

Pantheon Report

Generated at 2018-09-11 04:43:29 (UTC).

Data path: AWS Brazil 2 on **ens5** (*local*) → Colombia on **p4p1** (*remote*).

Repeated the test of 18 congestion control schemes 5 times.

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

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

System info:

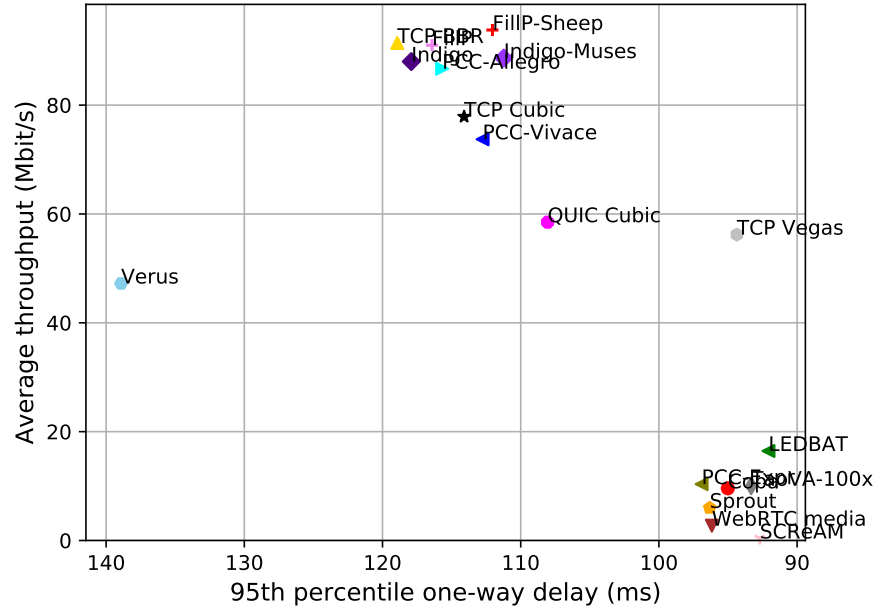
```
Linux 4.15.0-1020-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
net.ipv4.tcp_mem = 184101 245469 368202
```

Git summary:

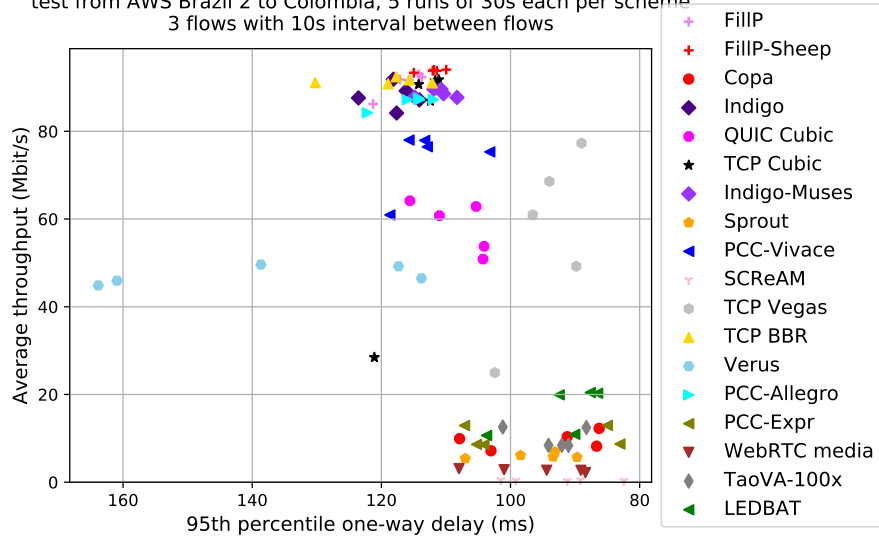
```
branch: muses @ f30bceca2aec2ef14a3cf71e25642f4a30905a03
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf5e58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ cbfce6db5ff5740dafa1771f813cd646339e1952
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quick @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
```

```
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

test from AWS Brazil 2 to Colombia, 5 runs of 30s each per scheme
 3 flows with 10s interval between flows (mean of all runs by scheme)



test from AWS Brazil 2 to Colombia, 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	55.05	38.99	31.31	118.56	119.51	117.59	12.64	18.79	27.46
Copa	5	3.37	8.05	2.59	92.66	92.97	92.85	59.11	49.46	58.15
TCP Cubic	5	55.22	22.72	22.59	110.69	112.12	112.18	0.67	0.24	0.59
FillP	5	52.81	43.44	28.04	142.47	114.31	113.31	24.67	21.34	19.99
FillP-Sheep	5	55.42	40.16	35.38	111.46	112.12	111.23	14.86	27.83	30.02
Indigo	5	56.72	34.80	25.87	115.40	117.40	119.41	7.79	13.28	32.21
LEDBAT	5	10.17	7.69	3.55	92.31	88.71	91.65	0.13	0.06	0.48
Indigo-Muses	5	69.58	20.85	16.04	111.51	110.09	111.16	2.68	1.41	0.64
PCC-Allegro	5	77.42	10.10	7.76	114.74	116.40	116.60	2.83	4.12	6.67
PCC-Expr	5	2.82	9.58	3.55	89.04	92.67	90.27	70.76	48.57	62.62
QUIC Cubic	5	44.06	16.06	11.51	108.33	101.93	104.99	1.21	1.08	1.77
SCReAM	5	0.17	0.20	0.22	89.93	88.92	89.02	0.05	0.08	0.35
Sprout	5	3.00	2.98	3.04	92.84	98.30	91.31	0.38	0.34	0.00
TaoVA-100x	5	3.41	7.38	5.21	85.91	94.67	89.62	70.77	28.73	32.95
TCP Vegas	5	22.69	27.63	45.42	94.37	96.20	93.06	1.13	2.33	1.20
Verus	5	24.08	27.35	16.59	122.99	140.10	130.09	24.14	53.09	33.47
PCC-Vivace	5	63.20	12.12	7.47	112.37	113.78	112.95	1.13	2.11	3.04
WebRTC media	5	1.50	1.06	0.18	91.30	92.55	86.94	0.13	0.06	0.10

Run 1: Statistics of TCP BBR

Start at: 2018-09-11 02:58:37

End at: 2018-09-11 02:59:07

Local clock offset: -8.064 ms

Remote clock offset: 3.617 ms

Below is generated by plot.py at 2018-09-11 04:36:23

Datalink statistics

-- Total of 3 flows:

Average throughput: 90.82 Mbit/s

95th percentile per-packet one-way delay: 118.964 ms

Loss rate: 15.14%

-- Flow 1:

Average throughput: 52.27 Mbit/s

95th percentile per-packet one-way delay: 118.155 ms

Loss rate: 11.61%

-- Flow 2:

Average throughput: 41.38 Mbit/s

95th percentile per-packet one-way delay: 120.541 ms

Loss rate: 19.24%

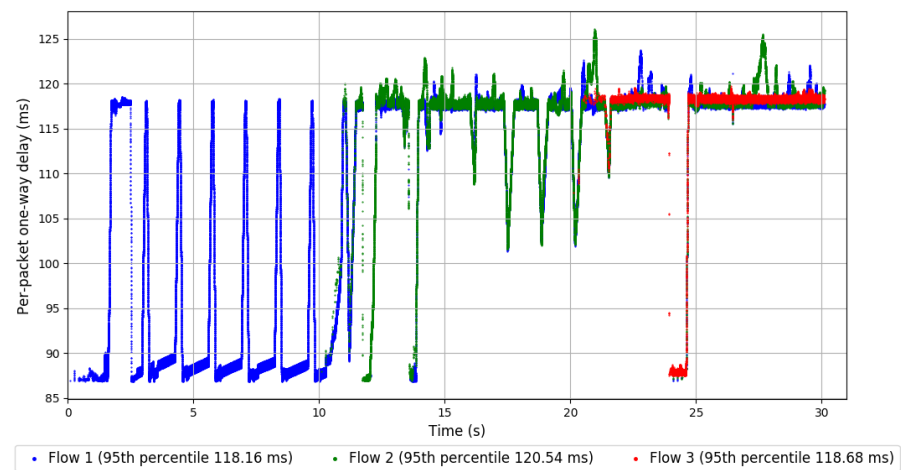
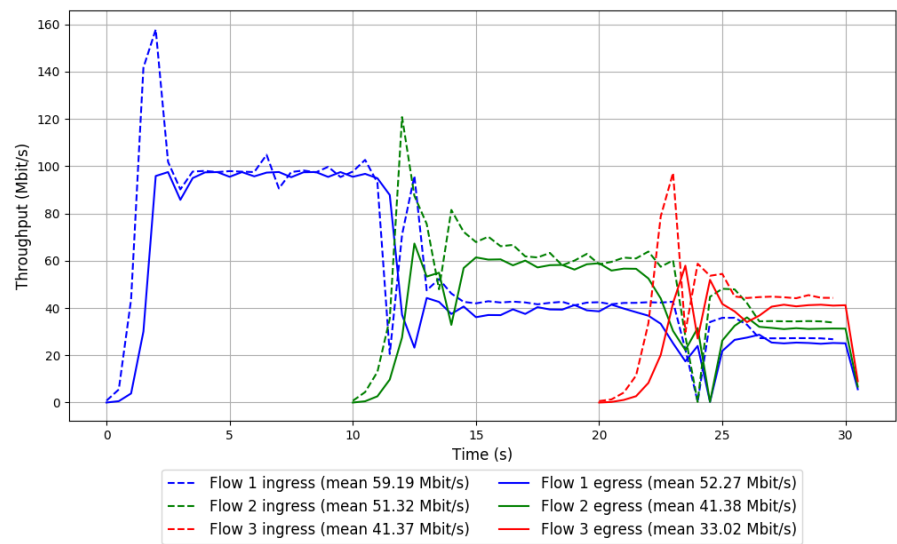
-- Flow 3:

Average throughput: 33.02 Mbit/s

95th percentile per-packet one-way delay: 118.679 ms

Loss rate: 20.11%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-09-11 03:21:57

End at: 2018-09-11 03:22:27

Local clock offset: -5.873 ms

Remote clock offset: 5.251 ms

Below is generated by plot.py at 2018-09-11 04:36:23

Datalink statistics

-- Total of 3 flows:

Average throughput: 91.09 Mbit/s

95th percentile per-packet one-way delay: 130.228 ms

Loss rate: 15.74%

-- Flow 1:

Average throughput: 57.69 Mbit/s

95th percentile per-packet one-way delay: 129.562 ms

Loss rate: 12.49%

-- Flow 2:

Average throughput: 35.92 Mbit/s

95th percentile per-packet one-way delay: 133.043 ms

Loss rate: 17.58%

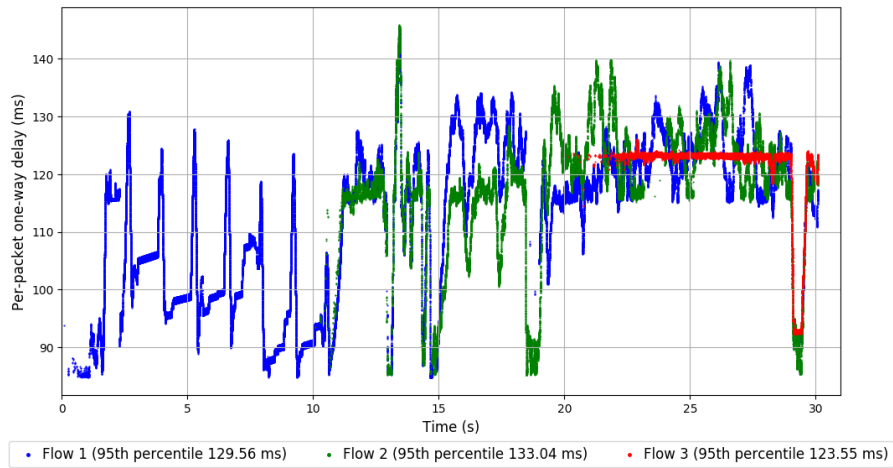
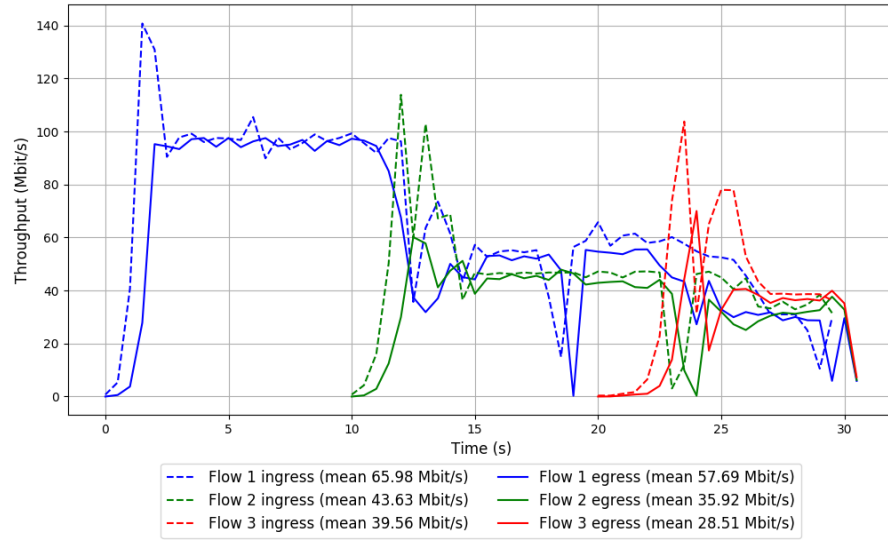
-- Flow 3:

Average throughput: 28.51 Mbit/s

95th percentile per-packet one-way delay: 123.553 ms

Loss rate: 27.96%

Run 2: Report of TCP BBR — Data Link

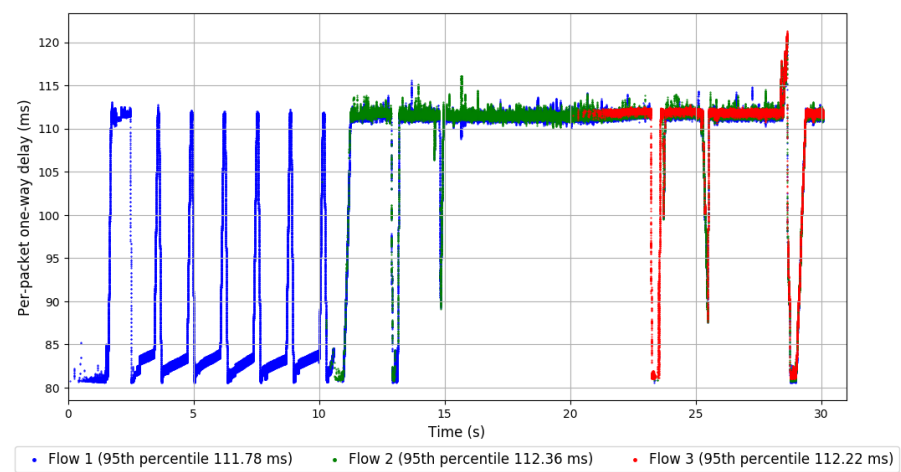
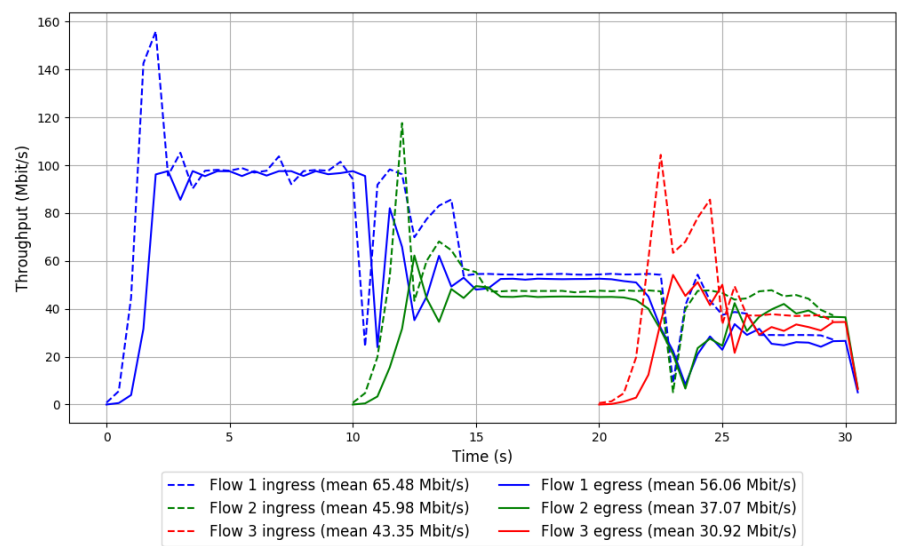


Run 3: Statistics of TCP BBR

Start at: 2018-09-11 03:44:39
End at: 2018-09-11 03:45:09
Local clock offset: -10.243 ms
Remote clock offset: 0.723 ms

Below is generated by plot.py at 2018-09-11 04:36:23
Datalink statistics
-- Total of 3 flows:
Average throughput: 91.04 Mbit/s
95th percentile per-packet one-way delay: 112.125 ms
Loss rate: 17.57%
-- Flow 1:
Average throughput: 56.06 Mbit/s
95th percentile per-packet one-way delay: 111.778 ms
Loss rate: 14.30%
-- Flow 2:
Average throughput: 37.07 Mbit/s
95th percentile per-packet one-way delay: 112.356 ms
Loss rate: 19.35%
-- Flow 3:
Average throughput: 30.92 Mbit/s
95th percentile per-packet one-way delay: 112.223 ms
Loss rate: 28.67%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2018-09-11 04:07:40

End at: 2018-09-11 04:08:10

Local clock offset: -7.823 ms

Remote clock offset: 5.099 ms

Below is generated by plot.py at 2018-09-11 04:36:25

Datalink statistics

-- Total of 3 flows:

Average throughput: 92.45 Mbit/s

95th percentile per-packet one-way delay: 117.681 ms

Loss rate: 17.27%

-- Flow 1:

Average throughput: 56.61 Mbit/s

95th percentile per-packet one-way delay: 117.625 ms

Loss rate: 12.53%

-- Flow 2:

Average throughput: 36.85 Mbit/s

95th percentile per-packet one-way delay: 116.346 ms

Loss rate: 18.02%

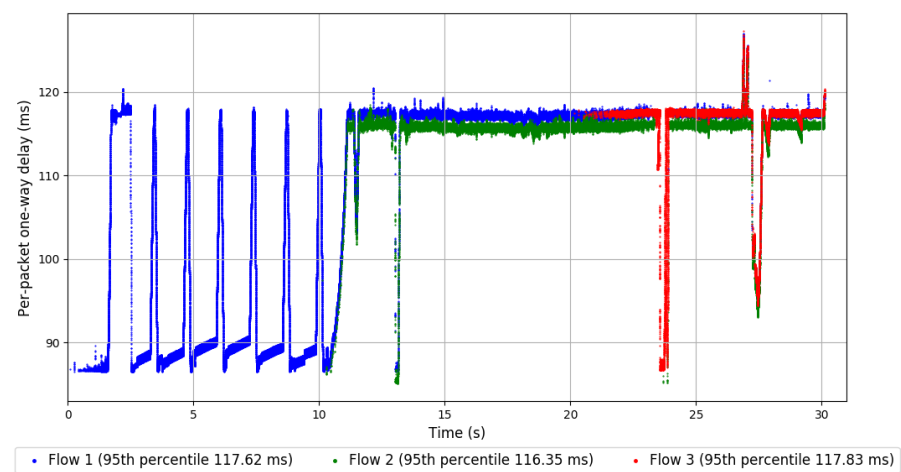
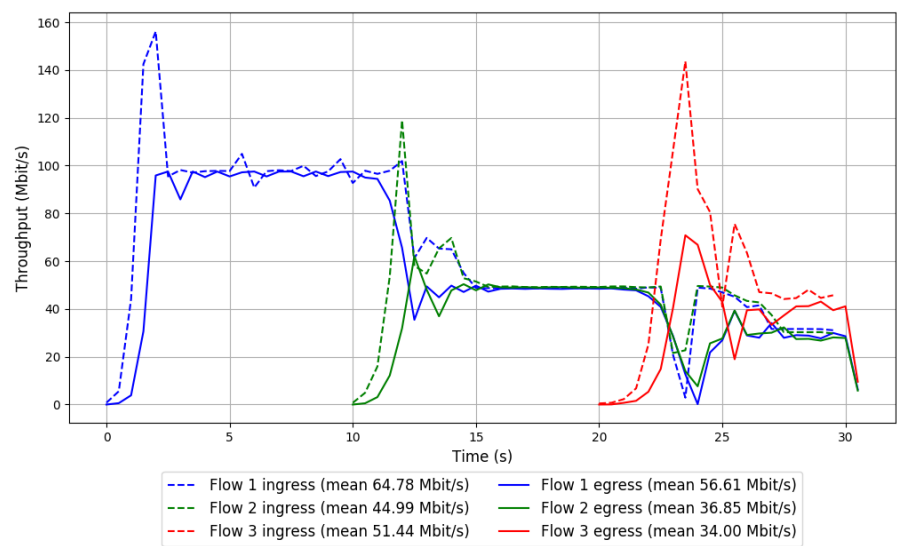
-- Flow 3:

Average throughput: 34.00 Mbit/s

95th percentile per-packet one-way delay: 117.834 ms

Loss rate: 33.89%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-09-11 04:30:46

End at: 2018-09-11 04:31:16

Local clock offset: -6.306 ms

Remote clock offset: 4.015 ms

Below is generated by plot.py at 2018-09-11 04:36:25

Datalink statistics

-- Total of 3 flows:

Average throughput: 91.73 Mbit/s

95th percentile per-packet one-way delay: 115.654 ms

Loss rate: 16.52%

-- Flow 1:

Average throughput: 52.62 Mbit/s

95th percentile per-packet one-way delay: 115.685 ms

Loss rate: 12.25%

-- Flow 2:

Average throughput: 43.72 Mbit/s

95th percentile per-packet one-way delay: 115.287 ms

Loss rate: 19.76%

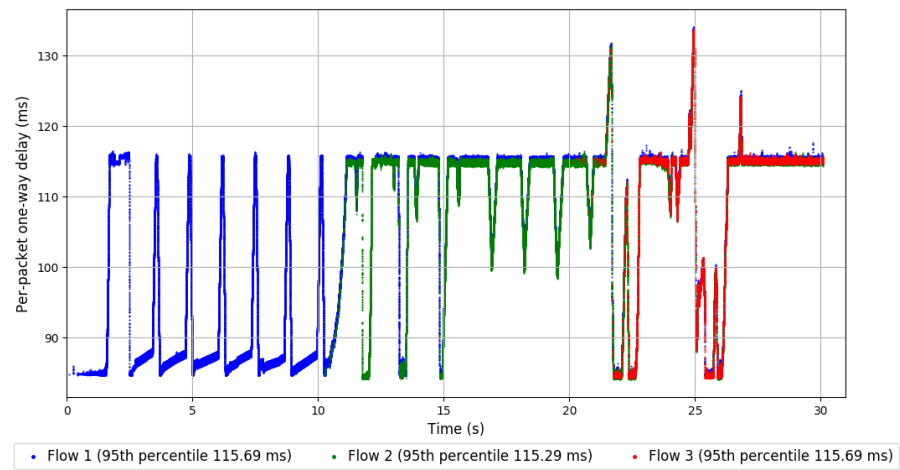
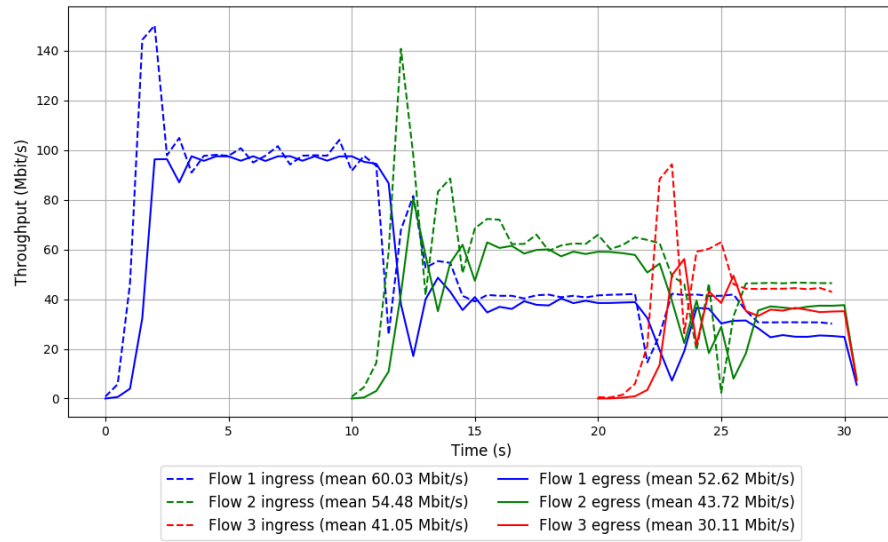
-- Flow 3:

Average throughput: 30.11 Mbit/s

95th percentile per-packet one-way delay: 115.686 ms

Loss rate: 26.65%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-09-11 02:47:21

End at: 2018-09-11 02:47:51

Local clock offset: -7.33 ms

Remote clock offset: 3.119 ms

Below is generated by plot.py at 2018-09-11 04:36:25

Datalink statistics

-- Total of 3 flows:

Average throughput: 9.93 Mbit/s

95th percentile per-packet one-way delay: 107.888 ms

Loss rate: 11.38%

-- Flow 1:

Average throughput: 5.41 Mbit/s

95th percentile per-packet one-way delay: 107.826 ms

Loss rate: 6.96%

-- Flow 2:

Average throughput: 4.43 Mbit/s

95th percentile per-packet one-way delay: 107.916 ms

Loss rate: 9.19%

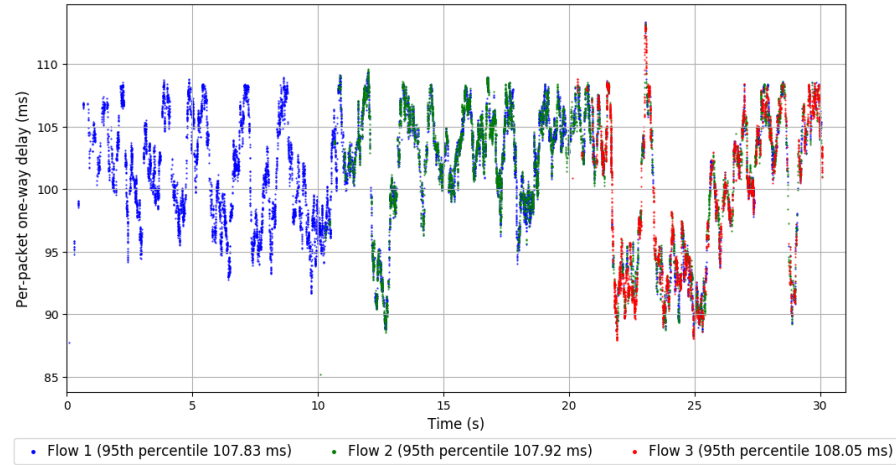
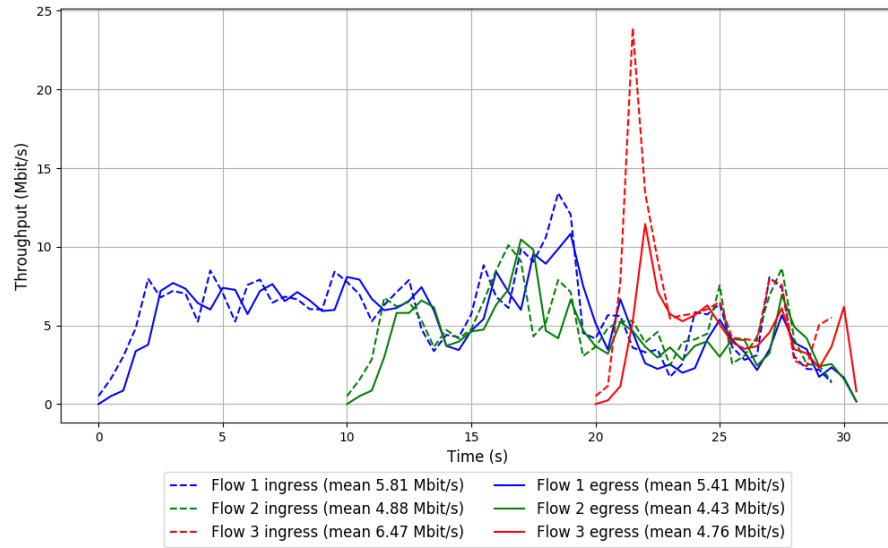
-- Flow 3:

Average throughput: 4.76 Mbit/s

95th percentile per-packet one-way delay: 108.050 ms

Loss rate: 26.60%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2018-09-11 03:10:24

End at: 2018-09-11 03:10:54

Local clock offset: -6.446 ms

Remote clock offset: 0.968 ms

Below is generated by plot.py at 2018-09-11 04:36:25

Datalink statistics

-- Total of 3 flows:

Average throughput: 7.16 Mbit/s

95th percentile per-packet one-way delay: 103.023 ms

Loss rate: 15.16%

-- Flow 1:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 88.380 ms

Loss rate: 98.60%

-- Flow 2:

Average throughput: 7.62 Mbit/s

95th percentile per-packet one-way delay: 102.818 ms

Loss rate: 18.26%

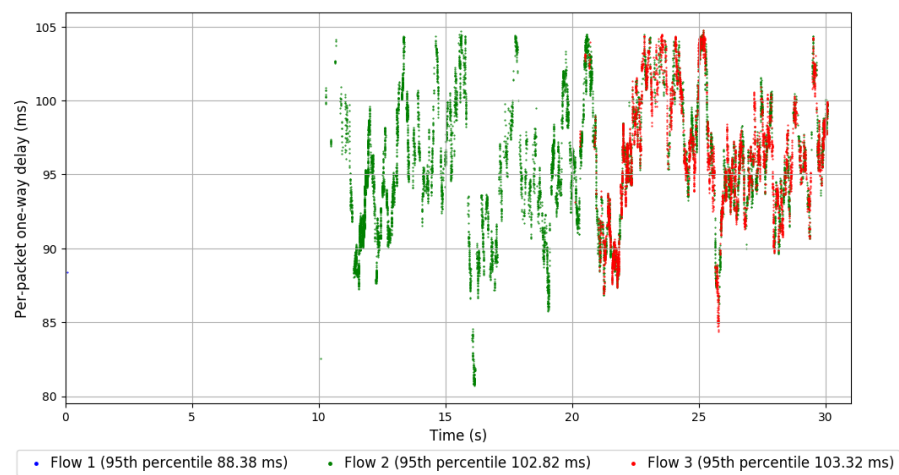
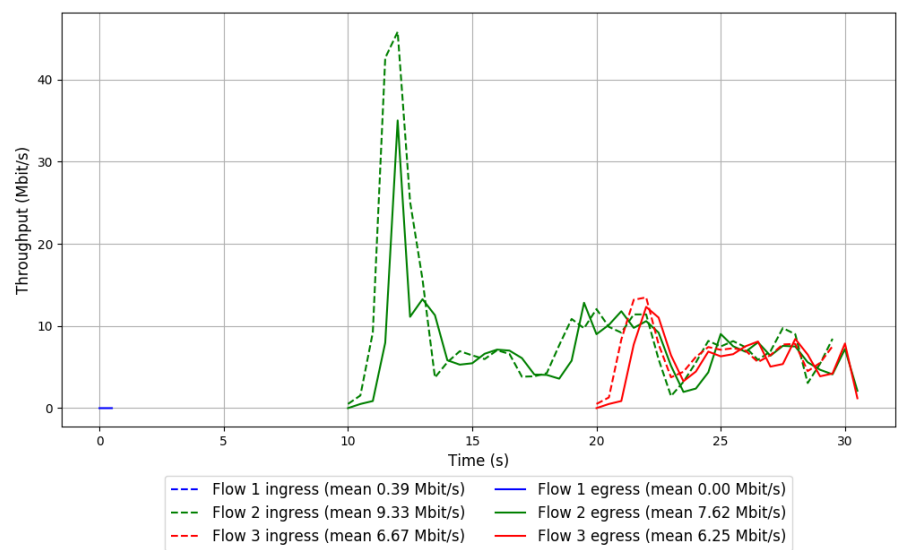
-- Flow 3:

Average throughput: 6.25 Mbit/s

95th percentile per-packet one-way delay: 103.321 ms

Loss rate: 6.37%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-09-11 03:33:20

End at: 2018-09-11 03:33:50

Local clock offset: -7.84 ms

Remote clock offset: 0.633 ms

Below is generated by plot.py at 2018-09-11 04:36:25

Datalink statistics

-- Total of 3 flows:

Average throughput: 10.36 Mbit/s

95th percentile per-packet one-way delay: 91.215 ms

Loss rate: 65.24%

-- Flow 1:

Average throughput: 3.54 Mbit/s

95th percentile per-packet one-way delay: 94.697 ms

Loss rate: 17.13%

-- Flow 2:

Average throughput: 10.26 Mbit/s

95th percentile per-packet one-way delay: 82.784 ms

Loss rate: 73.23%

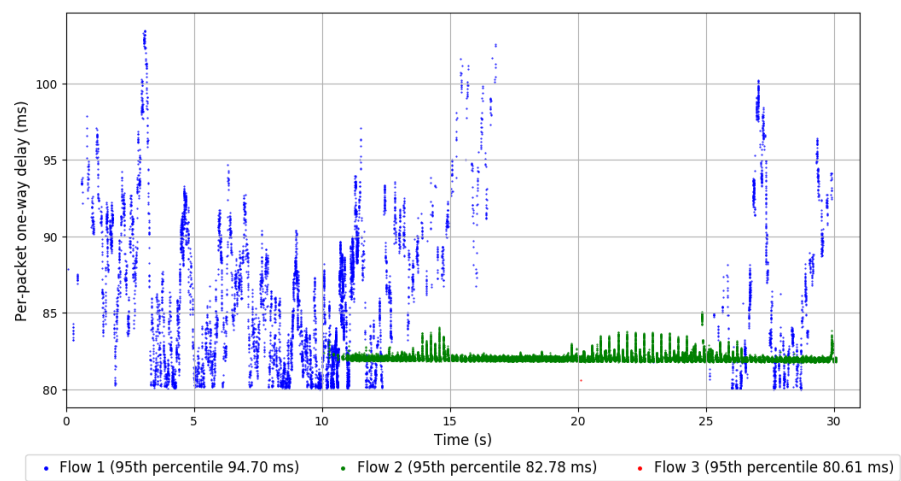
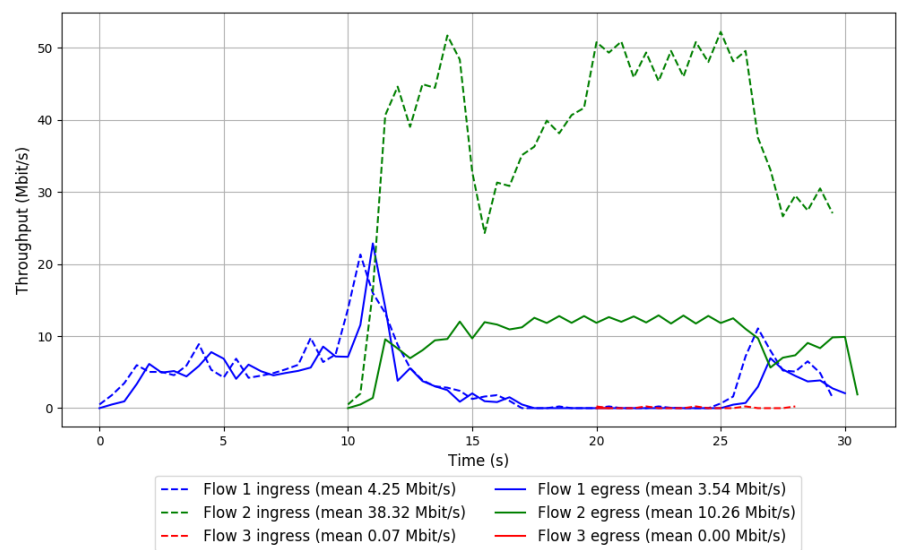
-- Flow 3:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 80.615 ms

Loss rate: 99.83%

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2018-09-11 03:56:07

End at: 2018-09-11 03:56:37

Local clock offset: -11.13 ms

Remote clock offset: 4.445 ms

Below is generated by plot.py at 2018-09-11 04:36:25

Datalink statistics

-- Total of 3 flows:

Average throughput: 8.21 Mbit/s

95th percentile per-packet one-way delay: 86.669 ms

Loss rate: 65.39%

-- Flow 1:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 86.824 ms

Loss rate: 98.60%

-- Flow 2:

Average throughput: 12.32 Mbit/s

95th percentile per-packet one-way delay: 86.668 ms

Loss rate: 65.36%

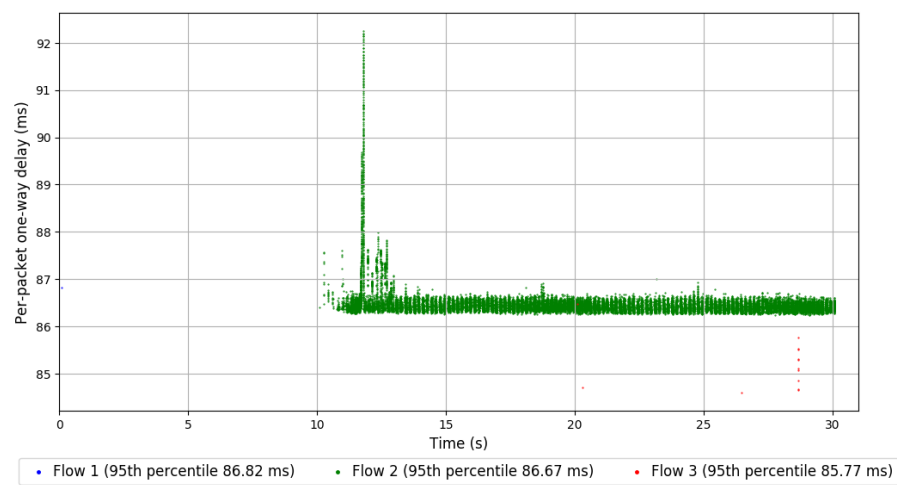
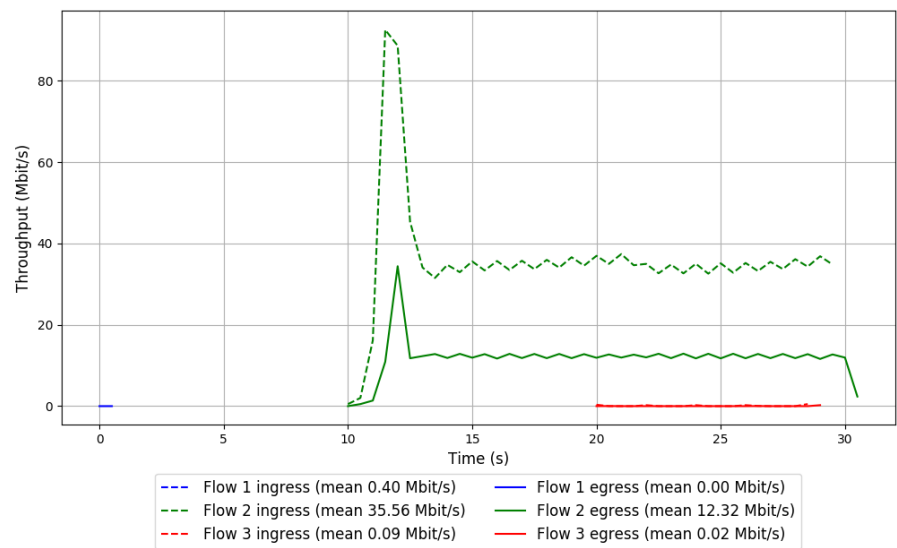
-- Flow 3:

Average throughput: 0.02 Mbit/s

95th percentile per-packet one-way delay: 85.765 ms

Loss rate: 81.99%

Run 4: Report of Copa — Data Link

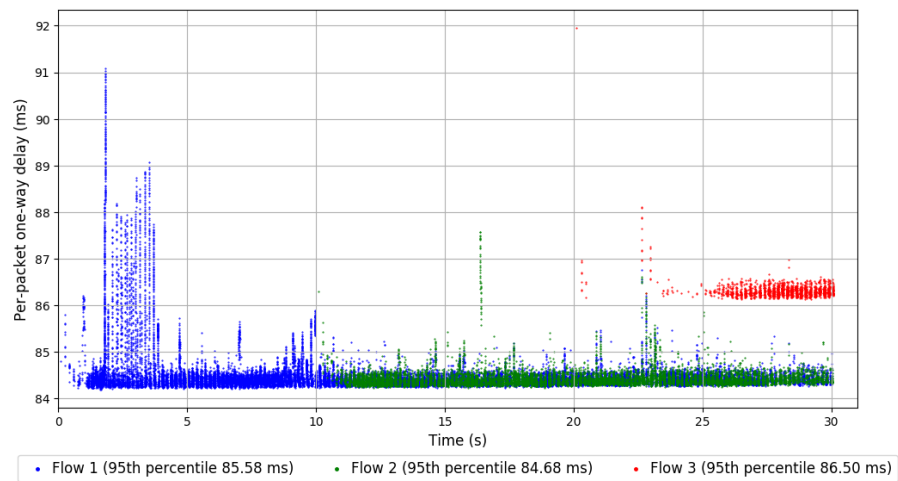
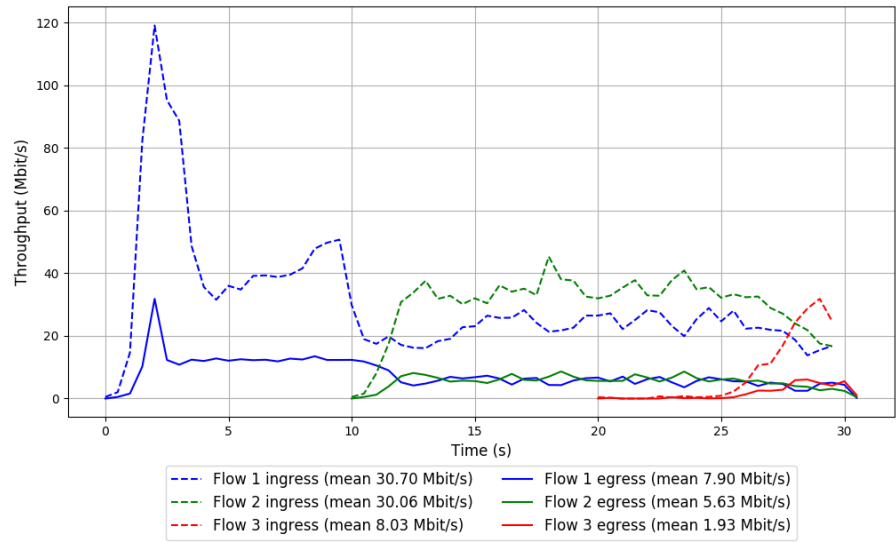


Run 5: Statistics of Copa

Start at: 2018-09-11 04:19:10
End at: 2018-09-11 04:19:40
Local clock offset: -6.281 ms
Remote clock offset: 4.543 ms

```
# Below is generated by plot.py at 2018-09-11 04:36:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.27 Mbit/s
95th percentile per-packet one-way delay: 86.275 ms
Loss rate: 76.98%
-- Flow 1:
Average throughput: 7.90 Mbit/s
95th percentile per-packet one-way delay: 85.576 ms
Loss rate: 74.27%
-- Flow 2:
Average throughput: 5.63 Mbit/s
95th percentile per-packet one-way delay: 84.677 ms
Loss rate: 81.27%
-- Flow 3:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 86.500 ms
Loss rate: 75.97%
```

Run 5: Report of Copa — Data Link

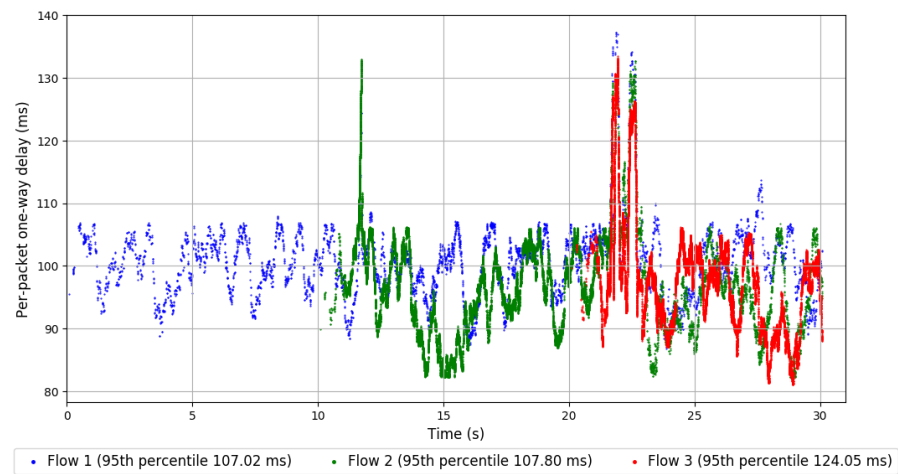
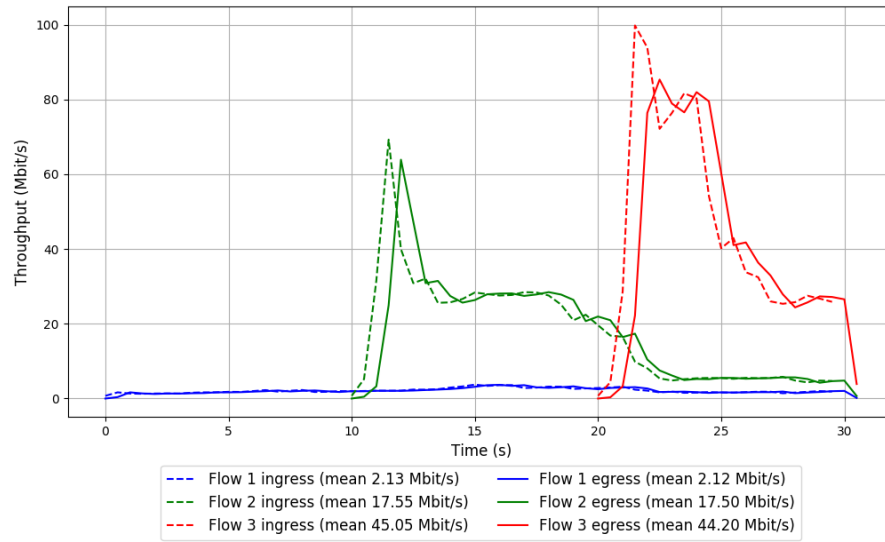


Run 1: Statistics of TCP Cubic

Start at: 2018-09-11 02:48:34
End at: 2018-09-11 02:49:04
Local clock offset: -8.132 ms
Remote clock offset: -1.162 ms

Below is generated by plot.py at 2018-09-11 04:36:25
Datalink statistics
-- Total of 3 flows:
Average throughput: 28.46 Mbit/s
95th percentile per-packet one-way delay: 121.078 ms
Loss rate: 1.25%
-- Flow 1:
Average throughput: 2.12 Mbit/s
95th percentile per-packet one-way delay: 107.023 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 17.50 Mbit/s
95th percentile per-packet one-way delay: 107.803 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 44.20 Mbit/s
95th percentile per-packet one-way delay: 124.048 ms
Loss rate: 2.10%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-09-11 03:11:37

End at: 2018-09-11 03:12:07

Local clock offset: -7.152 ms

Remote clock offset: 4.597 ms

Below is generated by plot.py at 2018-09-11 04:36:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 90.69 Mbit/s

95th percentile per-packet one-way delay: 114.221 ms

Loss rate: 0.56%

-- Flow 1:

Average throughput: 75.98 Mbit/s

95th percentile per-packet one-way delay: 114.328 ms

Loss rate: 0.63%

-- Flow 2:

Average throughput: 16.78 Mbit/s

95th percentile per-packet one-way delay: 112.919 ms

Loss rate: 0.15%

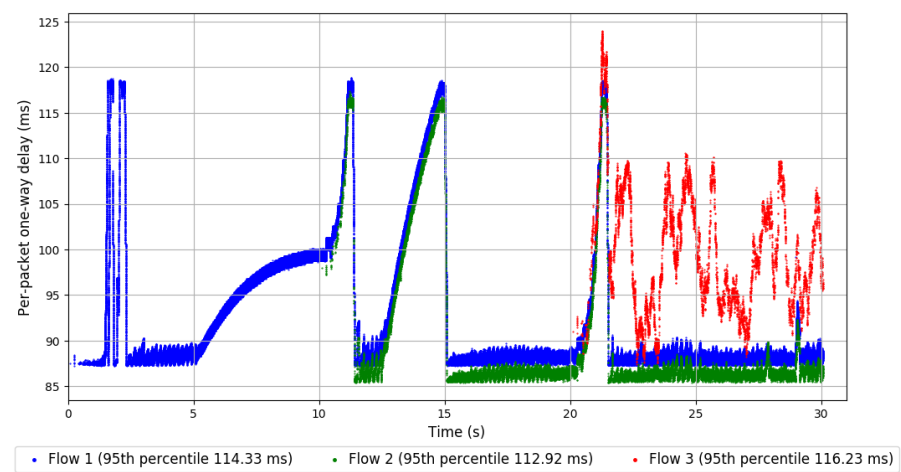
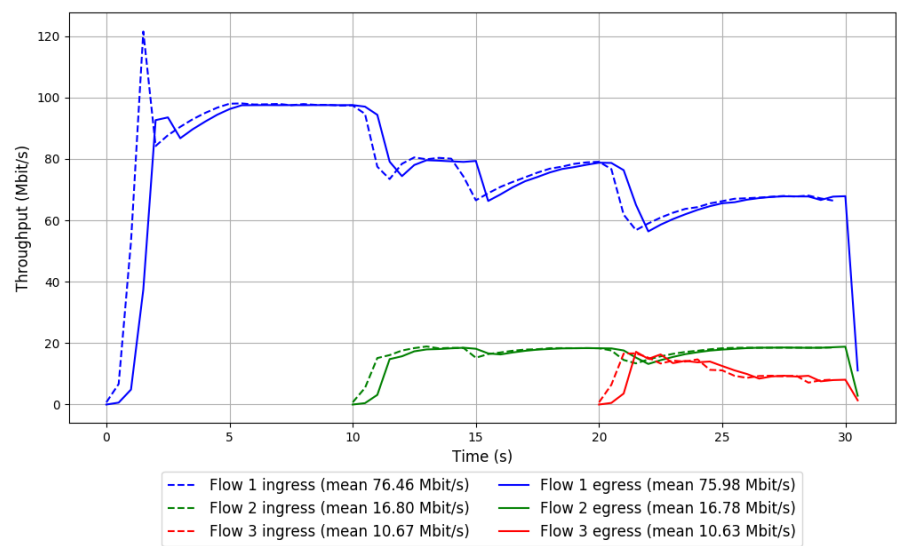
-- Flow 3:

Average throughput: 10.63 Mbit/s

95th percentile per-packet one-way delay: 116.232 ms

Loss rate: 0.42%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2018-09-11 03:34:34

End at: 2018-09-11 03:35:04

Local clock offset: -9.036 ms

Remote clock offset: 1.081 ms

Below is generated by plot.py at 2018-09-11 04:36:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 86.90 Mbit/s

95th percentile per-packet one-way delay: 112.404 ms

Loss rate: 0.73%

-- Flow 1:

Average throughput: 49.73 Mbit/s

95th percentile per-packet one-way delay: 112.229 ms

Loss rate: 1.00%

-- Flow 2:

Average throughput: 45.91 Mbit/s

95th percentile per-packet one-way delay: 112.875 ms

Loss rate: 0.42%

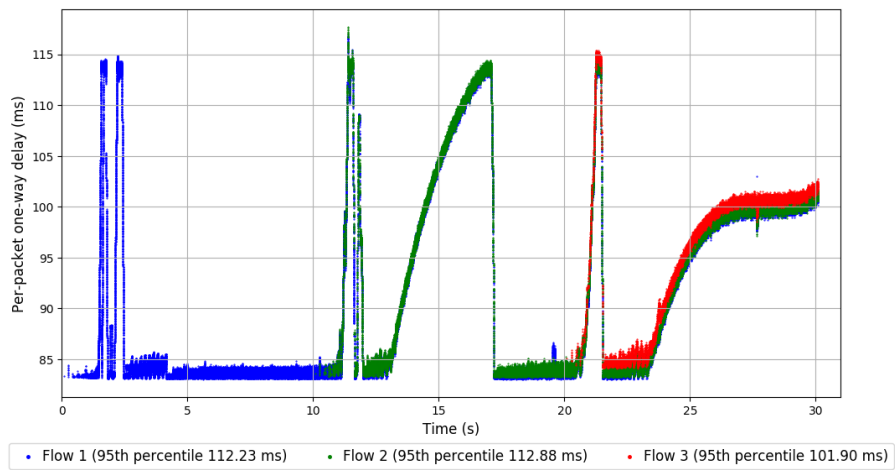
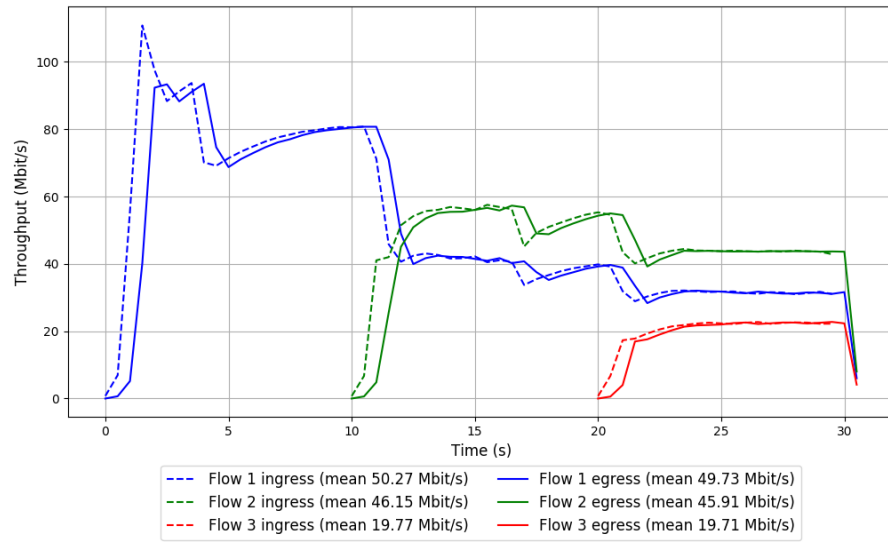
-- Flow 3:

Average throughput: 19.71 Mbit/s

95th percentile per-packet one-way delay: 101.901 ms

Loss rate: 0.14%

Run 3: Report of TCP Cubic — Data Link

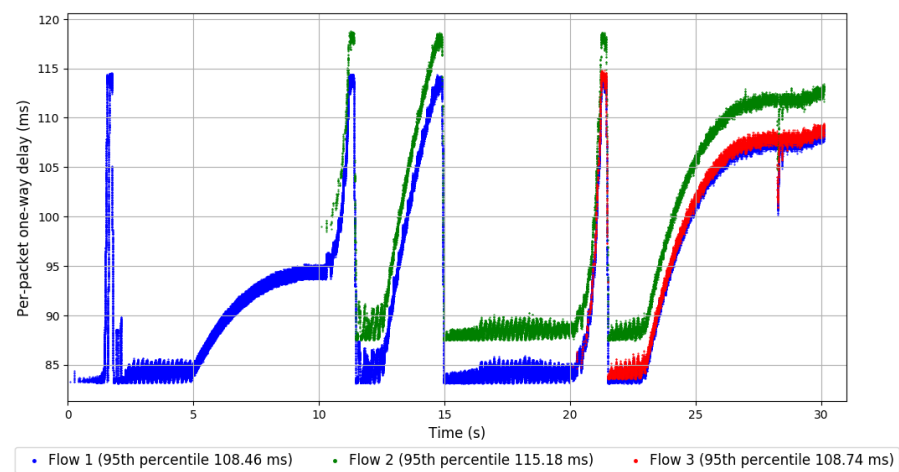
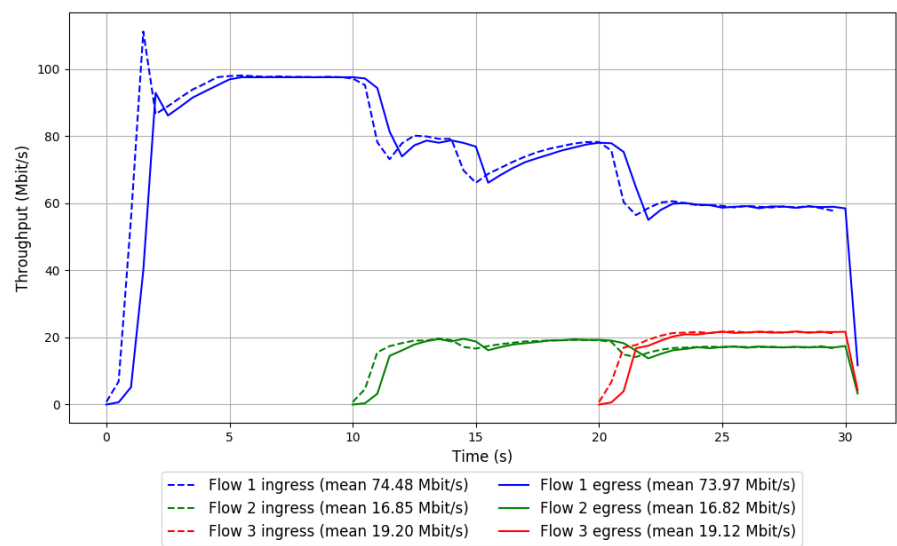


Run 4: Statistics of TCP Cubic

Start at: 2018-09-11 03:57:20
End at: 2018-09-11 03:57:50
Local clock offset: -12.052 ms
Remote clock offset: 0.401 ms

Below is generated by plot.py at 2018-09-11 04:36:52
Datalink statistics
-- Total of 3 flows:
Average throughput: 91.56 Mbit/s
95th percentile per-packet one-way delay: 111.675 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 73.97 Mbit/s
95th percentile per-packet one-way delay: 108.462 ms
Loss rate: 0.59%
-- Flow 2:
Average throughput: 16.82 Mbit/s
95th percentile per-packet one-way delay: 115.178 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 19.12 Mbit/s
95th percentile per-packet one-way delay: 108.738 ms
Loss rate: 0.14%

Run 4: Report of TCP Cubic — Data Link

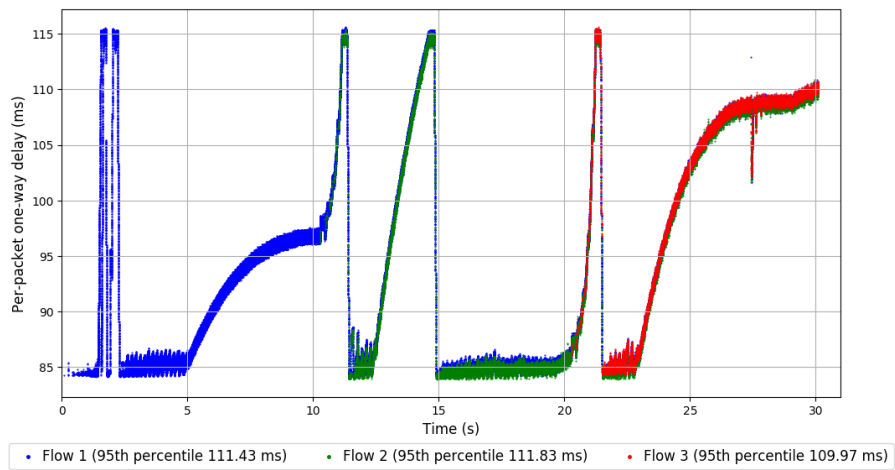
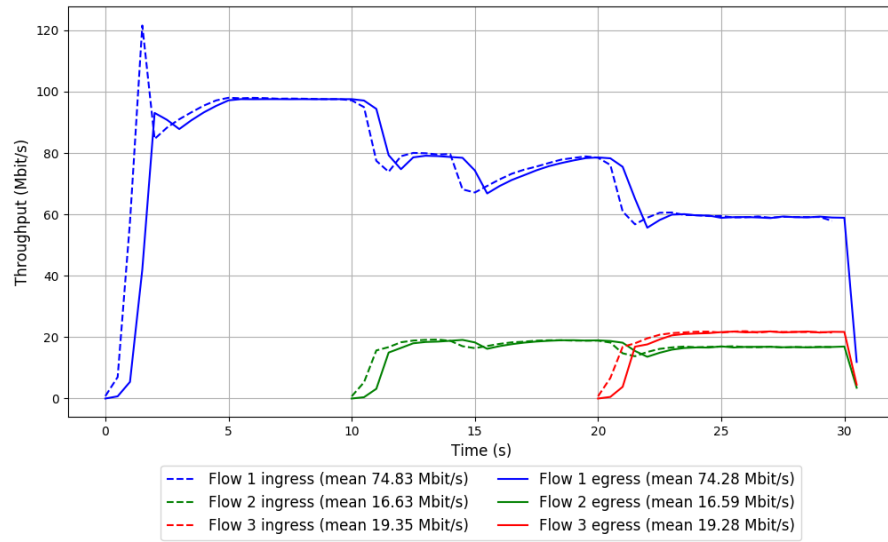


Run 5: Statistics of TCP Cubic

Start at: 2018-09-11 04:20:24
End at: 2018-09-11 04:20:54
Local clock offset: -6.186 ms
Remote clock offset: 4.066 ms

Below is generated by plot.py at 2018-09-11 04:37:24
Datalink statistics
-- Total of 3 flows:
Average throughput: 91.75 Mbit/s
95th percentile per-packet one-way delay: 111.106 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 74.28 Mbit/s
95th percentile per-packet one-way delay: 111.426 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 16.59 Mbit/s
95th percentile per-packet one-way delay: 111.833 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 19.28 Mbit/s
95th percentile per-packet one-way delay: 109.969 ms
Loss rate: 0.14%

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-09-11 02:46:02

End at: 2018-09-11 02:46:32

Local clock offset: -7.375 ms

Remote clock offset: 2.851 ms

Below is generated by plot.py at 2018-09-11 04:37:45

Datalink statistics

-- Total of 3 flows:

Average throughput: 86.23 Mbit/s

95th percentile per-packet one-way delay: 121.278 ms

Loss rate: 29.53%

-- Flow 1:

Average throughput: 25.57 Mbit/s

95th percentile per-packet one-way delay: 250.917 ms

Loss rate: 46.33%

-- Flow 2:

Average throughput: 69.66 Mbit/s

95th percentile per-packet one-way delay: 120.638 ms

Loss rate: 17.52%

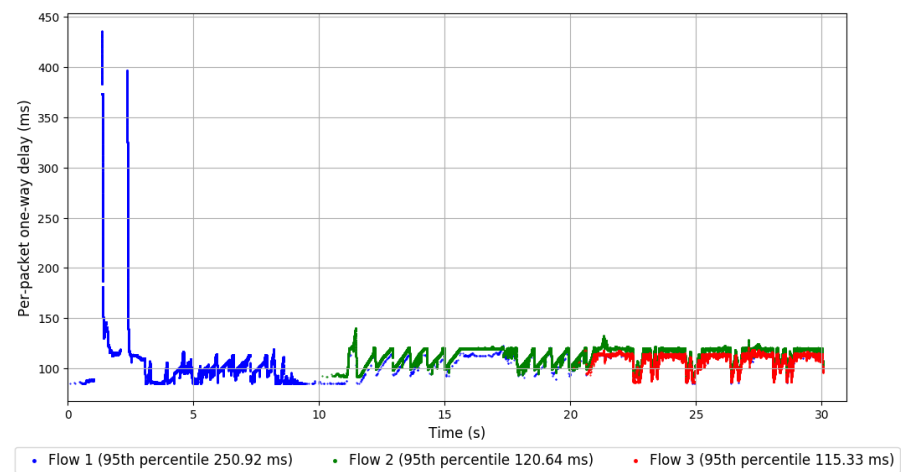
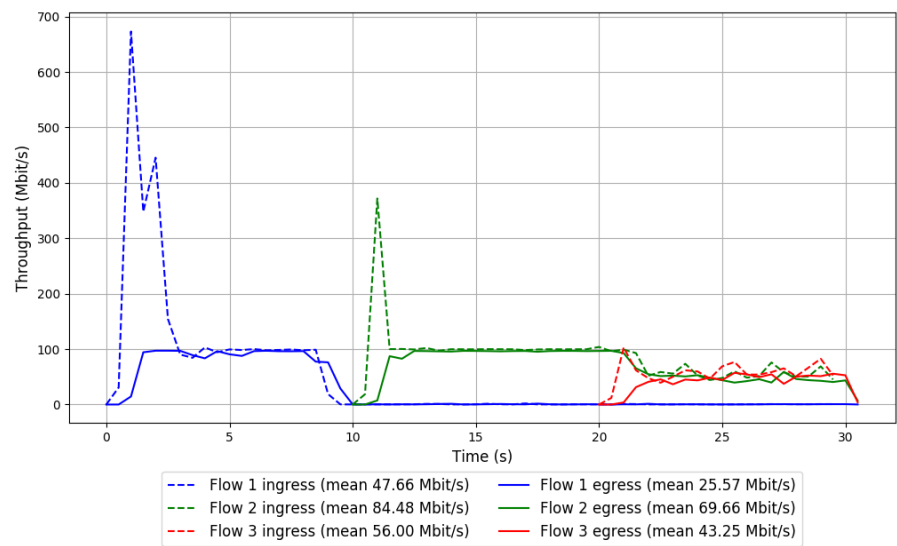
-- Flow 3:

Average throughput: 43.25 Mbit/s

95th percentile per-packet one-way delay: 115.325 ms

Loss rate: 22.80%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-09-11 03:09:03

End at: 2018-09-11 03:09:33

Local clock offset: -7.356 ms

Remote clock offset: 4.881 ms

Below is generated by plot.py at 2018-09-11 04:37:50

Datalink statistics

-- Total of 3 flows:

Average throughput: 91.81 Mbit/s

95th percentile per-packet one-way delay: 117.133 ms

Loss rate: 20.69%

-- Flow 1:

Average throughput: 59.87 Mbit/s

95th percentile per-packet one-way delay: 117.224 ms

Loss rate: 18.96%

-- Flow 2:

Average throughput: 26.12 Mbit/s

95th percentile per-packet one-way delay: 116.739 ms

Loss rate: 22.51%

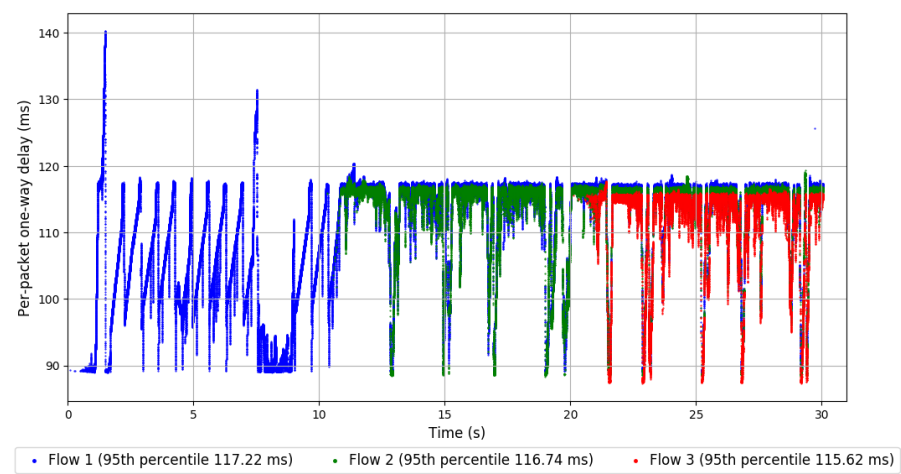
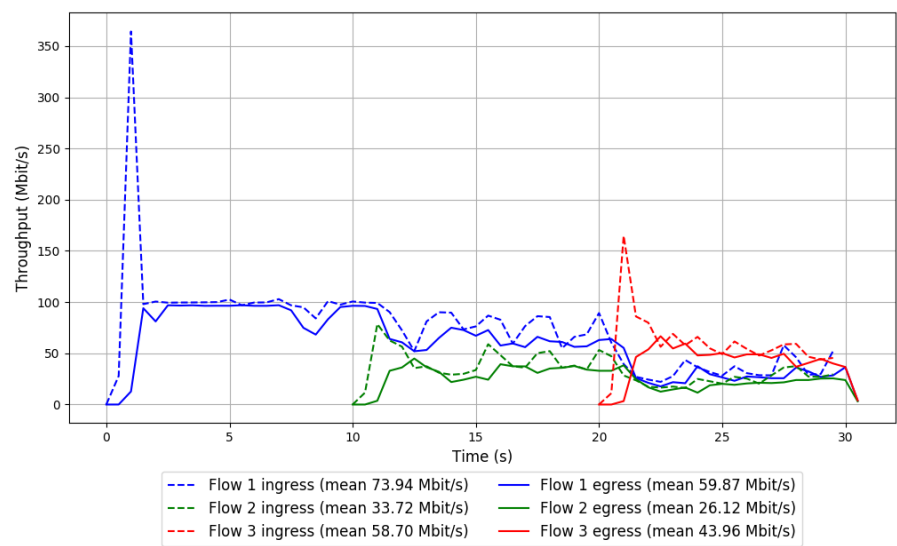
-- Flow 3:

Average throughput: 43.96 Mbit/s

95th percentile per-packet one-way delay: 115.625 ms

Loss rate: 25.12%

Run 2: Report of FillP — Data Link

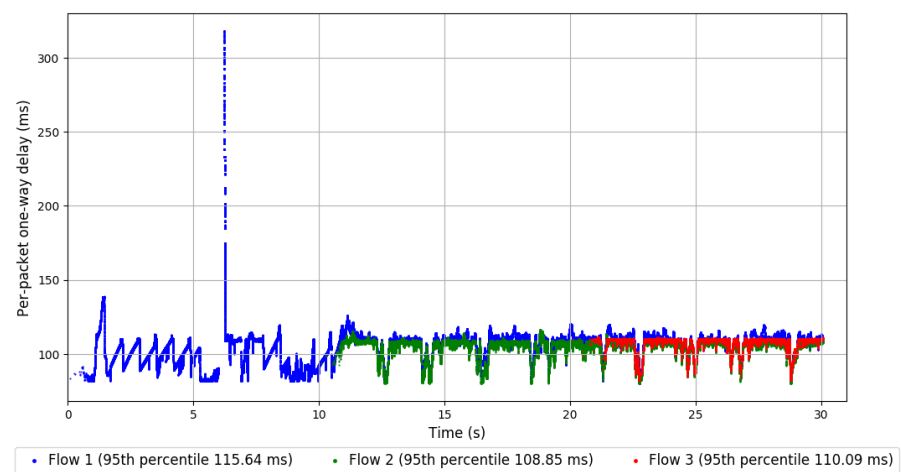
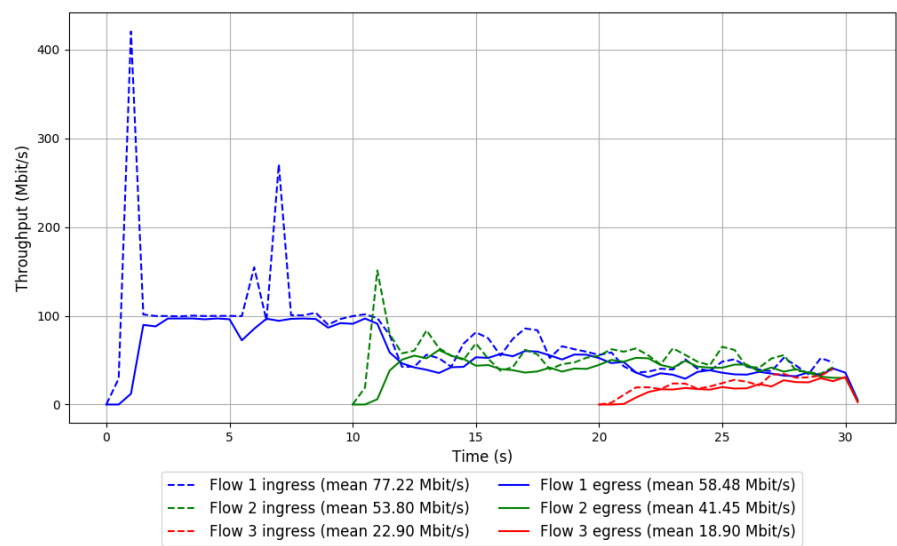


Run 3: Statistics of FillP

Start at: 2018-09-11 03:32:02
End at: 2018-09-11 03:32:32
Local clock offset: -7.417 ms
Remote clock offset: 0.79 ms

Below is generated by plot.py at 2018-09-11 04:37:51
Datalink statistics
-- Total of 3 flows:
Average throughput: 92.36 Mbit/s
95th percentile per-packet one-way delay: 113.759 ms
Loss rate: 23.39%
-- Flow 1:
Average throughput: 58.48 Mbit/s
95th percentile per-packet one-way delay: 115.643 ms
Loss rate: 24.20%
-- Flow 2:
Average throughput: 41.45 Mbit/s
95th percentile per-packet one-way delay: 108.846 ms
Loss rate: 22.90%
-- Flow 3:
Average throughput: 18.90 Mbit/s
95th percentile per-packet one-way delay: 110.087 ms
Loss rate: 17.45%

Run 3: Report of FillP — Data Link



Run 4: Statistics of FillP

Start at: 2018-09-11 03:54:49

End at: 2018-09-11 03:55:19

Local clock offset: -11.84 ms

Remote clock offset: 0.574 ms

Below is generated by plot.py at 2018-09-11 04:37:51

Datalink statistics

-- Total of 3 flows:

Average throughput: 91.67 Mbit/s

95th percentile per-packet one-way delay: 115.752 ms

Loss rate: 17.18%

-- Flow 1:

Average throughput: 64.95 Mbit/s

95th percentile per-packet one-way delay: 115.820 ms

Loss rate: 16.46%

-- Flow 2:

Average throughput: 33.95 Mbit/s

95th percentile per-packet one-way delay: 110.986 ms

Loss rate: 19.61%

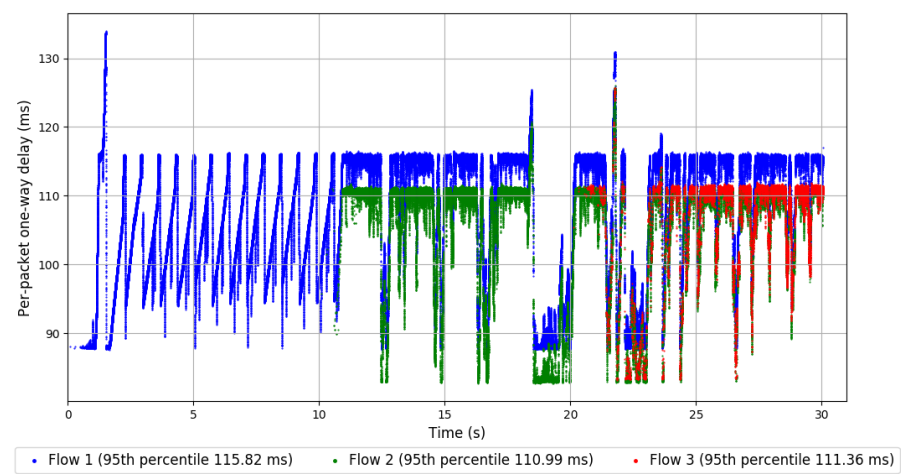
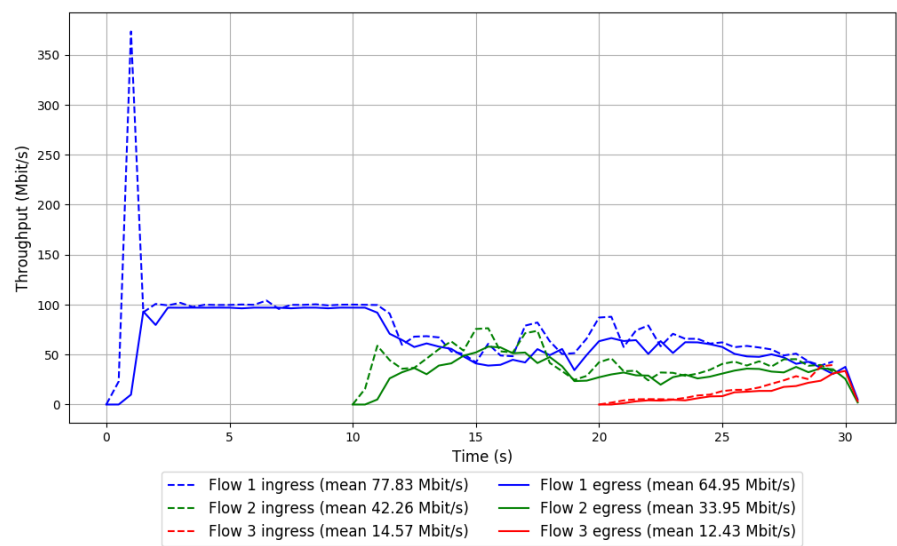
-- Flow 3:

Average throughput: 12.43 Mbit/s

95th percentile per-packet one-way delay: 111.360 ms

Loss rate: 14.66%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-09-11 04:17:50

End at: 2018-09-11 04:18:20

Local clock offset: -6.401 ms

Remote clock offset: 4.48 ms

Below is generated by plot.py at 2018-09-11 04:38:03

Datalink statistics

-- Total of 3 flows:

Average throughput: 93.00 Mbit/s

95th percentile per-packet one-way delay: 114.175 ms

Loss rate: 19.95%

-- Flow 1:

Average throughput: 55.20 Mbit/s

95th percentile per-packet one-way delay: 112.730 ms

Loss rate: 17.40%

-- Flow 2:

Average throughput: 46.03 Mbit/s

95th percentile per-packet one-way delay: 114.354 ms

Loss rate: 24.18%

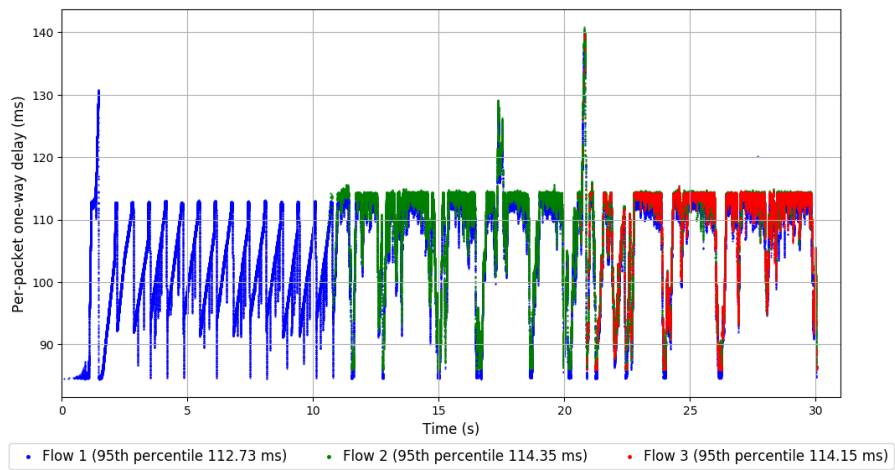
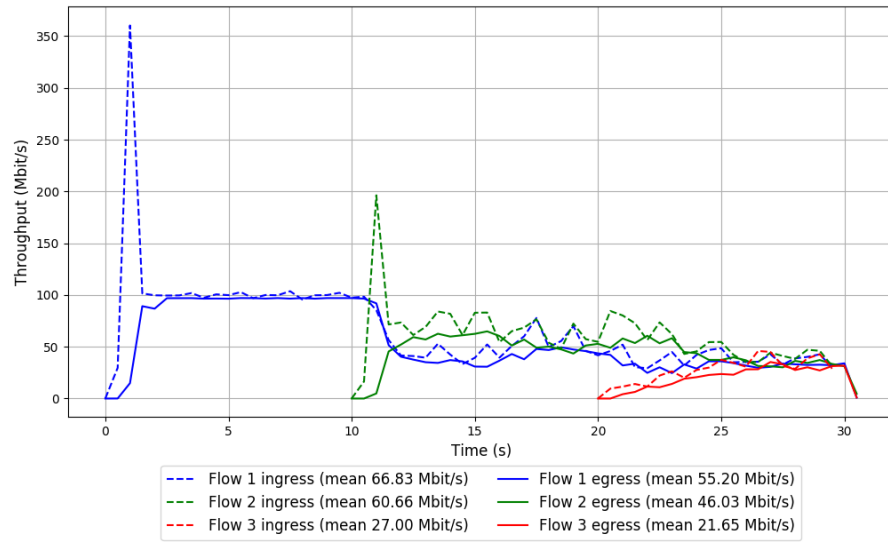
-- Flow 3:

Average throughput: 21.65 Mbit/s

95th percentile per-packet one-way delay: 114.153 ms

Loss rate: 19.93%

Run 5: Report of FillP — Data Link

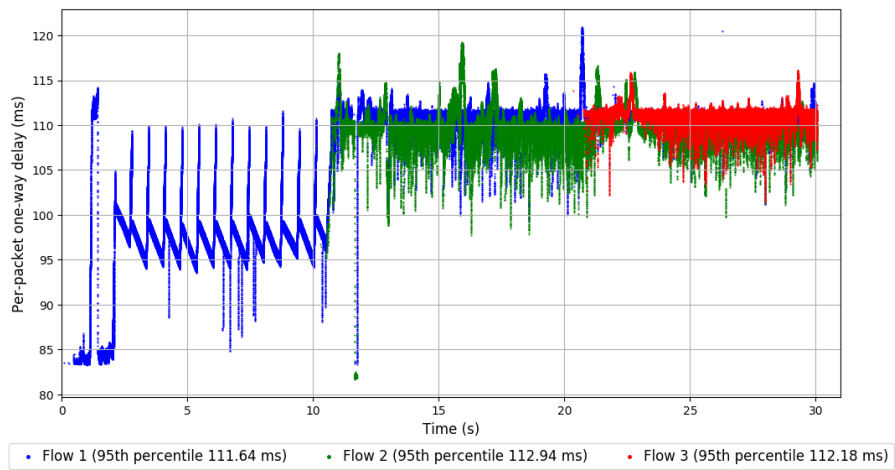
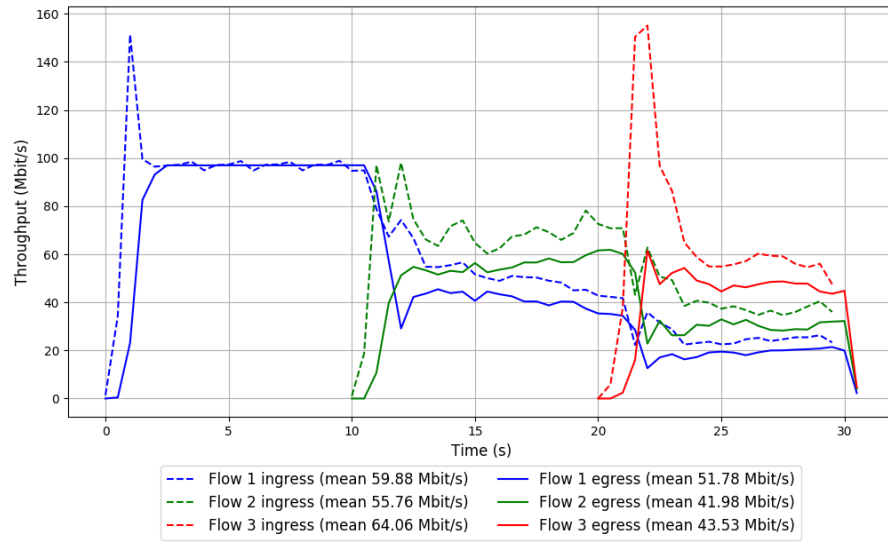


Run 1: Statistics of FillP-Sheep

Start at: 2018-09-11 02:53:34
End at: 2018-09-11 02:54:04
Local clock offset: -8.211 ms
Remote clock offset: -0.312 ms

Below is generated by plot.py at 2018-09-11 04:38:12
Datalink statistics
-- Total of 3 flows:
Average throughput: 93.82 Mbit/s
95th percentile per-packet one-way delay: 112.042 ms
Loss rate: 20.57%
-- Flow 1:
Average throughput: 51.78 Mbit/s
95th percentile per-packet one-way delay: 111.637 ms
Loss rate: 13.45%
-- Flow 2:
Average throughput: 41.98 Mbit/s
95th percentile per-packet one-way delay: 112.940 ms
Loss rate: 24.70%
-- Flow 3:
Average throughput: 43.53 Mbit/s
95th percentile per-packet one-way delay: 112.182 ms
Loss rate: 33.45%

Run 1: Report of FillP-Sheep — Data Link



Run 2: Statistics of FillP-Sheep

Start at: 2018-09-11 03:16:55

End at: 2018-09-11 03:17:25

Local clock offset: -6.893 ms

Remote clock offset: 4.896 ms

Below is generated by plot.py at 2018-09-11 04:38:21

Datalink statistics

-- Total of 3 flows:

Average throughput: 93.35 Mbit/s

95th percentile per-packet one-way delay: 114.978 ms

Loss rate: 21.65%

-- Flow 1:

Average throughput: 57.26 Mbit/s

95th percentile per-packet one-way delay: 114.901 ms

Loss rate: 16.25%

-- Flow 2:

Average throughput: 37.20 Mbit/s

95th percentile per-packet one-way delay: 115.235 ms

Loss rate: 28.35%

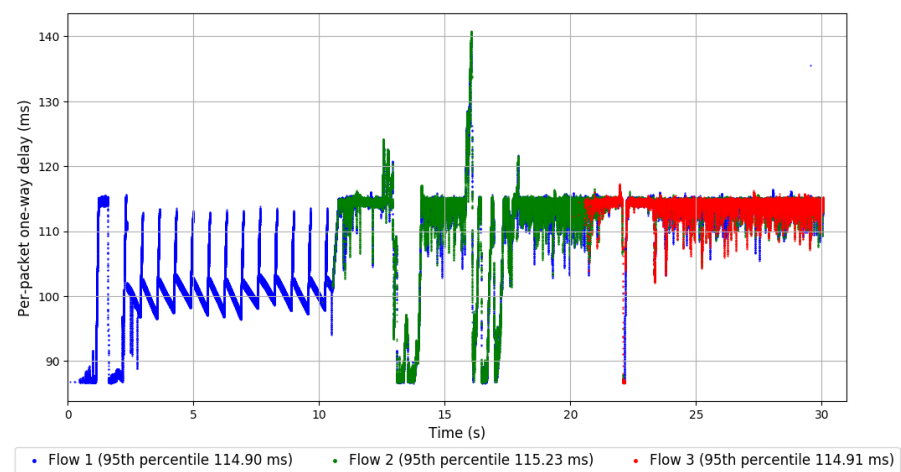
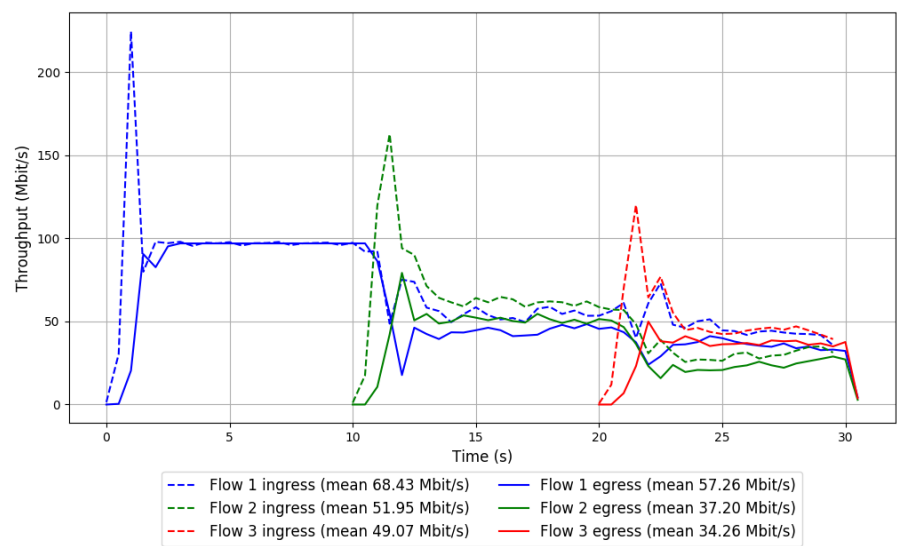
-- Flow 3:

Average throughput: 34.26 Mbit/s

95th percentile per-packet one-way delay: 114.907 ms

Loss rate: 30.17%

Run 2: Report of FillP-Sheep — Data Link



Run 3: Statistics of FillP-Sheep

Start at: 2018-09-11 03:39:37

End at: 2018-09-11 03:40:07

Local clock offset: -9.543 ms

Remote clock offset: 0.441 ms

Below is generated by plot.py at 2018-09-11 04:38:59

Datalink statistics

-- Total of 3 flows:

Average throughput: 94.05 Mbit/s

95th percentile per-packet one-way delay: 109.957 ms

Loss rate: 21.41%

-- Flow 1:

Average throughput: 55.07 Mbit/s

95th percentile per-packet one-way delay: 108.616 ms

Loss rate: 14.28%

-- Flow 2:

Average throughput: 42.07 Mbit/s

95th percentile per-packet one-way delay: 110.144 ms

Loss rate: 30.43%

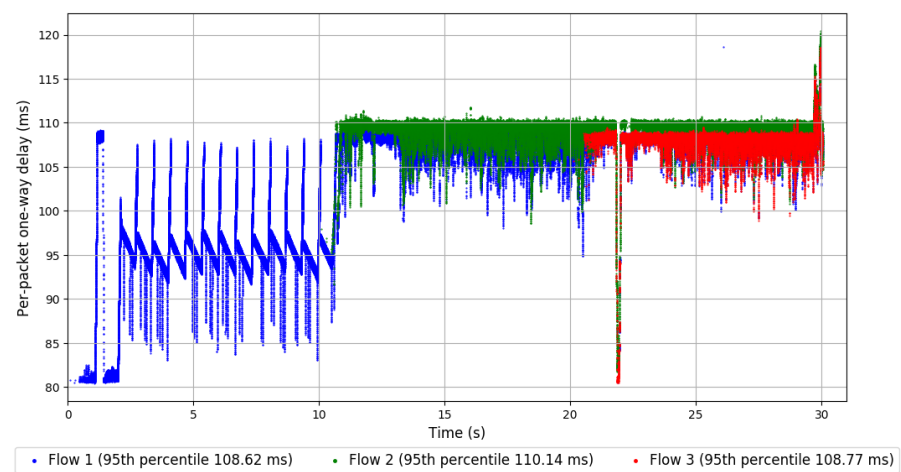
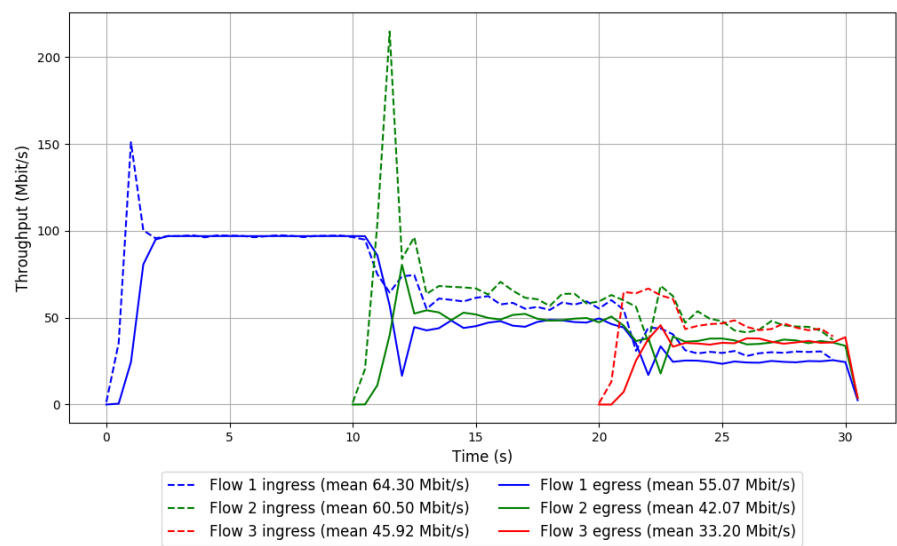
-- Flow 3:

Average throughput: 33.20 Mbit/s

95th percentile per-packet one-way delay: 108.768 ms

Loss rate: 27.70%

Run 3: Report of FillP-Sheep — Data Link



Run 4: Statistics of FillP-Sheep

Start at: 2018-09-11 04:02:26

End at: 2018-09-11 04:02:56

Local clock offset: -9.338 ms

Remote clock offset: 0.994 ms

Below is generated by plot.py at 2018-09-11 04:39:25

Datalink statistics

-- Total of 3 flows:

Average throughput: 94.01 Mbit/s

95th percentile per-packet one-way delay: 111.854 ms

Loss rate: 21.53%

-- Flow 1:

Average throughput: 55.14 Mbit/s

95th percentile per-packet one-way delay: 111.967 ms

Loss rate: 14.96%

-- Flow 2:

Average throughput: 42.19 Mbit/s

95th percentile per-packet one-way delay: 110.677 ms

Loss rate: 28.95%

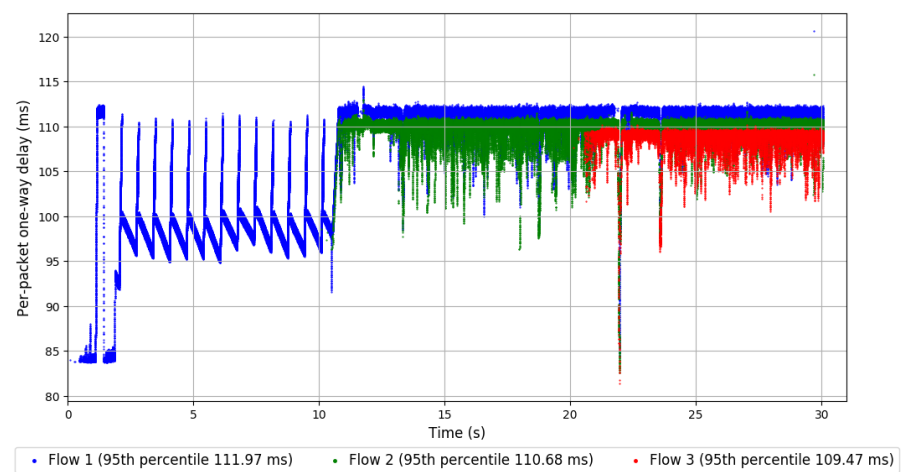
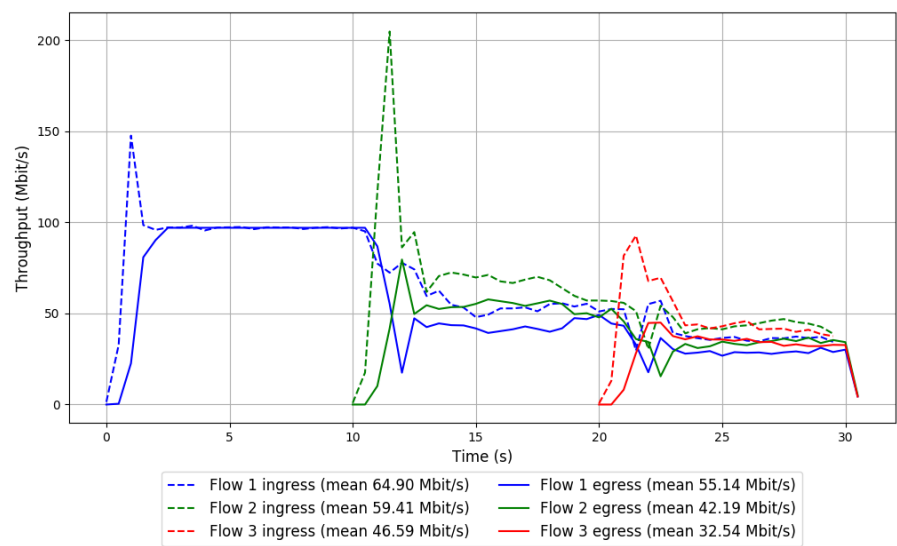
-- Flow 3:

Average throughput: 32.54 Mbit/s

95th percentile per-packet one-way delay: 109.475 ms

Loss rate: 30.14%

Run 4: Report of FillP-Sheep — Data Link



Run 5: Statistics of FillP-Sheep

Start at: 2018-09-11 04:25:32

End at: 2018-09-11 04:26:02

Local clock offset: -6.695 ms

Remote clock offset: 0.701 ms

Below is generated by plot.py at 2018-09-11 04:39:27

Datalink statistics

-- Total of 3 flows:

Average throughput: 93.78 Mbit/s

95th percentile per-packet one-way delay: 111.405 ms

Loss rate: 20.39%

-- Flow 1:

Average throughput: 57.85 Mbit/s

95th percentile per-packet one-way delay: 110.186 ms

Loss rate: 15.37%

-- Flow 2:

Average throughput: 37.36 Mbit/s

95th percentile per-packet one-way delay: 111.608 ms

Loss rate: 26.70%

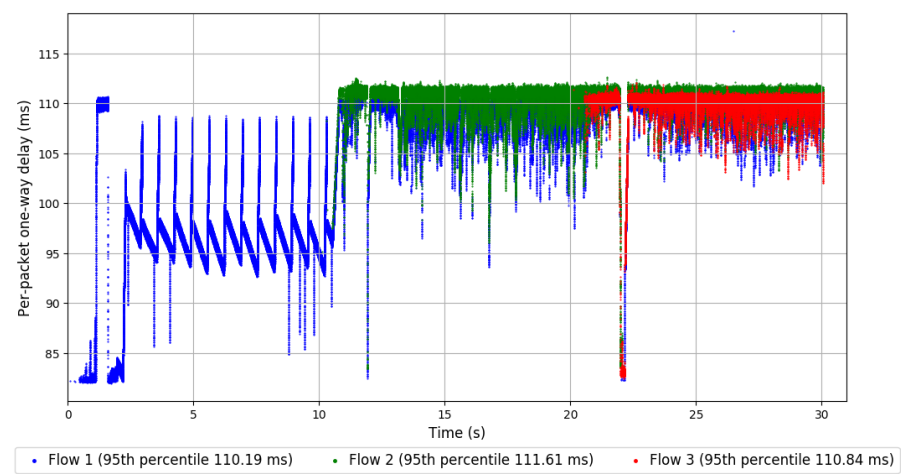
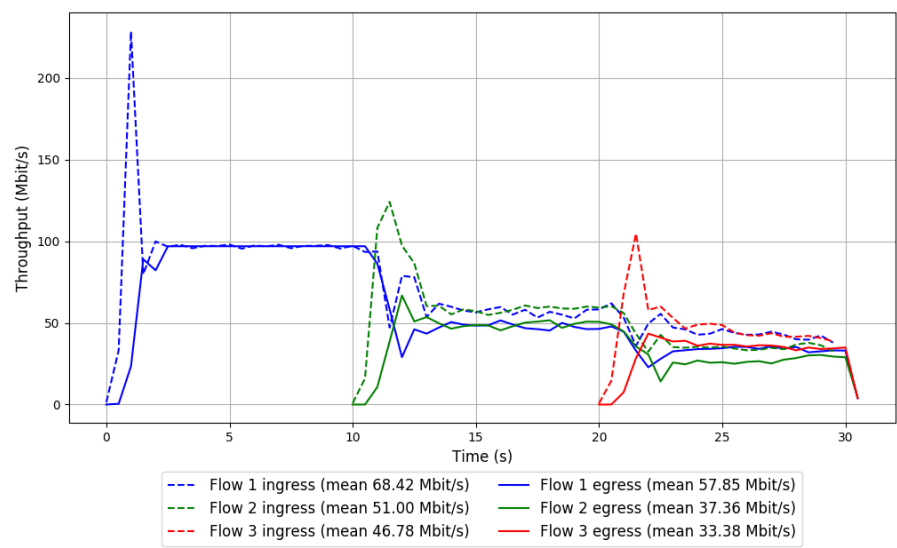
-- Flow 3:

Average throughput: 33.38 Mbit/s

95th percentile per-packet one-way delay: 110.839 ms

Loss rate: 28.66%

Run 5: Report of FillP-Sheep — Data Link

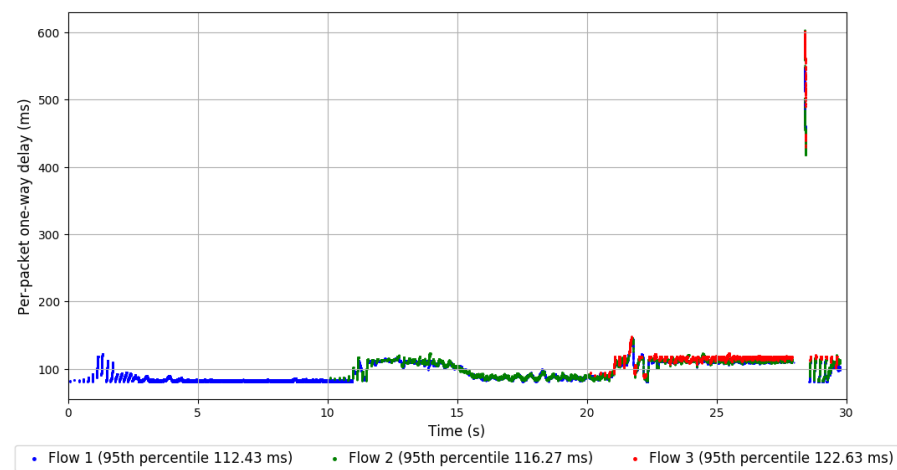
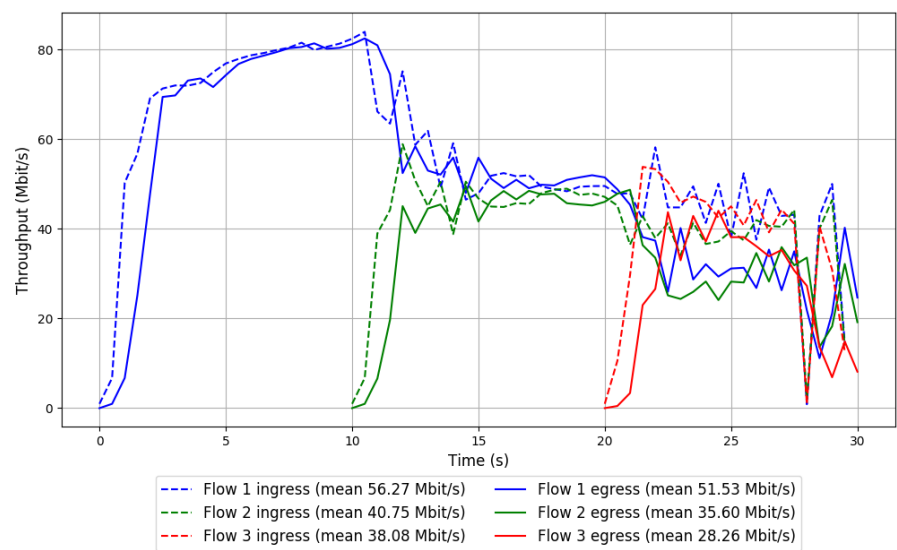


Run 1: Statistics of Indigo

Start at: 2018-09-11 02:49:49
End at: 2018-09-11 02:50:19
Local clock offset: -7.428 ms
Remote clock offset: -0.593 ms

Below is generated by plot.py at 2018-09-11 04:39:27
Datalink statistics
-- Total of 3 flows:
Average throughput: 84.16 Mbit/s
95th percentile per-packet one-way delay: 117.642 ms
Loss rate: 11.75%
-- Flow 1:
Average throughput: 51.53 Mbit/s
95th percentile per-packet one-way delay: 112.426 ms
Loss rate: 8.37%
-- Flow 2:
Average throughput: 35.60 Mbit/s
95th percentile per-packet one-way delay: 116.268 ms
Loss rate: 12.58%
-- Flow 3:
Average throughput: 28.26 Mbit/s
95th percentile per-packet one-way delay: 122.627 ms
Loss rate: 25.59%

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-09-11 03:13:03

End at: 2018-09-11 03:13:33

Local clock offset: -7.139 ms

Remote clock offset: 5.101 ms

Below is generated by plot.py at 2018-09-11 04:39:27

Datalink statistics

-- Total of 3 flows:

Average throughput: 87.60 Mbit/s

95th percentile per-packet one-way delay: 123.545 ms

Loss rate: 12.26%

-- Flow 1:

Average throughput: 54.93 Mbit/s

95th percentile per-packet one-way delay: 117.415 ms

Loss rate: 7.22%

-- Flow 2:

Average throughput: 35.66 Mbit/s

95th percentile per-packet one-way delay: 124.206 ms

Loss rate: 15.00%

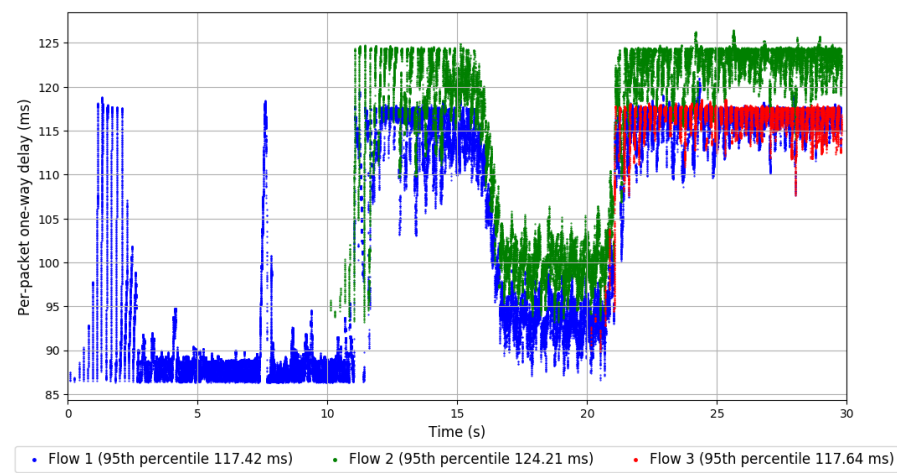
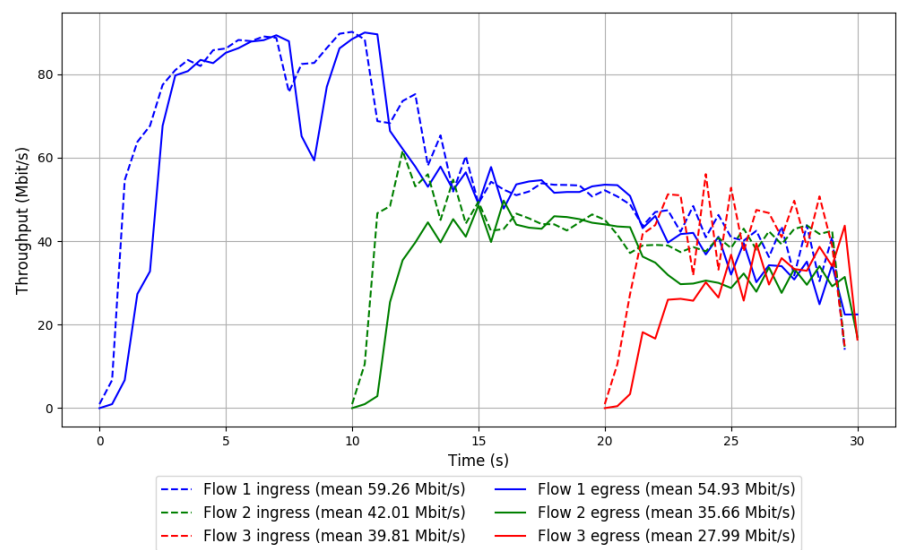
-- Flow 3:

Average throughput: 27.99 Mbit/s

95th percentile per-packet one-way delay: 117.637 ms

Loss rate: 29.50%

Run 2: Report of Indigo — Data Link

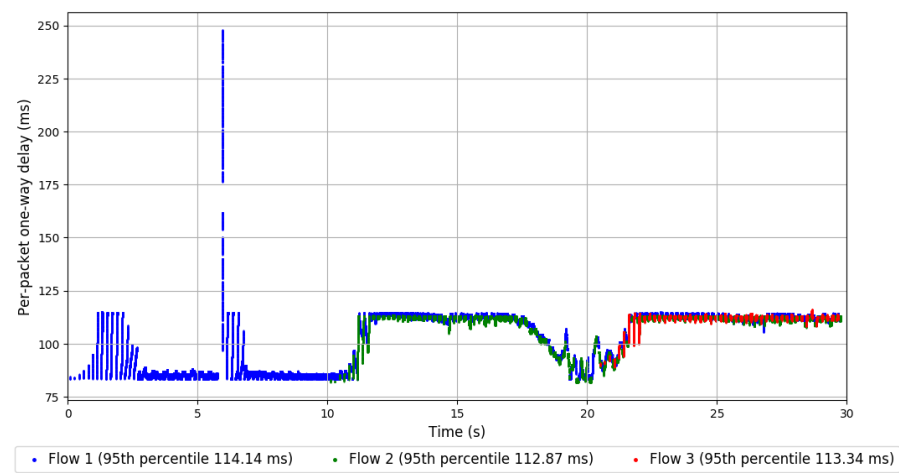
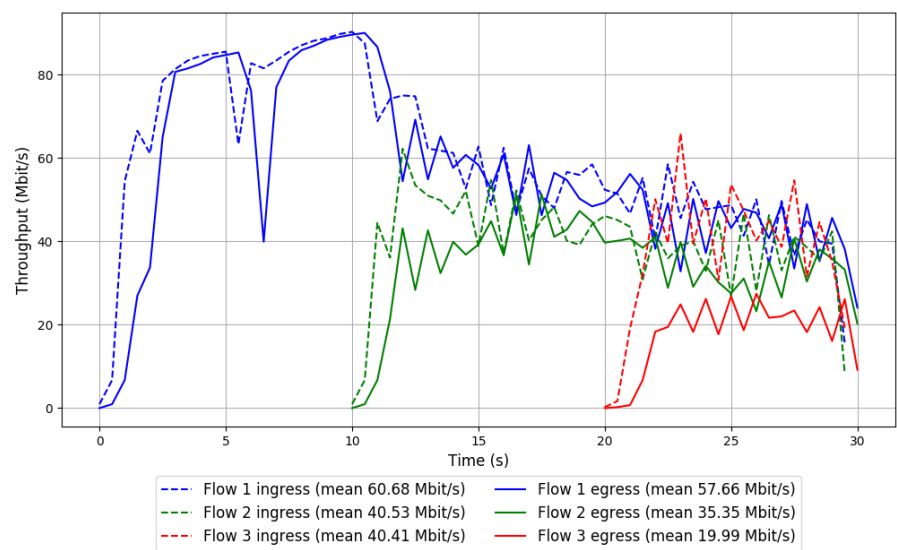


Run 3: Statistics of Indigo

Start at: 2018-09-11 03:35:51
End at: 2018-09-11 03:36:21
Local clock offset: -9.415 ms
Remote clock offset: 0.957 ms

```
# Below is generated by plot.py at 2018-09-11 04:39:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.17 Mbit/s
95th percentile per-packet one-way delay: 114.112 ms
Loss rate: 12.65%
-- Flow 1:
Average throughput: 57.66 Mbit/s
95th percentile per-packet one-way delay: 114.141 ms
Loss rate: 4.89%
-- Flow 2:
Average throughput: 35.35 Mbit/s
95th percentile per-packet one-way delay: 112.869 ms
Loss rate: 12.64%
-- Flow 3:
Average throughput: 19.99 Mbit/s
95th percentile per-packet one-way delay: 113.343 ms
Loss rate: 50.40%
```

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-09-11 03:58:38

End at: 2018-09-11 03:59:08

Local clock offset: -11.9 ms

Remote clock offset: 3.936 ms

Below is generated by plot.py at 2018-09-11 04:39:27

Datalink statistics

-- Total of 3 flows:

Average throughput: 89.21 Mbit/s

95th percentile per-packet one-way delay: 116.161 ms

Loss rate: 5.46%

-- Flow 1:

Average throughput: 58.00 Mbit/s

95th percentile per-packet one-way delay: 116.118 ms

Loss rate: 4.16%

-- Flow 2:

Average throughput: 37.21 Mbit/s

95th percentile per-packet one-way delay: 116.285 ms

Loss rate: 7.17%

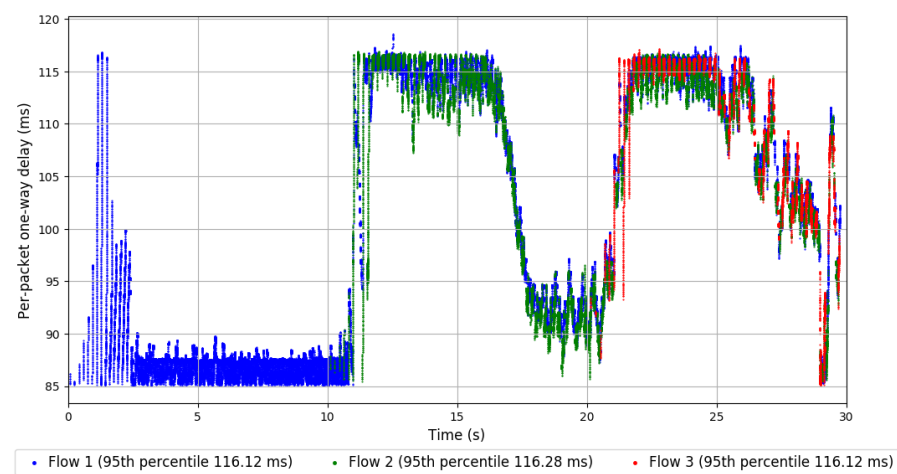
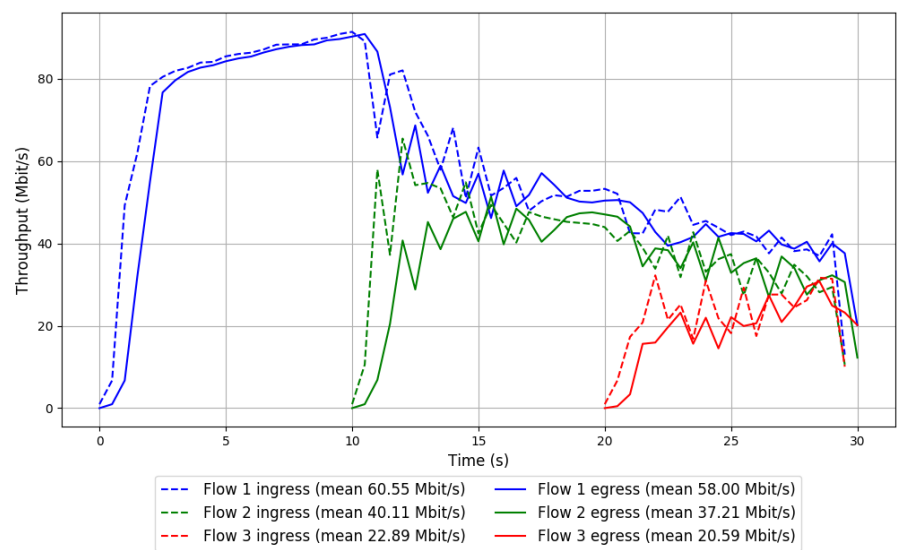
-- Flow 3:

Average throughput: 20.59 Mbit/s

95th percentile per-packet one-way delay: 116.124 ms

Loss rate: 9.99%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-09-11 04:21:43

End at: 2018-09-11 04:22:13

Local clock offset: -6.869 ms

Remote clock offset: 4.829 ms

Below is generated by plot.py at 2018-09-11 04:39:41

Datalink statistics

-- Total of 3 flows:

Average throughput: 91.87 Mbit/s

95th percentile per-packet one-way delay: 118.143 ms

Loss rate: 20.53%

-- Flow 1:

Average throughput: 61.47 Mbit/s

95th percentile per-packet one-way delay: 116.882 ms

Loss rate: 14.32%

-- Flow 2:

Average throughput: 30.19 Mbit/s

95th percentile per-packet one-way delay: 117.361 ms

Loss rate: 18.99%

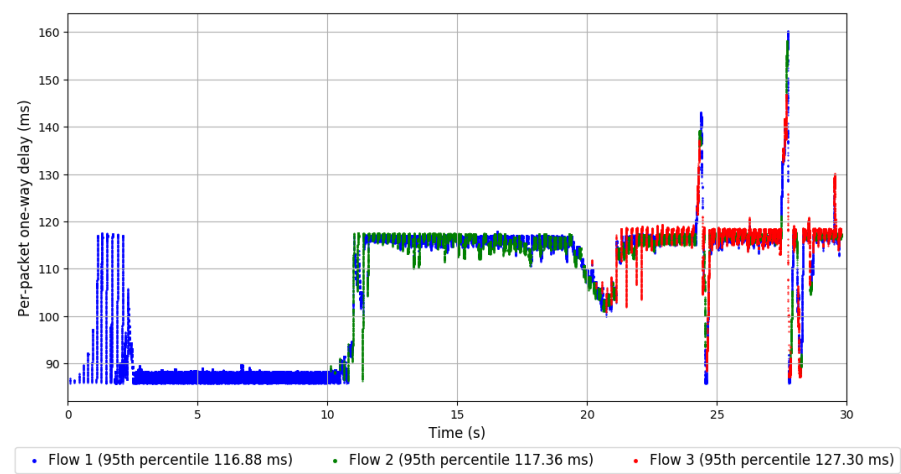
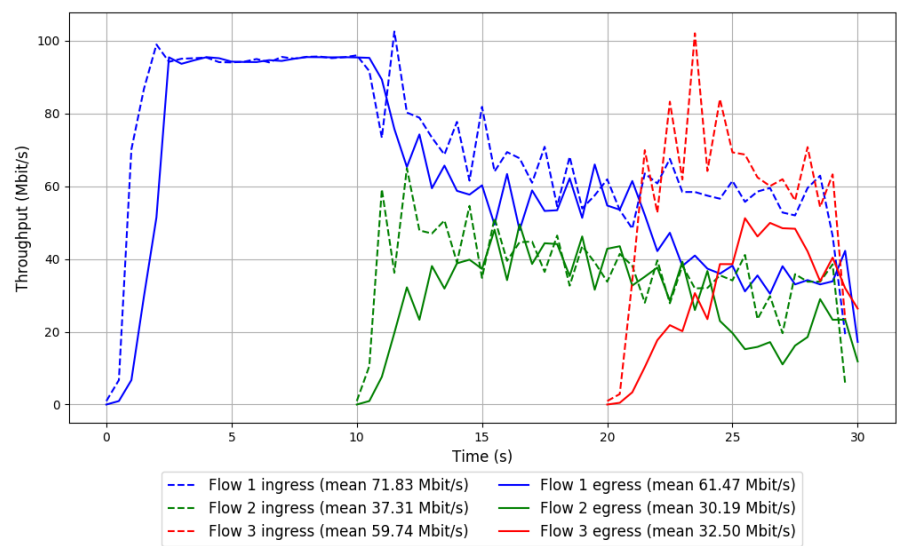
-- Flow 3:

Average throughput: 32.50 Mbit/s

95th percentile per-packet one-way delay: 127.302 ms

Loss rate: 45.56%

Run 5: Report of Indigo — Data Link

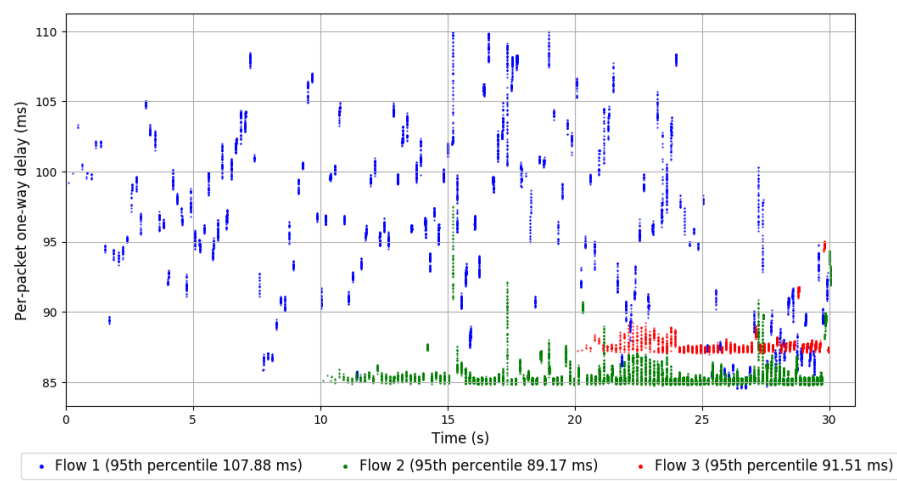
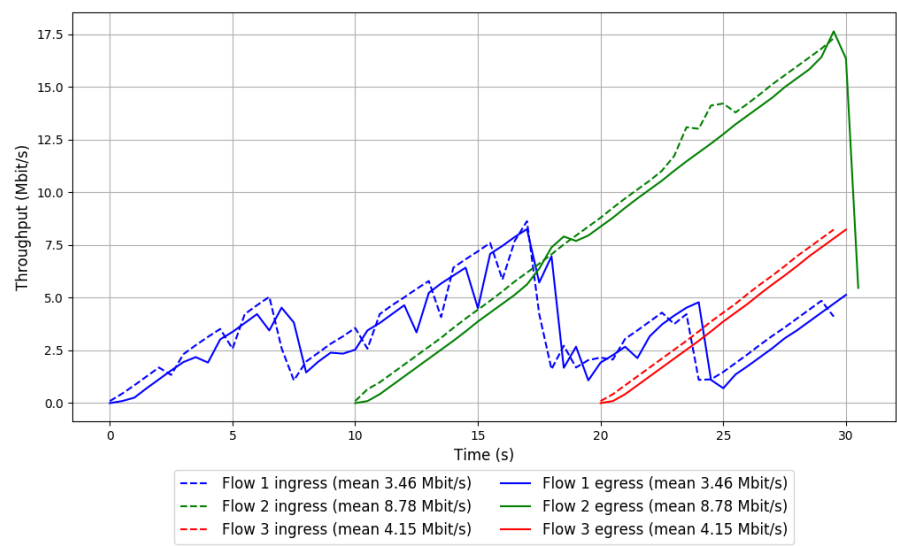


```
Run 1: Statistics of LEDBAT

Start at: 2018-09-11 02:57:23
End at: 2018-09-11 02:57:53
Local clock offset: -7.401 ms
Remote clock offset: 3.582 ms

# Below is generated by plot.py at 2018-09-11 04:39:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.66 Mbit/s
95th percentile per-packet one-way delay: 103.705 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 3.46 Mbit/s
95th percentile per-packet one-way delay: 107.881 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 8.78 Mbit/s
95th percentile per-packet one-way delay: 89.169 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 4.15 Mbit/s
95th percentile per-packet one-way delay: 91.510 ms
Loss rate: 0.00%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-09-11 03:20:44

End at: 2018-09-11 03:21:14

Local clock offset: -6.01 ms

Remote clock offset: 4.656 ms

Below is generated by plot.py at 2018-09-11 04:39:41

Datalink statistics

-- Total of 3 flows:

Average throughput: 10.92 Mbit/s

95th percentile per-packet one-way delay: 90.055 ms

Loss rate: 0.23%

-- Flow 1:

Average throughput: 7.95 Mbit/s

95th percentile per-packet one-way delay: 89.908 ms

Loss rate: 0.15%

-- Flow 2:

Average throughput: 4.06 Mbit/s

95th percentile per-packet one-way delay: 89.222 ms

Loss rate: 0.20%

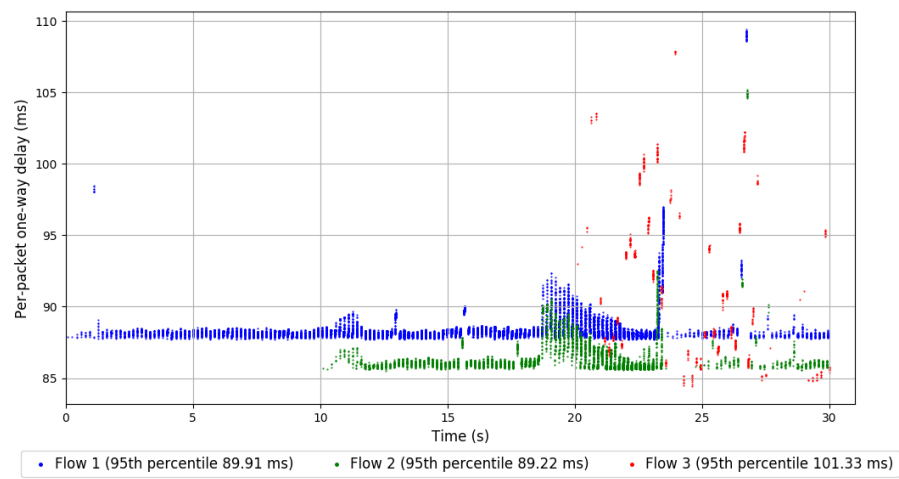
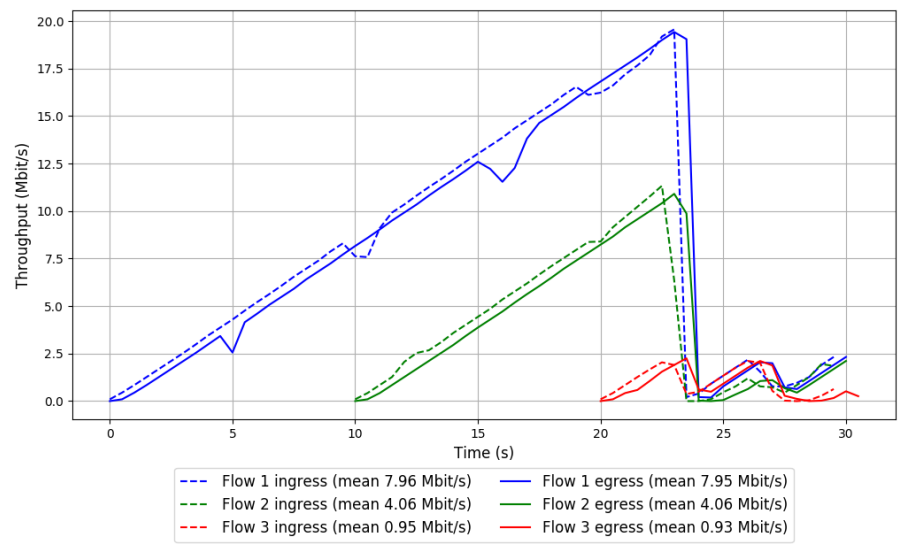
-- Flow 3:

Average throughput: 0.93 Mbit/s

95th percentile per-packet one-way delay: 101.334 ms

Loss rate: 2.38%

Run 2: Report of LEDBAT — Data Link

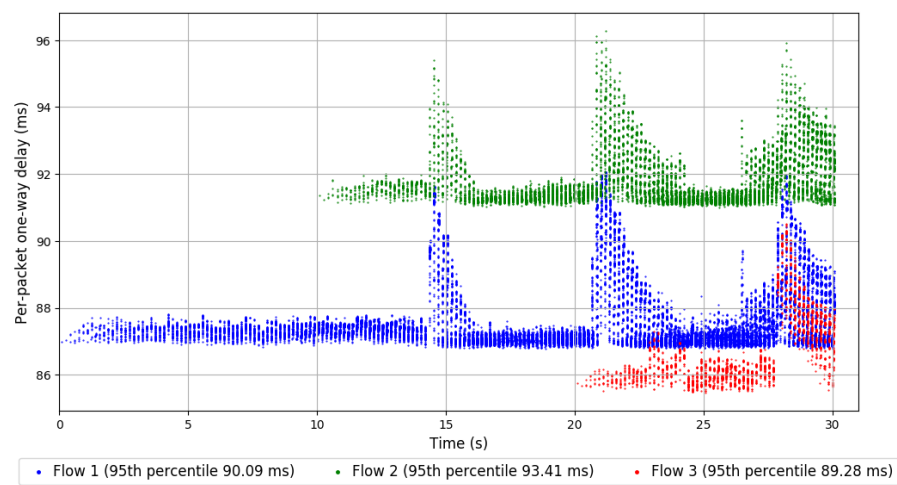
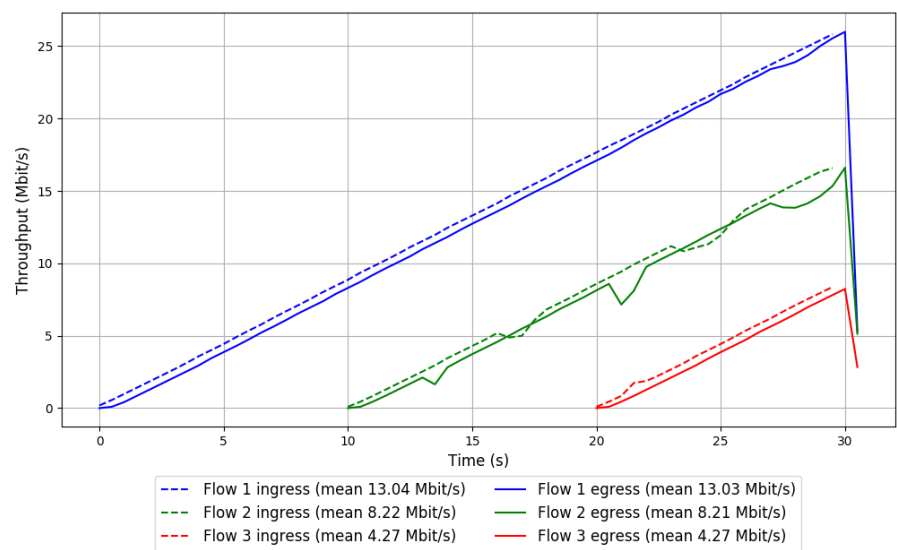


Run 3: Statistics of LEDBAT

Start at: 2018-09-11 03:43:25
End at: 2018-09-11 03:43:55
Local clock offset: -10.855 ms
Remote clock offset: 4.38 ms

Below is generated by plot.py at 2018-09-11 04:39:41
Datalink statistics
-- Total of 3 flows:
Average throughput: 19.92 Mbit/s
95th percentile per-packet one-way delay: 92.457 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 13.03 Mbit/s
95th percentile per-packet one-way delay: 90.087 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 8.21 Mbit/s
95th percentile per-packet one-way delay: 93.406 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 4.27 Mbit/s
95th percentile per-packet one-way delay: 89.280 ms
Loss rate: 0.00%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2018-09-11 04:06:25

End at: 2018-09-11 04:06:55

Local clock offset: -8.153 ms

Remote clock offset: 4.745 ms

Below is generated by plot.py at 2018-09-11 04:39:41

Datalink statistics

-- Total of 3 flows:

Average throughput: 20.44 Mbit/s

95th percentile per-packet one-way delay: 87.661 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 13.32 Mbit/s

95th percentile per-packet one-way delay: 87.129 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 8.69 Mbit/s

95th percentile per-packet one-way delay: 85.892 ms

Loss rate: 0.00%

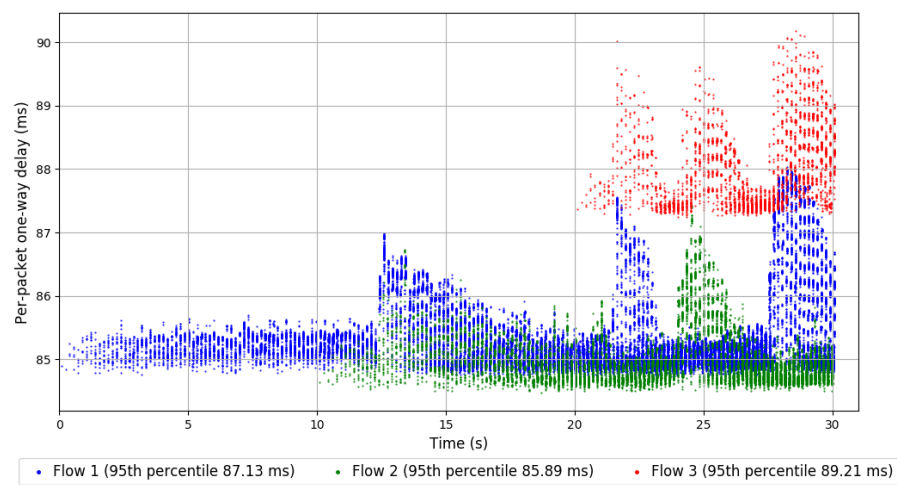
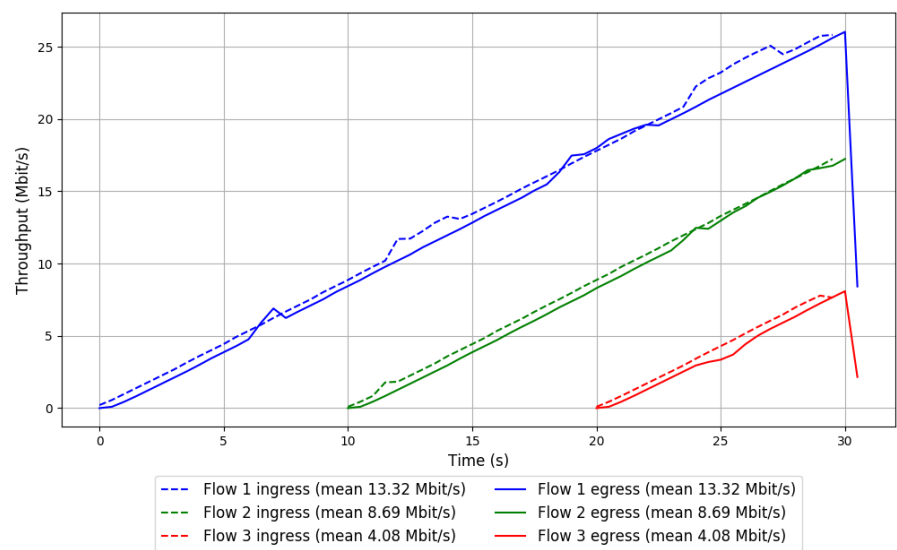
-- Flow 3:

Average throughput: 4.08 Mbit/s

95th percentile per-packet one-way delay: 89.212 ms

Loss rate: 0.03%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-09-11 04:29:31

End at: 2018-09-11 04:30:01

Local clock offset: -6.005 ms

Remote clock offset: 4.037 ms

Below is generated by plot.py at 2018-09-11 04:39:41

Datalink statistics

-- Total of 3 flows:

Average throughput: 20.27 Mbit/s

95th percentile per-packet one-way delay: 86.508 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 13.08 Mbit/s

95th percentile per-packet one-way delay: 86.529 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 8.70 Mbit/s

95th percentile per-packet one-way delay: 85.868 ms

Loss rate: 0.00%

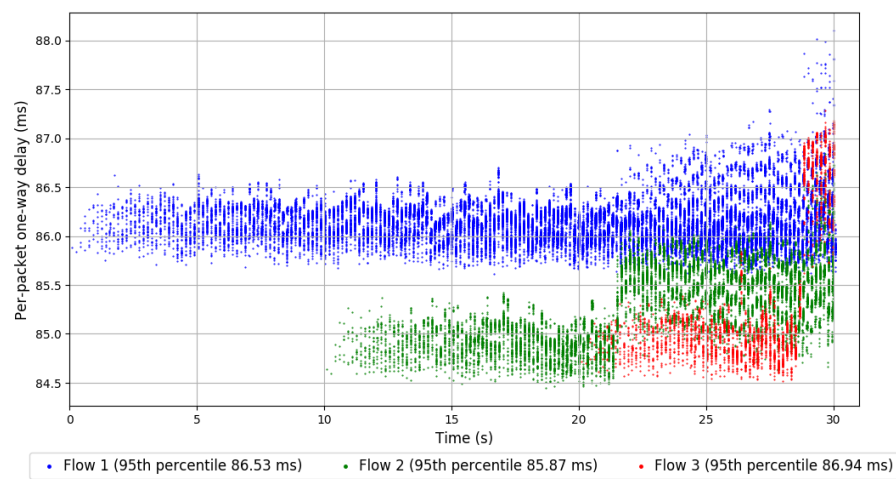
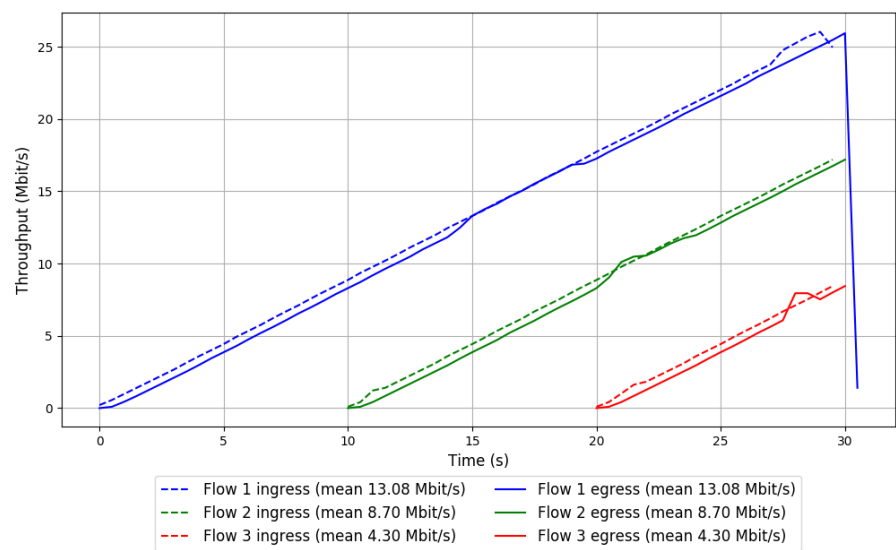
-- Flow 3:

Average throughput: 4.30 Mbit/s

95th percentile per-packet one-way delay: 86.936 ms

Loss rate: 0.00%

Run 5: Report of LEDBAT — Data Link



Run 1: Statistics of Indigo-Muses

Start at: 2018-09-11 03:01:08

End at: 2018-09-11 03:01:38

Local clock offset: -7.863 ms

Remote clock offset: 3.957 ms

Below is generated by plot.py at 2018-09-11 04:40:20

Datalink statistics

-- Total of 3 flows:

Average throughput: 87.79 Mbit/s

95th percentile per-packet one-way delay: 114.849 ms

Loss rate: 1.97%

-- Flow 1:

Average throughput: 70.89 Mbit/s

95th percentile per-packet one-way delay: 114.834 ms

Loss rate: 2.10%

-- Flow 2:

Average throughput: 18.63 Mbit/s

95th percentile per-packet one-way delay: 116.219 ms

Loss rate: 1.68%

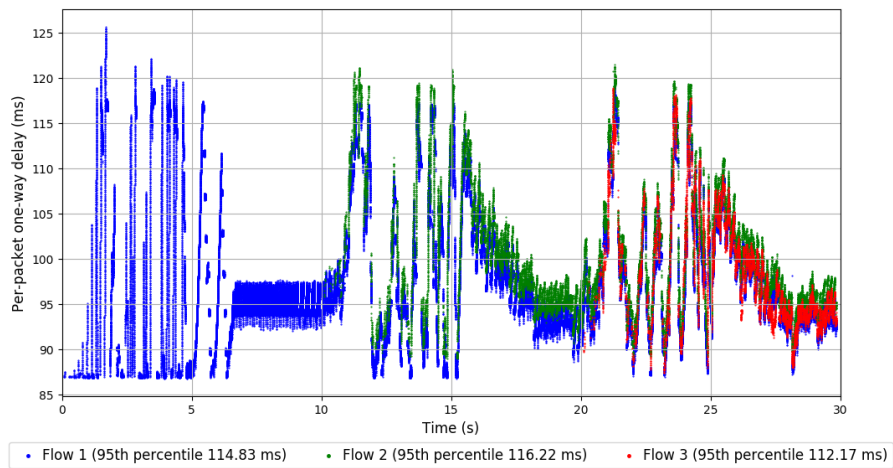
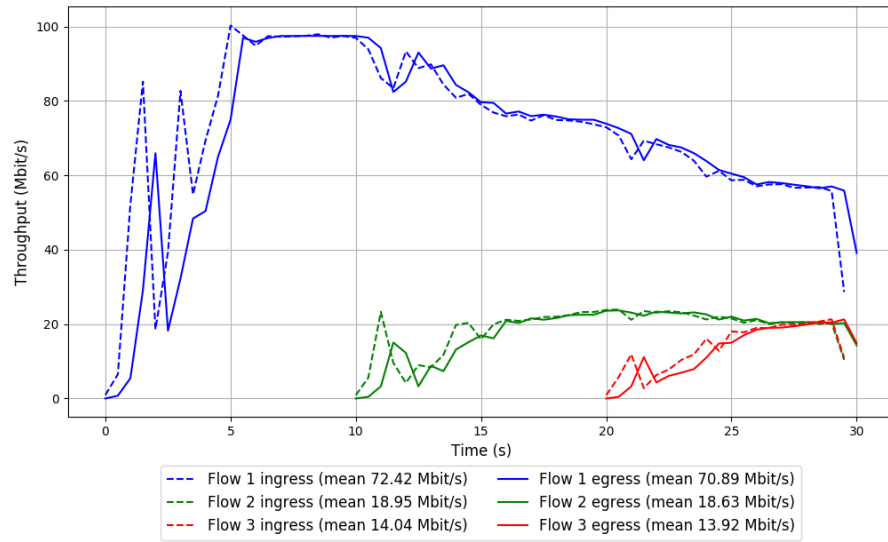
-- Flow 3:

Average throughput: 13.92 Mbit/s

95th percentile per-packet one-way delay: 112.175 ms

Loss rate: 0.84%

Run 1: Report of Indigo-Muses — Data Link



Run 2: Statistics of Indigo-Muses

Start at: 2018-09-11 03:24:29

End at: 2018-09-11 03:24:59

Local clock offset: -6.535 ms

Remote clock offset: 1.255 ms

Below is generated by plot.py at 2018-09-11 04:40:26

Datalink statistics

-- Total of 3 flows:

Average throughput: 88.55 Mbit/s

95th percentile per-packet one-way delay: 110.365 ms

Loss rate: 2.05%

-- Flow 1:

Average throughput: 68.62 Mbit/s

95th percentile per-packet one-way delay: 110.331 ms

Loss rate: 2.46%

-- Flow 2:

Average throughput: 23.43 Mbit/s

95th percentile per-packet one-way delay: 108.734 ms

Loss rate: 0.79%

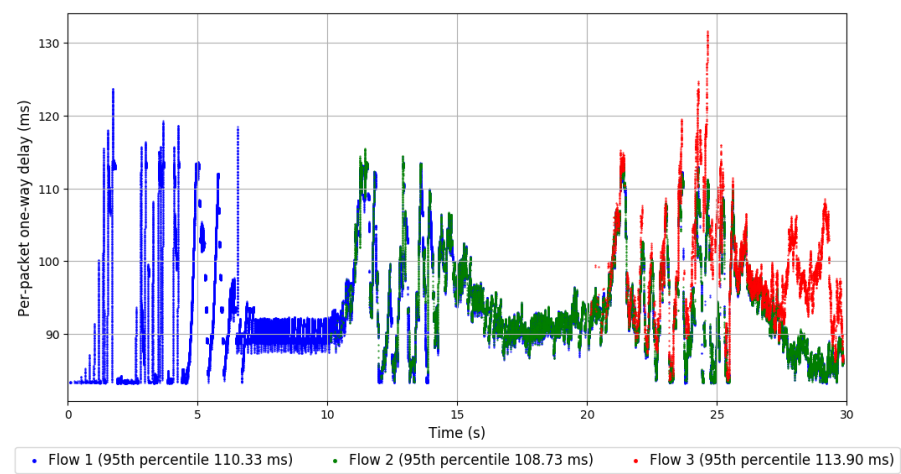
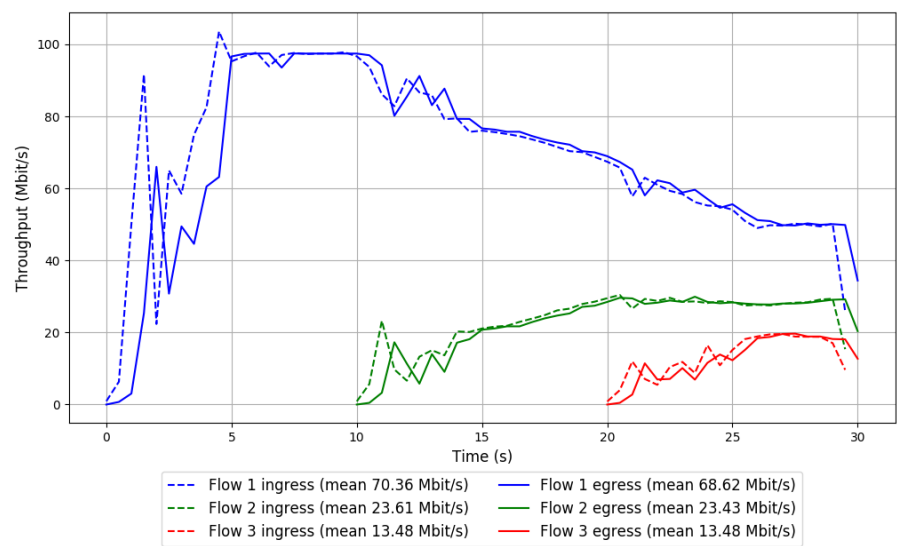
-- Flow 3:

Average throughput: 13.48 Mbit/s

95th percentile per-packet one-way delay: 113.903 ms

Loss rate: 0.12%

Run 2: Report of Indigo-Muses — Data Link

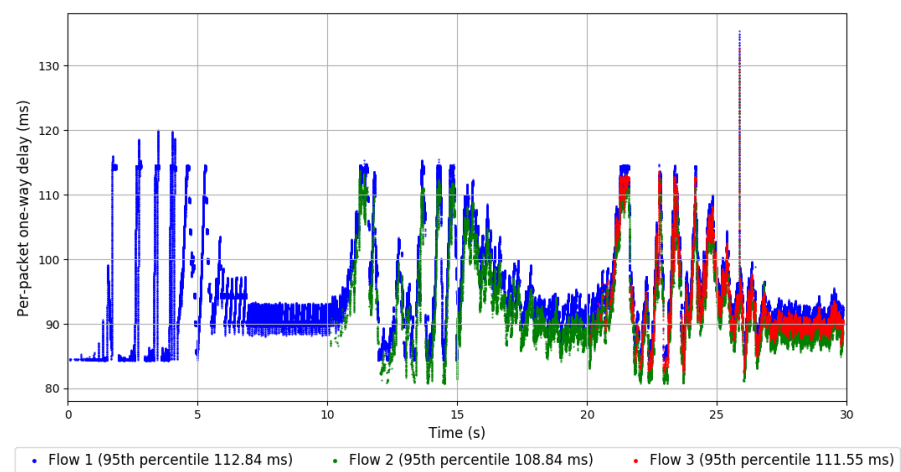
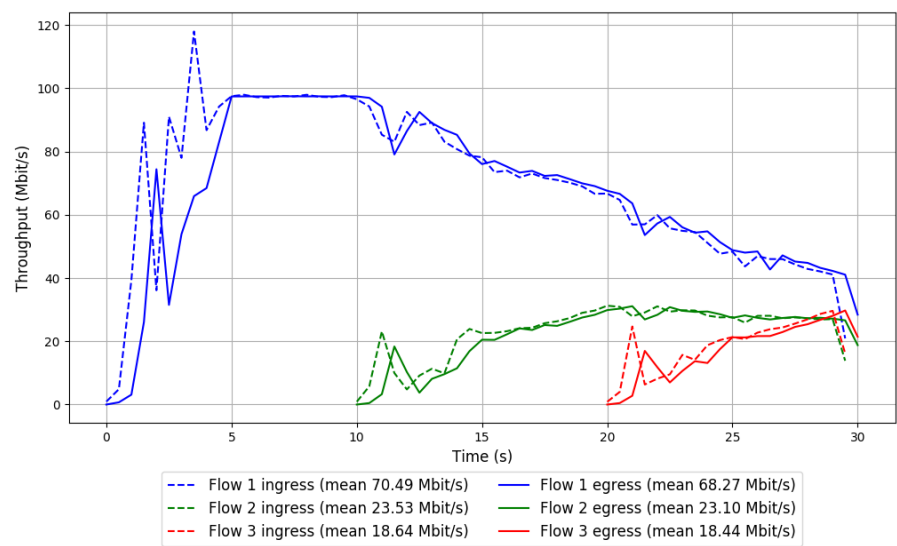


Run 3: Statistics of Indigo-Muses

Start at: 2018-09-11 03:47:12
End at: 2018-09-11 03:47:42
Local clock offset: -10.552 ms
Remote clock offset: 0.65 ms

```
# Below is generated by plot.py at 2018-09-11 04:40:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.61 Mbit/s
95th percentile per-packet one-way delay: 111.877 ms
Loss rate: 2.78%
-- Flow 1:
Average throughput: 68.27 Mbit/s
95th percentile per-packet one-way delay: 112.840 ms
Loss rate: 3.14%
-- Flow 2:
Average throughput: 23.10 Mbit/s
95th percentile per-packet one-way delay: 108.842 ms
Loss rate: 1.84%
-- Flow 3:
Average throughput: 18.44 Mbit/s
95th percentile per-packet one-way delay: 111.553 ms
Loss rate: 1.08%
```

Run 3: Report of Indigo-Muses — Data Link

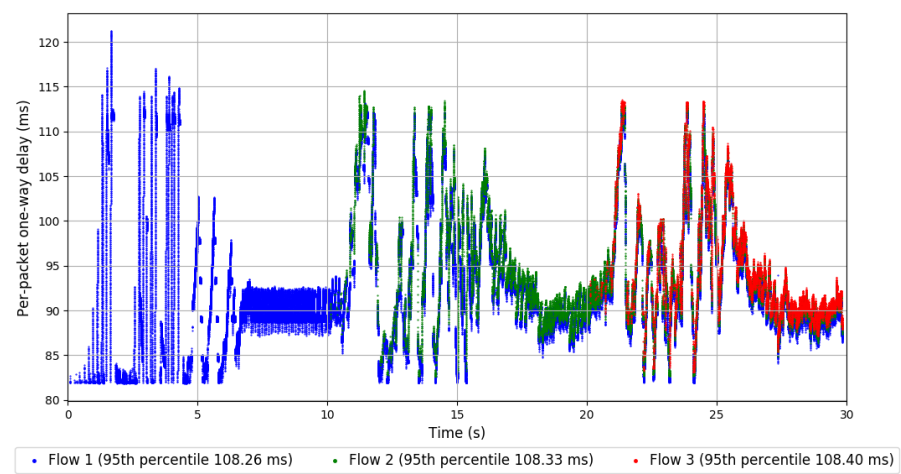
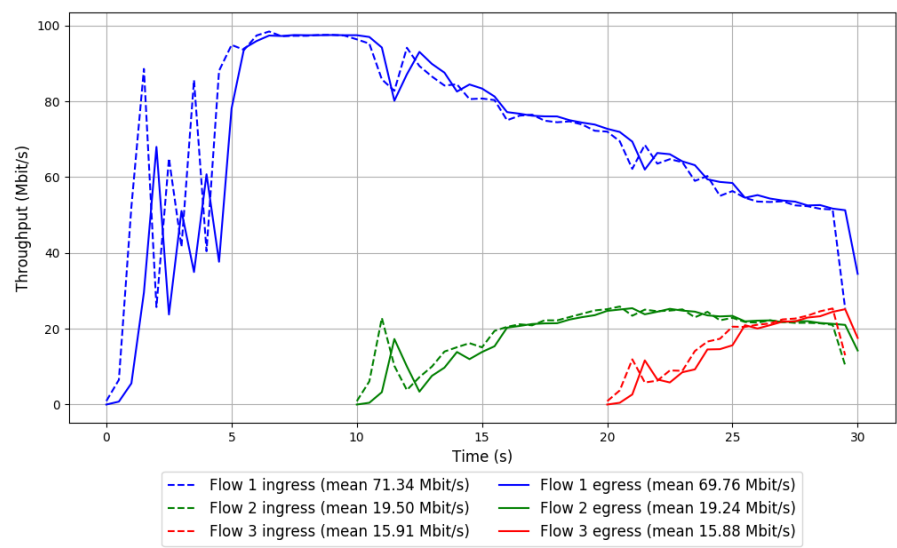


Run 4: Statistics of Indigo-Muses

Start at: 2018-09-11 04:10:14
End at: 2018-09-11 04:10:44
Local clock offset: -8.212 ms
Remote clock offset: 1.387 ms

```
# Below is generated by plot.py at 2018-09-11 04:40:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.71 Mbit/s
95th percentile per-packet one-way delay: 108.294 ms
Loss rate: 1.95%
-- Flow 1:
Average throughput: 69.76 Mbit/s
95th percentile per-packet one-way delay: 108.261 ms
Loss rate: 2.19%
-- Flow 2:
Average throughput: 19.24 Mbit/s
95th percentile per-packet one-way delay: 108.330 ms
Loss rate: 1.34%
-- Flow 3:
Average throughput: 15.88 Mbit/s
95th percentile per-packet one-way delay: 108.399 ms
Loss rate: 0.22%
```

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-09-11 04:33:18

End at: 2018-09-11 04:33:48

Local clock offset: -7.547 ms

Remote clock offset: 0.799 ms

Below is generated by plot.py at 2018-09-11 04:40:36

Datalink statistics

-- Total of 3 flows:

Average throughput: 89.57 Mbit/s

95th percentile per-packet one-way delay: 110.749 ms

Loss rate: 3.05%

-- Flow 1:

Average throughput: 70.37 Mbit/s

95th percentile per-packet one-way delay: 111.309 ms

Loss rate: 3.52%

-- Flow 2:

Average throughput: 19.85 Mbit/s

95th percentile per-packet one-way delay: 108.309 ms

Loss rate: 1.42%

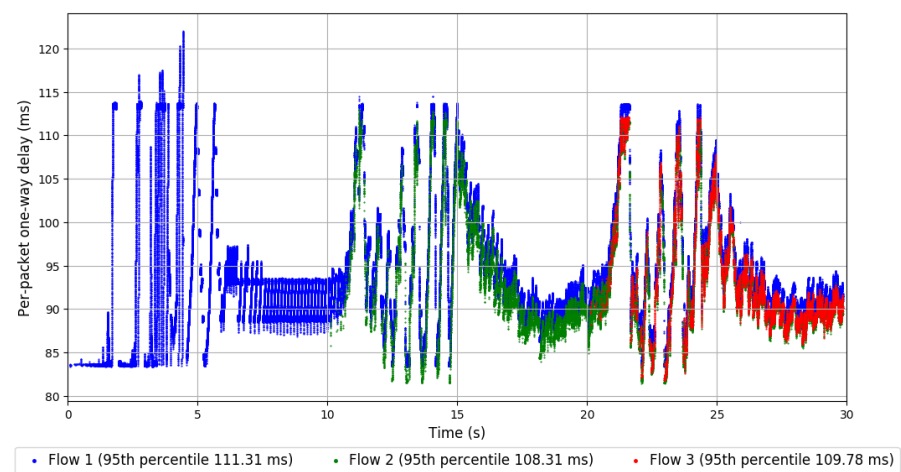
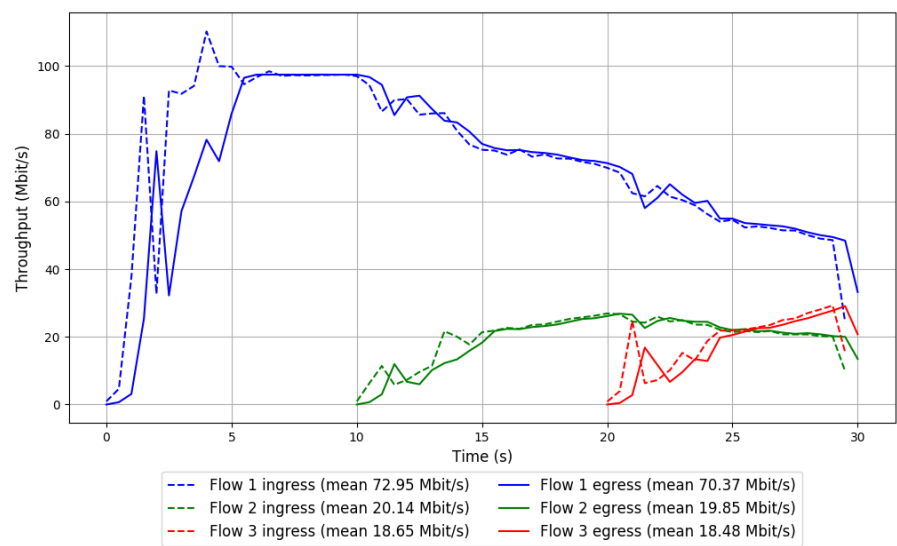
-- Flow 3:

Average throughput: 18.48 Mbit/s

95th percentile per-packet one-way delay: 109.775 ms

Loss rate: 0.93%

Run 5: Report of Indigo-Muses — Data Link

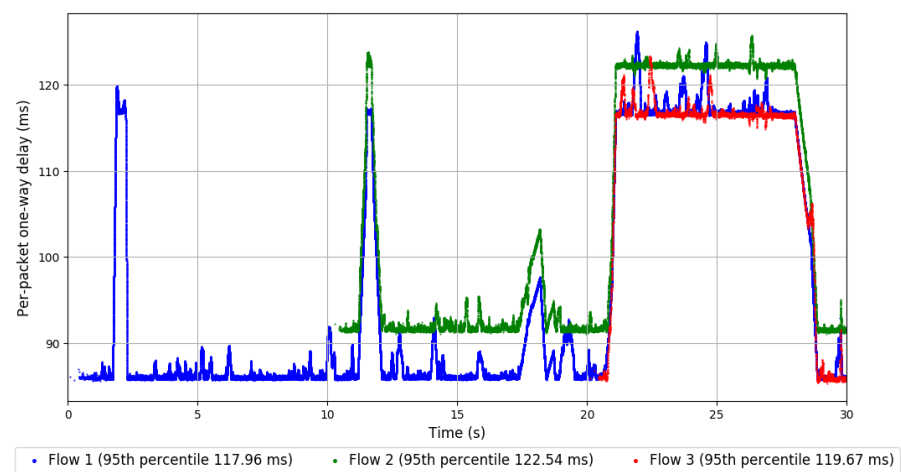
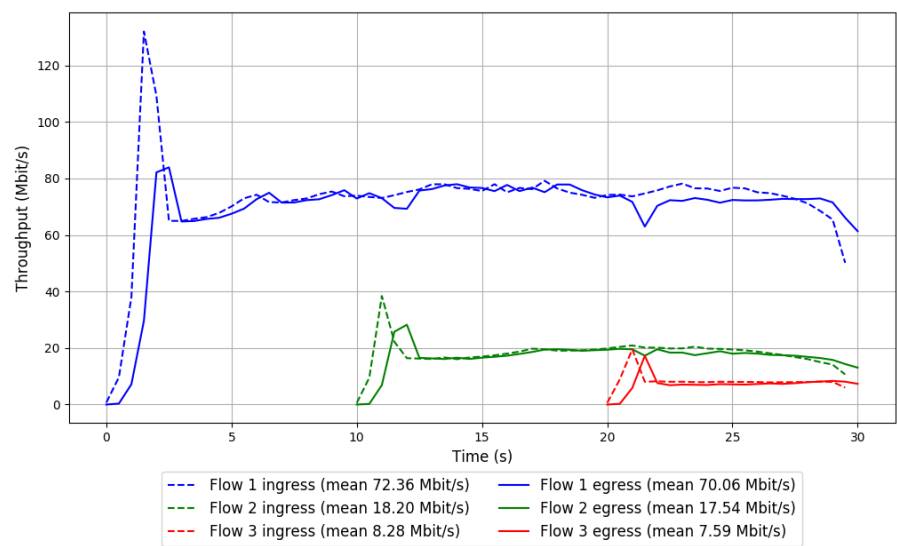


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-09-11 02:43:30
End at: 2018-09-11 02:44:00
Local clock offset: -7.192 ms
Remote clock offset: 1.887 ms

# Below is generated by plot.py at 2018-09-11 04:40:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.22 Mbit/s
95th percentile per-packet one-way delay: 122.164 ms
Loss rate: 3.41%
-- Flow 1:
Average throughput: 70.06 Mbit/s
95th percentile per-packet one-way delay: 117.963 ms
Loss rate: 3.18%
-- Flow 2:
Average throughput: 17.54 Mbit/s
95th percentile per-packet one-way delay: 122.541 ms
Loss rate: 3.67%
-- Flow 3:
Average throughput: 7.59 Mbit/s
95th percentile per-packet one-way delay: 119.671 ms
Loss rate: 8.28%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-09-11 03:06:22

End at: 2018-09-11 03:06:52

Local clock offset: -7.463 ms

Remote clock offset: 0.339 ms

Below is generated by plot.py at 2018-09-11 04:40:37

Datalink statistics

-- Total of 3 flows:

Average throughput: 87.22 Mbit/s

95th percentile per-packet one-way delay: 114.067 ms

Loss rate: 2.24%

-- Flow 1:

Average throughput: 78.90 Mbit/s

95th percentile per-packet one-way delay: 114.037 ms

Loss rate: 2.18%

-- Flow 2:

Average throughput: 8.49 Mbit/s

95th percentile per-packet one-way delay: 114.168 ms

Loss rate: 2.44%

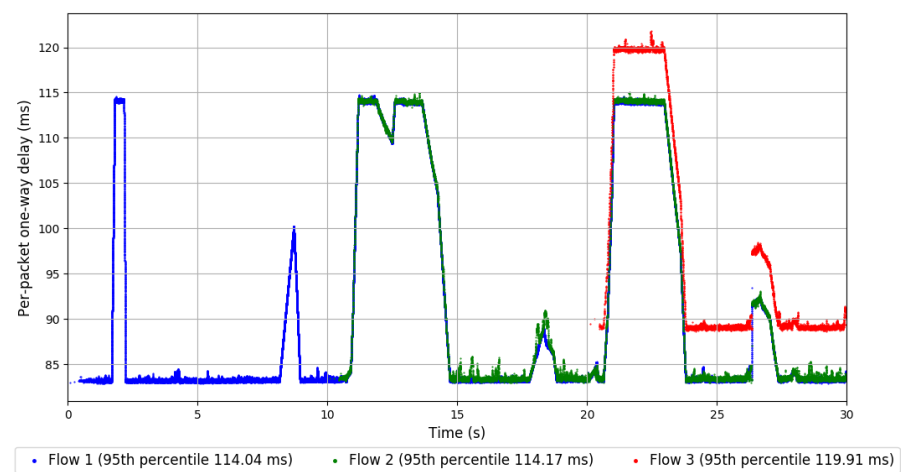
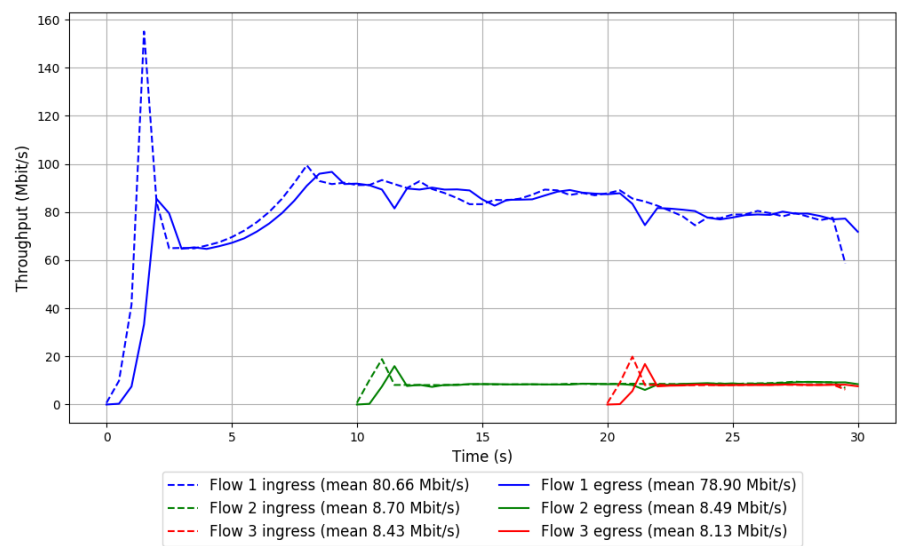
-- Flow 3:

Average throughput: 8.13 Mbit/s

95th percentile per-packet one-way delay: 119.914 ms

Loss rate: 3.61%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-09-11 03:29:31

End at: 2018-09-11 03:30:01

Local clock offset: -6.993 ms

Remote clock offset: 4.261 ms

Below is generated by plot.py at 2018-09-11 04:40:54

Datalink statistics

-- Total of 3 flows:

Average throughput: 87.19 Mbit/s

95th percentile per-packet one-way delay: 115.995 ms

Loss rate: 3.11%

-- Flow 1:

Average throughput: 78.38 Mbit/s

95th percentile per-packet one-way delay: 115.868 ms

Loss rate: 2.93%

-- Flow 2:

Average throughput: 9.21 Mbit/s

95th percentile per-packet one-way delay: 117.365 ms

Loss rate: 4.12%

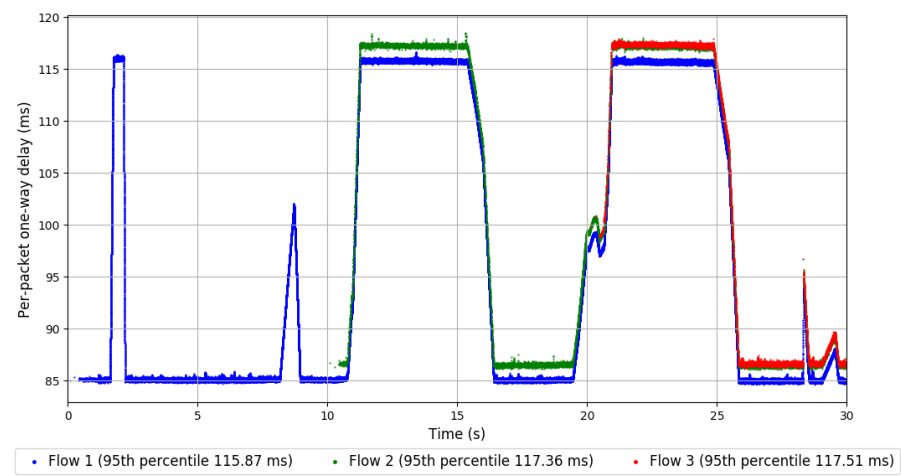
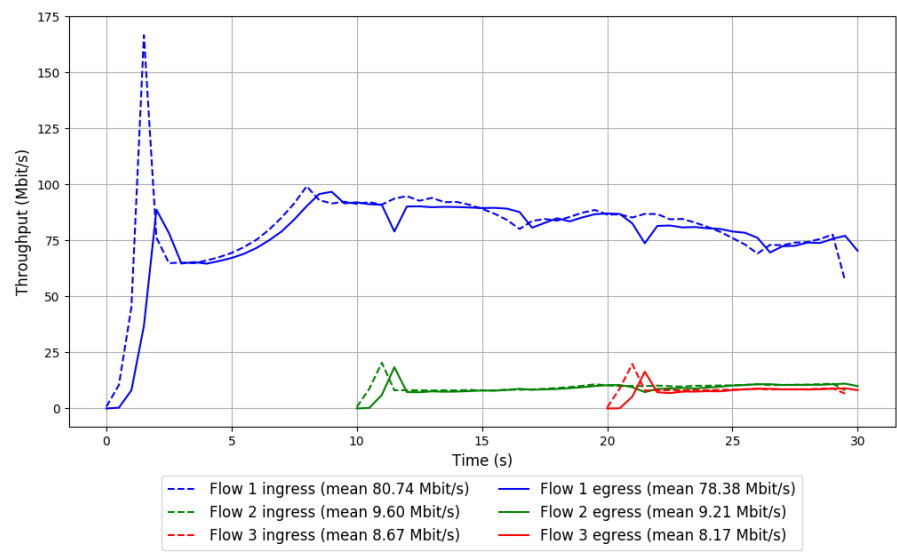
-- Flow 3:

Average throughput: 8.17 Mbit/s

95th percentile per-packet one-way delay: 117.513 ms

Loss rate: 5.83%

Run 3: Report of PCC-Allegro — Data Link

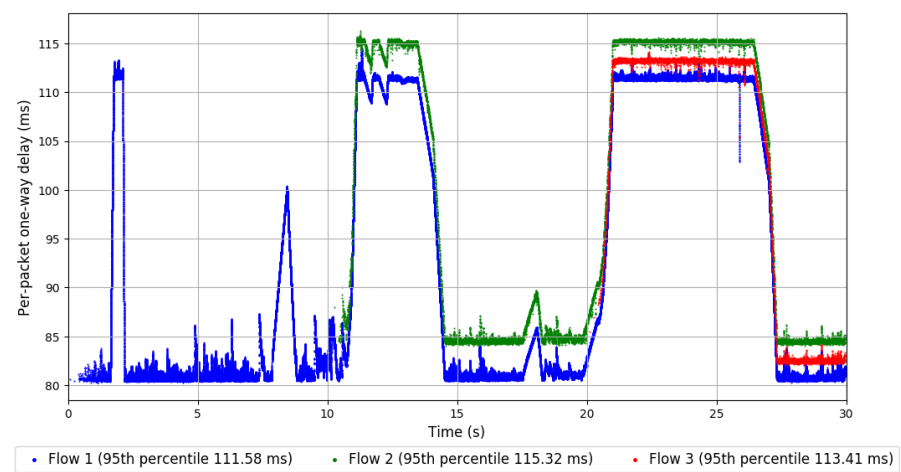
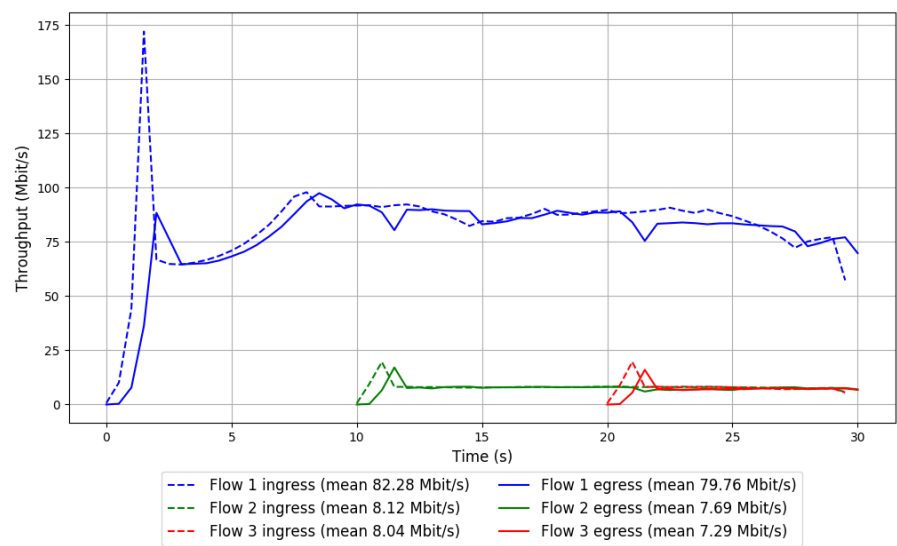


Run 4: Statistics of PCC-Allegro

Start at: 2018-09-11 03:52:15
End at: 2018-09-11 03:52:45
Local clock offset: -10.975 ms
Remote clock offset: 0.291 ms

Below is generated by plot.py at 2018-09-11 04:41:39
Datalink statistics
-- Total of 3 flows:
Average throughput: 87.27 Mbit/s
95th percentile per-packet one-way delay: 111.957 ms
Loss rate: 3.39%
-- Flow 1:
Average throughput: 79.76 Mbit/s
95th percentile per-packet one-way delay: 111.582 ms
Loss rate: 3.07%
-- Flow 2:
Average throughput: 7.69 Mbit/s
95th percentile per-packet one-way delay: 115.319 ms
Loss rate: 5.35%
-- Flow 3:
Average throughput: 7.29 Mbit/s
95th percentile per-packet one-way delay: 113.408 ms
Loss rate: 9.32%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-09-11 04:15:17

End at: 2018-09-11 04:15:47

Local clock offset: -7.431 ms

Remote clock offset: 0.853 ms

Below is generated by plot.py at 2018-09-11 04:41:48

Datalink statistics

-- Total of 3 flows:

Average throughput: 87.55 Mbit/s

95th percentile per-packet one-way delay: 114.236 ms

Loss rate: 3.03%

-- Flow 1:

Average throughput: 79.99 Mbit/s

95th percentile per-packet one-way delay: 114.243 ms

Loss rate: 2.80%

-- Flow 2:

Average throughput: 7.58 Mbit/s

95th percentile per-packet one-way delay: 112.613 ms

Loss rate: 5.02%

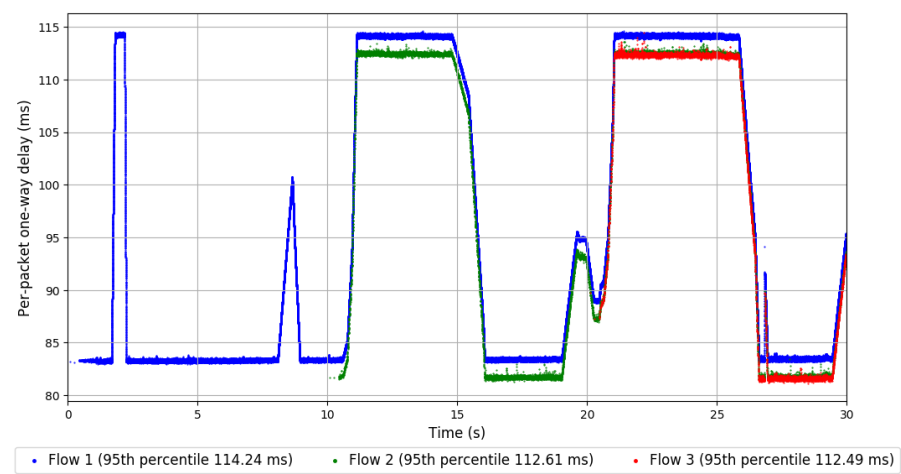
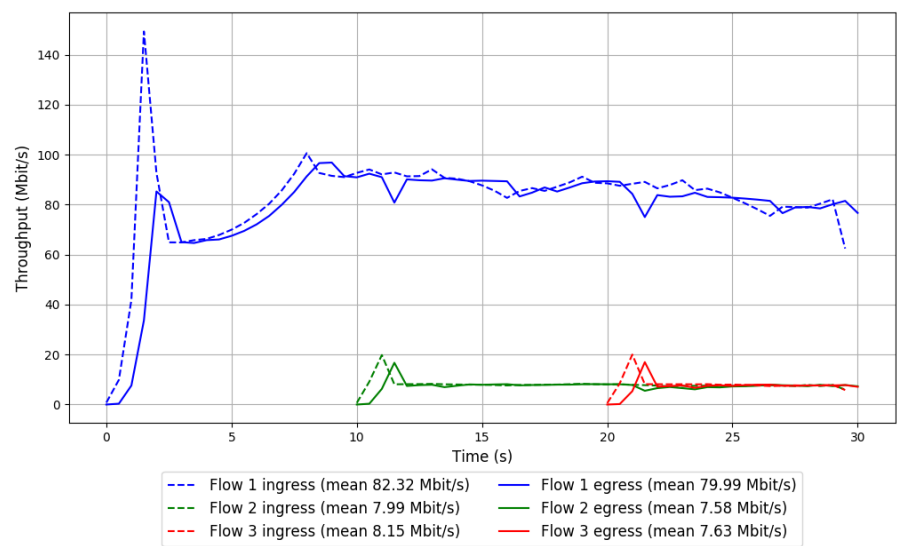
-- Flow 3:

Average throughput: 7.63 Mbit/s

95th percentile per-packet one-way delay: 112.491 ms

Loss rate: 6.32%

Run 5: Report of PCC-Allegro — Data Link

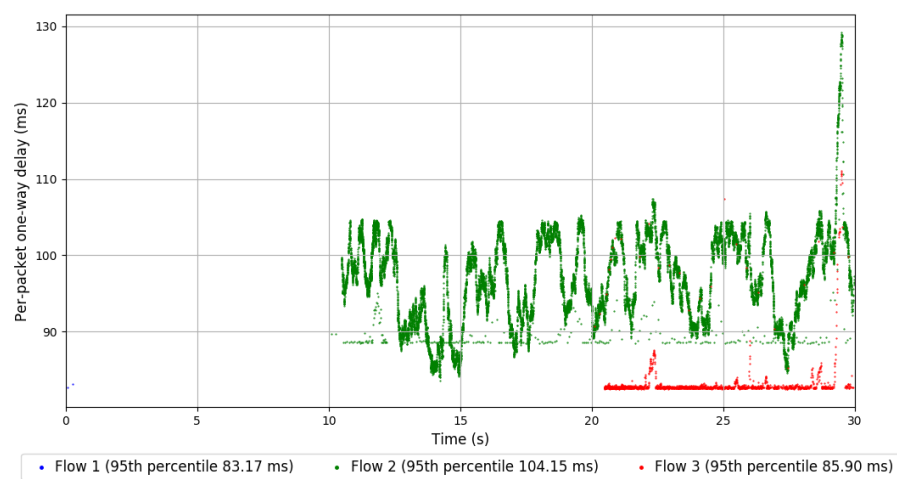
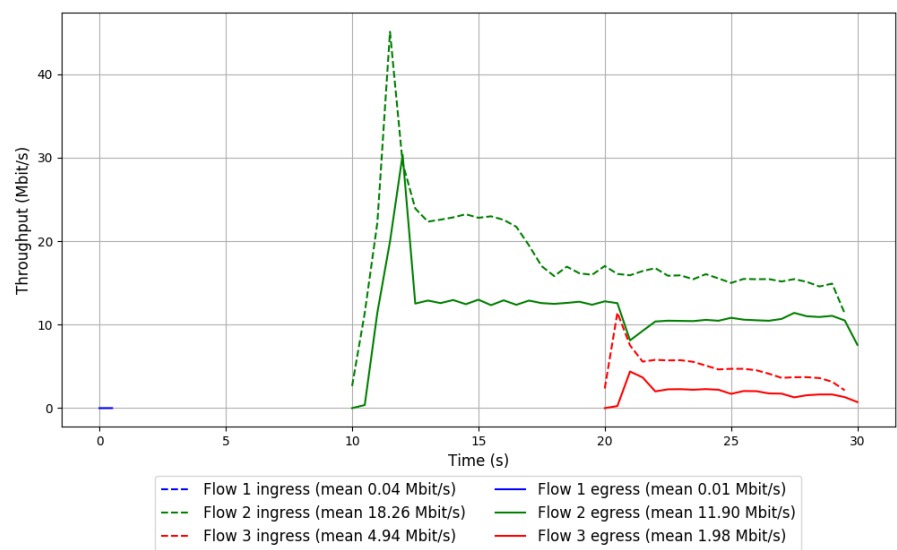


```
Run 1: Statistics of PCC-Expr

Start at: 2018-09-11 02:39:41
End at: 2018-09-11 02:40:11
Local clock offset: -6.911 ms
Remote clock offset: -1.151 ms

# Below is generated by plot.py at 2018-09-11 04:41:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.56 Mbit/s
95th percentile per-packet one-way delay: 104.108 ms
Loss rate: 37.83%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 83.170 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 11.90 Mbit/s
95th percentile per-packet one-way delay: 104.152 ms
Loss rate: 34.86%
-- Flow 3:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 85.902 ms
Loss rate: 59.98%
```

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2018-09-11 03:02:26

End at: 2018-09-11 03:02:56

Local clock offset: -7.738 ms

Remote clock offset: 3.932 ms

Below is generated by plot.py at 2018-09-11 04:41:48

Datalink statistics

-- Total of 3 flows:

Average throughput: 12.92 Mbit/s

95th percentile per-packet one-way delay: 107.124 ms

Loss rate: 46.84%

-- Flow 1:

Average throughput: 5.33 Mbit/s

95th percentile per-packet one-way delay: 108.173 ms

Loss rate: 41.80%

-- Flow 2:

Average throughput: 10.51 Mbit/s

95th percentile per-packet one-way delay: 87.468 ms

Loss rate: 47.45%

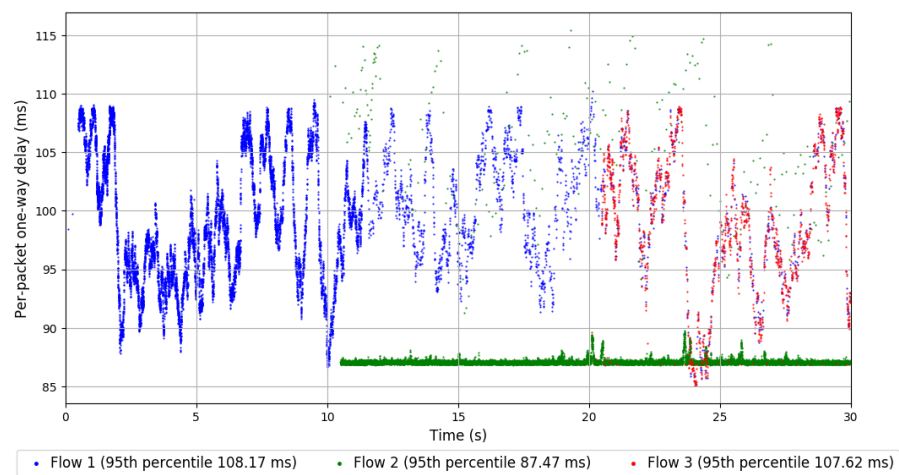
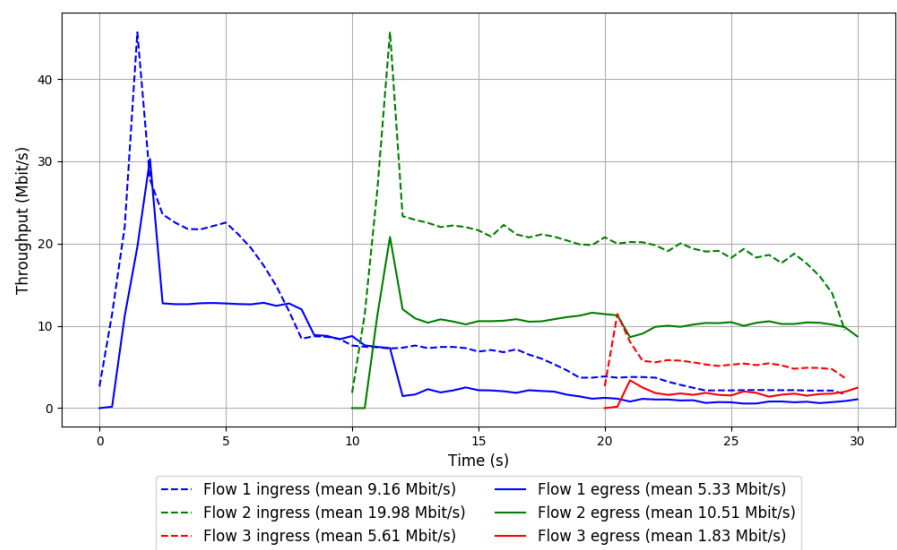
-- Flow 3:

Average throughput: 1.83 Mbit/s

95th percentile per-packet one-way delay: 107.620 ms

Loss rate: 67.41%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-09-11 03:25:46

End at: 2018-09-11 03:26:16

Local clock offset: -5.729 ms

Remote clock offset: 4.457 ms

Below is generated by plot.py at 2018-09-11 04:41:48

Datalink statistics

-- Total of 3 flows:

Average throughput: 8.62 Mbit/s

95th percentile per-packet one-way delay: 105.265 ms

Loss rate: 66.01%

-- Flow 1:

Average throughput: 0.01 Mbit/s

95th percentile per-packet one-way delay: 86.365 ms

Loss rate: 85.71%

-- Flow 2:

Average throughput: 12.45 Mbit/s

95th percentile per-packet one-way delay: 105.316 ms

Loss rate: 65.15%

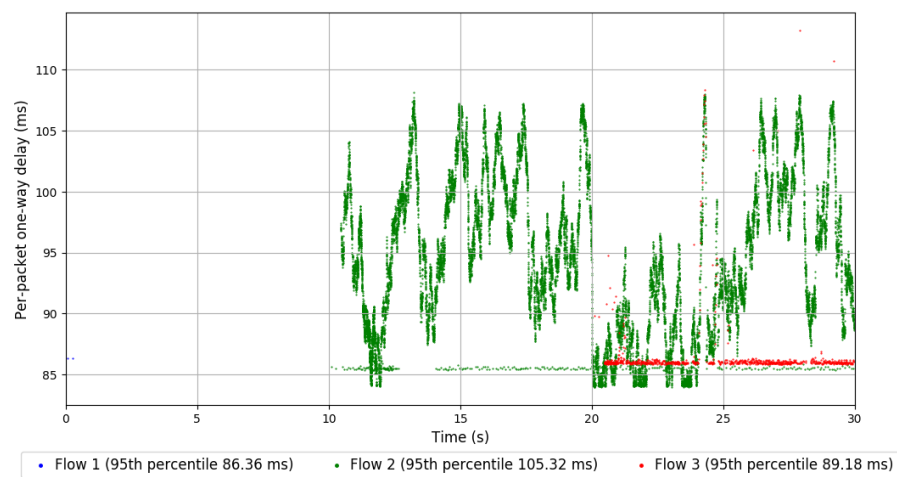
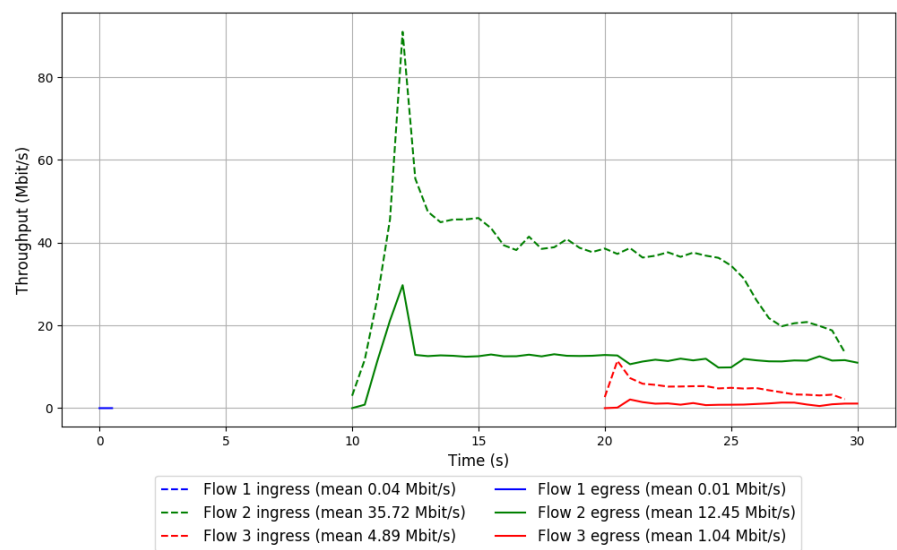
-- Flow 3:

Average throughput: 1.04 Mbit/s

95th percentile per-packet one-way delay: 89.184 ms

Loss rate: 78.66%

Run 3: Report of PCC-Expr — Data Link

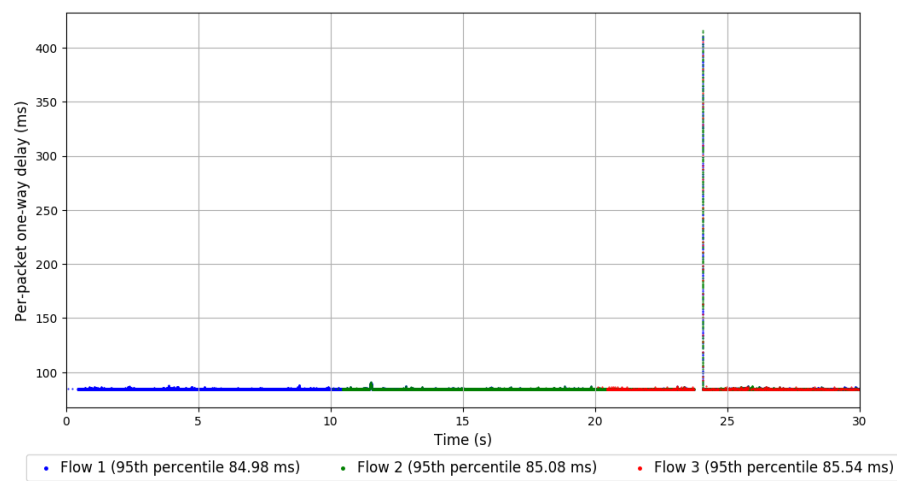
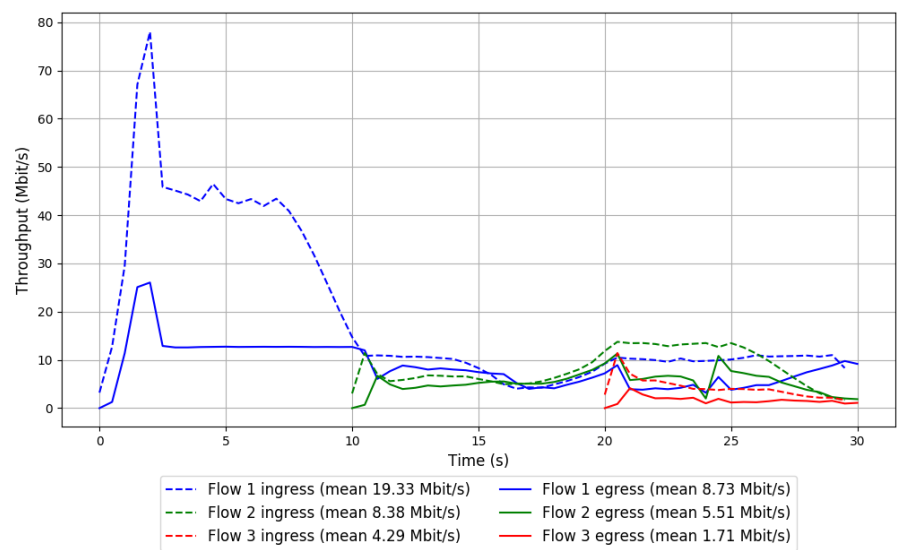


Run 4: Statistics of PCC-Expr

Start at: 2018-09-11 03:48:30
End at: 2018-09-11 03:49:00
Local clock offset: -10.606 ms
Remote clock offset: 4.227 ms

Below is generated by plot.py at 2018-09-11 04:41:48
Datalink statistics
-- Total of 3 flows:
Average throughput: 12.96 Mbit/s
95th percentile per-packet one-way delay: 85.013 ms
Loss rate: 50.77%
-- Flow 1:
Average throughput: 8.73 Mbit/s
95th percentile per-packet one-way delay: 84.982 ms
Loss rate: 54.85%
-- Flow 2:
Average throughput: 5.51 Mbit/s
95th percentile per-packet one-way delay: 85.078 ms
Loss rate: 34.22%
-- Flow 3:
Average throughput: 1.71 Mbit/s
95th percentile per-packet one-way delay: 85.543 ms
Loss rate: 60.18%

Run 4: Report of PCC-Expr — Data Link

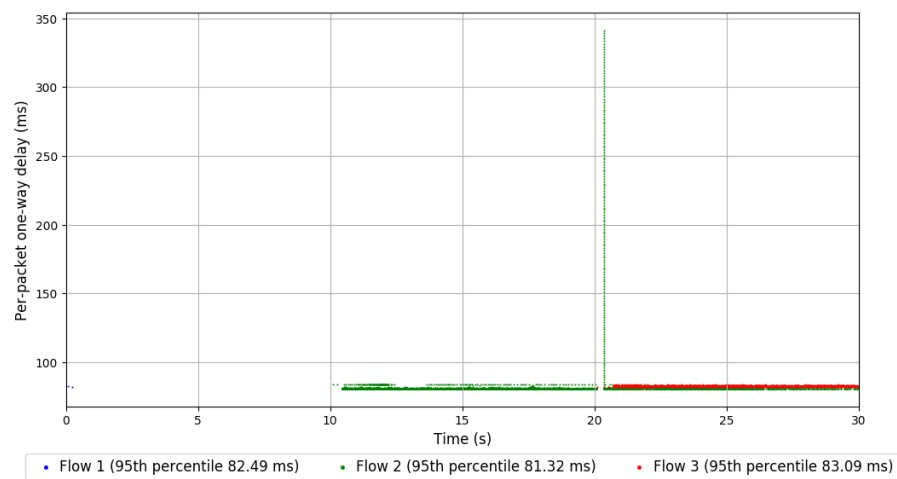
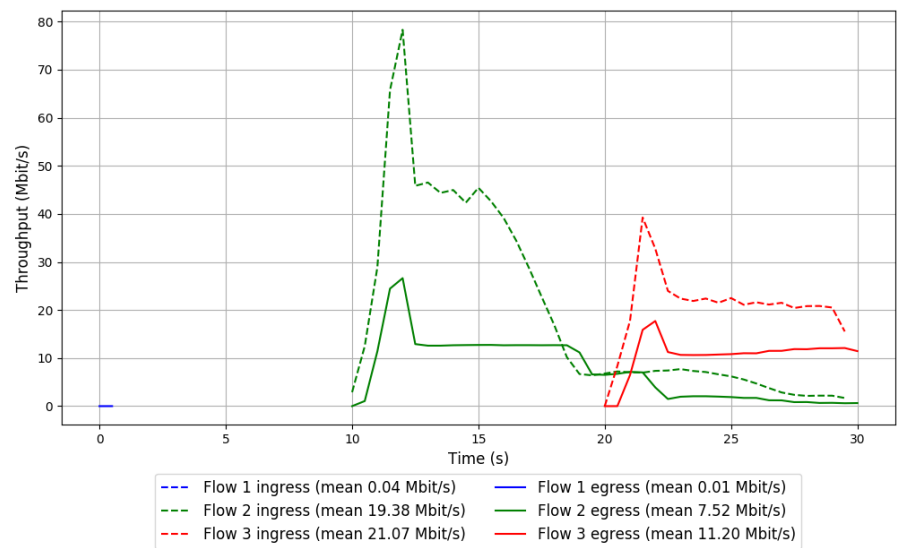


```
Run 5: Statistics of PCC-Expr

Start at: 2018-09-11 04:11:32
End at: 2018-09-11 04:12:02
Local clock offset: -7.19 ms
Remote clock offset: 1.417 ms

# Below is generated by plot.py at 2018-09-11 04:41:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.70 Mbit/s
95th percentile per-packet one-way delay: 83.055 ms
Loss rate: 56.17%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 82.490 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 7.52 Mbit/s
95th percentile per-packet one-way delay: 81.319 ms
Loss rate: 61.19%
-- Flow 3:
Average throughput: 11.20 Mbit/s
95th percentile per-packet one-way delay: 83.088 ms
Loss rate: 46.87%
```

Run 5: Report of PCC-Expr — Data Link

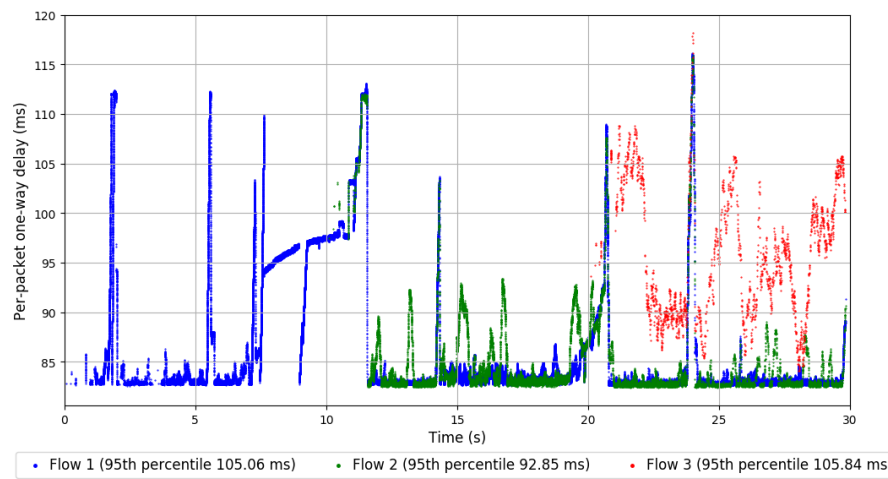
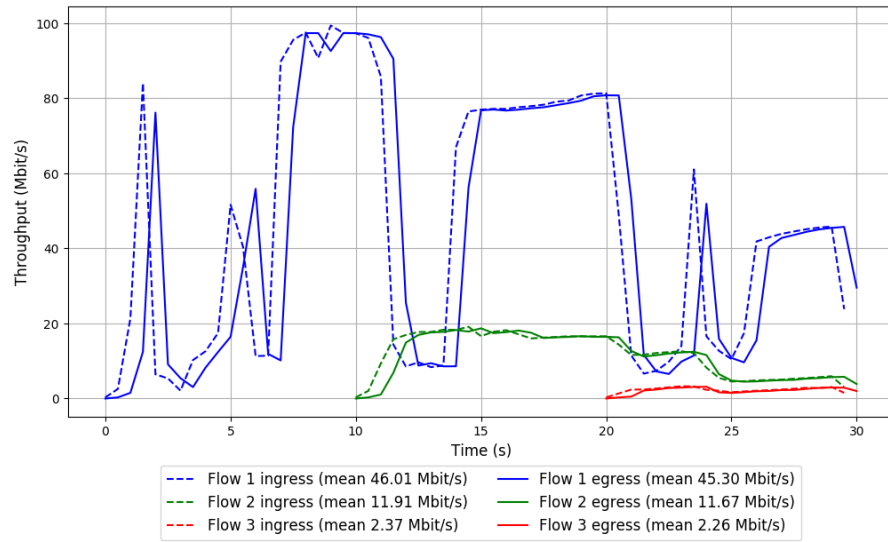


Run 1: Statistics of QUIC Cubic

Start at: 2018-09-11 02:44:46
End at: 2018-09-11 02:45:16
Local clock offset: -7.26 ms
Remote clock offset: -1.073 ms

Below is generated by plot.py at 2018-09-11 04:41:48
Datalink statistics
-- Total of 3 flows:
Average throughput: 53.78 Mbit/s
95th percentile per-packet one-way delay: 104.090 ms
Loss rate: 1.66%
-- Flow 1:
Average throughput: 45.30 Mbit/s
95th percentile per-packet one-way delay: 105.059 ms
Loss rate: 1.53%
-- Flow 2:
Average throughput: 11.67 Mbit/s
95th percentile per-packet one-way delay: 92.849 ms
Loss rate: 2.08%
-- Flow 3:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 105.836 ms
Loss rate: 5.09%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-09-11 03:07:39

End at: 2018-09-11 03:08:09

Local clock offset: -7.364 ms

Remote clock offset: 4.307 ms

Below is generated by plot.py at 2018-09-11 04:41:48

Datalink statistics

-- Total of 3 flows:

Average throughput: 60.77 Mbit/s

95th percentile per-packet one-way delay: 111.011 ms

Loss rate: 1.03%

-- Flow 1:

Average throughput: 44.41 Mbit/s

95th percentile per-packet one-way delay: 110.432 ms

Loss rate: 1.05%

-- Flow 2:

Average throughput: 17.81 Mbit/s

95th percentile per-packet one-way delay: 108.235 ms

Loss rate: 0.81%

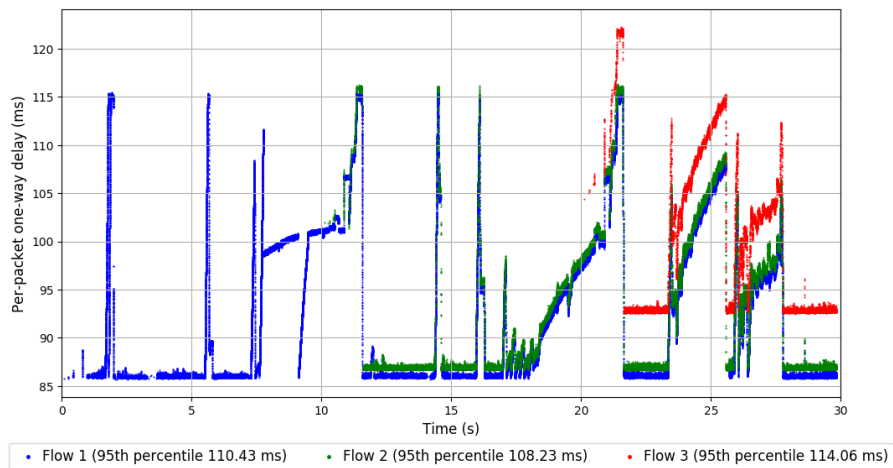
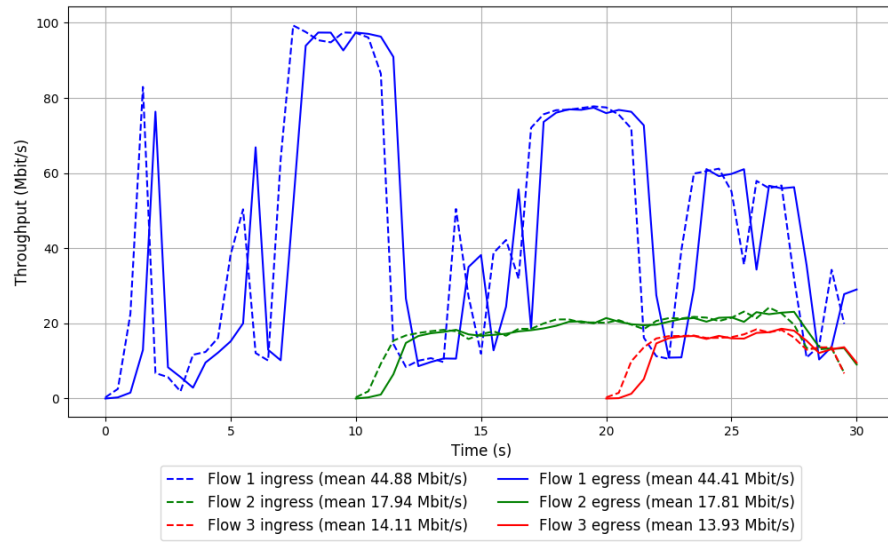
-- Flow 3:

Average throughput: 13.93 Mbit/s

95th percentile per-packet one-way delay: 114.055 ms

Loss rate: 1.46%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-09-11 03:30:47

End at: 2018-09-11 03:31:17

Local clock offset: -7.572 ms

Remote clock offset: 0.717 ms

Below is generated by plot.py at 2018-09-11 04:41:48

Datalink statistics

-- Total of 3 flows:

Average throughput: 50.88 Mbit/s

95th percentile per-packet one-way delay: 104.263 ms

Loss rate: 1.28%

-- Flow 1:

Average throughput: 41.87 Mbit/s

95th percentile per-packet one-way delay: 105.318 ms

Loss rate: 1.26%

-- Flow 2:

Average throughput: 12.36 Mbit/s

95th percentile per-packet one-way delay: 93.350 ms

Loss rate: 1.40%

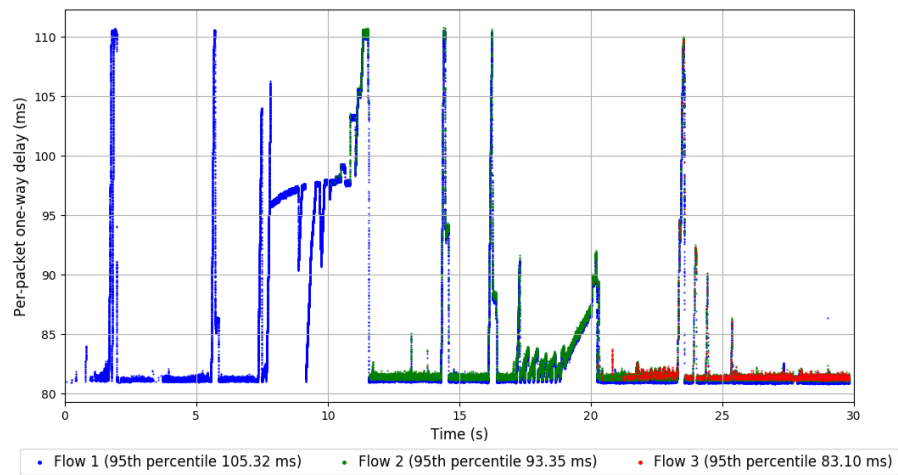
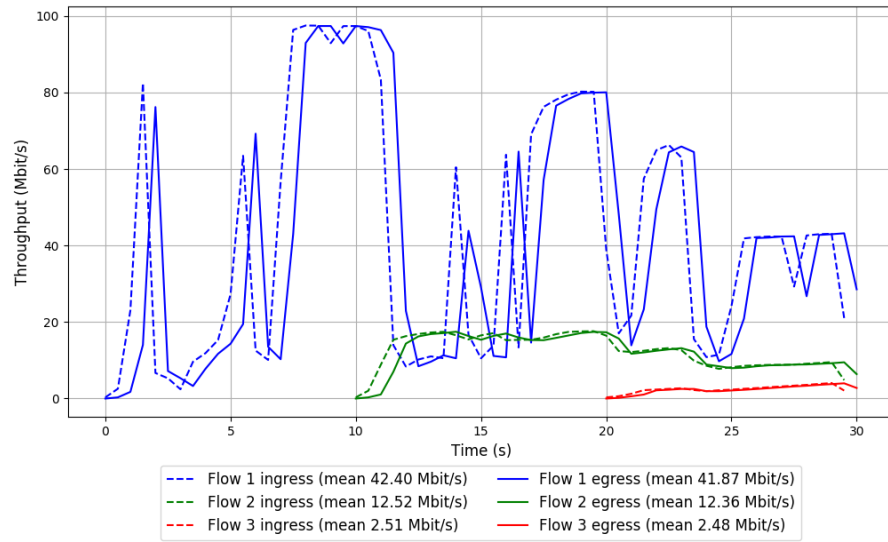
-- Flow 3:

Average throughput: 2.48 Mbit/s

95th percentile per-packet one-way delay: 83.104 ms

Loss rate: 1.26%

Run 3: Report of QUIC Cubic — Data Link

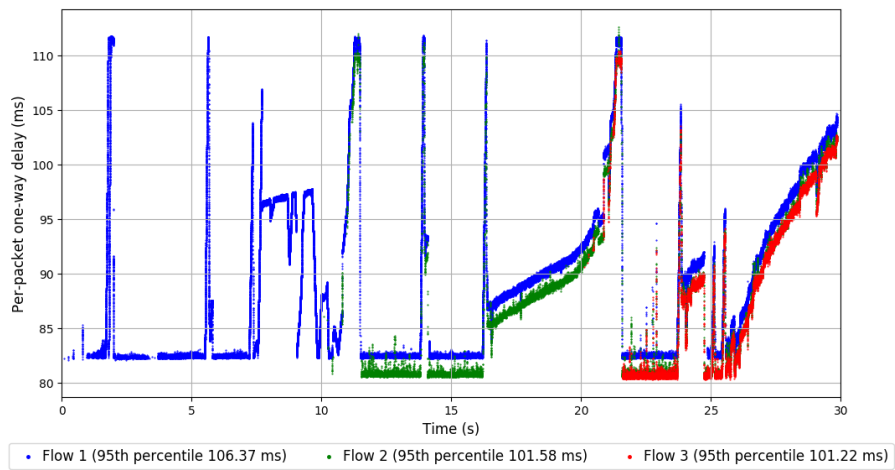
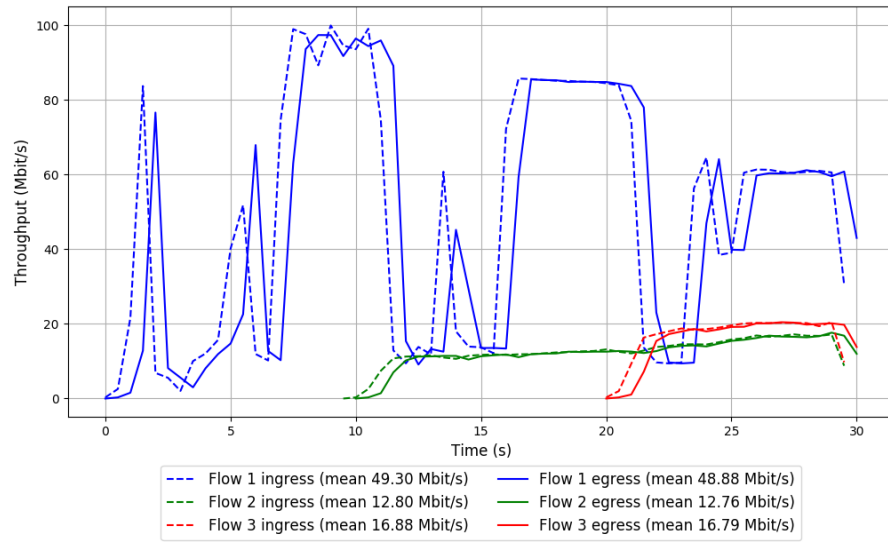


Run 4: Statistics of QUIC Cubic

Start at: 2018-09-11 03:53:32
End at: 2018-09-11 03:54:02
Local clock offset: -10.972 ms
Remote clock offset: 0.079 ms

Below is generated by plot.py at 2018-09-11 04:41:48
Datalink statistics
-- Total of 3 flows:
Average throughput: 62.86 Mbit/s
95th percentile per-packet one-way delay: 105.327 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 48.88 Mbit/s
95th percentile per-packet one-way delay: 106.368 ms
Loss rate: 0.77%
-- Flow 2:
Average throughput: 12.76 Mbit/s
95th percentile per-packet one-way delay: 101.581 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 16.79 Mbit/s
95th percentile per-packet one-way delay: 101.217 ms
Loss rate: 0.38%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-09-11 04:16:33

End at: 2018-09-11 04:17:03

Local clock offset: -7.306 ms

Remote clock offset: 4.717 ms

Below is generated by plot.py at 2018-09-11 04:41:52

Datalink statistics

-- Total of 3 flows:

Average throughput: 64.16 Mbit/s

95th percentile per-packet one-way delay: 115.582 ms

Loss rate: 1.22%

-- Flow 1:

Average throughput: 39.85 Mbit/s

95th percentile per-packet one-way delay: 114.485 ms

Loss rate: 1.45%

-- Flow 2:

Average throughput: 25.70 Mbit/s

95th percentile per-packet one-way delay: 113.611 ms

Loss rate: 0.91%

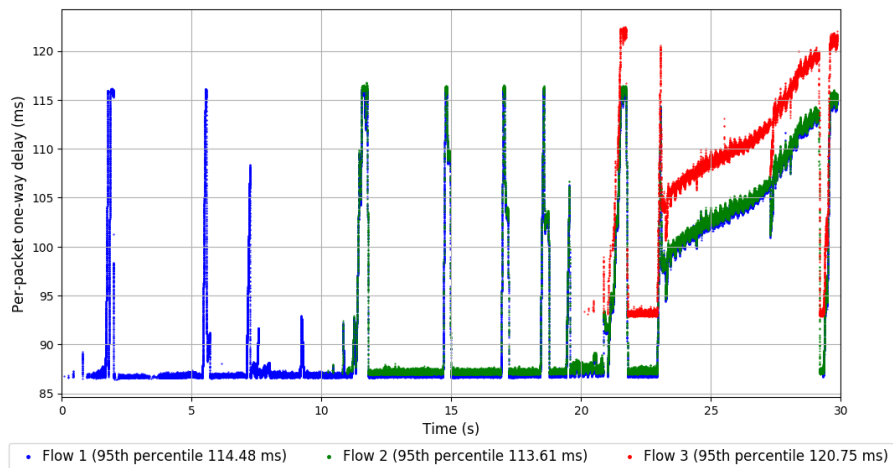
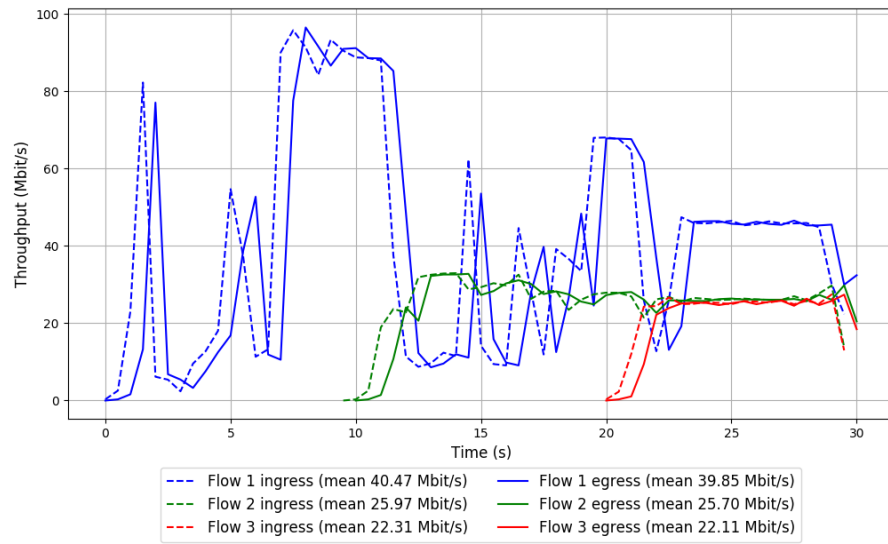
-- Flow 3:

Average throughput: 22.11 Mbit/s

95th percentile per-packet one-way delay: 120.754 ms

Loss rate: 0.67%

Run 5: Report of QUIC Cubic — Data Link

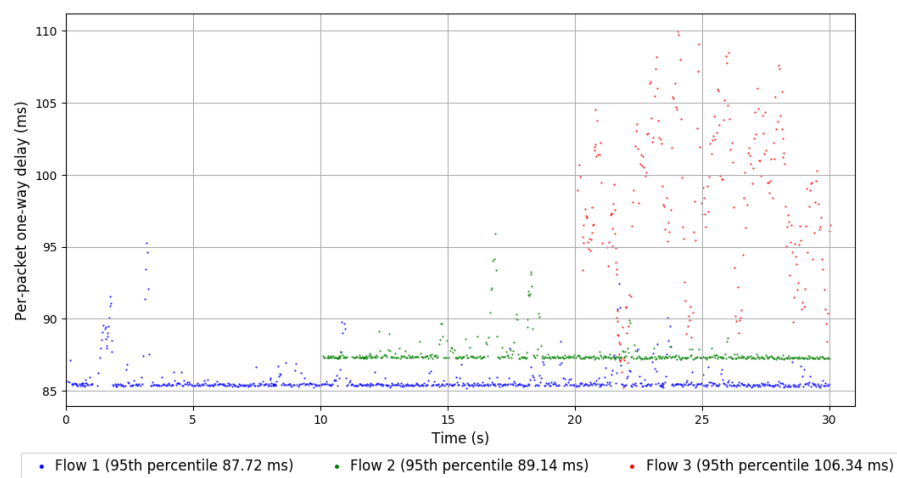
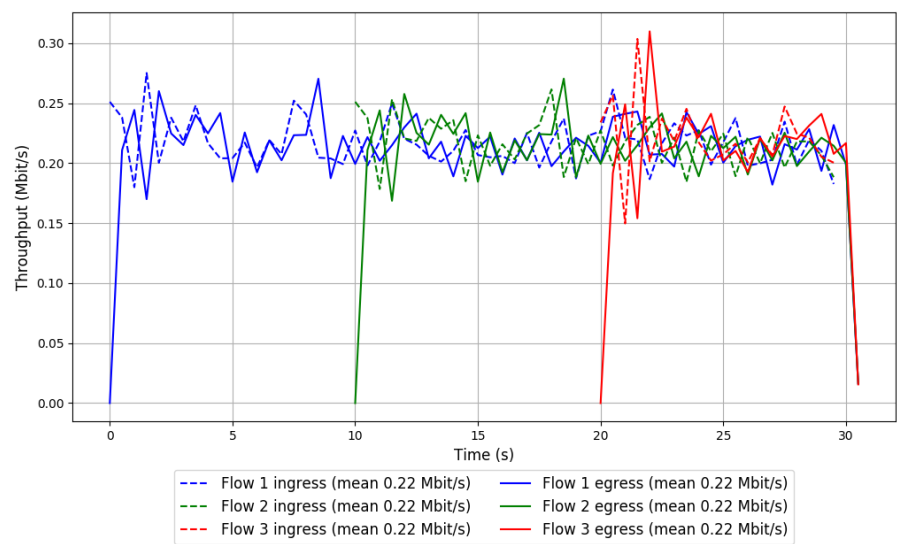


```
Run 1: Statistics of SReAM

Start at: 2018-09-11 02:52:22
End at: 2018-09-11 02:52:52
Local clock offset: -8.168 ms
Remote clock offset: 3.16 ms

# Below is generated by plot.py at 2018-09-11 04:41:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 101.497 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.722 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 89.144 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 106.345 ms
Loss rate: 0.00%
```

Run 1: Report of SReAM — Data Link

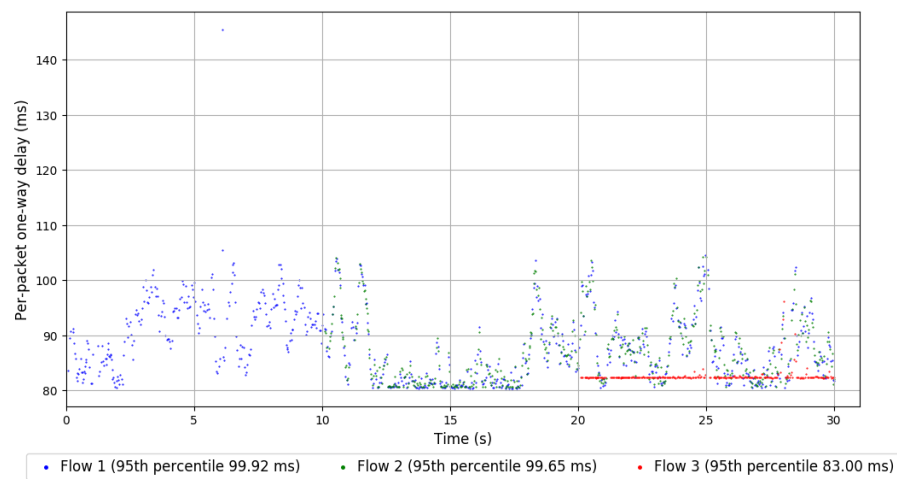
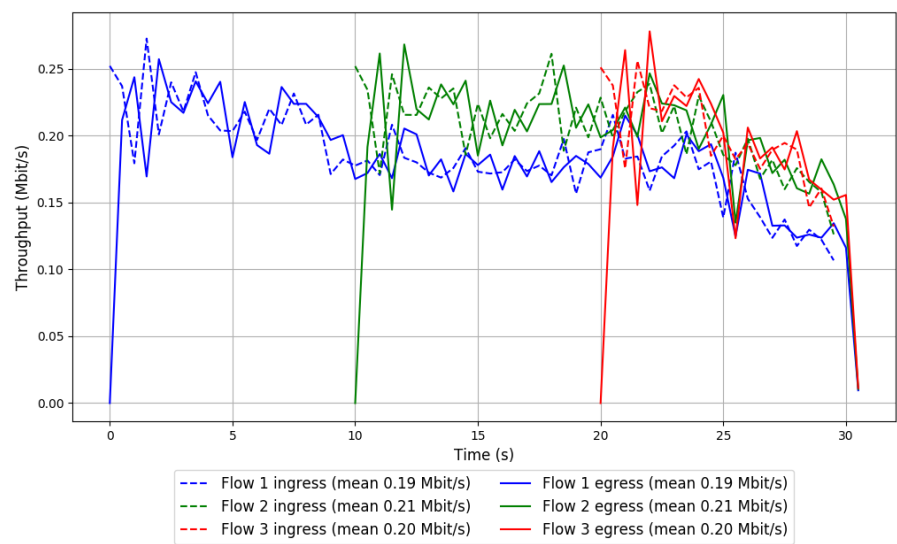


Run 2: Statistics of SReAM

Start at: 2018-09-11 03:15:42
End at: 2018-09-11 03:16:13
Local clock offset: -6.164 ms
Remote clock offset: 1.034 ms

Below is generated by plot.py at 2018-09-11 04:41:52
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 99.179 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 99.921 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 99.651 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 83.003 ms
Loss rate: 1.76%

Run 2: Report of SReAM — Data Link

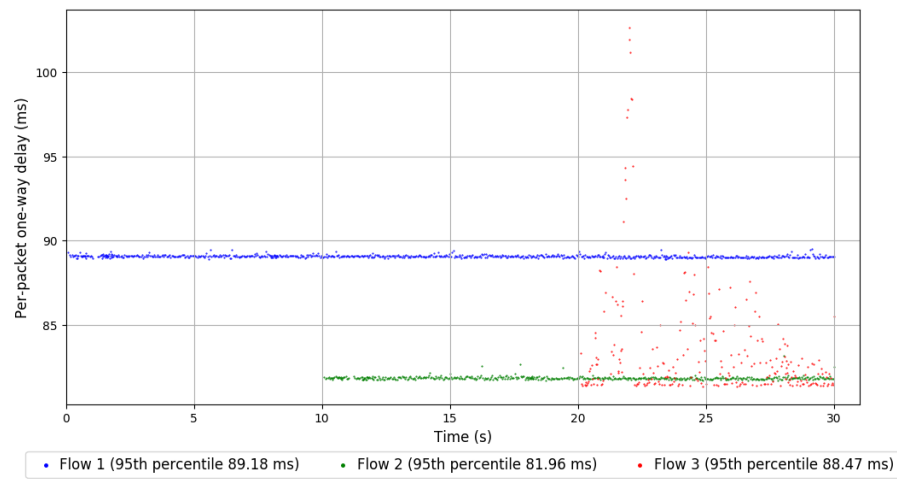
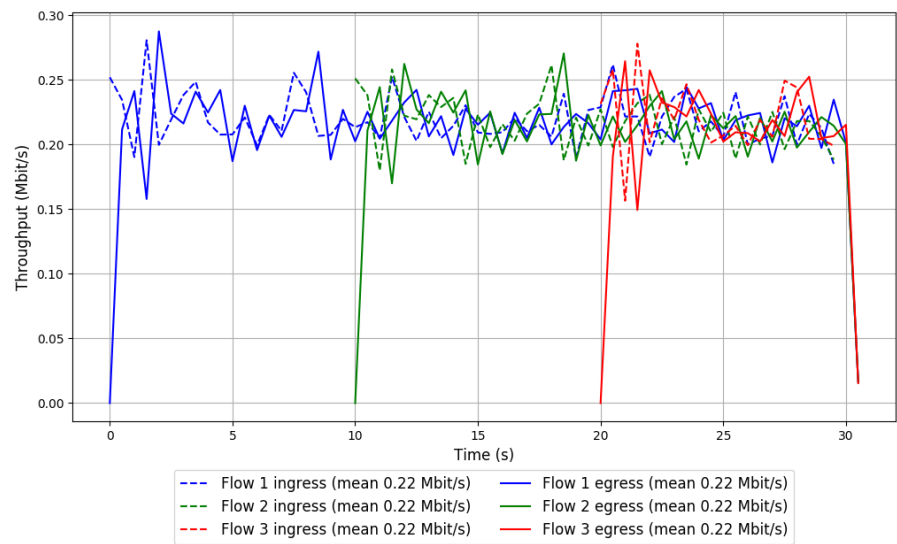


Run 3: Statistics of SReAM

Start at: 2018-09-11 03:38:25
End at: 2018-09-11 03:38:55
Local clock offset: -10.024 ms
Remote clock offset: 0.912 ms

Below is generated by plot.py at 2018-09-11 04:41:52
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 89.159 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 89.184 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 81.956 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 88.468 ms
Loss rate: 0.00%

Run 3: Report of SCRaM — Data Link

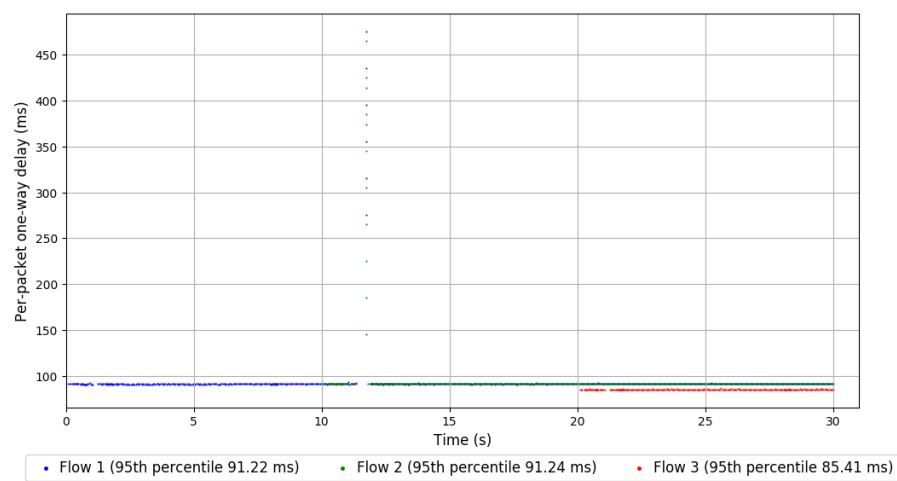
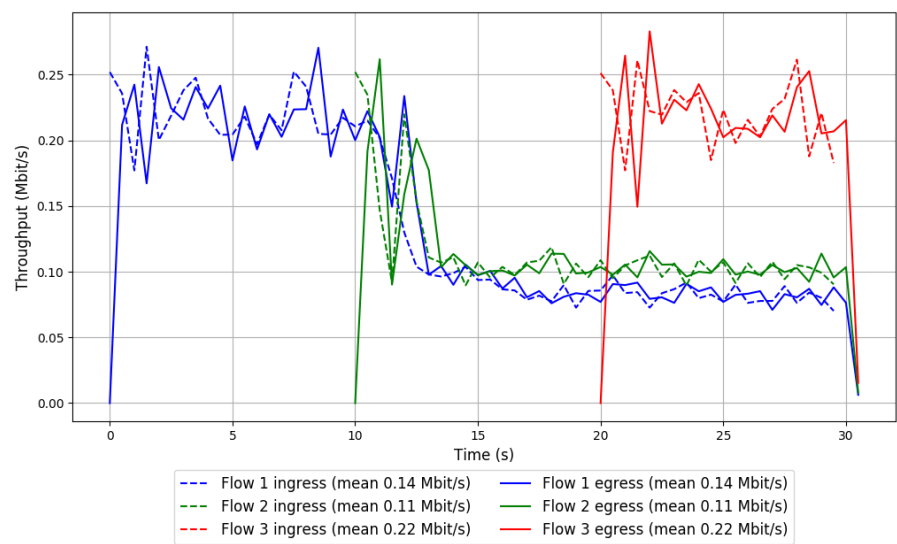


Run 4: Statistics of SReAM

Start at: 2018-09-11 04:01:14
End at: 2018-09-11 04:01:44
Local clock offset: -10.547 ms
Remote clock offset: 4.006 ms

Below is generated by plot.py at 2018-09-11 04:41:52
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 91.216 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 91.216 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 91.237 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.411 ms
Loss rate: 0.00%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SReAM

Start at: 2018-09-11 04:24:20

End at: 2018-09-11 04:24:50

Local clock offset: -6.766 ms

Remote clock offset: 0.307 ms

Below is generated by plot.py at 2018-09-11 04:41:52

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.30 Mbit/s

95th percentile per-packet one-way delay: 82.450 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.09 Mbit/s

95th percentile per-packet one-way delay: 81.614 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 82.619 ms

Loss rate: 0.00%

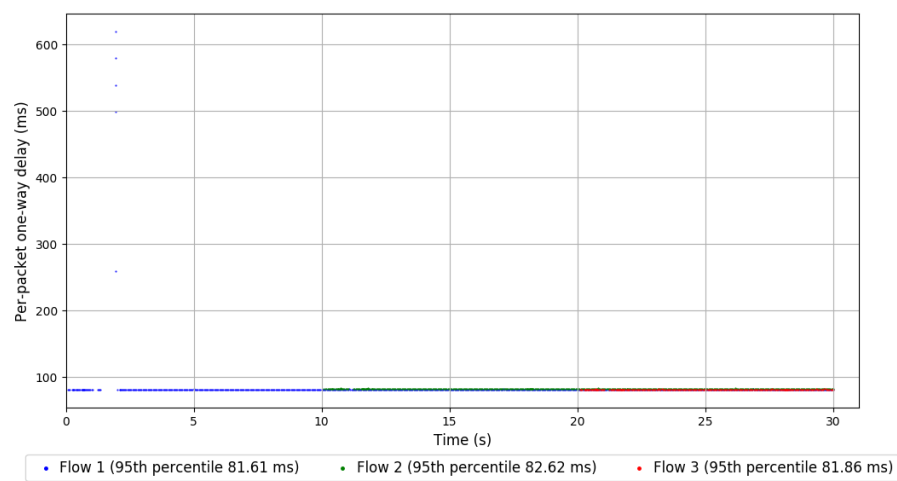
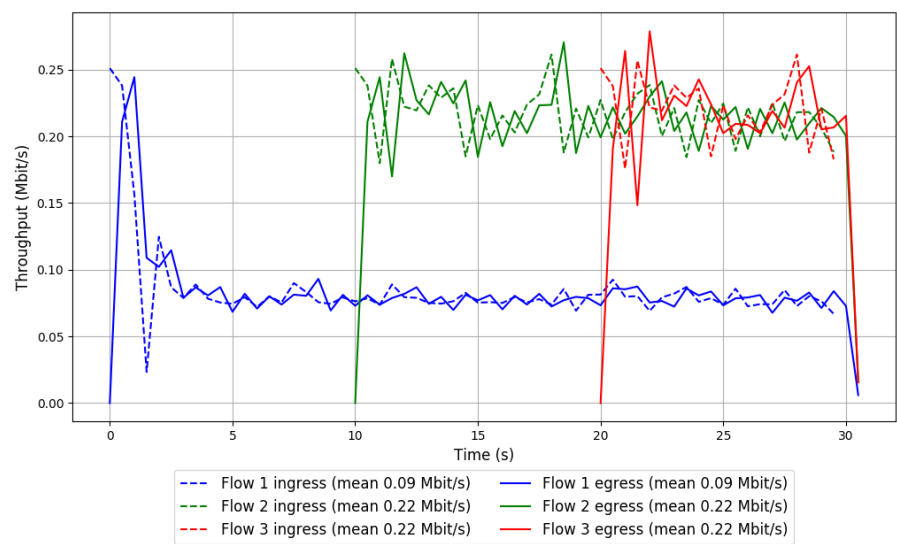
-- Flow 3:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 81.858 ms

Loss rate: 0.00%

Run 5: Report of SCReAM — Data Link

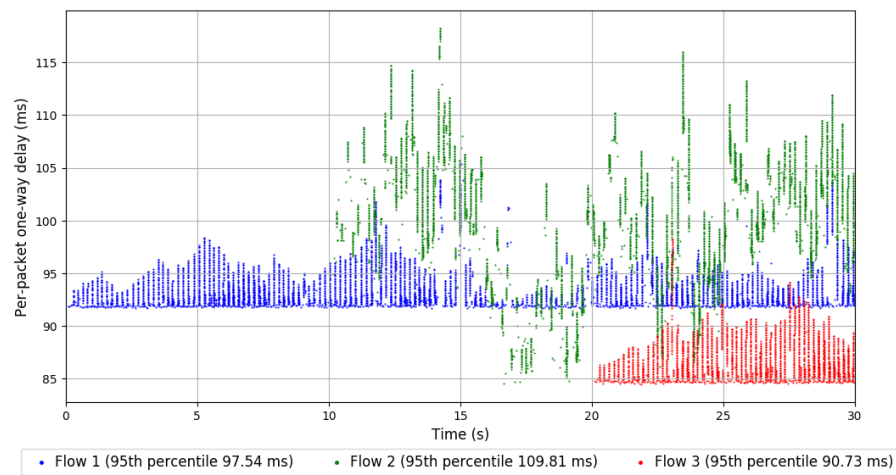
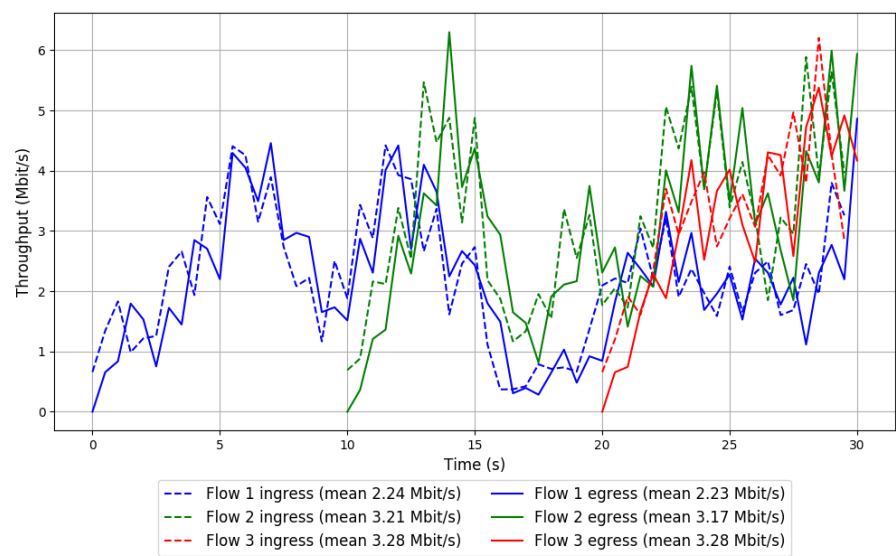


Run 1: Statistics of Sprout

Start at: 2018-09-11 02:59:55
End at: 2018-09-11 03:00:25
Local clock offset: -7.185 ms
Remote clock offset: 3.682 ms

Below is generated by plot.py at 2018-09-11 04:41:52
Datalink statistics
-- Total of 3 flows:
Average throughput: 5.42 Mbit/s
95th percentile per-packet one-way delay: 107.008 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 2.23 Mbit/s
95th percentile per-packet one-way delay: 97.540 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 3.17 Mbit/s
95th percentile per-packet one-way delay: 109.805 ms
Loss rate: 1.03%
-- Flow 3:
Average throughput: 3.28 Mbit/s
95th percentile per-packet one-way delay: 90.729 ms
Loss rate: 0.00%

Run 1: Report of Sprout — Data Link

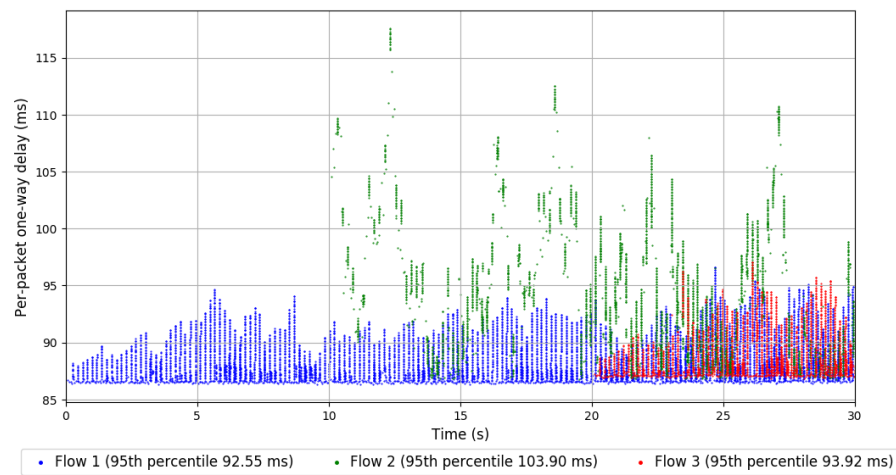
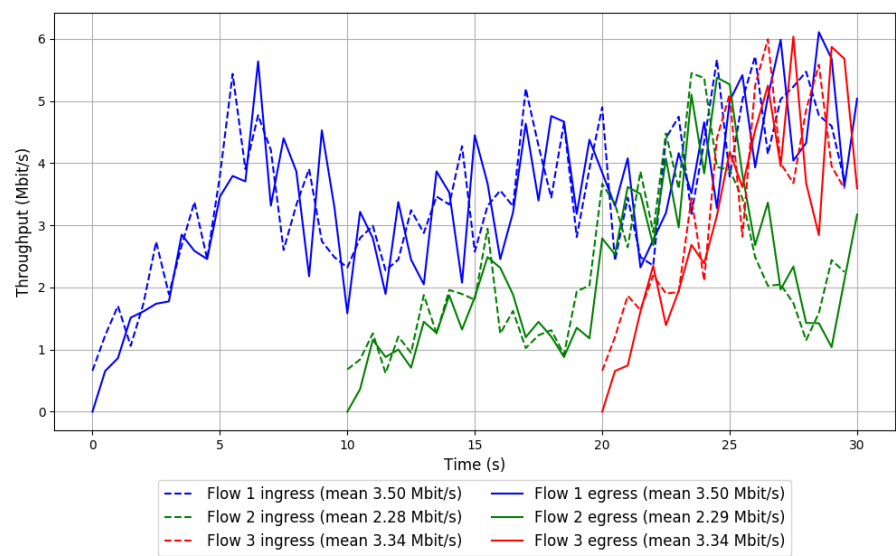


Run 2: Statistics of Sprout

Start at: 2018-09-11 03:23:16
End at: 2018-09-11 03:23:46
Local clock offset: -5.826 ms
Remote clock offset: 5.138 ms

```
# Below is generated by plot.py at 2018-09-11 04:41:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.12 Mbit/s
95th percentile per-packet one-way delay: 98.446 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 3.50 Mbit/s
95th percentile per-packet one-way delay: 92.551 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 2.29 Mbit/s
95th percentile per-packet one-way delay: 103.902 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 3.34 Mbit/s
95th percentile per-packet one-way delay: 93.920 ms
Loss rate: 0.00%
```

Run 2: Report of Sprout — Data Link

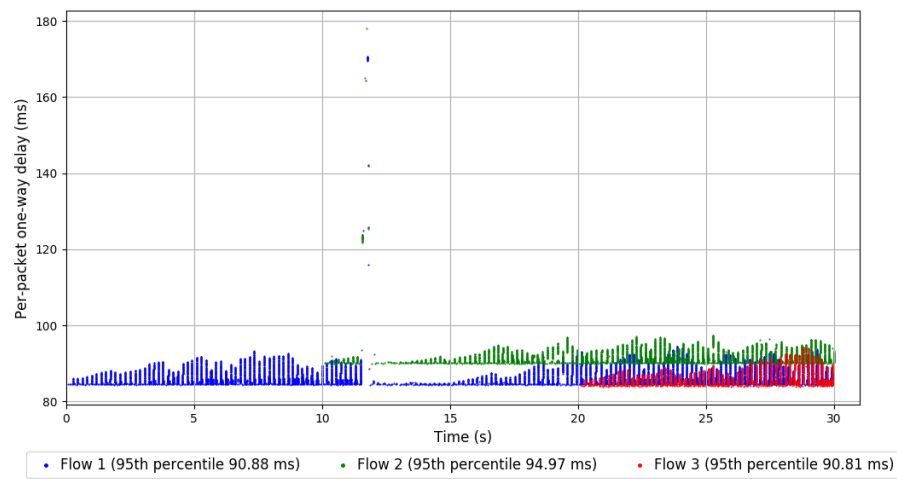
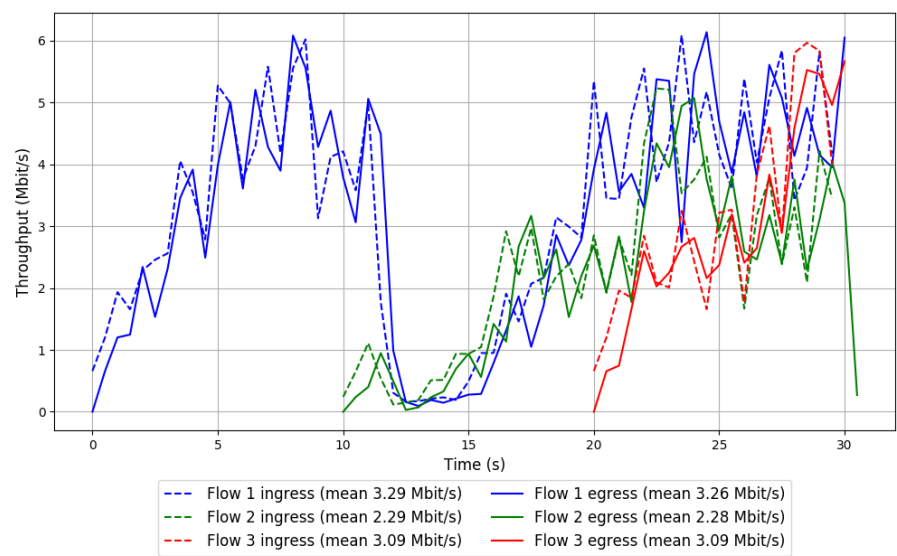


Run 3: Statistics of Sprout

Start at: 2018-09-11 03:45:59
End at: 2018-09-11 03:46:29
Local clock offset: -10.404 ms
Remote clock offset: 3.919 ms

```
# Below is generated by plot.py at 2018-09-11 04:41:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.80 Mbit/s
95th percentile per-packet one-way delay: 93.404 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 3.26 Mbit/s
95th percentile per-packet one-way delay: 90.883 ms
Loss rate: 0.75%
-- Flow 2:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 94.966 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 3.09 Mbit/s
95th percentile per-packet one-way delay: 90.810 ms
Loss rate: 0.00%
```

Run 3: Report of Sprout — Data Link

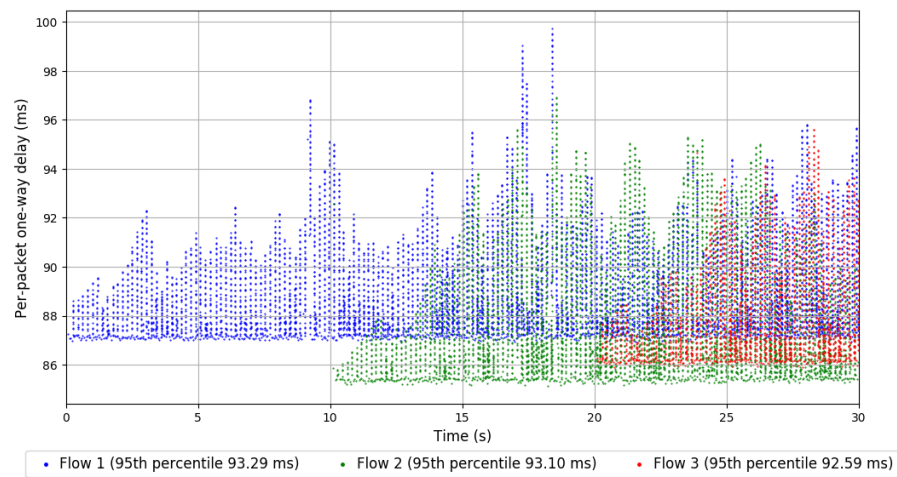
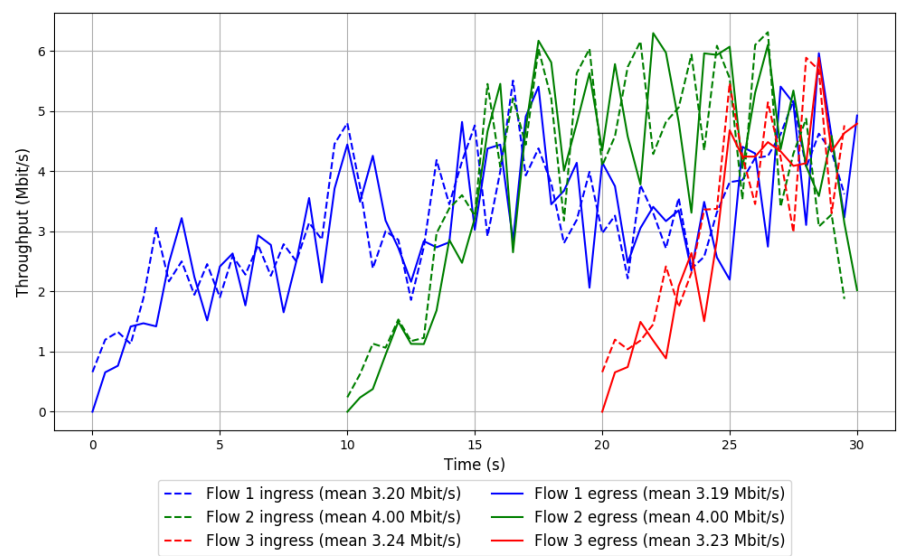


Run 4: Statistics of Sprout

Start at: 2018-09-11 04:09:01
End at: 2018-09-11 04:09:31
Local clock offset: -8.311 ms
Remote clock offset: 4.901 ms

```
# Below is generated by plot.py at 2018-09-11 04:41:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.92 Mbit/s
95th percentile per-packet one-way delay: 93.086 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 3.19 Mbit/s
95th percentile per-packet one-way delay: 93.287 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 4.00 Mbit/s
95th percentile per-packet one-way delay: 93.099 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.23 Mbit/s
95th percentile per-packet one-way delay: 92.591 ms
Loss rate: 0.00%
```

Run 4: Report of Sprout — Data Link

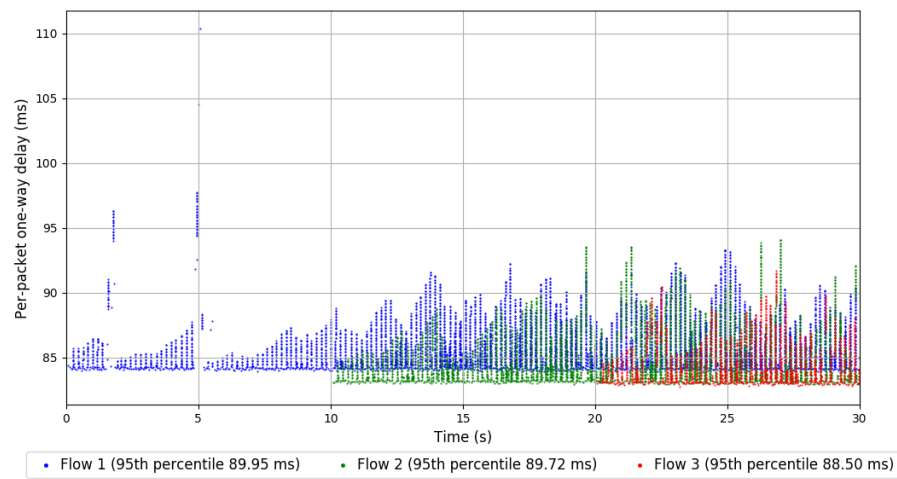
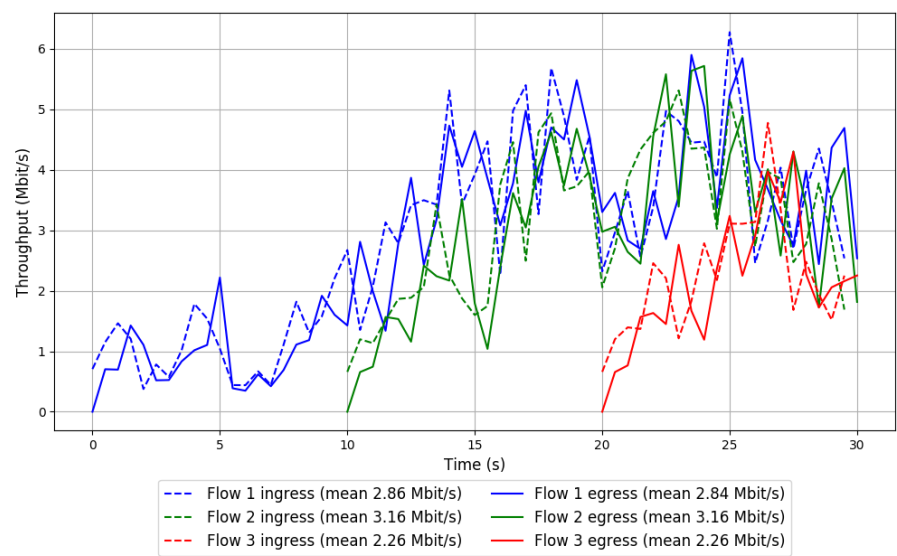


Run 5: Statistics of Sprout

Start at: 2018-09-11 04:32:05
End at: 2018-09-11 04:32:35
Local clock offset: -7.275 ms
Remote clock offset: 0.576 ms

```
# Below is generated by plot.py at 2018-09-11 04:41:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.69 Mbit/s
95th percentile per-packet one-way delay: 89.696 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 2.84 Mbit/s
95th percentile per-packet one-way delay: 89.955 ms
Loss rate: 0.59%
-- Flow 2:
Average throughput: 3.16 Mbit/s
95th percentile per-packet one-way delay: 89.721 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 88.496 ms
Loss rate: 0.00%
```

Run 5: Report of Sprout — Data Link

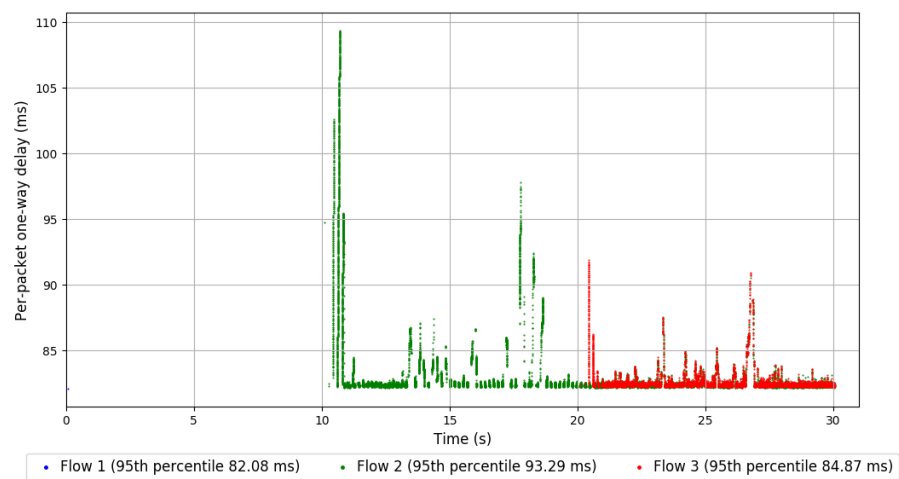
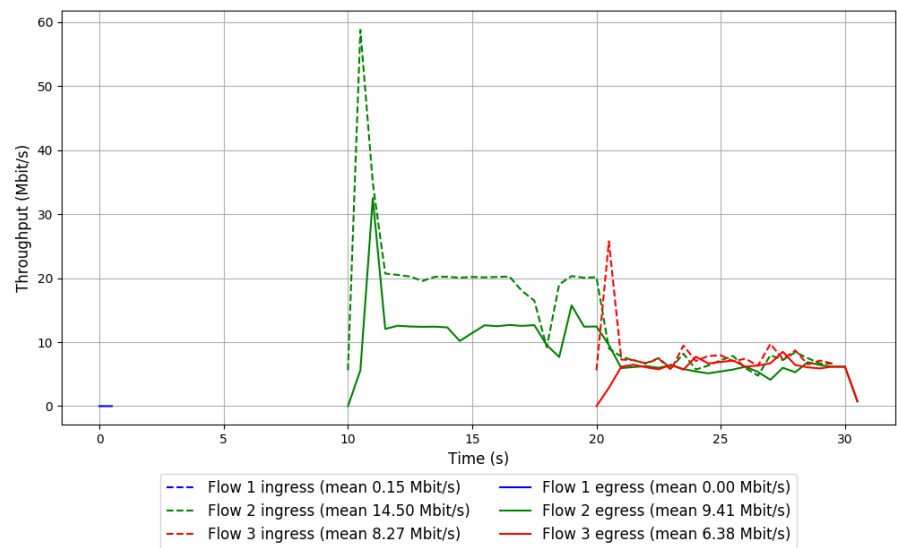


Run 1: Statistics of TaoVA-100x

Start at: 2018-09-11 02:54:53
End at: 2018-09-11 02:55:23
Local clock offset: -7.381 ms
Remote clock offset: -0.497 ms

Below is generated by plot.py at 2018-09-11 04:41:52
Datalink statistics
-- Total of 3 flows:
Average throughput: 8.39 Mbit/s
95th percentile per-packet one-way delay: 91.032 ms
Loss rate: 32.41%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 82.085 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 9.41 Mbit/s
95th percentile per-packet one-way delay: 93.290 ms
Loss rate: 35.14%
-- Flow 3:
Average throughput: 6.38 Mbit/s
95th percentile per-packet one-way delay: 84.869 ms
Loss rate: 22.77%

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-09-11 03:18:13

End at: 2018-09-11 03:18:43

Local clock offset: -6.116 ms

Remote clock offset: 4.972 ms

Below is generated by plot.py at 2018-09-11 04:41:52

Datalink statistics

-- Total of 3 flows:

Average throughput: 12.59 Mbit/s

95th percentile per-packet one-way delay: 101.194 ms

Loss rate: 29.63%

-- Flow 1:

Average throughput: 9.42 Mbit/s

95th percentile per-packet one-way delay: 90.553 ms

Loss rate: 28.78%

-- Flow 2:

Average throughput: 3.26 Mbit/s

95th percentile per-packet one-way delay: 105.027 ms

Loss rate: 24.21%

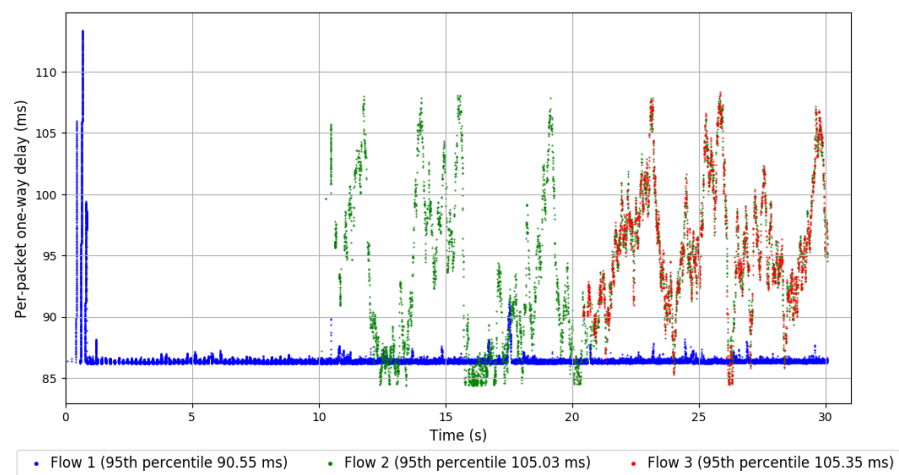
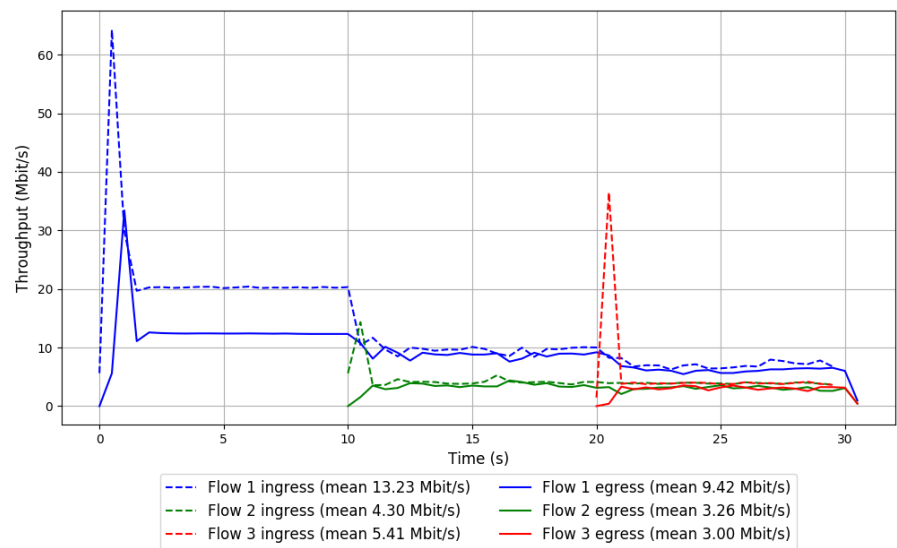
-- Flow 3:

Average throughput: 3.00 Mbit/s

95th percentile per-packet one-way delay: 105.349 ms

Loss rate: 44.54%

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

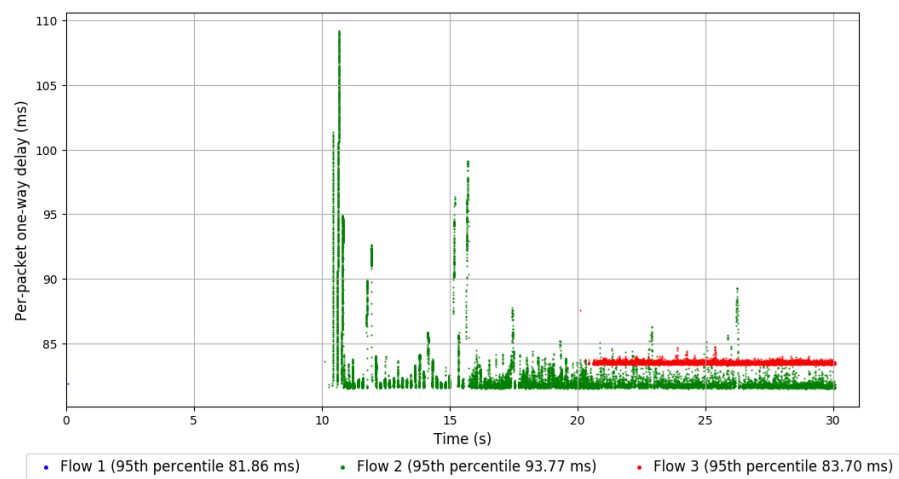
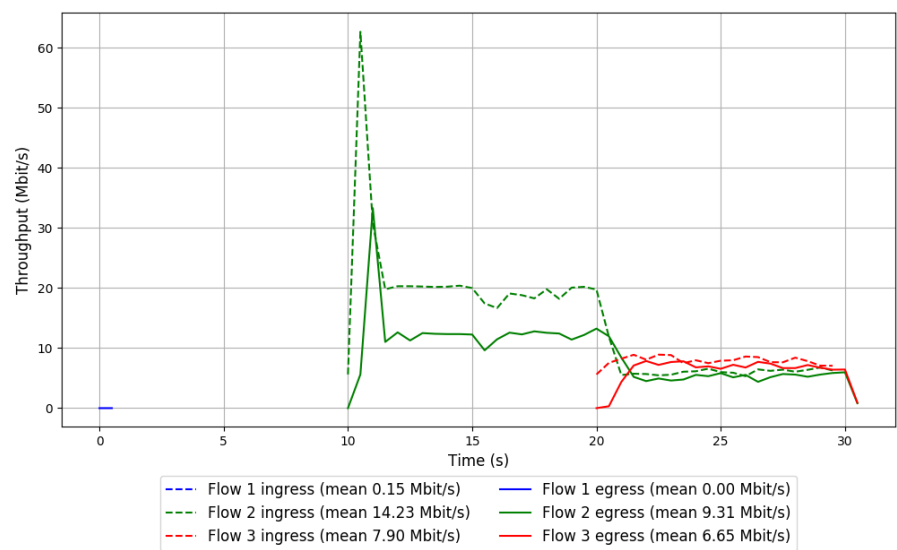


Run 3: Statistics of TaoVA-100x

Start at: 2018-09-11 03:40:55
End at: 2018-09-11 03:41:25
Local clock offset: -10.572 ms
Remote clock offset: 0.958 ms

Below is generated by plot.py at 2018-09-11 04:41:52
Datalink statistics
-- Total of 3 flows:
Average throughput: 8.41 Mbit/s
95th percentile per-packet one-way delay: 92.045 ms
Loss rate: 30.53%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 81.858 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 9.31 Mbit/s
95th percentile per-packet one-way delay: 93.767 ms
Loss rate: 34.61%
-- Flow 3:
Average throughput: 6.65 Mbit/s
95th percentile per-packet one-way delay: 83.698 ms
Loss rate: 15.81%

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



Run 4: Statistics of TaoVA-100x

Start at: 2018-09-11 04:03:54

End at: 2018-09-11 04:04:24

Local clock offset: -9.606 ms

Remote clock offset: 4.532 ms

Below is generated by plot.py at 2018-09-11 04:41:53

Datalink statistics

-- Total of 3 flows:

Average throughput: 12.47 Mbit/s

95th percentile per-packet one-way delay: 88.244 ms

Loss rate: 34.93%

-- Flow 1:

Average throughput: 7.62 Mbit/s

95th percentile per-packet one-way delay: 93.145 ms

Loss rate: 37.31%

-- Flow 2:

Average throughput: 5.45 Mbit/s

95th percentile per-packet one-way delay: 86.278 ms

Loss rate: 26.44%

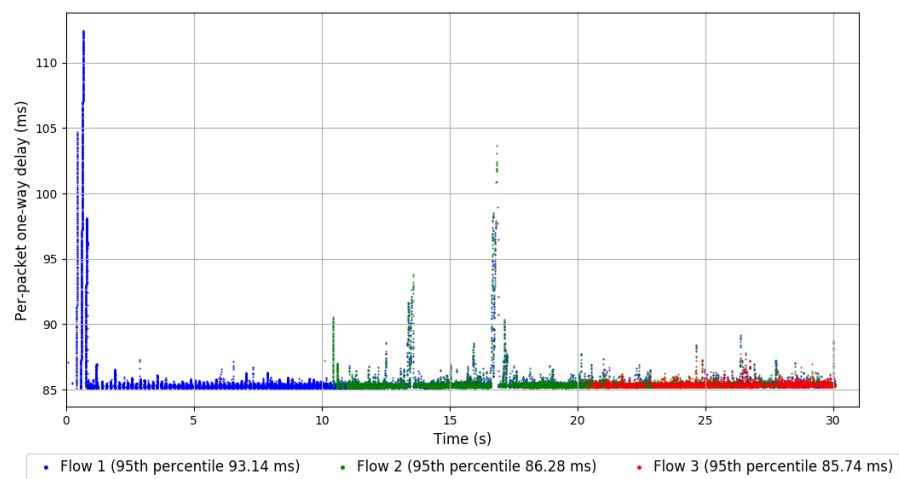
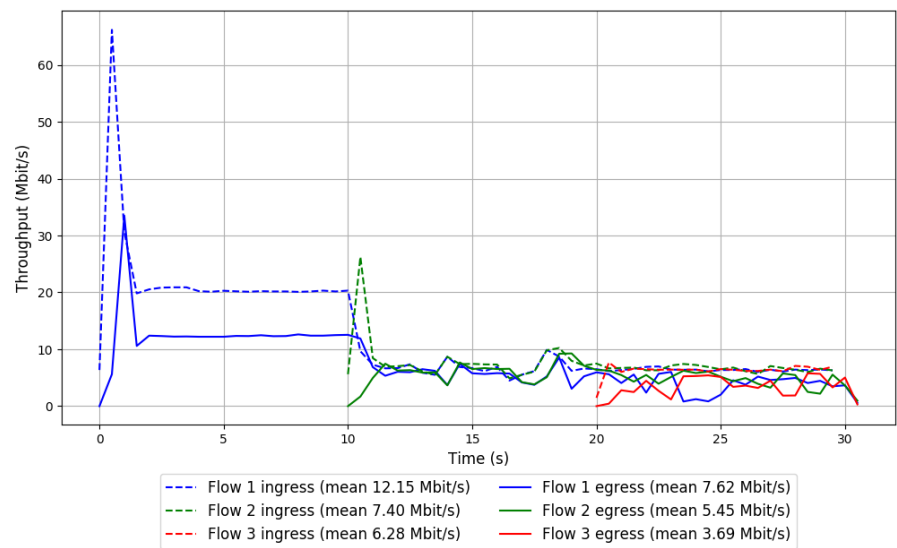
-- Flow 3:

Average throughput: 3.69 Mbit/s

95th percentile per-packet one-way delay: 85.738 ms

Loss rate: 41.18%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-09-11 04:26:56

End at: 2018-09-11 04:27:26

Local clock offset: -6.541 ms

Remote clock offset: 0.352 ms

Below is generated by plot.py at 2018-09-11 04:41:53

Datalink statistics

-- Total of 3 flows:

Average throughput: 8.41 Mbit/s

95th percentile per-packet one-way delay: 94.115 ms

Loss rate: 28.44%

-- Flow 1:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 81.912 ms

Loss rate: 95.92%

-- Flow 2:

Average throughput: 9.46 Mbit/s

95th percentile per-packet one-way delay: 95.011 ms

Loss rate: 23.27%

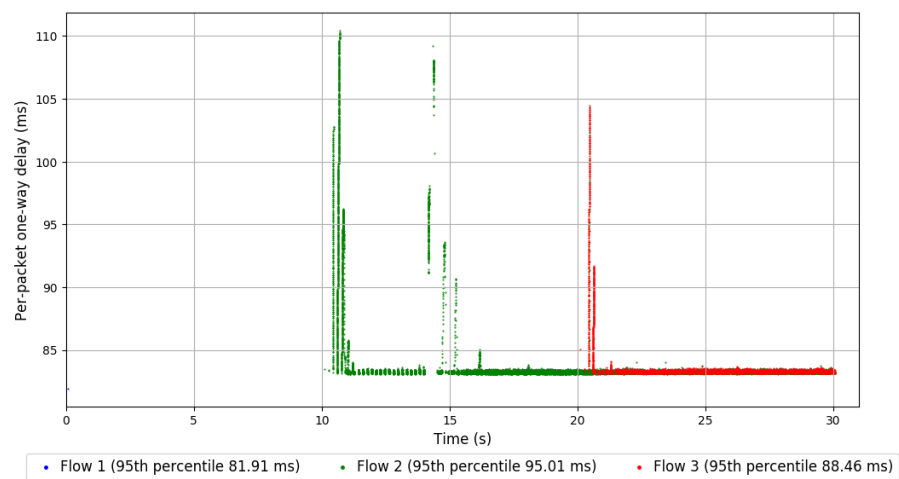
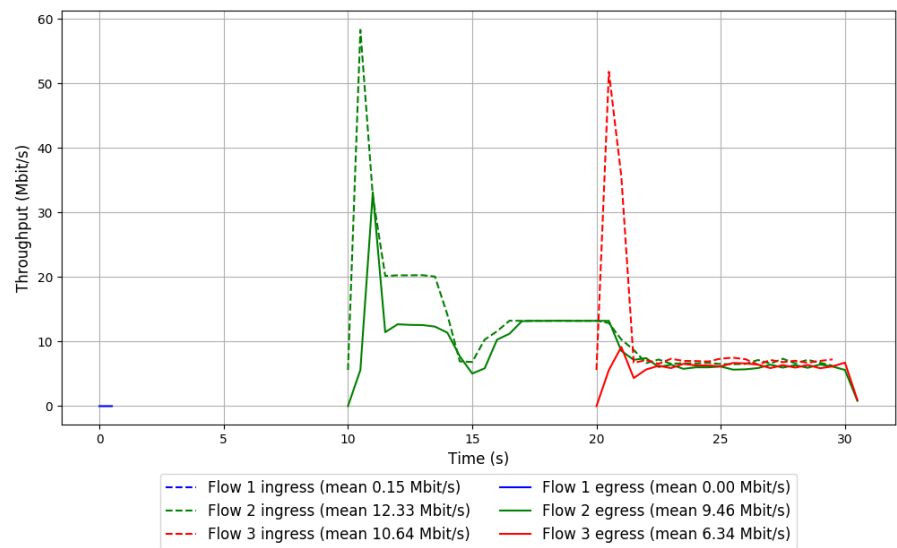
-- Flow 3:

Average throughput: 6.34 Mbit/s

95th percentile per-packet one-way delay: 88.457 ms

Loss rate: 40.44%

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

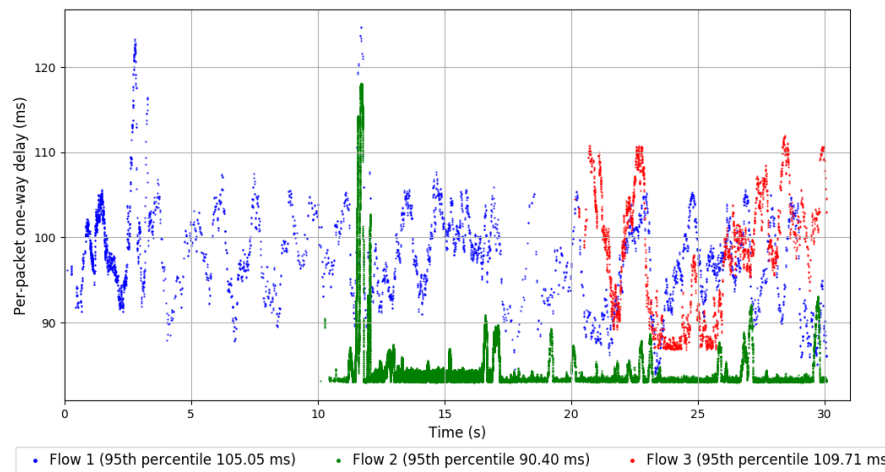
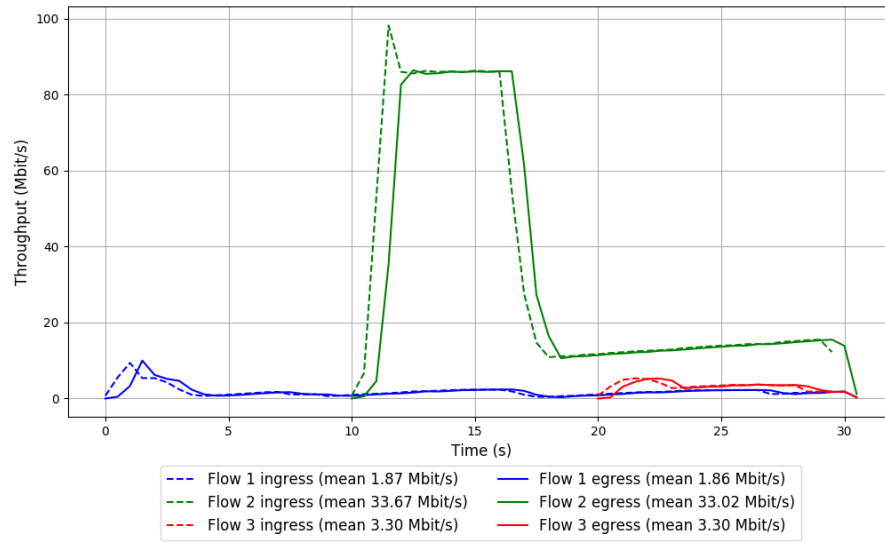


Run 1: Statistics of TCP Vegas

Start at: 2018-09-11 02:51:08
End at: 2018-09-11 02:51:38
Local clock offset: -8.152 ms
Remote clock offset: -0.899 ms

Below is generated by plot.py at 2018-09-11 04:42:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 24.96 Mbit/s
95th percentile per-packet one-way delay: 102.424 ms
Loss rate: 1.79%
-- Flow 1:
Average throughput: 1.86 Mbit/s
95th percentile per-packet one-way delay: 105.049 ms
Loss rate: 0.79%
-- Flow 2:
Average throughput: 33.02 Mbit/s
95th percentile per-packet one-way delay: 90.403 ms
Loss rate: 1.94%
-- Flow 3:
Average throughput: 3.30 Mbit/s
95th percentile per-packet one-way delay: 109.709 ms
Loss rate: 0.33%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-09-11 03:14:25

End at: 2018-09-11 03:14:55

Local clock offset: -6.302 ms

Remote clock offset: 1.006 ms

Below is generated by plot.py at 2018-09-11 04:42:44

Datalink statistics

-- Total of 3 flows:

Average throughput: 77.28 Mbit/s

95th percentile per-packet one-way delay: 89.000 ms

Loss rate: 0.89%

-- Flow 1:

Average throughput: 51.78 Mbit/s

95th percentile per-packet one-way delay: 88.887 ms

Loss rate: 0.91%

-- Flow 2:

Average throughput: 19.33 Mbit/s

95th percentile per-packet one-way delay: 90.375 ms

Loss rate: 0.49%

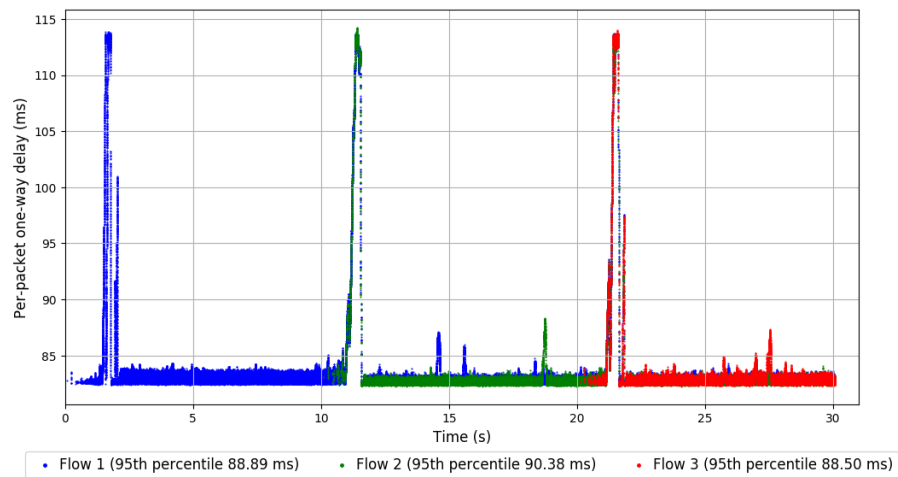
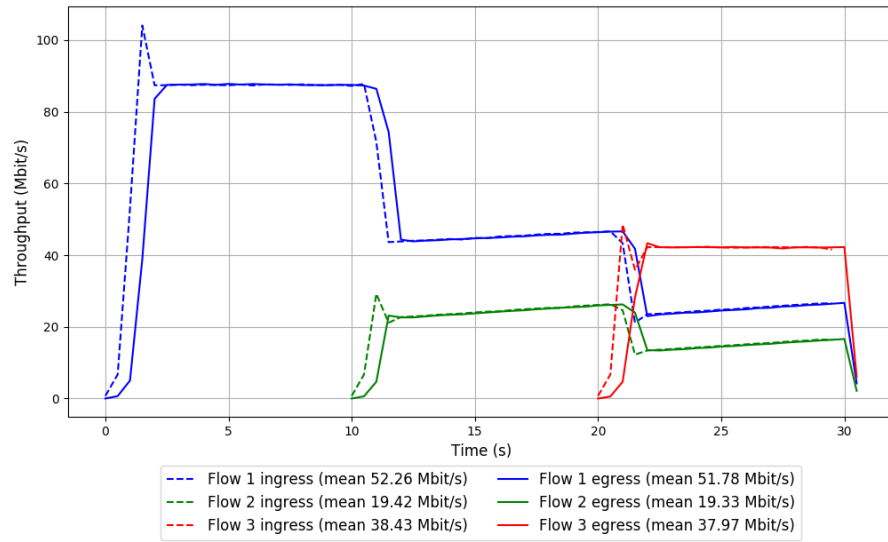
-- Flow 3:

Average throughput: 37.97 Mbit/s

95th percentile per-packet one-way delay: 88.505 ms

Loss rate: 1.19%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2018-09-11 03:37:10

End at: 2018-09-11 03:37:40

Local clock offset: -9.072 ms

Remote clock offset: 0.694 ms

Below is generated by plot.py at 2018-09-11 04:42:44

Datalink statistics

-- Total of 3 flows:

Average throughput: 49.23 Mbit/s

95th percentile per-packet one-way delay: 89.815 ms

Loss rate: 1.41%

-- Flow 1:

Average throughput: 4.19 Mbit/s

95th percentile per-packet one-way delay: 89.318 ms

Loss rate: 0.44%

-- Flow 2:

Average throughput: 38.72 Mbit/s

95th percentile per-packet one-way delay: 91.114 ms

Loss rate: 1.36%

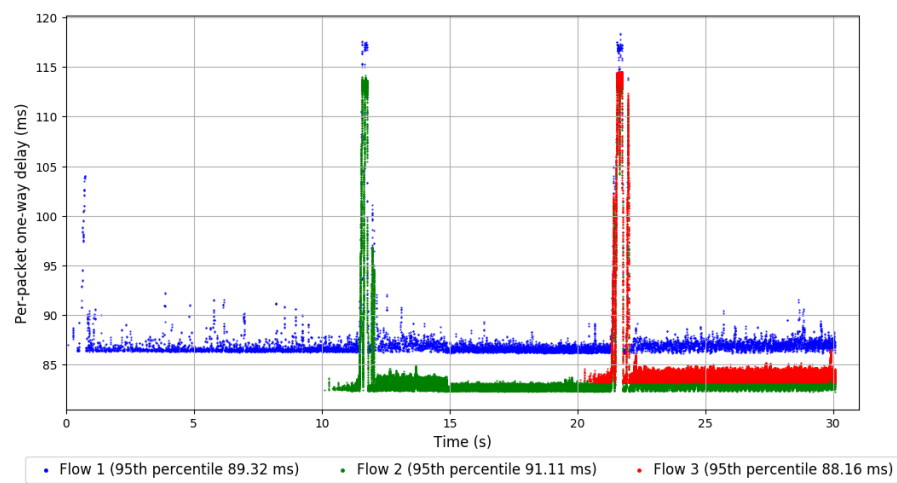
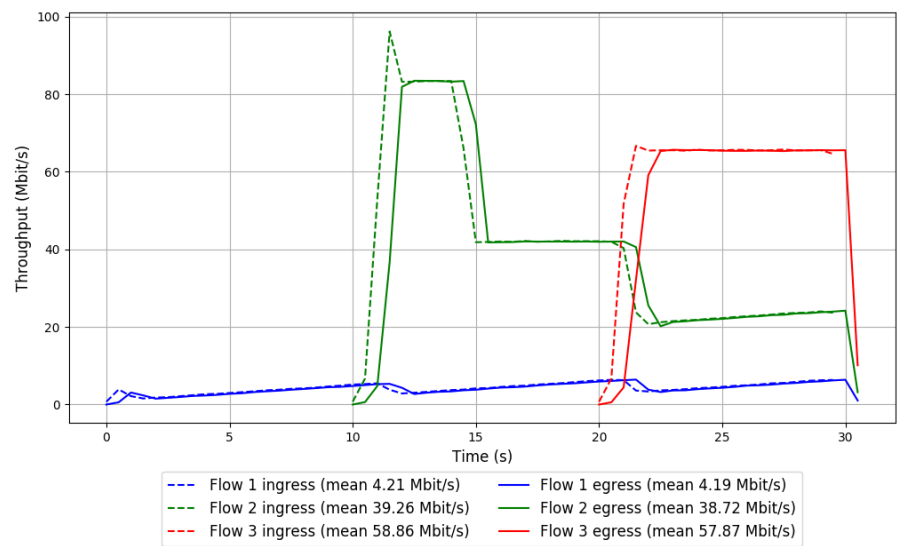
-- Flow 3:

Average throughput: 57.87 Mbit/s

95th percentile per-packet one-way delay: 88.164 ms

Loss rate: 1.67%

Run 3: Report of TCP Vegas — Data Link

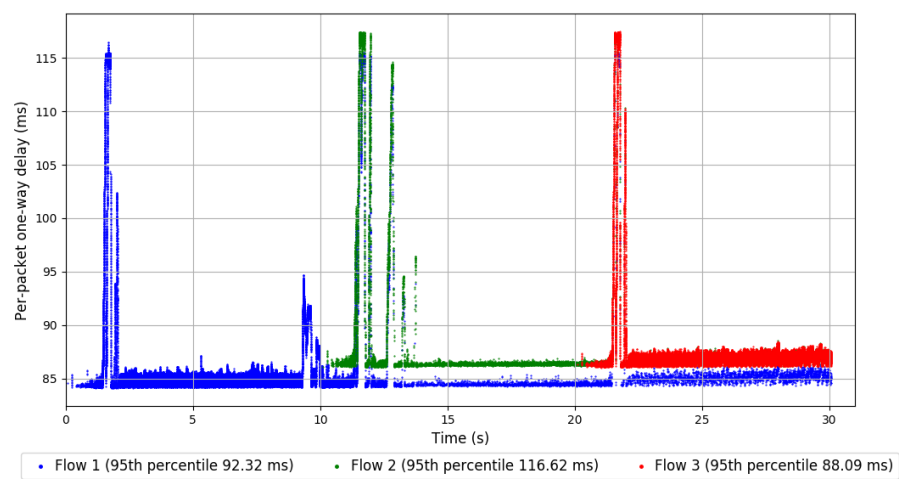
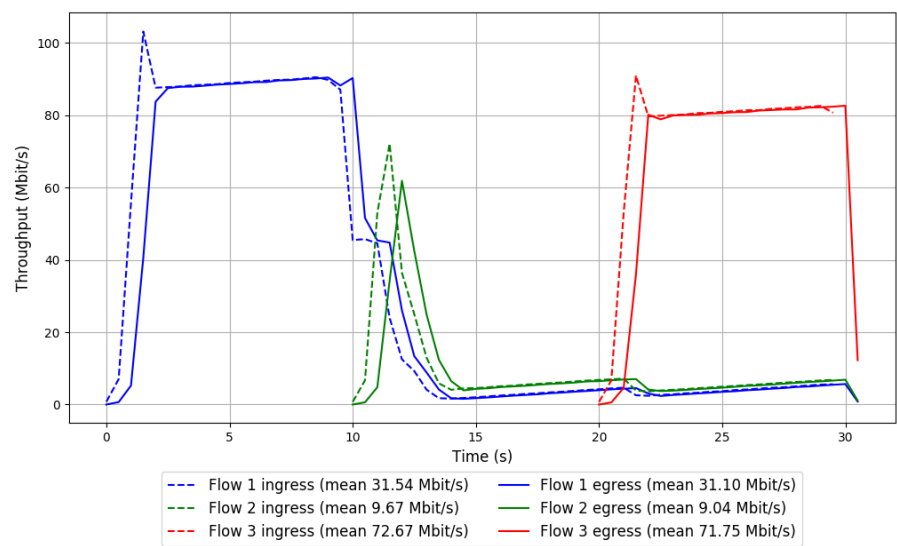


Run 4: Statistics of TCP Vegas

Start at: 2018-09-11 03:59:58
End at: 2018-09-11 04:00:28
Local clock offset: -10.414 ms
Remote clock offset: 3.988 ms

Below is generated by plot.py at 2018-09-11 04:42:44
Datalink statistics
-- Total of 3 flows:
Average throughput: 60.96 Mbit/s
95th percentile per-packet one-way delay: 96.568 ms
Loss rate: 1.87%
-- Flow 1:
Average throughput: 31.10 Mbit/s
95th percentile per-packet one-way delay: 92.318 ms
Loss rate: 1.39%
-- Flow 2:
Average throughput: 9.04 Mbit/s
95th percentile per-packet one-way delay: 116.618 ms
Loss rate: 6.49%
-- Flow 3:
Average throughput: 71.75 Mbit/s
95th percentile per-packet one-way delay: 88.087 ms
Loss rate: 1.25%

Run 4: Report of TCP Vegas — Data Link

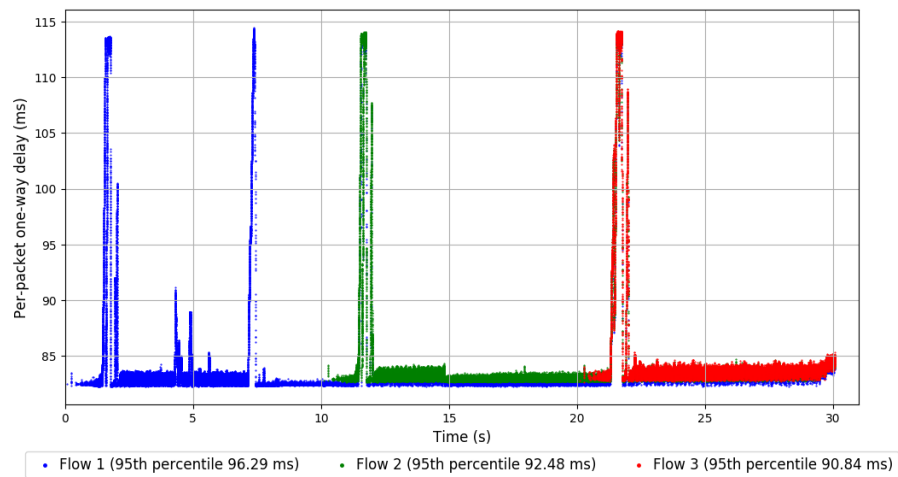
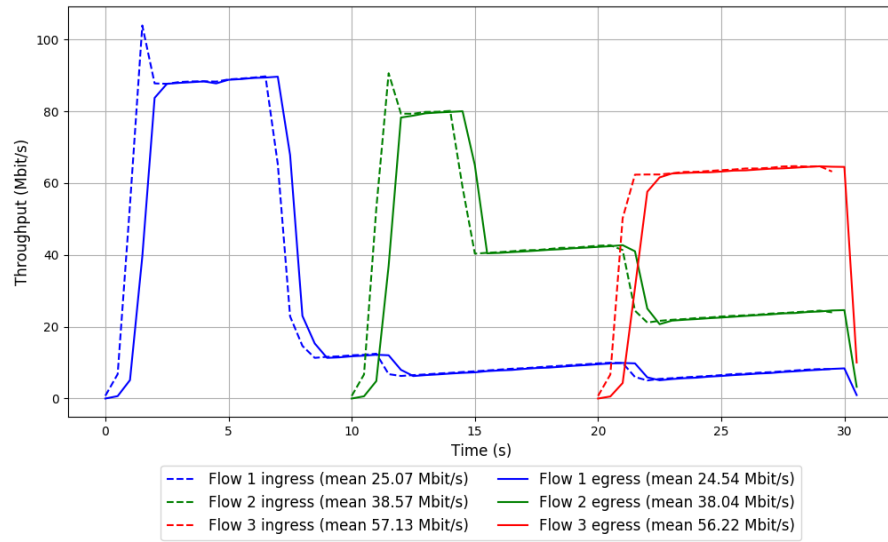


Run 5: Statistics of TCP Vegas

Start at: 2018-09-11 04:23:03
End at: 2018-09-11 04:23:33
Local clock offset: -6.003 ms
Remote clock offset: 0.848 ms

Below is generated by plot.py at 2018-09-11 04:42:44
Datalink statistics
-- Total of 3 flows:
Average throughput: 68.57 Mbit/s
95th percentile per-packet one-way delay: 93.984 ms
Loss rate: 1.70%
-- Flow 1:
Average throughput: 24.54 Mbit/s
95th percentile per-packet one-way delay: 96.288 ms
Loss rate: 2.13%
-- Flow 2:
Average throughput: 38.04 Mbit/s
95th percentile per-packet one-way delay: 92.476 ms
Loss rate: 1.38%
-- Flow 3:
Average throughput: 56.22 Mbit/s
95th percentile per-packet one-way delay: 90.837 ms
Loss rate: 1.56%

Run 5: Report of TCP Vegas — Data Link

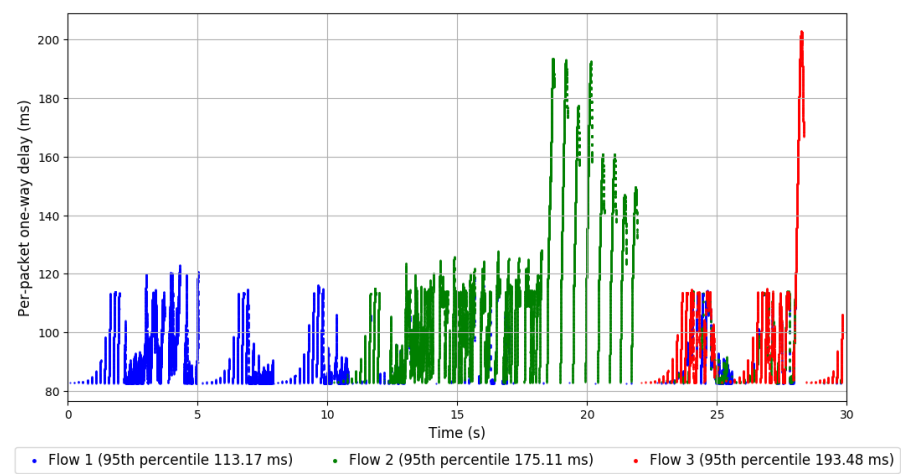
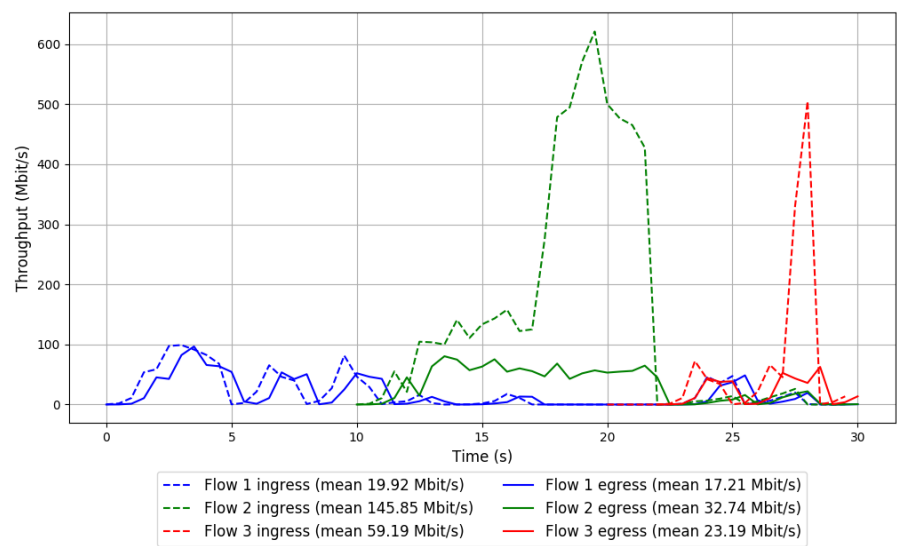


Run 1: Statistics of Verus

Start at: 2018-09-11 02:56:06
End at: 2018-09-11 02:56:36
Local clock offset: -7.373 ms
Remote clock offset: -0.048 ms

Below is generated by plot.py at 2018-09-11 04:42:44
Datalink statistics
-- Total of 3 flows:
Average throughput: 44.86 Mbit/s
95th percentile per-packet one-way delay: 163.841 ms
Loss rate: 66.94%
-- Flow 1:
Average throughput: 17.21 Mbit/s
95th percentile per-packet one-way delay: 113.166 ms
Loss rate: 13.62%
-- Flow 2:
Average throughput: 32.74 Mbit/s
95th percentile per-packet one-way delay: 175.112 ms
Loss rate: 77.55%
-- Flow 3:
Average throughput: 23.19 Mbit/s
95th percentile per-packet one-way delay: 193.477 ms
Loss rate: 68.80%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2018-09-11 03:19:27

End at: 2018-09-11 03:19:57

Local clock offset: -5.998 ms

Remote clock offset: 4.935 ms

Below is generated by plot.py at 2018-09-11 04:42:44

Datalink statistics

-- Total of 3 flows:

Average throughput: 45.93 Mbit/s

95th percentile per-packet one-way delay: 160.941 ms

Loss rate: 58.04%

-- Flow 1:

Average throughput: 23.17 Mbit/s

95th percentile per-packet one-way delay: 128.845 ms

Loss rate: 14.15%

-- Flow 2:

Average throughput: 30.04 Mbit/s

95th percentile per-packet one-way delay: 171.873 ms

Loss rate: 74.81%

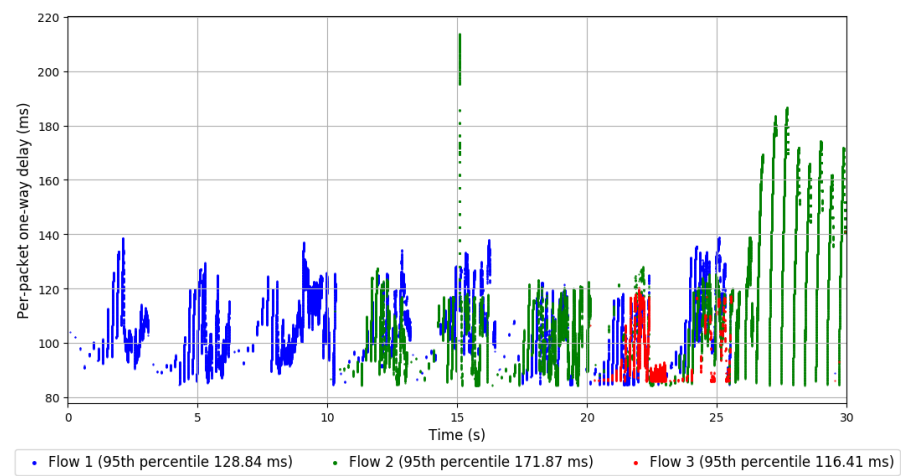
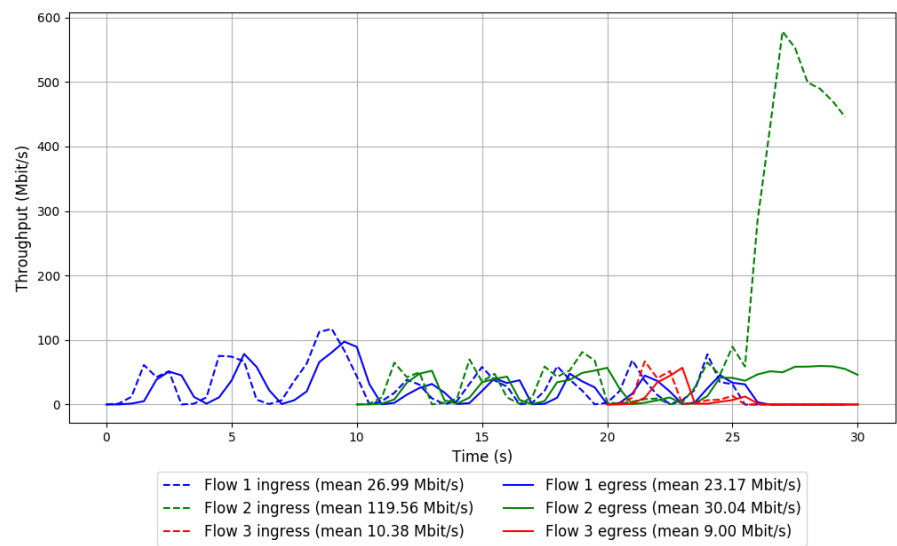
-- Flow 3:

Average throughput: 9.00 Mbit/s

95th percentile per-packet one-way delay: 116.407 ms

Loss rate: 12.98%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2018-09-11 03:42:09

End at: 2018-09-11 03:42:39

Local clock offset: -9.911 ms

Remote clock offset: 0.476 ms

Below is generated by plot.py at 2018-09-11 04:42:44

Datalink statistics

-- Total of 3 flows:

Average throughput: 46.48 Mbit/s

95th percentile per-packet one-way delay: 113.795 ms

Loss rate: 29.29%

-- Flow 1:

Average throughput: 26.87 Mbit/s

95th percentile per-packet one-way delay: 112.231 ms

Loss rate: 15.26%

-- Flow 2:

Average throughput: 24.84 Mbit/s

95th percentile per-packet one-way delay: 115.853 ms

Loss rate: 46.49%

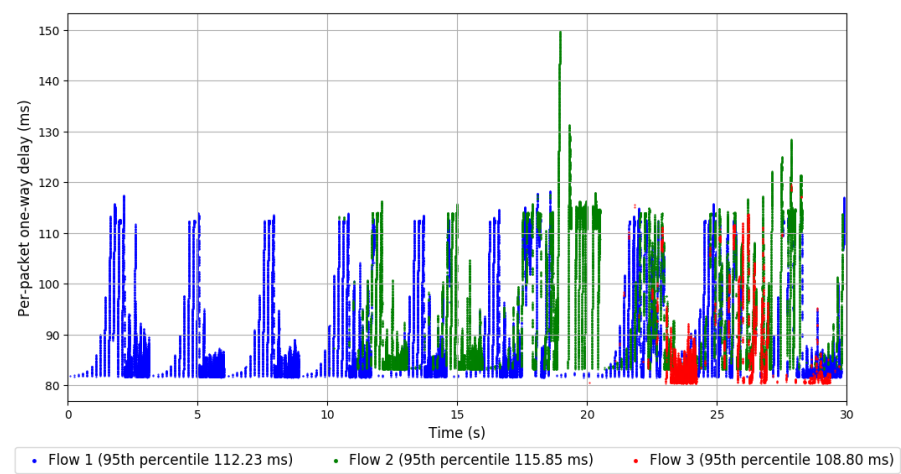
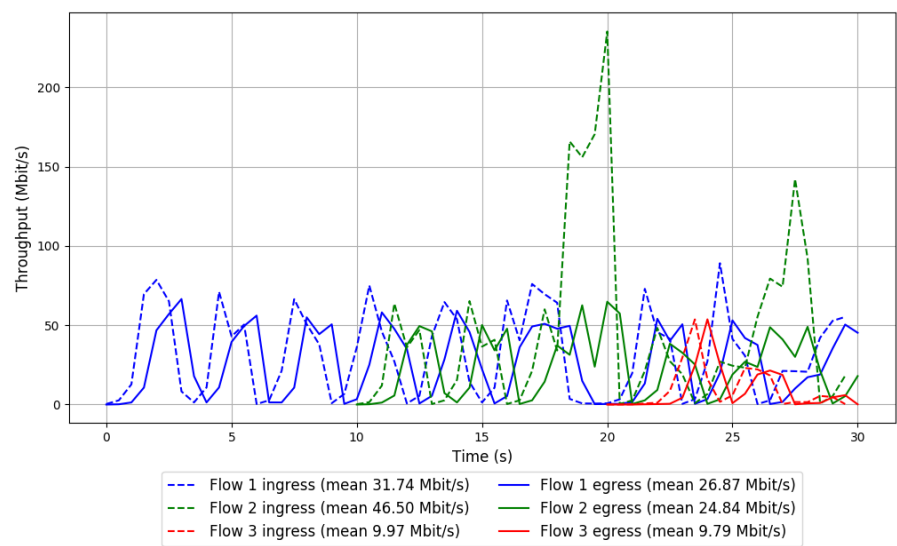
-- Flow 3:

Average throughput: 9.79 Mbit/s

95th percentile per-packet one-way delay: 108.795 ms

Loss rate: 3.40%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2018-09-11 04:05:08

End at: 2018-09-11 04:05:38

Local clock offset: -8.488 ms

Remote clock offset: 4.375 ms

Below is generated by plot.py at 2018-09-11 04:42:46

Datalink statistics

-- Total of 3 flows:

Average throughput: 49.23 Mbit/s

95th percentile per-packet one-way delay: 117.349 ms

Loss rate: 32.23%

-- Flow 1:

Average throughput: 21.64 Mbit/s

95th percentile per-packet one-way delay: 115.823 ms

Loss rate: 13.14%

-- Flow 2:

Average throughput: 30.63 Mbit/s

95th percentile per-packet one-way delay: 120.586 ms

Loss rate: 45.38%

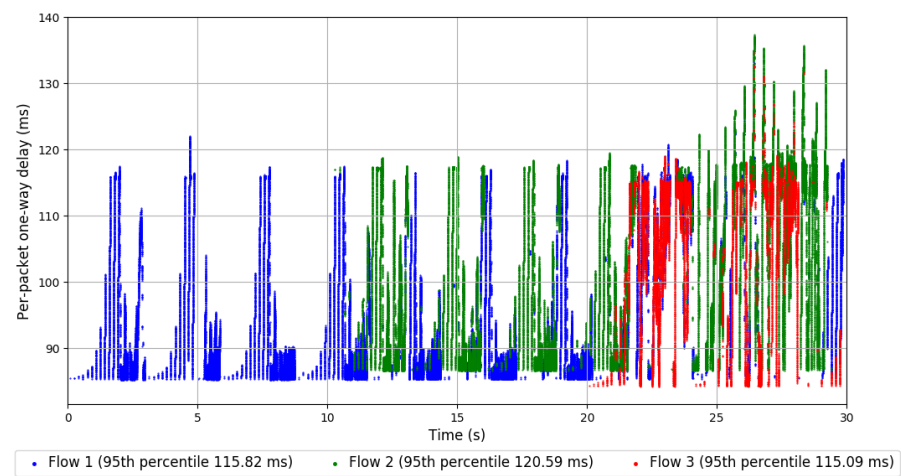
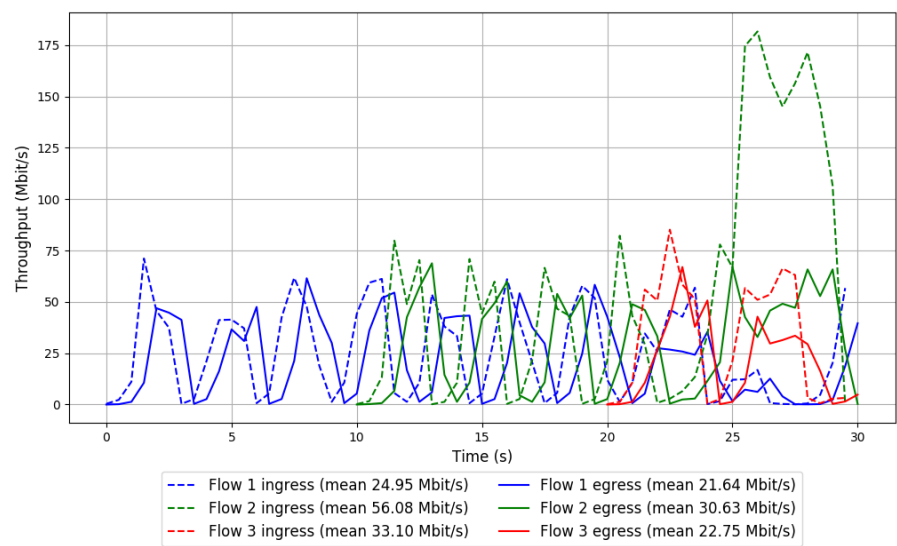
-- Flow 3:

Average throughput: 22.75 Mbit/s

95th percentile per-packet one-way delay: 115.091 ms

Loss rate: 31.21%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-09-11 04:28:11

End at: 2018-09-11 04:28:41

Local clock offset: -5.72 ms

Remote clock offset: 4.399 ms

Below is generated by plot.py at 2018-09-11 04:43:11

Datalink statistics

-- Total of 3 flows:

Average throughput: 49.61 Mbit/s

95th percentile per-packet one-way delay: 138.663 ms

Loss rate: 57.32%

-- Flow 1:

Average throughput: 31.50 Mbit/s

95th percentile per-packet one-way delay: 144.887 ms

Loss rate: 64.52%

-- Flow 2:

Average throughput: 18.52 Mbit/s

95th percentile per-packet one-way delay: 117.084 ms

Loss rate: 21.22%

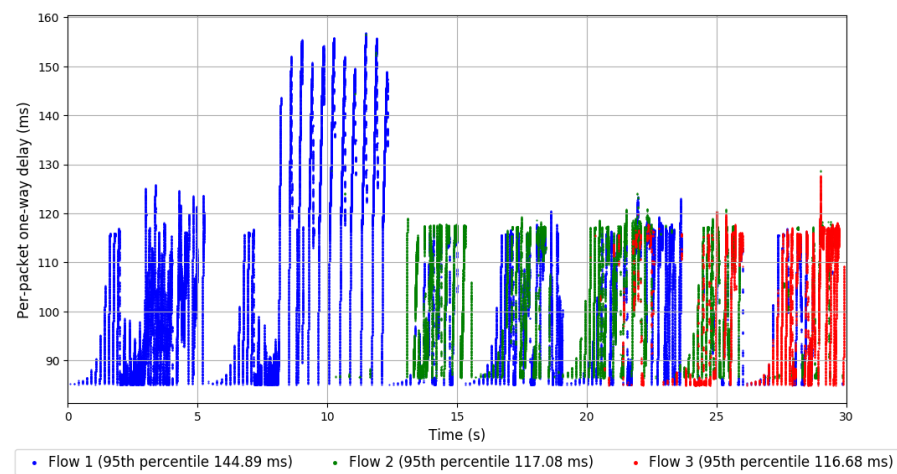
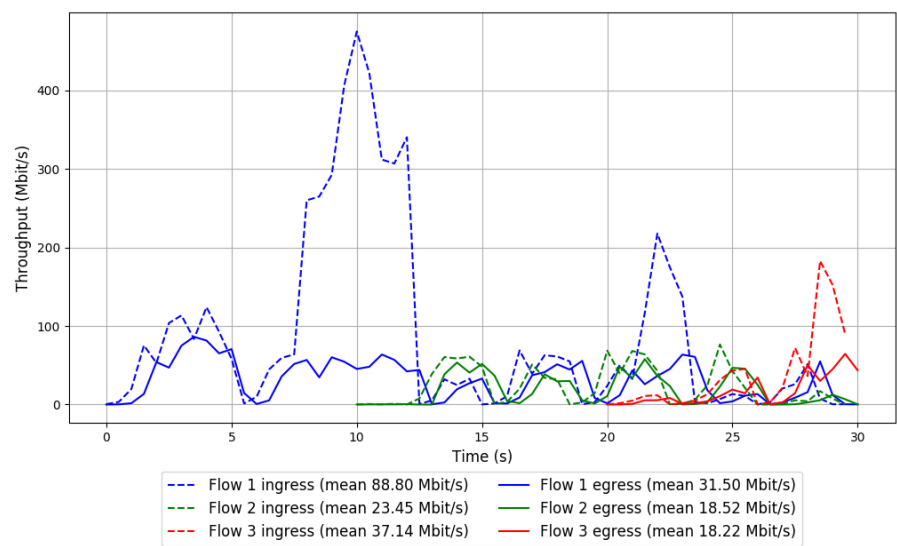
-- Flow 3:

Average throughput: 18.22 Mbit/s

95th percentile per-packet one-way delay: 116.679 ms

Loss rate: 50.96%

Run 5: Report of Verus — Data Link

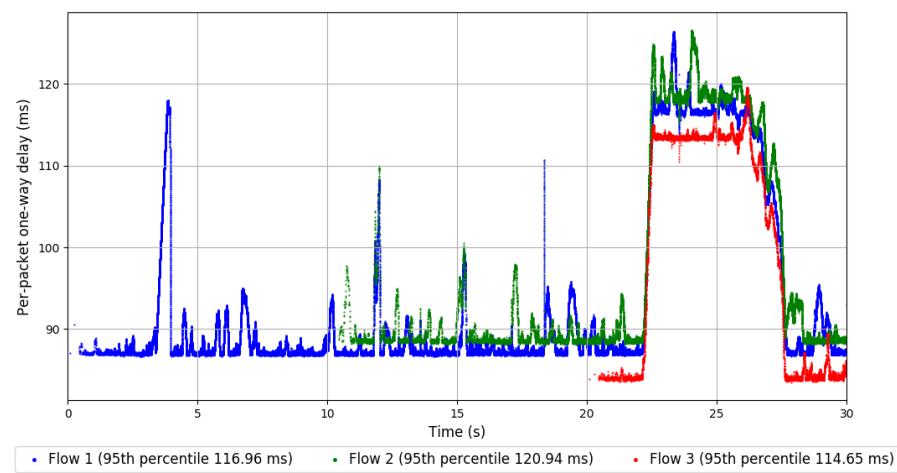
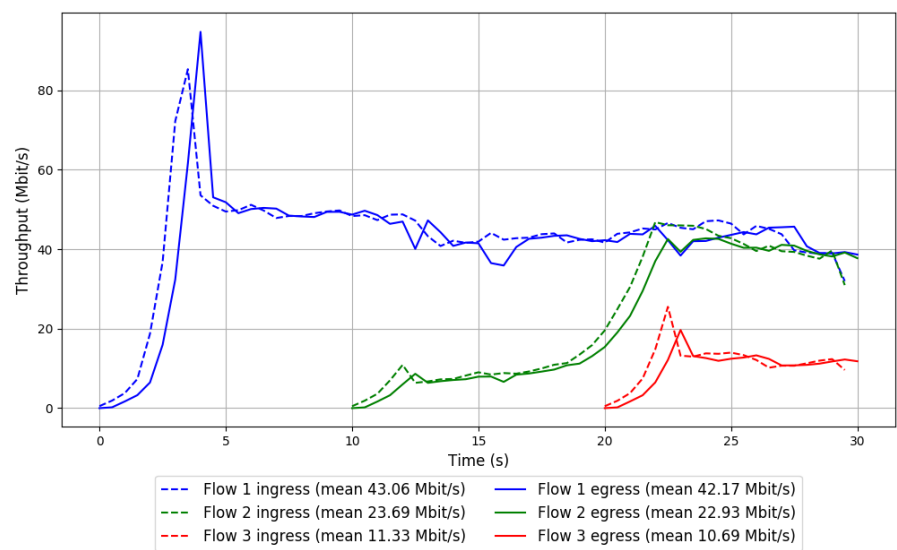


Run 1: Statistics of PCC-Vivace

Start at: 2018-09-11 02:40:55
End at: 2018-09-11 02:41:25
Local clock offset: -7.021 ms
Remote clock offset: -1.164 ms

Below is generated by plot.py at 2018-09-11 04:43:14
Datalink statistics
-- Total of 3 flows:
Average throughput: 60.93 Mbit/s
95th percentile per-packet one-way delay: 118.686 ms
Loss rate: 2.58%
-- Flow 1:
Average throughput: 42.17 Mbit/s
95th percentile per-packet one-way delay: 116.962 ms
Loss rate: 2.09%
-- Flow 2:
Average throughput: 22.93 Mbit/s
95th percentile per-packet one-way delay: 120.935 ms
Loss rate: 3.20%
-- Flow 3:
Average throughput: 10.69 Mbit/s
95th percentile per-packet one-way delay: 114.650 ms
Loss rate: 5.56%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-09-11 03:03:40

End at: 2018-09-11 03:04:10

Local clock offset: -7.635 ms

Remote clock offset: 0.615 ms

Below is generated by plot.py at 2018-09-11 04:43:26

Datalink statistics

-- Total of 3 flows:

Average throughput: 77.92 Mbit/s

95th percentile per-packet one-way delay: 113.286 ms

Loss rate: 0.69%

-- Flow 1:

Average throughput: 71.40 Mbit/s

95th percentile per-packet one-way delay: 113.524 ms

Loss rate: 0.62%

-- Flow 2:

Average throughput: 9.04 Mbit/s

95th percentile per-packet one-way delay: 112.356 ms

Loss rate: 1.56%

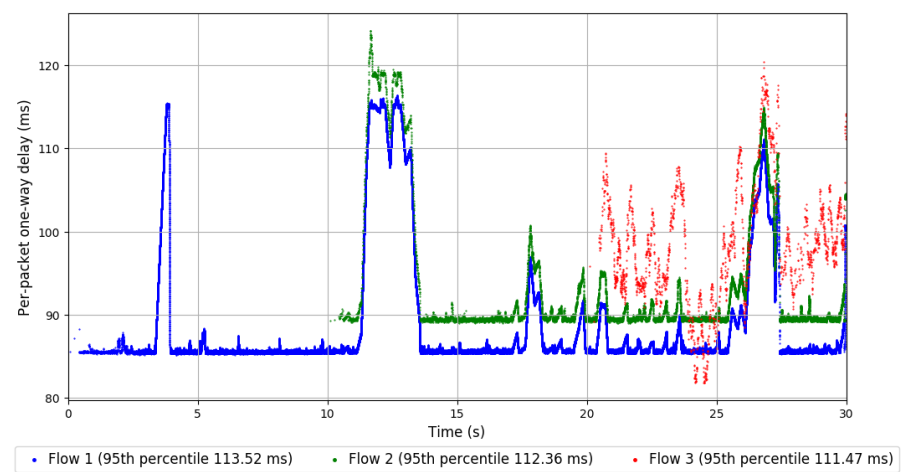
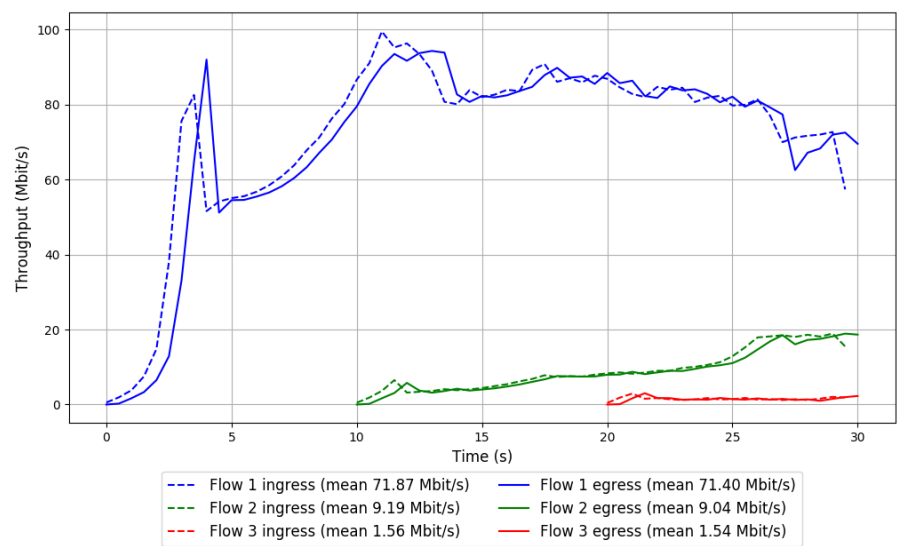
-- Flow 3:

Average throughput: 1.54 Mbit/s

95th percentile per-packet one-way delay: 111.467 ms

Loss rate: 1.01%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-09-11 03:27:00

End at: 2018-09-11 03:27:30

Local clock offset: -5.668 ms

Remote clock offset: 4.319 ms

Below is generated by plot.py at 2018-09-11 04:43:28

Datalink statistics

-- Total of 3 flows:

Average throughput: 78.00 Mbit/s

95th percentile per-packet one-way delay: 115.722 ms

Loss rate: 1.10%

-- Flow 1:

Average throughput: 69.15 Mbit/s

95th percentile per-packet one-way delay: 115.651 ms

Loss rate: 1.04%

-- Flow 2:

Average throughput: 9.45 Mbit/s

95th percentile per-packet one-way delay: 119.790 ms

Loss rate: 1.48%

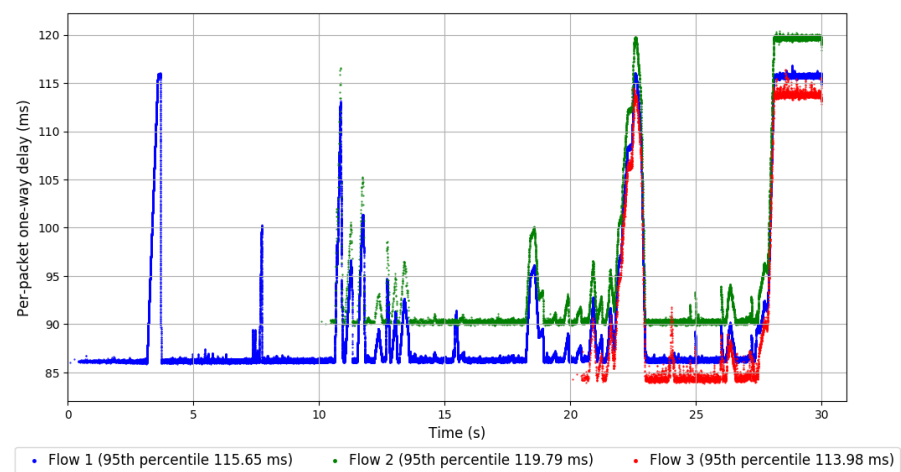
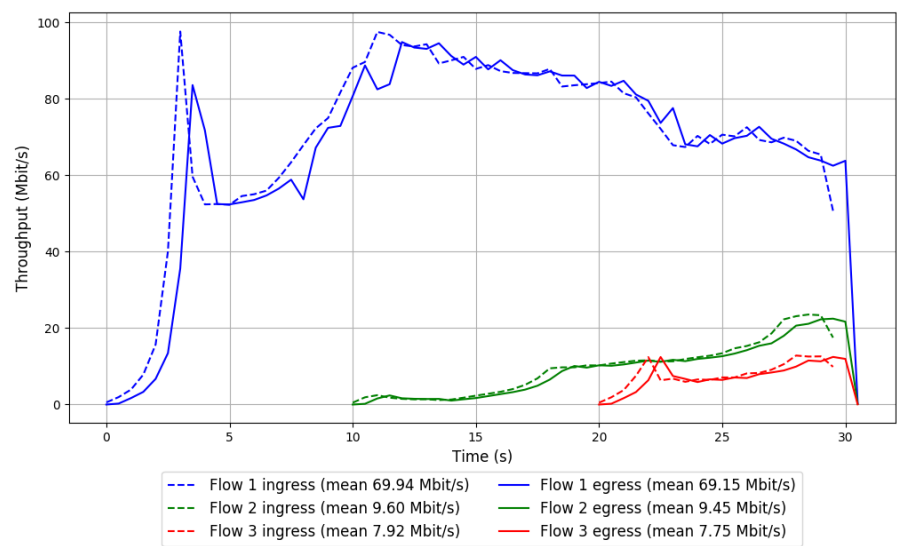
-- Flow 3:

Average throughput: 7.75 Mbit/s

95th percentile per-packet one-way delay: 113.982 ms

Loss rate: 1.81%

Run 3: Report of PCC-Vivace — Data Link

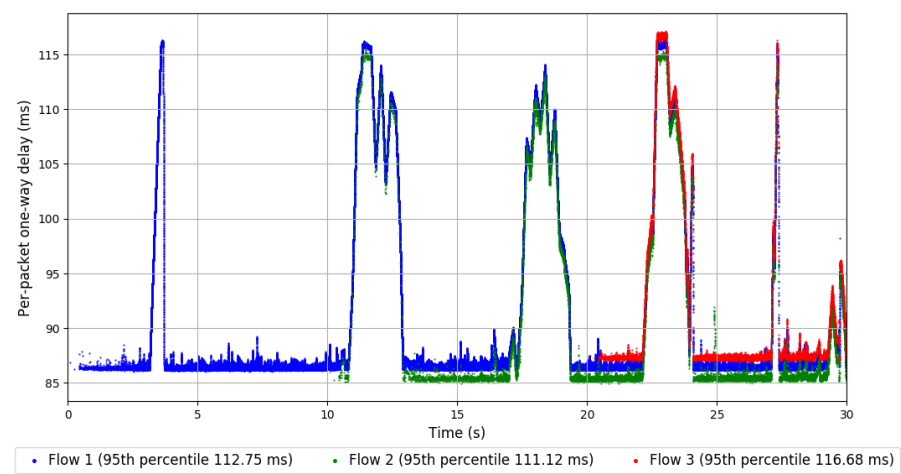
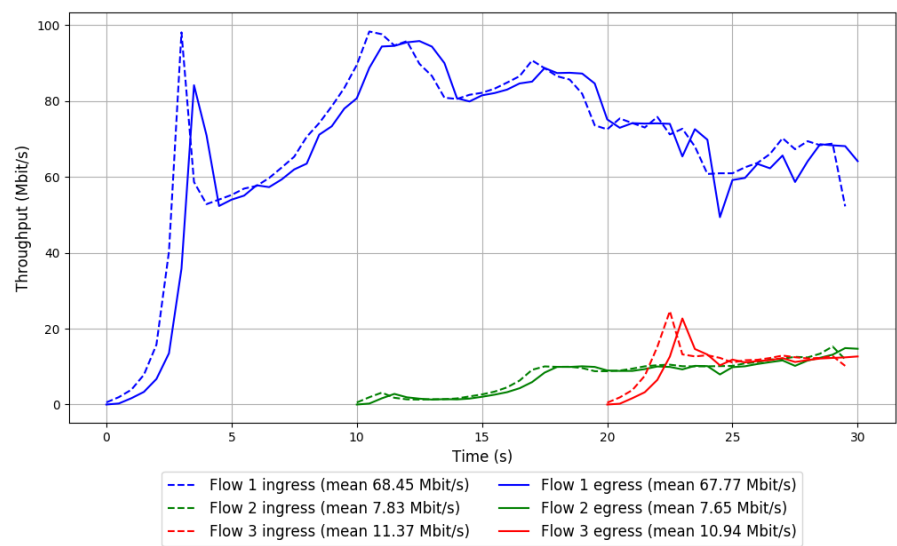


Run 4: Statistics of PCC-Vivace

Start at: 2018-09-11 03:49:43
End at: 2018-09-11 03:50:13
Local clock offset: -11.477 ms
Remote clock offset: 4.265 ms

Below is generated by plot.py at 2018-09-11 04:43:28
Datalink statistics
-- Total of 3 flows:
Average throughput: 76.46 Mbit/s
95th percentile per-packet one-way delay: 112.890 ms
Loss rate: 1.23%
-- Flow 1:
Average throughput: 67.77 Mbit/s
95th percentile per-packet one-way delay: 112.750 ms
Loss rate: 1.00%
-- Flow 2:
Average throughput: 7.65 Mbit/s
95th percentile per-packet one-way delay: 111.119 ms
Loss rate: 2.36%
-- Flow 3:
Average throughput: 10.94 Mbit/s
95th percentile per-packet one-way delay: 116.676 ms
Loss rate: 3.78%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-09-11 04:12:46

End at: 2018-09-11 04:13:16

Local clock offset: -6.972 ms

Remote clock offset: 1.254 ms

Below is generated by plot.py at 2018-09-11 04:43:28

Datalink statistics

-- Total of 3 flows:

Average throughput: 75.30 Mbit/s

95th percentile per-packet one-way delay: 103.217 ms

Loss rate: 1.05%

-- Flow 1:

Average throughput: 65.50 Mbit/s

95th percentile per-packet one-way delay: 102.974 ms

Loss rate: 0.88%

-- Flow 2:

Average throughput: 11.53 Mbit/s

95th percentile per-packet one-way delay: 104.699 ms

Loss rate: 1.94%

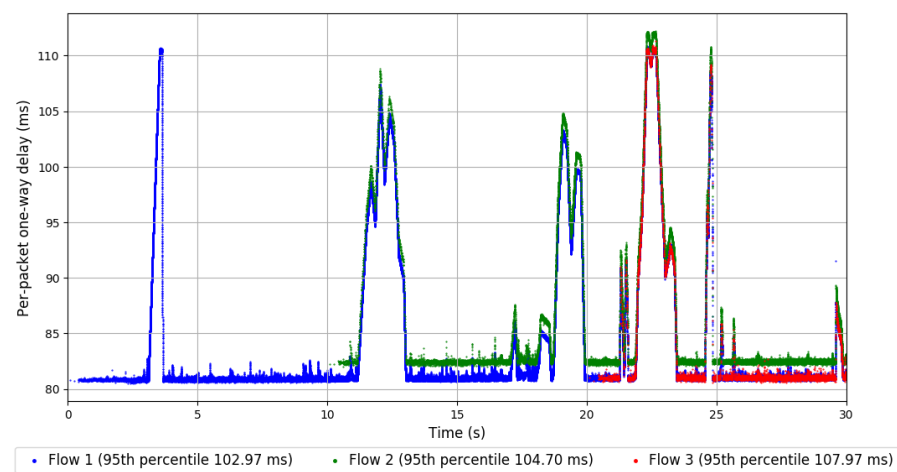
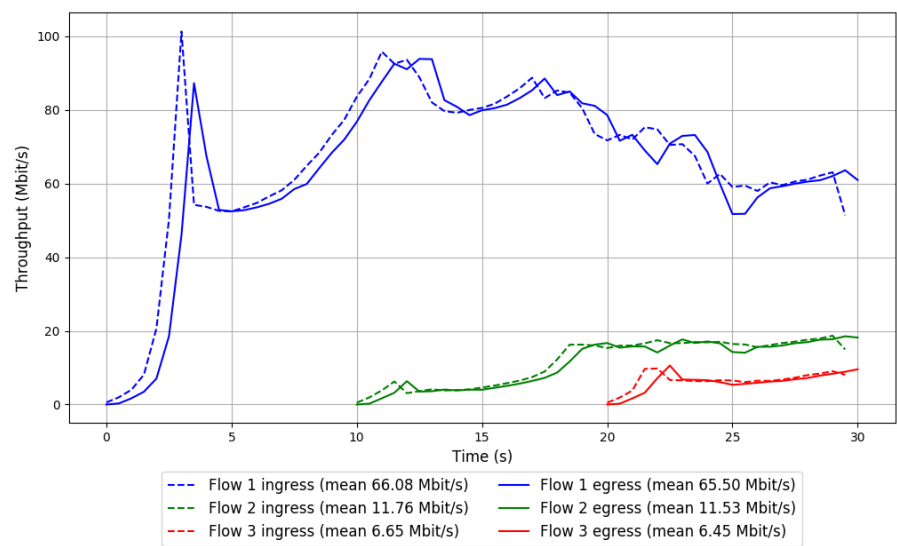
-- Flow 3:

Average throughput: 6.45 Mbit/s

95th percentile per-packet one-way delay: 107.968 ms

Loss rate: 3.03%

Run 5: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-09-11 02:42:17

End at: 2018-09-11 02:42:47

Local clock offset: -7.896 ms

Remote clock offset: 2.206 ms

Below is generated by plot.py at 2018-09-11 04:43:28

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.73 Mbit/s

95th percentile per-packet one-way delay: 94.398 ms

Loss rate: 0.02%

-- Flow 1:

Average throughput: 1.64 Mbit/s

95th percentile per-packet one-way delay: 92.130 ms

Loss rate: 0.02%

-- Flow 2:

Average throughput: 0.98 Mbit/s

95th percentile per-packet one-way delay: 95.342 ms

Loss rate: 0.00%

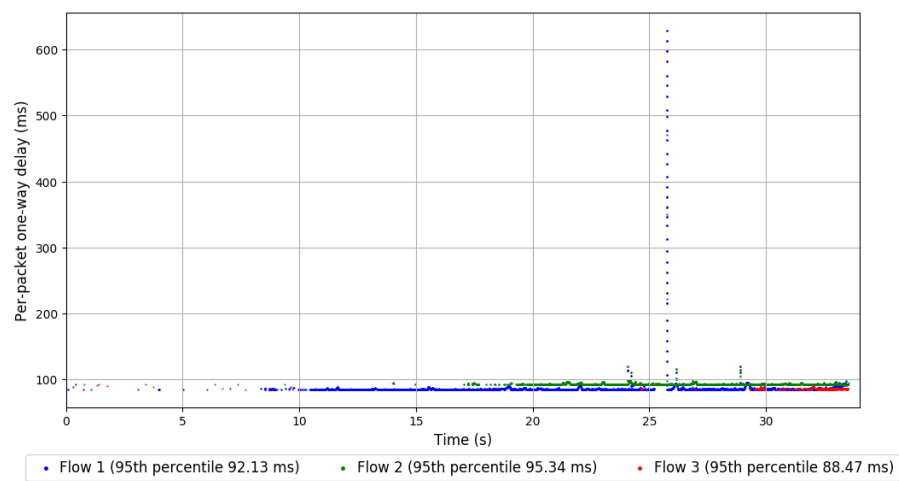
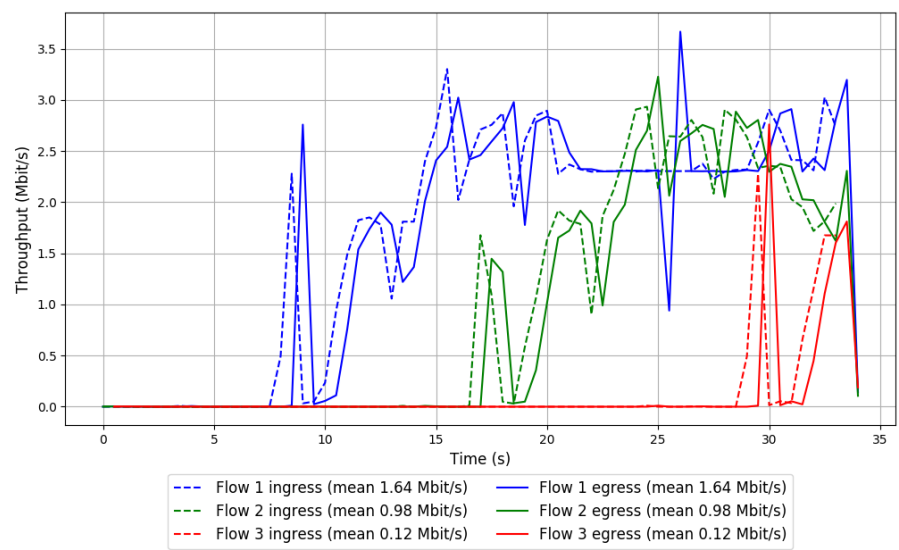
-- Flow 3:

Average throughput: 0.12 Mbit/s

95th percentile per-packet one-way delay: 88.467 ms

Loss rate: 0.23%

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-09-11 03:05:09

End at: 2018-09-11 03:05:39

Local clock offset: -7.527 ms

Remote clock offset: 0.703 ms

Below is generated by plot.py at 2018-09-11 04:43:28

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.10 Mbit/s

95th percentile per-packet one-way delay: 107.972 ms

Loss rate: 0.13%

-- Flow 1:

Average throughput: 1.70 Mbit/s

95th percentile per-packet one-way delay: 90.245 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 1.21 Mbit/s

95th percentile per-packet one-way delay: 110.101 ms

Loss rate: 0.31%

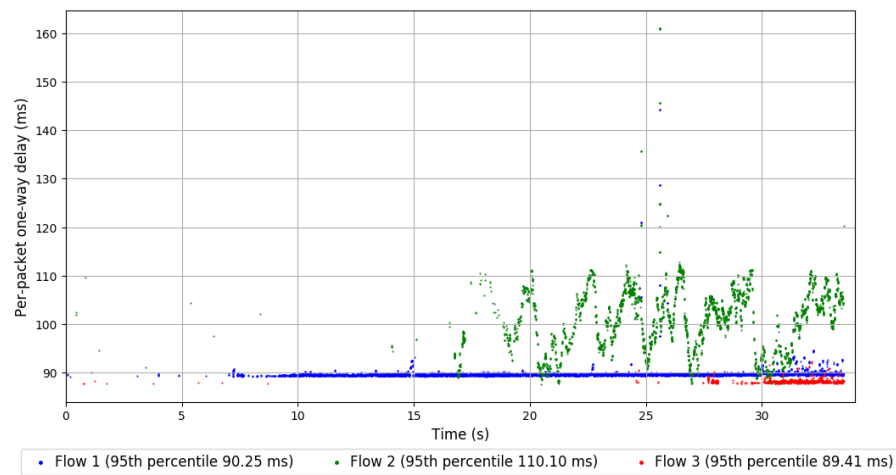
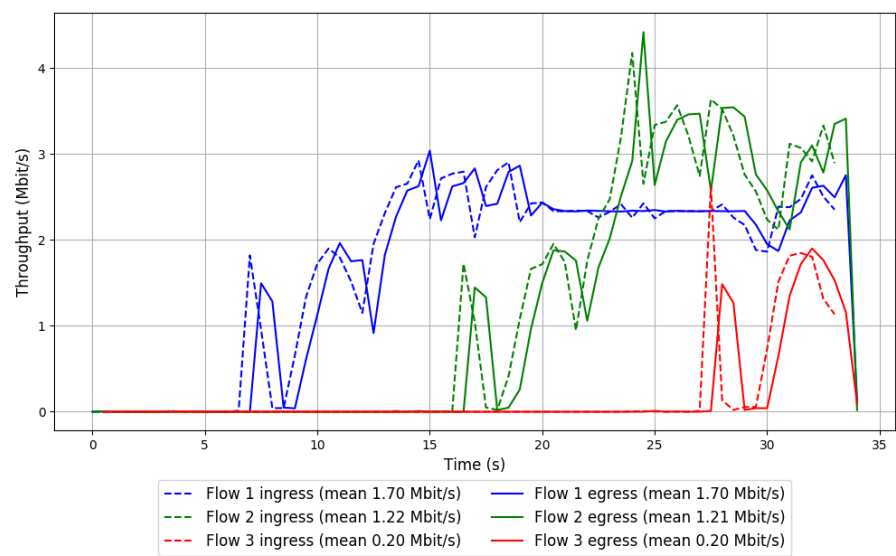
-- Flow 3:

Average throughput: 0.20 Mbit/s

95th percentile per-packet one-way delay: 89.406 ms

Loss rate: 0.15%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-09-11 03:28:18

End at: 2018-09-11 03:28:48

Local clock offset: -6.371 ms

Remote clock offset: 0.894 ms

Below is generated by plot.py at 2018-09-11 04:43:28

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.86 Mbit/s

95th percentile per-packet one-way delay: 100.992 ms

Loss rate: 0.03%

-- Flow 1:

Average throughput: 1.68 Mbit/s

95th percentile per-packet one-way delay: 102.193 ms

Loss rate: 0.05%

-- Flow 2:

Average throughput: 1.03 Mbit/s

95th percentile per-packet one-way delay: 83.986 ms

Loss rate: 0.00%

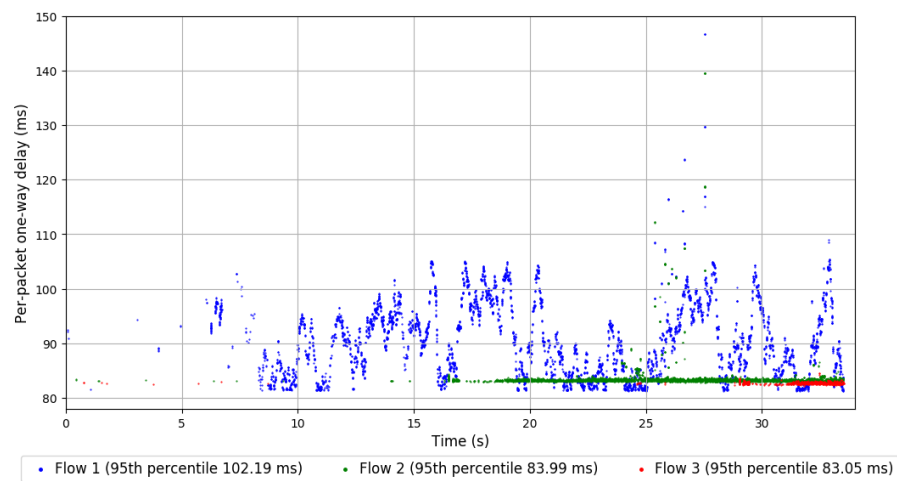
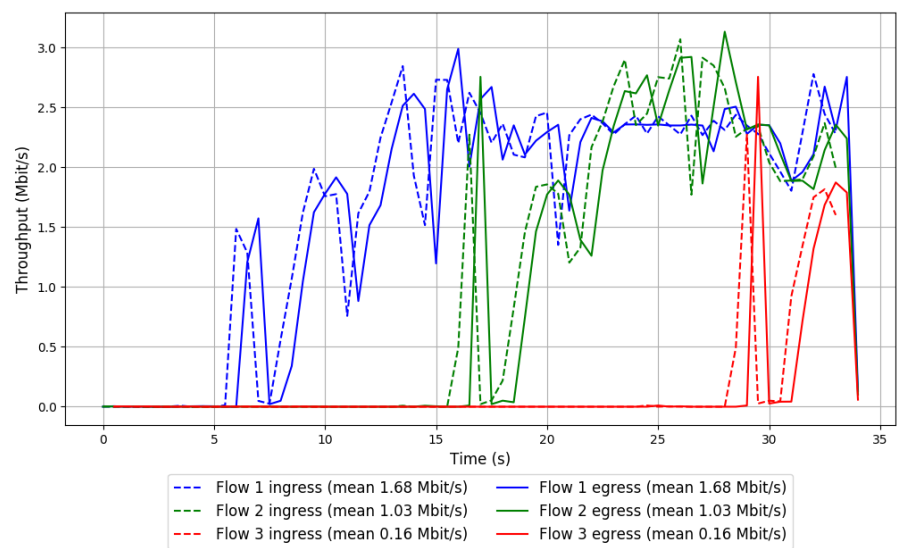
-- Flow 3:

Average throughput: 0.16 Mbit/s

95th percentile per-packet one-way delay: 83.047 ms

Loss rate: 0.01%

Run 3: Report of WebRTC media — Data Link

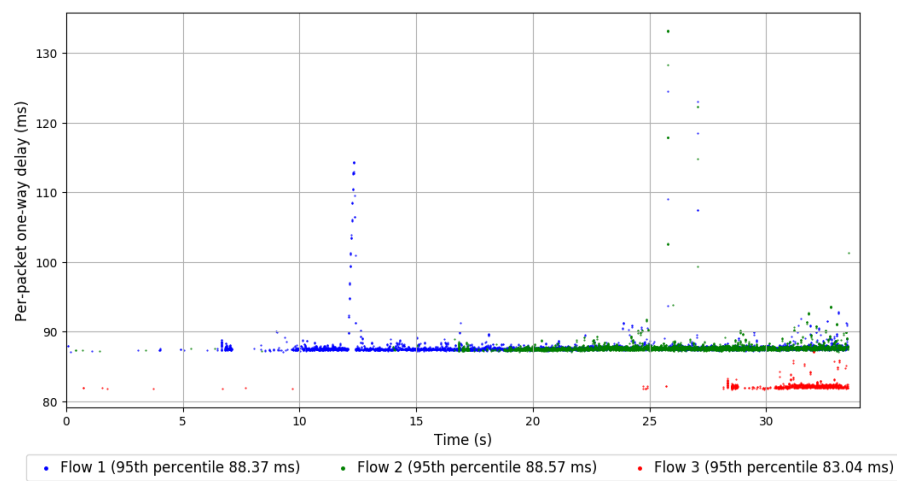
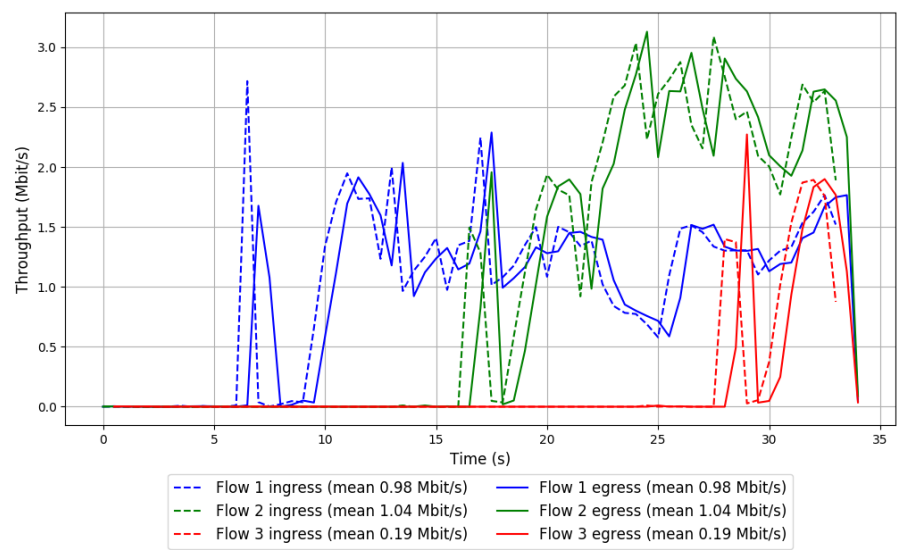


Run 4: Statistics of WebRTC media

Start at: 2018-09-11 03:51:02
End at: 2018-09-11 03:51:32
Local clock offset: -11.593 ms
Remote clock offset: 0.529 ms

Below is generated by plot.py at 2018-09-11 04:43:28
Datalink statistics
-- Total of 3 flows:
Average throughput: 2.19 Mbit/s
95th percentile per-packet one-way delay: 88.396 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 88.374 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 88.573 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 83.039 ms
Loss rate: 0.00%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-09-11 04:14:04

End at: 2018-09-11 04:14:34

Local clock offset: -6.862 ms

Remote clock offset: 1.349 ms

Below is generated by plot.py at 2018-09-11 04:43:28

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.71 Mbit/s

95th percentile per-packet one-way delay: 89.096 ms

Loss rate: 0.05%

-- Flow 1:

Average throughput: 1.49 Mbit/s

95th percentile per-packet one-way delay: 83.569 ms

Loss rate: 0.07%

-- Flow 2:

Average throughput: 1.02 Mbit/s

95th percentile per-packet one-way delay: 84.753 ms

Loss rate: 0.00%

-- Flow 3:

Average throughput: 0.23 Mbit/s

95th percentile per-packet one-way delay: 90.726 ms

Loss rate: 0.13%

Run 5: Report of WebRTC media — Data Link

