

Pantheon Report

Generated at 2018-03-27 00:26:41 (UTC).

Data path: AWS Brazil 2 Ethernet (*local*) → Colombia 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).

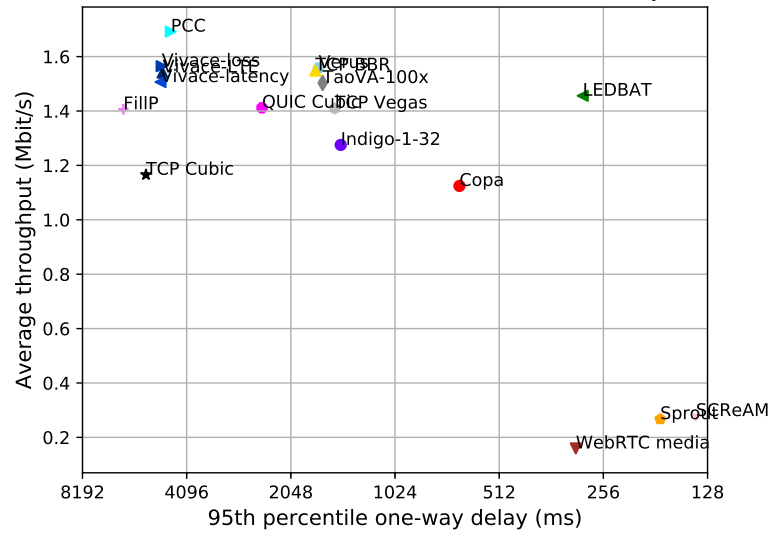
Tested BBR with qdisc of Fair Queuing (**fq**), and other schemes with the default Linux qdisc (**pfifo_fast**).

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

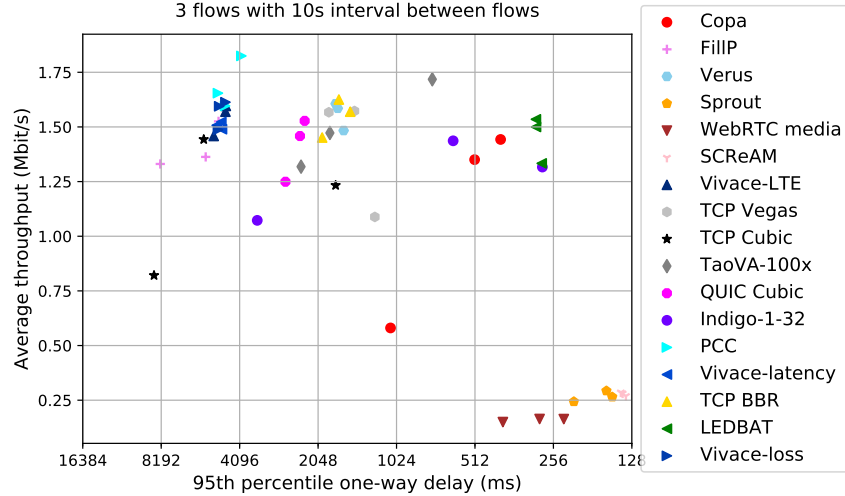
Git summary:

```
branch: master @ 503f51fe03f703a4c0a826a0792a4fead3e7d1b0
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
M datagrump/sender.cc
third_party/fillp @ 828bbf95fd4941149b5cec90f281d1c69ae1a5c6
third_party/genericCC @ 9249eea3238475c4d8cca1443d28df70bff6c4a2
third_party/indigo @ a9b2060d39e4da2e8987e893e3eca2a6c7cd0ab9
third_party/indigo-1-layer-128-unit @ 3ae9e4ef4230db7484501f82ce8b377695f2f66d
third_party/indigo-1-layer-32-unit @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/indigo-1-layer-32-unit-no-calib @ 1f3a7f75b41135ed5b540c0fd3505939528e2a5f
third_party/indigo-no-calib @ 7224f2202e8a044d8306fa0b983ad84360c53d89
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ fb1053193c2861da659ba9013db26744ccfcf993
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/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream @ c3370fd7bd17265a79aeb34e4016ad23f5965885
third_party/sourdough @ f1a14bffe749737437f61b1eae30b267cde681
third_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce
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 @ 7a4ba531e75b4a6f66f5c4580192120401784ce3
third_party/webrtc @ f271183af822eee5d0031620f4bebf38aedc5581
```

test from AWS Brazil 2 Ethernet to Colombia ppp0, 3 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)



test from AWS Brazil 2 Ethernet to Colombia ppp0, 3 runs of 30s each per scheme
3 flows with 10s interval between flows



scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	3	1.00	0.72	0.27	1727.43	1760.65	1258.27	1.07	2.64	5.74
TCP Cubic	3	1.11	0.08	0.06	5366.47	4585.74	5392.83	23.82	39.55	67.80
LEDBAT	3	1.04	0.45	0.36	290.48	297.73	294.98	0.62	1.39	3.64
PCC	3	1.69	0.00	0.00	4551.93	4023.93	4292.75	73.08	6.13	14.74
QUIC Cubic	3	1.10	0.43	0.12	2437.52	2518.72	2607.57	6.19	16.13	32.86
SCReAM	3	0.08	0.21	0.18	132.51	143.14	142.22	0.09	0.07	0.22
WebRTC media	3	0.06	0.06	0.05	354.42	257.79	288.08	0.00	0.02	0.00
Sprout	3	0.13	0.13	0.13	185.14	163.39	179.31	0.01	0.13	0.02
TaoVA-100x	3	0.90	0.63	0.57	1128.21	1914.26	1660.98	2.49	9.48	25.21
TCP Vegas	3	1.07	0.37	0.38	1455.97	1538.39	1478.66	2.62	5.50	16.66
Verus	3	1.54	0.01	0.01	1703.07	1699.21	1638.93	4.83	6.51	9.44
Copa	3	0.71	0.43	0.39	594.66	703.21	712.18	1.31	2.44	2.60
FillP	3	1.40	0.01	0.01	6241.88	5244.40	5062.95	96.29	8.08	83.30
Indigo-1-32	3	0.69	0.54	0.72	460.66	460.59	1835.63	0.08	0.28	3.77
Vivace-latency	3	0.87	0.96	0.00	4828.17	4897.60	4805.60	33.33	43.59	41.28
Vivace-loss	3	1.56	0.00	0.00	4836.18	4840.18	4517.02	28.97	15.41	12.74
Vivace-LTE	3	0.94	0.91	0.00	4775.46	4839.55	4771.34	32.96	47.68	29.89

Run 1: Statistics of TCP BBR

Start at: 2018-03-26 23:29:58

End at: 2018-03-26 23:30:28

Local clock offset: -6.075 ms

Remote clock offset: 2.569 ms

Below is generated by plot.py at 2018-03-27 00:25:59

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.45 Mbit/s

95th percentile per-packet one-way delay: 1975.674 ms

Loss rate: 1.26%

-- Flow 1:

Average throughput: 0.96 Mbit/s

95th percentile per-packet one-way delay: 1964.174 ms

Loss rate: 0.79%

-- Flow 2:

Average throughput: 0.67 Mbit/s

95th percentile per-packet one-way delay: 1985.698 ms

Loss rate: 1.88%

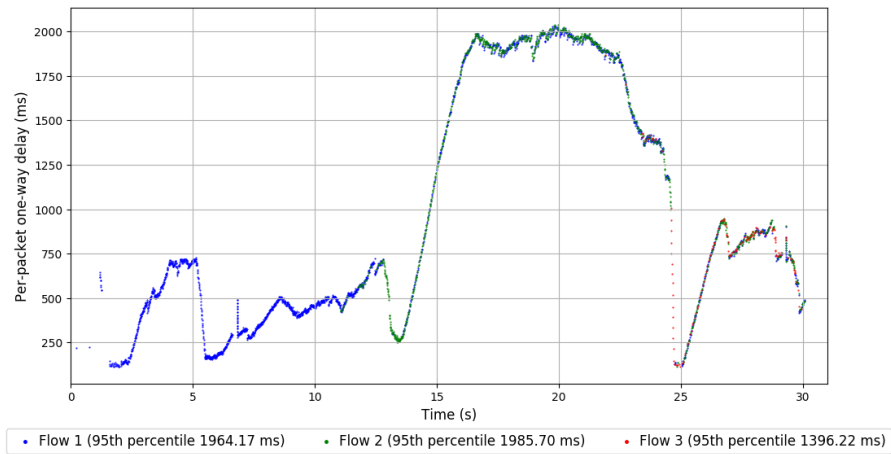
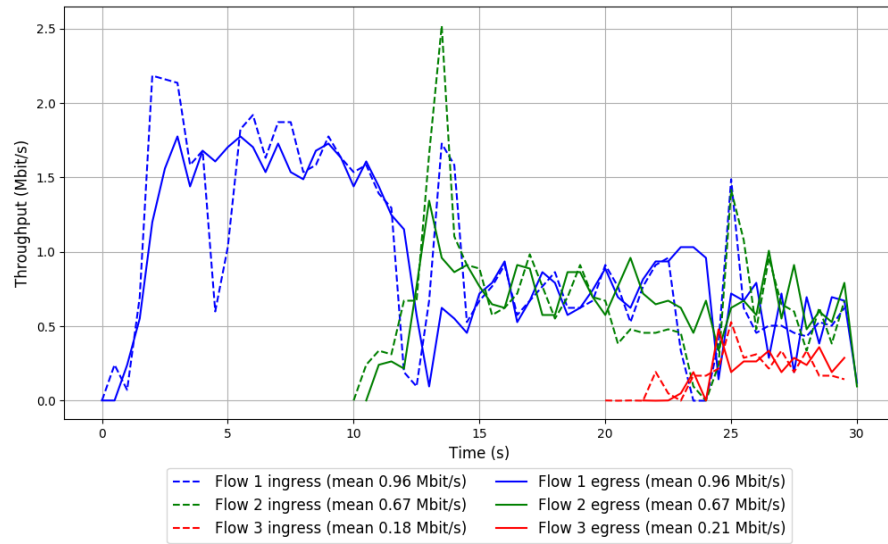
-- Flow 3:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 1396.223 ms

Loss rate: 4.13%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-03-26 23:52:42

End at: 2018-03-26 23:53:12

Local clock offset: -5.592 ms

Remote clock offset: 8.556 ms

Below is generated by plot.py at 2018-03-27 00:26:00

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.63 Mbit/s

95th percentile per-packet one-way delay: 1704.337 ms

Loss rate: 1.89%

-- Flow 1:

Average throughput: 1.06 Mbit/s

95th percentile per-packet one-way delay: 1694.227 ms

Loss rate: 1.12%

-- Flow 2:

Average throughput: 0.74 Mbit/s

95th percentile per-packet one-way delay: 1734.459 ms

Loss rate: 2.65%

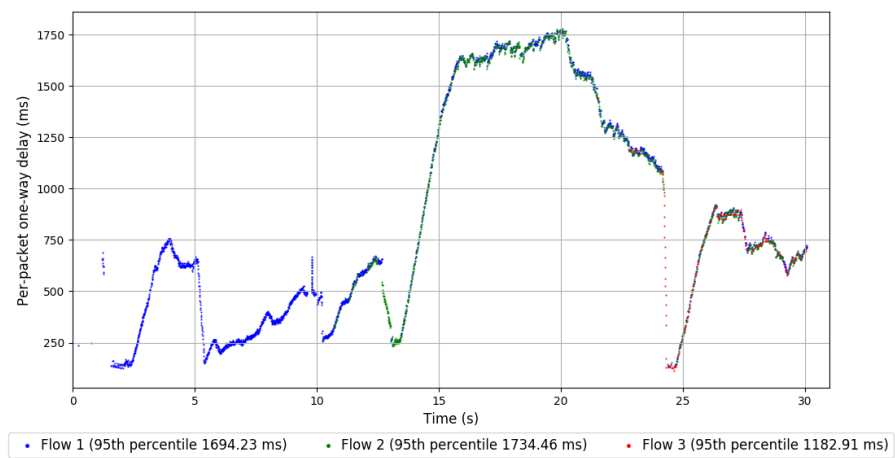
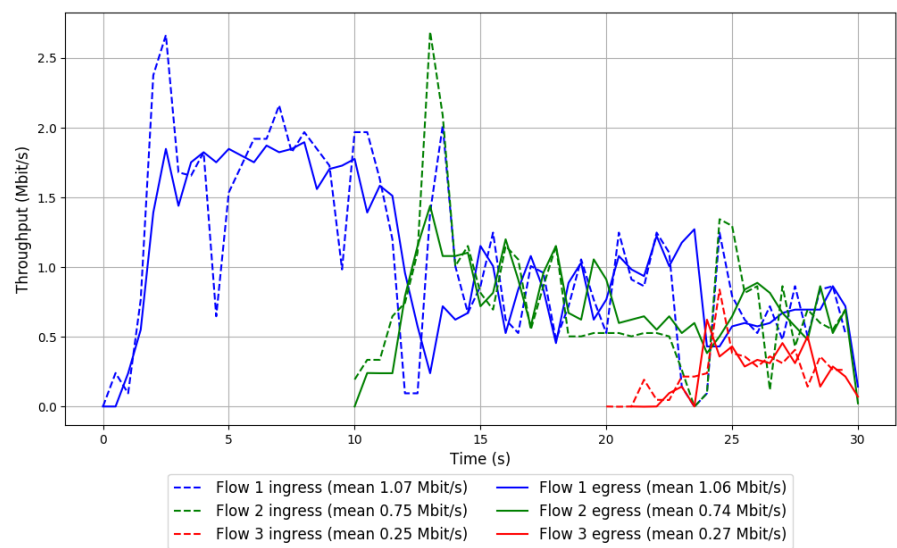
-- Flow 3:

Average throughput: 0.27 Mbit/s

95th percentile per-packet one-way delay: 1182.914 ms

Loss rate: 7.27%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-03-27 00:15:26

End at: 2018-03-27 00:15:56

Local clock offset: -4.128 ms

Remote clock offset: 9.132 ms

Below is generated by plot.py at 2018-03-27 00:26:00

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.57 Mbit/s

95th percentile per-packet one-way delay: 1541.847 ms

Loss rate: 2.28%

-- Flow 1:

Average throughput: 0.97 Mbit/s

95th percentile per-packet one-way delay: 1523.878 ms

Loss rate: 1.31%

-- Flow 2:

Average throughput: 0.76 Mbit/s

95th percentile per-packet one-way delay: 1561.781 ms

Loss rate: 3.39%

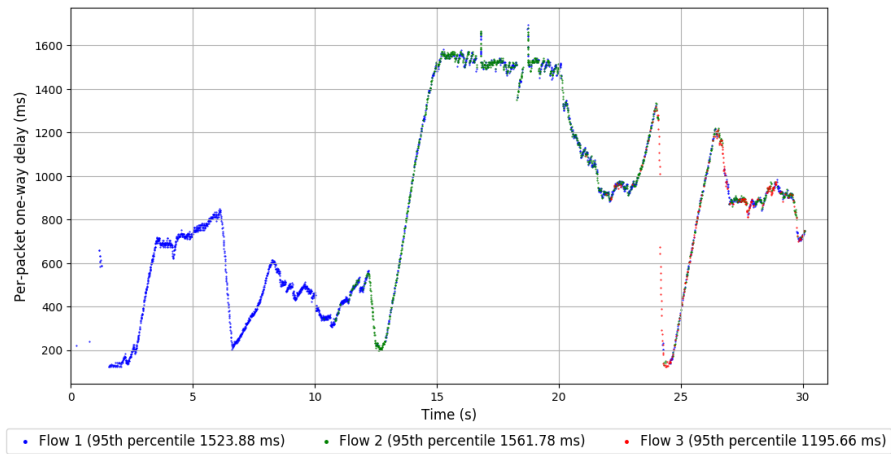
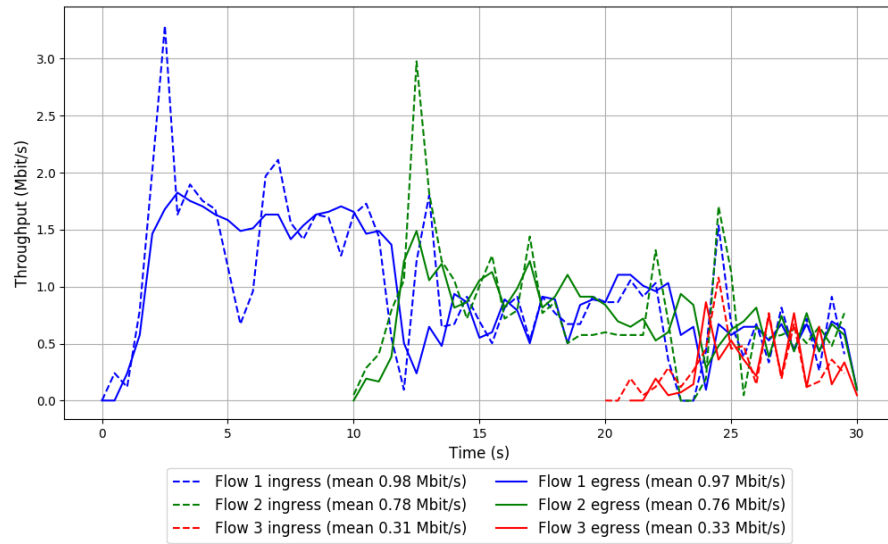
-- Flow 3:

Average throughput: 0.33 Mbit/s

95th percentile per-packet one-way delay: 1195.660 ms

Loss rate: 5.83%

Run 3: Report of TCP BBR — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-03-26 23:38:48

End at: 2018-03-26 23:39:18

Local clock offset: -4.263 ms

Remote clock offset: 8.231 ms

Below is generated by plot.py at 2018-03-27 00:26:00

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.23 Mbit/s

95th percentile per-packet one-way delay: 1753.618 ms

Loss rate: 23.63%

-- Flow 1:

Average throughput: 1.11 Mbit/s

95th percentile per-packet one-way delay: 1754.156 ms

Loss rate: 23.24%

-- Flow 2:

Average throughput: 0.15 Mbit/s

95th percentile per-packet one-way delay: 1953.815 ms

Loss rate: 29.39%

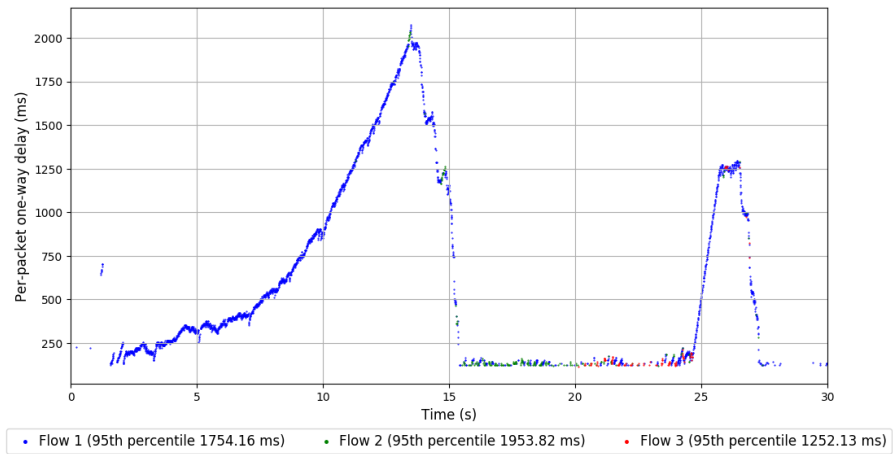
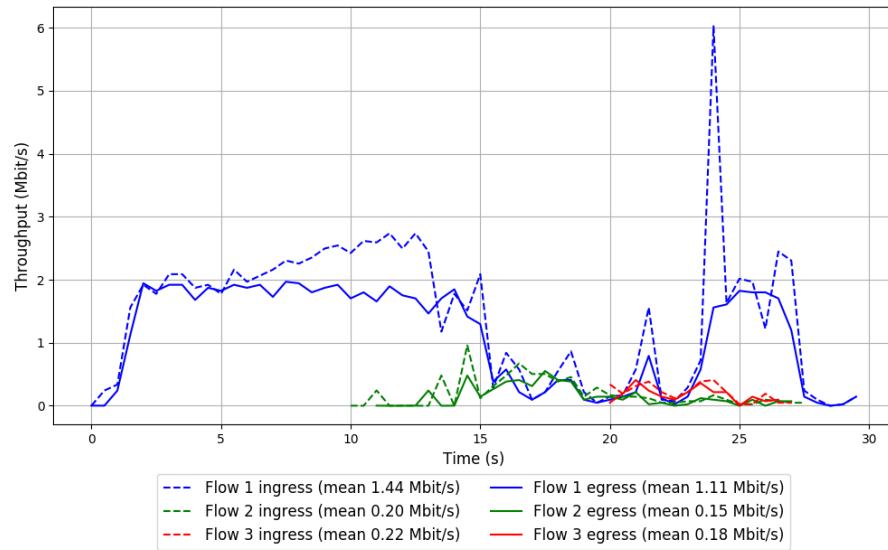
-- Flow 3:

Average throughput: 0.18 Mbit/s

95th percentile per-packet one-way delay: 1252.135 ms

Loss rate: 21.52%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-03-27 00:01:32

End at: 2018-03-27 00:02:02

Local clock offset: -5.607 ms

Remote clock offset: 2.664 ms

Below is generated by plot.py at 2018-03-27 00:26:00

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.82 Mbit/s

95th percentile per-packet one-way delay: 8728.784 ms

Loss rate: 29.04%

-- Flow 1:

Average throughput: 0.81 Mbit/s

95th percentile per-packet one-way delay: 8728.784 ms

Loss rate: 28.46%

-- Flow 2:

Average throughput: 0.04 Mbit/s

95th percentile per-packet one-way delay: 6116.964 ms

Loss rate: 52.83%

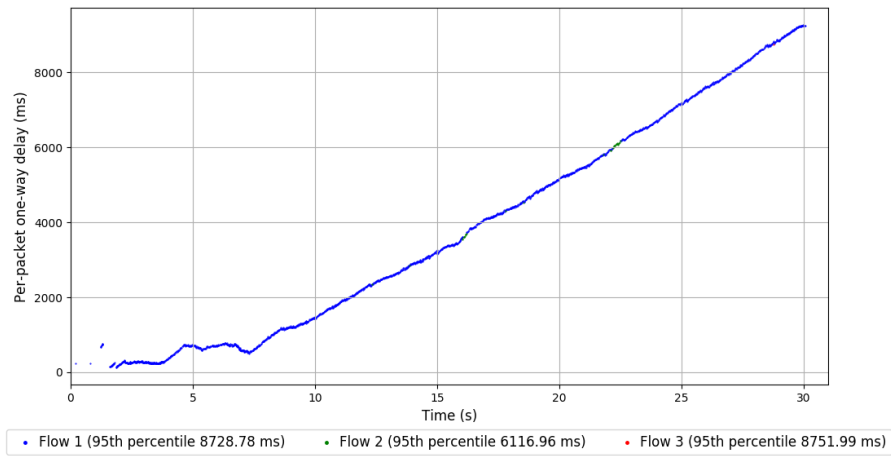
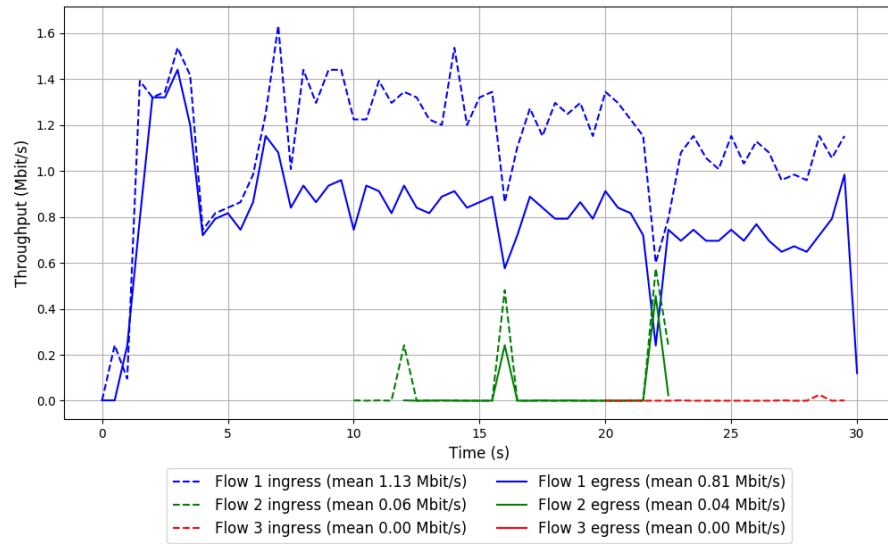
-- Flow 3:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 8751.985 ms

Loss rate: 95.34%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2018-03-27 00:24:15

End at: 2018-03-27 00:24:45

Local clock offset: -1.856 ms

Remote clock offset: 9.168 ms

Below is generated by plot.py at 2018-03-27 00:26:00

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.44 Mbit/s

95th percentile per-packet one-way delay: 5626.230 ms

Loss rate: 20.28%

-- Flow 1:

Average throughput: 1.41 Mbit/s

95th percentile per-packet one-way delay: 5616.481 ms

Loss rate: 19.75%

-- Flow 2:

Average throughput: 0.06 Mbit/s

95th percentile per-packet one-way delay: 5686.449 ms

Loss rate: 36.42%

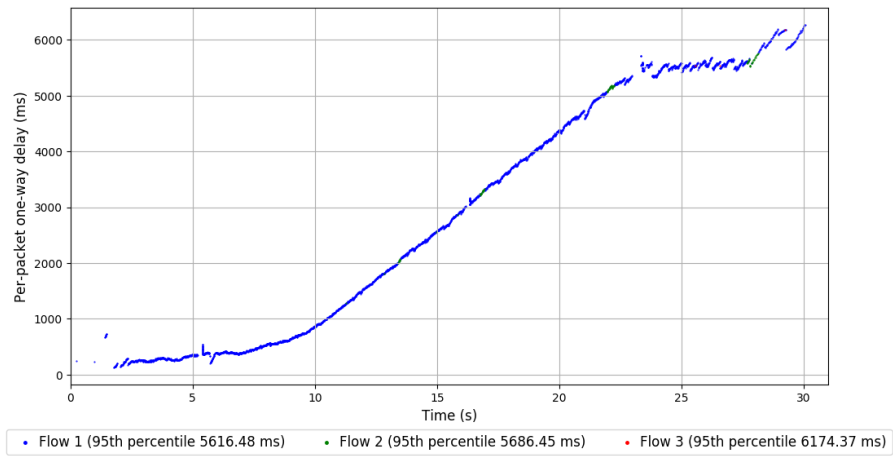
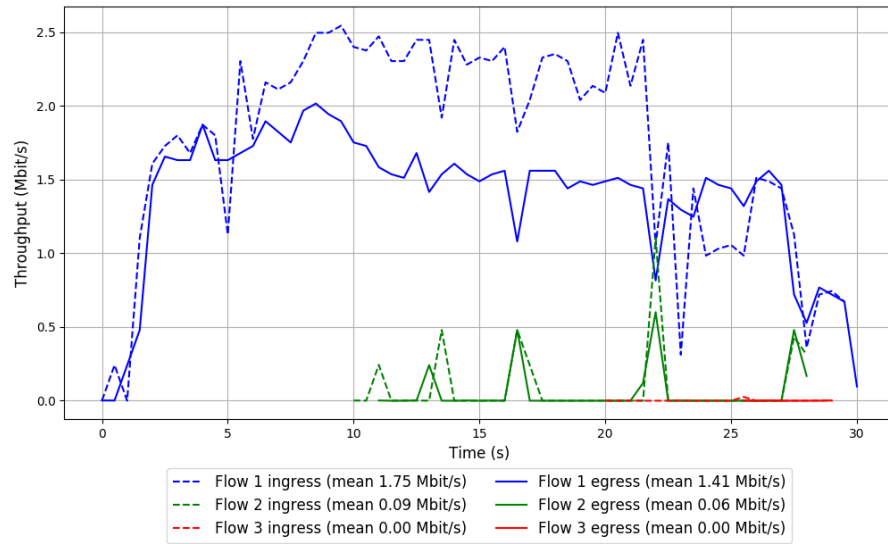
-- Flow 3:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 6174.368 ms

Loss rate: 86.54%

Run 3: Report of TCP Cubic — Data Link

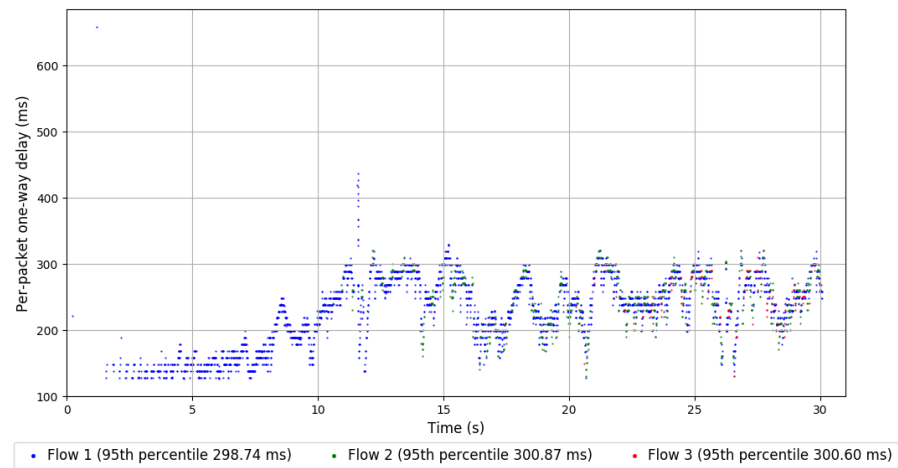
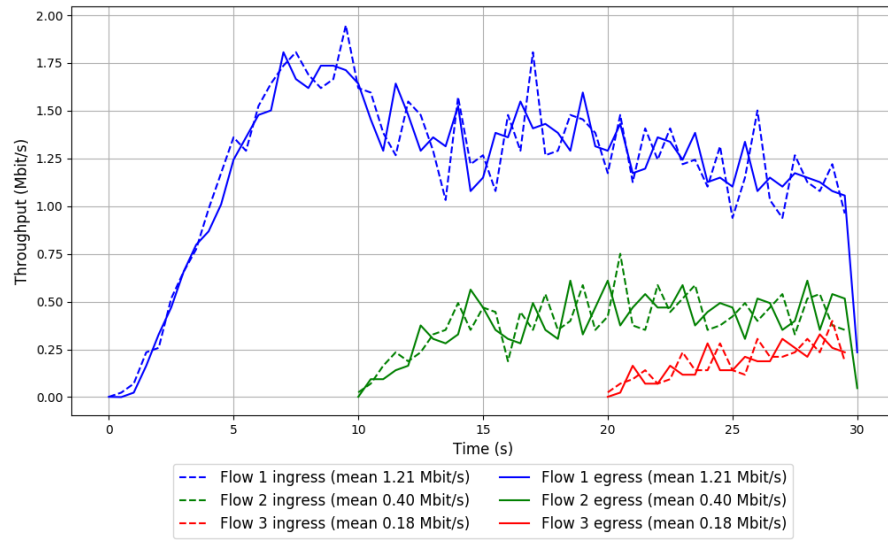


```
Run 1: Statistics of LEDBAT

Start at: 2018-03-26 23:35:01
End at: 2018-03-26 23:35:31
Local clock offset: -6.354 ms
Remote clock offset: 8.108 ms

# Below is generated by plot.py at 2018-03-27 00:26:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.53 Mbit/s
95th percentile per-packet one-way delay: 298.882 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 1.21 Mbit/s
95th percentile per-packet one-way delay: 298.742 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 300.870 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 300.596 ms
Loss rate: 4.51%
```


Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-03-26 23:57:45

End at: 2018-03-26 23:58:15

Local clock offset: -5.591 ms

Remote clock offset: 8.562 ms

Below is generated by plot.py at 2018-03-27 00:26:00

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.33 Mbit/s

95th percentile per-packet one-way delay: 283.935 ms

Loss rate: 1.68%

-- Flow 1:

Average throughput: 0.93 Mbit/s

95th percentile per-packet one-way delay: 284.000 ms

Loss rate: 1.29%

-- Flow 2:

Average throughput: 0.37 Mbit/s

95th percentile per-packet one-way delay: 283.833 ms

Loss rate: 3.41%

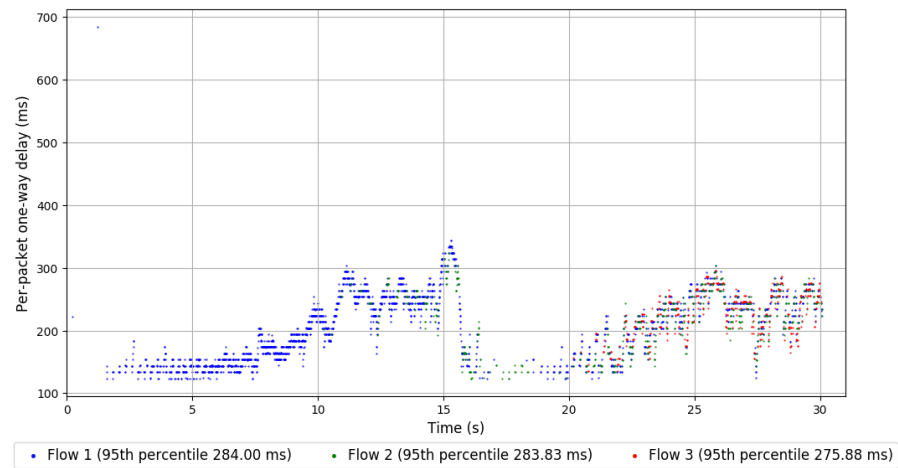
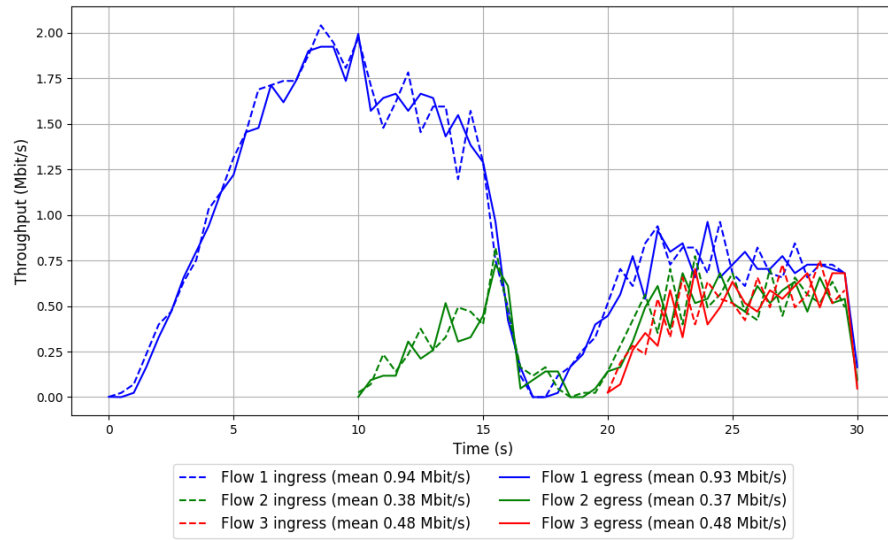
-- Flow 3:

Average throughput: 0.48 Mbit/s

95th percentile per-packet one-way delay: 275.879 ms

Loss rate: 1.23%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-03-27 00:20:28

End at: 2018-03-27 00:20:58

Local clock offset: 8.078 ms

Remote clock offset: 9.201 ms

Below is generated by plot.py at 2018-03-27 00:26:02

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.50 Mbit/s

95th percentile per-packet one-way delay: 298.579 ms

Loss rate: 0.75%

-- Flow 1:

Average throughput: 0.98 Mbit/s

95th percentile per-packet one-way delay: 288.696 ms

Loss rate: 0.16%

-- Flow 2:

Average throughput: 0.57 Mbit/s

95th percentile per-packet one-way delay: 308.475 ms

Loss rate: 0.62%

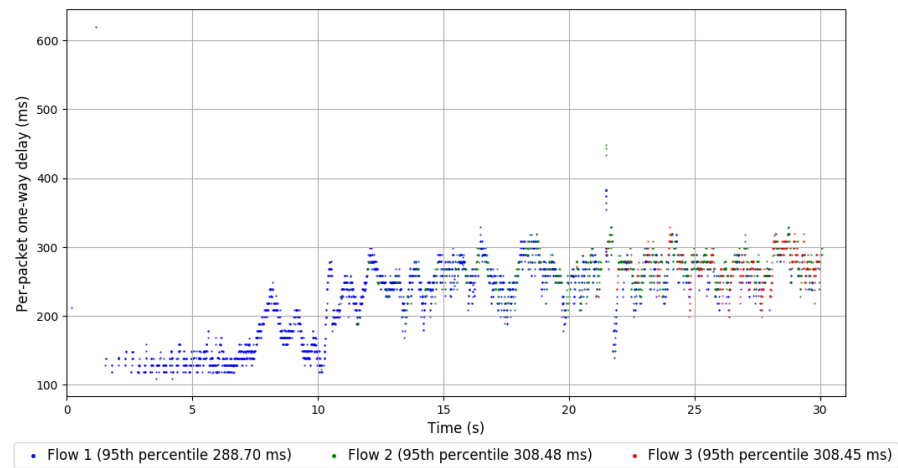
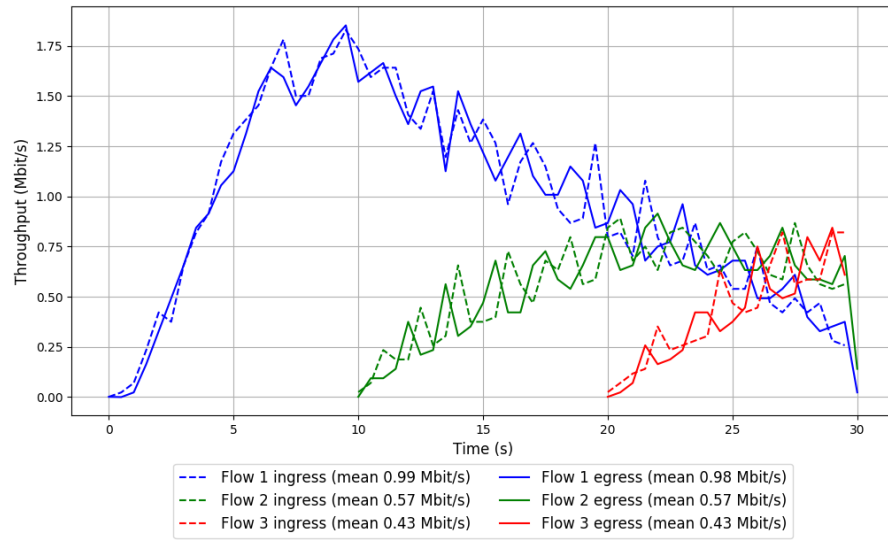
-- Flow 3:

Average throughput: 0.43 Mbit/s

95th percentile per-packet one-way delay: 308.452 ms

Loss rate: 5.18%

Run 3: Report of LEDBAT — Data Link

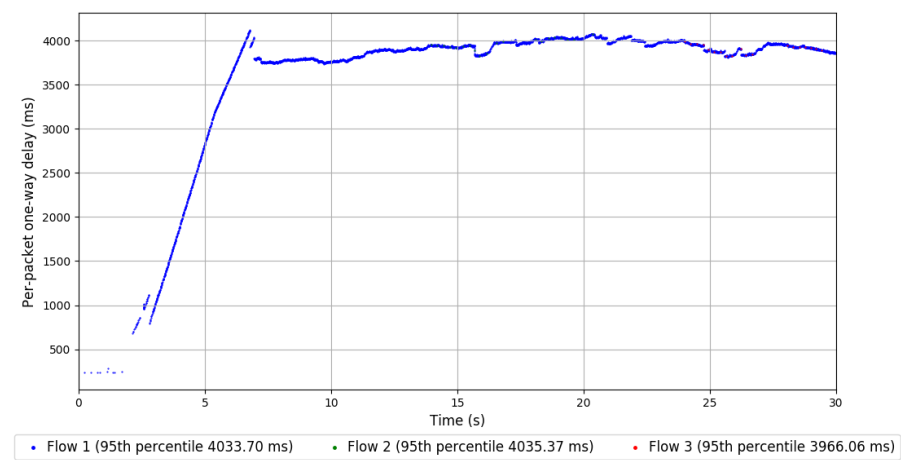
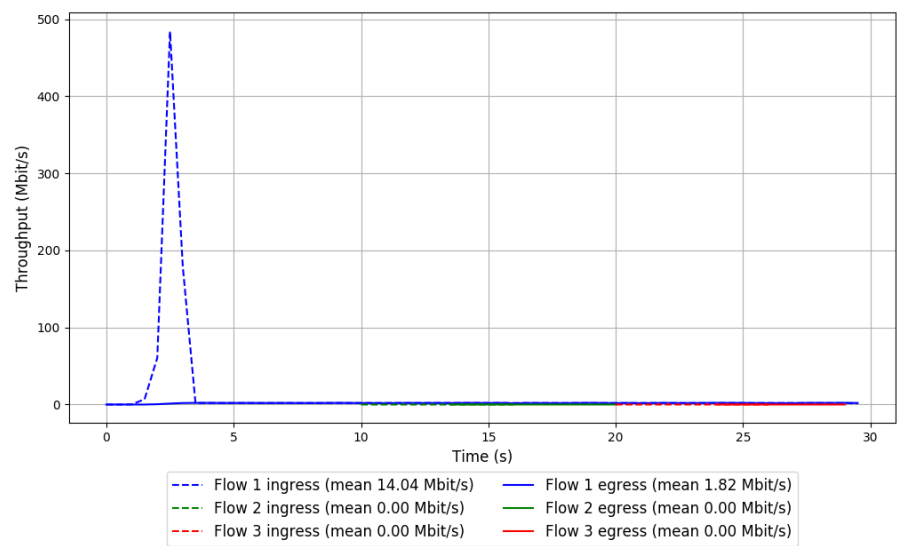


```
Run 1: Statistics of PCC

Start at: 2018-03-26 23:36:16
End at: 2018-03-26 23:36:46
Local clock offset: -6.441 ms
Remote clock offset: 8.285 ms

# Below is generated by plot.py at 2018-03-27 00:26:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 4033.702 ms
Loss rate: 87.06%
-- Flow 1:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 4033.702 ms
Loss rate: 87.07%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 4035.373 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 3966.057 ms
Loss rate: 5.60%
```

Run 1: Report of PCC — Data Link



Run 2: Statistics of PCC

Start at: 2018-03-26 23:59:00

End at: 2018-03-26 23:59:30

Local clock offset: -5.42 ms

Remote clock offset: 8.544 ms

Below is generated by plot.py at 2018-03-27 00:26:12

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.65 Mbit/s

95th percentile per-packet one-way delay: 4961.537 ms

Loss rate: 65.21%

-- Flow 1:

Average throughput: 1.65 Mbit/s

95th percentile per-packet one-way delay: 4964.542 ms

Loss rate: 65.23%

-- Flow 2:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 3376.159 ms

Loss rate: 18.39%

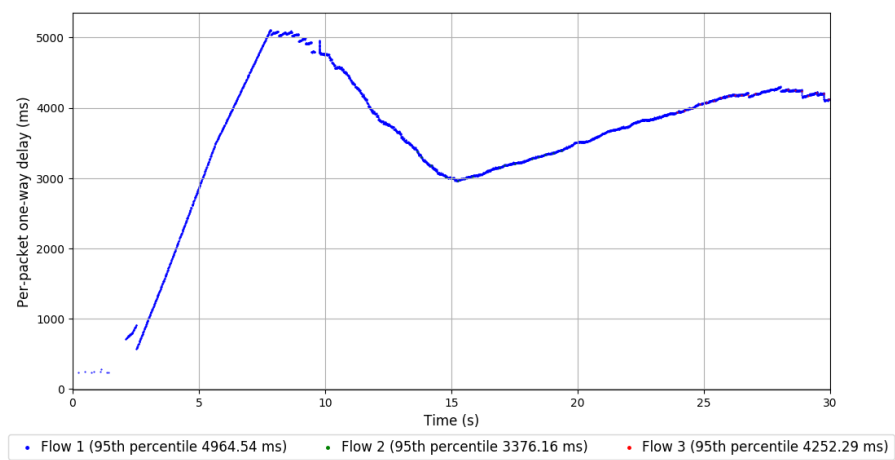
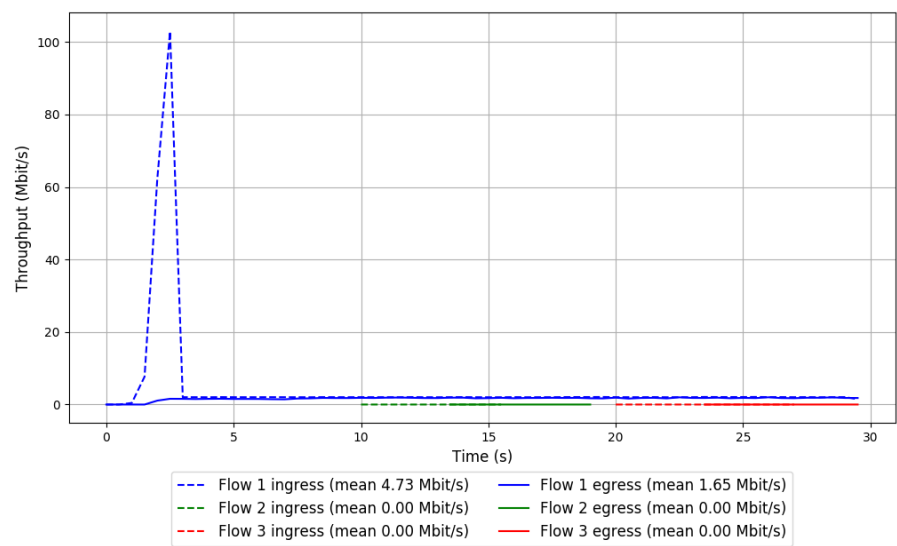
-- Flow 3:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 4252.291 ms

Loss rate: 10.61%

Run 2: Report of PCC — Data Link



Run 3: Statistics of PCC

Start at: 2018-03-27 00:21:44

End at: 2018-03-27 00:22:14

Local clock offset: -2.303 ms

Remote clock offset: 3.207 ms

Below is generated by plot.py at 2018-03-27 00:26:12

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.60 Mbit/s

95th percentile per-packet one-way delay: 4657.985 ms

Loss rate: 66.94%

-- Flow 1:

Average throughput: 1.60 Mbit/s

95th percentile per-packet one-way delay: 4657.545 ms

Loss rate: 66.95%

-- Flow 2:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 4660.267 ms

Loss rate: 0.00%

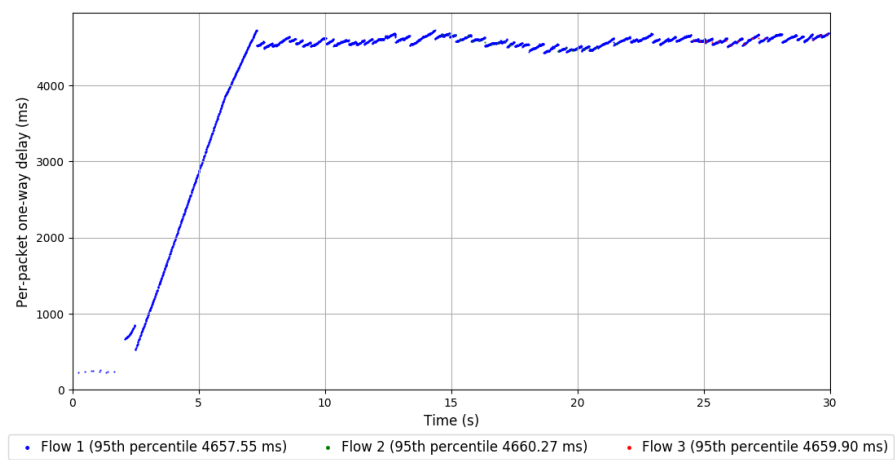
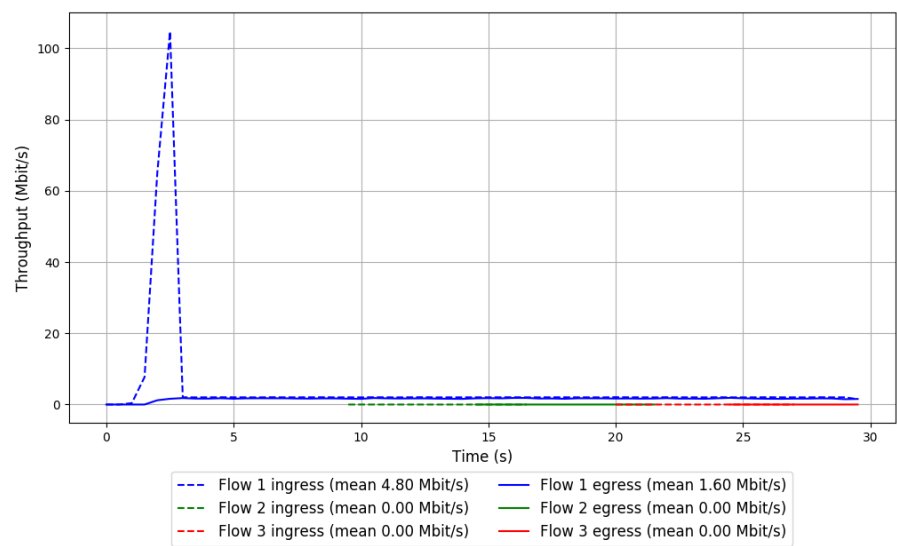
-- Flow 3:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 4659.897 ms

Loss rate: 28.02%

Run 3: Report of PCC — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-03-26 23:18:36

End at: 2018-03-26 23:19:06

Local clock offset: -5.289 ms

Remote clock offset: 7.766 ms

Below is generated by plot.py at 2018-03-27 00:26:12

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.46 Mbit/s

95th percentile per-packet one-way delay: 2403.577 ms

Loss rate: 8.80%

-- Flow 1:

Average throughput: 1.13 Mbit/s

95th percentile per-packet one-way delay: 2356.469 ms

Loss rate: 5.83%

-- Flow 2:

Average throughput: 0.44 Mbit/s

95th percentile per-packet one-way delay: 2460.369 ms

Loss rate: 15.73%

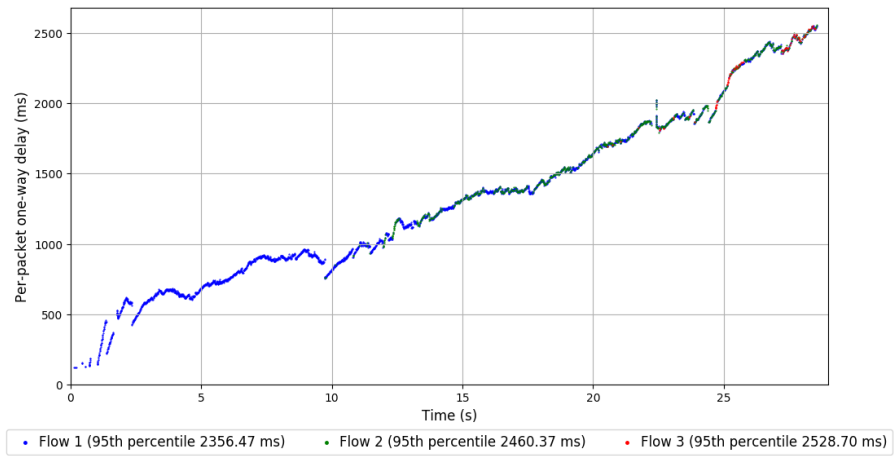
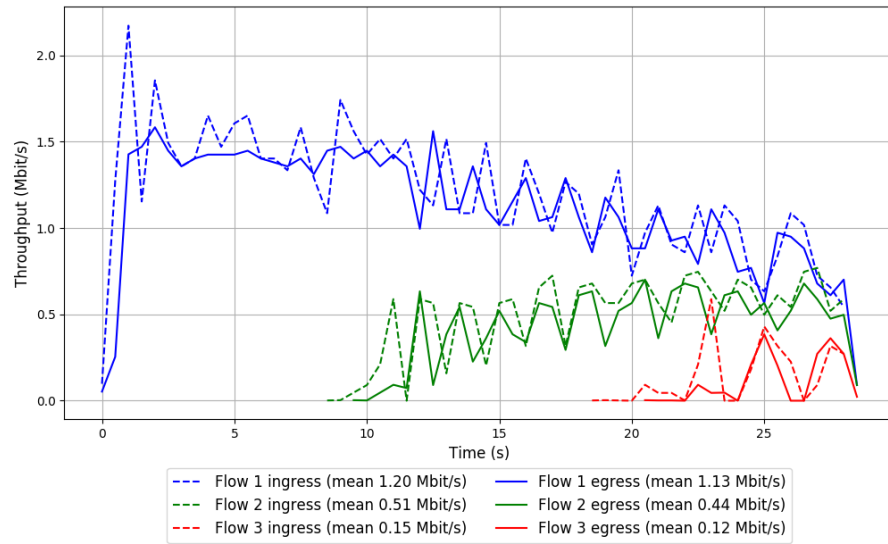
-- Flow 3:

Average throughput: 0.12 Mbit/s

95th percentile per-packet one-way delay: 2528.702 ms

Loss rate: 32.09%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-03-26 23:41:20

End at: 2018-03-26 23:41:50

Local clock offset: -6.061 ms

Remote clock offset: 2.349 ms

Below is generated by plot.py at 2018-03-27 00:26:12

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.25 Mbit/s

95th percentile per-packet one-way delay: 2732.558 ms

Loss rate: 10.15%

-- Flow 1:

Average throughput: 0.94 Mbit/s

95th percentile per-packet one-way delay: 2664.314 ms

Loss rate: 7.04%

-- Flow 2:

Average throughput: 0.46 Mbit/s

95th percentile per-packet one-way delay: 2745.841 ms

Loss rate: 16.16%

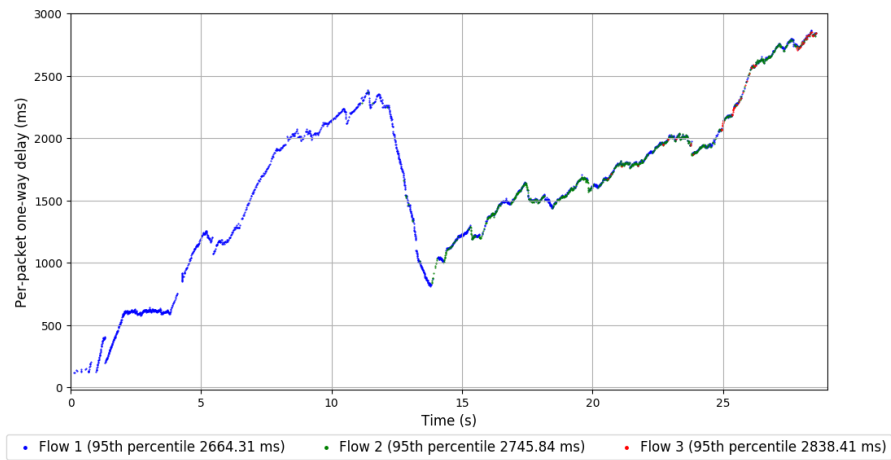
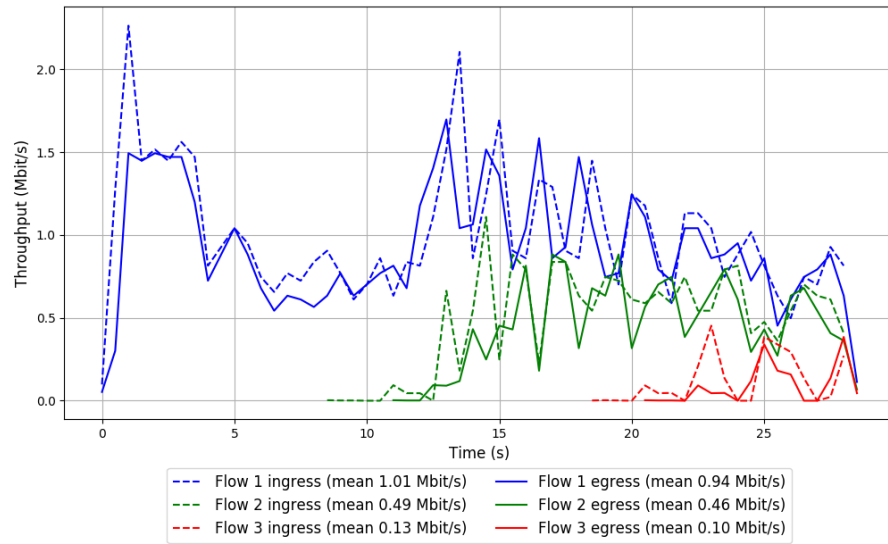
-- Flow 3:

Average throughput: 0.10 Mbit/s

95th percentile per-packet one-way delay: 2838.414 ms

Loss rate: 36.23%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-03-27 00:04:03

End at: 2018-03-27 00:04:33

Local clock offset: -5.719 ms

Remote clock offset: 8.698 ms

Below is generated by plot.py at 2018-03-27 00:26:12

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.53 Mbit/s

95th percentile per-packet one-way delay: 2305.954 ms

Loss rate: 8.56%

-- Flow 1:

Average throughput: 1.22 Mbit/s

95th percentile per-packet one-way delay: 2291.765 ms

Loss rate: 5.69%

-- Flow 2:

Average throughput: 0.40 Mbit/s

95th percentile per-packet one-way delay: 2349.964 ms

Loss rate: 16.51%

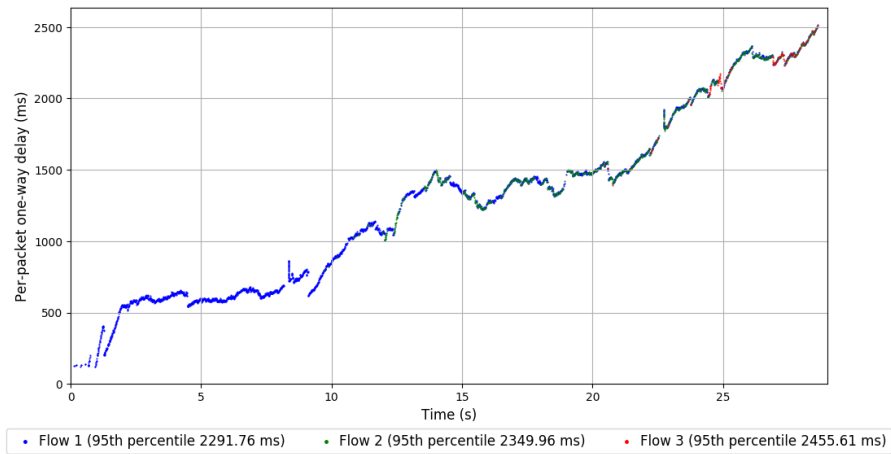
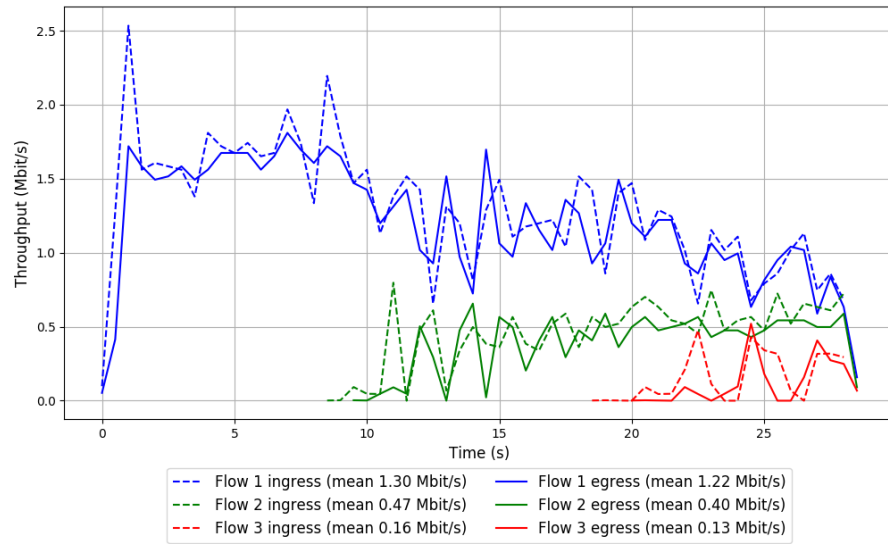
-- Flow 3:

Average throughput: 0.13 Mbit/s

95th percentile per-packet one-way delay: 2455.607 ms

Loss rate: 30.25%

Run 3: Report of QUIC Cubic — Data Link

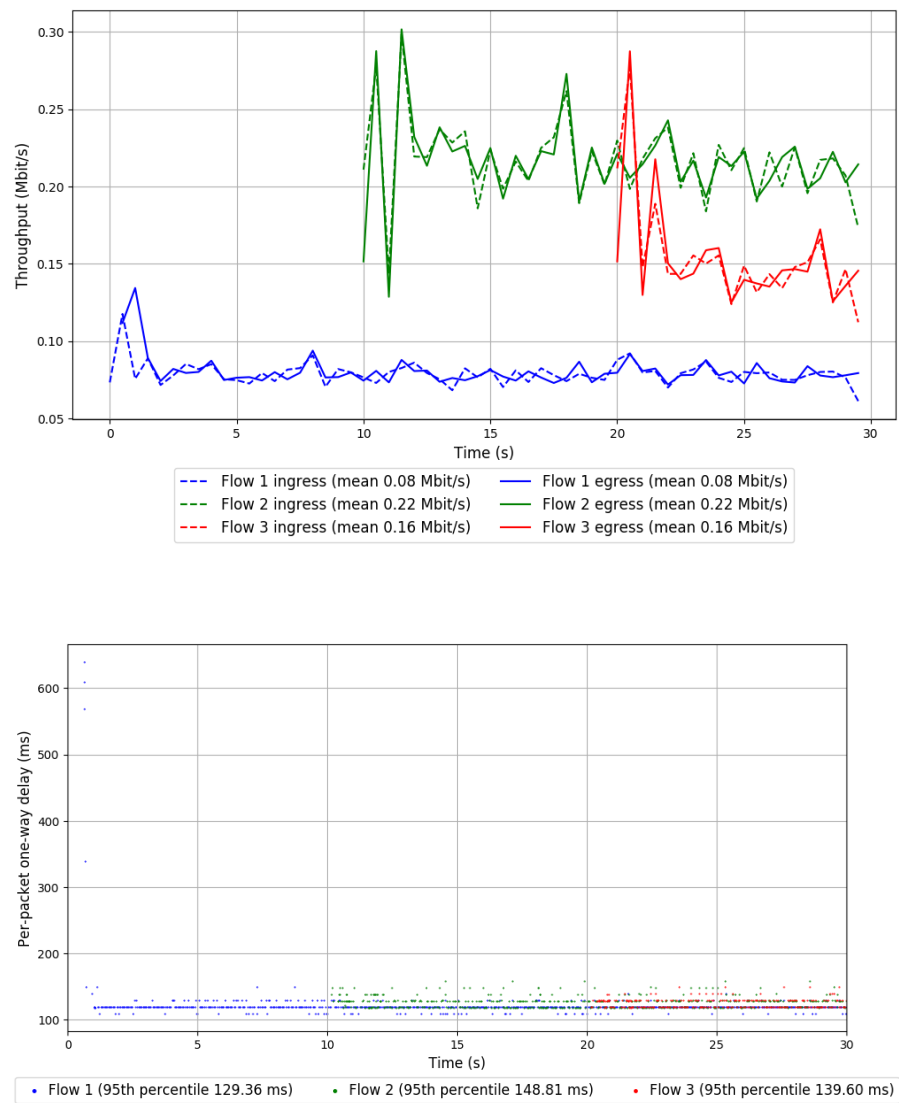


```
Run 1: Statistics of SReAM

Start at: 2018-03-26 23:26:11
End at: 2018-03-26 23:26:41
Local clock offset: -5.902 ms
Remote clock offset: 2.401 ms

# Below is generated by plot.py at 2018-03-27 00:26:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 138.882 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 129.363 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 148.812 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 139.600 ms
Loss rate: 0.33%
```

Run 1: Report of SReAM — Data Link



Run 2: Statistics of SReAM

Start at: 2018-03-26 23:48:54

End at: 2018-03-26 23:49:24

Local clock offset: -5.701 ms

Remote clock offset: 8.428 ms

Below is generated by plot.py at 2018-03-27 00:26:12

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.29 Mbit/s

95th percentile per-packet one-way delay: 141.116 ms

Loss rate: 0.04%

-- Flow 1:

Average throughput: 0.08 Mbit/s

95th percentile per-packet one-way delay: 136.160 ms

Loss rate: 0.13%

-- Flow 2:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 145.413 ms

Loss rate: 0.00%

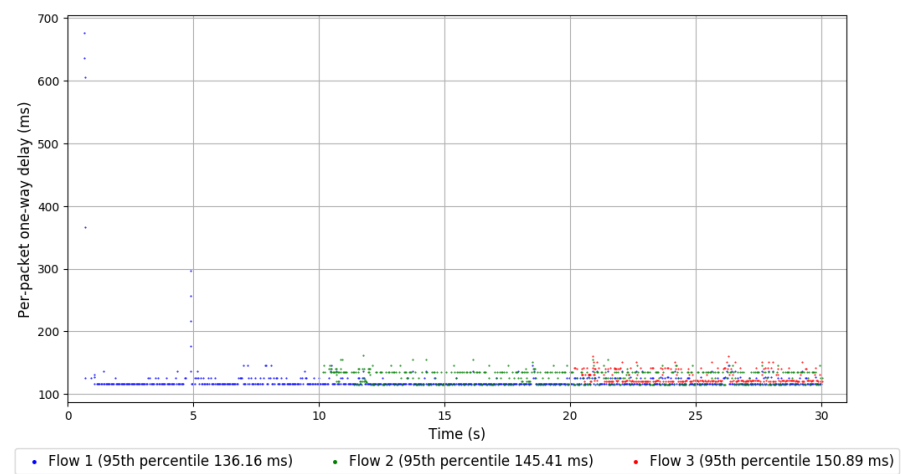
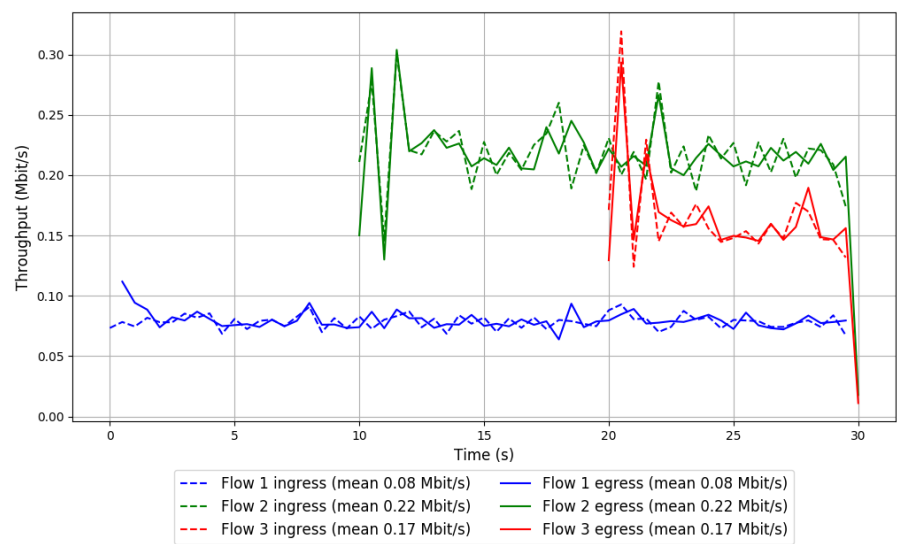
-- Flow 3:

Average throughput: 0.17 Mbit/s

95th percentile per-packet one-way delay: 150.892 ms

Loss rate: 0.00%

Run 2: Report of SReAM — Data Link

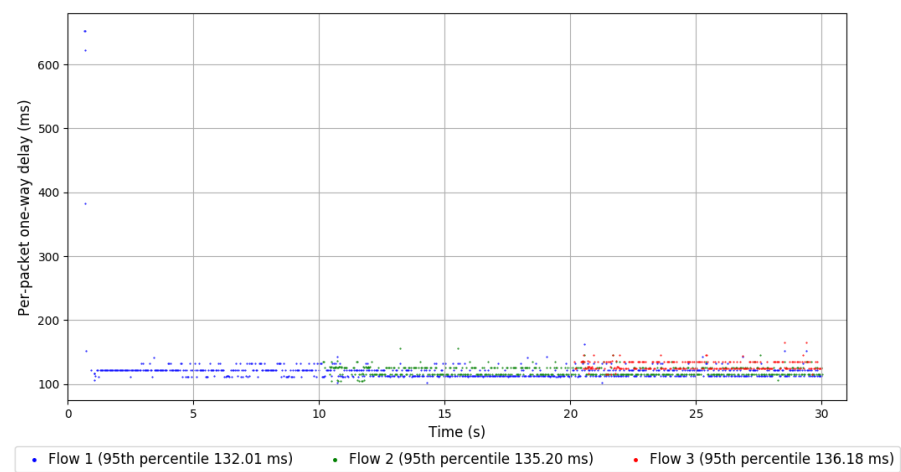
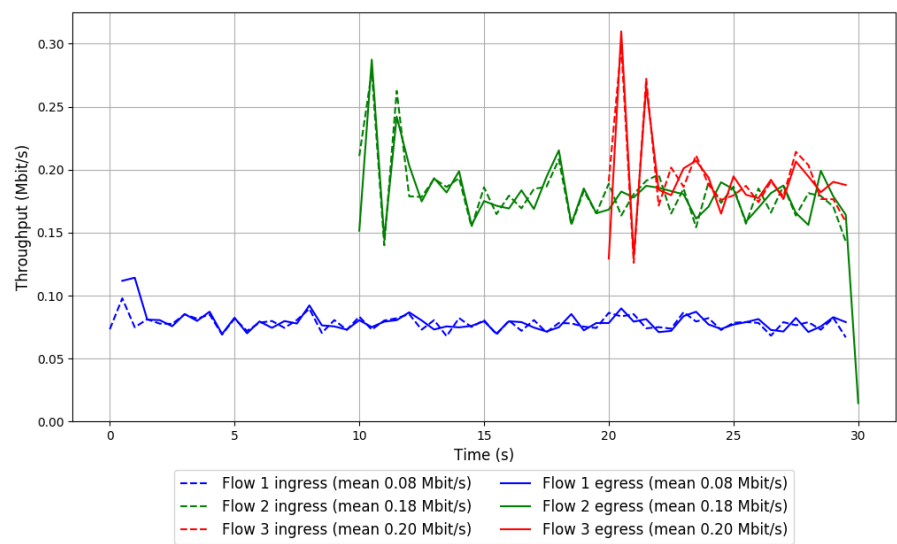


Run 3: Statistics of SCReAM

Start at: 2018-03-27 00:11:38
End at: 2018-03-27 00:12:08
Local clock offset: -5.838 ms
Remote clock offset: 3.087 ms

Below is generated by plot.py at 2018-03-27 00:26:12
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 134.898 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 132.013 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 135.197 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 136.178 ms
Loss rate: 0.34%

Run 3: Report of SReAM — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-03-26 23:19:53

End at: 2018-03-26 23:20:23

Local clock offset: -5.325 ms

Remote clock offset: 7.617 ms

Below is generated by plot.py at 2018-03-27 00:26:12

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.16 Mbit/s

95th percentile per-packet one-way delay: 289.254 ms

Loss rate: 0.02%

-- Flow 1:

Average throughput: 0.06 Mbit/s

95th percentile per-packet one-way delay: 269.710 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.06 Mbit/s

95th percentile per-packet one-way delay: 291.564 ms

Loss rate: 0.07%

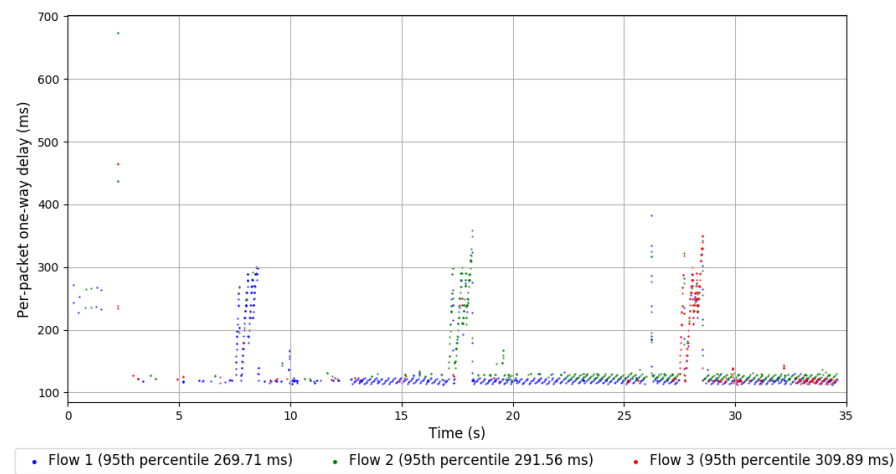
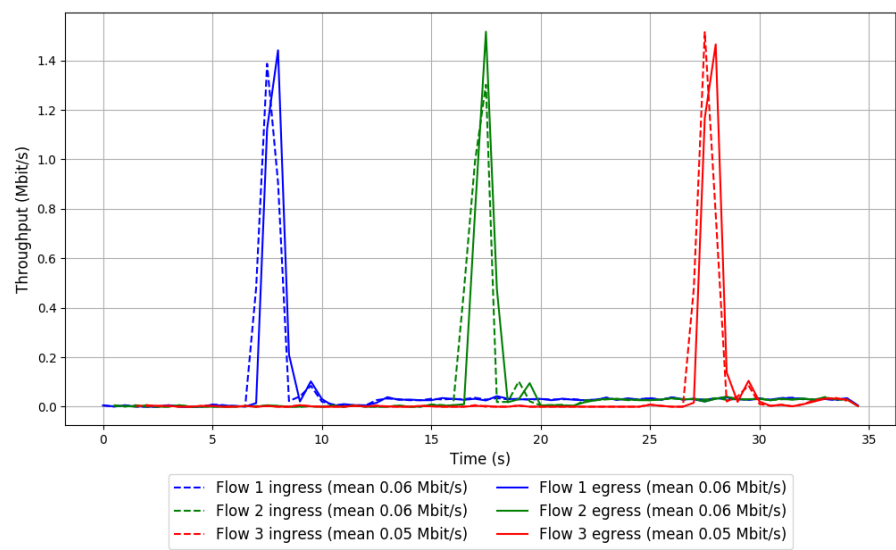
-- Flow 3:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 309.895 ms

Loss rate: 0.00%

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-03-26 23:42:36

End at: 2018-03-26 23:43:06

Local clock offset: -6.05 ms

Remote clock offset: 2.465 ms

Below is generated by plot.py at 2018-03-27 00:26:12

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.15 Mbit/s

95th percentile per-packet one-way delay: 400.106 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 570.914 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.06 Mbit/s

95th percentile per-packet one-way delay: 257.326 ms

Loss rate: 0.00%

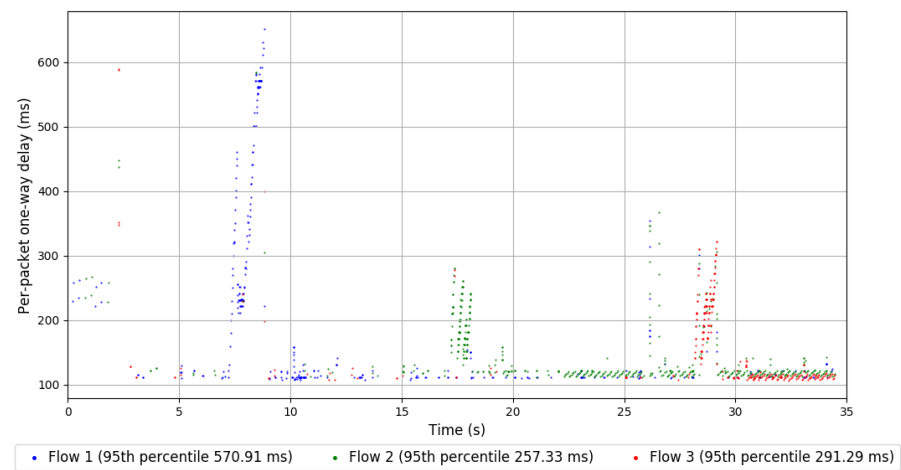
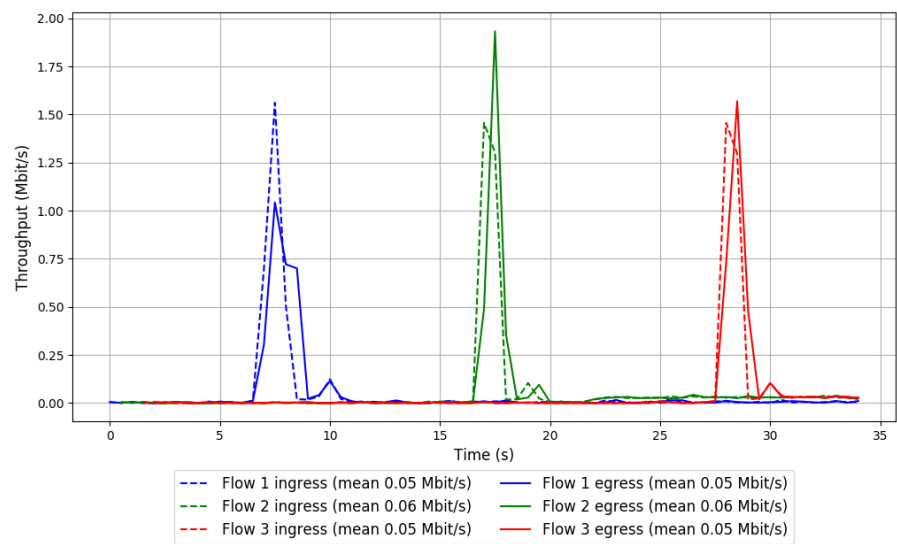
-- Flow 3:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 291.289 ms

Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-03-27 00:05:20

End at: 2018-03-27 00:05:50

Local clock offset: 0.002 ms

Remote clock offset: 2.844 ms

Below is generated by plot.py at 2018-03-27 00:26:12

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.16 Mbit/s

95th percentile per-packet one-way delay: 233.575 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.06 Mbit/s

95th percentile per-packet one-way delay: 222.627 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.06 Mbit/s

95th percentile per-packet one-way delay: 224.488 ms

Loss rate: 0.00%

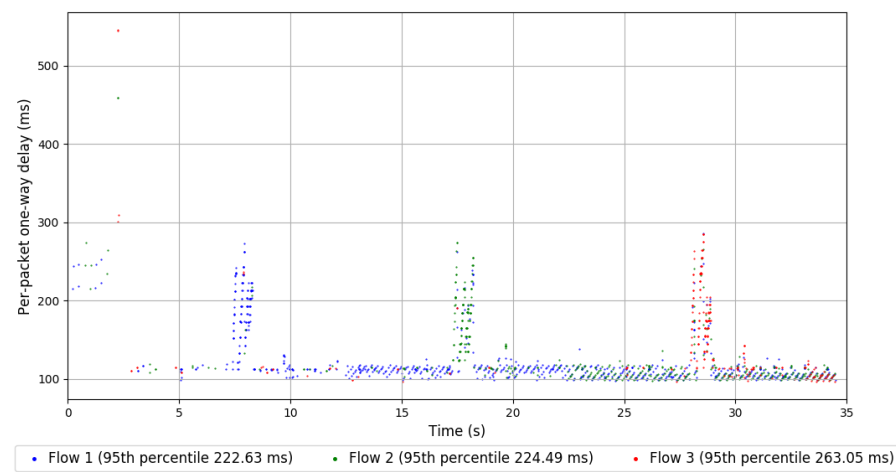
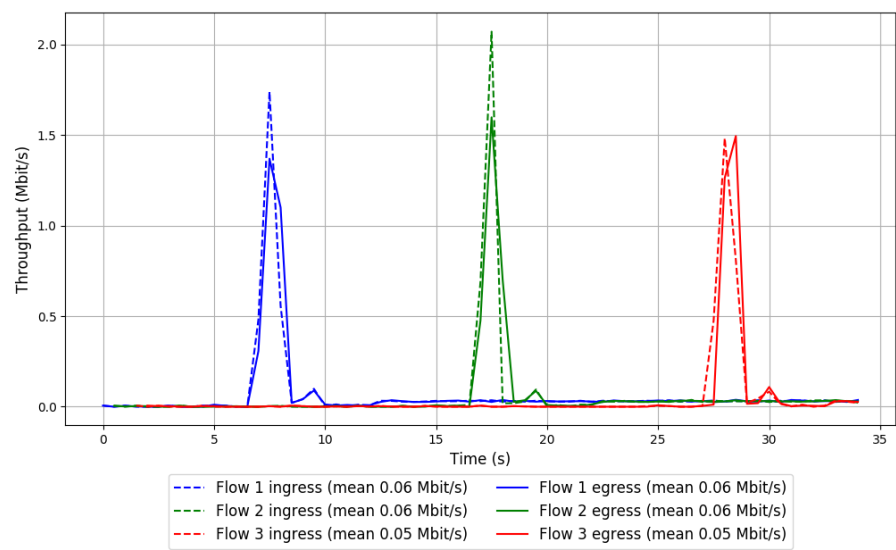
-- Flow 3:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 263.046 ms

Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link

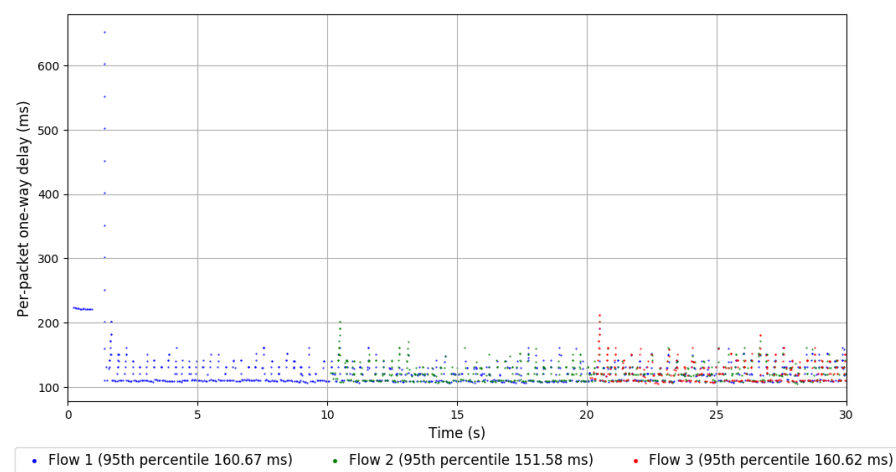
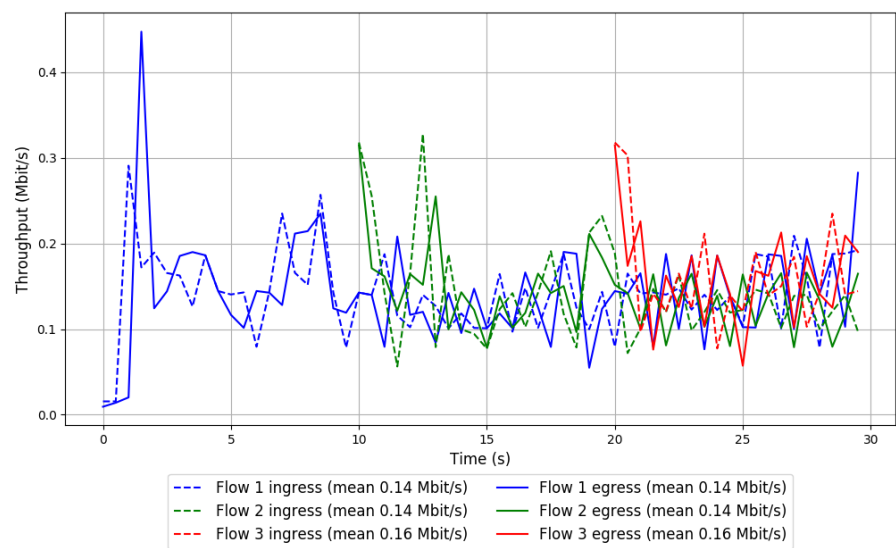


```
Run 1: Statistics of Sprout

Start at: 2018-03-26 23:37:32
End at: 2018-03-26 23:38:02
Local clock offset: -6.455 ms
Remote clock offset: 2.294 ms

# Below is generated by plot.py at 2018-03-27 00:26:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 160.260 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 160.674 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 151.576 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 160.625 ms
Loss rate: 0.00%
```

Run 1: Report of Sprout — Data Link

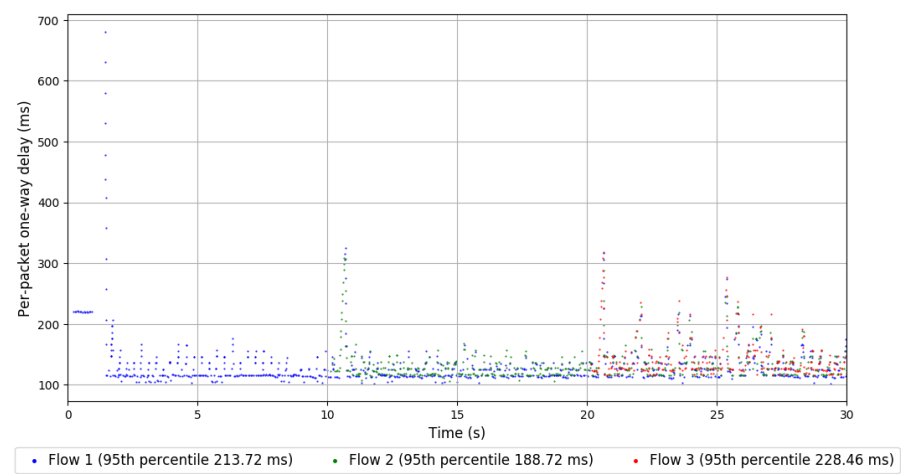
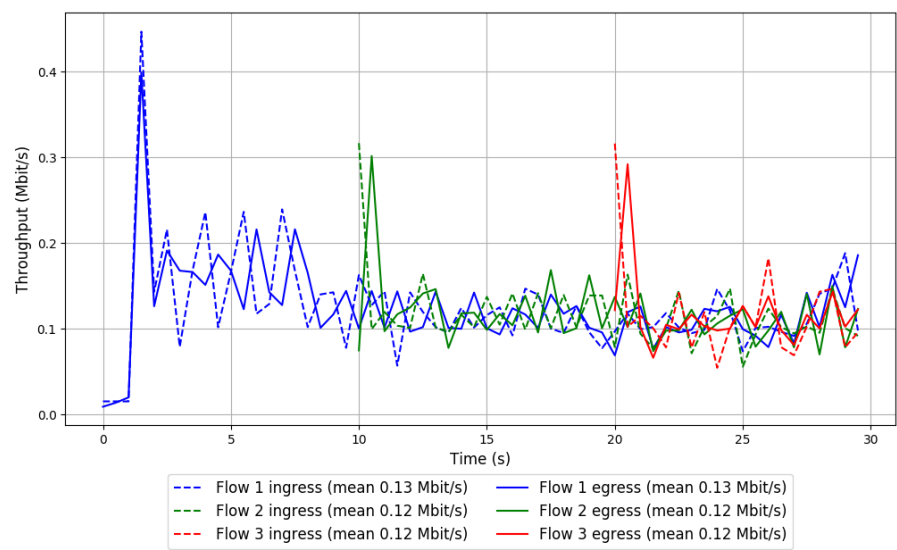


Run 2: Statistics of Sprout

Start at: 2018-03-27 00:00:16
End at: 2018-03-27 00:00:46
Local clock offset: -5.611 ms
Remote clock offset: 2.771 ms

```
# Below is generated by plot.py at 2018-03-27 00:26:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 213.723 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 213.723 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 188.720 ms
Loss rate: 0.38%
-- Flow 3:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 228.456 ms
Loss rate: 0.00%
```


Run 2: Report of Sprout — Data Link

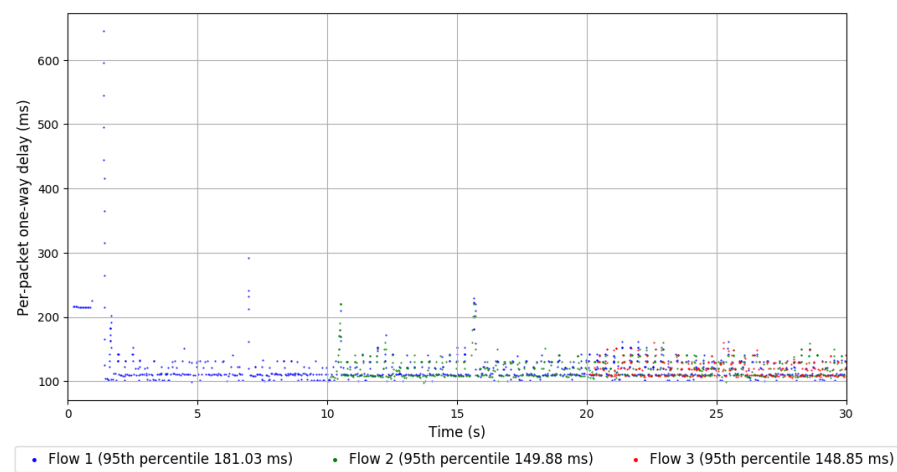
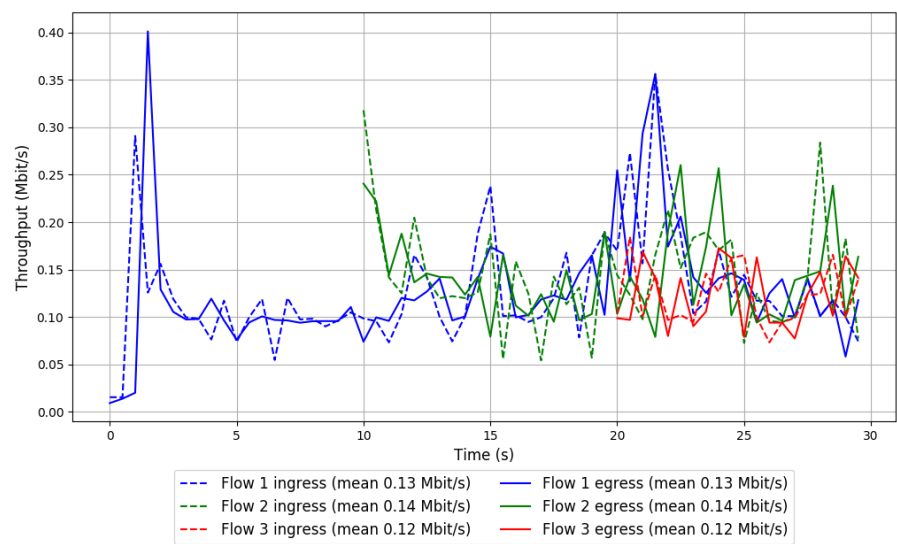


Run 3: Statistics of Sprout

Start at: 2018-03-27 00:23:00
End at: 2018-03-27 00:23:30
Local clock offset: 11.227 ms
Remote clock offset: 9.288 ms

```
# Below is generated by plot.py at 2018-03-27 00:26:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 152.241 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 181.034 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 149.883 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 148.854 ms
Loss rate: 0.06%
```

Run 3: Report of Sprout — Data Link

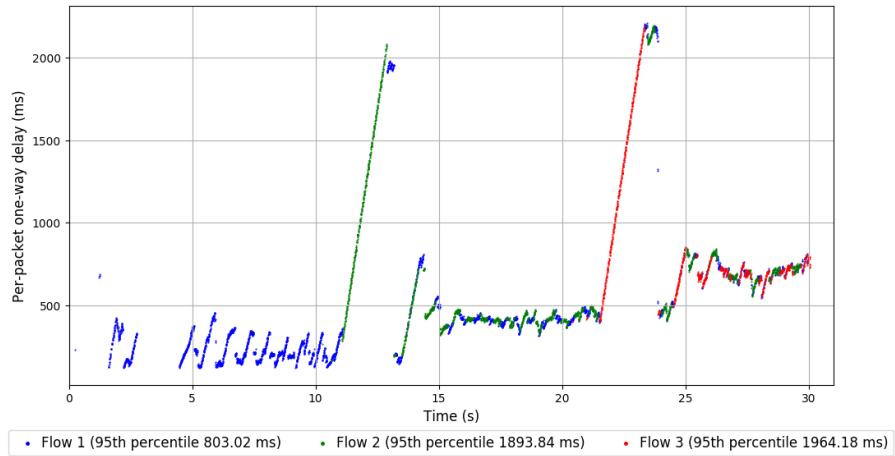
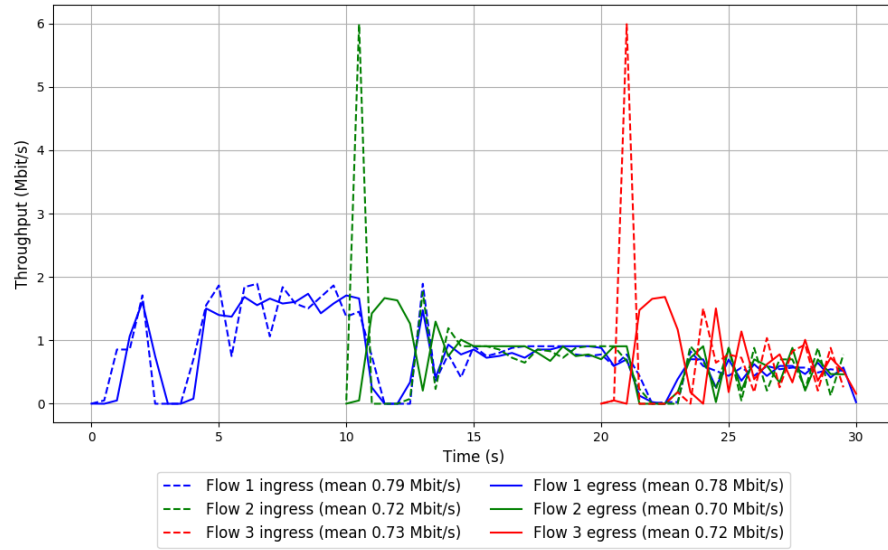


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-03-26 23:23:40
End at: 2018-03-26 23:24:10
Local clock offset: -5.656 ms
Remote clock offset: 7.616 ms

# Below is generated by plot.py at 2018-03-27 00:26:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.47 Mbit/s
95th percentile per-packet one-way delay: 1845.298 ms
Loss rate: 2.30%
-- Flow 1:
Average throughput: 0.78 Mbit/s
95th percentile per-packet one-way delay: 803.017 ms
Loss rate: 1.43%
-- Flow 2:
Average throughput: 0.70 Mbit/s
95th percentile per-packet one-way delay: 1893.844 ms
Loss rate: 3.10%
-- Flow 3:
Average throughput: 0.72 Mbit/s
95th percentile per-packet one-way delay: 1964.183 ms
Loss rate: 3.57%
```

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-03-26 23:46:23

End at: 2018-03-26 23:46:53

Local clock offset: -5.731 ms

Remote clock offset: 2.494 ms

Below is generated by plot.py at 2018-03-27 00:26:21

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.72 Mbit/s

95th percentile per-packet one-way delay: 746.451 ms

Loss rate: 19.35%

-- Flow 1:

Average throughput: 1.12 Mbit/s

95th percentile per-packet one-way delay: 603.693 ms

Loss rate: 4.83%

-- Flow 2:

Average throughput: 0.74 Mbit/s

95th percentile per-packet one-way delay: 1024.554 ms

Loss rate: 22.25%

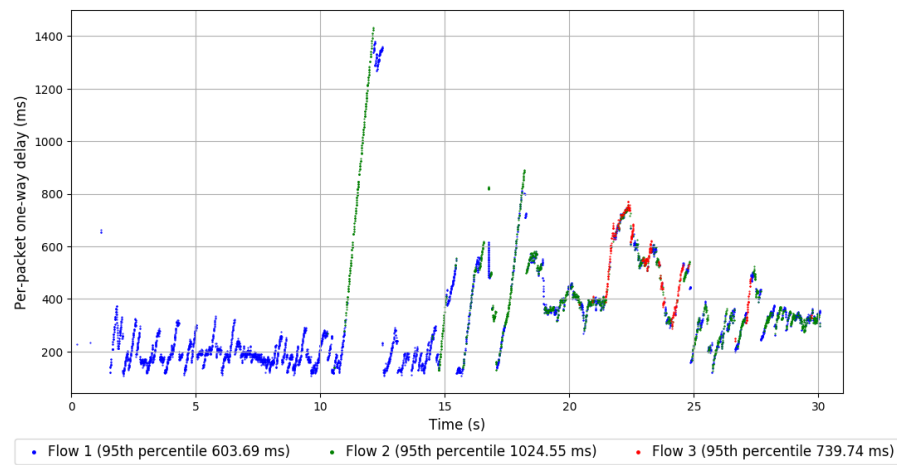
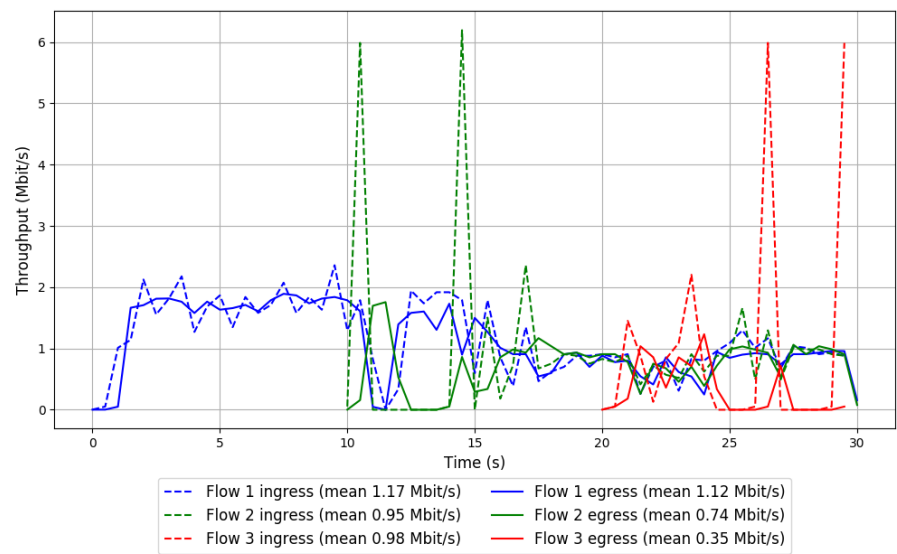
-- Flow 3:

Average throughput: 0.35 Mbit/s

95th percentile per-packet one-way delay: 739.737 ms

Loss rate: 66.54%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-03-27 00:09:07

End at: 2018-03-27 00:09:37

Local clock offset: -1.799 ms

Remote clock offset: 8.966 ms

Below is generated by plot.py at 2018-03-27 00:26:21

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.32 Mbit/s

95th percentile per-packet one-way delay: 2380.760 ms

Loss rate: 2.35%

-- Flow 1:

Average throughput: 0.81 Mbit/s

95th percentile per-packet one-way delay: 1977.913 ms

Loss rate: 1.22%

-- Flow 2:

Average throughput: 0.46 Mbit/s

95th percentile per-packet one-way delay: 2824.388 ms

Loss rate: 3.10%

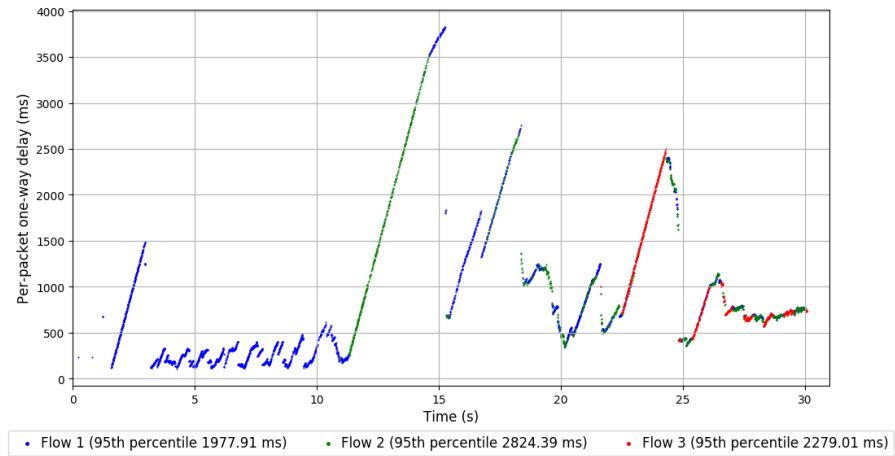
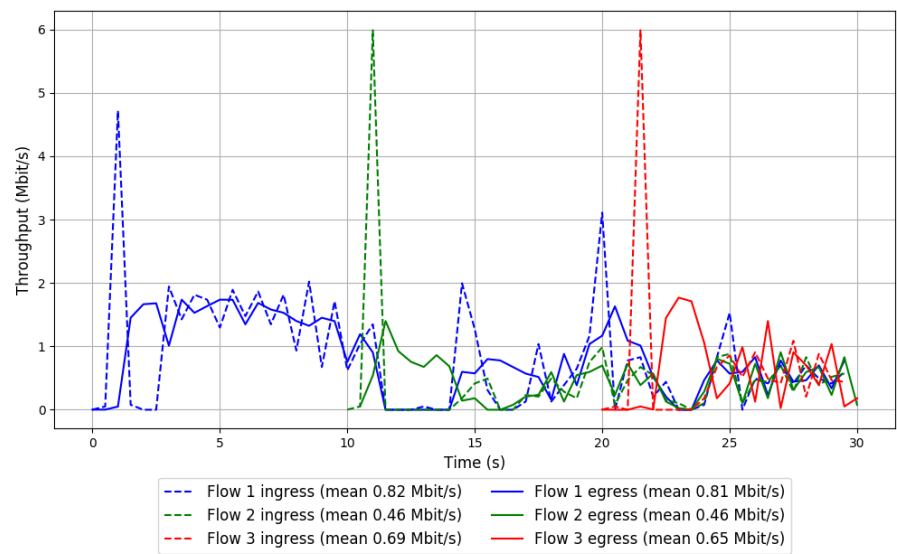
-- Flow 3:

Average throughput: 0.65 Mbit/s

95th percentile per-packet one-way delay: 2279.015 ms

Loss rate: 5.51%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-03-26 23:32:29

End at: 2018-03-26 23:32:59

Local clock offset: -6.204 ms

Remote clock offset: 2.652 ms

Below is generated by plot.py at 2018-03-27 00:26:21

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.09 Mbit/s

95th percentile per-packet one-way delay: 1240.397 ms

Loss rate: 2.63%

-- Flow 1:

Average throughput: 0.71 Mbit/s

95th percentile per-packet one-way delay: 1250.446 ms

Loss rate: 0.90%

-- Flow 2:

Average throughput: 0.38 Mbit/s

95th percentile per-packet one-way delay: 1248.149 ms

Loss rate: 3.19%

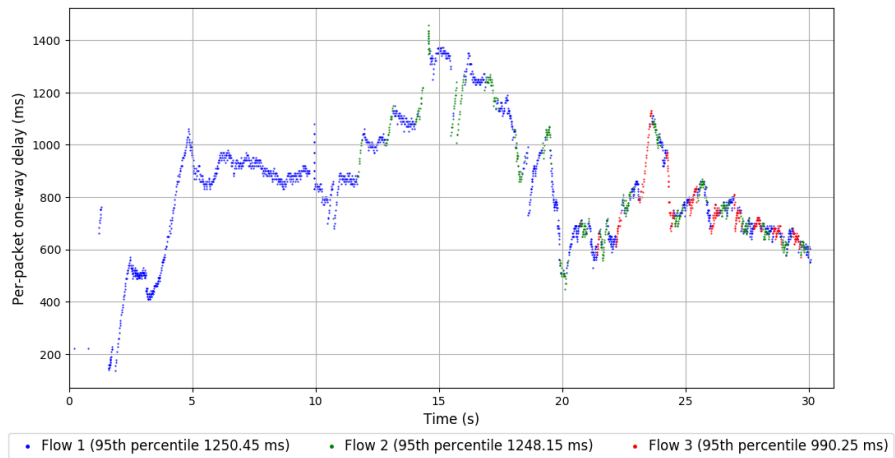
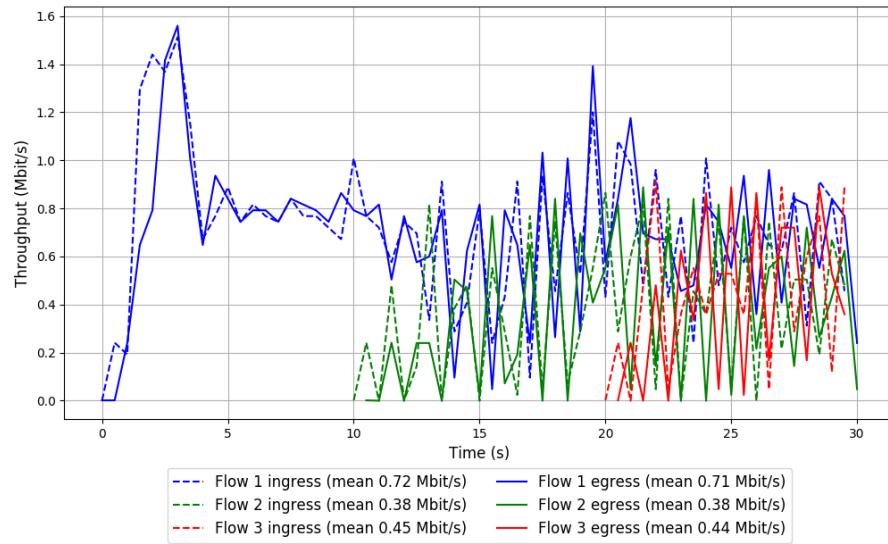
-- Flow 3:

Average throughput: 0.44 Mbit/s

95th percentile per-packet one-way delay: 990.248 ms

Loss rate: 10.08%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-03-26 23:55:13

End at: 2018-03-26 23:55:43

Local clock offset: -5.631 ms

Remote clock offset: 8.544 ms

Below is generated by plot.py at 2018-03-27 00:26:21

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.57 Mbit/s

95th percentile per-packet one-way delay: 1485.004 ms

Loss rate: 4.47%

-- Flow 1:

Average throughput: 1.27 Mbit/s

95th percentile per-packet one-way delay: 1464.857 ms

Loss rate: 2.72%

-- Flow 2:

Average throughput: 0.29 Mbit/s

95th percentile per-packet one-way delay: 1485.000 ms

Loss rate: 4.98%

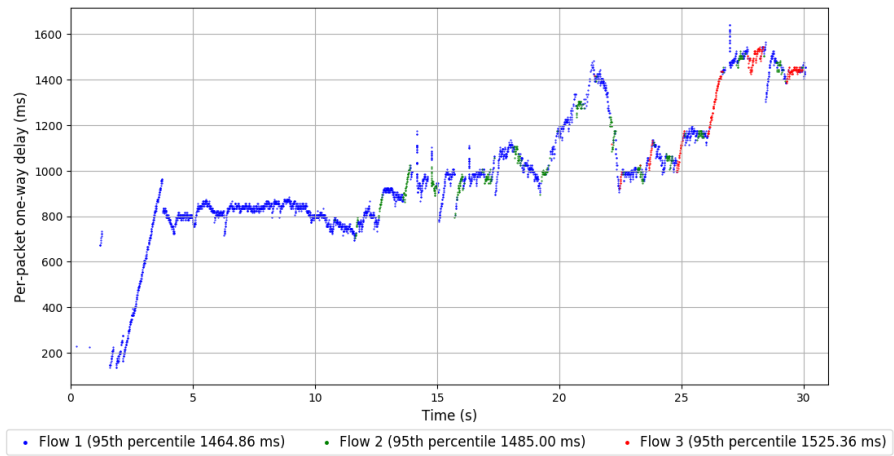
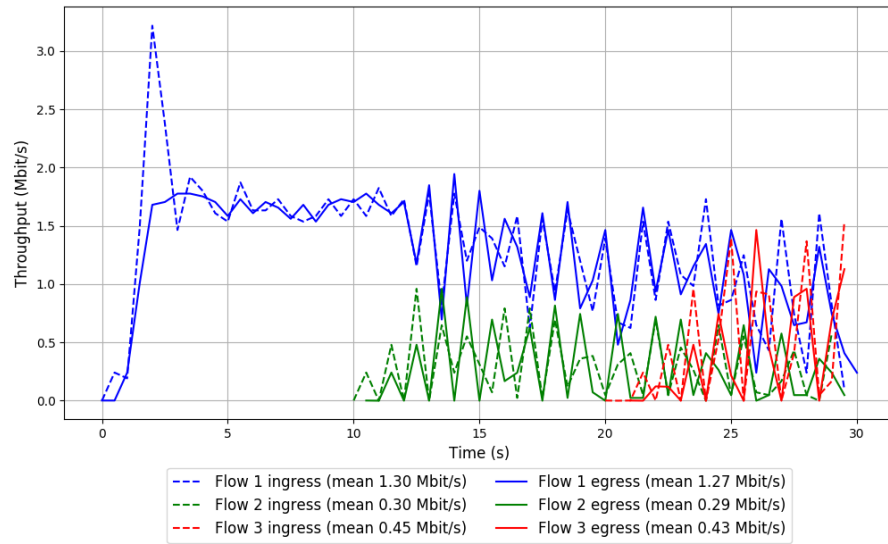
-- Flow 3:

Average throughput: 0.43 Mbit/s

95th percentile per-packet one-way delay: 1525.357 ms

Loss rate: 18.97%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2018-03-27 00:17:57

End at: 2018-03-27 00:18:27

Local clock offset: -1.485 ms

Remote clock offset: 9.073 ms

Below is generated by plot.py at 2018-03-27 00:26:21

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.57 Mbit/s

95th percentile per-packet one-way delay: 1862.389 ms

Loss rate: 5.92%

-- Flow 1:

Average throughput: 1.23 Mbit/s

95th percentile per-packet one-way delay: 1652.609 ms

Loss rate: 4.24%

-- Flow 2:

Average throughput: 0.43 Mbit/s

95th percentile per-packet one-way delay: 1882.027 ms

Loss rate: 8.33%

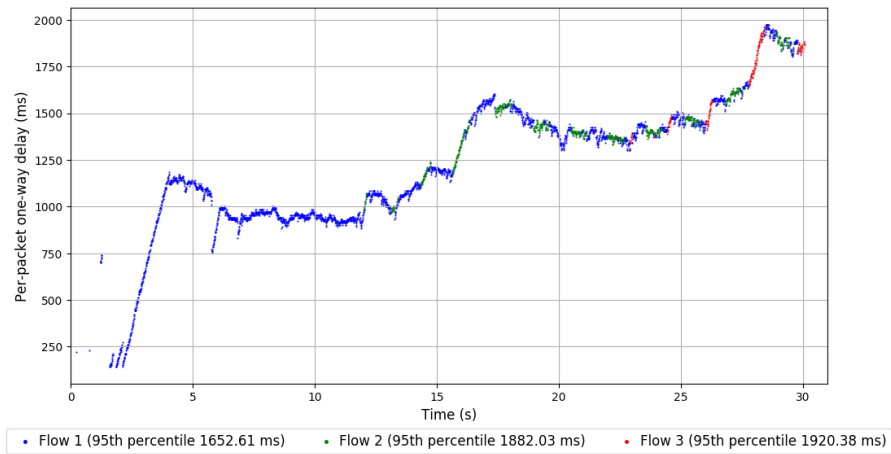
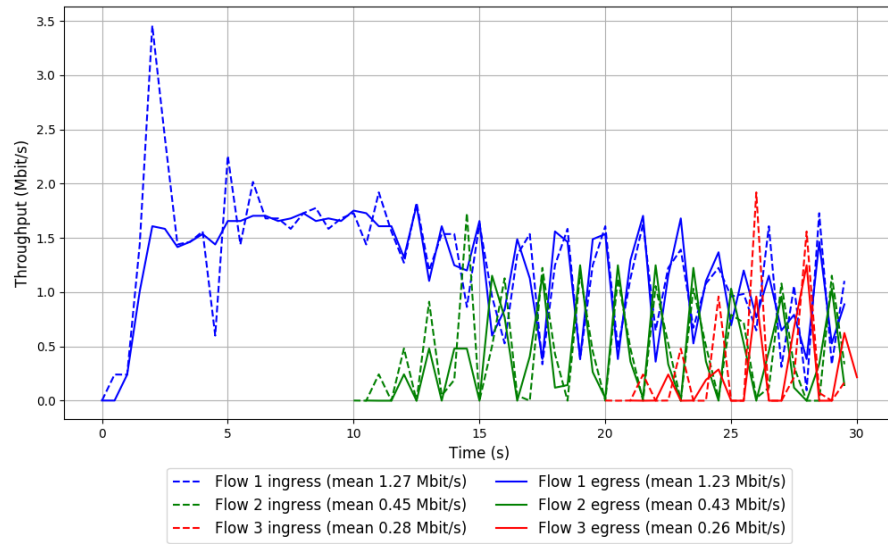
-- Flow 3:

Average throughput: 0.26 Mbit/s

95th percentile per-packet one-way delay: 1920.375 ms

Loss rate: 20.92%

Run 3: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-03-26 23:27:26

End at: 2018-03-26 23:27:56

Local clock offset: -5.886 ms

Remote clock offset: 7.724 ms

Below is generated by plot.py at 2018-03-27 00:26:21

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.48 Mbit/s

95th percentile per-packet one-way delay: 1634.069 ms

Loss rate: 2.80%

-- Flow 1:

Average throughput: 1.47 Mbit/s

95th percentile per-packet one-way delay: 1634.069 ms

Loss rate: 2.77%

-- Flow 2:

Average throughput: 0.01 Mbit/s

95th percentile per-packet one-way delay: 1548.885 ms

Loss rate: 5.00%

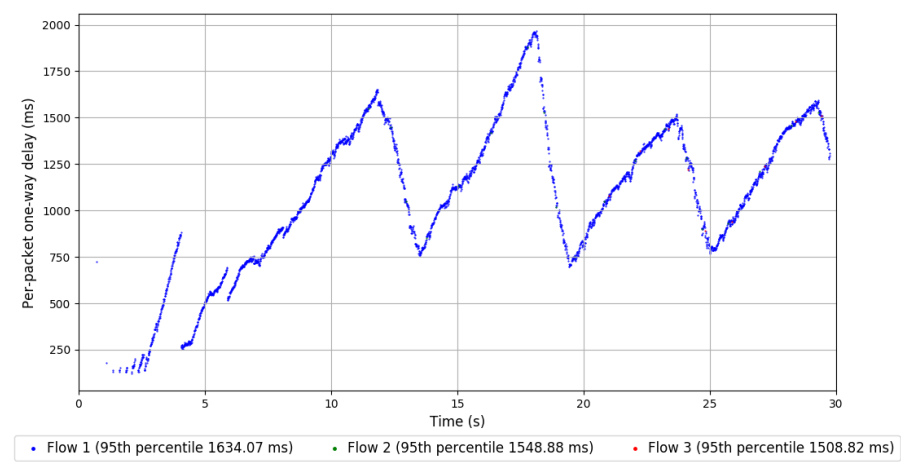
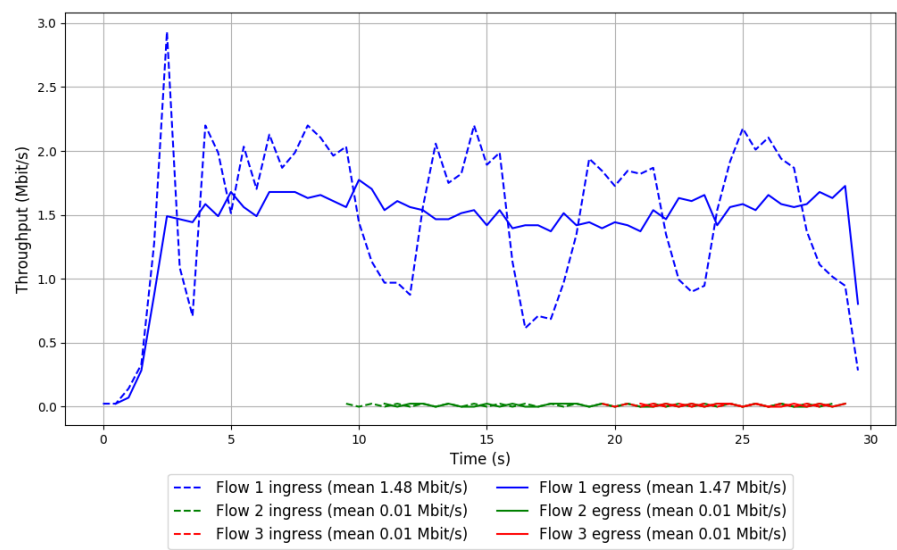
-- Flow 3:

Average throughput: 0.01 Mbit/s

95th percentile per-packet one-way delay: 1508.822 ms

Loss rate: 10.00%

Run 1: Report of Verus — Data Link

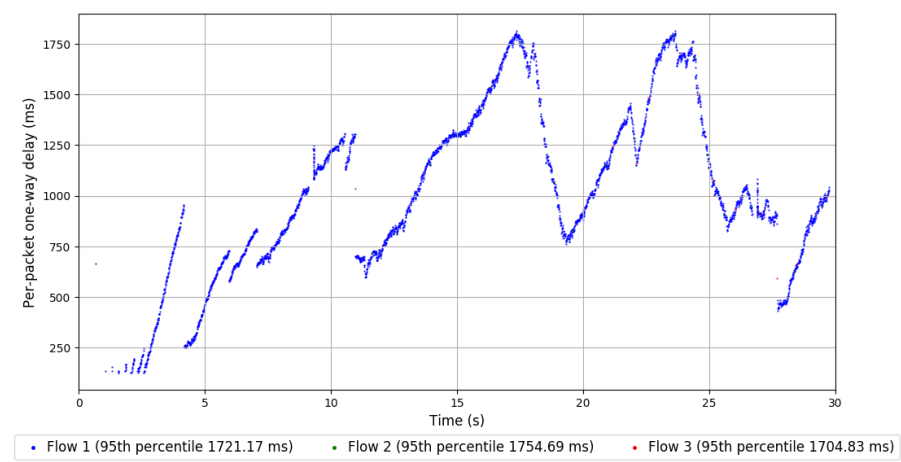
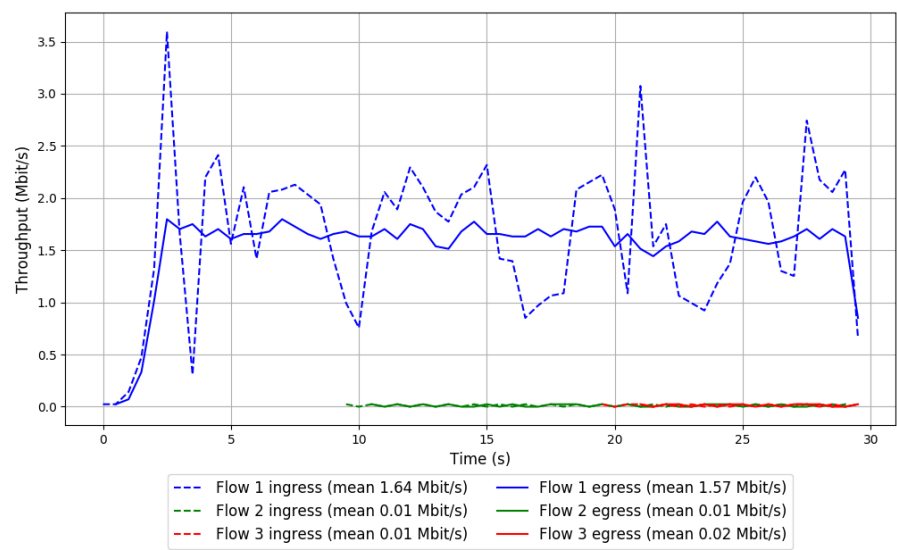


Run 2: Statistics of Verus

Start at: 2018-03-26 23:50:10
End at: 2018-03-26 23:50:40
Local clock offset: -5.626 ms
Remote clock offset: 2.486 ms

Below is generated by plot.py at 2018-03-27 00:26:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 1.59 Mbit/s
95th percentile per-packet one-way delay: 1721.168 ms
Loss rate: 6.16%
-- Flow 1:
Average throughput: 1.57 Mbit/s
95th percentile per-packet one-way delay: 1721.168 ms
Loss rate: 6.14%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1754.688 ms
Loss rate: 9.52%
-- Flow 3:
Average throughput: 0.02 Mbit/s
95th percentile per-packet one-way delay: 1704.829 ms
Loss rate: 8.33%

Run 2: Report of Verus — Data Link

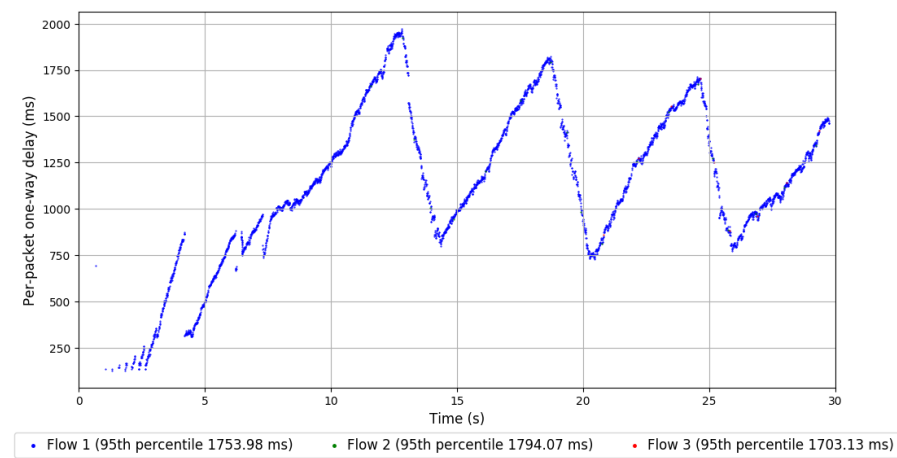
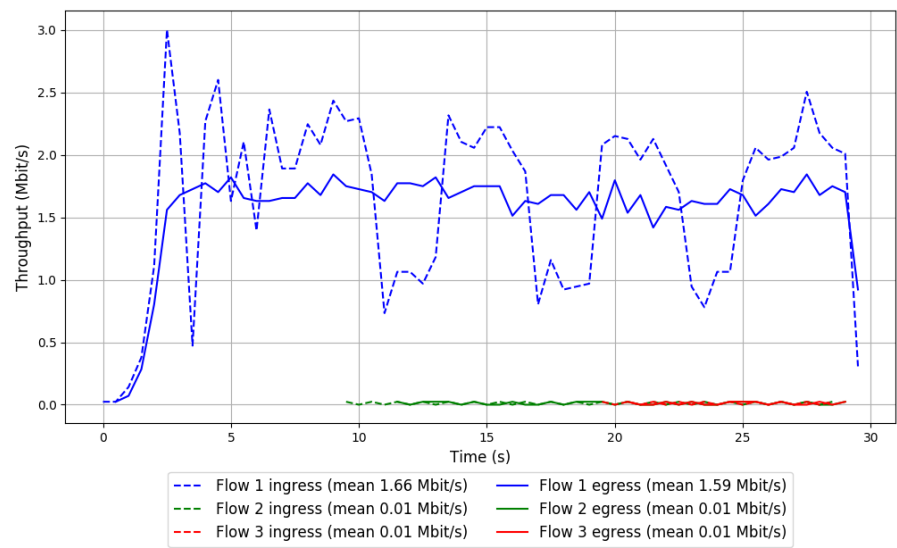


Run 3: Statistics of Verus

Start at: 2018-03-27 00:12:54
End at: 2018-03-27 00:13:24
Local clock offset: -0.043 ms
Remote clock offset: 9.024 ms

Below is generated by plot.py at 2018-03-27 00:26:22
Datalink statistics
-- Total of 3 flows:
Average throughput: 1.61 Mbit/s
95th percentile per-packet one-way delay: 1754.272 ms
Loss rate: 5.60%
-- Flow 1:
Average throughput: 1.59 Mbit/s
95th percentile per-packet one-way delay: 1753.983 ms
Loss rate: 5.59%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1794.066 ms
Loss rate: 5.00%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1703.127 ms
Loss rate: 10.00%

Run 3: Report of Verus — Data Link



Run 1: Statistics of Copa

Start at: 2018-03-26 23:17:21

End at: 2018-03-26 23:17:51

Local clock offset: -5.103 ms

Remote clock offset: 7.748 ms

Below is generated by plot.py at 2018-03-27 00:26:24

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.35 Mbit/s

95th percentile per-packet one-way delay: 513.580 ms

Loss rate: 2.55%

-- Flow 1:

Average throughput: 0.81 Mbit/s

95th percentile per-packet one-way delay: 508.298 ms

Loss rate: 1.73%

-- Flow 2:

Average throughput: 0.58 Mbit/s

95th percentile per-packet one-way delay: 519.535 ms

Loss rate: 3.60%

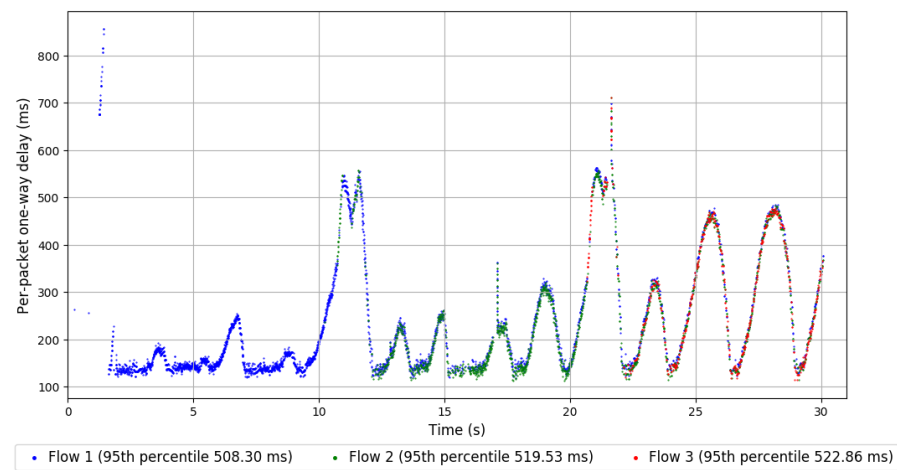
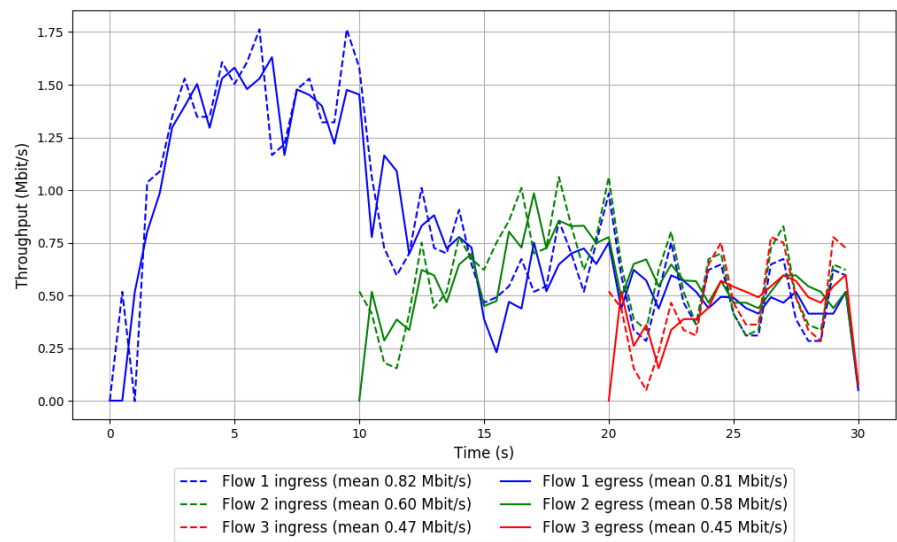
-- Flow 3:

Average throughput: 0.45 Mbit/s

95th percentile per-packet one-way delay: 522.863 ms

Loss rate: 4.20%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2018-03-26 23:40:04

End at: 2018-03-26 23:40:34

Local clock offset: -6.185 ms

Remote clock offset: 2.355 ms

Below is generated by plot.py at 2018-03-27 00:26:26

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.44 Mbit/s

95th percentile per-packet one-way delay: 408.238 ms

Loss rate: 2.28%

-- Flow 1:

Average throughput: 0.95 Mbit/s

95th percentile per-packet one-way delay: 407.670 ms

Loss rate: 1.95%

-- Flow 2:

Average throughput: 0.52 Mbit/s

95th percentile per-packet one-way delay: 409.684 ms

Loss rate: 3.07%

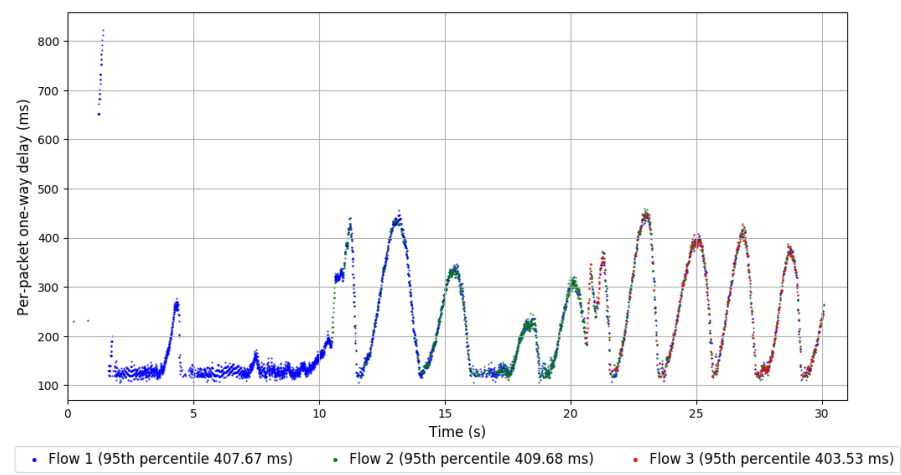
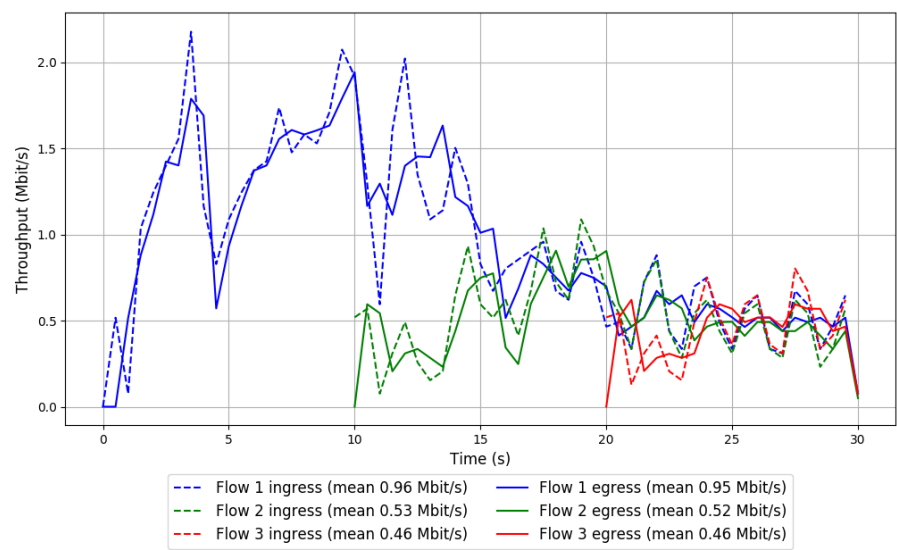
-- Flow 3:

Average throughput: 0.46 Mbit/s

95th percentile per-packet one-way delay: 403.533 ms

Loss rate: 2.54%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-03-27 00:02:48

End at: 2018-03-27 00:03:18

Local clock offset: -5.691 ms

Remote clock offset: 2.733 ms

Below is generated by plot.py at 2018-03-27 00:26:26

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.58 Mbit/s

95th percentile per-packet one-way delay: 1079.650 ms

Loss rate: 0.45%

-- Flow 1:

Average throughput: 0.37 Mbit/s

95th percentile per-packet one-way delay: 868.019 ms

Loss rate: 0.24%

-- Flow 2:

Average throughput: 0.20 Mbit/s

95th percentile per-packet one-way delay: 1180.424 ms

Loss rate: 0.65%

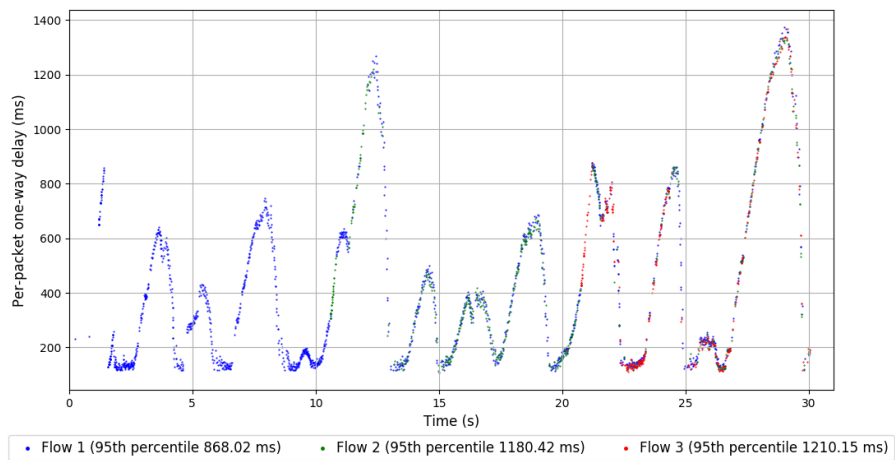
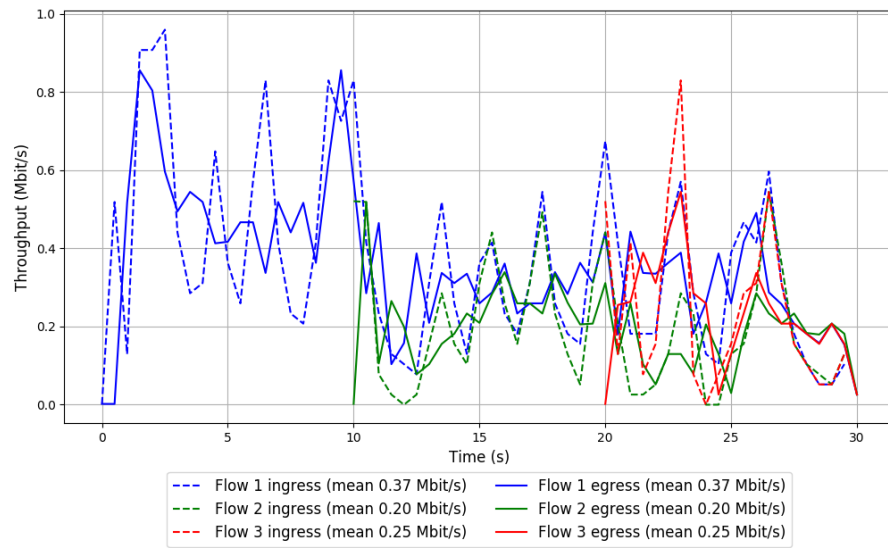
-- Flow 3:

Average throughput: 0.25 Mbit/s

95th percentile per-packet one-way delay: 1210.148 ms

Loss rate: 1.05%

Run 3: Report of Copa — Data Link

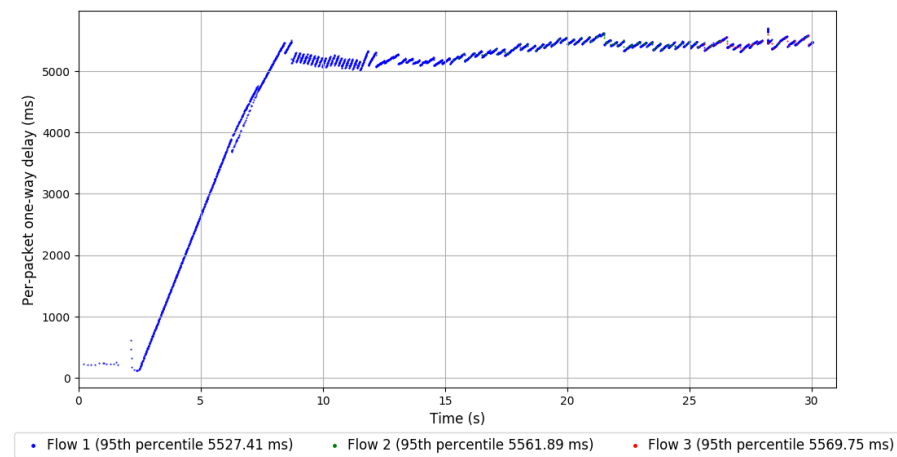
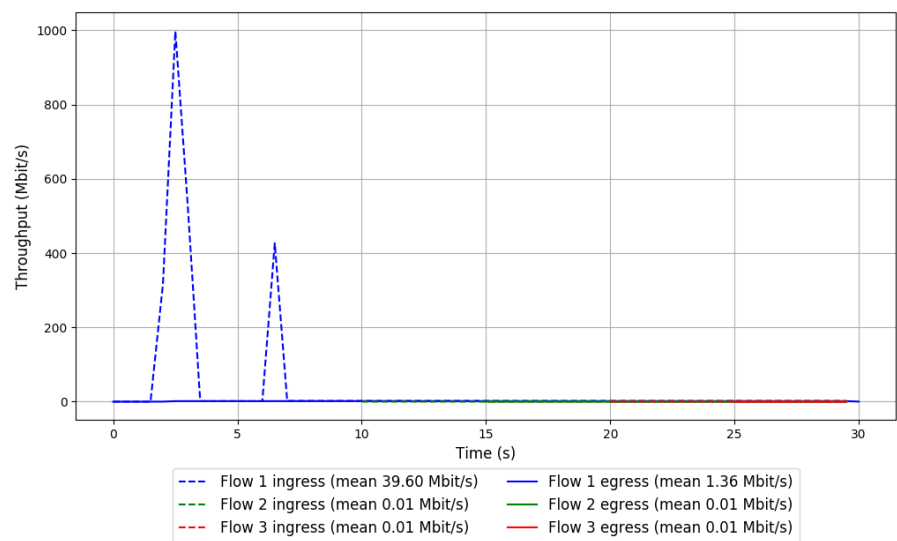


```
Run 1: Statistics of FillP

Start at: 2018-03-26 23:22:23
End at: 2018-03-26 23:22:53
Local clock offset: -5.554 ms
Remote clock offset: 2.786 ms

# Below is generated by plot.py at 2018-03-27 00:26:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.36 Mbit/s
95th percentile per-packet one-way delay: 5529.208 ms
Loss rate: 96.57%
-- Flow 1:
Average throughput: 1.36 Mbit/s
95th percentile per-packet one-way delay: 5527.411 ms
Loss rate: 96.58%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 5561.890 ms
Loss rate: 9.64%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 5569.753 ms
Loss rate: 75.68%
```

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-03-26 23:45:07

End at: 2018-03-26 23:45:37

Local clock offset: -5.8 ms

Remote clock offset: 8.37 ms

Below is generated by plot.py at 2018-03-27 00:26:38

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.53 Mbit/s

95th percentile per-packet one-way delay: 4936.348 ms

Loss rate: 96.20%

-- Flow 1:

Average throughput: 1.52 Mbit/s

95th percentile per-packet one-way delay: 4937.193 ms

Loss rate: 96.21%

-- Flow 2:

Average throughput: 0.01 Mbit/s

95th percentile per-packet one-way delay: 4817.782 ms

Loss rate: 6.52%

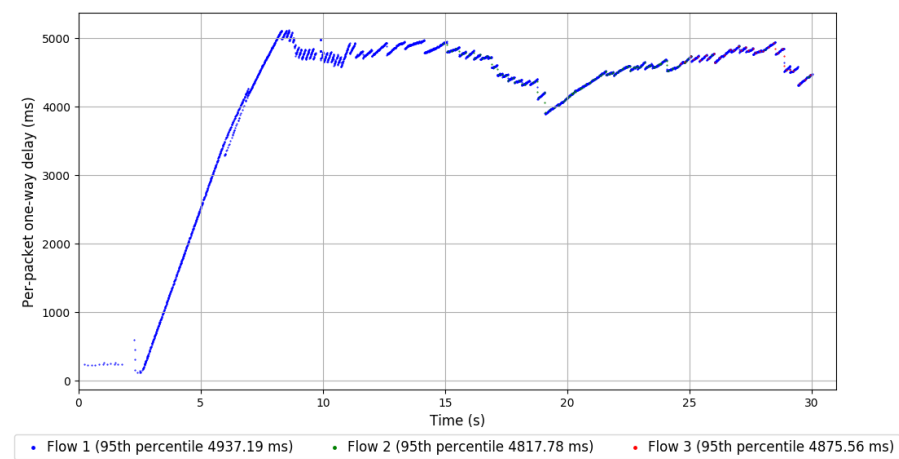
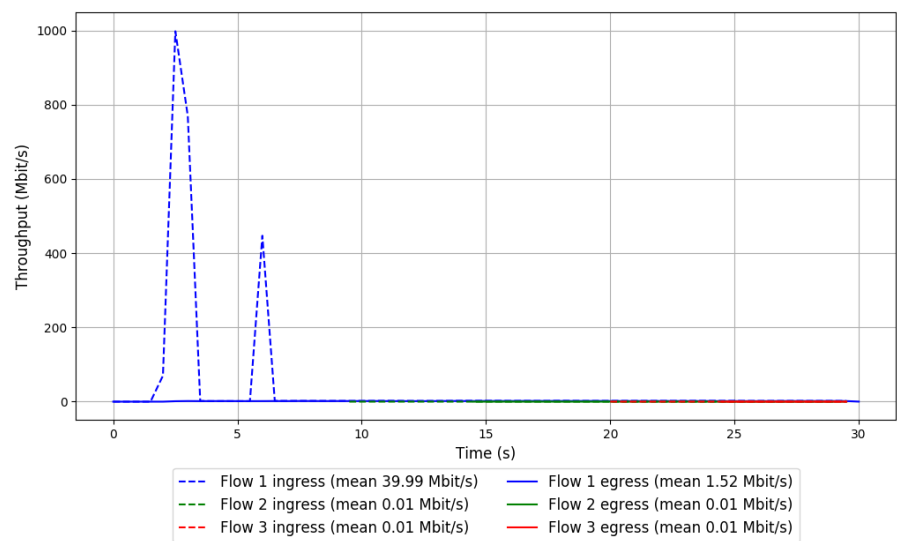
-- Flow 3:

Average throughput: 0.01 Mbit/s

95th percentile per-packet one-way delay: 4875.556 ms

Loss rate: 74.23%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-03-27 00:07:50

End at: 2018-03-27 00:08:20

Local clock offset: -5.782 ms

Remote clock offset: 2.93 ms

Below is generated by plot.py at 2018-03-27 00:26:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.33 Mbit/s

95th percentile per-packet one-way delay: 8260.303 ms

Loss rate: 97.44%

-- Flow 1:

Average throughput: 1.33 Mbit/s

95th percentile per-packet one-way delay: 8261.047 ms

Loss rate: 96.07%

-- Flow 2:

Average throughput: 0.01 Mbit/s

95th percentile per-packet one-way delay: 5353.527 ms

Loss rate: 8.07%

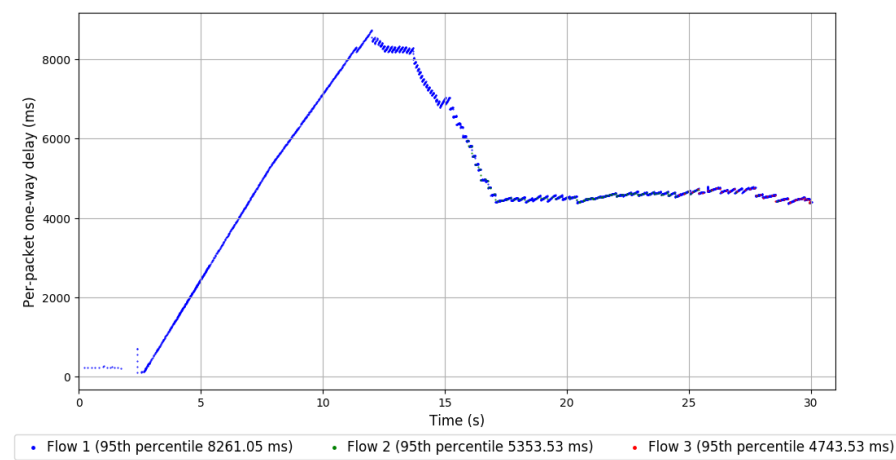
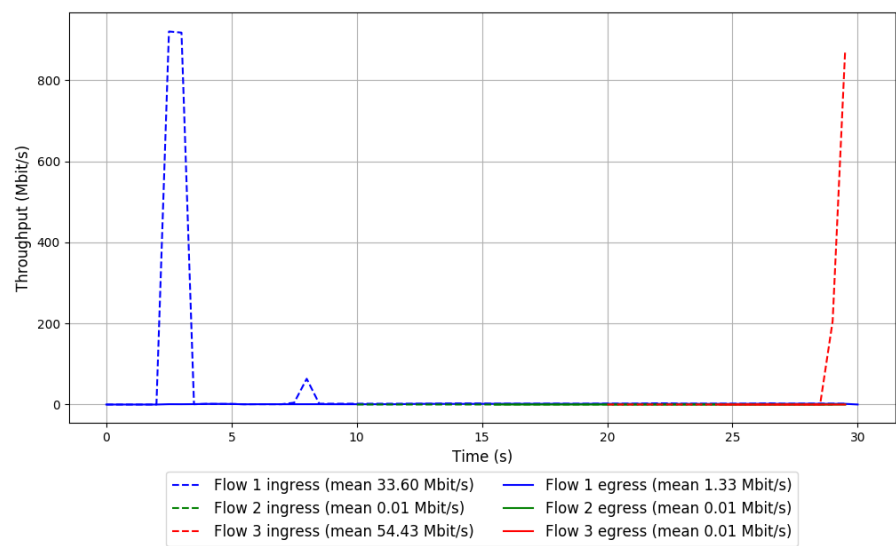
-- Flow 3:

Average throughput: 0.01 Mbit/s

95th percentile per-packet one-way delay: 4743.527 ms

Loss rate: 99.99%

Run 3: Report of FillP — Data Link



Run 1: Statistics of Indigo-1-32

Start at: 2018-03-26 23:31:14

End at: 2018-03-26 23:31:44

Local clock offset: -6.203 ms

Remote clock offset: 2.534 ms

Below is generated by plot.py at 2018-03-27 00:26:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.07 Mbit/s

95th percentile per-packet one-way delay: 3505.891 ms

Loss rate: 3.46%

-- Flow 1:

Average throughput: 0.41 Mbit/s

95th percentile per-packet one-way delay: 876.057 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.48 Mbit/s

95th percentile per-packet one-way delay: 697.982 ms

Loss rate: 0.00%

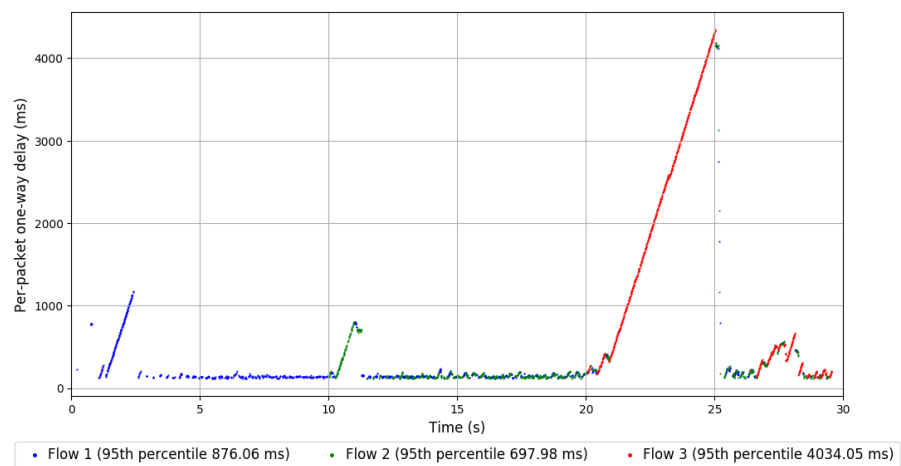
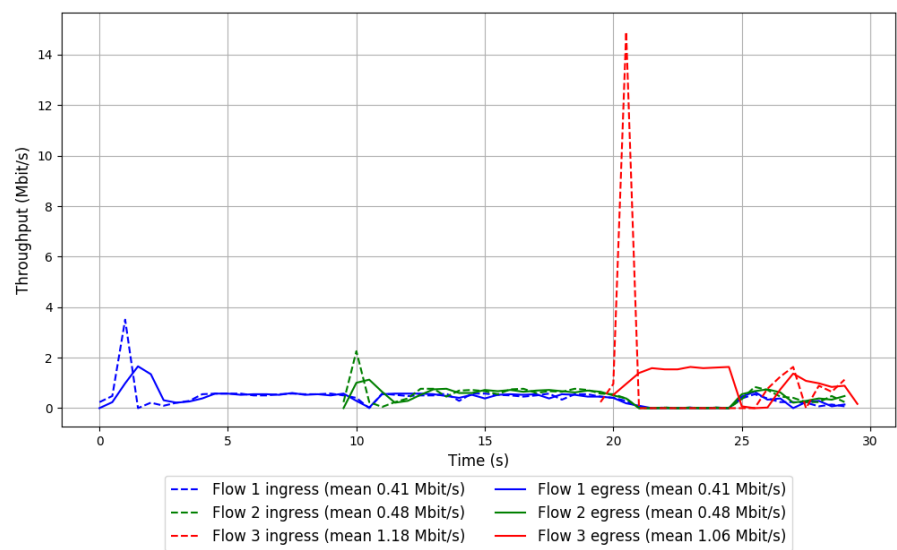
-- Flow 3:

Average throughput: 1.06 Mbit/s

95th percentile per-packet one-way delay: 4034.045 ms

Loss rate: 10.07%

Run 1: Report of Indigo-1-32 — Data Link



Run 2: Statistics of Indigo-1-32

Start at: 2018-03-26 23:53:58

End at: 2018-03-26 23:54:28

Local clock offset: -5.56 ms

Remote clock offset: 2.64 ms

Below is generated by plot.py at 2018-03-27 00:26:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.32 Mbit/s

95th percentile per-packet one-way delay: 282.290 ms

Loss rate: 0.25%

-- Flow 1:

Average throughput: 0.83 Mbit/s

95th percentile per-packet one-way delay: 251.899 ms

Loss rate: 0.25%

-- Flow 2:

Average throughput: 0.52 Mbit/s

95th percentile per-packet one-way delay: 292.221 ms

Loss rate: 0.24%

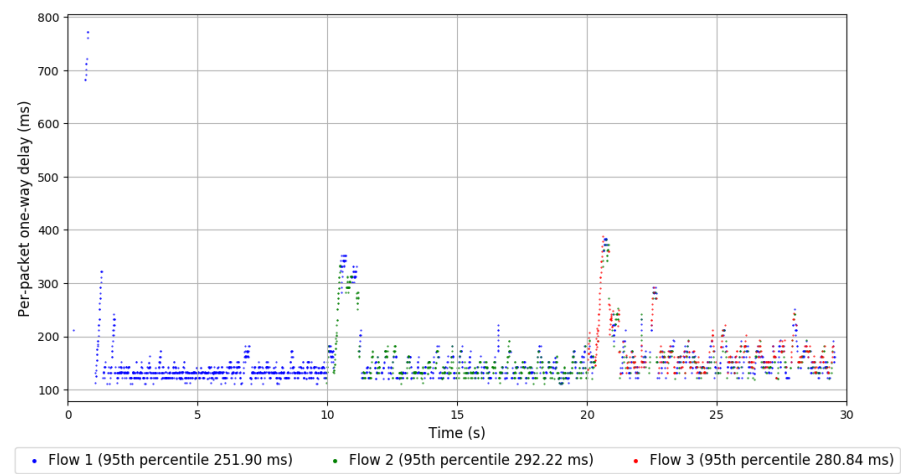
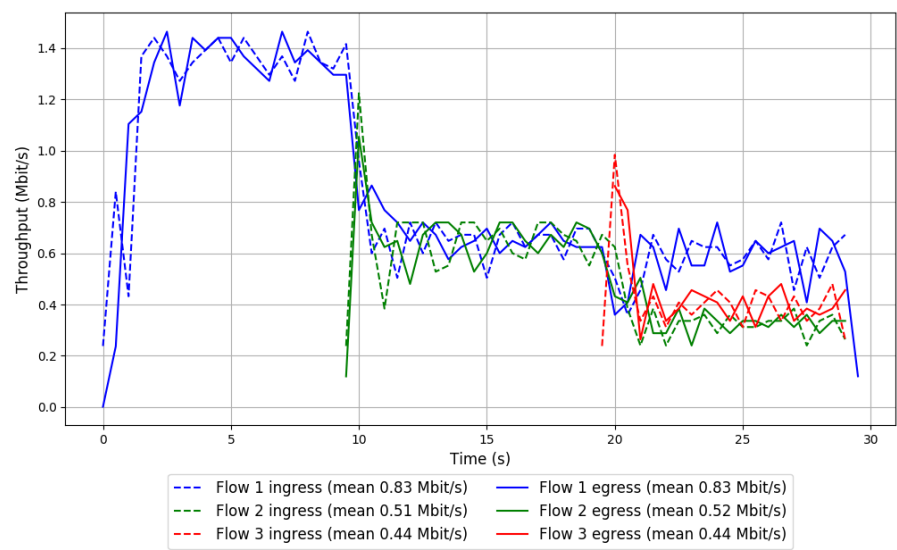
-- Flow 3:

Average throughput: 0.44 Mbit/s

95th percentile per-packet one-way delay: 280.838 ms

Loss rate: 0.29%

Run 2: Report of Indigo-1-32 — Data Link



Run 3: Statistics of Indigo-1-32

Start at: 2018-03-27 00:16:41

End at: 2018-03-27 00:17:11

Local clock offset: -3.714 ms

Remote clock offset: 3.151 ms

Below is generated by plot.py at 2018-03-27 00:26:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.44 Mbit/s

95th percentile per-packet one-way delay: 620.881 ms

Loss rate: 0.31%

-- Flow 1:

Average throughput: 0.82 Mbit/s

95th percentile per-packet one-way delay: 254.033 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.61 Mbit/s

95th percentile per-packet one-way delay: 391.555 ms

Loss rate: 0.60%

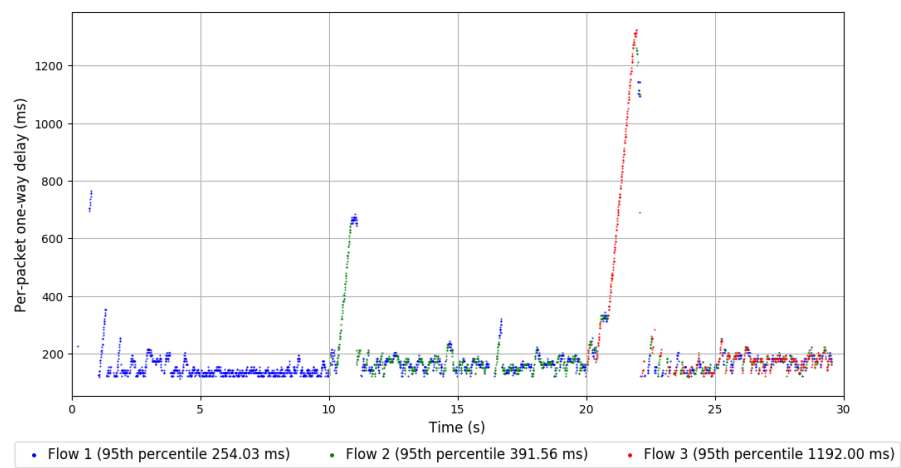
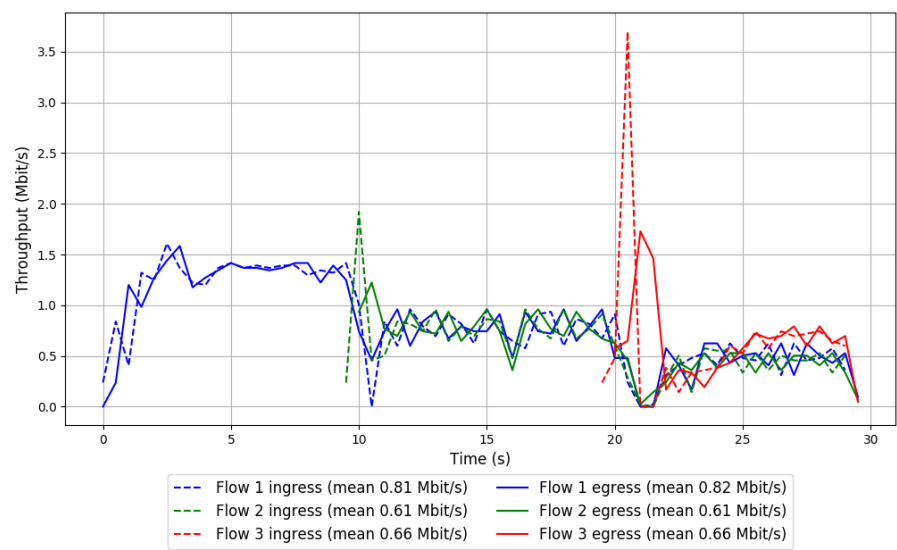
-- Flow 3:

Average throughput: 0.66 Mbit/s

95th percentile per-packet one-way delay: 1192.001 ms

Loss rate: 0.95%

Run 3: Report of Indigo-1-32 — Data Link



Run 1: Statistics of Vivace-latency

Start at: 2018-03-26 23:33:45

End at: 2018-03-26 23:34:15

Local clock offset: -6.367 ms

Remote clock offset: 2.612 ms

Below is generated by plot.py at 2018-03-27 00:26:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.49 Mbit/s

95th percentile per-packet one-way delay: 4788.262 ms

Loss rate: 36.55%

-- Flow 1:

Average throughput: 0.84 Mbit/s

95th percentile per-packet one-way delay: 4782.697 ms

Loss rate: 33.32%

-- Flow 2:

Average throughput: 0.97 Mbit/s

95th percentile per-packet one-way delay: 4792.753 ms

Loss rate: 40.31%

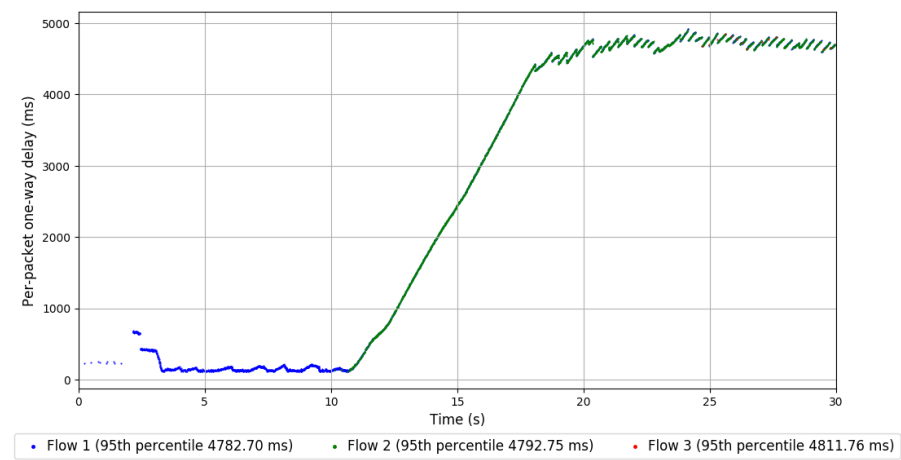
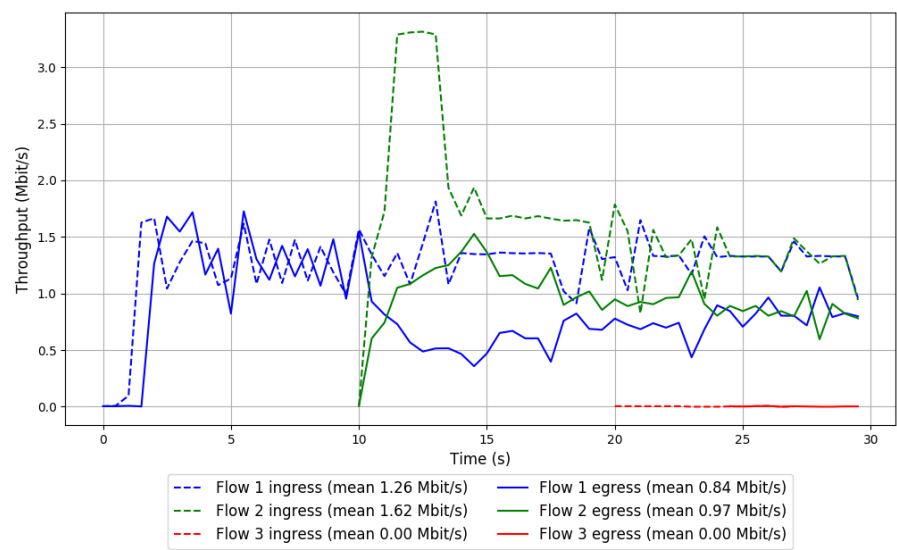
-- Flow 3:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 4811.756 ms

Loss rate: 38.22%

Run 1: Report of Vivace-latency — Data Link



Run 2: Statistics of Vivace-latency

Start at: 2018-03-26 23:56:29

End at: 2018-03-26 23:56:59

Local clock offset: -5.575 ms

Remote clock offset: 8.531 ms

Below is generated by plot.py at 2018-03-27 00:26:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.52 Mbit/s

95th percentile per-packet one-way delay: 4817.099 ms

Loss rate: 36.15%

-- Flow 1:

Average throughput: 0.84 Mbit/s

95th percentile per-packet one-way delay: 4791.388 ms

Loss rate: 33.16%

-- Flow 2:

Average throughput: 1.02 Mbit/s

95th percentile per-packet one-way delay: 4834.855 ms

Loss rate: 39.49%

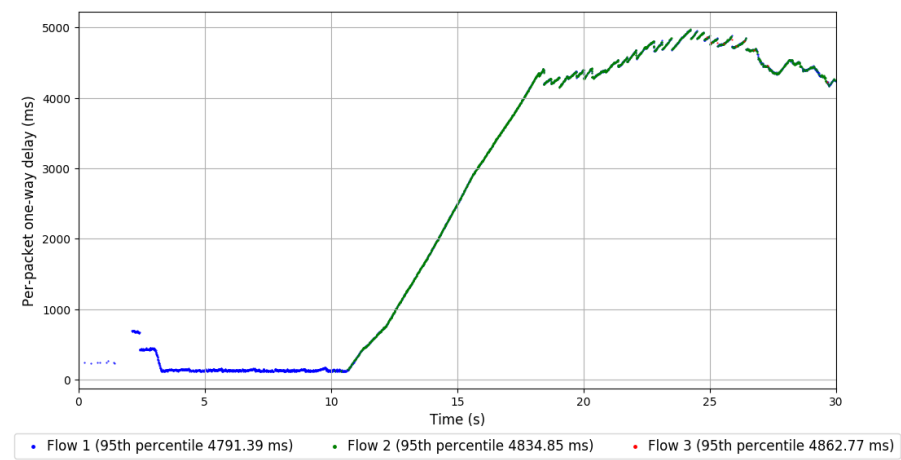
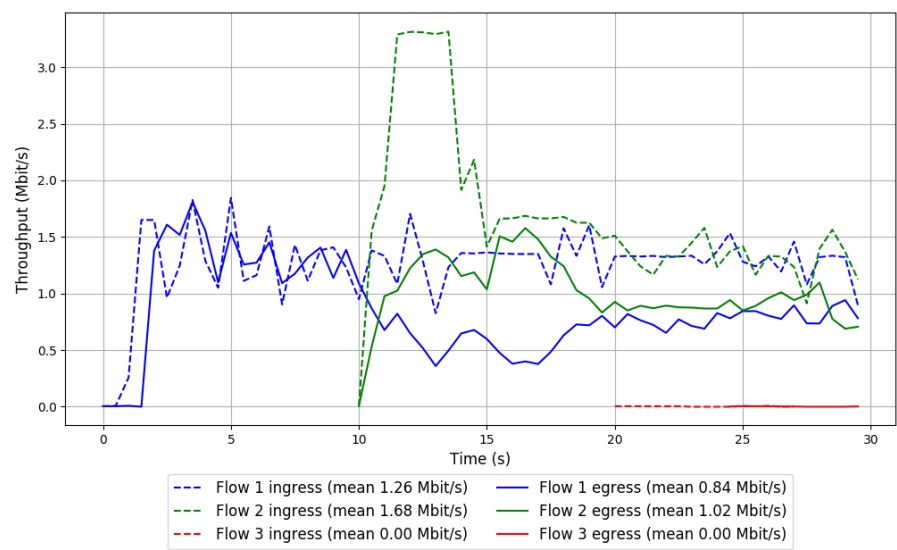
-- Flow 3:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 4862.768 ms

Loss rate: 53.02%

Run 2: Report of Vivace-latency — Data Link



Run 3: Statistics of Vivace-latency

Start at: 2018-03-27 00:19:12

End at: 2018-03-27 00:19:42

Local clock offset: 7.036 ms

Remote clock offset: 3.262 ms

Below is generated by plot.py at 2018-03-27 00:26:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.51 Mbit/s

95th percentile per-packet one-way delay: 5018.722 ms

Loss rate: 41.56%

-- Flow 1:

Average throughput: 0.92 Mbit/s

95th percentile per-packet one-way delay: 4910.417 ms

Loss rate: 33.50%

-- Flow 2:

Average throughput: 0.89 Mbit/s

95th percentile per-packet one-way delay: 5065.204 ms

Loss rate: 50.96%

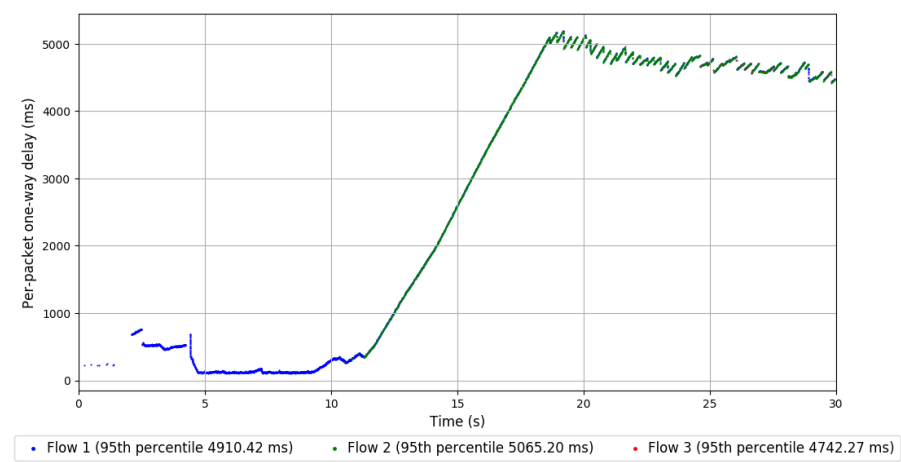
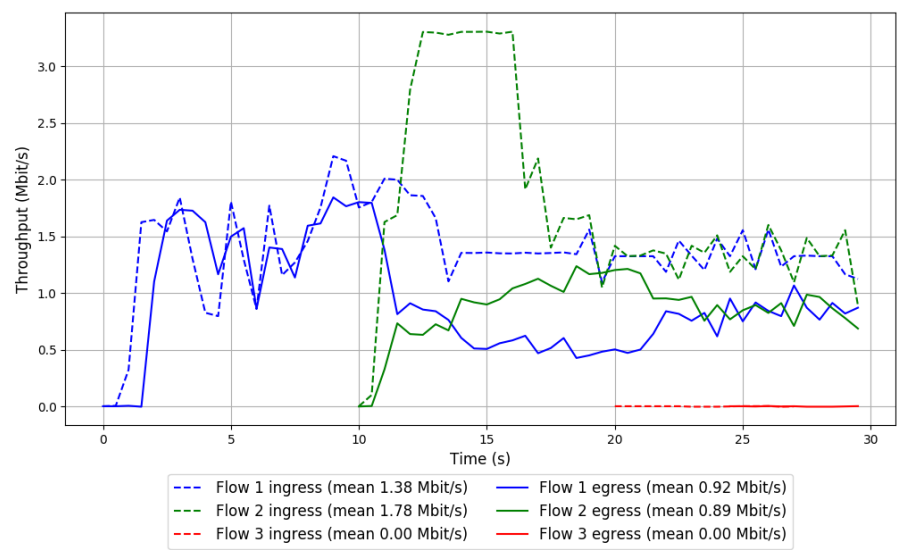
-- Flow 3:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 4742.272 ms

Loss rate: 32.61%

Run 3: Report of Vivace-latency — Data Link

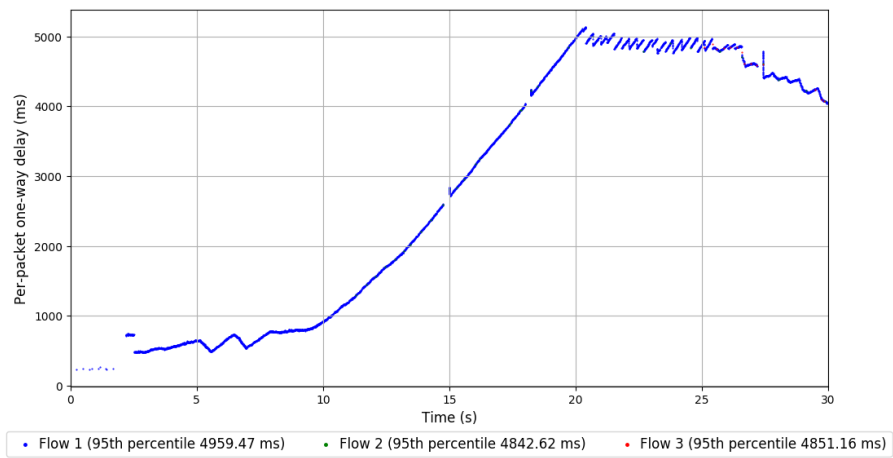
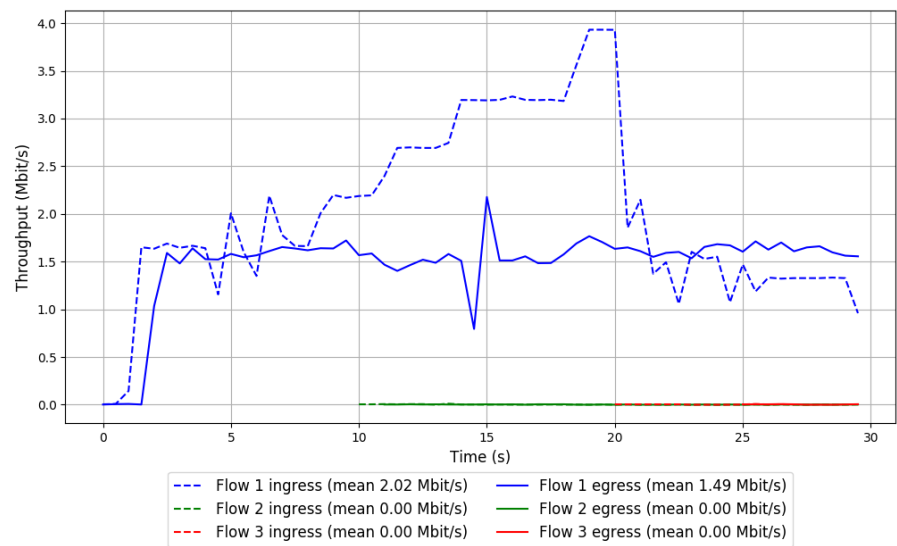


```
Run 1: Statistics of Vivace-loss

Start at: 2018-03-26 23:28:42
End at: 2018-03-26 23:29:12
Local clock offset: -5.973 ms
Remote clock offset: 7.705 ms

# Below is generated by plot.py at 2018-03-27 00:26:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.49 Mbit/s
95th percentile per-packet one-way delay: 4959.422 ms
Loss rate: 26.94%
-- Flow 1:
Average throughput: 1.49 Mbit/s
95th percentile per-packet one-way delay: 4959.469 ms
Loss rate: 26.94%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 4842.625 ms
Loss rate: 13.54%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 4851.161 ms
Loss rate: 32.61%
```

Run 1: Report of Vivace-loss — Data Link



Run 2: Statistics of Vivace-loss

Start at: 2018-03-26 23:51:26

End at: 2018-03-26 23:51:56

Local clock offset: -5.646 ms

Remote clock offset: 8.213 ms

Below is generated by plot.py at 2018-03-27 00:26:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.59 Mbit/s

95th percentile per-packet one-way delay: 4907.734 ms

Loss rate: 26.93%

-- Flow 1:

Average throughput: 1.59 Mbit/s

95th percentile per-packet one-way delay: 4907.122 ms

Loss rate: 26.95%

-- Flow 2:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 4959.733 ms

Loss rate: 14.33%

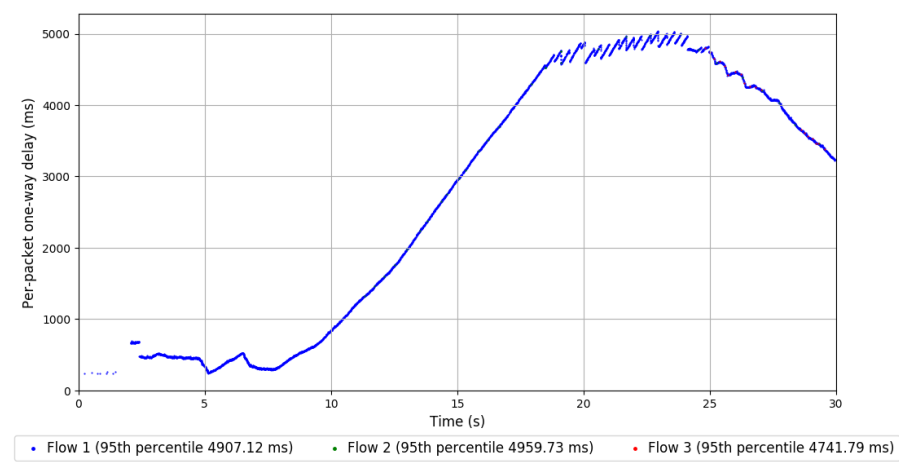
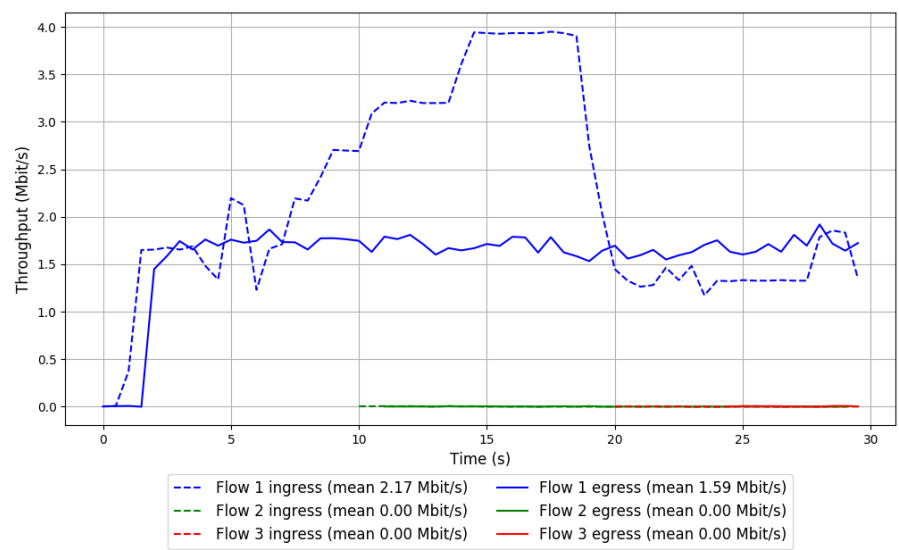
-- Flow 3:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 4741.787 ms

Loss rate: 5.60%

Run 2: Report of Vivace-loss — Data Link



Run 3: Statistics of Vivace-loss

Start at: 2018-03-27 00:14:09

End at: 2018-03-27 00:14:39

Local clock offset: -4.688 ms

Remote clock offset: 9.031 ms

Below is generated by plot.py at 2018-03-27 00:26:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.61 Mbit/s

95th percentile per-packet one-way delay: 4642.663 ms

Loss rate: 33.02%

-- Flow 1:

Average throughput: 1.61 Mbit/s

95th percentile per-packet one-way delay: 4641.944 ms

Loss rate: 33.03%

-- Flow 2:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 4718.183 ms

Loss rate: 18.37%

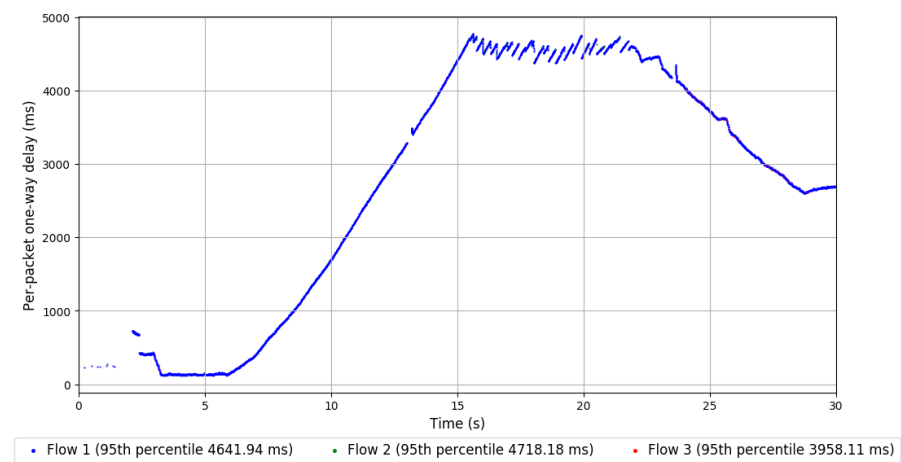
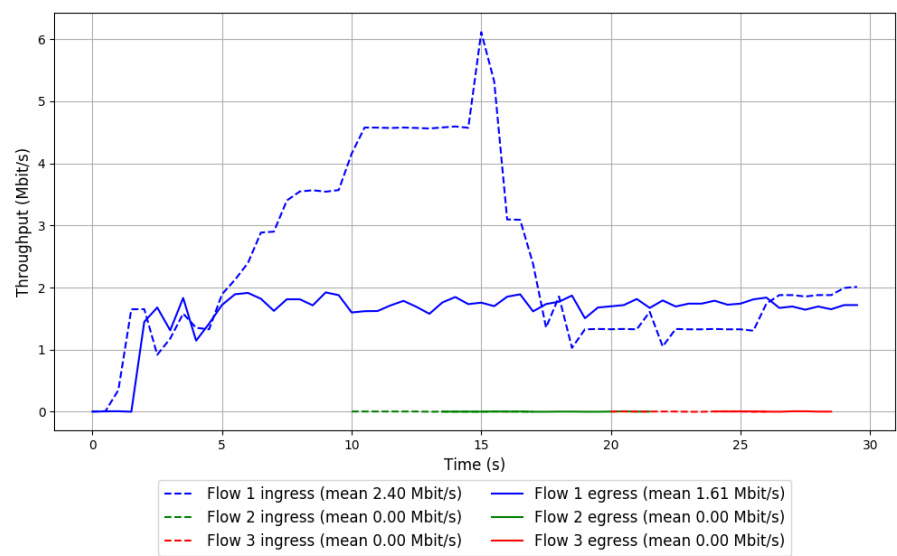
-- Flow 3:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 3958.112 ms

Loss rate: 0.00%

Run 3: Report of Vivace-loss — Data Link



Run 1: Statistics of Vivace-LTE

Start at: 2018-03-26 23:24:55

End at: 2018-03-26 23:25:25

Local clock offset: -5.685 ms

Remote clock offset: 2.303 ms

Below is generated by plot.py at 2018-03-27 00:26:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.46 Mbit/s

95th percentile per-packet one-way delay: 5151.770 ms

Loss rate: 42.42%

-- Flow 1:

Average throughput: 0.90 Mbit/s

95th percentile per-packet one-way delay: 5098.007 ms

Loss rate: 33.88%

-- Flow 2:

Average throughput: 0.88 Mbit/s

95th percentile per-packet one-way delay: 5192.771 ms

Loss rate: 52.35%

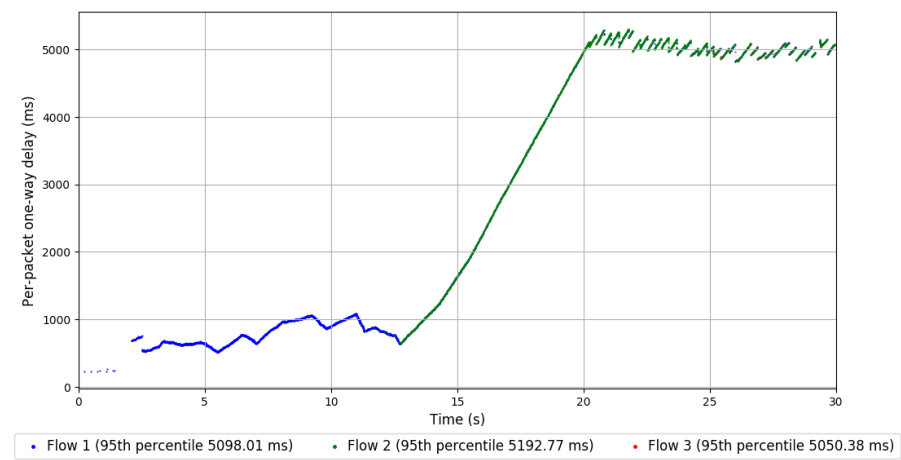
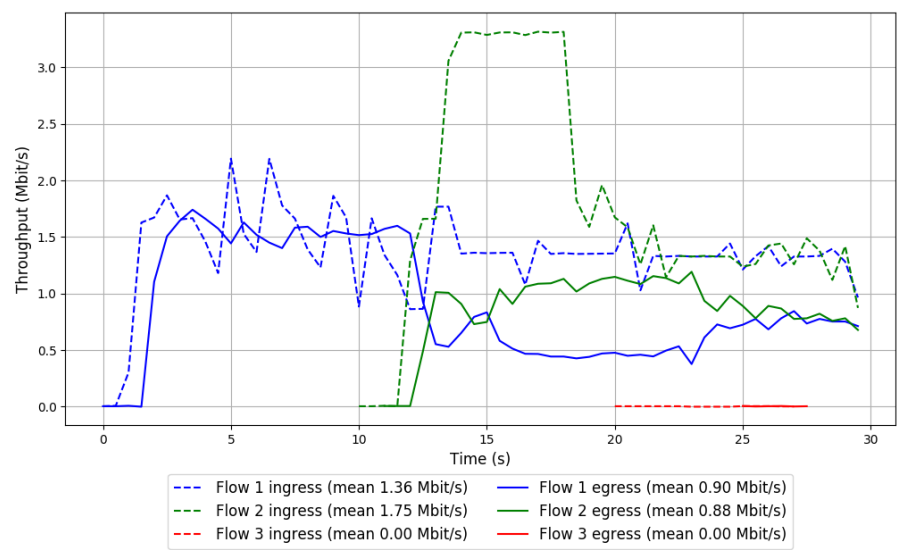
-- Flow 3:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 5050.375 ms

Loss rate: 44.83%

Run 1: Report of Vivace-LTE — Data Link



Run 2: Statistics of Vivace-LTE

Start at: 2018-03-26 23:47:39

End at: 2018-03-26 23:48:09

Local clock offset: -5.675 ms

Remote clock offset: 2.547 ms

Below is generated by plot.py at 2018-03-27 00:26:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.60 Mbit/s

95th percentile per-packet one-way delay: 4628.789 ms

Loss rate: 39.92%

-- Flow 1:

Average throughput: 0.99 Mbit/s

95th percentile per-packet one-way delay: 4609.404 ms

Loss rate: 33.67%

-- Flow 2:

Average throughput: 0.91 Mbit/s

95th percentile per-packet one-way delay: 4651.514 ms

Loss rate: 47.96%

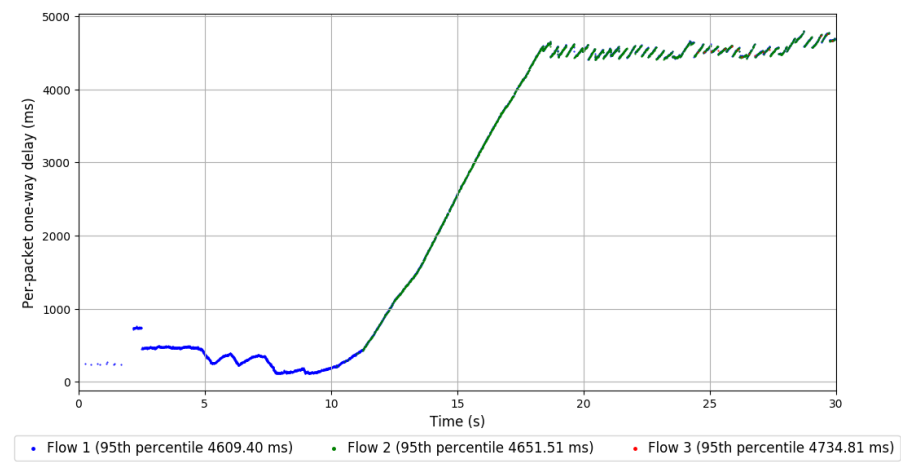
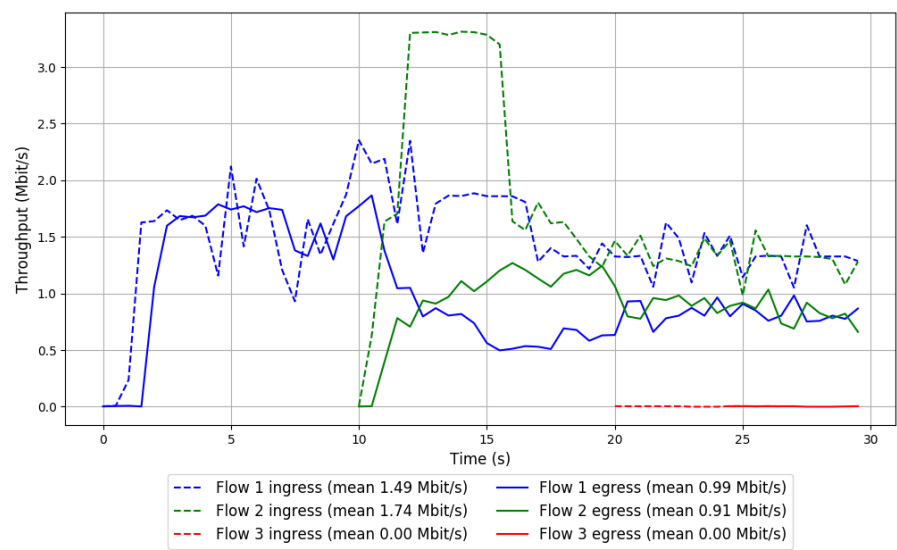
-- Flow 3:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 4734.811 ms

Loss rate: 28.02%

Run 2: Report of Vivace-LTE — Data Link



Run 3: Statistics of Vivace-LTE

Start at: 2018-03-27 00:10:23

End at: 2018-03-27 00:10:53

Local clock offset: -2.444 ms

Remote clock offset: 8.945 ms

Below is generated by plot.py at 2018-03-27 00:26:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.57 Mbit/s

95th percentile per-packet one-way delay: 4644.016 ms

Loss rate: 36.44%

-- Flow 1:

Average throughput: 0.93 Mbit/s

95th percentile per-packet one-way delay: 4618.968 ms

Loss rate: 31.32%

-- Flow 2:

Average throughput: 0.95 Mbit/s

95th percentile per-packet one-way delay: 4674.376 ms

Loss rate: 42.73%

-- Flow 3:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 4528.825 ms

Loss rate: 16.81%

Run 3: Report of Vivace-LTE — Data Link

