

Pantheon Report

Generated at 2018-09-07 07:27:39 (UTC).

Data path: GCE Sydney 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.

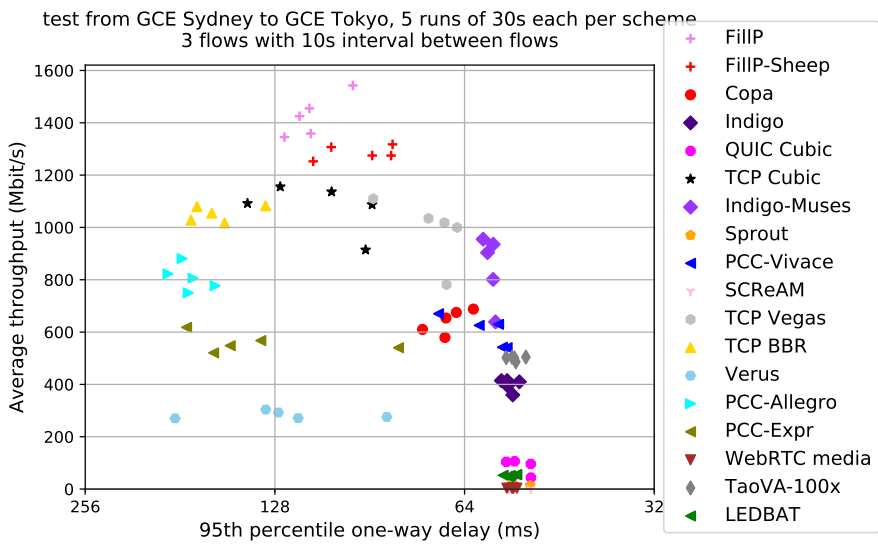
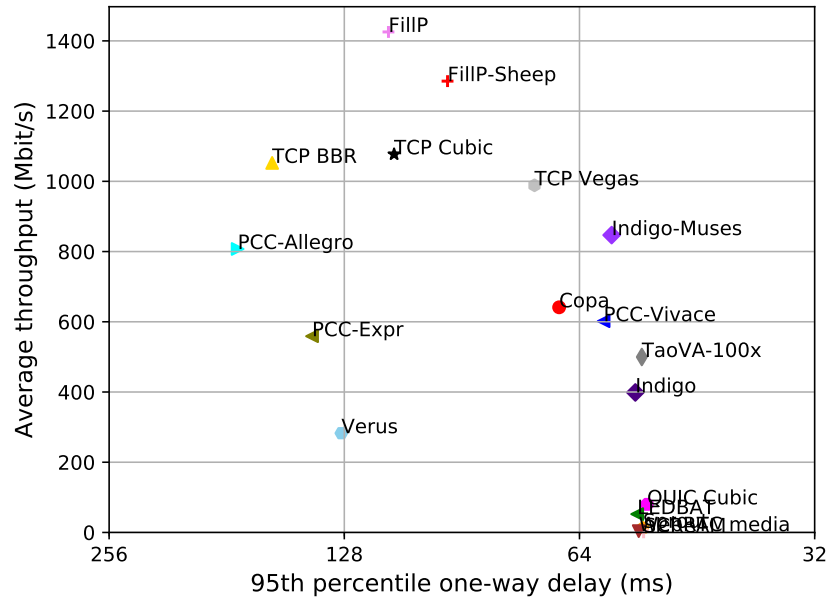
System info:

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



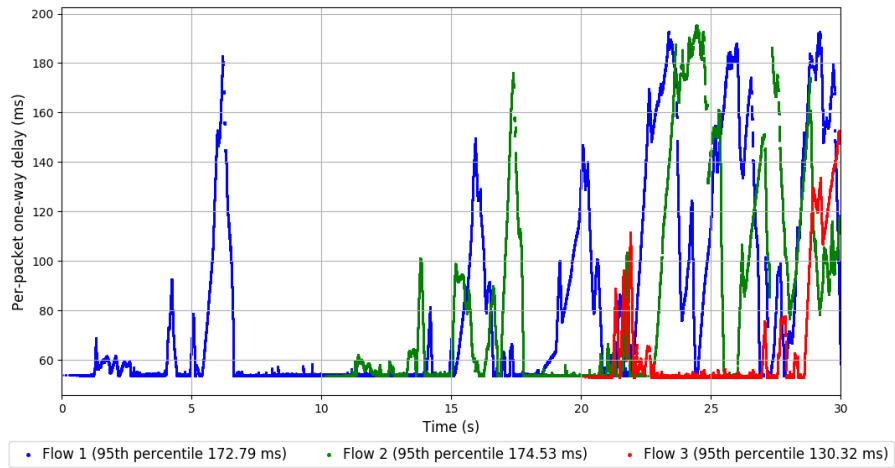
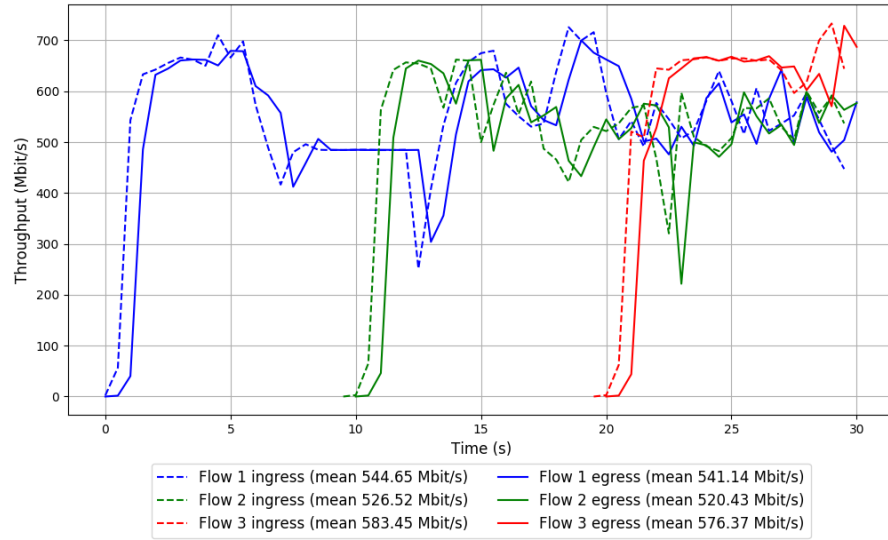
scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	538.88	518.79	505.20	156.87	152.02	143.97	0.73	0.72	1.26
Copa	5	339.95	312.61	279.06	66.65	66.08	75.08	0.03	0.01	0.02
TCP Cubic	5	545.21	553.52	490.87	98.21	101.95	100.58	0.04	0.11	0.26
FillP	5	777.63	697.46	554.08	111.50	104.60	104.26	1.52	0.76	1.63
FillP-Sheep	5	718.51	608.01	489.73	95.69	93.69	64.45	0.14	0.31	0.03
Indigo	5	208.38	200.93	175.80	53.79	53.80	54.10	0.01	0.01	0.01
LEDBAT	5	33.08	23.13	11.56	53.71	52.46	53.36	0.00	0.00	0.00
Indigo-Muses	5	470.46	391.45	355.55	59.31	55.89	56.01	0.00	0.00	0.04
PCC-Allegro	5	419.81	416.14	337.99	163.36	180.74	147.20	2.79	4.21	4.61
PCC-Expr	5	318.72	279.33	164.75	144.64	121.52	66.39	2.38	1.73	0.19
QUIC Cubic	5	35.11	50.96	33.85	51.21	51.81	51.29	0.00	0.01	0.00
SCReAM	5	0.21	0.21	0.22	51.91	51.79	52.93	0.00	0.00	0.14
Sprout	5	6.74	6.55	6.66	51.80	53.09	51.80	0.00	0.06	0.00
TaoVA-100x	5	251.39	253.13	239.92	52.71	51.38	51.93	0.01	0.00	0.00
TCP Vegas	5	507.76	501.44	442.07	63.98	74.91	70.53	0.03	0.09	0.11
Verus	5	153.99	150.10	88.82	127.19	121.04	67.42	1.30	0.05	0.00
PCC-Vivace	5	340.40	325.96	134.42	59.85	72.10	57.76	0.01	0.01	0.03
WebRTC media	5	1.96	1.25	0.51	52.10	53.19	52.49	0.00	0.00	0.00

Run 1: Statistics of TCP BBR

Start at: 2018-09-07 02:03:46
End at: 2018-09-07 02:04:16
Local clock offset: -0.07 ms
Remote clock offset: -0.126 ms

Below is generated by plot.py at 2018-09-07 05:12:10
Datalink statistics
-- Total of 3 flows:
Average throughput: 1079.75 Mbit/s
95th percentile per-packet one-way delay: 170.193 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 541.14 Mbit/s
95th percentile per-packet one-way delay: 172.791 ms
Loss rate: 0.66%
-- Flow 2:
Average throughput: 520.43 Mbit/s
95th percentile per-packet one-way delay: 174.530 ms
Loss rate: 1.17%
-- Flow 3:
Average throughput: 576.37 Mbit/s
95th percentile per-packet one-way delay: 130.325 ms
Loss rate: 1.24%

Run 1: Report of TCP BBR — Data Link

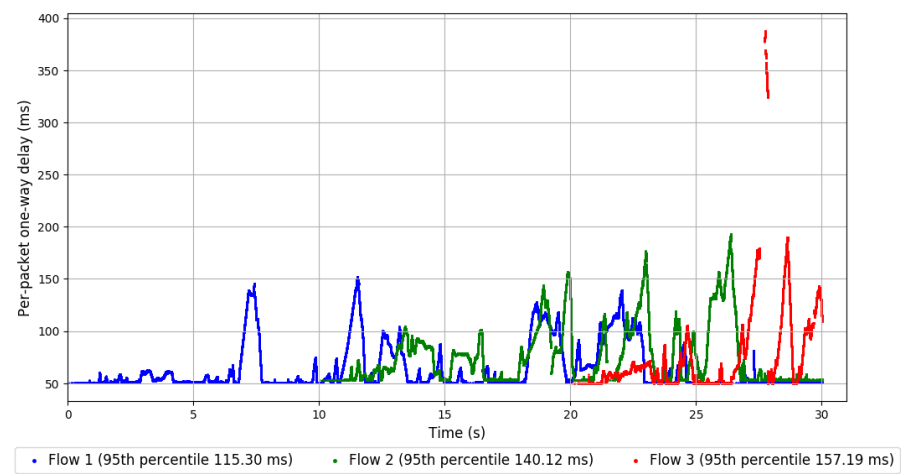
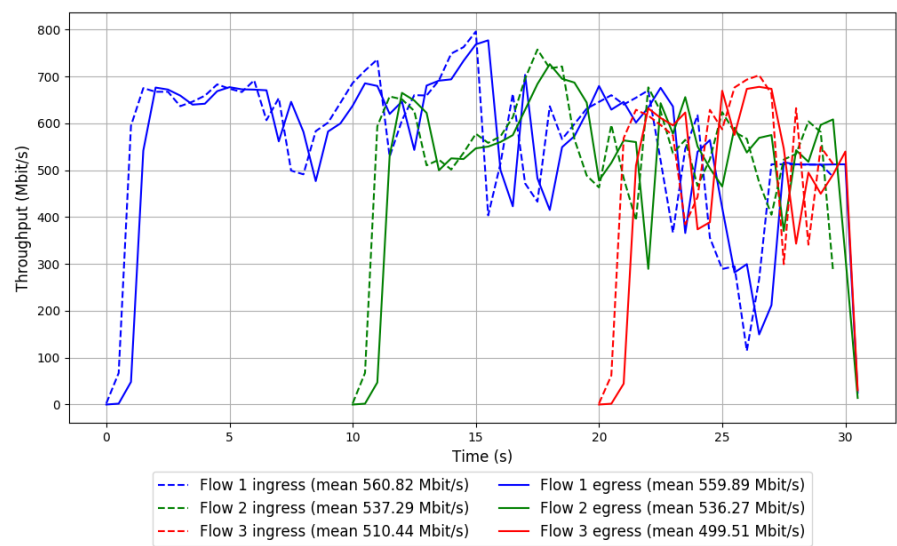


Run 2: Statistics of TCP BBR

Start at: 2018-09-07 02:35:30
End at: 2018-09-07 02:36:00
Local clock offset: -0.005 ms
Remote clock offset: -0.138 ms

Below is generated by plot.py at 2018-09-07 05:12:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 1082.99 Mbit/s
95th percentile per-packet one-way delay: 132.432 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 559.89 Mbit/s
95th percentile per-packet one-way delay: 115.296 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 536.27 Mbit/s
95th percentile per-packet one-way delay: 140.123 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 499.51 Mbit/s
95th percentile per-packet one-way delay: 157.191 ms
Loss rate: 2.14%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

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

End at: 2018-09-07 03:07:39

Local clock offset: -0.156 ms

Remote clock offset: 0.045 ms

Below is generated by plot.py at 2018-09-07 05:12:21

Datalink statistics

-- Total of 3 flows:

Average throughput: 1054.81 Mbit/s

95th percentile per-packet one-way delay: 161.224 ms

Loss rate: 1.00%

-- Flow 1:

Average throughput: 551.07 Mbit/s

95th percentile per-packet one-way delay: 162.306 ms

Loss rate: 0.94%

-- Flow 2:

Average throughput: 542.70 Mbit/s

95th percentile per-packet one-way delay: 159.981 ms

Loss rate: 1.38%

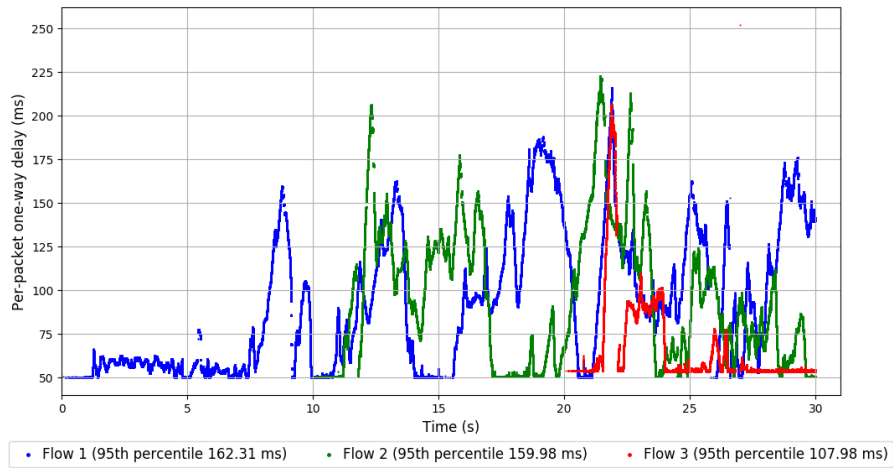
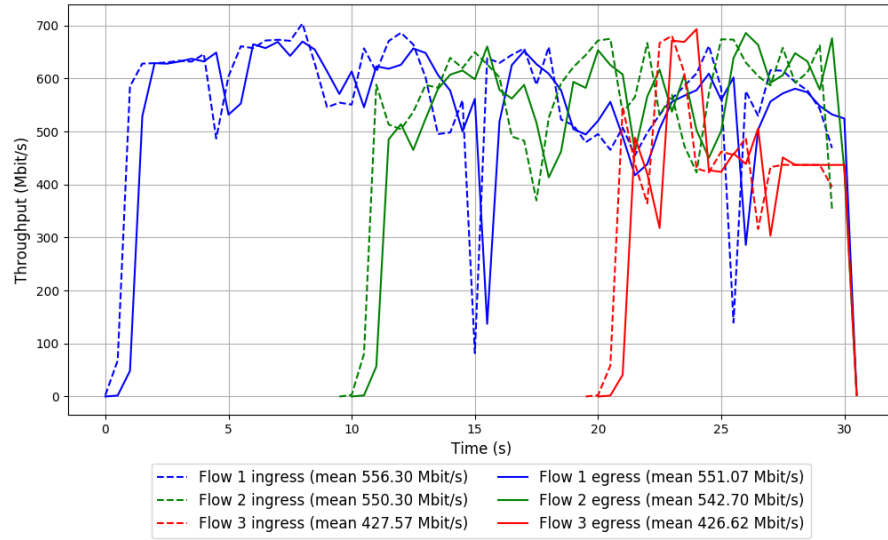
-- Flow 3:

Average throughput: 426.62 Mbit/s

95th percentile per-packet one-way delay: 107.980 ms

Loss rate: 0.26%

Run 3: Report of TCP BBR — Data Link

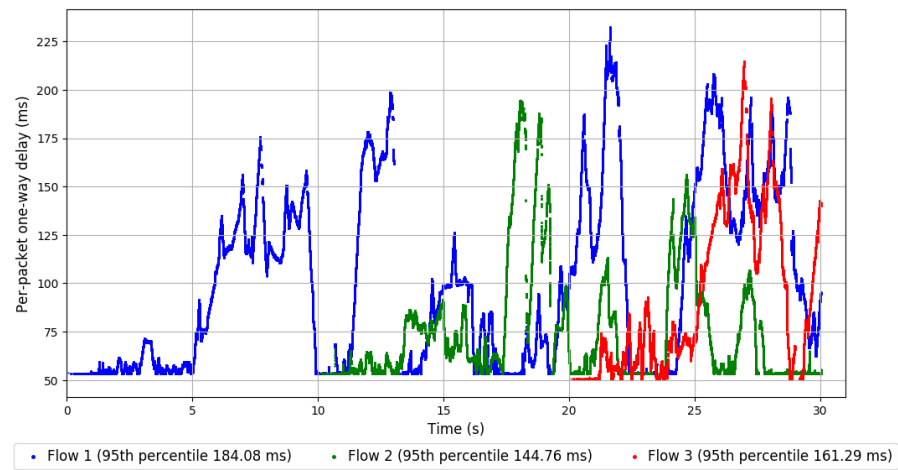
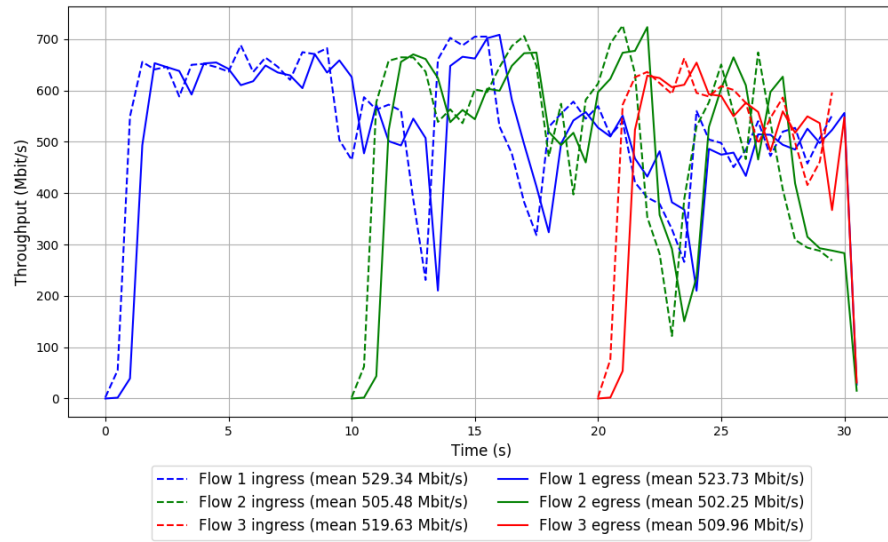


Run 4: Statistics of TCP BBR

Start at: 2018-09-07 03:38:40
End at: 2018-09-07 03:39:10
Local clock offset: -0.102 ms
Remote clock offset: -0.169 ms

Below is generated by plot.py at 2018-09-07 05:12:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 1027.75 Mbit/s
95th percentile per-packet one-way delay: 173.936 ms
Loss rate: 1.07%
-- Flow 1:
Average throughput: 523.73 Mbit/s
95th percentile per-packet one-way delay: 184.084 ms
Loss rate: 1.07%
-- Flow 2:
Average throughput: 502.25 Mbit/s
95th percentile per-packet one-way delay: 144.762 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 509.96 Mbit/s
95th percentile per-packet one-way delay: 161.293 ms
Loss rate: 1.86%

Run 4: Report of TCP BBR — Data Link

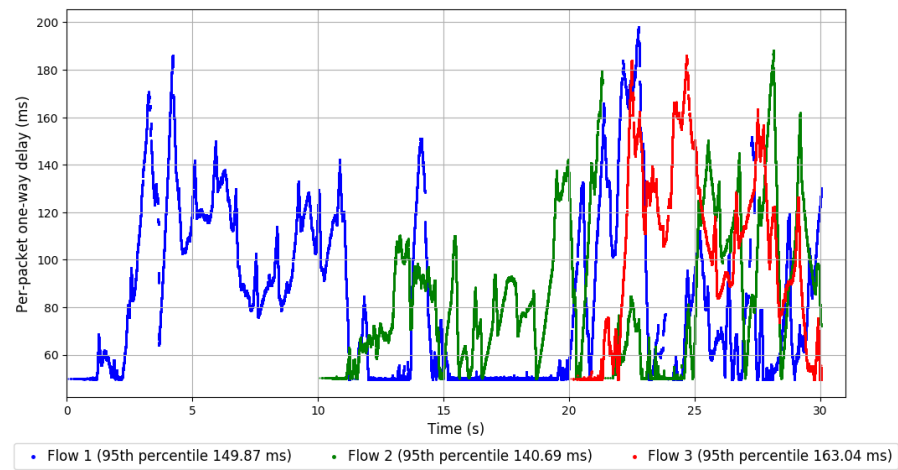
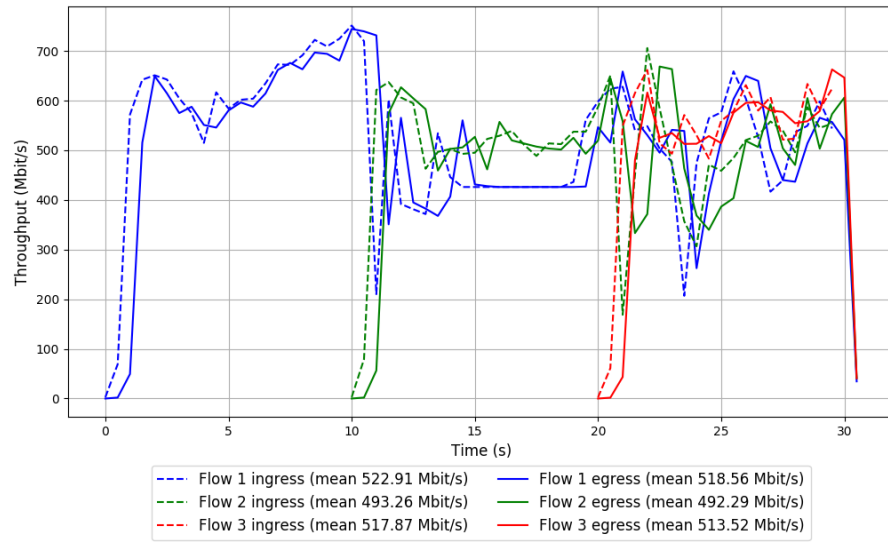


Run 5: Statistics of TCP BBR

Start at: 2018-09-07 04:10:17
End at: 2018-09-07 04:10:47
Local clock offset: 0.045 ms
Remote clock offset: -0.173 ms

Below is generated by plot.py at 2018-09-07 05:12:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 1017.14 Mbit/s
95th percentile per-packet one-way delay: 153.860 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 518.56 Mbit/s
95th percentile per-packet one-way delay: 149.868 ms
Loss rate: 0.83%
-- Flow 2:
Average throughput: 492.29 Mbit/s
95th percentile per-packet one-way delay: 140.695 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 513.52 Mbit/s
95th percentile per-packet one-way delay: 163.040 ms
Loss rate: 0.82%

Run 5: Report of TCP BBR — Data Link

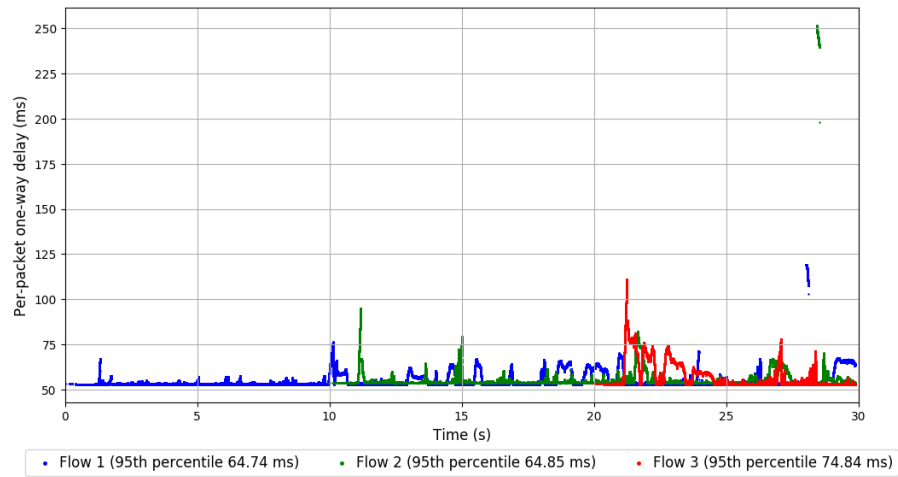
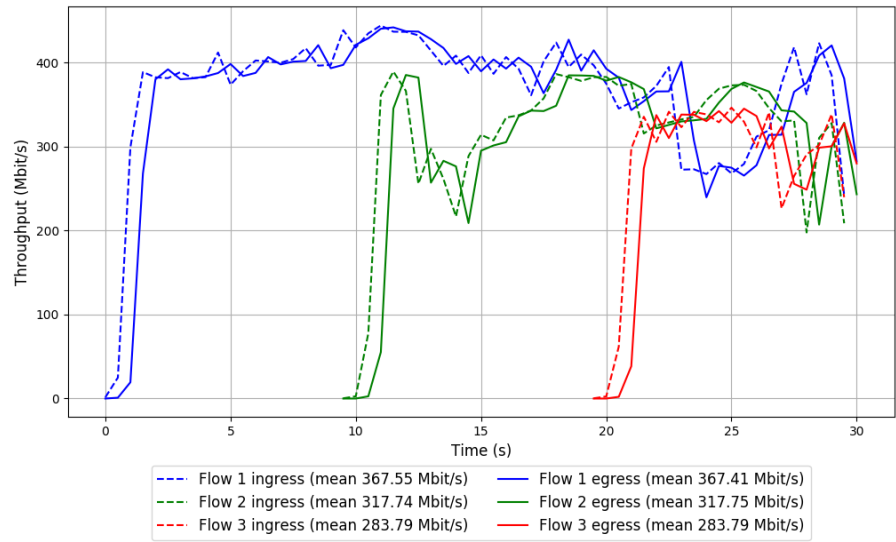


Run 1: Statistics of Copa

Start at: 2018-09-07 01:59:35
End at: 2018-09-07 02:00:05
Local clock offset: 0.003 ms
Remote clock offset: -0.135 ms

Below is generated by plot.py at 2018-09-07 05:14:17
Datalink statistics
-- Total of 3 flows:
Average throughput: 674.92 Mbit/s
95th percentile per-packet one-way delay: 65.952 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 367.41 Mbit/s
95th percentile per-packet one-way delay: 64.743 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 317.75 Mbit/s
95th percentile per-packet one-way delay: 64.853 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 283.79 Mbit/s
95th percentile per-packet one-way delay: 74.836 ms
Loss rate: 0.02%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2018-09-07 02:31:25

End at: 2018-09-07 02:31:55

Local clock offset: 0.007 ms

Remote clock offset: 1.223 ms

Below is generated by plot.py at 2018-09-07 05:14:17

Datalink statistics

-- Total of 3 flows:

Average throughput: 653.79 Mbit/s

95th percentile per-packet one-way delay: 68.504 ms

Loss rate: 0.02%

-- Flow 1:

Average throughput: 354.42 Mbit/s

95th percentile per-packet one-way delay: 66.682 ms

Loss rate: 0.03%

-- Flow 2:

Average throughput: 298.88 Mbit/s

95th percentile per-packet one-way delay: 72.866 ms

Loss rate: 0.02%

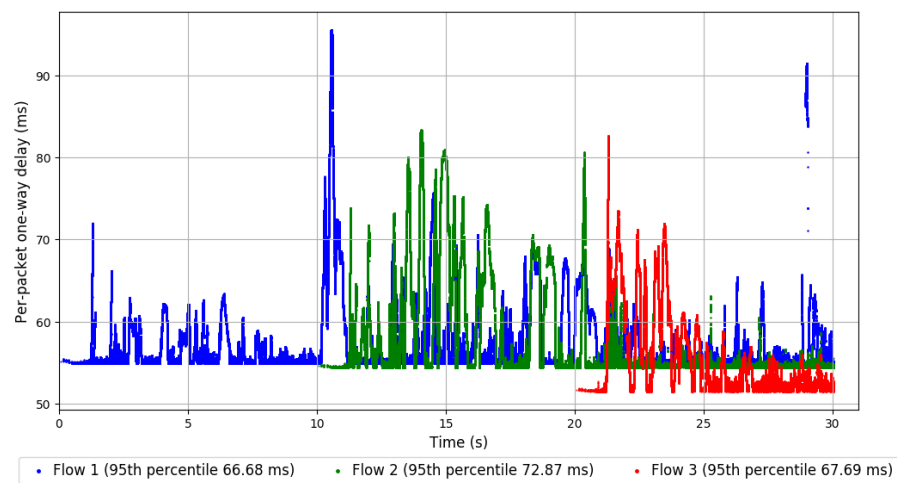
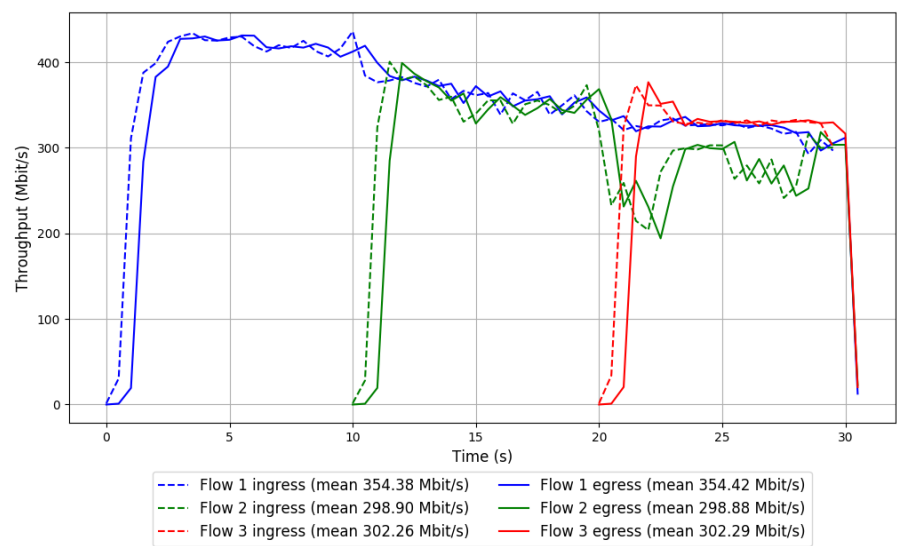
-- Flow 3:

Average throughput: 302.29 Mbit/s

95th percentile per-packet one-way delay: 67.686 ms

Loss rate: 0.00%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-09-07 03:03:08

End at: 2018-09-07 03:03:38

Local clock offset: -0.176 ms

Remote clock offset: 0.035 ms

Below is generated by plot.py at 2018-09-07 05:14:17

Datalink statistics

-- Total of 3 flows:

Average throughput: 579.36 Mbit/s

95th percentile per-packet one-way delay: 68.751 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 295.58 Mbit/s

95th percentile per-packet one-way delay: 70.492 ms

Loss rate: 0.03%

-- Flow 2:

Average throughput: 303.52 Mbit/s

95th percentile per-packet one-way delay: 61.648 ms

Loss rate: 0.00%

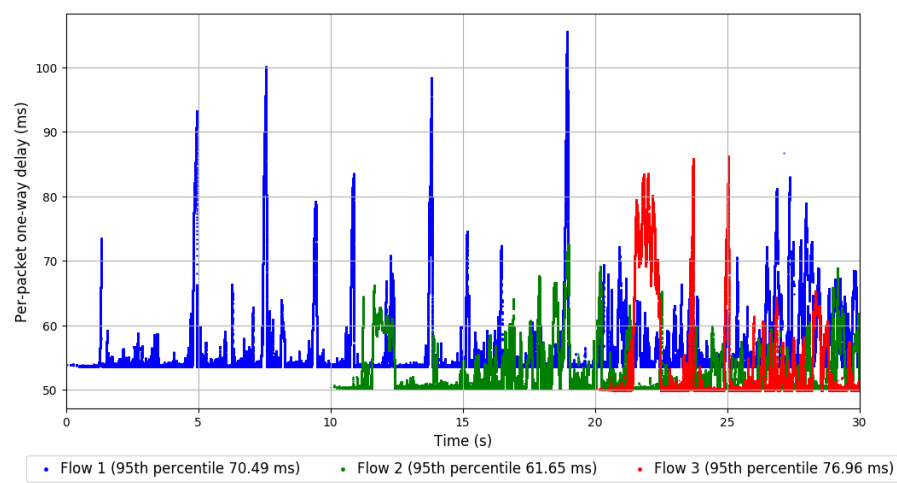
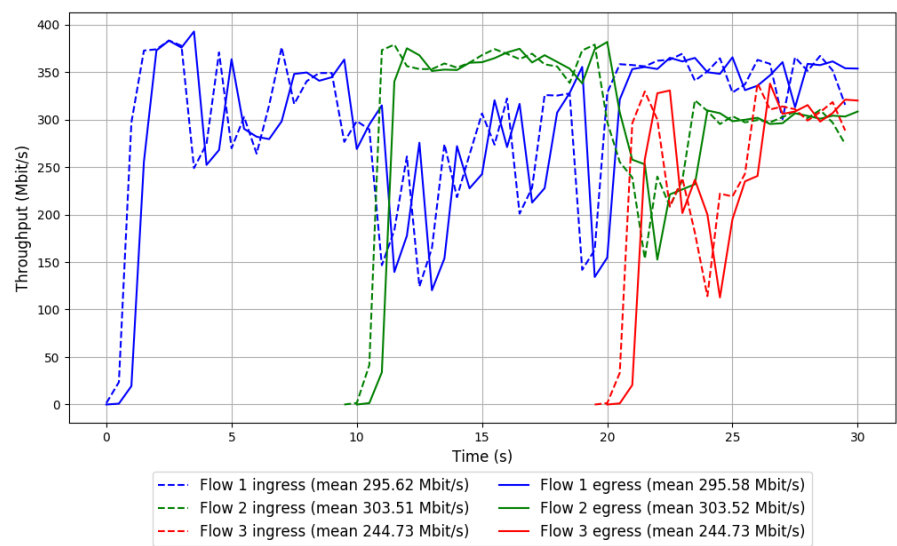
-- Flow 3:

Average throughput: 244.73 Mbit/s

95th percentile per-packet one-way delay: 76.960 ms

Loss rate: 0.00%

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2018-09-07 03:34:30

End at: 2018-09-07 03:35:00

Local clock offset: -0.165 ms

Remote clock offset: 0.07 ms

Below is generated by plot.py at 2018-09-07 05:29:09

Datalink statistics

-- Total of 3 flows:

Average throughput: 610.12 Mbit/s

95th percentile per-packet one-way delay: 74.616 ms

Loss rate: 0.02%

-- Flow 1:

Average throughput: 318.40 Mbit/s

95th percentile per-packet one-way delay: 70.309 ms

Loss rate: 0.02%

-- Flow 2:

Average throughput: 313.21 Mbit/s

95th percentile per-packet one-way delay: 68.857 ms

Loss rate: 0.00%

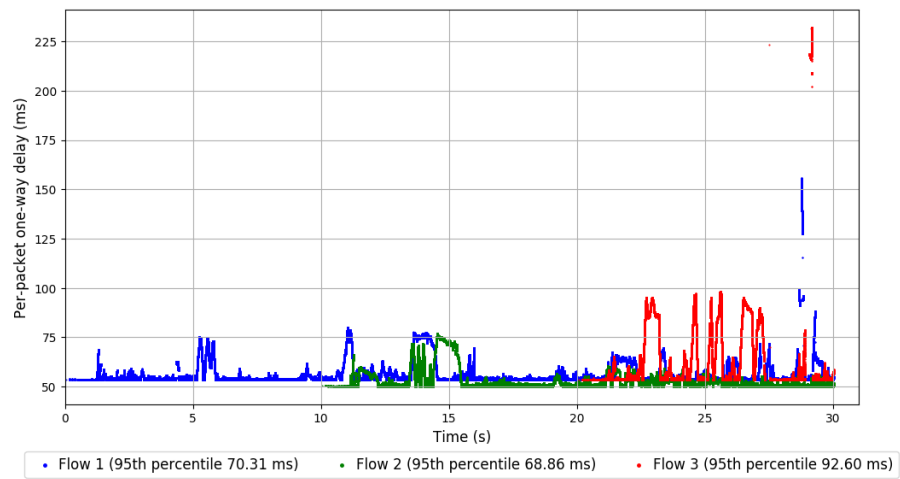
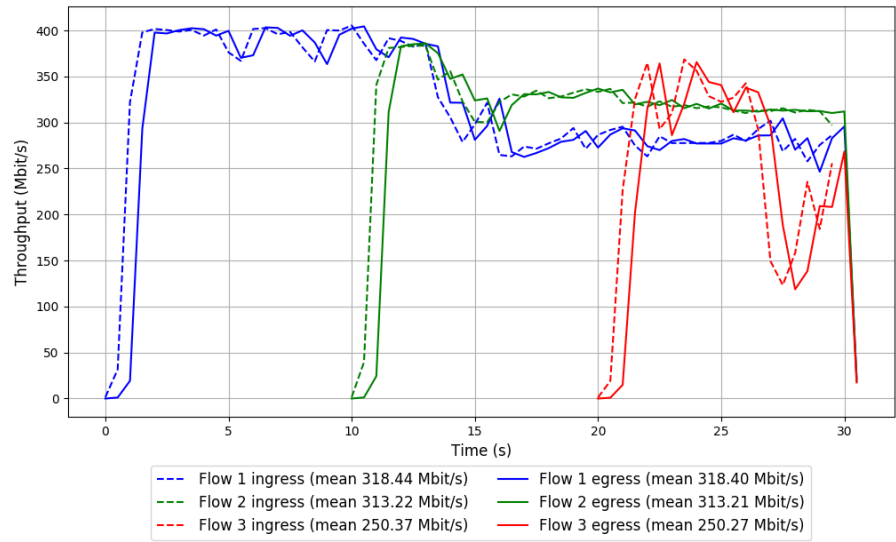
-- Flow 3:

Average throughput: 250.27 Mbit/s

95th percentile per-packet one-way delay: 92.603 ms

Loss rate: 0.06%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-09-07 04:06:08

End at: 2018-09-07 04:06:38

Local clock offset: -0.074 ms

Remote clock offset: -0.15 ms

Below is generated by plot.py at 2018-09-07 05:31:45

Datalink statistics

-- Total of 3 flows:

Average throughput: 687.94 Mbit/s

95th percentile per-packet one-way delay: 61.970 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 363.93 Mbit/s

95th percentile per-packet one-way delay: 61.012 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 329.71 Mbit/s

95th percentile per-packet one-way delay: 62.170 ms

Loss rate: 0.00%

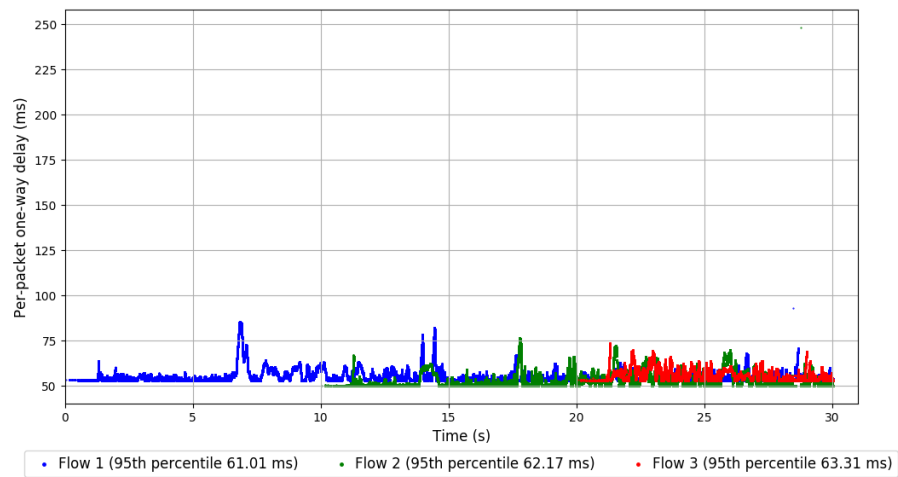
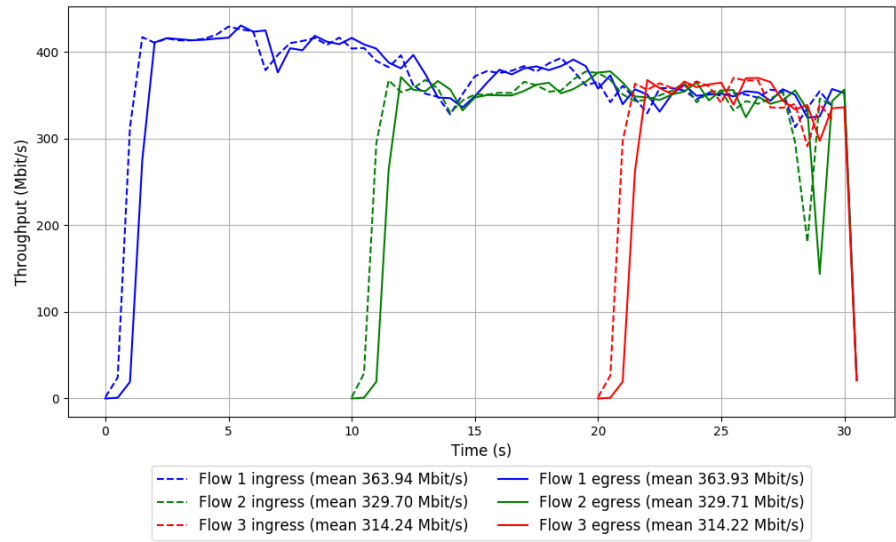
-- Flow 3:

Average throughput: 314.22 Mbit/s

95th percentile per-packet one-way delay: 63.309 ms

Loss rate: 0.02%

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-09-07 02:11:22

End at: 2018-09-07 02:11:52

Local clock offset: -0.164 ms

Remote clock offset: 0.064 ms

Below is generated by plot.py at 2018-09-07 05:31:45

Datalink statistics

-- Total of 3 flows:

Average throughput: 1091.93 Mbit/s

95th percentile per-packet one-way delay: 141.482 ms

Loss rate: 0.06%

-- Flow 1:

Average throughput: 571.61 Mbit/s

95th percentile per-packet one-way delay: 150.454 ms

Loss rate: 0.02%

-- Flow 2:

Average throughput: 549.66 Mbit/s

95th percentile per-packet one-way delay: 110.655 ms

Loss rate: 0.12%

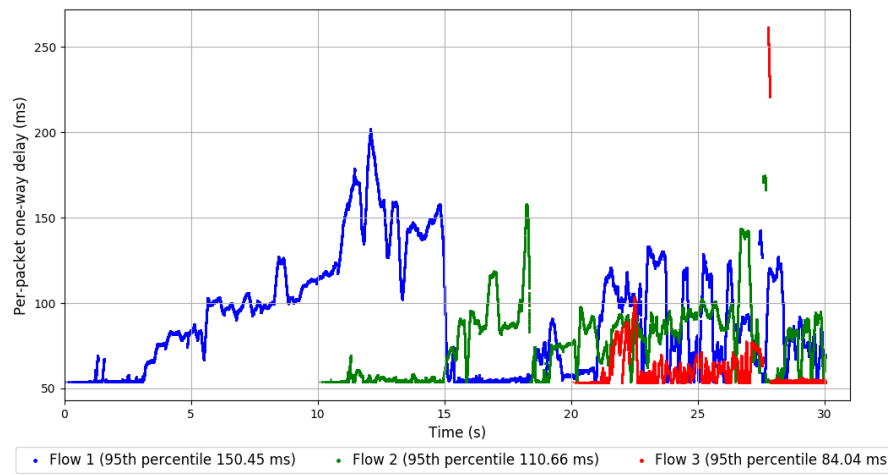
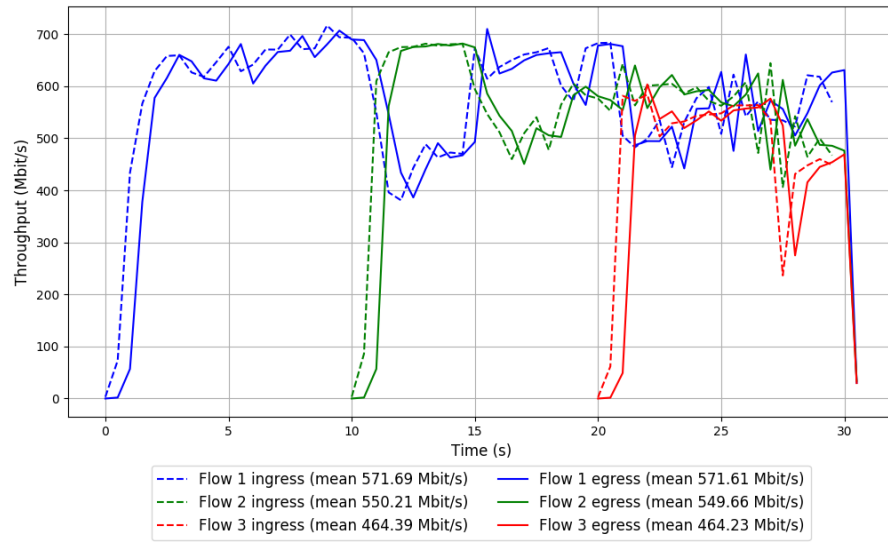
-- Flow 3:

Average throughput: 464.23 Mbit/s

95th percentile per-packet one-way delay: 84.043 ms

Loss rate: 0.07%

Run 1: Report of TCP Cubic — Data Link

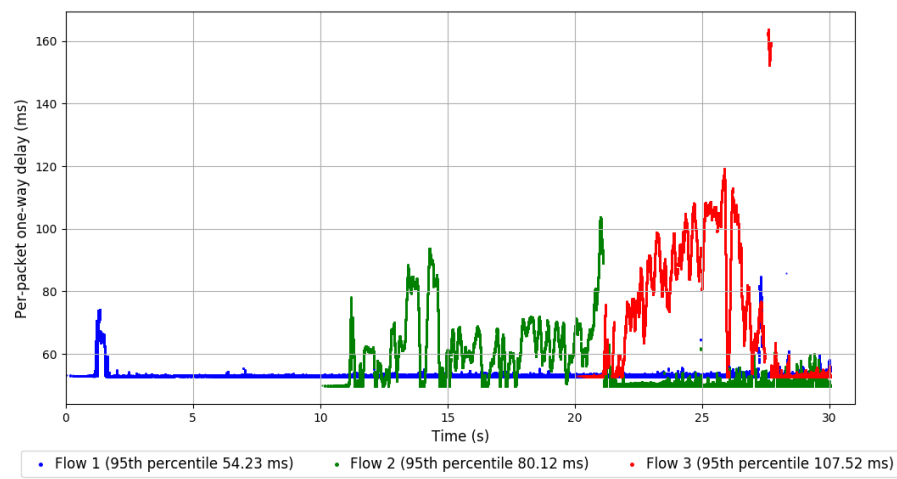
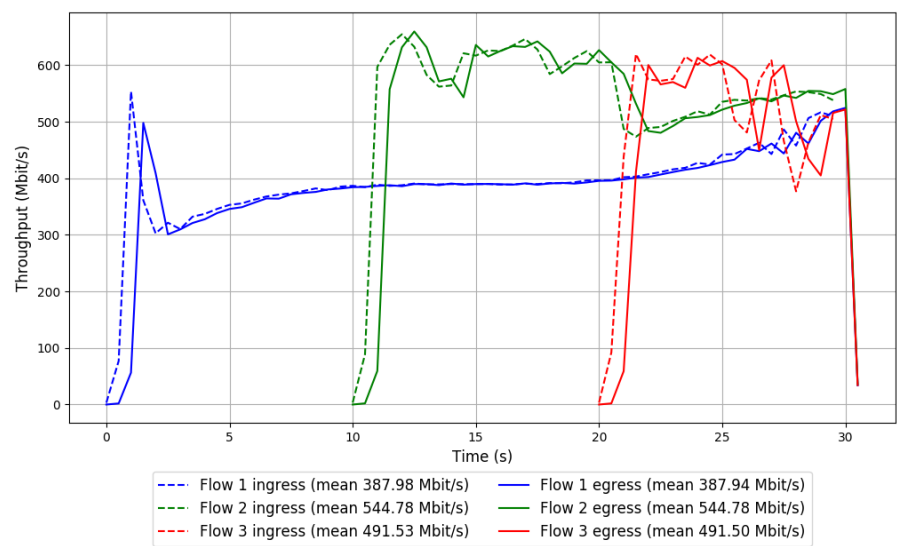


Run 2: Statistics of TCP Cubic

Start at: 2018-09-07 02:43:05
End at: 2018-09-07 02:43:35
Local clock offset: 0.037 ms
Remote clock offset: -0.399 ms

Below is generated by plot.py at 2018-09-07 05:31:45
Datalink statistics
-- Total of 3 flows:
Average throughput: 914.26 Mbit/s
95th percentile per-packet one-way delay: 91.881 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 387.94 Mbit/s
95th percentile per-packet one-way delay: 54.233 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 544.78 Mbit/s
95th percentile per-packet one-way delay: 80.124 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 491.50 Mbit/s
95th percentile per-packet one-way delay: 107.523 ms
Loss rate: 0.04%

Run 2: Report of TCP Cubic — Data Link

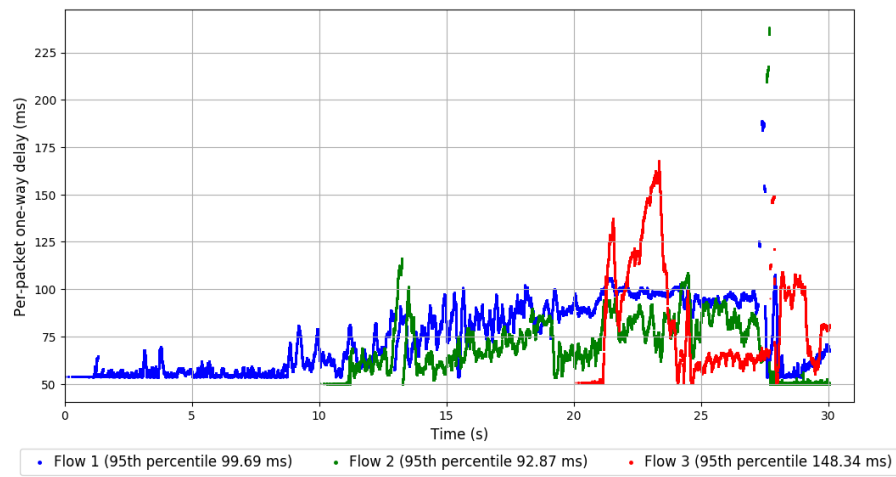
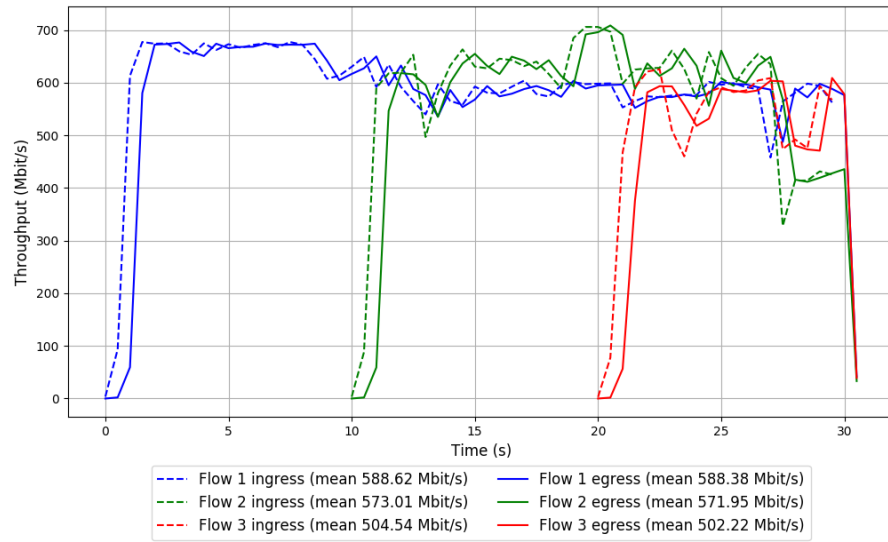


Run 3: Statistics of TCP Cubic

Start at: 2018-09-07 03:14:31
End at: 2018-09-07 03:15:01
Local clock offset: -0.242 ms
Remote clock offset: -0.092 ms

Below is generated by plot.py at 2018-09-07 05:31:45
Datalink statistics
-- Total of 3 flows:
Average throughput: 1136.34 Mbit/s
95th percentile per-packet one-way delay: 104.044 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 588.38 Mbit/s
95th percentile per-packet one-way delay: 99.688 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 571.95 Mbit/s
95th percentile per-packet one-way delay: 92.873 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 502.22 Mbit/s
95th percentile per-packet one-way delay: 148.345 ms
Loss rate: 0.47%

Run 3: Report of TCP Cubic — Data Link

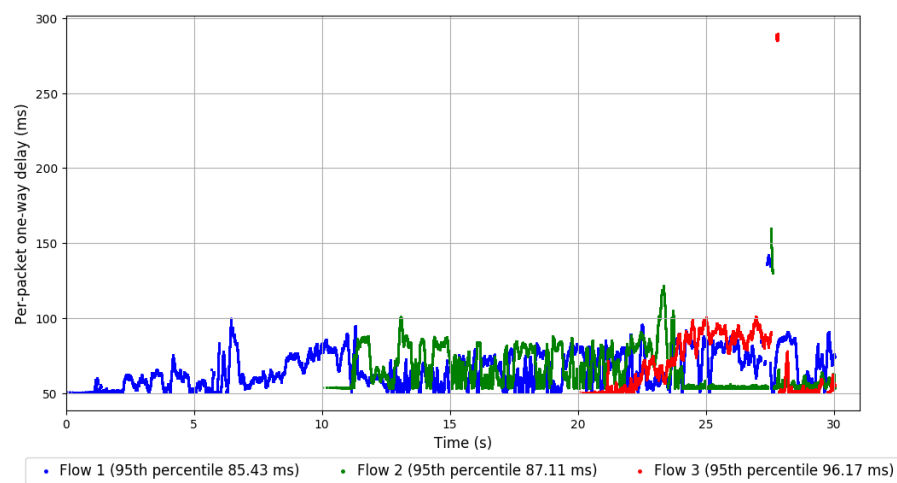
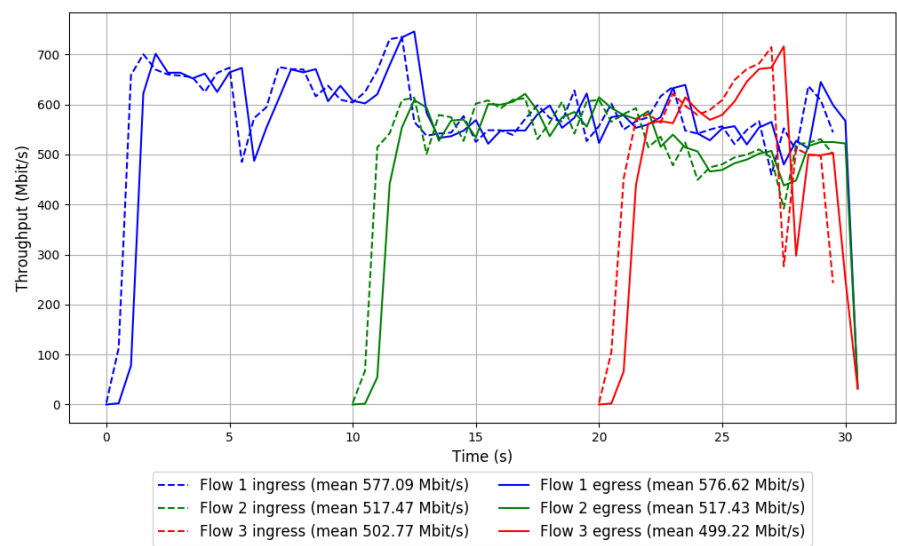


Run 4: Statistics of TCP Cubic

Start at: 2018-09-07 03:46:09
End at: 2018-09-07 03:46:39
Local clock offset: -0.105 ms
Remote clock offset: -0.087 ms

Below is generated by plot.py at 2018-09-07 05:31:45
Datalink statistics
-- Total of 3 flows:
Average throughput: 1087.08 Mbit/s
95th percentile per-packet one-way delay: 89.724 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 576.62 Mbit/s
95th percentile per-packet one-way delay: 85.431 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 517.43 Mbit/s
95th percentile per-packet one-way delay: 87.114 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 499.22 Mbit/s
95th percentile per-packet one-way delay: 96.166 ms
Loss rate: 0.70%

Run 4: Report of TCP Cubic — Data Link

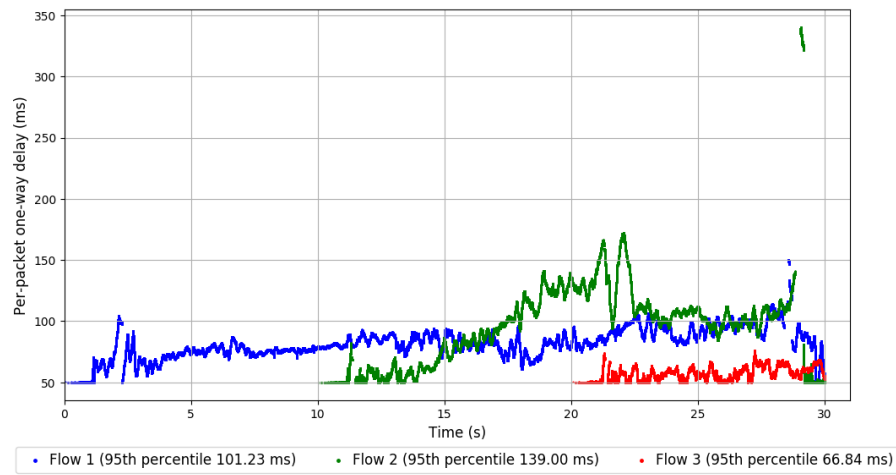
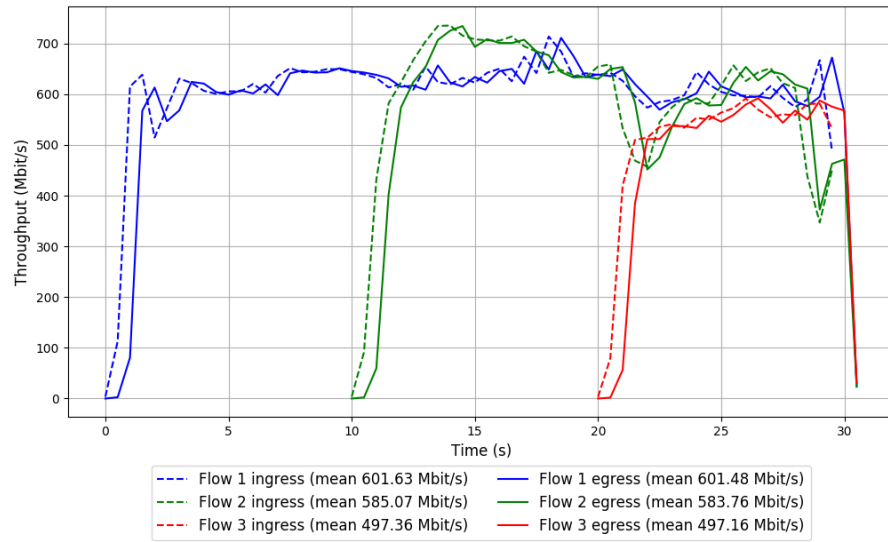


Run 5: Statistics of TCP Cubic

Start at: 2018-09-07 04:17:47
End at: 2018-09-07 04:18:17
Local clock offset: 0.046 ms
Remote clock offset: -0.542 ms

Below is generated by plot.py at 2018-09-07 05:32:53
Datalink statistics
-- Total of 3 flows:
Average throughput: 1155.60 Mbit/s
95th percentile per-packet one-way delay: 125.511 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 601.48 Mbit/s
95th percentile per-packet one-way delay: 101.227 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 583.76 Mbit/s
95th percentile per-packet one-way delay: 138.997 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 497.16 Mbit/s
95th percentile per-packet one-way delay: 66.839 ms
Loss rate: 0.04%

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-09-07 02:24:58

End at: 2018-09-07 02:25:28

Local clock offset: -0.101 ms

Remote clock offset: 0.122 ms

Below is generated by plot.py at 2018-09-07 05:41:49

Datalink statistics

-- Total of 3 flows:

Average throughput: 1455.15 Mbit/s

95th percentile per-packet one-way delay: 112.808 ms

Loss rate: 0.87%

-- Flow 1:

Average throughput: 786.19 Mbit/s

95th percentile per-packet one-way delay: 116.160 ms

Loss rate: 1.24%

-- Flow 2:

Average throughput: 739.32 Mbit/s

95th percentile per-packet one-way delay: 108.880 ms

Loss rate: 0.59%

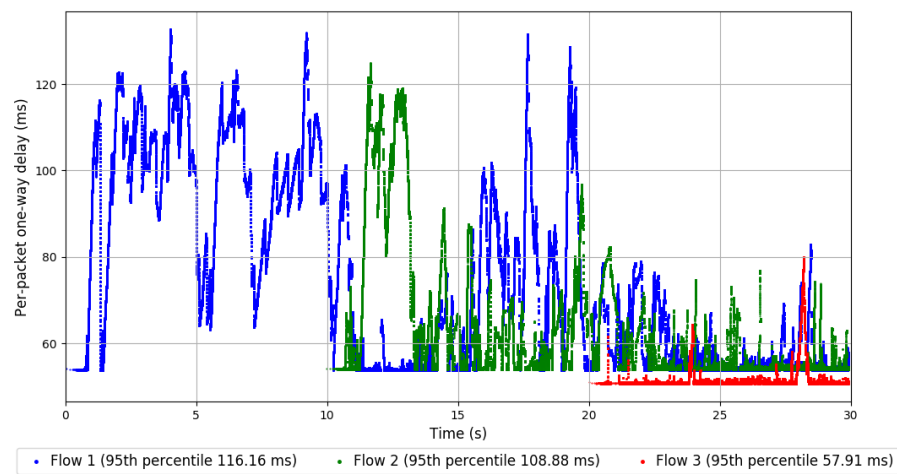
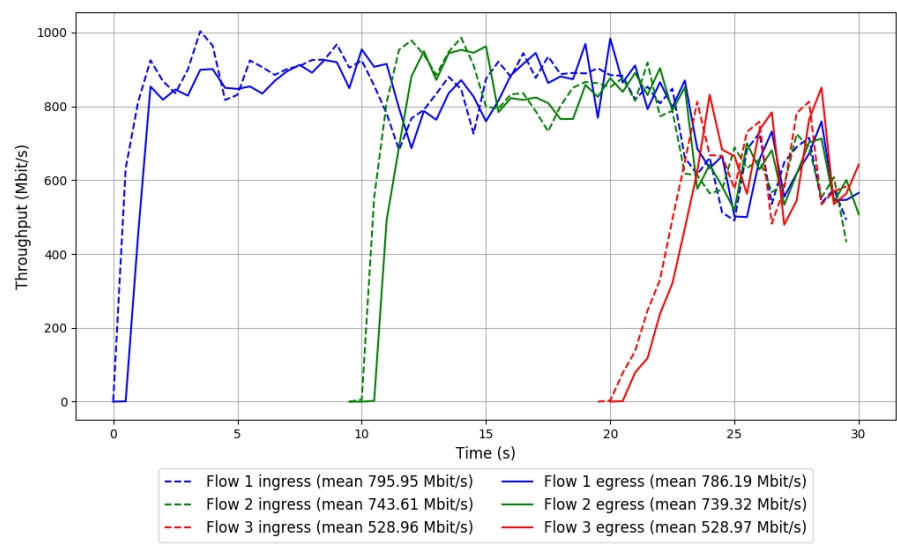
-- Flow 3:

Average throughput: 528.97 Mbit/s

95th percentile per-packet one-way delay: 57.905 ms

Loss rate: 0.00%

Run 1: Report of FillP — Data Link

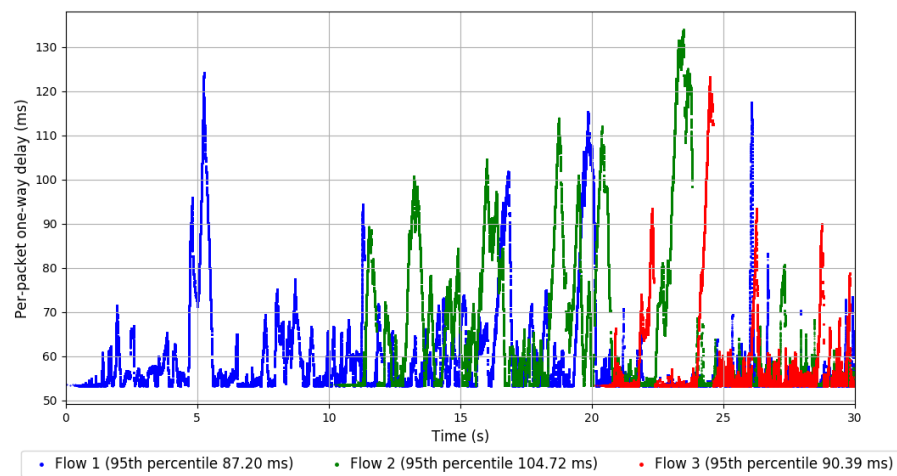
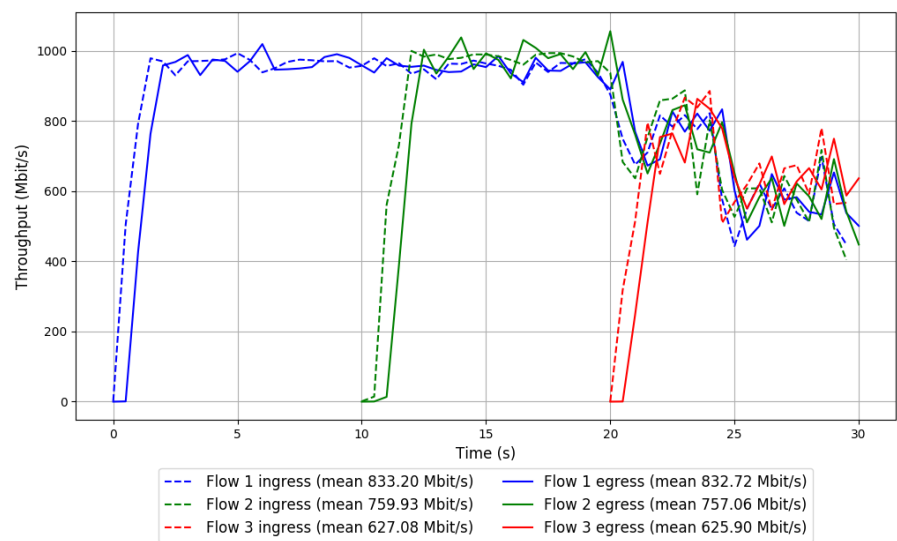


Run 2: Statistics of FillP

Start at: 2018-09-07 02:56:40
End at: 2018-09-07 02:57:10
Local clock offset: -0.348 ms
Remote clock offset: -0.519 ms

Below is generated by plot.py at 2018-09-07 05:58:49
Datalink statistics
-- Total of 3 flows:
Average throughput: 1542.78 Mbit/s
95th percentile per-packet one-way delay: 96.261 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 832.72 Mbit/s
95th percentile per-packet one-way delay: 87.196 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 757.06 Mbit/s
95th percentile per-packet one-way delay: 104.724 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 625.90 Mbit/s
95th percentile per-packet one-way delay: 90.393 ms
Loss rate: 0.21%

Run 2: Report of FillP — Data Link

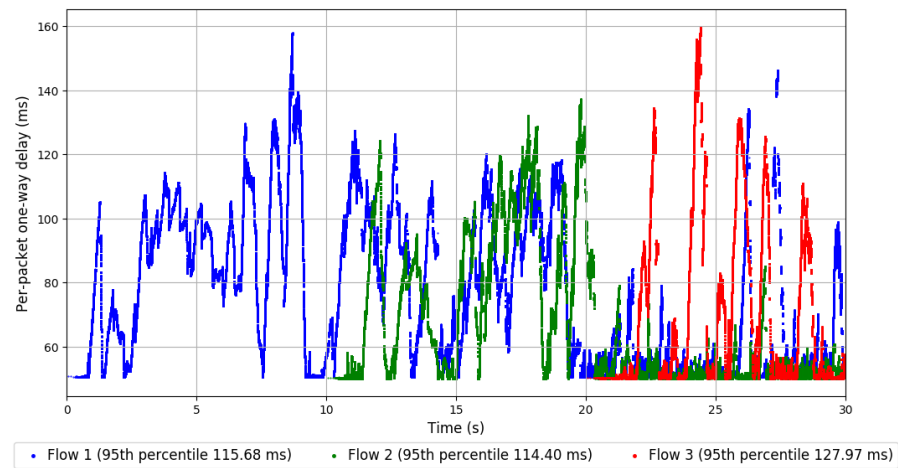
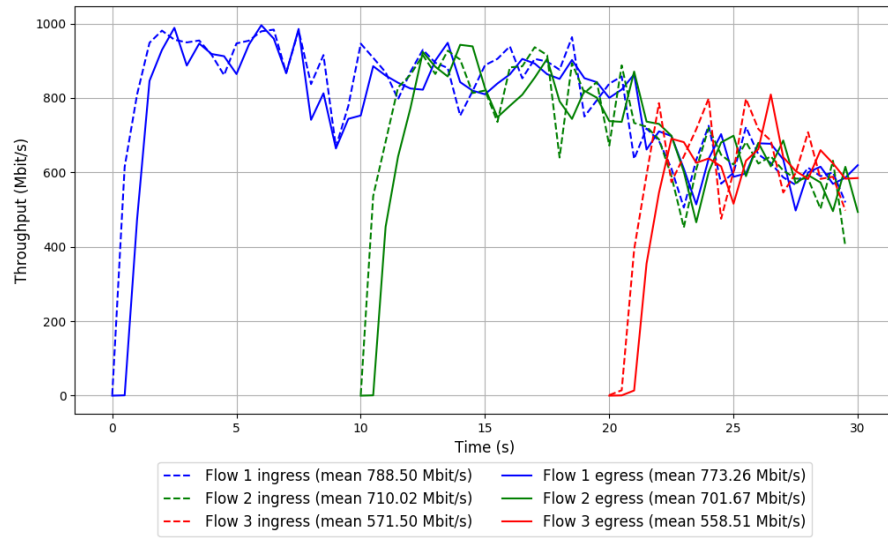


Run 3: Statistics of FillP

Start at: 2018-09-07 03:28:12
End at: 2018-09-07 03:28:42
Local clock offset: -0.189 ms
Remote clock offset: -0.146 ms

Below is generated by plot.py at 2018-09-07 05:58:49
Datalink statistics
-- Total of 3 flows:
Average throughput: 1425.13 Mbit/s
95th percentile per-packet one-way delay: 116.966 ms
Loss rate: 1.72%
-- Flow 1:
Average throughput: 773.26 Mbit/s
95th percentile per-packet one-way delay: 115.683 ms
Loss rate: 1.93%
-- Flow 2:
Average throughput: 701.67 Mbit/s
95th percentile per-packet one-way delay: 114.396 ms
Loss rate: 1.17%
-- Flow 3:
Average throughput: 558.51 Mbit/s
95th percentile per-packet one-way delay: 127.971 ms
Loss rate: 2.23%

Run 3: Report of FillP — Data Link



Run 4: Statistics of FillP

Start at: 2018-09-07 03:59:41

End at: 2018-09-07 04:00:11

Local clock offset: -0.048 ms

Remote clock offset: 0.02 ms

Below is generated by plot.py at 2018-09-07 05:58:49

Datalink statistics

-- Total of 3 flows:

Average throughput: 1345.38 Mbit/s

95th percentile per-packet one-way delay: 123.591 ms

Loss rate: 2.37%

-- Flow 1:

Average throughput: 728.46 Mbit/s

95th percentile per-packet one-way delay: 125.603 ms

Loss rate: 3.48%

-- Flow 2:

Average throughput: 627.16 Mbit/s

95th percentile per-packet one-way delay: 118.233 ms

Loss rate: 1.26%

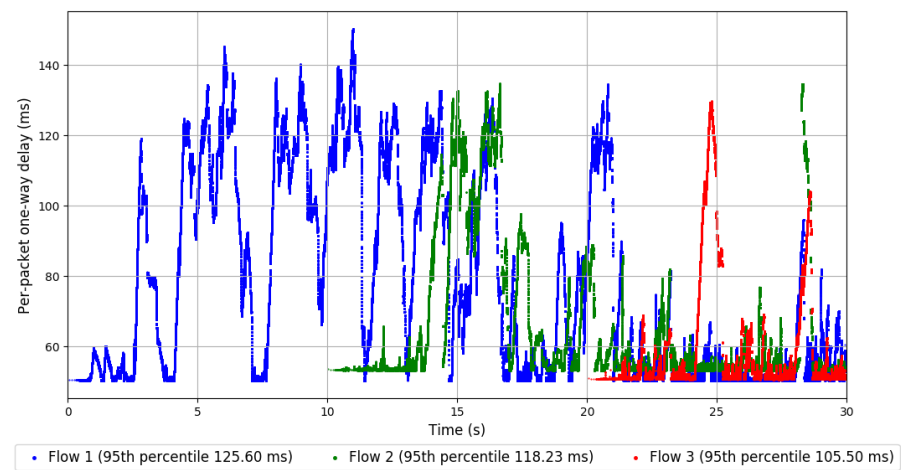
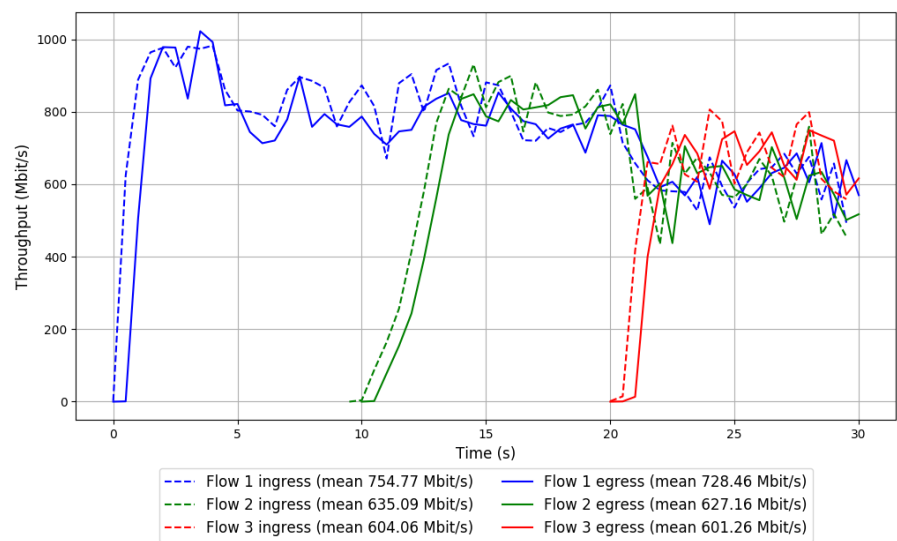
-- Flow 3:

Average throughput: 601.26 Mbit/s

95th percentile per-packet one-way delay: 105.500 ms

Loss rate: 0.47%

Run 4: Report of FillP — Data Link

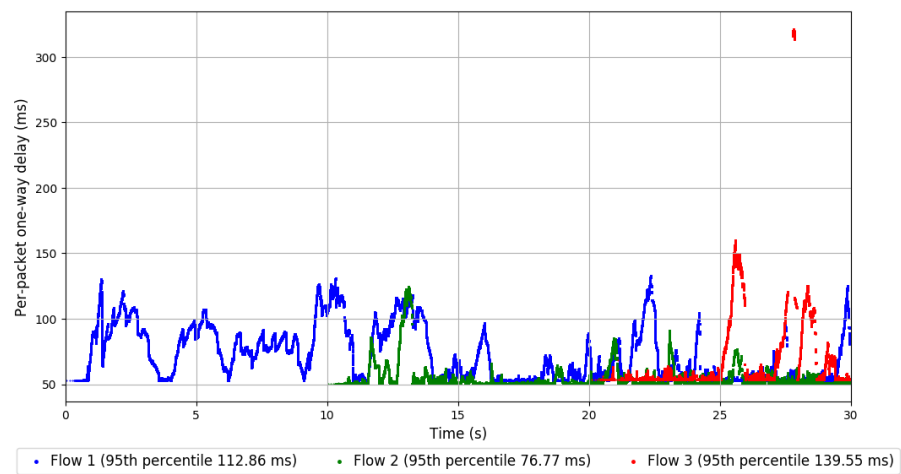
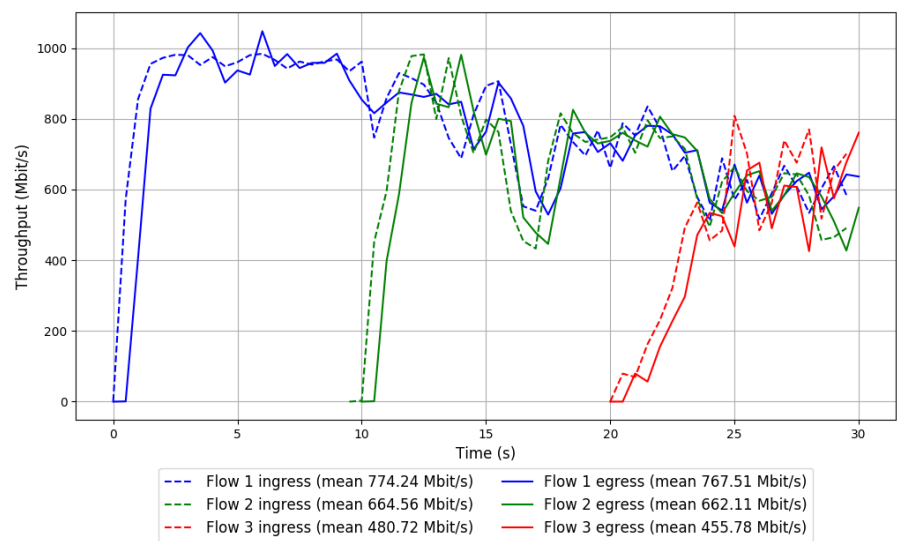


Run 5: Statistics of FillP

Start at: 2018-09-07 04:31:18
End at: 2018-09-07 04:31:48
Local clock offset: -0.19 ms
Remote clock offset: -0.227 ms

Below is generated by plot.py at 2018-09-07 05:58:49
Datalink statistics
-- Total of 3 flows:
Average throughput: 1358.78 Mbit/s
95th percentile per-packet one-way delay: 112.265 ms
Loss rate: 1.22%
-- Flow 1:
Average throughput: 767.51 Mbit/s
95th percentile per-packet one-way delay: 112.864 ms
Loss rate: 0.88%
-- Flow 2:
Average throughput: 662.11 Mbit/s
95th percentile per-packet one-way delay: 76.768 ms
Loss rate: 0.38%
-- Flow 3:
Average throughput: 455.78 Mbit/s
95th percentile per-packet one-way delay: 139.547 ms
Loss rate: 5.22%

Run 5: Report of FillP — Data Link

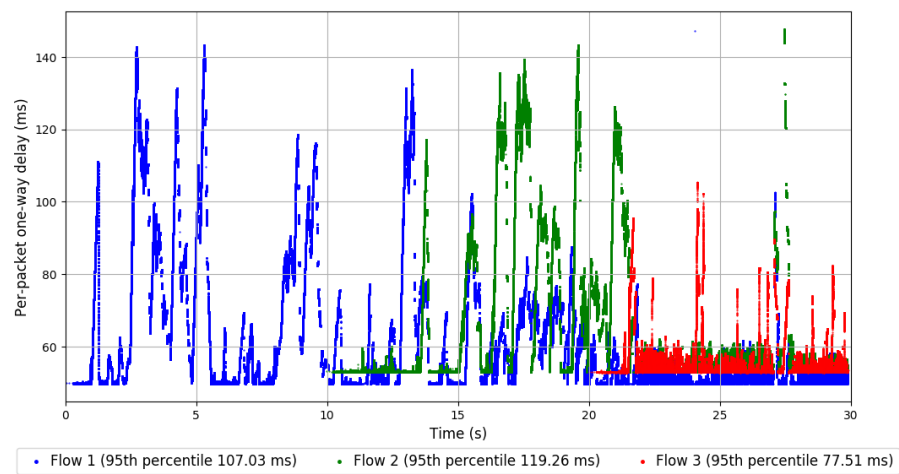
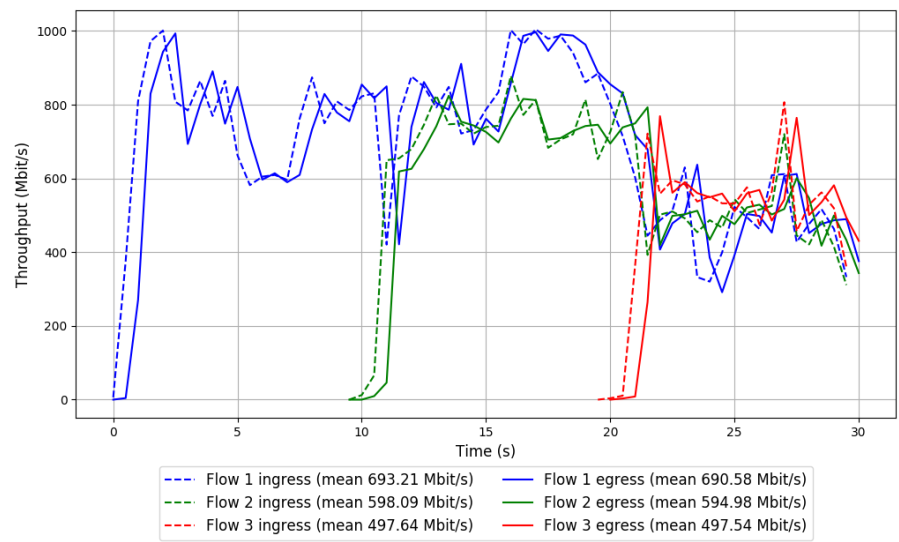


Run 1: Statistics of FillP-Sheep

Start at: 2018-09-07 02:22:57
End at: 2018-09-07 02:23:27
Local clock offset: 0.106 ms
Remote clock offset: -0.584 ms

Below is generated by plot.py at 2018-09-07 05:58:49
Datalink statistics
-- Total of 3 flows:
Average throughput: 1252.59 Mbit/s
95th percentile per-packet one-way delay: 111.287 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 690.58 Mbit/s
95th percentile per-packet one-way delay: 107.028 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 594.98 Mbit/s
95th percentile per-packet one-way delay: 119.260 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 497.54 Mbit/s
95th percentile per-packet one-way delay: 77.508 ms
Loss rate: 0.03%

Run 1: Report of FillP-Sheep — Data Link



Run 2: Statistics of FillP-Sheep

Start at: 2018-09-07 02:54:36

End at: 2018-09-07 02:55:06

Local clock offset: -0.209 ms

Remote clock offset: 0.015 ms

Below is generated by plot.py at 2018-09-07 05:59:10

Datalink statistics

-- Total of 3 flows:

Average throughput: 1317.53 Mbit/s

95th percentile per-packet one-way delay: 83.262 ms

Loss rate: 0.11%

-- Flow 1:

Average throughput: 736.38 Mbit/s

95th percentile per-packet one-way delay: 93.815 ms

Loss rate: 0.18%

-- Flow 2:

Average throughput: 613.34 Mbit/s

95th percentile per-packet one-way delay: 63.852 ms

Loss rate: 0.03%

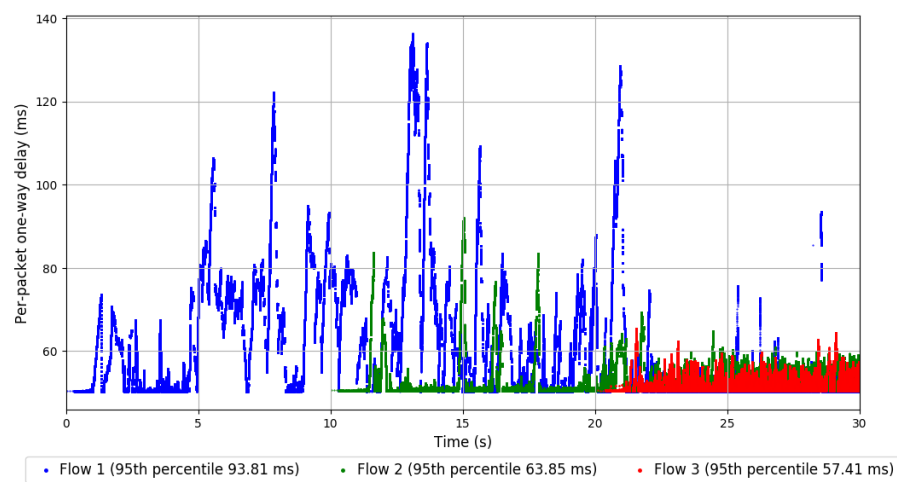
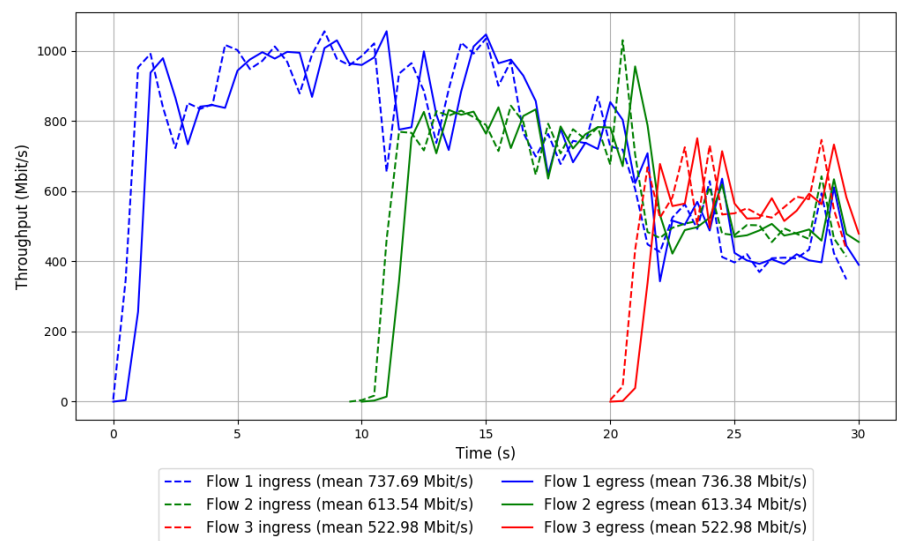
-- Flow 3:

Average throughput: 522.98 Mbit/s

95th percentile per-packet one-way delay: 57.412 ms

Loss rate: 0.00%

Run 2: Report of FillP-Sheep — Data Link

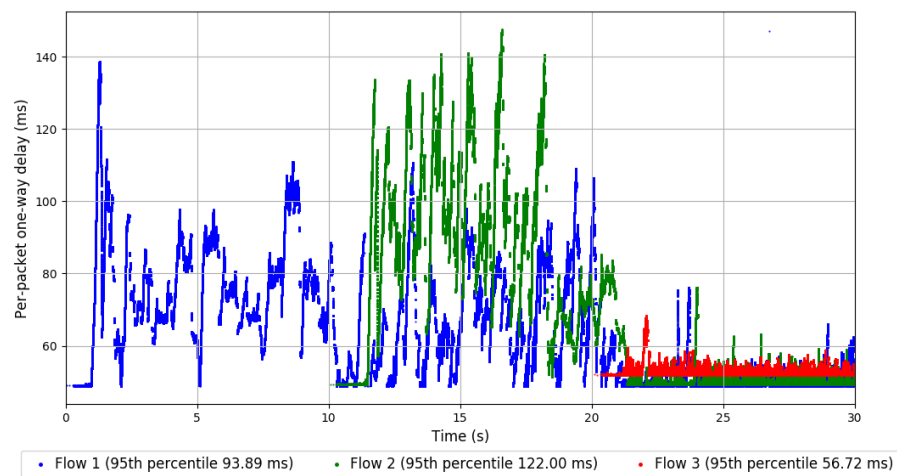
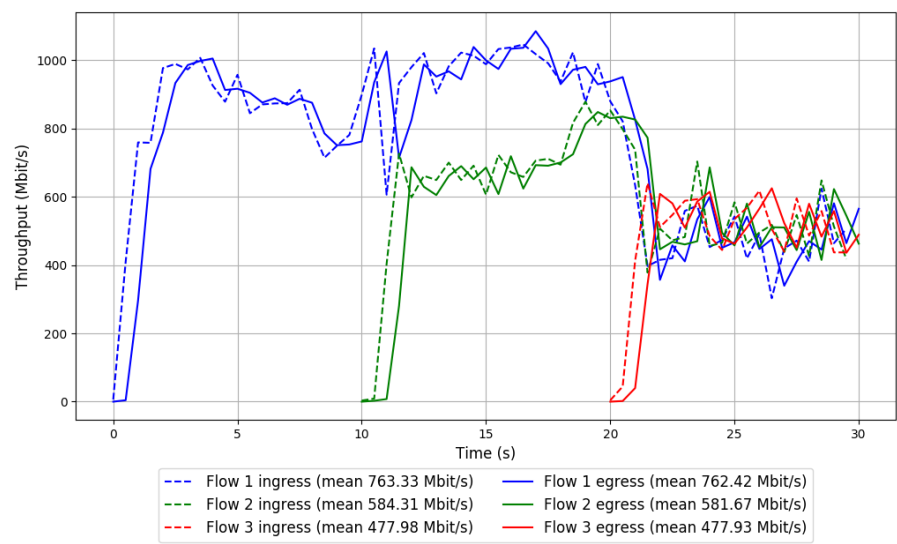


Run 3: Statistics of FillP-Sheep

Start at: 2018-09-07 03:26:10
End at: 2018-09-07 03:26:40
Local clock offset: 0.082 ms
Remote clock offset: -1.232 ms

```
# Below is generated by plot.py at 2018-09-07 06:00:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1307.08 Mbit/s
95th percentile per-packet one-way delay: 104.174 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 762.42 Mbit/s
95th percentile per-packet one-way delay: 93.887 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 581.67 Mbit/s
95th percentile per-packet one-way delay: 121.995 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 477.93 Mbit/s
95th percentile per-packet one-way delay: 56.723 ms
Loss rate: 0.03%
```

Run 3: Report of FillP-Sheep — Data Link

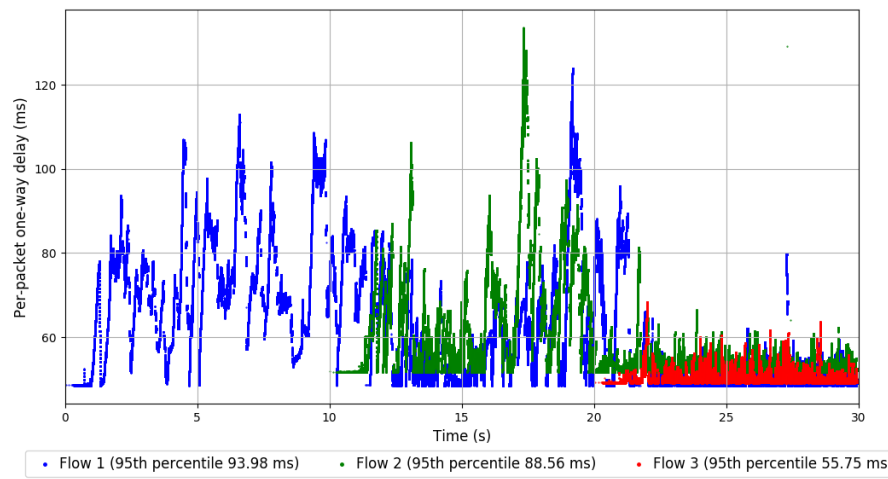
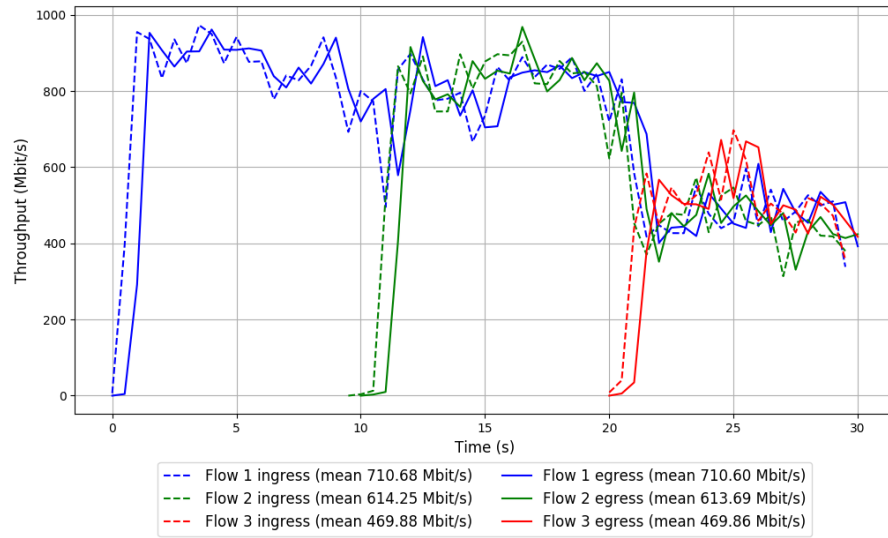


Run 4: Statistics of FillP-Sheep

Start at: 2018-09-07 03:57:38
End at: 2018-09-07 03:58:08
Local clock offset: -0.111 ms
Remote clock offset: -1.585 ms

```
# Below is generated by plot.py at 2018-09-07 06:12:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1274.86 Mbit/s
95th percentile per-packet one-way delay: 89.689 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 710.60 Mbit/s
95th percentile per-packet one-way delay: 93.979 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 613.69 Mbit/s
95th percentile per-packet one-way delay: 88.558 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 469.86 Mbit/s
95th percentile per-packet one-way delay: 55.747 ms
Loss rate: 0.01%
```

Run 4: Report of FillP-Sheep — Data Link

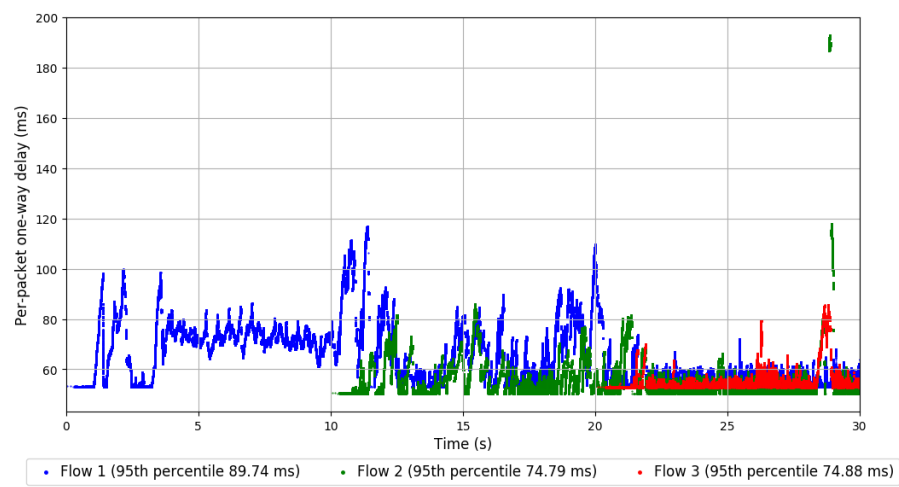
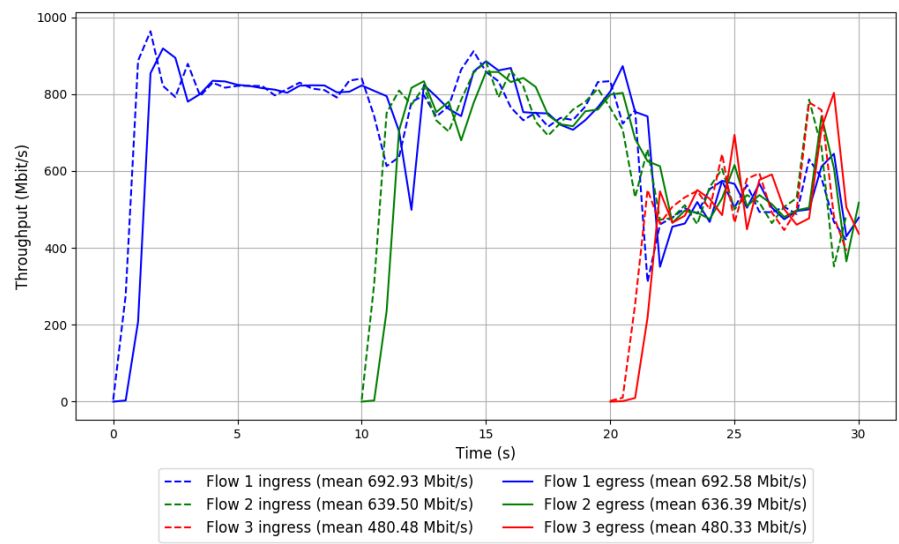


Run 5: Statistics of FillP-Sheep

Start at: 2018-09-07 04:29:17
End at: 2018-09-07 04:29:47
Local clock offset: -0.064 ms
Remote clock offset: -0.182 ms

Below is generated by plot.py at 2018-09-07 06:23:34
Datalink statistics
-- Total of 3 flows:
Average throughput: 1274.71 Mbit/s
95th percentile per-packet one-way delay: 83.687 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 692.58 Mbit/s
95th percentile per-packet one-way delay: 89.738 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 636.39 Mbit/s
95th percentile per-packet one-way delay: 74.787 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 480.33 Mbit/s
95th percentile per-packet one-way delay: 74.882 ms
Loss rate: 0.06%

Run 5: Report of FillP-Sheep — Data Link

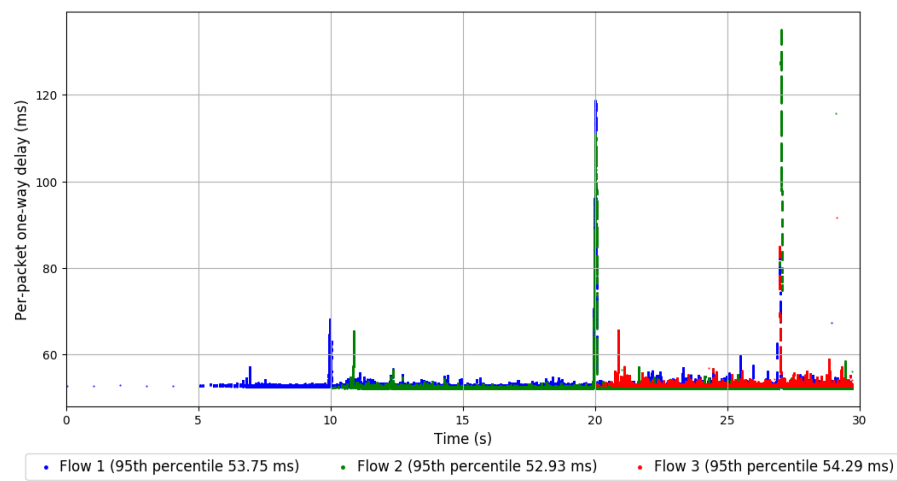
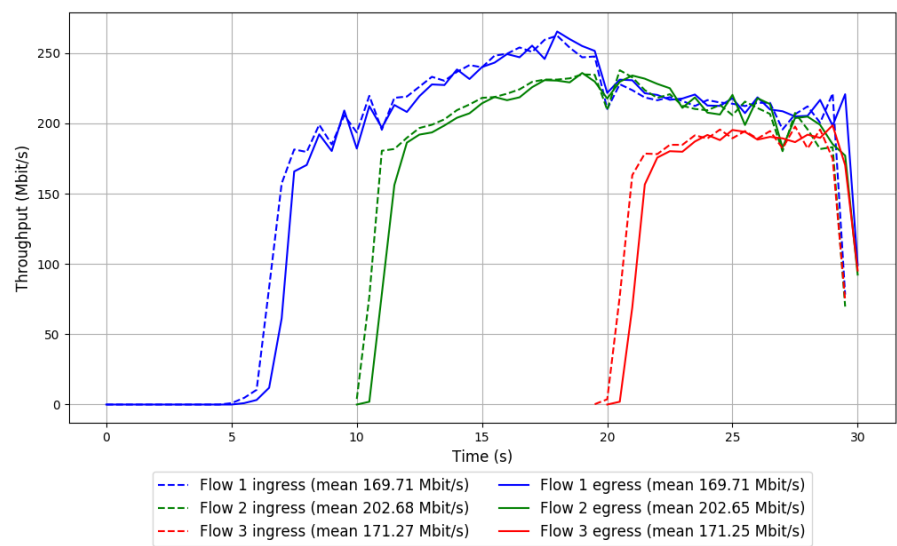


Run 1: Statistics of Indigo

Start at: 2018-09-07 02:05:54
End at: 2018-09-07 02:06:24
Local clock offset: 0.041 ms
Remote clock offset: -0.831 ms

Below is generated by plot.py at 2018-09-07 06:23:34
Datalink statistics
-- Total of 3 flows:
Average throughput: 359.86 Mbit/s
95th percentile per-packet one-way delay: 53.661 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 169.71 Mbit/s
95th percentile per-packet one-way delay: 53.746 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 202.65 Mbit/s
95th percentile per-packet one-way delay: 52.929 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 171.25 Mbit/s
95th percentile per-packet one-way delay: 54.288 ms
Loss rate: 0.02%

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-09-07 02:37:38

End at: 2018-09-07 02:38:08

Local clock offset: 0.018 ms

Remote clock offset: 0.994 ms

Below is generated by plot.py at 2018-09-07 06:23:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 409.89 Mbit/s

95th percentile per-packet one-way delay: 52.385 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 220.17 Mbit/s

95th percentile per-packet one-way delay: 52.358 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 197.02 Mbit/s

95th percentile per-packet one-way delay: 52.367 ms

Loss rate: 0.00%

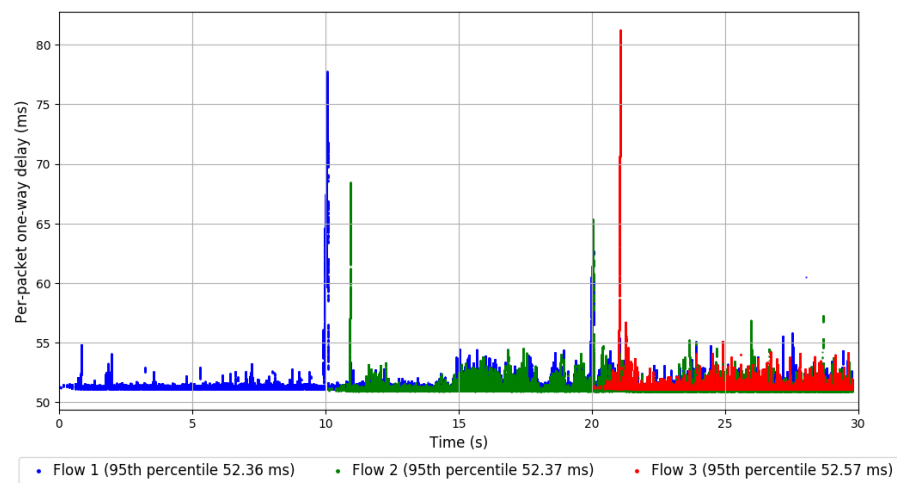
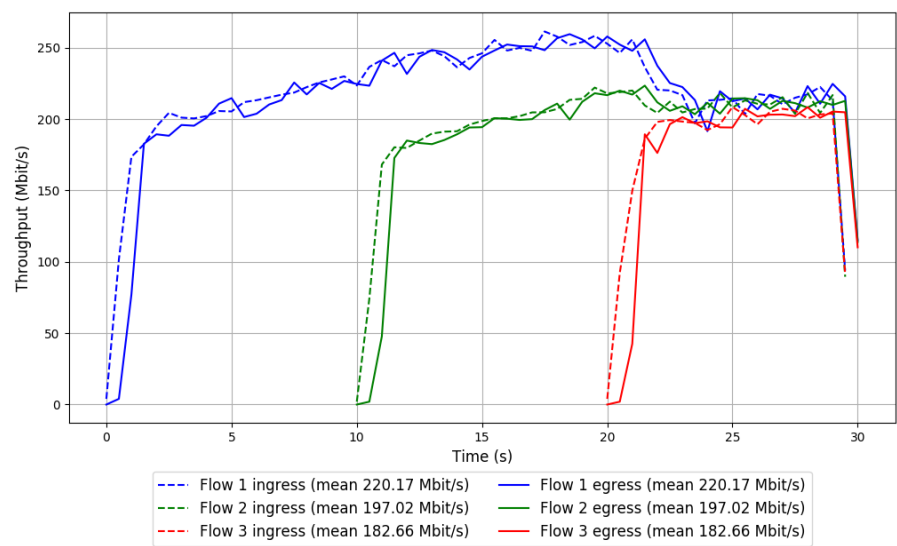
-- Flow 3:

Average throughput: 182.66 Mbit/s

95th percentile per-packet one-way delay: 52.566 ms

Loss rate: 0.00%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-09-07 03:09:17

End at: 2018-09-07 03:09:47

Local clock offset: -0.327 ms

Remote clock offset: 1.157 ms

Below is generated by plot.py at 2018-09-07 06:23:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 414.45 Mbit/s

95th percentile per-packet one-way delay: 55.934 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 222.49 Mbit/s

95th percentile per-packet one-way delay: 56.309 ms

Loss rate: 0.02%

-- Flow 2:

Average throughput: 206.30 Mbit/s

95th percentile per-packet one-way delay: 52.898 ms

Loss rate: 0.00%

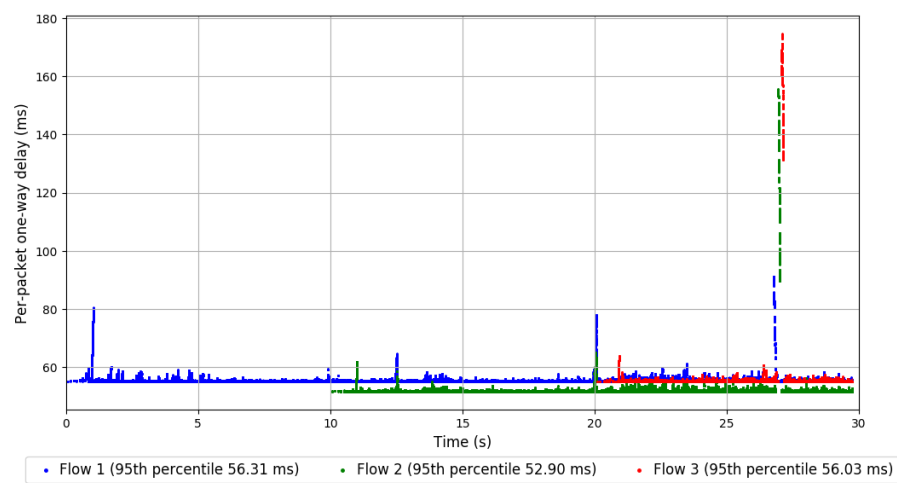
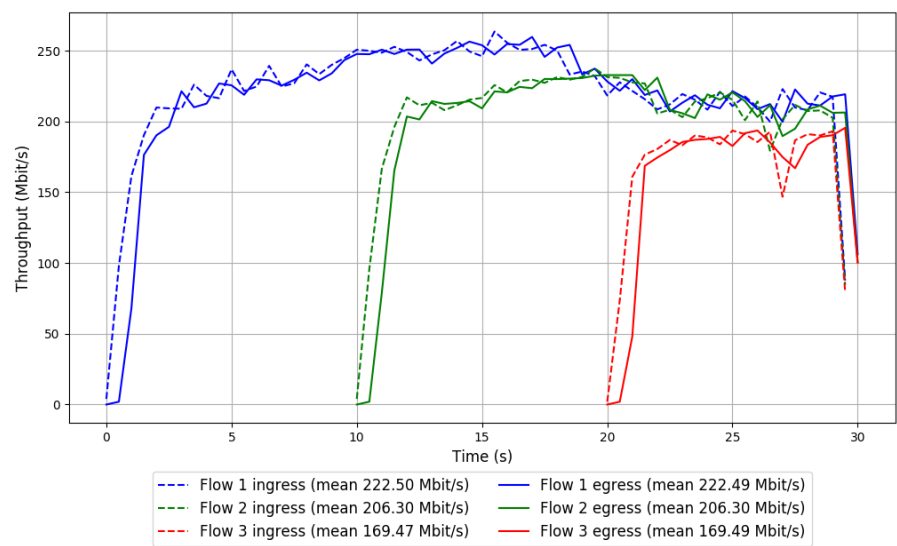
-- Flow 3:

Average throughput: 169.49 Mbit/s

95th percentile per-packet one-way delay: 56.029 ms

Loss rate: 0.02%

Run 3: Report of Indigo — Data Link

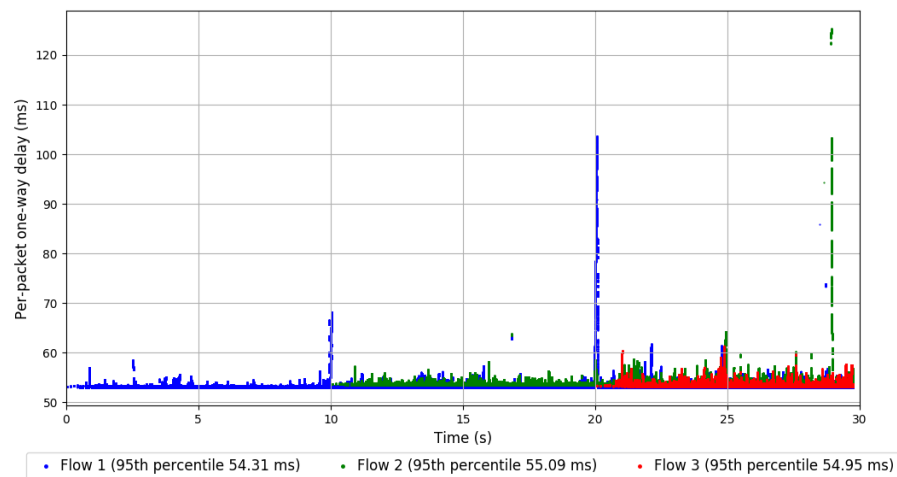
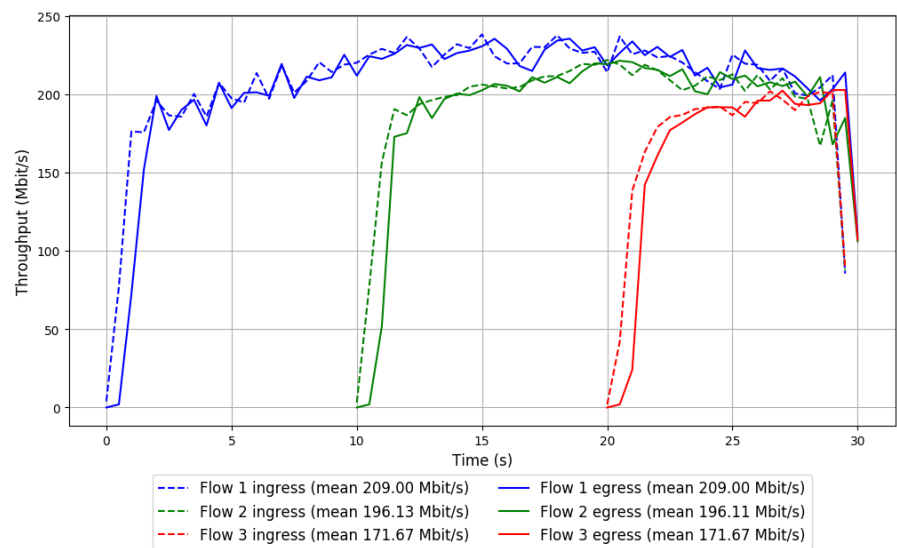


Run 4: Statistics of Indigo

Start at: 2018-09-07 03:40:46
End at: 2018-09-07 03:41:16
Local clock offset: -0.072 ms
Remote clock offset: -0.046 ms

Below is generated by plot.py at 2018-09-07 06:23:34
Datalink statistics
-- Total of 3 flows:
Average throughput: 394.87 Mbit/s
95th percentile per-packet one-way delay: 54.684 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 209.00 Mbit/s
95th percentile per-packet one-way delay: 54.308 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 196.11 Mbit/s
95th percentile per-packet one-way delay: 55.088 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 171.67 Mbit/s
95th percentile per-packet one-way delay: 54.949 ms
Loss rate: 0.03%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-09-07 04:12:21

End at: 2018-09-07 04:12:51

Local clock offset: -0.175 ms

Remote clock offset: 0.562 ms

Below is generated by plot.py at 2018-09-07 06:23:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 414.51 Mbit/s

95th percentile per-packet one-way delay: 54.771 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 220.53 Mbit/s

95th percentile per-packet one-way delay: 52.237 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 202.55 Mbit/s

95th percentile per-packet one-way delay: 55.742 ms

Loss rate: 0.01%

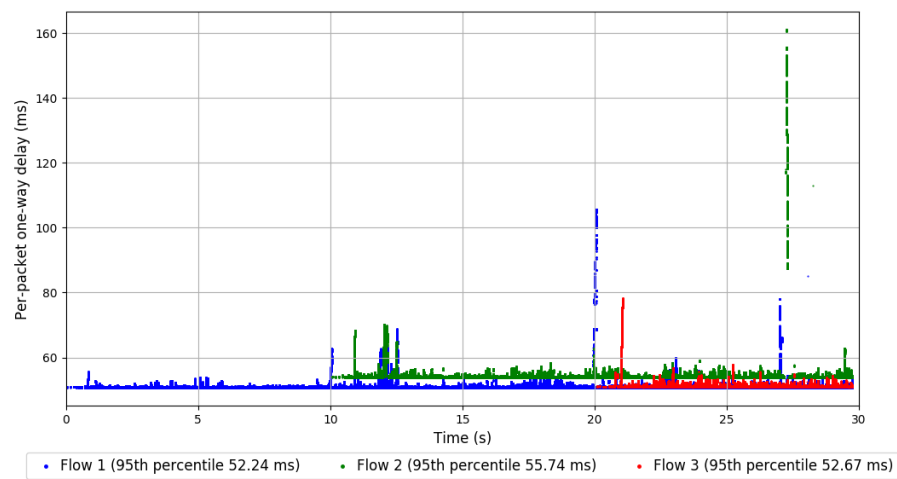
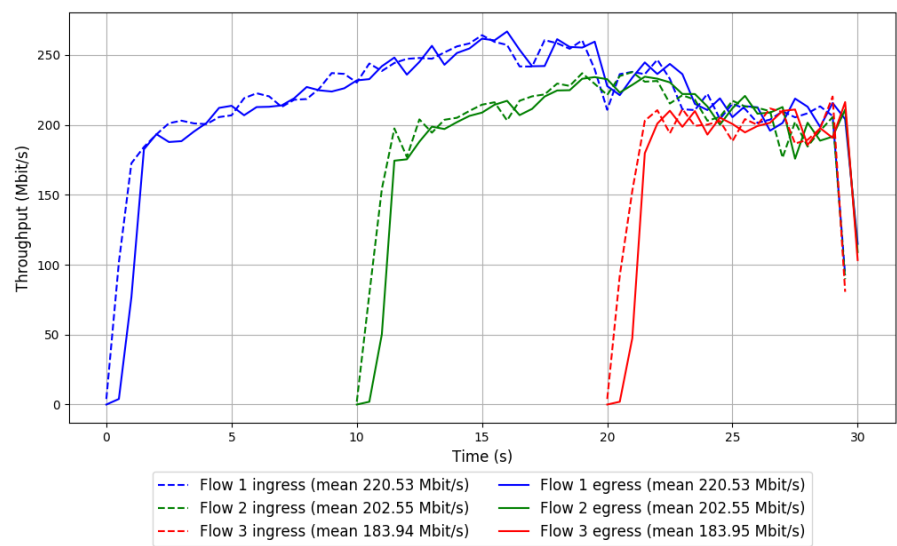
-- Flow 3:

Average throughput: 183.95 Mbit/s

95th percentile per-packet one-way delay: 52.675 ms

Loss rate: 0.00%

Run 5: Report of Indigo — Data Link



Run 1: Statistics of LEDBAT

Start at: 2018-09-07 02:14:38

End at: 2018-09-07 02:15:08

Local clock offset: -0.023 ms

Remote clock offset: 0.247 ms

Below is generated by plot.py at 2018-09-07 06:23:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 47.43 Mbit/s

95th percentile per-packet one-way delay: 54.450 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 27.35 Mbit/s

95th percentile per-packet one-way delay: 54.529 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 24.48 Mbit/s

95th percentile per-packet one-way delay: 51.914 ms

Loss rate: 0.00%

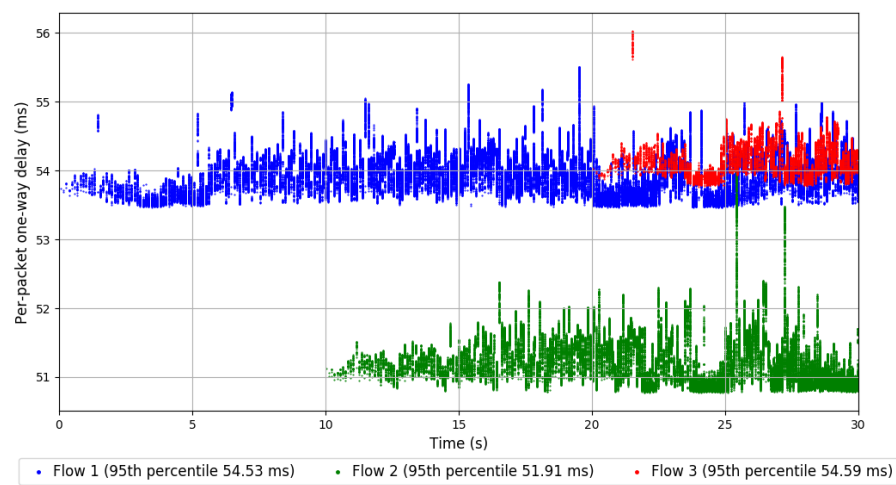
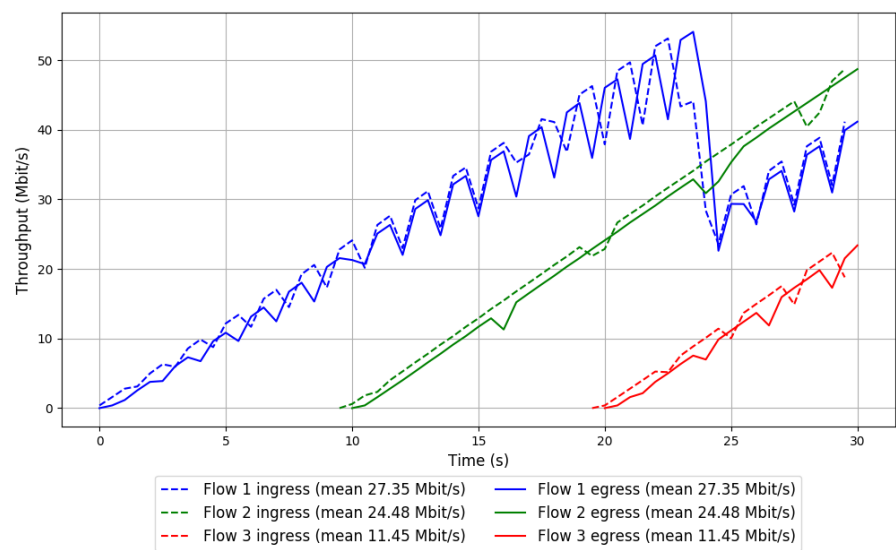
-- Flow 3:

Average throughput: 11.45 Mbit/s

95th percentile per-packet one-way delay: 54.585 ms

Loss rate: 0.00%

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-09-07 02:46:11

End at: 2018-09-07 02:46:41

Local clock offset: 0.026 ms

Remote clock offset: 0.987 ms

Below is generated by plot.py at 2018-09-07 06:23:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 52.60 Mbit/s

95th percentile per-packet one-way delay: 55.578 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 33.98 Mbit/s

95th percentile per-packet one-way delay: 55.766 ms

Loss rate: 0.02%

-- Flow 2:

Average throughput: 22.06 Mbit/s

95th percentile per-packet one-way delay: 54.920 ms

Loss rate: 0.00%

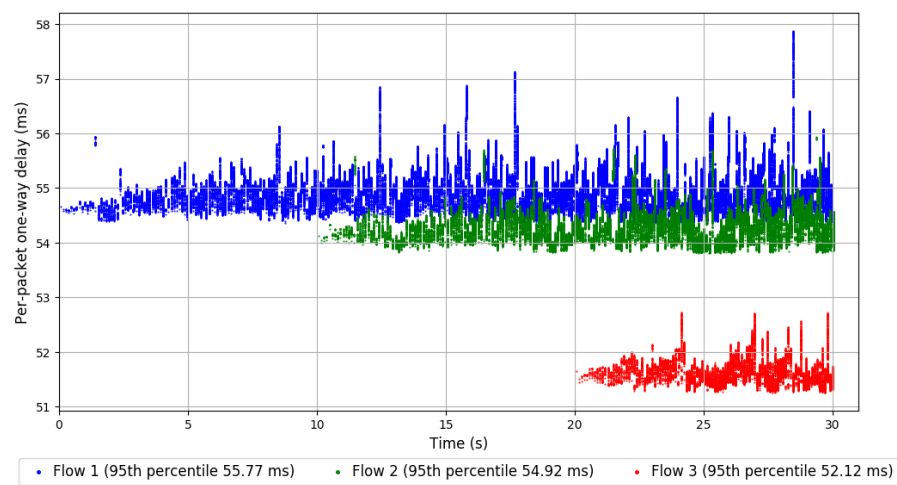
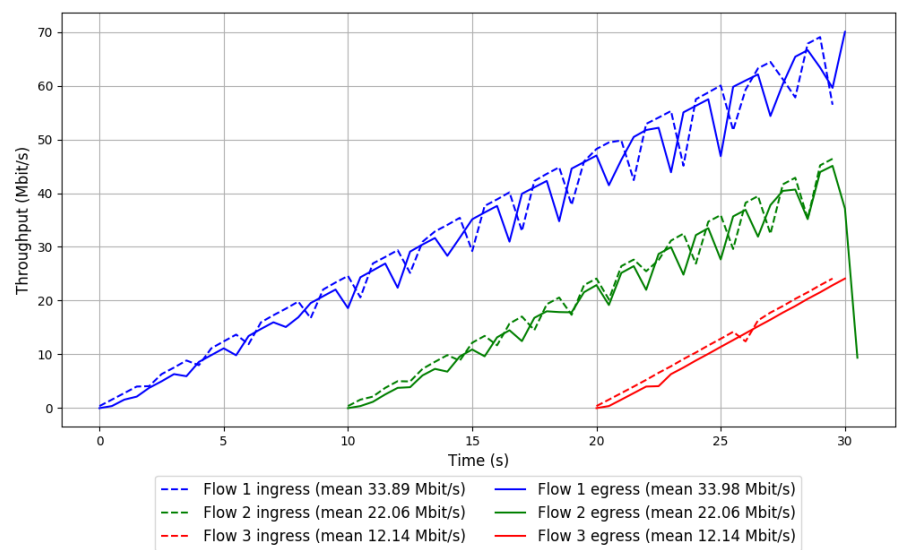
-- Flow 3:

Average throughput: 12.14 Mbit/s

95th percentile per-packet one-way delay: 52.124 ms

Loss rate: 0.00%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-09-07 03:17:49

End at: 2018-09-07 03:18:19

Local clock offset: 0.027 ms

Remote clock offset: -0.64 ms

Below is generated by plot.py at 2018-09-07 06:23:34

Datalink statistics

-- Total of 3 flows:

Average throughput: 55.52 Mbit/s

95th percentile per-packet one-way delay: 52.879 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 36.65 Mbit/s

95th percentile per-packet one-way delay: 50.900 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 22.73 Mbit/s

95th percentile per-packet one-way delay: 50.866 ms

Loss rate: 0.00%

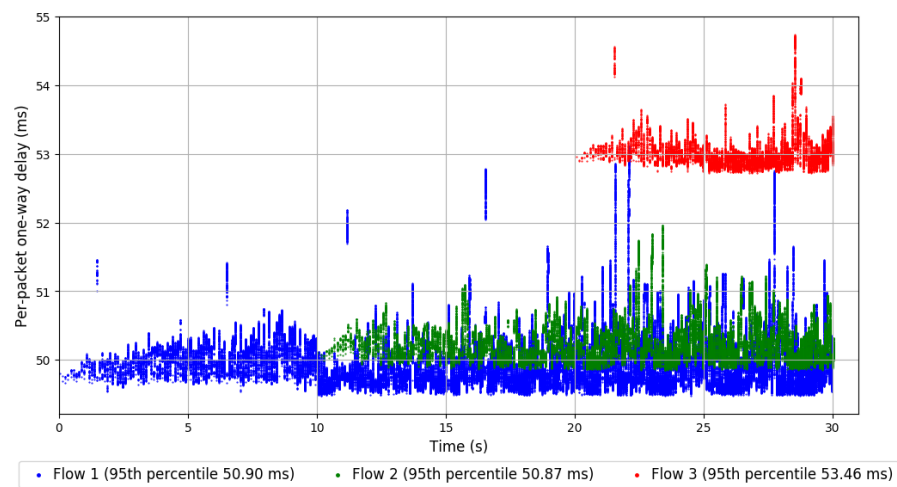
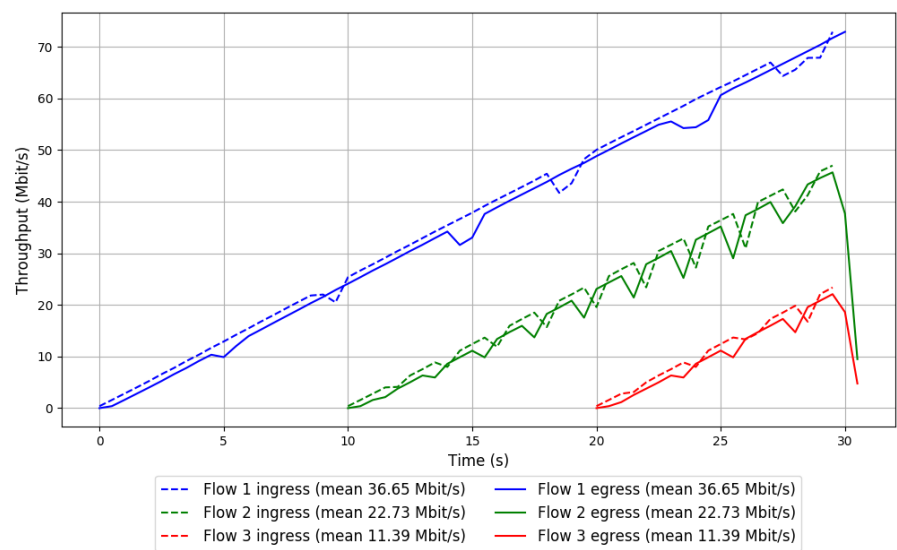
-- Flow 3:

Average throughput: 11.39 Mbit/s

95th percentile per-packet one-way delay: 53.464 ms

Loss rate: 0.00%

Run 3: Report of LEDBAT — Data Link

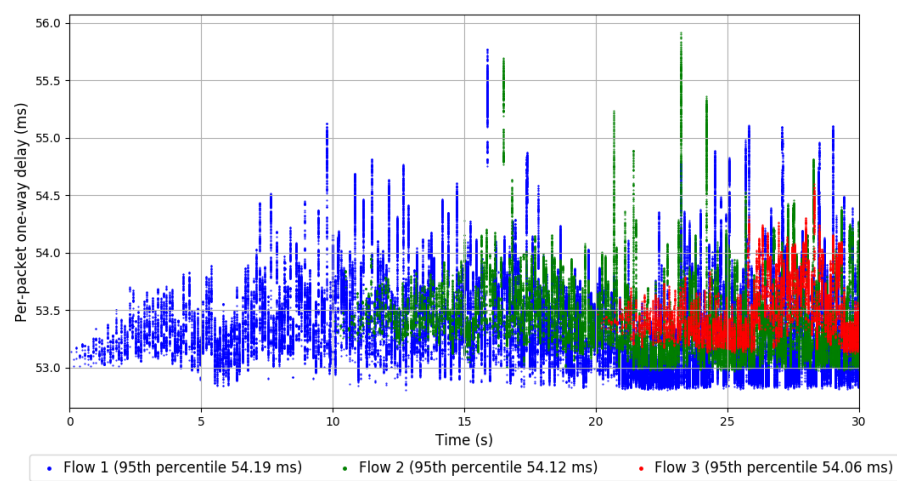
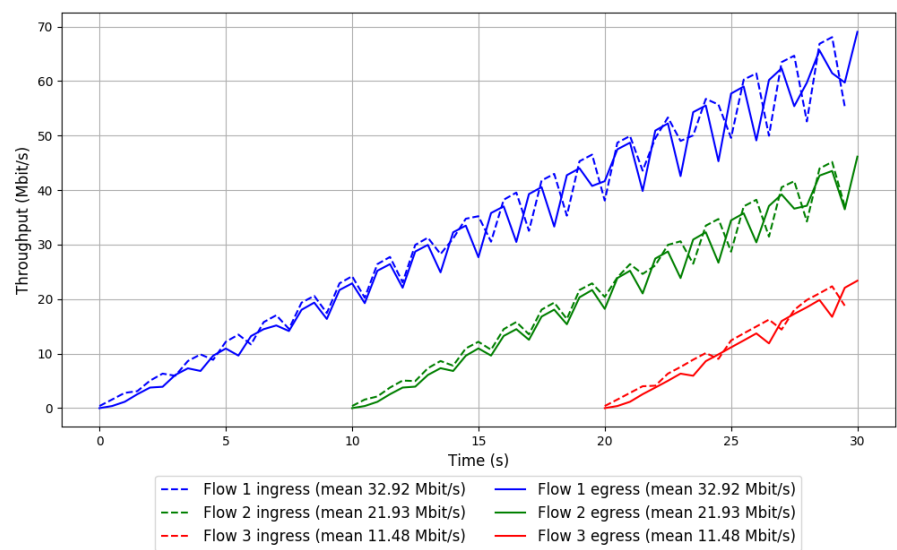


Run 4: Statistics of LEDBAT

Start at: 2018-09-07 03:49:25
End at: 2018-09-07 03:49:55
Local clock offset: -0.105 ms
Remote clock offset: -0.235 ms

Below is generated by plot.py at 2018-09-07 06:23:34
Datalink statistics
-- Total of 3 flows:
Average throughput: 51.29 Mbit/s
95th percentile per-packet one-way delay: 54.149 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 32.92 Mbit/s
95th percentile per-packet one-way delay: 54.188 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 21.93 Mbit/s
95th percentile per-packet one-way delay: 54.115 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 11.48 Mbit/s
95th percentile per-packet one-way delay: 54.058 ms
Loss rate: 0.00%

Run 4: Report of LEDBAT — Data Link

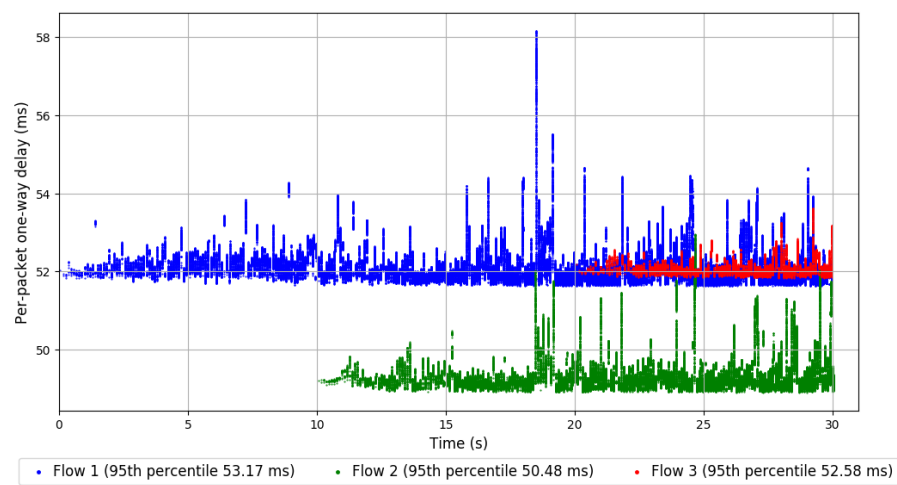
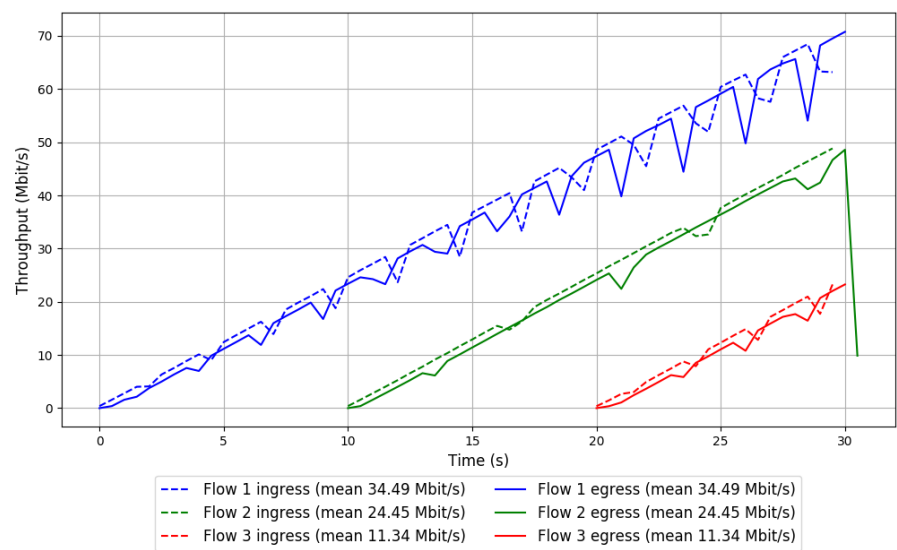


Run 5: Statistics of LEDBAT

Start at: 2018-09-07 04:21:06
End at: 2018-09-07 04:21:36
Local clock offset: -0.11 ms
Remote clock offset: -1.392 ms

Below is generated by plot.py at 2018-09-07 06:23:34
Datalink statistics
-- Total of 3 flows:
Average throughput: 54.48 Mbit/s
95th percentile per-packet one-way delay: 52.924 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 34.49 Mbit/s
95th percentile per-packet one-way delay: 53.175 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 24.45 Mbit/s
95th percentile per-packet one-way delay: 50.481 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 11.34 Mbit/s
95th percentile per-packet one-way delay: 52.584 ms
Loss rate: 0.00%

Run 5: Report of LEDBAT — Data Link



Run 1: Statistics of Indigo-Muses

Start at: 2018-09-07 02:27:06

End at: 2018-09-07 02:27:36

Local clock offset: 0.113 ms

Remote clock offset: 1.341 ms

Below is generated by plot.py at 2018-09-07 06:25:22

Datalink statistics

-- Total of 3 flows:

Average throughput: 935.57 Mbit/s

95th percentile per-packet one-way delay: 57.632 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 521.68 Mbit/s

95th percentile per-packet one-way delay: 57.871 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 444.51 Mbit/s

95th percentile per-packet one-way delay: 57.603 ms

Loss rate: 0.01%

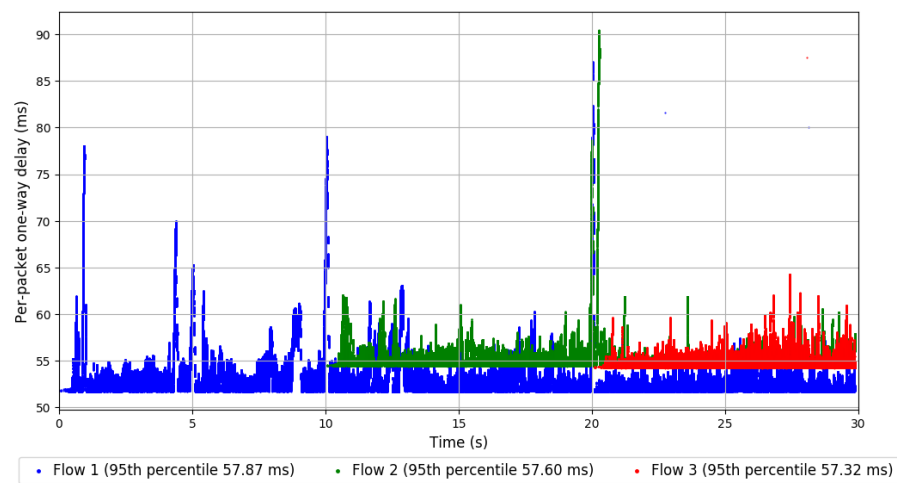
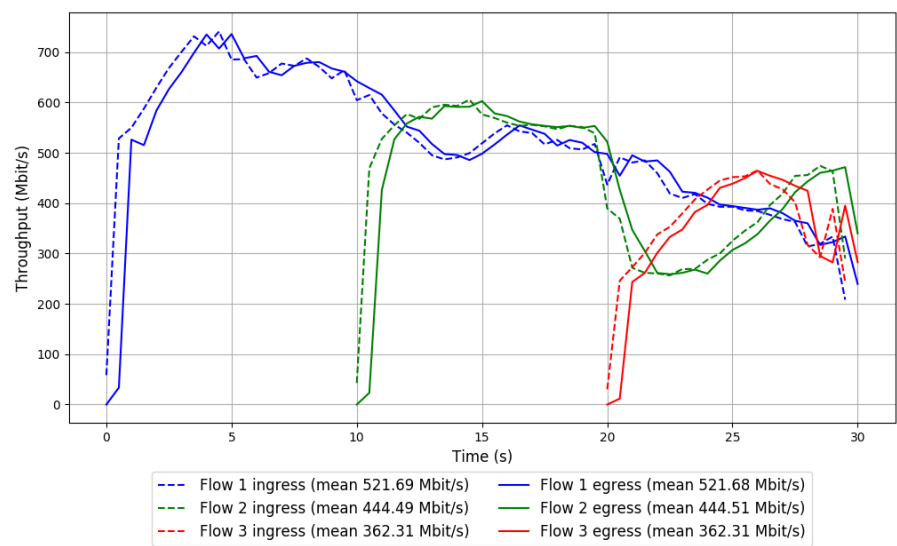
-- Flow 3:

Average throughput: 362.31 Mbit/s

95th percentile per-packet one-way delay: 57.321 ms

Loss rate: 0.06%

Run 1: Report of Indigo-Muses — Data Link

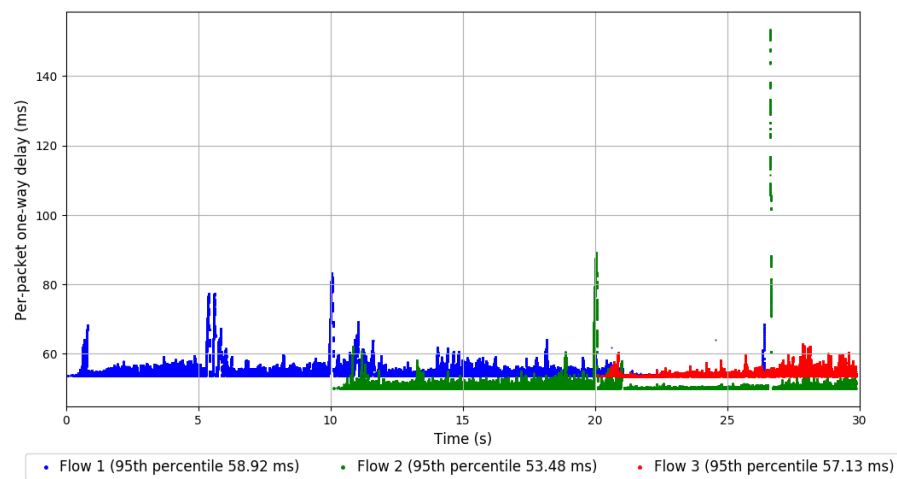
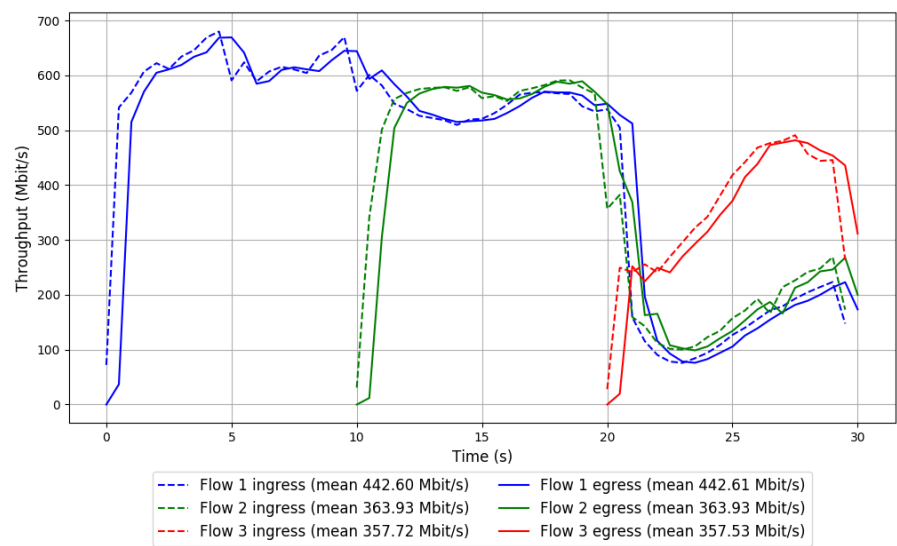


Run 2: Statistics of Indigo-Muses

Start at: 2018-09-07 02:58:51
End at: 2018-09-07 02:59:21
Local clock offset: -0.187 ms
Remote clock offset: -0.069 ms

Below is generated by plot.py at 2018-09-07 06:25:22
Datalink statistics
-- Total of 3 flows:
Average throughput: 801.26 Mbit/s
95th percentile per-packet one-way delay: 57.649 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 442.61 Mbit/s
95th percentile per-packet one-way delay: 58.922 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 363.93 Mbit/s
95th percentile per-packet one-way delay: 53.475 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 357.53 Mbit/s
95th percentile per-packet one-way delay: 57.132 ms
Loss rate: 0.07%

Run 2: Report of Indigo-Muses — Data Link



Run 3: Statistics of Indigo-Muses

Start at: 2018-09-07 03:30:21

End at: 2018-09-07 03:30:51

Local clock offset: 0.059 ms

Remote clock offset: 0.033 ms

Below is generated by plot.py at 2018-09-07 06:25:22

Datalink statistics

-- Total of 3 flows:

Average throughput: 638.89 Mbit/s

95th percentile per-packet one-way delay: 57.150 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 329.20 Mbit/s

95th percentile per-packet one-way delay: 59.095 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 327.37 Mbit/s

95th percentile per-packet one-way delay: 53.269 ms

Loss rate: 0.00%

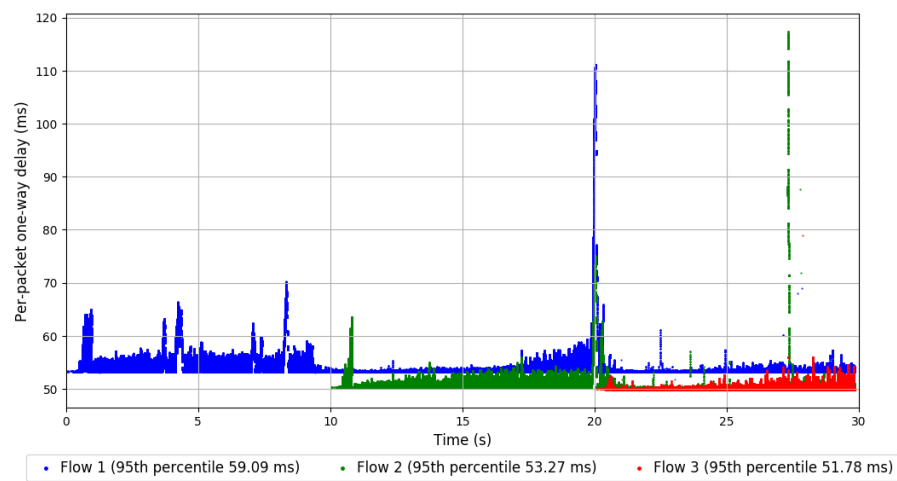
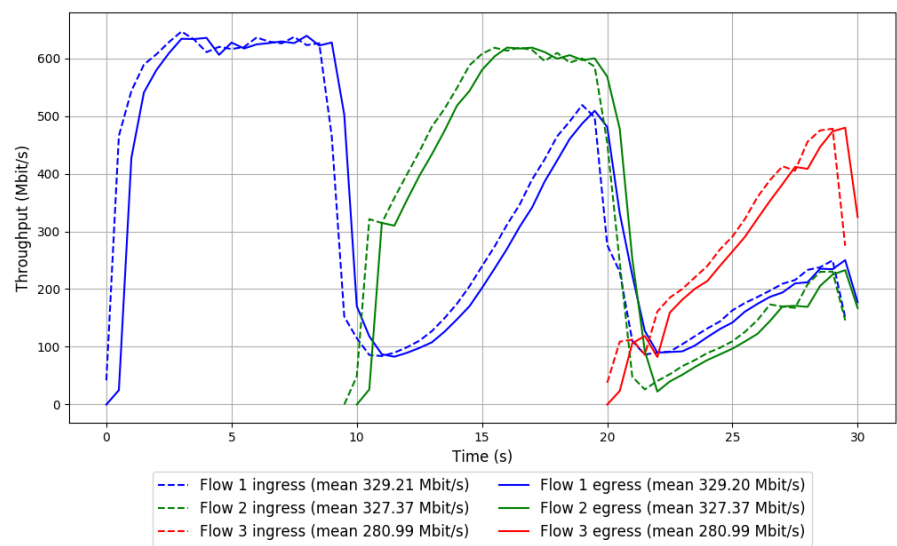
-- Flow 3:

Average throughput: 280.99 Mbit/s

95th percentile per-packet one-way delay: 51.783 ms

Loss rate: 0.00%

Run 3: Report of Indigo-Muses — Data Link



Run 4: Statistics of Indigo-Muses

Start at: 2018-09-07 04:01:47

End at: 2018-09-07 04:02:17

Local clock offset: -0.139 ms

Remote clock offset: 1.077 ms

Below is generated by plot.py at 2018-09-07 06:28:18

Datalink statistics

-- Total of 3 flows:

Average throughput: 954.93 Mbit/s

95th percentile per-packet one-way delay: 59.789 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 533.84 Mbit/s

95th percentile per-packet one-way delay: 61.756 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 438.31 Mbit/s

95th percentile per-packet one-way delay: 55.485 ms

Loss rate: 0.00%

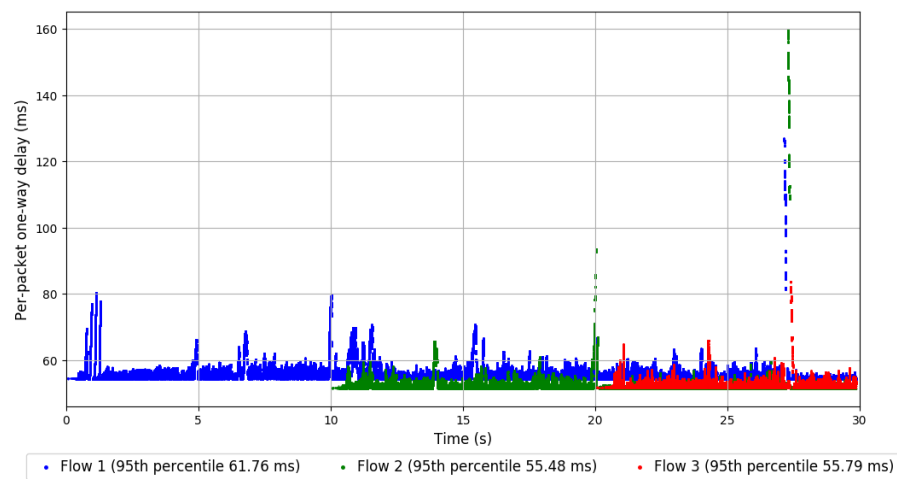
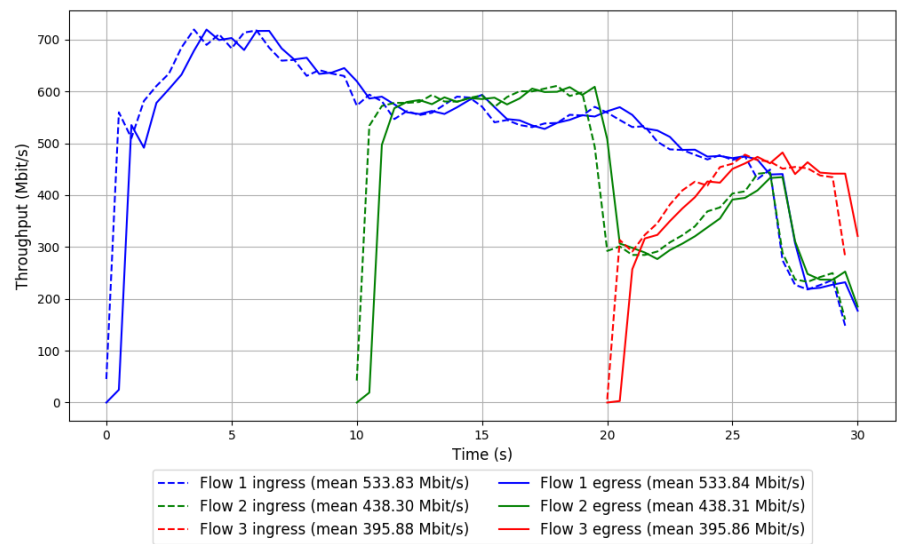
-- Flow 3:

Average throughput: 395.86 Mbit/s

95th percentile per-packet one-way delay: 55.794 ms

Loss rate: 0.00%

Run 4: Report of Indigo-Muses — Data Link

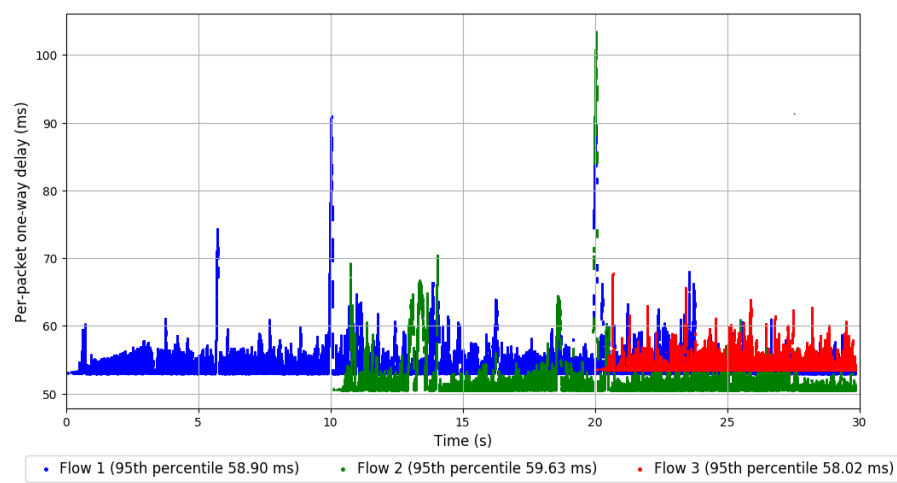
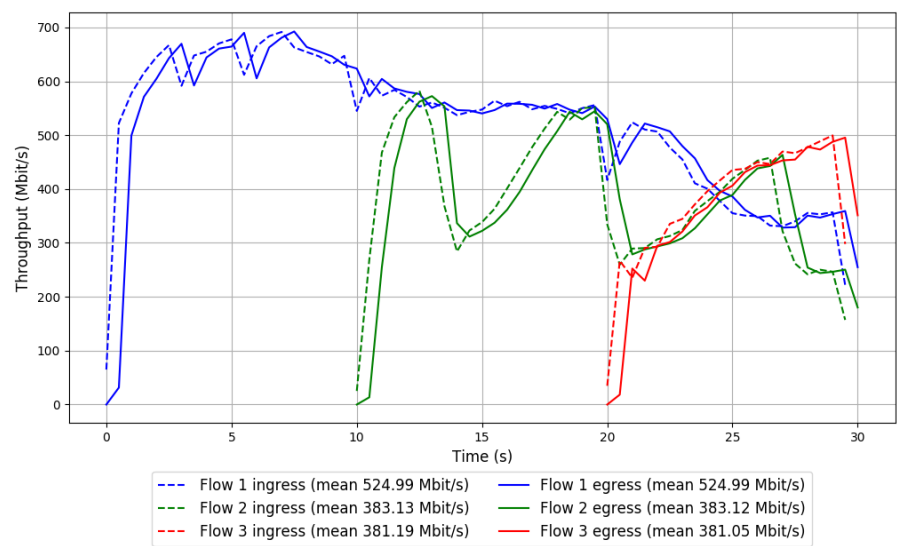


Run 5: Statistics of Indigo-Muses

Start at: 2018-09-07 04:33:23
End at: 2018-09-07 04:33:53
Local clock offset: -0.258 ms
Remote clock offset: -0.211 ms

Below is generated by plot.py at 2018-09-07 06:28:18
Datalink statistics
-- Total of 3 flows:
Average throughput: 903.81 Mbit/s
95th percentile per-packet one-way delay: 58.842 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 524.99 Mbit/s
95th percentile per-packet one-way delay: 58.897 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 383.12 Mbit/s
95th percentile per-packet one-way delay: 59.629 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 381.05 Mbit/s
95th percentile per-packet one-way delay: 58.015 ms
Loss rate: 0.07%

Run 5: Report of Indigo-Muses — Data Link

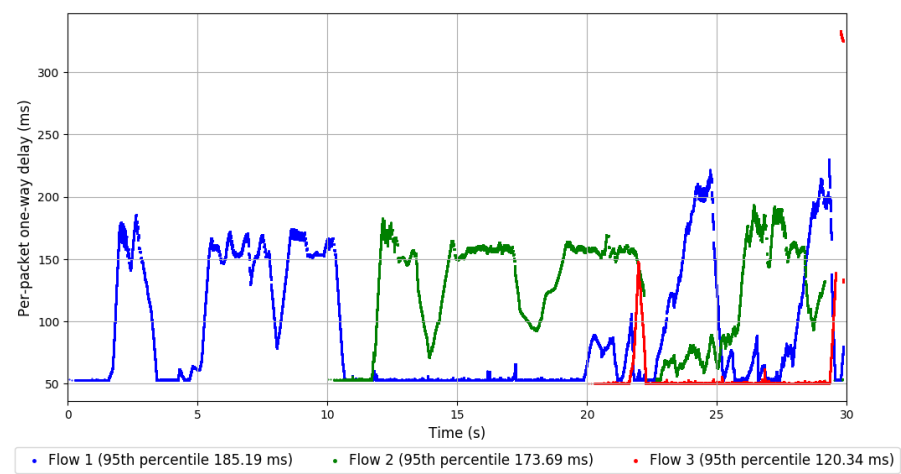
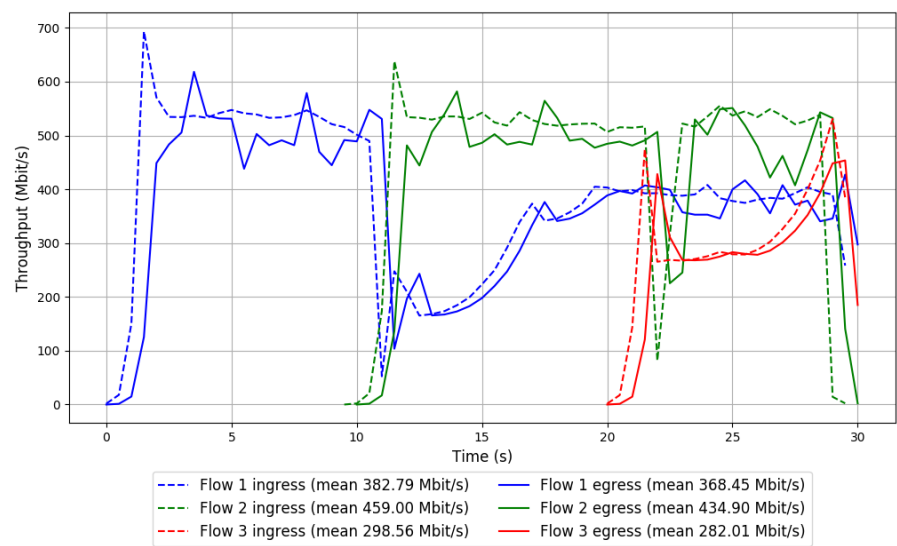


Run 1: Statistics of PCC-Allegro

Start at: 2018-09-07 02:17:50
End at: 2018-09-07 02:18:20
Local clock offset: -0.01 ms
Remote clock offset: -0.153 ms

Below is generated by plot.py at 2018-09-07 06:36:14
Datalink statistics
-- Total of 3 flows:
Average throughput: 750.05 Mbit/s
95th percentile per-packet one-way delay: 175.652 ms
Loss rate: 4.56%
-- Flow 1:
Average throughput: 368.45 Mbit/s
95th percentile per-packet one-way delay: 185.192 ms
Loss rate: 3.76%
-- Flow 2:
Average throughput: 434.90 Mbit/s
95th percentile per-packet one-way delay: 173.694 ms
Loss rate: 5.25%
-- Flow 3:
Average throughput: 282.01 Mbit/s
95th percentile per-packet one-way delay: 120.339 ms
Loss rate: 5.54%

Run 1: Report of PCC-Allegro — Data Link

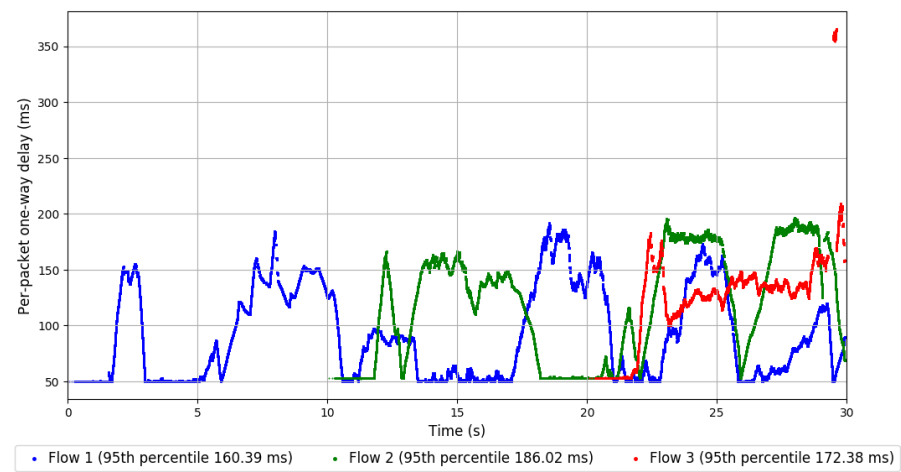
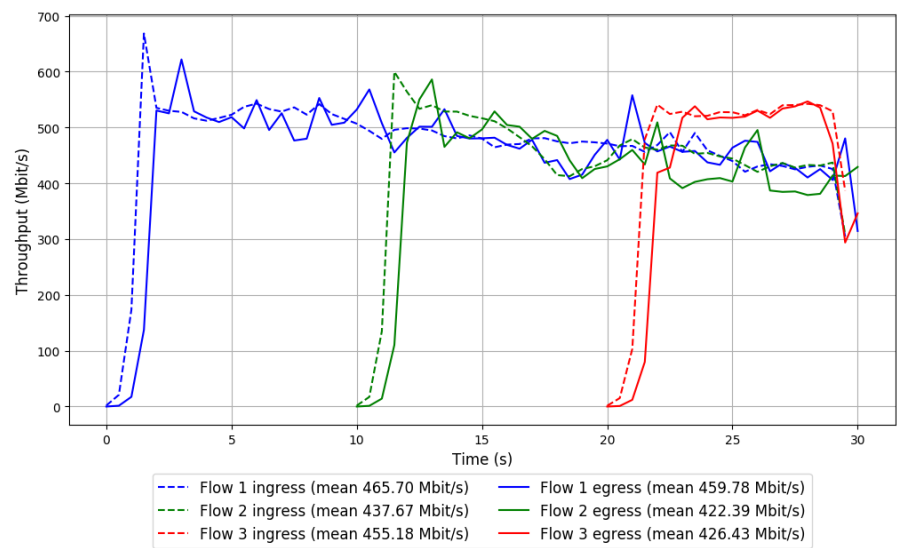


Run 2: Statistics of PCC-Allegro

Start at: 2018-09-07 02:49:20
End at: 2018-09-07 02:49:50
Local clock offset: 0.015 ms
Remote clock offset: -0.381 ms

Below is generated by plot.py at 2018-09-07 06:42:10
Datalink statistics
-- Total of 3 flows:
Average throughput: 880.77 Mbit/s
95th percentile per-packet one-way delay: 179.647 ms
Loss rate: 2.82%
-- Flow 1:
Average throughput: 459.78 Mbit/s
95th percentile per-packet one-way delay: 160.393 ms
Loss rate: 1.27%
-- Flow 2:
Average throughput: 422.39 Mbit/s
95th percentile per-packet one-way delay: 186.019 ms
Loss rate: 3.50%
-- Flow 3:
Average throughput: 426.43 Mbit/s
95th percentile per-packet one-way delay: 172.382 ms
Loss rate: 6.33%

Run 2: Report of PCC-Allegro — Data Link

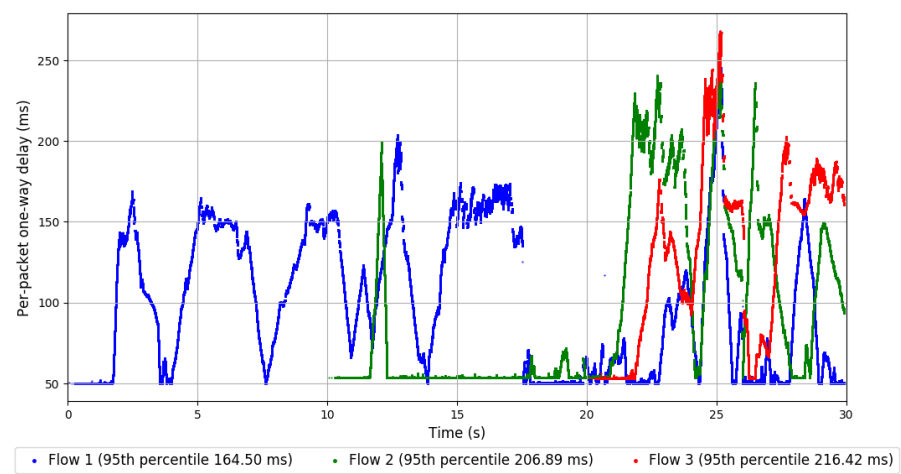
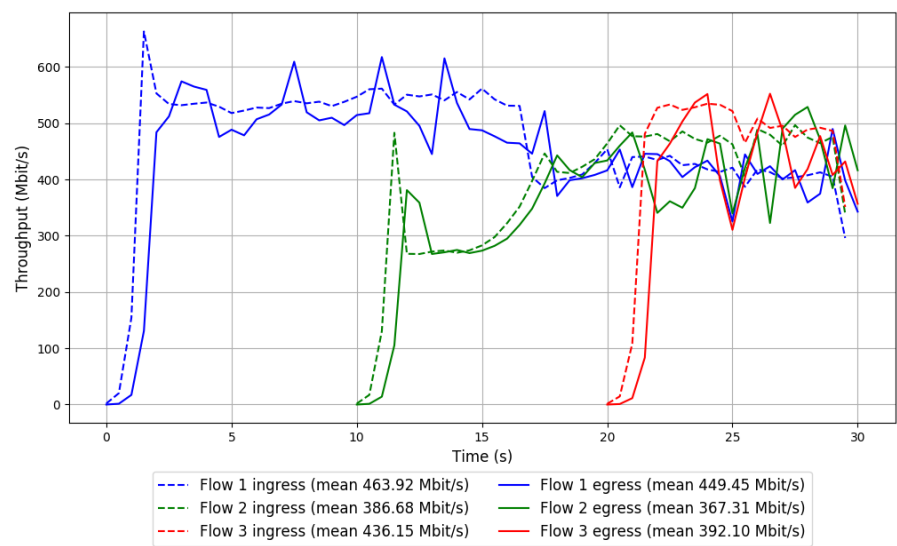


Run 3: Statistics of PCC-Allegro

Start at: 2018-09-07 03:20:58
End at: 2018-09-07 03:21:28
Local clock offset: 0.003 ms
Remote clock offset: -0.269 ms

Below is generated by plot.py at 2018-09-07 06:51:16
Datalink statistics
-- Total of 3 flows:
Average throughput: 822.40 Mbit/s
95th percentile per-packet one-way delay: 189.187 ms
Loss rate: 4.84%
-- Flow 1:
Average throughput: 449.45 Mbit/s
95th percentile per-packet one-way delay: 164.505 ms
Loss rate: 3.12%
-- Flow 2:
Average throughput: 367.31 Mbit/s
95th percentile per-packet one-way delay: 206.886 ms
Loss rate: 5.02%
-- Flow 3:
Average throughput: 392.10 Mbit/s
95th percentile per-packet one-way delay: 216.420 ms
Loss rate: 10.10%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-09-07 03:52:28

End at: 2018-09-07 03:52:58

Local clock offset: -0.175 ms

Remote clock offset: 0.112 ms

Below is generated by plot.py at 2018-09-07 06:51:28

Datalink statistics

-- Total of 3 flows:

Average throughput: 806.17 Mbit/s

95th percentile per-packet one-way delay: 172.619 ms

Loss rate: 5.17%

-- Flow 1:

Average throughput: 427.33 Mbit/s

95th percentile per-packet one-way delay: 172.111 ms

Loss rate: 5.79%

-- Flow 2:

Average throughput: 410.75 Mbit/s

95th percentile per-packet one-way delay: 175.417 ms

Loss rate: 6.10%

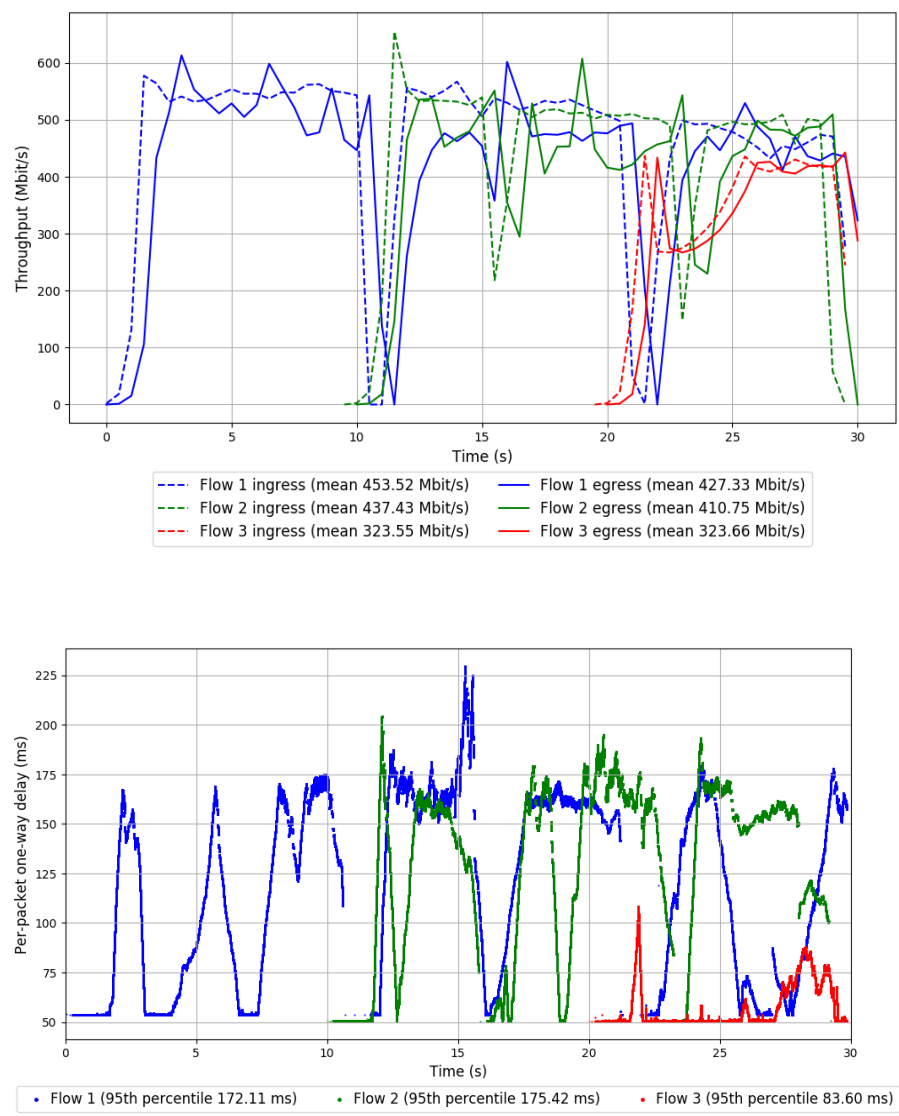
-- Flow 3:

Average throughput: 323.66 Mbit/s

95th percentile per-packet one-way delay: 83.597 ms

Loss rate: 0.00%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-09-07 04:24:10

End at: 2018-09-07 04:24:40

Local clock offset: -0.149 ms

Remote clock offset: 0.422 ms

Below is generated by plot.py at 2018-09-07 06:51:28

Datalink statistics

-- Total of 3 flows:

Average throughput: 777.36 Mbit/s

95th percentile per-packet one-way delay: 159.216 ms

Loss rate: 0.58%

-- Flow 1:

Average throughput: 394.04 Mbit/s

95th percentile per-packet one-way delay: 134.606 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 445.37 Mbit/s

95th percentile per-packet one-way delay: 161.686 ms

Loss rate: 1.19%

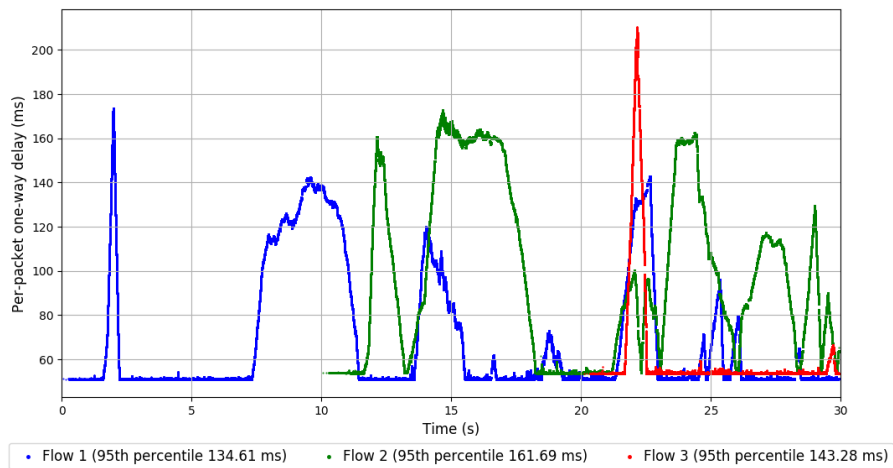
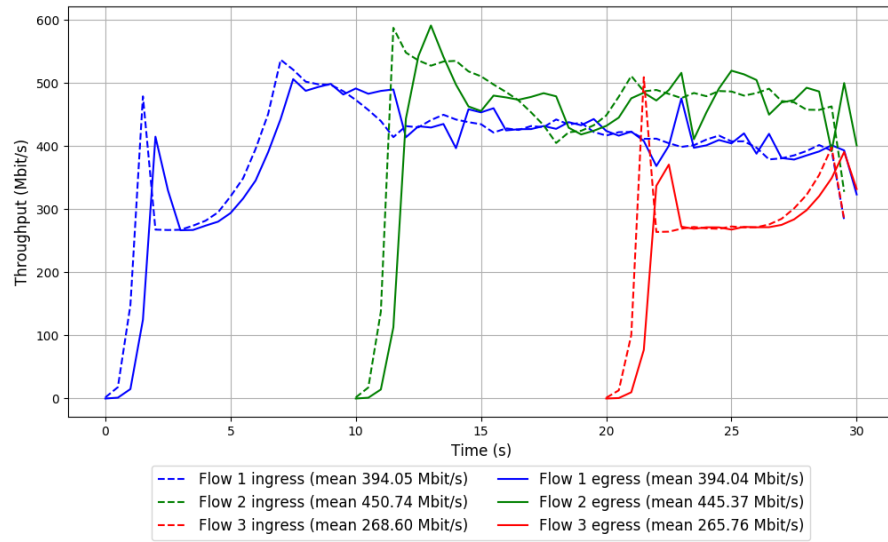
-- Flow 3:

Average throughput: 265.76 Mbit/s

95th percentile per-packet one-way delay: 143.281 ms

Loss rate: 1.06%

Run 5: Report of PCC-Allegro — Data Link

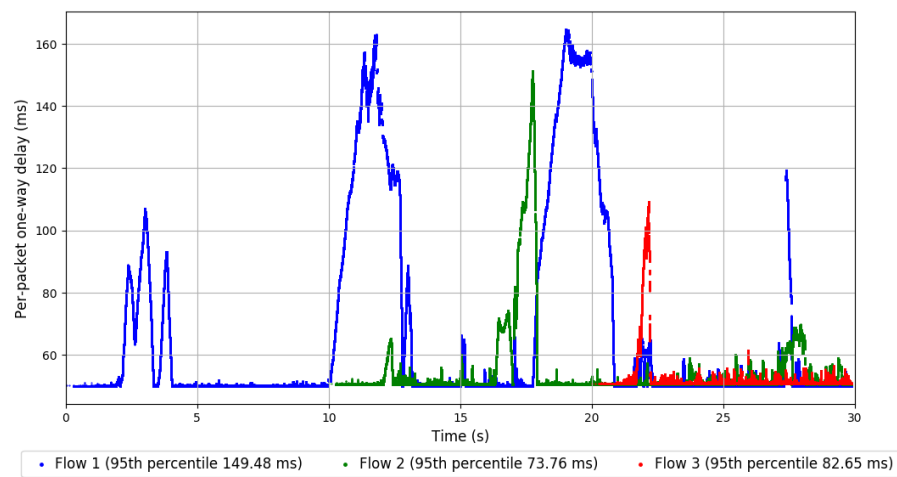
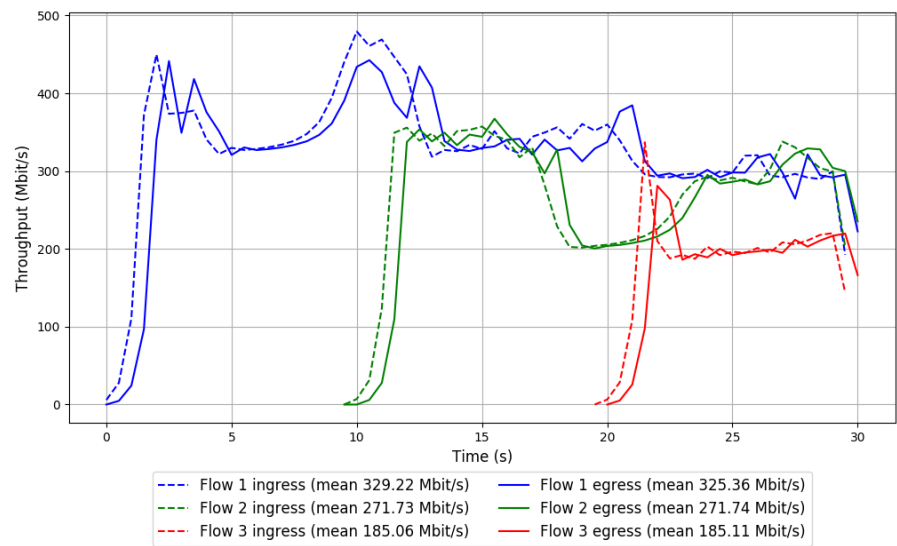


```
Run 1: Statistics of PCC-Expr

Start at: 2018-09-07 02:01:44
End at: 2018-09-07 02:02:14
Local clock offset: -0.155 ms
Remote clock offset: -0.191 ms

# Below is generated by plot.py at 2018-09-07 06:51:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 567.58 Mbit/s
95th percentile per-packet one-way delay: 134.785 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 325.36 Mbit/s
95th percentile per-packet one-way delay: 149.477 ms
Loss rate: 1.17%
-- Flow 2:
Average throughput: 271.74 Mbit/s
95th percentile per-packet one-way delay: 73.757 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 185.11 Mbit/s
95th percentile per-packet one-way delay: 82.654 ms
Loss rate: 0.00%
```

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2018-09-07 02:33:33

End at: 2018-09-07 02:34:03

Local clock offset: 0.065 ms

Remote clock offset: 0.19 ms

Below is generated by plot.py at 2018-09-07 06:51:28

Datalink statistics

-- Total of 3 flows:

Average throughput: 520.53 Mbit/s

95th percentile per-packet one-way delay: 160.135 ms

Loss rate: 1.33%

-- Flow 1:

Average throughput: 306.80 Mbit/s

95th percentile per-packet one-way delay: 165.797 ms

Loss rate: 2.18%

-- Flow 2:

Average throughput: 276.31 Mbit/s

95th percentile per-packet one-way delay: 121.996 ms

Loss rate: 0.08%

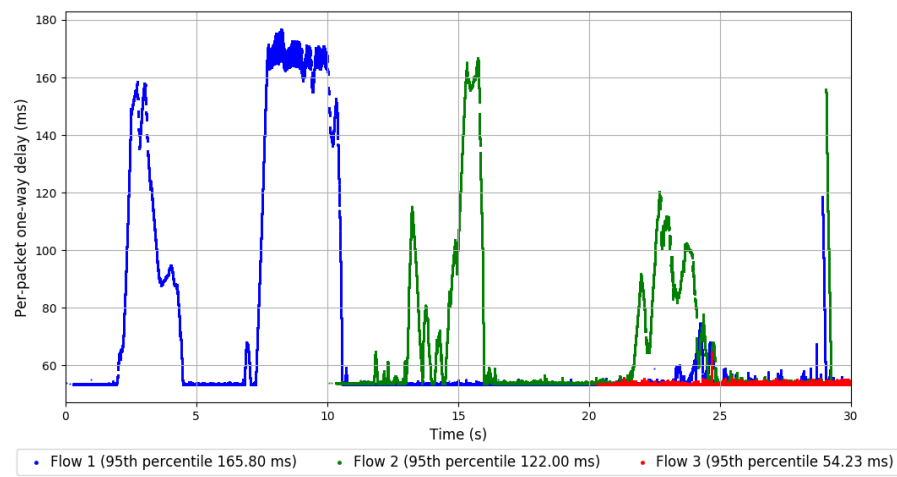
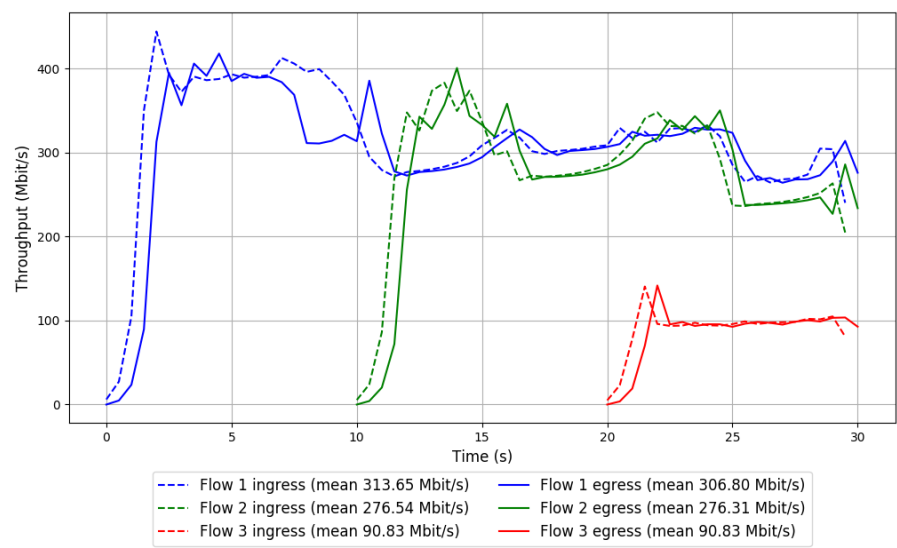
-- Flow 3:

Average throughput: 90.83 Mbit/s

95th percentile per-packet one-way delay: 54.233 ms

Loss rate: 0.00%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-09-07 03:05:10

End at: 2018-09-07 03:05:40

Local clock offset: 0.057 ms

Remote clock offset: 0.084 ms

Below is generated by plot.py at 2018-09-07 06:51:28

Datalink statistics

-- Total of 3 flows:

Average throughput: 548.09 Mbit/s

95th percentile per-packet one-way delay: 150.711 ms

Loss rate: 0.65%

-- Flow 1:

Average throughput: 309.23 Mbit/s

95th percentile per-packet one-way delay: 144.529 ms

Loss rate: 0.78%

-- Flow 2:

Average throughput: 262.12 Mbit/s

95th percentile per-packet one-way delay: 161.911 ms

Loss rate: 0.64%

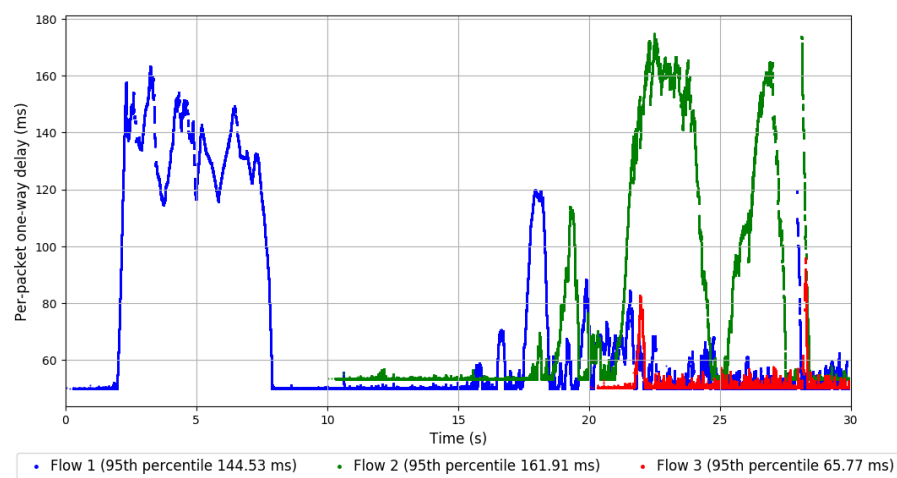
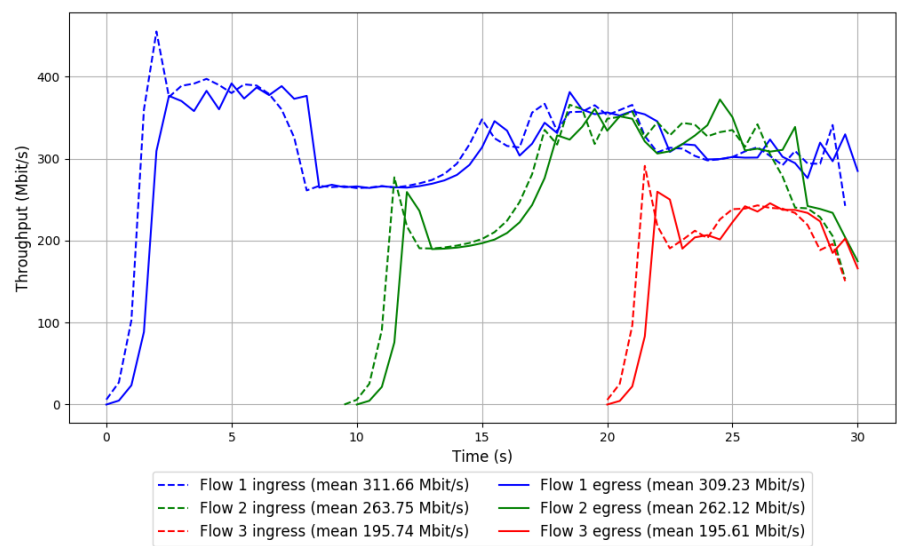
-- Flow 3:

Average throughput: 195.61 Mbit/s

95th percentile per-packet one-way delay: 65.770 ms

Loss rate: 0.08%

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

Start at: 2018-09-07 03:36:34

End at: 2018-09-07 03:37:04

Local clock offset: -0.167 ms

Remote clock offset: 0.933 ms

Below is generated by plot.py at 2018-09-07 06:58:40

Datalink statistics

-- Total of 3 flows:

Average throughput: 618.01 Mbit/s

95th percentile per-packet one-way delay: 176.758 ms

Loss rate: 7.03%

-- Flow 1:

Average throughput: 342.17 Mbit/s

95th percentile per-packet one-way delay: 176.460 ms

Loss rate: 7.42%

-- Flow 2:

Average throughput: 329.50 Mbit/s

95th percentile per-packet one-way delay: 177.457 ms

Loss rate: 7.90%

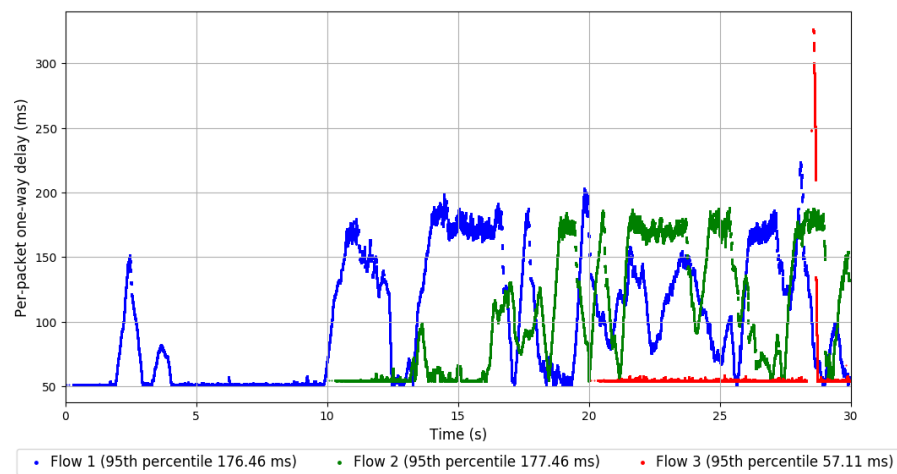
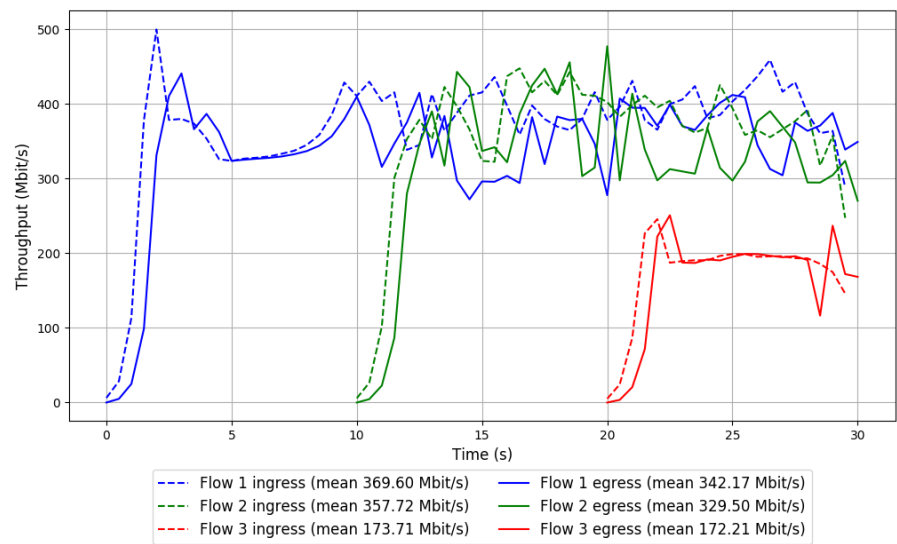
-- Flow 3:

Average throughput: 172.21 Mbit/s

95th percentile per-packet one-way delay: 57.106 ms

Loss rate: 0.88%

Run 4: Report of PCC-Expr — Data Link

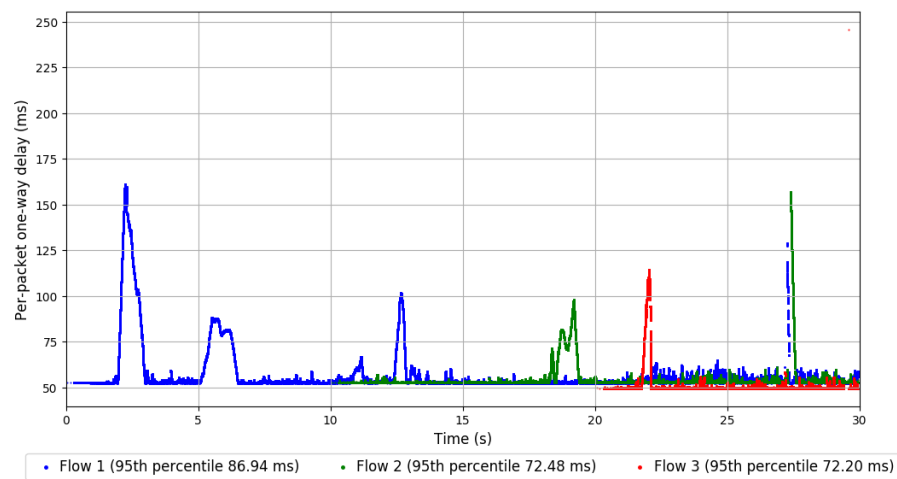
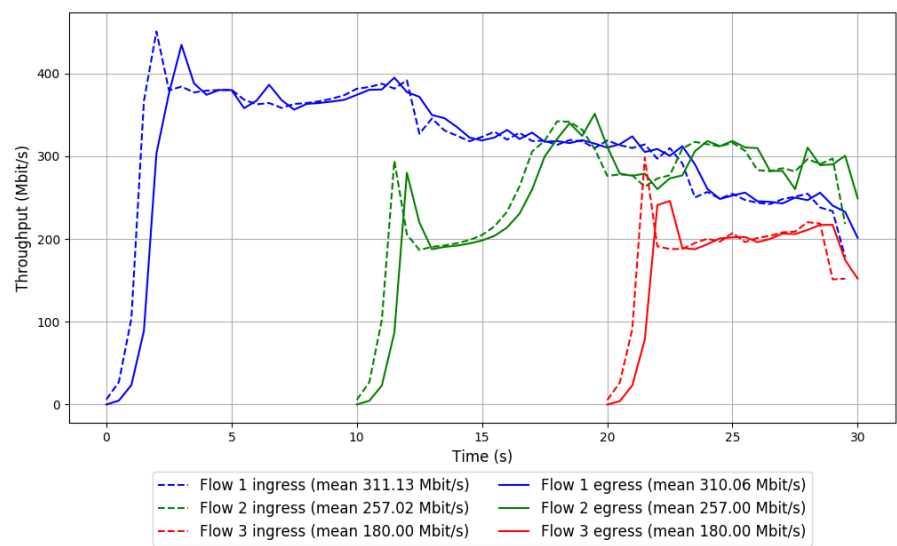


Run 5: Statistics of PCC-Expr

Start at: 2018-09-07 04:08:18
End at: 2018-09-07 04:08:48
Local clock offset: -0.156 ms
Remote clock offset: -0.524 ms

Below is generated by plot.py at 2018-09-07 07:00:46
Datalink statistics
-- Total of 3 flows:
Average throughput: 540.32 Mbit/s
95th percentile per-packet one-way delay: 81.480 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 310.06 Mbit/s
95th percentile per-packet one-way delay: 86.943 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 257.00 Mbit/s
95th percentile per-packet one-way delay: 72.479 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 180.00 Mbit/s
95th percentile per-packet one-way delay: 72.199 ms
Loss rate: 0.00%

Run 5: Report of PCC-Expr — Data Link

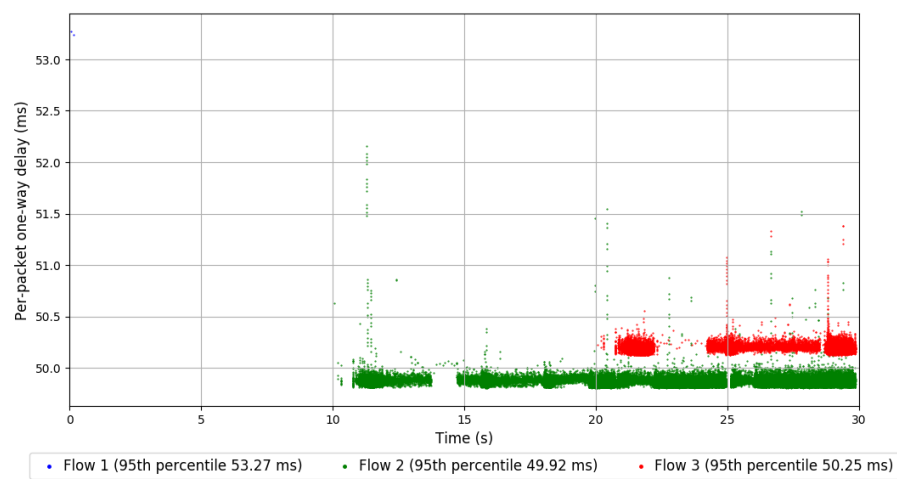
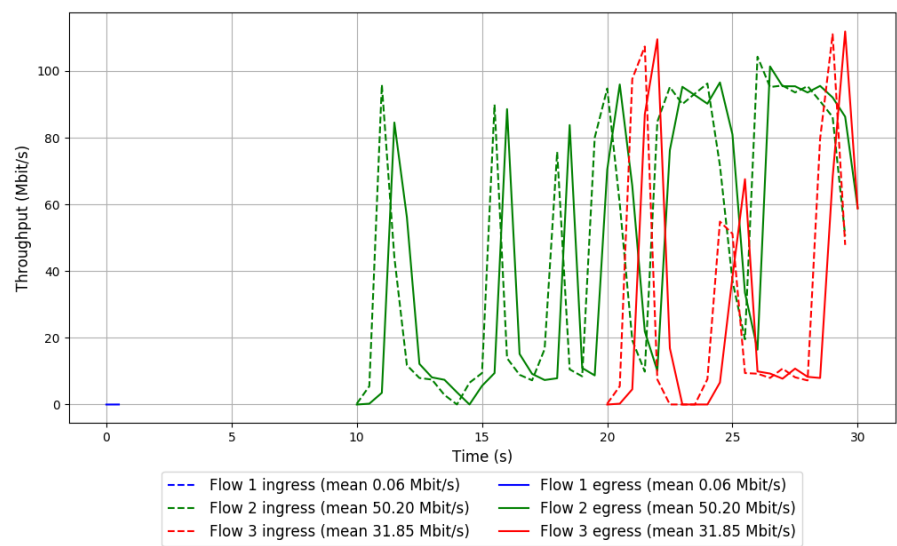


Run 1: Statistics of QUIC Cubic

Start at: 2018-09-07 02:29:02
End at: 2018-09-07 02:29:32
Local clock offset: 0.032 ms
Remote clock offset: -0.082 ms

Below is generated by plot.py at 2018-09-07 07:00:46
Datalink statistics
-- Total of 3 flows:
Average throughput: 43.79 Mbit/s
95th percentile per-packet one-way delay: 50.211 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 53.270 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.20 Mbit/s
95th percentile per-packet one-way delay: 49.920 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 31.85 Mbit/s
95th percentile per-packet one-way delay: 50.252 ms
Loss rate: 0.00%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-09-07 03:00:40

End at: 2018-09-07 03:01:10

Local clock offset: -0.323 ms

Remote clock offset: 1.177 ms

Below is generated by plot.py at 2018-09-07 07:00:46

Datalink statistics

-- Total of 3 flows:

Average throughput: 104.01 Mbit/s

95th percentile per-packet one-way delay: 54.953 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 52.60 Mbit/s

95th percentile per-packet one-way delay: 51.905 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 51.48 Mbit/s

95th percentile per-packet one-way delay: 54.984 ms

Loss rate: 0.02%

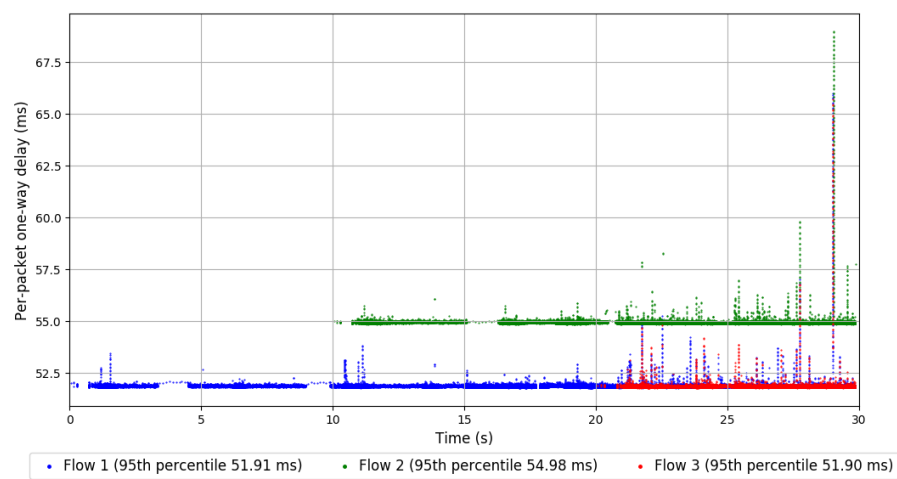
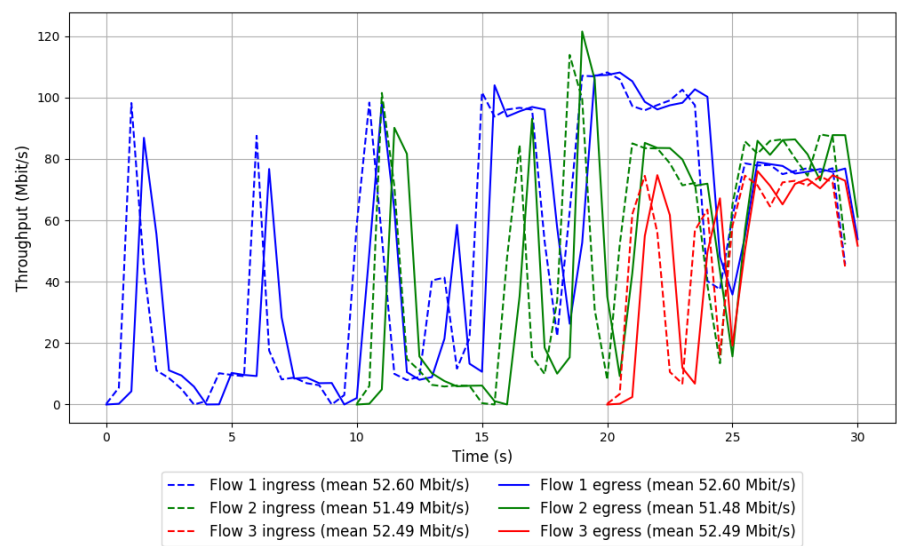
-- Flow 3:

Average throughput: 52.49 Mbit/s

95th percentile per-packet one-way delay: 51.896 ms

Loss rate: 0.00%

Run 2: Report of QUIC Cubic — Data Link

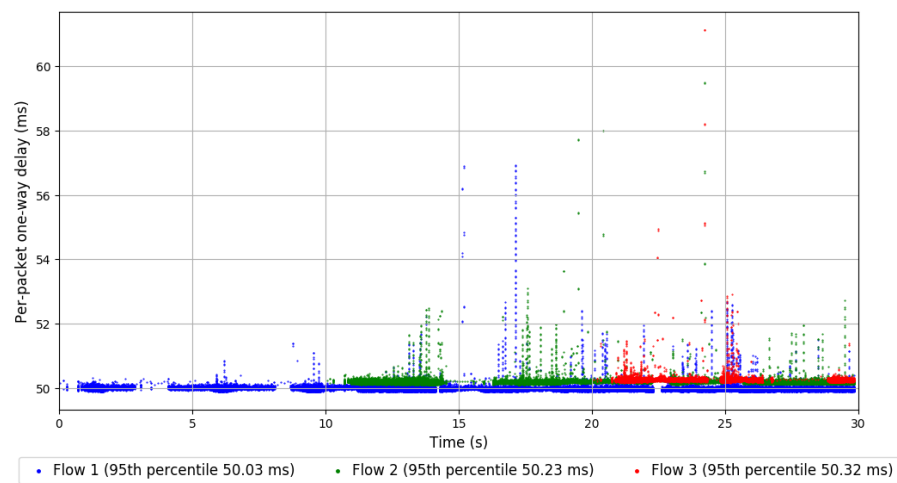
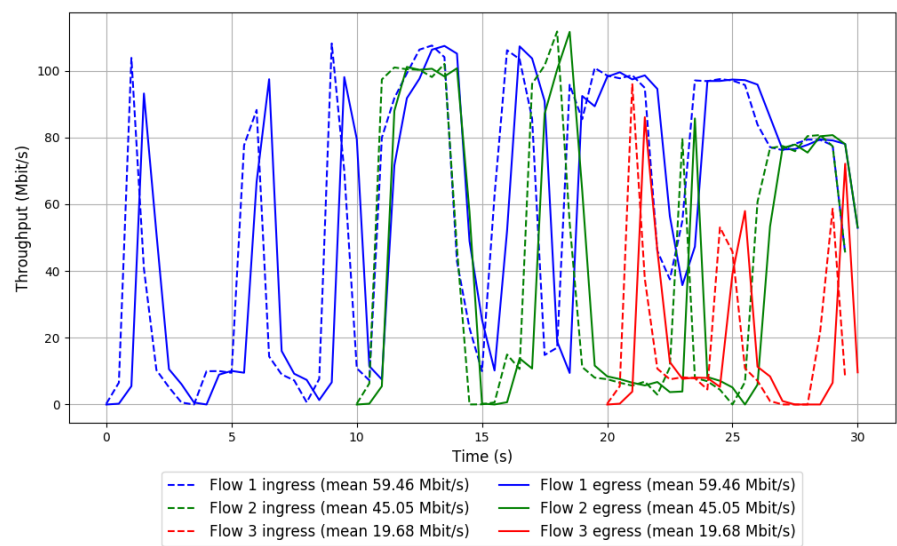


Run 3: Statistics of QUIC Cubic

Start at: 2018-09-07 03:32:03
End at: 2018-09-07 03:32:33
Local clock offset: 0.04 ms
Remote clock offset: -0.227 ms

Below is generated by plot.py at 2018-09-07 07:00:46
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.83 Mbit/s
95th percentile per-packet one-way delay: 50.241 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 59.46 Mbit/s
95th percentile per-packet one-way delay: 50.029 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 45.05 Mbit/s
95th percentile per-packet one-way delay: 50.234 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 19.68 Mbit/s
95th percentile per-packet one-way delay: 50.323 ms
Loss rate: 0.02%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-09-07 04:03:44

End at: 2018-09-07 04:04:14

Local clock offset: 0.075 ms

Remote clock offset: 0.416 ms

Below is generated by plot.py at 2018-09-07 07:00:46

Datalink statistics

-- Total of 3 flows:

Average throughput: 50.43 Mbit/s

95th percentile per-packet one-way delay: 53.530 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.06 Mbit/s

95th percentile per-packet one-way delay: 50.612 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 59.34 Mbit/s

95th percentile per-packet one-way delay: 50.547 ms

Loss rate: 0.00%

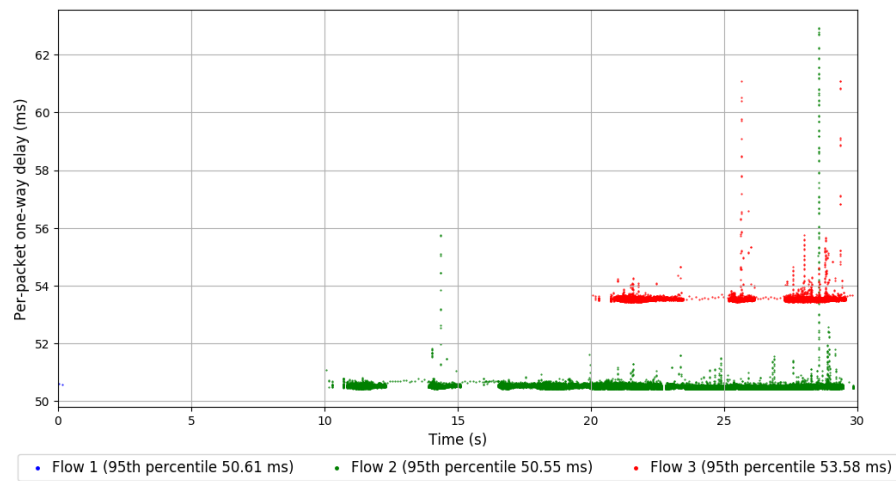
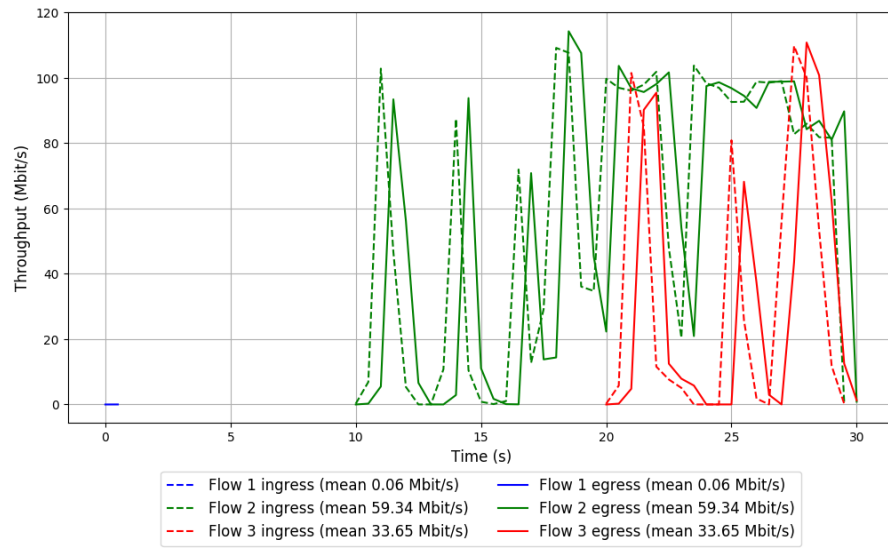
-- Flow 3:

Average throughput: 33.65 Mbit/s

95th percentile per-packet one-way delay: 53.580 ms

Loss rate: 0.00%

Run 4: Report of QUIC Cubic — Data Link

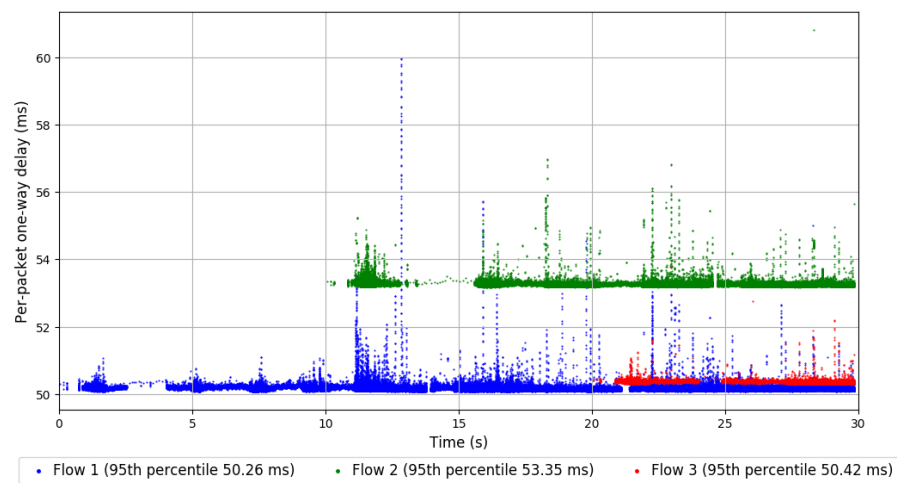
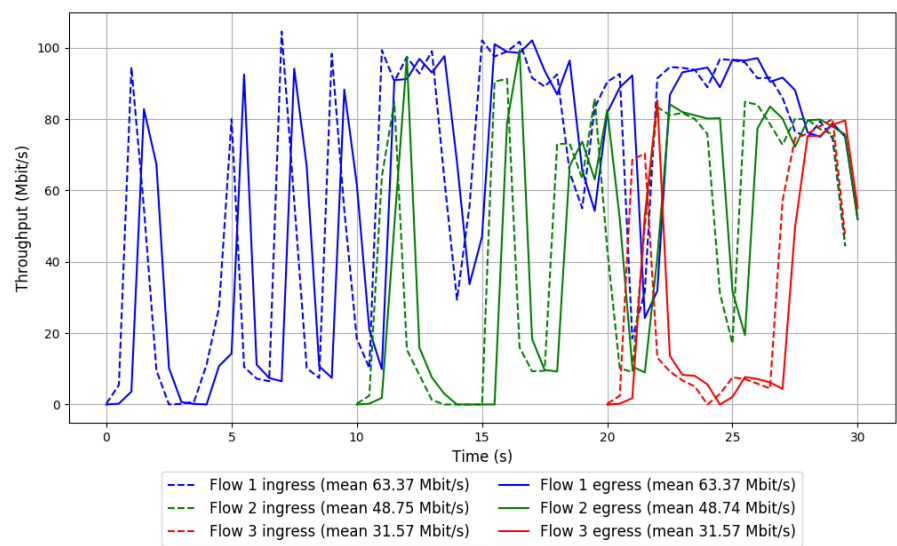


Run 5: Statistics of QUIC Cubic

Start at: 2018-09-07 04:35:17
End at: 2018-09-07 04:35:47
Local clock offset: -0.211 ms
Remote clock offset: -0.147 ms

Below is generated by plot.py at 2018-09-07 07:00:46
Datalink statistics
-- Total of 3 flows:
Average throughput: 106.07 Mbit/s
95th percentile per-packet one-way delay: 53.292 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 63.37 Mbit/s
95th percentile per-packet one-way delay: 50.258 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 48.74 Mbit/s
95th percentile per-packet one-way delay: 53.349 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 31.57 Mbit/s
95th percentile per-packet one-way delay: 50.418 ms
Loss rate: 0.00%

Run 5: Report of QUIC Cubic — Data Link

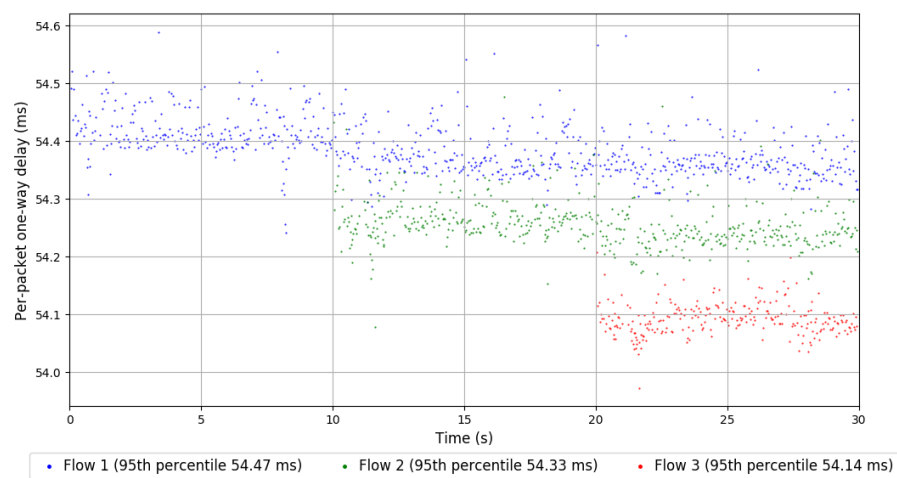
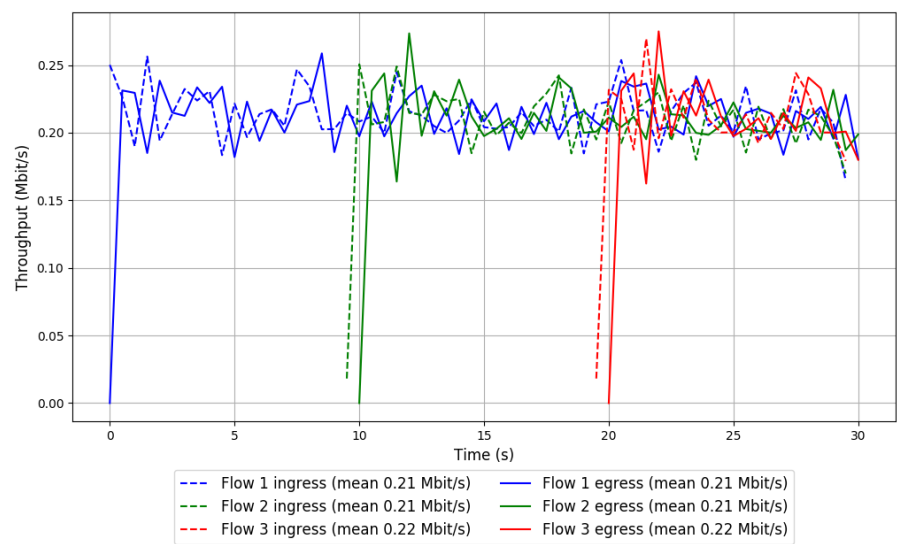


```
Run 1: Statistics of SReAM

Start at: 2018-09-07 01:58:25
End at: 2018-09-07 01:58:55
Local clock offset: -0.291 ms
Remote clock offset: 0.666 ms

# Below is generated by plot.py at 2018-09-07 07:00:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 54.452 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 54.473 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 54.330 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 54.140 ms
Loss rate: 0.35%
```

Run 1: Report of SReAM — Data Link

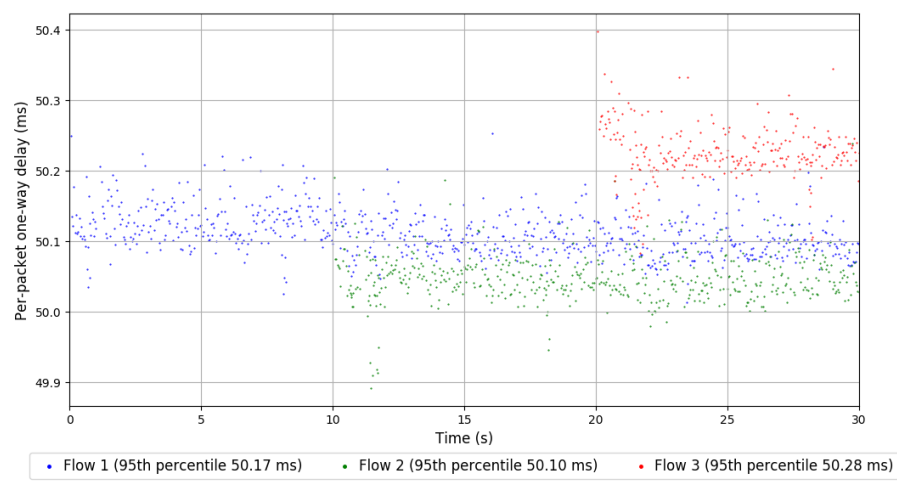
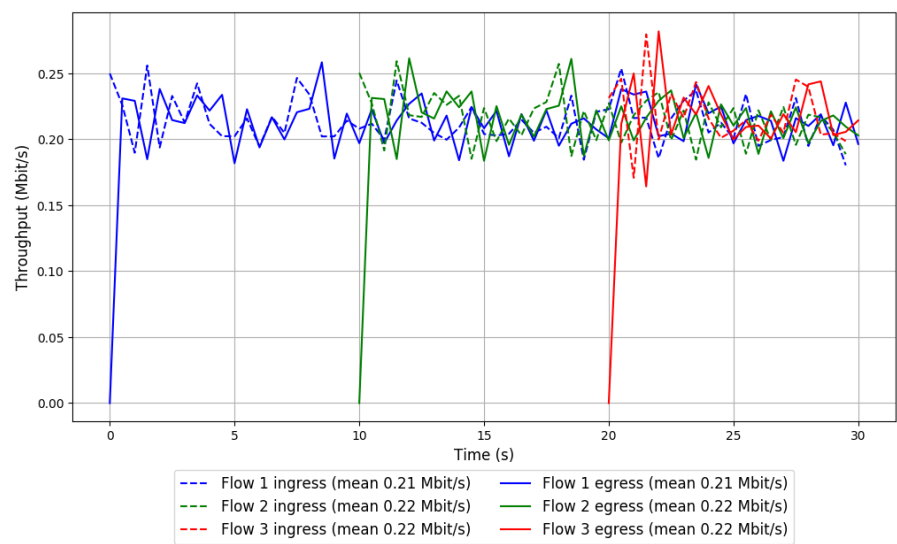


Run 2: Statistics of SReAM

Start at: 2018-09-07 02:30:15
End at: 2018-09-07 02:30:45
Local clock offset: -0.04 ms
Remote clock offset: -0.485 ms

Below is generated by plot.py at 2018-09-07 07:00:46
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 50.241 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 50.173 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.103 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.284 ms
Loss rate: 0.00%

Run 2: Report of SReAM — Data Link

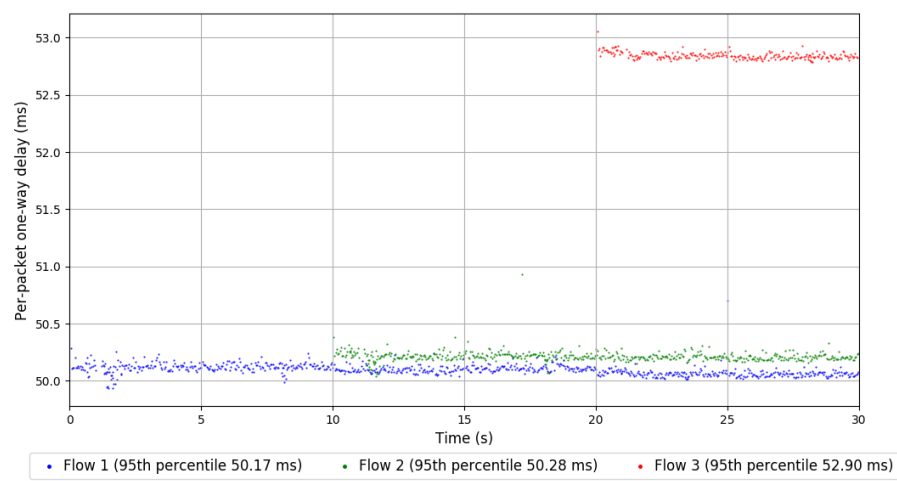
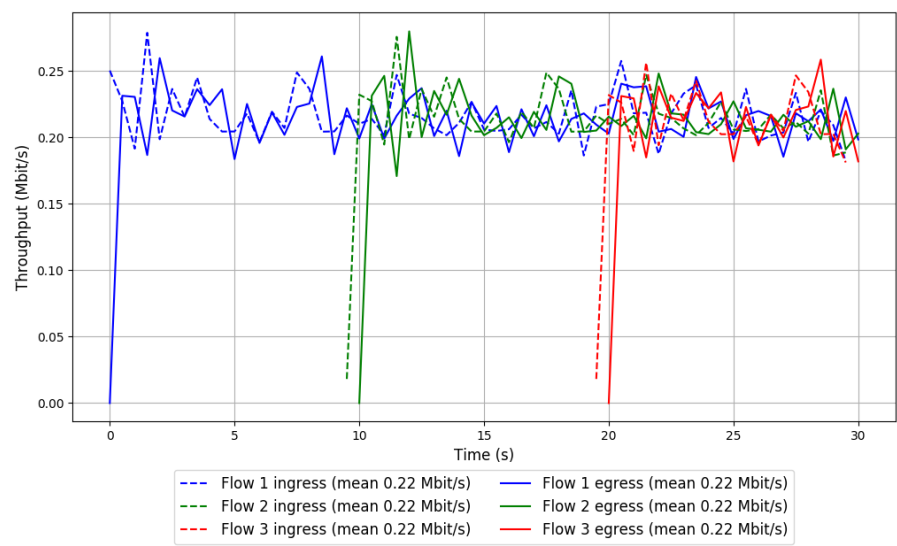


Run 3: Statistics of SReAM

Start at: 2018-09-07 03:01:57
End at: 2018-09-07 03:02:27
Local clock offset: -0.081 ms
Remote clock offset: -0.228 ms

Below is generated by plot.py at 2018-09-07 07:00:46
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 52.855 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.167 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.277 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 52.896 ms
Loss rate: 0.36%

Run 3: Report of SReAM — Data Link



Run 4: Statistics of SReAM

Start at: 2018-09-07 03:33:19

End at: 2018-09-07 03:33:49

Local clock offset: -0.03 ms

Remote clock offset: 0.06 ms

Below is generated by plot.py at 2018-09-07 07:00:46

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.42 Mbit/s

95th percentile per-packet one-way delay: 53.613 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 53.630 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 53.244 ms

Loss rate: 0.00%

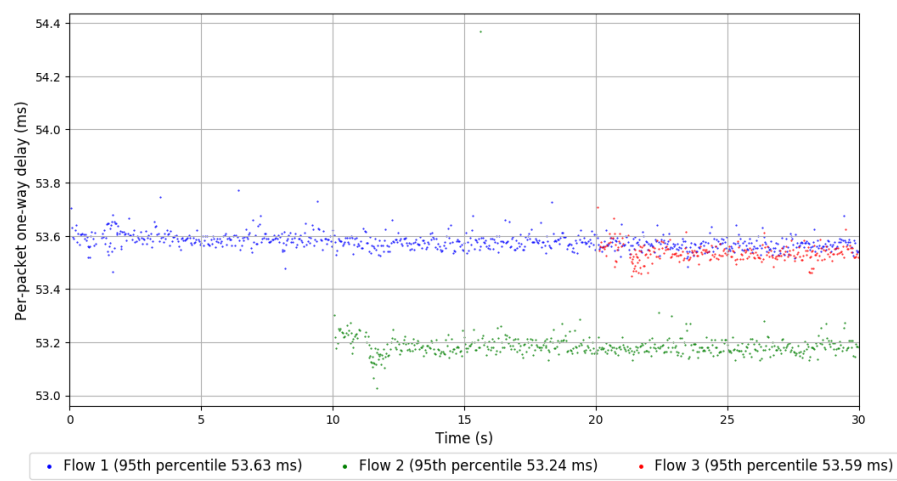
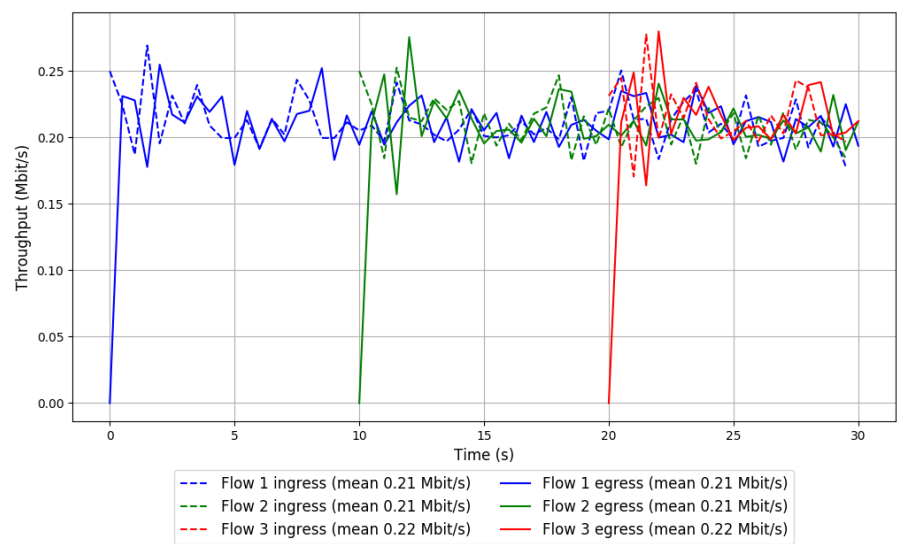
-- Flow 3:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 53.586 ms

Loss rate: 0.00%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SReAM

Start at: 2018-09-07 04:04:57

End at: 2018-09-07 04:05:27

Local clock offset: -0.198 ms

Remote clock offset: 0.371 ms

Below is generated by plot.py at 2018-09-07 07:00:46

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.43 Mbit/s

95th percentile per-packet one-way delay: 53.728 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 51.089 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 50.997 ms

Loss rate: 0.00%

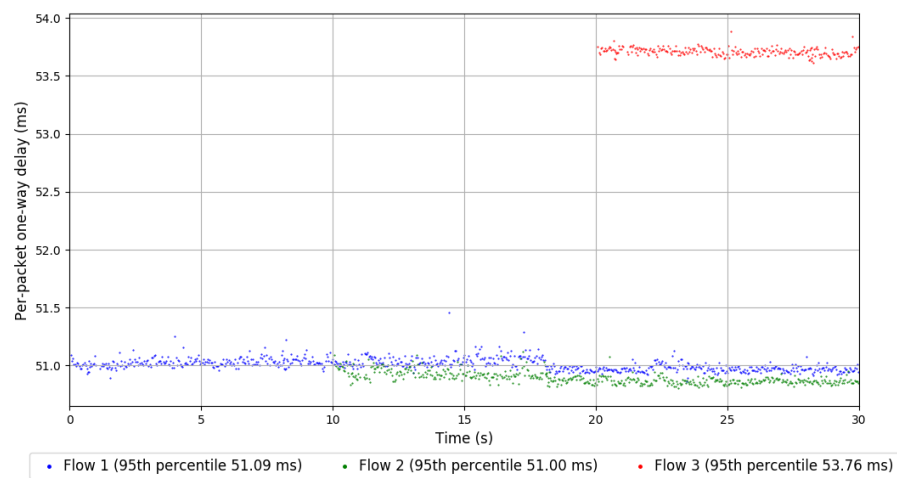
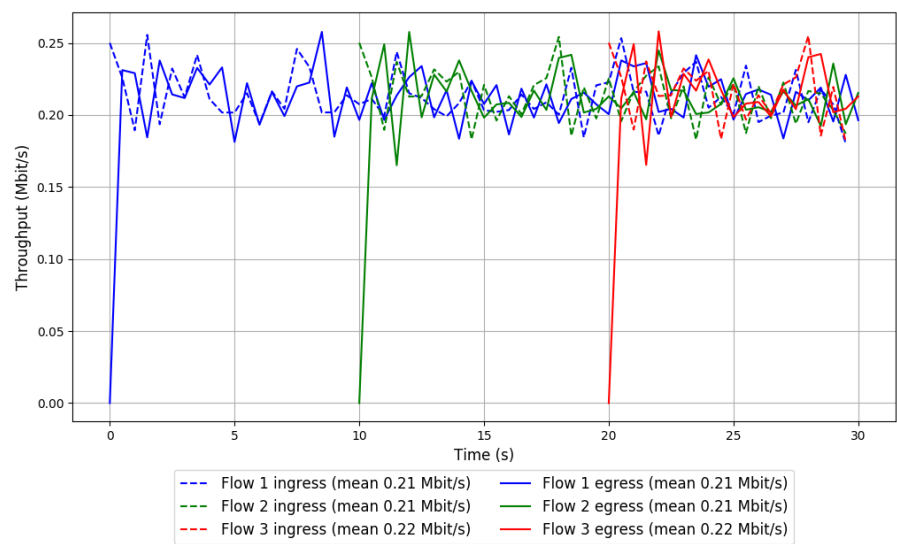
-- Flow 3:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 53.760 ms

Loss rate: 0.00%

Run 5: Report of SReAM — Data Link

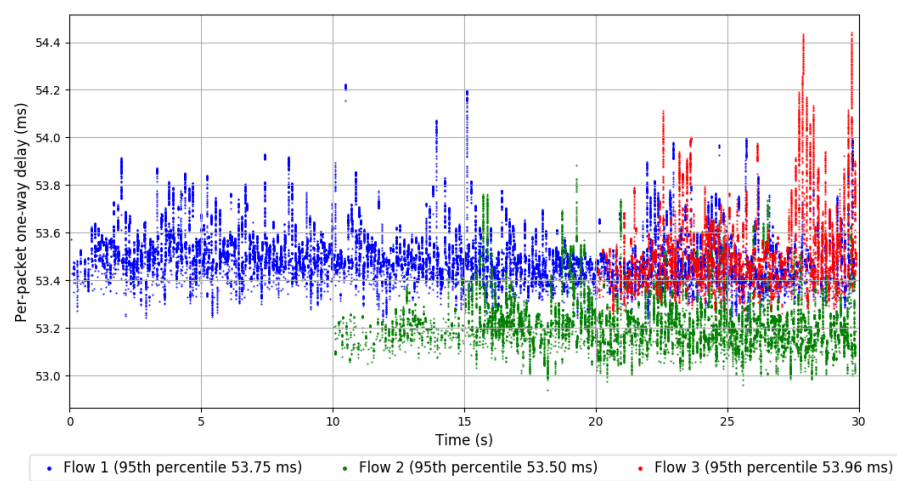
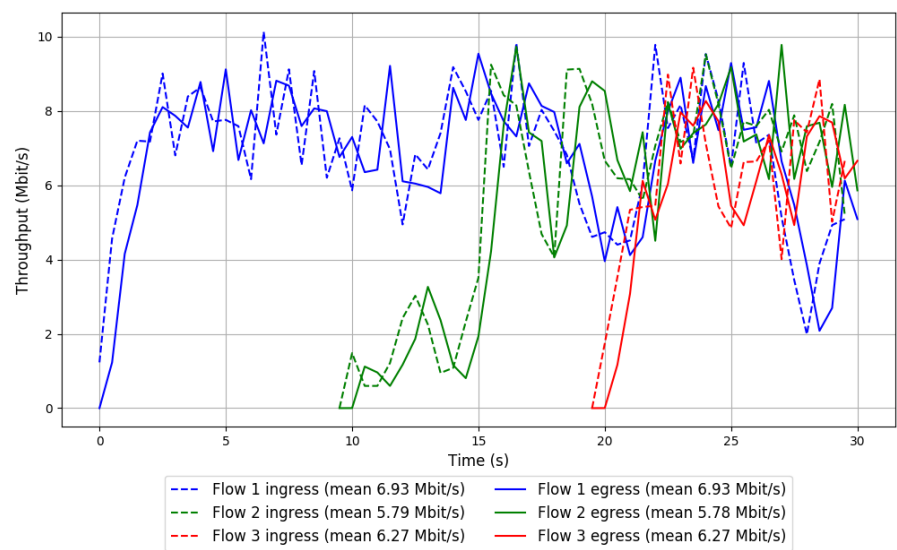


Run 1: Statistics of Sprout

Start at: 2018-09-07 02:19:49
End at: 2018-09-07 02:20:19
Local clock offset: -0.037 ms
Remote clock offset: -0.301 ms

Below is generated by plot.py at 2018-09-07 07:00:46
Datalink statistics
-- Total of 3 flows:
Average throughput: 12.85 Mbit/s
95th percentile per-packet one-way delay: 53.751 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 6.93 Mbit/s
95th percentile per-packet one-way delay: 53.753 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 5.78 Mbit/s
95th percentile per-packet one-way delay: 53.496 ms
Loss rate: 0.29%
-- Flow 3:
Average throughput: 6.27 Mbit/s
95th percentile per-packet one-way delay: 53.958 ms
Loss rate: 0.00%

Run 1: Report of Sprout — Data Link

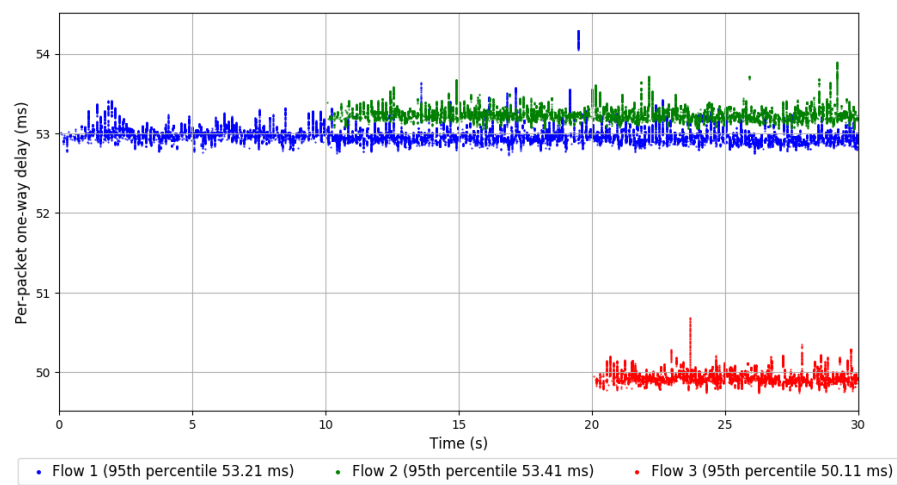
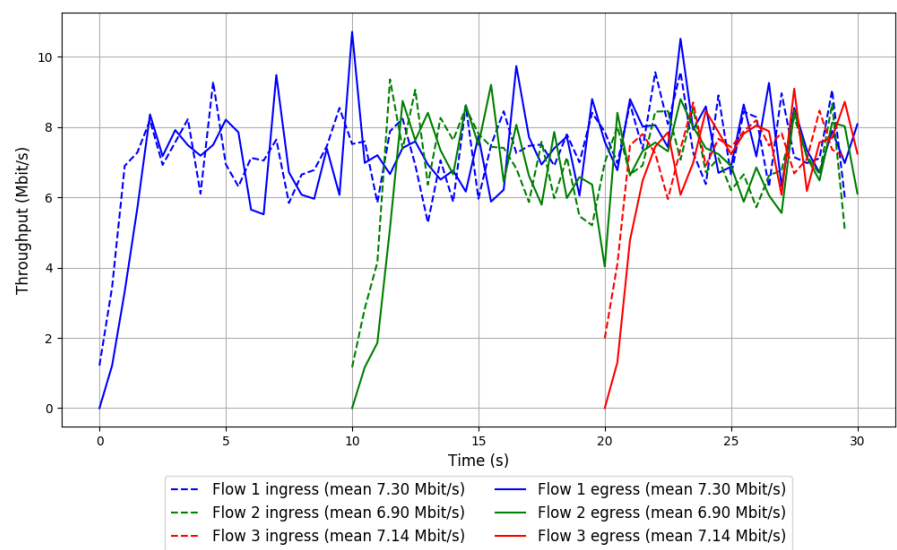


Run 2: Statistics of Sprout

Start at: 2018-09-07 02:51:27
End at: 2018-09-07 02:51:57
Local clock offset: -0.21 ms
Remote clock offset: -0.283 ms

Below is generated by plot.py at 2018-09-07 07:00:46
Datalink statistics
-- Total of 3 flows:
Average throughput: 14.24 Mbit/s
95th percentile per-packet one-way delay: 53.335 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.30 Mbit/s
95th percentile per-packet one-way delay: 53.208 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 6.90 Mbit/s
95th percentile per-packet one-way delay: 53.409 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.14 Mbit/s
95th percentile per-packet one-way delay: 50.112 ms
Loss rate: 0.00%

Run 2: Report of Sprout — Data Link

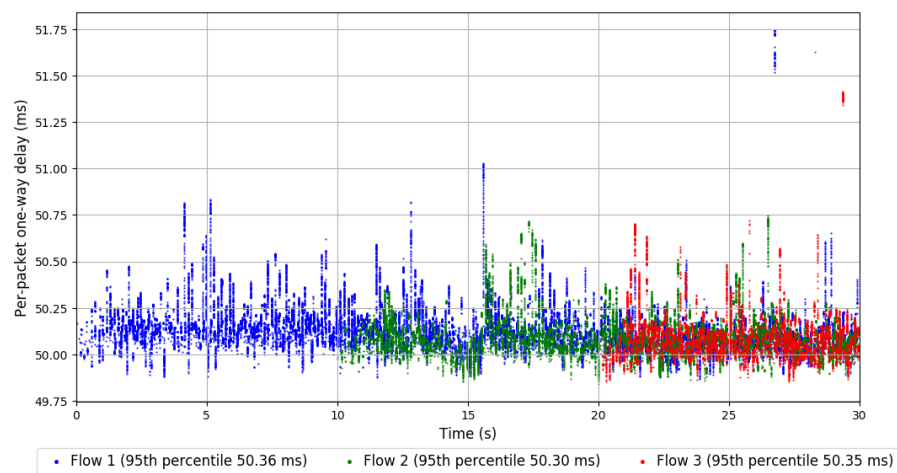
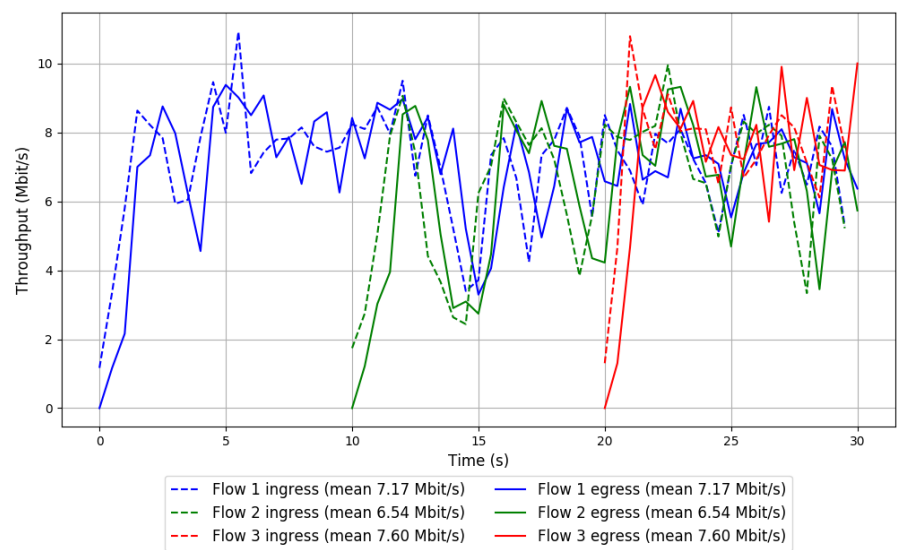


Run 3: Statistics of Sprout

Start at: 2018-09-07 03:23:02
End at: 2018-09-07 03:23:32
Local clock offset: -0.166 ms
Remote clock offset: -0.356 ms

Below is generated by plot.py at 2018-09-07 07:00:46
Datalink statistics
-- Total of 3 flows:
Average throughput: 14.02 Mbit/s
95th percentile per-packet one-way delay: 50.344 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.17 Mbit/s
95th percentile per-packet one-way delay: 50.356 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 6.54 Mbit/s
95th percentile per-packet one-way delay: 50.301 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.60 Mbit/s
95th percentile per-packet one-way delay: 50.352 ms
Loss rate: 0.00%

Run 3: Report of Sprout — Data Link

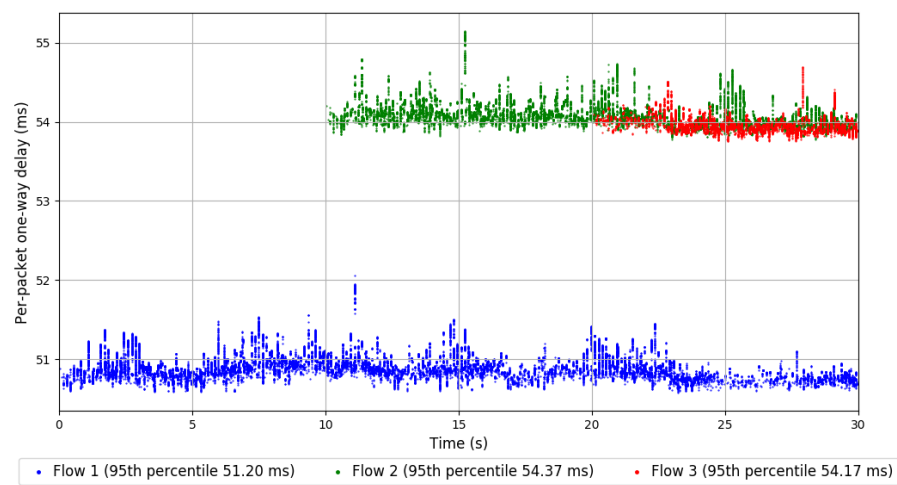
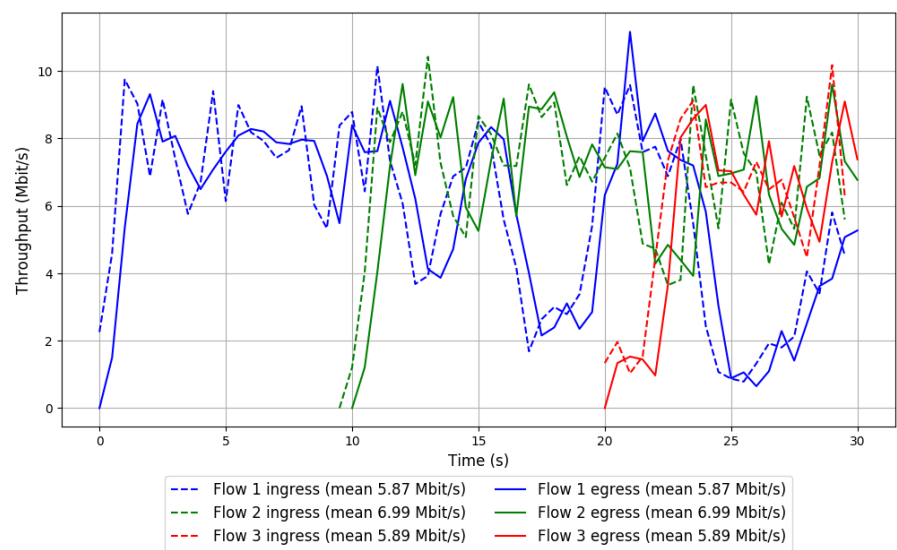


Run 4: Statistics of Sprout

Start at: 2018-09-07 03:54:31
End at: 2018-09-07 03:55:01
Local clock offset: -0.231 ms
Remote clock offset: 0.389 ms

```
# Below is generated by plot.py at 2018-09-07 07:00:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.46 Mbit/s
95th percentile per-packet one-way delay: 54.242 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 5.87 Mbit/s
95th percentile per-packet one-way delay: 51.205 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 6.99 Mbit/s
95th percentile per-packet one-way delay: 54.373 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 5.89 Mbit/s
95th percentile per-packet one-way delay: 54.168 ms
Loss rate: 0.00%
```

Run 4: Report of Sprout — Data Link

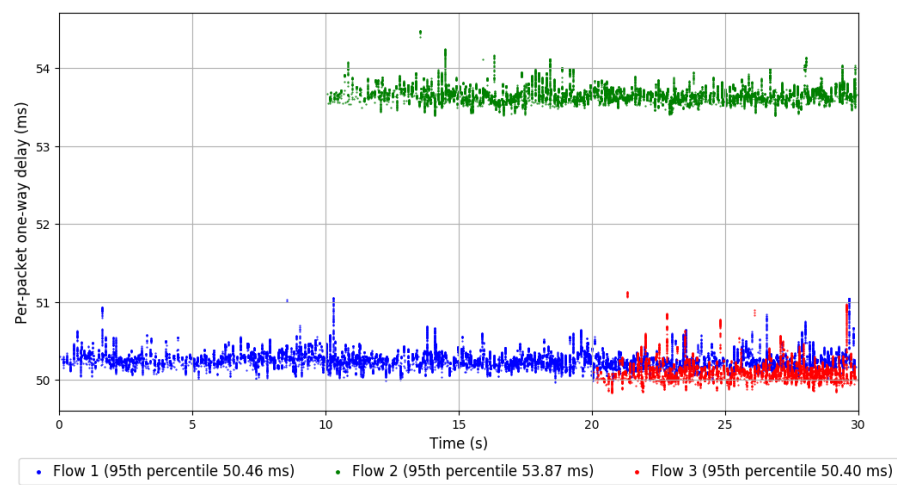
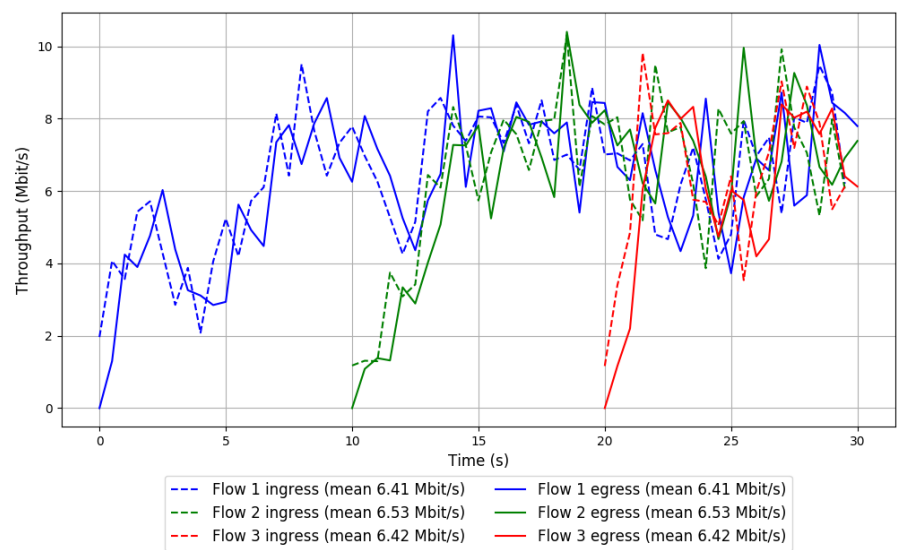


Run 5: Statistics of Sprout

Start at: 2018-09-07 04:26:10
End at: 2018-09-07 04:26:40
Local clock offset: 0.022 ms
Remote clock offset: -0.038 ms

Below is generated by plot.py at 2018-09-07 07:00:46
Datalink statistics
-- Total of 3 flows:
Average throughput: 12.87 Mbit/s
95th percentile per-packet one-way delay: 53.756 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.41 Mbit/s
95th percentile per-packet one-way delay: 50.459 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 6.53 Mbit/s
95th percentile per-packet one-way delay: 53.867 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 6.42 Mbit/s
95th percentile per-packet one-way delay: 50.400 ms
Loss rate: 0.00%

Run 5: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2018-09-07 02:21:02

End at: 2018-09-07 02:21:32

Local clock offset: -0.162 ms

Remote clock offset: 0.231 ms

Below is generated by plot.py at 2018-09-07 07:05:19

Datalink statistics

-- Total of 3 flows:

Average throughput: 504.75 Mbit/s

95th percentile per-packet one-way delay: 51.147 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 255.21 Mbit/s

95th percentile per-packet one-way delay: 51.180 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 254.40 Mbit/s

95th percentile per-packet one-way delay: 50.795 ms

Loss rate: 0.00%

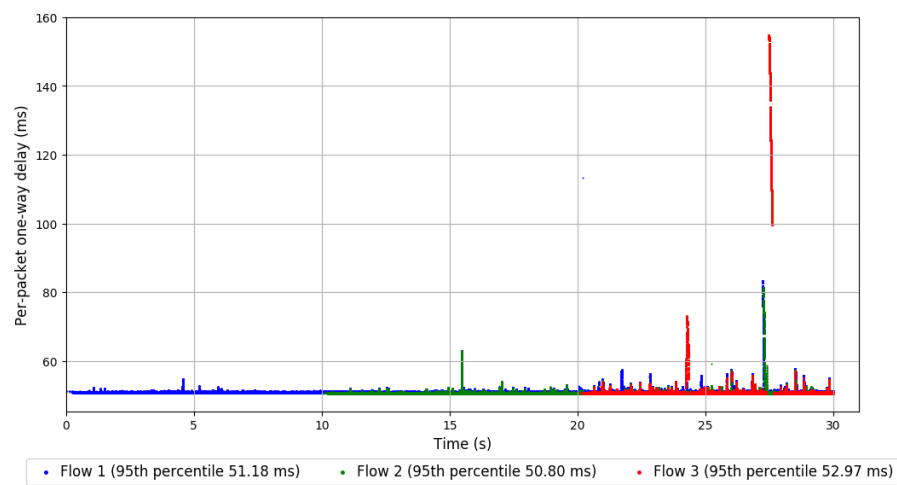
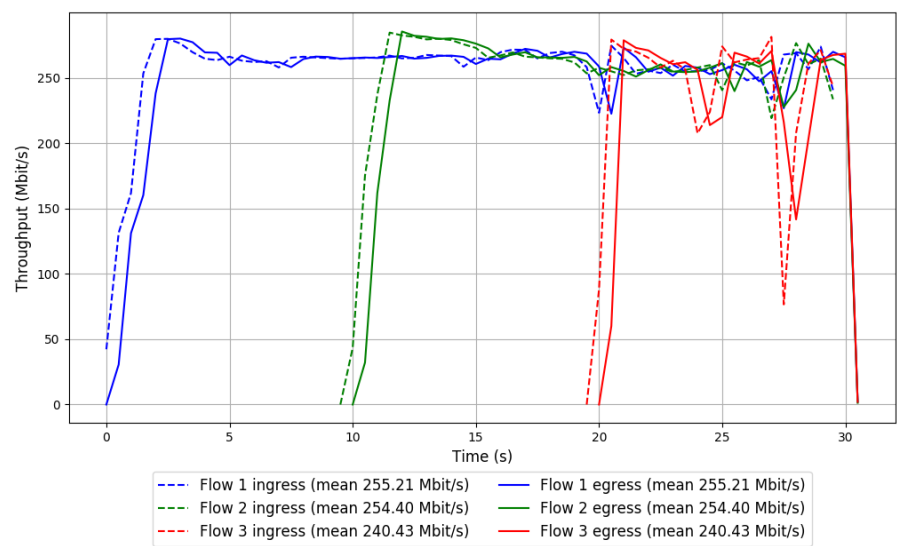
-- Flow 3:

Average throughput: 240.43 Mbit/s

95th percentile per-packet one-way delay: 52.966 ms

Loss rate: 0.00%

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-09-07 02:52:40

End at: 2018-09-07 02:53:10

Local clock offset: -0.094 ms

Remote clock offset: 1.214 ms

Below is generated by plot.py at 2018-09-07 07:05:51

Datalink statistics

-- Total of 3 flows:

Average throughput: 502.36 Mbit/s

95th percentile per-packet one-way delay: 54.954 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 248.96 Mbit/s

95th percentile per-packet one-way delay: 55.028 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 257.57 Mbit/s

95th percentile per-packet one-way delay: 51.859 ms

Loss rate: 0.00%

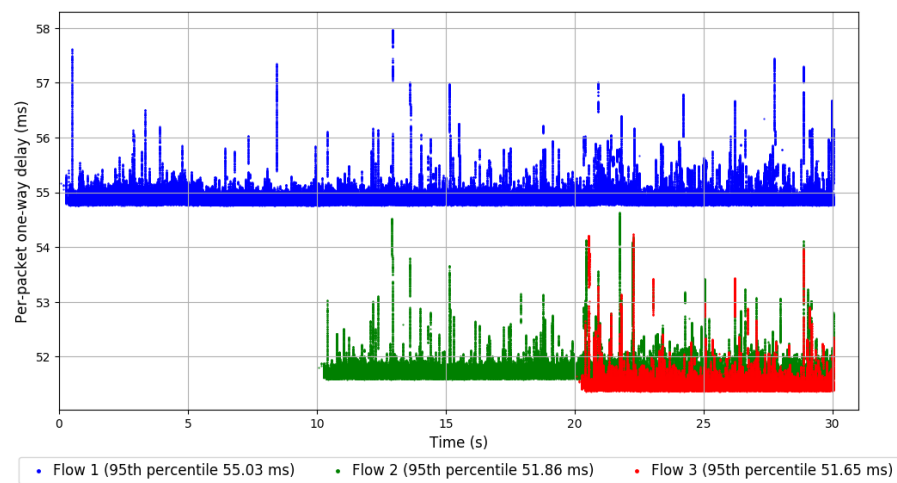
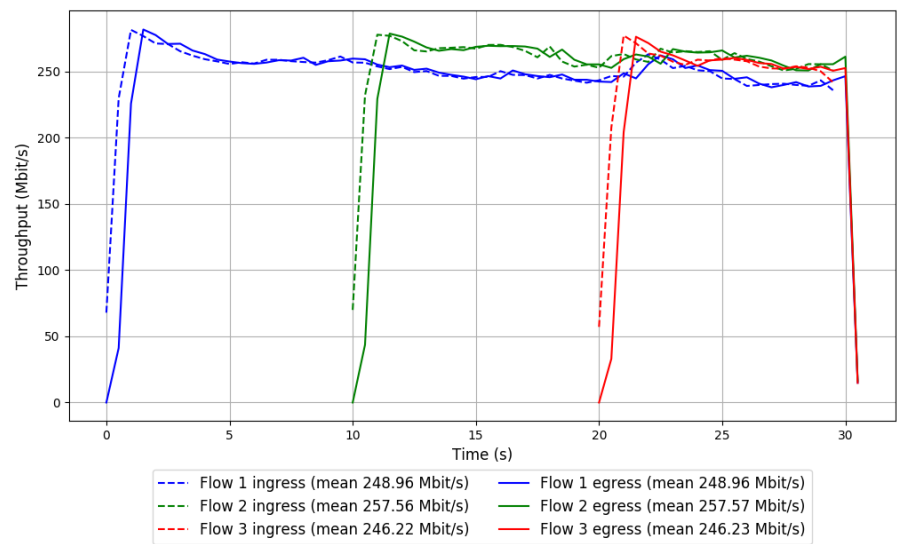
-- Flow 3:

Average throughput: 246.23 Mbit/s

95th percentile per-packet one-way delay: 51.649 ms

Loss rate: 0.00%

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

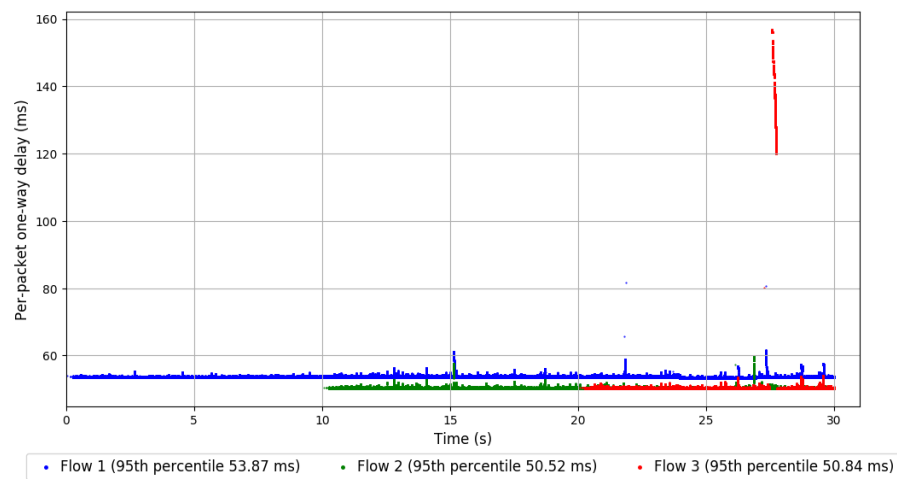
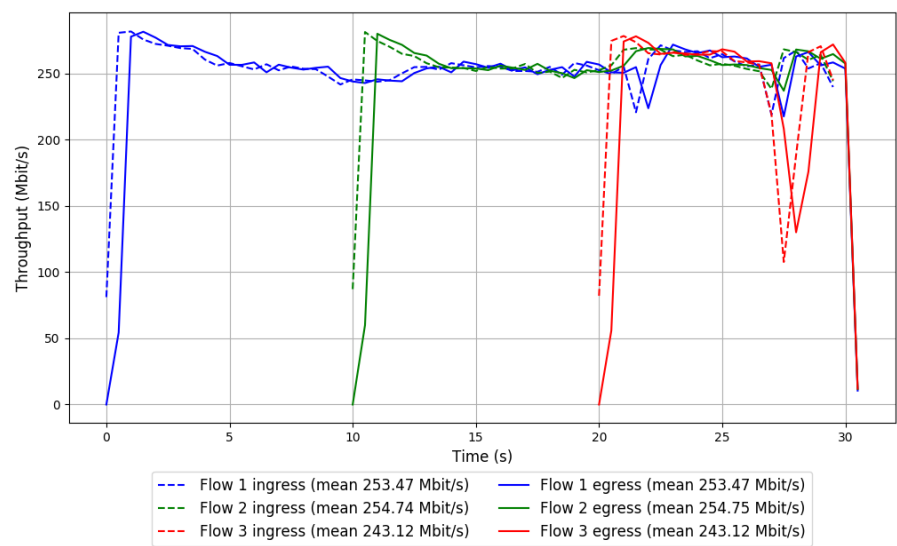


Run 3: Statistics of TaoVA-100x

Start at: 2018-09-07 03:24:14
End at: 2018-09-07 03:24:44
Local clock offset: -0.301 ms
Remote clock offset: -0.118 ms

Below is generated by plot.py at 2018-09-07 07:06:12
Datalink statistics
-- Total of 3 flows:
Average throughput: 503.85 Mbit/s
95th percentile per-packet one-way delay: 53.798 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 253.47 Mbit/s
95th percentile per-packet one-way delay: 53.874 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 254.75 Mbit/s
95th percentile per-packet one-way delay: 50.523 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 243.12 Mbit/s
95th percentile per-packet one-way delay: 50.835 ms
Loss rate: 0.00%

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



Run 4: Statistics of TaoVA-100x

Start at: 2018-09-07 03:55:43

End at: 2018-09-07 03:56:13

Local clock offset: -0.03 ms

Remote clock offset: 0.018 ms

Below is generated by plot.py at 2018-09-07 07:07:11

Datalink statistics

-- Total of 3 flows:

Average throughput: 501.19 Mbit/s

95th percentile per-packet one-way delay: 53.338 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 254.53 Mbit/s

95th percentile per-packet one-way delay: 50.332 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 253.90 Mbit/s

95th percentile per-packet one-way delay: 53.452 ms

Loss rate: 0.01%

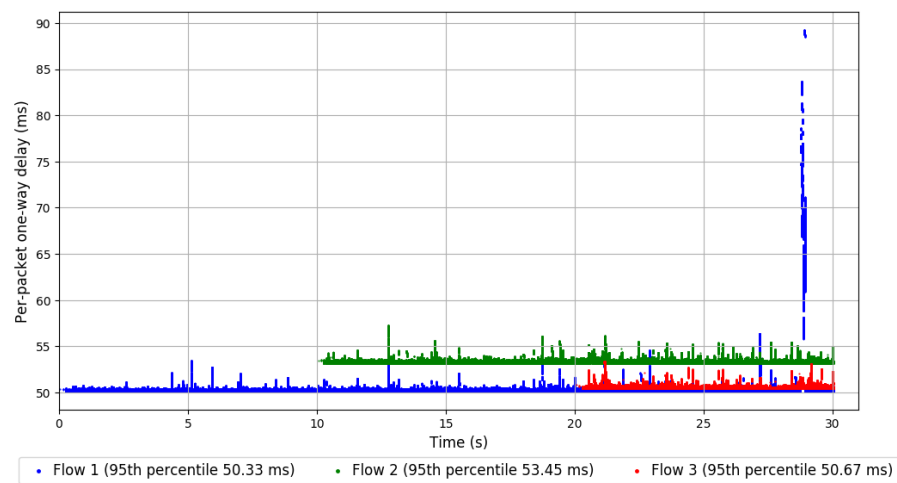
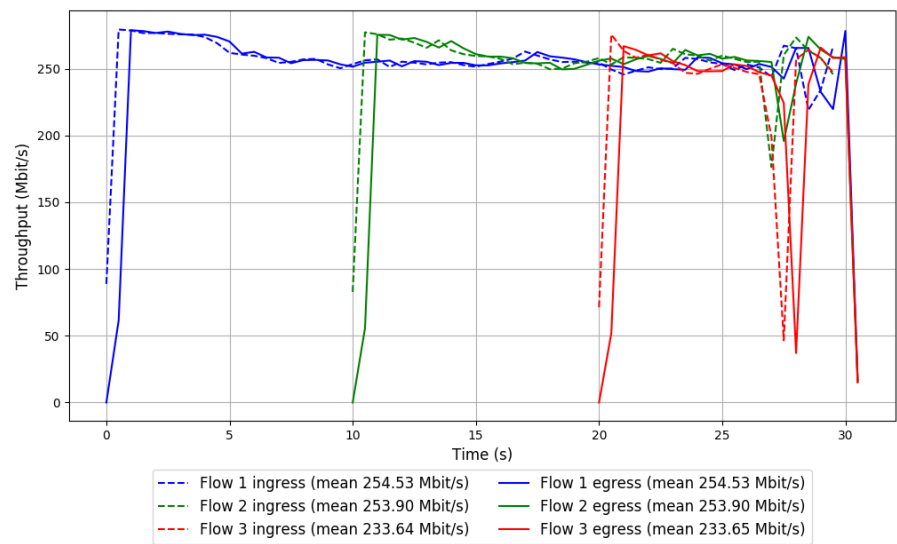
-- Flow 3:

Average throughput: 233.65 Mbit/s

95th percentile per-packet one-way delay: 50.675 ms

Loss rate: 0.00%

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

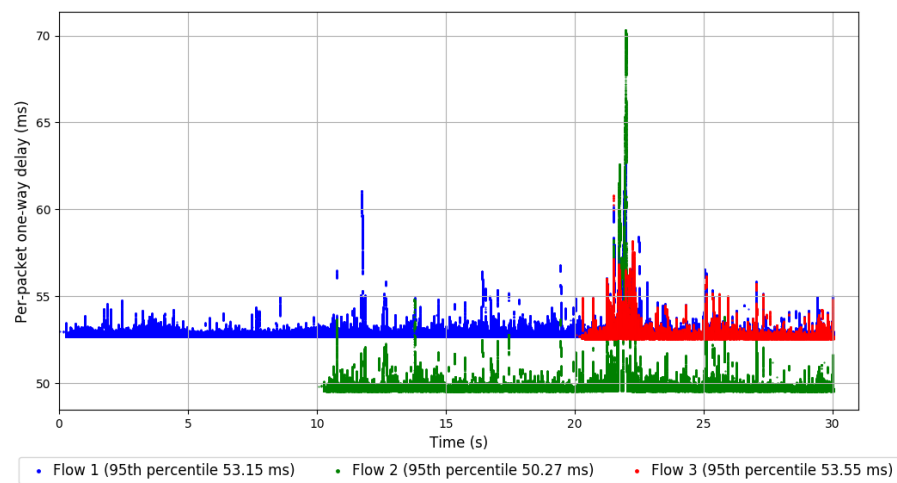
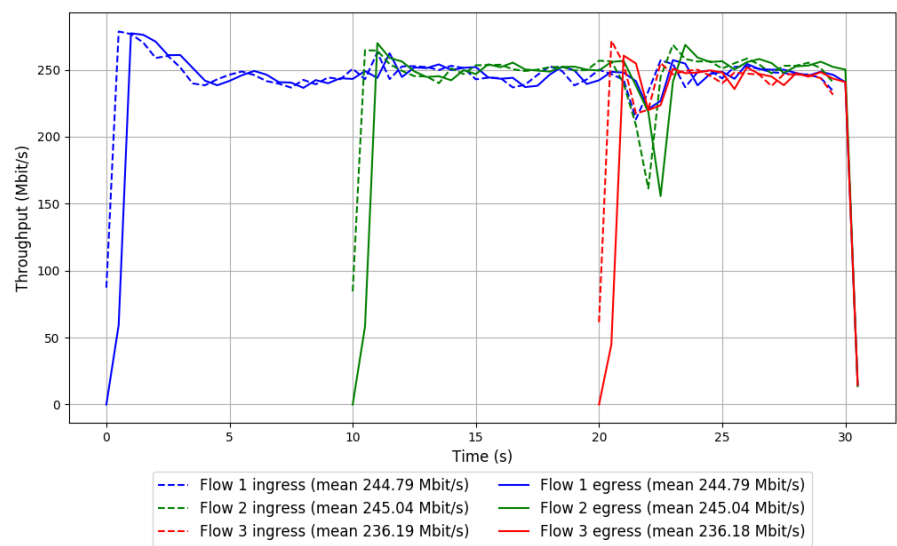


Run 5: Statistics of TaoVA-100x

Start at: 2018-09-07 04:27:23
End at: 2018-09-07 04:27:53
Local clock offset: 0.096 ms
Remote clock offset: -0.492 ms

Below is generated by plot.py at 2018-09-07 07:07:15
Datalink statistics
-- Total of 3 flows:
Average throughput: 486.43 Mbit/s
95th percentile per-packet one-way delay: 53.060 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 244.79 Mbit/s
95th percentile per-packet one-way delay: 53.148 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 245.04 Mbit/s
95th percentile per-packet one-way delay: 50.270 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 236.18 Mbit/s
95th percentile per-packet one-way delay: 53.548 ms
Loss rate: 0.02%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-09-07 02:07:38

End at: 2018-09-07 02:08:08

Local clock offset: -0.066 ms

Remote clock offset: -0.93 ms

Below is generated by plot.py at 2018-09-07 07:11:02

Datalink statistics

-- Total of 3 flows:

Average throughput: 1109.48 Mbit/s

95th percentile per-packet one-way delay: 89.378 ms

Loss rate: 0.10%

-- Flow 1:

Average throughput: 575.42 Mbit/s

95th percentile per-packet one-way delay: 76.099 ms

Loss rate: 0.04%

-- Flow 2:

Average throughput: 560.99 Mbit/s

95th percentile per-packet one-way delay: 91.817 ms

Loss rate: 0.17%

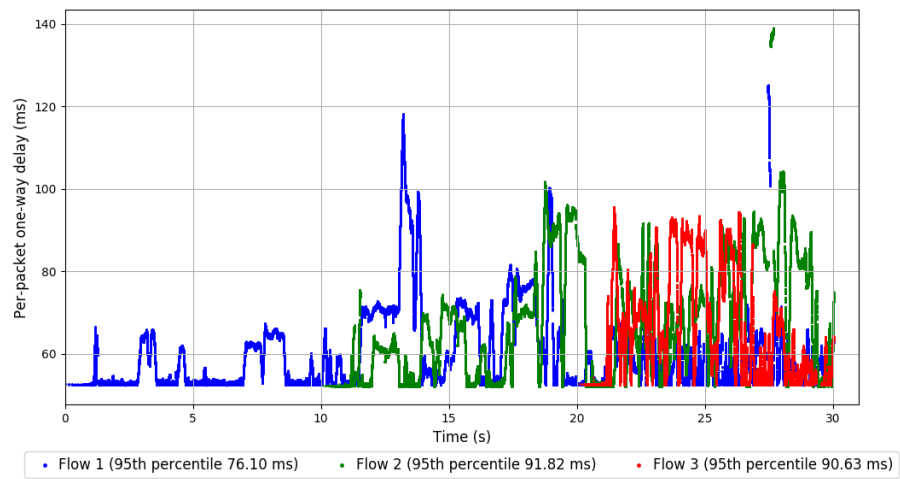
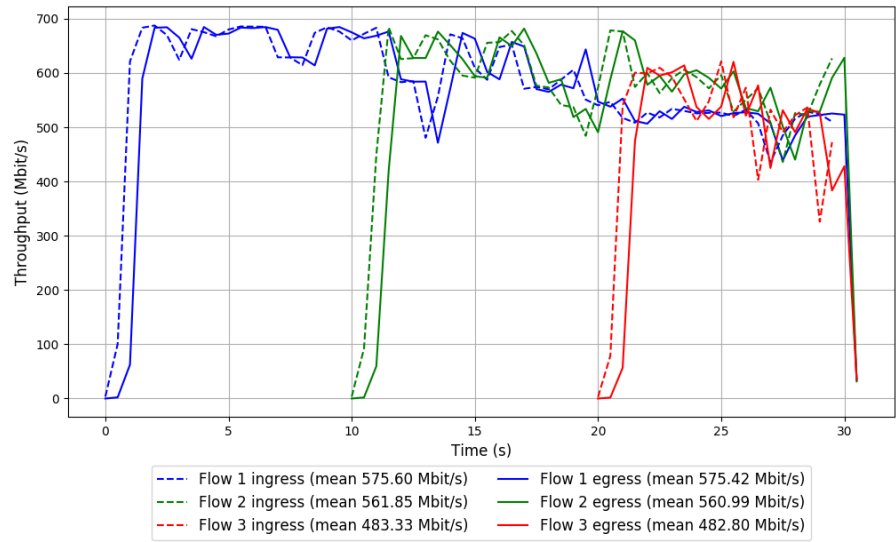
-- Flow 3:

Average throughput: 482.80 Mbit/s

95th percentile per-packet one-way delay: 90.626 ms

Loss rate: 0.14%

Run 1: Report of TCP Vegas — Data Link

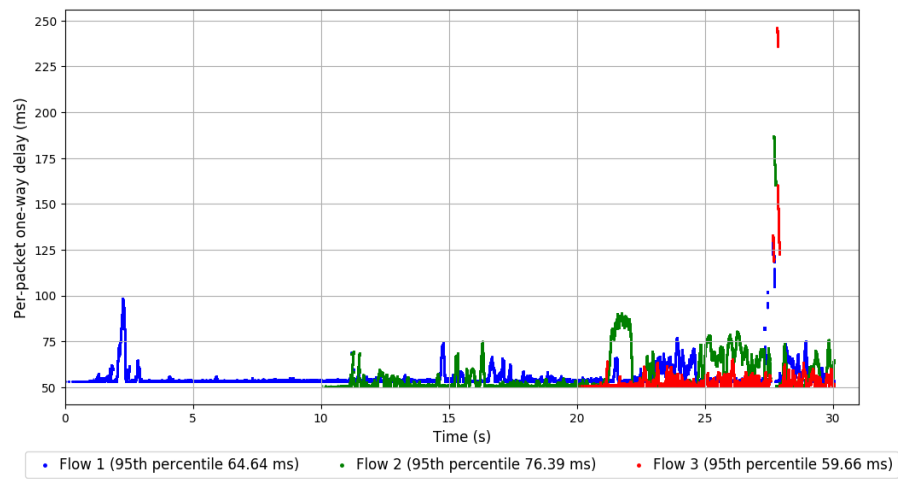
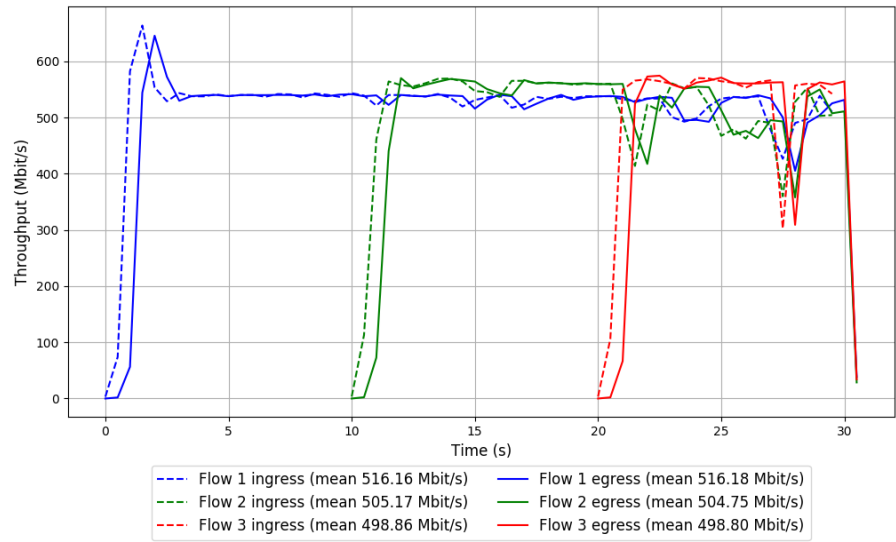


Run 2: Statistics of TCP Vegas

Start at: 2018-09-07 02:39:26
End at: 2018-09-07 02:39:56
Local clock offset: -0.037 ms
Remote clock offset: -0.119 ms

Below is generated by plot.py at 2018-09-07 07:18:35
Datalink statistics
-- Total of 3 flows:
Average throughput: 1018.20 Mbit/s
95th percentile per-packet one-way delay: 68.876 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 516.18 Mbit/s
95th percentile per-packet one-way delay: 64.645 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 504.75 Mbit/s
95th percentile per-packet one-way delay: 76.395 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 498.80 Mbit/s
95th percentile per-packet one-way delay: 59.657 ms
Loss rate: 0.01%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2018-09-07 03:11:06

End at: 2018-09-07 03:11:36

Local clock offset: -0.22 ms

Remote clock offset: 0.277 ms

Below is generated by plot.py at 2018-09-07 07:18:35

Datalink statistics

-- Total of 3 flows:

Average throughput: 781.26 Mbit/s

95th percentile per-packet one-way delay: 68.356 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 328.02 Mbit/s

95th percentile per-packet one-way delay: 51.883 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 441.20 Mbit/s

95th percentile per-packet one-way delay: 70.800 ms

Loss rate: 0.00%

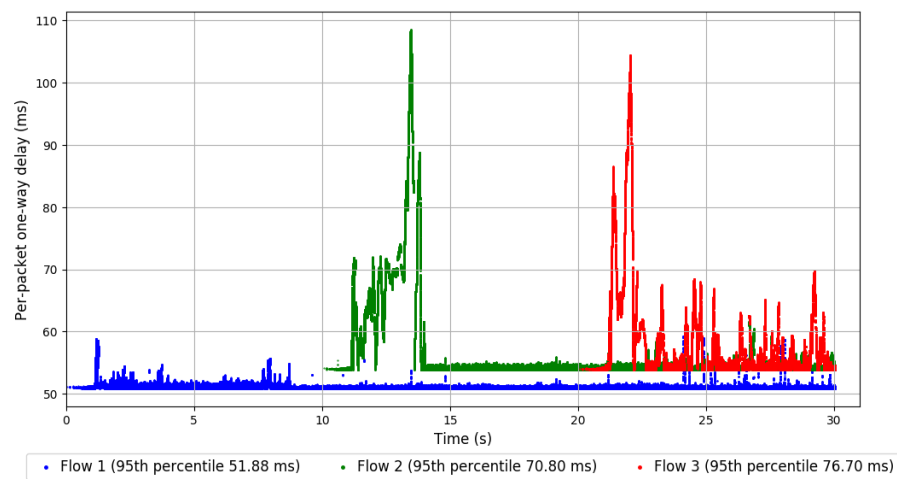
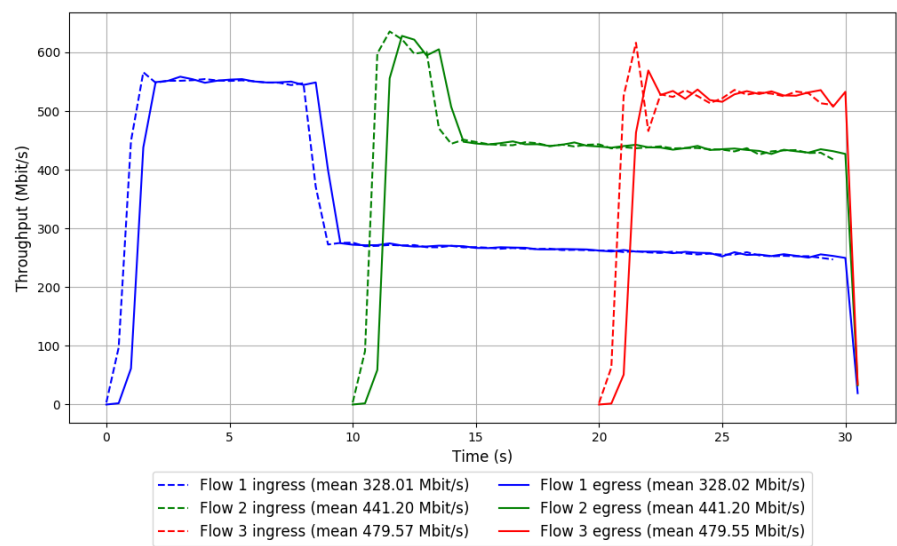
-- Flow 3:

Average throughput: 479.55 Mbit/s

95th percentile per-packet one-way delay: 76.700 ms

Loss rate: 0.03%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2018-09-07 03:42:33

End at: 2018-09-07 03:43:03

Local clock offset: -0.117 ms

Remote clock offset: 0.12 ms

Below is generated by plot.py at 2018-09-07 07:23:08

Datalink statistics

-- Total of 3 flows:

Average throughput: 999.73 Mbit/s

95th percentile per-packet one-way delay: 65.763 ms

Loss rate: 0.04%

-- Flow 1:

Average throughput: 553.82 Mbit/s

95th percentile per-packet one-way delay: 56.205 ms

Loss rate: 0.03%

-- Flow 2:

Average throughput: 431.24 Mbit/s

95th percentile per-packet one-way delay: 61.485 ms

Loss rate: 0.00%

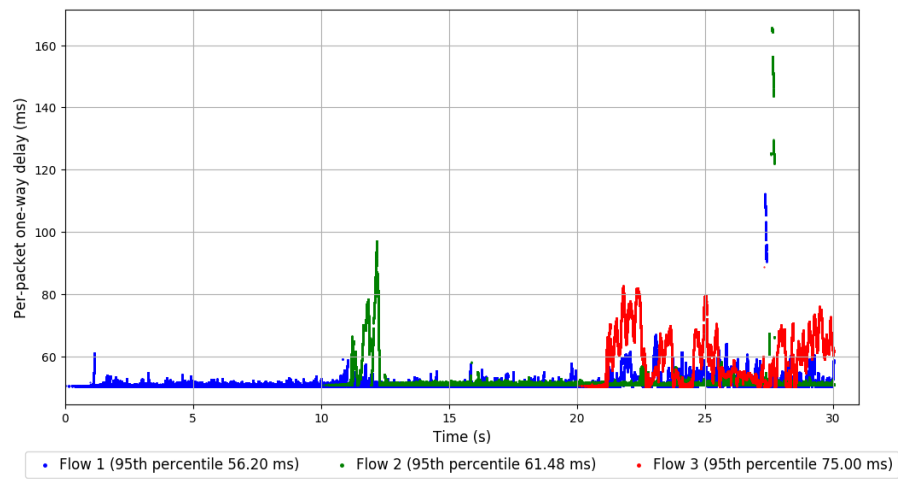
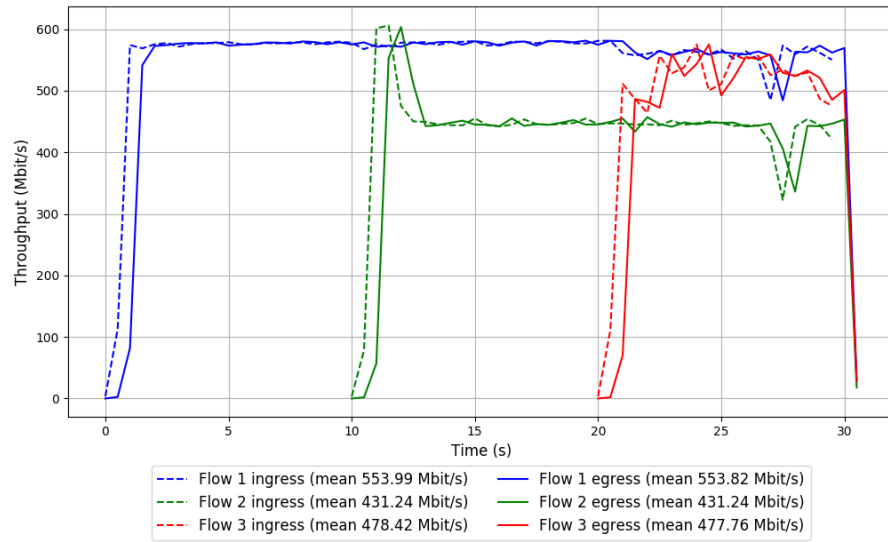
-- Flow 3:

Average throughput: 477.76 Mbit/s

95th percentile per-packet one-way delay: 75.000 ms

Loss rate: 0.14%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2018-09-07 04:14:09

End at: 2018-09-07 04:14:39

Local clock offset: 0.064 ms

Remote clock offset: 0.223 ms

Below is generated by plot.py at 2018-09-07 07:24:06

Datalink statistics

-- Total of 3 flows:

Average throughput: 1034.50 Mbit/s

95th percentile per-packet one-way delay: 73.008 ms

Loss rate: 0.12%

-- Flow 1:

Average throughput: 565.34 Mbit/s

95th percentile per-packet one-way delay: 71.067 ms

Loss rate: 0.05%

-- Flow 2:

Average throughput: 569.01 Mbit/s

95th percentile per-packet one-way delay: 74.058 ms

Loss rate: 0.20%

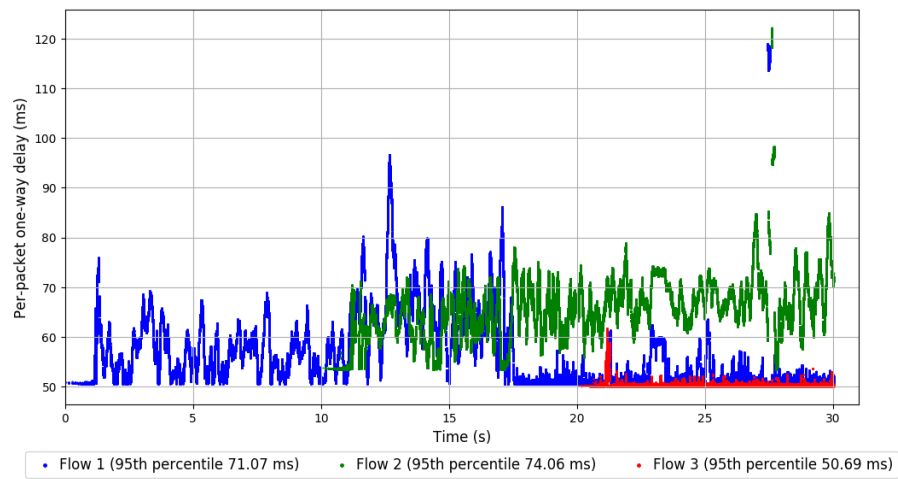
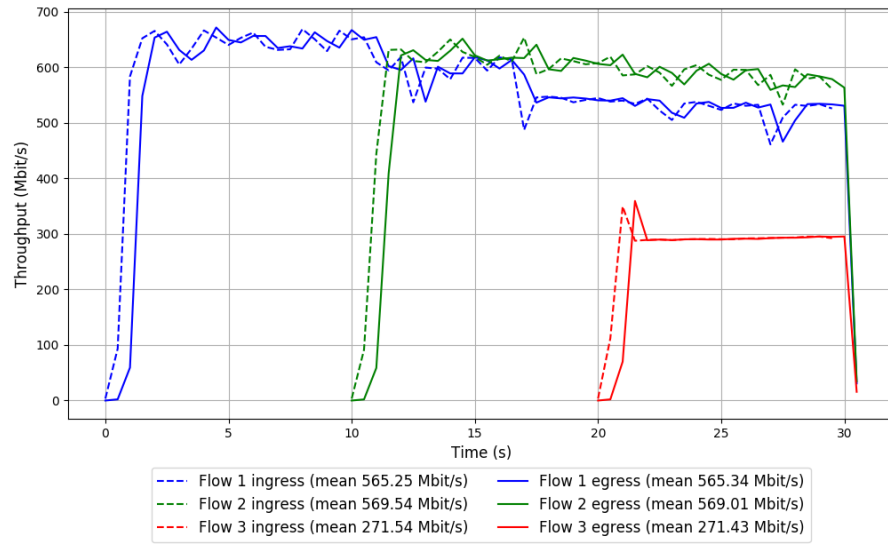
-- Flow 3:

Average throughput: 271.43 Mbit/s

95th percentile per-packet one-way delay: 50.689 ms

Loss rate: 0.23%

Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-09-07 02:09:43

End at: 2018-09-07 02:10:13

Local clock offset: -0.164 ms

Remote clock offset: -0.02 ms

Below is generated by plot.py at 2018-09-07 07:24:06

Datalink statistics

-- Total of 3 flows:

Average throughput: 303.84 Mbit/s

95th percentile per-packet one-way delay: 132.344 ms

Loss rate: 0.21%

-- Flow 1:

Average throughput: 160.84 Mbit/s

95th percentile per-packet one-way delay: 120.692 ms

Loss rate: 0.39%

-- Flow 2:

Average throughput: 181.09 Mbit/s

95th percentile per-packet one-way delay: 141.748 ms

Loss rate: 0.00%

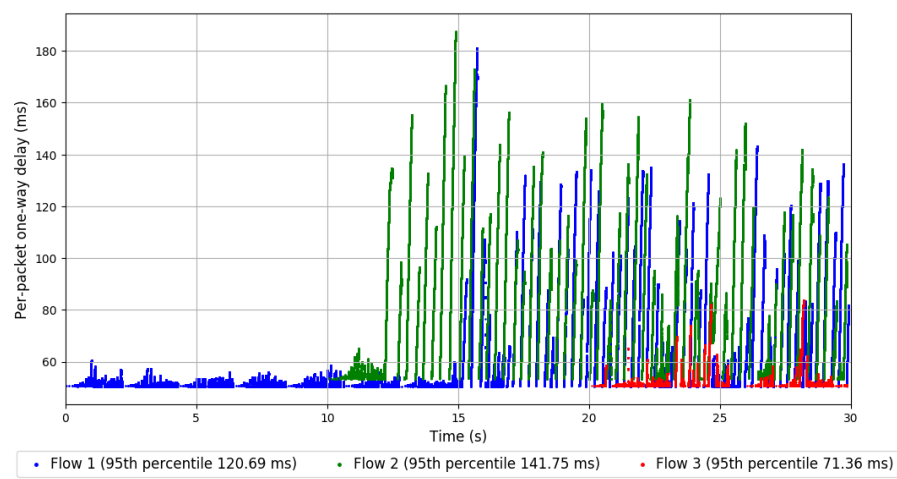
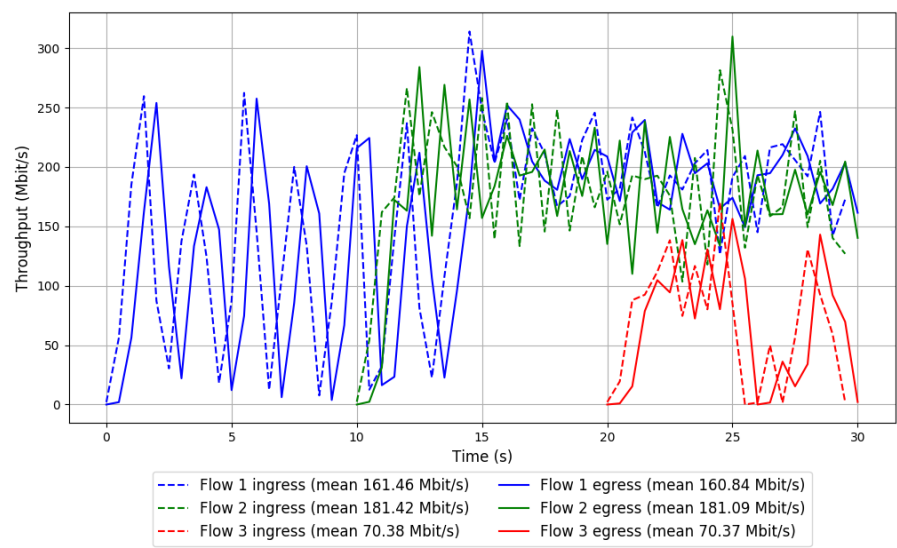
-- Flow 3:

Average throughput: 70.37 Mbit/s

95th percentile per-packet one-way delay: 71.356 ms

Loss rate: 0.00%

Run 1: Report of Verus — Data Link

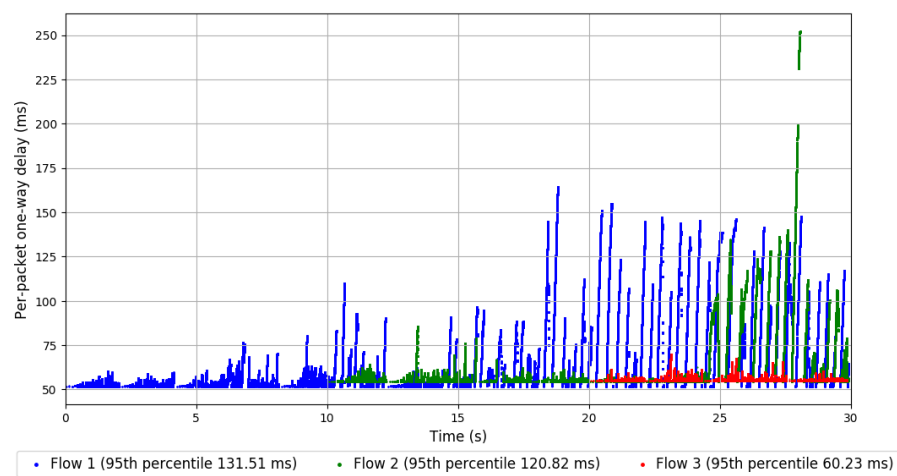
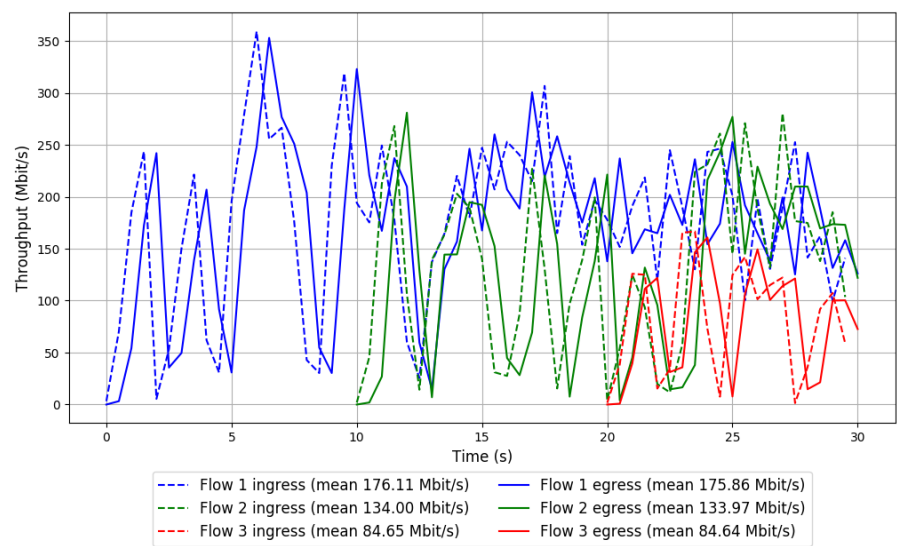


Run 2: Statistics of Verus

Start at: 2018-09-07 02:41:27
End at: 2018-09-07 02:41:57
Local clock offset: 0.018 ms
Remote clock offset: 1.182 ms

Below is generated by plot.py at 2018-09-07 07:24:06
Datalink statistics
-- Total of 3 flows:
Average throughput: 292.55 Mbit/s
95th percentile per-packet one-way delay: 126.351 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 175.86 Mbit/s
95th percentile per-packet one-way delay: 131.512 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 133.97 Mbit/s
95th percentile per-packet one-way delay: 120.822 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 84.64 Mbit/s
95th percentile per-packet one-way delay: 60.228 ms
Loss rate: 0.00%

Run 2: Report of Verus — Data Link

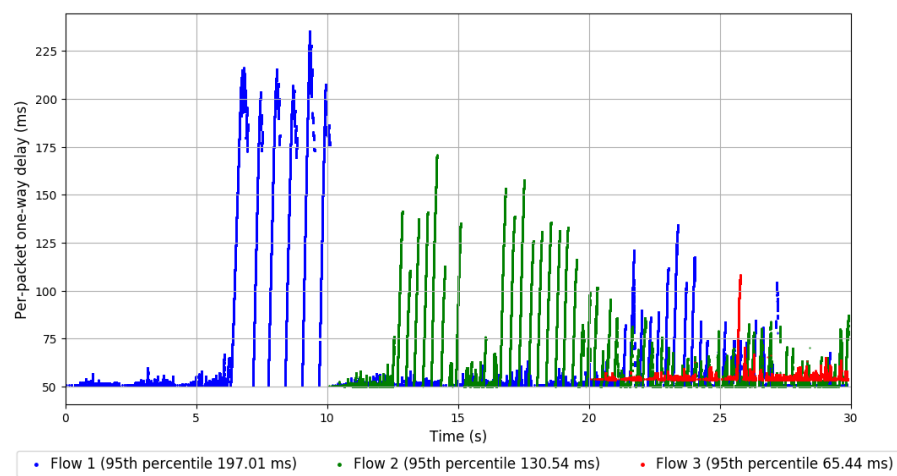
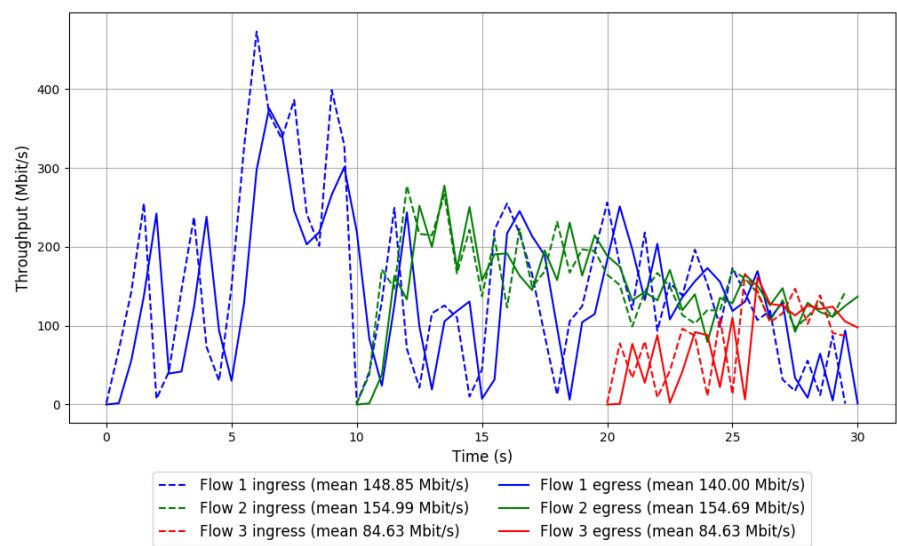


Run 3: Statistics of Verus

Start at: 2018-09-07 03:12:55
End at: 2018-09-07 03:13:25
Local clock offset: -0.395 ms
Remote clock offset: -0.065 ms

Below is generated by plot.py at 2018-09-07 07:24:06
Datalink statistics
-- Total of 3 flows:
Average throughput: 270.27 Mbit/s
95th percentile per-packet one-way delay: 184.317 ms
Loss rate: 3.24%
-- Flow 1:
Average throughput: 140.00 Mbit/s
95th percentile per-packet one-way delay: 197.007 ms
Loss rate: 5.95%
-- Flow 2:
Average throughput: 154.69 Mbit/s
95th percentile per-packet one-way delay: 130.539 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 84.63 Mbit/s
95th percentile per-packet one-way delay: 65.441 ms
Loss rate: 0.00%

Run 3: Report of Verus — Data Link

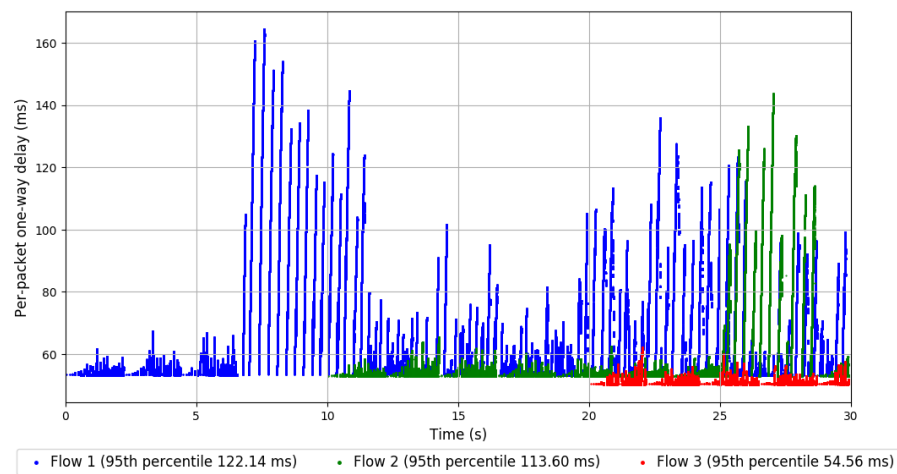
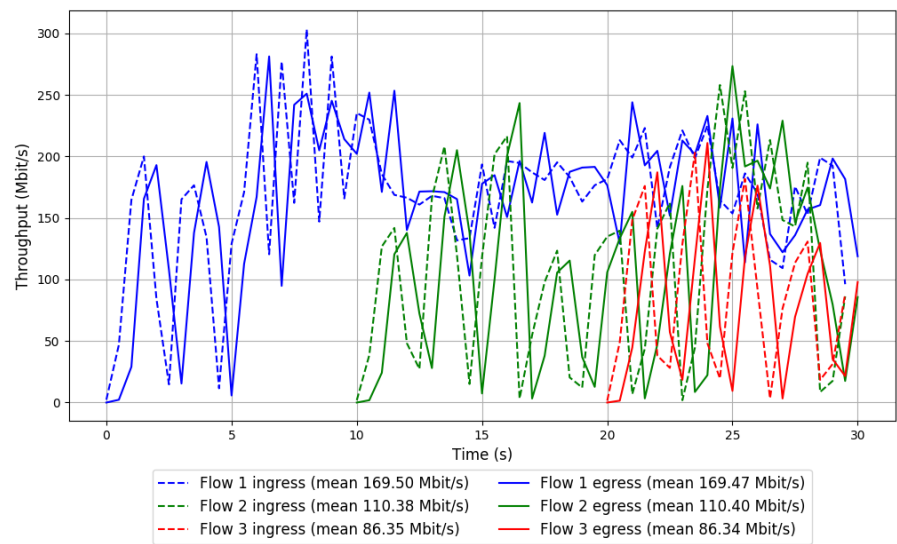


Run 4: Statistics of Verus

Start at: 2018-09-07 03:44:32
End at: 2018-09-07 03:45:02
Local clock offset: -0.094 ms
Remote clock offset: -0.227 ms

Below is generated by plot.py at 2018-09-07 07:24:06
Datalink statistics
-- Total of 3 flows:
Average throughput: 271.26 Mbit/s
95th percentile per-packet one-way delay: 117.546 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 169.47 Mbit/s
95th percentile per-packet one-way delay: 122.144 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 110.40 Mbit/s
95th percentile per-packet one-way delay: 113.597 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 86.34 Mbit/s
95th percentile per-packet one-way delay: 54.564 ms
Loss rate: 0.00%

Run 4: Report of Verus — Data Link

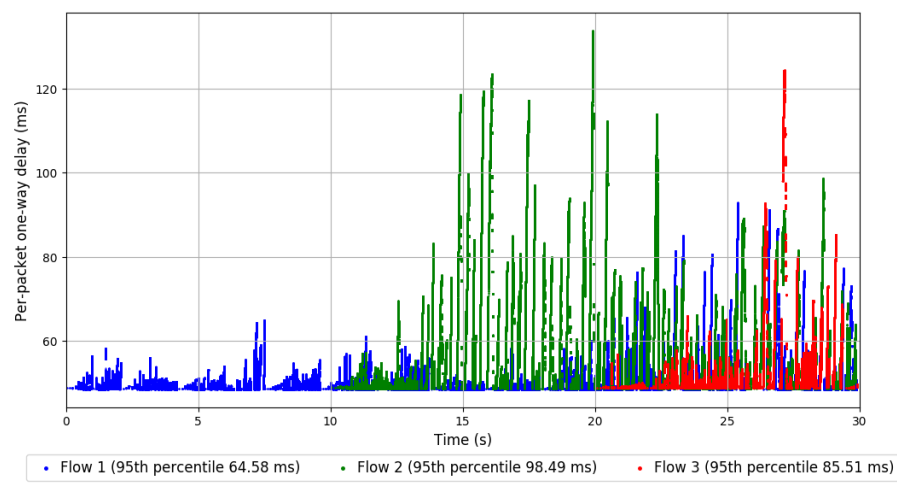
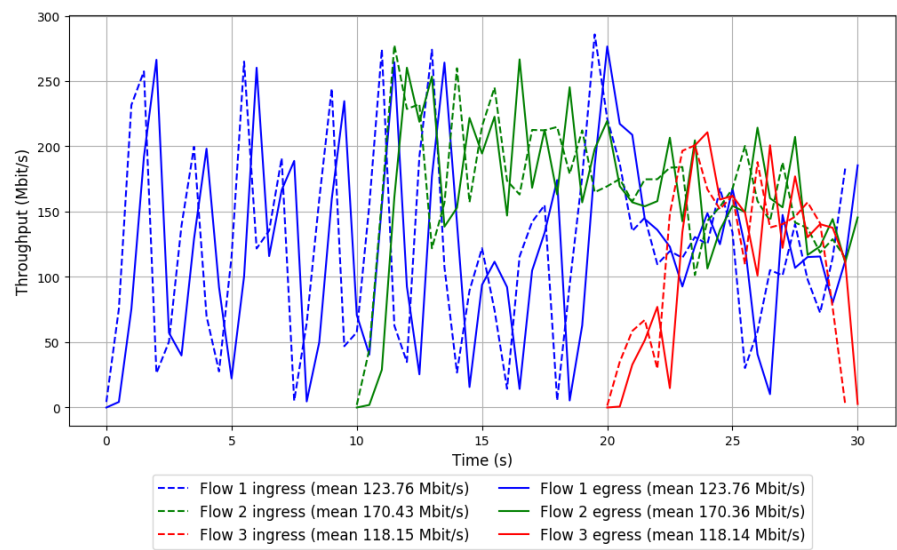


Run 5: Statistics of Verus

Start at: 2018-09-07 04:16:11
End at: 2018-09-07 04:16:41
Local clock offset: -0.129 ms
Remote clock offset: -1.585 ms

Below is generated by plot.py at 2018-09-07 07:24:45
Datalink statistics
-- Total of 3 flows:
Average throughput: 275.52 Mbit/s
95th percentile per-packet one-way delay: 85.040 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 123.76 Mbit/s
95th percentile per-packet one-way delay: 64.582 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 170.36 Mbit/s
95th percentile per-packet one-way delay: 98.487 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 118.14 Mbit/s
95th percentile per-packet one-way delay: 85.507 ms
Loss rate: 0.00%

Run 5: Report of Verus — Data Link

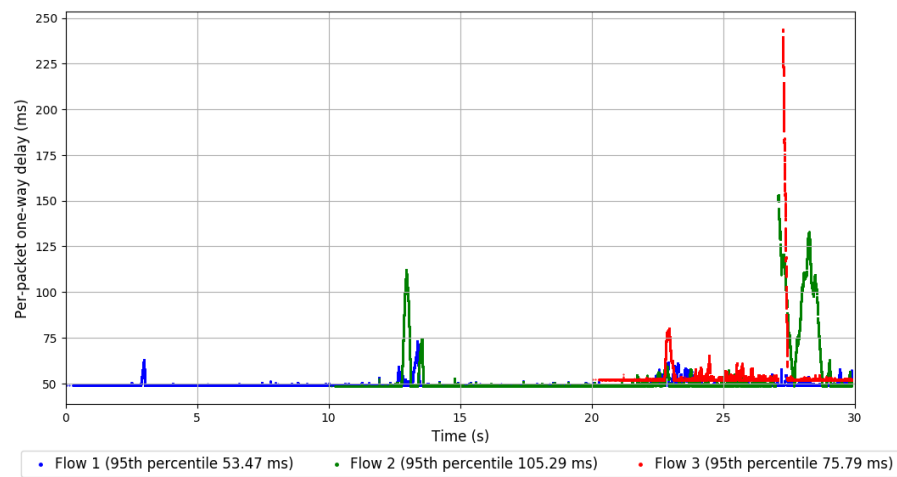
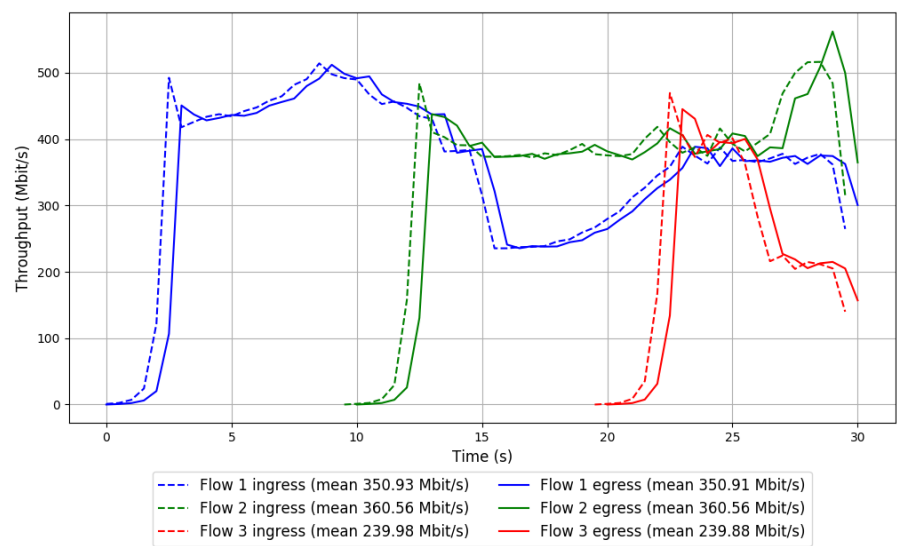


Run 1: Statistics of PCC-Vivace

Start at: 2018-09-07 02:15:54
End at: 2018-09-07 02:16:24
Local clock offset: -0.017 ms
Remote clock offset: -1.524 ms

Below is generated by plot.py at 2018-09-07 07:27:18
Datalink statistics
-- Total of 3 flows:
Average throughput: 670.14 Mbit/s
95th percentile per-packet one-way delay: 70.391 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 350.91 Mbit/s
95th percentile per-packet one-way delay: 53.470 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 360.56 Mbit/s
95th percentile per-packet one-way delay: 105.291 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 239.88 Mbit/s
95th percentile per-packet one-way delay: 75.790 ms
Loss rate: 0.07%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-09-07 02:47:27

End at: 2018-09-07 02:47:57

Local clock offset: -0.178 ms

Remote clock offset: 1.272 ms

Below is generated by plot.py at 2018-09-07 07:27:18

Datalink statistics

-- Total of 3 flows:

Average throughput: 625.67 Mbit/s

95th percentile per-packet one-way delay: 60.665 ms

Loss rate: 0.02%

-- Flow 1:

Average throughput: 358.80 Mbit/s

95th percentile per-packet one-way delay: 61.889 ms

Loss rate: 0.03%

-- Flow 2:

Average throughput: 351.70 Mbit/s

95th percentile per-packet one-way delay: 60.482 ms

Loss rate: 0.00%

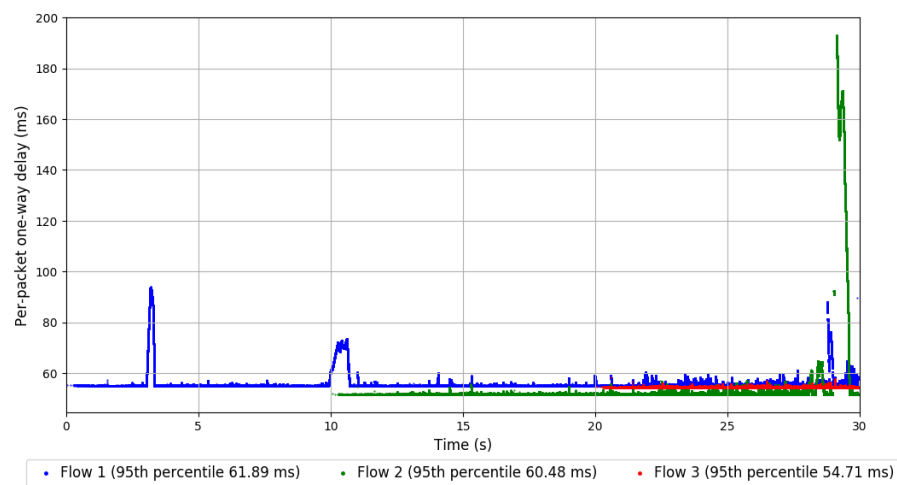
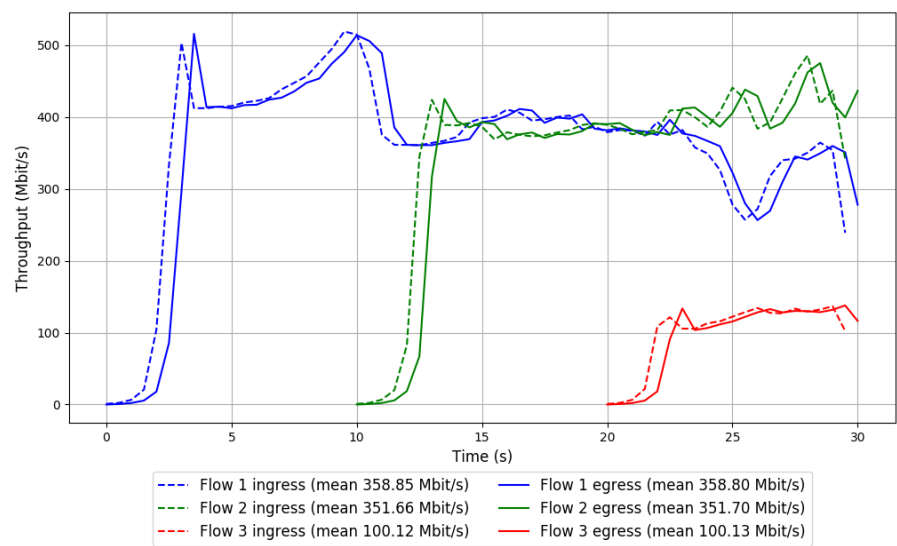
-- Flow 3:

Average throughput: 100.13 Mbit/s

95th percentile per-packet one-way delay: 54.712 ms

Loss rate: 0.03%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-09-07 03:19:05

End at: 2018-09-07 03:19:35

Local clock offset: 0.075 ms

Remote clock offset: -0.63 ms

Below is generated by plot.py at 2018-09-07 07:27:18

Datalink statistics

-- Total of 3 flows:

Average throughput: 629.70 Mbit/s

95th percentile per-packet one-way delay: 56.517 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 352.00 Mbit/s

95th percentile per-packet one-way delay: 56.464 ms

Loss rate: 0.02%

-- Flow 2:

Average throughput: 322.81 Mbit/s

95th percentile per-packet one-way delay: 57.207 ms

Loss rate: 0.01%

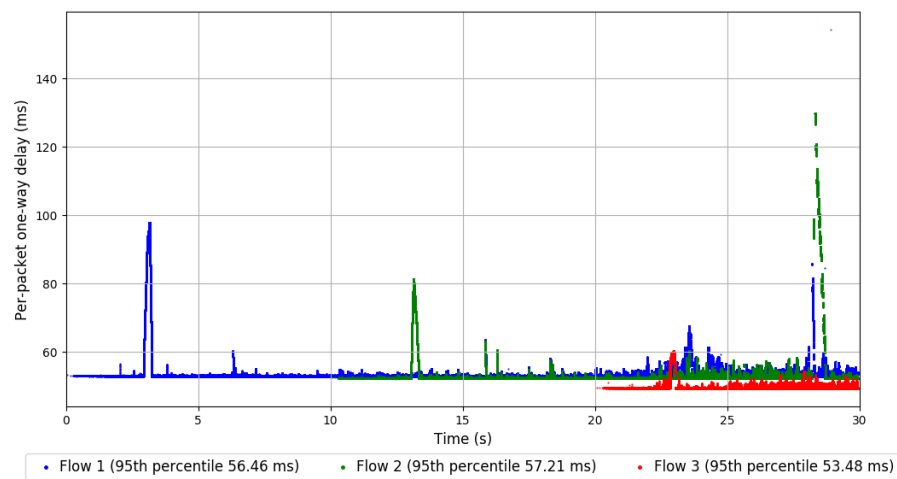
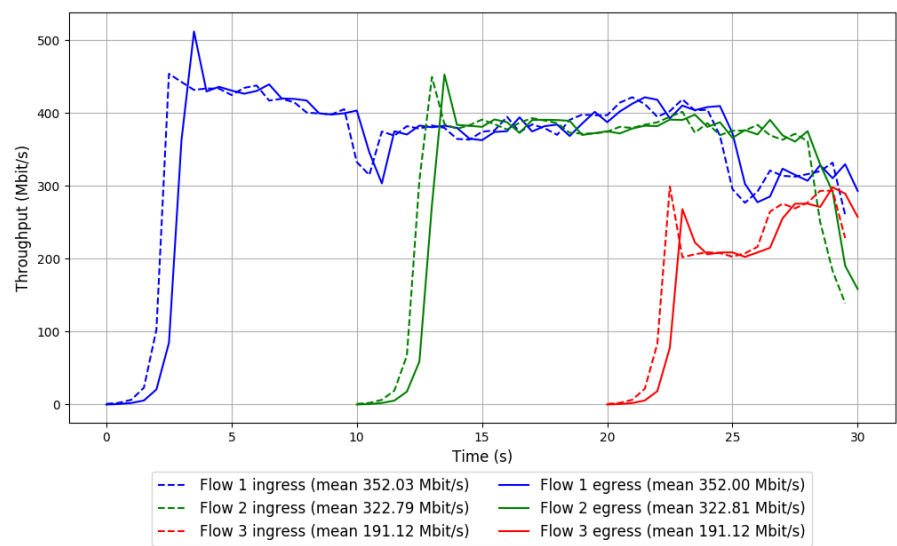
-- Flow 3:

Average throughput: 191.12 Mbit/s

95th percentile per-packet one-way delay: 53.483 ms

Loss rate: 0.00%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-09-07 03:50:41

End at: 2018-09-07 03:51:11

Local clock offset: -0.176 ms

Remote clock offset: 1.072 ms

Below is generated by plot.py at 2018-09-07 07:27:18

Datalink statistics

-- Total of 3 flows:

Average throughput: 540.42 Mbit/s

95th percentile per-packet one-way delay: 54.779 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 309.97 Mbit/s

95th percentile per-packet one-way delay: 52.641 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 304.41 Mbit/s

95th percentile per-packet one-way delay: 83.187 ms

Loss rate: 0.01%

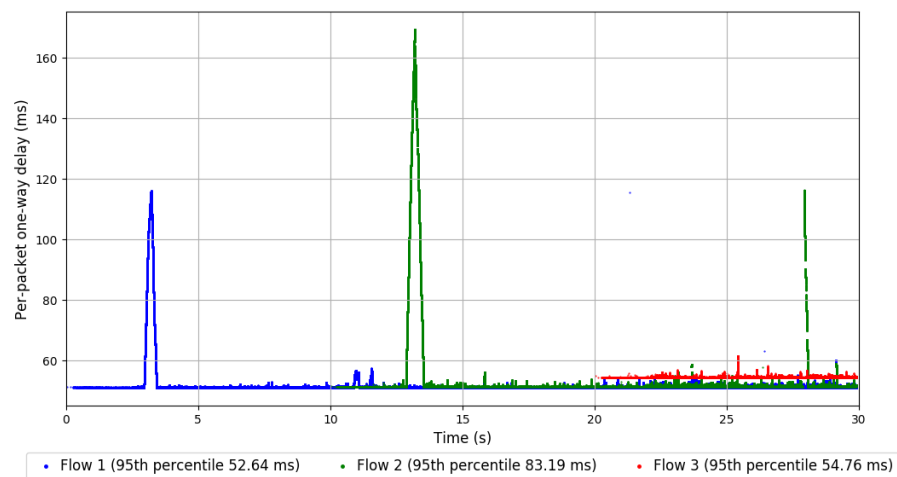
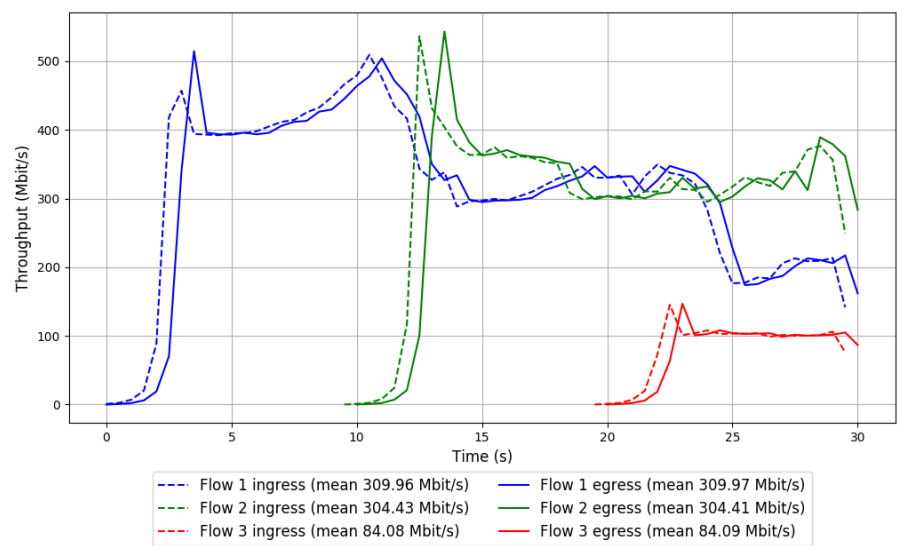
-- Flow 3:

Average throughput: 84.09 Mbit/s

95th percentile per-packet one-way delay: 54.755 ms

Loss rate: 0.05%

Run 4: Report of PCC-Vivace — Data Link

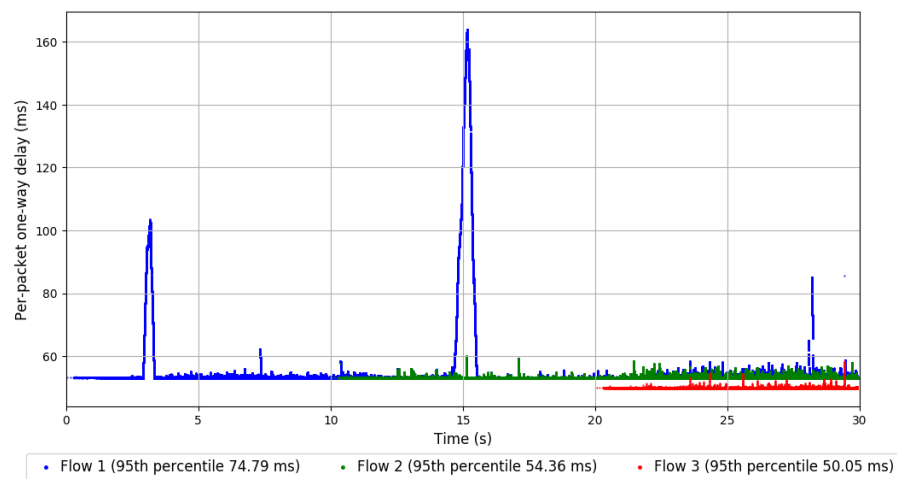
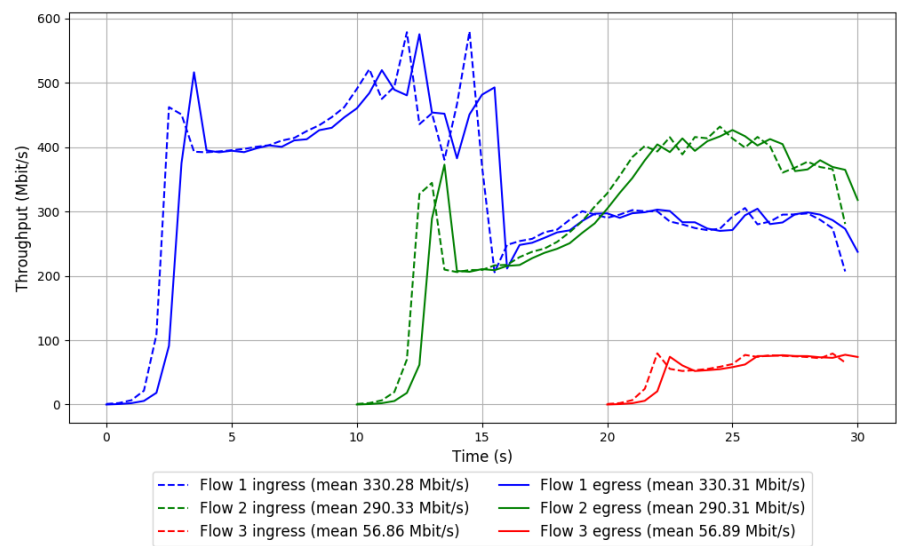


Run 5: Statistics of PCC-Vivace

Start at: 2018-09-07 04:22:23
End at: 2018-09-07 04:22:53
Local clock offset: 0.003 ms
Remote clock offset: -0.178 ms

Below is generated by plot.py at 2018-09-07 07:27:35
Datalink statistics
-- Total of 3 flows:
Average throughput: 542.12 Mbit/s
95th percentile per-packet one-way delay: 55.736 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 330.31 Mbit/s
95th percentile per-packet one-way delay: 74.787 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 290.31 Mbit/s
95th percentile per-packet one-way delay: 54.356 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 56.89 Mbit/s
95th percentile per-packet one-way delay: 50.048 ms
Loss rate: 0.00%

Run 5: Report of PCC-Vivace — Data Link

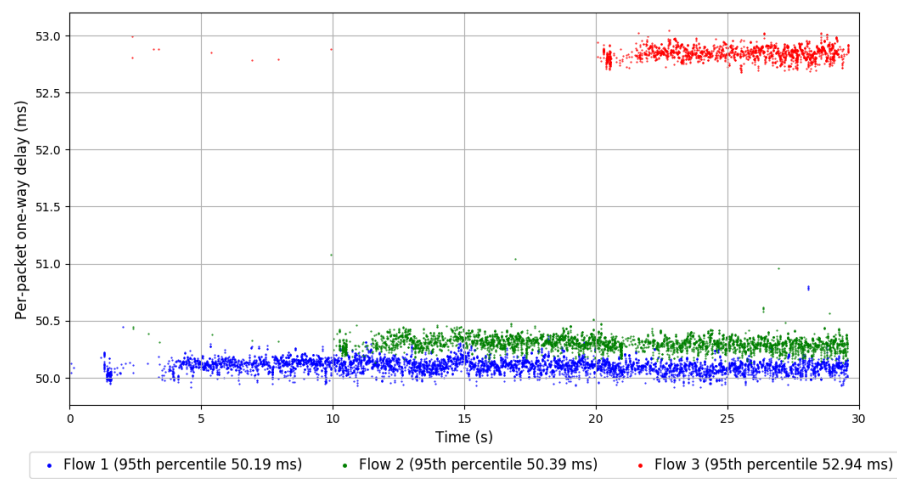
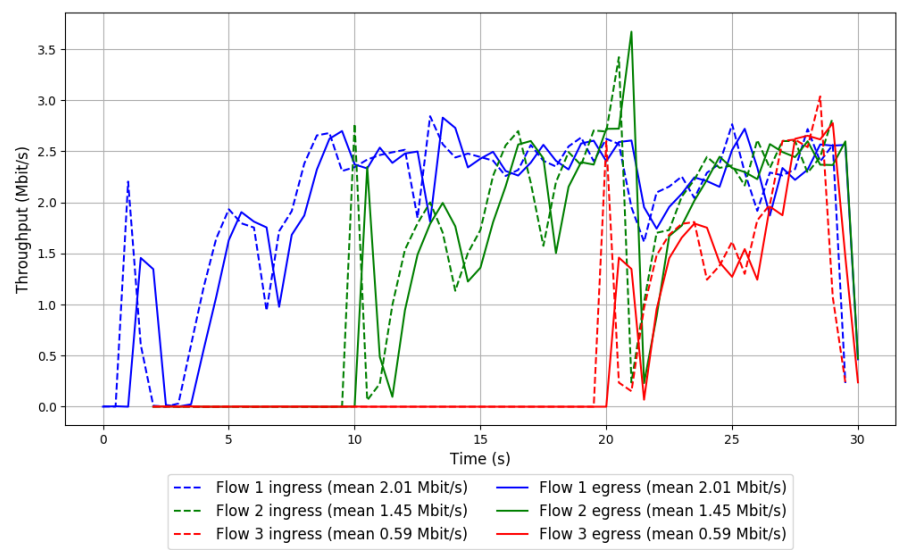


Run 1: Statistics of WebRTC media

Start at: 2018-09-07 02:13:27
End at: 2018-09-07 02:13:57
Local clock offset: -0.013 ms
Remote clock offset: -0.347 ms

Below is generated by plot.py at 2018-09-07 07:27:35
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.89 Mbit/s
95th percentile per-packet one-way delay: 52.868 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.01 Mbit/s
95th percentile per-packet one-way delay: 50.194 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.45 Mbit/s
95th percentile per-packet one-way delay: 50.394 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 52.936 ms
Loss rate: 0.00%

Run 1: Report of WebRTC media — Data Link

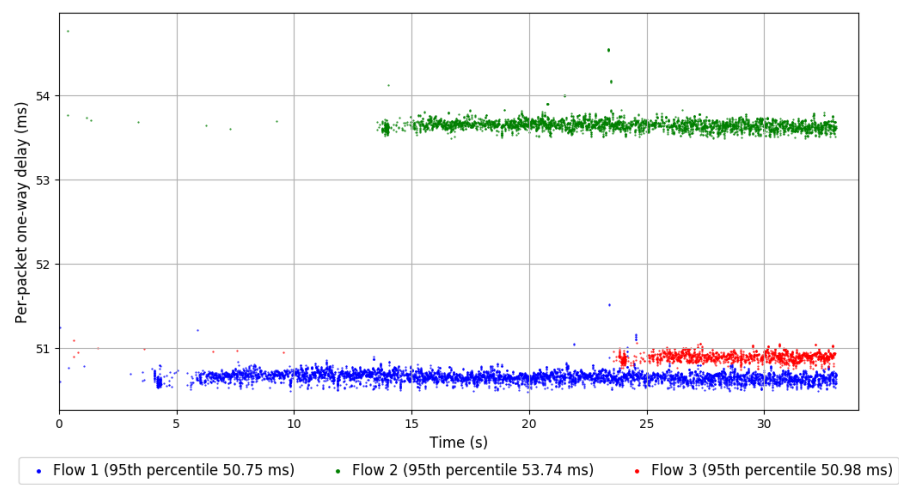
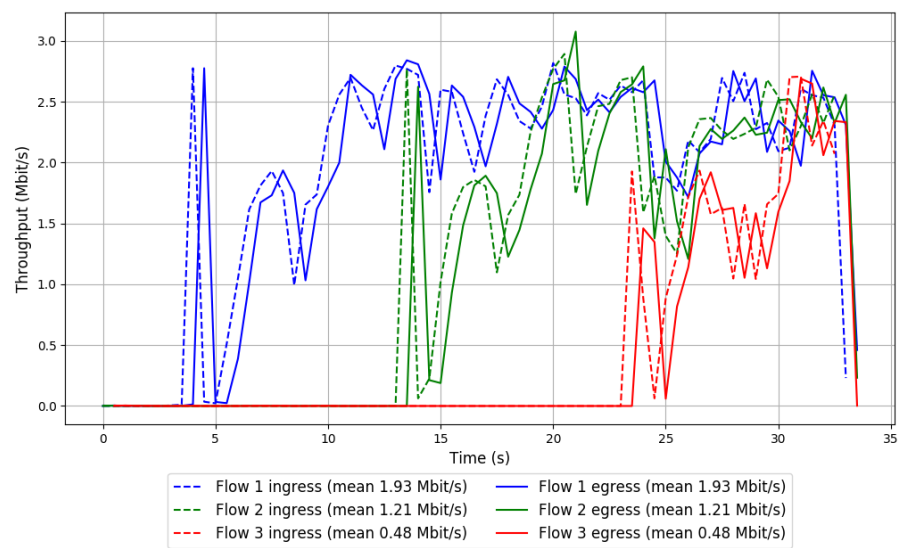


Run 2: Statistics of WebRTC media

Start at: 2018-09-07 02:45:00
End at: 2018-09-07 02:45:30
Local clock offset: -0.348 ms
Remote clock offset: -0.027 ms

Below is generated by plot.py at 2018-09-07 07:27:35
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.59 Mbit/s
95th percentile per-packet one-way delay: 53.701 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 50.751 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.21 Mbit/s
95th percentile per-packet one-way delay: 53.740 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 50.985 ms
Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-09-07 03:16:38

End at: 2018-09-07 03:17:08

Local clock offset: -0.032 ms

Remote clock offset: 0.104 ms

Below is generated by plot.py at 2018-09-07 07:27:35

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.59 Mbit/s

95th percentile per-packet one-way delay: 53.808 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 1.92 Mbit/s

95th percentile per-packet one-way delay: 53.825 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 1.19 Mbit/s

95th percentile per-packet one-way delay: 53.447 ms

Loss rate: 0.00%

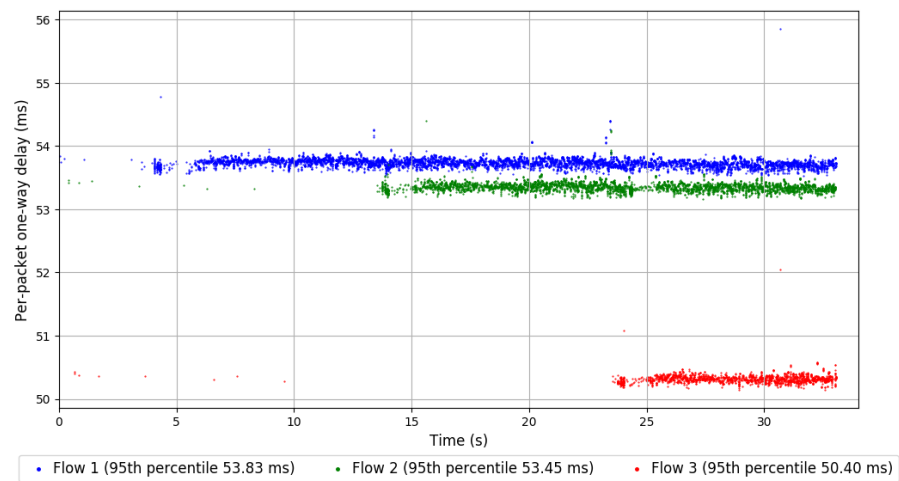
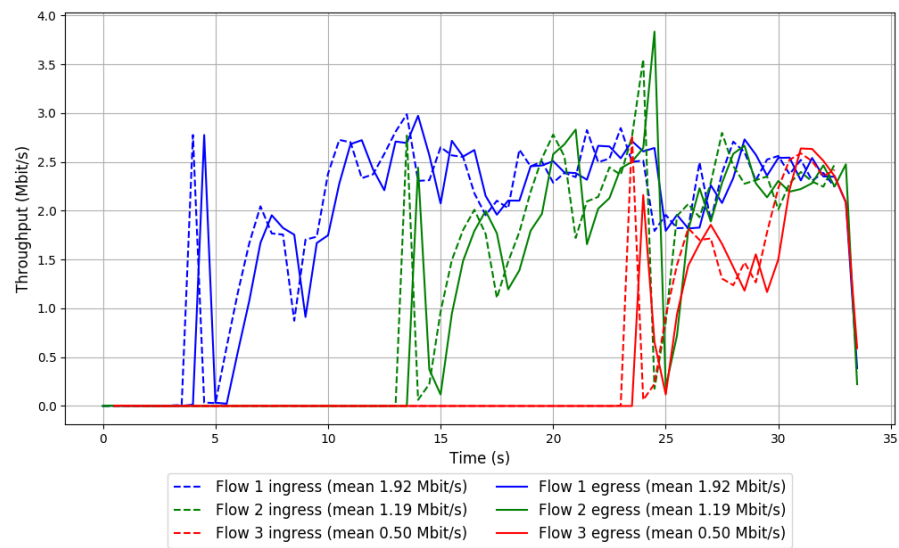
-- Flow 3:

Average throughput: 0.50 Mbit/s

95th percentile per-packet one-way delay: 50.402 ms

Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2018-09-07 03:48:14

End at: 2018-09-07 03:48:44

Local clock offset: 0.015 ms

Remote clock offset: 0.394 ms

Below is generated by plot.py at 2018-09-07 07:27:35

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.74 Mbit/s

95th percentile per-packet one-way delay: 53.520 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 2.03 Mbit/s

95th percentile per-packet one-way delay: 50.862 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 1.22 Mbit/s

95th percentile per-packet one-way delay: 53.556 ms

Loss rate: 0.00%

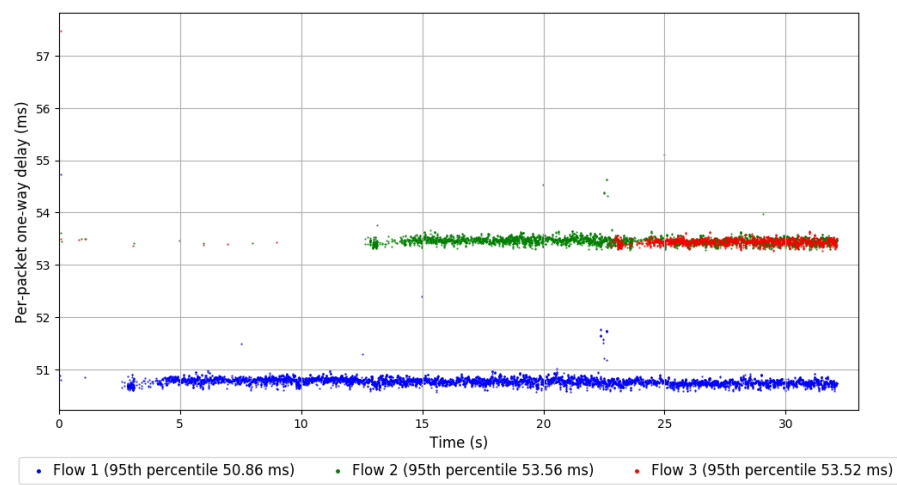
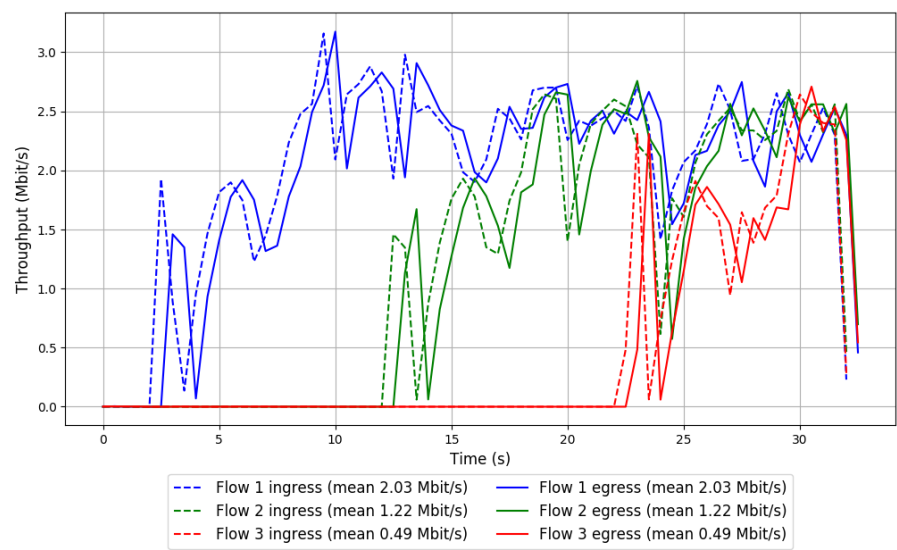
-- Flow 3:

Average throughput: 0.49 Mbit/s

95th percentile per-packet one-way delay: 53.523 ms

Loss rate: 0.00%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-09-07 04:19:55

End at: 2018-09-07 04:20:25

Local clock offset: -0.322 ms

Remote clock offset: 0.874 ms

Below is generated by plot.py at 2018-09-07 07:27:35

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.56 Mbit/s

95th percentile per-packet one-way delay: 54.838 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 1.92 Mbit/s

95th percentile per-packet one-way delay: 54.852 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 1.18 Mbit/s

95th percentile per-packet one-way delay: 54.836 ms

Loss rate: 0.00%

-- Flow 3:

Average throughput: 0.48 Mbit/s

95th percentile per-packet one-way delay: 54.616 ms

Loss rate: 0.00%

Run 5: Report of WebRTC media — Data Link

