

Pantheon Report

Generated at 2019-02-11 19:49:11 (UTC).

Data path: AWS Brazil 2 on **ens5** (*local*) → Colombia on **p4p1** (*remote*).

Repeated the test of 21 congestion control schemes 5 times.

Each test lasted for 30 seconds running 3 flows with 10-second interval between two flows.

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

System info:

```
Linux 4.15.0-1031-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

```
branch: muses @ 7a686f7c2ed0a333082c0bab1fa5c921ab47e6ee
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 5ce721187ad823da20955337730c746486ca4966
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
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
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
```

third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

Figure 10: Average throughput vs. 95th percentile one-way delay. The plot shows a clear trade-off between delay and throughput. Protocols like Verus, Indigo, and PCC-Allegro achieve high throughput with low delay, while others like LEDBAT and PCC-Expr have higher delay for lower throughput.



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	5	56.31	38.05	29.44	114.00	114.63	114.81	12.47	18.38	24.86
Copa	5	0.00	10.26	4.12	81.78	83.03	82.64	98.08	75.53	77.00
TCP Cubic	5	74.28	16.65	15.91	113.10	113.04	110.39	0.87	0.17	0.15
FillP	5	46.49	52.53	27.33	110.38	110.79	110.74	13.42	21.43	23.41
FillP-Sheep	5	20.54	59.97	45.93	110.18	111.05	111.01	8.39	8.79	9.71
Indigo	5	67.42	23.35	27.41	115.80	115.83	115.70	9.77	31.37	66.89
Indigo-MusesC3	5	49.07	47.48	50.53	113.81	114.76	114.65	1.59	2.21	5.89
Indigo-MusesC5	5	58.34	50.98	7.64	112.46	113.63	114.71	2.25	5.27	6.30
Indigo-MusesD	5	60.47	37.49	28.18	110.43	109.71	110.75	1.67	0.87	1.45
Indigo-MusesT	5	54.09	46.40	34.86	112.43	113.53	113.79	6.52	5.36	9.93
LEDBAT	5	10.94	7.87	3.77	83.92	83.75	84.70	0.06	0.00	0.00
PCC-Allegro	5	78.53	9.77	5.68	115.98	115.53	116.61	2.76	4.41	4.67
PCC-Expr	5	8.56	5.08	2.88	85.21	84.56	84.58	55.62	37.80	46.50
QUIC Cubic	5	42.68	21.82	16.41	110.73	109.47	110.57	1.30	1.85	4.10
SCReAM	5	0.22	0.22	0.22	82.96	83.61	83.51	0.00	0.00	0.00
Sprout	5	2.60	2.78	2.88	89.89	91.41	91.06	0.00	0.00	0.00
TaoVA-100x	5	0.00	9.49	6.50	84.37	94.46	83.70	95.92	35.67	31.07
TCP Vegas	5	43.81	23.07	36.65	95.96	91.47	91.97	0.94	0.49	1.21
Verus	5	22.90	27.35	4.74	118.89	141.80	119.15	28.25	53.46	31.56
PCC-Vivace	5	66.55	13.03	6.80	109.66	110.58	109.04	0.21	0.36	0.54
WebRTC media	5	0.05	0.04	0.04	84.56	84.10	85.22	0.01	0.01	0.00

Run 1: Statistics of TCP BBR

Start at: 2019-02-11 17:17:27

End at: 2019-02-11 17:17:57

Local clock offset: -3.34 ms

Remote clock offset: 4.117 ms

Below is generated by plot.py at 2019-02-11 19:40:08

Datalink statistics

-- Total of 3 flows:

Average throughput: 91.10 Mbit/s

95th percentile per-packet one-way delay: 112.980 ms

Loss rate: 17.25%

-- Flow 1:

Average throughput: 56.05 Mbit/s

95th percentile per-packet one-way delay: 110.216 ms

Loss rate: 13.98%

-- Flow 2:

Average throughput: 38.25 Mbit/s

95th percentile per-packet one-way delay: 113.079 ms

Loss rate: 22.16%

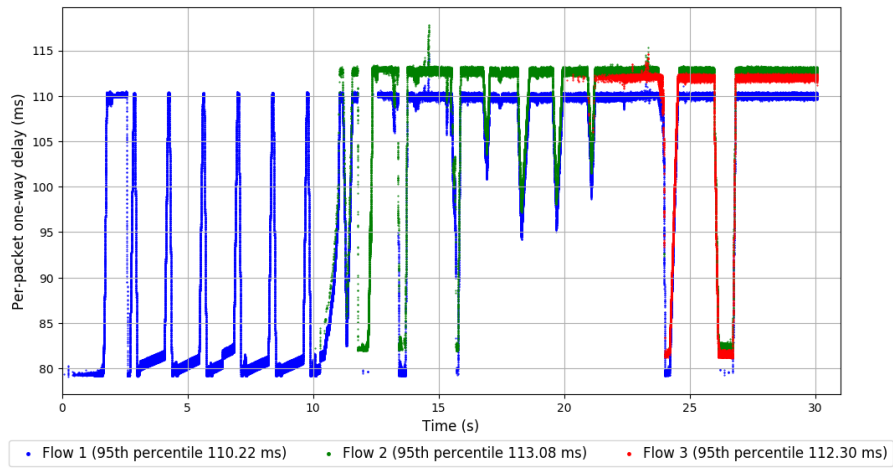
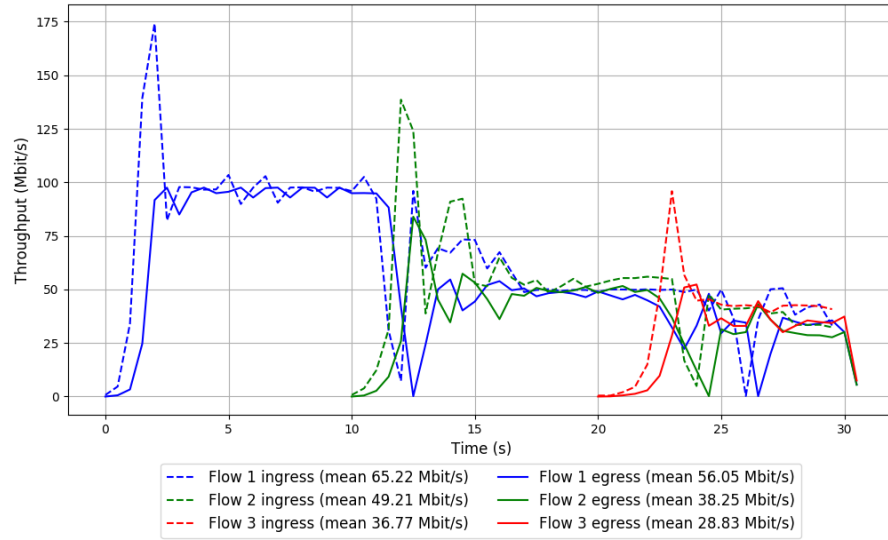
-- Flow 3:

Average throughput: 28.83 Mbit/s

95th percentile per-packet one-way delay: 112.300 ms

Loss rate: 21.60%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2019-02-11 17:45:25

End at: 2019-02-11 17:45:55

Local clock offset: -6.336 ms

Remote clock offset: 4.125 ms

Below is generated by plot.py at 2019-02-11 19:40:08

Datalink statistics

-- Total of 3 flows:

Average throughput: 91.72 Mbit/s

95th percentile per-packet one-way delay: 113.261 ms

Loss rate: 13.71%

-- Flow 1:

Average throughput: 56.35 Mbit/s

95th percentile per-packet one-way delay: 111.979 ms

Loss rate: 9.54%

-- Flow 2:

Average throughput: 35.93 Mbit/s

95th percentile per-packet one-way delay: 113.430 ms

Loss rate: 14.33%

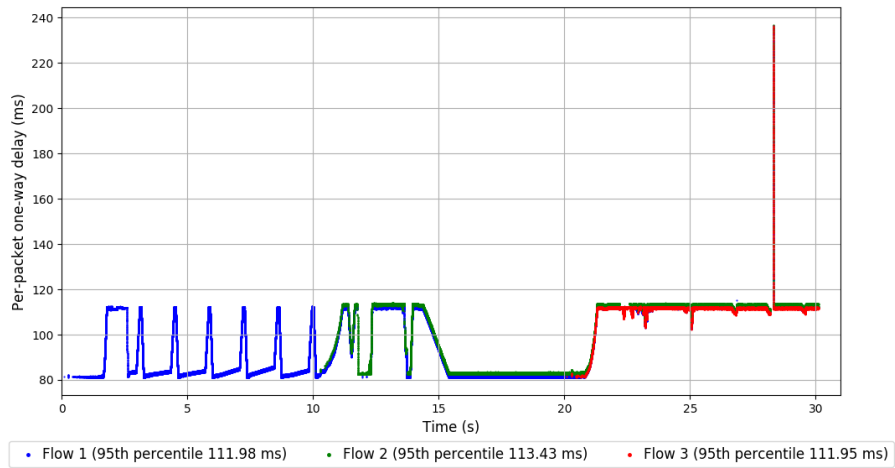
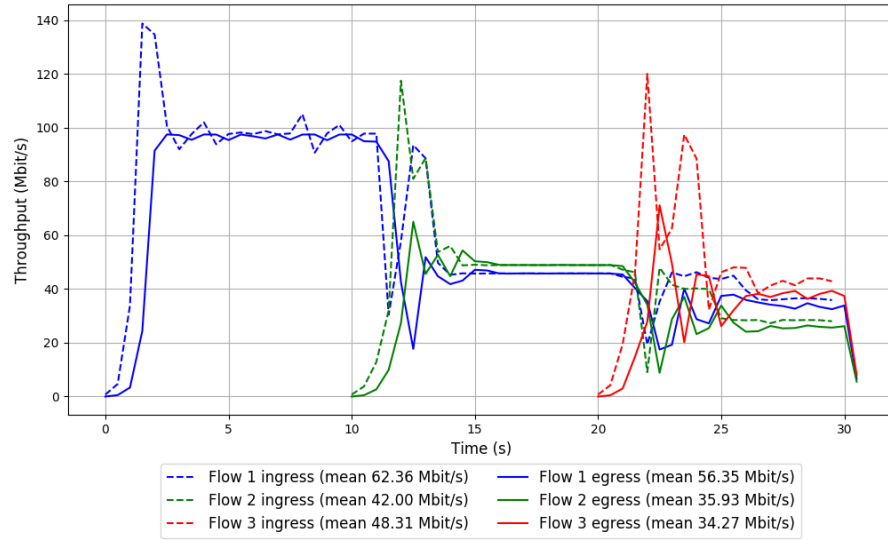
-- Flow 3:

Average throughput: 34.27 Mbit/s

95th percentile per-packet one-way delay: 111.949 ms

Loss rate: 28.85%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2019-02-11 18:13:31

End at: 2019-02-11 18:14:01

Local clock offset: -3.255 ms

Remote clock offset: 6.759 ms

Below is generated by plot.py at 2019-02-11 19:40:09

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.26 Mbit/s

95th percentile per-packet one-way delay: 116.522 ms

Loss rate: 17.97%

-- Flow 1:

Average throughput: 60.56 Mbit/s

95th percentile per-packet one-way delay: 116.562 ms

Loss rate: 14.74%

-- Flow 2:

Average throughput: 35.10 Mbit/s

95th percentile per-packet one-way delay: 114.823 ms

Loss rate: 23.21%

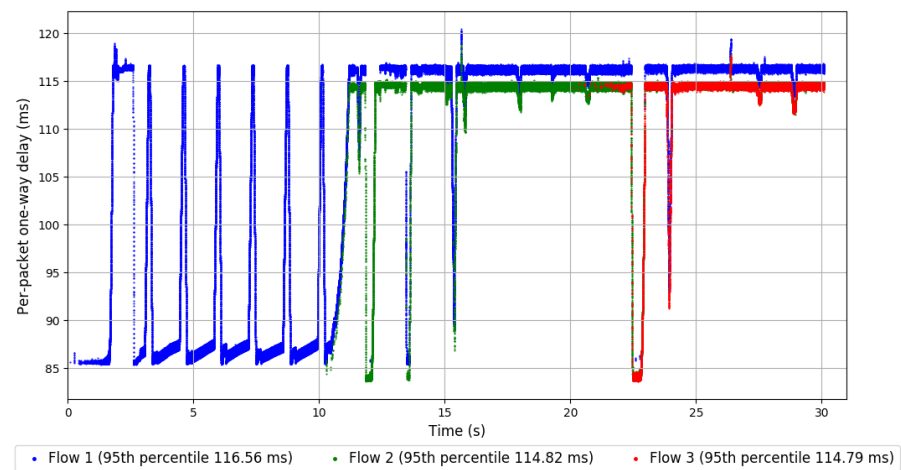
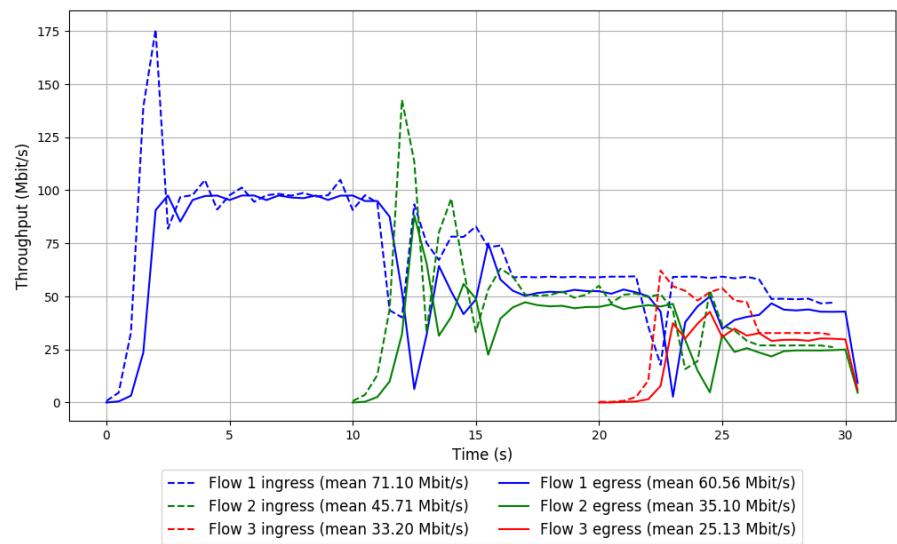
-- Flow 3:

Average throughput: 25.13 Mbit/s

95th percentile per-packet one-way delay: 114.787 ms

Loss rate: 24.32%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2019-02-11 18:42:14

End at: 2019-02-11 18:42:44

Local clock offset: -0.688 ms

Remote clock offset: 7.639 ms

Below is generated by plot.py at 2019-02-11 19:40:09

Datalink statistics

-- Total of 3 flows:

Average throughput: 91.40 Mbit/s

95th percentile per-packet one-way delay: 118.075 ms

Loss rate: 15.33%

-- Flow 1:

Average throughput: 50.87 Mbit/s

95th percentile per-packet one-way delay: 114.761 ms

Loss rate: 12.09%

-- Flow 2:

Average throughput: 45.90 Mbit/s

95th percentile per-packet one-way delay: 116.872 ms

Loss rate: 16.74%

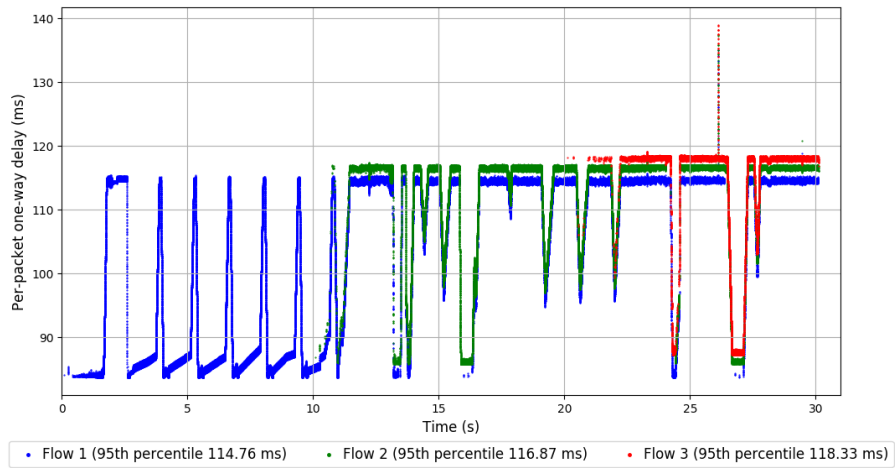
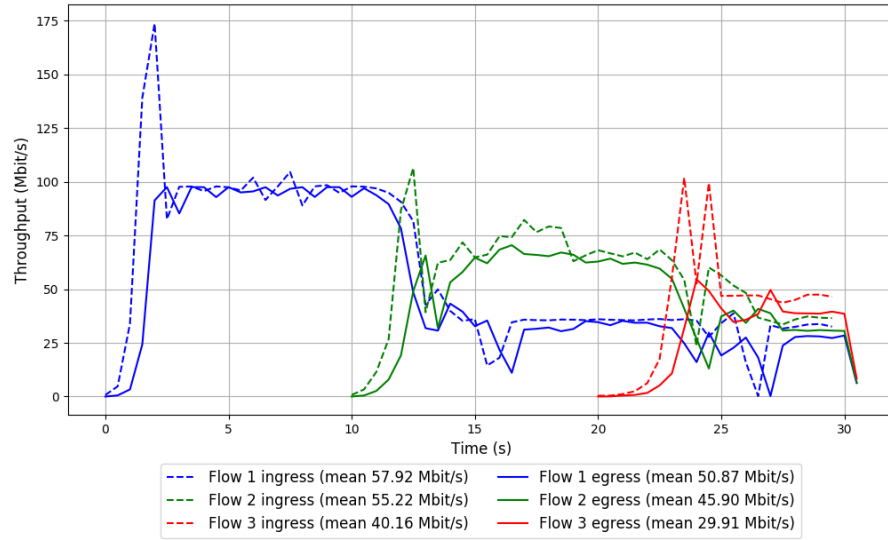
-- Flow 3:

Average throughput: 29.91 Mbit/s

95th percentile per-packet one-way delay: 118.335 ms

Loss rate: 25.54%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2019-02-11 19:10:22

End at: 2019-02-11 19:10:52

Local clock offset: -3.844 ms

Remote clock offset: 7.292 ms

Below is generated by plot.py at 2019-02-11 19:40:09

Datalink statistics

-- Total of 3 flows:

Average throughput: 90.75 Mbit/s

95th percentile per-packet one-way delay: 116.533 ms

Loss rate: 14.34%

-- Flow 1:

Average throughput: 57.72 Mbit/s

95th percentile per-packet one-way delay: 116.501 ms

Loss rate: 12.01%

-- Flow 2:

Average throughput: 35.07 Mbit/s

95th percentile per-packet one-way delay: 114.967 ms

Loss rate: 15.46%

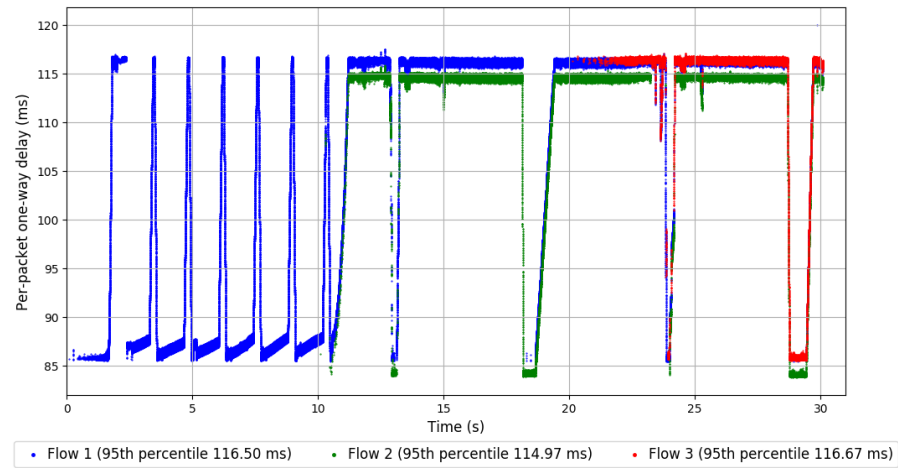
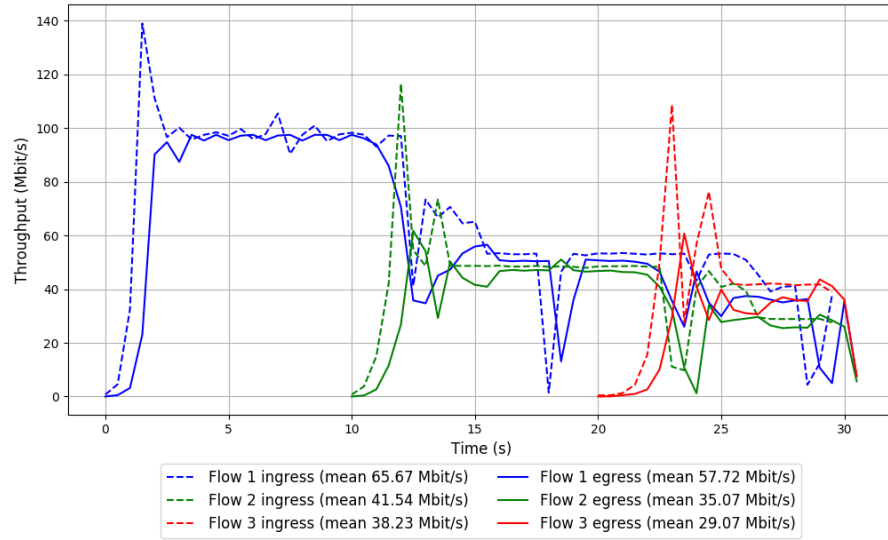
-- Flow 3:

Average throughput: 29.07 Mbit/s

95th percentile per-packet one-way delay: 116.671 ms

Loss rate: 23.97%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2019-02-11 17:22:55

End at: 2019-02-11 17:23:25

Local clock offset: -3.517 ms

Remote clock offset: 4.977 ms

Below is generated by plot.py at 2019-02-11 19:40:09

Datalink statistics

-- Total of 3 flows:

Average throughput: 8.19 Mbit/s

95th percentile per-packet one-way delay: 84.446 ms

Loss rate: 74.68%

-- Flow 1:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 82.081 ms

Loss rate: 98.60%

-- Flow 2:

Average throughput: 10.24 Mbit/s

95th percentile per-packet one-way delay: 84.526 ms

Loss rate: 74.03%

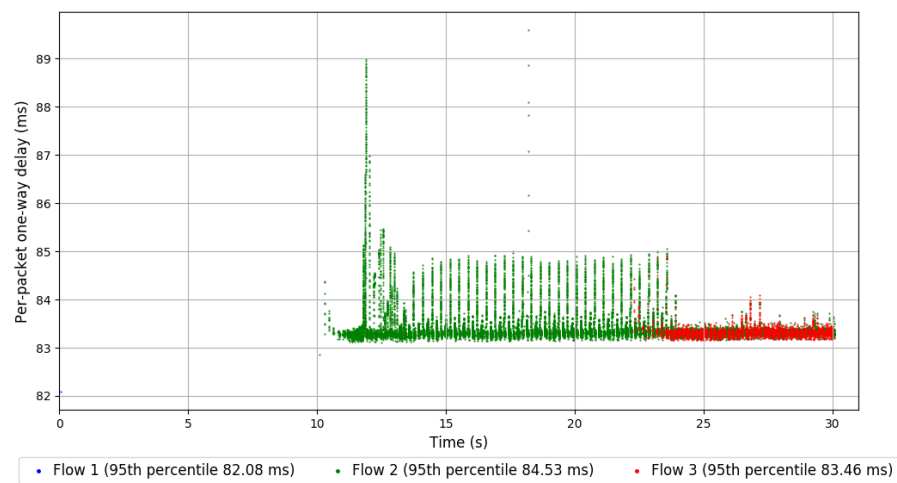
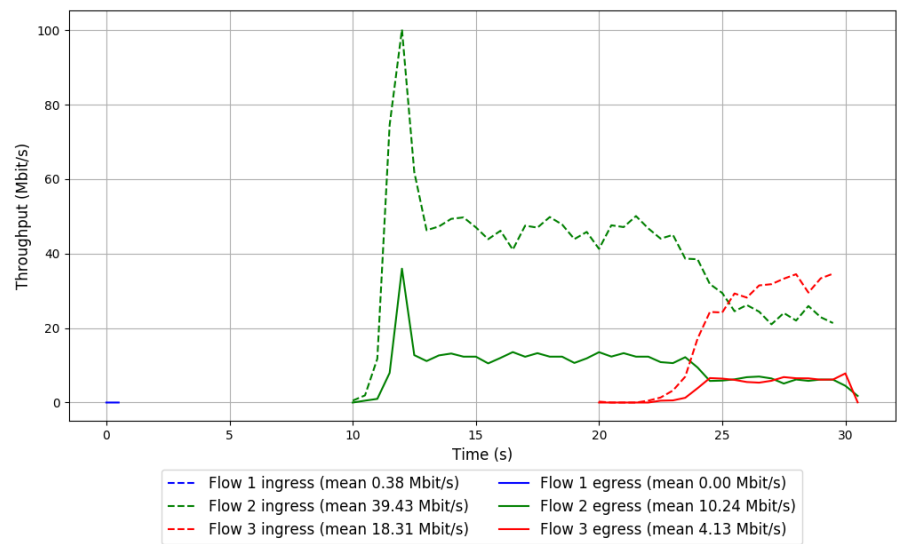
-- Flow 3:

Average throughput: 4.13 Mbit/s

95th percentile per-packet one-way delay: 83.458 ms

Loss rate: 77.45%

Run 1: Report of Copa — Data Link

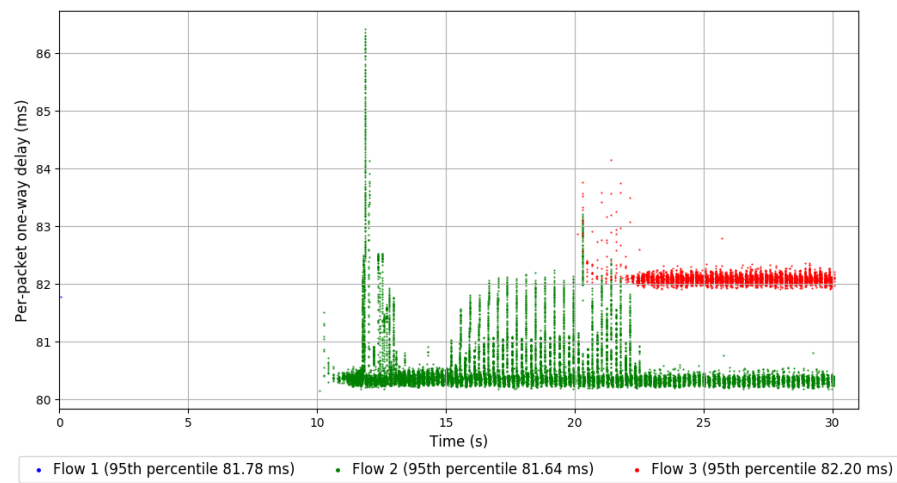
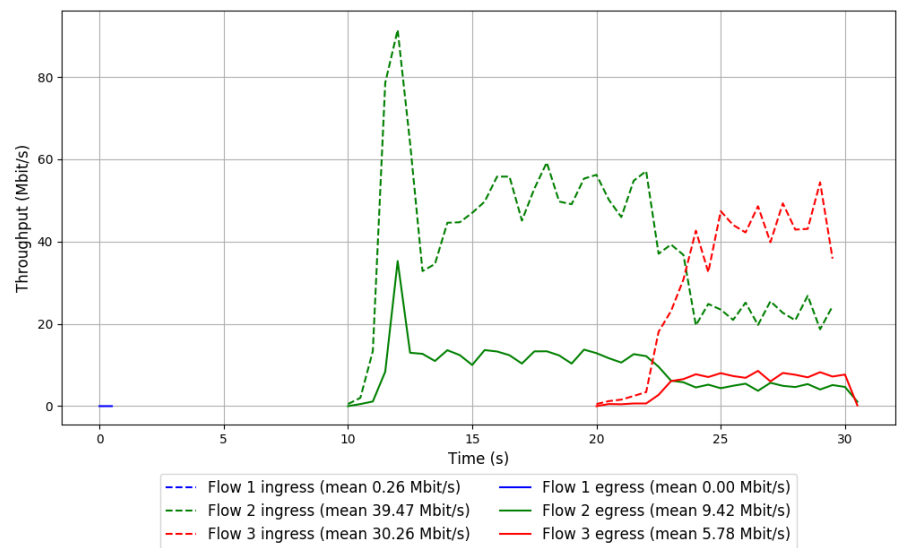


Run 2: Statistics of Copa

Start at: 2019-02-11 17:50:54
End at: 2019-02-11 17:51:24
Local clock offset: -6.314 ms
Remote clock offset: 3.971 ms

Below is generated by plot.py at 2019-02-11 19:40:09
Datalink statistics
-- Total of 3 flows:
Average throughput: 8.19 Mbit/s
95th percentile per-packet one-way delay: 82.142 ms
Loss rate: 77.47%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 81.778 ms
Loss rate: 97.92%
-- Flow 2:
Average throughput: 9.42 Mbit/s
95th percentile per-packet one-way delay: 81.635 ms
Loss rate: 76.15%
-- Flow 3:
Average throughput: 5.78 Mbit/s
95th percentile per-packet one-way delay: 82.200 ms
Loss rate: 80.91%

Run 2: Report of Copa — Data Link

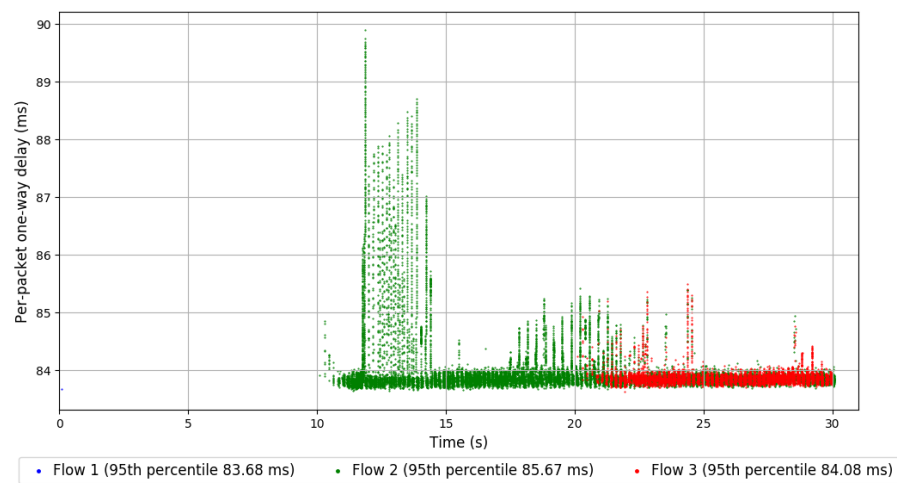
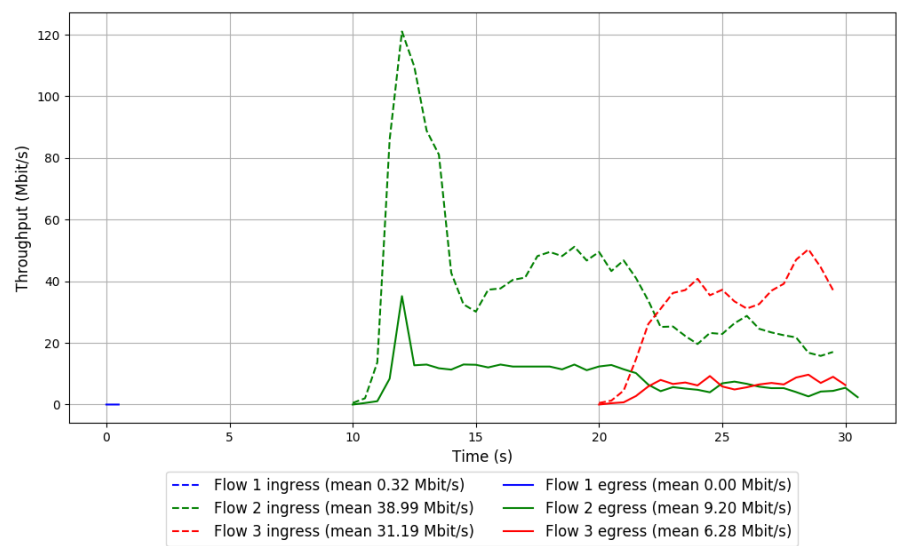


Run 3: Statistics of Copa

Start at: 2019-02-11 18:19:15
End at: 2019-02-11 18:19:45
Local clock offset: -2.042 ms
Remote clock offset: 6.825 ms

Below is generated by plot.py at 2019-02-11 19:40:09
Datalink statistics
-- Total of 3 flows:
Average throughput: 8.20 Mbit/s
95th percentile per-packet one-way delay: 85.232 ms
Loss rate: 77.40%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 83.680 ms
Loss rate: 98.33%
-- Flow 2:
Average throughput: 9.20 Mbit/s
95th percentile per-packet one-way delay: 85.671 ms
Loss rate: 76.42%
-- Flow 3:
Average throughput: 6.28 Mbit/s
95th percentile per-packet one-way delay: 84.084 ms
Loss rate: 79.87%

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2019-02-11 18:47:41

End at: 2019-02-11 18:48:11

Local clock offset: -0.605 ms

Remote clock offset: 4.632 ms

Below is generated by plot.py at 2019-02-11 19:40:09

Datalink statistics

-- Total of 3 flows:

Average throughput: 8.20 Mbit/s

95th percentile per-packet one-way delay: 81.857 ms

Loss rate: 75.23%

-- Flow 1:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 80.767 ms

Loss rate: 97.24%

-- Flow 2:

Average throughput: 12.29 Mbit/s

95th percentile per-packet one-way delay: 81.849 ms

Loss rate: 75.23%

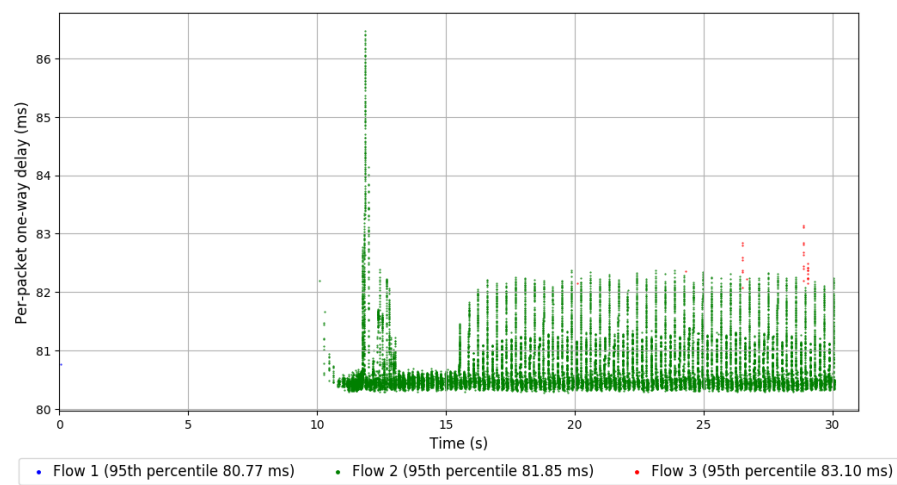
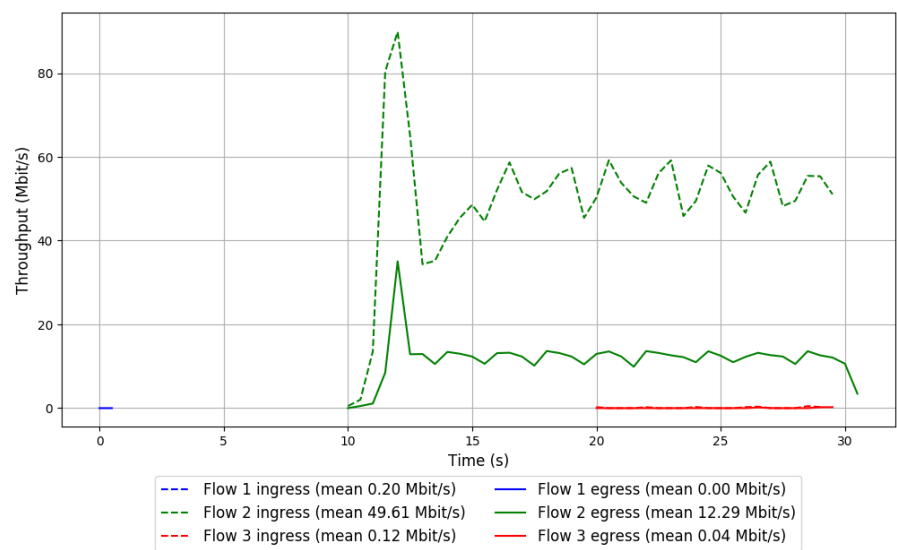
-- Flow 3:

Average throughput: 0.04 Mbit/s

95th percentile per-packet one-way delay: 83.104 ms

Loss rate: 68.12%

Run 4: Report of Copa — Data Link

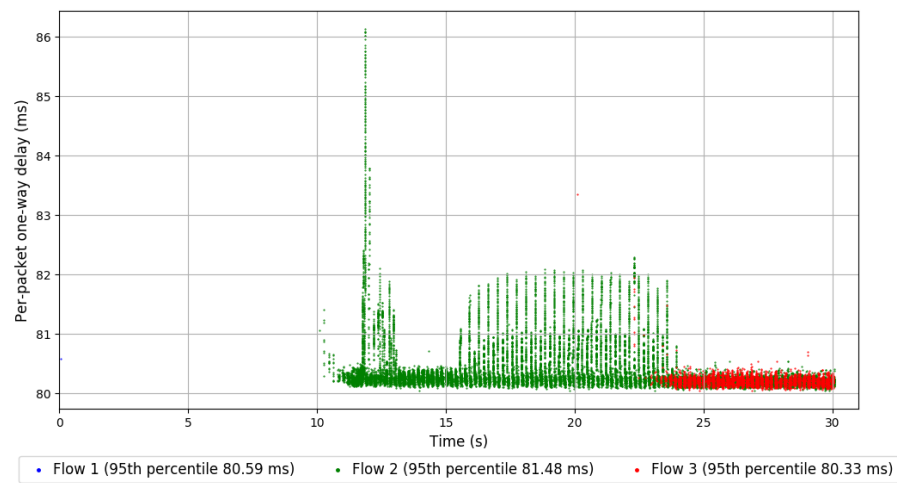
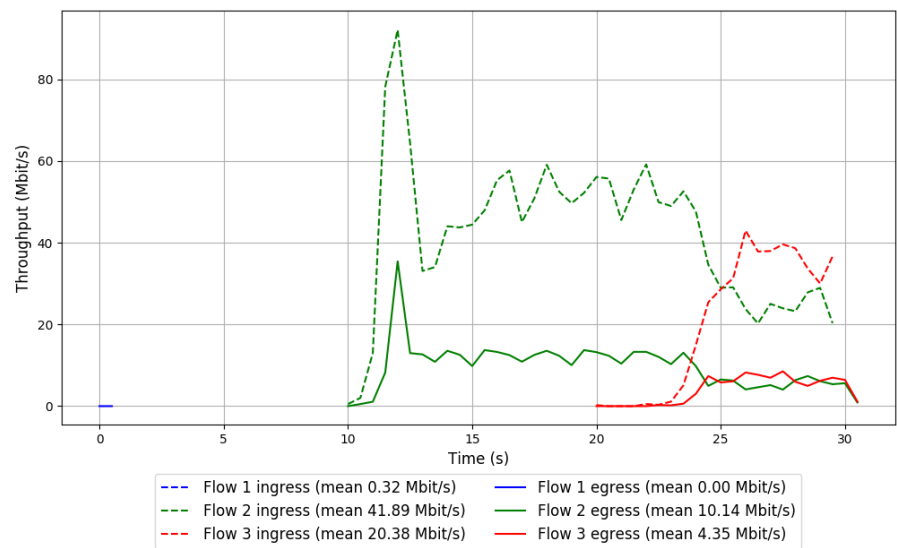


Run 5: Statistics of Copa

Start at: 2019-02-11 19:15:57
End at: 2019-02-11 19:16:27
Local clock offset: -4.592 ms
Remote clock offset: 3.97 ms

Below is generated by plot.py at 2019-02-11 19:40:09
Datalink statistics
-- Total of 3 flows:
Average throughput: 8.19 Mbit/s
95th percentile per-packet one-way delay: 81.381 ms
Loss rate: 76.36%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 80.587 ms
Loss rate: 98.33%
-- Flow 2:
Average throughput: 10.14 Mbit/s
95th percentile per-packet one-way delay: 81.485 ms
Loss rate: 75.80%
-- Flow 3:
Average throughput: 4.35 Mbit/s
95th percentile per-packet one-way delay: 80.333 ms
Loss rate: 78.66%

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2019-02-11 17:42:40

End at: 2019-02-11 17:43:10

Local clock offset: -5.888 ms

Remote clock offset: 4.501 ms

Below is generated by plot.py at 2019-02-11 19:40:19

Datalink statistics

-- Total of 3 flows:

Average throughput: 90.90 Mbit/s

95th percentile per-packet one-way delay: 110.704 ms

Loss rate: 0.57%

-- Flow 1:

Average throughput: 74.00 Mbit/s

95th percentile per-packet one-way delay: 111.330 ms

Loss rate: 0.66%

-- Flow 2:

Average throughput: 16.11 Mbit/s

95th percentile per-packet one-way delay: 110.117 ms

Loss rate: 0.15%

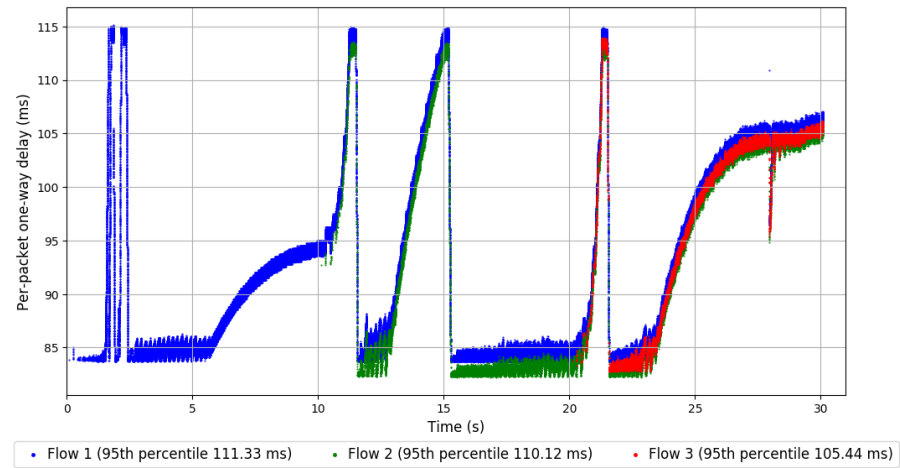
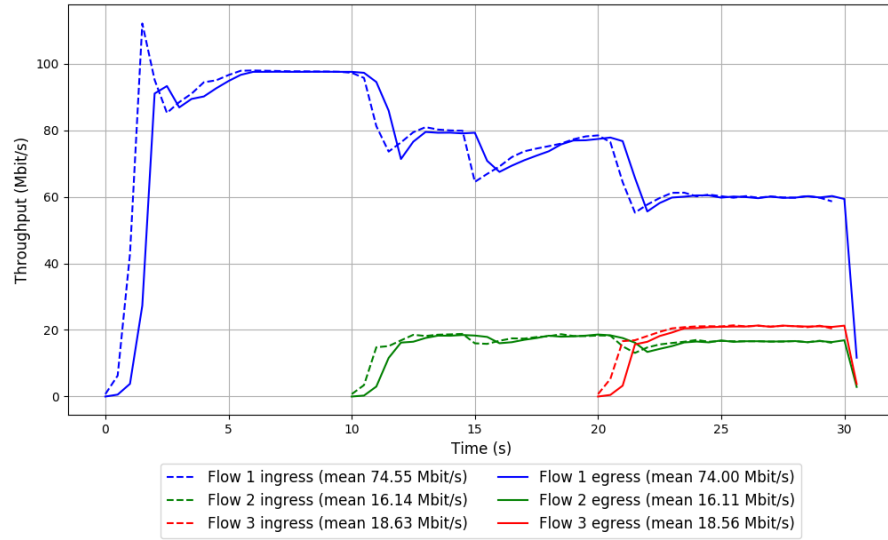
-- Flow 3:

Average throughput: 18.56 Mbit/s

95th percentile per-packet one-way delay: 105.444 ms

Loss rate: 0.13%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2019-02-11 18:10:42

End at: 2019-02-11 18:11:12

Local clock offset: -4.776 ms

Remote clock offset: 3.323 ms

Below is generated by plot.py at 2019-02-11 19:40:28

Datalink statistics

-- Total of 3 flows:

Average throughput: 90.96 Mbit/s

95th percentile per-packet one-way delay: 109.229 ms

Loss rate: 0.57%

-- Flow 1:

Average throughput: 74.34 Mbit/s

95th percentile per-packet one-way delay: 109.084 ms

Loss rate: 0.66%

-- Flow 2:

Average throughput: 15.56 Mbit/s

95th percentile per-packet one-way delay: 111.597 ms

Loss rate: 0.17%

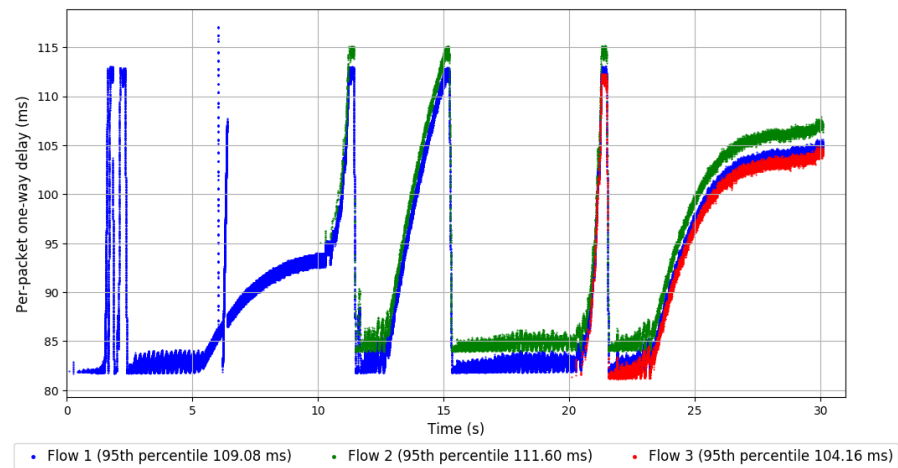
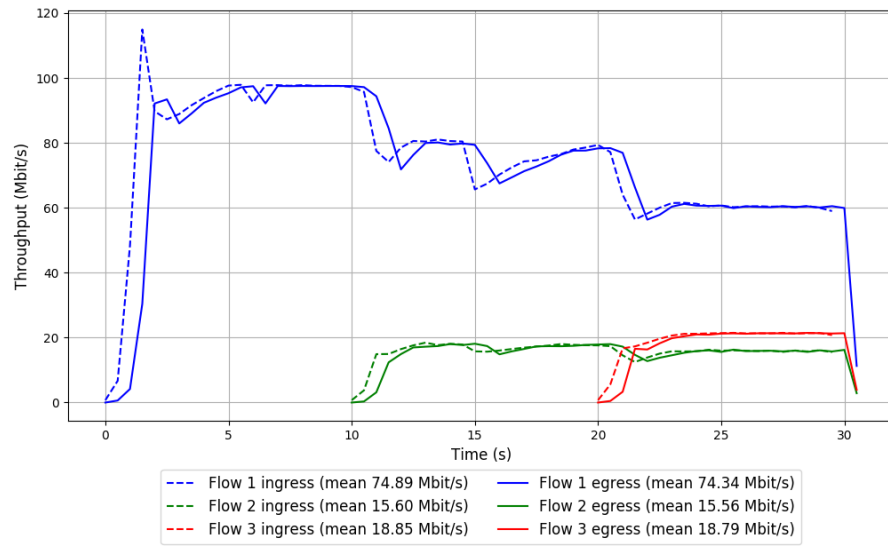
-- Flow 3:

Average throughput: 18.79 Mbit/s

95th percentile per-packet one-way delay: 104.158 ms

Loss rate: 0.10%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2019-02-11 18:39:09

End at: 2019-02-11 18:39:39

Local clock offset: -0.677 ms

Remote clock offset: 7.677 ms

Below is generated by plot.py at 2019-02-11 19:40:29

Datalink statistics

-- Total of 3 flows:

Average throughput: 89.86 Mbit/s

95th percentile per-packet one-way delay: 115.321 ms

Loss rate: 1.03%

-- Flow 1:

Average throughput: 73.44 Mbit/s

95th percentile per-packet one-way delay: 115.339 ms

Loss rate: 1.22%

-- Flow 2:

Average throughput: 19.18 Mbit/s

95th percentile per-packet one-way delay: 114.584 ms

Loss rate: 0.13%

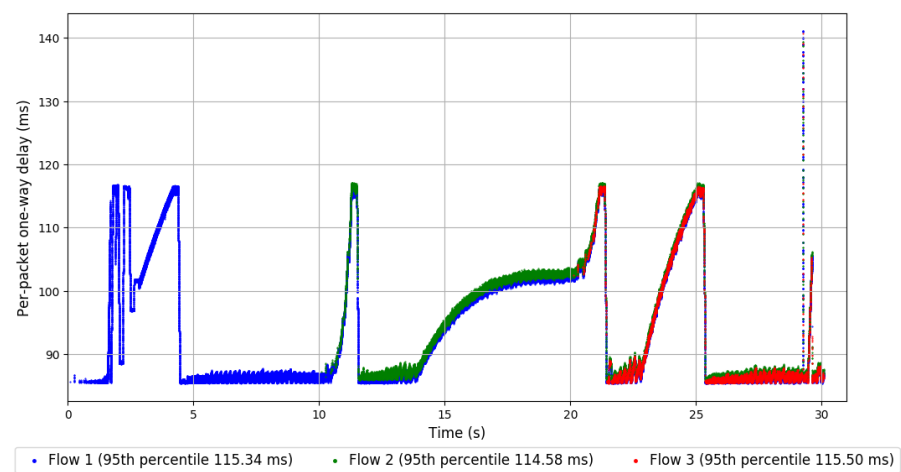
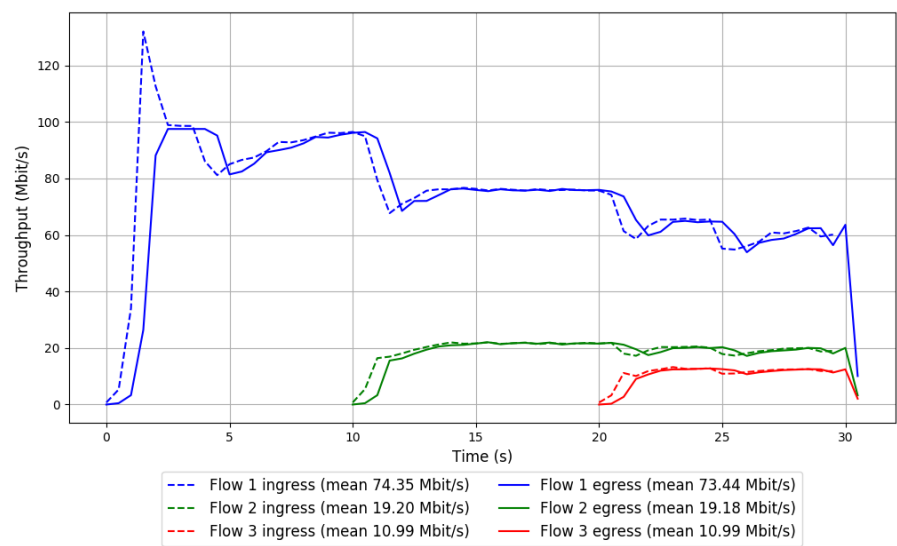
-- Flow 3:

Average throughput: 10.99 Mbit/s

95th percentile per-packet one-way delay: 115.504 ms

Loss rate: 0.21%

Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

Start at: 2019-02-11 19:07:21

End at: 2019-02-11 19:07:51

Local clock offset: -1.925 ms

Remote clock offset: 8.339 ms

Below is generated by plot.py at 2019-02-11 19:41:07

Datalink statistics

-- Total of 3 flows:

Average throughput: 91.06 Mbit/s

95th percentile per-packet one-way delay: 112.820 ms

Loss rate: 0.56%

-- Flow 1:

Average throughput: 74.36 Mbit/s

95th percentile per-packet one-way delay: 112.878 ms

Loss rate: 0.65%

-- Flow 2:

Average throughput: 15.79 Mbit/s

95th percentile per-packet one-way delay: 113.972 ms

Loss rate: 0.20%

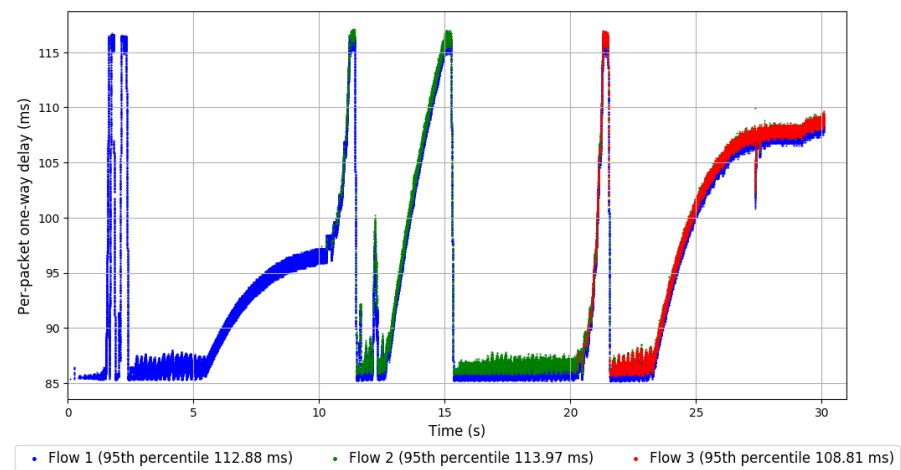
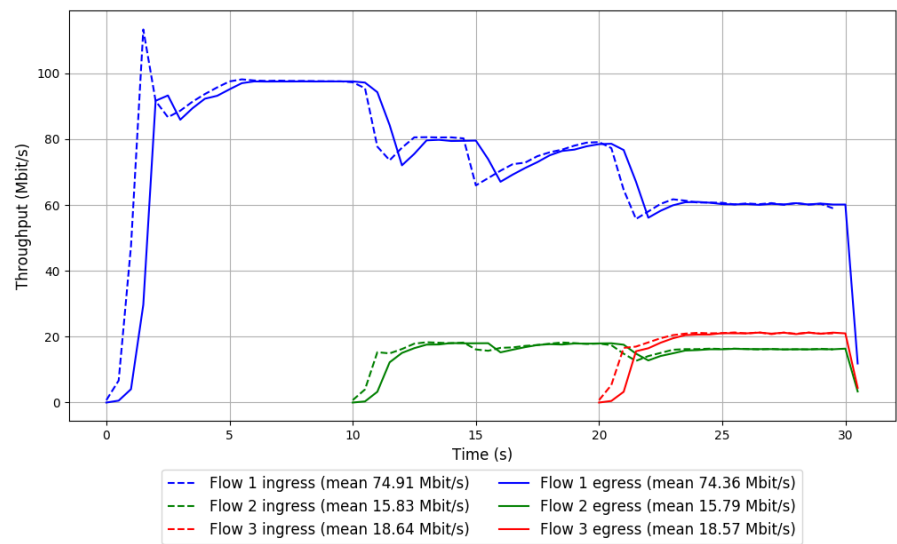
-- Flow 3:

Average throughput: 18.57 Mbit/s

95th percentile per-packet one-way delay: 108.813 ms

Loss rate: 0.12%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2019-02-11 19:35:19

End at: 2019-02-11 19:35:49

Local clock offset: -7.325 ms

Remote clock offset: 7.514 ms

Below is generated by plot.py at 2019-02-11 19:41:08

Datalink statistics

-- Total of 3 flows:

Average throughput: 90.53 Mbit/s

95th percentile per-packet one-way delay: 116.749 ms

Loss rate: 1.01%

-- Flow 1:

Average throughput: 75.28 Mbit/s

95th percentile per-packet one-way delay: 116.891 ms

Loss rate: 1.18%

-- Flow 2:

Average throughput: 16.60 Mbit/s

95th percentile per-packet one-way delay: 114.920 ms

Loss rate: 0.18%

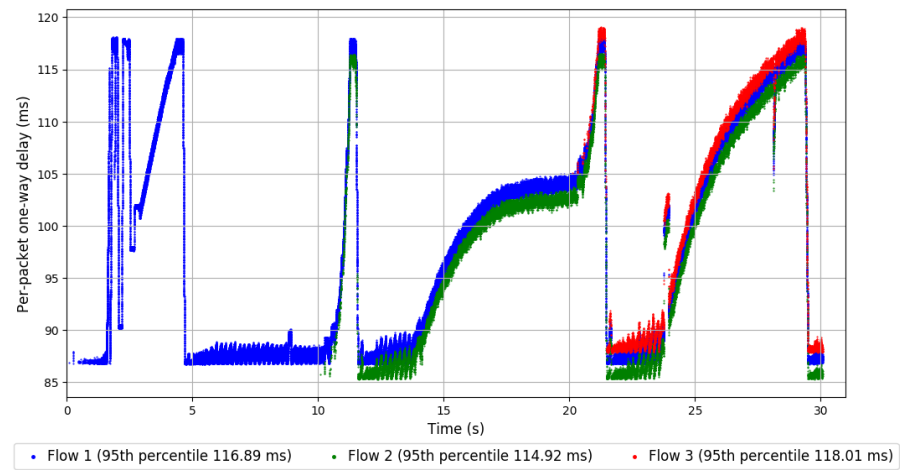
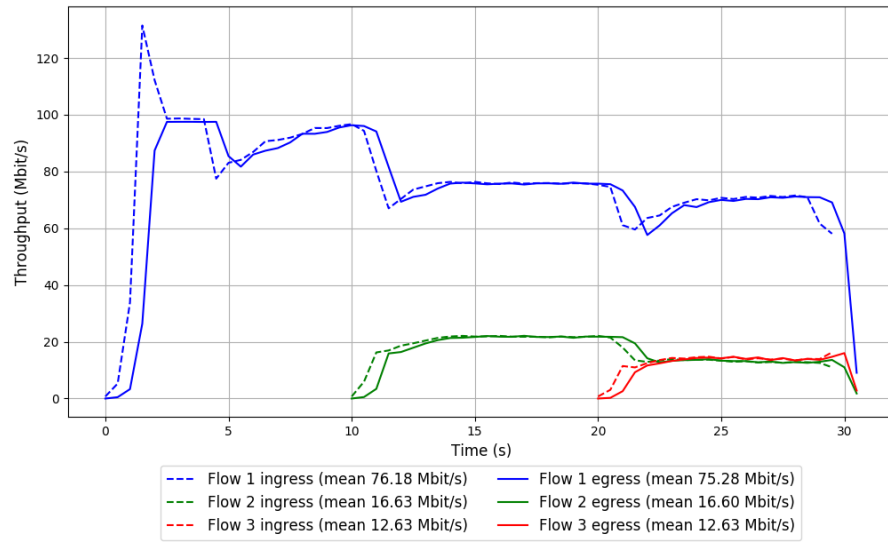
-- Flow 3:

Average throughput: 12.63 Mbit/s

95th percentile per-packet one-way delay: 118.009 ms

Loss rate: 0.19%

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2019-02-11 17:24:09

End at: 2019-02-11 17:24:39

Local clock offset: -2.598 ms

Remote clock offset: 4.831 ms

Below is generated by plot.py at 2019-02-11 19:41:33

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.98 Mbit/s

95th percentile per-packet one-way delay: 108.867 ms

Loss rate: 19.94%

-- Flow 1:

Average throughput: 62.29 Mbit/s

95th percentile per-packet one-way delay: 108.581 ms

Loss rate: 15.19%

-- Flow 2:

Average throughput: 31.54 Mbit/s

95th percentile per-packet one-way delay: 108.647 ms

Loss rate: 30.46%

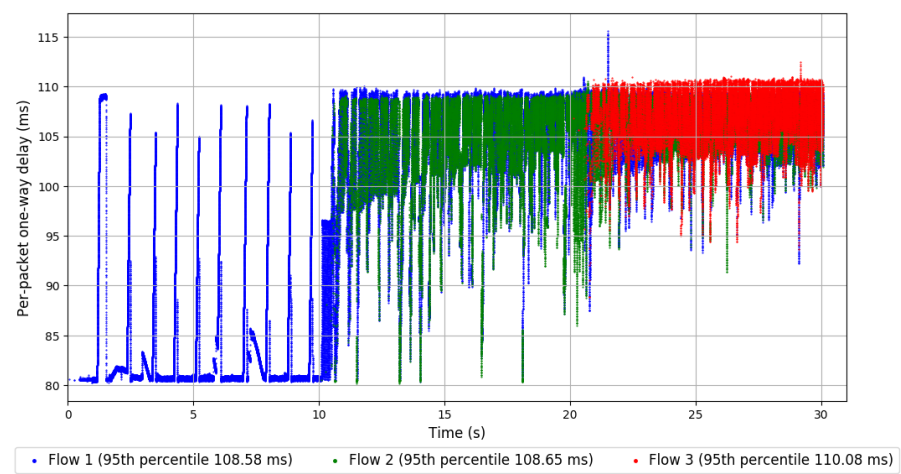
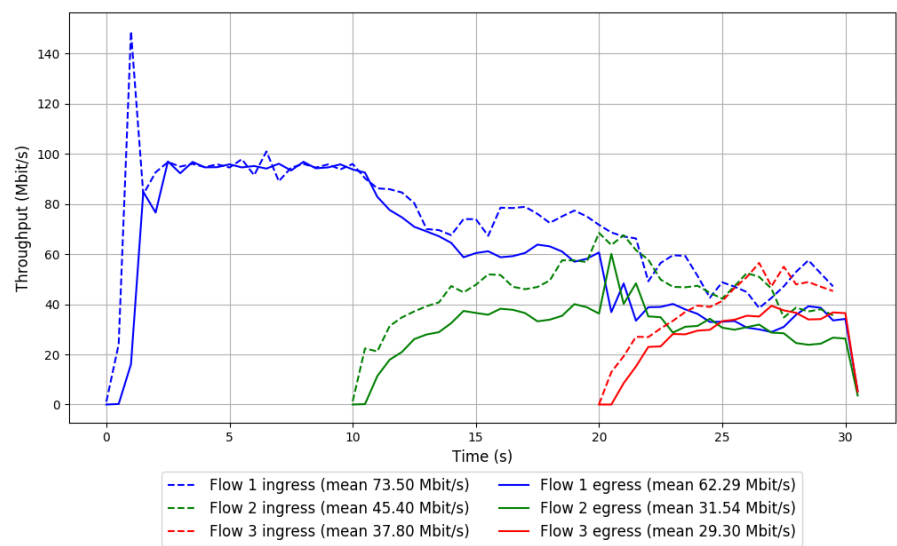
-- Flow 3:

Average throughput: 29.30 Mbit/s

95th percentile per-packet one-way delay: 110.075 ms

Loss rate: 22.46%

Run 1: Report of FillP — Data Link

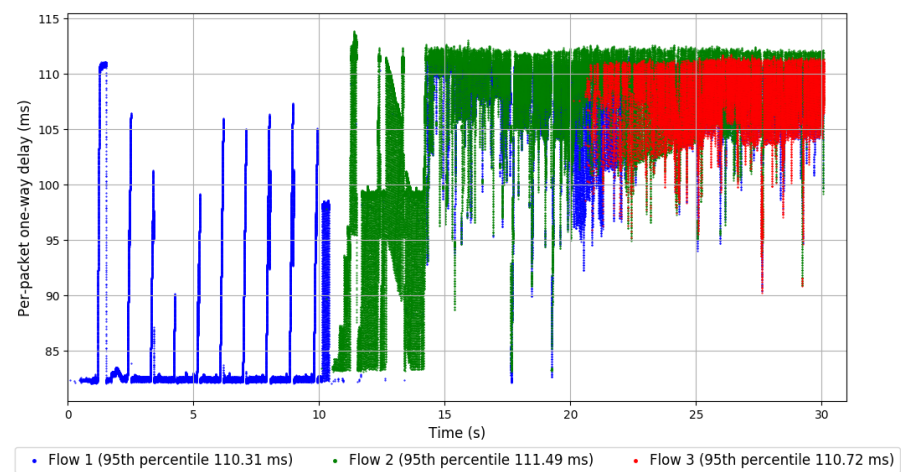
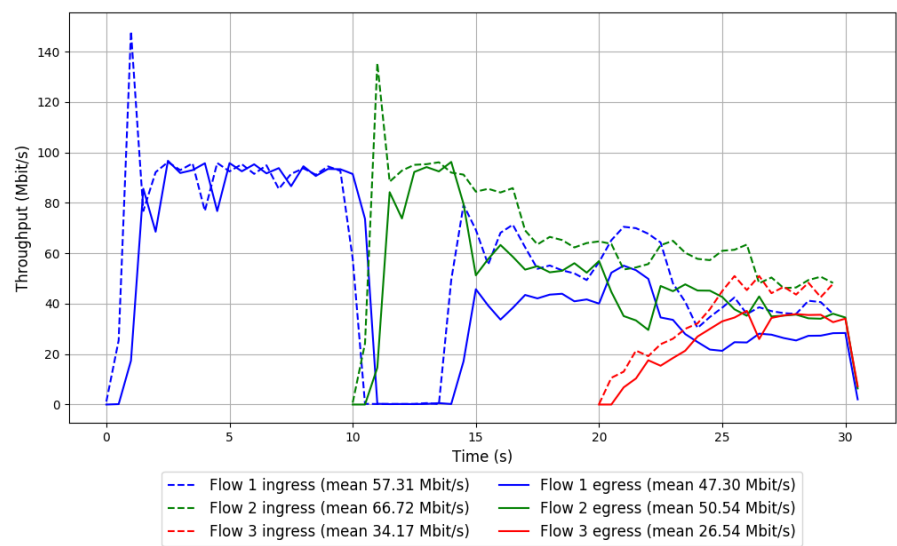


Run 2: Statistics of FillP

Start at: 2019-02-11 17:52:08
End at: 2019-02-11 17:52:38
Local clock offset: -6.418 ms
Remote clock offset: 4.683 ms

Below is generated by plot.py at 2019-02-11 19:41:33
Datalink statistics
-- Total of 3 flows:
Average throughput: 89.71 Mbit/s
95th percentile per-packet one-way delay: 111.063 ms
Loss rate: 20.56%
-- Flow 1:
Average throughput: 47.30 Mbit/s
95th percentile per-packet one-way delay: 110.309 ms
Loss rate: 17.43%
-- Flow 2:
Average throughput: 50.54 Mbit/s
95th percentile per-packet one-way delay: 111.494 ms
Loss rate: 24.15%
-- Flow 3:
Average throughput: 26.54 Mbit/s
95th percentile per-packet one-way delay: 110.722 ms
Loss rate: 22.33%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2019-02-11 18:20:30

End at: 2019-02-11 18:21:00

Local clock offset: -1.863 ms

Remote clock offset: 7.014 ms

Below is generated by plot.py at 2019-02-11 19:41:33

Datalink statistics

-- Total of 3 flows:

Average throughput: 88.05 Mbit/s

95th percentile per-packet one-way delay: 113.634 ms

Loss rate: 15.57%

-- Flow 1:

Average throughput: 28.82 Mbit/s

95th percentile per-packet one-way delay: 111.438 ms

Loss rate: 6.09%

-- Flow 2:

Average throughput: 68.10 Mbit/s

95th percentile per-packet one-way delay: 113.756 ms

Loss rate: 16.32%

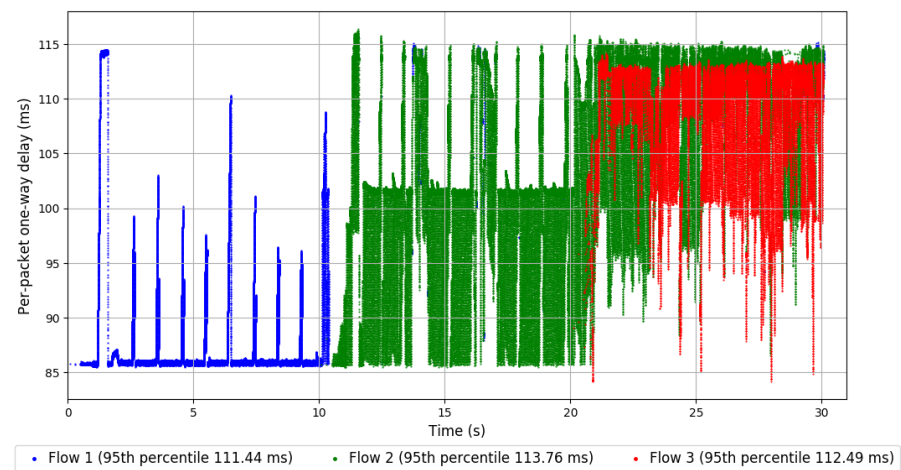
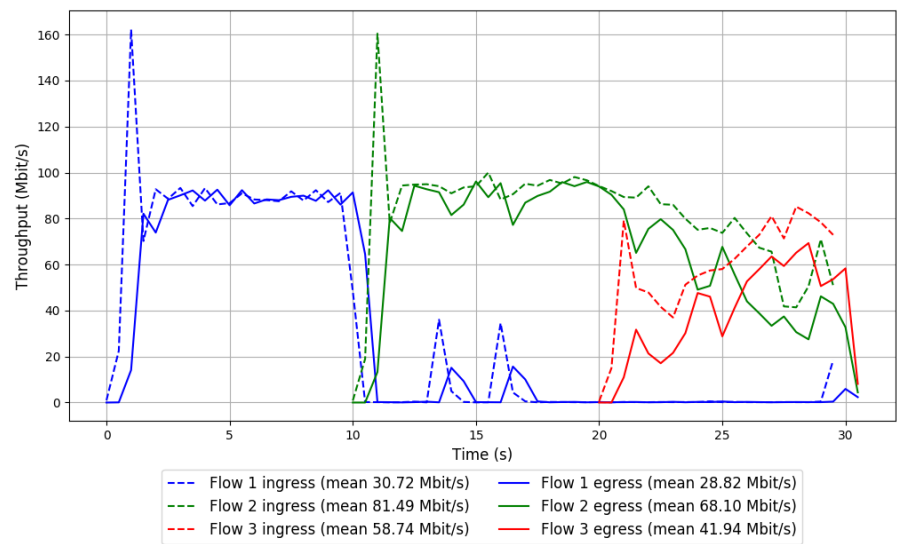
-- Flow 3:

Average throughput: 41.94 Mbit/s

95th percentile per-packet one-way delay: 112.493 ms

Loss rate: 28.45%

Run 3: Report of FillP — Data Link

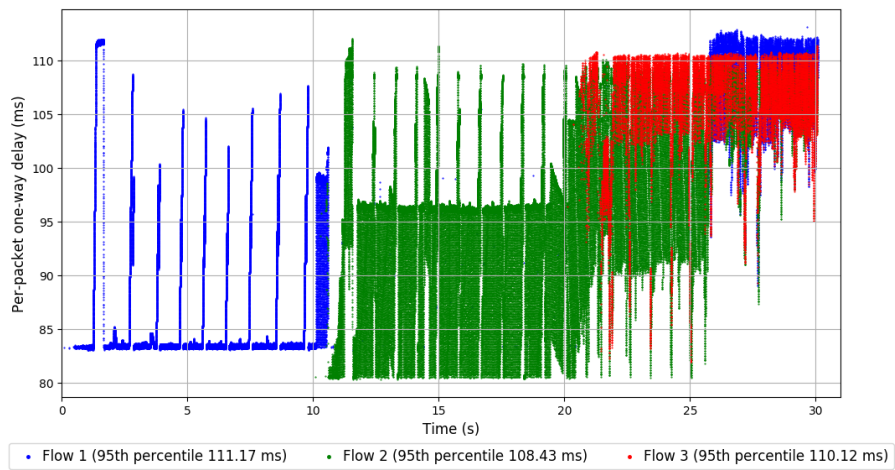
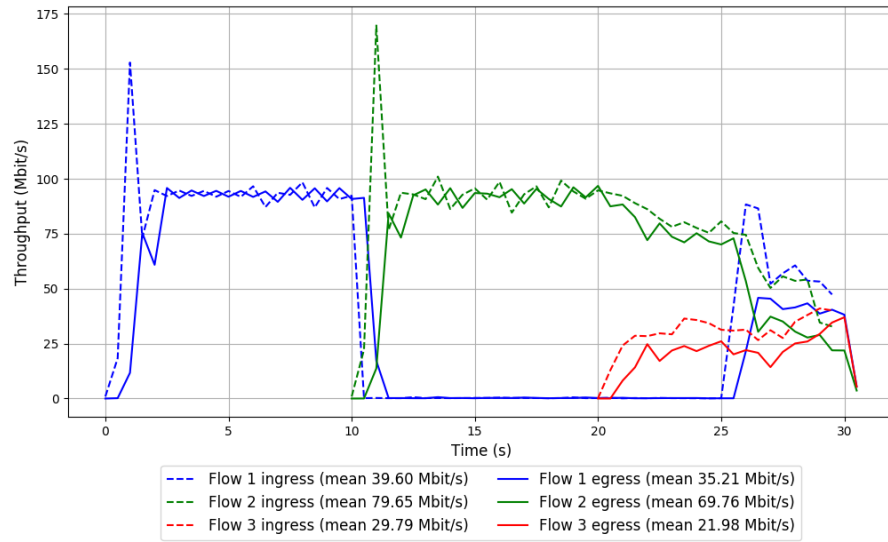


Run 4: Statistics of FillP

Start at: 2019-02-11 18:48:55
End at: 2019-02-11 18:49:25
Local clock offset: -0.642 ms
Remote clock offset: 4.469 ms

Below is generated by plot.py at 2019-02-11 19:41:38
Datalink statistics
-- Total of 3 flows:
Average throughput: 88.93 Mbit/s
95th percentile per-packet one-way delay: 109.624 ms
Loss rate: 13.14%
-- Flow 1:
Average throughput: 35.21 Mbit/s
95th percentile per-packet one-way delay: 111.173 ms
Loss rate: 11.00%
-- Flow 2:
Average throughput: 69.76 Mbit/s
95th percentile per-packet one-way delay: 108.431 ms
Loss rate: 12.32%
-- Flow 3:
Average throughput: 21.98 Mbit/s
95th percentile per-packet one-way delay: 110.124 ms
Loss rate: 26.16%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2019-02-11 19:17:10

End at: 2019-02-11 19:17:40

Local clock offset: -5.608 ms

Remote clock offset: 3.708 ms

Below is generated by plot.py at 2019-02-11 19:41:54

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.86 Mbit/s

95th percentile per-packet one-way delay: 111.082 ms

Loss rate: 19.52%

-- Flow 1:

Average throughput: 58.82 Mbit/s

95th percentile per-packet one-way delay: 110.424 ms

Loss rate: 17.40%

-- Flow 2:

Average throughput: 42.73 Mbit/s

95th percentile per-packet one-way delay: 111.645 ms

Loss rate: 23.89%

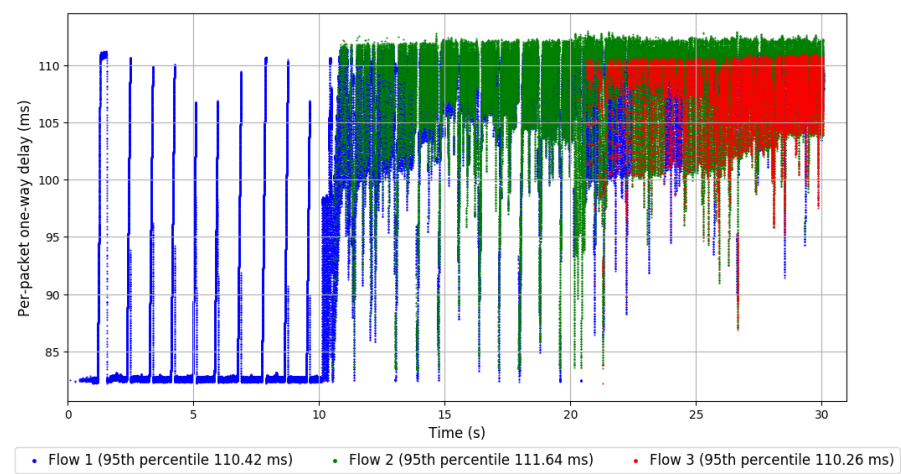
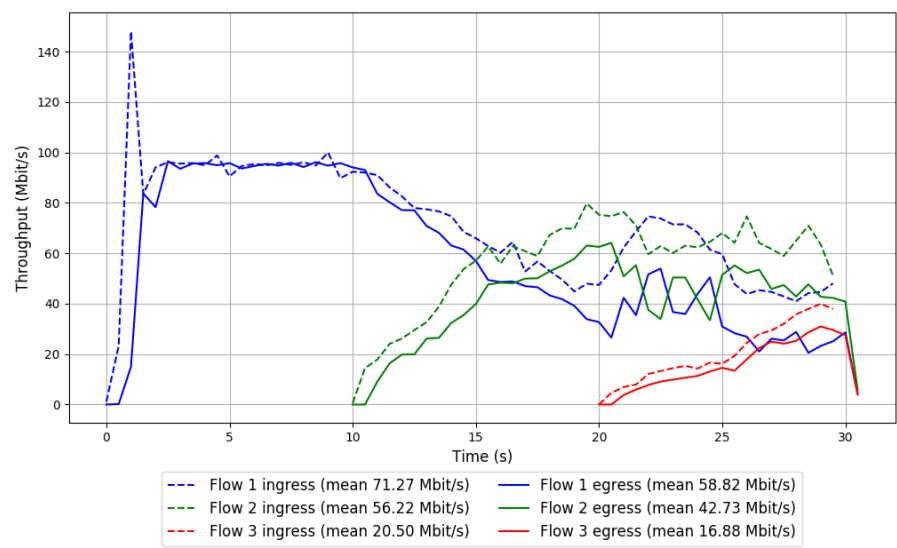
-- Flow 3:

Average throughput: 16.88 Mbit/s

95th percentile per-packet one-way delay: 110.264 ms

Loss rate: 17.64%

Run 5: Report of FillP — Data Link

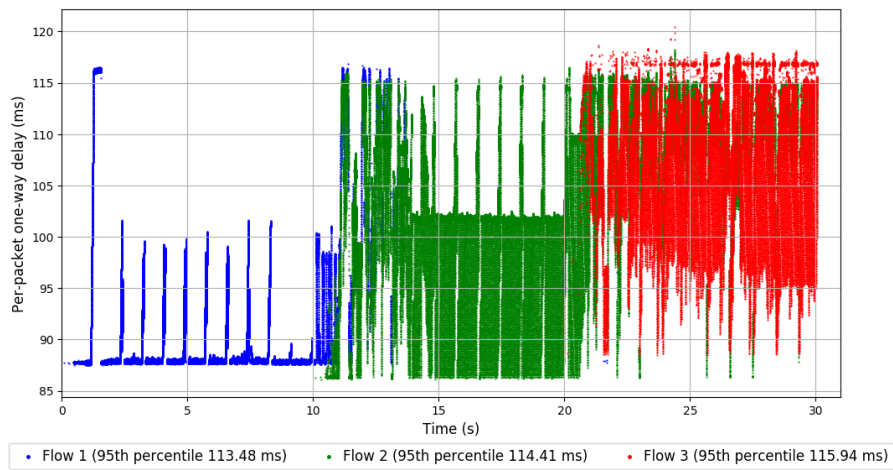
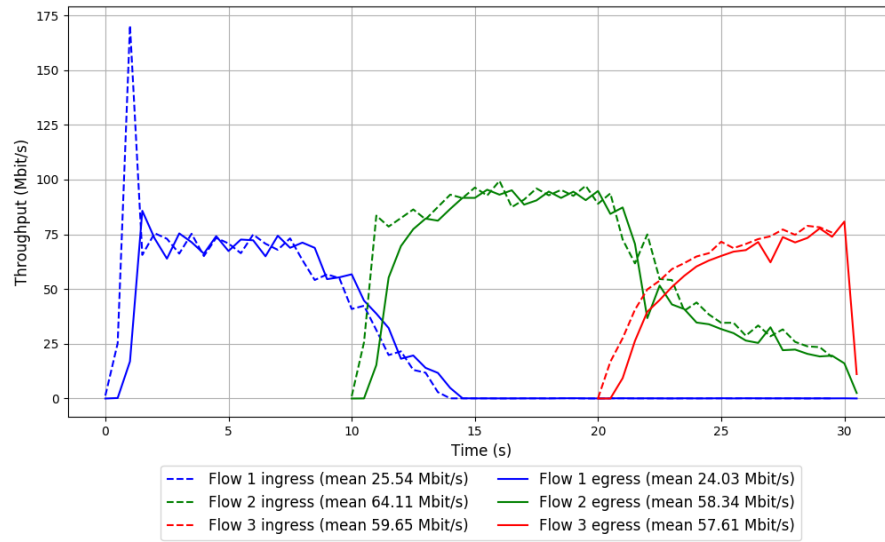


Run 1: Statistics of FillP-Sheep

Start at: 2019-02-11 17:20:16
End at: 2019-02-11 17:20:46
Local clock offset: -3.744 ms
Remote clock offset: 10.429 ms

Below is generated by plot.py at 2019-02-11 19:41:54
Datalink statistics
-- Total of 3 flows:
Average throughput: 82.01 Mbit/s
95th percentile per-packet one-way delay: 114.578 ms
Loss rate: 6.72%
-- Flow 1:
Average throughput: 24.03 Mbit/s
95th percentile per-packet one-way delay: 113.482 ms
Loss rate: 5.84%
-- Flow 2:
Average throughput: 58.34 Mbit/s
95th percentile per-packet one-way delay: 114.414 ms
Loss rate: 8.90%
-- Flow 3:
Average throughput: 57.61 Mbit/s
95th percentile per-packet one-way delay: 115.941 ms
Loss rate: 3.16%

Run 1: Report of FillP-Sheep — Data Link



Run 2: Statistics of FillP-Sheep

Start at: 2019-02-11 17:48:10

End at: 2019-02-11 17:48:40

Local clock offset: -6.756 ms

Remote clock offset: 3.98 ms

Below is generated by plot.py at 2019-02-11 19:42:13

Datalink statistics

-- Total of 3 flows:

Average throughput: 75.07 Mbit/s

95th percentile per-packet one-way delay: 111.434 ms

Loss rate: 8.96%

-- Flow 1:

Average throughput: 16.32 Mbit/s

95th percentile per-packet one-way delay: 111.748 ms

Loss rate: 7.81%

-- Flow 2:

Average throughput: 75.80 Mbit/s

95th percentile per-packet one-way delay: 111.489 ms

Loss rate: 7.41%

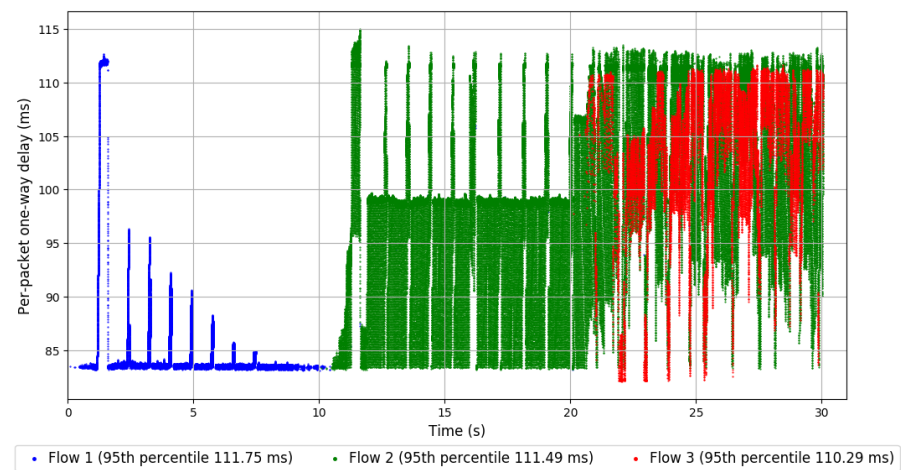
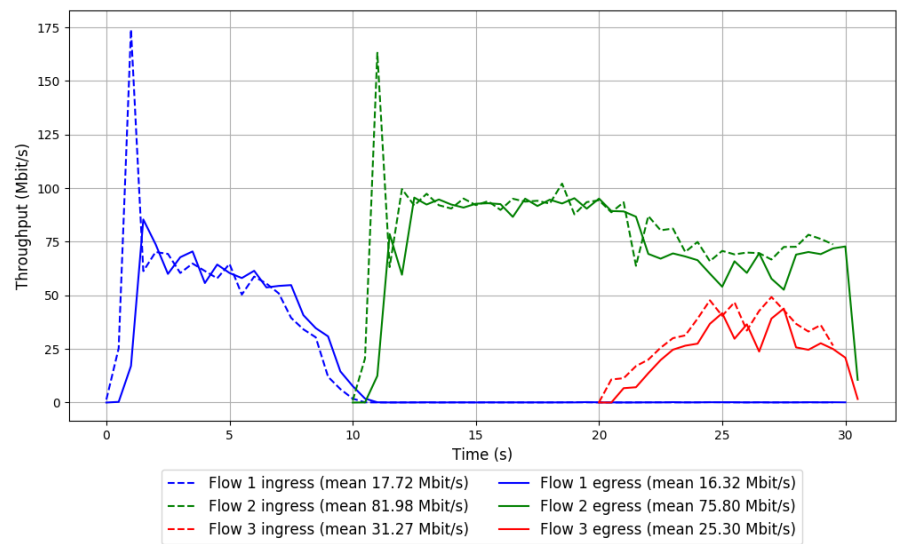
-- Flow 3:

Average throughput: 25.30 Mbit/s

95th percentile per-packet one-way delay: 110.292 ms

Loss rate: 19.06%

Run 2: Report of FillP-Sheep — Data Link



Run 3: Statistics of FillP-Sheep

Start at: 2019-02-11 18:16:34

End at: 2019-02-11 18:17:04

Local clock offset: -3.286 ms

Remote clock offset: 3.532 ms

Below is generated by plot.py at 2019-02-11 19:42:13

Datalink statistics

-- Total of 3 flows:

Average throughput: 66.59 Mbit/s

95th percentile per-packet one-way delay: 110.293 ms

Loss rate: 10.19%

-- Flow 1:

Average throughput: 7.57 Mbit/s

95th percentile per-packet one-way delay: 111.950 ms

Loss rate: 17.98%

-- Flow 2:

Average throughput: 57.45 Mbit/s

95th percentile per-packet one-way delay: 110.171 ms

Loss rate: 10.30%

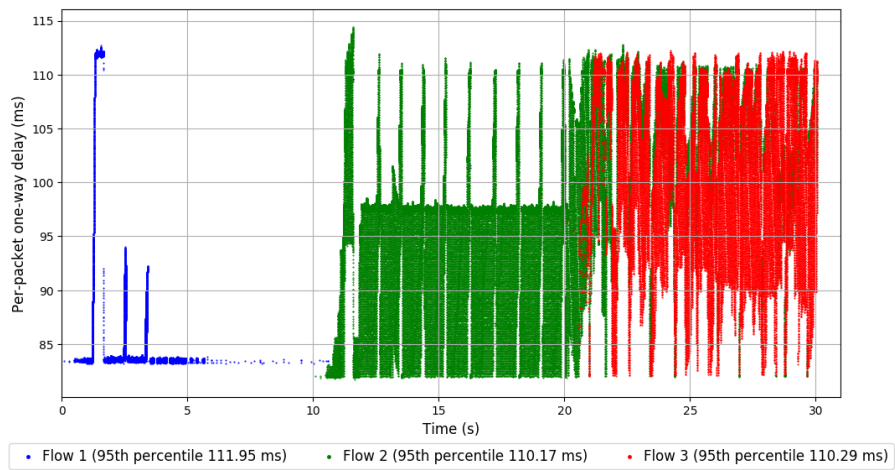
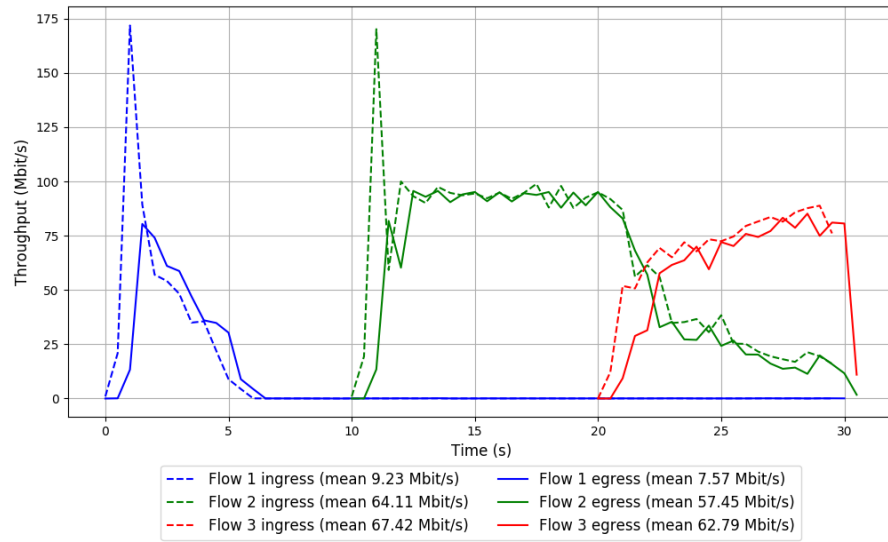
-- Flow 3:

Average throughput: 62.79 Mbit/s

95th percentile per-packet one-way delay: 110.288 ms

Loss rate: 6.75%

Run 3: Report of FillP-Sheep — Data Link



Run 4: Statistics of FillP-Sheep

Start at: 2019-02-11 18:44:59

End at: 2019-02-11 18:45:29

Local clock offset: -0.659 ms

Remote clock offset: 4.337 ms

Below is generated by plot.py at 2019-02-11 19:42:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 81.33 Mbit/s

95th percentile per-packet one-way delay: 109.834 ms

Loss rate: 6.31%

-- Flow 1:

Average throughput: 26.45 Mbit/s

95th percentile per-packet one-way delay: 106.787 ms

Loss rate: 5.41%

-- Flow 2:

Average throughput: 69.64 Mbit/s

95th percentile per-packet one-way delay: 109.954 ms

Loss rate: 5.80%

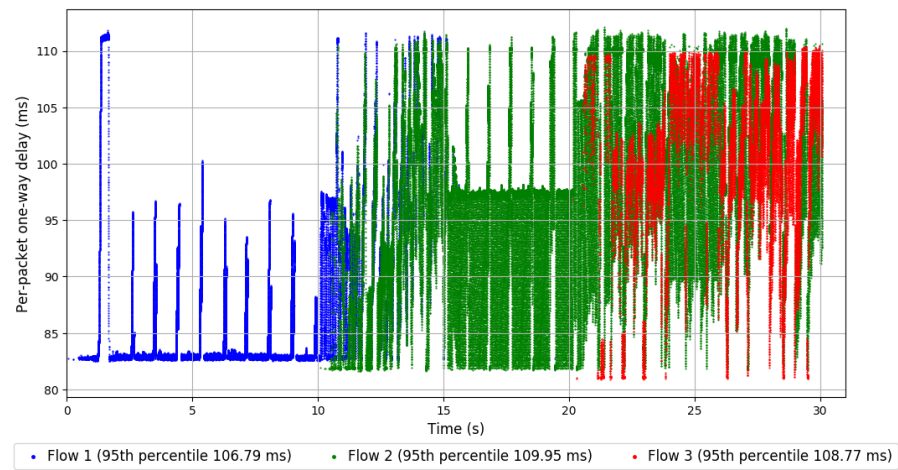
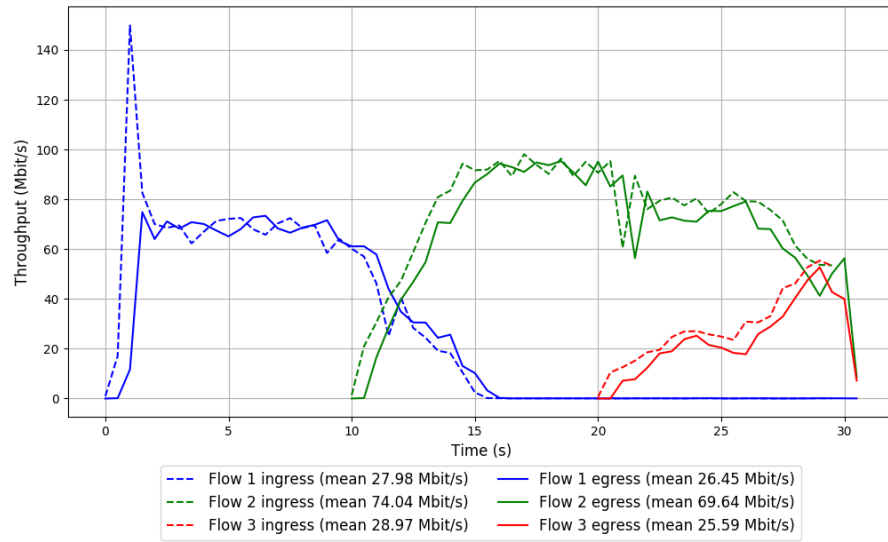
-- Flow 3:

Average throughput: 25.59 Mbit/s

95th percentile per-packet one-way delay: 108.770 ms

Loss rate: 11.58%

Run 4: Report of FillP-Sheep — Data Link



Run 5: Statistics of FillP-Sheep

Start at: 2019-02-11 19:13:13

End at: 2019-02-11 19:13:43

Local clock offset: -4.045 ms

Remote clock offset: 3.738 ms

Below is generated by plot.py at 2019-02-11 19:42:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 73.29 Mbit/s

95th percentile per-packet one-way delay: 109.429 ms

Loss rate: 8.15%

-- Flow 1:

Average throughput: 28.33 Mbit/s

95th percentile per-packet one-way delay: 106.944 ms

Loss rate: 4.92%

-- Flow 2:

Average throughput: 38.64 Mbit/s

95th percentile per-packet one-way delay: 109.202 ms

Loss rate: 11.55%

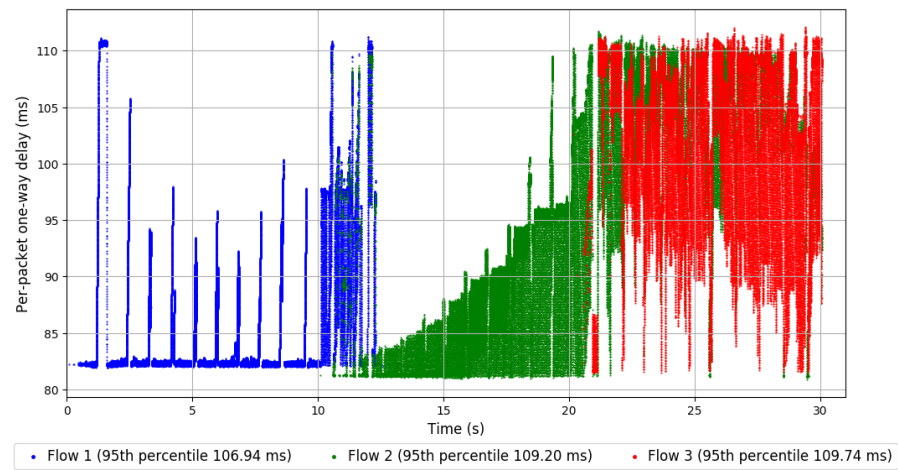
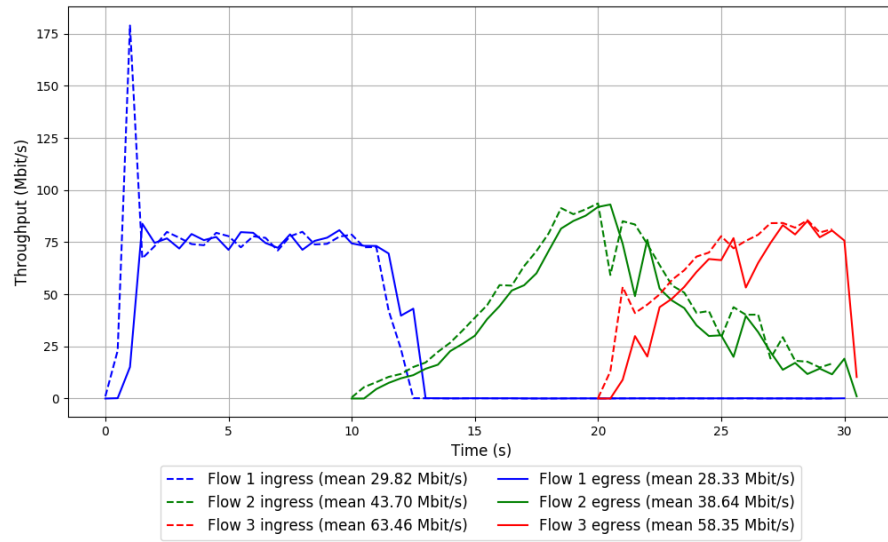
-- Flow 3:

Average throughput: 58.35 Mbit/s

95th percentile per-packet one-way delay: 109.742 ms

Loss rate: 8.00%

Run 5: Report of FillP-Sheep — Data Link



Run 1: Statistics of Indigo

Start at: 2019-02-11 17:44:01

End at: 2019-02-11 17:44:31

Local clock offset: -6.197 ms

Remote clock offset: 7.864 ms

Below is generated by plot.py at 2019-02-11 19:42:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 91.80 Mbit/s

95th percentile per-packet one-way delay: 119.072 ms

Loss rate: 31.69%

-- Flow 1:

Average throughput: 66.06 Mbit/s

95th percentile per-packet one-way delay: 115.447 ms

Loss rate: 9.91%

-- Flow 2:

Average throughput: 26.46 Mbit/s

95th percentile per-packet one-way delay: 119.181 ms

Loss rate: 28.07%

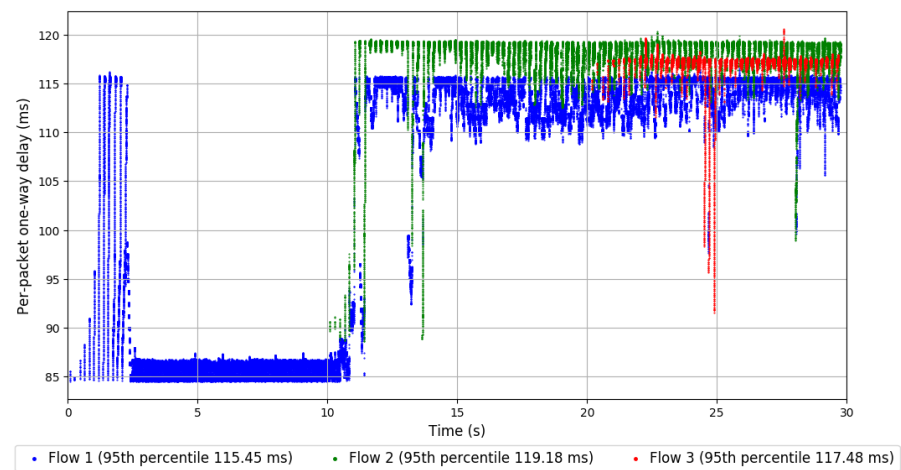
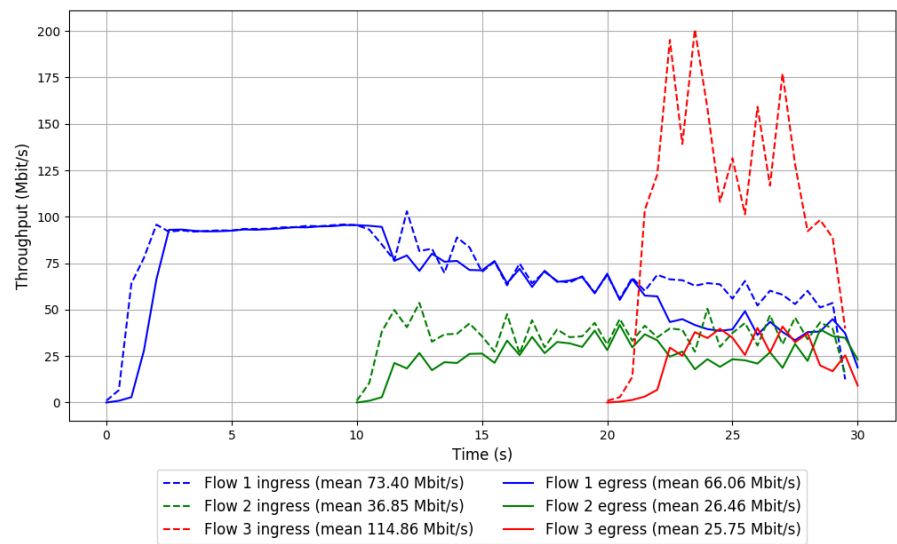
-- Flow 3:

Average throughput: 25.75 Mbit/s

95th percentile per-packet one-way delay: 117.485 ms

Loss rate: 77.57%

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2019-02-11 18:12:05

End at: 2019-02-11 18:12:35

Local clock offset: -4.418 ms

Remote clock offset: 3.698 ms

Below is generated by plot.py at 2019-02-11 19:42:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.09 Mbit/s

95th percentile per-packet one-way delay: 115.190 ms

Loss rate: 11.66%

-- Flow 1:

Average throughput: 71.01 Mbit/s

95th percentile per-packet one-way delay: 115.213 ms

Loss rate: 5.38%

-- Flow 2:

Average throughput: 17.55 Mbit/s

95th percentile per-packet one-way delay: 112.471 ms

Loss rate: 25.26%

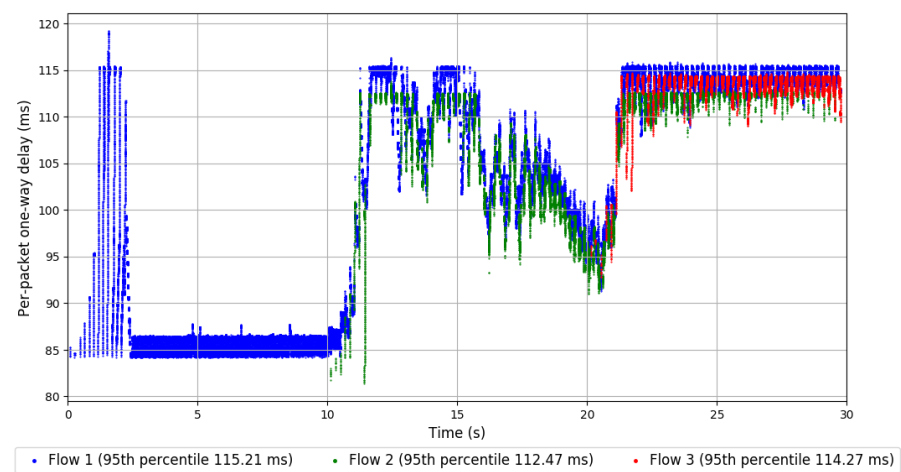
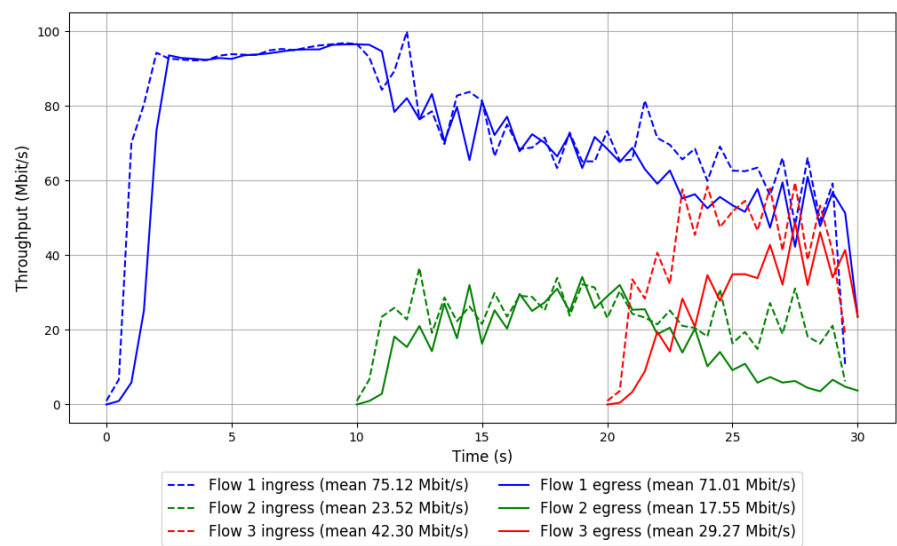
-- Flow 3:

Average throughput: 29.27 Mbit/s

95th percentile per-packet one-way delay: 114.272 ms

Loss rate: 30.68%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2019-02-11 18:40:45

End at: 2019-02-11 18:41:15

Local clock offset: -0.754 ms

Remote clock offset: 7.964 ms

Below is generated by plot.py at 2019-02-11 19:42:52

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.04 Mbit/s

95th percentile per-packet one-way delay: 117.950 ms

Loss rate: 31.36%

-- Flow 1:

Average throughput: 66.51 Mbit/s

95th percentile per-packet one-way delay: 116.727 ms

Loss rate: 11.77%

-- Flow 2:

Average throughput: 27.07 Mbit/s

95th percentile per-packet one-way delay: 118.155 ms

Loss rate: 29.13%

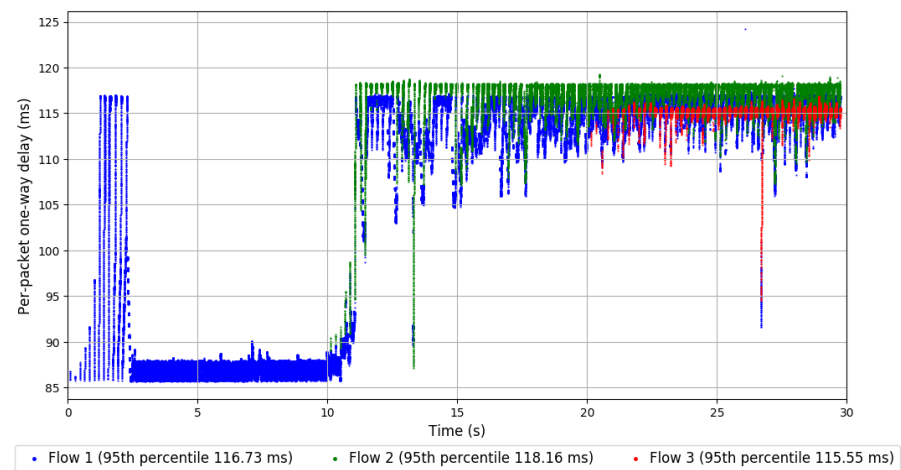
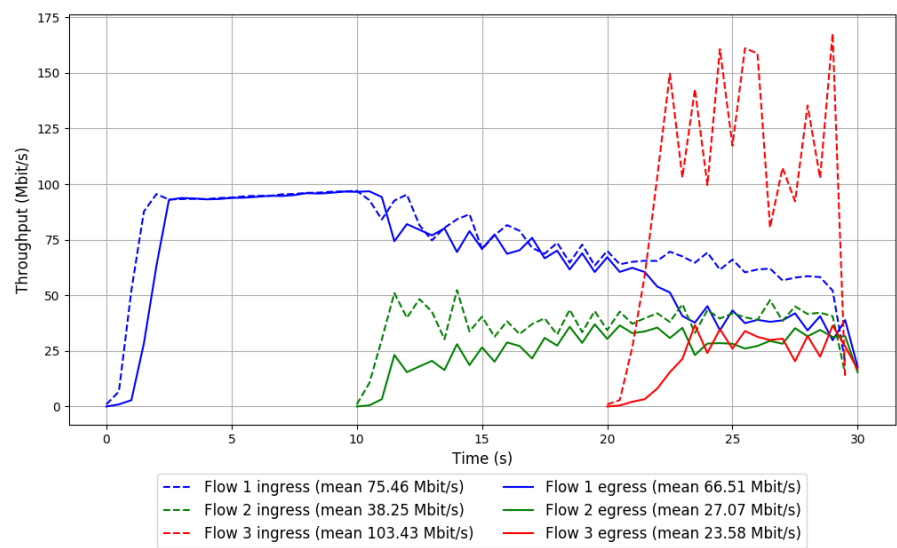
-- Flow 3:

Average throughput: 23.58 Mbit/s

95th percentile per-packet one-way delay: 115.545 ms

Loss rate: 77.19%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2019-02-11 19:08:53

End at: 2019-02-11 19:09:23

Local clock offset: -3.315 ms

Remote clock offset: 8.015 ms

Below is generated by plot.py at 2019-02-11 19:43:09

Datalink statistics

-- Total of 3 flows:

Average throughput: 91.14 Mbit/s

95th percentile per-packet one-way delay: 118.041 ms

Loss rate: 35.42%

-- Flow 1:

Average throughput: 67.05 Mbit/s

95th percentile per-packet one-way delay: 118.065 ms

Loss rate: 13.68%

-- Flow 2:

Average throughput: 23.23 Mbit/s

95th percentile per-packet one-way delay: 117.423 ms

Loss rate: 36.15%

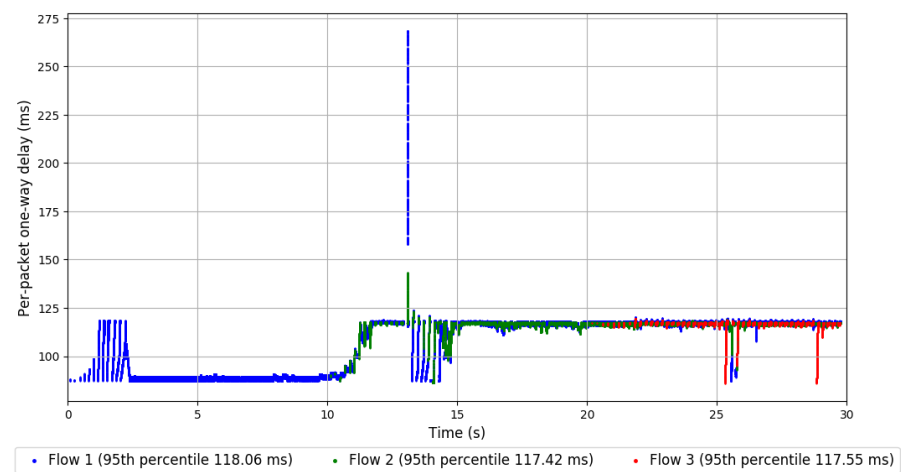
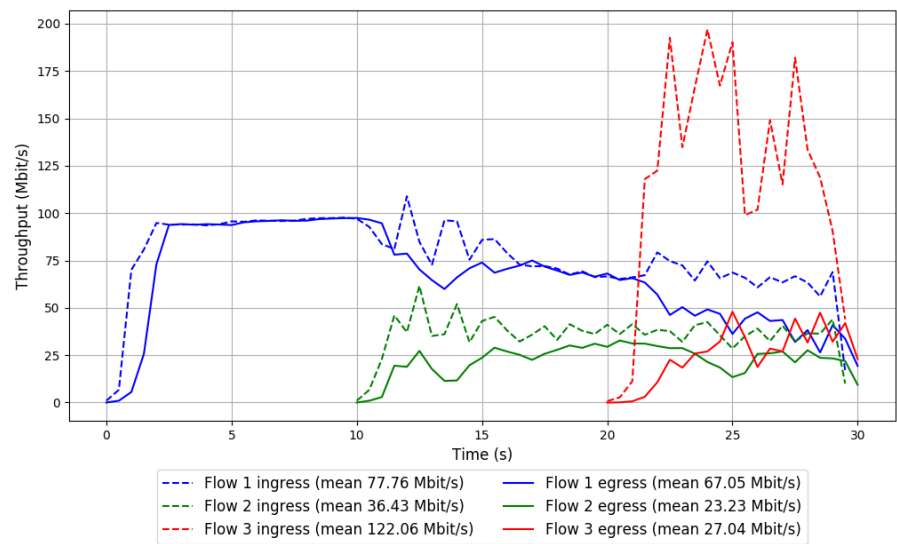
-- Flow 3:

Average throughput: 27.04 Mbit/s

95th percentile per-packet one-way delay: 117.554 ms

Loss rate: 77.85%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2019-02-11 19:36:45

End at: 2019-02-11 19:37:15

Local clock offset: -7.103 ms

Remote clock offset: 3.386 ms

Below is generated by plot.py at 2019-02-11 19:43:20

Datalink statistics

-- Total of 3 flows:

Average throughput: 91.34 Mbit/s

95th percentile per-packet one-way delay: 113.555 ms

Loss rate: 30.48%

-- Flow 1:

Average throughput: 66.46 Mbit/s

95th percentile per-packet one-way delay: 113.528 ms

Loss rate: 8.09%

-- Flow 2:

Average throughput: 22.43 Mbit/s

95th percentile per-packet one-way delay: 111.942 ms

Loss rate: 38.26%

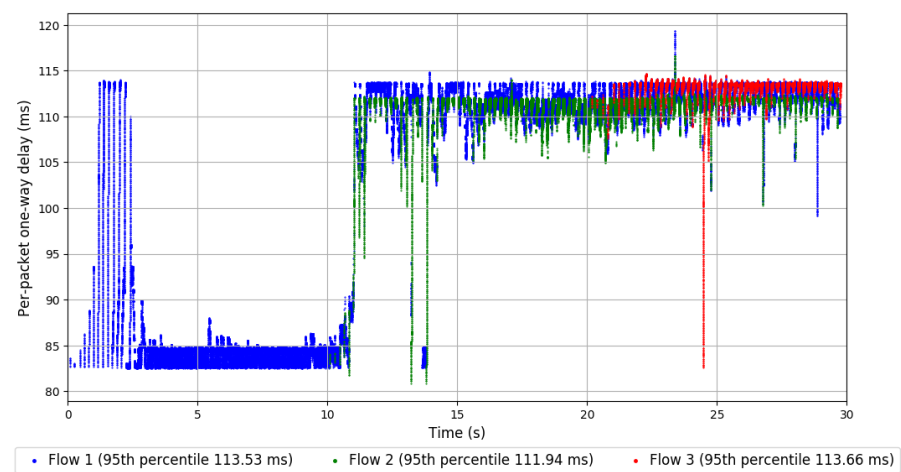
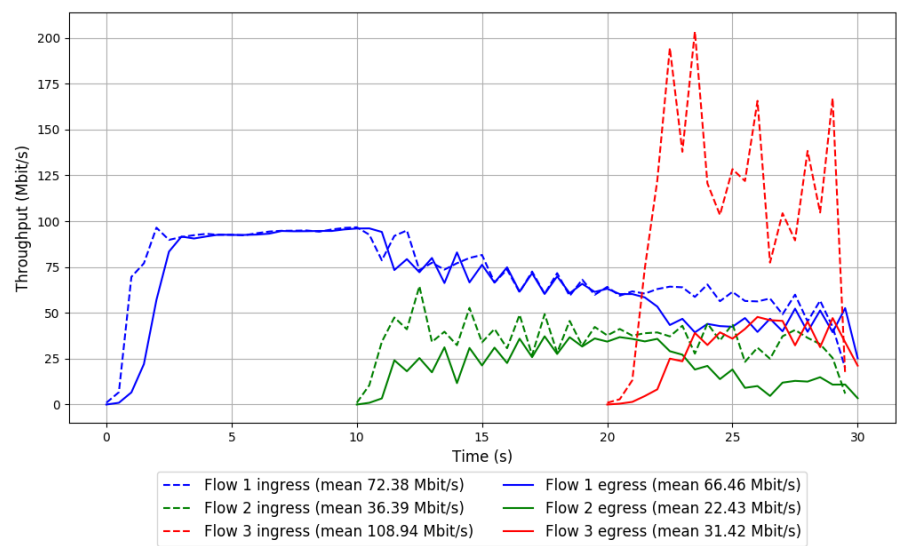
-- Flow 3:

Average throughput: 31.42 Mbit/s

95th percentile per-packet one-way delay: 113.664 ms

Loss rate: 71.15%

Run 5: Report of Indigo — Data Link



Run 1: Statistics of Indigo-MusesC3

Start at: 2019-02-11 17:40:05

End at: 2019-02-11 17:40:35

Local clock offset: -5.108 ms

Remote clock offset: 8.436 ms

Below is generated by plot.py at 2019-02-11 19:43:21

Datalink statistics

-- Total of 3 flows:

Average throughput: 95.15 Mbit/s

95th percentile per-packet one-way delay: 116.605 ms

Loss rate: 1.35%

-- Flow 1:

Average throughput: 51.89 Mbit/s

95th percentile per-packet one-way delay: 115.801 ms

Loss rate: 1.01%

-- Flow 2:

Average throughput: 48.98 Mbit/s

95th percentile per-packet one-way delay: 116.634 ms

Loss rate: 1.56%

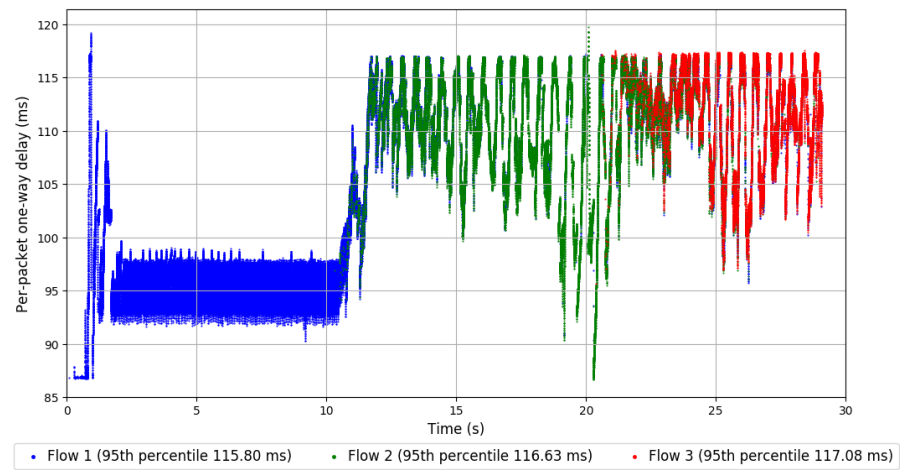
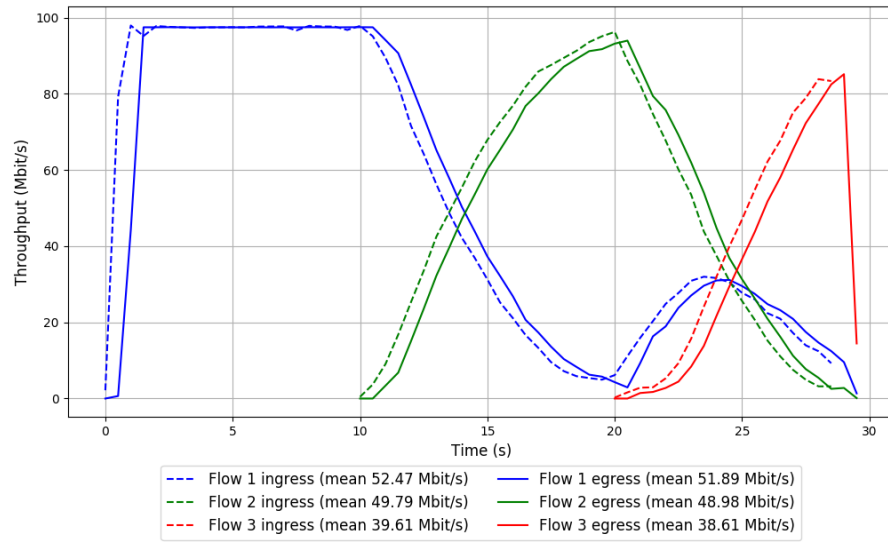
-- Flow 3:

Average throughput: 38.61 Mbit/s

95th percentile per-packet one-way delay: 117.079 ms

Loss rate: 2.32%

Run 1: Report of Indigo-MusesC3 — Data Link



Run 2: Statistics of Indigo-MusesC3

Start at: 2019-02-11 18:08:01

End at: 2019-02-11 18:08:31

Local clock offset: -5.213 ms

Remote clock offset: 3.098 ms

Below is generated by plot.py at 2019-02-11 19:43:42

Datalink statistics

-- Total of 3 flows:

Average throughput: 94.98 Mbit/s

95th percentile per-packet one-way delay: 112.670 ms

Loss rate: 5.06%

-- Flow 1:

Average throughput: 47.76 Mbit/s

95th percentile per-packet one-way delay: 110.757 ms

Loss rate: 1.79%

-- Flow 2:

Average throughput: 40.73 Mbit/s

95th percentile per-packet one-way delay: 112.912 ms

Loss rate: 3.25%

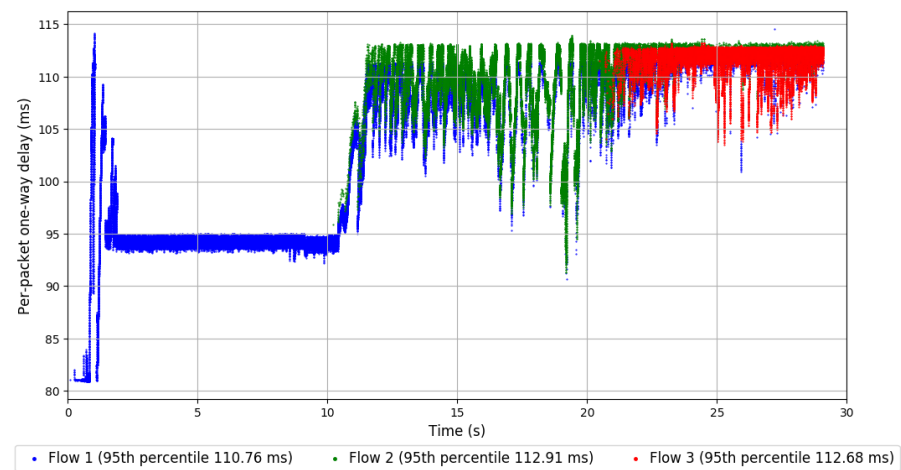
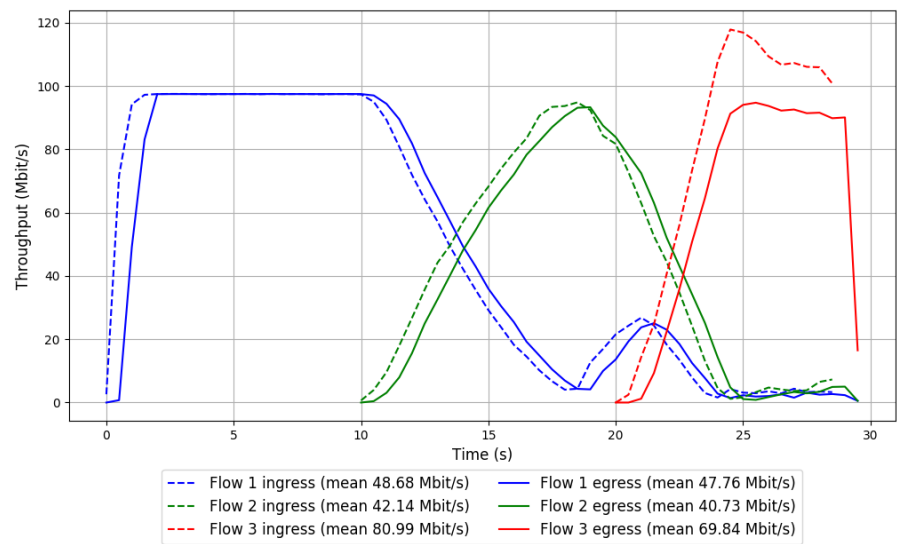
-- Flow 3:

Average throughput: 69.84 Mbit/s

95th percentile per-packet one-way delay: 112.676 ms

Loss rate: 13.75%

Run 2: Report of Indigo-MusesC3 — Data Link



Run 3: Statistics of Indigo-MusesC3

Start at: 2019-02-11 18:36:36

End at: 2019-02-11 18:37:06

Local clock offset: -1.437 ms

Remote clock offset: 7.801 ms

Below is generated by plot.py at 2019-02-11 19:43:46

Datalink statistics

-- Total of 3 flows:

Average throughput: 95.00 Mbit/s

95th percentile per-packet one-way delay: 117.824 ms

Loss rate: 3.49%

-- Flow 1:

Average throughput: 48.46 Mbit/s

95th percentile per-packet one-way delay: 117.241 ms

Loss rate: 2.09%

-- Flow 2:

Average throughput: 42.13 Mbit/s

95th percentile per-packet one-way delay: 116.363 ms

Loss rate: 2.26%

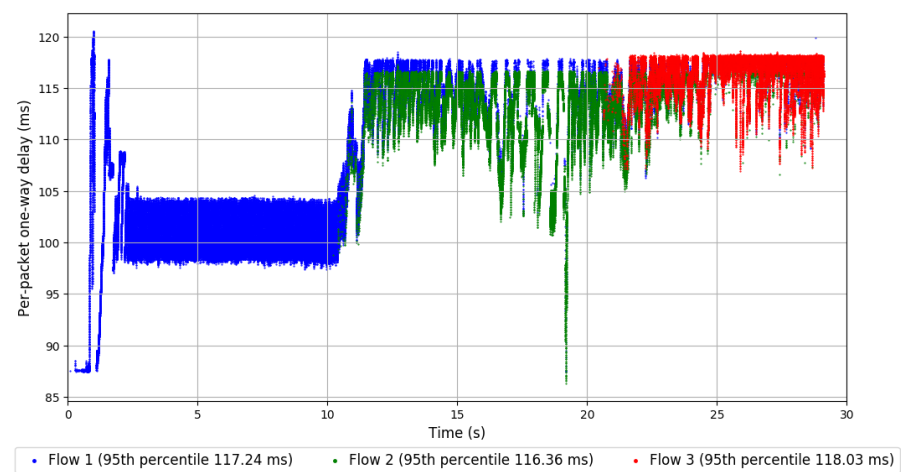
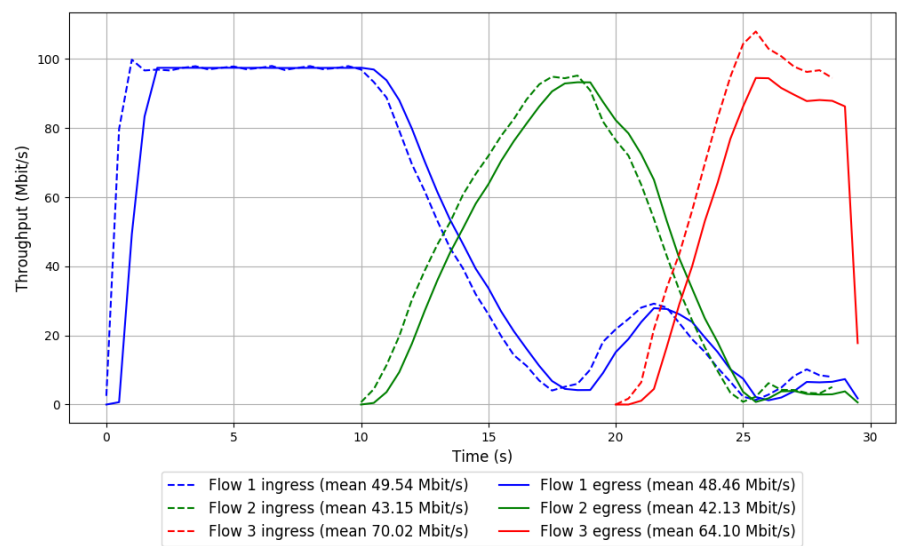
-- Flow 3:

Average throughput: 64.10 Mbit/s

95th percentile per-packet one-way delay: 118.034 ms

Loss rate: 8.46%

Run 3: Report of Indigo-MusesC3 — Data Link



Run 4: Statistics of Indigo-MusesC3

Start at: 2019-02-11 19:04:42

End at: 2019-02-11 19:05:12

Local clock offset: -1.12 ms

Remote clock offset: 4.23 ms

Below is generated by plot.py at 2019-02-11 19:43:50

Datalink statistics

-- Total of 3 flows:

Average throughput: 95.09 Mbit/s

95th percentile per-packet one-way delay: 111.995 ms

Loss rate: 1.63%

-- Flow 1:

Average throughput: 48.25 Mbit/s

95th percentile per-packet one-way delay: 111.399 ms

Loss rate: 1.27%

-- Flow 2:

Average throughput: 58.05 Mbit/s

95th percentile per-packet one-way delay: 112.183 ms

Loss rate: 1.91%

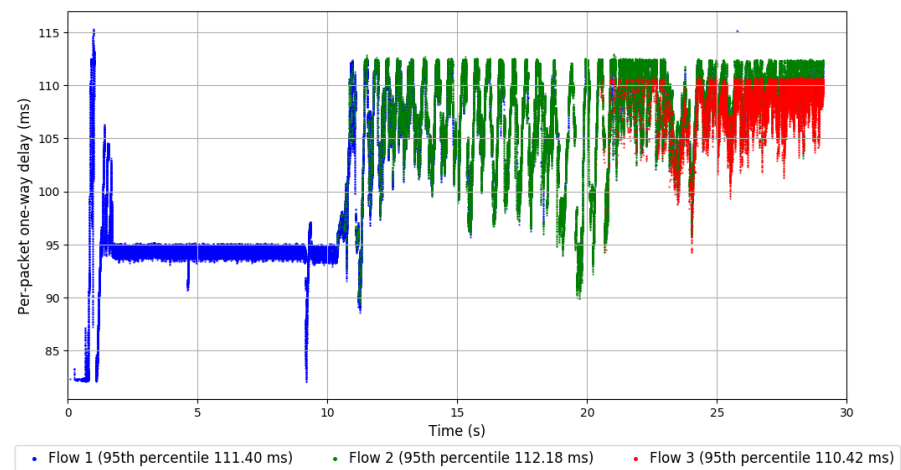
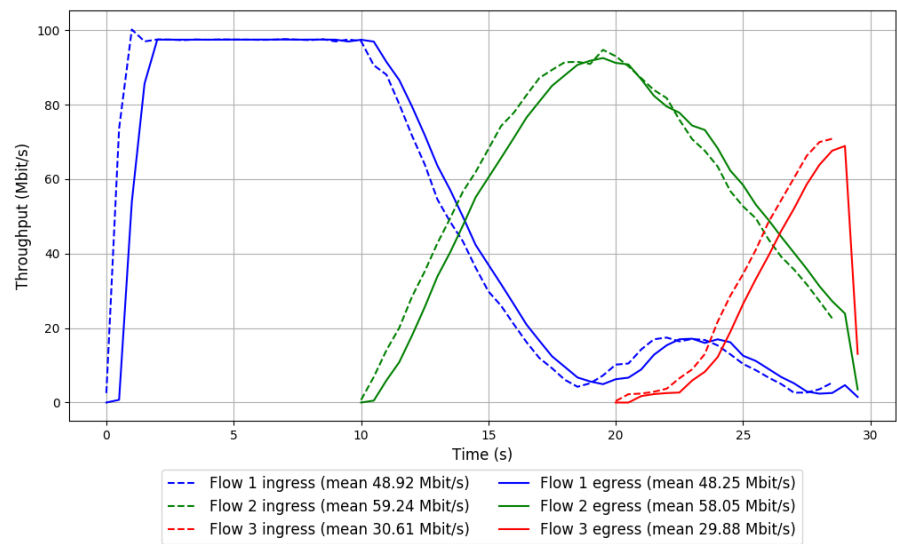
-- Flow 3:

Average throughput: 29.88 Mbit/s

95th percentile per-packet one-way delay: 110.425 ms

Loss rate: 2.30%

Run 4: Report of Indigo-MusesC3 — Data Link



Run 5: Statistics of Indigo-MusesC3

Start at: 2019-02-11 19:32:43

End at: 2019-02-11 19:33:13

Local clock offset: -6.558 ms

Remote clock offset: 7.285 ms

Below is generated by plot.py at 2019-02-11 19:43:50

Datalink statistics

-- Total of 3 flows:

Average throughput: 94.89 Mbit/s

95th percentile per-packet one-way delay: 115.199 ms

Loss rate: 2.01%

-- Flow 1:

Average throughput: 49.00 Mbit/s

95th percentile per-packet one-way delay: 113.842 ms

Loss rate: 1.80%

-- Flow 2:

Average throughput: 47.50 Mbit/s

95th percentile per-packet one-way delay: 115.702 ms

Loss rate: 2.05%

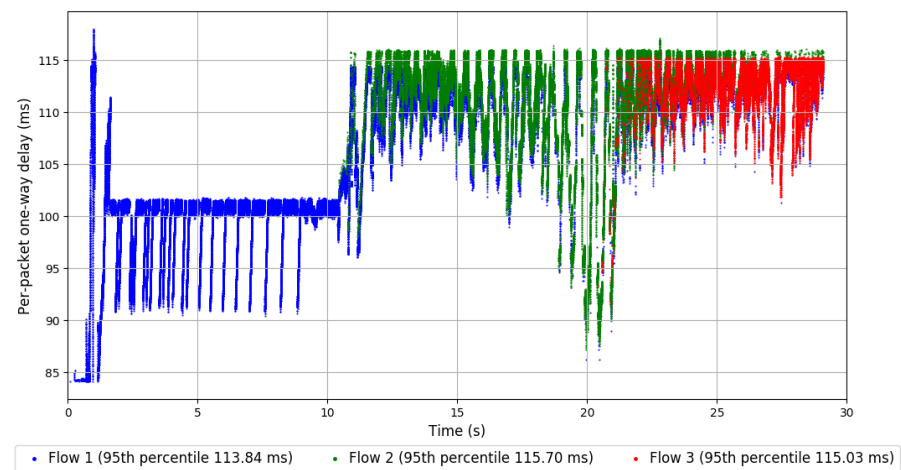
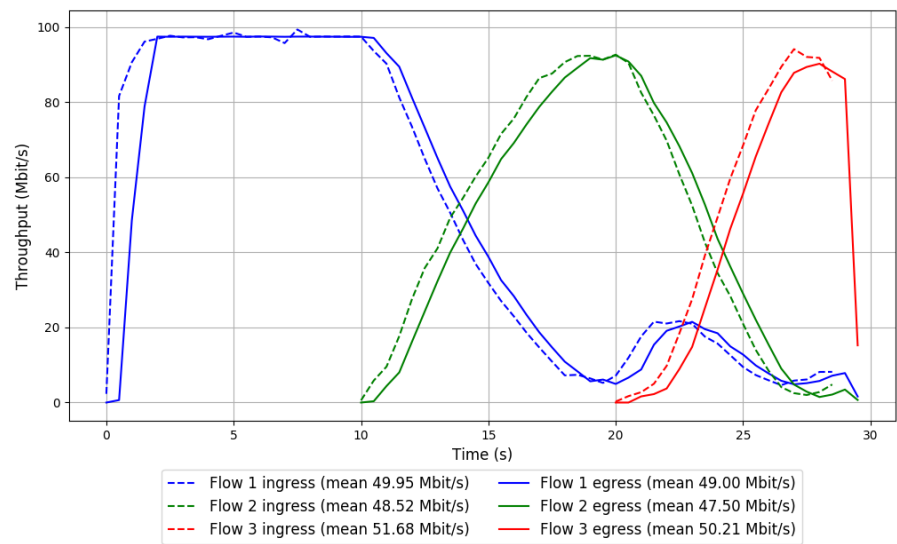
-- Flow 3:

Average throughput: 50.21 Mbit/s

95th percentile per-packet one-way delay: 115.026 ms

Loss rate: 2.60%

Run 5: Report of Indigo-MusesC3 — Data Link



Run 1: Statistics of Indigo-MusesC5

Start at: 2019-02-11 17:26:58

End at: 2019-02-11 17:27:28

Local clock offset: -2.351 ms

Remote clock offset: 8.573 ms

Below is generated by plot.py at 2019-02-11 19:43:59

Datalink statistics

-- Total of 3 flows:

Average throughput: 93.97 Mbit/s

95th percentile per-packet one-way delay: 115.004 ms

Loss rate: 1.66%

-- Flow 1:

Average throughput: 55.74 Mbit/s

95th percentile per-packet one-way delay: 113.438 ms

Loss rate: 1.00%

-- Flow 2:

Average throughput: 54.66 Mbit/s

95th percentile per-packet one-way delay: 116.047 ms

Loss rate: 2.55%

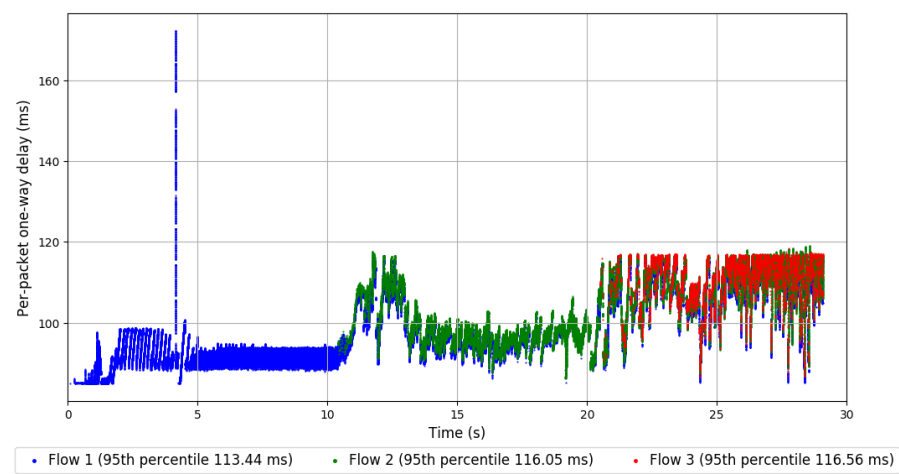
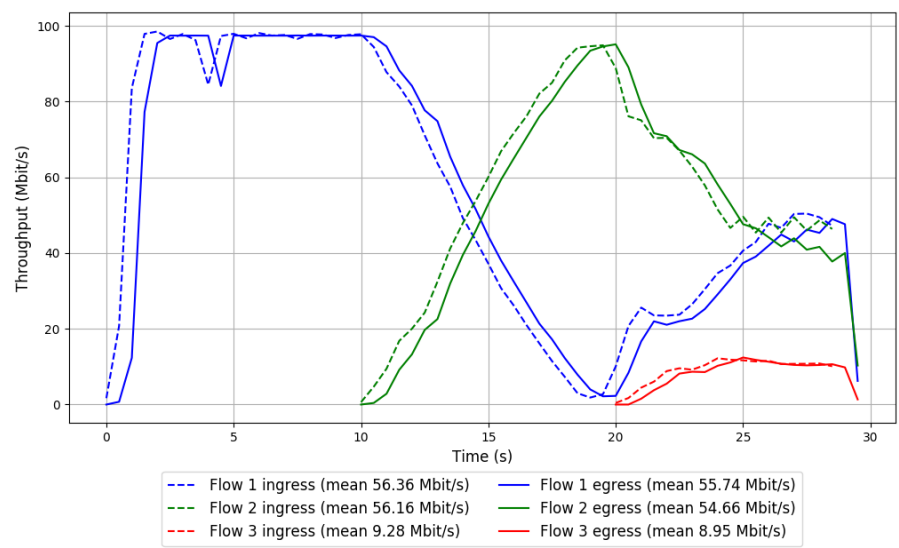
-- Flow 3:

Average throughput: 8.95 Mbit/s

95th percentile per-packet one-way delay: 116.562 ms

Loss rate: 3.41%

Run 1: Report of Indigo-MusesC5 — Data Link



Run 2: Statistics of Indigo-MusesC5

Start at: 2019-02-11 17:54:43

End at: 2019-02-11 17:55:13

Local clock offset: -6.666 ms

Remote clock offset: 4.008 ms

Below is generated by plot.py at 2019-02-11 19:44:16

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.16 Mbit/s

95th percentile per-packet one-way delay: 110.492 ms

Loss rate: 7.83%

-- Flow 1:

Average throughput: 73.25 Mbit/s

95th percentile per-packet one-way delay: 110.492 ms

Loss rate: 6.21%

-- Flow 2:

Average throughput: 25.83 Mbit/s

95th percentile per-packet one-way delay: 110.183 ms

Loss rate: 13.96%

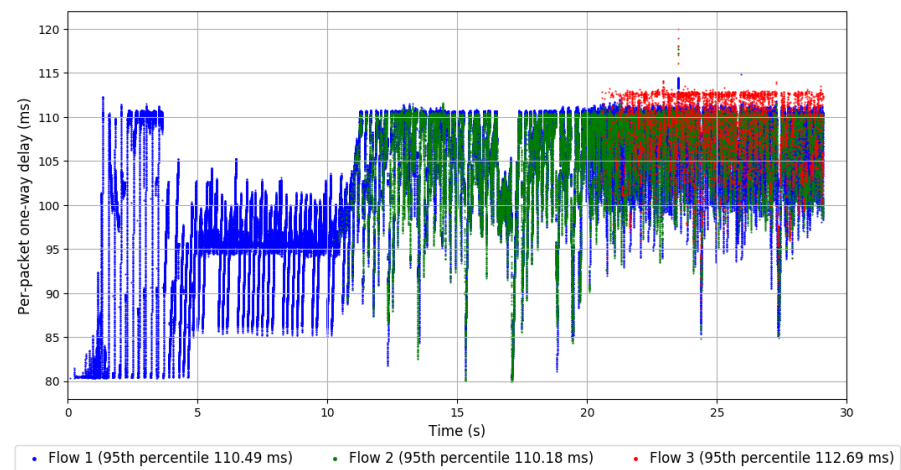
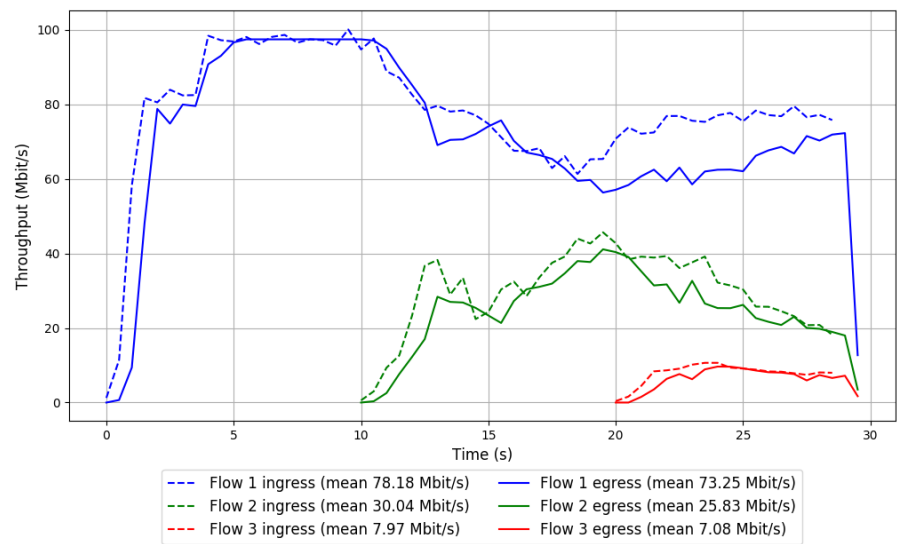
-- Flow 3:

Average throughput: 7.08 Mbit/s

95th percentile per-packet one-way delay: 112.689 ms

Loss rate: 11.07%

Run 2: Report of Indigo-MusesC5 — Data Link



Run 3: Statistics of Indigo-MusesC5

Start at: 2019-02-11 18:23:04

End at: 2019-02-11 18:23:34

Local clock offset: -1.53 ms

Remote clock offset: 3.558 ms

Below is generated by plot.py at 2019-02-11 19:44:28

Datalink statistics

-- Total of 3 flows:

Average throughput: 94.16 Mbit/s

95th percentile per-packet one-way delay: 112.610 ms

Loss rate: 2.28%

-- Flow 1:

Average throughput: 54.52 Mbit/s

95th percentile per-packet one-way delay: 110.762 ms

Loss rate: 1.98%

-- Flow 2:

Average throughput: 57.77 Mbit/s

95th percentile per-packet one-way delay: 113.123 ms

Loss rate: 2.58%

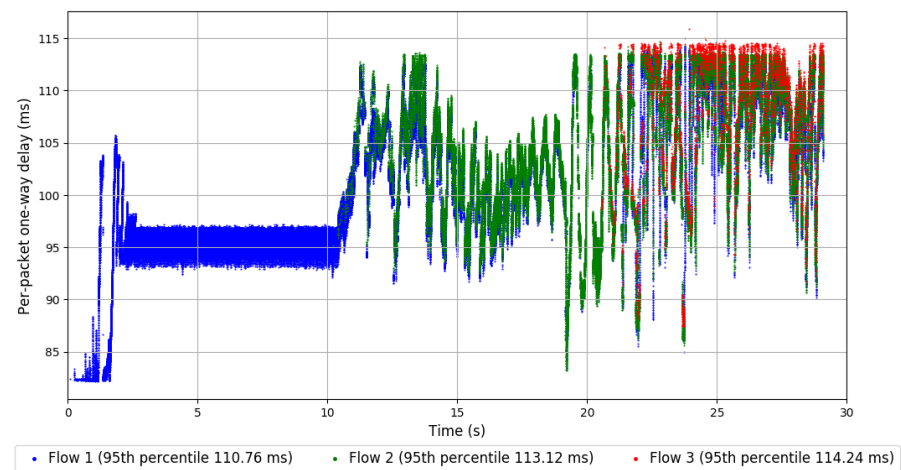
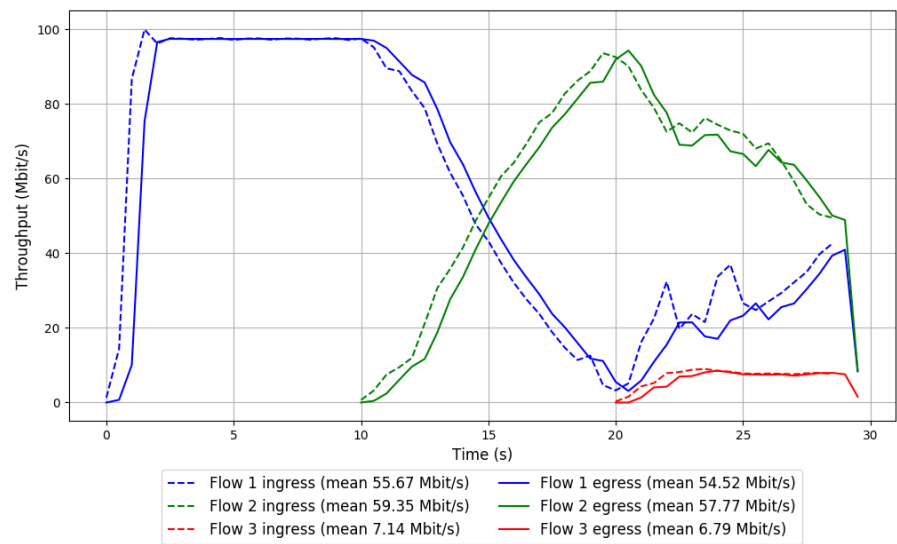
-- Flow 3:

Average throughput: 6.79 Mbit/s

95th percentile per-packet one-way delay: 114.236 ms

Loss rate: 4.67%

Run 3: Report of Indigo-MusesC5 — Data Link



Run 4: Statistics of Indigo-MusesC5

Start at: 2019-02-11 18:51:31

End at: 2019-02-11 18:52:01

Local clock offset: -1.258 ms

Remote clock offset: 4.733 ms

Below is generated by plot.py at 2019-02-11 19:44:28

Datalink statistics

-- Total of 3 flows:

Average throughput: 94.38 Mbit/s

95th percentile per-packet one-way delay: 112.670 ms

Loss rate: 1.62%

-- Flow 1:

Average throughput: 53.67 Mbit/s

95th percentile per-packet one-way delay: 111.987 ms

Loss rate: 0.89%

-- Flow 2:

Average throughput: 59.43 Mbit/s

95th percentile per-packet one-way delay: 112.847 ms

Loss rate: 2.43%

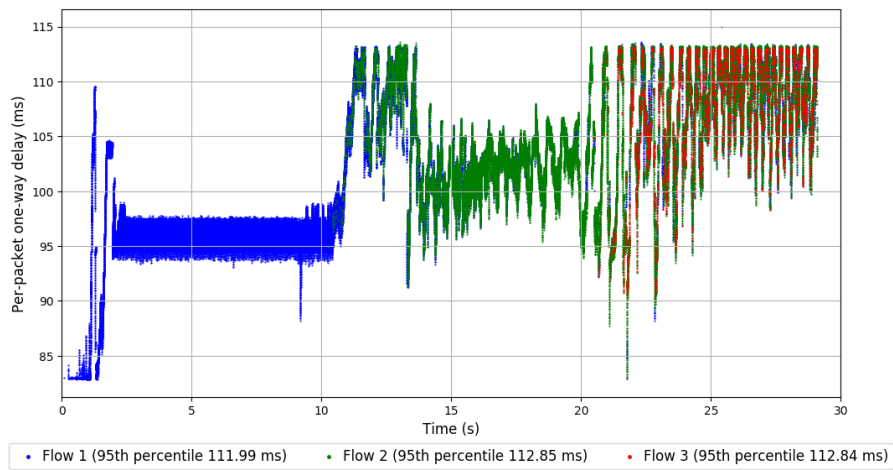
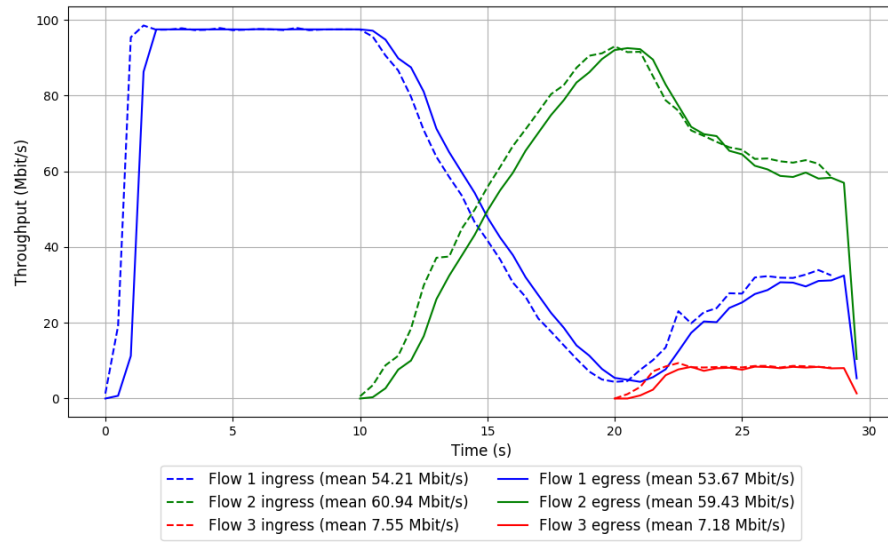
-- Flow 3:

Average throughput: 7.18 Mbit/s

95th percentile per-packet one-way delay: 112.840 ms

Loss rate: 4.83%

Run 4: Report of Indigo-MusesC5 — Data Link



Run 5: Statistics of Indigo-MusesC5

Start at: 2019-02-11 19:19:41

End at: 2019-02-11 19:20:11

Local clock offset: -6.018 ms

Remote clock offset: 7.194 ms

Below is generated by plot.py at 2019-02-11 19:44:50

Datalink statistics

-- Total of 3 flows:

Average throughput: 94.26 Mbit/s

95th percentile per-packet one-way delay: 115.951 ms

Loss rate: 2.83%

-- Flow 1:

Average throughput: 54.52 Mbit/s

95th percentile per-packet one-way delay: 115.629 ms

Loss rate: 1.17%

-- Flow 2:

Average throughput: 57.23 Mbit/s

95th percentile per-packet one-way delay: 115.945 ms

Loss rate: 4.85%

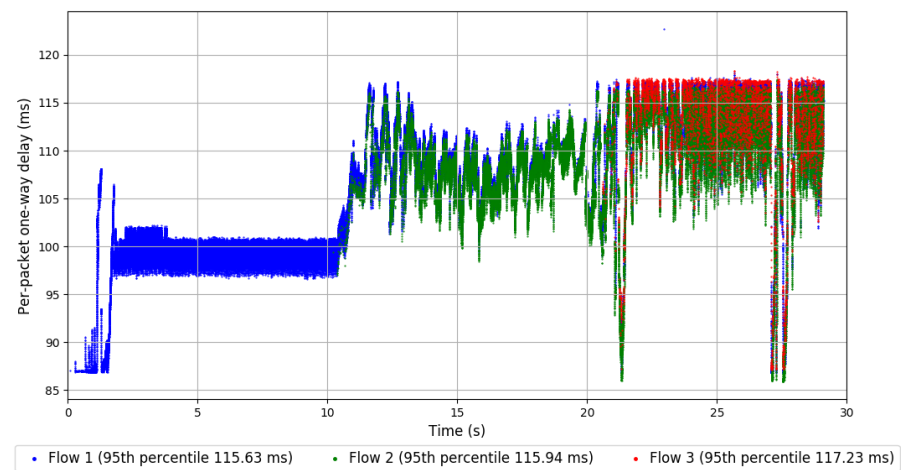
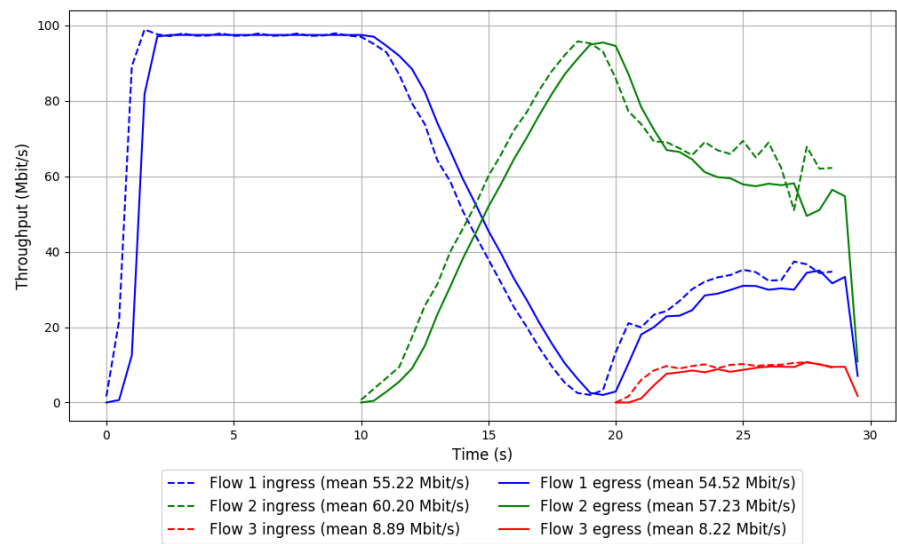
-- Flow 3:

Average throughput: 8.22 Mbit/s

95th percentile per-packet one-way delay: 117.227 ms

Loss rate: 7.54%

Run 5: Report of Indigo-MusesC5 — Data Link



Run 1: Statistics of Indigo-MusesD

Start at: 2019-02-11 17:37:31

End at: 2019-02-11 17:38:01

Local clock offset: -3.431 ms

Remote clock offset: 7.595 ms

Below is generated by plot.py at 2019-02-11 19:44:52

Datalink statistics

-- Total of 3 flows:

Average throughput: 91.93 Mbit/s

95th percentile per-packet one-way delay: 105.024 ms

Loss rate: 2.09%

-- Flow 1:

Average throughput: 53.34 Mbit/s

95th percentile per-packet one-way delay: 104.465 ms

Loss rate: 3.54%

-- Flow 2:

Average throughput: 46.94 Mbit/s

95th percentile per-packet one-way delay: 104.972 ms

Loss rate: 0.01%

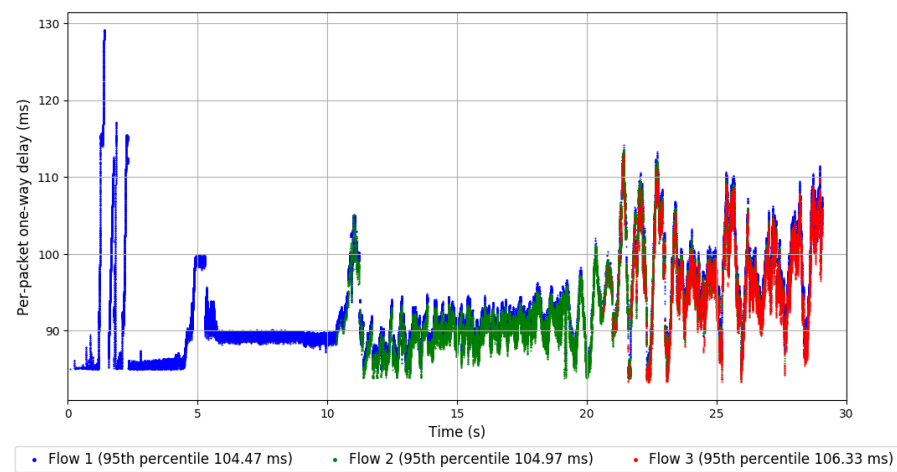
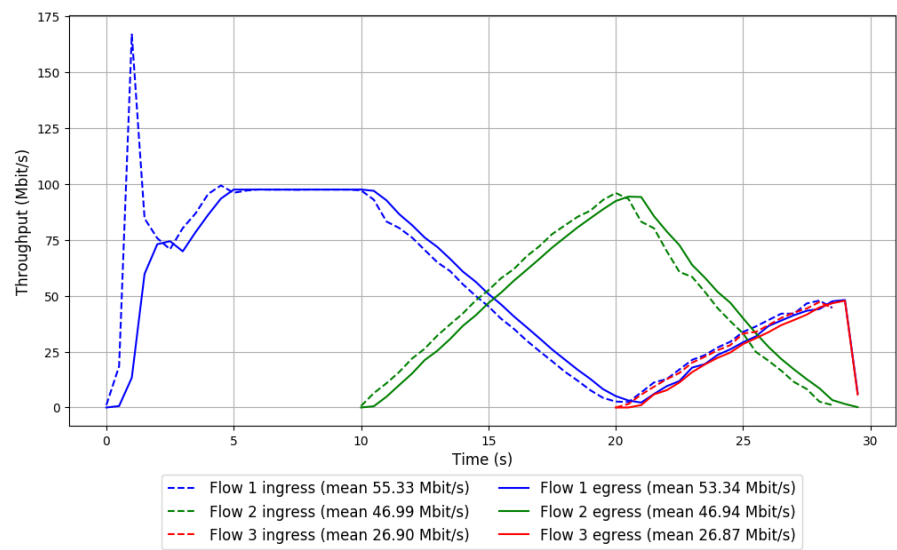
-- Flow 3:

Average throughput: 26.87 Mbit/s

95th percentile per-packet one-way delay: 106.327 ms

Loss rate: 0.00%

Run 1: Report of Indigo-MusesD — Data Link



Run 2: Statistics of Indigo-MusesD

Start at: 2019-02-11 18:05:21

End at: 2019-02-11 18:05:51

Local clock offset: -6.557 ms

Remote clock offset: 7.885 ms

Below is generated by plot.py at 2019-02-11 19:44:55

Datalink statistics

-- Total of 3 flows:

Average throughput: 93.97 Mbit/s

95th percentile per-packet one-way delay: 115.715 ms

Loss rate: 0.56%

-- Flow 1:

Average throughput: 57.31 Mbit/s

95th percentile per-packet one-way delay: 117.262 ms

Loss rate: 0.77%

-- Flow 2:

Average throughput: 41.02 Mbit/s

95th percentile per-packet one-way delay: 113.888 ms

Loss rate: 0.25%

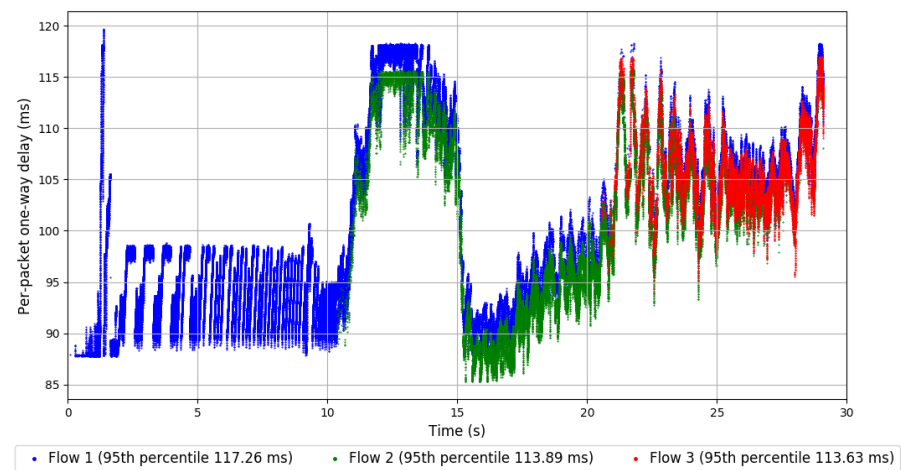
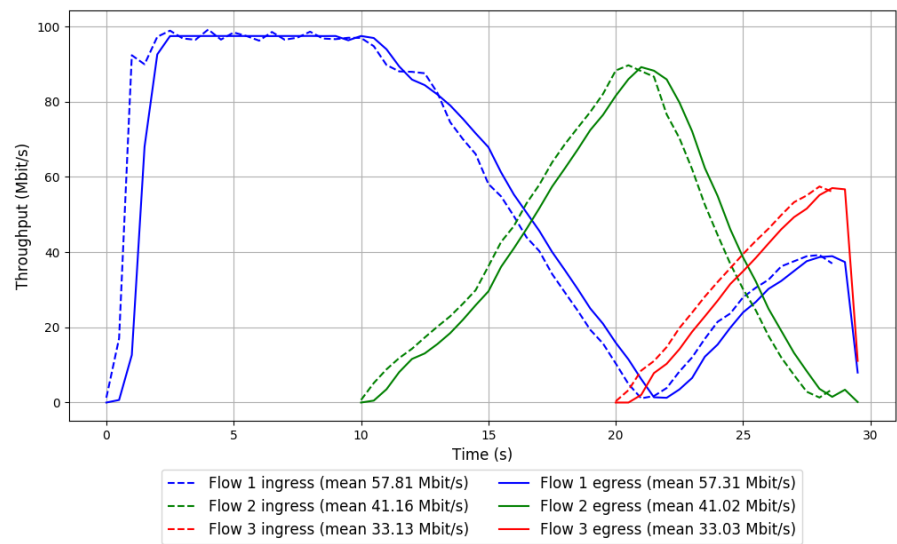
-- Flow 3:

Average throughput: 33.03 Mbit/s

95th percentile per-packet one-way delay: 113.629 ms

Loss rate: 0.13%

Run 2: Report of Indigo-MusesD — Data Link



Run 3: Statistics of Indigo-MusesD

Start at: 2019-02-11 18:33:55

End at: 2019-02-11 18:34:25

Local clock offset: -1.336 ms

Remote clock offset: 7.822 ms

Below is generated by plot.py at 2019-02-11 19:44:56

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.64 Mbit/s

95th percentile per-packet one-way delay: 115.587 ms

Loss rate: 3.31%

-- Flow 1:

Average throughput: 79.26 Mbit/s

95th percentile per-packet one-way delay: 115.391 ms

Loss rate: 2.97%

-- Flow 2:

Average throughput: 10.41 Mbit/s

95th percentile per-packet one-way delay: 116.803 ms

Loss rate: 3.78%

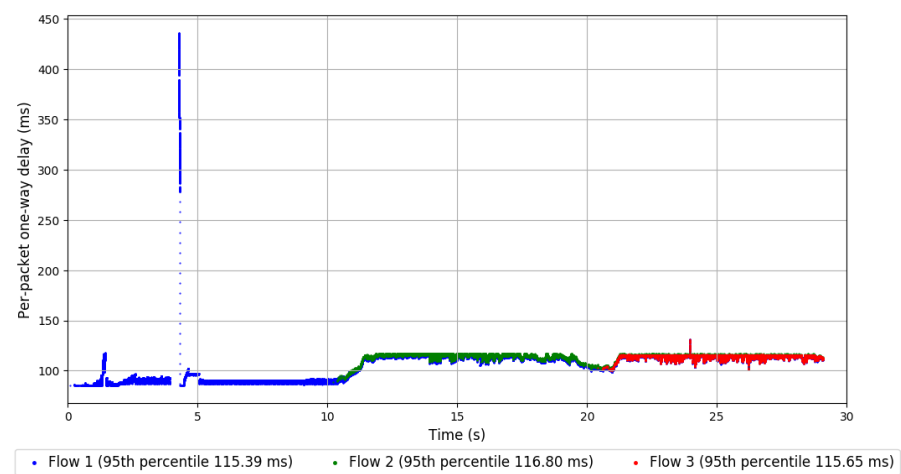
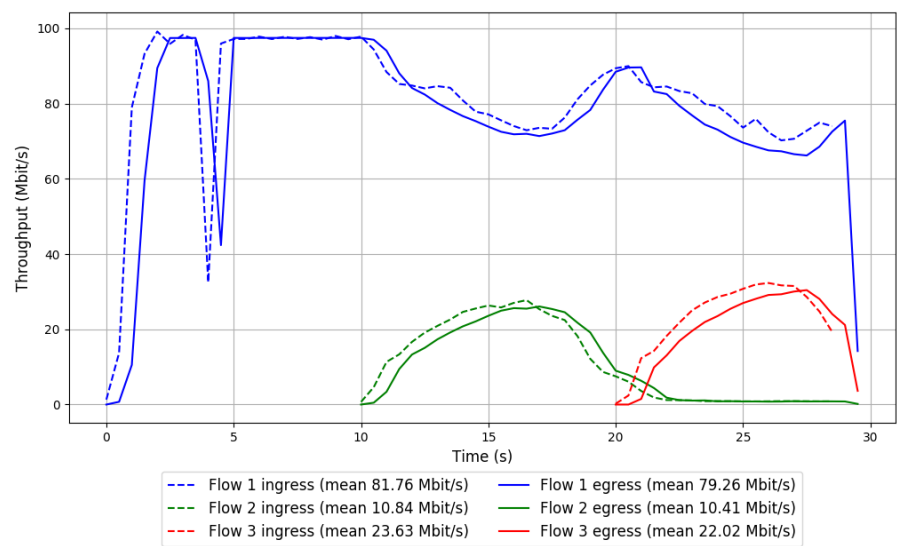
-- Flow 3:

Average throughput: 22.02 Mbit/s

95th percentile per-packet one-way delay: 115.654 ms

Loss rate: 6.70%

Run 3: Report of Indigo-MusesD — Data Link



Run 4: Statistics of Indigo-MusesD

Start at: 2019-02-11 19:01:55

End at: 2019-02-11 19:02:25

Local clock offset: -0.243 ms

Remote clock offset: 4.684 ms

Below is generated by plot.py at 2019-02-11 19:45:04

Datalink statistics

-- Total of 3 flows:

Average throughput: 93.75 Mbit/s

95th percentile per-packet one-way delay: 110.077 ms

Loss rate: 0.70%

-- Flow 1:

Average throughput: 57.80 Mbit/s

95th percentile per-packet one-way delay: 110.580 ms

Loss rate: 1.02%

-- Flow 2:

Average throughput: 41.89 Mbit/s

95th percentile per-packet one-way delay: 108.485 ms

Loss rate: 0.23%

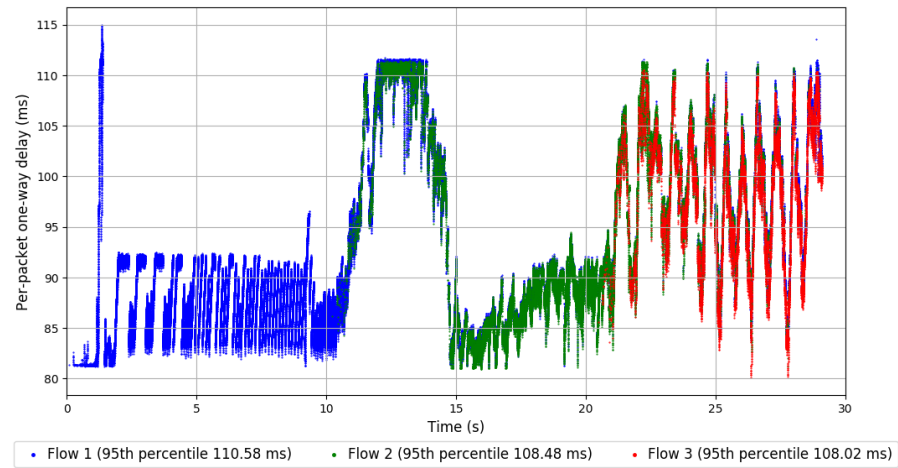
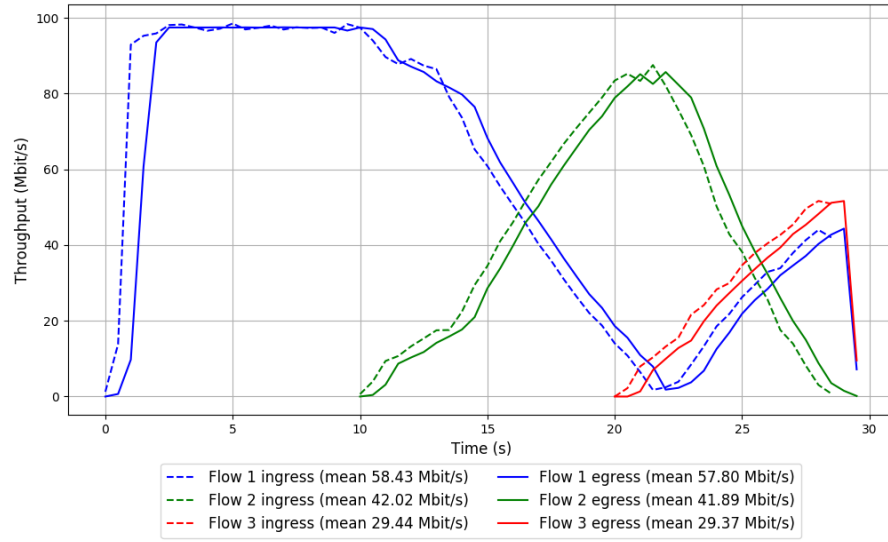
-- Flow 3:

Average throughput: 29.37 Mbit/s

95th percentile per-packet one-way delay: 108.019 ms

Loss rate: 0.08%

Run 4: Report of Indigo-MusesD — Data Link



Run 5: Statistics of Indigo-MusesD

Start at: 2019-02-11 19:30:10

End at: 2019-02-11 19:30:40

Local clock offset: -6.38 ms

Remote clock offset: 3.396 ms

Below is generated by plot.py at 2019-02-11 19:45:27

Datalink statistics

-- Total of 3 flows:

Average throughput: 94.19 Mbit/s

95th percentile per-packet one-way delay: 105.997 ms

Loss rate: 0.08%

-- Flow 1:

Average throughput: 54.65 Mbit/s

95th percentile per-packet one-way delay: 104.465 ms

Loss rate: 0.05%

-- Flow 2:

Average throughput: 47.19 Mbit/s

95th percentile per-packet one-way delay: 104.411 ms

Loss rate: 0.06%

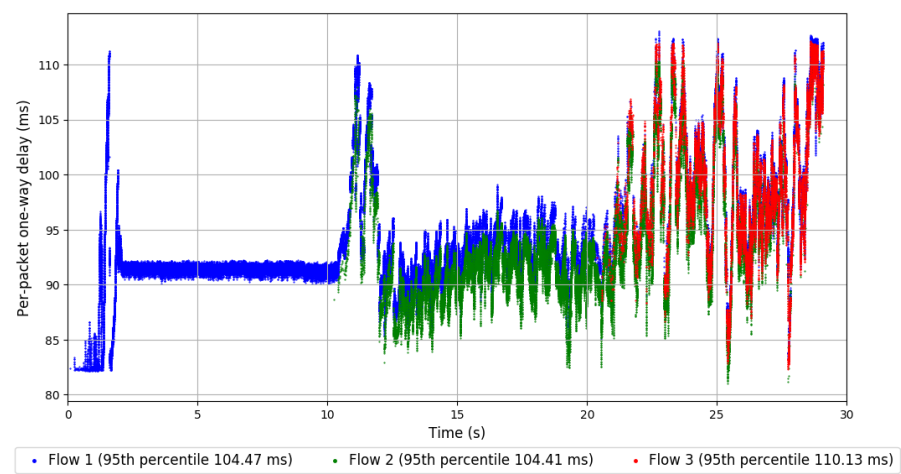
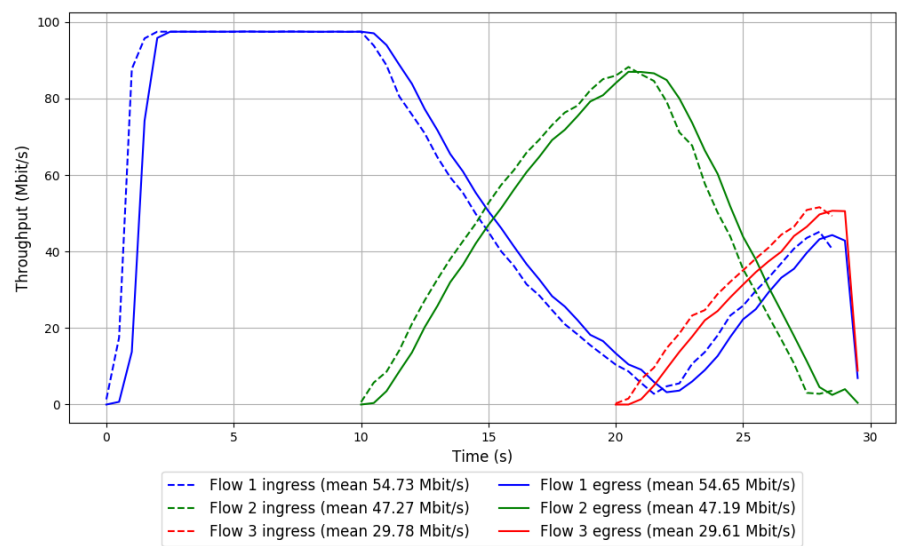
-- Flow 3:

Average throughput: 29.61 Mbit/s

95th percentile per-packet one-way delay: 110.134 ms

Loss rate: 0.36%

Run 5: Report of Indigo-MusesD — Data Link



Run 1: Statistics of Indigo-MusesT

Start at: 2019-02-11 17:29:42

End at: 2019-02-11 17:30:12

Local clock offset: -2.21 ms

Remote clock offset: 4.507 ms

Below is generated by plot.py at 2019-02-11 19:45:37

Datalink statistics

-- Total of 3 flows:

Average throughput: 94.65 Mbit/s

95th percentile per-packet one-way delay: 112.809 ms

Loss rate: 4.46%

-- Flow 1:

Average throughput: 58.96 Mbit/s

95th percentile per-packet one-way delay: 110.447 ms

Loss rate: 3.81%

-- Flow 2:

Average throughput: 36.02 Mbit/s

95th percentile per-packet one-way delay: 113.164 ms

Loss rate: 4.12%

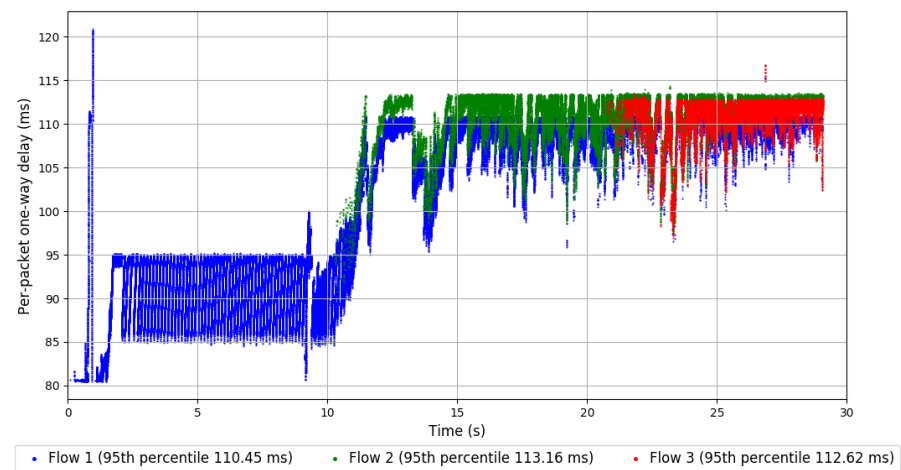
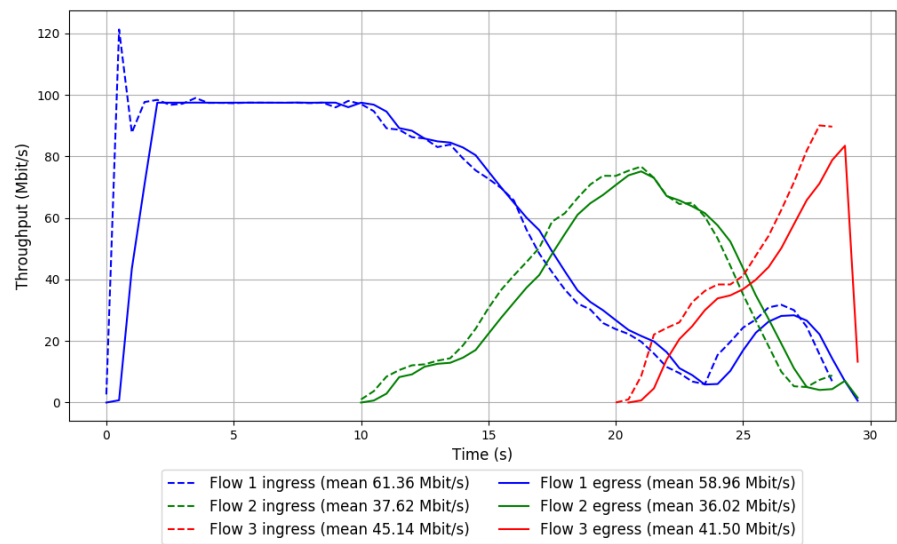
-- Flow 3:

Average throughput: 41.50 Mbit/s

95th percentile per-packet one-way delay: 112.618 ms

Loss rate: 8.06%

Run 1: Report of Indigo-MusesT — Data Link



Run 2: Statistics of Indigo-MusesT

Start at: 2019-02-11 17:57:22

End at: 2019-02-11 17:57:52

Local clock offset: -7.523 ms

Remote clock offset: 4.093 ms

Below is generated by plot.py at 2019-02-11 19:45:42

Datalink statistics

-- Total of 3 flows:

Average throughput: 94.70 Mbit/s

95th percentile per-packet one-way delay: 112.489 ms

Loss rate: 7.47%

-- Flow 1:

Average throughput: 49.86 Mbit/s

95th percentile per-packet one-way delay: 111.436 ms

Loss rate: 8.46%

-- Flow 2:

Average throughput: 53.39 Mbit/s

95th percentile per-packet one-way delay: 112.611 ms

Loss rate: 4.87%

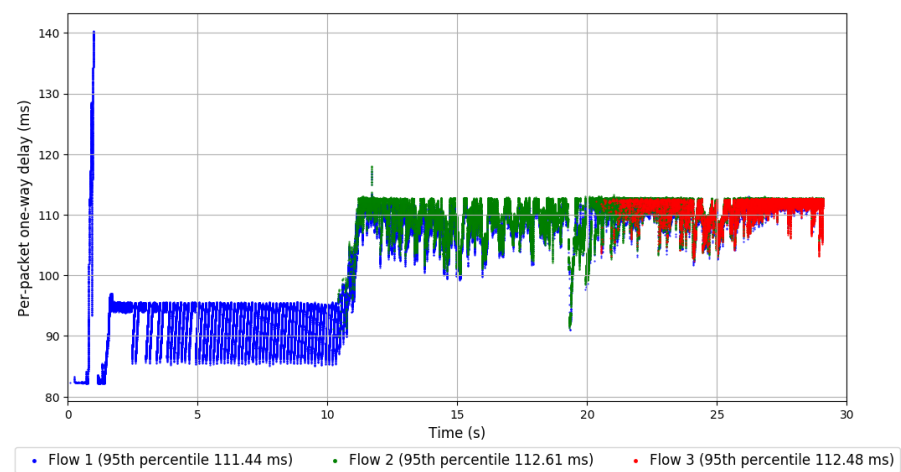
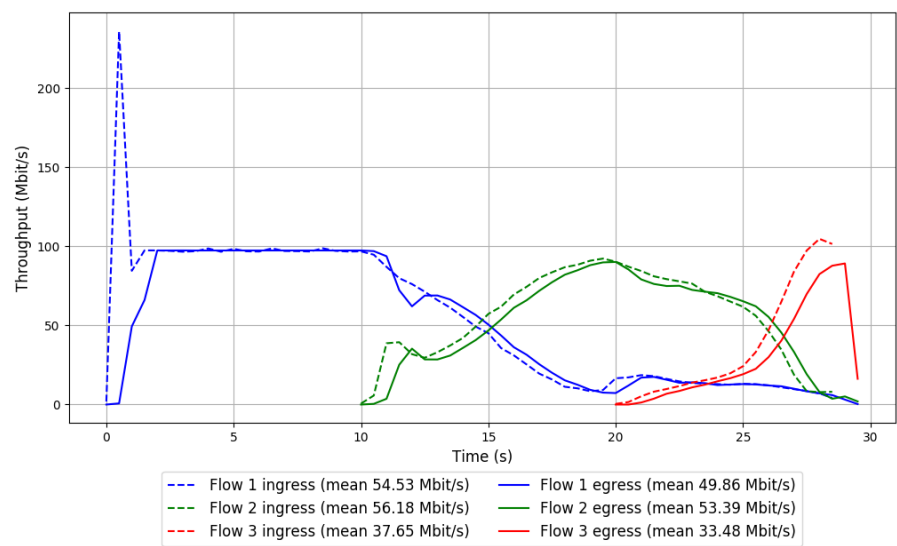
-- Flow 3:

Average throughput: 33.48 Mbit/s

95th percentile per-packet one-way delay: 112.479 ms

Loss rate: 11.06%

Run 2: Report of Indigo-MusesT — Data Link



Run 3: Statistics of Indigo-MusesT

Start at: 2019-02-11 18:25:42

End at: 2019-02-11 18:26:12

Local clock offset: -2.014 ms

Remote clock offset: 6.497 ms

Below is generated by plot.py at 2019-02-11 19:45:59

Datalink statistics

-- Total of 3 flows:

Average throughput: 94.85 Mbit/s

95th percentile per-packet one-way delay: 116.520 ms

Loss rate: 8.41%

-- Flow 1:

Average throughput: 48.14 Mbit/s

95th percentile per-packet one-way delay: 115.605 ms

Loss rate: 9.33%

-- Flow 2:

Average throughput: 66.07 Mbit/s

95th percentile per-packet one-way delay: 116.621 ms

Loss rate: 7.65%

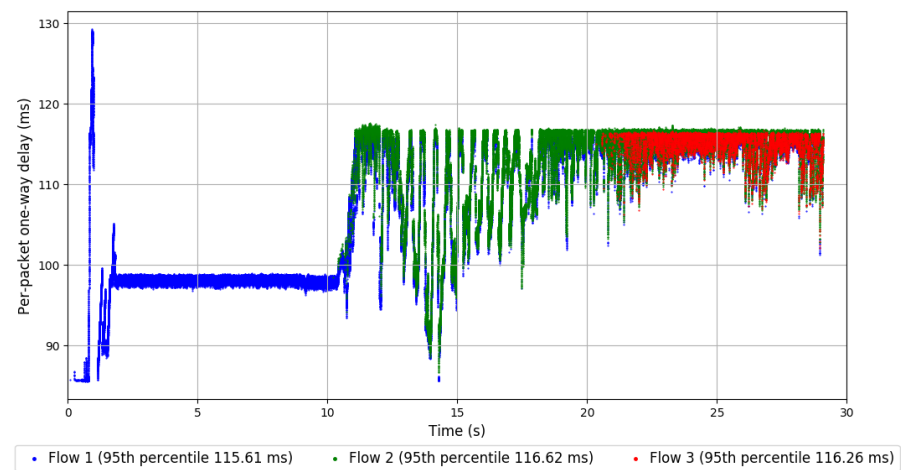
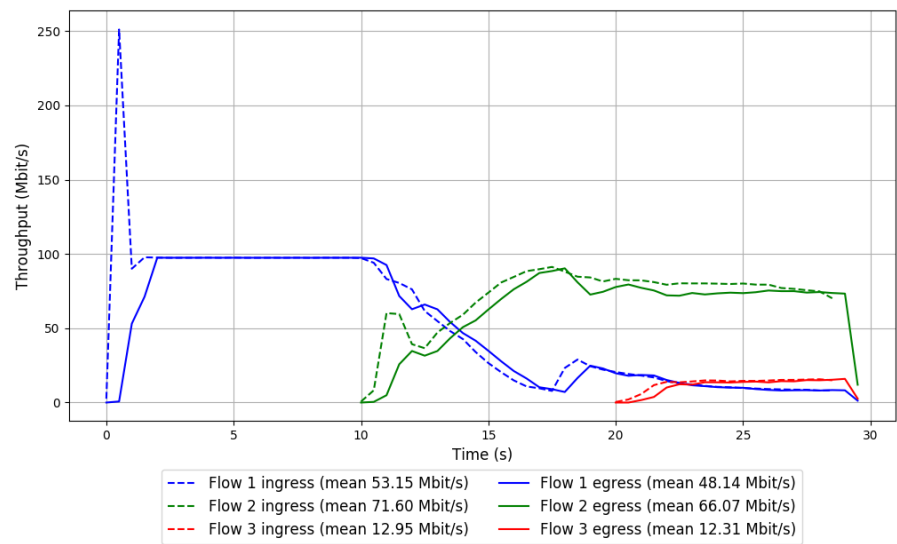
-- Flow 3:

Average throughput: 12.31 Mbit/s

95th percentile per-packet one-way delay: 116.257 ms

Loss rate: 4.98%

Run 3: Report of Indigo-MusesT — Data Link



Run 4: Statistics of Indigo-MusesT

Start at: 2019-02-11 18:54:15

End at: 2019-02-11 18:54:45

Local clock offset: -1.251 ms

Remote clock offset: 4.408 ms

Below is generated by plot.py at 2019-02-11 19:46:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 94.46 Mbit/s

95th percentile per-packet one-way delay: 113.469 ms

Loss rate: 7.09%

-- Flow 1:

Average throughput: 54.74 Mbit/s

95th percentile per-packet one-way delay: 113.389 ms

Loss rate: 7.05%

-- Flow 2:

Average throughput: 42.16 Mbit/s

95th percentile per-packet one-way delay: 112.717 ms

Loss rate: 4.97%

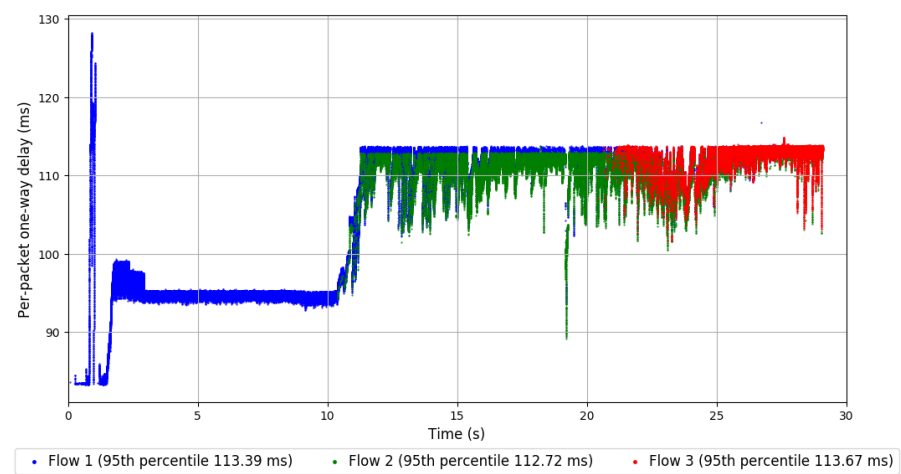
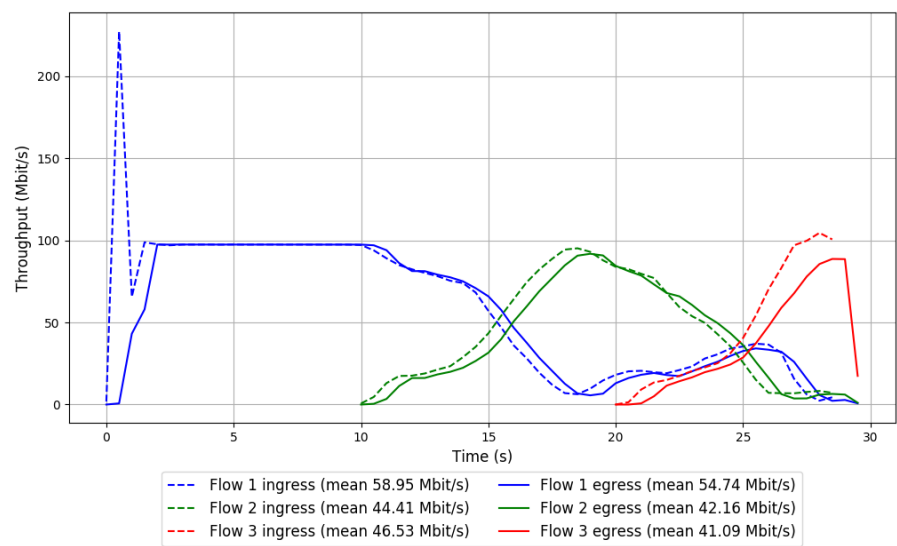
-- Flow 3:

Average throughput: 41.09 Mbit/s

95th percentile per-packet one-way delay: 113.675 ms

Loss rate: 11.62%

Run 4: Report of Indigo-MusesT — Data Link



Run 5: Statistics of Indigo-MusesT

Start at: 2019-02-11 19:22:16

End at: 2019-02-11 19:22:46

Local clock offset: -6.367 ms

Remote clock offset: 3.887 ms

Below is generated by plot.py at 2019-02-11 19:46:04

Datalink statistics

-- Total of 3 flows:

Average throughput: 94.95 Mbit/s

95th percentile per-packet one-way delay: 113.669 ms

Loss rate: 5.83%

-- Flow 1:

Average throughput: 58.74 Mbit/s

95th percentile per-packet one-way delay: 111.267 ms

Loss rate: 3.93%

-- Flow 2:

Average throughput: 34.36 Mbit/s

95th percentile per-packet one-way delay: 112.524 ms

Loss rate: 5.21%

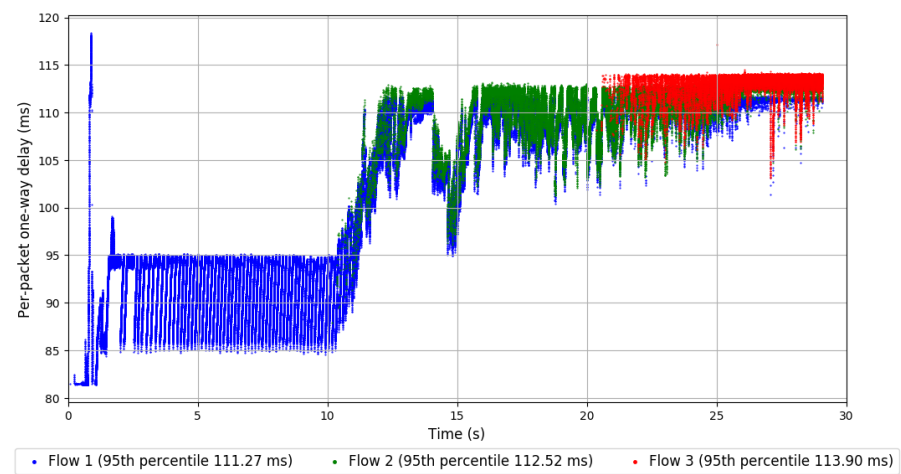
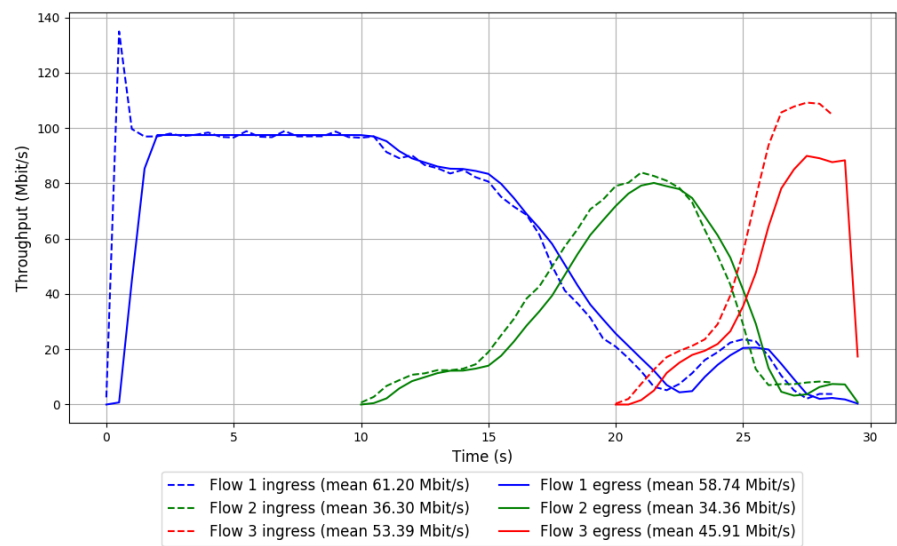
-- Flow 3:

Average throughput: 45.91 Mbit/s

95th percentile per-packet one-way delay: 113.898 ms

Loss rate: 13.95%

Run 5: Report of Indigo-MusesT — Data Link

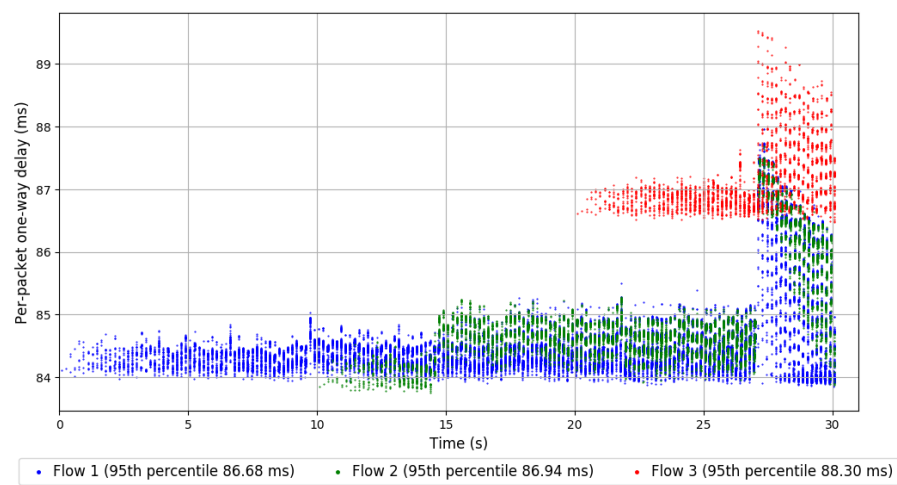
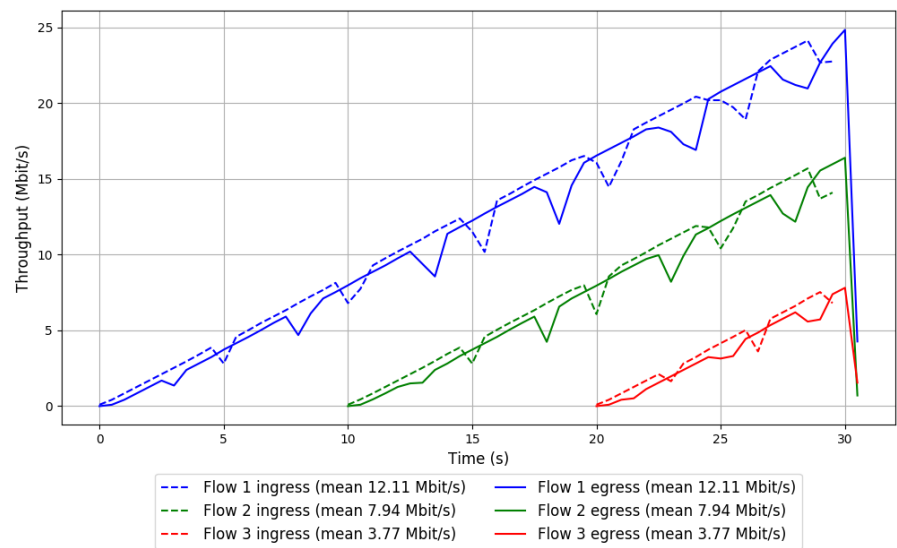


```
Run 1: Statistics of LEDBAT

Start at: 2019-02-11 17:41:26
End at: 2019-02-11 17:41:56
Local clock offset: -4.827 ms
Remote clock offset: 7.963 ms

# Below is generated by plot.py at 2019-02-11 19:46:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.65 Mbit/s
95th percentile per-packet one-way delay: 87.085 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.11 Mbit/s
95th percentile per-packet one-way delay: 86.678 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 7.94 Mbit/s
95th percentile per-packet one-way delay: 86.936 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.77 Mbit/s
95th percentile per-packet one-way delay: 88.301 ms
Loss rate: 0.00%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2019-02-11 18:09:22

End at: 2019-02-11 18:09:52

Local clock offset: -5.339 ms

Remote clock offset: 3.234 ms

Below is generated by plot.py at 2019-02-11 19:46:04

Datalink statistics

-- Total of 3 flows:

Average throughput: 18.31 Mbit/s

95th percentile per-packet one-way delay: 83.347 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 11.82 Mbit/s

95th percentile per-packet one-way delay: 83.327 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 7.86 Mbit/s

95th percentile per-packet one-way delay: 83.250 ms

Loss rate: 0.00%

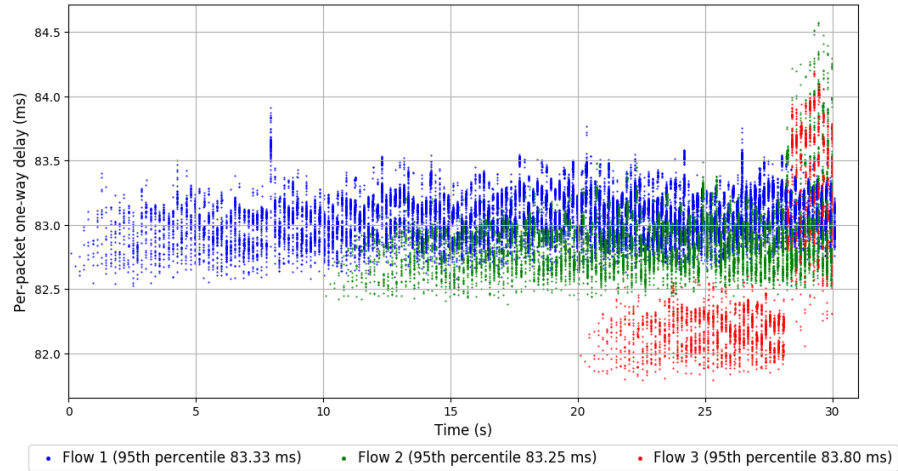
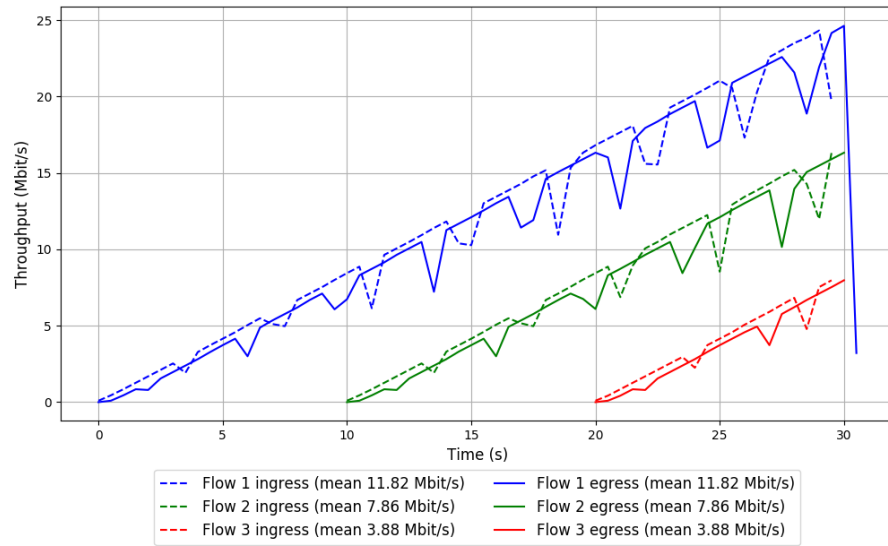
-- Flow 3:

Average throughput: 3.88 Mbit/s

95th percentile per-packet one-way delay: 83.799 ms

Loss rate: 0.00%

Run 2: Report of LEDBAT — Data Link

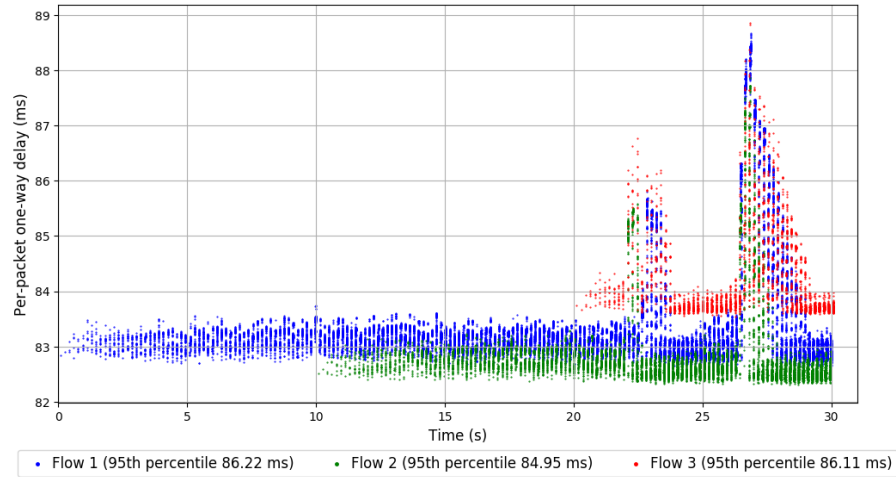
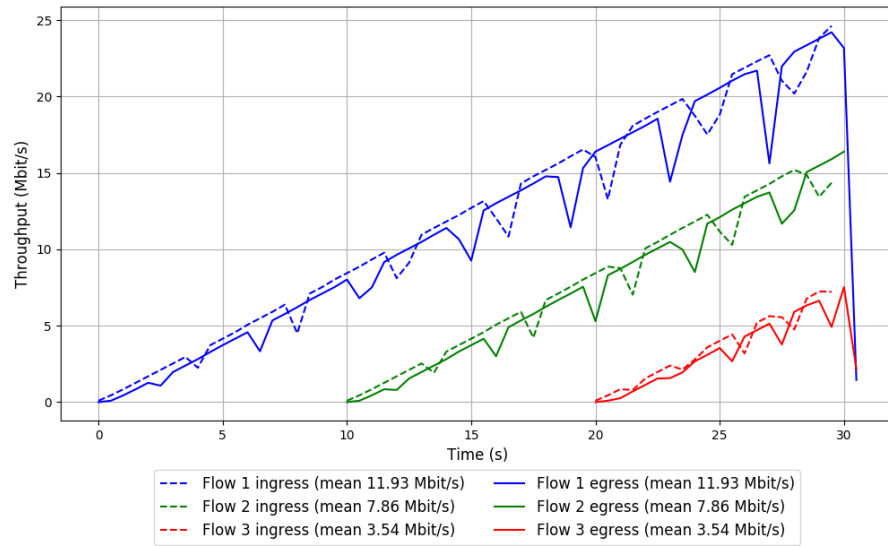


Run 3: Statistics of LEDBAT

Start at: 2019-02-11 18:37:55
End at: 2019-02-11 18:38:25
Local clock offset: -1.402 ms
Remote clock offset: 4.218 ms

Below is generated by plot.py at 2019-02-11 19:46:04
Datalink statistics
-- Total of 3 flows:
Average throughput: 18.29 Mbit/s
95th percentile per-packet one-way delay: 85.759 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.93 Mbit/s
95th percentile per-packet one-way delay: 86.224 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 7.86 Mbit/s
95th percentile per-packet one-way delay: 84.953 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.54 Mbit/s
95th percentile per-packet one-way delay: 86.112 ms
Loss rate: 0.00%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2019-02-11 19:06:06

End at: 2019-02-11 19:06:36

Local clock offset: -1.074 ms

Remote clock offset: 4.137 ms

Below is generated by plot.py at 2019-02-11 19:46:04

Datalink statistics

-- Total of 3 flows:

Average throughput: 13.15 Mbit/s

95th percentile per-packet one-way delay: 81.745 ms

Loss rate: 0.15%

-- Flow 1:

Average throughput: 6.75 Mbit/s

95th percentile per-packet one-way delay: 80.653 ms

Loss rate: 0.28%

-- Flow 2:

Average throughput: 7.72 Mbit/s

95th percentile per-packet one-way delay: 81.720 ms

Loss rate: 0.00%

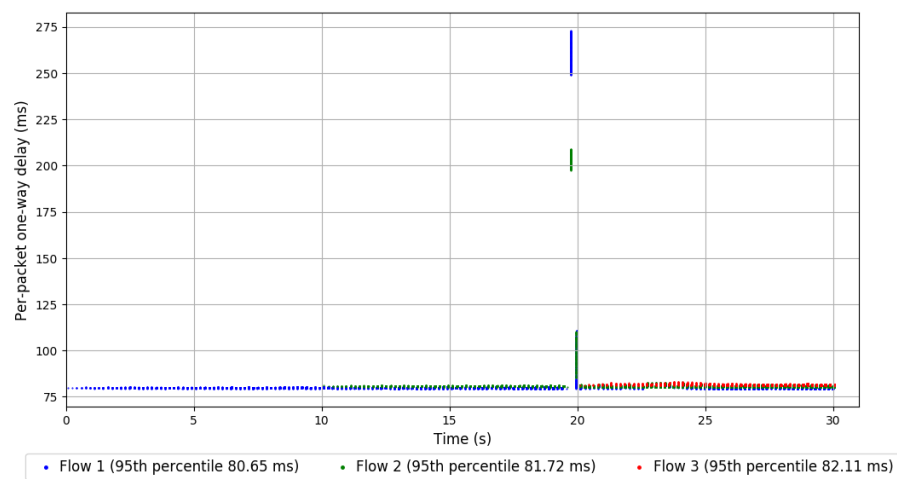
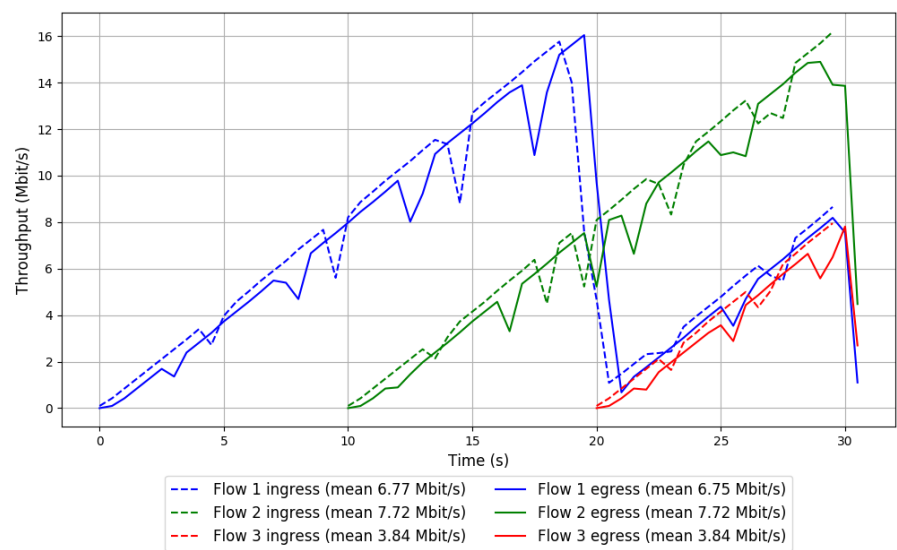
-- Flow 3:

Average throughput: 3.84 Mbit/s

95th percentile per-packet one-way delay: 82.108 ms

Loss rate: 0.00%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2019-02-11 19:34:04

End at: 2019-02-11 19:34:34

Local clock offset: -7.389 ms

Remote clock offset: 3.266 ms

Below is generated by plot.py at 2019-02-11 19:46:04

Datalink statistics

-- Total of 3 flows:

Average throughput: 18.62 Mbit/s

95th percentile per-packet one-way delay: 82.852 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 12.07 Mbit/s

95th percentile per-packet one-way delay: 82.725 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 7.97 Mbit/s

95th percentile per-packet one-way delay: 81.891 ms

Loss rate: 0.00%

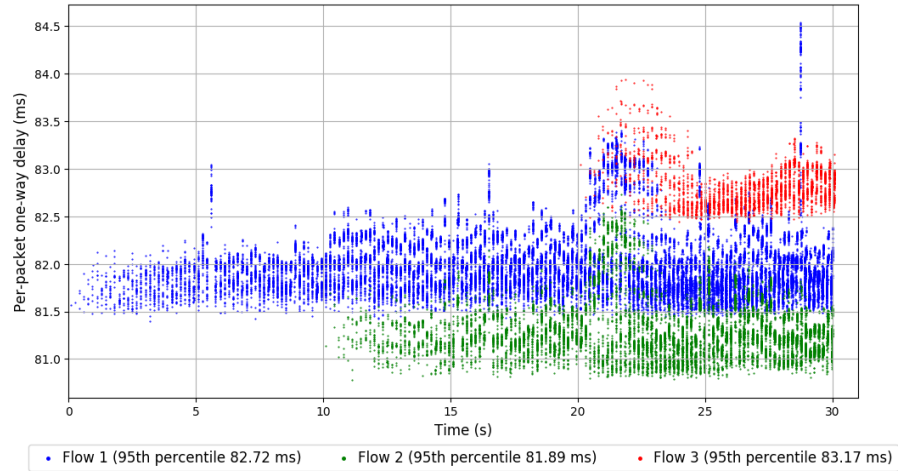
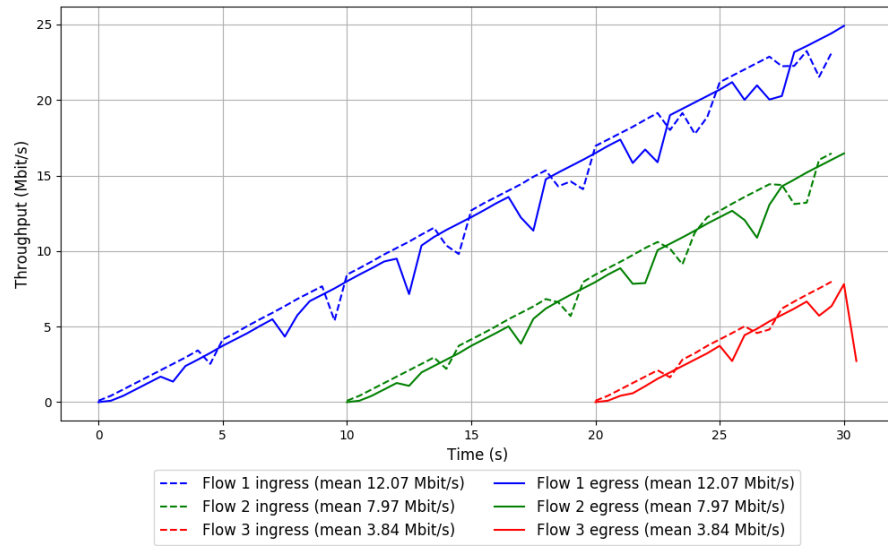
-- Flow 3:

Average throughput: 3.84 Mbit/s

95th percentile per-packet one-way delay: 83.174 ms

Loss rate: 0.00%

Run 5: Report of LEDBAT — Data Link

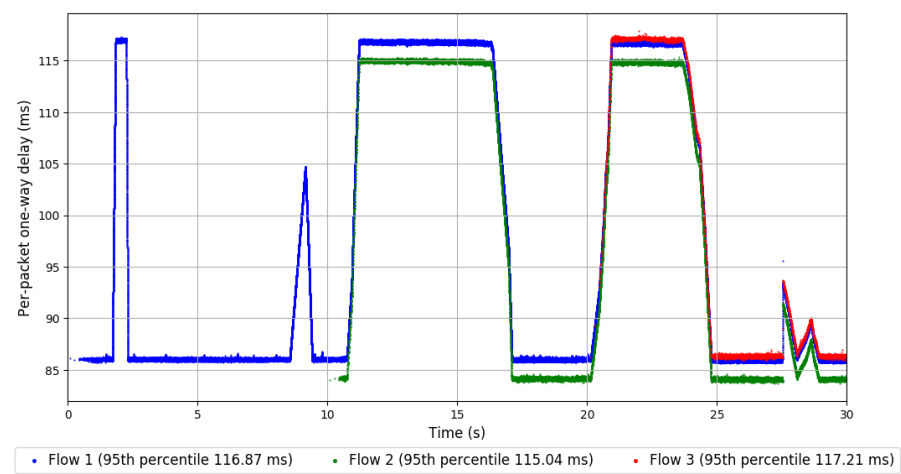
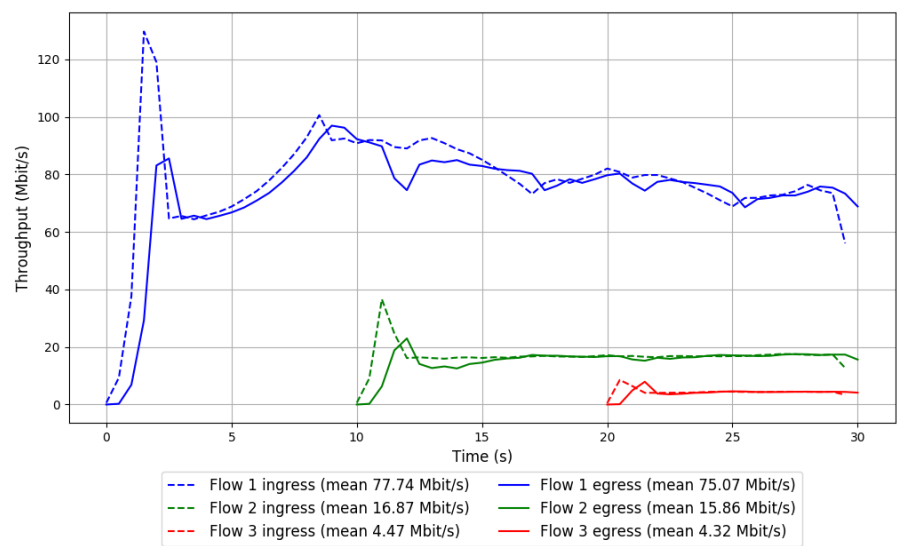


```
Run 1: Statistics of PCC-Allegro

Start at: 2019-02-11 17:36:11
End at: 2019-02-11 17:36:41
Local clock offset: -2.859 ms
Remote clock offset: 8.188 ms

# Below is generated by plot.py at 2019-02-11 19:46:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.04 Mbit/s
95th percentile per-packet one-way delay: 116.863 ms
Loss rate: 3.75%
-- Flow 1:
Average throughput: 75.07 Mbit/s
95th percentile per-packet one-way delay: 116.867 ms
Loss rate: 3.44%
-- Flow 2:
Average throughput: 15.86 Mbit/s
95th percentile per-packet one-way delay: 115.044 ms
Loss rate: 5.99%
-- Flow 3:
Average throughput: 4.32 Mbit/s
95th percentile per-packet one-way delay: 117.208 ms
Loss rate: 3.21%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2019-02-11 18:03:59

End at: 2019-02-11 18:04:29

Local clock offset: -7.086 ms

Remote clock offset: 7.636 ms

Below is generated by plot.py at 2019-02-11 19:46:40

Datalink statistics

-- Total of 3 flows:

Average throughput: 86.83 Mbit/s

95th percentile per-packet one-way delay: 115.296 ms

Loss rate: 2.25%

-- Flow 1:

Average throughput: 79.47 Mbit/s

95th percentile per-packet one-way delay: 115.259 ms

Loss rate: 2.23%

-- Flow 2:

Average throughput: 8.98 Mbit/s

95th percentile per-packet one-way delay: 116.932 ms

Loss rate: 2.36%

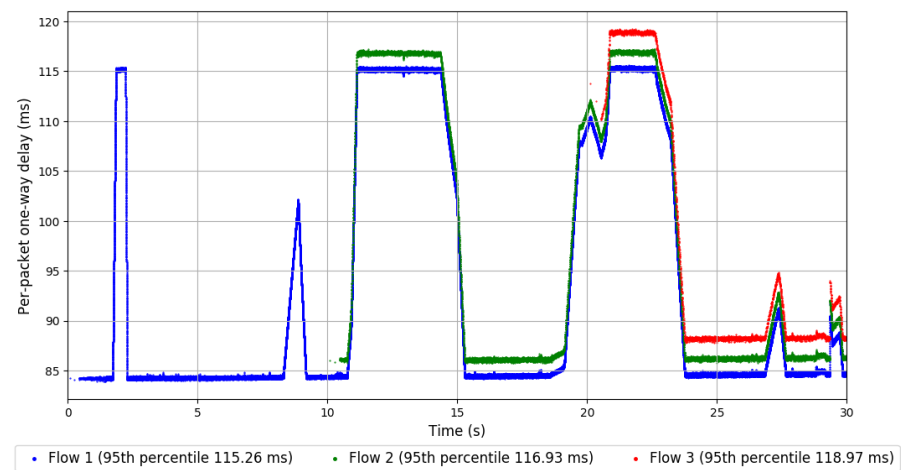
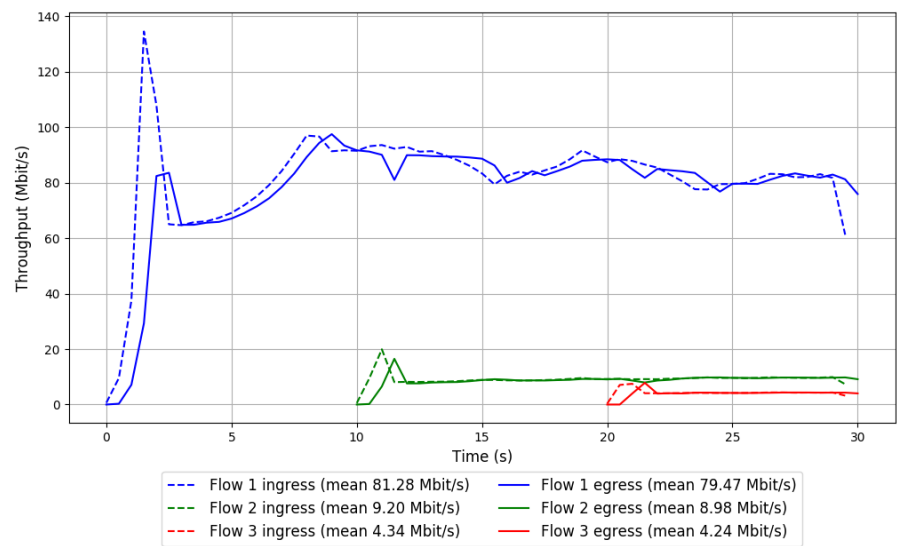
-- Flow 3:

Average throughput: 4.24 Mbit/s

95th percentile per-packet one-way delay: 118.968 ms

Loss rate: 2.71%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2019-02-11 18:32:34

End at: 2019-02-11 18:33:04

Local clock offset: -1.434 ms

Remote clock offset: 7.445 ms

Below is generated by plot.py at 2019-02-11 19:46:46

Datalink statistics

-- Total of 3 flows:

Average throughput: 87.10 Mbit/s

95th percentile per-packet one-way delay: 116.783 ms

Loss rate: 2.37%

-- Flow 1:

Average throughput: 80.23 Mbit/s

95th percentile per-packet one-way delay: 116.756 ms

Loss rate: 2.28%

-- Flow 2:

Average throughput: 8.27 Mbit/s

95th percentile per-packet one-way delay: 117.275 ms

Loss rate: 3.34%

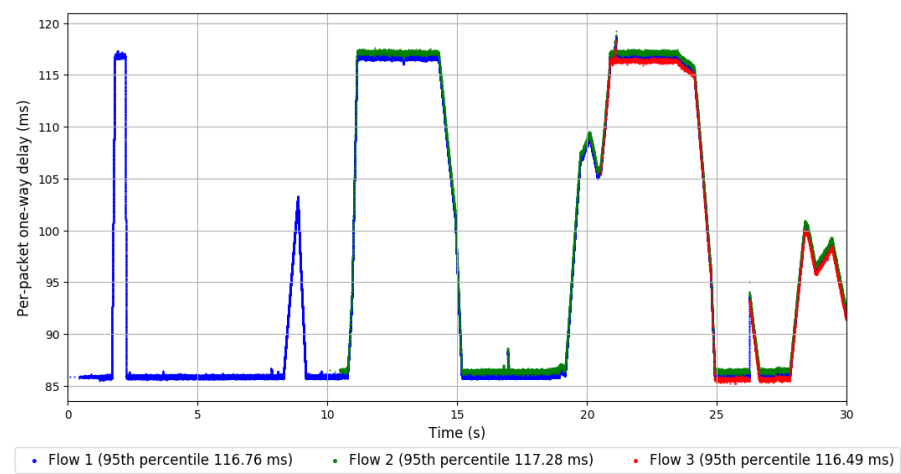
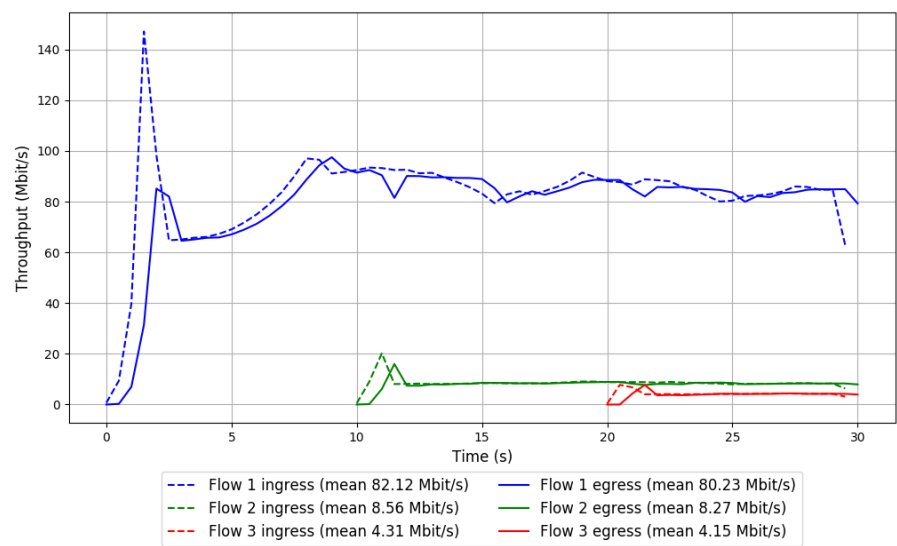
-- Flow 3:

Average throughput: 4.15 Mbit/s

95th percentile per-packet one-way delay: 116.488 ms

Loss rate: 3.90%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2019-02-11 19:00:38

End at: 2019-02-11 19:01:08

Local clock offset: -0.992 ms

Remote clock offset: 8.09 ms

Below is generated by plot.py at 2019-02-11 19:46:47

Datalink statistics

-- Total of 3 flows:

Average throughput: 86.64 Mbit/s

95th percentile per-packet one-way delay: 116.578 ms

Loss rate: 2.96%

-- Flow 1:

Average throughput: 79.09 Mbit/s

95th percentile per-packet one-way delay: 116.564 ms

Loss rate: 2.74%

-- Flow 2:

Average throughput: 7.38 Mbit/s

95th percentile per-packet one-way delay: 115.338 ms

Loss rate: 4.73%

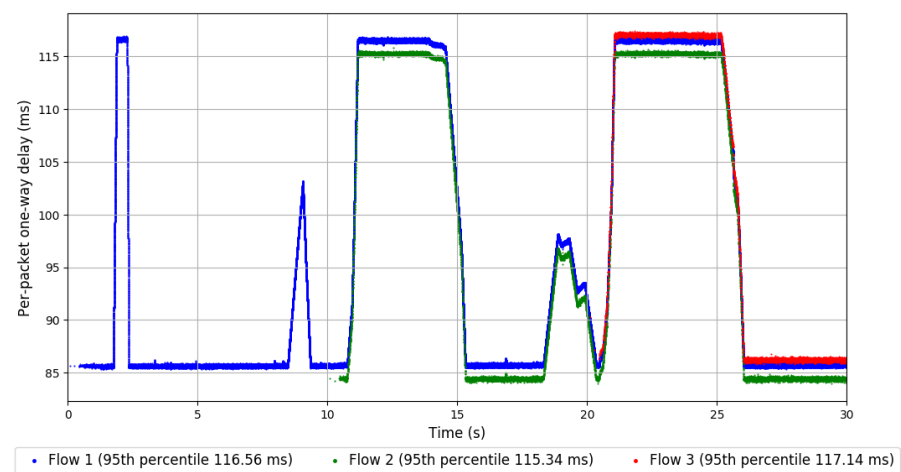
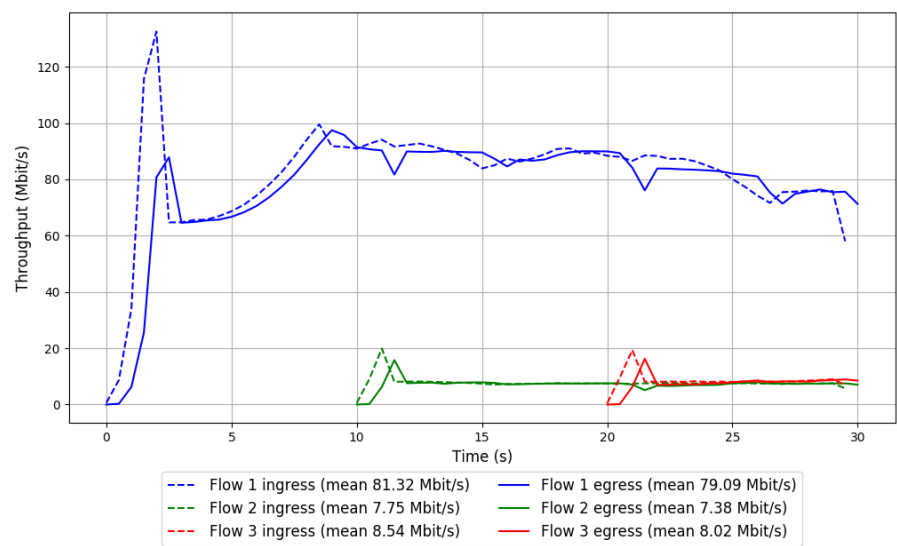
-- Flow 3:

Average throughput: 8.02 Mbit/s

95th percentile per-packet one-way delay: 117.141 ms

Loss rate: 6.14%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2019-02-11 19:28:52

End at: 2019-02-11 19:29:22

Local clock offset: -6.973 ms

Remote clock offset: 3.554 ms

Below is generated by plot.py at 2019-02-11 19:46:53

Datalink statistics

-- Total of 3 flows:

Average throughput: 86.85 Mbit/s

95th percentile per-packet one-way delay: 114.472 ms

Loss rate: 3.40%

-- Flow 1:

Average throughput: 78.77 Mbit/s

95th percentile per-packet one-way delay: 114.478 ms

Loss rate: 3.10%

-- Flow 2:

Average throughput: 8.35 Mbit/s

95th percentile per-packet one-way delay: 113.043 ms

Loss rate: 5.65%

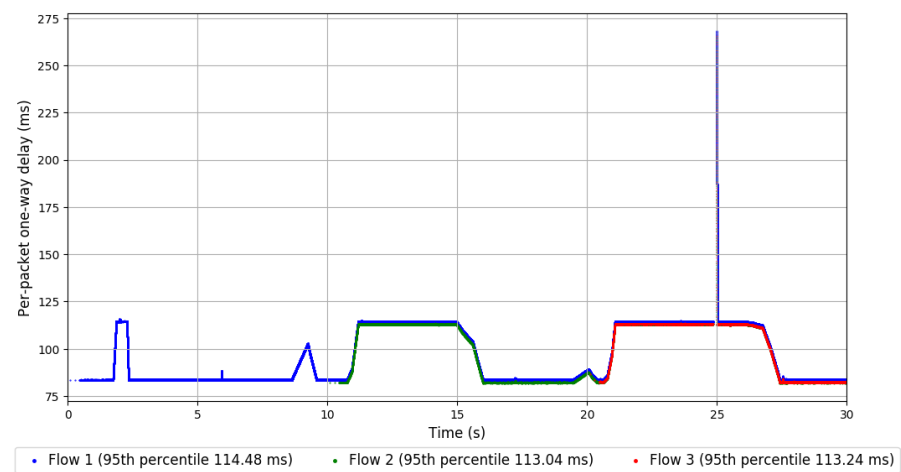
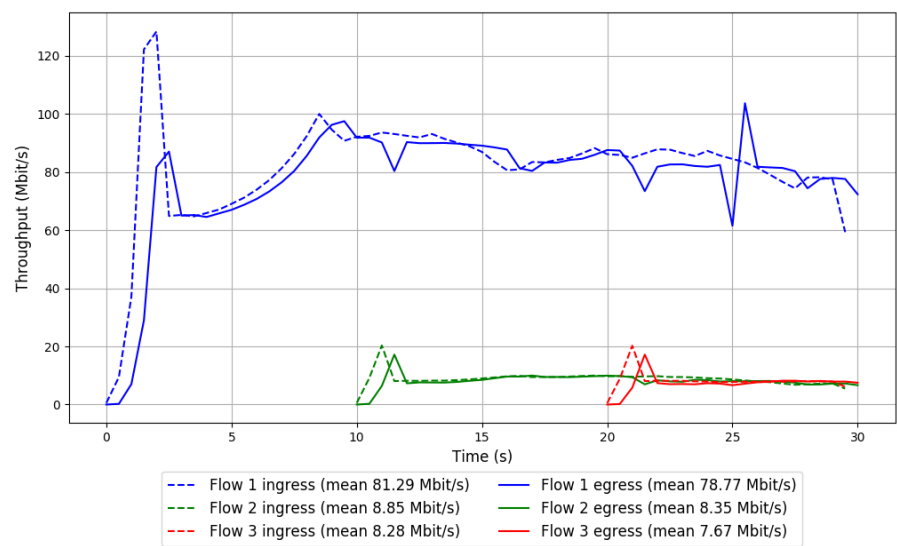
-- Flow 3:

Average throughput: 7.67 Mbit/s

95th percentile per-packet one-way delay: 113.244 ms

Loss rate: 7.37%

Run 5: Report of PCC-Allegro — Data Link

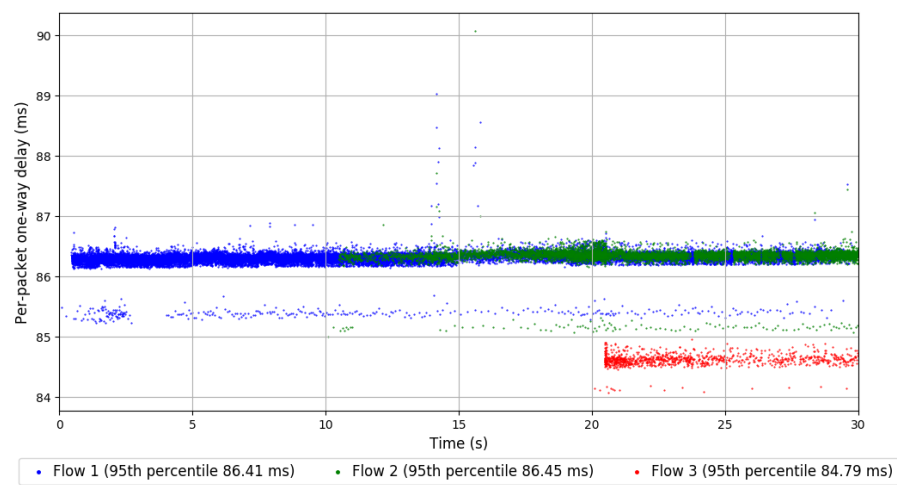
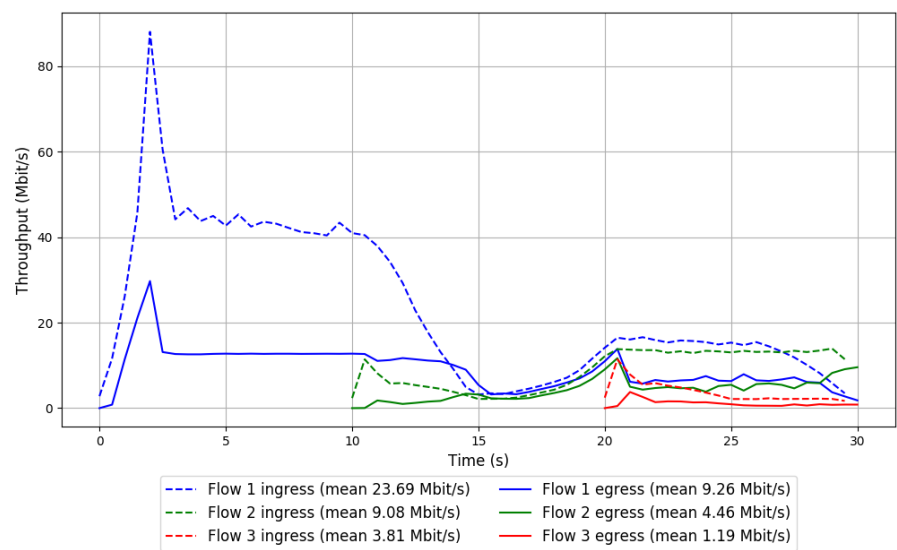



```
Run 1: Statistics of PCC-Expr

Start at: 2019-02-11 17:28:24
End at: 2019-02-11 17:28:54
Local clock offset: -2.328 ms
Remote clock offset: 8.365 ms

# Below is generated by plot.py at 2019-02-11 19:46:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.62 Mbit/s
95th percentile per-packet one-way delay: 86.424 ms
Loss rate: 59.27%
-- Flow 1:
Average throughput: 9.26 Mbit/s
95th percentile per-packet one-way delay: 86.414 ms
Loss rate: 60.90%
-- Flow 2:
Average throughput: 4.46 Mbit/s
95th percentile per-packet one-way delay: 86.448 ms
Loss rate: 50.87%
-- Flow 3:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 84.786 ms
Loss rate: 68.91%
```

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2019-02-11 17:56:07

End at: 2019-02-11 17:56:37

Local clock offset: -6.699 ms

Remote clock offset: 7.585 ms

Below is generated by plot.py at 2019-02-11 19:46:53

Datalink statistics

-- Total of 3 flows:

Average throughput: 12.95 Mbit/s

95th percentile per-packet one-way delay: 85.951 ms

Loss rate: 64.32%

-- Flow 1:

Average throughput: 10.58 Mbit/s

95th percentile per-packet one-way delay: 85.953 ms

Loss rate: 65.97%

-- Flow 2:

Average throughput: 2.48 Mbit/s

95th percentile per-packet one-way delay: 84.321 ms

Loss rate: 55.39%

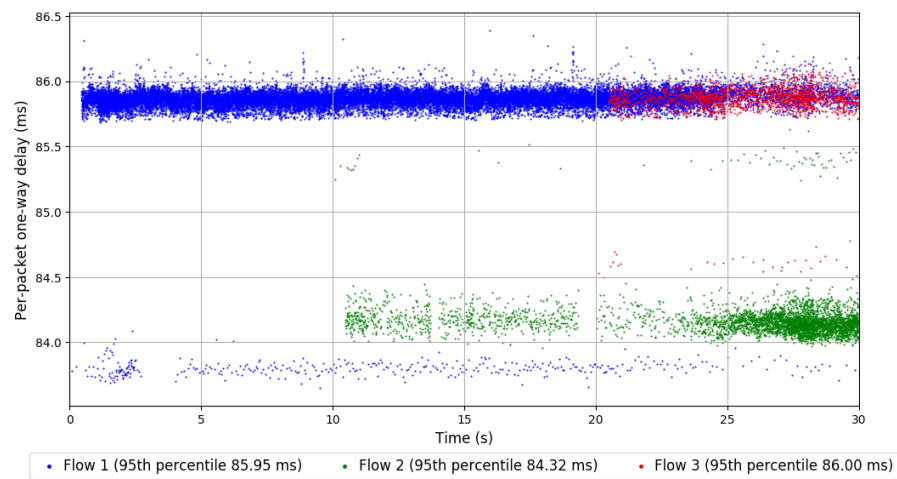
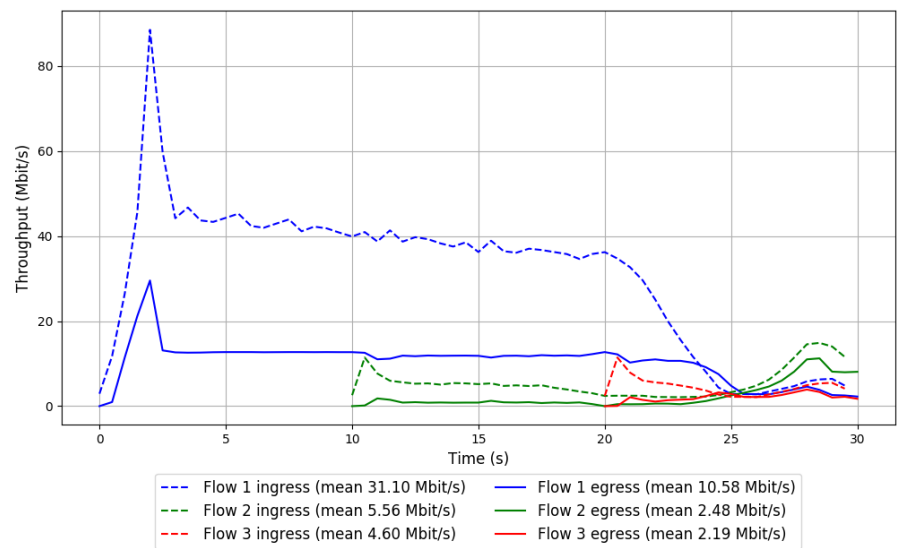
-- Flow 3:

Average throughput: 2.19 Mbit/s

95th percentile per-packet one-way delay: 86.003 ms

Loss rate: 52.31%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2019-02-11 18:24:27

End at: 2019-02-11 18:24:57

Local clock offset: -1.435 ms

Remote clock offset: 3.38 ms

Below is generated by plot.py at 2019-02-11 19:46:53

Datalink statistics

-- Total of 3 flows:

Average throughput: 12.95 Mbit/s

95th percentile per-packet one-way delay: 82.294 ms

Loss rate: 43.89%

-- Flow 1:

Average throughput: 7.00 Mbit/s

95th percentile per-packet one-way delay: 82.296 ms

Loss rate: 54.67%

-- Flow 2:

Average throughput: 7.08 Mbit/s

95th percentile per-packet one-way delay: 82.300 ms

Loss rate: 20.04%

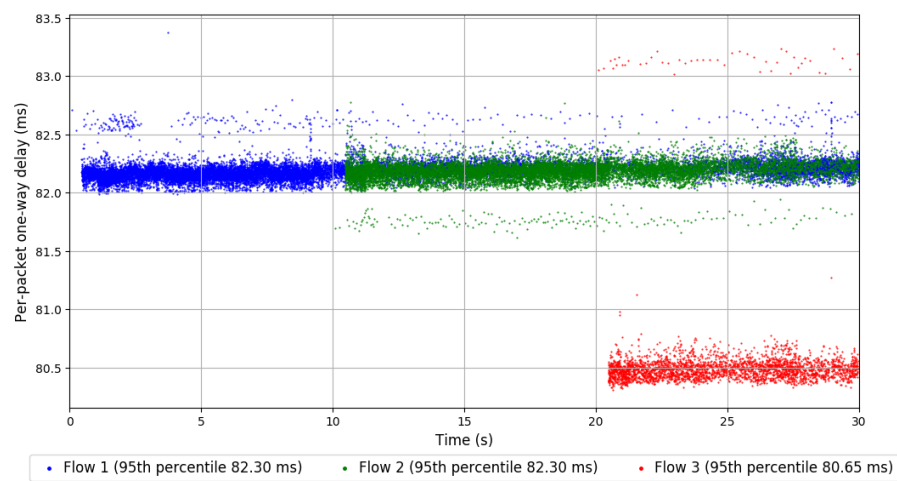
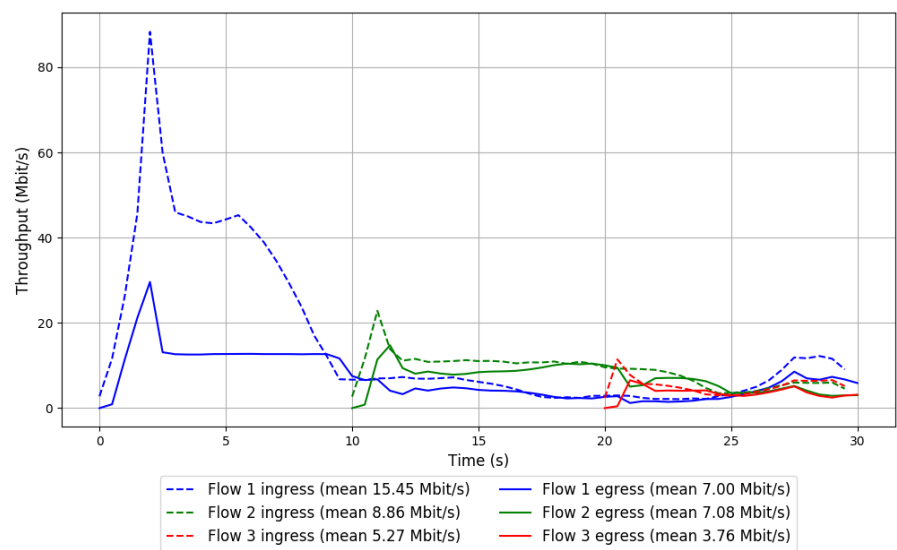
-- Flow 3:

Average throughput: 3.76 Mbit/s

95th percentile per-packet one-way delay: 80.646 ms

Loss rate: 28.94%

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

Start at: 2019-02-11 18:52:59

End at: 2019-02-11 18:53:30

Local clock offset: -1.234 ms

Remote clock offset: 8.513 ms

Below is generated by plot.py at 2019-02-11 19:46:53

Datalink statistics

-- Total of 3 flows:

Average throughput: 12.95 Mbit/s

95th percentile per-packet one-way delay: 85.347 ms

Loss rate: 37.48%

-- Flow 1:

Average throughput: 8.64 Mbit/s

95th percentile per-packet one-way delay: 85.073 ms

Loss rate: 37.31%

-- Flow 2:

Average throughput: 5.52 Mbit/s

95th percentile per-packet one-way delay: 85.079 ms

Loss rate: 33.49%

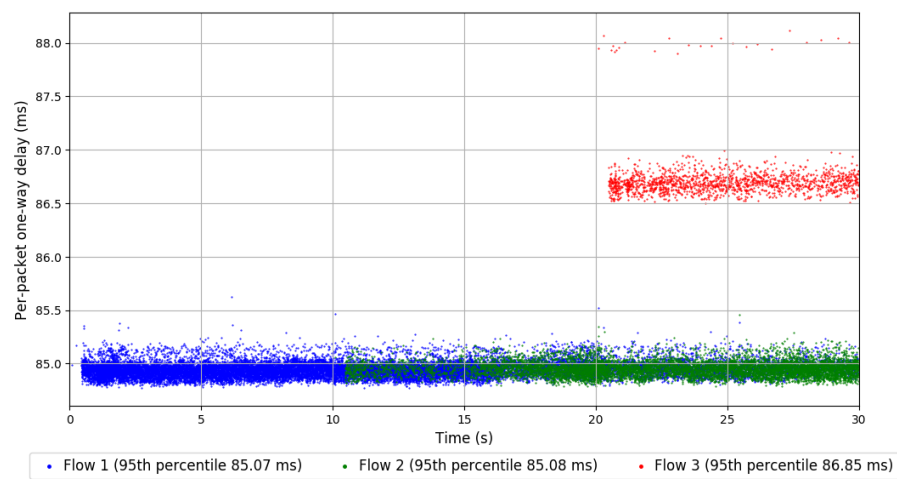
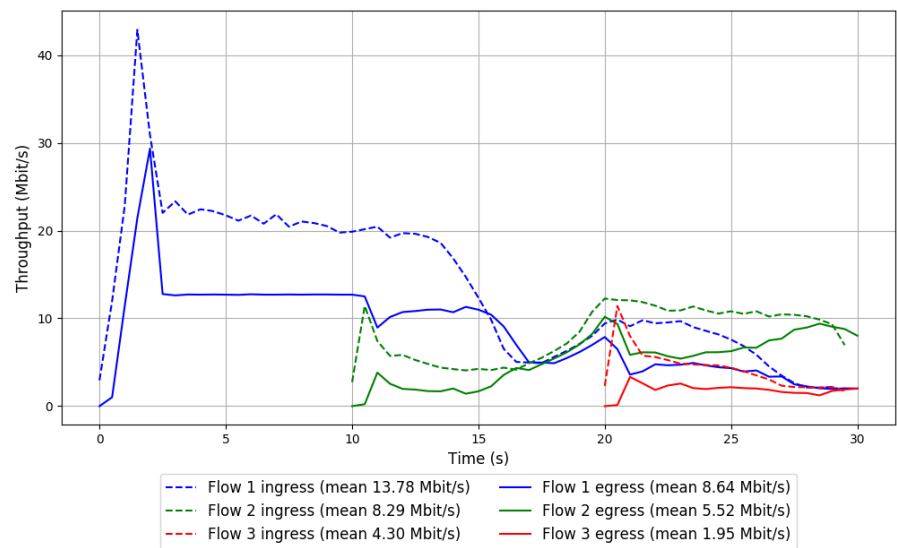
-- Flow 3:

Average throughput: 1.95 Mbit/s

95th percentile per-packet one-way delay: 86.850 ms

Loss rate: 54.63%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2019-02-11 19:21:02

End at: 2019-02-11 19:21:32

Local clock offset: -6.196 ms

Remote clock offset: 7.293 ms

Below is generated by plot.py at 2019-02-11 19:46:53

Datalink statistics

-- Total of 3 flows:

Average throughput: 12.95 Mbit/s

95th percentile per-packet one-way delay: 86.299 ms

Loss rate: 49.87%

-- Flow 1:

Average throughput: 7.30 Mbit/s

95th percentile per-packet one-way delay: 86.325 ms

Loss rate: 59.23%

-- Flow 2:

Average throughput: 5.88 Mbit/s

95th percentile per-packet one-way delay: 84.649 ms

Loss rate: 29.23%

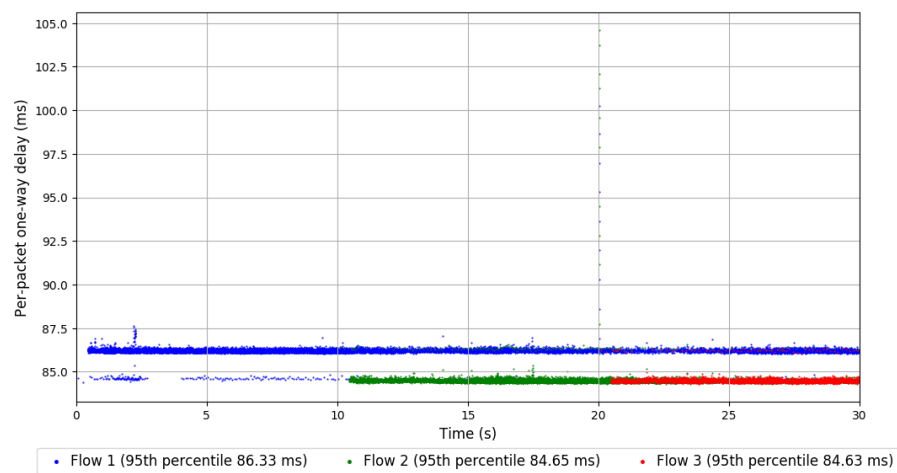
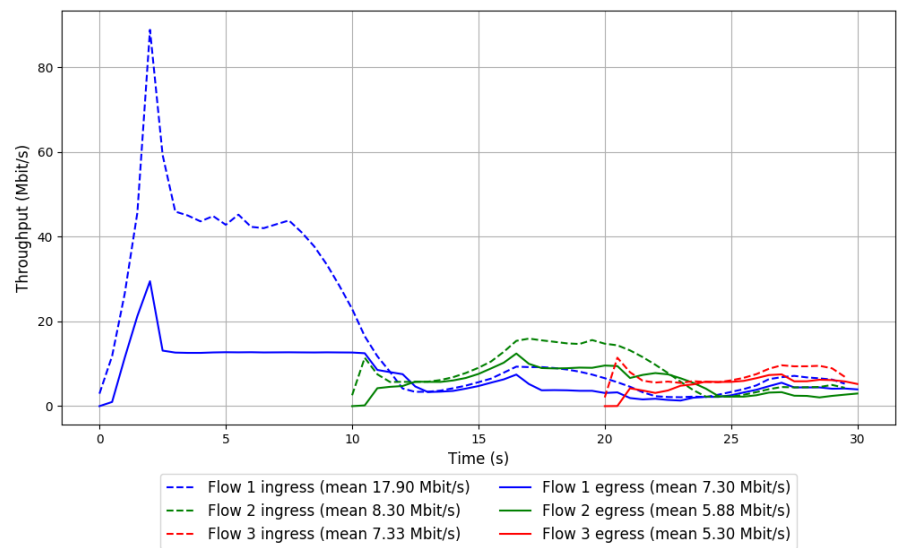
-- Flow 3:

Average throughput: 5.30 Mbit/s

95th percentile per-packet one-way delay: 84.632 ms

Loss rate: 27.71%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2019-02-11 17:18:55

End at: 2019-02-11 17:19:25

Local clock offset: -3.223 ms

Remote clock offset: 8.201 ms

Below is generated by plot.py at 2019-02-11 19:47:19

Datalink statistics

-- Total of 3 flows:

Average throughput: 63.24 Mbit/s

95th percentile per-packet one-way delay: 109.708 ms

Loss rate: 0.74%

-- Flow 1:

Average throughput: 45.39 Mbit/s

95th percentile per-packet one-way delay: 110.904 ms

Loss rate: 0.85%

-- Flow 2:

Average throughput: 18.86 Mbit/s

95th percentile per-packet one-way delay: 103.428 ms

Loss rate: 0.36%

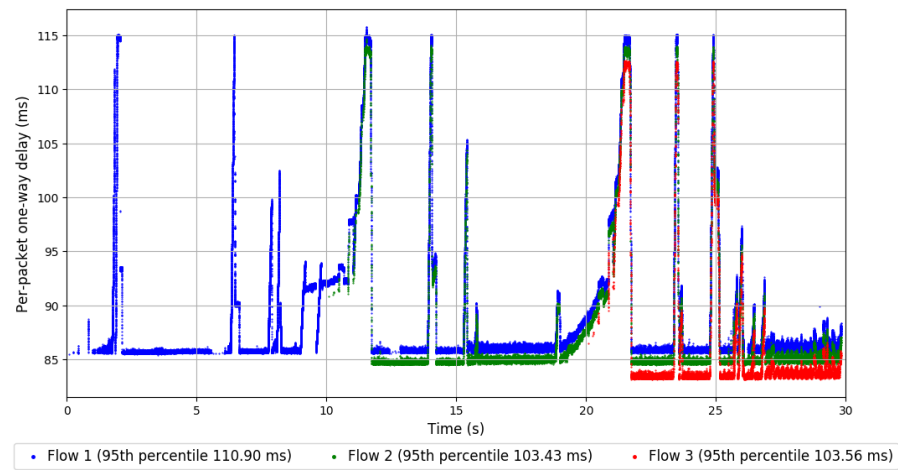
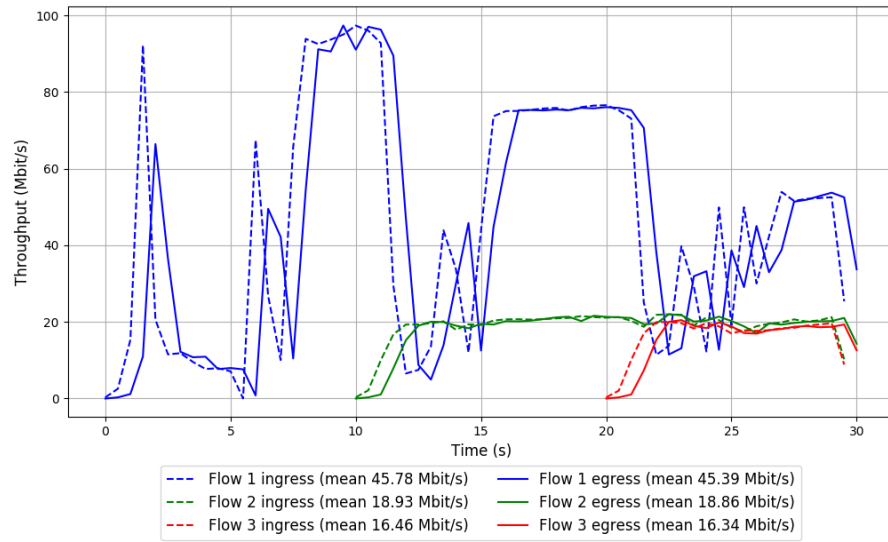
-- Flow 3:

Average throughput: 16.34 Mbit/s

95th percentile per-packet one-way delay: 103.560 ms

Loss rate: 0.76%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2019-02-11 17:46:49

End at: 2019-02-11 17:47:19

Local clock offset: -5.819 ms

Remote clock offset: 8.366 ms

Below is generated by plot.py at 2019-02-11 19:47:25

Datalink statistics

-- Total of 3 flows:

Average throughput: 63.08 Mbit/s

95th percentile per-packet one-way delay: 111.704 ms

Loss rate: 2.45%

-- Flow 1:

Average throughput: 47.02 Mbit/s

95th percentile per-packet one-way delay: 109.592 ms

Loss rate: 1.41%

-- Flow 2:

Average throughput: 17.68 Mbit/s

95th percentile per-packet one-way delay: 108.774 ms

Loss rate: 0.90%

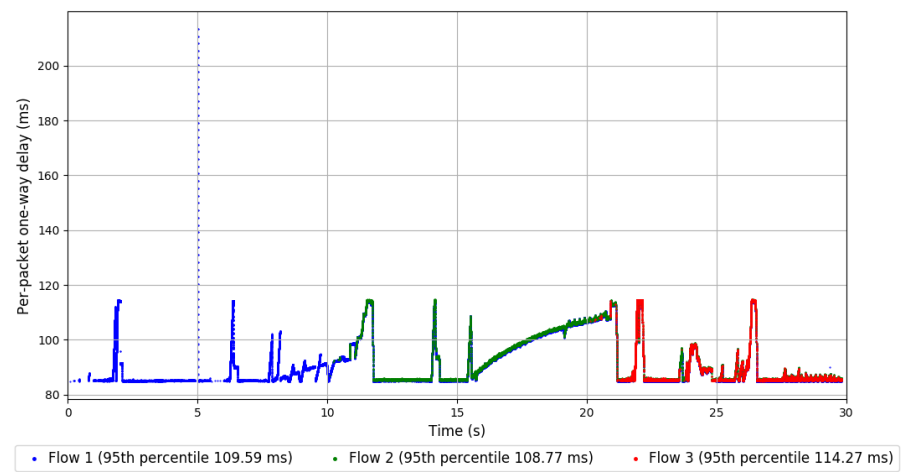
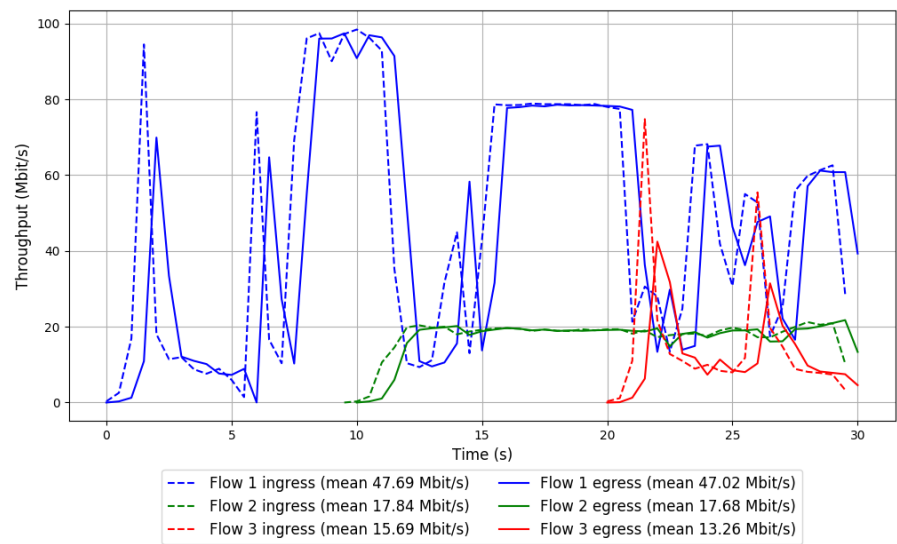
-- Flow 3:

Average throughput: 13.26 Mbit/s

95th percentile per-packet one-way delay: 114.266 ms

Loss rate: 15.68%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2019-02-11 18:15:08

End at: 2019-02-11 18:15:38

Local clock offset: -3.621 ms

Remote clock offset: 2.988 ms

Below is generated by plot.py at 2019-02-11 19:47:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 68.16 Mbit/s

95th percentile per-packet one-way delay: 108.069 ms

Loss rate: 0.60%

-- Flow 1:

Average throughput: 46.97 Mbit/s

95th percentile per-packet one-way delay: 106.895 ms

Loss rate: 0.67%

-- Flow 2:

Average throughput: 21.82 Mbit/s

95th percentile per-packet one-way delay: 109.039 ms

Loss rate: 0.47%

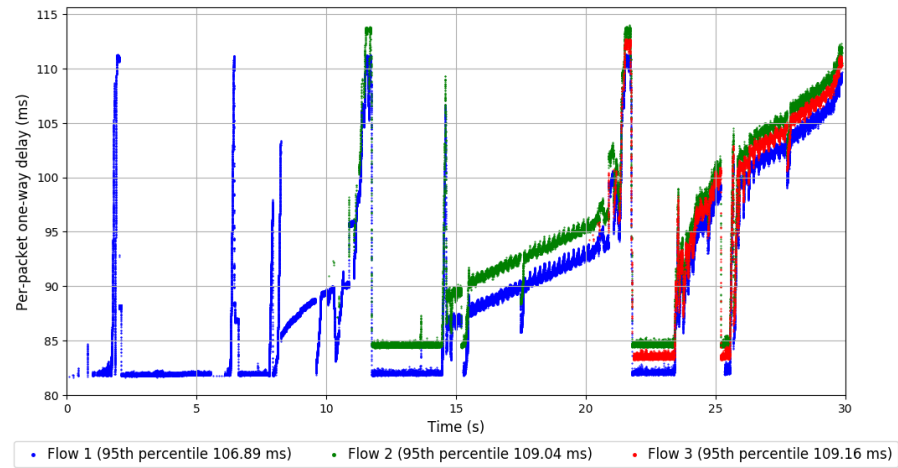
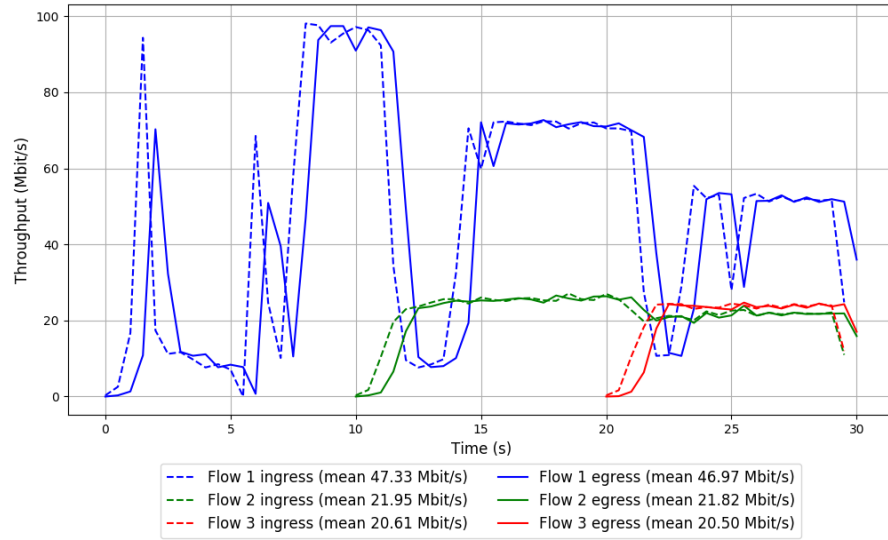
-- Flow 3:

Average throughput: 20.50 Mbit/s

95th percentile per-packet one-way delay: 109.158 ms

Loss rate: 0.35%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2019-02-11 18:43:40

End at: 2019-02-11 18:44:10

Local clock offset: -0.662 ms

Remote clock offset: 8.04 ms

Below is generated by plot.py at 2019-02-11 19:47:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 61.83 Mbit/s

95th percentile per-packet one-way delay: 114.515 ms

Loss rate: 0.89%

-- Flow 1:

Average throughput: 38.77 Mbit/s

95th percentile per-packet one-way delay: 115.246 ms

Loss rate: 1.07%

-- Flow 2:

Average throughput: 29.67 Mbit/s

95th percentile per-packet one-way delay: 113.469 ms

Loss rate: 0.65%

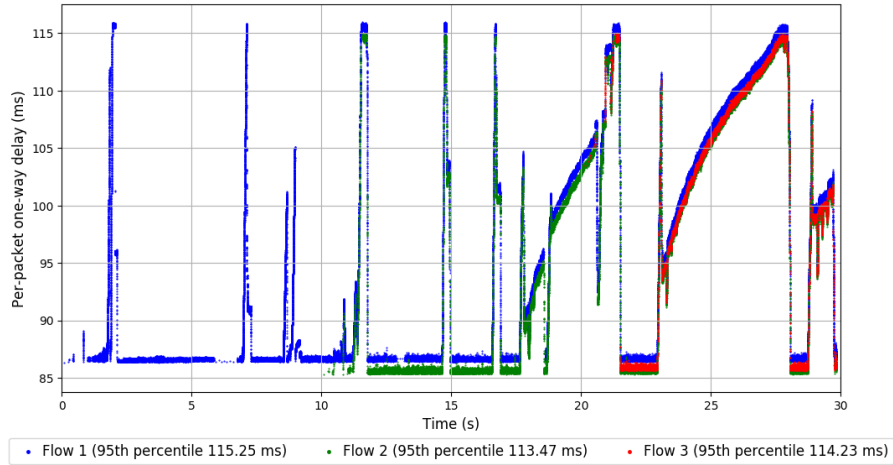
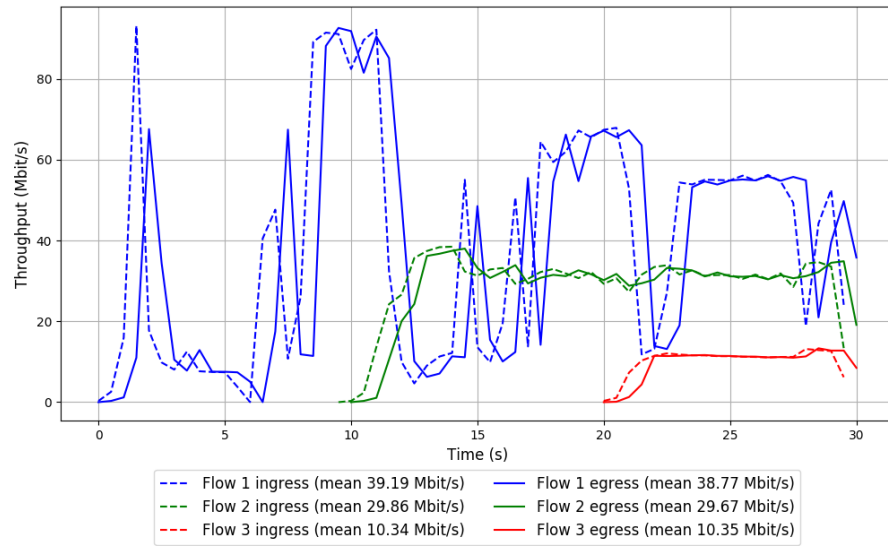
-- Flow 3:

Average throughput: 10.35 Mbit/s

95th percentile per-packet one-way delay: 114.233 ms

Loss rate: 0.12%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2019-02-11 19:11:51

End at: 2019-02-11 19:12:21

Local clock offset: -4.357 ms

Remote clock offset: 4.095 ms

Below is generated by plot.py at 2019-02-11 19:47:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 56.30 Mbit/s

95th percentile per-packet one-way delay: 111.689 ms

Loss rate: 3.76%

-- Flow 1:

Average throughput: 35.25 Mbit/s

95th percentile per-packet one-way delay: 111.009 ms

Loss rate: 2.51%

-- Flow 2:

Average throughput: 21.08 Mbit/s

95th percentile per-packet one-way delay: 112.662 ms

Loss rate: 6.85%

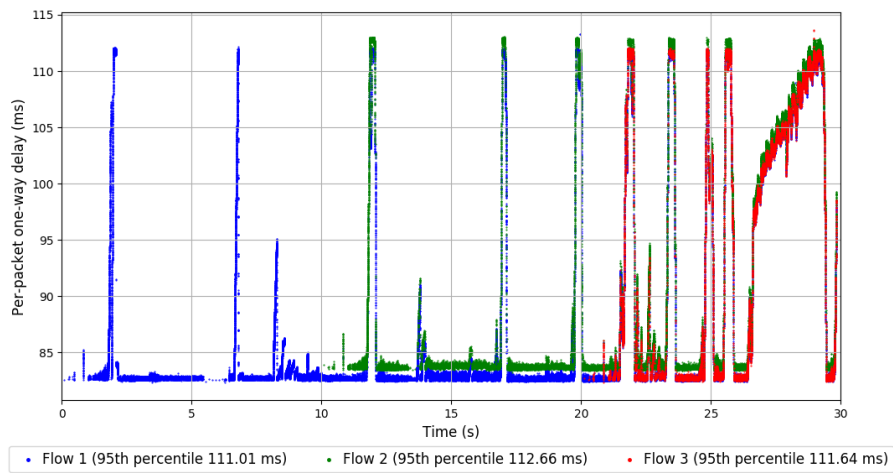
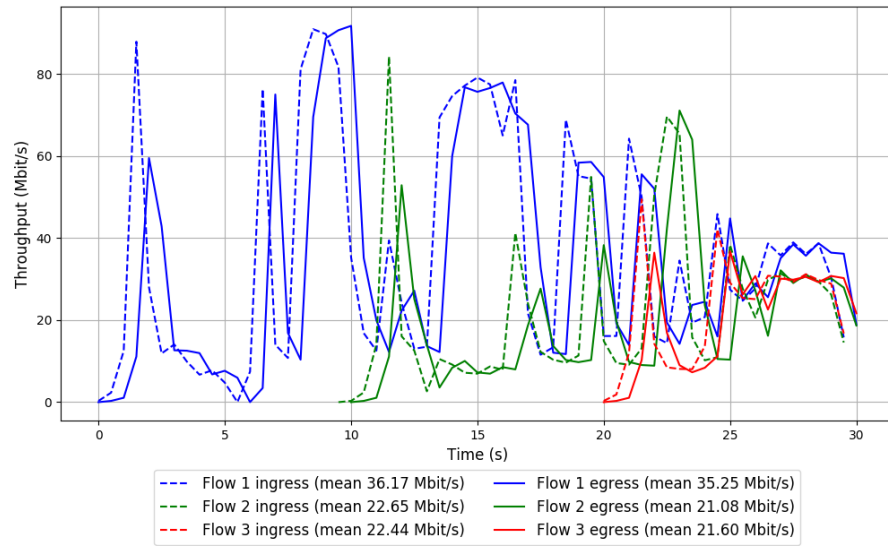
-- Flow 3:

Average throughput: 21.60 Mbit/s

95th percentile per-packet one-way delay: 111.643 ms

Loss rate: 3.59%

Run 5: Report of QUIC Cubic — Data Link

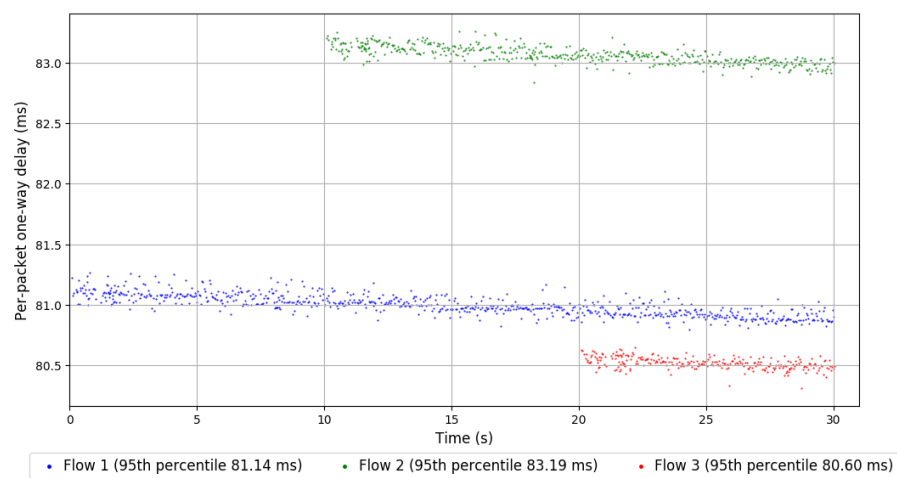
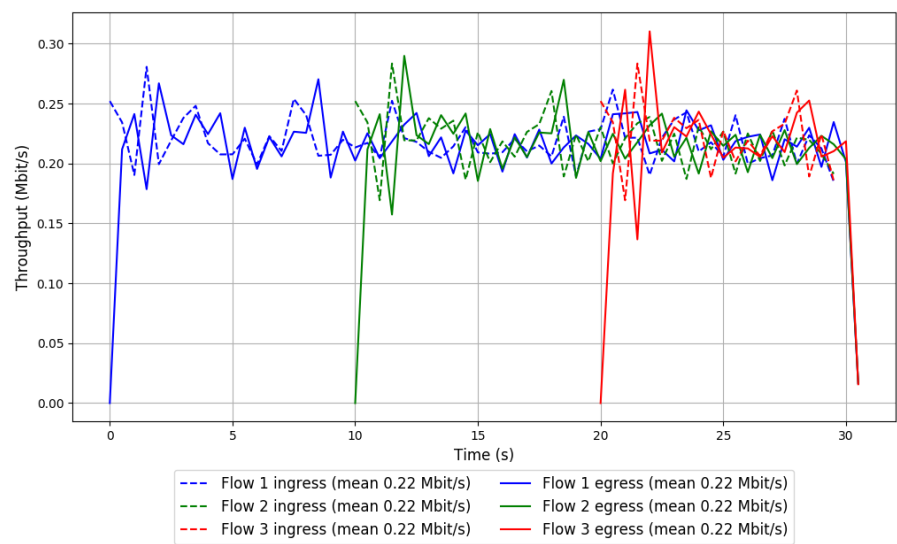


```
Run 1: Statistics of SReAM

Start at: 2019-02-11 17:34:59
End at: 2019-02-11 17:35:29
Local clock offset: -2.947 ms
Remote clock offset: 4.328 ms

# Below is generated by plot.py at 2019-02-11 19:47:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 83.148 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 81.142 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 83.188 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 80.598 ms
Loss rate: 0.00%
```

Run 1: Report of SReAM — Data Link



Run 2: Statistics of SReAM

Start at: 2019-02-11 18:02:46

End at: 2019-02-11 18:03:16

Local clock offset: -7.055 ms

Remote clock offset: 3.564 ms

Below is generated by plot.py at 2019-02-11 19:47:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.44 Mbit/s

95th percentile per-packet one-way delay: 83.130 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 81.797 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 83.154 ms

Loss rate: 0.00%

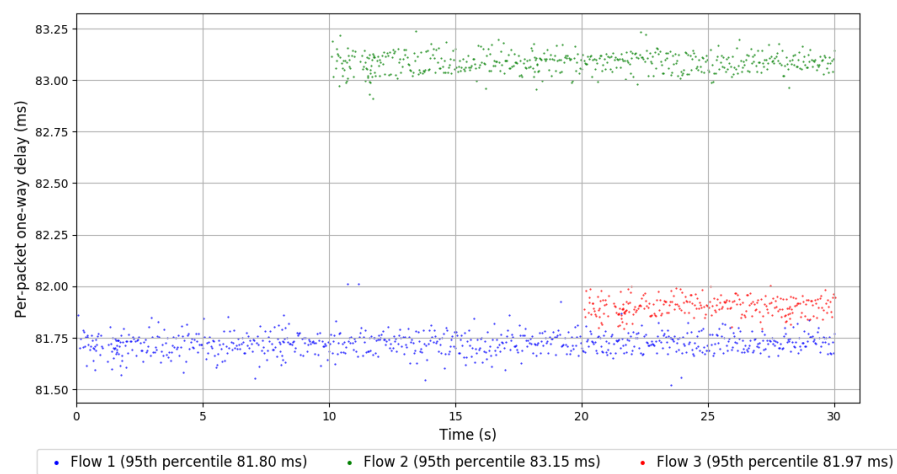
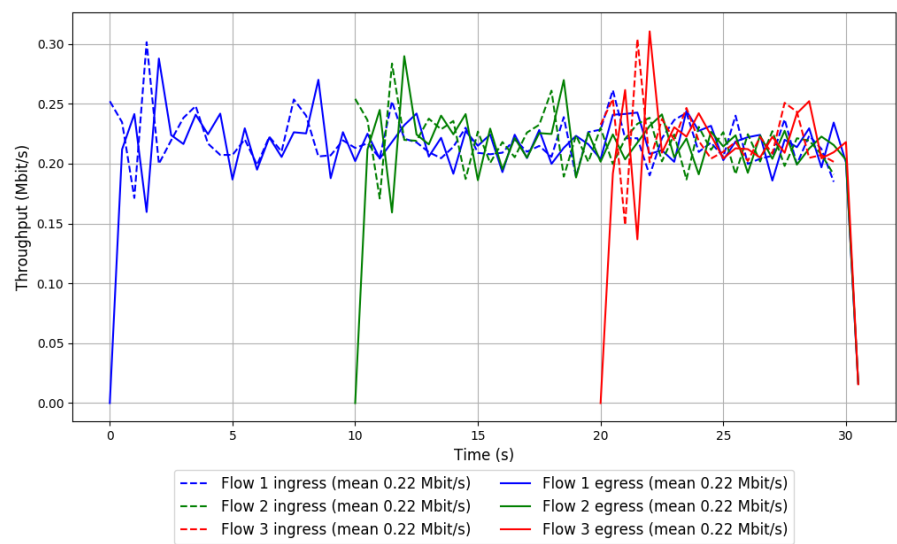
-- Flow 3:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 81.974 ms

Loss rate: 0.00%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SReAM

Start at: 2019-02-11 18:31:21

End at: 2019-02-11 18:31:51

Local clock offset: -1.532 ms

Remote clock offset: 3.458 ms

Below is generated by plot.py at 2019-02-11 19:47:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.44 Mbit/s

95th percentile per-packet one-way delay: 83.832 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 81.198 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 82.526 ms

Loss rate: 0.00%

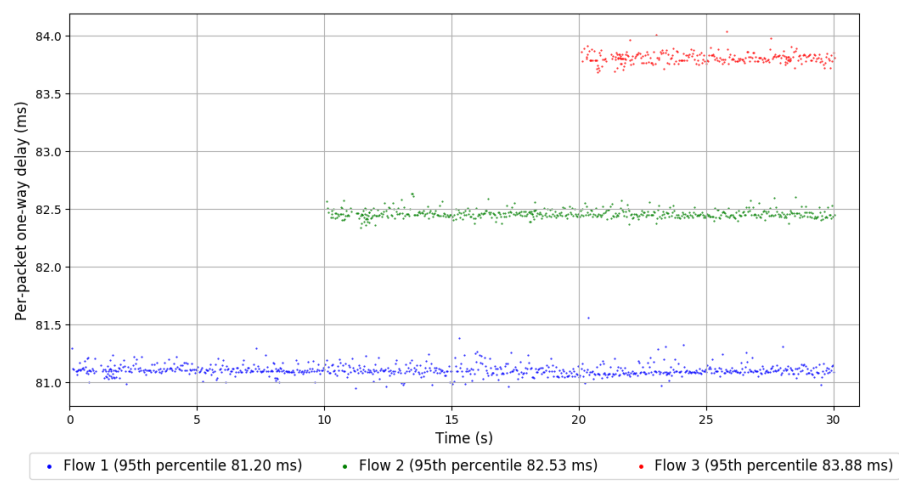
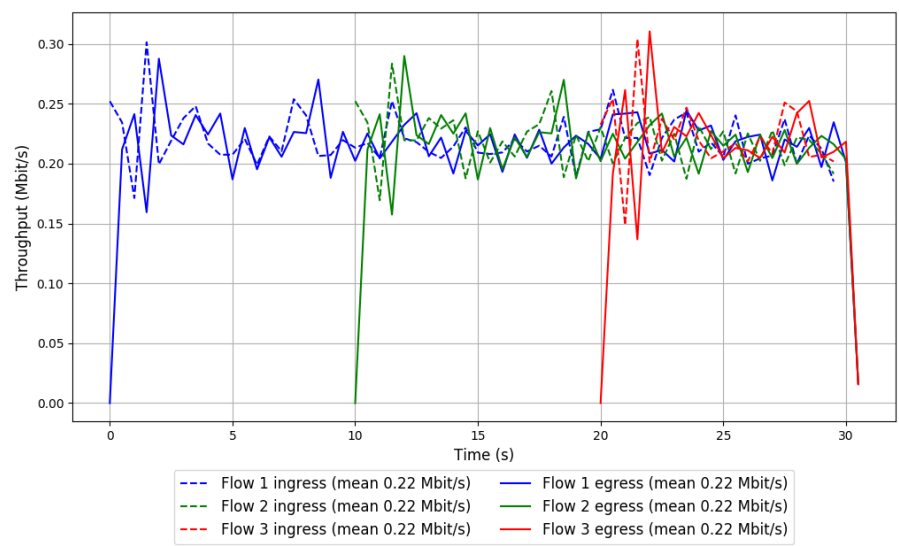
-- Flow 3:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 83.883 ms

Loss rate: 0.00%

Run 3: Report of SReAM — Data Link



Run 4: Statistics of SReAM

Start at: 2019-02-11 18:59:26

End at: 2019-02-11 18:59:56

Local clock offset: -1.087 ms

Remote clock offset: 8.467 ms

Below is generated by plot.py at 2019-02-11 19:47:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.44 Mbit/s

95th percentile per-packet one-way delay: 87.932 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 87.939 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 87.467 ms

Loss rate: 0.00%

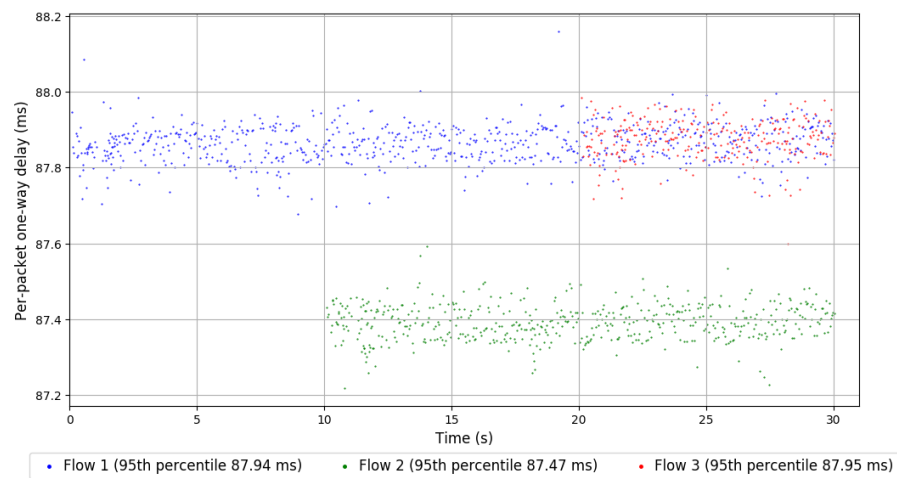
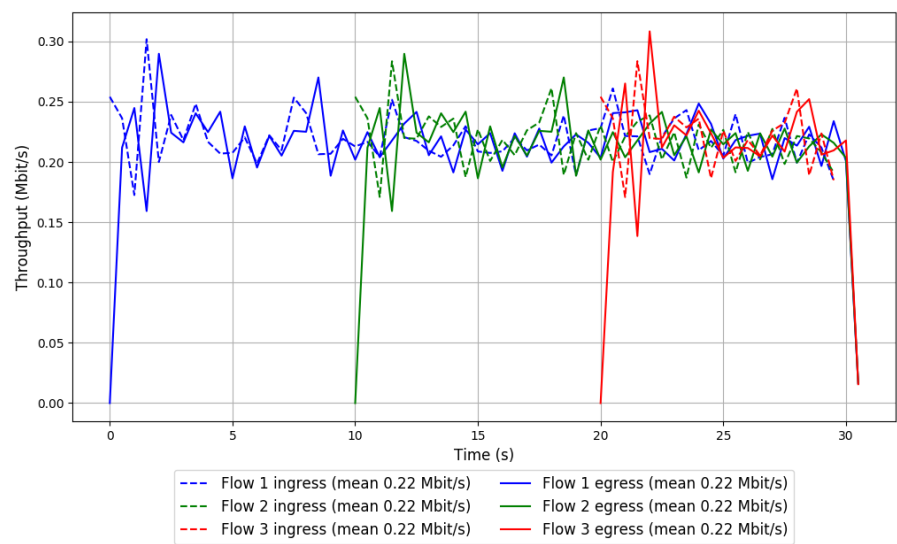
-- Flow 3:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 87.955 ms

Loss rate: 0.00%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SReAM

Start at: 2019-02-11 19:27:40

End at: 2019-02-11 19:28:10

Local clock offset: -6.11 ms

Remote clock offset: 3.428 ms

Below is generated by plot.py at 2019-02-11 19:47:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.44 Mbit/s

95th percentile per-packet one-way delay: 83.046 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 82.708 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 81.723 ms

Loss rate: 0.00%

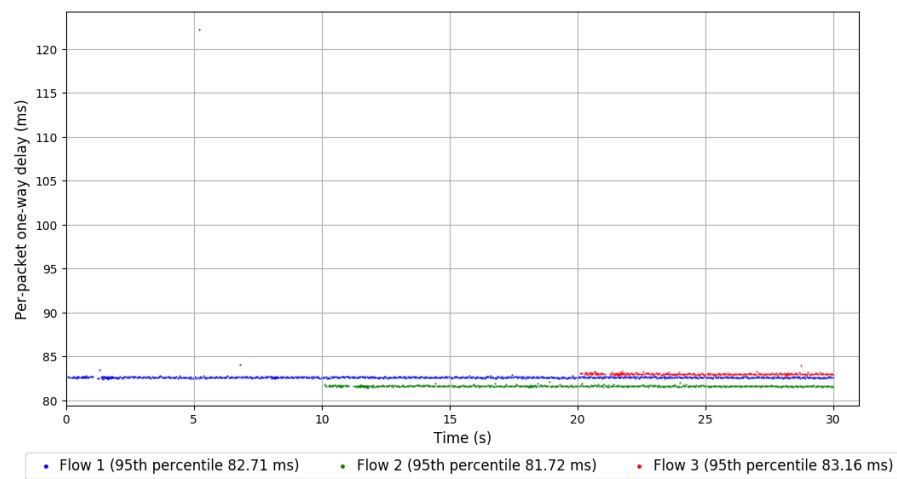
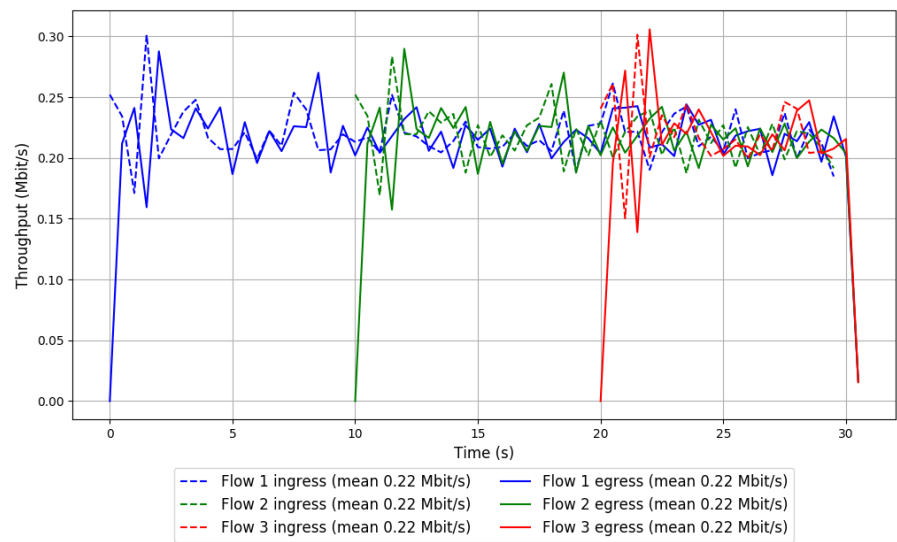
-- Flow 3:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 83.161 ms

Loss rate: 0.00%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2019-02-11 17:33:46

End at: 2019-02-11 17:34:16

Local clock offset: -2.673 ms

Remote clock offset: 8.566 ms

Below is generated by plot.py at 2019-02-11 19:47:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 5.30 Mbit/s

95th percentile per-packet one-way delay: 91.576 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 2.47 Mbit/s

95th percentile per-packet one-way delay: 91.509 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 2.34 Mbit/s

95th percentile per-packet one-way delay: 89.593 ms

Loss rate: 0.00%

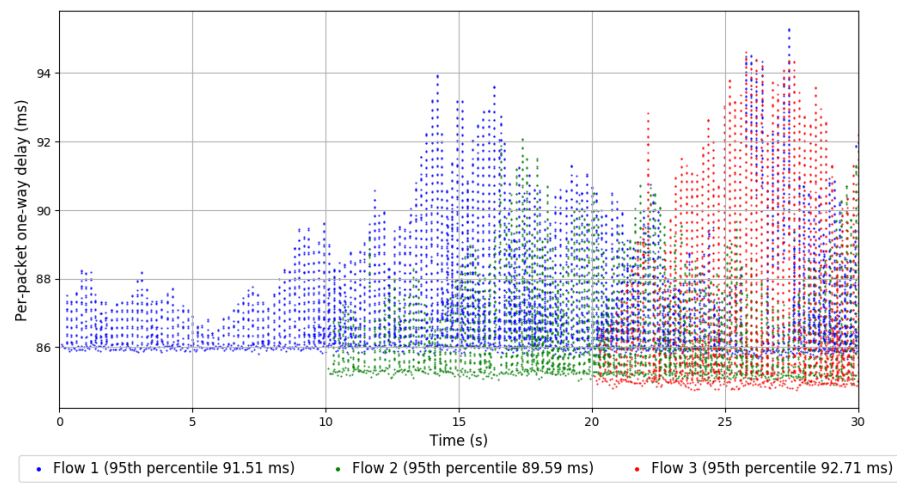
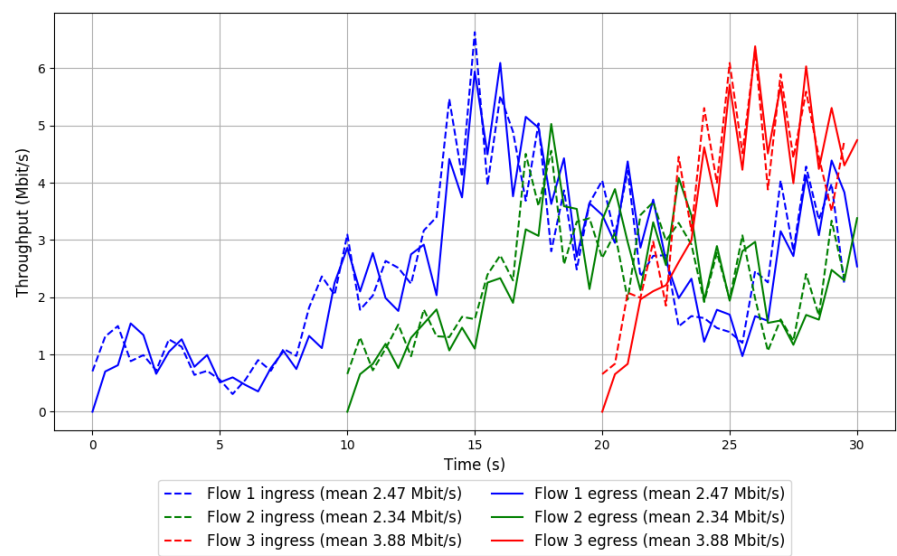
-- Flow 3:

Average throughput: 3.88 Mbit/s

95th percentile per-packet one-way delay: 92.712 ms

Loss rate: 0.00%

Run 1: Report of Sprout — Data Link

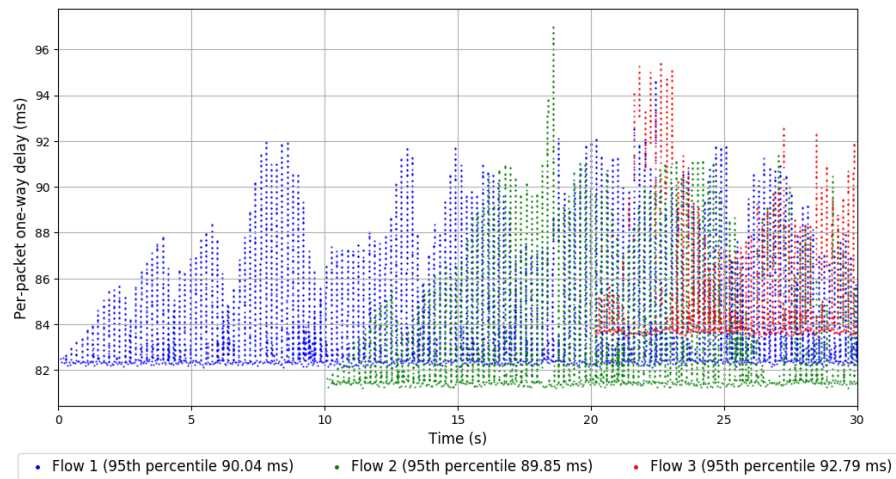
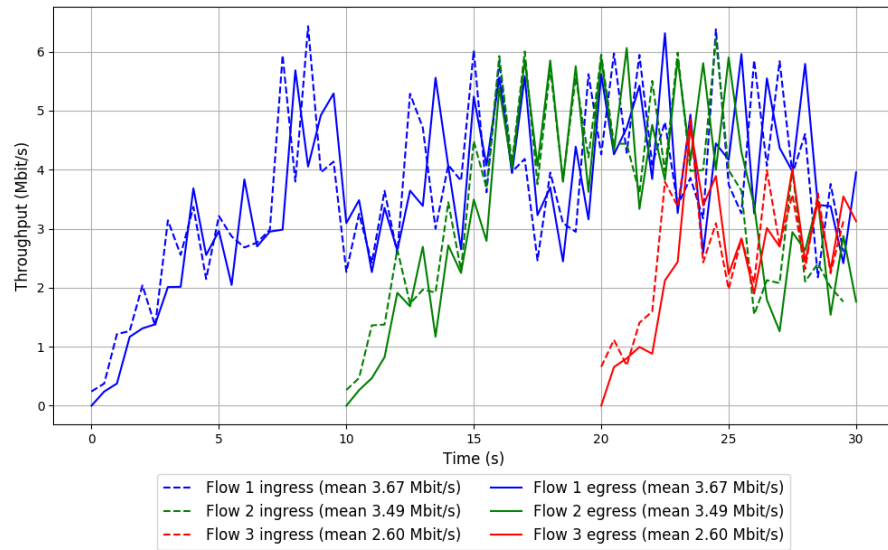


Run 2: Statistics of Sprout

Start at: 2019-02-11 18:01:33
End at: 2019-02-11 18:02:03
Local clock offset: -7.746 ms
Remote clock offset: 3.59 ms

Below is generated by plot.py at 2019-02-11 19:47:34
Datalink statistics
-- Total of 3 flows:
Average throughput: 6.84 Mbit/s
95th percentile per-packet one-way delay: 90.261 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 3.67 Mbit/s
95th percentile per-packet one-way delay: 90.039 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 3.49 Mbit/s
95th percentile per-packet one-way delay: 89.852 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 2.60 Mbit/s
95th percentile per-packet one-way delay: 92.792 ms
Loss rate: 0.00%

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

Start at: 2019-02-11 18:30:07

End at: 2019-02-11 18:30:37

Local clock offset: -0.944 ms

Remote clock offset: 7.059 ms

Below is generated by plot.py at 2019-02-11 19:47:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 4.52 Mbit/s

95th percentile per-packet one-way delay: 93.136 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 1.54 Mbit/s

95th percentile per-packet one-way delay: 88.181 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 2.77 Mbit/s

95th percentile per-packet one-way delay: 95.356 ms

Loss rate: 0.00%

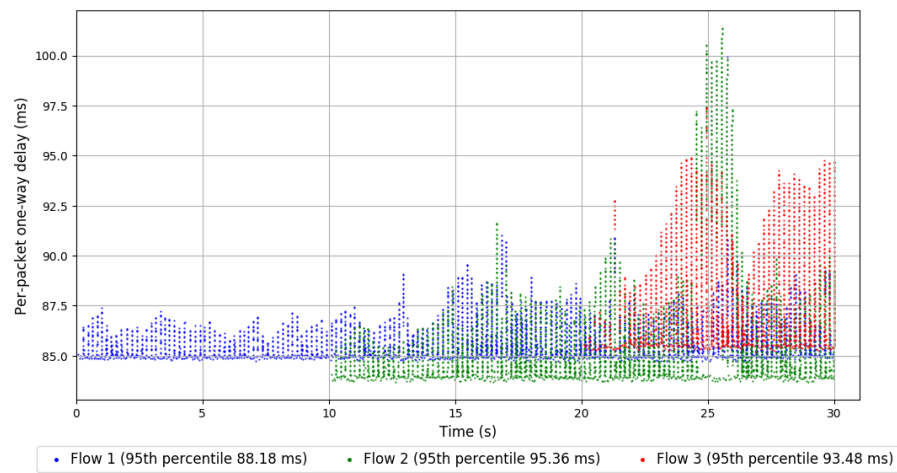
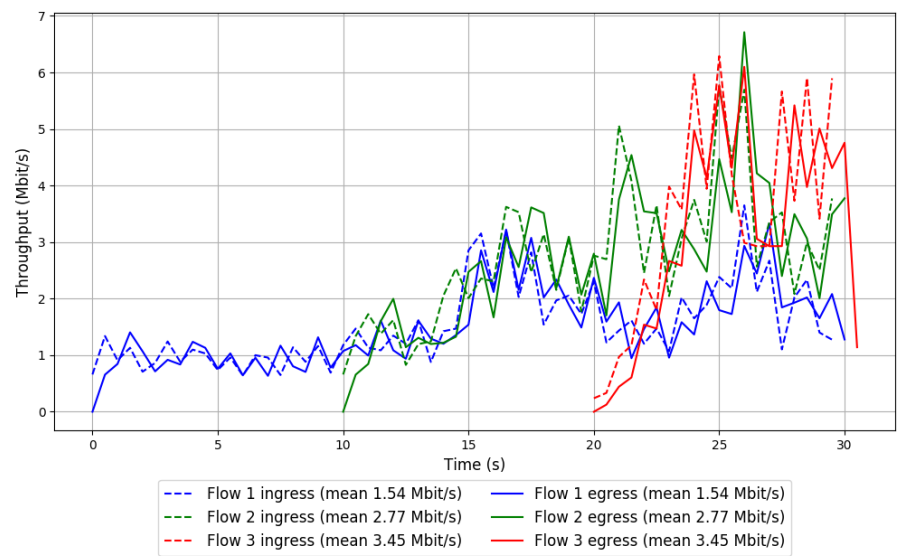
-- Flow 3:

Average throughput: 3.45 Mbit/s

95th percentile per-packet one-way delay: 93.481 ms

Loss rate: 0.00%

Run 3: Report of Sprout — Data Link

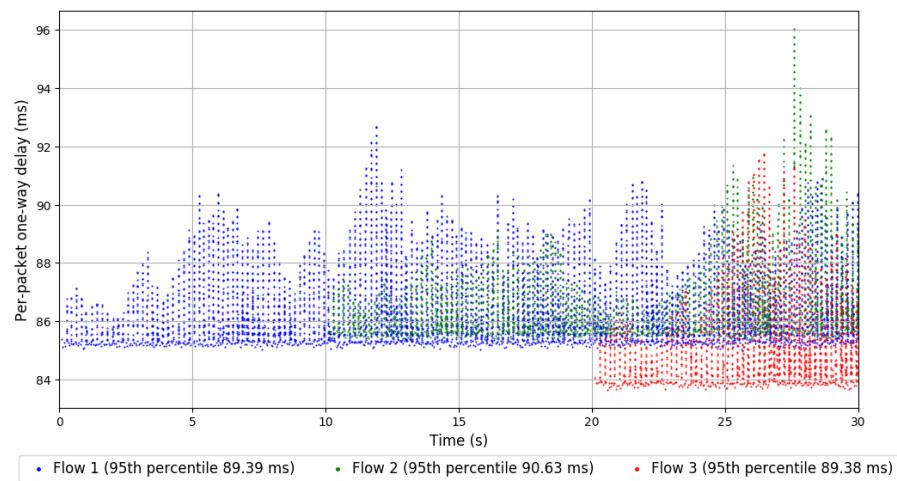
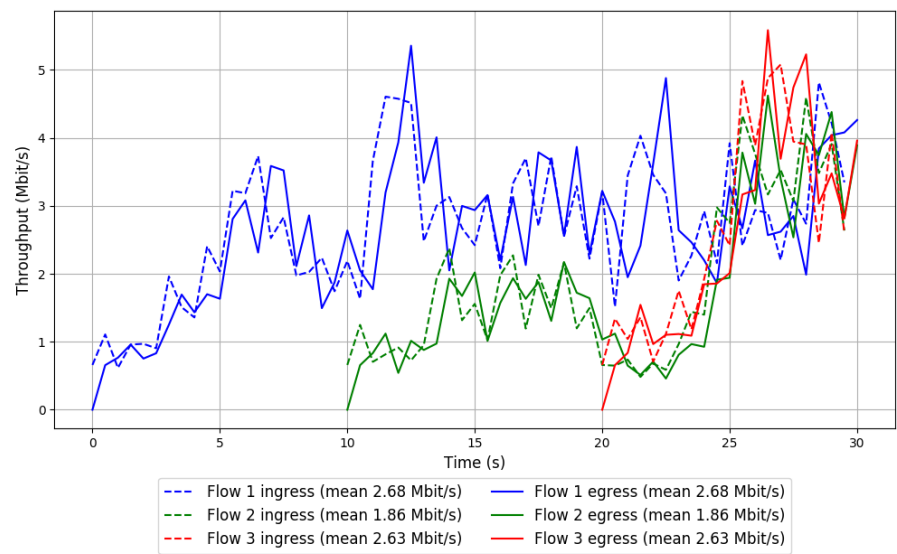


Run 4: Statistics of Sprout

Start at: 2019-02-11 18:58:13
End at: 2019-02-11 18:58:43
Local clock offset: -0.316 ms
Remote clock offset: 8.384 ms

```
# Below is generated by plot.py at 2019-02-11 19:47:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.78 Mbit/s
95th percentile per-packet one-way delay: 89.713 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.68 Mbit/s
95th percentile per-packet one-way delay: 89.395 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.86 Mbit/s
95th percentile per-packet one-way delay: 90.627 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 2.63 Mbit/s
95th percentile per-packet one-way delay: 89.376 ms
Loss rate: 0.00%
```

Run 4: Report of Sprout — Data Link

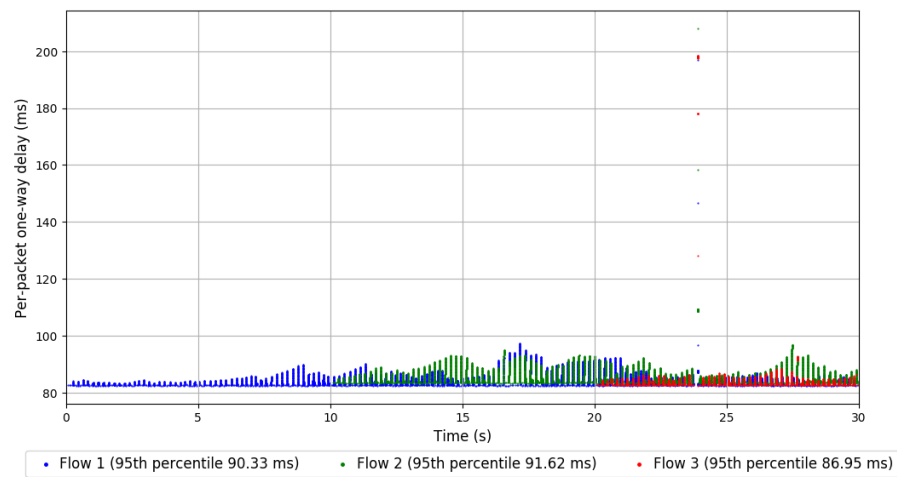
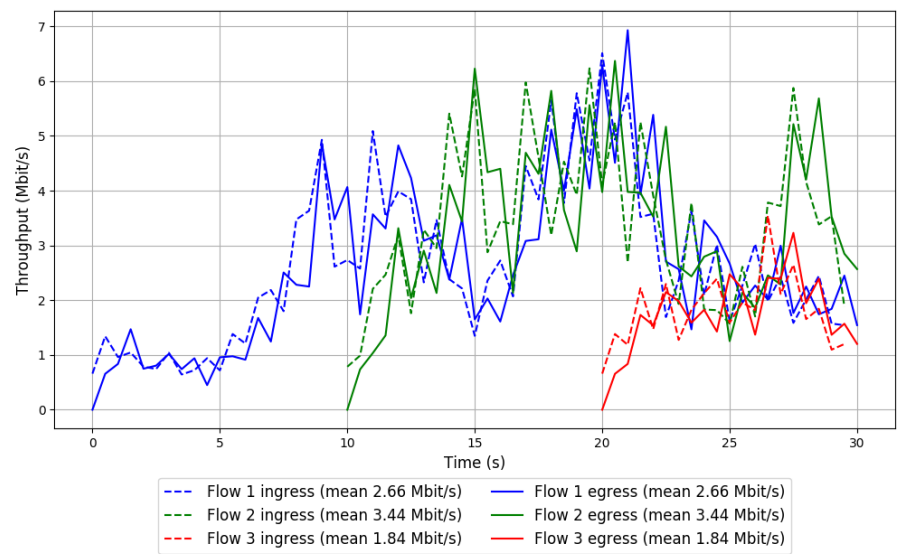


Run 5: Statistics of Sprout

Start at: 2019-02-11 19:26:27
End at: 2019-02-11 19:26:57
Local clock offset: -6.793 ms
Remote clock offset: 3.607 ms

```
# Below is generated by plot.py at 2019-02-11 19:47:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.55 Mbit/s
95th percentile per-packet one-way delay: 90.989 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.66 Mbit/s
95th percentile per-packet one-way delay: 90.329 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 3.44 Mbit/s
95th percentile per-packet one-way delay: 91.616 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 1.84 Mbit/s
95th percentile per-packet one-way delay: 86.955 ms
Loss rate: 0.00%
```

Run 5: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2019-02-11 17:38:51

End at: 2019-02-11 17:39:21

Local clock offset: -4.823 ms

Remote clock offset: 8.181 ms

Below is generated by plot.py at 2019-02-11 19:47:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 8.48 Mbit/s

95th percentile per-packet one-way delay: 91.082 ms

Loss rate: 29.74%

-- Flow 1:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 85.019 ms

Loss rate: 95.92%

-- Flow 2:

Average throughput: 9.77 Mbit/s

95th percentile per-packet one-way delay: 94.879 ms

Loss rate: 33.33%

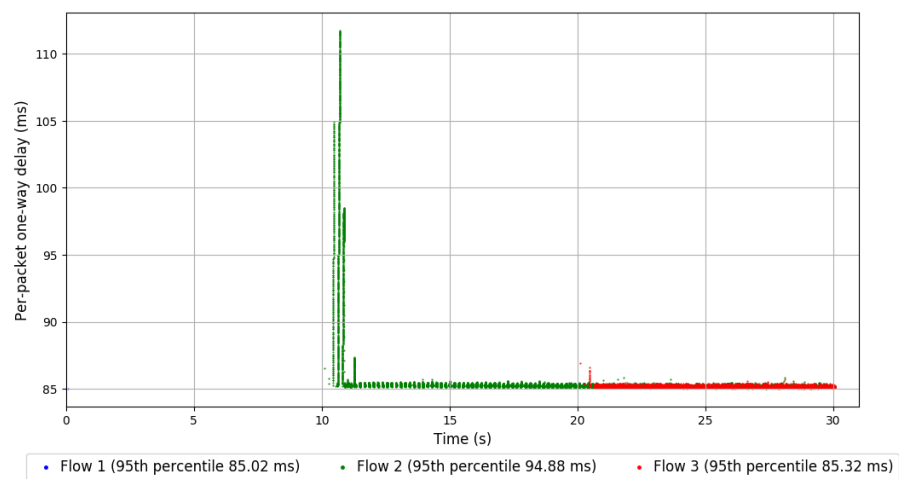
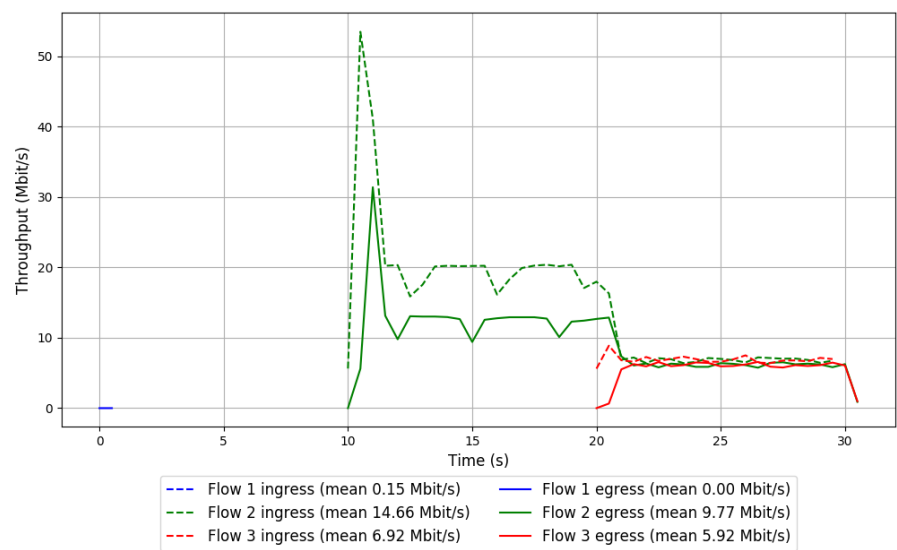
-- Flow 3:

Average throughput: 5.92 Mbit/s

95th percentile per-packet one-way delay: 85.324 ms

Loss rate: 14.47%

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



Run 2: Statistics of TaoVA-100x

Start at: 2019-02-11 18:06:47

End at: 2019-02-11 18:07:17

Local clock offset: -6.476 ms

Remote clock offset: 3.828 ms

Below is generated by plot.py at 2019-02-11 19:47:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 8.48 Mbit/s

95th percentile per-packet one-way delay: 89.140 ms

Loss rate: 29.13%

-- Flow 1:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 81.845 ms

Loss rate: 95.92%

-- Flow 2:

Average throughput: 9.83 Mbit/s

95th percentile per-packet one-way delay: 92.848 ms

Loss rate: 32.41%

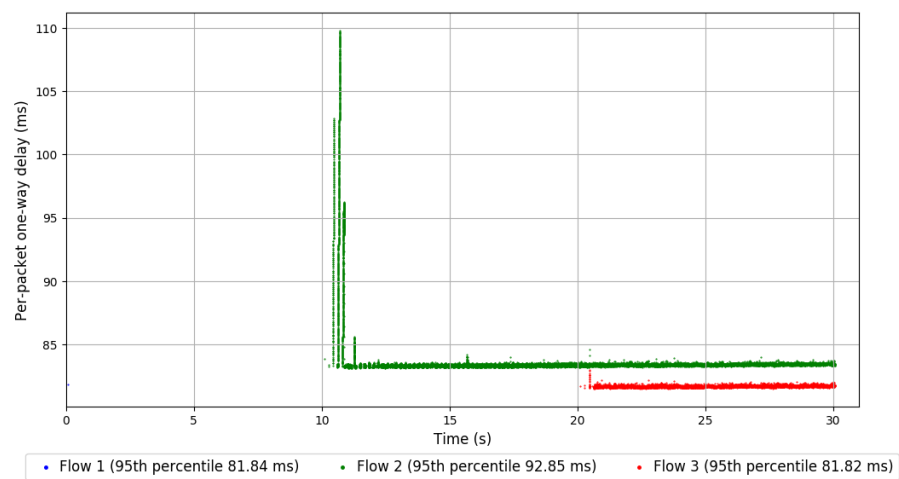
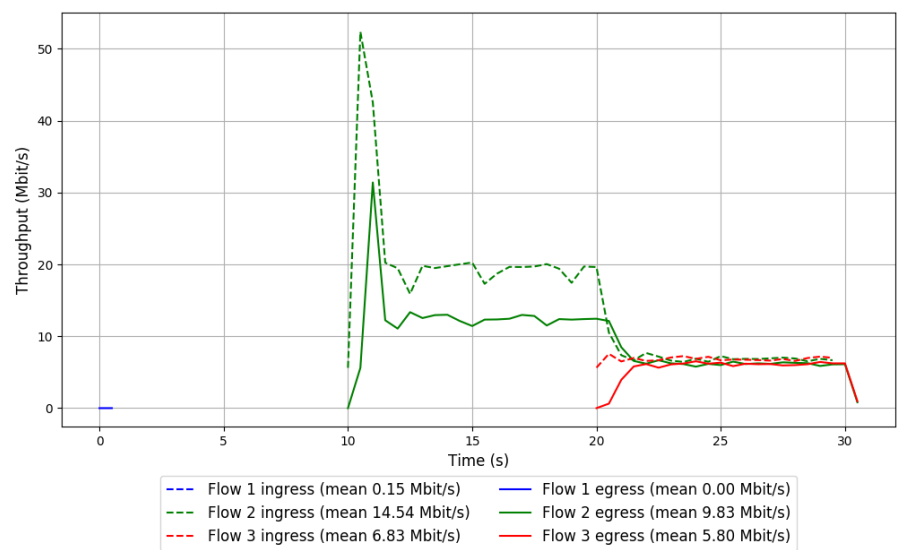
-- Flow 3:

Average throughput: 5.80 Mbit/s

95th percentile per-packet one-way delay: 81.821 ms

Loss rate: 15.10%

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



Run 3: Statistics of TaoVA-100x

Start at: 2019-02-11 18:35:21

End at: 2019-02-11 18:35:51

Local clock offset: -1.326 ms

Remote clock offset: 7.388 ms

Below is generated by plot.py at 2019-02-11 19:47:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 8.48 Mbit/s

95th percentile per-packet one-way delay: 93.136 ms

Loss rate: 88.85%

-- Flow 1:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 84.797 ms

Loss rate: 95.92%

-- Flow 2:

Average throughput: 8.29 Mbit/s

95th percentile per-packet one-way delay: 97.004 ms

Loss rate: 46.27%

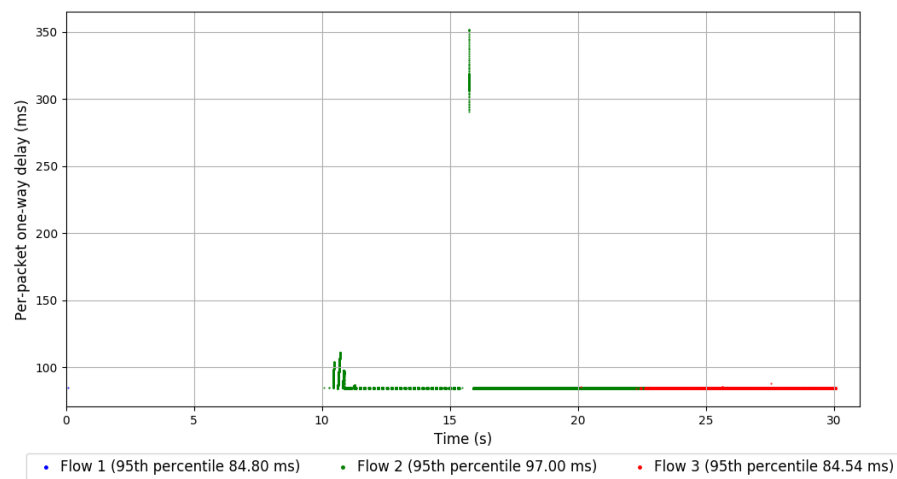
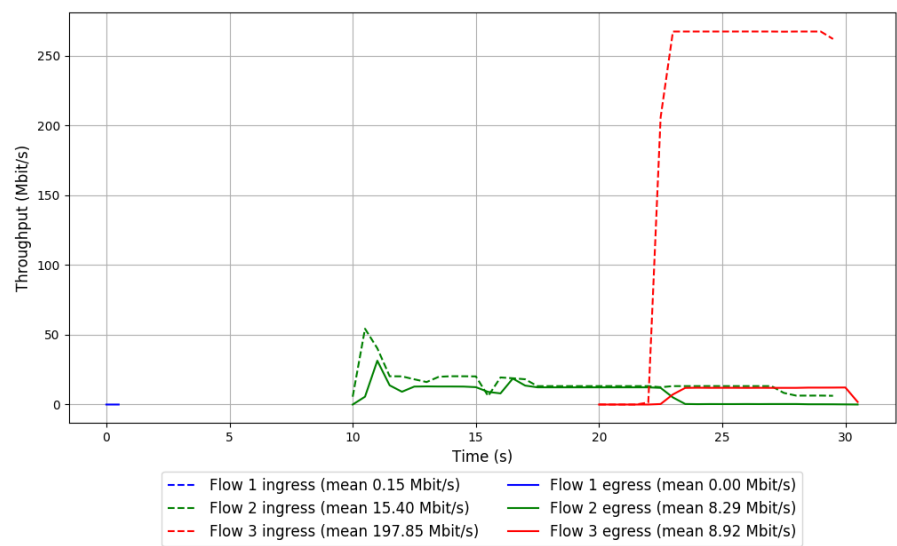
-- Flow 3:

Average throughput: 8.92 Mbit/s

95th percentile per-packet one-way delay: 84.537 ms

Loss rate: 95.49%

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



Run 4: Statistics of TaoVA-100x

Start at: 2019-02-11 19:03:28

End at: 2019-02-11 19:03:58

Local clock offset: -0.13 ms

Remote clock offset: 8.067 ms

Below is generated by plot.py at 2019-02-11 19:47:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 8.48 Mbit/s

95th percentile per-packet one-way delay: 91.320 ms

Loss rate: 29.66%

-- Flow 1:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 87.247 ms

Loss rate: 95.92%

-- Flow 2:

Average throughput: 9.81 Mbit/s

95th percentile per-packet one-way delay: 94.988 ms

Loss rate: 33.06%

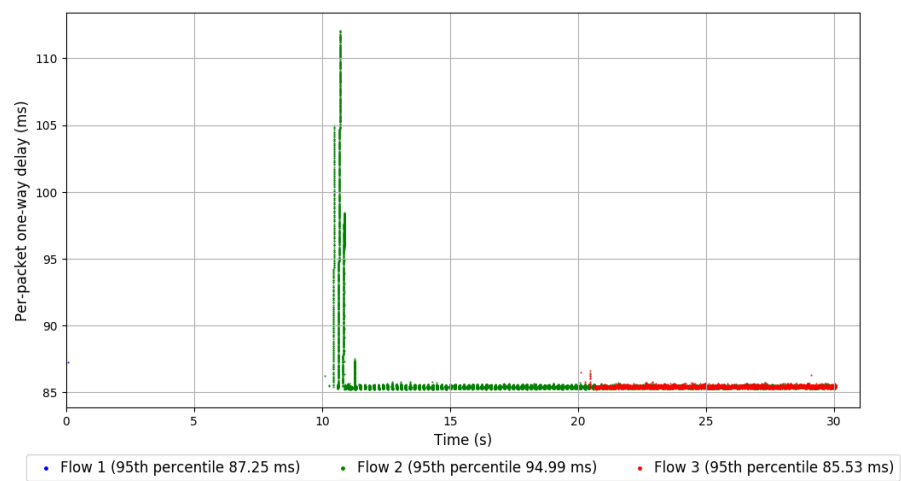
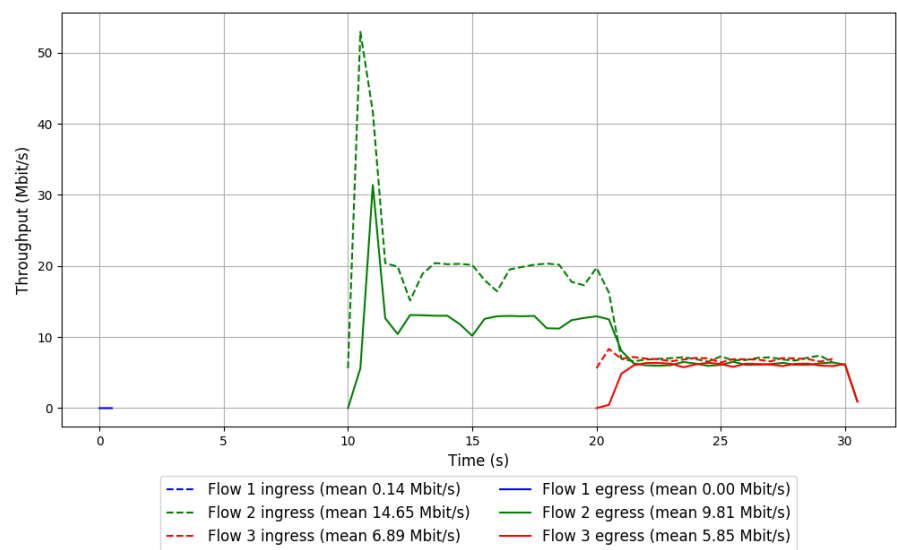
-- Flow 3:

Average throughput: 5.85 Mbit/s

95th percentile per-packet one-way delay: 85.528 ms

Loss rate: 15.15%

Run 4: Report of TaoVA-100x — Data Link



Run 5: Statistics of TaoVA-100x

Start at: 2019-02-11 19:31:30

End at: 2019-02-11 19:32:00

Local clock offset: -7.171 ms

Remote clock offset: 3.762 ms

Below is generated by plot.py at 2019-02-11 19:47:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 8.48 Mbit/s

95th percentile per-packet one-way delay: 88.759 ms

Loss rate: 29.76%

-- Flow 1:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 82.928 ms

Loss rate: 95.92%

-- Flow 2:

Average throughput: 9.74 Mbit/s

95th percentile per-packet one-way delay: 92.584 ms

Loss rate: 33.29%

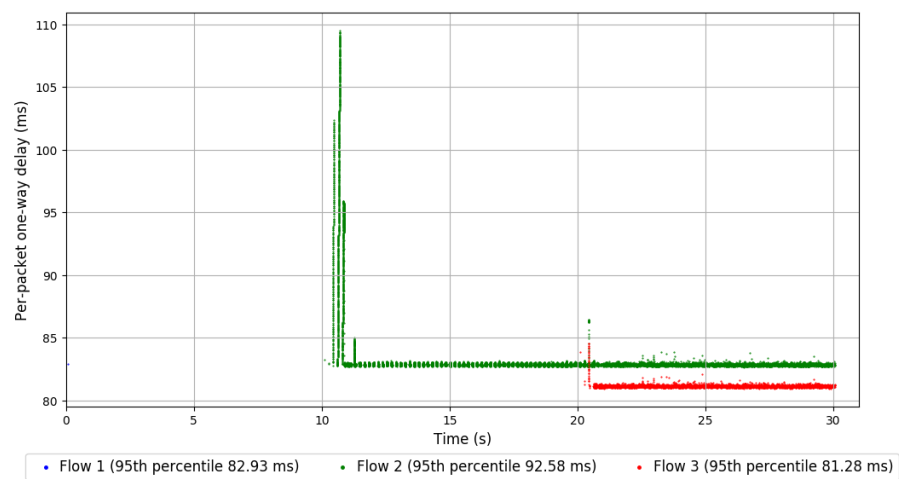
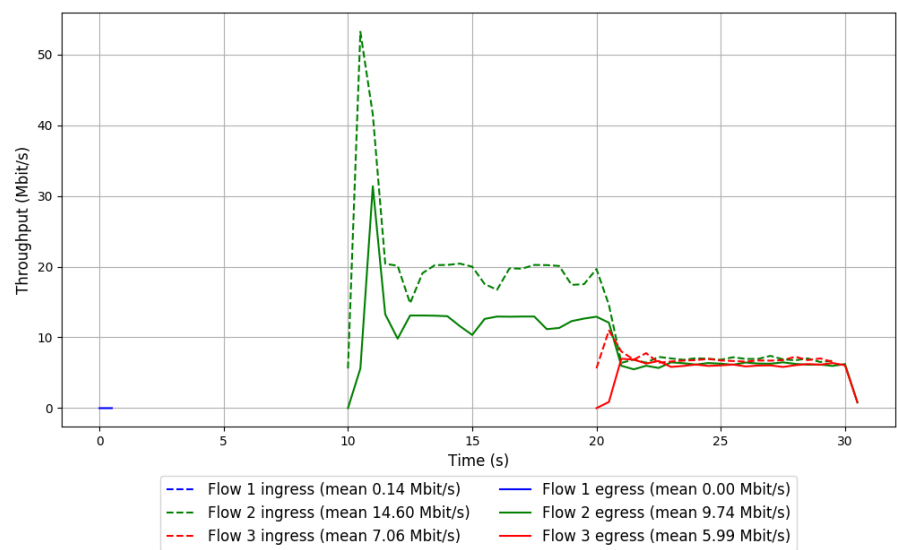
-- Flow 3:

Average throughput: 5.99 Mbit/s

95th percentile per-packet one-way delay: 81.284 ms

Loss rate: 15.13%

Run 5: Report of TaoVA-100x — Data Link



Run 1: Statistics of TCP Vegas

Start at: 2019-02-11 17:21:36

End at: 2019-02-11 17:22:06

Local clock offset: -2.838 ms

Remote clock offset: 5.075 ms

Below is generated by plot.py at 2019-02-11 19:48:11

Datalink statistics

-- Total of 3 flows:

Average throughput: 75.67 Mbit/s

95th percentile per-packet one-way delay: 86.635 ms

Loss rate: 0.89%

-- Flow 1:

Average throughput: 50.29 Mbit/s

95th percentile per-packet one-way delay: 86.152 ms

Loss rate: 0.89%

-- Flow 2:

Average throughput: 18.65 Mbit/s

95th percentile per-packet one-way delay: 89.724 ms

Loss rate: 0.39%

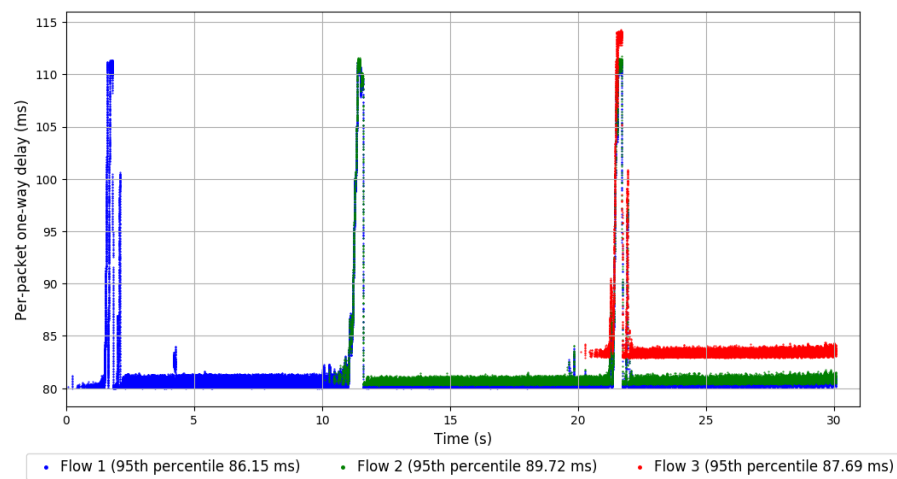
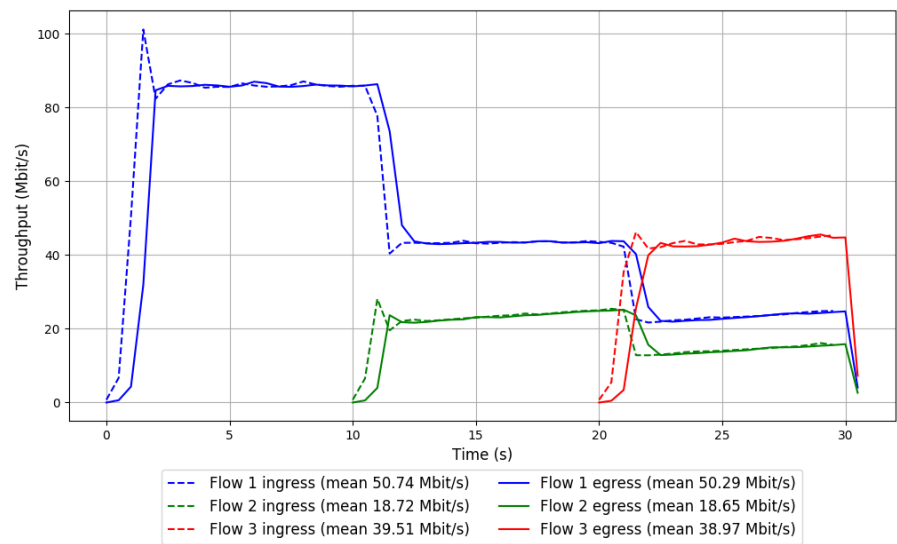
-- Flow 3:

Average throughput: 38.97 Mbit/s

95th percentile per-packet one-way delay: 87.690 ms

Loss rate: 1.37%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2019-02-11 17:49:32

End at: 2019-02-11 17:50:02

Local clock offset: -6.222 ms

Remote clock offset: 4.434 ms

Below is generated by plot.py at 2019-02-11 19:48:11

Datalink statistics

-- Total of 3 flows:

Average throughput: 73.57 Mbit/s

95th percentile per-packet one-way delay: 89.327 ms

Loss rate: 0.86%

-- Flow 1:

Average throughput: 48.37 Mbit/s

95th percentile per-packet one-way delay: 89.532 ms

Loss rate: 0.88%

-- Flow 2:

Average throughput: 18.53 Mbit/s

95th percentile per-packet one-way delay: 91.720 ms

Loss rate: 0.32%

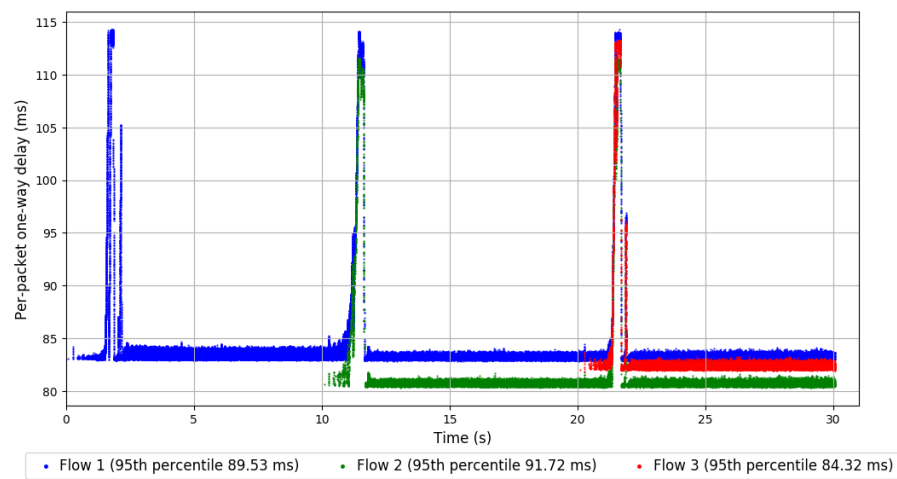
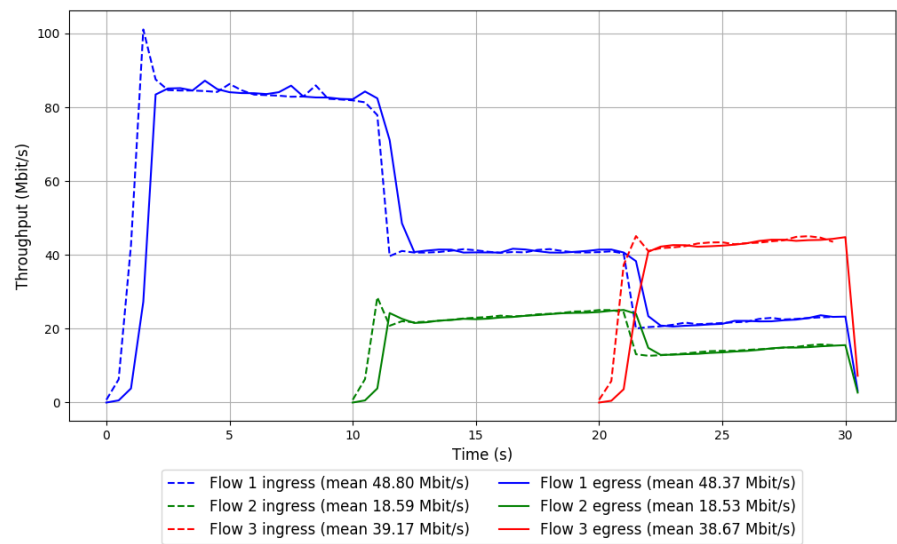
-- Flow 3:

Average throughput: 38.67 Mbit/s

95th percentile per-packet one-way delay: 84.323 ms

Loss rate: 1.27%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2019-02-11 18:17:54

End at: 2019-02-11 18:18:24

Local clock offset: -3.124 ms

Remote clock offset: 3.577 ms

Below is generated by plot.py at 2019-02-11 19:48:11

Datalink statistics

-- Total of 3 flows:

Average throughput: 65.42 Mbit/s

95th percentile per-packet one-way delay: 96.134 ms

Loss rate: 0.37%

-- Flow 1:

Average throughput: 35.68 Mbit/s

95th percentile per-packet one-way delay: 101.973 ms

Loss rate: 0.14%

-- Flow 2:

Average throughput: 33.90 Mbit/s

95th percentile per-packet one-way delay: 88.438 ms

Loss rate: 0.70%

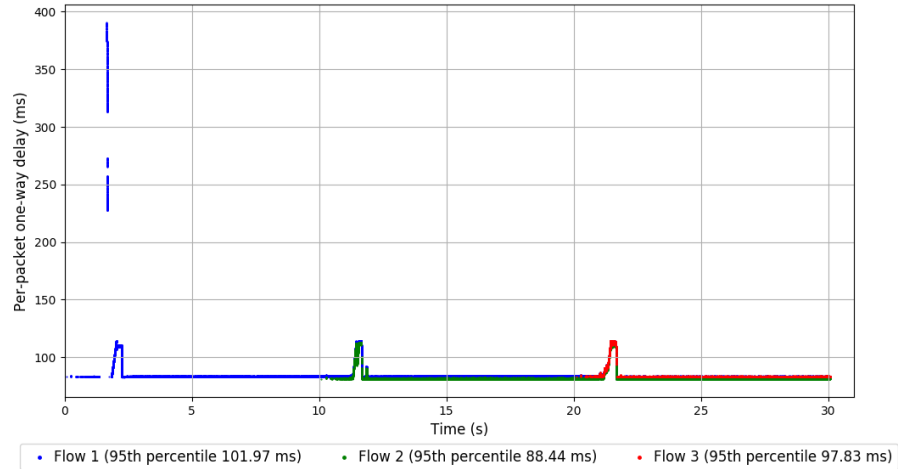
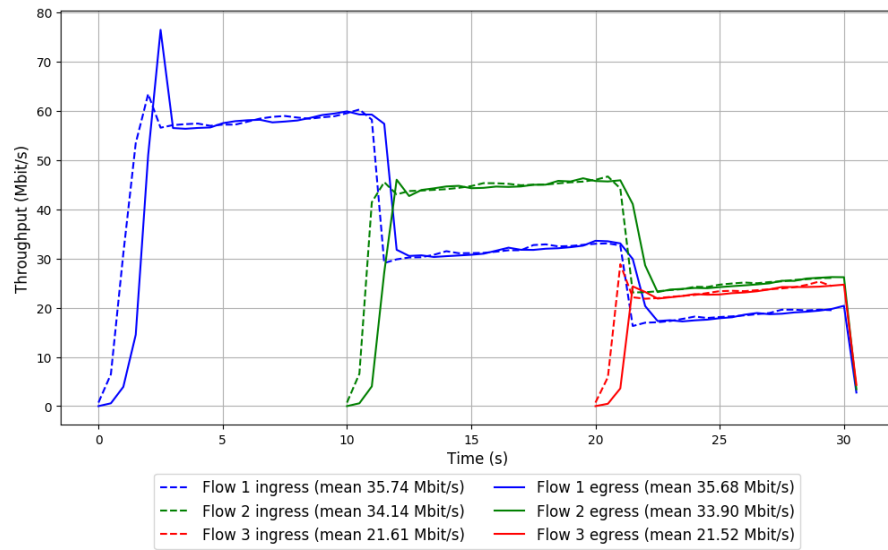
-- Flow 3:

Average throughput: 21.52 Mbit/s

95th percentile per-packet one-way delay: 97.835 ms

Loss rate: 0.43%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2019-02-11 18:46:20

End at: 2019-02-11 18:46:50

Local clock offset: -1.455 ms

Remote clock offset: 7.789 ms

Below is generated by plot.py at 2019-02-11 19:48:11

Datalink statistics

-- Total of 3 flows:

Average throughput: 65.34 Mbit/s

95th percentile per-packet one-way delay: 103.073 ms

Loss rate: 1.47%

-- Flow 1:

Average throughput: 36.39 Mbit/s

95th percentile per-packet one-way delay: 108.070 ms

Loss rate: 1.79%

-- Flow 2:

Average throughput: 18.05 Mbit/s

95th percentile per-packet one-way delay: 91.139 ms

Loss rate: 0.27%

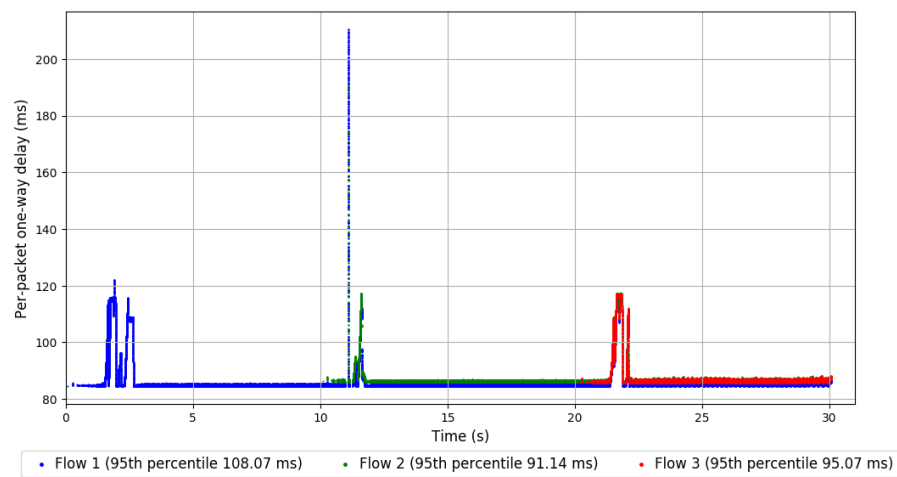
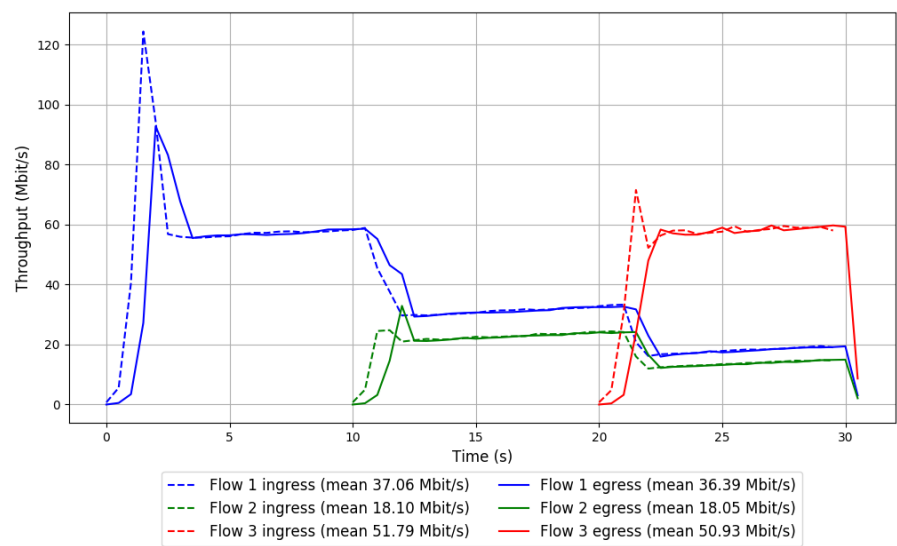
-- Flow 3:

Average throughput: 50.93 Mbit/s

95th percentile per-packet one-way delay: 95.066 ms

Loss rate: 1.63%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2019-02-11 19:14:38

End at: 2019-02-11 19:15:09

Local clock offset: -4.375 ms

Remote clock offset: 7.678 ms

Below is generated by plot.py at 2019-02-11 19:48:24

Datalink statistics

-- Total of 3 flows:

Average throughput: 76.82 Mbit/s

95th percentile per-packet one-way delay: 94.561 ms

Loss rate: 1.00%

-- Flow 1:

Average throughput: 48.33 Mbit/s

95th percentile per-packet one-way delay: 94.052 ms

Loss rate: 1.00%

-- Flow 2:

Average throughput: 26.21 Mbit/s

95th percentile per-packet one-way delay: 96.344 ms

Loss rate: 0.75%

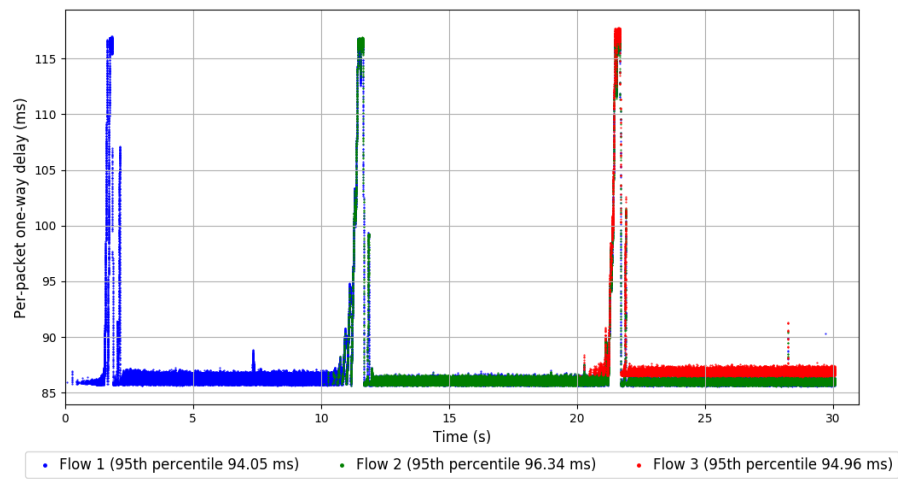
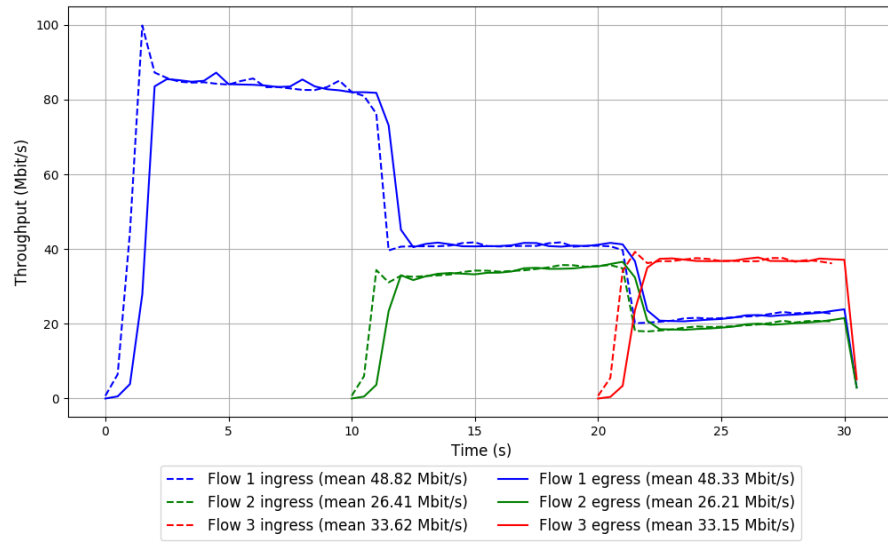
-- Flow 3:

Average throughput: 33.15 Mbit/s

95th percentile per-packet one-way delay: 94.956 ms

Loss rate: 1.37%

Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2019-02-11 17:32:27

End at: 2019-02-11 17:32:57

Local clock offset: -2.068 ms

Remote clock offset: 4.755 ms

Below is generated by plot.py at 2019-02-11 19:48:24

Datalink statistics

-- Total of 3 flows:

Average throughput: 40.15 Mbit/s

95th percentile per-packet one-way delay: 137.293 ms

Loss rate: 58.11%

-- Flow 1:

Average throughput: 20.32 Mbit/s

95th percentile per-packet one-way delay: 111.256 ms

Loss rate: 12.53%

-- Flow 2:

Average throughput: 25.99 Mbit/s

95th percentile per-packet one-way delay: 143.079 ms

Loss rate: 75.17%

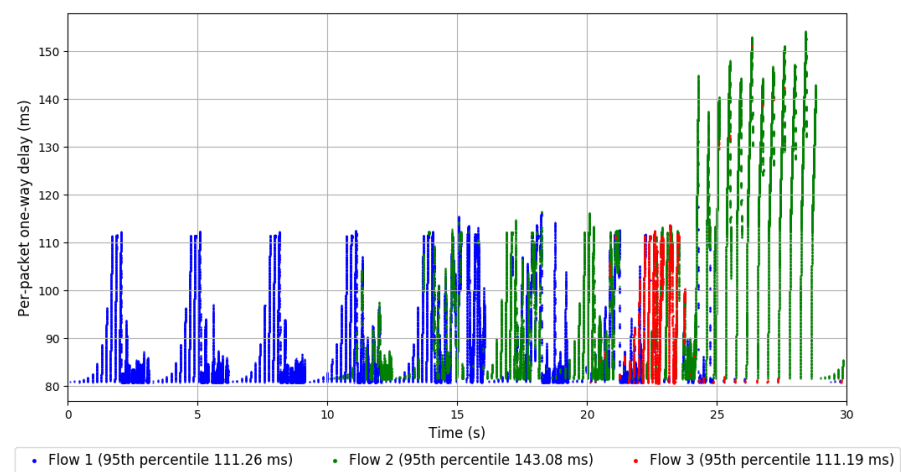
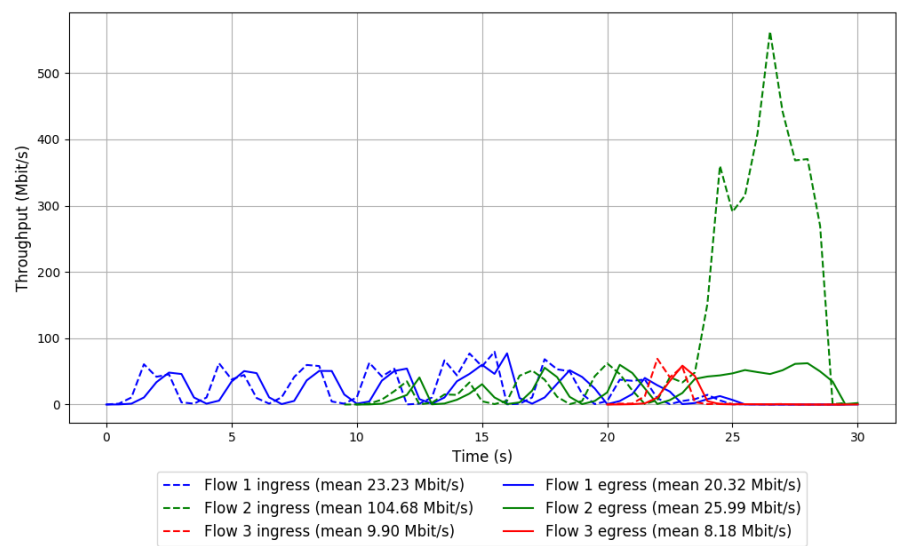
-- Flow 3:

Average throughput: 8.18 Mbit/s

95th percentile per-packet one-way delay: 111.190 ms

Loss rate: 17.40%

Run 1: Report of Verus — Data Link

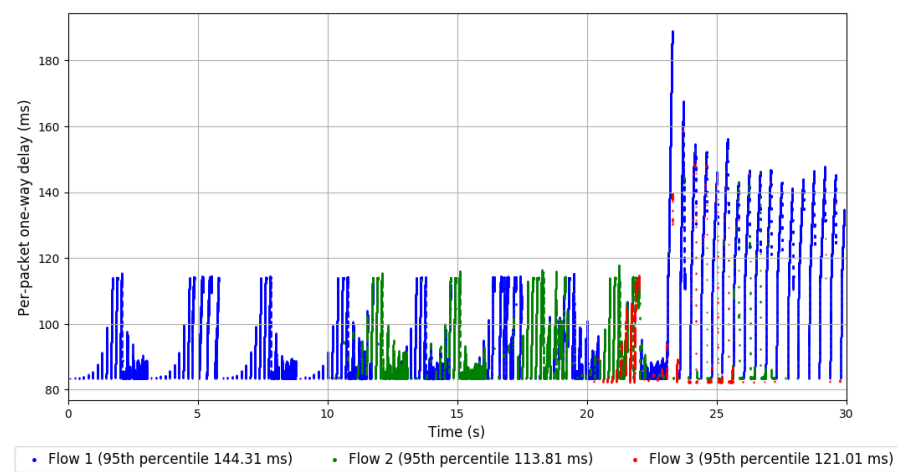
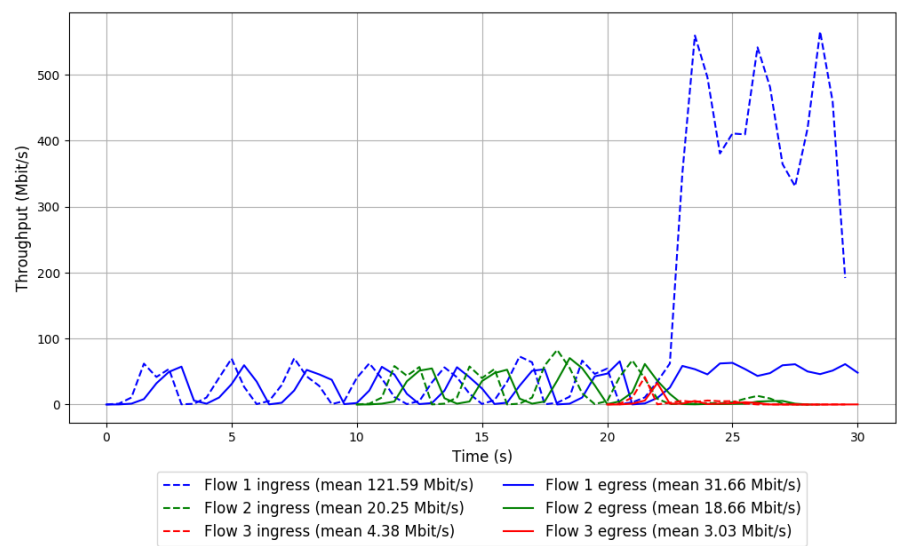


Run 2: Statistics of Verus

Start at: 2019-02-11 18:00:12
End at: 2019-02-11 18:00:42
Local clock offset: -7.672 ms
Remote clock offset: 4.089 ms

Below is generated by plot.py at 2019-02-11 19:48:24
Datalink statistics
-- Total of 3 flows:
Average throughput: 43.76 Mbit/s
95th percentile per-packet one-way delay: 142.043 ms
Loss rate: 67.74%
-- Flow 1:
Average throughput: 31.66 Mbit/s
95th percentile per-packet one-way delay: 144.310 ms
Loss rate: 73.92%
-- Flow 2:
Average throughput: 18.66 Mbit/s
95th percentile per-packet one-way delay: 113.807 ms
Loss rate: 13.57%
-- Flow 3:
Average throughput: 3.03 Mbit/s
95th percentile per-packet one-way delay: 121.008 ms
Loss rate: 30.86%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2019-02-11 18:28:37

End at: 2019-02-11 18:29:07

Local clock offset: -0.971 ms

Remote clock offset: 3.429 ms

Below is generated by plot.py at 2019-02-11 19:48:32

Datalink statistics

-- Total of 3 flows:

Average throughput: 44.42 Mbit/s

95th percentile per-packet one-way delay: 162.942 ms

Loss rate: 73.97%

-- Flow 1:

Average throughput: 22.02 Mbit/s

95th percentile per-packet one-way delay: 112.791 ms

Loss rate: 32.41%

-- Flow 2:

Average throughput: 33.07 Mbit/s

95th percentile per-packet one-way delay: 168.217 ms

Loss rate: 84.01%

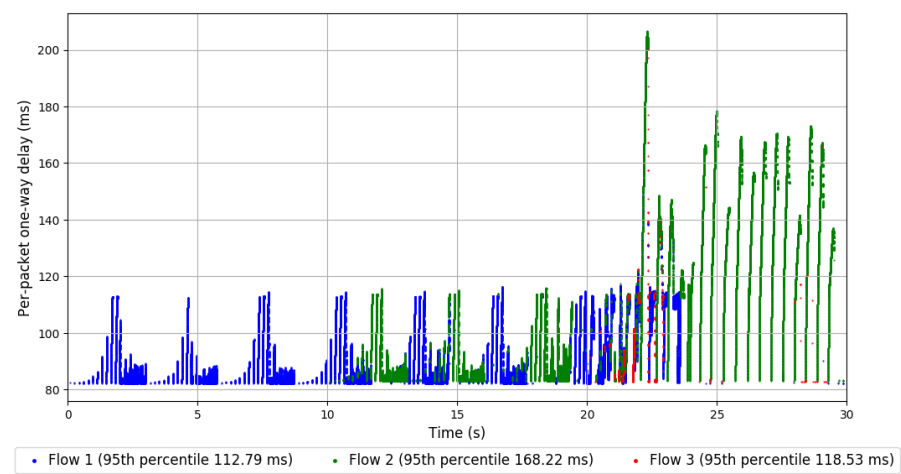
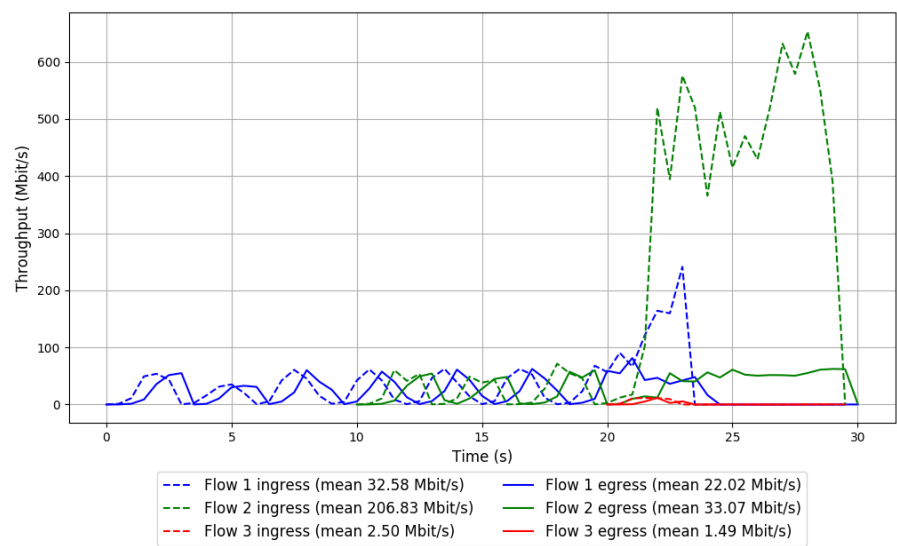
-- Flow 3:

Average throughput: 1.49 Mbit/s

95th percentile per-packet one-way delay: 118.529 ms

Loss rate: 41.59%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2019-02-11 18:56:57

End at: 2019-02-11 18:57:27

Local clock offset: -1.103 ms

Remote clock offset: 8.602 ms

Below is generated by plot.py at 2019-02-11 19:48:37

Datalink statistics

-- Total of 3 flows:

Average throughput: 39.42 Mbit/s

95th percentile per-packet one-way delay: 115.350 ms

Loss rate: 10.77%

-- Flow 1:

Average throughput: 24.17 Mbit/s

95th percentile per-packet one-way delay: 115.230 ms

Loss rate: 12.22%

-- Flow 2:

Average throughput: 17.65 Mbit/s

95th percentile per-packet one-way delay: 118.907 ms

Loss rate: 8.23%

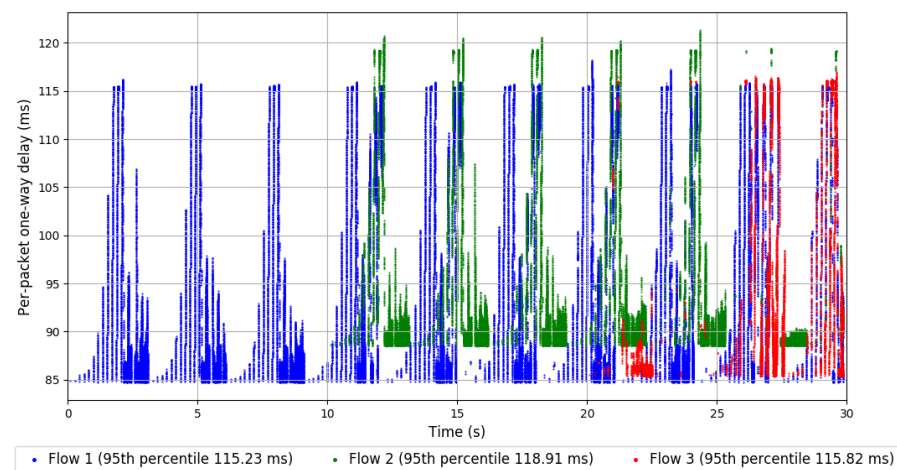
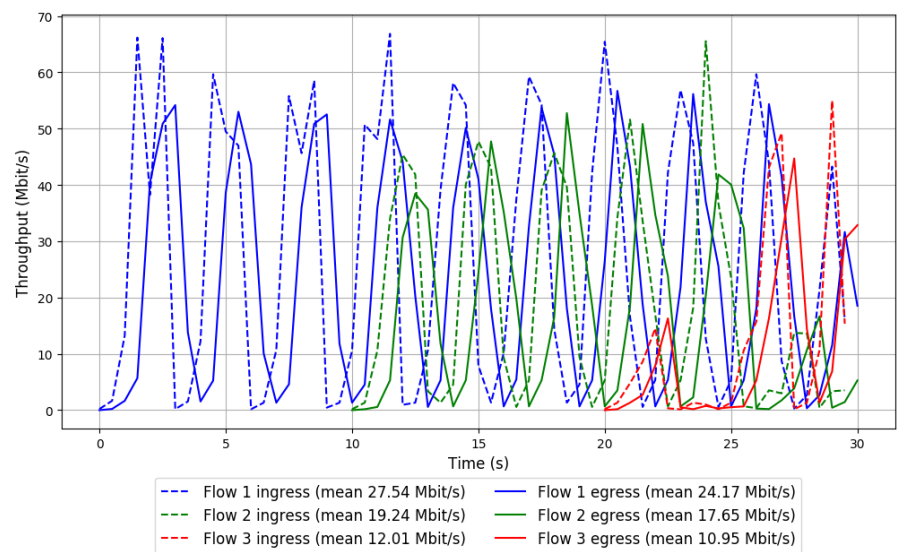
-- Flow 3:

Average throughput: 10.95 Mbit/s

95th percentile per-packet one-way delay: 115.817 ms

Loss rate: 8.79%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2019-02-11 19:25:08

End at: 2019-02-11 19:25:38

Local clock offset: -5.958 ms

Remote clock offset: 3.738 ms

Below is generated by plot.py at 2019-02-11 19:49:09

Datalink statistics

-- Total of 3 flows:

Average throughput: 43.53 Mbit/s

95th percentile per-packet one-way delay: 142.496 ms

Loss rate: 80.04%

-- Flow 1:

Average throughput: 16.33 Mbit/s

95th percentile per-packet one-way delay: 110.861 ms

Loss rate: 10.17%

-- Flow 2:

Average throughput: 41.39 Mbit/s

95th percentile per-packet one-way delay: 164.980 ms

Loss rate: 86.30%

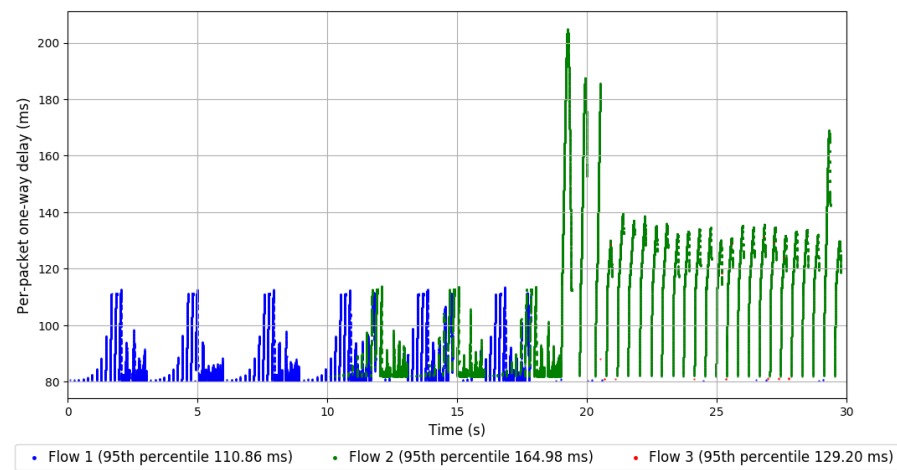
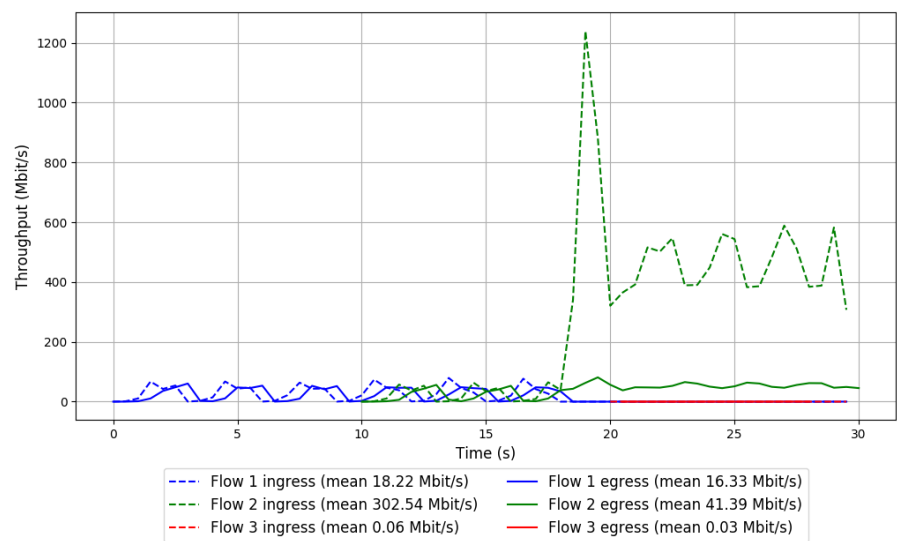
-- Flow 3:

Average throughput: 0.03 Mbit/s

95th percentile per-packet one-way delay: 129.204 ms

Loss rate: 59.18%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2019-02-11 17:31:05

End at: 2019-02-11 17:31:35

Local clock offset: -2.824 ms

Remote clock offset: 8.536 ms

Below is generated by plot.py at 2019-02-11 19:49:09

Datalink statistics

-- Total of 3 flows:

Average throughput: 77.57 Mbit/s

95th percentile per-packet one-way delay: 116.367 ms

Loss rate: 0.48%

-- Flow 1:

Average throughput: 62.73 Mbit/s

95th percentile per-packet one-way delay: 116.350 ms

Loss rate: 0.43%

-- Flow 2:

Average throughput: 15.93 Mbit/s

95th percentile per-packet one-way delay: 116.696 ms

Loss rate: 0.74%

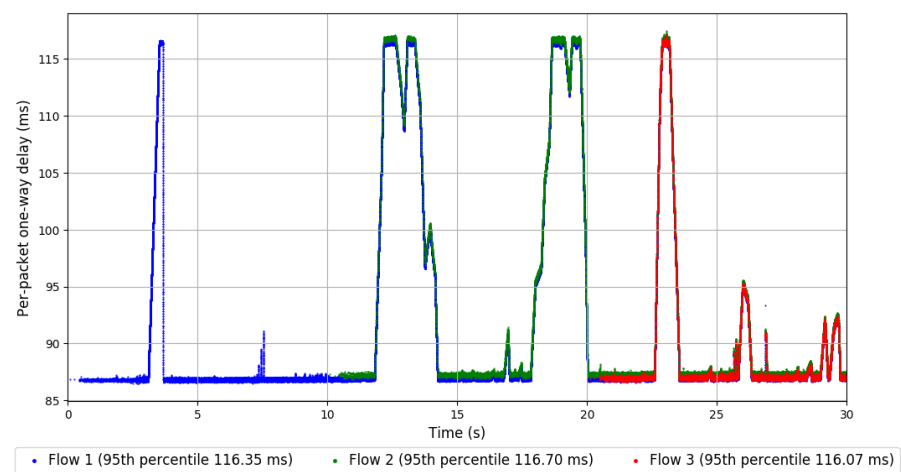
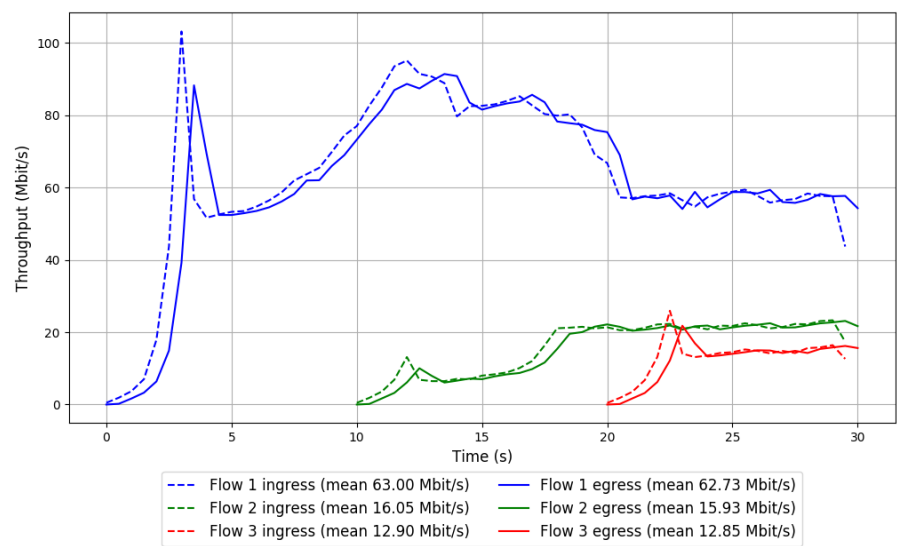
-- Flow 3:

Average throughput: 12.85 Mbit/s

95th percentile per-packet one-way delay: 116.073 ms

Loss rate: 0.42%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2019-02-11 17:58:46

End at: 2019-02-11 17:59:16

Local clock offset: -6.852 ms

Remote clock offset: 7.943 ms

Below is generated by plot.py at 2019-02-11 19:49:09

Datalink statistics

-- Total of 3 flows:

Average throughput: 78.12 Mbit/s

95th percentile per-packet one-way delay: 109.784 ms

Loss rate: 0.21%

-- Flow 1:

Average throughput: 68.24 Mbit/s

95th percentile per-packet one-way delay: 110.846 ms

Loss rate: 0.22%

-- Flow 2:

Average throughput: 12.11 Mbit/s

95th percentile per-packet one-way delay: 103.318 ms

Loss rate: 0.25%

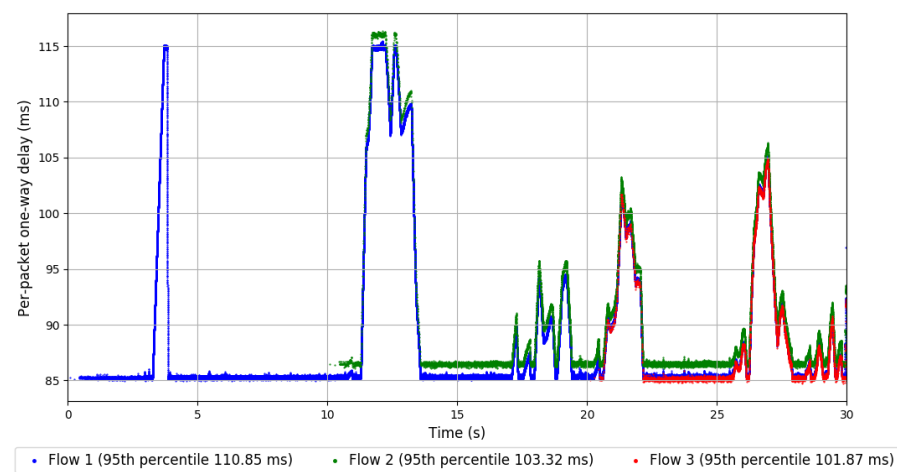
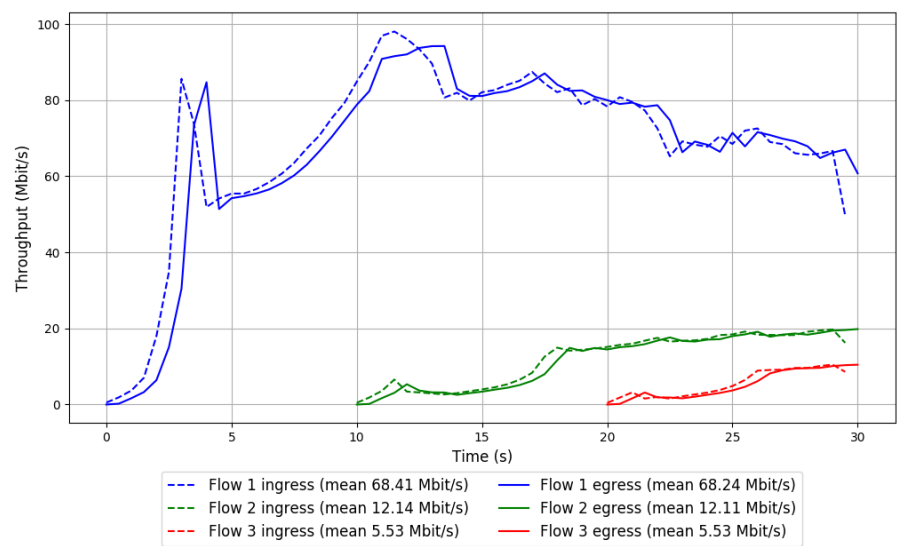
-- Flow 3:

Average throughput: 5.53 Mbit/s

95th percentile per-packet one-way delay: 101.872 ms

Loss rate: 0.00%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2019-02-11 18:27:04

End at: 2019-02-11 18:27:34

Local clock offset: -1.883 ms

Remote clock offset: 2.974 ms

Below is generated by plot.py at 2019-02-11 19:49:09

Datalink statistics

-- Total of 3 flows:

Average throughput: 76.23 Mbit/s

95th percentile per-packet one-way delay: 111.968 ms

Loss rate: 0.24%

-- Flow 1:

Average throughput: 67.26 Mbit/s

95th percentile per-packet one-way delay: 111.121 ms

Loss rate: 0.18%

-- Flow 2:

Average throughput: 11.02 Mbit/s

95th percentile per-packet one-way delay: 113.261 ms

Loss rate: 0.45%

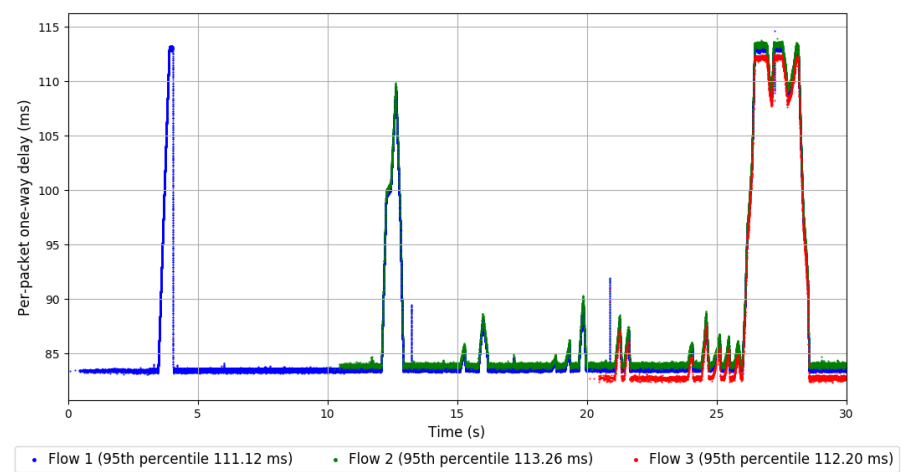
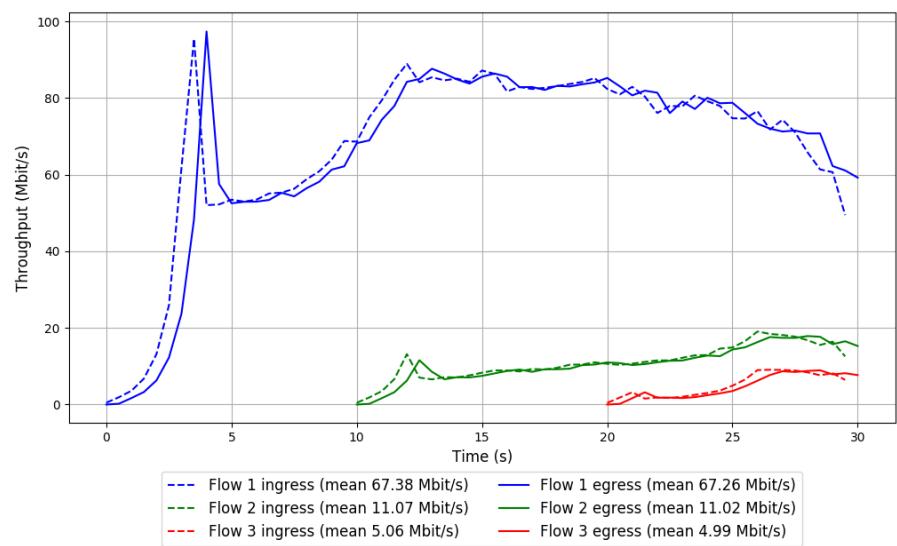
-- Flow 3:

Average throughput: 4.99 Mbit/s

95th percentile per-packet one-way delay: 112.199 ms

Loss rate: 1.41%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2019-02-11 18:55:37

End at: 2019-02-11 18:56:07

Local clock offset: -0.398 ms

Remote clock offset: 4.486 ms

Below is generated by plot.py at 2019-02-11 19:49:10

Datalink statistics

-- Total of 3 flows:

Average throughput: 78.29 Mbit/s

95th percentile per-packet one-way delay: 107.376 ms

Loss rate: 0.13%

-- Flow 1:

Average throughput: 68.00 Mbit/s

95th percentile per-packet one-way delay: 103.607 ms

Loss rate: 0.11%

-- Flow 2:

Average throughput: 12.46 Mbit/s

95th percentile per-packet one-way delay: 110.620 ms

Loss rate: 0.26%

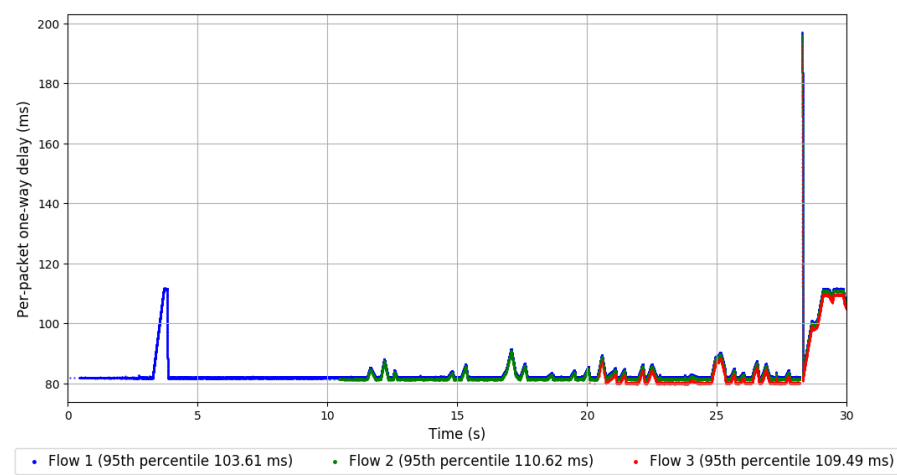
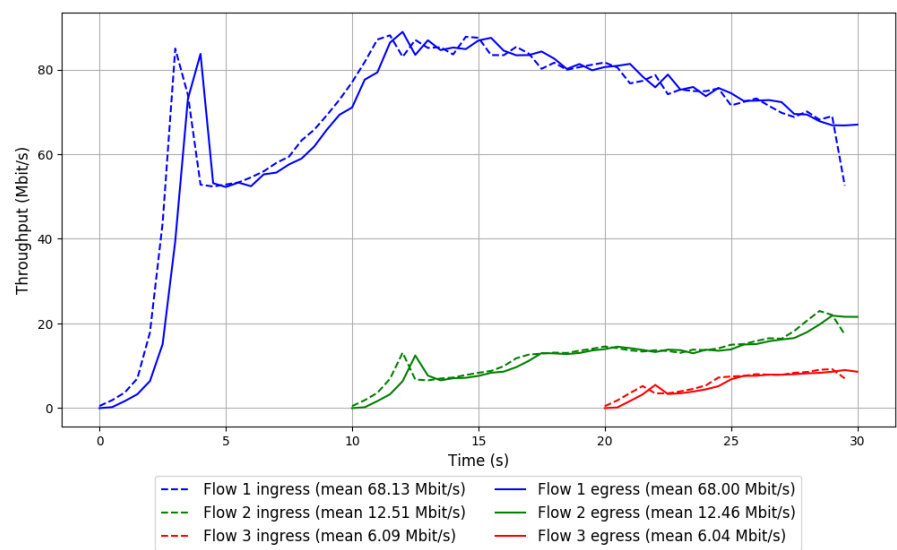
-- Flow 3:

Average throughput: 6.04 Mbit/s

95th percentile per-packet one-way delay: 109.491 ms

Loss rate: 0.54%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2019-02-11 19:23:38

End at: 2019-02-11 19:24:08

Local clock offset: -5.743 ms

Remote clock offset: 3.828 ms

Below is generated by plot.py at 2019-02-11 19:49:10

Datalink statistics

-- Total of 3 flows:

Average throughput: 77.09 Mbit/s

95th percentile per-packet one-way delay: 106.768 ms

Loss rate: 0.10%

-- Flow 1:

Average throughput: 66.53 Mbit/s

95th percentile per-packet one-way delay: 106.370 ms

Loss rate: 0.10%

-- Flow 2:

Average throughput: 13.61 Mbit/s

95th percentile per-packet one-way delay: 109.028 ms

Loss rate: 0.10%

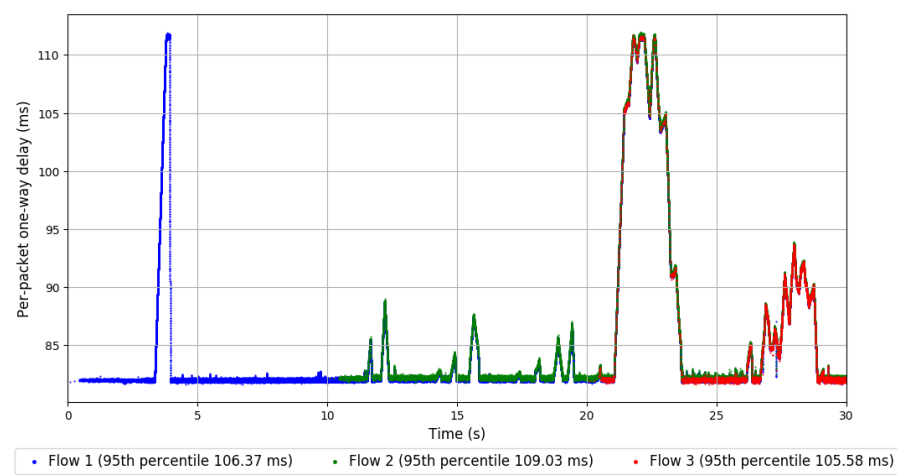
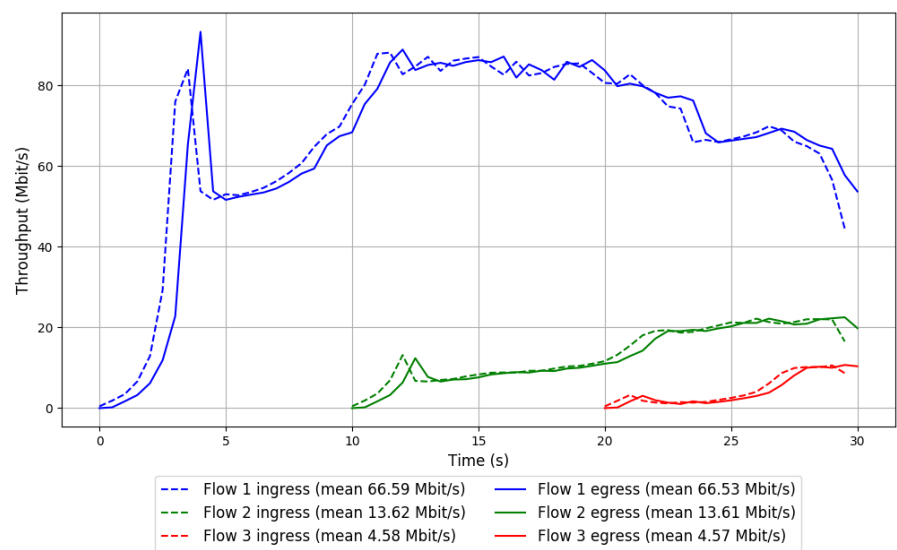
-- Flow 3:

Average throughput: 4.57 Mbit/s

95th percentile per-packet one-way delay: 105.575 ms

Loss rate: 0.31%

Run 5: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2019-02-11 17:25:45

End at: 2019-02-11 17:26:15

Local clock offset: -3.283 ms

Remote clock offset: 8.872 ms

Below is generated by plot.py at 2019-02-11 19:49:10

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.13 Mbit/s

95th percentile per-packet one-way delay: 87.866 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.04 Mbit/s

95th percentile per-packet one-way delay: 85.830 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.04 Mbit/s

95th percentile per-packet one-way delay: 87.988 ms

Loss rate: 0.00%

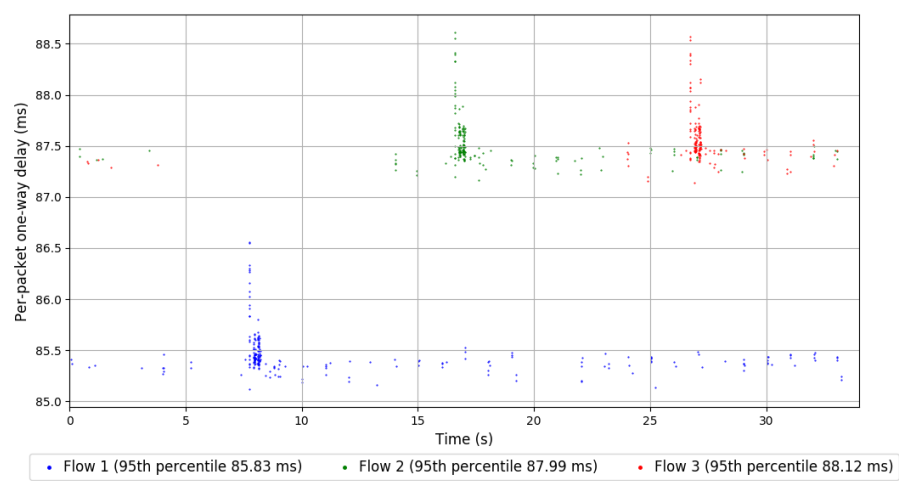
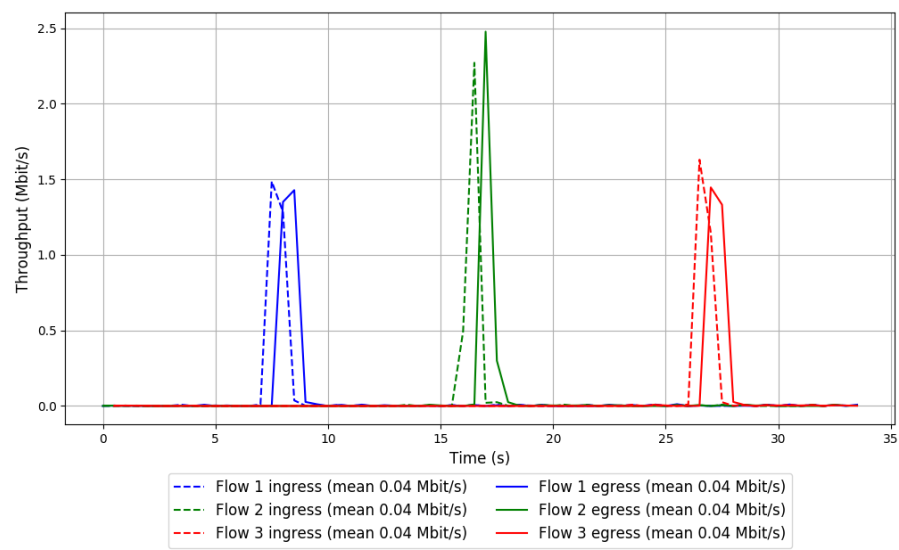
-- Flow 3:

Average throughput: 0.04 Mbit/s

95th percentile per-packet one-way delay: 88.117 ms

Loss rate: 0.00%

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2019-02-11 17:53:31

End at: 2019-02-11 17:54:01

Local clock offset: -6.489 ms

Remote clock offset: 4.111 ms

Below is generated by plot.py at 2019-02-11 19:49:10

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.13 Mbit/s

95th percentile per-packet one-way delay: 82.731 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 83.700 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.04 Mbit/s

95th percentile per-packet one-way delay: 80.748 ms

Loss rate: 0.00%

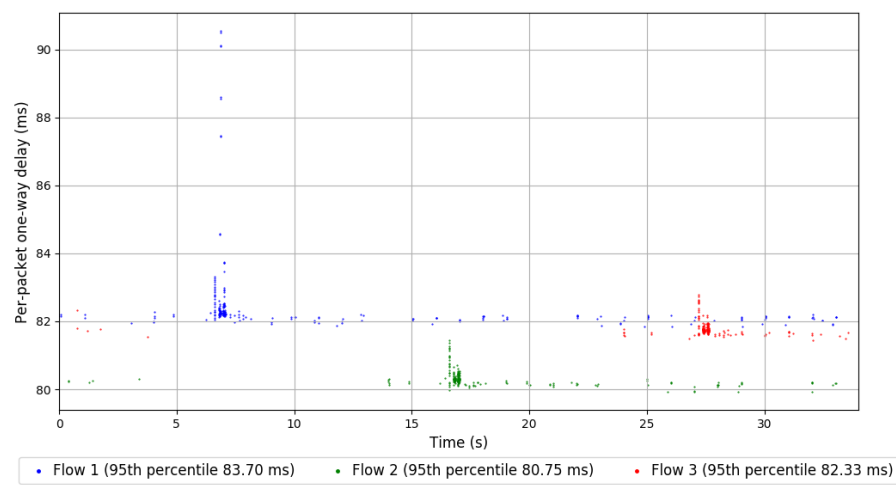
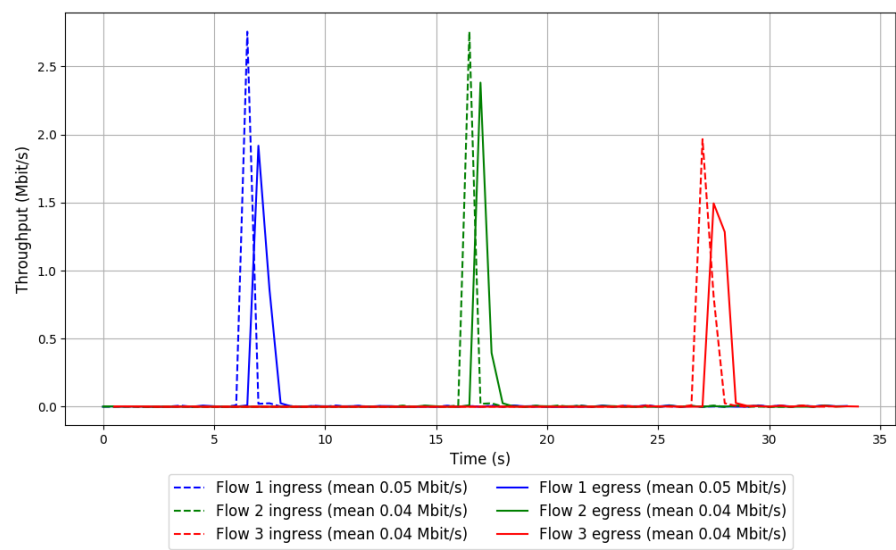
-- Flow 3:

Average throughput: 0.04 Mbit/s

95th percentile per-packet one-way delay: 82.331 ms

Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2019-02-11 18:21:51

End at: 2019-02-11 18:22:21

Local clock offset: -1.784 ms

Remote clock offset: 6.823 ms

Below is generated by plot.py at 2019-02-11 19:49:10

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.13 Mbit/s

95th percentile per-packet one-way delay: 86.811 ms

Loss rate: 0.02%

-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 87.161 ms

Loss rate: 0.05%

-- Flow 2:

Average throughput: 0.04 Mbit/s

95th percentile per-packet one-way delay: 84.428 ms

Loss rate: 0.00%

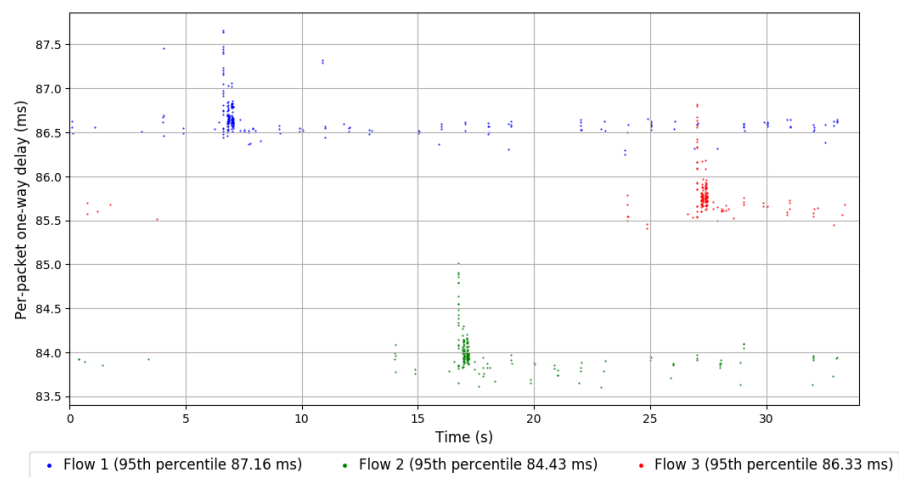
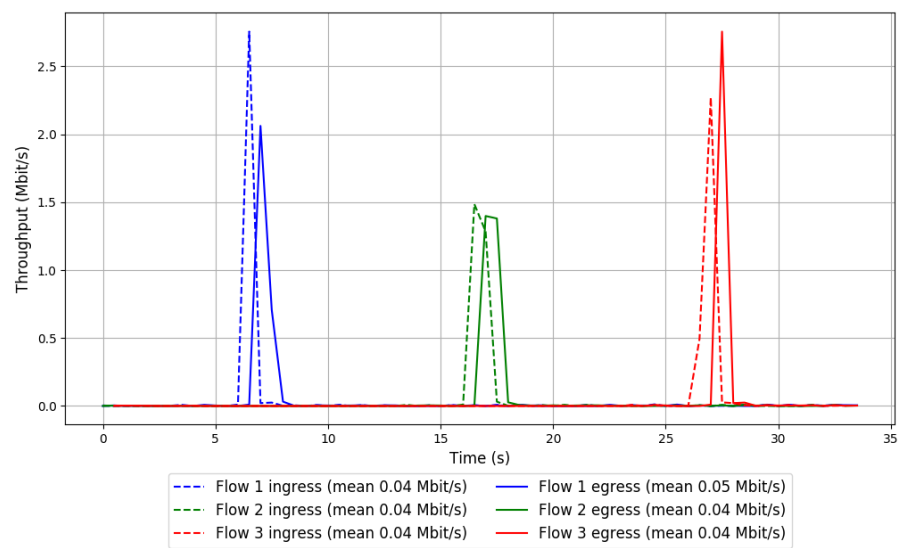
-- Flow 3:

Average throughput: 0.04 Mbit/s

95th percentile per-packet one-way delay: 86.331 ms

Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2019-02-11 18:50:18

End at: 2019-02-11 18:50:48

Local clock offset: -0.539 ms

Remote clock offset: 4.385 ms

Below is generated by plot.py at 2019-02-11 19:49:10

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.13 Mbit/s

95th percentile per-packet one-way delay: 83.246 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 81.038 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.04 Mbit/s

95th percentile per-packet one-way delay: 80.656 ms

Loss rate: 0.00%

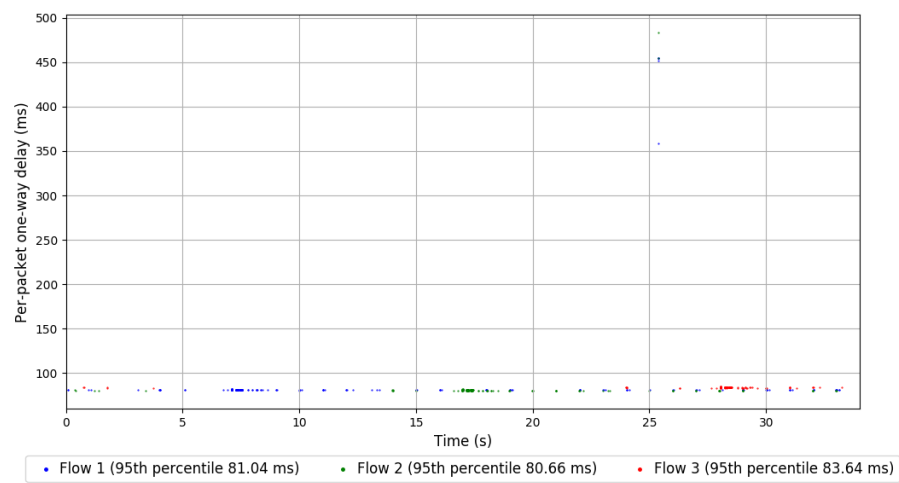
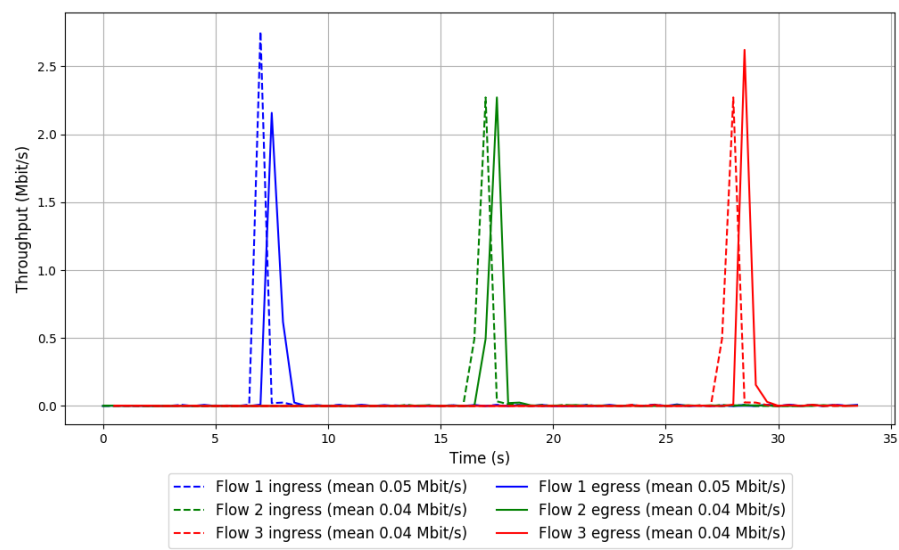
-- Flow 3:

Average throughput: 0.04 Mbit/s

95th percentile per-packet one-way delay: 83.640 ms

Loss rate: 0.00%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2019-02-11 19:18:29

End at: 2019-02-11 19:18:59

Local clock offset: -5.113 ms

Remote clock offset: 7.814 ms

Below is generated by plot.py at 2019-02-11 19:49:10

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.13 Mbit/s

95th percentile per-packet one-way delay: 86.235 ms

Loss rate: 0.02%

-- Flow 1:

Average throughput: 0.04 Mbit/s

95th percentile per-packet one-way delay: 85.059 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.04 Mbit/s

95th percentile per-packet one-way delay: 86.687 ms

Loss rate: 0.05%

-- Flow 3:

Average throughput: 0.04 Mbit/s

95th percentile per-packet one-way delay: 85.693 ms

Loss rate: 0.00%

Run 5: Report of WebRTC media — Data Link

