

Pantheon Report

Generated at 2018-07-10 03:06:52 (UTC).

Data path: AWS India 1 Ethernet (*local*) → India ppp0 ppp0 (*remote*).

Repeated the test of 17 congestion control schemes 3 times.

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

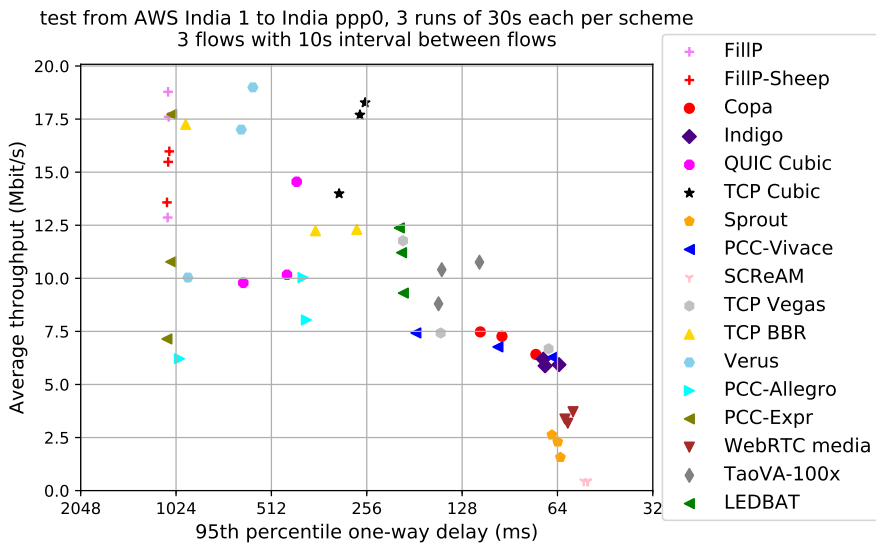
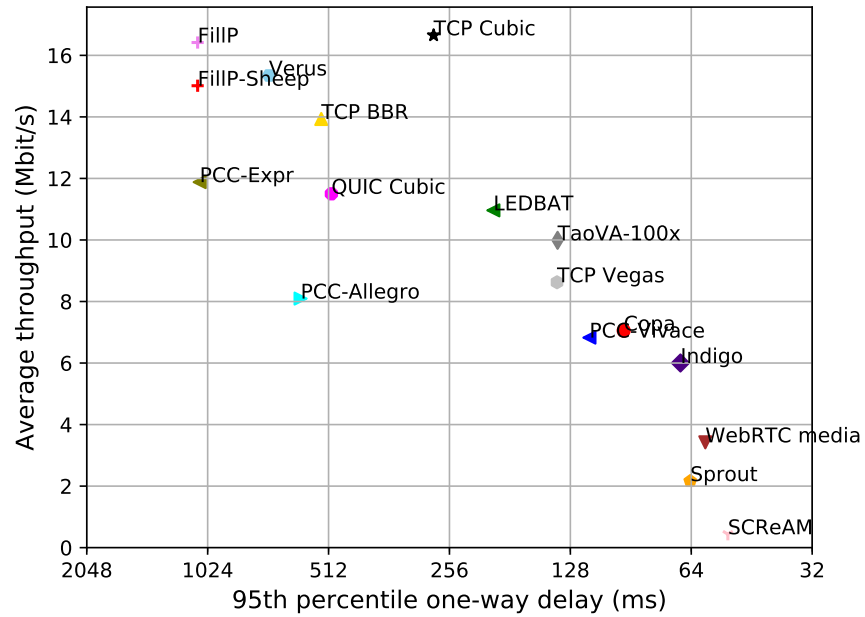
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

NTP offsets were measured against `nets.org.sg` and have been applied to correct the timestamps in logs.

Git summary:

```
branch: master @ 9250dbeec7fb57193cdff1ba8c440b4e16ab30f0
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ 37162fe9af85249aeccac061c93e75640ef710b5
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfc58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ 6f038ed31259d366f9840f65b82cbe8f464b1b39
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quirk @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webRTC @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

test from AWS India 1 to India ppp0, 3 runs of 30s each per scheme
 3 flows with 10s interval between flows (mean of all runs by scheme)



scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	3	8.63	5.83	4.49	511.07	540.43	448.19	3.05	7.61	12.96
Copa	3	3.92	3.41	2.61	81.57	111.43	93.84	0.34	0.31	0.57
TCP Cubic	3	11.42	6.02	3.82	273.52	290.53	298.31	0.64	0.85	3.25
FillP	3	13.79	3.17	2.11	1085.45	1080.37	1080.83	48.43	30.44	41.68
FillP-Sheep	3	8.52	8.07	4.10	1075.67	1091.08	1087.00	20.89	38.11	58.32
Indigo	3	2.62	3.54	3.18	61.73	73.49	68.64	0.10	0.26	0.30
LEDBAT	3	7.80	3.81	1.93	188.43	217.16	221.20	0.12	0.75	1.44
PCC-Allegro	3	5.18	1.98	4.88	555.72	599.34	549.50	1.81	2.61	12.15
PCC-Expr	3	7.96	4.21	3.75	1065.50	1075.36	1084.64	23.94	36.27	48.91
QUIC Cubic	3	7.85	4.44	2.23	467.86	552.55	467.09	0.91	1.40	3.89
SCReAM	3	0.22	0.22	0.22	48.73	54.96	46.49	0.00	0.19	0.35
Sprout	3	1.37	0.88	0.63	66.02	62.56	59.84	0.08	0.07	0.13
TaoVA-100x	3	5.32	4.74	4.57	115.48	138.34	222.28	0.22	0.65	1.12
TCP Vegas	3	4.38	3.91	4.96	144.26	126.83	113.06	0.36	0.57	0.74
Verus	3	11.03	5.14	2.90	725.23	710.67	755.90	2.20	1.80	5.26
PCC-Vivace	3	3.49	3.96	2.13	94.22	140.12	177.79	0.38	0.57	0.88
WebRTC media	3	1.90	1.22	0.32	57.35	59.90	58.98	0.37	0.64	1.37

Run 1: Statistics of TCP BBR

Start at: 2018-07-10 02:16:31

End at: 2018-07-10 02:17:01

Local clock offset: 1.83 ms

Remote clock offset: 1.6 ms

Below is generated by plot.py at 2018-07-10 03:05:35

Datalink statistics

-- Total of 3 flows:

Average throughput: 17.25 Mbit/s

95th percentile per-packet one-way delay: 954.645 ms

Loss rate: 2.03%

-- Flow 1:

Average throughput: 9.72 Mbit/s

95th percentile per-packet one-way delay: 836.051 ms

Loss rate: 0.70%

-- Flow 2:

Average throughput: 7.44 Mbit/s

95th percentile per-packet one-way delay: 1013.970 ms

Loss rate: 2.34%

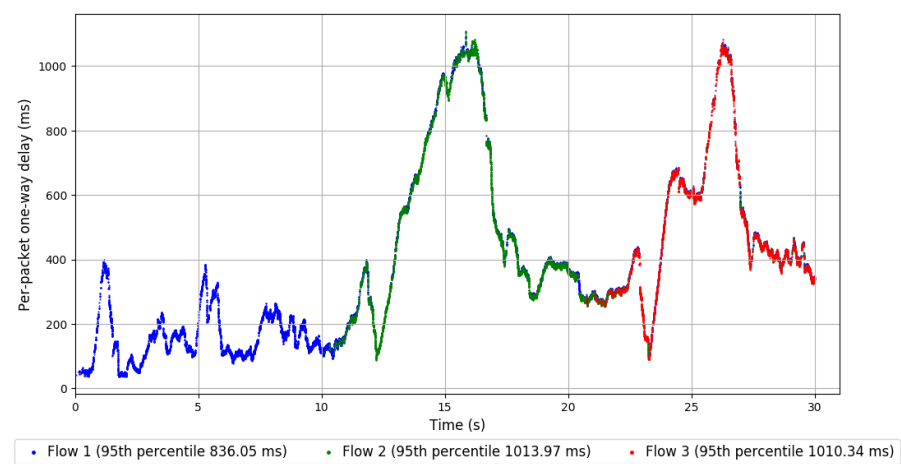
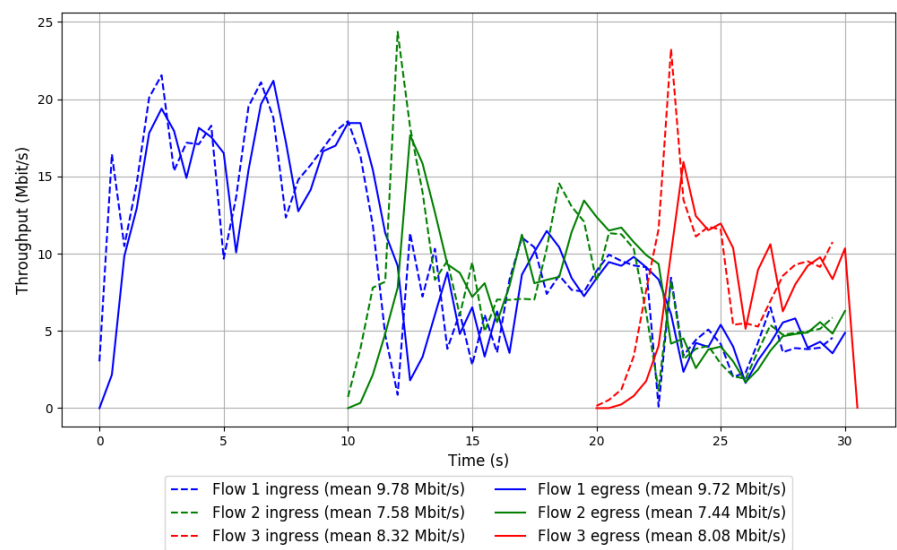
-- Flow 3:

Average throughput: 8.08 Mbit/s

95th percentile per-packet one-way delay: 1010.343 ms

Loss rate: 6.17%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-07-10 02:35:32

End at: 2018-07-10 02:36:02

Local clock offset: 2.546 ms

Remote clock offset: 0.682 ms

Below is generated by plot.py at 2018-07-10 03:05:35

Datalink statistics

-- Total of 3 flows:

Average throughput: 12.31 Mbit/s

95th percentile per-packet one-way delay: 275.238 ms

Loss rate: 0.68%

-- Flow 1:

Average throughput: 8.40 Mbit/s

95th percentile per-packet one-way delay: 273.693 ms

Loss rate: 0.41%

-- Flow 2:

Average throughput: 3.79 Mbit/s

95th percentile per-packet one-way delay: 274.682 ms

Loss rate: 0.97%

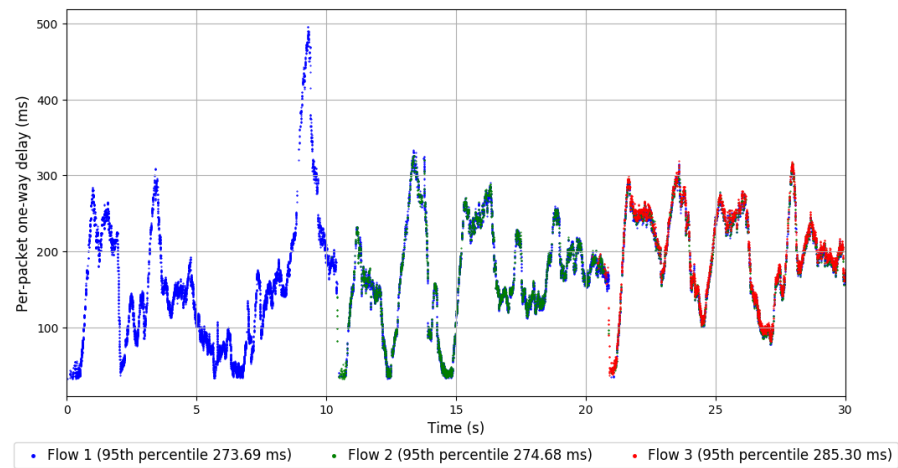
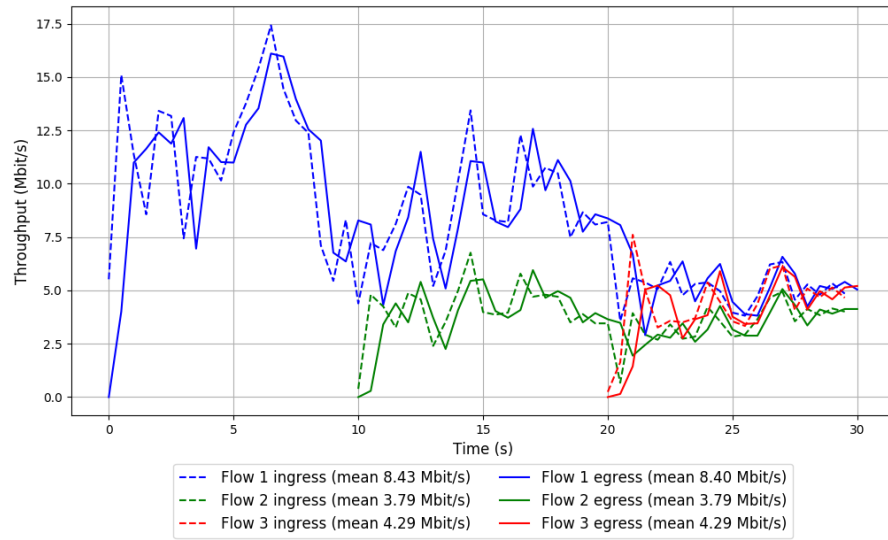
-- Flow 3:

Average throughput: 4.29 Mbit/s

95th percentile per-packet one-way delay: 285.302 ms

Loss rate: 1.80%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-07-10 02:54:32

End at: 2018-07-10 02:55:02

Local clock offset: 3.585 ms

Remote clock offset: -2.06 ms

Below is generated by plot.py at 2018-07-10 03:05:35

Datalink statistics

-- Total of 3 flows:

Average throughput: 12.24 Mbit/s

95th percentile per-packet one-way delay: 371.703 ms

Loss rate: 13.04%

-- Flow 1:

Average throughput: 7.78 Mbit/s

95th percentile per-packet one-way delay: 423.465 ms

Loss rate: 8.03%

-- Flow 2:

Average throughput: 6.27 Mbit/s

95th percentile per-packet one-way delay: 332.647 ms

Loss rate: 19.51%

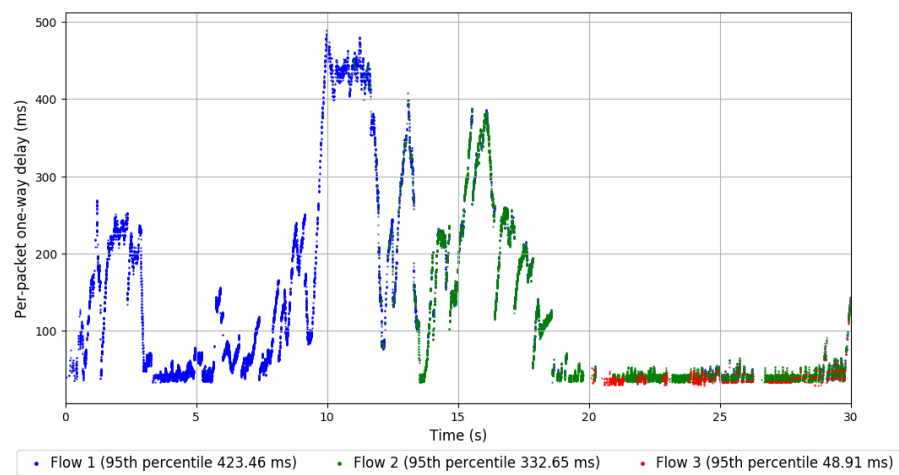
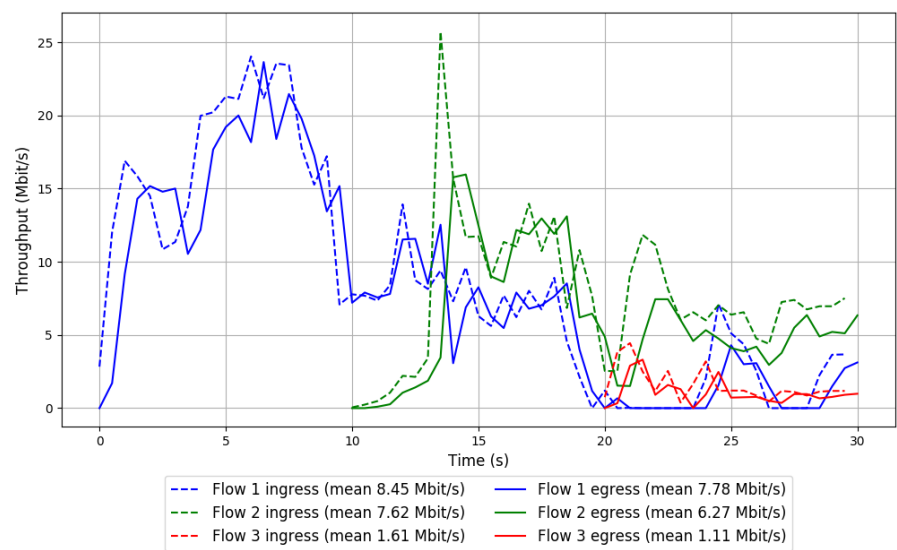
-- Flow 3:

Average throughput: 1.11 Mbit/s

95th percentile per-packet one-way delay: 48.914 ms

Loss rate: 30.90%

Run 3: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-07-10 02:10:52

End at: 2018-07-10 02:11:22

Local clock offset: 3.556 ms

Remote clock offset: 0.308 ms

Below is generated by plot.py at 2018-07-10 03:05:35

Datalink statistics

-- Total of 3 flows:

Average throughput: 7.48 Mbit/s

95th percentile per-packet one-way delay: 112.143 ms

Loss rate: 0.07%

-- Flow 1:

Average throughput: 4.53 Mbit/s

95th percentile per-packet one-way delay: 82.433 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 3.32 Mbit/s

95th percentile per-packet one-way delay: 162.545 ms

Loss rate: 0.12%

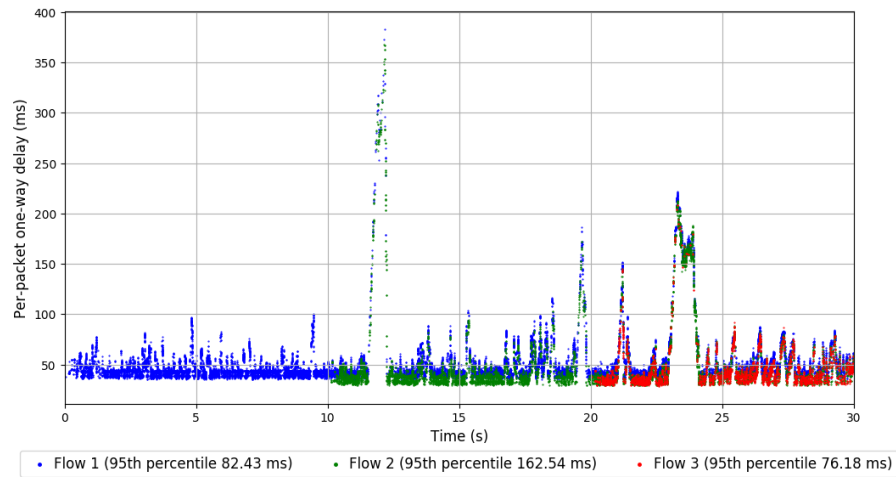
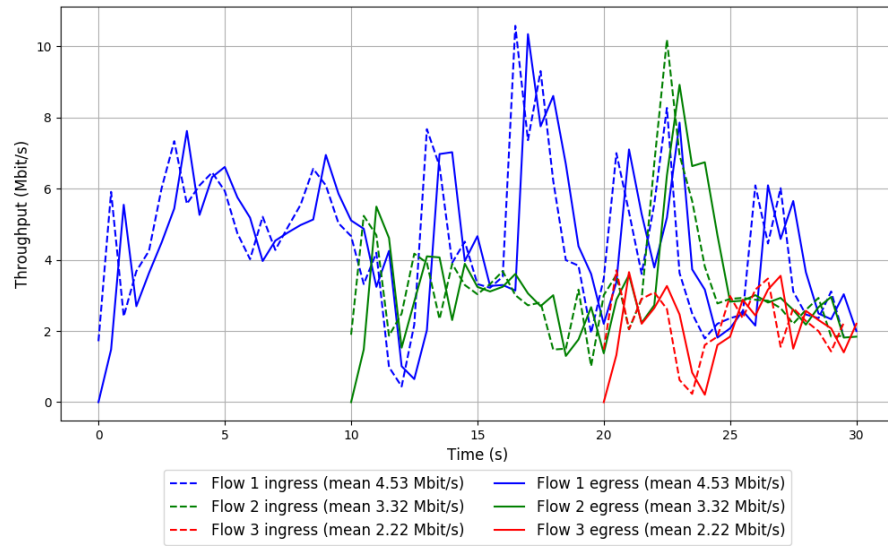
-- Flow 3:

Average throughput: 2.22 Mbit/s

95th percentile per-packet one-way delay: 76.176 ms

Loss rate: 0.29%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2018-07-10 02:29:54

End at: 2018-07-10 02:30:24

Local clock offset: 2.557 ms

Remote clock offset: 0.394 ms

Below is generated by plot.py at 2018-07-10 03:05:35

Datalink statistics

-- Total of 3 flows:

Average throughput: 6.42 Mbit/s

95th percentile per-packet one-way delay: 74.870 ms

Loss rate: 0.50%

-- Flow 1:

Average throughput: 3.12 Mbit/s

95th percentile per-packet one-way delay: 64.413 ms

Loss rate: 0.70%

-- Flow 2:

Average throughput: 3.65 Mbit/s

95th percentile per-packet one-way delay: 83.062 ms

Loss rate: 0.18%

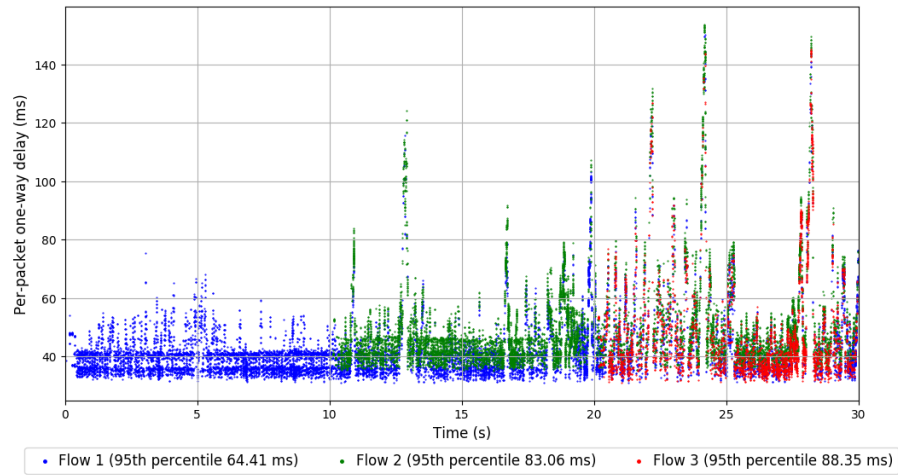
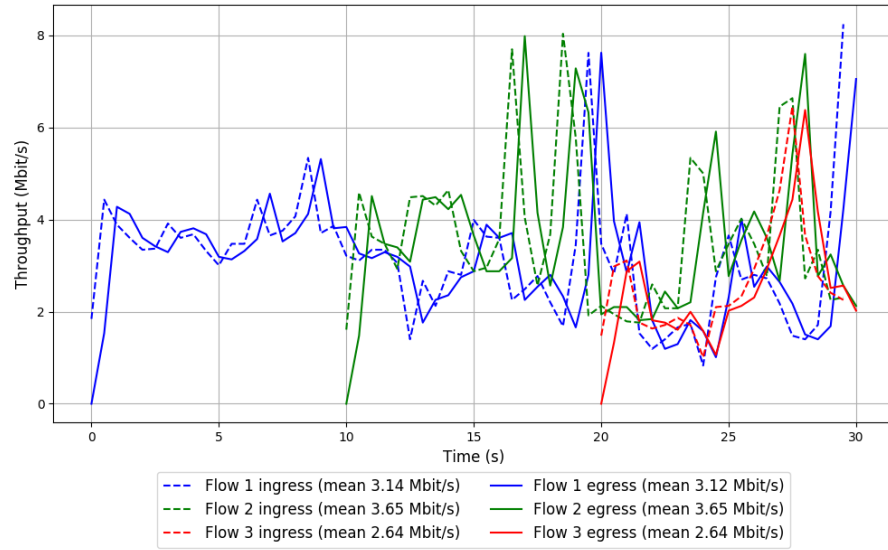
-- Flow 3:

Average throughput: 2.64 Mbit/s

95th percentile per-packet one-way delay: 88.351 ms

Loss rate: 0.69%

Run 2: Report of Copa — Data Link

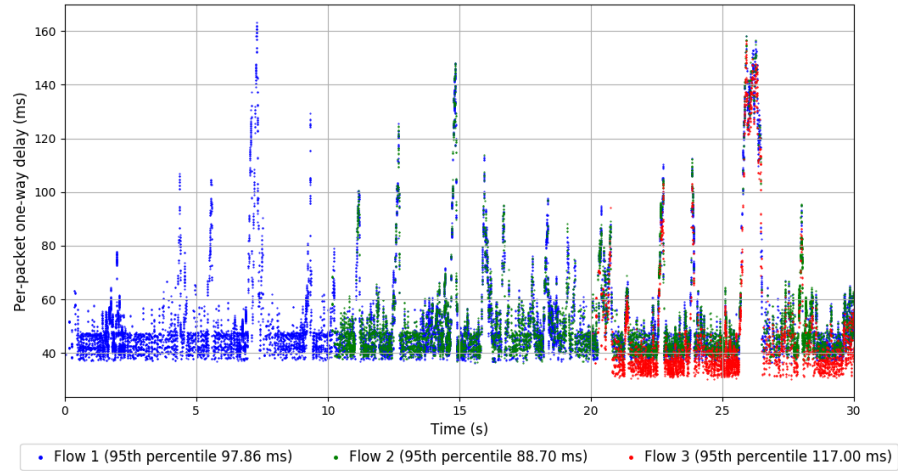
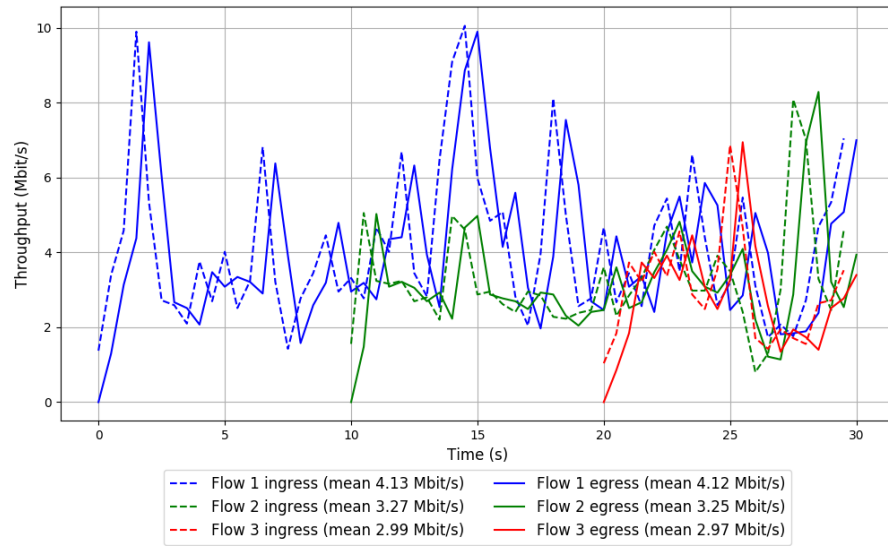


Run 3: Statistics of Copa

Start at: 2018-07-10 02:48:57
End at: 2018-07-10 02:49:27
Local clock offset: 2.631 ms
Remote clock offset: -1.658 ms

Below is generated by plot.py at 2018-07-10 03:05:35
Datalink statistics
-- Total of 3 flows:
Average throughput: 7.27 Mbit/s
95th percentile per-packet one-way delay: 95.819 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 4.12 Mbit/s
95th percentile per-packet one-way delay: 97.859 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 3.25 Mbit/s
95th percentile per-packet one-way delay: 88.697 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 2.97 Mbit/s
95th percentile per-packet one-way delay: 116.995 ms
Loss rate: 0.74%

Run 3: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-07-10 02:11:58

End at: 2018-07-10 02:12:28

Local clock offset: 0.748 ms

Remote clock offset: 1.57 ms

Below is generated by plot.py at 2018-07-10 03:05:36

Datalink statistics

-- Total of 3 flows:

Average throughput: 17.70 Mbit/s

95th percentile per-packet one-way delay: 269.046 ms

Loss rate: 0.74%

-- Flow 1:

Average throughput: 13.36 Mbit/s

95th percentile per-packet one-way delay: 268.420 ms

Loss rate: 0.62%

-- Flow 2:

Average throughput: 4.98 Mbit/s

95th percentile per-packet one-way delay: 263.152 ms

Loss rate: 0.61%

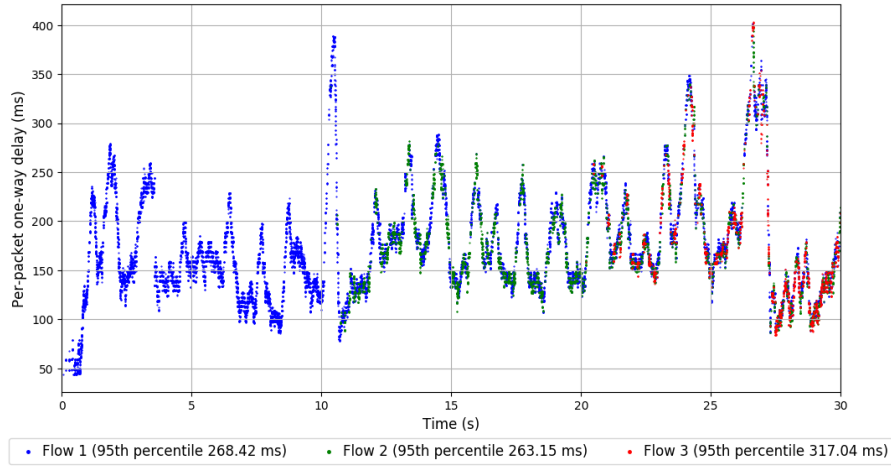
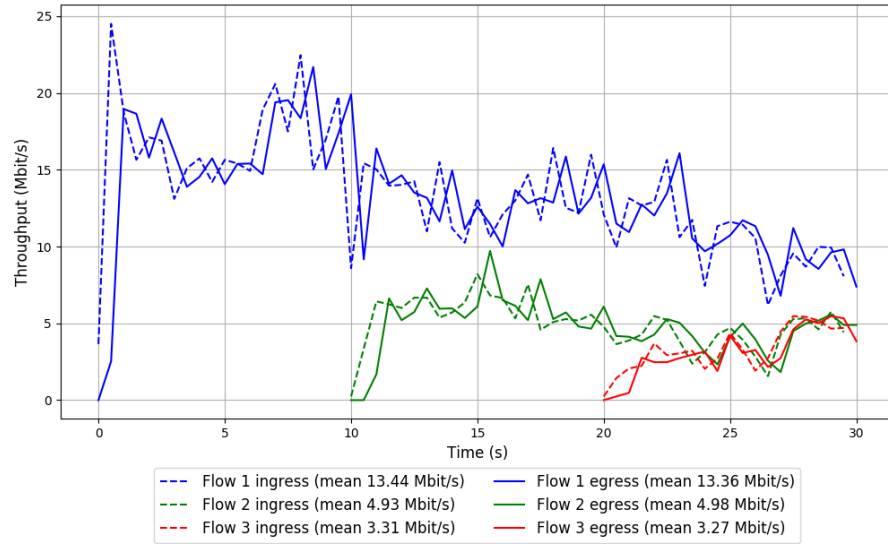
-- Flow 3:

Average throughput: 3.27 Mbit/s

95th percentile per-packet one-way delay: 317.041 ms

Loss rate: 2.59%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-07-10 02:31:01

End at: 2018-07-10 02:31:31

Local clock offset: 3.194 ms

Remote clock offset: 0.203 ms

Below is generated by plot.py at 2018-07-10 03:05:36

Datalink statistics

-- Total of 3 flows:

Average throughput: 18.27 Mbit/s

95th percentile per-packet one-way delay: 259.079 ms

Loss rate: 0.83%

-- Flow 1:

Average throughput: 12.24 Mbit/s

95th percentile per-packet one-way delay: 264.576 ms

Loss rate: 0.53%

-- Flow 2:

Average throughput: 7.09 Mbit/s

95th percentile per-packet one-way delay: 254.742 ms

Loss rate: 0.88%

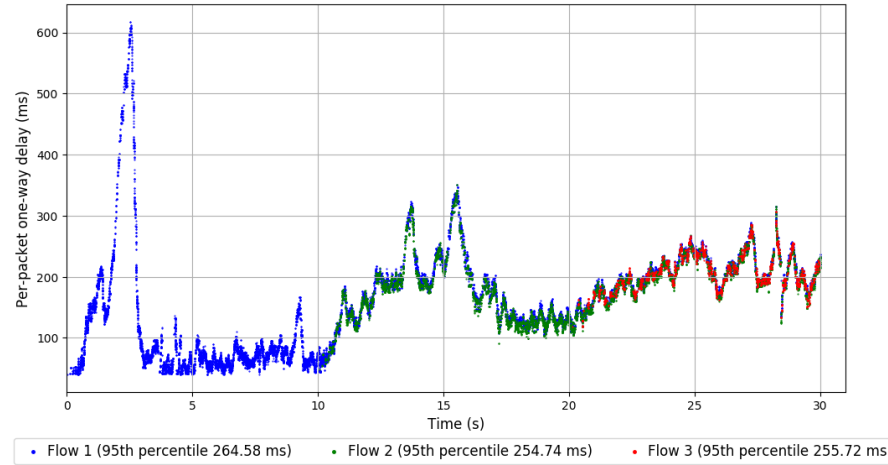
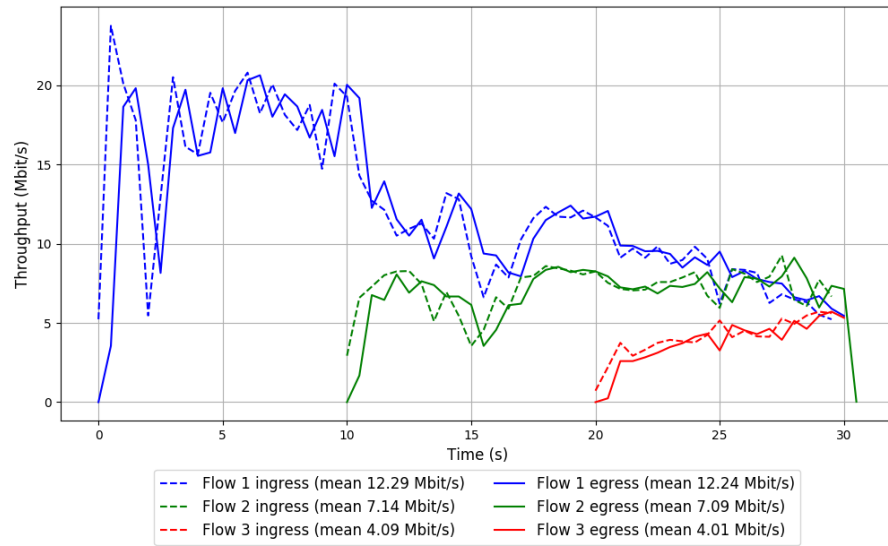
-- Flow 3:

Average throughput: 4.01 Mbit/s

95th percentile per-packet one-way delay: 255.725 ms

Loss rate: 3.33%

Run 2: Report of TCP Cubic — Data Link

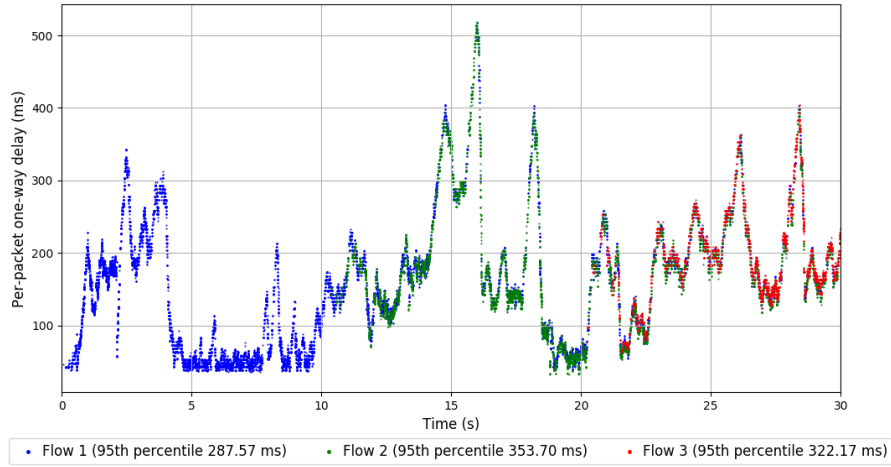
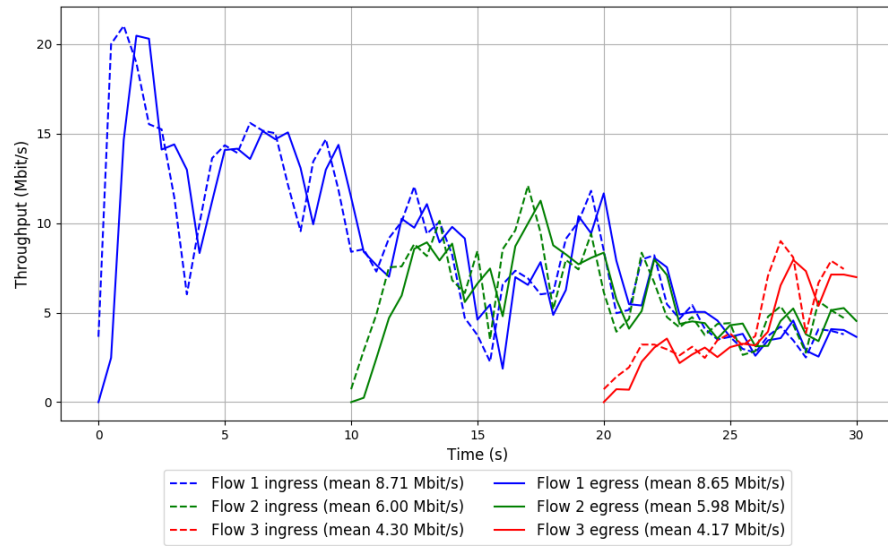


Run 3: Statistics of TCP Cubic

Start at: 2018-07-10 02:50:05
End at: 2018-07-10 02:50:35
Local clock offset: 3.297 ms
Remote clock offset: -1.474 ms

Below is generated by plot.py at 2018-07-10 03:05:42
Datalink statistics
-- Total of 3 flows:
Average throughput: 13.99 Mbit/s
95th percentile per-packet one-way delay: 312.953 ms
Loss rate: 1.17%
-- Flow 1:
Average throughput: 8.65 Mbit/s
95th percentile per-packet one-way delay: 287.573 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 5.98 Mbit/s
95th percentile per-packet one-way delay: 353.705 ms
Loss rate: 1.05%
-- Flow 3:
Average throughput: 4.17 Mbit/s
95th percentile per-packet one-way delay: 322.167 ms
Loss rate: 3.83%

Run 3: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-07-10 02:22:03

End at: 2018-07-10 02:22:33

Local clock offset: 2.019 ms

Remote clock offset: 2.33 ms

Below is generated by plot.py at 2018-07-10 03:05:57

Datalink statistics

-- Total of 3 flows:

Average throughput: 17.60 Mbit/s

95th percentile per-packet one-way delay: 1080.539 ms

Loss rate: 46.54%

-- Flow 1:

Average throughput: 15.90 Mbit/s

95th percentile per-packet one-way delay: 1080.713 ms

Loss rate: 47.92%

-- Flow 2:

Average throughput: 2.24 Mbit/s

95th percentile per-packet one-way delay: 1080.242 ms

Loss rate: 27.07%

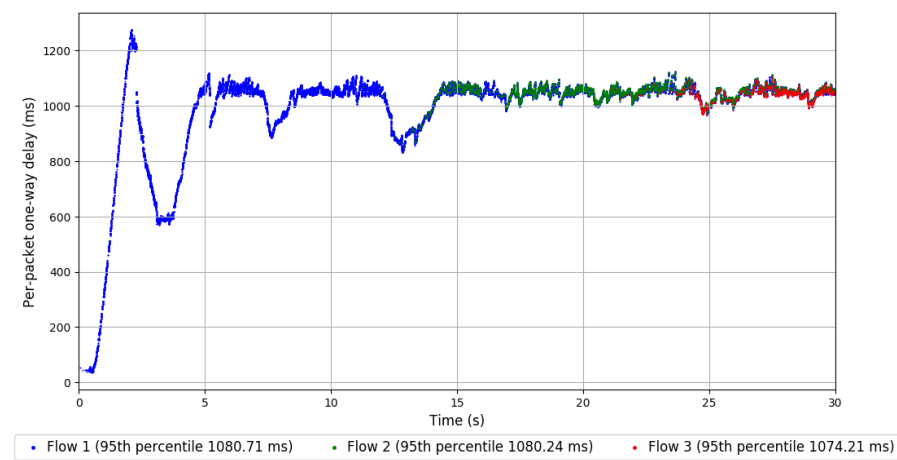
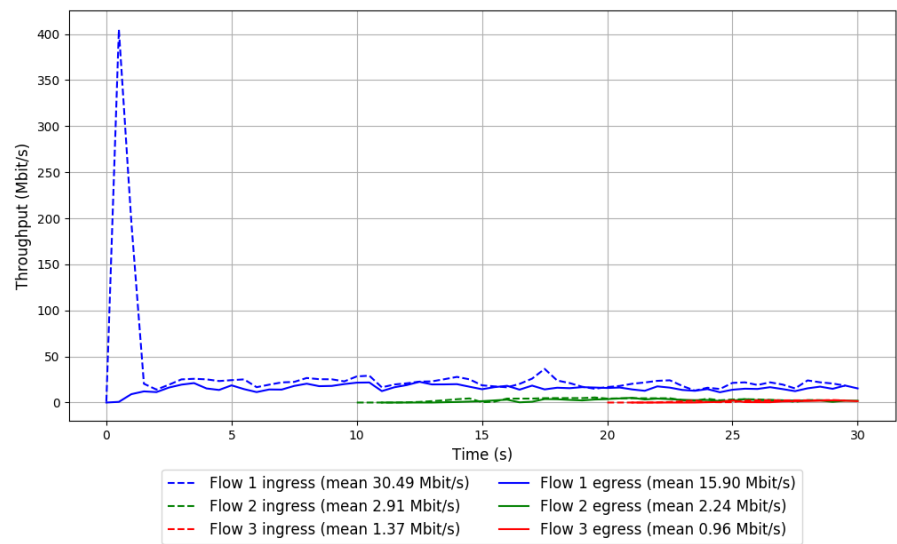
-- Flow 3:

Average throughput: 0.96 Mbit/s

95th percentile per-packet one-way delay: 1074.213 ms

Loss rate: 37.40%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-07-10 02:41:02

End at: 2018-07-10 02:41:32

Local clock offset: 2.066 ms

Remote clock offset: -1.1 ms

Below is generated by plot.py at 2018-07-10 03:06:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 18.78 Mbit/s

95th percentile per-packet one-way delay: 1084.897 ms

Loss rate: 46.49%

-- Flow 1:

Average throughput: 14.51 Mbit/s

95th percentile per-packet one-way delay: 1085.886 ms

Loss rate: 49.20%

-- Flow 2:

Average throughput: 5.83 Mbit/s

95th percentile per-packet one-way delay: 1082.605 ms

Loss rate: 33.01%

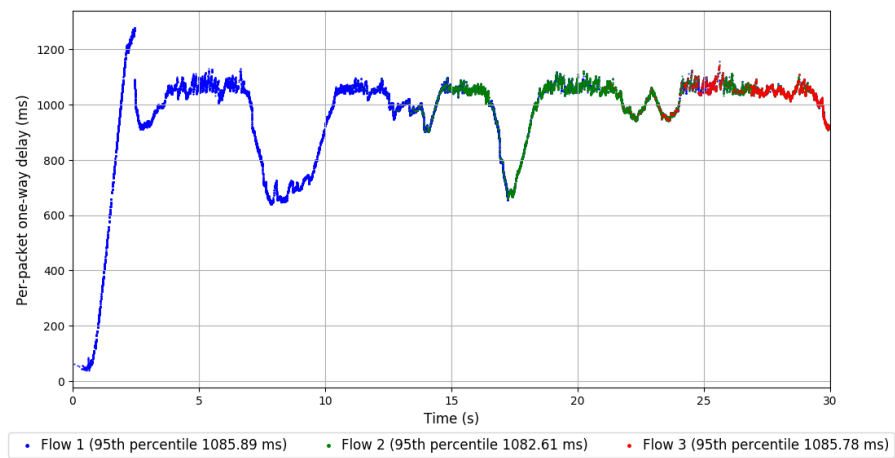
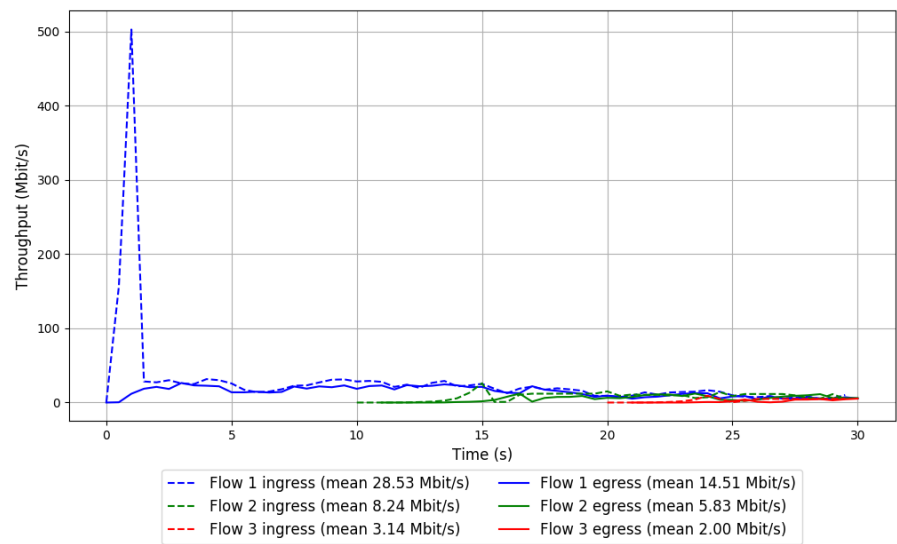
-- Flow 3:

Average throughput: 2.00 Mbit/s

95th percentile per-packet one-way delay: 1085.776 ms

Loss rate: 43.16%

Run 2: Report of FillP — Data Link

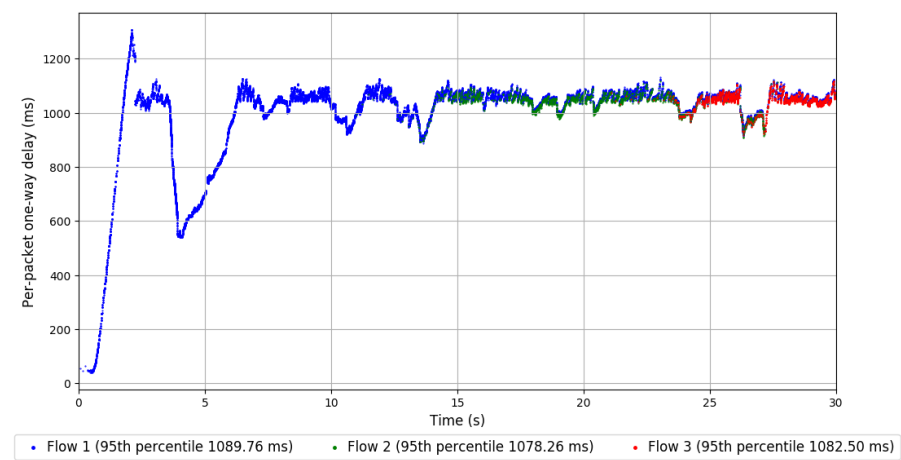
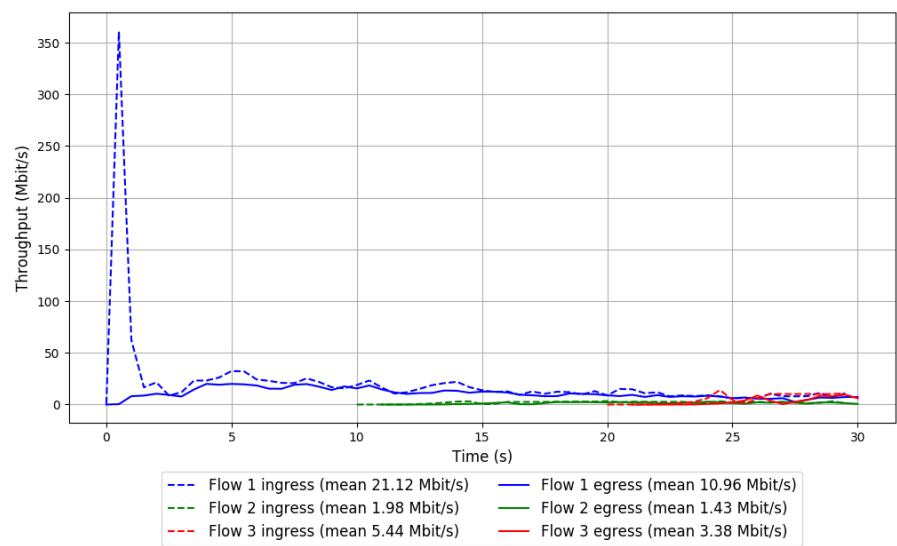


Run 3: Statistics of FillP

Start at: 2018-07-10 03:00:05
End at: 2018-07-10 03:00:35
Local clock offset: 0.806 ms
Remote clock offset: -2.498 ms

Below is generated by plot.py at 2018-07-10 03:06:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 12.86 Mbit/s
95th percentile per-packet one-way delay: 1088.268 ms
Loss rate: 46.99%
-- Flow 1:
Average throughput: 10.96 Mbit/s
95th percentile per-packet one-way delay: 1089.755 ms
Loss rate: 48.18%
-- Flow 2:
Average throughput: 1.43 Mbit/s
95th percentile per-packet one-way delay: 1078.258 ms
Loss rate: 31.24%
-- Flow 3:
Average throughput: 3.38 Mbit/s
95th percentile per-packet one-way delay: 1082.499 ms
Loss rate: 44.48%

Run 3: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2018-07-10 02:08:39

End at: 2018-07-10 02:09:09

Local clock offset: -0.133 ms

Remote clock offset: 0.797 ms

Below is generated by plot.py at 2018-07-10 03:06:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 15.98 Mbit/s

95th percentile per-packet one-way delay: 1075.463 ms

Loss rate: 30.46%

-- Flow 1:

Average throughput: 8.89 Mbit/s

95th percentile per-packet one-way delay: 1066.520 ms

Loss rate: 15.34%

-- Flow 2:

Average throughput: 8.16 Mbit/s

95th percentile per-packet one-way delay: 1082.882 ms

Loss rate: 35.56%

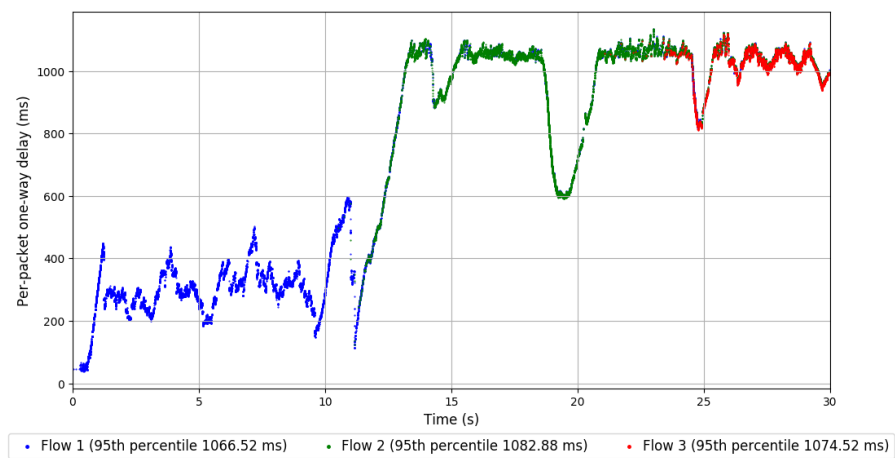
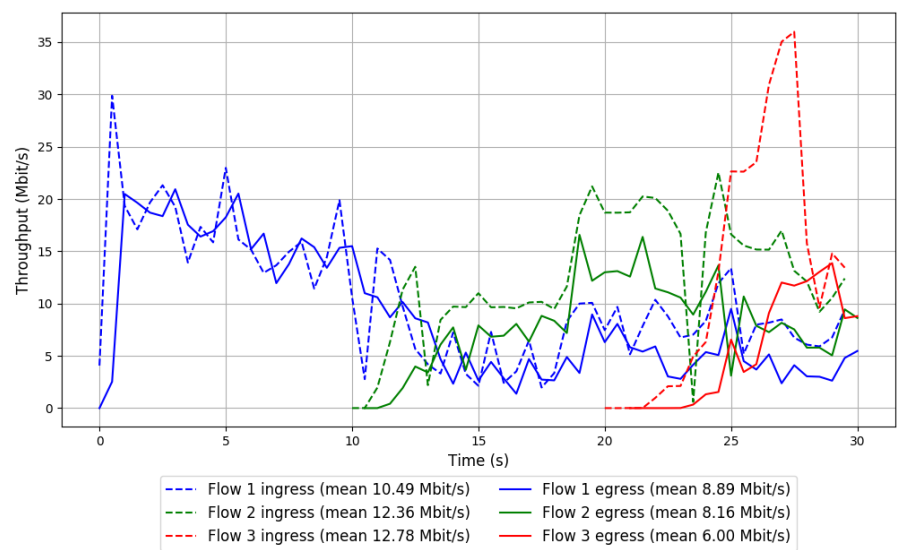
-- Flow 3:

Average throughput: 6.00 Mbit/s

95th percentile per-packet one-way delay: 1074.518 ms

Loss rate: 57.96%

Run 1: Report of FillP-Sheep — Data Link



Run 2: Statistics of FillP-Sheep

Start at: 2018-07-10 02:27:40

End at: 2018-07-10 02:28:10

Local clock offset: 1.981 ms

Remote clock offset: 1.545 ms

Below is generated by plot.py at 2018-07-10 03:06:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 15.48 Mbit/s

95th percentile per-packet one-way delay: 1084.234 ms

Loss rate: 30.48%

-- Flow 1:

Average throughput: 9.64 Mbit/s

95th percentile per-packet one-way delay: 1076.279 ms

Loss rate: 22.06%

-- Flow 2:

Average throughput: 7.49 Mbit/s

95th percentile per-packet one-way delay: 1091.111 ms

Loss rate: 37.43%

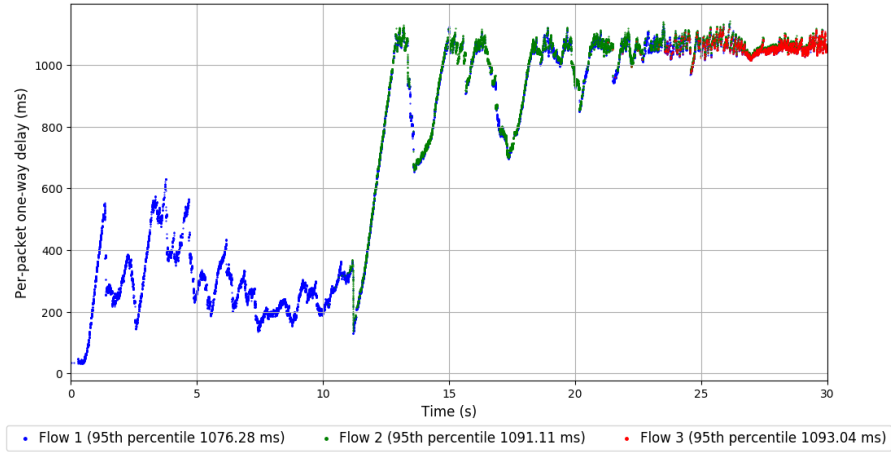
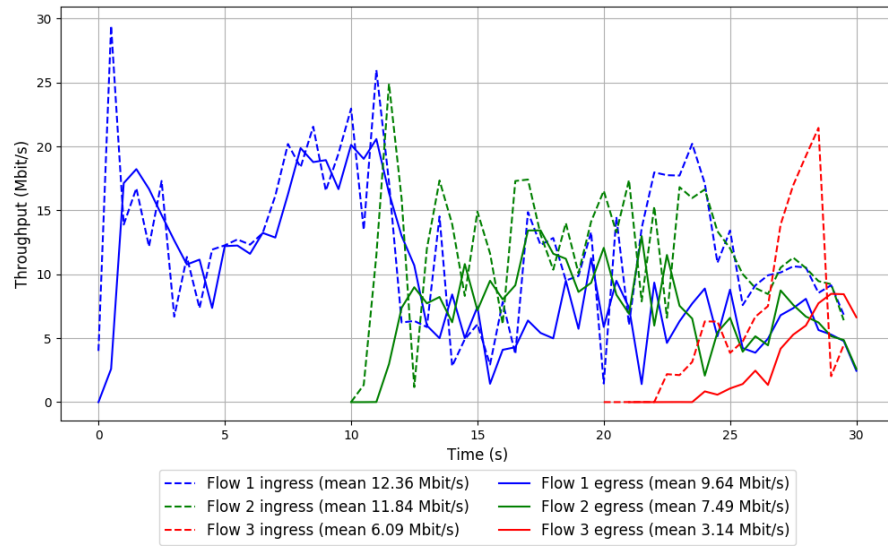
-- Flow 3:

Average throughput: 3.14 Mbit/s

95th percentile per-packet one-way delay: 1093.044 ms

Loss rate: 54.95%

Run 2: Report of FillP-Sheep — Data Link



Run 3: Statistics of FillP-Sheep

Start at: 2018-07-10 02:46:38

End at: 2018-07-10 02:47:08

Local clock offset: 0.916 ms

Remote clock offset: -1.18 ms

Below is generated by plot.py at 2018-07-10 03:06:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 13.58 Mbit/s

95th percentile per-packet one-way delay: 1093.828 ms

Loss rate: 36.70%

-- Flow 1:

Average throughput: 7.02 Mbit/s

95th percentile per-packet one-way delay: 1084.206 ms

Loss rate: 25.28%

-- Flow 2:

Average throughput: 8.55 Mbit/s

95th percentile per-packet one-way delay: 1099.260 ms

Loss rate: 41.35%

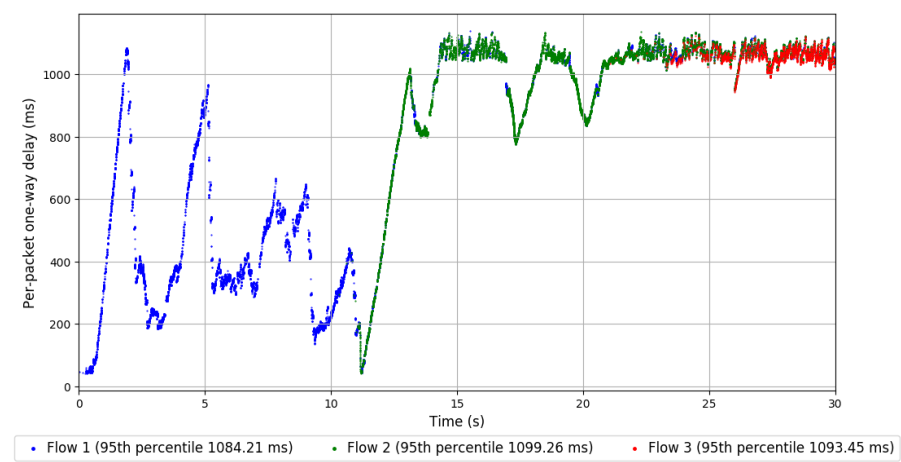
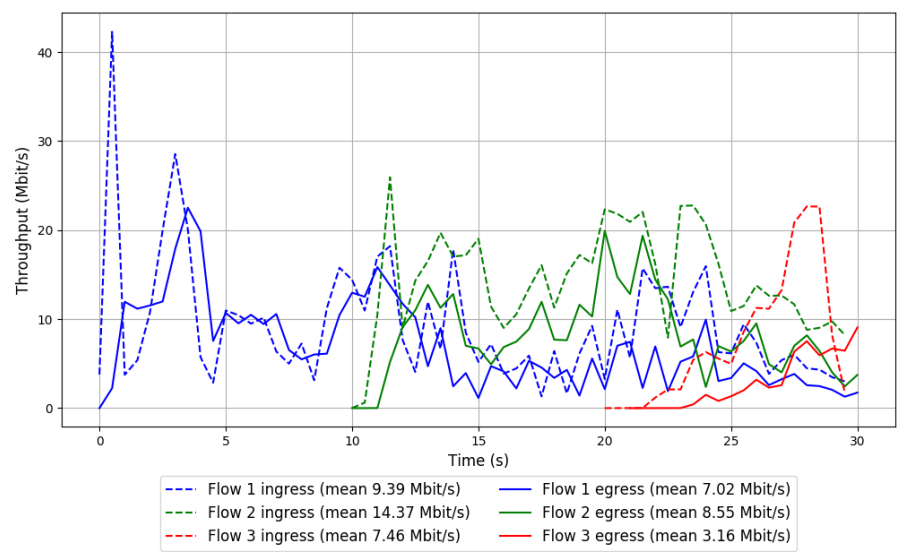
-- Flow 3:

Average throughput: 3.16 Mbit/s

95th percentile per-packet one-way delay: 1093.453 ms

Loss rate: 62.04%

Run 3: Report of FillP-Sheep — Data Link

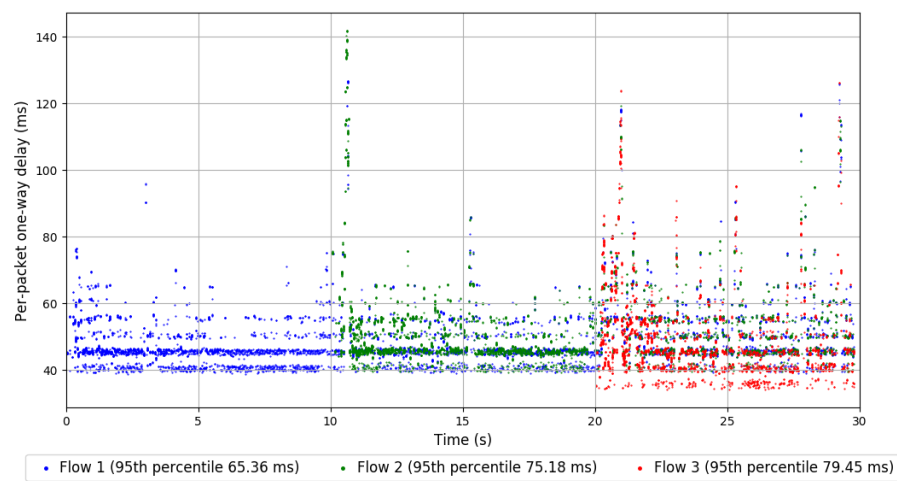
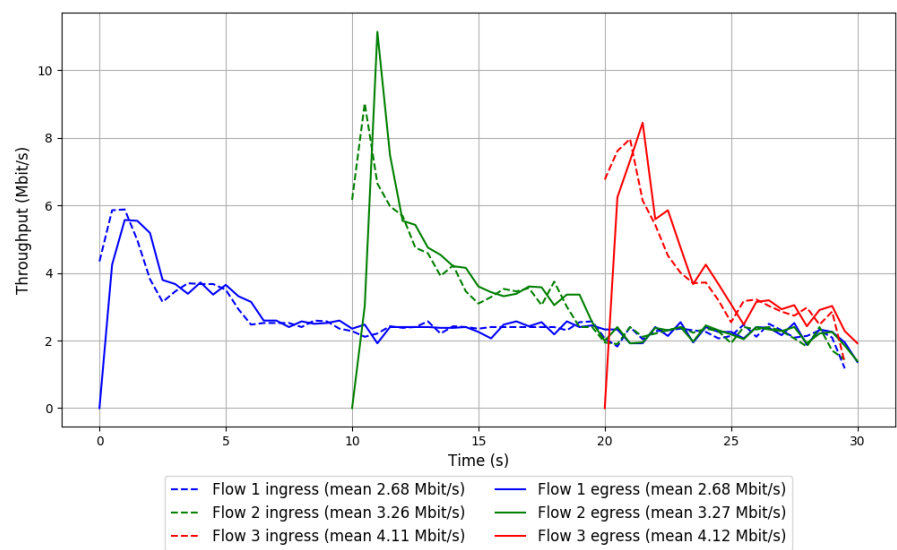


```
Run 1: Statistics of Indigo

Start at: 2018-07-10 02:17:38
End at: 2018-07-10 02:18:08
Local clock offset: -0.498 ms
Remote clock offset: 1.384 ms

# Below is generated by plot.py at 2018-07-10 03:06:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.19 Mbit/s
95th percentile per-packet one-way delay: 70.970 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 2.68 Mbit/s
95th percentile per-packet one-way delay: 65.359 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 3.27 Mbit/s
95th percentile per-packet one-way delay: 75.177 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 4.12 Mbit/s
95th percentile per-packet one-way delay: 79.446 ms
Loss rate: 0.03%
```

Run 1: Report of Indigo — Data Link

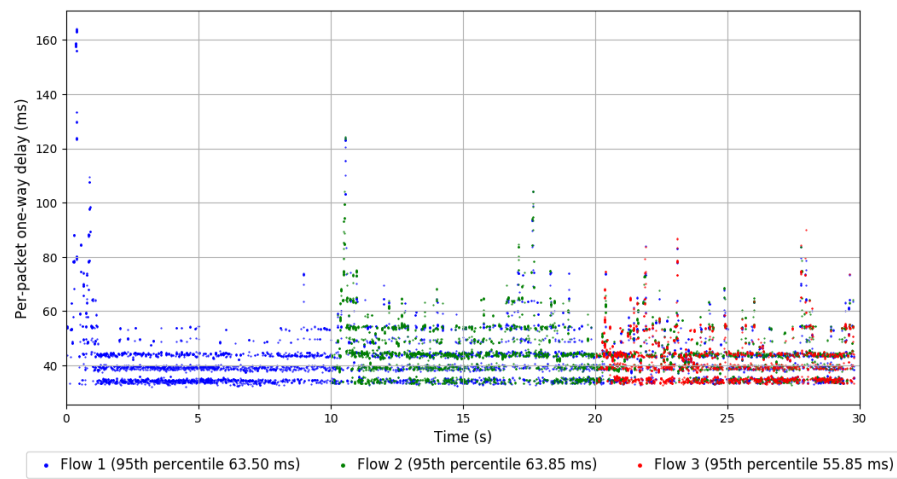
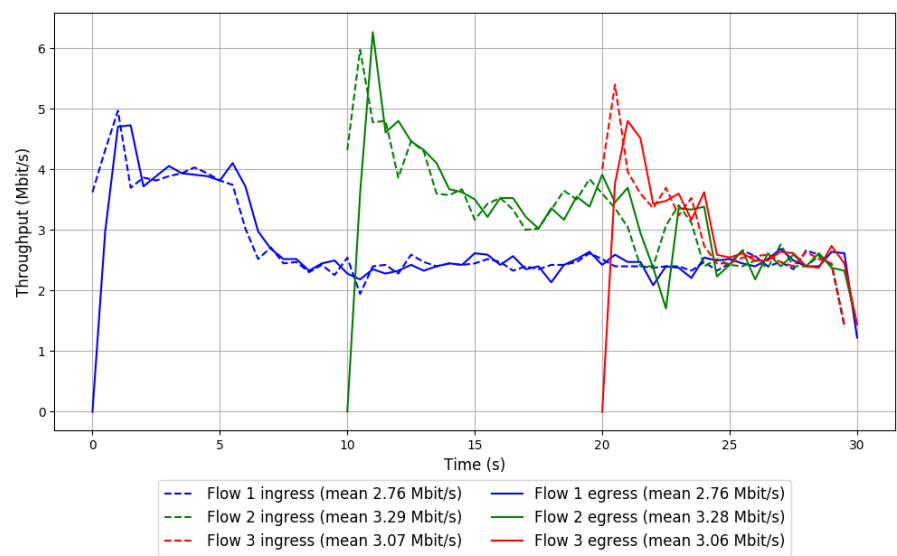


Run 2: Statistics of Indigo

Start at: 2018-07-10 02:36:38
End at: 2018-07-10 02:37:08
Local clock offset: 2.276 ms
Remote clock offset: -0.698 ms

Below is generated by plot.py at 2018-07-10 03:06:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 5.93 Mbit/s
95th percentile per-packet one-way delay: 63.289 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 2.76 Mbit/s
95th percentile per-packet one-way delay: 63.503 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 3.28 Mbit/s
95th percentile per-packet one-way delay: 63.848 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 3.06 Mbit/s
95th percentile per-packet one-way delay: 55.850 ms
Loss rate: 0.44%

Run 2: Report of Indigo — Data Link

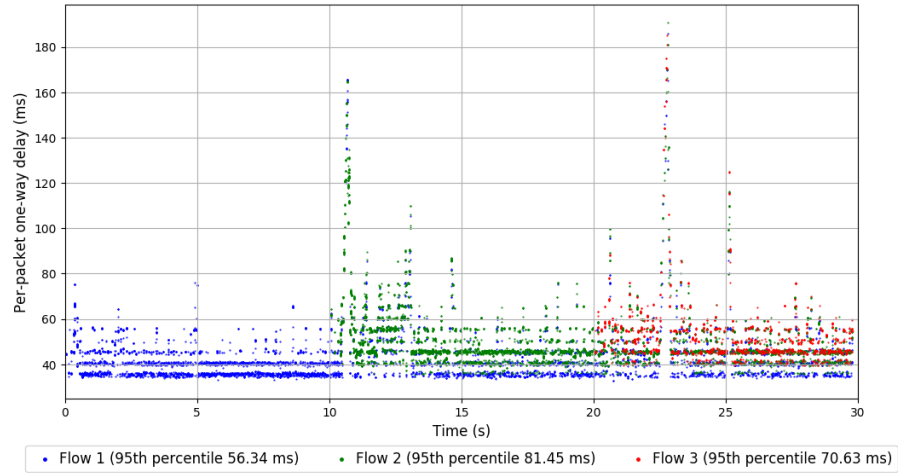
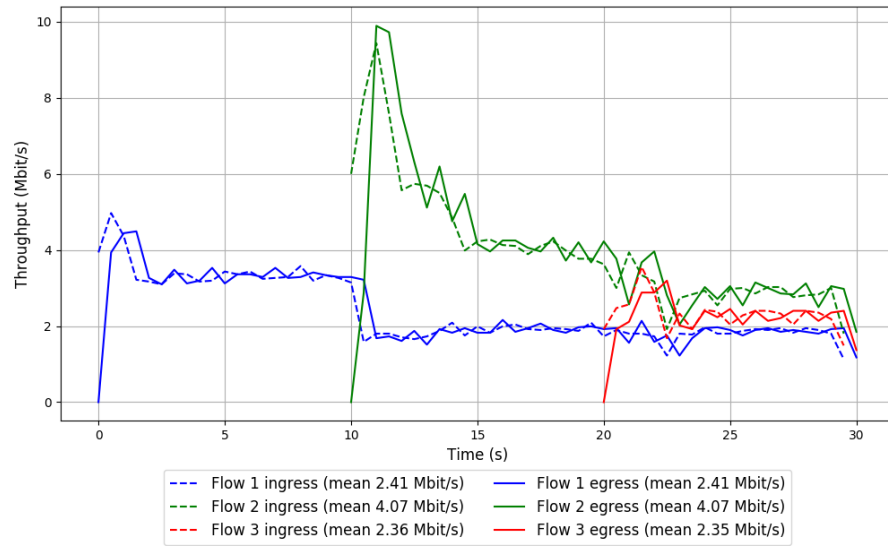


Run 3: Statistics of Indigo

Start at: 2018-07-10 02:55:40
End at: 2018-07-10 02:56:10
Local clock offset: 2.233 ms
Remote clock offset: -1.484 ms

Below is generated by plot.py at 2018-07-10 03:06:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 5.88 Mbit/s
95th percentile per-packet one-way delay: 70.022 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 2.41 Mbit/s
95th percentile per-packet one-way delay: 56.339 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 4.07 Mbit/s
95th percentile per-packet one-way delay: 81.454 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 2.35 Mbit/s
95th percentile per-packet one-way delay: 70.631 ms
Loss rate: 0.42%

Run 3: Report of Indigo — Data Link

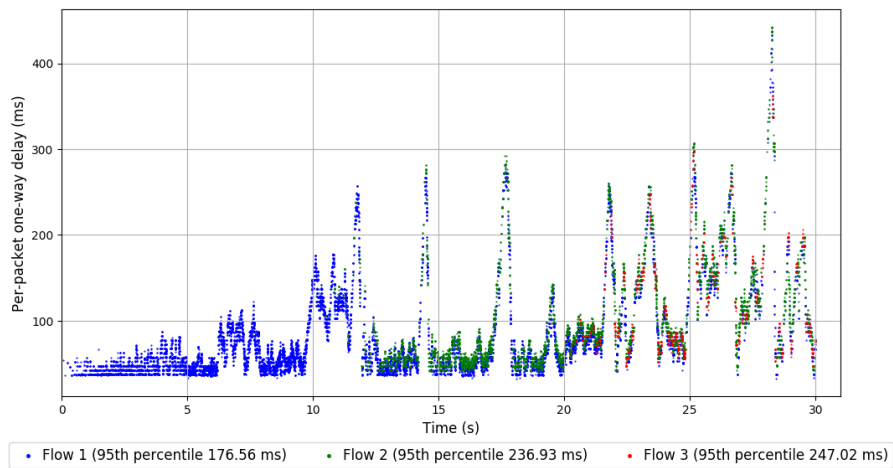
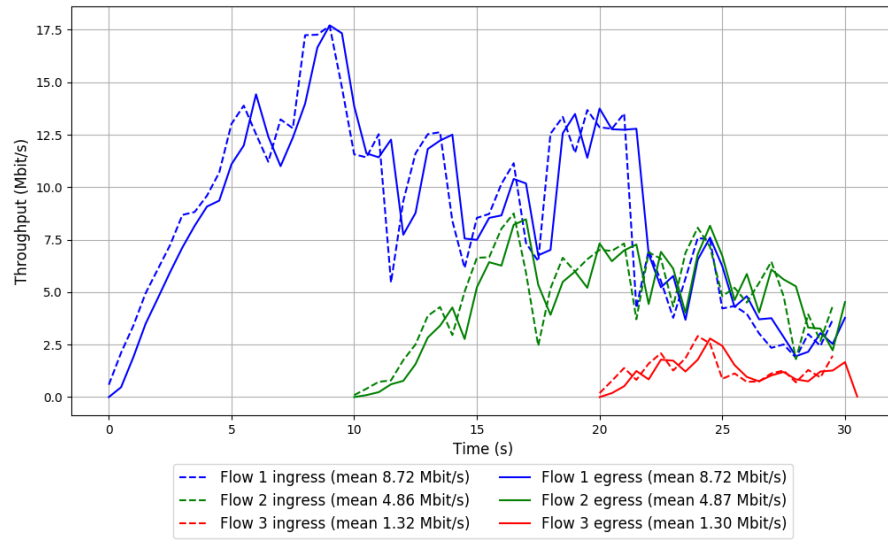


```
Run 1: Statistics of LEDBAT

Start at: 2018-07-10 02:24:20
End at: 2018-07-10 02:24:50
Local clock offset: 0.632 ms
Remote clock offset: 2.045 ms

# Below is generated by plot.py at 2018-07-10 03:06:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.37 Mbit/s
95th percentile per-packet one-way delay: 202.080 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 8.72 Mbit/s
95th percentile per-packet one-way delay: 176.556 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 4.87 Mbit/s
95th percentile per-packet one-way delay: 236.927 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 1.30 Mbit/s
95th percentile per-packet one-way delay: 247.017 ms
Loss rate: 1.61%
```

Run 1: Report of LEDBAT — Data Link

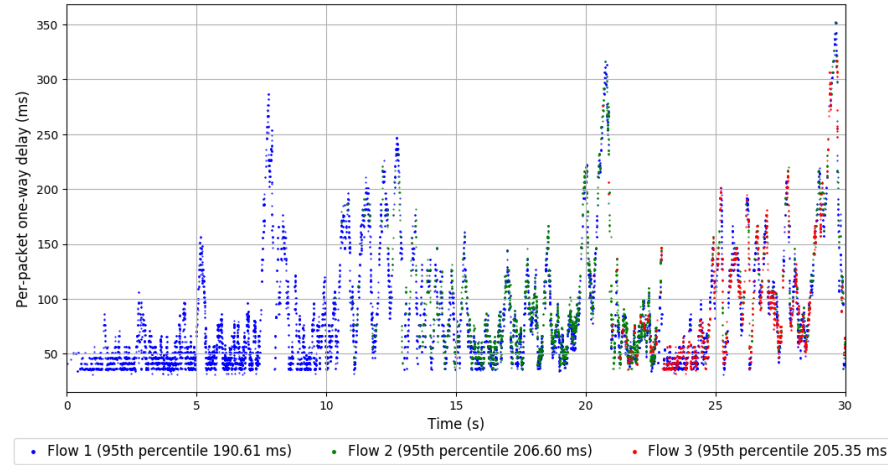
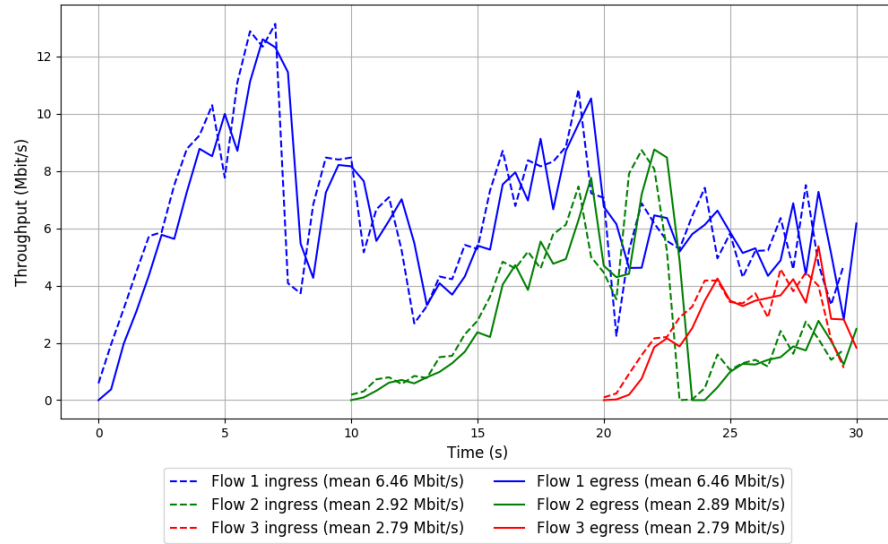


Run 2: Statistics of LEDBAT

Start at: 2018-07-10 02:43:20
End at: 2018-07-10 02:43:50
Local clock offset: 2.923 ms
Remote clock offset: -0.944 ms

Below is generated by plot.py at 2018-07-10 03:06:04
Datalink statistics
-- Total of 3 flows:
Average throughput: 9.30 Mbit/s
95th percentile per-packet one-way delay: 196.250 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 6.46 Mbit/s
95th percentile per-packet one-way delay: 190.610 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 2.89 Mbit/s
95th percentile per-packet one-way delay: 206.598 ms
Loss rate: 1.05%
-- Flow 3:
Average throughput: 2.79 Mbit/s
95th percentile per-packet one-way delay: 205.348 ms
Loss rate: 0.26%

Run 2: Report of LEDBAT — Data Link

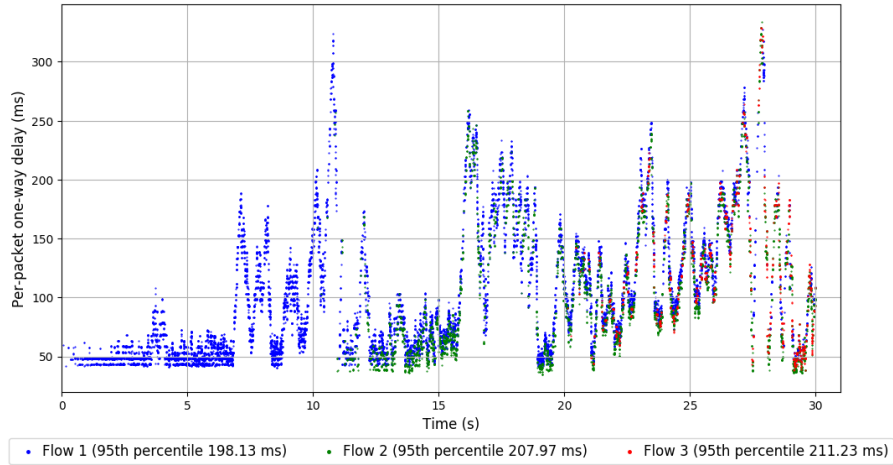
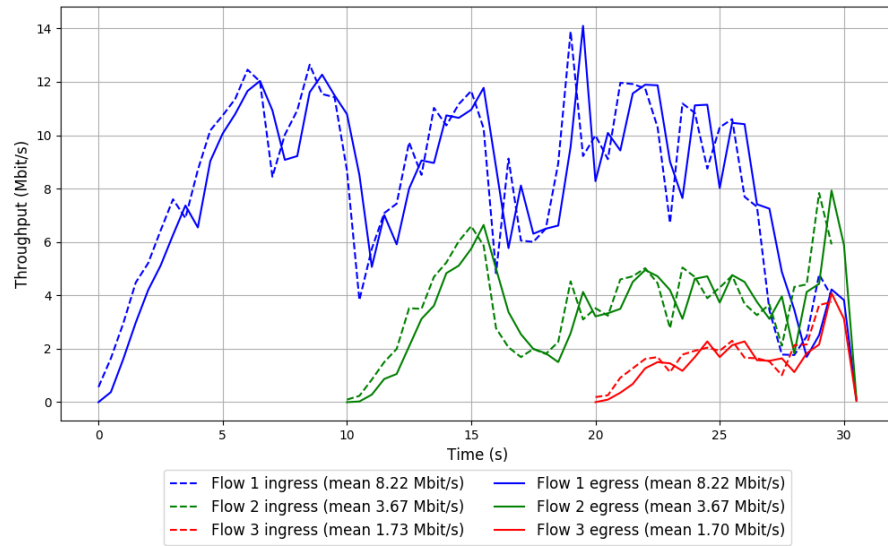


Run 3: Statistics of LEDBAT

Start at: 2018-07-10 03:02:20
End at: 2018-07-10 03:02:50
Local clock offset: 2.043 ms
Remote clock offset: -2.015 ms

Below is generated by plot.py at 2018-07-10 03:06:05
Datalink statistics
-- Total of 3 flows:
Average throughput: 11.21 Mbit/s
95th percentile per-packet one-way delay: 198.805 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 8.22 Mbit/s
95th percentile per-packet one-way delay: 198.133 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 3.67 Mbit/s
95th percentile per-packet one-way delay: 207.968 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 211.234 ms
Loss rate: 2.44%

Run 3: Report of LEDBAT — Data Link

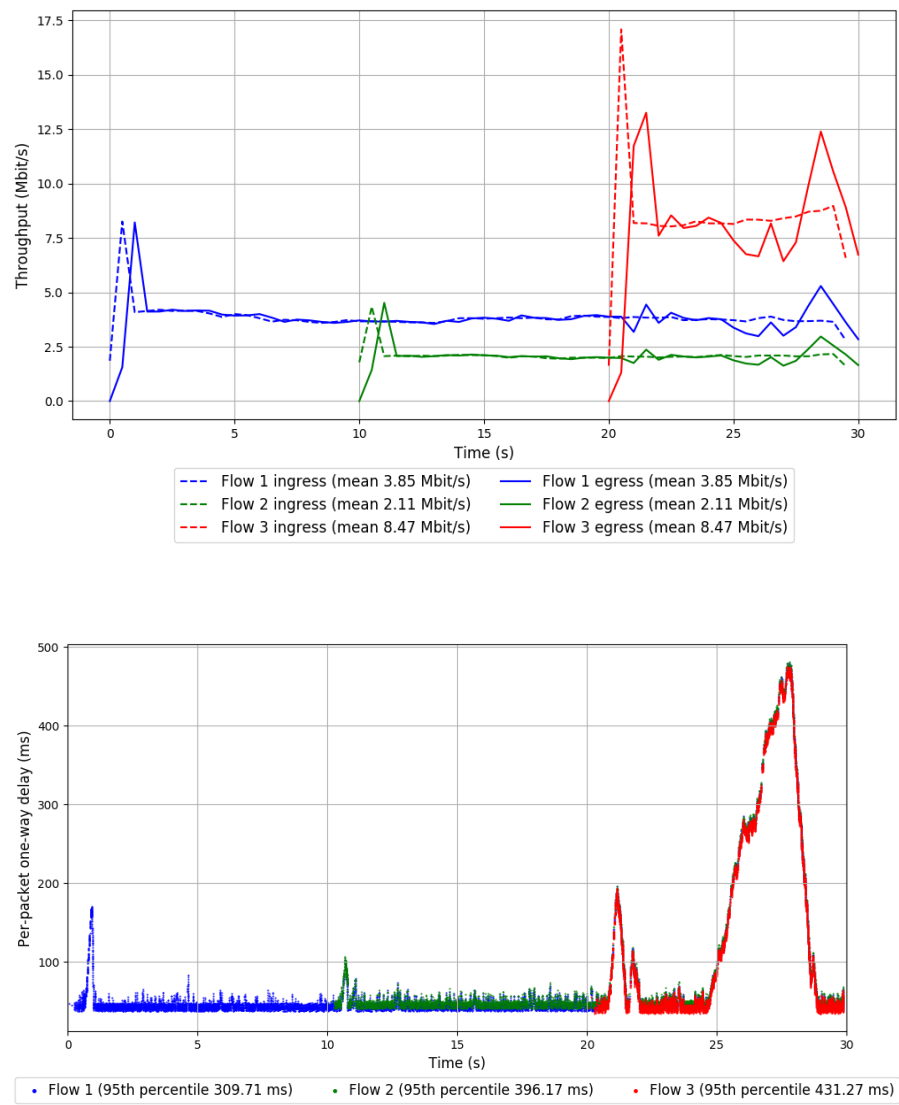


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-07-10 02:18:43
End at: 2018-07-10 02:19:13
Local clock offset: 0.309 ms
Remote clock offset: 2.262 ms

# Below is generated by plot.py at 2018-07-10 03:06:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.04 Mbit/s
95th percentile per-packet one-way delay: 397.073 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 3.85 Mbit/s
95th percentile per-packet one-way delay: 309.710 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 2.11 Mbit/s
95th percentile per-packet one-way delay: 396.165 ms
Loss rate: 0.27%
-- Flow 3:
Average throughput: 8.47 Mbit/s
95th percentile per-packet one-way delay: 431.269 ms
Loss rate: 0.37%
```

Run 1: Report of PCC-Allegro — Data Link

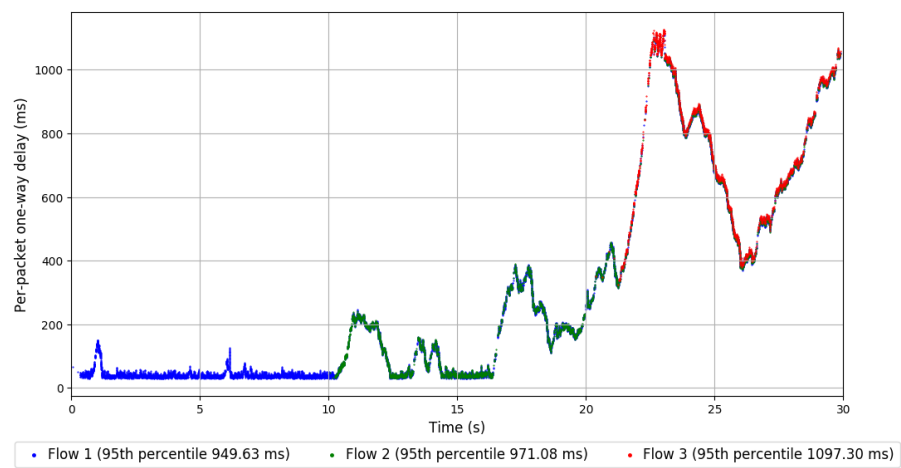
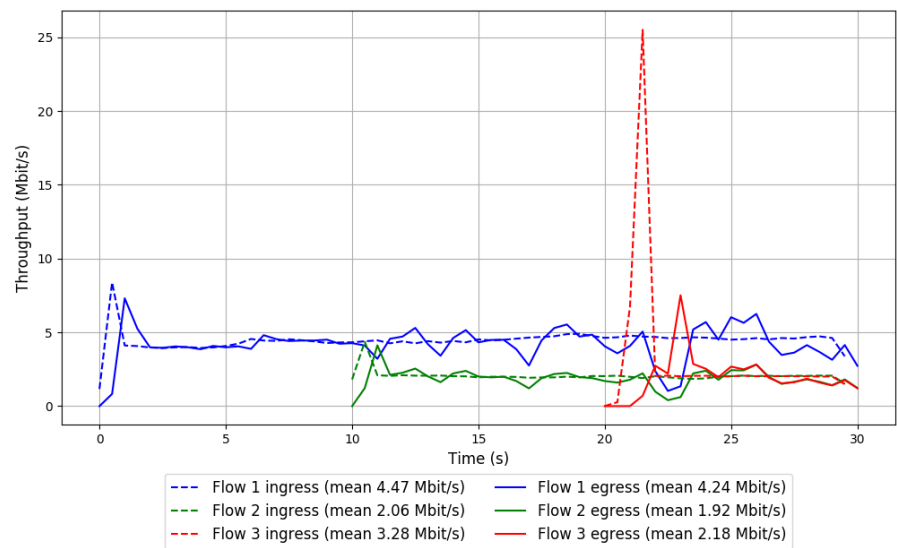


Run 2: Statistics of PCC-Allegro

Start at: 2018-07-10 02:37:44
End at: 2018-07-10 02:38:14
Local clock offset: 3.087 ms
Remote clock offset: -0.645 ms

Below is generated by plot.py at 2018-07-10 03:06:05
Datalink statistics
-- Total of 3 flows:
Average throughput: 6.21 Mbit/s
95th percentile per-packet one-way delay: 999.139 ms
Loss rate: 10.37%
-- Flow 1:
Average throughput: 4.24 Mbit/s
95th percentile per-packet one-way delay: 949.635 ms
Loss rate: 5.16%
-- Flow 2:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: 971.084 ms
Loss rate: 7.28%
-- Flow 3:
Average throughput: 2.18 Mbit/s
95th percentile per-packet one-way delay: 1097.298 ms
Loss rate: 35.80%

Run 2: Report of PCC-Allegro — Data Link

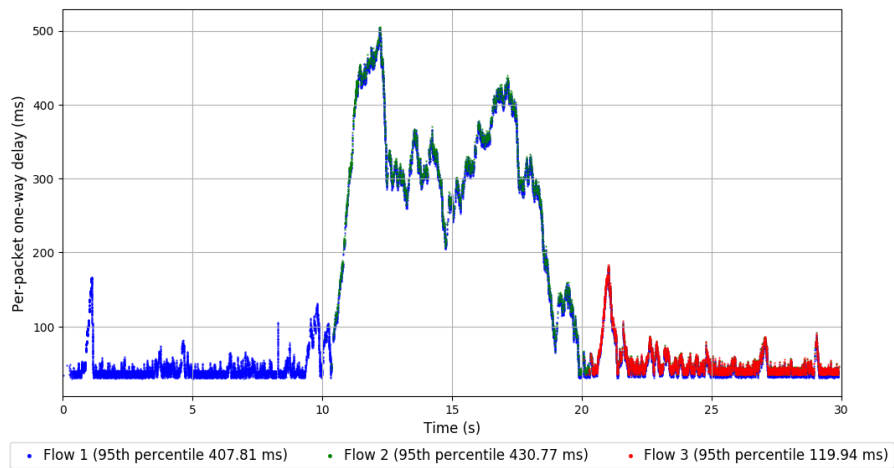
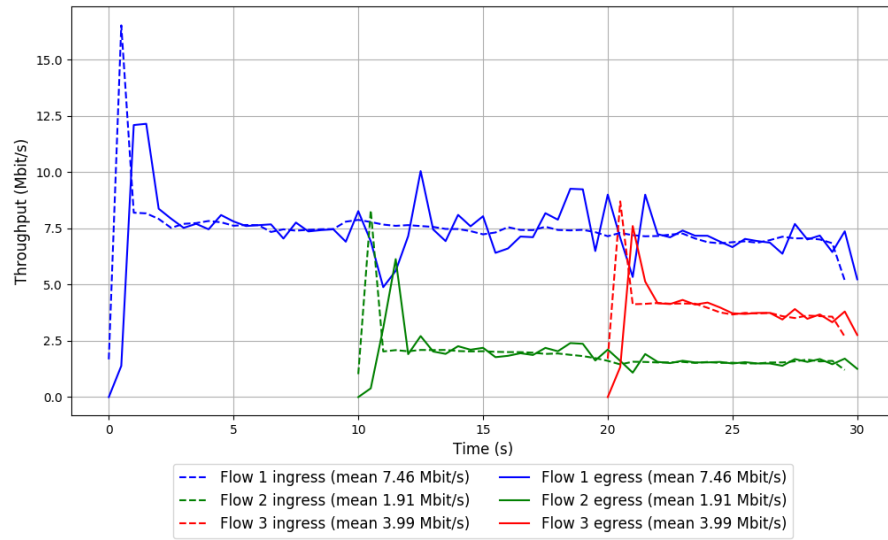


Run 3: Statistics of PCC-Allegro

Start at: 2018-07-10 02:56:46
End at: 2018-07-10 02:57:16
Local clock offset: 2.396 ms
Remote clock offset: -3.082 ms

Below is generated by plot.py at 2018-07-10 03:06:11
Datalink statistics
-- Total of 3 flows:
Average throughput: 10.03 Mbit/s
95th percentile per-packet one-way delay: 406.866 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 7.46 Mbit/s
95th percentile per-packet one-way delay: 407.809 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 1.91 Mbit/s
95th percentile per-packet one-way delay: 430.774 ms
Loss rate: 0.29%
-- Flow 3:
Average throughput: 3.99 Mbit/s
95th percentile per-packet one-way delay: 119.945 ms
Loss rate: 0.28%

Run 3: Report of PCC-Allegro — Data Link

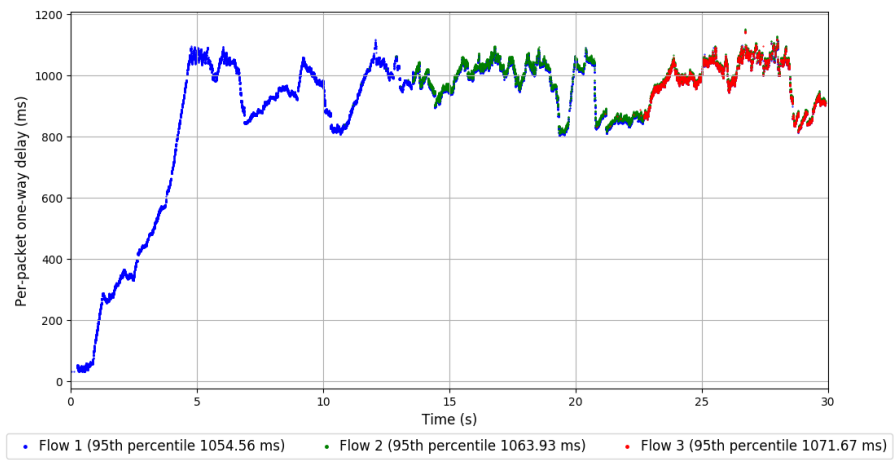
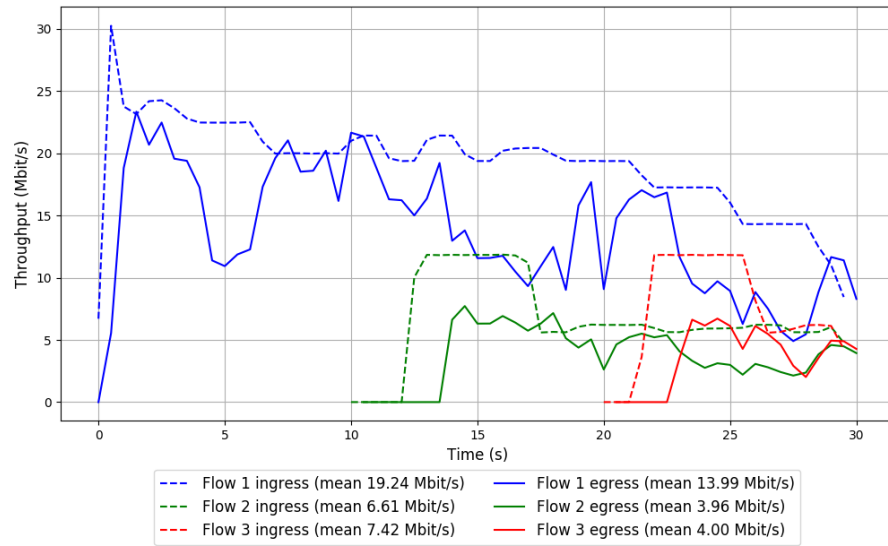


```
Run 1: Statistics of PCC-Expr

Start at: 2018-07-10 02:19:50
End at: 2018-07-10 02:20:20
Local clock offset: 3.902 ms
Remote clock offset: 3.142 ms

# Below is generated by plot.py at 2018-07-10 03:06:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 17.72 Mbit/s
95th percentile per-packet one-way delay: 1057.468 ms
Loss rate: 32.11%
-- Flow 1:
Average throughput: 13.99 Mbit/s
95th percentile per-packet one-way delay: 1054.562 ms
Loss rate: 27.36%
-- Flow 2:
Average throughput: 3.96 Mbit/s
95th percentile per-packet one-way delay: 1063.930 ms
Loss rate: 42.64%
-- Flow 3:
Average throughput: 4.00 Mbit/s
95th percentile per-packet one-way delay: 1071.675 ms
Loss rate: 50.59%
```

Run 1: Report of PCC-Expr — Data Link

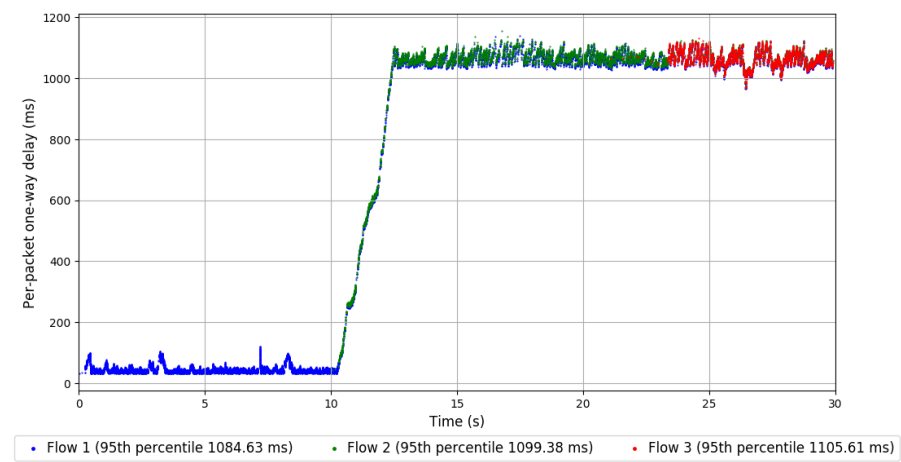
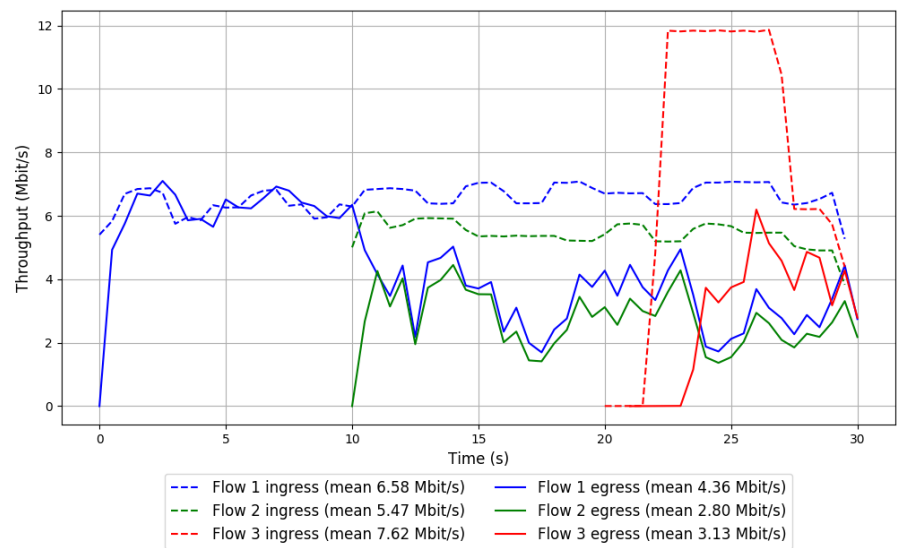


Run 2: Statistics of PCC-Expr

Start at: 2018-07-10 02:38:50
End at: 2018-07-10 02:39:20
Local clock offset: 1.832 ms
Remote clock offset: -0.902 ms

Below is generated by plot.py at 2018-07-10 03:06:40
Datalink statistics
-- Total of 3 flows:
Average throughput: 7.14 Mbit/s
95th percentile per-packet one-way delay: 1094.436 ms
Loss rate: 43.97%
-- Flow 1:
Average throughput: 4.36 Mbit/s
95th percentile per-packet one-way delay: 1084.634 ms
Loss rate: 33.85%
-- Flow 2:
Average throughput: 2.80 Mbit/s
95th percentile per-packet one-way delay: 1099.378 ms
Loss rate: 48.90%
-- Flow 3:
Average throughput: 3.13 Mbit/s
95th percentile per-packet one-way delay: 1105.612 ms
Loss rate: 63.34%

Run 2: Report of PCC-Expr — Data Link

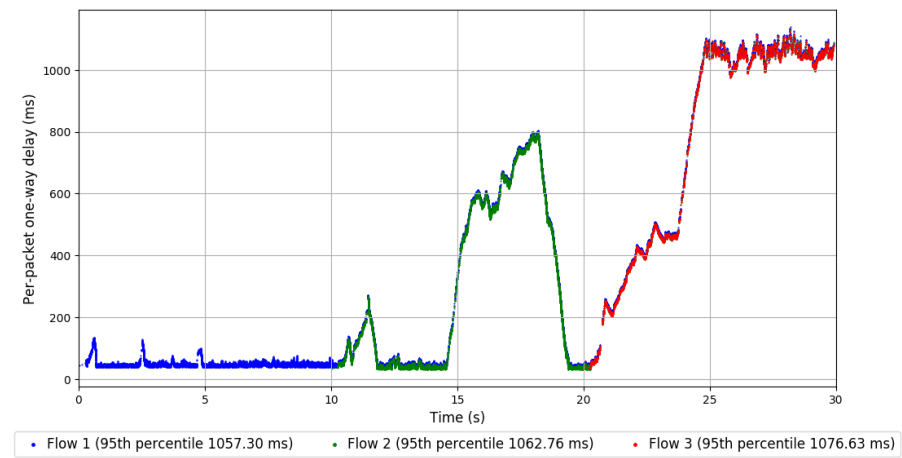
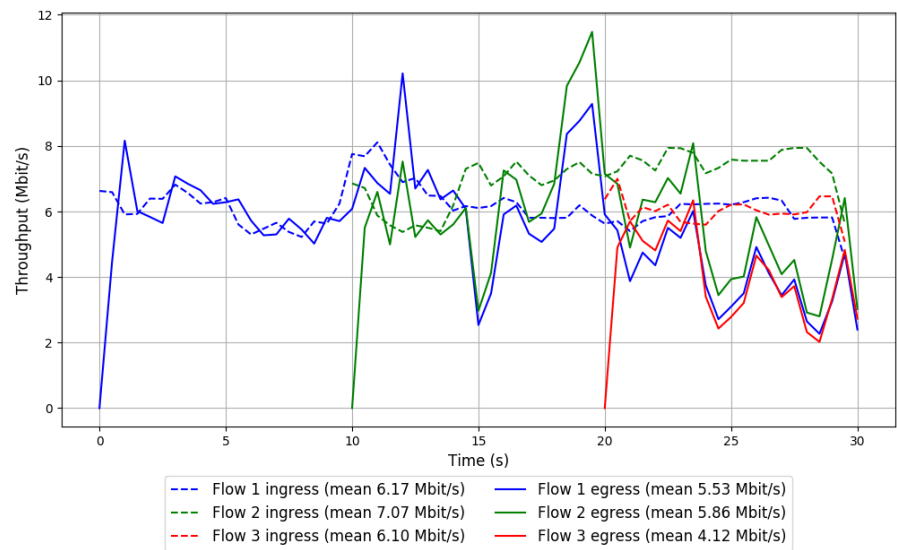


Run 3: Statistics of PCC-Expr

Start at: 2018-07-10 02:57:52
End at: 2018-07-10 02:58:22
Local clock offset: 1.211 ms
Remote clock offset: -1.359 ms

Below is generated by plot.py at 2018-07-10 03:06:40
Datalink statistics
-- Total of 3 flows:
Average throughput: 10.78 Mbit/s
95th percentile per-packet one-way delay: 1064.261 ms
Loss rate: 16.52%
-- Flow 1:
Average throughput: 5.53 Mbit/s
95th percentile per-packet one-way delay: 1057.303 ms
Loss rate: 10.62%
-- Flow 2:
Average throughput: 5.86 Mbit/s
95th percentile per-packet one-way delay: 1062.758 ms
Loss rate: 17.28%
-- Flow 3:
Average throughput: 4.12 Mbit/s
95th percentile per-packet one-way delay: 1076.627 ms
Loss rate: 32.79%

Run 3: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-07-10 02:26:33

End at: 2018-07-10 02:27:03

Local clock offset: 0.02 ms

Remote clock offset: 2.033 ms

Below is generated by plot.py at 2018-07-10 03:06:40

Datalink statistics

-- Total of 3 flows:

Average throughput: 14.55 Mbit/s

95th percentile per-packet one-way delay: 426.064 ms

Loss rate: 1.17%

-- Flow 1:

Average throughput: 9.56 Mbit/s

95th percentile per-packet one-way delay: 416.868 ms

Loss rate: 1.08%

-- Flow 2:

Average throughput: 6.60 Mbit/s

95th percentile per-packet one-way delay: 428.838 ms

Loss rate: 0.89%

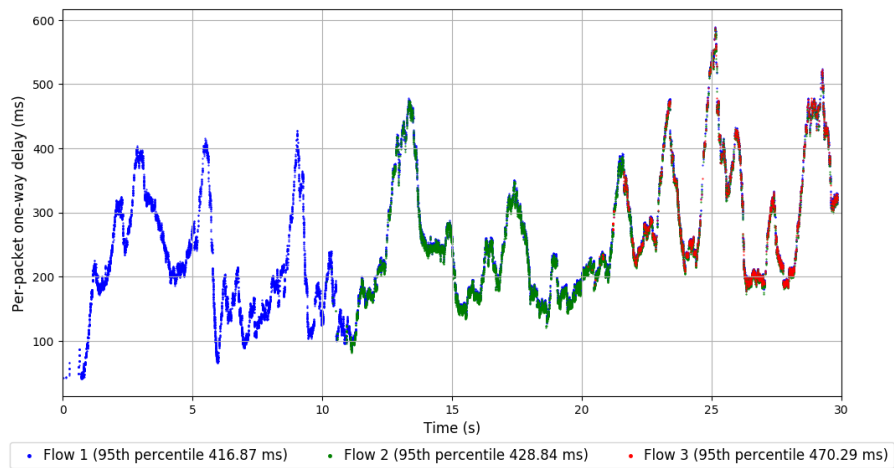
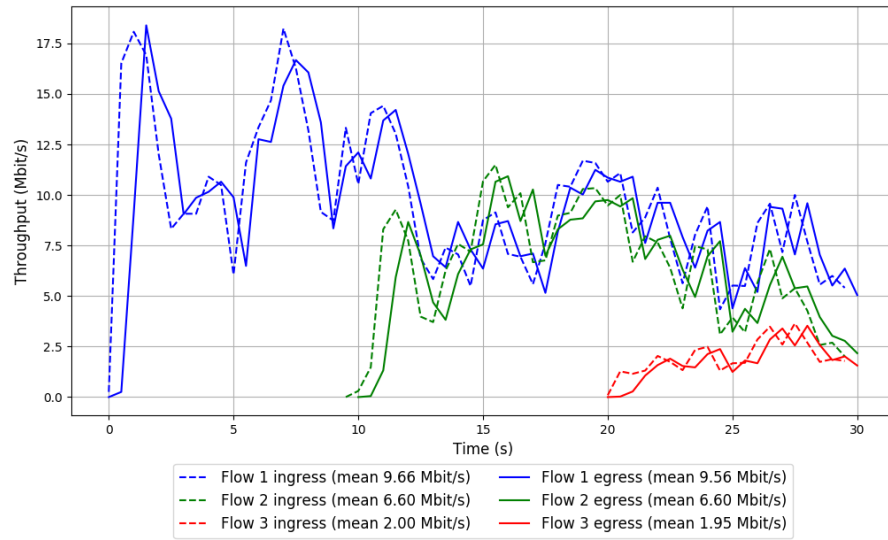
-- Flow 3:

Average throughput: 1.95 Mbit/s

95th percentile per-packet one-way delay: 470.287 ms

Loss rate: 4.39%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-07-10 02:45:32

End at: 2018-07-10 02:46:02

Local clock offset: 2.977 ms

Remote clock offset: -0.56 ms

Below is generated by plot.py at 2018-07-10 03:06:40

Datalink statistics

-- Total of 3 flows:

Average throughput: 9.79 Mbit/s

95th percentile per-packet one-way delay: 628.061 ms

Loss rate: 1.16%

-- Flow 1:

Average throughput: 6.10 Mbit/s

95th percentile per-packet one-way delay: 551.481 ms

Loss rate: 0.94%

-- Flow 2:

Average throughput: 4.45 Mbit/s

95th percentile per-packet one-way delay: 739.863 ms

Loss rate: 1.35%

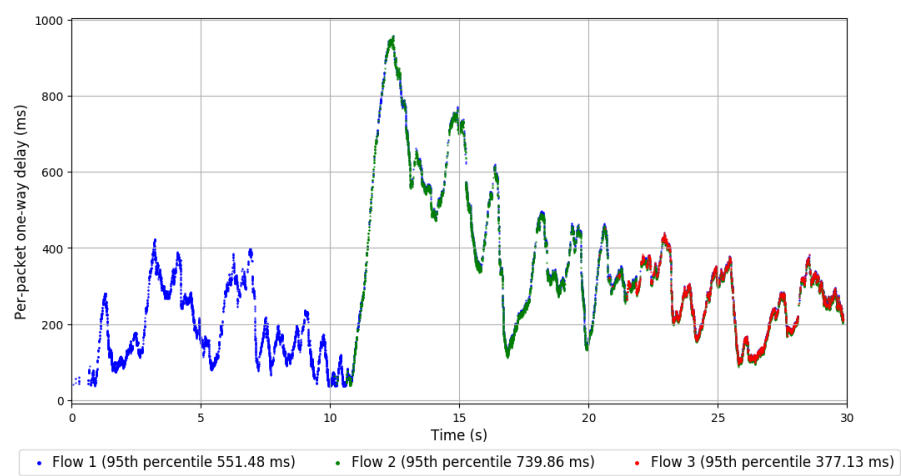
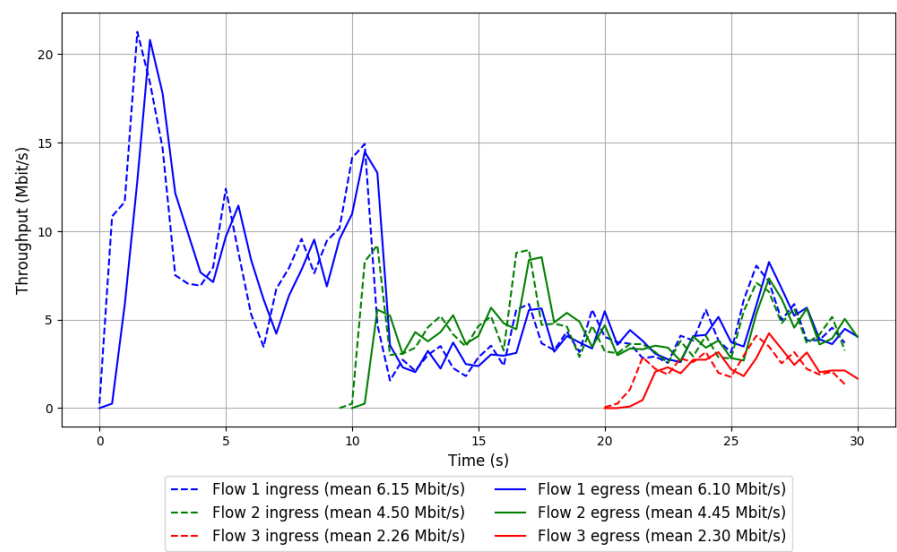
-- Flow 3:

Average throughput: 2.30 Mbit/s

95th percentile per-packet one-way delay: 377.131 ms

Loss rate: 2.19%

Run 2: Report of QUIC Cubic — Data Link

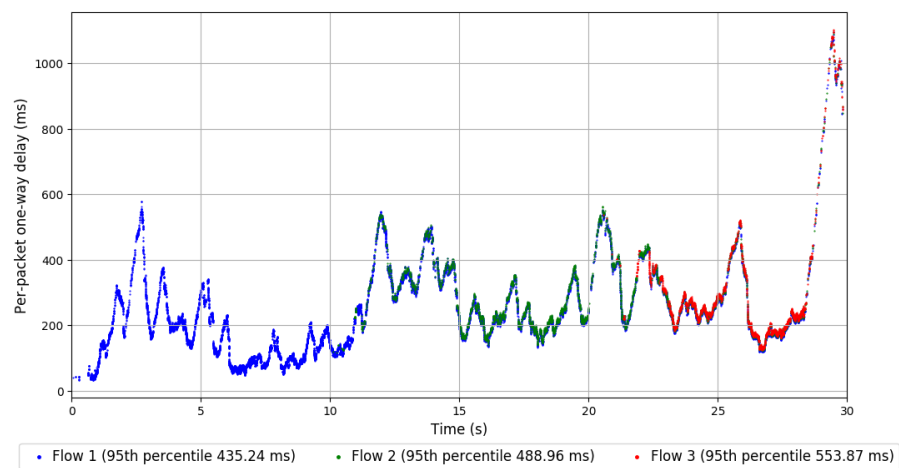
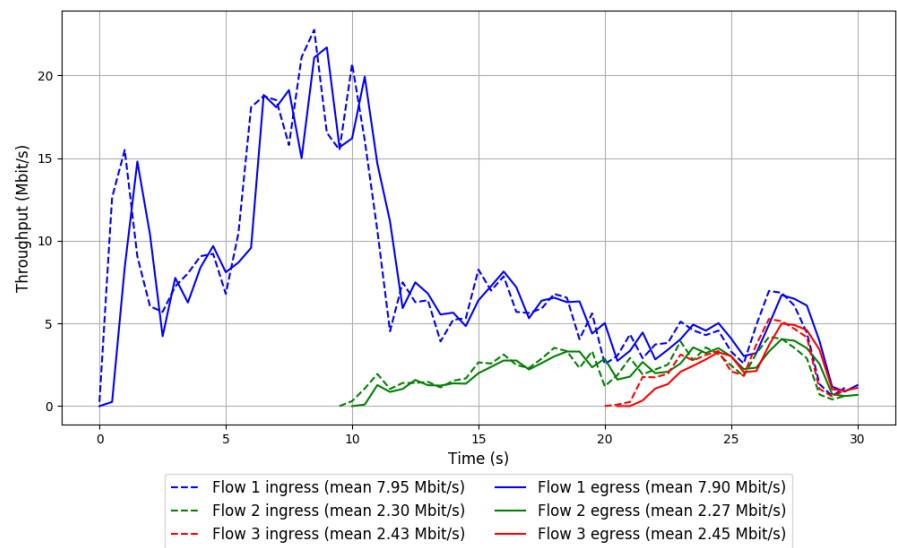


Run 3: Statistics of QUIC Cubic

Start at: 2018-07-10 03:04:33
End at: 2018-07-10 03:05:03
Local clock offset: 0.956 ms
Remote clock offset: -3.101 ms

Below is generated by plot.py at 2018-07-10 03:06:40
Datalink statistics
-- Total of 3 flows:
Average throughput: 10.17 Mbit/s
95th percentile per-packet one-way delay: 457.158 ms
Loss rate: 1.23%
-- Flow 1:
Average throughput: 7.90 Mbit/s
95th percentile per-packet one-way delay: 435.236 ms
Loss rate: 0.71%
-- Flow 2:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 488.963 ms
Loss rate: 1.96%
-- Flow 3:
Average throughput: 2.45 Mbit/s
95th percentile per-packet one-way delay: 553.867 ms
Loss rate: 5.09%

Run 3: Report of QUIC Cubic — Data Link

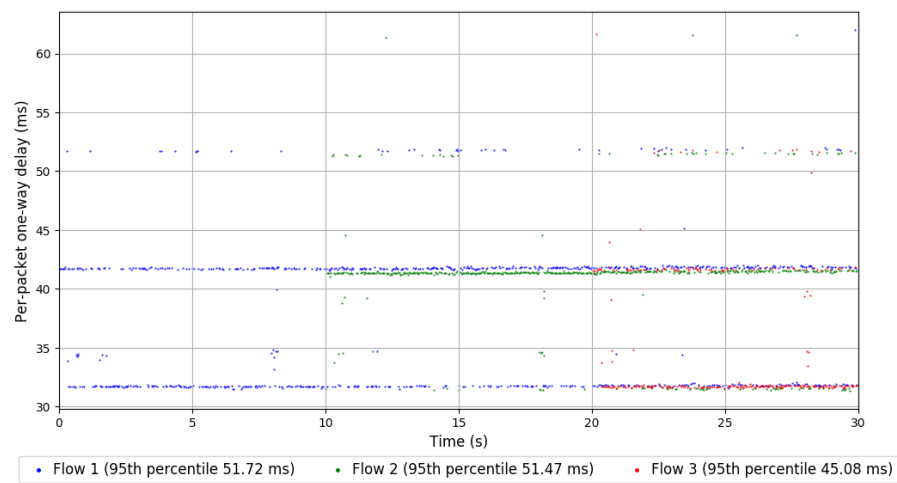
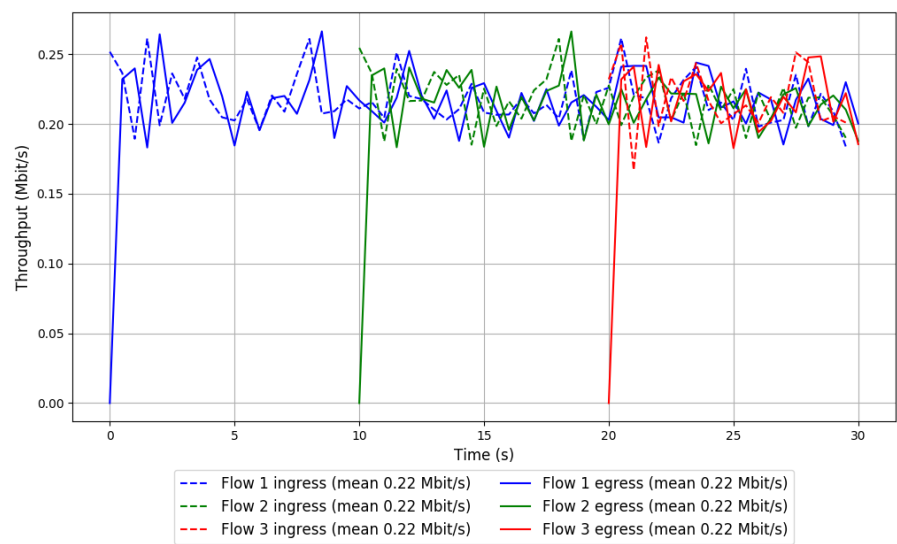


```
Run 1: Statistics of SReAM

Start at: 2018-07-10 02:20:57
End at: 2018-07-10 02:21:27
Local clock offset: 2.469 ms
Remote clock offset: 2.397 ms

# Below is generated by plot.py at 2018-07-10 03:06:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 51.498 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 51.722 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 51.467 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 45.083 ms
Loss rate: 0.35%
```

Run 1: Report of SReAM — Data Link

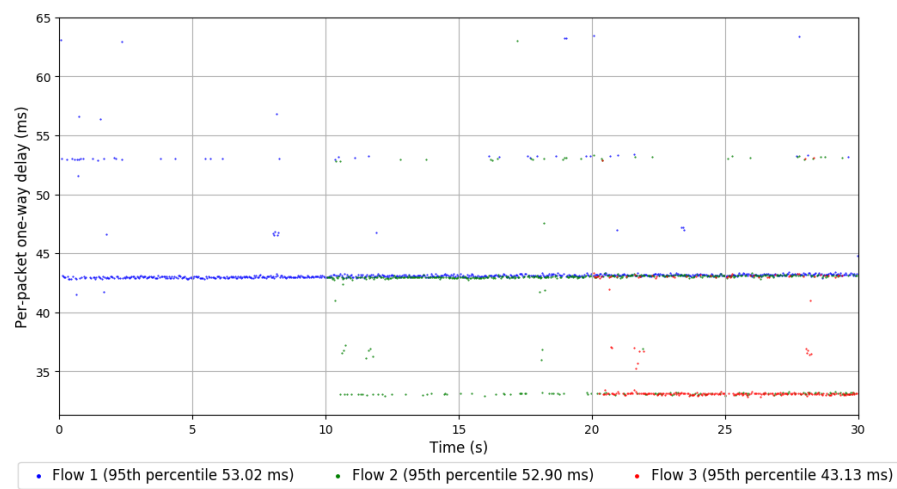
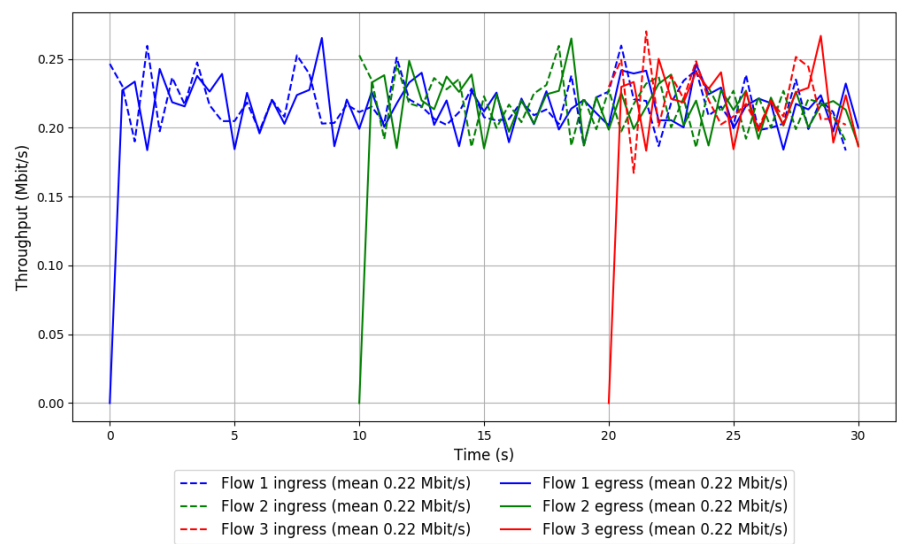


Run 2: Statistics of SReAM

Start at: 2018-07-10 02:39:57
End at: 2018-07-10 02:40:27
Local clock offset: 0.852 ms
Remote clock offset: -0.955 ms

Below is generated by plot.py at 2018-07-10 03:06:40
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 52.891 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 53.016 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 52.900 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 43.133 ms
Loss rate: 0.36%

Run 2: Report of SReAM — Data Link

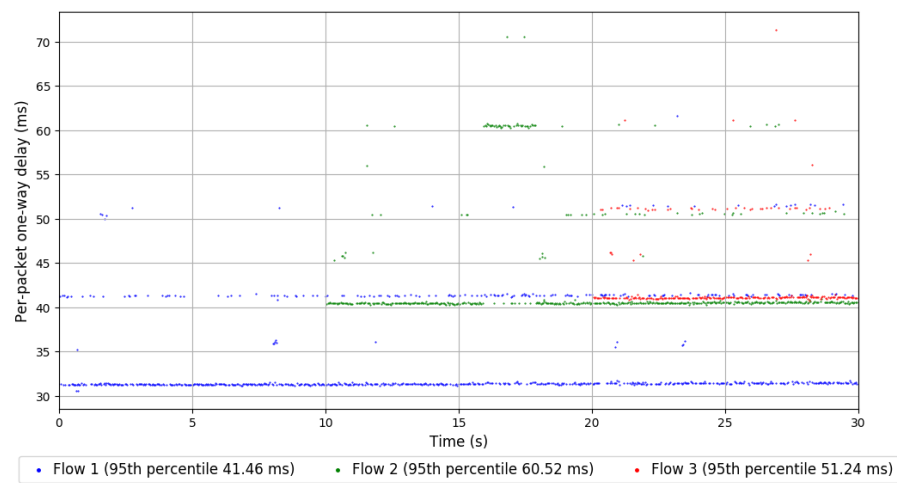
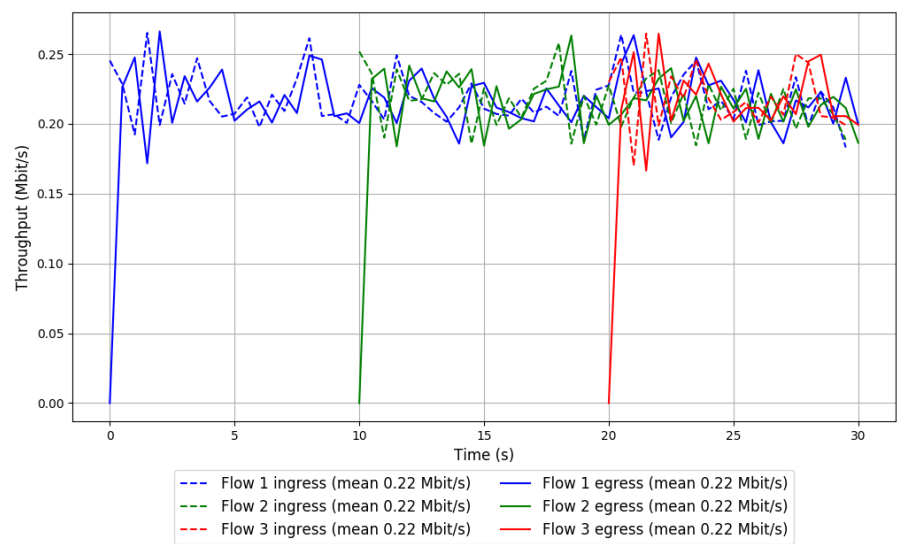


Run 3: Statistics of SReAM

Start at: 2018-07-10 02:59:00
End at: 2018-07-10 02:59:30
Local clock offset: 2.902 ms
Remote clock offset: -1.798 ms

Below is generated by plot.py at 2018-07-10 03:06:40
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 51.274 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 41.462 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.520 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 51.241 ms
Loss rate: 0.35%

Run 3: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-07-10 02:25:27

End at: 2018-07-10 02:25:57

Local clock offset: 3.005 ms

Remote clock offset: 3.46 ms

Below is generated by plot.py at 2018-07-10 03:06:40

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.63 Mbit/s

95th percentile per-packet one-way delay: 66.633 ms

Loss rate: 0.10%

-- Flow 1:

Average throughput: 1.87 Mbit/s

95th percentile per-packet one-way delay: 71.050 ms

Loss rate: 0.11%

-- Flow 2:

Average throughput: 0.87 Mbit/s

95th percentile per-packet one-way delay: 61.603 ms

Loss rate: 0.04%

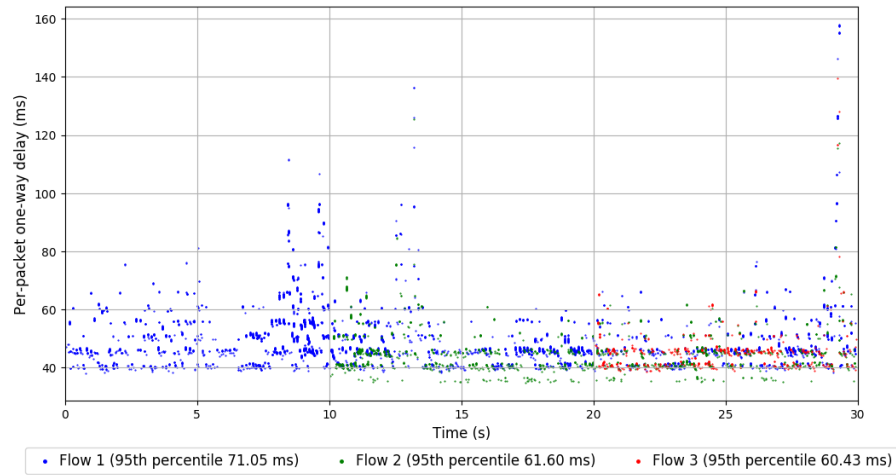
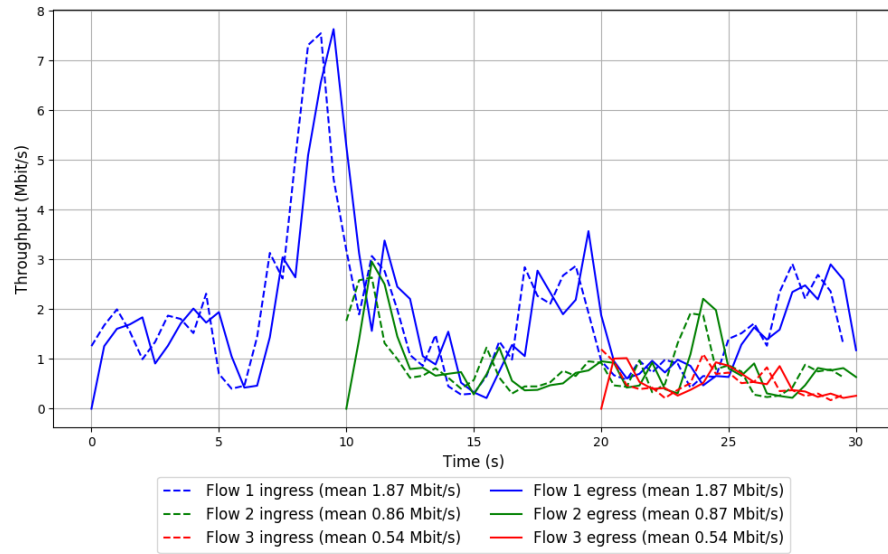
-- Flow 3:

Average throughput: 0.54 Mbit/s

95th percentile per-packet one-way delay: 60.429 ms

Loss rate: 0.22%

Run 1: Report of Sprout — Data Link

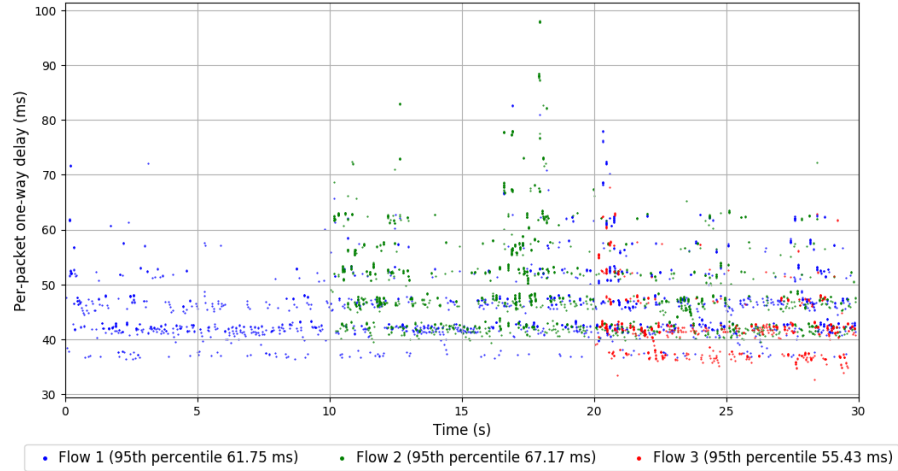
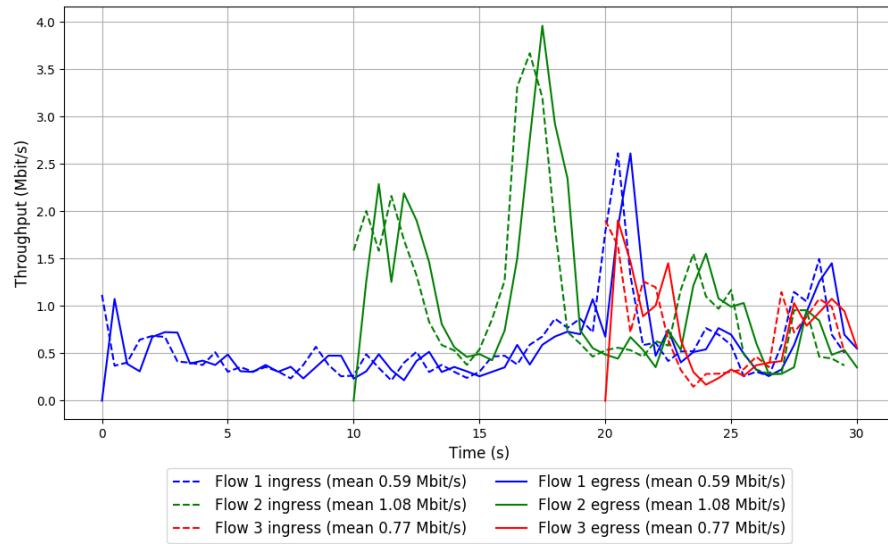


Run 2: Statistics of Sprout

Start at: 2018-07-10 02:44:27
End at: 2018-07-10 02:44:57
Local clock offset: 2.332 ms
Remote clock offset: -0.483 ms

Below is generated by plot.py at 2018-07-10 03:06:40
Datalink statistics
-- Total of 3 flows:
Average throughput: 1.57 Mbit/s
95th percentile per-packet one-way delay: 62.650 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 61.748 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.08 Mbit/s
95th percentile per-packet one-way delay: 67.168 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 0.77 Mbit/s
95th percentile per-packet one-way delay: 55.429 ms
Loss rate: 0.01%

Run 2: Report of Sprout — Data Link

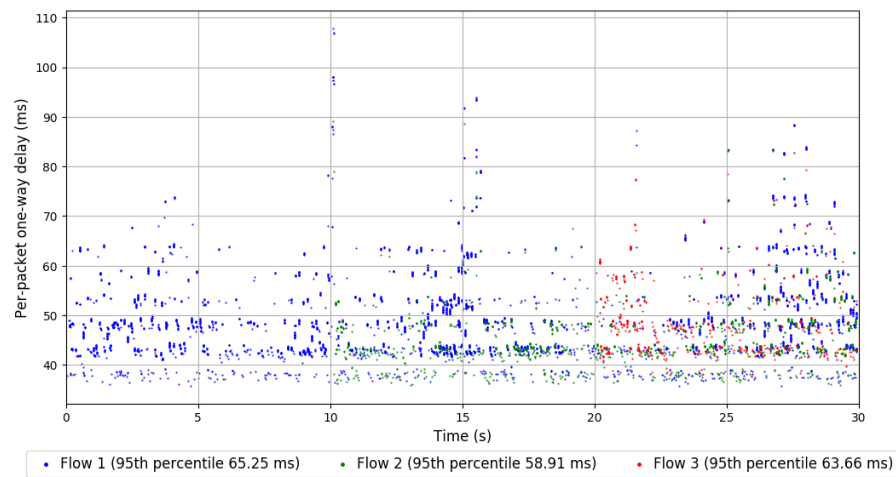
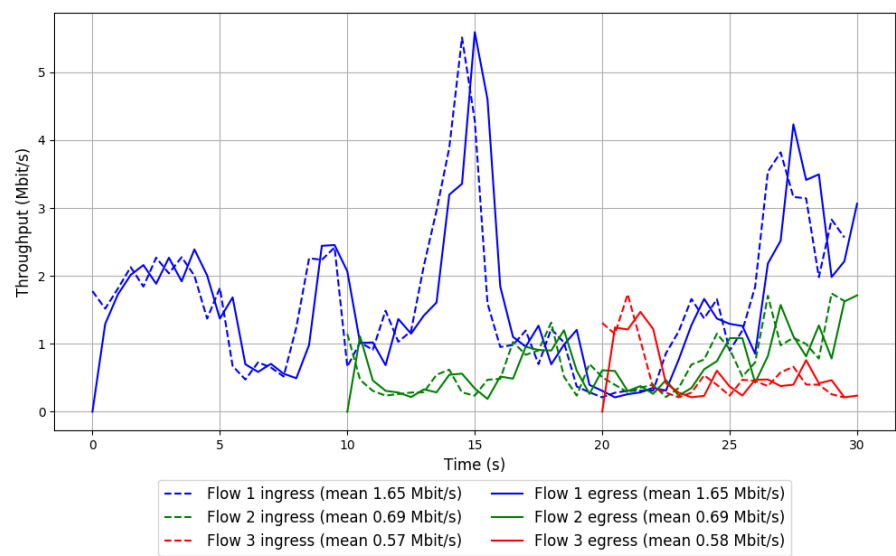


Run 3: Statistics of Sprout

Start at: 2018-07-10 03:03:27
End at: 2018-07-10 03:03:57
Local clock offset: 1.121 ms
Remote clock offset: -2.803 ms

Below is generated by plot.py at 2018-07-10 03:06:40
Datalink statistics
-- Total of 3 flows:
Average throughput: 2.30 Mbit/s
95th percentile per-packet one-way delay: 63.876 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 1.65 Mbit/s
95th percentile per-packet one-way delay: 65.247 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 58.912 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 63.661 ms
Loss rate: 0.17%

Run 3: Report of Sprout — Data Link

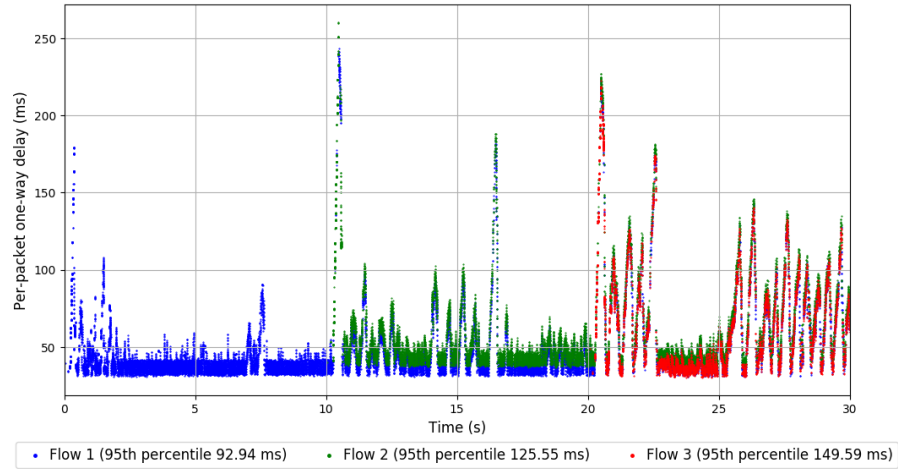
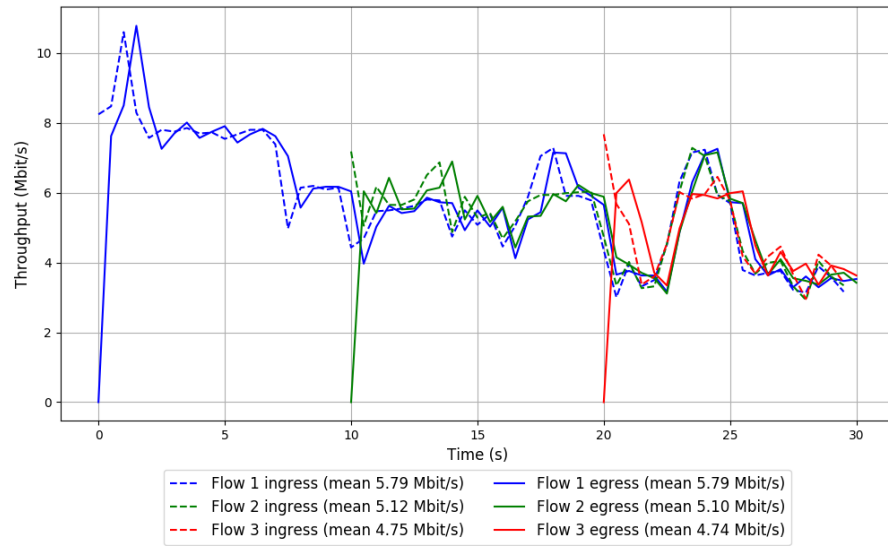


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-07-10 02:23:12
End at: 2018-07-10 02:23:42
Local clock offset: 2.64 ms
Remote clock offset: 2.742 ms

# Below is generated by plot.py at 2018-07-10 03:06:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.76 Mbit/s
95th percentile per-packet one-way delay: 112.843 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 5.79 Mbit/s
95th percentile per-packet one-way delay: 92.941 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 5.10 Mbit/s
95th percentile per-packet one-way delay: 125.552 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 4.74 Mbit/s
95th percentile per-packet one-way delay: 149.593 ms
Loss rate: 0.52%
```

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

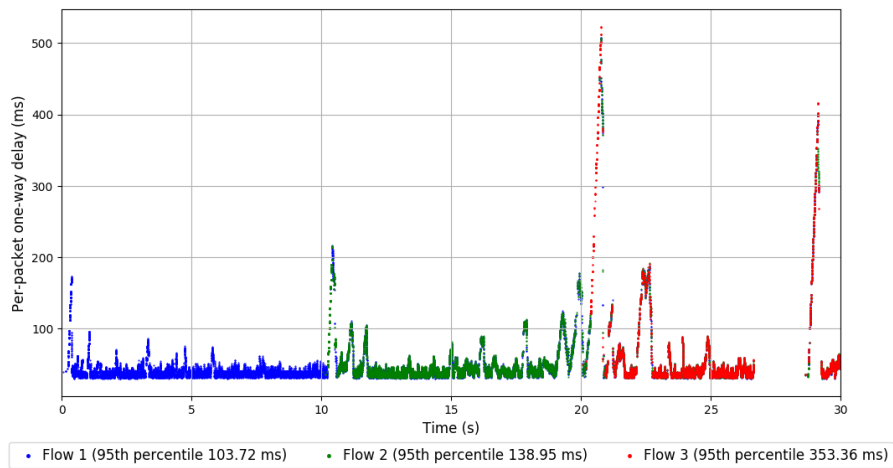
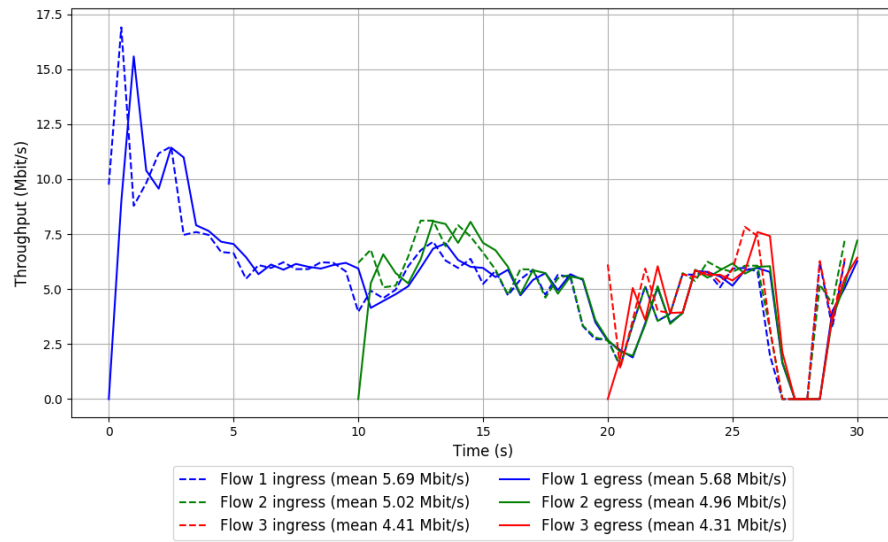


Run 2: Statistics of TaoVA-100x

Start at: 2018-07-10 02:42:12
End at: 2018-07-10 02:42:42
Local clock offset: 1.954 ms
Remote clock offset: -1.656 ms

Below is generated by plot.py at 2018-07-10 03:06:40
Datalink statistics
-- Total of 3 flows:
Average throughput: 10.41 Mbit/s
95th percentile per-packet one-way delay: 148.401 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 5.68 Mbit/s
95th percentile per-packet one-way delay: 103.723 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 4.96 Mbit/s
95th percentile per-packet one-way delay: 138.950 ms
Loss rate: 1.33%
-- Flow 3:
Average throughput: 4.31 Mbit/s
95th percentile per-packet one-way delay: 353.359 ms
Loss rate: 2.53%

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

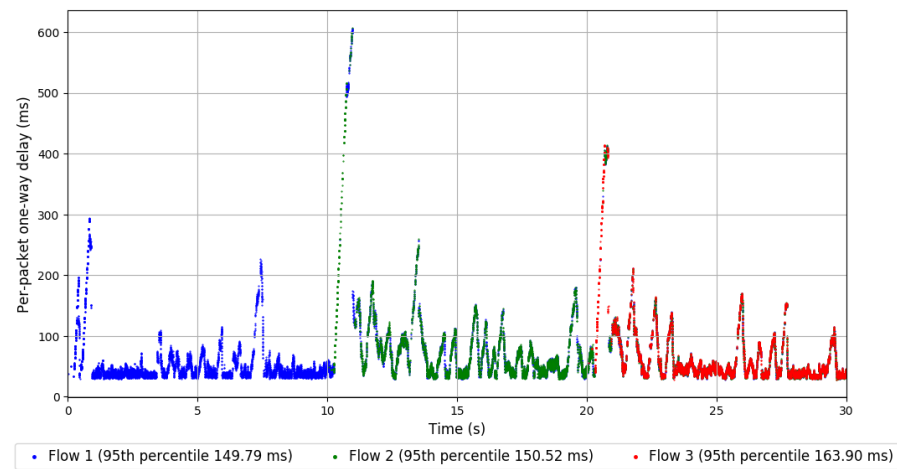
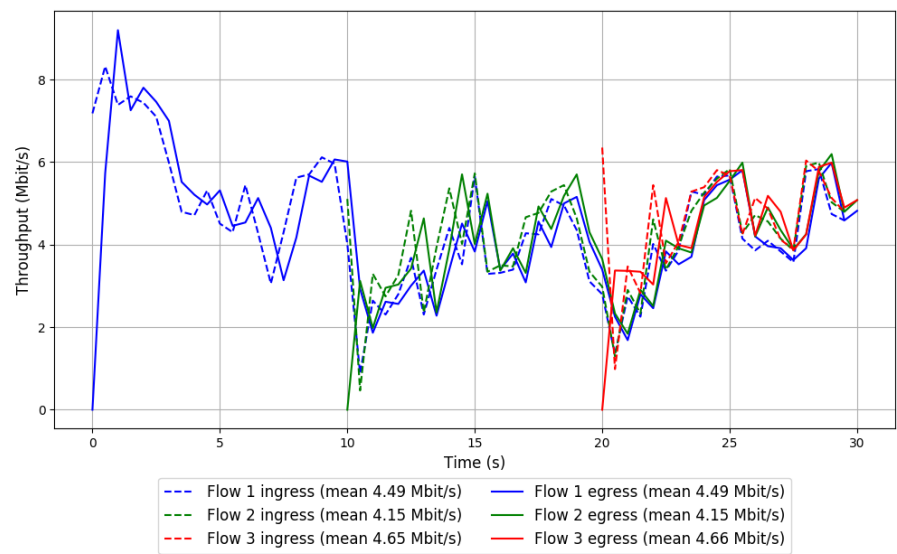


Run 3: Statistics of TaoVA-100x

Start at: 2018-07-10 03:01:12
End at: 2018-07-10 03:01:42
Local clock offset: 3.817 ms
Remote clock offset: -2.765 ms

Below is generated by plot.py at 2018-07-10 03:06:40
Datalink statistics
-- Total of 3 flows:
Average throughput: 8.80 Mbit/s
95th percentile per-packet one-way delay: 151.939 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 4.49 Mbit/s
95th percentile per-packet one-way delay: 149.787 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 4.15 Mbit/s
95th percentile per-packet one-way delay: 150.516 ms
Loss rate: 0.17%
-- Flow 3:
Average throughput: 4.66 Mbit/s
95th percentile per-packet one-way delay: 163.896 ms
Loss rate: 0.31%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-07-10 02:14:18

End at: 2018-07-10 02:14:48

Local clock offset: 3.763 ms

Remote clock offset: 1.971 ms

Below is generated by plot.py at 2018-07-10 03:06:40

Datalink statistics

-- Total of 3 flows:

Average throughput: 11.77 Mbit/s

95th percentile per-packet one-way delay: 196.688 ms

Loss rate: 0.17%

-- Flow 1:

Average throughput: 6.35 Mbit/s

95th percentile per-packet one-way delay: 229.627 ms

Loss rate: 0.23%

-- Flow 2:

Average throughput: 4.87 Mbit/s

95th percentile per-packet one-way delay: 166.926 ms

Loss rate: 0.16%

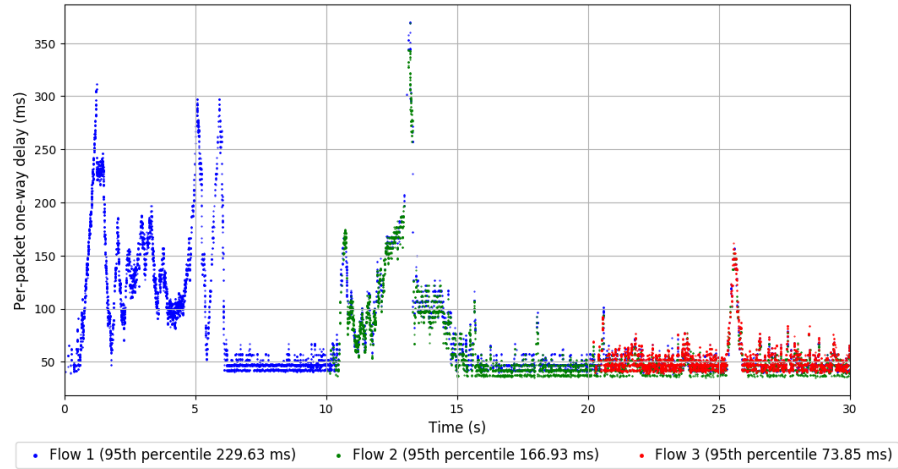
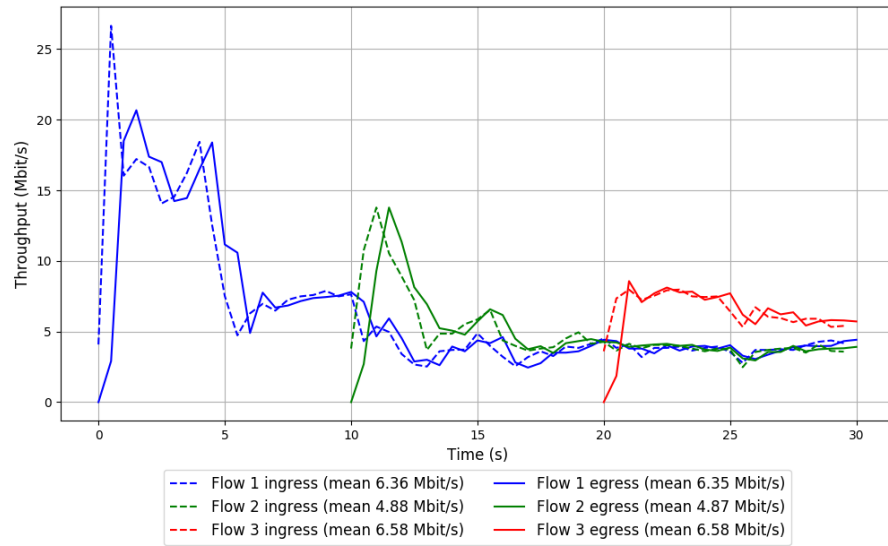
-- Flow 3:

Average throughput: 6.58 Mbit/s

95th percentile per-packet one-way delay: 73.849 ms

Loss rate: 0.00%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-07-10 02:33:16

End at: 2018-07-10 02:33:46

Local clock offset: 1.792 ms

Remote clock offset: 0.113 ms

Below is generated by plot.py at 2018-07-10 03:06:40

Datalink statistics

-- Total of 3 flows:

Average throughput: 7.42 Mbit/s

95th percentile per-packet one-way delay: 149.596 ms

Loss rate: 0.12%

-- Flow 1:

Average throughput: 3.44 Mbit/s

95th percentile per-packet one-way delay: 119.862 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 3.69 Mbit/s

95th percentile per-packet one-way delay: 153.701 ms

Loss rate: 0.11%

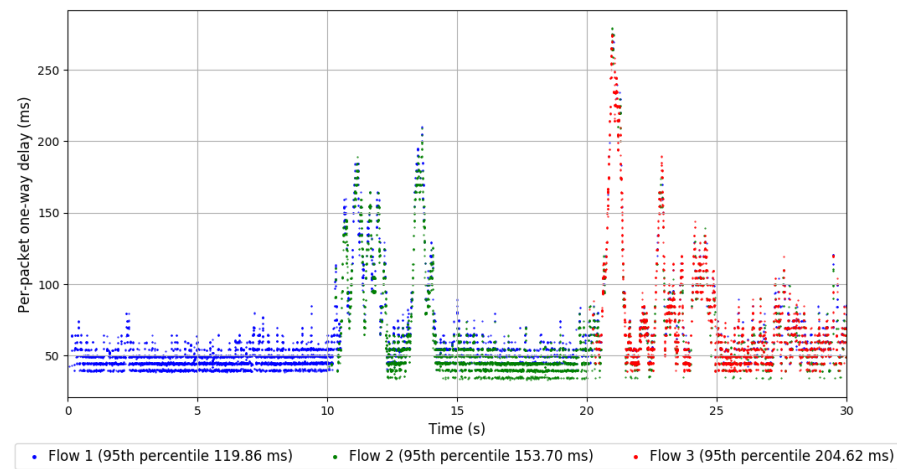
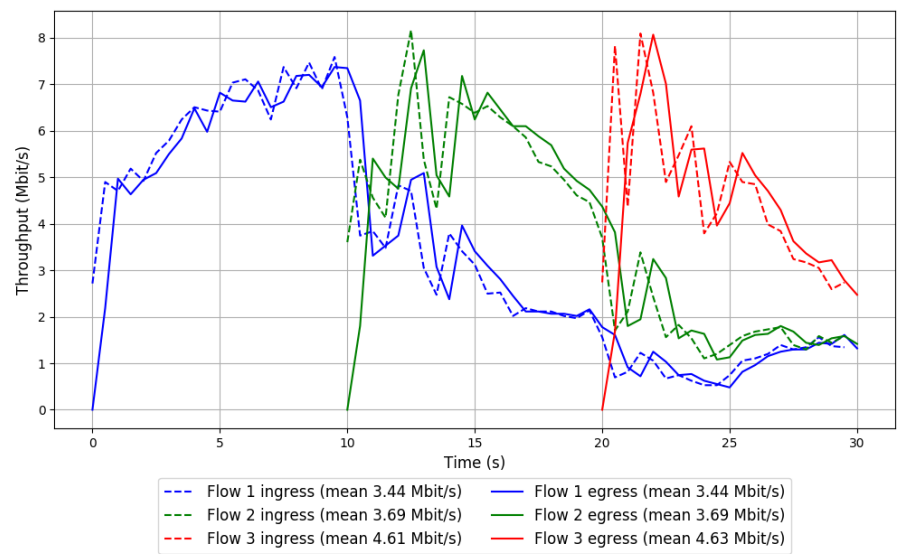
-- Flow 3:

Average throughput: 4.63 Mbit/s

95th percentile per-packet one-way delay: 204.616 ms

Loss rate: 0.37%

Run 2: Report of TCP Vegas — Data Link

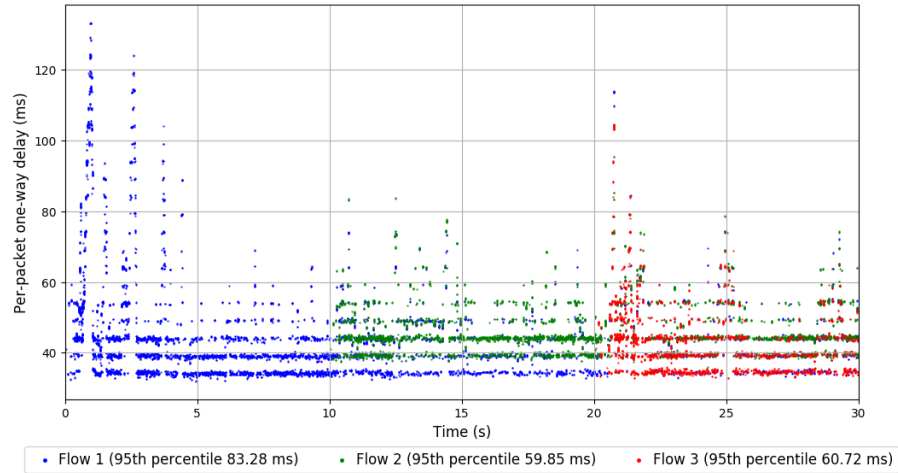
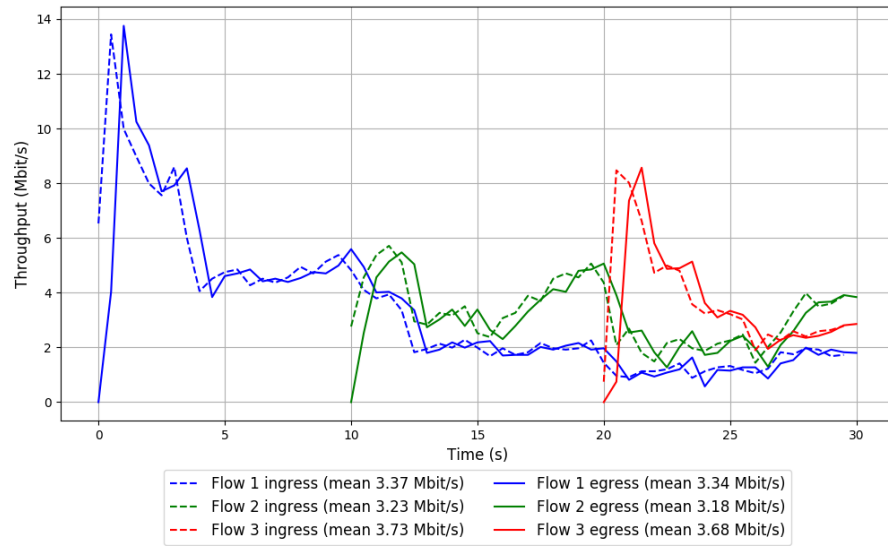


Run 3: Statistics of TCP Vegas

Start at: 2018-07-10 02:52:19
End at: 2018-07-10 02:52:49
Local clock offset: 2.156 ms
Remote clock offset: -2.249 ms

Below is generated by plot.py at 2018-07-10 03:06:40
Datalink statistics
-- Total of 3 flows:
Average throughput: 6.68 Mbit/s
95th percentile per-packet one-way delay: 68.255 ms
Loss rate: 1.21%
-- Flow 1:
Average throughput: 3.34 Mbit/s
95th percentile per-packet one-way delay: 83.282 ms
Loss rate: 0.84%
-- Flow 2:
Average throughput: 3.18 Mbit/s
95th percentile per-packet one-way delay: 59.851 ms
Loss rate: 1.43%
-- Flow 3:
Average throughput: 3.68 Mbit/s
95th percentile per-packet one-way delay: 60.720 ms
Loss rate: 1.84%

Run 3: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-07-10 02:09:45

End at: 2018-07-10 02:10:15

Local clock offset: 1.567 ms

Remote clock offset: 0.744 ms

Below is generated by plot.py at 2018-07-10 03:06:50

Datalink statistics

-- Total of 3 flows:

Average throughput: 19.00 Mbit/s

95th percentile per-packet one-way delay: 585.786 ms

Loss rate: 0.85%

-- Flow 1:

Average throughput: 13.15 Mbit/s

95th percentile per-packet one-way delay: 577.091 ms

Loss rate: 0.97%

-- Flow 2:

Average throughput: 6.75 Mbit/s

95th percentile per-packet one-way delay: 610.887 ms

Loss rate: 0.21%

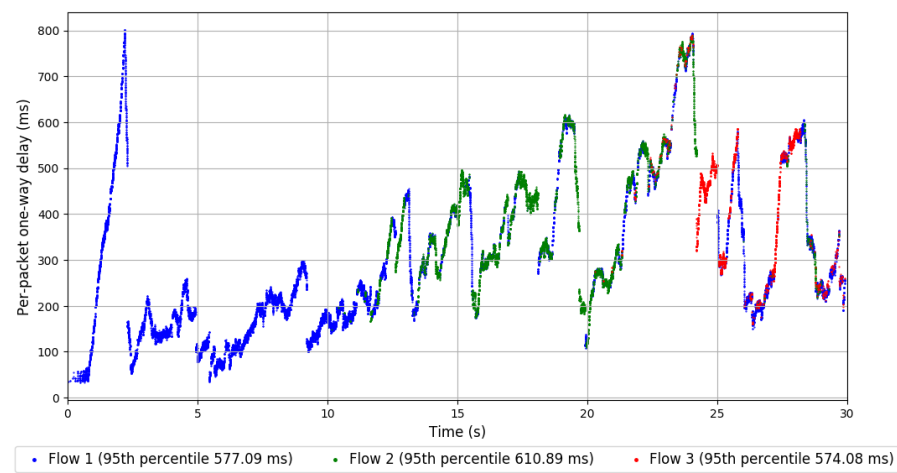
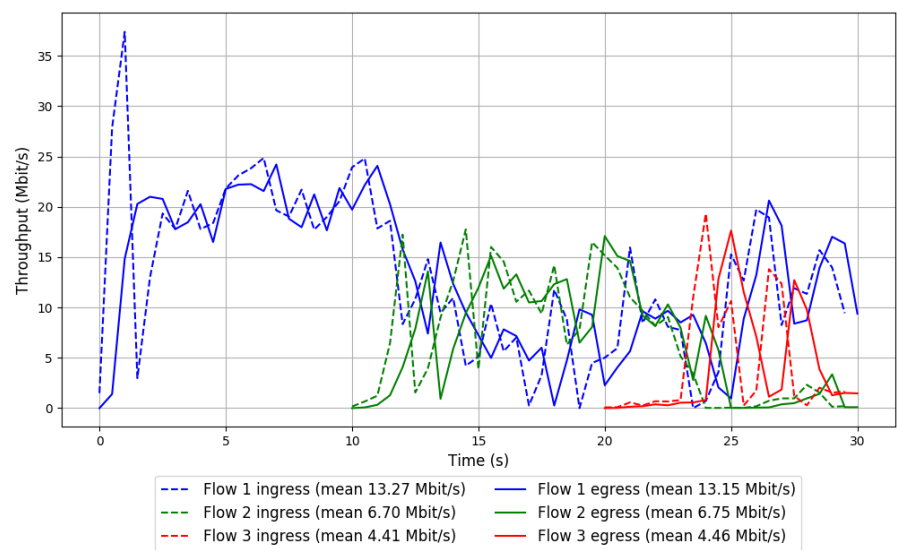
-- Flow 3:

Average throughput: 4.46 Mbit/s

95th percentile per-packet one-way delay: 574.083 ms

Loss rate: 1.63%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2018-07-10 02:28:48

End at: 2018-07-10 02:29:18

Local clock offset: 3.155 ms

Remote clock offset: 1.0 ms

Below is generated by plot.py at 2018-07-10 03:06:50

Datalink statistics

-- Total of 3 flows:

Average throughput: 10.04 Mbit/s

95th percentile per-packet one-way delay: 939.478 ms

Loss rate: 4.71%

-- Flow 1:

Average throughput: 7.89 Mbit/s

95th percentile per-packet one-way delay: 945.142 ms

Loss rate: 4.52%

-- Flow 2:

Average throughput: 2.59 Mbit/s

95th percentile per-packet one-way delay: 923.267 ms

Loss rate: 3.74%

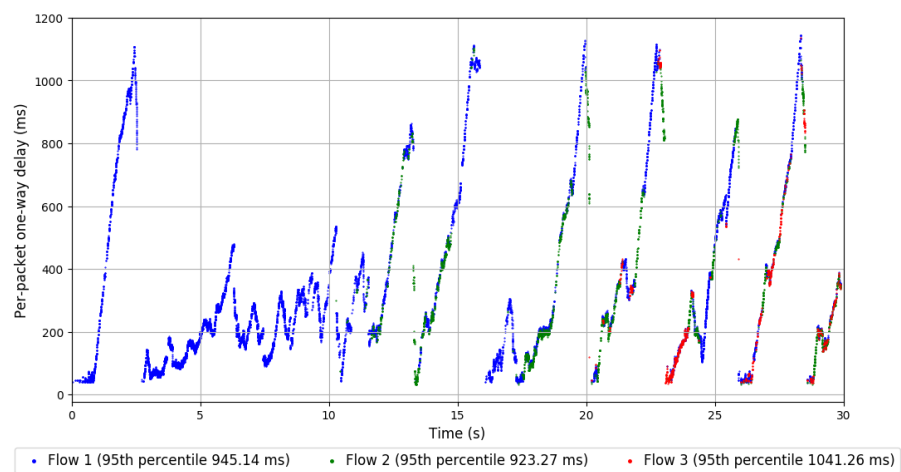
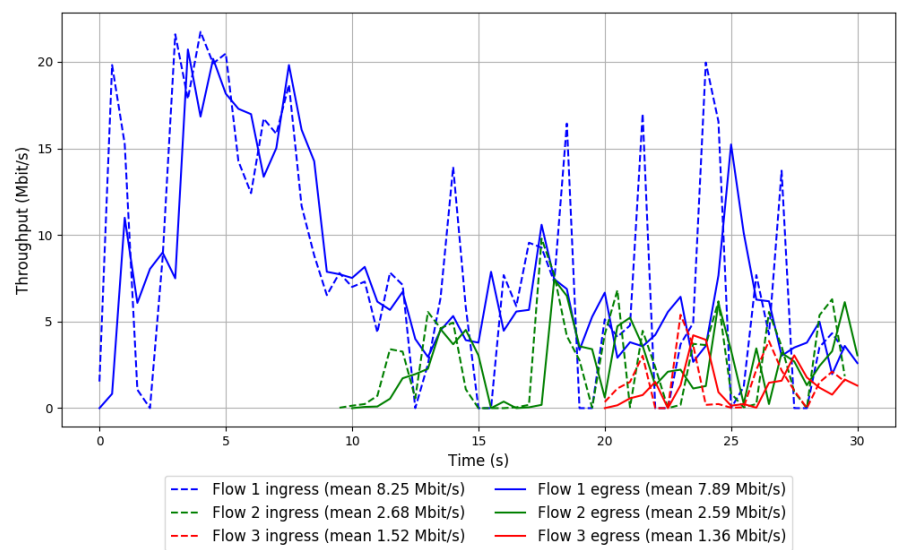
-- Flow 3:

Average throughput: 1.36 Mbit/s

95th percentile per-packet one-way delay: 1041.259 ms

Loss rate: 11.28%

Run 2: Report of Verus — Data Link

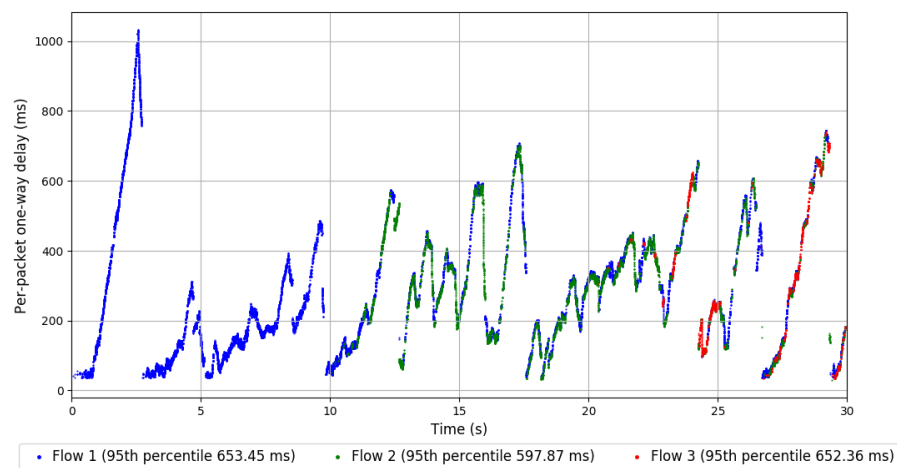
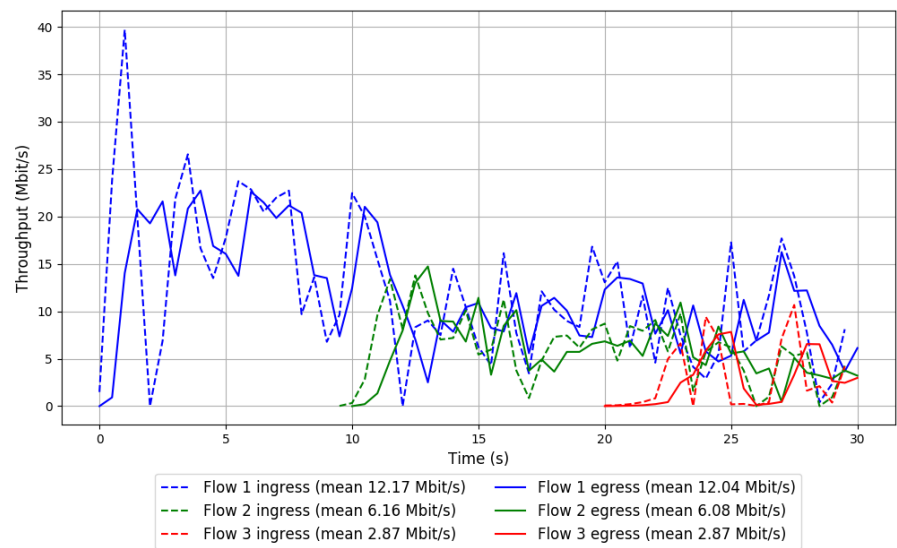


Run 3: Statistics of Verus

Start at: 2018-07-10 02:47:46
End at: 2018-07-10 02:48:16
Local clock offset: 3.457 ms
Remote clock offset: -1.061 ms

Below is generated by plot.py at 2018-07-10 03:06:50
Datalink statistics
-- Total of 3 flows:
Average throughput: 17.01 Mbit/s
95th percentile per-packet one-way delay: 637.534 ms
Loss rate: 1.30%
-- Flow 1:
Average throughput: 12.04 Mbit/s
95th percentile per-packet one-way delay: 653.454 ms
Loss rate: 1.12%
-- Flow 2:
Average throughput: 6.08 Mbit/s
95th percentile per-packet one-way delay: 597.870 ms
Loss rate: 1.44%
-- Flow 3:
Average throughput: 2.87 Mbit/s
95th percentile per-packet one-way delay: 652.362 ms
Loss rate: 2.88%

Run 3: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-07-10 02:15:25

End at: 2018-07-10 02:15:55

Local clock offset: 1.947 ms

Remote clock offset: 1.464 ms

Below is generated by plot.py at 2018-07-10 03:06:50

Datalink statistics

-- Total of 3 flows:

Average throughput: 6.77 Mbit/s

95th percentile per-packet one-way delay: 98.682 ms

Loss rate: 0.11%

-- Flow 1:

Average throughput: 4.25 Mbit/s

95th percentile per-packet one-way delay: 56.449 ms

Loss rate: 0.05%

-- Flow 2:

Average throughput: 2.67 Mbit/s

95th percentile per-packet one-way delay: 155.413 ms

Loss rate: 0.09%

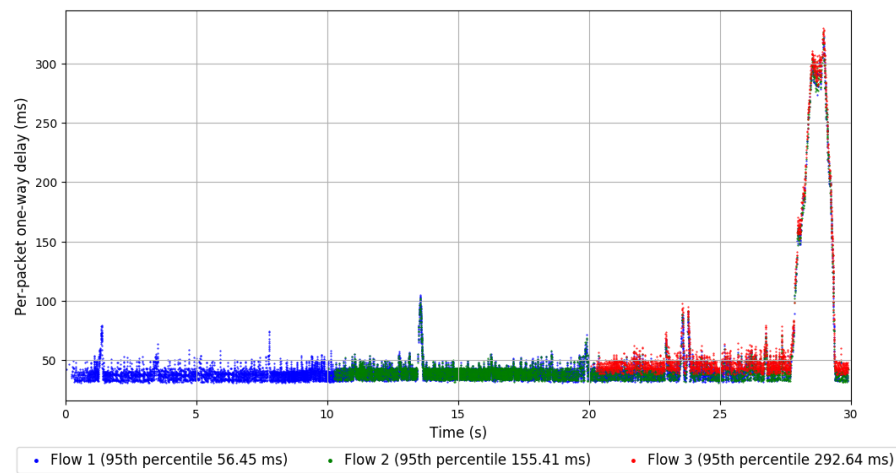
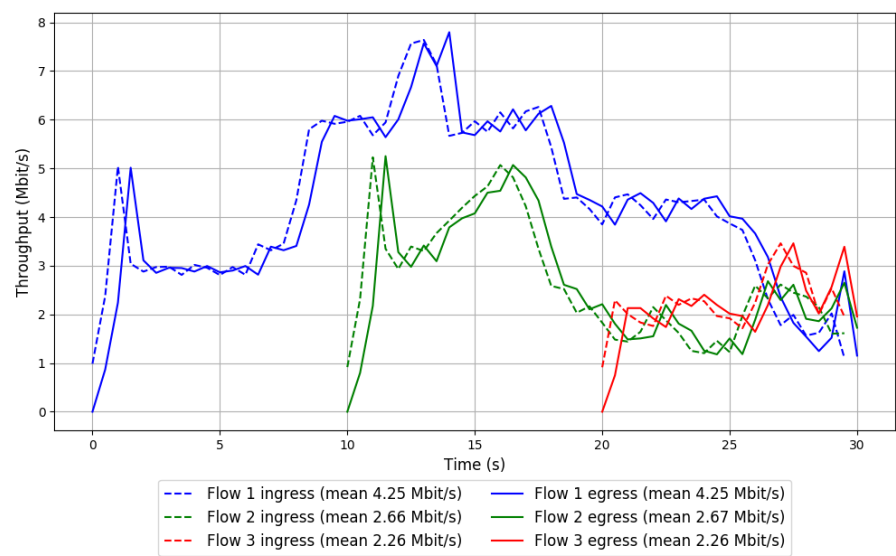
-- Flow 3:

Average throughput: 2.26 Mbit/s

95th percentile per-packet one-way delay: 292.643 ms

Loss rate: 0.52%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-07-10 02:34:22

End at: 2018-07-10 02:34:52

Local clock offset: 4.218 ms

Remote clock offset: 0.199 ms

Below is generated by plot.py at 2018-07-10 03:06:50

Datalink statistics

-- Total of 3 flows:

Average throughput: 7.43 Mbit/s

95th percentile per-packet one-way delay: 179.175 ms

Loss rate: 0.12%

-- Flow 1:

Average throughput: 3.12 Mbit/s

95th percentile per-packet one-way delay: 159.222 ms

Loss rate: 0.04%

-- Flow 2:

Average throughput: 5.51 Mbit/s

95th percentile per-packet one-way delay: 190.288 ms

Loss rate: 0.14%

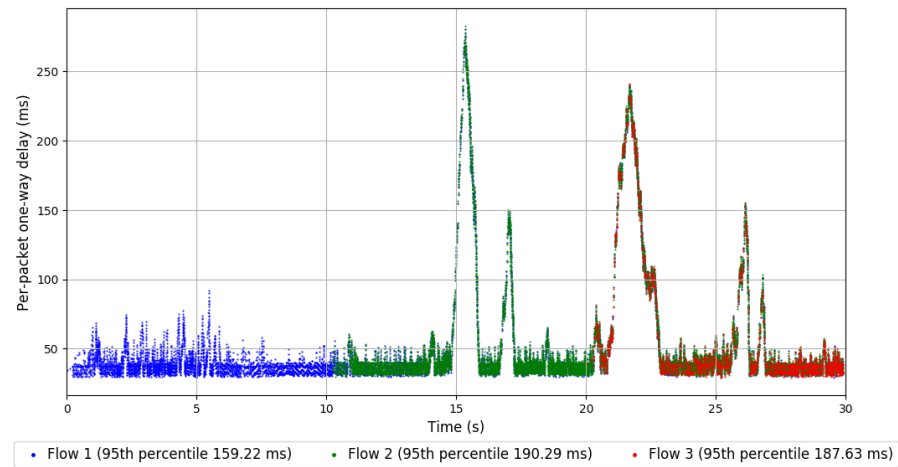
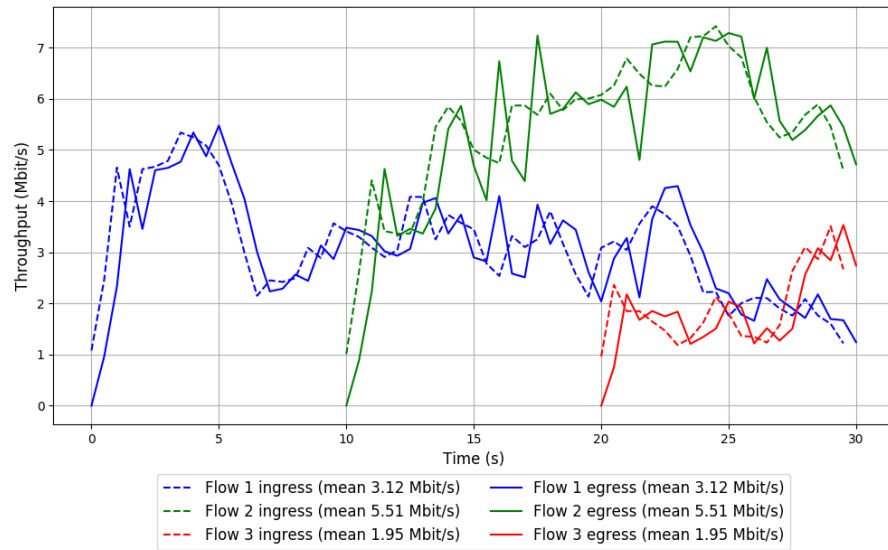
-- Flow 3:

Average throughput: 1.95 Mbit/s

95th percentile per-packet one-way delay: 187.630 ms

Loss rate: 0.42%

Run 2: Report of PCC-Vivace — Data Link

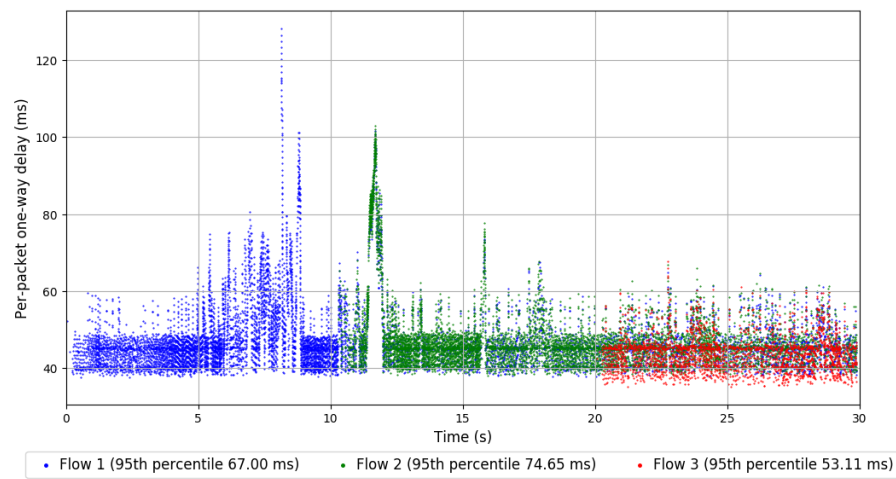
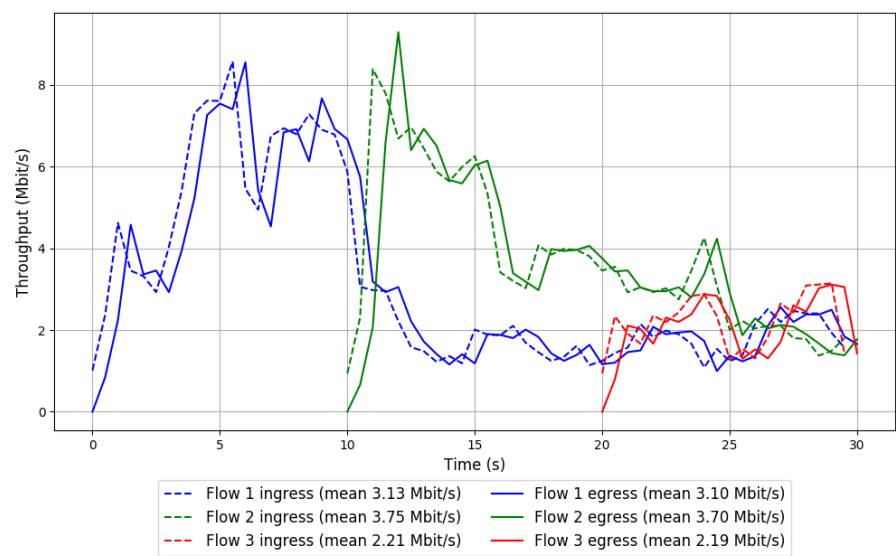


Run 3: Statistics of PCC-Vivace

Start at: 2018-07-10 02:53:25
End at: 2018-07-10 02:53:55
Local clock offset: 1.942 ms
Remote clock offset: -1.736 ms

Below is generated by plot.py at 2018-07-10 03:06:50
Datalink statistics
-- Total of 3 flows:
Average throughput: 6.29 Mbit/s
95th percentile per-packet one-way delay: 66.444 ms
Loss rate: 1.30%
-- Flow 1:
Average throughput: 3.10 Mbit/s
95th percentile per-packet one-way delay: 66.999 ms
Loss rate: 1.05%
-- Flow 2:
Average throughput: 3.70 Mbit/s
95th percentile per-packet one-way delay: 74.649 ms
Loss rate: 1.49%
-- Flow 3:
Average throughput: 2.19 Mbit/s
95th percentile per-packet one-way delay: 53.109 ms
Loss rate: 1.69%

Run 3: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-07-10 02:13:12

End at: 2018-07-10 02:13:42

Local clock offset: 1.273 ms

Remote clock offset: 1.167 ms

Below is generated by plot.py at 2018-07-10 03:06:50

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.37 Mbit/s

95th percentile per-packet one-way delay: 60.615 ms

Loss rate: 0.41%

-- Flow 1:

Average throughput: 1.84 Mbit/s

95th percentile per-packet one-way delay: 54.920 ms

Loss rate: 0.24%

-- Flow 2:

Average throughput: 1.17 Mbit/s

95th percentile per-packet one-way delay: 63.547 ms

Loss rate: 0.45%

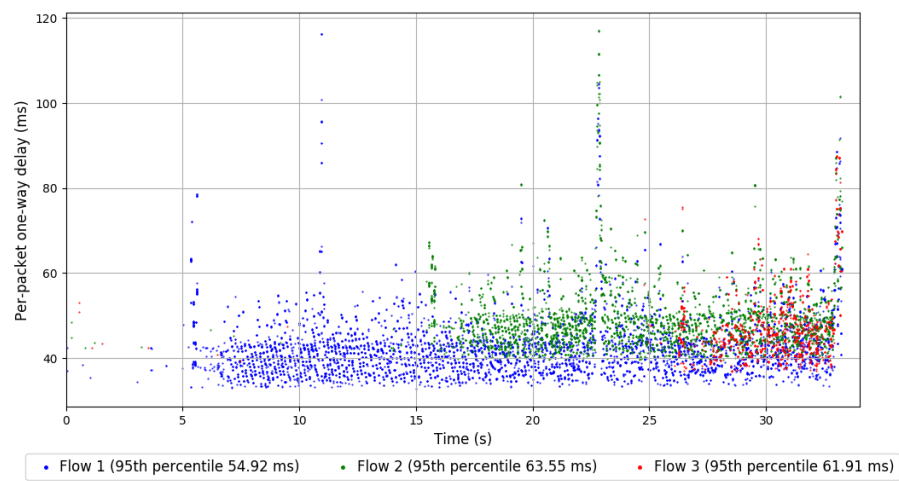
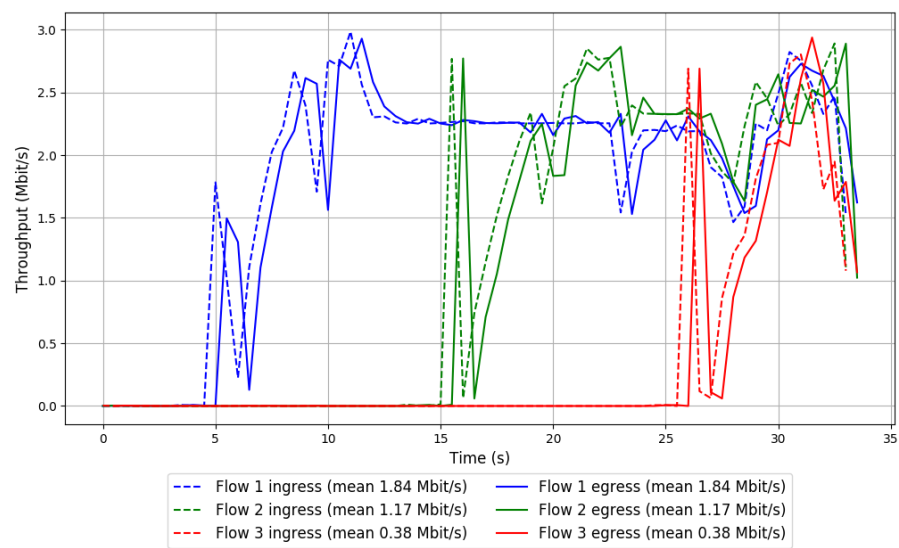
-- Flow 3:

Average throughput: 0.38 Mbit/s

95th percentile per-packet one-way delay: 61.910 ms

Loss rate: 1.14%

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-07-10 02:32:09

End at: 2018-07-10 02:32:39

Local clock offset: 2.791 ms

Remote clock offset: 0.548 ms

Below is generated by plot.py at 2018-07-10 03:06:50

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.18 Mbit/s

95th percentile per-packet one-way delay: 59.386 ms

Loss rate: 0.22%

-- Flow 1:

Average throughput: 1.85 Mbit/s

95th percentile per-packet one-way delay: 58.777 ms

Loss rate: 0.14%

-- Flow 2:

Average throughput: 1.14 Mbit/s

95th percentile per-packet one-way delay: 61.206 ms

Loss rate: 0.40%

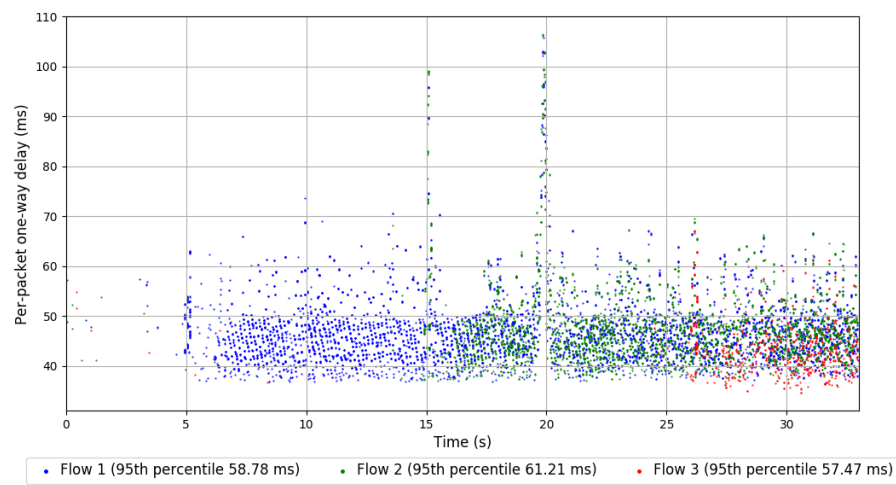
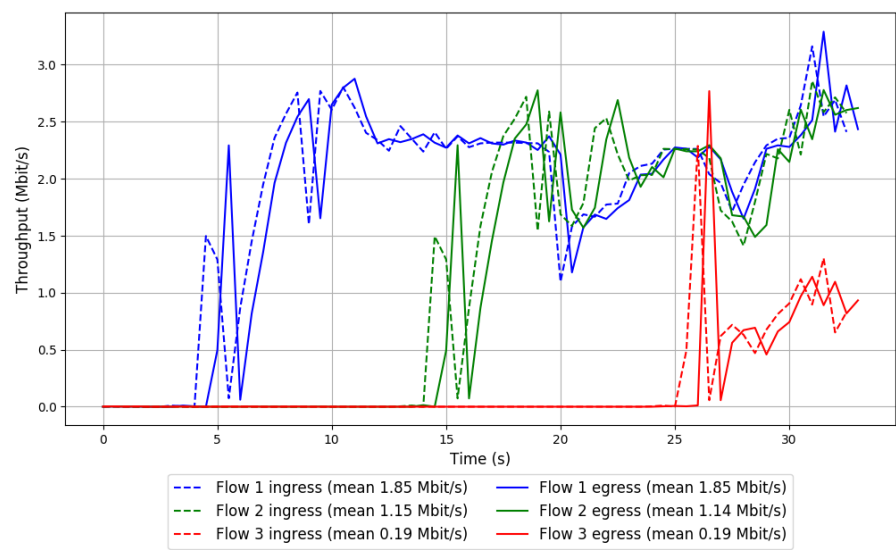
-- Flow 3:

Average throughput: 0.19 Mbit/s

95th percentile per-packet one-way delay: 57.471 ms

Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-07-10 02:51:13
End at: 2018-07-10 02:51:43
Local clock offset: 2.011 ms
Remote clock offset: -0.722 ms

Below is generated by plot.py at 2018-07-10 03:06:50
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.72 Mbit/s
95th percentile per-packet one-way delay: 57.152 ms
Loss rate: 1.09%
-- Flow 1:
Average throughput: 2.00 Mbit/s
95th percentile per-packet one-way delay: 58.361 ms
Loss rate: 0.72%
-- Flow 2:
Average throughput: 1.35 Mbit/s
95th percentile per-packet one-way delay: 54.943 ms
Loss rate: 1.07%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 57.553 ms
Loss rate: 2.98%

Run 3: Report of WebRTC media — Data Link

