

Pantheon Report

Generated at 2018-10-02 18:51:53 (UTC).

Data path: Mexico on **em1** (*remote*) → AWS California 2 on **ens5** (*local*).

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 **time.stanford.edu** and have been applied to correct the timestamps in logs.

System info:

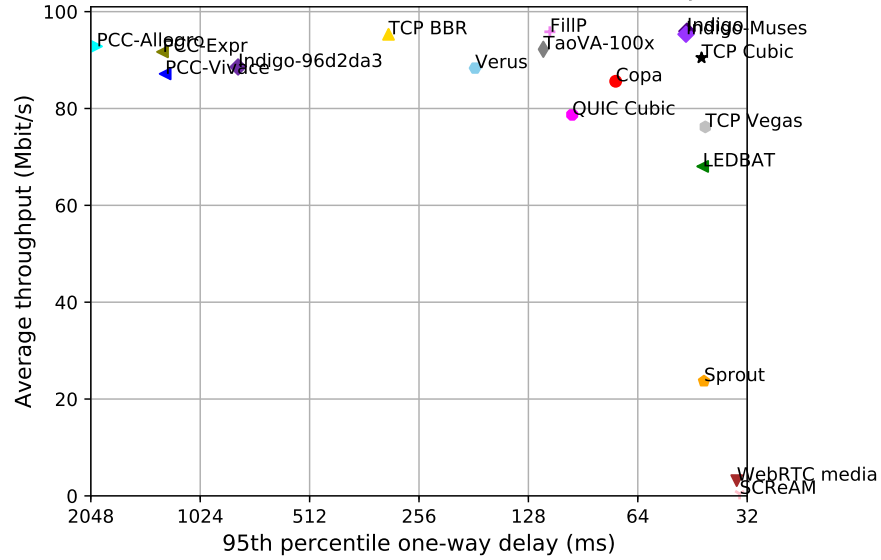
```
Linux 4.15.0-1021-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

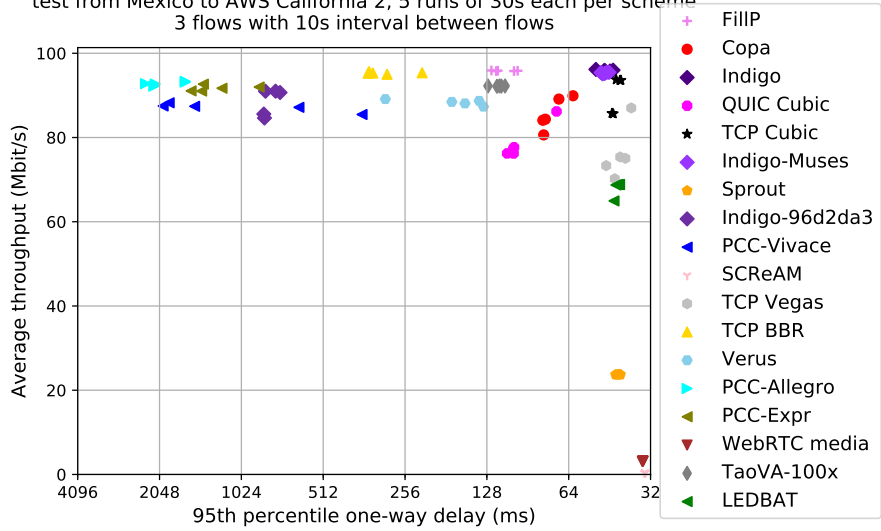
```
branch: muses @ 2e19c0464530faa92c63f8217c9971438a26a3be
third_party/fillp @ 5332fc9127c63565e13f4933b336c02d1aabdac6
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
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-quic @ 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 Mexico to AWS California 2, 5 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)



test from Mexico to AWS California 2, 5 runs of 30s each per scheme
3 flows with 10s interval between flows



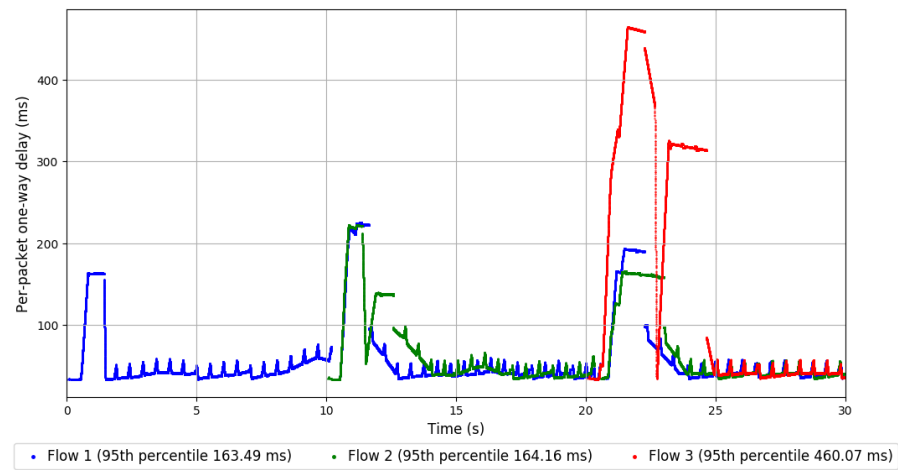
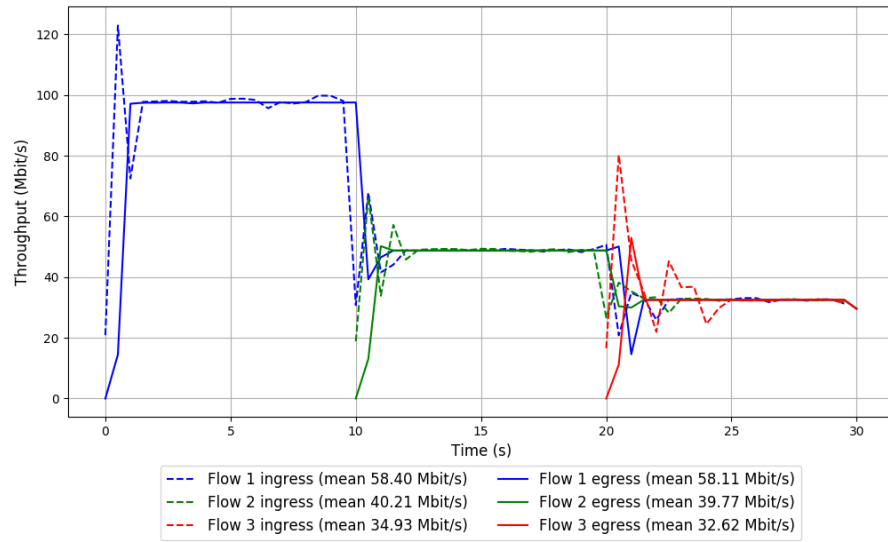
scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	58.54	40.50	29.68	177.72	180.85	561.64	1.10	1.43	4.99
Copa	5	51.40	37.65	27.64	102.33	46.03	53.98	0.16	0.35	0.70
TCP Cubic	5	52.51	38.97	36.32	44.03	41.74	48.56	0.15	0.28	0.70
FillP	5	57.67	38.60	37.86	95.96	126.62	96.38	0.95	0.95	0.91
Indigo	5	58.90	40.24	31.53	46.50	48.74	46.31	0.20	0.40	0.74
Indigo-96d2da3	5	54.59	35.03	32.51	673.75	926.27	770.53	3.23	3.31	5.01
LEDBAT	5	38.87	30.72	26.37	42.28	44.64	38.99	0.15	0.23	1.26
Indigo-Muses	5	58.42	36.59	38.19	47.41	47.65	46.21	0.14	0.29	0.73
PCC-Allegro	5	57.30	38.29	30.74	2022.28	1347.77	514.41	17.12	13.06	5.94
PCC-Expr	5	58.71	36.96	25.60	911.04	1428.84	162.48	30.69	14.86	1.63
QUIC Cubic	5	46.62	35.31	26.26	86.70	112.13	131.41	0.22	0.49	1.00
SCReAM	5	0.21	0.21	0.22	33.58	33.55	33.53	0.16	0.40	0.71
Sprout	5	12.00	11.91	11.52	41.84	42.00	42.92	0.24	0.37	0.69
TaoVA-100x	5	56.66	40.66	25.65	108.51	123.32	155.03	0.50	1.06	3.25
TCP Vegas	5	40.17	37.32	33.81	50.37	37.18	41.04	0.17	0.30	0.84
Verus	5	53.93	36.44	30.76	142.07	149.35	696.52	0.37	0.53	1.68
PCC-Vivace	5	57.20	32.61	25.18	1280.91	316.21	172.60	3.59	1.40	2.07
WebRTC media	5	1.73	1.00	0.42	34.13	34.19	34.32	0.16	0.28	0.41

Run 1: Statistics of TCP BBR

Start at: 2018-10-02 16:48:12
End at: 2018-10-02 16:48:42
Local clock offset: 3.517 ms
Remote clock offset: -5.126 ms

Below is generated by plot.py at 2018-10-02 18:40:37
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.37 Mbit/s
95th percentile per-packet one-way delay: 221.468 ms
Loss rate: 1.69%
-- Flow 1:
Average throughput: 58.11 Mbit/s
95th percentile per-packet one-way delay: 163.490 ms
Loss rate: 0.71%
-- Flow 2:
Average throughput: 39.77 Mbit/s
95th percentile per-packet one-way delay: 164.158 ms
Loss rate: 1.42%
-- Flow 3:
Average throughput: 32.62 Mbit/s
95th percentile per-packet one-way delay: 460.070 ms
Loss rate: 7.21%

Run 1: Report of TCP BBR — Data Link

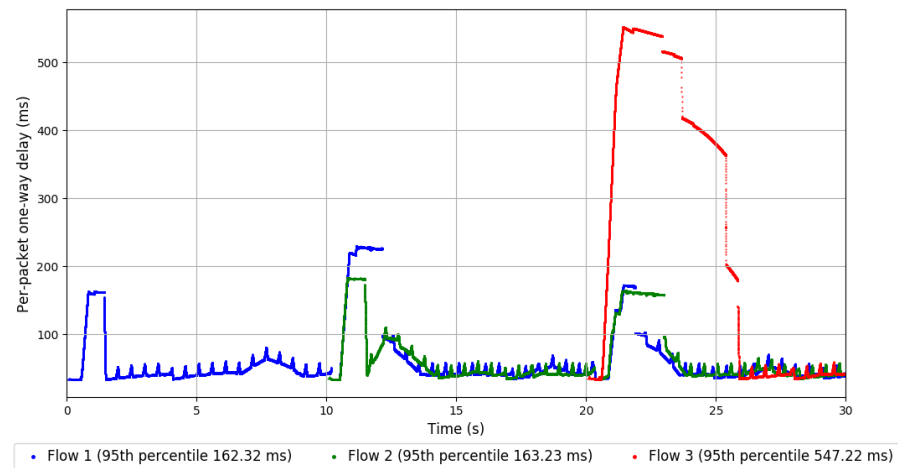
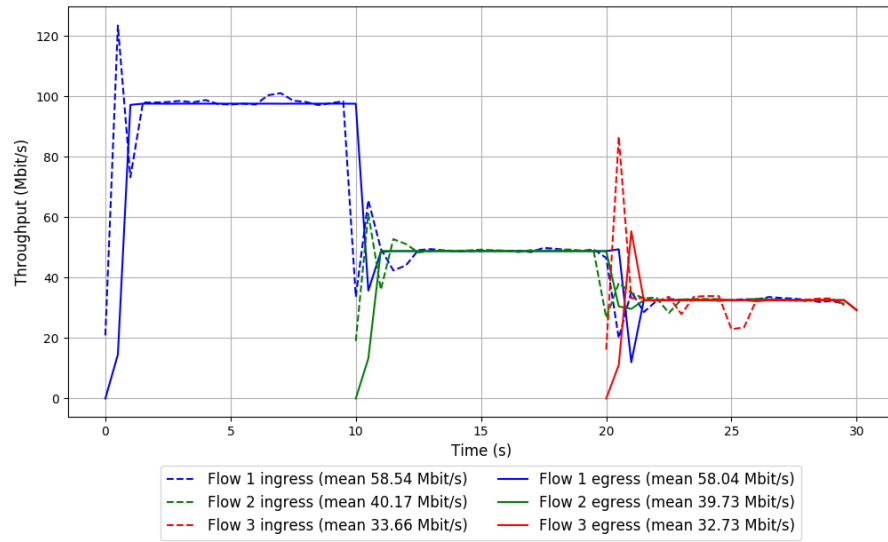


Run 2: Statistics of TCP BBR

Start at: 2018-10-02 17:13:02
End at: 2018-10-02 17:13:32
Local clock offset: 2.563 ms
Remote clock offset: -5.593 ms

Below is generated by plot.py at 2018-10-02 18:40:39
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.31 Mbit/s
95th percentile per-packet one-way delay: 336.388 ms
Loss rate: 1.43%
-- Flow 1:
Average throughput: 58.04 Mbit/s
95th percentile per-packet one-way delay: 162.322 ms
Loss rate: 1.06%
-- Flow 2:
Average throughput: 39.73 Mbit/s
95th percentile per-packet one-way delay: 163.234 ms
Loss rate: 1.43%
-- Flow 3:
Average throughput: 32.73 Mbit/s
95th percentile per-packet one-way delay: 547.218 ms
Loss rate: 3.39%

Run 2: Report of TCP BBR — Data Link

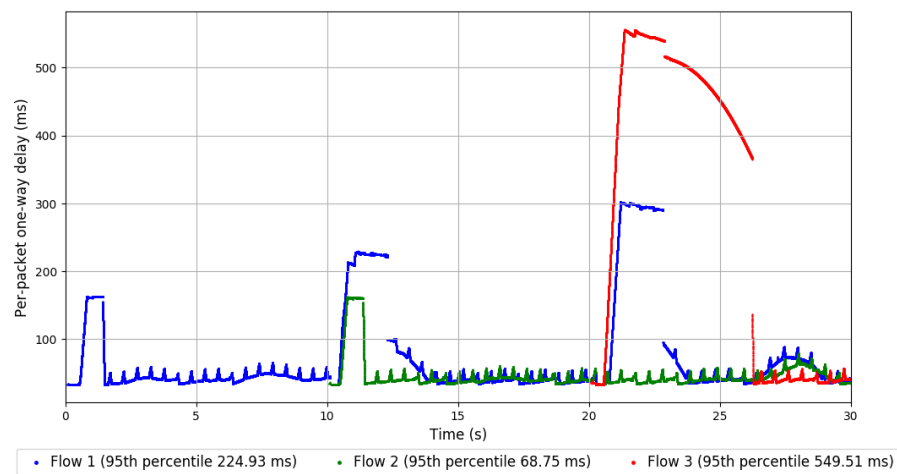
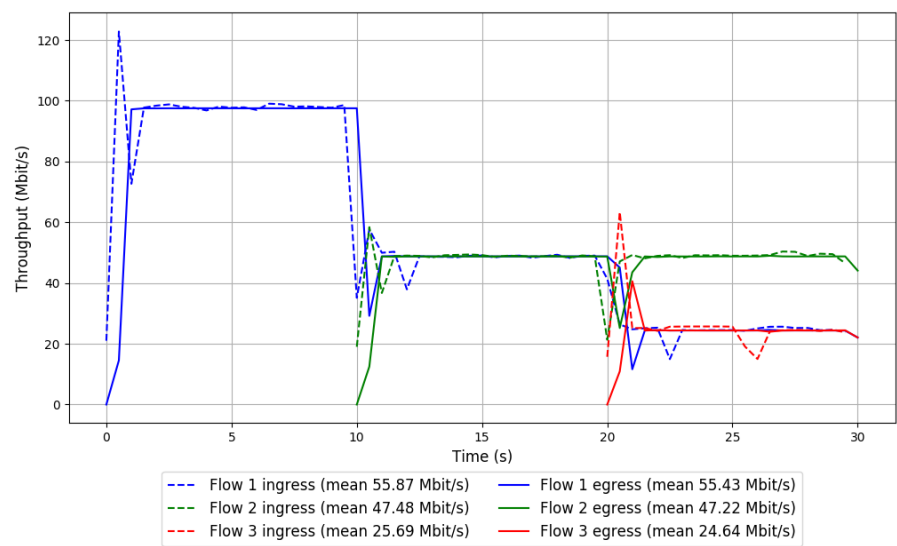


Run 3: Statistics of TCP BBR

Start at: 2018-10-02 17:37:44
End at: 2018-10-02 17:38:14
Local clock offset: 4.222 ms
Remote clock offset: -5.819 ms

Below is generated by plot.py at 2018-10-02 18:40:39
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.01 Mbit/s
95th percentile per-packet one-way delay: 297.973 ms
Loss rate: 1.29%
-- Flow 1:
Average throughput: 55.43 Mbit/s
95th percentile per-packet one-way delay: 224.933 ms
Loss rate: 1.00%
-- Flow 2:
Average throughput: 47.22 Mbit/s
95th percentile per-packet one-way delay: 68.746 ms
Loss rate: 0.85%
-- Flow 3:
Average throughput: 24.64 Mbit/s
95th percentile per-packet one-way delay: 549.506 ms
Loss rate: 4.74%

Run 3: Report of TCP BBR — Data Link

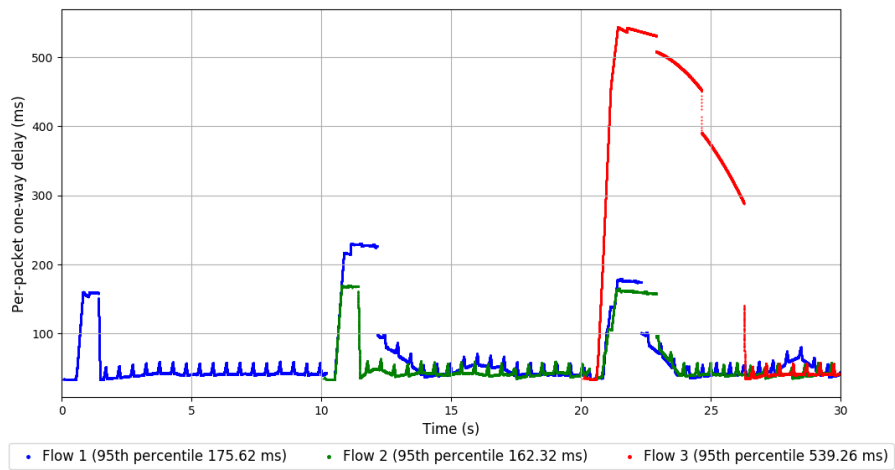
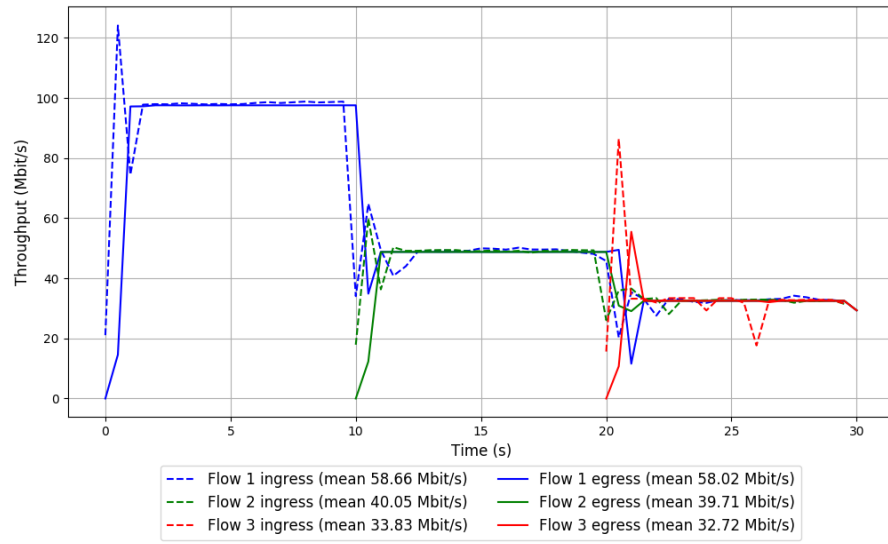


Run 4: Statistics of TCP BBR

Start at: 2018-10-02 18:02:34
End at: 2018-10-02 18:03:04
Local clock offset: 3.278 ms
Remote clock offset: -4.765 ms

Below is generated by plot.py at 2018-10-02 18:40:39
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.27 Mbit/s
95th percentile per-packet one-way delay: 349.793 ms
Loss rate: 1.58%
-- Flow 1:
Average throughput: 58.02 Mbit/s
95th percentile per-packet one-way delay: 175.618 ms
Loss rate: 1.30%
-- Flow 2:
Average throughput: 39.71 Mbit/s
95th percentile per-packet one-way delay: 162.319 ms
Loss rate: 1.20%
-- Flow 3:
Average throughput: 32.72 Mbit/s
95th percentile per-packet one-way delay: 539.259 ms
Loss rate: 3.93%

Run 4: Report of TCP BBR — Data Link

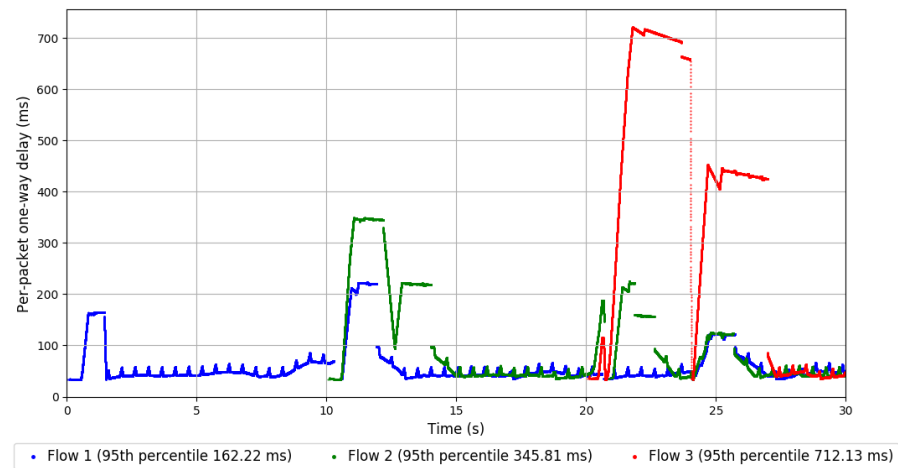
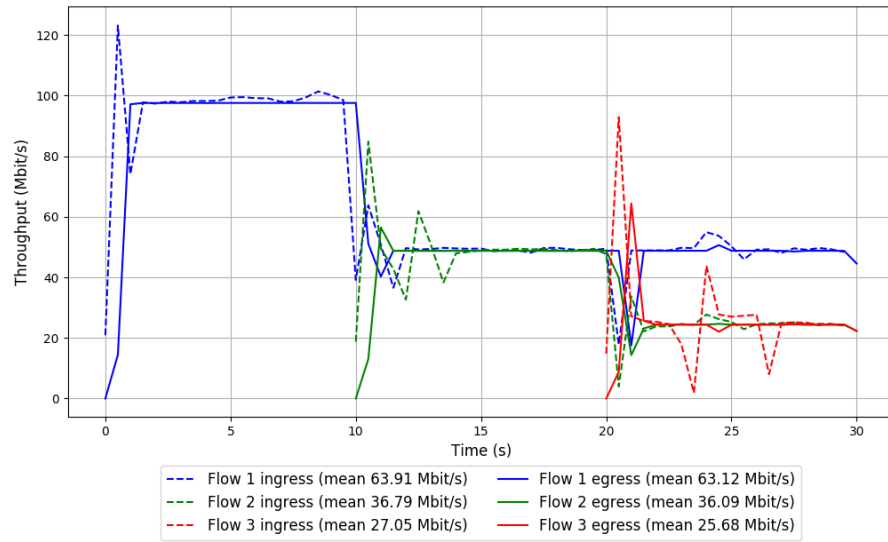


Run 5: Statistics of TCP BBR

Start at: 2018-10-02 18:27:19
End at: 2018-10-02 18:27:49
Local clock offset: 0.56 ms
Remote clock offset: -3.722 ms

Below is generated by plot.py at 2018-10-02 18:40:39
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.65 Mbit/s
95th percentile per-packet one-way delay: 347.102 ms
Loss rate: 2.03%
-- Flow 1:
Average throughput: 63.12 Mbit/s
95th percentile per-packet one-way delay: 162.221 ms
Loss rate: 1.44%
-- Flow 2:
Average throughput: 36.09 Mbit/s
95th percentile per-packet one-way delay: 345.808 ms
Loss rate: 2.23%
-- Flow 3:
Average throughput: 25.68 Mbit/s
95th percentile per-packet one-way delay: 712.131 ms
Loss rate: 5.69%

Run 5: Report of TCP BBR — Data Link

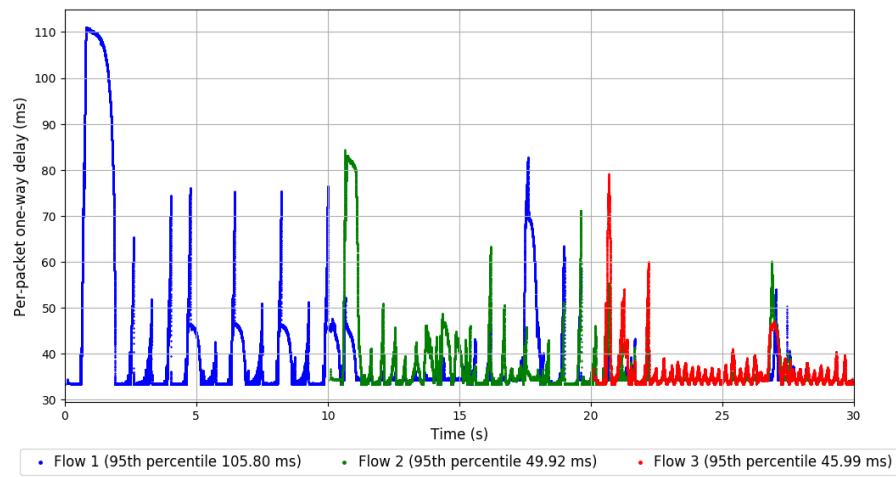
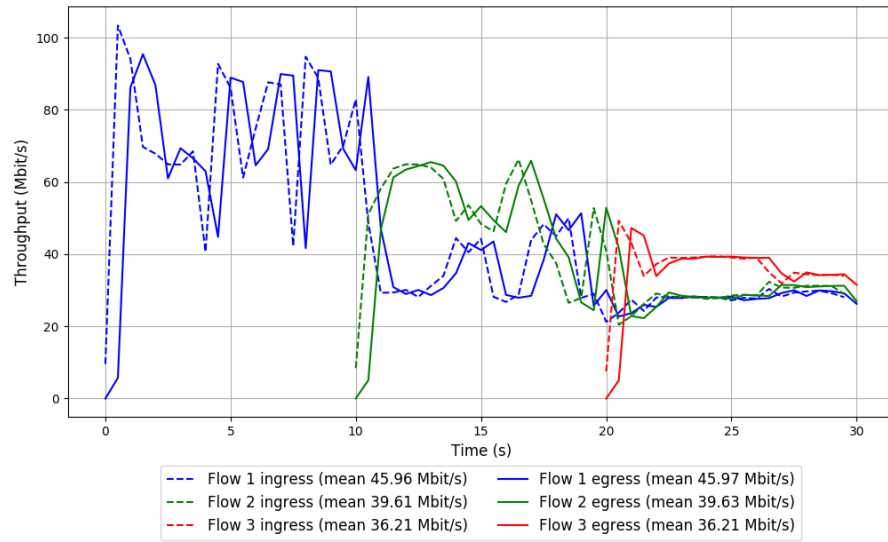


Run 1: Statistics of Copa

Start at: 2018-10-02 16:42:34
End at: 2018-10-02 16:43:04
Local clock offset: 3.768 ms
Remote clock offset: -4.729 ms

Below is generated by plot.py at 2018-10-02 18:41:29
Datalink statistics
-- Total of 3 flows:
Average throughput: 84.34 Mbit/s
95th percentile per-packet one-way delay: 78.007 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 45.97 Mbit/s
95th percentile per-packet one-way delay: 105.795 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 39.63 Mbit/s
95th percentile per-packet one-way delay: 49.918 ms
Loss rate: 0.27%
-- Flow 3:
Average throughput: 36.21 Mbit/s
95th percentile per-packet one-way delay: 45.990 ms
Loss rate: 0.67%

Run 1: Report of Copa — Data Link

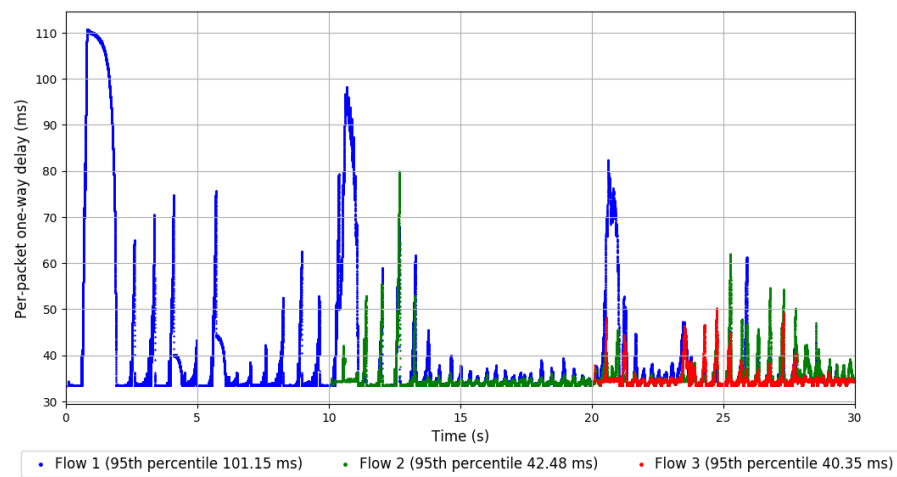
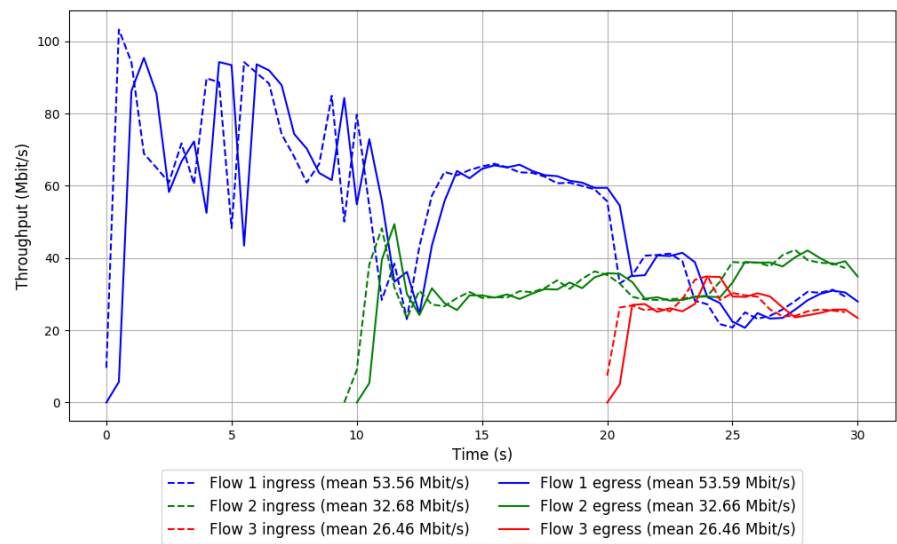


Run 2: Statistics of Copa

Start at: 2018-10-02 17:07:25
End at: 2018-10-02 17:07:55
Local clock offset: 2.623 ms
Remote clock offset: -5.474 ms

Below is generated by plot.py at 2018-10-02 18:41:29
Datalink statistics
-- Total of 3 flows:
Average throughput: 84.10 Mbit/s
95th percentile per-packet one-way delay: 79.673 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 53.59 Mbit/s
95th percentile per-packet one-way delay: 101.152 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 32.66 Mbit/s
95th percentile per-packet one-way delay: 42.479 ms
Loss rate: 0.38%
-- Flow 3:
Average throughput: 26.46 Mbit/s
95th percentile per-packet one-way delay: 40.353 ms
Loss rate: 0.63%

Run 2: Report of Copa — Data Link

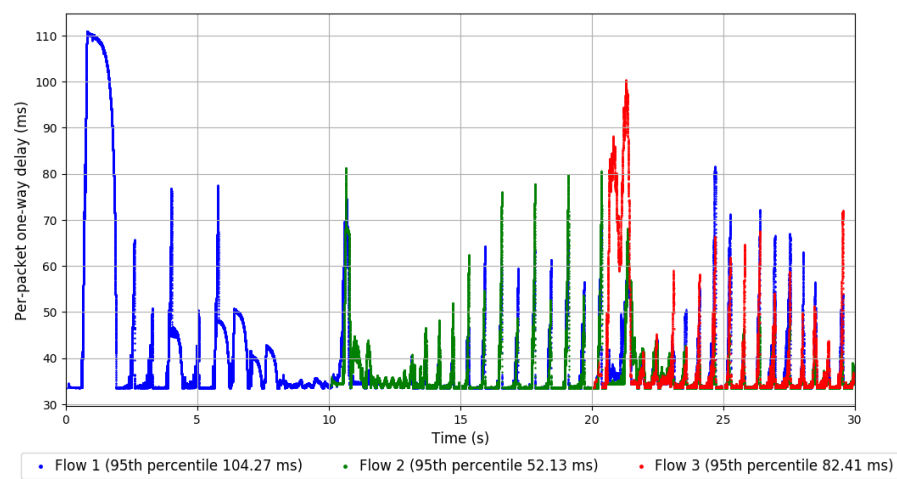
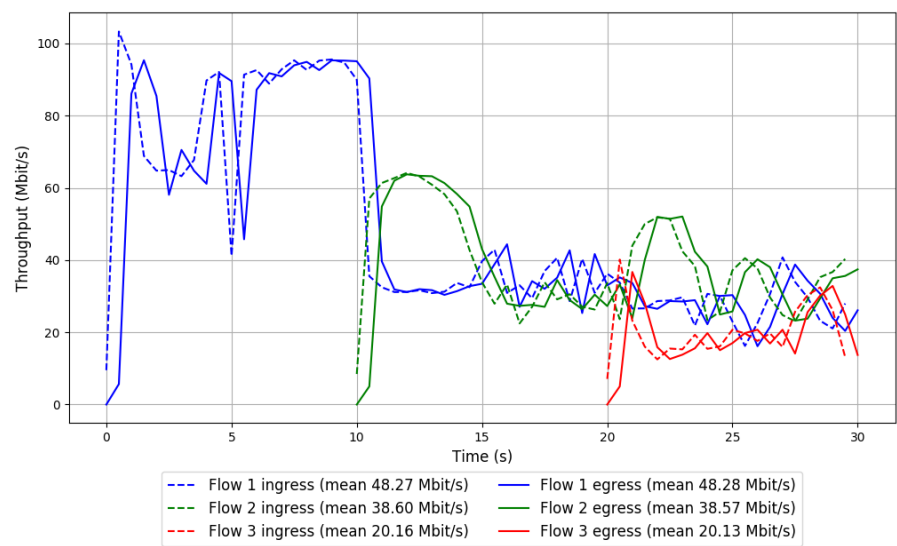


Run 3: Statistics of Copa

Start at: 2018-10-02 17:32:09
End at: 2018-10-02 17:32:39
Local clock offset: 4.008 ms
Remote clock offset: -6.024 ms

Below is generated by plot.py at 2018-10-02 18:41:29
Datalink statistics
-- Total of 3 flows:
Average throughput: 80.62 Mbit/s
95th percentile per-packet one-way delay: 79.123 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 48.28 Mbit/s
95th percentile per-packet one-way delay: 104.272 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 38.57 Mbit/s
95th percentile per-packet one-way delay: 52.126 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 20.13 Mbit/s
95th percentile per-packet one-way delay: 82.414 ms
Loss rate: 0.75%

Run 3: Report of Copa — Data Link

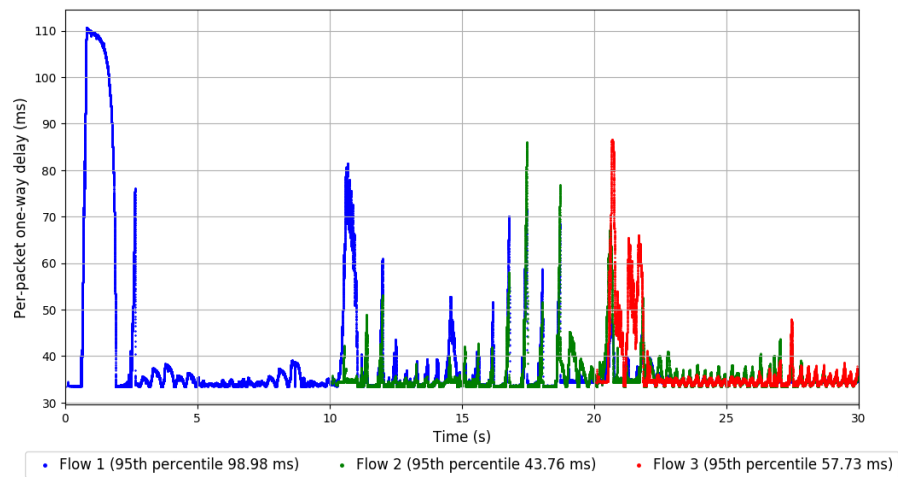
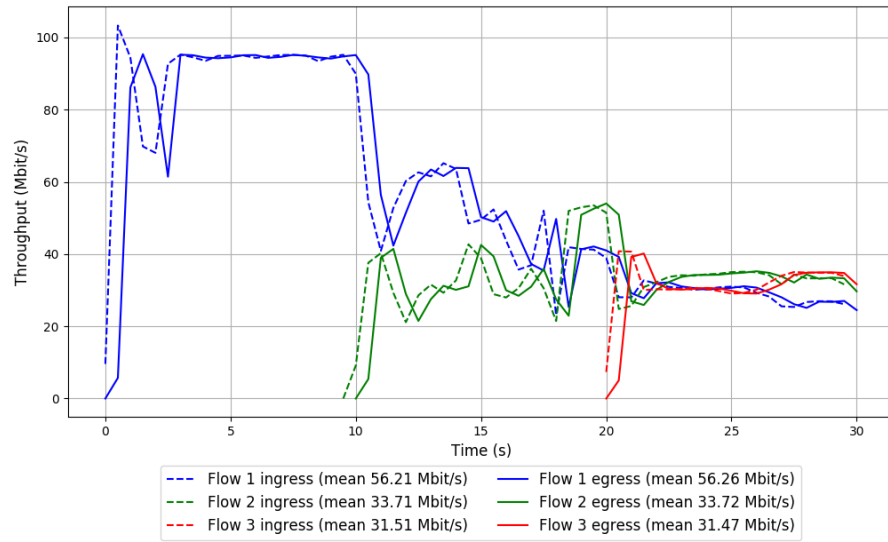


Run 4: Statistics of Copa

Start at: 2018-10-02 17:56:56
End at: 2018-10-02 17:57:26
Local clock offset: 3.412 ms
Remote clock offset: -5.084 ms

Below is generated by plot.py at 2018-10-02 18:42:36
Datalink statistics
-- Total of 3 flows:
Average throughput: 89.13 Mbit/s
95th percentile per-packet one-way delay: 69.556 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 56.26 Mbit/s
95th percentile per-packet one-way delay: 98.980 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 33.72 Mbit/s
95th percentile per-packet one-way delay: 43.761 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 31.47 Mbit/s
95th percentile per-packet one-way delay: 57.734 ms
Loss rate: 0.78%

Run 4: Report of Copa — Data Link

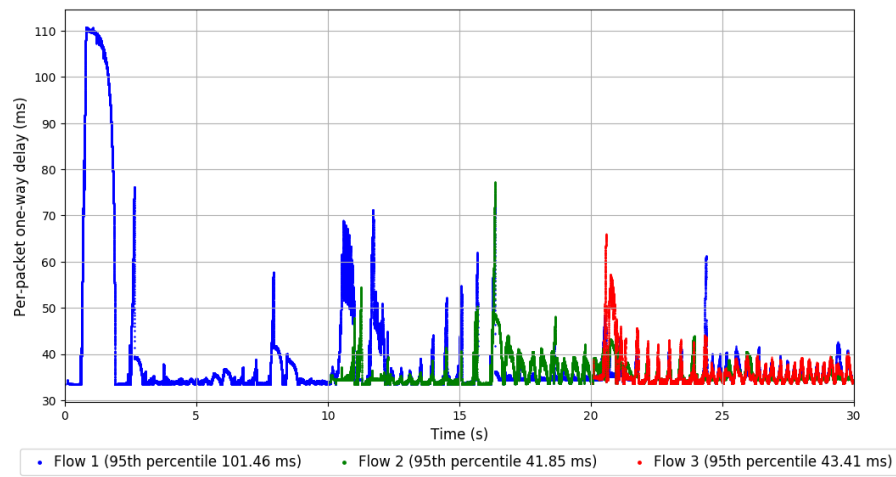
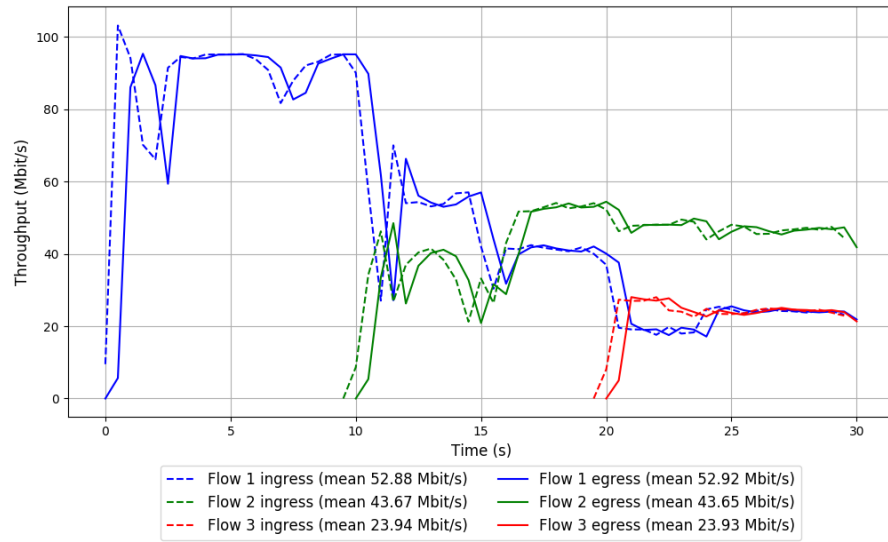


Run 5: Statistics of Copa

Start at: 2018-10-02 18:21:42
End at: 2018-10-02 18:22:12
Local clock offset: 1.487 ms
Remote clock offset: -3.743 ms

```
# Below is generated by plot.py at 2018-10-02 18:42:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.91 Mbit/s
95th percentile per-packet one-way delay: 61.735 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 52.92 Mbit/s
95th percentile per-packet one-way delay: 101.464 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 43.65 Mbit/s
95th percentile per-packet one-way delay: 41.849 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 23.93 Mbit/s
95th percentile per-packet one-way delay: 43.413 ms
Loss rate: 0.68%
```

Run 5: Report of Copa — Data Link

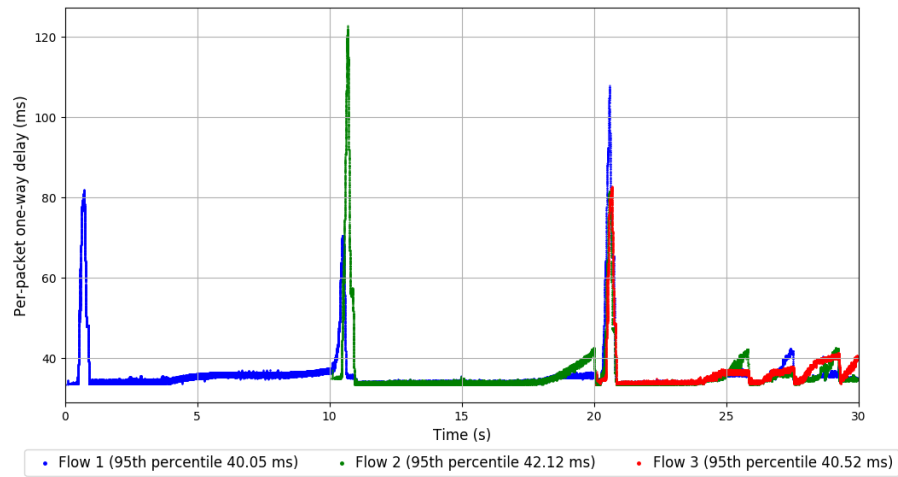
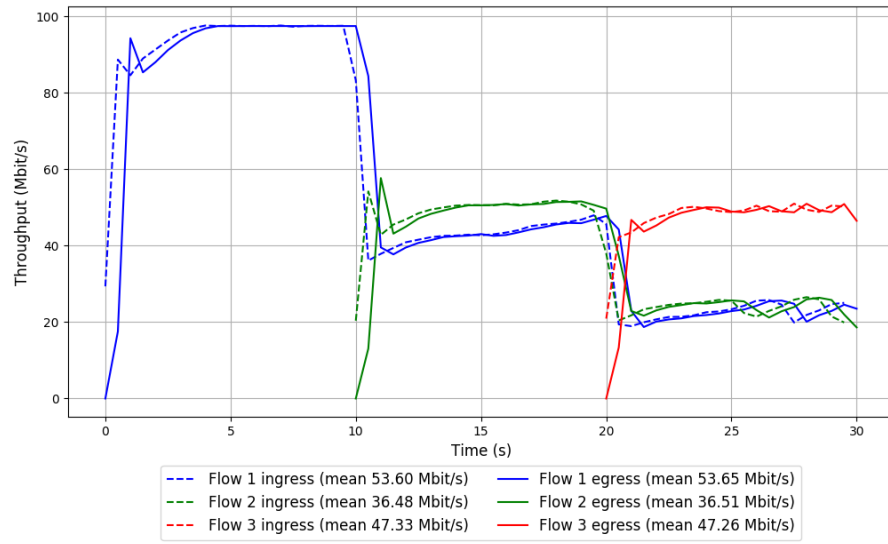


Run 1: Statistics of TCP Cubic

Start at: 2018-10-02 16:43:59
End at: 2018-10-02 16:44:29
Local clock offset: 3.777 ms
Remote clock offset: -4.808 ms

Below is generated by plot.py at 2018-10-02 18:42:37
Datalink statistics
-- Total of 3 flows:
Average throughput: 93.59 Mbit/s
95th percentile per-packet one-way delay: 41.133 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 53.65 Mbit/s
95th percentile per-packet one-way delay: 40.049 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 36.51 Mbit/s
95th percentile per-packet one-way delay: 42.124 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 47.26 Mbit/s
95th percentile per-packet one-way delay: 40.521 ms
Loss rate: 0.78%

Run 1: Report of TCP Cubic — Data Link

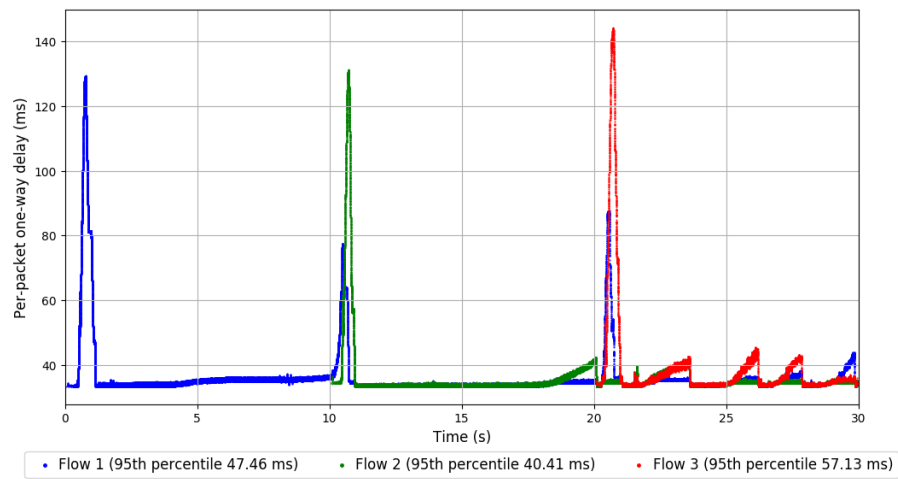
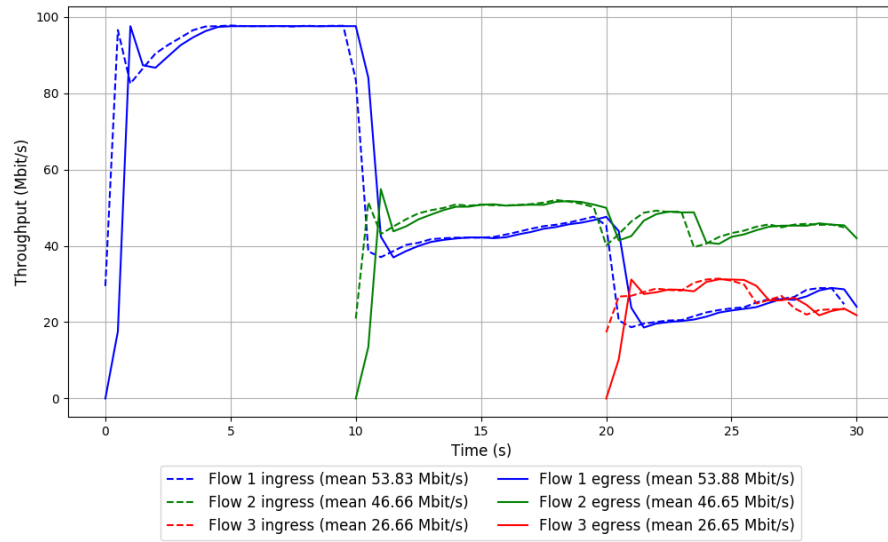


Run 2: Statistics of TCP Cubic

Start at: 2018-10-02 17:08:50
End at: 2018-10-02 17:09:20
Local clock offset: 2.589 ms
Remote clock offset: -5.498 ms

Below is generated by plot.py at 2018-10-02 18:42:37
Datalink statistics
-- Total of 3 flows:
Average throughput: 93.74 Mbit/s
95th percentile per-packet one-way delay: 42.800 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 53.88 Mbit/s
95th percentile per-packet one-way delay: 47.463 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 46.65 Mbit/s
95th percentile per-packet one-way delay: 40.413 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 26.65 Mbit/s
95th percentile per-packet one-way delay: 57.127 ms
Loss rate: 0.66%

Run 2: Report of TCP Cubic — Data Link

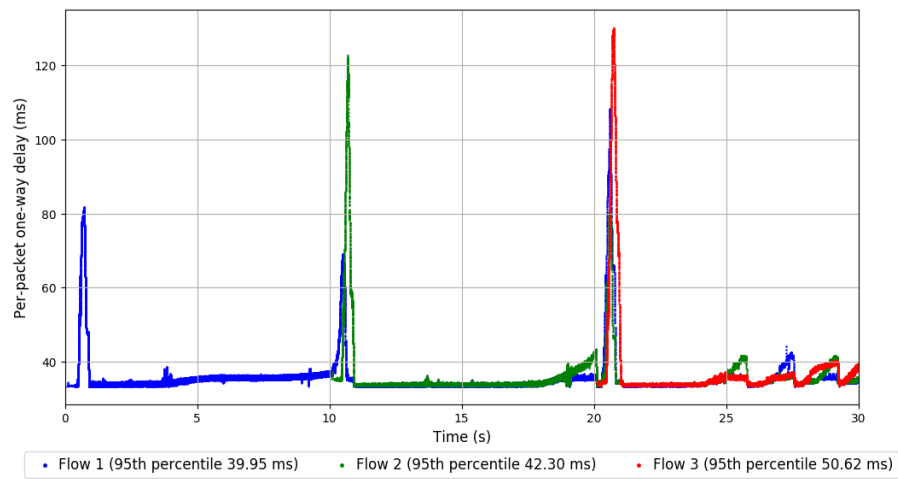
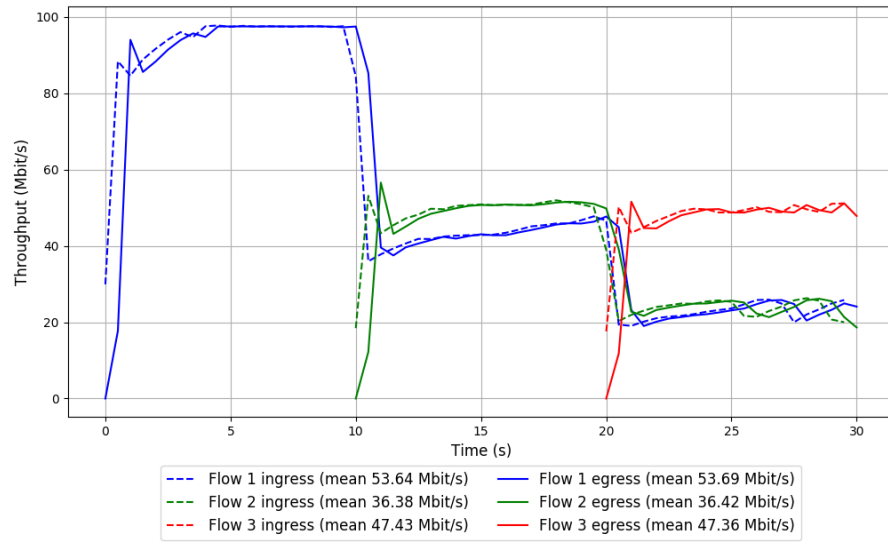


Run 3: Statistics of TCP Cubic

Start at: 2018-10-02 17:33:34
End at: 2018-10-02 17:34:04
Local clock offset: 4.075 ms
Remote clock offset: -5.845 ms

Below is generated by plot.py at 2018-10-02 18:42:37
Datalink statistics
-- Total of 3 flows:
Average throughput: 93.59 Mbit/s
95th percentile per-packet one-way delay: 41.483 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 53.69 Mbit/s
95th percentile per-packet one-way delay: 39.953 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 36.42 Mbit/s
95th percentile per-packet one-way delay: 42.305 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 47.36 Mbit/s
95th percentile per-packet one-way delay: 50.623 ms
Loss rate: 0.78%

Run 3: Report of TCP Cubic — Data Link

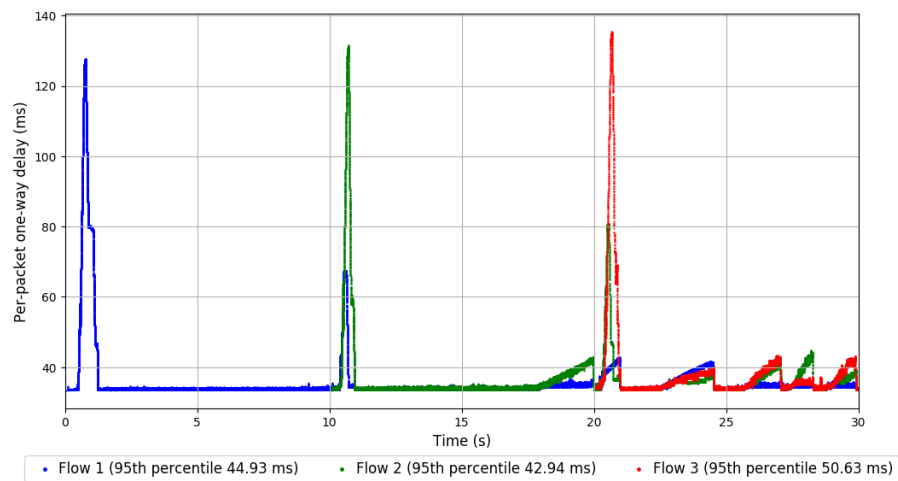
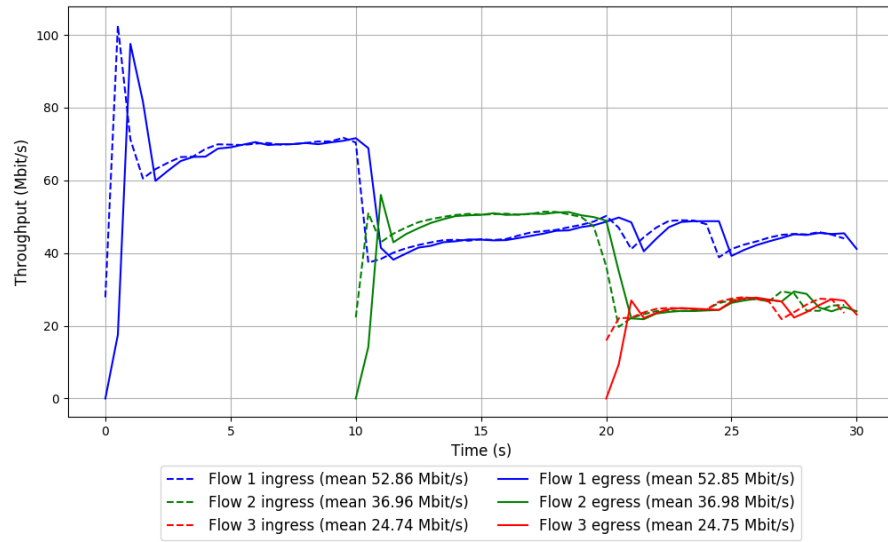


Run 4: Statistics of TCP Cubic

Start at: 2018-10-02 17:58:22
End at: 2018-10-02 17:58:52
Local clock offset: 3.384 ms
Remote clock offset: -4.999 ms

Below is generated by plot.py at 2018-10-02 18:42:37
Datalink statistics
-- Total of 3 flows:
Average throughput: 85.65 Mbit/s
95th percentile per-packet one-way delay: 43.891 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 52.85 Mbit/s
95th percentile per-packet one-way delay: 44.928 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 36.98 Mbit/s
95th percentile per-packet one-way delay: 42.941 ms
Loss rate: 0.27%
-- Flow 3:
Average throughput: 24.75 Mbit/s
95th percentile per-packet one-way delay: 50.628 ms
Loss rate: 0.59%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2018-10-02 18:23:08

End at: 2018-10-02 18:23:38

Local clock offset: 1.181 ms

Remote clock offset: -3.73 ms

Below is generated by plot.py at 2018-10-02 18:42:37

Datalink statistics

-- Total of 3 flows:

Average throughput: 85.75 Mbit/s

95th percentile per-packet one-way delay: 44.365 ms

Loss rate: 0.29%

-- Flow 1:

Average throughput: 48.49 Mbit/s

95th percentile per-packet one-way delay: 47.773 ms

Loss rate: 0.16%

-- Flow 2:

Average throughput: 38.29 Mbit/s

95th percentile per-packet one-way delay: 40.894 ms

Loss rate: 0.33%

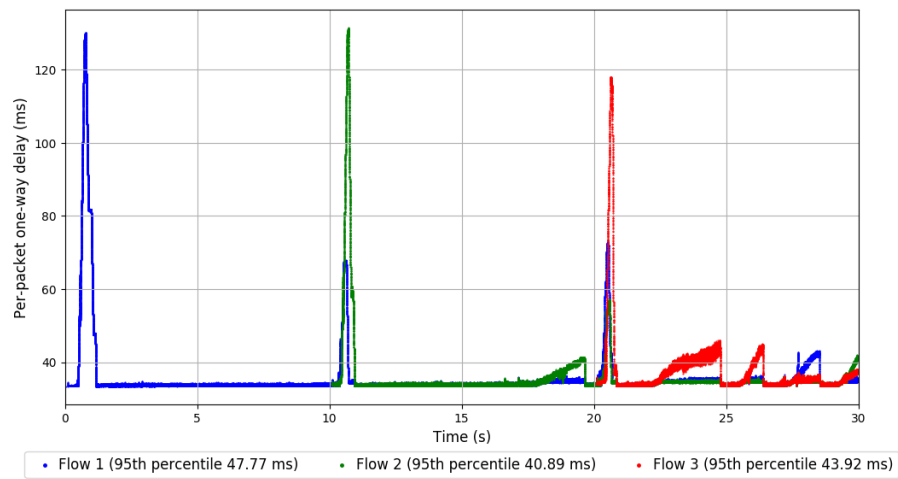
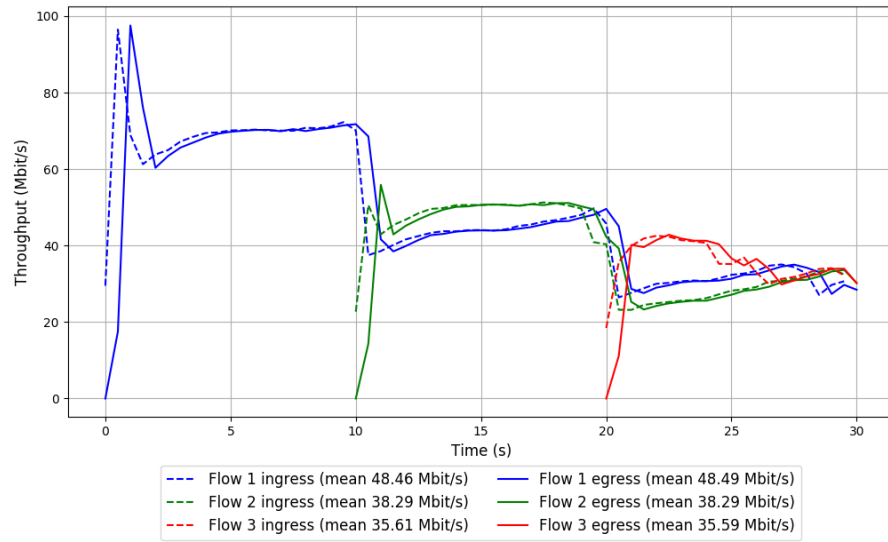
-- Flow 3:

Average throughput: 35.59 Mbit/s

95th percentile per-packet one-way delay: 43.920 ms

Loss rate: 0.70%

Run 5: Report of TCP Cubic — Data Link

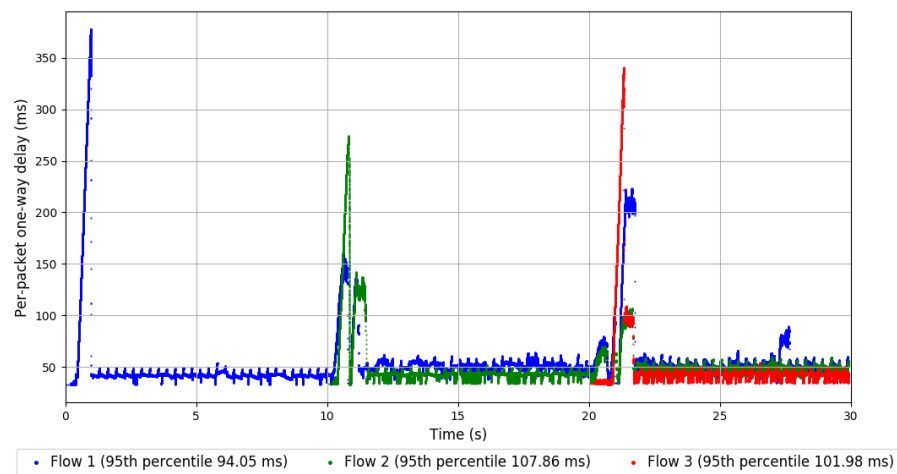
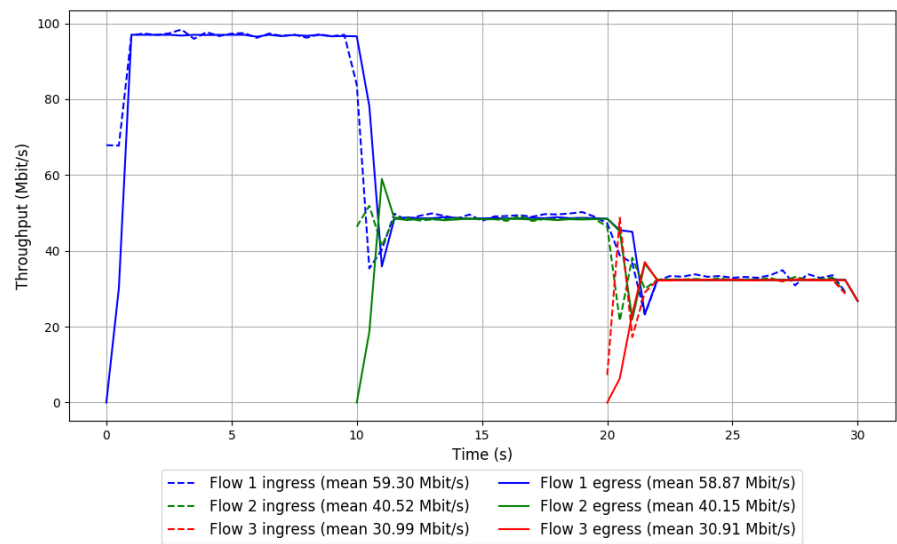


Run 1: Statistics of FillP

Start at: 2018-10-02 16:55:04
End at: 2018-10-02 16:55:34
Local clock offset: 2.957 ms
Remote clock offset: -5.023 ms

Below is generated by plot.py at 2018-10-02 18:42:52
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.78 Mbit/s
95th percentile per-packet one-way delay: 101.730 ms
Loss rate: 1.02%
-- Flow 1:
Average throughput: 58.87 Mbit/s
95th percentile per-packet one-way delay: 94.054 ms
Loss rate: 0.93%
-- Flow 2:
Average throughput: 40.15 Mbit/s
95th percentile per-packet one-way delay: 107.859 ms
Loss rate: 1.23%
-- Flow 3:
Average throughput: 30.91 Mbit/s
95th percentile per-packet one-way delay: 101.985 ms
Loss rate: 0.94%

Run 1: Report of FillP — Data Link

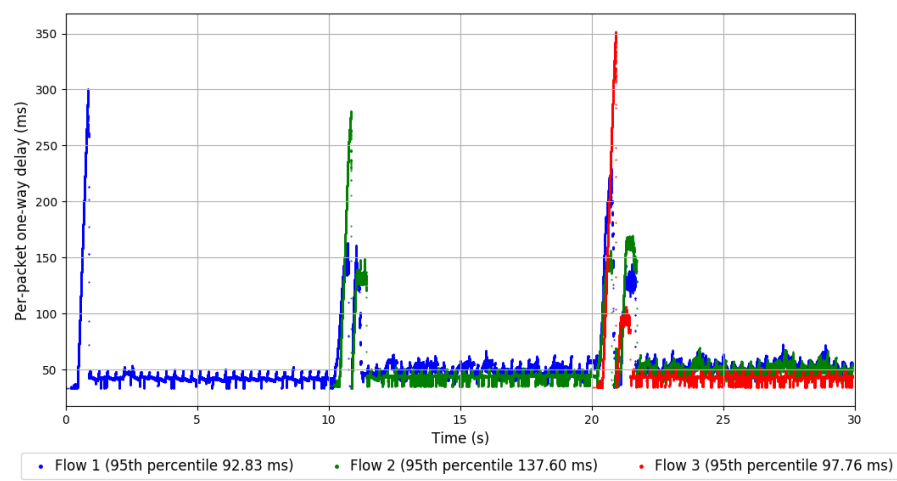
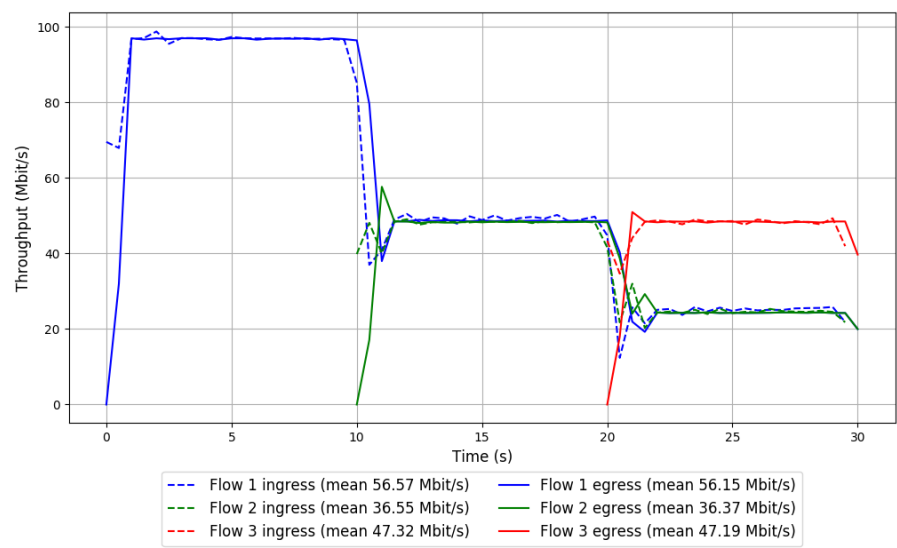


Run 2: Statistics of FillP

Start at: 2018-10-02 17:19:53
End at: 2018-10-02 17:20:23
Local clock offset: 3.118 ms
Remote clock offset: -5.848 ms

Below is generated by plot.py at 2018-10-02 18:43:06
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.92 Mbit/s
95th percentile per-packet one-way delay: 123.188 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 56.15 Mbit/s
95th percentile per-packet one-way delay: 92.833 ms
Loss rate: 0.94%
-- Flow 2:
Average throughput: 36.37 Mbit/s
95th percentile per-packet one-way delay: 137.603 ms
Loss rate: 0.80%
-- Flow 3:
Average throughput: 47.19 Mbit/s
95th percentile per-packet one-way delay: 97.762 ms
Loss rate: 0.84%

Run 2: Report of FillP — Data Link

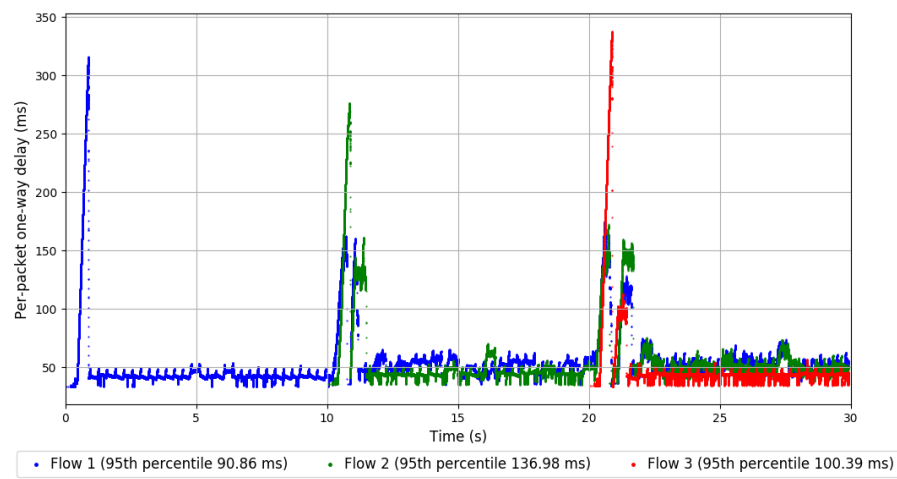
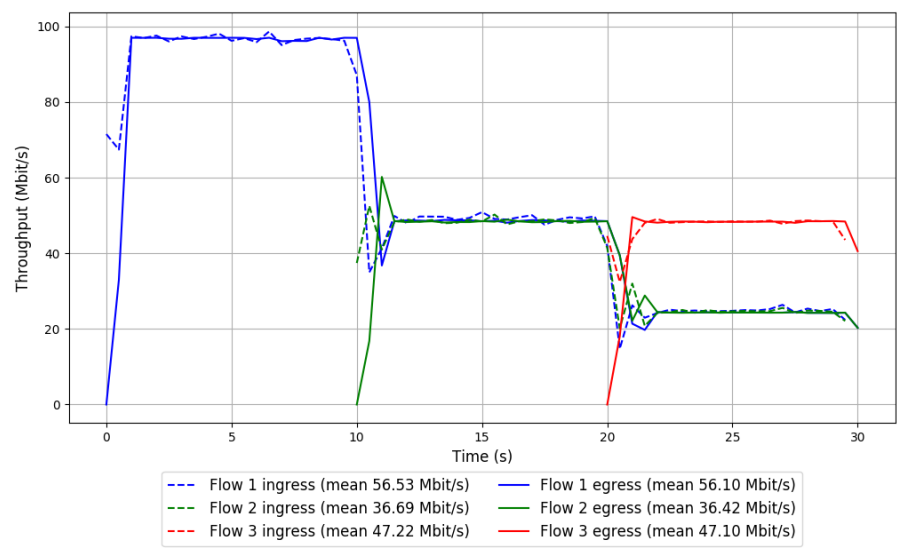


Run 3: Statistics of FillP

Start at: 2018-10-02 17:44:38
End at: 2018-10-02 17:45:08
Local clock offset: 4.417 ms
Remote clock offset: -5.611 ms

Below is generated by plot.py at 2018-10-02 18:43:08
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.88 Mbit/s
95th percentile per-packet one-way delay: 116.717 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 56.10 Mbit/s
95th percentile per-packet one-way delay: 90.864 ms
Loss rate: 0.98%
-- Flow 2:
Average throughput: 36.42 Mbit/s
95th percentile per-packet one-way delay: 136.983 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 47.10 Mbit/s
95th percentile per-packet one-way delay: 100.395 ms
Loss rate: 0.90%

Run 3: Report of FillP — Data Link

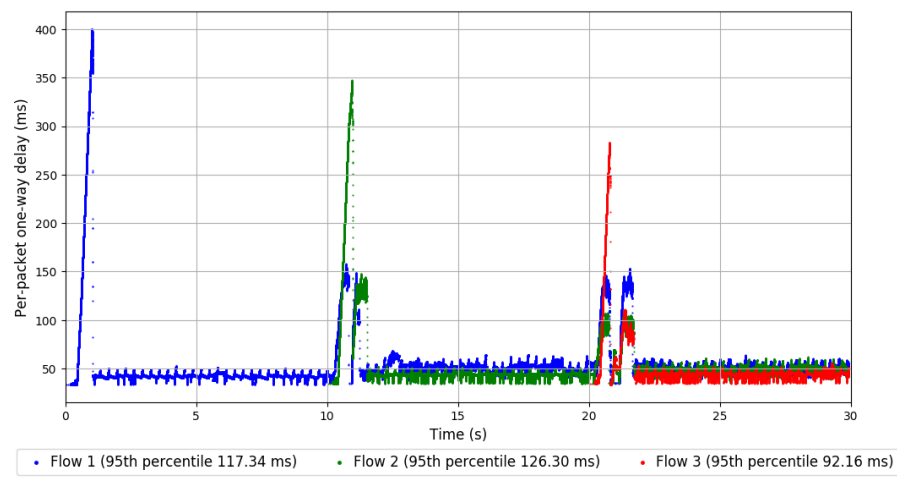
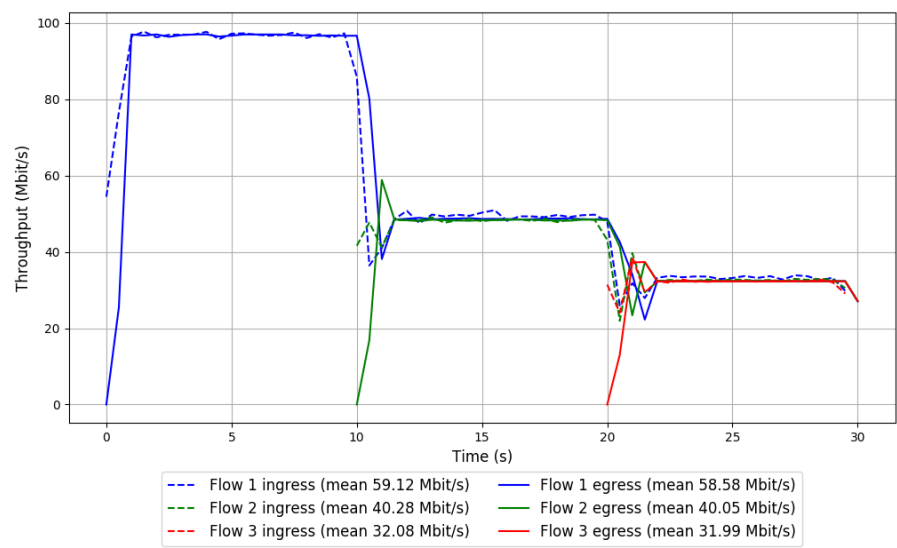


Run 4: Statistics of FillP

Start at: 2018-10-02 18:09:25
End at: 2018-10-02 18:09:55
Local clock offset: 3.178 ms
Remote clock offset: -4.516 ms

Below is generated by plot.py at 2018-10-02 18:43:08
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.76 Mbit/s
95th percentile per-packet one-way delay: 118.352 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 58.58 Mbit/s
95th percentile per-packet one-way delay: 117.344 ms
Loss rate: 1.11%
-- Flow 2:
Average throughput: 40.05 Mbit/s
95th percentile per-packet one-way delay: 126.301 ms
Loss rate: 0.89%
-- Flow 3:
Average throughput: 31.99 Mbit/s
95th percentile per-packet one-way delay: 92.159 ms
Loss rate: 0.93%

Run 4: Report of FillP — Data Link

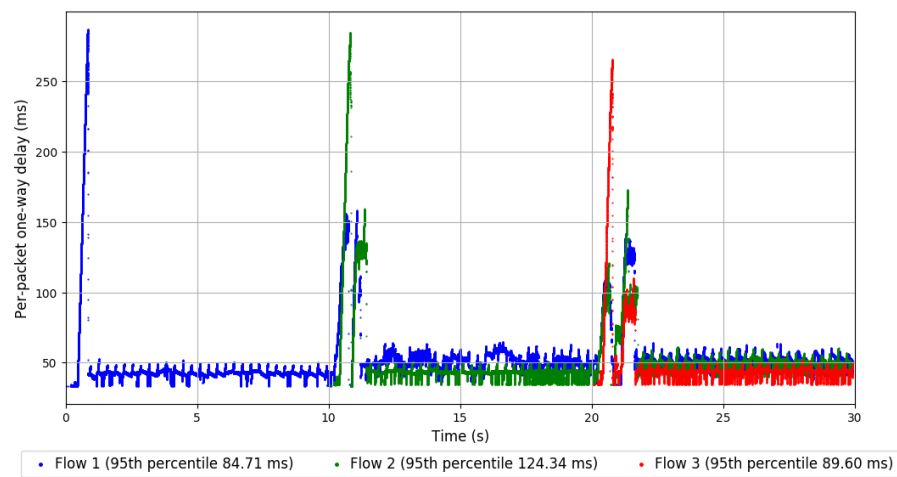
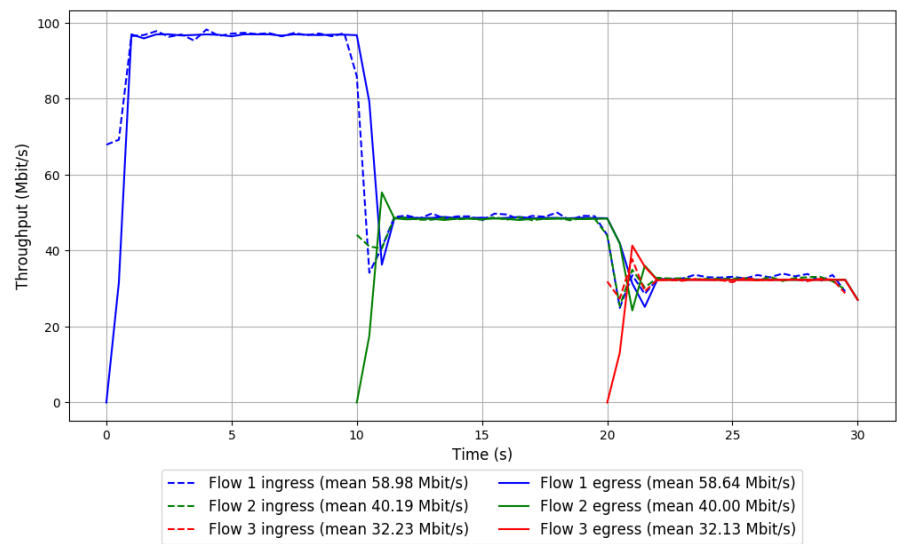


Run 5: Statistics of FillP

Start at: 2018-10-02 18:34:10
End at: 2018-10-02 18:34:40
Local clock offset: -0.146 ms
Remote clock offset: -3.692 ms

Below is generated by plot.py at 2018-10-02 18:43:46
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.84 Mbit/s
95th percentile per-packet one-way delay: 98.624 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 58.64 Mbit/s
95th percentile per-packet one-way delay: 84.714 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 40.00 Mbit/s
95th percentile per-packet one-way delay: 124.342 ms
Loss rate: 0.77%
-- Flow 3:
Average throughput: 32.13 Mbit/s
95th percentile per-packet one-way delay: 89.604 ms
Loss rate: 0.93%

Run 5: Report of FillP — Data Link

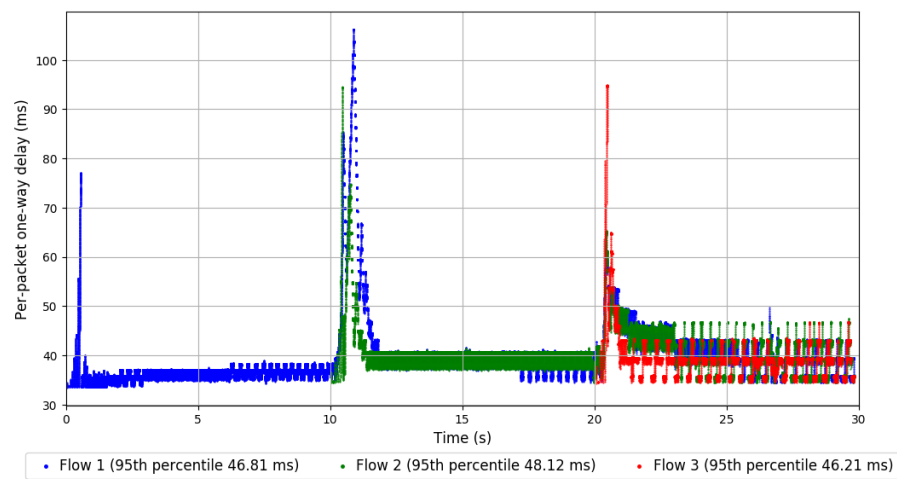
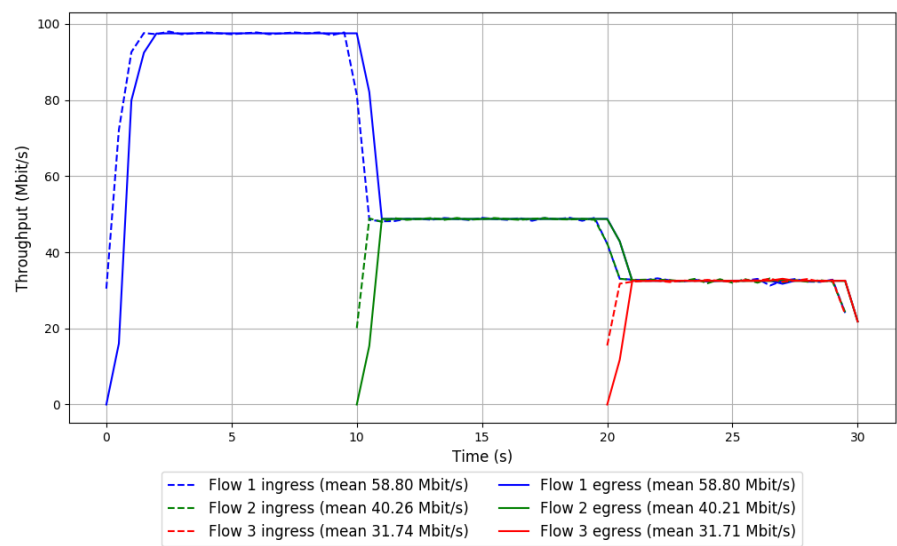



```
Run 1: Statistics of Indigo

Start at: 2018-10-02 16:56:27
End at: 2018-10-02 16:56:57
Local clock offset: 2.897 ms
Remote clock offset: -5.165 ms

# Below is generated by plot.py at 2018-10-02 18:43:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.89 Mbit/s
95th percentile per-packet one-way delay: 47.310 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 58.80 Mbit/s
95th percentile per-packet one-way delay: 46.806 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 40.21 Mbit/s
95th percentile per-packet one-way delay: 48.122 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 31.71 Mbit/s
95th percentile per-packet one-way delay: 46.214 ms
Loss rate: 0.77%
```

Run 1: Report of Indigo — Data Link

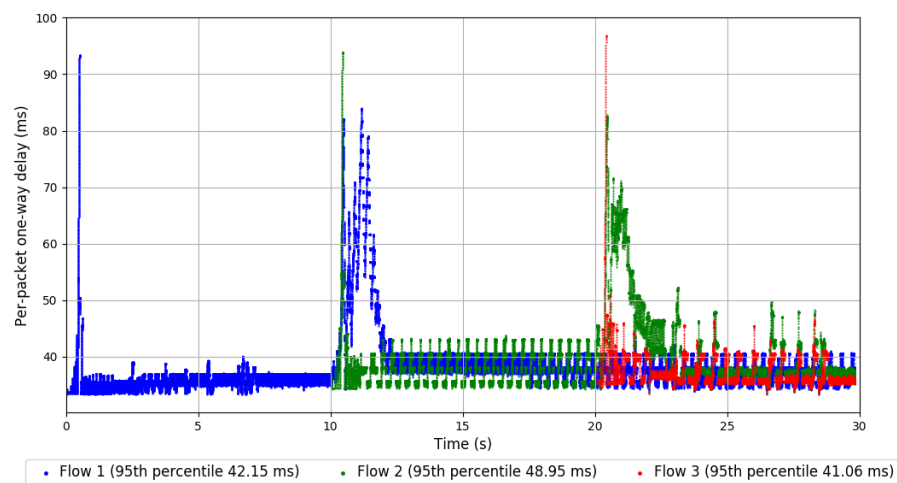
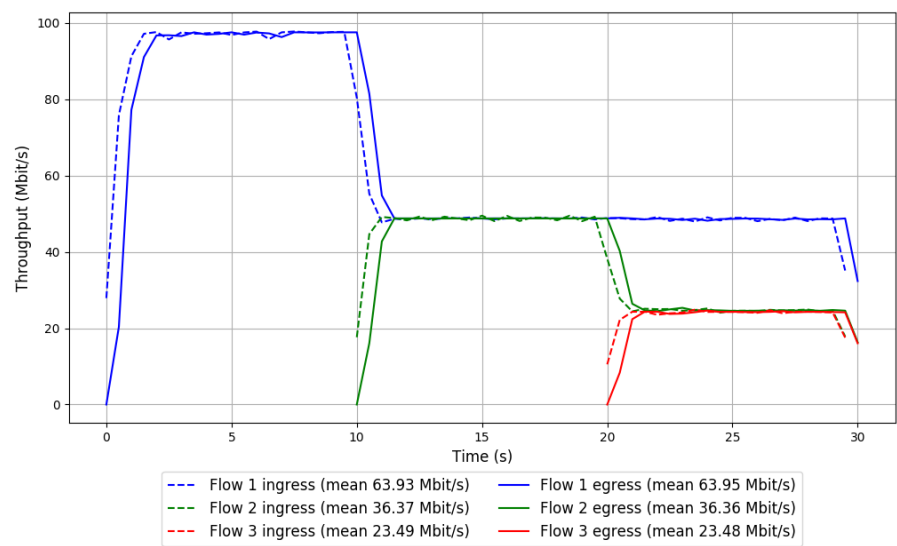


Run 2: Statistics of Indigo

Start at: 2018-10-02 17:21:15
End at: 2018-10-02 17:21:45
Local clock offset: 3.261 ms
Remote clock offset: -5.876 ms

Below is generated by plot.py at 2018-10-02 18:43:46
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.79 Mbit/s
95th percentile per-packet one-way delay: 45.107 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 63.95 Mbit/s
95th percentile per-packet one-way delay: 42.150 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 36.36 Mbit/s
95th percentile per-packet one-way delay: 48.955 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 23.48 Mbit/s
95th percentile per-packet one-way delay: 41.060 ms
Loss rate: 0.70%

Run 2: Report of Indigo — Data Link

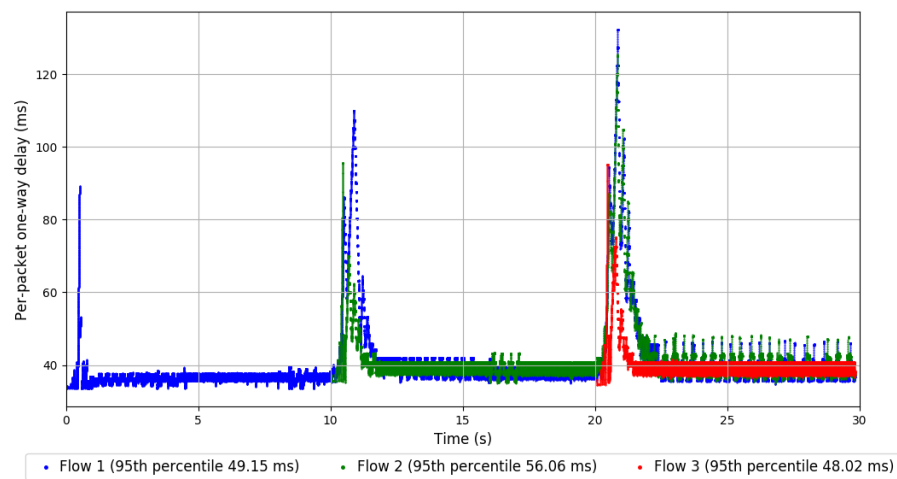
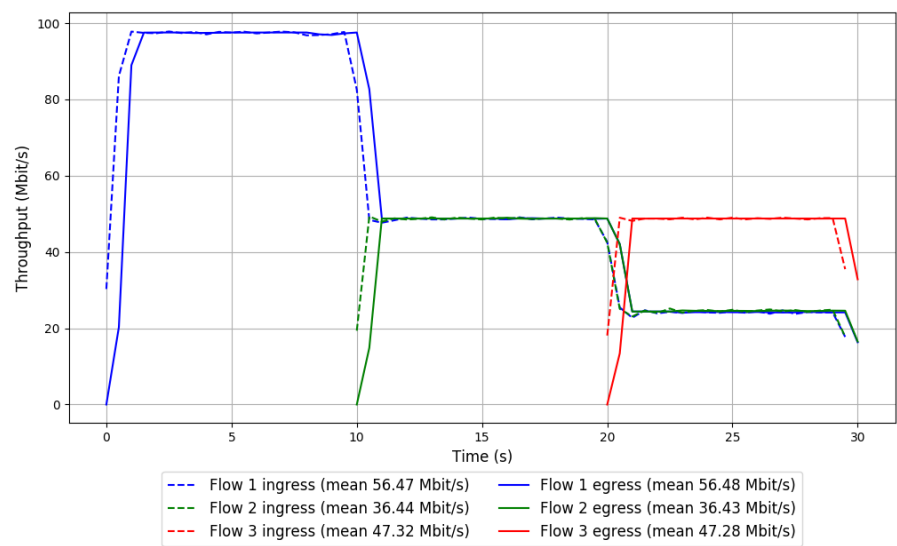


Run 3: Statistics of Indigo

Start at: 2018-10-02 17:46:01
End at: 2018-10-02 17:46:31
Local clock offset: 4.457 ms
Remote clock offset: -5.512 ms

Below is generated by plot.py at 2018-10-02 18:43:47
Datalink statistics
-- Total of 3 flows:
Average throughput: 96.17 Mbit/s
95th percentile per-packet one-way delay: 50.846 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 56.48 Mbit/s
95th percentile per-packet one-way delay: 49.152 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 36.43 Mbit/s
95th percentile per-packet one-way delay: 56.059 ms
Loss rate: 0.38%
-- Flow 3:
Average throughput: 47.28 Mbit/s
95th percentile per-packet one-way delay: 48.025 ms
Loss rate: 0.75%

Run 3: Report of Indigo — Data Link

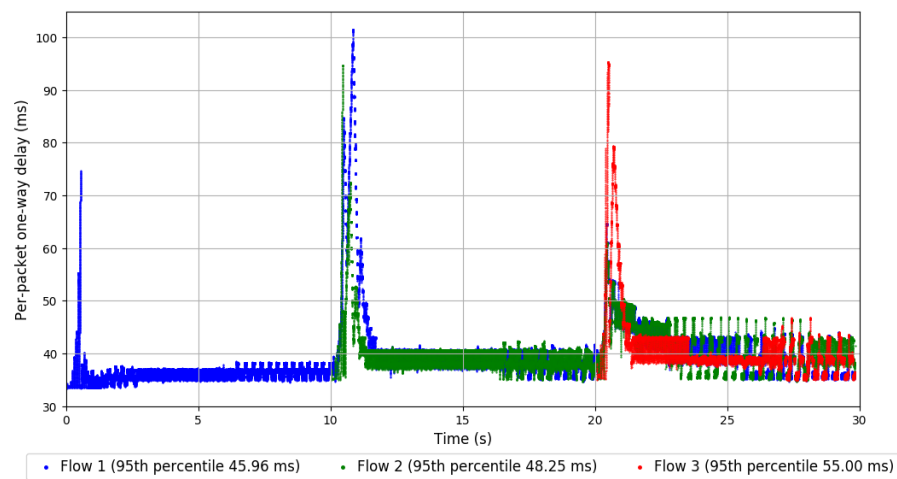
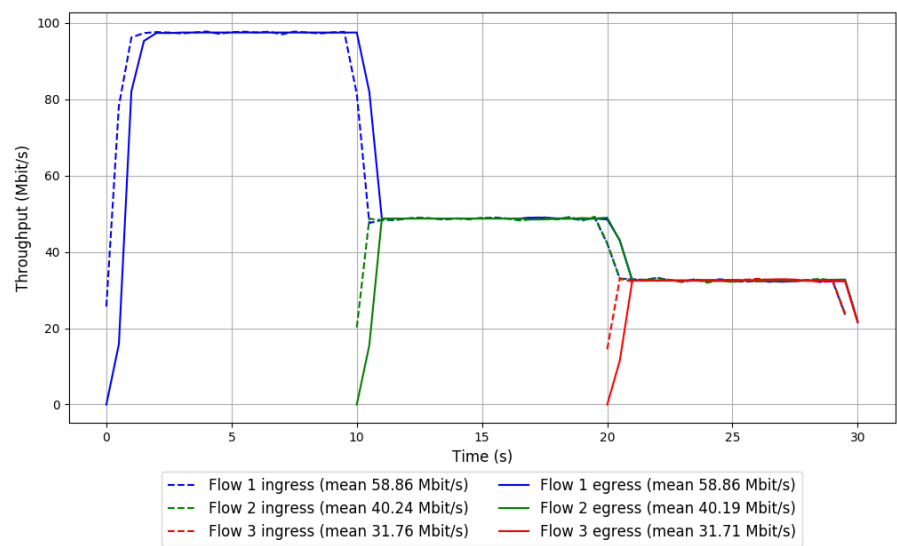


Run 4: Statistics of Indigo

Start at: 2018-10-02 18:10:47
End at: 2018-10-02 18:11:17
Local clock offset: 3.183 ms
Remote clock offset: -4.248 ms

Below is generated by plot.py at 2018-10-02 18:44:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.94 Mbit/s
95th percentile per-packet one-way delay: 47.207 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 58.86 Mbit/s
95th percentile per-packet one-way delay: 45.962 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 40.19 Mbit/s
95th percentile per-packet one-way delay: 48.248 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 31.71 Mbit/s
95th percentile per-packet one-way delay: 55.003 ms
Loss rate: 0.80%

Run 4: Report of Indigo — Data Link

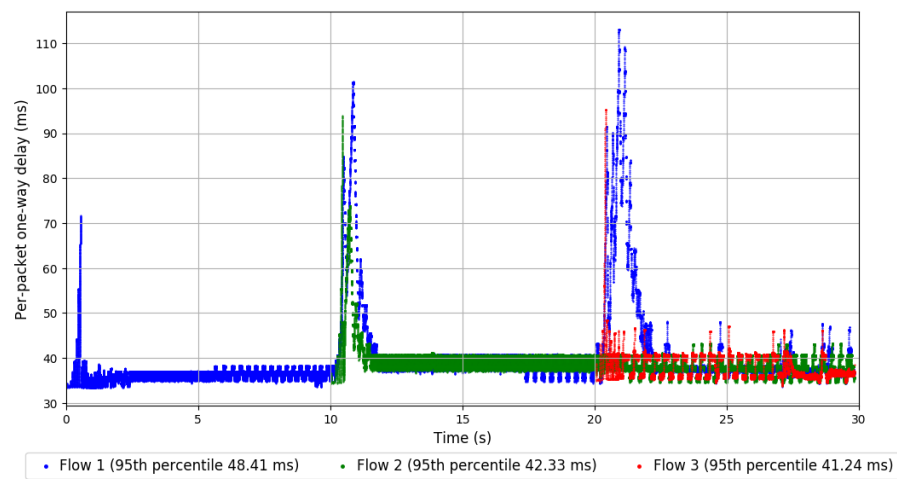
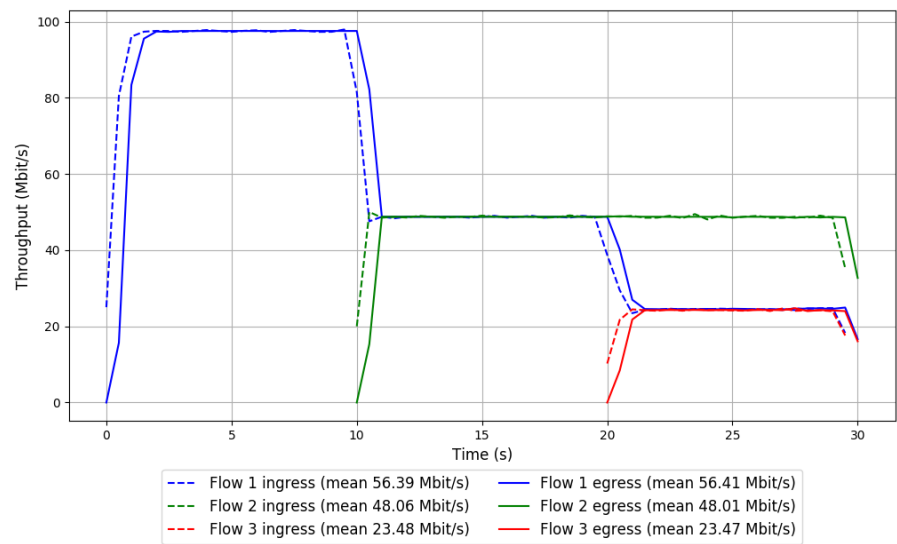


Run 5: Statistics of Indigo

Start at: 2018-10-02 18:35:32
End at: 2018-10-02 18:36:02
Local clock offset: -0.241 ms
Remote clock offset: -3.642 ms

Below is generated by plot.py at 2018-10-02 18:44:15
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.99 Mbit/s
95th percentile per-packet one-way delay: 43.949 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 56.41 Mbit/s
95th percentile per-packet one-way delay: 48.407 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 48.01 Mbit/s
95th percentile per-packet one-way delay: 42.330 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 23.47 Mbit/s
95th percentile per-packet one-way delay: 41.243 ms
Loss rate: 0.70%

Run 5: Report of Indigo — Data Link

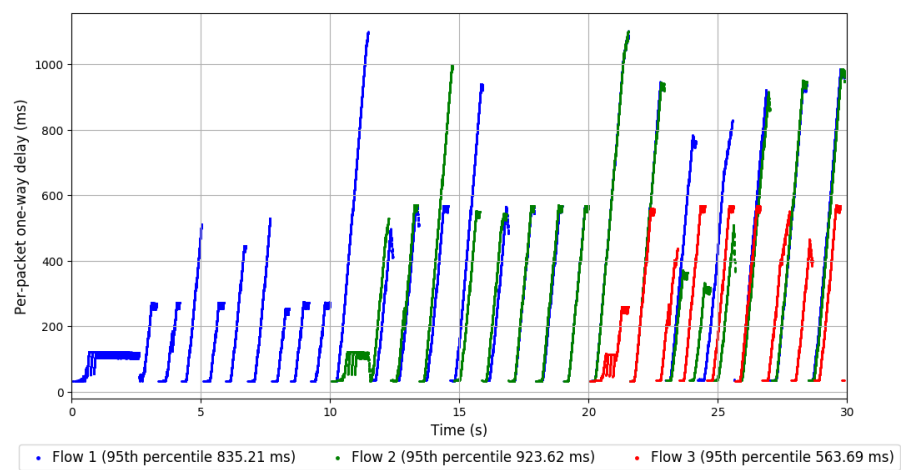
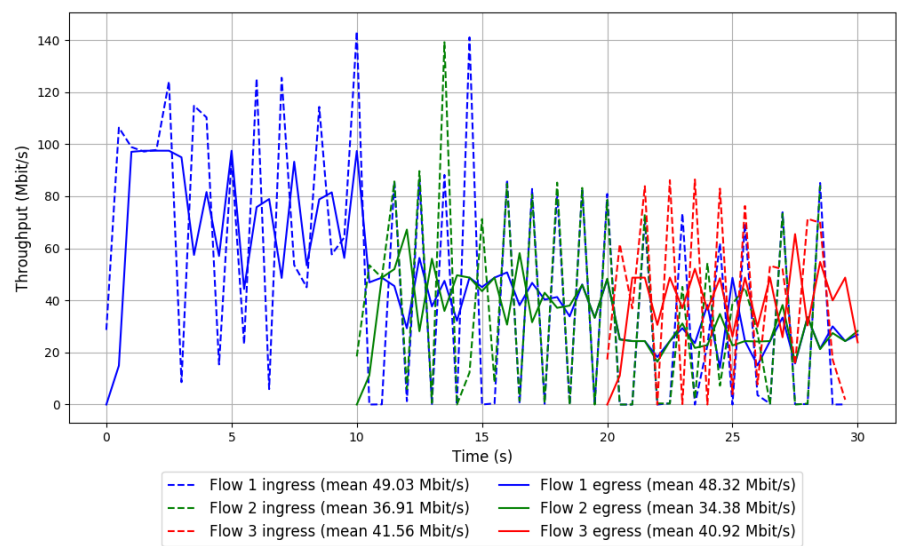


Run 1: Statistics of Indigo-96d2da3

Start at: 2018-10-02 16:57:51
End at: 2018-10-02 16:58:21
Local clock offset: 2.842 ms
Remote clock offset: -5.251 ms

Below is generated by plot.py at 2018-10-02 18:44:15
Datalink statistics
-- Total of 3 flows:
Average throughput: 84.63 Mbit/s
95th percentile per-packet one-way delay: 842.165 ms
Loss rate: 1.99%
-- Flow 1:
Average throughput: 48.32 Mbit/s
95th percentile per-packet one-way delay: 835.208 ms
Loss rate: 1.68%
-- Flow 2:
Average throughput: 34.38 Mbit/s
95th percentile per-packet one-way delay: 923.620 ms
Loss rate: 2.42%
-- Flow 3:
Average throughput: 40.92 Mbit/s
95th percentile per-packet one-way delay: 563.688 ms
Loss rate: 2.39%

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

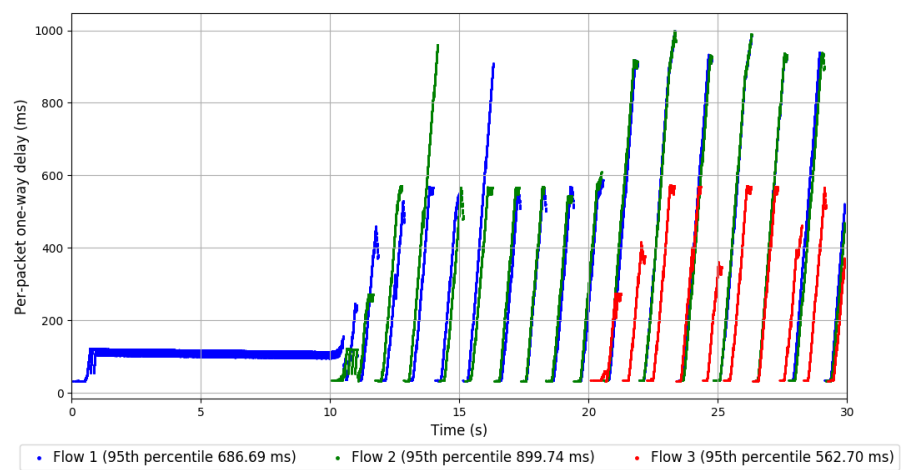
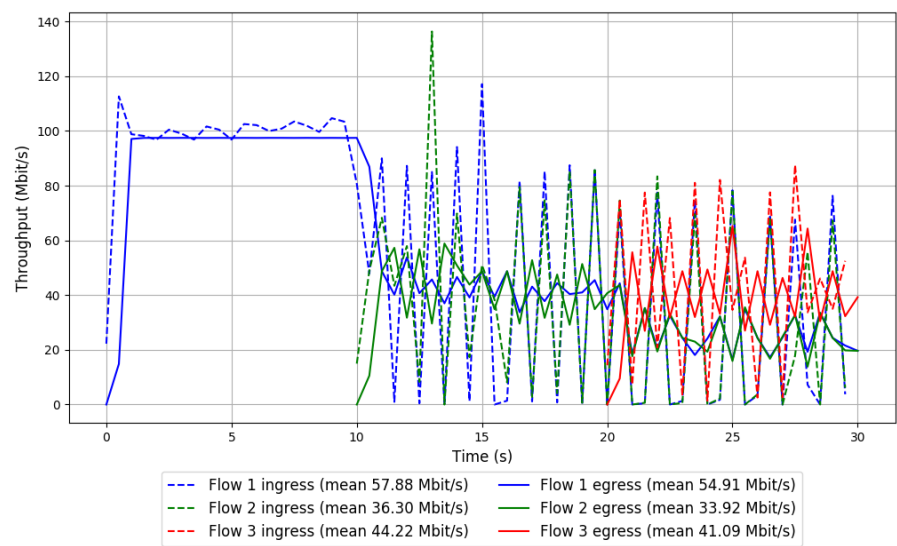


Run 2: Statistics of Indigo-96d2da3

Start at: 2018-10-02 17:22:38
End at: 2018-10-02 17:23:08
Local clock offset: 3.423 ms
Remote clock offset: -5.841 ms

Below is generated by plot.py at 2018-10-02 18:44:16
Datalink statistics
-- Total of 3 flows:
Average throughput: 91.00 Mbit/s
95th percentile per-packet one-way delay: 766.589 ms
Loss rate: 4.68%
-- Flow 1:
Average throughput: 54.91 Mbit/s
95th percentile per-packet one-way delay: 686.688 ms
Loss rate: 4.17%
-- Flow 2:
Average throughput: 33.92 Mbit/s
95th percentile per-packet one-way delay: 899.742 ms
Loss rate: 5.36%
-- Flow 3:
Average throughput: 41.09 Mbit/s
95th percentile per-packet one-way delay: 562.695 ms
Loss rate: 5.64%

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

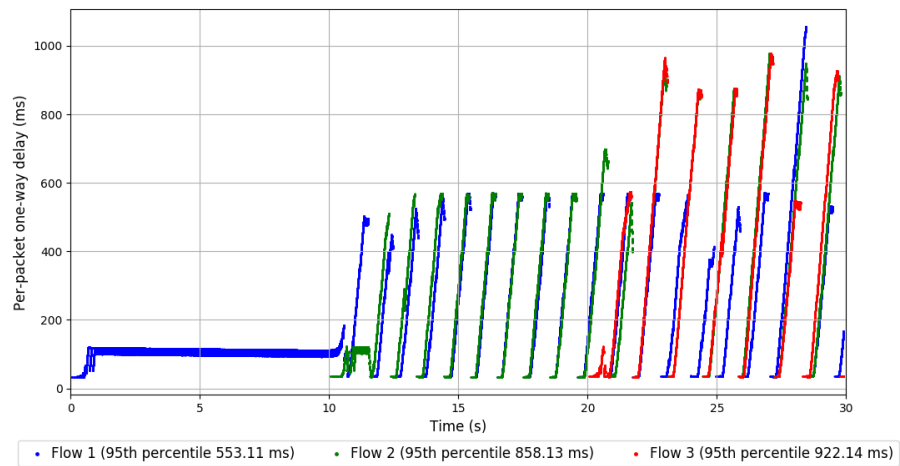
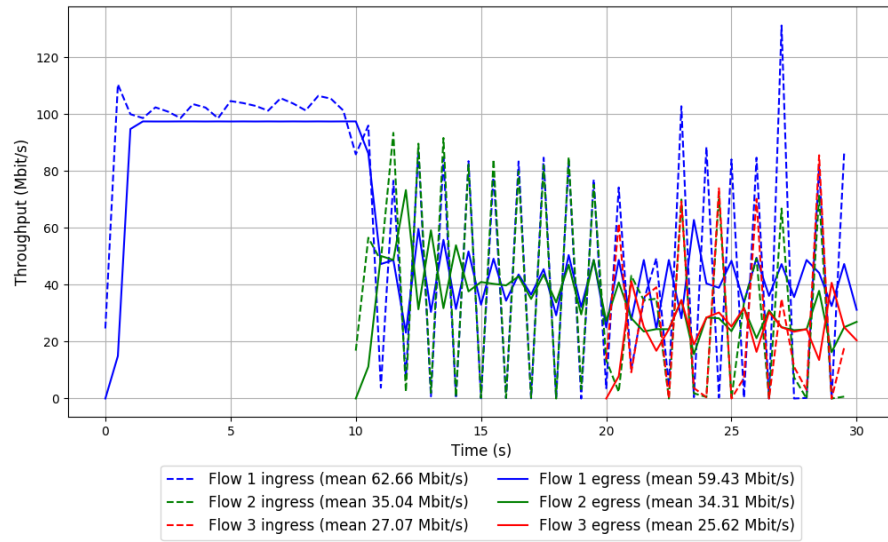


Run 3: Statistics of Indigo-96d2da3

Start at: 2018-10-02 17:47:25
End at: 2018-10-02 17:47:55
Local clock offset: 4.227 ms
Remote clock offset: -5.445 ms

Below is generated by plot.py at 2018-10-02 18:44:44
Datalink statistics
-- Total of 3 flows:
Average throughput: 90.68 Mbit/s
95th percentile per-packet one-way delay: 737.931 ms
Loss rate: 4.64%
-- Flow 1:
Average throughput: 59.43 Mbit/s
95th percentile per-packet one-way delay: 553.113 ms
Loss rate: 5.28%
-- Flow 2:
Average throughput: 34.31 Mbit/s
95th percentile per-packet one-way delay: 858.131 ms
Loss rate: 2.40%
-- Flow 3:
Average throughput: 25.62 Mbit/s
95th percentile per-packet one-way delay: 922.145 ms
Loss rate: 5.99%

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

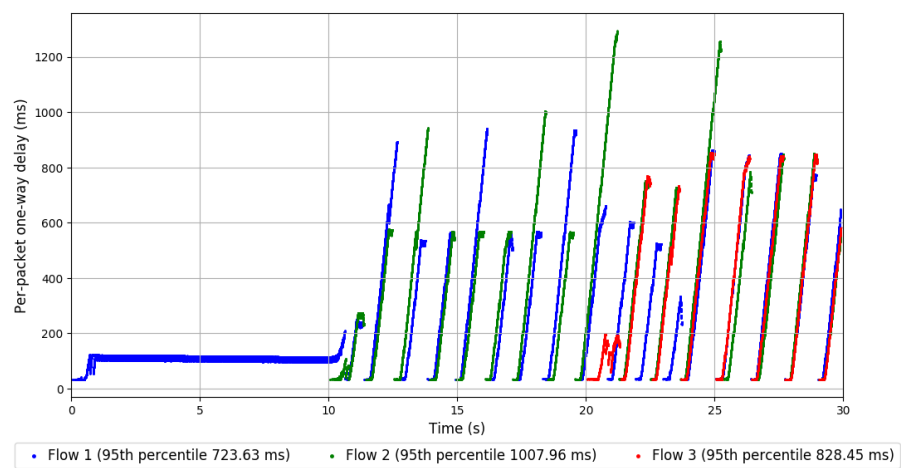
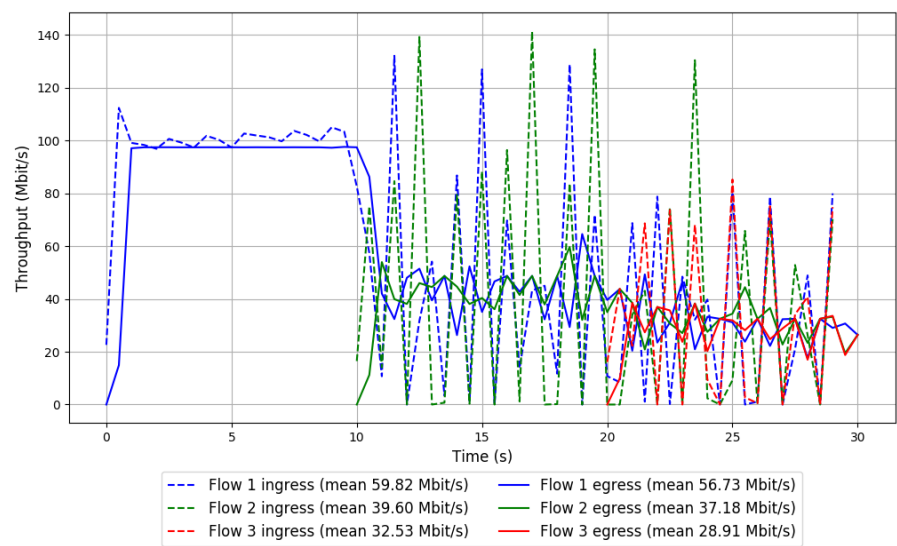


Run 4: Statistics of Indigo-96d2da3

Start at: 2018-10-02 18:12:10
End at: 2018-10-02 18:12:40
Local clock offset: 3.185 ms
Remote clock offset: -4.235 ms

Below is generated by plot.py at 2018-10-02 18:44:55
Datalink statistics
-- Total of 3 flows:
Average throughput: 90.99 Mbit/s
95th percentile per-packet one-way delay: 834.885 ms
Loss rate: 4.04%
-- Flow 1:
Average throughput: 56.73 Mbit/s
95th percentile per-packet one-way delay: 723.631 ms
Loss rate: 3.55%
-- Flow 2:
Average throughput: 37.18 Mbit/s
95th percentile per-packet one-way delay: 1007.961 ms
Loss rate: 3.81%
-- Flow 3:
Average throughput: 28.91 Mbit/s
95th percentile per-packet one-way delay: 828.449 ms
Loss rate: 7.38%

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

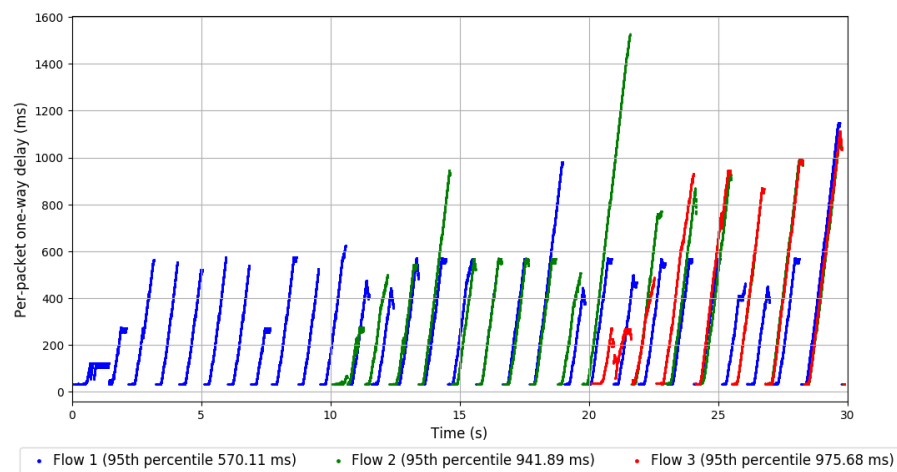
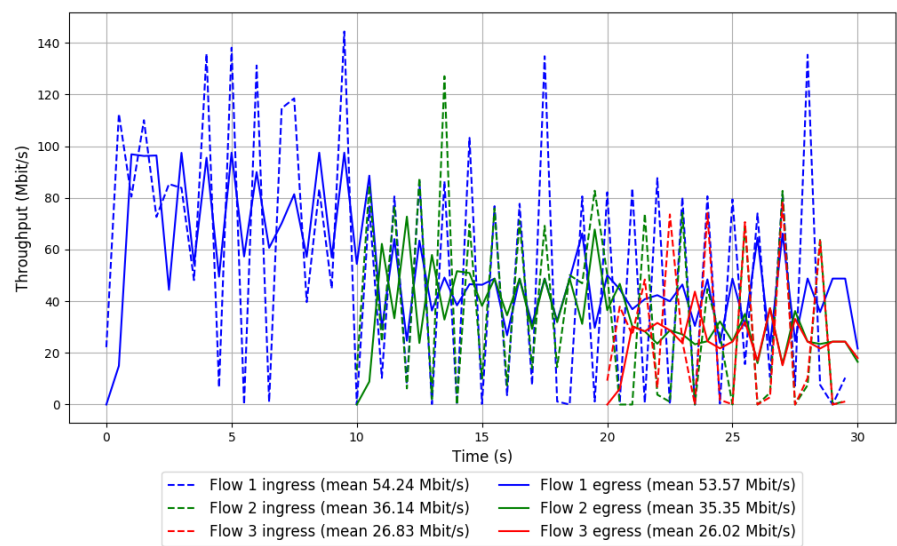


Run 5: Statistics of Indigo-96d2da3

Start at: 2018-10-02 18:36:56
End at: 2018-10-02 18:37:26
Local clock offset: -0.351 ms
Remote clock offset: -3.674 ms

Below is generated by plot.py at 2018-10-02 18:44:55
Datalink statistics
-- Total of 3 flows:
Average throughput: 85.57 Mbit/s
95th percentile per-packet one-way delay: 846.945 ms
Loss rate: 1.99%
-- Flow 1:
Average throughput: 53.57 Mbit/s
95th percentile per-packet one-way delay: 570.107 ms
Loss rate: 1.45%
-- Flow 2:
Average throughput: 35.35 Mbit/s
95th percentile per-packet one-way delay: 941.888 ms
Loss rate: 2.58%
-- Flow 3:
Average throughput: 26.02 Mbit/s
95th percentile per-packet one-way delay: 975.684 ms
Loss rate: 3.67%

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

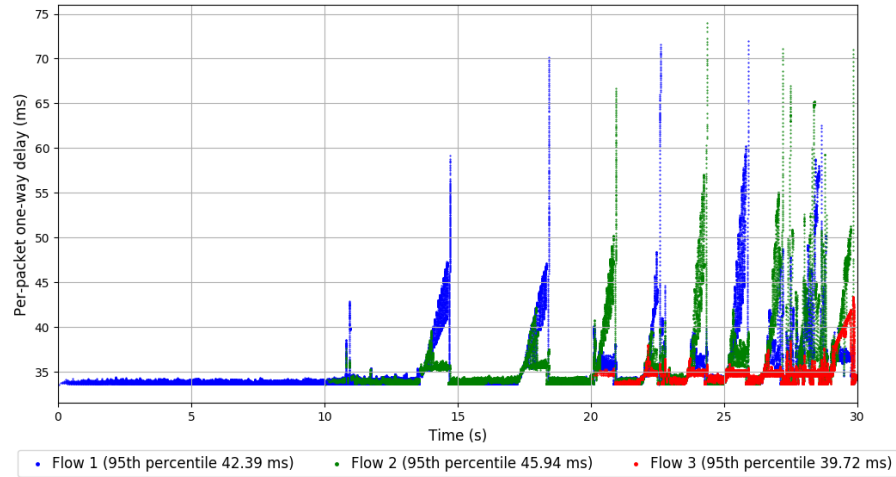
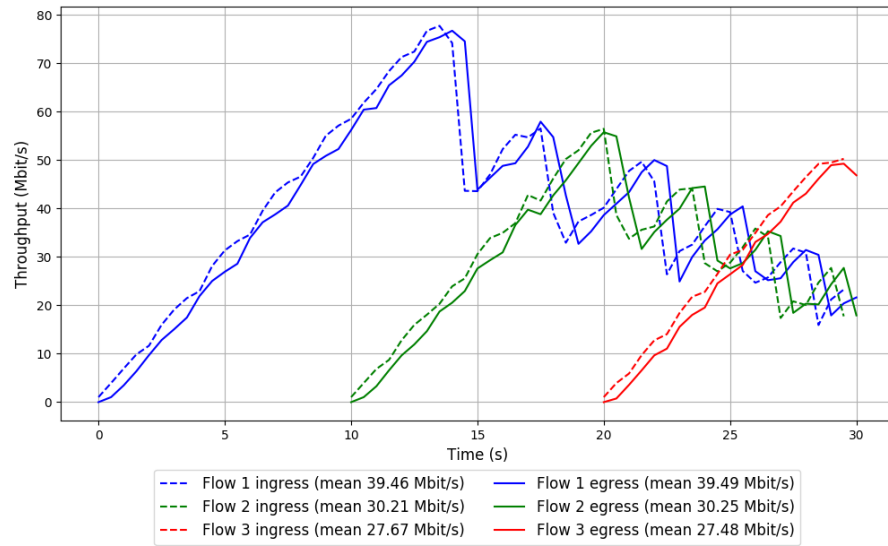


Run 1: Statistics of LEDBAT

Start at: 2018-10-02 16:38:32
End at: 2018-10-02 16:39:02
Local clock offset: 3.731 ms
Remote clock offset: -4.707 ms

Below is generated by plot.py at 2018-10-02 18:44:55
Datalink statistics
-- Total of 3 flows:
Average throughput: 68.73 Mbit/s
95th percentile per-packet one-way delay: 42.926 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 39.49 Mbit/s
95th percentile per-packet one-way delay: 42.392 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 30.25 Mbit/s
95th percentile per-packet one-way delay: 45.943 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 27.48 Mbit/s
95th percentile per-packet one-way delay: 39.722 ms
Loss rate: 1.31%

Run 1: Report of LEDBAT — Data Link

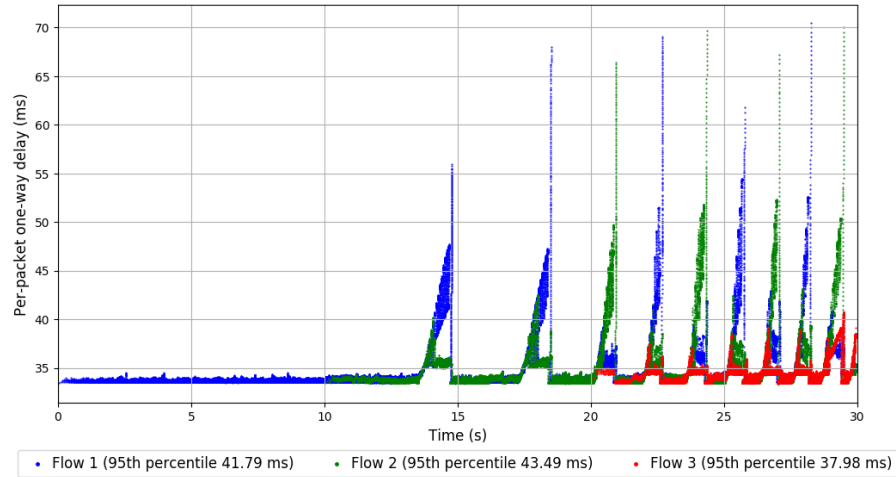
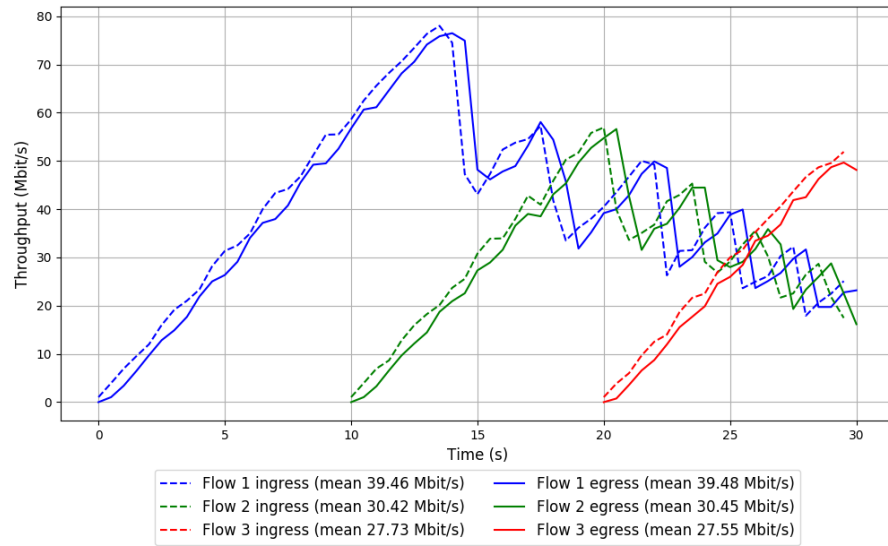


Run 2: Statistics of LEDBAT

Start at: 2018-10-02 17:03:25
End at: 2018-10-02 17:03:55
Local clock offset: 2.687 ms
Remote clock offset: -5.329 ms

Below is generated by plot.py at 2018-10-02 18:44:55
Datalink statistics
-- Total of 3 flows:
Average throughput: 68.86 Mbit/s
95th percentile per-packet one-way delay: 41.635 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 39.48 Mbit/s
95th percentile per-packet one-way delay: 41.787 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 30.45 Mbit/s
95th percentile per-packet one-way delay: 43.495 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 27.55 Mbit/s
95th percentile per-packet one-way delay: 37.985 ms
Loss rate: 1.31%

Run 2: Report of LEDBAT — Data Link

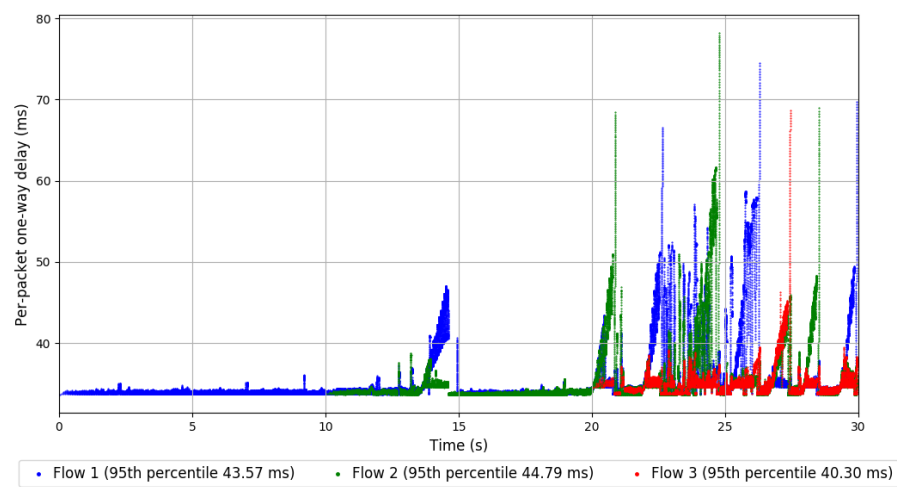
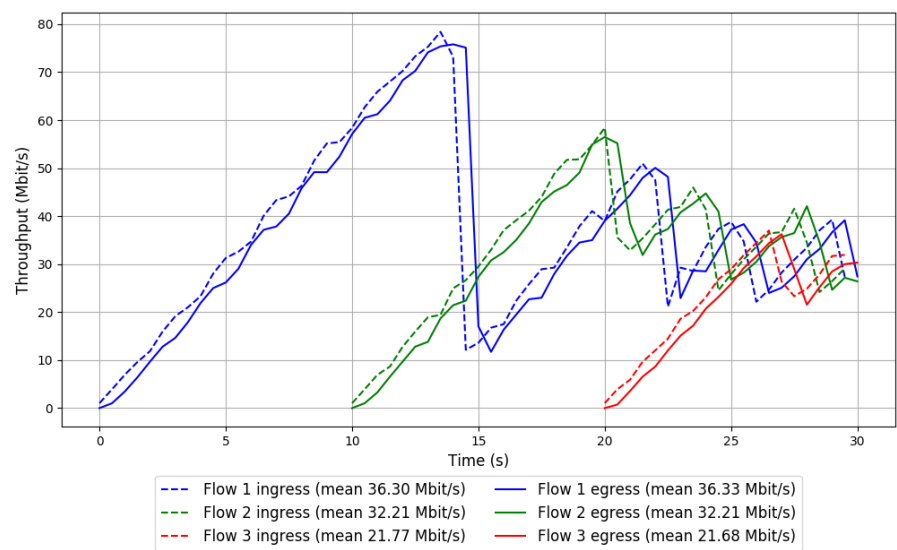


Run 3: Statistics of LEDBAT

Start at: 2018-10-02 17:28:10
End at: 2018-10-02 17:28:40
Local clock offset: 3.817 ms
Remote clock offset: -6.063 ms

Below is generated by plot.py at 2018-10-02 18:45:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 64.94 Mbit/s
95th percentile per-packet one-way delay: 43.627 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 36.33 Mbit/s
95th percentile per-packet one-way delay: 43.573 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 32.21 Mbit/s
95th percentile per-packet one-way delay: 44.791 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 21.68 Mbit/s
95th percentile per-packet one-way delay: 40.299 ms
Loss rate: 1.05%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2018-10-02 17:52:57

End at: 2018-10-02 17:53:27

Local clock offset: 3.661 ms

Remote clock offset: -5.39 ms

Below is generated by plot.py at 2018-10-02 18:45:08

Datalink statistics

-- Total of 3 flows:

Average throughput: 68.84 Mbit/s

95th percentile per-packet one-way delay: 42.317 ms

Loss rate: 0.32%

-- Flow 1:

Average throughput: 39.53 Mbit/s

95th percentile per-packet one-way delay: 41.948 ms

Loss rate: 0.15%

-- Flow 2:

Average throughput: 30.32 Mbit/s

95th percentile per-packet one-way delay: 44.970 ms

Loss rate: 0.21%

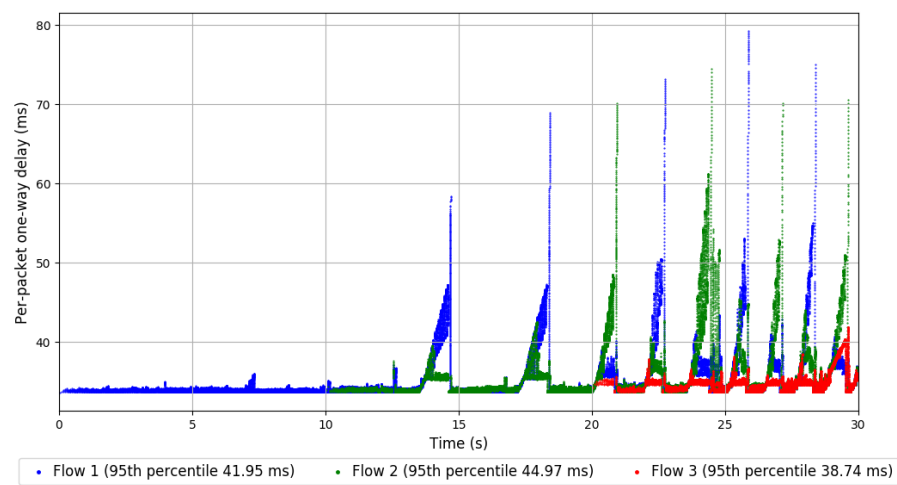
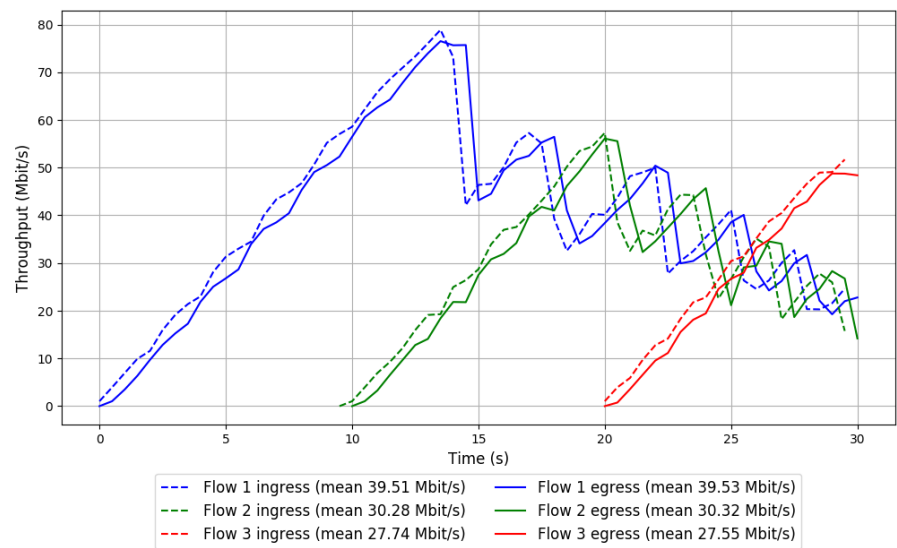
-- Flow 3:

Average throughput: 27.55 Mbit/s

95th percentile per-packet one-way delay: 38.741 ms

Loss rate: 1.31%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-10-02 18:17:43

End at: 2018-10-02 18:18:13

Local clock offset: 2.513 ms

Remote clock offset: -4.19 ms

Below is generated by plot.py at 2018-10-02 18:45:10

Datalink statistics

-- Total of 3 flows:

Average throughput: 68.82 Mbit/s

95th percentile per-packet one-way delay: 41.644 ms

Loss rate: 0.33%

-- Flow 1:

Average throughput: 39.51 Mbit/s

95th percentile per-packet one-way delay: 41.683 ms

Loss rate: 0.16%

-- Flow 2:

Average throughput: 30.35 Mbit/s

95th percentile per-packet one-way delay: 44.011 ms

Loss rate: 0.22%

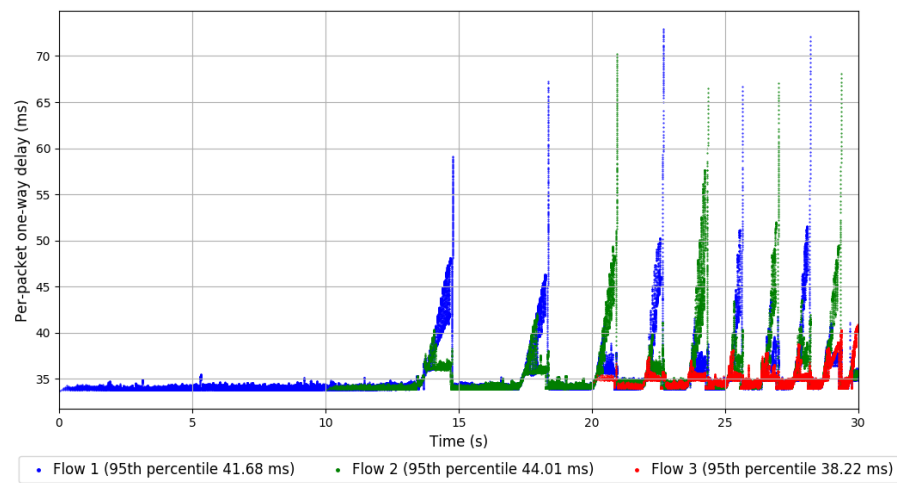
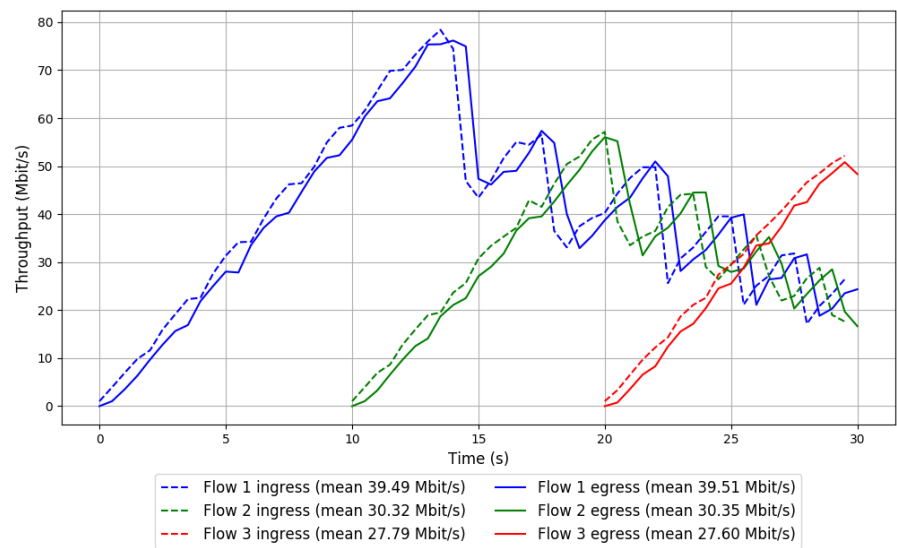
-- Flow 3:

Average throughput: 27.60 Mbit/s

95th percentile per-packet one-way delay: 38.215 ms

Loss rate: 1.31%

Run 5: Report of LEDBAT — Data Link

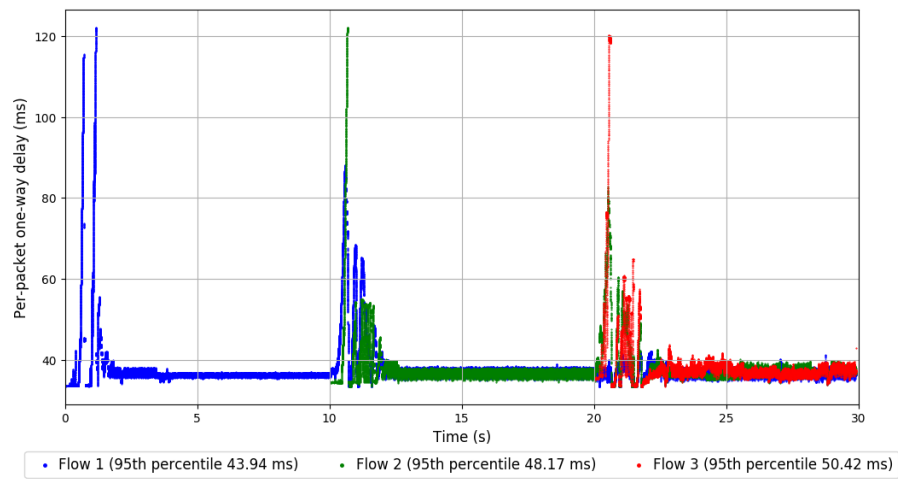
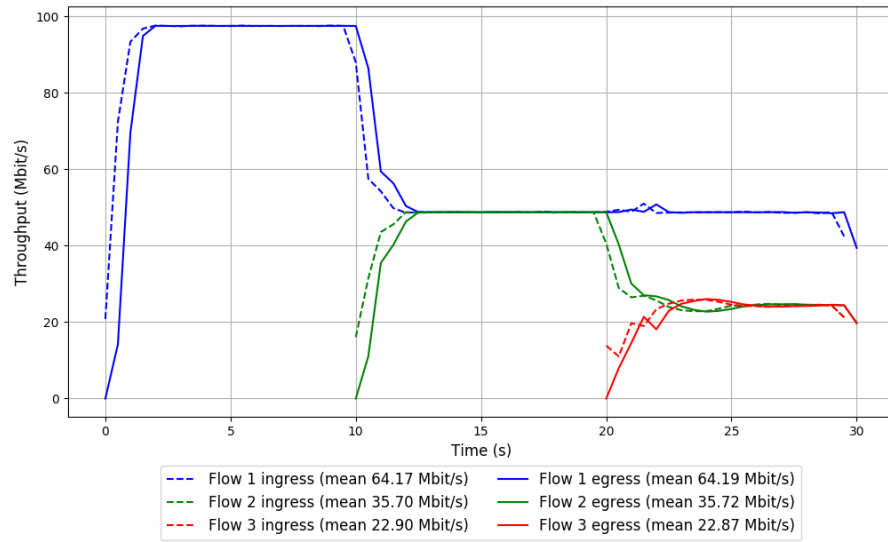


Run 1: Statistics of Indigo-Muses

Start at: 2018-10-02 16:34:22
End at: 2018-10-02 16:34:52
Local clock offset: 3.72 ms
Remote clock offset: -4.243 ms

Below is generated by plot.py at 2018-10-02 18:45:46
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.47 Mbit/s
95th percentile per-packet one-way delay: 45.478 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 64.19 Mbit/s
95th percentile per-packet one-way delay: 43.943 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 35.72 Mbit/s
95th percentile per-packet one-way delay: 48.175 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 22.87 Mbit/s
95th percentile per-packet one-way delay: 50.419 ms
Loss rate: 0.74%

Run 1: Report of Indigo-Muses — Data Link

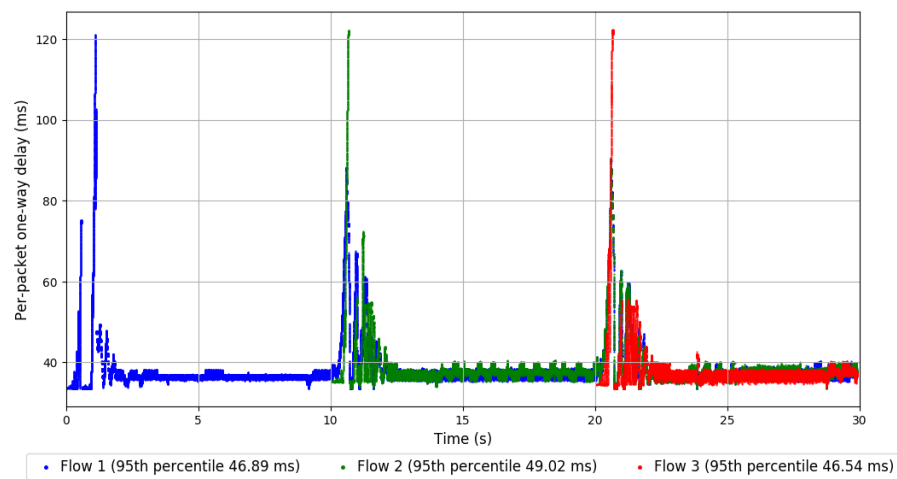
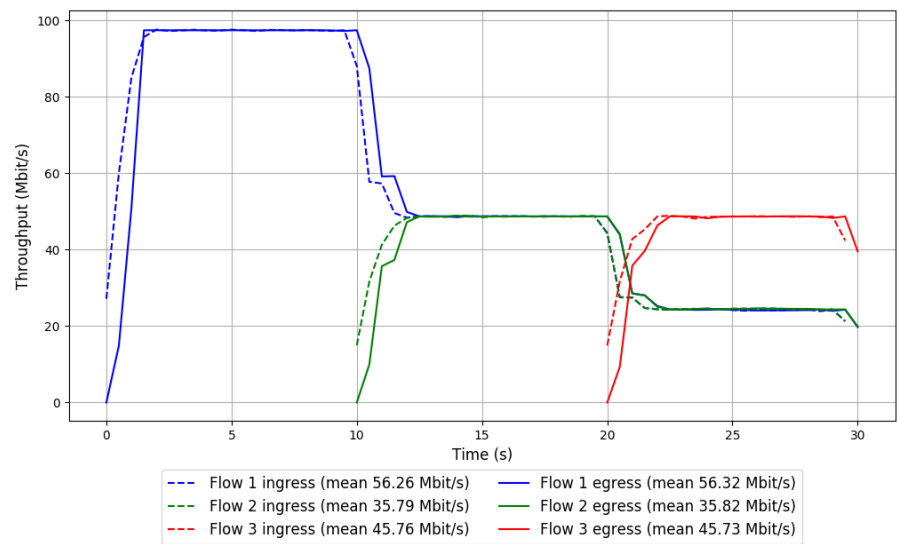


Run 2: Statistics of Indigo-Muses

Start at: 2018-10-02 16:59:14
End at: 2018-10-02 16:59:44
Local clock offset: 2.789 ms
Remote clock offset: -5.392 ms

Below is generated by plot.py at 2018-10-02 18:45:53
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.20 Mbit/s
95th percentile per-packet one-way delay: 47.223 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 56.32 Mbit/s
95th percentile per-packet one-way delay: 46.886 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 35.82 Mbit/s
95th percentile per-packet one-way delay: 49.022 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 45.73 Mbit/s
95th percentile per-packet one-way delay: 46.544 ms
Loss rate: 0.73%

Run 2: Report of Indigo-Muses — Data Link



Run 3: Statistics of Indigo-Muses

Start at: 2018-10-02 17:24:01

End at: 2018-10-02 17:24:31

Local clock offset: 3.528 ms

Remote clock offset: -5.86 ms

Below is generated by plot.py at 2018-10-02 18:45:58

Datalink statistics

-- Total of 3 flows:

Average throughput: 95.11 Mbit/s

95th percentile per-packet one-way delay: 48.069 ms

Loss rate: 0.28%

-- Flow 1:

Average throughput: 56.06 Mbit/s

95th percentile per-packet one-way delay: 49.666 ms

Loss rate: 0.12%

-- Flow 2:

Average throughput: 35.87 Mbit/s

95th percentile per-packet one-way delay: 45.104 ms

Loss rate: 0.36%

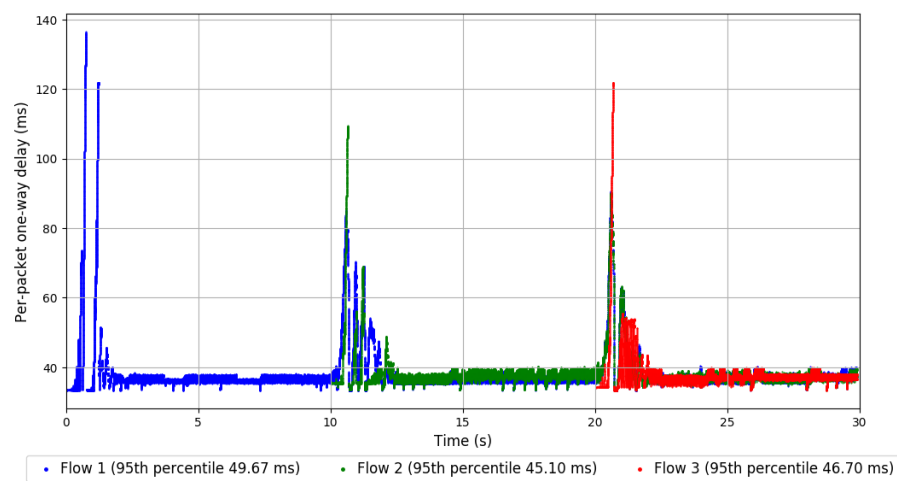
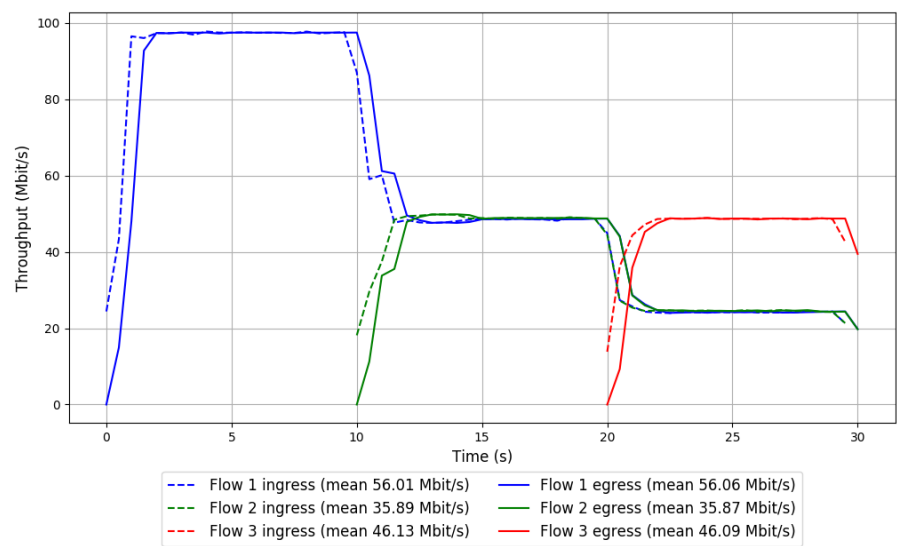
-- Flow 3:

Average throughput: 46.09 Mbit/s

95th percentile per-packet one-way delay: 46.704 ms

Loss rate: 0.73%

Run 3: Report of Indigo-Muses — Data Link

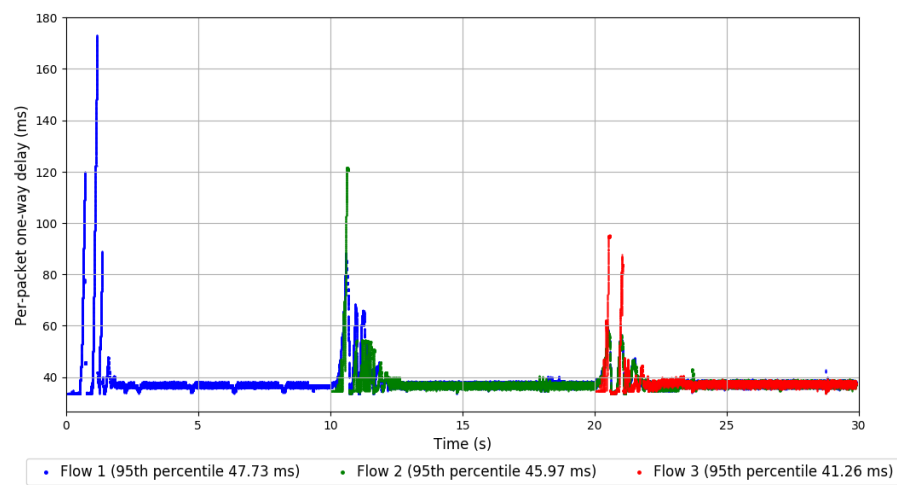
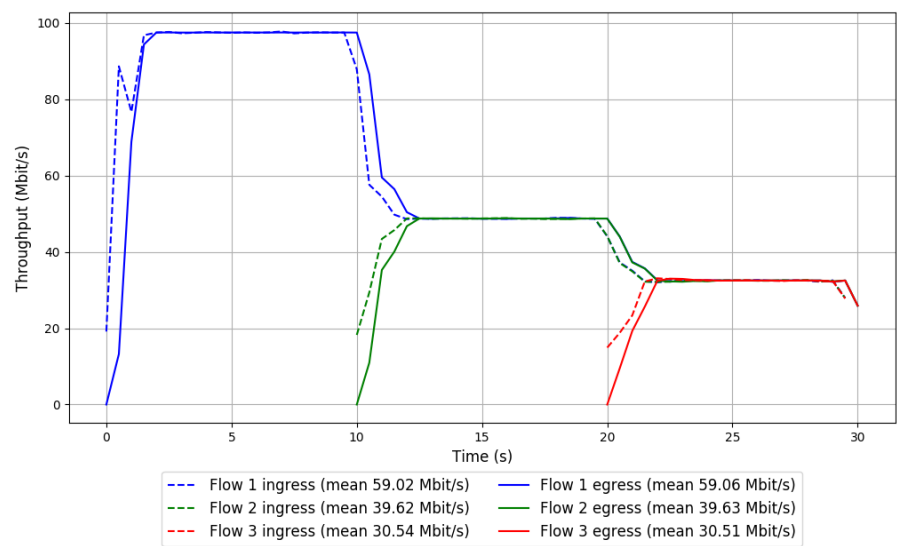


Run 4: Statistics of Indigo-Muses

Start at: 2018-10-02 17:48:47
End at: 2018-10-02 17:49:17
Local clock offset: 4.056 ms
Remote clock offset: -5.502 ms

```
# Below is generated by plot.py at 2018-10-02 18:46:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.47 Mbit/s
95th percentile per-packet one-way delay: 46.381 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 59.06 Mbit/s
95th percentile per-packet one-way delay: 47.731 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 39.63 Mbit/s
95th percentile per-packet one-way delay: 45.966 ms
Loss rate: 0.29%
-- Flow 3:
Average throughput: 30.51 Mbit/s
95th percentile per-packet one-way delay: 41.261 ms
Loss rate: 0.72%
```

Run 4: Report of Indigo-Muses — Data Link

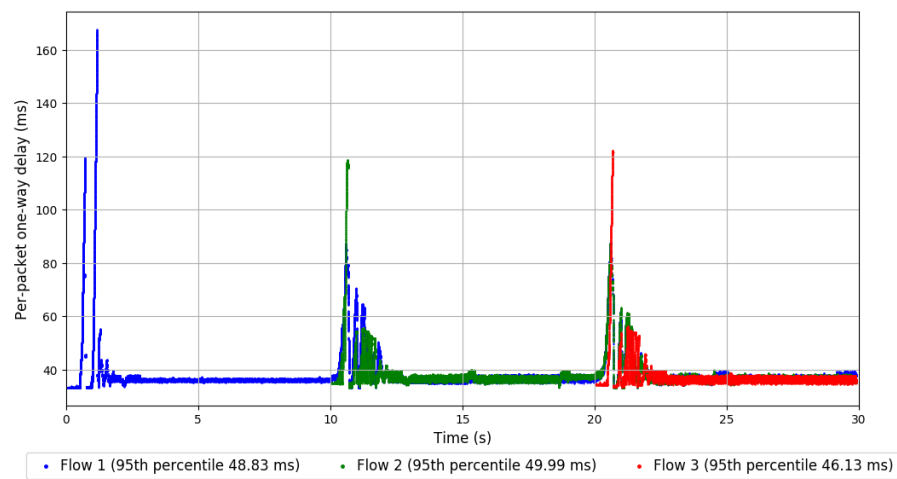
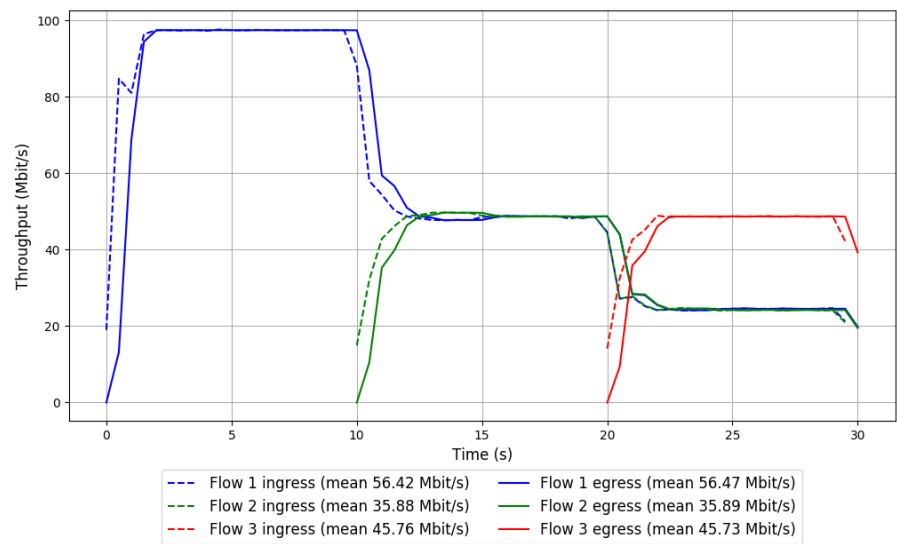


Run 5: Statistics of Indigo-Muses

Start at: 2018-10-02 18:13:33
End at: 2018-10-02 18:14:03
Local clock offset: 3.182 ms
Remote clock offset: -4.079 ms

Below is generated by plot.py at 2018-10-02 18:46:03
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.41 Mbit/s
95th percentile per-packet one-way delay: 48.671 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 56.47 Mbit/s
95th percentile per-packet one-way delay: 48.826 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 35.89 Mbit/s
95th percentile per-packet one-way delay: 49.986 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 45.73 Mbit/s
95th percentile per-packet one-way delay: 46.131 ms
Loss rate: 0.72%

Run 5: Report of Indigo-Muses — Data Link

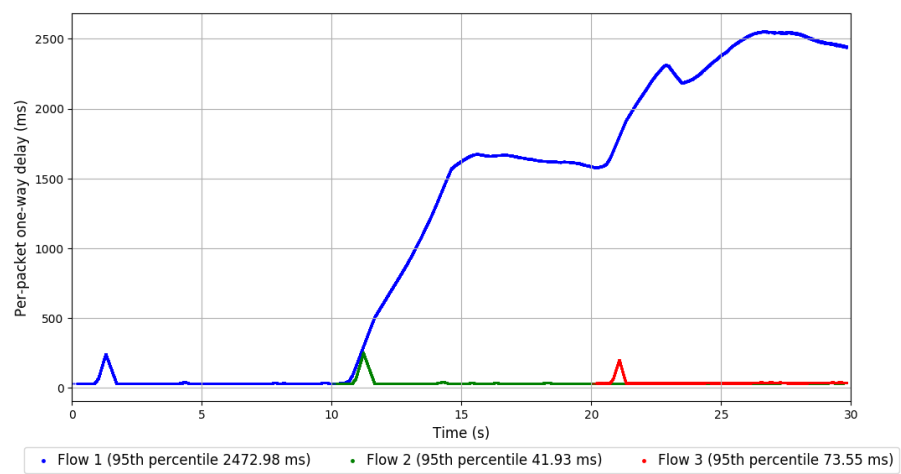
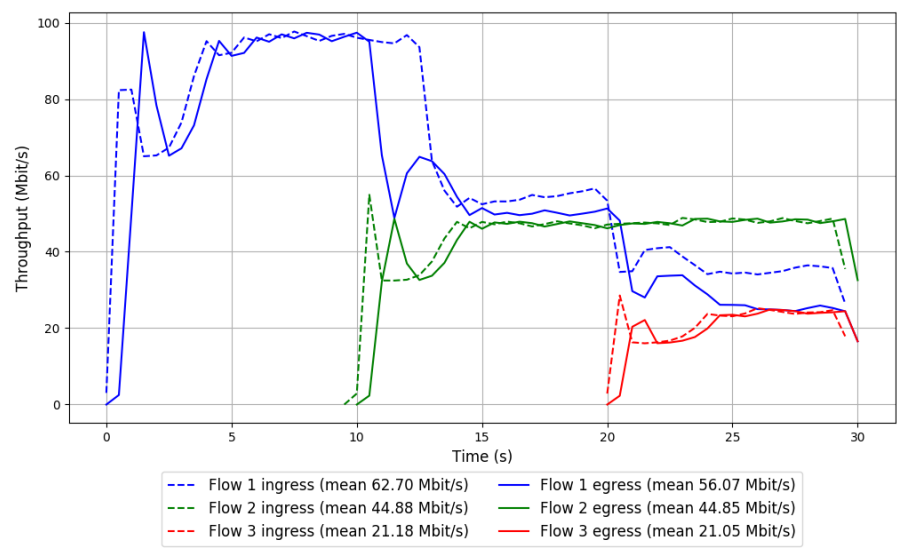



```
Run 1: Statistics of PCC-Allegro

Start at: 2018-10-02 16:52:16
End at: 2018-10-02 16:52:46
Local clock offset: 3.142 ms
Remote clock offset: -5.021 ms

# Below is generated by plot.py at 2018-10-02 18:46:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.79 Mbit/s
95th percentile per-packet one-way delay: 2305.681 ms
Loss rate: 6.98%
-- Flow 1:
Average throughput: 56.07 Mbit/s
95th percentile per-packet one-way delay: 2472.984 ms
Loss rate: 10.76%
-- Flow 2:
Average throughput: 44.85 Mbit/s
95th percentile per-packet one-way delay: 41.932 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 21.05 Mbit/s
95th percentile per-packet one-way delay: 73.545 ms
Loss rate: 1.27%
```

Run 1: Report of PCC-Allegro — Data Link

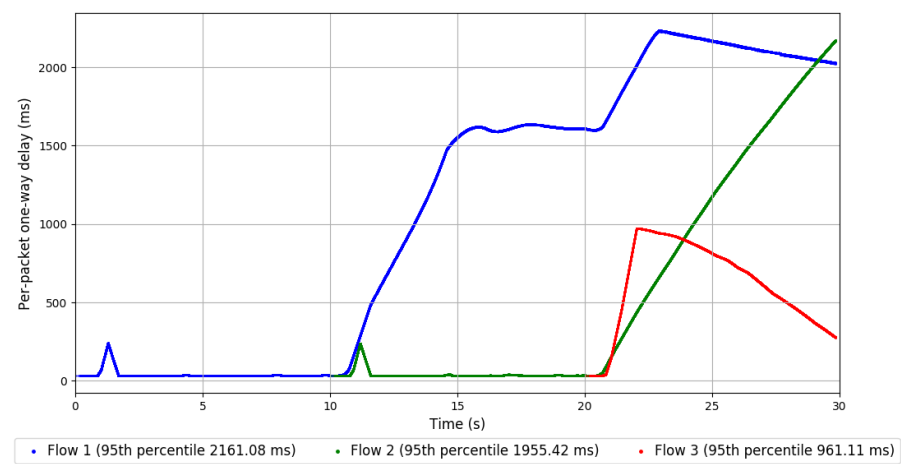
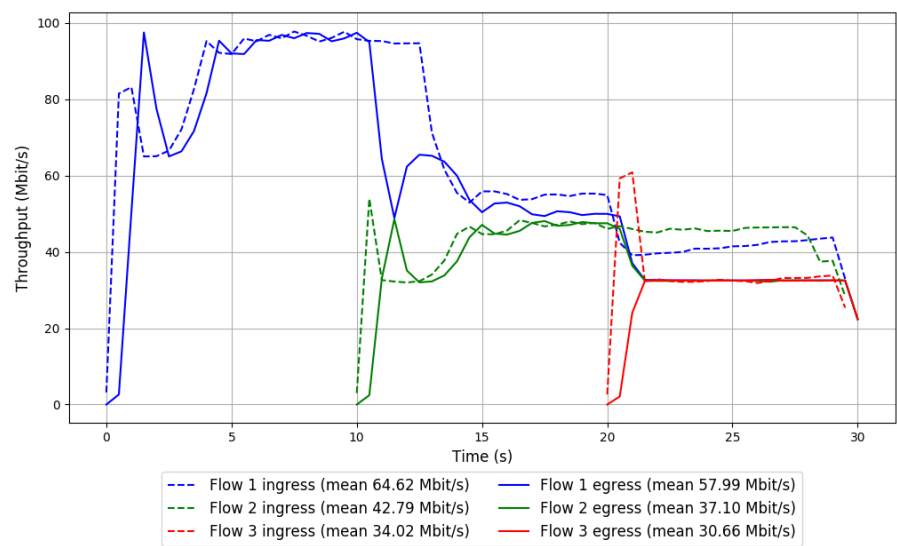


Run 2: Statistics of PCC-Allegro

Start at: 2018-10-02 17:17:05
End at: 2018-10-02 17:17:35
Local clock offset: 2.73 ms
Remote clock offset: -5.738 ms

Below is generated by plot.py at 2018-10-02 18:46:18
Datalink statistics
-- Total of 3 flows:
Average throughput: 92.71 Mbit/s
95th percentile per-packet one-way delay: 2123.465 ms
Loss rate: 11.30%
-- Flow 1:
Average throughput: 57.99 Mbit/s
95th percentile per-packet one-way delay: 2161.077 ms
Loss rate: 10.46%
-- Flow 2:
Average throughput: 37.10 Mbit/s
95th percentile per-packet one-way delay: 1955.425 ms
Loss rate: 13.56%
-- Flow 3:
Average throughput: 30.66 Mbit/s
95th percentile per-packet one-way delay: 961.113 ms
Loss rate: 10.43%

Run 2: Report of PCC-Allegro — Data Link

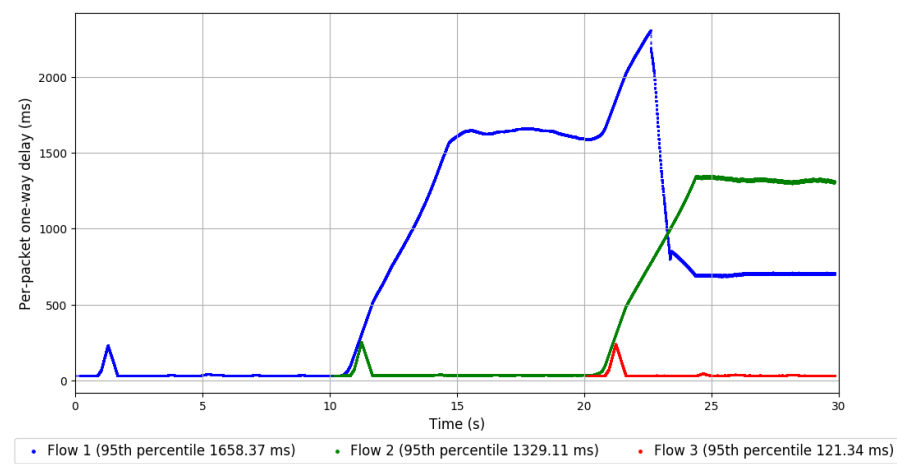
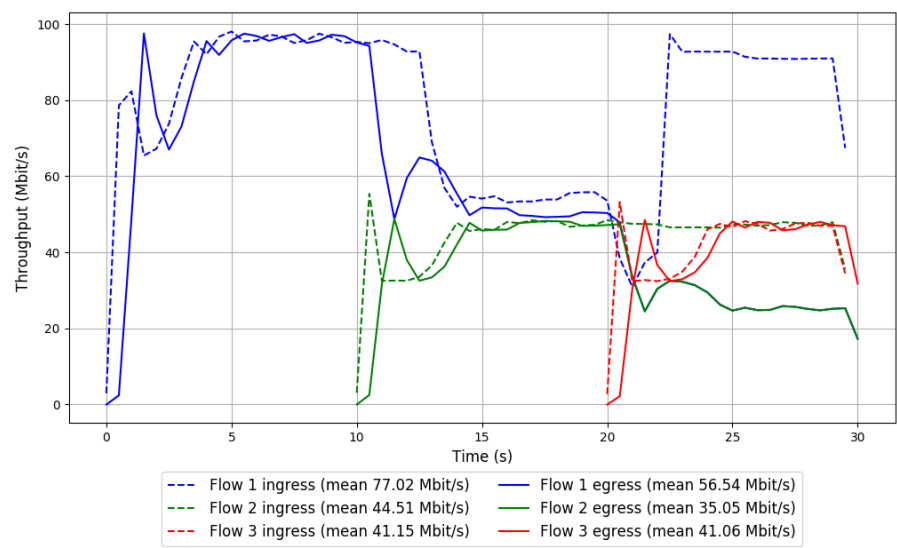


Run 3: Statistics of PCC-Allegro

Start at: 2018-10-02 17:41:49
End at: 2018-10-02 17:42:19
Local clock offset: 4.346 ms
Remote clock offset: -5.666 ms

Below is generated by plot.py at 2018-10-02 18:46:23
Datalink statistics
-- Total of 3 flows:
Average throughput: 93.33 Mbit/s
95th percentile per-packet one-way delay: 1646.824 ms
Loss rate: 22.53%
-- Flow 1:
Average throughput: 56.54 Mbit/s
95th percentile per-packet one-way delay: 1658.373 ms
Loss rate: 26.74%
-- Flow 2:
Average throughput: 35.05 Mbit/s
95th percentile per-packet one-way delay: 1329.113 ms
Loss rate: 21.50%
-- Flow 3:
Average throughput: 41.06 Mbit/s
95th percentile per-packet one-way delay: 121.337 ms
Loss rate: 0.89%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-10-02 18:06:37

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

Local clock offset: 3.224 ms

Remote clock offset: -4.49 ms

Below is generated by plot.py at 2018-10-02 18:46:53

Datalink statistics

-- Total of 3 flows:

Average throughput: 93.15 Mbit/s

95th percentile per-packet one-way delay: 1647.696 ms

Loss rate: 22.73%

-- Flow 1:

Average throughput: 58.77 Mbit/s

95th percentile per-packet one-way delay: 1653.124 ms

Loss rate: 27.07%

-- Flow 2:

Average throughput: 36.82 Mbit/s

95th percentile per-packet one-way delay: 1298.848 ms

Loss rate: 16.26%

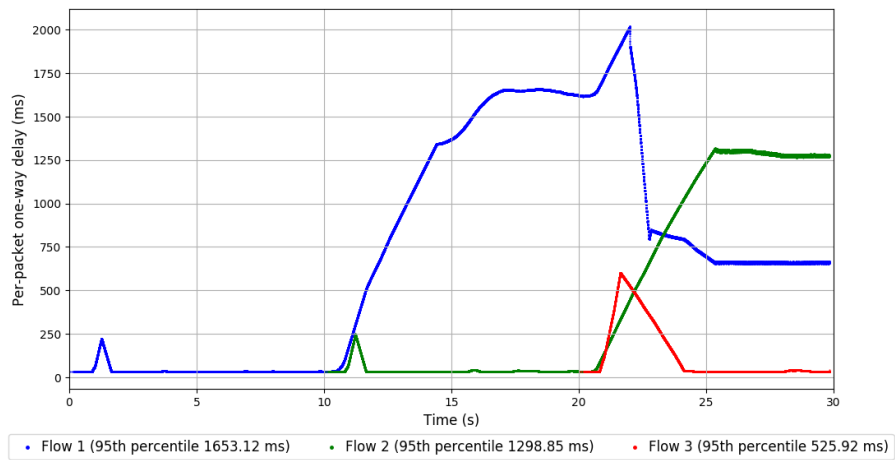
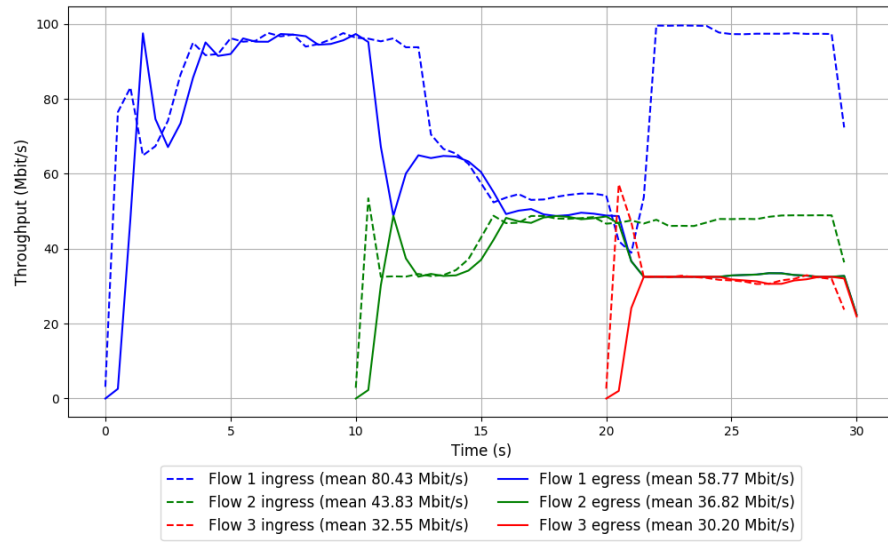
-- Flow 3:

Average throughput: 30.20 Mbit/s

95th percentile per-packet one-way delay: 525.925 ms

Loss rate: 7.79%

Run 4: Report of PCC-Allegro — Data Link

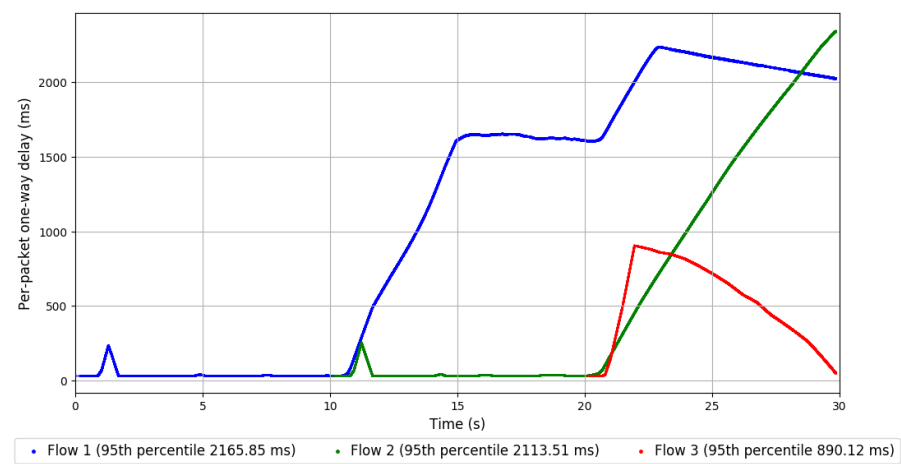
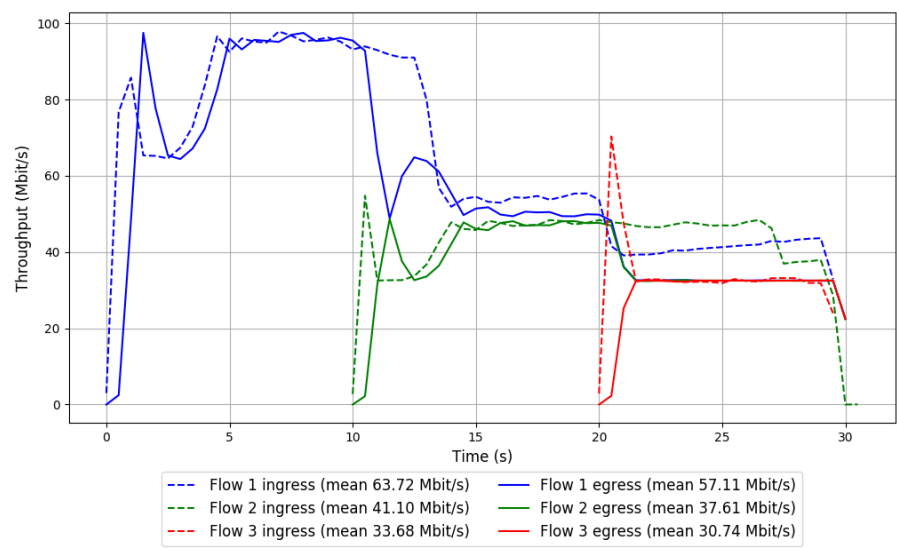


Run 5: Statistics of PCC-Allegro

Start at: 2018-10-02 18:31:22
End at: 2018-10-02 18:31:53
Local clock offset: 0.107 ms
Remote clock offset: -3.553 ms

Below is generated by plot.py at 2018-10-02 18:46:55
Datalink statistics
-- Total of 3 flows:
Average throughput: 92.18 Mbit/s
95th percentile per-packet one-way delay: 2149.368 ms
Loss rate: 11.26%
-- Flow 1:
Average throughput: 57.11 Mbit/s
95th percentile per-packet one-way delay: 2165.853 ms
Loss rate: 10.56%
-- Flow 2:
Average throughput: 37.61 Mbit/s
95th percentile per-packet one-way delay: 2113.510 ms
Loss rate: 13.57%
-- Flow 3:
Average throughput: 30.74 Mbit/s
95th percentile per-packet one-way delay: 890.124 ms
Loss rate: 9.33%

Run 5: Report of PCC-Allegro — Data Link

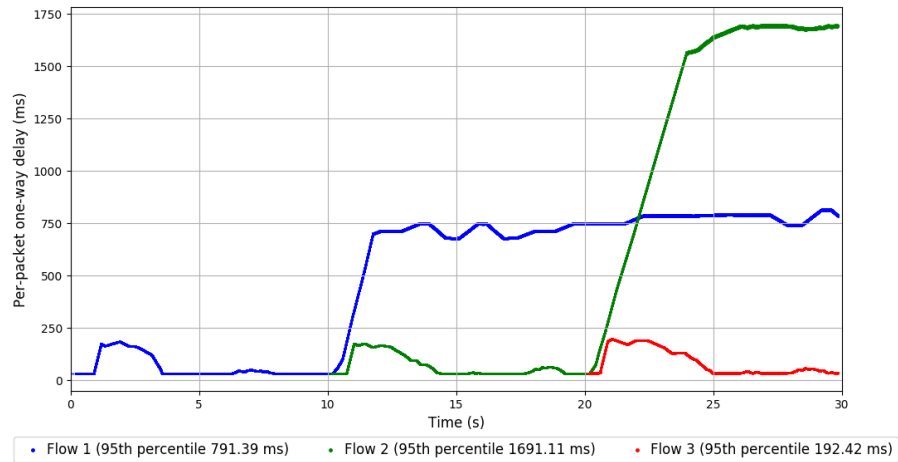
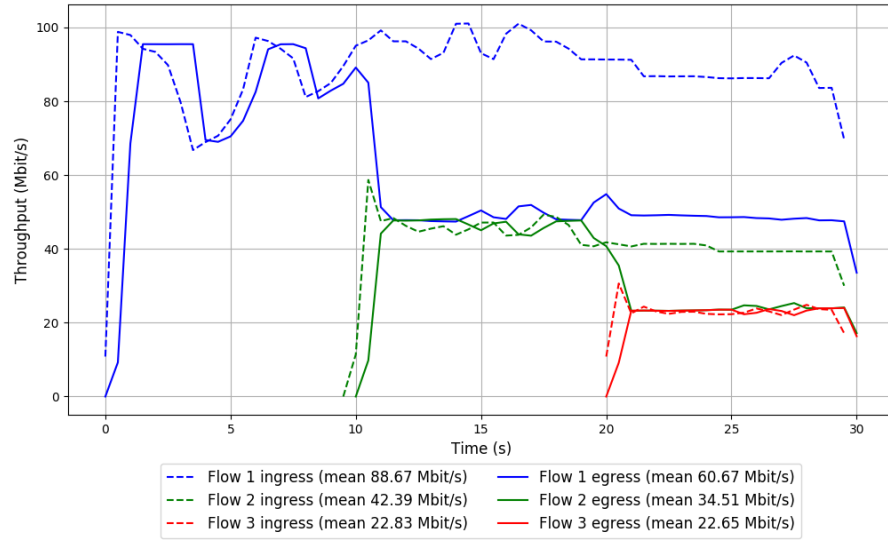


```
Run 1: Statistics of PCC-Expr

Start at: 2018-10-02 16:46:44
End at: 2018-10-02 16:47:14
Local clock offset: 3.678 ms
Remote clock offset: -4.876 ms

# Below is generated by plot.py at 2018-10-02 18:48:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.06 Mbit/s
95th percentile per-packet one-way delay: 1567.889 ms
Loss rate: 26.97%
-- Flow 1:
Average throughput: 60.67 Mbit/s
95th percentile per-packet one-way delay: 791.395 ms
Loss rate: 31.72%
-- Flow 2:
Average throughput: 34.51 Mbit/s
95th percentile per-packet one-way delay: 1691.113 ms
Loss rate: 18.86%
-- Flow 3:
Average throughput: 22.65 Mbit/s
95th percentile per-packet one-way delay: 192.422 ms
Loss rate: 1.44%
```

Run 1: Report of PCC-Expr — Data Link

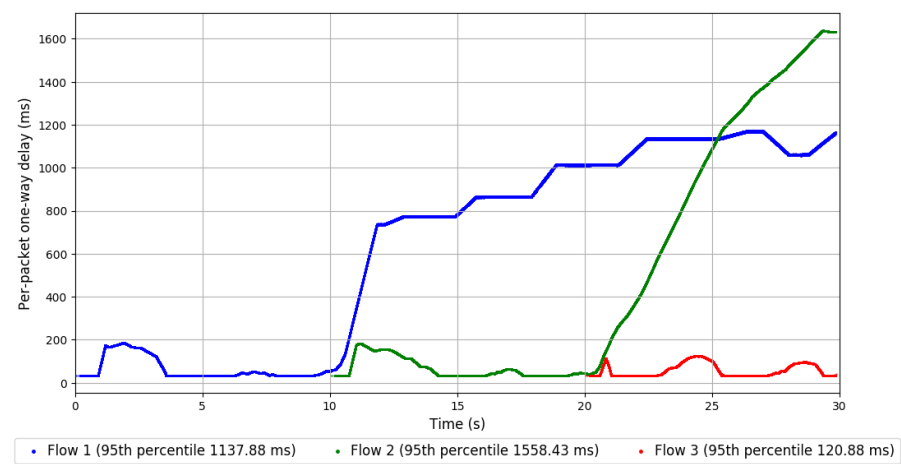
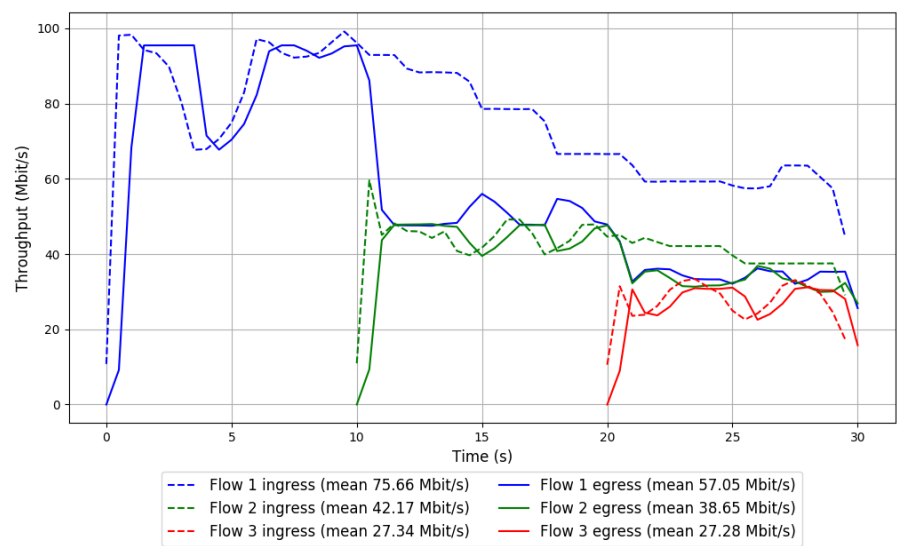


Run 2: Statistics of PCC-Expr

Start at: 2018-10-02 17:11:34
End at: 2018-10-02 17:12:04
Local clock offset: 2.572 ms
Remote clock offset: -5.555 ms

Below is generated by plot.py at 2018-10-02 18:48:11
Datalink statistics
-- Total of 3 flows:
Average throughput: 91.70 Mbit/s
95th percentile per-packet one-way delay: 1206.944 ms
Loss rate: 18.83%
-- Flow 1:
Average throughput: 57.05 Mbit/s
95th percentile per-packet one-way delay: 1137.878 ms
Loss rate: 24.76%
-- Flow 2:
Average throughput: 38.65 Mbit/s
95th percentile per-packet one-way delay: 1558.431 ms
Loss rate: 8.63%
-- Flow 3:
Average throughput: 27.28 Mbit/s
95th percentile per-packet one-way delay: 120.875 ms
Loss rate: 0.79%

Run 2: Report of PCC-Expr — Data Link

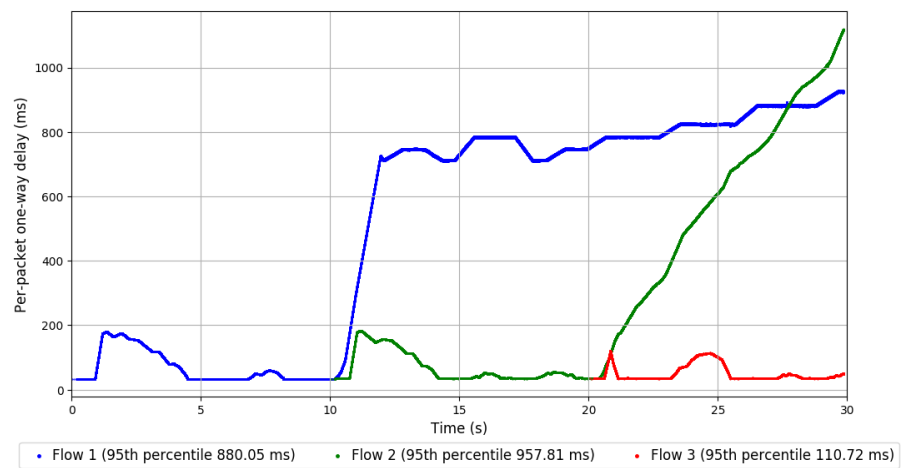
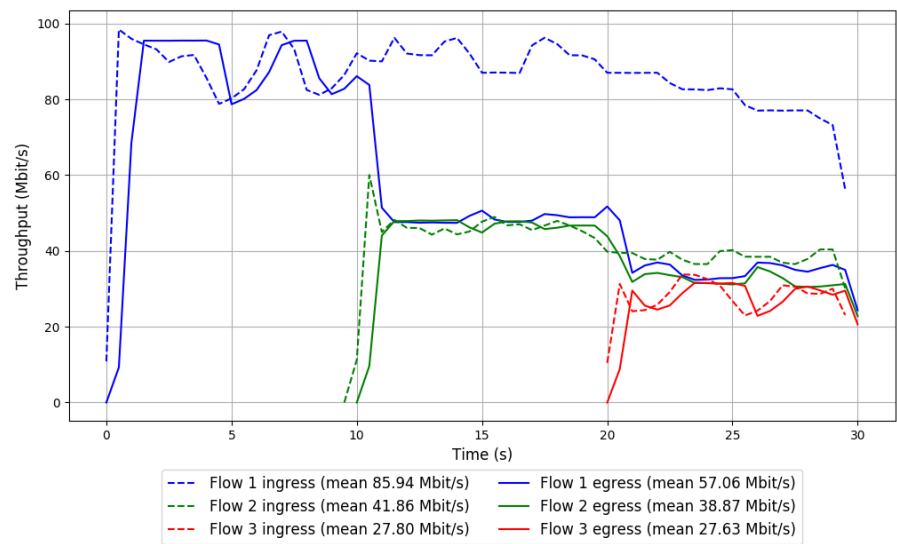


Run 3: Statistics of PCC-Expr

Start at: 2018-10-02 17:36:17
End at: 2018-10-02 17:36:47
Local clock offset: 4.182 ms
Remote clock offset: -5.706 ms

Below is generated by plot.py at 2018-10-02 18:48:13
Datalink statistics
-- Total of 3 flows:
Average throughput: 91.99 Mbit/s
95th percentile per-packet one-way delay: 880.962 ms
Loss rate: 25.36%
-- Flow 1:
Average throughput: 57.06 Mbit/s
95th percentile per-packet one-way delay: 880.047 ms
Loss rate: 33.74%
-- Flow 2:
Average throughput: 38.87 Mbit/s
95th percentile per-packet one-way delay: 957.809 ms
Loss rate: 7.43%
-- Flow 3:
Average throughput: 27.63 Mbit/s
95th percentile per-packet one-way delay: 110.722 ms
Loss rate: 1.25%

Run 3: Report of PCC-Expr — Data Link

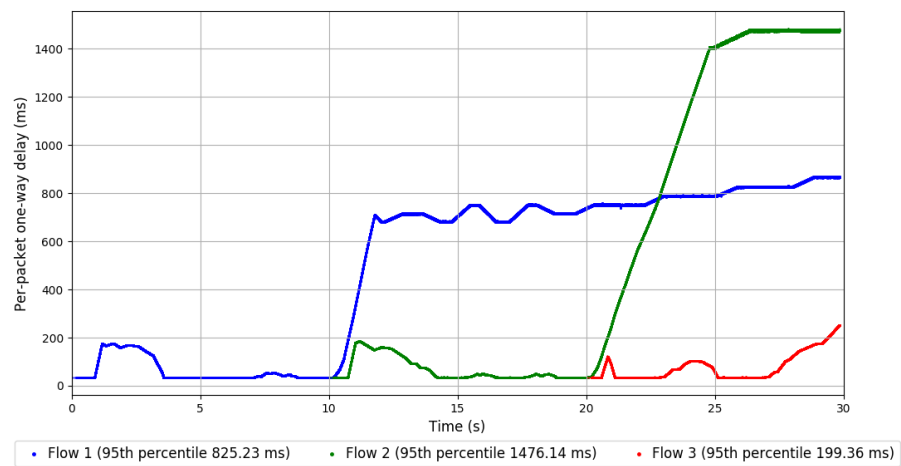
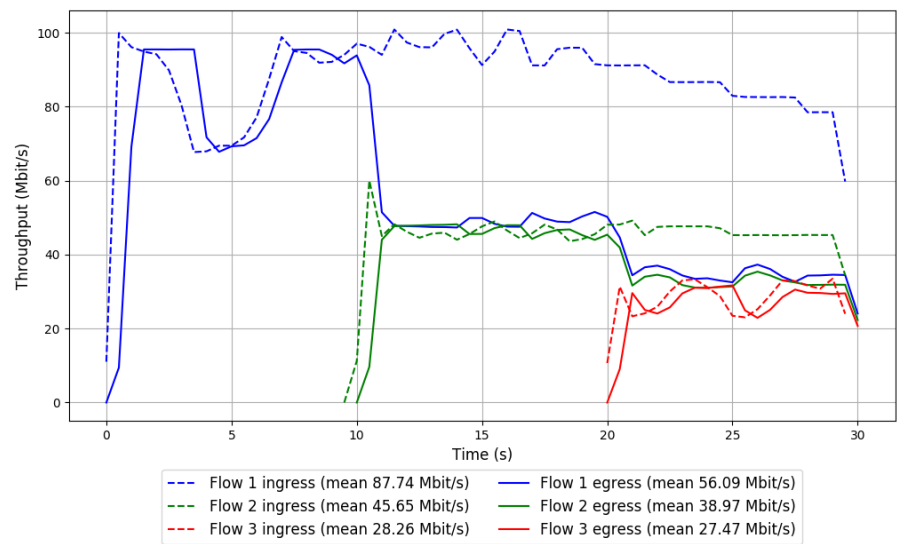


Run 4: Statistics of PCC-Expr

Start at: 2018-10-02 18:01:06
End at: 2018-10-02 18:01:36
Local clock offset: 3.307 ms
Remote clock offset: -4.785 ms

Below is generated by plot.py at 2018-10-02 18:48:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 91.02 Mbit/s
95th percentile per-packet one-way delay: 1434.036 ms
Loss rate: 28.73%
-- Flow 1:
Average throughput: 56.09 Mbit/s
95th percentile per-packet one-way delay: 825.225 ms
Loss rate: 36.21%
-- Flow 2:
Average throughput: 38.97 Mbit/s
95th percentile per-packet one-way delay: 1476.145 ms
Loss rate: 14.89%
-- Flow 3:
Average throughput: 27.47 Mbit/s
95th percentile per-packet one-way delay: 199.357 ms
Loss rate: 3.44%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-10-02 18:25:52

End at: 2018-10-02 18:26:22

Local clock offset: 0.727 ms

Remote clock offset: -3.76 ms

Below is generated by plot.py at 2018-10-02 18:48:36

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.68 Mbit/s

95th percentile per-packet one-way delay: 1413.412 ms

Loss rate: 24.79%

-- Flow 1:

Average throughput: 62.67 Mbit/s

95th percentile per-packet one-way delay: 920.669 ms

Loss rate: 27.00%

-- Flow 2:

Average throughput: 33.79 Mbit/s

95th percentile per-packet one-way delay: 1460.704 ms

Loss rate: 24.47%

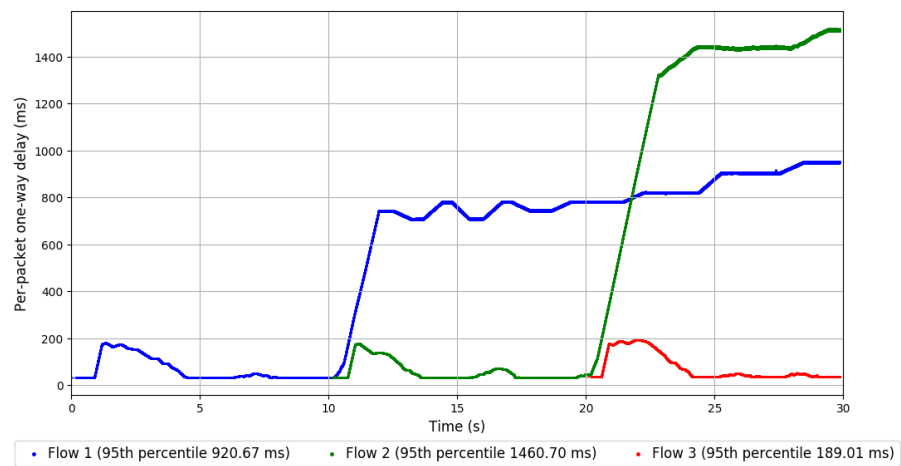
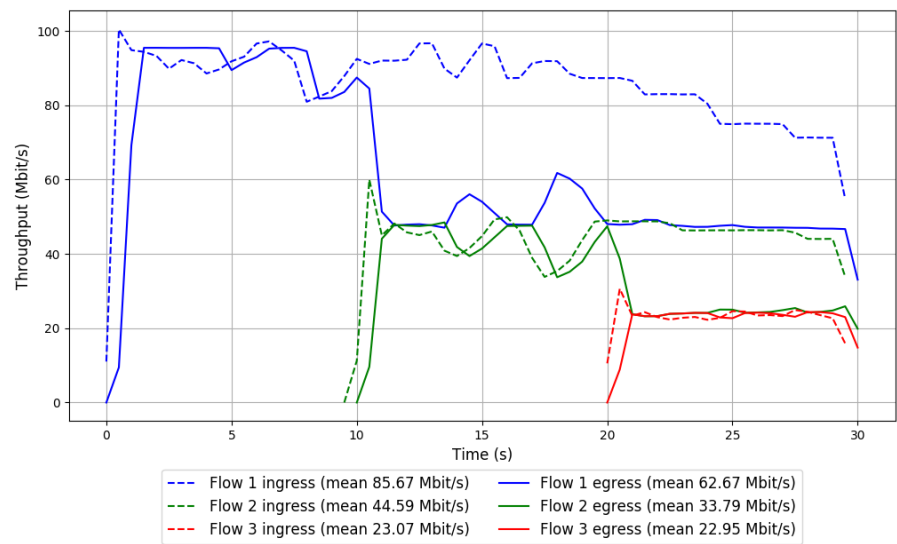
-- Flow 3:

Average throughput: 22.95 Mbit/s

95th percentile per-packet one-way delay: 189.006 ms

Loss rate: 1.21%

Run 5: Report of PCC-Expr — Data Link

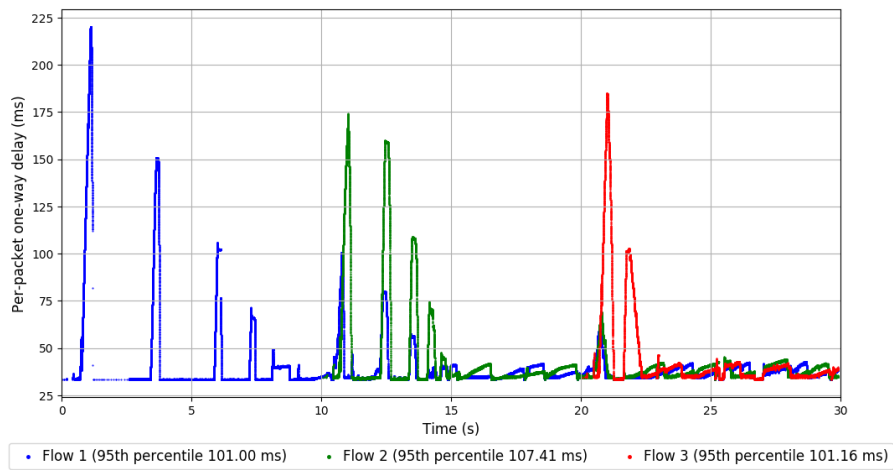
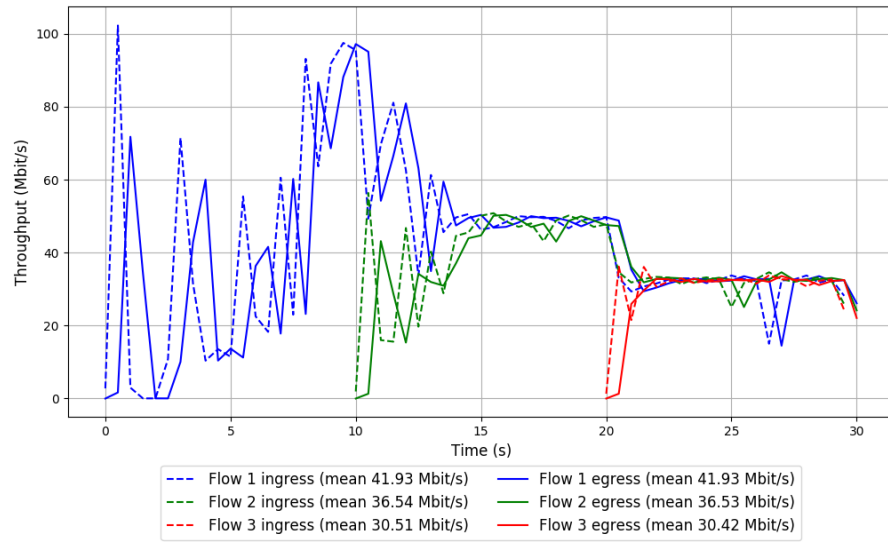


Run 1: Statistics of QUIC Cubic

Start at: 2018-10-02 16:49:35
End at: 2018-10-02 16:50:05
Local clock offset: 3.359 ms
Remote clock offset: -4.881 ms

Below is generated by plot.py at 2018-10-02 18:48:36
Datalink statistics
-- Total of 3 flows:
Average throughput: 76.21 Mbit/s
95th percentile per-packet one-way delay: 102.084 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 41.93 Mbit/s
95th percentile per-packet one-way delay: 101.000 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 36.53 Mbit/s
95th percentile per-packet one-way delay: 107.413 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 30.42 Mbit/s
95th percentile per-packet one-way delay: 101.163 ms
Loss rate: 0.96%

Run 1: Report of QUIC Cubic — Data Link

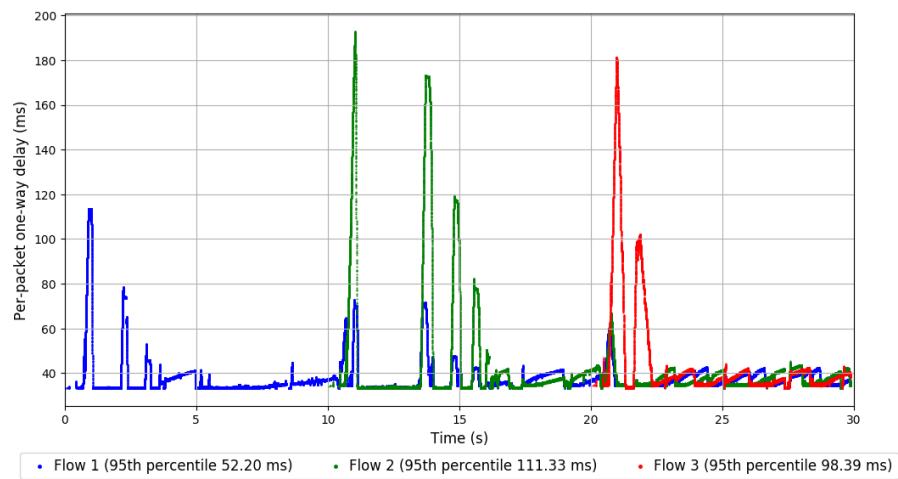
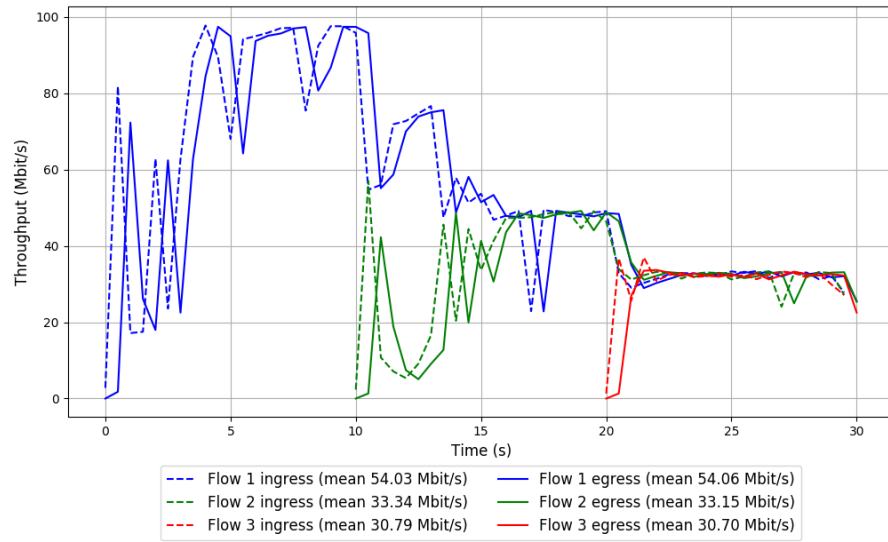


Run 2: Statistics of QUIC Cubic

Start at: 2018-10-02 17:14:25
End at: 2018-10-02 17:14:55
Local clock offset: 2.56 ms
Remote clock offset: -5.687 ms

Below is generated by plot.py at 2018-10-02 18:48:36
Datalink statistics
-- Total of 3 flows:
Average throughput: 86.19 Mbit/s
95th percentile per-packet one-way delay: 70.958 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 54.06 Mbit/s
95th percentile per-packet one-way delay: 52.197 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 33.15 Mbit/s
95th percentile per-packet one-way delay: 111.332 ms
Loss rate: 0.89%
-- Flow 3:
Average throughput: 30.70 Mbit/s
95th percentile per-packet one-way delay: 98.389 ms
Loss rate: 0.91%

Run 2: Report of QUIC Cubic — Data Link

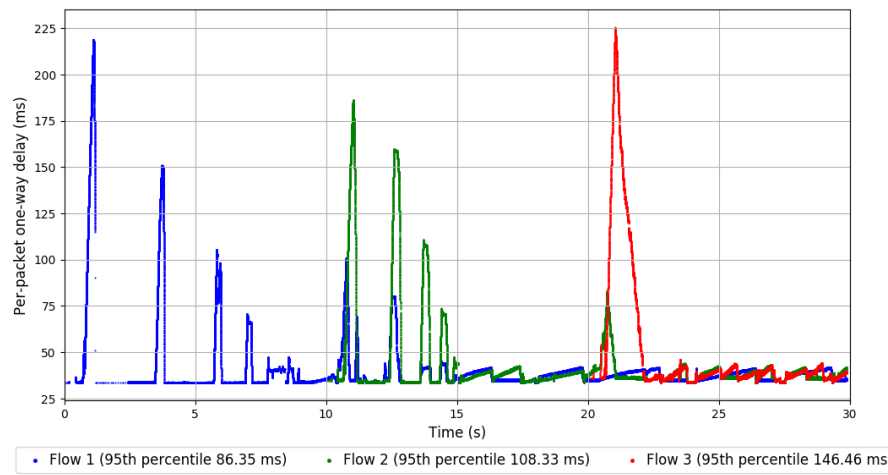
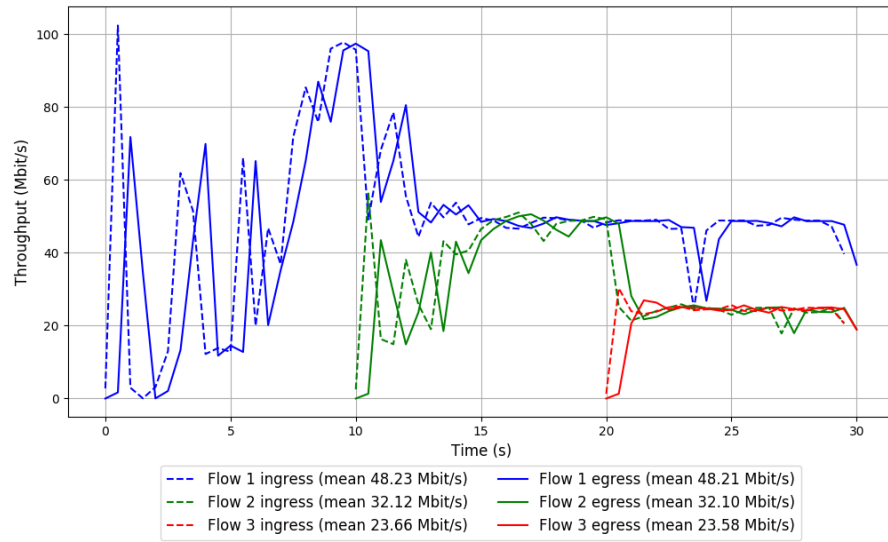


Run 3: Statistics of QUIC Cubic

Start at: 2018-10-02 17:39:09
End at: 2018-10-02 17:39:39
Local clock offset: 4.269 ms
Remote clock offset: -5.952 ms

Below is generated by plot.py at 2018-10-02 18:48:36
Datalink statistics
-- Total of 3 flows:
Average throughput: 77.31 Mbit/s
95th percentile per-packet one-way delay: 102.353 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 48.21 Mbit/s
95th percentile per-packet one-way delay: 86.352 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 32.10 Mbit/s
95th percentile per-packet one-way delay: 108.329 ms
Loss rate: 0.38%
-- Flow 3:
Average throughput: 23.58 Mbit/s
95th percentile per-packet one-way delay: 146.464 ms
Loss rate: 1.02%

Run 3: Report of QUIC Cubic — Data Link

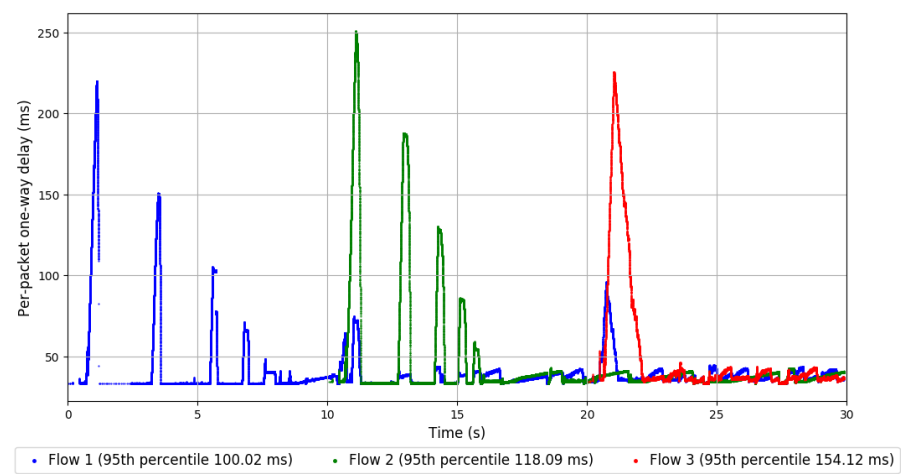
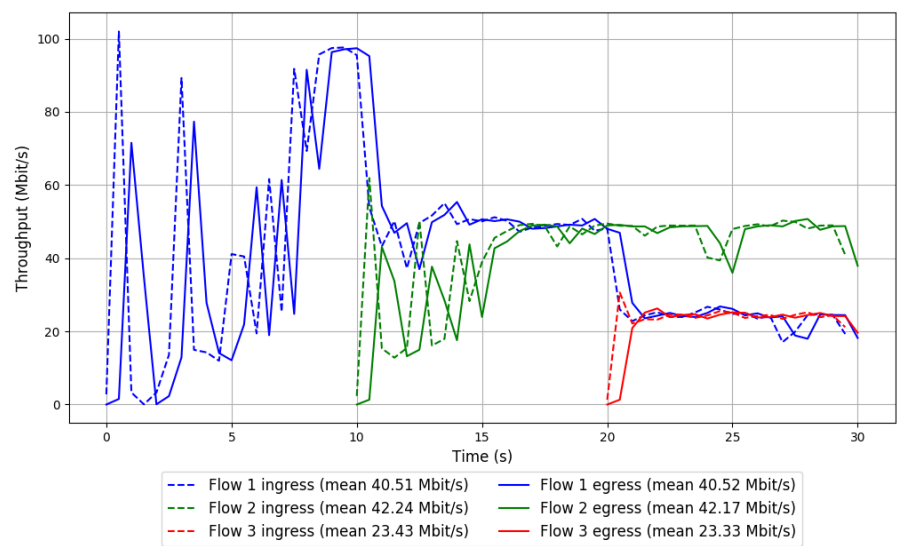


Run 4: Statistics of QUIC Cubic

Start at: 2018-10-02 18:03:57
End at: 2018-10-02 18:04:27
Local clock offset: 3.255 ms
Remote clock offset: -4.616 ms

Below is generated by plot.py at 2018-10-02 18:48:36
Datalink statistics
-- Total of 3 flows:
Average throughput: 76.23 Mbit/s
95th percentile per-packet one-way delay: 107.824 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 40.52 Mbit/s
95th percentile per-packet one-way delay: 100.018 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 42.17 Mbit/s
95th percentile per-packet one-way delay: 118.094 ms
Loss rate: 0.49%
-- Flow 3:
Average throughput: 23.33 Mbit/s
95th percentile per-packet one-way delay: 154.123 ms
Loss rate: 1.08%

Run 4: Report of QUIC Cubic — Data Link

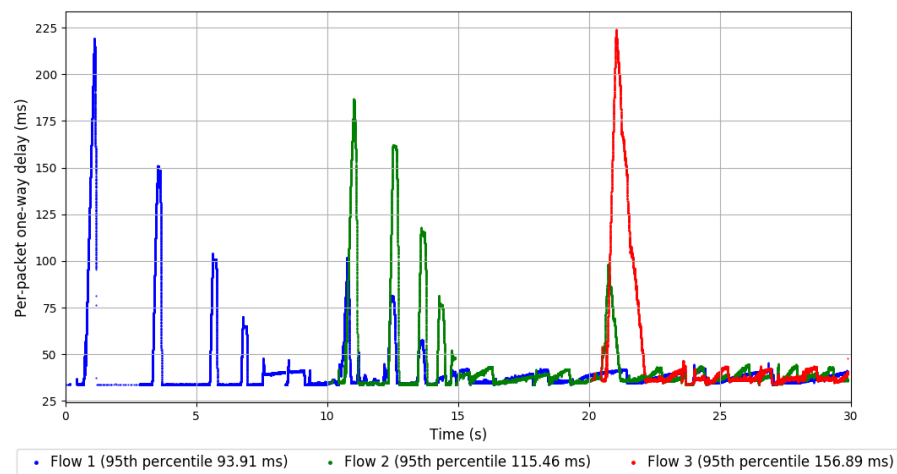
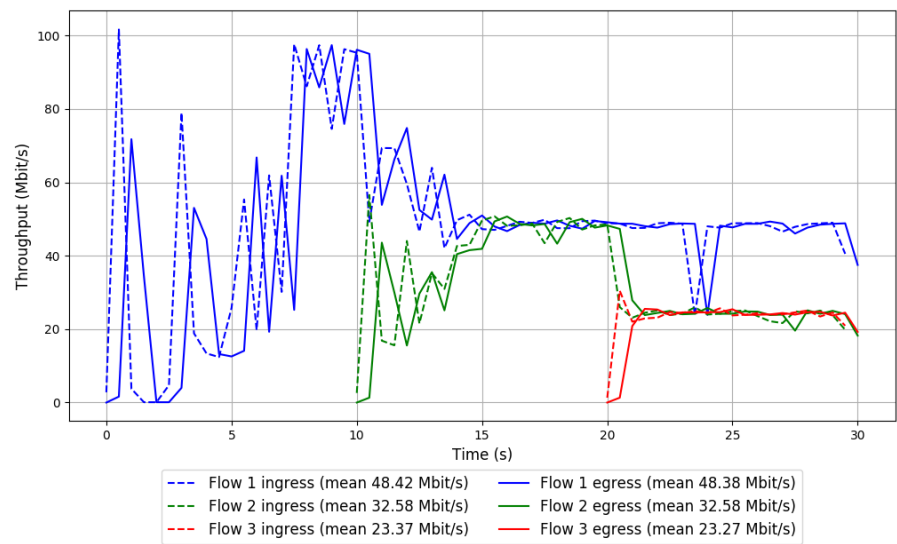


Run 5: Statistics of QUIC Cubic

Start at: 2018-10-02 18:28:43
End at: 2018-10-02 18:29:13
Local clock offset: 0.413 ms
Remote clock offset: -3.779 ms

Below is generated by plot.py at 2018-10-02 18:48:59
Datalink statistics
-- Total of 3 flows:
Average throughput: 77.68 Mbit/s
95th percentile per-packet one-way delay: 101.685 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 48.38 Mbit/s
95th percentile per-packet one-way delay: 93.913 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 32.58 Mbit/s
95th percentile per-packet one-way delay: 115.463 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 23.27 Mbit/s
95th percentile per-packet one-way delay: 156.894 ms
Loss rate: 1.05%

Run 5: Report of QUIC Cubic — Data Link

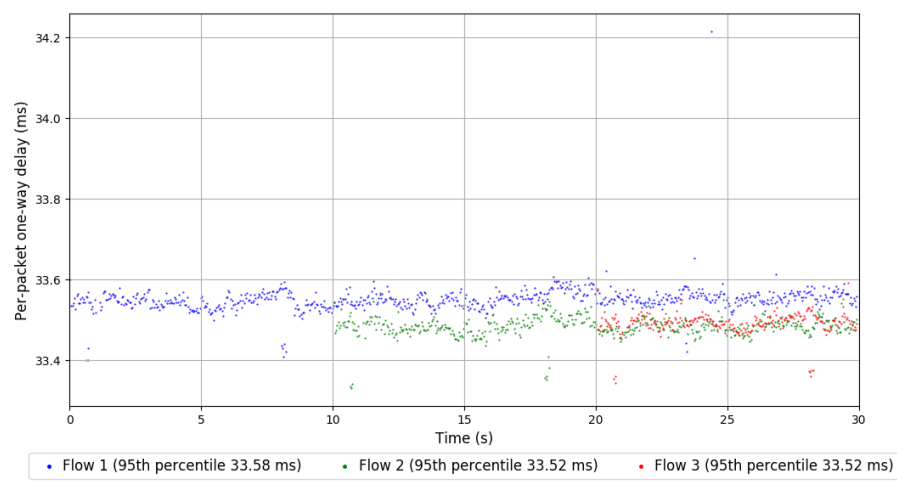
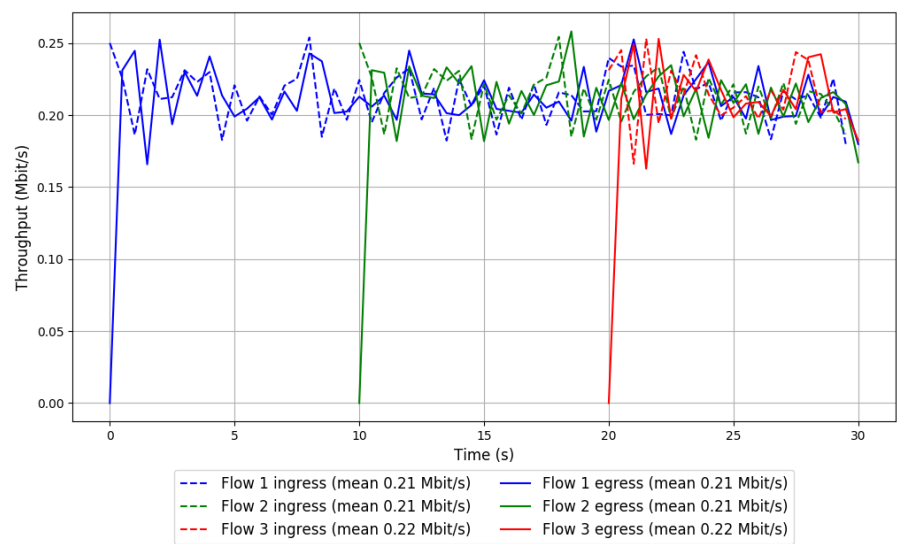


```
Run 1: Statistics of SReAM

Start at: 2018-10-02 16:50:57
End at: 2018-10-02 16:51:27
Local clock offset: 3.226 ms
Remote clock offset: -4.942 ms

# Below is generated by plot.py at 2018-10-02 18:48:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 33.575 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.582 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.521 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 33.522 ms
Loss rate: 0.71%
```

Run 1: Report of SReAM — Data Link

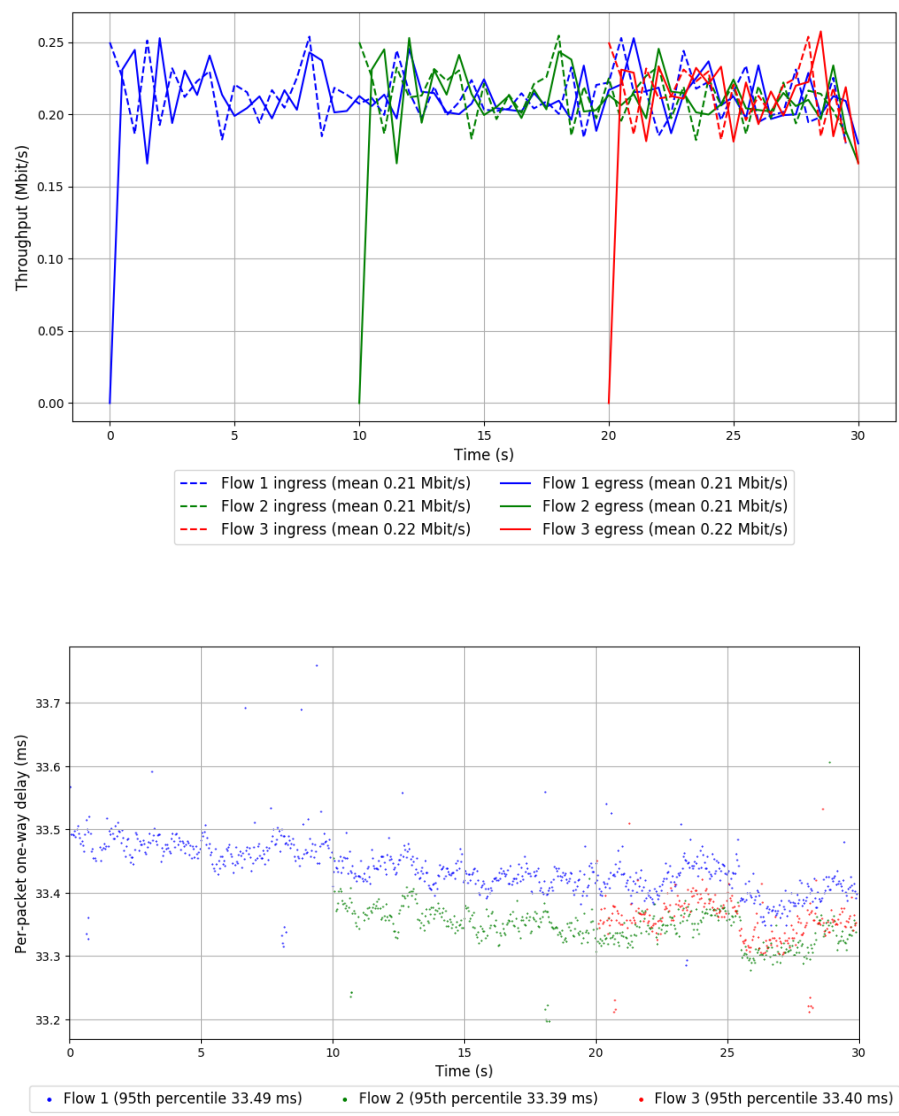


Run 2: Statistics of SReAM

Start at: 2018-10-02 17:15:47
End at: 2018-10-02 17:16:17
Local clock offset: 2.566 ms
Remote clock offset: -5.759 ms

Below is generated by plot.py at 2018-10-02 18:48:59
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 33.485 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.495 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.387 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 33.404 ms
Loss rate: 0.71%

Run 2: Report of SReAM — Data Link

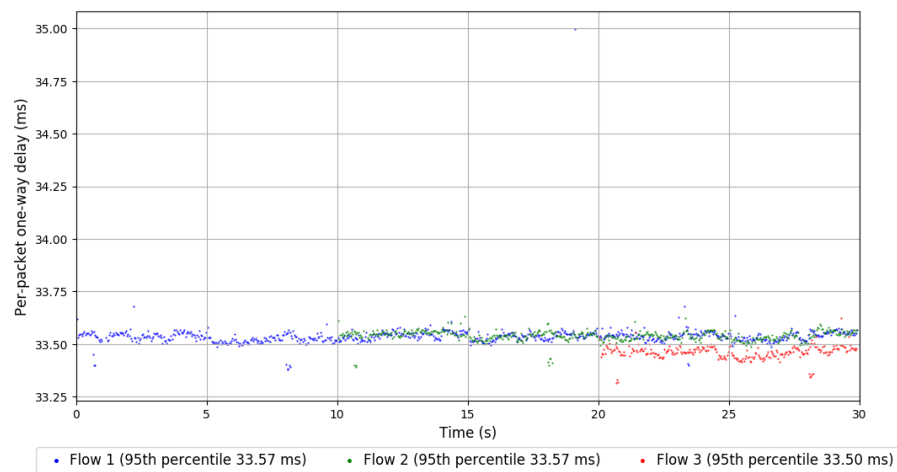
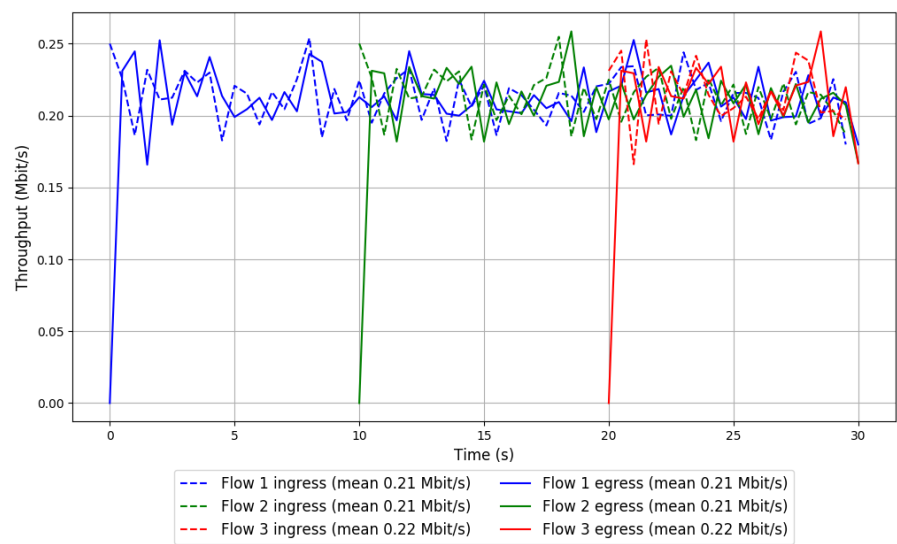


Run 3: Statistics of SReAM

Start at: 2018-10-02 17:40:31
End at: 2018-10-02 17:41:01
Local clock offset: 4.314 ms
Remote clock offset: -5.748 ms

Below is generated by plot.py at 2018-10-02 18:48:59
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 33.569 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.569 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.569 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 33.498 ms
Loss rate: 0.71%

Run 3: Report of SReAM — Data Link

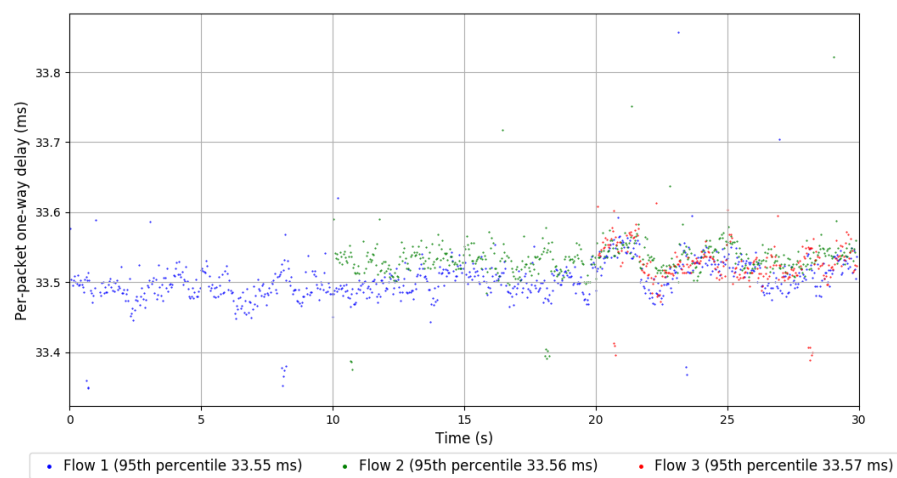
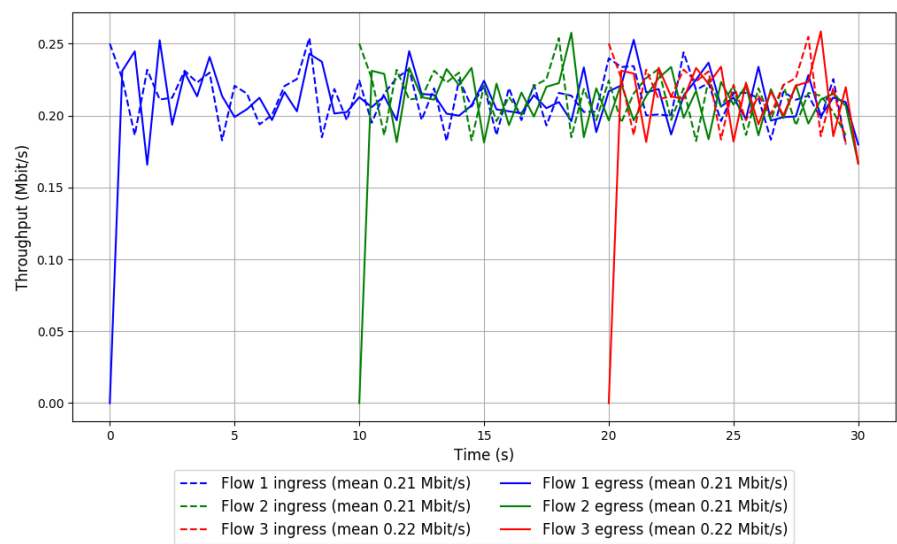


Run 4: Statistics of SReAM

Start at: 2018-10-02 18:05:20
End at: 2018-10-02 18:05:50
Local clock offset: 3.239 ms
Remote clock offset: -4.515 ms

Below is generated by plot.py at 2018-10-02 18:48:59
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 33.560 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.546 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.564 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 33.568 ms
Loss rate: 0.71%

Run 4: Report of SReAM — Data Link

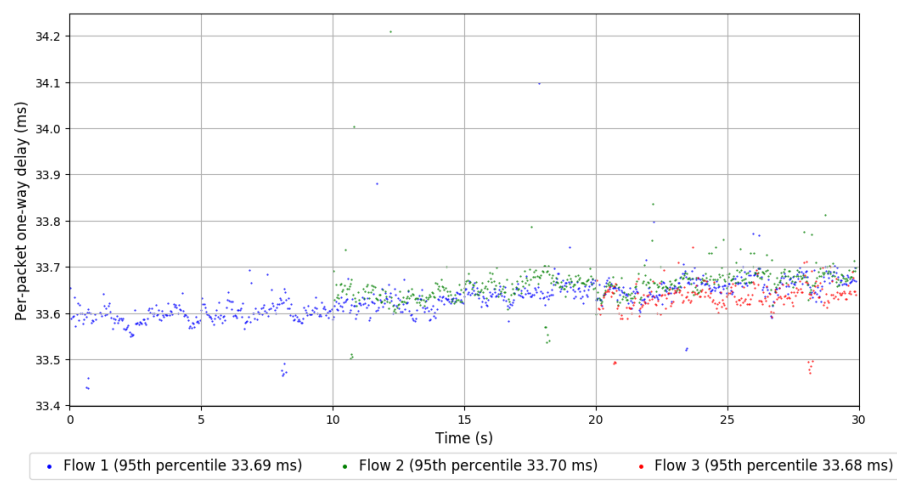
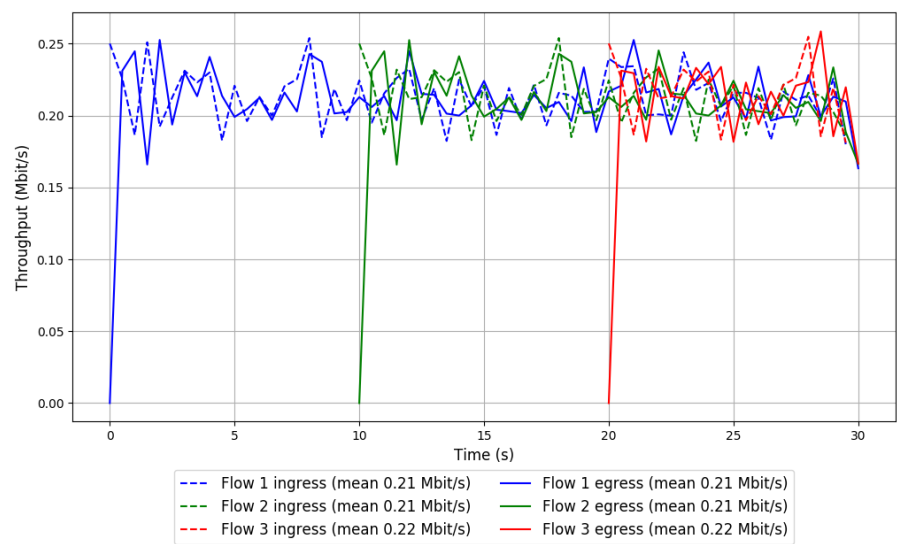


Run 5: Statistics of SReAM

Start at: 2018-10-02 18:30:05
End at: 2018-10-02 18:30:35
Local clock offset: 0.213 ms
Remote clock offset: -3.735 ms

Below is generated by plot.py at 2018-10-02 18:48:59
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 33.692 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.685 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.702 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 33.676 ms
Loss rate: 0.71%

Run 5: Report of SCReAM — Data Link

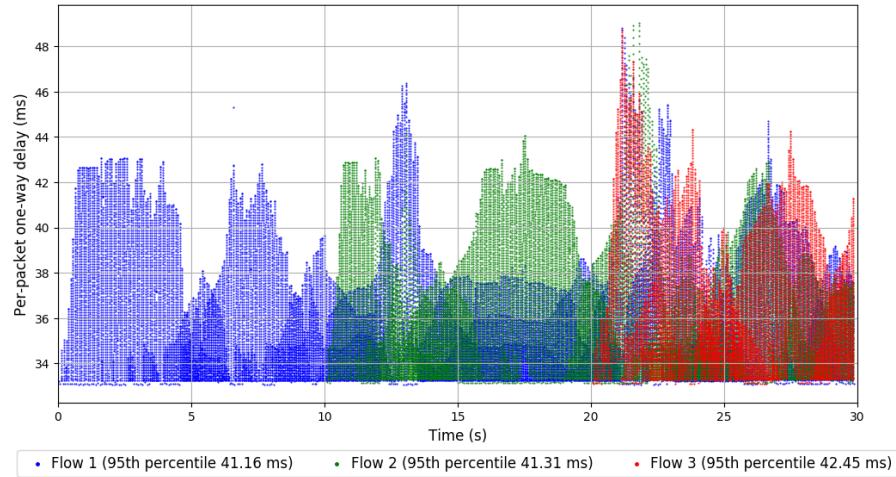
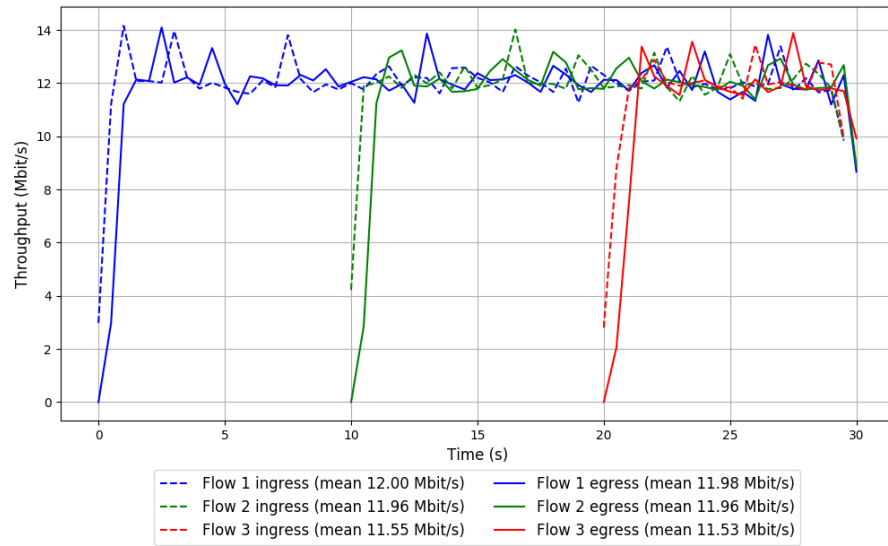


Run 1: Statistics of Sprout

Start at: 2018-10-02 16:41:14
End at: 2018-10-02 16:41:44
Local clock offset: 3.761 ms
Remote clock offset: -4.487 ms

Below is generated by plot.py at 2018-10-02 18:48:59
Datalink statistics
-- Total of 3 flows:
Average throughput: 23.71 Mbit/s
95th percentile per-packet one-way delay: 41.426 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 11.98 Mbit/s
95th percentile per-packet one-way delay: 41.155 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 11.96 Mbit/s
95th percentile per-packet one-way delay: 41.307 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 11.53 Mbit/s
95th percentile per-packet one-way delay: 42.451 ms
Loss rate: 0.88%

Run 1: Report of Sprout — Data Link

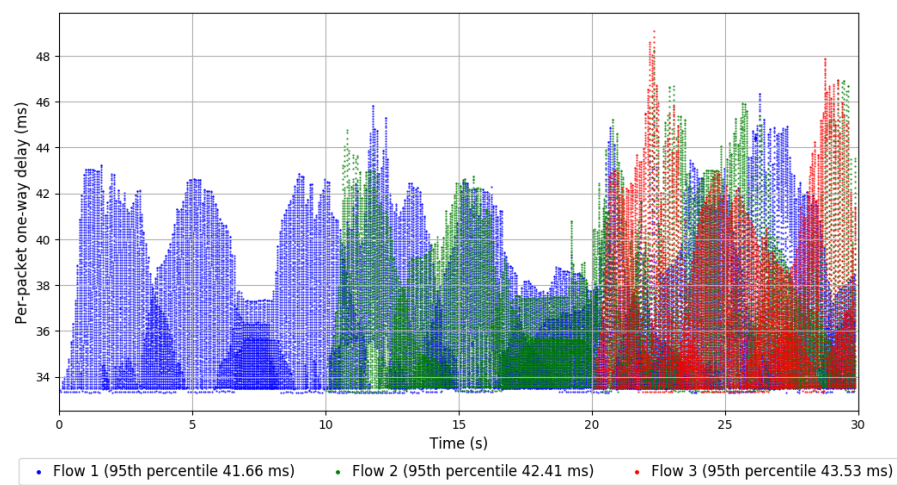
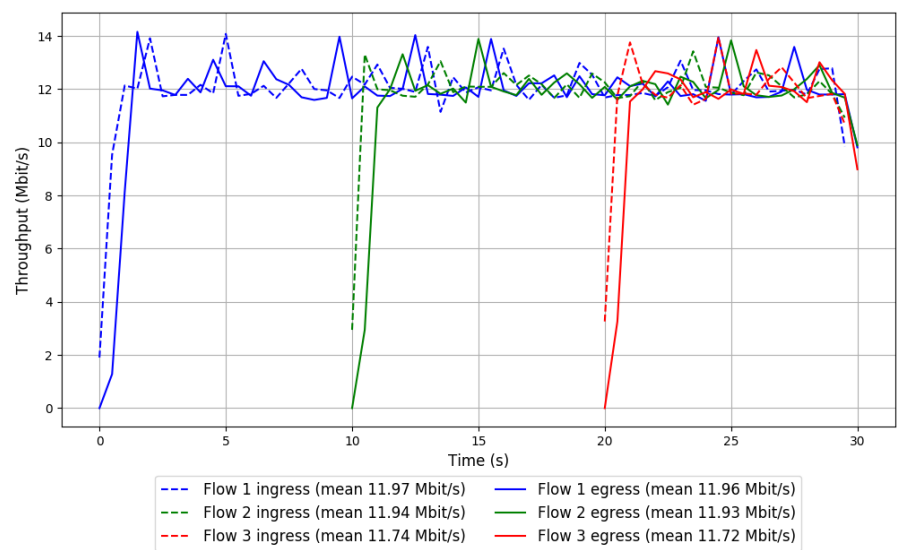


Run 2: Statistics of Sprout

Start at: 2018-10-02 17:06:06
End at: 2018-10-02 17:06:36
Local clock offset: 2.642 ms
Remote clock offset: -5.477 ms

Below is generated by plot.py at 2018-10-02 18:48:59
Datalink statistics
-- Total of 3 flows:
Average throughput: 23.75 Mbit/s
95th percentile per-packet one-way delay: 42.174 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 11.96 Mbit/s
95th percentile per-packet one-way delay: 41.663 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 11.93 Mbit/s
95th percentile per-packet one-way delay: 42.411 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 11.72 Mbit/s
95th percentile per-packet one-way delay: 43.533 ms
Loss rate: 0.73%

Run 2: Report of Sprout — Data Link

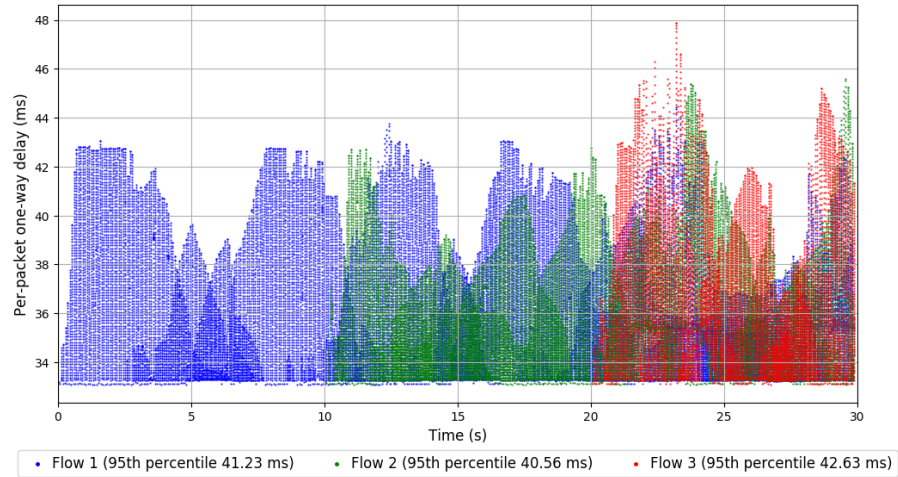
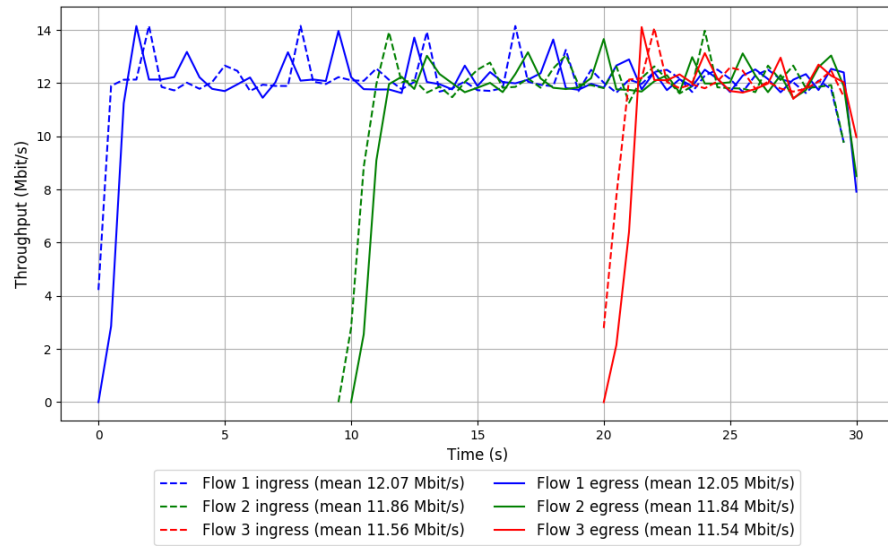


Run 3: Statistics of Sprout

Start at: 2018-10-02 17:30:50
End at: 2018-10-02 17:31:20
Local clock offset: 3.947 ms
Remote clock offset: -5.72 ms

```
# Below is generated by plot.py at 2018-10-02 18:48:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.72 Mbit/s
95th percentile per-packet one-way delay: 41.312 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 12.05 Mbit/s
95th percentile per-packet one-way delay: 41.225 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 11.84 Mbit/s
95th percentile per-packet one-way delay: 40.556 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 11.54 Mbit/s
95th percentile per-packet one-way delay: 42.631 ms
Loss rate: 0.86%
```

Run 3: Report of Sprout — Data Link

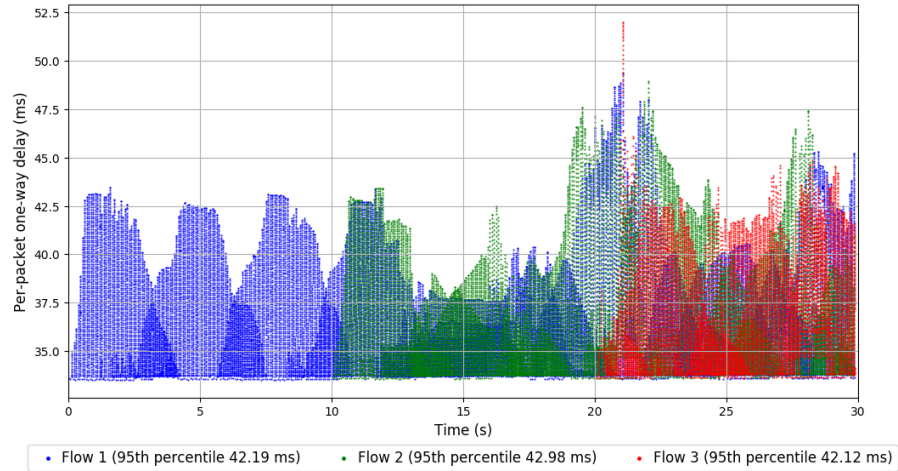
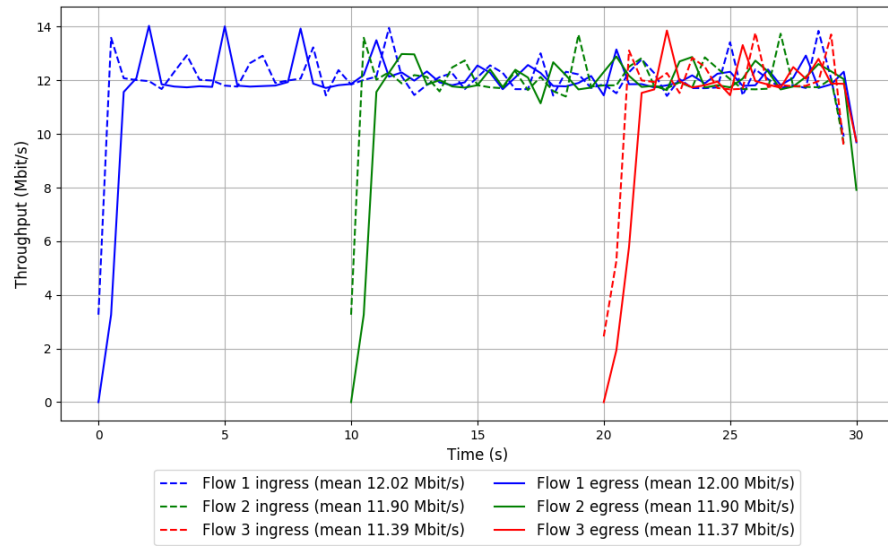


Run 4: Statistics of Sprout

Start at: 2018-10-02 17:55:37
End at: 2018-10-02 17:56:07
Local clock offset: 3.479 ms
Remote clock offset: -5.306 ms

Below is generated by plot.py at 2018-10-02 18:48:59
Datalink statistics
-- Total of 3 flows:
Average throughput: 23.64 Mbit/s
95th percentile per-packet one-way delay: 42.401 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 12.00 Mbit/s
95th percentile per-packet one-way delay: 42.192 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 11.90 Mbit/s
95th percentile per-packet one-way delay: 42.980 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 11.37 Mbit/s
95th percentile per-packet one-way delay: 42.120 ms
Loss rate: 0.75%

Run 4: Report of Sprout — Data Link

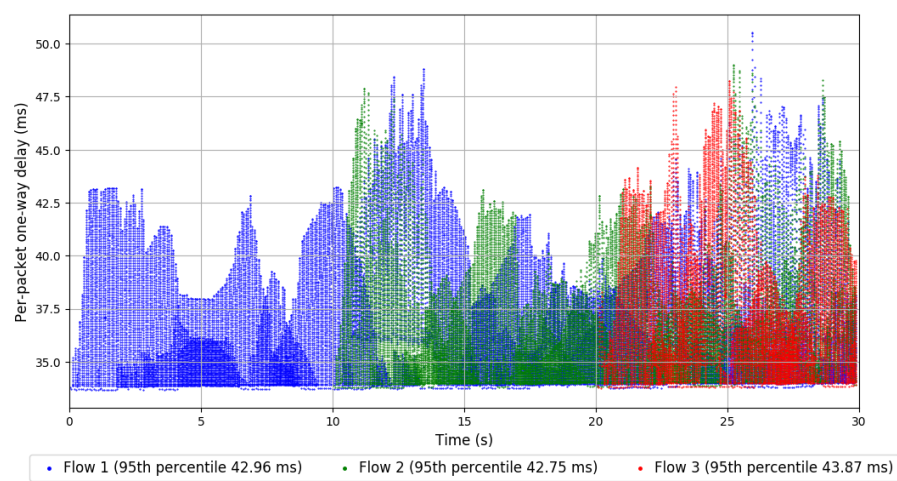
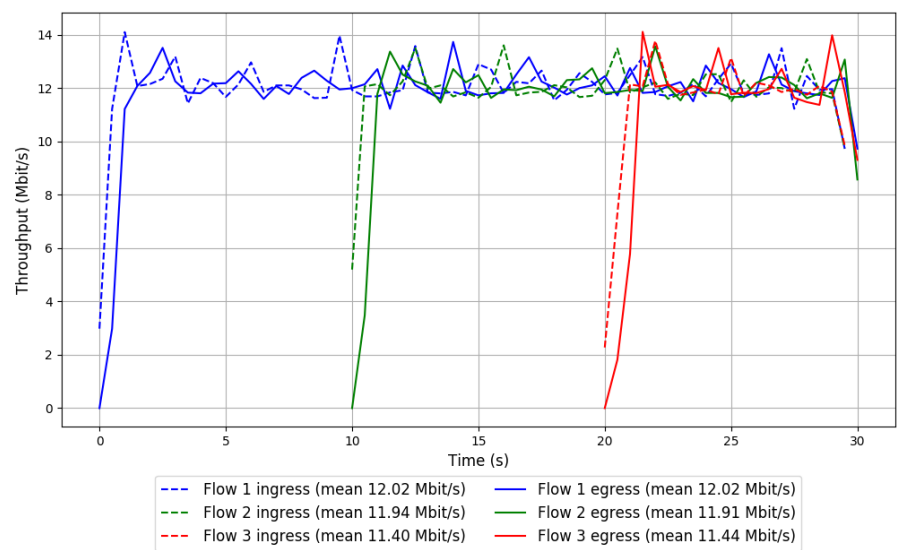


Run 5: Statistics of Sprout

Start at: 2018-10-02 18:20:24
End at: 2018-10-02 18:20:54
Local clock offset: 1.798 ms
Remote clock offset: -4.116 ms

```
# Below is generated by plot.py at 2018-10-02 18:48:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.70 Mbit/s
95th percentile per-packet one-way delay: 43.051 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 12.02 Mbit/s
95th percentile per-packet one-way delay: 42.957 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 11.91 Mbit/s
95th percentile per-packet one-way delay: 42.752 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 11.44 Mbit/s
95th percentile per-packet one-way delay: 43.865 ms
Loss rate: 0.24%
```

Run 5: Report of Sprout — Data Link

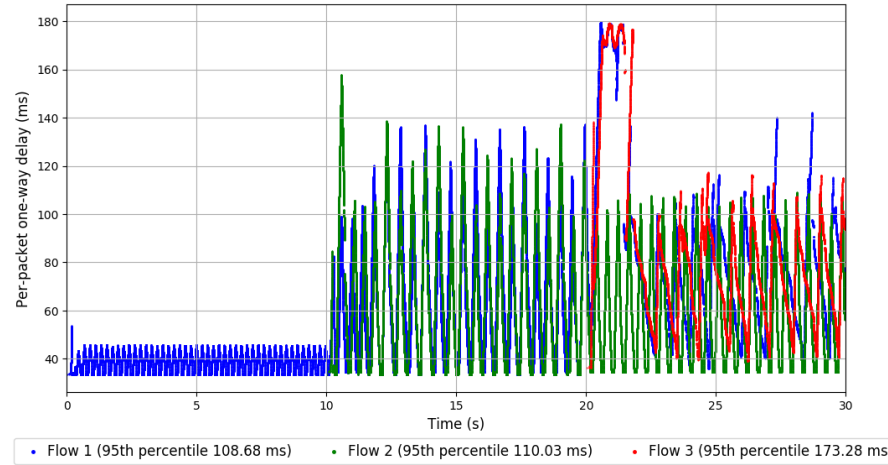
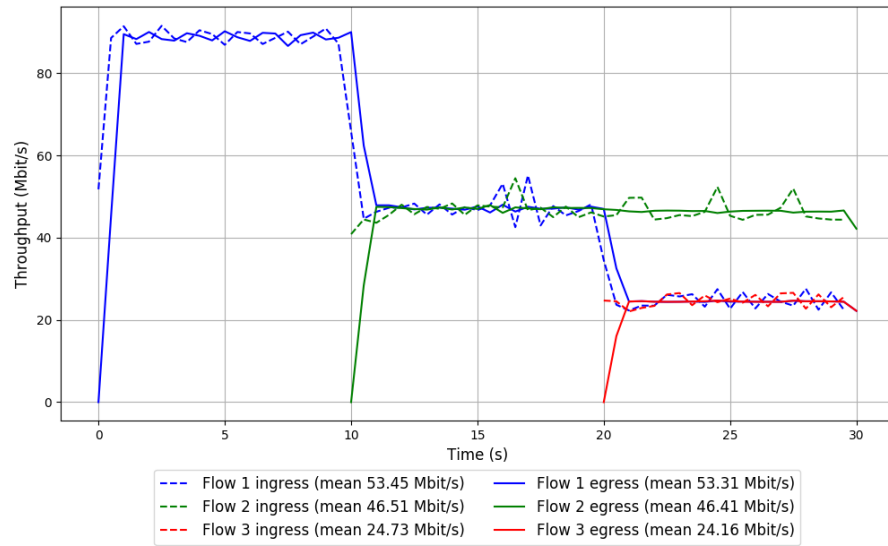


Run 1: Statistics of TaoVA-100x

Start at: 2018-10-02 16:53:38
End at: 2018-10-02 16:54:08
Local clock offset: 3.034 ms
Remote clock offset: -5.255 ms

Below is generated by plot.py at 2018-10-02 18:50:27
Datalink statistics
-- Total of 3 flows:
Average throughput: 92.21 Mbit/s
95th percentile per-packet one-way delay: 113.215 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 53.31 Mbit/s
95th percentile per-packet one-way delay: 108.682 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 46.41 Mbit/s
95th percentile per-packet one-way delay: 110.027 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 24.16 Mbit/s
95th percentile per-packet one-way delay: 173.282 ms
Loss rate: 2.92%

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

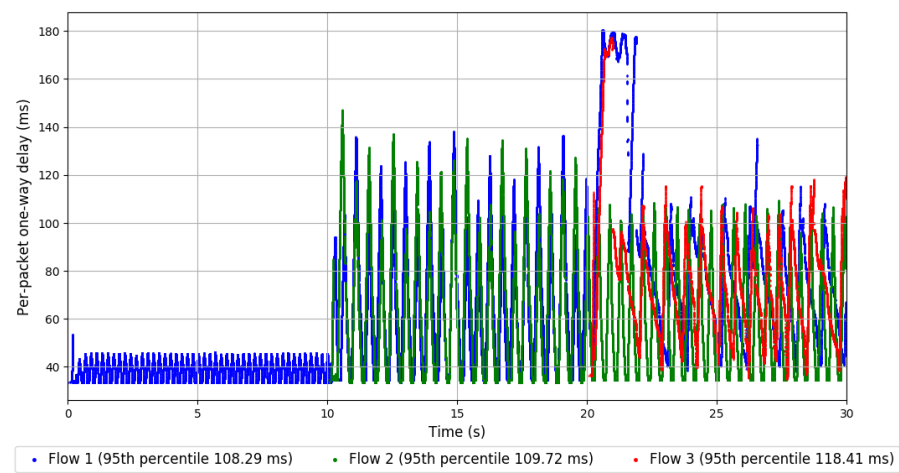
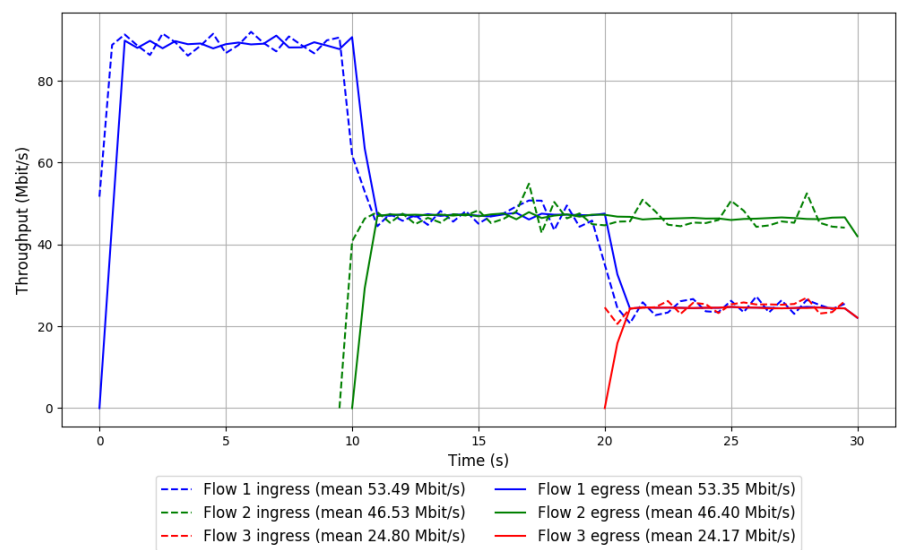


Run 2: Statistics of TaoVA-100x

Start at: 2018-10-02 17:18:27
End at: 2018-10-02 17:18:57
Local clock offset: 2.962 ms
Remote clock offset: -5.783 ms

Below is generated by plot.py at 2018-10-02 18:50:28
Datalink statistics
-- Total of 3 flows:
Average throughput: 92.25 Mbit/s
95th percentile per-packet one-way delay: 109.723 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 53.35 Mbit/s
95th percentile per-packet one-way delay: 108.286 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 46.40 Mbit/s
95th percentile per-packet one-way delay: 109.716 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 24.17 Mbit/s
95th percentile per-packet one-way delay: 118.405 ms
Loss rate: 3.16%

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

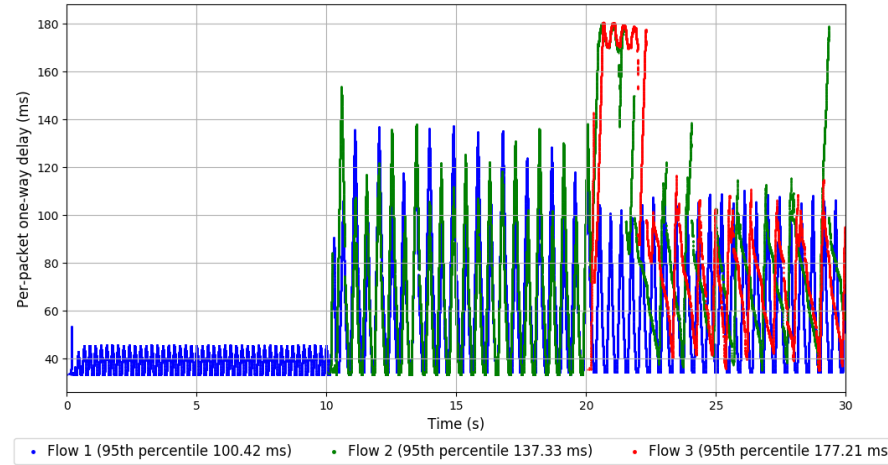
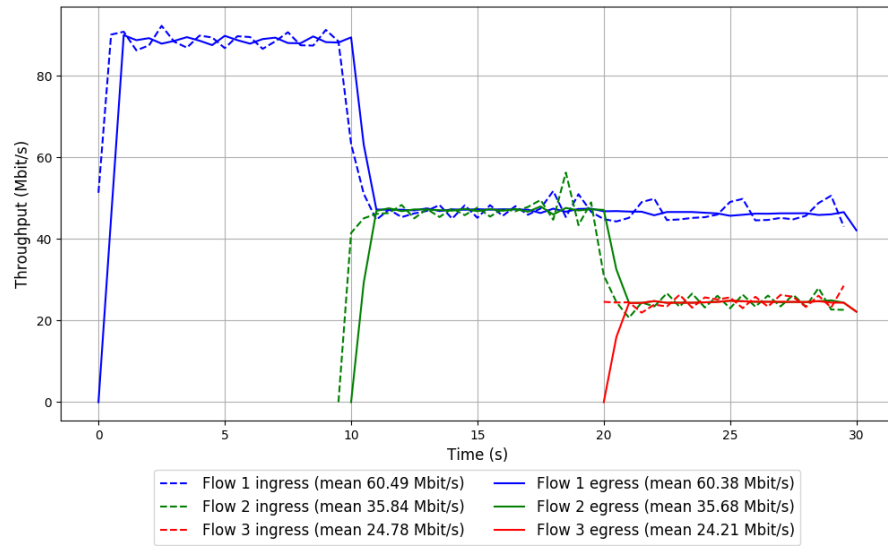


Run 3: Statistics of TaoVA-100x

Start at: 2018-10-02 17:43:12
End at: 2018-10-02 17:43:42
Local clock offset: 4.394 ms
Remote clock offset: -5.637 ms

Below is generated by plot.py at 2018-10-02 18:50:30
Datalink statistics
-- Total of 3 flows:
Average throughput: 92.16 Mbit/s
95th percentile per-packet one-way delay: 117.524 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 60.38 Mbit/s
95th percentile per-packet one-way delay: 100.422 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 35.68 Mbit/s
95th percentile per-packet one-way delay: 137.326 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 24.21 Mbit/s
95th percentile per-packet one-way delay: 177.205 ms
Loss rate: 2.94%

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

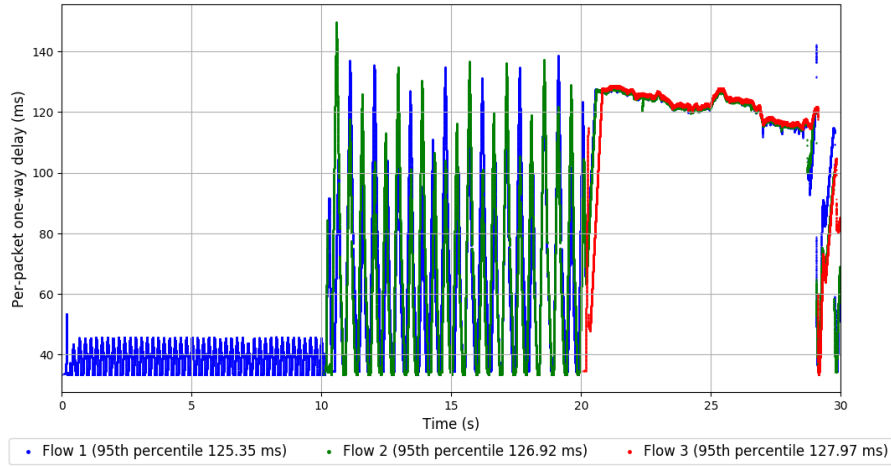
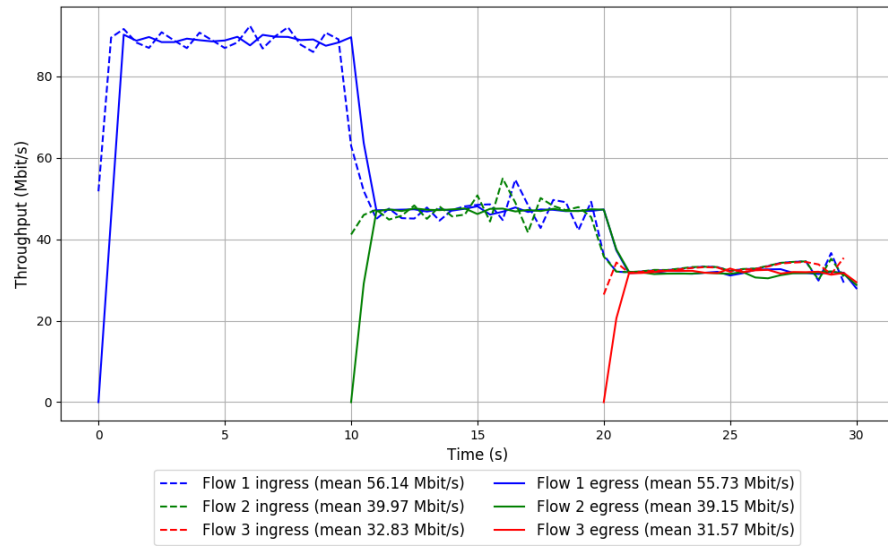


Run 4: Statistics of TaoVA-100x

Start at: 2018-10-02 18:07:59
End at: 2018-10-02 18:08:29
Local clock offset: 3.195 ms
Remote clock offset: -4.408 ms

Below is generated by plot.py at 2018-10-02 18:50:31
Datalink statistics
-- Total of 3 flows:
Average throughput: 92.24 Mbit/s
95th percentile per-packet one-way delay: 126.793 ms
Loss rate: 1.76%
-- Flow 1:
Average throughput: 55.73 Mbit/s
95th percentile per-packet one-way delay: 125.352 ms
Loss rate: 0.95%
-- Flow 2:
Average throughput: 39.15 Mbit/s
95th percentile per-packet one-way delay: 126.924 ms
Loss rate: 2.37%
-- Flow 3:
Average throughput: 31.57 Mbit/s
95th percentile per-packet one-way delay: 127.974 ms
Loss rate: 4.45%

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

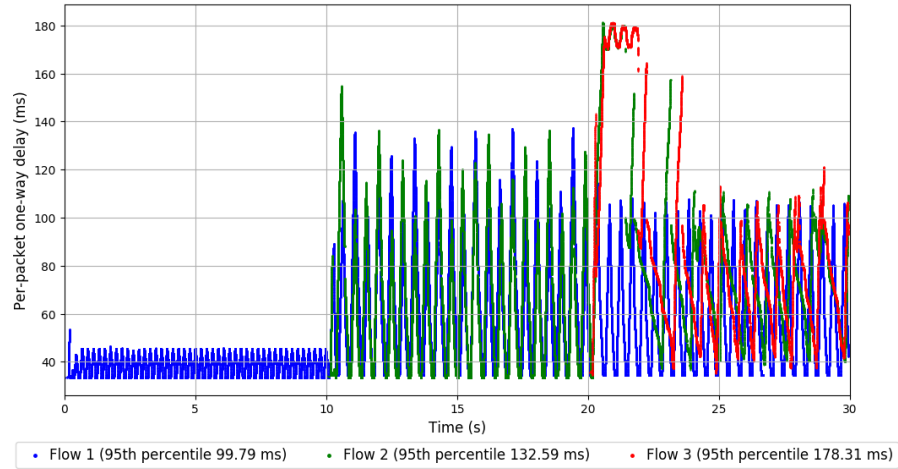
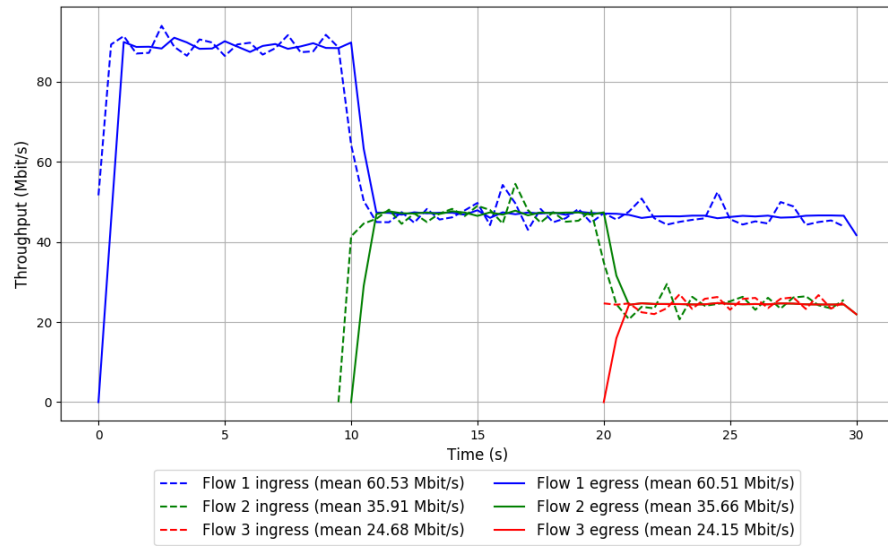


Run 5: Statistics of TaoVA-100x

Start at: 2018-10-02 18:32:45
End at: 2018-10-02 18:33:15
Local clock offset: -0.038 ms
Remote clock offset: -3.675 ms

Below is generated by plot.py at 2018-10-02 18:50:33
Datalink statistics
-- Total of 3 flows:
Average throughput: 92.25 Mbit/s
95th percentile per-packet one-way delay: 115.045 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 60.51 Mbit/s
95th percentile per-packet one-way delay: 99.787 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 35.66 Mbit/s
95th percentile per-packet one-way delay: 132.592 ms
Loss rate: 1.01%
-- Flow 3:
Average throughput: 24.15 Mbit/s
95th percentile per-packet one-way delay: 178.306 ms
Loss rate: 2.78%

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

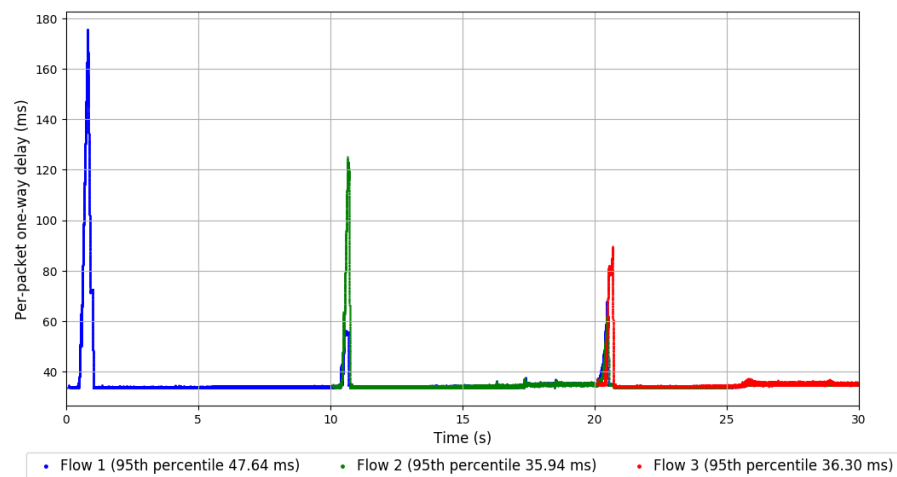
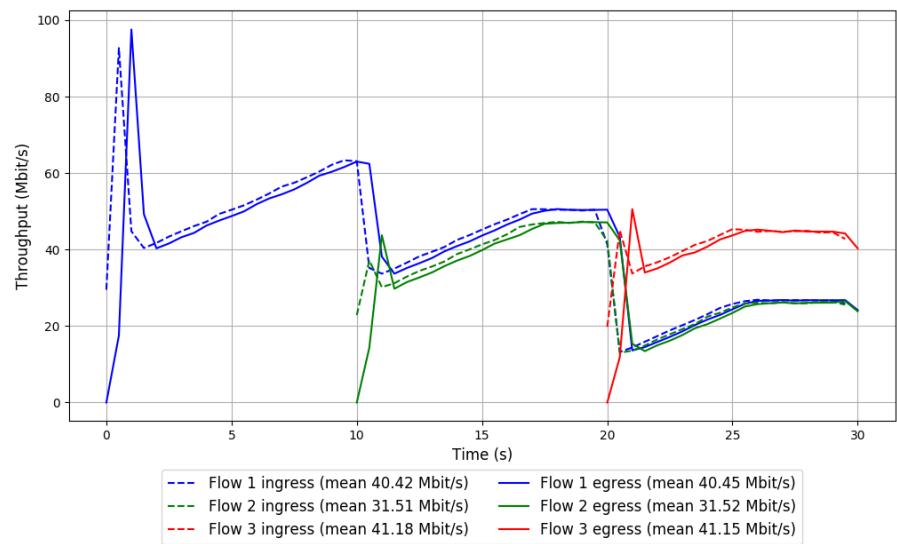


Run 1: Statistics of TCP Vegas

Start at: 2018-10-02 16:45:22
End at: 2018-10-02 16:45:52
Local clock offset: 3.812 ms
Remote clock offset: -4.998 ms

Below is generated by plot.py at 2018-10-02 18:50:33
Datalink statistics
-- Total of 3 flows:
Average throughput: 75.06 Mbit/s
95th percentile per-packet one-way delay: 39.607 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 40.45 Mbit/s
95th percentile per-packet one-way delay: 47.642 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 31.52 Mbit/s
95th percentile per-packet one-way delay: 35.940 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 41.15 Mbit/s
95th percentile per-packet one-way delay: 36.304 ms
Loss rate: 0.72%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-10-02 17:10:12

End at: 2018-10-02 17:10:42

Local clock offset: 2.585 ms

Remote clock offset: -5.76 ms

Below is generated by plot.py at 2018-10-02 18:50:33

Datalink statistics

-- Total of 3 flows:

Average throughput: 87.02 Mbit/s

95th percentile per-packet one-way delay: 37.689 ms

Loss rate: 0.26%

-- Flow 1:

Average throughput: 49.26 Mbit/s

95th percentile per-packet one-way delay: 43.305 ms

Loss rate: 0.12%

-- Flow 2:

Average throughput: 45.85 Mbit/s

95th percentile per-packet one-way delay: 37.291 ms

Loss rate: 0.34%

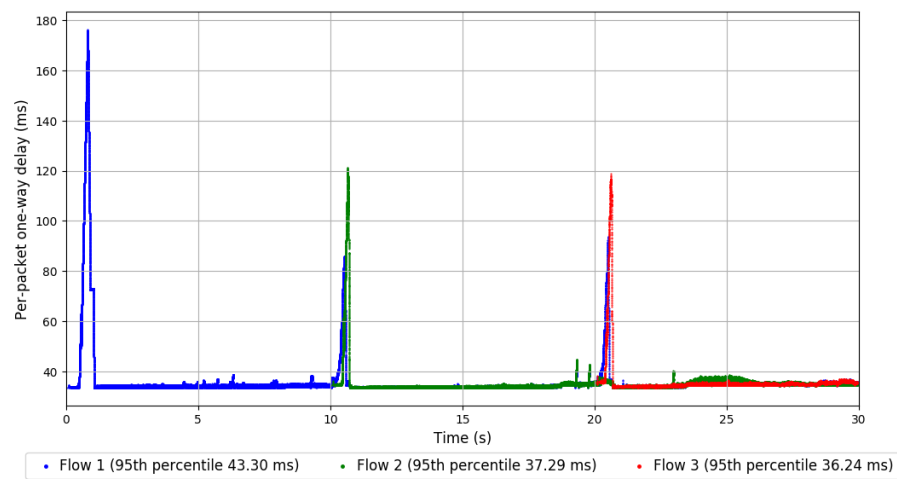
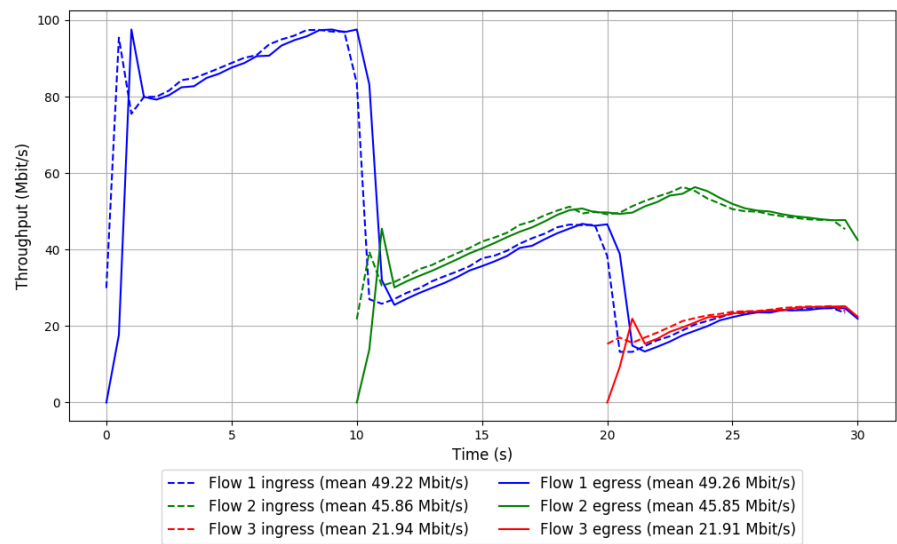
-- Flow 3:

Average throughput: 21.91 Mbit/s

95th percentile per-packet one-way delay: 36.239 ms

Loss rate: 0.81%

Run 2: Report of TCP Vegas — Data Link

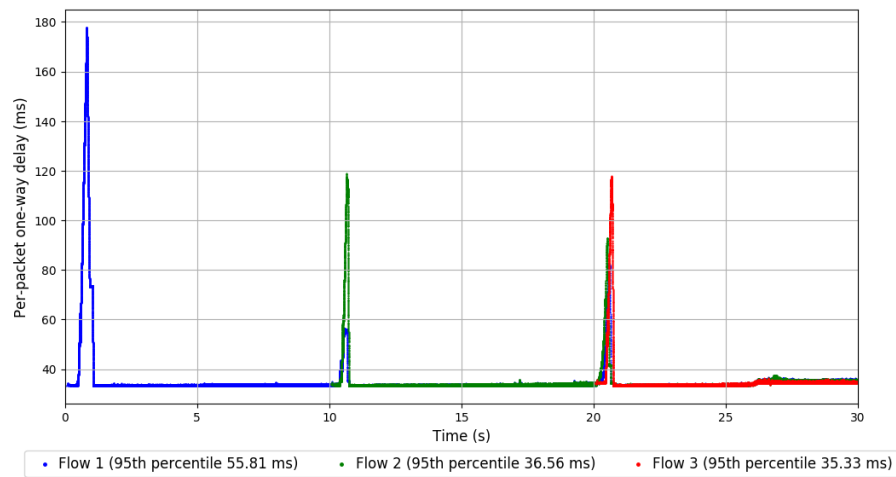
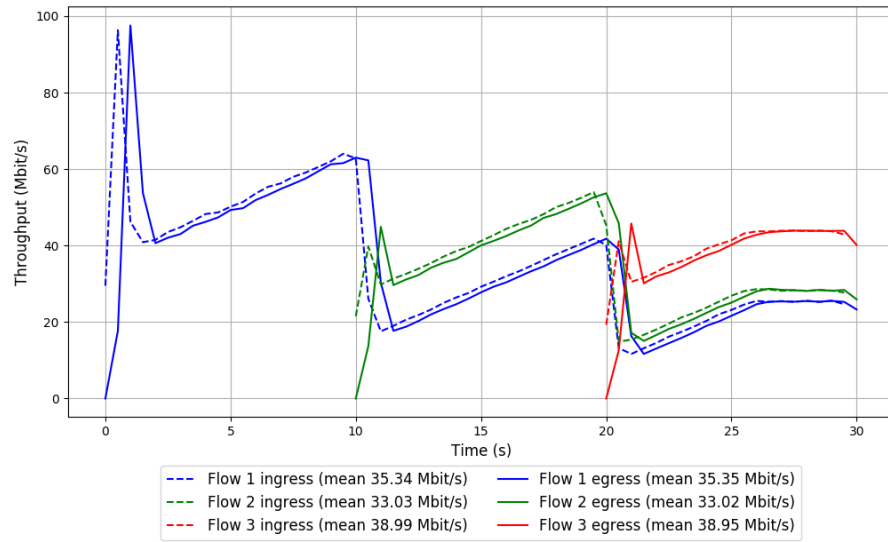


Run 3: Statistics of TCP Vegas

Start at: 2018-10-02 17:34:56
End at: 2018-10-02 17:35:26
Local clock offset: 4.129 ms
Remote clock offset: -5.883 ms

Below is generated by plot.py at 2018-10-02 18:50:33
Datalink statistics
-- Total of 3 flows:
Average throughput: 70.21 Mbit/s
95th percentile per-packet one-way delay: 43.323 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 35.35 Mbit/s
95th percentile per-packet one-way delay: 55.808 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 33.02 Mbit/s
95th percentile per-packet one-way delay: 36.556 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 38.95 Mbit/s
95th percentile per-packet one-way delay: 35.330 ms
Loss rate: 0.74%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2018-10-02 17:59:44

End at: 2018-10-02 18:00:14

Local clock offset: 3.352 ms

Remote clock offset: -5.05 ms

Below is generated by plot.py at 2018-10-02 18:50:33

Datalink statistics

-- Total of 3 flows:

Average throughput: 73.32 Mbit/s

95th percentile per-packet one-way delay: 46.603 ms

Loss rate: 0.33%

-- Flow 1:

Average throughput: 37.66 Mbit/s

95th percentile per-packet one-way delay: 51.685 ms

Loss rate: 0.21%

-- Flow 2:

Average throughput: 38.48 Mbit/s

95th percentile per-packet one-way delay: 36.950 ms

Loss rate: 0.27%

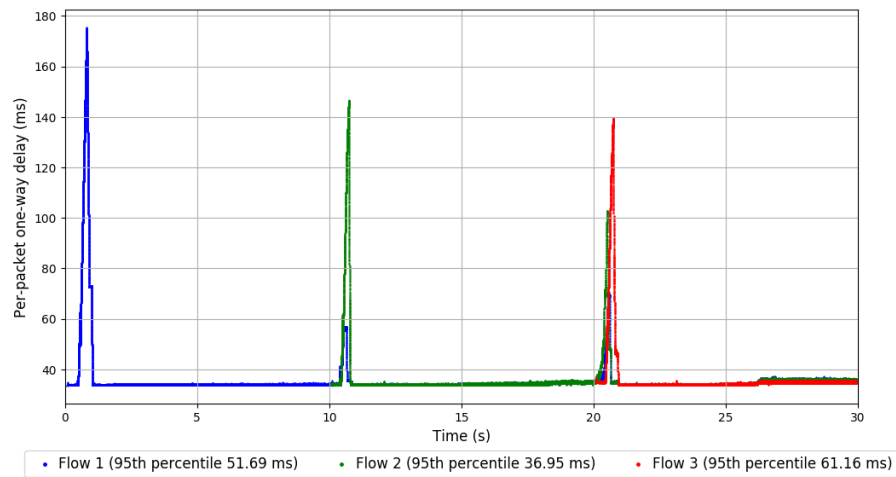
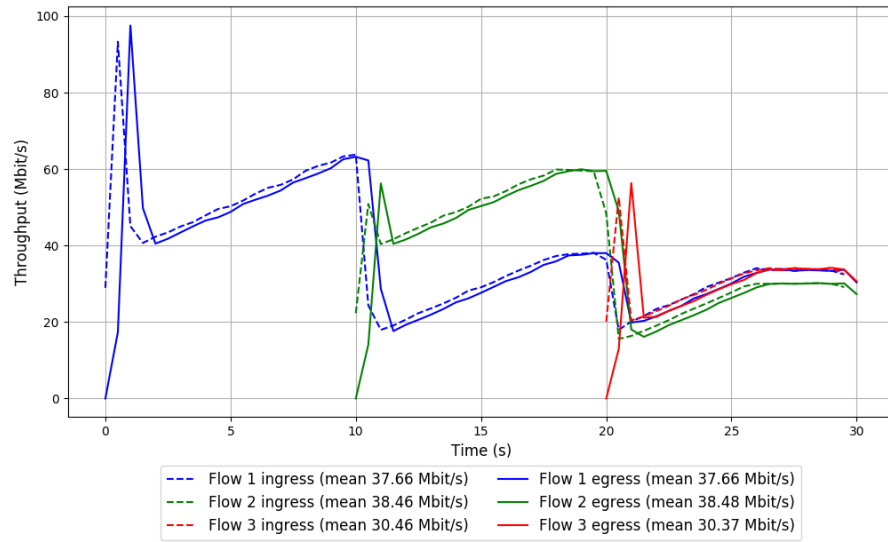
-- Flow 3:

Average throughput: 30.37 Mbit/s

95th percentile per-packet one-way delay: 61.161 ms

Loss rate: 0.93%

Run 4: Report of TCP Vegas — Data Link

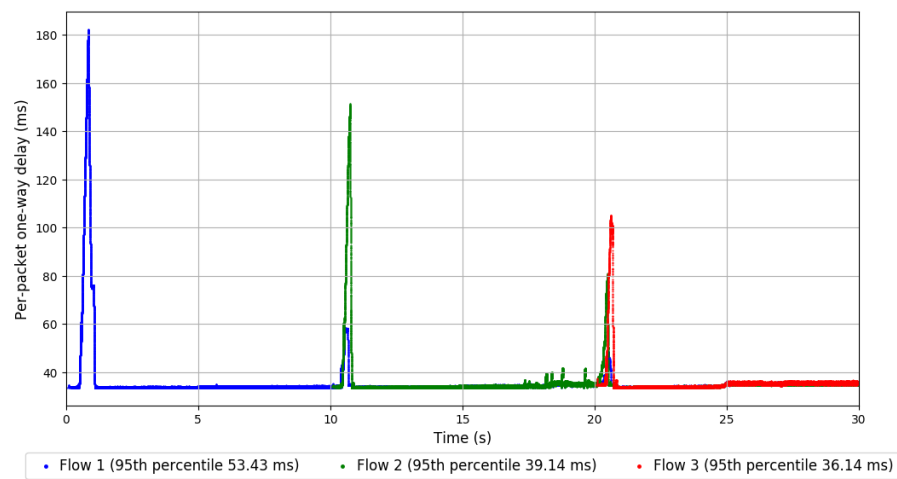
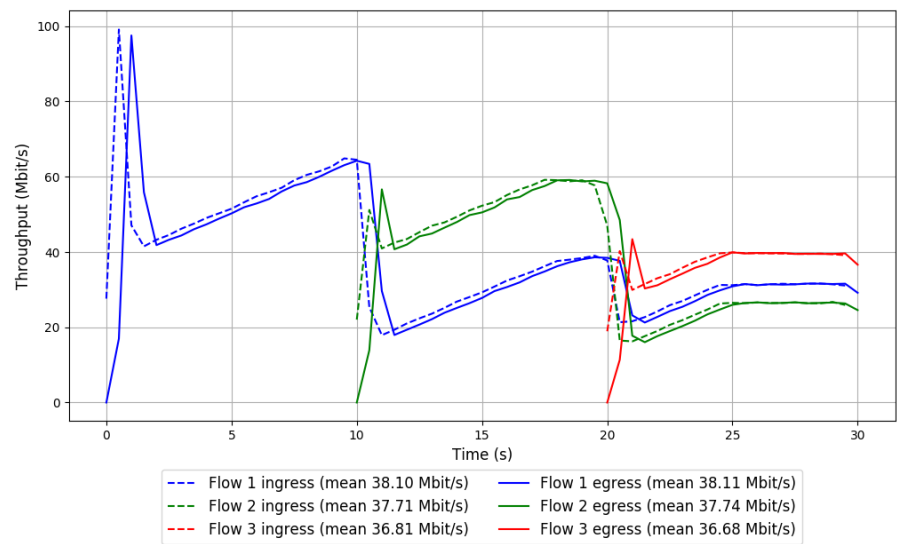


Run 5: Statistics of TCP Vegas

Start at: 2018-10-02 18:24:30
End at: 2018-10-02 18:25:00
Local clock offset: 0.965 ms
Remote clock offset: -3.798 ms

```
# Below is generated by plot.py at 2018-10-02 18:50:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 75.38 Mbit/s
95th percentile per-packet one-way delay: 41.370 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 38.11 Mbit/s
95th percentile per-packet one-way delay: 53.432 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 37.74 Mbit/s
95th percentile per-packet one-way delay: 39.140 ms
Loss rate: 0.24%
-- Flow 3:
Average throughput: 36.68 Mbit/s
95th percentile per-packet one-way delay: 36.143 ms
Loss rate: 1.01%
```

Run 5: Report of TCP Vegas — Data Link

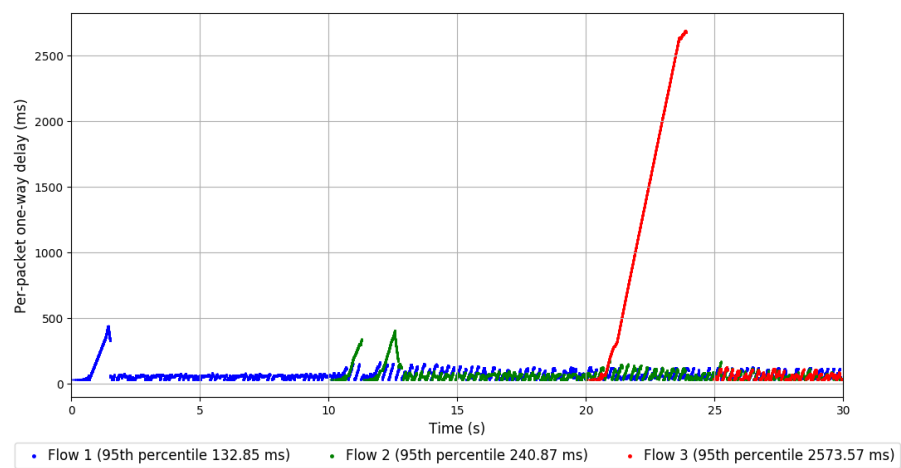
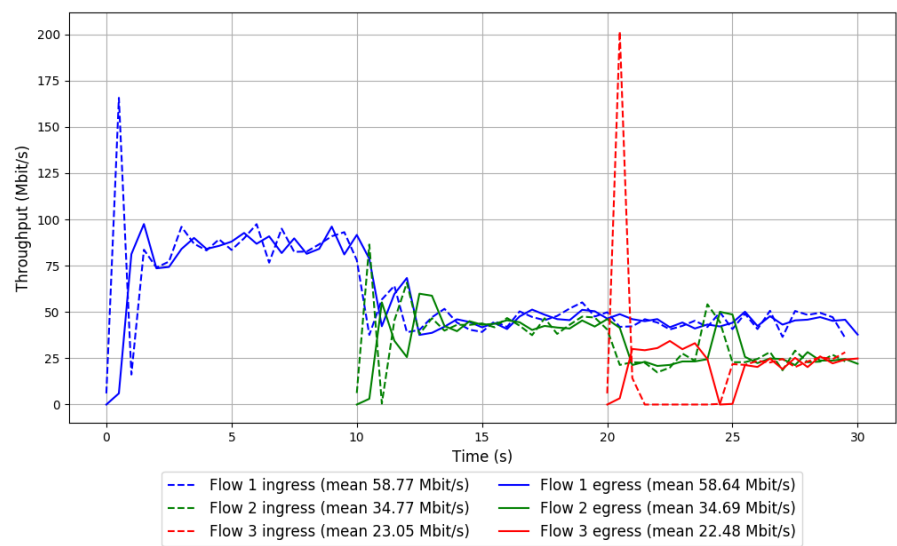


Run 1: Statistics of Verus

Start at: 2018-10-02 16:37:09
End at: 2018-10-02 16:37:39
Local clock offset: 3.72 ms
Remote clock offset: -4.475 ms

Below is generated by plot.py at 2018-10-02 18:50:57
Datalink statistics
-- Total of 3 flows:
Average throughput: 89.12 Mbit/s
95th percentile per-packet one-way delay: 302.536 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 58.64 Mbit/s
95th percentile per-packet one-way delay: 132.850 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 34.69 Mbit/s
95th percentile per-packet one-way delay: 240.874 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 22.48 Mbit/s
95th percentile per-packet one-way delay: 2573.569 ms
Loss rate: 3.11%

Run 1: Report of Verus — Data Link

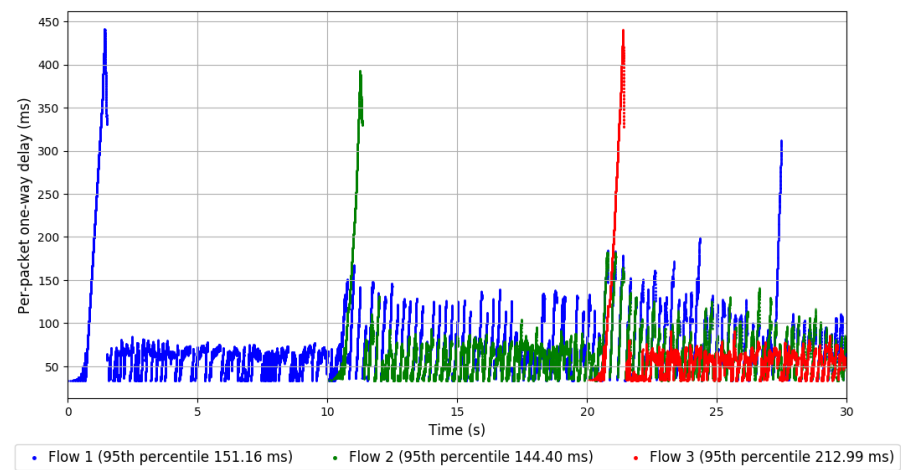
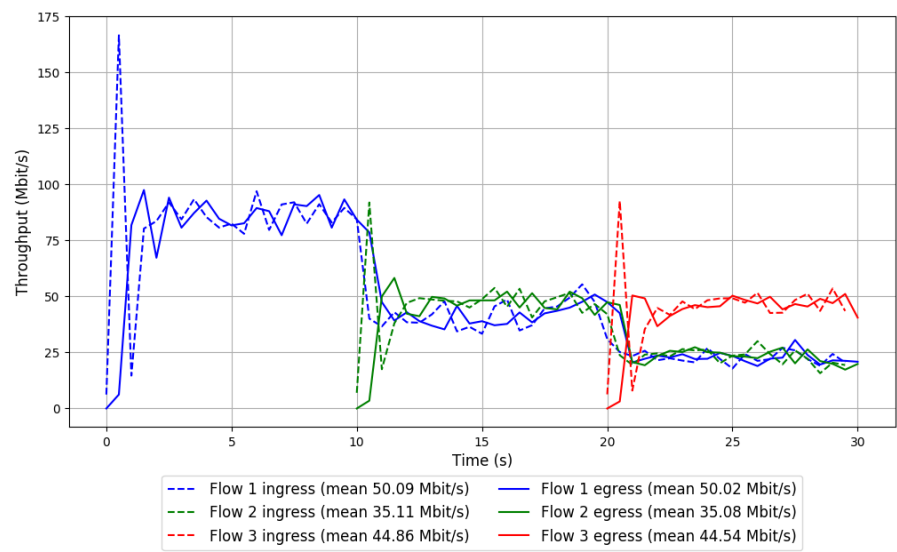


Run 2: Statistics of Verus

Start at: 2018-10-02 17:02:01
End at: 2018-10-02 17:02:31
Local clock offset: 2.724 ms
Remote clock offset: -5.337 ms

Below is generated by plot.py at 2018-10-02 18:51:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 88.09 Mbit/s
95th percentile per-packet one-way delay: 154.114 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 50.02 Mbit/s
95th percentile per-packet one-way delay: 151.158 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 35.08 Mbit/s
95th percentile per-packet one-way delay: 144.400 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 44.54 Mbit/s
95th percentile per-packet one-way delay: 212.989 ms
Loss rate: 1.19%

Run 2: Report of Verus — Data Link

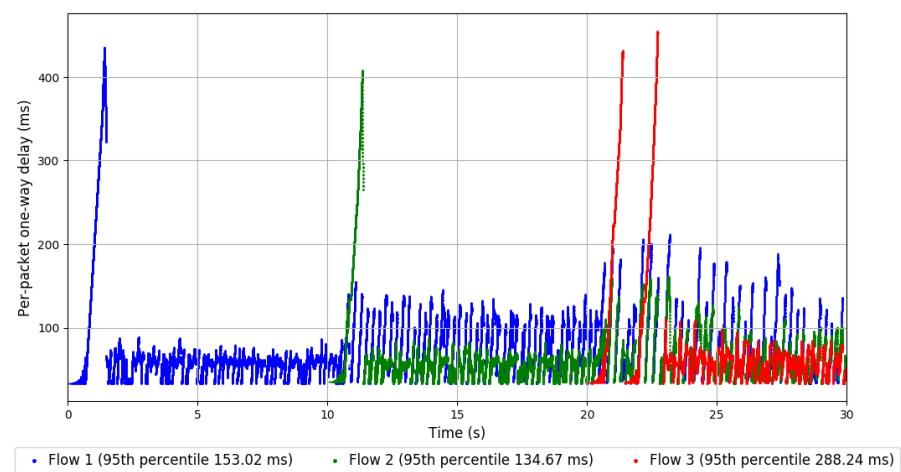
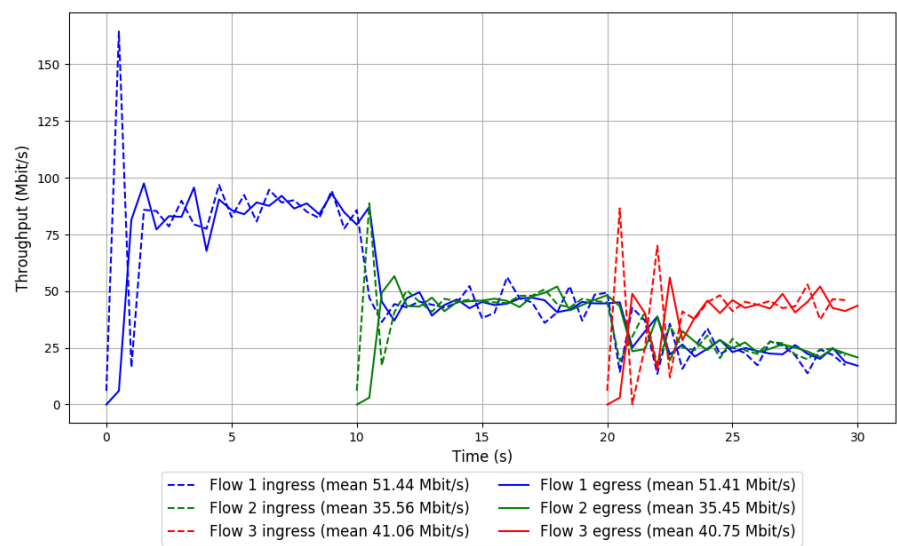


Run 3: Statistics of Verus

Start at: 2018-10-02 17:26:47
End at: 2018-10-02 17:27:17
Local clock offset: 3.743 ms
Remote clock offset: -5.949 ms

Below is generated by plot.py at 2018-10-02 18:51:30
Datalink statistics
-- Total of 3 flows:
Average throughput: 88.46 Mbit/s
95th percentile per-packet one-way delay: 172.251 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 51.41 Mbit/s
95th percentile per-packet one-way delay: 153.021 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 35.45 Mbit/s
95th percentile per-packet one-way delay: 134.672 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 40.75 Mbit/s
95th percentile per-packet one-way delay: 288.240 ms
Loss rate: 1.29%

Run 3: Report of Verus — Data Link

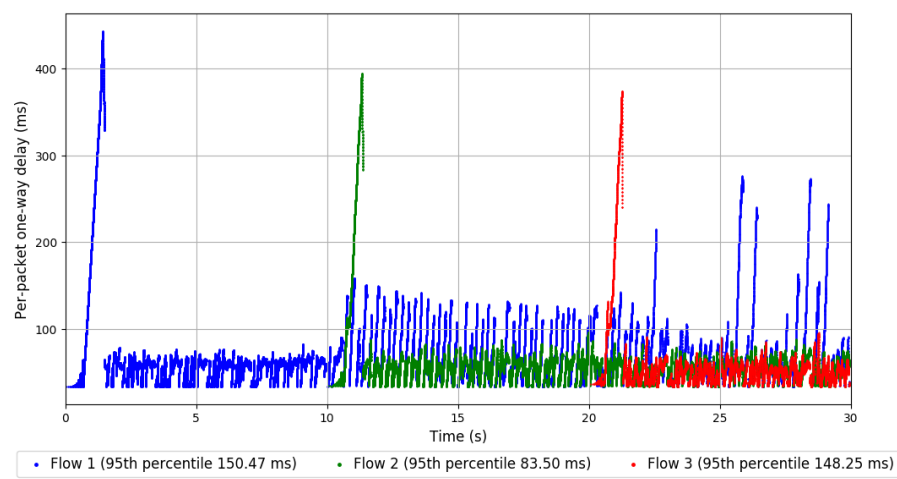
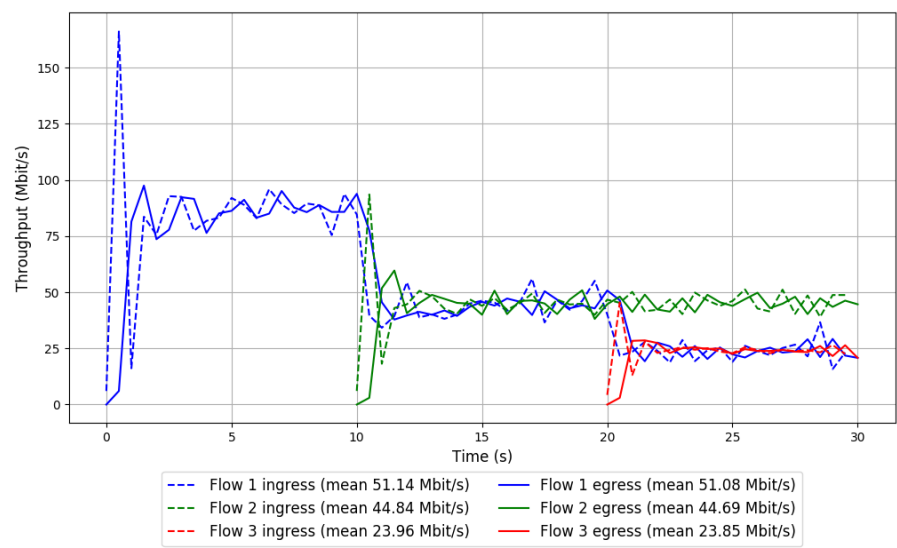


Run 4: Statistics of Verus

Start at: 2018-10-02 17:51:33
End at: 2018-10-02 17:52:03
Local clock offset: 3.76 ms
Remote clock offset: -5.368 ms

Below is generated by plot.py at 2018-10-02 18:51:30
Datalink statistics
-- Total of 3 flows:
Average throughput: 88.70 Mbit/s
95th percentile per-packet one-way delay: 136.674 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 51.08 Mbit/s
95th percentile per-packet one-way delay: 150.467 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 44.69 Mbit/s
95th percentile per-packet one-way delay: 83.499 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 23.85 Mbit/s
95th percentile per-packet one-way delay: 148.249 ms
Loss rate: 1.11%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-10-02 18:16:19

End at: 2018-10-02 18:16:49

Local clock offset: 3.023 ms

Remote clock offset: -3.99 ms

Below is generated by plot.py at 2018-10-02 18:51:32

Datalink statistics

-- Total of 3 flows:

Average throughput: 87.33 Mbit/s

95th percentile per-packet one-way delay: 131.668 ms

Loss rate: 0.61%

-- Flow 1:

Average throughput: 58.50 Mbit/s

95th percentile per-packet one-way delay: 122.876 ms

Loss rate: 0.51%

-- Flow 2:

Average throughput: 32.31 Mbit/s

95th percentile per-packet one-way delay: 143.304 ms

Loss rate: 0.51%

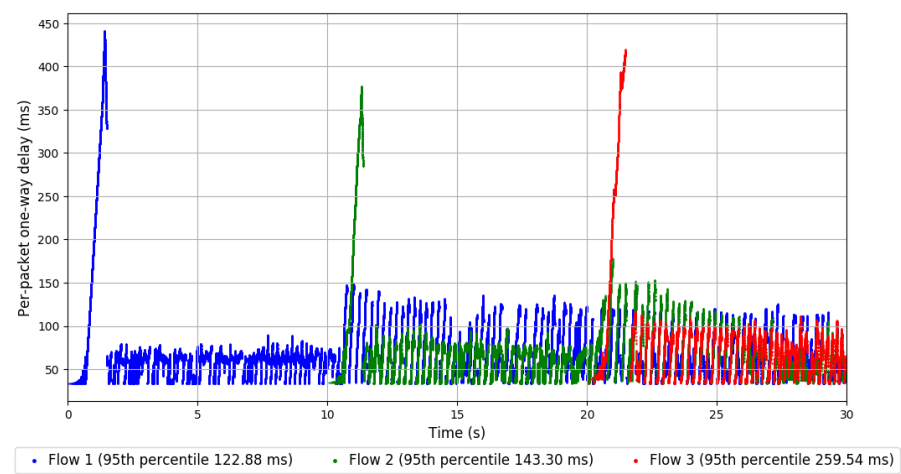
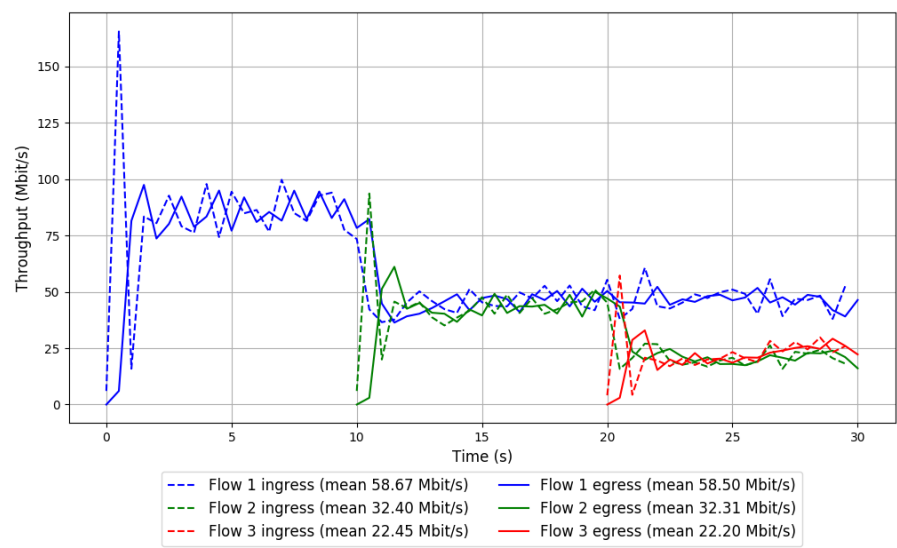
-- Flow 3:

Average throughput: 22.20 Mbit/s

95th percentile per-packet one-way delay: 259.541 ms

Loss rate: 1.70%

Run 5: Report of Verus — Data Link

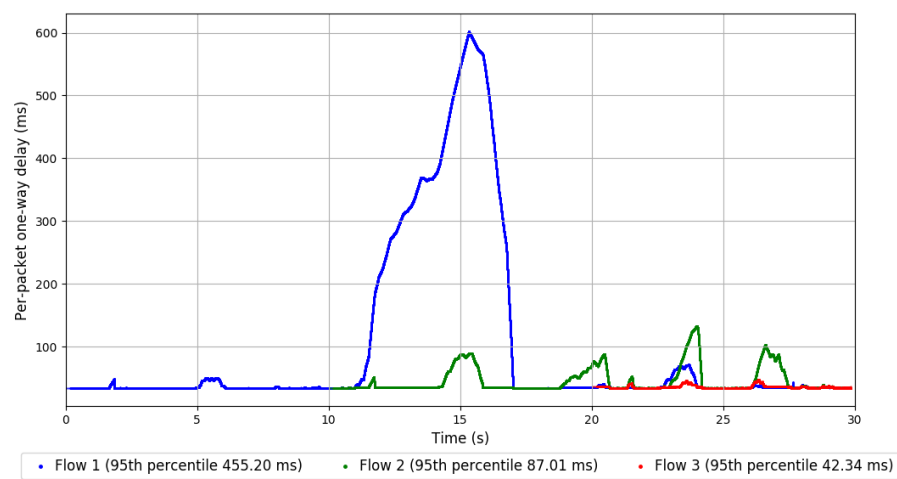
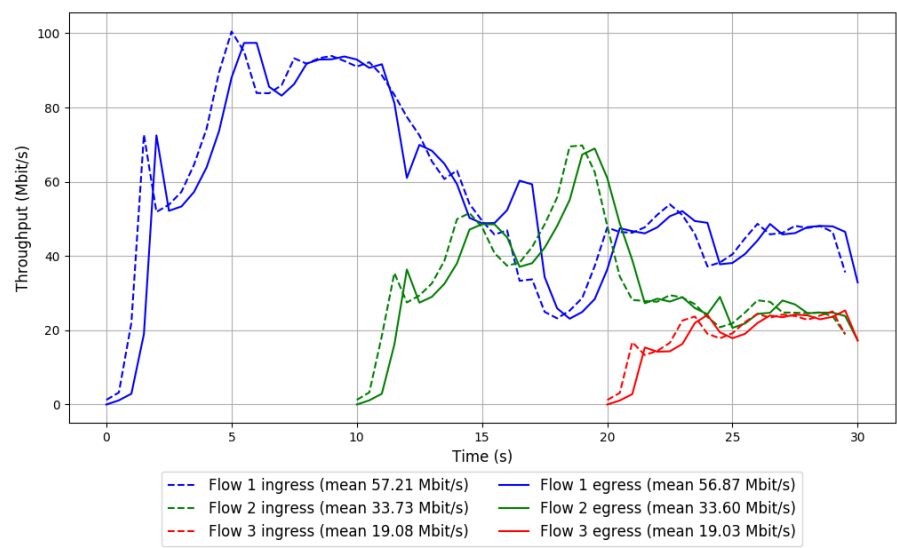


Run 1: Statistics of PCC-Vivace

Start at: 2018-10-02 16:35:45
End at: 2018-10-02 16:36:15
Local clock offset: 3.725 ms
Remote clock offset: -4.496 ms

Below is generated by plot.py at 2018-10-02 18:51:39
Datalink statistics
-- Total of 3 flows:
Average throughput: 85.46 Mbit/s
95th percentile per-packet one-way delay: 368.617 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 56.87 Mbit/s
95th percentile per-packet one-way delay: 455.200 ms
Loss rate: 0.80%
-- Flow 2:
Average throughput: 33.60 Mbit/s
95th percentile per-packet one-way delay: 87.006 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 19.03 Mbit/s
95th percentile per-packet one-way delay: 42.341 ms
Loss rate: 0.88%

Run 1: Report of PCC-Vivace — Data Link

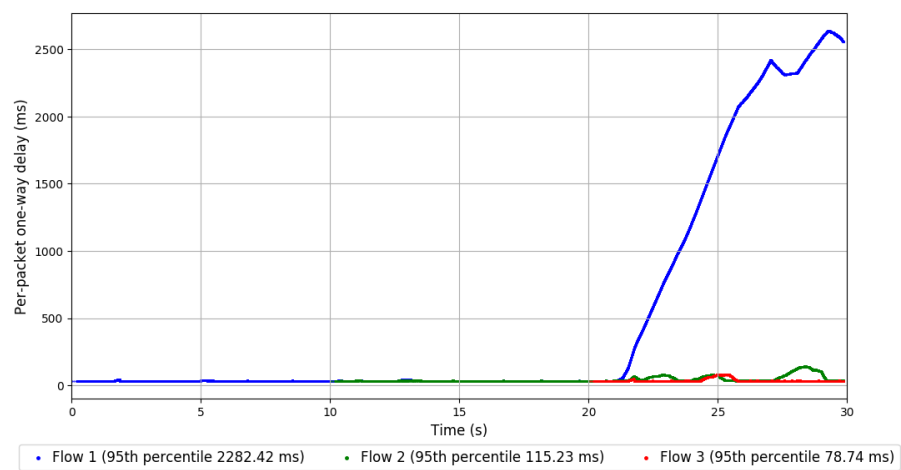
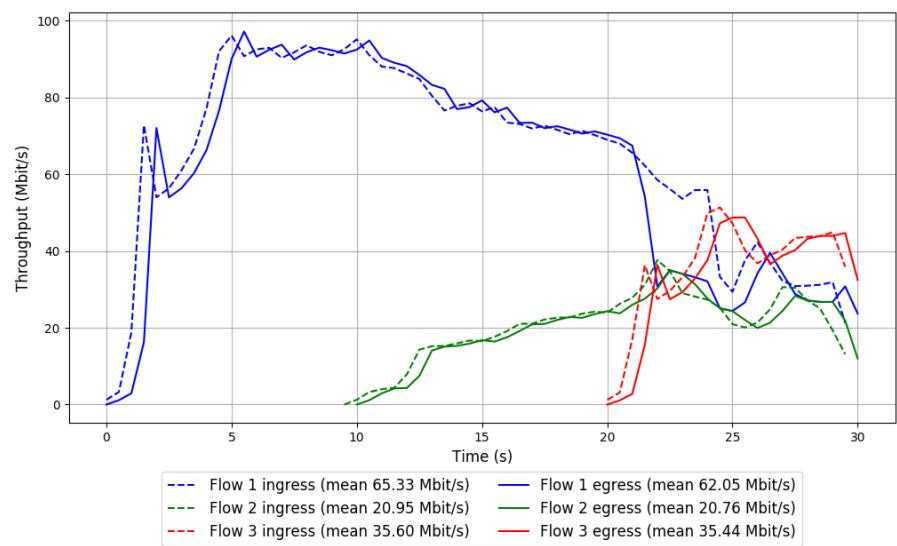


Run 2: Statistics of PCC-Vivace

Start at: 2018-10-02 17:00:36
End at: 2018-10-02 17:01:06
Local clock offset: 2.762 ms
Remote clock offset: -5.311 ms

Below is generated by plot.py at 2018-10-02 18:51:42
Datalink statistics
-- Total of 3 flows:
Average throughput: 87.49 Mbit/s
95th percentile per-packet one-way delay: 1987.459 ms
Loss rate: 4.07%
-- Flow 1:
Average throughput: 62.05 Mbit/s
95th percentile per-packet one-way delay: 2282.420 ms
Loss rate: 5.22%
-- Flow 2:
Average throughput: 20.76 Mbit/s
95th percentile per-packet one-way delay: 115.226 ms
Loss rate: 1.22%
-- Flow 3:
Average throughput: 35.44 Mbit/s
95th percentile per-packet one-way delay: 78.744 ms
Loss rate: 1.10%

Run 2: Report of PCC-Vivace — Data Link

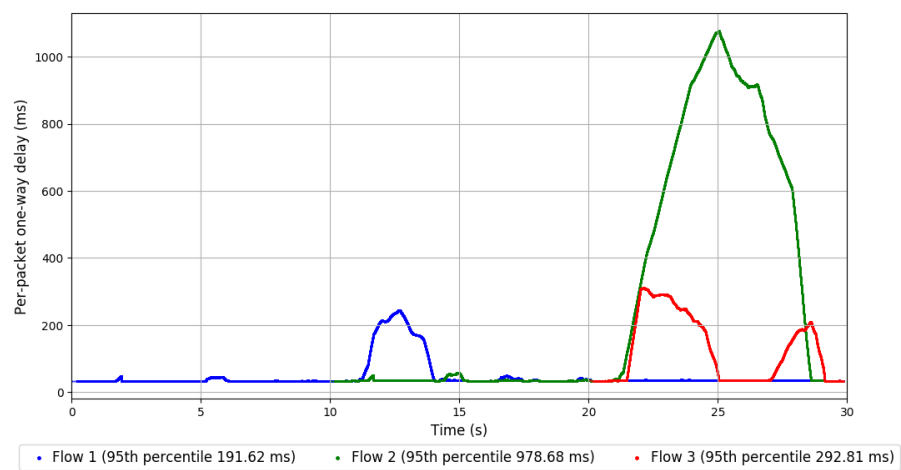
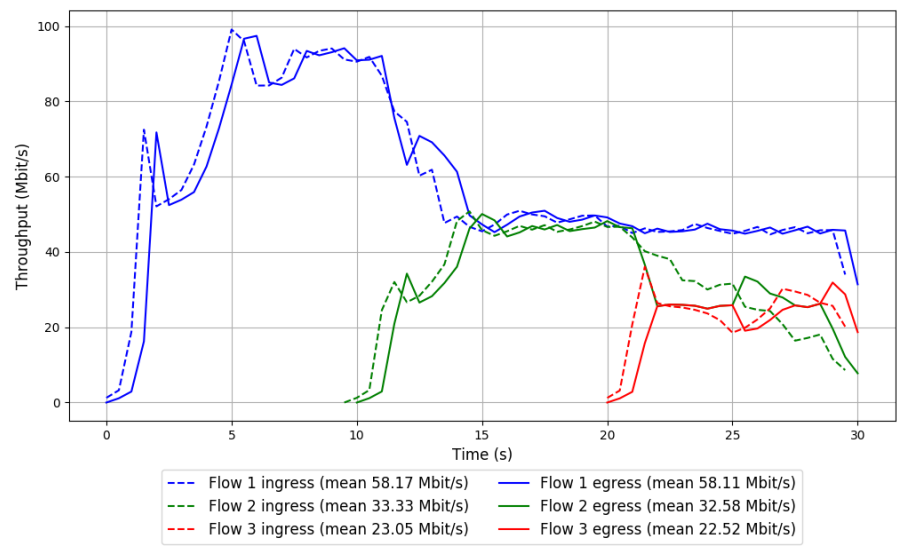


Run 3: Statistics of PCC-Vivace

Start at: 2018-10-02 17:25:23
End at: 2018-10-02 17:25:53
Local clock offset: 3.643 ms
Remote clock offset: -6.097 ms

Below is generated by plot.py at 2018-10-02 18:51:44
Datalink statistics
-- Total of 3 flows:
Average throughput: 87.16 Mbit/s
95th percentile per-packet one-way delay: 629.114 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 58.11 Mbit/s
95th percentile per-packet one-way delay: 191.618 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 32.58 Mbit/s
95th percentile per-packet one-way delay: 978.676 ms
Loss rate: 2.57%
-- Flow 3:
Average throughput: 22.52 Mbit/s
95th percentile per-packet one-way delay: 292.808 ms
Loss rate: 2.94%

Run 3: Report of PCC-Vivace — Data Link

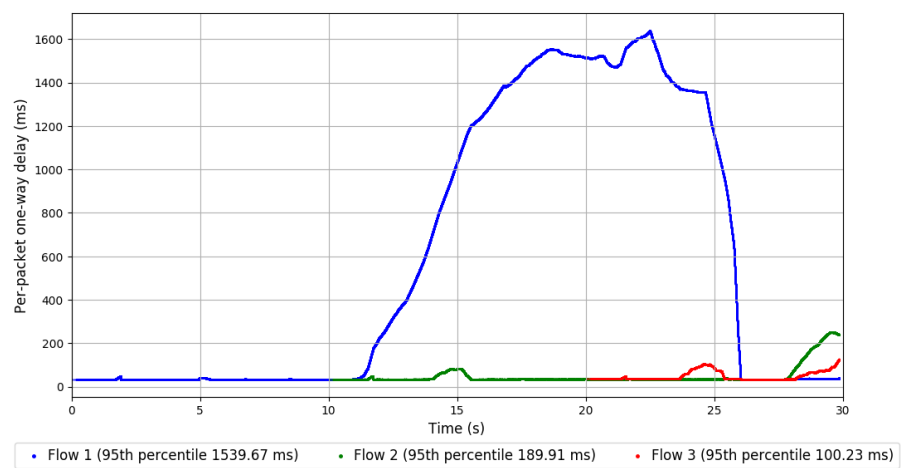
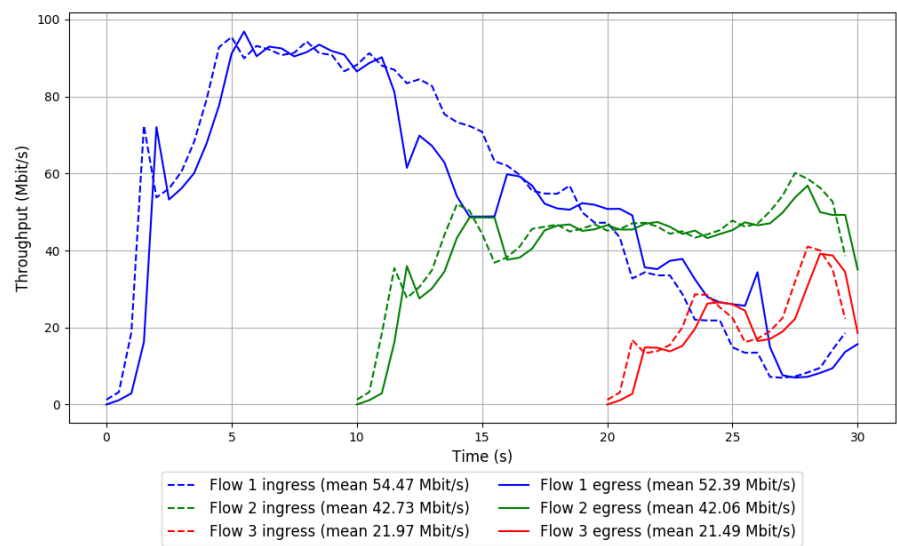


Run 4: Statistics of PCC-Vivace

Start at: 2018-10-02 17:50:10
End at: 2018-10-02 17:50:40
Local clock offset: 3.907 ms
Remote clock offset: -5.445 ms

Below is generated by plot.py at 2018-10-02 18:51:49
Datalink statistics
-- Total of 3 flows:
Average throughput: 87.41 Mbit/s
95th percentile per-packet one-way delay: 1521.695 ms
Loss rate: 3.24%
-- Flow 1:
Average throughput: 52.39 Mbit/s
95th percentile per-packet one-way delay: 1539.672 ms
Loss rate: 4.03%
-- Flow 2:
Average throughput: 42.06 Mbit/s
95th percentile per-packet one-way delay: 189.912 ms
Loss rate: 1.86%
-- Flow 3:
Average throughput: 21.49 Mbit/s
95th percentile per-packet one-way delay: 100.235 ms
Loss rate: 2.78%

Run 4: Report of PCC-Vivace — Data Link

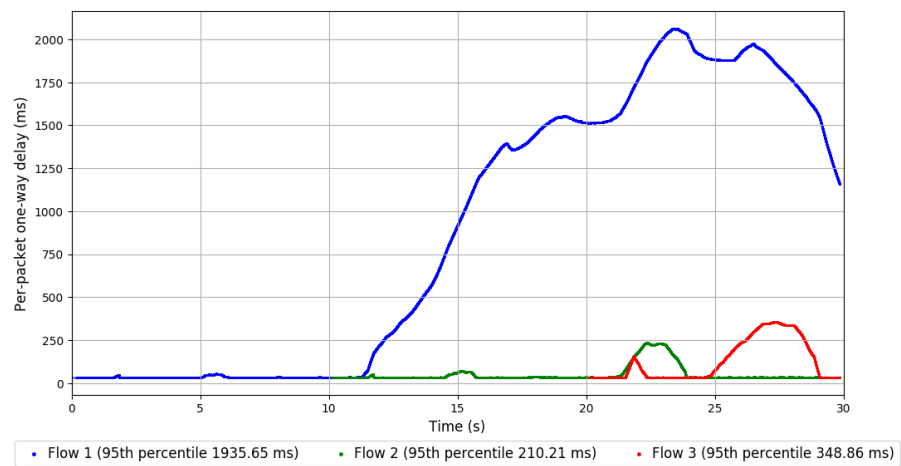
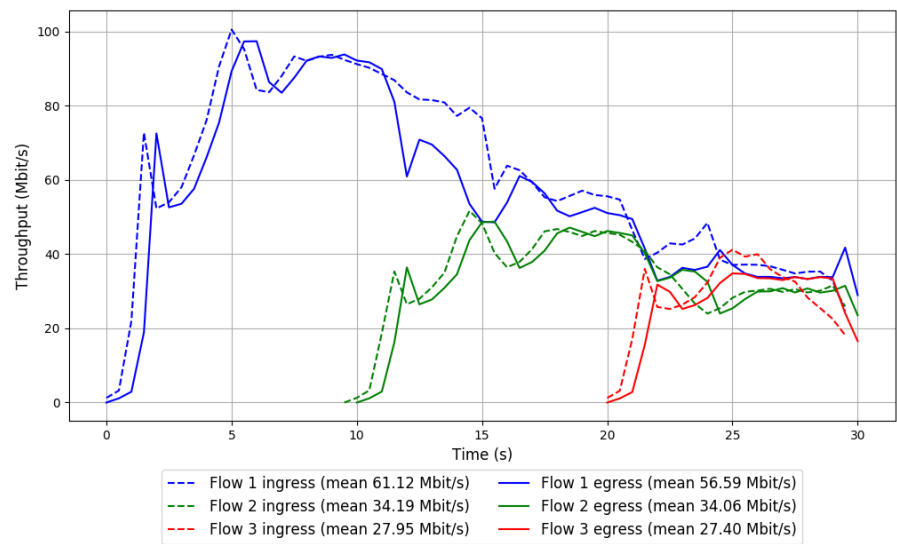


Run 5: Statistics of PCC-Vivace

Start at: 2018-10-02 18:14:55
End at: 2018-10-02 18:15:25
Local clock offset: 3.194 ms
Remote clock offset: -4.307 ms

Below is generated by plot.py at 2018-10-02 18:51:51
Datalink statistics
-- Total of 3 flows:
Average throughput: 88.24 Mbit/s
95th percentile per-packet one-way delay: 1888.178 ms
Loss rate: 5.42%
-- Flow 1:
Average throughput: 56.59 Mbit/s
95th percentile per-packet one-way delay: 1935.650 ms
Loss rate: 7.60%
-- Flow 2:
Average throughput: 34.06 Mbit/s
95th percentile per-packet one-way delay: 210.210 ms
Loss rate: 0.69%
-- Flow 3:
Average throughput: 27.40 Mbit/s
95th percentile per-packet one-way delay: 348.858 ms
Loss rate: 2.63%

Run 5: Report of PCC-Vivace — Data Link

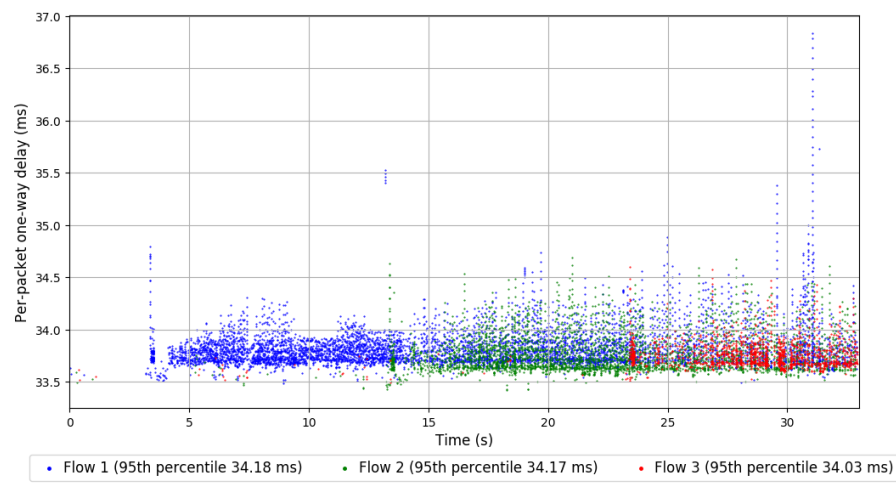
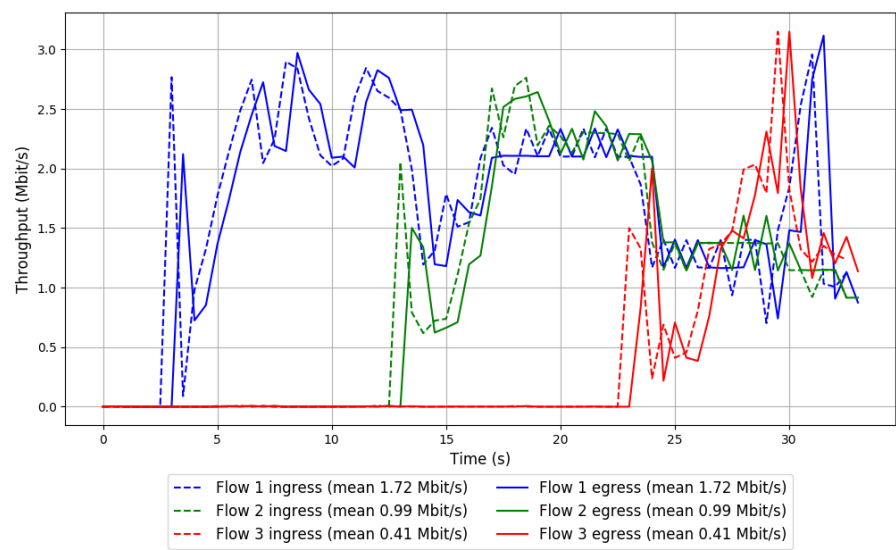


Run 1: Statistics of WebRTC media

Start at: 2018-10-02 16:39:55
End at: 2018-10-02 16:40:25
Local clock offset: 3.738 ms
Remote clock offset: -4.782 ms

Below is generated by plot.py at 2018-10-02 18:51:51
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.10 Mbit/s
95th percentile per-packet one-way delay: 34.170 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 1.72 Mbit/s
95th percentile per-packet one-way delay: 34.181 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 0.99 Mbit/s
95th percentile per-packet one-way delay: 34.175 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 34.030 ms
Loss rate: 0.36%

Run 1: Report of WebRTC media — Data Link

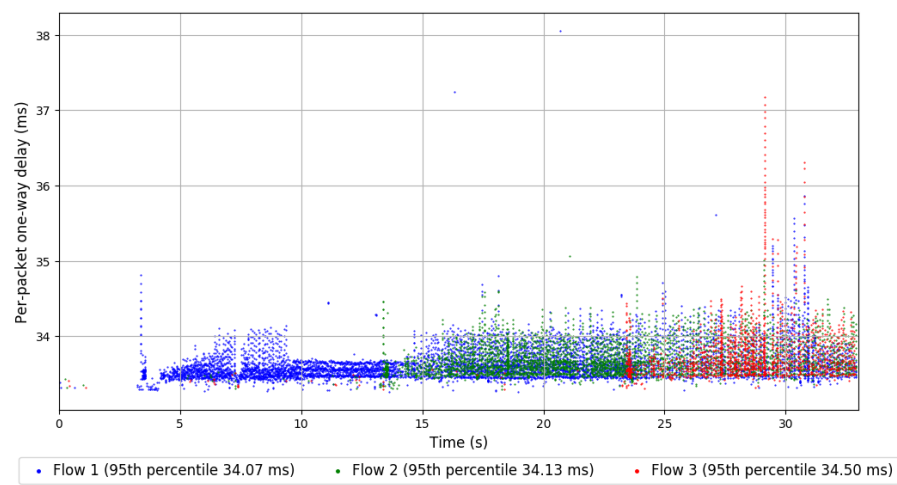
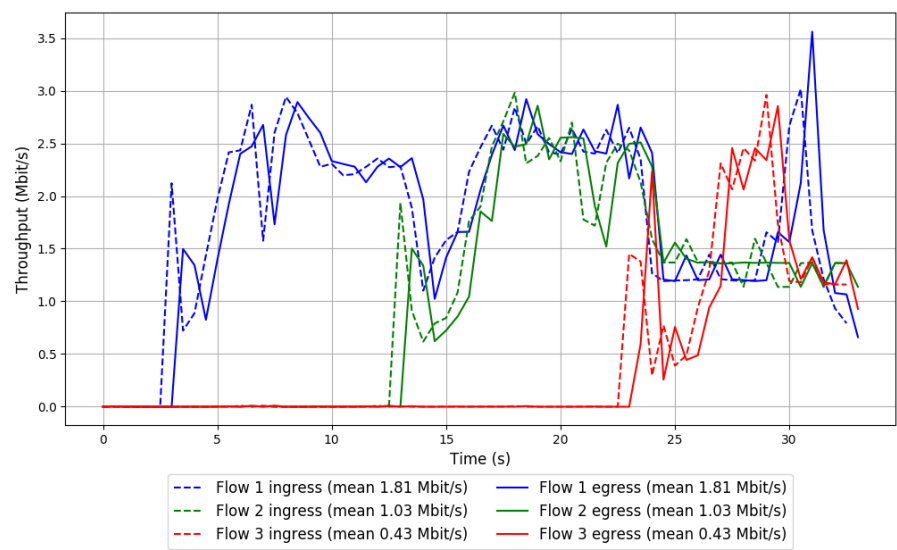


Run 2: Statistics of WebRTC media

Start at: 2018-10-02 17:04:48
End at: 2018-10-02 17:05:18
Local clock offset: 2.654 ms
Remote clock offset: -5.401 ms

Below is generated by plot.py at 2018-10-02 18:51:51
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.26 Mbit/s
95th percentile per-packet one-way delay: 34.143 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 1.81 Mbit/s
95th percentile per-packet one-way delay: 34.068 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 1.03 Mbit/s
95th percentile per-packet one-way delay: 34.128 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 34.504 ms
Loss rate: 0.82%

Run 2: Report of WebRTC media — Data Link

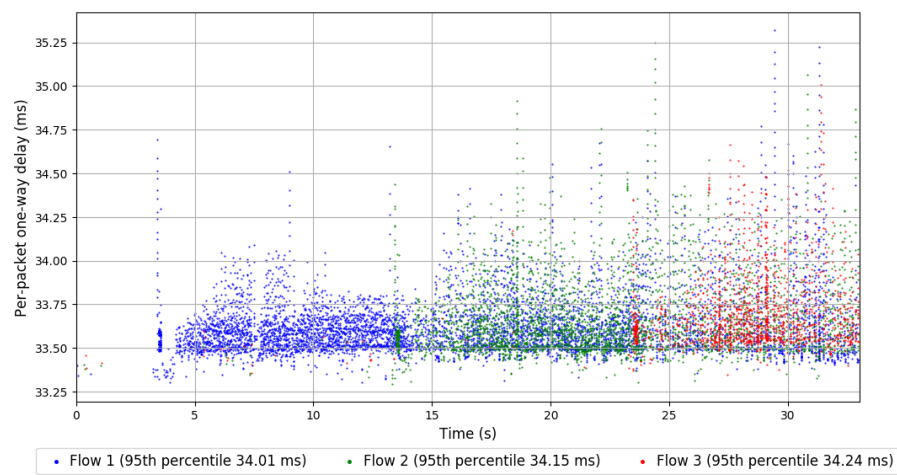
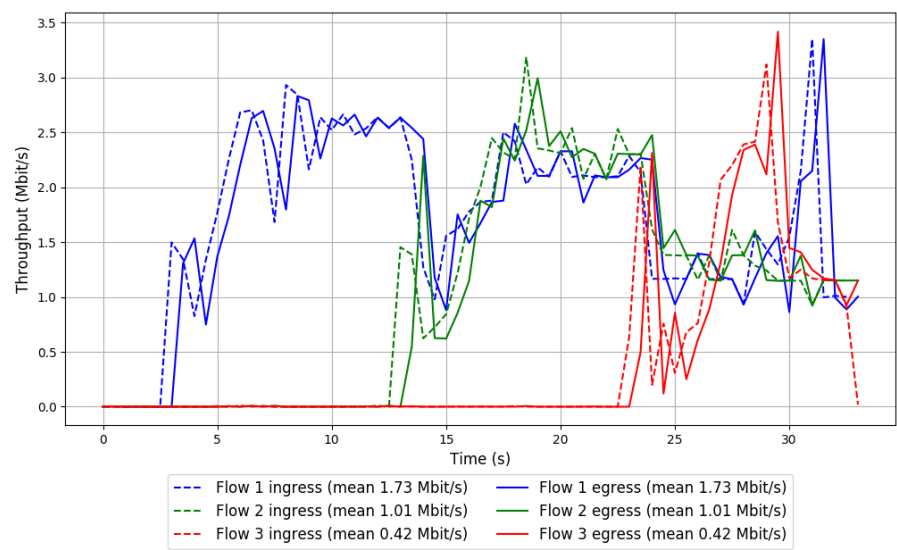


Run 3: Statistics of WebRTC media

Start at: 2018-10-02 17:29:32
End at: 2018-10-02 17:30:02
Local clock offset: 3.893 ms
Remote clock offset: -5.885 ms

Below is generated by plot.py at 2018-10-02 18:51:51
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.15 Mbit/s
95th percentile per-packet one-way delay: 34.104 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 1.73 Mbit/s
95th percentile per-packet one-way delay: 34.013 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 1.01 Mbit/s
95th percentile per-packet one-way delay: 34.148 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 34.242 ms
Loss rate: 0.07%

Run 3: Report of WebRTC media — Data Link

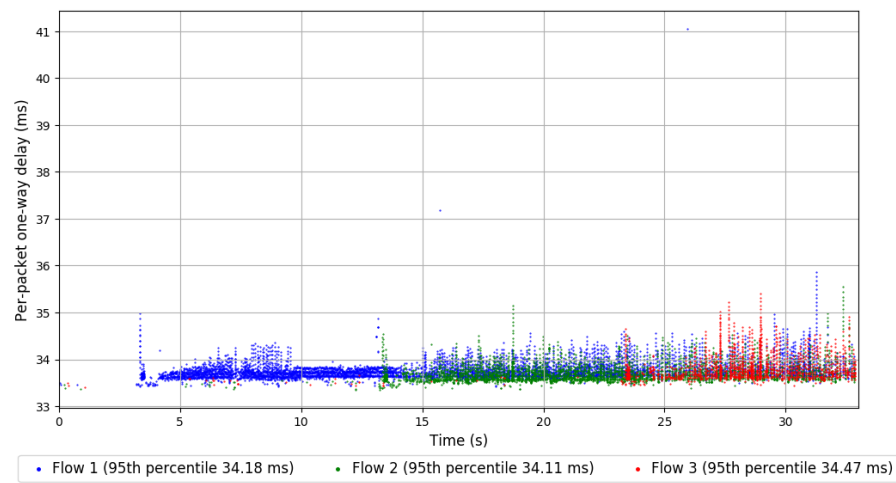
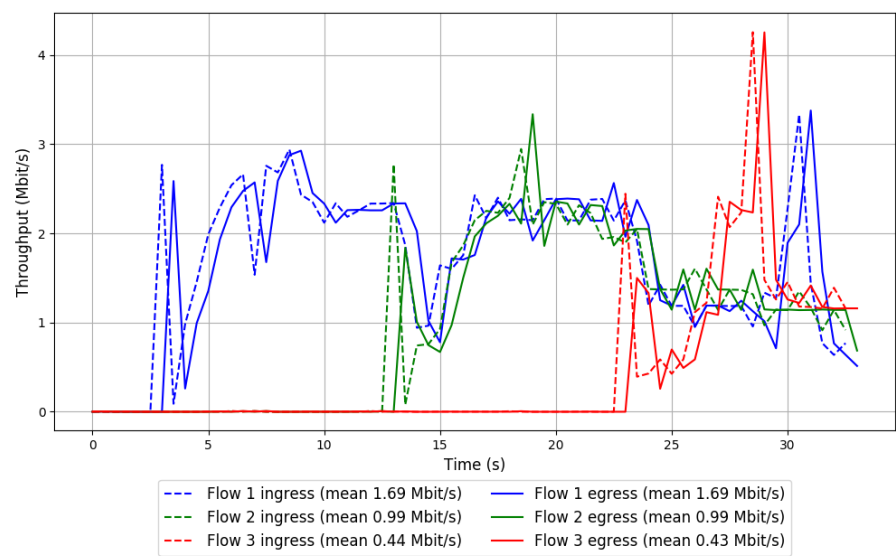


Run 4: Statistics of WebRTC media

Start at: 2018-10-02 17:54:19
End at: 2018-10-02 17:54:49
Local clock offset: 3.564 ms
Remote clock offset: -5.222 ms

Below is generated by plot.py at 2018-10-02 18:51:51
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.10 Mbit/s
95th percentile per-packet one-way delay: 34.216 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 1.69 Mbit/s
95th percentile per-packet one-way delay: 34.176 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 0.99 Mbit/s
95th percentile per-packet one-way delay: 34.114 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 34.466 ms
Loss rate: 0.81%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-10-02 18:19:05
End at: 2018-10-02 18:19:35
Local clock offset: 2.099 ms
Remote clock offset: -3.934 ms

Below is generated by plot.py at 2018-10-02 18:51:51
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.11 Mbit/s
95th percentile per-packet one-way delay: 34.313 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 34.192 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 0.99 Mbit/s
95th percentile per-packet one-way delay: 34.389 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 34.375 ms
Loss rate: 0.00%

Run 5: Report of WebRTC media — Data Link

