

Pantheon Report

Generated at 2018-09-06 22:03:14 (UTC).

Data path: GCE Iowa on **ens4** (*local*) → GCE Tokyo on **ens4** (*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 `time.google.com` and have been applied to correct the timestamps in logs.

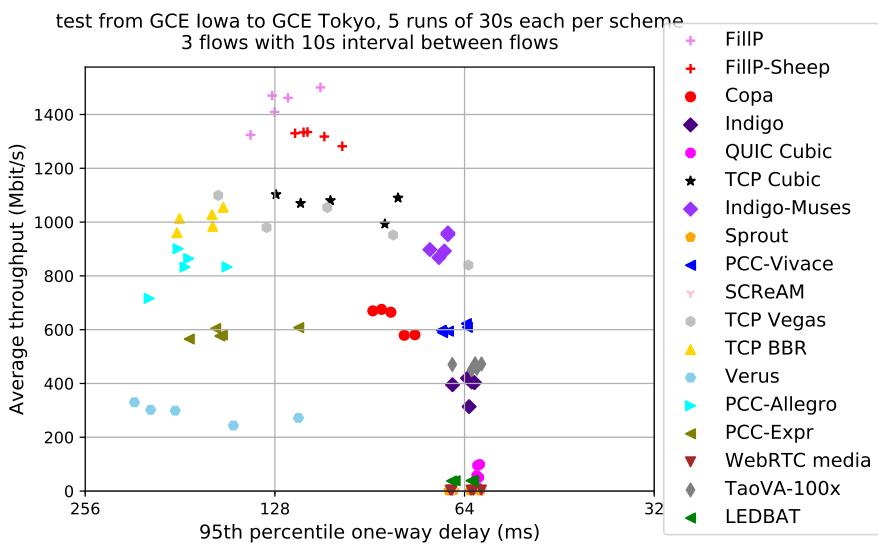
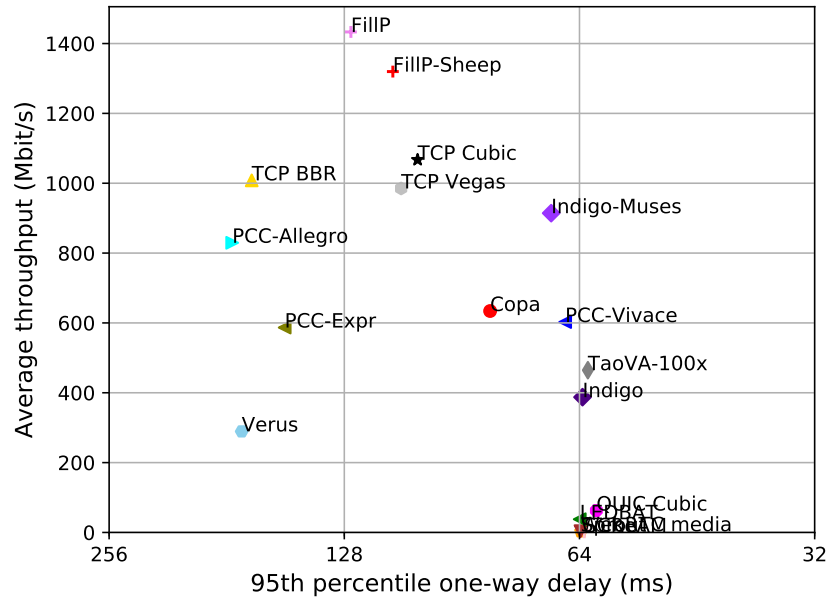
System info:

```
Linux 4.15.0-1018-gcp
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 = 536870912 536870912 536870912
```

Git summary:

```
branch: muses @ f392ce15d580343f4432c3d7e068b3290f03eb4a
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ a28d20fb82a95a965a3da65fd1eb71b8994e9b84
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-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

test from GCE Iowa to GCE Tokyo, 5 runs of 30s each per scheme
 3 flows with 10s interval between flows (mean of all runs by scheme)



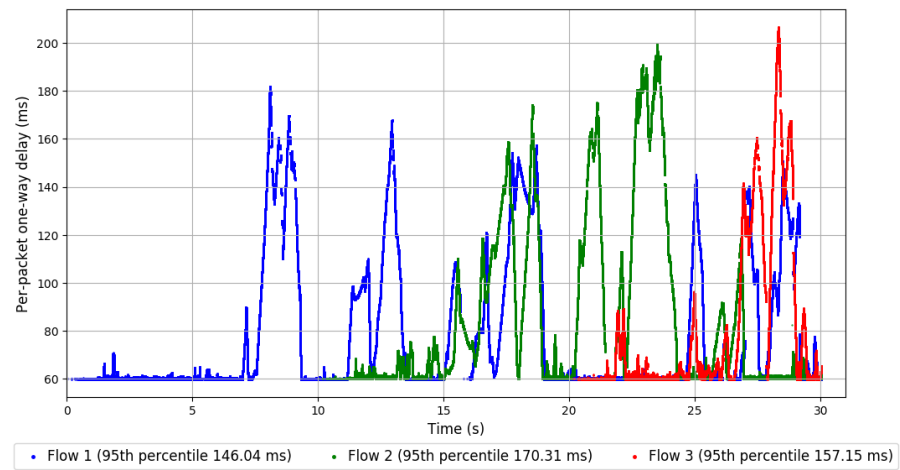
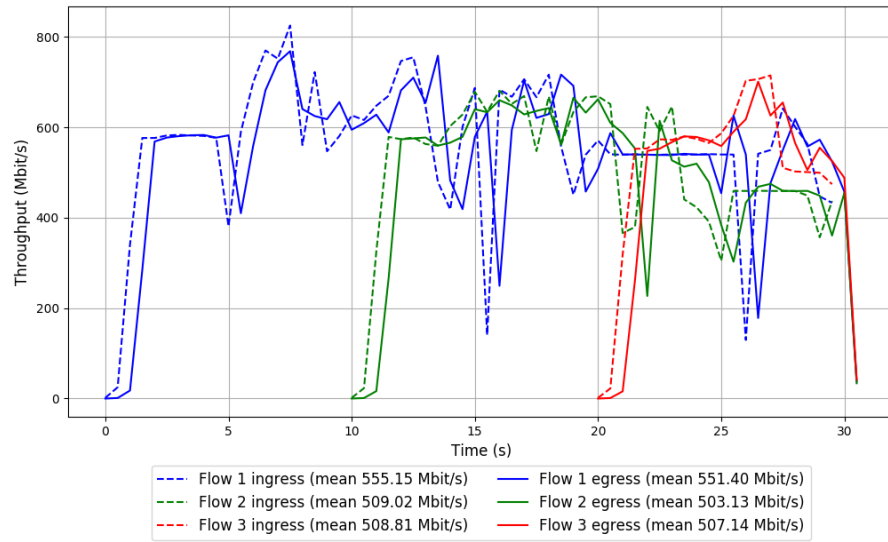
scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	532.12	483.42	463.89	167.21	157.08	149.11	1.47	0.95	1.48
Copa	5	318.16	334.21	280.97	80.06	78.66	98.53	0.01	0.04	0.10
TCP Cubic	5	570.35	518.51	455.14	104.18	88.06	114.00	0.11	0.06	0.24
FillP	5	756.27	720.79	594.55	127.34	122.25	87.58	2.79	0.84	0.07
FillP-Sheep	5	713.69	649.07	523.69	115.12	98.20	78.74	0.41	0.32	0.01
Indigo	5	196.30	203.60	172.93	63.55	62.34	62.42	0.00	0.00	0.00
LEDBAT	5	24.43	16.32	7.88	62.08	62.96	62.94	0.00	0.00	0.00
Indigo-Muses	5	492.43	434.23	409.05	70.78	68.34	66.35	0.01	0.00	0.00
PCC-Allegro	5	457.57	400.39	321.30	175.96	161.04	139.41	2.44	2.29	2.71
PCC-Expr	5	323.86	295.00	201.43	152.68	128.36	93.46	0.98	1.07	0.31
QUIC Cubic	5	23.30	42.37	34.81	62.00	60.97	60.85	0.00	0.00	0.00
SCReAM	5	0.22	0.22	0.22	63.09	60.72	61.93	0.00	0.00	0.00
Sprout	5	0.87	1.21	1.77	61.56	62.62	62.66	0.00	0.00	0.00
TaoVA-100x	5	242.00	226.63	215.61	61.34	62.48	61.37	0.00	0.01	0.00
TCP Vegas	5	509.91	472.25	482.37	104.77	89.15	88.34	0.04	0.08	0.17
Verus	5	172.35	132.05	89.85	185.26	102.24	90.97	2.74	0.05	0.05
PCC-Vivace	5	359.79	291.77	147.26	68.33	64.49	75.24	0.00	0.01	0.00
WebRTC media	5	1.93	1.24	0.49	62.67	62.64	62.65	0.00	0.02	0.00

Run 1: Statistics of TCP BBR

Start at: 2018-09-06 16:43:59
End at: 2018-09-06 16:44:29
Local clock offset: 0.038 ms
Remote clock offset: -0.876 ms

Below is generated by plot.py at 2018-09-06 19:45:41
Datalink statistics
-- Total of 3 flows:
Average throughput: 1054.96 Mbit/s
95th percentile per-packet one-way delay: 154.601 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 551.40 Mbit/s
95th percentile per-packet one-way delay: 146.044 ms
Loss rate: 0.68%
-- Flow 2:
Average throughput: 503.13 Mbit/s
95th percentile per-packet one-way delay: 170.305 ms
Loss rate: 1.16%
-- Flow 3:
Average throughput: 507.14 Mbit/s
95th percentile per-packet one-way delay: 157.145 ms
Loss rate: 0.31%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-09-06 17:16:14

End at: 2018-09-06 17:16:44

Local clock offset: 0.092 ms

Remote clock offset: 0.358 ms

Below is generated by plot.py at 2018-09-06 19:45:41

Datalink statistics

-- Total of 3 flows:

Average throughput: 1027.96 Mbit/s

95th percentile per-packet one-way delay: 161.052 ms

Loss rate: 1.30%

-- Flow 1:

Average throughput: 538.40 Mbit/s

95th percentile per-packet one-way delay: 170.537 ms

Loss rate: 1.95%

-- Flow 2:

Average throughput: 514.87 Mbit/s

95th percentile per-packet one-way delay: 139.262 ms

Loss rate: 0.32%

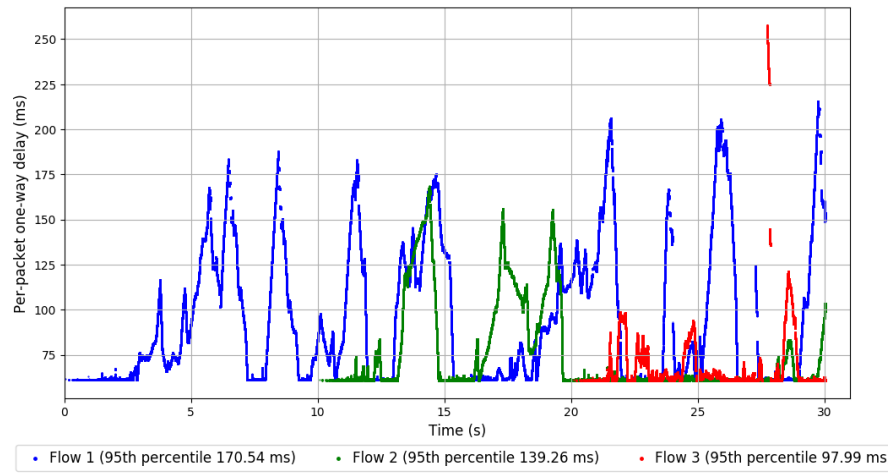
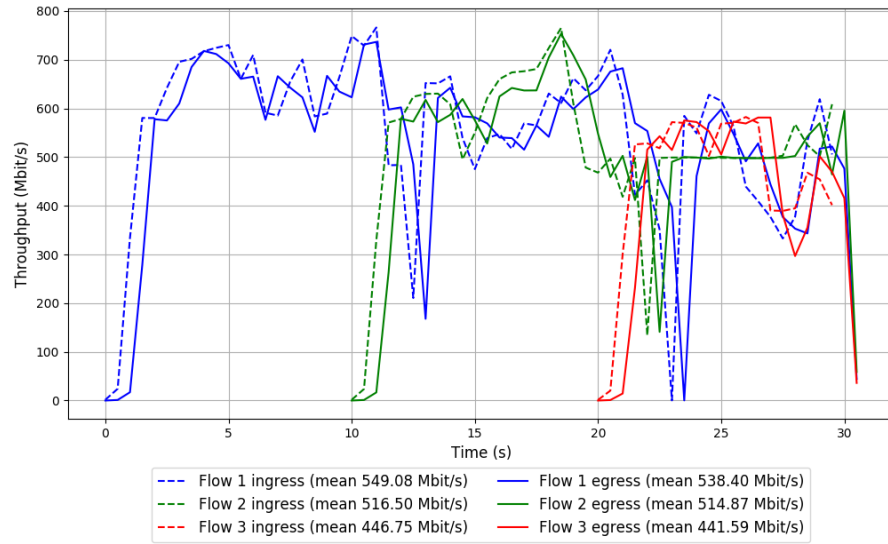
-- Flow 3:

Average throughput: 441.59 Mbit/s

95th percentile per-packet one-way delay: 97.988 ms

Loss rate: 1.16%

Run 2: Report of TCP BBR — Data Link

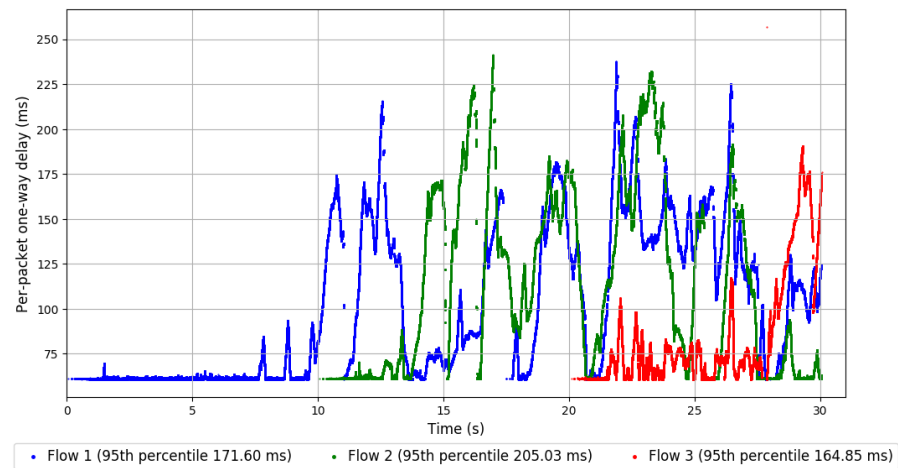
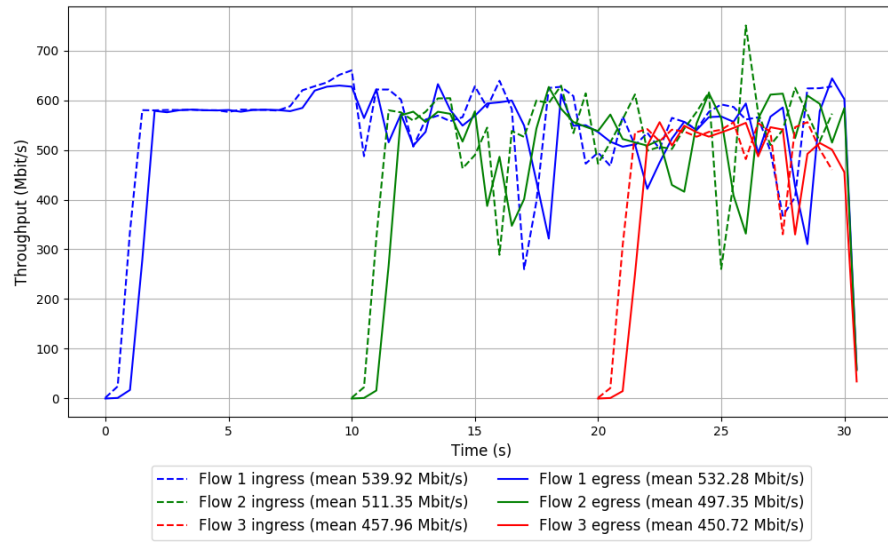


Run 3: Statistics of TCP BBR

Start at: 2018-09-06 17:48:37
End at: 2018-09-06 17:49:07
Local clock offset: 0.128 ms
Remote clock offset: -0.224 ms

Below is generated by plot.py at 2018-09-06 19:45:41
Datalink statistics
-- Total of 3 flows:
Average throughput: 1013.27 Mbit/s
95th percentile per-packet one-way delay: 181.402 ms
Loss rate: 1.87%
-- Flow 1:
Average throughput: 532.28 Mbit/s
95th percentile per-packet one-way delay: 171.604 ms
Loss rate: 1.41%
-- Flow 2:
Average throughput: 497.35 Mbit/s
95th percentile per-packet one-way delay: 205.034 ms
Loss rate: 2.73%
-- Flow 3:
Average throughput: 450.72 Mbit/s
95th percentile per-packet one-way delay: 164.854 ms
Loss rate: 1.57%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2018-09-06 18:20:40

End at: 2018-09-06 18:21:10

Local clock offset: 0.095 ms

Remote clock offset: 0.272 ms

Below is generated by plot.py at 2018-09-06 19:45:41

Datalink statistics

-- Total of 3 flows:

Average throughput: 960.59 Mbit/s

95th percentile per-packet one-way delay: 183.075 ms

Loss rate: 1.67%

-- Flow 1:

Average throughput: 516.87 Mbit/s

95th percentile per-packet one-way delay: 187.292 ms

Loss rate: 2.22%

-- Flow 2:

Average throughput: 441.37 Mbit/s

95th percentile per-packet one-way delay: 103.962 ms

Loss rate: 0.00%

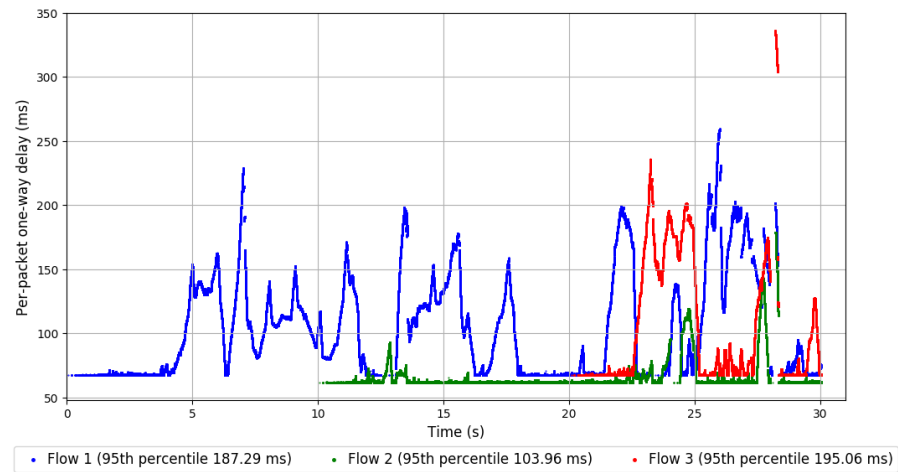
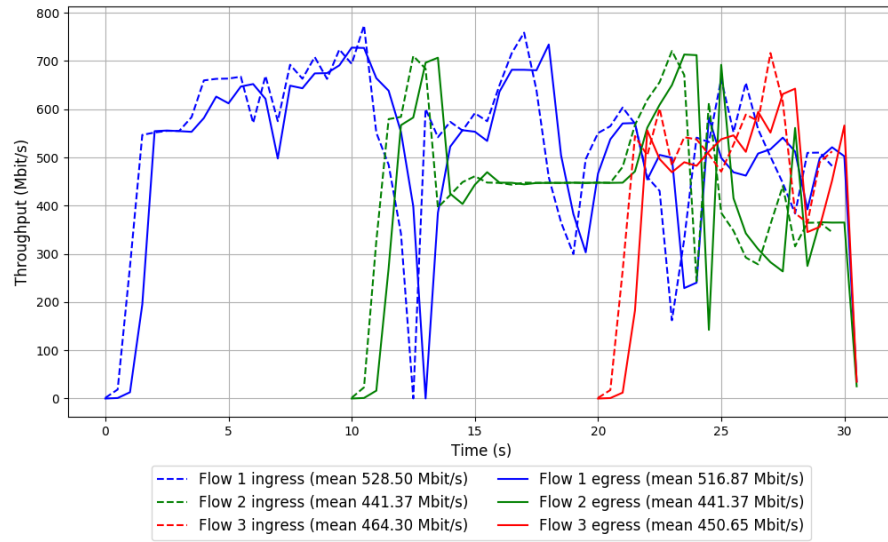
-- Flow 3:

Average throughput: 450.65 Mbit/s

95th percentile per-packet one-way delay: 195.062 ms

Loss rate: 2.99%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-09-06 18:52:48

End at: 2018-09-06 18:53:18

Local clock offset: 0.172 ms

Remote clock offset: 0.56 ms

Below is generated by plot.py at 2018-09-06 19:45:41

Datalink statistics

-- Total of 3 flows:

Average throughput: 984.24 Mbit/s

95th percentile per-packet one-way delay: 160.659 ms

Loss rate: 0.95%

-- Flow 1:

Average throughput: 521.65 Mbit/s

95th percentile per-packet one-way delay: 160.597 ms

Loss rate: 1.07%

-- Flow 2:

Average throughput: 460.38 Mbit/s

95th percentile per-packet one-way delay: 166.844 ms

Loss rate: 0.54%

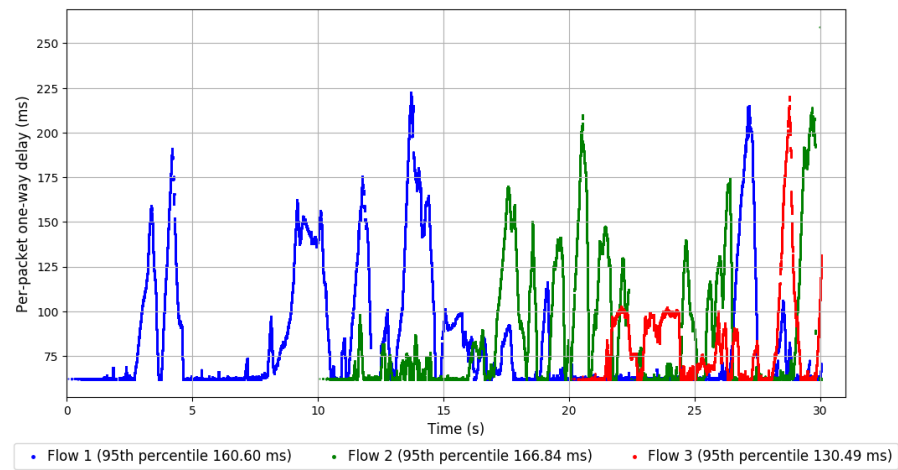
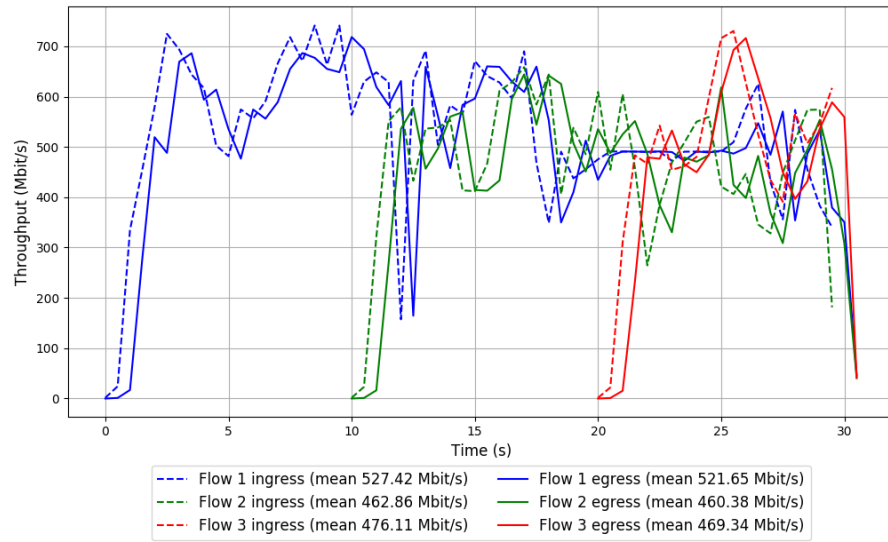
-- Flow 3:

Average throughput: 469.34 Mbit/s

95th percentile per-packet one-way delay: 130.487 ms

Loss rate: 1.36%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-09-06 16:52:38

End at: 2018-09-06 16:53:08

Local clock offset: 0.099 ms

Remote clock offset: 0.223 ms

Below is generated by plot.py at 2018-09-06 19:45:41

Datalink statistics

-- Total of 3 flows:

Average throughput: 579.11 Mbit/s

95th percentile per-packet one-way delay: 79.785 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 286.98 Mbit/s

95th percentile per-packet one-way delay: 79.390 ms

Loss rate: 0.02%

-- Flow 2:

Average throughput: 307.83 Mbit/s

95th percentile per-packet one-way delay: 75.621 ms

Loss rate: 0.00%

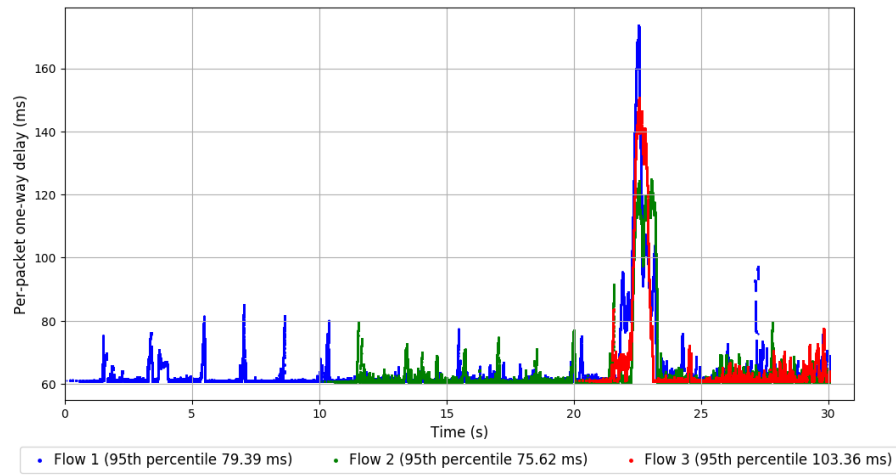
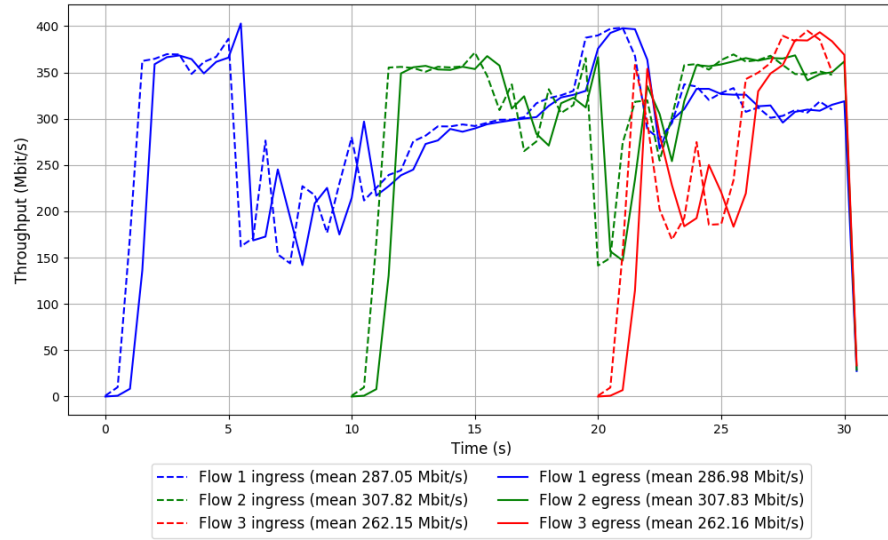
-- Flow 3:

Average throughput: 262.16 Mbit/s

95th percentile per-packet one-way delay: 103.356 ms

Loss rate: 0.00%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2018-09-06 17:24:48

End at: 2018-09-06 17:25:18

Local clock offset: 0.147 ms

Remote clock offset: 0.246 ms

Below is generated by plot.py at 2018-09-06 19:47:40

Datalink statistics

-- Total of 3 flows:

Average throughput: 664.85 Mbit/s

95th percentile per-packet one-way delay: 83.777 ms

Loss rate: 0.04%

-- Flow 1:

Average throughput: 332.59 Mbit/s

95th percentile per-packet one-way delay: 69.998 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 340.63 Mbit/s

95th percentile per-packet one-way delay: 81.331 ms

Loss rate: 0.03%

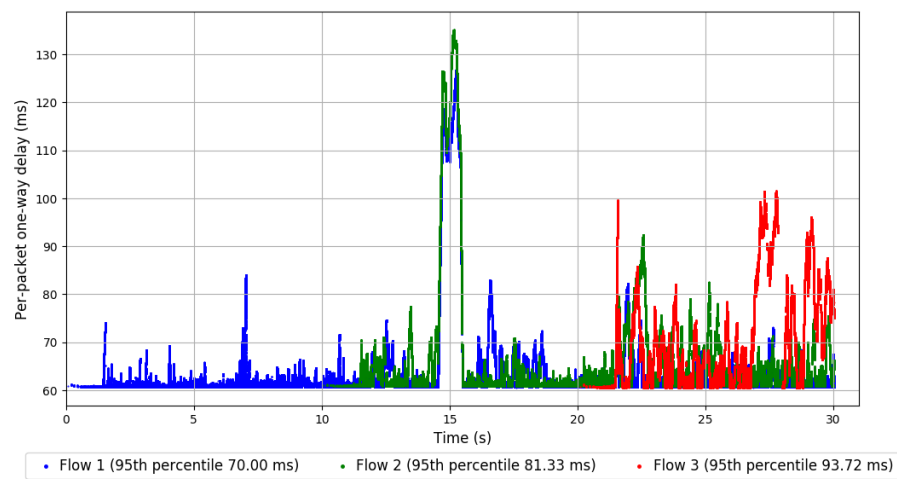
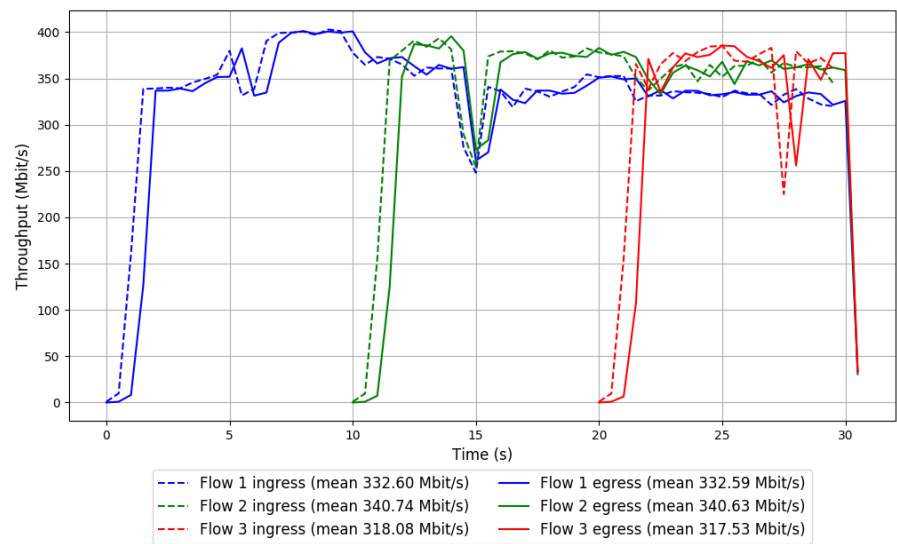
-- Flow 3:

Average throughput: 317.53 Mbit/s

95th percentile per-packet one-way delay: 93.721 ms

Loss rate: 0.15%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-09-06 17:57:10

End at: 2018-09-06 17:57:40

Local clock offset: 0.088 ms

Remote clock offset: 0.097 ms

Below is generated by plot.py at 2018-09-06 19:47:53

Datalink statistics

-- Total of 3 flows:

Average throughput: 669.86 Mbit/s

95th percentile per-packet one-way delay: 89.488 ms

Loss rate: 0.13%

-- Flow 1:

Average throughput: 337.78 Mbit/s

95th percentile per-packet one-way delay: 90.858 ms

Loss rate: 0.02%

-- Flow 2:

Average throughput: 338.31 Mbit/s

95th percentile per-packet one-way delay: 77.297 ms

Loss rate: 0.18%

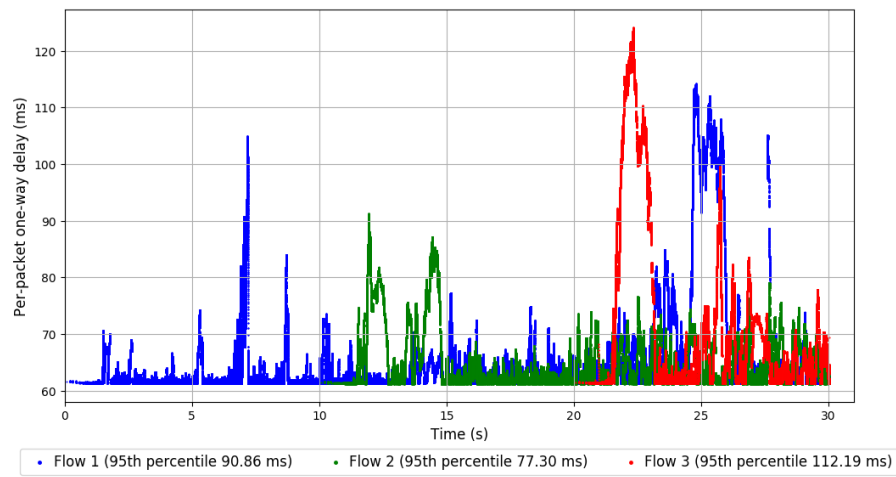
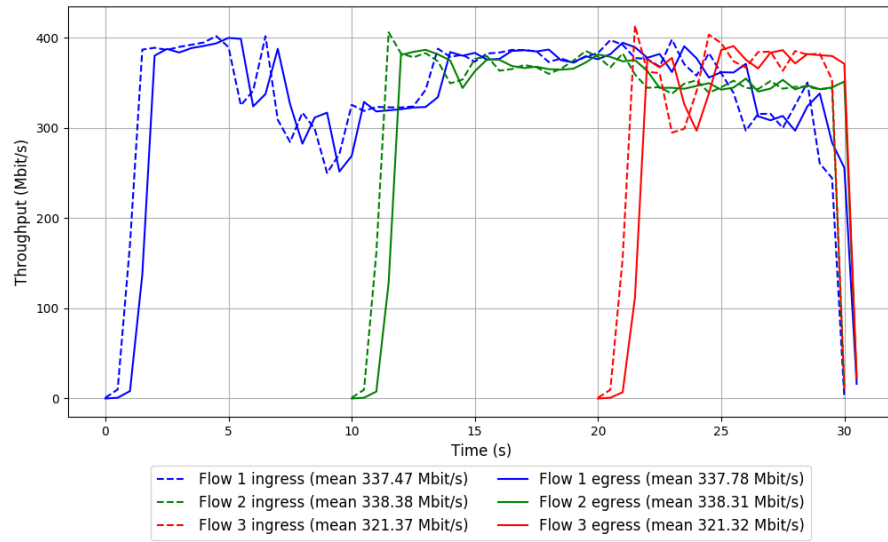
-- Flow 3:

Average throughput: 321.32 Mbit/s

95th percentile per-packet one-way delay: 112.190 ms

Loss rate: 0.34%

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2018-09-06 18:29:12

End at: 2018-09-06 18:29:42

Local clock offset: 0.122 ms

Remote clock offset: 0.631 ms

Below is generated by plot.py at 2018-09-06 20:04:23

Datalink statistics

-- Total of 3 flows:

Average throughput: 675.52 Mbit/s

95th percentile per-packet one-way delay: 86.664 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 360.52 Mbit/s

95th percentile per-packet one-way delay: 83.390 ms

Loss rate: 0.02%

-- Flow 2:

Average throughput: 333.63 Mbit/s

95th percentile per-packet one-way delay: 87.907 ms

Loss rate: 0.00%

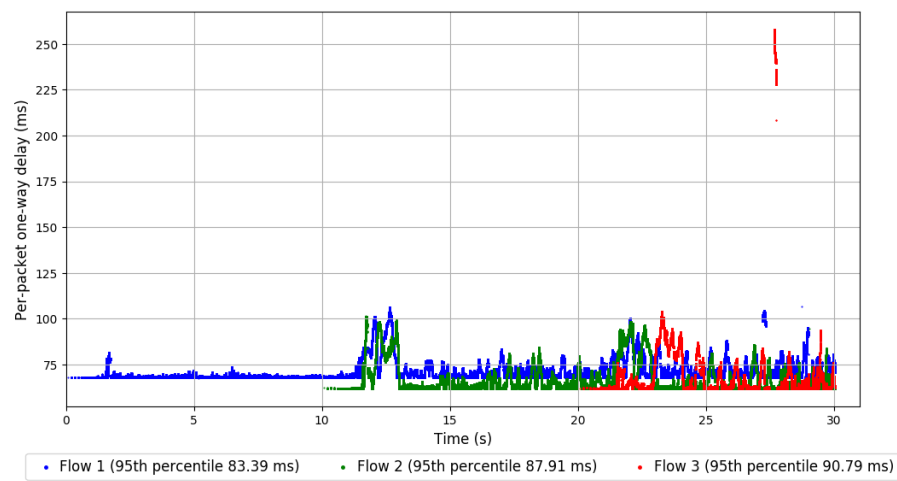
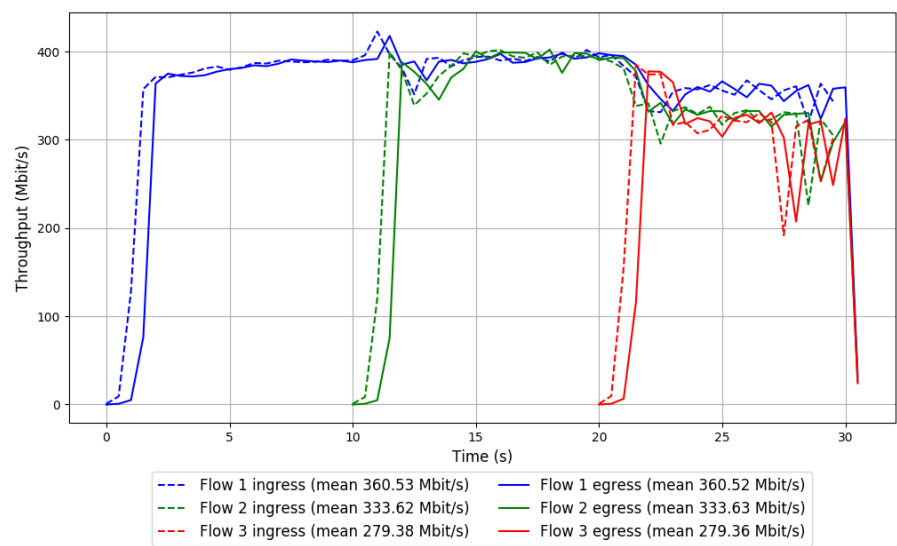
-- Flow 3:

Average throughput: 279.36 Mbit/s

95th percentile per-packet one-way delay: 90.790 ms

Loss rate: 0.00%

Run 4: Report of Copa — Data Link

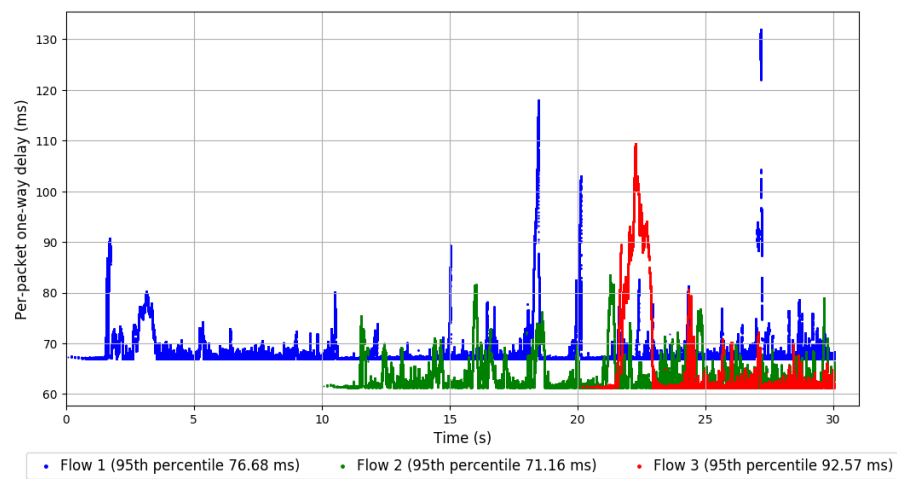
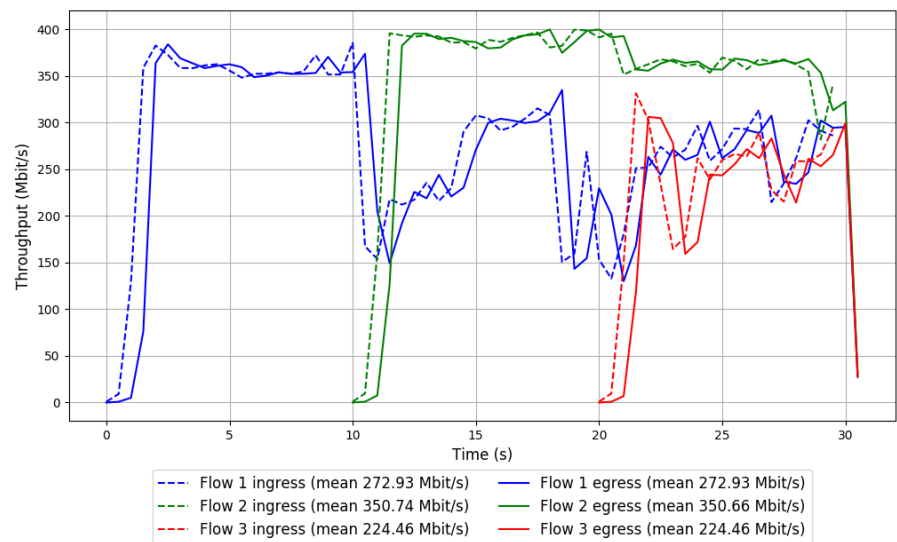


Run 5: Statistics of Copa

Start at: 2018-09-06 19:01:23
End at: 2018-09-06 19:01:53
Local clock offset: 0.121 ms
Remote clock offset: -0.173 ms

Below is generated by plot.py at 2018-09-06 20:04:23
Datalink statistics
-- Total of 3 flows:
Average throughput: 581.12 Mbit/s
95th percentile per-packet one-way delay: 76.727 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 272.93 Mbit/s
95th percentile per-packet one-way delay: 76.678 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 350.66 Mbit/s
95th percentile per-packet one-way delay: 71.163 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 224.46 Mbit/s
95th percentile per-packet one-way delay: 92.571 ms
Loss rate: 0.00%

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-09-06 16:40:13

End at: 2018-09-06 16:40:43

Local clock offset: 0.046 ms

Remote clock offset: 0.751 ms

Below is generated by plot.py at 2018-09-06 20:04:23

Datalink statistics

-- Total of 3 flows:

Average throughput: 1080.19 Mbit/s

95th percentile per-packet one-way delay: 104.469 ms

Loss rate: 0.13%

-- Flow 1:

Average throughput: 591.07 Mbit/s

95th percentile per-packet one-way delay: 106.411 ms

Loss rate: 0.16%

-- Flow 2:

Average throughput: 514.47 Mbit/s

95th percentile per-packet one-way delay: 92.910 ms

Loss rate: 0.10%

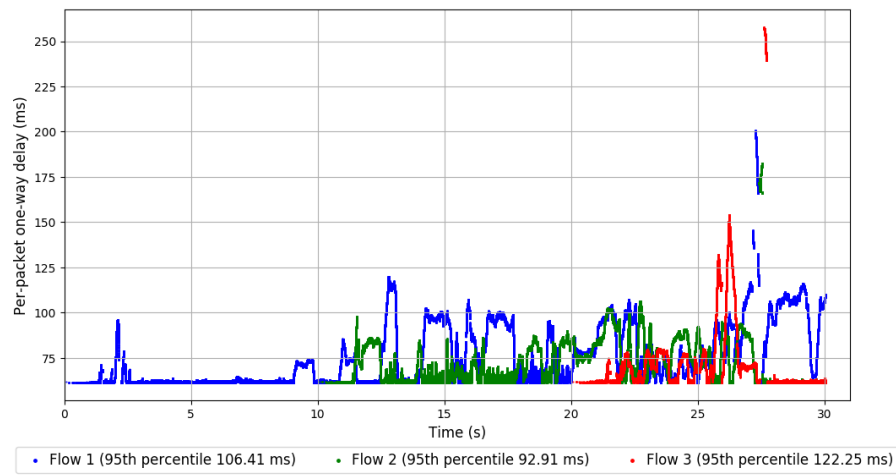
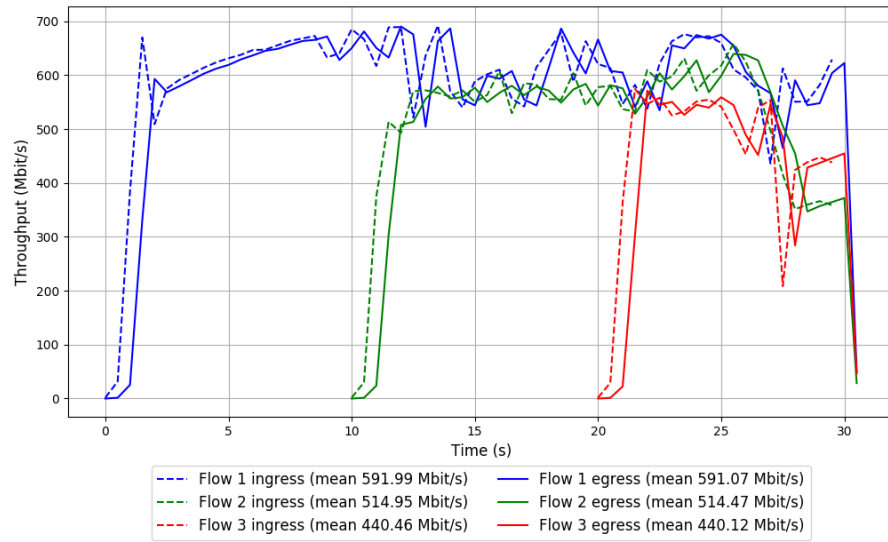
-- Flow 3:

Average throughput: 440.12 Mbit/s

95th percentile per-packet one-way delay: 122.253 ms

Loss rate: 0.08%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-09-06 17:12:24

End at: 2018-09-06 17:12:54

Local clock offset: 0.105 ms

Remote clock offset: 1.419 ms

Below is generated by plot.py at 2018-09-06 20:04:23

Datalink statistics

-- Total of 3 flows:

Average throughput: 1069.88 Mbit/s

95th percentile per-packet one-way delay: 116.509 ms

Loss rate: 0.14%

-- Flow 1:

Average throughput: 569.86 Mbit/s

95th percentile per-packet one-way delay: 118.149 ms

Loss rate: 0.05%

-- Flow 2:

Average throughput: 503.21 Mbit/s

95th percentile per-packet one-way delay: 84.170 ms

Loss rate: 0.11%

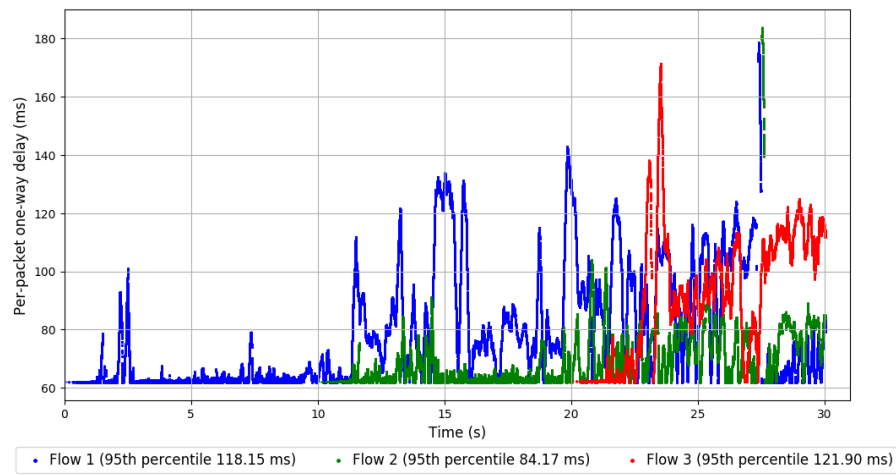
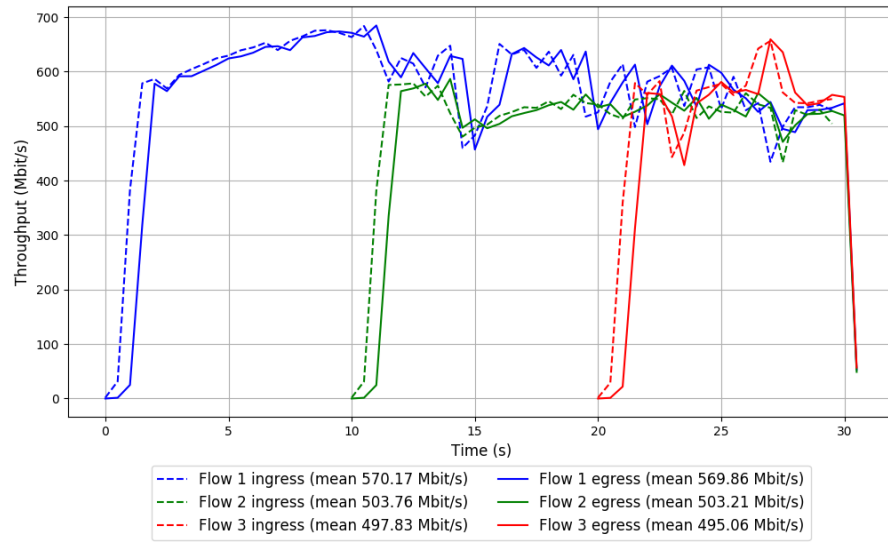
-- Flow 3:

Average throughput: 495.06 Mbit/s

95th percentile per-packet one-way delay: 121.898 ms

Loss rate: 0.55%

Run 2: Report of TCP Cubic — Data Link

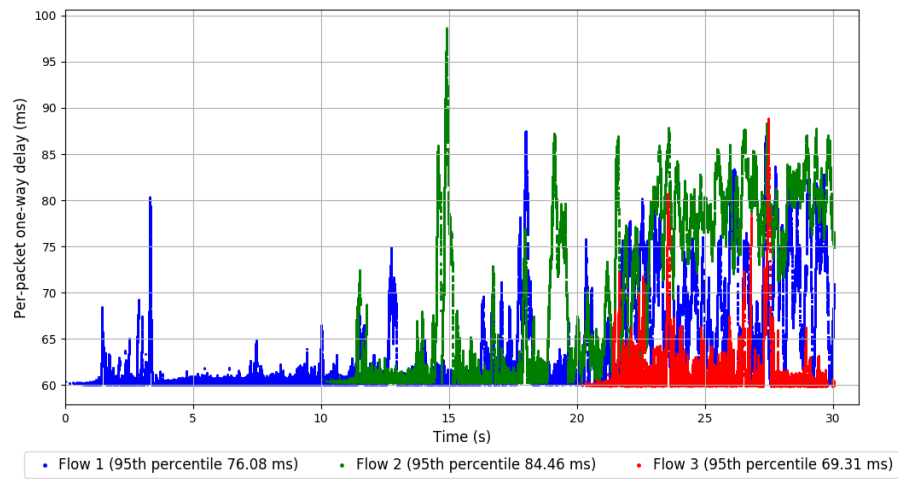
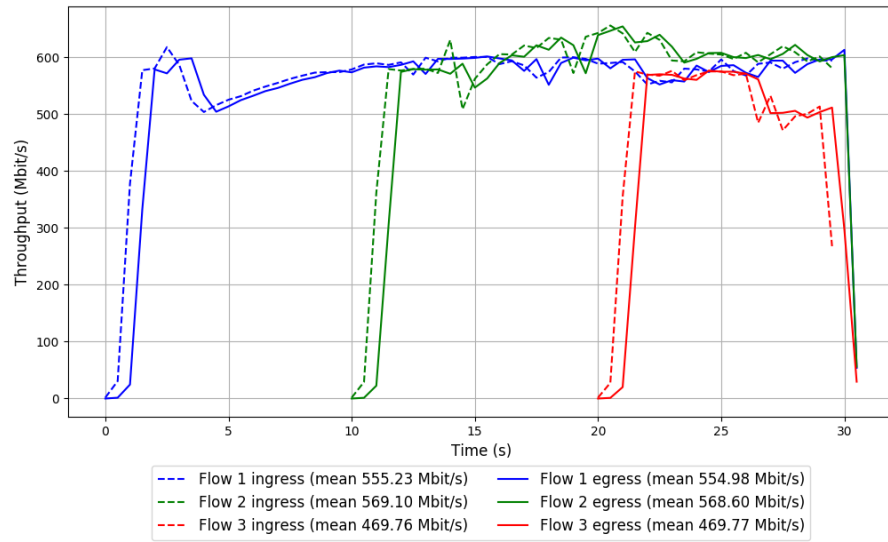


Run 3: Statistics of TCP Cubic

Start at: 2018-09-06 17:44:51
End at: 2018-09-06 17:45:21
Local clock offset: 0.101 ms
Remote clock offset: -1.013 ms

Below is generated by plot.py at 2018-09-06 20:04:23
Datalink statistics
-- Total of 3 flows:
Average throughput: 1089.80 Mbit/s
95th percentile per-packet one-way delay: 81.606 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 554.98 Mbit/s
95th percentile per-packet one-way delay: 76.078 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 568.60 Mbit/s
95th percentile per-packet one-way delay: 84.462 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 469.77 Mbit/s
95th percentile per-packet one-way delay: 69.314 ms
Loss rate: 0.00%

Run 3: Report of TCP Cubic — Data Link

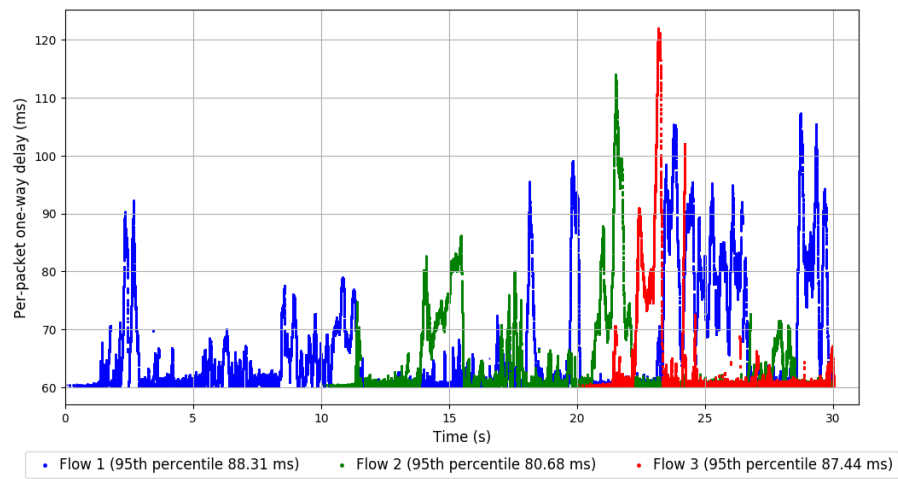
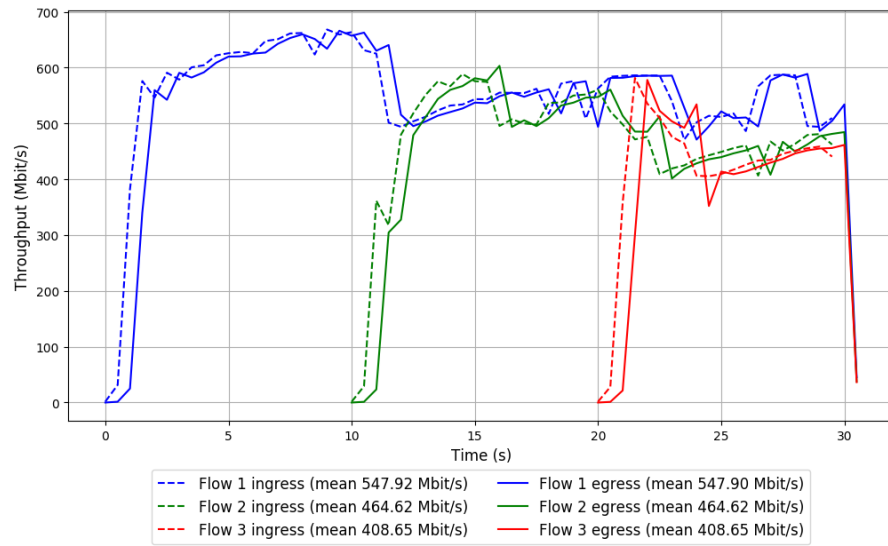


Run 4: Statistics of TCP Cubic

Start at: 2018-09-06 18:16:57
End at: 2018-09-06 18:17:27
Local clock offset: 0.098 ms
Remote clock offset: -1.055 ms

Below is generated by plot.py at 2018-09-06 20:04:23
Datalink statistics
-- Total of 3 flows:
Average throughput: 993.13 Mbit/s
95th percentile per-packet one-way delay: 85.640 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 547.90 Mbit/s
95th percentile per-packet one-way delay: 88.313 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 464.62 Mbit/s
95th percentile per-packet one-way delay: 80.681 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 408.65 Mbit/s
95th percentile per-packet one-way delay: 87.437 ms
Loss rate: 0.00%

Run 4: Report of TCP Cubic — Data Link

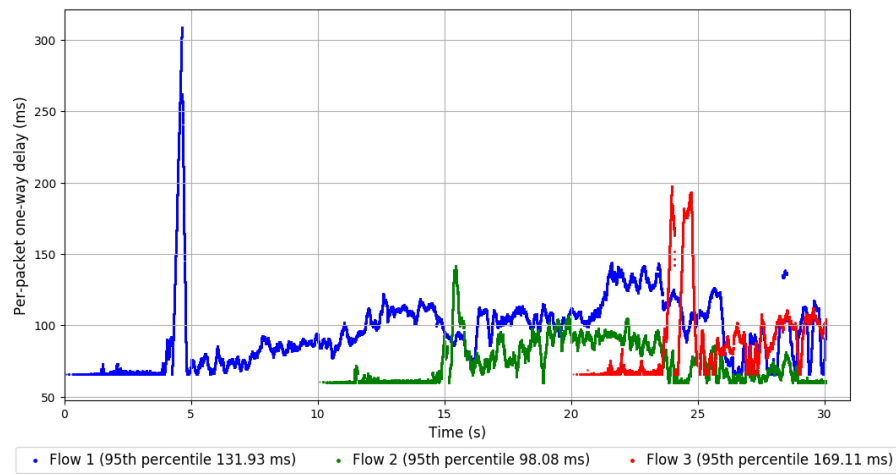
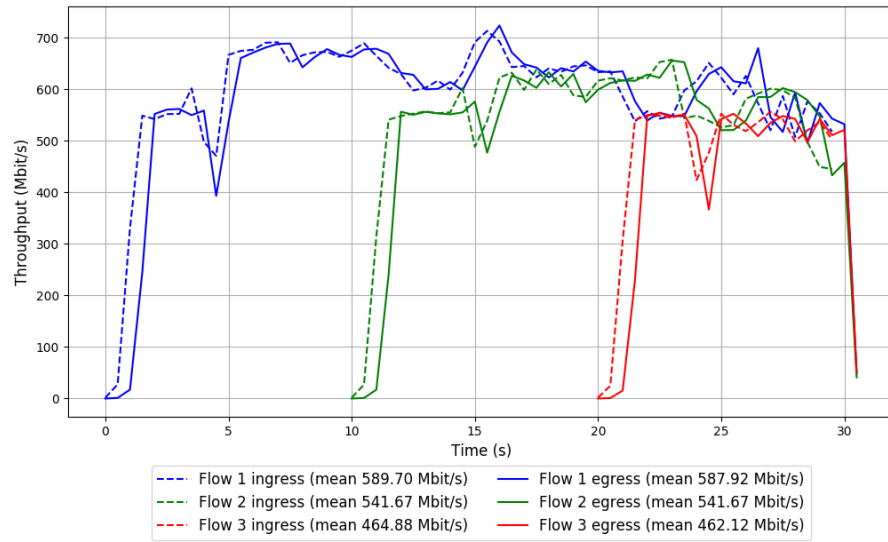


Run 5: Statistics of TCP Cubic

Start at: 2018-09-06 18:49:04
End at: 2018-09-06 18:49:34
Local clock offset: 0.153 ms
Remote clock offset: -1.091 ms

Below is generated by plot.py at 2018-09-06 20:06:14
Datalink statistics
-- Total of 3 flows:
Average throughput: 1102.41 Mbit/s
95th percentile per-packet one-way delay: 127.452 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 587.92 Mbit/s
95th percentile per-packet one-way delay: 131.932 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 541.67 Mbit/s
95th percentile per-packet one-way delay: 98.077 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 462.12 Mbit/s
95th percentile per-packet one-way delay: 169.113 ms
Loss rate: 0.59%

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-09-06 16:36:21

End at: 2018-09-06 16:36:51

Local clock offset: 0.014 ms

Remote clock offset: 1.488 ms

Below is generated by plot.py at 2018-09-06 20:14:38

Datalink statistics

-- Total of 3 flows:

Average throughput: 1409.33 Mbit/s

95th percentile per-packet one-way delay: 128.127 ms

Loss rate: 2.23%

-- Flow 1:

Average throughput: 739.50 Mbit/s

95th percentile per-packet one-way delay: 139.766 ms

Loss rate: 3.80%

-- Flow 2:

Average throughput: 707.73 Mbit/s

95th percentile per-packet one-way delay: 119.209 ms

Loss rate: 0.61%

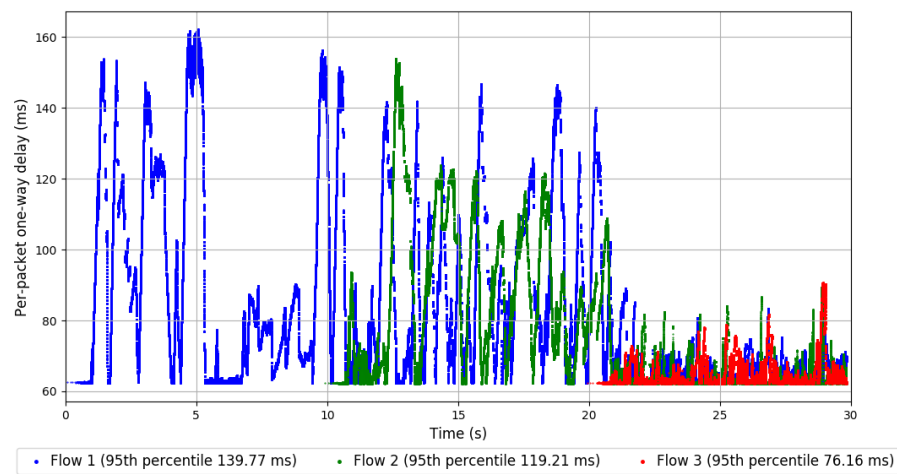
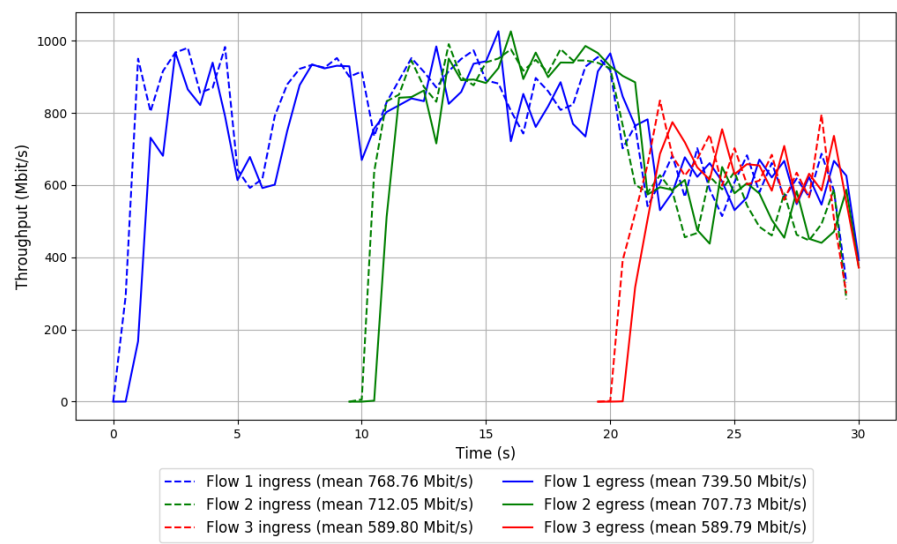
-- Flow 3:

Average throughput: 589.79 Mbit/s

95th percentile per-packet one-way delay: 76.164 ms

Loss rate: 0.00%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-09-06 17:08:27

End at: 2018-09-06 17:08:58

Local clock offset: 0.069 ms

Remote clock offset: 1.373 ms

Below is generated by plot.py at 2018-09-06 20:29:08

Datalink statistics

-- Total of 3 flows:

Average throughput: 1324.04 Mbit/s

95th percentile per-packet one-way delay: 139.902 ms

Loss rate: 3.34%

-- Flow 1:

Average throughput: 685.26 Mbit/s

95th percentile per-packet one-way delay: 145.584 ms

Loss rate: 6.02%

-- Flow 2:

Average throughput: 687.65 Mbit/s

95th percentile per-packet one-way delay: 115.453 ms

Loss rate: 0.40%

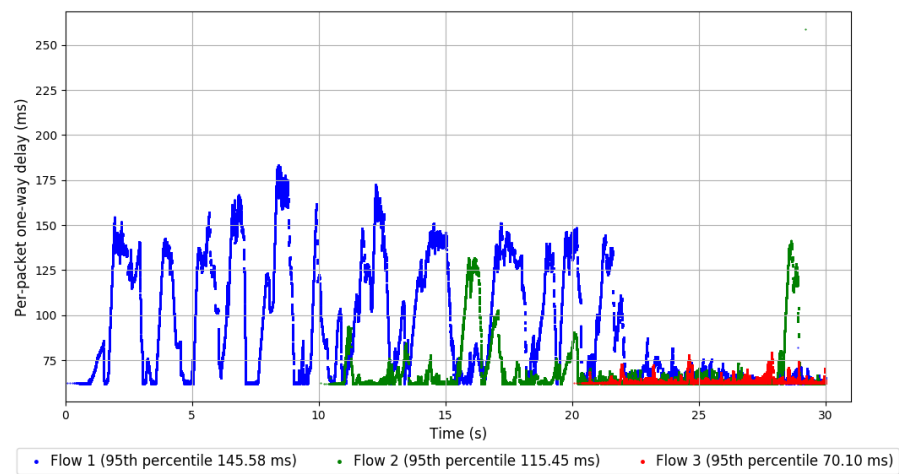
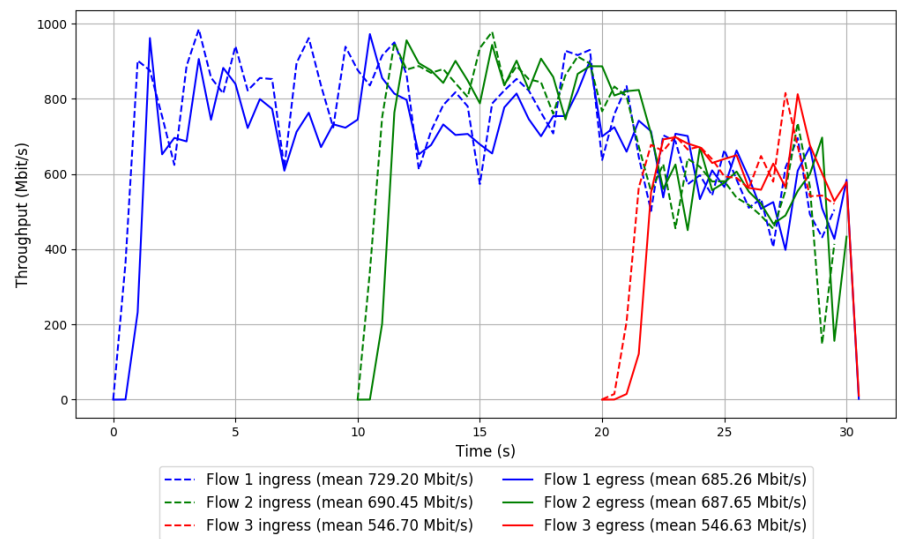
-- Flow 3:

Average throughput: 546.63 Mbit/s

95th percentile per-packet one-way delay: 70.103 ms

Loss rate: 0.00%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-09-06 17:40:48

End at: 2018-09-06 17:41:18

Local clock offset: 0.146 ms

Remote clock offset: 0.998 ms

Below is generated by plot.py at 2018-09-06 20:32:51

Datalink statistics

-- Total of 3 flows:

Average throughput: 1500.59 Mbit/s

95th percentile per-packet one-way delay: 108.365 ms

Loss rate: 0.47%

-- Flow 1:

Average throughput: 804.69 Mbit/s

95th percentile per-packet one-way delay: 102.539 ms

Loss rate: 0.71%

-- Flow 2:

Average throughput: 741.98 Mbit/s

95th percentile per-packet one-way delay: 114.293 ms

Loss rate: 0.26%

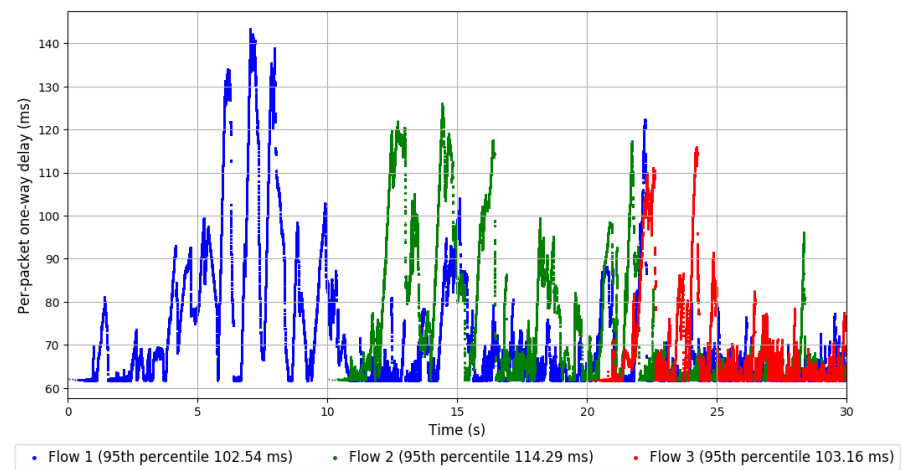
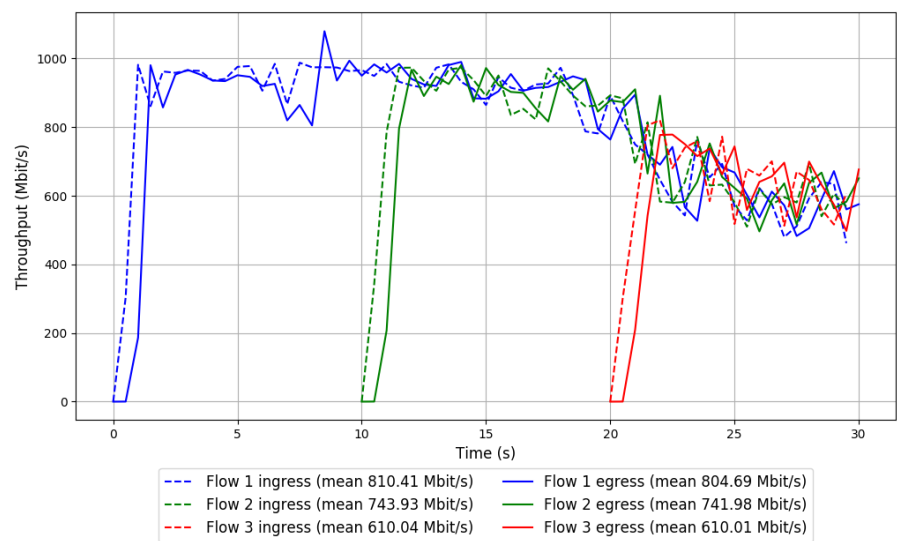
-- Flow 3:

Average throughput: 610.01 Mbit/s

95th percentile per-packet one-way delay: 103.159 ms

Loss rate: 0.00%

Run 3: Report of FillP — Data Link

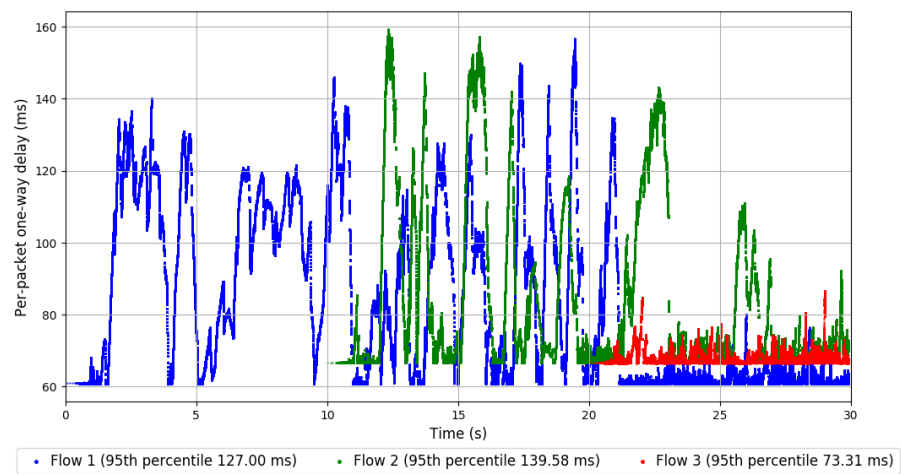
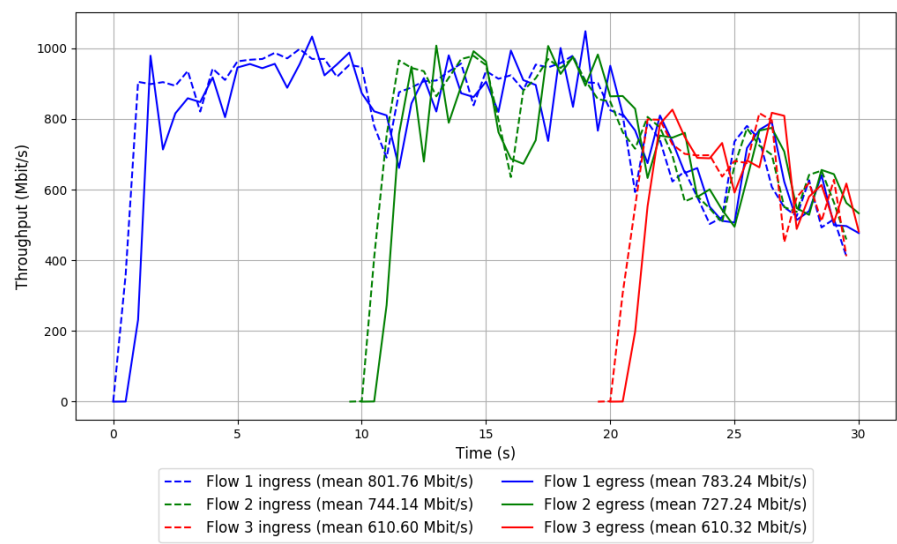


Run 4: Statistics of FillP

Start at: 2018-09-06 18:12:56
End at: 2018-09-06 18:13:26
Local clock offset: 0.098 ms
Remote clock offset: -0.362 ms

Below is generated by plot.py at 2018-09-06 20:32:56
Datalink statistics
-- Total of 3 flows:
Average throughput: 1470.23 Mbit/s
95th percentile per-packet one-way delay: 129.274 ms
Loss rate: 2.00%
-- Flow 1:
Average throughput: 783.24 Mbit/s
95th percentile per-packet one-way delay: 127.002 ms
Loss rate: 2.31%
-- Flow 2:
Average throughput: 727.24 Mbit/s
95th percentile per-packet one-way delay: 139.581 ms
Loss rate: 2.29%
-- Flow 3:
Average throughput: 610.32 Mbit/s
95th percentile per-packet one-way delay: 73.314 ms
Loss rate: 0.08%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-09-06 18:45:03

End at: 2018-09-06 18:45:33

Local clock offset: 0.134 ms

Remote clock offset: -0.57 ms

Below is generated by plot.py at 2018-09-06 20:32:56

Datalink statistics

-- Total of 3 flows:

Average throughput: 1461.83 Mbit/s

95th percentile per-packet one-way delay: 122.007 ms

Loss rate: 0.85%

-- Flow 1:

Average throughput: 768.68 Mbit/s

95th percentile per-packet one-way delay: 121.796 ms

Loss rate: 1.13%

-- Flow 2:

Average throughput: 739.34 Mbit/s

95th percentile per-packet one-way delay: 122.723 ms

Loss rate: 0.65%

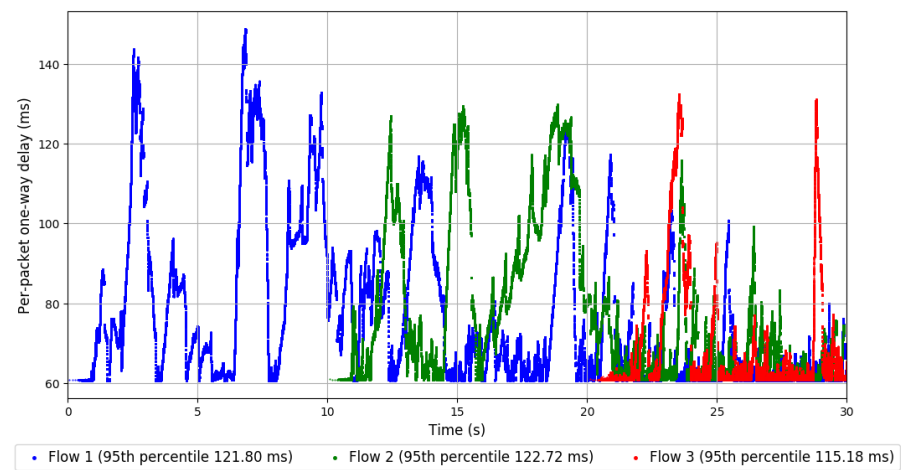
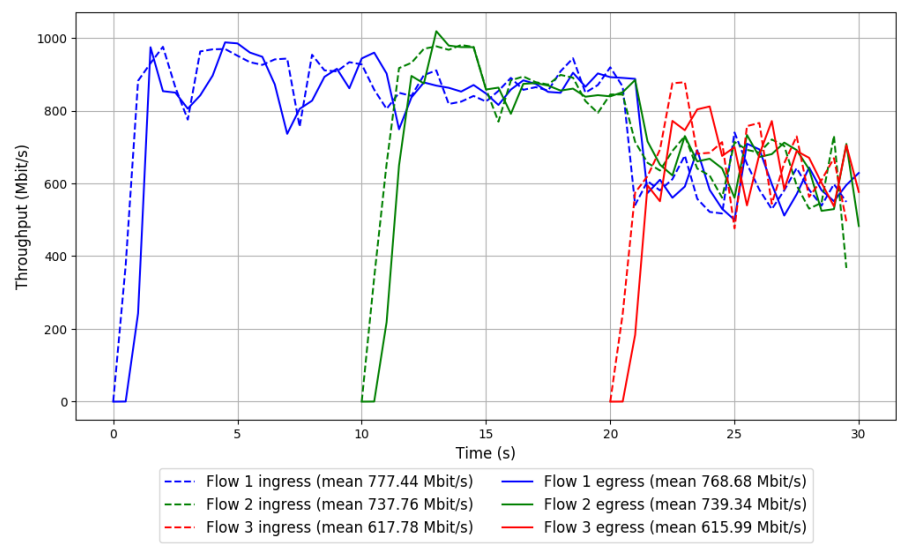
-- Flow 3:

Average throughput: 615.99 Mbit/s

95th percentile per-packet one-way delay: 115.184 ms

Loss rate: 0.29%

Run 5: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2018-09-06 16:33:02

End at: 2018-09-06 16:33:32

Local clock offset: 0.027 ms

Remote clock offset: 0.493 ms

Below is generated by plot.py at 2018-09-06 20:32:56

Datalink statistics

-- Total of 3 flows:

Average throughput: 1334.72 Mbit/s

95th percentile per-packet one-way delay: 113.636 ms

Loss rate: 0.22%

-- Flow 1:

Average throughput: 708.28 Mbit/s

95th percentile per-packet one-way delay: 117.580 ms

Loss rate: 0.15%

-- Flow 2:

Average throughput: 660.89 Mbit/s

95th percentile per-packet one-way delay: 90.628 ms

Loss rate: 0.42%

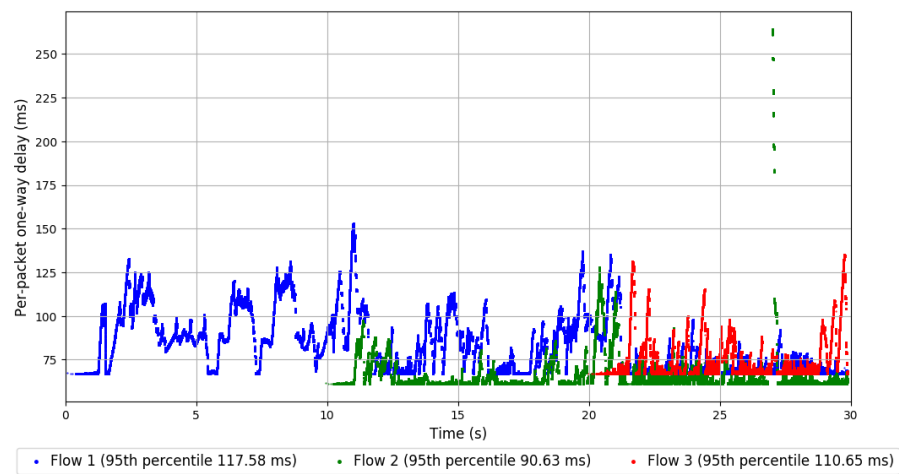
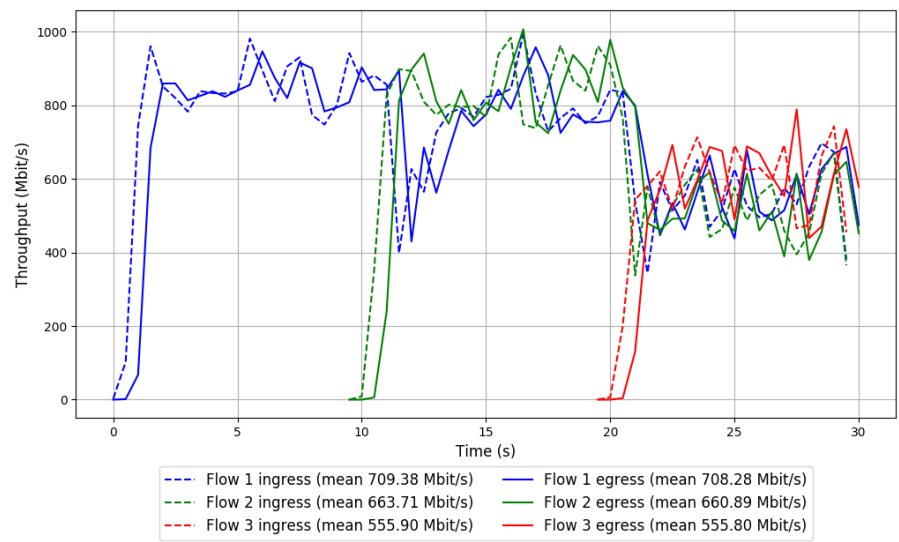
-- Flow 3:

Average throughput: 555.80 Mbit/s

95th percentile per-packet one-way delay: 110.649 ms

Loss rate: 0.02%

Run 1: Report of FillP-Sheep — Data Link



Run 2: Statistics of FillP-Sheep

Start at: 2018-09-06 17:05:09

End at: 2018-09-06 17:05:39

Local clock offset: 0.106 ms

Remote clock offset: 0.233 ms

Below is generated by plot.py at 2018-09-06 20:32:56

Datalink statistics

-- Total of 3 flows:

Average throughput: 1330.12 Mbit/s

95th percentile per-packet one-way delay: 118.888 ms

Loss rate: 0.51%

-- Flow 1:

Average throughput: 697.74 Mbit/s

95th percentile per-packet one-way delay: 125.934 ms

Loss rate: 0.76%

-- Flow 2:

Average throughput: 690.02 Mbit/s

95th percentile per-packet one-way delay: 102.822 ms

Loss rate: 0.34%

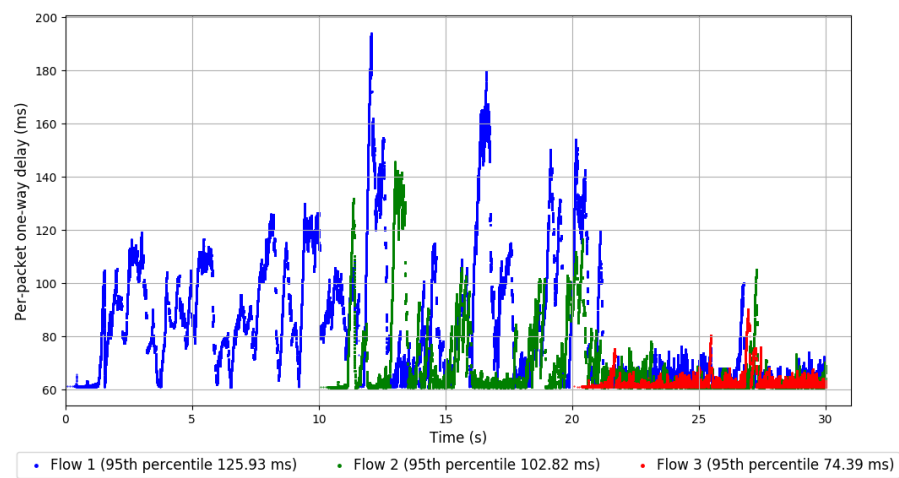
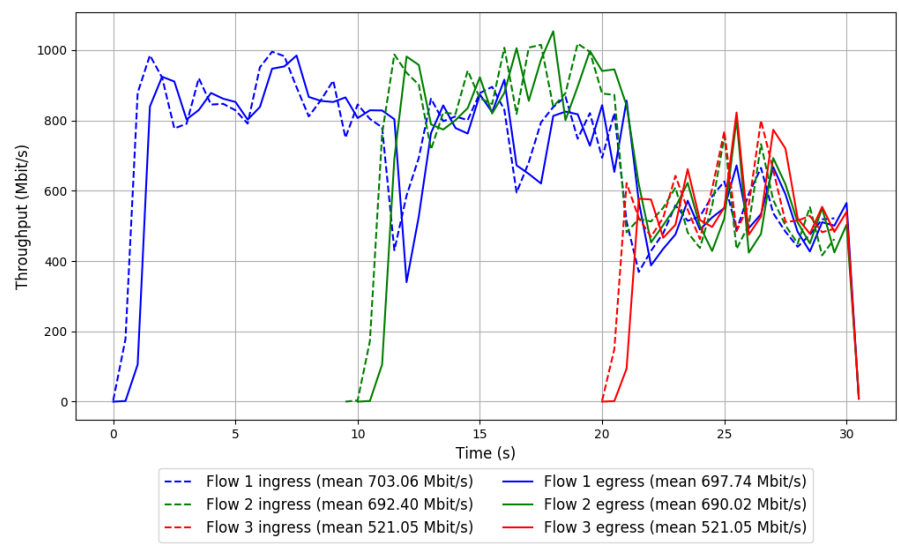
-- Flow 3:

Average throughput: 521.05 Mbit/s

95th percentile per-packet one-way delay: 74.388 ms

Loss rate: 0.00%

Run 2: Report of FillP-Sheep — Data Link

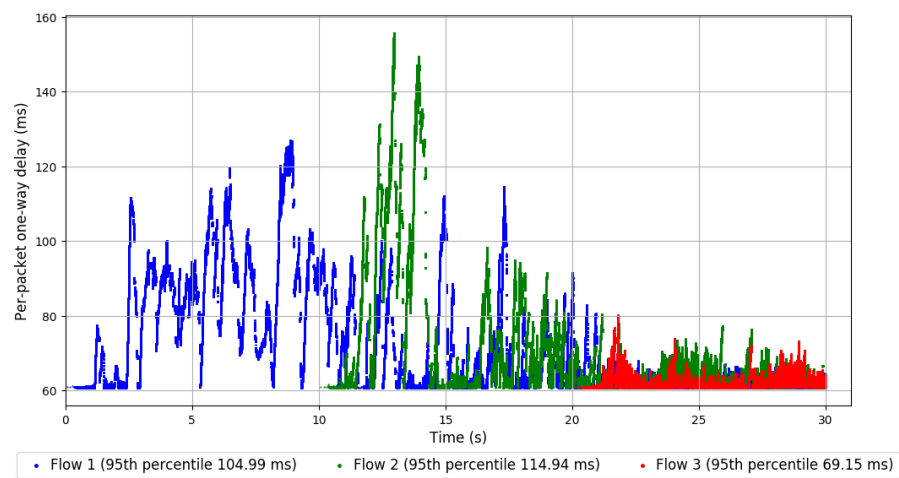
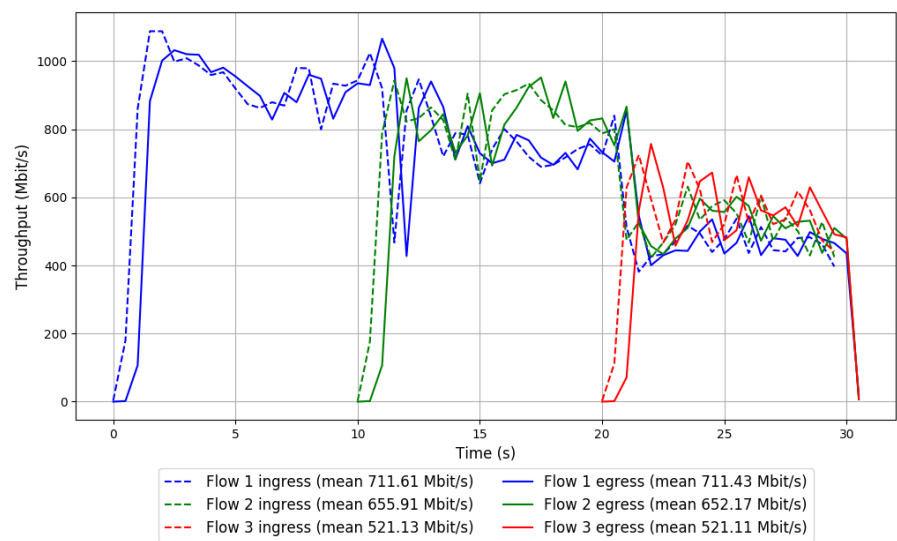


Run 3: Statistics of FillP-Sheep

Start at: 2018-09-06 17:37:31
End at: 2018-09-06 17:38:01
Local clock offset: 0.103 ms
Remote clock offset: -0.131 ms

Below is generated by plot.py at 2018-09-06 20:34:05
Datalink statistics
-- Total of 3 flows:
Average throughput: 1317.98 Mbit/s
95th percentile per-packet one-way delay: 106.839 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 711.43 Mbit/s
95th percentile per-packet one-way delay: 104.989 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 652.17 Mbit/s
95th percentile per-packet one-way delay: 114.940 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 521.11 Mbit/s
95th percentile per-packet one-way delay: 69.153 ms
Loss rate: 0.00%

Run 3: Report of FillP-Sheep — Data Link

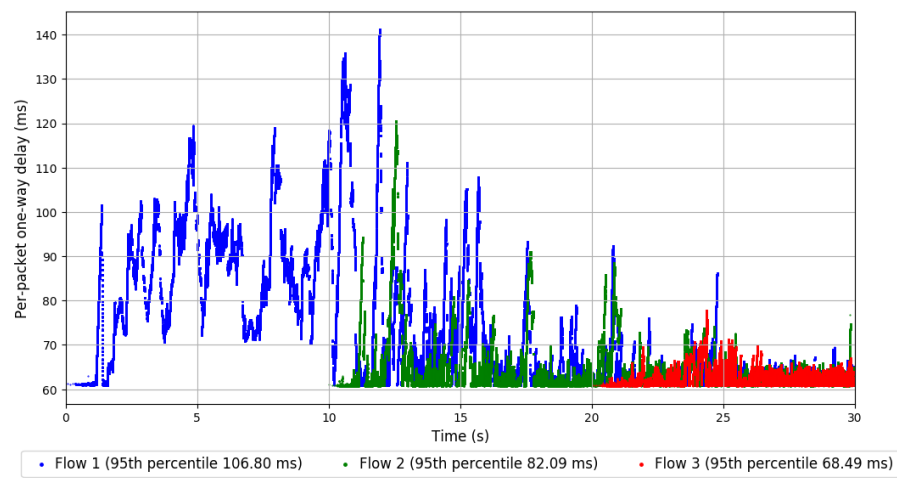
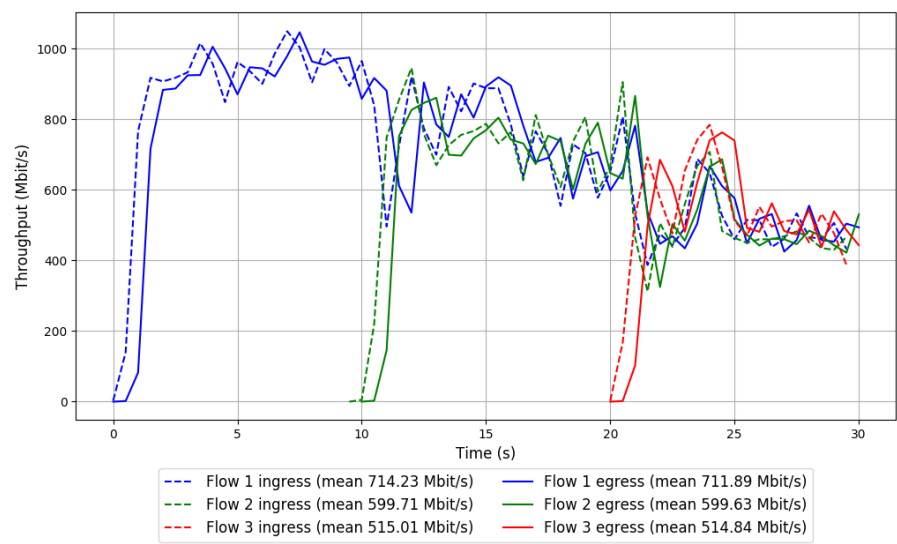


Run 4: Statistics of FillP-Sheep

Start at: 2018-09-06 18:09:41
End at: 2018-09-06 18:10:11
Local clock offset: 0.103 ms
Remote clock offset: -0.342 ms

Below is generated by plot.py at 2018-09-06 20:45:37
Datalink statistics
-- Total of 3 flows:
Average throughput: 1281.93 Mbit/s
95th percentile per-packet one-way delay: 100.056 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 711.89 Mbit/s
95th percentile per-packet one-way delay: 106.802 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 599.63 Mbit/s
95th percentile per-packet one-way delay: 82.088 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 514.84 Mbit/s
95th percentile per-packet one-way delay: 68.491 ms
Loss rate: 0.02%

Run 4: Report of FillP-Sheep — Data Link



Run 5: Statistics of FillP-Sheep

Start at: 2018-09-06 18:41:45

End at: 2018-09-06 18:42:15

Local clock offset: 0.168 ms

Remote clock offset: 0.553 ms

Below is generated by plot.py at 2018-09-06 20:57:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 1333.80 Mbit/s

95th percentile per-packet one-way delay: 115.265 ms

Loss rate: 0.53%

-- Flow 1:

Average throughput: 739.13 Mbit/s

95th percentile per-packet one-way delay: 120.309 ms

Loss rate: 0.81%

-- Flow 2:

Average throughput: 642.64 Mbit/s

95th percentile per-packet one-way delay: 100.515 ms

Loss rate: 0.24%

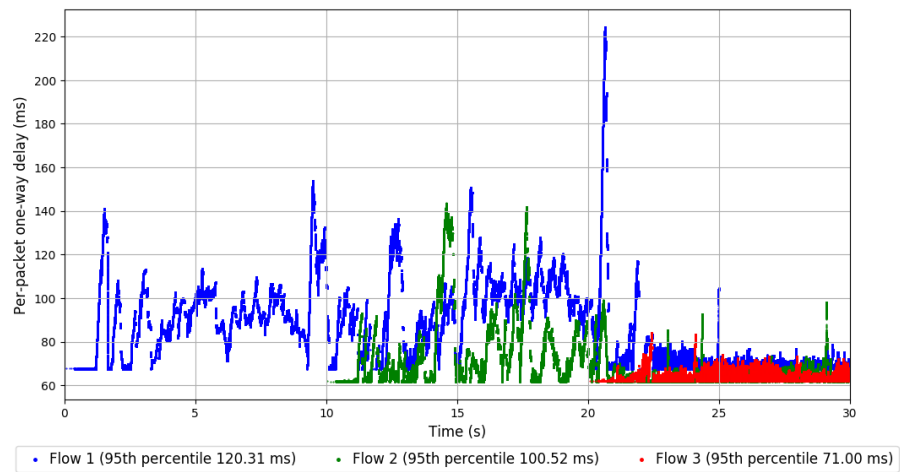
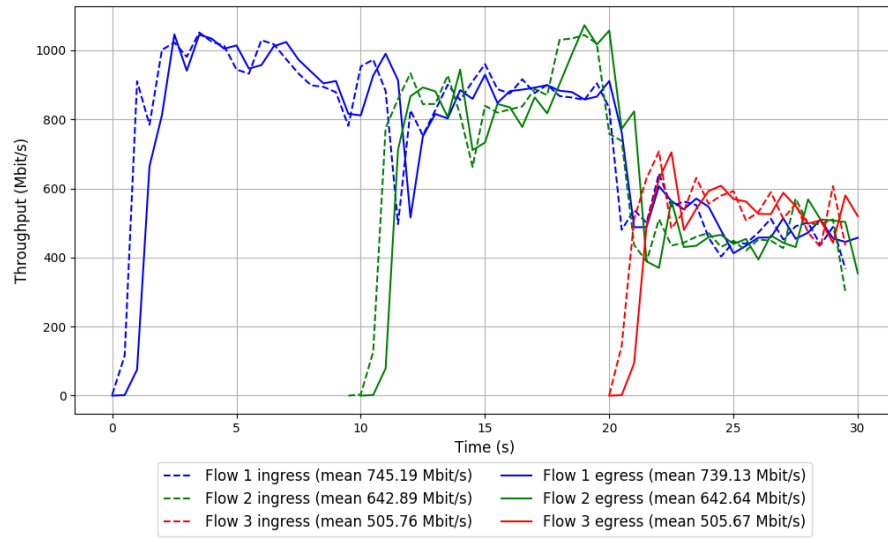
-- Flow 3:

Average throughput: 505.67 Mbit/s

95th percentile per-packet one-way delay: 71.003 ms

Loss rate: 0.00%

Run 5: Report of FillP-Sheep — Data Link

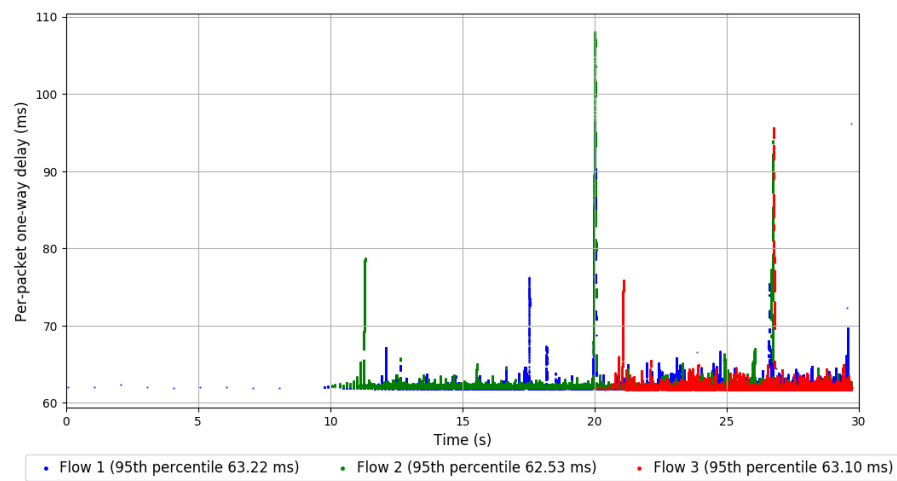
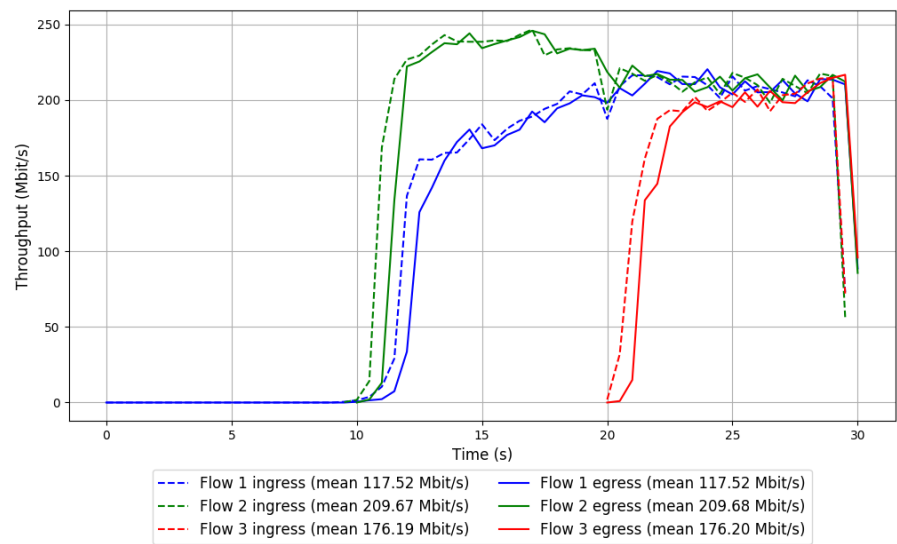


```
Run 1: Statistics of Indigo

Start at: 2018-09-06 16:38:31
End at: 2018-09-06 16:39:01
Local clock offset: 0.052 ms
Remote clock offset: 1.233 ms

# Below is generated by plot.py at 2018-09-06 20:57:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 313.94 Mbit/s
95th percentile per-packet one-way delay: 62.938 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 117.52 Mbit/s
95th percentile per-packet one-way delay: 63.220 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 209.68 Mbit/s
95th percentile per-packet one-way delay: 62.534 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 176.20 Mbit/s
95th percentile per-packet one-way delay: 63.105 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-09-06 17:10:35

End at: 2018-09-06 17:11:05

Local clock offset: 0.098 ms

Remote clock offset: 0.534 ms

Below is generated by plot.py at 2018-09-06 20:57:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 405.31 Mbit/s

95th percentile per-packet one-way delay: 62.324 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 214.36 Mbit/s

95th percentile per-packet one-way delay: 62.451 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 202.32 Mbit/s

95th percentile per-packet one-way delay: 62.001 ms

Loss rate: 0.00%

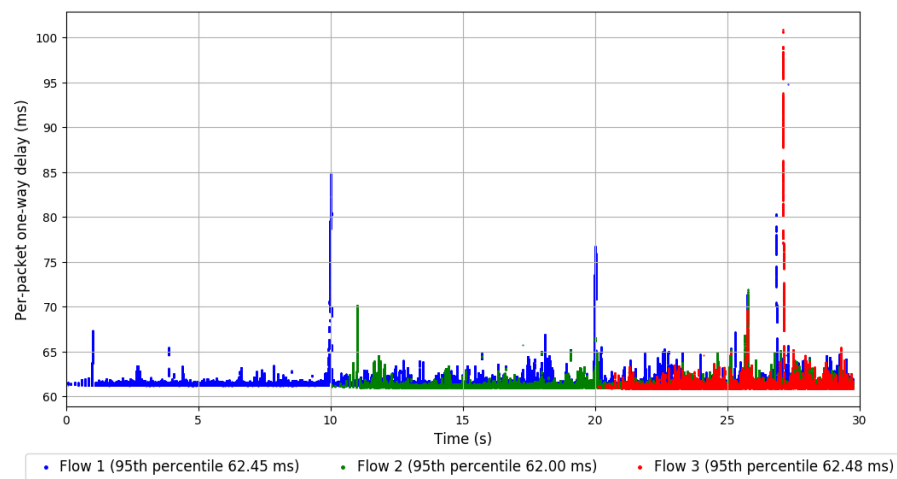
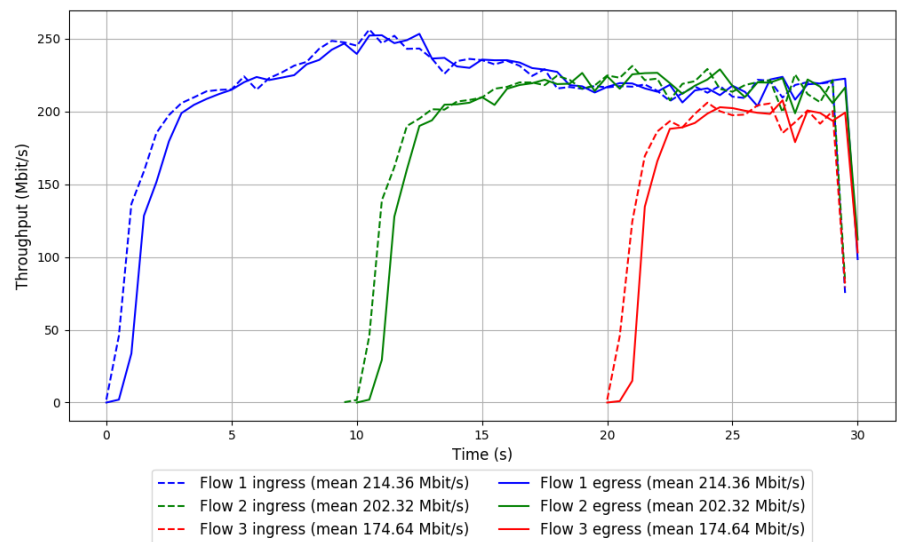
-- Flow 3:

Average throughput: 174.64 Mbit/s

95th percentile per-packet one-way delay: 62.477 ms

Loss rate: 0.00%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-09-06 17:43:00

End at: 2018-09-06 17:43:30

Local clock offset: 0.117 ms

Remote clock offset: 1.078 ms

Below is generated by plot.py at 2018-09-06 20:57:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 419.68 Mbit/s

95th percentile per-packet one-way delay: 63.303 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 222.57 Mbit/s

95th percentile per-packet one-way delay: 63.324 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 213.20 Mbit/s

95th percentile per-packet one-way delay: 63.262 ms

Loss rate: 0.00%

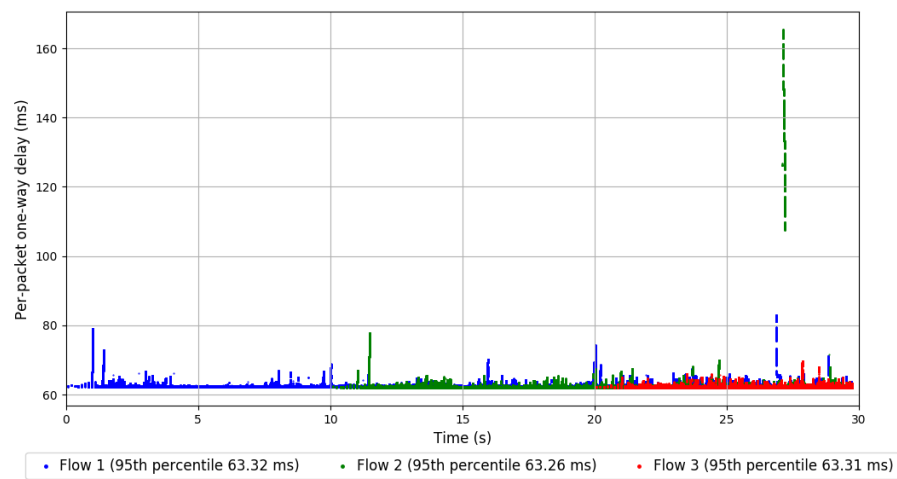
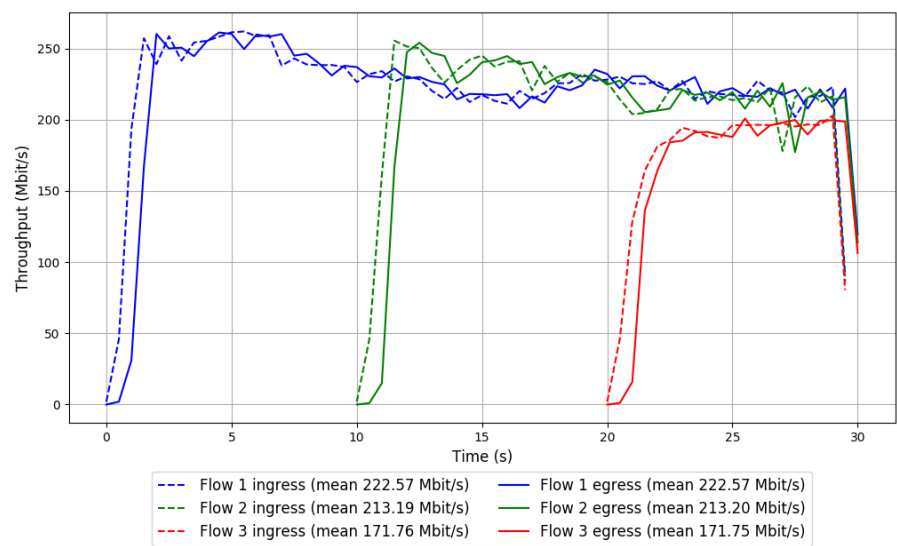
-- Flow 3:

Average throughput: 171.75 Mbit/s

95th percentile per-packet one-way delay: 63.310 ms

Loss rate: 0.00%

Run 3: Report of Indigo — Data Link

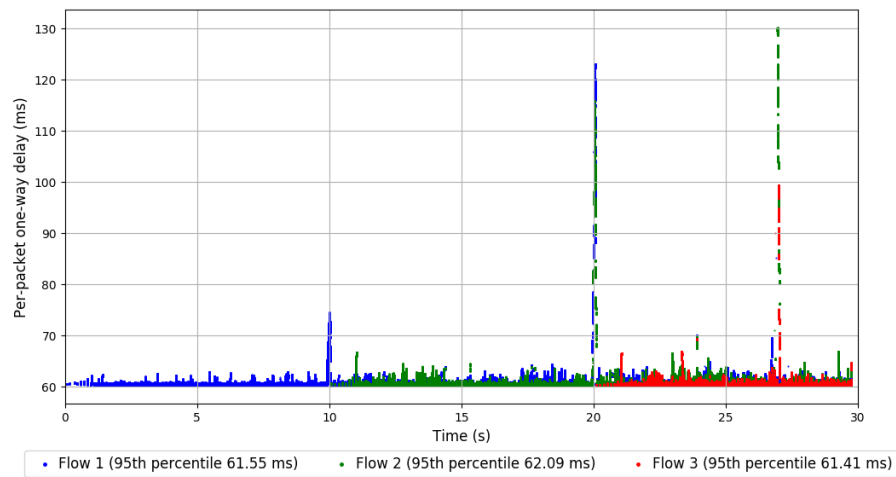
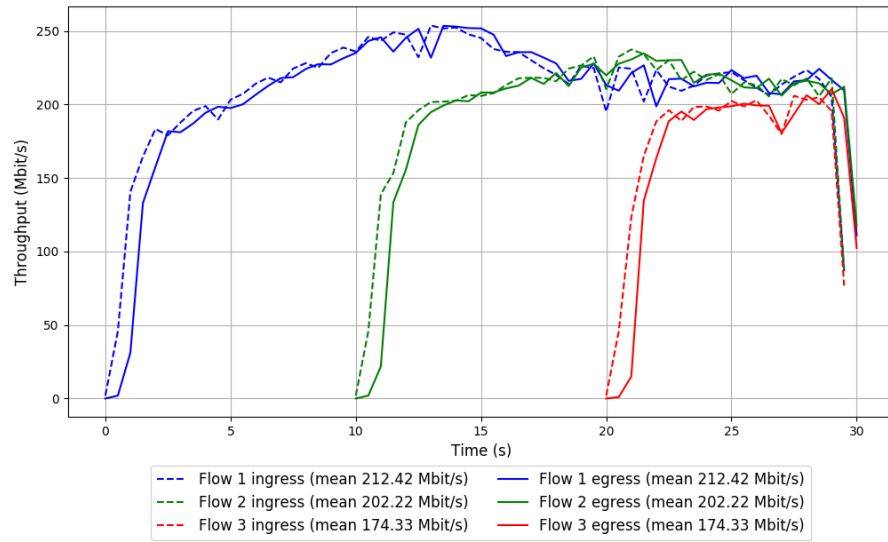


Run 4: Statistics of Indigo

Start at: 2018-09-06 18:15:08
End at: 2018-09-06 18:15:38
Local clock offset: 0.097 ms
Remote clock offset: -0.885 ms

Below is generated by plot.py at 2018-09-06 20:57:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 403.07 Mbit/s
95th percentile per-packet one-way delay: 61.710 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 212.42 Mbit/s
95th percentile per-packet one-way delay: 61.550 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 202.22 Mbit/s
95th percentile per-packet one-way delay: 62.091 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 174.33 Mbit/s
95th percentile per-packet one-way delay: 61.409 ms
Loss rate: 0.00%

Run 4: Report of Indigo — Data Link

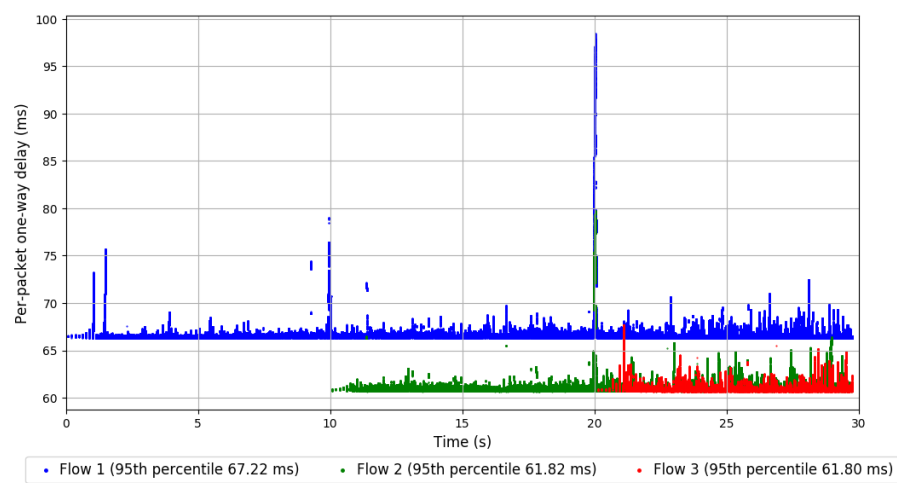
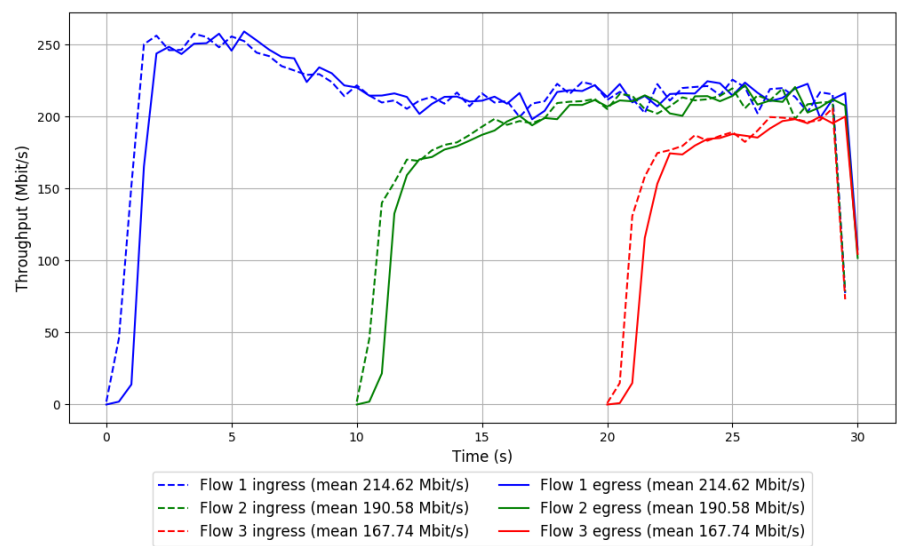


Run 5: Statistics of Indigo

Start at: 2018-09-06 18:47:14
End at: 2018-09-06 18:47:44
Local clock offset: 0.172 ms
Remote clock offset: -0.655 ms

Below is generated by plot.py at 2018-09-06 20:57:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 395.26 Mbit/s
95th percentile per-packet one-way delay: 66.882 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 214.62 Mbit/s
95th percentile per-packet one-way delay: 67.222 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 190.58 Mbit/s
95th percentile per-packet one-way delay: 61.817 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 167.74 Mbit/s
95th percentile per-packet one-way delay: 61.796 ms
Loss rate: 0.00%

Run 5: Report of Indigo — Data Link

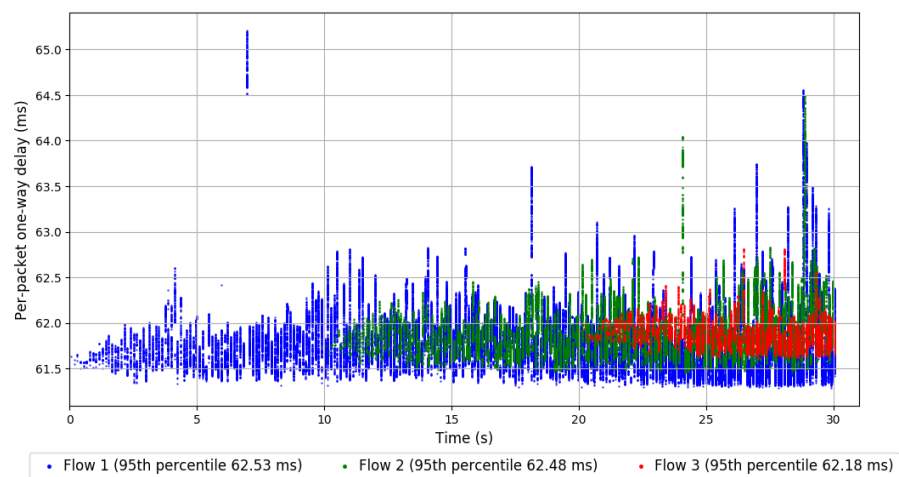
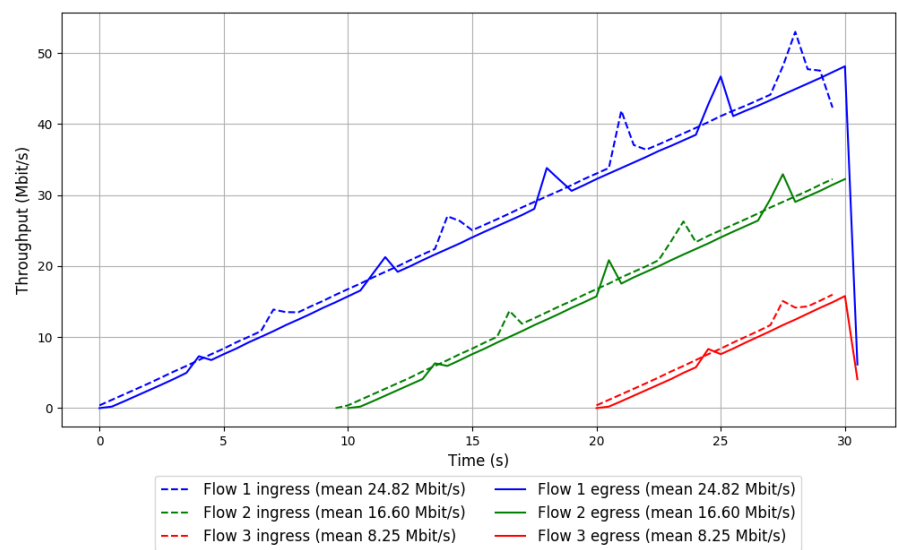


```
Run 1: Statistics of LEDBAT

Start at: 2018-09-06 16:46:09
End at: 2018-09-06 16:46:39
Local clock offset: 0.083 ms
Remote clock offset: 0.85 ms

# Below is generated by plot.py at 2018-09-06 20:57:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 38.58 Mbit/s
95th percentile per-packet one-way delay: 62.495 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 24.82 Mbit/s
95th percentile per-packet one-way delay: 62.534 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 16.60 Mbit/s
95th percentile per-packet one-way delay: 62.477 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 8.25 Mbit/s
95th percentile per-packet one-way delay: 62.176 ms
Loss rate: 0.00%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-09-06 17:18:24

End at: 2018-09-06 17:18:54

Local clock offset: 0.119 ms

Remote clock offset: 0.53 ms

Below is generated by plot.py at 2018-09-06 20:57:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 36.47 Mbit/s

95th percentile per-packet one-way delay: 62.007 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 22.77 Mbit/s

95th percentile per-packet one-way delay: 62.049 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 16.59 Mbit/s

95th percentile per-packet one-way delay: 61.899 ms

Loss rate: 0.00%

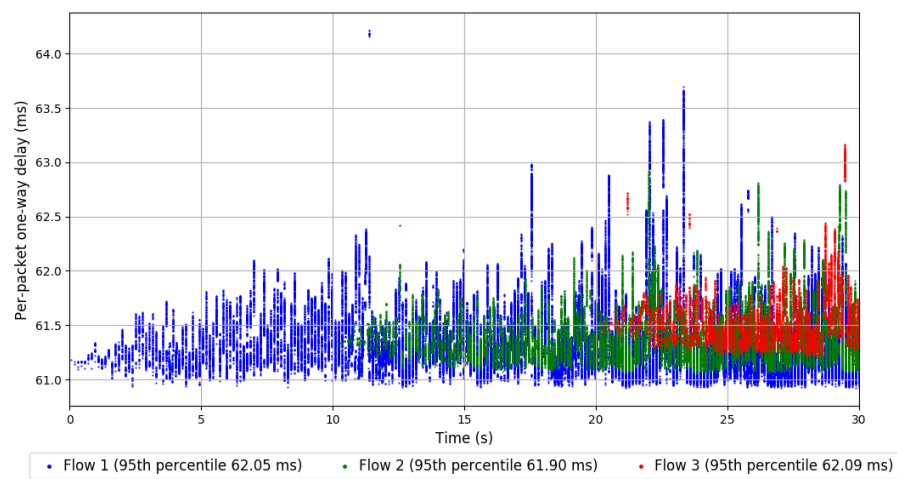
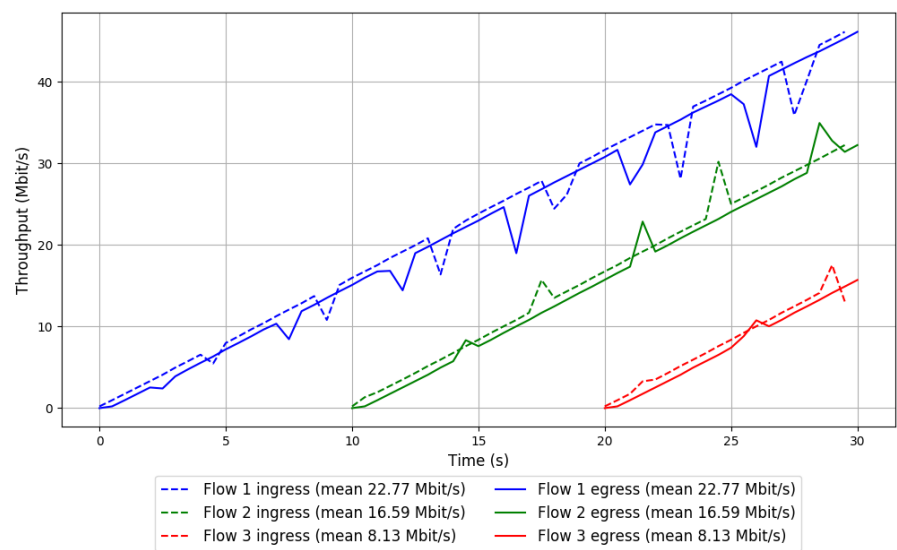
-- Flow 3:

Average throughput: 8.13 Mbit/s

95th percentile per-packet one-way delay: 62.094 ms

Loss rate: 0.00%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-09-06 17:50:44

End at: 2018-09-06 17:51:14

Local clock offset: 0.111 ms

Remote clock offset: -0.2 ms

Below is generated by plot.py at 2018-09-06 20:57:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 38.39 Mbit/s

95th percentile per-packet one-way delay: 61.922 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 24.75 Mbit/s

95th percentile per-packet one-way delay: 62.022 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 16.59 Mbit/s

95th percentile per-packet one-way delay: 61.690 ms

Loss rate: 0.00%

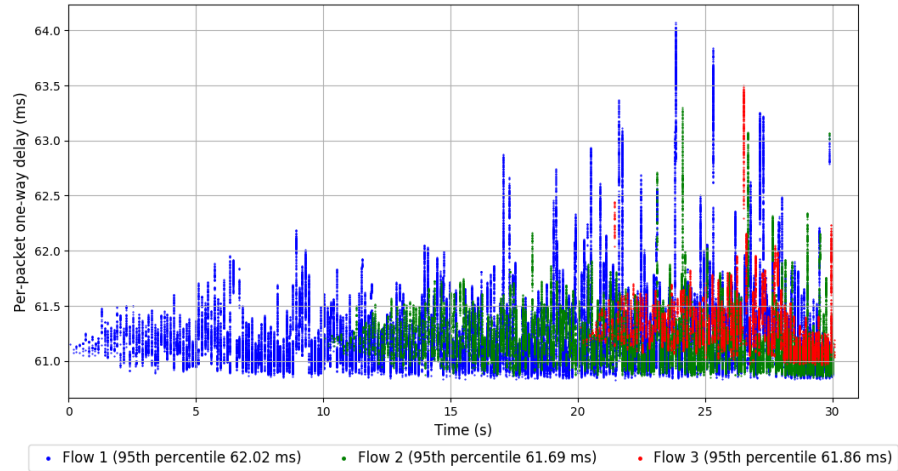
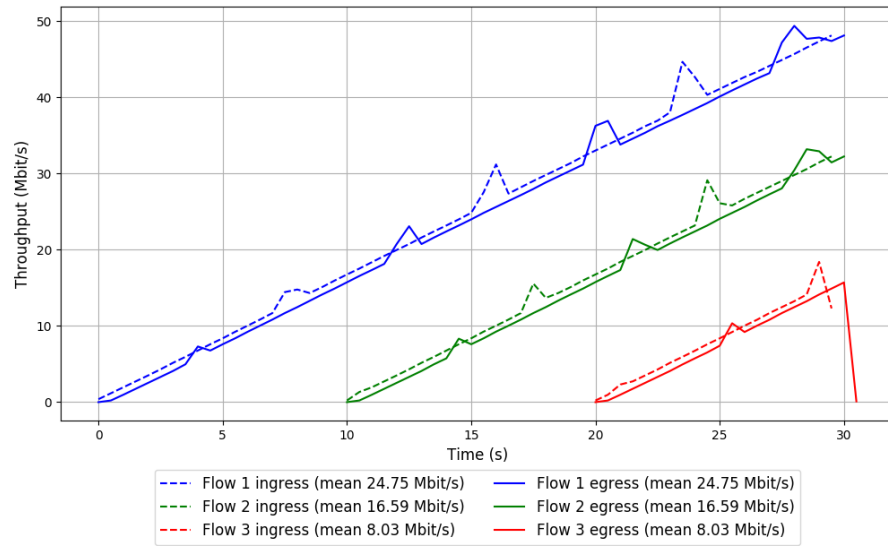
-- Flow 3:

Average throughput: 8.03 Mbit/s

95th percentile per-packet one-way delay: 61.857 ms

Loss rate: 0.00%

Run 3: Report of LEDBAT — Data Link

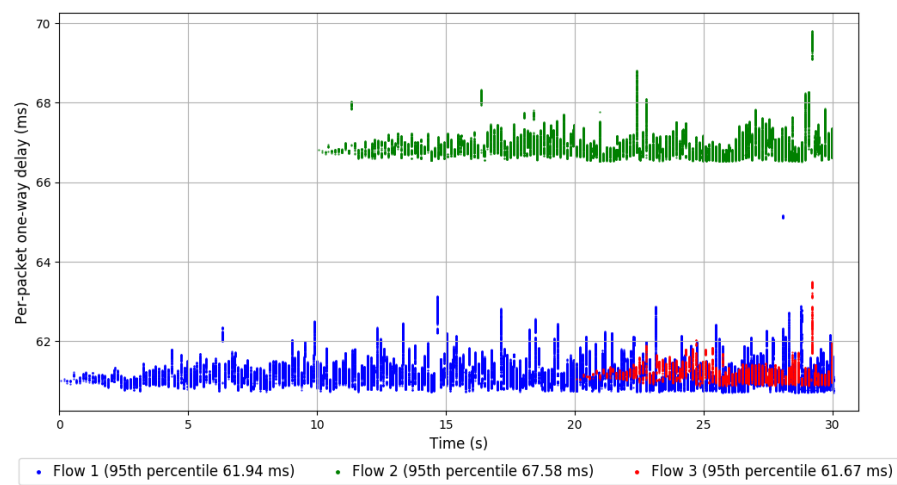
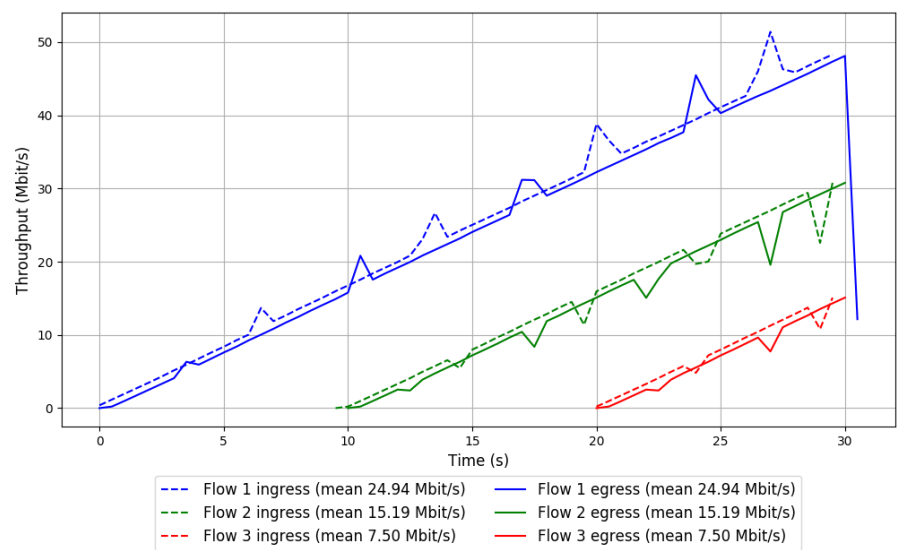


Run 4: Statistics of LEDBAT

Start at: 2018-09-06 18:22:46
End at: 2018-09-06 18:23:16
Local clock offset: 0.122 ms
Remote clock offset: -0.404 ms

Below is generated by plot.py at 2018-09-06 20:57:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 37.51 Mbit/s
95th percentile per-packet one-way delay: 67.126 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 24.94 Mbit/s
95th percentile per-packet one-way delay: 61.940 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 15.19 Mbit/s
95th percentile per-packet one-way delay: 67.578 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.50 Mbit/s
95th percentile per-packet one-way delay: 61.668 ms
Loss rate: 0.00%

Run 4: Report of LEDBAT — Data Link

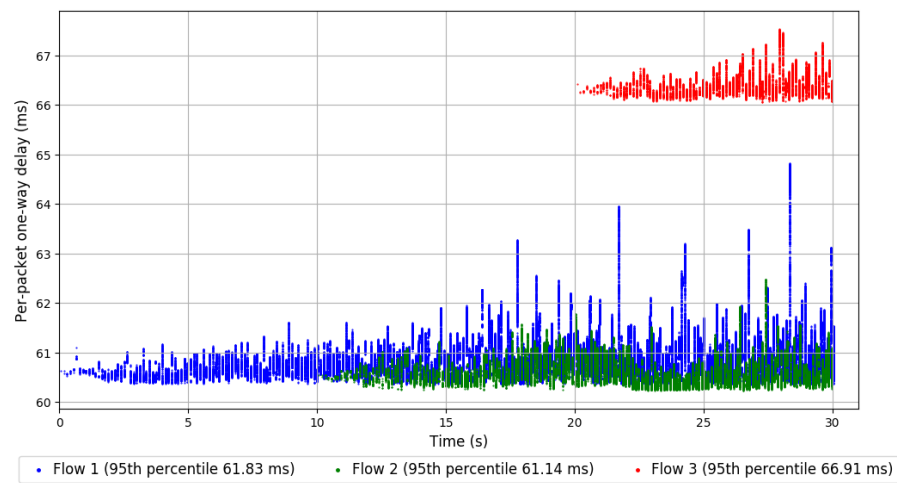
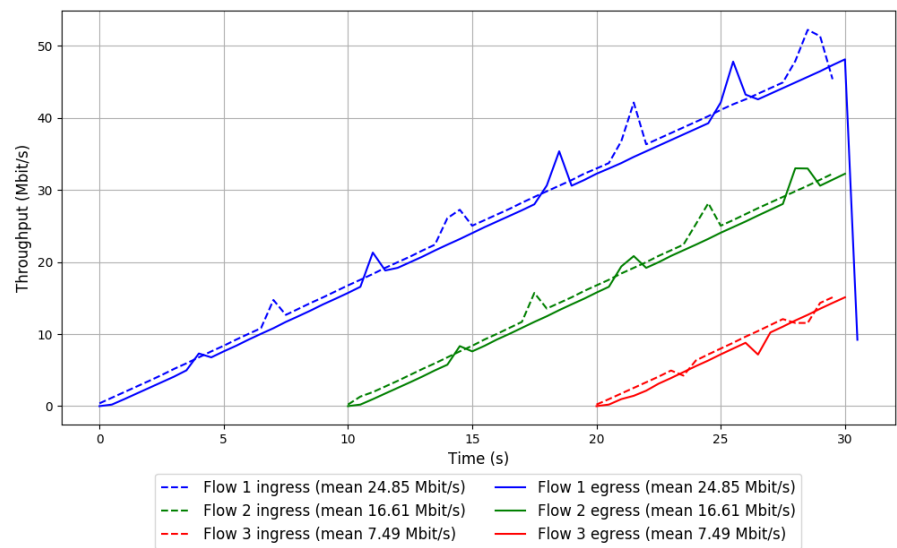


Run 5: Statistics of LEDBAT

Start at: 2018-09-06 18:54:57
End at: 2018-09-06 18:55:27
Local clock offset: 0.13 ms
Remote clock offset: -1.077 ms

Below is generated by plot.py at 2018-09-06 20:57:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 38.34 Mbit/s
95th percentile per-packet one-way delay: 66.247 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 24.85 Mbit/s
95th percentile per-packet one-way delay: 61.830 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 16.61 Mbit/s
95th percentile per-packet one-way delay: 61.140 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.49 Mbit/s
95th percentile per-packet one-way delay: 66.906 ms
Loss rate: 0.00%

Run 5: Report of LEDBAT — Data Link



Run 1: Statistics of Indigo-Muses

Start at: 2018-09-06 16:56:55

End at: 2018-09-06 16:57:25

Local clock offset: 0.056 ms

Remote clock offset: 1.072 ms

Below is generated by plot.py at 2018-09-06 20:57:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 892.32 Mbit/s

95th percentile per-packet one-way delay: 68.895 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 487.30 Mbit/s

95th percentile per-packet one-way delay: 70.790 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 438.93 Mbit/s

95th percentile per-packet one-way delay: 67.254 ms

Loss rate: 0.00%

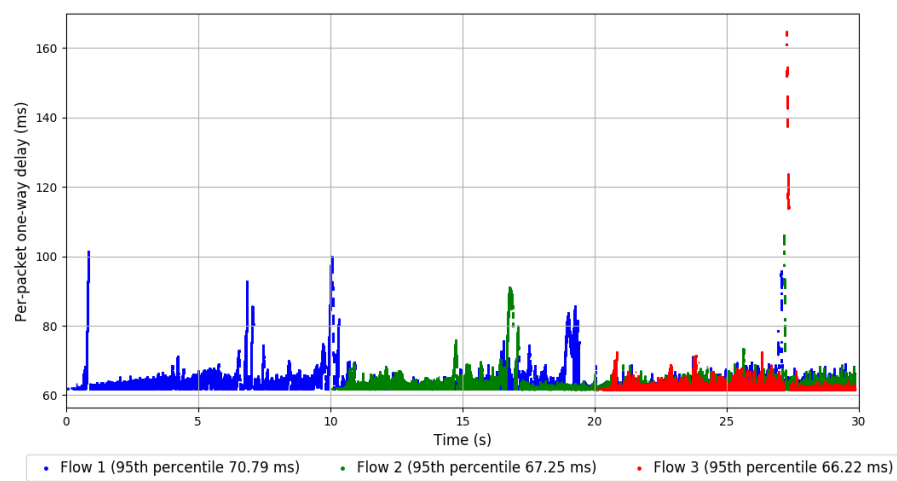
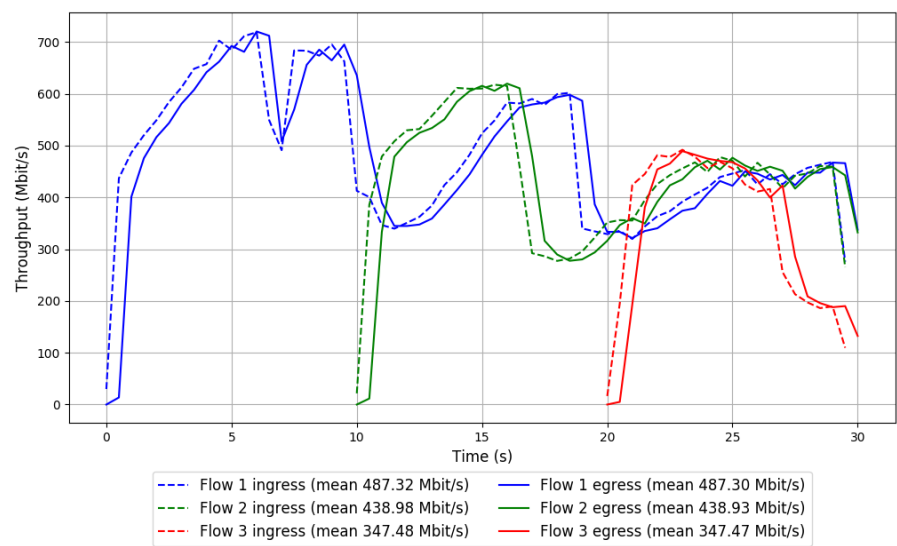
-- Flow 3:

Average throughput: 347.47 Mbit/s

95th percentile per-packet one-way delay: 66.215 ms

Loss rate: 0.00%

Run 1: Report of Indigo-Muses — Data Link



Run 2: Statistics of Indigo-Muses

Start at: 2018-09-06 17:29:06

End at: 2018-09-06 17:29:36

Local clock offset: 0.08 ms

Remote clock offset: 0.528 ms

Below is generated by plot.py at 2018-09-06 20:58:18

Datalink statistics

-- Total of 3 flows:

Average throughput: 953.39 Mbit/s

95th percentile per-packet one-way delay: 68.024 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 522.51 Mbit/s

95th percentile per-packet one-way delay: 69.343 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 422.19 Mbit/s

95th percentile per-packet one-way delay: 67.175 ms

Loss rate: 0.01%

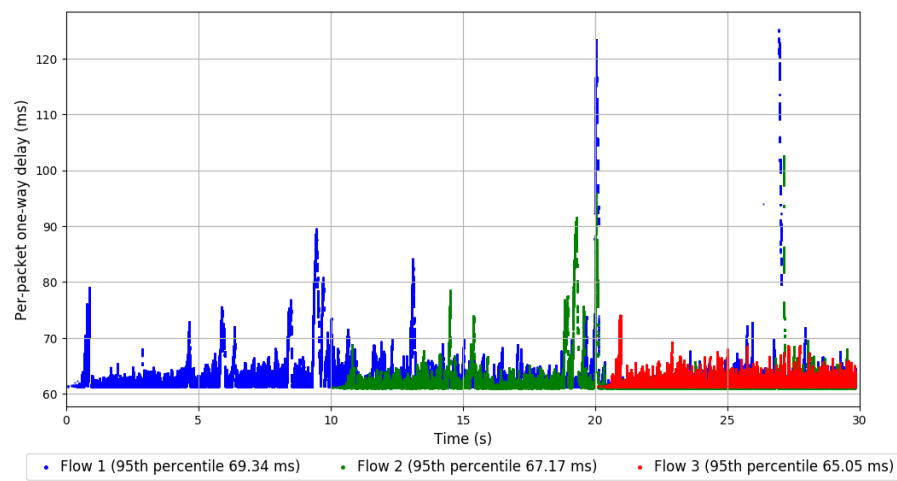
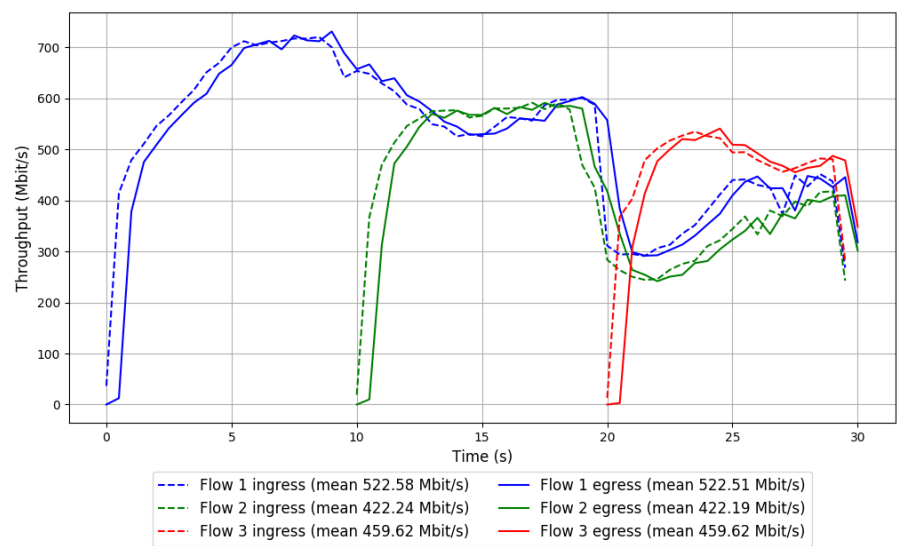
-- Flow 3:

Average throughput: 459.62 Mbit/s

95th percentile per-packet one-way delay: 65.048 ms

Loss rate: 0.00%

Run 2: Report of Indigo-Muses — Data Link



Run 3: Statistics of Indigo-Muses

Start at: 2018-09-06 18:01:28

End at: 2018-09-06 18:01:58

Local clock offset: 0.114 ms

Remote clock offset: 0.363 ms

Below is generated by plot.py at 2018-09-06 21:00:18

Datalink statistics

-- Total of 3 flows:

Average throughput: 868.24 Mbit/s

95th percentile per-packet one-way delay: 70.279 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 460.00 Mbit/s

95th percentile per-packet one-way delay: 70.629 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 451.61 Mbit/s

95th percentile per-packet one-way delay: 70.715 ms

Loss rate: 0.00%

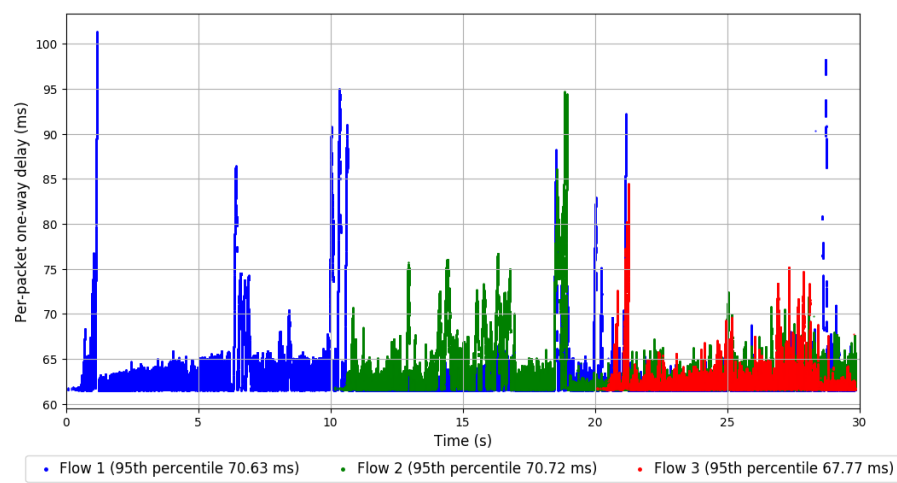
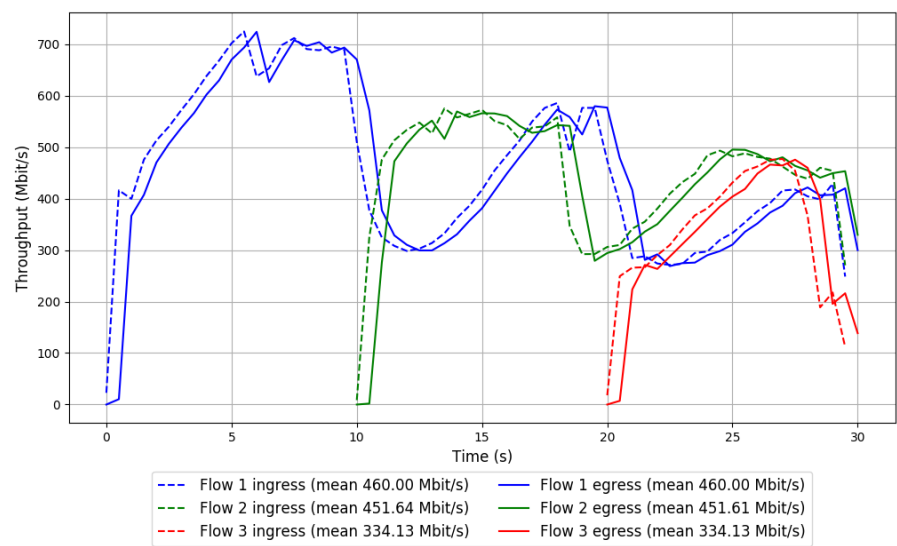
-- Flow 3:

Average throughput: 334.13 Mbit/s

95th percentile per-packet one-way delay: 67.774 ms

Loss rate: 0.00%

Run 3: Report of Indigo-Muses — Data Link



Run 4: Statistics of Indigo-Muses

Start at: 2018-09-06 18:33:23

End at: 2018-09-06 18:33:53

Local clock offset: 0.1 ms

Remote clock offset: 0.881 ms

Below is generated by plot.py at 2018-09-06 21:01:19

Datalink statistics

-- Total of 3 flows:

Average throughput: 897.75 Mbit/s

95th percentile per-packet one-way delay: 72.644 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 467.35 Mbit/s

95th percentile per-packet one-way delay: 74.176 ms

Loss rate: 0.02%

-- Flow 2:

Average throughput: 430.45 Mbit/s

95th percentile per-packet one-way delay: 69.976 ms

Loss rate: 0.00%

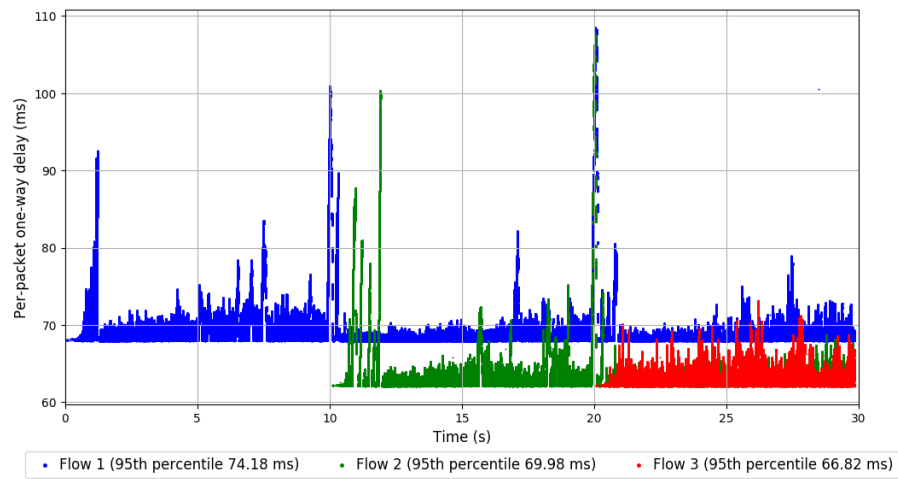
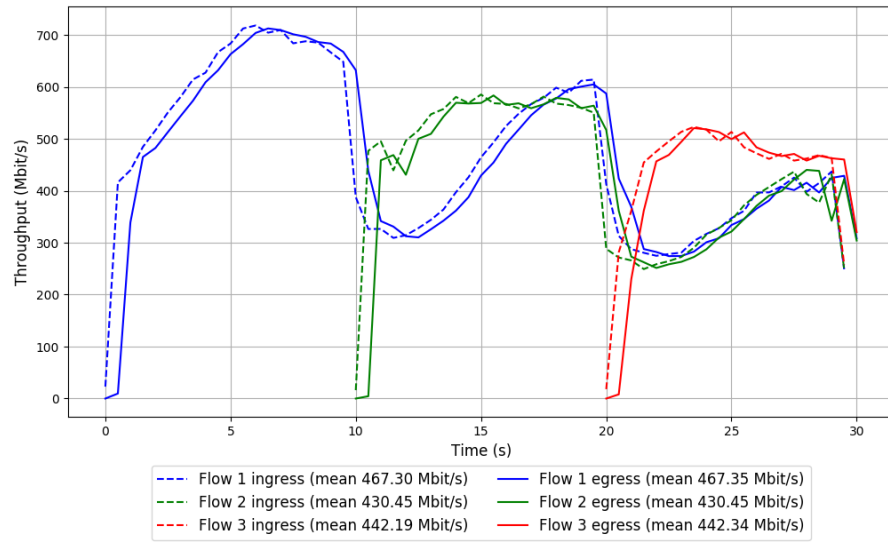
-- Flow 3:

Average throughput: 442.34 Mbit/s

95th percentile per-packet one-way delay: 66.821 ms

Loss rate: 0.00%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-09-06 19:05:36

End at: 2018-09-06 19:06:06

Local clock offset: 0.134 ms

Remote clock offset: 0.082 ms

Below is generated by plot.py at 2018-09-06 21:02:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 959.68 Mbit/s

95th percentile per-packet one-way delay: 68.005 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 525.00 Mbit/s

95th percentile per-packet one-way delay: 68.965 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 427.99 Mbit/s

95th percentile per-packet one-way delay: 66.592 ms

Loss rate: 0.00%

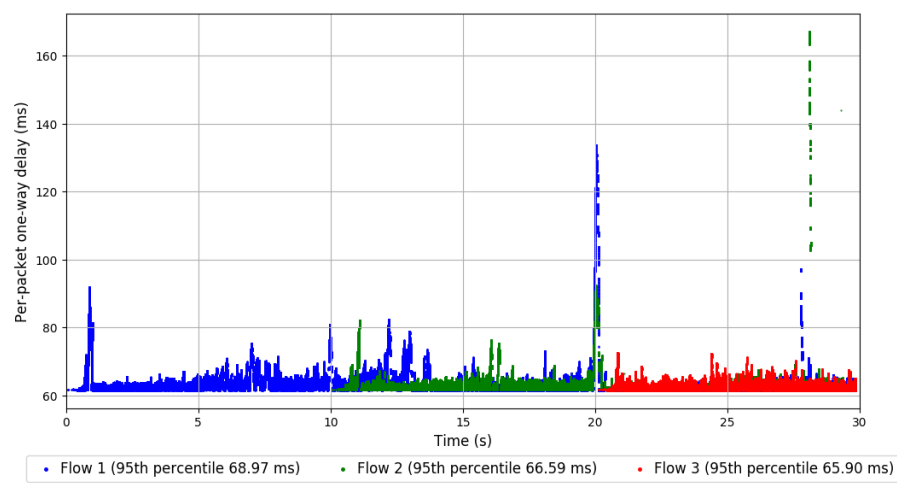
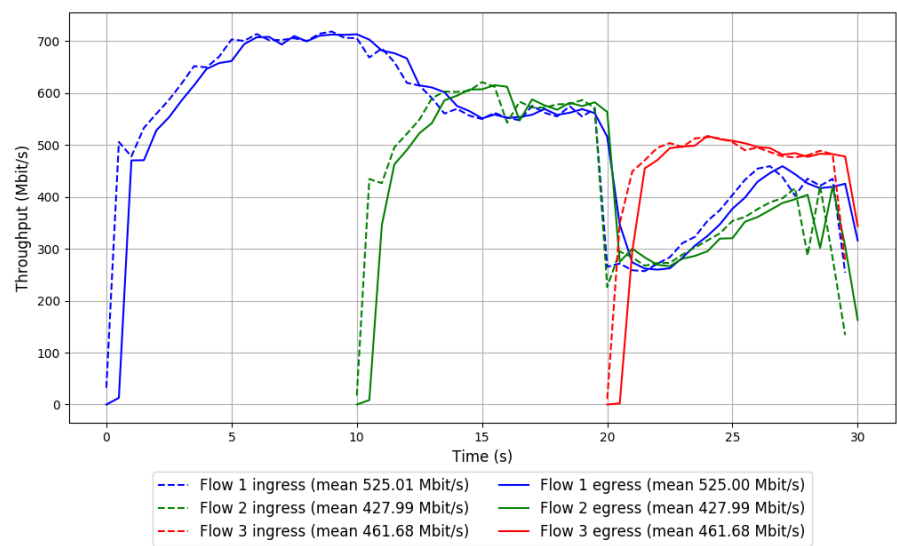
-- Flow 3:

Average throughput: 461.68 Mbit/s

95th percentile per-packet one-way delay: 65.903 ms

Loss rate: 0.00%

Run 5: Report of Indigo-Muses — Data Link

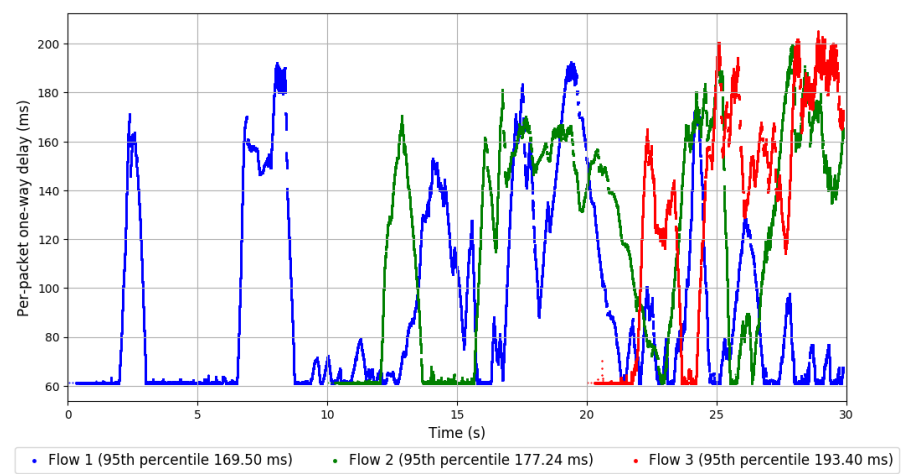
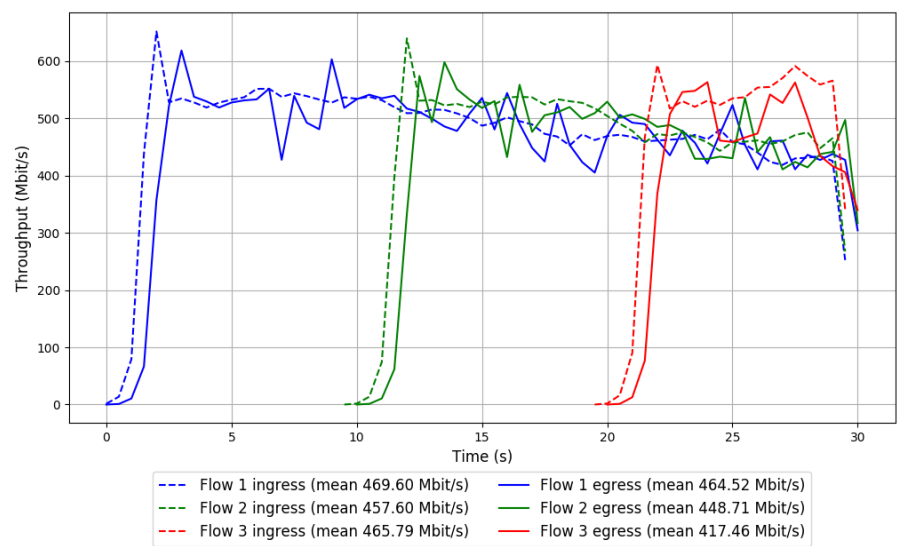


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-09-06 16:54:43
End at: 2018-09-06 16:55:13
Local clock offset: 0.101 ms
Remote clock offset: 0.392 ms

# Below is generated by plot.py at 2018-09-06 21:15:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 900.89 Mbit/s
95th percentile per-packet one-way delay: 182.281 ms
Loss rate: 3.03%
-- Flow 1:
Average throughput: 464.52 Mbit/s
95th percentile per-packet one-way delay: 169.498 ms
Loss rate: 1.21%
-- Flow 2:
Average throughput: 448.71 Mbit/s
95th percentile per-packet one-way delay: 177.244 ms
Loss rate: 2.09%
-- Flow 3:
Average throughput: 417.46 Mbit/s
95th percentile per-packet one-way delay: 193.401 ms
Loss rate: 10.46%
```


Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-09-06 17:26:59

End at: 2018-09-06 17:27:29

Local clock offset: 0.08 ms

Remote clock offset: 1.667 ms

Below is generated by plot.py at 2018-09-06 21:15:53

Datalink statistics

-- Total of 3 flows:

Average throughput: 832.59 Mbit/s

95th percentile per-packet one-way delay: 177.756 ms

Loss rate: 2.64%

-- Flow 1:

Average throughput: 459.07 Mbit/s

95th percentile per-packet one-way delay: 172.791 ms

Loss rate: 1.90%

-- Flow 2:

Average throughput: 441.76 Mbit/s

95th percentile per-packet one-way delay: 186.148 ms

Loss rate: 4.45%

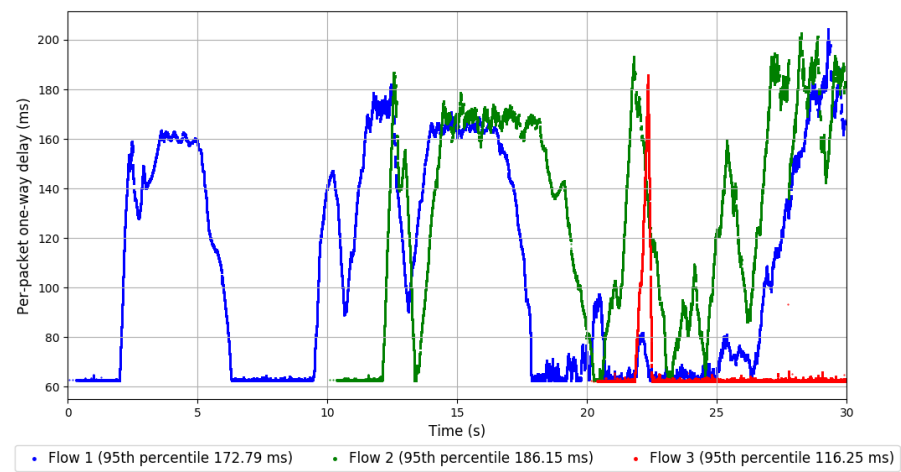
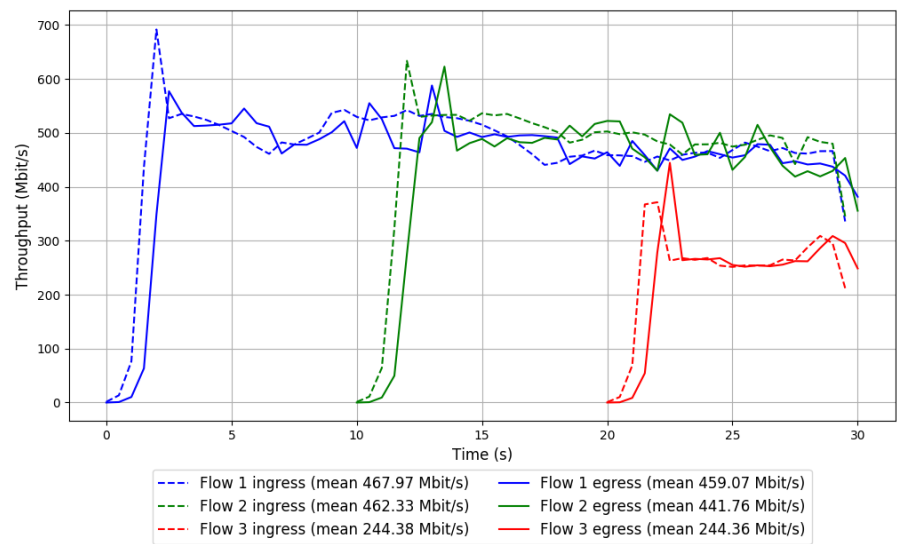
-- Flow 3:

Average throughput: 244.36 Mbit/s

95th percentile per-packet one-way delay: 116.255 ms

Loss rate: 0.00%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-09-06 17:59:21

End at: 2018-09-06 17:59:51

Local clock offset: 0.101 ms

Remote clock offset: 0.9 ms

Below is generated by plot.py at 2018-09-06 21:26:03

Datalink statistics

-- Total of 3 flows:

Average throughput: 833.31 Mbit/s

95th percentile per-packet one-way delay: 152.469 ms

Loss rate: 0.75%

-- Flow 1:

Average throughput: 478.86 Mbit/s

95th percentile per-packet one-way delay: 157.587 ms

Loss rate: 0.53%

-- Flow 2:

Average throughput: 318.43 Mbit/s

95th percentile per-packet one-way delay: 83.553 ms

Loss rate: 0.31%

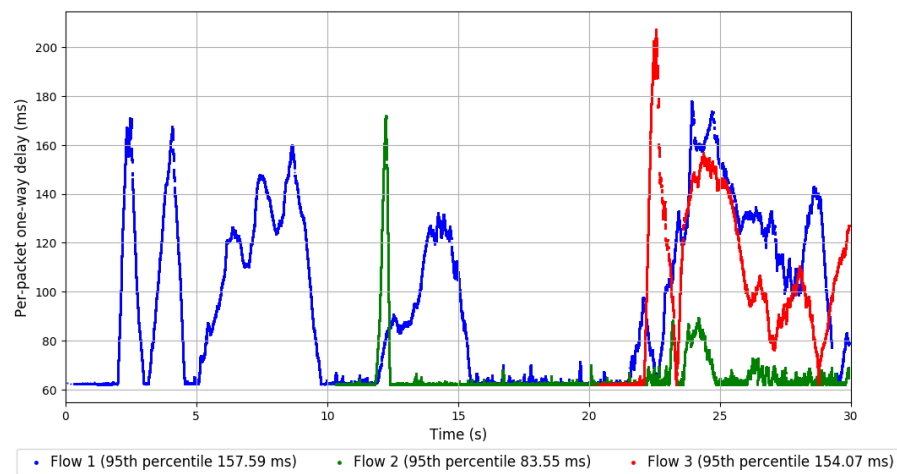
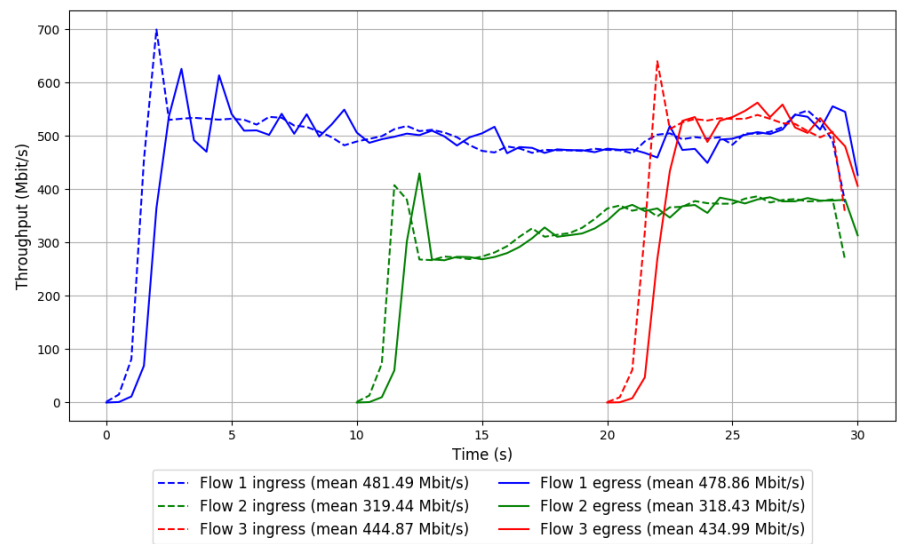
-- Flow 3:

Average throughput: 434.99 Mbit/s

95th percentile per-packet one-way delay: 154.067 ms

Loss rate: 2.15%

Run 3: Report of PCC-Allegro — Data Link

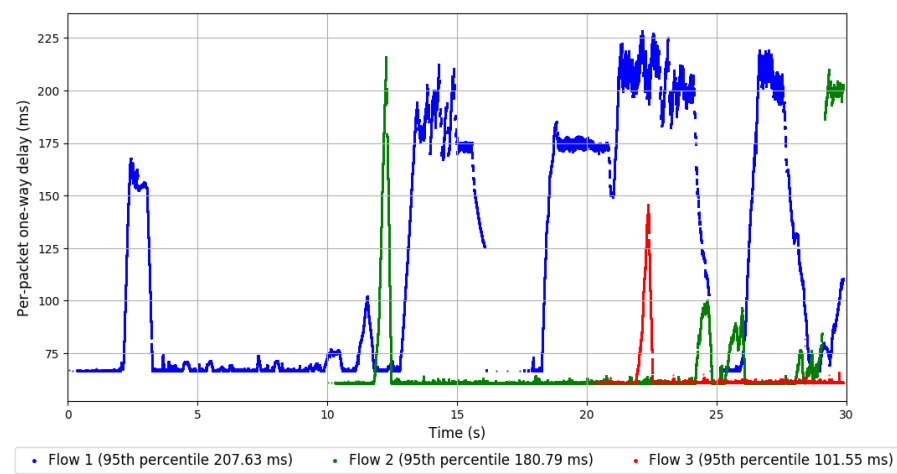
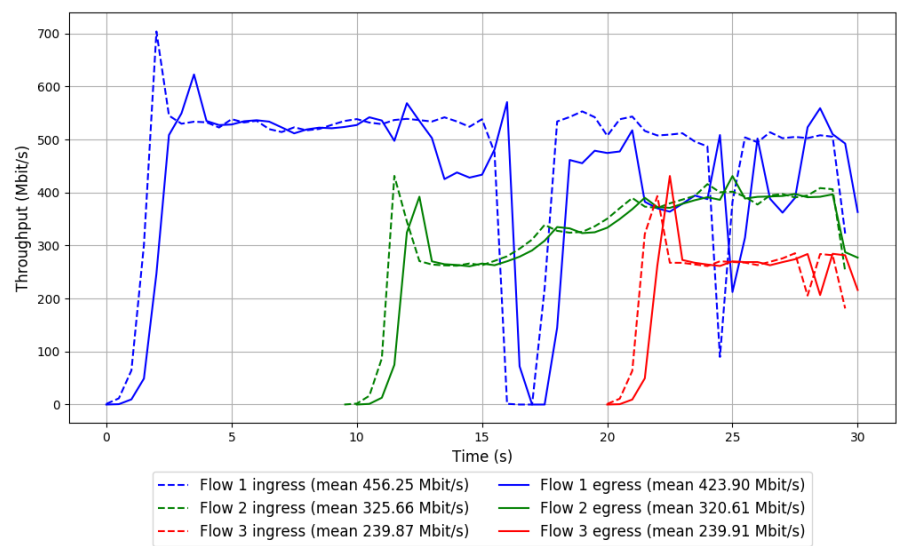


Run 4: Statistics of PCC-Allegro

Start at: 2018-09-06 18:31:24
End at: 2018-09-06 18:31:54
Local clock offset: 0.093 ms
Remote clock offset: -0.476 ms

Below is generated by plot.py at 2018-09-06 21:26:03
Datalink statistics
-- Total of 3 flows:
Average throughput: 716.23 Mbit/s
95th percentile per-packet one-way delay: 202.639 ms
Loss rate: 4.76%
-- Flow 1:
Average throughput: 423.90 Mbit/s
95th percentile per-packet one-way delay: 207.635 ms
Loss rate: 7.11%
-- Flow 2:
Average throughput: 320.61 Mbit/s
95th percentile per-packet one-way delay: 180.791 ms
Loss rate: 1.55%
-- Flow 3:
Average throughput: 239.91 Mbit/s
95th percentile per-packet one-way delay: 101.546 ms
Loss rate: 0.00%

Run 4: Report of PCC-Allegro — Data Link

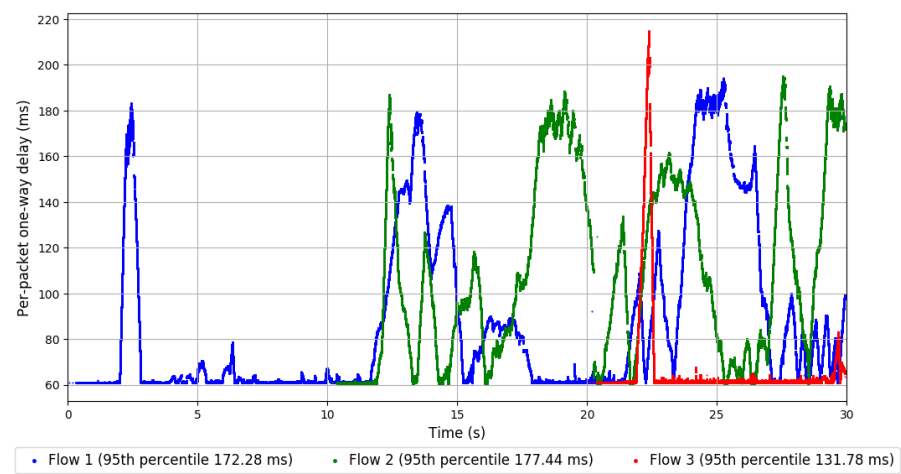
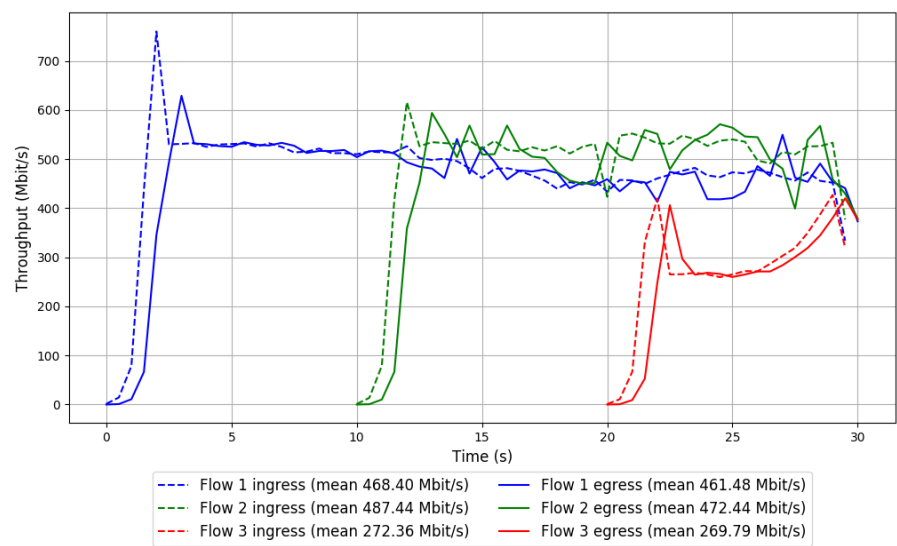


Run 5: Statistics of PCC-Allegro

Start at: 2018-09-06 19:03:27
End at: 2018-09-06 19:03:57
Local clock offset: 0.094 ms
Remote clock offset: -0.719 ms

Below is generated by plot.py at 2018-09-06 21:28:12
Datalink statistics
-- Total of 3 flows:
Average throughput: 864.25 Mbit/s
95th percentile per-packet one-way delay: 175.365 ms
Loss rate: 1.98%
-- Flow 1:
Average throughput: 461.48 Mbit/s
95th percentile per-packet one-way delay: 172.275 ms
Loss rate: 1.45%
-- Flow 2:
Average throughput: 472.44 Mbit/s
95th percentile per-packet one-way delay: 177.445 ms
Loss rate: 3.03%
-- Flow 3:
Average throughput: 269.79 Mbit/s
95th percentile per-packet one-way delay: 131.775 ms
Loss rate: 0.92%

Run 5: Report of PCC-Allegro — Data Link

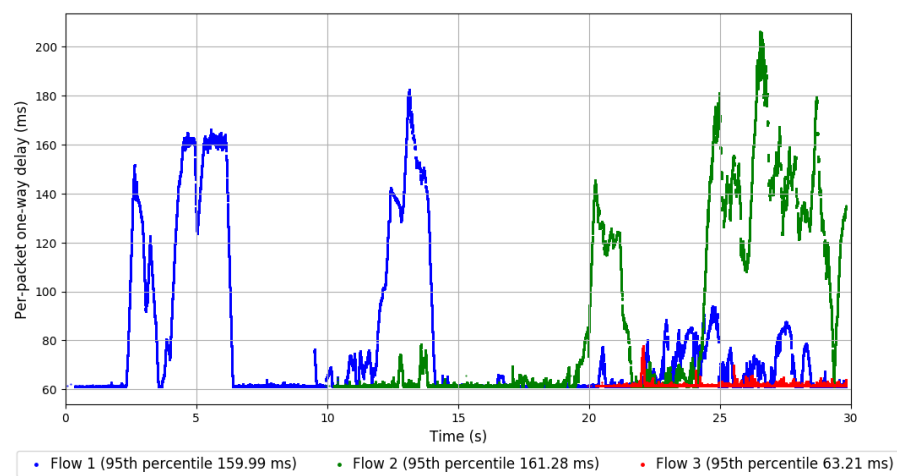
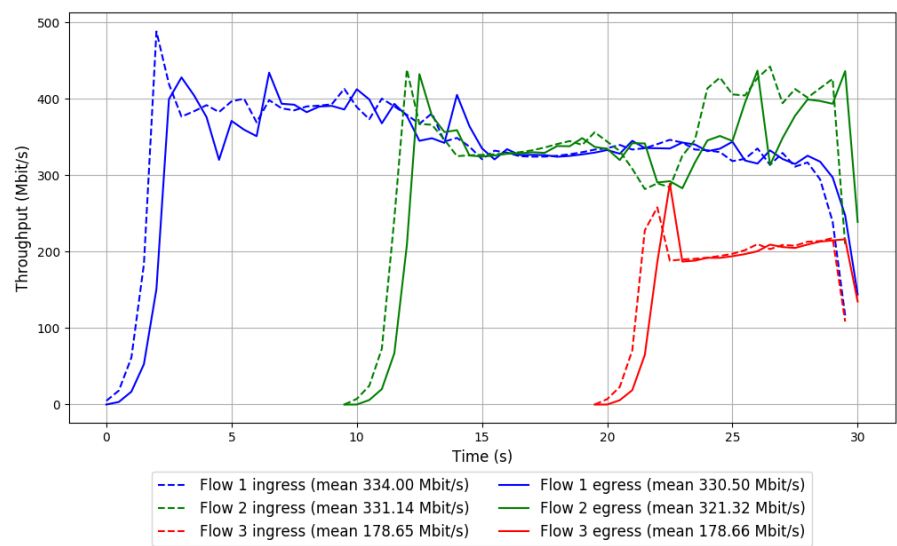


```
Run 1: Statistics of PCC-Expr

Start at: 2018-09-06 16:50:31
End at: 2018-09-06 16:51:01
Local clock offset: 0.073 ms
Remote clock offset: 0.587 ms

# Below is generated by plot.py at 2018-09-06 21:28:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 604.36 Mbit/s
95th percentile per-packet one-way delay: 158.937 ms
Loss rate: 1.64%
-- Flow 1:
Average throughput: 330.50 Mbit/s
95th percentile per-packet one-way delay: 159.989 ms
Loss rate: 1.05%
-- Flow 2:
Average throughput: 321.32 Mbit/s
95th percentile per-packet one-way delay: 161.277 ms
Loss rate: 2.96%
-- Flow 3:
Average throughput: 178.66 Mbit/s
95th percentile per-packet one-way delay: 63.211 ms
Loss rate: 0.01%
```

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2018-09-06 17:22:44

End at: 2018-09-06 17:23:14

Local clock offset: 0.102 ms

Remote clock offset: 0.865 ms

Below is generated by plot.py at 2018-09-06 21:28:12

Datalink statistics

-- Total of 3 flows:

Average throughput: 565.28 Mbit/s

95th percentile per-packet one-way delay: 175.040 ms

Loss rate: 1.22%

-- Flow 1:

Average throughput: 315.34 Mbit/s

95th percentile per-packet one-way delay: 178.832 ms

Loss rate: 1.96%

-- Flow 2:

Average throughput: 248.02 Mbit/s

95th percentile per-packet one-way delay: 114.658 ms

Loss rate: 0.37%

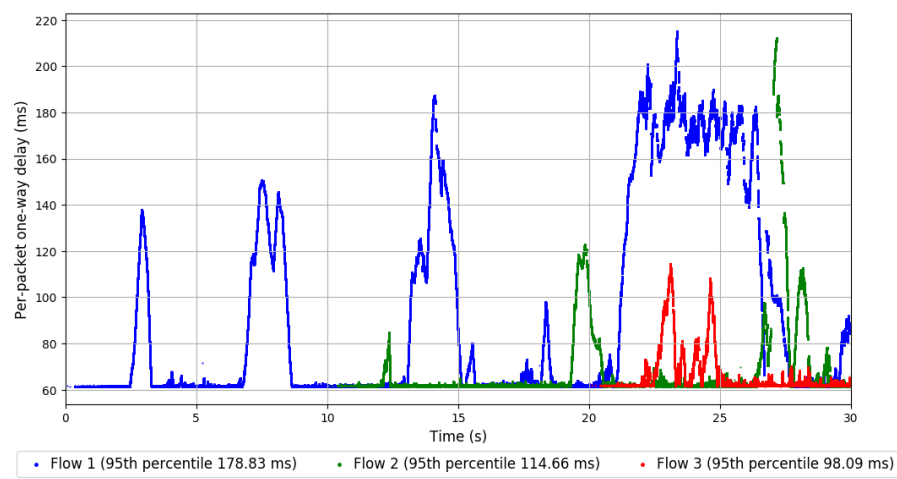
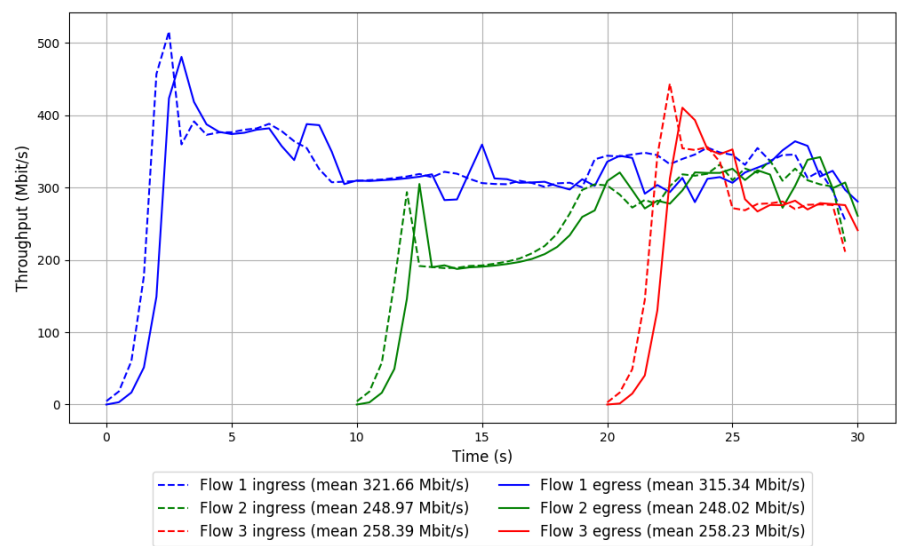
-- Flow 3:

Average throughput: 258.23 Mbit/s

95th percentile per-packet one-way delay: 98.086 ms

Loss rate: 0.06%

Run 2: Report of PCC-Expr — Data Link

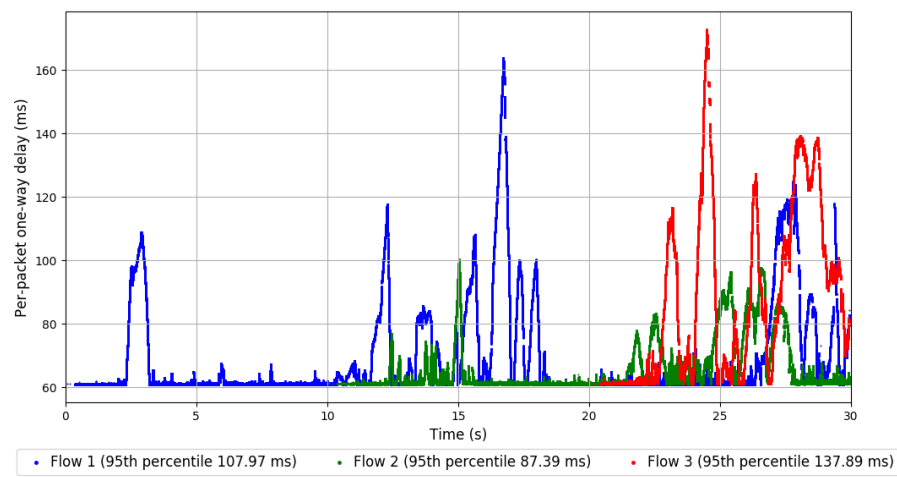
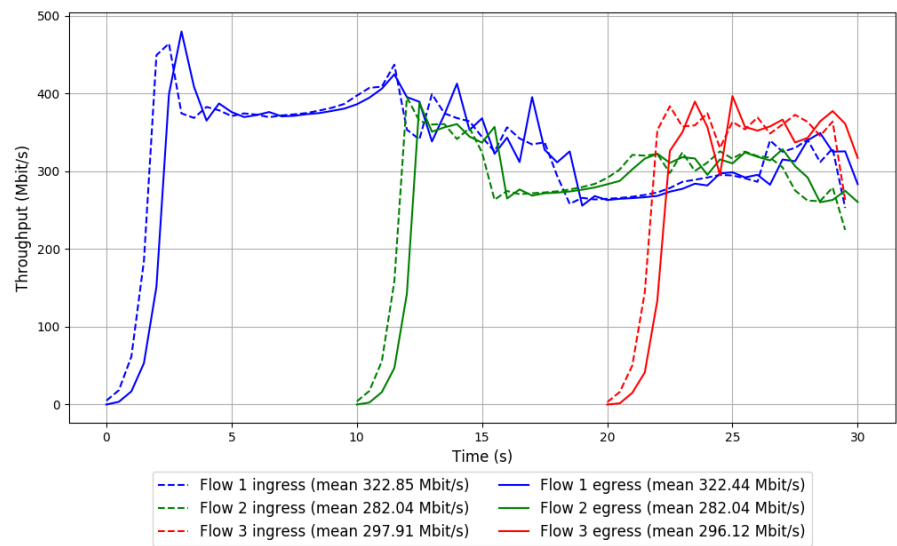


Run 3: Statistics of PCC-Expr

Start at: 2018-09-06 17:55:02
End at: 2018-09-06 17:55:33
Local clock offset: 0.09 ms
Remote clock offset: -0.148 ms

Below is generated by plot.py at 2018-09-06 21:28:12
Datalink statistics
-- Total of 3 flows:
Average throughput: 607.63 Mbit/s
95th percentile per-packet one-way delay: 117.341 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 322.44 Mbit/s
95th percentile per-packet one-way delay: 107.967 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 282.04 Mbit/s
95th percentile per-packet one-way delay: 87.385 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 296.12 Mbit/s
95th percentile per-packet one-way delay: 137.891 ms
Loss rate: 0.61%

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

Start at: 2018-09-06 18:27:07

End at: 2018-09-06 18:27:37

Local clock offset: 0.149 ms

Remote clock offset: 0.562 ms

Below is generated by plot.py at 2018-09-06 21:35:19

Datalink statistics

-- Total of 3 flows:

Average throughput: 576.50 Mbit/s

95th percentile per-packet one-way delay: 156.608 ms

Loss rate: 1.08%

-- Flow 1:

Average throughput: 317.27 Mbit/s

95th percentile per-packet one-way delay: 156.467 ms

Loss rate: 0.72%

-- Flow 2:

Average throughput: 340.21 Mbit/s

95th percentile per-packet one-way delay: 158.102 ms

Loss rate: 1.59%

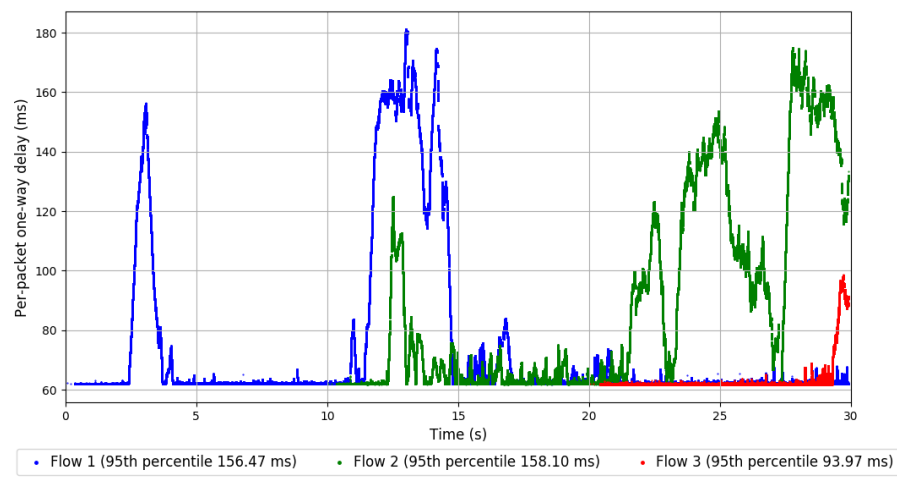
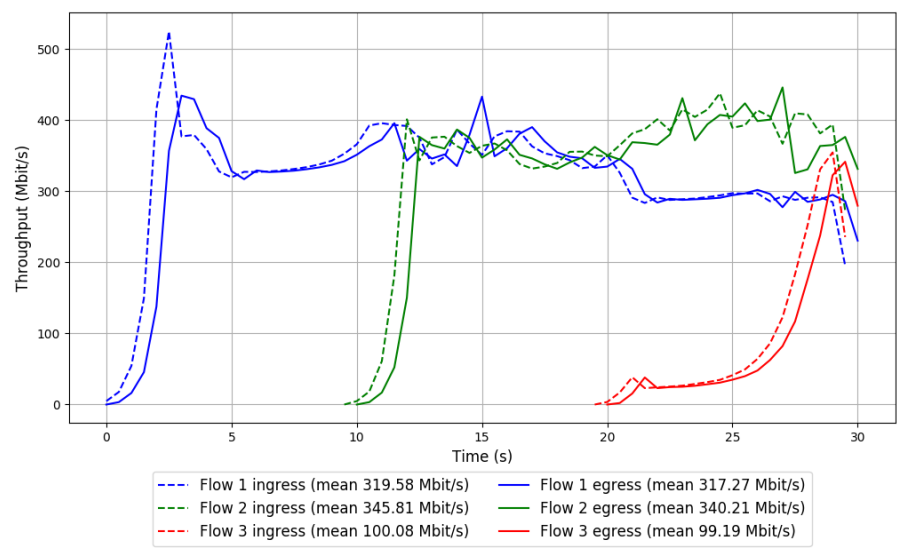
-- Flow 3:

Average throughput: 99.19 Mbit/s

95th percentile per-packet one-way delay: 93.966 ms

Loss rate: 0.87%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-09-06 18:59:17

End at: 2018-09-06 18:59:47

Local clock offset: 0.127 ms

Remote clock offset: 0.26 ms

Below is generated by plot.py at 2018-09-06 21:37:19

Datalink statistics

-- Total of 3 flows:

Average throughput: 579.94 Mbit/s

95th percentile per-packet one-way delay: 155.093 ms

Loss rate: 0.76%

-- Flow 1:

Average throughput: 333.77 Mbit/s

95th percentile per-packet one-way delay: 160.140 ms

Loss rate: 1.06%

-- Flow 2:

Average throughput: 283.43 Mbit/s

95th percentile per-packet one-way delay: 120.379 ms

Loss rate: 0.45%

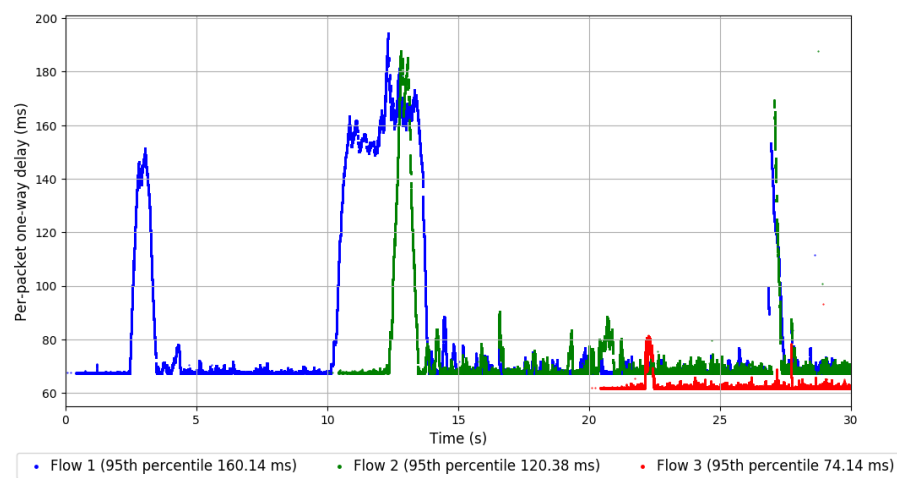
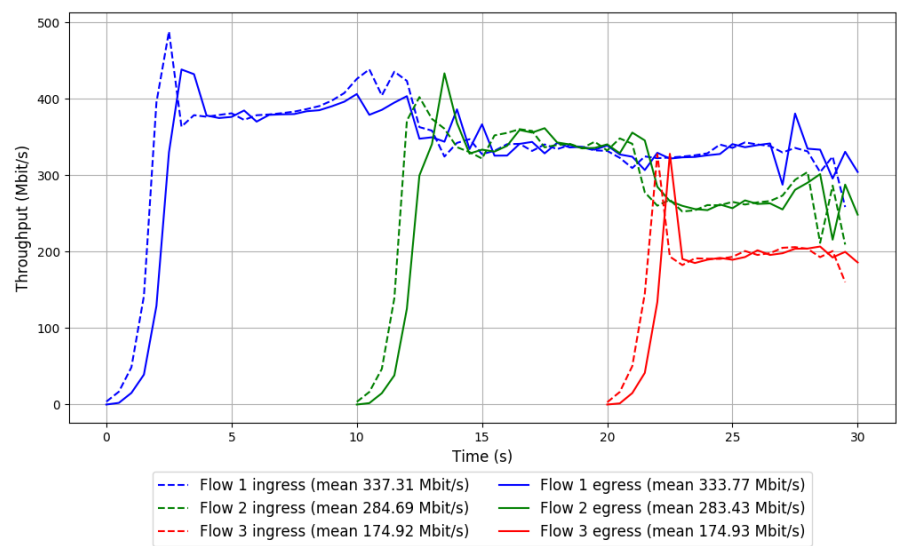
-- Flow 3:

Average throughput: 174.93 Mbit/s

95th percentile per-packet one-way delay: 74.139 ms

Loss rate: 0.00%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-09-06 16:58:51

End at: 2018-09-06 16:59:21

Local clock offset: 0.08 ms

Remote clock offset: 0.199 ms

Below is generated by plot.py at 2018-09-06 21:37:19

Datalink statistics

-- Total of 3 flows:

Average throughput: 11.37 Mbit/s

95th percentile per-packet one-way delay: 60.867 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 60.867 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 61.389 ms

Loss rate: 0.00%

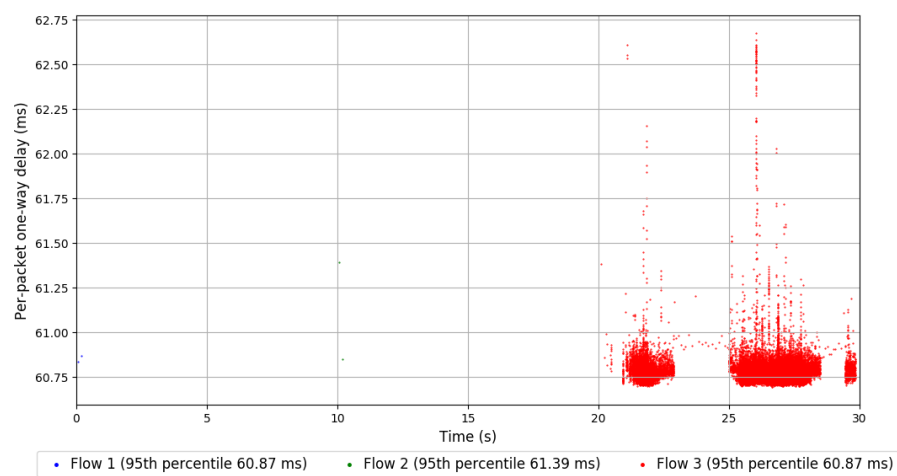
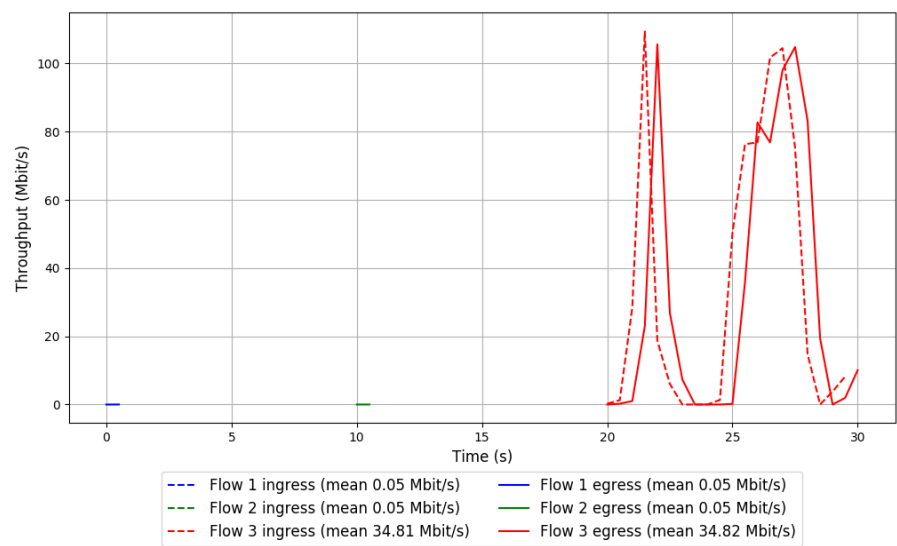
-- Flow 3:

Average throughput: 34.82 Mbit/s

95th percentile per-packet one-way delay: 60.866 ms

Loss rate: 0.00%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-09-06 17:31:06

End at: 2018-09-06 17:31:36

Local clock offset: 0.102 ms

Remote clock offset: 0.031 ms

Below is generated by plot.py at 2018-09-06 21:37:19

Datalink statistics

-- Total of 3 flows:

Average throughput: 50.80 Mbit/s

95th percentile per-packet one-way delay: 60.752 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 60.633 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 61.88 Mbit/s

95th percentile per-packet one-way delay: 60.588 ms

Loss rate: 0.00%

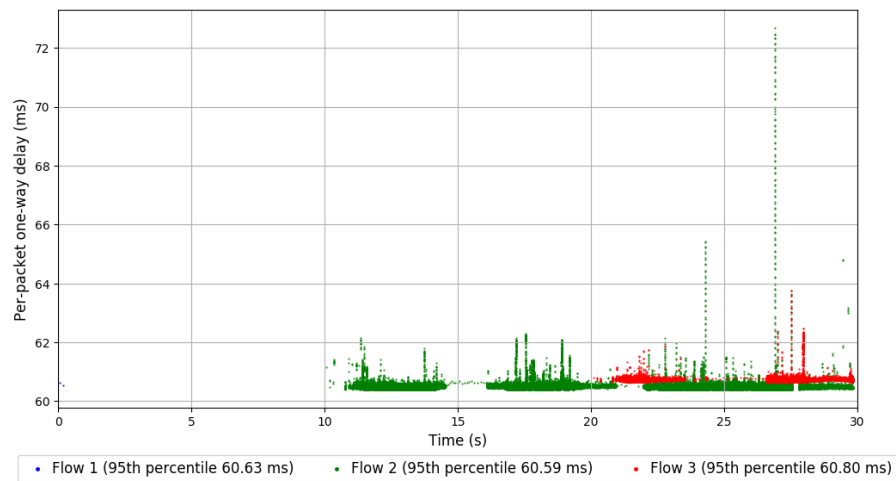
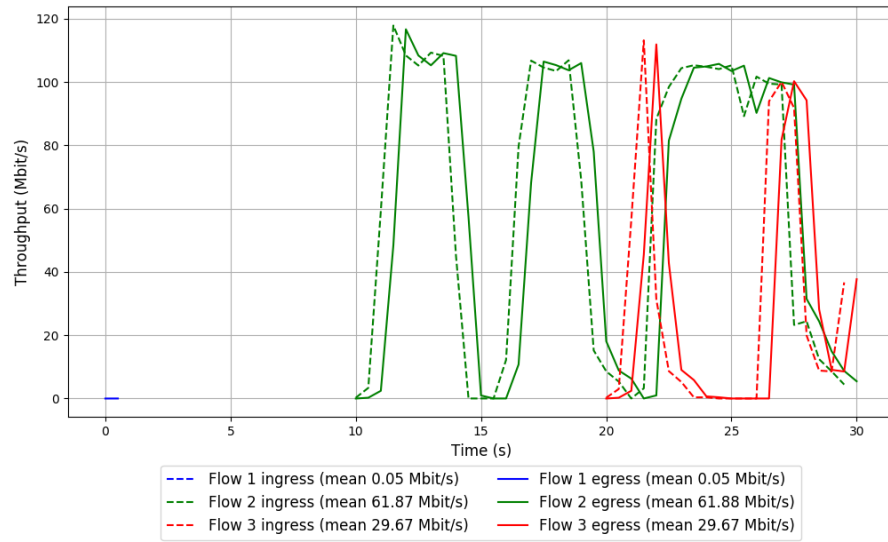
-- Flow 3:

Average throughput: 29.67 Mbit/s

95th percentile per-packet one-way delay: 60.804 ms

Loss rate: 0.00%

Run 2: Report of QUIC Cubic — Data Link

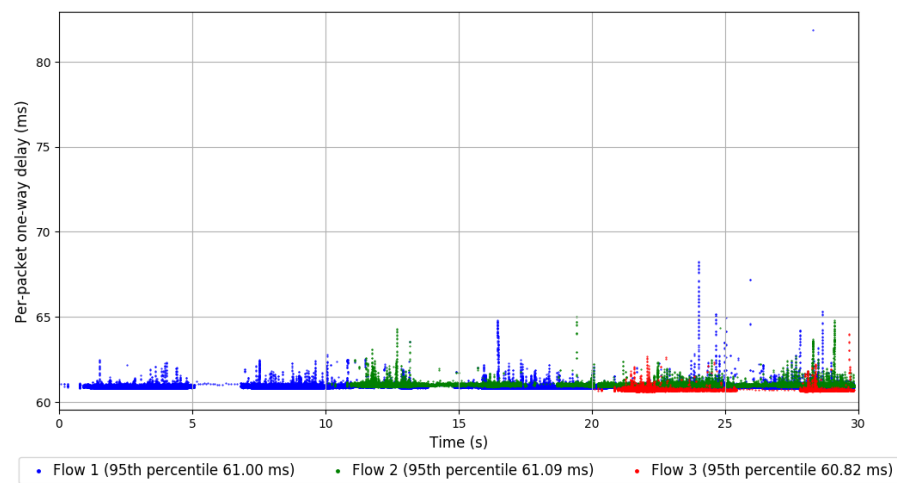
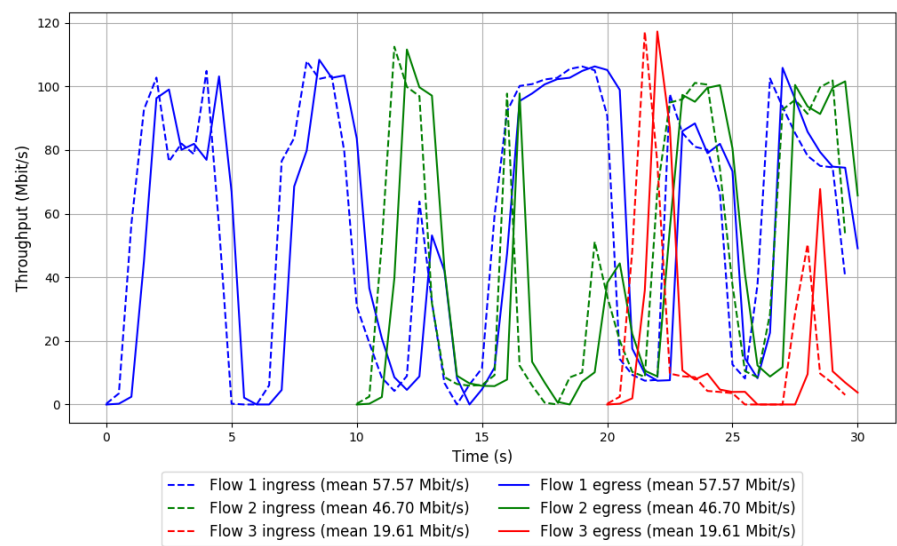


Run 3: Statistics of QUIC Cubic

Start at: 2018-09-06 18:03:23
End at: 2018-09-06 18:03:53
Local clock offset: 0.087 ms
Remote clock offset: -0.368 ms

Below is generated by plot.py at 2018-09-06 21:37:19
Datalink statistics
-- Total of 3 flows:
Average throughput: 94.96 Mbit/s
95th percentile per-packet one-way delay: 61.050 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 57.57 Mbit/s
95th percentile per-packet one-way delay: 61.002 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 46.70 Mbit/s
95th percentile per-packet one-way delay: 61.087 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 19.61 Mbit/s
95th percentile per-packet one-way delay: 60.822 ms
Loss rate: 0.00%

Run 3: Report of QUIC Cubic — Data Link

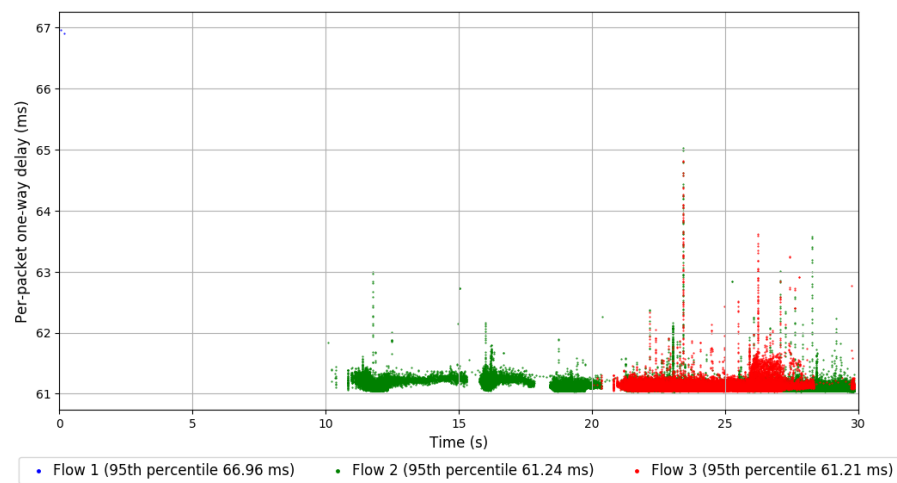
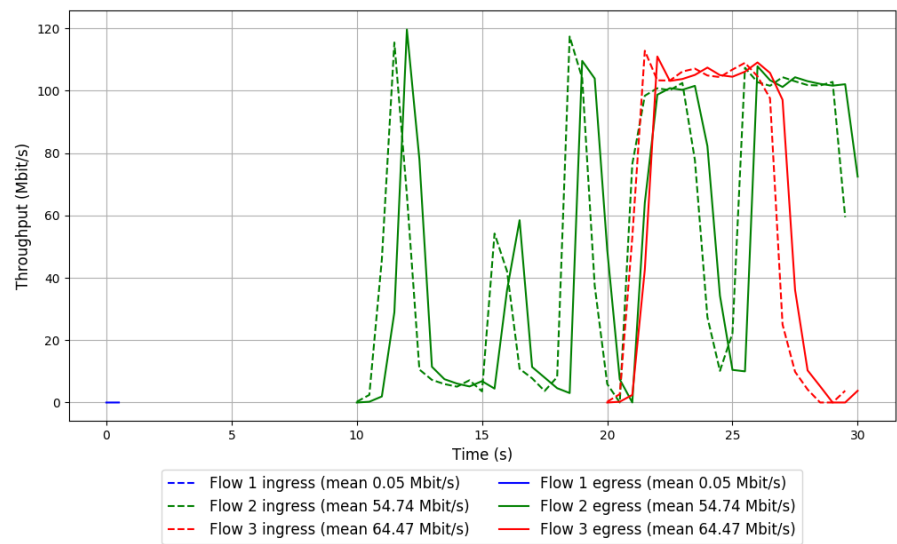


Run 4: Statistics of QUIC Cubic

Start at: 2018-09-06 18:35:20
End at: 2018-09-06 18:35:50
Local clock offset: 0.121 ms
Remote clock offset: -0.277 ms

Below is generated by plot.py at 2018-09-06 21:37:19
Datalink statistics
-- Total of 3 flows:
Average throughput: 57.45 Mbit/s
95th percentile per-packet one-way delay: 61.231 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 66.962 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 54.74 Mbit/s
95th percentile per-packet one-way delay: 61.239 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 64.47 Mbit/s
95th percentile per-packet one-way delay: 61.211 ms
Loss rate: 0.00%

Run 4: Report of QUIC Cubic — Data Link

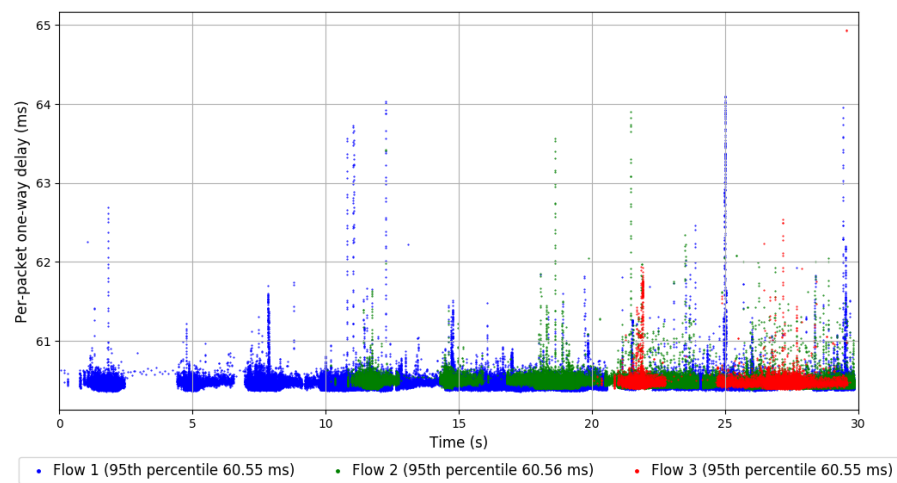
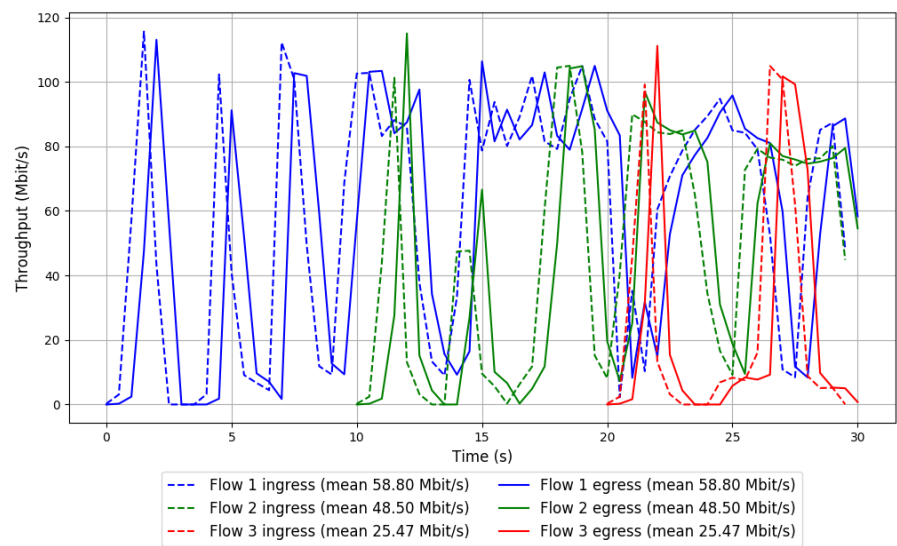


Run 5: Statistics of QUIC Cubic

Start at: 2018-09-06 19:07:36
End at: 2018-09-06 19:08:06
Local clock offset: 0.151 ms
Remote clock offset: -1.181 ms

Below is generated by plot.py at 2018-09-06 21:37:19
Datalink statistics
-- Total of 3 flows:
Average throughput: 99.22 Mbit/s
95th percentile per-packet one-way delay: 60.554 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 58.80 Mbit/s
95th percentile per-packet one-way delay: 60.553 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 48.50 Mbit/s
95th percentile per-packet one-way delay: 60.556 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 25.47 Mbit/s
95th percentile per-packet one-way delay: 60.550 ms
Loss rate: 0.00%

Run 5: Report of QUIC Cubic — Data Link

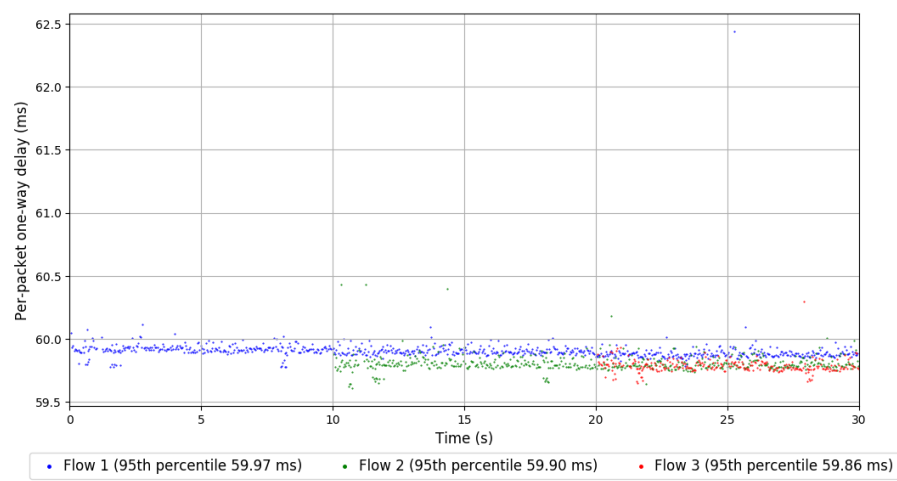
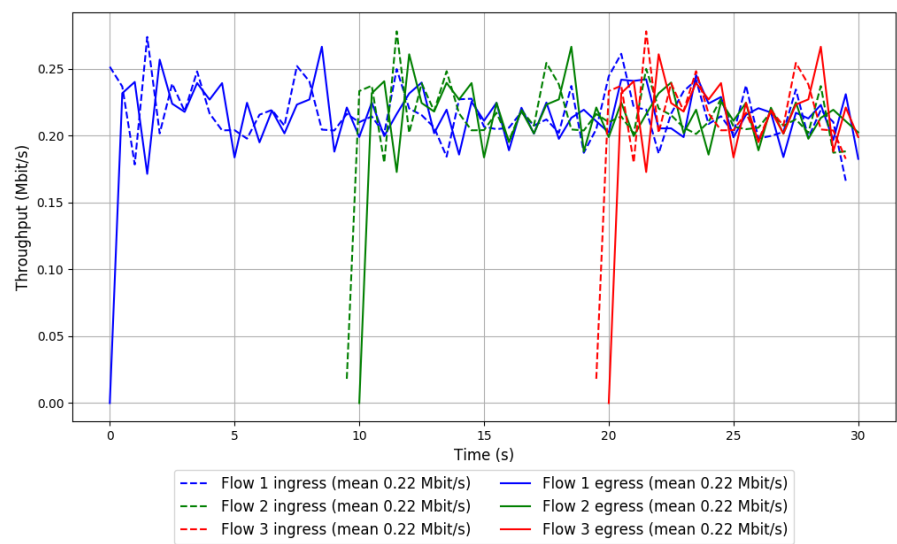


```
Run 1: Statistics of SReAM

Start at: 2018-09-06 16:49:20
End at: 2018-09-06 16:49:50
Local clock offset: 0.072 ms
Remote clock offset: -1.049 ms

# Below is generated by plot.py at 2018-09-06 21:37:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 59.950 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 59.970 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 59.901 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 59.864 ms
Loss rate: 0.00%
```

Run 1: Report of SReAM — Data Link

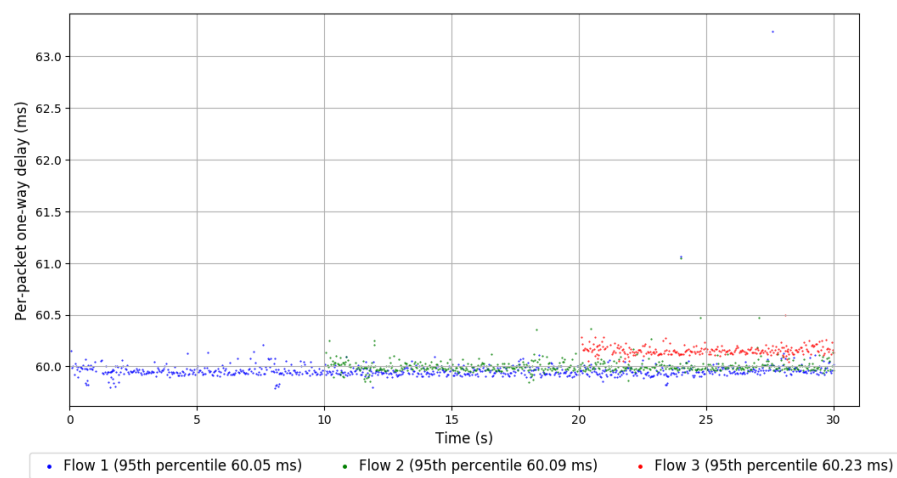
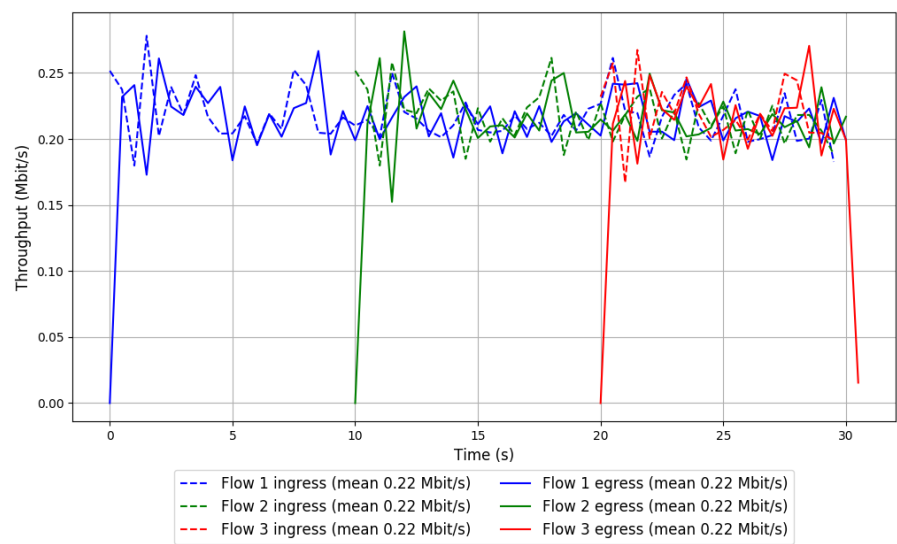


Run 2: Statistics of SReAM

Start at: 2018-09-06 17:21:33
End at: 2018-09-06 17:22:03
Local clock offset: 0.352 ms
Remote clock offset: -0.401 ms

Below is generated by plot.py at 2018-09-06 21:37:19
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 60.178 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.048 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.095 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.234 ms
Loss rate: 0.00%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SReAM

Start at: 2018-09-06 17:53:52

End at: 2018-09-06 17:54:22

Local clock offset: 0.094 ms

Remote clock offset: 0.339 ms

Below is generated by plot.py at 2018-09-06 21:37:19

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.44 Mbit/s

95th percentile per-packet one-way delay: 61.872 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 61.879 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 61.867 ms

Loss rate: 0.00%

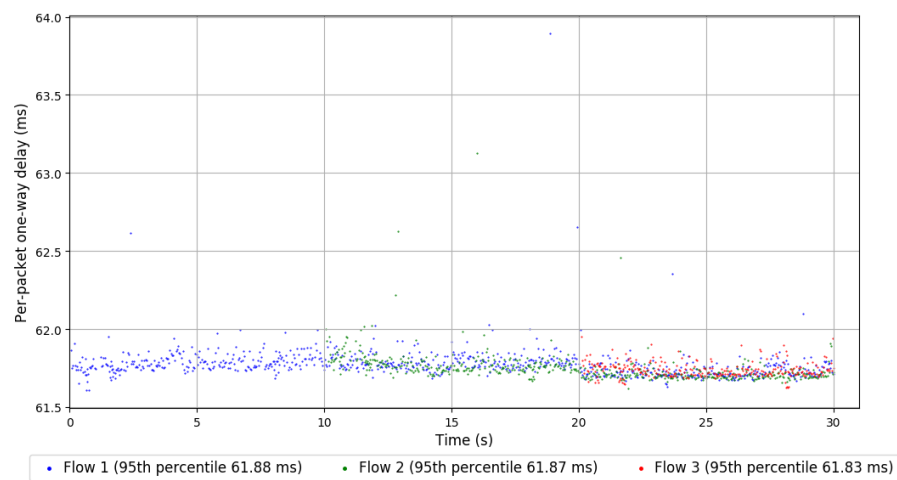
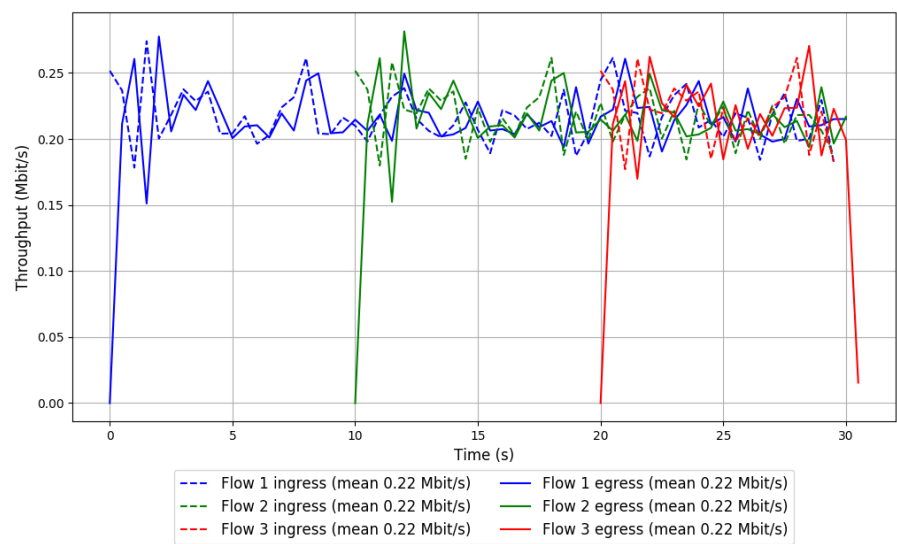
-- Flow 3:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 61.833 ms

Loss rate: 0.00%

Run 3: Report of SReAM — Data Link

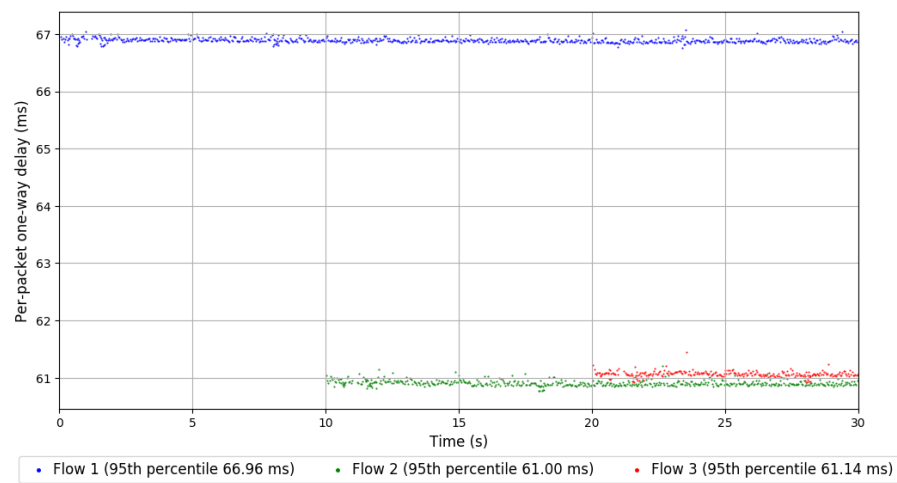
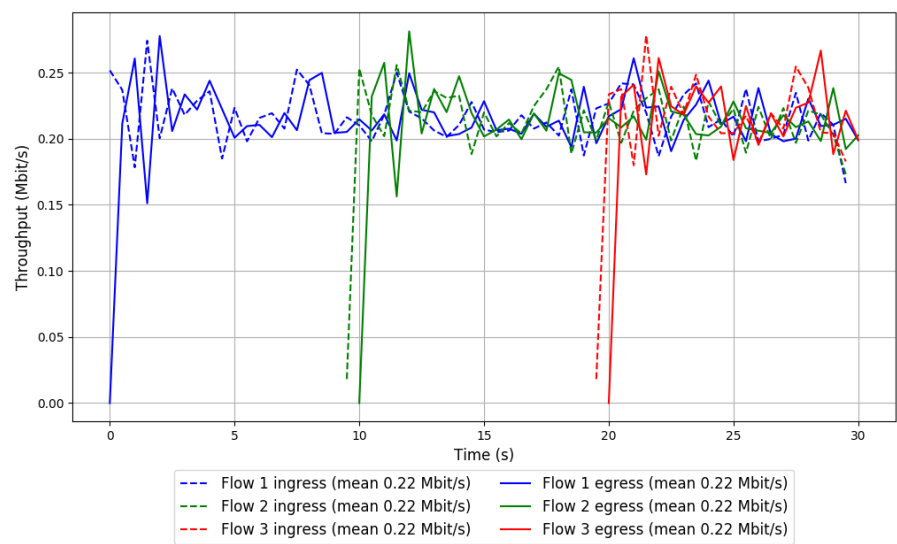


Run 4: Statistics of SReAM

Start at: 2018-09-06 18:25:56
End at: 2018-09-06 18:26:26
Local clock offset: 0.127 ms
Remote clock offset: -0.392 ms

Below is generated by plot.py at 2018-09-06 21:37:19
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 66.941 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 66.963 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 61.001 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 61.136 ms
Loss rate: 0.00%

Run 4: Report of SCReAM — Data Link

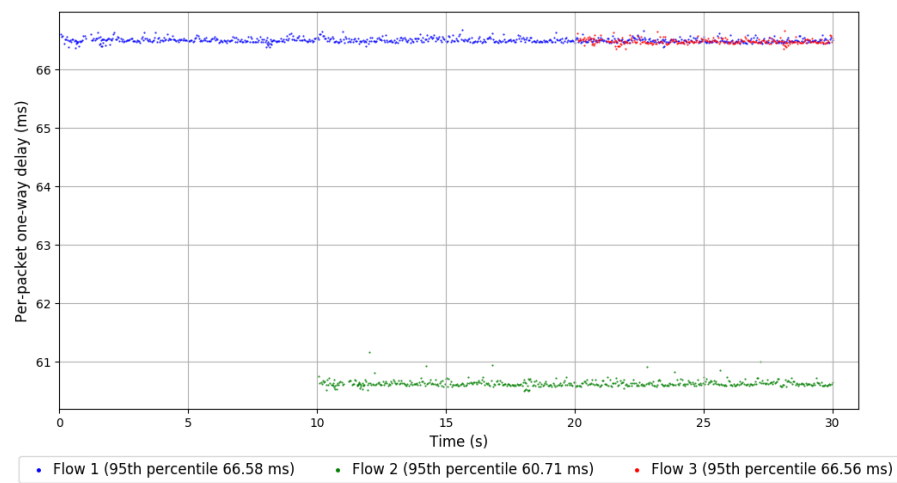
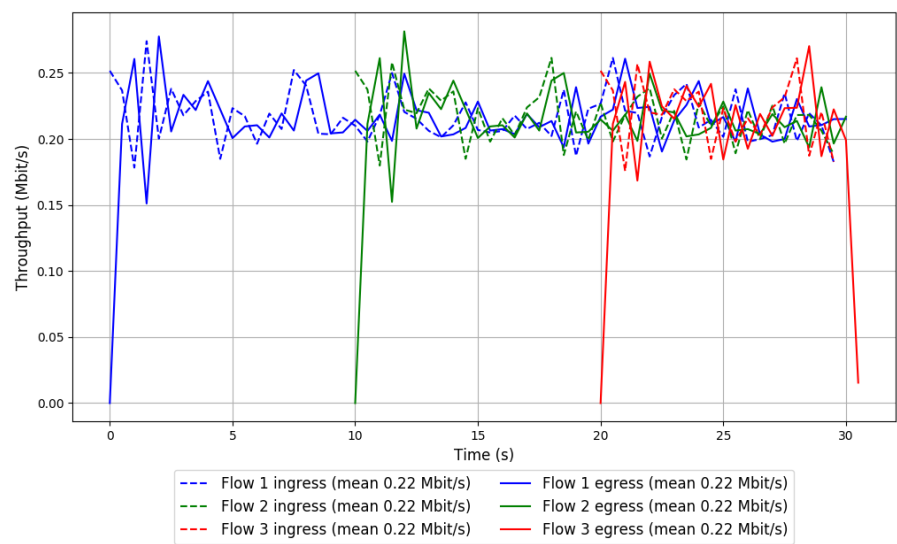


Run 5: Statistics of SReAM

Start at: 2018-09-06 18:58:06
End at: 2018-09-06 18:58:36
Local clock offset: 0.12 ms
Remote clock offset: -0.882 ms

Below is generated by plot.py at 2018-09-06 21:37:19
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 66.560 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 66.577 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.712 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 66.560 ms
Loss rate: 0.00%

Run 5: Report of SCReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-09-06 16:35:09

End at: 2018-09-06 16:35:39

Local clock offset: 0.137 ms

Remote clock offset: 1.442 ms

Below is generated by plot.py at 2018-09-06 21:37:19

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.28 Mbit/s

95th percentile per-packet one-way delay: 67.832 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.61 Mbit/s

95th percentile per-packet one-way delay: 62.282 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.60 Mbit/s

95th percentile per-packet one-way delay: 62.386 ms

Loss rate: 0.00%

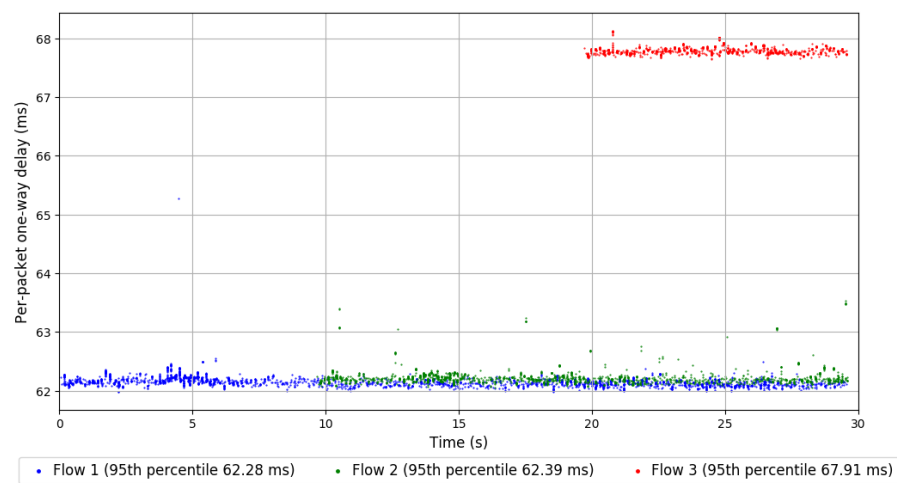
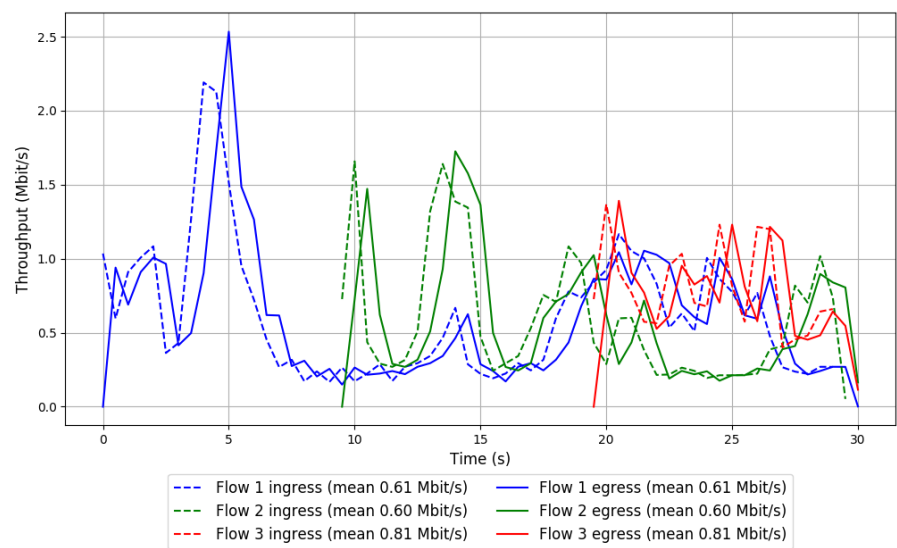
-- Flow 3:

Average throughput: 0.81 Mbit/s

95th percentile per-packet one-way delay: 67.912 ms

Loss rate: 0.00%

Run 1: Report of Sprout — Data Link

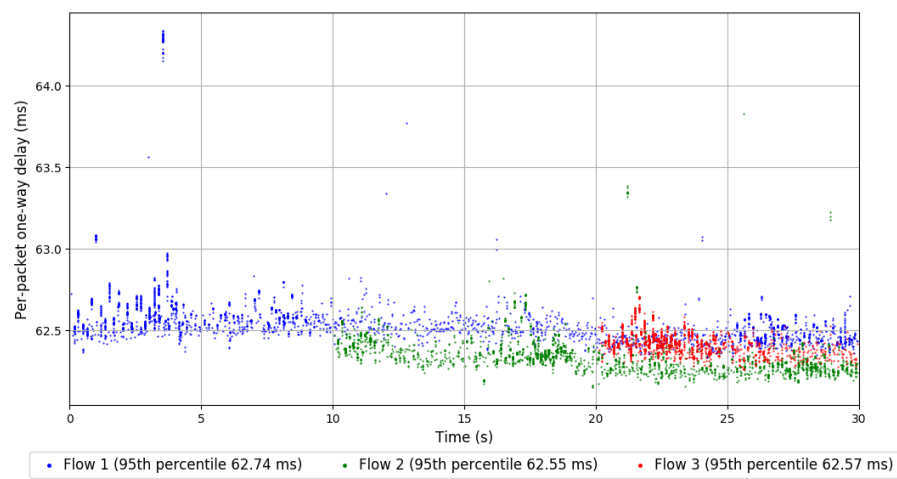
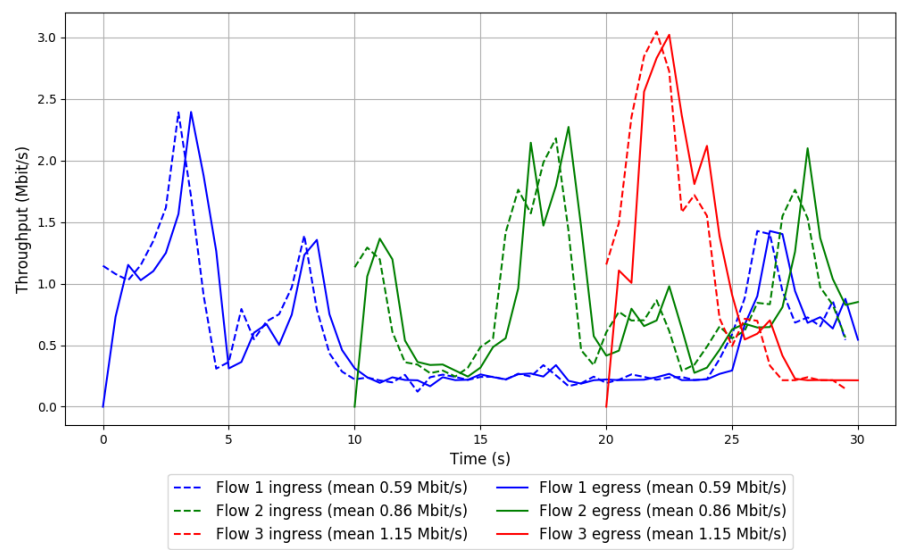


Run 2: Statistics of Sprout

Start at: 2018-09-06 17:07:16
End at: 2018-09-06 17:07:46
Local clock offset: 0.099 ms
Remote clock offset: 1.642 ms

Below is generated by plot.py at 2018-09-06 21:37:19
Datalink statistics
-- Total of 3 flows:
Average throughput: 1.55 Mbit/s
95th percentile per-packet one-way delay: 62.677 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 62.743 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 62.551 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 1.15 Mbit/s
95th percentile per-packet one-way delay: 62.570 ms
Loss rate: 0.00%

Run 2: Report of Sprout — Data Link

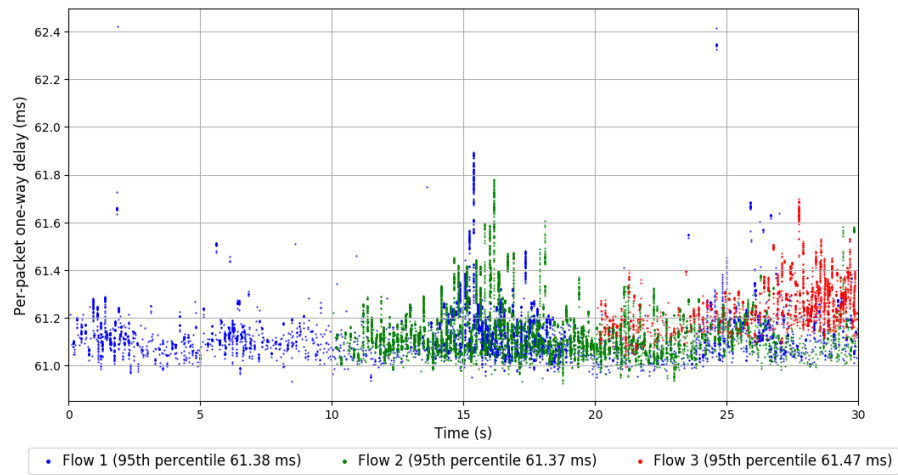
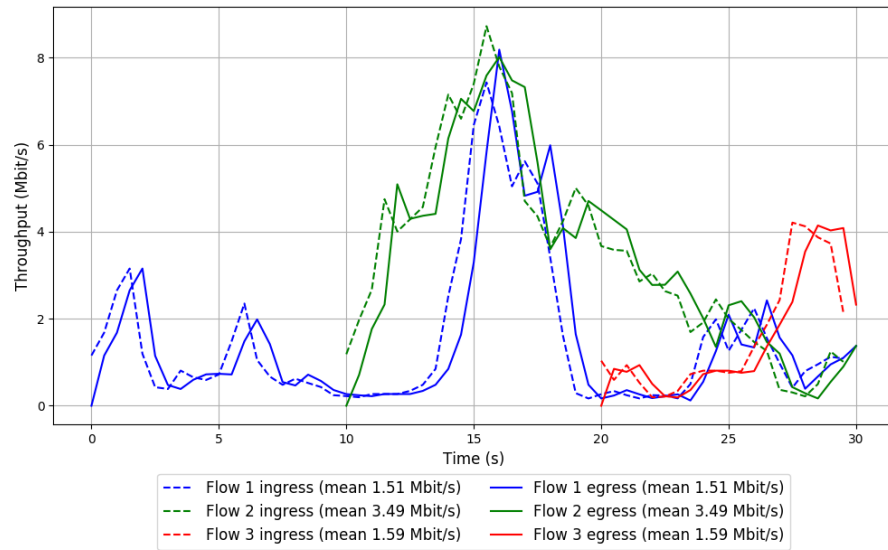


Run 3: Statistics of Sprout

Start at: 2018-09-06 17:39:35
End at: 2018-09-06 17:40:05
Local clock offset: 0.078 ms
Remote clock offset: 0.015 ms

```
# Below is generated by plot.py at 2018-09-06 21:37:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.35 Mbit/s
95th percentile per-packet one-way delay: 61.396 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.51 Mbit/s
95th percentile per-packet one-way delay: 61.376 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 3.49 Mbit/s
95th percentile per-packet one-way delay: 61.371 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 1.59 Mbit/s
95th percentile per-packet one-way delay: 61.471 ms
Loss rate: 0.00%
```

Run 3: Report of Sprout — Data Link

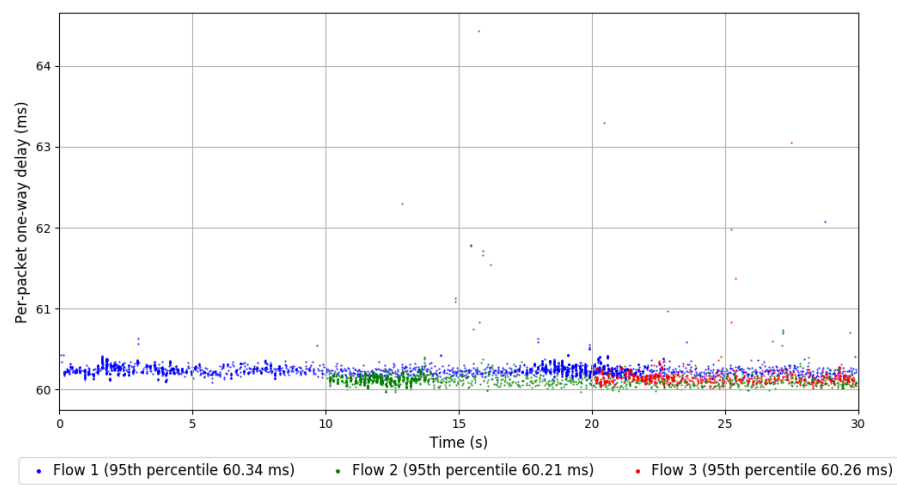
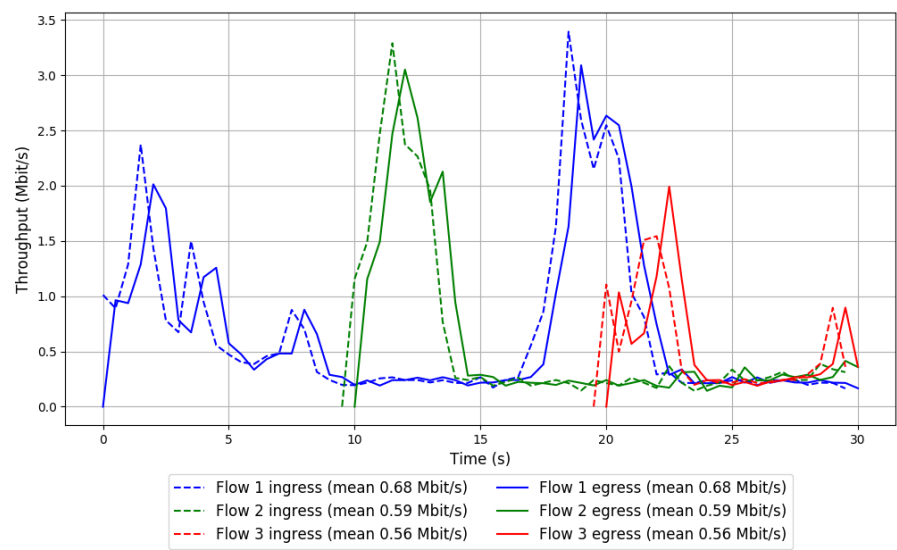


Run 4: Statistics of Sprout

Start at: 2018-09-06 18:11:45
End at: 2018-09-06 18:12:15
Local clock offset: 0.096 ms
Remote clock offset: -1.168 ms

```
# Below is generated by plot.py at 2018-09-06 21:37:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.26 Mbit/s
95th percentile per-packet one-way delay: 60.319 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.68 Mbit/s
95th percentile per-packet one-way delay: 60.342 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 60.210 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 60.261 ms
Loss rate: 0.00%
```

Run 4: Report of Sprout — Data Link

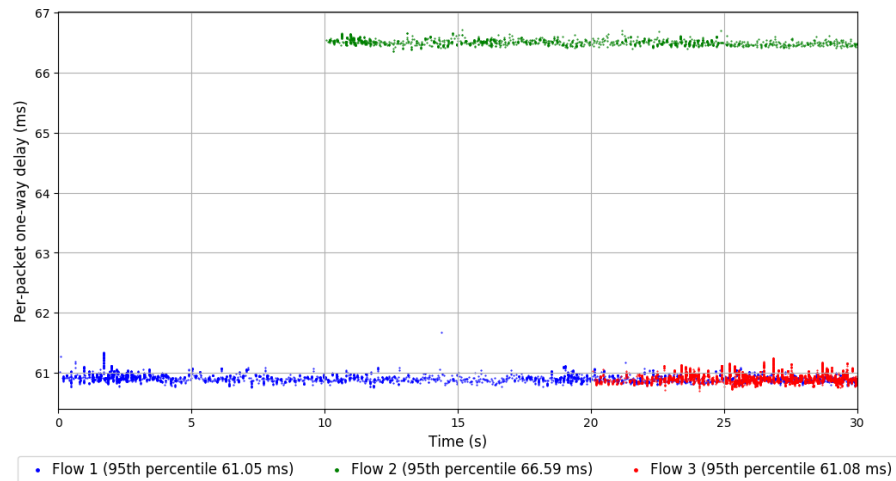
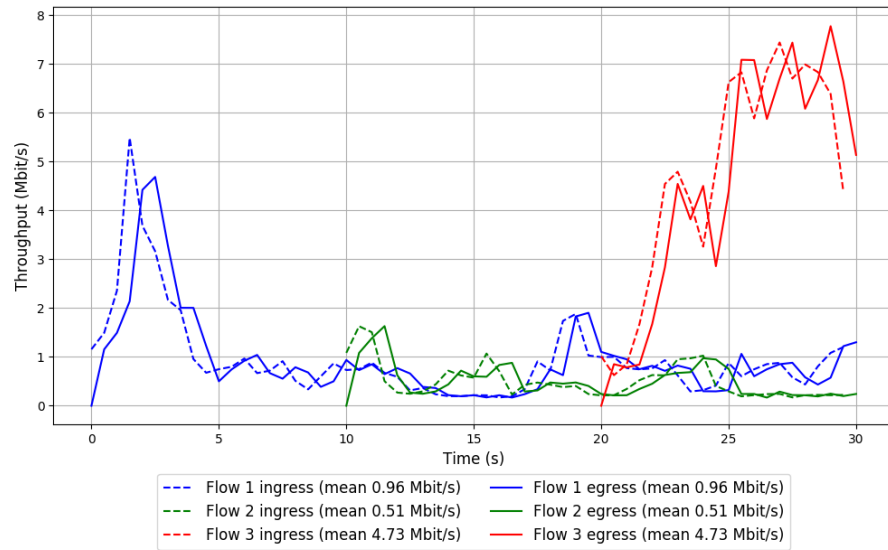


Run 5: Statistics of Sprout

Start at: 2018-09-06 18:43:51
End at: 2018-09-06 18:44:21
Local clock offset: 0.157 ms
Remote clock offset: -0.636 ms

Below is generated by plot.py at 2018-09-06 21:37:19
Datalink statistics
-- Total of 3 flows:
Average throughput: 2.87 Mbit/s
95th percentile per-packet one-way delay: 66.517 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.96 Mbit/s
95th percentile per-packet one-way delay: 61.046 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.51 Mbit/s
95th percentile per-packet one-way delay: 66.595 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 4.73 Mbit/s
95th percentile per-packet one-way delay: 61.077 ms
Loss rate: 0.00%

Run 5: Report of Sprout — Data Link

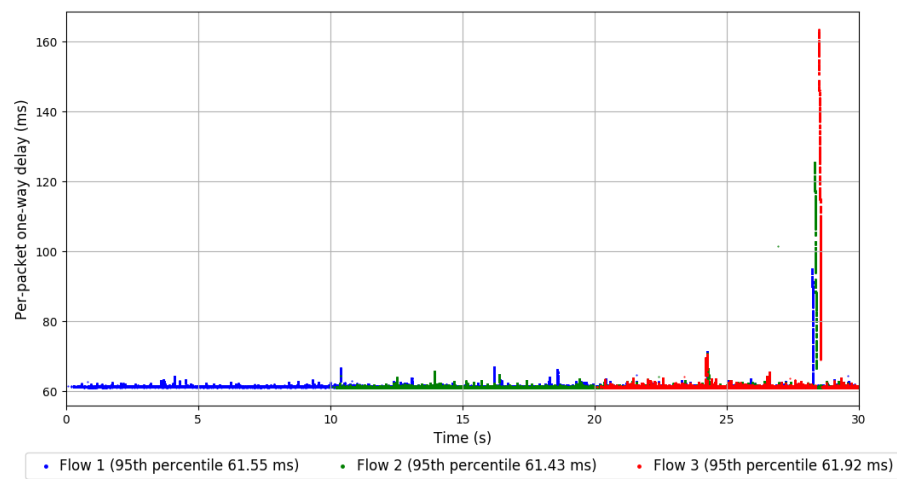
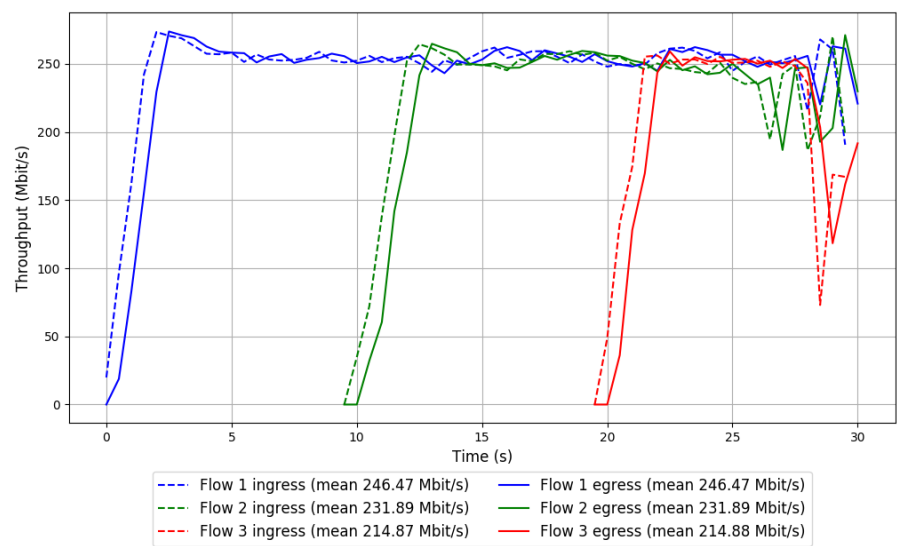


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-09-06 16:47:25
End at: 2018-09-06 16:47:55
Local clock offset: 0.051 ms
Remote clock offset: 0.414 ms

# Below is generated by plot.py at 2018-09-06 21:39:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 472.95 Mbit/s
95th percentile per-packet one-way delay: 61.564 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 246.47 Mbit/s
95th percentile per-packet one-way delay: 61.552 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 231.89 Mbit/s
95th percentile per-packet one-way delay: 61.433 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 214.88 Mbit/s
95th percentile per-packet one-way delay: 61.916 ms
Loss rate: 0.00%
```

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

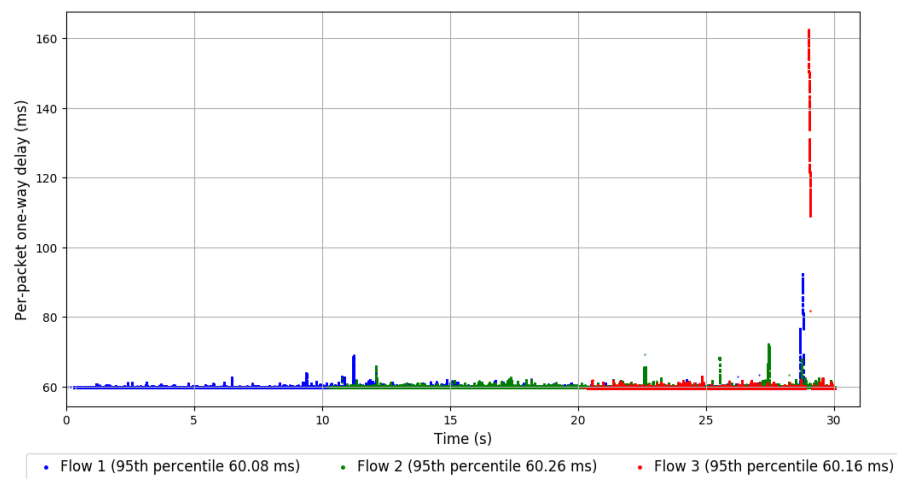
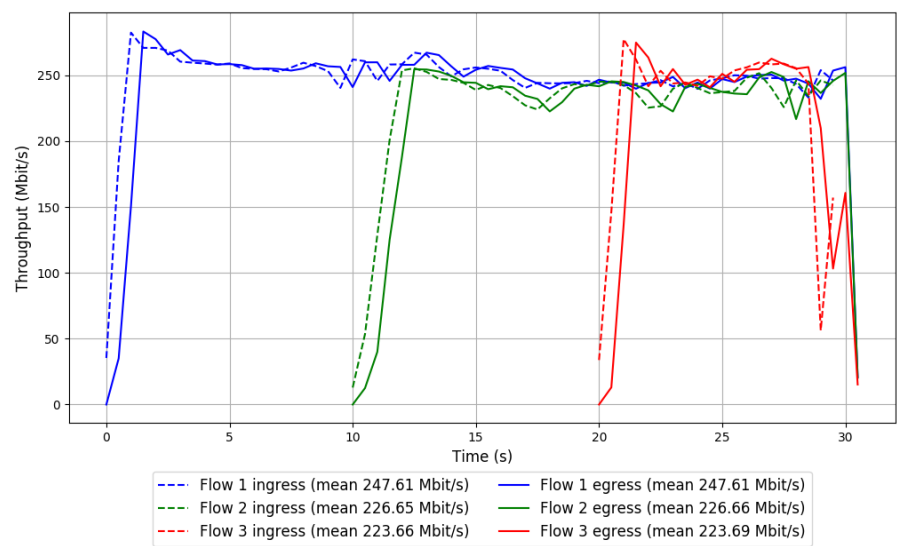


Run 2: Statistics of TaoVA-100x

Start at: 2018-09-06 17:19:39
End at: 2018-09-06 17:20:09
Local clock offset: 0.113 ms
Remote clock offset: -0.866 ms

Below is generated by plot.py at 2018-09-06 21:39:45
Datalink statistics
-- Total of 3 flows:
Average throughput: 472.65 Mbit/s
95th percentile per-packet one-way delay: 60.154 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 247.61 Mbit/s
95th percentile per-packet one-way delay: 60.077 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 226.66 Mbit/s
95th percentile per-packet one-way delay: 60.260 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 223.69 Mbit/s
95th percentile per-packet one-way delay: 60.157 ms
Loss rate: 0.00%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-09-06 17:52:00

End at: 2018-09-06 17:52:30

Local clock offset: 0.105 ms

Remote clock offset: 0.867 ms

Below is generated by plot.py at 2018-09-06 21:39:45

Datalink statistics

-- Total of 3 flows:

Average throughput: 450.41 Mbit/s

95th percentile per-packet one-way delay: 62.383 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 239.75 Mbit/s

95th percentile per-packet one-way delay: 62.407 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 213.59 Mbit/s

95th percentile per-packet one-way delay: 62.383 ms

Loss rate: 0.00%

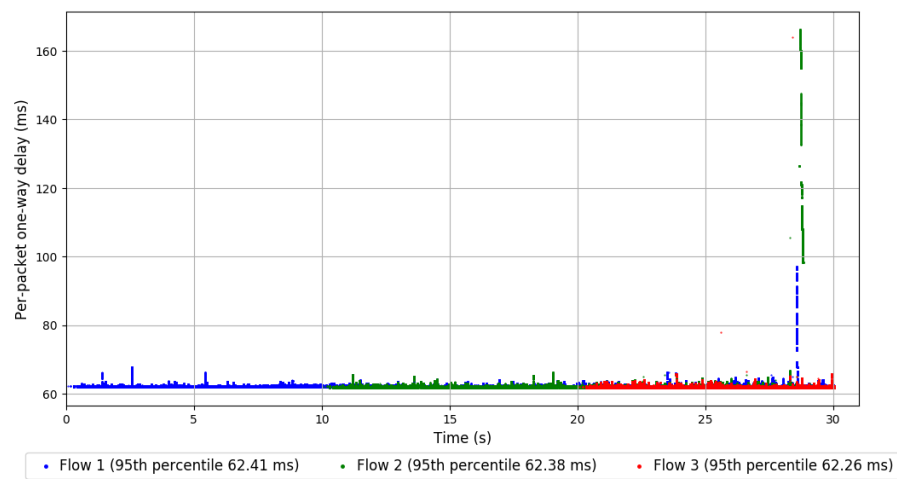
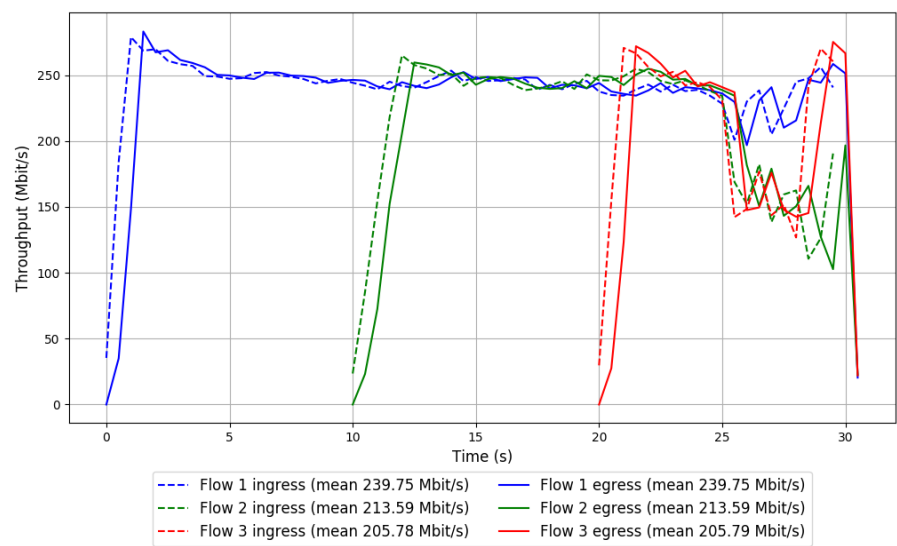
-- Flow 3:

Average throughput: 205.79 Mbit/s

95th percentile per-packet one-way delay: 62.259 ms

Loss rate: 0.00%

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

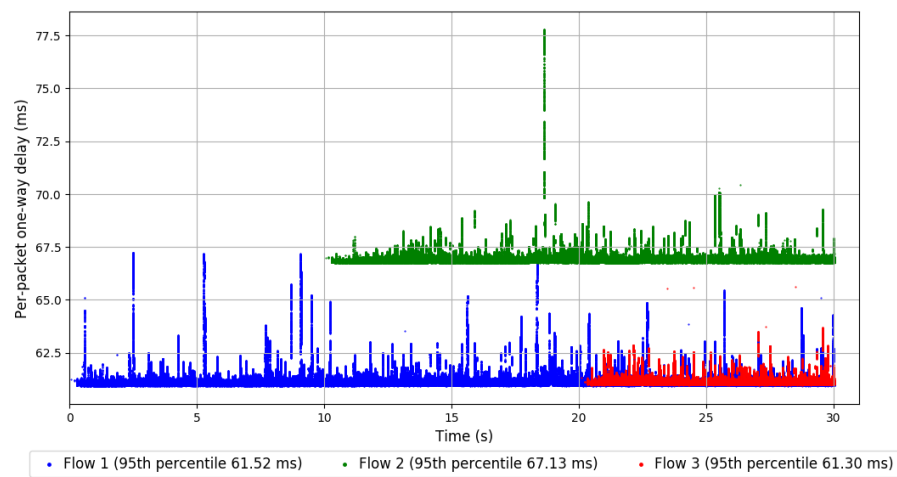
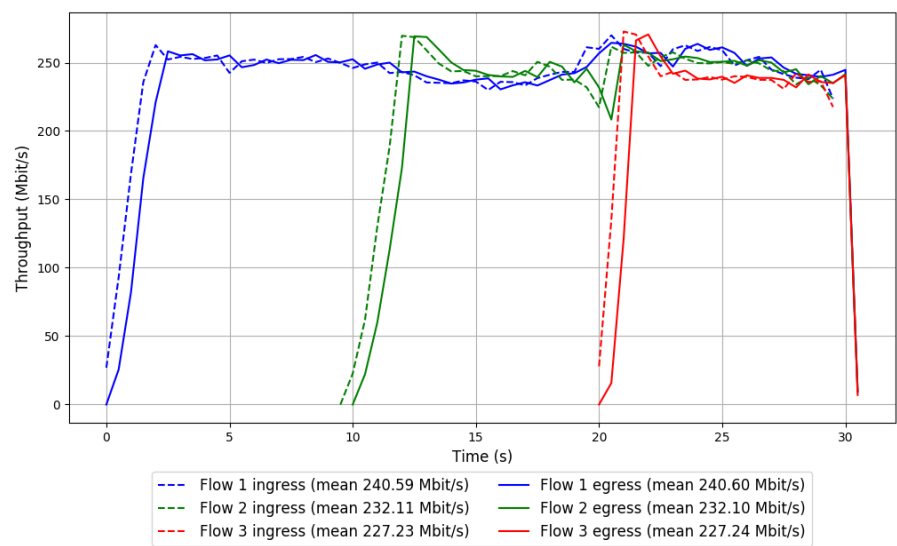


Run 4: Statistics of TaoVA-100x

Start at: 2018-09-06 18:24:02
End at: 2018-09-06 18:24:32
Local clock offset: 0.096 ms
Remote clock offset: -0.212 ms

Below is generated by plot.py at 2018-09-06 21:40:52
Datalink statistics
-- Total of 3 flows:
Average throughput: 470.59 Mbit/s
95th percentile per-packet one-way delay: 66.929 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 240.60 Mbit/s
95th percentile per-packet one-way delay: 61.516 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 232.10 Mbit/s
95th percentile per-packet one-way delay: 67.133 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 227.24 Mbit/s
95th percentile per-packet one-way delay: 61.300 ms
Loss rate: 0.00%

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

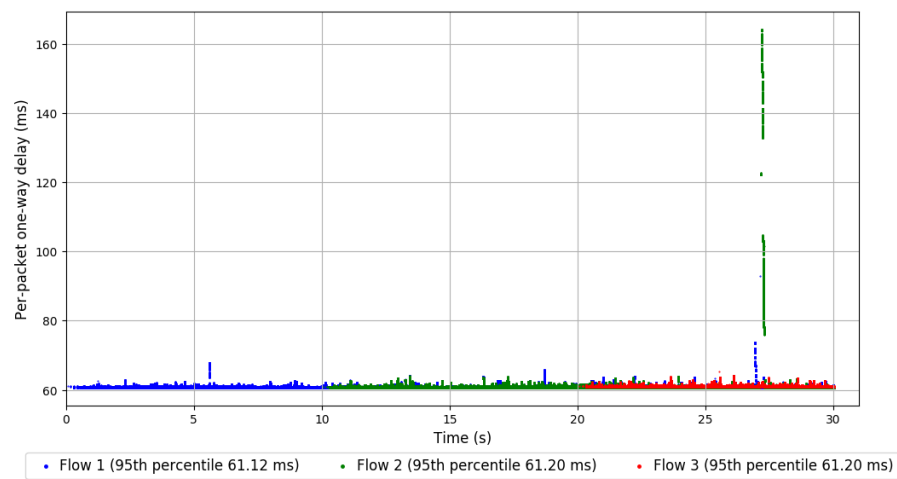
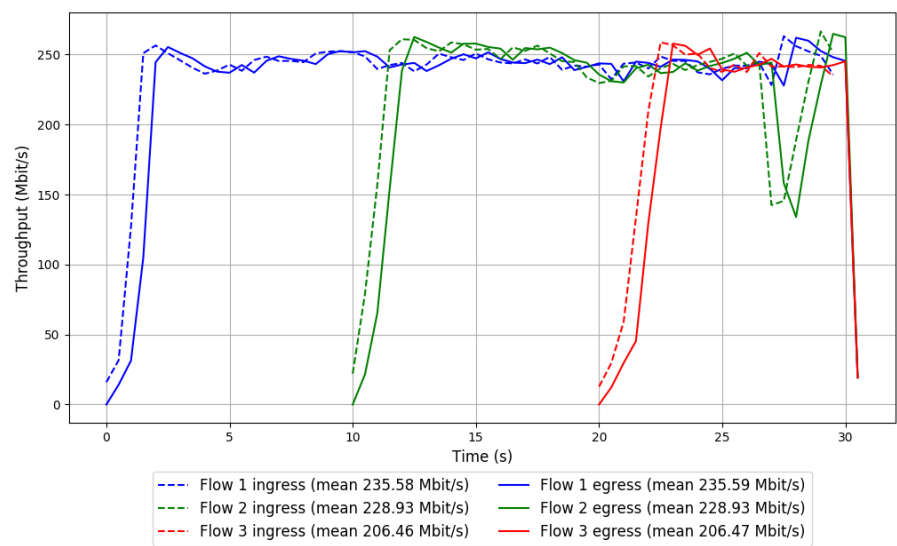


Run 5: Statistics of TaoVA-100x

Start at: 2018-09-06 18:56:13
End at: 2018-09-06 18:56:43
Local clock offset: 0.155 ms
Remote clock offset: -0.576 ms

Below is generated by plot.py at 2018-09-06 21:41:16
Datalink statistics
-- Total of 3 flows:
Average throughput: 456.62 Mbit/s
95th percentile per-packet one-way delay: 61.164 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 235.59 Mbit/s
95th percentile per-packet one-way delay: 61.124 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 228.93 Mbit/s
95th percentile per-packet one-way delay: 61.204 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 206.47 Mbit/s
95th percentile per-packet one-way delay: 61.199 ms
Loss rate: 0.00%

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

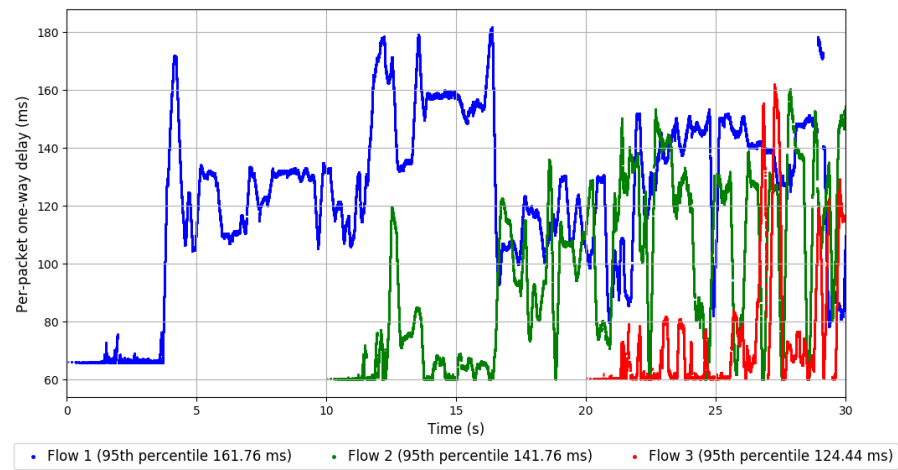
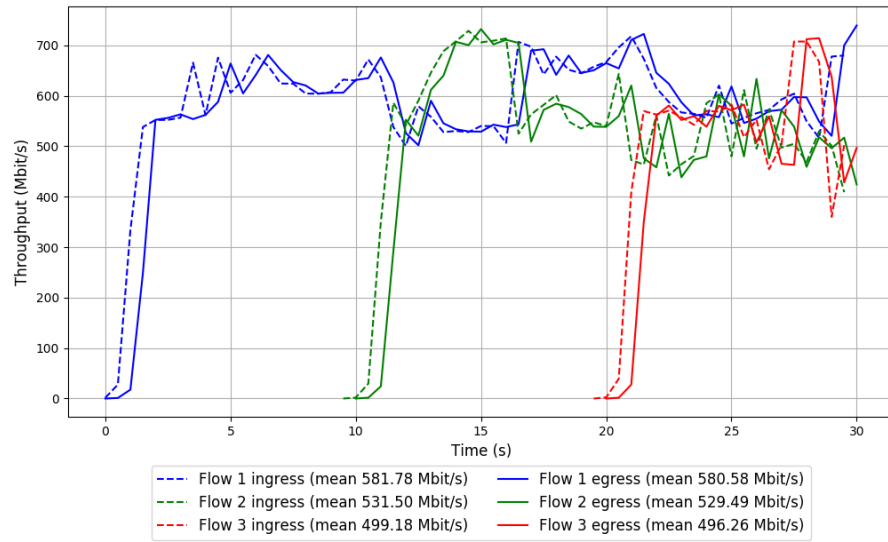


Run 1: Statistics of TCP Vegas

Start at: 2018-09-06 16:29:02
End at: 2018-09-06 16:29:32
Local clock offset: 0.058 ms
Remote clock offset: -0.477 ms

Below is generated by plot.py at 2018-09-06 21:49:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 1099.16 Mbit/s
95th percentile per-packet one-way delay: 157.463 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 580.58 Mbit/s
95th percentile per-packet one-way delay: 161.756 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 529.49 Mbit/s
95th percentile per-packet one-way delay: 141.756 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 496.26 Mbit/s
95th percentile per-packet one-way delay: 124.439 ms
Loss rate: 0.58%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-09-06 17:01:15

End at: 2018-09-06 17:01:45

Local clock offset: 0.087 ms

Remote clock offset: 0.175 ms

Below is generated by plot.py at 2018-09-06 21:53:40

Datalink statistics

-- Total of 3 flows:

Average throughput: 951.84 Mbit/s

95th percentile per-packet one-way delay: 83.091 ms

Loss rate: 0.03%

-- Flow 1:

Average throughput: 457.95 Mbit/s

95th percentile per-packet one-way delay: 62.931 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 461.42 Mbit/s

95th percentile per-packet one-way delay: 64.092 ms

Loss rate: 0.01%

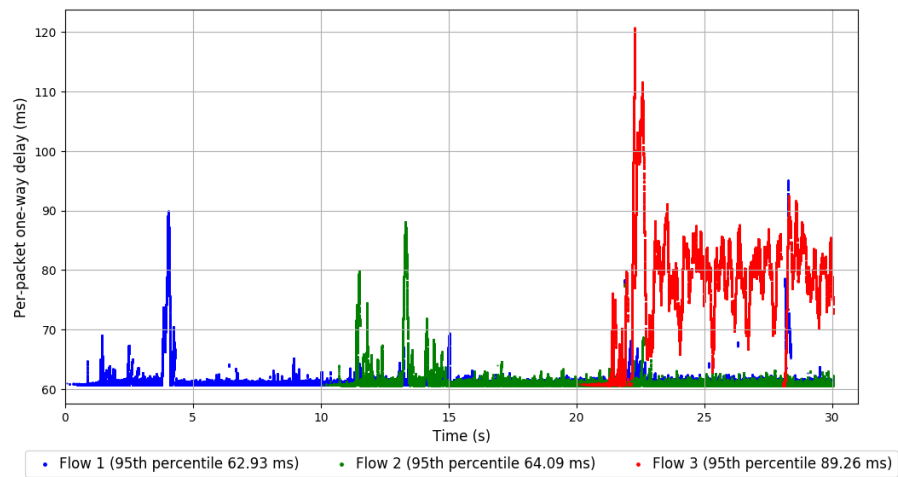
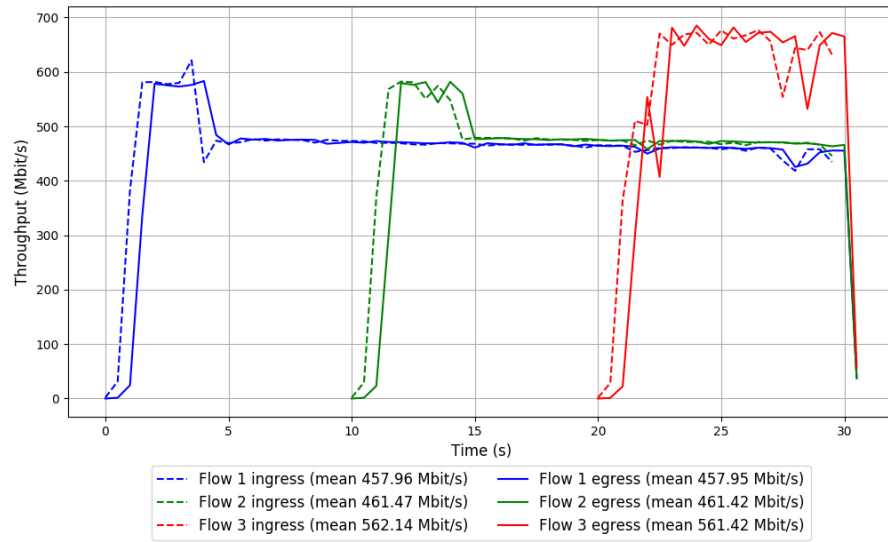
-- Flow 3:

Average throughput: 561.42 Mbit/s

95th percentile per-packet one-way delay: 89.259 ms

Loss rate: 0.13%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2018-09-06 17:33:35

End at: 2018-09-06 17:34:05

Local clock offset: 0.073 ms

Remote clock offset: 0.877 ms

Below is generated by plot.py at 2018-09-06 21:55:09

Datalink statistics

-- Total of 3 flows:

Average throughput: 979.76 Mbit/s

95th percentile per-packet one-way delay: 131.936 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 547.99 Mbit/s

95th percentile per-packet one-way delay: 135.524 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 435.93 Mbit/s

95th percentile per-packet one-way delay: 64.478 ms

Loss rate: 0.00%

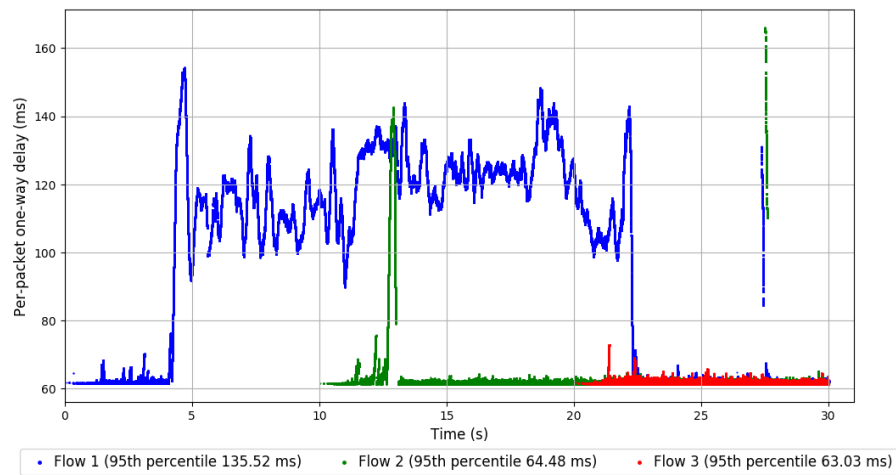
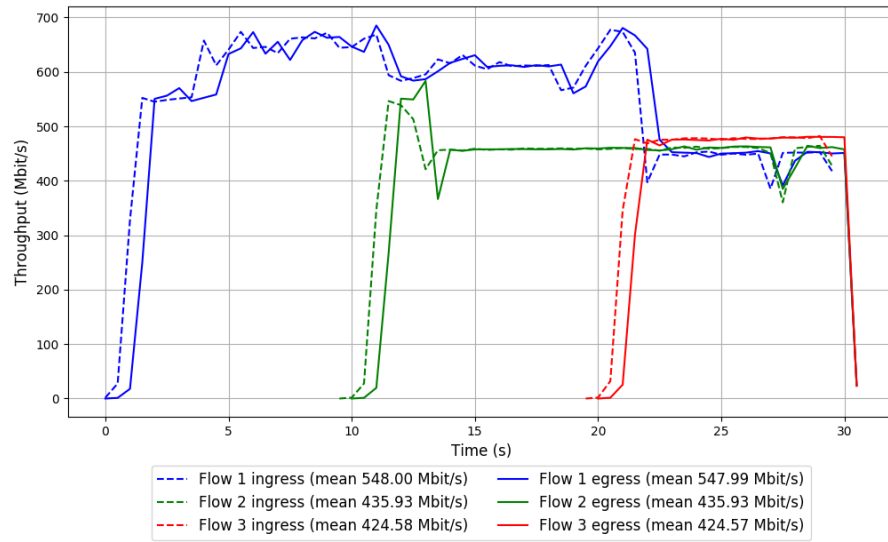
-- Flow 3:

Average throughput: 424.57 Mbit/s

95th percentile per-packet one-way delay: 63.031 ms

Loss rate: 0.00%

Run 3: Report of TCP Vegas — Data Link

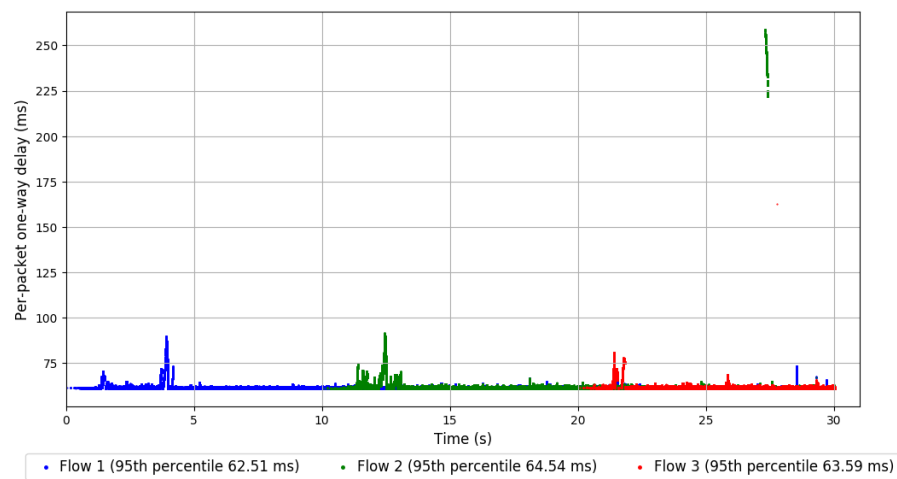
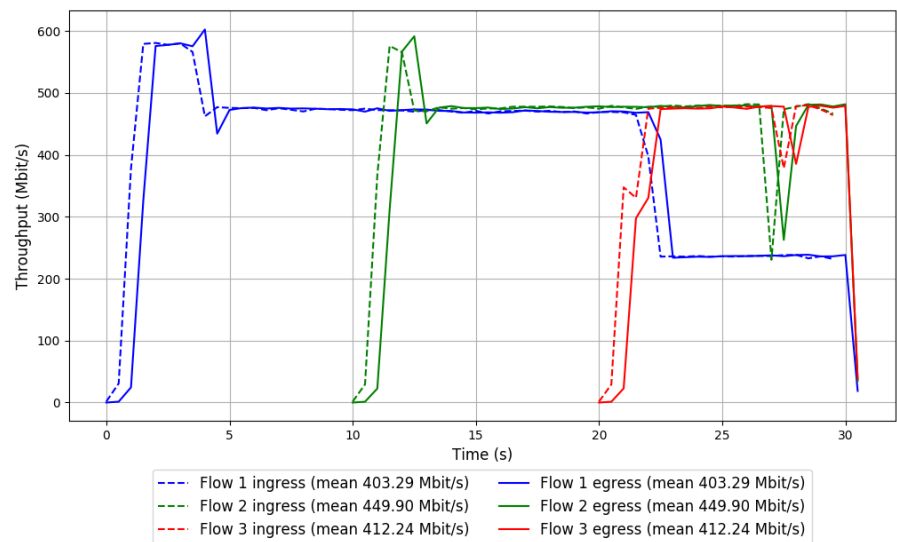


Run 4: Statistics of TCP Vegas

Start at: 2018-09-06 18:05:53
End at: 2018-09-06 18:06:23
Local clock offset: 0.117 ms
Remote clock offset: -0.004 ms

Below is generated by plot.py at 2018-09-06 21:55:09
Datalink statistics
-- Total of 3 flows:
Average throughput: 840.06 Mbit/s
95th percentile per-packet one-way delay: 63.102 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 403.29 Mbit/s
95th percentile per-packet one-way delay: 62.507 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 449.90 Mbit/s
95th percentile per-packet one-way delay: 64.539 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 412.24 Mbit/s
95th percentile per-packet one-way delay: 63.595 ms
Loss rate: 0.00%

Run 4: Report of TCP Vegas — Data Link

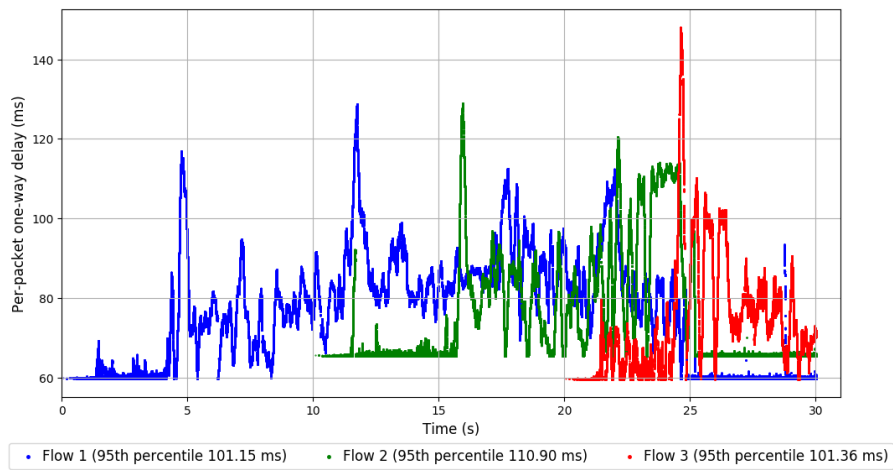
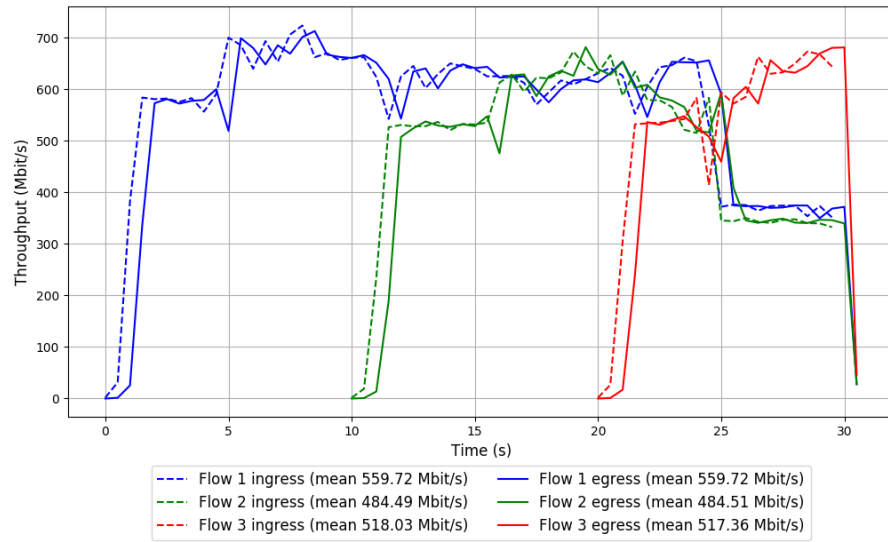


Run 5: Statistics of TCP Vegas

Start at: 2018-09-06 18:37:47
End at: 2018-09-06 18:38:17
Local clock offset: 0.133 ms
Remote clock offset: -1.638 ms

```
# Below is generated by plot.py at 2018-09-06 21:58:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1054.31 Mbit/s
95th percentile per-packet one-way delay: 105.700 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 559.72 Mbit/s
95th percentile per-packet one-way delay: 101.151 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 484.51 Mbit/s
95th percentile per-packet one-way delay: 110.897 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 517.36 Mbit/s
95th percentile per-packet one-way delay: 101.362 ms
Loss rate: 0.13%
```

Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-09-06 16:42:20

End at: 2018-09-06 16:42:50

Local clock offset: 0.028 ms

Remote clock offset: 0.16 ms

Below is generated by plot.py at 2018-09-06 21:58:59

Datalink statistics

-- Total of 3 flows:

Average throughput: 272.16 Mbit/s

95th percentile per-packet one-way delay: 117.424 ms

Loss rate: 0.11%

-- Flow 1:

Average throughput: 142.04 Mbit/s

95th percentile per-packet one-way delay: 123.562 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 163.35 Mbit/s

95th percentile per-packet one-way delay: 113.712 ms

Loss rate: 0.25%

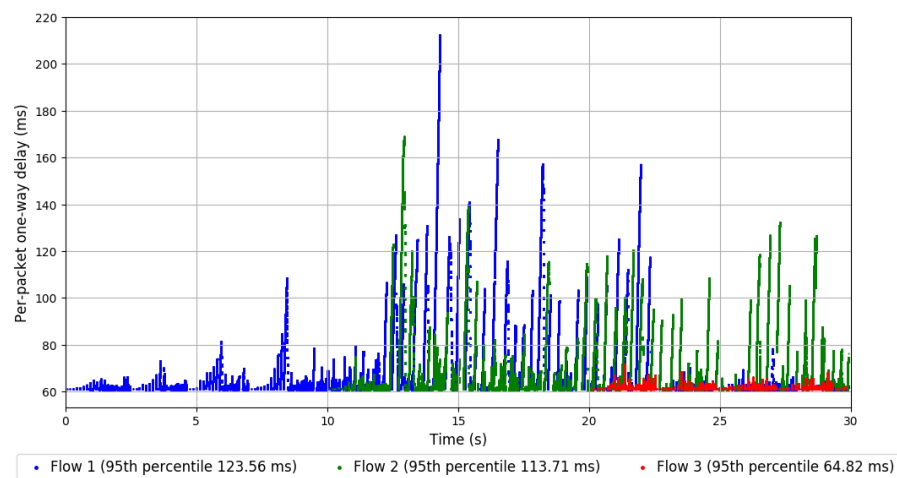
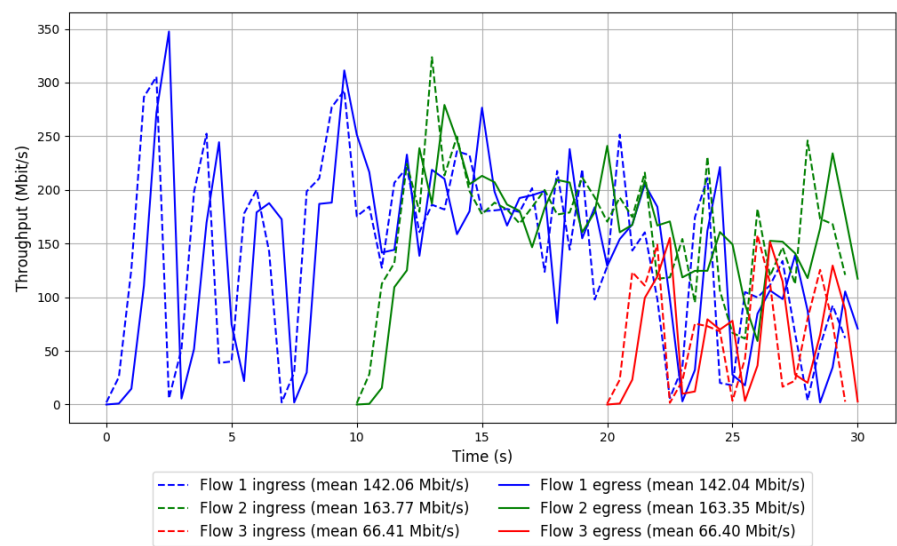
-- Flow 3:

Average throughput: 66.40 Mbit/s

95th percentile per-packet one-way delay: 64.817 ms

Loss rate: 0.00%

Run 1: Report of Verus — Data Link

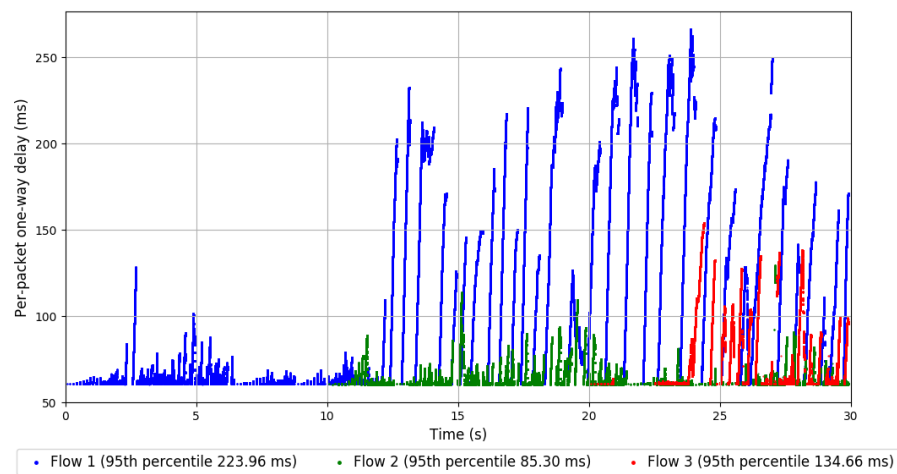
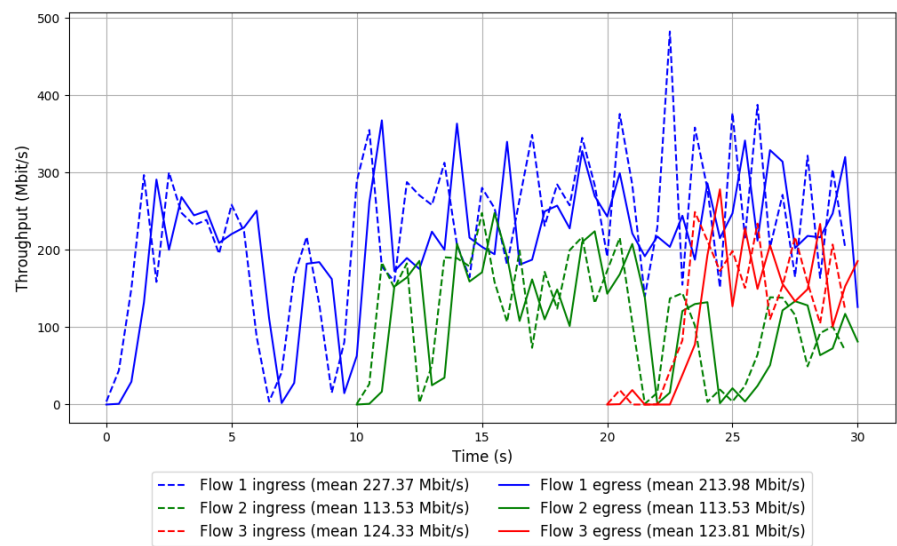


Run 2: Statistics of Verus

Start at: 2018-09-06 17:14:30
End at: 2018-09-06 17:15:00
Local clock offset: 0.05 ms
Remote clock offset: -0.017 ms

Below is generated by plot.py at 2018-09-06 21:58:59
Datalink statistics
-- Total of 3 flows:
Average throughput: 330.10 Mbit/s
95th percentile per-packet one-way delay: 213.870 ms
Loss rate: 3.93%
-- Flow 1:
Average throughput: 213.98 Mbit/s
95th percentile per-packet one-way delay: 223.962 ms
Loss rate: 5.89%
-- Flow 2:
Average throughput: 113.53 Mbit/s
95th percentile per-packet one-way delay: 85.300 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 123.81 Mbit/s
95th percentile per-packet one-way delay: 134.656 ms
Loss rate: 0.27%

Run 2: Report of Verus — Data Link

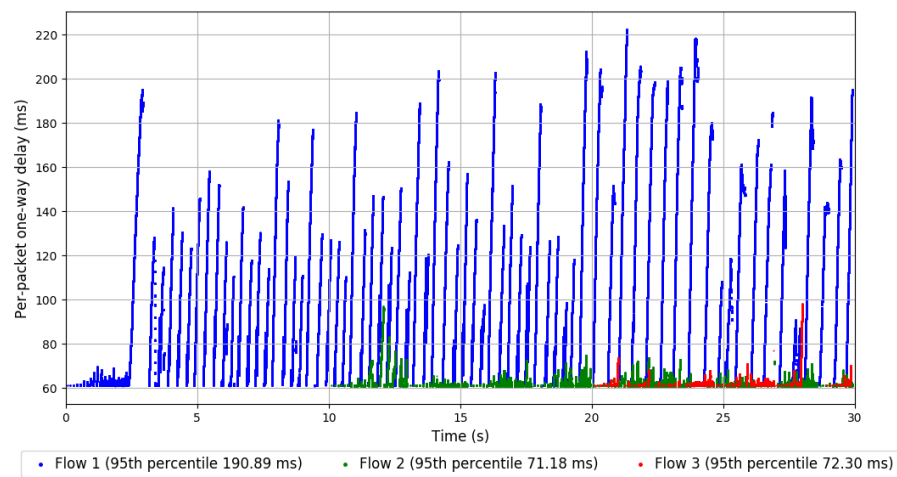
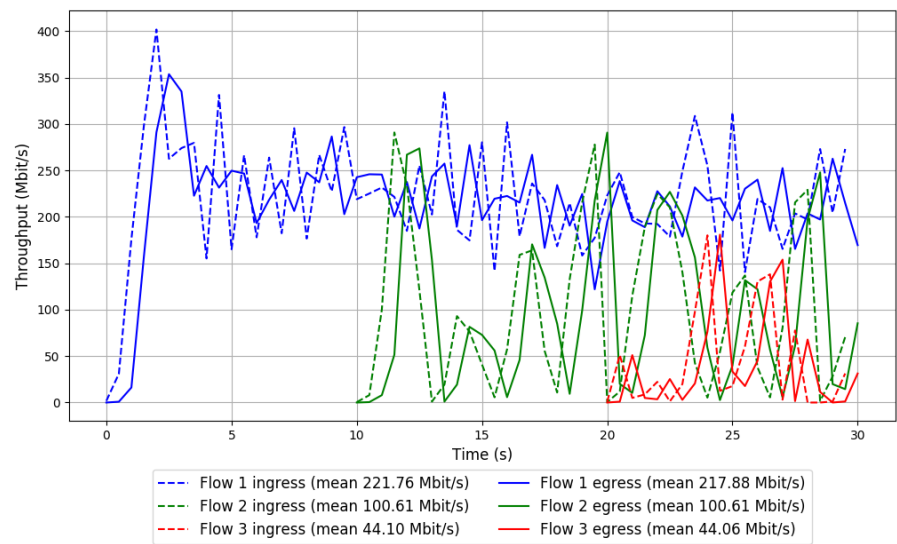


Run 3: Statistics of Verus

Start at: 2018-09-06 17:46:57
End at: 2018-09-06 17:47:27
Local clock offset: 0.103 ms
Remote clock offset: -0.098 ms

Below is generated by plot.py at 2018-09-06 21:58:59
Datalink statistics
-- Total of 3 flows:
Average throughput: 299.03 Mbit/s
95th percentile per-packet one-way delay: 184.263 ms
Loss rate: 1.28%
-- Flow 1:
Average throughput: 217.88 Mbit/s
95th percentile per-packet one-way delay: 190.892 ms
Loss rate: 1.75%
-- Flow 2:
Average throughput: 100.61 Mbit/s
95th percentile per-packet one-way delay: 71.178 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 44.06 Mbit/s
95th percentile per-packet one-way delay: 72.300 ms
Loss rate: 0.00%

Run 3: Report of Verus — Data Link

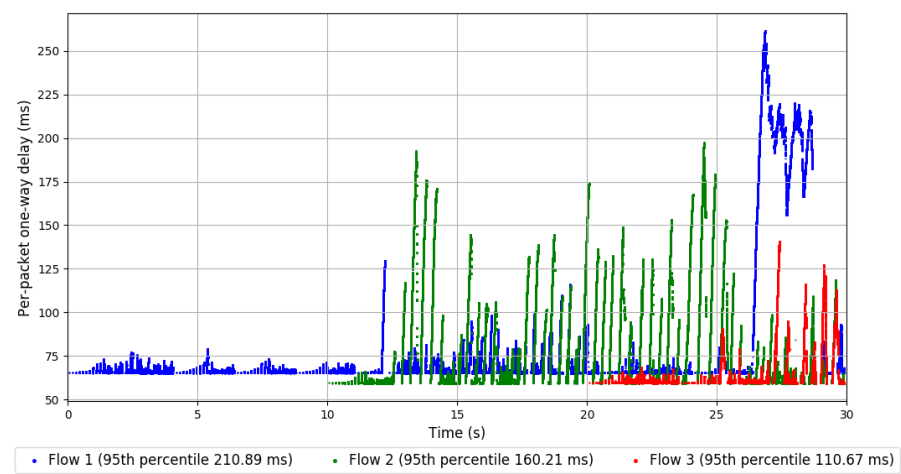
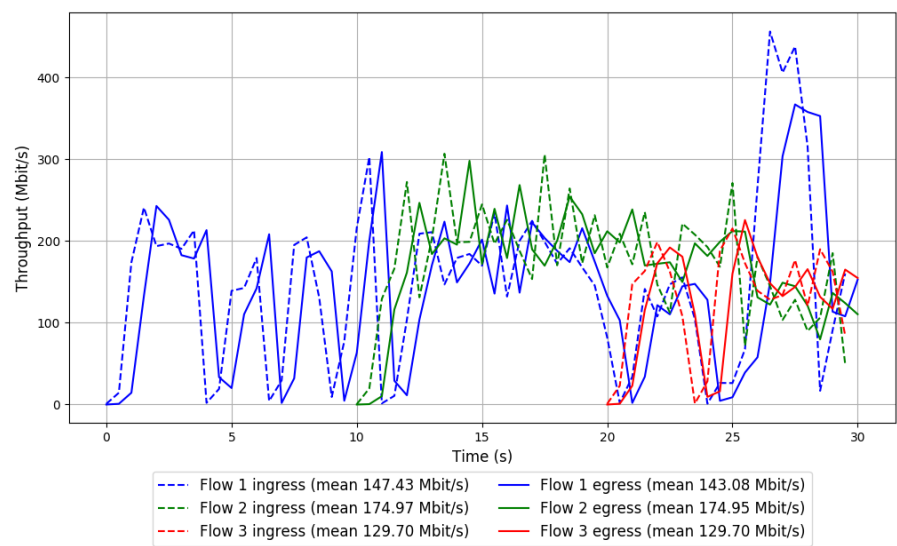


Run 4: Statistics of Verus

Start at: 2018-09-06 18:18:59
End at: 2018-09-06 18:19:29
Local clock offset: 0.115 ms
Remote clock offset: -1.7 ms

Below is generated by plot.py at 2018-09-06 21:59:13
Datalink statistics
-- Total of 3 flows:
Average throughput: 301.99 Mbit/s
95th percentile per-packet one-way delay: 201.560 ms
Loss rate: 1.43%
-- Flow 1:
Average throughput: 143.08 Mbit/s
95th percentile per-packet one-way delay: 210.887 ms
Loss rate: 2.97%
-- Flow 2:
Average throughput: 174.95 Mbit/s
95th percentile per-packet one-way delay: 160.214 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 129.70 Mbit/s
95th percentile per-packet one-way delay: 110.672 ms
Loss rate: 0.00%

Run 4: Report of Verus — Data Link

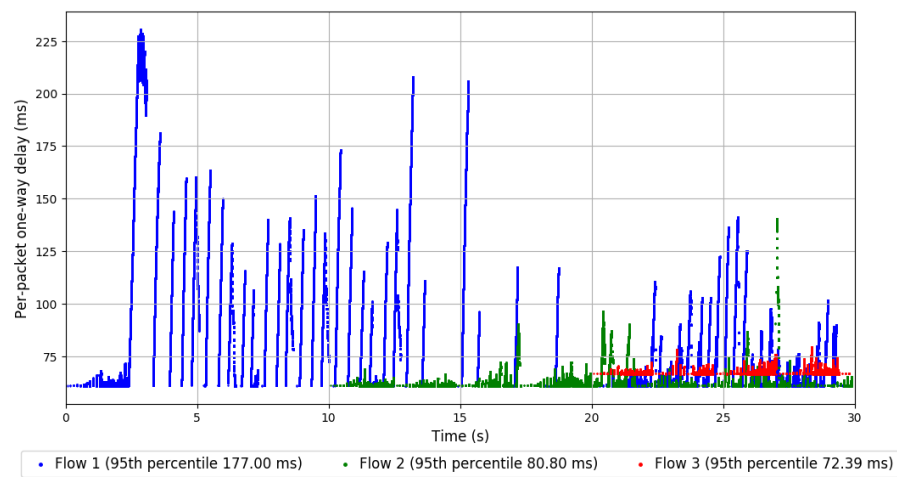
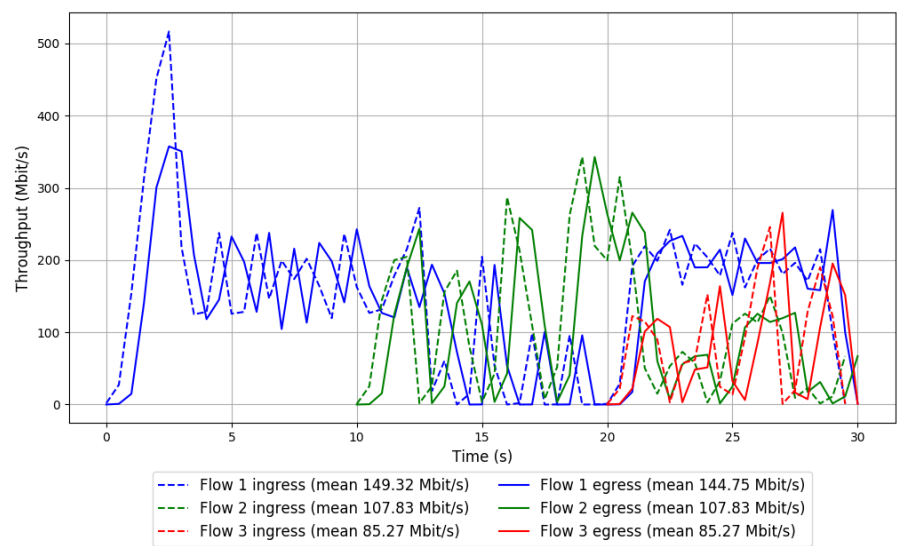


Run 5: Statistics of Verus

Start at: 2018-09-06 18:51:12
End at: 2018-09-06 18:51:42
Local clock offset: 0.14 ms
Remote clock offset: -0.542 ms

Below is generated by plot.py at 2018-09-06 21:59:13
Datalink statistics
-- Total of 3 flows:
Average throughput: 243.63 Mbit/s
95th percentile per-packet one-way delay: 148.931 ms
Loss rate: 1.83%
-- Flow 1:
Average throughput: 144.75 Mbit/s
95th percentile per-packet one-way delay: 177.004 ms
Loss rate: 3.06%
-- Flow 2:
Average throughput: 107.83 Mbit/s
95th percentile per-packet one-way delay: 80.799 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 85.27 Mbit/s
95th percentile per-packet one-way delay: 72.387 ms
Loss rate: 0.00%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-09-06 16:31:09

End at: 2018-09-06 16:31:39

Local clock offset: 0.065 ms

Remote clock offset: 1.438 ms

Below is generated by plot.py at 2018-09-06 22:01:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 589.29 Mbit/s

95th percentile per-packet one-way delay: 69.356 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 359.68 Mbit/s

95th percentile per-packet one-way delay: 64.813 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 281.71 Mbit/s

95th percentile per-packet one-way delay: 70.957 ms

Loss rate: 0.00%

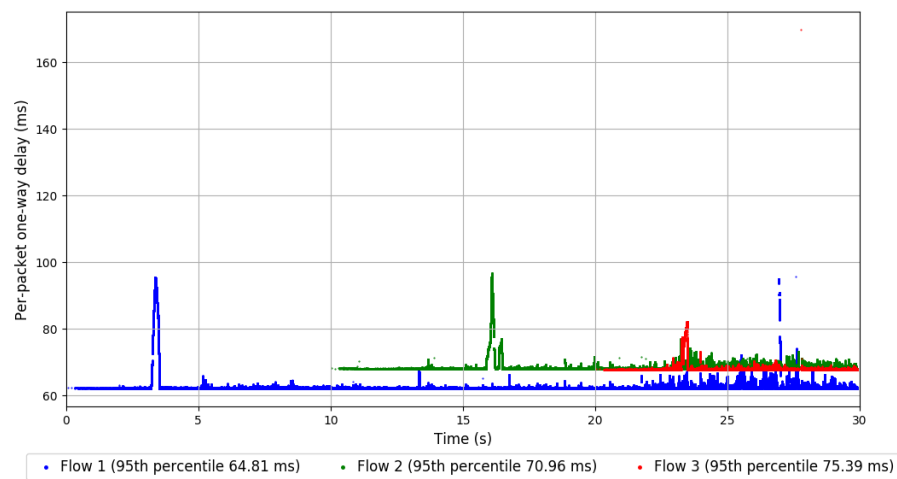
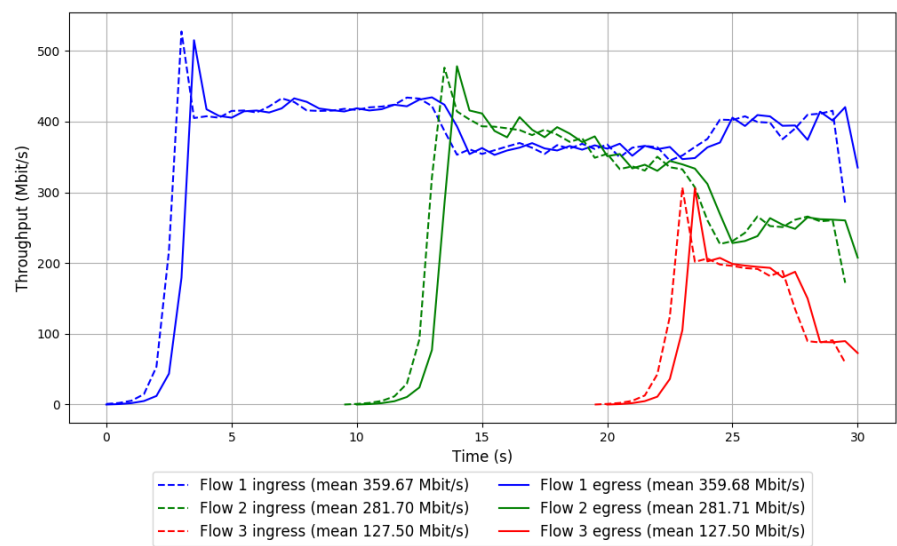
-- Flow 3:

Average throughput: 127.50 Mbit/s

95th percentile per-packet one-way delay: 75.387 ms

Loss rate: 0.00%

Run 1: Report of PCC-Vivace — Data Link

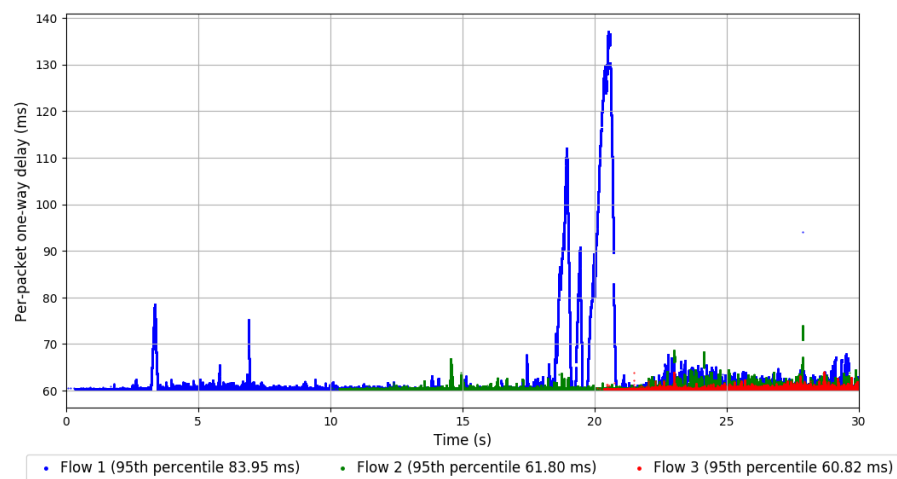
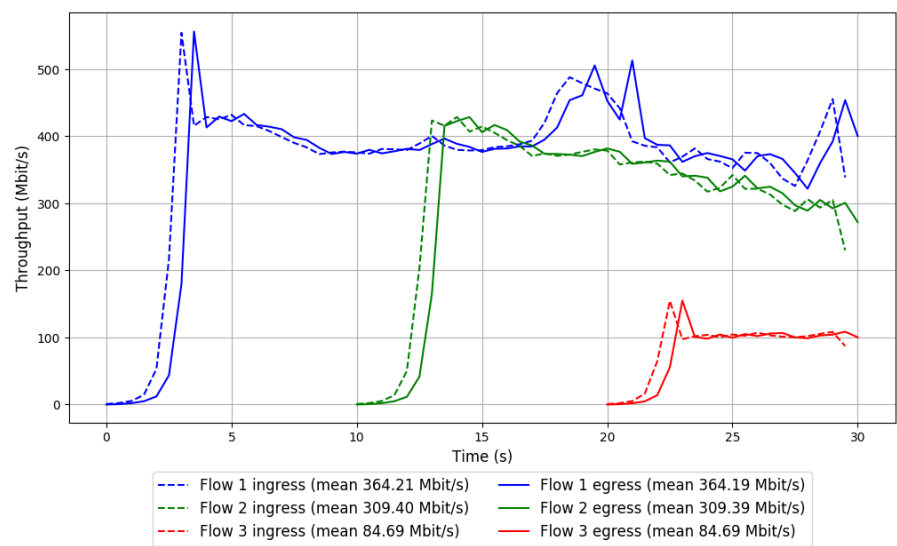


Run 2: Statistics of PCC-Vivace

Start at: 2018-09-06 17:03:15
End at: 2018-09-06 17:03:45
Local clock offset: 0.095 ms
Remote clock offset: -0.226 ms

Below is generated by plot.py at 2018-09-06 22:02:30
Datalink statistics
-- Total of 3 flows:
Average throughput: 597.87 Mbit/s
95th percentile per-packet one-way delay: 69.669 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 364.19 Mbit/s
95th percentile per-packet one-way delay: 83.947 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 309.39 Mbit/s
95th percentile per-packet one-way delay: 61.797 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 84.69 Mbit/s
95th percentile per-packet one-way delay: 60.820 ms
Loss rate: 0.00%

Run 2: Report of PCC-Vivace — Data Link

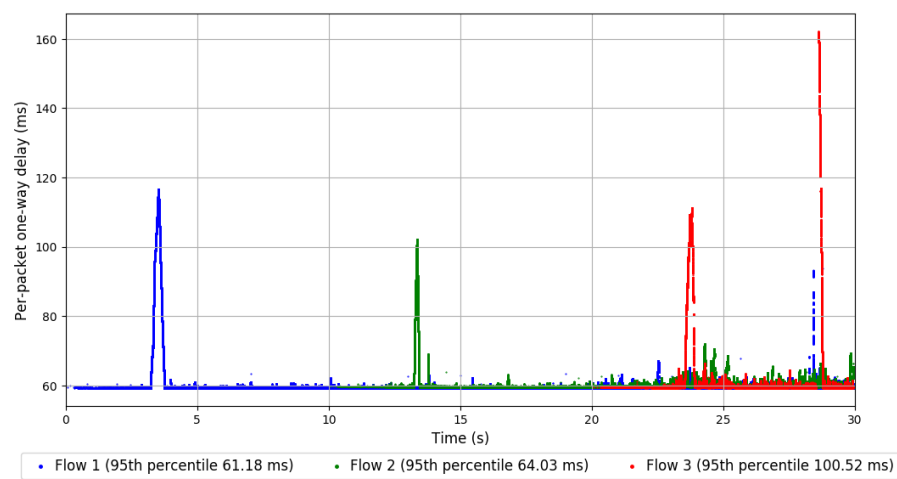
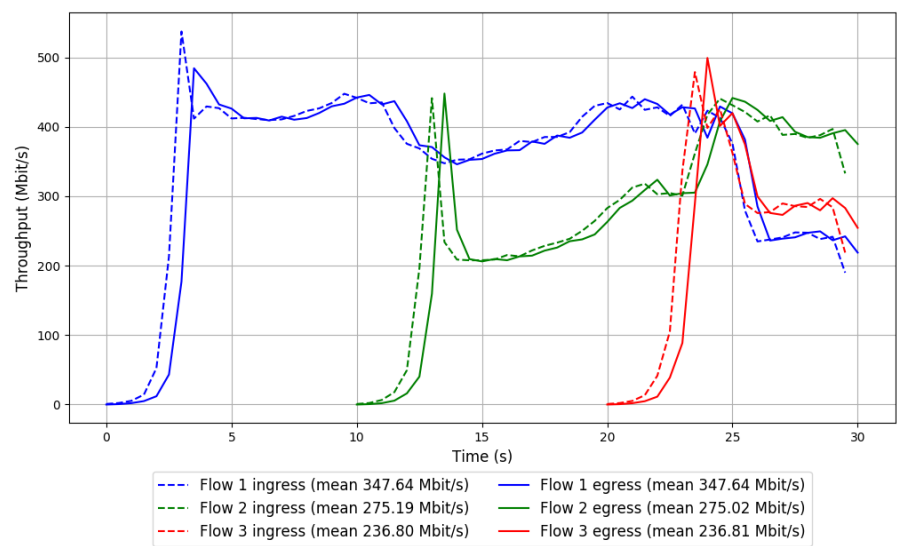


Run 3: Statistics of PCC-Vivace

Start at: 2018-09-06 17:35:37
End at: 2018-09-06 17:36:07
Local clock offset: 0.147 ms
Remote clock offset: -1.247 ms

Below is generated by plot.py at 2018-09-06 22:02:42
Datalink statistics
-- Total of 3 flows:
Average throughput: 608.63 Mbit/s
95th percentile per-packet one-way delay: 63.350 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 347.64 Mbit/s
95th percentile per-packet one-way delay: 61.181 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 275.02 Mbit/s
95th percentile per-packet one-way delay: 64.033 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 236.81 Mbit/s
95th percentile per-packet one-way delay: 100.521 ms
Loss rate: 0.00%

Run 3: Report of PCC-Vivace — Data Link

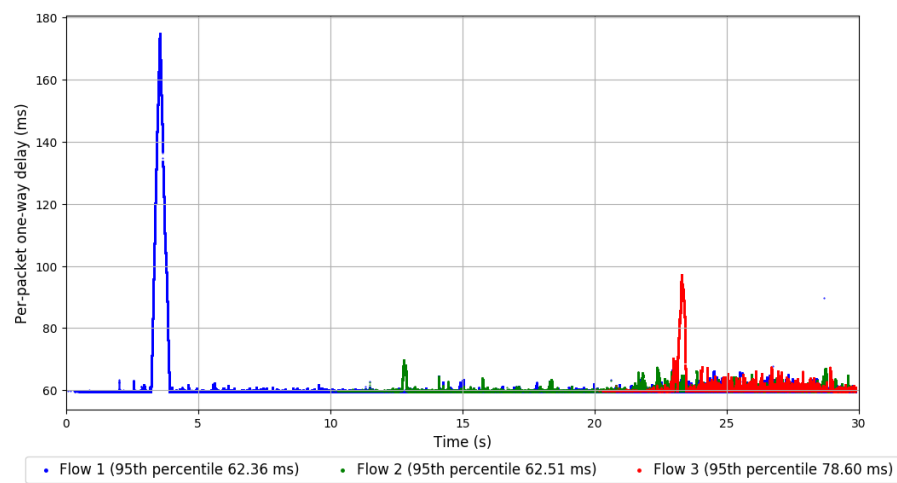
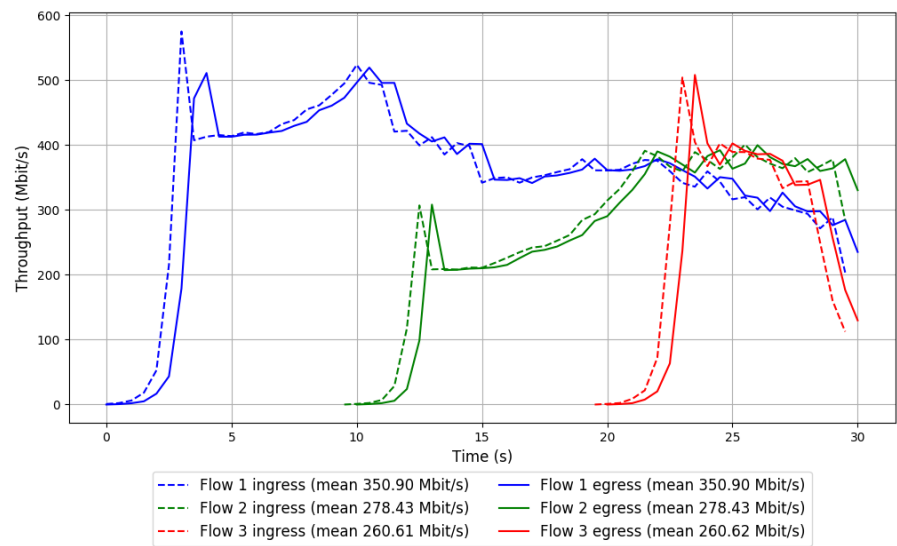


Run 4: Statistics of PCC-Vivace

Start at: 2018-09-06 18:07:46
End at: 2018-09-06 18:08:16
Local clock offset: 0.152 ms
Remote clock offset: -1.431 ms

Below is generated by plot.py at 2018-09-06 22:03:09
Datalink statistics
-- Total of 3 flows:
Average throughput: 622.51 Mbit/s
95th percentile per-packet one-way delay: 63.580 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 350.90 Mbit/s
95th percentile per-packet one-way delay: 62.362 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 278.43 Mbit/s
95th percentile per-packet one-way delay: 62.513 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 260.62 Mbit/s
95th percentile per-packet one-way delay: 78.598 ms
Loss rate: 0.00%

Run 4: Report of PCC-Vivace — Data Link

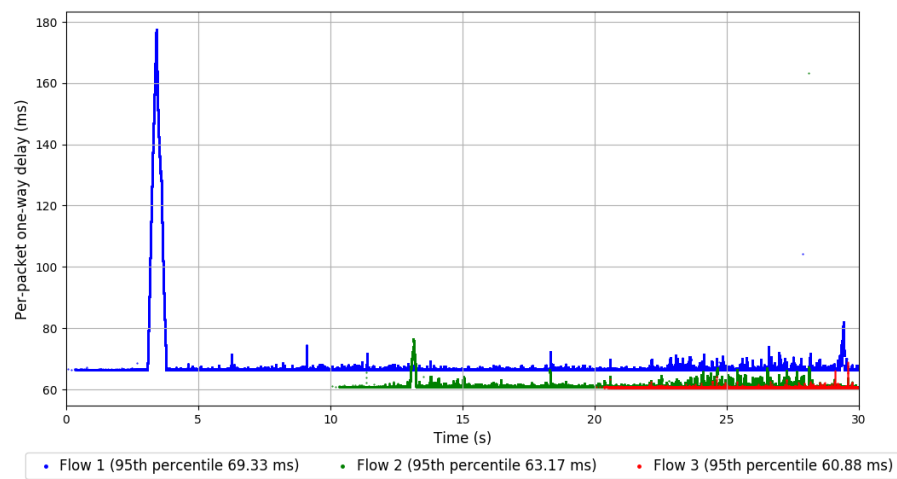
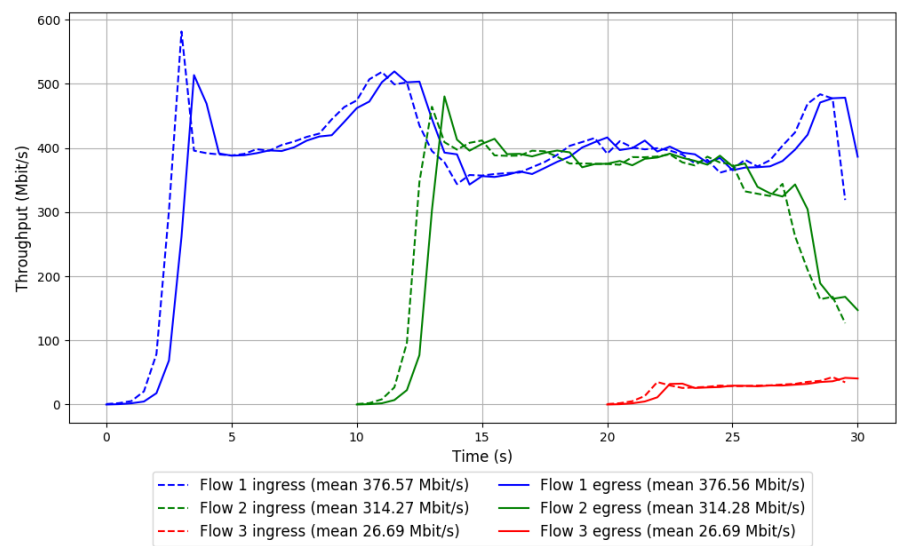


Run 5: Statistics of PCC-Vivace

Start at: 2018-09-06 18:39:51
End at: 2018-09-06 18:40:21
Local clock offset: 0.123 ms
Remote clock offset: -0.572 ms

Below is generated by plot.py at 2018-09-06 22:03:10
Datalink statistics
-- Total of 3 flows:
Average throughput: 594.35 Mbit/s
95th percentile per-packet one-way delay: 67.878 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 376.56 Mbit/s
95th percentile per-packet one-way delay: 69.330 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 314.28 Mbit/s
95th percentile per-packet one-way delay: 63.171 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 26.69 Mbit/s
95th percentile per-packet one-way delay: 60.881 ms
Loss rate: 0.00%

Run 5: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-09-06 16:27:50

End at: 2018-09-06 16:28:20

Local clock offset: 0.041 ms

Remote clock offset: 0.884 ms

Below is generated by plot.py at 2018-09-06 22:03:10

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.61 Mbit/s

95th percentile per-packet one-way delay: 67.421 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 1.79 Mbit/s

95th percentile per-packet one-way delay: 67.448 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 1.54 Mbit/s

95th percentile per-packet one-way delay: 61.813 ms

Loss rate: 0.00%

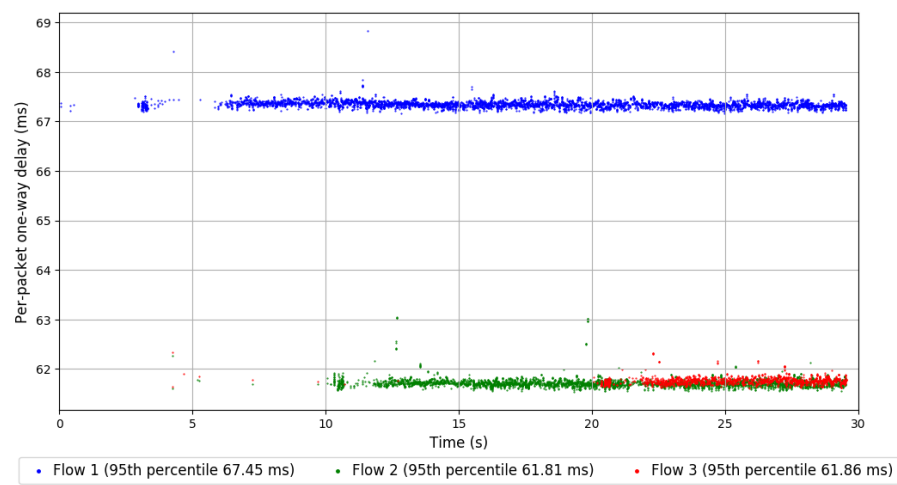
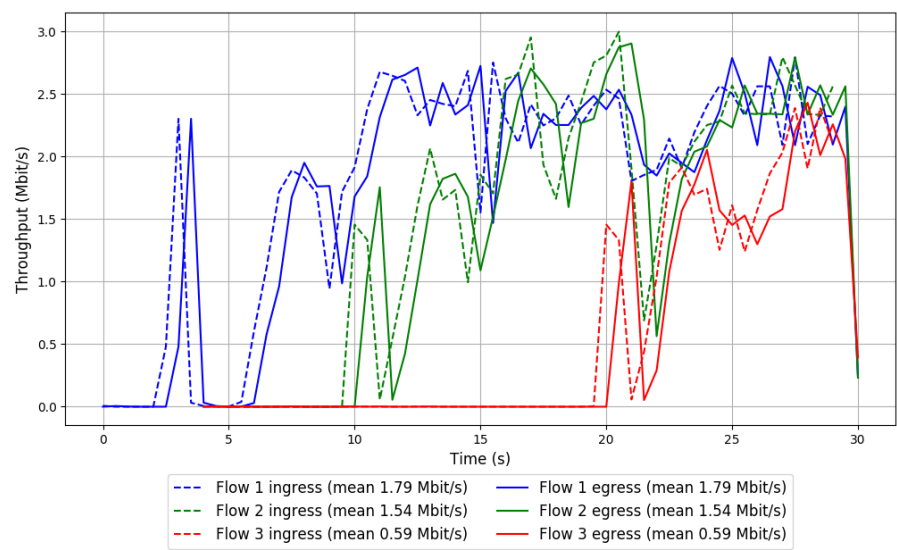
-- Flow 3:

Average throughput: 0.59 Mbit/s

95th percentile per-packet one-way delay: 61.858 ms

Loss rate: 0.00%

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-09-06 17:00:04

End at: 2018-09-06 17:00:34

Local clock offset: 0.074 ms

Remote clock offset: 1.594 ms

Below is generated by plot.py at 2018-09-06 22:03:10

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.58 Mbit/s

95th percentile per-packet one-way delay: 62.508 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 1.97 Mbit/s

95th percentile per-packet one-way delay: 62.377 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 1.17 Mbit/s

95th percentile per-packet one-way delay: 62.542 ms

Loss rate: 0.00%

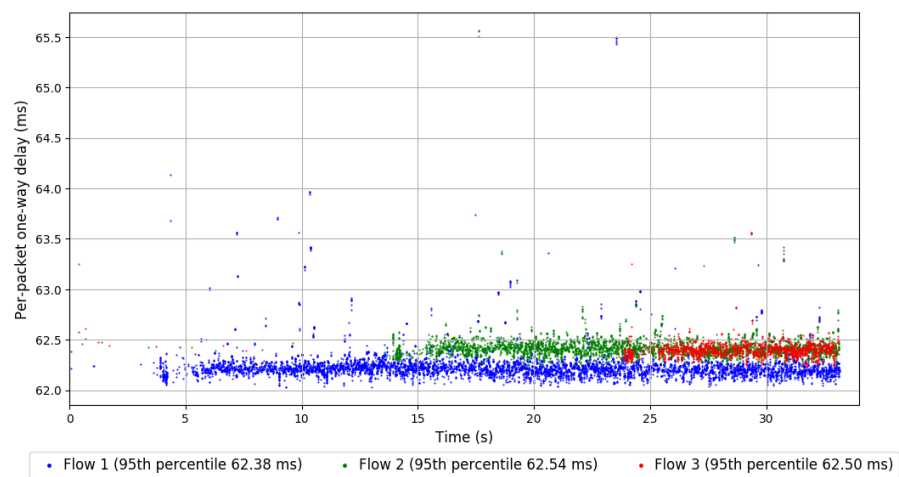
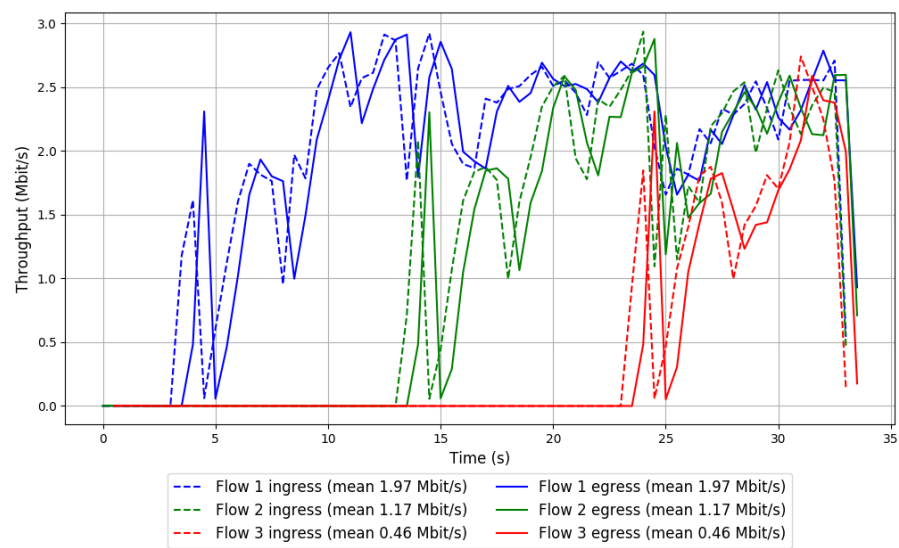
-- Flow 3:

Average throughput: 0.46 Mbit/s

95th percentile per-packet one-way delay: 62.498 ms

Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link

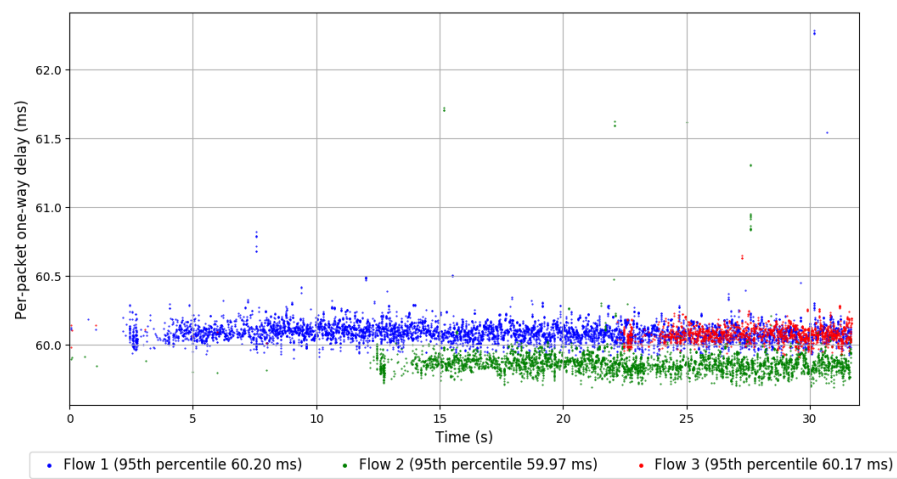
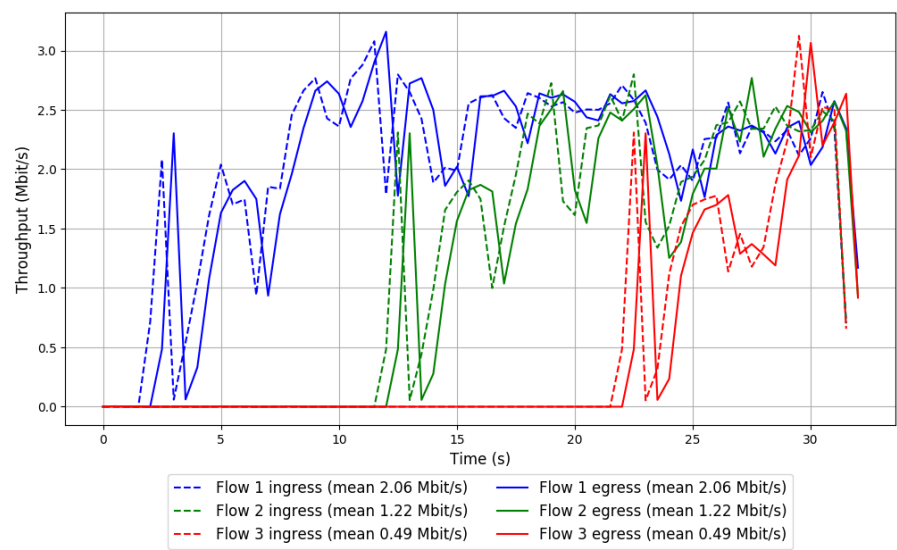


Run 3: Statistics of WebRTC media

Start at: 2018-09-06 17:32:23
End at: 2018-09-06 17:32:53
Local clock offset: 0.126 ms
Remote clock offset: -0.749 ms

Below is generated by plot.py at 2018-09-06 22:03:10
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.76 Mbit/s
95th percentile per-packet one-way delay: 60.180 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.06 Mbit/s
95th percentile per-packet one-way delay: 60.200 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 59.974 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 60.170 ms
Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2018-09-06 18:04:41

End at: 2018-09-06 18:05:11

Local clock offset: 0.105 ms

Remote clock offset: 0.374 ms

Below is generated by plot.py at 2018-09-06 22:03:10

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.53 Mbit/s

95th percentile per-packet one-way delay: 61.966 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 1.93 Mbit/s

95th percentile per-packet one-way delay: 61.996 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 1.16 Mbit/s

95th percentile per-packet one-way delay: 61.891 ms

Loss rate: 0.00%

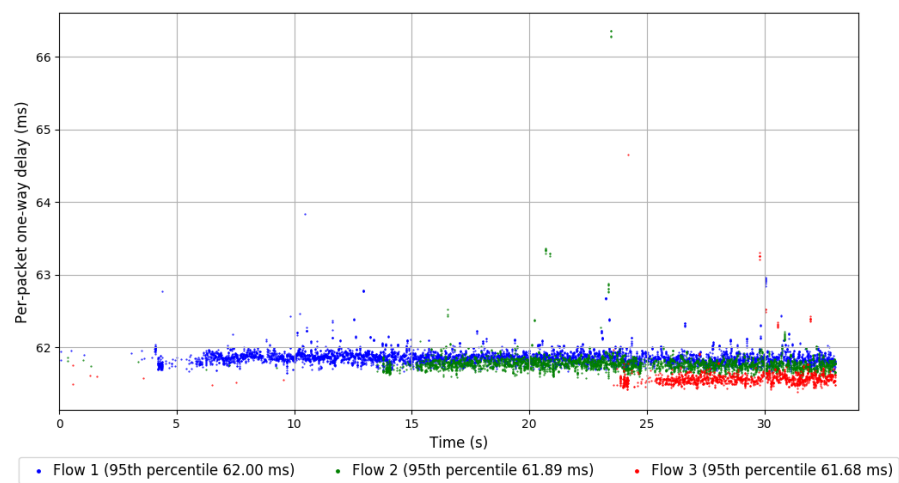
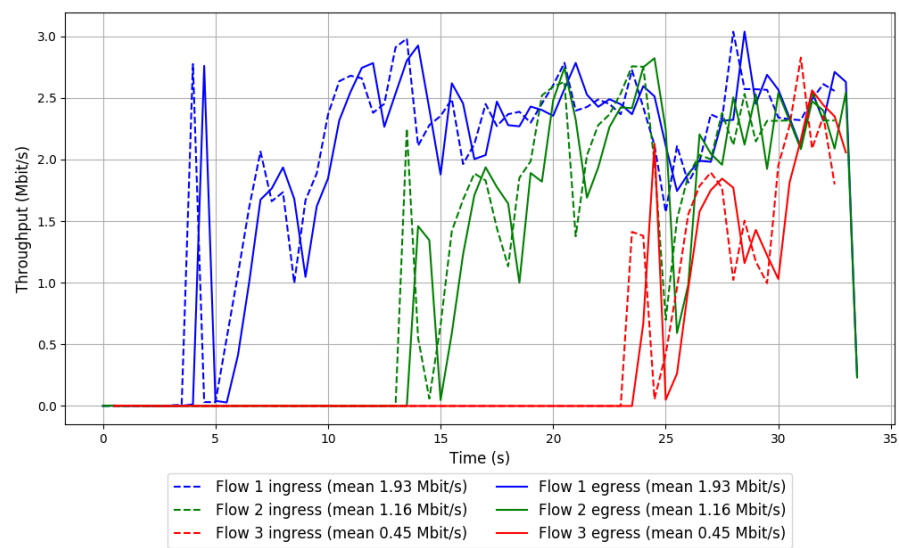
-- Flow 3:

Average throughput: 0.45 Mbit/s

95th percentile per-packet one-way delay: 61.676 ms

Loss rate: 0.00%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-09-06 18:36:35
End at: 2018-09-06 18:37:05
Local clock offset: 0.158 ms
Remote clock offset: -0.248 ms

Below is generated by plot.py at 2018-09-06 22:03:10
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.47 Mbit/s
95th percentile per-packet one-way delay: 66.983 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 1.91 Mbit/s
95th percentile per-packet one-way delay: 61.345 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 67.004 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 67.042 ms
Loss rate: 0.00%

Run 5: Report of WebRTC media — Data Link

