

Pantheon Report

Generated at 2018-11-15 06:59:14 (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:

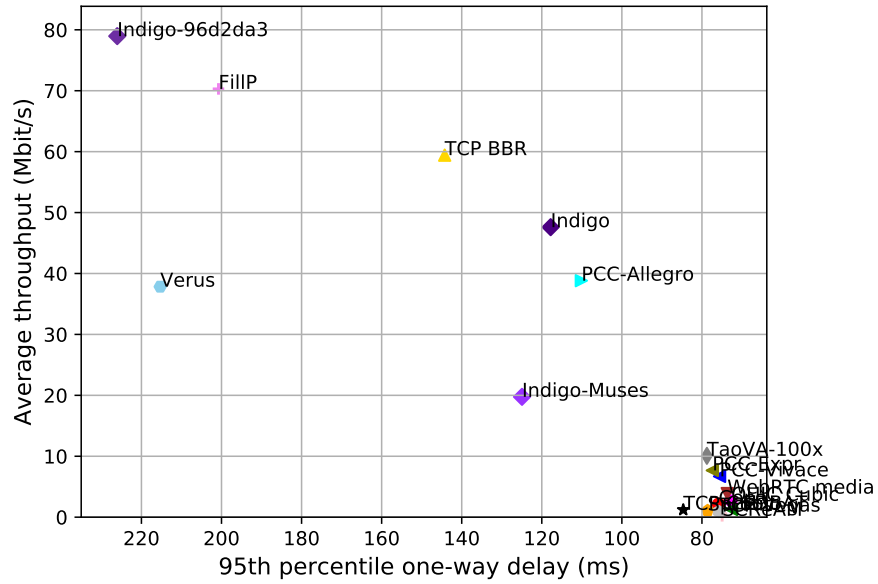
```
Linux 4.15.0-1023-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

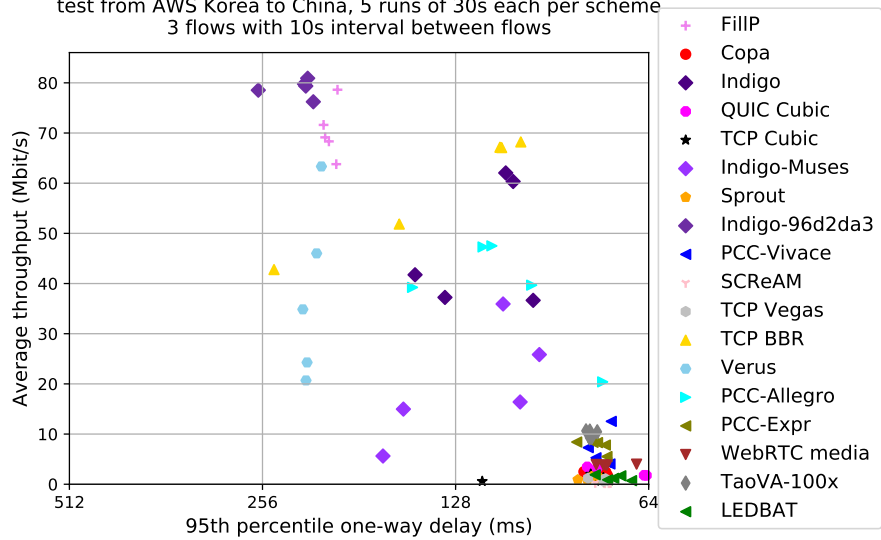
```
branch: muses @ 794ca3866981572cb73700a276691acf79c60f2b
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
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)



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



scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	41.23	19.76	15.42	125.51	141.18	166.61	16.10	24.12	29.20
Copa	5	0.01	2.04	2.31	69.96	75.91	75.73	97.18	4.45	4.55
TCP Cubic	5	0.56	0.53	0.87	83.57	71.01	72.92	2.49	2.92	2.81
FillP	5	38.07	41.36	14.29	198.87	199.44	202.92	15.39	18.44	18.09
Indigo	5	17.23	31.23	30.47	109.64	115.82	120.24	6.35	9.28	14.84
Indigo-96d2da3	5	47.42	36.73	23.61	216.34	226.07	226.37	32.30	48.56	49.88
LEDBAT	5	0.70	0.58	0.59	67.99	70.18	71.36	3.10	3.91	2.88
Indigo-Muses	5	6.88	14.21	10.66	141.83	99.74	102.26	3.46	3.24	2.60
PCC-Allegro	5	39.16	10.76	22.62	104.39	95.83	96.32	10.77	12.24	9.46
PCC-Expr	5	0.01	9.36	4.38	69.82	77.34	78.27	82.48	30.52	42.33
QUIC Cubic	5	1.30	1.37	1.48	72.68	72.71	71.06	2.96	2.94	3.40
SCReAM	5	0.10	0.12	0.13	71.90	70.08	70.19	3.59	2.58	3.44
Sprout	5	0.57	0.51	0.57	75.95	75.83	77.28	2.80	3.25	2.65
TaoVA-100x	5	5.63	4.19	4.95	78.81	77.15	82.74	13.01	16.81	27.36
TCP Vegas	5	0.38	0.53	0.56	72.89	72.71	72.57	3.15	2.93	3.32
Verus	5	20.75	18.93	14.18	213.36	201.08	221.78	31.22	17.63	40.17
PCC-Vivace	5	3.50	3.10	3.47	72.41	75.82	72.37	2.79	2.52	2.61
WebRTC media	5	2.22	1.31	0.36	70.71	72.60	68.72	2.61	2.47	2.53

Run 1: Statistics of TCP BBR

Start at: 2018-11-15 04:57:35

End at: 2018-11-15 04:58:05

Local clock offset: -6.597 ms

Remote clock offset: 8.106 ms

Below is generated by plot.py at 2018-11-15 06:55:50

Datalink statistics

-- Total of 3 flows:

Average throughput: 51.86 Mbit/s

95th percentile per-packet one-way delay: 156.681 ms

Loss rate: 18.19%

-- Flow 1:

Average throughput: 38.82 Mbit/s

95th percentile per-packet one-way delay: 155.612 ms

Loss rate: 16.51%

-- Flow 2:

Average throughput: 16.70 Mbit/s

95th percentile per-packet one-way delay: 163.168 ms

Loss rate: 22.79%

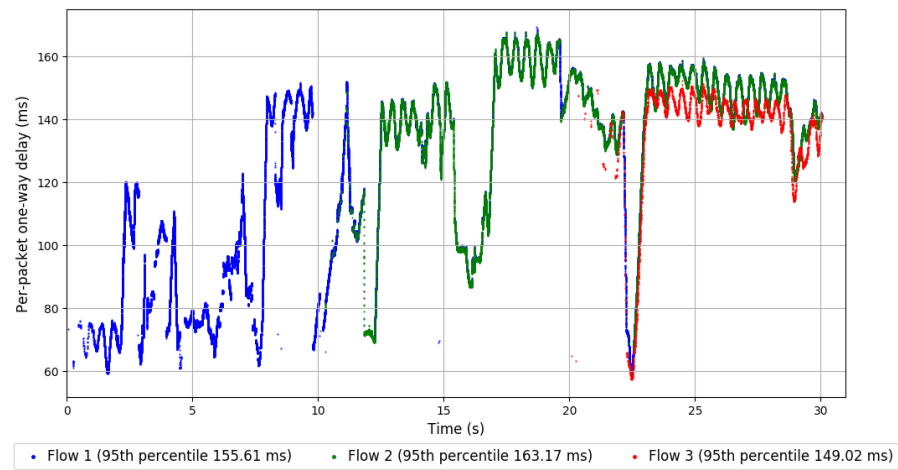
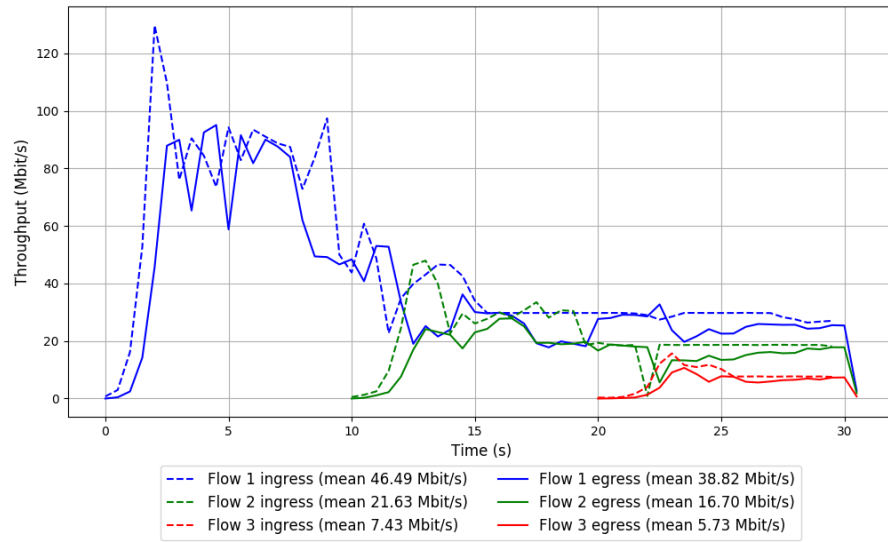
-- Flow 3:

Average throughput: 5.73 Mbit/s

95th percentile per-packet one-way delay: 149.024 ms

Loss rate: 22.88%

Run 1: Report of TCP BBR — Data Link

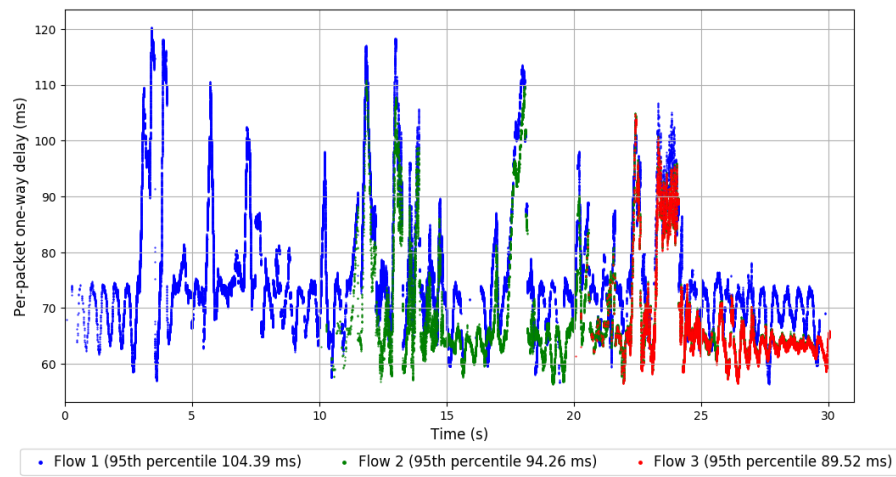
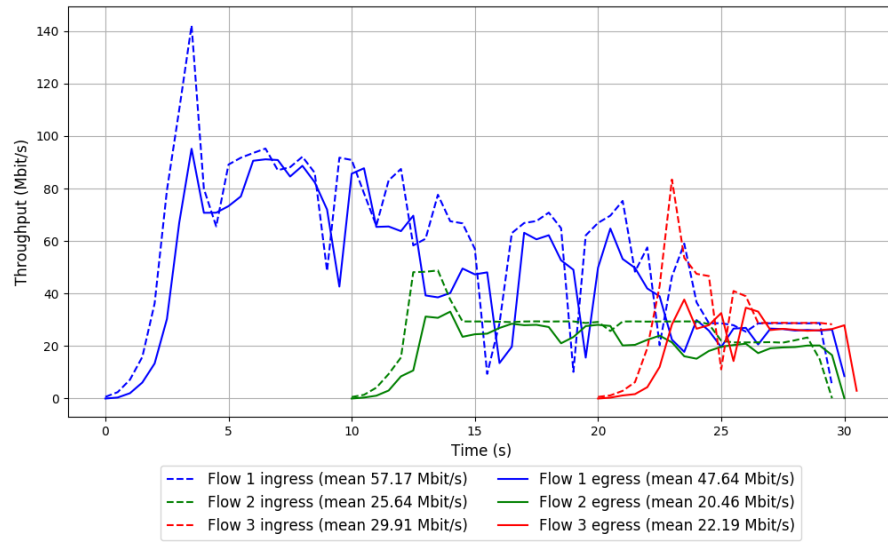


Run 2: Statistics of TCP BBR

Start at: 2018-11-15 05:22:39
End at: 2018-11-15 05:23:09
Local clock offset: -6.49 ms
Remote clock offset: 50.308 ms

Below is generated by plot.py at 2018-11-15 06:56:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 68.23 Mbit/s
95th percentile per-packet one-way delay: 101.286 ms
Loss rate: 18.46%
-- Flow 1:
Average throughput: 47.64 Mbit/s
95th percentile per-packet one-way delay: 104.392 ms
Loss rate: 16.66%
-- Flow 2:
Average throughput: 20.46 Mbit/s
95th percentile per-packet one-way delay: 94.260 ms
Loss rate: 20.22%
-- Flow 3:
Average throughput: 22.19 Mbit/s
95th percentile per-packet one-way delay: 89.521 ms
Loss rate: 25.79%

Run 2: Report of TCP BBR — Data Link

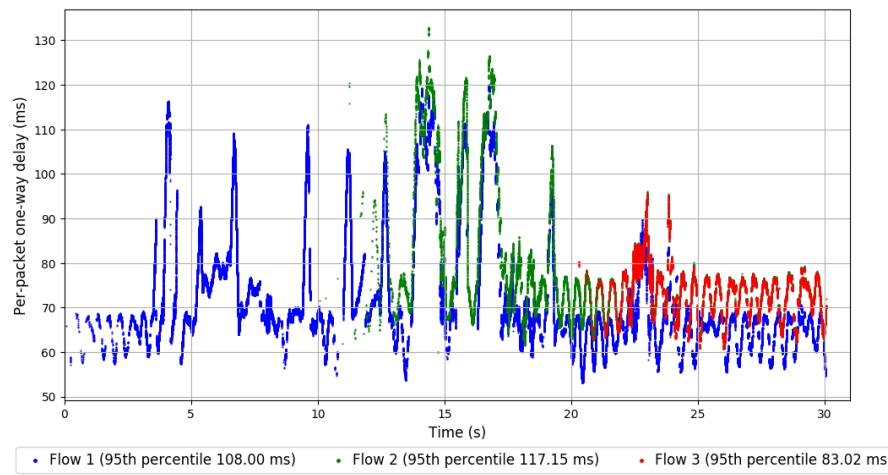
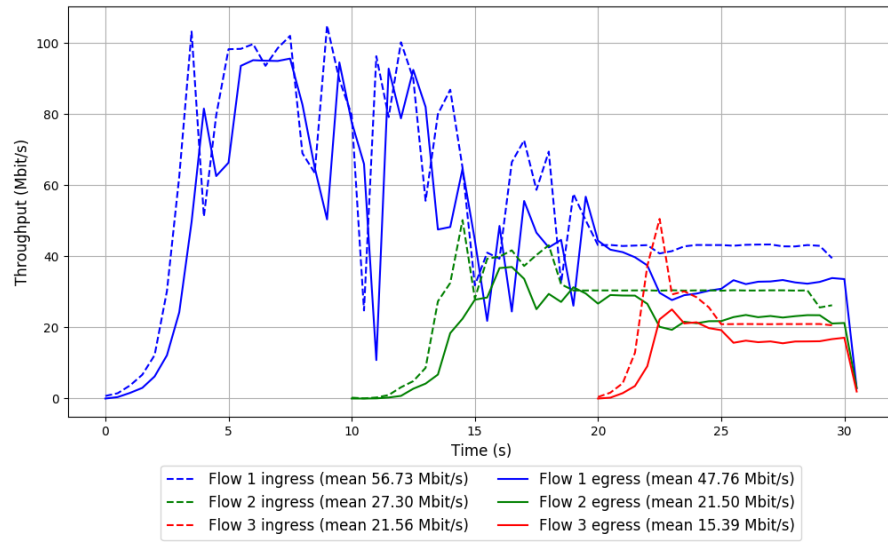


Run 3: Statistics of TCP BBR

Start at: 2018-11-15 05:48:02
End at: 2018-11-15 05:48:32
Local clock offset: -2.064 ms
Remote clock offset: 29.104 ms

Below is generated by plot.py at 2018-11-15 06:56:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 67.17 Mbit/s
95th percentile per-packet one-way delay: 109.169 ms
Loss rate: 18.15%
-- Flow 1:
Average throughput: 47.76 Mbit/s
95th percentile per-packet one-way delay: 107.998 ms
Loss rate: 15.83%
-- Flow 2:
Average throughput: 21.50 Mbit/s
95th percentile per-packet one-way delay: 117.150 ms
Loss rate: 21.24%
-- Flow 3:
Average throughput: 15.39 Mbit/s
95th percentile per-packet one-way delay: 83.018 ms
Loss rate: 28.61%

Run 3: Report of TCP BBR — Data Link

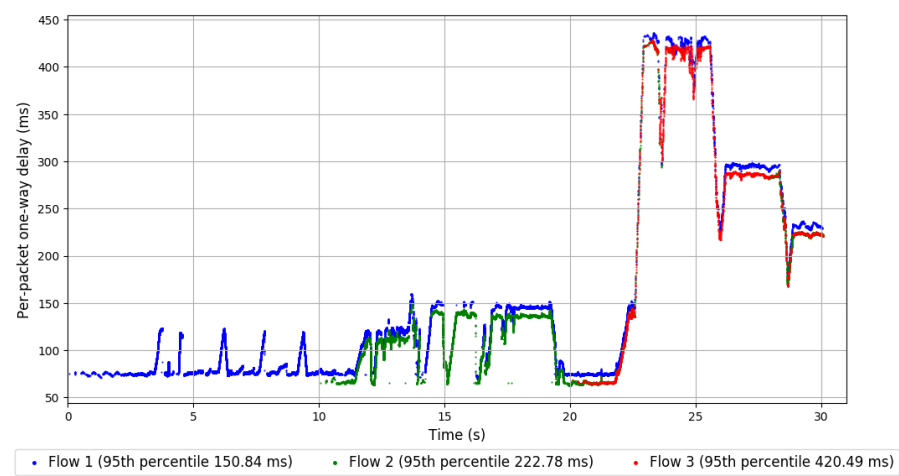
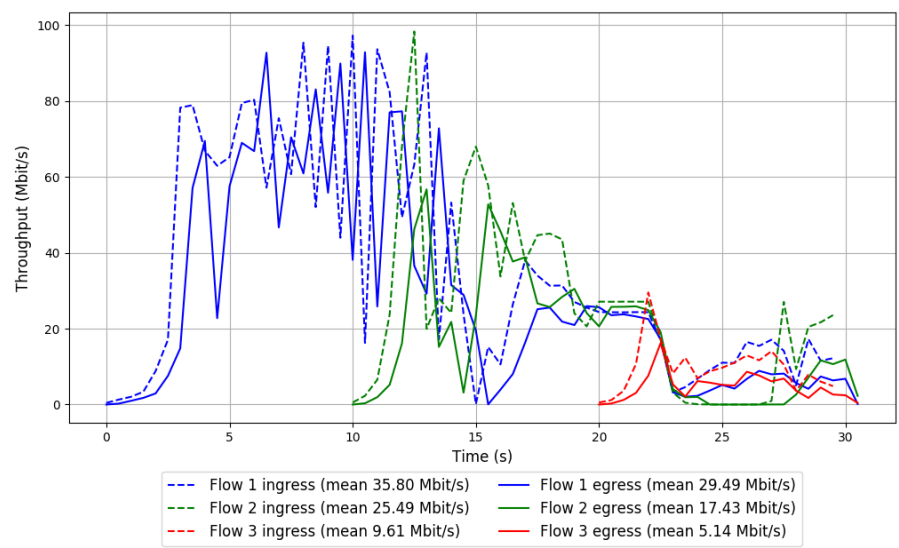


Run 4: Statistics of TCP BBR

Start at: 2018-11-15 06:13:59
End at: 2018-11-15 06:14:29
Local clock offset: -2.601 ms
Remote clock offset: 30.236 ms

Below is generated by plot.py at 2018-11-15 06:56:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 42.79 Mbit/s
95th percentile per-packet one-way delay: 245.632 ms
Loss rate: 23.56%
-- Flow 1:
Average throughput: 29.49 Mbit/s
95th percentile per-packet one-way delay: 150.836 ms
Loss rate: 17.70%
-- Flow 2:
Average throughput: 17.43 Mbit/s
95th percentile per-packet one-way delay: 222.775 ms
Loss rate: 31.61%
-- Flow 3:
Average throughput: 5.14 Mbit/s
95th percentile per-packet one-way delay: 420.494 ms
Loss rate: 46.45%

Run 4: Report of TCP BBR — Data Link

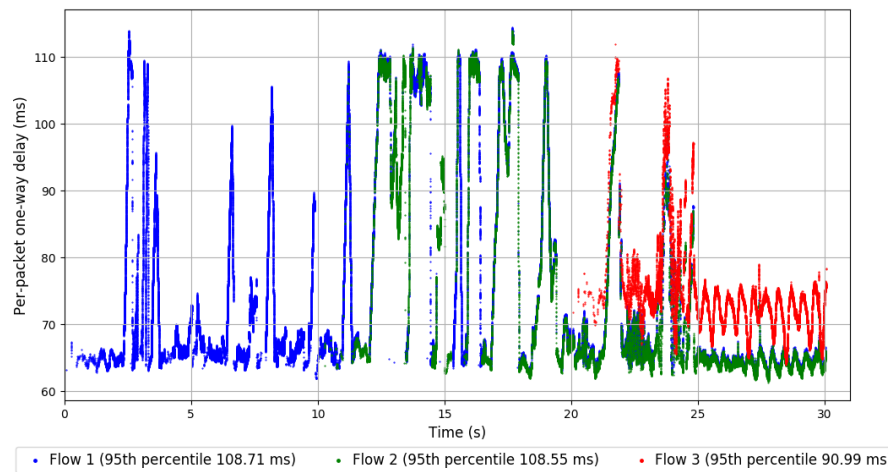
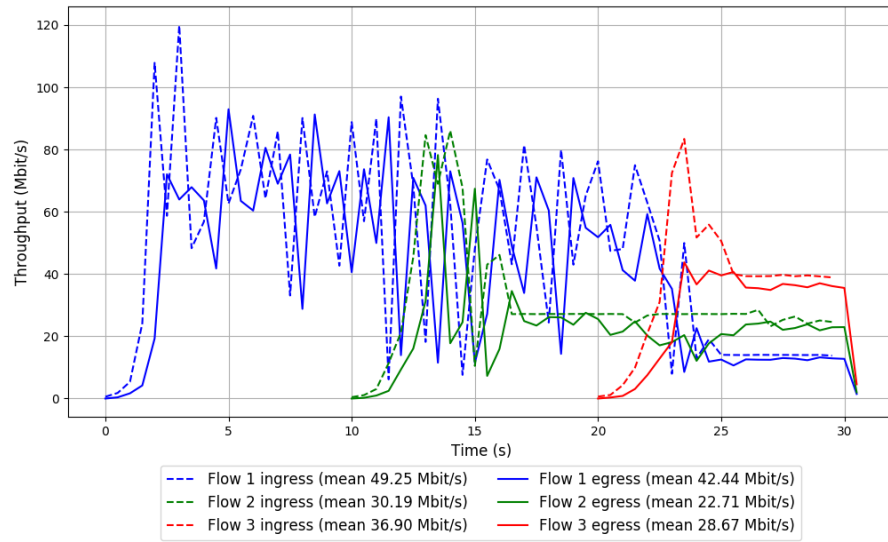


Run 5: Statistics of TCP BBR

Start at: 2018-11-15 06:39:51
End at: 2018-11-15 06:40:21
Local clock offset: 0.898 ms
Remote clock offset: 36.546 ms

Below is generated by plot.py at 2018-11-15 06:56:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 67.10 Mbit/s
95th percentile per-packet one-way delay: 108.499 ms
Loss rate: 17.78%
-- Flow 1:
Average throughput: 42.44 Mbit/s
95th percentile per-packet one-way delay: 108.713 ms
Loss rate: 13.81%
-- Flow 2:
Average throughput: 22.71 Mbit/s
95th percentile per-packet one-way delay: 108.553 ms
Loss rate: 24.76%
-- Flow 3:
Average throughput: 28.67 Mbit/s
95th percentile per-packet one-way delay: 90.994 ms
Loss rate: 22.25%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-11-15 05:10:04

End at: 2018-11-15 05:10:34

Local clock offset: -4.871 ms

Remote clock offset: 35.62 ms

Below is generated by plot.py at 2018-11-15 06:56:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.89 Mbit/s

95th percentile per-packet one-way delay: 75.076 ms

Loss rate: 3.78%

-- Flow 1:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 62.779 ms

Loss rate: 98.80%

-- Flow 2:

Average throughput: 1.88 Mbit/s

95th percentile per-packet one-way delay: 75.132 ms

Loss rate: 3.83%

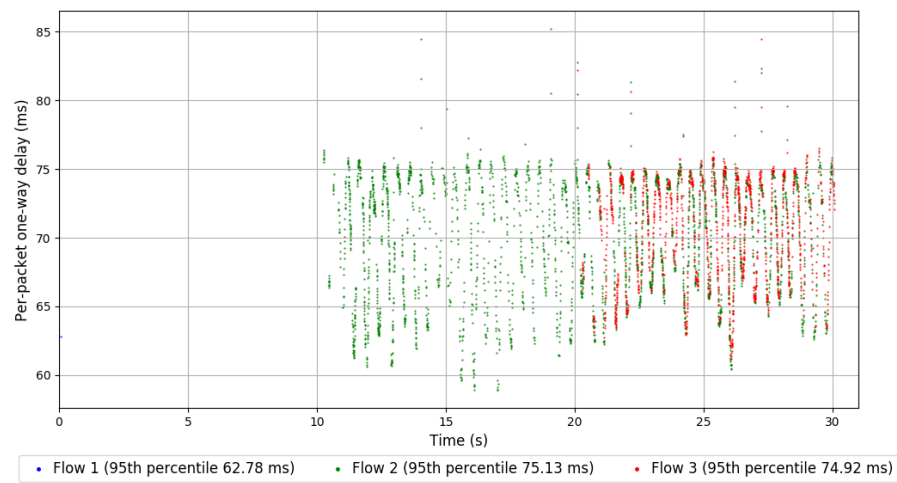
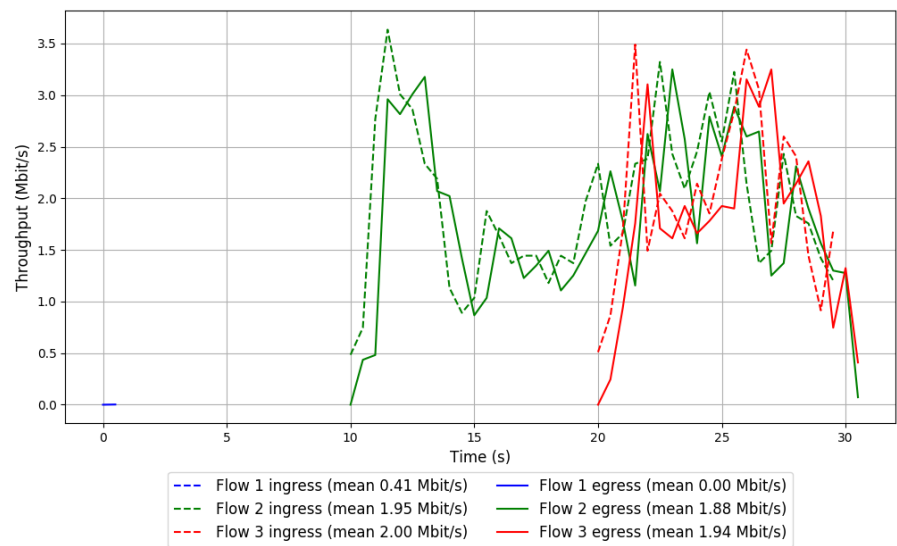
-- Flow 3:

Average throughput: 1.94 Mbit/s

95th percentile per-packet one-way delay: 74.923 ms

Loss rate: 3.26%

Run 1: Report of Copa — Data Link

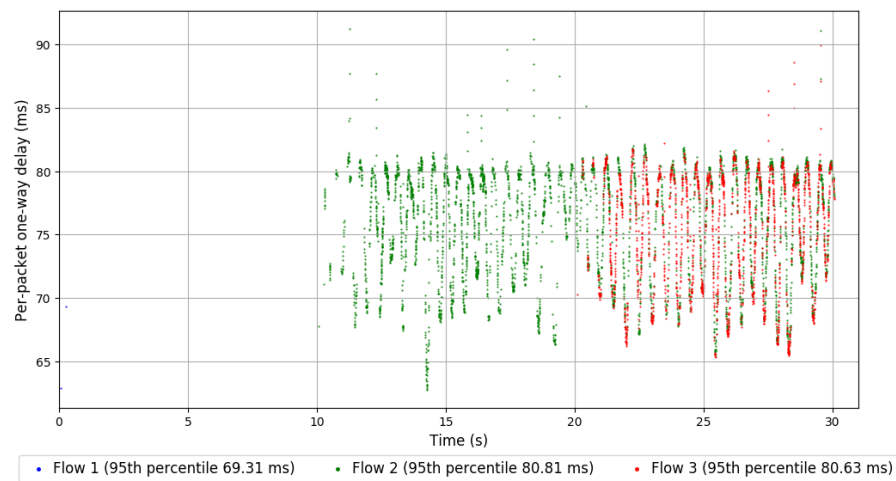
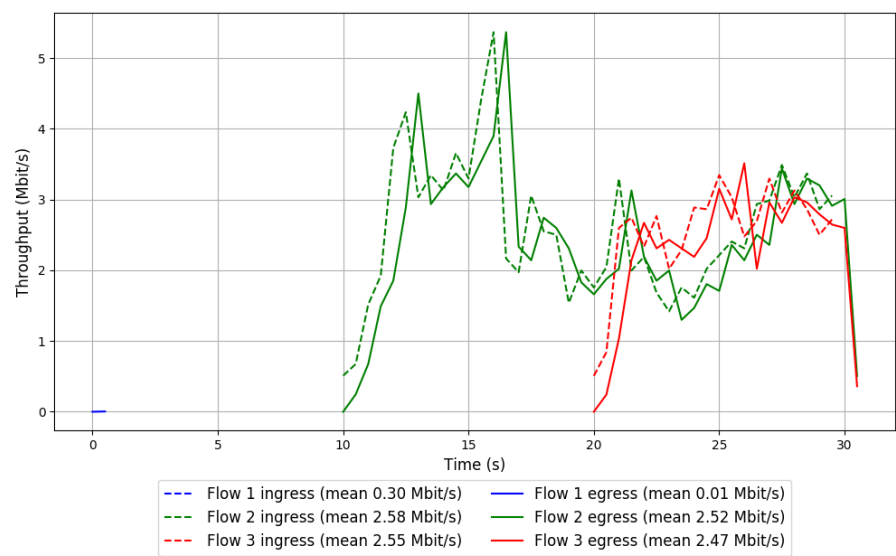


Run 2: Statistics of Copa

Start at: 2018-11-15 05:35:34
End at: 2018-11-15 05:36:04
Local clock offset: -3.241 ms
Remote clock offset: 35.913 ms

Below is generated by plot.py at 2018-11-15 06:56:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 2.50 Mbit/s
95th percentile per-packet one-way delay: 80.747 ms
Loss rate: 2.56%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 69.309 ms
Loss rate: 96.71%
-- Flow 2:
Average throughput: 2.52 Mbit/s
95th percentile per-packet one-way delay: 80.806 ms
Loss rate: 2.24%
-- Flow 3:
Average throughput: 2.47 Mbit/s
95th percentile per-packet one-way delay: 80.629 ms
Loss rate: 2.99%

Run 2: Report of Copa — Data Link

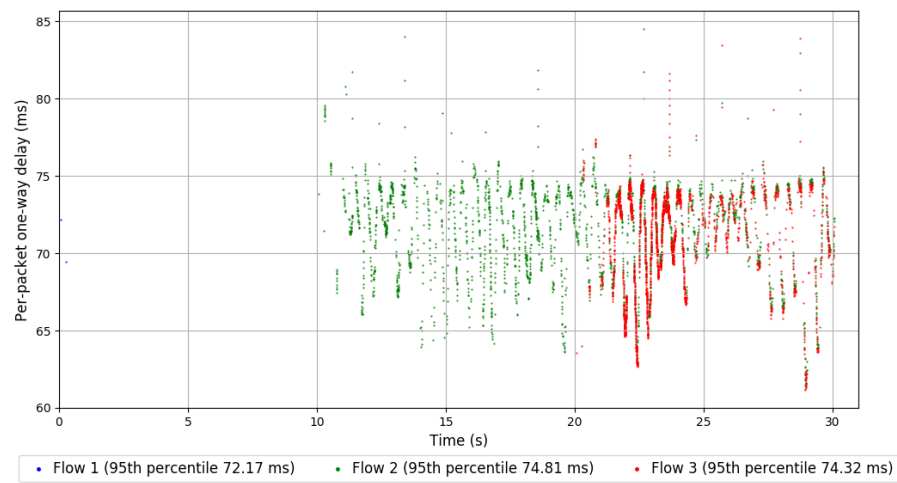
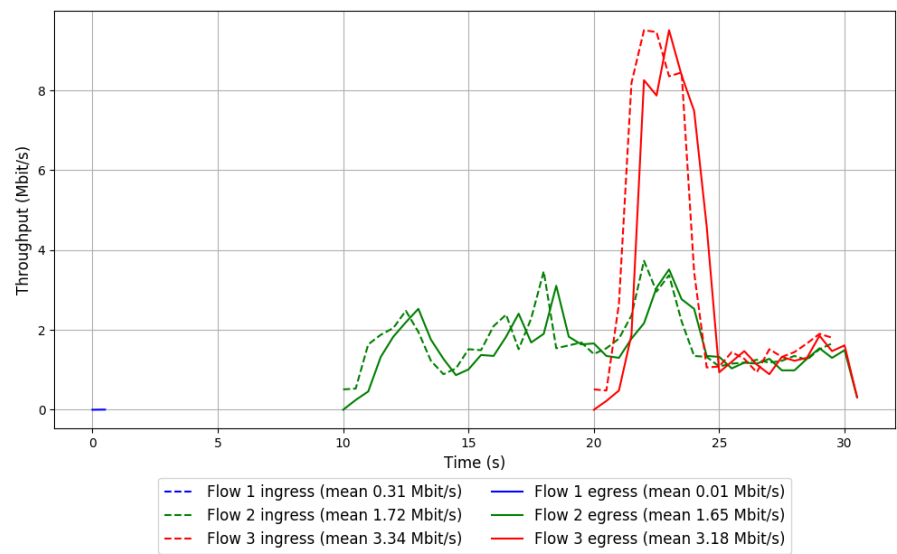


Run 3: Statistics of Copa

Start at: 2018-11-15 06:01:04
End at: 2018-11-15 06:01:34
Local clock offset: -2.281 ms
Remote clock offset: 28.745 ms

Below is generated by plot.py at 2018-11-15 06:56:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 2.16 Mbit/s
95th percentile per-packet one-way delay: 74.594 ms
Loss rate: 4.39%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 72.175 ms
Loss rate: 97.24%
-- Flow 2:
Average throughput: 1.65 Mbit/s
95th percentile per-packet one-way delay: 74.807 ms
Loss rate: 3.96%
-- Flow 3:
Average throughput: 3.18 Mbit/s
95th percentile per-packet one-way delay: 74.320 ms
Loss rate: 4.63%

Run 3: Report of Copa — Data Link

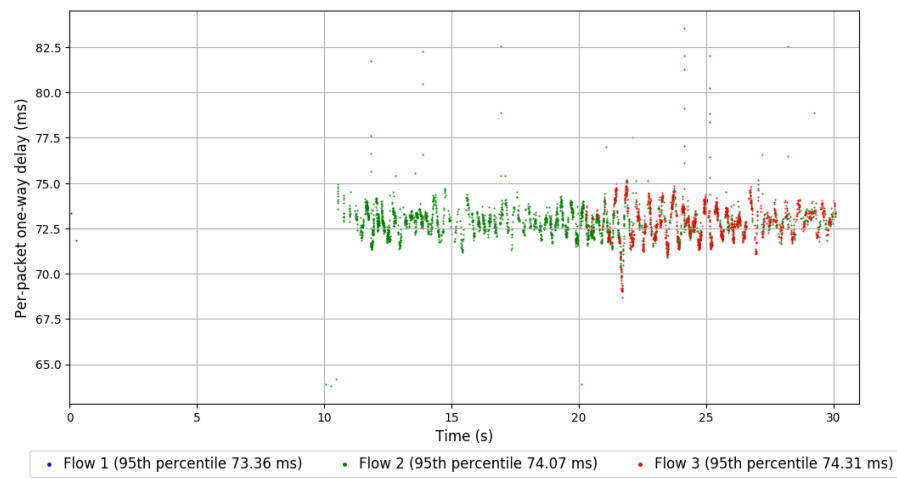
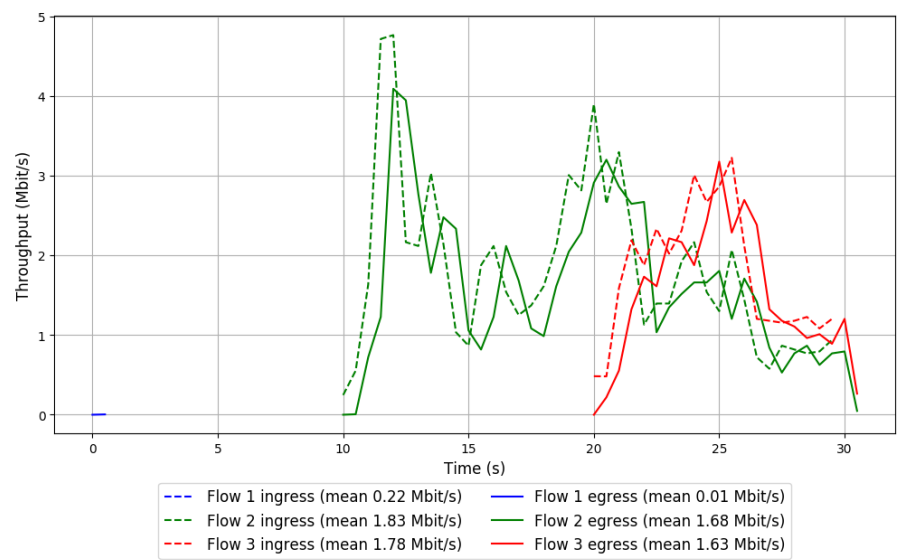


Run 4: Statistics of Copa

Start at: 2018-11-15 06:26:54
End at: 2018-11-15 06:27:24
Local clock offset: -3.146 ms
Remote clock offset: 31.497 ms

Below is generated by plot.py at 2018-11-15 06:56:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 1.66 Mbit/s
95th percentile per-packet one-way delay: 74.149 ms
Loss rate: 8.05%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 73.358 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 1.68 Mbit/s
95th percentile per-packet one-way delay: 74.068 ms
Loss rate: 8.01%
-- Flow 3:
Average throughput: 1.63 Mbit/s
95th percentile per-packet one-way delay: 74.310 ms
Loss rate: 7.89%

Run 4: Report of Copa — Data Link

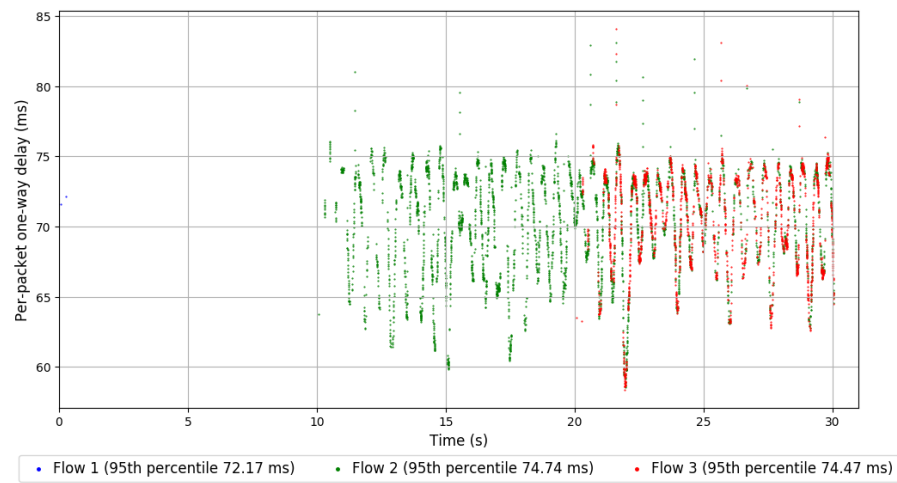
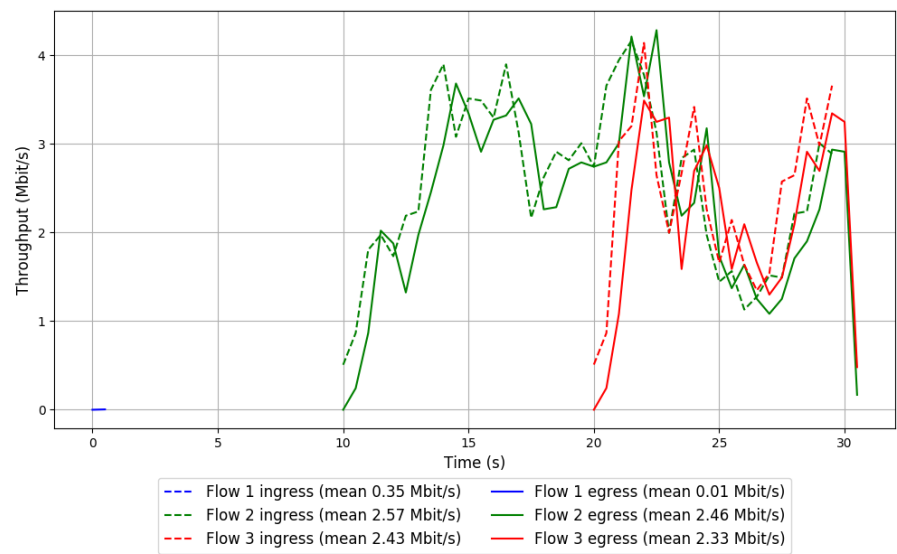


Run 5: Statistics of Copa

Start at: 2018-11-15 06:52:35
End at: 2018-11-15 06:53:05
Local clock offset: 1.534 ms
Remote clock offset: 41.021 ms

Below is generated by plot.py at 2018-11-15 06:56:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 2.42 Mbit/s
95th percentile per-packet one-way delay: 74.664 ms
Loss rate: 4.23%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 72.170 ms
Loss rate: 97.24%
-- Flow 2:
Average throughput: 2.46 Mbit/s
95th percentile per-packet one-way delay: 74.741 ms
Loss rate: 4.22%
-- Flow 3:
Average throughput: 2.33 Mbit/s
95th percentile per-packet one-way delay: 74.472 ms
Loss rate: 3.97%

Run 5: Report of Copa — Data Link

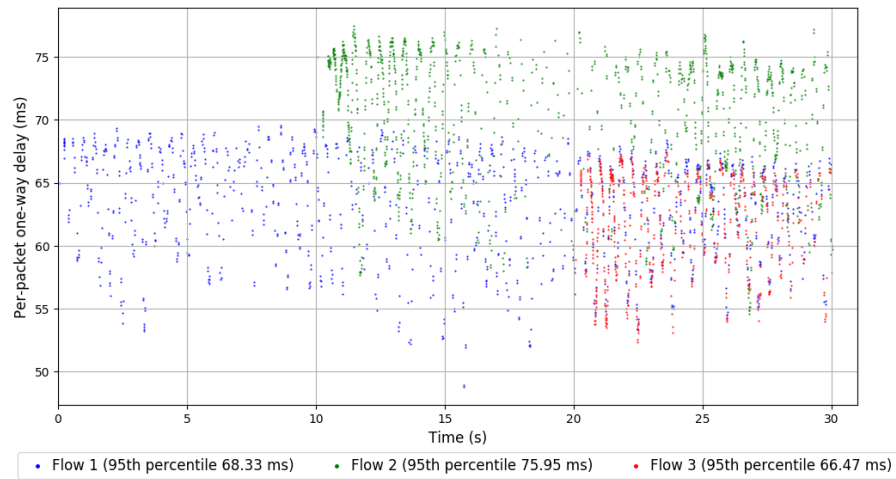
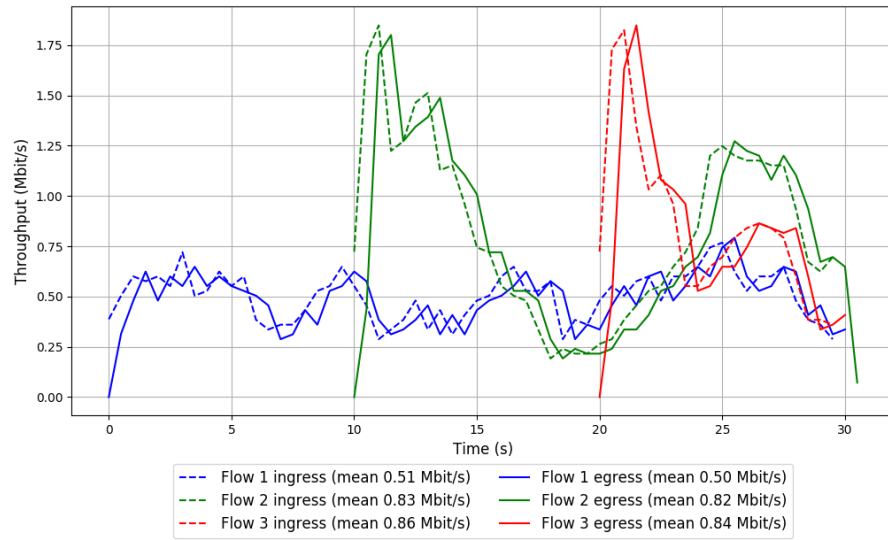


Run 1: Statistics of TCP Cubic

Start at: 2018-11-15 04:50:41
End at: 2018-11-15 04:51:11
Local clock offset: -3.845 ms
Remote clock offset: -18.561 ms

Below is generated by plot.py at 2018-11-15 06:56:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 1.32 Mbit/s
95th percentile per-packet one-way delay: 75.295 ms
Loss rate: 1.91%
-- Flow 1:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 68.332 ms
Loss rate: 2.22%
-- Flow 2:
Average throughput: 0.82 Mbit/s
95th percentile per-packet one-way delay: 75.951 ms
Loss rate: 1.45%
-- Flow 3:
Average throughput: 0.84 Mbit/s
95th percentile per-packet one-way delay: 66.467 ms
Loss rate: 2.26%

Run 1: Report of TCP Cubic — Data Link

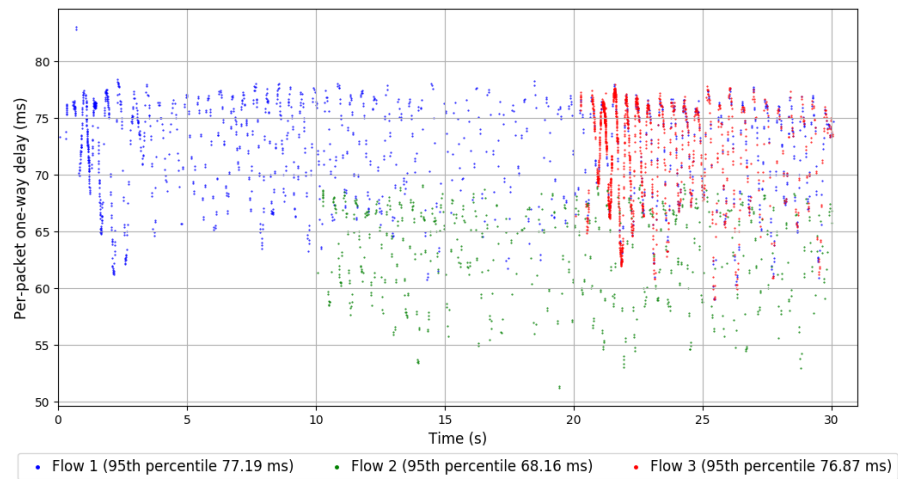
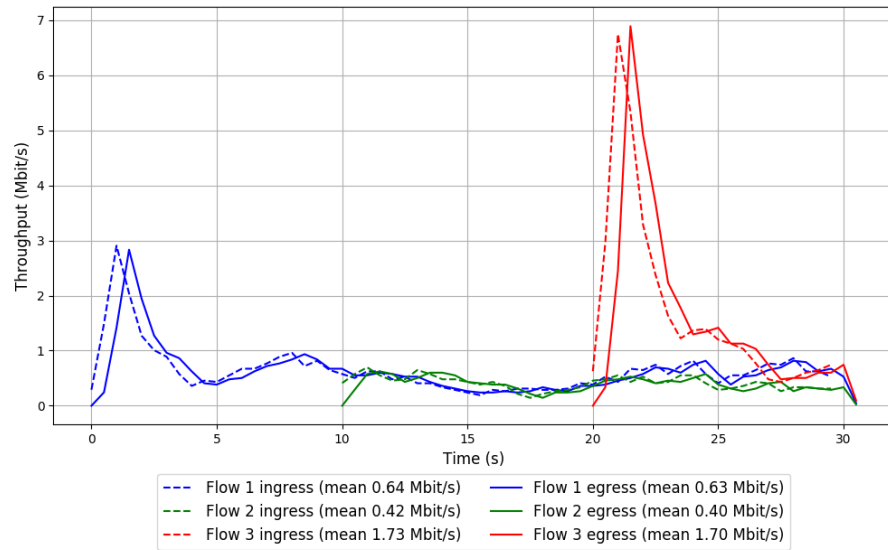


Run 2: Statistics of TCP Cubic

Start at: 2018-11-15 05:15:26
End at: 2018-11-15 05:15:56
Local clock offset: -5.391 ms
Remote clock offset: 44.769 ms

Below is generated by plot.py at 2018-11-15 06:56:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 1.47 Mbit/s
95th percentile per-packet one-way delay: 76.929 ms
Loss rate: 1.88%
-- Flow 1:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 77.189 ms
Loss rate: 1.62%
-- Flow 2:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 68.163 ms
Loss rate: 2.75%
-- Flow 3:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 76.871 ms
Loss rate: 1.74%

Run 2: Report of TCP Cubic — Data Link

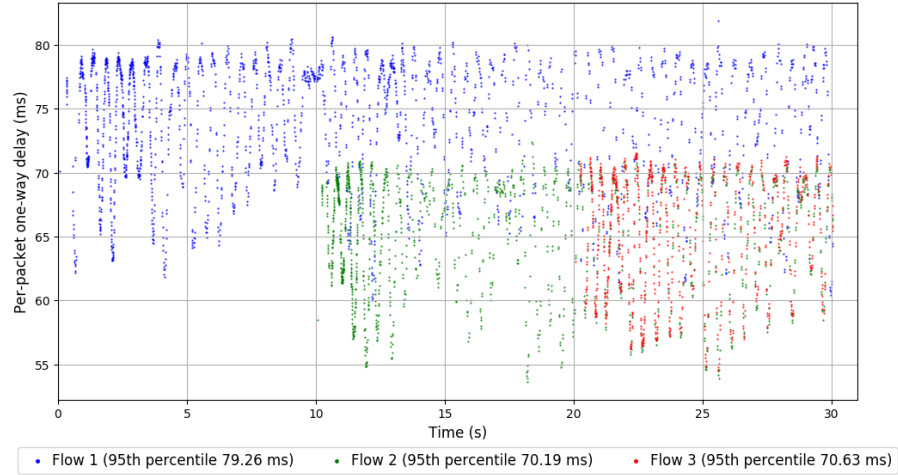
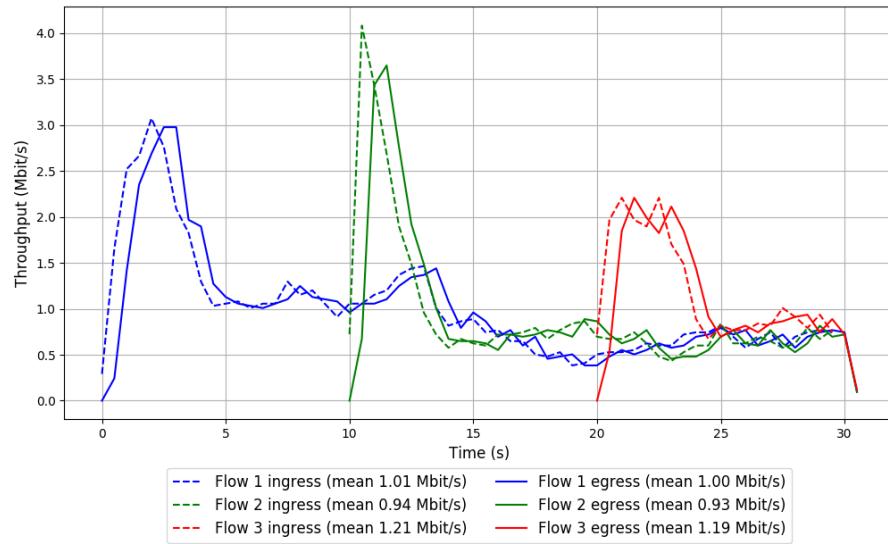


Run 3: Statistics of TCP Cubic

Start at: 2018-11-15 05:40:57
End at: 2018-11-15 05:41:27
Local clock offset: -2.132 ms
Remote clock offset: 32.252 ms

Below is generated by plot.py at 2018-11-15 06:56:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 2.02 Mbit/s
95th percentile per-packet one-way delay: 78.817 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 79.263 ms
Loss rate: 0.87%
-- Flow 2:
Average throughput: 0.93 Mbit/s
95th percentile per-packet one-way delay: 70.190 ms
Loss rate: 1.15%
-- Flow 3:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 70.629 ms
Loss rate: 1.49%

Run 3: Report of TCP Cubic — Data Link

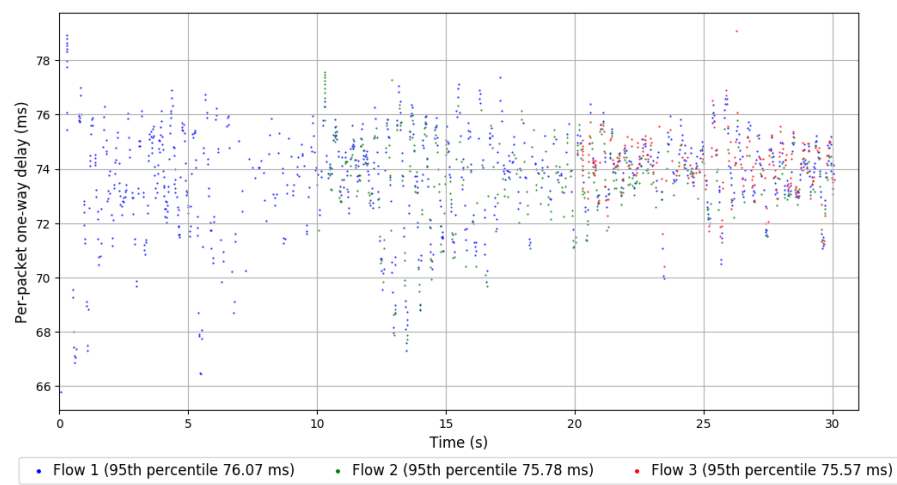
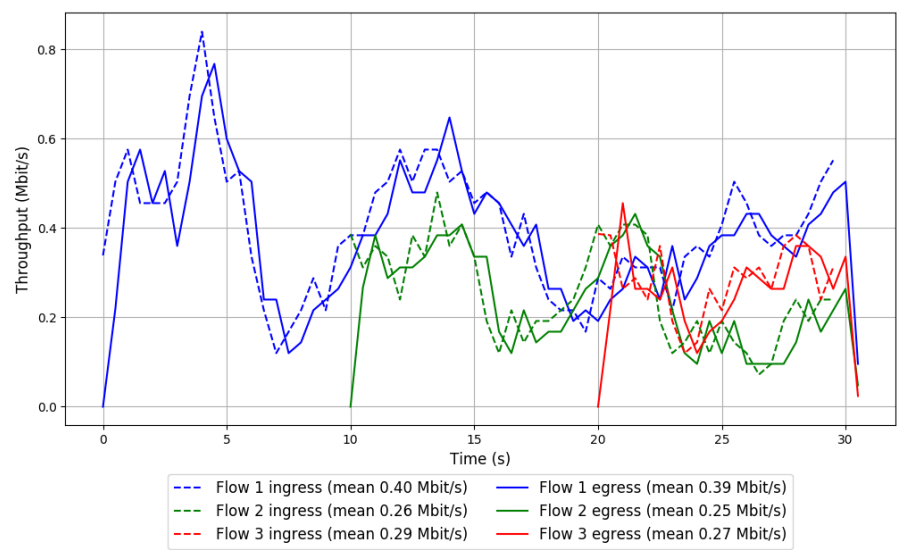


Run 4: Statistics of TCP Cubic

Start at: 2018-11-15 06:06:34
End at: 2018-11-15 06:07:04
Local clock offset: -2.368 ms
Remote clock offset: 28.868 ms

Below is generated by plot.py at 2018-11-15 06:56:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 75.967 ms
Loss rate: 3.65%
-- Flow 1:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 76.073 ms
Loss rate: 3.27%
-- Flow 2:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 75.781 ms
Loss rate: 4.46%
-- Flow 3:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 75.566 ms
Loss rate: 3.80%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2018-11-15 06:32:33

End at: 2018-11-15 06:33:03

Local clock offset: -0.909 ms

Remote clock offset: 32.54 ms

Below is generated by plot.py at 2018-11-15 06:56:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.59 Mbit/s

95th percentile per-packet one-way delay: 116.314 ms

Loss rate: 4.62%

-- Flow 1:

Average throughput: 0.30 Mbit/s

95th percentile per-packet one-way delay: 116.979 ms

Loss rate: 4.46%

-- Flow 2:

Average throughput: 0.25 Mbit/s

95th percentile per-packet one-way delay: 64.970 ms

Loss rate: 4.80%

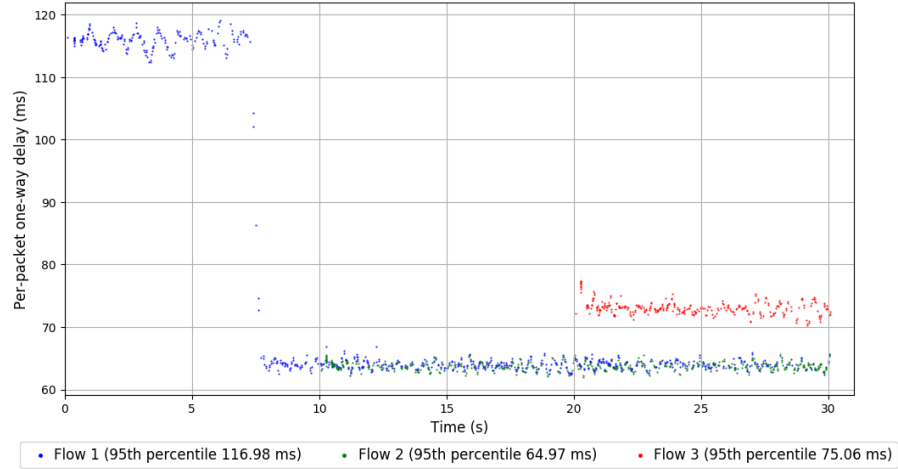
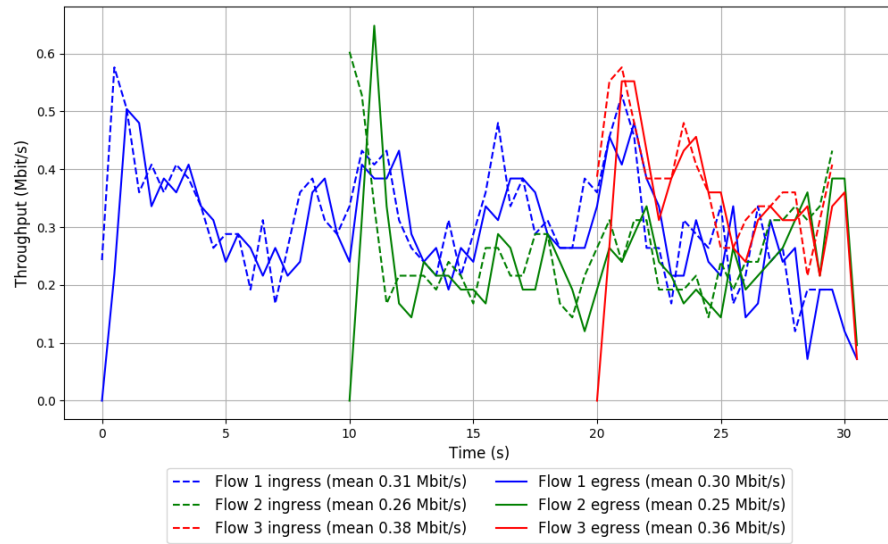
-- Flow 3:

Average throughput: 0.36 Mbit/s

95th percentile per-packet one-way delay: 75.065 ms

Loss rate: 4.76%

Run 5: Report of TCP Cubic — Data Link

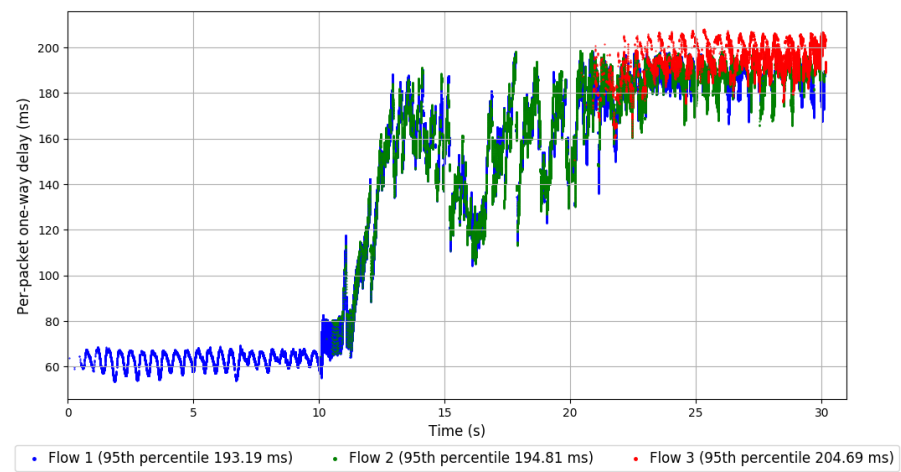
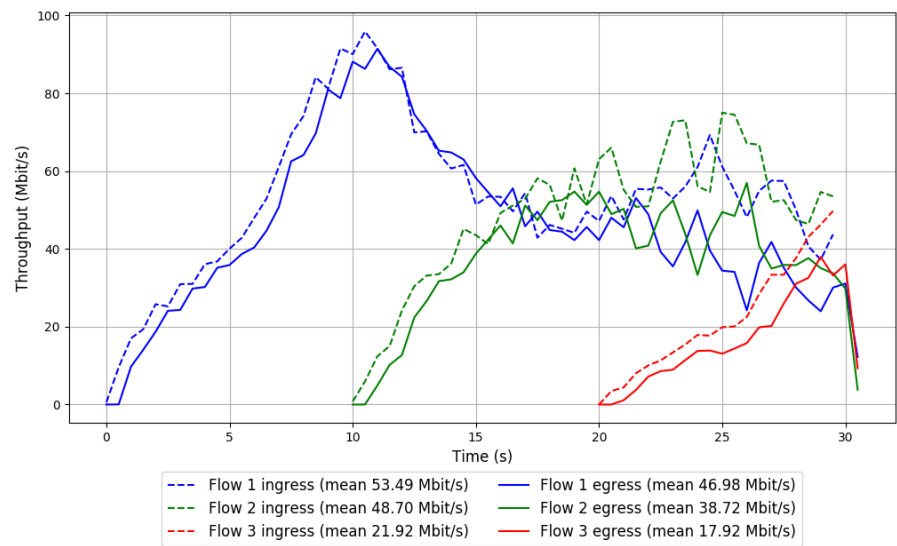


Run 1: Statistics of FillP

Start at: 2018-11-15 05:07:09
End at: 2018-11-15 05:07:39
Local clock offset: -4.712 ms
Remote clock offset: 31.448 ms

Below is generated by plot.py at 2018-11-15 06:56:32
Datalink statistics
-- Total of 3 flows:
Average throughput: 78.62 Mbit/s
95th percentile per-packet one-way delay: 195.581 ms
Loss rate: 15.24%
-- Flow 1:
Average throughput: 46.98 Mbit/s
95th percentile per-packet one-way delay: 193.194 ms
Loss rate: 11.91%
-- Flow 2:
Average throughput: 38.72 Mbit/s
95th percentile per-packet one-way delay: 194.809 ms
Loss rate: 20.15%
-- Flow 3:
Average throughput: 17.92 Mbit/s
95th percentile per-packet one-way delay: 204.692 ms
Loss rate: 17.89%

Run 1: Report of FillP — Data Link

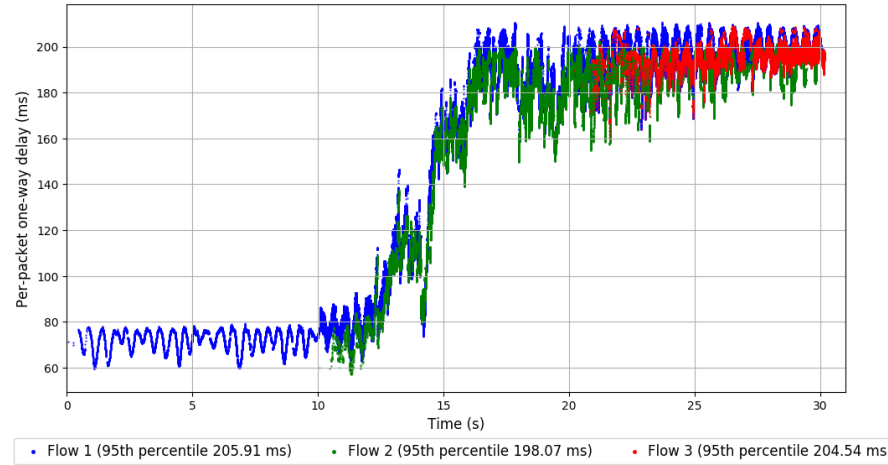
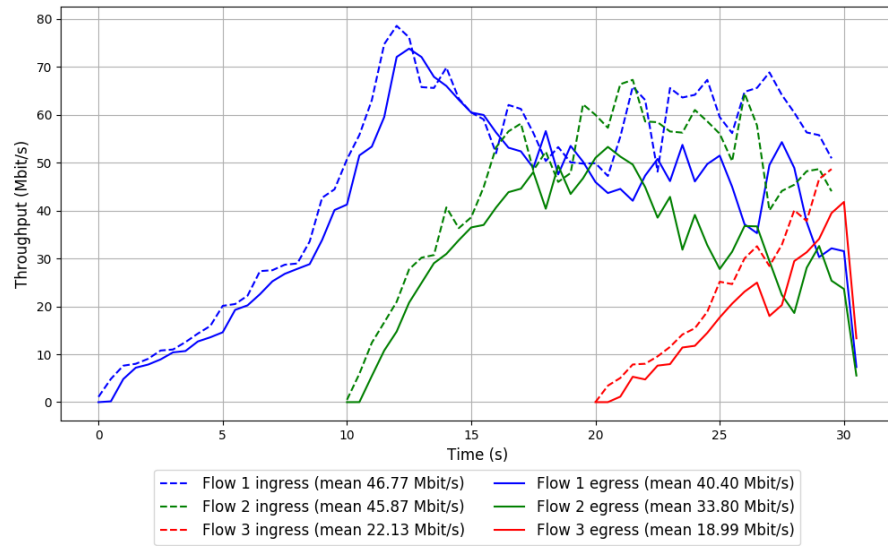


Run 2: Statistics of FillP

Start at: 2018-11-15 05:32:42
End at: 2018-11-15 05:33:12
Local clock offset: -4.036 ms
Remote clock offset: 36.324 ms

Below is generated by plot.py at 2018-11-15 06:56:32
Datalink statistics
-- Total of 3 flows:
Average throughput: 69.13 Mbit/s
95th percentile per-packet one-way delay: 204.438 ms
Loss rate: 18.02%
-- Flow 1:
Average throughput: 40.40 Mbit/s
95th percentile per-packet one-way delay: 205.908 ms
Loss rate: 13.44%
-- Flow 2:
Average throughput: 33.80 Mbit/s
95th percentile per-packet one-way delay: 198.071 ms
Loss rate: 25.97%
-- Flow 3:
Average throughput: 18.99 Mbit/s
95th percentile per-packet one-way delay: 204.543 ms
Loss rate: 14.13%

Run 2: Report of FillP — Data Link

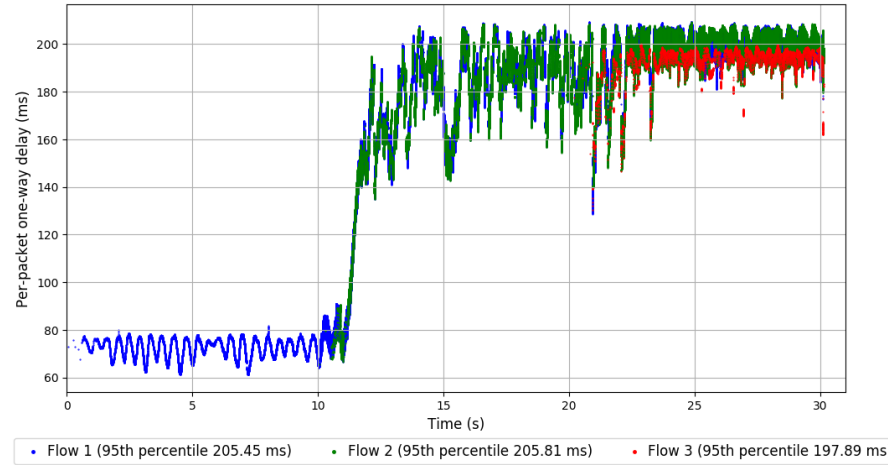
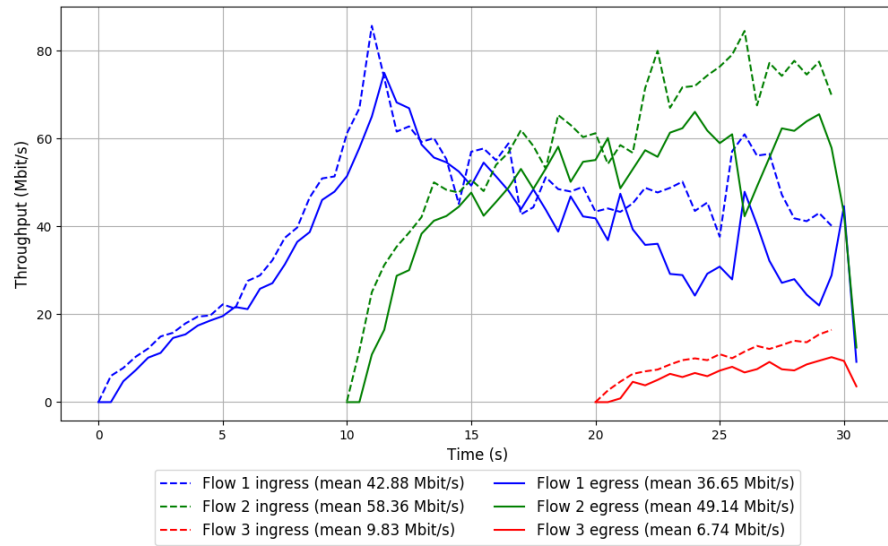


Run 3: Statistics of FillP

Start at: 2018-11-15 05:57:59
End at: 2018-11-15 05:58:29
Local clock offset: -2.494 ms
Remote clock offset: 31.951 ms

Below is generated by plot.py at 2018-11-15 06:56:32
Datalink statistics
-- Total of 3 flows:
Average throughput: 71.61 Mbit/s
95th percentile per-packet one-way delay: 205.601 ms
Loss rate: 15.46%
-- Flow 1:
Average throughput: 36.65 Mbit/s
95th percentile per-packet one-way delay: 205.454 ms
Loss rate: 14.33%
-- Flow 2:
Average throughput: 49.14 Mbit/s
95th percentile per-packet one-way delay: 205.805 ms
Loss rate: 15.35%
-- Flow 3:
Average throughput: 6.74 Mbit/s
95th percentile per-packet one-way delay: 197.892 ms
Loss rate: 31.68%

Run 3: Report of FillP — Data Link

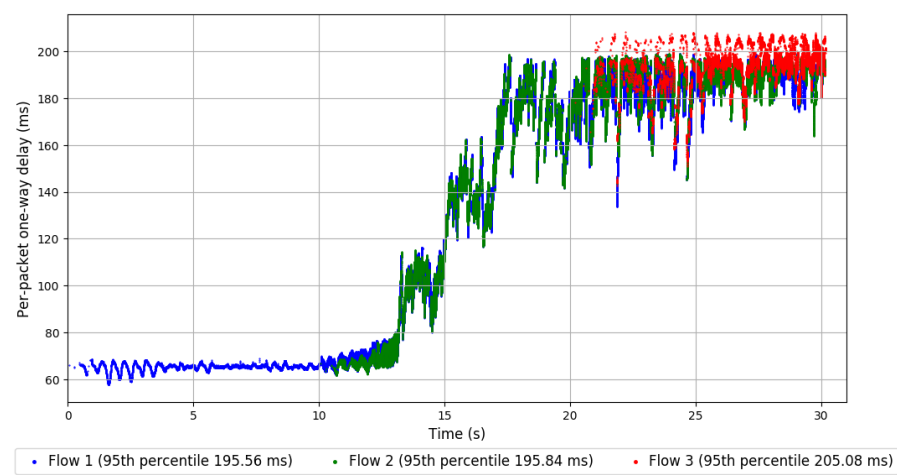
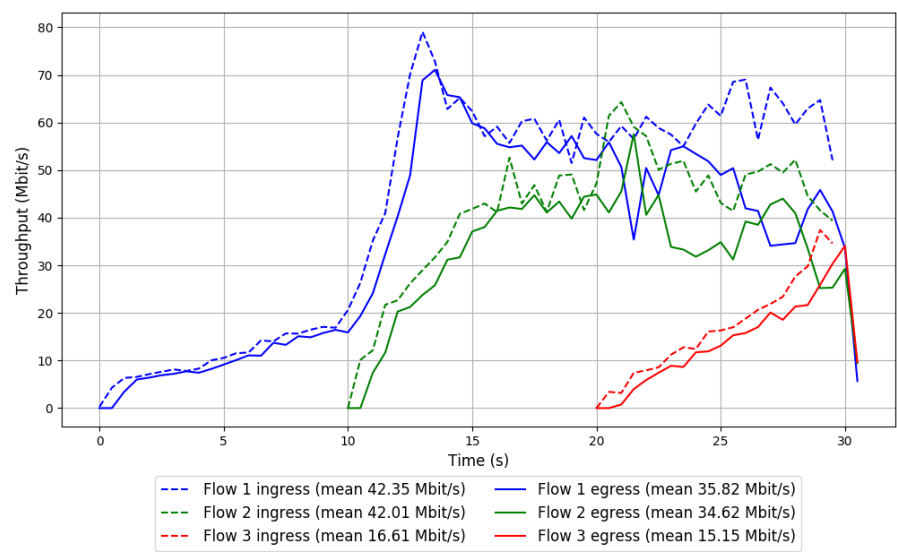


Run 4: Statistics of FillP

Start at: 2018-11-15 06:23:59
End at: 2018-11-15 06:24:29
Local clock offset: -2.801 ms
Remote clock offset: 33.414 ms

Below is generated by plot.py at 2018-11-15 06:56:44
Datalink statistics
-- Total of 3 flows:
Average throughput: 63.79 Mbit/s
95th percentile per-packet one-way delay: 196.435 ms
Loss rate: 15.50%
-- Flow 1:
Average throughput: 35.82 Mbit/s
95th percentile per-packet one-way delay: 195.565 ms
Loss rate: 15.26%
-- Flow 2:
Average throughput: 34.62 Mbit/s
95th percentile per-packet one-way delay: 195.838 ms
Loss rate: 17.22%
-- Flow 3:
Average throughput: 15.15 Mbit/s
95th percentile per-packet one-way delay: 205.084 ms
Loss rate: 8.61%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-11-15 06:49:41

End at: 2018-11-15 06:50:11

Local clock offset: 1.575 ms

Remote clock offset: 40.07 ms

Below is generated by plot.py at 2018-11-15 06:56:55

Datalink statistics

-- Total of 3 flows:

Average throughput: 68.33 Mbit/s

95th percentile per-packet one-way delay: 201.706 ms

Loss rate: 17.79%

-- Flow 1:

Average throughput: 30.48 Mbit/s

95th percentile per-packet one-way delay: 194.240 ms

Loss rate: 22.02%

-- Flow 2:

Average throughput: 50.54 Mbit/s

95th percentile per-packet one-way delay: 202.687 ms

Loss rate: 13.51%

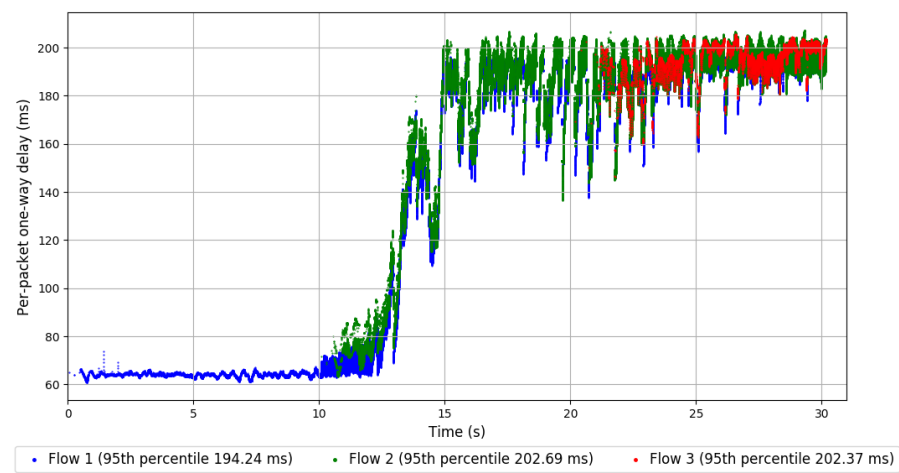
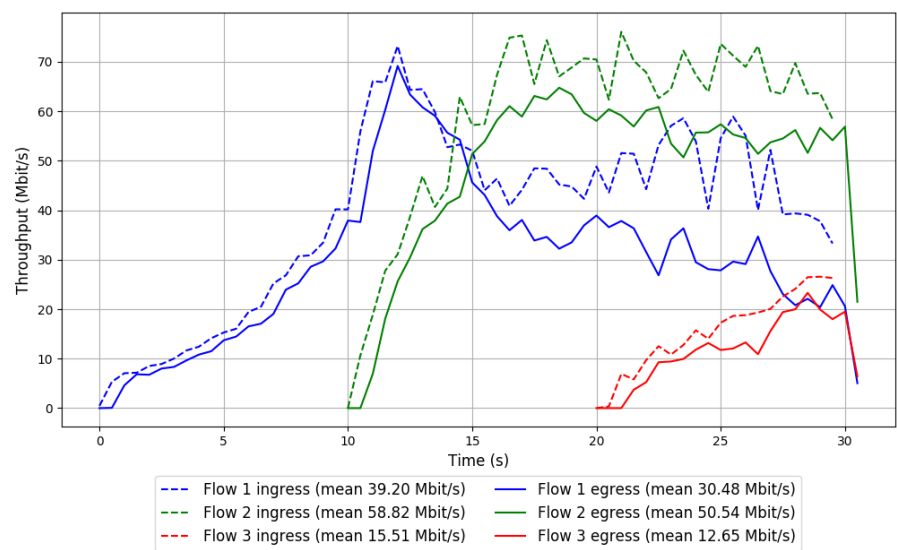
-- Flow 3:

Average throughput: 12.65 Mbit/s

95th percentile per-packet one-way delay: 202.367 ms

Loss rate: 18.14%

Run 5: Report of FillP — Data Link

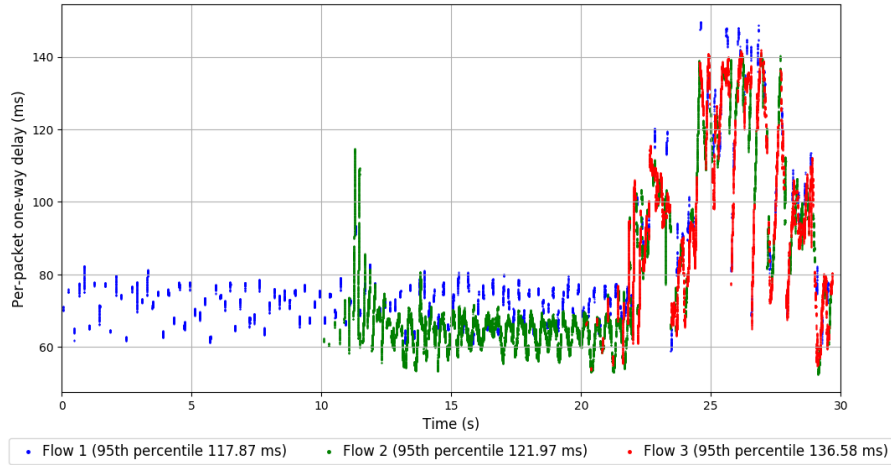
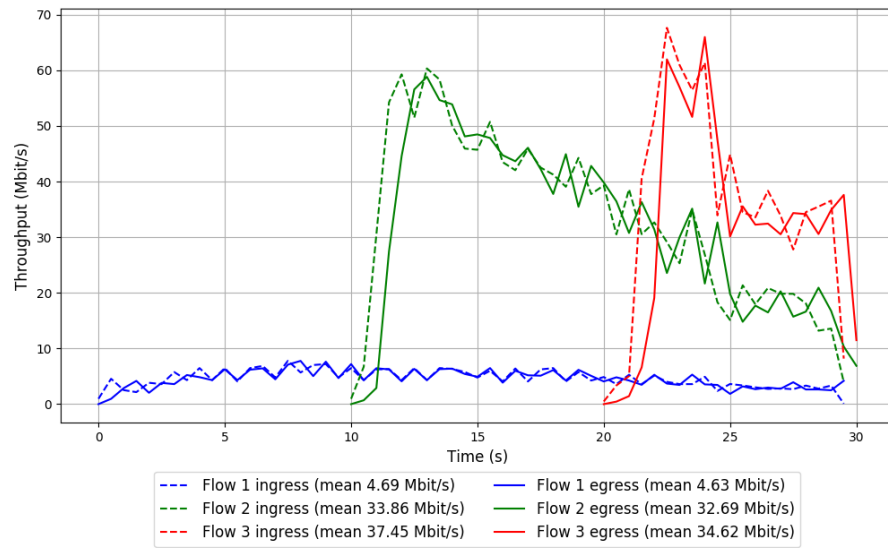



```
Run 1: Statistics of Indigo

Start at: 2018-11-15 04:54:48
End at: 2018-11-15 04:55:18
Local clock offset: -5.981 ms
Remote clock offset: 0.296 ms

# Below is generated by plot.py at 2018-11-15 06:56:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 37.23 Mbit/s
95th percentile per-packet one-way delay: 132.981 ms
Loss rate: 4.46%
-- Flow 1:
Average throughput: 4.63 Mbit/s
95th percentile per-packet one-way delay: 117.868 ms
Loss rate: 1.81%
-- Flow 2:
Average throughput: 32.69 Mbit/s
95th percentile per-packet one-way delay: 121.966 ms
Loss rate: 3.39%
-- Flow 3:
Average throughput: 34.62 Mbit/s
95th percentile per-packet one-way delay: 136.582 ms
Loss rate: 7.51%
```

Run 1: Report of Indigo — Data Link

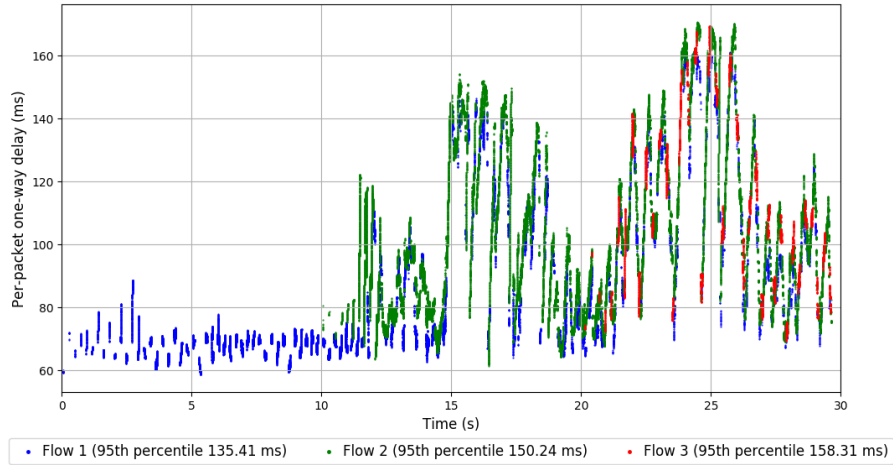
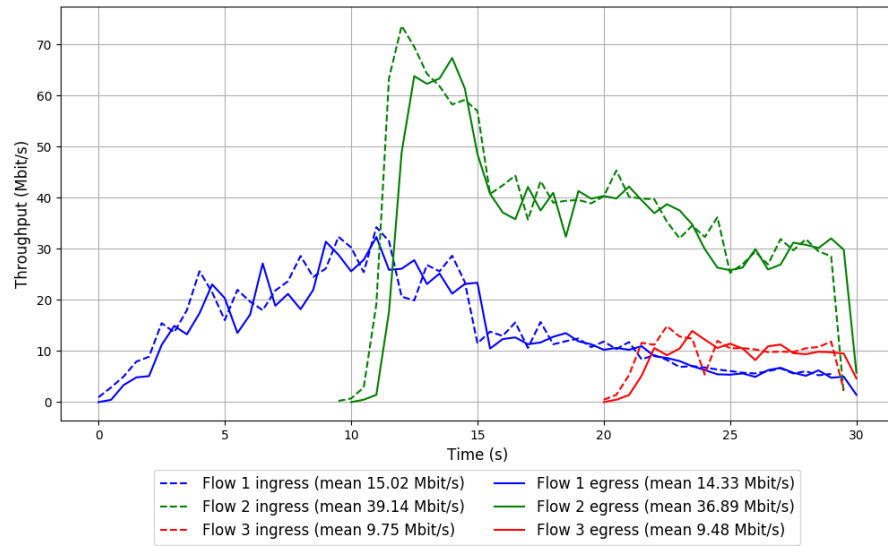


Run 2: Statistics of Indigo

Start at: 2018-11-15 05:19:43
End at: 2018-11-15 05:20:13
Local clock offset: -5.888 ms
Remote clock offset: 50.432 ms

Below is generated by plot.py at 2018-11-15 06:56:55
Datalink statistics
-- Total of 3 flows:
Average throughput: 41.75 Mbit/s
95th percentile per-packet one-way delay: 148.052 ms
Loss rate: 5.08%
-- Flow 1:
Average throughput: 14.33 Mbit/s
95th percentile per-packet one-way delay: 135.409 ms
Loss rate: 4.53%
-- Flow 2:
Average throughput: 36.89 Mbit/s
95th percentile per-packet one-way delay: 150.235 ms
Loss rate: 5.69%
-- Flow 3:
Average throughput: 9.48 Mbit/s
95th percentile per-packet one-way delay: 158.308 ms
Loss rate: 2.66%

Run 2: Report of Indigo — Data Link

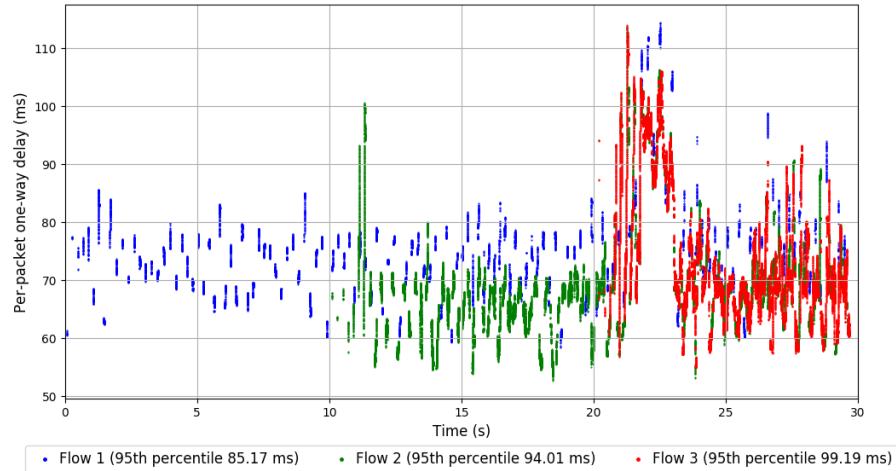
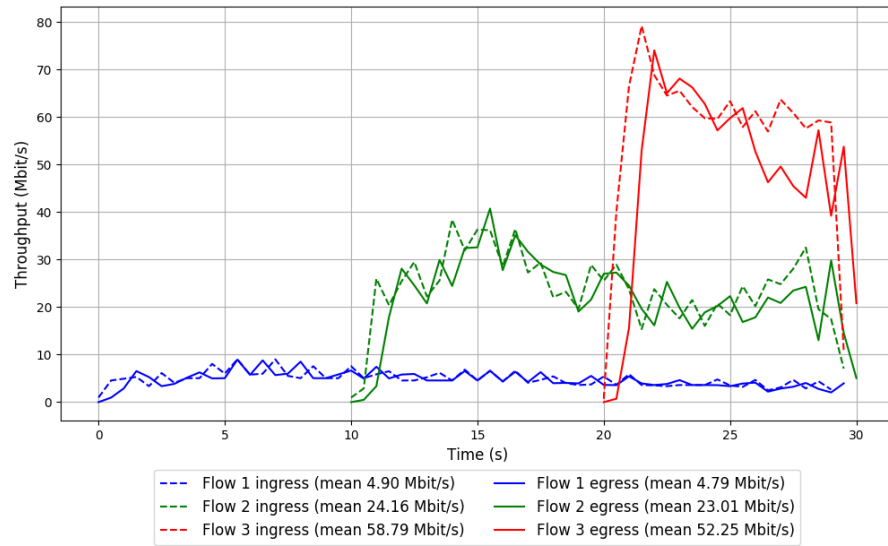


Run 3: Statistics of Indigo

Start at: 2018-11-15 05:45:14
End at: 2018-11-15 05:45:44
Local clock offset: -2.312 ms
Remote clock offset: 29.623 ms

Below is generated by plot.py at 2018-11-15 06:56:55
Datalink statistics
-- Total of 3 flows:
Average throughput: 36.65 Mbit/s
95th percentile per-packet one-way delay: 96.886 ms
Loss rate: 7.52%
-- Flow 1:
Average throughput: 4.79 Mbit/s
95th percentile per-packet one-way delay: 85.172 ms
Loss rate: 2.33%
-- Flow 2:
Average throughput: 23.01 Mbit/s
95th percentile per-packet one-way delay: 94.014 ms
Loss rate: 4.79%
-- Flow 3:
Average throughput: 52.25 Mbit/s
95th percentile per-packet one-way delay: 99.185 ms
Loss rate: 11.17%

Run 3: Report of Indigo — Data Link

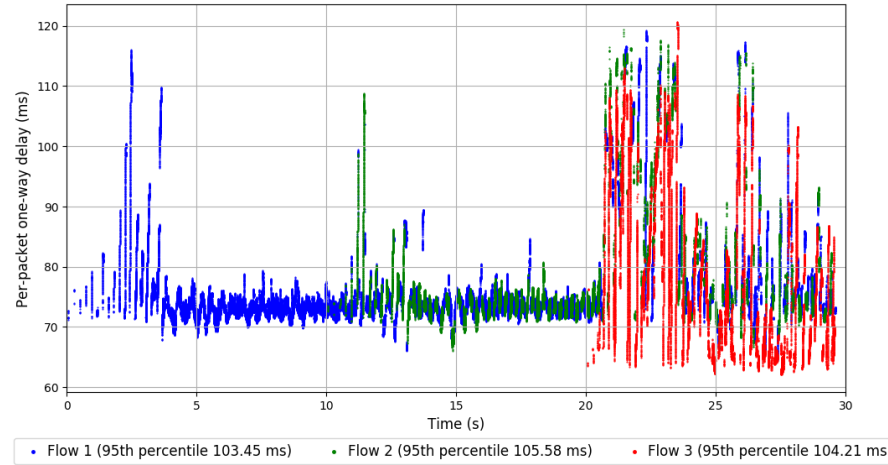
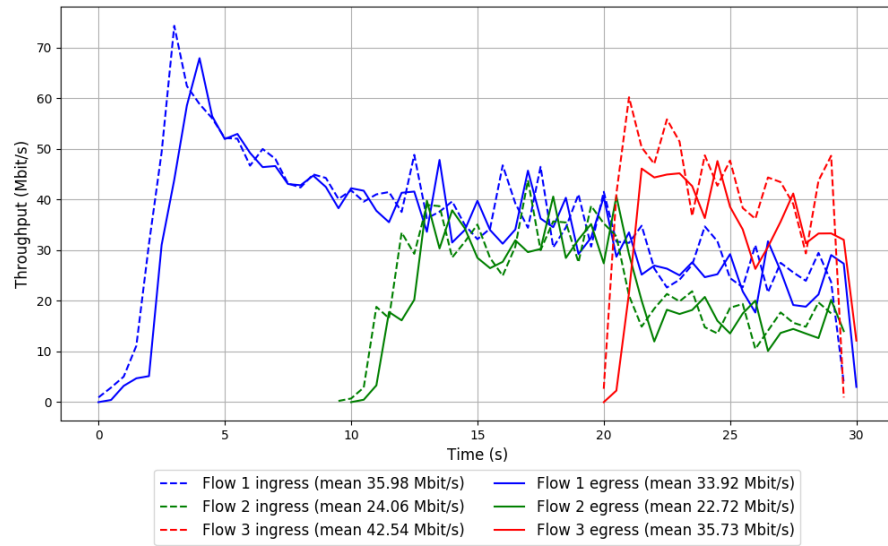


Run 4: Statistics of Indigo

Start at: 2018-11-15 06:10:57
End at: 2018-11-15 06:11:27
Local clock offset: -2.264 ms
Remote clock offset: 27.679 ms

```
# Below is generated by plot.py at 2018-11-15 06:57:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 60.33 Mbit/s
95th percentile per-packet one-way delay: 104.106 ms
Loss rate: 7.82%
-- Flow 1:
Average throughput: 33.92 Mbit/s
95th percentile per-packet one-way delay: 103.447 ms
Loss rate: 5.71%
-- Flow 2:
Average throughput: 22.72 Mbit/s
95th percentile per-packet one-way delay: 105.580 ms
Loss rate: 5.55%
-- Flow 3:
Average throughput: 35.73 Mbit/s
95th percentile per-packet one-way delay: 104.212 ms
Loss rate: 15.95%
```

Run 4: Report of Indigo — Data Link

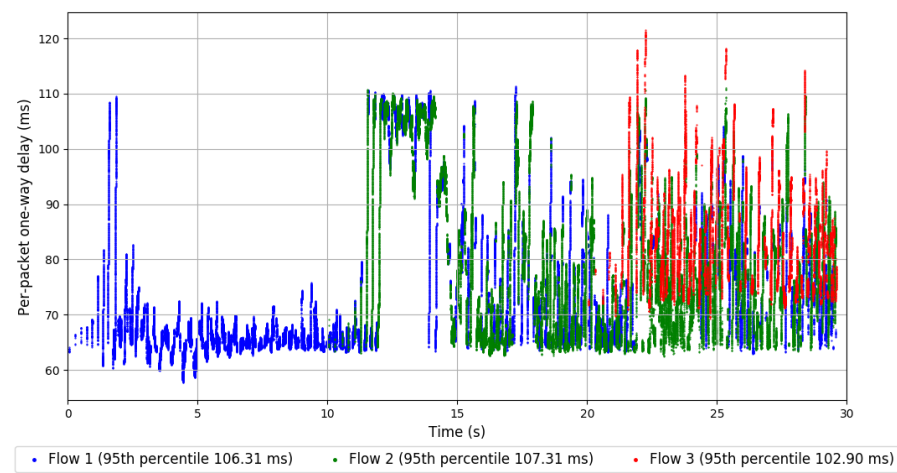
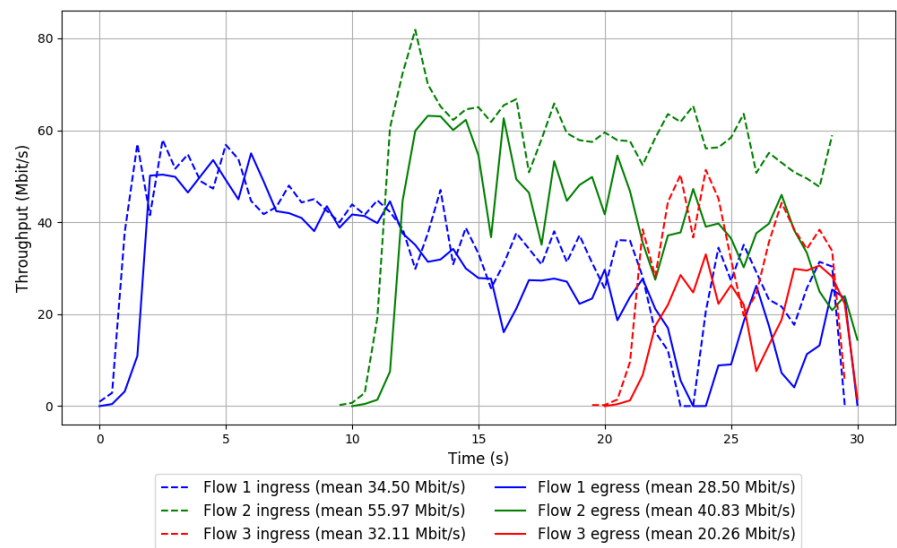


Run 5: Statistics of Indigo

Start at: 2018-11-15 06:36:50
End at: 2018-11-15 06:37:20
Local clock offset: 0.525 ms
Remote clock offset: 35.251 ms

```
# Below is generated by plot.py at 2018-11-15 06:57:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 62.05 Mbit/s
95th percentile per-packet one-way delay: 106.915 ms
Loss rate: 24.19%
-- Flow 1:
Average throughput: 28.50 Mbit/s
95th percentile per-packet one-way delay: 106.311 ms
Loss rate: 17.39%
-- Flow 2:
Average throughput: 40.83 Mbit/s
95th percentile per-packet one-way delay: 107.314 ms
Loss rate: 26.96%
-- Flow 3:
Average throughput: 20.26 Mbit/s
95th percentile per-packet one-way delay: 102.900 ms
Loss rate: 36.89%
```

Run 5: Report of Indigo — Data Link

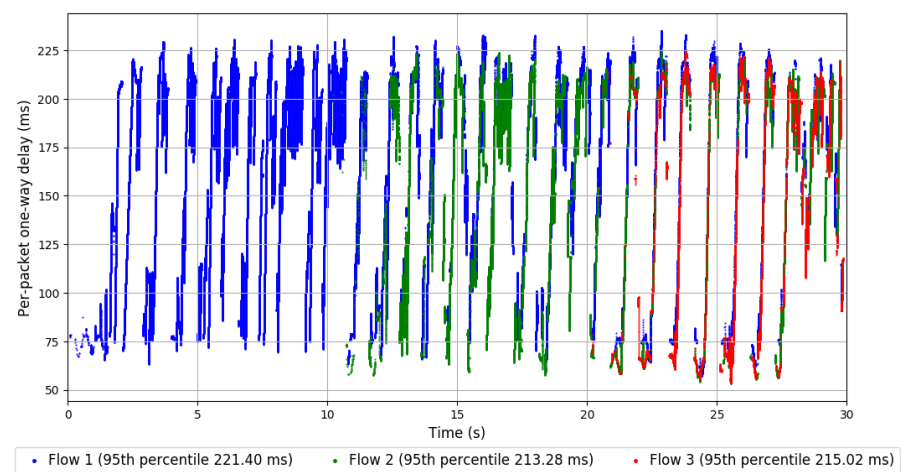
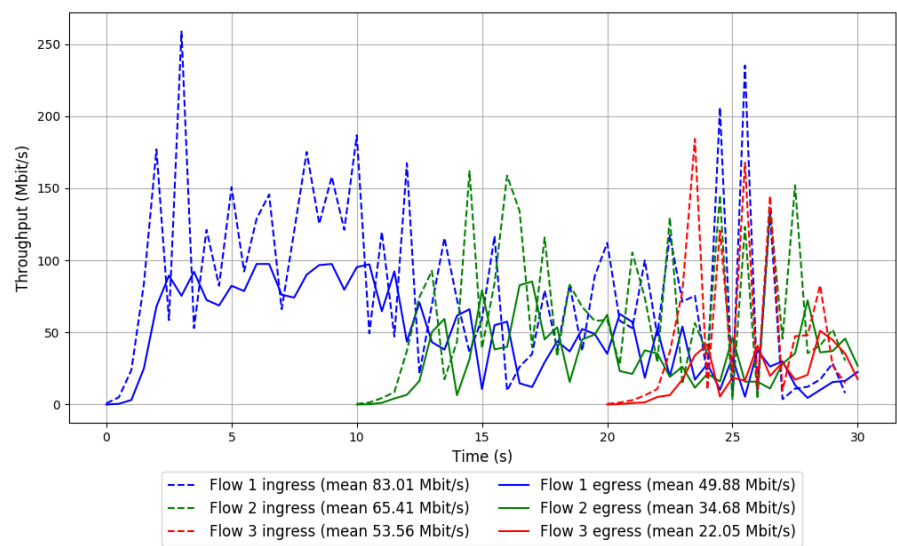


Run 1: Statistics of Indigo-96d2da3

Start at: 2018-11-15 04:51:57
End at: 2018-11-15 04:52:27
Local clock offset: -4.685 ms
Remote clock offset: -10.563 ms

Below is generated by plot.py at 2018-11-15 06:57:48
Datalink statistics
-- Total of 3 flows:
Average throughput: 79.78 Mbit/s
95th percentile per-packet one-way delay: 220.204 ms
Loss rate: 44.24%
-- Flow 1:
Average throughput: 49.88 Mbit/s
95th percentile per-packet one-way delay: 221.402 ms
Loss rate: 39.82%
-- Flow 2:
Average throughput: 34.68 Mbit/s
95th percentile per-packet one-way delay: 213.278 ms
Loss rate: 46.97%
-- Flow 3:
Average throughput: 22.05 Mbit/s
95th percentile per-packet one-way delay: 215.021 ms
Loss rate: 58.67%

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

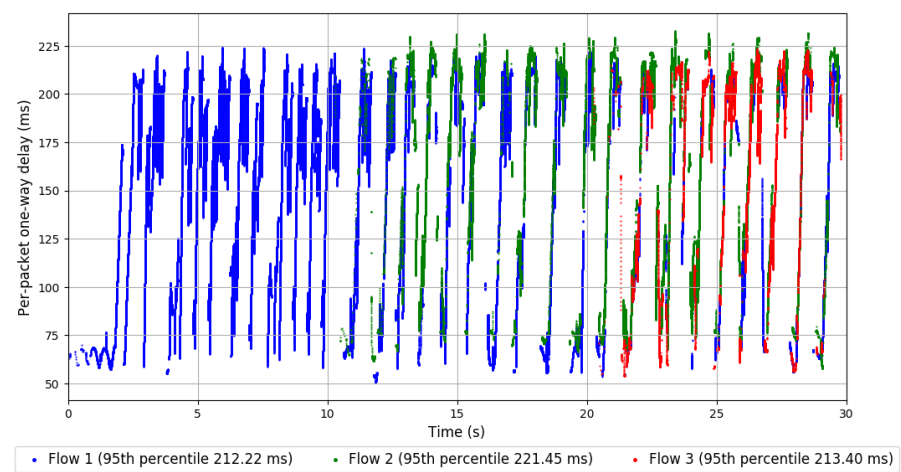
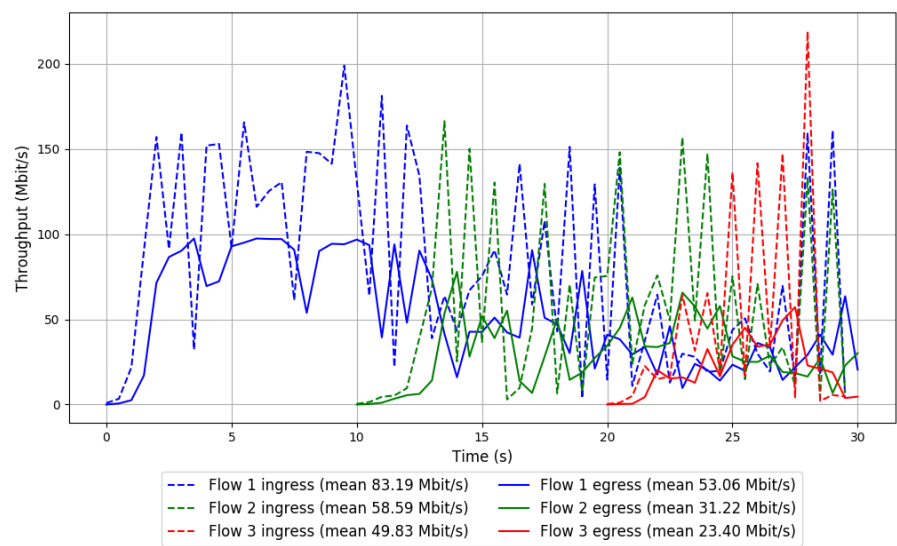


Run 2: Statistics of Indigo-96d2da3

Start at: 2018-11-15 05:16:43
End at: 2018-11-15 05:17:13
Local clock offset: -5.348 ms
Remote clock offset: 47.352 ms

Below is generated by plot.py at 2018-11-15 06:57:49
Datalink statistics
-- Total of 3 flows:
Average throughput: 80.92 Mbit/s
95th percentile per-packet one-way delay: 217.672 ms
Loss rate: 40.97%
-- Flow 1:
Average throughput: 53.06 Mbit/s
95th percentile per-packet one-way delay: 212.225 ms
Loss rate: 35.91%
-- Flow 2:
Average throughput: 31.22 Mbit/s
95th percentile per-packet one-way delay: 221.448 ms
Loss rate: 46.75%
-- Flow 3:
Average throughput: 23.40 Mbit/s
95th percentile per-packet one-way delay: 213.399 ms
Loss rate: 53.22%

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

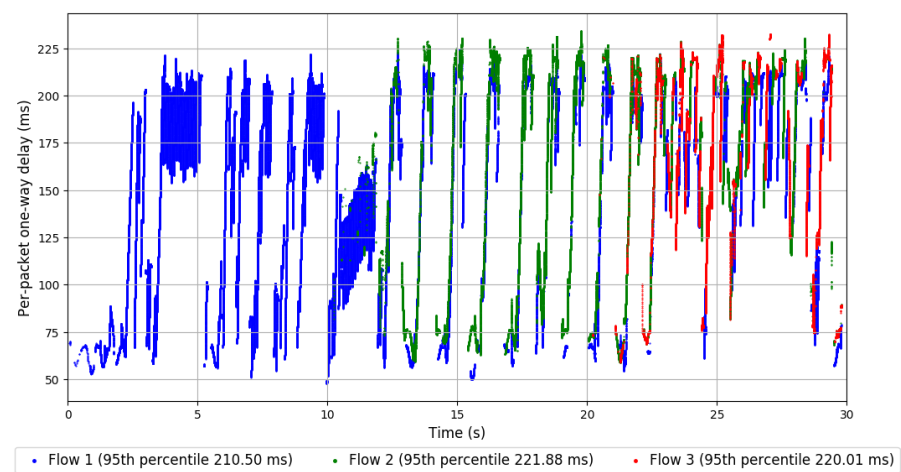
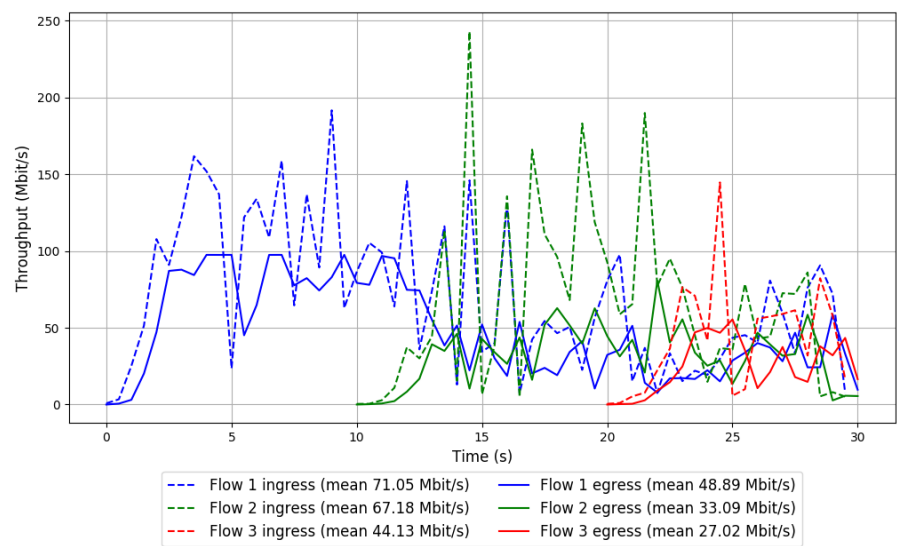


Run 3: Statistics of Indigo-96d2da3

Start at: 2018-11-15 05:42:15
End at: 2018-11-15 05:42:45
Local clock offset: -2.388 ms
Remote clock offset: 29.579 ms

Below is generated by plot.py at 2018-11-15 06:57:49
Datalink statistics
-- Total of 3 flows:
Average throughput: 79.35 Mbit/s
95th percentile per-packet one-way delay: 219.156 ms
Loss rate: 38.70%
-- Flow 1:
Average throughput: 48.89 Mbit/s
95th percentile per-packet one-way delay: 210.503 ms
Loss rate: 31.17%
-- Flow 2:
Average throughput: 33.09 Mbit/s
95th percentile per-packet one-way delay: 221.875 ms
Loss rate: 50.79%
-- Flow 3:
Average throughput: 27.02 Mbit/s
95th percentile per-packet one-way delay: 220.012 ms
Loss rate: 38.67%

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

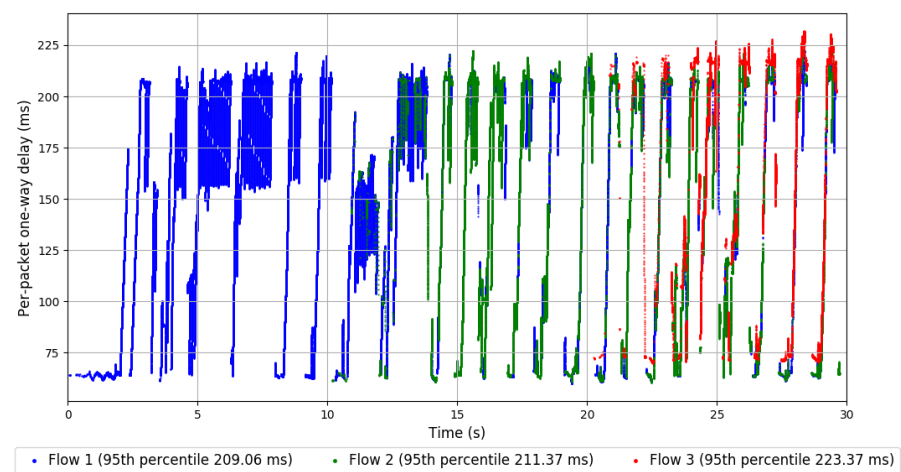
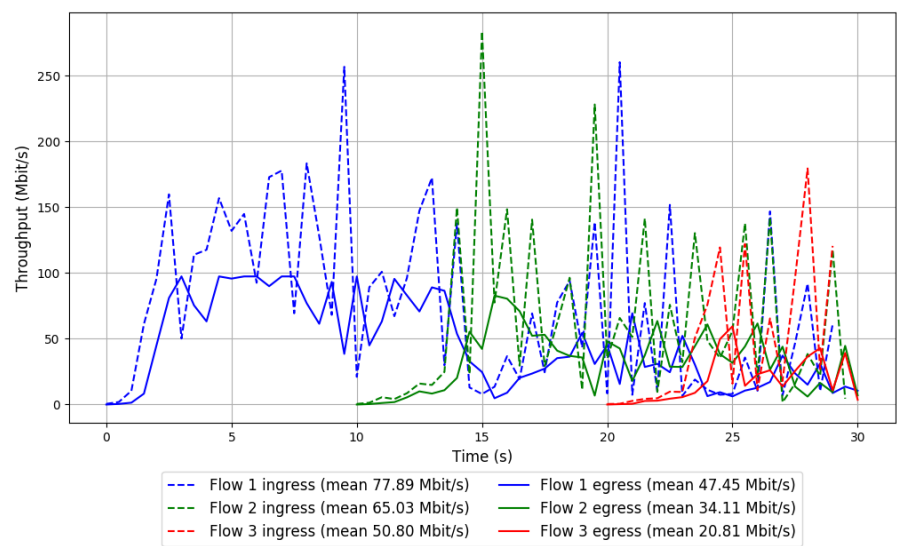


Run 4: Statistics of Indigo-96d2da3

Start at: 2018-11-15 06:07:52
End at: 2018-11-15 06:08:22
Local clock offset: -2.138 ms
Remote clock offset: 27.964 ms

Below is generated by plot.py at 2018-11-15 06:57:49
Datalink statistics
-- Total of 3 flows:
Average throughput: 76.23 Mbit/s
95th percentile per-packet one-way delay: 213.309 ms
Loss rate: 43.83%
-- Flow 1:
Average throughput: 47.45 Mbit/s
95th percentile per-packet one-way delay: 209.055 ms
Loss rate: 38.79%
-- Flow 2:
Average throughput: 34.11 Mbit/s
95th percentile per-packet one-way delay: 211.374 ms
Loss rate: 47.53%
-- Flow 3:
Average throughput: 20.81 Mbit/s
95th percentile per-packet one-way delay: 223.369 ms
Loss rate: 58.46%

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

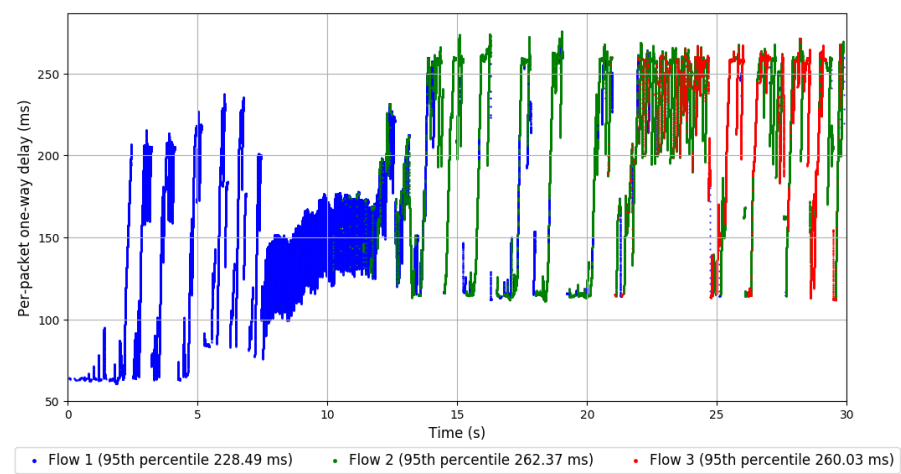
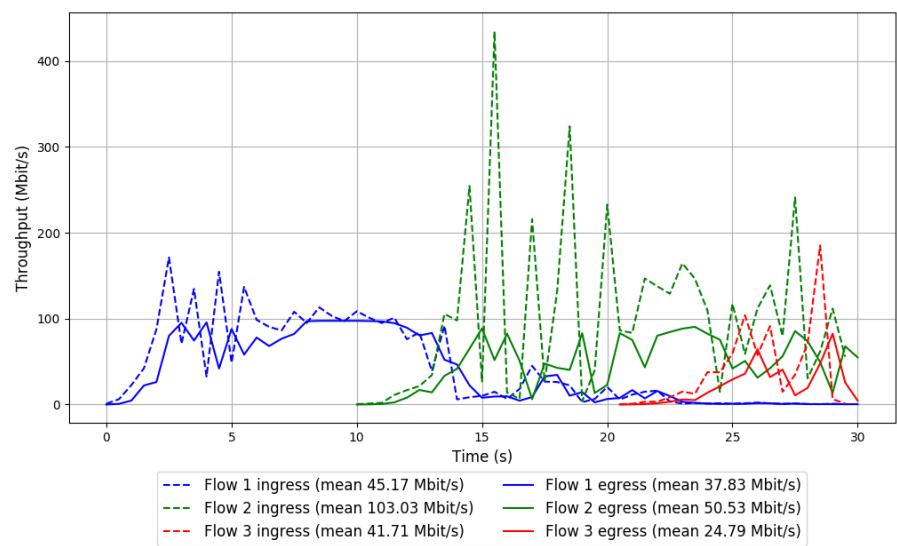


Run 5: Statistics of Indigo-96d2da3

Start at: 2018-11-15 06:33:51
End at: 2018-11-15 06:34:21
Local clock offset: -0.318 ms
Remote clock offset: 33.383 ms

Below is generated by plot.py at 2018-11-15 06:58:03
Datalink statistics
-- Total of 3 flows:
Average throughput: 78.54 Mbit/s
95th percentile per-packet one-way delay: 259.885 ms
Loss rate: 37.15%
-- Flow 1:
Average throughput: 37.83 Mbit/s
95th percentile per-packet one-way delay: 228.492 ms
Loss rate: 15.80%
-- Flow 2:
Average throughput: 50.53 Mbit/s
95th percentile per-packet one-way delay: 262.366 ms
Loss rate: 50.75%
-- Flow 3:
Average throughput: 24.79 Mbit/s
95th percentile per-packet one-way delay: 260.026 ms
Loss rate: 40.36%

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

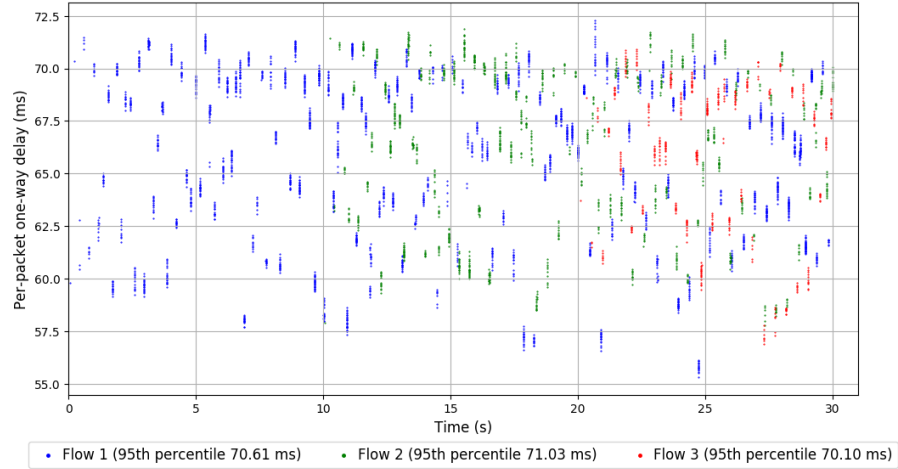
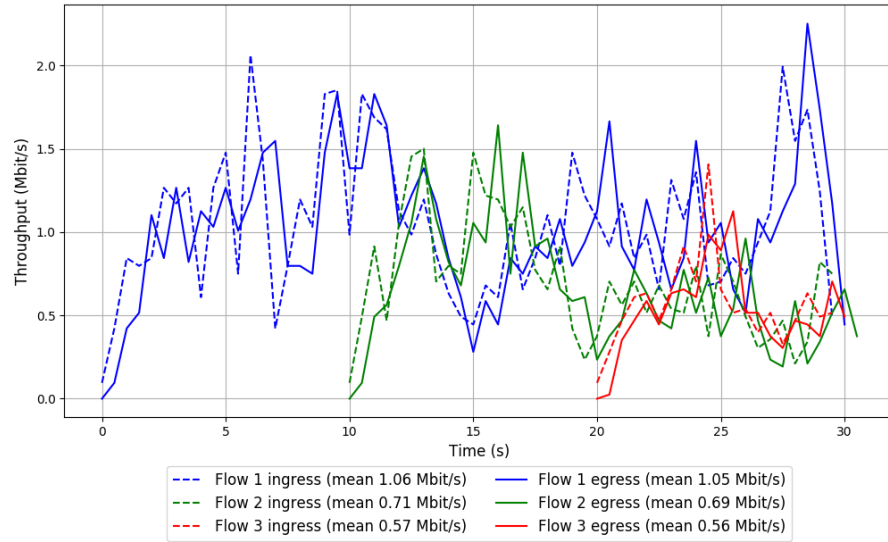


```
Run 1: Statistics of LEDBAT

Start at: 2018-11-15 05:11:22
End at: 2018-11-15 05:11:52
Local clock offset: -5.036 ms
Remote clock offset: 41.47 ms

# Below is generated by plot.py at 2018-11-15 06:58:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.68 Mbit/s
95th percentile per-packet one-way delay: 70.736 ms
Loss rate: 2.17%
-- Flow 1:
Average throughput: 1.05 Mbit/s
95th percentile per-packet one-way delay: 70.614 ms
Loss rate: 1.56%
-- Flow 2:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 71.028 ms
Loss rate: 3.22%
-- Flow 3:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 70.104 ms
Loss rate: 2.90%
```

Run 1: Report of LEDBAT — Data Link

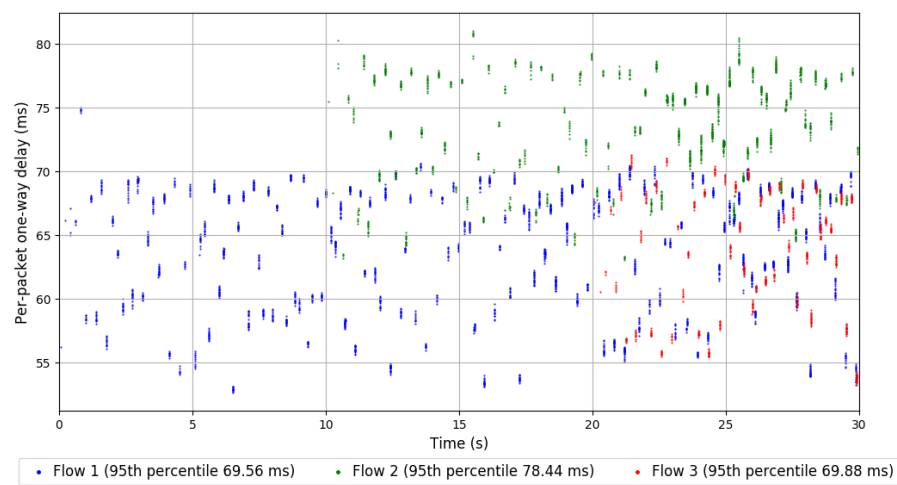
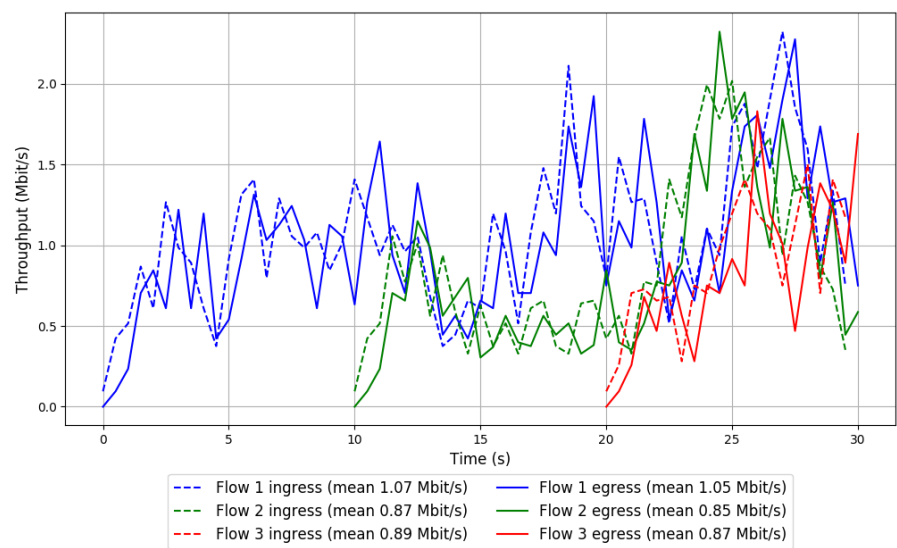


Run 2: Statistics of LEDBAT

Start at: 2018-11-15 05:36:52
End at: 2018-11-15 05:37:22
Local clock offset: -2.858 ms
Remote clock offset: 32.445 ms

Below is generated by plot.py at 2018-11-15 06:58:03
Datalink statistics
-- Total of 3 flows:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 77.561 ms
Loss rate: 1.99%
-- Flow 1:
Average throughput: 1.05 Mbit/s
95th percentile per-packet one-way delay: 69.559 ms
Loss rate: 1.77%
-- Flow 2:
Average throughput: 0.85 Mbit/s
95th percentile per-packet one-way delay: 78.441 ms
Loss rate: 2.32%
-- Flow 3:
Average throughput: 0.87 Mbit/s
95th percentile per-packet one-way delay: 69.875 ms
Loss rate: 2.16%

Run 2: Report of LEDBAT — Data Link

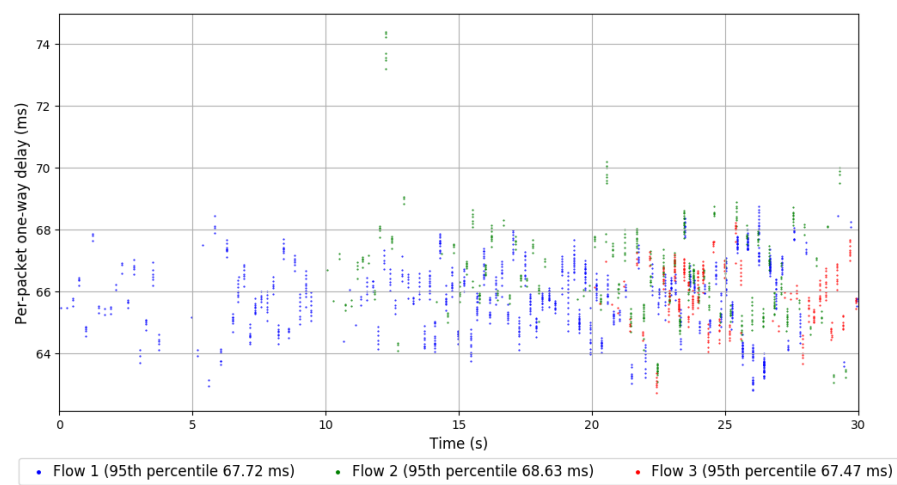
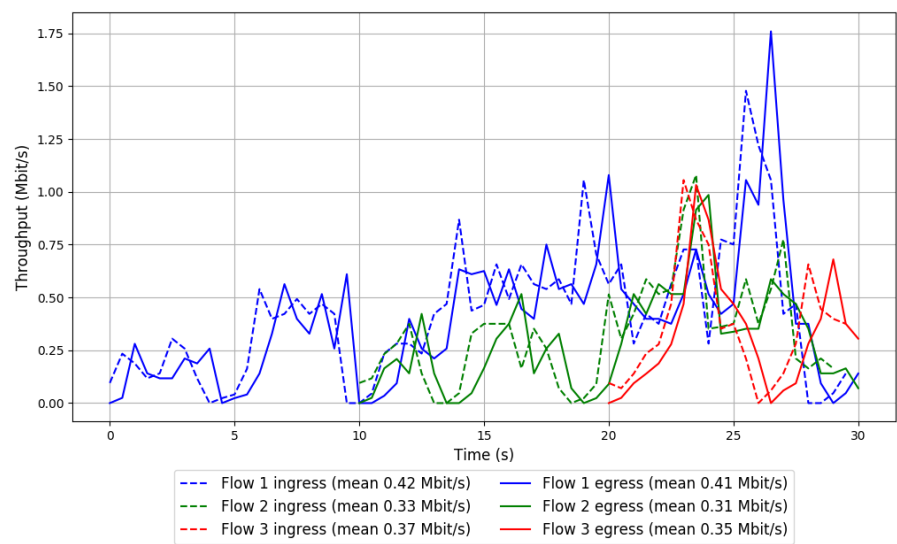


Run 3: Statistics of LEDBAT

Start at: 2018-11-15 06:02:23
End at: 2018-11-15 06:02:53
Local clock offset: -2.33 ms
Remote clock offset: 30.105 ms

Below is generated by plot.py at 2018-11-15 06:58:03
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.72 Mbit/s
95th percentile per-packet one-way delay: 68.060 ms
Loss rate: 4.74%
-- Flow 1:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 67.724 ms
Loss rate: 4.03%
-- Flow 2:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 68.629 ms
Loss rate: 5.91%
-- Flow 3:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 67.465 ms
Loss rate: 5.17%

Run 3: Report of LEDBAT — Data Link

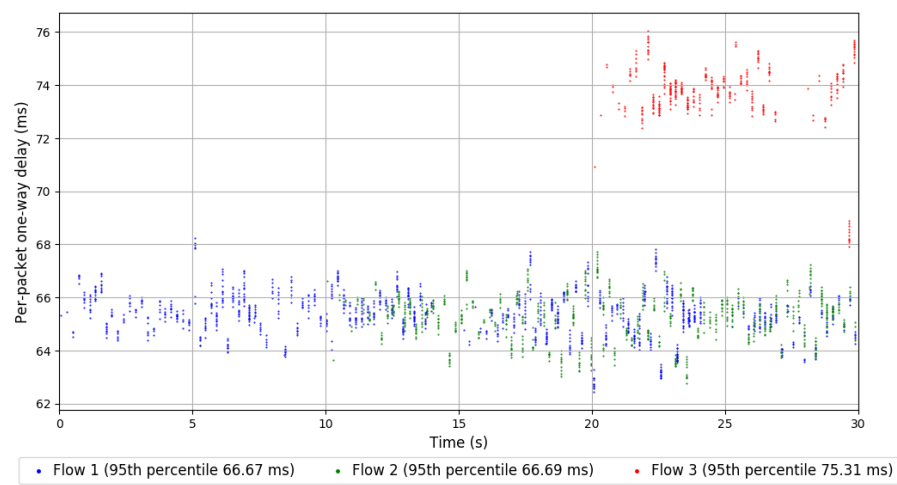
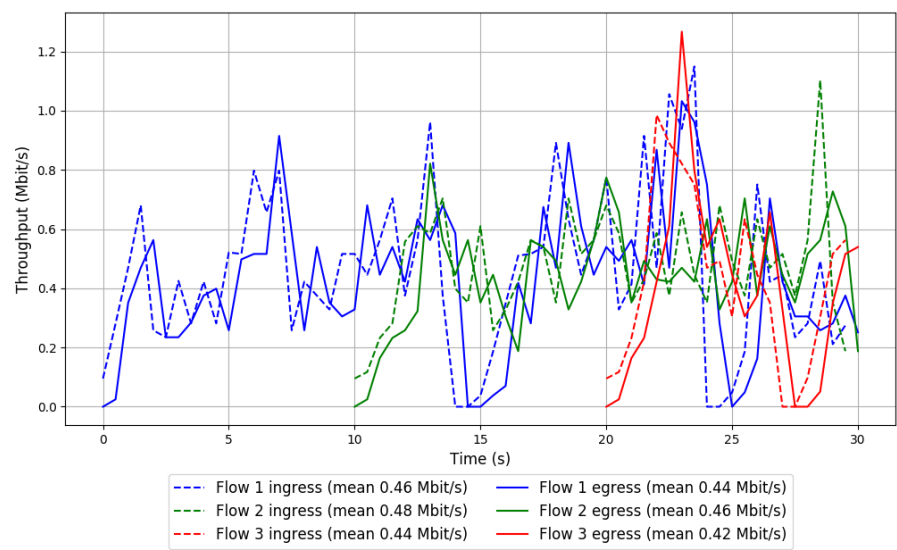


Run 4: Statistics of LEDBAT

Start at: 2018-11-15 06:28:19
End at: 2018-11-15 06:28:49
Local clock offset: -2.427 ms
Remote clock offset: 32.641 ms

Below is generated by plot.py at 2018-11-15 06:58:03
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.88 Mbit/s
95th percentile per-packet one-way delay: 74.180 ms
Loss rate: 4.37%
-- Flow 1:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 66.671 ms
Loss rate: 4.57%
-- Flow 2:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 66.690 ms
Loss rate: 4.81%
-- Flow 3:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 75.312 ms
Loss rate: 2.76%

Run 4: Report of LEDBAT — Data Link

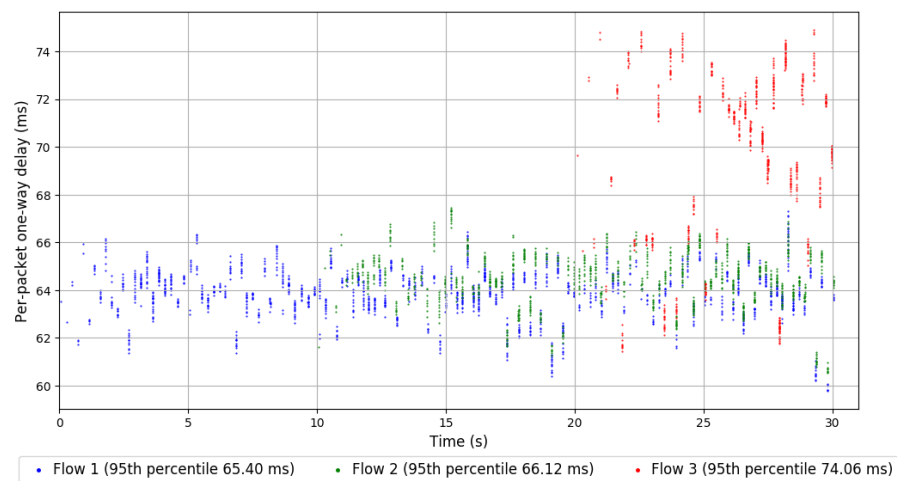
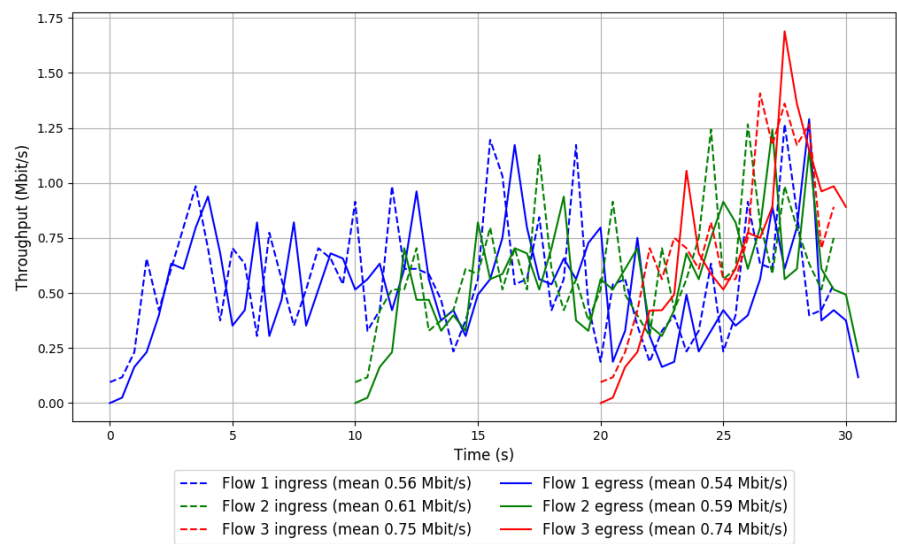


Run 5: Statistics of LEDBAT

Start at: 2018-11-15 06:53:53
End at: 2018-11-15 06:54:23
Local clock offset: 1.626 ms
Remote clock offset: 41.844 ms

Below is generated by plot.py at 2018-11-15 06:58:03
Datalink statistics
-- Total of 3 flows:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 72.556 ms
Loss rate: 3.03%
-- Flow 1:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 65.404 ms
Loss rate: 3.55%
-- Flow 2:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 66.120 ms
Loss rate: 3.30%
-- Flow 3:
Average throughput: 0.74 Mbit/s
95th percentile per-packet one-way delay: 74.061 ms
Loss rate: 1.42%

Run 5: Report of LEDBAT — Data Link

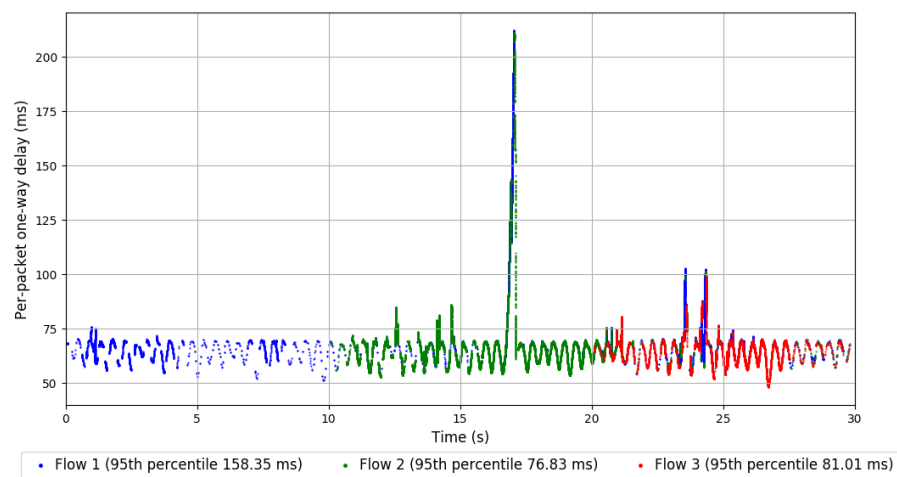
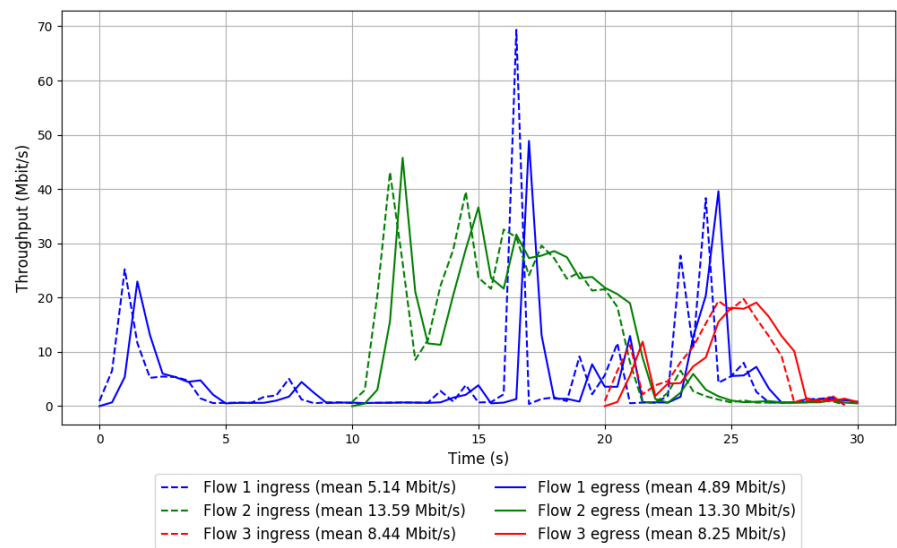


Run 1: Statistics of Indigo-Muses

Start at: 2018-11-15 04:49:21
End at: 2018-11-15 04:49:51
Local clock offset: -3.449 ms
Remote clock offset: -18.238 ms

Below is generated by plot.py at 2018-11-15 06:58:03
Datalink statistics
-- Total of 3 flows:
Average throughput: 16.40 Mbit/s
95th percentile per-packet one-way delay: 101.530 ms
Loss rate: 2.97%
-- Flow 1:
Average throughput: 4.89 Mbit/s
95th percentile per-packet one-way delay: 158.350 ms
Loss rate: 4.85%
-- Flow 2:
Average throughput: 13.30 Mbit/s
95th percentile per-packet one-way delay: 76.829 ms
Loss rate: 2.14%
-- Flow 3:
Average throughput: 8.25 Mbit/s
95th percentile per-packet one-way delay: 81.007 ms
Loss rate: 2.18%

Run 1: Report of Indigo-Muses — Data Link

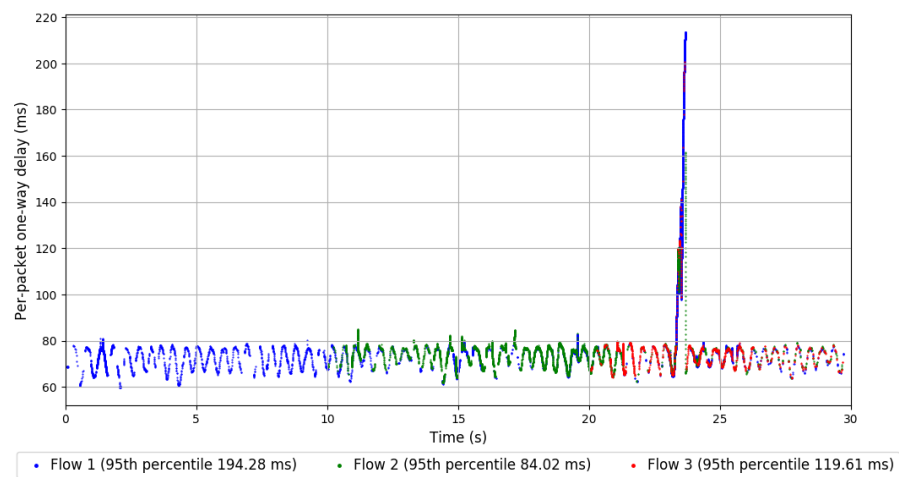
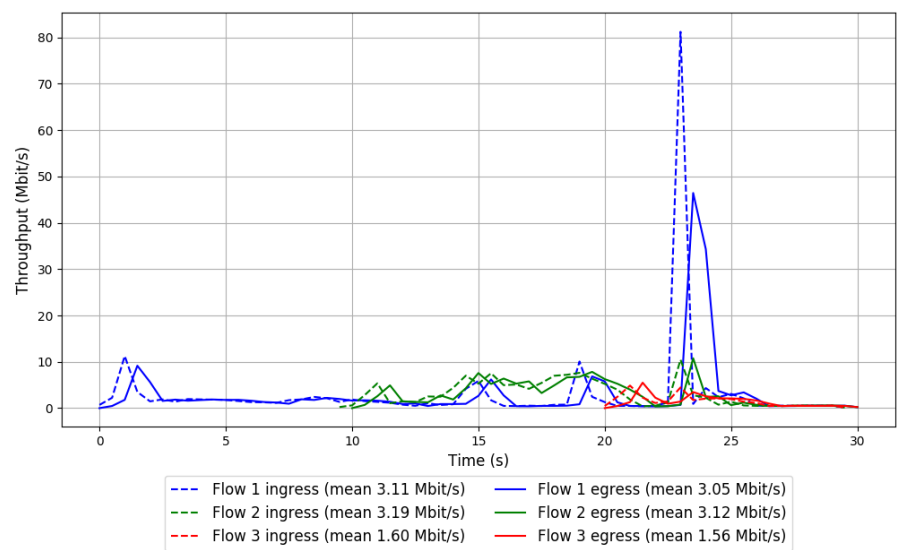


Run 2: Statistics of Indigo-Muses

Start at: 2018-11-15 05:14:05
End at: 2018-11-15 05:14:35
Local clock offset: -5.037 ms
Remote clock offset: 44.243 ms

Below is generated by plot.py at 2018-11-15 06:58:03
Datalink statistics
-- Total of 3 flows:
Average throughput: 5.63 Mbit/s
95th percentile per-packet one-way delay: 166.118 ms
Loss rate: 1.90%
-- Flow 1:
Average throughput: 3.05 Mbit/s
95th percentile per-packet one-way delay: 194.279 ms
Loss rate: 1.73%
-- Flow 2:
Average throughput: 3.12 Mbit/s
95th percentile per-packet one-way delay: 84.016 ms
Loss rate: 2.12%
-- Flow 3:
Average throughput: 1.56 Mbit/s
95th percentile per-packet one-way delay: 119.606 ms
Loss rate: 2.05%

Run 2: Report of Indigo-Muses — Data Link

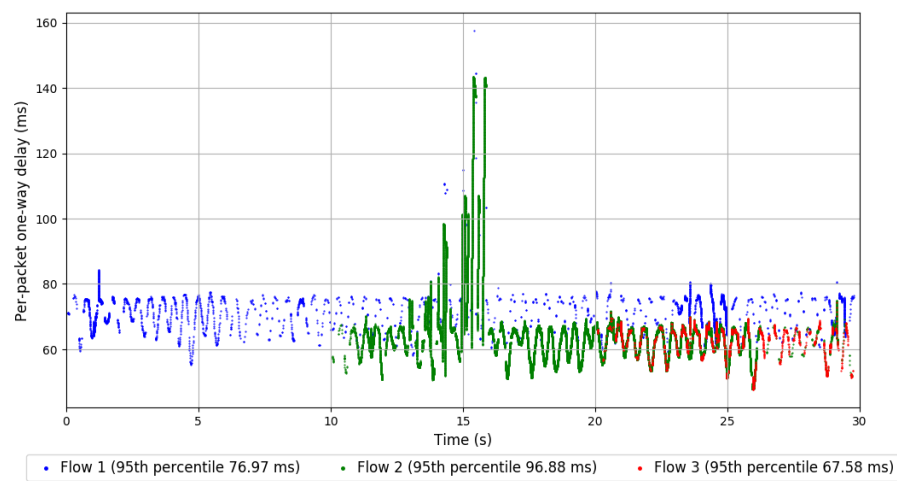
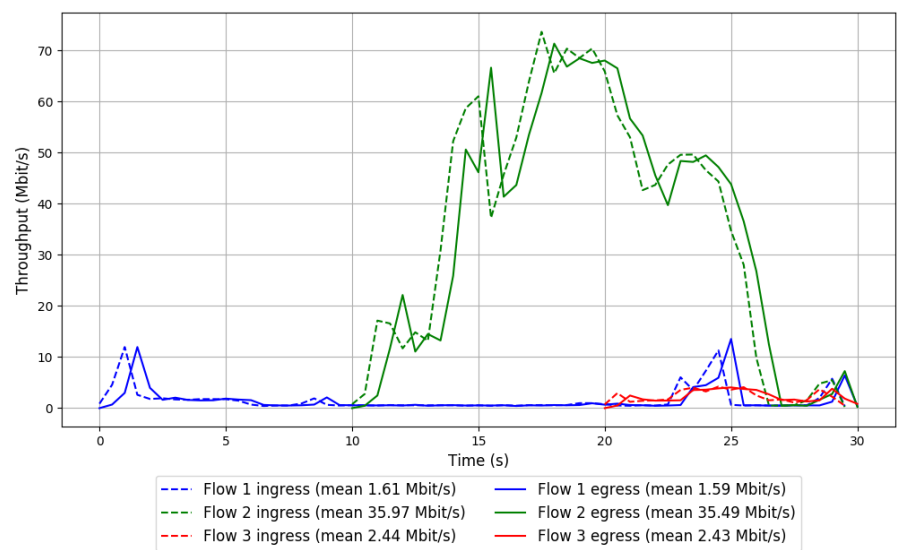


Run 3: Statistics of Indigo-Muses

Start at: 2018-11-15 05:39:35
End at: 2018-11-15 05:40:05
Local clock offset: -2.222 ms
Remote clock offset: 29.444 ms

Below is generated by plot.py at 2018-11-15 06:58:03
Datalink statistics
-- Total of 3 flows:
Average throughput: 25.84 Mbit/s
95th percentile per-packet one-way delay: 94.766 ms
Loss rate: 1.35%
-- Flow 1:
Average throughput: 1.59 Mbit/s
95th percentile per-packet one-way delay: 76.969 ms
Loss rate: 1.46%
-- Flow 2:
Average throughput: 35.49 Mbit/s
95th percentile per-packet one-way delay: 96.884 ms
Loss rate: 1.37%
-- Flow 3:
Average throughput: 2.43 Mbit/s
95th percentile per-packet one-way delay: 67.585 ms
Loss rate: 0.59%

Run 3: Report of Indigo-Muses — Data Link

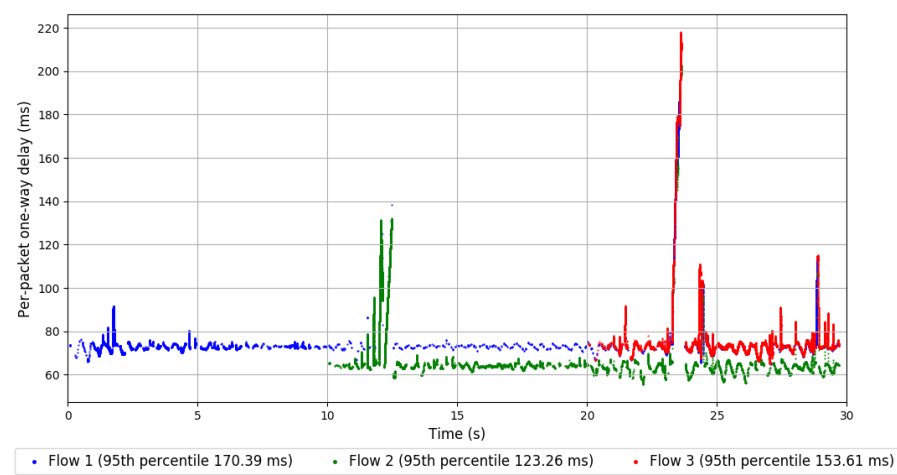
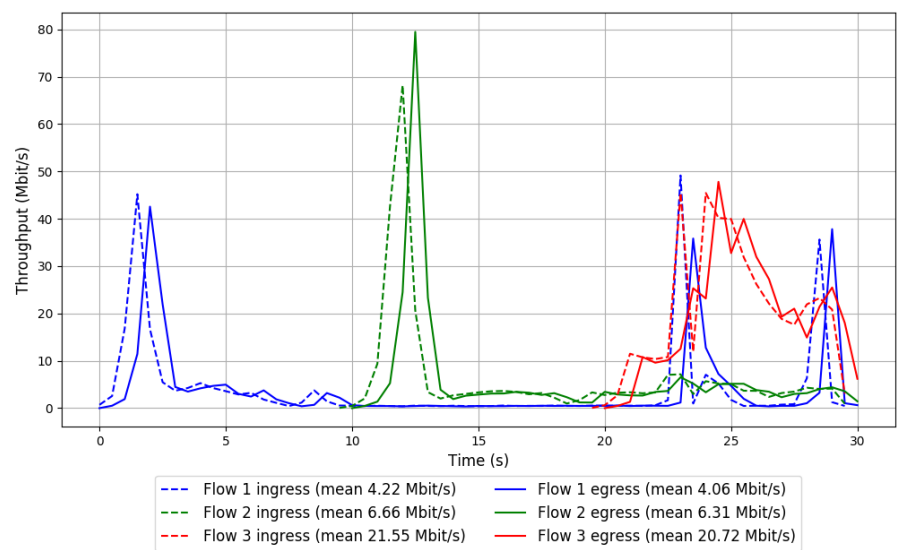


Run 4: Statistics of Indigo-Muses

Start at: 2018-11-15 06:05:10
End at: 2018-11-15 06:05:40
Local clock offset: -2.18 ms
Remote clock offset: 28.382 ms

Below is generated by plot.py at 2018-11-15 06:58:03
Datalink statistics
-- Total of 3 flows:
Average throughput: 14.98 Mbit/s
95th percentile per-packet one-way delay: 154.377 ms
Loss rate: 4.23%
-- Flow 1:
Average throughput: 4.06 Mbit/s
95th percentile per-packet one-way delay: 170.394 ms
Loss rate: 3.70%
-- Flow 2:
Average throughput: 6.31 Mbit/s
95th percentile per-packet one-way delay: 123.263 ms
Loss rate: 5.32%
-- Flow 3:
Average throughput: 20.72 Mbit/s
95th percentile per-packet one-way delay: 153.611 ms
Loss rate: 3.87%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-11-15 06:31:06

End at: 2018-11-15 06:31:36

Local clock offset: -1.166 ms

Remote clock offset: 32.41 ms

Below is generated by plot.py at 2018-11-15 06:58:03

Datalink statistics

-- Total of 3 flows:

Average throughput: 35.93 Mbit/s

95th percentile per-packet one-way delay: 107.934 ms

Loss rate: 5.25%

-- Flow 1:

Average throughput: 20.79 Mbit/s

95th percentile per-packet one-way delay: 109.170 ms

Loss rate: 5.56%

-- Flow 2:

Average throughput: 12.85 Mbit/s

95th percentile per-packet one-way delay: 117.694 ms

Loss rate: 5.23%

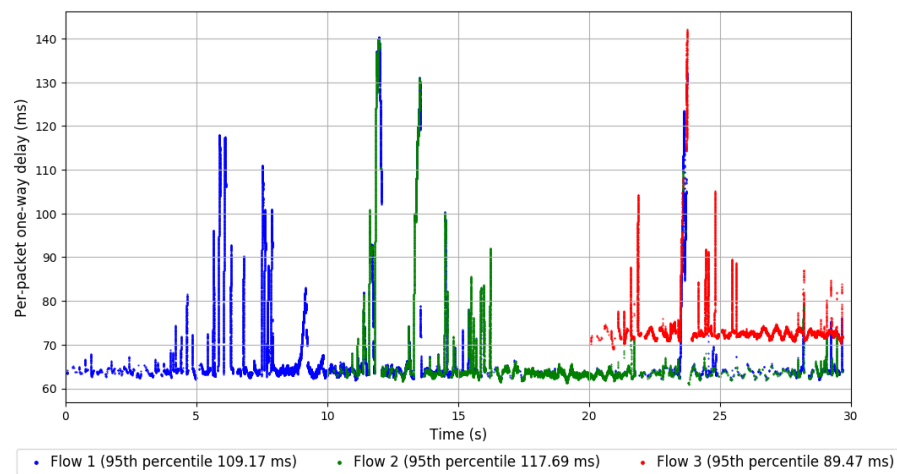
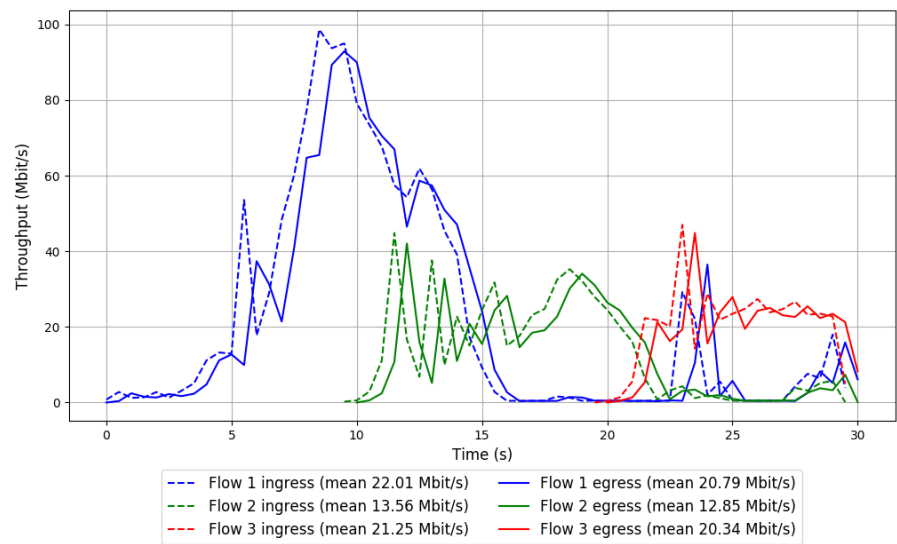
-- Flow 3:

Average throughput: 20.34 Mbit/s

95th percentile per-packet one-way delay: 89.475 ms

Loss rate: 4.29%

Run 5: Report of Indigo-Muses — Data Link

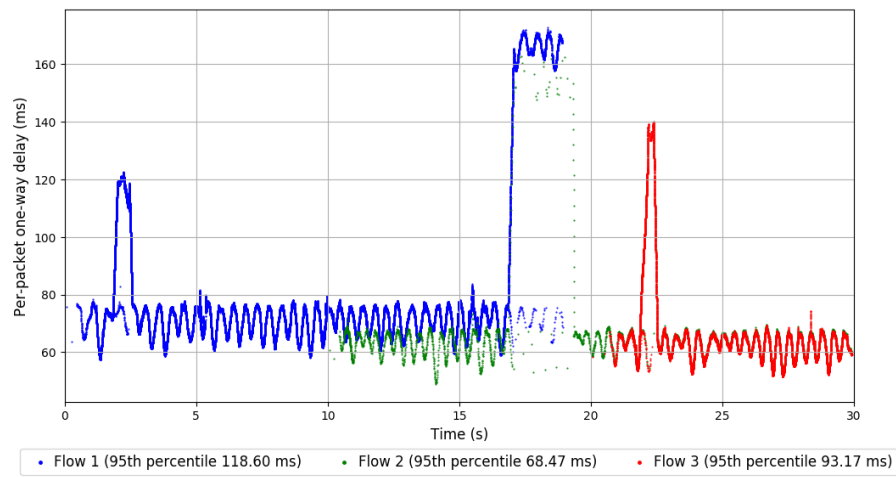
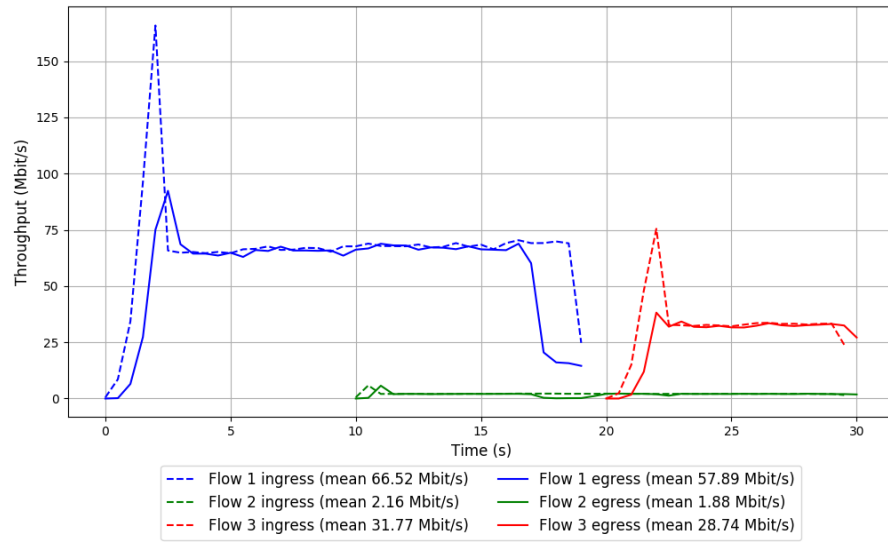


Run 1: Statistics of PCC-Allegro

Start at: 2018-11-15 04:47:56
End at: 2018-11-15 04:48:26
Local clock offset: -2.309 ms
Remote clock offset: -19.467 ms

Below is generated by plot.py at 2018-11-15 06:58:14
Datalink statistics
-- Total of 3 flows:
Average throughput: 47.29 Mbit/s
95th percentile per-packet one-way delay: 115.981 ms
Loss rate: 13.47%
-- Flow 1:
Average throughput: 57.89 Mbit/s
95th percentile per-packet one-way delay: 118.597 ms
Loss rate: 14.44%
-- Flow 2:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 68.465 ms
Loss rate: 13.13%
-- Flow 3:
Average throughput: 28.74 Mbit/s
95th percentile per-packet one-way delay: 93.175 ms
Loss rate: 9.54%

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-11-15 05:12:40

End at: 2018-11-15 05:13:10

Local clock offset: -5.09 ms

Remote clock offset: 42.15 ms

Below is generated by plot.py at 2018-11-15 06:58:14

Datalink statistics

-- Total of 3 flows:

Average throughput: 39.68 Mbit/s

95th percentile per-packet one-way delay: 97.391 ms

Loss rate: 3.82%

-- Flow 1:

Average throughput: 8.95 Mbit/s

95th percentile per-packet one-way delay: 69.288 ms

Loss rate: 2.63%

-- Flow 2:

Average throughput: 31.26 Mbit/s

95th percentile per-packet one-way delay: 97.343 ms

Loss rate: 3.21%

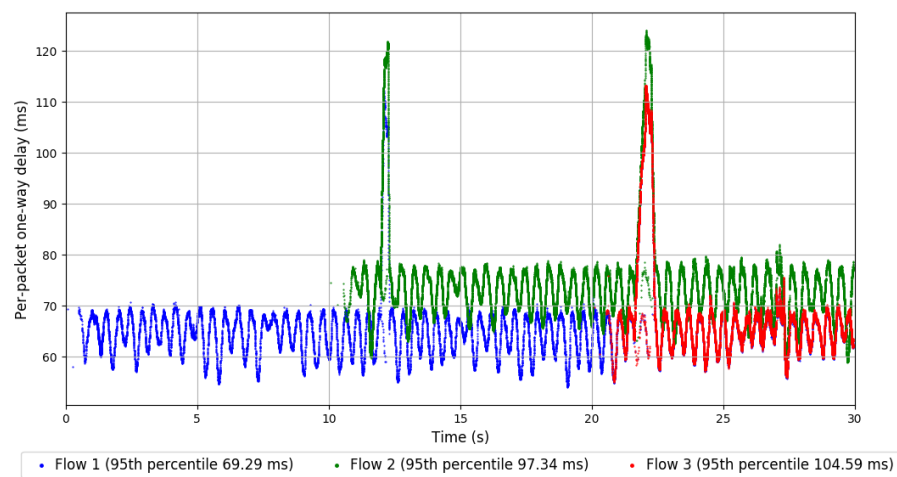
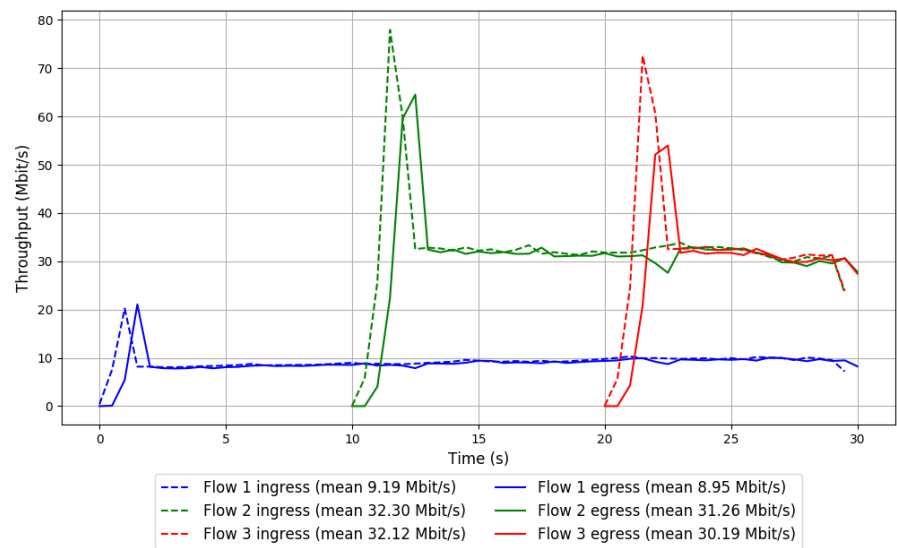
-- Flow 3:

Average throughput: 30.19 Mbit/s

95th percentile per-packet one-way delay: 104.591 ms

Loss rate: 6.10%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-11-15 05:38:10

End at: 2018-11-15 05:38:40

Local clock offset: -2.677 ms

Remote clock offset: 30.83 ms

Below is generated by plot.py at 2018-11-15 06:58:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 47.51 Mbit/s

95th percentile per-packet one-way delay: 112.345 ms

Loss rate: 11.48%

-- Flow 1:

Average throughput: 56.97 Mbit/s

95th percentile per-packet one-way delay: 117.181 ms

Loss rate: 12.43%

-- Flow 2:

Average throughput: 15.15 Mbit/s

95th percentile per-packet one-way delay: 99.914 ms

Loss rate: 9.20%

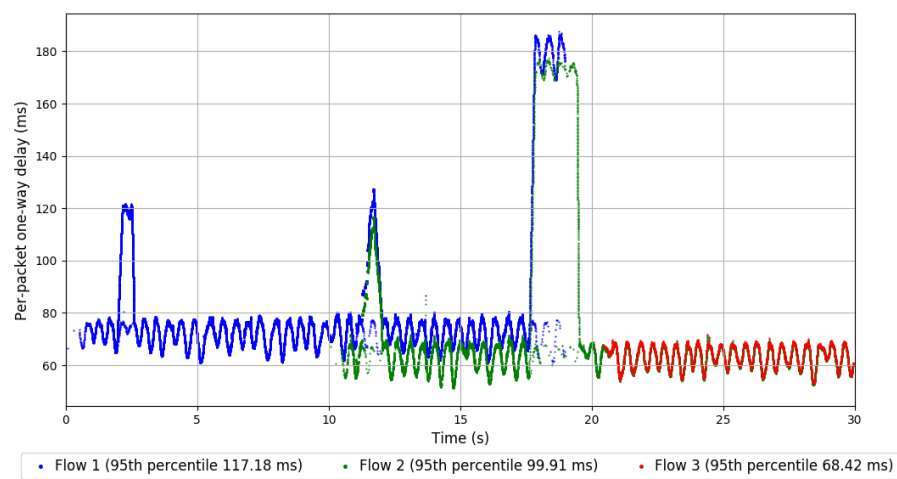
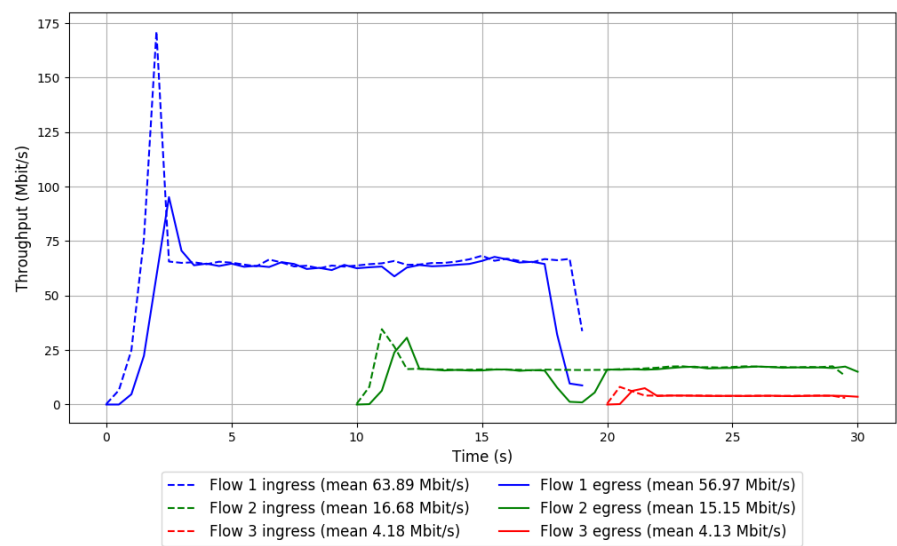
-- Flow 3:

Average throughput: 4.13 Mbit/s

95th percentile per-packet one-way delay: 68.417 ms

Loss rate: 1.43%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-11-15 06:03:42

End at: 2018-11-15 06:04:12

Local clock offset: -2.26 ms

Remote clock offset: 31.46 ms

Below is generated by plot.py at 2018-11-15 06:58:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 39.23 Mbit/s

95th percentile per-packet one-way delay: 149.375 ms

Loss rate: 22.05%

-- Flow 1:

Average throughput: 54.93 Mbit/s

95th percentile per-packet one-way delay: 141.044 ms

Loss rate: 19.21%

-- Flow 2:

Average throughput: 1.55 Mbit/s

95th percentile per-packet one-way delay: 140.137 ms

Loss rate: 30.34%

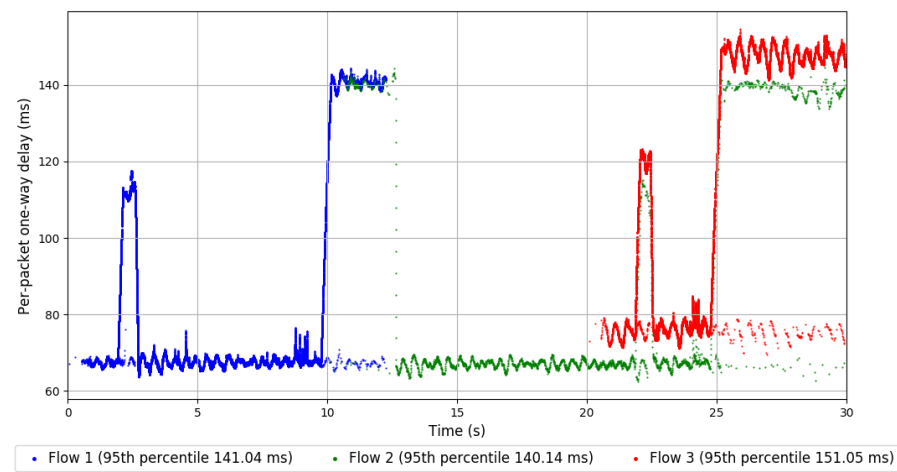
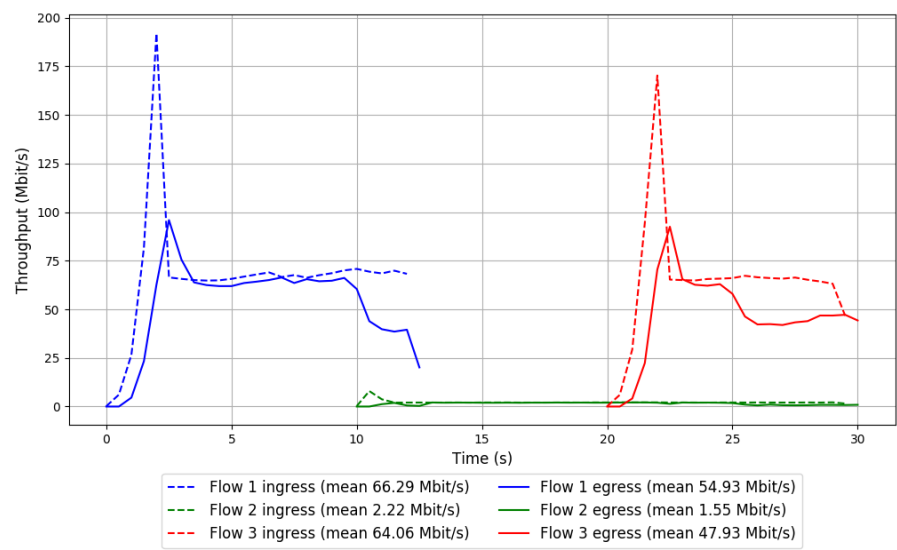
-- Flow 3:

Average throughput: 47.93 Mbit/s

95th percentile per-packet one-way delay: 151.053 ms

Loss rate: 25.18%

Run 4: Report of PCC-Allegro — Data Link

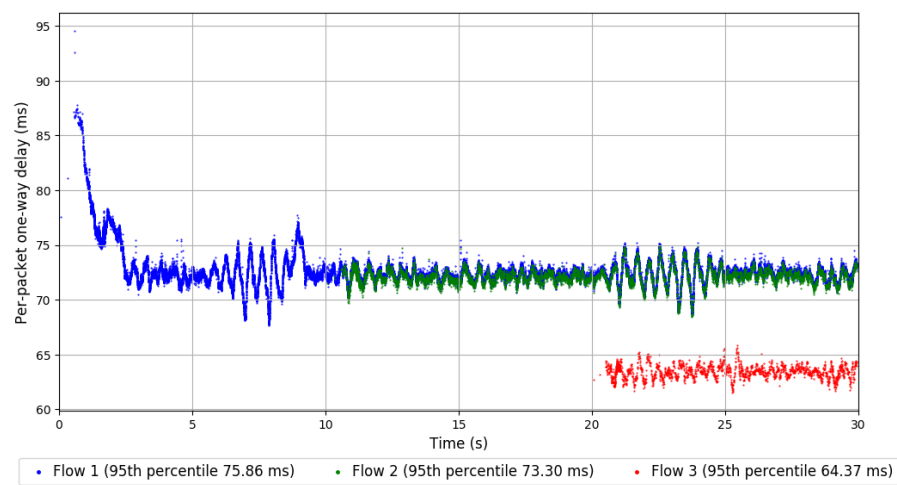
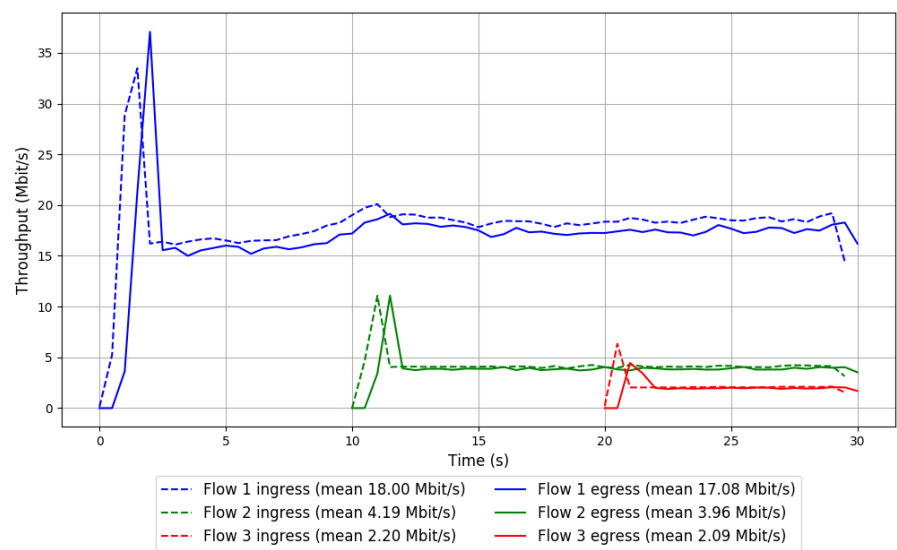


Run 5: Statistics of PCC-Allegro

Start at: 2018-11-15 06:29:44
End at: 2018-11-15 06:30:14
Local clock offset: -1.7 ms
Remote clock offset: 31.478 ms

Below is generated by plot.py at 2018-11-15 06:58:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 20.40 Mbit/s
95th percentile per-packet one-way delay: 75.486 ms
Loss rate: 5.15%
-- Flow 1:
Average throughput: 17.08 Mbit/s
95th percentile per-packet one-way delay: 75.856 ms
Loss rate: 5.13%
-- Flow 2:
Average throughput: 3.96 Mbit/s
95th percentile per-packet one-way delay: 73.300 ms
Loss rate: 5.31%
-- Flow 3:
Average throughput: 2.09 Mbit/s
95th percentile per-packet one-way delay: 64.372 ms
Loss rate: 5.03%

Run 5: Report of PCC-Allegro — Data Link

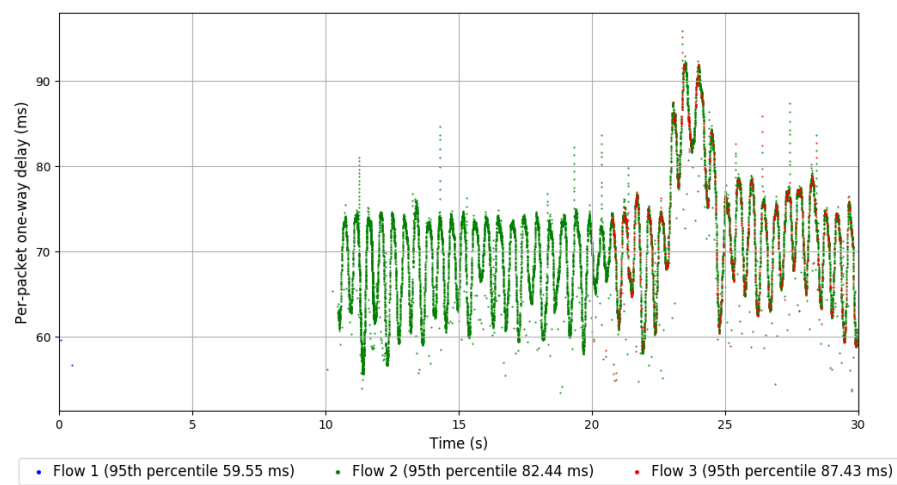
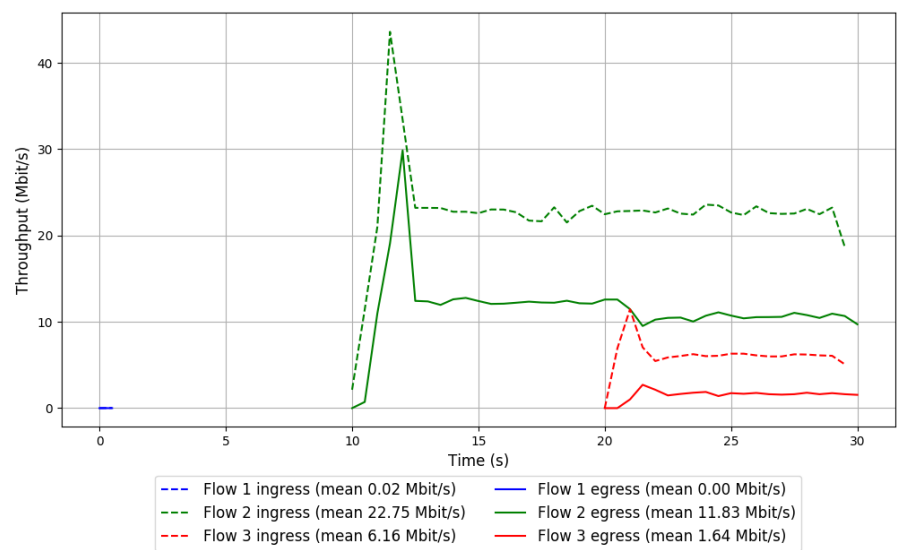


```
Run 1: Statistics of PCC-Expr

Start at: 2018-11-15 04:56:16
End at: 2018-11-15 04:56:46
Local clock offset: -6.424 ms
Remote clock offset: 4.263 ms

# Below is generated by plot.py at 2018-11-15 06:58:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.41 Mbit/s
95th percentile per-packet one-way delay: 82.873 ms
Loss rate: 51.00%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 59.548 ms
Loss rate: 86.67%
-- Flow 2:
Average throughput: 11.83 Mbit/s
95th percentile per-packet one-way delay: 82.437 ms
Loss rate: 47.98%
-- Flow 3:
Average throughput: 1.64 Mbit/s
95th percentile per-packet one-way delay: 87.433 ms
Loss rate: 73.44%
```

Run 1: Report of PCC-Expr — Data Link

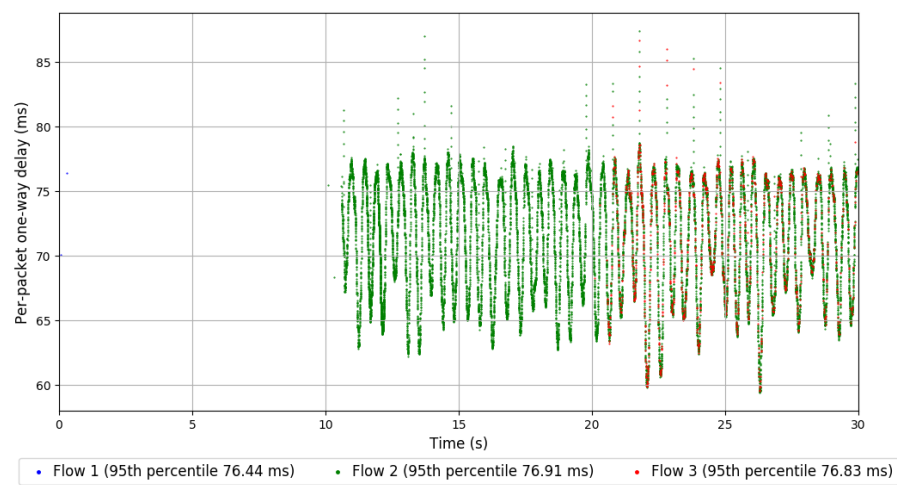
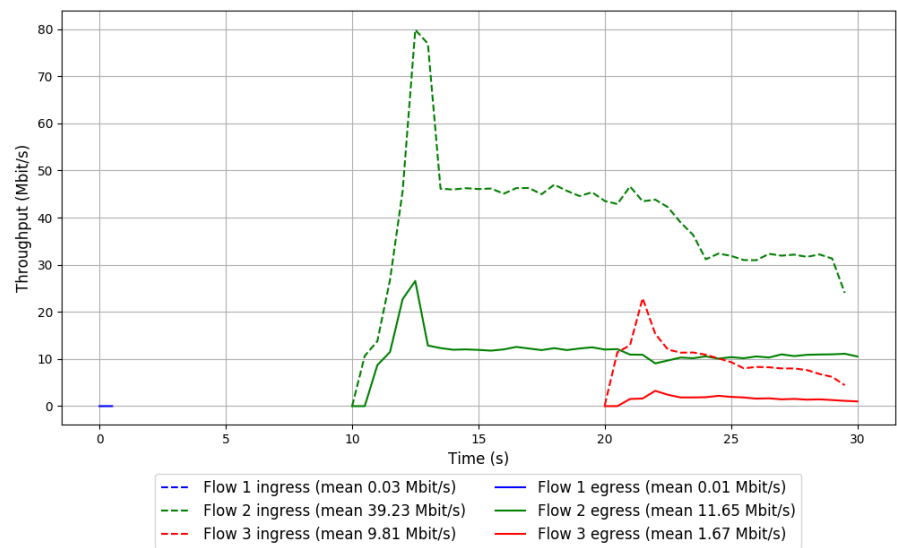


```
Run 2: Statistics of PCC-Expr

Start at: 2018-11-15 05:21:16
End at: 2018-11-15 05:21:46
Local clock offset: -6.333 ms
Remote clock offset: 51.78 ms

# Below is generated by plot.py at 2018-11-15 06:58:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.30 Mbit/s
95th percentile per-packet one-way delay: 76.906 ms
Loss rate: 71.71%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 76.437 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 11.65 Mbit/s
95th percentile per-packet one-way delay: 76.912 ms
Loss rate: 70.30%
-- Flow 3:
Average throughput: 1.67 Mbit/s
95th percentile per-packet one-way delay: 76.827 ms
Loss rate: 83.02%
```

Run 2: Report of PCC-Expr — Data Link

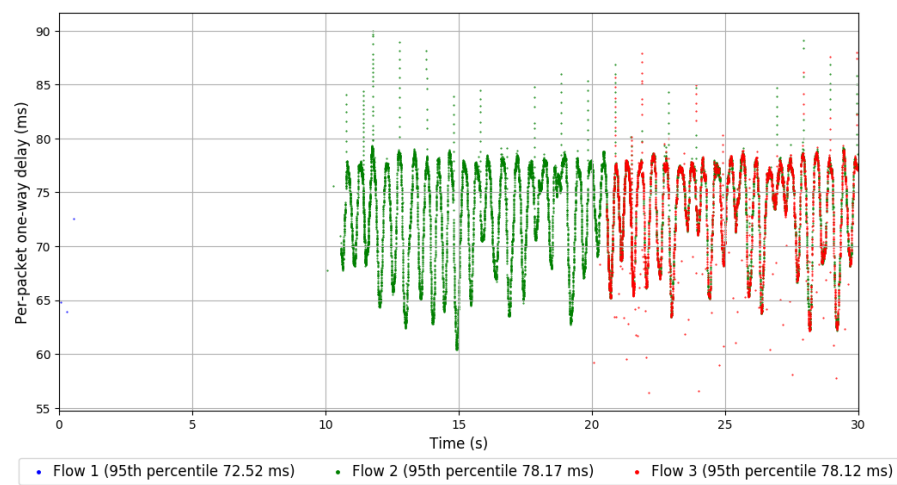
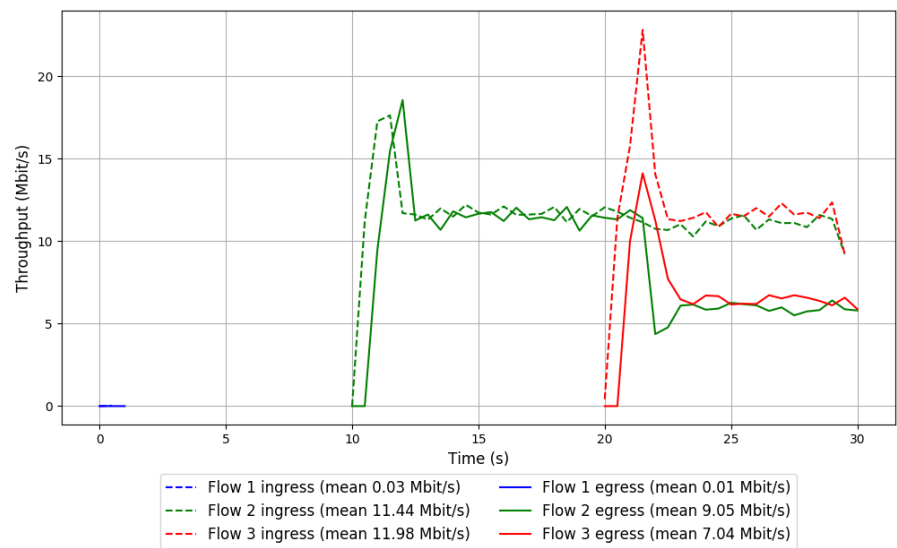


Run 3: Statistics of PCC-Expr

Start at: 2018-11-15 05:46:42
End at: 2018-11-15 05:47:12
Local clock offset: -2.27 ms
Remote clock offset: 30.711 ms

Below is generated by plot.py at 2018-11-15 06:58:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 8.35 Mbit/s
95th percentile per-packet one-way delay: 78.156 ms
Loss rate: 27.78%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 72.518 ms
Loss rate: 80.00%
-- Flow 2:
Average throughput: 9.05 Mbit/s
95th percentile per-packet one-way delay: 78.169 ms
Loss rate: 20.86%
-- Flow 3:
Average throughput: 7.04 Mbit/s
95th percentile per-packet one-way delay: 78.116 ms
Loss rate: 41.10%

Run 3: Report of PCC-Expr — Data Link

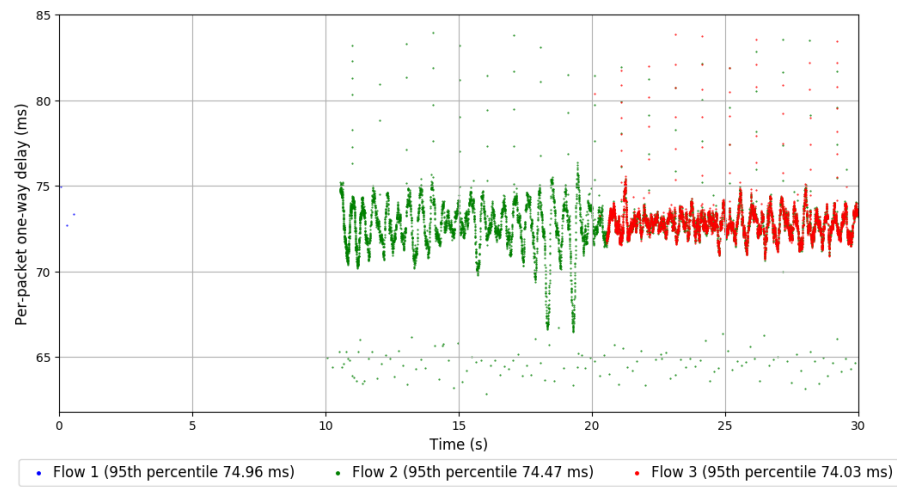
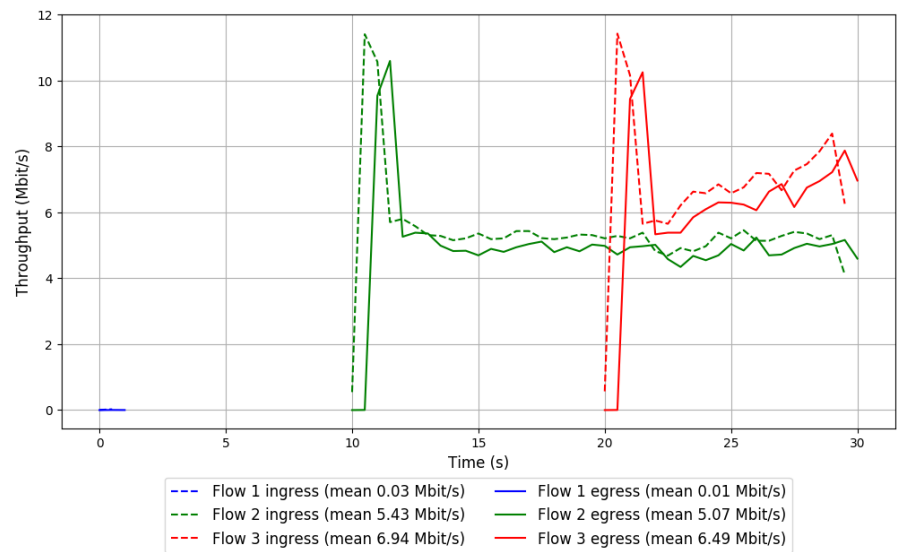


Run 4: Statistics of PCC-Expr

Start at: 2018-11-15 06:12:37
End at: 2018-11-15 06:13:07
Local clock offset: -2.425 ms
Remote clock offset: 28.881 ms

Below is generated by plot.py at 2018-11-15 06:58:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 5.52 Mbit/s
95th percentile per-packet one-way delay: 74.350 ms
Loss rate: 6.59%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 74.956 ms
Loss rate: 80.00%
-- Flow 2:
Average throughput: 5.07 Mbit/s
95th percentile per-packet one-way delay: 74.474 ms
Loss rate: 6.57%
-- Flow 3:
Average throughput: 6.49 Mbit/s
95th percentile per-packet one-way delay: 74.035 ms
Loss rate: 6.60%

Run 4: Report of PCC-Expr — Data Link

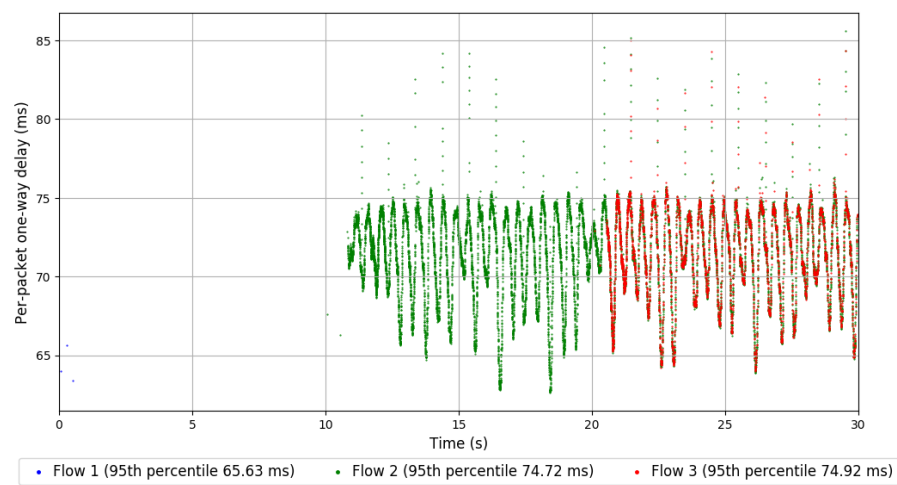
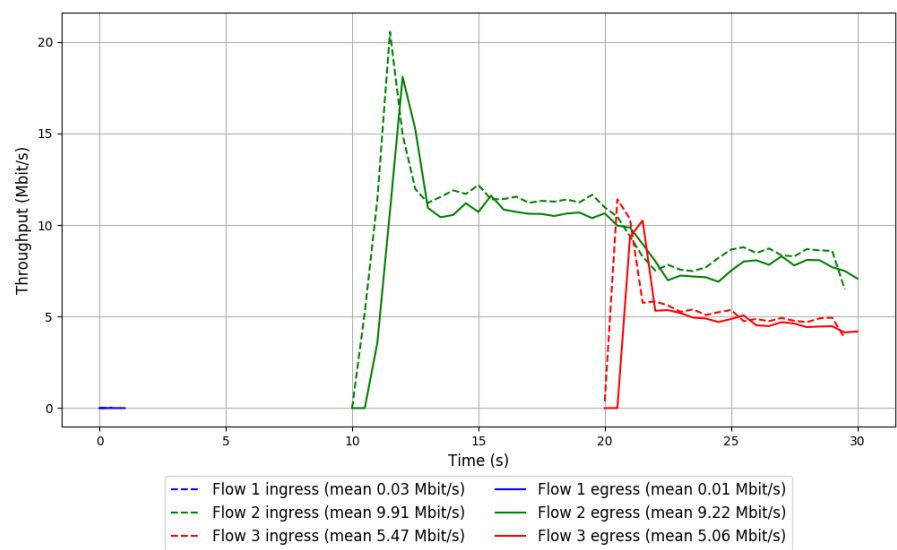


Run 5: Statistics of PCC-Expr

Start at: 2018-11-15 06:38:29
End at: 2018-11-15 06:38:59
Local clock offset: 0.488 ms
Remote clock offset: 35.953 ms

Below is generated by plot.py at 2018-11-15 06:58:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 7.81 Mbit/s
95th percentile per-packet one-way delay: 74.776 ms
Loss rate: 7.03%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 65.633 ms
Loss rate: 80.00%
-- Flow 2:
Average throughput: 9.22 Mbit/s
95th percentile per-packet one-way delay: 74.720 ms
Loss rate: 6.89%
-- Flow 3:
Average throughput: 5.06 Mbit/s
95th percentile per-packet one-way delay: 74.923 ms
Loss rate: 7.51%

Run 5: Report of PCC-Expr — Data Link

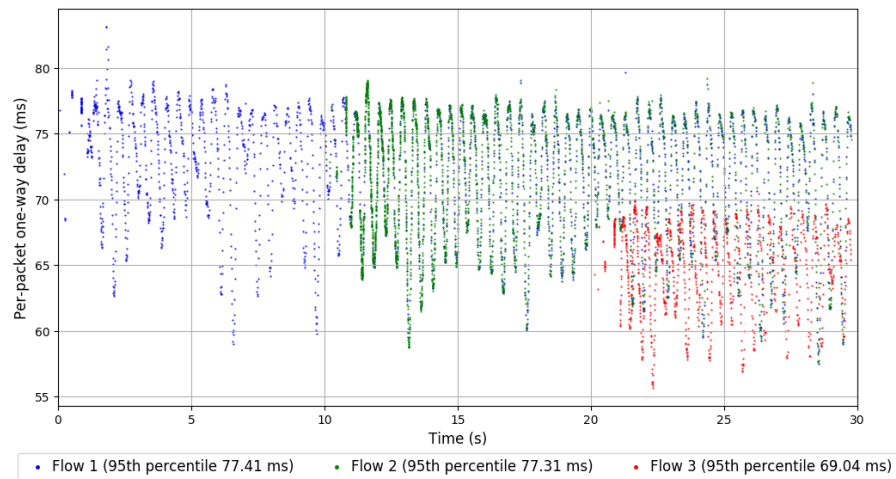
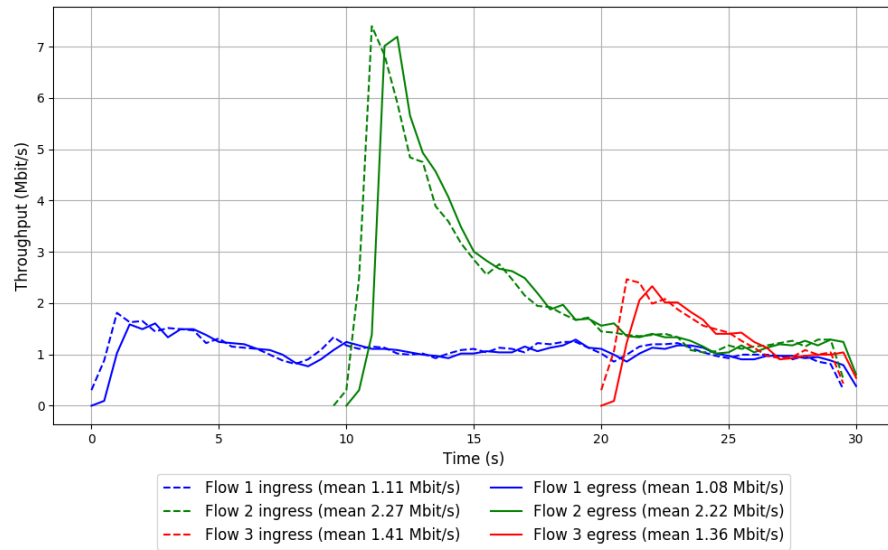


Run 1: Statistics of QUIC Cubic

Start at: 2018-11-15 05:00:24
End at: 2018-11-15 05:00:54
Local clock offset: -5.45 ms
Remote clock offset: 19.005 ms

Below is generated by plot.py at 2018-11-15 06:58:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 2.99 Mbit/s
95th percentile per-packet one-way delay: 77.263 ms
Loss rate: 2.51%
-- Flow 1:
Average throughput: 1.08 Mbit/s
95th percentile per-packet one-way delay: 77.413 ms
Loss rate: 2.58%
-- Flow 2:
Average throughput: 2.22 Mbit/s
95th percentile per-packet one-way delay: 77.309 ms
Loss rate: 2.15%
-- Flow 3:
Average throughput: 1.36 Mbit/s
95th percentile per-packet one-way delay: 69.037 ms
Loss rate: 3.50%

Run 1: Report of QUIC Cubic — Data Link

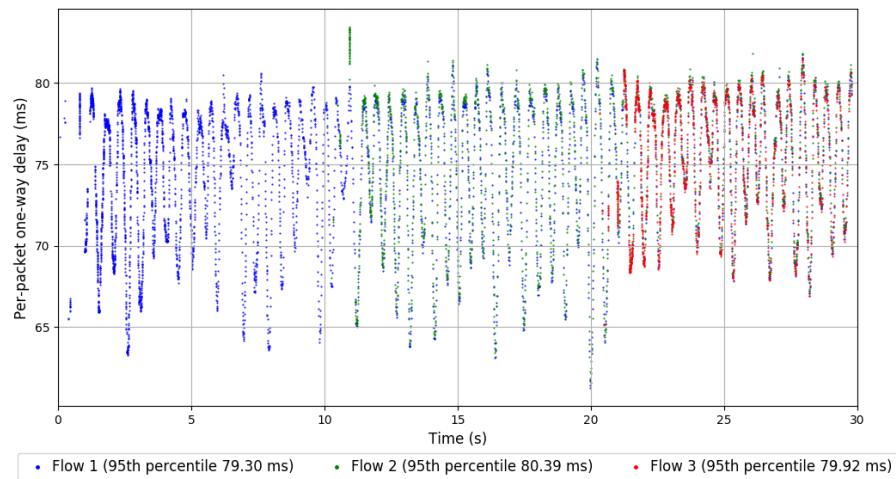
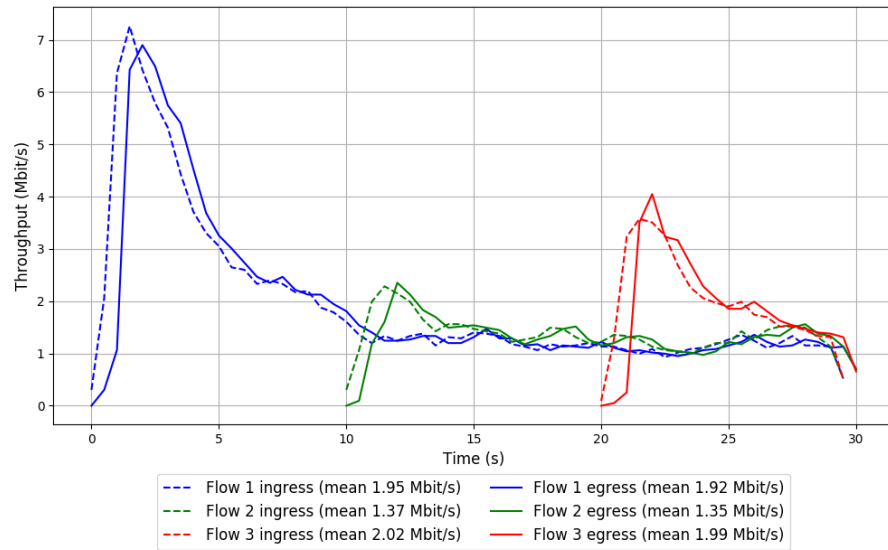


Run 2: Statistics of QUIC Cubic

Start at: 2018-11-15 05:25:45
End at: 2018-11-15 05:26:15
Local clock offset: -6.972 ms
Remote clock offset: 54.774 ms

Below is generated by plot.py at 2018-11-15 06:58:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.46 Mbit/s
95th percentile per-packet one-way delay: 79.789 ms
Loss rate: 1.60%
-- Flow 1:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: 79.301 ms
Loss rate: 1.48%
-- Flow 2:
Average throughput: 1.35 Mbit/s
95th percentile per-packet one-way delay: 80.386 ms
Loss rate: 1.80%
-- Flow 3:
Average throughput: 1.99 Mbit/s
95th percentile per-packet one-way delay: 79.915 ms
Loss rate: 1.69%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-11-15 05:50:59

End at: 2018-11-15 05:51:29

Local clock offset: -2.16 ms

Remote clock offset: 30.79 ms

Below is generated by plot.py at 2018-11-15 06:58:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.44 Mbit/s

95th percentile per-packet one-way delay: 76.820 ms

Loss rate: 1.32%

-- Flow 1:

Average throughput: 1.97 Mbit/s

95th percentile per-packet one-way delay: 76.784 ms

Loss rate: 1.15%

-- Flow 2:

Average throughput: 1.37 Mbit/s

95th percentile per-packet one-way delay: 76.847 ms

Loss rate: 1.77%

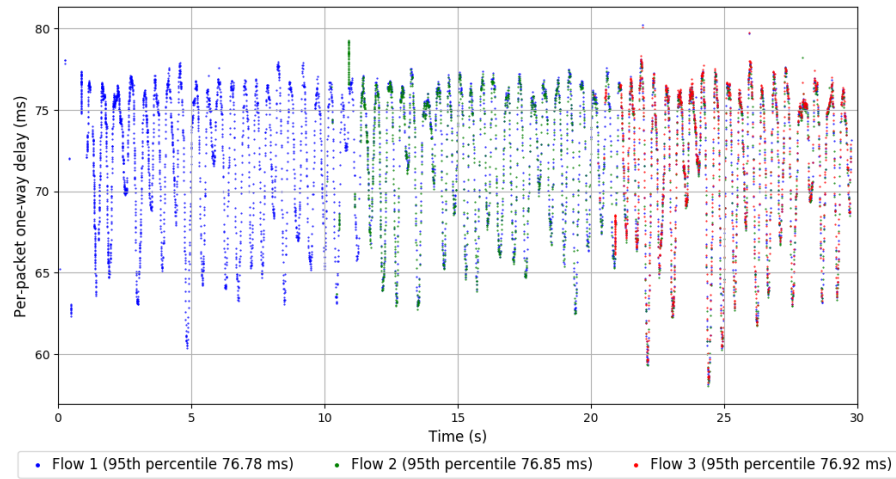
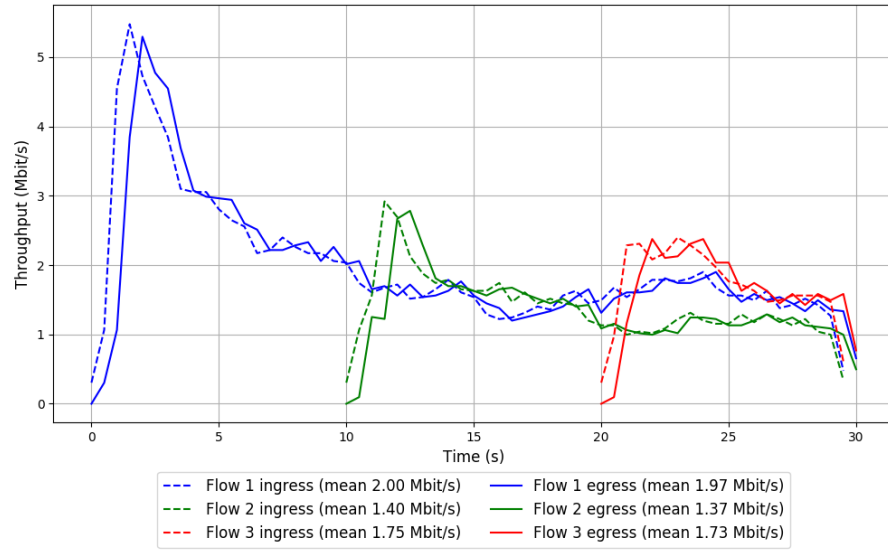
-- Flow 3:

Average throughput: 1.73 Mbit/s

95th percentile per-packet one-way delay: 76.917 ms

Loss rate: 1.21%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-11-15 06:16:54

End at: 2018-11-15 06:17:24

Local clock offset: -2.67 ms

Remote clock offset: 28.87 ms

Below is generated by plot.py at 2018-11-15 06:58:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.79 Mbit/s

95th percentile per-packet one-way delay: 65.049 ms

Loss rate: 4.94%

-- Flow 1:

Average throughput: 0.70 Mbit/s

95th percentile per-packet one-way delay: 65.409 ms

Loss rate: 4.95%

-- Flow 2:

Average throughput: 1.11 Mbit/s

95th percentile per-packet one-way delay: 64.410 ms

Loss rate: 4.65%

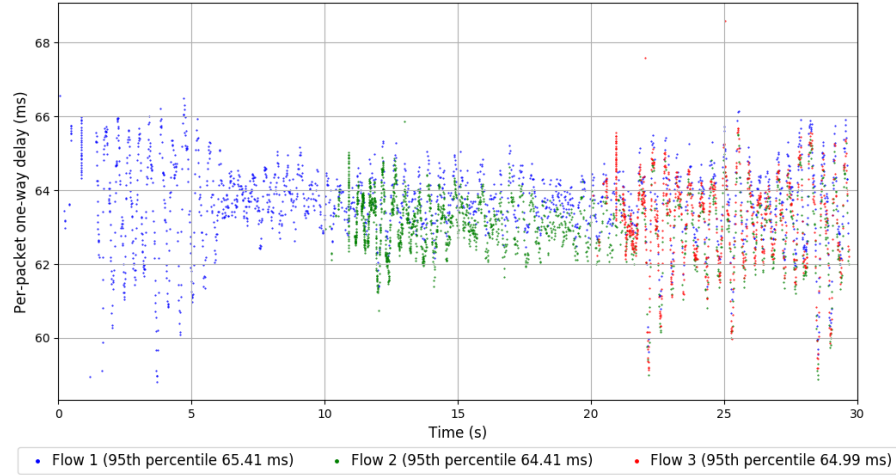
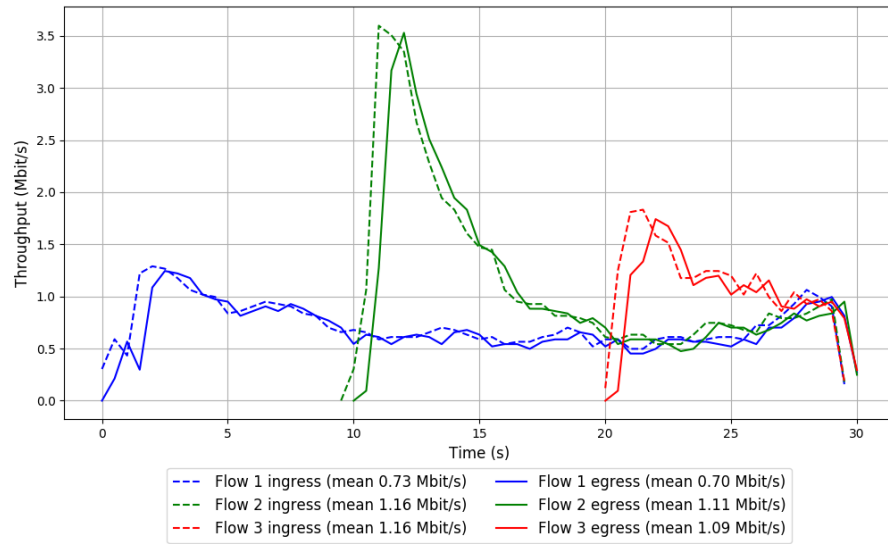
-- Flow 3:

Average throughput: 1.09 Mbit/s

95th percentile per-packet one-way delay: 64.992 ms

Loss rate: 5.50%

Run 4: Report of QUIC Cubic — Data Link

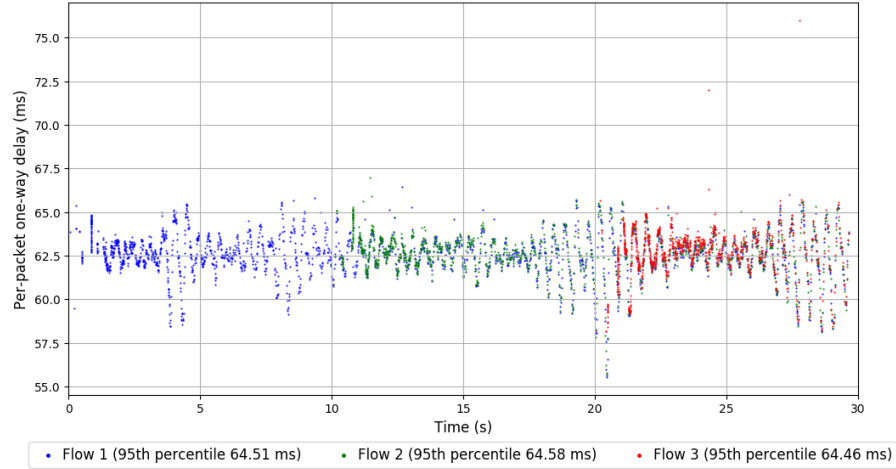
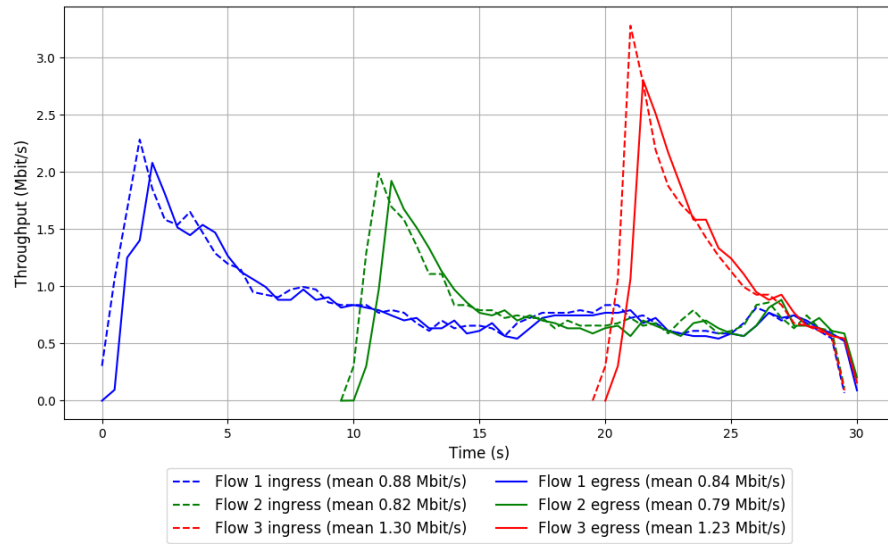


Run 5: Statistics of QUIC Cubic

Start at: 2018-11-15 06:42:48
End at: 2018-11-15 06:43:18
Local clock offset: 1.121 ms
Remote clock offset: 36.725 ms

Below is generated by plot.py at 2018-11-15 06:58:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 1.76 Mbit/s
95th percentile per-packet one-way delay: 64.526 ms
Loss rate: 4.66%
-- Flow 1:
Average throughput: 0.84 Mbit/s
95th percentile per-packet one-way delay: 64.510 ms
Loss rate: 4.66%
-- Flow 2:
Average throughput: 0.79 Mbit/s
95th percentile per-packet one-way delay: 64.581 ms
Loss rate: 4.32%
-- Flow 3:
Average throughput: 1.23 Mbit/s
95th percentile per-packet one-way delay: 64.462 ms
Loss rate: 5.08%

Run 5: Report of QUIC Cubic — Data Link

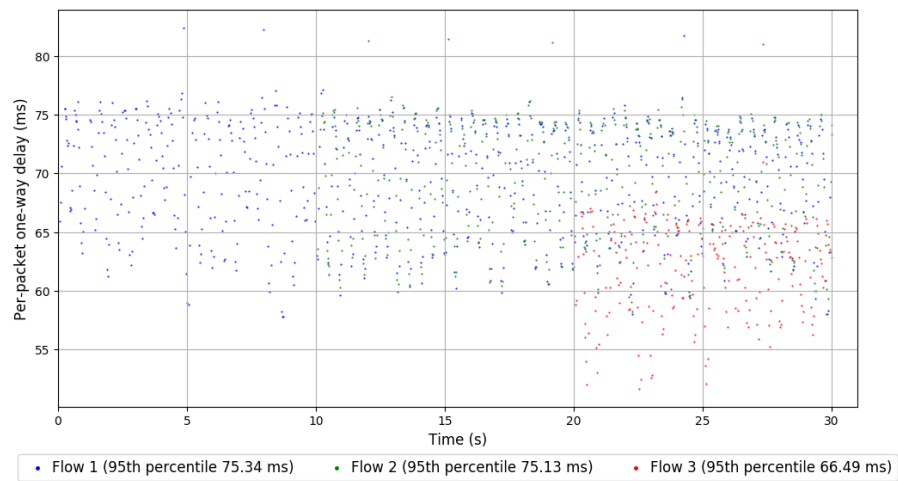
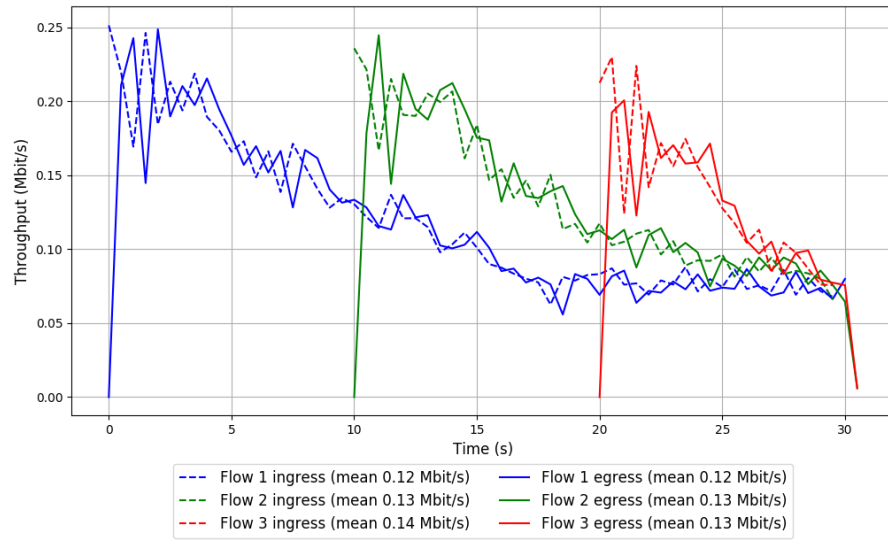


Run 1: Statistics of SReAM

Start at: 2018-11-15 04:59:07
End at: 2018-11-15 04:59:37
Local clock offset: -5.896 ms
Remote clock offset: 13.455 ms

Below is generated by plot.py at 2018-11-15 06:58:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 75.108 ms
Loss rate: 2.14%
-- Flow 1:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 75.337 ms
Loss rate: 1.93%
-- Flow 2:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 75.131 ms
Loss rate: 1.57%
-- Flow 3:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 66.493 ms
Loss rate: 3.78%

Run 1: Report of SReAM — Data Link

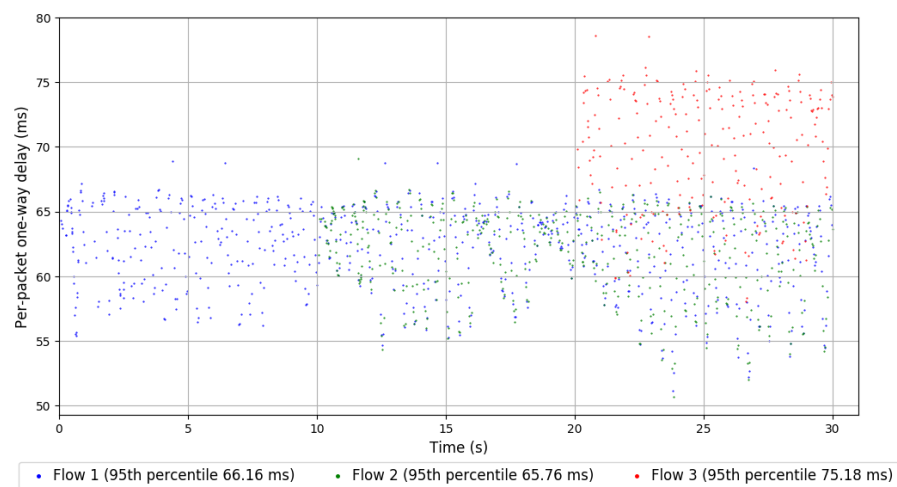
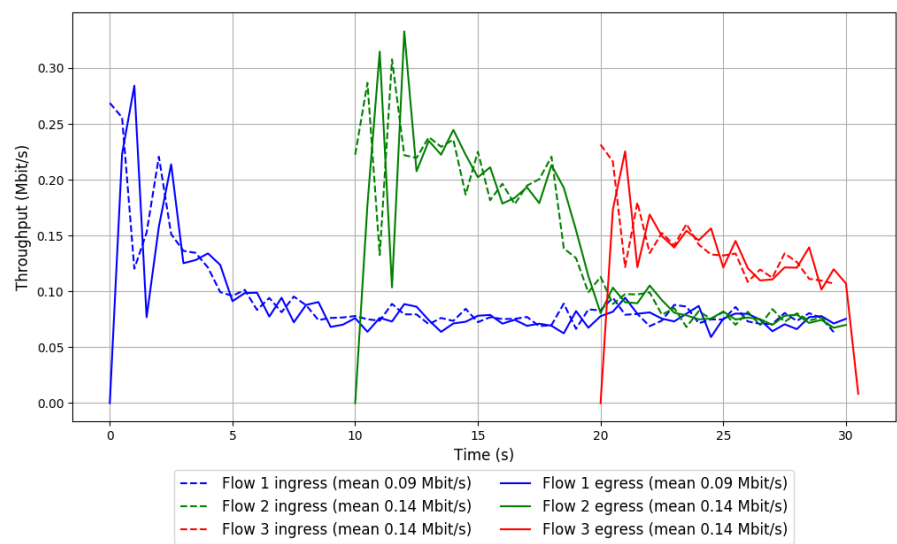


Run 2: Statistics of SCReAM

Start at: 2018-11-15 05:24:22
End at: 2018-11-15 05:24:52
Local clock offset: -6.687 ms
Remote clock offset: 53.343 ms

Below is generated by plot.py at 2018-11-15 06:58:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.23 Mbit/s
95th percentile per-packet one-way delay: 73.398 ms
Loss rate: 2.70%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 66.160 ms
Loss rate: 3.94%
-- Flow 2:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 65.761 ms
Loss rate: 2.01%
-- Flow 3:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 75.182 ms
Loss rate: 1.63%

Run 2: Report of SReAM — Data Link

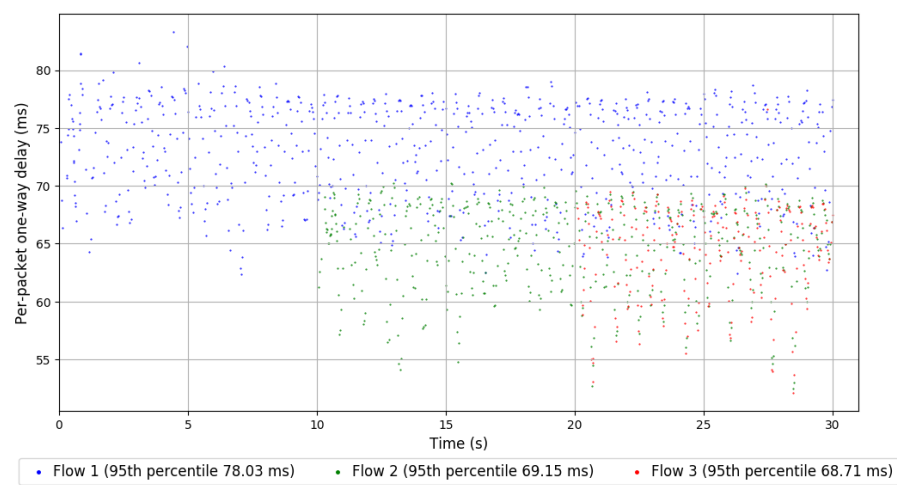
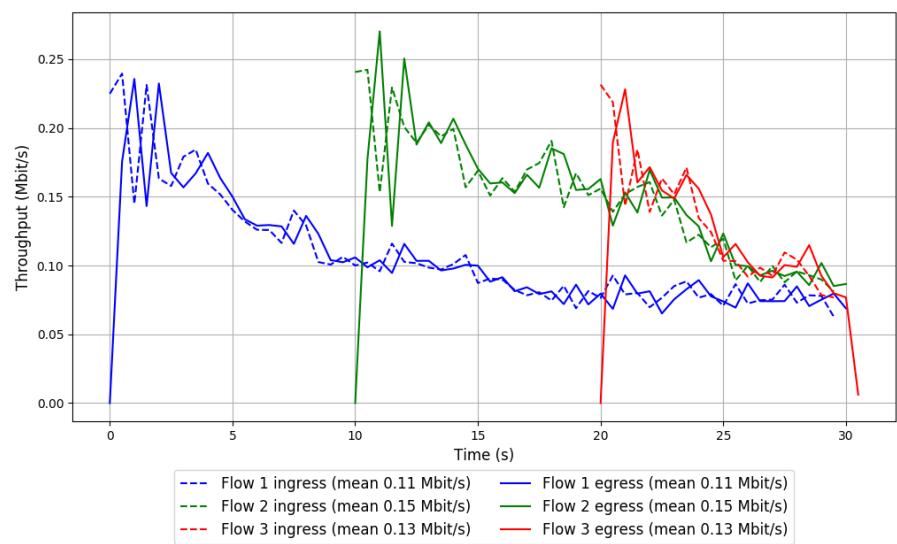


Run 3: Statistics of SReAM

Start at: 2018-11-15 05:49:42
End at: 2018-11-15 05:50:12
Local clock offset: -2.459 ms
Remote clock offset: 30.578 ms

Below is generated by plot.py at 2018-11-15 06:58:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 77.528 ms
Loss rate: 1.26%
-- Flow 1:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 78.031 ms
Loss rate: 1.61%
-- Flow 2:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 69.149 ms
Loss rate: 1.01%
-- Flow 3:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 68.712 ms
Loss rate: 0.93%

Run 3: Report of SReAM — Data Link

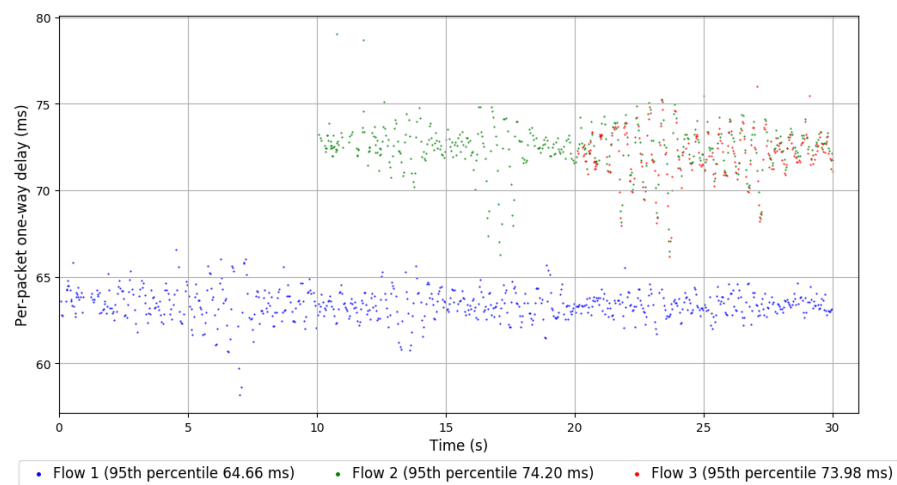
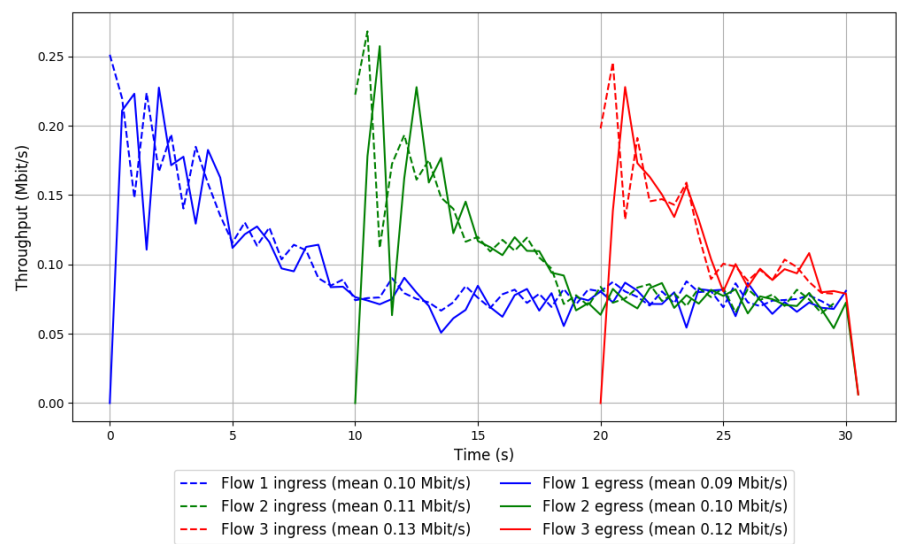


Run 4: Statistics of SCReAM

Start at: 2018-11-15 06:15:37
End at: 2018-11-15 06:16:07
Local clock offset: -2.257 ms
Remote clock offset: 28.915 ms

Below is generated by plot.py at 2018-11-15 06:58:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 73.856 ms
Loss rate: 4.79%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 64.661 ms
Loss rate: 5.06%
-- Flow 2:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 74.201 ms
Loss rate: 4.47%
-- Flow 3:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 73.983 ms
Loss rate: 4.71%

Run 4: Report of SReAM — Data Link

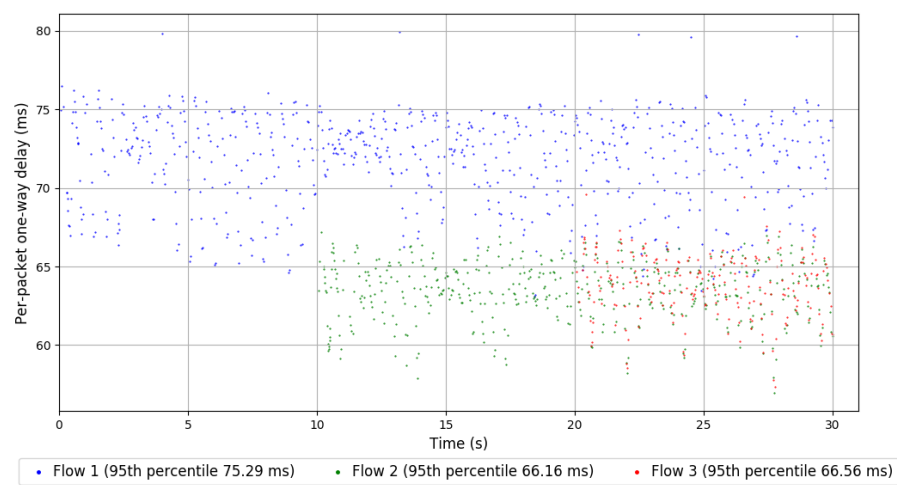
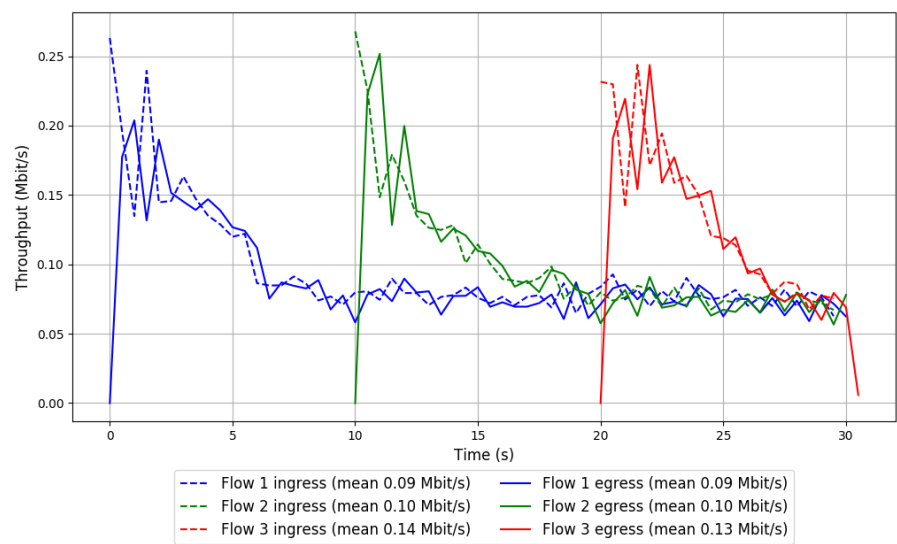


Run 5: Statistics of SCReAM

Start at: 2018-11-15 06:41:30
End at: 2018-11-15 06:42:00
Local clock offset: 0.917 ms
Remote clock offset: 37.503 ms

Below is generated by plot.py at 2018-11-15 06:58:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 74.887 ms
Loss rate: 5.07%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 75.287 ms
Loss rate: 5.43%
-- Flow 2:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 66.156 ms
Loss rate: 3.84%
-- Flow 3:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 66.555 ms
Loss rate: 6.13%

Run 5: Report of SReAM — Data Link

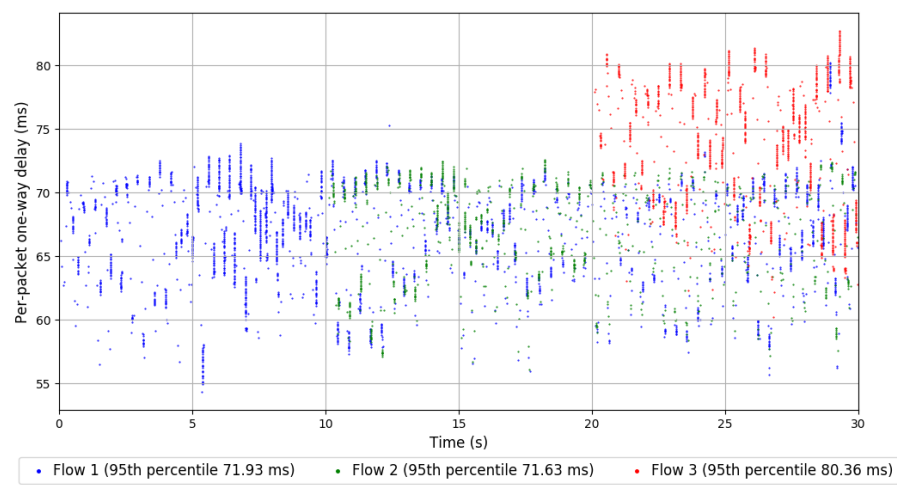
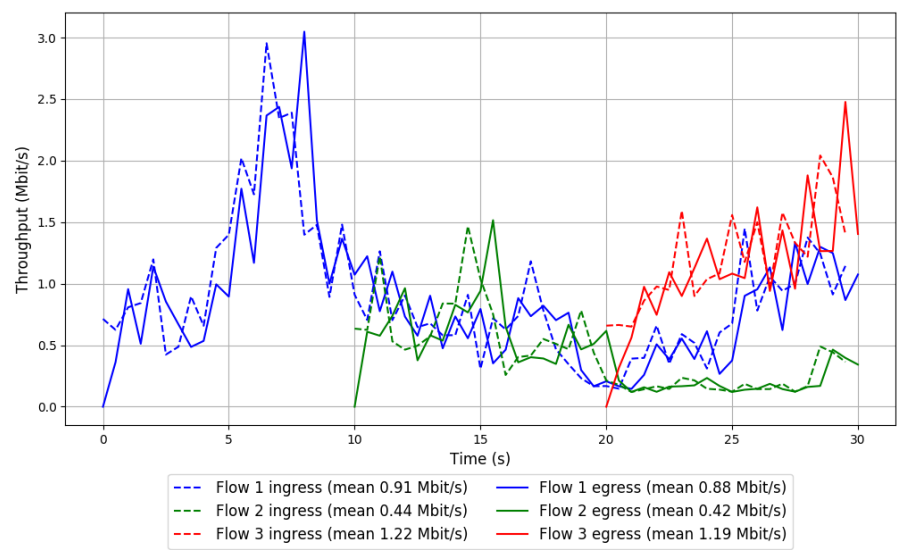


Run 1: Statistics of Sprout

Start at: 2018-11-15 05:03:02
End at: 2018-11-15 05:03:32
Local clock offset: -4.982 ms
Remote clock offset: 27.357 ms

Below is generated by plot.py at 2018-11-15 06:58:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 1.55 Mbit/s
95th percentile per-packet one-way delay: 78.553 ms
Loss rate: 3.02%
-- Flow 1:
Average throughput: 0.88 Mbit/s
95th percentile per-packet one-way delay: 71.933 ms
Loss rate: 3.23%
-- Flow 2:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 71.632 ms
Loss rate: 3.56%
-- Flow 3:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 80.365 ms
Loss rate: 2.17%

Run 1: Report of Sprout — Data Link

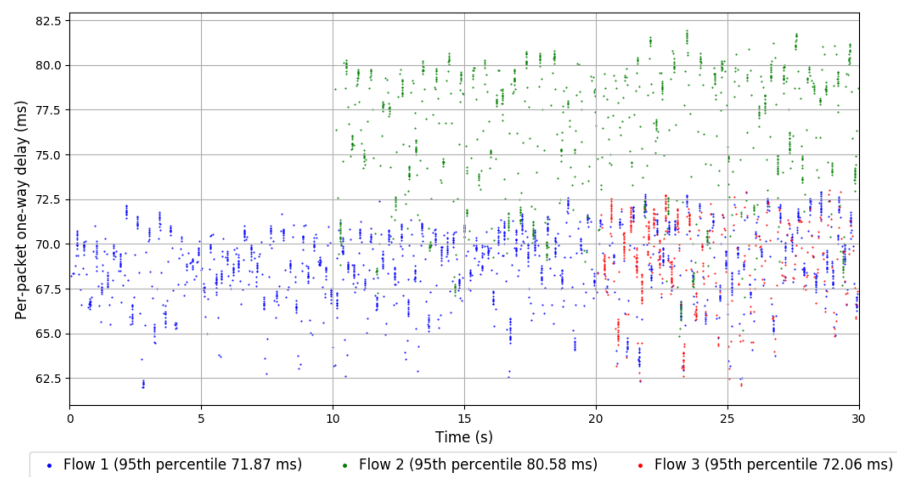
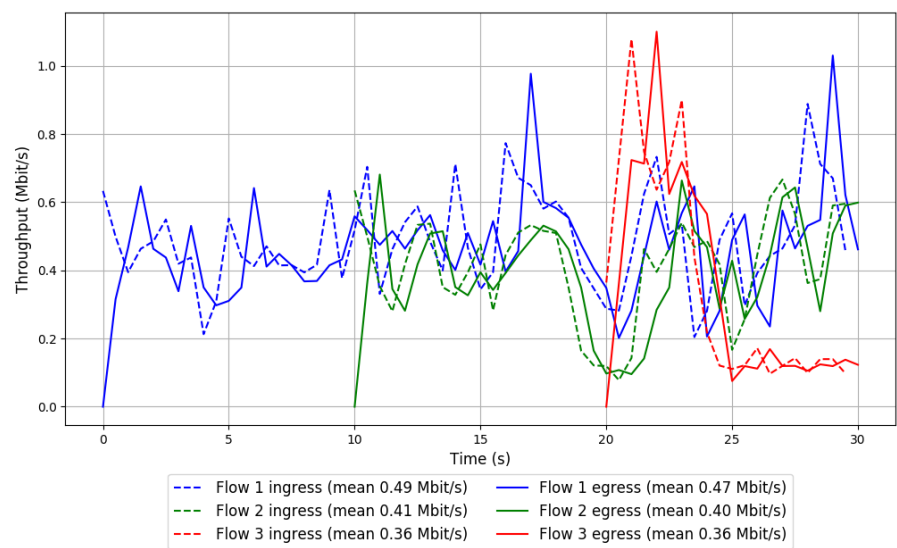


Run 2: Statistics of Sprout

Start at: 2018-11-15 05:28:25
End at: 2018-11-15 05:28:55
Local clock offset: -6.005 ms
Remote clock offset: 46.482 ms

Below is generated by plot.py at 2018-11-15 06:58:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 79.784 ms
Loss rate: 2.93%
-- Flow 1:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 71.873 ms
Loss rate: 3.49%
-- Flow 2:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 80.584 ms
Loss rate: 2.51%
-- Flow 3:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 72.061 ms
Loss rate: 1.63%

Run 2: Report of Sprout — Data Link

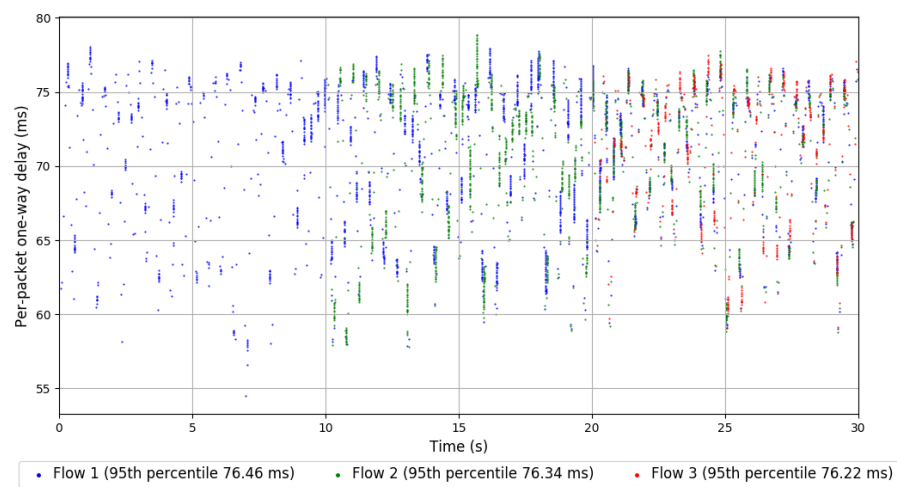
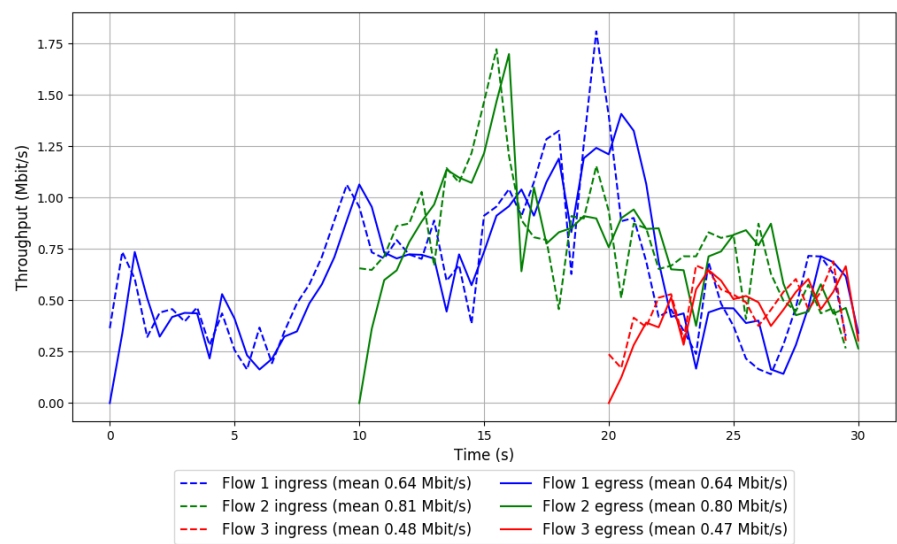


Run 3: Statistics of Sprout

Start at: 2018-11-15 05:53:42
End at: 2018-11-15 05:54:12
Local clock offset: -2.617 ms
Remote clock offset: 29.749 ms

```
# Below is generated by plot.py at 2018-11-15 06:58:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.32 Mbit/s
95th percentile per-packet one-way delay: 76.370 ms
Loss rate: 1.19%
-- Flow 1:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 76.456 ms
Loss rate: 1.11%
-- Flow 2:
Average throughput: 0.80 Mbit/s
95th percentile per-packet one-way delay: 76.345 ms
Loss rate: 1.09%
-- Flow 3:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 76.216 ms
Loss rate: 1.84%
```

Run 3: Report of Sprout — Data Link

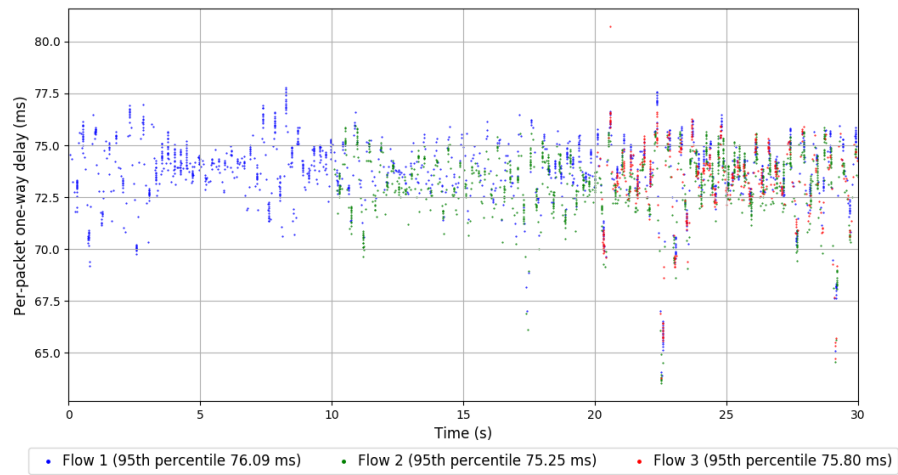
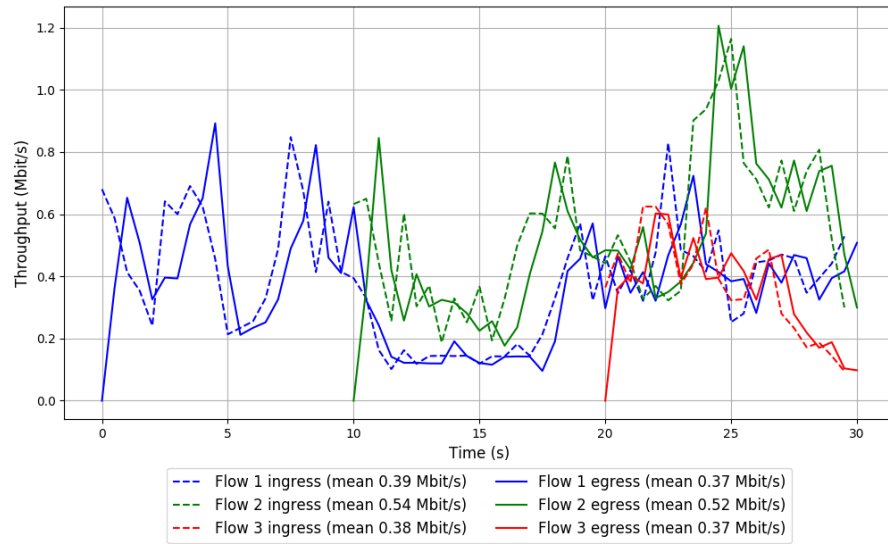


Run 4: Statistics of Sprout

Start at: 2018-11-15 06:19:35
End at: 2018-11-15 06:20:05
Local clock offset: -2.679 ms
Remote clock offset: 31.198 ms

```
# Below is generated by plot.py at 2018-11-15 06:58:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.84 Mbit/s
95th percentile per-packet one-way delay: 75.716 ms
Loss rate: 3.44%
-- Flow 1:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 76.092 ms
Loss rate: 3.02%
-- Flow 2:
Average throughput: 0.52 Mbit/s
95th percentile per-packet one-way delay: 75.247 ms
Loss rate: 3.61%
-- Flow 3:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 75.804 ms
Loss rate: 4.18%
```

Run 4: Report of Sprout — Data Link

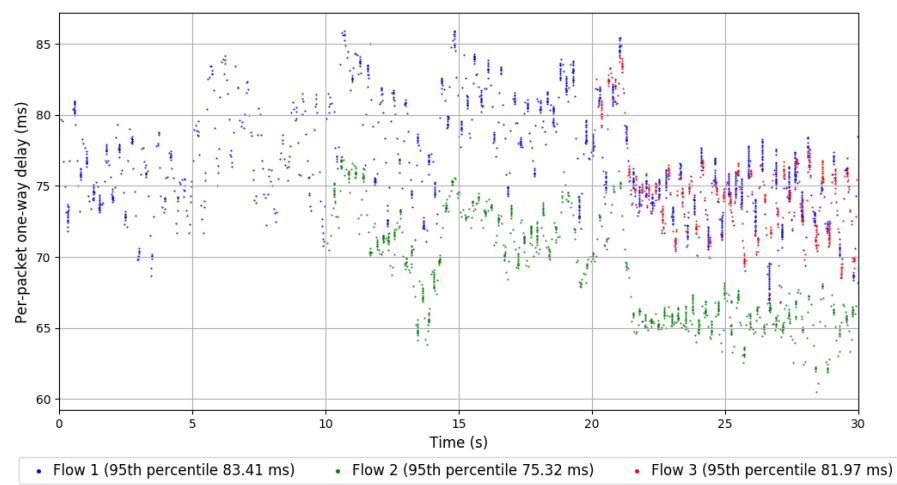
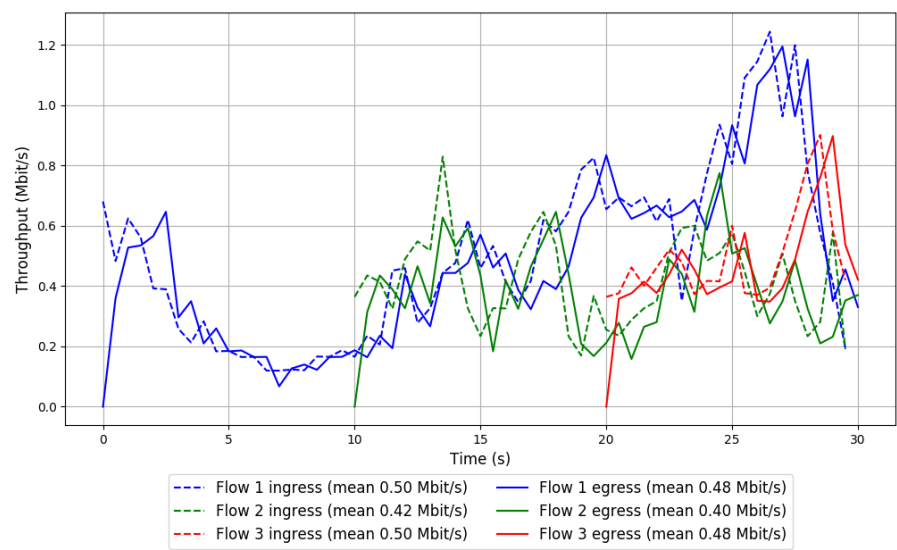


Run 5: Statistics of Sprout

Start at: 2018-11-15 06:45:28
End at: 2018-11-15 06:45:58
Local clock offset: 1.269 ms
Remote clock offset: 40.455 ms

```
# Below is generated by plot.py at 2018-11-15 06:58:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.91 Mbit/s
95th percentile per-packet one-way delay: 82.524 ms
Loss rate: 3.90%
-- Flow 1:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 83.410 ms
Loss rate: 3.15%
-- Flow 2:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 75.317 ms
Loss rate: 5.50%
-- Flow 3:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 81.973 ms
Loss rate: 3.44%
```

Run 5: Report of Sprout — Data Link

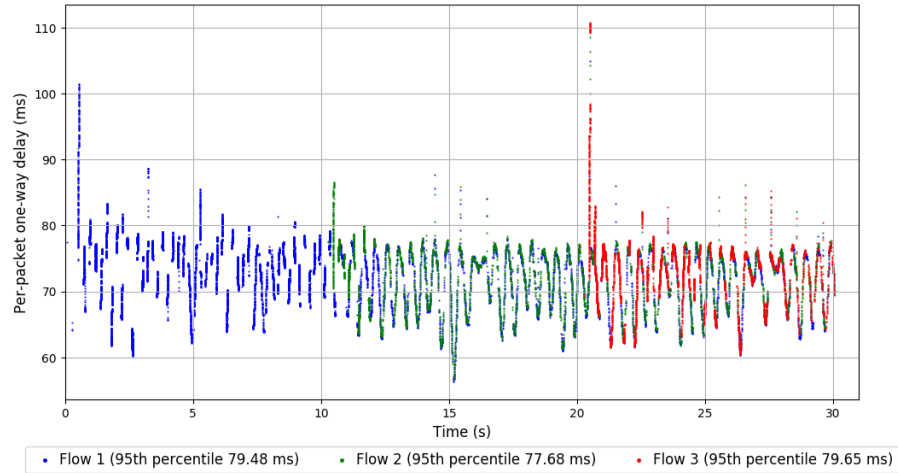
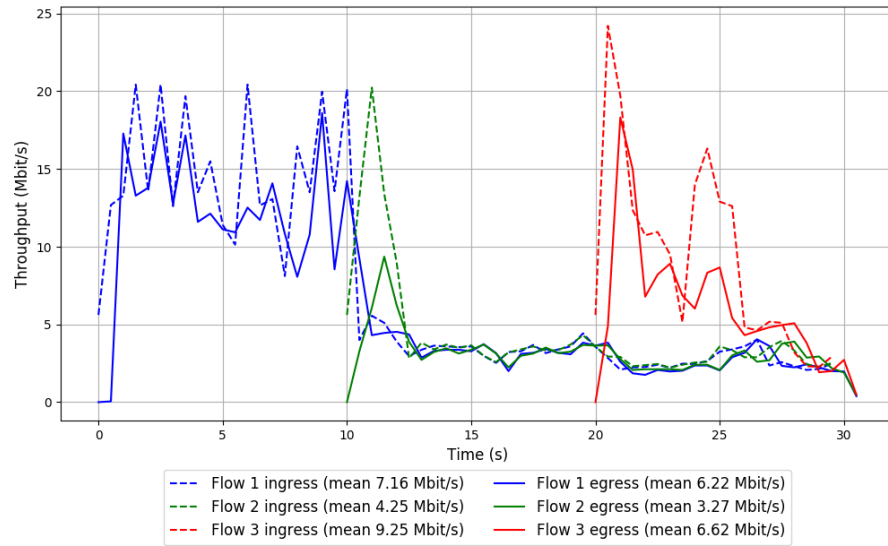


Run 1: Statistics of TaoVA-100x

Start at: 2018-11-15 05:04:21
End at: 2018-11-15 05:04:51
Local clock offset: -4.848 ms
Remote clock offset: 27.214 ms

Below is generated by plot.py at 2018-11-15 06:58:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 10.60 Mbit/s
95th percentile per-packet one-way delay: 79.059 ms
Loss rate: 18.92%
-- Flow 1:
Average throughput: 6.22 Mbit/s
95th percentile per-packet one-way delay: 79.478 ms
Loss rate: 13.17%
-- Flow 2:
Average throughput: 3.27 Mbit/s
95th percentile per-packet one-way delay: 77.683 ms
Loss rate: 23.11%
-- Flow 3:
Average throughput: 6.62 Mbit/s
95th percentile per-packet one-way delay: 79.653 ms
Loss rate: 28.42%

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

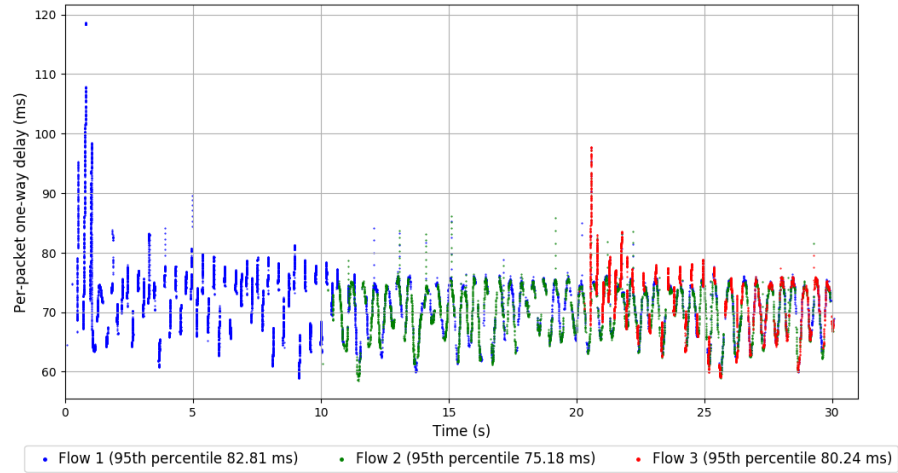
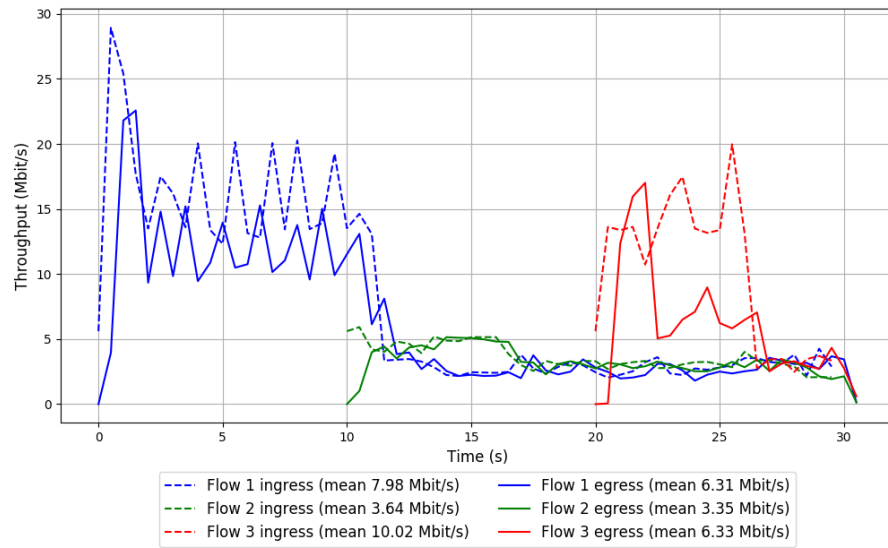


Run 2: Statistics of TaoVA-100x

Start at: 2018-11-15 05:29:43
End at: 2018-11-15 05:30:13
Local clock offset: -5.247 ms
Remote clock offset: 38.468 ms

Below is generated by plot.py at 2018-11-15 06:58:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 10.64 Mbit/s
95th percentile per-packet one-way delay: 80.147 ms
Loss rate: 22.52%
-- Flow 1:
Average throughput: 6.31 Mbit/s
95th percentile per-packet one-way delay: 82.812 ms
Loss rate: 20.94%
-- Flow 2:
Average throughput: 3.35 Mbit/s
95th percentile per-packet one-way delay: 75.178 ms
Loss rate: 8.01%
-- Flow 3:
Average throughput: 6.33 Mbit/s
95th percentile per-packet one-way delay: 80.237 ms
Loss rate: 36.86%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-11-15 05:55:02

End at: 2018-11-15 05:55:32

Local clock offset: -2.475 ms

Remote clock offset: 29.77 ms

Below is generated by plot.py at 2018-11-15 06:58:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 9.27 Mbit/s

95th percentile per-packet one-way delay: 79.106 ms

Loss rate: 10.09%

-- Flow 1:

Average throughput: 3.83 Mbit/s

95th percentile per-packet one-way delay: 77.314 ms

Loss rate: 3.54%

-- Flow 2:

Average throughput: 5.28 Mbit/s

95th percentile per-packet one-way delay: 79.979 ms

Loss rate: 9.58%

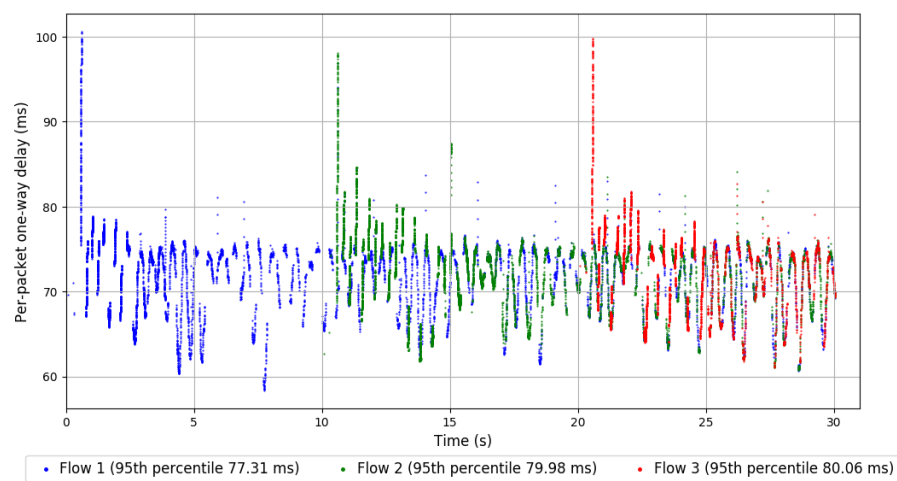
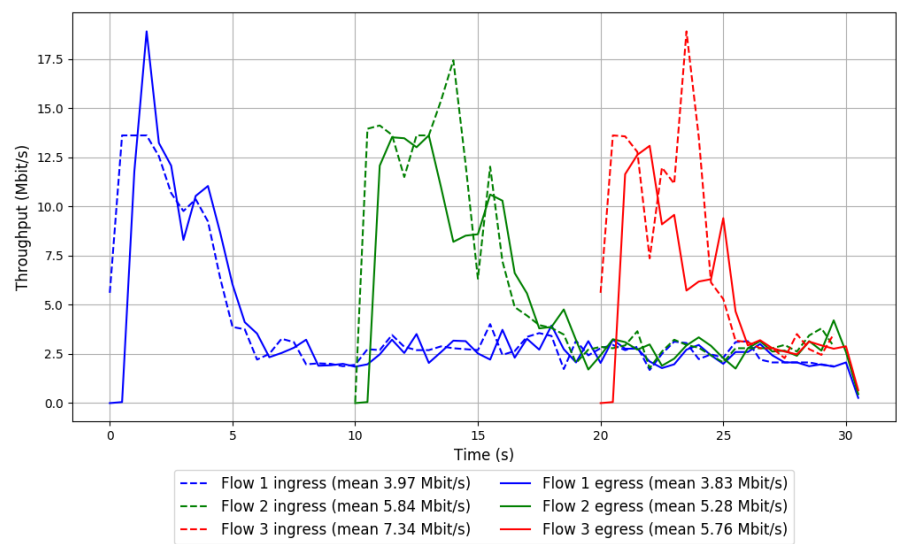
-- Flow 3:

Average throughput: 5.76 Mbit/s

95th percentile per-packet one-way delay: 80.056 ms

Loss rate: 21.57%

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

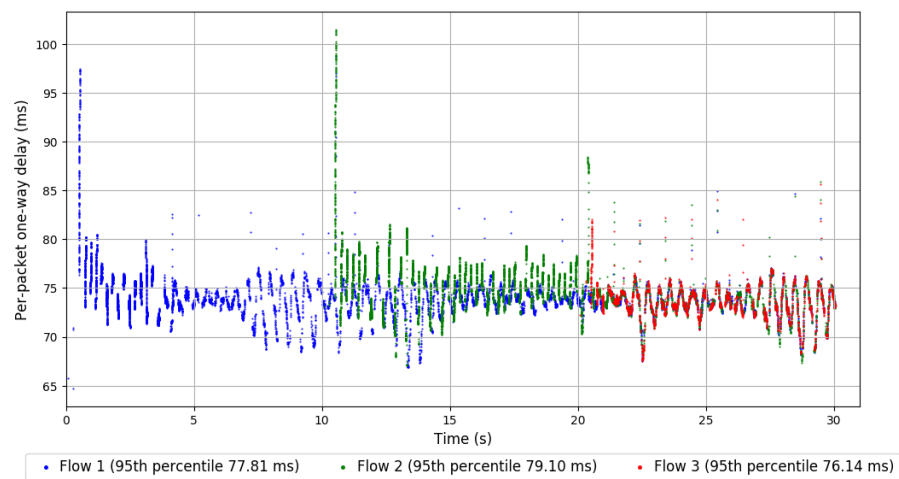
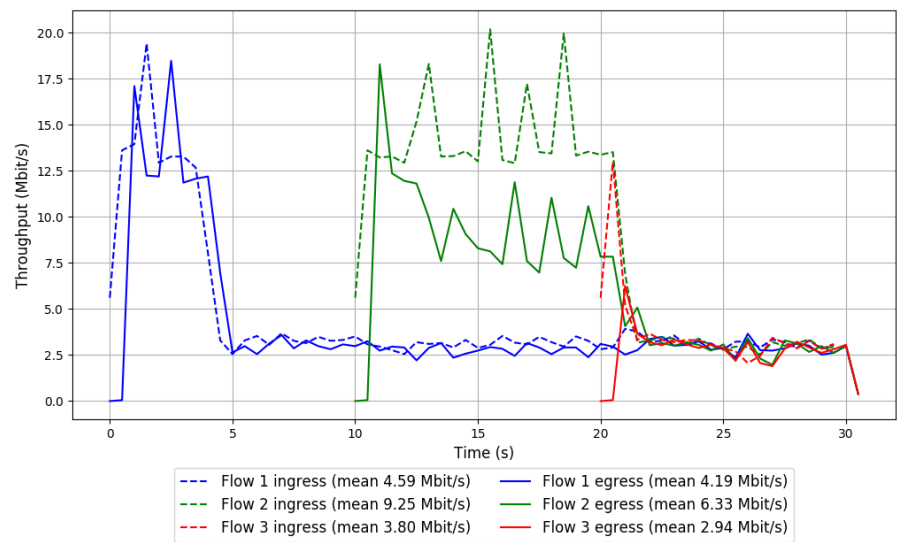


Run 4: Statistics of TaoVA-100x

Start at: 2018-11-15 06:20:55
End at: 2018-11-15 06:21:25
Local clock offset: -2.724 ms
Remote clock offset: 31.666 ms

Below is generated by plot.py at 2018-11-15 06:58:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 9.38 Mbit/s
95th percentile per-packet one-way delay: 78.535 ms
Loss rate: 21.87%
-- Flow 1:
Average throughput: 4.19 Mbit/s
95th percentile per-packet one-way delay: 77.808 ms
Loss rate: 8.73%
-- Flow 2:
Average throughput: 6.33 Mbit/s
95th percentile per-packet one-way delay: 79.101 ms
Loss rate: 31.54%
-- Flow 3:
Average throughput: 2.94 Mbit/s
95th percentile per-packet one-way delay: 76.141 ms
Loss rate: 22.55%

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

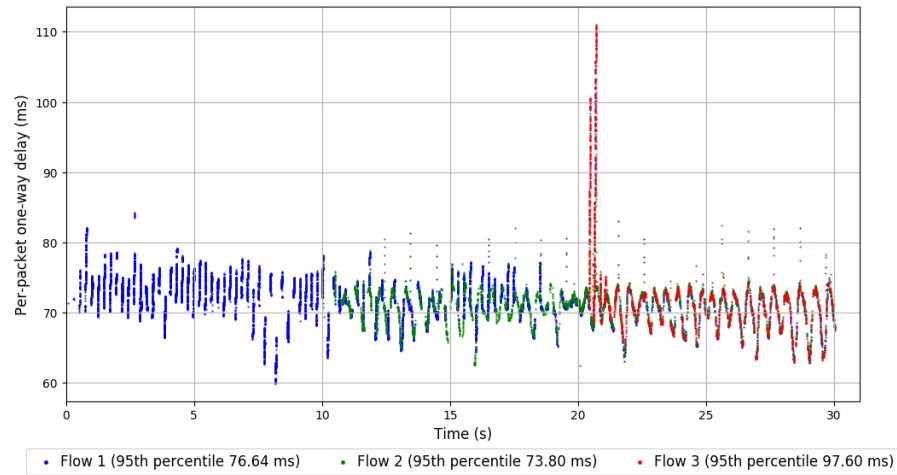
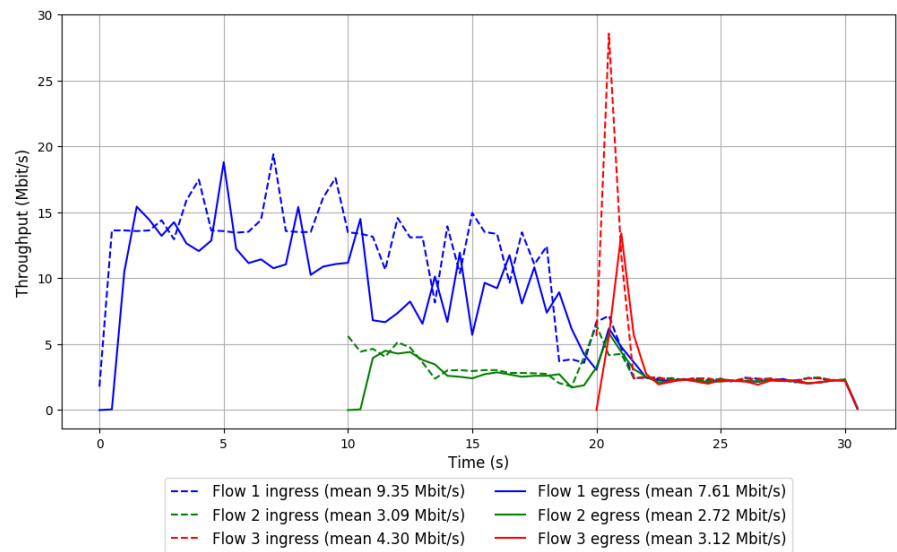


Run 5: Statistics of TaoVA-100x

Start at: 2018-11-15 06:46:48
End at: 2018-11-15 06:47:18
Local clock offset: 1.473 ms
Remote clock offset: 38.183 ms

Below is generated by plot.py at 2018-11-15 06:58:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 10.46 Mbit/s
95th percentile per-packet one-way delay: 76.970 ms
Loss rate: 18.55%
-- Flow 1:
Average throughput: 7.61 Mbit/s
95th percentile per-packet one-way delay: 76.638 ms
Loss rate: 18.68%
-- Flow 2:
Average throughput: 2.72 Mbit/s
95th percentile per-packet one-way delay: 73.800 ms
Loss rate: 11.80%
-- Flow 3:
Average throughput: 3.12 Mbit/s
95th percentile per-packet one-way delay: 97.604 ms
Loss rate: 27.41%

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

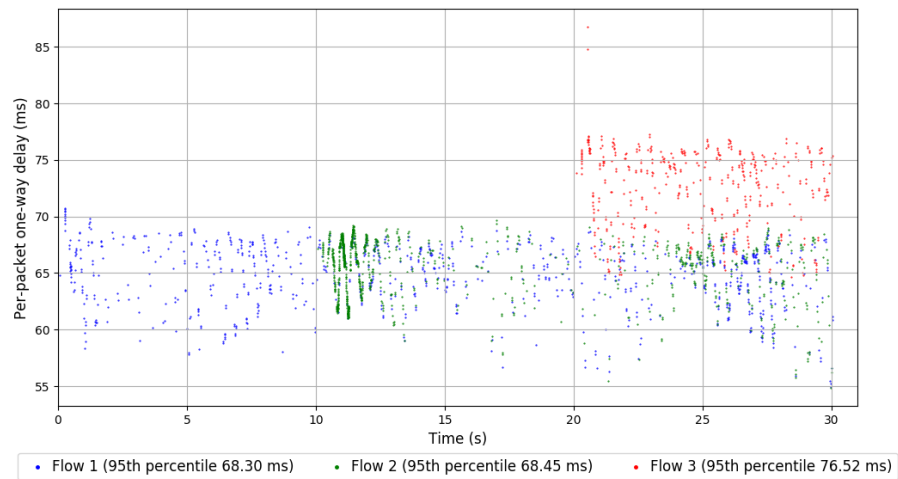
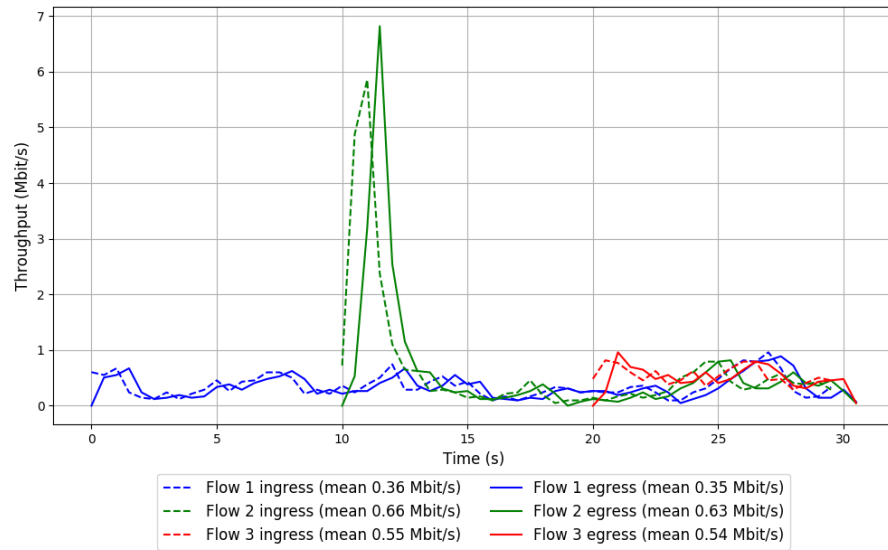


Run 1: Statistics of TCP Vegas

Start at: 2018-11-15 05:08:41
End at: 2018-11-15 05:09:11
Local clock offset: -4.878 ms
Remote clock offset: 34.853 ms

Below is generated by plot.py at 2018-11-15 06:58:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.95 Mbit/s
95th percentile per-packet one-way delay: 75.125 ms
Loss rate: 3.19%
-- Flow 1:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 68.298 ms
Loss rate: 3.14%
-- Flow 2:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 68.448 ms
Loss rate: 3.84%
-- Flow 3:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 76.524 ms
Loss rate: 1.75%

Run 1: Report of TCP Vegas — Data Link

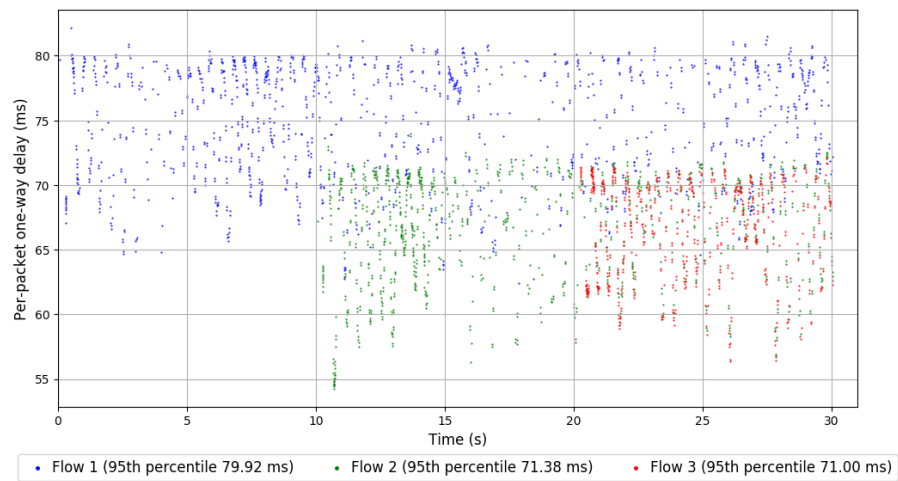
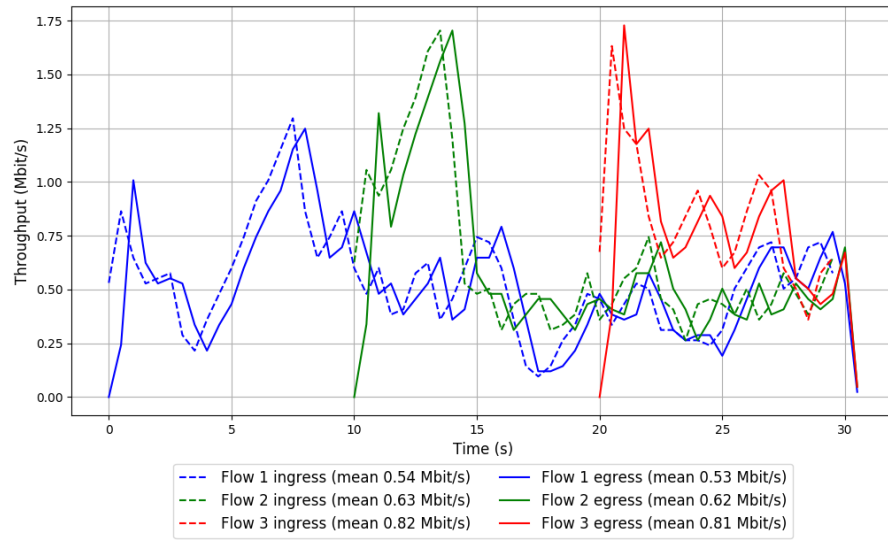


Run 2: Statistics of TCP Vegas

Start at: 2018-11-15 05:34:16
End at: 2018-11-15 05:34:46
Local clock offset: -3.481 ms
Remote clock offset: 36.396 ms

Below is generated by plot.py at 2018-11-15 06:58:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 1.21 Mbit/s
95th percentile per-packet one-way delay: 79.548 ms
Loss rate: 1.69%
-- Flow 1:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 79.921 ms
Loss rate: 1.93%
-- Flow 2:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 71.383 ms
Loss rate: 1.34%
-- Flow 3:
Average throughput: 0.81 Mbit/s
95th percentile per-packet one-way delay: 70.998 ms
Loss rate: 1.76%

Run 2: Report of TCP Vegas — Data Link

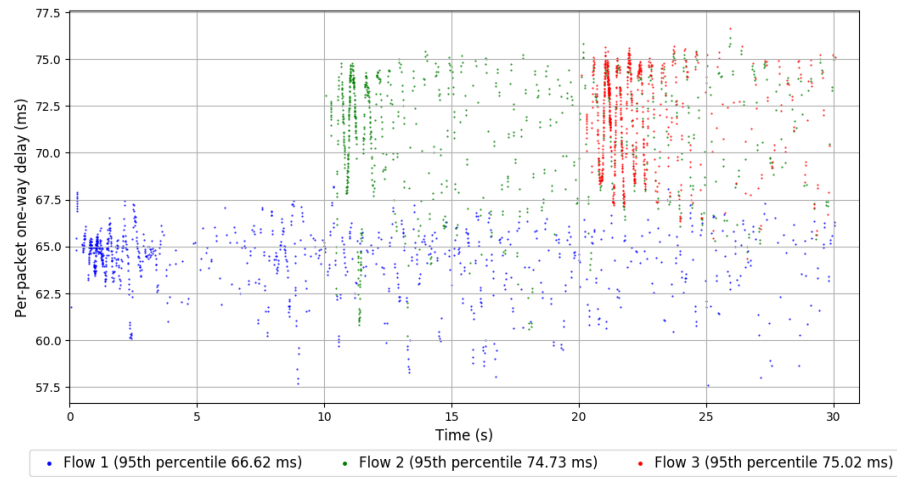
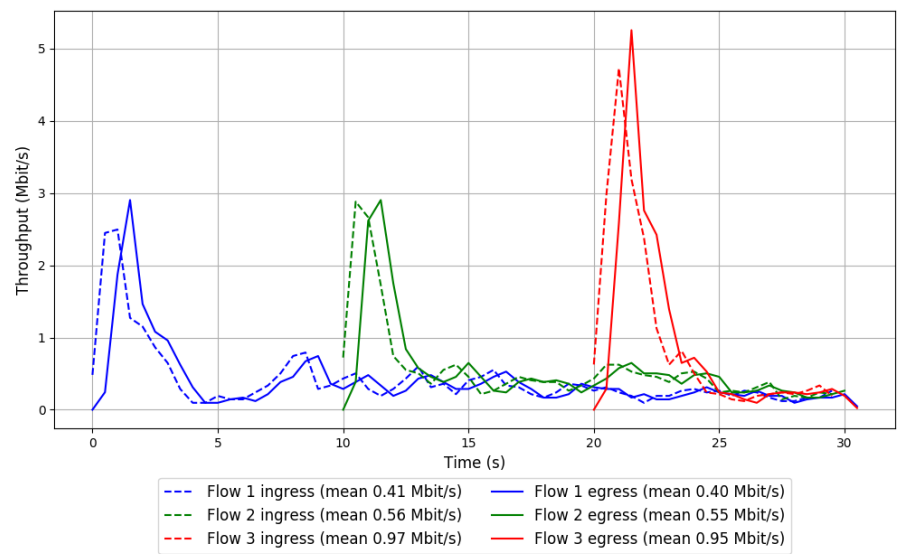


Run 3: Statistics of TCP Vegas

Start at: 2018-11-15 05:59:39
End at: 2018-11-15 06:00:09
Local clock offset: -2.418 ms
Remote clock offset: 29.658 ms

Below is generated by plot.py at 2018-11-15 06:58:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 1.08 Mbit/s
95th percentile per-packet one-way delay: 74.719 ms
Loss rate: 2.24%
-- Flow 1:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 66.617 ms
Loss rate: 2.90%
-- Flow 2:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 74.727 ms
Loss rate: 1.73%
-- Flow 3:
Average throughput: 0.95 Mbit/s
95th percentile per-packet one-way delay: 75.018 ms
Loss rate: 1.98%

Run 3: Report of TCP Vegas — Data Link

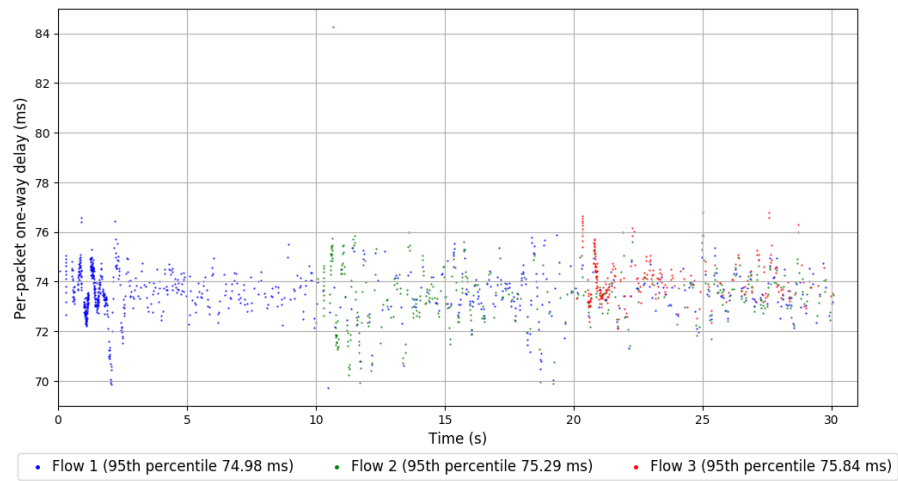
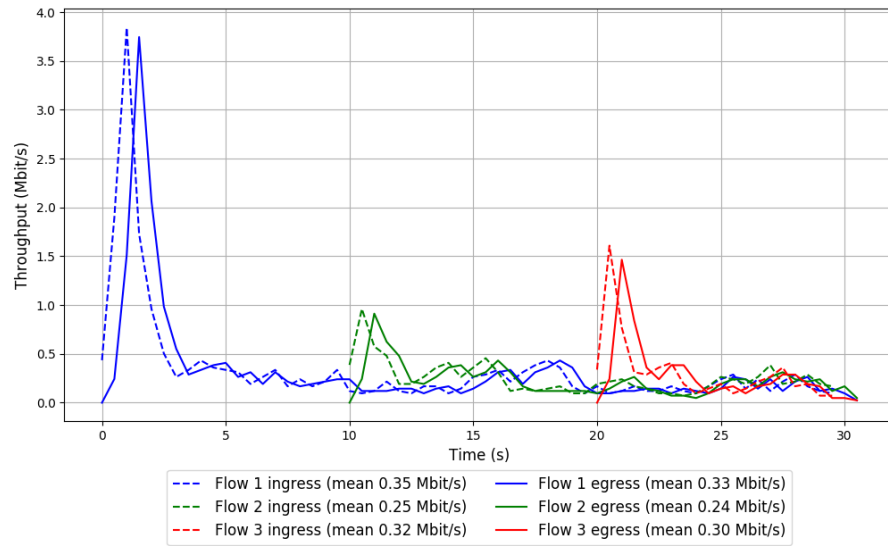


Run 4: Statistics of TCP Vegas

Start at: 2018-11-15 06:25:36
End at: 2018-11-15 06:26:06
Local clock offset: -3.24 ms
Remote clock offset: 32.032 ms

```
# Below is generated by plot.py at 2018-11-15 06:58:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 75.263 ms
Loss rate: 4.01%
-- Flow 1:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 74.977 ms
Loss rate: 3.58%
-- Flow 2:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 75.294 ms
Loss rate: 5.05%
-- Flow 3:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 75.845 ms
Loss rate: 3.82%
```

Run 4: Report of TCP Vegas — Data Link

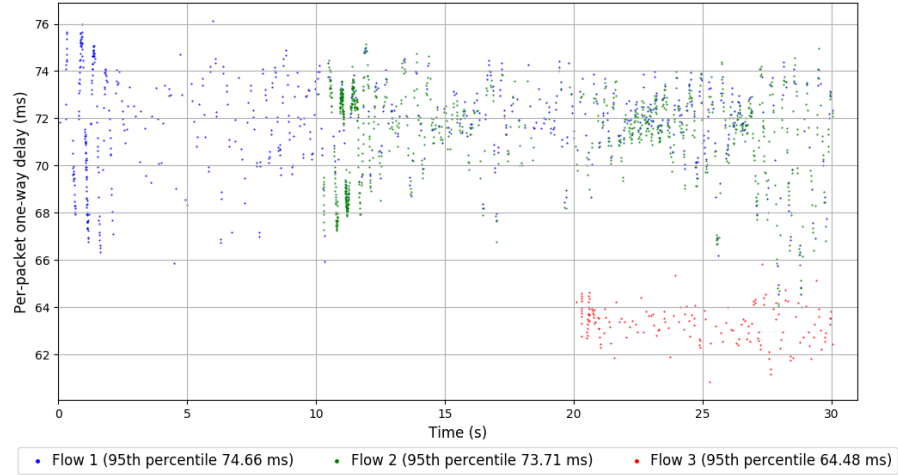
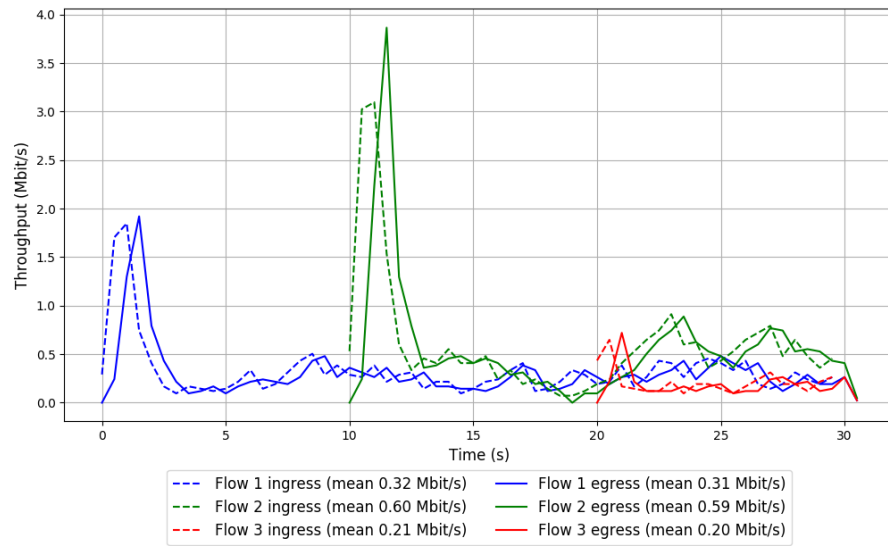


Run 5: Statistics of TCP Vegas

Start at: 2018-11-15 06:51:17
End at: 2018-11-15 06:51:47
Local clock offset: 1.614 ms
Remote clock offset: 40.172 ms

Below is generated by plot.py at 2018-11-15 06:58:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.77 Mbit/s
95th percentile per-packet one-way delay: 74.199 ms
Loss rate: 3.72%
-- Flow 1:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 74.655 ms
Loss rate: 4.20%
-- Flow 2:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 73.714 ms
Loss rate: 2.69%
-- Flow 3:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 64.479 ms
Loss rate: 7.30%

Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-11-15 05:05:42

End at: 2018-11-15 05:06:12

Local clock offset: -4.637 ms

Remote clock offset: 29.07 ms

Below is generated by plot.py at 2018-11-15 06:59:08

Datalink statistics

-- Total of 3 flows:

Average throughput: 34.86 Mbit/s

95th percentile per-packet one-way delay: 221.473 ms

Loss rate: 55.96%

-- Flow 1:

Average throughput: 7.06 Mbit/s

95th percentile per-packet one-way delay: 226.992 ms

Loss rate: 67.78%

-- Flow 2:

Average throughput: 39.50 Mbit/s

95th percentile per-packet one-way delay: 219.875 ms

Loss rate: 52.89%

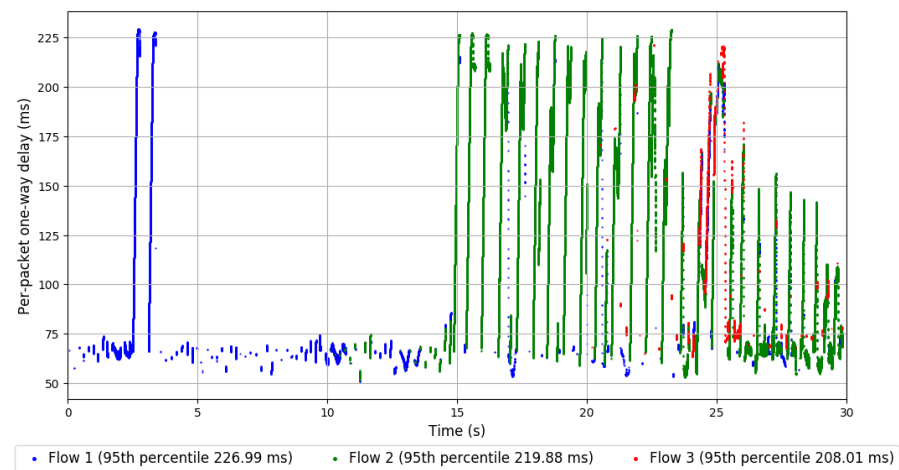
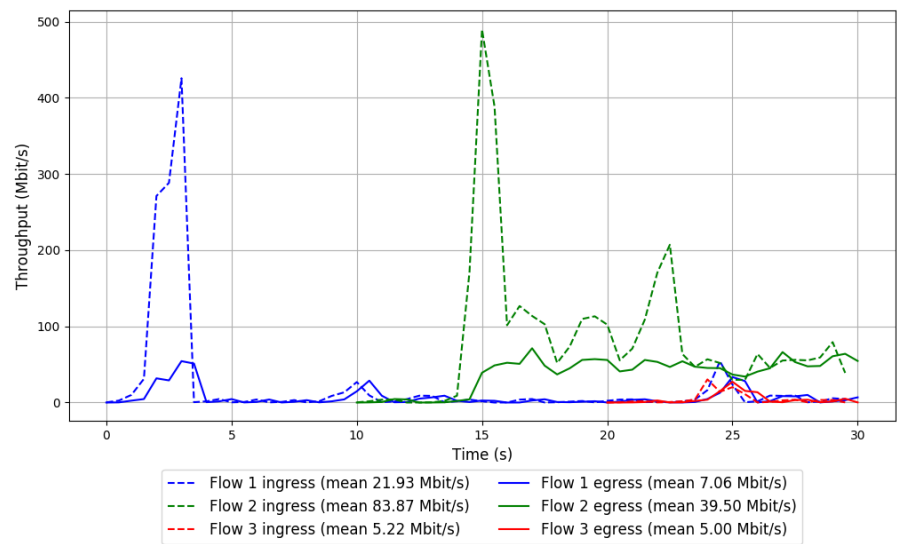
-- Flow 3:

Average throughput: 5.00 Mbit/s

95th percentile per-packet one-way delay: 208.013 ms

Loss rate: 4.00%

Run 1: Report of Verus — Data Link

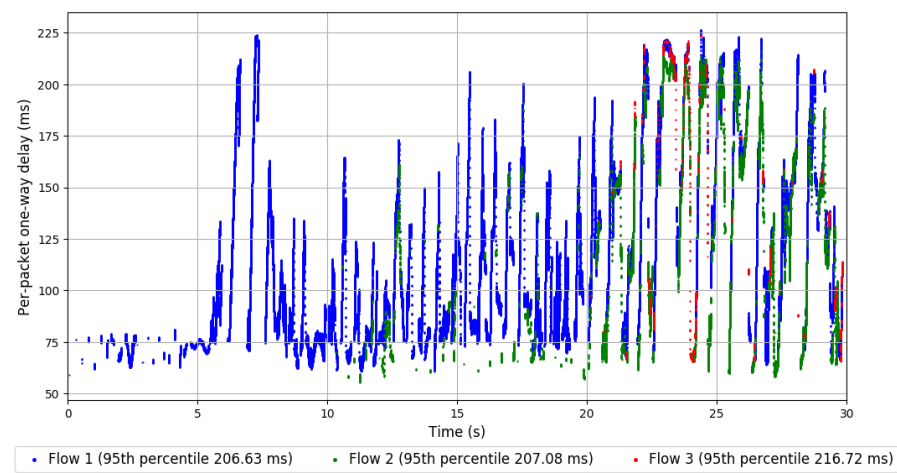
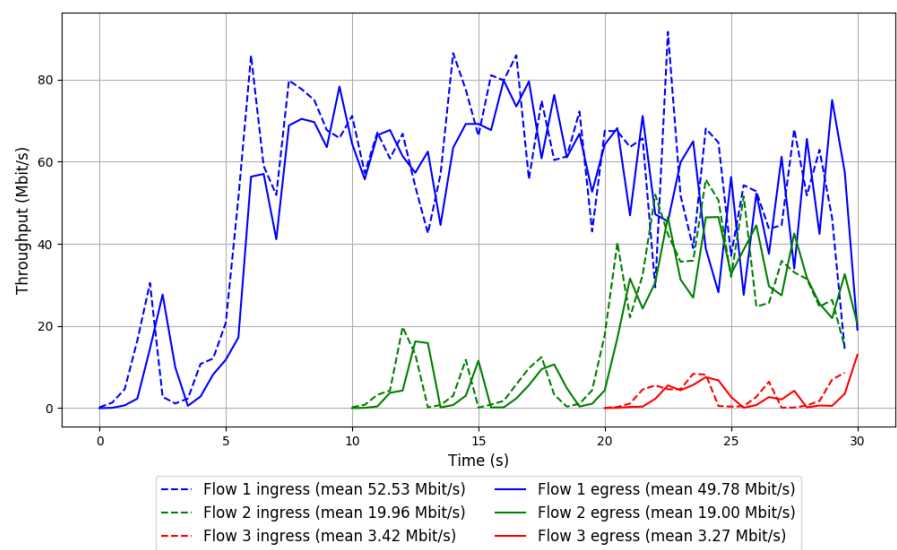


Run 2: Statistics of Verus

Start at: 2018-11-15 05:31:05
End at: 2018-11-15 05:31:35
Local clock offset: -4.548 ms
Remote clock offset: 37.445 ms

Below is generated by plot.py at 2018-11-15 06:59:13
Datalink statistics
-- Total of 3 flows:
Average throughput: 63.34 Mbit/s
95th percentile per-packet one-way delay: 207.189 ms
Loss rate: 5.01%
-- Flow 1:
Average throughput: 49.78 Mbit/s
95th percentile per-packet one-way delay: 206.631 ms
Loss rate: 5.06%
-- Flow 2:
Average throughput: 19.00 Mbit/s
95th percentile per-packet one-way delay: 207.078 ms
Loss rate: 4.85%
-- Flow 3:
Average throughput: 3.27 Mbit/s
95th percentile per-packet one-way delay: 216.722 ms
Loss rate: 4.22%

Run 2: Report of Verus — Data Link

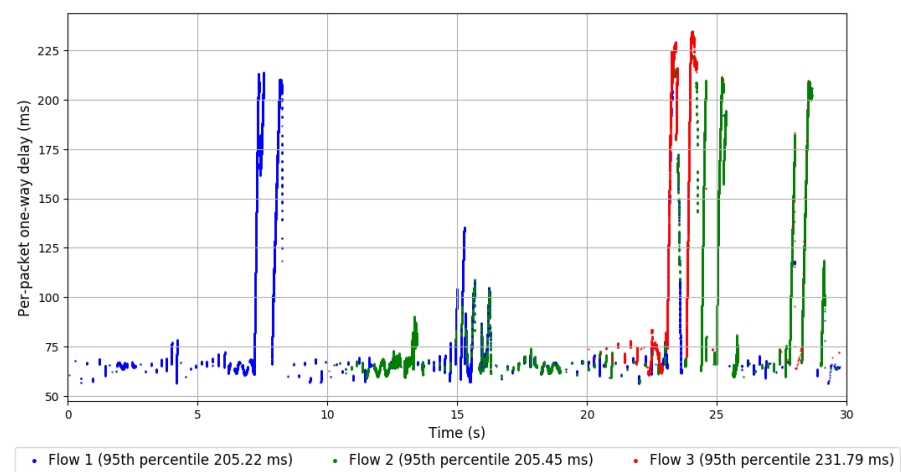
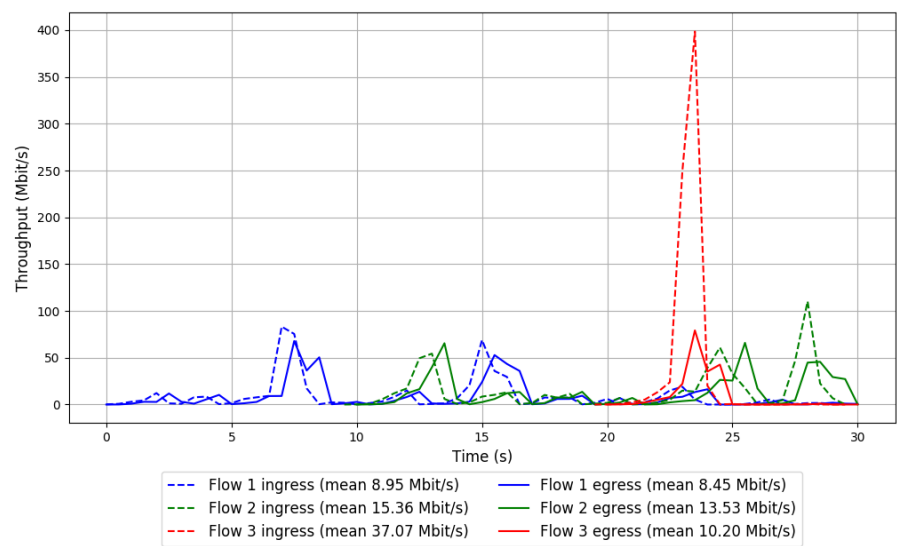


Run 3: Statistics of Verus

Start at: 2018-11-15 05:56:28
End at: 2018-11-15 05:56:58
Local clock offset: -2.508 ms
Remote clock offset: 29.832 ms

Below is generated by plot.py at 2018-11-15 06:59:13
Datalink statistics
-- Total of 3 flows:
Average throughput: 20.69 Mbit/s
95th percentile per-packet one-way delay: 218.983 ms
Loss rate: 33.55%
-- Flow 1:
Average throughput: 8.45 Mbit/s
95th percentile per-packet one-way delay: 205.215 ms
Loss rate: 5.60%
-- Flow 2:
Average throughput: 13.53 Mbit/s
95th percentile per-packet one-way delay: 205.450 ms
Loss rate: 11.90%
-- Flow 3:
Average throughput: 10.20 Mbit/s
95th percentile per-packet one-way delay: 231.787 ms
Loss rate: 72.48%

Run 3: Report of Verus — Data Link

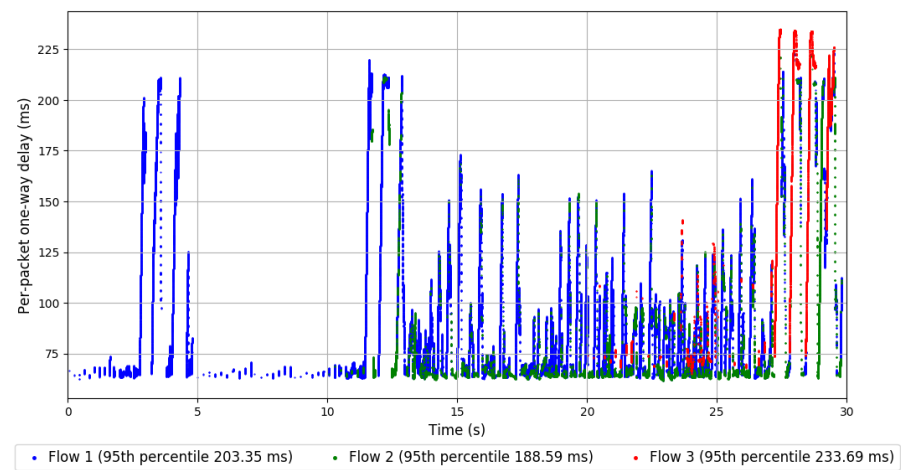
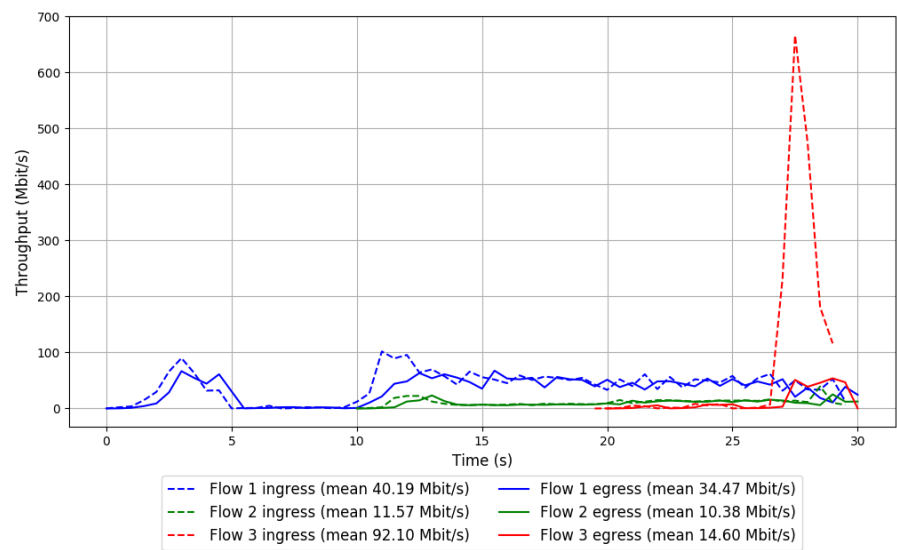


Run 4: Statistics of Verus

Start at: 2018-11-15 06:22:19
End at: 2018-11-15 06:22:49
Local clock offset: -2.731 ms
Remote clock offset: 31.039 ms

```
# Below is generated by plot.py at 2018-11-15 06:59:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 46.01 Mbit/s
95th percentile per-packet one-way delay: 210.772 ms
Loss rate: 39.96%
-- Flow 1:
Average throughput: 34.47 Mbit/s
95th percentile per-packet one-way delay: 203.351 ms
Loss rate: 14.10%
-- Flow 2:
Average throughput: 10.38 Mbit/s
95th percentile per-packet one-way delay: 188.592 ms
Loss rate: 10.03%
-- Flow 3:
Average throughput: 14.60 Mbit/s
95th percentile per-packet one-way delay: 233.691 ms
Loss rate: 83.89%
```

Run 4: Report of Verus — Data Link

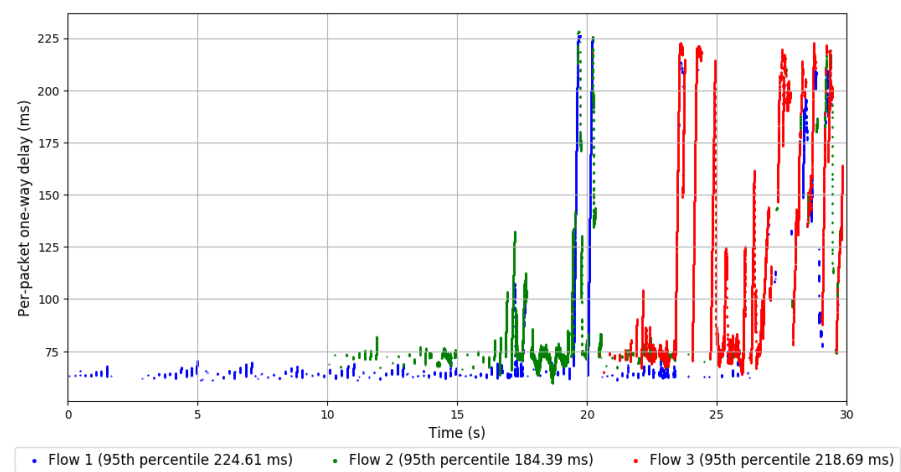
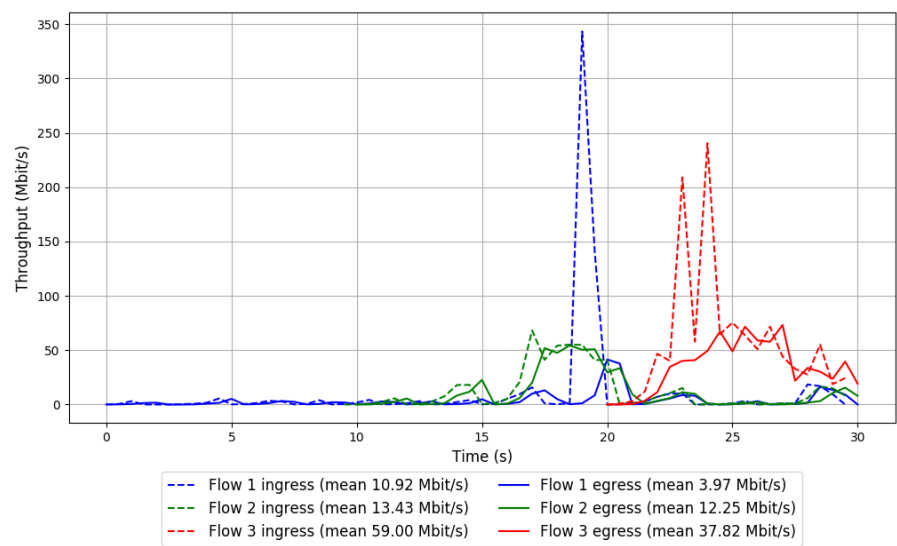


Run 5: Statistics of Verus

Start at: 2018-11-15 06:48:11
End at: 2018-11-15 06:48:41
Local clock offset: 1.499 ms
Remote clock offset: 38.949 ms

Below is generated by plot.py at 2018-11-15 06:59:13
Datalink statistics
-- Total of 3 flows:
Average throughput: 24.28 Mbit/s
95th percentile per-packet one-way delay: 218.143 ms
Loss rate: 37.54%
-- Flow 1:
Average throughput: 3.97 Mbit/s
95th percentile per-packet one-way delay: 224.611 ms
Loss rate: 63.57%
-- Flow 2:
Average throughput: 12.25 Mbit/s
95th percentile per-packet one-way delay: 184.394 ms
Loss rate: 8.50%
-- Flow 3:
Average throughput: 37.82 Mbit/s
95th percentile per-packet one-way delay: 218.685 ms
Loss rate: 36.26%

Run 5: Report of Verus — Data Link

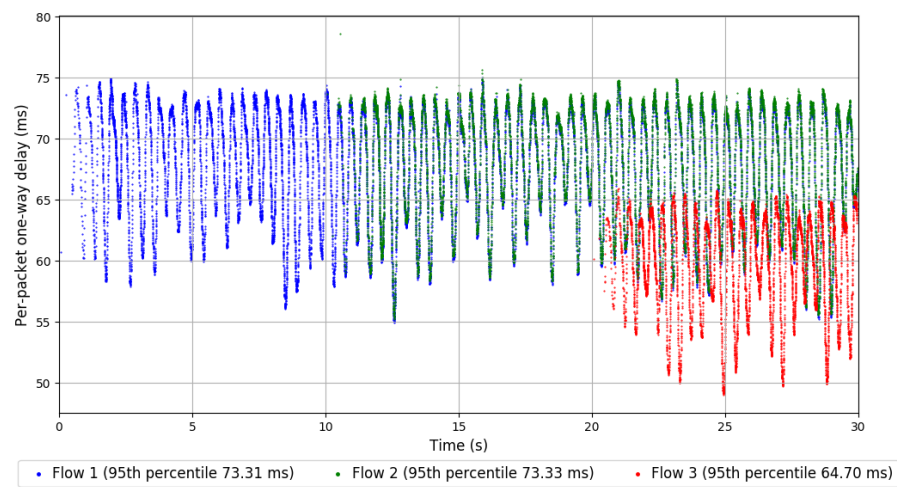
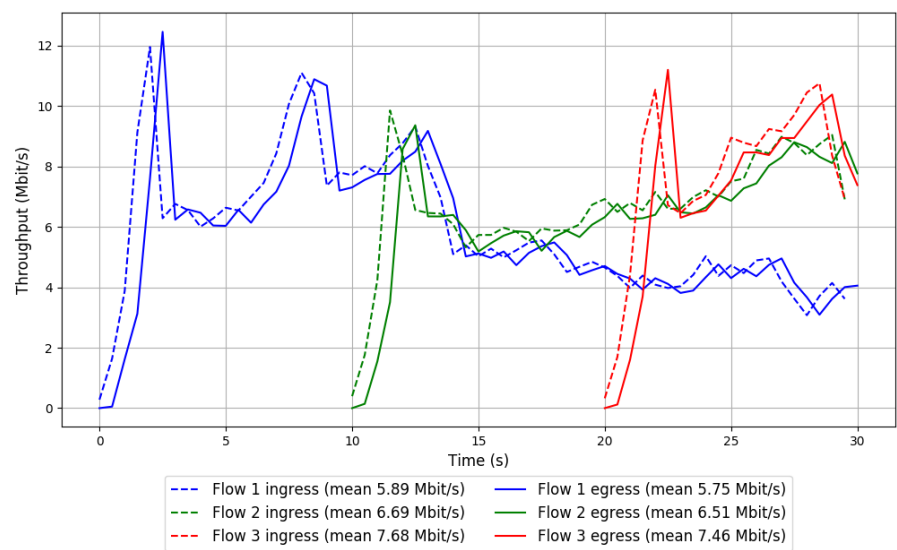


Run 1: Statistics of PCC-Vivace

Start at: 2018-11-15 05:01:41
End at: 2018-11-15 05:02:11
Local clock offset: -5.285 ms
Remote clock offset: 18.186 ms

Below is generated by plot.py at 2018-11-15 06:59:13
Datalink statistics
-- Total of 3 flows:
Average throughput: 12.54 Mbit/s
95th percentile per-packet one-way delay: 73.212 ms
Loss rate: 2.65%
-- Flow 1:
Average throughput: 5.75 Mbit/s
95th percentile per-packet one-way delay: 73.312 ms
Loss rate: 2.47%
-- Flow 2:
Average throughput: 6.51 Mbit/s
95th percentile per-packet one-way delay: 73.330 ms
Loss rate: 2.77%
-- Flow 3:
Average throughput: 7.46 Mbit/s
95th percentile per-packet one-way delay: 64.700 ms
Loss rate: 2.87%

Run 1: Report of PCC-Vivace — Data Link

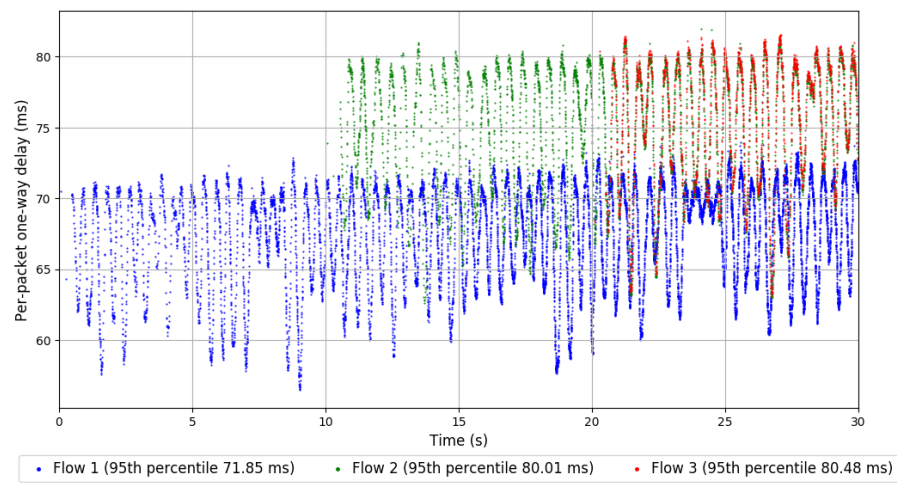
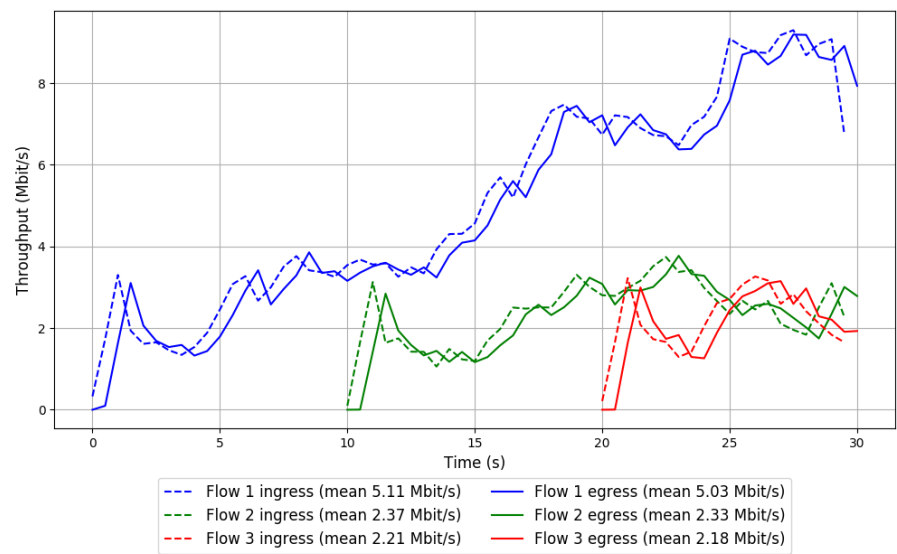


Run 2: Statistics of PCC-Vivace

Start at: 2018-11-15 05:27:05
End at: 2018-11-15 05:27:35
Local clock offset: -6.97 ms
Remote clock offset: 50.244 ms

Below is generated by plot.py at 2018-11-15 06:59:13
Datalink statistics
-- Total of 3 flows:
Average throughput: 7.30 Mbit/s
95th percentile per-packet one-way delay: 79.510 ms
Loss rate: 1.59%
-- Flow 1:
Average throughput: 5.03 Mbit/s
95th percentile per-packet one-way delay: 71.850 ms
Loss rate: 1.61%
-- Flow 2:
Average throughput: 2.33 Mbit/s
95th percentile per-packet one-way delay: 80.013 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 2.18 Mbit/s
95th percentile per-packet one-way delay: 80.485 ms
Loss rate: 1.19%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-11-15 05:52:20

End at: 2018-11-15 05:52:50

Local clock offset: -2.421 ms

Remote clock offset: 31.17 ms

Below is generated by plot.py at 2018-11-15 06:59:13

Datalink statistics

-- Total of 3 flows:

Average throughput: 5.28 Mbit/s

95th percentile per-packet one-way delay: 77.339 ms

Loss rate: 1.55%

-- Flow 1:

Average throughput: 2.64 Mbit/s

95th percentile per-packet one-way delay: 77.470 ms

Loss rate: 1.55%

-- Flow 2:

Average throughput: 2.08 Mbit/s

95th percentile per-packet one-way delay: 77.521 ms

Loss rate: 1.31%

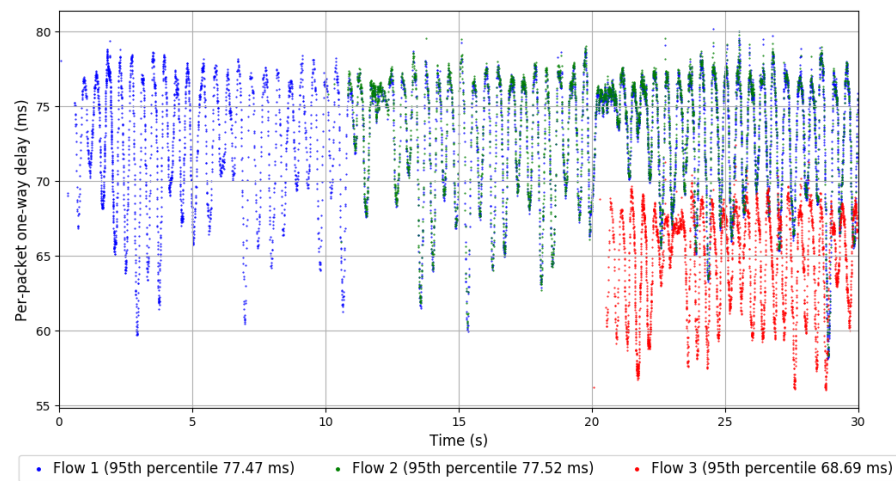
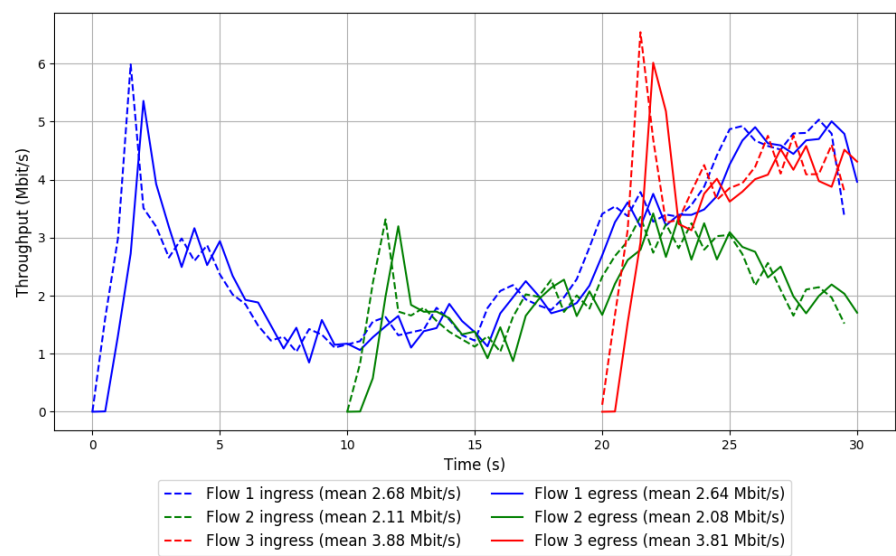
-- Flow 3:

Average throughput: 3.81 Mbit/s

95th percentile per-packet one-way delay: 68.690 ms

Loss rate: 1.82%

Run 3: Report of PCC-Vivace — Data Link

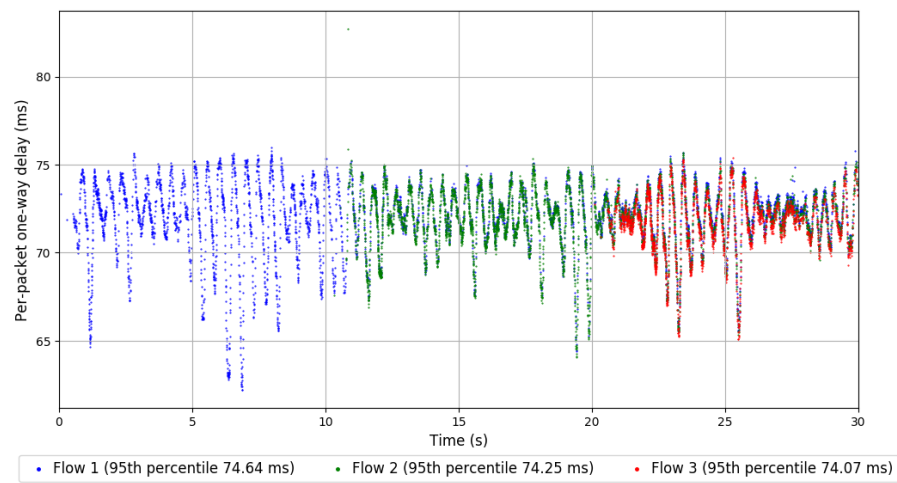
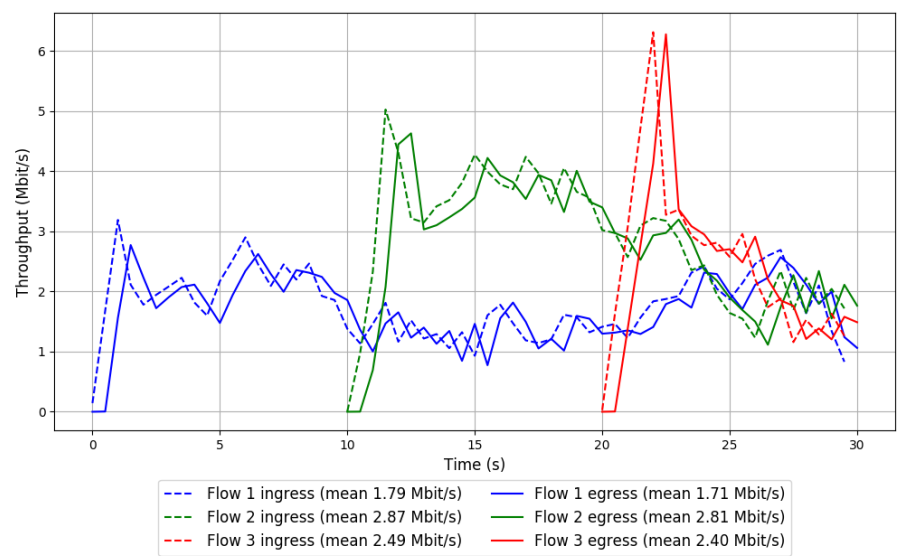


Run 4: Statistics of PCC-Vivace

Start at: 2018-11-15 06:18:13
End at: 2018-11-15 06:18:43
Local clock offset: -2.688 ms
Remote clock offset: 29.596 ms

Below is generated by plot.py at 2018-11-15 06:59:13
Datalink statistics
-- Total of 3 flows:
Average throughput: 4.35 Mbit/s
95th percentile per-packet one-way delay: 74.420 ms
Loss rate: 3.70%
-- Flow 1:
Average throughput: 1.71 Mbit/s
95th percentile per-packet one-way delay: 74.644 ms
Loss rate: 4.00%
-- Flow 2:
Average throughput: 2.81 Mbit/s
95th percentile per-packet one-way delay: 74.245 ms
Loss rate: 3.51%
-- Flow 3:
Average throughput: 2.40 Mbit/s
95th percentile per-packet one-way delay: 74.073 ms
Loss rate: 3.49%

Run 4: Report of PCC-Vivace — Data Link

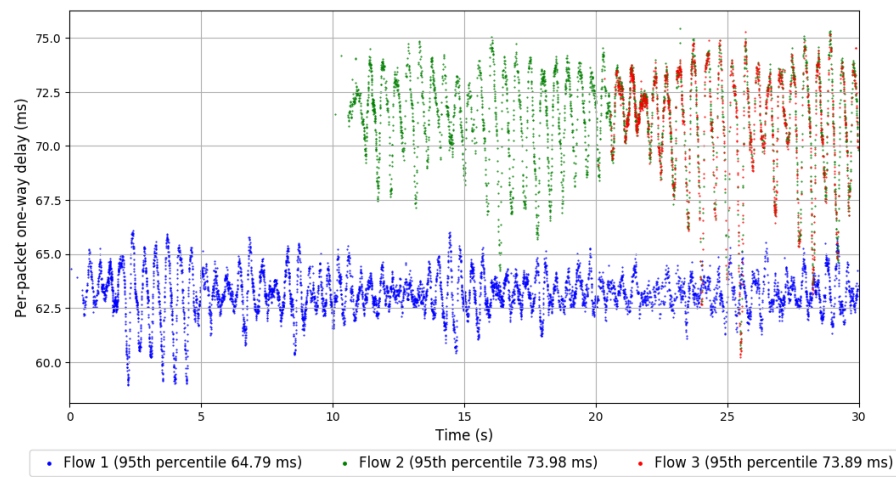
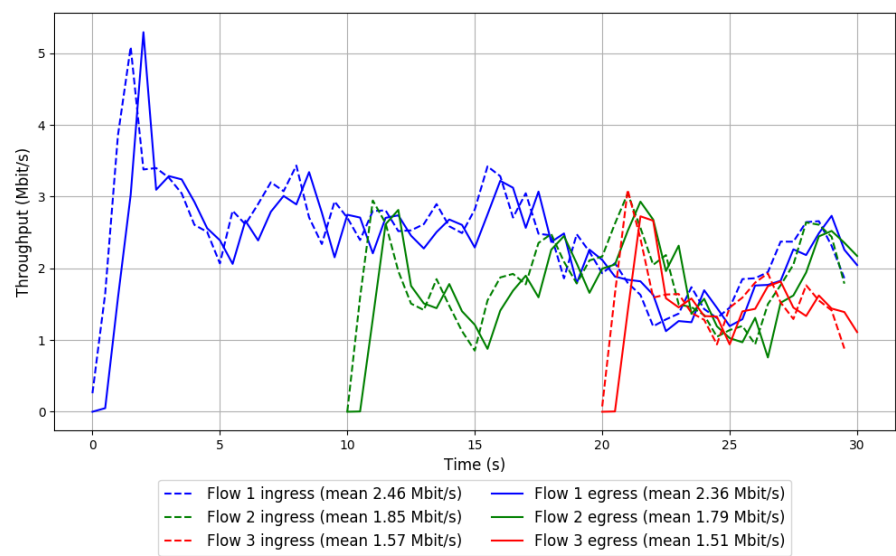


Run 5: Statistics of PCC-Vivace

Start at: 2018-11-15 06:44:08
End at: 2018-11-15 06:44:38
Local clock offset: 1.015 ms
Remote clock offset: 37.447 ms

Below is generated by plot.py at 2018-11-15 06:59:13
Datalink statistics
-- Total of 3 flows:
Average throughput: 4.04 Mbit/s
95th percentile per-packet one-way delay: 73.553 ms
Loss rate: 3.93%
-- Flow 1:
Average throughput: 2.36 Mbit/s
95th percentile per-packet one-way delay: 64.792 ms
Loss rate: 4.32%
-- Flow 2:
Average throughput: 1.79 Mbit/s
95th percentile per-packet one-way delay: 73.979 ms
Loss rate: 3.26%
-- Flow 3:
Average throughput: 1.51 Mbit/s
95th percentile per-packet one-way delay: 73.888 ms
Loss rate: 3.69%

Run 5: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-11-15 04:53:31

End at: 2018-11-15 04:54:01

Local clock offset: -5.244 ms

Remote clock offset: -5.59 ms

Below is generated by plot.py at 2018-11-15 06:59:13

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.77 Mbit/s

95th percentile per-packet one-way delay: 74.385 ms

Loss rate: 1.63%

-- Flow 1:

Average throughput: 2.20 Mbit/s

95th percentile per-packet one-way delay: 74.898 ms

Loss rate: 1.30%

-- Flow 2:

Average throughput: 1.39 Mbit/s

95th percentile per-packet one-way delay: 66.650 ms

Loss rate: 1.96%

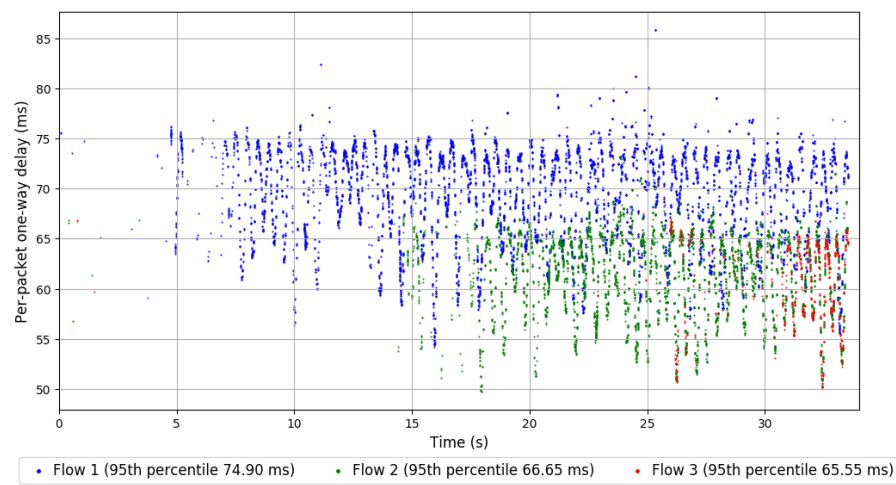
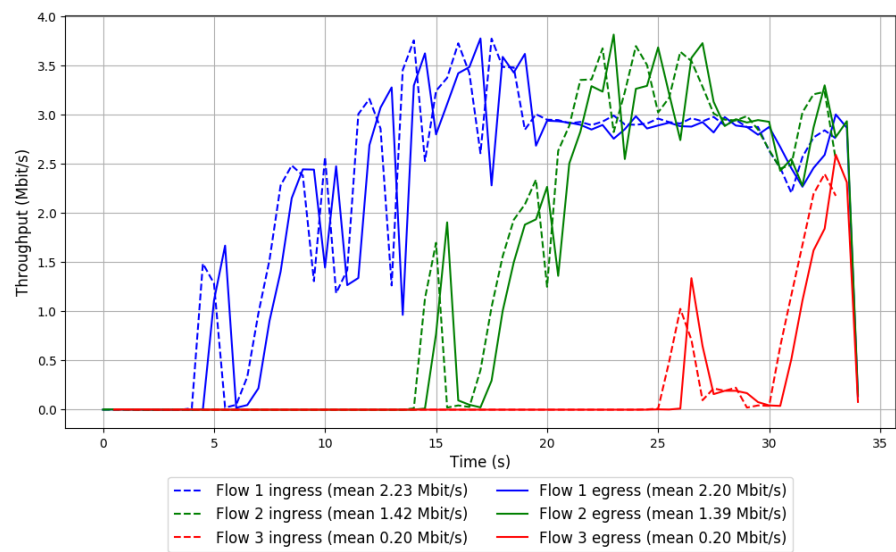
-- Flow 3:

Average throughput: 0.20 Mbit/s

95th percentile per-packet one-way delay: 65.545 ms

Loss rate: 2.88%

Run 1: Report of WebRTC media — Data Link

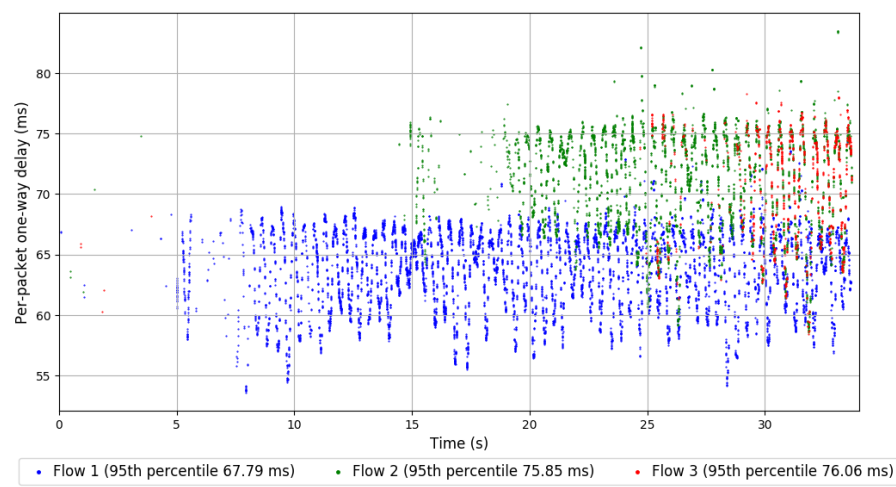
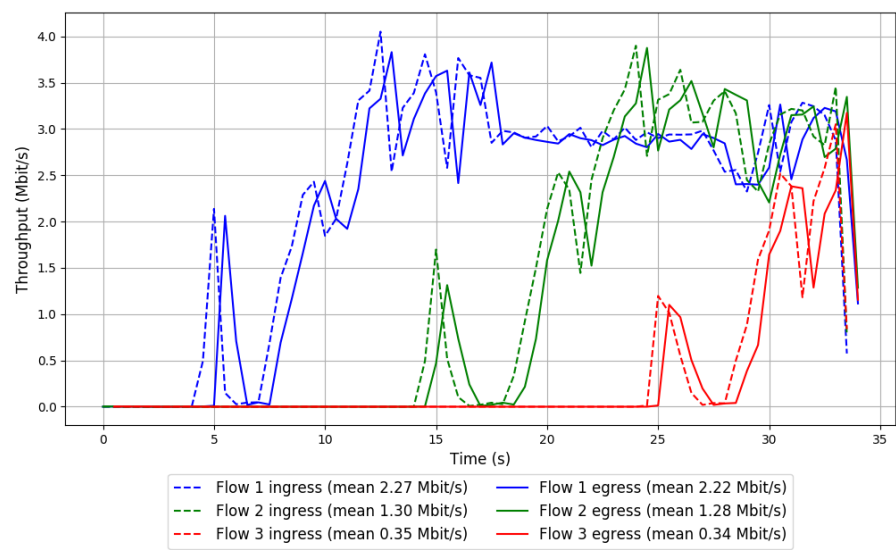


Run 2: Statistics of WebRTC media

Start at: 2018-11-15 05:18:21
End at: 2018-11-15 05:18:51
Local clock offset: -5.713 ms
Remote clock offset: 48.056 ms

Below is generated by plot.py at 2018-11-15 06:59:13
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.82 Mbit/s
95th percentile per-packet one-way delay: 75.272 ms
Loss rate: 1.75%
-- Flow 1:
Average throughput: 2.22 Mbit/s
95th percentile per-packet one-way delay: 67.788 ms
Loss rate: 1.91%
-- Flow 2:
Average throughput: 1.28 Mbit/s
95th percentile per-packet one-way delay: 75.854 ms
Loss rate: 1.44%
-- Flow 3:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 76.062 ms
Loss rate: 1.85%

Run 2: Report of WebRTC media — Data Link

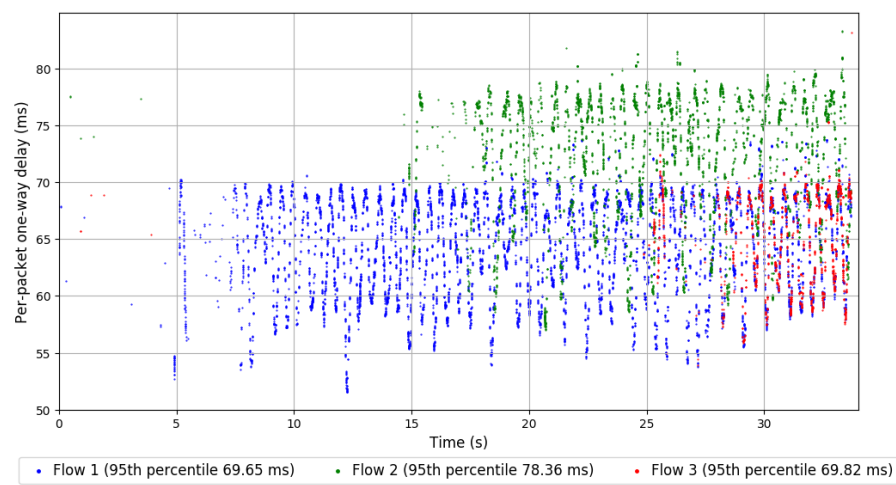
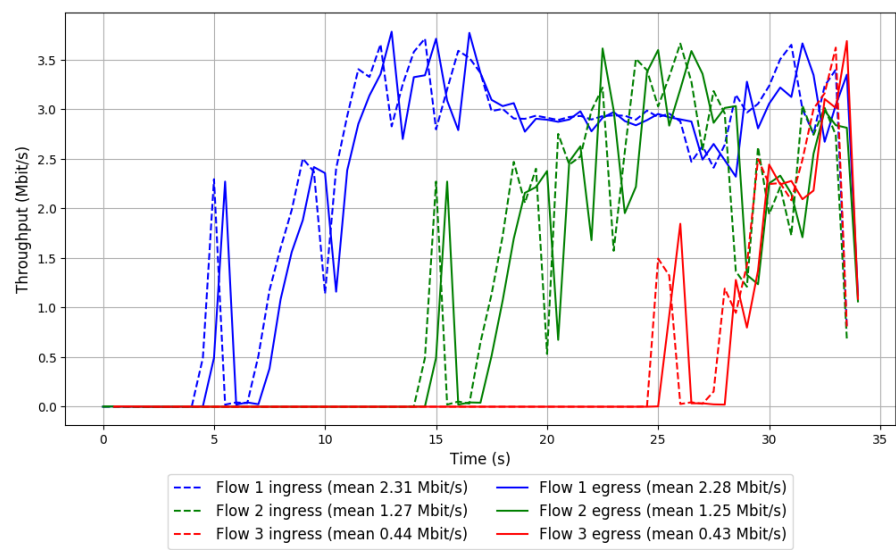


Run 3: Statistics of WebRTC media

Start at: 2018-11-15 05:43:51
End at: 2018-11-15 05:44:21
Local clock offset: -2.16 ms
Remote clock offset: 30.927 ms

Below is generated by plot.py at 2018-11-15 06:59:13
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.94 Mbit/s
95th percentile per-packet one-way delay: 77.259 ms
Loss rate: 1.20%
-- Flow 1:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 69.646 ms
Loss rate: 1.28%
-- Flow 2:
Average throughput: 1.25 Mbit/s
95th percentile per-packet one-way delay: 78.359 ms
Loss rate: 1.05%
-- Flow 3:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 69.819 ms
Loss rate: 1.17%

Run 3: Report of WebRTC media — Data Link

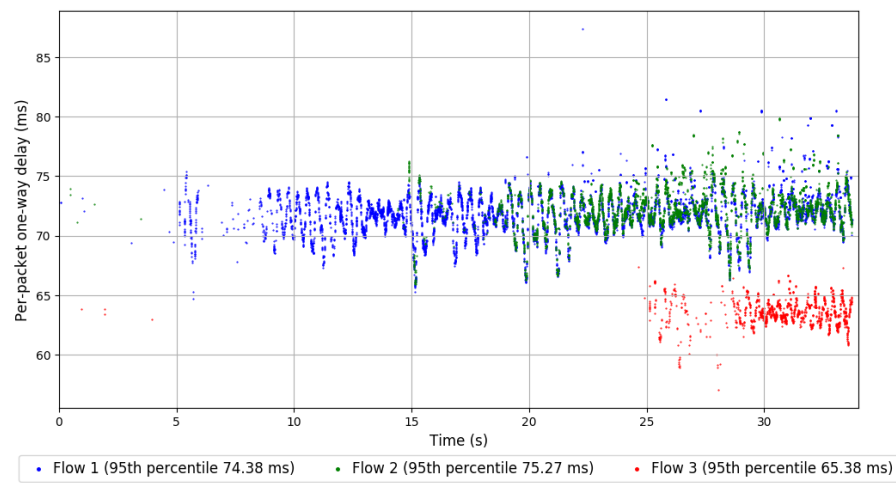
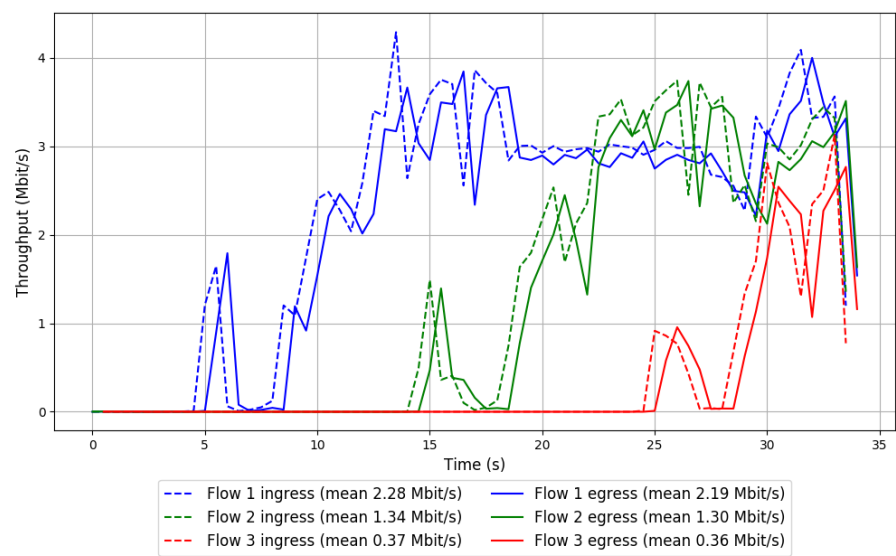


Run 4: Statistics of WebRTC media

Start at: 2018-11-15 06:09:31
End at: 2018-11-15 06:10:01
Local clock offset: -2.222 ms
Remote clock offset: 27.878 ms

Below is generated by plot.py at 2018-11-15 06:59:13
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.82 Mbit/s
95th percentile per-packet one-way delay: 74.627 ms
Loss rate: 3.68%
-- Flow 1:
Average throughput: 2.19 Mbit/s
95th percentile per-packet one-way delay: 74.379 ms
Loss rate: 3.92%
-- Flow 2:
Average throughput: 1.30 Mbit/s
95th percentile per-packet one-way delay: 75.271 ms
Loss rate: 3.33%
-- Flow 3:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 65.375 ms
Loss rate: 3.40%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-11-15 06:35:31
End at: 2018-11-15 06:36:01
Local clock offset: 0.002 ms
Remote clock offset: 35.031 ms

Below is generated by plot.py at 2018-11-15 06:59:13
Datalink statistics
-- Total of 3 flows:
Average throughput: 4.00 Mbit/s
95th percentile per-packet one-way delay: 66.846 ms
Loss rate: 4.47%
-- Flow 1:
Average throughput: 2.23 Mbit/s
95th percentile per-packet one-way delay: 66.821 ms
Loss rate: 4.62%
-- Flow 2:
Average throughput: 1.35 Mbit/s
95th percentile per-packet one-way delay: 66.863 ms
Loss rate: 4.57%
-- Flow 3:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 66.824 ms
Loss rate: 3.35%

Run 5: Report of WebRTC media — Data Link

