

Pantheon Report

Generated at 2019-03-09 15:26:44 (UTC).

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

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:

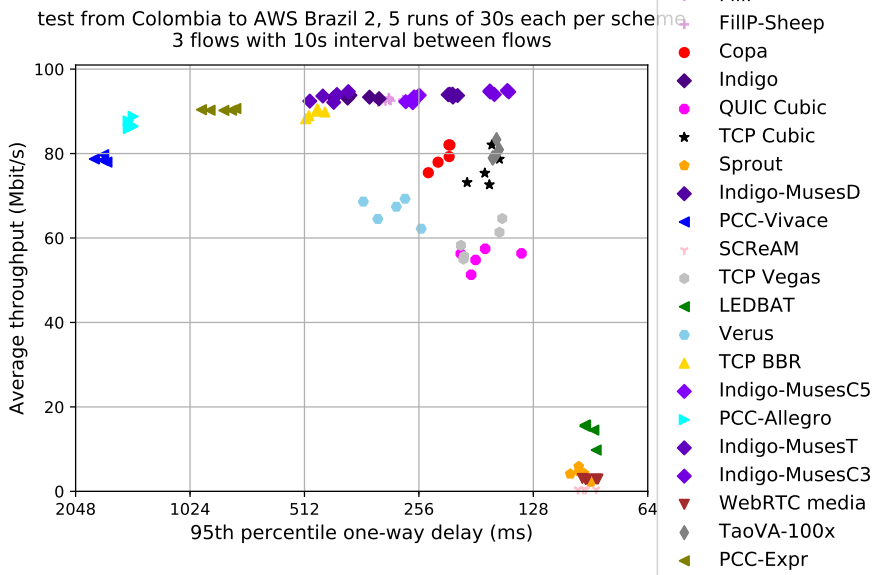
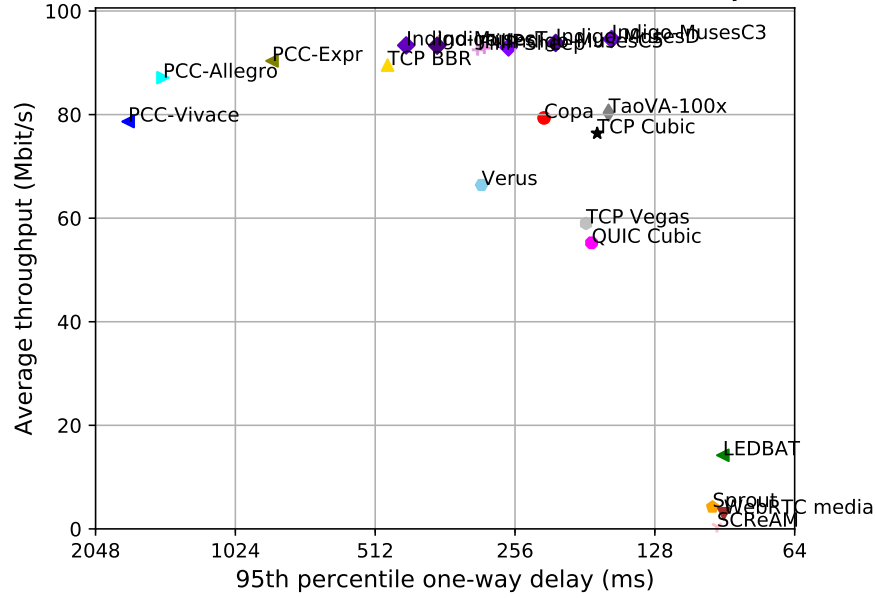
```
Linux 4.15.0-1031-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

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

test from Colombia to AWS Brazil 2, 5 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)



scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	54.81	37.79	29.63	444.51	533.22	556.91	2.57	5.06	7.72
Copa	5	47.77	32.53	30.36	213.65	137.28	235.07	0.57	0.81	2.23
TCP Cubic	5	43.26	35.38	29.39	182.28	167.57	147.98	0.49	0.87	2.17
FillP	5	57.31	38.97	29.43	329.10	248.01	292.55	1.81	3.06	3.90
FillP-Sheep	5	56.58	39.12	30.34	328.91	253.71	344.52	0.92	2.25	4.61
Indigo	5	58.31	38.71	28.81	401.24	181.51	151.97	7.18	2.06	3.51
Indigo-MusesC3	5	60.35	40.21	29.38	140.16	182.57	194.24	2.78	2.81	3.73
Indigo-MusesC5	5	59.14	39.90	28.54	250.27	278.08	333.96	3.47	5.10	5.77
Indigo-MusesD	5	60.77	38.08	29.30	213.63	167.57	164.11	6.14	4.59	4.94
Indigo-MusesT	5	58.85	39.70	31.47	401.76	418.34	503.66	6.07	5.20	10.00
LEDBAT	5	8.78	6.72	3.04	90.73	90.75	91.59	1.11	1.71	3.85
PCC-Allegro	5	55.05	33.99	29.35	1526.09	1014.83	1508.81	23.44	11.36	22.84
PCC-Expr	5	56.32	38.73	25.61	816.94	881.46	253.55	28.58	11.16	4.02
QUIC Cubic	5	35.23	22.33	15.95	127.51	196.98	296.32	0.58	1.50	4.29
SCReAM	5	0.22	0.22	0.22	92.81	91.67	91.53	0.64	1.03	1.76
Sprout	5	2.17	2.43	1.39	94.87	94.50	91.31	0.89	0.87	3.10
TaoVA-100x	5	46.13	38.56	26.33	154.32	165.13	156.81	0.48	1.01	2.27
TCP Vegas	5	32.65	30.42	18.67	187.64	124.17	243.38	0.57	1.02	2.00
Verus	5	38.81	30.71	22.29	305.86	286.65	276.14	1.03	1.31	2.85
PCC-Vivace	5	49.91	32.50	22.07	1544.39	1618.69	363.91	5.55	12.18	3.60
WebRTC media	5	1.66	0.93	0.34	89.76	88.79	89.79	0.54	0.76	2.48

Run 1: Statistics of TCP BBR

Start at: 2019-03-09 13:03:44

End at: 2019-03-09 13:04:14

Local clock offset: -7.588 ms

Remote clock offset: 3.493 ms

Below is generated by plot.py at 2019-03-09 15:14:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 88.27 Mbit/s

95th percentile per-packet one-way delay: 508.061 ms

Loss rate: 4.26%

-- Flow 1:

Average throughput: 54.25 Mbit/s

95th percentile per-packet one-way delay: 500.557 ms

Loss rate: 3.56%

-- Flow 2:

Average throughput: 36.32 Mbit/s

95th percentile per-packet one-way delay: 696.768 ms

Loss rate: 4.76%

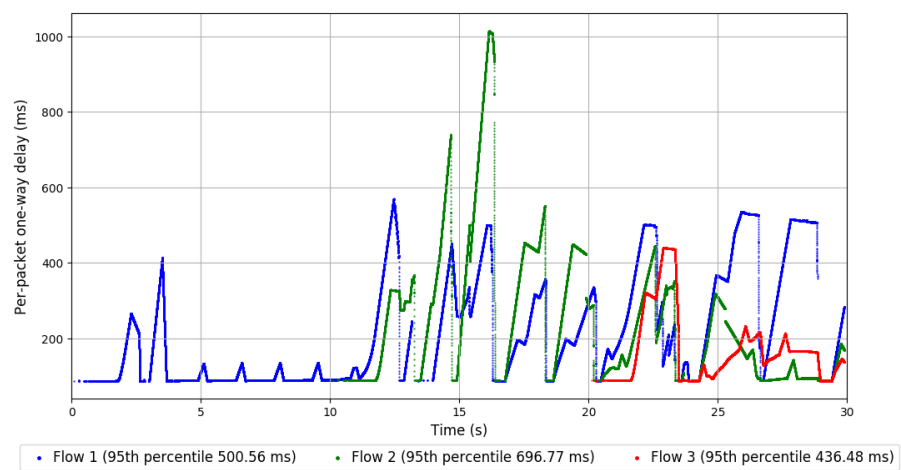
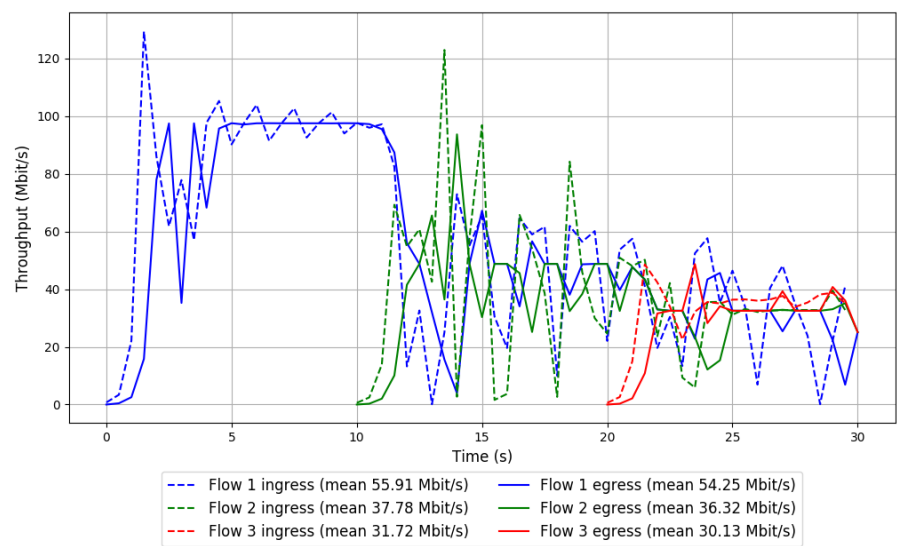
-- Flow 3:

Average throughput: 30.13 Mbit/s

95th percentile per-packet one-way delay: 436.481 ms

Loss rate: 6.79%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2019-03-09 13:31:14

End at: 2019-03-09 13:31:44

Local clock offset: -6.156 ms

Remote clock offset: 5.072 ms

Below is generated by plot.py at 2019-03-09 15:14:44

Datalink statistics

-- Total of 3 flows:

Average throughput: 89.86 Mbit/s

95th percentile per-packet one-way delay: 452.333 ms

Loss rate: 3.53%

-- Flow 1:

Average throughput: 54.98 Mbit/s

95th percentile per-packet one-way delay: 440.089 ms

Loss rate: 2.19%

-- Flow 2:

Average throughput: 38.40 Mbit/s

95th percentile per-packet one-way delay: 454.665 ms

Loss rate: 5.15%

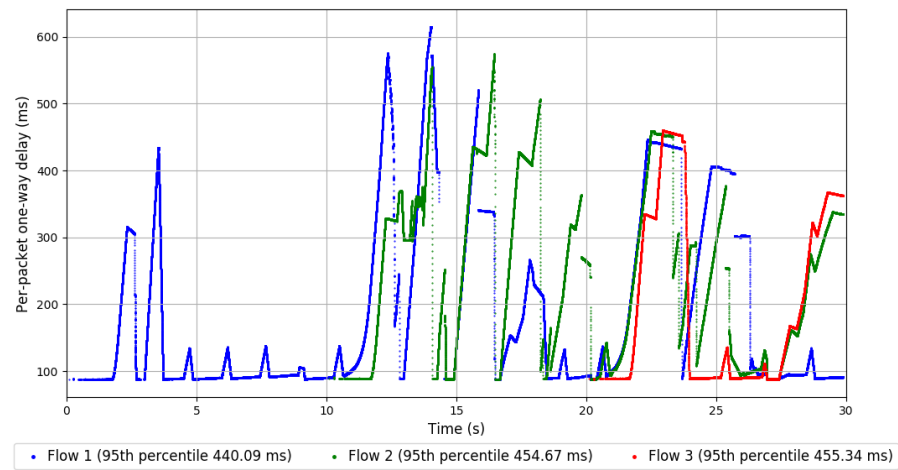
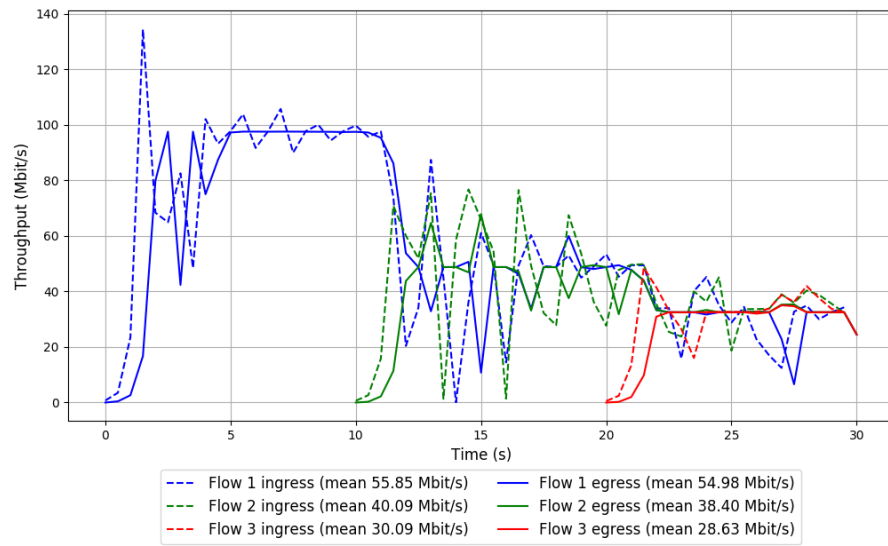
-- Flow 3:

Average throughput: 28.63 Mbit/s

95th percentile per-packet one-way delay: 455.341 ms

Loss rate: 6.71%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2019-03-09 13:58:44

End at: 2019-03-09 13:59:14

Local clock offset: -6.072 ms

Remote clock offset: 2.144 ms

Below is generated by plot.py at 2019-03-09 15:14:45

Datalink statistics

-- Total of 3 flows:

Average throughput: 90.05 Mbit/s

95th percentile per-packet one-way delay: 475.701 ms

Loss rate: 4.02%

-- Flow 1:

Average throughput: 55.30 Mbit/s

95th percentile per-packet one-way delay: 458.281 ms

Loss rate: 2.36%

-- Flow 2:

Average throughput: 37.64 Mbit/s

95th percentile per-packet one-way delay: 422.755 ms

Loss rate: 5.22%

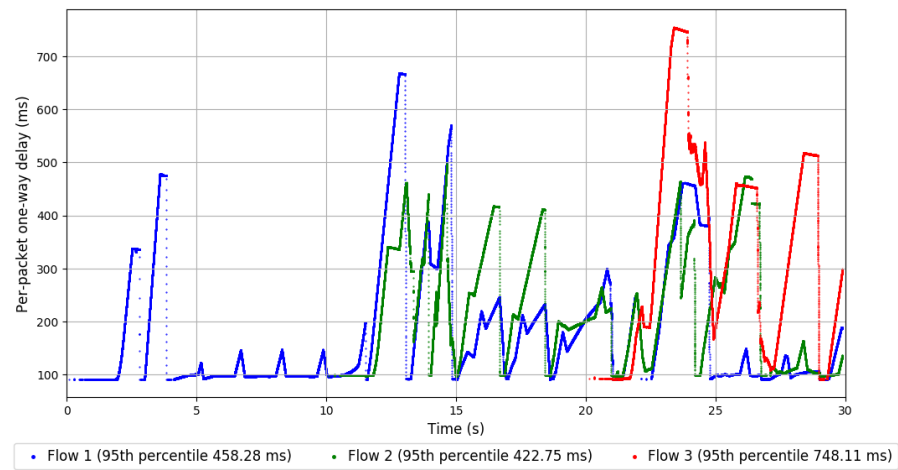
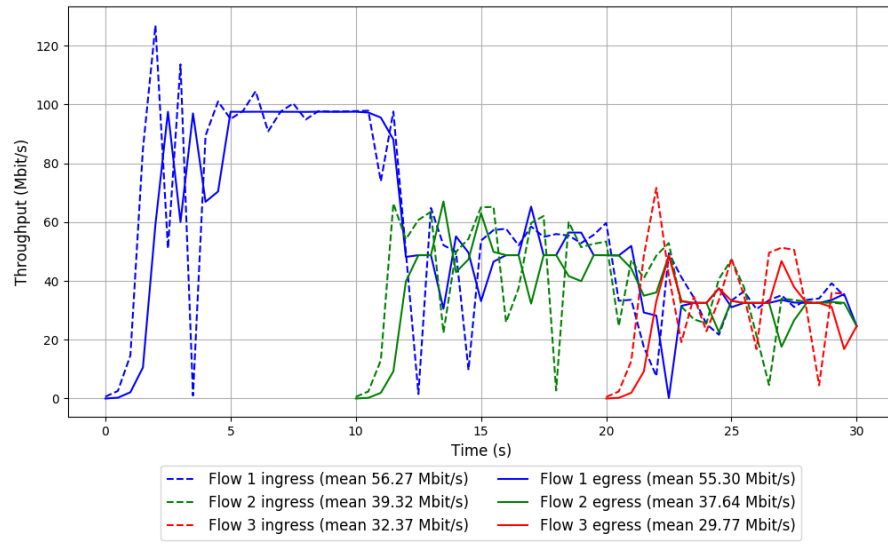
-- Flow 3:

Average throughput: 29.77 Mbit/s

95th percentile per-packet one-way delay: 748.114 ms

Loss rate: 9.81%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2019-03-09 14:26:31

End at: 2019-03-09 14:27:01

Local clock offset: -1.233 ms

Remote clock offset: 6.24 ms

Below is generated by plot.py at 2019-03-09 15:14:45

Datalink statistics

-- Total of 3 flows:

Average throughput: 90.65 Mbit/s

95th percentile per-packet one-way delay: 473.245 ms

Loss rate: 3.75%

-- Flow 1:

Average throughput: 56.23 Mbit/s

95th percentile per-packet one-way delay: 378.801 ms

Loss rate: 1.97%

-- Flow 2:

Average throughput: 37.92 Mbit/s

95th percentile per-packet one-way delay: 522.927 ms

Loss rate: 5.95%

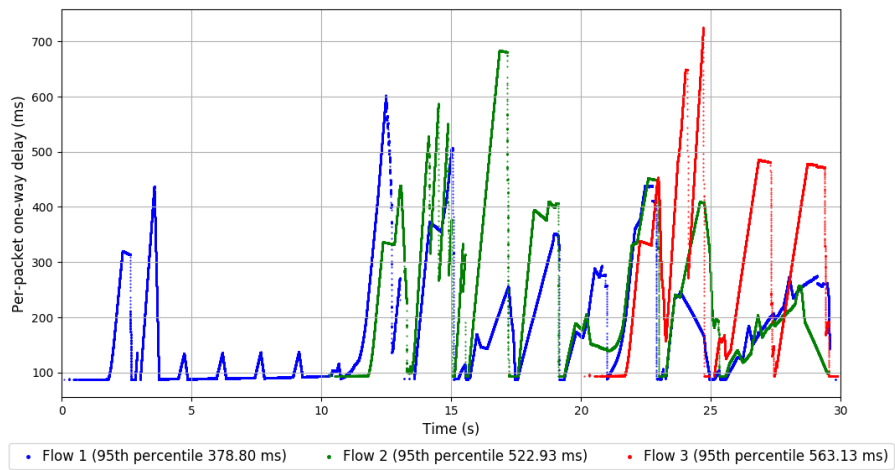
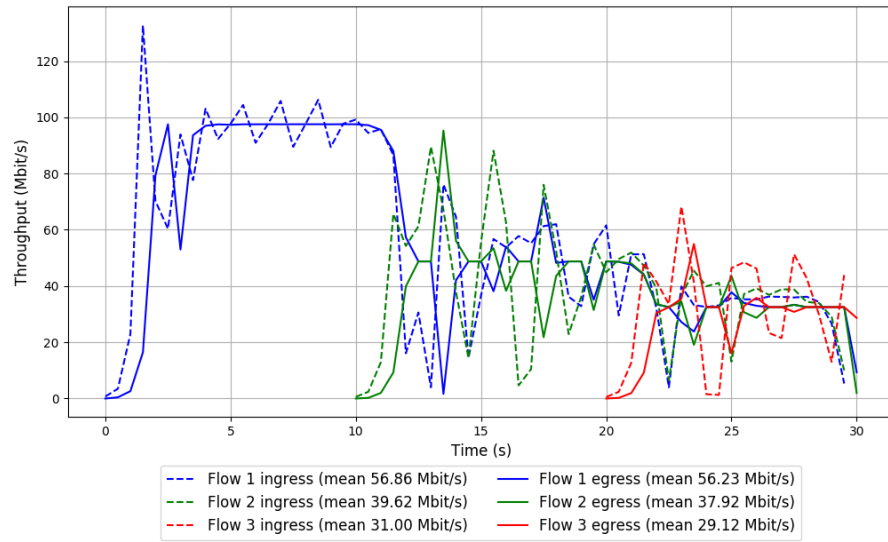
-- Flow 3:

Average throughput: 29.12 Mbit/s

95th percentile per-packet one-way delay: 563.135 ms

Loss rate: 7.96%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2019-03-09 14:54:05

End at: 2019-03-09 14:54:35

Local clock offset: -0.245 ms

Remote clock offset: 5.078 ms

Below is generated by plot.py at 2019-03-09 15:14:45

Datalink statistics

-- Total of 3 flows:

Average throughput: 88.97 Mbit/s

95th percentile per-packet one-way delay: 498.358 ms

Loss rate: 3.72%

-- Flow 1:

Average throughput: 53.30 Mbit/s

95th percentile per-packet one-way delay: 444.821 ms

Loss rate: 2.77%

-- Flow 2:

Average throughput: 38.65 Mbit/s

95th percentile per-packet one-way delay: 568.982 ms

Loss rate: 4.22%

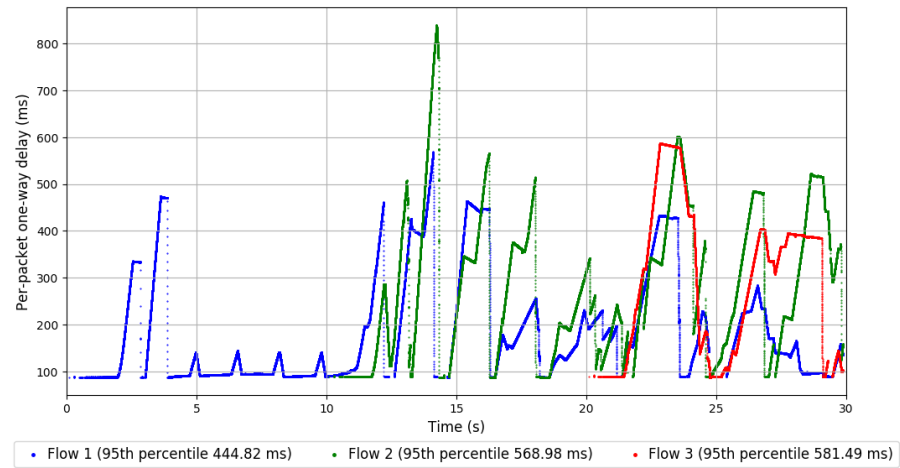
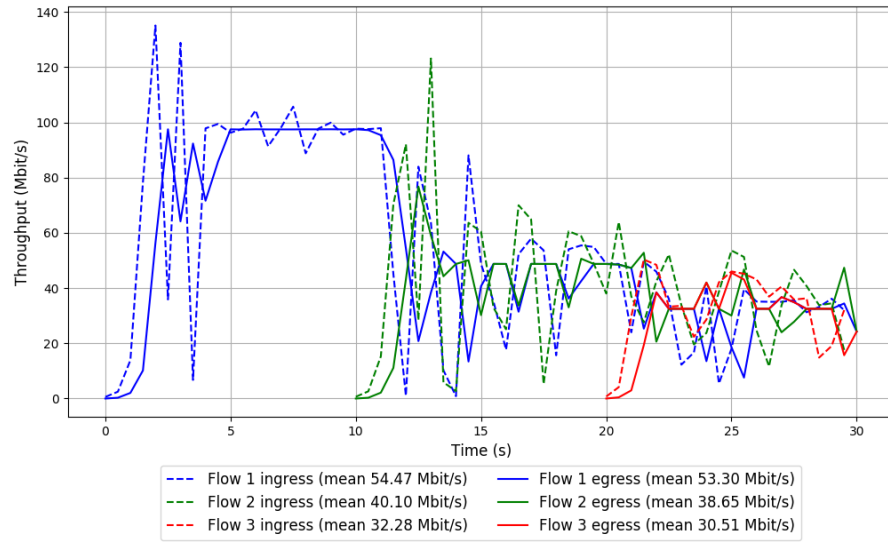
-- Flow 3:

Average throughput: 30.51 Mbit/s

95th percentile per-packet one-way delay: 581.488 ms

Loss rate: 7.34%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2019-03-09 12:54:31

End at: 2019-03-09 12:55:01

Local clock offset: -7.282 ms

Remote clock offset: 4.106 ms

Below is generated by plot.py at 2019-03-09 15:15:25

Datalink statistics

-- Total of 3 flows:

Average throughput: 75.47 Mbit/s

95th percentile per-packet one-way delay: 241.793 ms

Loss rate: 0.86%

-- Flow 1:

Average throughput: 46.11 Mbit/s

95th percentile per-packet one-way delay: 215.227 ms

Loss rate: 0.48%

-- Flow 2:

Average throughput: 28.19 Mbit/s

95th percentile per-packet one-way delay: 107.782 ms

Loss rate: 0.93%

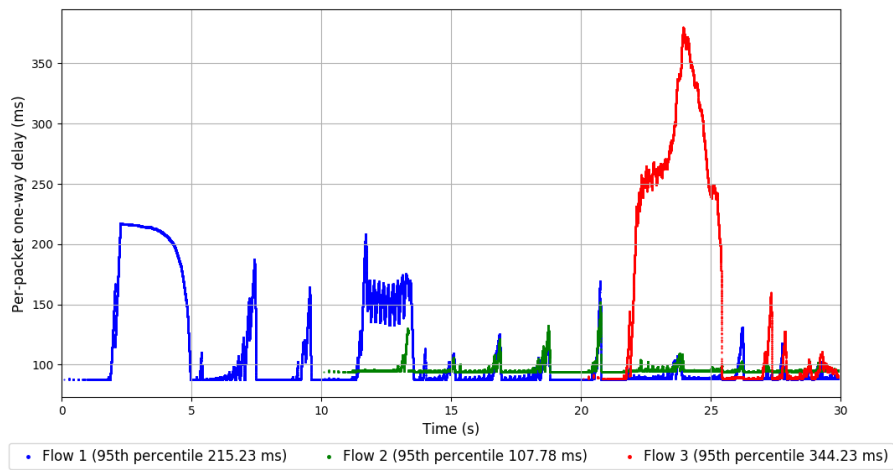
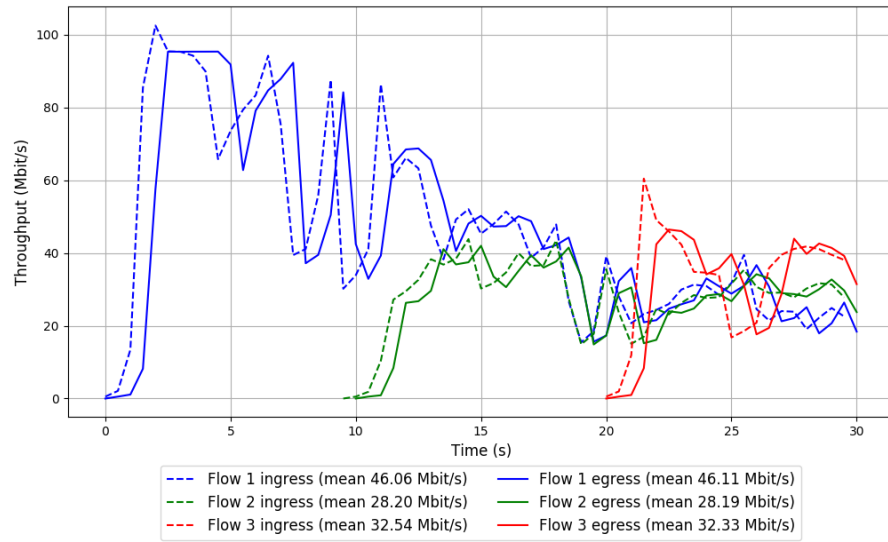
-- Flow 3:

Average throughput: 32.33 Mbit/s

95th percentile per-packet one-way delay: 344.228 ms

Loss rate: 2.36%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2019-03-09 13:21:53

End at: 2019-03-09 13:22:23

Local clock offset: -6.726 ms

Remote clock offset: 1.392 ms

Below is generated by plot.py at 2019-03-09 15:15:31

Datalink statistics

-- Total of 3 flows:

Average throughput: 79.28 Mbit/s

95th percentile per-packet one-way delay: 213.147 ms

Loss rate: 0.97%

-- Flow 1:

Average throughput: 49.80 Mbit/s

95th percentile per-packet one-way delay: 214.941 ms

Loss rate: 0.66%

-- Flow 2:

Average throughput: 29.37 Mbit/s

95th percentile per-packet one-way delay: 117.286 ms

Loss rate: 0.97%

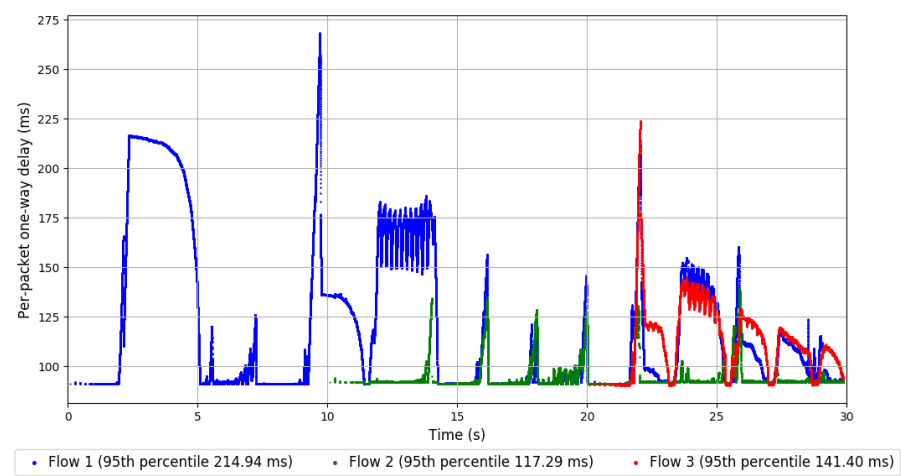
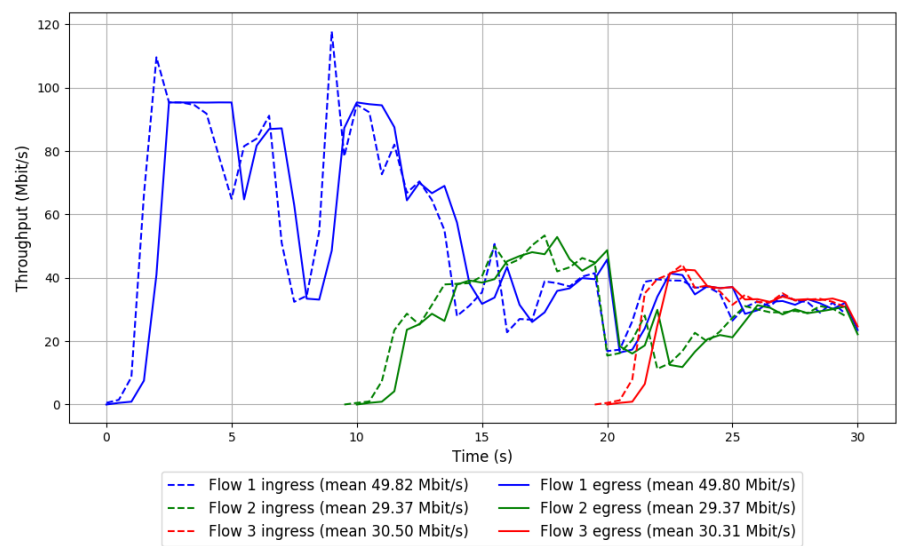
-- Flow 3:

Average throughput: 30.31 Mbit/s

95th percentile per-packet one-way delay: 141.402 ms

Loss rate: 2.51%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2019-03-09 13:49:23

End at: 2019-03-09 13:49:53

Local clock offset: -5.281 ms

Remote clock offset: 5.804 ms

Below is generated by plot.py at 2019-03-09 15:15:31

Datalink statistics

-- Total of 3 flows:

Average throughput: 77.96 Mbit/s

95th percentile per-packet one-way delay: 227.944 ms

Loss rate: 0.69%

-- Flow 1:

Average throughput: 45.28 Mbit/s

95th percentile per-packet one-way delay: 211.552 ms

Loss rate: 0.44%

-- Flow 2:

Average throughput: 34.36 Mbit/s

95th percentile per-packet one-way delay: 229.368 ms

Loss rate: 0.62%

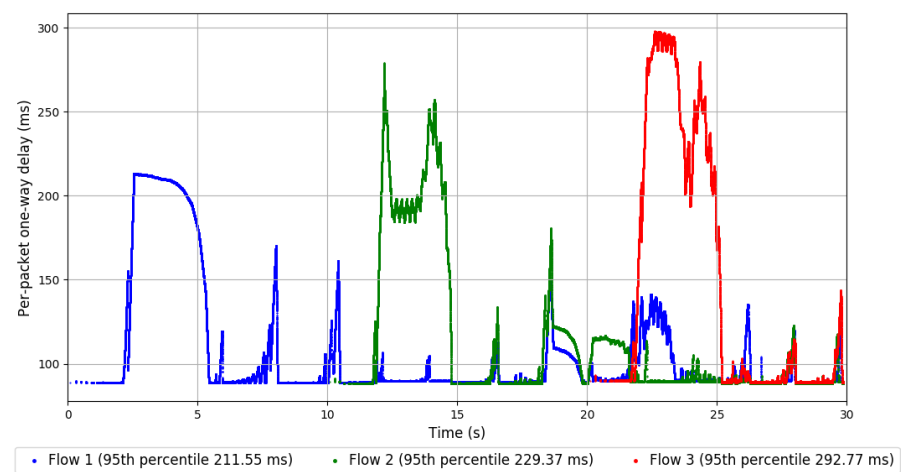
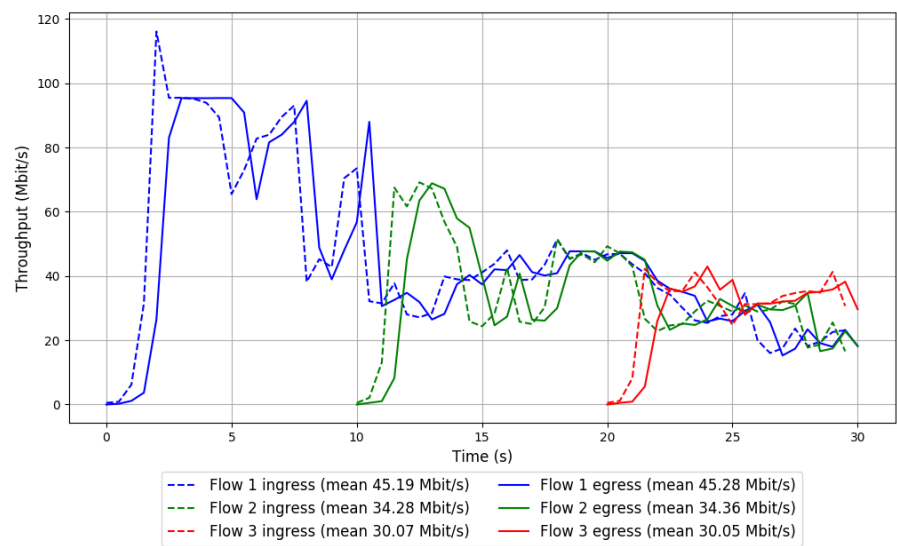
-- Flow 3:

Average throughput: 30.05 Mbit/s

95th percentile per-packet one-way delay: 292.766 ms

Loss rate: 1.94%

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2019-03-09 14:17:04

End at: 2019-03-09 14:17:34

Local clock offset: -4.001 ms

Remote clock offset: 5.282 ms

Below is generated by plot.py at 2019-03-09 15:16:32

Datalink statistics

-- Total of 3 flows:

Average throughput: 82.06 Mbit/s

95th percentile per-packet one-way delay: 213.399 ms

Loss rate: 0.71%

-- Flow 1:

Average throughput: 44.36 Mbit/s

95th percentile per-packet one-way delay: 213.169 ms

Loss rate: 0.61%

-- Flow 2:

Average throughput: 43.06 Mbit/s

95th percentile per-packet one-way delay: 136.782 ms

Loss rate: 0.46%

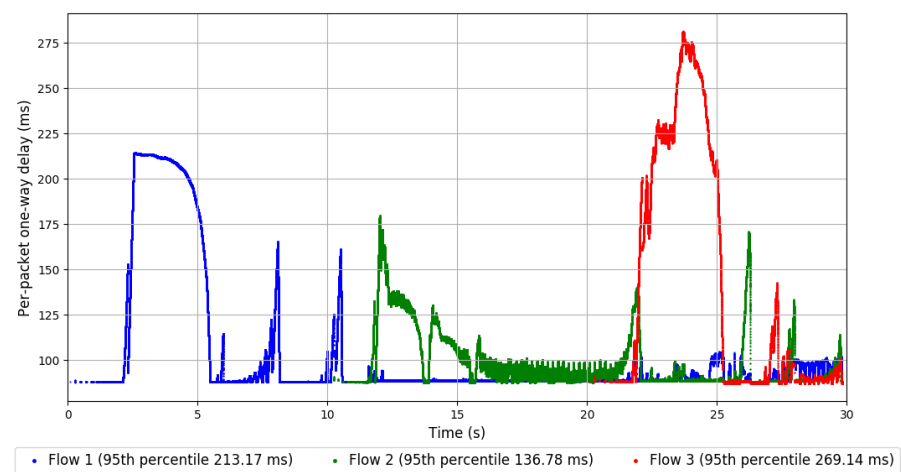
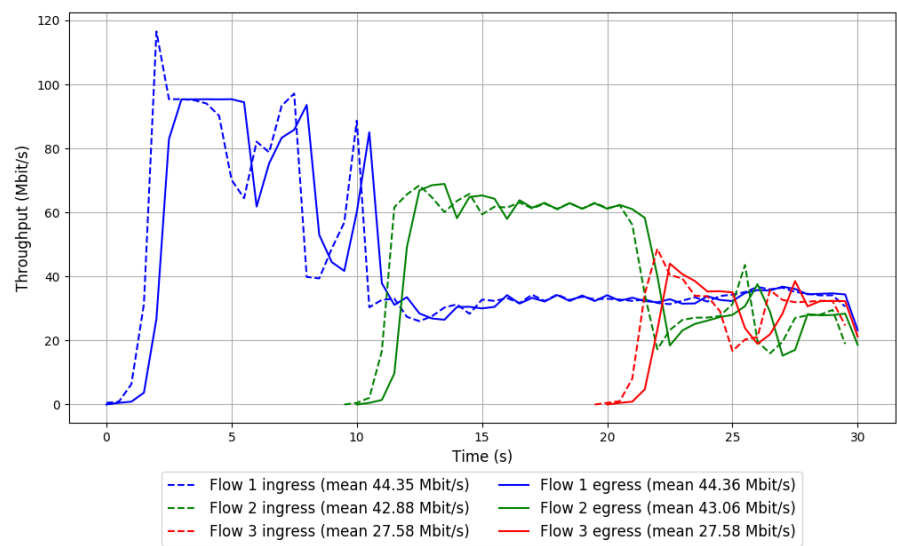
-- Flow 3:

Average throughput: 27.58 Mbit/s

95th percentile per-packet one-way delay: 269.139 ms

Loss rate: 1.96%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2019-03-09 14:44:42

End at: 2019-03-09 14:45:12

Local clock offset: 0.652 ms

Remote clock offset: 1.553 ms

Below is generated by plot.py at 2019-03-09 15:16:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 82.02 Mbit/s

95th percentile per-packet one-way delay: 212.175 ms

Loss rate: 0.98%

-- Flow 1:

Average throughput: 53.30 Mbit/s

95th percentile per-packet one-way delay: 213.365 ms

Loss rate: 0.67%

-- Flow 2:

Average throughput: 27.67 Mbit/s

95th percentile per-packet one-way delay: 95.205 ms

Loss rate: 1.06%

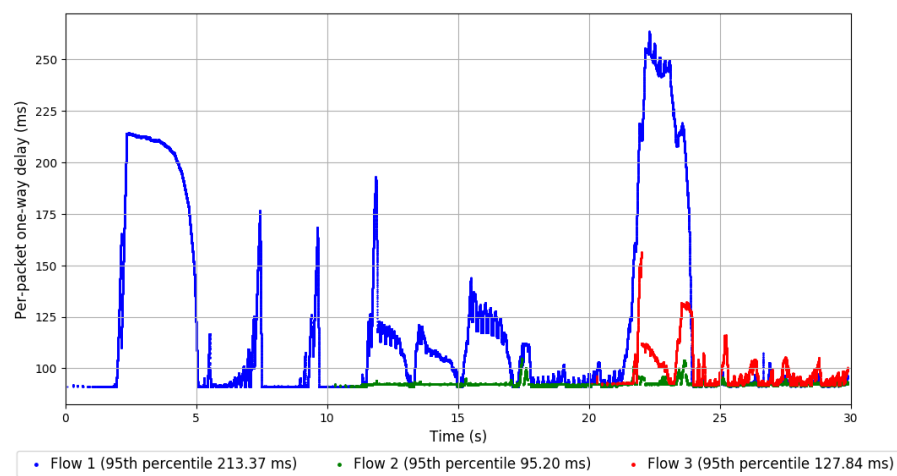
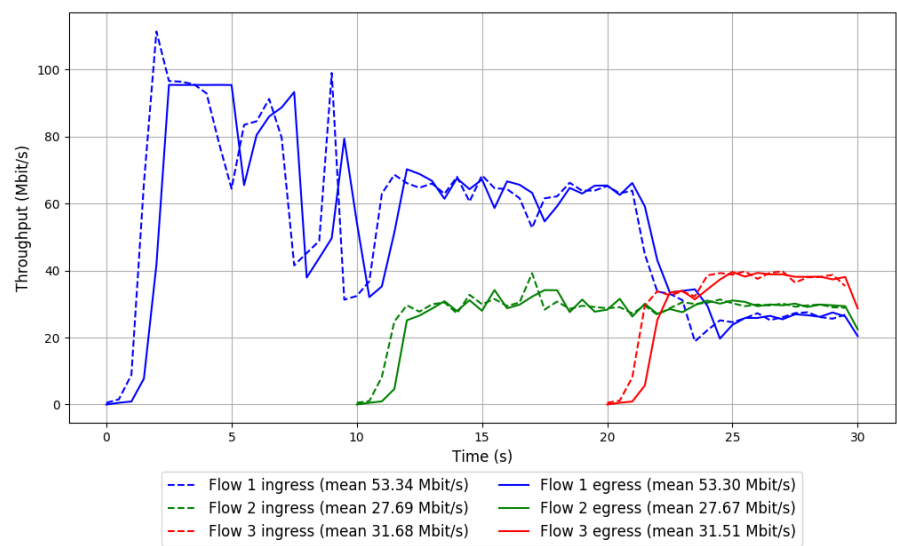
-- Flow 3:

Average throughput: 31.51 Mbit/s

95th percentile per-packet one-way delay: 127.840 ms

Loss rate: 2.40%

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2019-03-09 12:59:48

End at: 2019-03-09 13:00:18

Local clock offset: -6.784 ms

Remote clock offset: 3.571 ms

Below is generated by plot.py at 2019-03-09 15:16:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 75.38 Mbit/s

95th percentile per-packet one-way delay: 171.714 ms

Loss rate: 0.89%

-- Flow 1:

Average throughput: 40.44 Mbit/s

95th percentile per-packet one-way delay: 196.073 ms

Loss rate: 0.62%

-- Flow 2:

Average throughput: 36.34 Mbit/s

95th percentile per-packet one-way delay: 166.282 ms

Loss rate: 0.75%

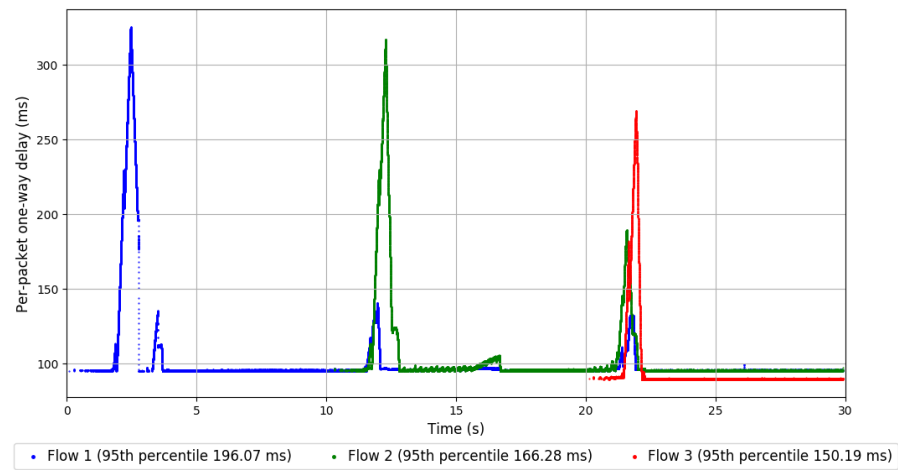
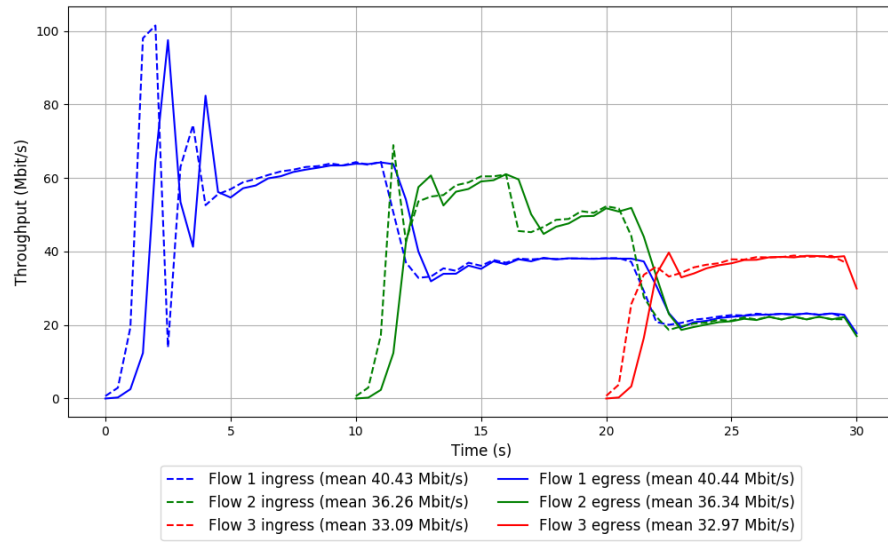
-- Flow 3:

Average throughput: 32.97 Mbit/s

95th percentile per-packet one-way delay: 150.192 ms

Loss rate: 2.22%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2019-03-09 13:27:16

End at: 2019-03-09 13:27:46

Local clock offset: -5.573 ms

Remote clock offset: 6.81 ms

Below is generated by plot.py at 2019-03-09 15:16:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 82.06 Mbit/s

95th percentile per-packet one-way delay: 164.550 ms

Loss rate: 0.75%

-- Flow 1:

Average throughput: 47.17 Mbit/s

95th percentile per-packet one-way delay: 167.826 ms

Loss rate: 0.34%

-- Flow 2:

Average throughput: 36.92 Mbit/s

95th percentile per-packet one-way delay: 164.719 ms

Loss rate: 0.80%

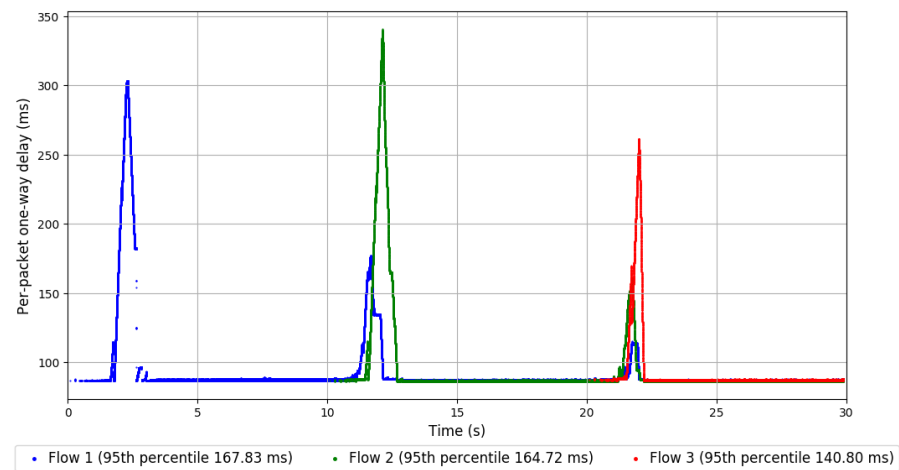
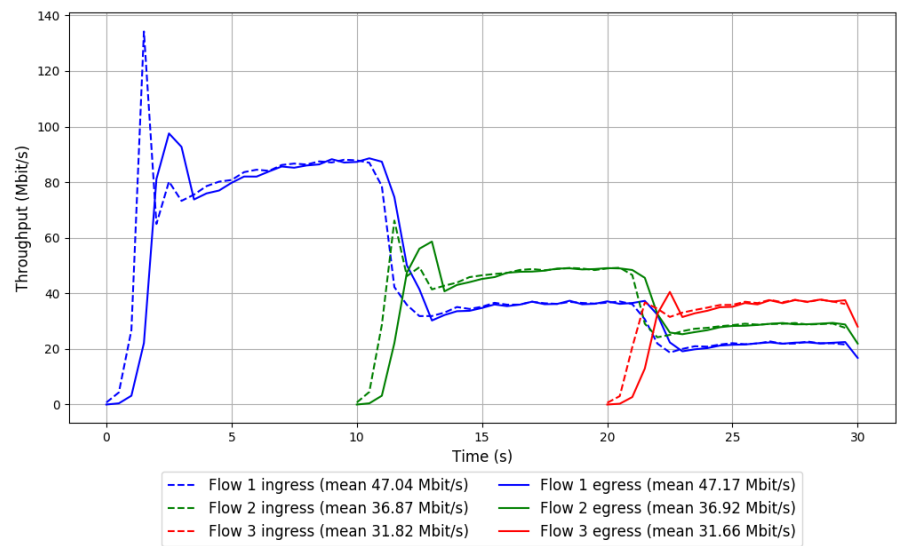
-- Flow 3:

Average throughput: 31.66 Mbit/s

95th percentile per-packet one-way delay: 140.796 ms

Loss rate: 2.43%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2019-03-09 13:54:44

End at: 2019-03-09 13:55:14

Local clock offset: -6.113 ms

Remote clock offset: 2.589 ms

Below is generated by plot.py at 2019-03-09 15:16:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 72.63 Mbit/s

95th percentile per-packet one-way delay: 167.012 ms

Loss rate: 0.68%

-- Flow 1:

Average throughput: 42.44 Mbit/s

95th percentile per-packet one-way delay: 187.881 ms

Loss rate: 0.44%

-- Flow 2:

Average throughput: 35.09 Mbit/s

95th percentile per-packet one-way delay: 149.147 ms

Loss rate: 0.83%

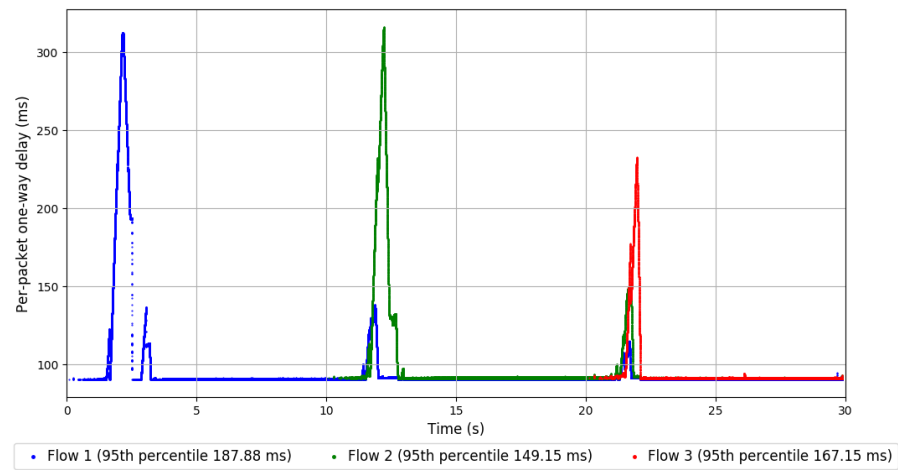
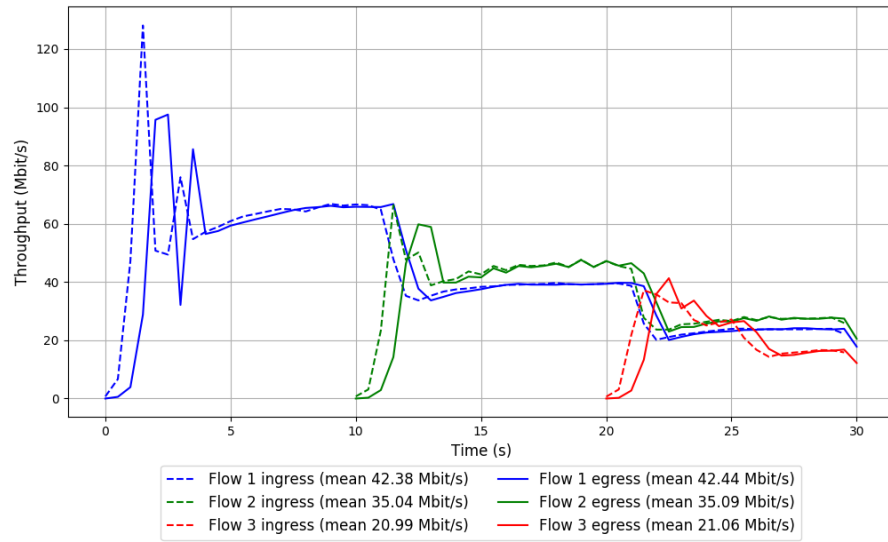
-- Flow 3:

Average throughput: 21.06 Mbit/s

95th percentile per-packet one-way delay: 167.152 ms

Loss rate: 1.64%

Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

Start at: 2019-03-09 14:22:29

End at: 2019-03-09 14:22:59

Local clock offset: -2.168 ms

Remote clock offset: 0.045 ms

Below is generated by plot.py at 2019-03-09 15:16:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 78.69 Mbit/s

95th percentile per-packet one-way delay: 157.233 ms

Loss rate: 0.92%

-- Flow 1:

Average throughput: 44.86 Mbit/s

95th percentile per-packet one-way delay: 167.611 ms

Loss rate: 0.58%

-- Flow 2:

Average throughput: 34.86 Mbit/s

95th percentile per-packet one-way delay: 161.767 ms

Loss rate: 0.85%

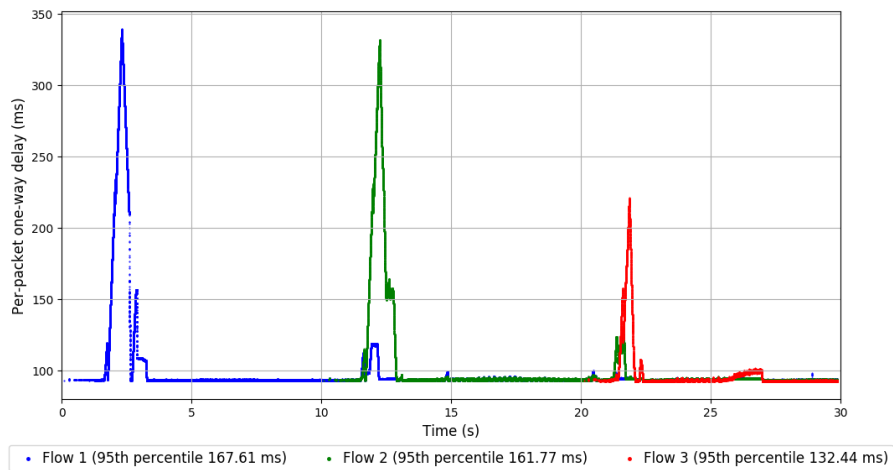
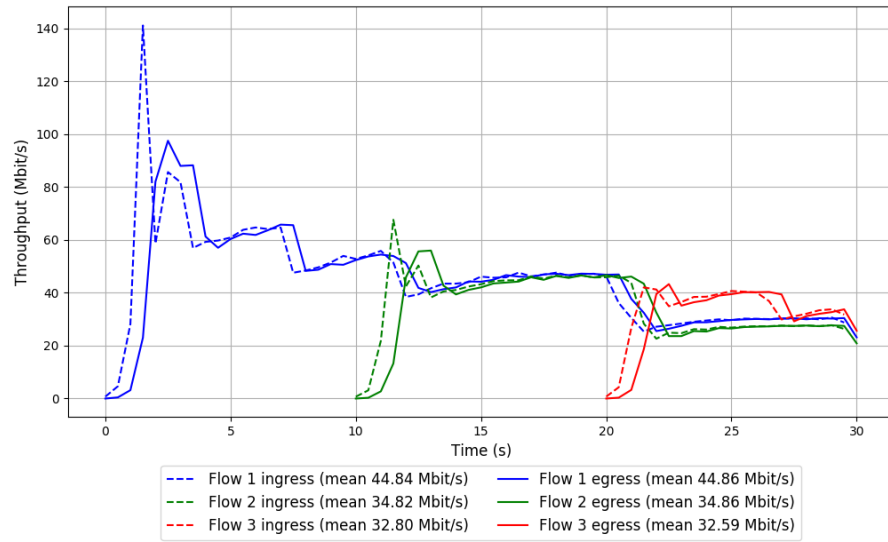
-- Flow 3:

Average throughput: 32.59 Mbit/s

95th percentile per-packet one-way delay: 132.442 ms

Loss rate: 2.46%

Run 4: Report of TCP Cubic — Data Link

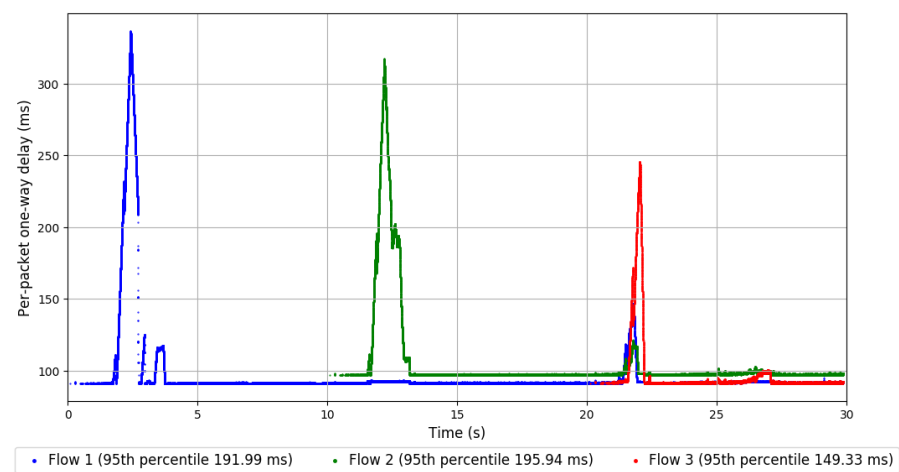
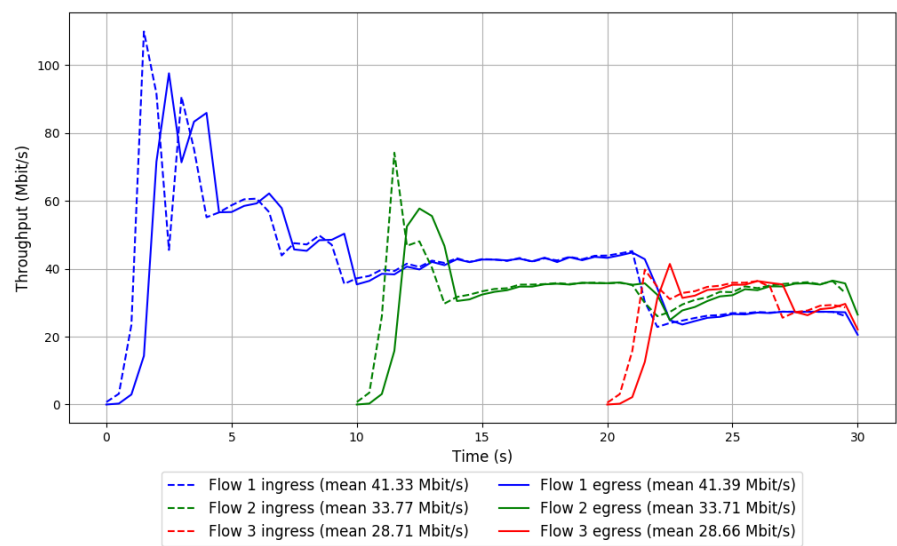


Run 5: Statistics of TCP Cubic

Start at: 2019-03-09 14:50:04
End at: 2019-03-09 14:50:34
Local clock offset: -0.818 ms
Remote clock offset: 1.399 ms

Below is generated by plot.py at 2019-03-09 15:16:34
Datalink statistics
-- Total of 3 flows:
Average throughput: 73.15 Mbit/s
95th percentile per-packet one-way delay: 191.130 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 41.39 Mbit/s
95th percentile per-packet one-way delay: 191.986 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 33.71 Mbit/s
95th percentile per-packet one-way delay: 195.941 ms
Loss rate: 1.13%
-- Flow 3:
Average throughput: 28.66 Mbit/s
95th percentile per-packet one-way delay: 149.326 ms
Loss rate: 2.12%

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2019-03-09 13:12:46

End at: 2019-03-09 13:13:16

Local clock offset: -7.898 ms

Remote clock offset: 0.668 ms

Below is generated by plot.py at 2019-03-09 15:16:52

Datalink statistics

-- Total of 3 flows:

Average throughput: 93.20 Mbit/s

95th percentile per-packet one-way delay: 307.267 ms

Loss rate: 2.55%

-- Flow 1:

Average throughput: 56.98 Mbit/s

95th percentile per-packet one-way delay: 291.432 ms

Loss rate: 0.82%

-- Flow 2:

Average throughput: 39.68 Mbit/s

95th percentile per-packet one-way delay: 318.270 ms

Loss rate: 5.01%

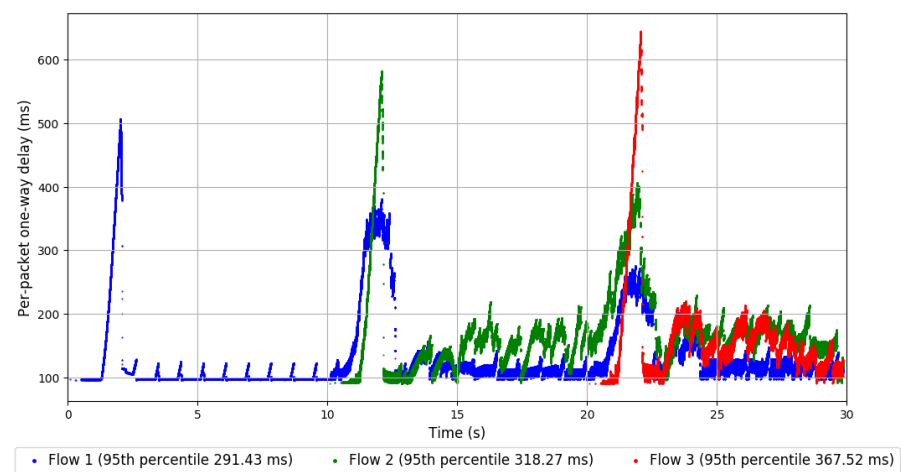
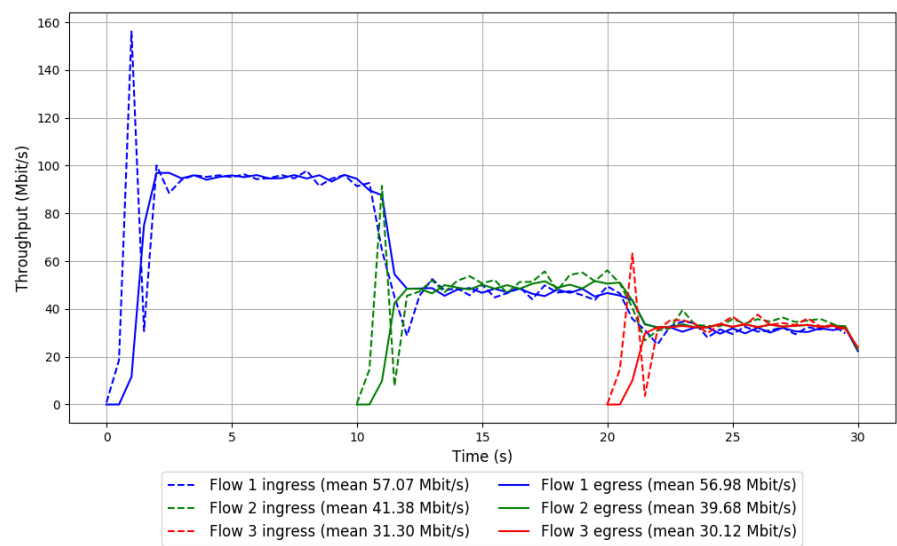
-- Flow 3:

Average throughput: 30.12 Mbit/s

95th percentile per-packet one-way delay: 367.517 ms

Loss rate: 5.47%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2019-03-09 13:40:18

End at: 2019-03-09 13:40:48

Local clock offset: -6.079 ms

Remote clock offset: 2.54 ms

Below is generated by plot.py at 2019-03-09 15:16:58

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.76 Mbit/s

95th percentile per-packet one-way delay: 281.969 ms

Loss rate: 2.74%

-- Flow 1:

Average throughput: 57.36 Mbit/s

95th percentile per-packet one-way delay: 316.656 ms

Loss rate: 2.60%

-- Flow 2:

Average throughput: 38.99 Mbit/s

95th percentile per-packet one-way delay: 212.845 ms

Loss rate: 3.20%

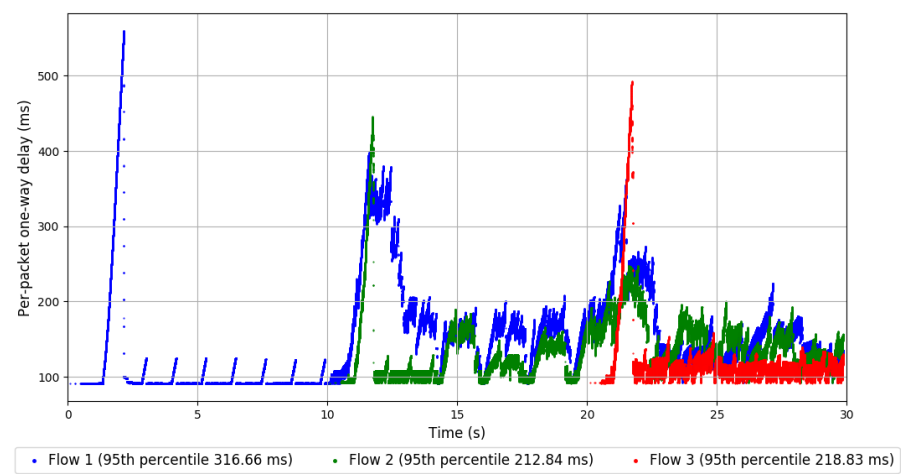
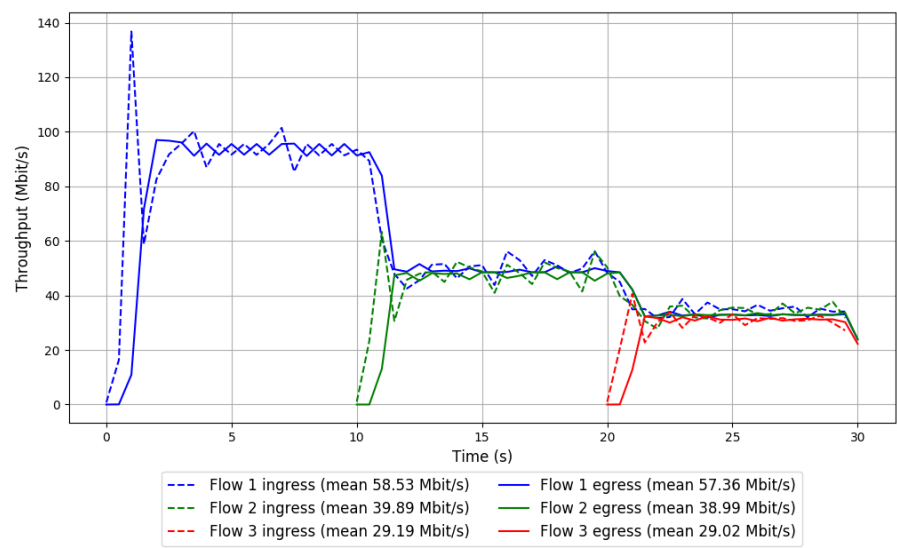
-- Flow 3:

Average throughput: 29.02 Mbit/s

95th percentile per-packet one-way delay: 218.830 ms

Loss rate: 2.33%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2019-03-09 14:07:55

End at: 2019-03-09 14:08:25

Local clock offset: -6.11 ms

Remote clock offset: 6.871 ms

Below is generated by plot.py at 2019-03-09 15:16:59

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.78 Mbit/s

95th percentile per-packet one-way delay: 306.535 ms

Loss rate: 2.22%

-- Flow 1:

Average throughput: 57.50 Mbit/s

95th percentile per-packet one-way delay: 354.441 ms

Loss rate: 2.36%

-- Flow 2:

Average throughput: 38.47 Mbit/s

95th percentile per-packet one-way delay: 241.847 ms

Loss rate: 1.47%

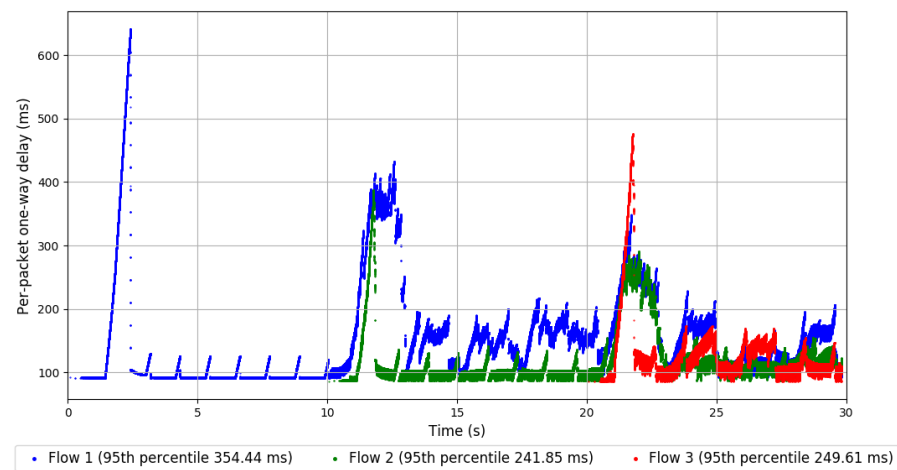
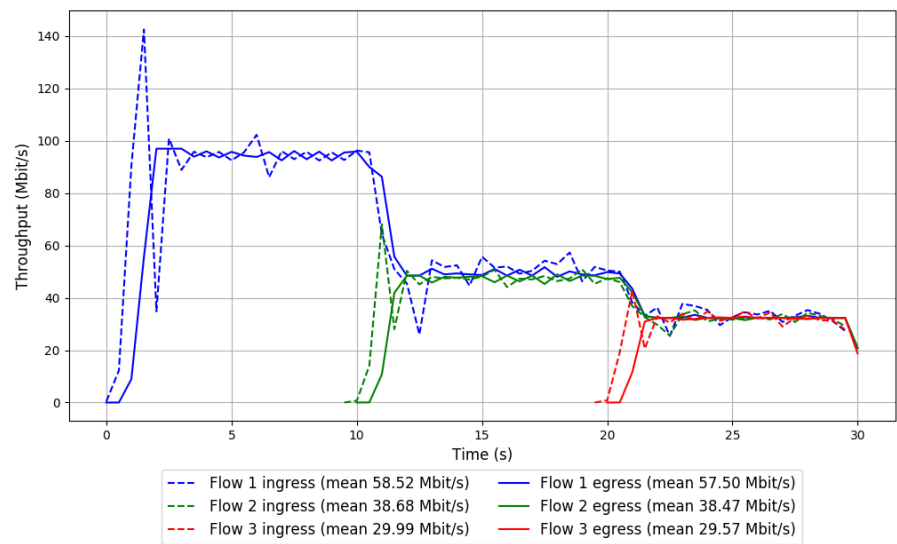
-- Flow 3:

Average throughput: 29.57 Mbit/s

95th percentile per-packet one-way delay: 249.609 ms

Loss rate: 3.31%

Run 3: Report of FillP — Data Link



Run 4: Statistics of FillP

Start at: 2019-03-09 14:35:37

End at: 2019-03-09 14:36:07

Local clock offset: -0.733 ms

Remote clock offset: 3.927 ms

Below is generated by plot.py at 2019-03-09 15:17:06

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.66 Mbit/s

95th percentile per-packet one-way delay: 272.211 ms

Loss rate: 2.25%

-- Flow 1:

Average throughput: 57.01 Mbit/s

95th percentile per-packet one-way delay: 331.045 ms

Loss rate: 1.12%

-- Flow 2:

Average throughput: 39.15 Mbit/s

95th percentile per-packet one-way delay: 231.324 ms

Loss rate: 3.69%

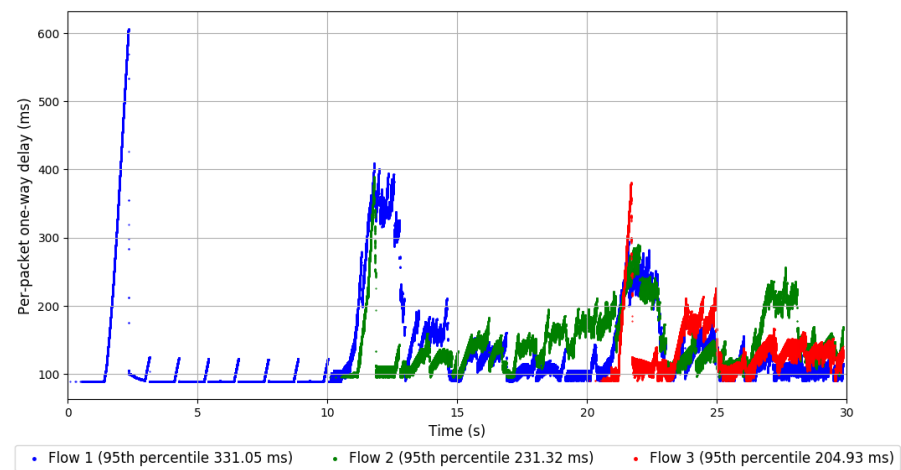
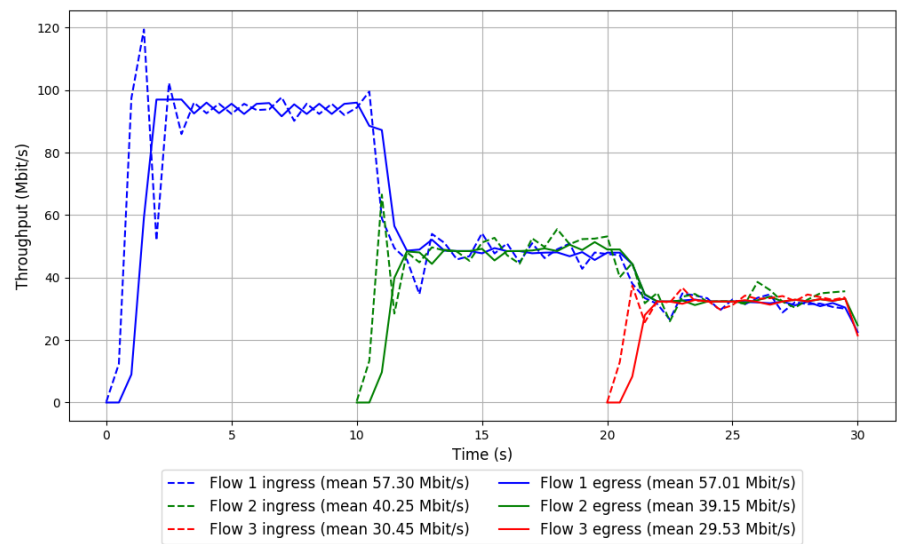
-- Flow 3:

Average throughput: 29.53 Mbit/s

95th percentile per-packet one-way delay: 204.934 ms

Loss rate: 4.82%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2019-03-09 15:03:14

End at: 2019-03-09 15:03:44

Local clock offset: -1.057 ms

Remote clock offset: 5.211 ms

Below is generated by plot.py at 2019-03-09 15:17:37

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.79 Mbit/s

95th percentile per-packet one-way delay: 322.604 ms

Loss rate: 2.23%

-- Flow 1:

Average throughput: 57.72 Mbit/s

95th percentile per-packet one-way delay: 351.916 ms

Loss rate: 2.15%

-- Flow 2:

Average throughput: 38.58 Mbit/s

95th percentile per-packet one-way delay: 235.777 ms

Loss rate: 1.92%

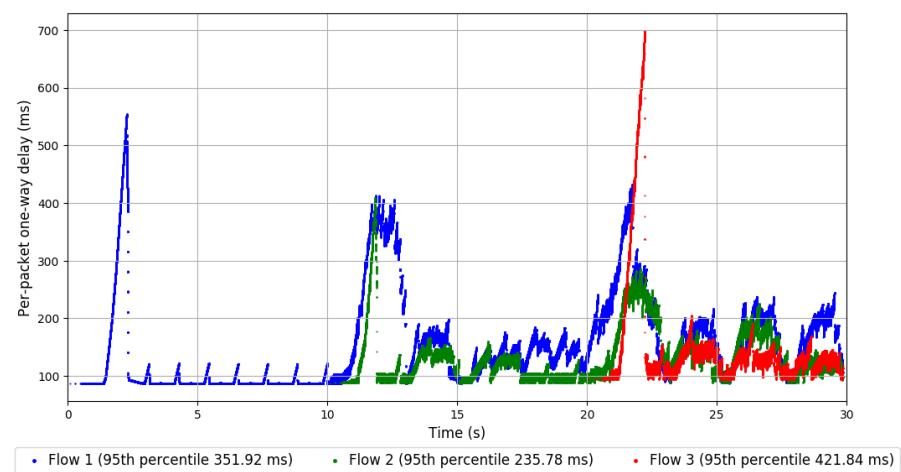
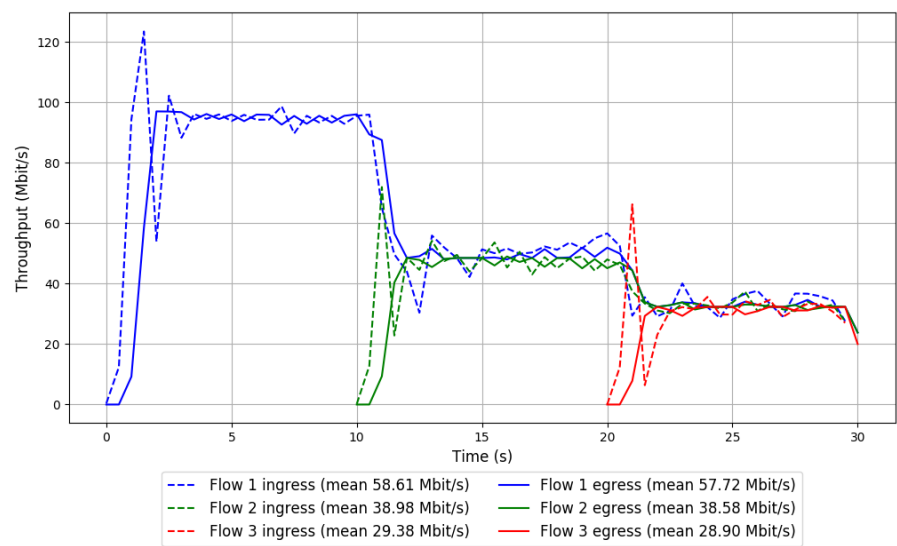
-- Flow 3:

Average throughput: 28.90 Mbit/s

95th percentile per-packet one-way delay: 421.841 ms

Loss rate: 3.56%

Run 5: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2019-03-09 12:58:30

End at: 2019-03-09 12:59:00

Local clock offset: -6.67 ms

Remote clock offset: 1.156 ms

Below is generated by plot.py at 2019-03-09 15:17:38

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.83 Mbit/s

95th percentile per-packet one-way delay: 322.463 ms

Loss rate: 1.84%

-- Flow 1:

Average throughput: 57.30 Mbit/s

95th percentile per-packet one-way delay: 330.205 ms

Loss rate: 1.05%

-- Flow 2:

Average throughput: 38.89 Mbit/s

95th percentile per-packet one-way delay: 313.594 ms

Loss rate: 2.19%

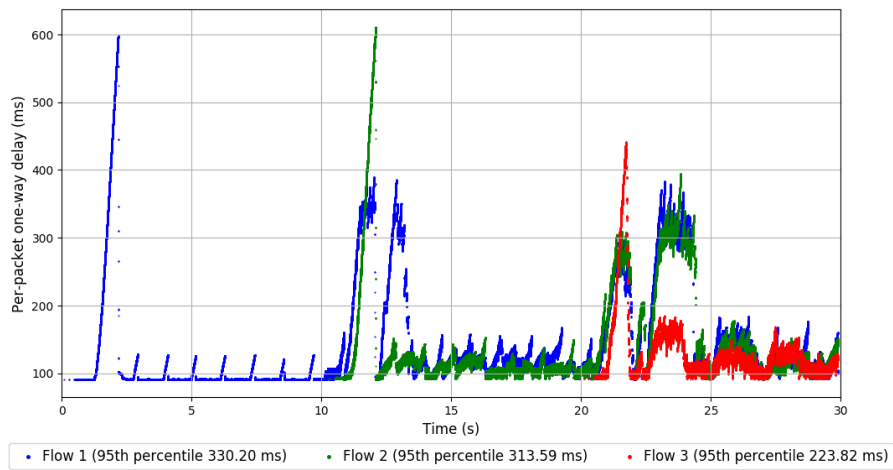
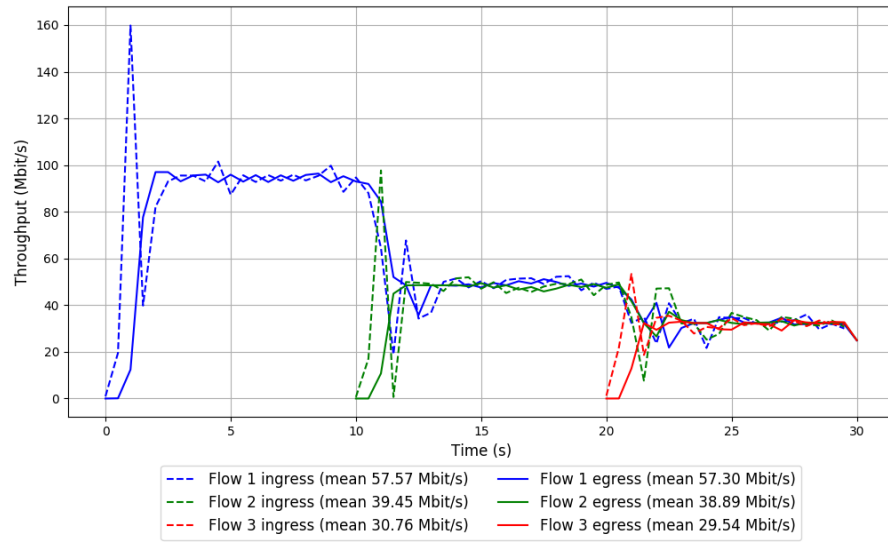
-- Flow 3:

Average throughput: 29.54 Mbit/s

95th percentile per-packet one-way delay: 223.816 ms

Loss rate: 5.45%

Run 1: Report of FillP-Sheep — Data Link



Run 2: Statistics of FillP-Sheep

Start at: 2019-03-09 13:25:57

End at: 2019-03-09 13:26:27

Local clock offset: -5.744 ms

Remote clock offset: 1.824 ms

Below is generated by plot.py at 2019-03-09 15:17:53

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.44 Mbit/s

95th percentile per-packet one-way delay: 313.455 ms

Loss rate: 1.69%

-- Flow 1:

Average throughput: 56.67 Mbit/s

95th percentile per-packet one-way delay: 325.681 ms

Loss rate: 1.02%

-- Flow 2:

Average throughput: 38.73 Mbit/s

95th percentile per-packet one-way delay: 256.327 ms

Loss rate: 2.11%

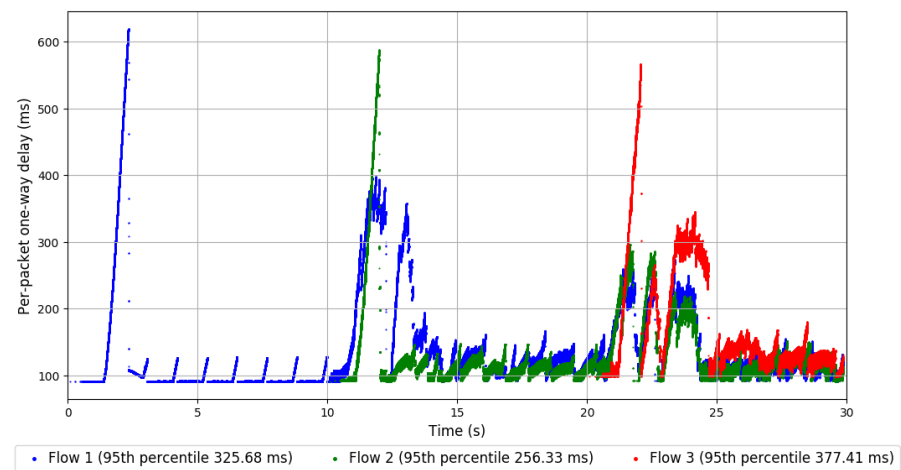
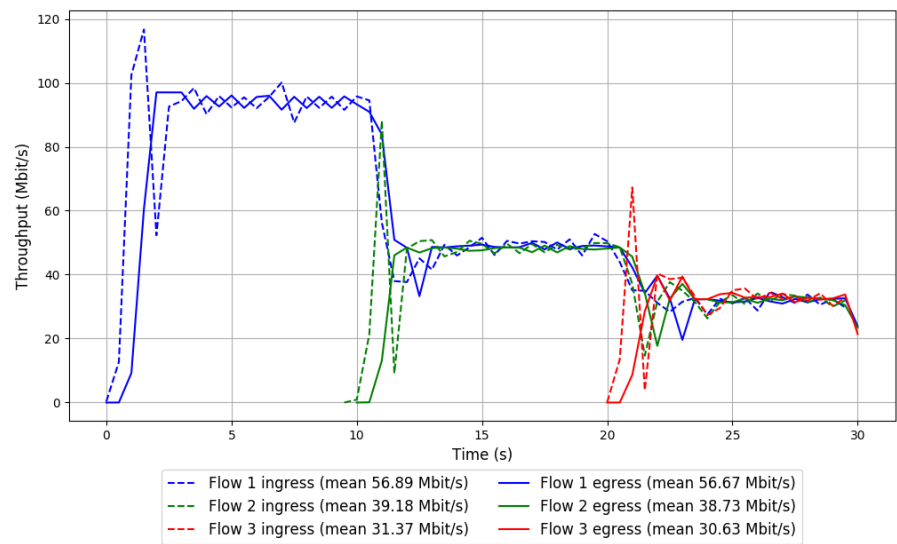
-- Flow 3:

Average throughput: 30.63 Mbit/s

95th percentile per-packet one-way delay: 377.408 ms

Loss rate: 4.29%

Run 2: Report of FillP-Sheep — Data Link



Run 3: Statistics of FillP-Sheep

Start at: 2019-03-09 13:53:25

End at: 2019-03-09 13:53:55

Local clock offset: -5.305 ms

Remote clock offset: 1.602 ms

Below is generated by plot.py at 2019-03-09 15:17:54

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.17 Mbit/s

95th percentile per-packet one-way delay: 327.317 ms

Loss rate: 1.50%

-- Flow 1:

Average throughput: 56.01 Mbit/s

95th percentile per-packet one-way delay: 348.335 ms

Loss rate: 0.69%

-- Flow 2:

Average throughput: 39.26 Mbit/s

95th percentile per-packet one-way delay: 240.371 ms

Loss rate: 1.82%

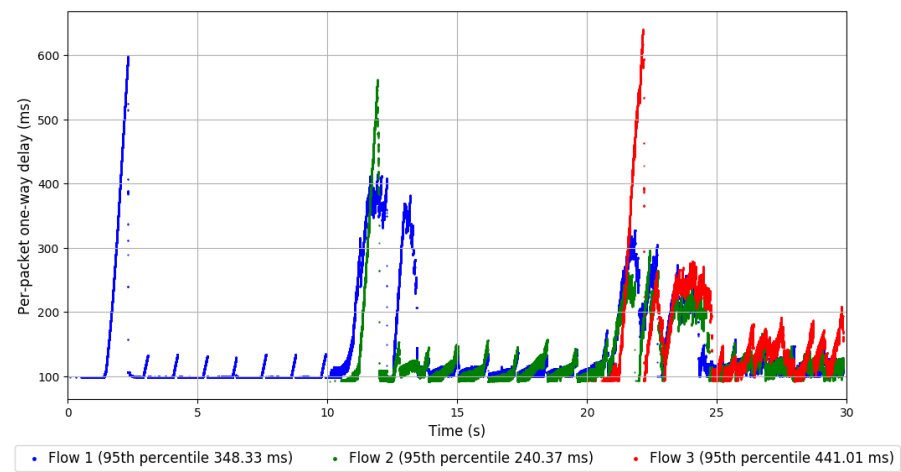
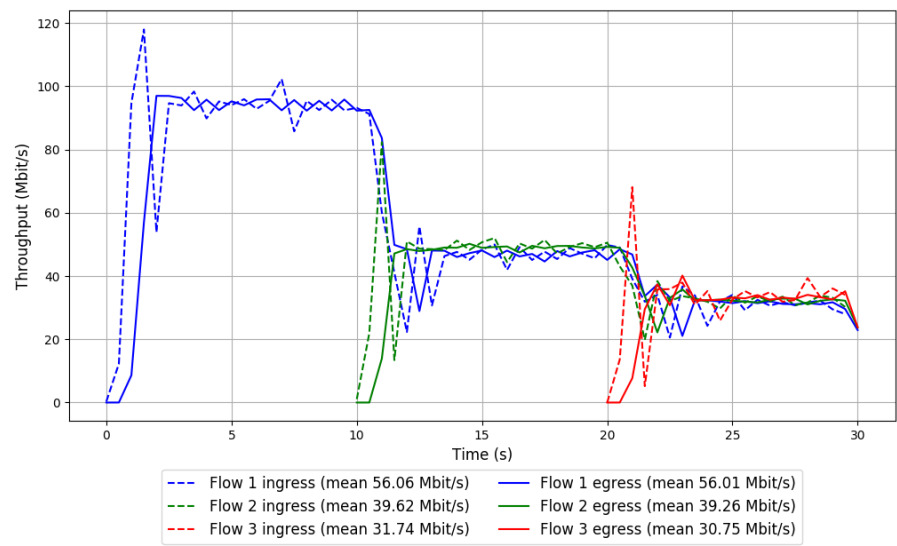
-- Flow 3:

Average throughput: 30.75 Mbit/s

95th percentile per-packet one-way delay: 441.013 ms

Loss rate: 4.98%

Run 3: Report of FillP-Sheep — Data Link



Run 4: Statistics of FillP-Sheep

Start at: 2019-03-09 14:21:08

End at: 2019-03-09 14:21:38

Local clock offset: -3.221 ms

Remote clock offset: 0.354 ms

Below is generated by plot.py at 2019-03-09 15:18:11

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.59 Mbit/s

95th percentile per-packet one-way delay: 273.516 ms

Loss rate: 1.75%

-- Flow 1:

Average throughput: 56.41 Mbit/s

95th percentile per-packet one-way delay: 313.627 ms

Loss rate: 0.87%

-- Flow 2:

Average throughput: 39.31 Mbit/s

95th percentile per-packet one-way delay: 202.483 ms

Loss rate: 2.84%

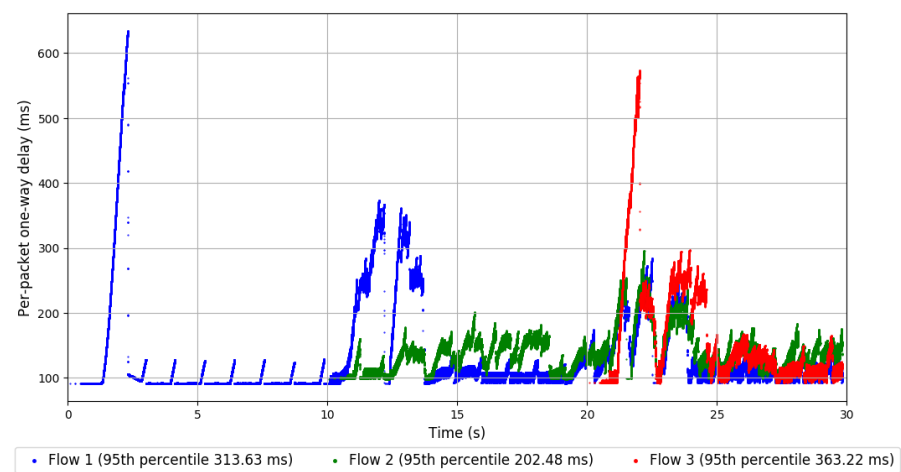
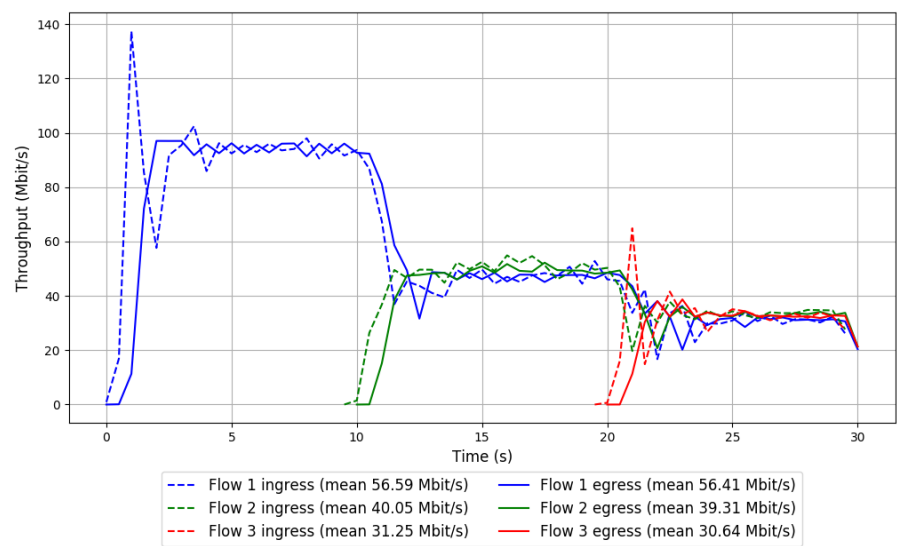
-- Flow 3:

Average throughput: 30.64 Mbit/s

95th percentile per-packet one-way delay: 363.221 ms

Loss rate: 3.74%

Run 4: Report of FillP-Sheep — Data Link



Run 5: Statistics of FillP-Sheep

Start at: 2019-03-09 14:48:45

End at: 2019-03-09 14:49:15

Local clock offset: -0.619 ms

Remote clock offset: 5.154 ms

Below is generated by plot.py at 2019-03-09 15:18:18

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.54 Mbit/s

95th percentile per-packet one-way delay: 303.794 ms

Loss rate: 1.73%

-- Flow 1:

Average throughput: 56.52 Mbit/s

95th percentile per-packet one-way delay: 326.696 ms

Loss rate: 0.97%

-- Flow 2:

Average throughput: 39.39 Mbit/s

95th percentile per-packet one-way delay: 255.778 ms

Loss rate: 2.27%

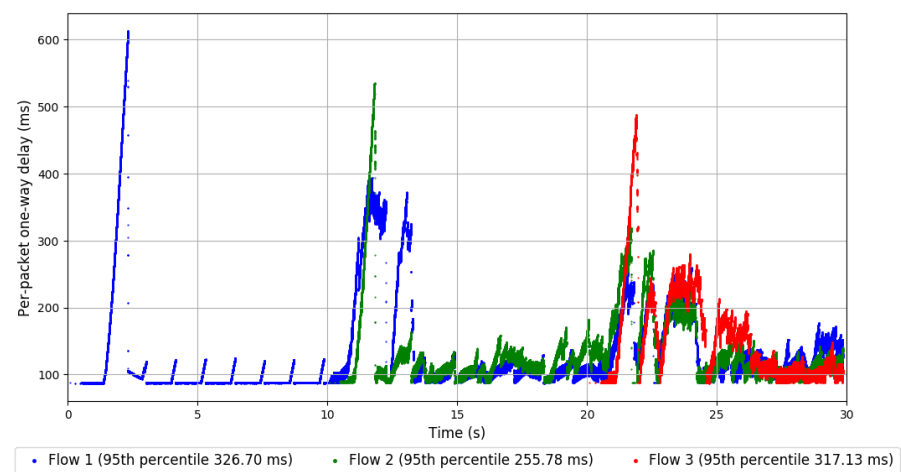
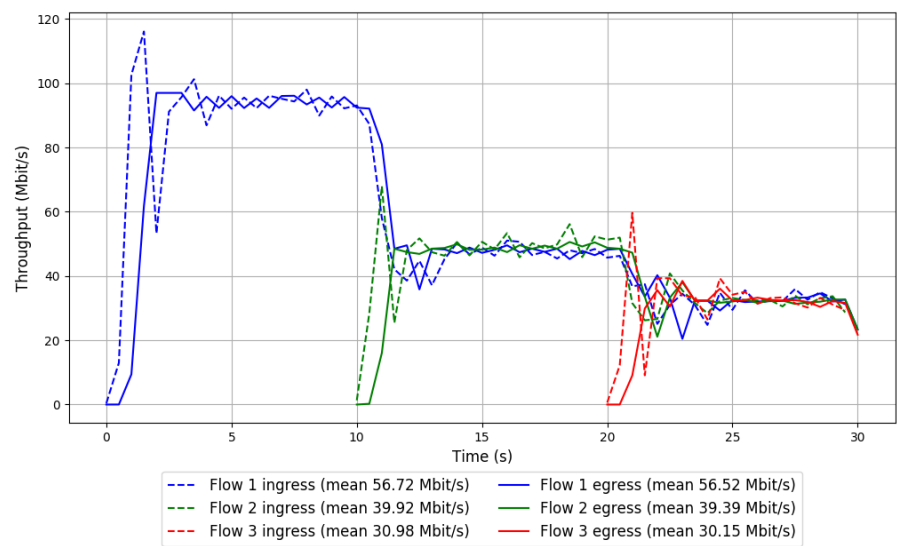
-- Flow 3:

Average throughput: 30.15 Mbit/s

95th percentile per-packet one-way delay: 317.133 ms

Loss rate: 4.57%

Run 5: Report of FillP-Sheep — Data Link



Run 1: Statistics of Indigo

Start at: 2019-03-09 13:02:24

End at: 2019-03-09 13:02:54

Local clock offset: -6.89 ms

Remote clock offset: 0.926 ms

Below is generated by plot.py at 2019-03-09 15:18:18

Datalink statistics

-- Total of 3 flows:

Average throughput: 93.80 Mbit/s

95th percentile per-packet one-way delay: 388.831 ms

Loss rate: 4.83%

-- Flow 1:

Average throughput: 58.61 Mbit/s

95th percentile per-packet one-way delay: 429.846 ms

Loss rate: 6.47%

-- Flow 2:

Average throughput: 38.54 Mbit/s

95th percentile per-packet one-way delay: 151.233 ms

Loss rate: 1.49%

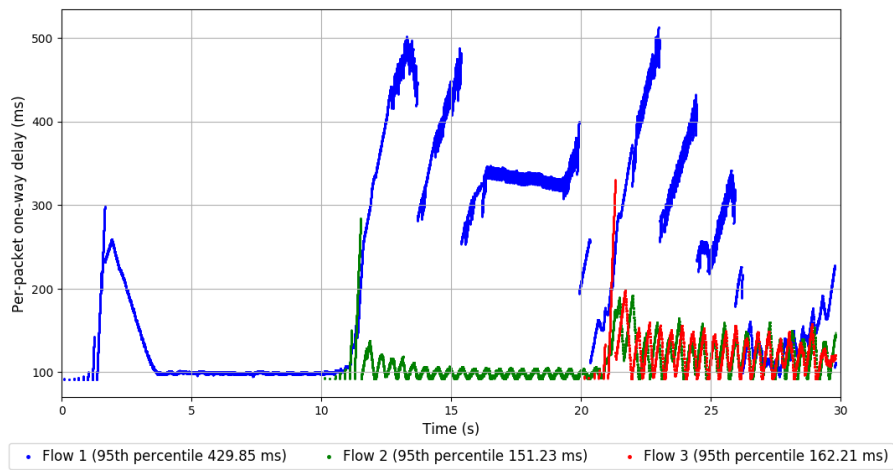
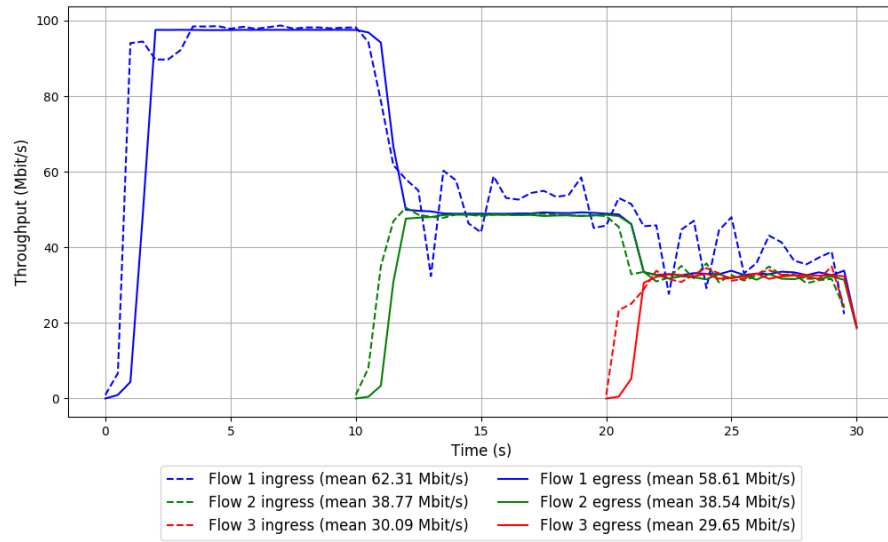
-- Flow 3:

Average throughput: 29.65 Mbit/s

95th percentile per-packet one-way delay: 162.210 ms

Loss rate: 3.21%

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2019-03-09 13:29:53

End at: 2019-03-09 13:30:23

Local clock offset: -6.28 ms

Remote clock offset: 0.752 ms

Below is generated by plot.py at 2019-03-09 15:18:18

Datalink statistics

-- Total of 3 flows:

Average throughput: 93.36 Mbit/s

95th percentile per-packet one-way delay: 345.191 ms

Loss rate: 4.88%

-- Flow 1:

Average throughput: 58.46 Mbit/s

95th percentile per-packet one-way delay: 352.402 ms

Loss rate: 5.28%

-- Flow 2:

Average throughput: 38.70 Mbit/s

95th percentile per-packet one-way delay: 304.820 ms

Loss rate: 4.40%

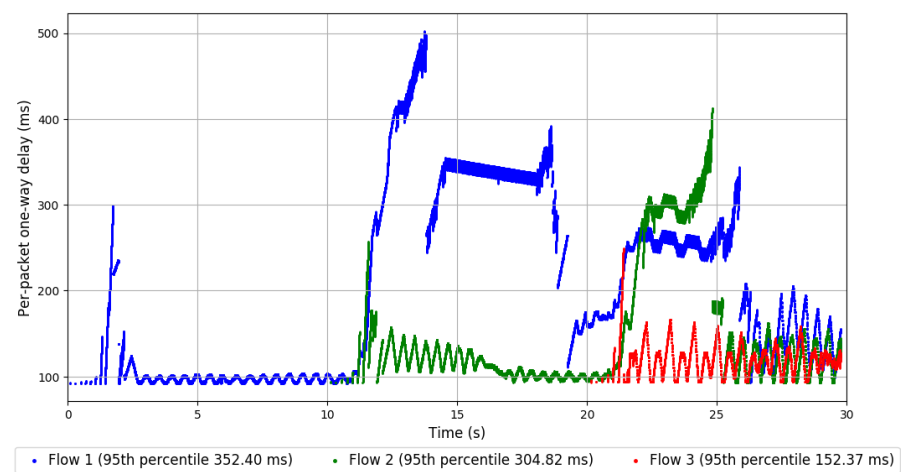
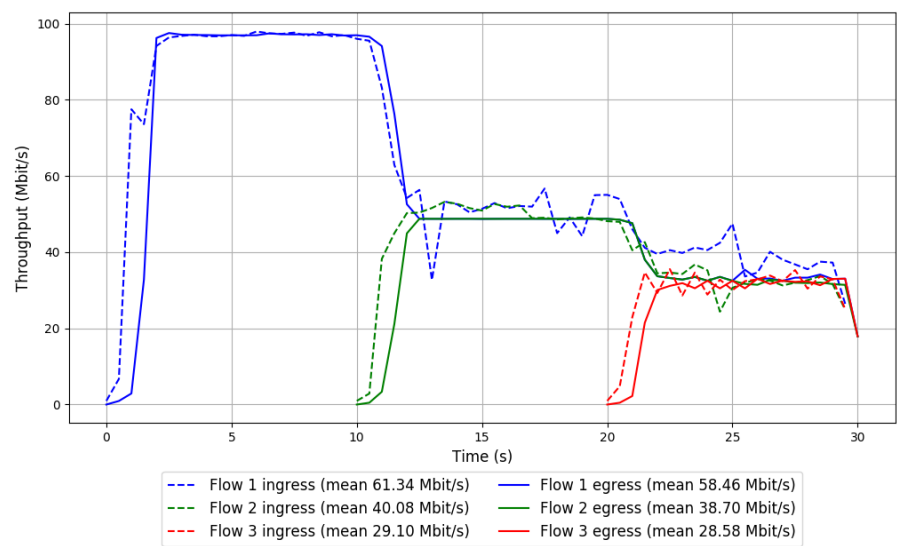
-- Flow 3:

Average throughput: 28.58 Mbit/s

95th percentile per-packet one-way delay: 152.372 ms

Loss rate: 3.71%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2019-03-09 13:57:22

End at: 2019-03-09 13:57:52

Local clock offset: -5.33 ms

Remote clock offset: 1.143 ms

Below is generated by plot.py at 2019-03-09 15:18:46

Datalink statistics

-- Total of 3 flows:

Average throughput: 93.24 Mbit/s

95th percentile per-packet one-way delay: 428.632 ms

Loss rate: 5.66%

-- Flow 1:

Average throughput: 58.42 Mbit/s

95th percentile per-packet one-way delay: 461.160 ms

Loss rate: 7.71%

-- Flow 2:

Average throughput: 38.41 Mbit/s

95th percentile per-packet one-way delay: 154.438 ms

Loss rate: 1.36%

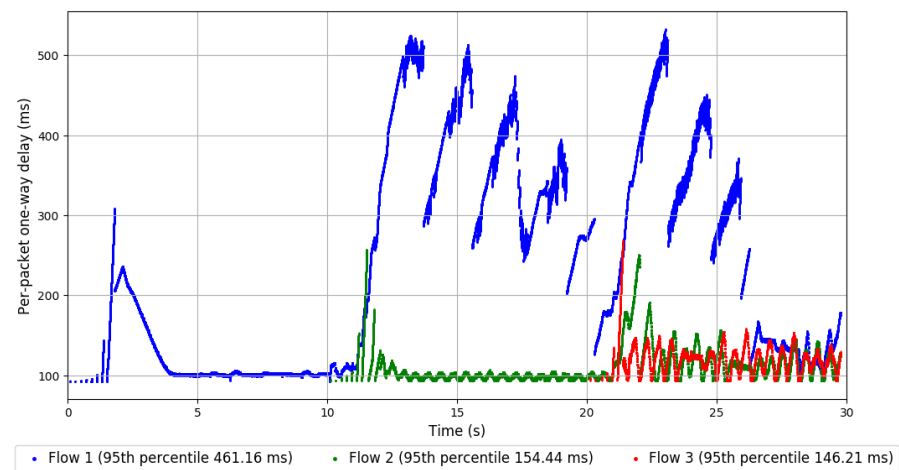
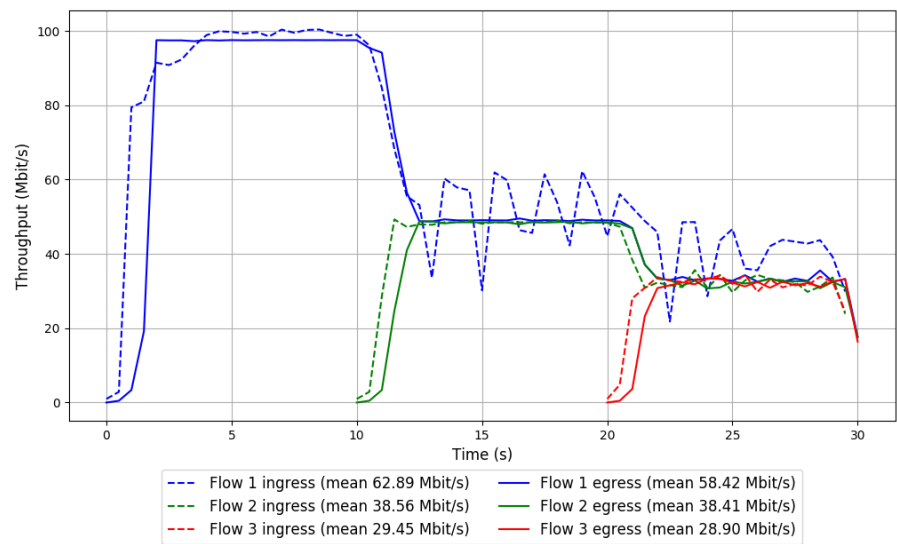
-- Flow 3:

Average throughput: 28.90 Mbit/s

95th percentile per-packet one-way delay: 146.207 ms

Loss rate: 3.78%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2019-03-09 14:25:10

End at: 2019-03-09 14:25:40

Local clock offset: -2.249 ms

Remote clock offset: 5.421 ms

Below is generated by plot.py at 2019-03-09 15:18:47

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.99 Mbit/s

95th percentile per-packet one-way delay: 325.888 ms

Loss rate: 4.11%

-- Flow 1:

Average throughput: 57.92 Mbit/s

95th percentile per-packet one-way delay: 332.025 ms

Loss rate: 5.53%

-- Flow 2:

Average throughput: 39.12 Mbit/s

95th percentile per-packet one-way delay: 129.700 ms

Loss rate: 1.23%

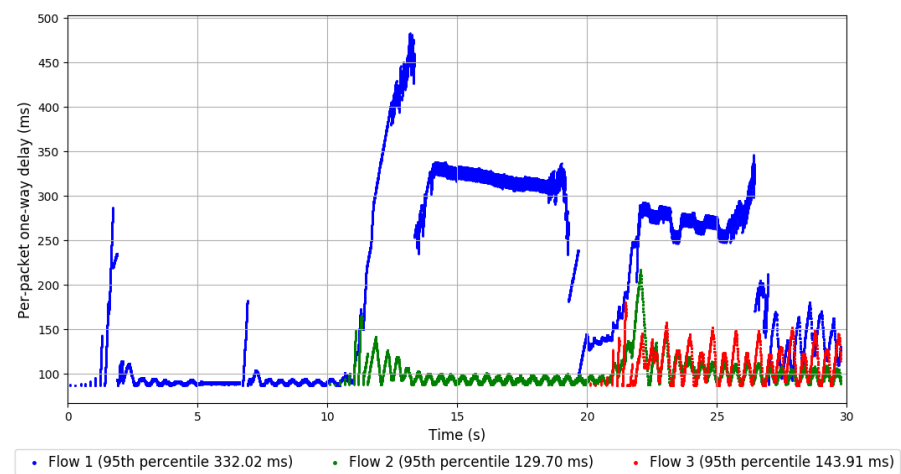
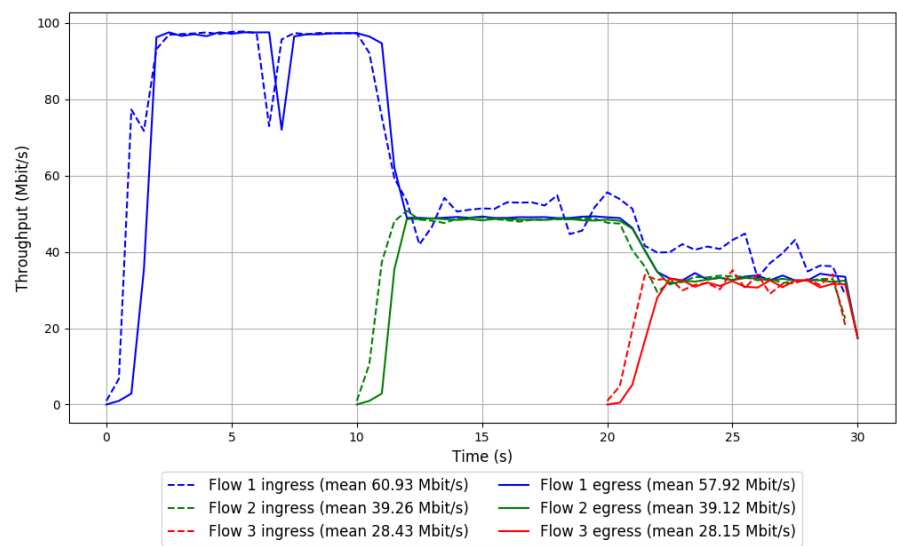
-- Flow 3:

Average throughput: 28.15 Mbit/s

95th percentile per-packet one-way delay: 143.913 ms

Loss rate: 2.94%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2019-03-09 14:52:41

End at: 2019-03-09 14:53:11

Local clock offset: -0.178 ms

Remote clock offset: 0.226 ms

Below is generated by plot.py at 2019-03-09 15:19:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 93.14 Mbit/s

95th percentile per-packet one-way delay: 394.201 ms

Loss rate: 7.89%

-- Flow 1:

Average throughput: 58.13 Mbit/s

95th percentile per-packet one-way delay: 430.743 ms

Loss rate: 10.92%

-- Flow 2:

Average throughput: 38.77 Mbit/s

95th percentile per-packet one-way delay: 167.362 ms

Loss rate: 1.83%

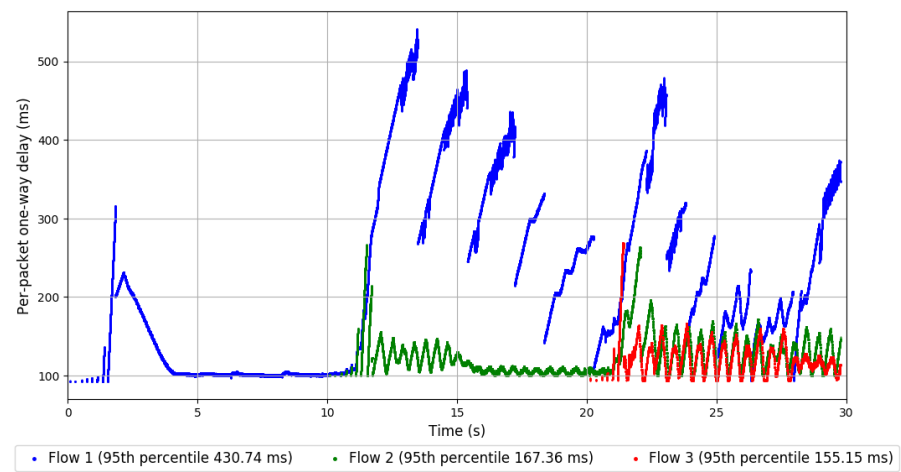
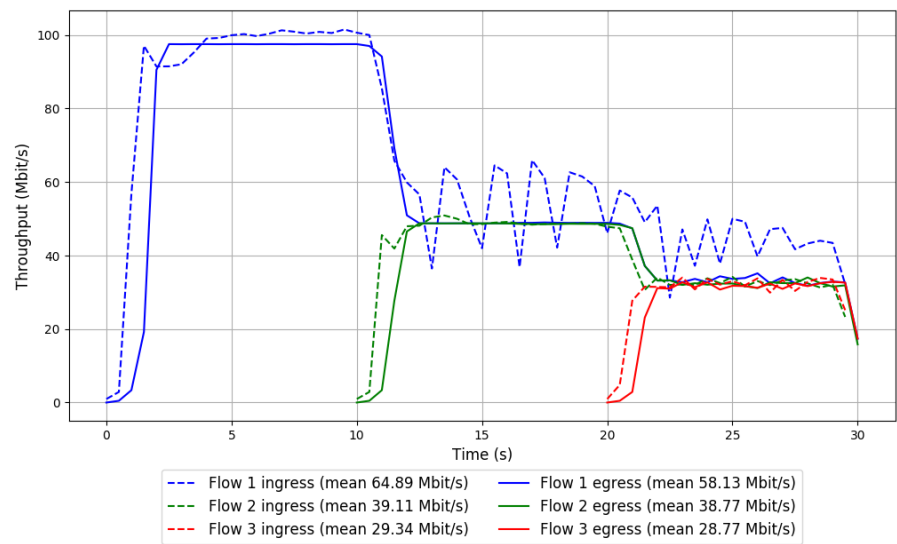
-- Flow 3:

Average throughput: 28.77 Mbit/s

95th percentile per-packet one-way delay: 155.150 ms

Loss rate: 3.90%

Run 5: Report of Indigo — Data Link



Run 1: Statistics of Indigo-MusesC3

Start at: 2019-03-09 13:05:03

End at: 2019-03-09 13:05:33

Local clock offset: -7.714 ms

Remote clock offset: 4.85 ms

Below is generated by plot.py at 2019-03-09 15:19:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 94.93 Mbit/s

95th percentile per-packet one-way delay: 149.824 ms

Loss rate: 3.30%

-- Flow 1:

Average throughput: 60.49 Mbit/s

95th percentile per-packet one-way delay: 133.422 ms

Loss rate: 2.73%

-- Flow 2:

Average throughput: 40.63 Mbit/s

95th percentile per-packet one-way delay: 138.800 ms

Loss rate: 4.58%

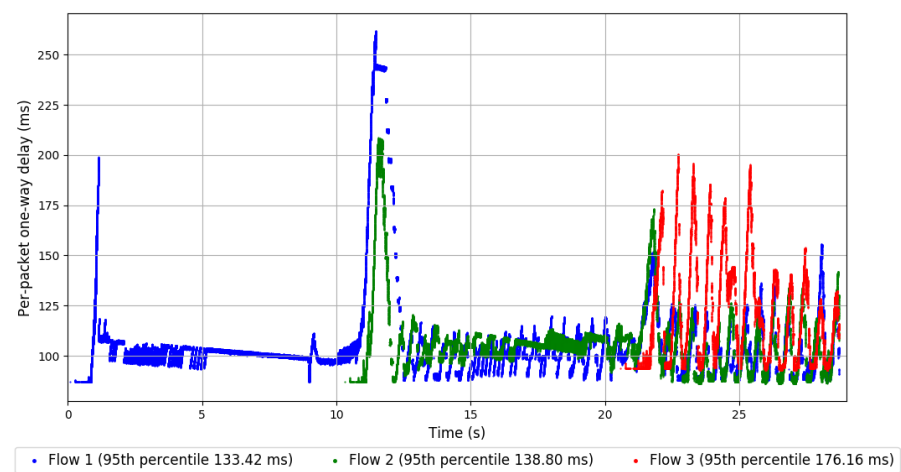
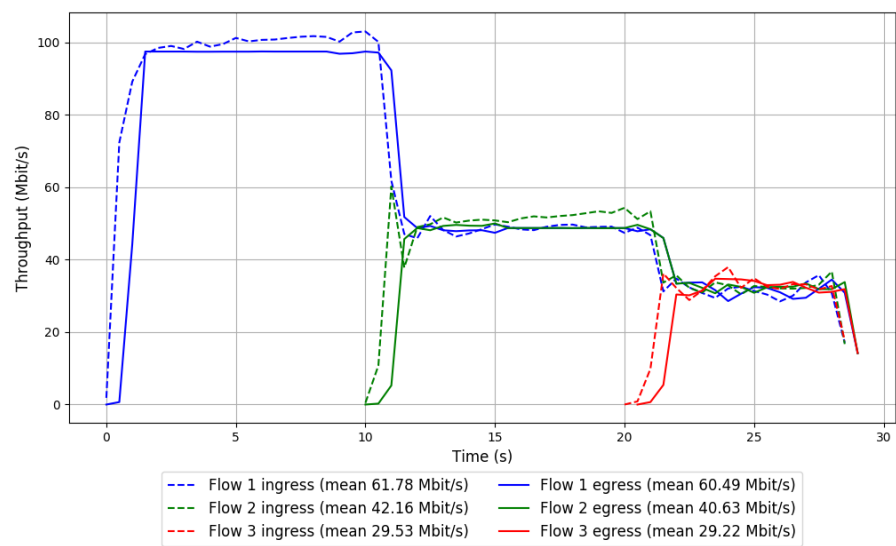
-- Flow 3:

Average throughput: 29.22 Mbit/s

95th percentile per-packet one-way delay: 176.158 ms

Loss rate: 3.34%

Run 1: Report of Indigo-MusesC3 — Data Link



Run 2: Statistics of Indigo-MusesC3

Start at: 2019-03-09 13:32:35

End at: 2019-03-09 13:33:05

Local clock offset: -5.399 ms

Remote clock offset: 6.2 ms

Below is generated by plot.py at 2019-03-09 15:19:13

Datalink statistics

-- Total of 3 flows:

Average throughput: 94.61 Mbit/s

95th percentile per-packet one-way delay: 148.506 ms

Loss rate: 3.19%

-- Flow 1:

Average throughput: 60.58 Mbit/s

95th percentile per-packet one-way delay: 146.875 ms

Loss rate: 3.19%

-- Flow 2:

Average throughput: 40.05 Mbit/s

95th percentile per-packet one-way delay: 150.063 ms

Loss rate: 3.08%

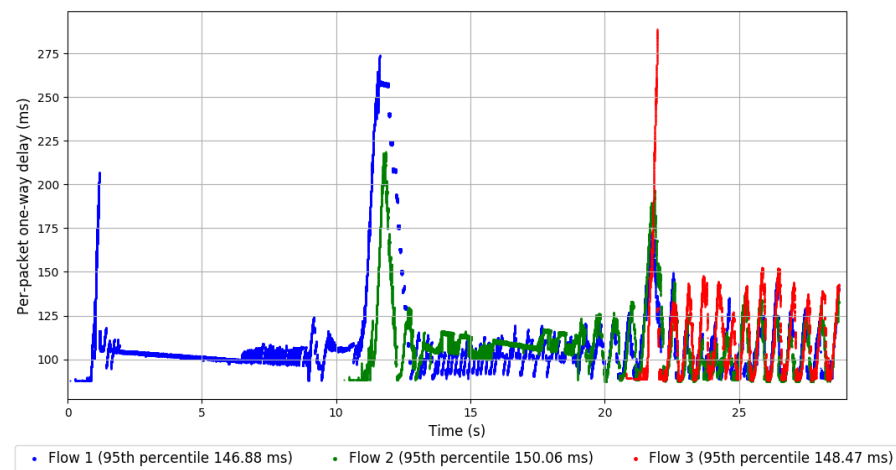
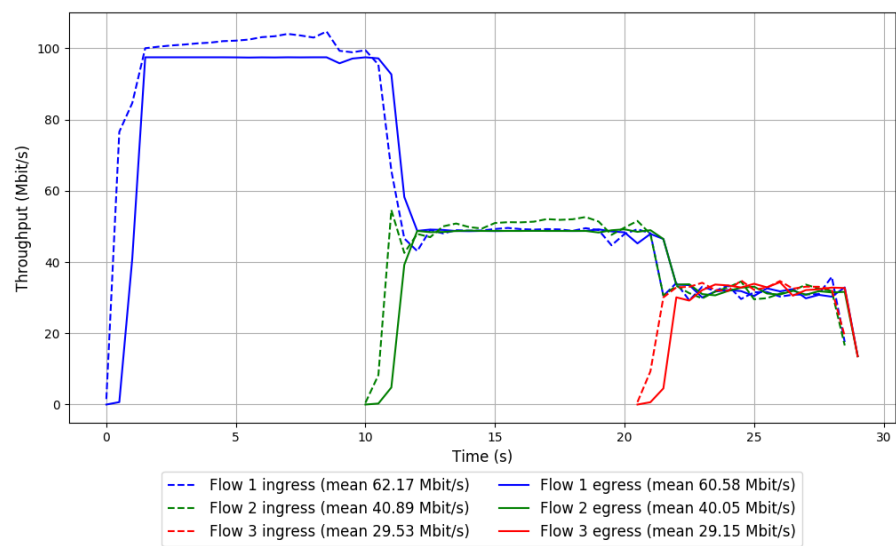
-- Flow 3:

Average throughput: 29.15 Mbit/s

95th percentile per-packet one-way delay: 148.471 ms

Loss rate: 3.52%

Run 2: Report of Indigo-MusesC3 — Data Link



Run 3: Statistics of Indigo-MusesC3

Start at: 2019-03-09 14:00:06

End at: 2019-03-09 14:00:36

Local clock offset: -5.348 ms

Remote clock offset: 4.628 ms

Below is generated by plot.py at 2019-03-09 15:19:17

Datalink statistics

-- Total of 3 flows:

Average throughput: 93.98 Mbit/s

95th percentile per-packet one-way delay: 162.081 ms

Loss rate: 2.53%

-- Flow 1:

Average throughput: 59.88 Mbit/s

95th percentile per-packet one-way delay: 150.817 ms

Loss rate: 2.89%

-- Flow 2:

Average throughput: 40.02 Mbit/s

95th percentile per-packet one-way delay: 204.830 ms

Loss rate: 1.45%

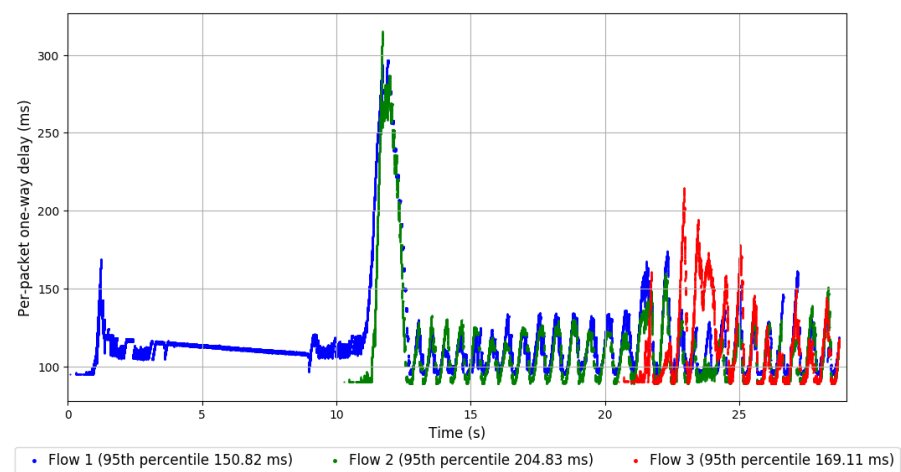
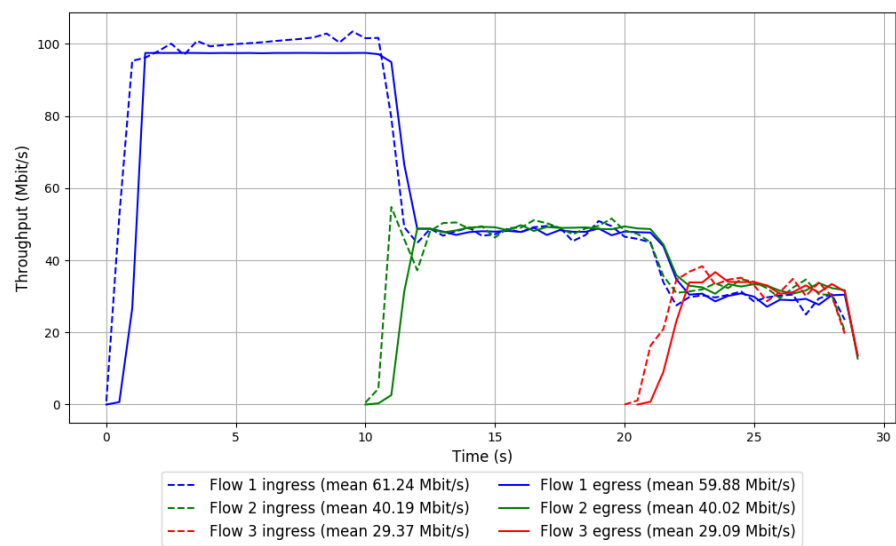
-- Flow 3:

Average throughput: 29.09 Mbit/s

95th percentile per-packet one-way delay: 169.106 ms

Loss rate: 3.24%

Run 3: Report of Indigo-MusesC3 — Data Link



Run 4: Statistics of Indigo-MusesC3

Start at: 2019-03-09 14:27:52

End at: 2019-03-09 14:28:22

Local clock offset: -1.766 ms

Remote clock offset: 5.189 ms

Below is generated by plot.py at 2019-03-09 15:19:21

Datalink statistics

-- Total of 3 flows:

Average throughput: 94.58 Mbit/s

95th percentile per-packet one-way delay: 166.258 ms

Loss rate: 2.35%

-- Flow 1:

Average throughput: 60.45 Mbit/s

95th percentile per-packet one-way delay: 132.100 ms

Loss rate: 2.18%

-- Flow 2:

Average throughput: 40.13 Mbit/s

95th percentile per-packet one-way delay: 197.051 ms

Loss rate: 2.22%

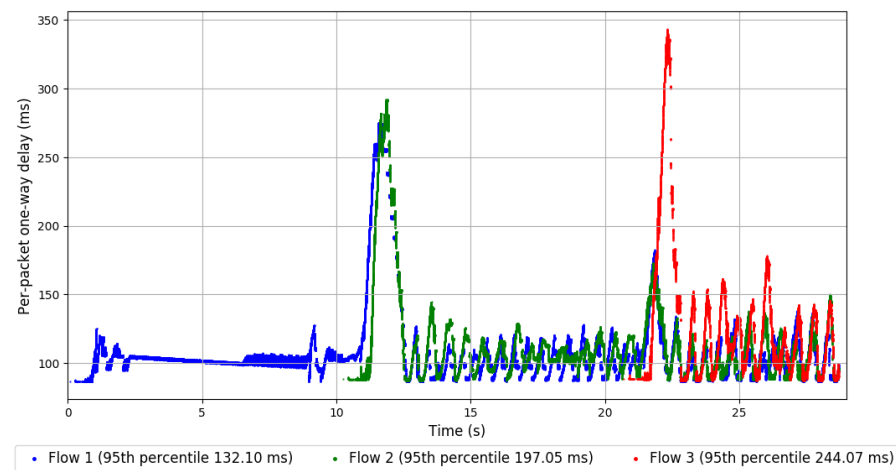
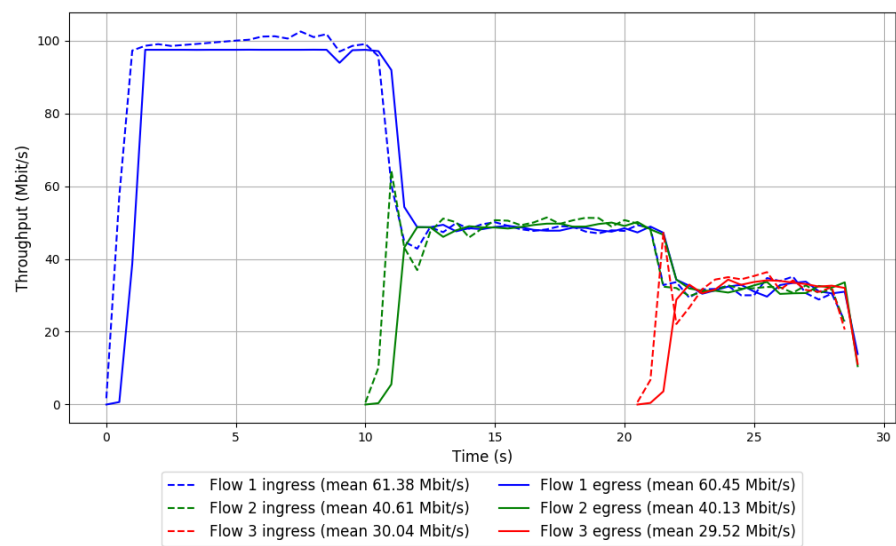
-- Flow 3:

Average throughput: 29.52 Mbit/s

95th percentile per-packet one-way delay: 244.068 ms

Loss rate: 3.97%

Run 4: Report of Indigo-MusesC3 — Data Link



Run 5: Statistics of Indigo-MusesC3

Start at: 2019-03-09 14:55:27

End at: 2019-03-09 14:55:57

Local clock offset: -0.277 ms

Remote clock offset: 6.167 ms

Below is generated by plot.py at 2019-03-09 15:19:26

Datalink statistics

-- Total of 3 flows:

Average throughput: 94.82 Mbit/s

95th percentile per-packet one-way delay: 166.517 ms

Loss rate: 3.00%

-- Flow 1:

Average throughput: 60.35 Mbit/s

95th percentile per-packet one-way delay: 137.589 ms

Loss rate: 2.90%

-- Flow 2:

Average throughput: 40.20 Mbit/s

95th percentile per-packet one-way delay: 222.090 ms

Loss rate: 2.70%

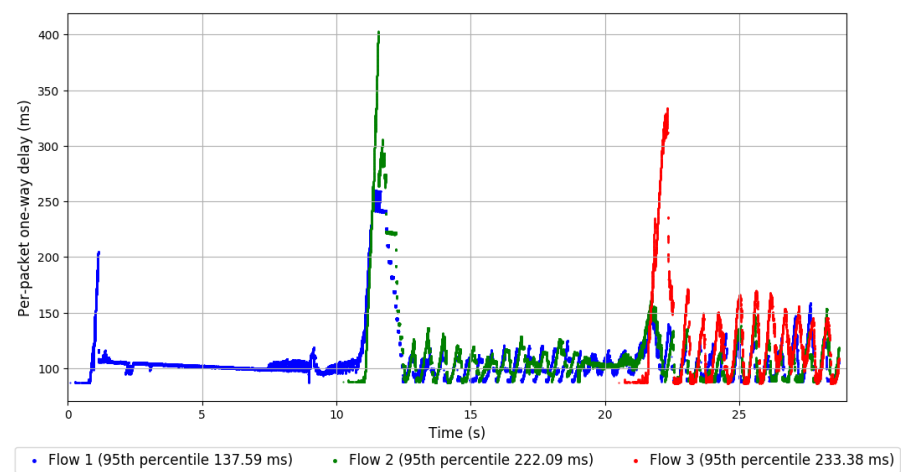
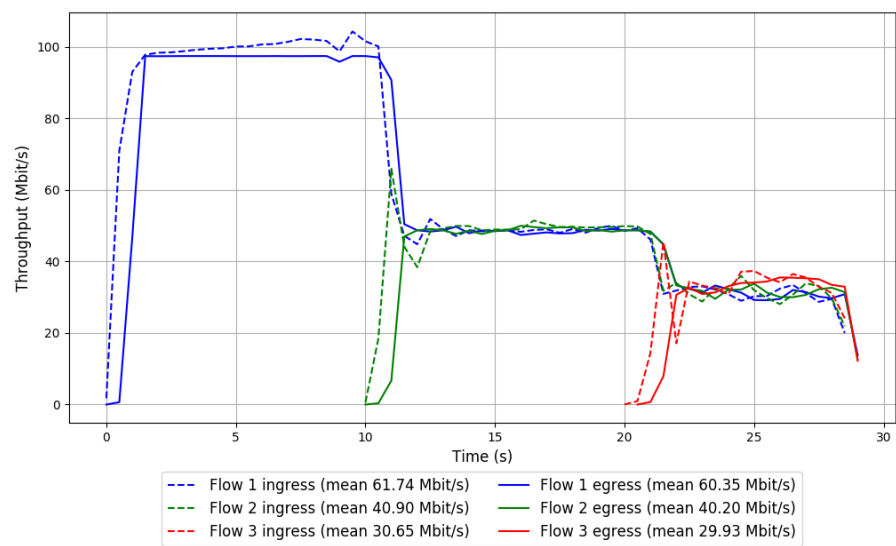
-- Flow 3:

Average throughput: 29.93 Mbit/s

95th percentile per-packet one-way delay: 233.377 ms

Loss rate: 4.60%

Run 5: Report of Indigo-MusesC3 — Data Link

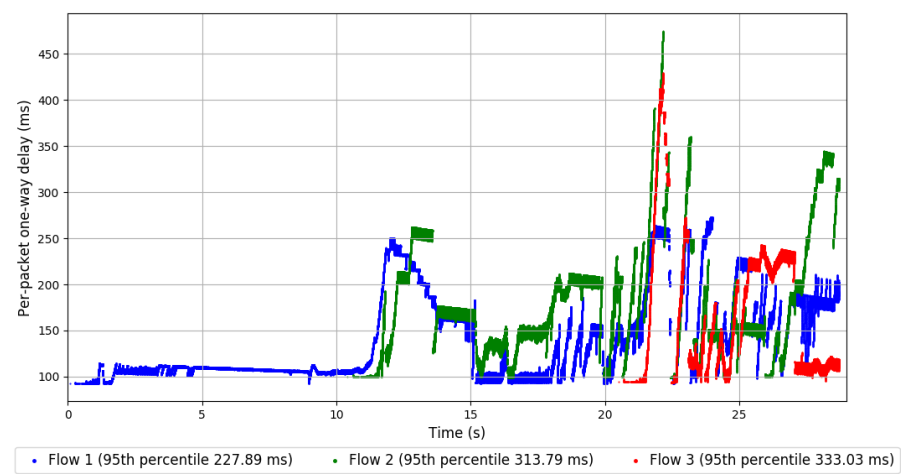
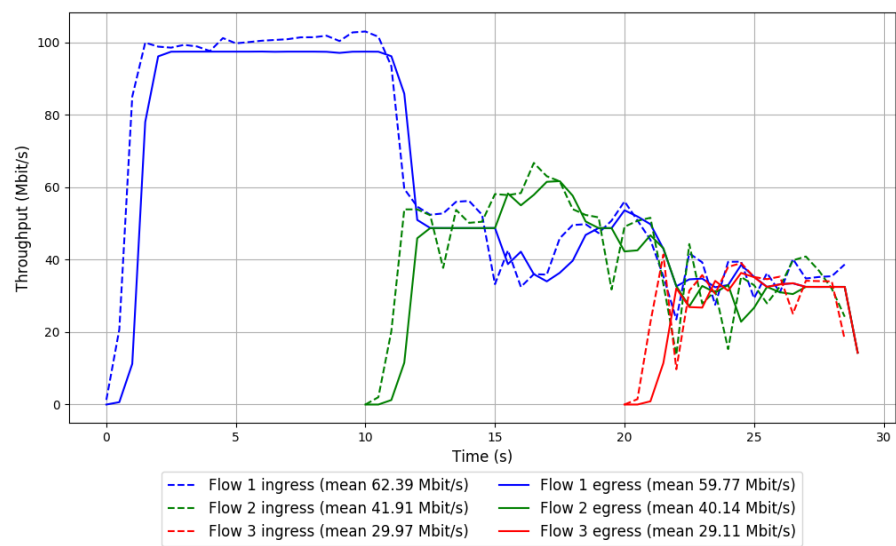


Run 1: Statistics of Indigo-MusesC5

Start at: 2019-03-09 13:17:55
End at: 2019-03-09 13:18:25
Local clock offset: -6.461 ms
Remote clock offset: -0.396 ms

Below is generated by plot.py at 2019-03-09 15:19:52
Datalink statistics
-- Total of 3 flows:
Average throughput: 93.81 Mbit/s
95th percentile per-packet one-way delay: 255.520 ms
Loss rate: 4.89%
-- Flow 1:
Average throughput: 59.77 Mbit/s
95th percentile per-packet one-way delay: 227.893 ms
Loss rate: 4.85%
-- Flow 2:
Average throughput: 40.14 Mbit/s
95th percentile per-packet one-way delay: 313.785 ms
Loss rate: 5.14%
-- Flow 3:
Average throughput: 29.11 Mbit/s
95th percentile per-packet one-way delay: 333.032 ms
Loss rate: 4.40%

Run 1: Report of Indigo-MusesC5 — Data Link



Run 2: Statistics of Indigo-MusesC5

Start at: 2019-03-09 13:45:28

End at: 2019-03-09 13:45:58

Local clock offset: -6.054 ms

Remote clock offset: 6.722 ms

Below is generated by plot.py at 2019-03-09 15:19:53

Datalink statistics

-- Total of 3 flows:

Average throughput: 93.26 Mbit/s

95th percentile per-packet one-way delay: 259.873 ms

Loss rate: 3.81%

-- Flow 1:

Average throughput: 58.68 Mbit/s

95th percentile per-packet one-way delay: 218.440 ms

Loss rate: 3.02%

-- Flow 2:

Average throughput: 41.81 Mbit/s

95th percentile per-packet one-way delay: 278.415 ms

Loss rate: 4.58%

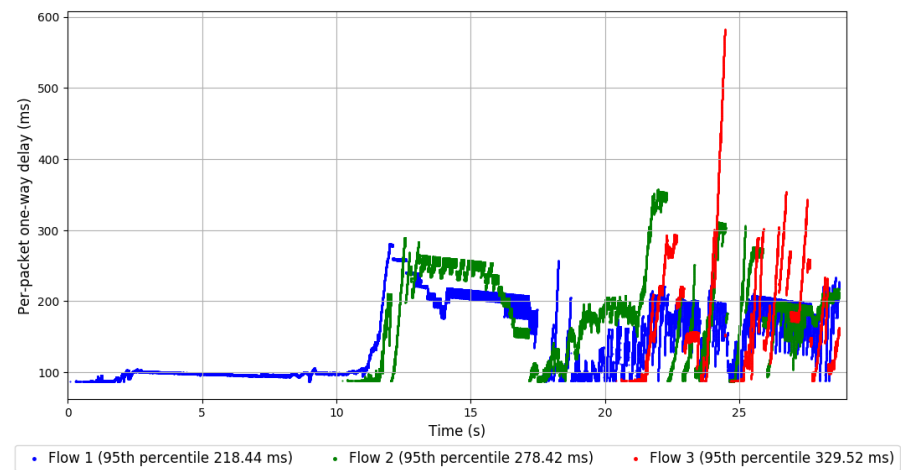
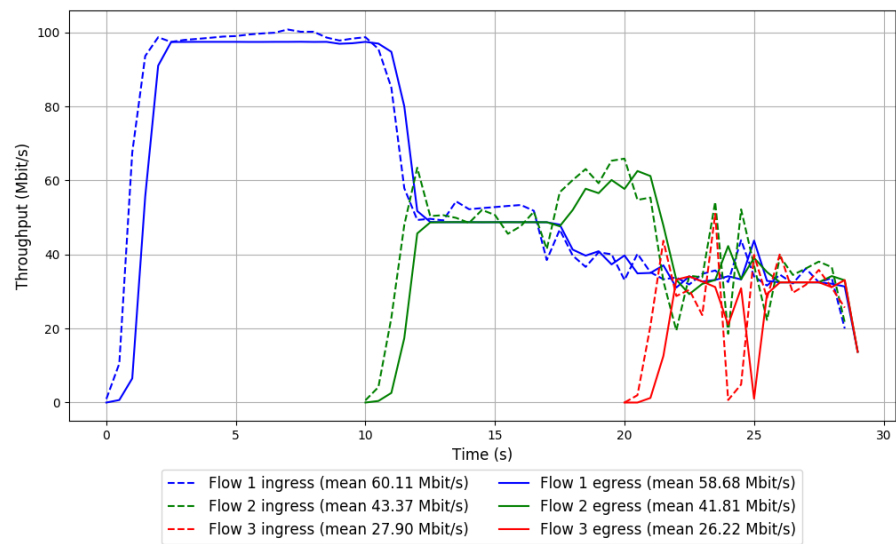
-- Flow 3:

Average throughput: 26.22 Mbit/s

95th percentile per-packet one-way delay: 329.518 ms

Loss rate: 7.06%

Run 2: Report of Indigo-MusesC5 — Data Link



Run 3: Statistics of Indigo-MusesC5

Start at: 2019-03-09 14:13:07

End at: 2019-03-09 14:13:37

Local clock offset: -6.178 ms

Remote clock offset: 6.525 ms

Below is generated by plot.py at 2019-03-09 15:20:07

Datalink statistics

-- Total of 3 flows:

Average throughput: 93.41 Mbit/s

95th percentile per-packet one-way delay: 263.635 ms

Loss rate: 3.50%

-- Flow 1:

Average throughput: 59.73 Mbit/s

95th percentile per-packet one-way delay: 260.744 ms

Loss rate: 2.83%

-- Flow 2:

Average throughput: 39.53 Mbit/s

95th percentile per-packet one-way delay: 282.678 ms

Loss rate: 4.75%

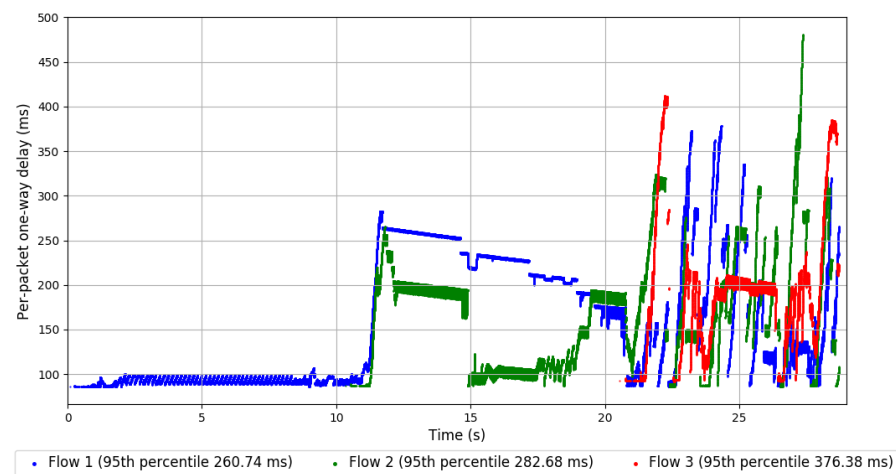
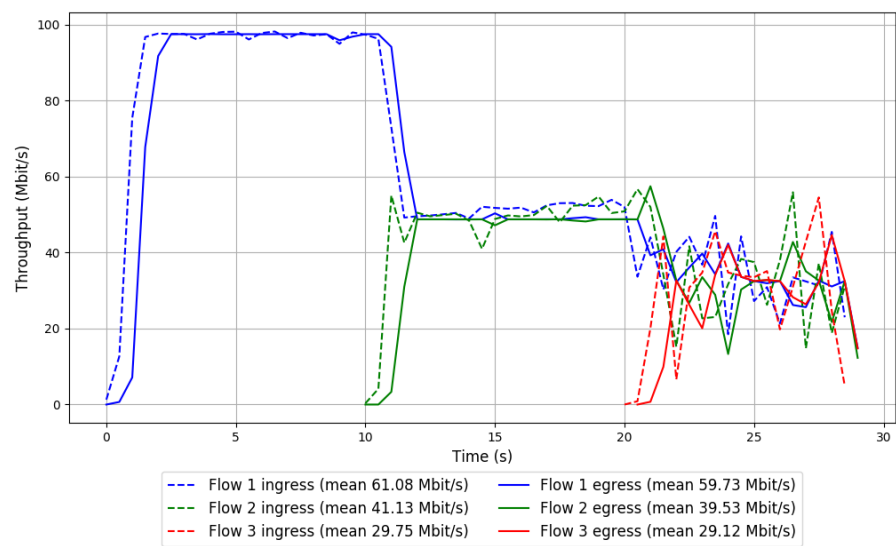
-- Flow 3:

Average throughput: 29.12 Mbit/s

95th percentile per-packet one-way delay: 376.382 ms

Loss rate: 4.46%

Run 3: Report of Indigo-MusesC5 — Data Link



Run 4: Statistics of Indigo-MusesC5

Start at: 2019-03-09 14:40:46

End at: 2019-03-09 14:41:16

Local clock offset: -0.265 ms

Remote clock offset: 0.38 ms

Below is generated by plot.py at 2019-03-09 15:20:07

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.29 Mbit/s

95th percentile per-packet one-way delay: 277.252 ms

Loss rate: 4.22%

-- Flow 1:

Average throughput: 58.70 Mbit/s

95th percentile per-packet one-way delay: 276.922 ms

Loss rate: 3.58%

-- Flow 2:

Average throughput: 38.91 Mbit/s

95th percentile per-packet one-way delay: 260.583 ms

Loss rate: 5.03%

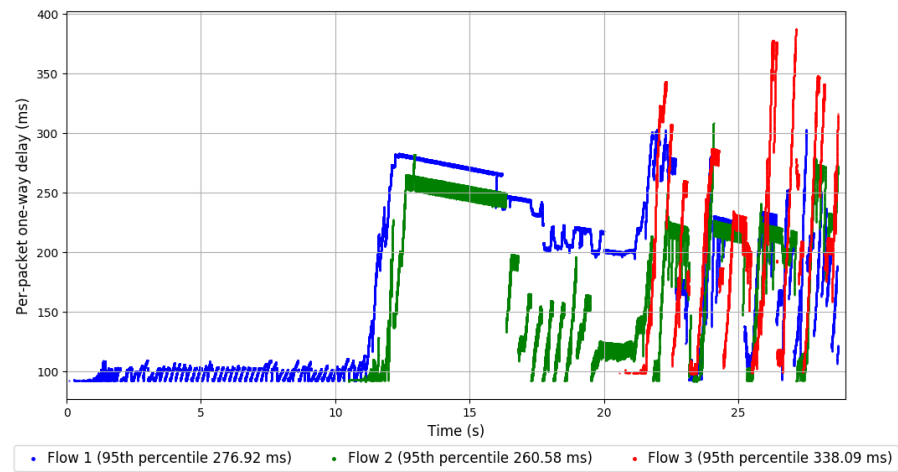
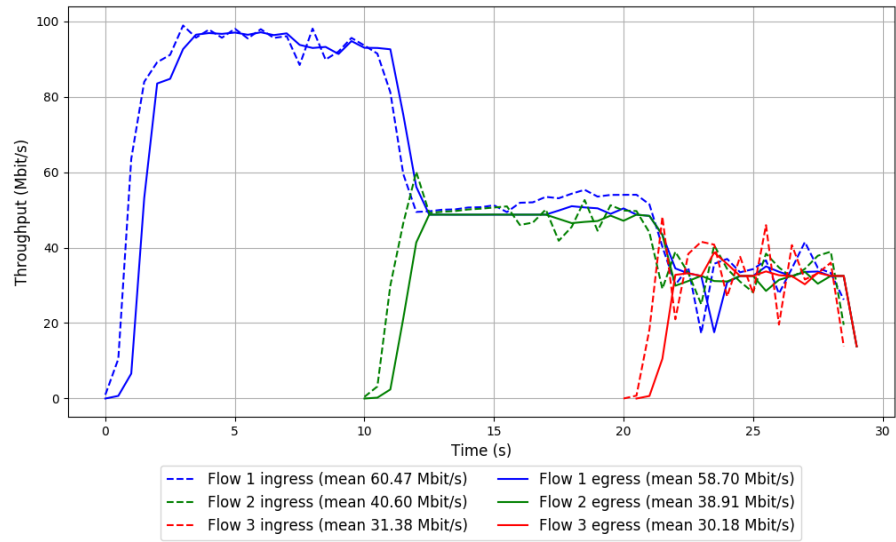
-- Flow 3:

Average throughput: 30.18 Mbit/s

95th percentile per-packet one-way delay: 338.090 ms

Loss rate: 6.12%

Run 4: Report of Indigo-MusesC5 — Data Link



Run 5: Statistics of Indigo-MusesC5

Start at: 2019-03-09 15:08:23

End at: 2019-03-09 15:08:53

Local clock offset: -0.967 ms

Remote clock offset: 6.451 ms

Below is generated by plot.py at 2019-03-09 15:20:19

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.05 Mbit/s

95th percentile per-packet one-way delay: 265.700 ms

Loss rate: 4.22%

-- Flow 1:

Average throughput: 58.83 Mbit/s

95th percentile per-packet one-way delay: 267.364 ms

Loss rate: 3.06%

-- Flow 2:

Average throughput: 39.11 Mbit/s

95th percentile per-packet one-way delay: 254.956 ms

Loss rate: 6.00%

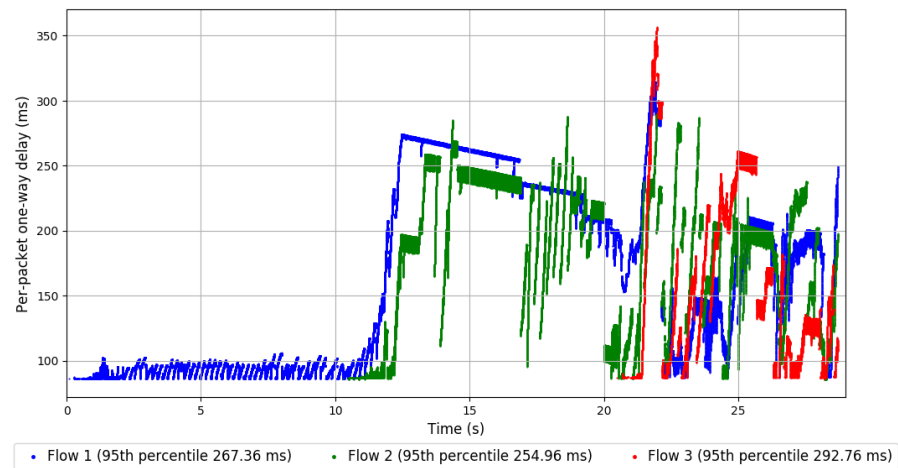
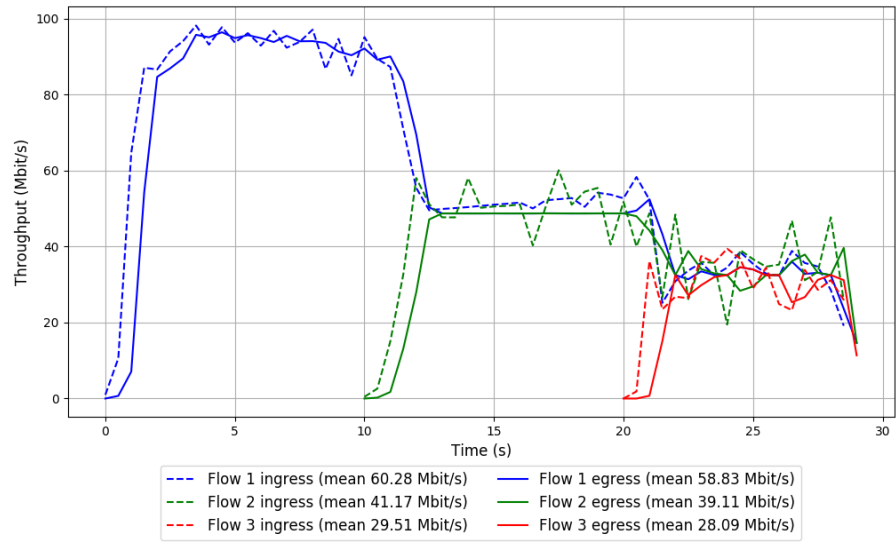
-- Flow 3:

Average throughput: 28.09 Mbit/s

95th percentile per-packet one-way delay: 292.760 ms

Loss rate: 6.82%

Run 5: Report of Indigo-MusesC5 — Data Link



Run 1: Statistics of Indigo-MusesD

Start at: 2019-03-09 13:10:13

End at: 2019-03-09 13:10:43

Local clock offset: -7.815 ms

Remote clock offset: 4.565 ms

Below is generated by plot.py at 2019-03-09 15:20:24

Datalink statistics

-- Total of 3 flows:

Average throughput: 93.74 Mbit/s

95th percentile per-packet one-way delay: 202.529 ms

Loss rate: 4.63%

-- Flow 1:

Average throughput: 61.48 Mbit/s

95th percentile per-packet one-way delay: 207.172 ms

Loss rate: 5.73%

-- Flow 2:

Average throughput: 36.24 Mbit/s

95th percentile per-packet one-way delay: 128.406 ms

Loss rate: 1.96%

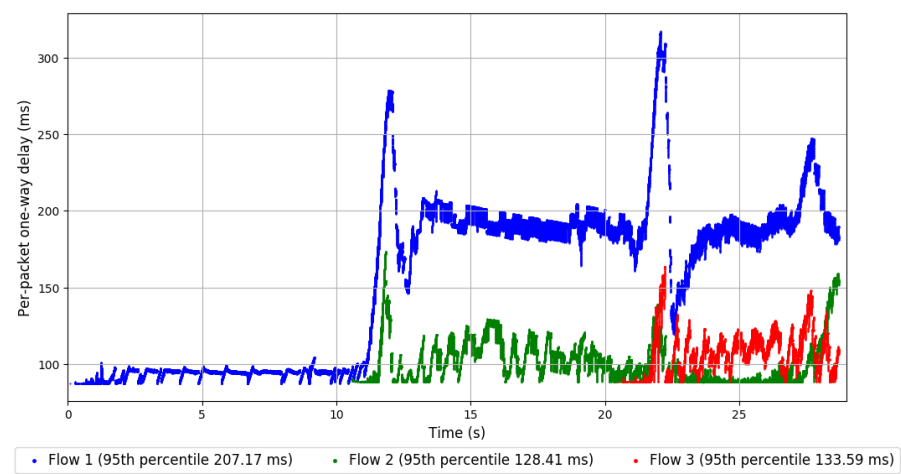
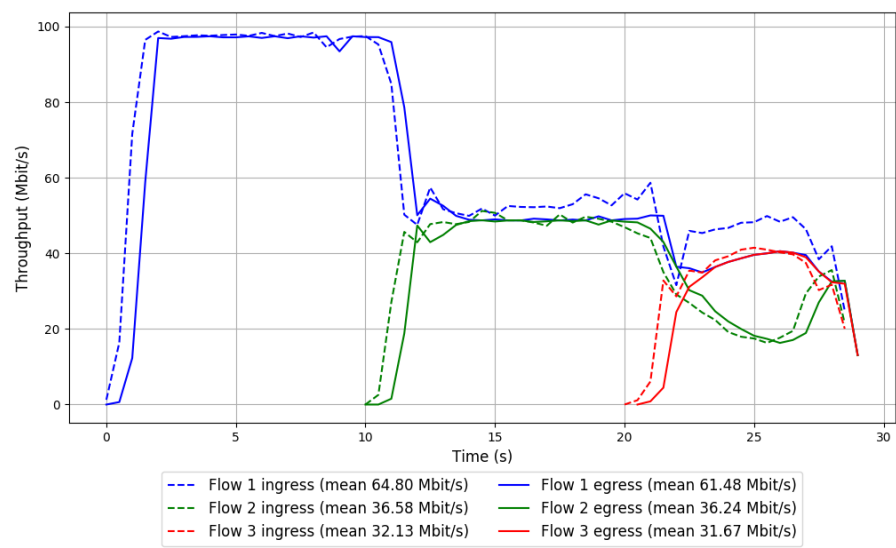
-- Flow 3:

Average throughput: 31.67 Mbit/s

95th percentile per-packet one-way delay: 133.585 ms

Loss rate: 3.72%

Run 1: Report of Indigo-MusesD — Data Link



Run 2: Statistics of Indigo-MusesD

Start at: 2019-03-09 13:37:45

End at: 2019-03-09 13:38:15

Local clock offset: -5.296 ms

Remote clock offset: 6.311 ms

Below is generated by plot.py at 2019-03-09 15:20:28

Datalink statistics

-- Total of 3 flows:

Average throughput: 93.38 Mbit/s

95th percentile per-packet one-way delay: 208.326 ms

Loss rate: 5.93%

-- Flow 1:

Average throughput: 61.32 Mbit/s

95th percentile per-packet one-way delay: 211.325 ms

Loss rate: 6.96%

-- Flow 2:

Average throughput: 37.38 Mbit/s

95th percentile per-packet one-way delay: 164.850 ms

Loss rate: 2.75%

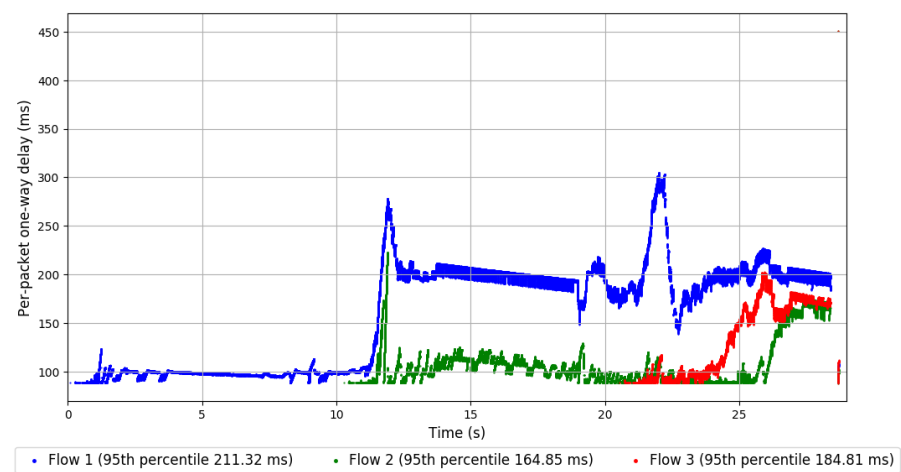
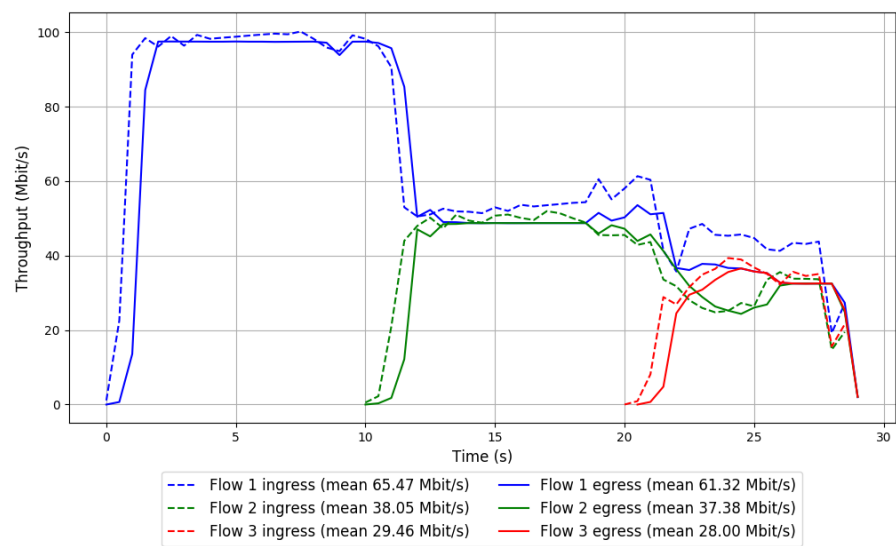
-- Flow 3:

Average throughput: 28.00 Mbit/s

95th percentile per-packet one-way delay: 184.807 ms

Loss rate: 7.17%

Run 2: Report of Indigo-MusesD — Data Link



Run 3: Statistics of Indigo-MusesD

Start at: 2019-03-09 14:05:20

End at: 2019-03-09 14:05:50

Local clock offset: -5.37 ms

Remote clock offset: 6.726 ms

Below is generated by plot.py at 2019-03-09 15:20:32

Datalink statistics

-- Total of 3 flows:

Average throughput: 93.94 Mbit/s

95th percentile per-packet one-way delay: 214.378 ms

Loss rate: 4.50%

-- Flow 1:

Average throughput: 60.09 Mbit/s

95th percentile per-packet one-way delay: 220.105 ms

Loss rate: 4.80%

-- Flow 2:

Average throughput: 38.59 Mbit/s

95th percentile per-packet one-way delay: 176.017 ms

Loss rate: 3.90%

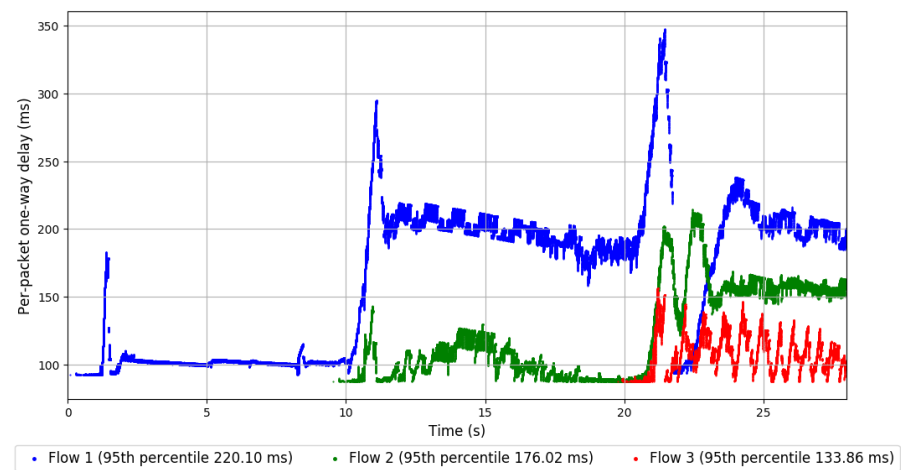
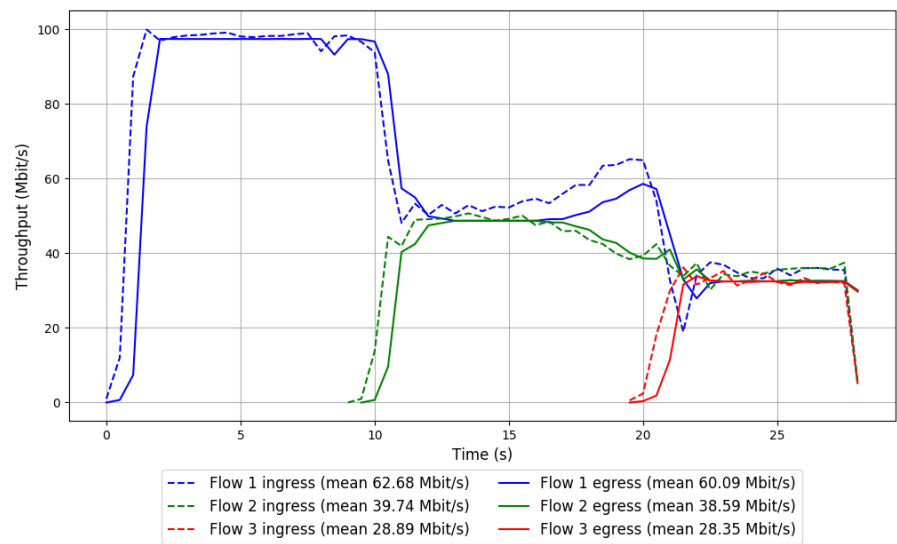
-- Flow 3:

Average throughput: 28.35 Mbit/s

95th percentile per-packet one-way delay: 133.856 ms

Loss rate: 4.13%

Run 3: Report of Indigo-MusesD — Data Link



Run 4: Statistics of Indigo-MusesD

Start at: 2019-03-09 14:33:04

End at: 2019-03-09 14:33:34

Local clock offset: -1.009 ms

Remote clock offset: 0.273 ms

Below is generated by plot.py at 2019-03-09 15:21:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 94.05 Mbit/s

95th percentile per-packet one-way delay: 212.496 ms

Loss rate: 5.94%

-- Flow 1:

Average throughput: 60.79 Mbit/s

95th percentile per-packet one-way delay: 220.168 ms

Loss rate: 7.33%

-- Flow 2:

Average throughput: 38.15 Mbit/s

95th percentile per-packet one-way delay: 162.865 ms

Loss rate: 2.42%

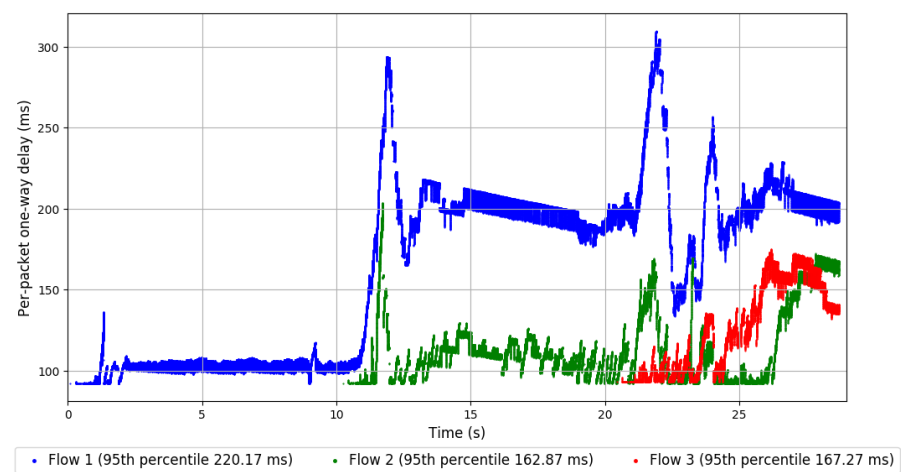
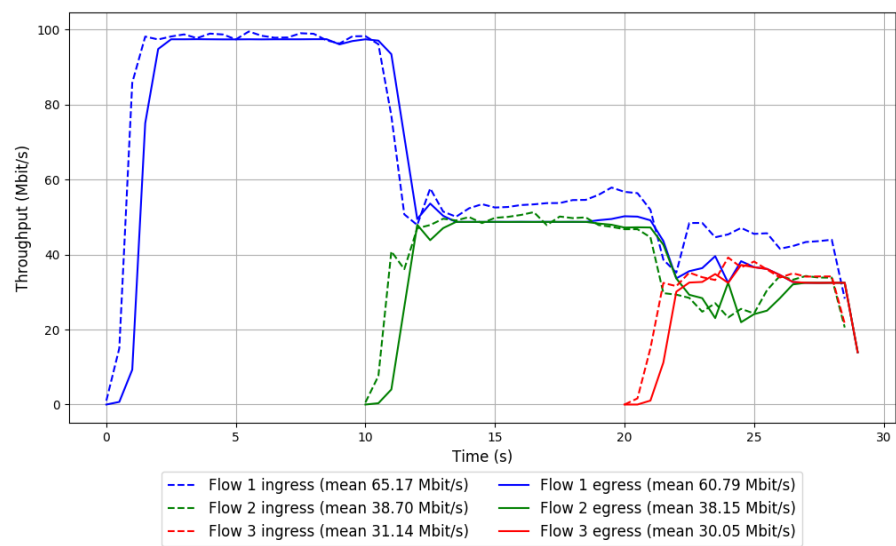
-- Flow 3:

Average throughput: 30.05 Mbit/s

95th percentile per-packet one-way delay: 167.267 ms

Loss rate: 5.69%

Run 4: Report of Indigo-MusesD — Data Link



Run 5: Statistics of Indigo-MusesD

Start at: 2019-03-09 15:00:40

End at: 2019-03-09 15:01:10

Local clock offset: -1.071 ms

Remote clock offset: 4.062 ms

Below is generated by plot.py at 2019-03-09 15:21:02

Datalink statistics

-- Total of 3 flows:

Average throughput: 94.07 Mbit/s

95th percentile per-packet one-way delay: 208.814 ms

Loss rate: 7.44%

-- Flow 1:

Average throughput: 60.17 Mbit/s

95th percentile per-packet one-way delay: 209.387 ms

Loss rate: 5.86%

-- Flow 2:

Average throughput: 40.05 Mbit/s

95th percentile per-packet one-way delay: 205.709 ms

Loss rate: 11.90%

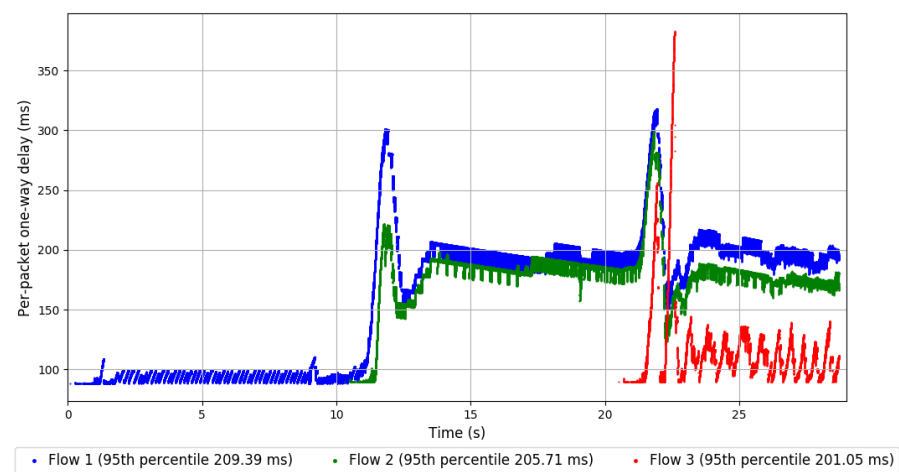
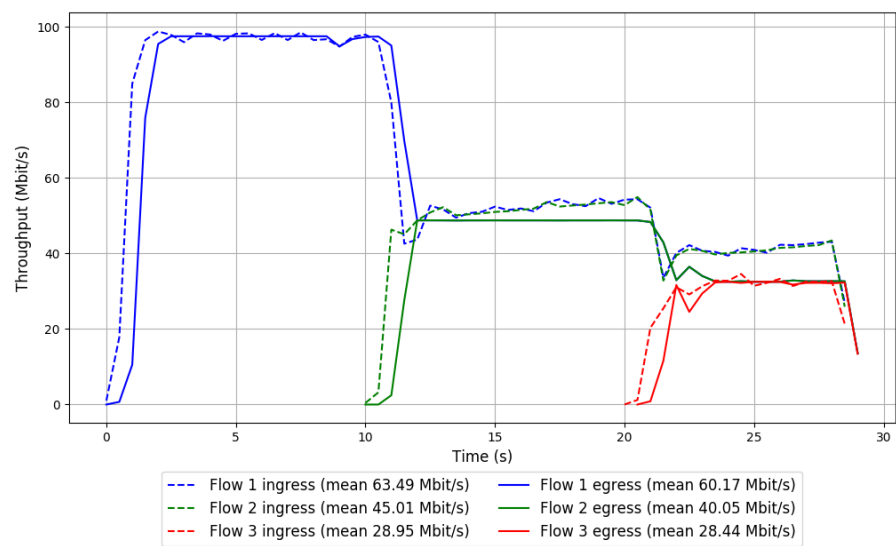
-- Flow 3:

Average throughput: 28.44 Mbit/s

95th percentile per-packet one-way delay: 201.048 ms

Loss rate: 4.01%

Run 5: Report of Indigo-MusesD — Data Link



Run 1: Statistics of Indigo-MusesT

Start at: 2019-03-09 13:01:05

End at: 2019-03-09 13:01:35

Local clock offset: -6.776 ms

Remote clock offset: 6.13 ms

Below is generated by plot.py at 2019-03-09 15:21:17

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.13 Mbit/s

95th percentile per-packet one-way delay: 428.854 ms

Loss rate: 8.18%

-- Flow 1:

Average throughput: 57.88 Mbit/s

95th percentile per-packet one-way delay: 413.185 ms

Loss rate: 8.51%

-- Flow 2:

Average throughput: 40.18 Mbit/s

95th percentile per-packet one-way delay: 356.292 ms

Loss rate: 4.13%

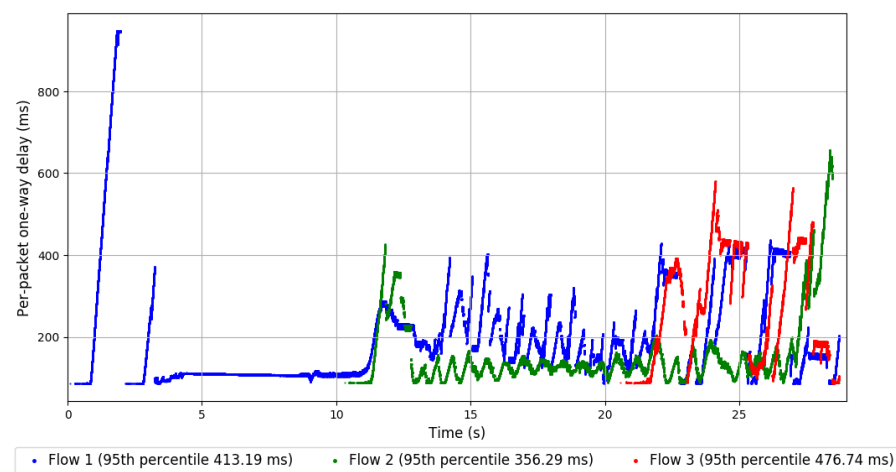
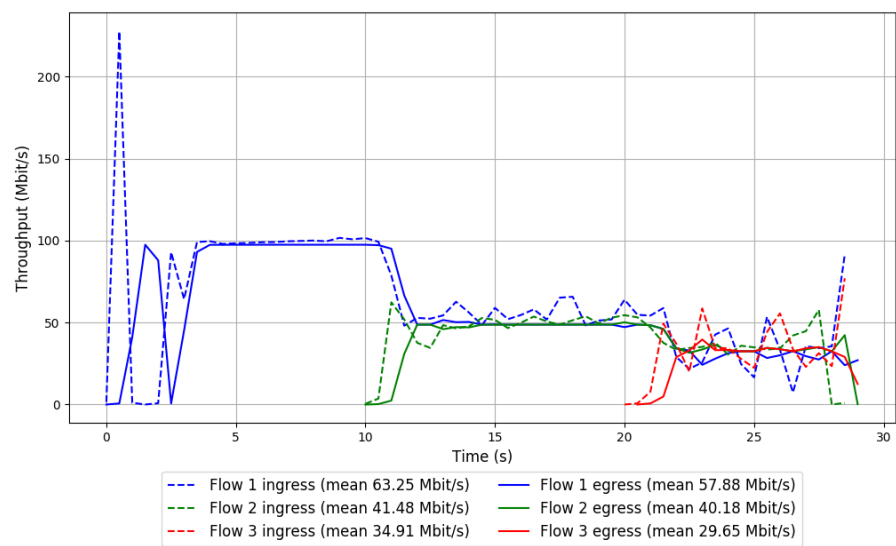
-- Flow 3:

Average throughput: 29.65 Mbit/s

95th percentile per-packet one-way delay: 476.737 ms

Loss rate: 16.93%

Run 1: Report of Indigo-MusesT — Data Link



Run 2: Statistics of Indigo-MusesT

Start at: 2019-03-09 13:28:34

End at: 2019-03-09 13:29:04

Local clock offset: -6.273 ms

Remote clock offset: 7.065 ms

Below is generated by plot.py at 2019-03-09 15:21:19

Datalink statistics

-- Total of 3 flows:

Average throughput: 93.98 Mbit/s

95th percentile per-packet one-way delay: 420.581 ms

Loss rate: 6.89%

-- Flow 1:

Average throughput: 58.60 Mbit/s

95th percentile per-packet one-way delay: 354.026 ms

Loss rate: 7.16%

-- Flow 2:

Average throughput: 40.04 Mbit/s

95th percentile per-packet one-way delay: 416.953 ms

Loss rate: 6.06%

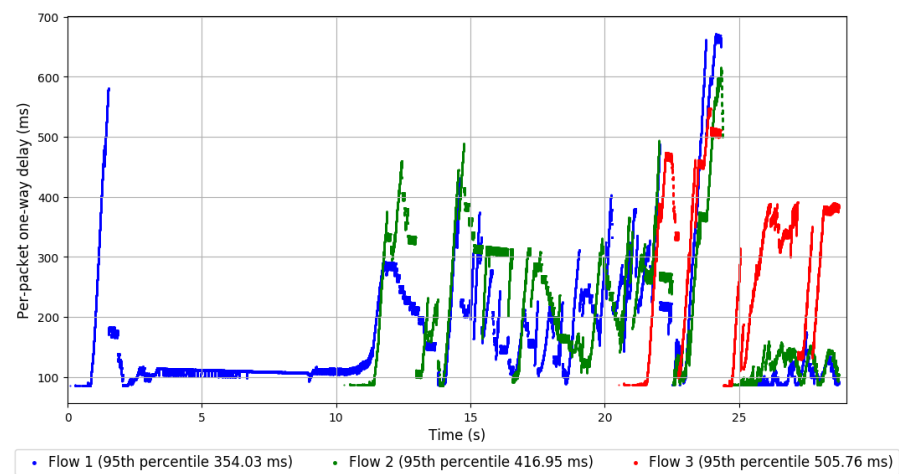
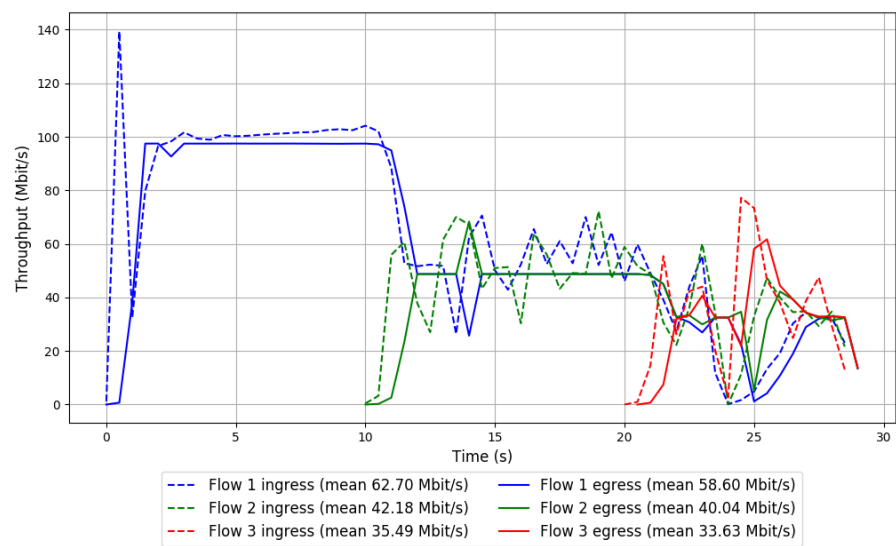
-- Flow 3:

Average throughput: 33.63 Mbit/s

95th percentile per-packet one-way delay: 505.761 ms

Loss rate: 7.43%

Run 2: Report of Indigo-MusesT — Data Link



Run 3: Statistics of Indigo-MusesT

Start at: 2019-03-09 13:56:02

End at: 2019-03-09 13:56:32

Local clock offset: -5.326 ms

Remote clock offset: 6.066 ms

Below is generated by plot.py at 2019-03-09 15:21:27

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.42 Mbit/s

95th percentile per-packet one-way delay: 495.689 ms

Loss rate: 5.59%

-- Flow 1:

Average throughput: 57.21 Mbit/s

95th percentile per-packet one-way delay: 451.171 ms

Loss rate: 5.34%

-- Flow 2:

Average throughput: 39.82 Mbit/s

95th percentile per-packet one-way delay: 483.383 ms

Loss rate: 5.98%

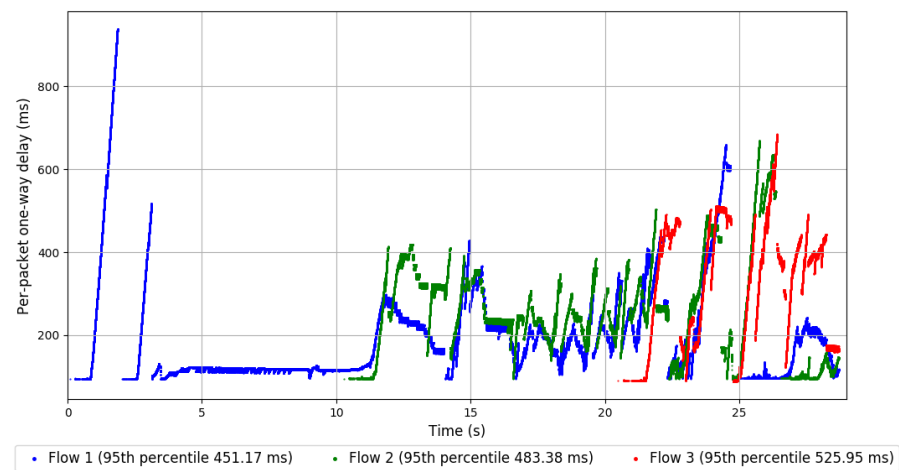
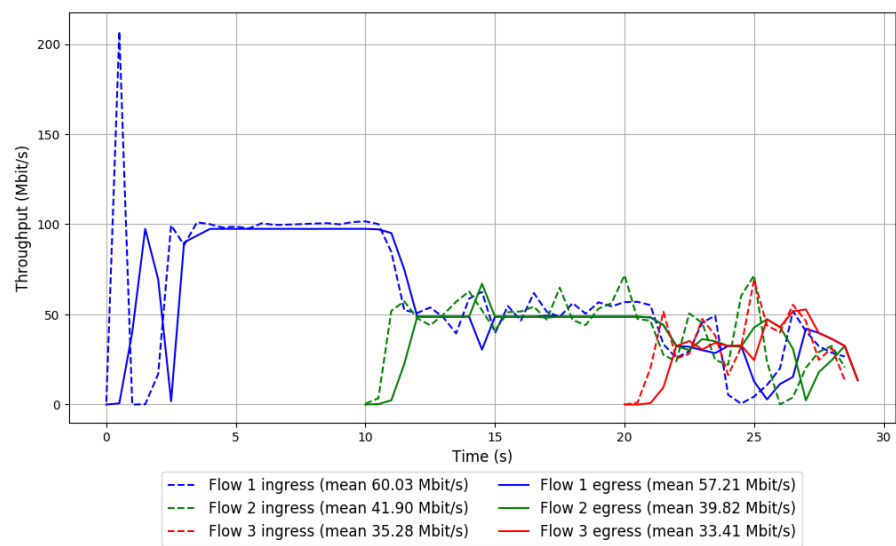
-- Flow 3:

Average throughput: 33.41 Mbit/s

95th percentile per-packet one-way delay: 525.948 ms

Loss rate: 6.06%

Run 3: Report of Indigo-MusesT — Data Link



Run 4: Statistics of Indigo-MusesT

Start at: 2019-03-09 14:23:49

End at: 2019-03-09 14:24:19

Local clock offset: -1.789 ms

Remote clock offset: 0.281 ms

Below is generated by plot.py at 2019-03-09 15:21:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 93.62 Mbit/s

95th percentile per-packet one-way delay: 458.069 ms

Loss rate: 4.58%

-- Flow 1:

Average throughput: 60.46 Mbit/s

95th percentile per-packet one-way delay: 430.737 ms

Loss rate: 4.44%

-- Flow 2:

Average throughput: 38.58 Mbit/s

95th percentile per-packet one-way delay: 453.173 ms

Loss rate: 4.29%

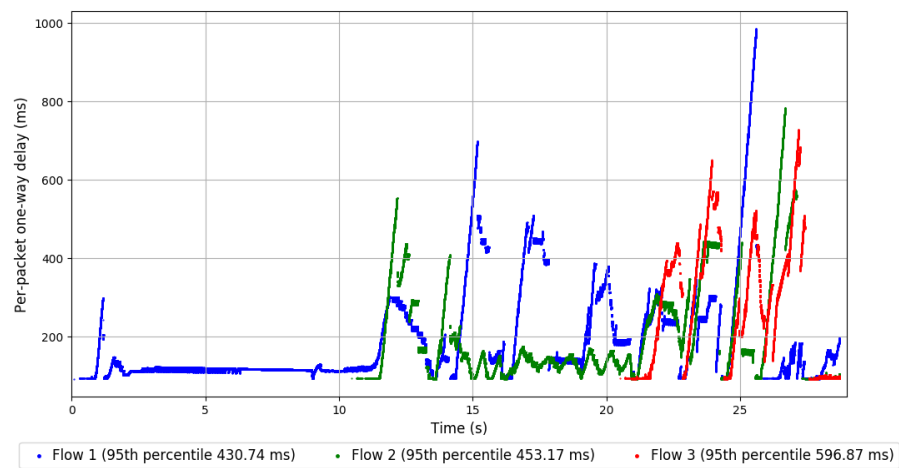
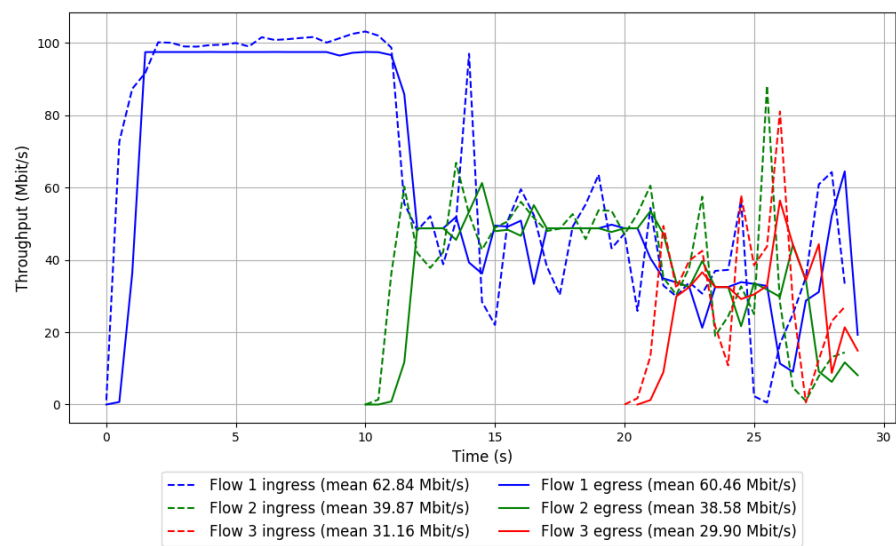
-- Flow 3:

Average throughput: 29.90 Mbit/s

95th percentile per-packet one-way delay: 596.872 ms

Loss rate: 6.28%

Run 4: Report of Indigo-MusesT — Data Link



Run 5: Statistics of Indigo-MusesT

Start at: 2019-03-09 14:51:22

End at: 2019-03-09 14:51:52

Local clock offset: -0.108 ms

Remote clock offset: 0.34 ms

Below is generated by plot.py at 2019-03-09 15:21:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 94.67 Mbit/s

95th percentile per-packet one-way delay: 392.441 ms

Loss rate: 5.91%

-- Flow 1:

Average throughput: 60.12 Mbit/s

95th percentile per-packet one-way delay: 359.690 ms

Loss rate: 4.89%

-- Flow 2:

Average throughput: 39.90 Mbit/s

95th percentile per-packet one-way delay: 381.880 ms

Loss rate: 5.53%

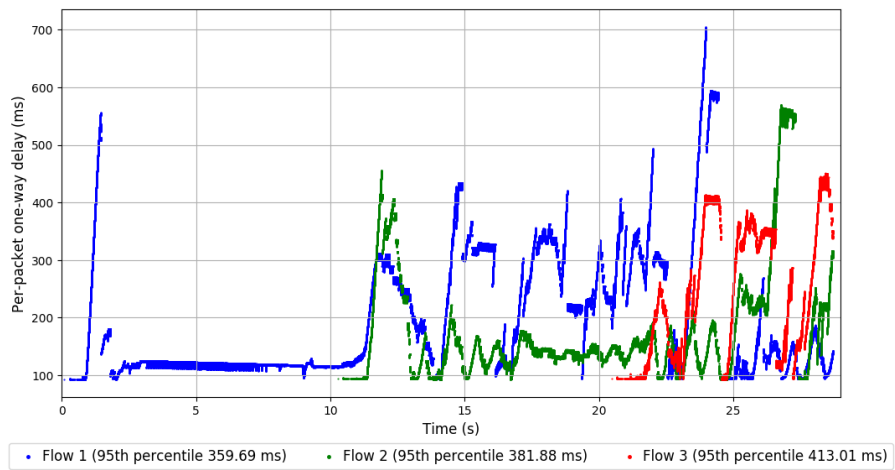
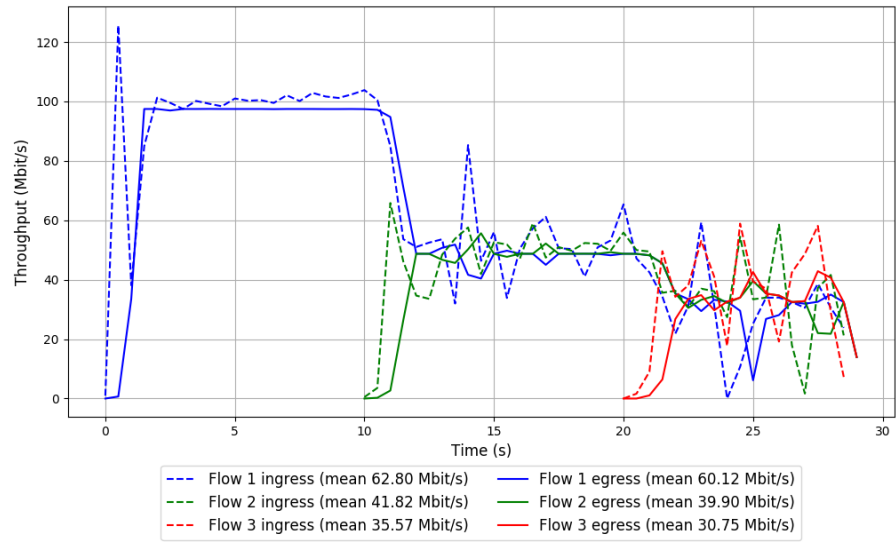
-- Flow 3:

Average throughput: 30.75 Mbit/s

95th percentile per-packet one-way delay: 413.007 ms

Loss rate: 13.31%

Run 5: Report of Indigo-MusesT — Data Link

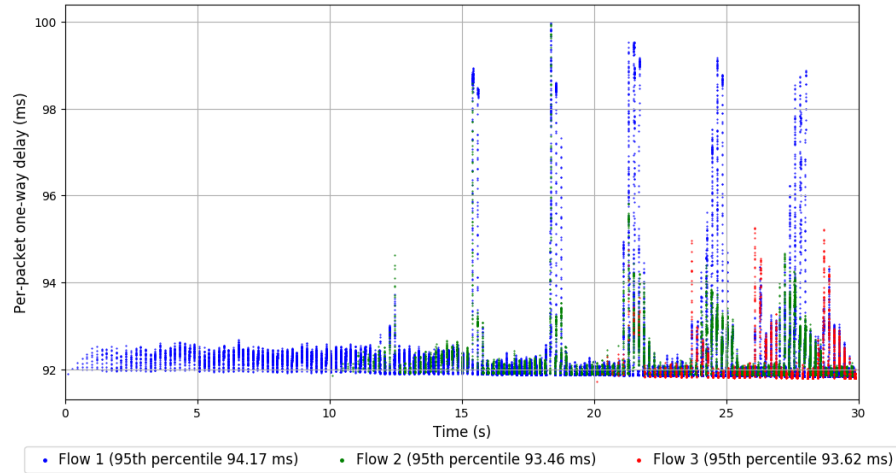
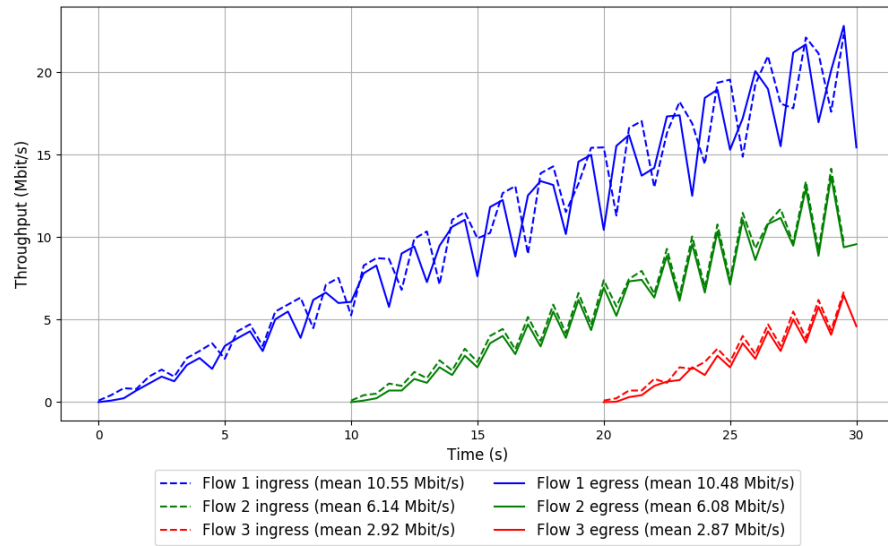


```
Run 1: Statistics of LEDBAT

Start at: 2019-03-09 13:14:04
End at: 2019-03-09 13:14:34
Local clock offset: -7.218 ms
Remote clock offset: 0.612 ms

# Below is generated by plot.py at 2019-03-09 15:21:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.42 Mbit/s
95th percentile per-packet one-way delay: 93.692 ms
Loss rate: 1.58%
-- Flow 1:
Average throughput: 10.48 Mbit/s
95th percentile per-packet one-way delay: 94.166 ms
Loss rate: 1.24%
-- Flow 2:
Average throughput: 6.08 Mbit/s
95th percentile per-packet one-way delay: 93.464 ms
Loss rate: 1.99%
-- Flow 3:
Average throughput: 2.87 Mbit/s
95th percentile per-packet one-way delay: 93.620 ms
Loss rate: 3.59%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2019-03-09 13:41:36

End at: 2019-03-09 13:42:06

Local clock offset: -5.318 ms

Remote clock offset: 7.803 ms

Below is generated by plot.py at 2019-03-09 15:21:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 14.51 Mbit/s

95th percentile per-packet one-way delay: 88.740 ms

Loss rate: 1.46%

-- Flow 1:

Average throughput: 8.40 Mbit/s

95th percentile per-packet one-way delay: 88.573 ms

Loss rate: 0.98%

-- Flow 2:

Average throughput: 7.80 Mbit/s

95th percentile per-packet one-way delay: 89.169 ms

Loss rate: 1.76%

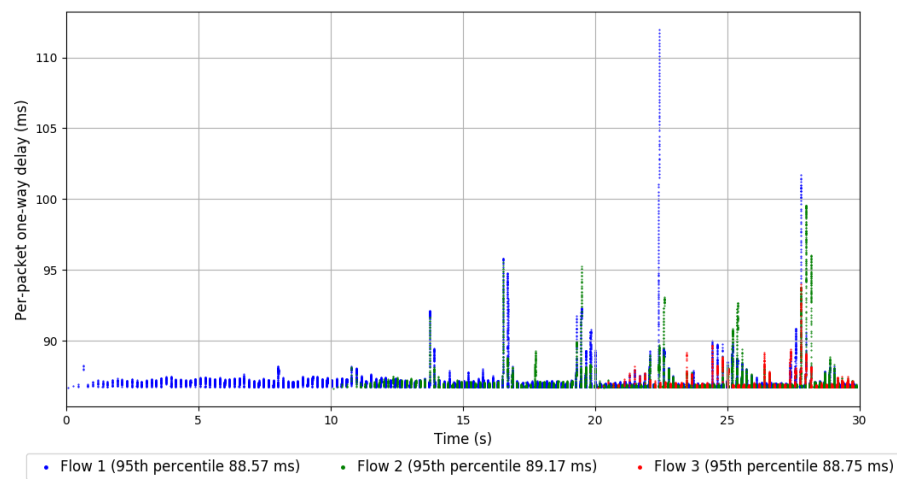
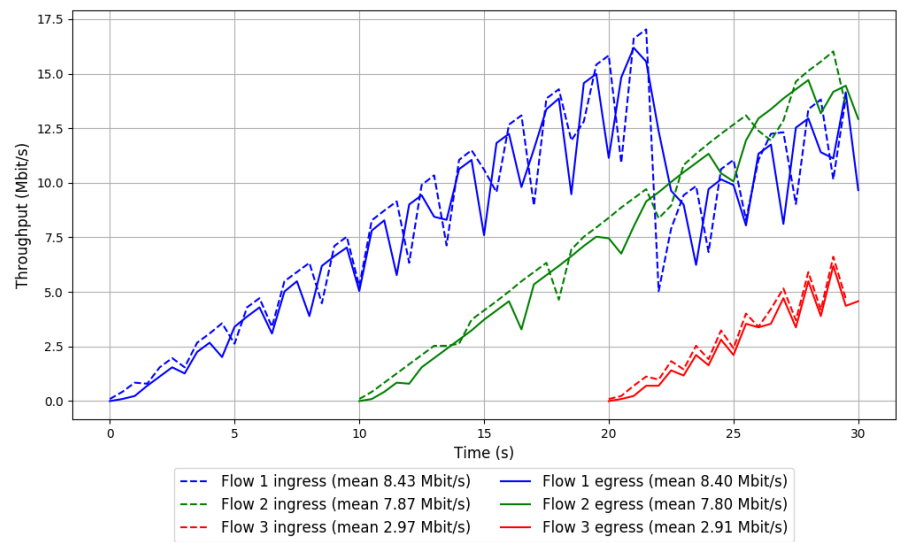
-- Flow 3:

Average throughput: 2.91 Mbit/s

95th percentile per-packet one-way delay: 88.755 ms

Loss rate: 4.05%

Run 2: Report of LEDBAT — Data Link

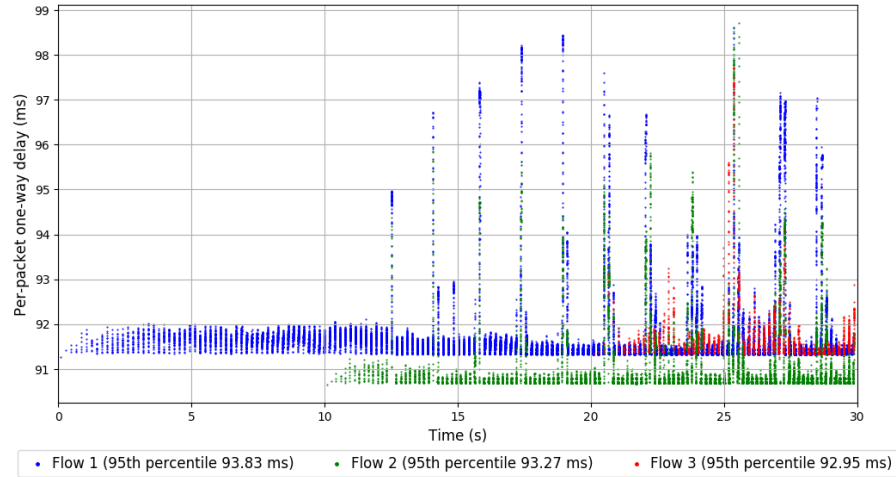
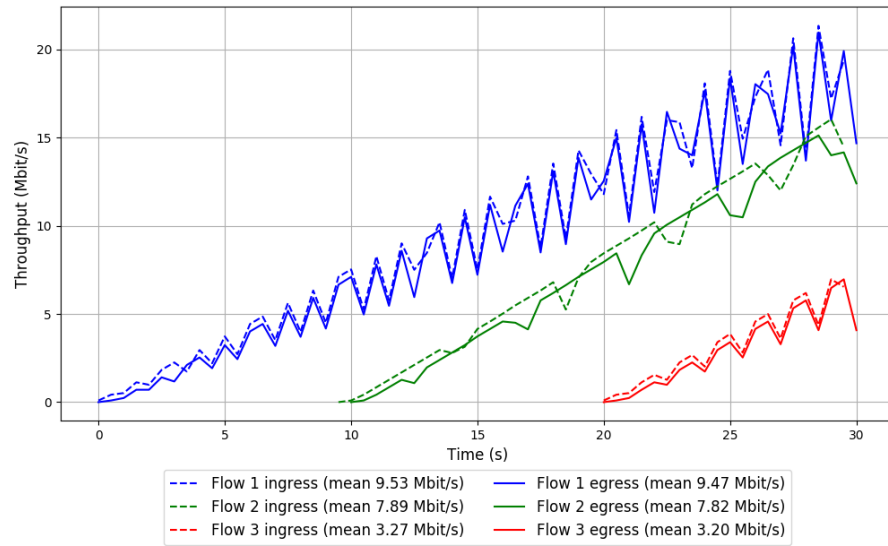


Run 3: Statistics of LEDBAT

Start at: 2019-03-09 14:09:14
End at: 2019-03-09 14:09:44
Local clock offset: -6.102 ms
Remote clock offset: 1.514 ms

Below is generated by plot.py at 2019-03-09 15:21:39
Datalink statistics
-- Total of 3 flows:
Average throughput: 15.71 Mbit/s
95th percentile per-packet one-way delay: 93.602 ms
Loss rate: 1.62%
-- Flow 1:
Average throughput: 9.47 Mbit/s
95th percentile per-packet one-way delay: 93.826 ms
Loss rate: 1.30%
-- Flow 2:
Average throughput: 7.82 Mbit/s
95th percentile per-packet one-way delay: 93.272 ms
Loss rate: 1.75%
-- Flow 3:
Average throughput: 3.20 Mbit/s
95th percentile per-packet one-way delay: 92.949 ms
Loss rate: 3.79%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2019-03-09 14:36:56

End at: 2019-03-09 14:37:26

Local clock offset: -0.611 ms

Remote clock offset: 6.578 ms

Below is generated by plot.py at 2019-03-09 15:21:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 9.78 Mbit/s

95th percentile per-packet one-way delay: 87.504 ms

Loss rate: 1.45%

-- Flow 1:

Average throughput: 5.07 Mbit/s

95th percentile per-packet one-way delay: 87.058 ms

Loss rate: 0.81%

-- Flow 2:

Average throughput: 5.77 Mbit/s

95th percentile per-packet one-way delay: 87.858 ms

Loss rate: 1.64%

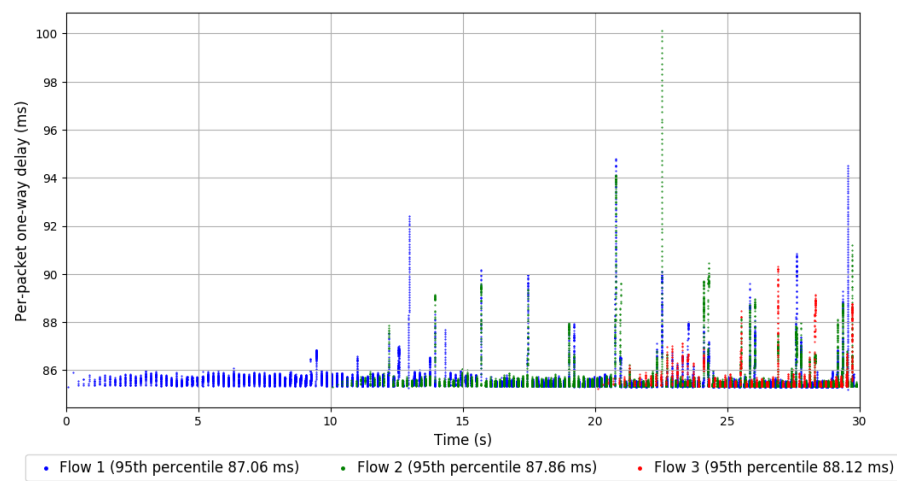
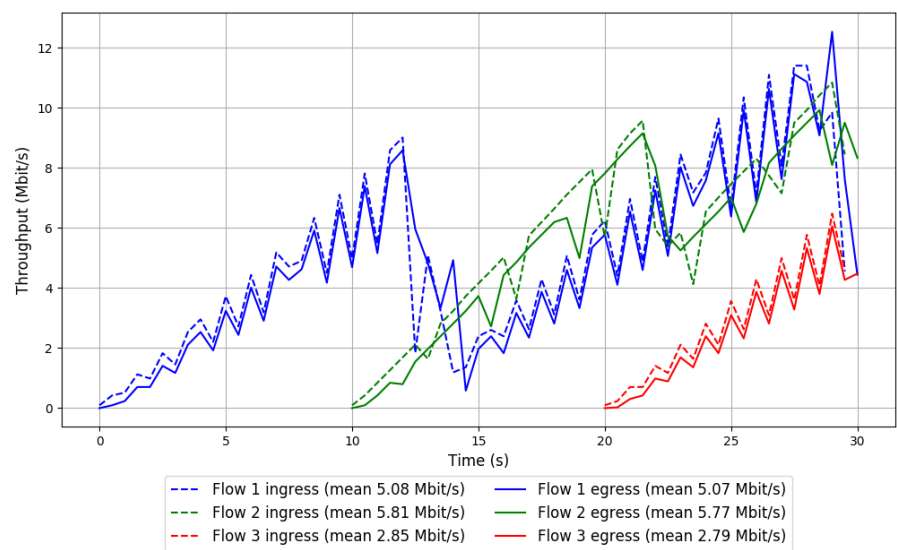
-- Flow 3:

Average throughput: 2.79 Mbit/s

95th percentile per-packet one-way delay: 88.123 ms

Loss rate: 4.14%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2019-03-09 15:04:32

End at: 2019-03-09 15:05:02

Local clock offset: -1.045 ms

Remote clock offset: 5.23 ms

Below is generated by plot.py at 2019-03-09 15:21:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 15.65 Mbit/s

95th percentile per-packet one-way delay: 93.312 ms

Loss rate: 1.45%

-- Flow 1:

Average throughput: 10.48 Mbit/s

95th percentile per-packet one-way delay: 90.021 ms

Loss rate: 1.23%

-- Flow 2:

Average throughput: 6.14 Mbit/s

95th percentile per-packet one-way delay: 90.005 ms

Loss rate: 1.39%

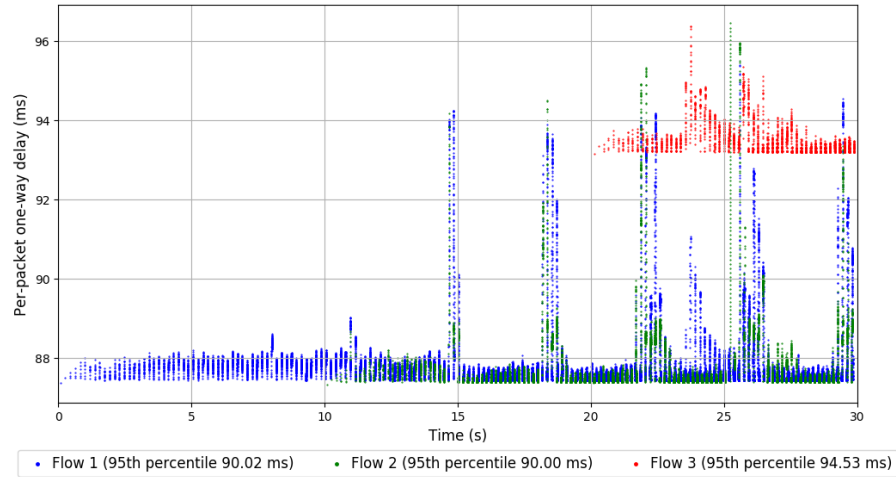
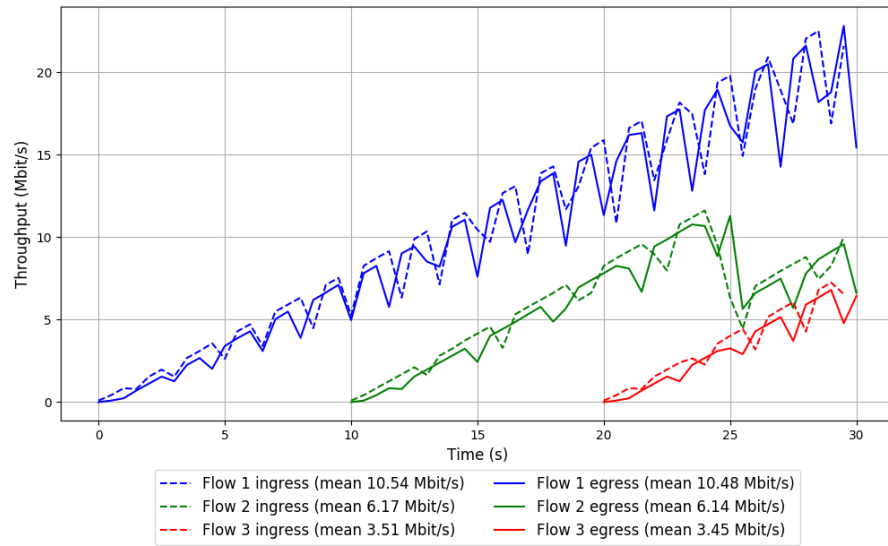
-- Flow 3:

Average throughput: 3.45 Mbit/s

95th percentile per-packet one-way delay: 94.528 ms

Loss rate: 3.69%

Run 5: Report of LEDBAT — Data Link

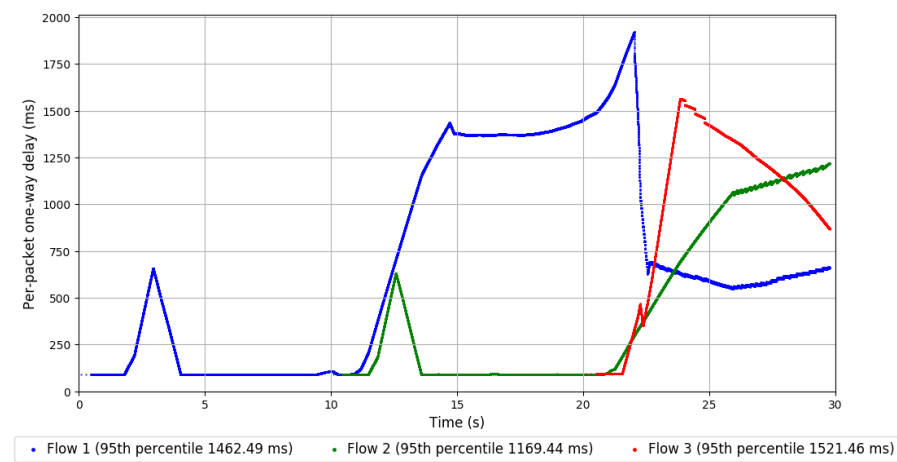
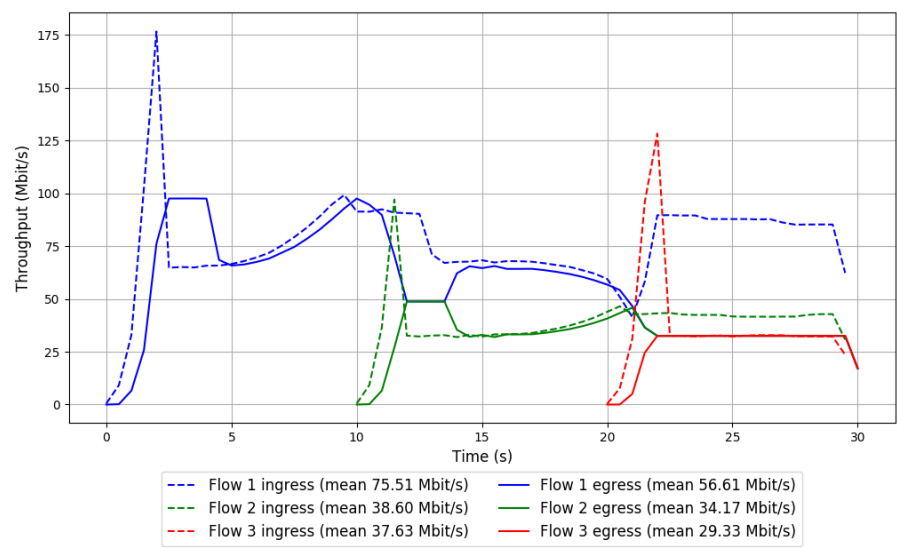


```
Run 1: Statistics of PCC-Allegro

Start at: 2019-03-09 13:15:19
End at: 2019-03-09 13:15:49
Local clock offset: -6.938 ms
Remote clock offset: 0.813 ms

# Below is generated by plot.py at 2019-03-09 15:22:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.80 Mbit/s
95th percentile per-packet one-way delay: 1444.919 ms
Loss rate: 22.32%
-- Flow 1:
Average throughput: 56.61 Mbit/s
95th percentile per-packet one-way delay: 1462.489 ms
Loss rate: 25.51%
-- Flow 2:
Average throughput: 34.17 Mbit/s
95th percentile per-packet one-way delay: 1169.444 ms
Loss rate: 12.34%
-- Flow 3:
Average throughput: 29.33 Mbit/s
95th percentile per-packet one-way delay: 1521.459 ms
Loss rate: 23.56%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2019-03-09 13:42:51

End at: 2019-03-09 13:43:21

Local clock offset: -5.983 ms

Remote clock offset: 1.634 ms

Below is generated by plot.py at 2019-03-09 15:22:17

Datalink statistics

-- Total of 3 flows:

Average throughput: 85.92 Mbit/s

95th percentile per-packet one-way delay: 1488.193 ms

Loss rate: 21.28%

-- Flow 1:

Average throughput: 53.21 Mbit/s

95th percentile per-packet one-way delay: 1580.542 ms

Loss rate: 23.01%

-- Flow 2:

Average throughput: 34.93 Mbit/s

95th percentile per-packet one-way delay: 1140.901 ms

Loss rate: 16.09%

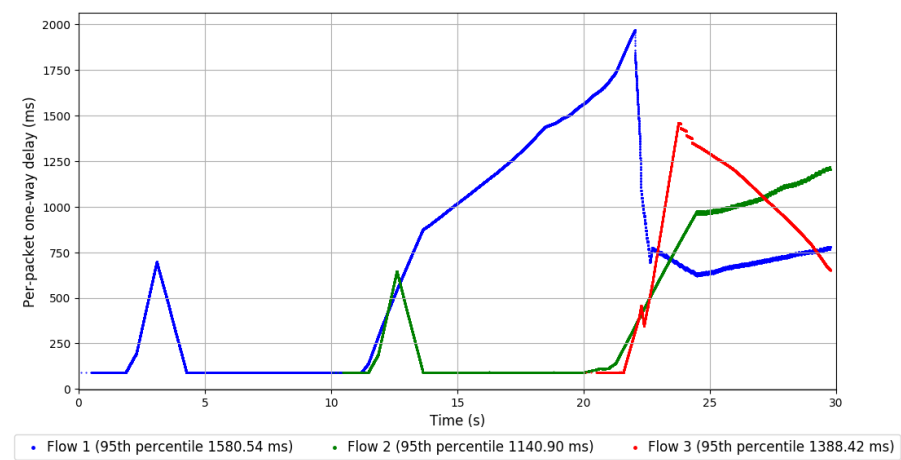
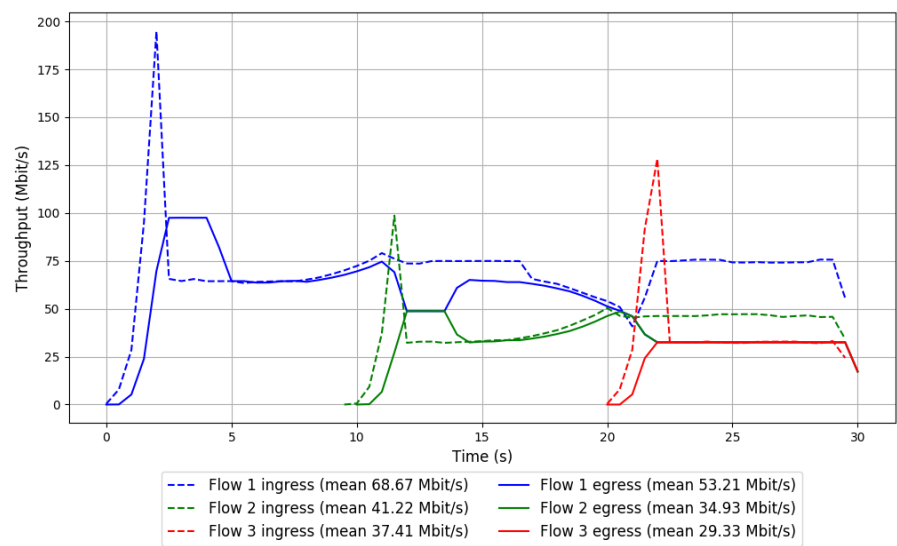
-- Flow 3:

Average throughput: 29.33 Mbit/s

95th percentile per-packet one-way delay: 1388.421 ms

Loss rate: 23.14%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2019-03-09 14:10:30

End at: 2019-03-09 14:11:00

Local clock offset: -6.123 ms

Remote clock offset: 0.546 ms

Below is generated by plot.py at 2019-03-09 15:22:20

Datalink statistics

-- Total of 3 flows:

Average throughput: 86.46 Mbit/s

95th percentile per-packet one-way delay: 1444.799 ms

Loss rate: 20.49%

-- Flow 1:

Average throughput: 54.29 Mbit/s

95th percentile per-packet one-way delay: 1462.218 ms

Loss rate: 22.96%

-- Flow 2:

Average throughput: 34.06 Mbit/s

95th percentile per-packet one-way delay: 1185.609 ms

Loss rate: 12.55%

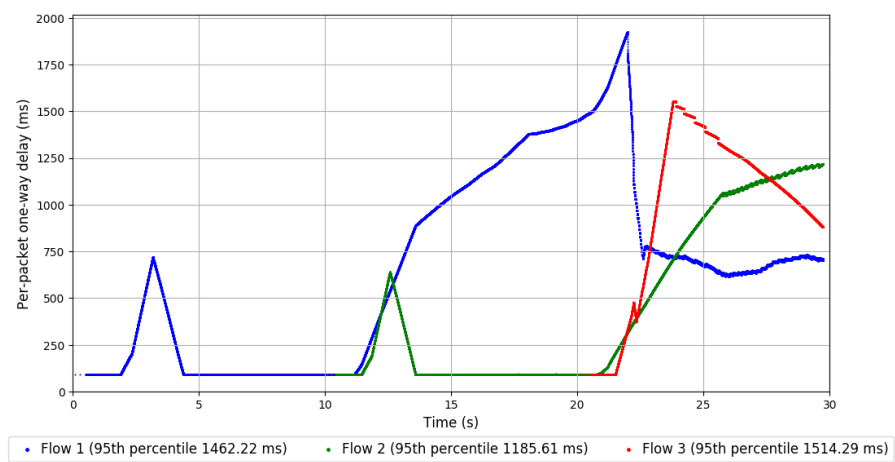
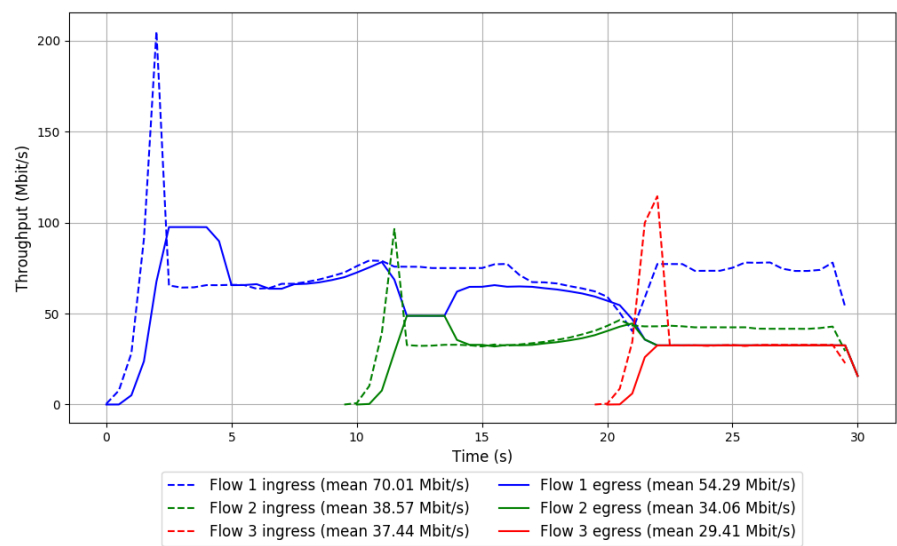
-- Flow 3:

Average throughput: 29.41 Mbit/s

95th percentile per-packet one-way delay: 1514.290 ms

Loss rate: 22.99%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2019-03-09 14:38:11

End at: 2019-03-09 14:38:41

Local clock offset: 0.251 ms

Remote clock offset: 0.367 ms

Below is generated by plot.py at 2019-03-09 15:22:20

Datalink statistics

-- Total of 3 flows:

Average throughput: 87.72 Mbit/s

95th percentile per-packet one-way delay: 1489.655 ms

Loss rate: 16.63%

-- Flow 1:

Average throughput: 56.27 Mbit/s

95th percentile per-packet one-way delay: 1697.522 ms

Loss rate: 19.84%

-- Flow 2:

Average throughput: 33.07 Mbit/s

95th percentile per-packet one-way delay: 438.790 ms

Loss rate: 4.99%

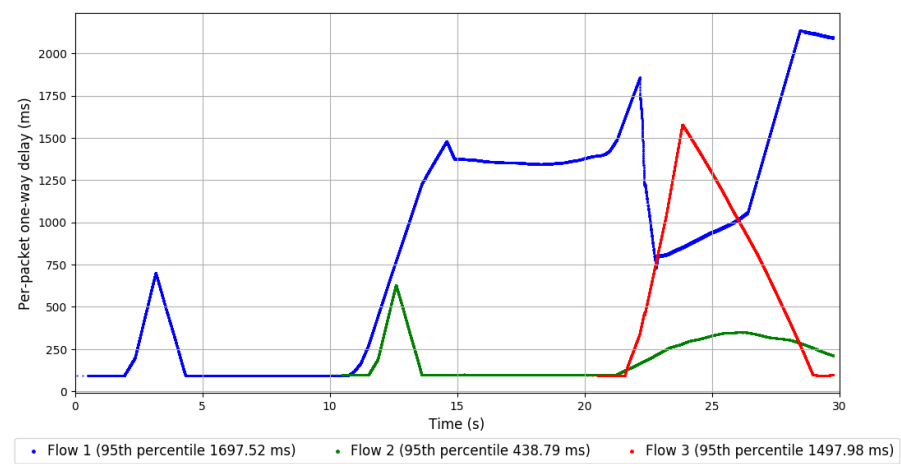
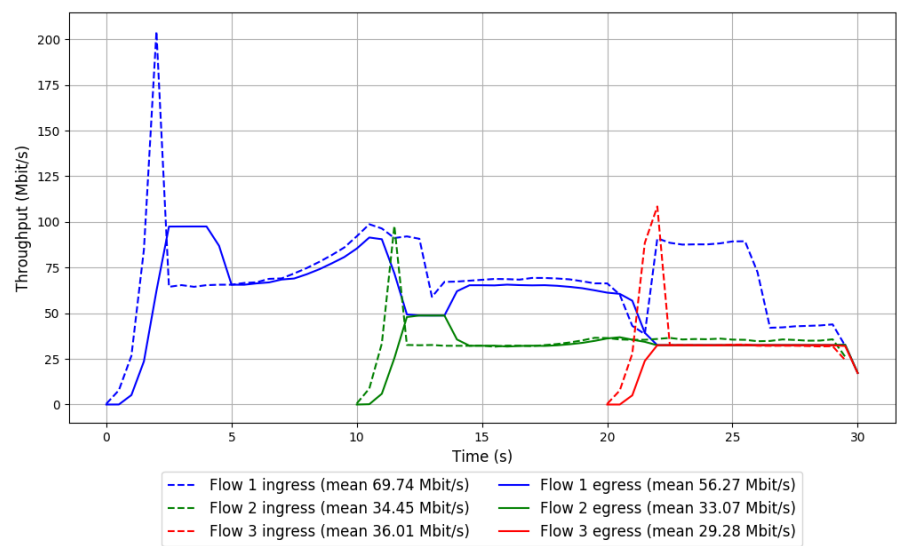
-- Flow 3:

Average throughput: 29.28 Mbit/s

95th percentile per-packet one-way delay: 1497.977 ms

Loss rate: 20.29%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2019-03-09 15:05:48

End at: 2019-03-09 15:06:18

Local clock offset: -1.024 ms

Remote clock offset: 0.257 ms

Below is generated by plot.py at 2019-03-09 15:22:22

Datalink statistics

-- Total of 3 flows:

Average throughput: 86.75 Mbit/s

95th percentile per-packet one-way delay: 1462.507 ms

Loss rate: 22.32%

-- Flow 1:

Average throughput: 54.85 Mbit/s

95th percentile per-packet one-way delay: 1427.701 ms

Loss rate: 25.89%

-- Flow 2:

Average throughput: 33.70 Mbit/s

95th percentile per-packet one-way delay: 1139.393 ms

Loss rate: 10.81%

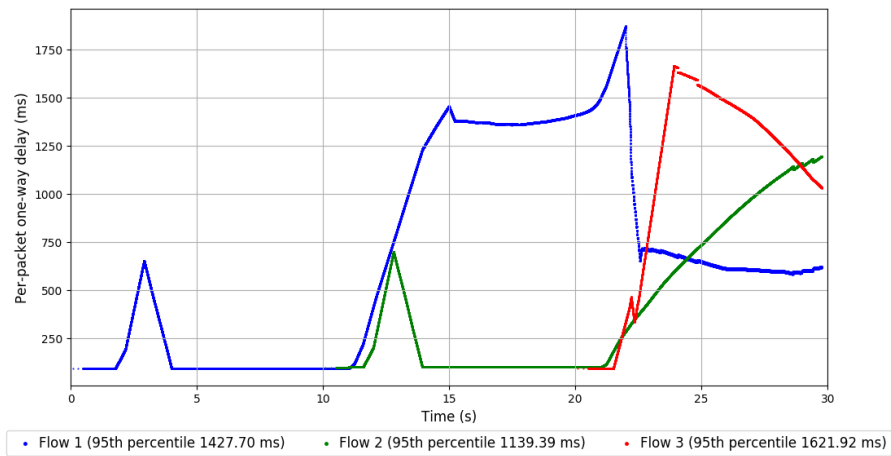
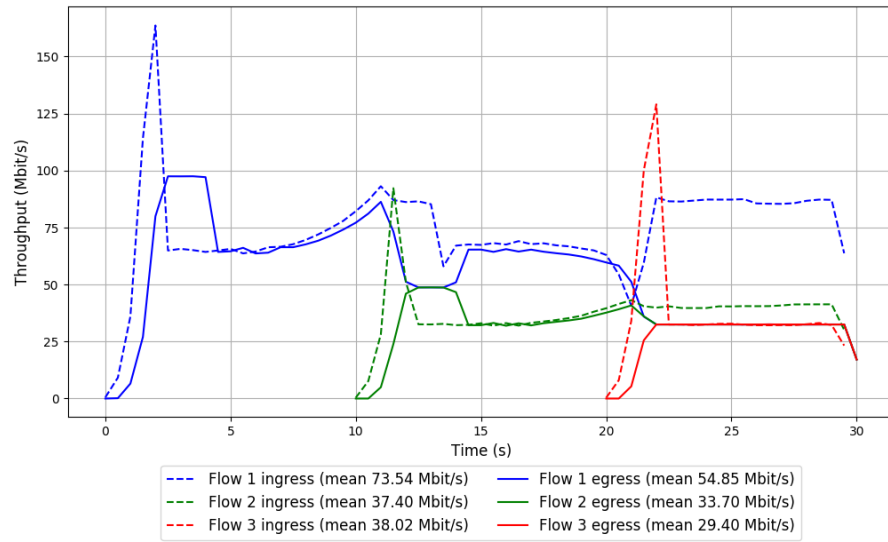
-- Flow 3:

Average throughput: 29.40 Mbit/s

95th percentile per-packet one-way delay: 1621.919 ms

Loss rate: 24.21%

Run 5: Report of PCC-Allegro — Data Link

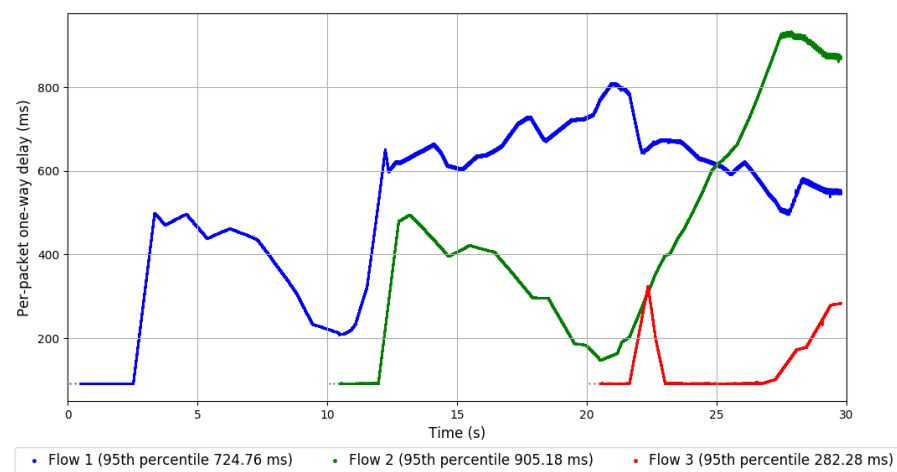
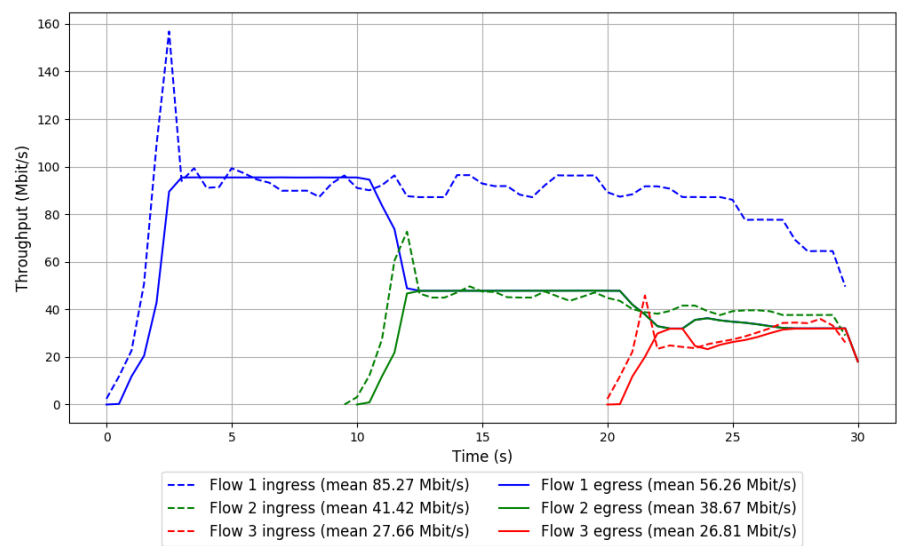



```
Run 1: Statistics of PCC-Expr

Start at: 2019-03-09 13:19:14
End at: 2019-03-09 13:19:44
Local clock offset: -6.285 ms
Remote clock offset: 1.029 ms

# Below is generated by plot.py at 2019-03-09 15:23:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.66 Mbit/s
95th percentile per-packet one-way delay: 776.015 ms
Loss rate: 26.16%
-- Flow 1:
Average throughput: 56.26 Mbit/s
95th percentile per-packet one-way delay: 724.760 ms
Loss rate: 34.45%
-- Flow 2:
Average throughput: 38.67 Mbit/s
95th percentile per-packet one-way delay: 905.178 ms
Loss rate: 7.54%
-- Flow 3:
Average throughput: 26.81 Mbit/s
95th percentile per-packet one-way delay: 282.284 ms
Loss rate: 4.97%
```

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2019-03-09 13:46:47

End at: 2019-03-09 13:47:17

Local clock offset: -6.0 ms

Remote clock offset: 2.753 ms

Below is generated by plot.py at 2019-03-09 15:23:38

Datalink statistics

-- Total of 3 flows:

Average throughput: 90.26 Mbit/s

95th percentile per-packet one-way delay: 907.188 ms

Loss rate: 16.42%

-- Flow 1:

Average throughput: 56.39 Mbit/s

95th percentile per-packet one-way delay: 909.615 ms

Loss rate: 18.88%

-- Flow 2:

Average throughput: 38.52 Mbit/s

95th percentile per-packet one-way delay: 906.857 ms

Loss rate: 14.36%

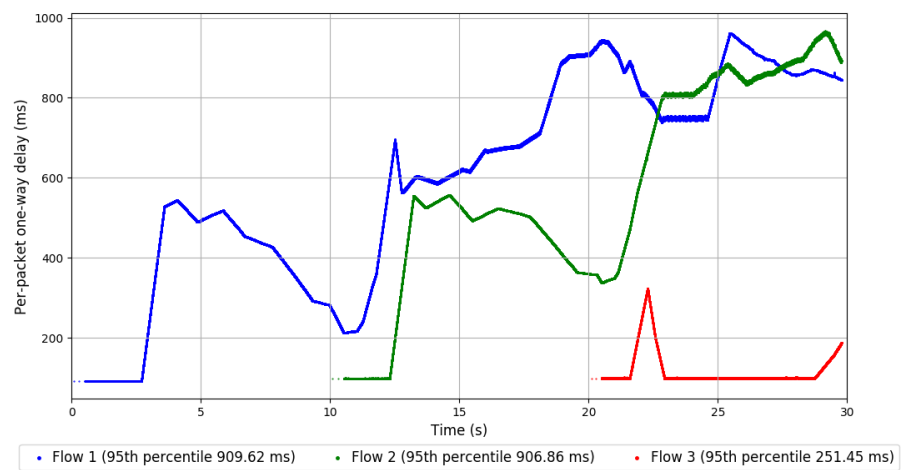
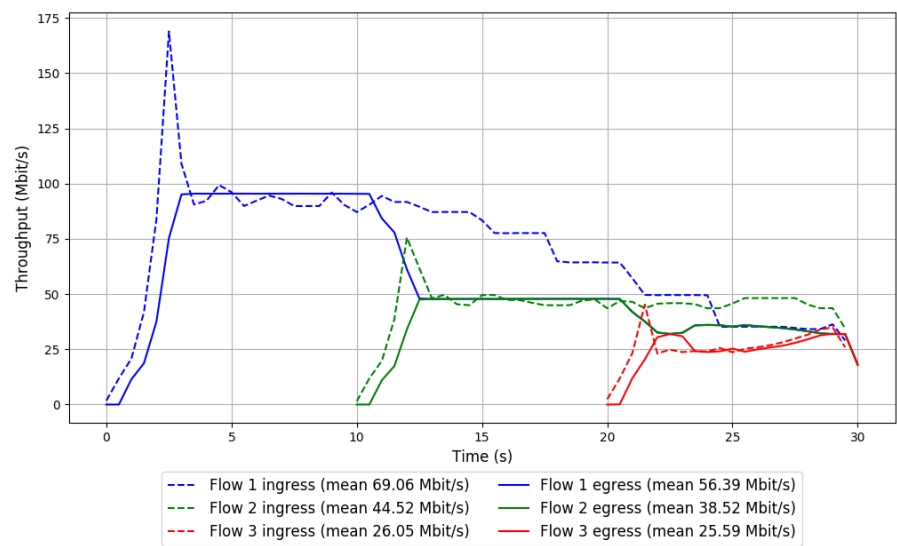
-- Flow 3:

Average throughput: 25.59 Mbit/s

95th percentile per-packet one-way delay: 251.446 ms

Loss rate: 3.76%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2019-03-09 14:14:26

End at: 2019-03-09 14:14:56

Local clock offset: -6.081 ms

Remote clock offset: 5.256 ms

Below is generated by plot.py at 2019-03-09 15:23:48

Datalink statistics

-- Total of 3 flows:

Average throughput: 90.22 Mbit/s

95th percentile per-packet one-way delay: 834.575 ms

Loss rate: 24.96%

-- Flow 1:

Average throughput: 56.39 Mbit/s

95th percentile per-packet one-way delay: 710.116 ms

Loss rate: 31.55%

-- Flow 2:

Average throughput: 38.78 Mbit/s

95th percentile per-packet one-way delay: 849.677 ms

Loss rate: 12.70%

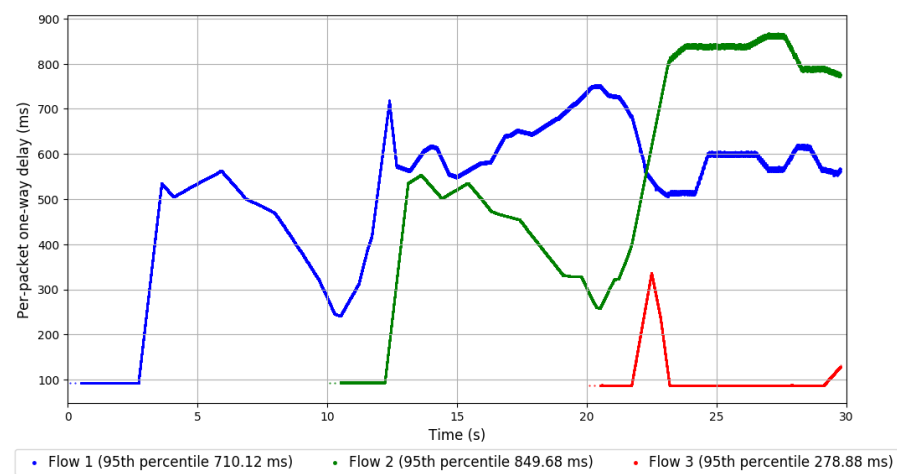
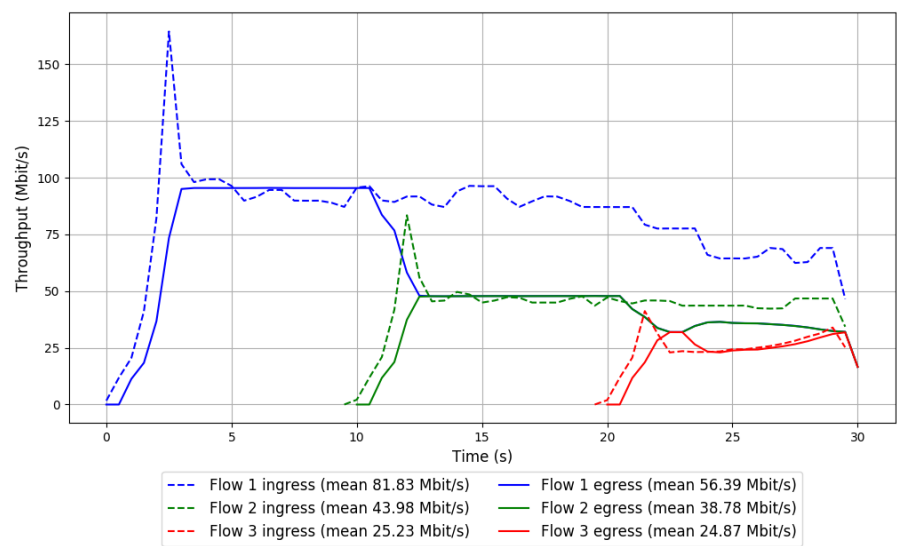
-- Flow 3:

Average throughput: 24.87 Mbit/s

95th percentile per-packet one-way delay: 278.883 ms

Loss rate: 3.32%

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

Start at: 2019-03-09 14:42:05

End at: 2019-03-09 14:42:35

Local clock offset: 0.525 ms

Remote clock offset: 1.45 ms

Below is generated by plot.py at 2019-03-09 15:24:21

Datalink statistics

-- Total of 3 flows:

Average throughput: 90.39 Mbit/s

95th percentile per-packet one-way delay: 955.863 ms

Loss rate: 20.23%

-- Flow 1:

Average throughput: 56.22 Mbit/s

95th percentile per-packet one-way delay: 1002.307 ms

Loss rate: 26.56%

-- Flow 2:

Average throughput: 38.86 Mbit/s

95th percentile per-packet one-way delay: 913.939 ms

Loss rate: 8.16%

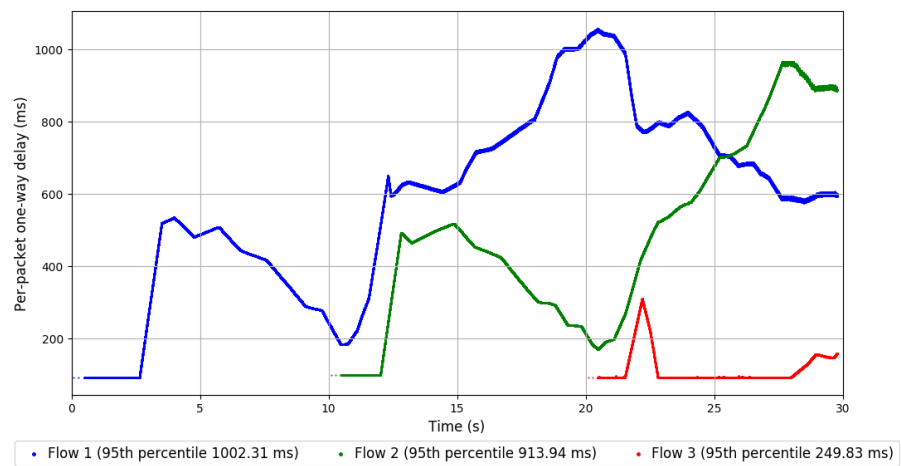
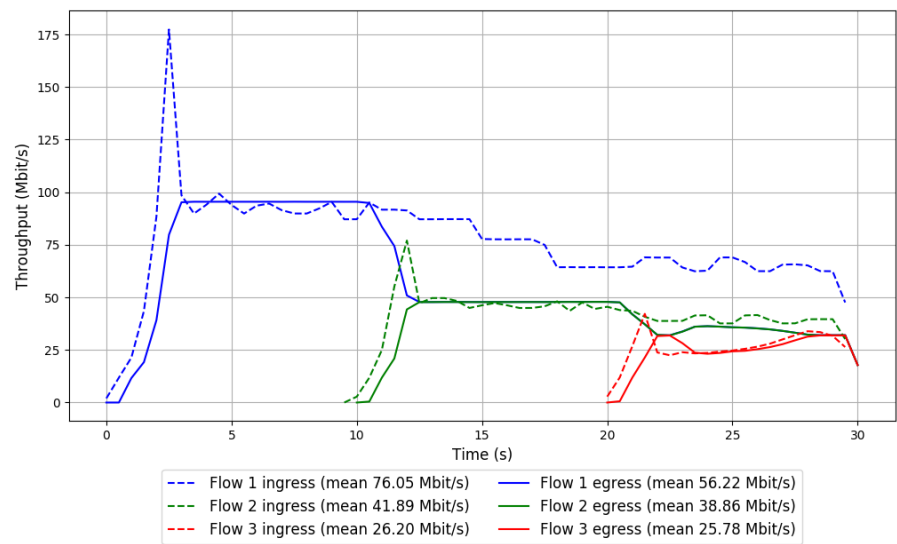
-- Flow 3:

Average throughput: 25.78 Mbit/s

95th percentile per-packet one-way delay: 249.826 ms

Loss rate: 3.57%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2019-03-09 15:09:43

End at: 2019-03-09 15:10:13

Local clock offset: -0.948 ms

Remote clock offset: 5.294 ms

Below is generated by plot.py at 2019-03-09 15:24:24

Datalink statistics

-- Total of 3 flows:

Average throughput: 90.27 Mbit/s

95th percentile per-packet one-way delay: 796.324 ms

Loss rate: 25.02%

-- Flow 1:

Average throughput: 56.36 Mbit/s

95th percentile per-packet one-way delay: 737.902 ms

Loss rate: 31.46%

-- Flow 2:

Average throughput: 38.84 Mbit/s

95th percentile per-packet one-way delay: 831.640 ms

Loss rate: 13.04%

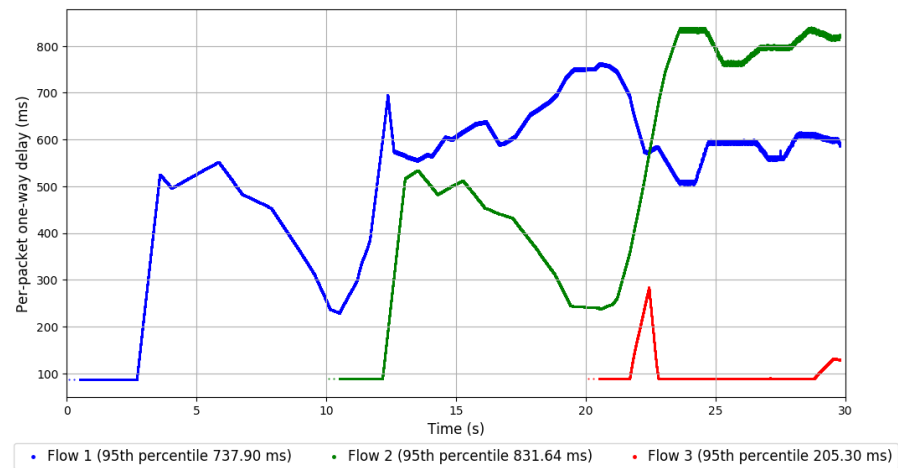
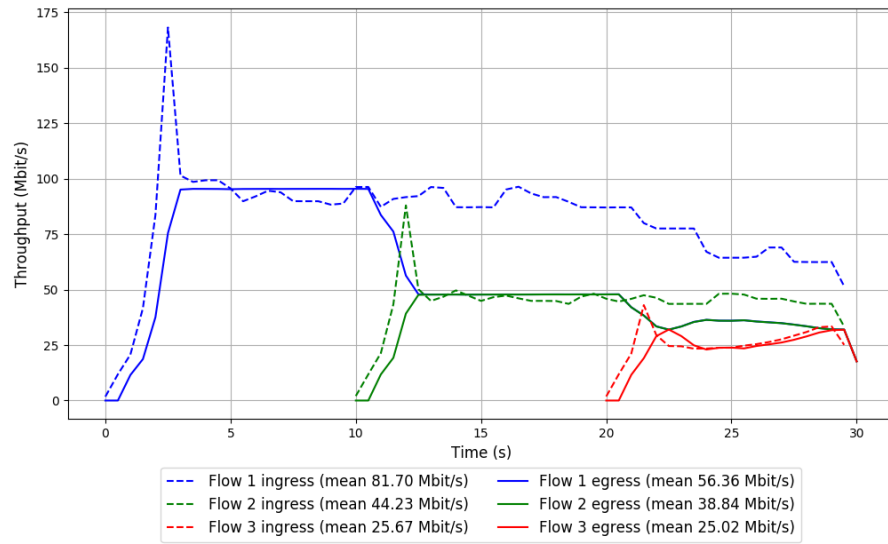
-- Flow 3:

Average throughput: 25.02 Mbit/s

95th percentile per-packet one-way delay: 205.304 ms

Loss rate: 4.46%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2019-03-09 13:07:35

End at: 2019-03-09 13:08:05

Local clock offset: -7.74 ms

Remote clock offset: 5.806 ms

Below is generated by plot.py at 2019-03-09 15:24:24

Datalink statistics

-- Total of 3 flows:

Average throughput: 54.80 Mbit/s

95th percentile per-packet one-way delay: 181.601 ms

Loss rate: 1.15%

-- Flow 1:

Average throughput: 35.39 Mbit/s

95th percentile per-packet one-way delay: 122.694 ms

Loss rate: 0.61%

-- Flow 2:

Average throughput: 21.54 Mbit/s

95th percentile per-packet one-way delay: 190.836 ms

Loss rate: 1.47%

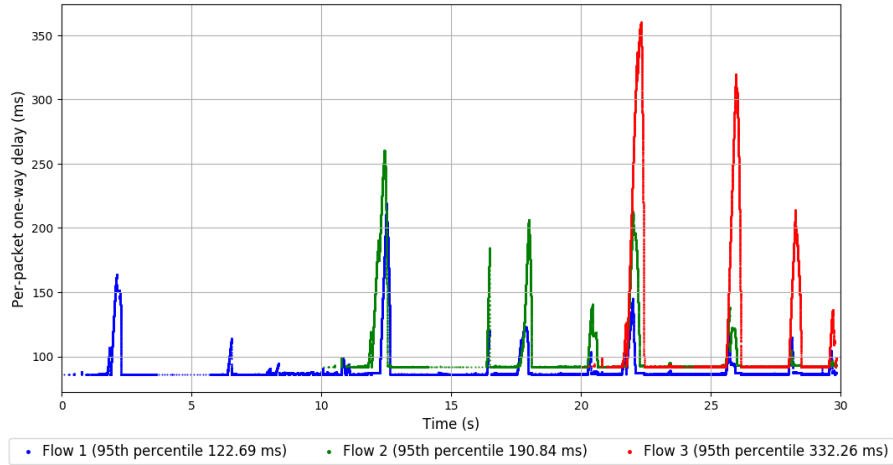
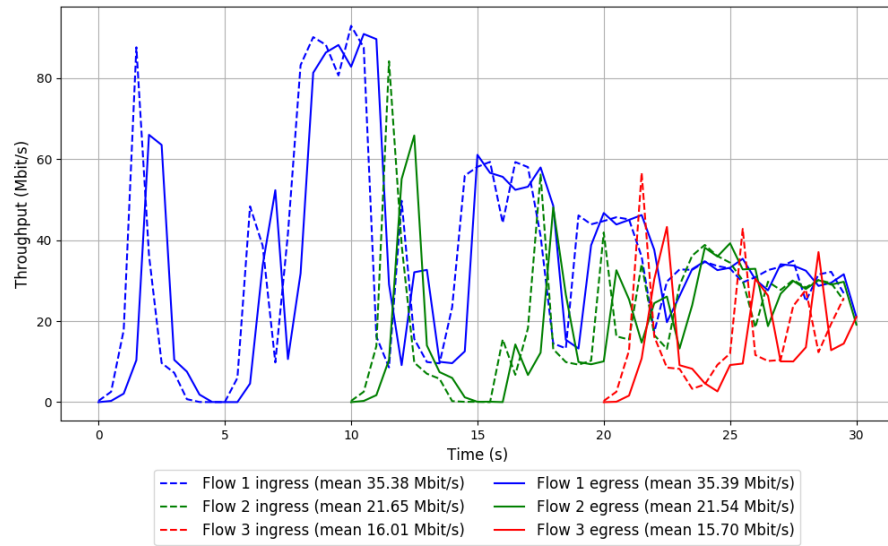
-- Flow 3:

Average throughput: 15.70 Mbit/s

95th percentile per-packet one-way delay: 332.262 ms

Loss rate: 3.95%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2019-03-09 13:35:08

End at: 2019-03-09 13:35:38

Local clock offset: -6.051 ms

Remote clock offset: 6.246 ms

Below is generated by plot.py at 2019-03-09 15:24:24

Datalink statistics

-- Total of 3 flows:

Average throughput: 51.30 Mbit/s

95th percentile per-packet one-way delay: 186.516 ms

Loss rate: 1.52%

-- Flow 1:

Average throughput: 32.80 Mbit/s

95th percentile per-packet one-way delay: 128.945 ms

Loss rate: 0.69%

-- Flow 2:

Average throughput: 23.01 Mbit/s

95th percentile per-packet one-way delay: 232.292 ms

Loss rate: 1.80%

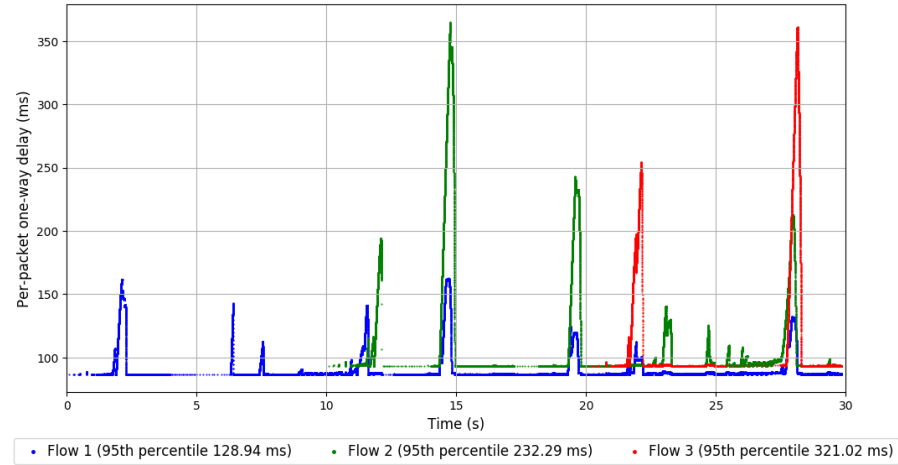
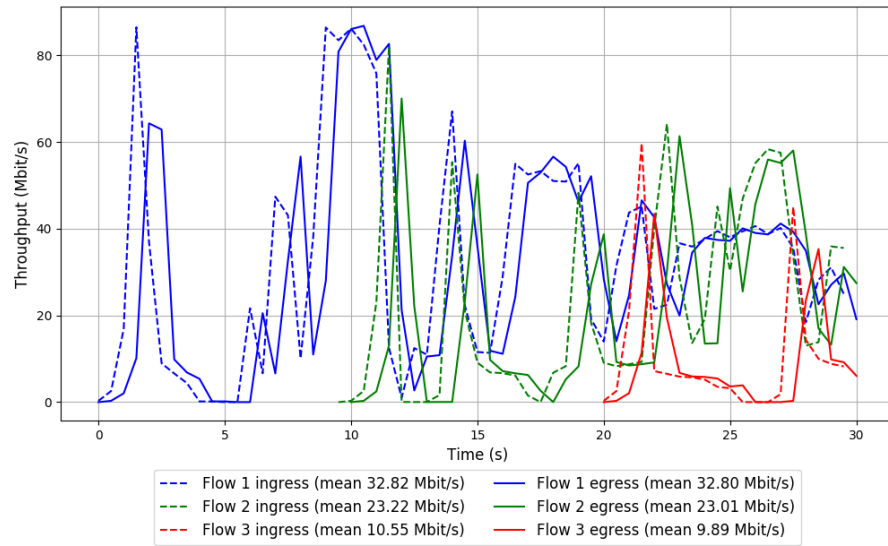
-- Flow 3:

Average throughput: 9.89 Mbit/s

95th percentile per-packet one-way delay: 321.016 ms

Loss rate: 8.07%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2019-03-09 14:02:40

End at: 2019-03-09 14:03:10

Local clock offset: -6.082 ms

Remote clock offset: 1.669 ms

Below is generated by plot.py at 2019-03-09 15:24:24

Datalink statistics

-- Total of 3 flows:

Average throughput: 56.30 Mbit/s

95th percentile per-packet one-way delay: 198.668 ms

Loss rate: 0.84%

-- Flow 1:

Average throughput: 37.12 Mbit/s

95th percentile per-packet one-way delay: 138.937 ms

Loss rate: 0.45%

-- Flow 2:

Average throughput: 21.65 Mbit/s

95th percentile per-packet one-way delay: 221.792 ms

Loss rate: 1.50%

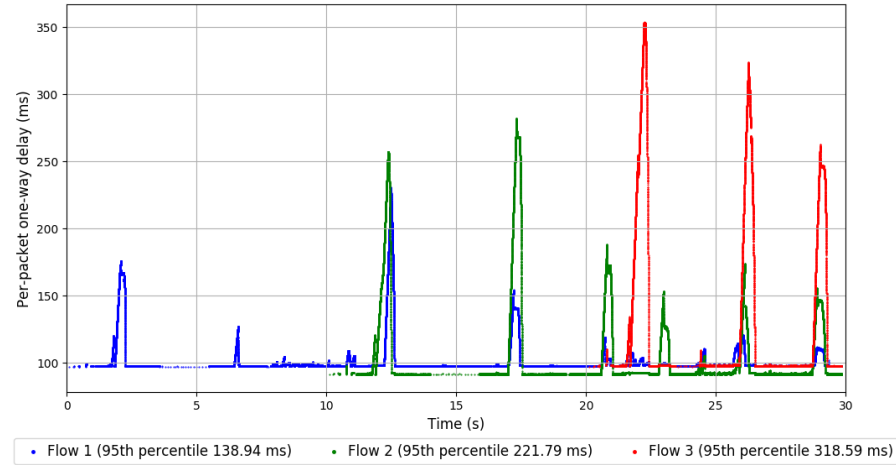
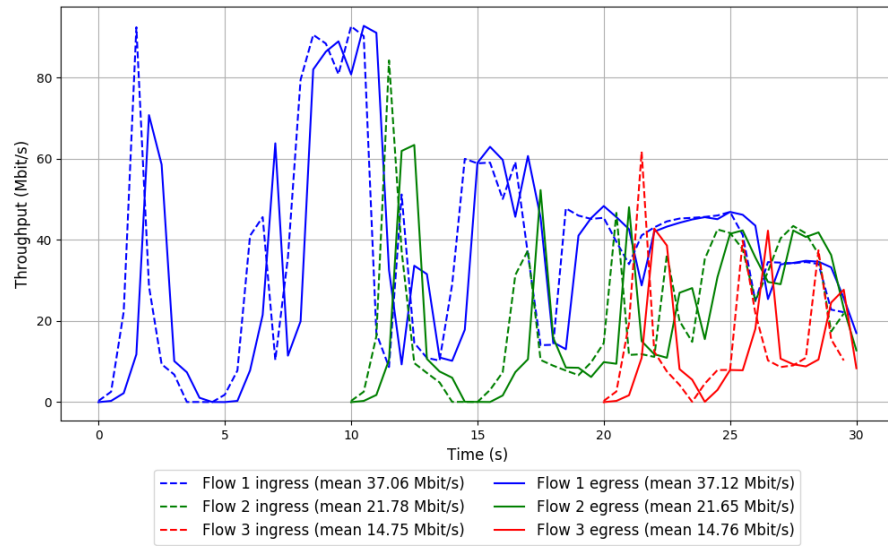
-- Flow 3:

Average throughput: 14.76 Mbit/s

95th percentile per-packet one-way delay: 318.593 ms

Loss rate: 1.92%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2019-03-09 14:30:25

End at: 2019-03-09 14:30:55

Local clock offset: -0.704 ms

Remote clock offset: 1.452 ms

Below is generated by plot.py at 2019-03-09 15:24:24

Datalink statistics

-- Total of 3 flows:

Average throughput: 56.36 Mbit/s

95th percentile per-packet one-way delay: 137.510 ms

Loss rate: 1.11%

-- Flow 1:

Average throughput: 33.14 Mbit/s

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

Loss rate: 0.68%

-- Flow 2:

Average throughput: 23.22 Mbit/s

95th percentile per-packet one-way delay: 154.844 ms

Loss rate: 1.27%

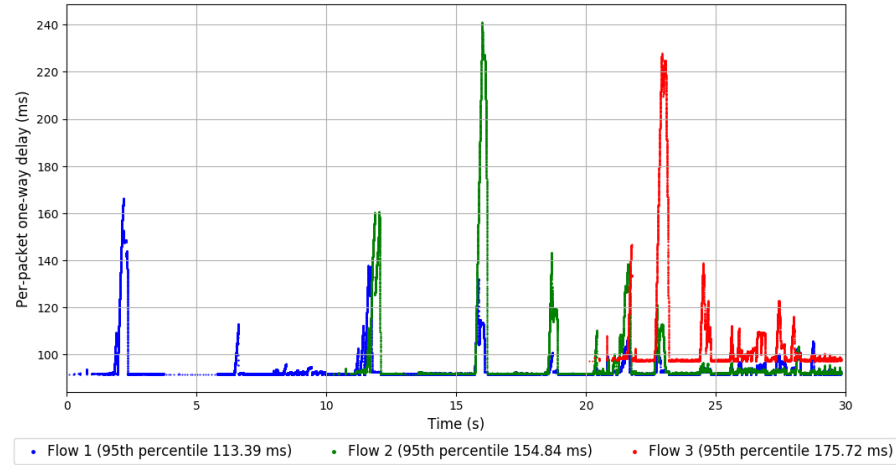
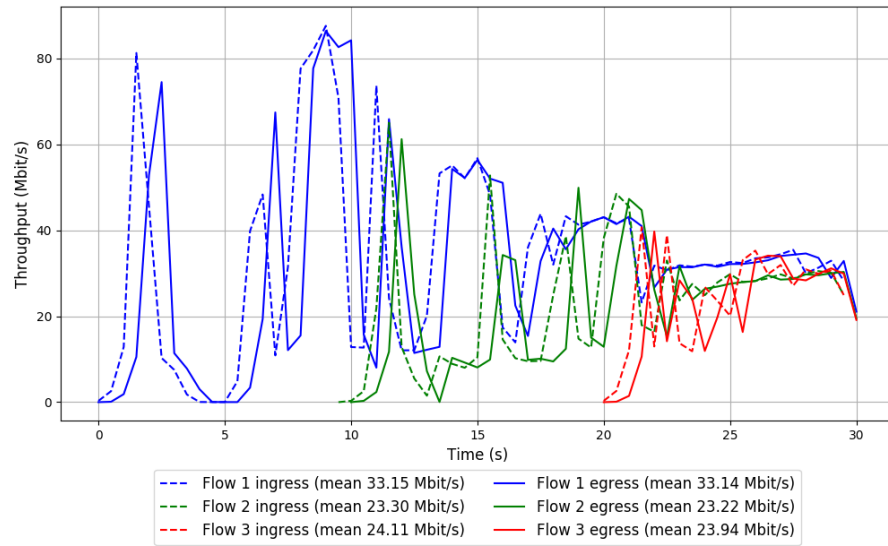
-- Flow 3:

Average throughput: 23.94 Mbit/s

95th percentile per-packet one-way delay: 175.721 ms

Loss rate: 2.58%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2019-03-09 14:58:02

End at: 2019-03-09 14:58:32

Local clock offset: -0.296 ms

Remote clock offset: 6.394 ms

Below is generated by plot.py at 2019-03-09 15:24:24

Datalink statistics

-- Total of 3 flows:

Average throughput: 57.46 Mbit/s

95th percentile per-packet one-way delay: 171.379 ms

Loss rate: 1.14%

-- Flow 1:

Average throughput: 37.69 Mbit/s

95th percentile per-packet one-way delay: 133.577 ms

Loss rate: 0.47%

-- Flow 2:

Average throughput: 22.22 Mbit/s

95th percentile per-packet one-way delay: 185.159 ms

Loss rate: 1.48%

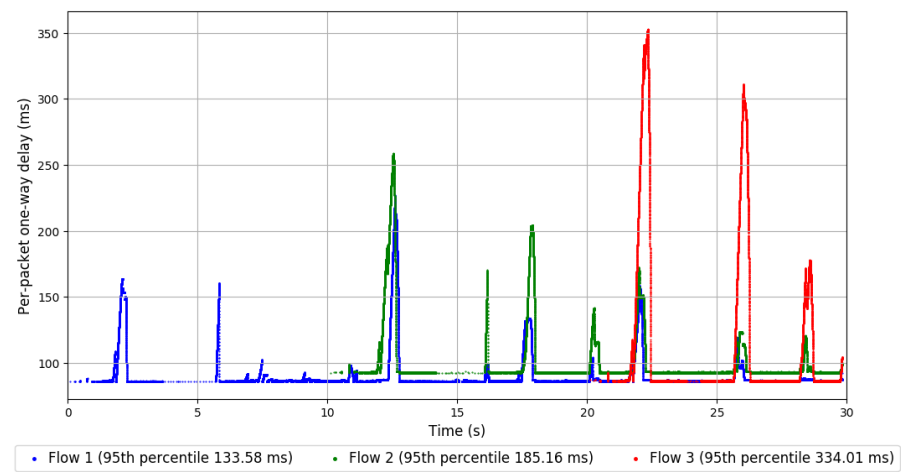
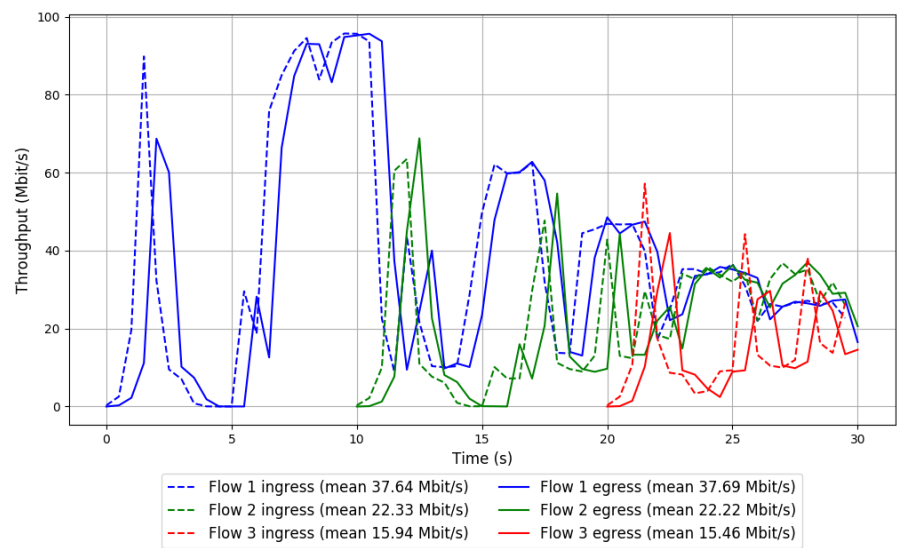
-- Flow 3:

Average throughput: 15.46 Mbit/s

95th percentile per-packet one-way delay: 334.011 ms

Loss rate: 4.91%

Run 5: Report of QUIC Cubic — Data Link

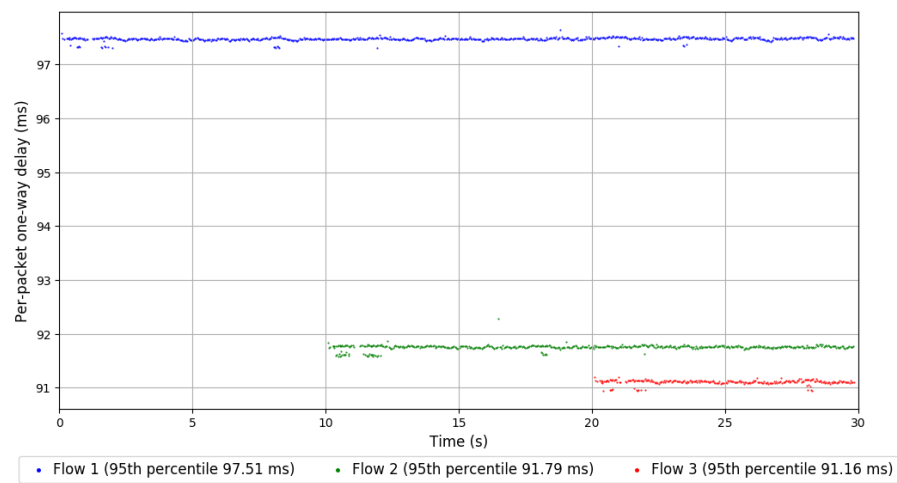
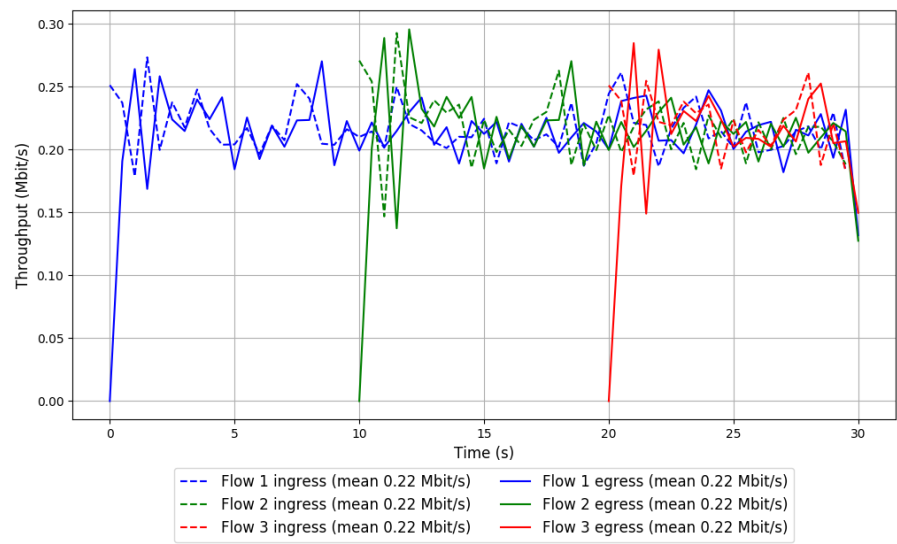


```
Run 1: Statistics of SReAM

Start at: 2019-03-09 13:20:39
End at: 2019-03-09 13:21:09
Local clock offset: -6.205 ms
Remote clock offset: 1.223 ms

# Below is generated by plot.py at 2019-03-09 15:24:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 97.505 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 97.514 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 91.790 ms
Loss rate: 1.03%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 91.155 ms
Loss rate: 1.84%
```

Run 1: Report of SReAM — Data Link

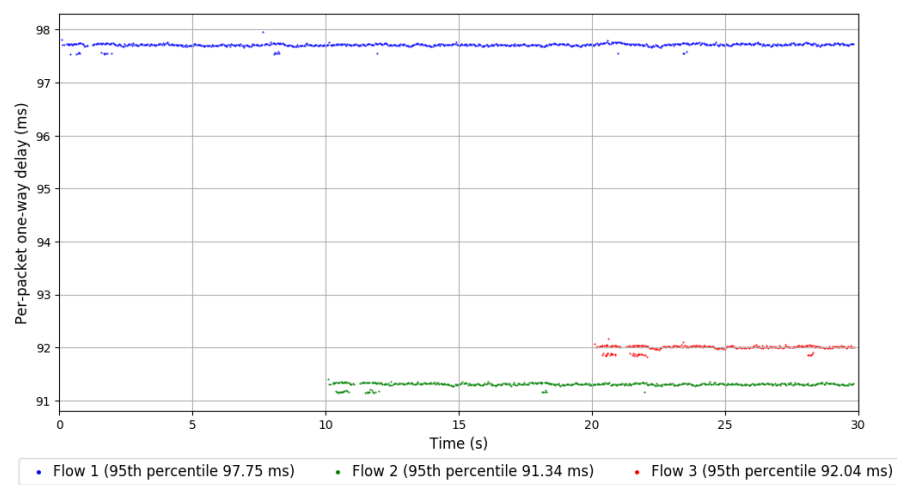
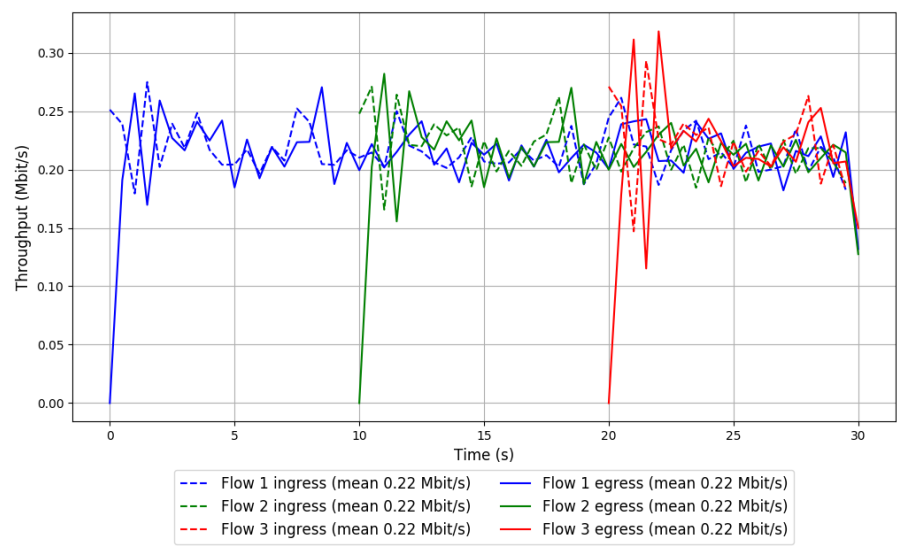


Run 2: Statistics of SReAM

Start at: 2019-03-09 13:48:10
End at: 2019-03-09 13:48:40
Local clock offset: -5.267 ms
Remote clock offset: 2.806 ms

Below is generated by plot.py at 2019-03-09 15:24:24
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 97.740 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 97.747 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 91.337 ms
Loss rate: 1.03%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 92.039 ms
Loss rate: 1.82%

Run 2: Report of SReAM — Data Link

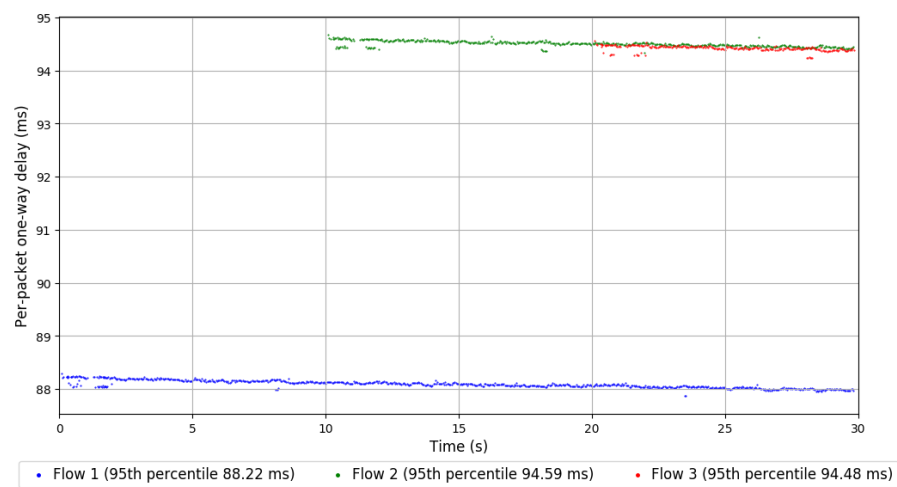
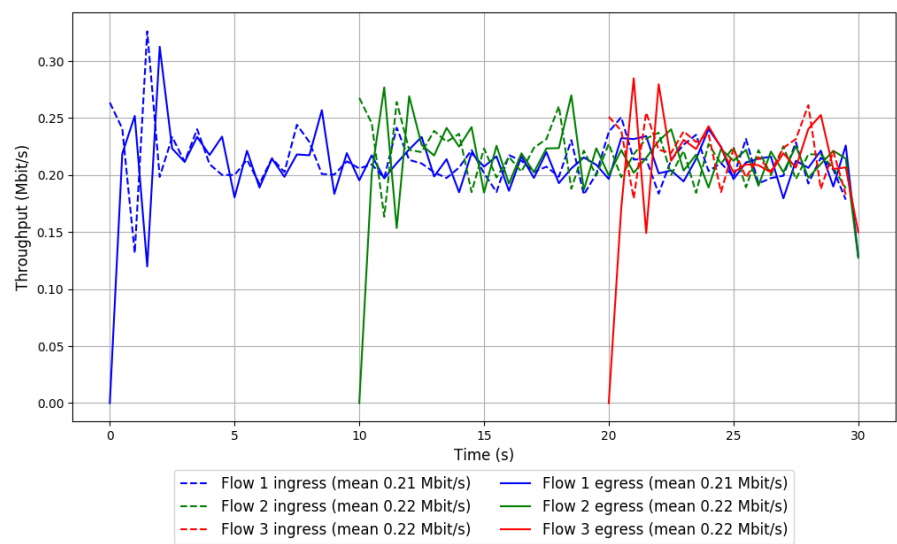


Run 3: Statistics of SReAM

Start at: 2019-03-09 14:15:51
End at: 2019-03-09 14:16:21
Local clock offset: -4.583 ms
Remote clock offset: 4.248 ms

Below is generated by plot.py at 2019-03-09 15:24:24
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 94.562 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 88.216 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 94.594 ms
Loss rate: 1.03%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 94.482 ms
Loss rate: 1.84%

Run 3: Report of SReAM — Data Link

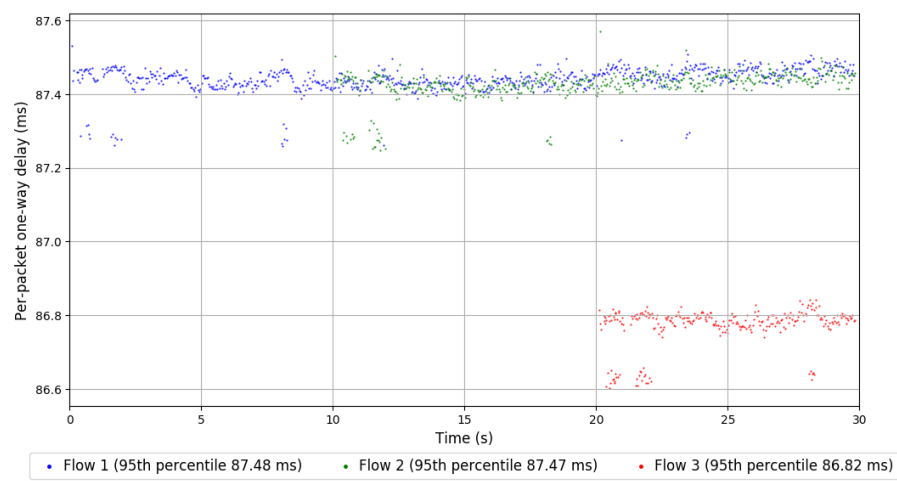
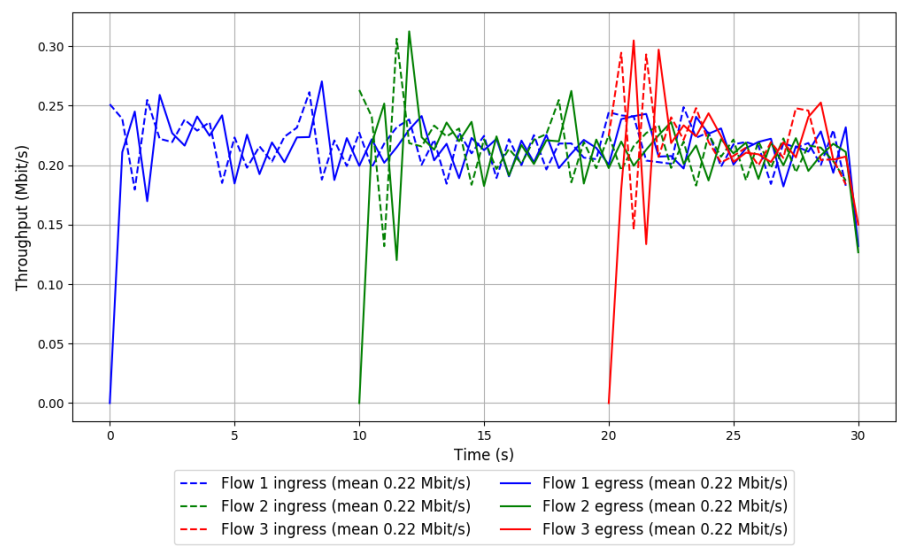


Run 4: Statistics of SReAM

Start at: 2019-03-09 14:43:29
End at: 2019-03-09 14:43:59
Local clock offset: -0.115 ms
Remote clock offset: 5.068 ms

Below is generated by plot.py at 2019-03-09 15:24:24
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 87.475 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.480 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.465 ms
Loss rate: 1.03%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.816 ms
Loss rate: 1.48%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SReAM

Start at: 2019-03-09 15:11:08

End at: 2019-03-09 15:11:38

Local clock offset: -0.897 ms

Remote clock offset: 5.379 ms

Below is generated by plot.py at 2019-03-09 15:24:24

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.44 Mbit/s

95th percentile per-packet one-way delay: 93.145 ms

Loss rate: 0.97%

-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 93.103 ms

Loss rate: 0.64%

-- Flow 2:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 93.151 ms

Loss rate: 1.03%

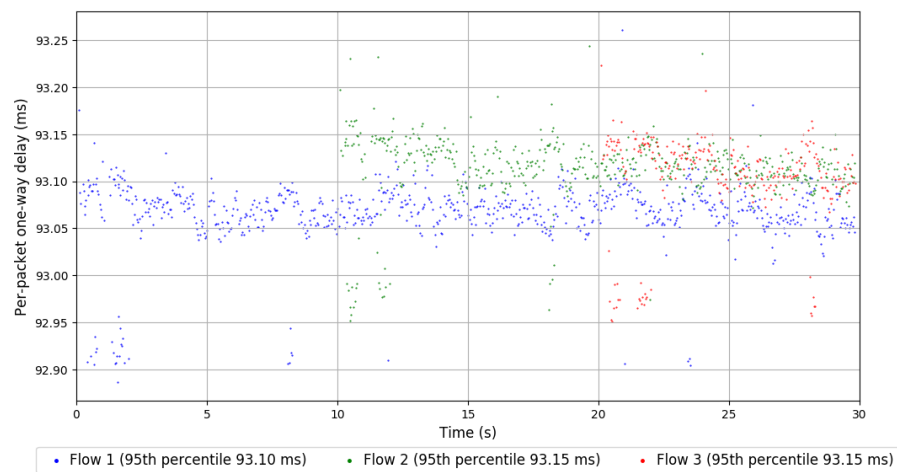
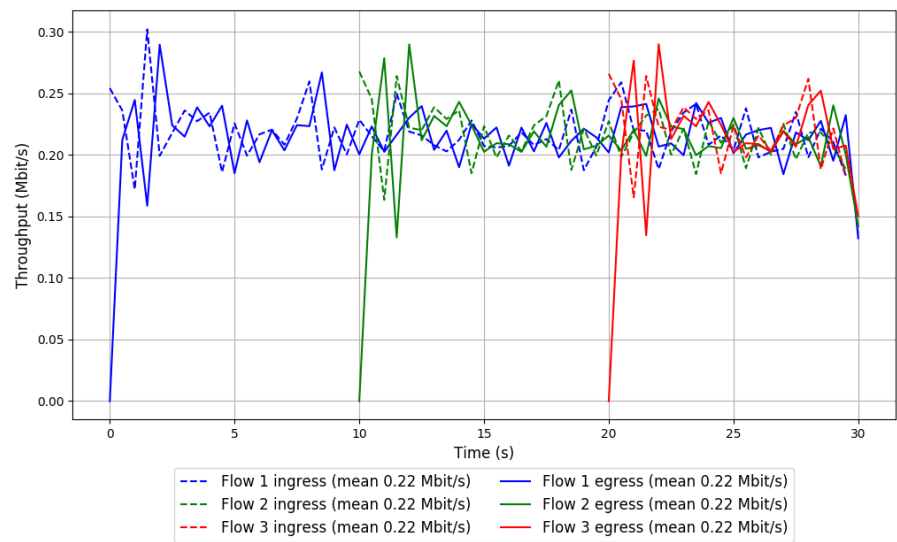
-- Flow 3:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 93.149 ms

Loss rate: 1.83%

Run 5: Report of SReAM — Data Link

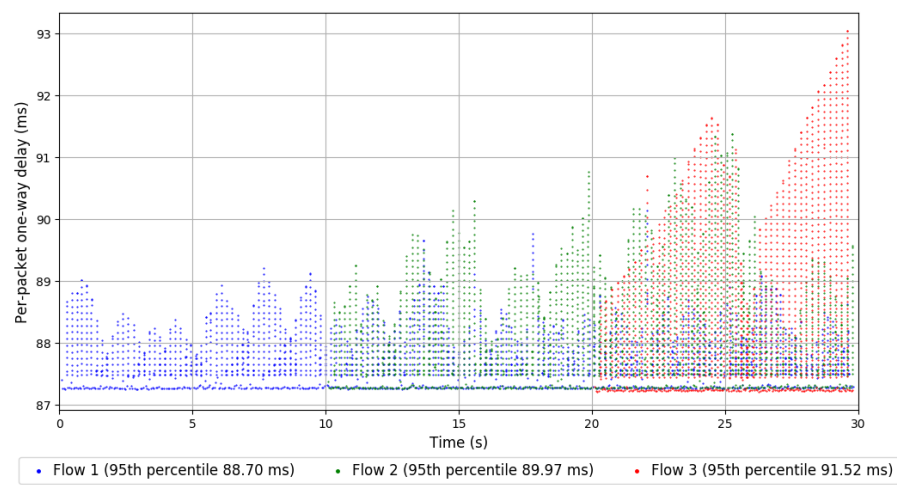
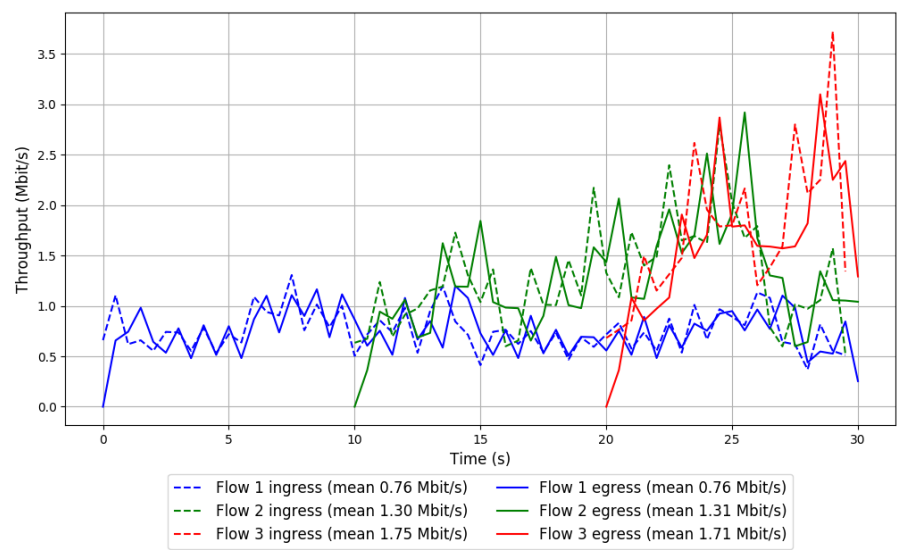


Run 1: Statistics of Sprout

Start at: 2019-03-09 13:06:22
End at: 2019-03-09 13:06:52
Local clock offset: -7.691 ms
Remote clock offset: 4.596 ms

Below is generated by plot.py at 2019-03-09 15:24:24
Datalink statistics
-- Total of 3 flows:
Average throughput: 2.18 Mbit/s
95th percentile per-packet one-way delay: 90.403 ms
Loss rate: 1.22%
-- Flow 1:
Average throughput: 0.76 Mbit/s
95th percentile per-packet one-way delay: 88.697 ms
Loss rate: 0.57%
-- Flow 2:
Average throughput: 1.31 Mbit/s
95th percentile per-packet one-way delay: 89.975 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 1.71 Mbit/s
95th percentile per-packet one-way delay: 91.521 ms
Loss rate: 3.87%

Run 1: Report of Sprout — Data Link

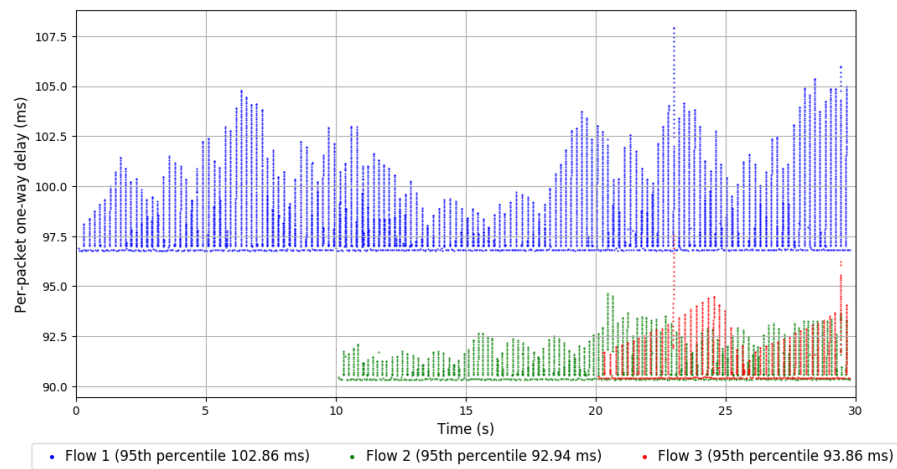
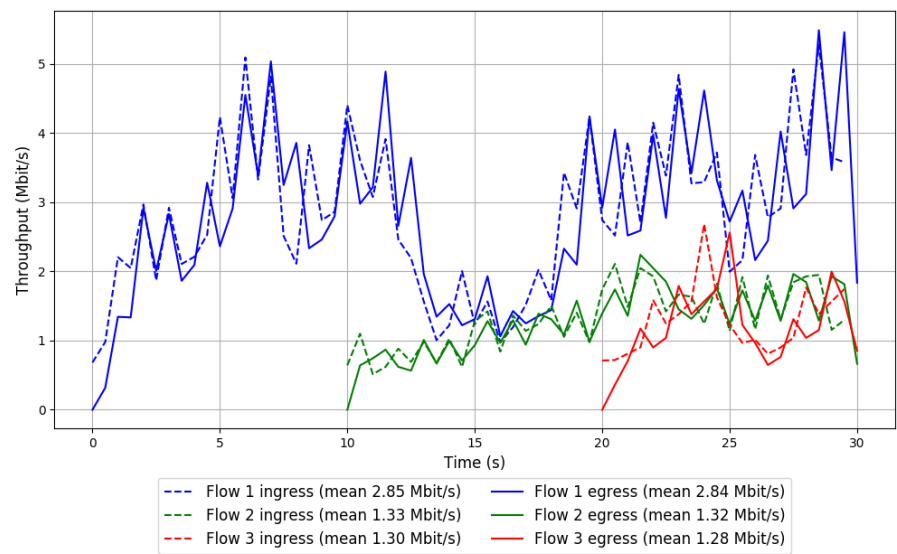


Run 2: Statistics of Sprout

Start at: 2019-03-09 13:33:54
End at: 2019-03-09 13:34:24
Local clock offset: -6.084 ms
Remote clock offset: 2.384 ms

```
# Below is generated by plot.py at 2019-03-09 15:24:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.13 Mbit/s
95th percentile per-packet one-way delay: 102.336 ms
Loss rate: 1.32%
-- Flow 1:
Average throughput: 2.84 Mbit/s
95th percentile per-packet one-way delay: 102.859 ms
Loss rate: 1.03%
-- Flow 2:
Average throughput: 1.32 Mbit/s
95th percentile per-packet one-way delay: 92.942 ms
Loss rate: 1.21%
-- Flow 3:
Average throughput: 1.28 Mbit/s
95th percentile per-packet one-way delay: 93.860 ms
Loss rate: 3.50%
```

Run 2: Report of Sprout — Data Link

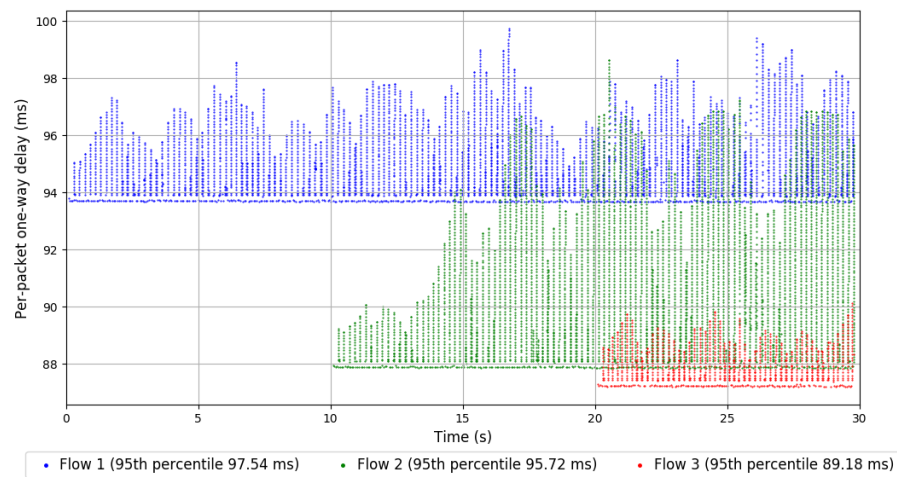
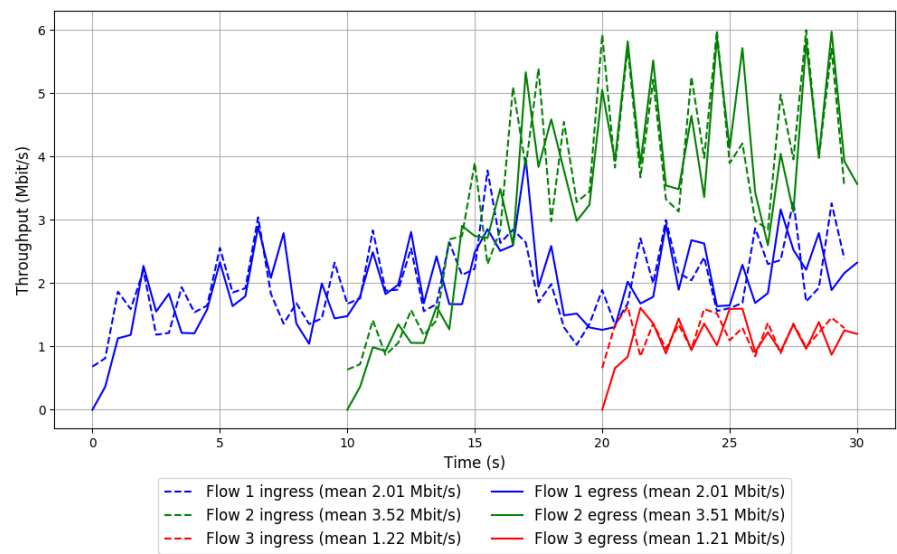


Run 3: Statistics of Sprout

Start at: 2019-03-09 14:01:26
End at: 2019-03-09 14:01:56
Local clock offset: -5.338 ms
Remote clock offset: 5.793 ms

```
# Below is generated by plot.py at 2019-03-09 15:24:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.73 Mbit/s
95th percentile per-packet one-way delay: 96.895 ms
Loss rate: 1.26%
-- Flow 1:
Average throughput: 2.01 Mbit/s
95th percentile per-packet one-way delay: 97.540 ms
Loss rate: 1.00%
-- Flow 2:
Average throughput: 3.51 Mbit/s
95th percentile per-packet one-way delay: 95.718 ms
Loss rate: 1.24%
-- Flow 3:
Average throughput: 1.21 Mbit/s
95th percentile per-packet one-way delay: 89.182 ms
Loss rate: 2.68%
```

Run 3: Report of Sprout — Data Link

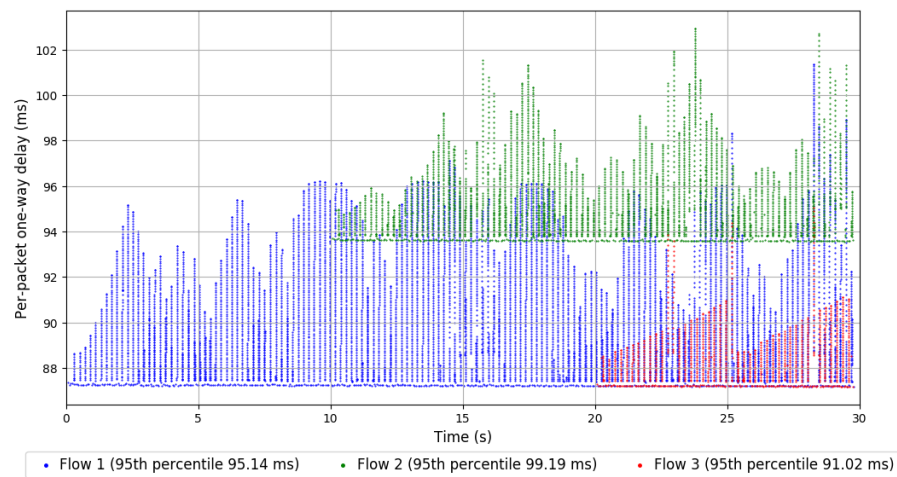
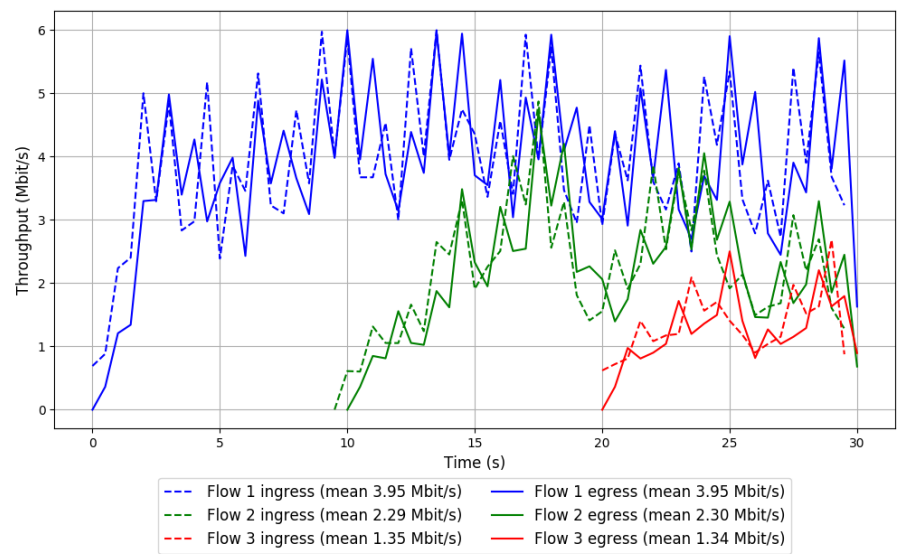


Run 4: Statistics of Sprout

Start at: 2019-03-09 14:29:11
End at: 2019-03-09 14:29:41
Local clock offset: -0.863 ms
Remote clock offset: 5.171 ms

```
# Below is generated by plot.py at 2019-03-09 15:24:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.90 Mbit/s
95th percentile per-packet one-way delay: 97.243 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 3.95 Mbit/s
95th percentile per-packet one-way delay: 95.145 ms
Loss rate: 0.68%
-- Flow 2:
Average throughput: 2.30 Mbit/s
95th percentile per-packet one-way delay: 99.188 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 1.34 Mbit/s
95th percentile per-packet one-way delay: 91.020 ms
Loss rate: 3.26%
```

Run 4: Report of Sprout — Data Link

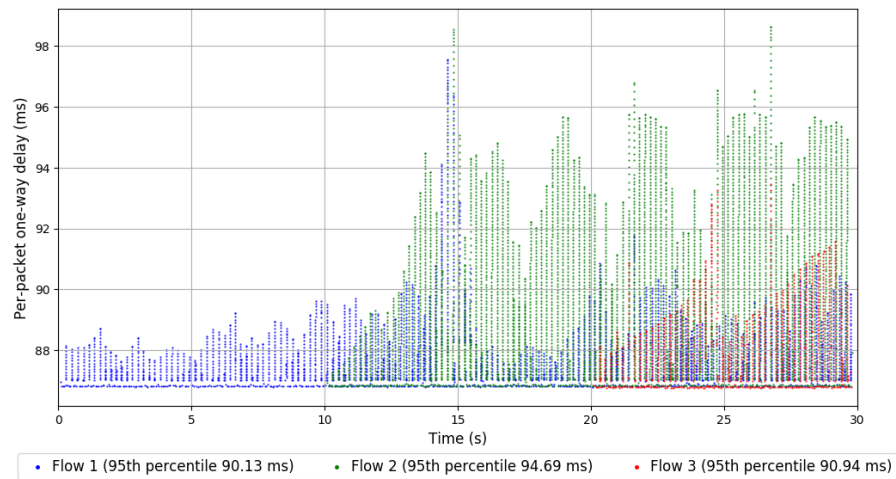
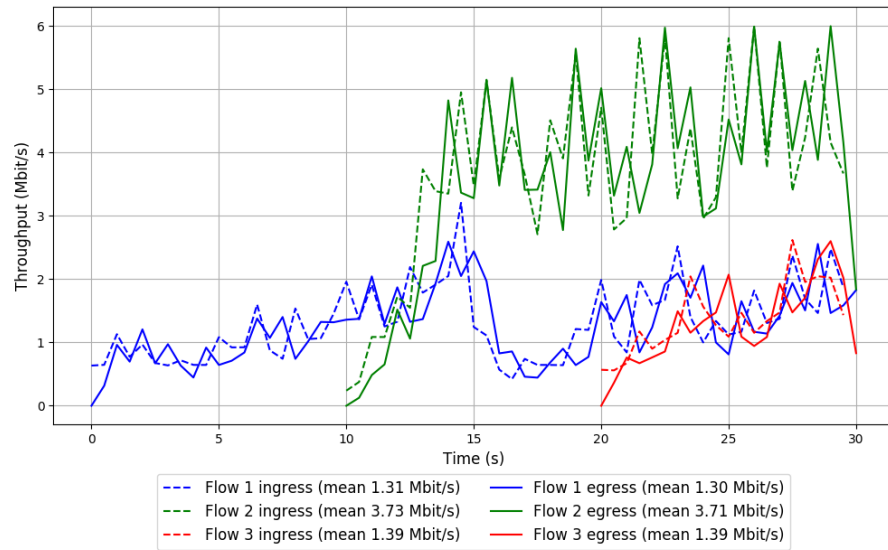


Run 5: Statistics of Sprout

Start at: 2019-03-09 14:56:48
End at: 2019-03-09 14:57:18
Local clock offset: -0.312 ms
Remote clock offset: 6.349 ms

Below is generated by plot.py at 2019-03-09 15:24:24
Datalink statistics
-- Total of 3 flows:
Average throughput: 4.22 Mbit/s
95th percentile per-packet one-way delay: 94.067 ms
Loss rate: 1.33%
-- Flow 1:
Average throughput: 1.30 Mbit/s
95th percentile per-packet one-way delay: 90.129 ms
Loss rate: 1.19%
-- Flow 2:
Average throughput: 3.71 Mbit/s
95th percentile per-packet one-way delay: 94.685 ms
Loss rate: 1.24%
-- Flow 3:
Average throughput: 1.39 Mbit/s
95th percentile per-packet one-way delay: 90.945 ms
Loss rate: 2.19%

Run 5: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2019-03-09 12:57:09

End at: 2019-03-09 12:57:39

Local clock offset: -6.638 ms

Remote clock offset: 0.045 ms

Below is generated by plot.py at 2019-03-09 15:25:24

Datalink statistics

-- Total of 3 flows:

Average throughput: 83.33 Mbit/s

95th percentile per-packet one-way delay: 159.939 ms

Loss rate: 0.71%

-- Flow 1:

Average throughput: 49.13 Mbit/s

95th percentile per-packet one-way delay: 158.560 ms

Loss rate: 0.43%

-- Flow 2:

Average throughput: 36.78 Mbit/s

95th percentile per-packet one-way delay: 163.241 ms

Loss rate: 0.81%

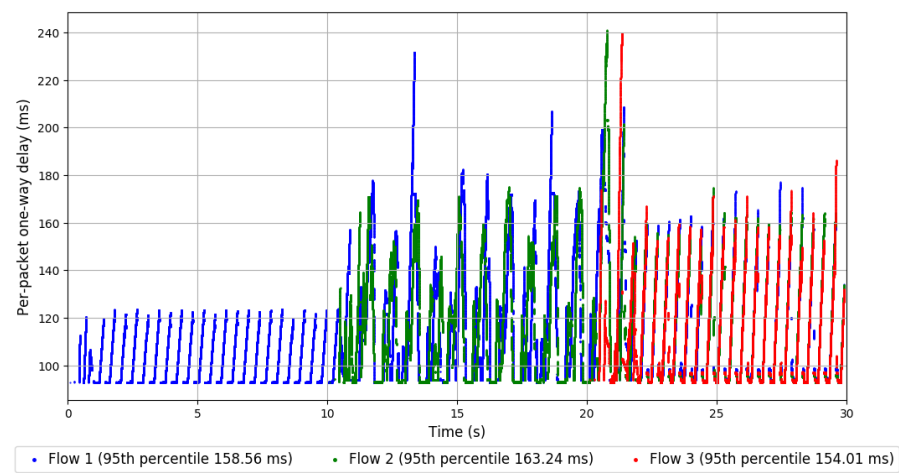
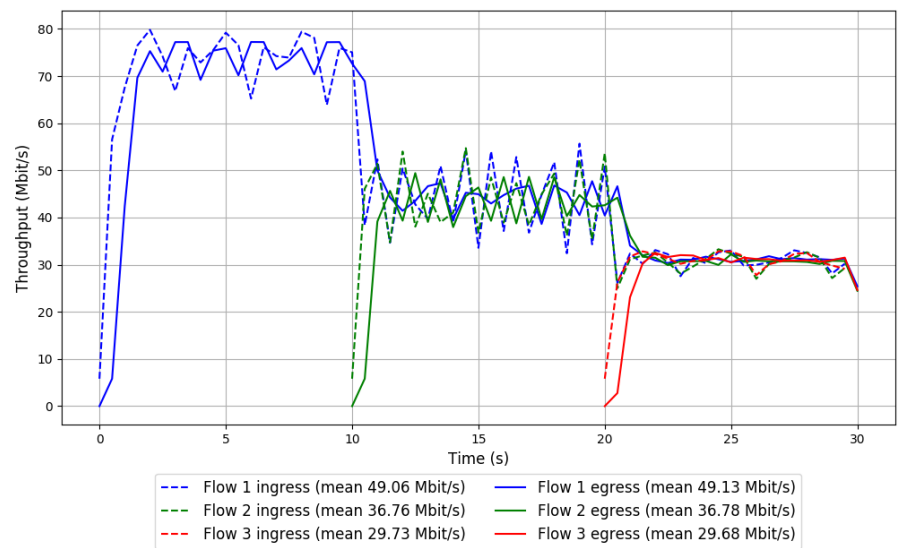
-- Flow 3:

Average throughput: 29.68 Mbit/s

95th percentile per-packet one-way delay: 154.007 ms

Loss rate: 1.88%

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



Run 2: Statistics of TaoVA-100x

Start at: 2019-03-09 13:24:35

End at: 2019-03-09 13:25:05

Local clock offset: -6.462 ms

Remote clock offset: 4.24 ms

Below is generated by plot.py at 2019-03-09 15:25:24

Datalink statistics

-- Total of 3 flows:

Average throughput: 79.63 Mbit/s

95th percentile per-packet one-way delay: 160.545 ms

Loss rate: 0.72%

-- Flow 1:

Average throughput: 45.61 Mbit/s

95th percentile per-packet one-way delay: 149.995 ms

Loss rate: 0.43%

-- Flow 2:

Average throughput: 37.79 Mbit/s

95th percentile per-packet one-way delay: 171.956 ms

Loss rate: 0.84%

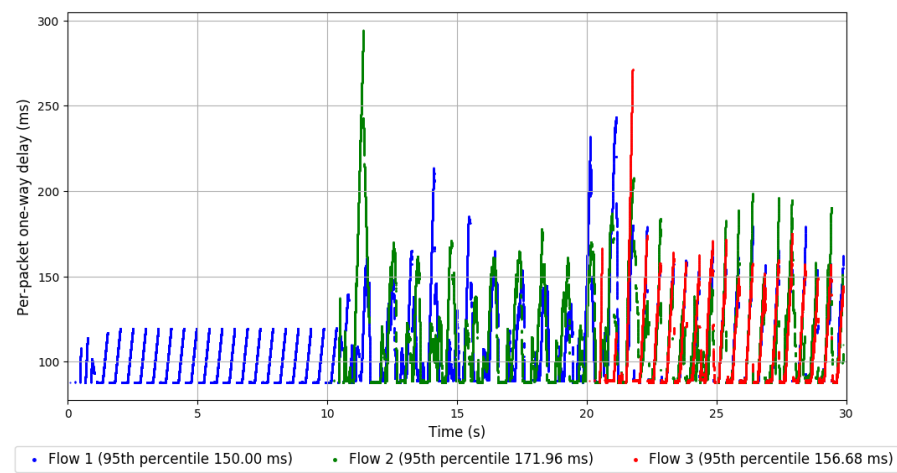
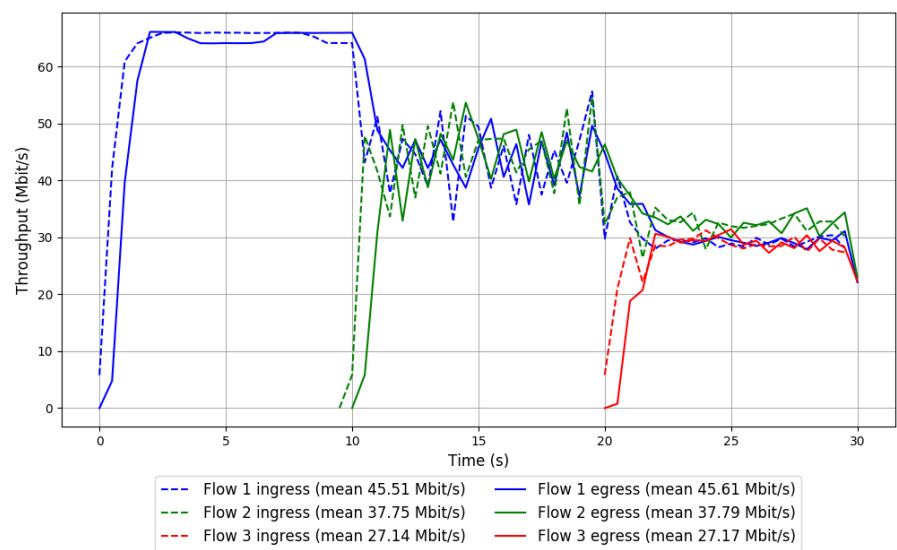
-- Flow 3:

Average throughput: 27.17 Mbit/s

95th percentile per-packet one-way delay: 156.675 ms

Loss rate: 1.83%

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



Run 3: Statistics of TaoVA-100x

Start at: 2019-03-09 13:52:03

End at: 2019-03-09 13:52:33

Local clock offset: -5.284 ms

Remote clock offset: 6.732 ms

Below is generated by plot.py at 2019-03-09 15:25:25

Datalink statistics

-- Total of 3 flows:

Average throughput: 78.98 Mbit/s

95th percentile per-packet one-way delay: 163.373 ms

Loss rate: 1.02%

-- Flow 1:

Average throughput: 41.20 Mbit/s

95th percentile per-packet one-way delay: 155.806 ms

Loss rate: 0.34%

-- Flow 2:

Average throughput: 42.25 Mbit/s

95th percentile per-packet one-way delay: 158.001 ms

Loss rate: 1.31%

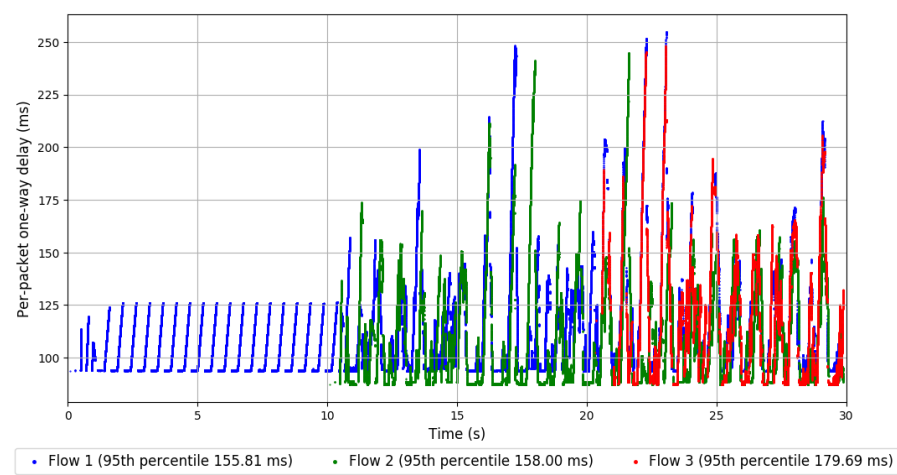
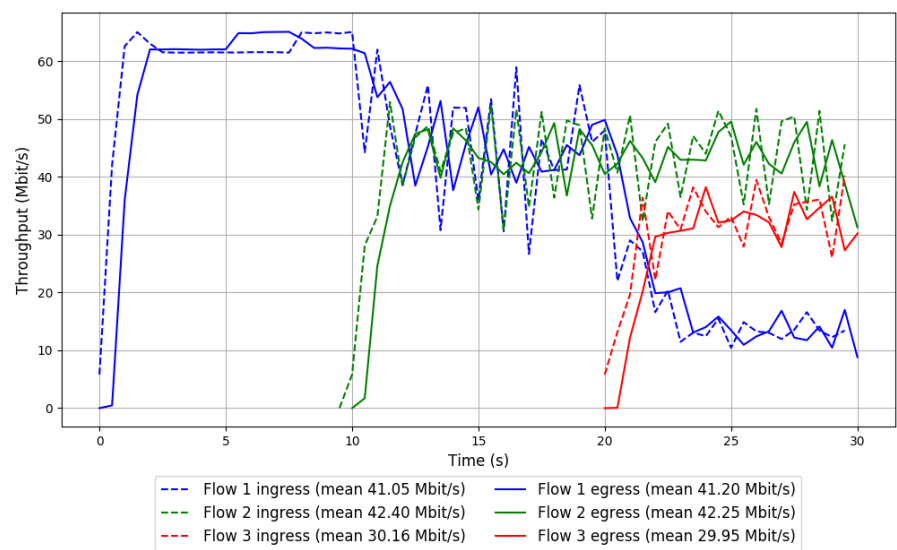
-- Flow 3:

Average throughput: 29.95 Mbit/s

95th percentile per-packet one-way delay: 179.694 ms

Loss rate: 2.98%

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



Run 4: Statistics of TaoVA-100x

Start at: 2019-03-09 14:19:46

End at: 2019-03-09 14:20:16

Local clock offset: -2.958 ms

Remote clock offset: 1.443 ms

Below is generated by plot.py at 2019-03-09 15:25:32

Datalink statistics

-- Total of 3 flows:

Average throughput: 78.94 Mbit/s

95th percentile per-packet one-way delay: 163.925 ms

Loss rate: 0.98%

-- Flow 1:

Average throughput: 45.34 Mbit/s

95th percentile per-packet one-way delay: 156.072 ms

Loss rate: 0.58%

-- Flow 2:

Average throughput: 36.20 Mbit/s

95th percentile per-packet one-way delay: 168.015 ms

Loss rate: 1.12%

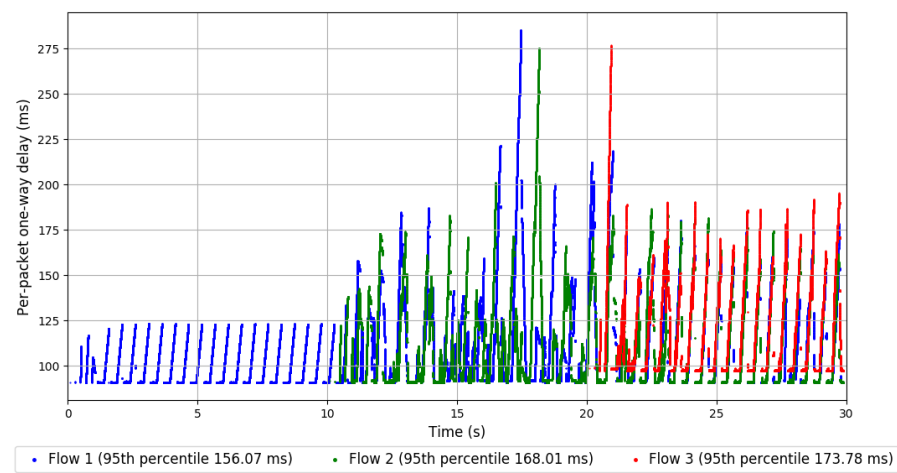
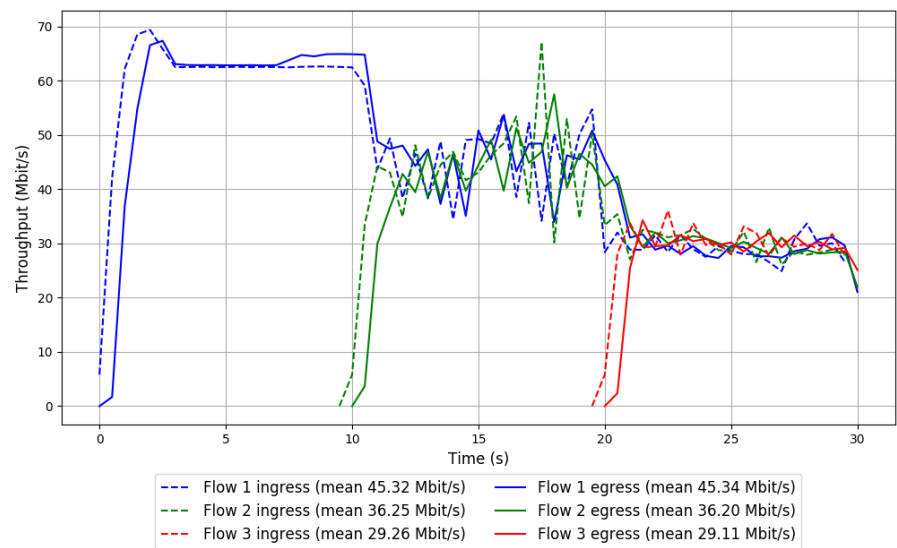
-- Flow 3:

Average throughput: 29.11 Mbit/s

95th percentile per-packet one-way delay: 173.785 ms

Loss rate: 2.53%

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



Run 5: Statistics of TaoVA-100x

Start at: 2019-03-09 14:47:23

End at: 2019-03-09 14:47:53

Local clock offset: 0.251 ms

Remote clock offset: 1.475 ms

Below is generated by plot.py at 2019-03-09 15:25:40

Datalink statistics

-- Total of 3 flows:

Average throughput: 80.92 Mbit/s

95th percentile per-packet one-way delay: 157.348 ms

Loss rate: 0.83%

-- Flow 1:

Average throughput: 49.39 Mbit/s

95th percentile per-packet one-way delay: 151.178 ms

Loss rate: 0.61%

-- Flow 2:

Average throughput: 39.78 Mbit/s

95th percentile per-packet one-way delay: 164.457 ms

Loss rate: 0.97%

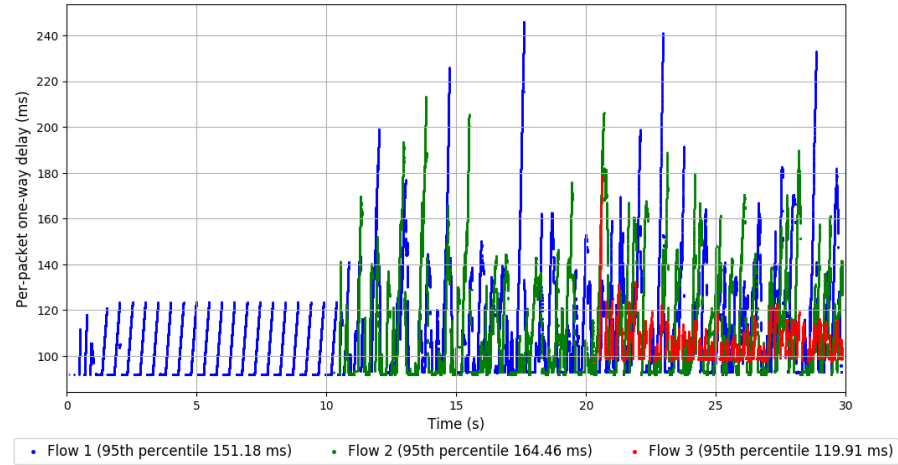
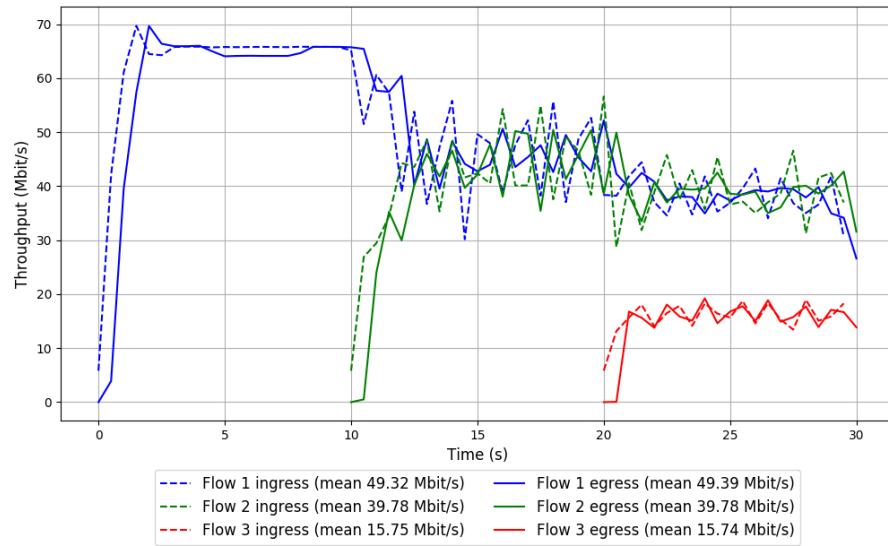
-- Flow 3:

Average throughput: 15.74 Mbit/s

95th percentile per-packet one-way delay: 119.908 ms

Loss rate: 2.13%

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



Run 1: Statistics of TCP Vegas

Start at: 2019-03-09 13:16:37

End at: 2019-03-09 13:17:07

Local clock offset: -7.517 ms

Remote clock offset: 5.666 ms

Below is generated by plot.py at 2019-03-09 15:25:40

Datalink statistics

-- Total of 3 flows:

Average throughput: 58.27 Mbit/s

95th percentile per-packet one-way delay: 198.471 ms

Loss rate: 0.81%

-- Flow 1:

Average throughput: 30.96 Mbit/s

95th percentile per-packet one-way delay: 191.422 ms

Loss rate: 0.43%

-- Flow 2:

Average throughput: 31.17 Mbit/s

95th percentile per-packet one-way delay: 112.310 ms

Loss rate: 1.05%

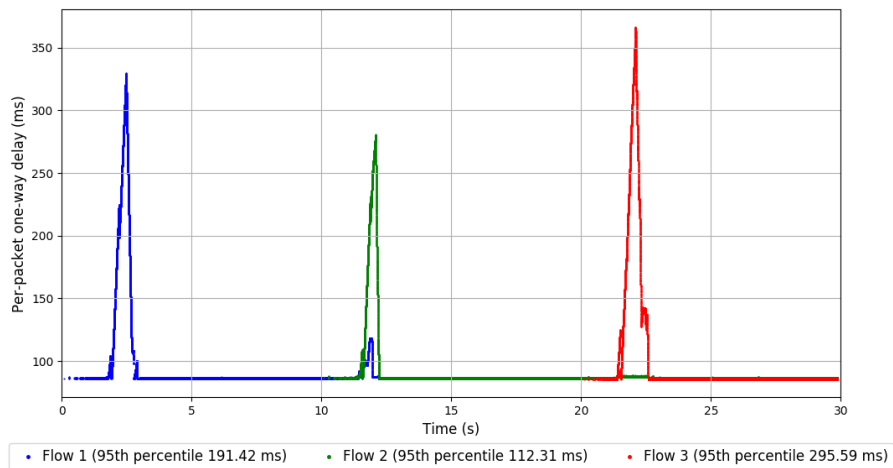
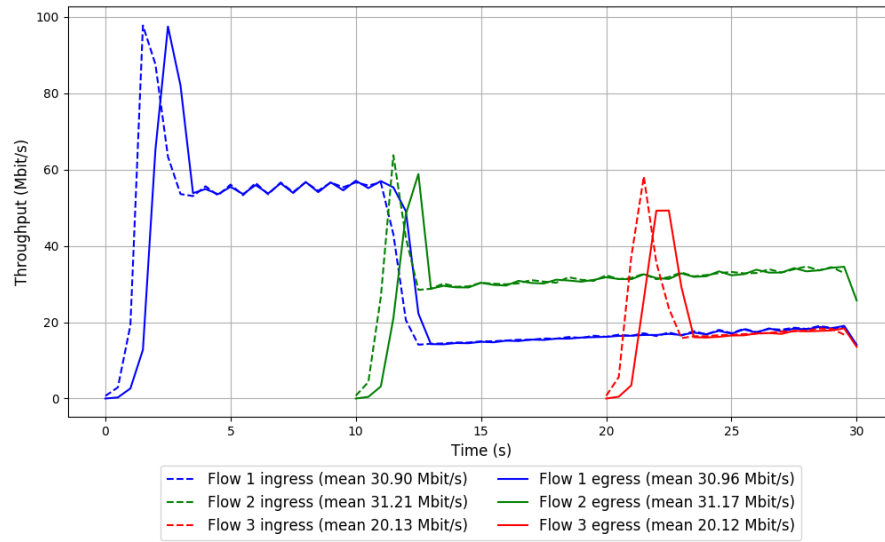
-- Flow 3:

Average throughput: 20.12 Mbit/s

95th percentile per-packet one-way delay: 295.590 ms

Loss rate: 1.81%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2019-03-09 13:44:10

End at: 2019-03-09 13:44:40

Local clock offset: -5.987 ms

Remote clock offset: 2.745 ms

Below is generated by plot.py at 2019-03-09 15:25:40

Datalink statistics

-- Total of 3 flows:

Average throughput: 61.36 Mbit/s

95th percentile per-packet one-way delay: 157.139 ms

Loss rate: 0.91%

-- Flow 1:

Average throughput: 32.61 Mbit/s

95th percentile per-packet one-way delay: 182.609 ms

Loss rate: 0.60%

-- Flow 2:

Average throughput: 33.61 Mbit/s

95th percentile per-packet one-way delay: 114.152 ms

Loss rate: 0.99%

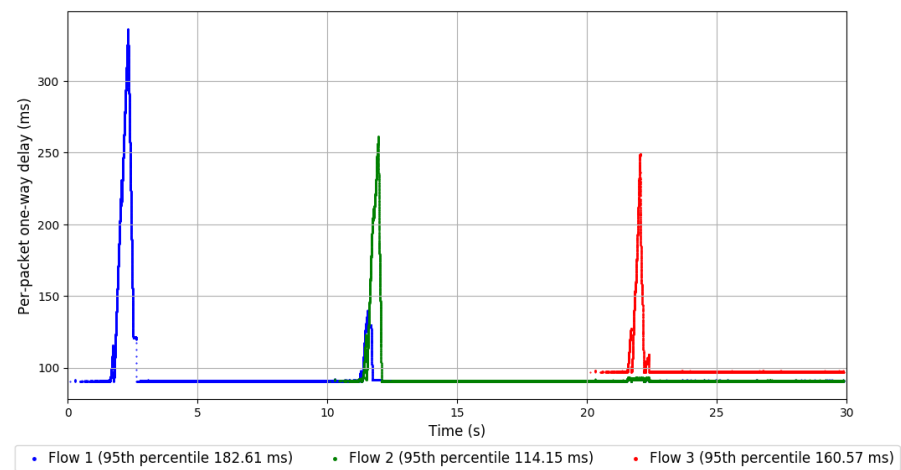
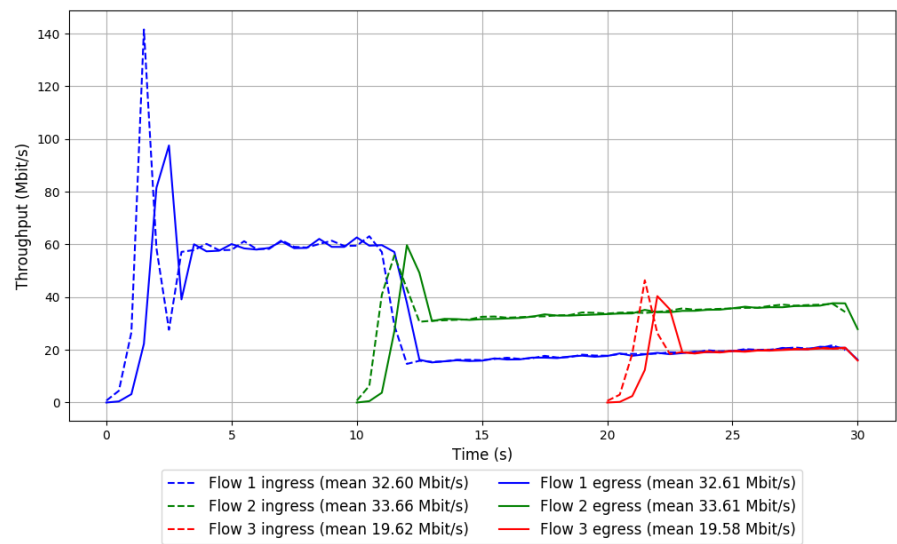
-- Flow 3:

Average throughput: 19.58 Mbit/s

95th percentile per-packet one-way delay: 160.568 ms

Loss rate: 2.19%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2019-03-09 14:11:49

End at: 2019-03-09 14:12:19

Local clock offset: -6.121 ms

Remote clock offset: 0.383 ms

Below is generated by plot.py at 2019-03-09 15:25:40

Datalink statistics

-- Total of 3 flows:

Average throughput: 64.61 Mbit/s

95th percentile per-packet one-way delay: 154.521 ms

Loss rate: 0.89%

-- Flow 1:

Average throughput: 39.19 Mbit/s

95th percentile per-packet one-way delay: 161.551 ms

Loss rate: 0.59%

-- Flow 2:

Average throughput: 29.75 Mbit/s

95th percentile per-packet one-way delay: 122.475 ms

Loss rate: 1.10%

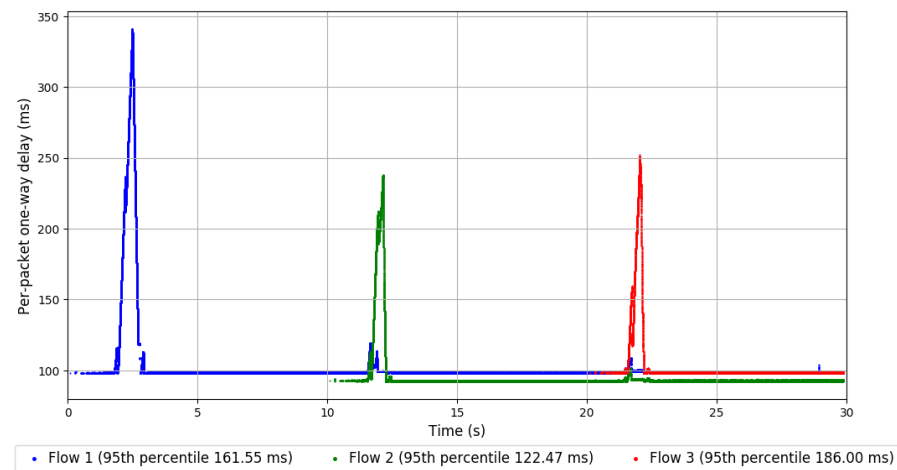
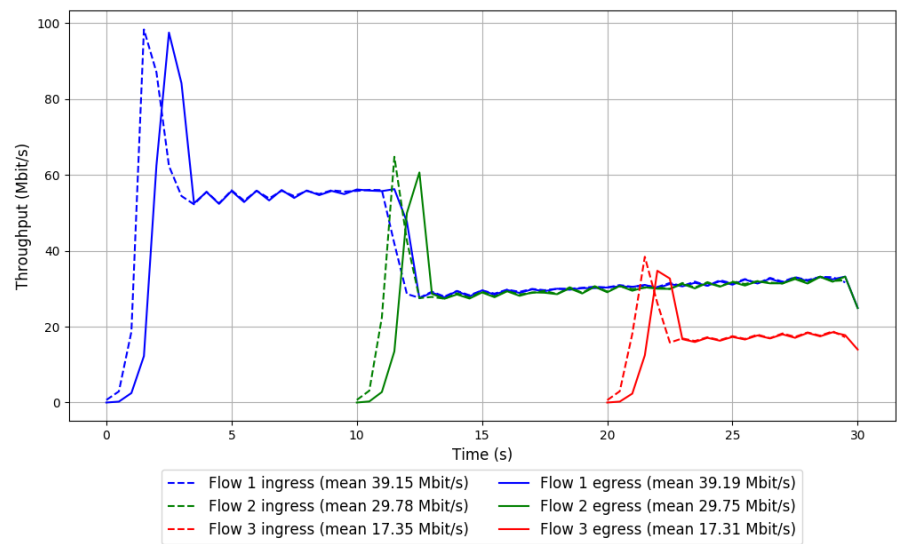
-- Flow 3:

Average throughput: 17.31 Mbit/s

95th percentile per-packet one-way delay: 185.996 ms

Loss rate: 2.21%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2019-03-09 14:39:29

End at: 2019-03-09 14:39:59

Local clock offset: -0.363 ms

Remote clock offset: 5.166 ms

Below is generated by plot.py at 2019-03-09 15:25:40

Datalink statistics

-- Total of 3 flows:

Average throughput: 55.66 Mbit/s

95th percentile per-packet one-way delay: 194.680 ms

Loss rate: 0.89%

-- Flow 1:

Average throughput: 33.51 Mbit/s

95th percentile per-packet one-way delay: 187.426 ms

Loss rate: 0.74%

-- Flow 2:

Average throughput: 24.04 Mbit/s

95th percentile per-packet one-way delay: 148.781 ms

Loss rate: 0.81%

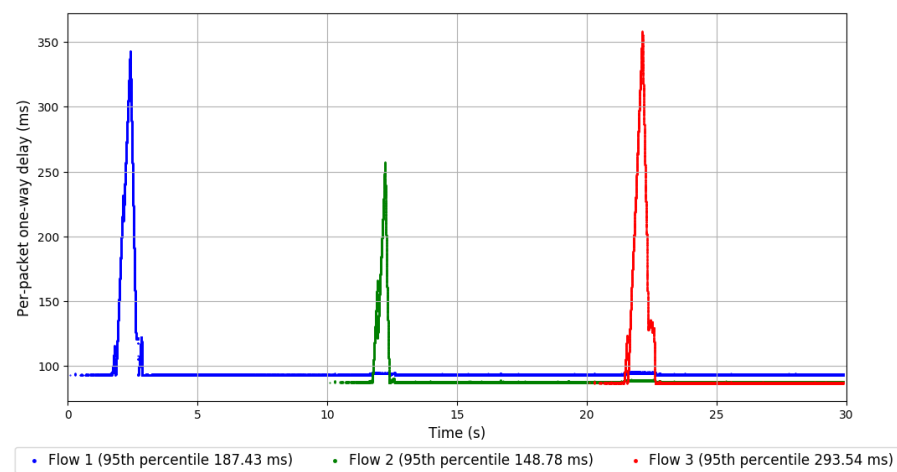
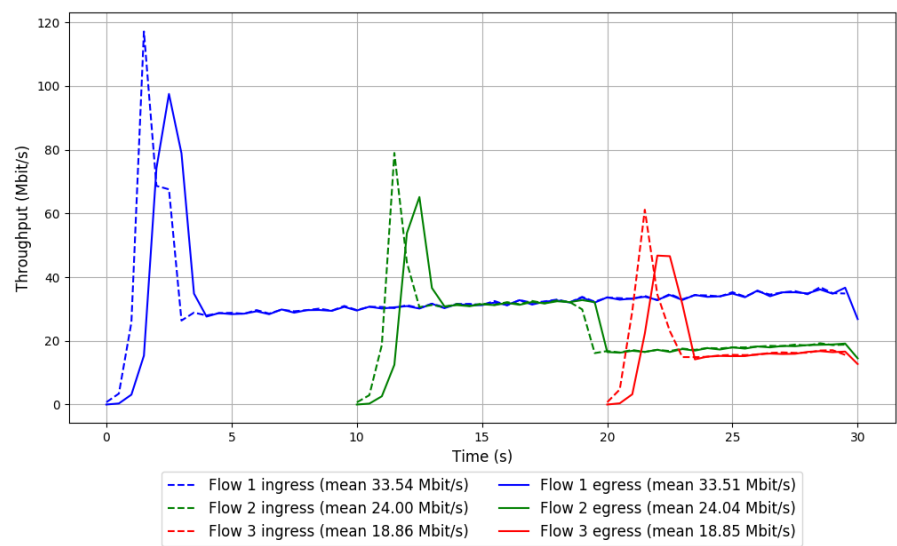
-- Flow 3:

Average throughput: 18.85 Mbit/s

95th percentile per-packet one-way delay: 293.535 ms

Loss rate: 1.86%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2019-03-09 15:07:06

End at: 2019-03-09 15:07:36

Local clock offset: -0.989 ms

Remote clock offset: 5.288 ms

Below is generated by plot.py at 2019-03-09 15:25:47

Datalink statistics

-- Total of 3 flows:

Average throughput: 55.00 Mbit/s

95th percentile per-packet one-way delay: 195.443 ms

Loss rate: 0.91%

-- Flow 1:

Average throughput: 26.98 Mbit/s

95th percentile per-packet one-way delay: 215.180 ms

Loss rate: 0.51%

-- Flow 2:

Average throughput: 33.55 Mbit/s

95th percentile per-packet one-way delay: 123.109 ms

Loss rate: 1.13%

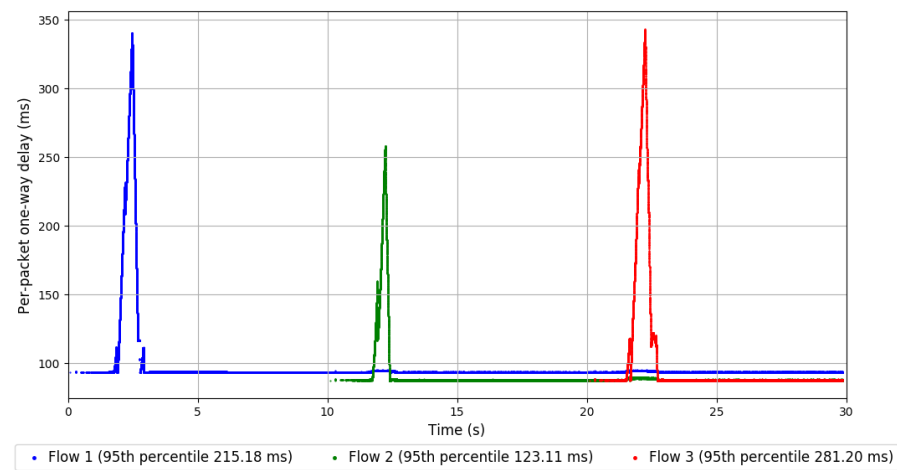
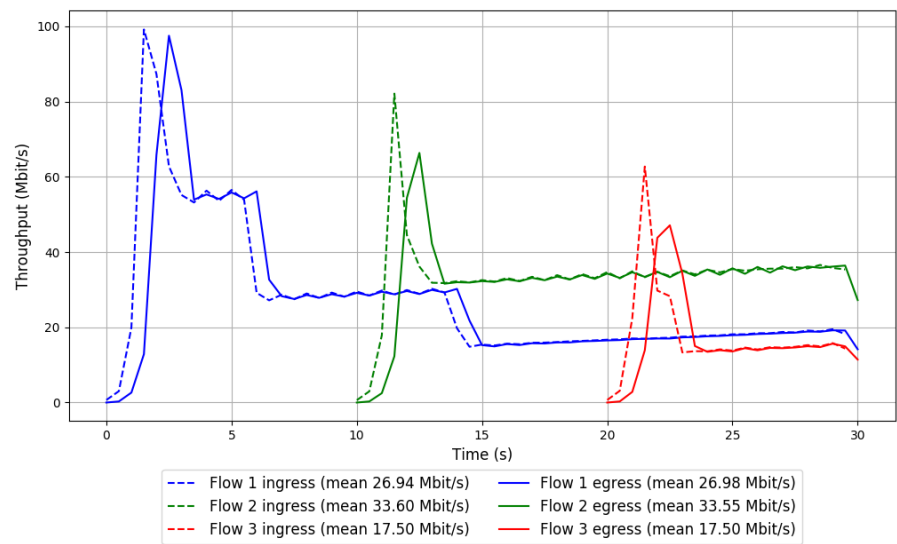
-- Flow 3:

Average throughput: 17.50 Mbit/s

95th percentile per-packet one-way delay: 281.198 ms

Loss rate: 1.94%

Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2019-03-09 12:55:52

End at: 2019-03-09 12:56:22

Local clock offset: -7.344 ms

Remote clock offset: 0.036 ms

Below is generated by plot.py at 2019-03-09 15:26:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 68.63 Mbit/s

95th percentile per-packet one-way delay: 358.465 ms

Loss rate: 1.34%

-- Flow 1:

Average throughput: 35.60 Mbit/s

95th percentile per-packet one-way delay: 368.087 ms

Loss rate: 0.93%

-- Flow 2:

Average throughput: 36.56 Mbit/s

95th percentile per-packet one-way delay: 370.883 ms

Loss rate: 1.88%

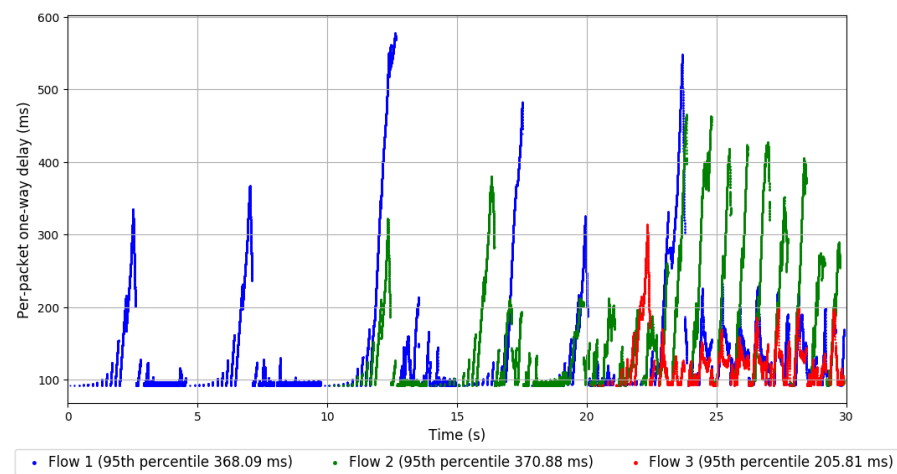
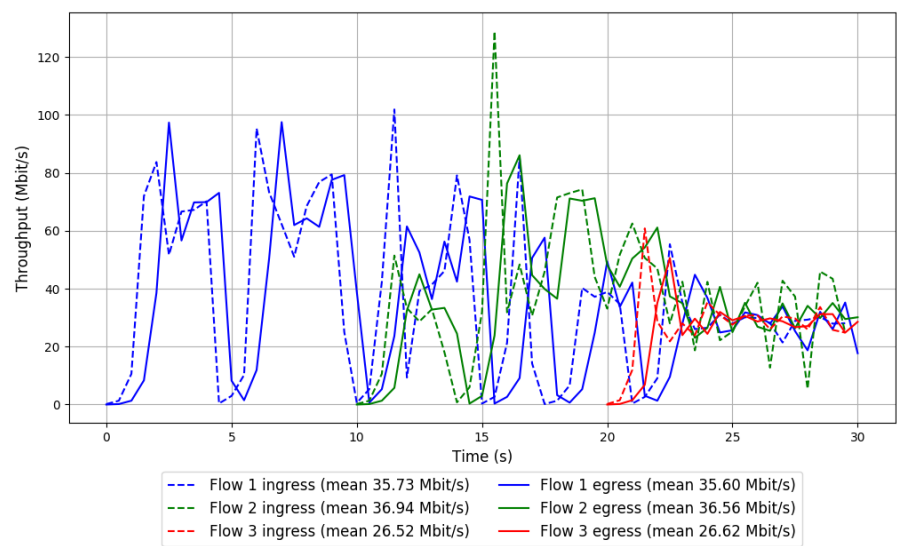
-- Flow 3:

Average throughput: 26.62 Mbit/s

95th percentile per-packet one-way delay: 205.810 ms

Loss rate: 1.49%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2019-03-09 13:23:16

End at: 2019-03-09 13:23:46

Local clock offset: -5.863 ms

Remote clock offset: 6.452 ms

Below is generated by plot.py at 2019-03-09 15:26:05

Datalink statistics

-- Total of 3 flows:

Average throughput: 69.30 Mbit/s

95th percentile per-packet one-way delay: 278.364 ms

Loss rate: 0.48%

-- Flow 1:

Average throughput: 35.95 Mbit/s

95th percentile per-packet one-way delay: 271.047 ms

Loss rate: 0.17%

-- Flow 2:

Average throughput: 40.84 Mbit/s

95th percentile per-packet one-way delay: 297.528 ms

Loss rate: 0.93%

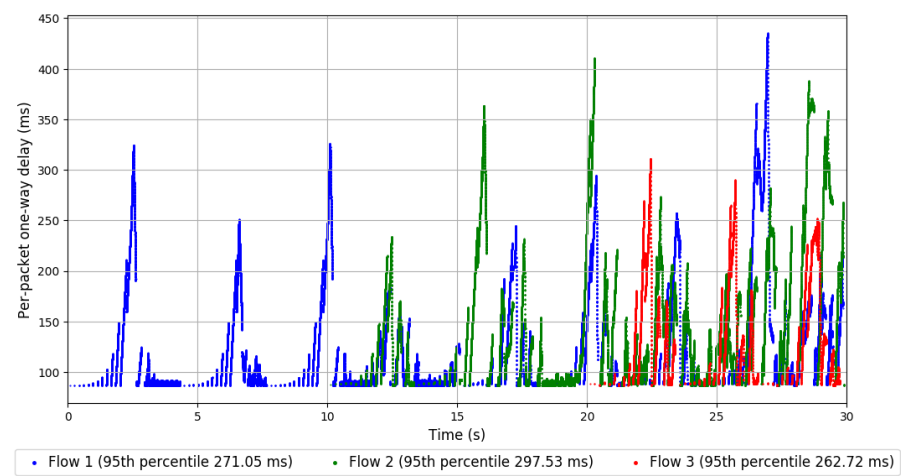
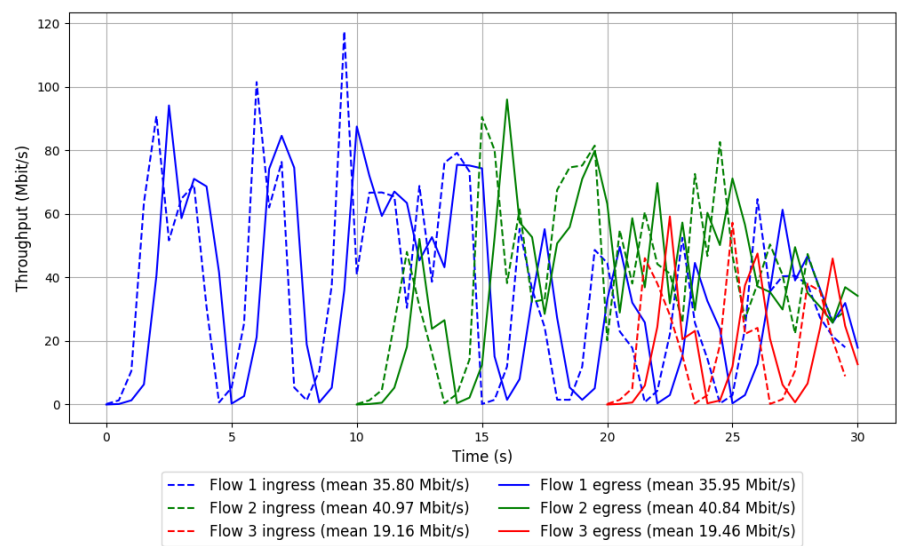
-- Flow 3:

Average throughput: 19.46 Mbit/s

95th percentile per-packet one-way delay: 262.721 ms

Loss rate: 0.32%

Run 2: Report of Verus — Data Link

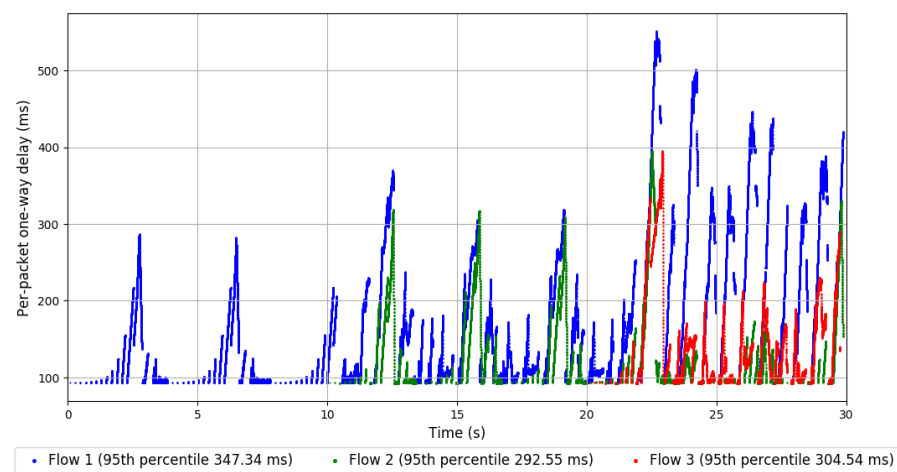
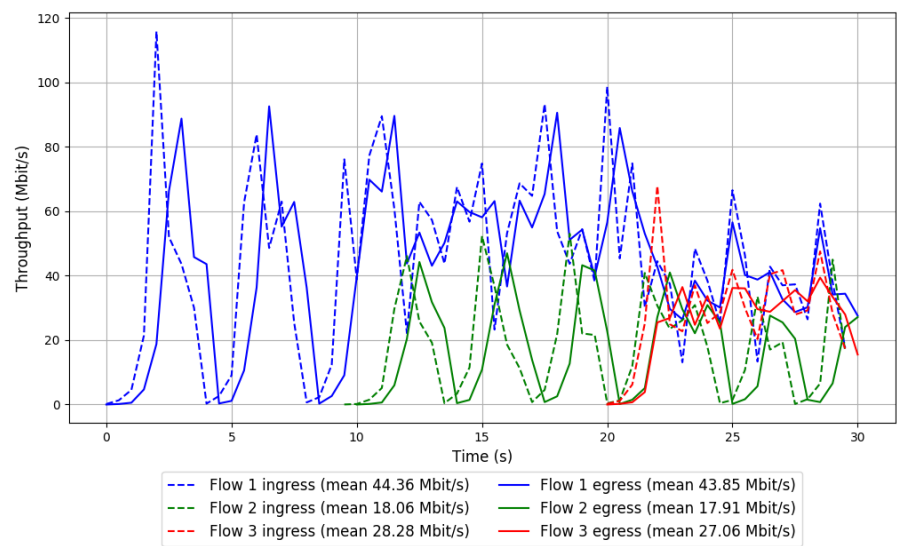


Run 3: Statistics of Verus

Start at: 2019-03-09 13:50:45
End at: 2019-03-09 13:51:15
Local clock offset: -5.294 ms
Remote clock offset: 1.707 ms

Below is generated by plot.py at 2019-03-09 15:26:09
Datalink statistics
-- Total of 3 flows:
Average throughput: 64.51 Mbit/s
95th percentile per-packet one-way delay: 328.309 ms
Loss rate: 2.22%
-- Flow 1:
Average throughput: 43.85 Mbit/s
95th percentile per-packet one-way delay: 347.338 ms
Loss rate: 1.23%
-- Flow 2:
Average throughput: 17.91 Mbit/s
95th percentile per-packet one-way delay: 292.553 ms
Loss rate: 1.81%
-- Flow 3:
Average throughput: 27.06 Mbit/s
95th percentile per-packet one-way delay: 304.539 ms
Loss rate: 7.37%

Run 3: Report of Verus — Data Link

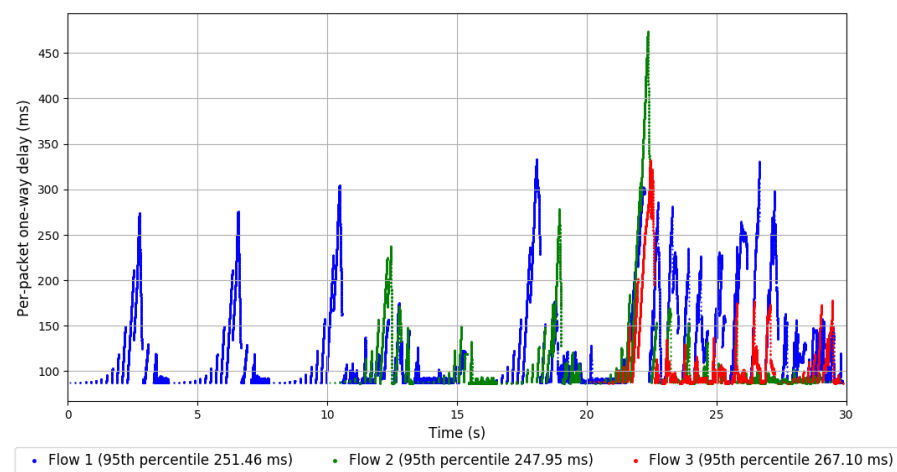
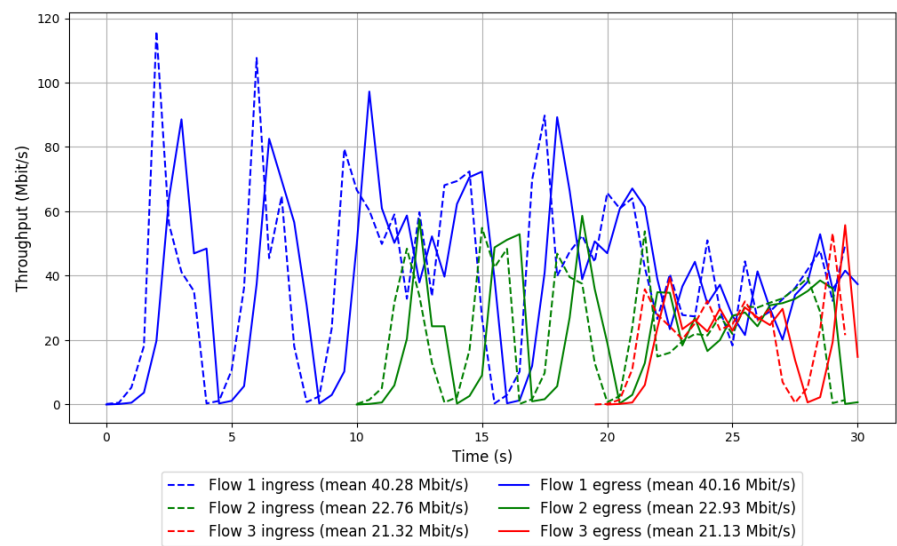


Run 4: Statistics of Verus

Start at: 2019-03-09 14:18:27
End at: 2019-03-09 14:18:57
Local clock offset: -4.223 ms
Remote clock offset: 5.318 ms

Below is generated by plot.py at 2019-03-09 15:26:09
Datalink statistics
-- Total of 3 flows:
Average throughput: 62.21 Mbit/s
95th percentile per-packet one-way delay: 252.518 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 40.16 Mbit/s
95th percentile per-packet one-way delay: 251.461 ms
Loss rate: 1.01%
-- Flow 2:
Average throughput: 22.93 Mbit/s
95th percentile per-packet one-way delay: 247.947 ms
Loss rate: 0.23%
-- Flow 3:
Average throughput: 21.13 Mbit/s
95th percentile per-packet one-way delay: 267.099 ms
Loss rate: 2.83%

Run 4: Report of Verus — Data Link

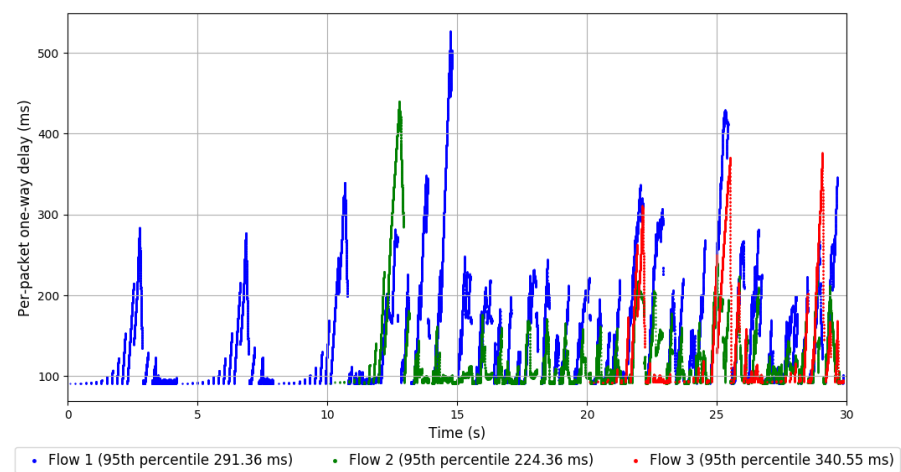
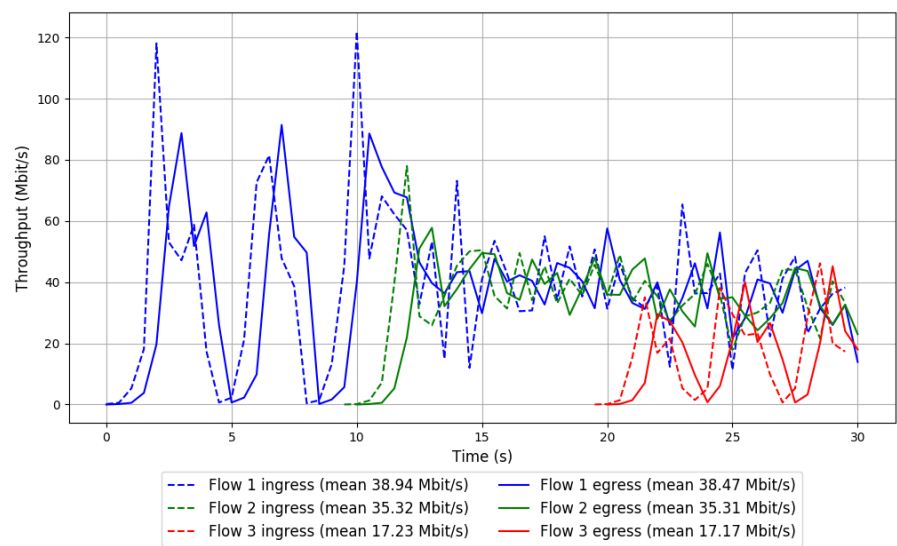


Run 5: Statistics of Verus

Start at: 2019-03-09 14:46:04
End at: 2019-03-09 14:46:34
Local clock offset: 0.352 ms
Remote clock offset: 1.422 ms

```
# Below is generated by plot.py at 2019-03-09 15:26:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 67.41 Mbit/s
95th percentile per-packet one-way delay: 293.461 ms
Loss rate: 1.81%
-- Flow 1:
Average throughput: 38.47 Mbit/s
95th percentile per-packet one-way delay: 291.363 ms
Loss rate: 1.83%
-- Flow 2:
Average throughput: 35.31 Mbit/s
95th percentile per-packet one-way delay: 224.363 ms
Loss rate: 1.68%
-- Flow 3:
Average throughput: 17.17 Mbit/s
95th percentile per-packet one-way delay: 340.553 ms
Loss rate: 2.23%
```

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2019-03-09 13:08:53

End at: 2019-03-09 13:09:23

Local clock offset: -7.784 ms

Remote clock offset: 4.524 ms

Below is generated by plot.py at 2019-03-09 15:26:31

Datalink statistics

-- Total of 3 flows:

Average throughput: 79.73 Mbit/s

95th percentile per-packet one-way delay: 1728.129 ms

Loss rate: 7.45%

-- Flow 1:

Average throughput: 50.35 Mbit/s

95th percentile per-packet one-way delay: 1827.527 ms

Loss rate: 5.63%

-- Flow 2:

Average throughput: 33.45 Mbit/s

95th percentile per-packet one-way delay: 1507.764 ms

Loss rate: 12.44%

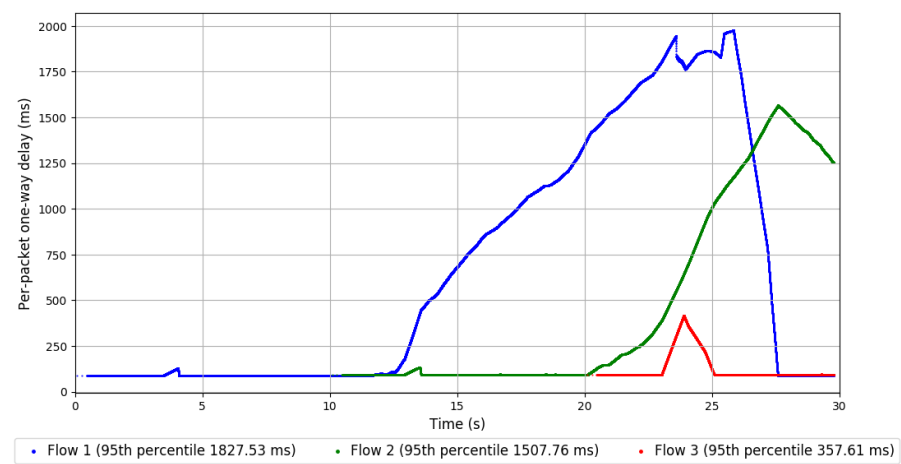
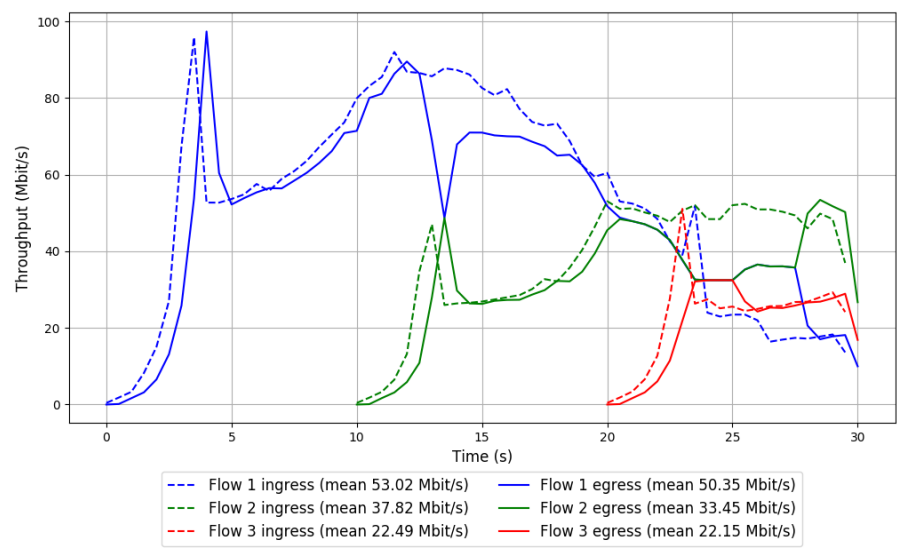
-- Flow 3:

Average throughput: 22.15 Mbit/s

95th percentile per-packet one-way delay: 357.605 ms

Loss rate: 3.53%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2019-03-09 13:36:25

End at: 2019-03-09 13:36:55

Local clock offset: -5.308 ms

Remote clock offset: 6.255 ms

Below is generated by plot.py at 2019-03-09 15:26:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 77.98 Mbit/s

95th percentile per-packet one-way delay: 1694.328 ms

Loss rate: 10.79%

-- Flow 1:

Average throughput: 49.83 Mbit/s

95th percentile per-packet one-way delay: 1694.934 ms

Loss rate: 9.10%

-- Flow 2:

Average throughput: 31.90 Mbit/s

95th percentile per-packet one-way delay: 1753.426 ms

Loss rate: 16.60%

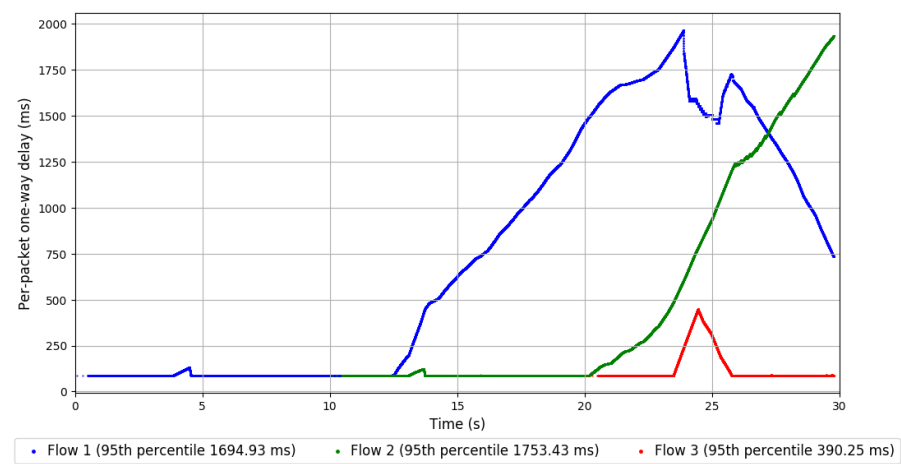
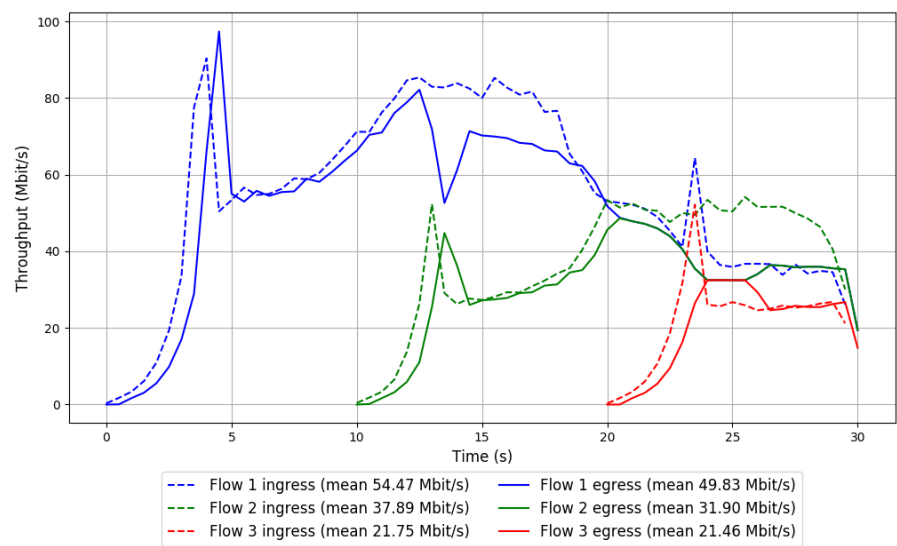
-- Flow 3:

Average throughput: 21.46 Mbit/s

95th percentile per-packet one-way delay: 390.246 ms

Loss rate: 3.27%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2019-03-09 14:03:58

End at: 2019-03-09 14:04:28

Local clock offset: -6.168 ms

Remote clock offset: 4.722 ms

Below is generated by plot.py at 2019-03-09 15:26:40

Datalink statistics

-- Total of 3 flows:

Average throughput: 78.47 Mbit/s

95th percentile per-packet one-way delay: 1732.855 ms

Loss rate: 6.10%

-- Flow 1:

Average throughput: 49.90 Mbit/s

95th percentile per-packet one-way delay: 1816.381 ms

Loss rate: 5.73%

-- Flow 2:

Average throughput: 32.42 Mbit/s

95th percentile per-packet one-way delay: 1327.997 ms

Loss rate: 7.83%

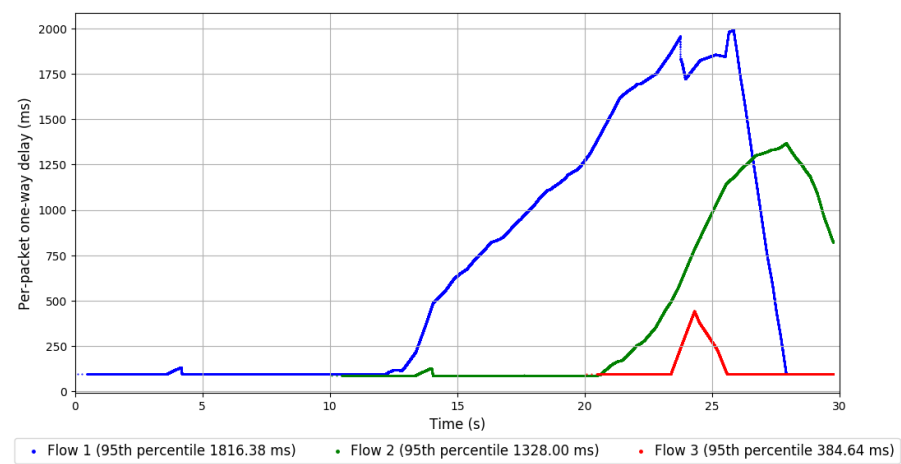
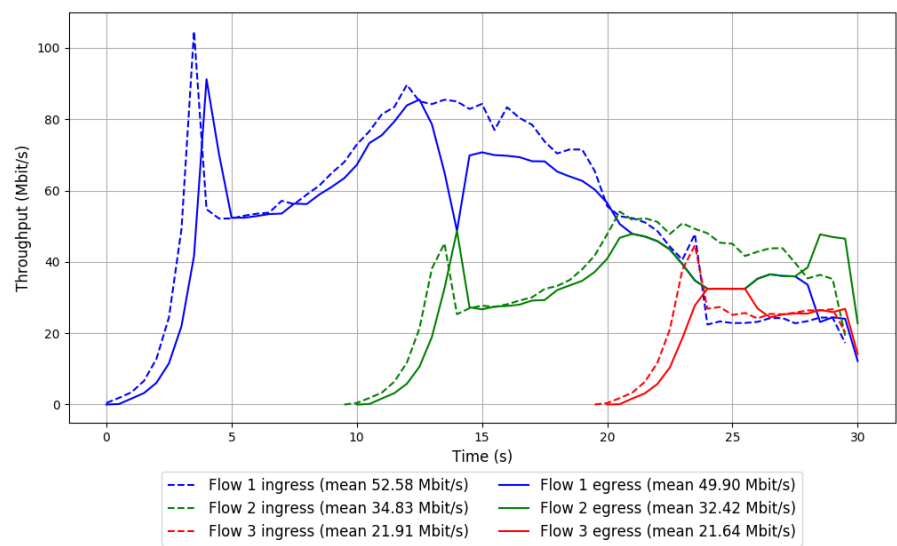
-- Flow 3:

Average throughput: 21.64 Mbit/s

95th percentile per-packet one-way delay: 384.641 ms

Loss rate: 3.25%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2019-03-09 14:31:43

End at: 2019-03-09 14:32:13

Local clock offset: -1.232 ms

Remote clock offset: 5.188 ms

Below is generated by plot.py at 2019-03-09 15:26:42

Datalink statistics

-- Total of 3 flows:

Average throughput: 78.72 Mbit/s

95th percentile per-packet one-way delay: 1828.303 ms

Loss rate: 5.82%

-- Flow 1:

Average throughput: 49.52 Mbit/s

95th percentile per-packet one-way delay: 568.198 ms

Loss rate: 1.71%

-- Flow 2:

Average throughput: 33.08 Mbit/s

95th percentile per-packet one-way delay: 2105.730 ms

Loss rate: 14.59%

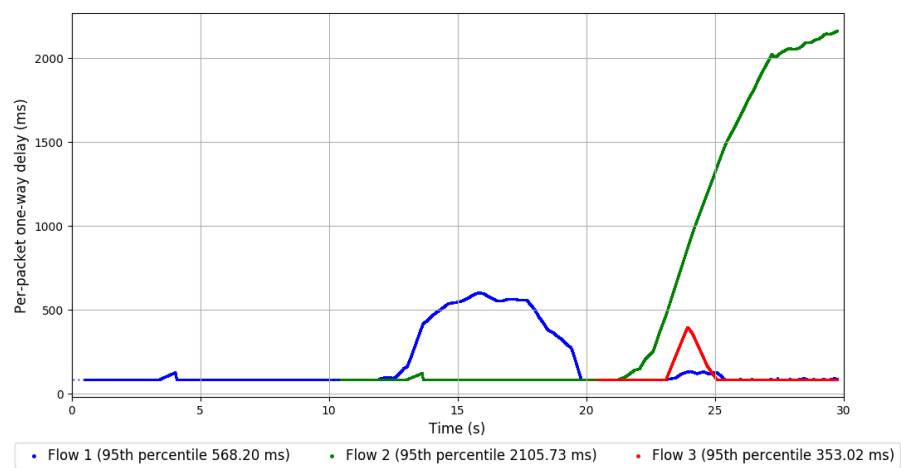
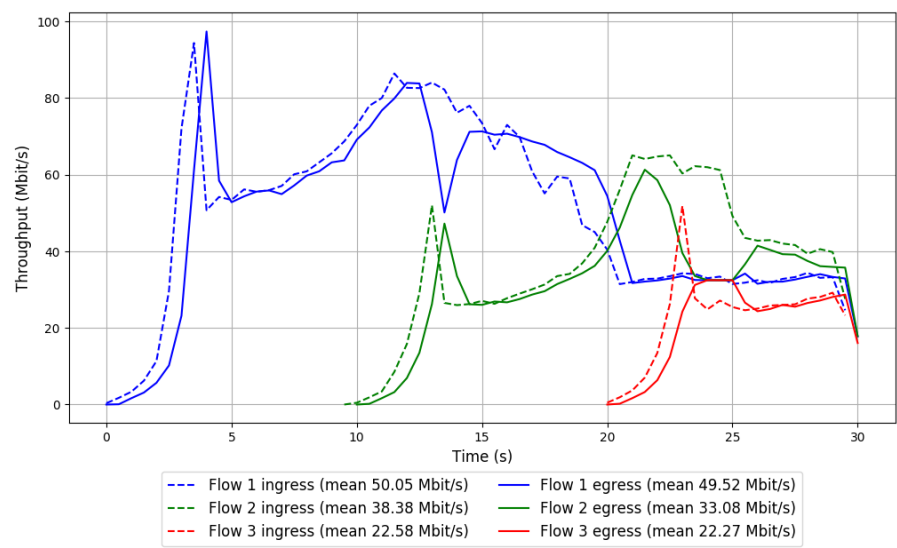
-- Flow 3:

Average throughput: 22.27 Mbit/s

95th percentile per-packet one-way delay: 353.023 ms

Loss rate: 3.35%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2019-03-09 14:59:20

End at: 2019-03-09 14:59:50

Local clock offset: -1.045 ms

Remote clock offset: 5.293 ms

Below is generated by plot.py at 2019-03-09 15:26:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 78.37 Mbit/s

95th percentile per-packet one-way delay: 1730.071 ms

Loss rate: 6.56%

-- Flow 1:

Average throughput: 49.96 Mbit/s

95th percentile per-packet one-way delay: 1814.896 ms

Loss rate: 5.58%

-- Flow 2:

Average throughput: 31.63 Mbit/s

95th percentile per-packet one-way delay: 1398.517 ms

Loss rate: 9.45%

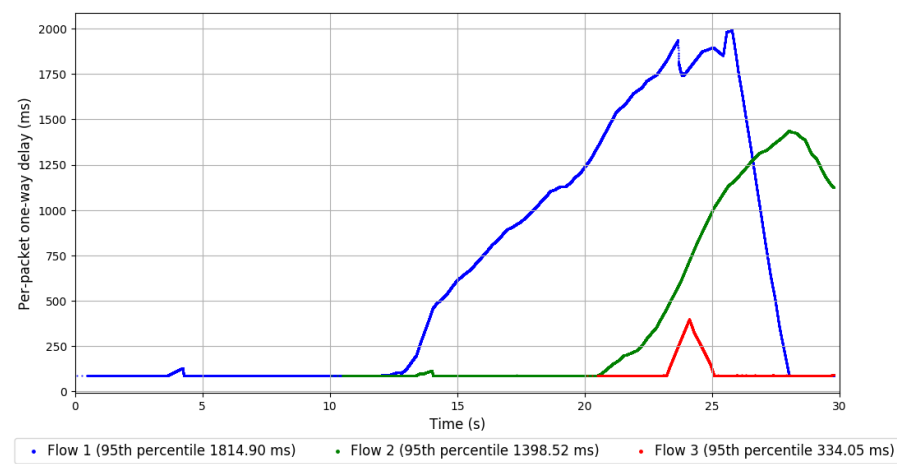
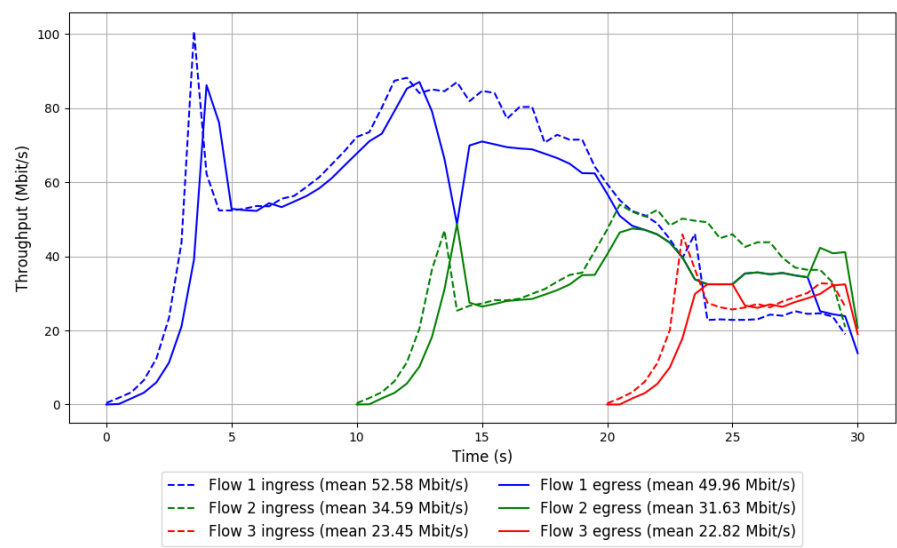
-- Flow 3:

Average throughput: 22.82 Mbit/s

95th percentile per-packet one-way delay: 334.051 ms

Loss rate: 4.60%

Run 5: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2019-03-09 13:11:32

End at: 2019-03-09 13:12:02

Local clock offset: -7.177 ms

Remote clock offset: 0.733 ms

Below is generated by plot.py at 2019-03-09 15:26:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.94 Mbit/s

95th percentile per-packet one-way delay: 92.456 ms

Loss rate: 0.72%

-- Flow 1:

Average throughput: 1.65 Mbit/s

95th percentile per-packet one-way delay: 92.453 ms

Loss rate: 0.43%

-- Flow 2:

Average throughput: 0.93 Mbit/s

95th percentile per-packet one-way delay: 92.506 ms

Loss rate: 0.75%

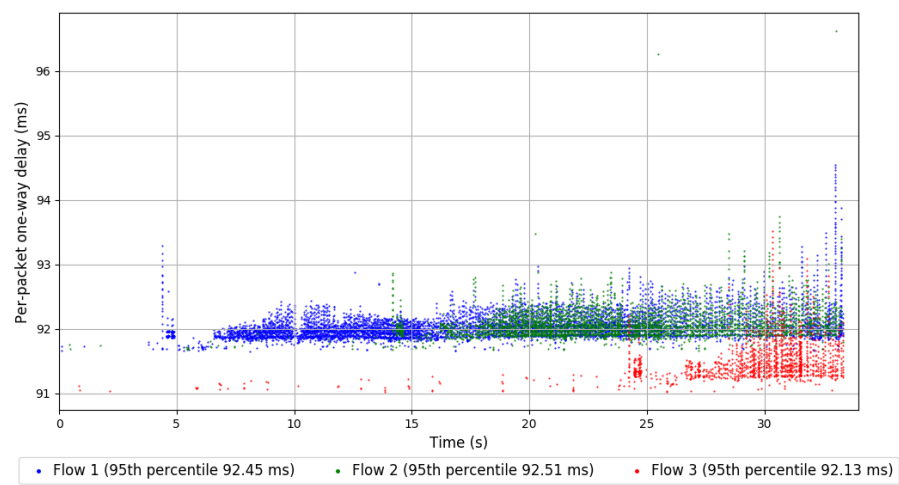
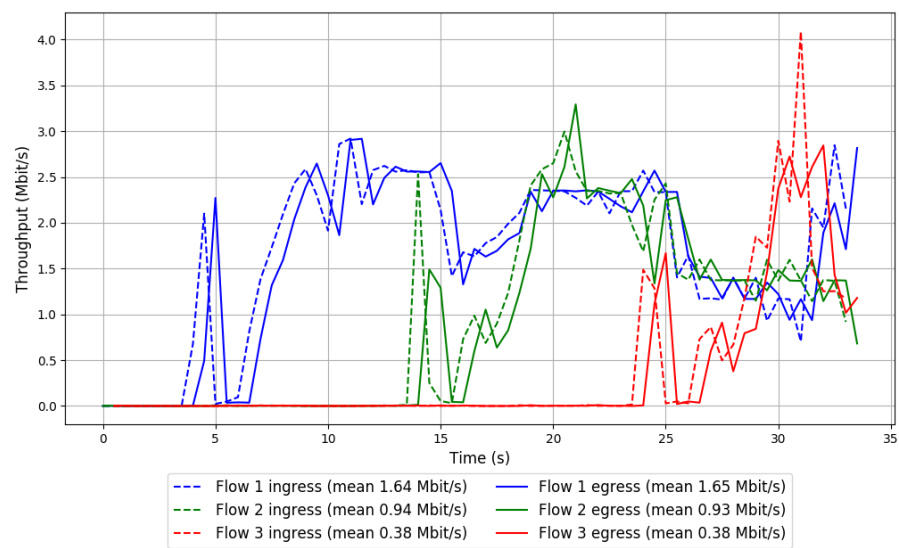
-- Flow 3:

Average throughput: 0.38 Mbit/s

95th percentile per-packet one-way delay: 92.131 ms

Loss rate: 1.89%

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2019-03-09 13:39:04

End at: 2019-03-09 13:39:34

Local clock offset: -5.337 ms

Remote clock offset: 7.46 ms

Below is generated by plot.py at 2019-03-09 15:26:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.78 Mbit/s

95th percentile per-packet one-way delay: 93.228 ms

Loss rate: 0.85%

-- Flow 1:

Average throughput: 1.65 Mbit/s

95th percentile per-packet one-way delay: 93.320 ms

Loss rate: 0.49%

-- Flow 2:

Average throughput: 0.91 Mbit/s

95th percentile per-packet one-way delay: 87.584 ms

Loss rate: 0.76%

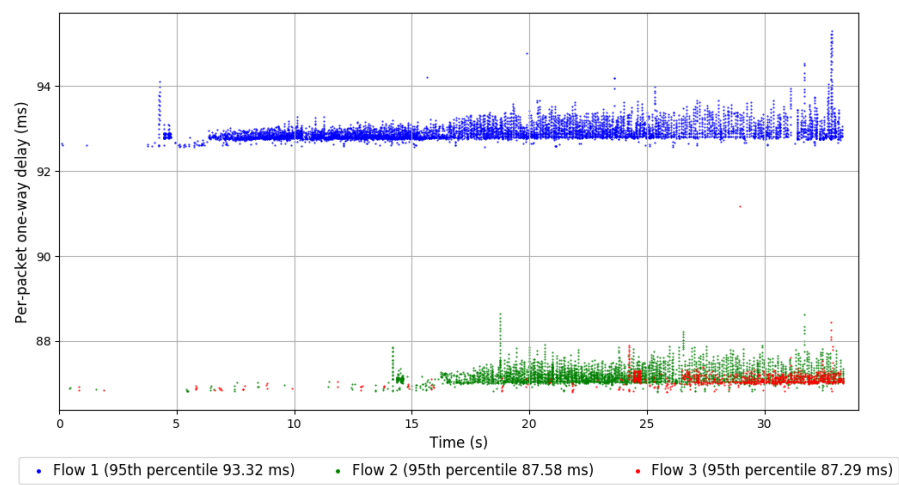
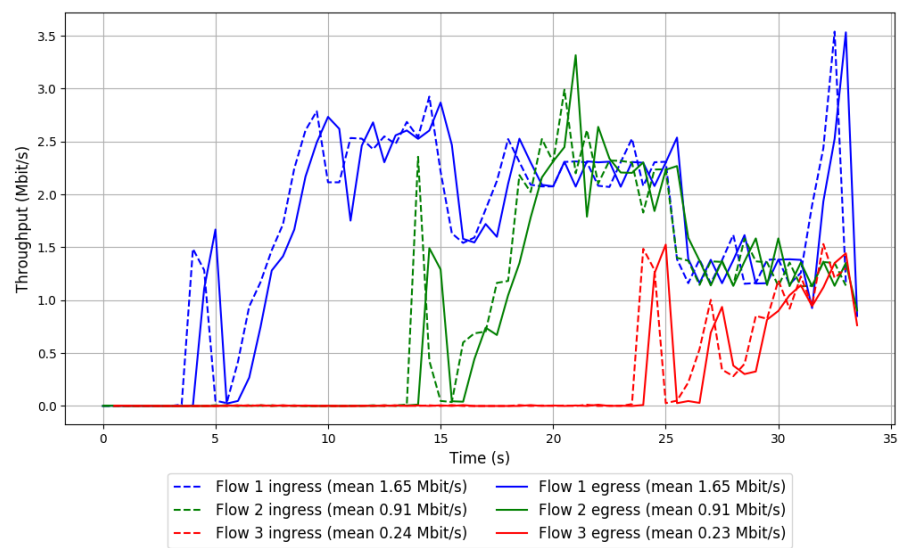
-- Flow 3:

Average throughput: 0.23 Mbit/s

95th percentile per-packet one-way delay: 87.288 ms

Loss rate: 3.78%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2019-03-09 14:06:41

End at: 2019-03-09 14:07:11

Local clock offset: -5.365 ms

Remote clock offset: 4.461 ms

Below is generated by plot.py at 2019-03-09 15:26:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.05 Mbit/s

95th percentile per-packet one-way delay: 95.095 ms

Loss rate: 1.13%

-- Flow 1:

Average throughput: 1.69 Mbit/s

95th percentile per-packet one-way delay: 89.761 ms

Loss rate: 0.96%

-- Flow 2:

Average throughput: 0.99 Mbit/s

95th percentile per-packet one-way delay: 89.761 ms

Loss rate: 0.74%

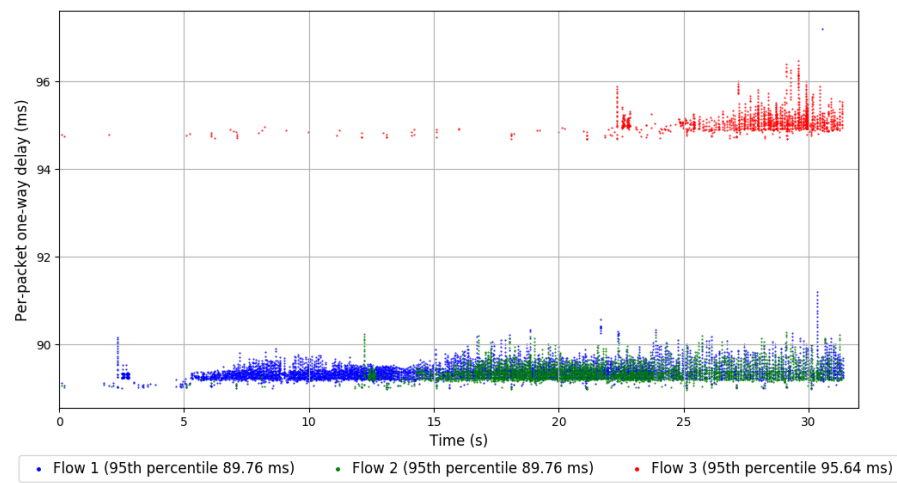
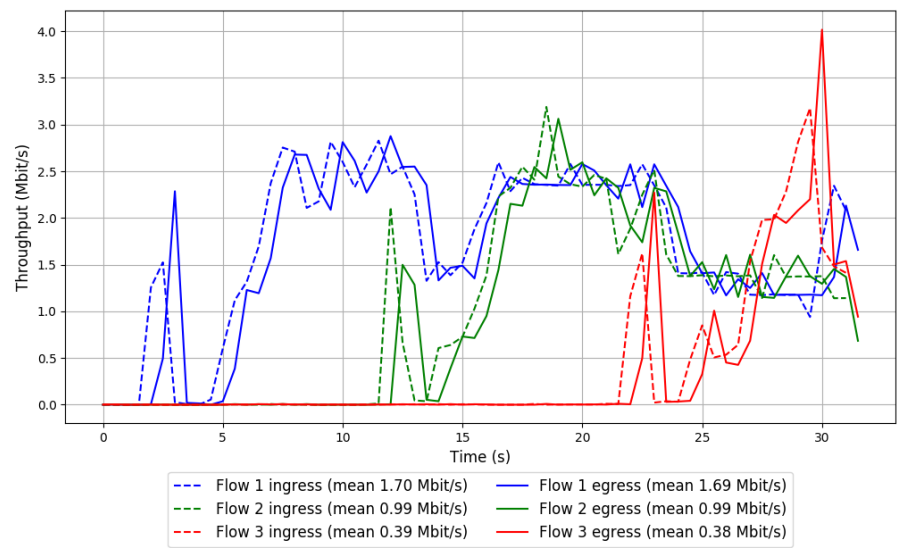
-- Flow 3:

Average throughput: 0.38 Mbit/s

95th percentile per-packet one-way delay: 95.643 ms

Loss rate: 2.90%

Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2019-03-09 14:34:23

End at: 2019-03-09 14:34:53

Local clock offset: -0.916 ms

Remote clock offset: 6.454 ms

Below is generated by plot.py at 2019-03-09 15:26:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.90 Mbit/s

95th percentile per-packet one-way delay: 86.547 ms

Loss rate: 0.68%

-- Flow 1:

Average throughput: 1.66 Mbit/s

95th percentile per-packet one-way delay: 85.937 ms

Loss rate: 0.36%

-- Flow 2:

Average throughput: 0.90 Mbit/s

95th percentile per-packet one-way delay: 86.700 ms

Loss rate: 0.77%

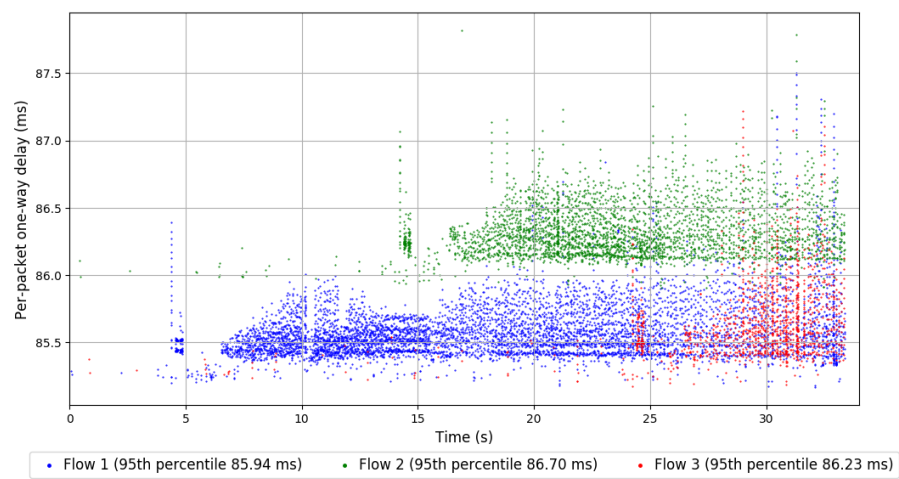
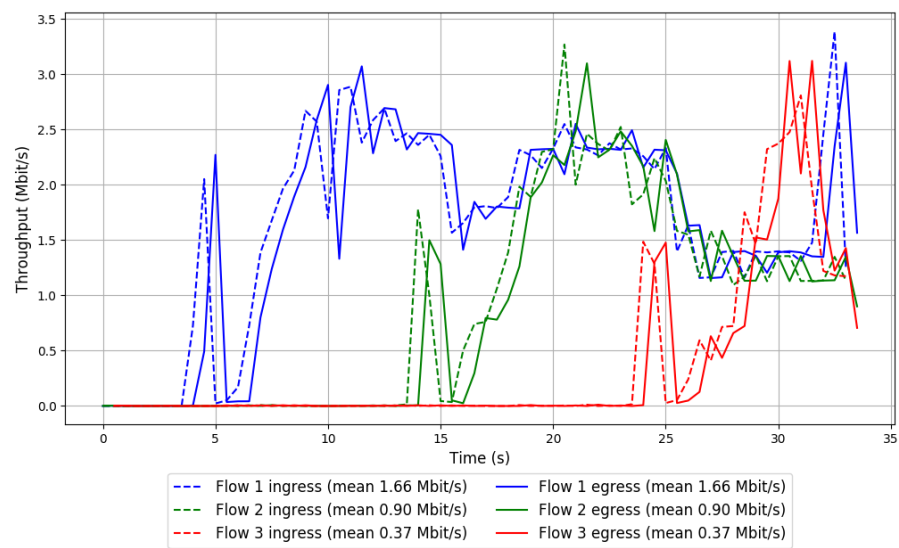
-- Flow 3:

Average throughput: 0.37 Mbit/s

95th percentile per-packet one-way delay: 86.233 ms

Loss rate: 1.92%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2019-03-09 15:02:00

End at: 2019-03-09 15:02:30

Local clock offset: -0.324 ms

Remote clock offset: 6.569 ms

Below is generated by plot.py at 2019-03-09 15:26:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.92 Mbit/s

95th percentile per-packet one-way delay: 87.394 ms

Loss rate: 0.74%

-- Flow 1:

Average throughput: 1.66 Mbit/s

95th percentile per-packet one-way delay: 87.324 ms

Loss rate: 0.46%

-- Flow 2:

Average throughput: 0.91 Mbit/s

95th percentile per-packet one-way delay: 87.379 ms

Loss rate: 0.77%

-- Flow 3:

Average throughput: 0.36 Mbit/s

95th percentile per-packet one-way delay: 87.639 ms

Loss rate: 1.92%

Run 5: Report of WebRTC media — Data Link

