percentile per-packet one-way delay: 1473.616 ms

Loss rate: 5.63%

-- Flow 1:

Average throughput: 1.86 Mbit/s

95th percentile per-packet one-way delay: 1387.442 ms

Loss rate: 3.62%

-- Flow 2:

Average throughput: 0.76 Mbit/s

95th percentile per-packet one-way delay: 1498.454 ms

Loss rate: 8.99%

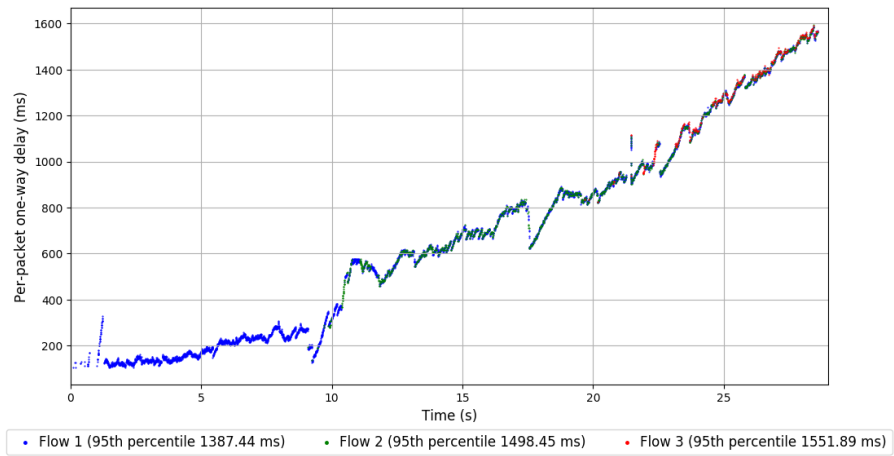
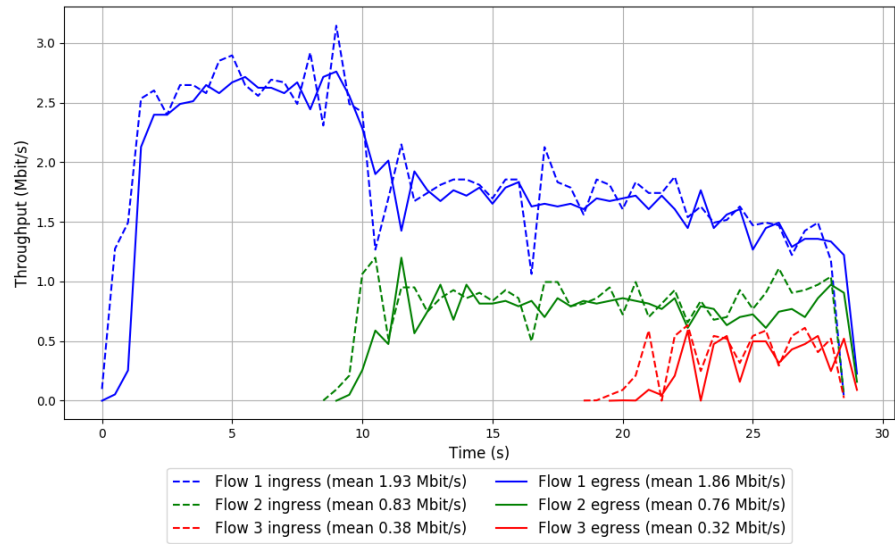
-- Flow 3:

Average throughput: 0.32 Mbit/s

95th percentile per-packet one-way delay: 1551.891 ms

Loss rate: 21.15%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-08-09 07:59:25

End at: 2018-08-09 07:59:55

Local clock offset: -7.191 ms

Remote clock offset: 1.364 ms

Below is generated by plot.py at 2018-08-09 08:14:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.53 Mbit/s

95th percentile per-packet one-way delay: 1823.035 ms

Loss rate: 6.59%

-- Flow 1:

Average throughput: 1.83 Mbit/s

95th percentile per-packet one-way delay: 1739.013 ms

Loss rate: 4.47%

-- Flow 2:

Average throughput: 0.89 Mbit/s

95th percentile per-packet one-way delay: 1929.838 ms

Loss rate: 8.59%

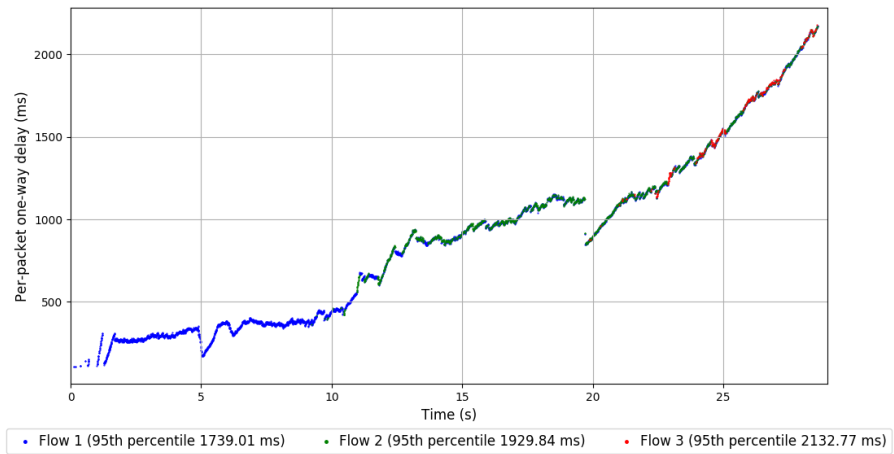
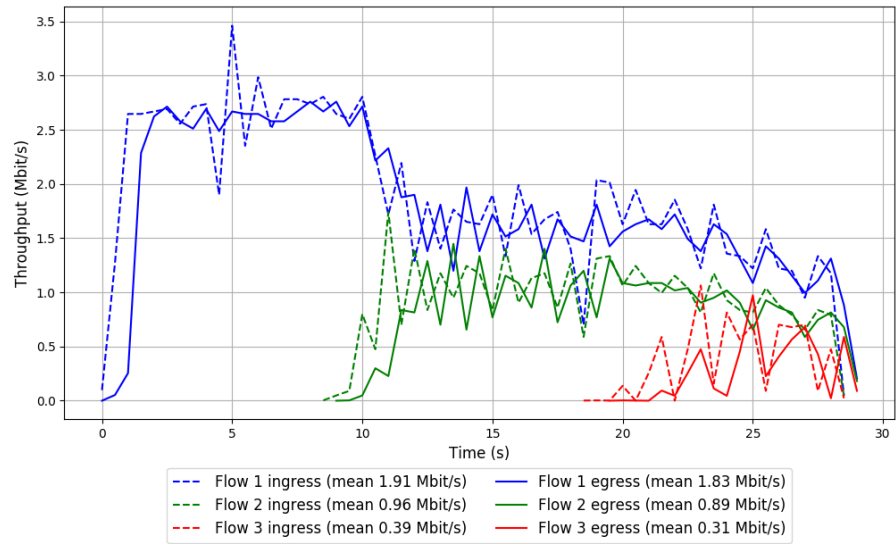
-- Flow 3:

Average throughput: 0.31 Mbit/s

95th percentile per-packet one-way delay: 2132.770 ms

Loss rate: 27.36%

Run 3: Report of QUIC Cubic — Data Link

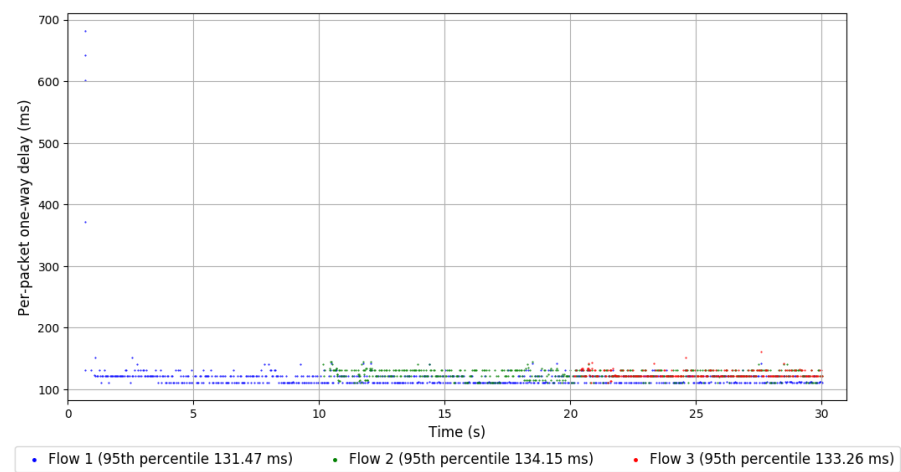
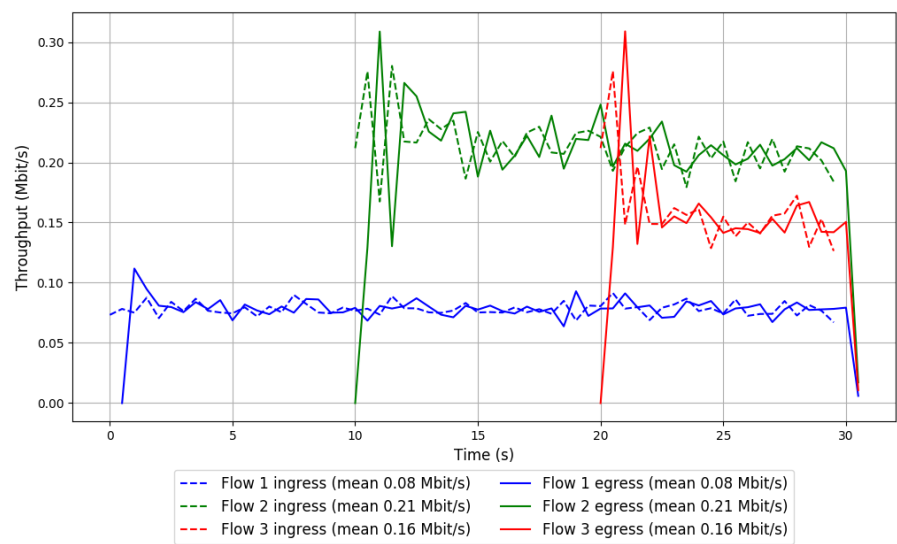


```
Run 1: Statistics of SCReAM

Start at: 2018-08-09 07:12:35
End at: 2018-08-09 07:13:05
Local clock offset: -2.596 ms
Remote clock offset: 5.151 ms

# Below is generated by plot.py at 2018-08-09 08:14:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 131.584 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 131.472 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 134.147 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 133.260 ms
Loss rate: 0.33%
```


Run 1: Report of SReAM — Data Link

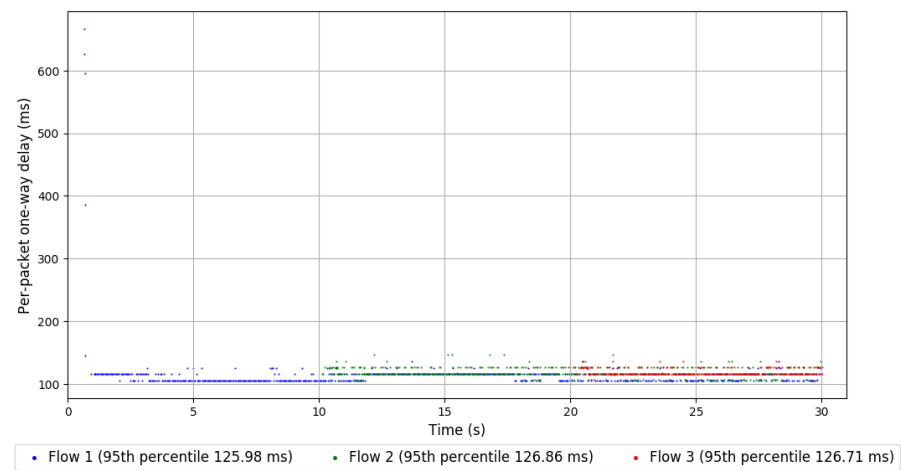
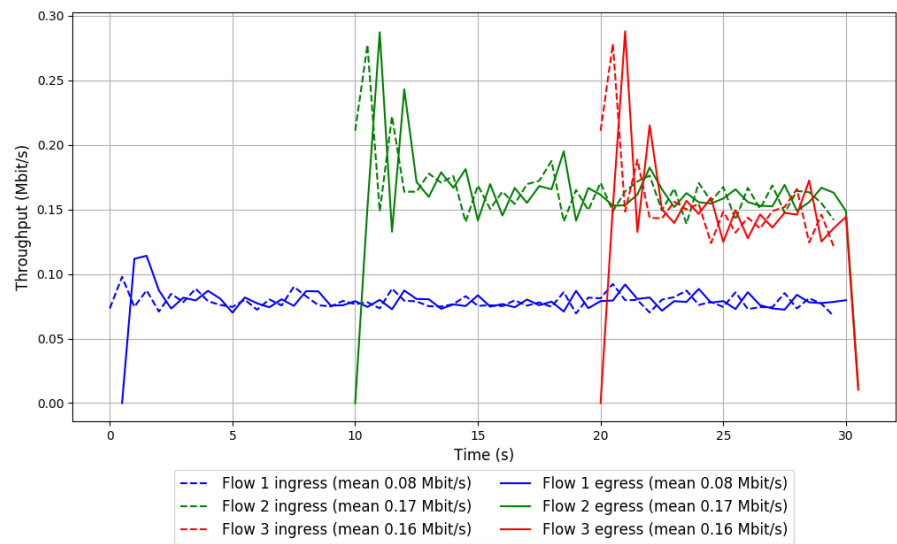


Run 2: Statistics of SReAM

Start at: 2018-08-09 07:33:02
End at: 2018-08-09 07:33:32
Local clock offset: -7.579 ms
Remote clock offset: 0.493 ms

Below is generated by plot.py at 2018-08-09 08:14:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 126.731 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 125.978 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 126.859 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 126.710 ms
Loss rate: 0.33%

Run 2: Report of SReAM — Data Link

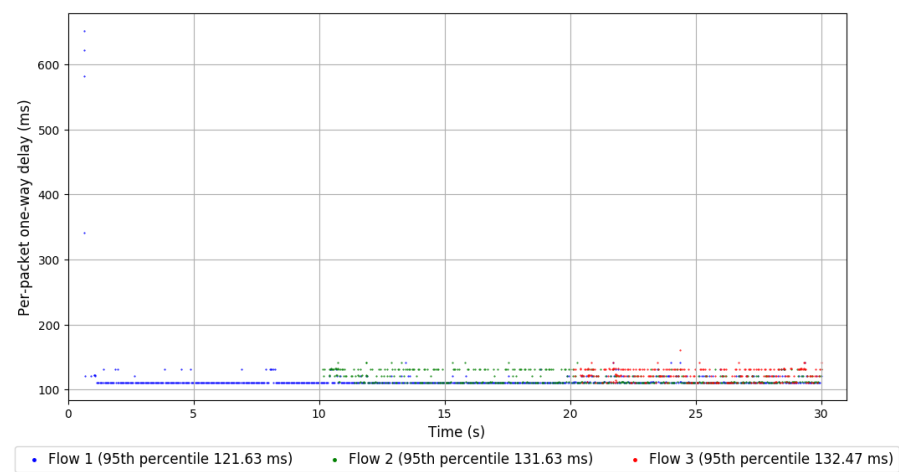
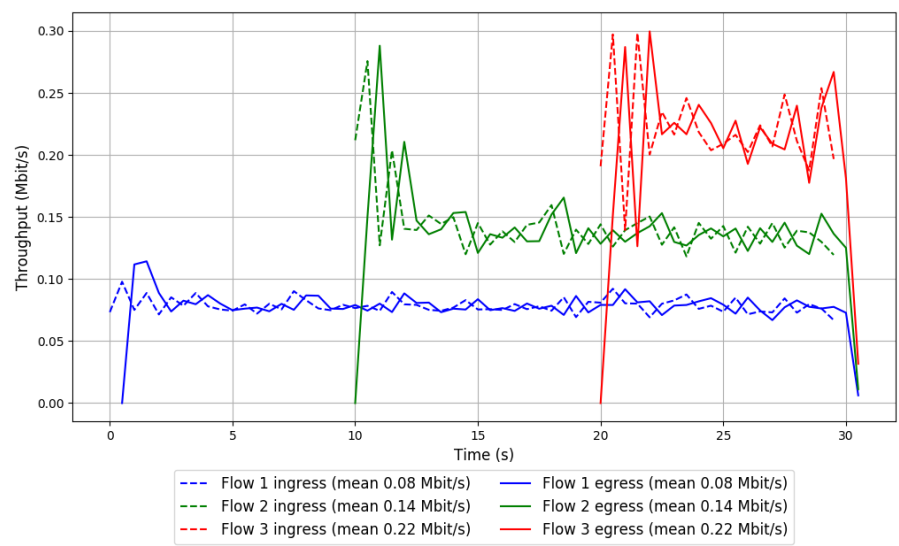


Run 3: Statistics of SCReAM

Start at: 2018-08-09 07:53:25
End at: 2018-08-09 07:53:55
Local clock offset: -7.522 ms
Remote clock offset: 6.0 ms

Below is generated by plot.py at 2018-08-09 08:14:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 131.555 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 121.634 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 131.630 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 132.468 ms
Loss rate: 0.35%

Run 3: Report of SCSReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-08-09 07:19:47

End at: 2018-08-09 07:20:17

Local clock offset: -4.407 ms

Remote clock offset: 5.232 ms

Below is generated by plot.py at 2018-08-09 08:14:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.31 Mbit/s

95th percentile per-packet one-way delay: 177.082 ms

Loss rate: 0.28%

-- Flow 1:

Average throughput: 0.15 Mbit/s

95th percentile per-packet one-way delay: 207.117 ms

Loss rate: 0.54%

-- Flow 2:

Average throughput: 0.16 Mbit/s

95th percentile per-packet one-way delay: 167.145 ms

Loss rate: 0.03%

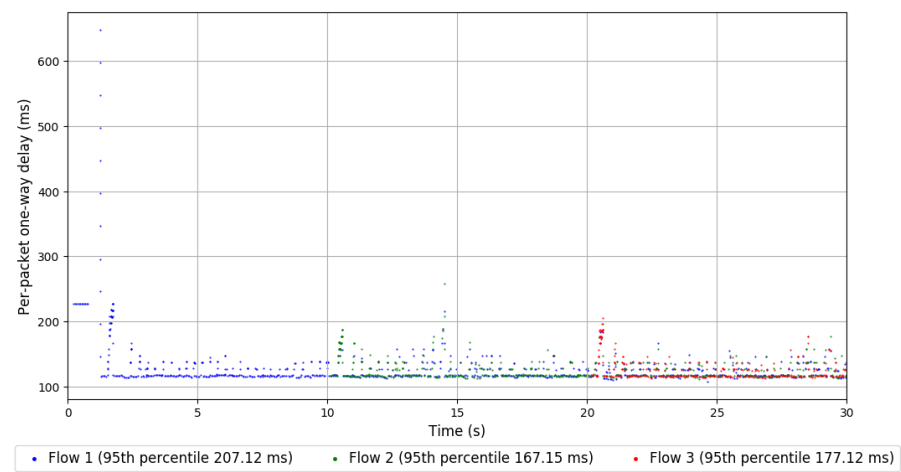
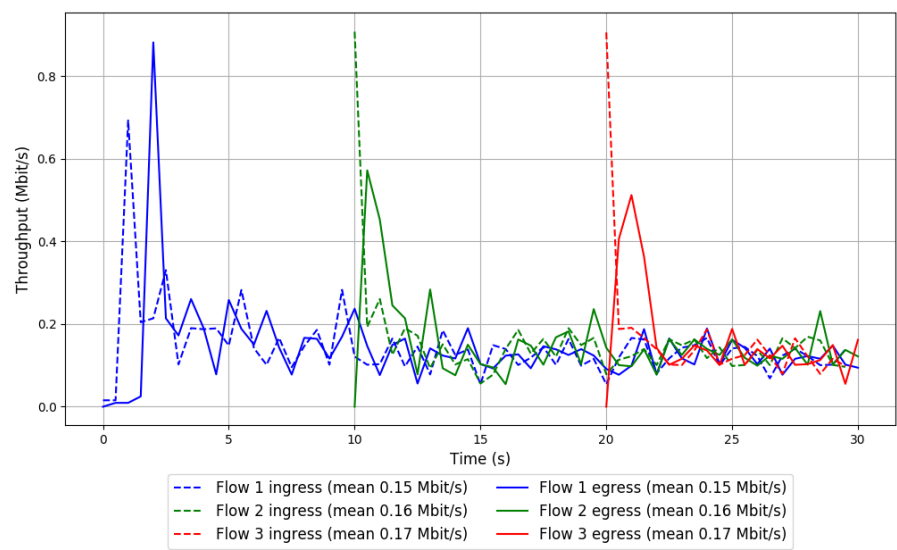
-- Flow 3:

Average throughput: 0.17 Mbit/s

95th percentile per-packet one-way delay: 177.115 ms

Loss rate: 0.05%

Run 1: Report of Sprout — Data Link

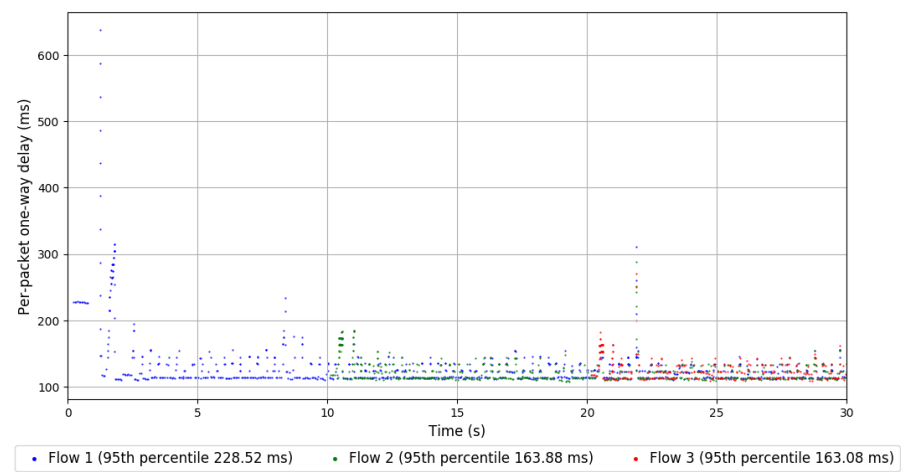
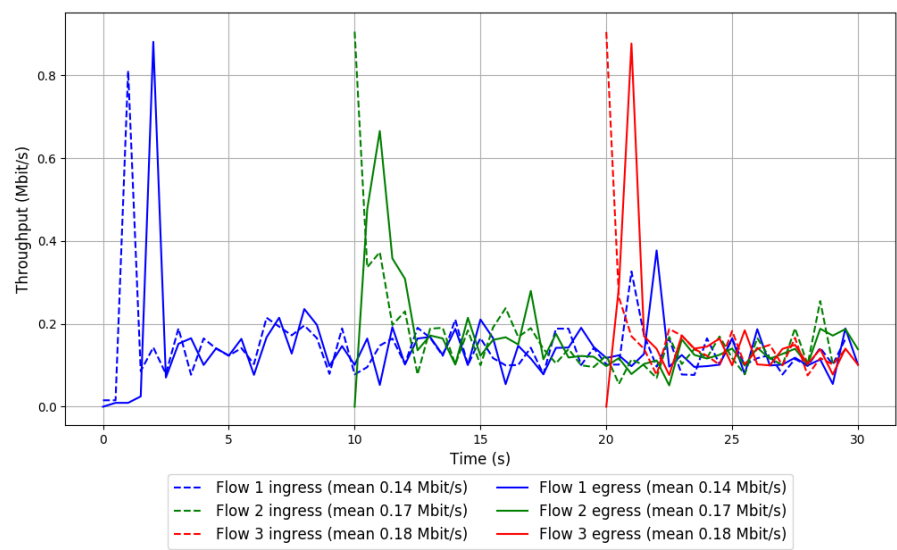


Run 2: Statistics of Sprout

Start at: 2018-08-09 07:40:14
End at: 2018-08-09 07:40:44
Local clock offset: -8.418 ms
Remote clock offset: 5.388 ms

Below is generated by plot.py at 2018-08-09 08:14:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 174.088 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 228.522 ms
Loss rate: 0.76%
-- Flow 2:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 163.880 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 163.080 ms
Loss rate: 1.17%

Run 2: Report of Sprout — Data Link

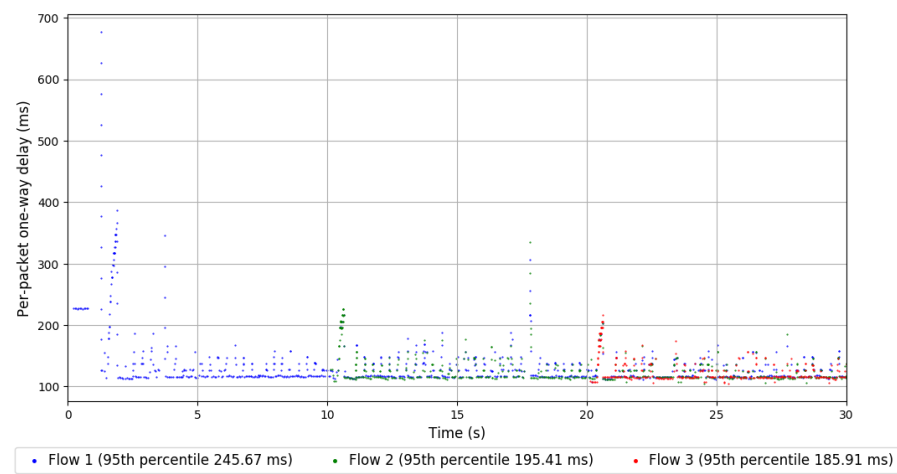
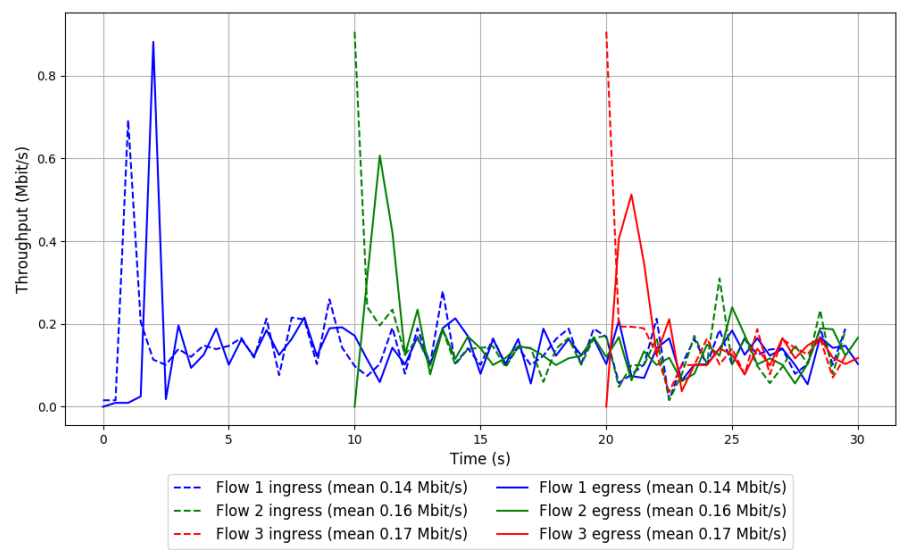


Run 3: Statistics of Sprout

Start at: 2018-08-09 08:00:37
End at: 2018-08-09 08:01:07
Local clock offset: -7.176 ms
Remote clock offset: 6.192 ms

```
# Below is generated by plot.py at 2018-08-09 08:14:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 205.881 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 245.673 ms
Loss rate: 1.03%
-- Flow 2:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 195.411 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 185.909 ms
Loss rate: 0.69%
```

Run 3: Report of Sprout — Data Link

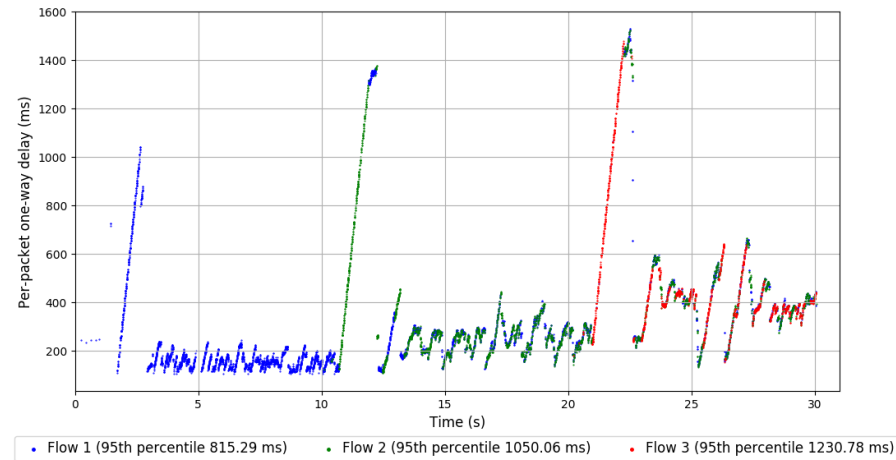
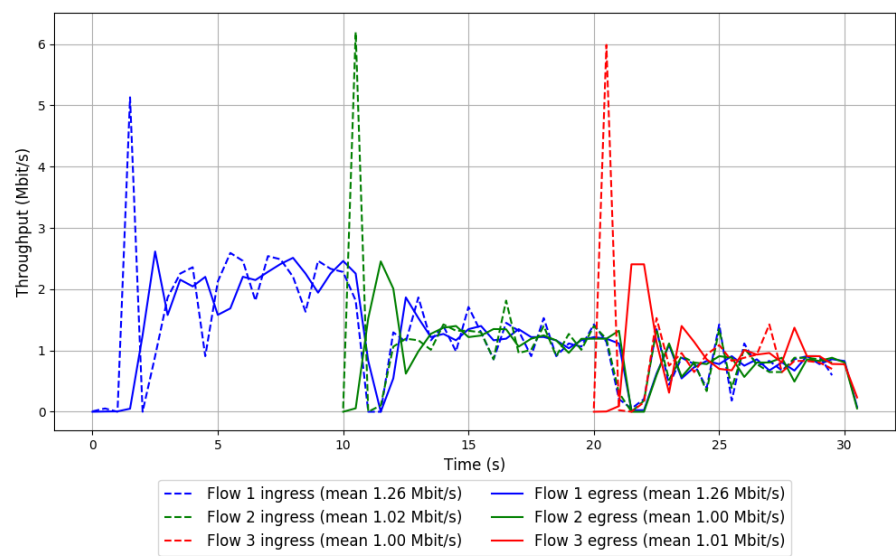


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-08-09 07:17:23
End at: 2018-08-09 07:17:53
Local clock offset: -3.421 ms
Remote clock offset: 0.328 ms

# Below is generated by plot.py at 2018-08-09 08:14:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 1001.900 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 1.26 Mbit/s
95th percentile per-packet one-way delay: 815.287 ms
Loss rate: 0.65%
-- Flow 2:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 1050.061 ms
Loss rate: 1.59%
-- Flow 3:
Average throughput: 1.01 Mbit/s
95th percentile per-packet one-way delay: 1230.781 ms
Loss rate: 1.04%
```

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-08-09 07:37:50

End at: 2018-08-09 07:38:20

Local clock offset: -8.146 ms

Remote clock offset: 5.377 ms

Below is generated by plot.py at 2018-08-09 08:14:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.36 Mbit/s

95th percentile per-packet one-way delay: 926.526 ms

Loss rate: 1.25%

-- Flow 1:

Average throughput: 1.34 Mbit/s

95th percentile per-packet one-way delay: 407.129 ms

Loss rate: 0.39%

-- Flow 2:

Average throughput: 1.05 Mbit/s

95th percentile per-packet one-way delay: 1134.651 ms

Loss rate: 1.70%

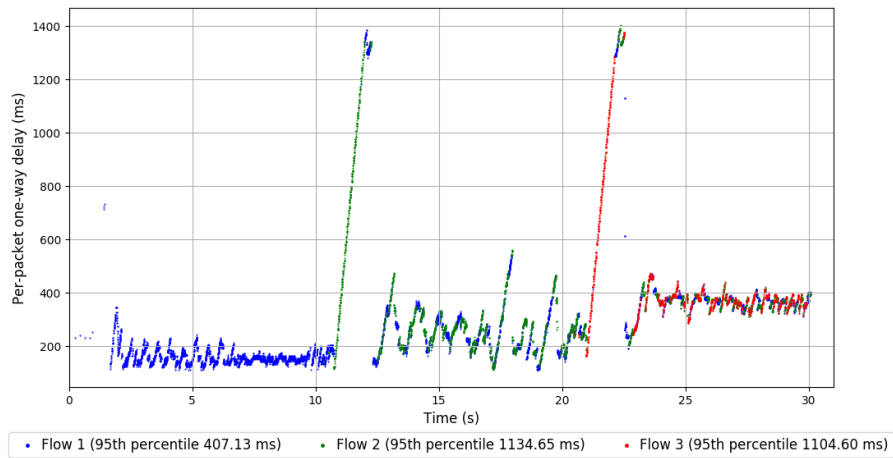
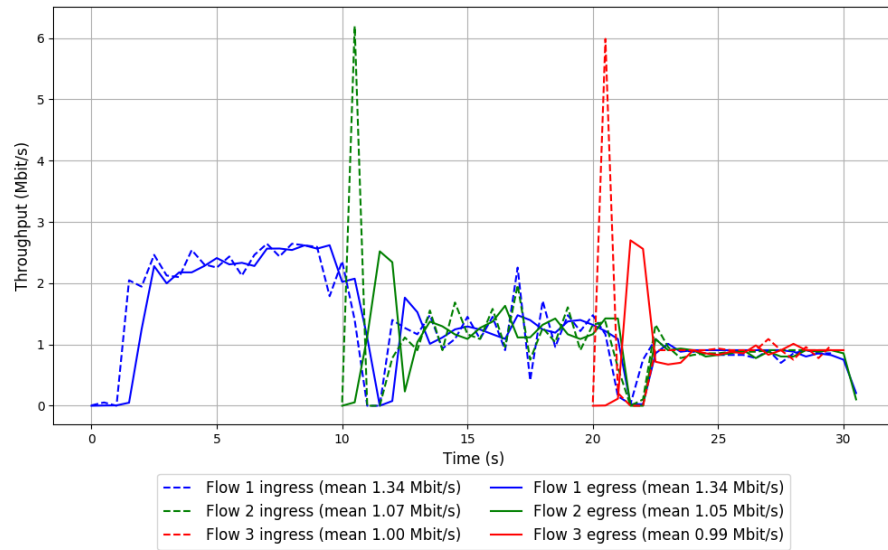
-- Flow 3:

Average throughput: 0.99 Mbit/s

95th percentile per-packet one-way delay: 1104.603 ms

Loss rate: 3.77%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-08-09 07:58:13

End at: 2018-08-09 07:58:43

Local clock offset: -7.245 ms

Remote clock offset: 1.244 ms

Below is generated by plot.py at 2018-08-09 08:14:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.36 Mbit/s

95th percentile per-packet one-way delay: 1104.600 ms

Loss rate: 0.91%

-- Flow 1:

Average throughput: 1.34 Mbit/s

95th percentile per-packet one-way delay: 458.427 ms

Loss rate: 0.51%

-- Flow 2:

Average throughput: 1.04 Mbit/s

95th percentile per-packet one-way delay: 1165.253 ms

Loss rate: 1.05%

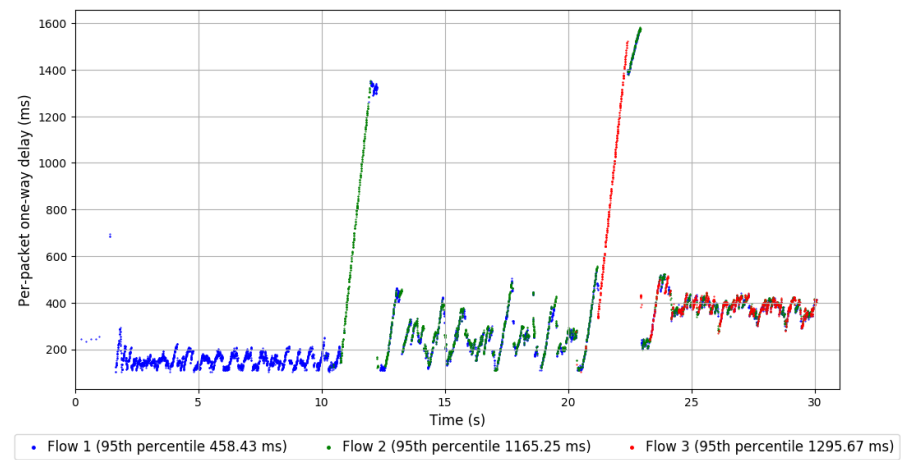
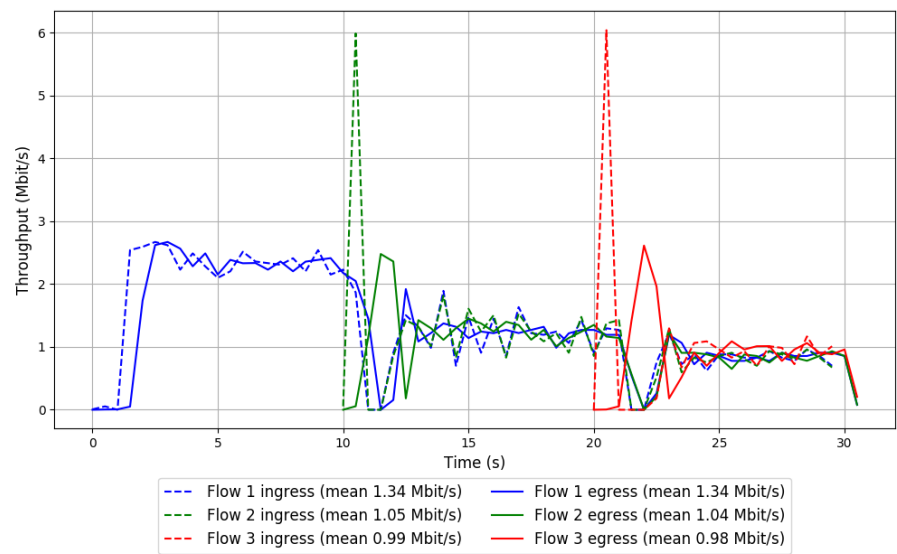
-- Flow 3:

Average throughput: 0.98 Mbit/s

95th percentile per-packet one-way delay: 1295.675 ms

Loss rate: 2.26%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-08-09 07:28:14

End at: 2018-08-09 07:28:44

Local clock offset: -6.553 ms

Remote clock offset: 0.706 ms

Below is generated by plot.py at 2018-08-09 08:14:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.41 Mbit/s

95th percentile per-packet one-way delay: 3256.041 ms

Loss rate: 21.88%

-- Flow 1:

Average throughput: 2.13 Mbit/s

95th percentile per-packet one-way delay: 3266.159 ms

Loss rate: 16.76%

-- Flow 2:

Average throughput: 0.47 Mbit/s

95th percentile per-packet one-way delay: 2986.509 ms

Loss rate: 45.83%

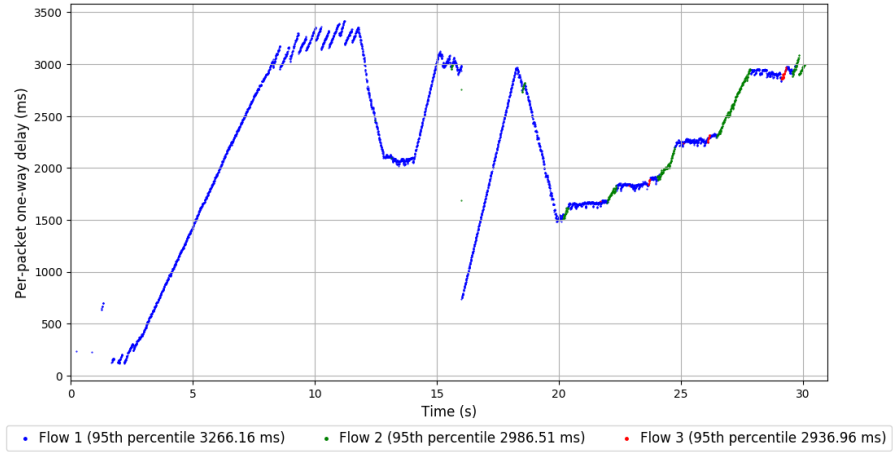
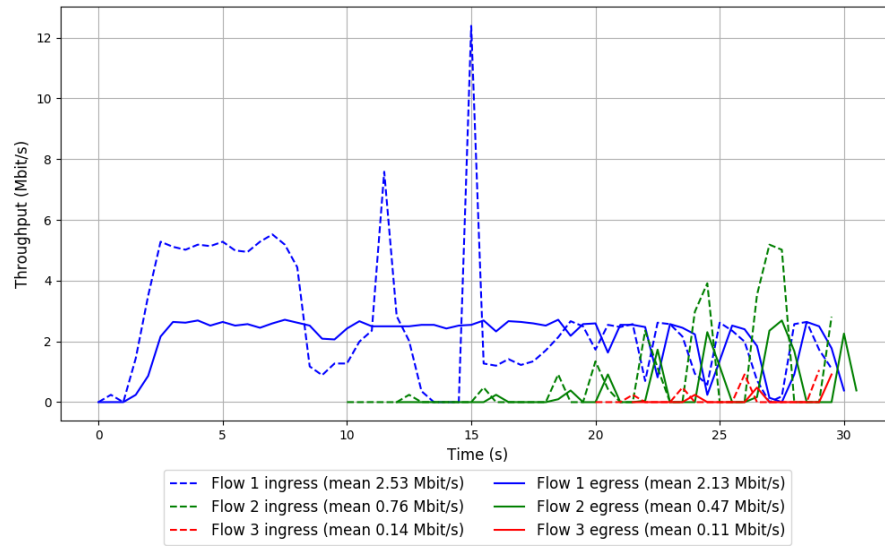
-- Flow 3:

Average throughput: 0.11 Mbit/s

95th percentile per-packet one-way delay: 2936.959 ms

Loss rate: 39.20%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-08-09 07:48:37

End at: 2018-08-09 07:49:07

Local clock offset: -8.193 ms

Remote clock offset: 5.749 ms

Below is generated by plot.py at 2018-08-09 08:14:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.39 Mbit/s

95th percentile per-packet one-way delay: 3103.532 ms

Loss rate: 14.91%

-- Flow 1:

Average throughput: 1.41 Mbit/s

95th percentile per-packet one-way delay: 2910.491 ms

Loss rate: 2.61%

-- Flow 2:

Average throughput: 1.51 Mbit/s

95th percentile per-packet one-way delay: 3253.340 ms

Loss rate: 27.90%

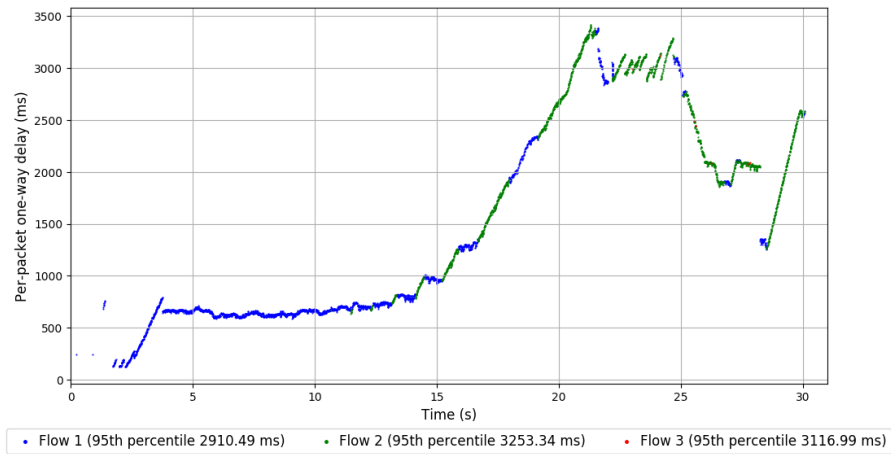
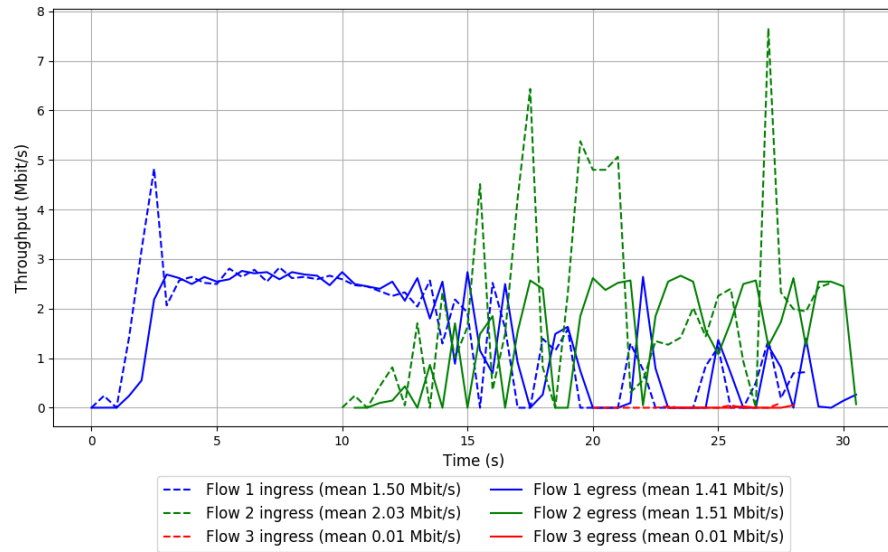
-- Flow 3:

Average throughput: 0.01 Mbit/s

95th percentile per-packet one-way delay: 3116.994 ms

Loss rate: 54.29%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

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

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

Local clock offset: -7.041 ms

Remote clock offset: 6.367 ms

Below is generated by plot.py at 2018-08-09 08:14:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.38 Mbit/s

95th percentile per-packet one-way delay: 3282.300 ms

Loss rate: 22.09%

-- Flow 1:

Average throughput: 2.08 Mbit/s

95th percentile per-packet one-way delay: 3262.108 ms

Loss rate: 16.36%

-- Flow 2:

Average throughput: 0.52 Mbit/s

95th percentile per-packet one-way delay: 3312.922 ms

Loss rate: 45.34%

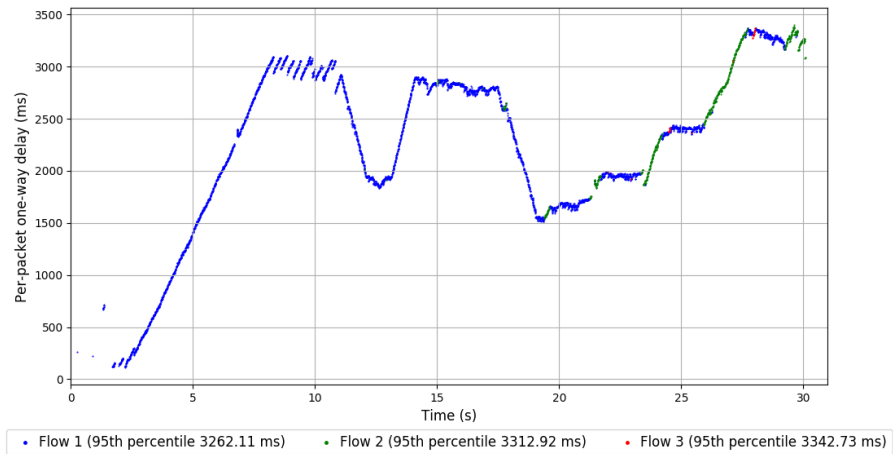
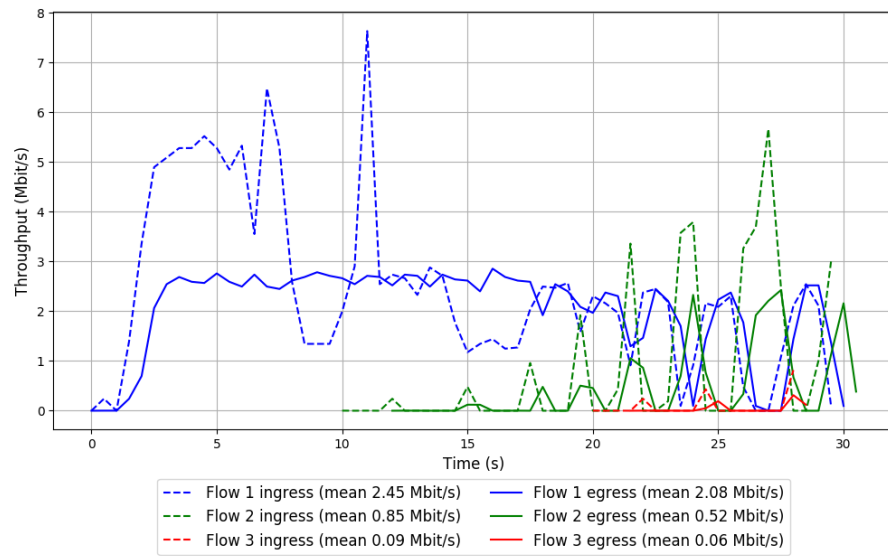
-- Flow 3:

Average throughput: 0.06 Mbit/s

95th percentile per-packet one-way delay: 3342.733 ms

Loss rate: 54.57%

Run 3: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-08-09 07:25:51

End at: 2018-08-09 07:26:21

Local clock offset: -5.843 ms

Remote clock offset: 0.867 ms

Below is generated by plot.py at 2018-08-09 08:14:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.24 Mbit/s

95th percentile per-packet one-way delay: 1684.455 ms

Loss rate: 2.22%

-- Flow 1:

Average throughput: 2.23 Mbit/s

95th percentile per-packet one-way delay: 1684.301 ms

Loss rate: 2.23%

-- Flow 2:

Average throughput: 0.01 Mbit/s

95th percentile per-packet one-way delay: 1682.165 ms

Loss rate: 0.00%

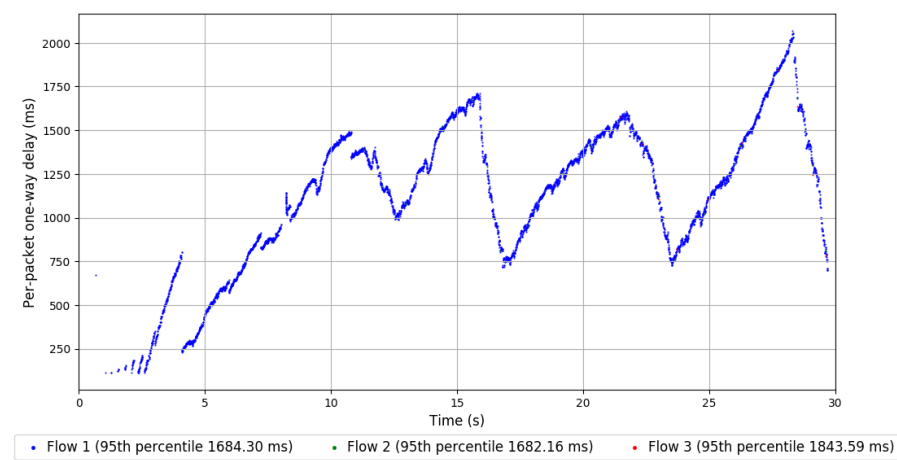
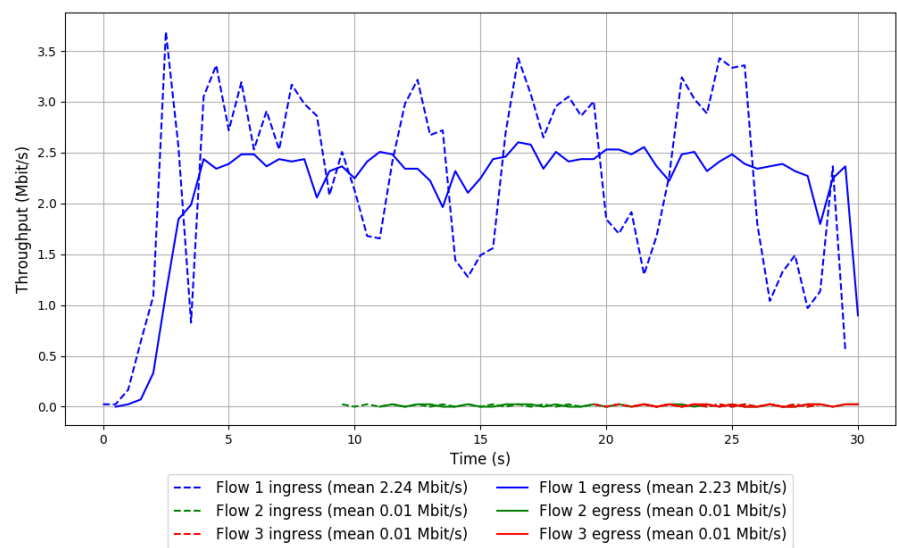
-- Flow 3:

Average throughput: 0.01 Mbit/s

95th percentile per-packet one-way delay: 1843.588 ms

Loss rate: 0.00%

Run 1: Report of Verus — Data Link

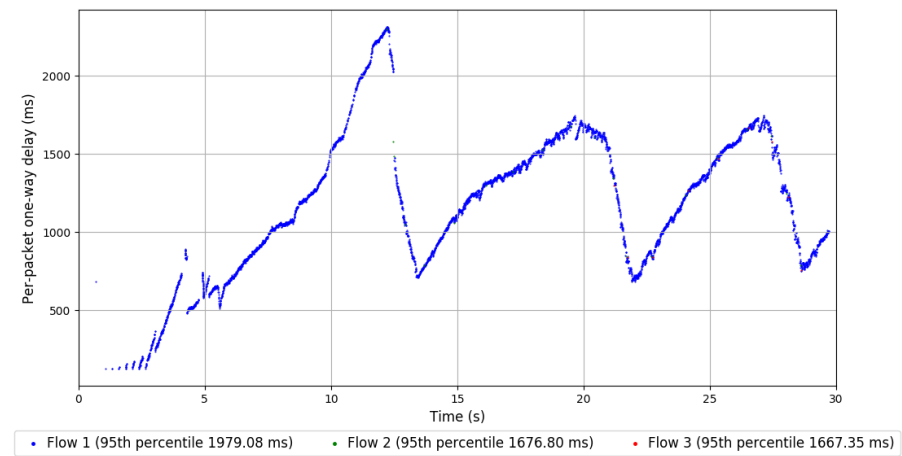
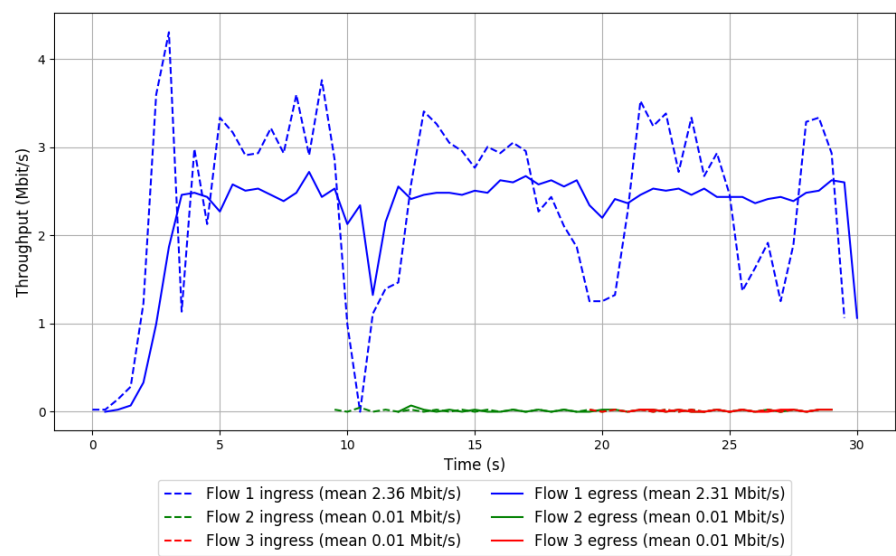


Run 2: Statistics of Verus

Start at: 2018-08-09 07:46:13
End at: 2018-08-09 07:46:43
Local clock offset: -8.735 ms
Remote clock offset: 5.669 ms

Below is generated by plot.py at 2018-08-09 08:14:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 2.32 Mbit/s
95th percentile per-packet one-way delay: 1979.082 ms
Loss rate: 4.26%
-- Flow 1:
Average throughput: 2.31 Mbit/s
95th percentile per-packet one-way delay: 1979.082 ms
Loss rate: 4.25%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1676.799 ms
Loss rate: 4.76%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1667.351 ms
Loss rate: 10.00%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2018-08-09 08:06:36

End at: 2018-08-09 08:07:06

Local clock offset: -7.016 ms

Remote clock offset: 1.43 ms

Below is generated by plot.py at 2018-08-09 08:14:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.37 Mbit/s

95th percentile per-packet one-way delay: 1724.354 ms

Loss rate: 5.12%

-- Flow 1:

Average throughput: 2.36 Mbit/s

95th percentile per-packet one-way delay: 1724.330 ms

Loss rate: 5.11%

-- Flow 2:

Average throughput: 0.01 Mbit/s

95th percentile per-packet one-way delay: 1733.850 ms

Loss rate: 5.00%

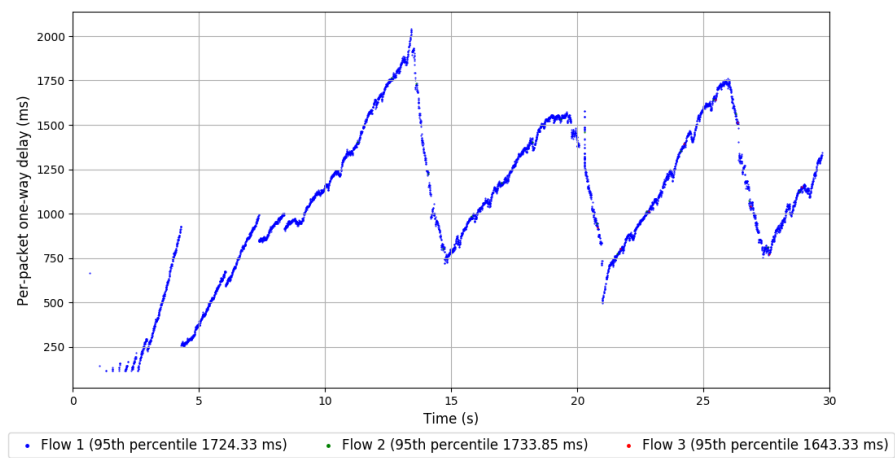
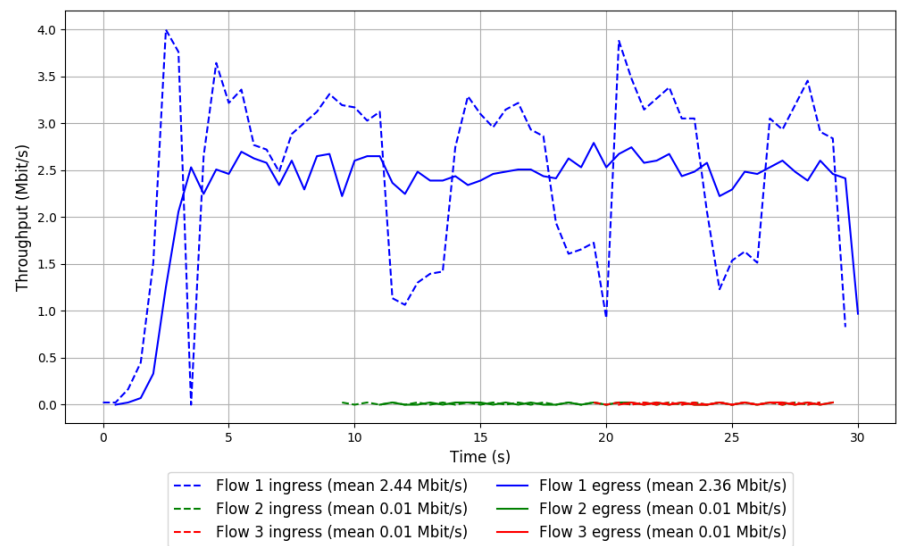
-- Flow 3:

Average throughput: 0.01 Mbit/s

95th percentile per-packet one-way delay: 1643.327 ms

Loss rate: 10.00%

Run 3: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-08-09 07:31:50

End at: 2018-08-09 07:32:20

Local clock offset: -7.416 ms

Remote clock offset: 5.348 ms

Below is generated by plot.py at 2018-08-09 08:14:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.91 Mbit/s

95th percentile per-packet one-way delay: 3959.106 ms

Loss rate: 19.15%

-- Flow 1:

Average throughput: 1.09 Mbit/s

95th percentile per-packet one-way delay: 3943.229 ms

Loss rate: 15.58%

-- Flow 2:

Average throughput: 1.24 Mbit/s

95th percentile per-packet one-way delay: 3968.256 ms

Loss rate: 23.43%

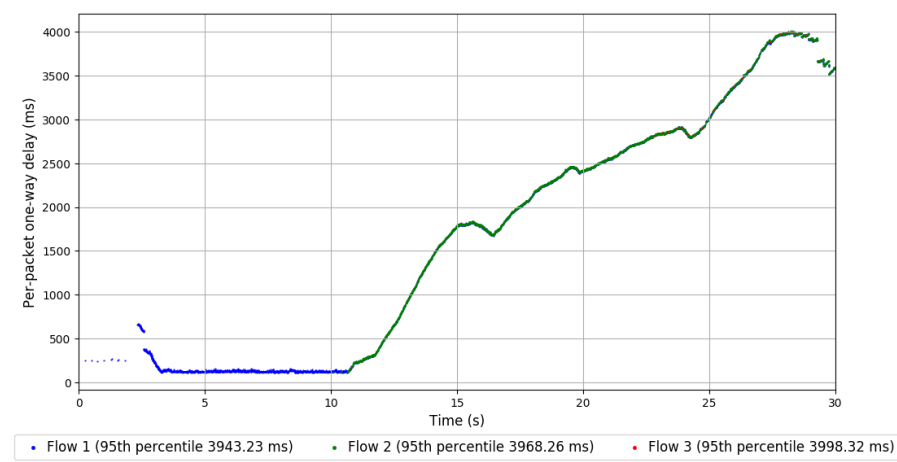
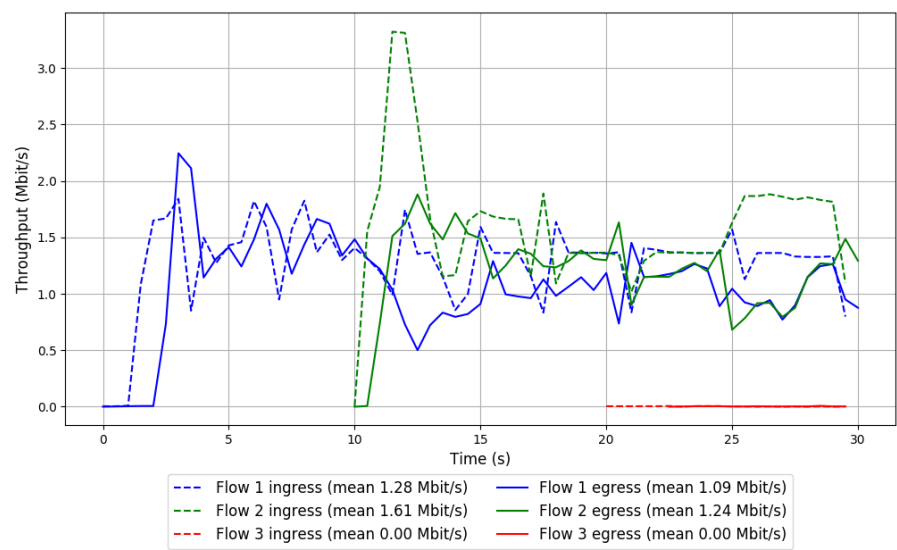
-- Flow 3:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 3998.322 ms

Loss rate: 20.44%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-08-09 07:52:14

End at: 2018-08-09 07:52:44

Local clock offset: -7.72 ms

Remote clock offset: 1.109 ms

Below is generated by plot.py at 2018-08-09 08:14:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.14 Mbit/s

95th percentile per-packet one-way delay: 3029.493 ms

Loss rate: 18.39%

-- Flow 1:

Average throughput: 1.30 Mbit/s

95th percentile per-packet one-way delay: 3017.147 ms

Loss rate: 15.64%

-- Flow 2:

Average throughput: 1.26 Mbit/s

95th percentile per-packet one-way delay: 3055.682 ms

Loss rate: 22.28%

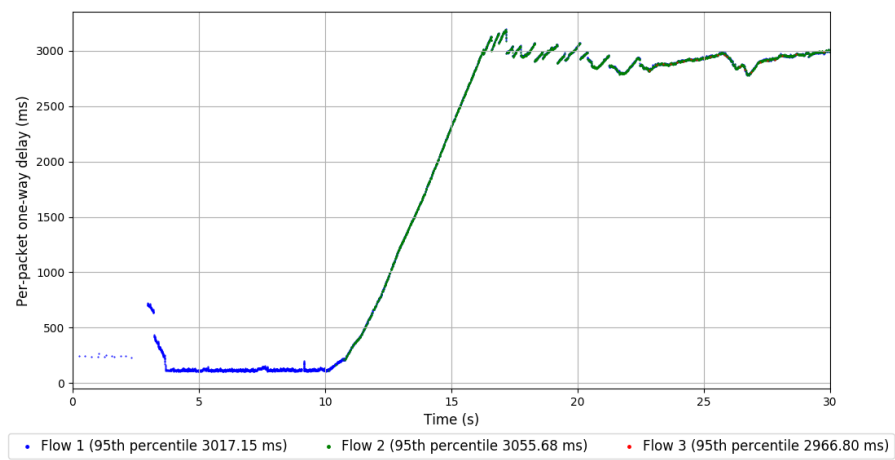
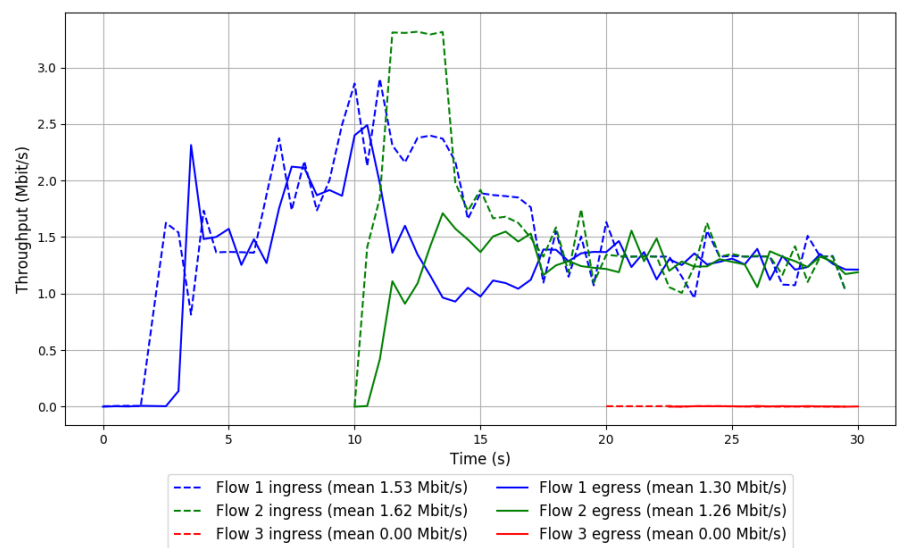
-- Flow 3:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 2966.804 ms

Loss rate: 11.51%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-08-09 08:12:36

End at: 2018-08-09 08:13:06

Local clock offset: -7.052 ms

Remote clock offset: 6.423 ms

Below is generated by plot.py at 2018-08-09 08:14:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.01 Mbit/s

95th percentile per-packet one-way delay: 3298.492 ms

Loss rate: 19.64%

-- Flow 1:

Average throughput: 1.22 Mbit/s

95th percentile per-packet one-way delay: 3293.024 ms

Loss rate: 17.20%

-- Flow 2:

Average throughput: 1.18 Mbit/s

95th percentile per-packet one-way delay: 3309.136 ms

Loss rate: 23.16%

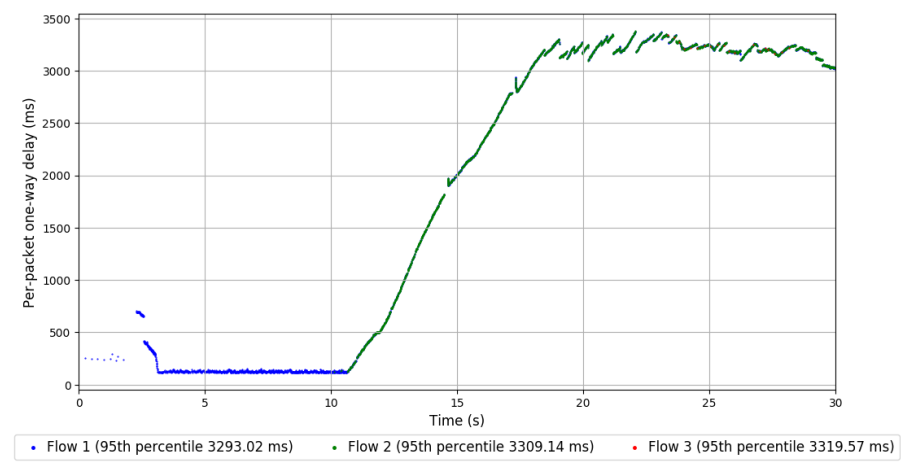
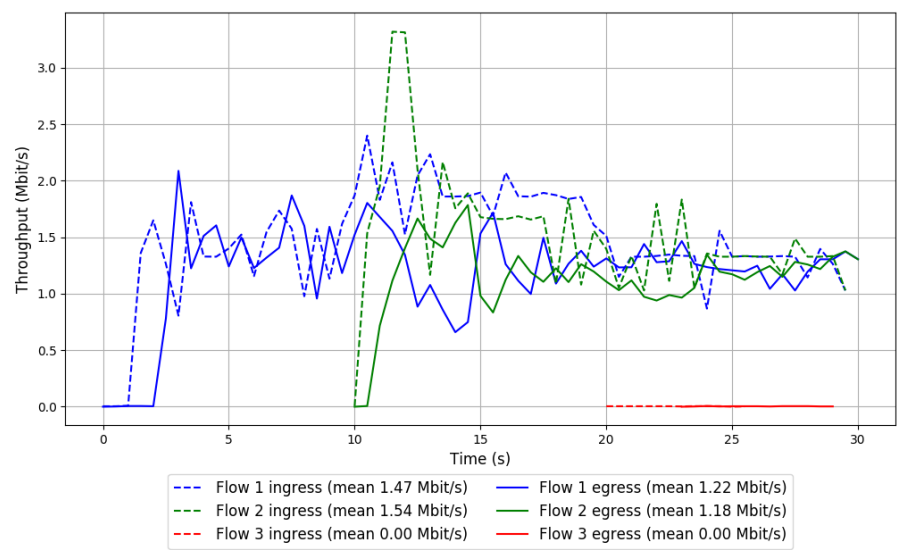
-- Flow 3:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 3319.572 ms

Loss rate: 0.00%

Run 3: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-08-09 07:24:39

End at: 2018-08-09 07:25:09

Local clock offset: -5.722 ms

Remote clock offset: 5.714 ms

Below is generated by plot.py at 2018-08-09 08:14:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.86 Mbit/s

95th percentile per-packet one-way delay: 346.566 ms

Loss rate: 0.35%

-- Flow 1:

Average throughput: 0.41 Mbit/s

95th percentile per-packet one-way delay: 314.933 ms

Loss rate: 0.28%

-- Flow 2:

Average throughput: 0.35 Mbit/s

95th percentile per-packet one-way delay: 361.434 ms

Loss rate: 0.16%

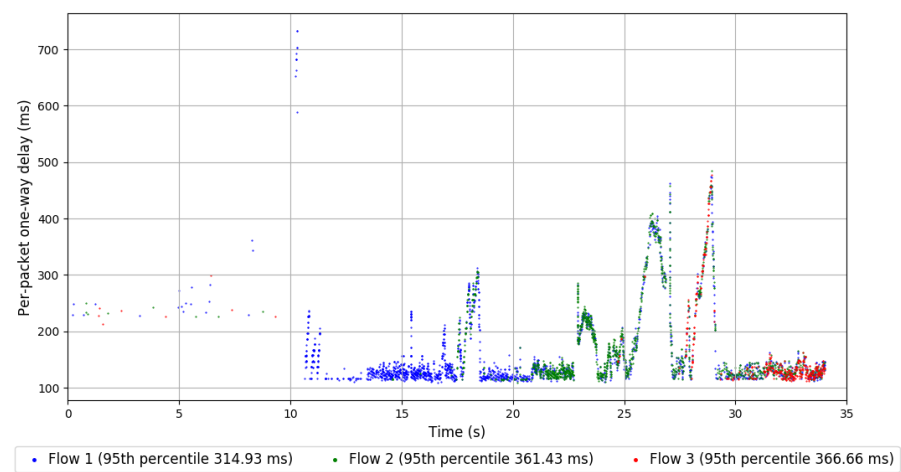
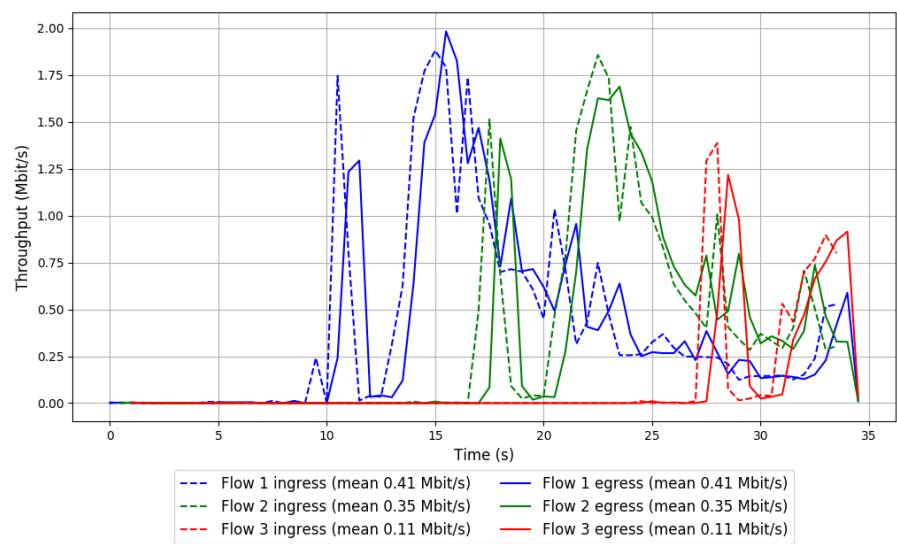
-- Flow 3:

Average throughput: 0.11 Mbit/s

95th percentile per-packet one-way delay: 366.658 ms

Loss rate: 1.27%

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-08-09 07:45:02

End at: 2018-08-09 07:45:32

Local clock offset: -8.769 ms

Remote clock offset: 0.642 ms

Below is generated by plot.py at 2018-08-09 08:14:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.66 Mbit/s

95th percentile per-packet one-way delay: 515.168 ms

Loss rate: 0.18%

-- Flow 1:

Average throughput: 0.37 Mbit/s

95th percentile per-packet one-way delay: 462.029 ms

Loss rate: 0.08%

-- Flow 2:

Average throughput: 0.25 Mbit/s

95th percentile per-packet one-way delay: 494.646 ms

Loss rate: 0.08%

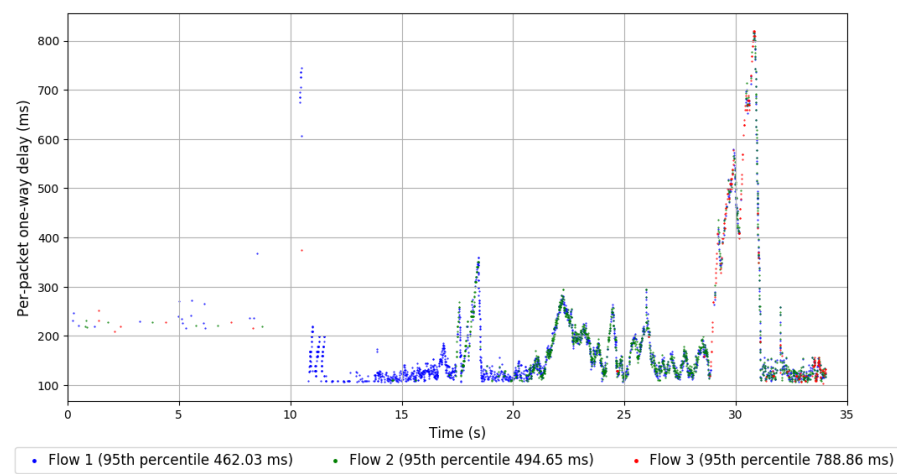
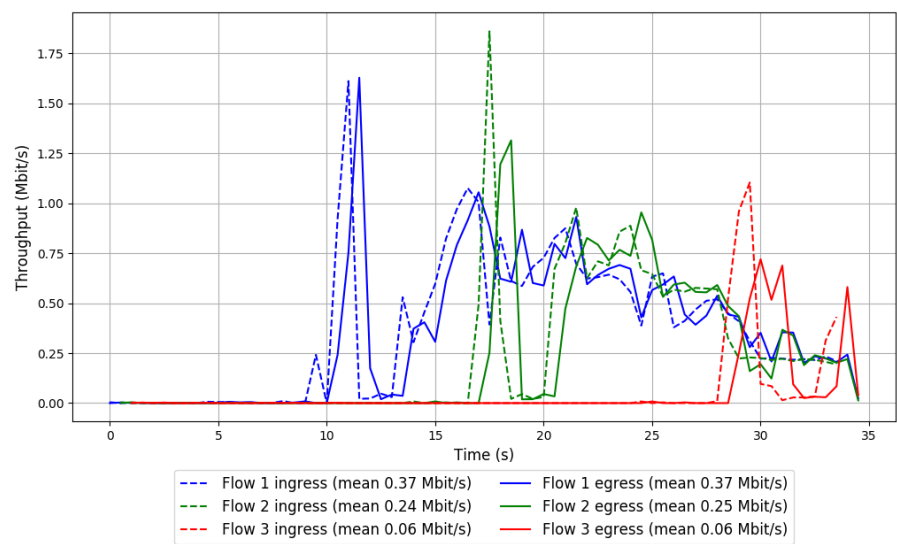
-- Flow 3:

Average throughput: 0.06 Mbit/s

95th percentile per-packet one-way delay: 788.856 ms

Loss rate: 1.22%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-08-09 08:05:25

End at: 2018-08-09 08:05:55

Local clock offset: -7.076 ms

Remote clock offset: 6.409 ms

Below is generated by plot.py at 2018-08-09 08:14:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.90 Mbit/s

95th percentile per-packet one-way delay: 419.913 ms

Loss rate: 0.10%

-- Flow 1:

Average throughput: 0.34 Mbit/s

95th percentile per-packet one-way delay: 280.583 ms

Loss rate: 0.04%

-- Flow 2:

Average throughput: 0.47 Mbit/s

95th percentile per-packet one-way delay: 434.510 ms

Loss rate: 0.06%

-- Flow 3:

Average throughput: 0.10 Mbit/s

95th percentile per-packet one-way delay: 487.264 ms

Loss rate: 0.47%

Run 3: Report of WebRTC media — Data Link

