

Pantheon Report

Generated at 2018-10-26 05:00:04 (UTC).

Data path: AWS Korea on `ens5` (*local*) → China on `eno1` (*remote*).

Repeated the test of 18 congestion control schemes 5 times.

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

NTP offsets were measured against `ntp.nict.jp` and have been applied to correct the timestamps in logs.

System info:

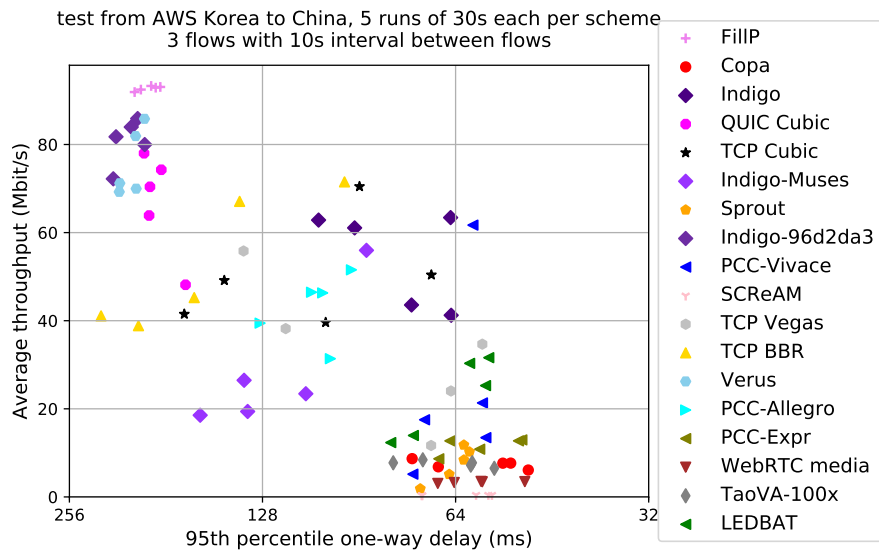
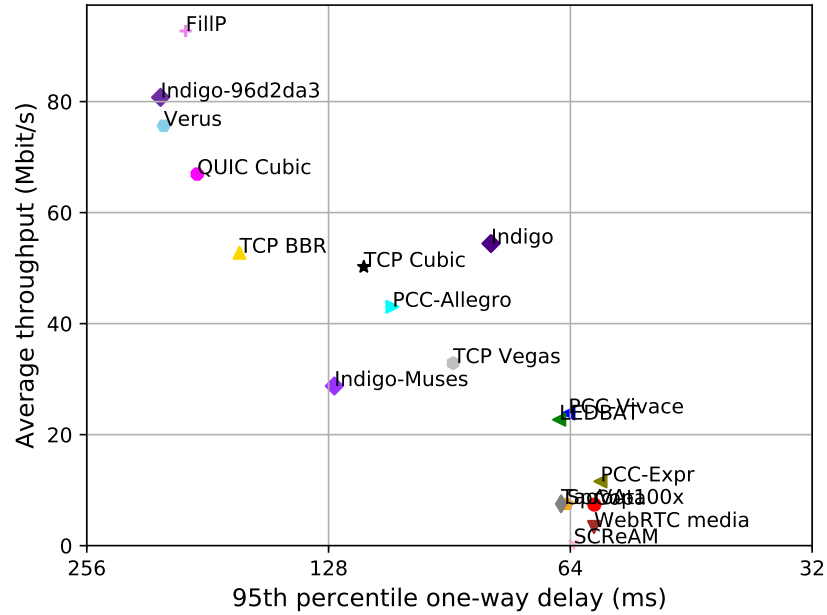
```
Linux 4.15.0-1023-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

```
branch: muses @ 2e19c0464530faa92c63f8217c9971438a26a3be
third_party/fillp @ 5332fc9127c63565e13f4933b336c02d1aabdac6
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quick @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
```

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

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



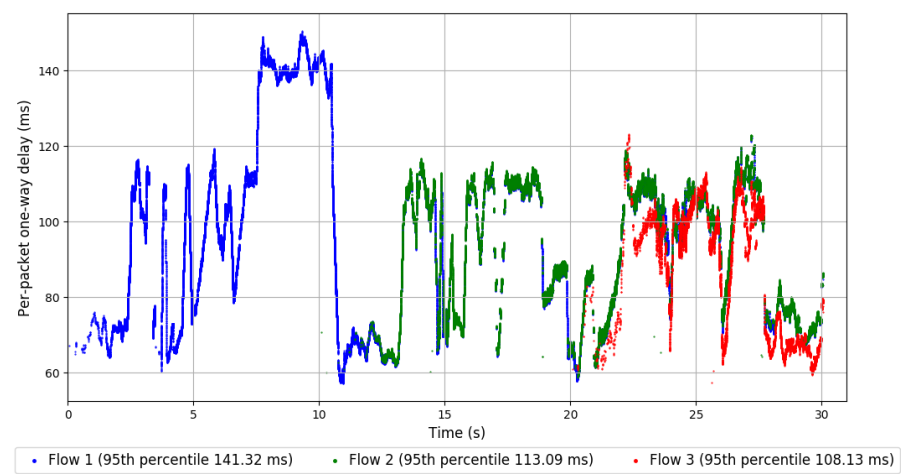
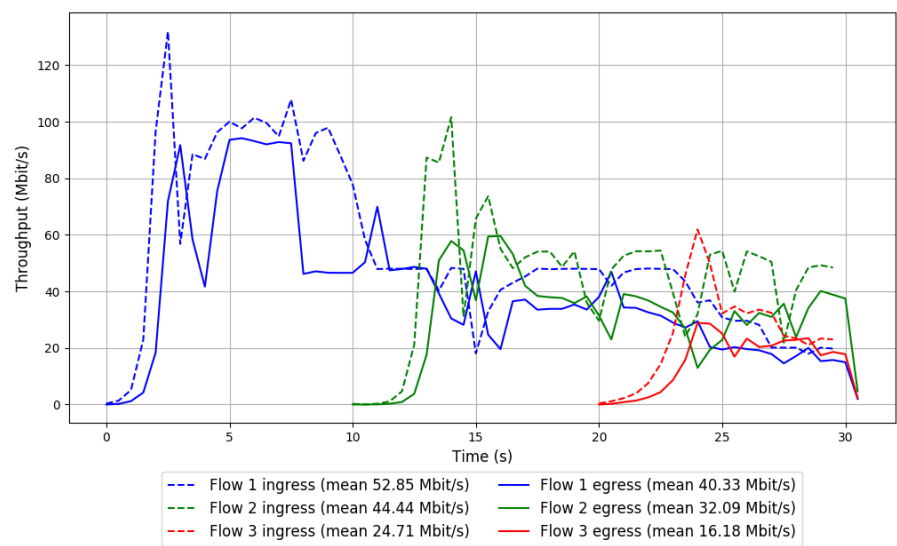
scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	38.23	15.92	11.85	158.43	196.40	160.32	16.57	21.17	18.90
Copa	5	0.87	7.13	5.35	58.92	59.89	59.31	79.89	9.62	16.70
TCP Cubic	5	32.41	16.20	21.12	108.51	141.02	121.67	1.35	1.50	1.55
FillP	5	53.59	40.61	36.86	191.27	192.59	195.27	11.91	20.79	33.95
Indigo	5	25.31	29.42	30.11	74.53	81.22	76.05	2.83	5.45	9.95
Indigo-96d2da3	5	52.85	29.64	26.44	206.67	207.06	208.35	36.74	47.29	54.11
LEDBAT	5	14.50	9.80	5.07	64.67	65.28	65.28	0.03	0.03	0.06
Indigo-Muses	5	15.21	12.60	16.04	112.51	128.08	140.37	2.25	1.98	1.29
PCC-Allegro	5	48.74	17.21	22.70	108.90	101.93	99.34	25.59	36.20	48.98
PCC-Expr	5	6.05	6.92	2.80	57.97	58.53	58.67	51.44	43.63	47.74
QUIC Cubic	5	39.31	33.24	17.50	180.07	185.79	189.68	0.28	0.20	0.52
SCReAM	5	0.19	0.22	0.22	62.65	62.38	61.87	0.00	0.00	0.00
Sprout	5	3.98	3.72	3.12	64.02	63.53	62.69	0.11	0.00	0.00
TaoVA-100x	5	0.00	8.16	6.31	52.90	64.84	68.11	95.92	14.71	15.88
TCP Vegas	5	17.10	14.49	18.42	75.33	88.34	89.31	0.09	0.26	0.23
Verus	5	52.27	26.17	20.33	204.43	204.39	203.38	12.46	20.58	21.25
PCC-Vivace	5	17.14	4.90	10.40	63.87	61.98	64.47	0.03	0.02	0.03
WebRTC media	5	1.81	1.17	0.40	59.26	57.51	58.73	0.02	0.00	0.10

Run 1: Statistics of TCP BBR

Start at: 2018-10-26 03:13:09
End at: 2018-10-26 03:13:39
Local clock offset: -0.426 ms
Remote clock offset: -5.216 ms

Below is generated by plot.py at 2018-10-26 04:54:49
Datalink statistics
-- Total of 3 flows:
Average throughput: 67.09 Mbit/s
95th percentile per-packet one-way delay: 138.954 ms
Loss rate: 26.00%
-- Flow 1:
Average throughput: 40.33 Mbit/s
95th percentile per-packet one-way delay: 141.325 ms
Loss rate: 23.67%
-- Flow 2:
Average throughput: 32.09 Mbit/s
95th percentile per-packet one-way delay: 113.086 ms
Loss rate: 27.80%
-- Flow 3:
Average throughput: 16.18 Mbit/s
95th percentile per-packet one-way delay: 108.132 ms
Loss rate: 34.48%

Run 1: Report of TCP BBR — Data Link

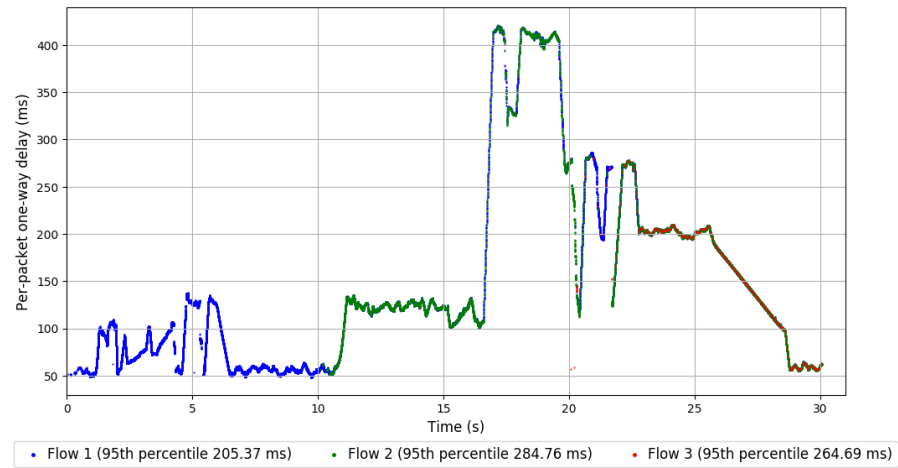
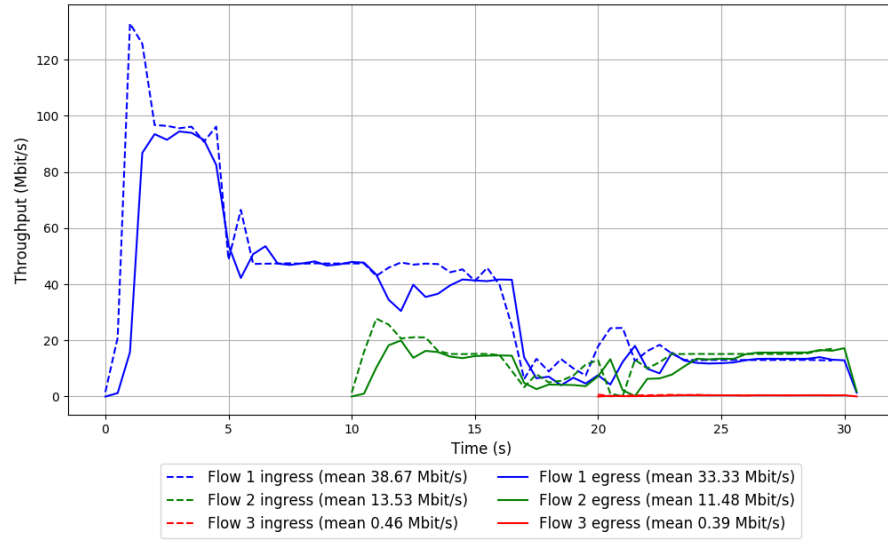


Run 2: Statistics of TCP BBR

Start at: 2018-10-26 03:38:12
End at: 2018-10-26 03:38:42
Local clock offset: 4.082 ms
Remote clock offset: -10.47 ms

Below is generated by plot.py at 2018-10-26 04:54:49
Datalink statistics
-- Total of 3 flows:
Average throughput: 41.10 Mbit/s
95th percentile per-packet one-way delay: 228.492 ms
Loss rate: 14.06%
-- Flow 1:
Average throughput: 33.33 Mbit/s
95th percentile per-packet one-way delay: 205.368 ms
Loss rate: 13.80%
-- Flow 2:
Average throughput: 11.48 Mbit/s
95th percentile per-packet one-way delay: 284.764 ms
Loss rate: 15.15%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 264.686 ms
Loss rate: 15.00%

Run 2: Report of TCP BBR — Data Link

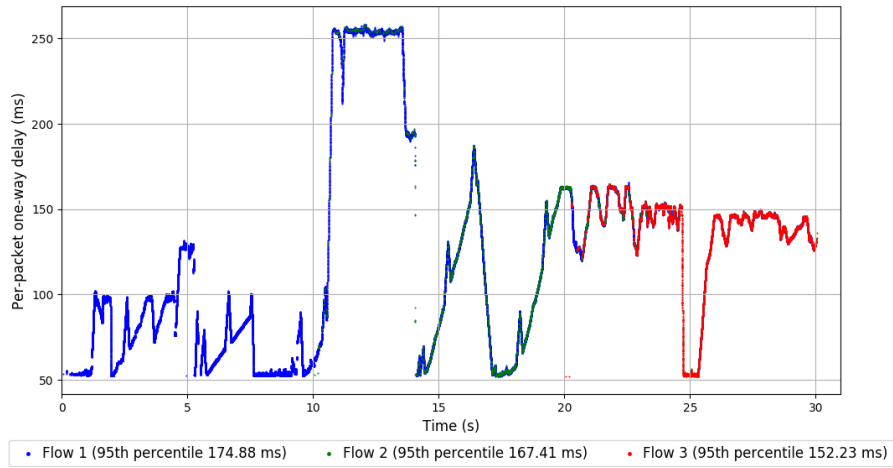
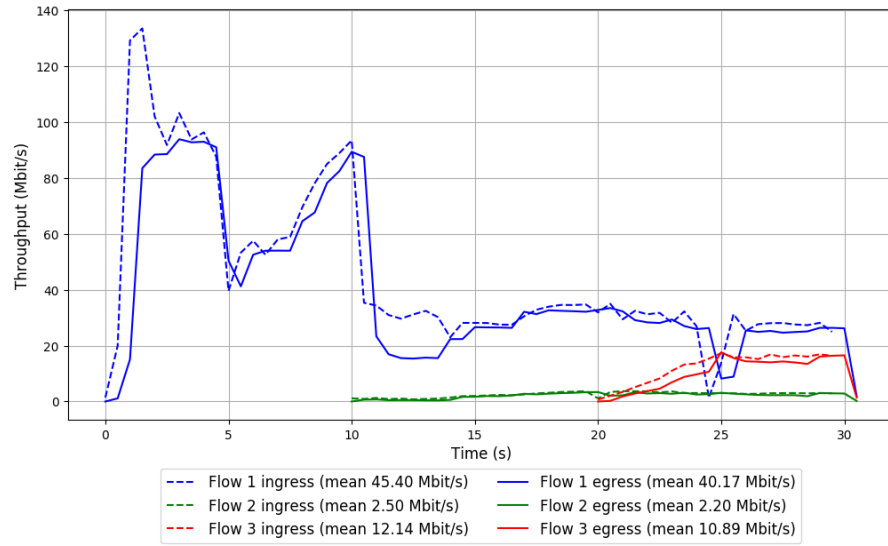


Run 3: Statistics of TCP BBR

Start at: 2018-10-26 04:02:18
End at: 2018-10-26 04:02:48
Local clock offset: 9.089 ms
Remote clock offset: -0.457 ms

Below is generated by plot.py at 2018-10-26 04:54:49
Datalink statistics
-- Total of 3 flows:
Average throughput: 45.25 Mbit/s
95th percentile per-packet one-way delay: 163.553 ms
Loss rate: 11.47%
-- Flow 1:
Average throughput: 40.17 Mbit/s
95th percentile per-packet one-way delay: 174.882 ms
Loss rate: 11.54%
-- Flow 2:
Average throughput: 2.20 Mbit/s
95th percentile per-packet one-way delay: 167.407 ms
Loss rate: 12.29%
-- Flow 3:
Average throughput: 10.89 Mbit/s
95th percentile per-packet one-way delay: 152.234 ms
Loss rate: 10.32%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2018-10-26 04:26:21

End at: 2018-10-26 04:26:51

Local clock offset: -1.287 ms

Remote clock offset: 0.707 ms

Below is generated by plot.py at 2018-10-26 04:54:51

Datalink statistics

-- Total of 3 flows:

Average throughput: 71.52 Mbit/s

95th percentile per-packet one-way delay: 95.359 ms

Loss rate: 20.20%

-- Flow 1:

Average throughput: 48.46 Mbit/s

95th percentile per-packet one-way delay: 96.236 ms

Loss rate: 17.52%

-- Flow 2:

Average throughput: 23.88 Mbit/s

95th percentile per-packet one-way delay: 95.442 ms

Loss rate: 26.09%

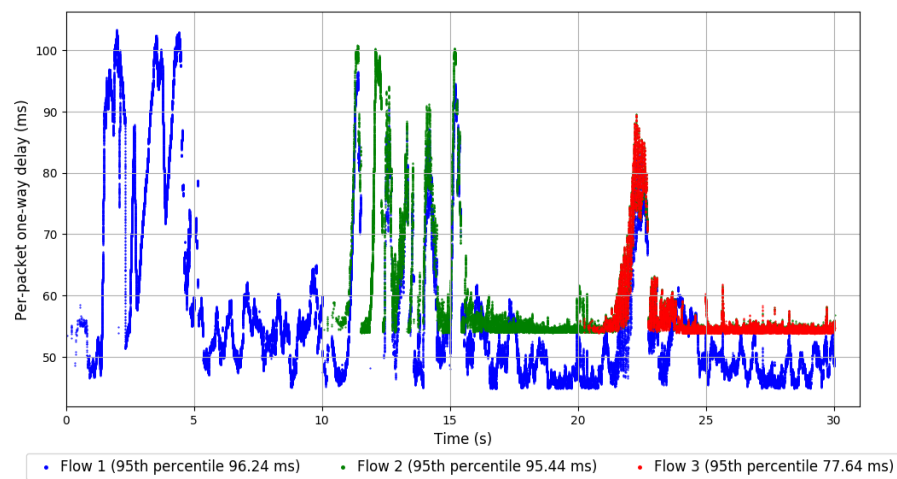
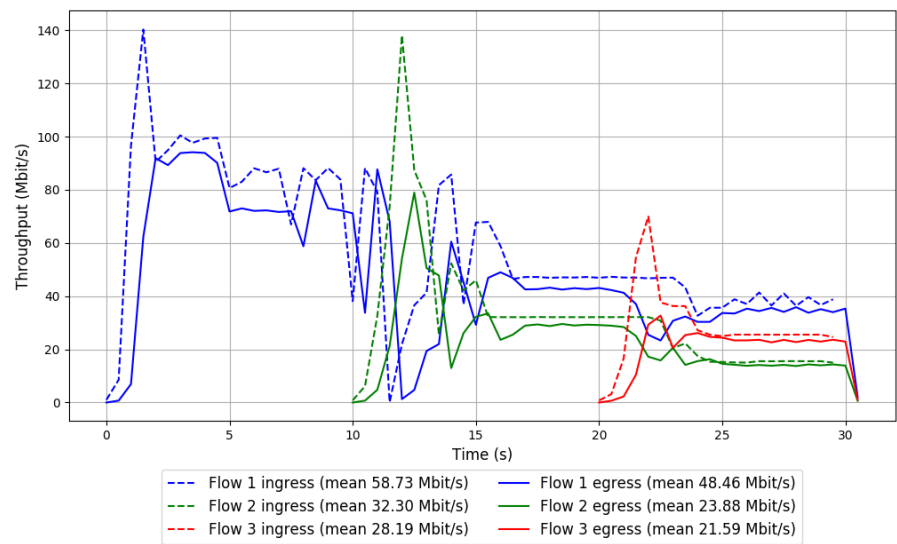
-- Flow 3:

Average throughput: 21.59 Mbit/s

95th percentile per-packet one-way delay: 77.636 ms

Loss rate: 23.49%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-10-26 04:51:00

End at: 2018-10-26 04:51:30

Local clock offset: -1.55 ms

Remote clock offset: 3.843 ms

Below is generated by plot.py at 2018-10-26 04:54:51

Datalink statistics

-- Total of 3 flows:

Average throughput: 38.87 Mbit/s

95th percentile per-packet one-way delay: 199.774 ms

Loss rate: 17.43%

-- Flow 1:

Average throughput: 28.85 Mbit/s

95th percentile per-packet one-way delay: 174.323 ms

Loss rate: 16.32%

-- Flow 2:

Average throughput: 9.94 Mbit/s

95th percentile per-packet one-way delay: 321.314 ms

Loss rate: 24.53%

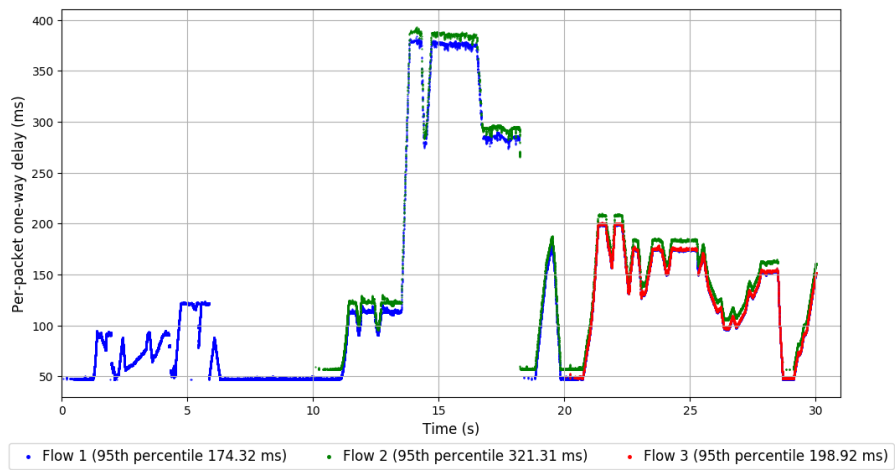
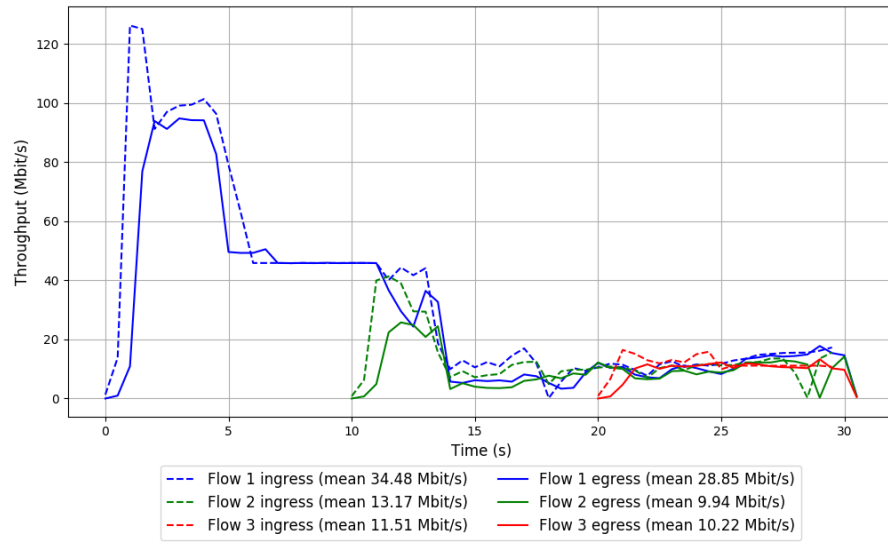
-- Flow 3:

Average throughput: 10.22 Mbit/s

95th percentile per-packet one-way delay: 198.916 ms

Loss rate: 11.23%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-10-26 02:58:29

End at: 2018-10-26 02:58:59

Local clock offset: 0.156 ms

Remote clock offset: 1.969 ms

Below is generated by plot.py at 2018-10-26 04:54:51

Datalink statistics

-- Total of 3 flows:

Average throughput: 8.69 Mbit/s

95th percentile per-packet one-way delay: 74.802 ms

Loss rate: 4.93%

-- Flow 1:

Average throughput: 4.36 Mbit/s

95th percentile per-packet one-way delay: 74.489 ms

Loss rate: 5.31%

-- Flow 2:

Average throughput: 4.84 Mbit/s

95th percentile per-packet one-way delay: 74.867 ms

Loss rate: 4.30%

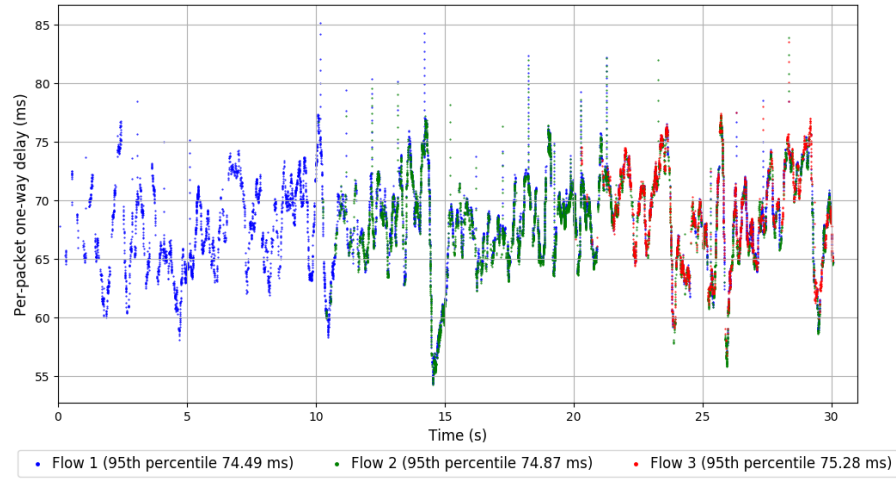
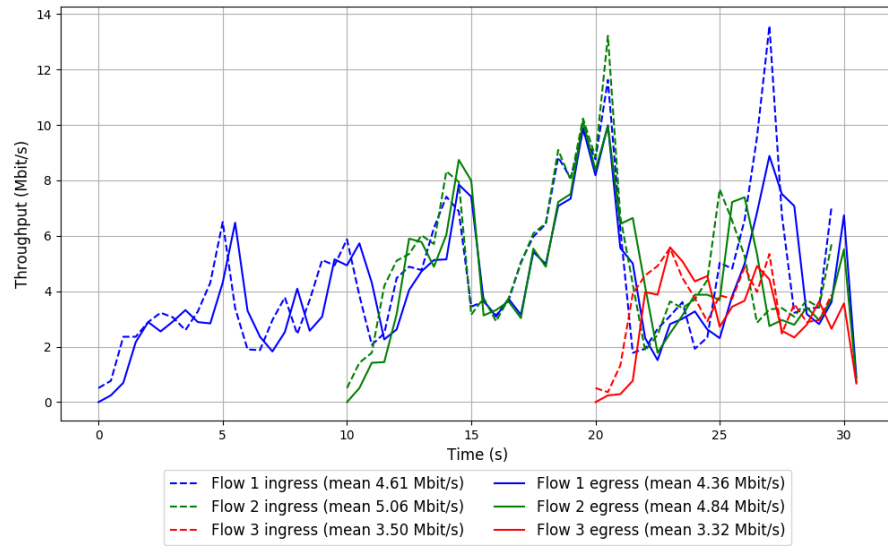
-- Flow 3:

Average throughput: 3.32 Mbit/s

95th percentile per-packet one-way delay: 75.277 ms

Loss rate: 5.28%

Run 1: Report of Copa — Data Link

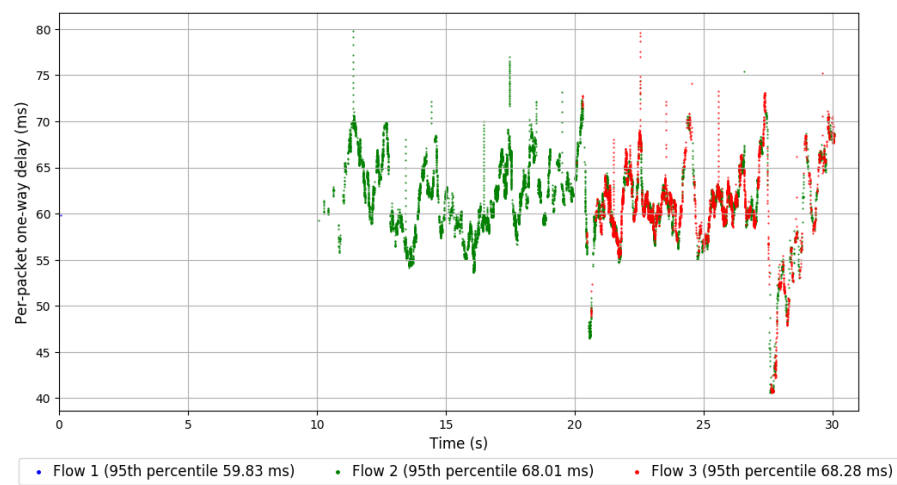
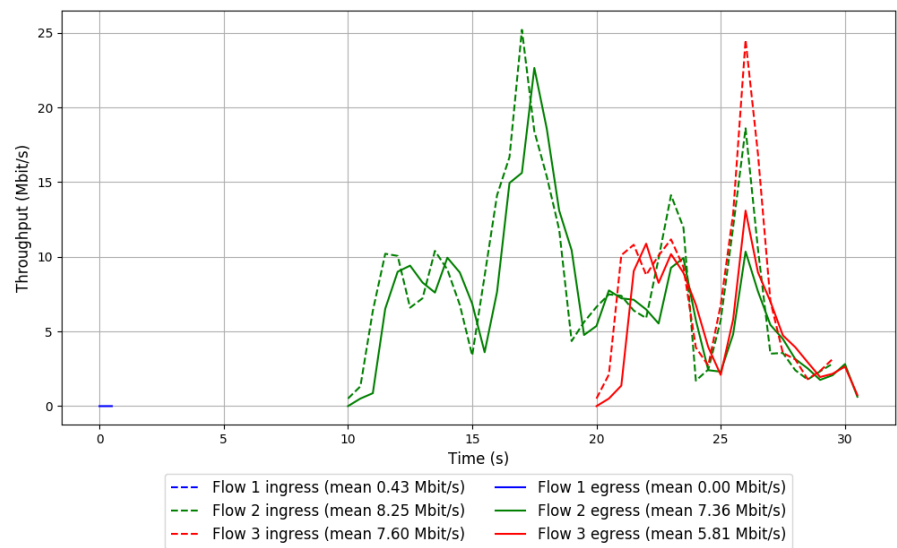


Run 2: Statistics of Copa

Start at: 2018-10-26 03:24:29
End at: 2018-10-26 03:24:59
Local clock offset: -0.562 ms
Remote clock offset: -7.535 ms

Below is generated by plot.py at 2018-10-26 04:54:51
Datalink statistics
-- Total of 3 flows:
Average throughput: 6.83 Mbit/s
95th percentile per-packet one-way delay: 68.096 ms
Loss rate: 14.80%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 59.830 ms
Loss rate: 98.80%
-- Flow 2:
Average throughput: 7.36 Mbit/s
95th percentile per-packet one-way delay: 68.009 ms
Loss rate: 10.75%
-- Flow 3:
Average throughput: 5.81 Mbit/s
95th percentile per-packet one-way delay: 68.278 ms
Loss rate: 23.52%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-10-26 03:48:45

End at: 2018-10-26 03:49:15

Local clock offset: 7.625 ms

Remote clock offset: 0.14 ms

Below is generated by plot.py at 2018-10-26 04:54:51

Datalink statistics

-- Total of 3 flows:

Average throughput: 7.66 Mbit/s

95th percentile per-packet one-way delay: 54.016 ms

Loss rate: 18.29%

-- Flow 1:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 56.090 ms

Loss rate: 97.92%

-- Flow 2:

Average throughput: 8.63 Mbit/s

95th percentile per-packet one-way delay: 54.181 ms

Loss rate: 16.58%

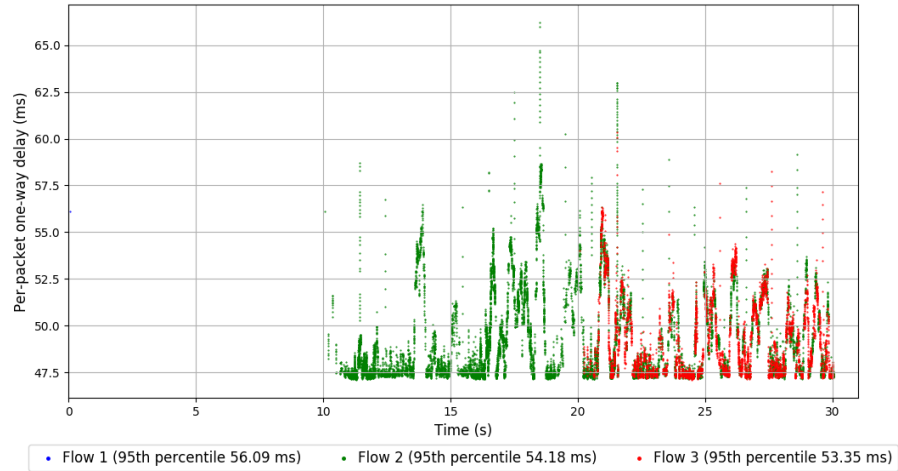
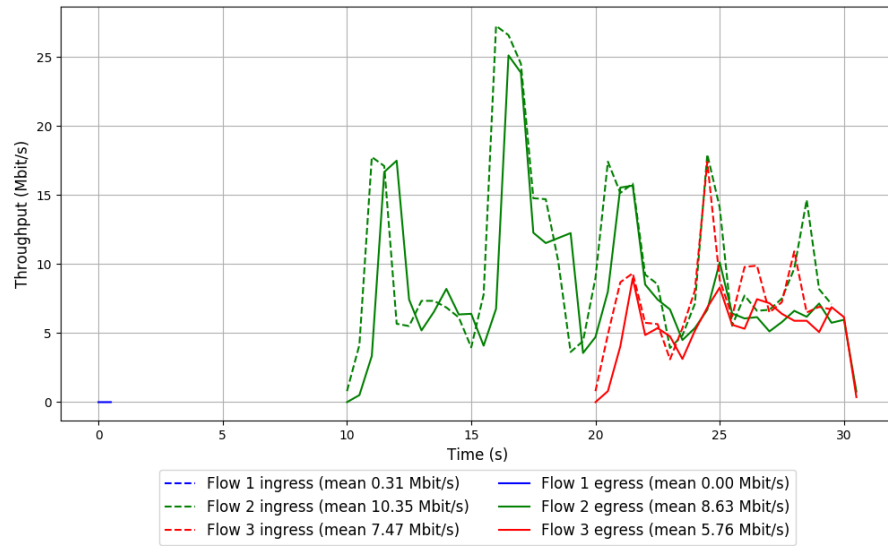
-- Flow 3:

Average throughput: 5.76 Mbit/s

95th percentile per-packet one-way delay: 53.352 ms

Loss rate: 22.97%

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2018-10-26 04:12:41

End at: 2018-10-26 04:13:11

Local clock offset: 1.712 ms

Remote clock offset: 2.657 ms

Below is generated by plot.py at 2018-10-26 04:54:51

Datalink statistics

-- Total of 3 flows:

Average throughput: 7.67 Mbit/s

95th percentile per-packet one-way delay: 52.514 ms

Loss rate: 15.16%

-- Flow 1:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 55.401 ms

Loss rate: 98.60%

-- Flow 2:

Average throughput: 8.23 Mbit/s

95th percentile per-packet one-way delay: 52.914 ms

Loss rate: 10.48%

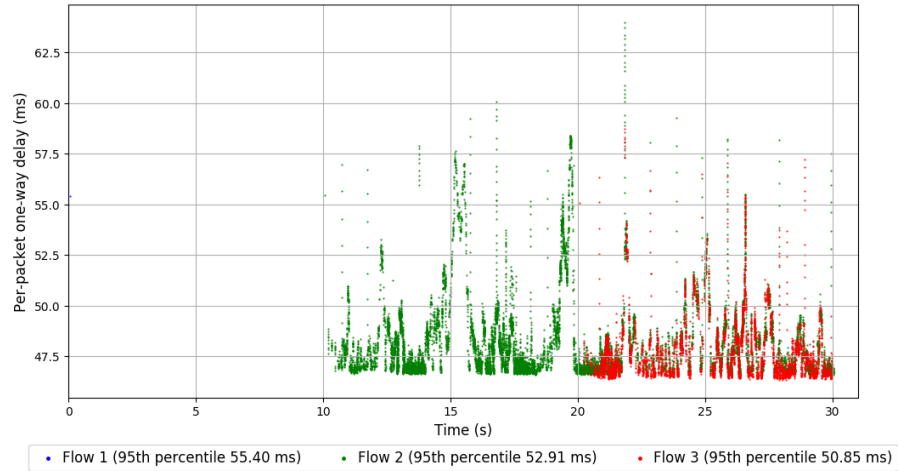
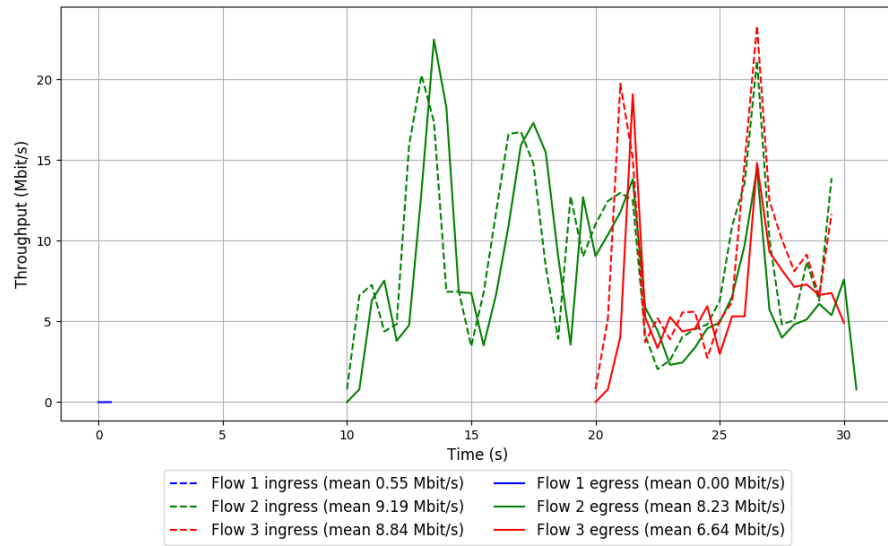
-- Flow 3:

Average throughput: 6.64 Mbit/s

95th percentile per-packet one-way delay: 50.855 ms

Loss rate: 24.93%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-10-26 04:37:12

End at: 2018-10-26 04:37:42

Local clock offset: -1.63 ms

Remote clock offset: 3.174 ms

Below is generated by plot.py at 2018-10-26 04:54:51

Datalink statistics

-- Total of 3 flows:

Average throughput: 6.10 Mbit/s

95th percentile per-packet one-way delay: 49.302 ms

Loss rate: 6.25%

-- Flow 1:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 48.797 ms

Loss rate: 98.80%

-- Flow 2:

Average throughput: 6.59 Mbit/s

95th percentile per-packet one-way delay: 49.501 ms

Loss rate: 5.97%

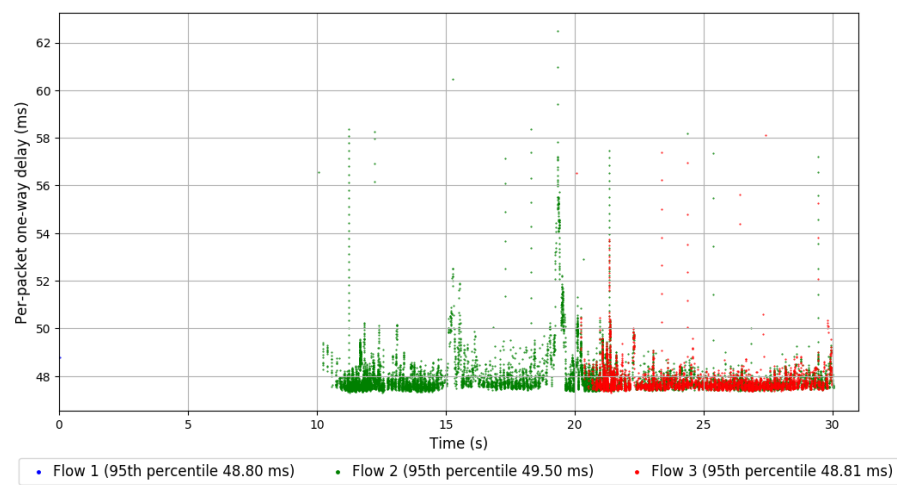
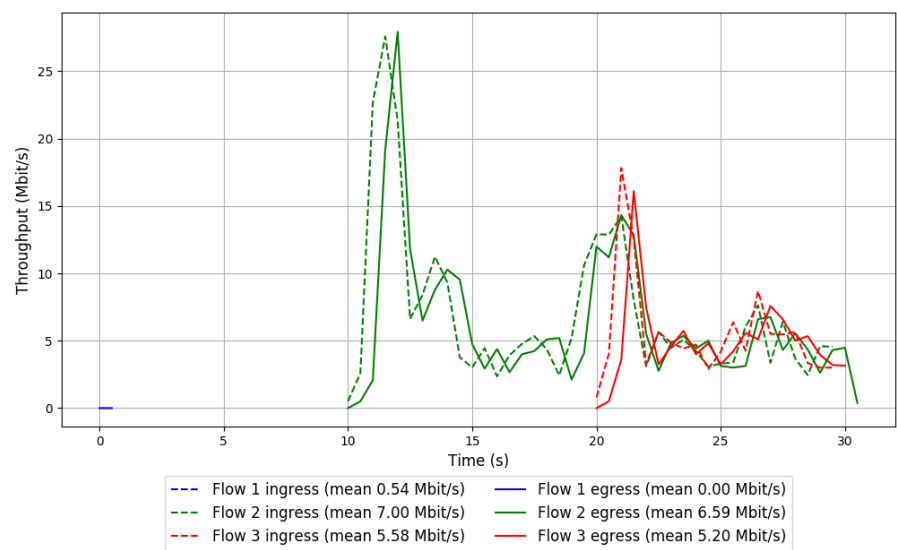
-- Flow 3:

Average throughput: 5.20 Mbit/s

95th percentile per-packet one-way delay: 48.806 ms

Loss rate: 6.81%

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-10-26 03:01:15

End at: 2018-10-26 03:01:45

Local clock offset: 0.433 ms

Remote clock offset: -4.45 ms

Below is generated by plot.py at 2018-10-26 04:54:51

Datalink statistics

-- Total of 3 flows:

Average throughput: 50.41 Mbit/s

95th percentile per-packet one-way delay: 69.812 ms

Loss rate: 0.85%

-- Flow 1:

Average throughput: 28.62 Mbit/s

95th percentile per-packet one-way delay: 68.493 ms

Loss rate: 0.47%

-- Flow 2:

Average throughput: 28.18 Mbit/s

95th percentile per-packet one-way delay: 80.749 ms

Loss rate: 1.21%

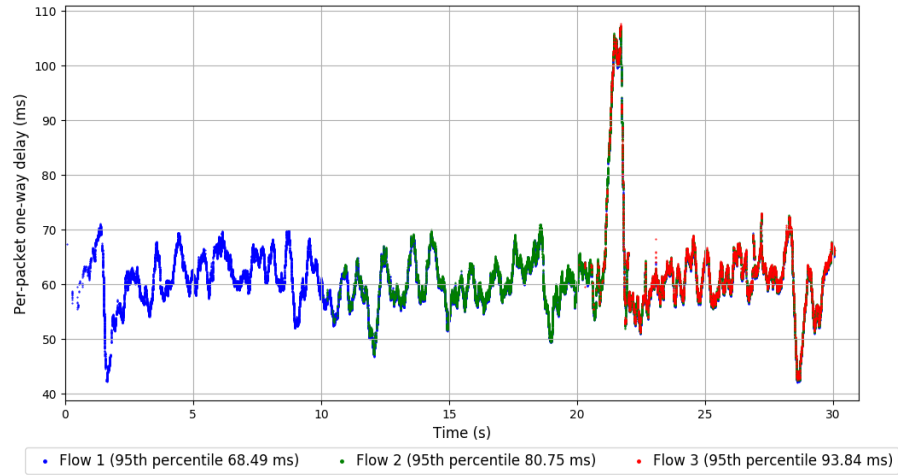
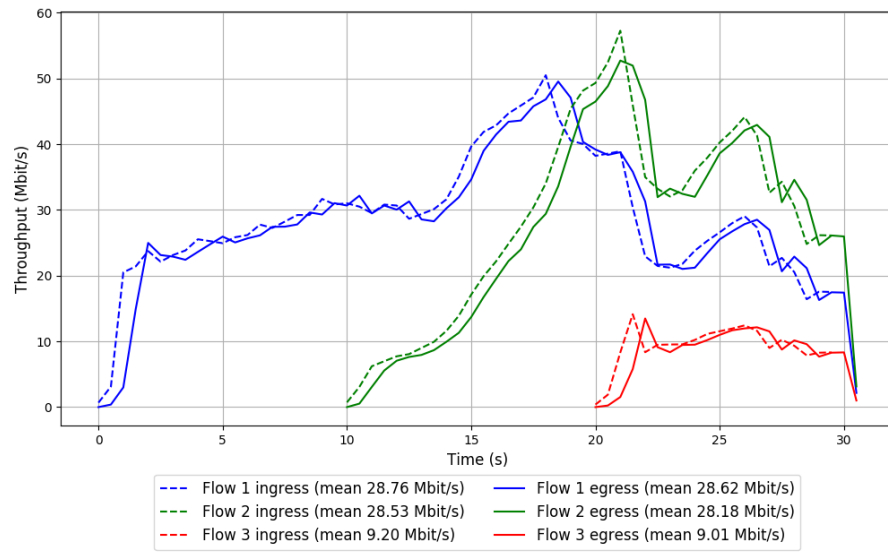
-- Flow 3:

Average throughput: 9.01 Mbit/s

95th percentile per-packet one-way delay: 93.843 ms

Loss rate: 2.09%

Run 1: Report of TCP Cubic — Data Link

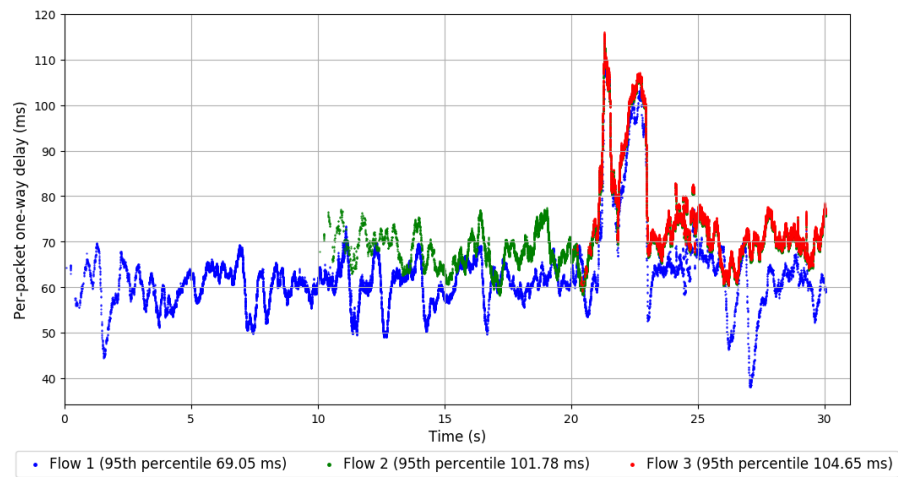
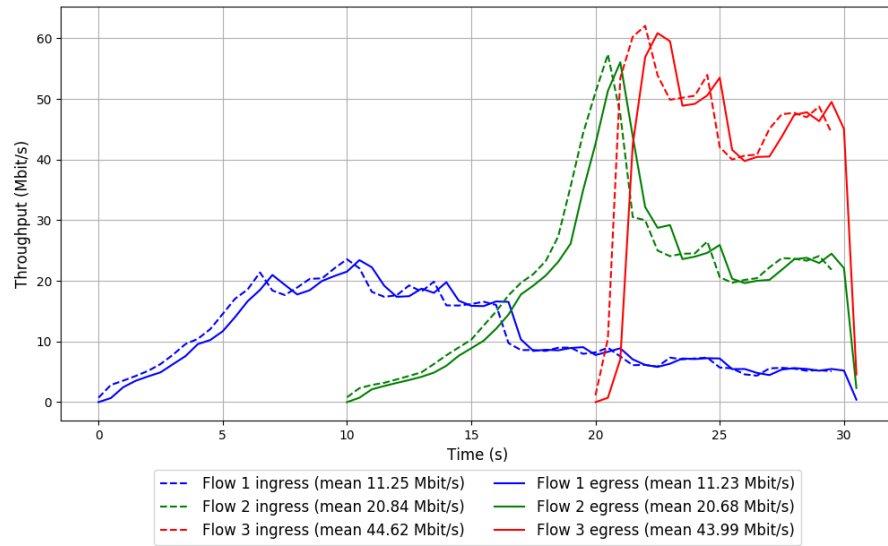


Run 2: Statistics of TCP Cubic

Start at: 2018-10-26 03:27:07
End at: 2018-10-26 03:27:37
Local clock offset: -0.552 ms
Remote clock offset: -9.987 ms

Below is generated by plot.py at 2018-10-26 04:54:51
Datalink statistics
-- Total of 3 flows:
Average throughput: 39.62 Mbit/s
95th percentile per-packet one-way delay: 102.039 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 11.23 Mbit/s
95th percentile per-packet one-way delay: 69.053 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 20.68 Mbit/s
95th percentile per-packet one-way delay: 101.785 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 43.99 Mbit/s
95th percentile per-packet one-way delay: 104.650 ms
Loss rate: 1.50%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2018-10-26 03:51:18

End at: 2018-10-26 03:51:48

Local clock offset: 8.136 ms

Remote clock offset: 0.83 ms

Below is generated by plot.py at 2018-10-26 04:54:51

Datalink statistics

-- Total of 3 flows:

Average throughput: 41.50 Mbit/s

95th percentile per-packet one-way delay: 169.469 ms

Loss rate: 2.00%

-- Flow 1:

Average throughput: 36.02 Mbit/s

95th percentile per-packet one-way delay: 166.610 ms

Loss rate: 2.05%

-- Flow 2:

Average throughput: 4.96 Mbit/s

95th percentile per-packet one-way delay: 287.060 ms

Loss rate: 2.39%

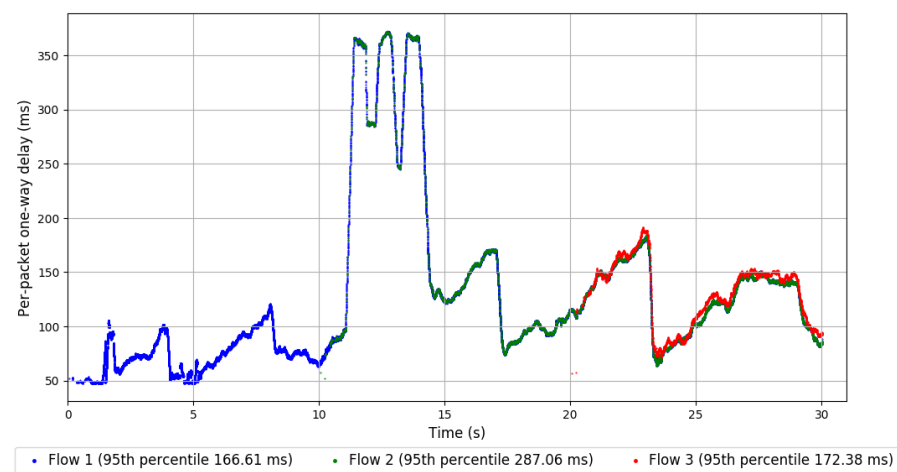
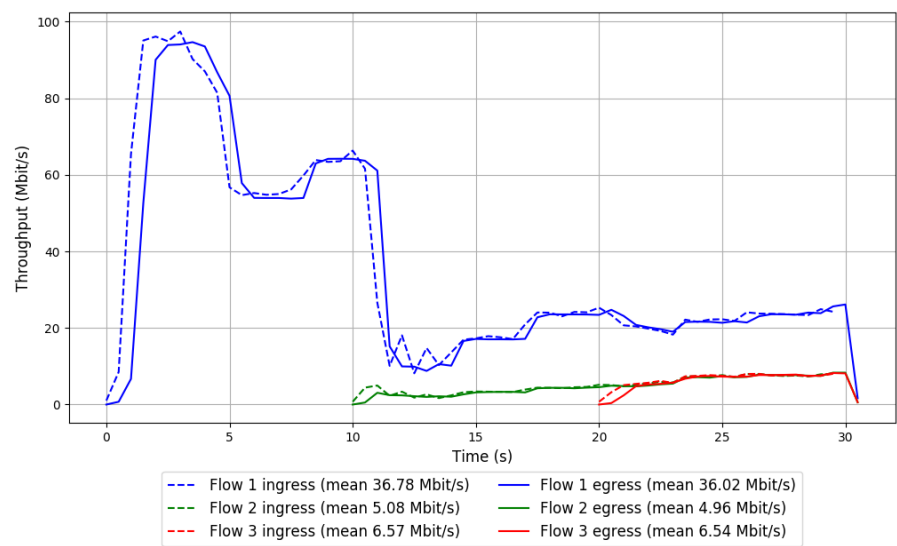
-- Flow 3:

Average throughput: 6.54 Mbit/s

95th percentile per-packet one-way delay: 172.379 ms

Loss rate: 0.64%

Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

Start at: 2018-10-26 04:15:14

End at: 2018-10-26 04:15:44

Local clock offset: 0.949 ms

Remote clock offset: 3.41 ms

Below is generated by plot.py at 2018-10-26 04:55:12

Datalink statistics

-- Total of 3 flows:

Average throughput: 70.46 Mbit/s

95th percentile per-packet one-way delay: 90.360 ms

Loss rate: 2.22%

-- Flow 1:

Average throughput: 44.50 Mbit/s

95th percentile per-packet one-way delay: 92.668 ms

Loss rate: 2.02%

-- Flow 2:

Average throughput: 18.92 Mbit/s

95th percentile per-packet one-way delay: 86.192 ms

Loss rate: 2.63%

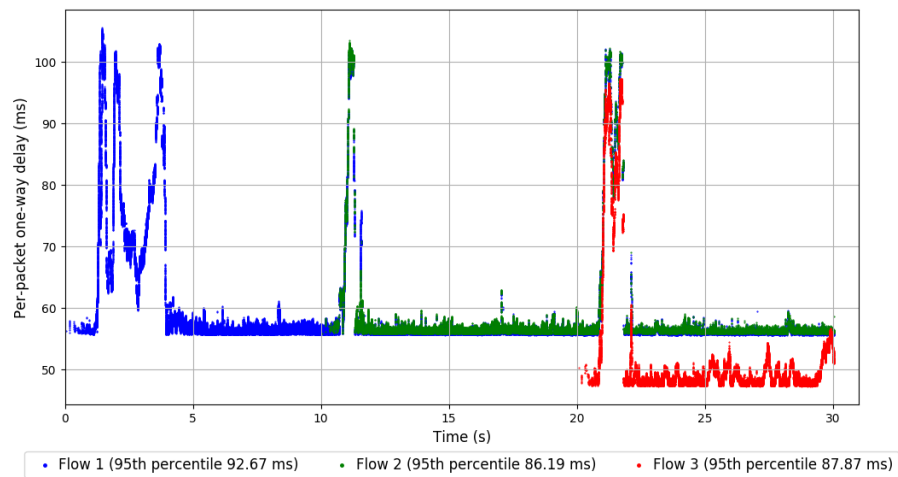
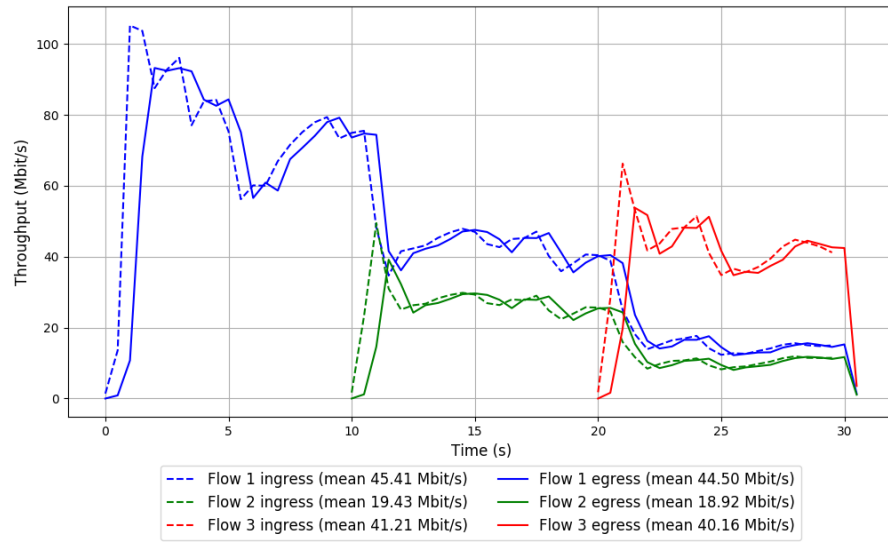
-- Flow 3:

Average throughput: 40.16 Mbit/s

95th percentile per-packet one-way delay: 87.874 ms

Loss rate: 2.52%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2018-10-26 04:39:48

End at: 2018-10-26 04:40:18

Local clock offset: -1.636 ms

Remote clock offset: 4.118 ms

Below is generated by plot.py at 2018-10-26 04:55:12

Datalink statistics

-- Total of 3 flows:

Average throughput: 49.15 Mbit/s

95th percentile per-packet one-way delay: 146.796 ms

Loss rate: 1.77%

-- Flow 1:

Average throughput: 41.67 Mbit/s

95th percentile per-packet one-way delay: 145.714 ms

Loss rate: 1.98%

-- Flow 2:

Average throughput: 8.28 Mbit/s

95th percentile per-packet one-way delay: 149.314 ms

Loss rate: 0.44%

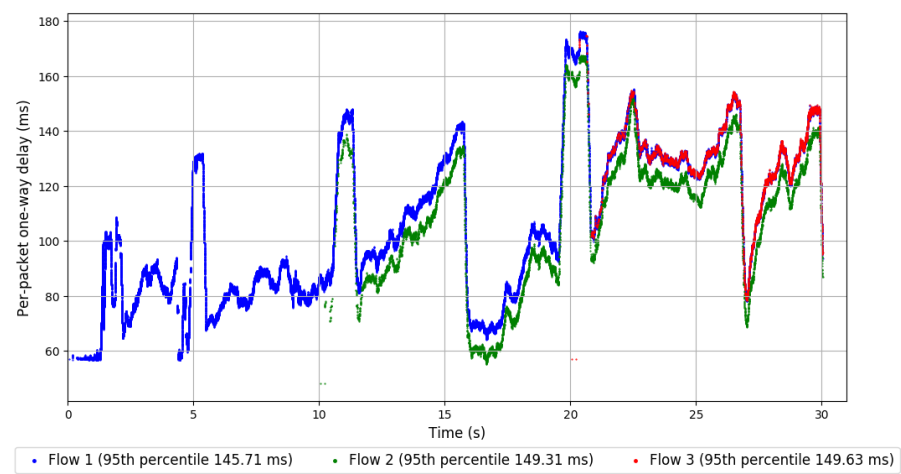
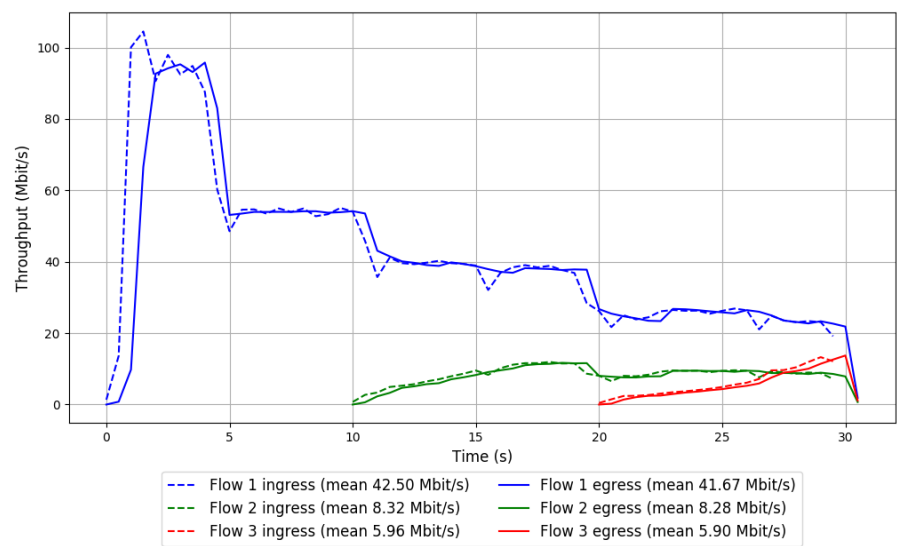
-- Flow 3:

Average throughput: 5.90 Mbit/s

95th percentile per-packet one-way delay: 149.629 ms

Loss rate: 1.01%

Run 5: Report of TCP Cubic — Data Link

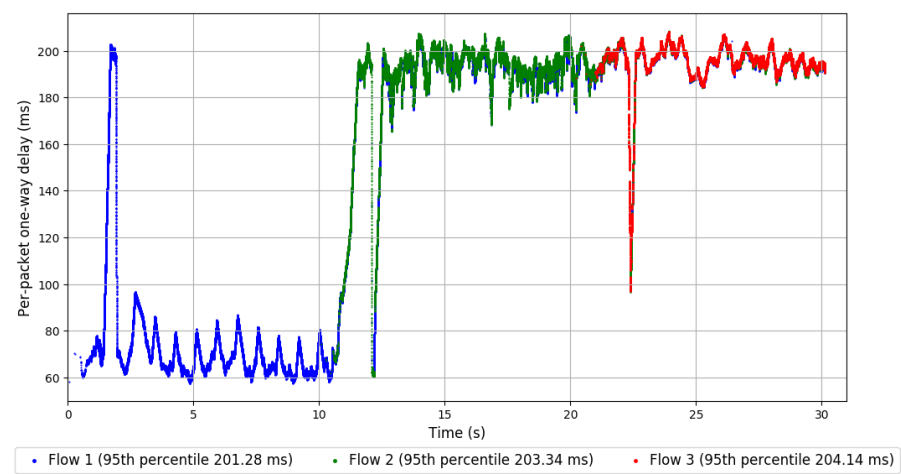
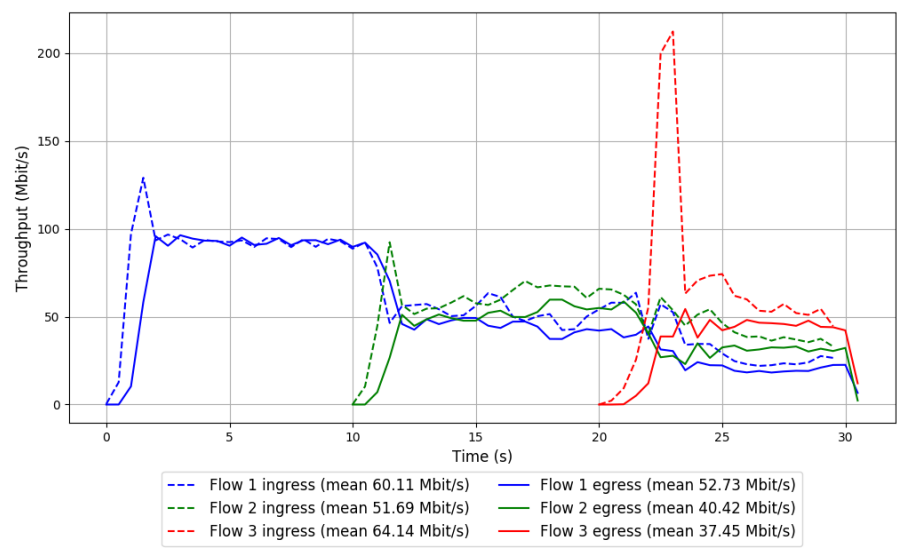


Run 1: Statistics of FillP

Start at: 2018-10-26 03:10:05
End at: 2018-10-26 03:10:35
Local clock offset: -0.428 ms
Remote clock offset: -7.142 ms

Below is generated by plot.py at 2018-10-26 04:55:55
Datalink statistics
-- Total of 3 flows:
Average throughput: 91.90 Mbit/s
95th percentile per-packet one-way delay: 202.559 ms
Loss rate: 20.27%
-- Flow 1:
Average throughput: 52.73 Mbit/s
95th percentile per-packet one-way delay: 201.276 ms
Loss rate: 11.88%
-- Flow 2:
Average throughput: 40.42 Mbit/s
95th percentile per-packet one-way delay: 203.340 ms
Loss rate: 21.74%
-- Flow 3:
Average throughput: 37.45 Mbit/s
95th percentile per-packet one-way delay: 204.137 ms
Loss rate: 41.58%

Run 1: Report of FillP — Data Link

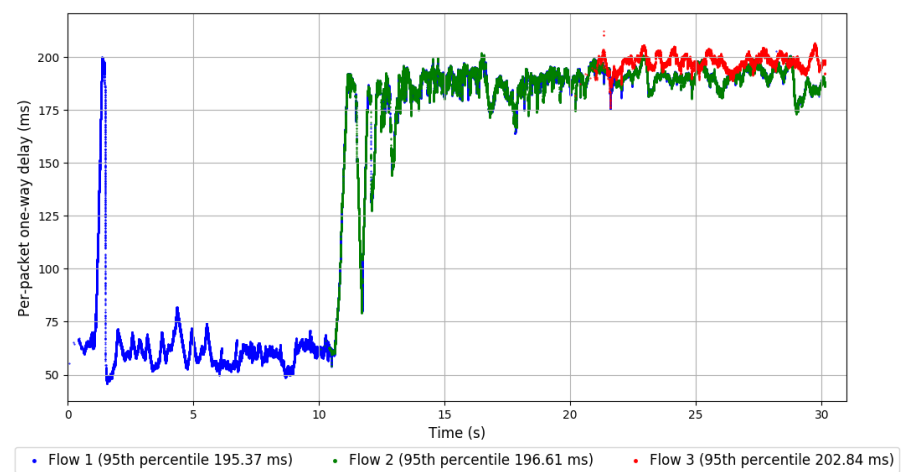
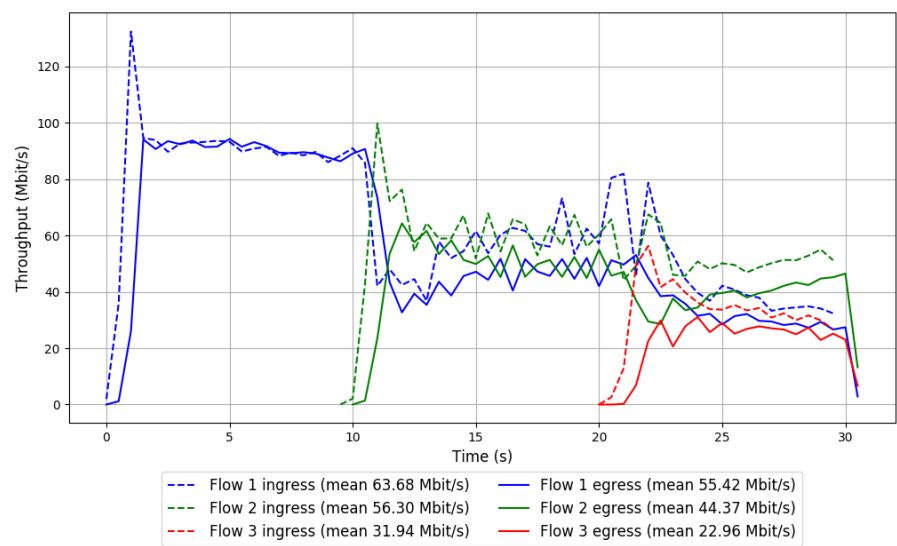


Run 2: Statistics of FillP

Start at: 2018-10-26 03:35:23
End at: 2018-10-26 03:35:53
Local clock offset: 2.281 ms
Remote clock offset: -10.119 ms

Below is generated by plot.py at 2018-10-26 04:56:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 92.46 Mbit/s
95th percentile per-packet one-way delay: 198.054 ms
Loss rate: 16.93%
-- Flow 1:
Average throughput: 55.42 Mbit/s
95th percentile per-packet one-way delay: 195.370 ms
Loss rate: 12.85%
-- Flow 2:
Average throughput: 44.37 Mbit/s
95th percentile per-packet one-way delay: 196.612 ms
Loss rate: 20.69%
-- Flow 3:
Average throughput: 22.96 Mbit/s
95th percentile per-packet one-way delay: 202.843 ms
Loss rate: 28.07%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-10-26 03:59:32

End at: 2018-10-26 04:00:02

Local clock offset: 9.594 ms

Remote clock offset: 1.738 ms

Below is generated by plot.py at 2018-10-26 04:56:07

Datalink statistics

-- Total of 3 flows:

Average throughput: 93.29 Mbit/s

95th percentile per-packet one-way delay: 190.884 ms

Loss rate: 18.20%

-- Flow 1:

Average throughput: 57.30 Mbit/s

95th percentile per-packet one-way delay: 189.543 ms

Loss rate: 12.69%

-- Flow 2:

Average throughput: 35.73 Mbit/s

95th percentile per-packet one-way delay: 190.640 ms

Loss rate: 22.89%

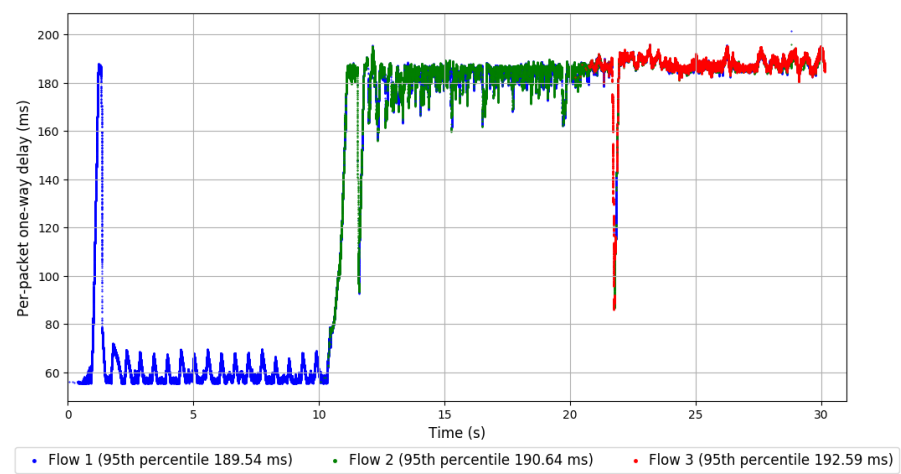
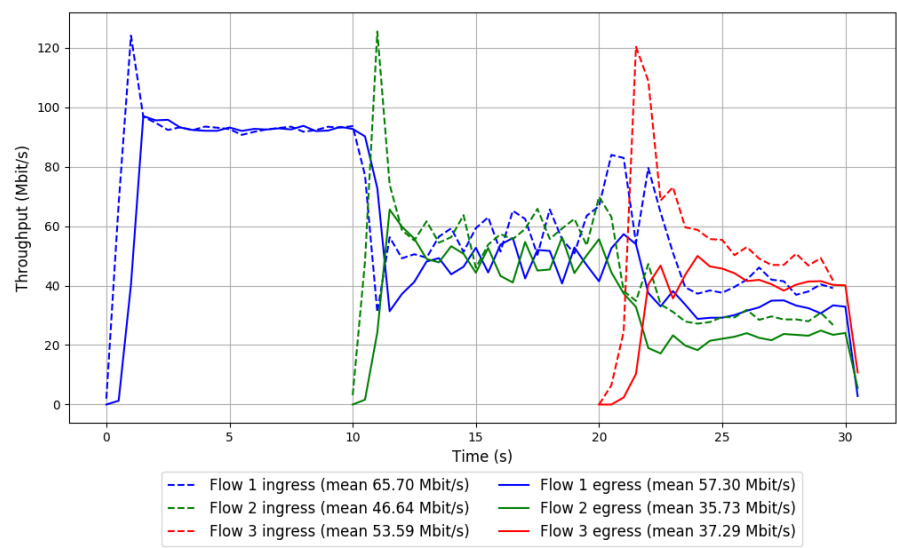
-- Flow 3:

Average throughput: 37.29 Mbit/s

95th percentile per-packet one-way delay: 192.589 ms

Loss rate: 30.39%

Run 3: Report of FillP — Data Link

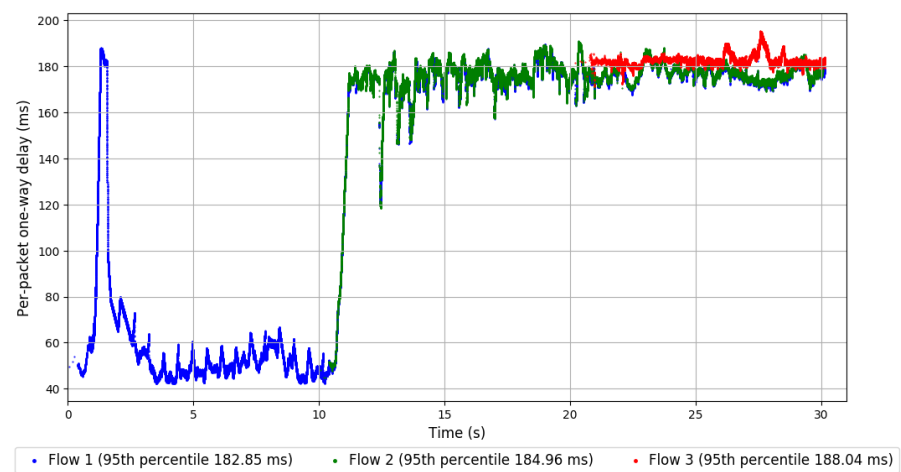
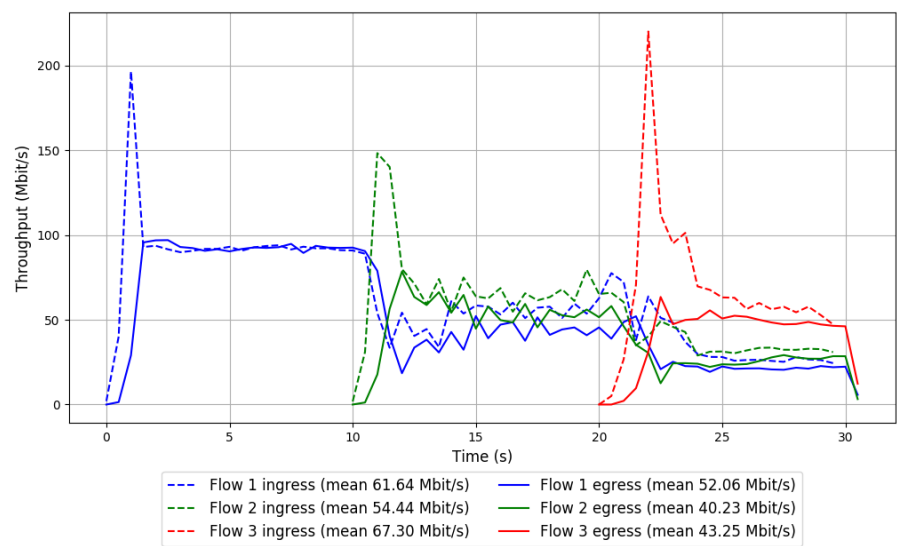


Run 4: Statistics of FillP

Start at: 2018-10-26 04:23:32
End at: 2018-10-26 04:24:02
Local clock offset: -0.937 ms
Remote clock offset: -1.188 ms

Below is generated by plot.py at 2018-10-26 04:56:09
Datalink statistics
-- Total of 3 flows:
Average throughput: 93.06 Mbit/s
95th percentile per-packet one-way delay: 184.719 ms
Loss rate: 22.24%
-- Flow 1:
Average throughput: 52.06 Mbit/s
95th percentile per-packet one-way delay: 182.854 ms
Loss rate: 15.18%
-- Flow 2:
Average throughput: 40.23 Mbit/s
95th percentile per-packet one-way delay: 184.964 ms
Loss rate: 25.93%
-- Flow 3:
Average throughput: 43.25 Mbit/s
95th percentile per-packet one-way delay: 188.041 ms
Loss rate: 35.74%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-10-26 04:48:06

End at: 2018-10-26 04:48:36

Local clock offset: -1.705 ms

Remote clock offset: 4.101 ms

Below is generated by plot.py at 2018-10-26 04:56:17

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.90 Mbit/s

95th percentile per-packet one-way delay: 187.802 ms

Loss rate: 14.12%

-- Flow 1:

Average throughput: 50.43 Mbit/s

95th percentile per-packet one-way delay: 187.308 ms

Loss rate: 6.94%

-- Flow 2:

Average throughput: 42.28 Mbit/s

95th percentile per-packet one-way delay: 187.405 ms

Loss rate: 12.72%

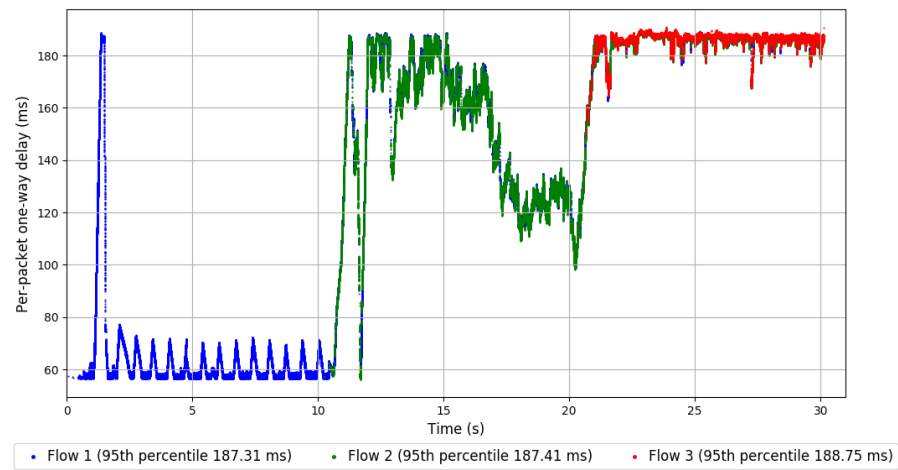
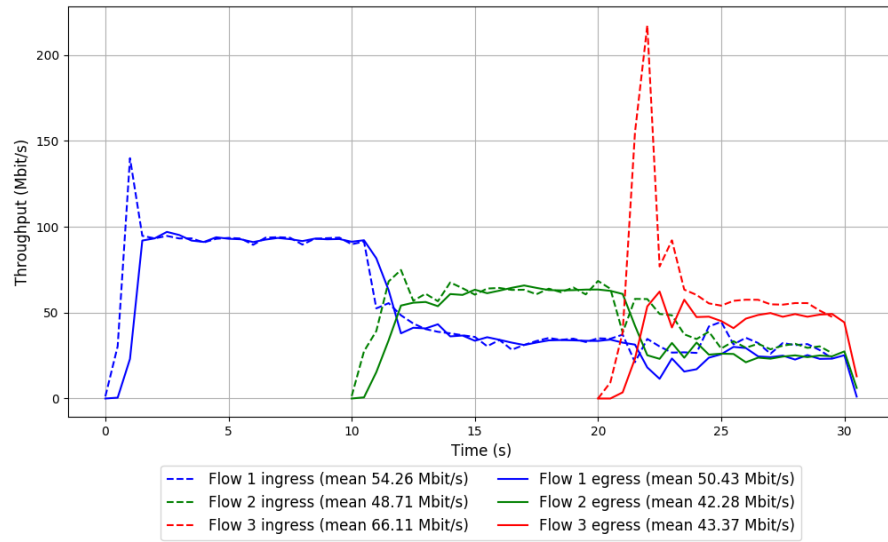
-- Flow 3:

Average throughput: 43.37 Mbit/s

95th percentile per-packet one-way delay: 188.751 ms

Loss rate: 33.95%

Run 5: Report of FillP — Data Link

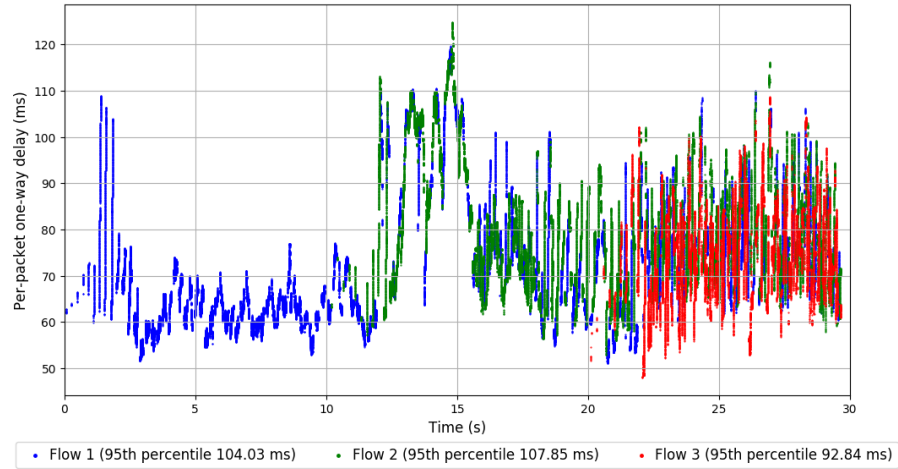
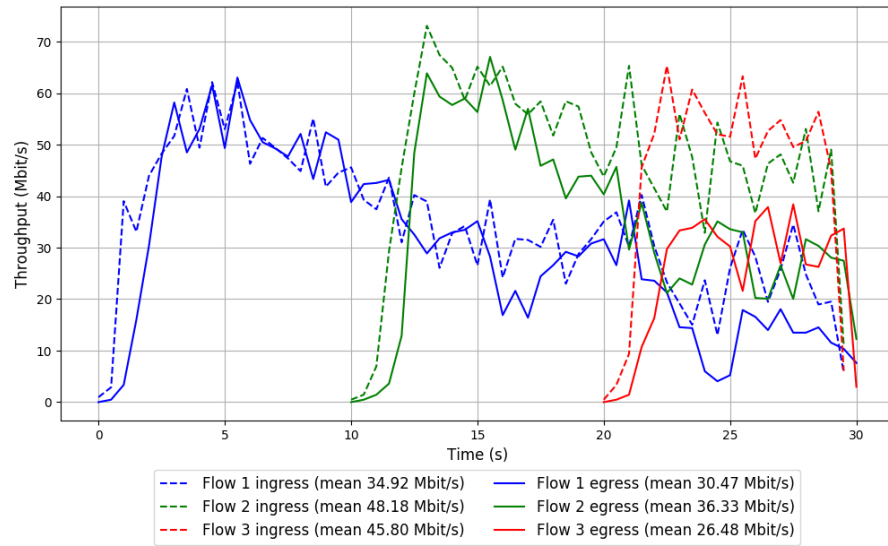


Run 1: Statistics of Indigo

Start at: 2018-10-26 03:02:44
End at: 2018-10-26 03:03:14
Local clock offset: 0.266 ms
Remote clock offset: -4.991 ms

Below is generated by plot.py at 2018-10-26 04:56:17
Datalink statistics
-- Total of 3 flows:
Average throughput: 62.84 Mbit/s
95th percentile per-packet one-way delay: 104.662 ms
Loss rate: 22.71%
-- Flow 1:
Average throughput: 30.47 Mbit/s
95th percentile per-packet one-way delay: 104.031 ms
Loss rate: 12.74%
-- Flow 2:
Average throughput: 36.33 Mbit/s
95th percentile per-packet one-way delay: 107.852 ms
Loss rate: 24.64%
-- Flow 3:
Average throughput: 26.48 Mbit/s
95th percentile per-packet one-way delay: 92.845 ms
Loss rate: 42.10%

Run 1: Report of Indigo — Data Link

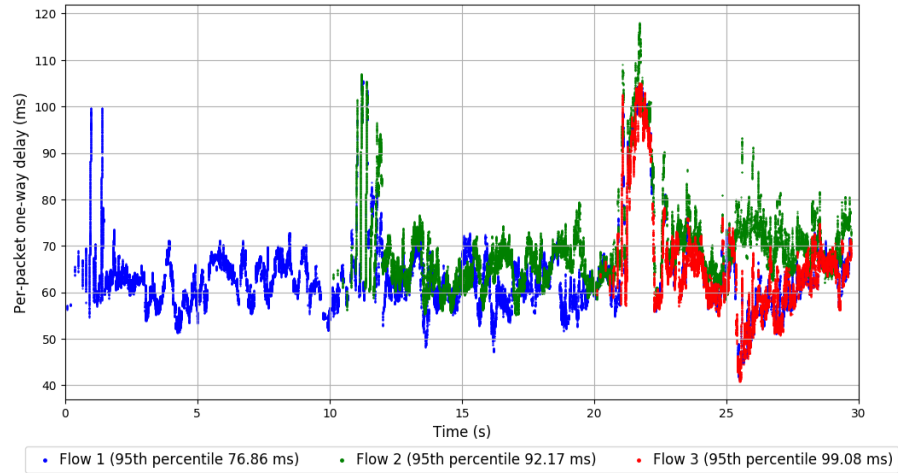
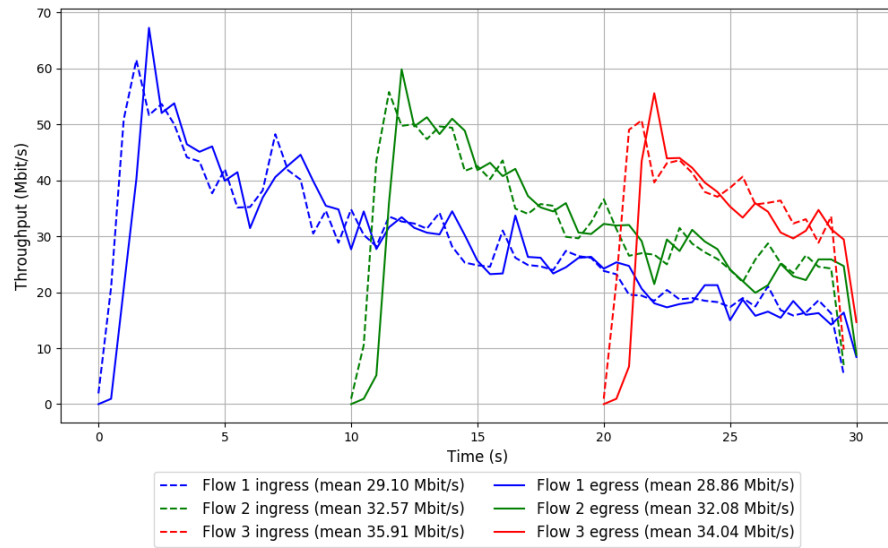


Run 2: Statistics of Indigo

Start at: 2018-10-26 03:28:28
End at: 2018-10-26 03:28:58
Local clock offset: -0.657 ms
Remote clock offset: -10.971 ms

Below is generated by plot.py at 2018-10-26 04:56:17
Datalink statistics
-- Total of 3 flows:
Average throughput: 61.07 Mbit/s
95th percentile per-packet one-way delay: 91.959 ms
Loss rate: 1.82%
-- Flow 1:
Average throughput: 28.86 Mbit/s
95th percentile per-packet one-way delay: 76.857 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 32.08 Mbit/s
95th percentile per-packet one-way delay: 92.173 ms
Loss rate: 1.45%
-- Flow 3:
Average throughput: 34.04 Mbit/s
95th percentile per-packet one-way delay: 99.076 ms
Loss rate: 5.12%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-10-26 03:52:38

End at: 2018-10-26 03:53:08

Local clock offset: 8.536 ms

Remote clock offset: 1.662 ms

Below is generated by plot.py at 2018-10-26 04:56:17

Datalink statistics

-- Total of 3 flows:

Average throughput: 63.41 Mbit/s

95th percentile per-packet one-way delay: 65.155 ms

Loss rate: 0.27%

-- Flow 1:

Average throughput: 36.68 Mbit/s

95th percentile per-packet one-way delay: 66.077 ms

Loss rate: 0.15%

-- Flow 2:

Average throughput: 18.52 Mbit/s

95th percentile per-packet one-way delay: 65.411 ms

Loss rate: 0.50%

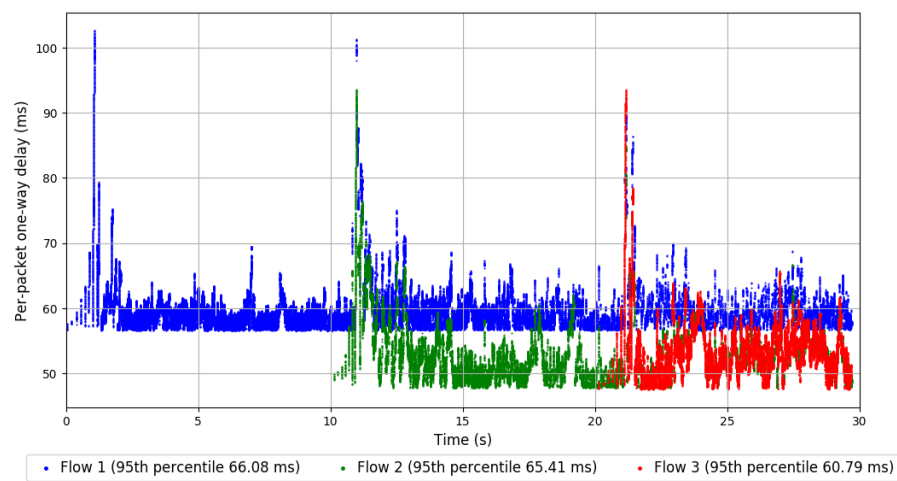
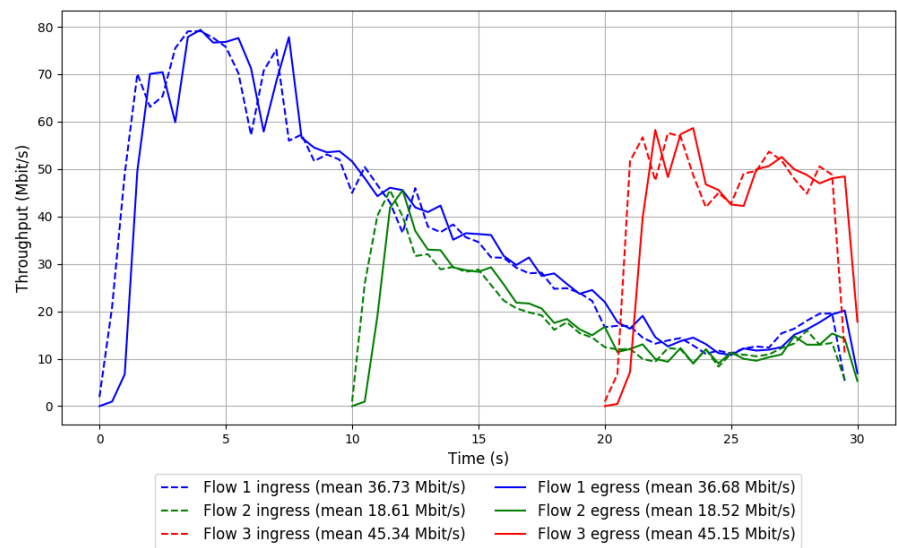
-- Flow 3:

Average throughput: 45.15 Mbit/s

95th percentile per-packet one-way delay: 60.794 ms

Loss rate: 0.39%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-10-26 04:16:39

End at: 2018-10-26 04:17:09

Local clock offset: 0.401 ms

Remote clock offset: 2.844 ms

Below is generated by plot.py at 2018-10-26 04:56:17

Datalink statistics

-- Total of 3 flows:

Average throughput: 43.57 Mbit/s

95th percentile per-packet one-way delay: 74.970 ms

Loss rate: 0.15%

-- Flow 1:

Average throughput: 17.74 Mbit/s

95th percentile per-packet one-way delay: 62.072 ms

Loss rate: 0.16%

-- Flow 2:

Average throughput: 36.58 Mbit/s

95th percentile per-packet one-way delay: 83.754 ms

Loss rate: 0.15%

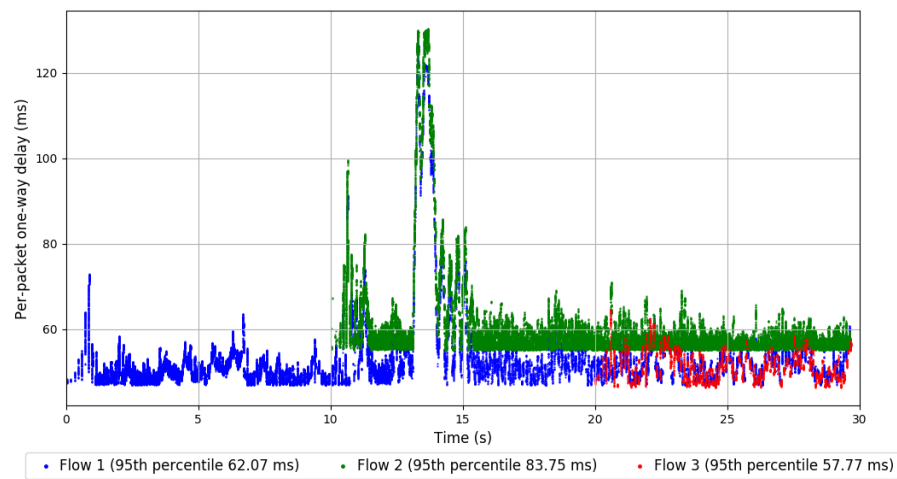
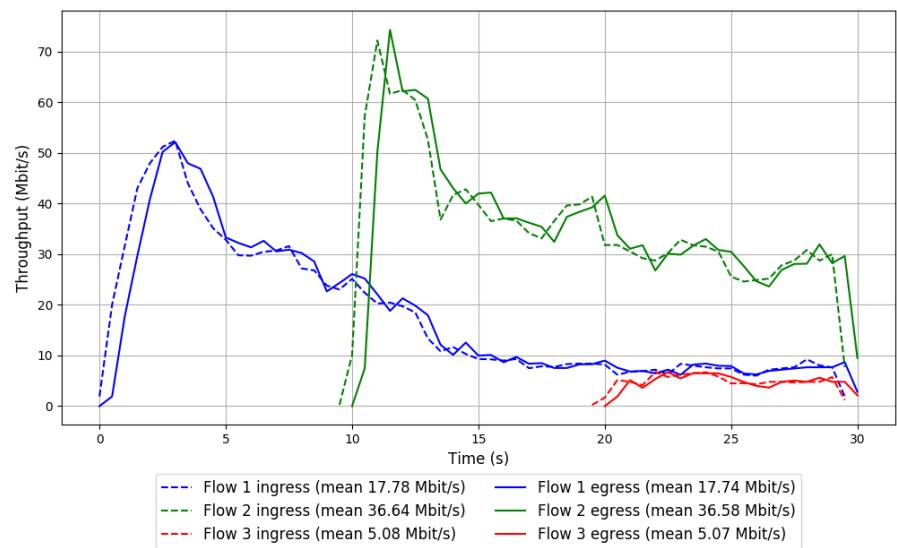
-- Flow 3:

Average throughput: 5.07 Mbit/s

95th percentile per-packet one-way delay: 57.771 ms

Loss rate: 0.00%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-10-26 04:41:10

End at: 2018-10-26 04:41:40

Local clock offset: -1.498 ms

Remote clock offset: 3.117 ms

Below is generated by plot.py at 2018-10-26 04:56:19

Datalink statistics

-- Total of 3 flows:

Average throughput: 41.24 Mbit/s

95th percentile per-packet one-way delay: 65.020 ms

Loss rate: 0.96%

-- Flow 1:

Average throughput: 12.82 Mbit/s

95th percentile per-packet one-way delay: 63.595 ms

Loss rate: 0.31%

-- Flow 2:

Average throughput: 23.59 Mbit/s

95th percentile per-packet one-way delay: 56.929 ms

Loss rate: 0.49%

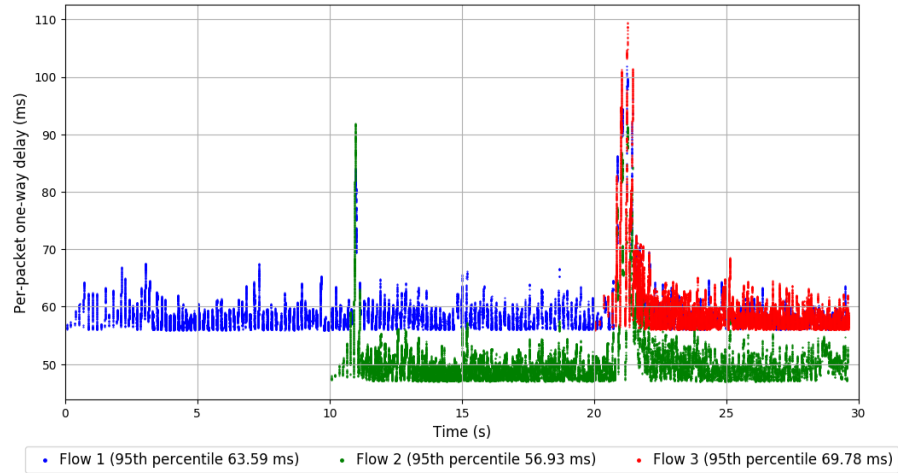
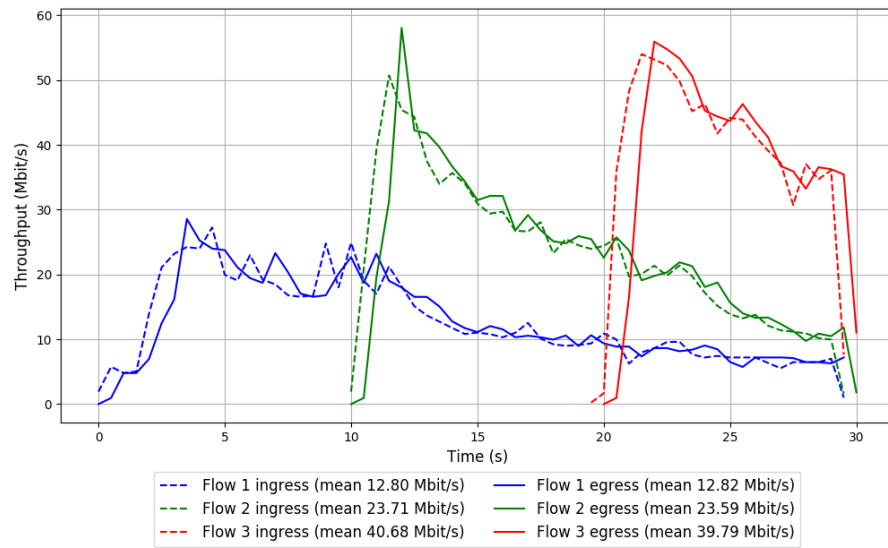
-- Flow 3:

Average throughput: 39.79 Mbit/s

95th percentile per-packet one-way delay: 69.784 ms

Loss rate: 2.15%

Run 5: Report of Indigo — Data Link



Run 1: Statistics of Indigo-96d2da3

Start at: 2018-10-26 02:54:14

End at: 2018-10-26 02:54:44

Local clock offset: 0.101 ms

Remote clock offset: -4.93 ms

Below is generated by plot.py at 2018-10-26 04:57:22

Datalink statistics

-- Total of 3 flows:

Average throughput: 81.75 Mbit/s

95th percentile per-packet one-way delay: 216.547 ms

Loss rate: 52.51%

-- Flow 1:

Average throughput: 55.85 Mbit/s

95th percentile per-packet one-way delay: 217.004 ms

Loss rate: 48.95%

-- Flow 2:

Average throughput: 25.85 Mbit/s

95th percentile per-packet one-way delay: 212.248 ms

Loss rate: 58.82%

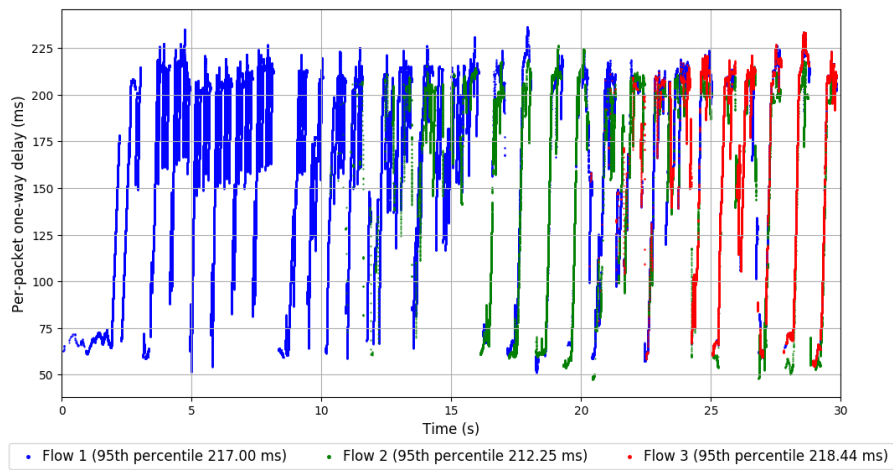
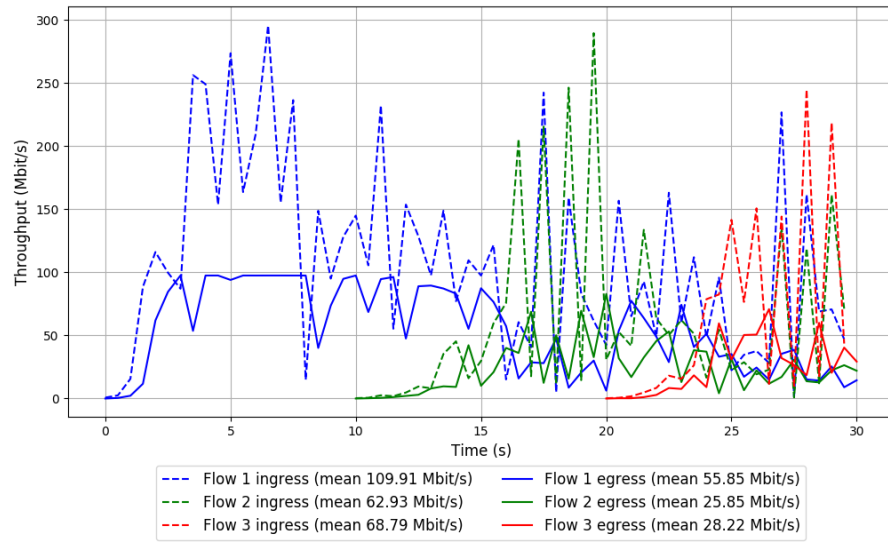
-- Flow 3:

Average throughput: 28.22 Mbit/s

95th percentile per-packet one-way delay: 218.438 ms

Loss rate: 58.54%

Run 1: Report of Indigo-96d2da3 — Data Link

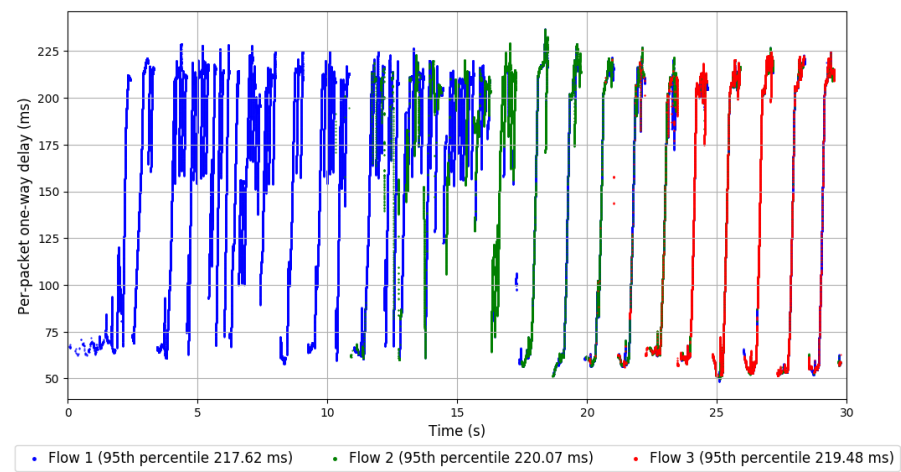
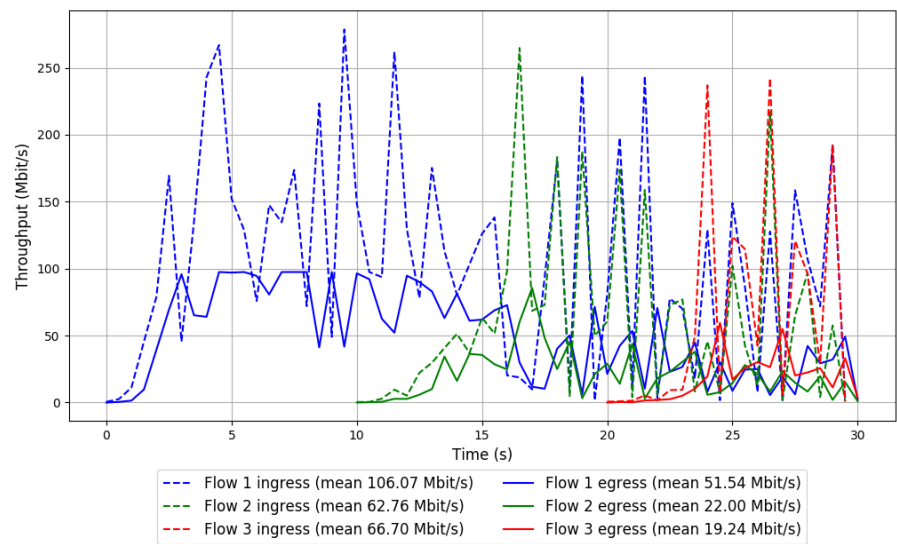


Run 2: Statistics of Indigo-96d2da3

Start at: 2018-10-26 03:20:16
End at: 2018-10-26 03:20:46
Local clock offset: -0.424 ms
Remote clock offset: -7.513 ms

Below is generated by plot.py at 2018-10-26 04:57:22
Datalink statistics
-- Total of 3 flows:
Average throughput: 72.21 Mbit/s
95th percentile per-packet one-way delay: 218.683 ms
Loss rate: 57.33%
-- Flow 1:
Average throughput: 51.54 Mbit/s
95th percentile per-packet one-way delay: 217.616 ms
Loss rate: 51.42%
-- Flow 2:
Average throughput: 22.00 Mbit/s
95th percentile per-packet one-way delay: 220.074 ms
Loss rate: 65.19%
-- Flow 3:
Average throughput: 19.24 Mbit/s
95th percentile per-packet one-way delay: 219.480 ms
Loss rate: 71.15%

Run 2: Report of Indigo-96d2da3 — Data Link

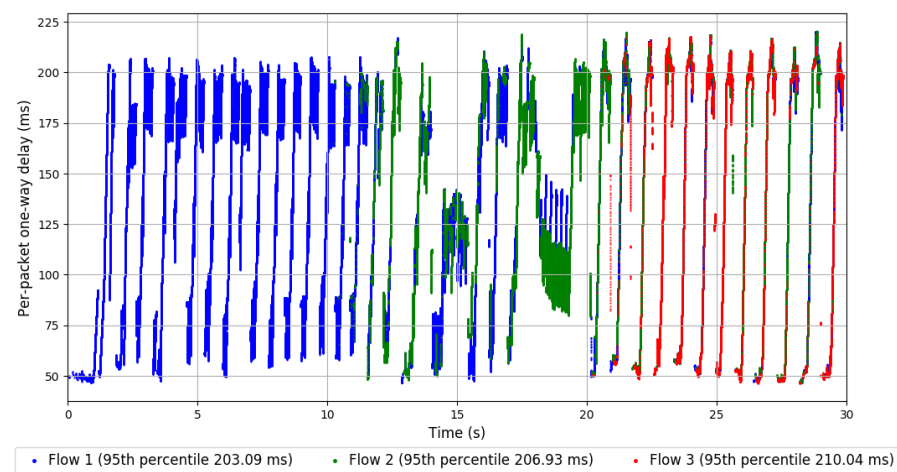
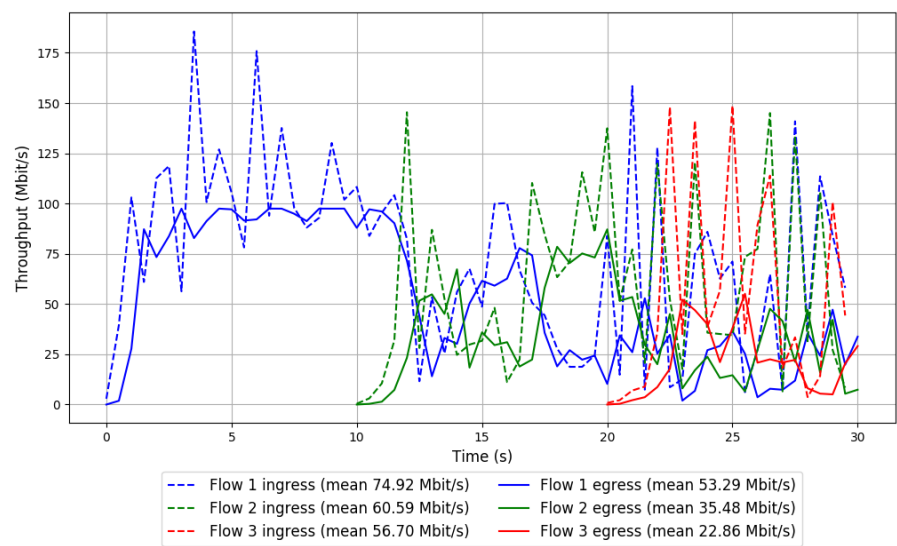


Run 3: Statistics of Indigo-96d2da3

Start at: 2018-10-26 03:44:48
End at: 2018-10-26 03:45:18
Local clock offset: 6.508 ms
Remote clock offset: -1.712 ms

Below is generated by plot.py at 2018-10-26 04:57:22
Datalink statistics
-- Total of 3 flows:
Average throughput: 83.96 Mbit/s
95th percentile per-packet one-way delay: 205.033 ms
Loss rate: 36.55%
-- Flow 1:
Average throughput: 53.29 Mbit/s
95th percentile per-packet one-way delay: 203.089 ms
Loss rate: 28.51%
-- Flow 2:
Average throughput: 35.48 Mbit/s
95th percentile per-packet one-way delay: 206.932 ms
Loss rate: 41.39%
-- Flow 3:
Average throughput: 22.86 Mbit/s
95th percentile per-packet one-way delay: 210.043 ms
Loss rate: 59.05%

Run 3: Report of Indigo-96d2da3 — Data Link



Run 4: Statistics of Indigo-96d2da3

Start at: 2018-10-26 04:08:44

End at: 2018-10-26 04:09:14

Local clock offset: 3.559 ms

Remote clock offset: 2.678 ms

Below is generated by plot.py at 2018-10-26 04:57:22

Datalink statistics

-- Total of 3 flows:

Average throughput: 85.89 Mbit/s

95th percentile per-packet one-way delay: 200.370 ms

Loss rate: 28.59%

-- Flow 1:

Average throughput: 46.70 Mbit/s

95th percentile per-packet one-way delay: 201.111 ms

Loss rate: 24.73%

-- Flow 2:

Average throughput: 38.19 Mbit/s

95th percentile per-packet one-way delay: 198.821 ms

Loss rate: 27.45%

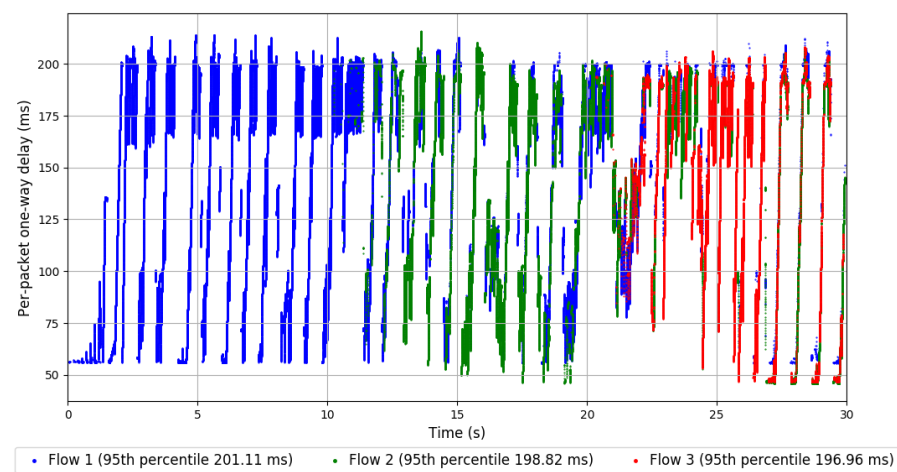
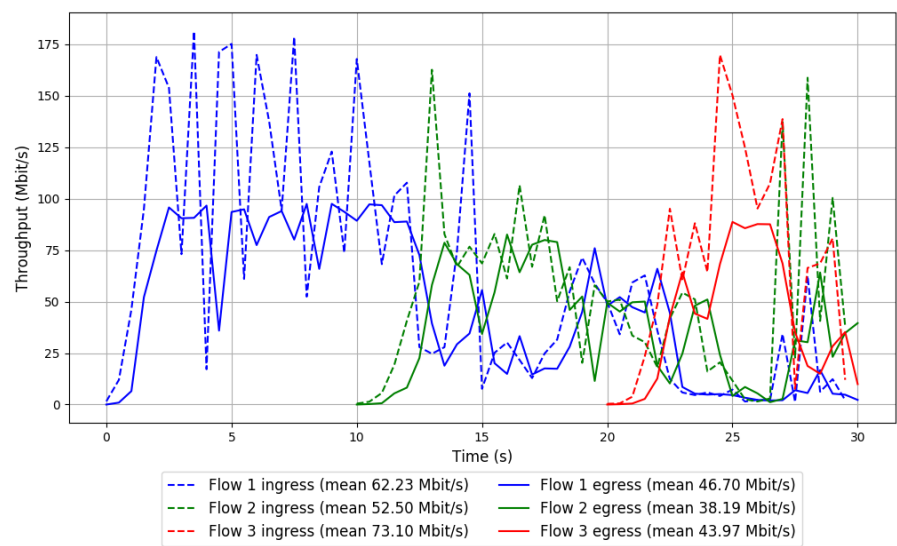
-- Flow 3:

Average throughput: 43.97 Mbit/s

95th percentile per-packet one-way delay: 196.962 ms

Loss rate: 40.45%

Run 4: Report of Indigo-96d2da3 — Data Link



Run 5: Statistics of Indigo-96d2da3

Start at: 2018-10-26 04:33:06

End at: 2018-10-26 04:33:36

Local clock offset: -1.637 ms

Remote clock offset: 2.83 ms

Below is generated by plot.py at 2018-10-26 04:57:22

Datalink statistics

-- Total of 3 flows:

Average throughput: 79.99 Mbit/s

95th percentile per-packet one-way delay: 195.359 ms

Loss rate: 34.39%

-- Flow 1:

Average throughput: 56.87 Mbit/s

95th percentile per-packet one-way delay: 194.544 ms

Loss rate: 30.07%

-- Flow 2:

Average throughput: 26.69 Mbit/s

95th percentile per-packet one-way delay: 197.200 ms

Loss rate: 43.60%

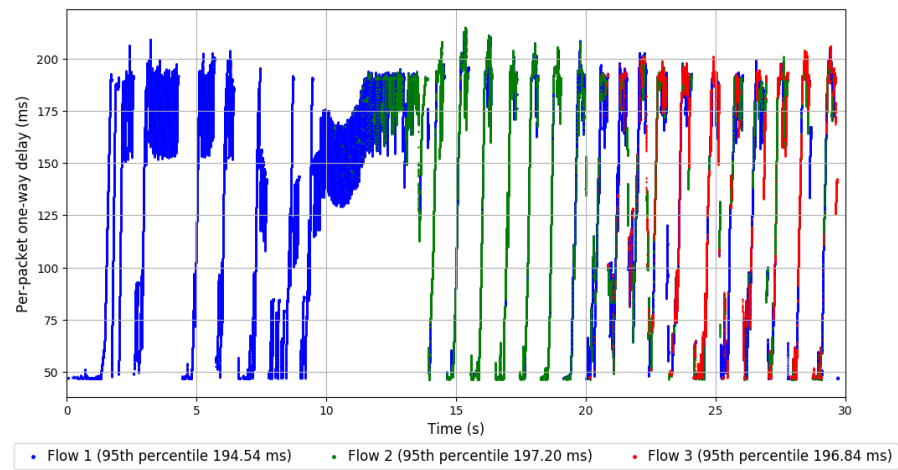
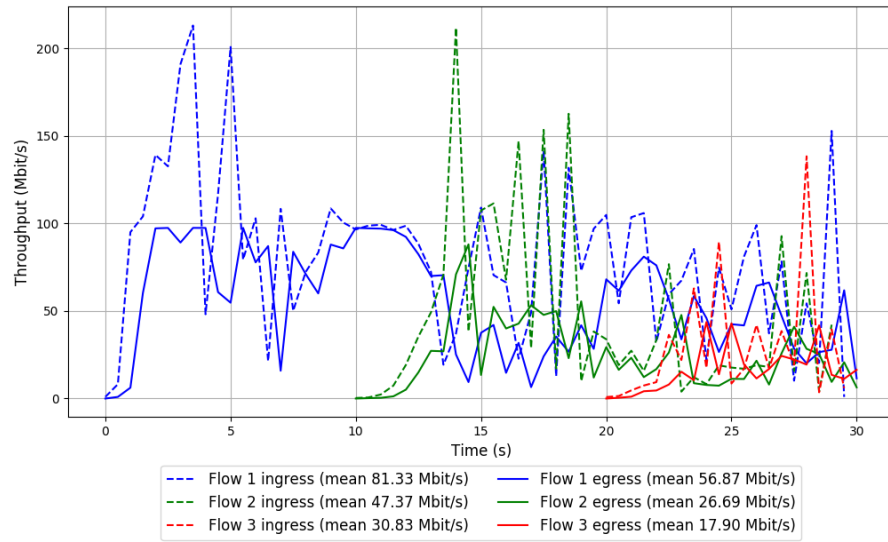
-- Flow 3:

Average throughput: 17.90 Mbit/s

95th percentile per-packet one-way delay: 196.845 ms

Loss rate: 41.34%

Run 5: Report of Indigo-96d2da3 — Data Link

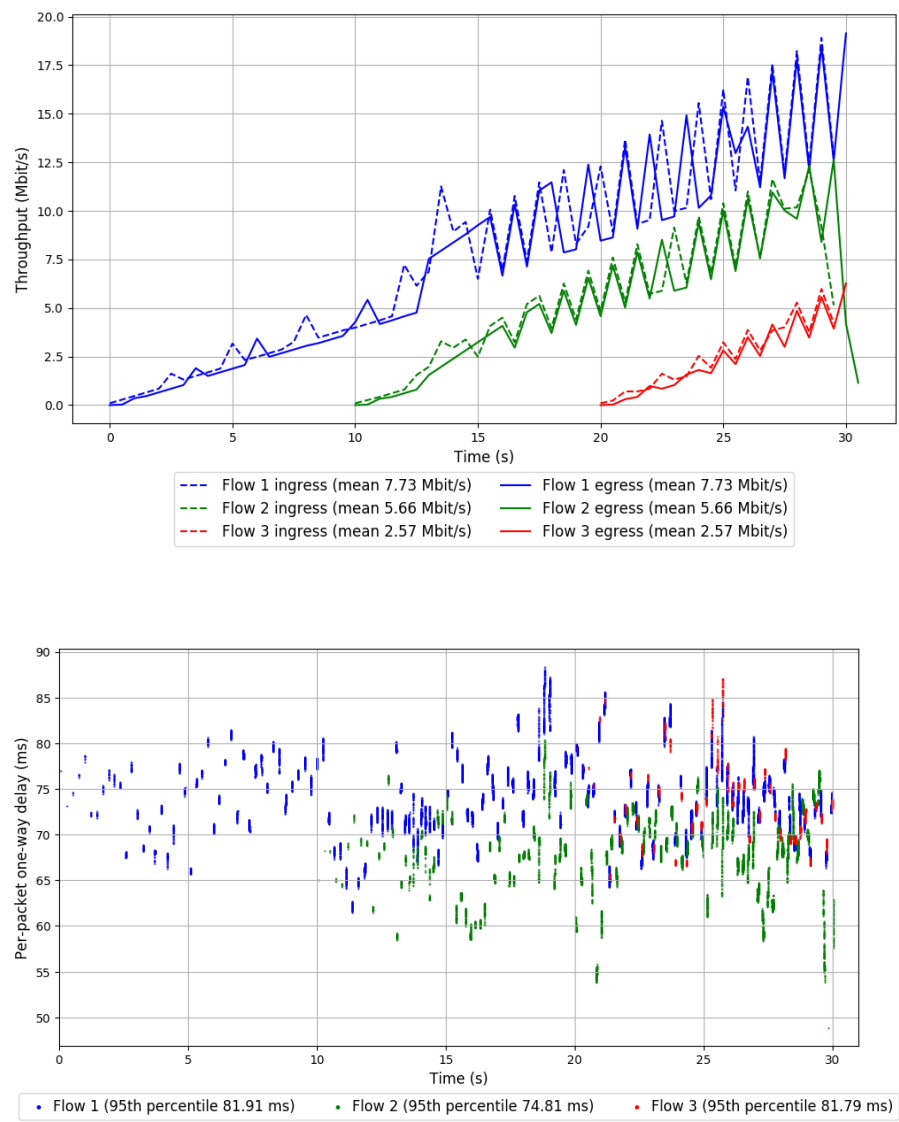


```
Run 1: Statistics of LEDBAT

Start at: 2018-10-26 03:04:22
End at: 2018-10-26 03:04:52
Local clock offset: -0.043 ms
Remote clock offset: 1.681 ms

# Below is generated by plot.py at 2018-10-26 04:57:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.34 Mbit/s
95th percentile per-packet one-way delay: 80.778 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 7.73 Mbit/s
95th percentile per-packet one-way delay: 81.906 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 5.66 Mbit/s
95th percentile per-packet one-way delay: 74.807 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 2.57 Mbit/s
95th percentile per-packet one-way delay: 81.789 ms
Loss rate: 0.00%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-10-26 03:29:55

End at: 2018-10-26 03:30:25

Local clock offset: -0.522 ms

Remote clock offset: -9.5 ms

Below is generated by plot.py at 2018-10-26 04:57:22

Datalink statistics

-- Total of 3 flows:

Average throughput: 13.95 Mbit/s

95th percentile per-packet one-way delay: 74.475 ms

Loss rate: 0.08%

-- Flow 1:

Average throughput: 8.95 Mbit/s

95th percentile per-packet one-way delay: 74.686 ms

Loss rate: 0.08%

-- Flow 2:

Average throughput: 5.56 Mbit/s

95th percentile per-packet one-way delay: 74.105 ms

Loss rate: 0.09%

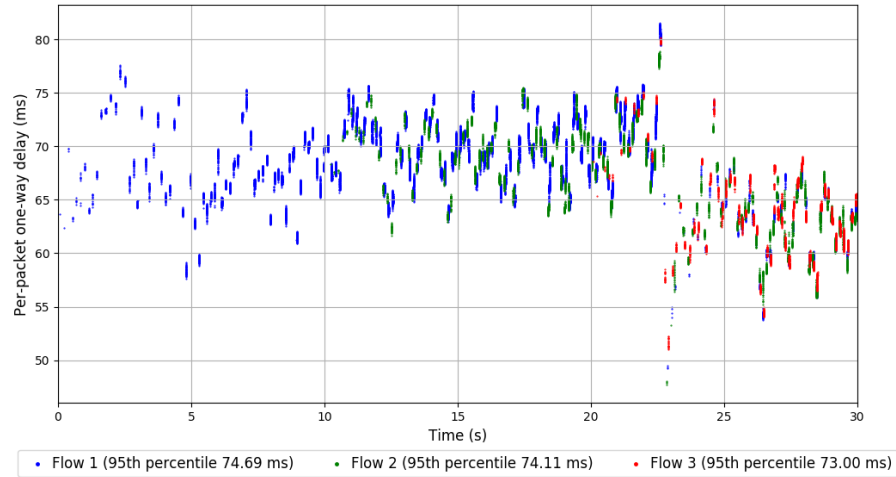
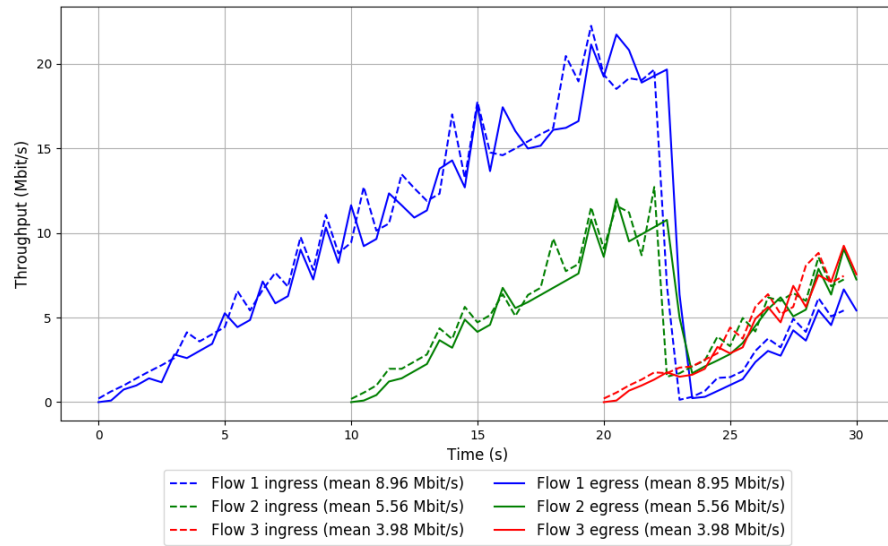
-- Flow 3:

Average throughput: 3.98 Mbit/s

95th percentile per-packet one-way delay: 72.999 ms

Loss rate: 0.03%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-10-26 03:54:03

End at: 2018-10-26 03:54:33

Local clock offset: 8.92 ms

Remote clock offset: 1.389 ms

Below is generated by plot.py at 2018-10-26 04:57:22

Datalink statistics

-- Total of 3 flows:

Average throughput: 30.32 Mbit/s

95th percentile per-packet one-way delay: 60.856 ms

Loss rate: 0.06%

-- Flow 1:

Average throughput: 18.63 Mbit/s

95th percentile per-packet one-way delay: 60.147 ms

Loss rate: 0.07%

-- Flow 2:

Average throughput: 13.82 Mbit/s

95th percentile per-packet one-way delay: 61.942 ms

Loss rate: 0.03%

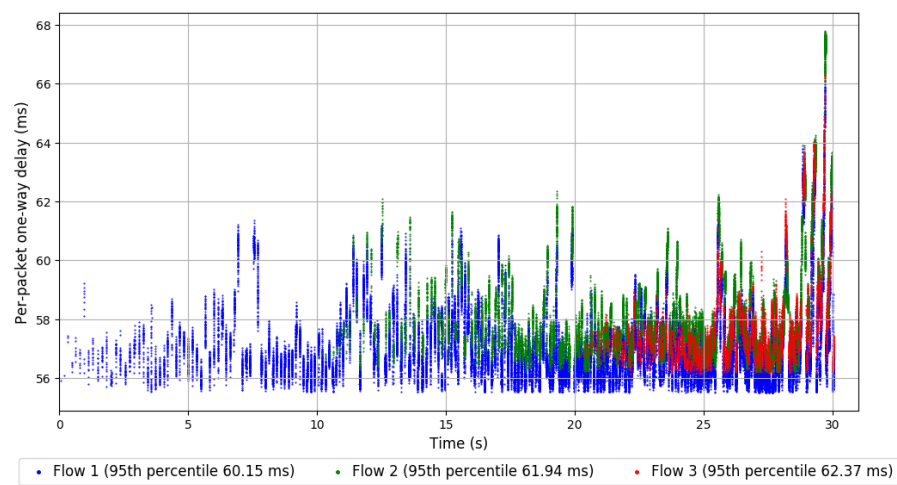
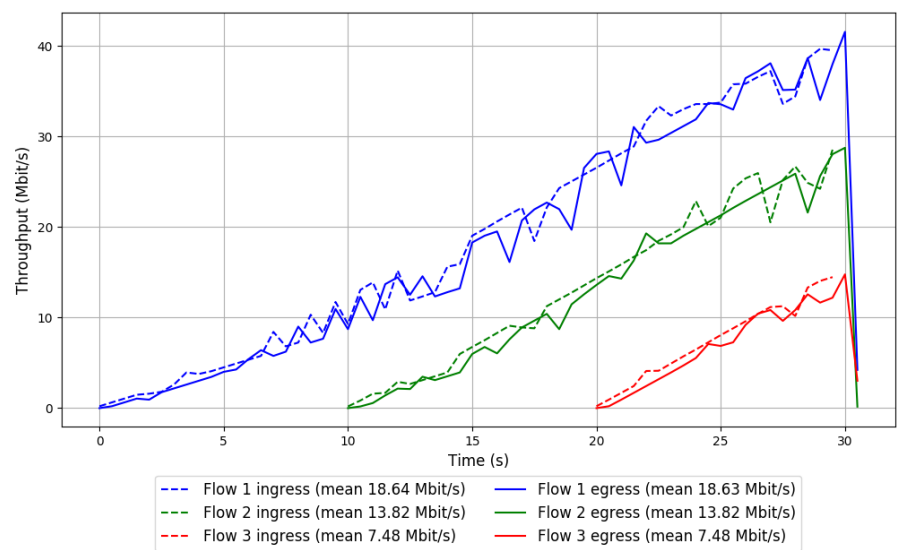
-- Flow 3:

Average throughput: 7.48 Mbit/s

95th percentile per-packet one-way delay: 62.366 ms

Loss rate: 0.13%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2018-10-26 04:18:02

End at: 2018-10-26 04:18:32

Local clock offset: 0.018 ms

Remote clock offset: 2.809 ms

Below is generated by plot.py at 2018-10-26 04:57:22

Datalink statistics

-- Total of 3 flows:

Average throughput: 31.61 Mbit/s

95th percentile per-packet one-way delay: 56.819 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 20.49 Mbit/s

95th percentile per-packet one-way delay: 56.221 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 13.71 Mbit/s

95th percentile per-packet one-way delay: 56.659 ms

Loss rate: 0.00%

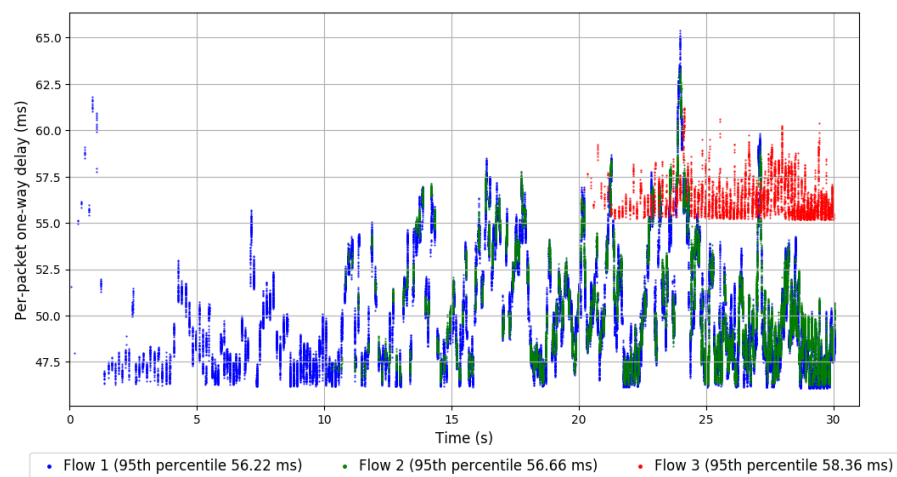
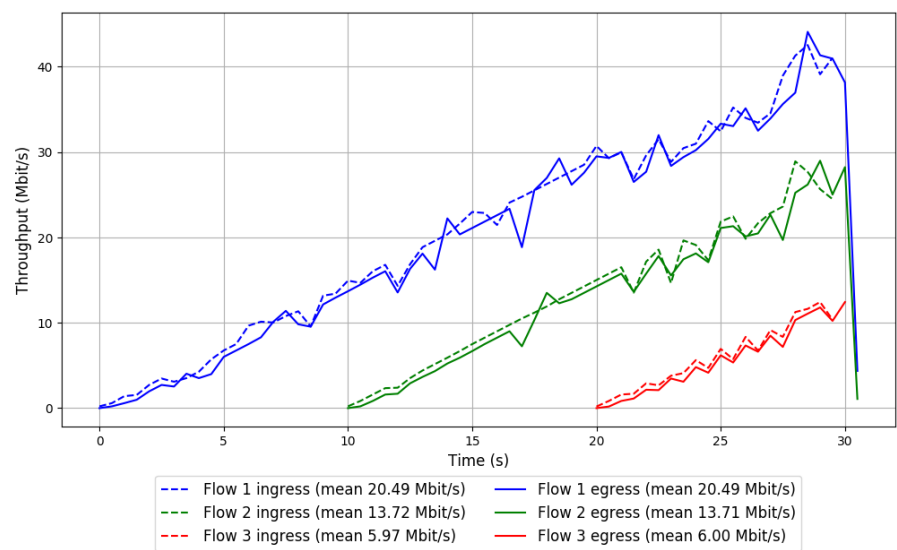
-- Flow 3:

Average throughput: 6.00 Mbit/s

95th percentile per-packet one-way delay: 58.358 ms

Loss rate: 0.14%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-10-26 04:42:33

End at: 2018-10-26 04:43:03

Local clock offset: -1.686 ms

Remote clock offset: 3.23 ms

Below is generated by plot.py at 2018-10-26 04:57:22

Datalink statistics

-- Total of 3 flows:

Average throughput: 25.27 Mbit/s

95th percentile per-packet one-way delay: 57.481 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 16.69 Mbit/s

95th percentile per-packet one-way delay: 50.413 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 10.23 Mbit/s

95th percentile per-packet one-way delay: 58.879 ms

Loss rate: 0.01%

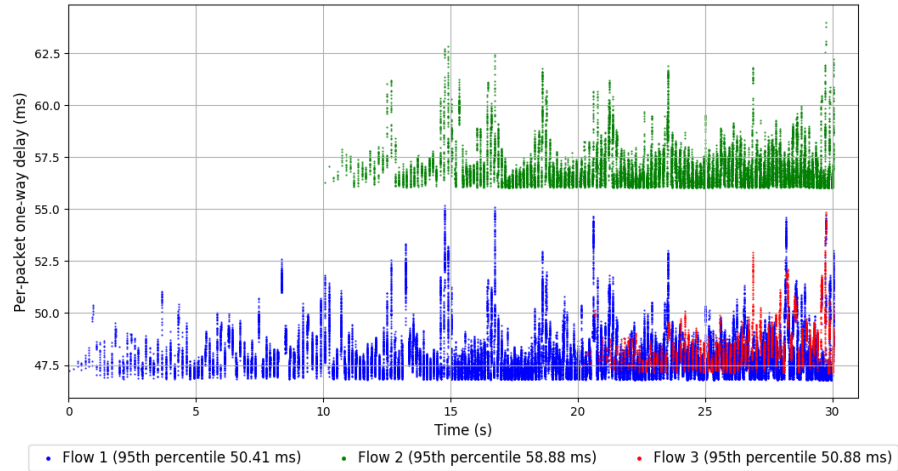
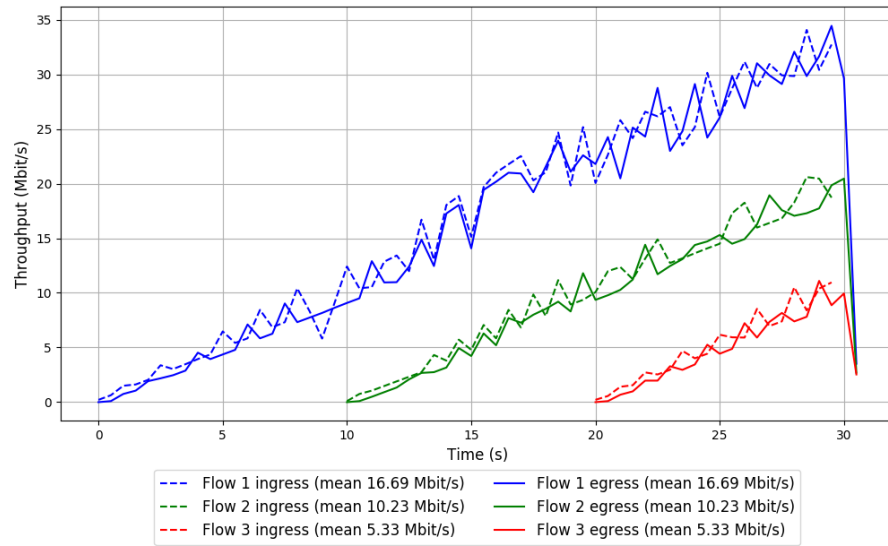
-- Flow 3:

Average throughput: 5.33 Mbit/s

95th percentile per-packet one-way delay: 50.885 ms

Loss rate: 0.00%

Run 5: Report of LEDBAT — Data Link

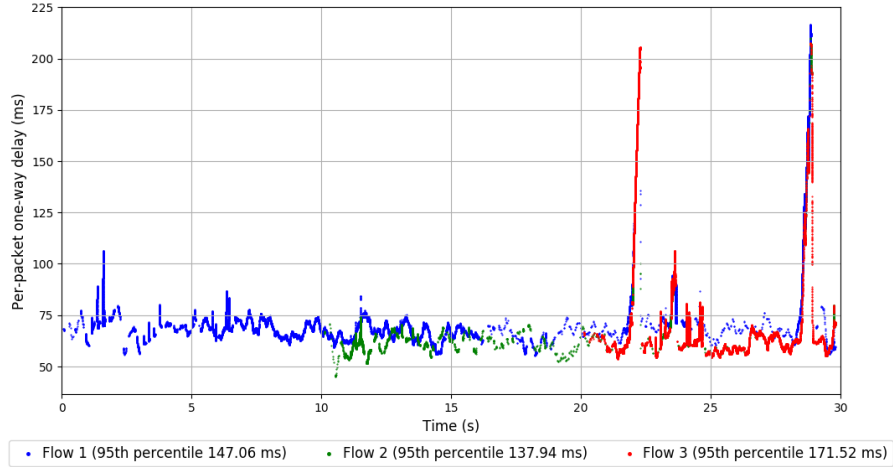
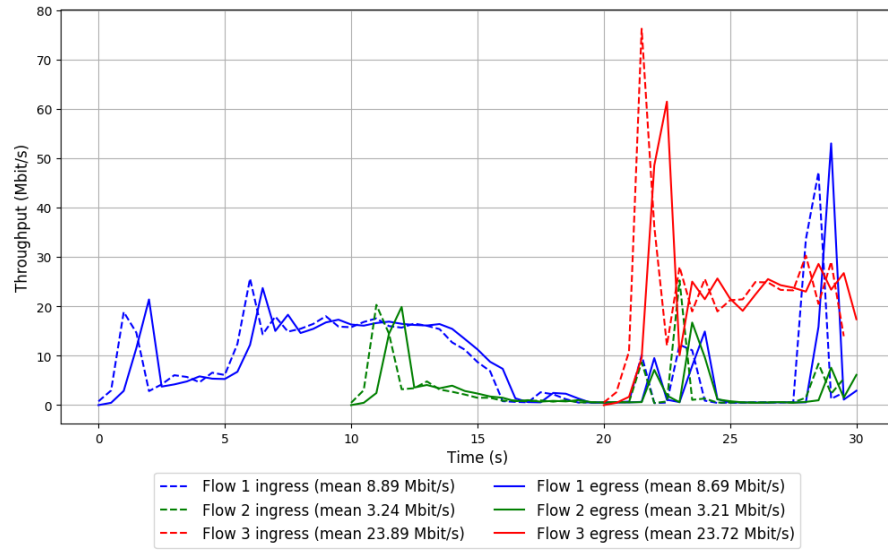


Run 1: Statistics of Indigo-Muses

Start at: 2018-10-26 03:05:43
End at: 2018-10-26 03:06:13
Local clock offset: -0.074 ms
Remote clock offset: -3.247 ms

Below is generated by plot.py at 2018-10-26 04:57:22
Datalink statistics
-- Total of 3 flows:
Average throughput: 18.54 Mbit/s
95th percentile per-packet one-way delay: 160.083 ms
Loss rate: 1.46%
-- Flow 1:
Average throughput: 8.69 Mbit/s
95th percentile per-packet one-way delay: 147.058 ms
Loss rate: 2.24%
-- Flow 2:
Average throughput: 3.21 Mbit/s
95th percentile per-packet one-way delay: 137.939 ms
Loss rate: 1.11%
-- Flow 3:
Average throughput: 23.72 Mbit/s
95th percentile per-packet one-way delay: 171.520 ms
Loss rate: 0.67%

Run 1: Report of Indigo-Muses — Data Link

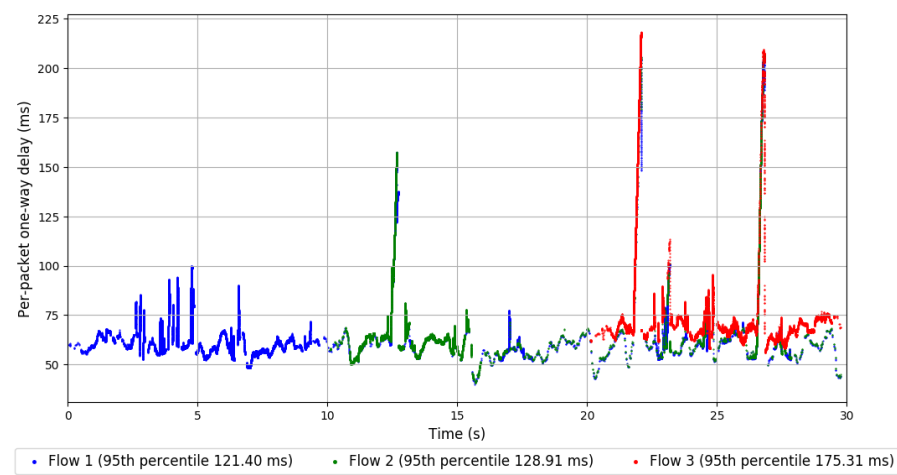
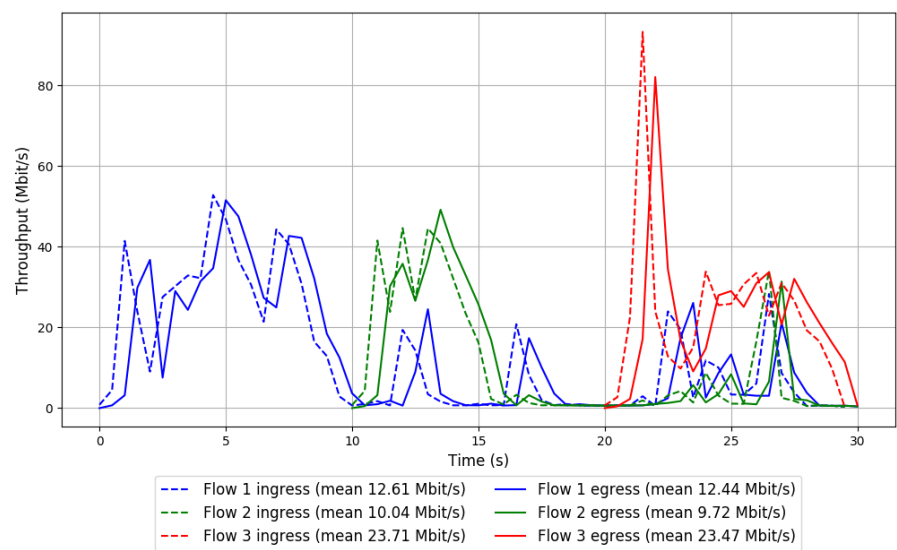


Run 2: Statistics of Indigo-Muses

Start at: 2018-10-26 03:31:13
End at: 2018-10-26 03:31:43
Local clock offset: -0.444 ms
Remote clock offset: -11.551 ms

Below is generated by plot.py at 2018-10-26 04:57:22
Datalink statistics
-- Total of 3 flows:
Average throughput: 26.48 Mbit/s
95th percentile per-packet one-way delay: 136.739 ms
Loss rate: 1.76%
-- Flow 1:
Average throughput: 12.44 Mbit/s
95th percentile per-packet one-way delay: 121.396 ms
Loss rate: 1.43%
-- Flow 2:
Average throughput: 9.72 Mbit/s
95th percentile per-packet one-way delay: 128.905 ms
Loss rate: 3.29%
-- Flow 3:
Average throughput: 23.47 Mbit/s
95th percentile per-packet one-way delay: 175.307 ms
Loss rate: 0.97%

Run 2: Report of Indigo-Muses — Data Link



Run 3: Statistics of Indigo-Muses

Start at: 2018-10-26 03:55:21

End at: 2018-10-26 03:55:51

Local clock offset: 8.912 ms

Remote clock offset: 1.731 ms

Below is generated by plot.py at 2018-10-26 04:57:22

Datalink statistics

-- Total of 3 flows:

Average throughput: 23.42 Mbit/s

95th percentile per-packet one-way delay: 109.563 ms

Loss rate: 0.02%

-- Flow 1:

Average throughput: 13.68 Mbit/s

95th percentile per-packet one-way delay: 101.150 ms

Loss rate: 0.03%

-- Flow 2:

Average throughput: 8.58 Mbit/s

95th percentile per-packet one-way delay: 128.404 ms

Loss rate: 0.00%

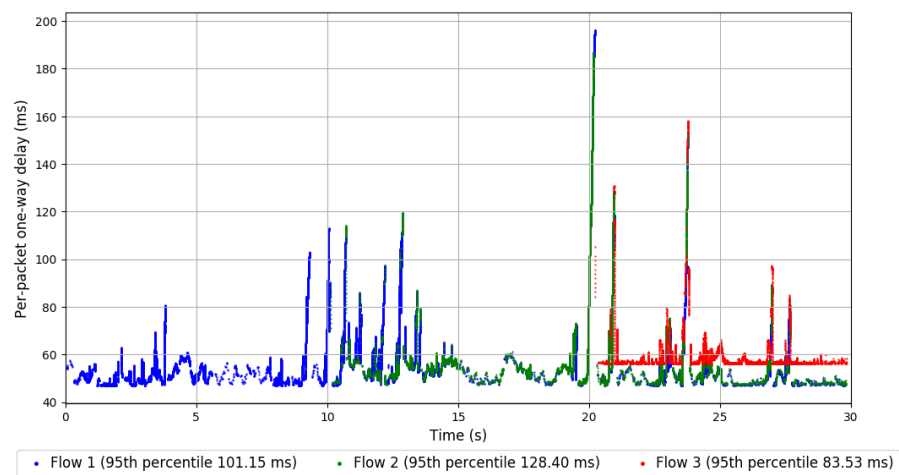
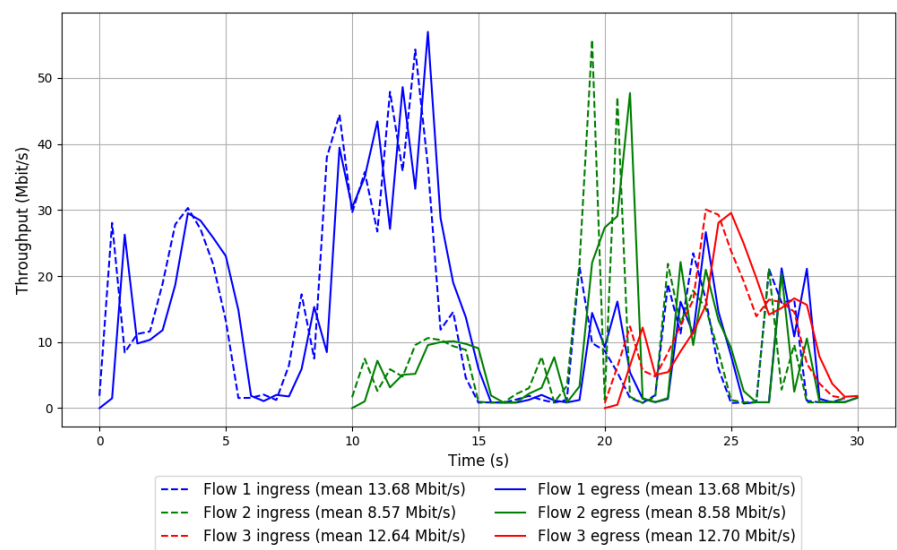
-- Flow 3:

Average throughput: 12.70 Mbit/s

95th percentile per-packet one-way delay: 83.525 ms

Loss rate: 0.00%

Run 3: Report of Indigo-Muses — Data Link



Run 4: Statistics of Indigo-Muses

Start at: 2018-10-26 04:19:22

End at: 2018-10-26 04:19:52

Local clock offset: -0.179 ms

Remote clock offset: 2.75 ms

Below is generated by plot.py at 2018-10-26 04:57:41

Datalink statistics

-- Total of 3 flows:

Average throughput: 55.98 Mbit/s

95th percentile per-packet one-way delay: 88.136 ms

Loss rate: 0.23%

-- Flow 1:

Average throughput: 29.93 Mbit/s

95th percentile per-packet one-way delay: 71.204 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 32.48 Mbit/s

95th percentile per-packet one-way delay: 109.815 ms

Loss rate: 0.61%

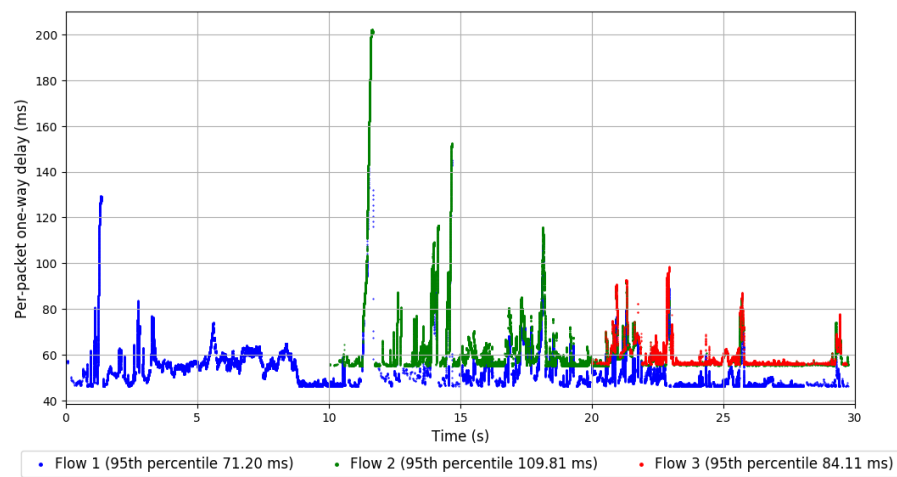
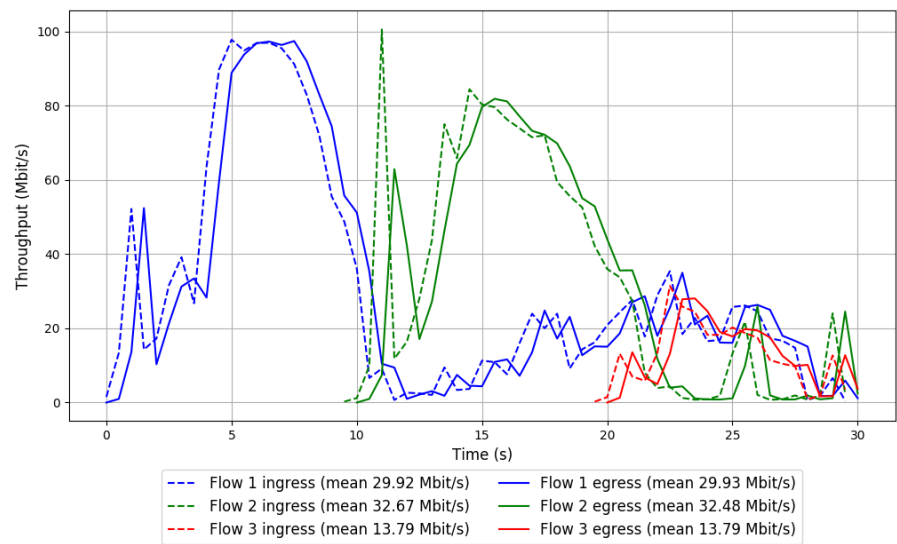
-- Flow 3:

Average throughput: 13.79 Mbit/s

95th percentile per-packet one-way delay: 84.106 ms

Loss rate: 0.00%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-10-26 04:43:52

End at: 2018-10-26 04:44:22

Local clock offset: -1.559 ms

Remote clock offset: 3.97 ms

Below is generated by plot.py at 2018-10-26 04:57:41

Datalink statistics

-- Total of 3 flows:

Average throughput: 19.40 Mbit/s

95th percentile per-packet one-way delay: 135.007 ms

Loss rate: 6.47%

-- Flow 1:

Average throughput: 11.29 Mbit/s

95th percentile per-packet one-way delay: 121.762 ms

Loss rate: 7.57%

-- Flow 2:

Average throughput: 9.01 Mbit/s

95th percentile per-packet one-way delay: 135.360 ms

Loss rate: 4.91%

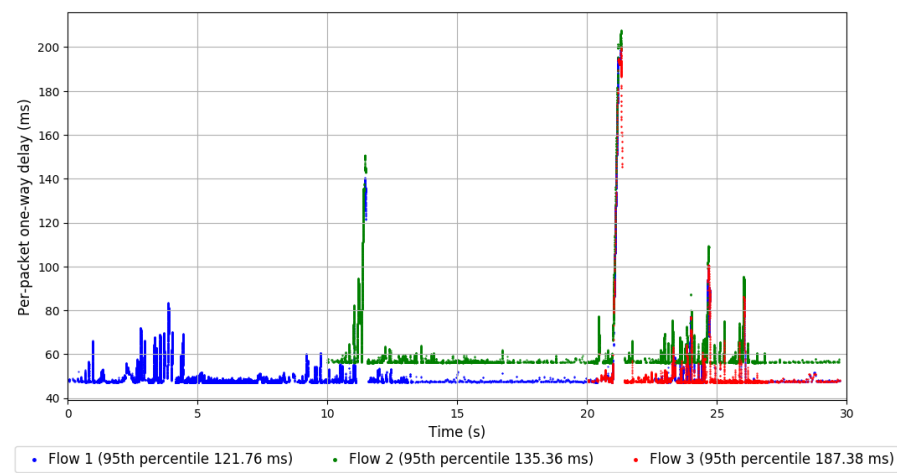
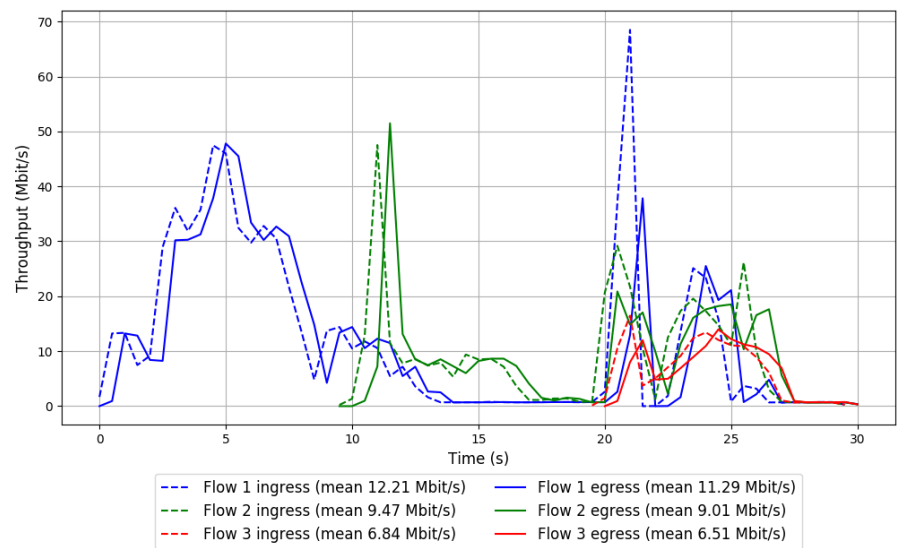
-- Flow 3:

Average throughput: 6.51 Mbit/s

95th percentile per-packet one-way delay: 187.382 ms

Loss rate: 4.80%

Run 5: Report of Indigo-Muses — Data Link

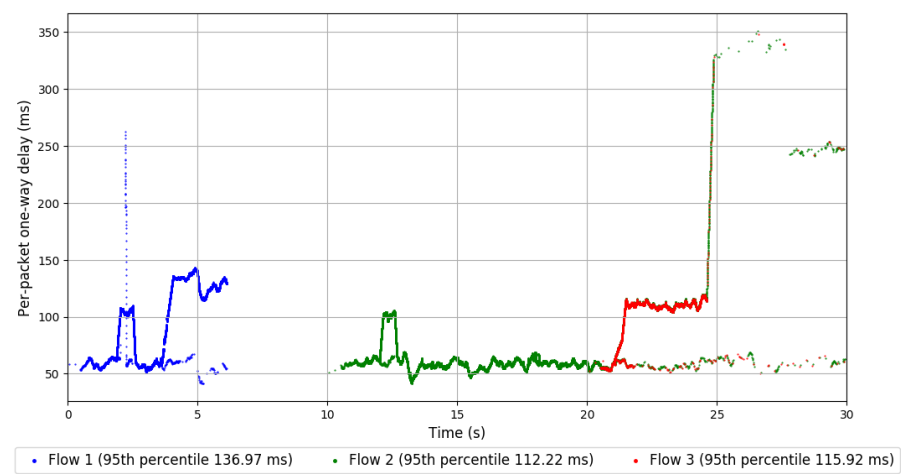
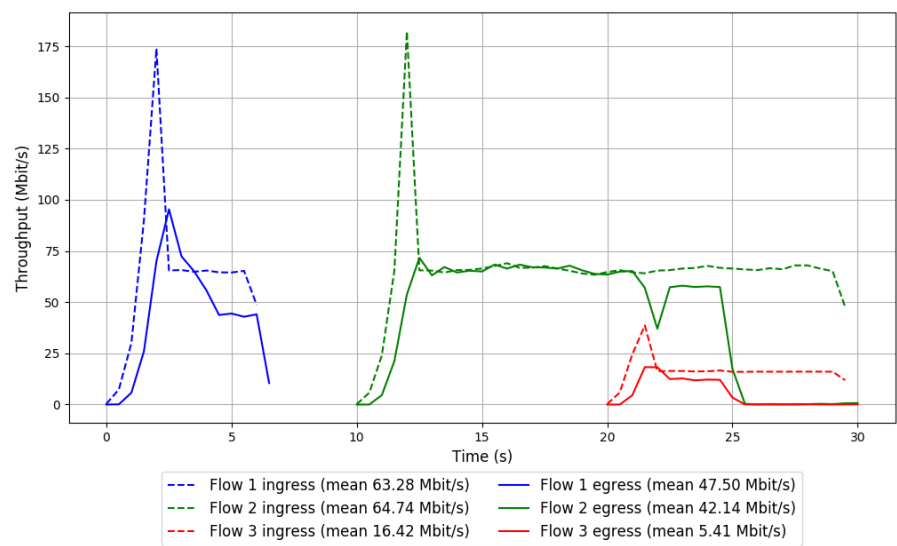



```
Run 1: Statistics of PCC-Allegro

Start at: 2018-10-26 02:59:49
End at: 2018-10-26 03:00:19
Local clock offset: 0.36 ms
Remote clock offset: -5.719 ms

# Below is generated by plot.py at 2018-10-26 04:57:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 39.45 Mbit/s
95th percentile per-packet one-way delay: 129.102 ms
Loss rate: 36.36%
-- Flow 1:
Average throughput: 47.50 Mbit/s
95th percentile per-packet one-way delay: 136.966 ms
Loss rate: 28.54%
-- Flow 2:
Average throughput: 42.14 Mbit/s
95th percentile per-packet one-way delay: 112.218 ms
Loss rate: 34.94%
-- Flow 3:
Average throughput: 5.41 Mbit/s
95th percentile per-packet one-way delay: 115.919 ms
Loss rate: 67.20%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-10-26 03:25:46

End at: 2018-10-26 03:26:16

Local clock offset: -0.629 ms

Remote clock offset: -7.8 ms

Below is generated by plot.py at 2018-10-26 04:58:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 46.31 Mbit/s

95th percentile per-packet one-way delay: 103.123 ms

Loss rate: 26.57%

-- Flow 1:

Average throughput: 53.00 Mbit/s

95th percentile per-packet one-way delay: 102.348 ms

Loss rate: 19.71%

-- Flow 2:

Average throughput: 11.97 Mbit/s

95th percentile per-packet one-way delay: 103.889 ms

Loss rate: 28.40%

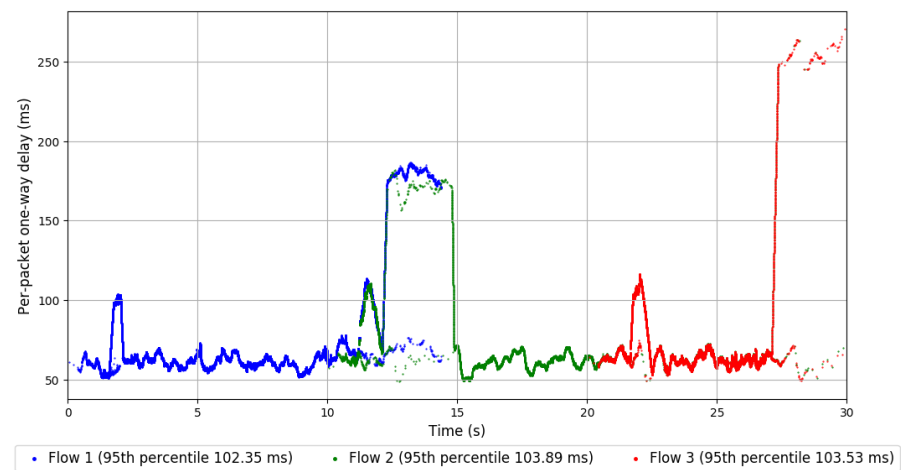
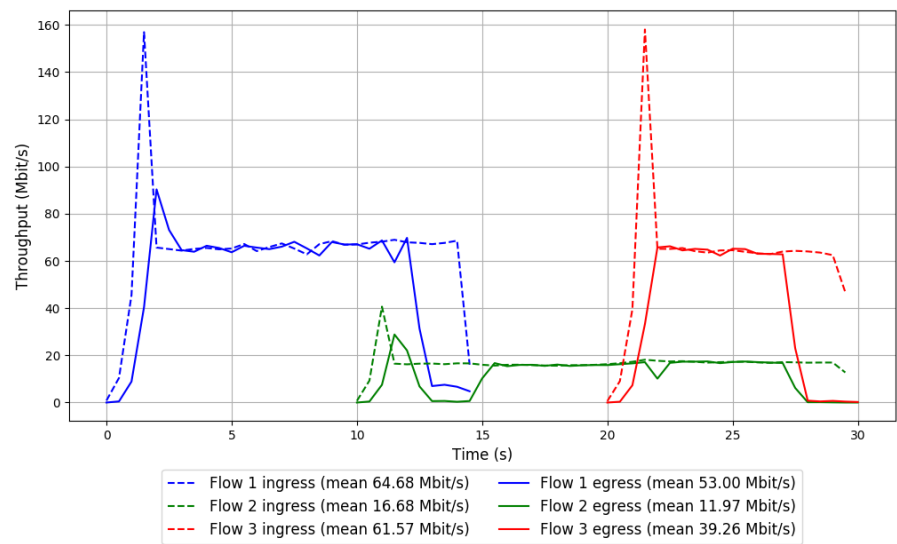
-- Flow 3:

Average throughput: 39.26 Mbit/s

95th percentile per-packet one-way delay: 103.532 ms

Loss rate: 36.27%

Run 2: Report of PCC-Allegro — Data Link

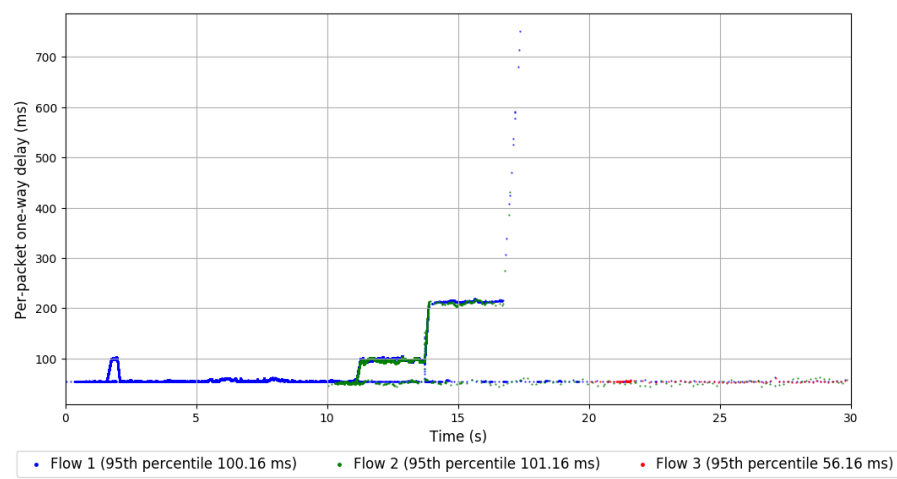
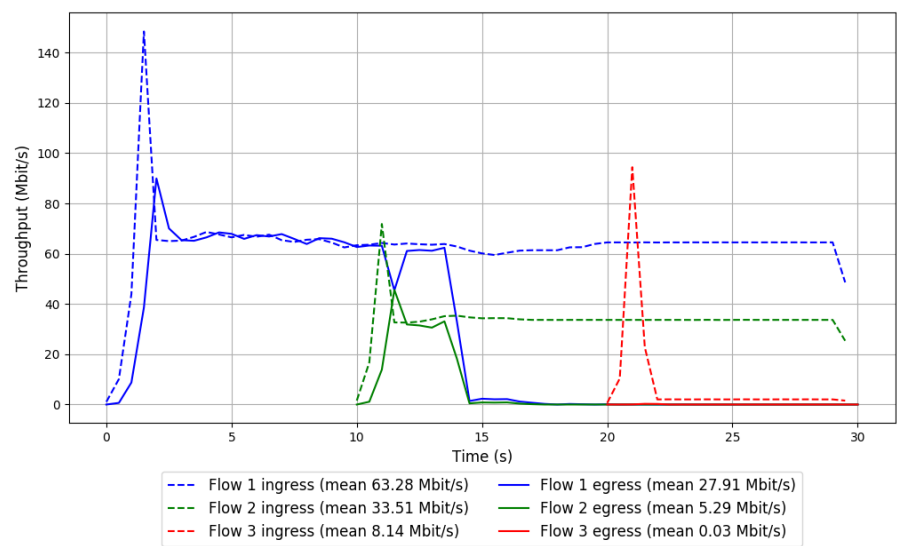


Run 3: Statistics of PCC-Allegro

Start at: 2018-10-26 03:50:00
End at: 2018-10-26 03:50:30
Local clock offset: 7.969 ms
Remote clock offset: -1.716 ms

Below is generated by plot.py at 2018-10-26 04:58:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 31.38 Mbit/s
95th percentile per-packet one-way delay: 100.319 ms
Loss rate: 64.54%
-- Flow 1:
Average throughput: 27.91 Mbit/s
95th percentile per-packet one-way delay: 100.164 ms
Loss rate: 56.10%
-- Flow 2:
Average throughput: 5.29 Mbit/s
95th percentile per-packet one-way delay: 101.160 ms
Loss rate: 84.28%
-- Flow 3:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 56.159 ms
Loss rate: 99.62%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-10-26 04:13:56

End at: 2018-10-26 04:14:26

Local clock offset: 1.117 ms

Remote clock offset: 3.079 ms

Below is generated by plot.py at 2018-10-26 04:58:04

Datalink statistics

-- Total of 3 flows:

Average throughput: 46.46 Mbit/s

95th percentile per-packet one-way delay: 107.328 ms

Loss rate: 22.09%

-- Flow 1:

Average throughput: 58.91 Mbit/s

95th percentile per-packet one-way delay: 108.258 ms

Loss rate: 12.58%

-- Flow 2:

Average throughput: 11.73 Mbit/s

95th percentile per-packet one-way delay: 103.987 ms

Loss rate: 24.51%

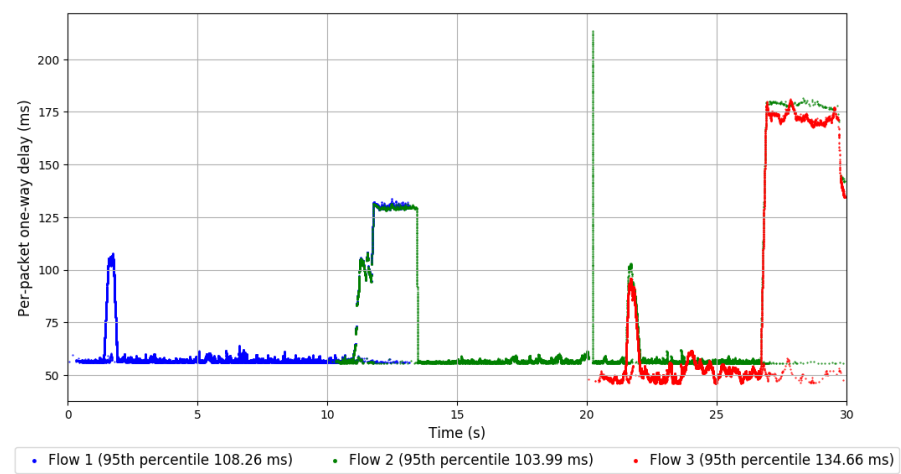
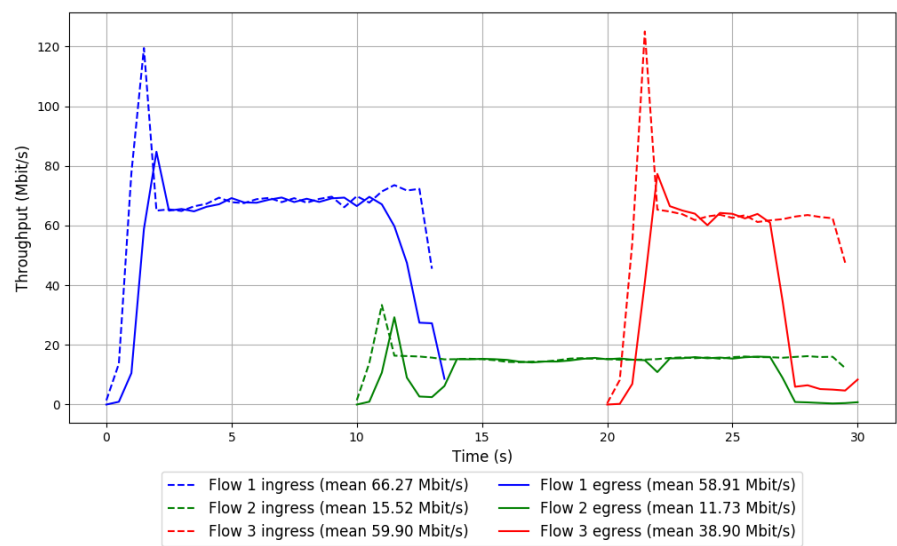
-- Flow 3:

Average throughput: 38.90 Mbit/s

95th percentile per-packet one-way delay: 134.662 ms

Loss rate: 35.04%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-10-26 04:38:28

End at: 2018-10-26 04:38:58

Local clock offset: -1.672 ms

Remote clock offset: 3.031 ms

Below is generated by plot.py at 2018-10-26 04:58:08

Datalink statistics

-- Total of 3 flows:

Average throughput: 51.55 Mbit/s

95th percentile per-packet one-way delay: 93.009 ms

Loss rate: 9.83%

-- Flow 1:

Average throughput: 56.36 Mbit/s

95th percentile per-packet one-way delay: 96.745 ms

Loss rate: 11.03%

-- Flow 2:

Average throughput: 14.90 Mbit/s

95th percentile per-packet one-way delay: 88.375 ms

Loss rate: 8.86%

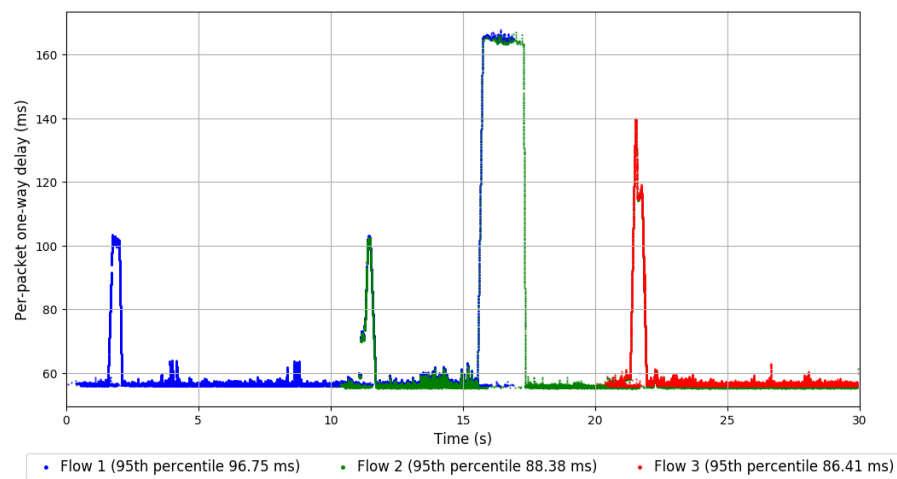
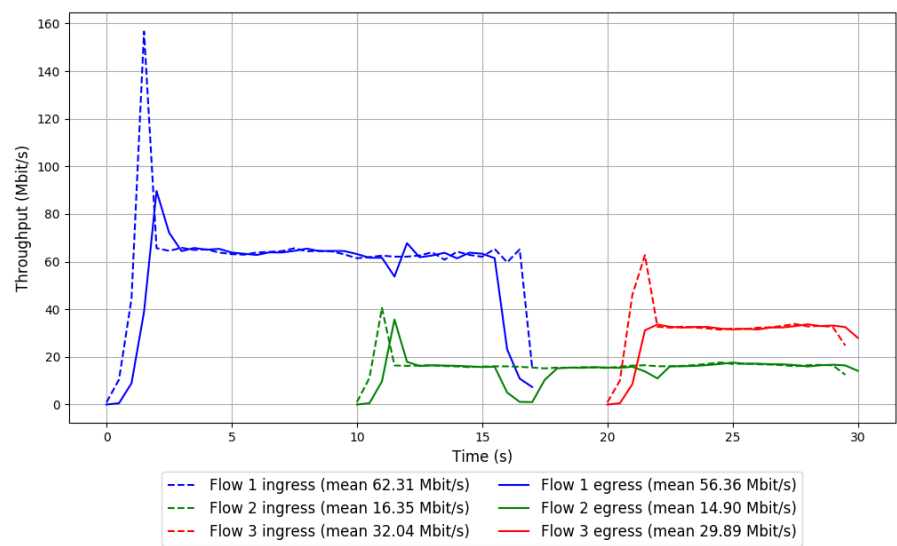
-- Flow 3:

Average throughput: 29.89 Mbit/s

95th percentile per-packet one-way delay: 86.407 ms

Loss rate: 6.76%

Run 5: Report of PCC-Allegro — Data Link

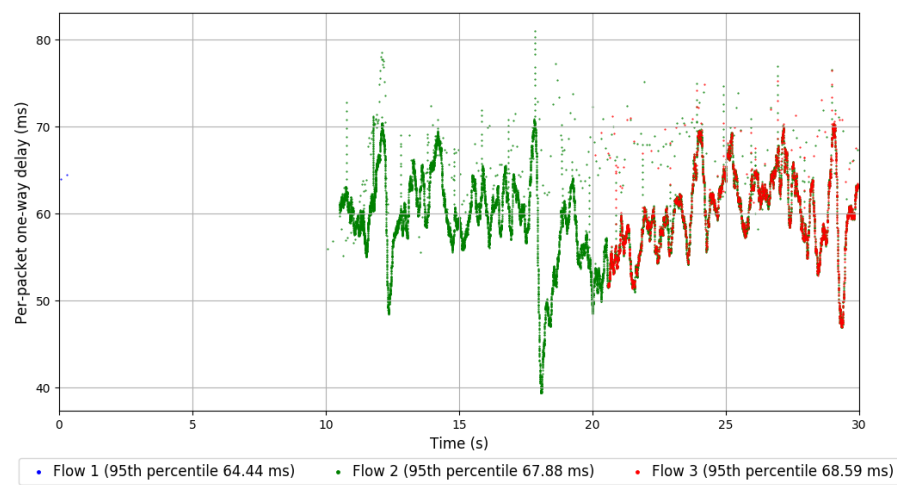
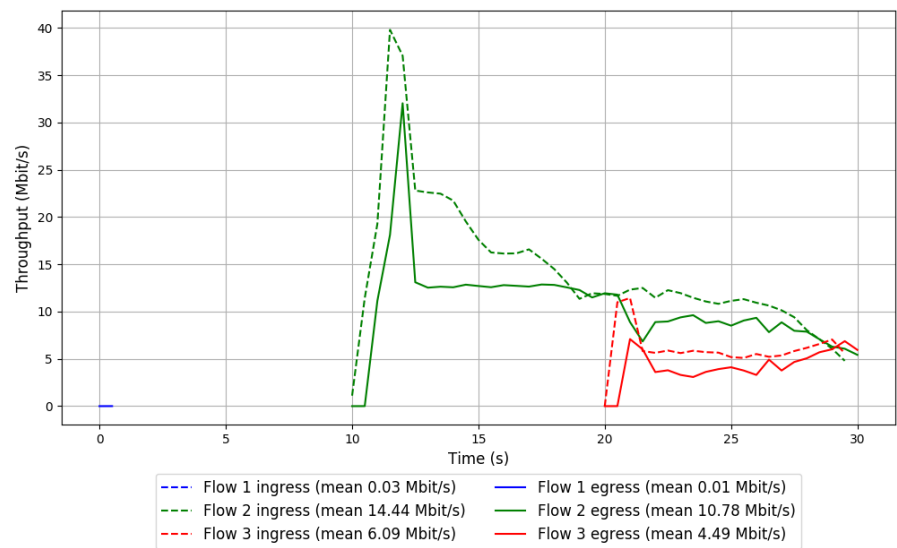


```
Run 1: Statistics of PCC-Expr

Start at: 2018-10-26 02:51:37
End at: 2018-10-26 02:52:07
Local clock offset: 0.16 ms
Remote clock offset: -4.758 ms

# Below is generated by plot.py at 2018-10-26 04:58:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.66 Mbit/s
95th percentile per-packet one-way delay: 67.983 ms
Loss rate: 25.46%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 64.445 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 10.78 Mbit/s
95th percentile per-packet one-way delay: 67.877 ms
Loss rate: 25.28%
-- Flow 3:
Average throughput: 4.49 Mbit/s
95th percentile per-packet one-way delay: 68.586 ms
Loss rate: 26.31%
```

Run 1: Report of PCC-Expr — Data Link

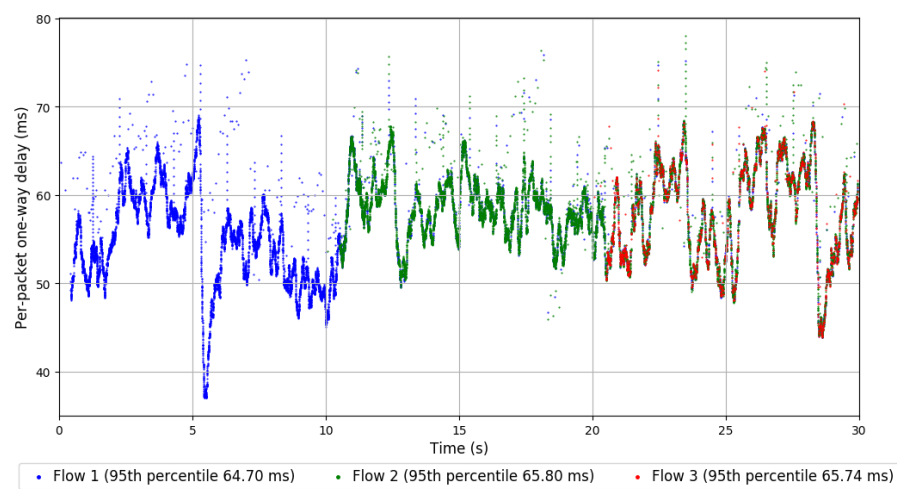
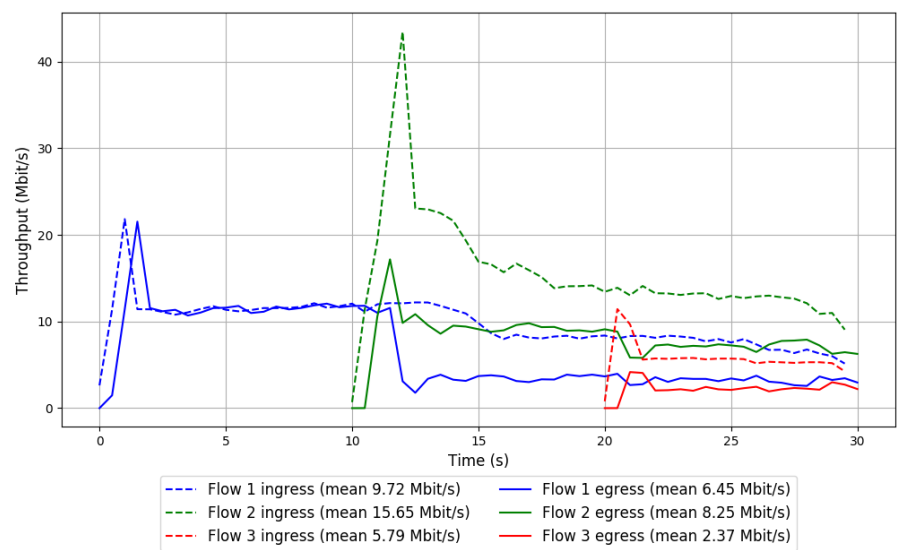


Run 2: Statistics of PCC-Expr

Start at: 2018-10-26 03:17:39
End at: 2018-10-26 03:18:09
Local clock offset: -0.367 ms
Remote clock offset: -9.895 ms

Below is generated by plot.py at 2018-10-26 04:58:08
Datalink statistics
-- Total of 3 flows:
Average throughput: 12.72 Mbit/s
95th percentile per-packet one-way delay: 65.337 ms
Loss rate: 42.29%
-- Flow 1:
Average throughput: 6.45 Mbit/s
95th percentile per-packet one-way delay: 64.697 ms
Loss rate: 33.66%
-- Flow 2:
Average throughput: 8.25 Mbit/s
95th percentile per-packet one-way delay: 65.800 ms
Loss rate: 47.26%
-- Flow 3:
Average throughput: 2.37 Mbit/s
95th percentile per-packet one-way delay: 65.744 ms
Loss rate: 59.10%

Run 2: Report of PCC-Expr — Data Link

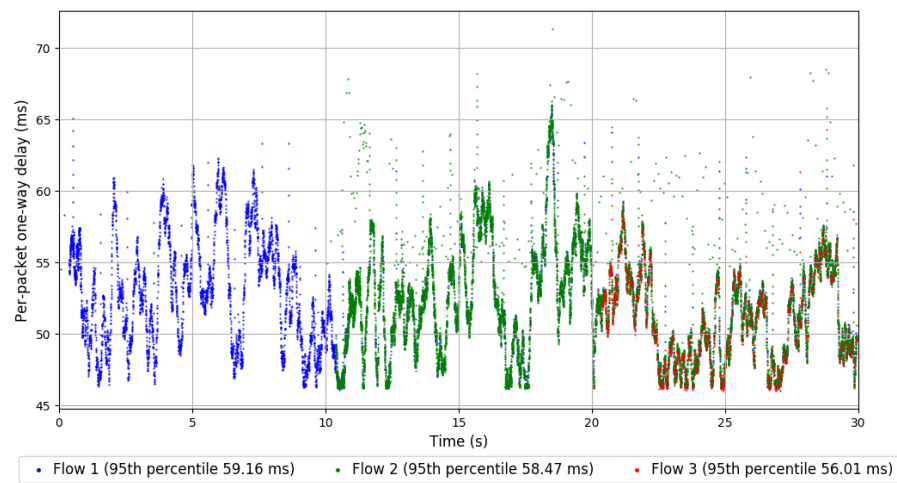
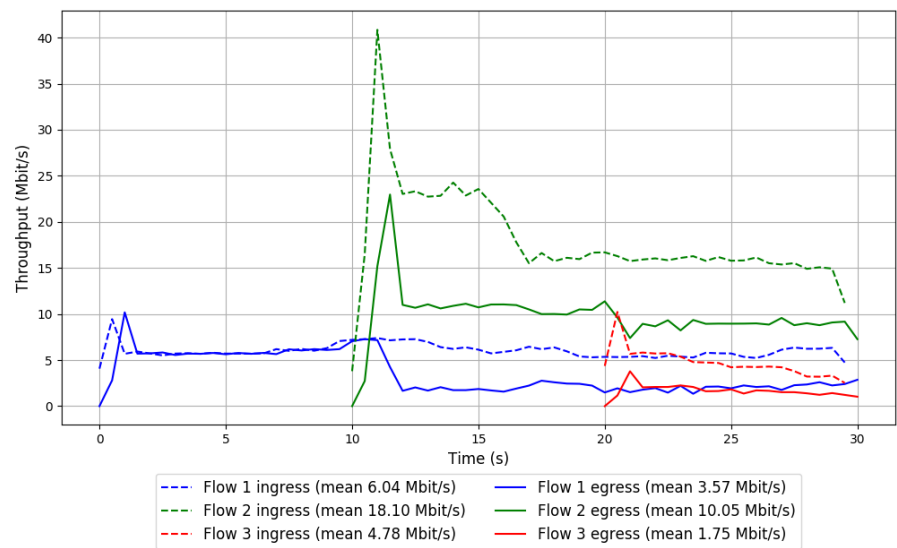


Run 3: Statistics of PCC-Expr

Start at: 2018-10-26 03:42:13
End at: 2018-10-26 03:42:43
Local clock offset: 5.587 ms
Remote clock offset: -3.141 ms

Below is generated by plot.py at 2018-10-26 04:58:08
Datalink statistics
-- Total of 3 flows:
Average throughput: 10.83 Mbit/s
95th percentile per-packet one-way delay: 58.696 ms
Loss rate: 44.91%
-- Flow 1:
Average throughput: 3.57 Mbit/s
95th percentile per-packet one-way delay: 59.155 ms
Loss rate: 40.91%
-- Flow 2:
Average throughput: 10.05 Mbit/s
95th percentile per-packet one-way delay: 58.465 ms
Loss rate: 44.49%
-- Flow 3:
Average throughput: 1.75 Mbit/s
95th percentile per-packet one-way delay: 56.011 ms
Loss rate: 63.36%

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

Start at: 2018-10-26 04:06:15

End at: 2018-10-26 04:06:45

Local clock offset: 5.294 ms

Remote clock offset: 2.399 ms

Below is generated by plot.py at 2018-10-26 04:58:08

Datalink statistics

-- Total of 3 flows:

Average throughput: 12.72 Mbit/s

95th percentile per-packet one-way delay: 51.071 ms

Loss rate: 33.10%

-- Flow 1:

Average throughput: 8.60 Mbit/s

95th percentile per-packet one-way delay: 50.987 ms

Loss rate: 35.14%

-- Flow 2:

Average throughput: 4.51 Mbit/s

95th percentile per-packet one-way delay: 50.738 ms

Loss rate: 27.64%

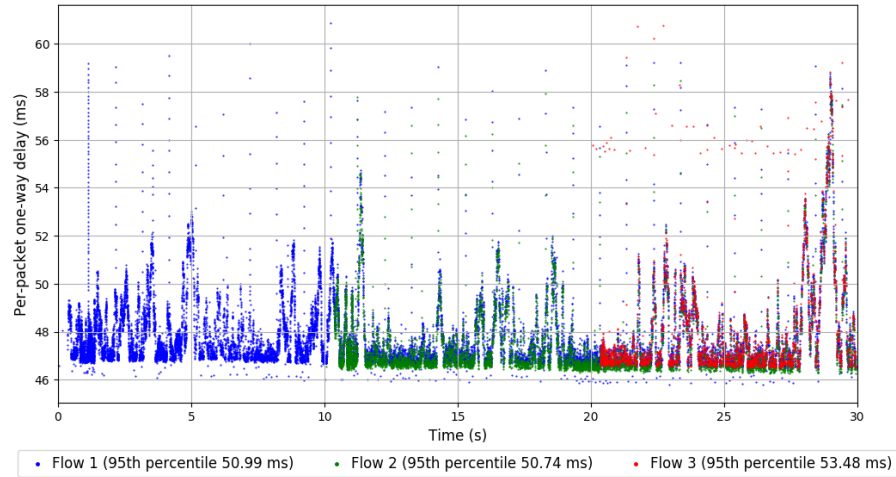
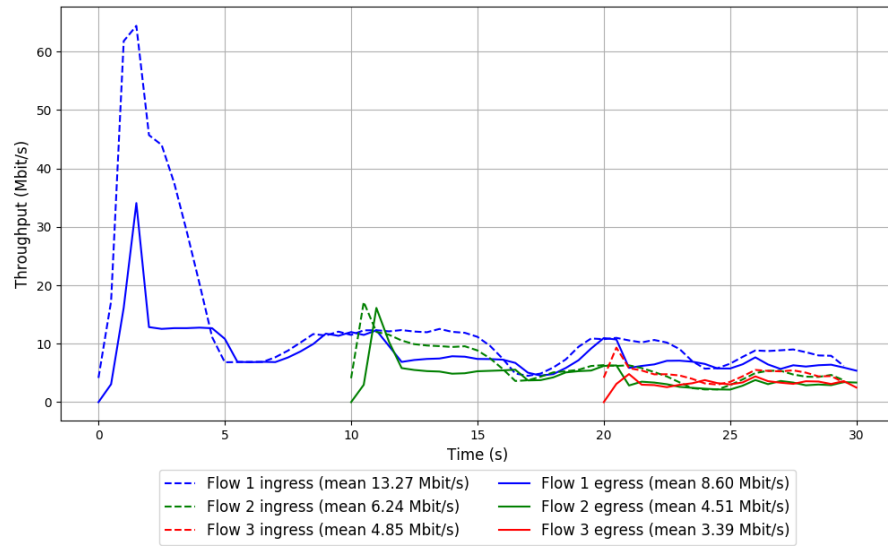
-- Flow 3:

Average throughput: 3.39 Mbit/s

95th percentile per-packet one-way delay: 53.478 ms

Loss rate: 30.29%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-10-26 04:30:33

End at: 2018-10-26 04:31:03

Local clock offset: -1.76 ms

Remote clock offset: 2.866 ms

Below is generated by plot.py at 2018-10-26 04:58:08

Datalink statistics

-- Total of 3 flows:

Average throughput: 12.95 Mbit/s

95th percentile per-packet one-way delay: 50.456 ms

Loss rate: 62.53%

-- Flow 1:

Average throughput: 11.62 Mbit/s

95th percentile per-packet one-way delay: 50.573 ms

Loss rate: 61.78%

-- Flow 2:

Average throughput: 1.01 Mbit/s

95th percentile per-packet one-way delay: 49.767 ms

Loss rate: 73.46%

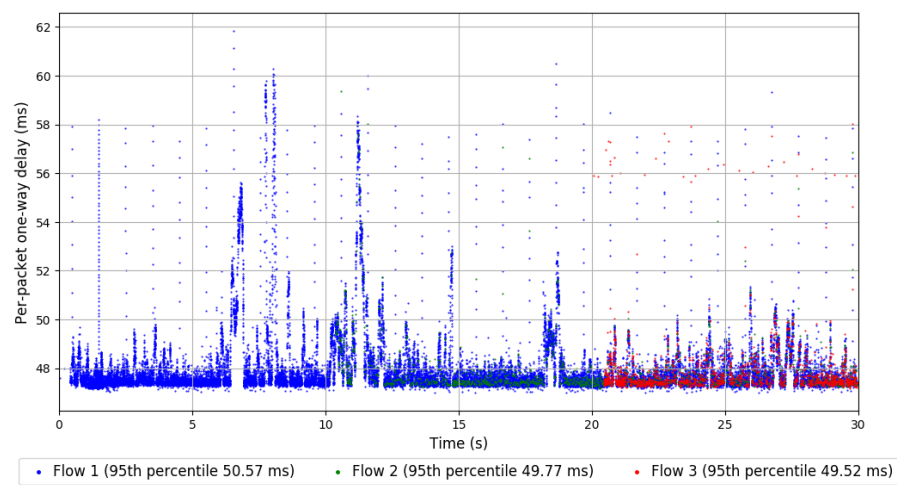
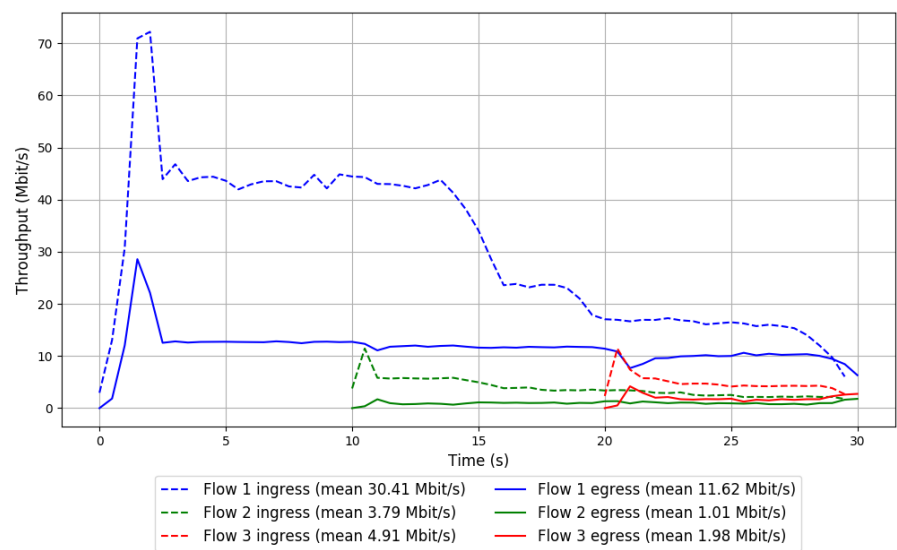
-- Flow 3:

Average throughput: 1.98 Mbit/s

95th percentile per-packet one-way delay: 49.516 ms

Loss rate: 59.62%

Run 5: Report of PCC-Expr — Data Link

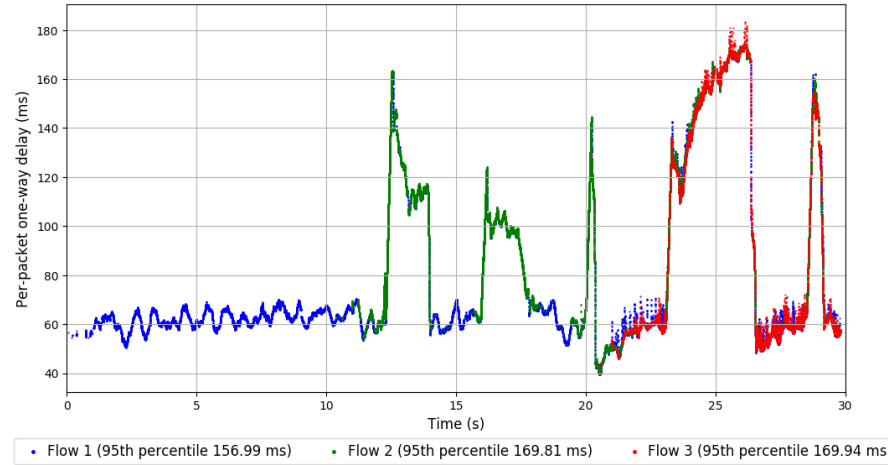
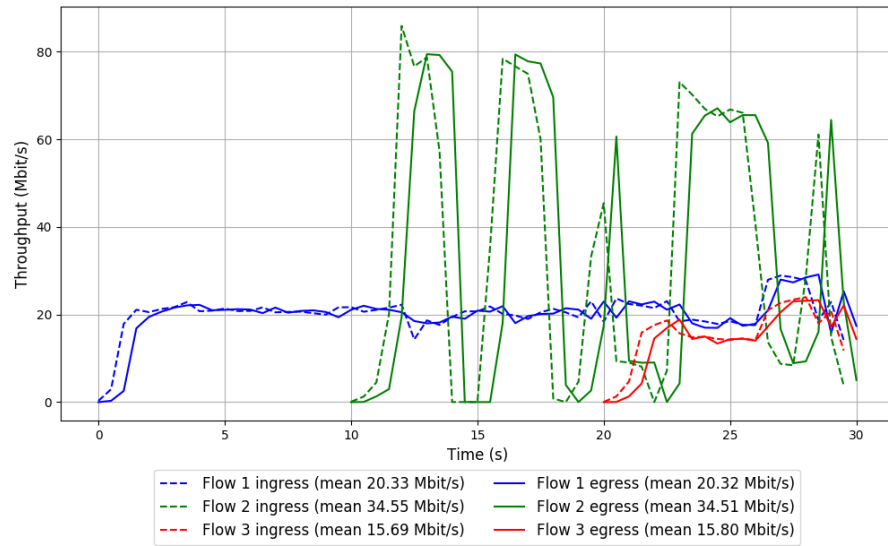


Run 1: Statistics of QUIC Cubic

Start at: 2018-10-26 02:50:07
End at: 2018-10-26 02:50:37
Local clock offset: 0.198 ms
Remote clock offset: -3.923 ms

Below is generated by plot.py at 2018-10-26 04:58:27
Datalink statistics
-- Total of 3 flows:
Average throughput: 48.16 Mbit/s
95th percentile per-packet one-way delay: 168.728 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 20.32 Mbit/s
95th percentile per-packet one-way delay: 156.993 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 34.51 Mbit/s
95th percentile per-packet one-way delay: 169.809 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 15.80 Mbit/s
95th percentile per-packet one-way delay: 169.935 ms
Loss rate: 0.02%

Run 1: Report of QUIC Cubic — Data Link

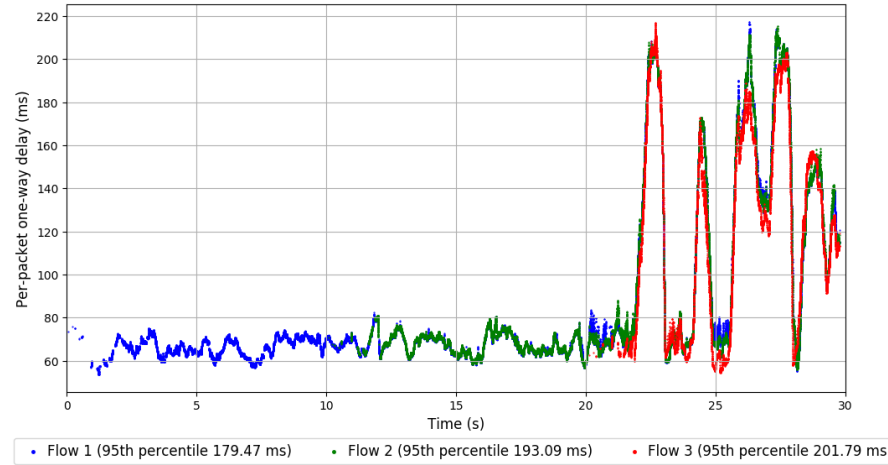
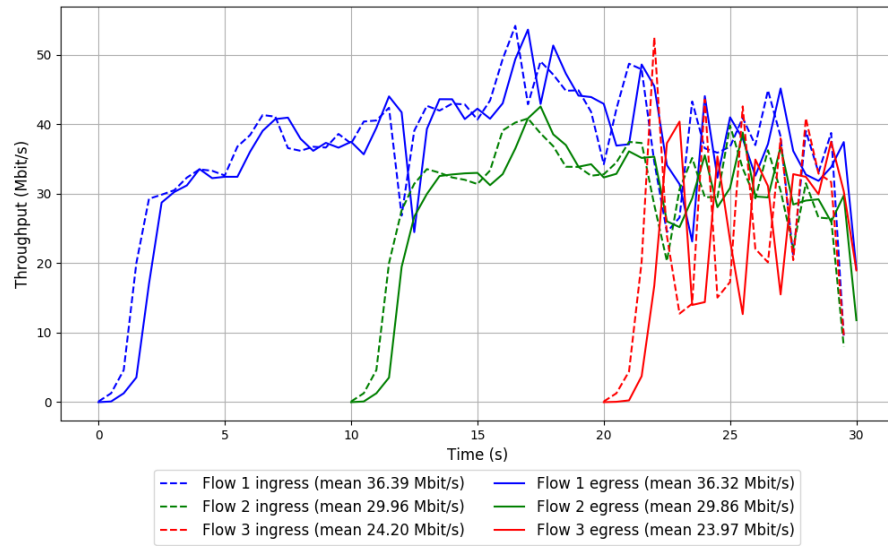


Run 2: Statistics of QUIC Cubic

Start at: 2018-10-26 03:16:08
End at: 2018-10-26 03:16:38
Local clock offset: -0.511 ms
Remote clock offset: -6.201 ms

Below is generated by plot.py at 2018-10-26 04:58:47
Datalink statistics
-- Total of 3 flows:
Average throughput: 63.88 Mbit/s
95th percentile per-packet one-way delay: 192.307 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 36.32 Mbit/s
95th percentile per-packet one-way delay: 179.474 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 29.86 Mbit/s
95th percentile per-packet one-way delay: 193.095 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 23.97 Mbit/s
95th percentile per-packet one-way delay: 201.792 ms
Loss rate: 0.39%

Run 2: Report of QUIC Cubic — Data Link

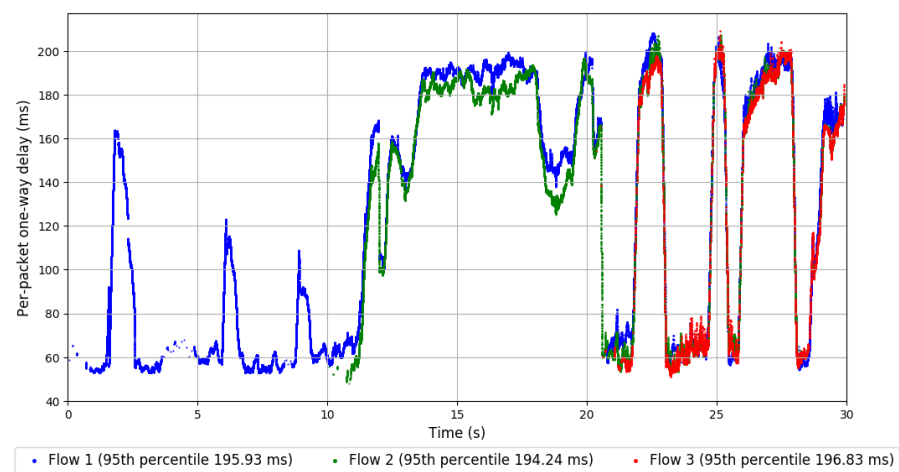
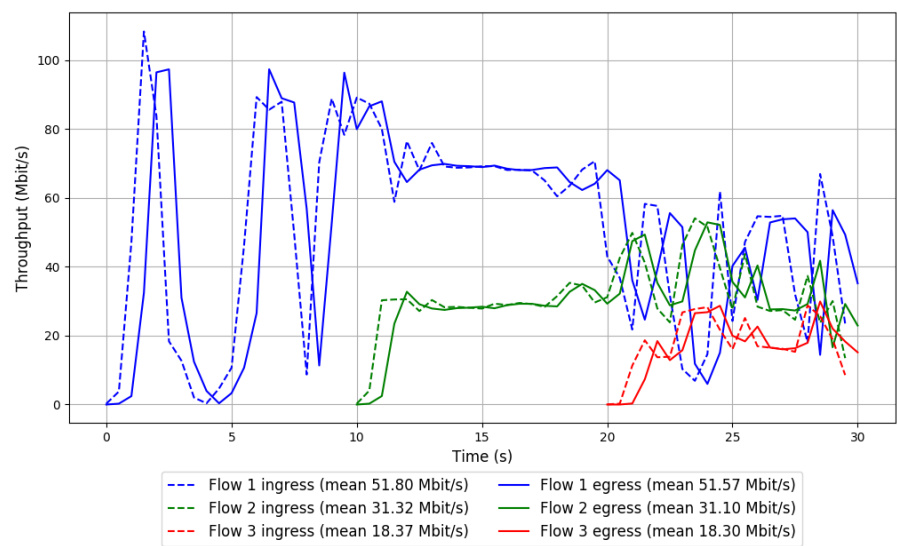


Run 3: Statistics of QUIC Cubic

Start at: 2018-10-26 03:40:47
End at: 2018-10-26 03:41:17
Local clock offset: 5.268 ms
Remote clock offset: -4.489 ms

Below is generated by plot.py at 2018-10-26 04:59:00
Datalink statistics
-- Total of 3 flows:
Average throughput: 78.01 Mbit/s
95th percentile per-packet one-way delay: 195.820 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 51.57 Mbit/s
95th percentile per-packet one-way delay: 195.934 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 31.10 Mbit/s
95th percentile per-packet one-way delay: 194.237 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 18.30 Mbit/s
95th percentile per-packet one-way delay: 196.828 ms
Loss rate: 0.12%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-10-26 04:04:51

End at: 2018-10-26 04:05:21

Local clock offset: 6.68 ms

Remote clock offset: 1.74 ms

Below is generated by plot.py at 2018-10-26 04:59:03

Datalink statistics

-- Total of 3 flows:

Average throughput: 70.40 Mbit/s

95th percentile per-packet one-way delay: 191.712 ms

Loss rate: 0.32%

-- Flow 1:

Average throughput: 42.61 Mbit/s

95th percentile per-packet one-way delay: 190.828 ms

Loss rate: 0.33%

-- Flow 2:

Average throughput: 39.48 Mbit/s

95th percentile per-packet one-way delay: 192.625 ms

Loss rate: 0.32%

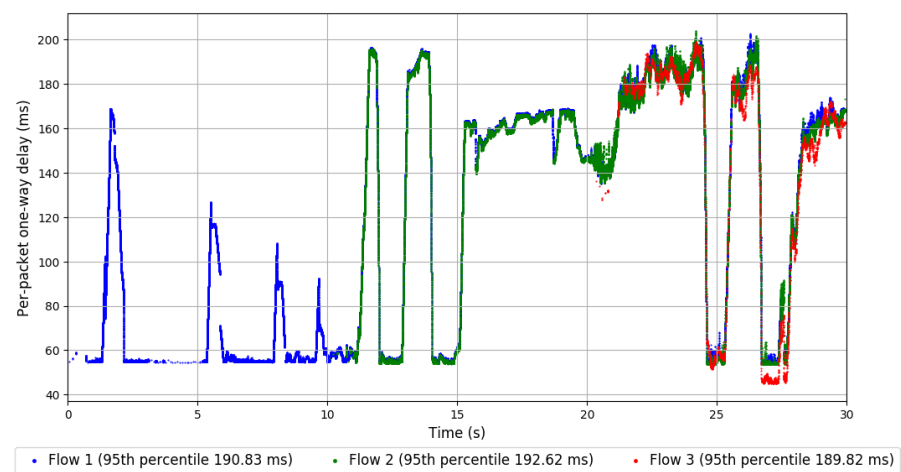
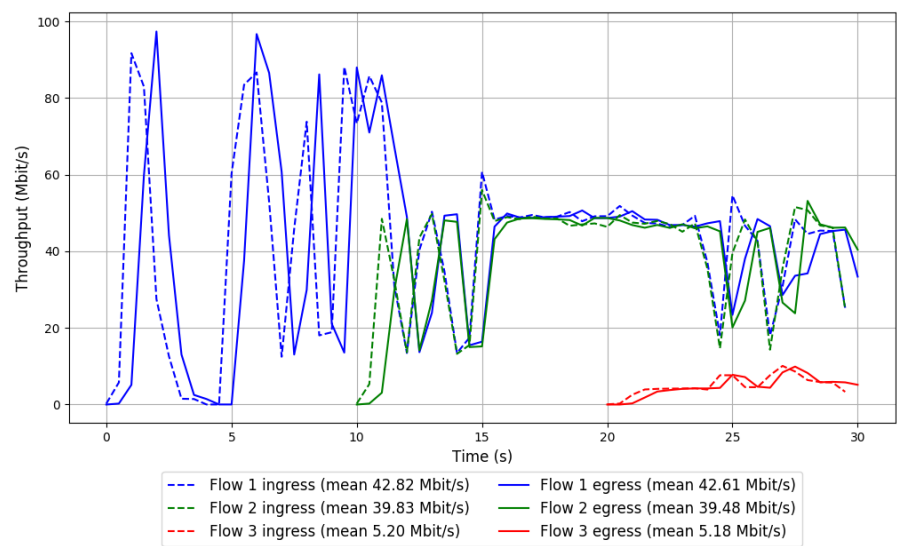
-- Flow 3:

Average throughput: 5.18 Mbit/s

95th percentile per-packet one-way delay: 189.822 ms

Loss rate: 0.05%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-10-26 04:29:05

End at: 2018-10-26 04:29:35

Local clock offset: -1.542 ms

Remote clock offset: 2.545 ms

Below is generated by plot.py at 2018-10-26 04:59:08

Datalink statistics

-- Total of 3 flows:

Average throughput: 74.27 Mbit/s

95th percentile per-packet one-way delay: 184.071 ms

Loss rate: 0.80%

-- Flow 1:

Average throughput: 45.72 Mbit/s

95th percentile per-packet one-way delay: 177.135 ms

Loss rate: 0.78%

-- Flow 2:

Average throughput: 31.23 Mbit/s

95th percentile per-packet one-way delay: 179.207 ms

Loss rate: 0.37%

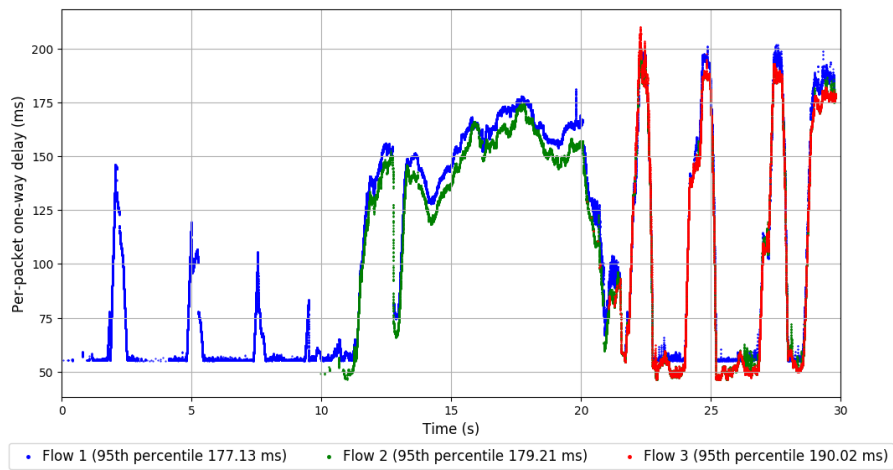
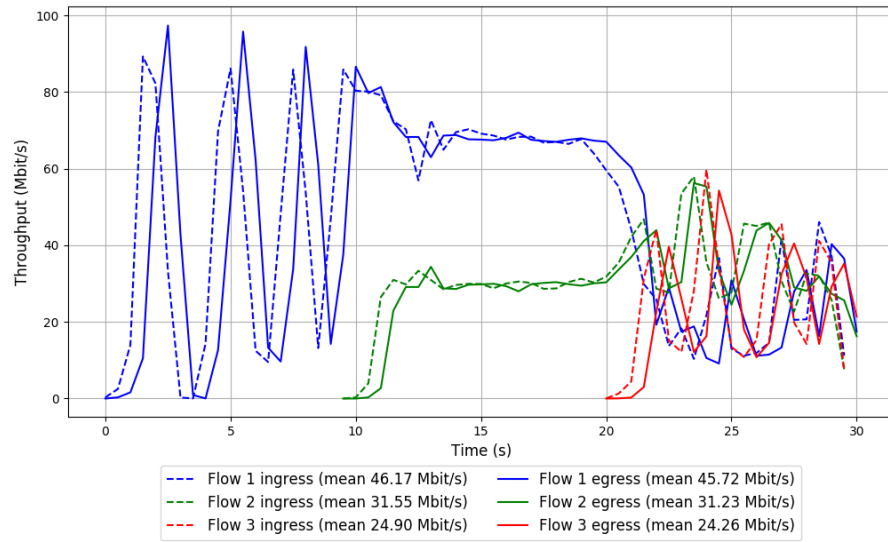
-- Flow 3:

Average throughput: 24.26 Mbit/s

95th percentile per-packet one-way delay: 190.018 ms

Loss rate: 2.04%

Run 5: Report of QUIC Cubic — Data Link

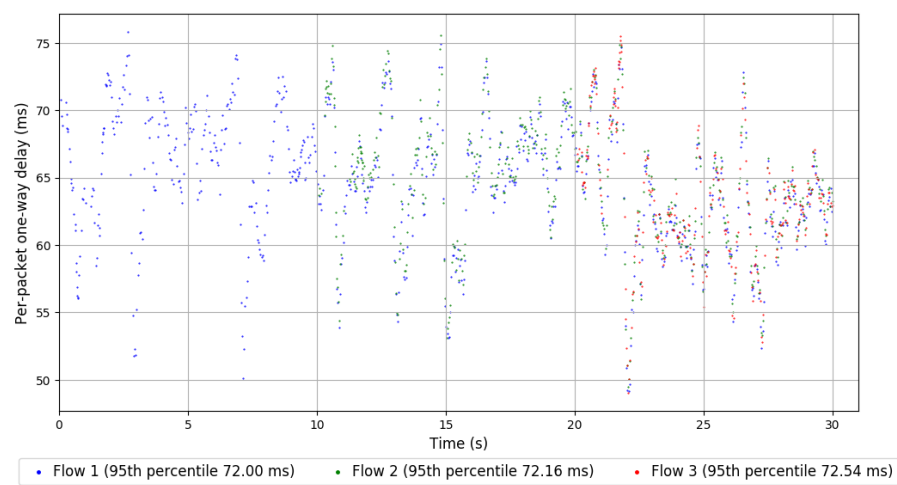
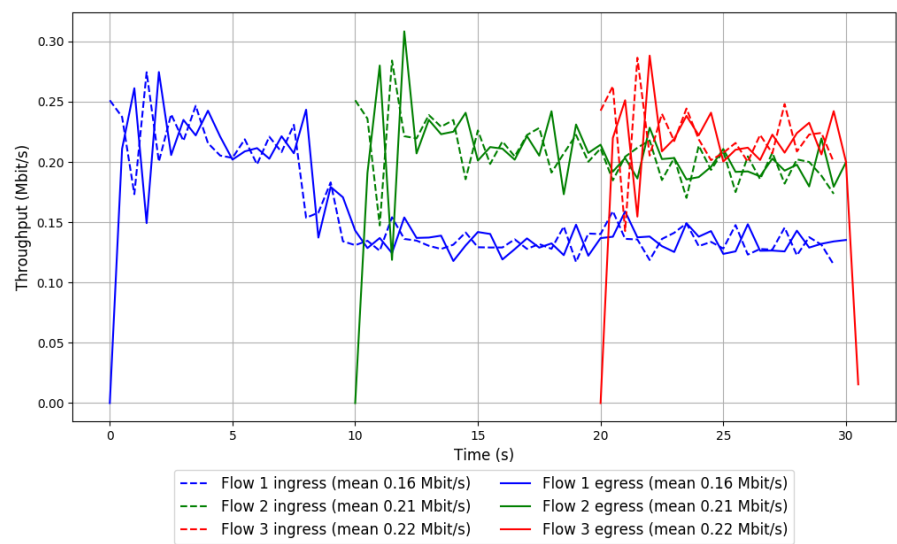


```
Run 1: Statistics of SReAM

Start at: 2018-10-26 02:57:11
End at: 2018-10-26 02:57:41
Local clock offset: 0.164 ms
Remote clock offset: -0.114 ms

# Below is generated by plot.py at 2018-10-26 04:59:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 72.124 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 72.002 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 72.160 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 72.536 ms
Loss rate: 0.00%
```

Run 1: Report of SReAM — Data Link

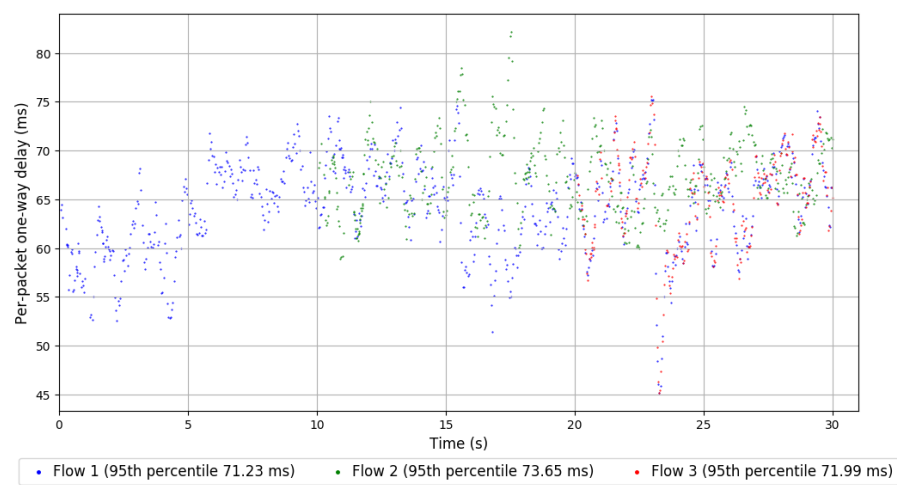
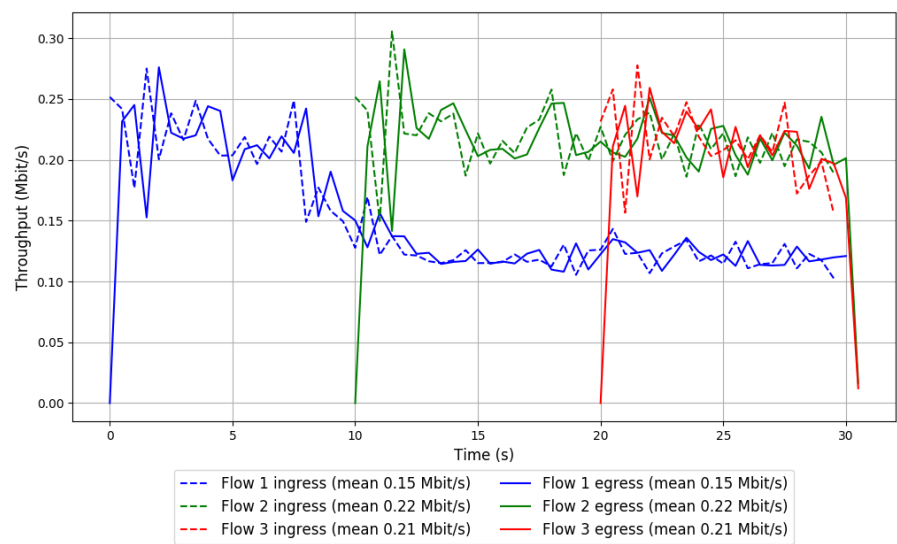


Run 2: Statistics of SReAM

Start at: 2018-10-26 03:23:13
End at: 2018-10-26 03:23:43
Local clock offset: -0.51 ms
Remote clock offset: -3.079 ms

Below is generated by plot.py at 2018-10-26 04:59:08
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 72.282 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 71.228 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 73.650 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 71.987 ms
Loss rate: 0.00%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SReAM

Start at: 2018-10-26 03:47:32

End at: 2018-10-26 03:48:02

Local clock offset: 7.356 ms

Remote clock offset: 0.032 ms

Below is generated by plot.py at 2018-10-26 04:59:08

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.44 Mbit/s

95th percentile per-packet one-way delay: 59.463 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 60.426 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 53.408 ms

Loss rate: 0.00%

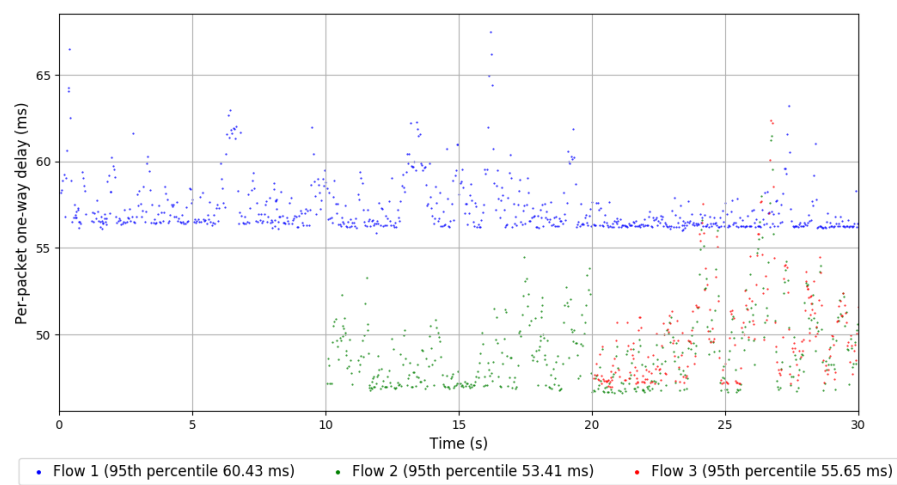
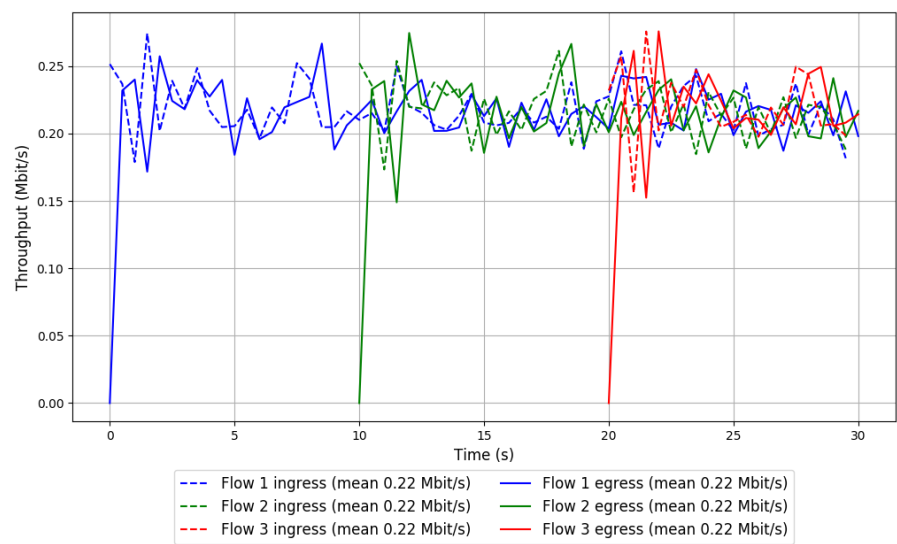
-- Flow 3:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 55.646 ms

Loss rate: 0.00%

Run 3: Report of SCReAM — Data Link



Run 4: Statistics of SReAM

Start at: 2018-10-26 04:11:29

End at: 2018-10-26 04:11:59

Local clock offset: 2.124 ms

Remote clock offset: 3.088 ms

Below is generated by plot.py at 2018-10-26 04:59:08

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.44 Mbit/s

95th percentile per-packet one-way delay: 56.901 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 57.669 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 56.230 ms

Loss rate: 0.00%

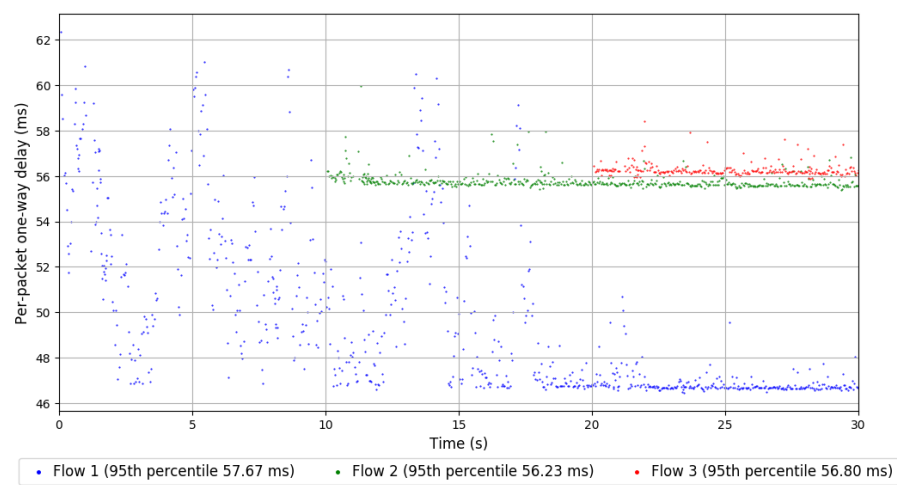
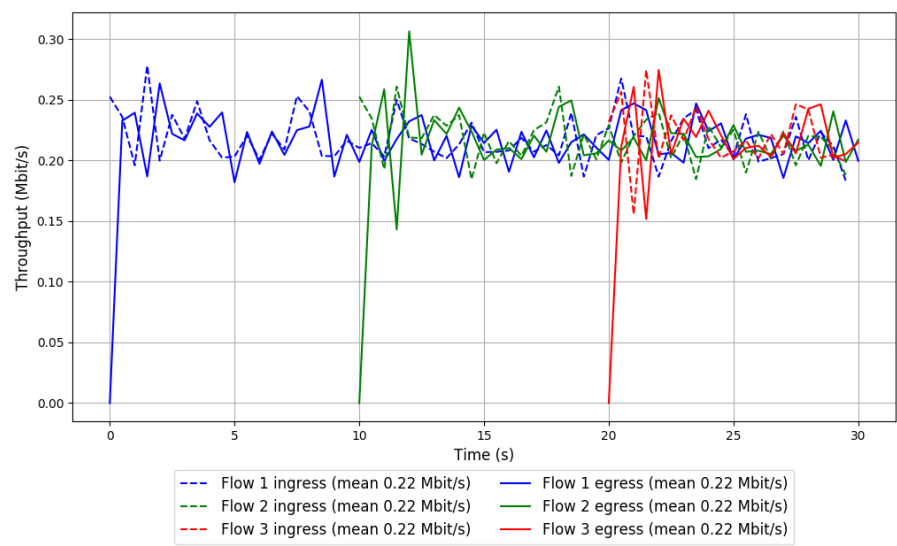
-- Flow 3:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 56.796 ms

Loss rate: 0.00%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SReAM

Start at: 2018-10-26 04:35:58

End at: 2018-10-26 04:36:28

Local clock offset: -1.678 ms

Remote clock offset: 2.916 ms

Below is generated by plot.py at 2018-10-26 04:59:08

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.43 Mbit/s

95th percentile per-packet one-way delay: 56.168 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 51.913 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 56.440 ms

Loss rate: 0.00%

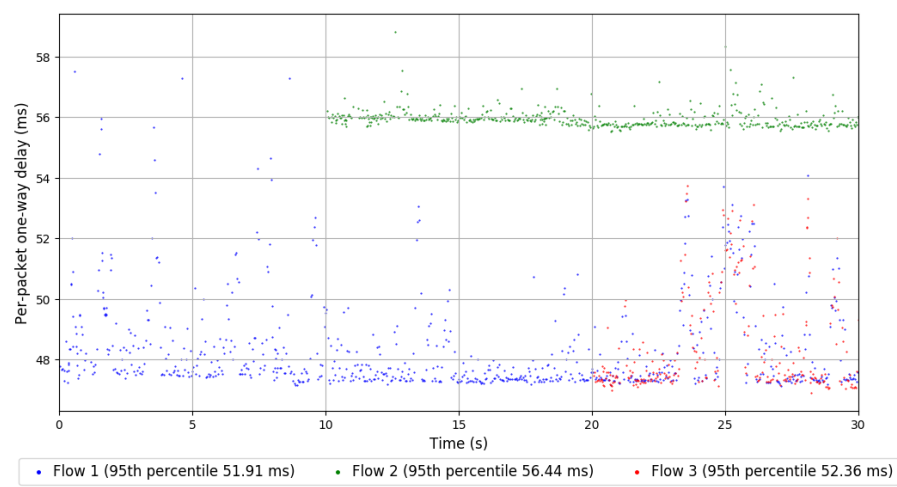
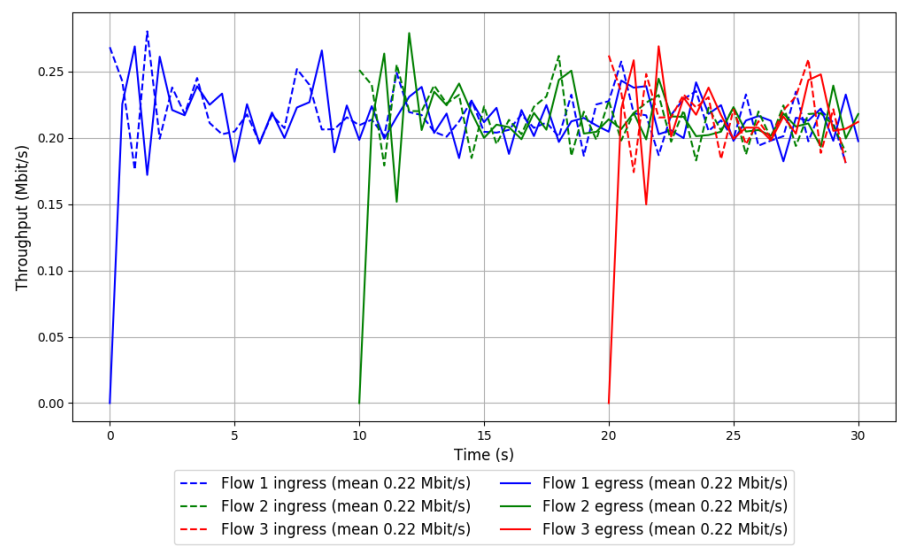
-- Flow 3:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 52.364 ms

Loss rate: 0.00%

Run 5: Report of SReAM — Data Link

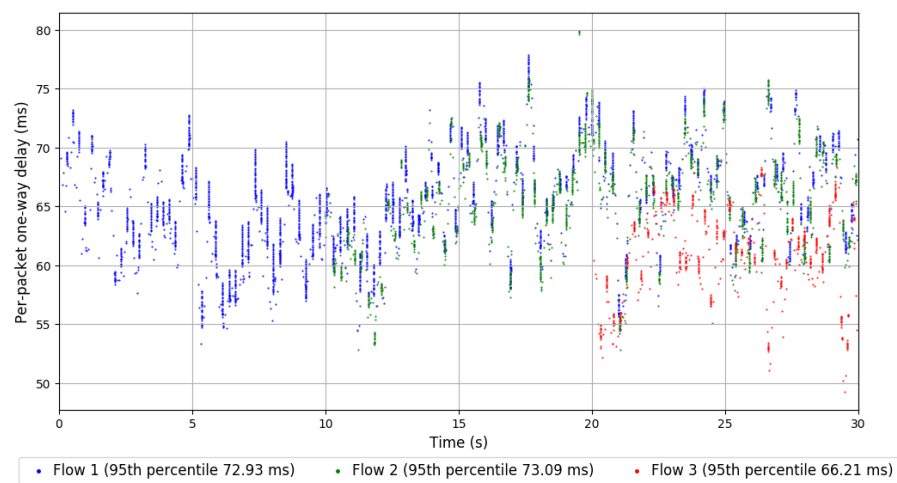
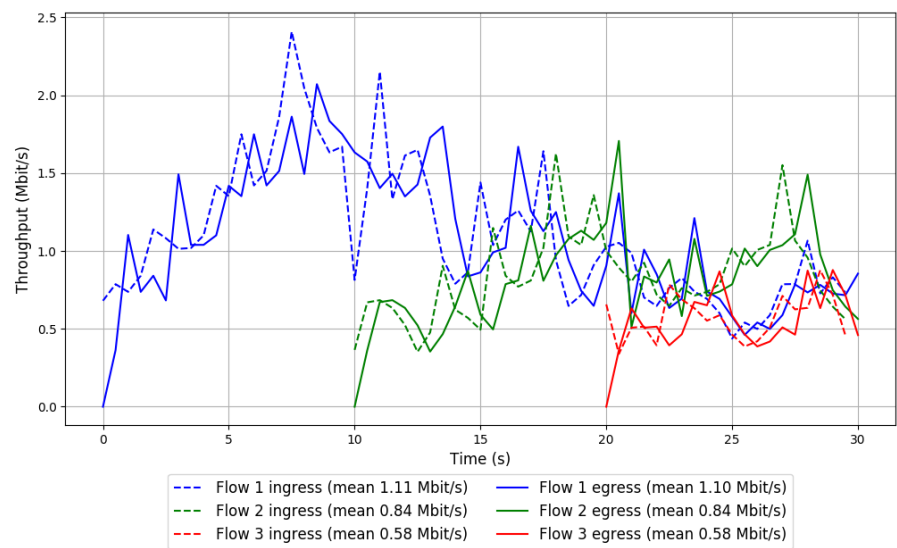


Run 1: Statistics of Sprout

Start at: 2018-10-26 02:52:57
End at: 2018-10-26 02:53:27
Local clock offset: -0.036 ms
Remote clock offset: -6.081 ms

Below is generated by plot.py at 2018-10-26 04:59:08
Datalink statistics
-- Total of 3 flows:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 72.648 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 72.926 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.84 Mbit/s
95th percentile per-packet one-way delay: 73.090 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 66.207 ms
Loss rate: 0.00%

Run 1: Report of Sprout — Data Link

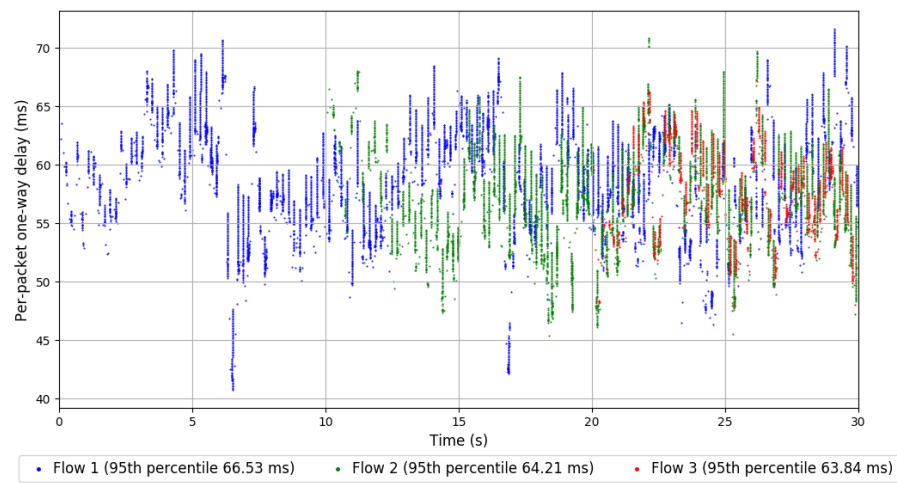
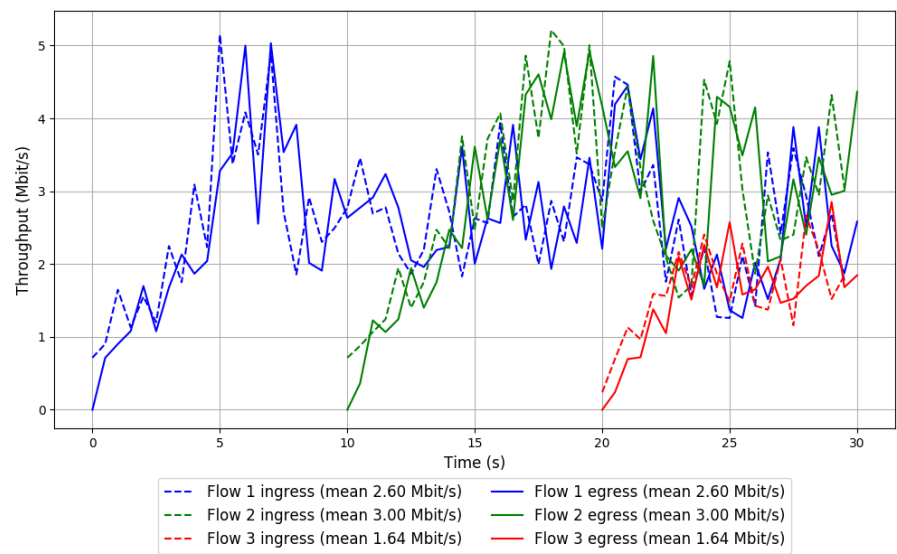


Run 2: Statistics of Sprout

Start at: 2018-10-26 03:18:58
End at: 2018-10-26 03:19:28
Local clock offset: -0.673 ms
Remote clock offset: -10.388 ms

```
# Below is generated by plot.py at 2018-10-26 04:59:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.13 Mbit/s
95th percentile per-packet one-way delay: 65.466 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 2.60 Mbit/s
95th percentile per-packet one-way delay: 66.533 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 3.00 Mbit/s
95th percentile per-packet one-way delay: 64.206 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 1.64 Mbit/s
95th percentile per-packet one-way delay: 63.837 ms
Loss rate: 0.00%
```

Run 2: Report of Sprout — Data Link

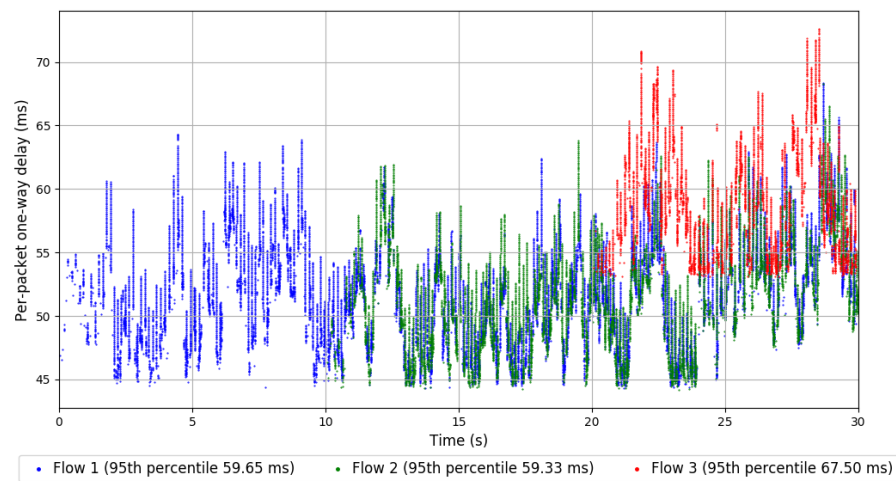
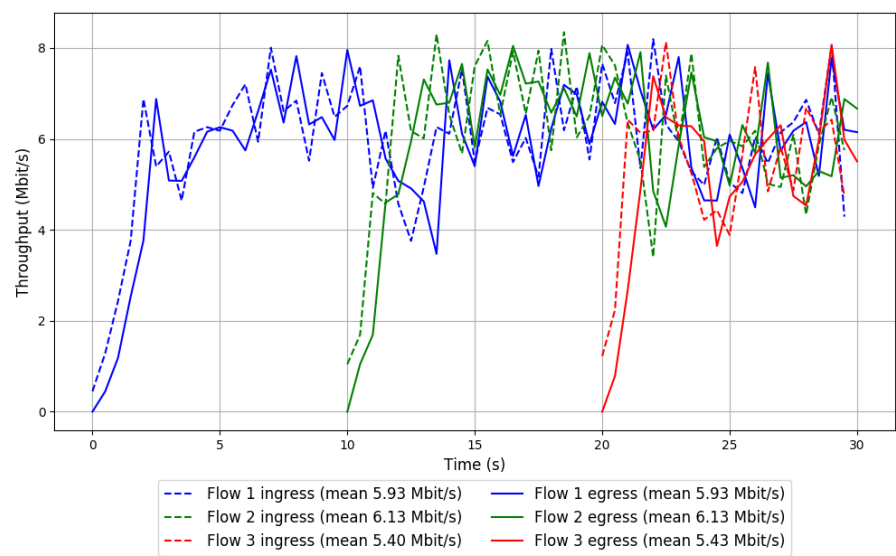


Run 3: Statistics of Sprout

Start at: 2018-10-26 03:43:30
End at: 2018-10-26 03:44:00
Local clock offset: 6.132 ms
Remote clock offset: -3.8 ms

Below is generated by plot.py at 2018-10-26 04:59:08
Datalink statistics
-- Total of 3 flows:
Average throughput: 11.79 Mbit/s
95th percentile per-packet one-way delay: 62.125 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 5.93 Mbit/s
95th percentile per-packet one-way delay: 59.654 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 6.13 Mbit/s
95th percentile per-packet one-way delay: 59.327 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 5.43 Mbit/s
95th percentile per-packet one-way delay: 67.498 ms
Loss rate: 0.00%

Run 3: Report of Sprout — Data Link

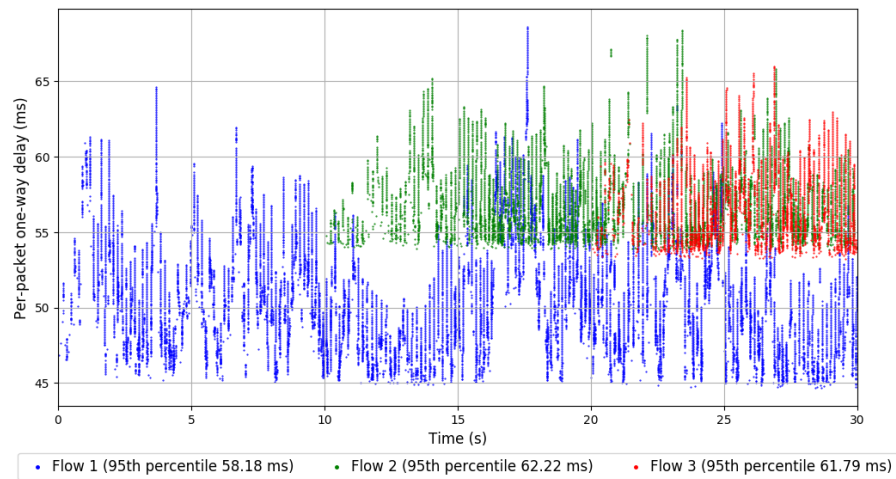
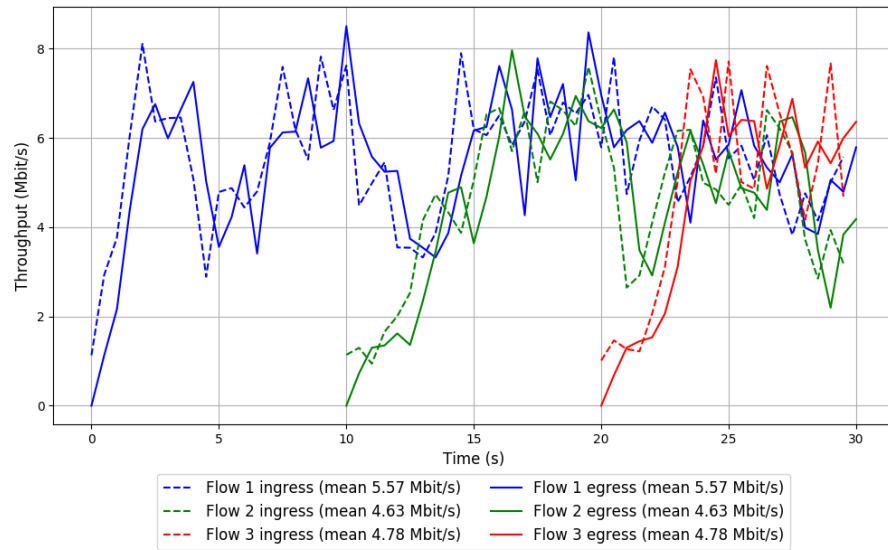


Run 4: Statistics of Sprout

Start at: 2018-10-26 04:07:30
End at: 2018-10-26 04:08:00
Local clock offset: 4.336 ms
Remote clock offset: 1.026 ms

```
# Below is generated by plot.py at 2018-10-26 04:59:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.22 Mbit/s
95th percentile per-packet one-way delay: 60.884 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 5.57 Mbit/s
95th percentile per-packet one-way delay: 58.177 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 4.63 Mbit/s
95th percentile per-packet one-way delay: 62.221 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 4.78 Mbit/s
95th percentile per-packet one-way delay: 61.786 ms
Loss rate: 0.00%
```

Run 4: Report of Sprout — Data Link

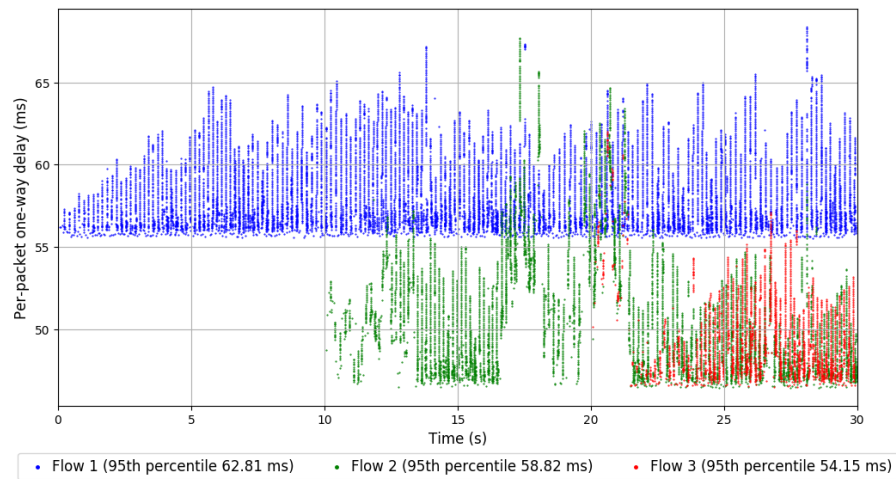
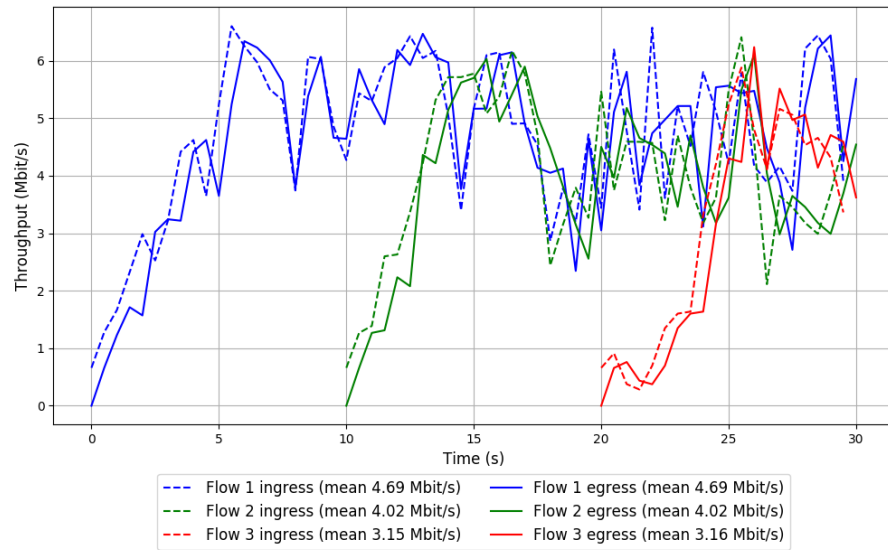


Run 5: Statistics of Sprout

Start at: 2018-10-26 04:31:50
End at: 2018-10-26 04:32:20
Local clock offset: -1.792 ms
Remote clock offset: 2.786 ms

```
# Below is generated by plot.py at 2018-10-26 04:59:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.40 Mbit/s
95th percentile per-packet one-way delay: 62.134 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.69 Mbit/s
95th percentile per-packet one-way delay: 62.810 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 4.02 Mbit/s
95th percentile per-packet one-way delay: 58.824 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.16 Mbit/s
95th percentile per-packet one-way delay: 54.145 ms
Loss rate: 0.00%
```

Run 5: Report of Sprout — Data Link

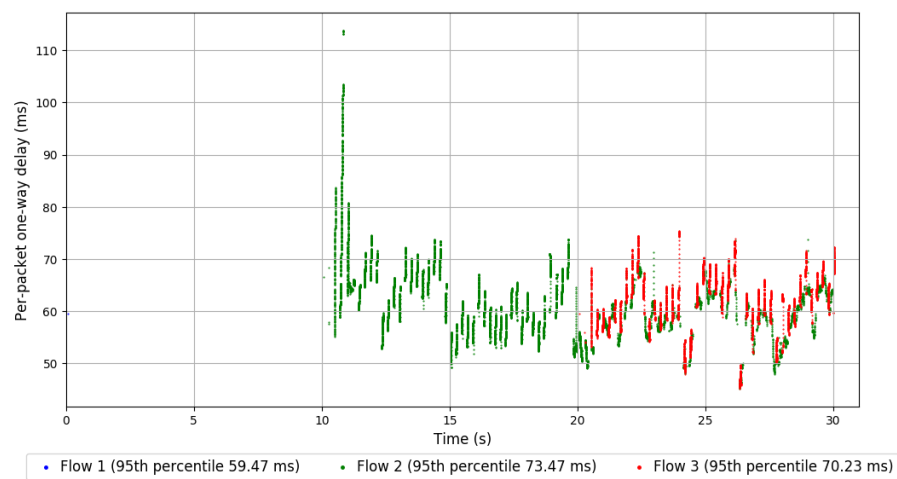
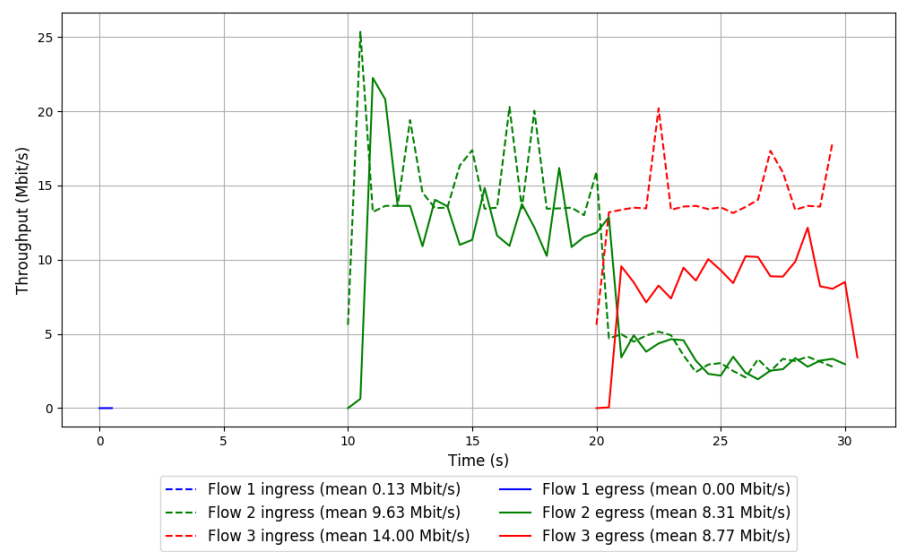


Run 1: Statistics of TaoVA-100x

Start at: 2018-10-26 03:11:49
End at: 2018-10-26 03:12:19
Local clock offset: -0.393 ms
Remote clock offset: -7.752 ms

Below is generated by plot.py at 2018-10-26 04:59:08
Datalink statistics
-- Total of 3 flows:
Average throughput: 8.43 Mbit/s
95th percentile per-packet one-way delay: 71.991 ms
Loss rate: 23.70%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 59.474 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 8.31 Mbit/s
95th percentile per-packet one-way delay: 73.471 ms
Loss rate: 13.76%
-- Flow 3:
Average throughput: 8.77 Mbit/s
95th percentile per-packet one-way delay: 70.231 ms
Loss rate: 37.33%

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-10-26 03:36:57

End at: 2018-10-26 03:37:27

Local clock offset: 3.348 ms

Remote clock offset: -3.15 ms

Below is generated by plot.py at 2018-10-26 04:59:08

Datalink statistics

-- Total of 3 flows:

Average throughput: 7.75 Mbit/s

95th percentile per-packet one-way delay: 80.051 ms

Loss rate: 7.20%

-- Flow 1:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 62.846 ms

Loss rate: 95.92%

-- Flow 2:

Average throughput: 8.92 Mbit/s

95th percentile per-packet one-way delay: 80.453 ms

Loss rate: 7.43%

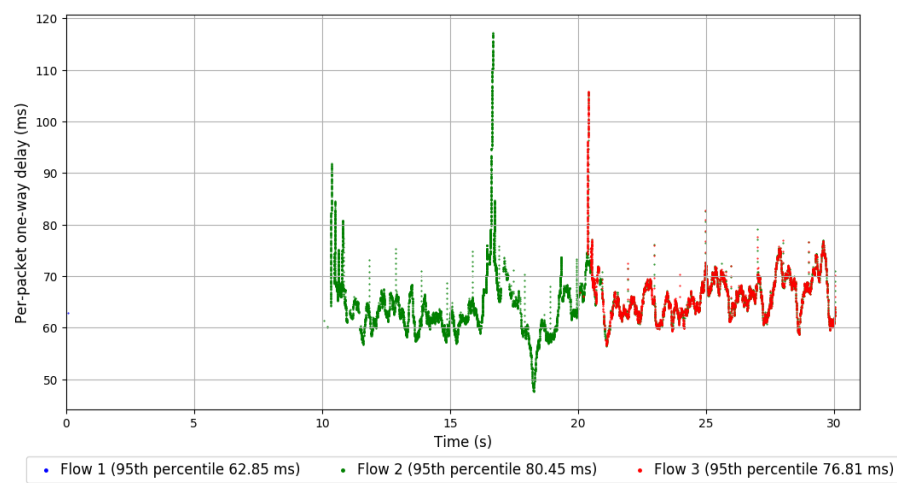
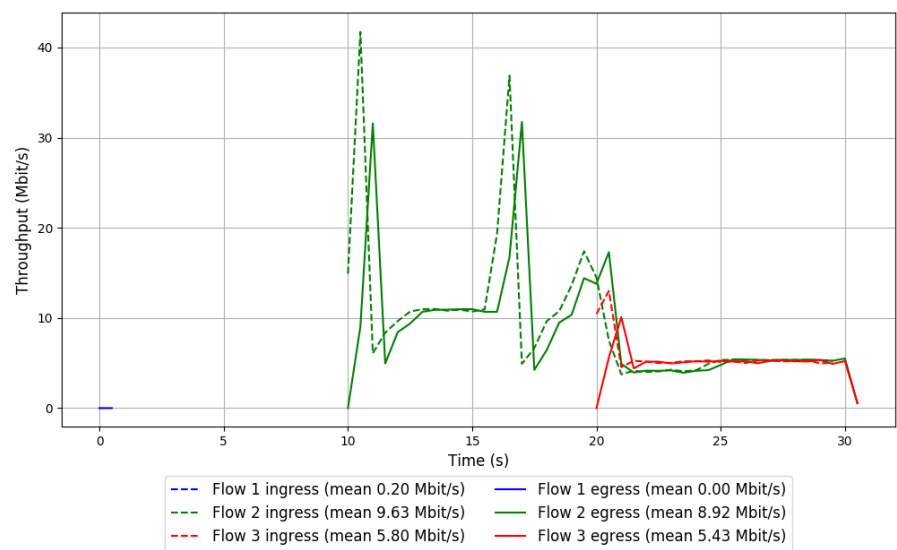
-- Flow 3:

Average throughput: 5.43 Mbit/s

95th percentile per-packet one-way delay: 76.806 ms

Loss rate: 6.40%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-10-26 04:01:04

End at: 2018-10-26 04:01:34

Local clock offset: 9.949 ms

Remote clock offset: 0.807 ms

Below is generated by plot.py at 2018-10-26 04:59:08

Datalink statistics

-- Total of 3 flows:

Average throughput: 7.76 Mbit/s

95th percentile per-packet one-way delay: 60.287 ms

Loss rate: 10.94%

-- Flow 1:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 45.896 ms

Loss rate: 95.92%

-- Flow 2:

Average throughput: 8.54 Mbit/s

95th percentile per-packet one-way delay: 58.993 ms

Loss rate: 9.14%

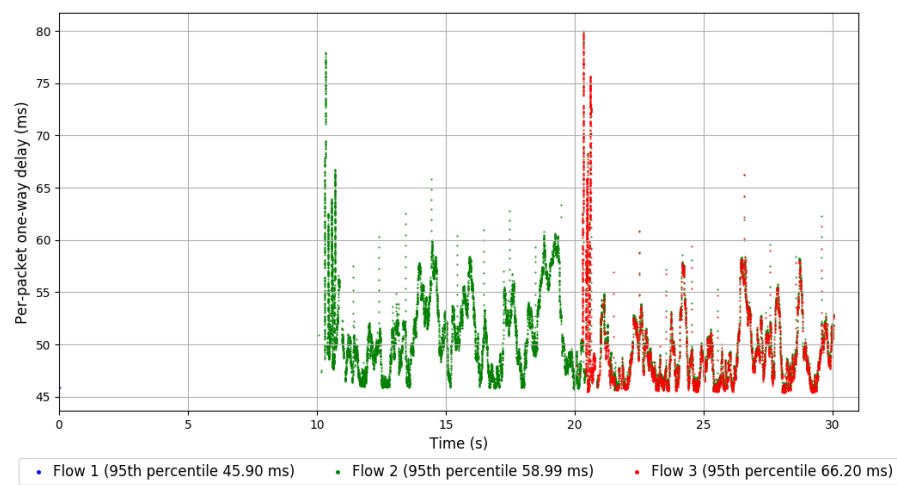
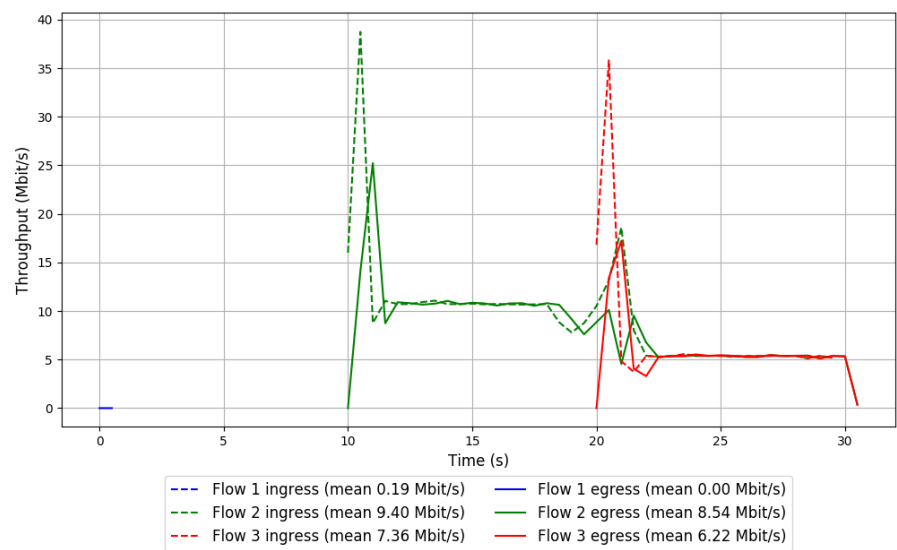
-- Flow 3:

Average throughput: 6.22 Mbit/s

95th percentile per-packet one-way delay: 66.202 ms

Loss rate: 15.51%

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



Run 4: Statistics of TaoVA-100x

Start at: 2018-10-26 04:25:06

End at: 2018-10-26 04:25:36

Local clock offset: -1.199 ms

Remote clock offset: 2.565 ms

Below is generated by plot.py at 2018-10-26 04:59:08

Datalink statistics

-- Total of 3 flows:

Average throughput: 7.21 Mbit/s

95th percentile per-packet one-way delay: 60.602 ms

Loss rate: 31.34%

-- Flow 1:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 47.982 ms

Loss rate: 95.92%

-- Flow 2:

Average throughput: 8.09 Mbit/s

95th percentile per-packet one-way delay: 58.830 ms

Loss rate: 35.71%

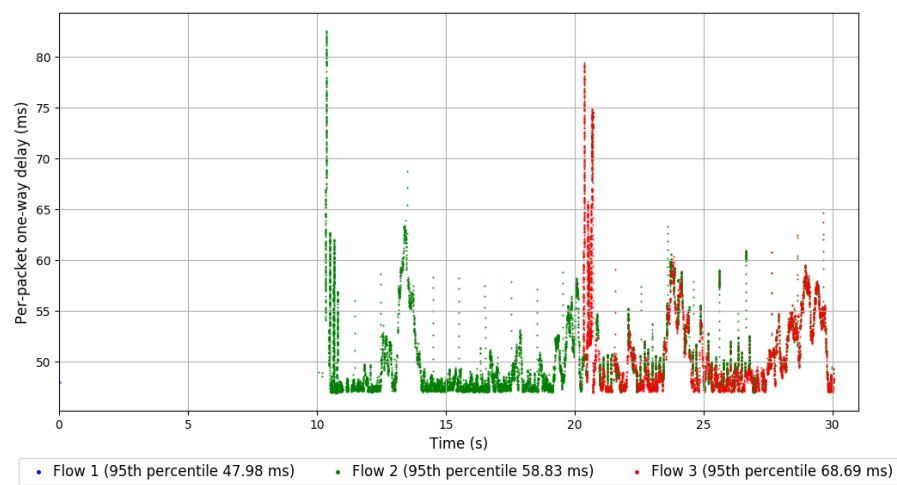
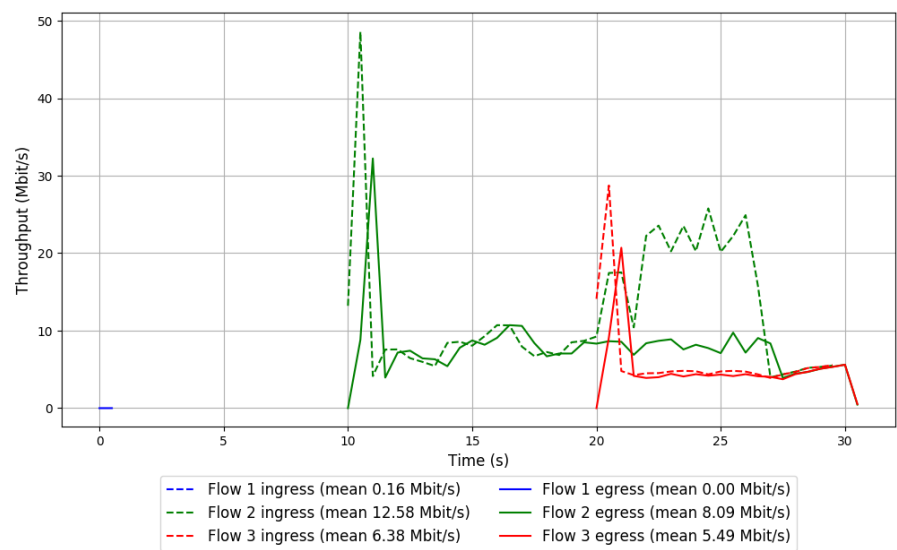
-- Flow 3:

Average throughput: 5.49 Mbit/s

95th percentile per-packet one-way delay: 68.691 ms

Loss rate: 14.06%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-10-26 04:49:39

End at: 2018-10-26 04:50:09

Local clock offset: -1.787 ms

Remote clock offset: 4.172 ms

Below is generated by plot.py at 2018-10-26 04:59:08

Datalink statistics

-- Total of 3 flows:

Average throughput: 6.50 Mbit/s

95th percentile per-packet one-way delay: 55.694 ms

Loss rate: 7.13%

-- Flow 1:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 48.319 ms

Loss rate: 95.92%

-- Flow 2:

Average throughput: 6.93 Mbit/s

95th percentile per-packet one-way delay: 52.446 ms

Loss rate: 7.53%

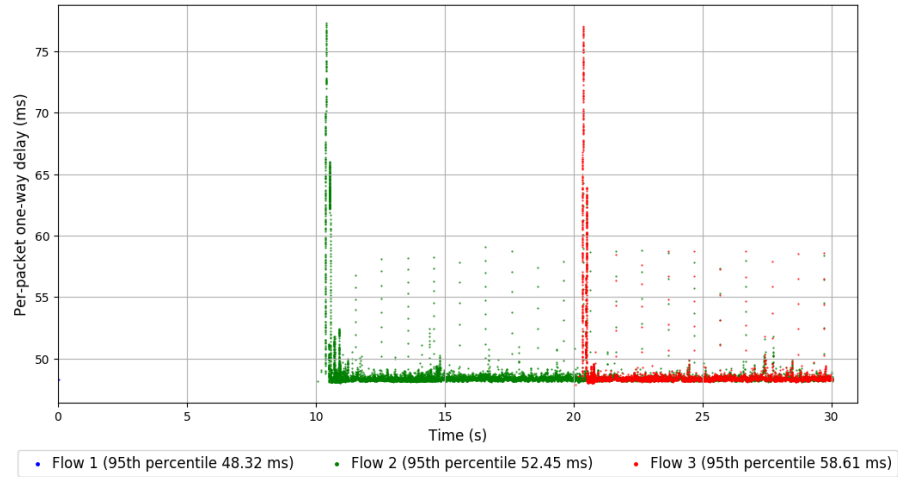
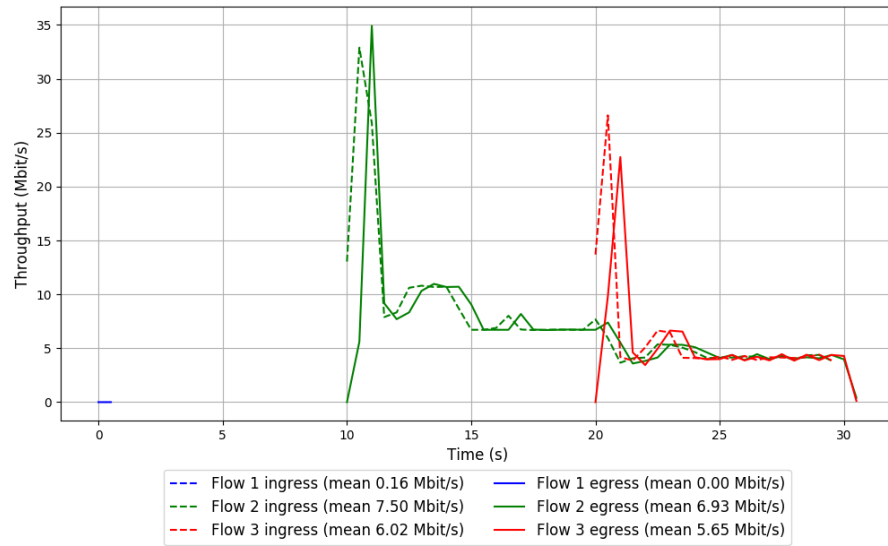
-- Flow 3:

Average throughput: 5.65 Mbit/s

95th percentile per-packet one-way delay: 58.613 ms

Loss rate: 6.08%

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

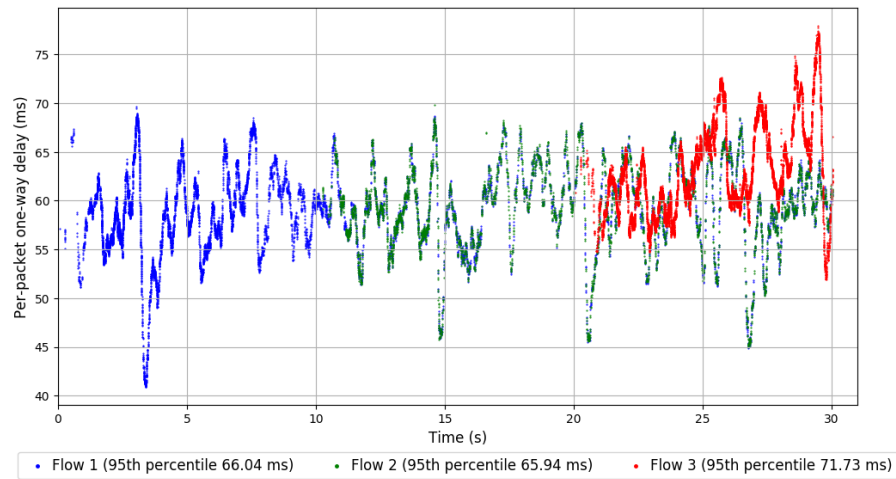
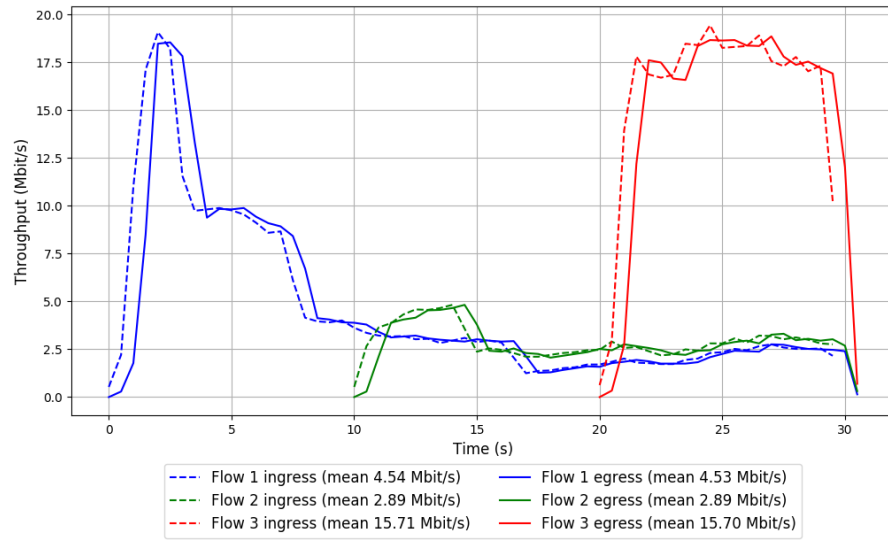


Run 1: Statistics of TCP Vegas

Start at: 2018-10-26 02:55:51
End at: 2018-10-26 02:56:21
Local clock offset: 0.022 ms
Remote clock offset: -7.162 ms

Below is generated by plot.py at 2018-10-26 04:59:08
Datalink statistics
-- Total of 3 flows:
Average throughput: 11.67 Mbit/s
95th percentile per-packet one-way delay: 69.874 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 4.53 Mbit/s
95th percentile per-packet one-way delay: 66.042 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 2.89 Mbit/s
95th percentile per-packet one-way delay: 65.941 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 15.70 Mbit/s
95th percentile per-packet one-way delay: 71.731 ms
Loss rate: 0.03%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-10-26 03:21:51

End at: 2018-10-26 03:22:21

Local clock offset: -0.353 ms

Remote clock offset: -6.33 ms

Below is generated by plot.py at 2018-10-26 04:59:08

Datalink statistics

-- Total of 3 flows:

Average throughput: 24.05 Mbit/s

95th percentile per-packet one-way delay: 65.070 ms

Loss rate: 0.02%

-- Flow 1:

Average throughput: 20.38 Mbit/s

95th percentile per-packet one-way delay: 65.052 ms

Loss rate: 0.03%

-- Flow 2:

Average throughput: 1.30 Mbit/s

95th percentile per-packet one-way delay: 64.502 ms

Loss rate: 0.09%

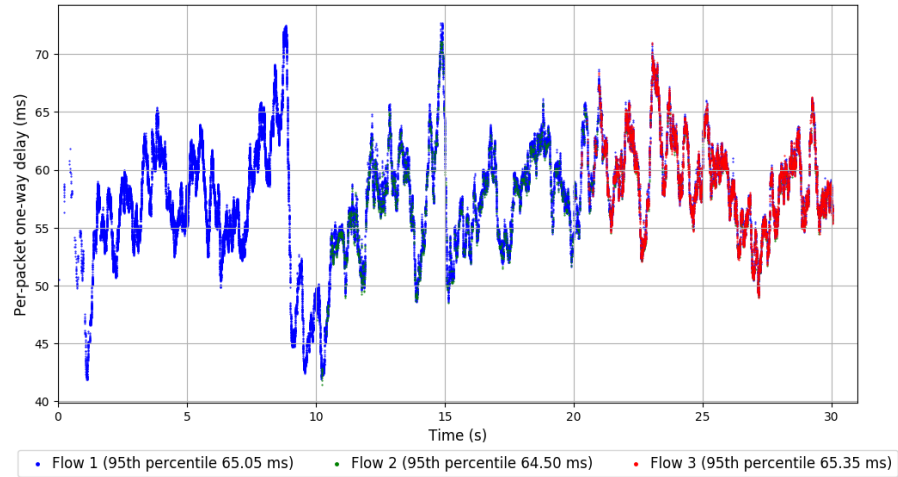
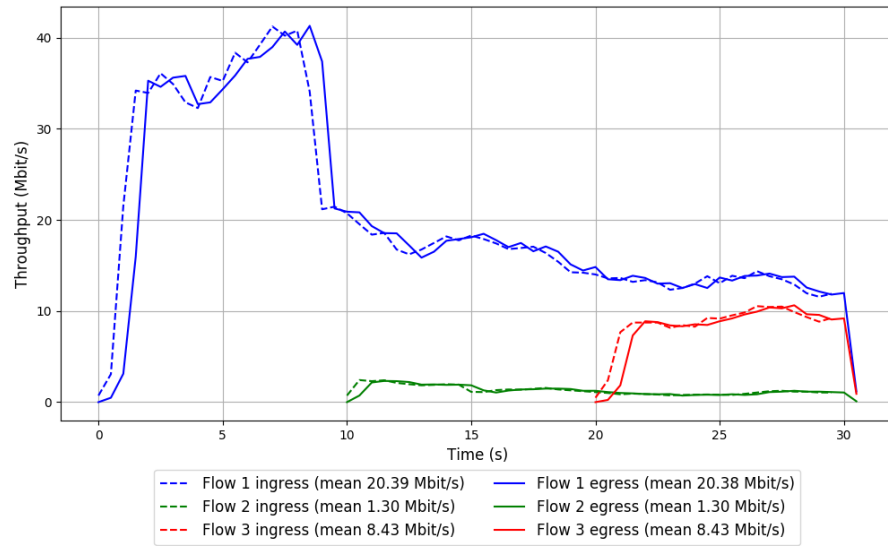
-- Flow 3:

Average throughput: 8.43 Mbit/s

95th percentile per-packet one-way delay: 65.347 ms

Loss rate: 0.00%

Run 2: Report of TCP Vegas — Data Link

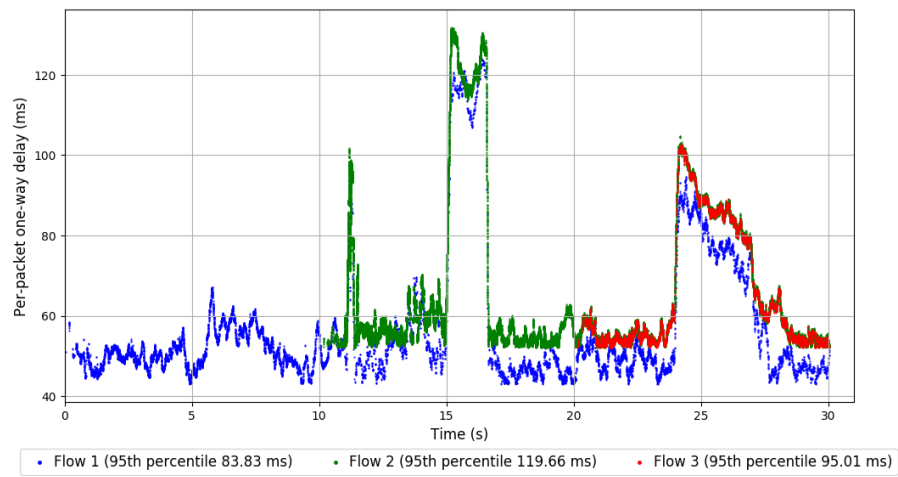
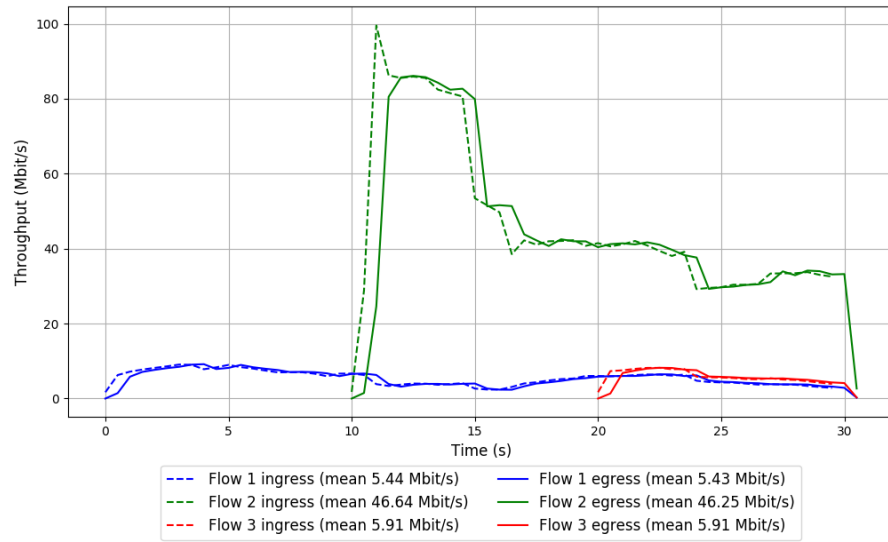


Run 3: Statistics of TCP Vegas

Start at: 2018-10-26 03:46:14
End at: 2018-10-26 03:46:44
Local clock offset: 7.018 ms
Remote clock offset: -4.381 ms

Below is generated by plot.py at 2018-10-26 04:59:08
Datalink statistics
-- Total of 3 flows:
Average throughput: 38.21 Mbit/s
95th percentile per-packet one-way delay: 117.780 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 5.43 Mbit/s
95th percentile per-packet one-way delay: 83.831 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 46.25 Mbit/s
95th percentile per-packet one-way delay: 119.657 ms
Loss rate: 0.83%
-- Flow 3:
Average throughput: 5.91 Mbit/s
95th percentile per-packet one-way delay: 95.011 ms
Loss rate: 0.00%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2018-10-26 04:10:10

End at: 2018-10-26 04:10:40

Local clock offset: 2.725 ms

Remote clock offset: 1.401 ms

Below is generated by plot.py at 2018-10-26 04:59:08

Datalink statistics

-- Total of 3 flows:

Average throughput: 34.68 Mbit/s

95th percentile per-packet one-way delay: 58.144 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 18.57 Mbit/s

95th percentile per-packet one-way delay: 55.755 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 3.20 Mbit/s

95th percentile per-packet one-way delay: 57.095 ms

Loss rate: 0.00%

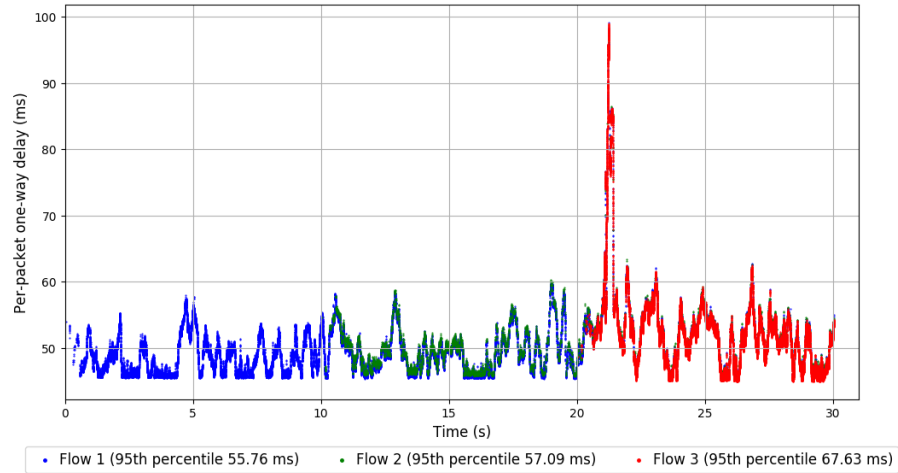
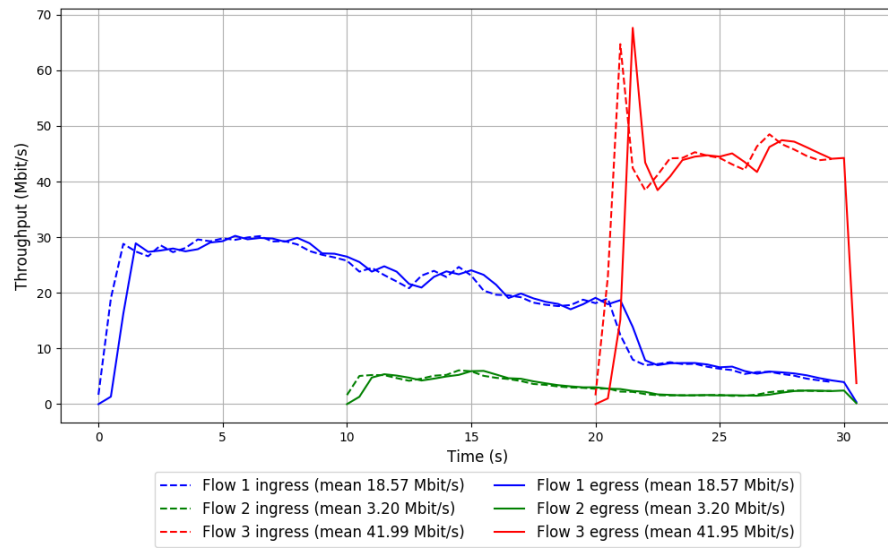
-- Flow 3:

Average throughput: 41.95 Mbit/s

95th percentile per-packet one-way delay: 67.628 ms

Loss rate: 0.03%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2018-10-26 04:34:34

End at: 2018-10-26 04:35:04

Local clock offset: -1.719 ms

Remote clock offset: 2.747 ms

Below is generated by plot.py at 2018-10-26 04:59:21

Datalink statistics

-- Total of 3 flows:

Average throughput: 55.82 Mbit/s

95th percentile per-packet one-way delay: 137.003 ms

Loss rate: 0.34%

-- Flow 1:

Average throughput: 36.59 Mbit/s

95th percentile per-packet one-way delay: 105.945 ms

Loss rate: 0.21%

-- Flow 2:

Average throughput: 18.82 Mbit/s

95th percentile per-packet one-way delay: 134.487 ms

Loss rate: 0.32%

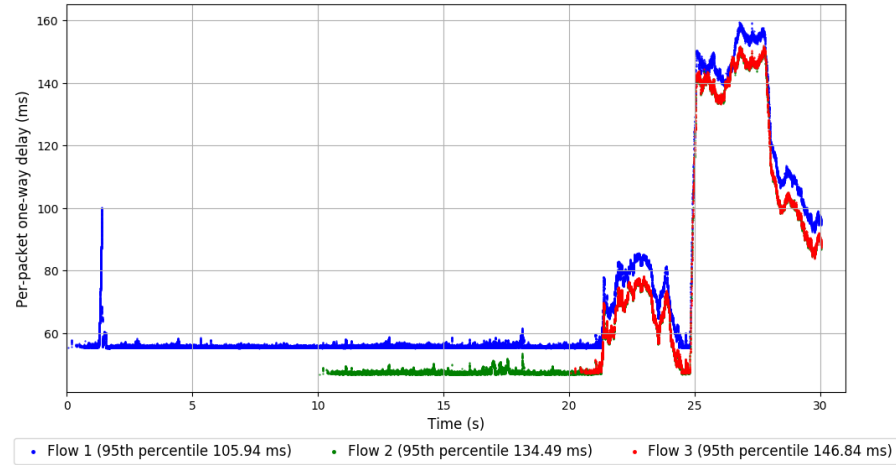
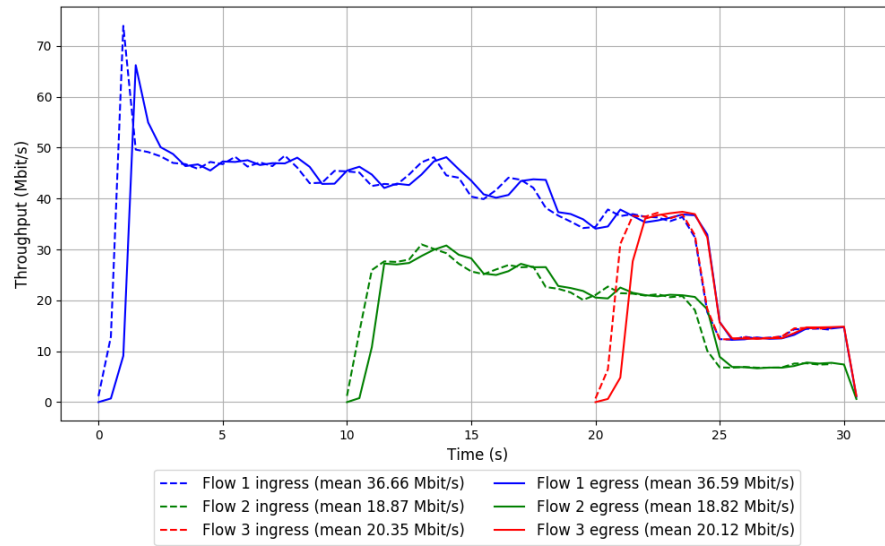
-- Flow 3:

Average throughput: 20.12 Mbit/s

95th percentile per-packet one-way delay: 146.838 ms

Loss rate: 1.11%

Run 5: Report of TCP Vegas — Data Link

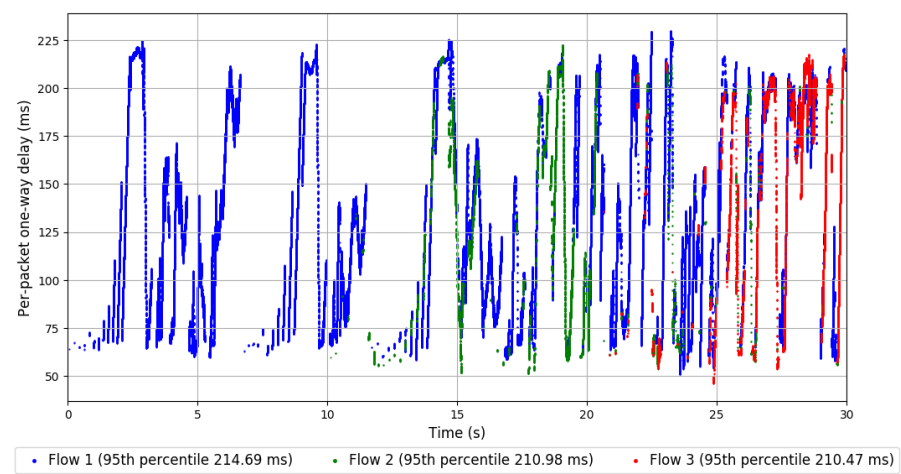
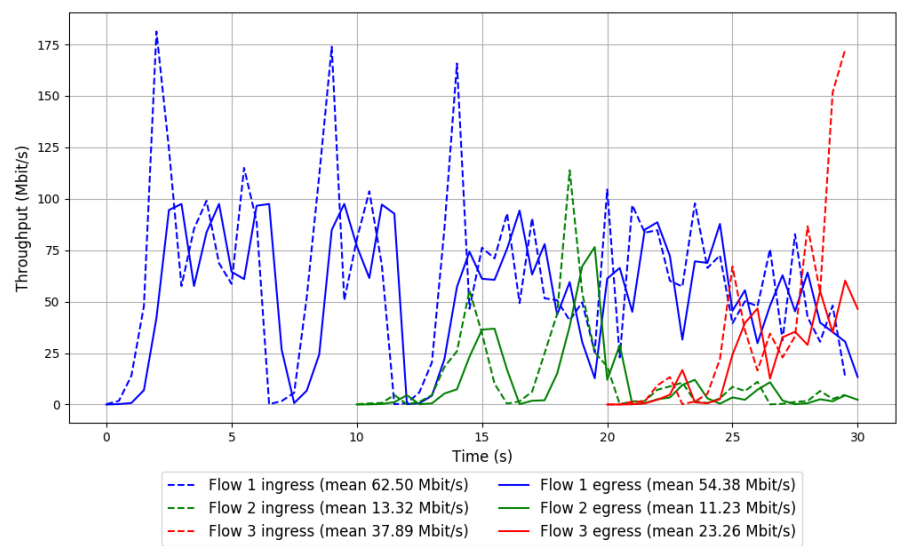


Run 1: Statistics of Verus

Start at: 2018-10-26 03:08:24
End at: 2018-10-26 03:08:54
Local clock offset: -0.182 ms
Remote clock offset: -5.124 ms

Below is generated by plot.py at 2018-10-26 04:59:45
Datalink statistics
-- Total of 3 flows:
Average throughput: 69.25 Mbit/s
95th percentile per-packet one-way delay: 214.057 ms
Loss rate: 16.73%
-- Flow 1:
Average throughput: 54.38 Mbit/s
95th percentile per-packet one-way delay: 214.689 ms
Loss rate: 12.56%
-- Flow 2:
Average throughput: 11.23 Mbit/s
95th percentile per-packet one-way delay: 210.978 ms
Loss rate: 15.45%
-- Flow 3:
Average throughput: 23.26 Mbit/s
95th percentile per-packet one-way delay: 210.468 ms
Loss rate: 38.91%

Run 1: Report of Verus — Data Link

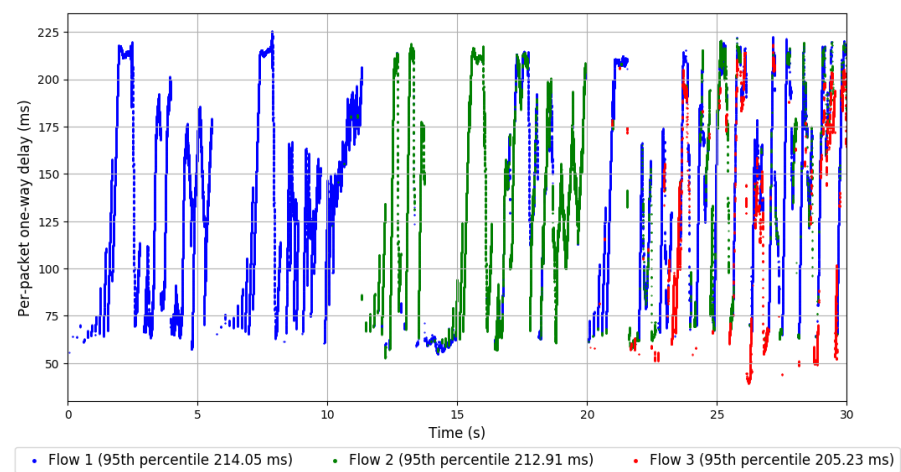
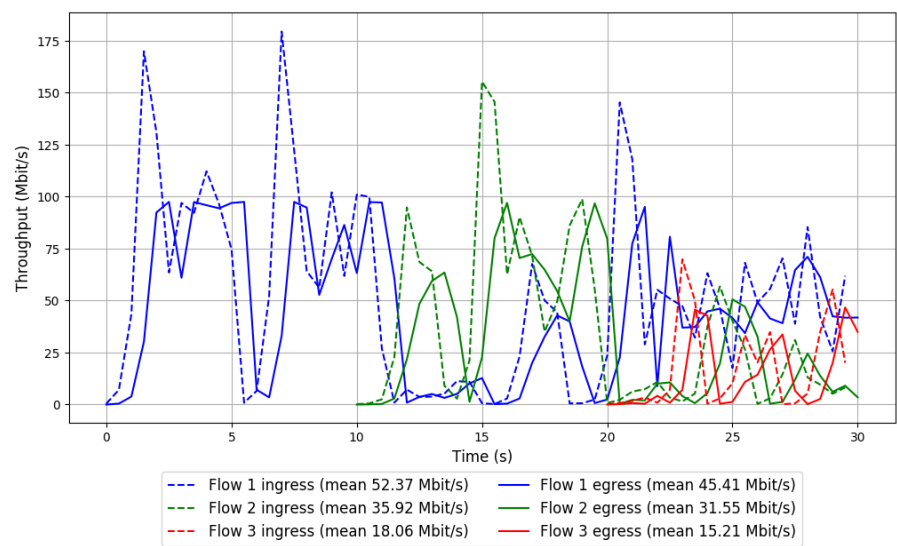


Run 2: Statistics of Verus

Start at: 2018-10-26 03:33:53
End at: 2018-10-26 03:34:23
Local clock offset: 1.271 ms
Remote clock offset: -12.698 ms

Below is generated by plot.py at 2018-10-26 04:59:51
Datalink statistics
-- Total of 3 flows:
Average throughput: 71.21 Mbit/s
95th percentile per-packet one-way delay: 213.643 ms
Loss rate: 12.95%
-- Flow 1:
Average throughput: 45.41 Mbit/s
95th percentile per-packet one-way delay: 214.047 ms
Loss rate: 13.17%
-- Flow 2:
Average throughput: 31.55 Mbit/s
95th percentile per-packet one-way delay: 212.909 ms
Loss rate: 11.98%
-- Flow 3:
Average throughput: 15.21 Mbit/s
95th percentile per-packet one-way delay: 205.227 ms
Loss rate: 14.86%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2018-10-26 03:58:02

End at: 2018-10-26 03:58:32

Local clock offset: 9.396 ms

Remote clock offset: 1.907 ms

Below is generated by plot.py at 2018-10-26 05:00:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 81.91 Mbit/s

95th percentile per-packet one-way delay: 201.833 ms

Loss rate: 12.79%

-- Flow 1:

Average throughput: 45.96 Mbit/s

95th percentile per-packet one-way delay: 202.370 ms

Loss rate: 12.16%

-- Flow 2:

Average throughput: 41.40 Mbit/s

95th percentile per-packet one-way delay: 196.873 ms

Loss rate: 11.47%

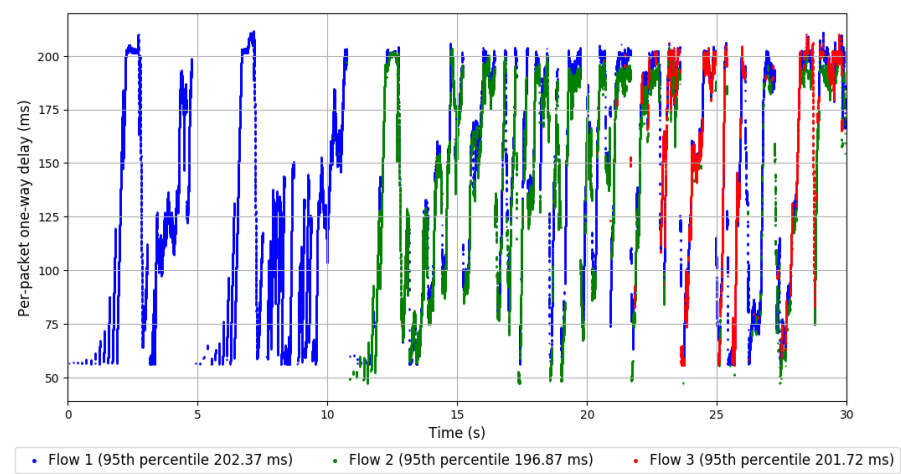
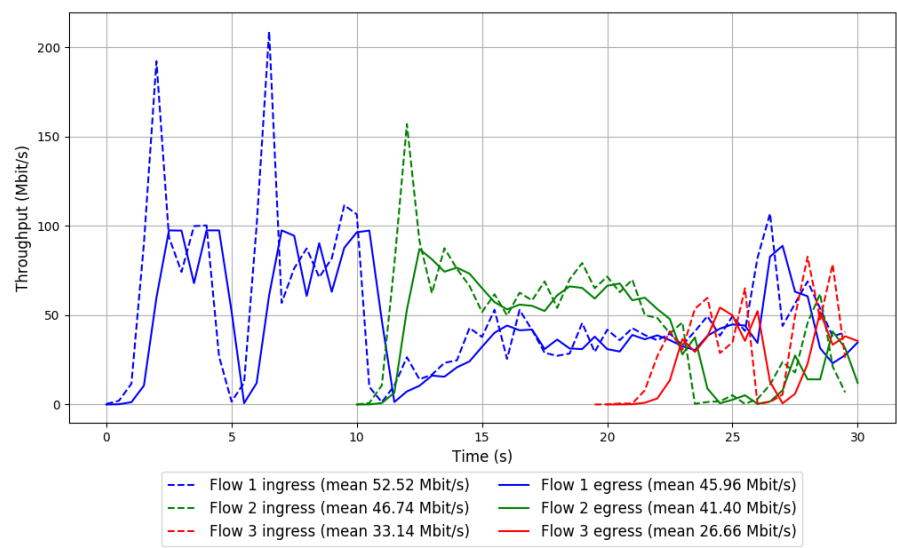
-- Flow 3:

Average throughput: 26.66 Mbit/s

95th percentile per-packet one-way delay: 201.716 ms

Loss rate: 19.67%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2018-10-26 04:22:01

End at: 2018-10-26 04:22:31

Local clock offset: -0.825 ms

Remote clock offset: 2.575 ms

Below is generated by plot.py at 2018-10-26 05:00:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 69.97 Mbit/s

95th percentile per-packet one-way delay: 201.441 ms

Loss rate: 20.38%

-- Flow 1:

Average throughput: 42.53 Mbit/s

95th percentile per-packet one-way delay: 196.370 ms

Loss rate: 13.44%

-- Flow 2:

Average throughput: 31.85 Mbit/s

95th percentile per-packet one-way delay: 203.724 ms

Loss rate: 32.07%

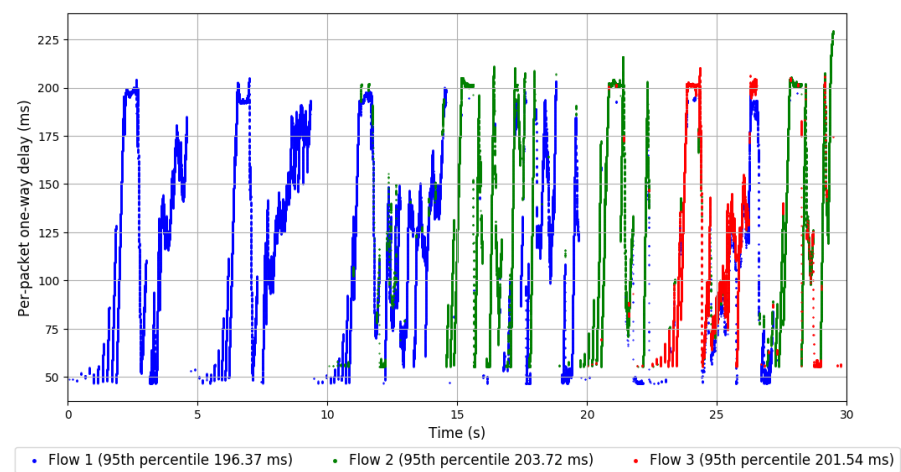
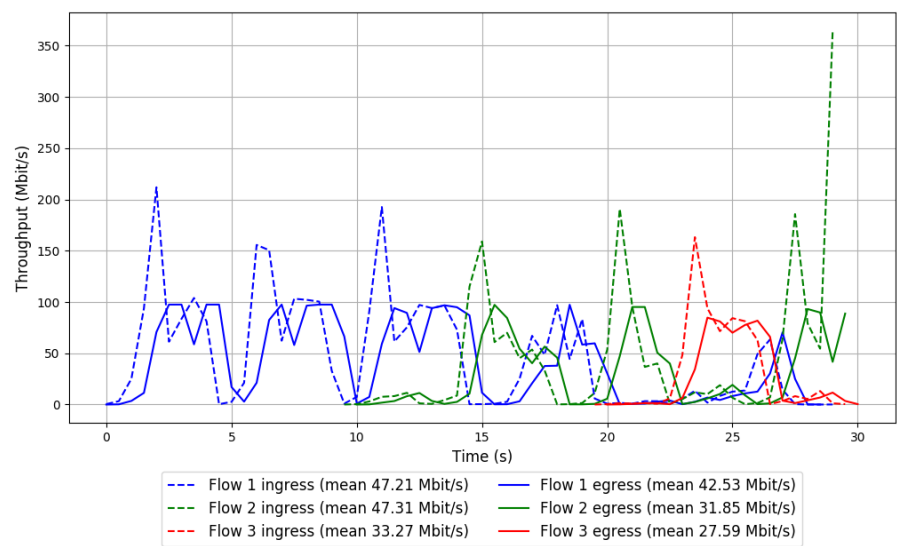
-- Flow 3:

Average throughput: 27.59 Mbit/s

95th percentile per-packet one-way delay: 201.540 ms

Loss rate: 17.05%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-10-26 04:46:31

End at: 2018-10-26 04:47:01

Local clock offset: -1.463 ms

Remote clock offset: 3.335 ms

Below is generated by plot.py at 2018-10-26 05:00:02

Datalink statistics

-- Total of 3 flows:

Average throughput: 85.83 Mbit/s

95th percentile per-packet one-way delay: 195.524 ms

Loss rate: 14.18%

-- Flow 1:

Average throughput: 73.07 Mbit/s

95th percentile per-packet one-way delay: 194.675 ms

Loss rate: 10.99%

-- Flow 2:

Average throughput: 14.84 Mbit/s

95th percentile per-packet one-way delay: 197.476 ms

Loss rate: 31.94%

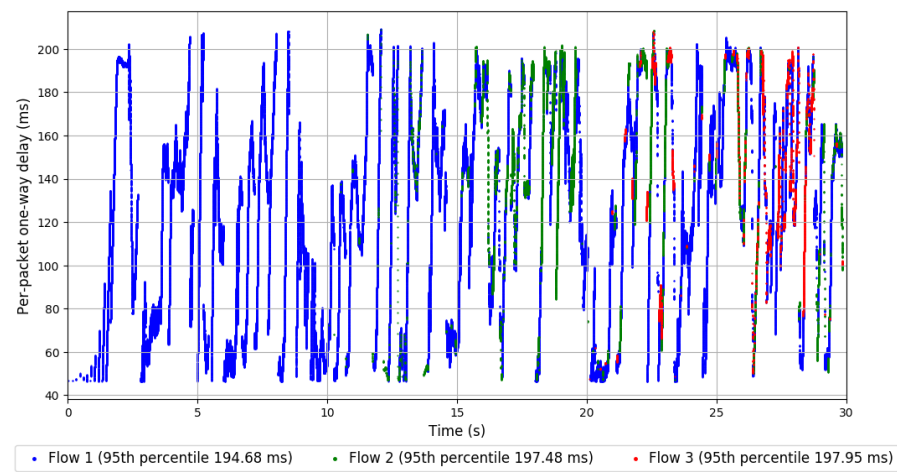
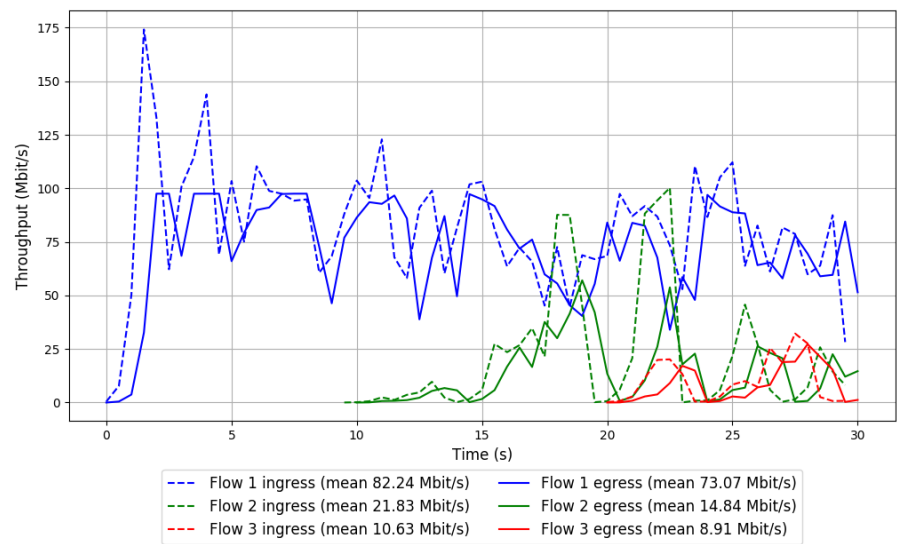
-- Flow 3:

Average throughput: 8.91 Mbit/s

95th percentile per-packet one-way delay: 197.948 ms

Loss rate: 15.75%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-10-26 03:07:04

End at: 2018-10-26 03:07:34

Local clock offset: -0.18 ms

Remote clock offset: 1.915 ms

Below is generated by plot.py at 2018-10-26 05:00:02

Datalink statistics

-- Total of 3 flows:

Average throughput: 5.17 Mbit/s

95th percentile per-packet one-way delay: 74.612 ms

Loss rate: 0.02%

-- Flow 1:

Average throughput: 2.74 Mbit/s

95th percentile per-packet one-way delay: 72.957 ms

Loss rate: 0.03%

-- Flow 2:

Average throughput: 2.06 Mbit/s

95th percentile per-packet one-way delay: 72.906 ms

Loss rate: 0.03%

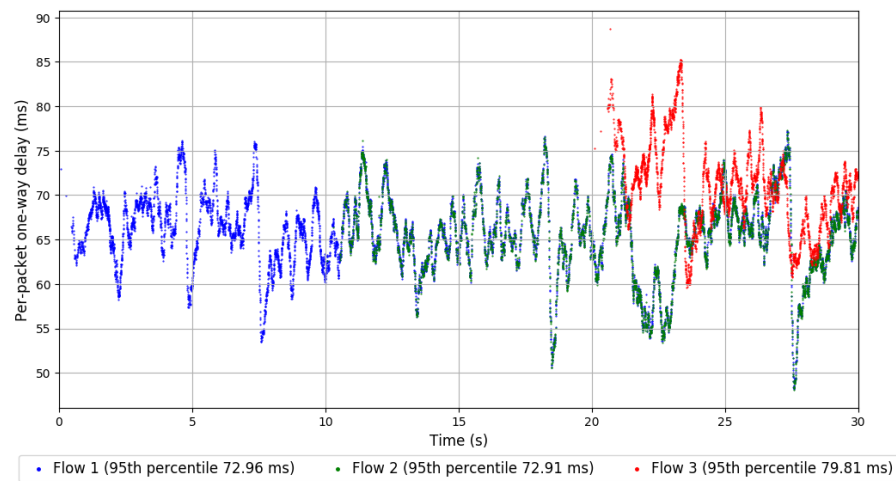
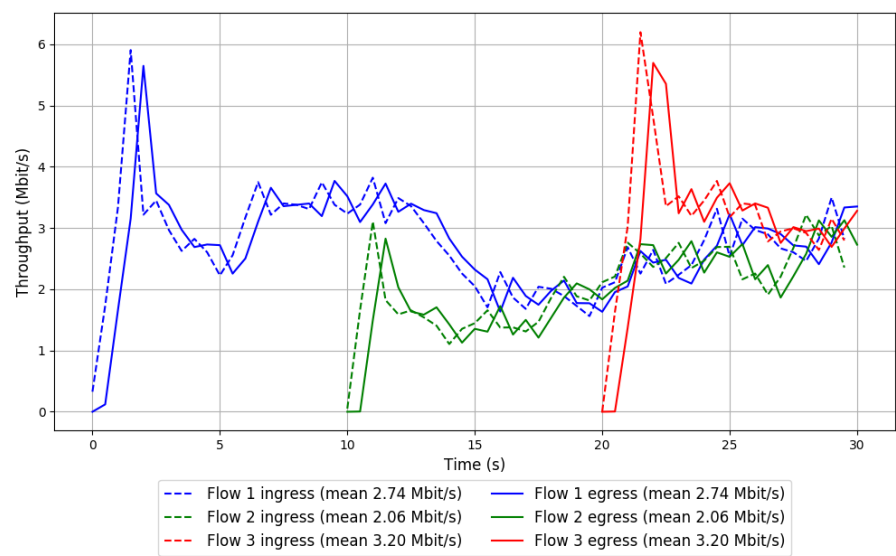
-- Flow 3:

Average throughput: 3.20 Mbit/s

95th percentile per-packet one-way delay: 79.813 ms

Loss rate: 0.00%

Run 1: Report of PCC-Vivace — Data Link

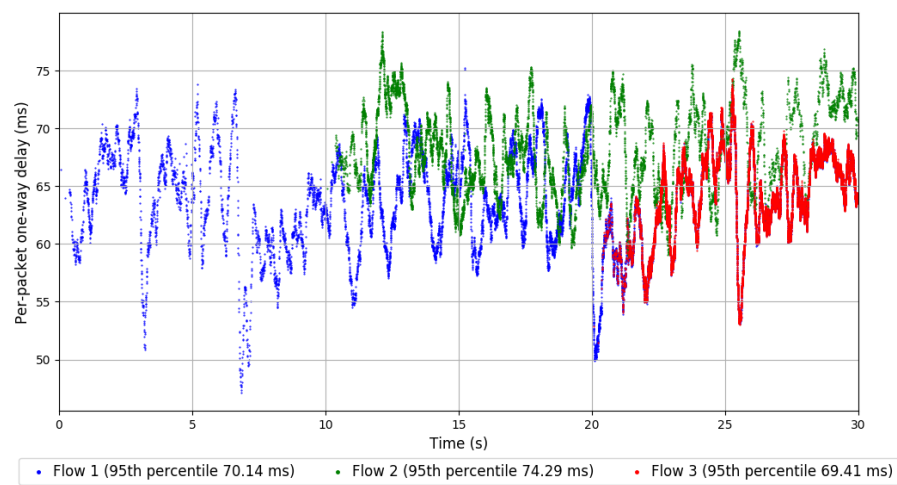
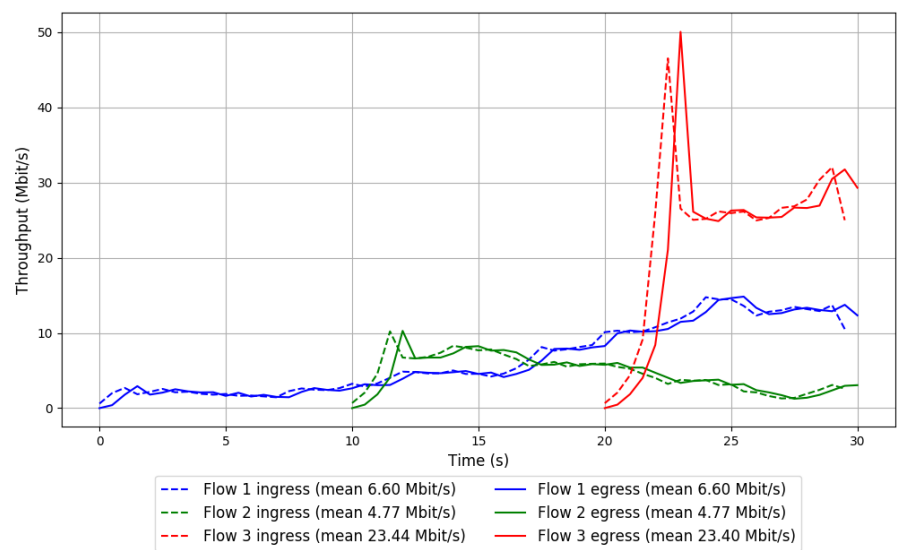


Run 2: Statistics of PCC-Vivace

Start at: 2018-10-26 03:32:34
End at: 2018-10-26 03:33:04
Local clock offset: 0.422 ms
Remote clock offset: -6.755 ms

Below is generated by plot.py at 2018-10-26 05:00:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 17.51 Mbit/s
95th percentile per-packet one-way delay: 71.548 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 6.60 Mbit/s
95th percentile per-packet one-way delay: 70.139 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 4.77 Mbit/s
95th percentile per-packet one-way delay: 74.292 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 23.40 Mbit/s
95th percentile per-packet one-way delay: 69.409 ms
Loss rate: 0.01%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-10-26 03:56:37

End at: 2018-10-26 03:57:07

Local clock offset: 9.353 ms

Remote clock offset: 1.531 ms

Below is generated by plot.py at 2018-10-26 05:00:02

Datalink statistics

-- Total of 3 flows:

Average throughput: 61.70 Mbit/s

95th percentile per-packet one-way delay: 60.147 ms

Loss rate: 0.04%

-- Flow 1:

Average throughput: 51.28 Mbit/s

95th percentile per-packet one-way delay: 60.334 ms

Loss rate: 0.03%

-- Flow 2:

Average throughput: 7.45 Mbit/s

95th percentile per-packet one-way delay: 55.000 ms

Loss rate: 0.00%

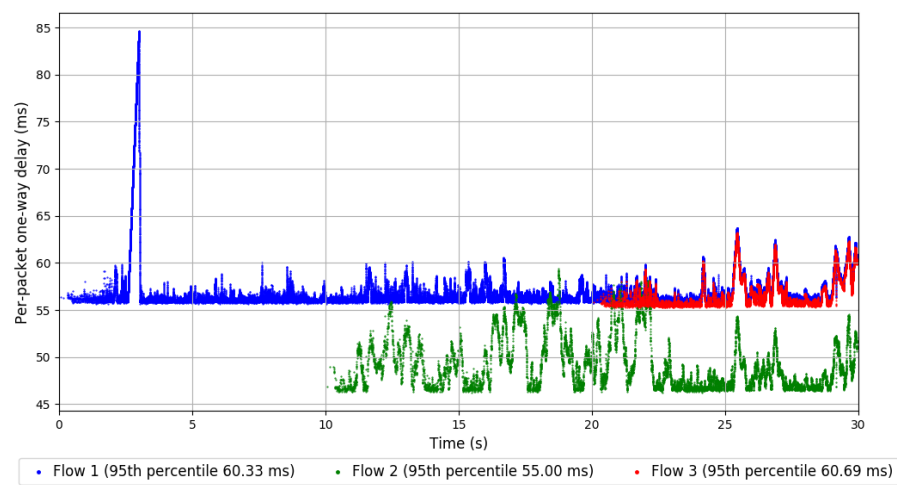
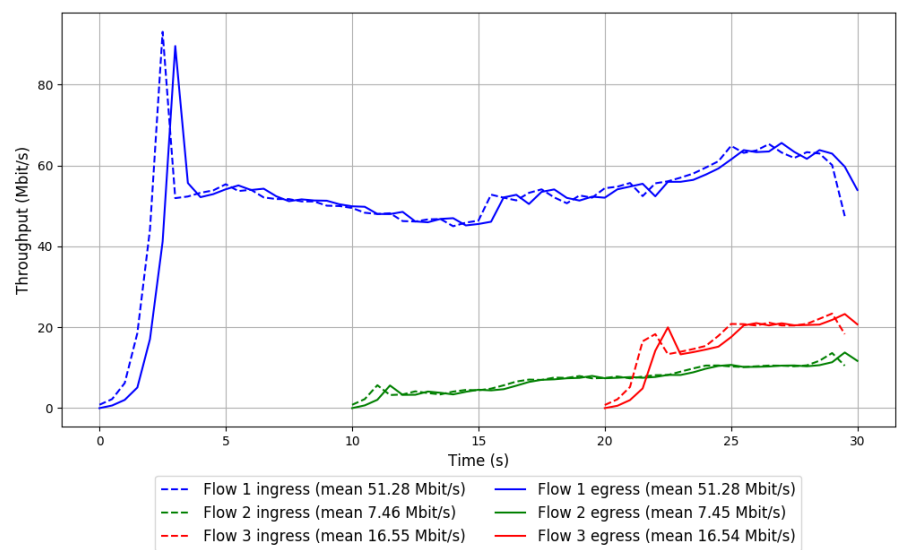
-- Flow 3:

Average throughput: 16.54 Mbit/s

95th percentile per-packet one-way delay: 60.691 ms

Loss rate: 0.12%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-10-26 04:20:43

End at: 2018-10-26 04:21:13

Local clock offset: -0.586 ms

Remote clock offset: 2.994 ms

Below is generated by plot.py at 2018-10-26 05:00:02

Datalink statistics

-- Total of 3 flows:

Average throughput: 13.46 Mbit/s

95th percentile per-packet one-way delay: 57.416 ms

Loss rate: 0.04%

-- Flow 1:

Average throughput: 9.94 Mbit/s

95th percentile per-packet one-way delay: 57.284 ms

Loss rate: 0.03%

-- Flow 2:

Average throughput: 3.83 Mbit/s

95th percentile per-packet one-way delay: 56.740 ms

Loss rate: 0.06%

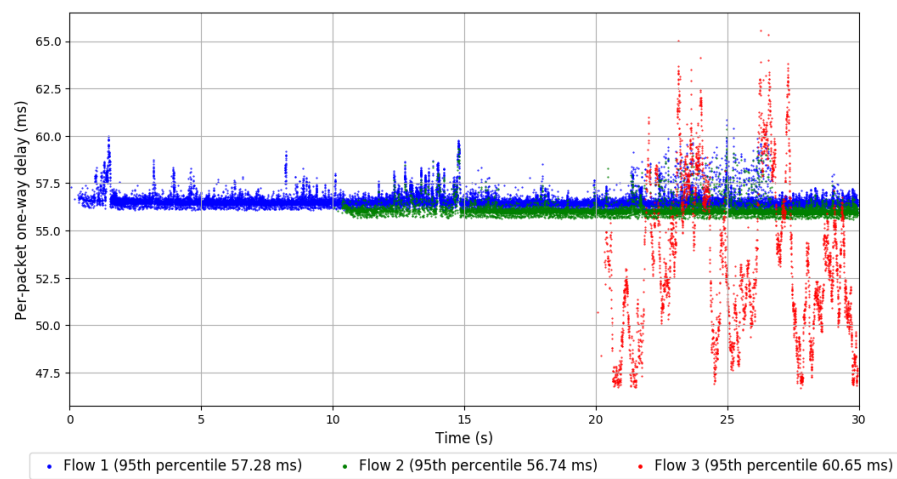
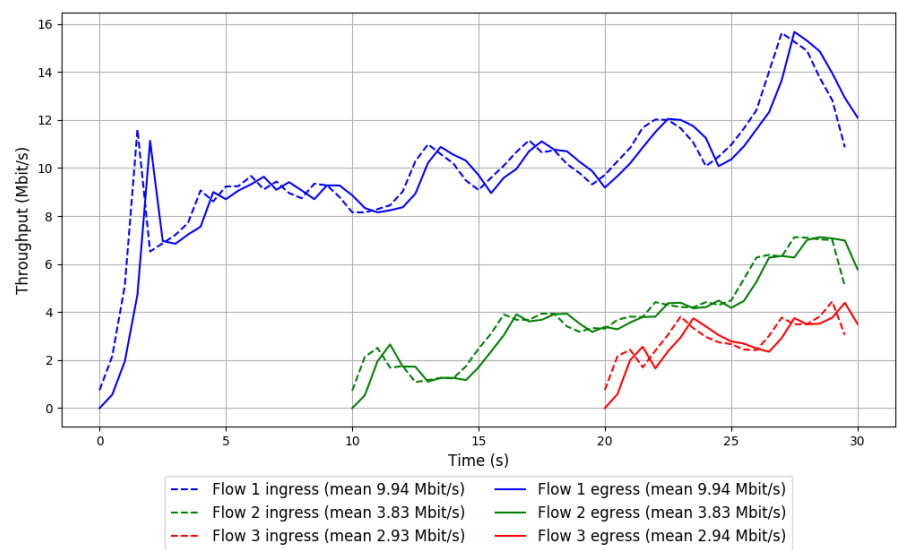
-- Flow 3:

Average throughput: 2.94 Mbit/s

95th percentile per-packet one-way delay: 60.650 ms

Loss rate: 0.00%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-10-26 04:45:11

End at: 2018-10-26 04:45:41

Local clock offset: -1.667 ms

Remote clock offset: 3.764 ms

Below is generated by plot.py at 2018-10-26 05:00:02

Datalink statistics

-- Total of 3 flows:

Average throughput: 21.34 Mbit/s

95th percentile per-packet one-way delay: 58.121 ms

Loss rate: 0.02%

-- Flow 1:

Average throughput: 15.14 Mbit/s

95th percentile per-packet one-way delay: 58.626 ms

Loss rate: 0.02%

-- Flow 2:

Average throughput: 6.37 Mbit/s

95th percentile per-packet one-way delay: 50.972 ms

Loss rate: 0.00%

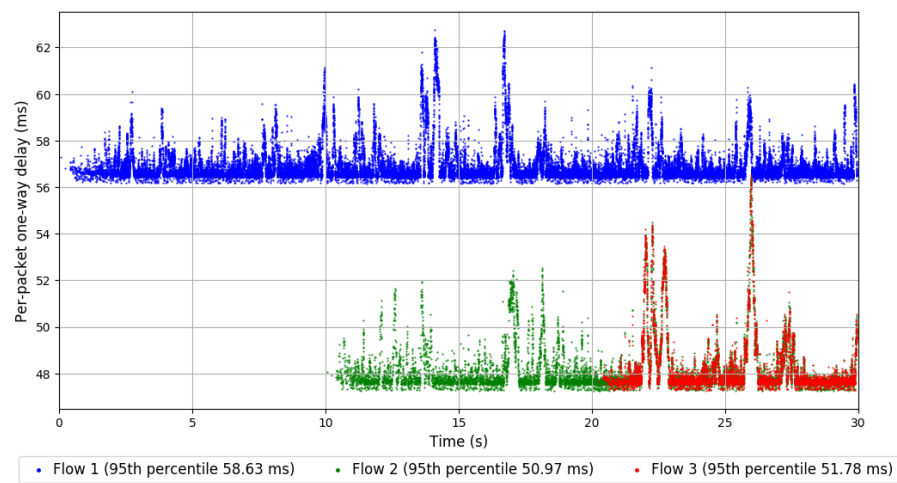
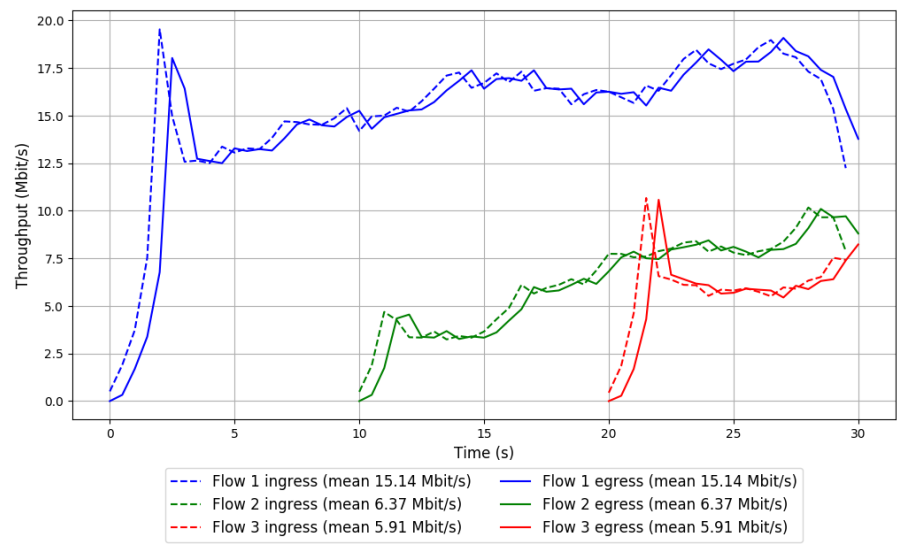
-- Flow 3:

Average throughput: 5.91 Mbit/s

95th percentile per-packet one-way delay: 51.781 ms

Loss rate: 0.00%

Run 5: Report of PCC-Vivace — Data Link

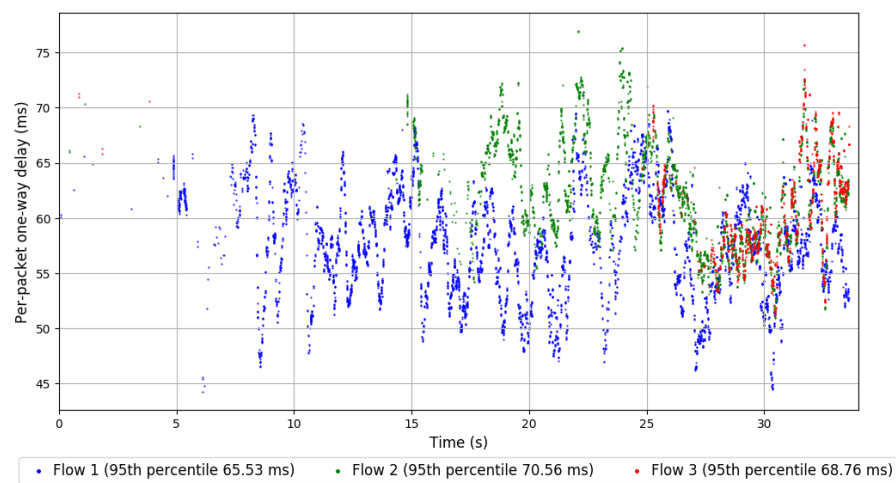
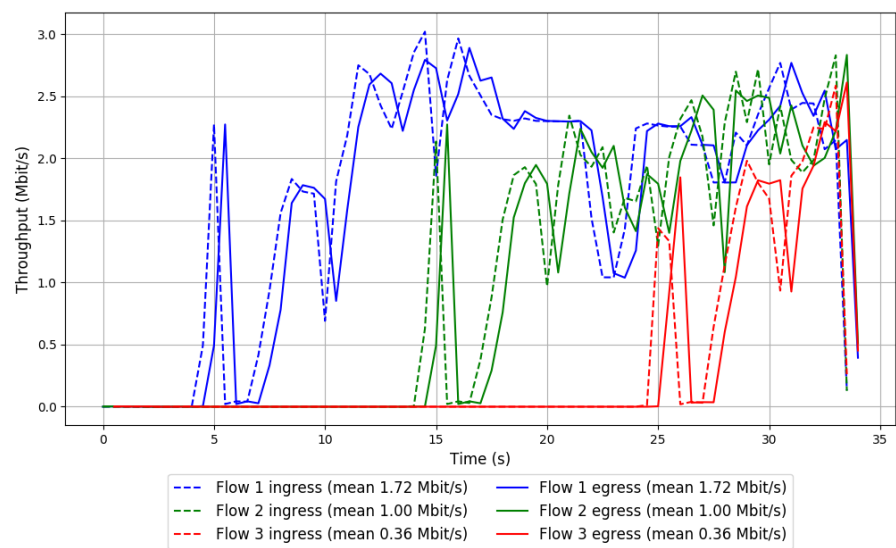


Run 1: Statistics of WebRTC media

Start at: 2018-10-26 03:14:49
End at: 2018-10-26 03:15:19
Local clock offset: -0.403 ms
Remote clock offset: -8.206 ms

Below is generated by plot.py at 2018-10-26 05:00:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.06 Mbit/s
95th percentile per-packet one-way delay: 68.221 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 1.72 Mbit/s
95th percentile per-packet one-way delay: 65.526 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 70.561 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 68.759 ms
Loss rate: 0.20%

Run 1: Report of WebRTC media — Data Link

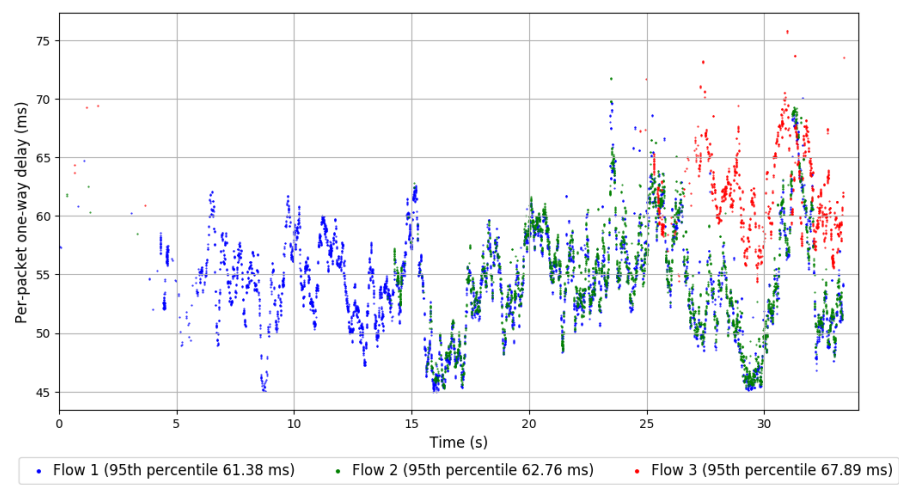
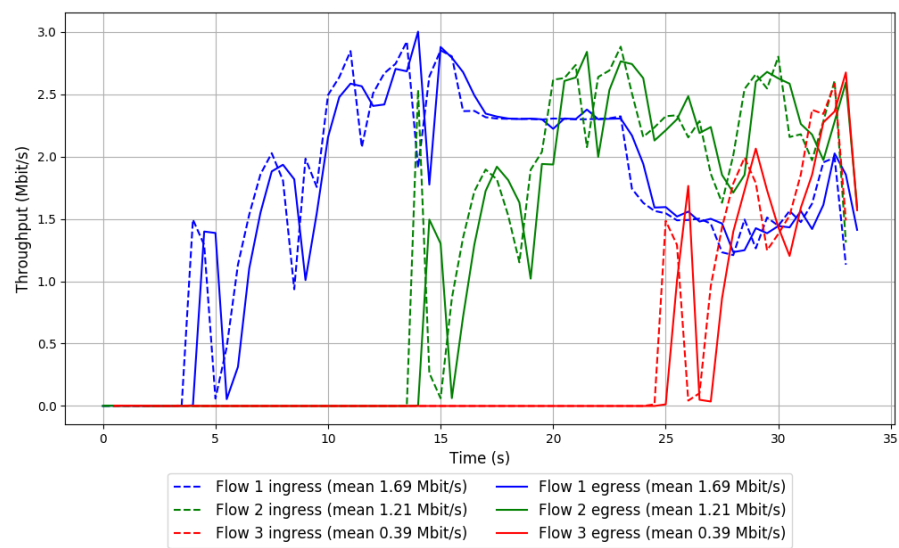


Run 2: Statistics of WebRTC media

Start at: 2018-10-26 03:39:33
End at: 2018-10-26 03:40:03
Local clock offset: 4.708 ms
Remote clock offset: -3.712 ms

Below is generated by plot.py at 2018-10-26 05:00:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.27 Mbit/s
95th percentile per-packet one-way delay: 64.308 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 1.69 Mbit/s
95th percentile per-packet one-way delay: 61.380 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.21 Mbit/s
95th percentile per-packet one-way delay: 62.761 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 67.891 ms
Loss rate: 0.30%

Run 2: Report of WebRTC media — Data Link

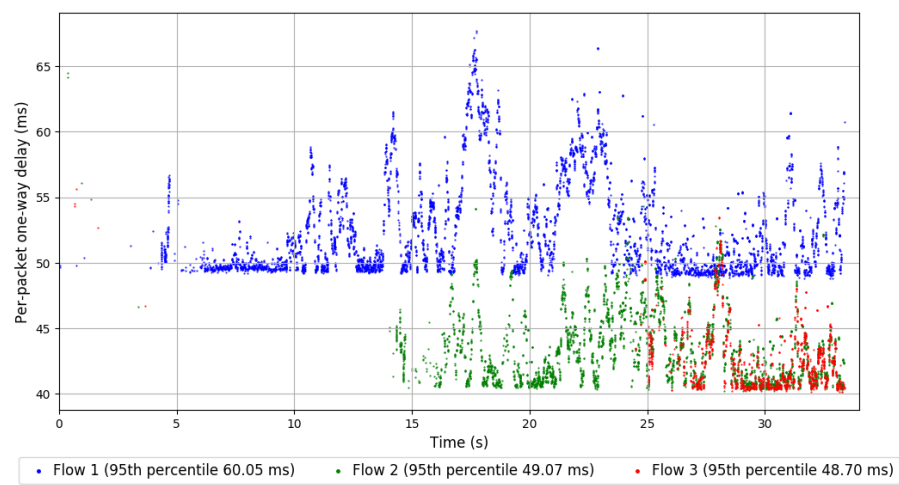
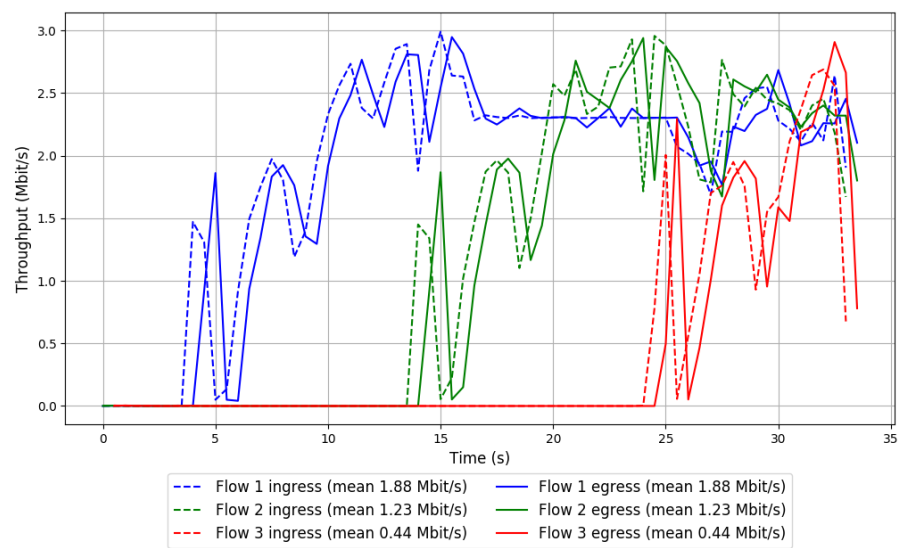


Run 3: Statistics of WebRTC media

Start at: 2018-10-26 04:03:38
End at: 2018-10-26 04:04:08
Local clock offset: 7.631 ms
Remote clock offset: -3.146 ms

Below is generated by plot.py at 2018-10-26 05:00:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.53 Mbit/s
95th percentile per-packet one-way delay: 58.407 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 60.046 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 1.23 Mbit/s
95th percentile per-packet one-way delay: 49.067 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 48.704 ms
Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2018-10-26 04:27:50

End at: 2018-10-26 04:28:20

Local clock offset: -1.421 ms

Remote clock offset: 3.147 ms

Below is generated by plot.py at 2018-10-26 05:00:02

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.44 Mbit/s

95th percentile per-packet one-way delay: 58.152 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 1.87 Mbit/s

95th percentile per-packet one-way delay: 58.241 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 1.18 Mbit/s

95th percentile per-packet one-way delay: 56.600 ms

Loss rate: 0.00%

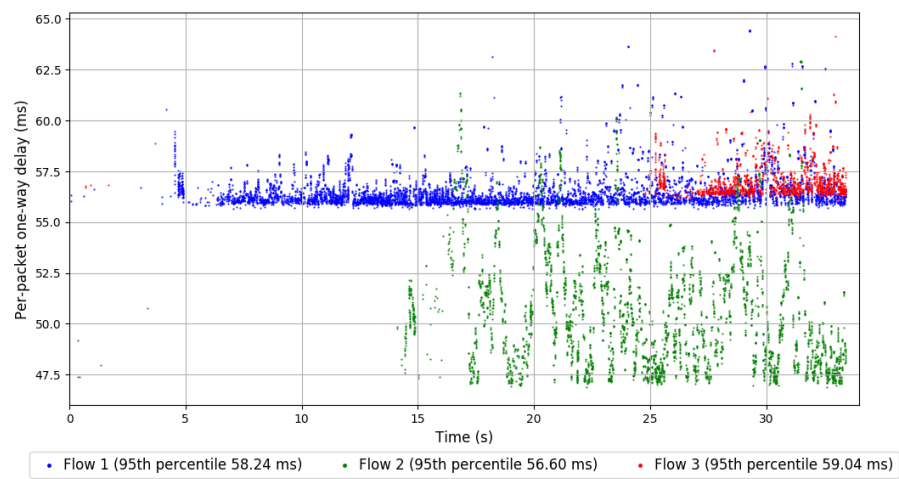
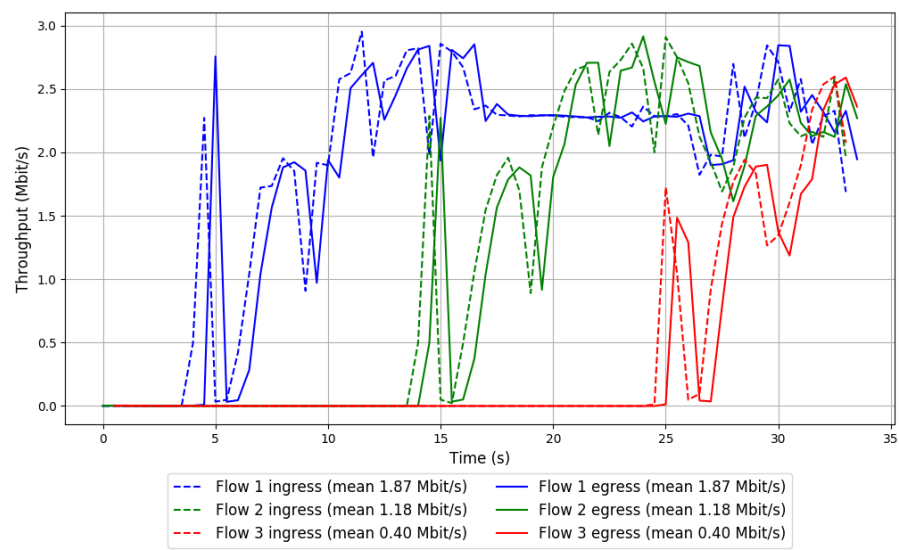
-- Flow 3:

Average throughput: 0.40 Mbit/s

95th percentile per-packet one-way delay: 59.040 ms

Loss rate: 0.00%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-10-26 04:52:20

End at: 2018-10-26 04:52:50

Local clock offset: -1.707 ms

Remote clock offset: 3.399 ms

Below is generated by plot.py at 2018-10-26 05:00:02

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.48 Mbit/s

95th percentile per-packet one-way delay: 49.917 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 1.88 Mbit/s

95th percentile per-packet one-way delay: 51.130 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 1.21 Mbit/s

95th percentile per-packet one-way delay: 48.574 ms

Loss rate: 0.00%

-- Flow 3:

Average throughput: 0.40 Mbit/s

95th percentile per-packet one-way delay: 49.277 ms

Loss rate: 0.00%

Run 5: Report of WebRTC media — Data Link

