

Pantheon Report

Generated at 2018-11-16 05:19:50 (UTC).

Data path: GCE Iowa on `ens4` (*remote*) → GCE London on `ens4` (*local*).

Repeated the test of 18 congestion control schemes 5 times.

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

NTP offsets were measured against `time.google.com` and have been applied to correct the timestamps in logs.

System info:

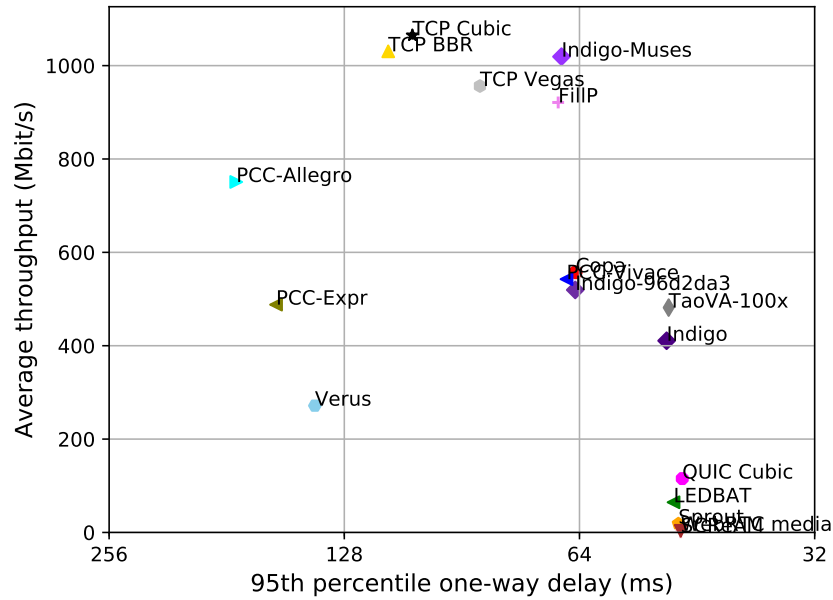
```
Linux 4.15.0-1021-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

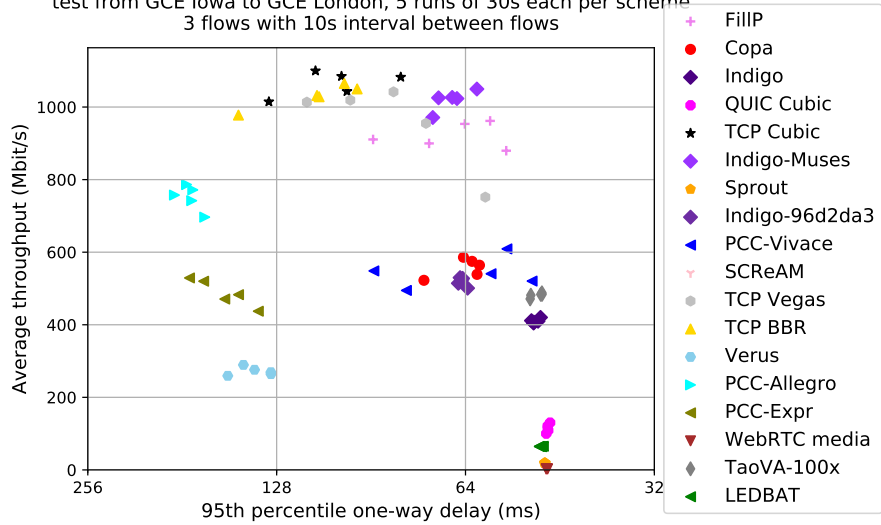
```
branch: muses @ 794ca3866981572cb73700a276691acf79c60f2b
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quick @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
```

third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

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



test from GCE Iowa to GCE London, 5 runs of 30s each per scheme
 3 flows with 10s interval between flows



scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	531.36	515.76	472.66	113.84	111.23	103.29	0.42	0.68	1.44
Copa	5	289.32	282.21	242.93	59.14	66.13	69.33	0.29	0.42	0.88
TCP Cubic	5	568.44	523.40	450.20	92.11	102.83	106.44	0.36	0.61	1.40
FillP	5	590.79	373.07	252.28	77.79	52.73	51.22	0.31	0.25	1.15
Indigo	5	218.70	201.95	175.92	49.40	49.73	49.35	0.33	0.50	1.06
Indigo-96d2da3	5	268.43	260.97	238.82	64.52	65.08	64.73	0.29	0.57	1.14
LEDBAT	5	41.81	27.59	13.68	48.51	48.51	48.17	0.62	0.95	1.91
Indigo-Muses	5	567.58	485.61	399.46	68.20	68.06	63.53	0.30	0.48	1.26
PCC-Allegro	5	412.77	370.53	281.40	177.46	156.03	125.51	6.09	4.41	3.57
PCC-Expr	5	293.29	250.68	86.28	153.74	136.82	55.13	2.46	2.45	1.68
QUIC Cubic	5	64.24	48.35	56.38	46.83	47.03	47.23	0.36	0.60	1.11
SCReAM	5	0.22	0.22	0.22	47.33	47.47	47.37	0.28	0.57	0.94
Sprout	5	9.63	9.46	9.25	47.81	47.69	47.83	0.32	0.47	0.94
TaoVA-100x	5	245.74	242.04	226.95	49.10	49.07	49.66	0.33	0.51	1.02
TCP Vegas	5	471.05	514.61	433.20	82.53	85.51	75.43	0.23	0.38	1.18
Verus	5	150.83	125.32	114.33	120.29	106.83	113.15	0.39	0.51	1.42
PCC-Vivace	5	323.56	286.17	88.65	62.25	84.30	48.78	0.29	0.66	1.47
WebRTC media	5	1.82	1.20	0.46	47.47	47.52	47.32	0.40	0.54	1.29

Run 1: Statistics of TCP BBR

Start at: 2018-11-16 00:23:23

End at: 2018-11-16 00:23:53

Local clock offset: -0.011 ms

Remote clock offset: 0.027 ms

Below is generated by plot.py at 2018-11-16 03:06:08

Datalink statistics

-- Total of 3 flows:

Average throughput: 1028.35 Mbit/s

95th percentile per-packet one-way delay: 109.530 ms

Loss rate: 0.69%

-- Flow 1:

Average throughput: 526.55 Mbit/s

95th percentile per-packet one-way delay: 109.533 ms

Loss rate: 0.45%

-- Flow 2:

Average throughput: 528.22 Mbit/s

95th percentile per-packet one-way delay: 103.929 ms

Loss rate: 0.67%

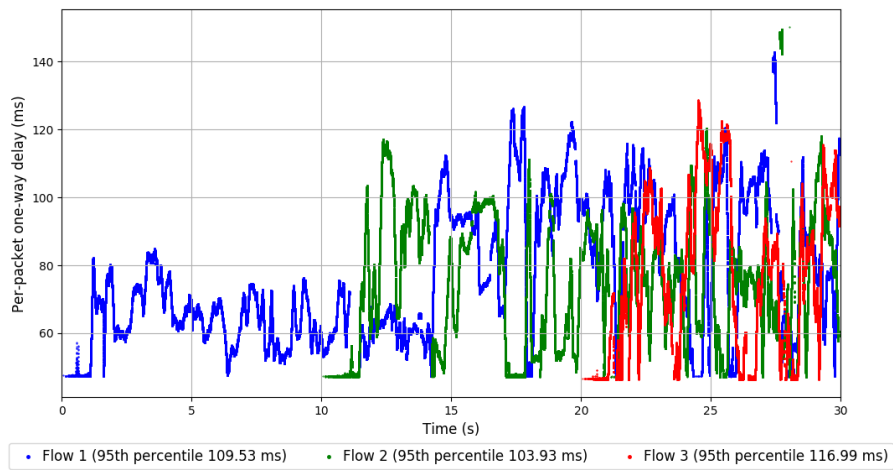
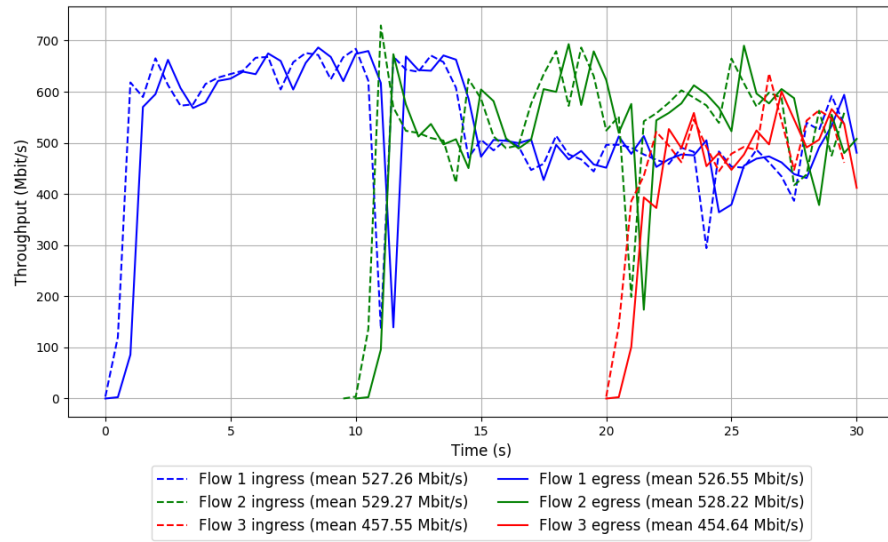
-- Flow 3:

Average throughput: 454.64 Mbit/s

95th percentile per-packet one-way delay: 116.988 ms

Loss rate: 1.57%

Run 1: Report of TCP BBR — Data Link

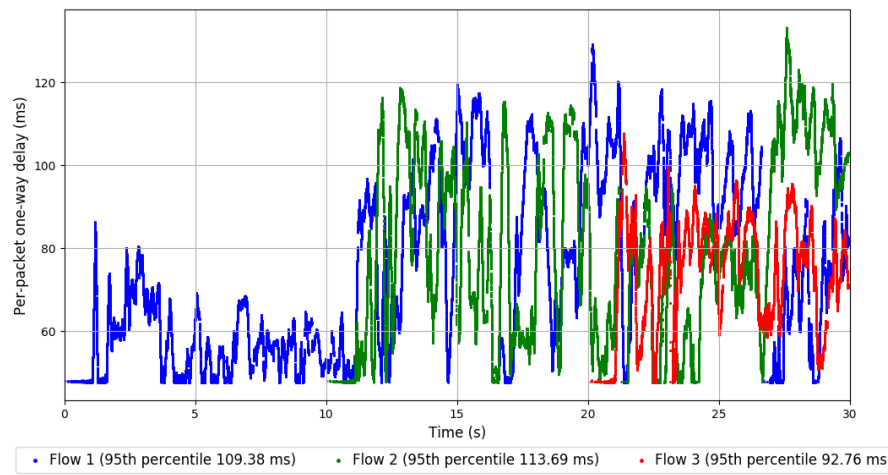
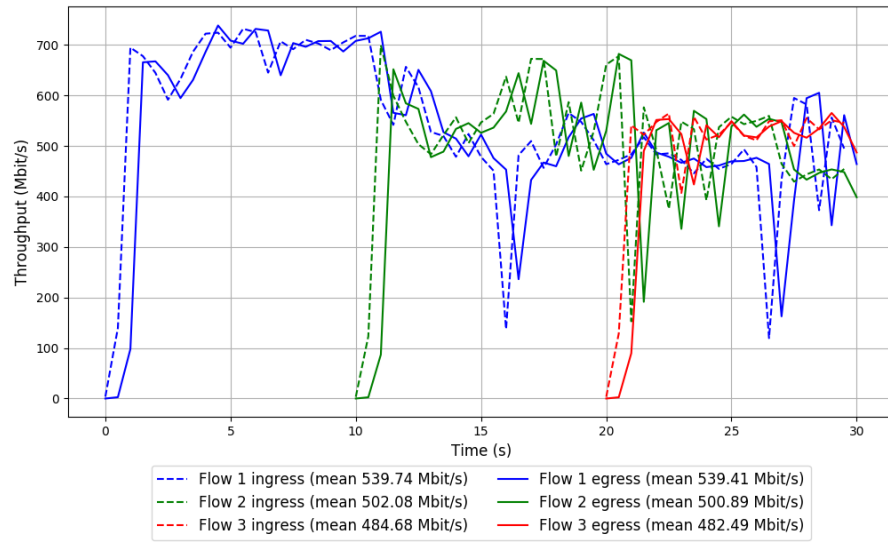


Run 2: Statistics of TCP BBR

Start at: 2018-11-16 00:54:33
End at: 2018-11-16 00:55:03
Local clock offset: 0.395 ms
Remote clock offset: -0.081 ms

Below is generated by plot.py at 2018-11-16 03:06:14
Datalink statistics
-- Total of 3 flows:
Average throughput: 1031.99 Mbit/s
95th percentile per-packet one-way delay: 110.379 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 539.41 Mbit/s
95th percentile per-packet one-way delay: 109.382 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 500.89 Mbit/s
95th percentile per-packet one-way delay: 113.694 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 482.49 Mbit/s
95th percentile per-packet one-way delay: 92.760 ms
Loss rate: 1.40%

Run 2: Report of TCP BBR — Data Link

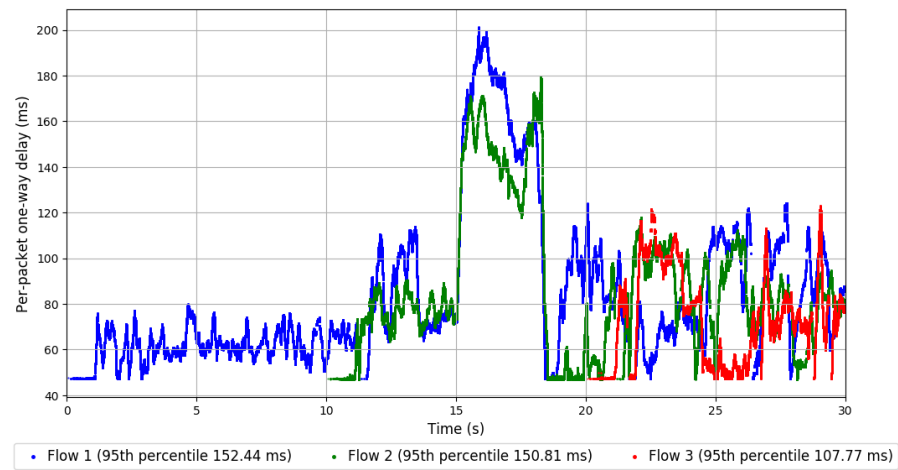
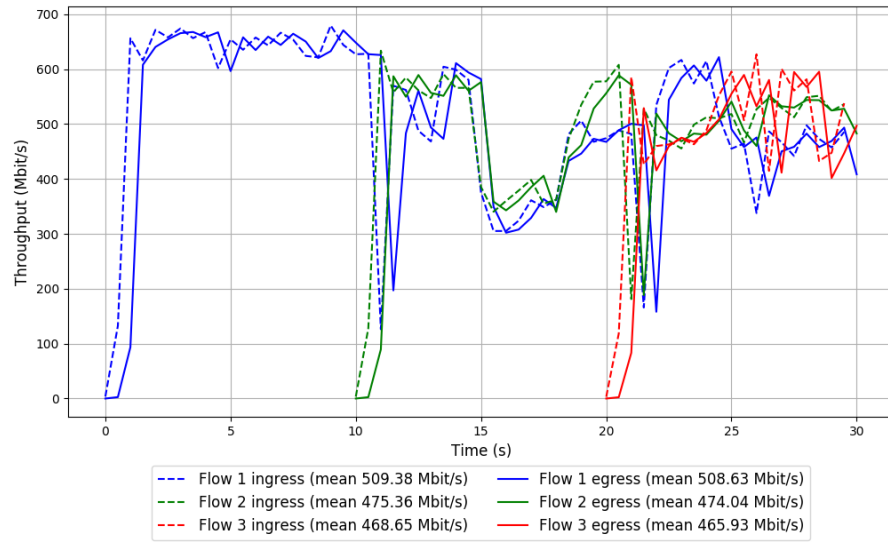


Run 3: Statistics of TCP BBR

Start at: 2018-11-16 01:25:32
End at: 2018-11-16 01:26:02
Local clock offset: 0.13 ms
Remote clock offset: -0.067 ms

Below is generated by plot.py at 2018-11-16 03:06:14
Datalink statistics
-- Total of 3 flows:
Average throughput: 977.83 Mbit/s
95th percentile per-packet one-way delay: 147.266 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 508.63 Mbit/s
95th percentile per-packet one-way delay: 152.437 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 474.04 Mbit/s
95th percentile per-packet one-way delay: 150.815 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 465.93 Mbit/s
95th percentile per-packet one-way delay: 107.768 ms
Loss rate: 1.53%

Run 3: Report of TCP BBR — Data Link

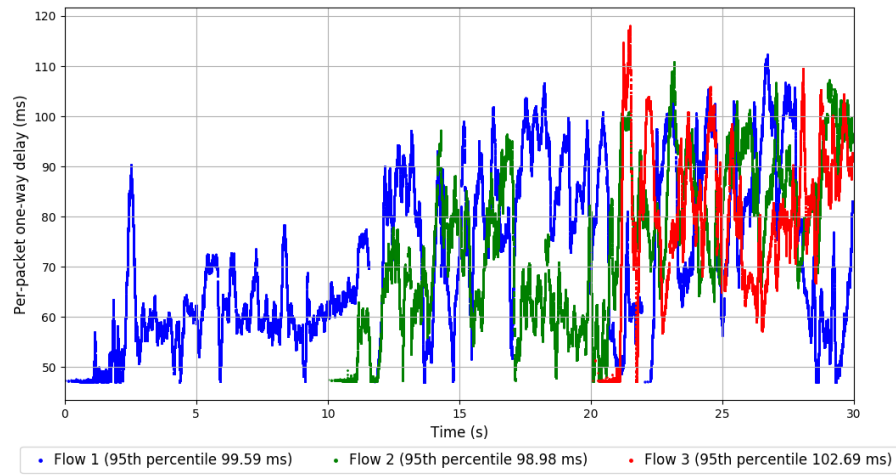
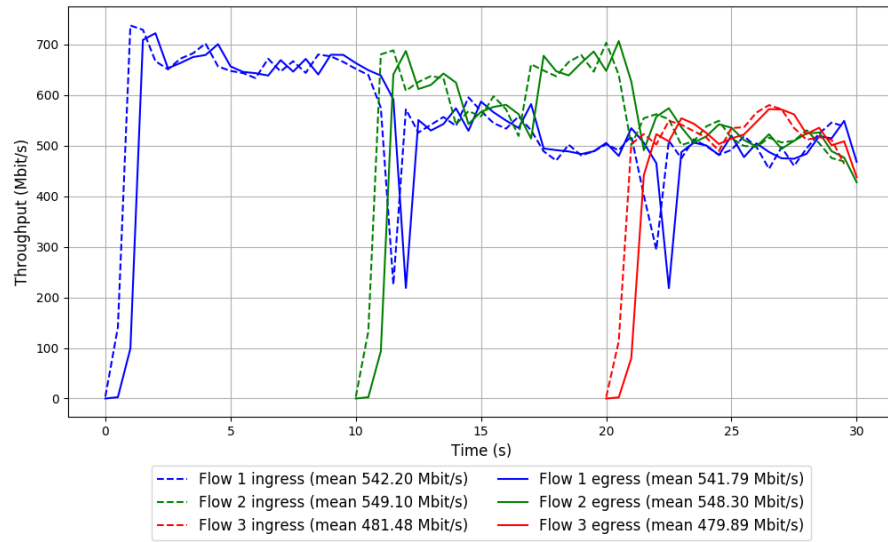


Run 4: Statistics of TCP BBR

Start at: 2018-11-16 01:56:40
End at: 2018-11-16 01:57:10
Local clock offset: 0.134 ms
Remote clock offset: -0.103 ms

Below is generated by plot.py at 2018-11-16 03:06:54
Datalink statistics
-- Total of 3 flows:
Average throughput: 1064.98 Mbit/s
95th percentile per-packet one-way delay: 99.844 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 541.79 Mbit/s
95th percentile per-packet one-way delay: 99.594 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 548.30 Mbit/s
95th percentile per-packet one-way delay: 98.977 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 479.89 Mbit/s
95th percentile per-packet one-way delay: 102.687 ms
Loss rate: 1.28%

Run 4: Report of TCP BBR — Data Link

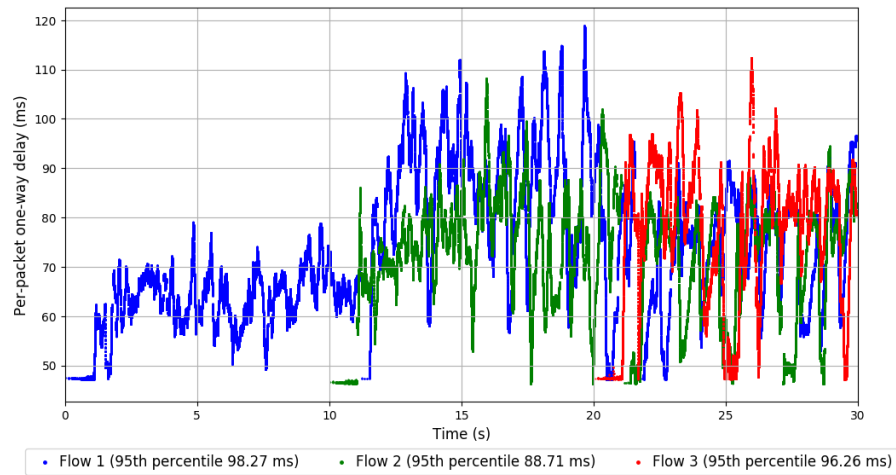
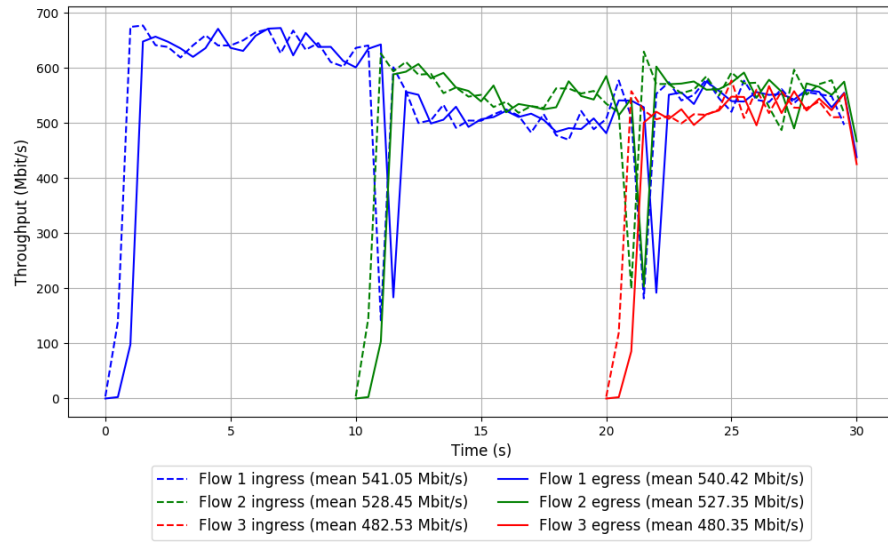


Run 5: Statistics of TCP BBR

Start at: 2018-11-16 02:27:48
End at: 2018-11-16 02:28:18
Local clock offset: 0.041 ms
Remote clock offset: -0.046 ms

Below is generated by plot.py at 2018-11-16 03:06:54
Datalink statistics
-- Total of 3 flows:
Average throughput: 1049.96 Mbit/s
95th percentile per-packet one-way delay: 95.251 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 540.42 Mbit/s
95th percentile per-packet one-way delay: 98.267 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 527.35 Mbit/s
95th percentile per-packet one-way delay: 88.714 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 480.35 Mbit/s
95th percentile per-packet one-way delay: 96.260 ms
Loss rate: 1.42%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-11-16 00:05:42

End at: 2018-11-16 00:06:12

Local clock offset: -0.008 ms

Remote clock offset: 0.242 ms

Below is generated by plot.py at 2018-11-16 03:07:29

Datalink statistics

-- Total of 3 flows:

Average throughput: 585.94 Mbit/s

95th percentile per-packet one-way delay: 64.479 ms

Loss rate: 0.48%

-- Flow 1:

Average throughput: 313.42 Mbit/s

95th percentile per-packet one-way delay: 65.497 ms

Loss rate: 0.35%

-- Flow 2:

Average throughput: 281.60 Mbit/s

95th percentile per-packet one-way delay: 63.908 ms

Loss rate: 0.43%

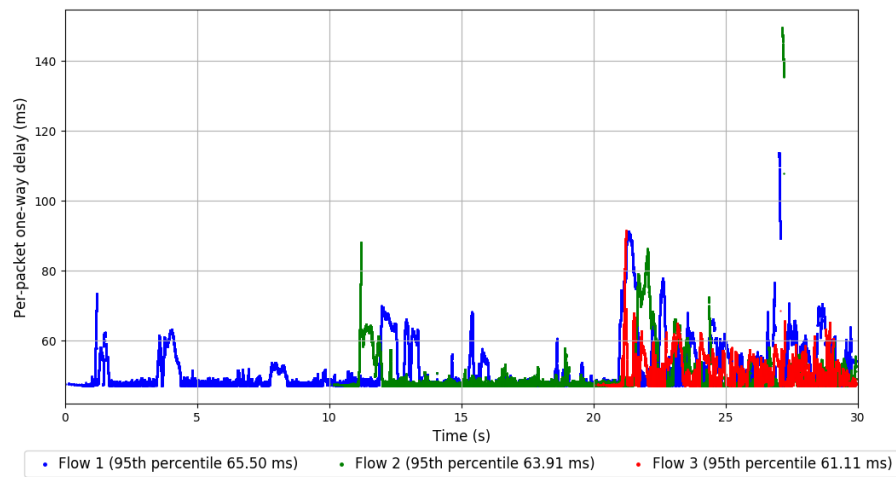
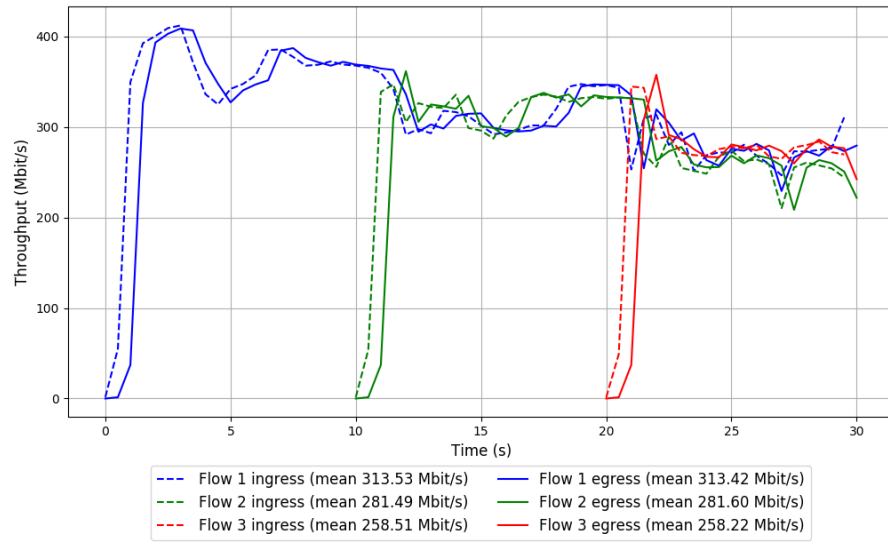
-- Flow 3:

Average throughput: 258.22 Mbit/s

95th percentile per-packet one-way delay: 61.109 ms

Loss rate: 1.04%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2018-11-16 00:36:59

End at: 2018-11-16 00:37:29

Local clock offset: -0.049 ms

Remote clock offset: -0.1 ms

Below is generated by plot.py at 2018-11-16 03:07:29

Datalink statistics

-- Total of 3 flows:

Average throughput: 522.50 Mbit/s

95th percentile per-packet one-way delay: 74.548 ms

Loss rate: 0.28%

-- Flow 1:

Average throughput: 281.90 Mbit/s

95th percentile per-packet one-way delay: 57.535 ms

Loss rate: 0.23%

-- Flow 2:

Average throughput: 264.42 Mbit/s

95th percentile per-packet one-way delay: 78.107 ms

Loss rate: 0.20%

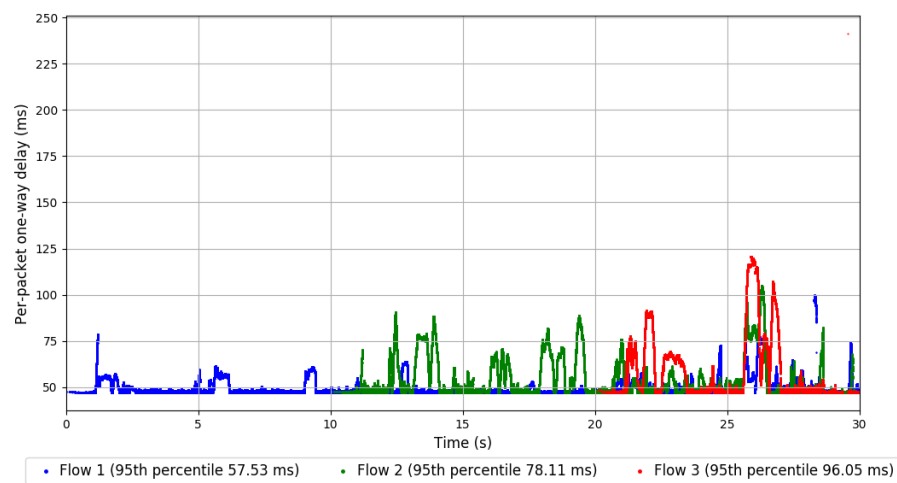
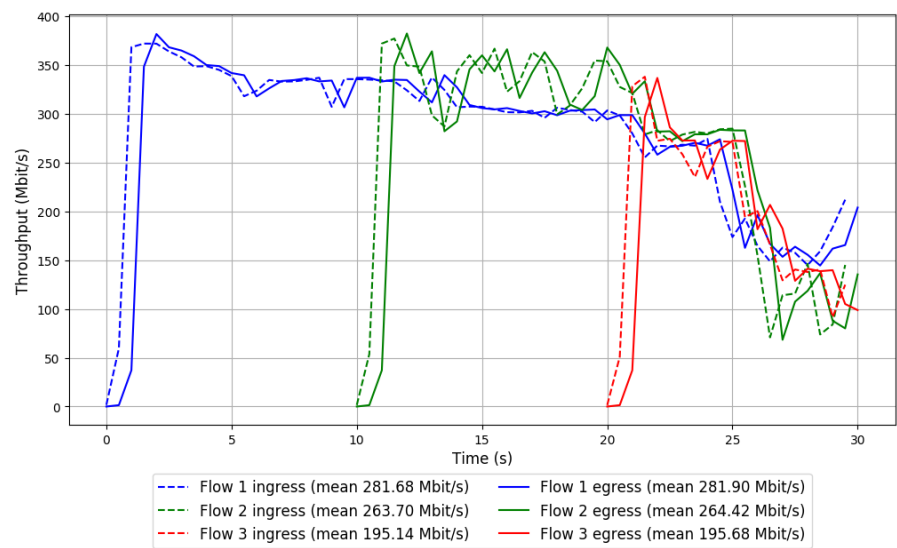
-- Flow 3:

Average throughput: 195.68 Mbit/s

95th percentile per-packet one-way delay: 96.051 ms

Loss rate: 0.67%

Run 2: Report of Copa — Data Link

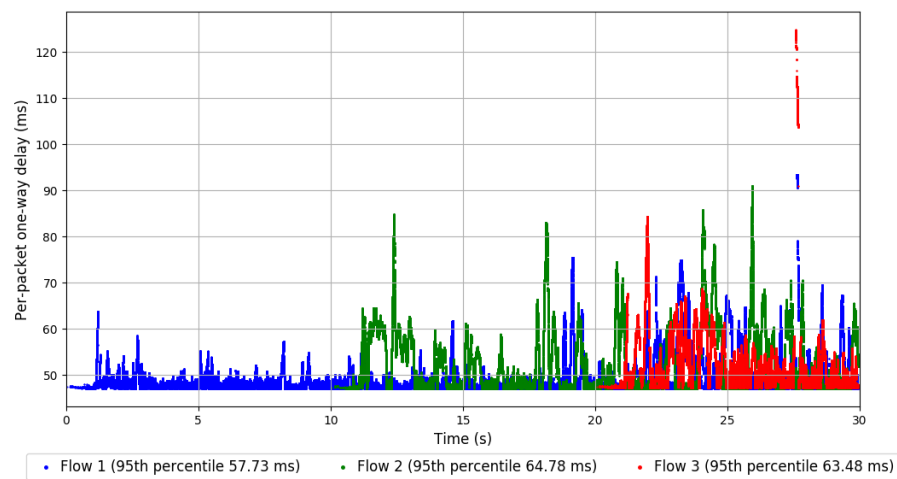
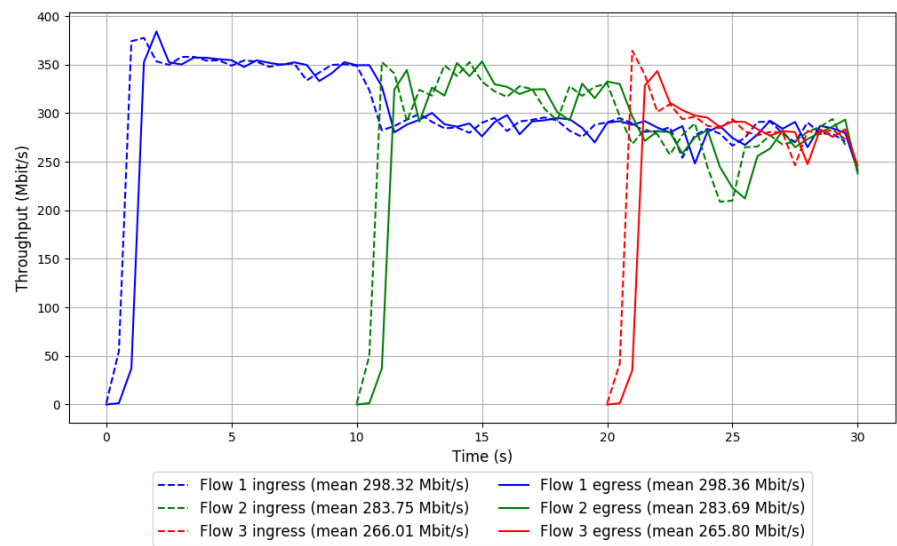


Run 3: Statistics of Copa

Start at: 2018-11-16 01:08:08
End at: 2018-11-16 01:08:38
Local clock offset: 0.059 ms
Remote clock offset: -0.082 ms

Below is generated by plot.py at 2018-11-16 03:07:29
Datalink statistics
-- Total of 3 flows:
Average throughput: 574.75 Mbit/s
95th percentile per-packet one-way delay: 62.475 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 298.36 Mbit/s
95th percentile per-packet one-way delay: 57.727 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 283.69 Mbit/s
95th percentile per-packet one-way delay: 64.775 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 265.80 Mbit/s
95th percentile per-packet one-way delay: 63.478 ms
Loss rate: 1.03%

Run 3: Report of Copa — Data Link

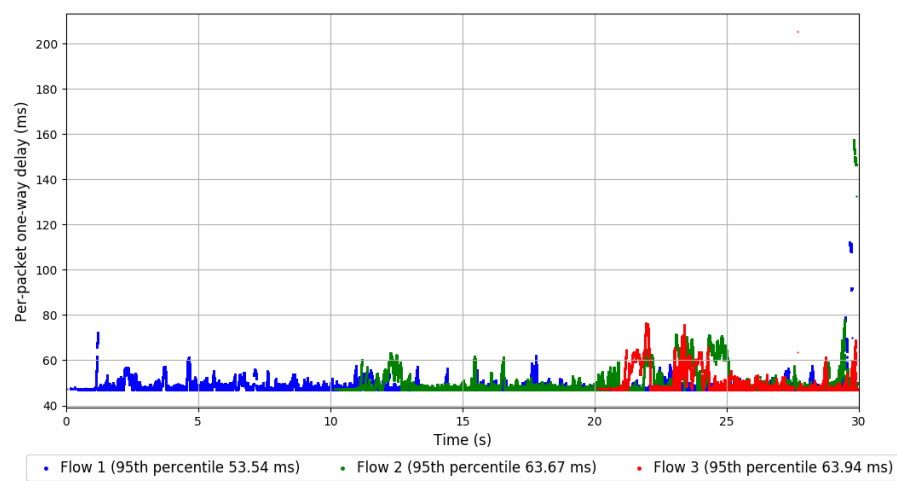
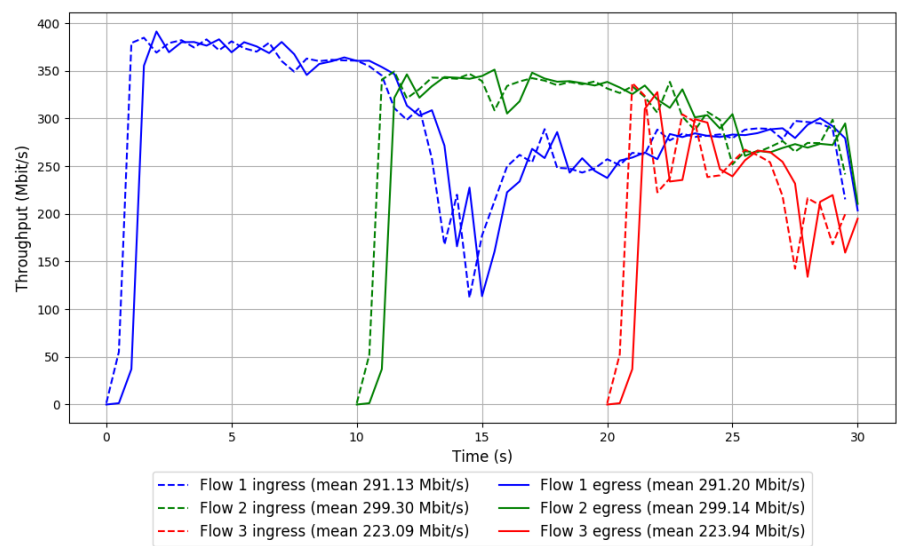


Run 4: Statistics of Copa

Start at: 2018-11-16 01:39:01
End at: 2018-11-16 01:39:31
Local clock offset: 0.103 ms
Remote clock offset: -0.089 ms

Below is generated by plot.py at 2018-11-16 03:25:44
Datalink statistics
-- Total of 3 flows:
Average throughput: 564.12 Mbit/s
95th percentile per-packet one-way delay: 60.800 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 291.20 Mbit/s
95th percentile per-packet one-way delay: 53.542 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 299.14 Mbit/s
95th percentile per-packet one-way delay: 63.673 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 223.94 Mbit/s
95th percentile per-packet one-way delay: 63.938 ms
Loss rate: 0.56%

Run 4: Report of Copa — Data Link

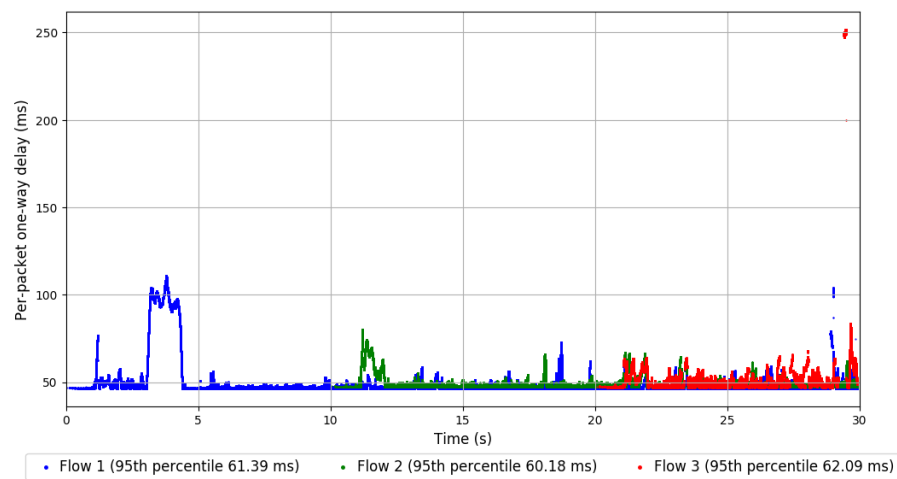
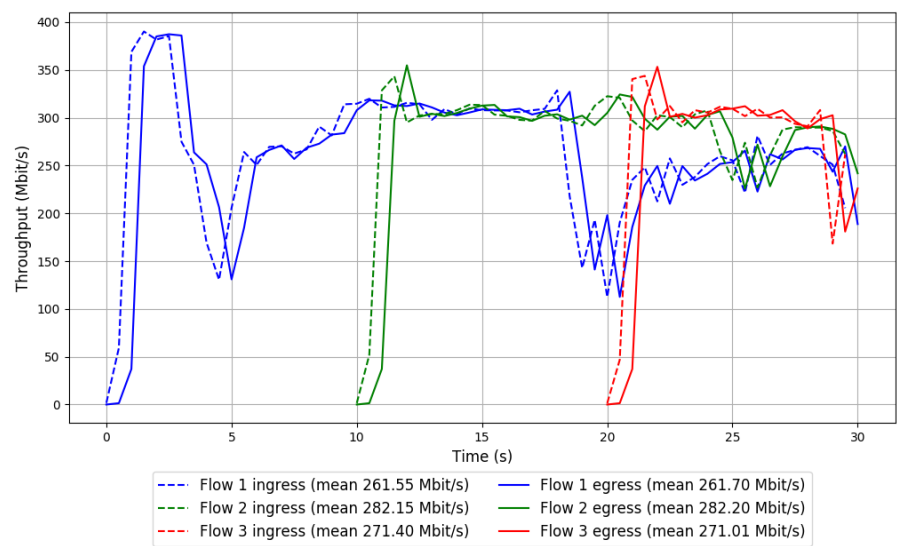


Run 5: Statistics of Copa

Start at: 2018-11-16 02:10:03
End at: 2018-11-16 02:10:33
Local clock offset: 0.035 ms
Remote clock offset: -0.074 ms

Below is generated by plot.py at 2018-11-16 03:25:44
Datalink statistics
-- Total of 3 flows:
Average throughput: 538.87 Mbit/s
95th percentile per-packet one-way delay: 61.343 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 261.70 Mbit/s
95th percentile per-packet one-way delay: 61.389 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 282.20 Mbit/s
95th percentile per-packet one-way delay: 60.182 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 271.01 Mbit/s
95th percentile per-packet one-way delay: 62.093 ms
Loss rate: 1.09%

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-11-16 00:20:08

End at: 2018-11-16 00:20:38

Local clock offset: 0.017 ms

Remote clock offset: 0.083 ms

Below is generated by plot.py at 2018-11-16 03:25:51

Datalink statistics

-- Total of 3 flows:

Average throughput: 1014.56 Mbit/s

95th percentile per-packet one-way delay: 131.708 ms

Loss rate: 0.64%

-- Flow 1:

Average throughput: 552.71 Mbit/s

95th percentile per-packet one-way delay: 87.645 ms

Loss rate: 0.38%

-- Flow 2:

Average throughput: 491.39 Mbit/s

95th percentile per-packet one-way delay: 123.789 ms

Loss rate: 0.62%

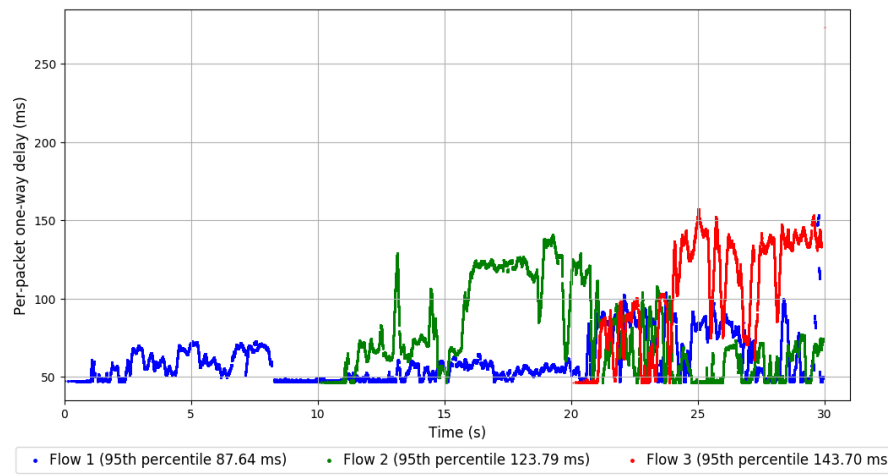
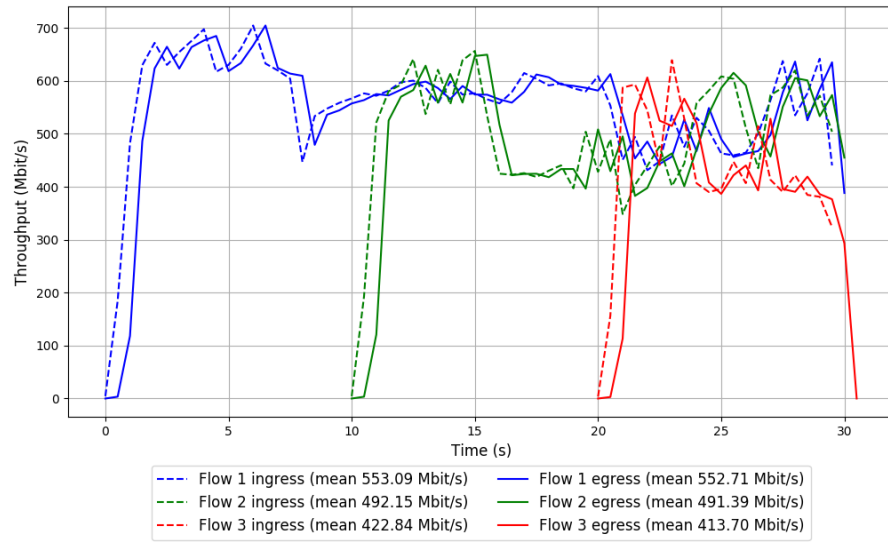
-- Flow 3:

Average throughput: 413.70 Mbit/s

95th percentile per-packet one-way delay: 143.701 ms

Loss rate: 1.70%

Run 1: Report of TCP Cubic — Data Link

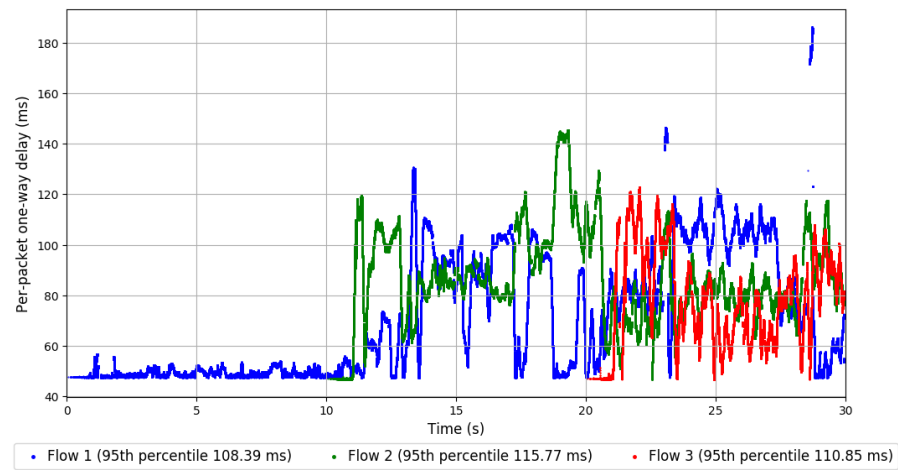
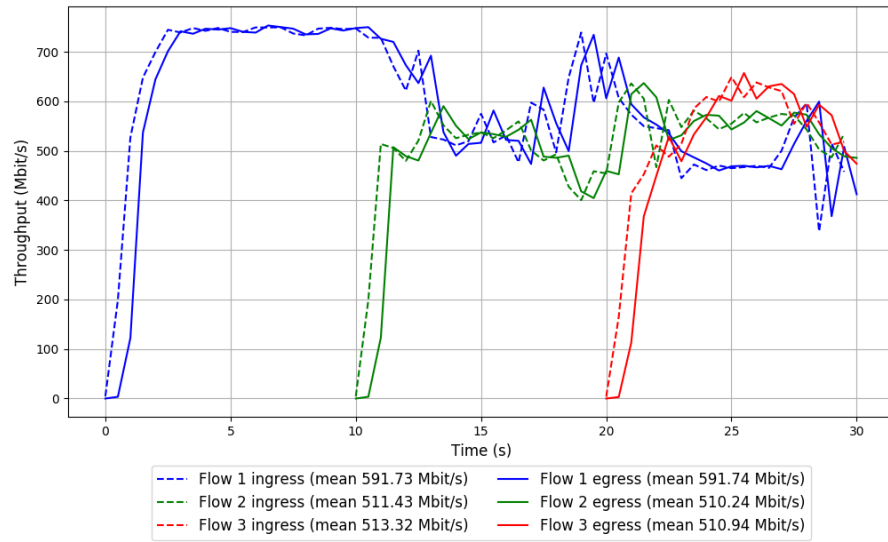


Run 2: Statistics of TCP Cubic

Start at: 2018-11-16 00:51:13
End at: 2018-11-16 00:51:43
Local clock offset: 0.403 ms
Remote clock offset: -0.134 ms

Below is generated by plot.py at 2018-11-16 03:27:39
Datalink statistics
-- Total of 3 flows:
Average throughput: 1099.82 Mbit/s
95th percentile per-packet one-way delay: 110.995 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 591.74 Mbit/s
95th percentile per-packet one-way delay: 108.387 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 510.24 Mbit/s
95th percentile per-packet one-way delay: 115.770 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 510.94 Mbit/s
95th percentile per-packet one-way delay: 110.849 ms
Loss rate: 1.39%

Run 2: Report of TCP Cubic — Data Link

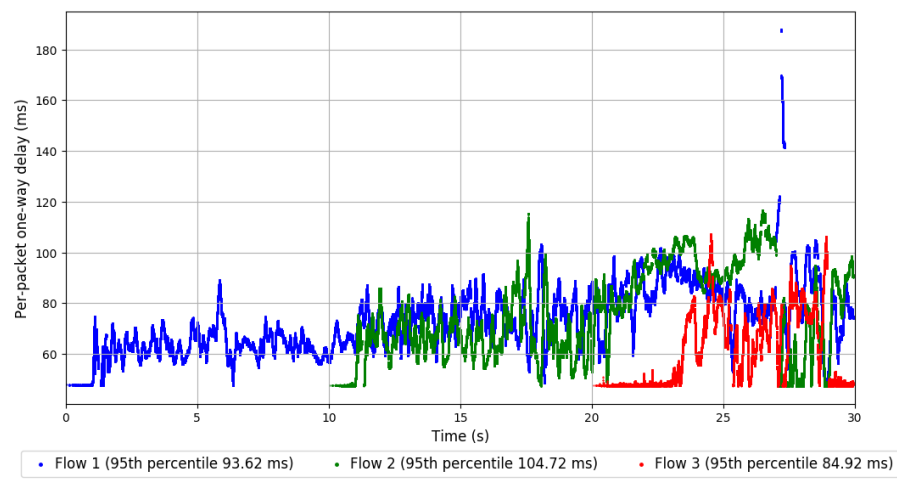
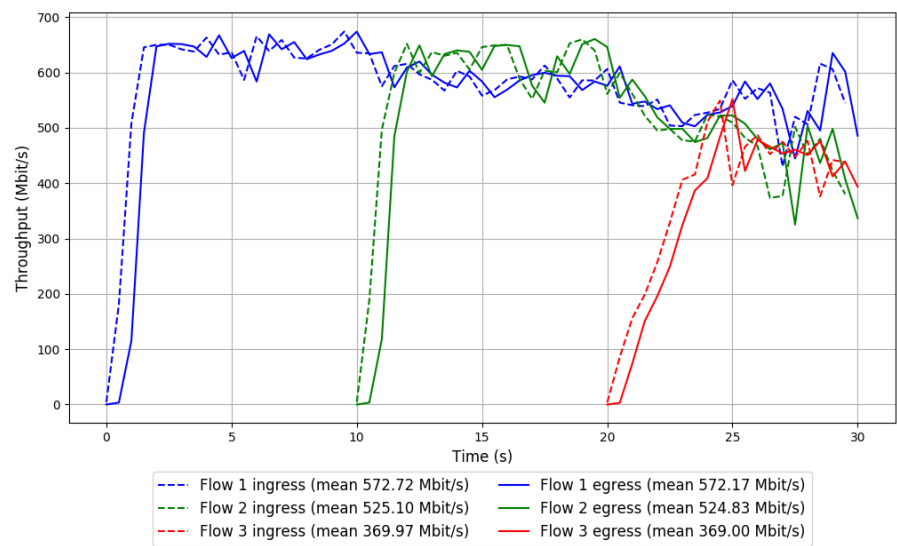


Run 3: Statistics of TCP Cubic

Start at: 2018-11-16 01:22:15
End at: 2018-11-16 01:22:45
Local clock offset: 0.491 ms
Remote clock offset: -0.039 ms

Below is generated by plot.py at 2018-11-16 03:27:40
Datalink statistics
-- Total of 3 flows:
Average throughput: 1043.06 Mbit/s
95th percentile per-packet one-way delay: 98.875 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 572.17 Mbit/s
95th percentile per-packet one-way delay: 93.623 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 524.83 Mbit/s
95th percentile per-packet one-way delay: 104.715 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 369.00 Mbit/s
95th percentile per-packet one-way delay: 84.923 ms
Loss rate: 1.20%

Run 3: Report of TCP Cubic — Data Link

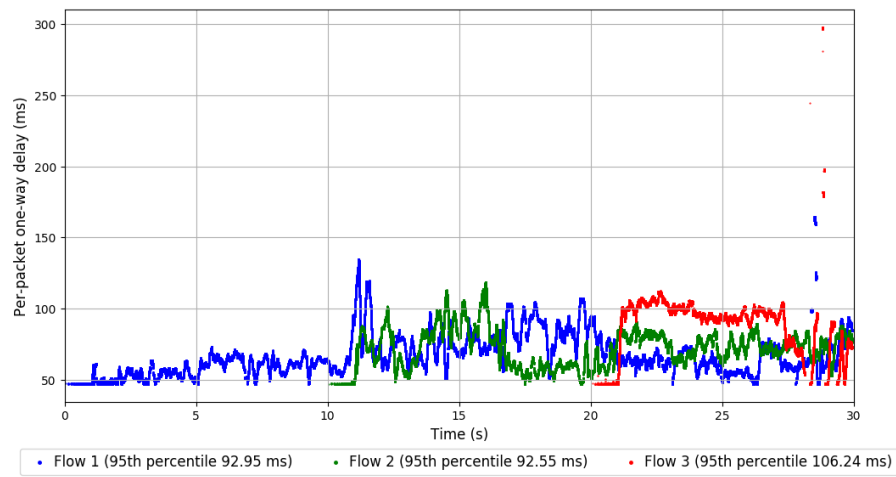
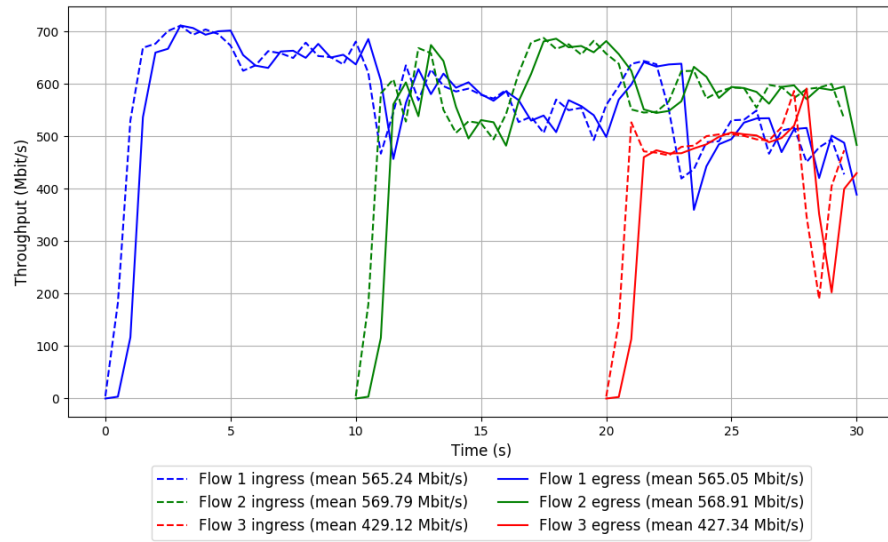


Run 4: Statistics of TCP Cubic

Start at: 2018-11-16 01:53:20
End at: 2018-11-16 01:53:50
Local clock offset: 0.145 ms
Remote clock offset: -0.092 ms

Below is generated by plot.py at 2018-11-16 03:28:10
Datalink statistics
-- Total of 3 flows:
Average throughput: 1084.71 Mbit/s
95th percentile per-packet one-way delay: 100.885 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 565.05 Mbit/s
95th percentile per-packet one-way delay: 92.954 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 568.91 Mbit/s
95th percentile per-packet one-way delay: 92.551 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 427.34 Mbit/s
95th percentile per-packet one-way delay: 106.237 ms
Loss rate: 1.36%

Run 4: Report of TCP Cubic — Data Link

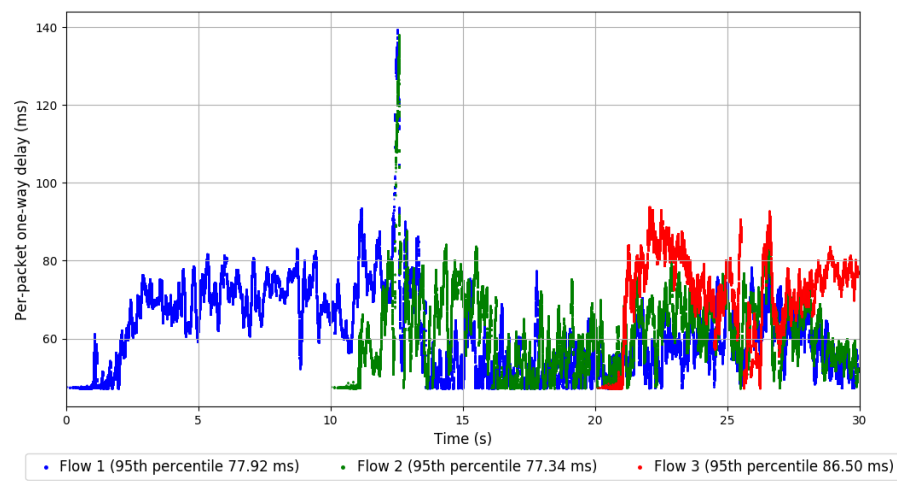
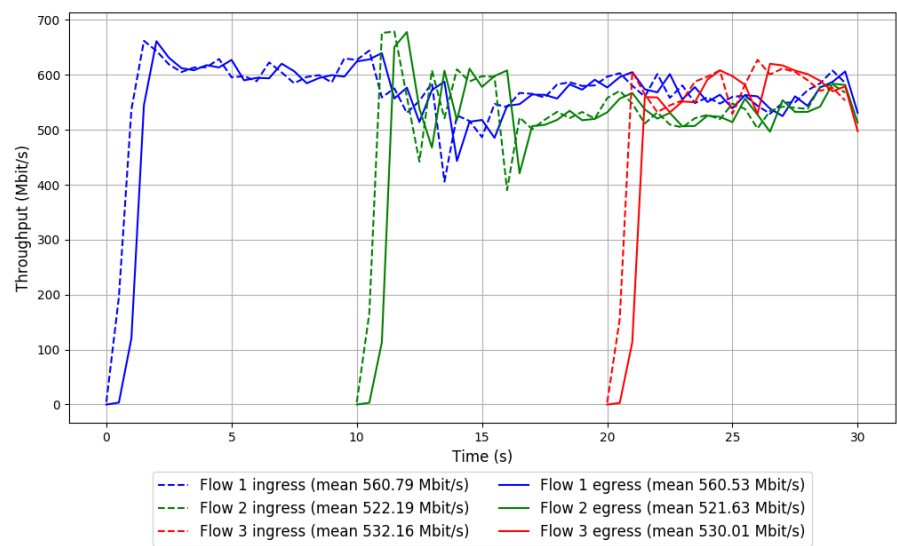


Run 5: Statistics of TCP Cubic

Start at: 2018-11-16 02:24:29
End at: 2018-11-16 02:24:59
Local clock offset: 0.01 ms
Remote clock offset: -0.097 ms

Below is generated by plot.py at 2018-11-16 03:28:11
Datalink statistics
-- Total of 3 flows:
Average throughput: 1082.46 Mbit/s
95th percentile per-packet one-way delay: 81.176 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 560.53 Mbit/s
95th percentile per-packet one-way delay: 77.918 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 521.63 Mbit/s
95th percentile per-packet one-way delay: 77.345 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 530.01 Mbit/s
95th percentile per-packet one-way delay: 86.505 ms
Loss rate: 1.34%

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-11-15 23:54:19

End at: 2018-11-15 23:54:49

Local clock offset: -0.019 ms

Remote clock offset: 0.216 ms

Below is generated by plot.py at 2018-11-16 03:28:30

Datalink statistics

-- Total of 3 flows:

Average throughput: 879.66 Mbit/s

95th percentile per-packet one-way delay: 55.111 ms

Loss rate: 0.23%

-- Flow 1:

Average throughput: 576.52 Mbit/s

95th percentile per-packet one-way delay: 59.724 ms

Loss rate: 0.11%

-- Flow 2:

Average throughput: 343.84 Mbit/s

95th percentile per-packet one-way delay: 51.861 ms

Loss rate: 0.04%

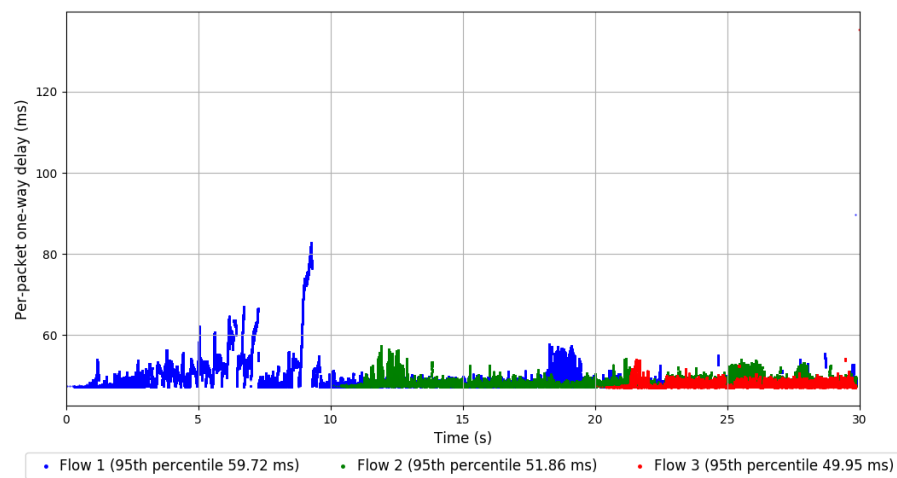
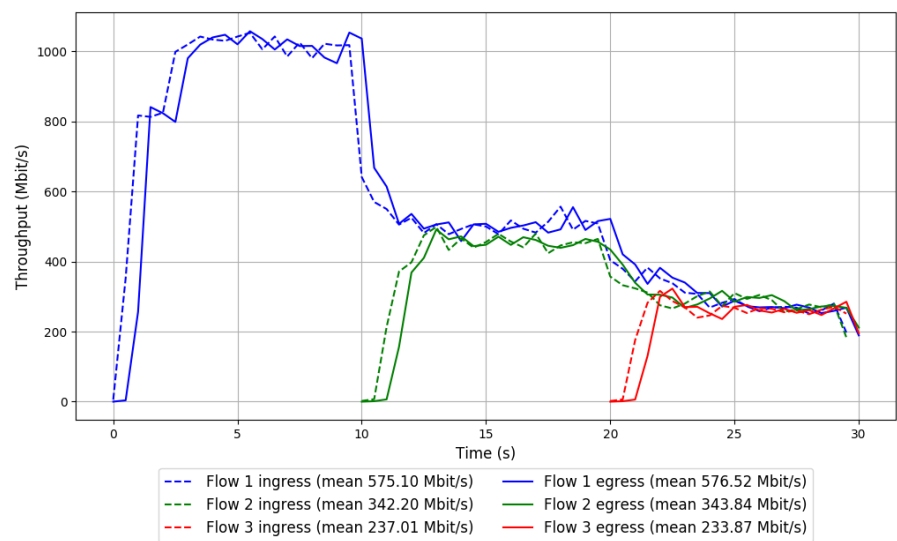
-- Flow 3:

Average throughput: 233.87 Mbit/s

95th percentile per-packet one-way delay: 49.952 ms

Loss rate: 1.61%

Run 1: Report of FillP — Data Link

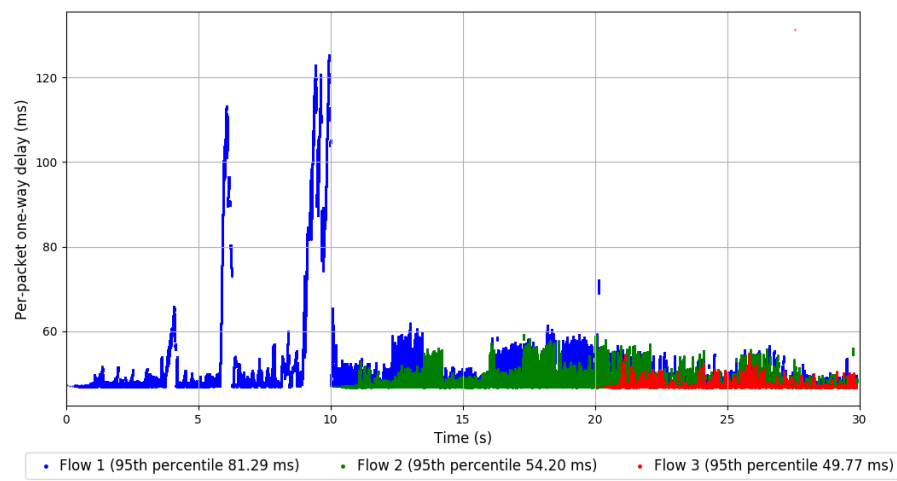
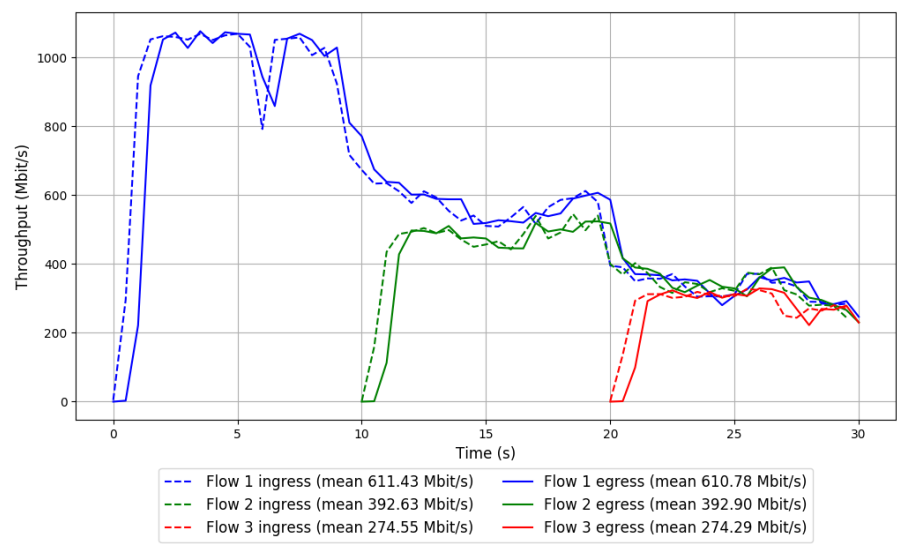


Run 2: Statistics of FillP

Start at: 2018-11-16 00:25:26
End at: 2018-11-16 00:25:56
Local clock offset: -0.384 ms
Remote clock offset: -0.014 ms

Below is generated by plot.py at 2018-11-16 03:48:00
Datalink statistics
-- Total of 3 flows:
Average throughput: 961.80 Mbit/s
95th percentile per-packet one-way delay: 58.470 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 610.78 Mbit/s
95th percentile per-packet one-way delay: 81.294 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 392.90 Mbit/s
95th percentile per-packet one-way delay: 54.197 ms
Loss rate: 0.31%
-- Flow 3:
Average throughput: 274.29 Mbit/s
95th percentile per-packet one-way delay: 49.773 ms
Loss rate: 1.14%

Run 2: Report of FillP — Data Link

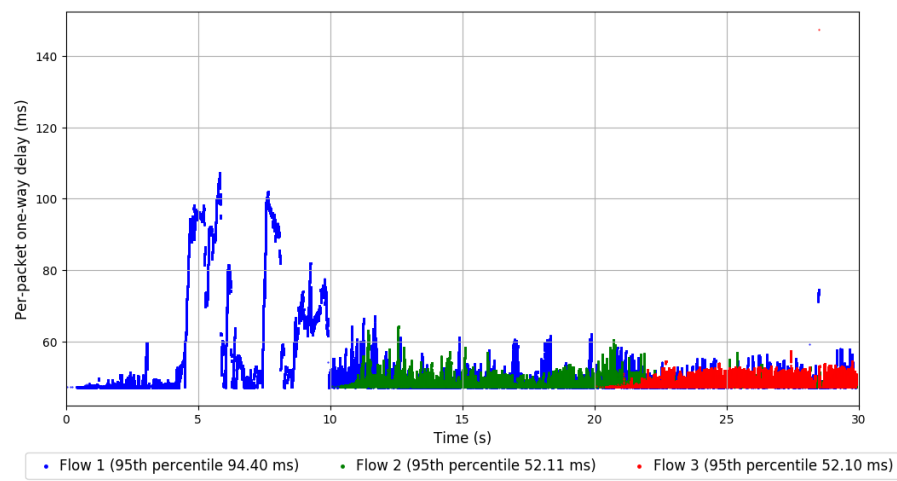
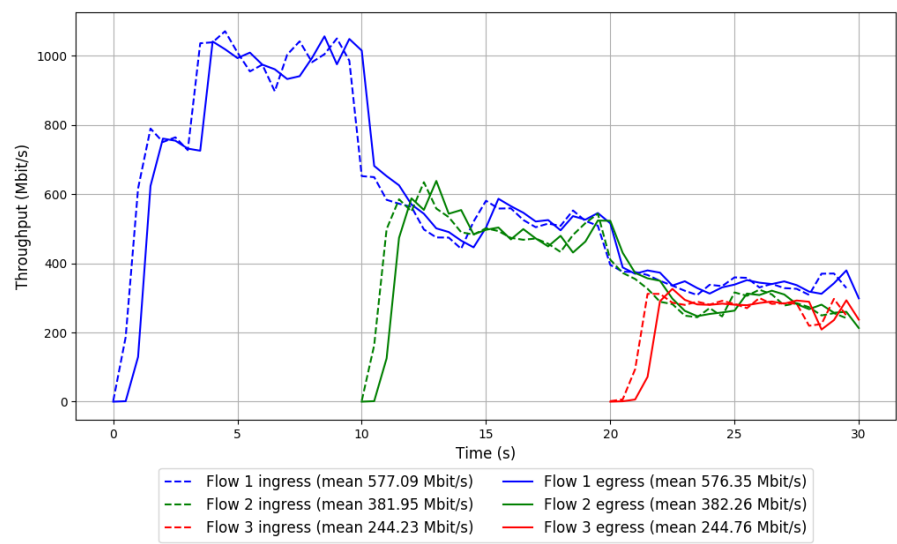


Run 3: Statistics of FillP

Start at: 2018-11-16 00:56:36
End at: 2018-11-16 00:57:06
Local clock offset: 0.043 ms
Remote clock offset: -0.054 ms

Below is generated by plot.py at 2018-11-16 03:48:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 910.66 Mbit/s
95th percentile per-packet one-way delay: 89.843 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 576.35 Mbit/s
95th percentile per-packet one-way delay: 94.399 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 382.26 Mbit/s
95th percentile per-packet one-way delay: 52.107 ms
Loss rate: 0.31%
-- Flow 3:
Average throughput: 244.76 Mbit/s
95th percentile per-packet one-way delay: 52.100 ms
Loss rate: 0.78%

Run 3: Report of FillP — Data Link

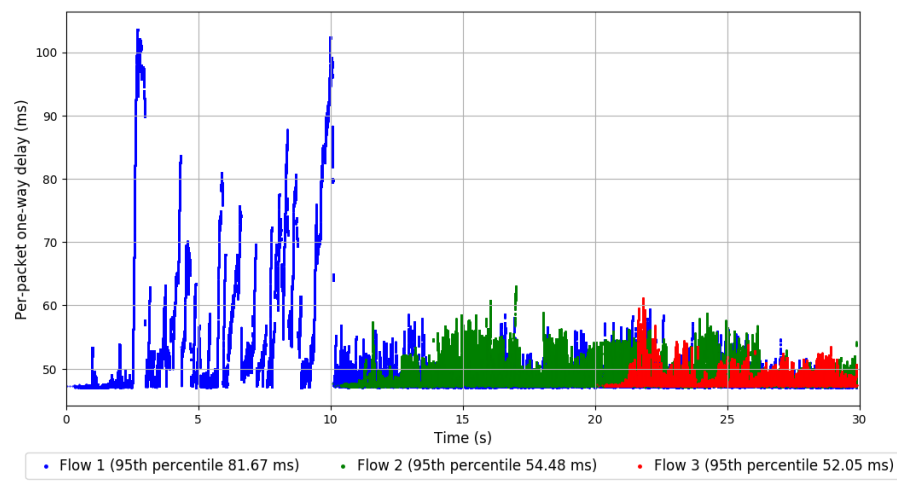
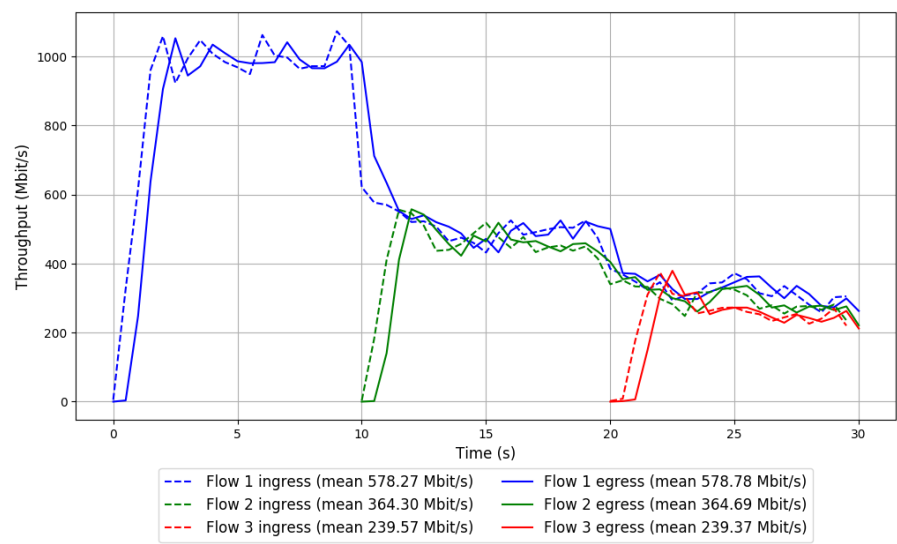


Run 4: Statistics of FillP

Start at: 2018-11-16 01:27:33
End at: 2018-11-16 01:28:03
Local clock offset: 0.126 ms
Remote clock offset: -0.071 ms

Below is generated by plot.py at 2018-11-16 03:48:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 899.76 Mbit/s
95th percentile per-packet one-way delay: 73.149 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 578.78 Mbit/s
95th percentile per-packet one-way delay: 81.667 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 364.69 Mbit/s
95th percentile per-packet one-way delay: 54.483 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 239.37 Mbit/s
95th percentile per-packet one-way delay: 52.054 ms
Loss rate: 0.95%

Run 4: Report of FillP — Data Link

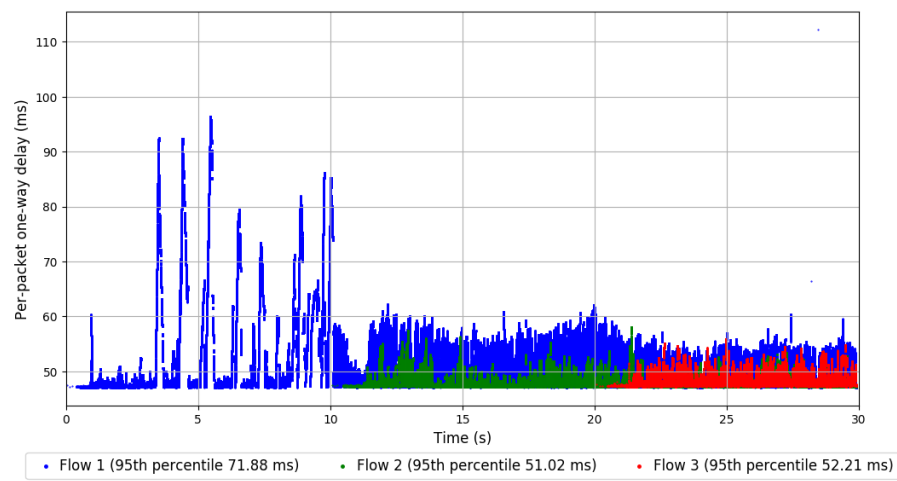
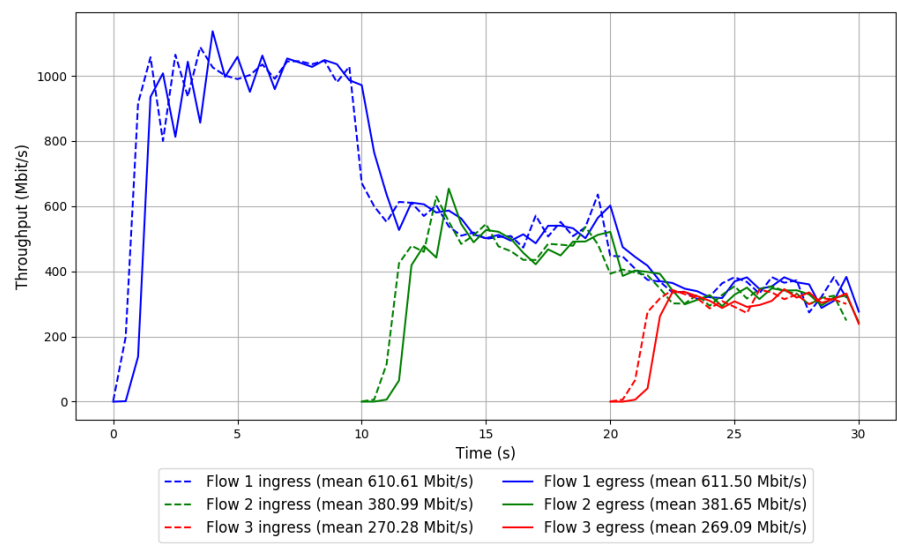


Run 5: Statistics of FillP

Start at: 2018-11-16 01:58:45
End at: 2018-11-16 01:59:15
Local clock offset: 0.117 ms
Remote clock offset: -0.091 ms

Below is generated by plot.py at 2018-11-16 03:49:30
Datalink statistics
-- Total of 3 flows:
Average throughput: 953.51 Mbit/s
95th percentile per-packet one-way delay: 64.160 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 611.50 Mbit/s
95th percentile per-packet one-way delay: 71.880 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 381.65 Mbit/s
95th percentile per-packet one-way delay: 51.019 ms
Loss rate: 0.31%
-- Flow 3:
Average throughput: 269.09 Mbit/s
95th percentile per-packet one-way delay: 52.206 ms
Loss rate: 1.28%

Run 5: Report of FillP — Data Link

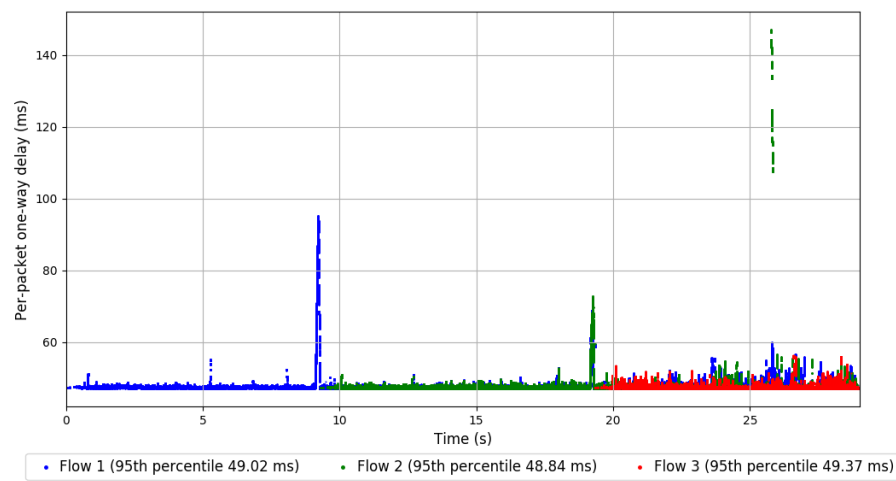
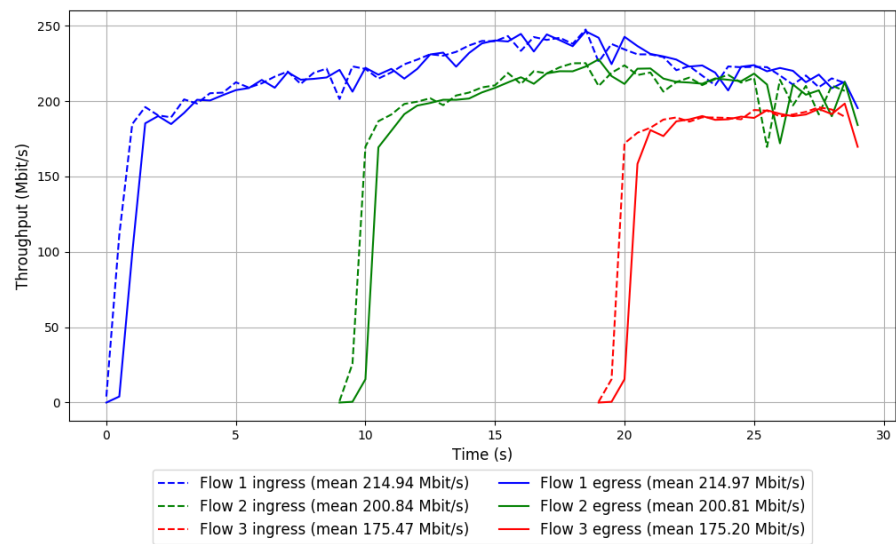



```
Run 1: Statistics of Indigo

Start at: 2018-11-15 23:56:07
End at: 2018-11-15 23:56:37
Local clock offset: -0.079 ms
Remote clock offset: 0.212 ms

# Below is generated by plot.py at 2018-11-16 03:49:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 409.79 Mbit/s
95th percentile per-packet one-way delay: 49.040 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 214.97 Mbit/s
95th percentile per-packet one-way delay: 49.017 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 200.81 Mbit/s
95th percentile per-packet one-way delay: 48.842 ms
Loss rate: 0.49%
-- Flow 3:
Average throughput: 175.20 Mbit/s
95th percentile per-packet one-way delay: 49.368 ms
Loss rate: 1.11%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-11-16 00:27:16

End at: 2018-11-16 00:27:46

Local clock offset: -0.048 ms

Remote clock offset: 0.007 ms

Below is generated by plot.py at 2018-11-16 03:49:30

Datalink statistics

-- Total of 3 flows:

Average throughput: 420.26 Mbit/s

95th percentile per-packet one-way delay: 48.598 ms

Loss rate: 0.47%

-- Flow 1:

Average throughput: 224.60 Mbit/s

95th percentile per-packet one-way delay: 48.191 ms

Loss rate: 0.30%

-- Flow 2:

Average throughput: 208.30 Mbit/s

95th percentile per-packet one-way delay: 49.423 ms

Loss rate: 0.49%

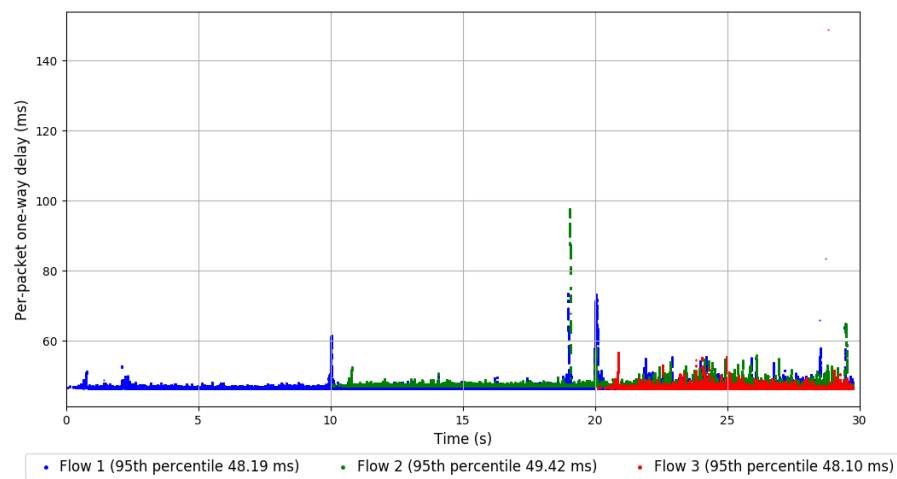
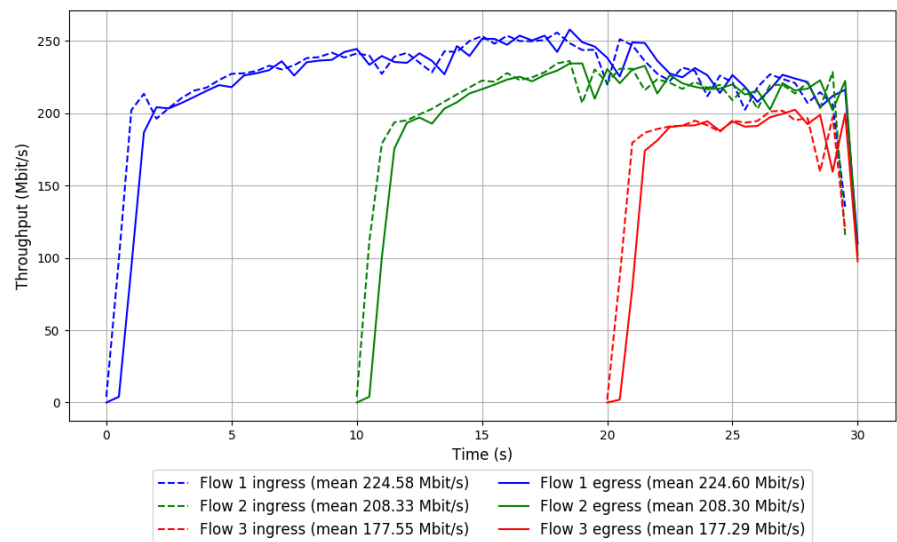
-- Flow 3:

Average throughput: 177.29 Mbit/s

95th percentile per-packet one-way delay: 48.096 ms

Loss rate: 1.10%

Run 2: Report of Indigo — Data Link

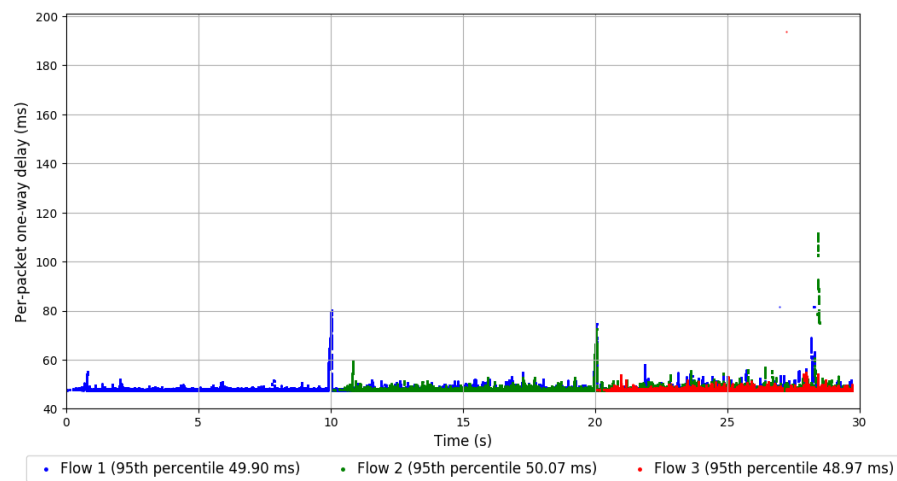
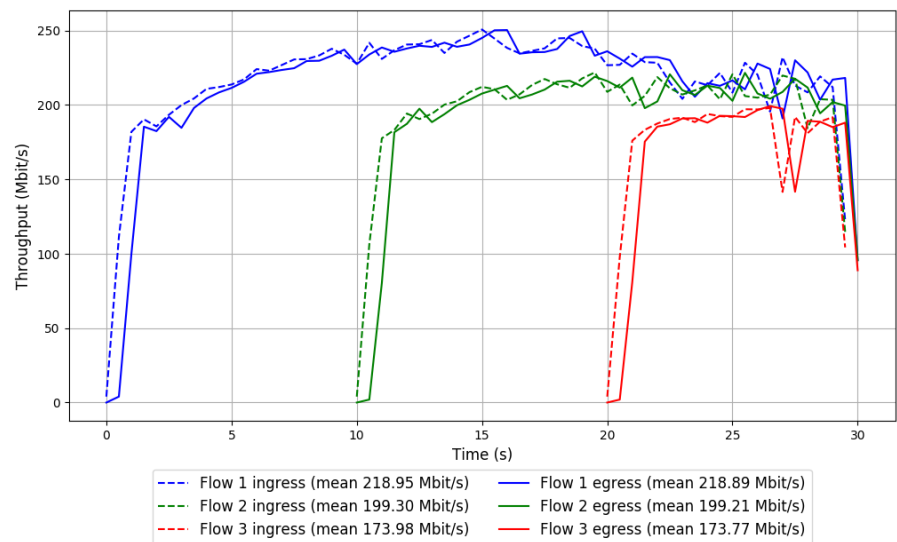


Run 3: Statistics of Indigo

Start at: 2018-11-16 00:58:26
End at: 2018-11-16 00:58:56
Local clock offset: 0.406 ms
Remote clock offset: -0.061 ms

Below is generated by plot.py at 2018-11-16 03:49:30
Datalink statistics
-- Total of 3 flows:
Average throughput: 407.18 Mbit/s
95th percentile per-packet one-way delay: 49.807 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 218.89 Mbit/s
95th percentile per-packet one-way delay: 49.903 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 199.21 Mbit/s
95th percentile per-packet one-way delay: 50.068 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 173.77 Mbit/s
95th percentile per-packet one-way delay: 48.971 ms
Loss rate: 1.06%

Run 3: Report of Indigo — Data Link

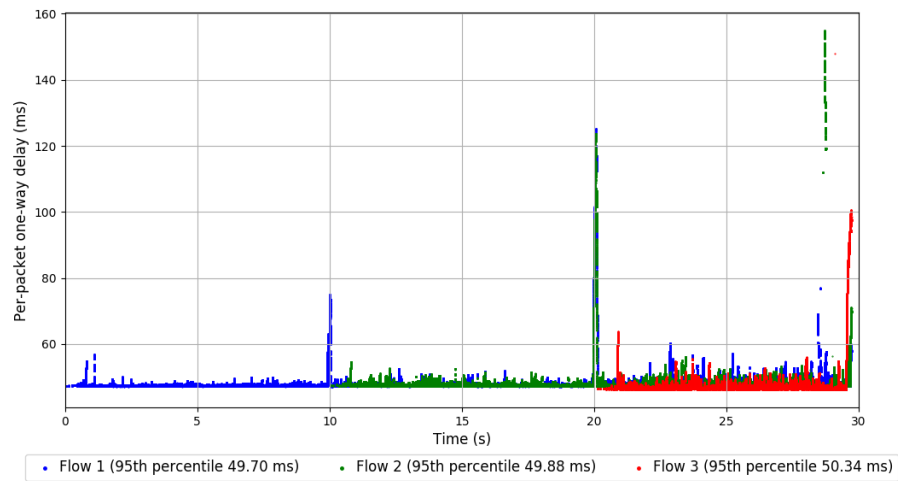
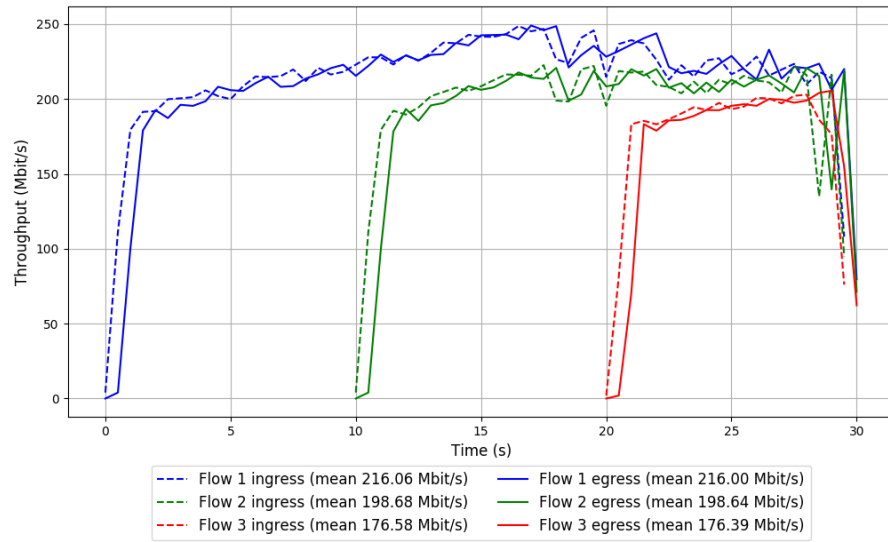


Run 4: Statistics of Indigo

Start at: 2018-11-16 01:29:21
End at: 2018-11-16 01:29:51
Local clock offset: 0.155 ms
Remote clock offset: -0.085 ms

Below is generated by plot.py at 2018-11-16 03:49:30
Datalink statistics
-- Total of 3 flows:
Average throughput: 404.79 Mbit/s
95th percentile per-packet one-way delay: 49.850 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 216.00 Mbit/s
95th percentile per-packet one-way delay: 49.697 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 198.64 Mbit/s
95th percentile per-packet one-way delay: 49.883 ms
Loss rate: 0.49%
-- Flow 3:
Average throughput: 176.39 Mbit/s
95th percentile per-packet one-way delay: 50.338 ms
Loss rate: 1.06%

Run 4: Report of Indigo — Data Link

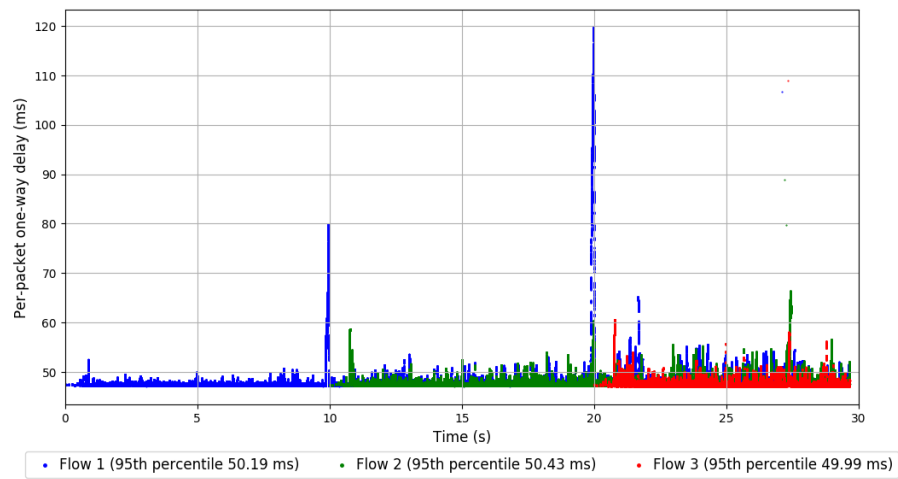
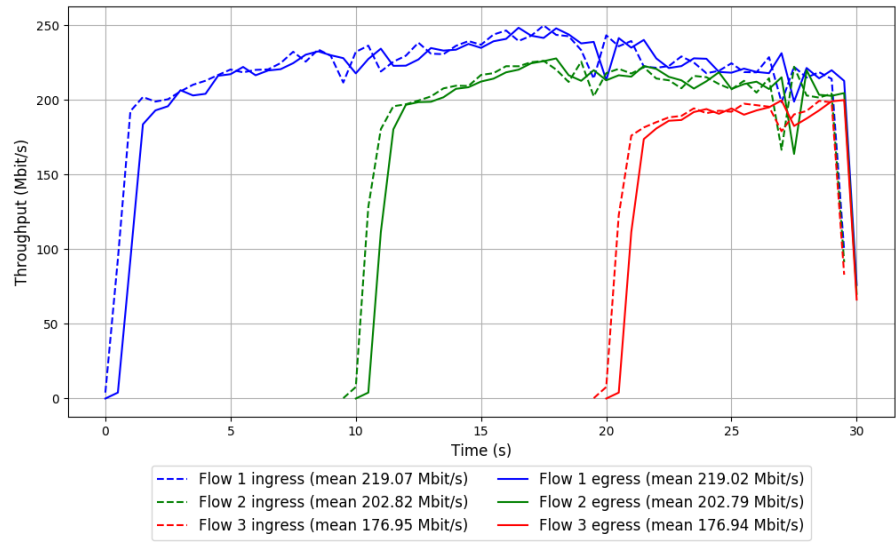


Run 5: Statistics of Indigo

Start at: 2018-11-16 02:00:37
End at: 2018-11-16 02:01:07
Local clock offset: 0.09 ms
Remote clock offset: -0.088 ms

Below is generated by plot.py at 2018-11-16 03:58:15
Datalink statistics
-- Total of 3 flows:
Average throughput: 411.33 Mbit/s
95th percentile per-packet one-way delay: 50.241 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 219.02 Mbit/s
95th percentile per-packet one-way delay: 50.187 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 202.79 Mbit/s
95th percentile per-packet one-way delay: 50.434 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 176.94 Mbit/s
95th percentile per-packet one-way delay: 49.986 ms
Loss rate: 0.98%

Run 5: Report of Indigo — Data Link



Run 1: Statistics of Indigo-96d2da3

Start at: 2018-11-16 00:09:51

End at: 2018-11-16 00:10:21

Local clock offset: -0.054 ms

Remote clock offset: 0.266 ms

Below is generated by plot.py at 2018-11-16 03:58:15

Datalink statistics

-- Total of 3 flows:

Average throughput: 527.98 Mbit/s

95th percentile per-packet one-way delay: 64.691 ms

Loss rate: 0.61%

-- Flow 1:

Average throughput: 272.31 Mbit/s

95th percentile per-packet one-way delay: 64.534 ms

Loss rate: 0.24%

-- Flow 2:

Average throughput: 261.27 Mbit/s

95th percentile per-packet one-way delay: 64.982 ms

Loss rate: 0.81%

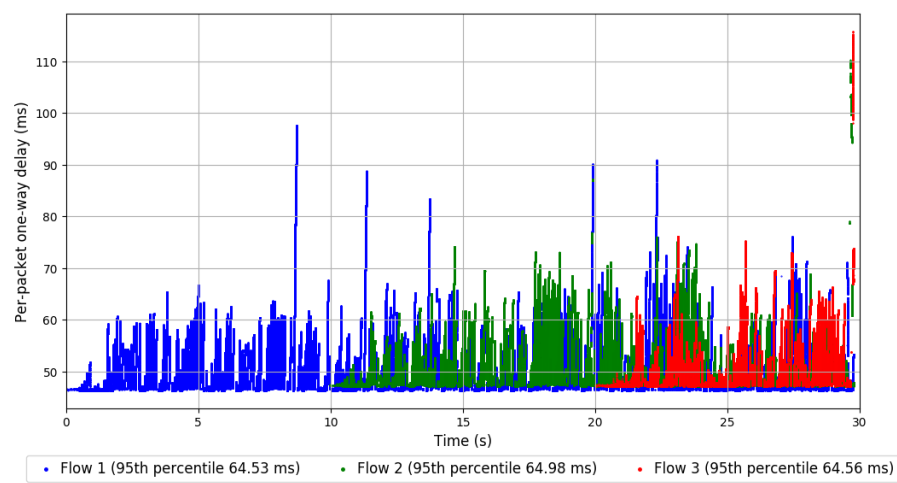
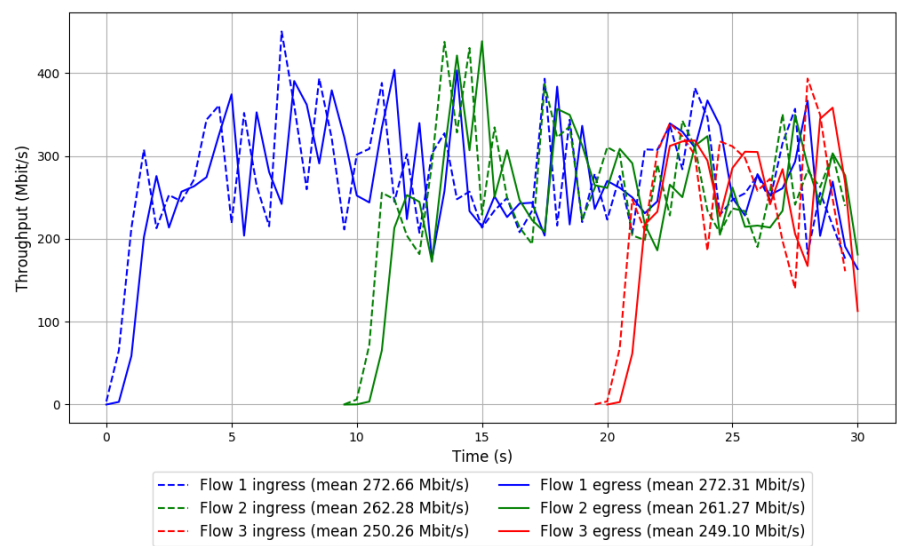
-- Flow 3:

Average throughput: 249.10 Mbit/s

95th percentile per-packet one-way delay: 64.556 ms

Loss rate: 1.41%

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

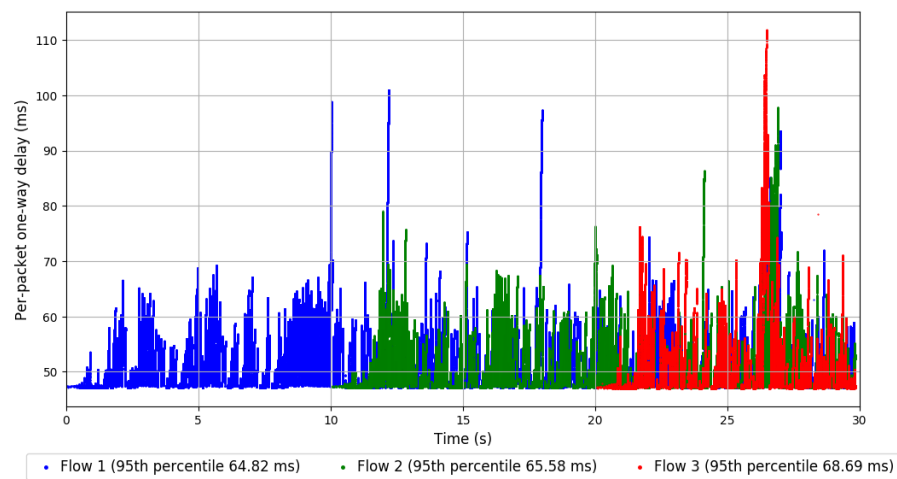
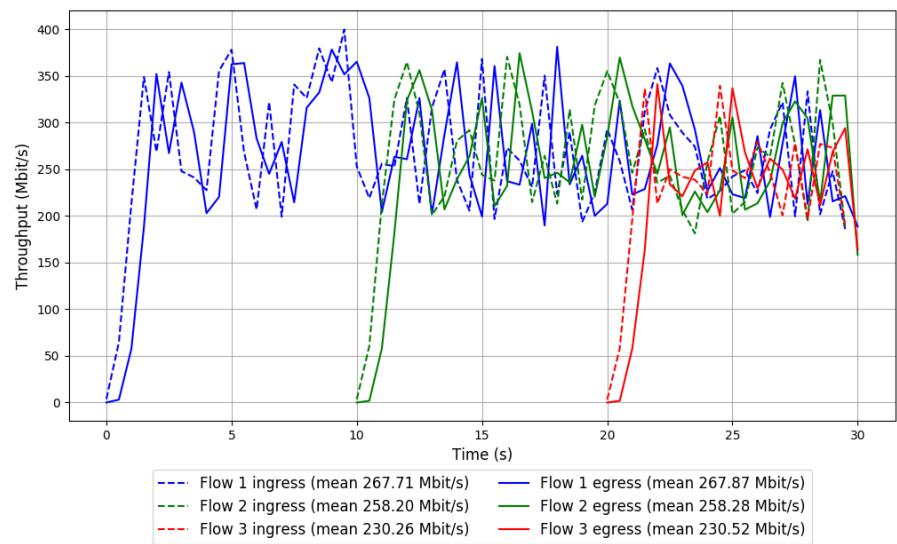


Run 2: Statistics of Indigo-96d2da3

Start at: 2018-11-16 00:41:02
End at: 2018-11-16 00:41:32
Local clock offset: -0.05 ms
Remote clock offset: -0.058 ms

Below is generated by plot.py at 2018-11-16 03:58:15
Datalink statistics
-- Total of 3 flows:
Average throughput: 514.34 Mbit/s
95th percentile per-packet one-way delay: 65.703 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 267.87 Mbit/s
95th percentile per-packet one-way delay: 64.821 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 258.28 Mbit/s
95th percentile per-packet one-way delay: 65.584 ms
Loss rate: 0.38%
-- Flow 3:
Average throughput: 230.52 Mbit/s
95th percentile per-packet one-way delay: 68.692 ms
Loss rate: 0.70%

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

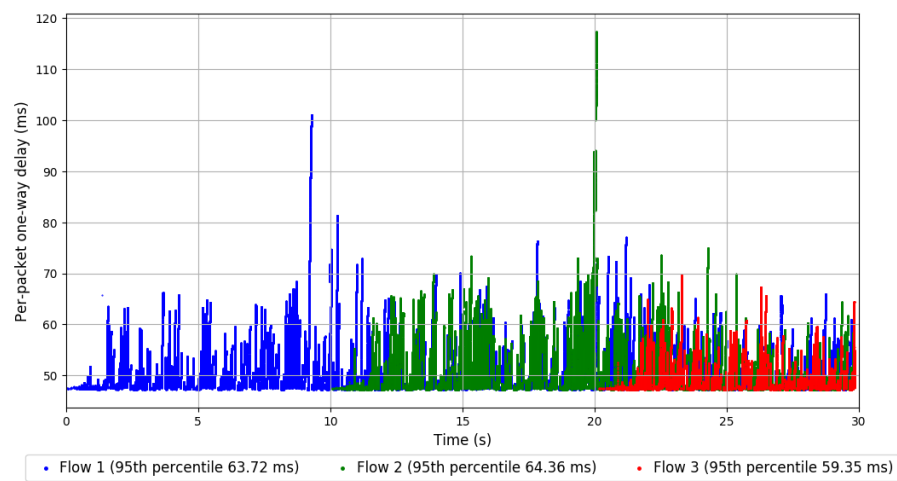
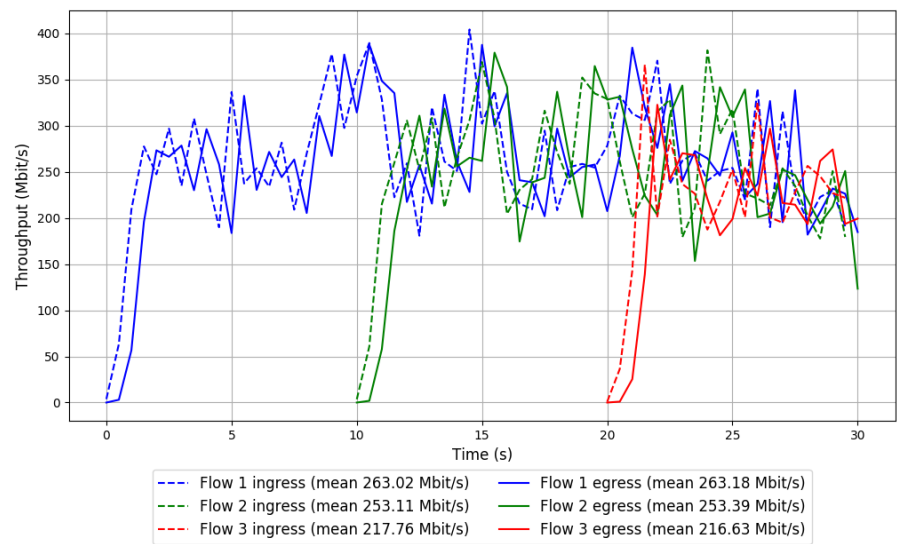


Run 3: Statistics of Indigo-96d2da3

Start at: 2018-11-16 01:12:14
End at: 2018-11-16 01:12:44
Local clock offset: 0.108 ms
Remote clock offset: -0.105 ms

Below is generated by plot.py at 2018-11-16 03:58:15
Datalink statistics
-- Total of 3 flows:
Average throughput: 500.81 Mbit/s
95th percentile per-packet one-way delay: 63.510 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 263.18 Mbit/s
95th percentile per-packet one-way delay: 63.716 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 253.39 Mbit/s
95th percentile per-packet one-way delay: 64.362 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 216.63 Mbit/s
95th percentile per-packet one-way delay: 59.349 ms
Loss rate: 1.31%

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

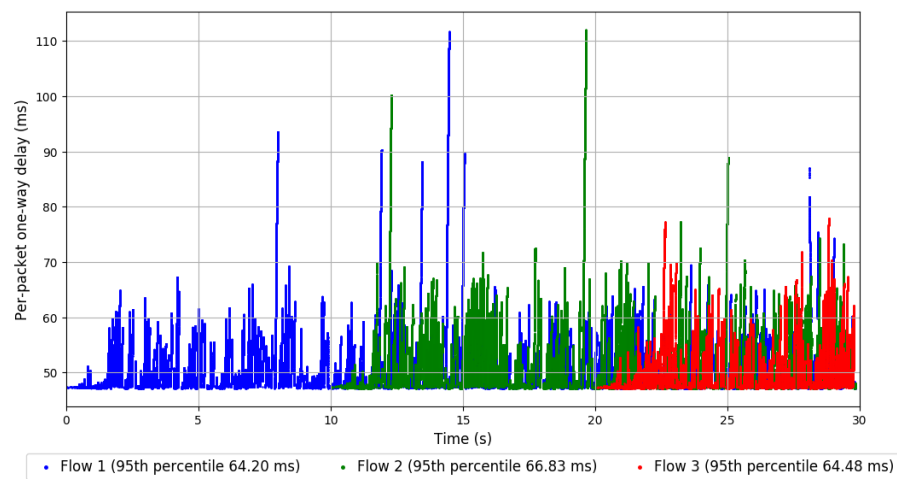
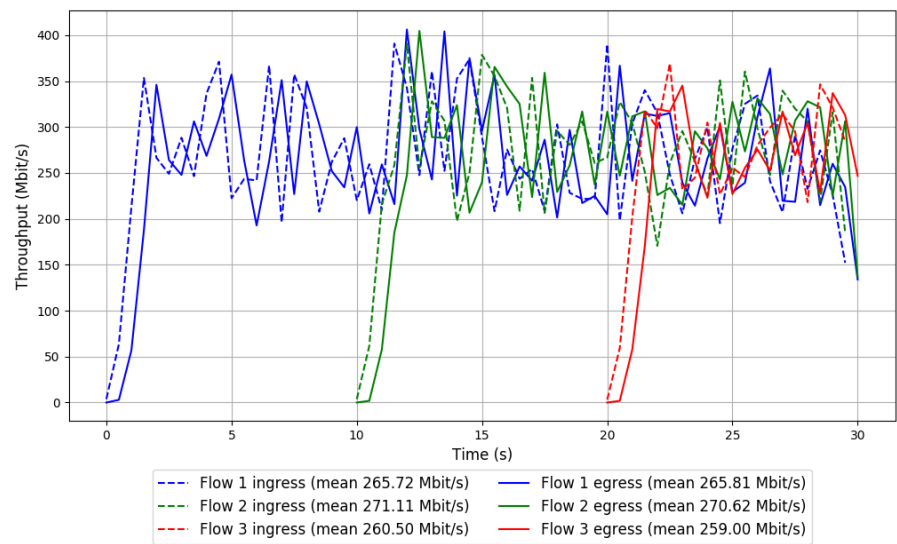


Run 4: Statistics of Indigo-96d2da3

Start at: 2018-11-16 01:43:07
End at: 2018-11-16 01:43:37
Local clock offset: 0.138 ms
Remote clock offset: -0.098 ms

Below is generated by plot.py at 2018-11-16 03:58:41
Datalink statistics
-- Total of 3 flows:
Average throughput: 529.84 Mbit/s
95th percentile per-packet one-way delay: 65.285 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 265.81 Mbit/s
95th percentile per-packet one-way delay: 64.202 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 270.62 Mbit/s
95th percentile per-packet one-way delay: 66.829 ms
Loss rate: 0.69%
-- Flow 3:
Average throughput: 259.00 Mbit/s
95th percentile per-packet one-way delay: 64.476 ms
Loss rate: 1.77%

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

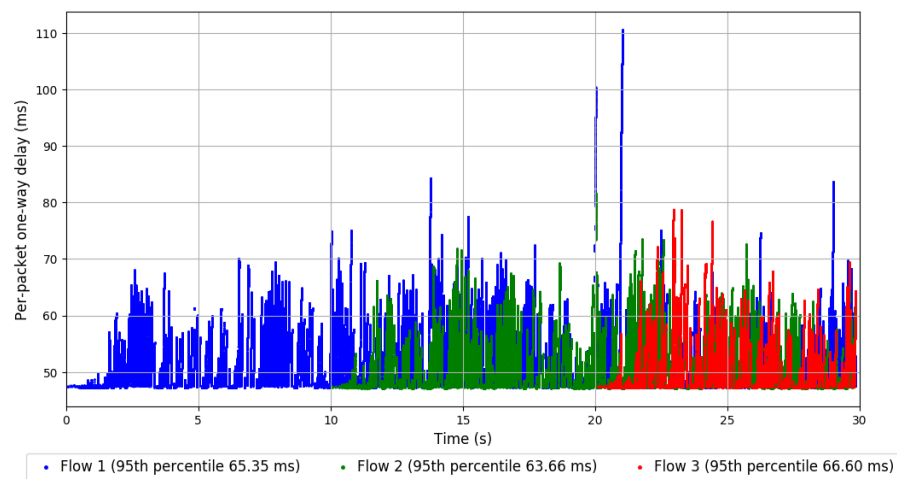
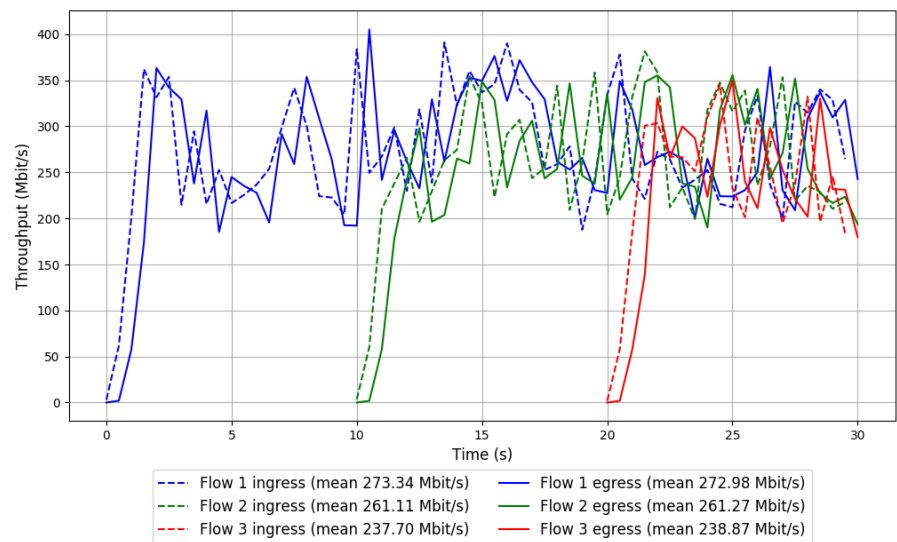


Run 5: Statistics of Indigo-96d2da3

Start at: 2018-11-16 02:14:17
End at: 2018-11-16 02:14:47
Local clock offset: 0.025 ms
Remote clock offset: -0.073 ms

Below is generated by plot.py at 2018-11-16 03:58:55
Datalink statistics
-- Total of 3 flows:
Average throughput: 524.48 Mbit/s
95th percentile per-packet one-way delay: 64.851 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 272.98 Mbit/s
95th percentile per-packet one-way delay: 65.351 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 261.27 Mbit/s
95th percentile per-packet one-way delay: 63.664 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 238.87 Mbit/s
95th percentile per-packet one-way delay: 66.597 ms
Loss rate: 0.52%

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

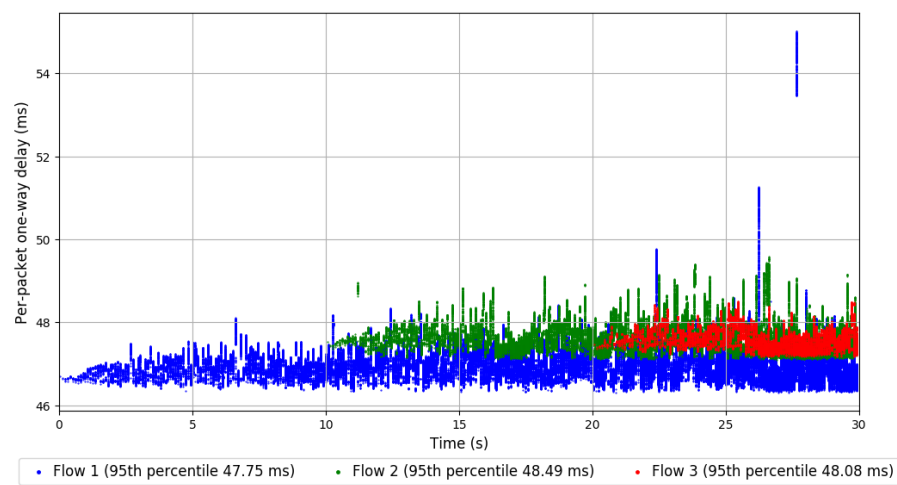
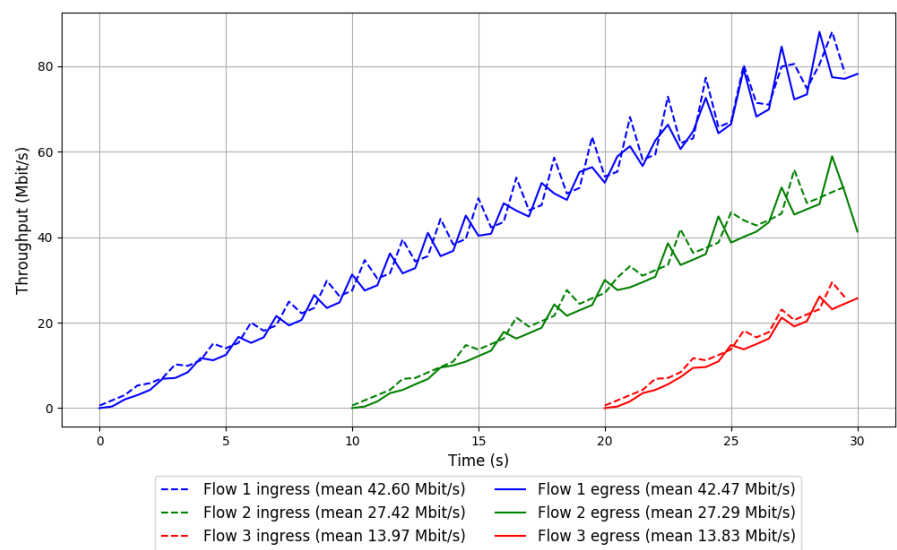


```
Run 1: Statistics of LEDBAT

Start at: 2018-11-16 00:04:24
End at: 2018-11-16 00:04:54
Local clock offset: -0.073 ms
Remote clock offset: 0.238 ms

# Below is generated by plot.py at 2018-11-16 03:58:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 65.12 Mbit/s
95th percentile per-packet one-way delay: 48.099 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 42.47 Mbit/s
95th percentile per-packet one-way delay: 47.747 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 27.29 Mbit/s
95th percentile per-packet one-way delay: 48.494 ms
Loss rate: 0.96%
-- Flow 3:
Average throughput: 13.83 Mbit/s
95th percentile per-packet one-way delay: 48.084 ms
Loss rate: 1.90%
```

Run 1: Report of LEDBAT — Data Link

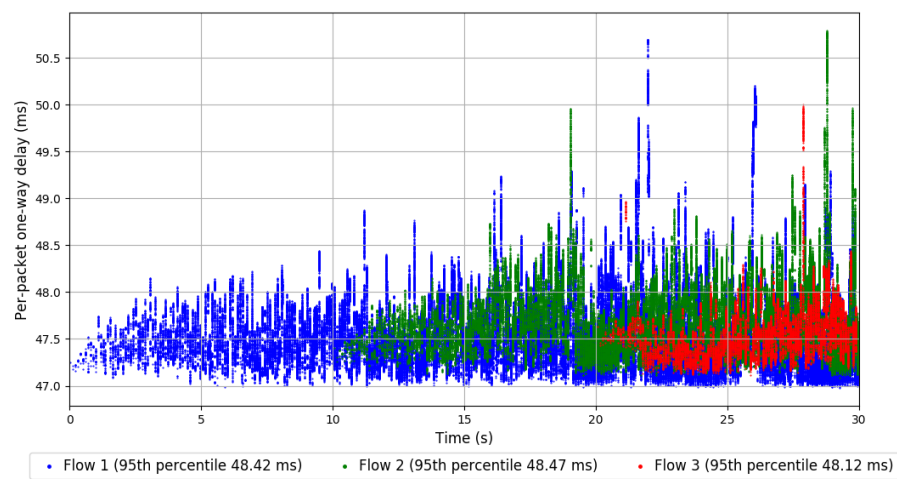
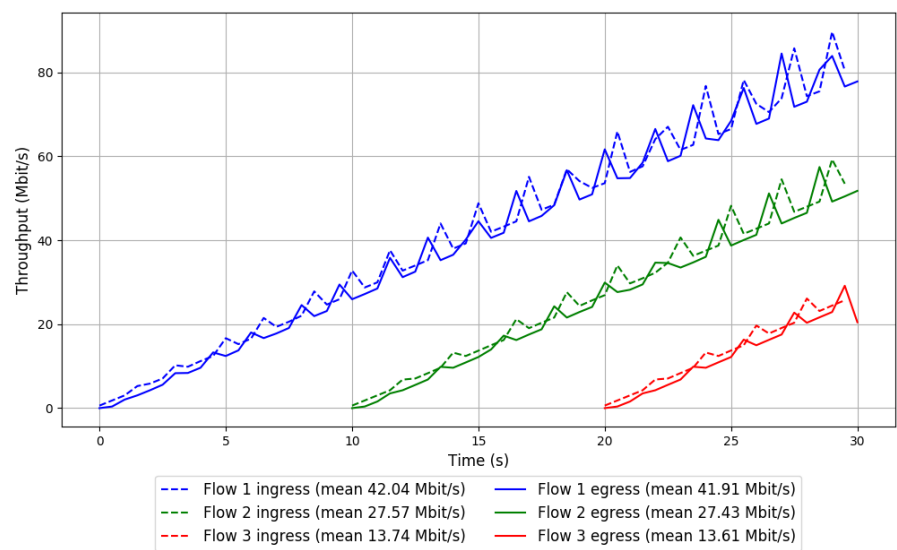


Run 2: Statistics of LEDBAT

Start at: 2018-11-16 00:35:41
End at: 2018-11-16 00:36:11
Local clock offset: -0.046 ms
Remote clock offset: -0.053 ms

Below is generated by plot.py at 2018-11-16 03:58:55
Datalink statistics
-- Total of 3 flows:
Average throughput: 64.61 Mbit/s
95th percentile per-packet one-way delay: 48.425 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 41.91 Mbit/s
95th percentile per-packet one-way delay: 48.424 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 27.43 Mbit/s
95th percentile per-packet one-way delay: 48.474 ms
Loss rate: 0.95%
-- Flow 3:
Average throughput: 13.61 Mbit/s
95th percentile per-packet one-way delay: 48.115 ms
Loss rate: 1.92%

Run 2: Report of LEDBAT — Data Link

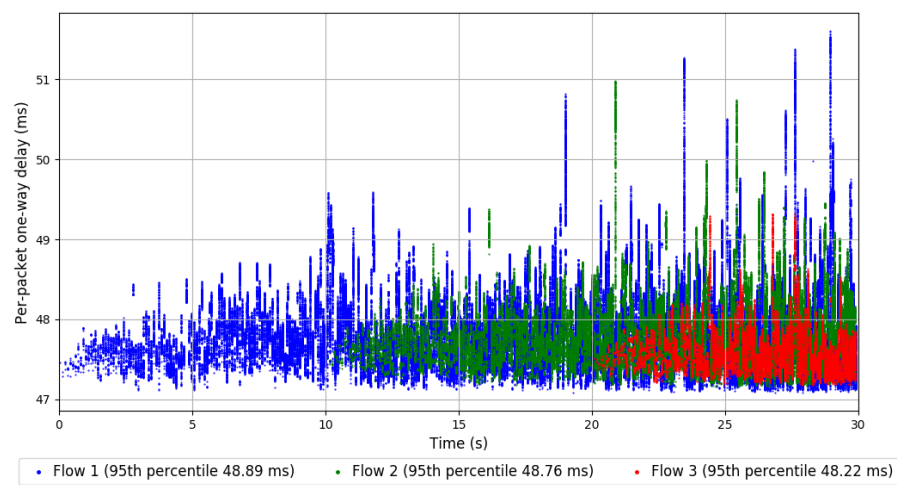
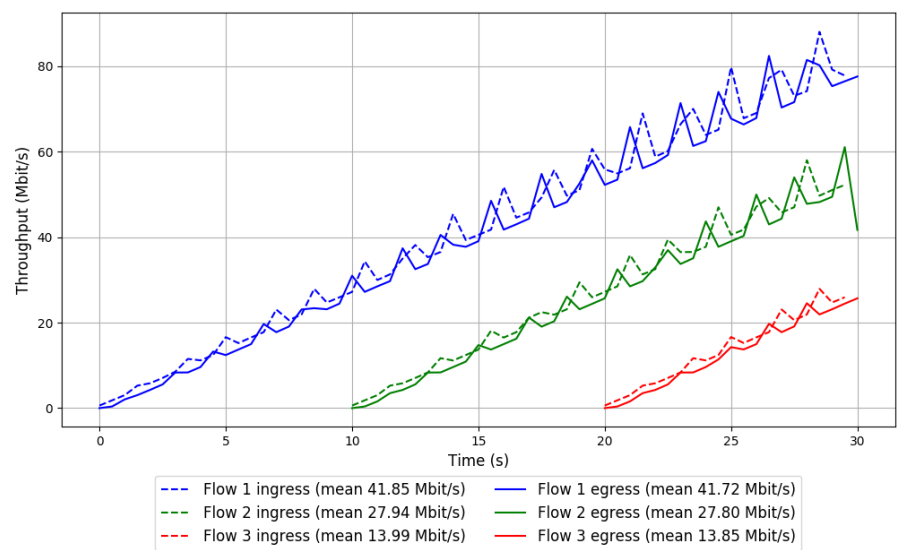


Run 3: Statistics of LEDBAT

Start at: 2018-11-16 01:06:50
End at: 2018-11-16 01:07:20
Local clock offset: 0.051 ms
Remote clock offset: -0.044 ms

Below is generated by plot.py at 2018-11-16 03:58:55
Datalink statistics
-- Total of 3 flows:
Average throughput: 64.73 Mbit/s
95th percentile per-packet one-way delay: 48.827 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 41.72 Mbit/s
95th percentile per-packet one-way delay: 48.890 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 27.80 Mbit/s
95th percentile per-packet one-way delay: 48.764 ms
Loss rate: 0.95%
-- Flow 3:
Average throughput: 13.85 Mbit/s
95th percentile per-packet one-way delay: 48.223 ms
Loss rate: 1.90%

Run 3: Report of LEDBAT — Data Link

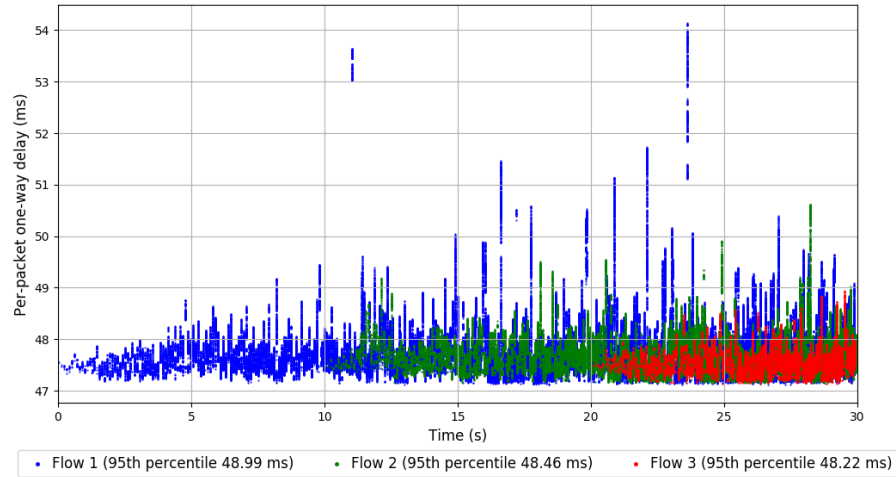
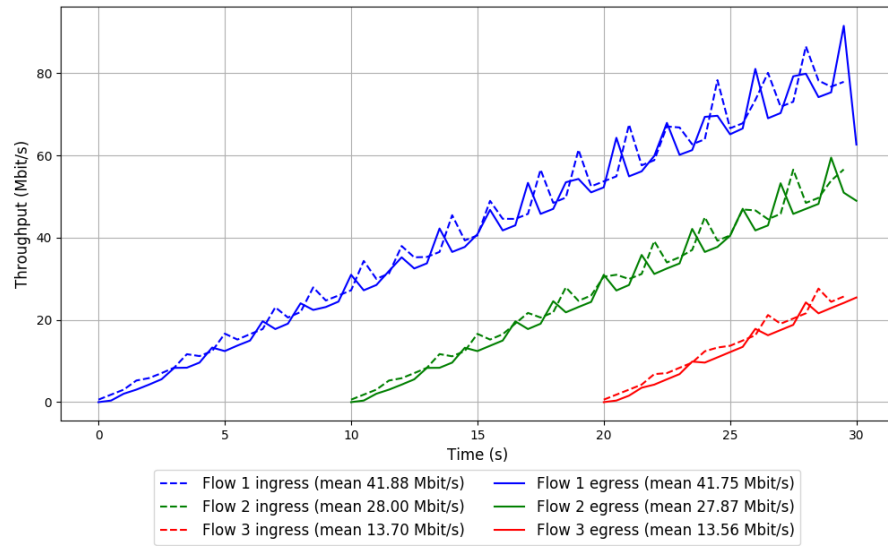


Run 4: Statistics of LEDBAT

Start at: 2018-11-16 01:37:43
End at: 2018-11-16 01:38:13
Local clock offset: 0.146 ms
Remote clock offset: -0.087 ms

Below is generated by plot.py at 2018-11-16 03:58:55
Datalink statistics
-- Total of 3 flows:
Average throughput: 64.69 Mbit/s
95th percentile per-packet one-way delay: 48.780 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 41.75 Mbit/s
95th percentile per-packet one-way delay: 48.990 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 27.87 Mbit/s
95th percentile per-packet one-way delay: 48.463 ms
Loss rate: 0.94%
-- Flow 3:
Average throughput: 13.56 Mbit/s
95th percentile per-packet one-way delay: 48.216 ms
Loss rate: 1.92%

Run 4: Report of LEDBAT — Data Link

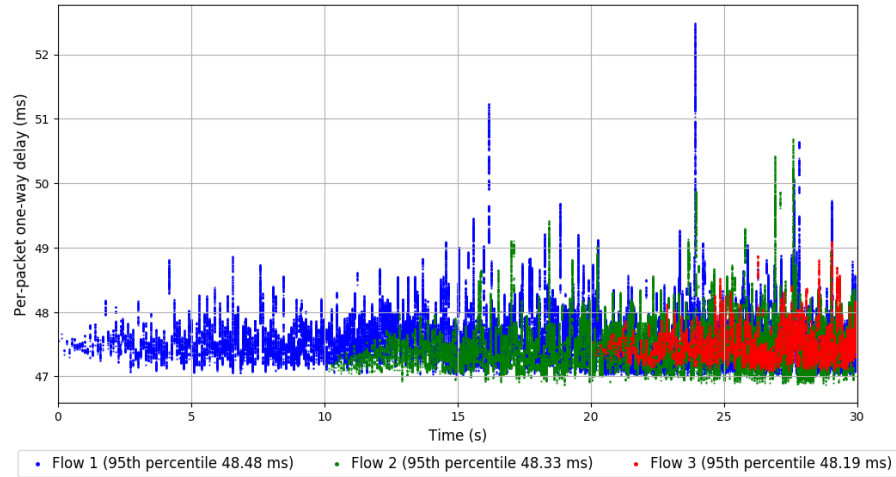
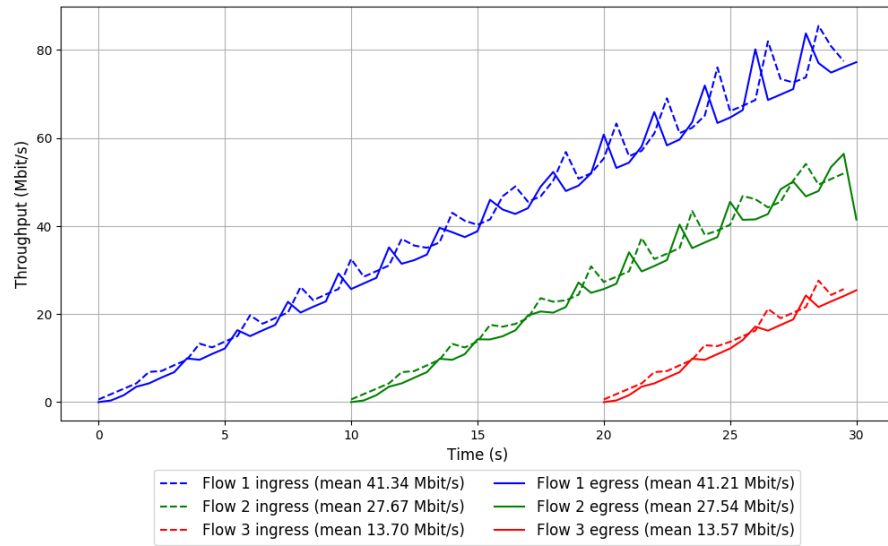


Run 5: Statistics of LEDBAT

Start at: 2018-11-16 02:08:45
End at: 2018-11-16 02:09:15
Local clock offset: -0.013 ms
Remote clock offset: -0.016 ms

Below is generated by plot.py at 2018-11-16 03:58:55
Datalink statistics
-- Total of 3 flows:
Average throughput: 63.94 Mbit/s
95th percentile per-packet one-way delay: 48.414 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 41.21 Mbit/s
95th percentile per-packet one-way delay: 48.482 ms
Loss rate: 0.63%
-- Flow 2:
Average throughput: 27.54 Mbit/s
95th percentile per-packet one-way delay: 48.334 ms
Loss rate: 0.95%
-- Flow 3:
Average throughput: 13.57 Mbit/s
95th percentile per-packet one-way delay: 48.187 ms
Loss rate: 1.92%

Run 5: Report of LEDBAT — Data Link



Run 1: Statistics of Indigo-Muses

Start at: 2018-11-16 00:07:47

End at: 2018-11-16 00:08:17

Local clock offset: -0.033 ms

Remote clock offset: 0.291 ms

Below is generated by plot.py at 2018-11-16 04:14:48

Datalink statistics

-- Total of 3 flows:

Average throughput: 1049.60 Mbit/s

95th percentile per-packet one-way delay: 61.385 ms

Loss rate: 0.47%

-- Flow 1:

Average throughput: 583.72 Mbit/s

95th percentile per-packet one-way delay: 61.146 ms

Loss rate: 0.31%

-- Flow 2:

Average throughput: 503.72 Mbit/s

95th percentile per-packet one-way delay: 61.352 ms

Loss rate: 0.43%

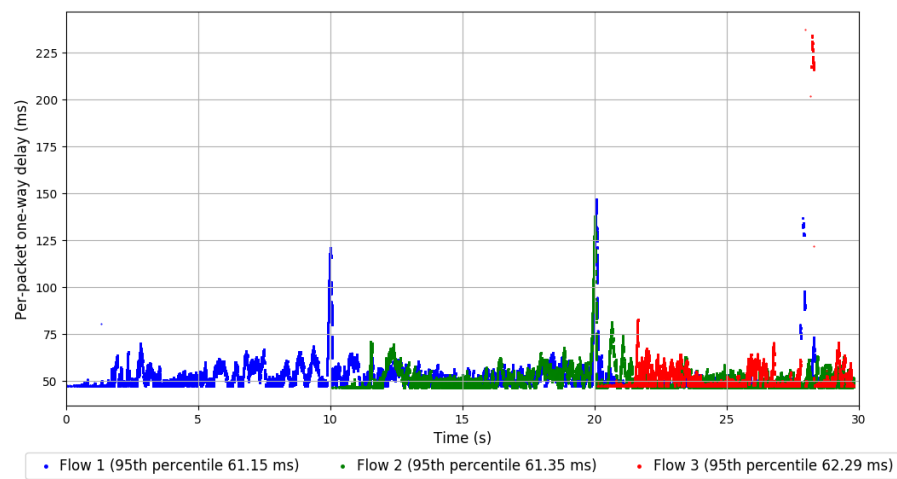
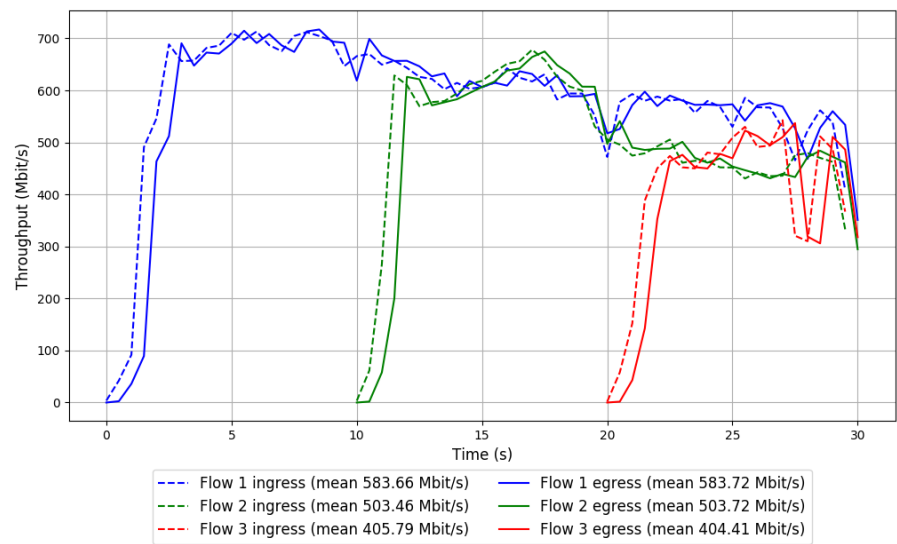
-- Flow 3:

Average throughput: 404.41 Mbit/s

95th percentile per-packet one-way delay: 62.286 ms

Loss rate: 1.27%

Run 1: Report of Indigo-Muses — Data Link

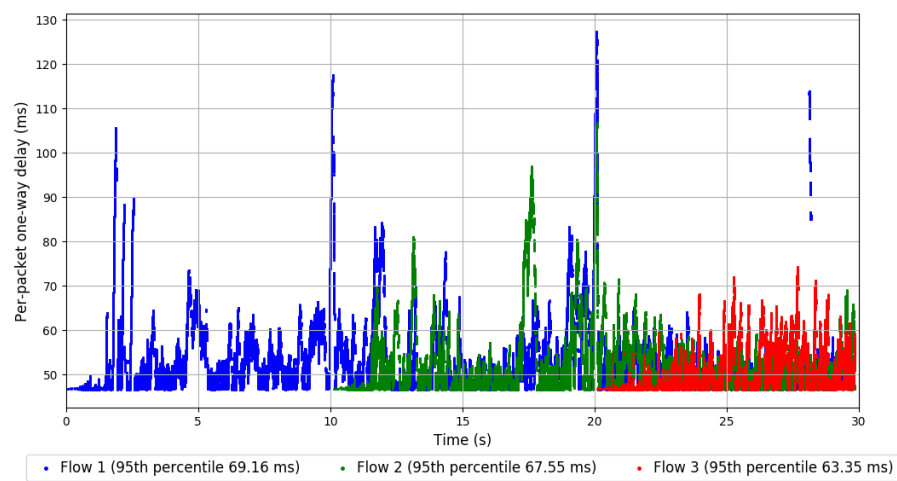
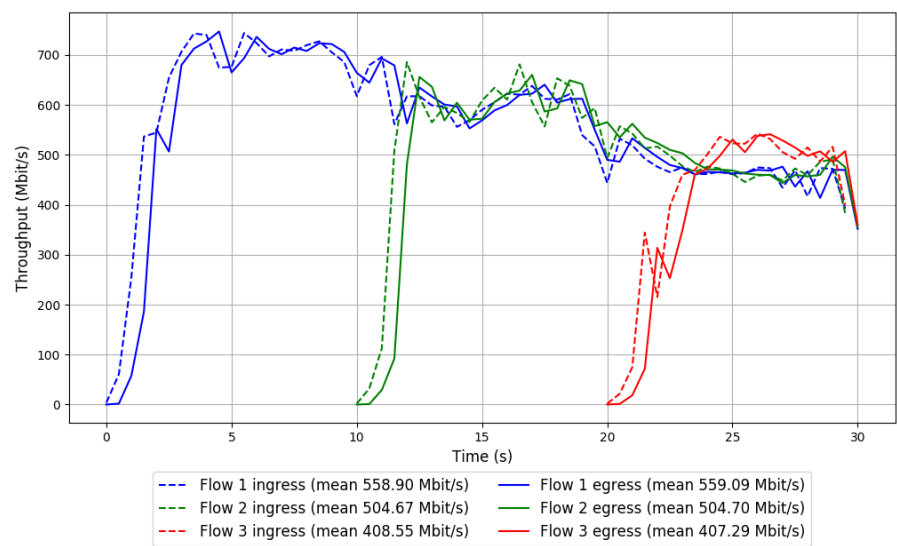


Run 2: Statistics of Indigo-Muses

Start at: 2018-11-16 00:38:59
End at: 2018-11-16 00:39:29
Local clock offset: -0.404 ms
Remote clock offset: -0.042 ms

Below is generated by plot.py at 2018-11-16 04:14:48
Datalink statistics
-- Total of 3 flows:
Average throughput: 1026.52 Mbit/s
95th percentile per-packet one-way delay: 67.199 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 559.09 Mbit/s
95th percentile per-packet one-way delay: 69.164 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 504.70 Mbit/s
95th percentile per-packet one-way delay: 67.553 ms
Loss rate: 0.45%
-- Flow 3:
Average throughput: 407.29 Mbit/s
95th percentile per-packet one-way delay: 63.353 ms
Loss rate: 1.26%

Run 2: Report of Indigo-Muses — Data Link

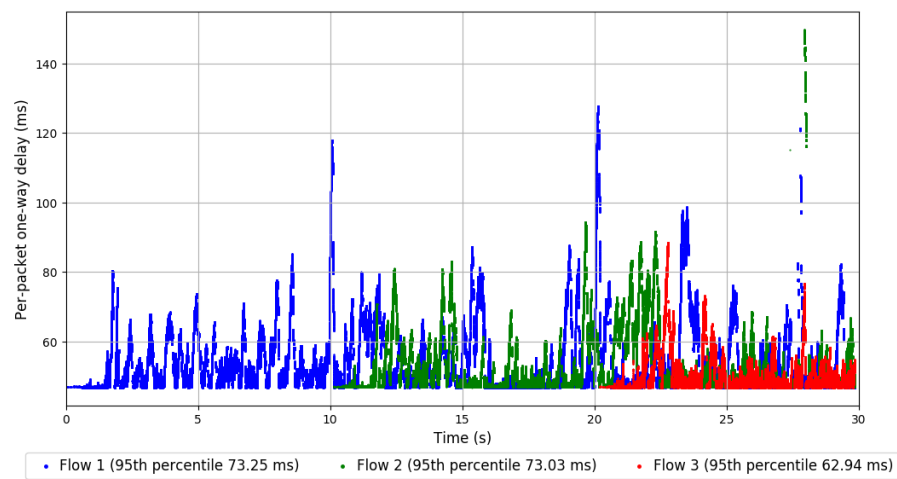
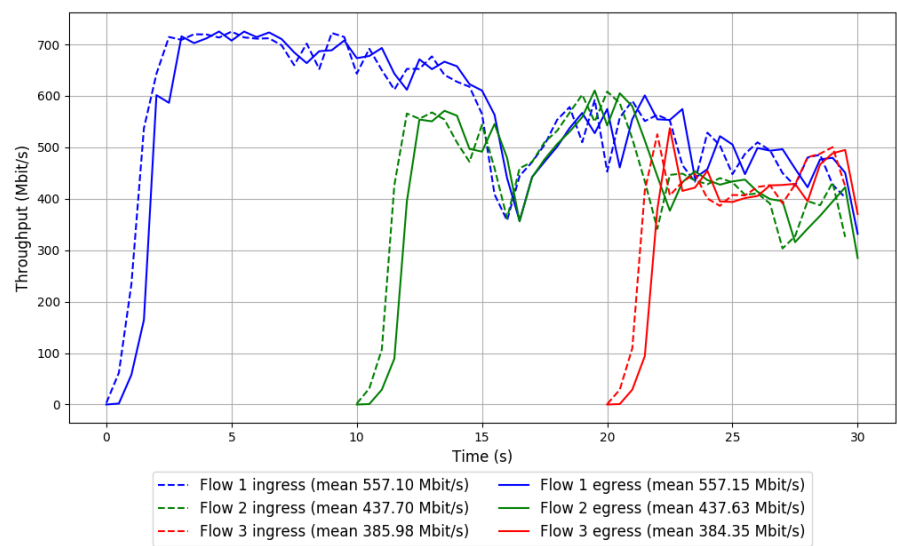


Run 3: Statistics of Indigo-Muses

Start at: 2018-11-16 01:10:13
End at: 2018-11-16 01:10:43
Local clock offset: -0.27 ms
Remote clock offset: -0.055 ms

Below is generated by plot.py at 2018-11-16 04:14:48
Datalink statistics
-- Total of 3 flows:
Average throughput: 971.17 Mbit/s
95th percentile per-packet one-way delay: 72.167 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 557.15 Mbit/s
95th percentile per-packet one-way delay: 73.254 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 437.63 Mbit/s
95th percentile per-packet one-way delay: 73.034 ms
Loss rate: 0.49%
-- Flow 3:
Average throughput: 384.35 Mbit/s
95th percentile per-packet one-way delay: 62.936 ms
Loss rate: 1.39%

Run 3: Report of Indigo-Muses — Data Link

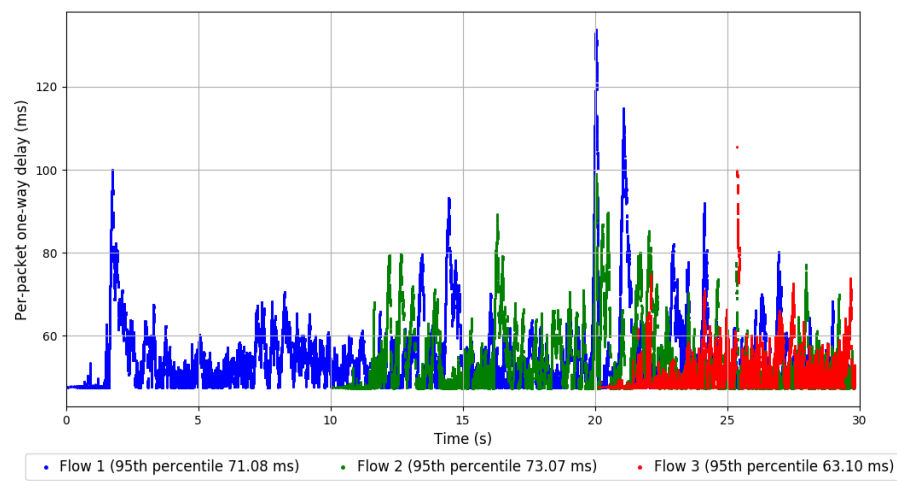
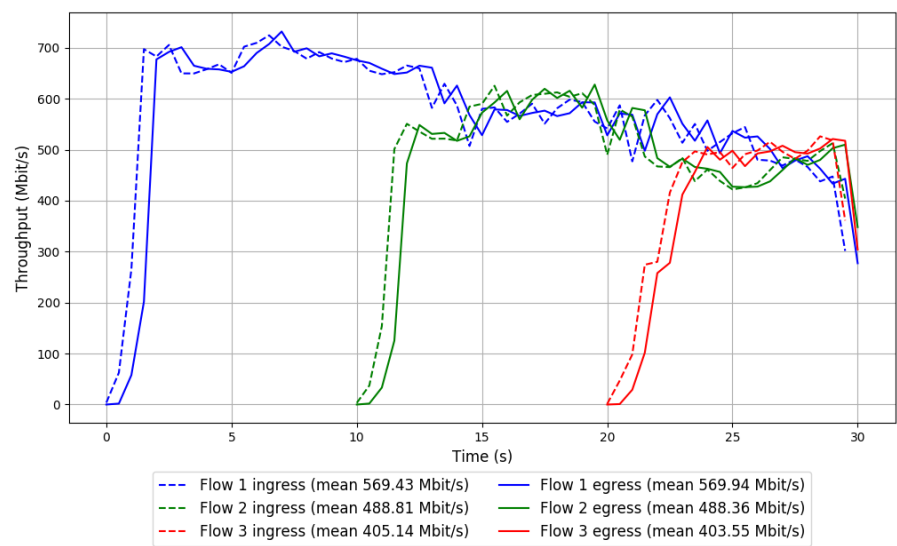


Run 4: Statistics of Indigo-Muses

Start at: 2018-11-16 01:41:05
End at: 2018-11-16 01:41:35
Local clock offset: 0.507 ms
Remote clock offset: -0.095 ms

Below is generated by plot.py at 2018-11-16 04:15:32
Datalink statistics
-- Total of 3 flows:
Average throughput: 1025.41 Mbit/s
95th percentile per-packet one-way delay: 70.659 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 569.94 Mbit/s
95th percentile per-packet one-way delay: 71.085 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 488.36 Mbit/s
95th percentile per-packet one-way delay: 73.070 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 403.55 Mbit/s
95th percentile per-packet one-way delay: 63.103 ms
Loss rate: 1.38%

Run 4: Report of Indigo-Muses — Data Link

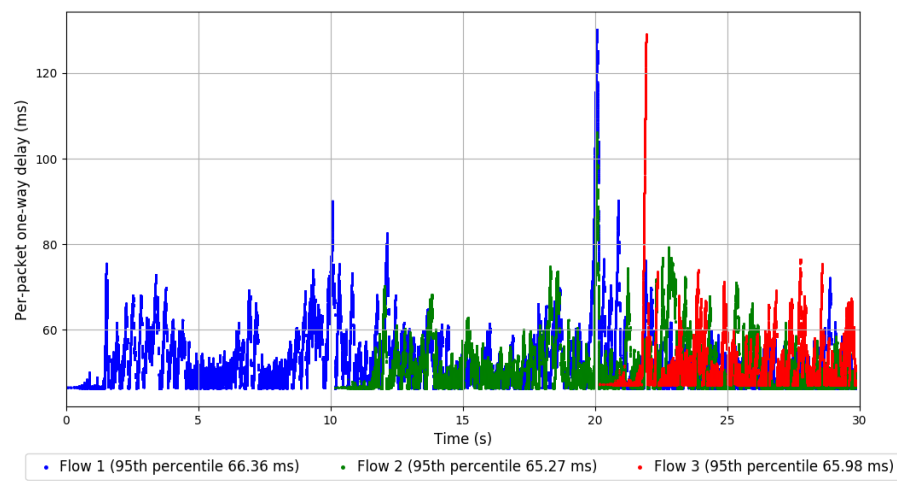
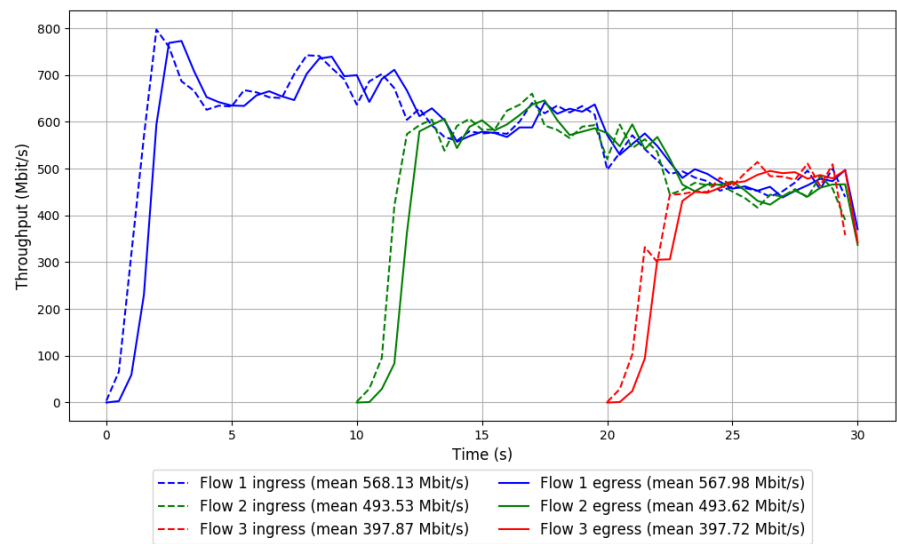


Run 5: Statistics of Indigo-Muses

Start at: 2018-11-16 02:12:11
End at: 2018-11-16 02:12:41
Local clock offset: 0.009 ms
Remote clock offset: -0.055 ms

Below is generated by plot.py at 2018-11-16 04:16:19
Datalink statistics
-- Total of 3 flows:
Average throughput: 1023.41 Mbit/s
95th percentile per-packet one-way delay: 66.040 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 567.98 Mbit/s
95th percentile per-packet one-way delay: 66.355 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 493.62 Mbit/s
95th percentile per-packet one-way delay: 65.266 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 397.72 Mbit/s
95th percentile per-packet one-way delay: 65.985 ms
Loss rate: 1.02%

Run 5: Report of Indigo-Muses — Data Link



Run 1: Statistics of PCC-Allegro

Start at: 2018-11-16 00:02:23

End at: 2018-11-16 00:02:53

Local clock offset: -0.064 ms

Remote clock offset: 0.243 ms

Below is generated by plot.py at 2018-11-16 04:26:24

Datalink statistics

-- Total of 3 flows:

Average throughput: 741.97 Mbit/s

95th percentile per-packet one-way delay: 174.813 ms

Loss rate: 5.36%

-- Flow 1:

Average throughput: 407.51 Mbit/s

95th percentile per-packet one-way delay: 177.693 ms

Loss rate: 5.72%

-- Flow 2:

Average throughput: 304.75 Mbit/s

95th percentile per-packet one-way delay: 93.707 ms

Loss rate: 0.61%

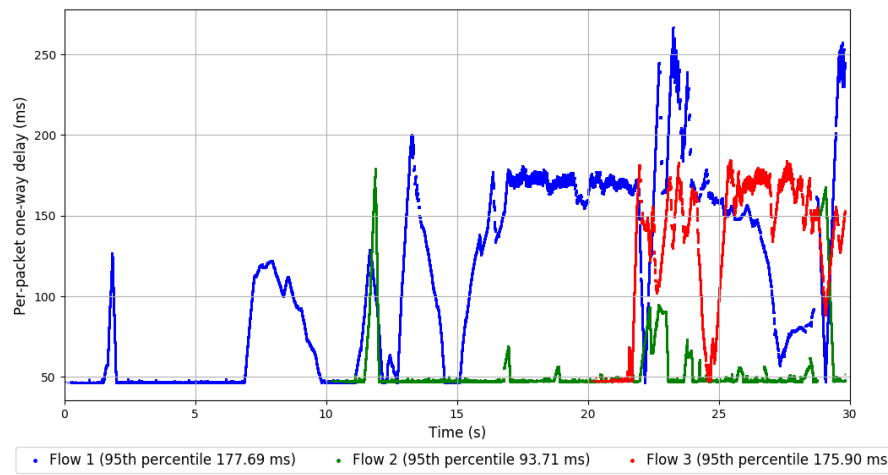
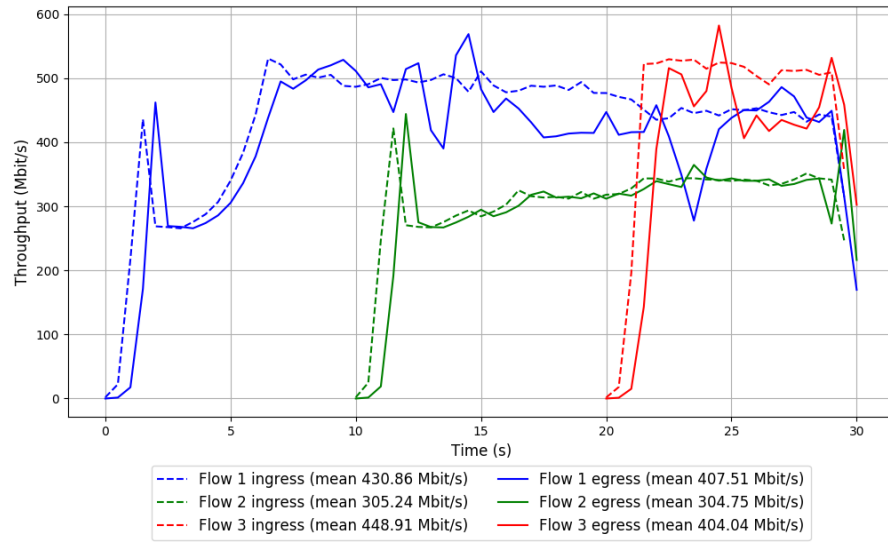
-- Flow 3:

Average throughput: 404.04 Mbit/s

95th percentile per-packet one-way delay: 175.903 ms

Loss rate: 10.85%

Run 1: Report of PCC-Allegro — Data Link

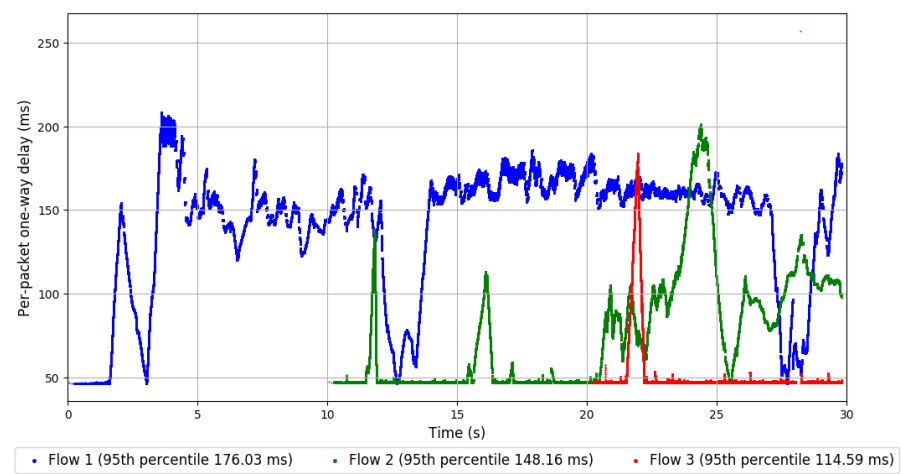
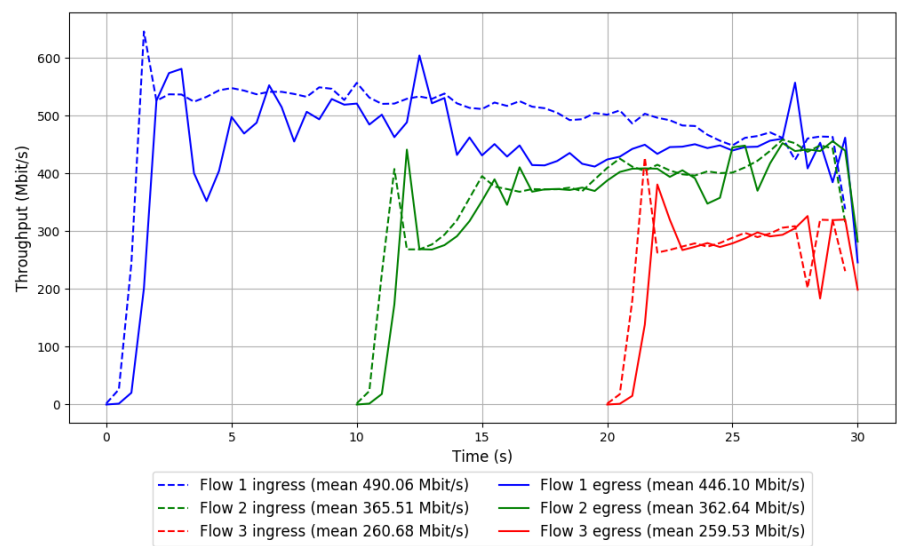


Run 2: Statistics of PCC-Allegro

Start at: 2018-11-16 00:33:34
End at: 2018-11-16 00:34:04
Local clock offset: -0.051 ms
Remote clock offset: -0.094 ms

Below is generated by plot.py at 2018-11-16 04:28:40
Datalink statistics
-- Total of 3 flows:
Average throughput: 771.76 Mbit/s
95th percentile per-packet one-way delay: 174.115 ms
Loss rate: 6.06%
-- Flow 1:
Average throughput: 446.10 Mbit/s
95th percentile per-packet one-way delay: 176.029 ms
Loss rate: 9.26%
-- Flow 2:
Average throughput: 362.64 Mbit/s
95th percentile per-packet one-way delay: 148.164 ms
Loss rate: 1.26%
-- Flow 3:
Average throughput: 259.53 Mbit/s
95th percentile per-packet one-way delay: 114.590 ms
Loss rate: 1.40%

Run 2: Report of PCC-Allegro — Data Link

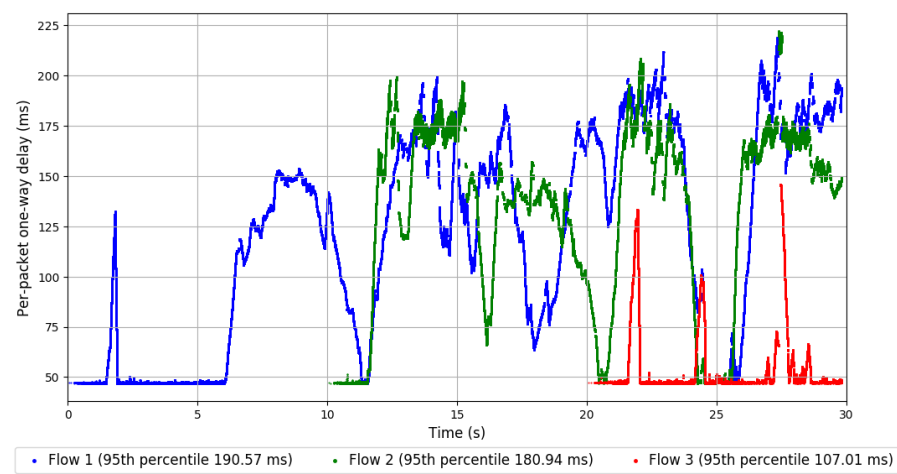
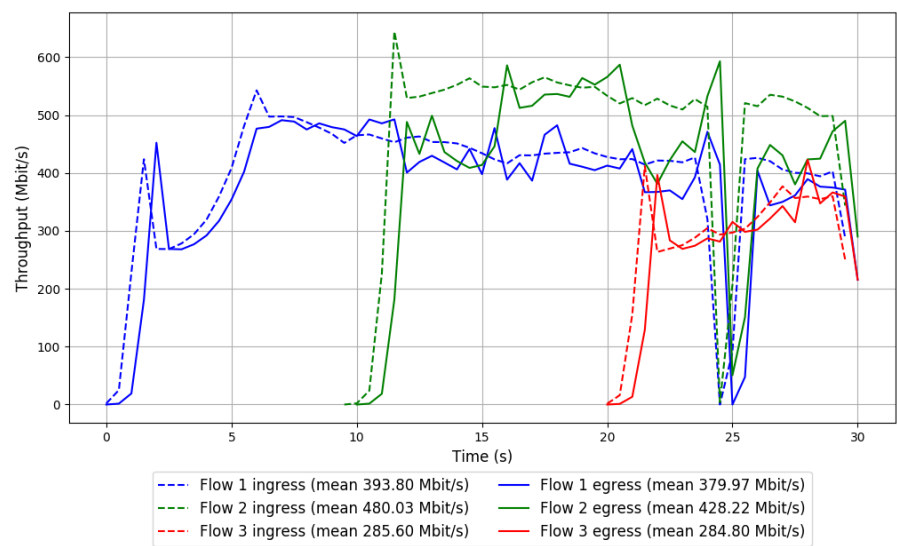


Run 3: Statistics of PCC-Allegro

Start at: 2018-11-16 01:04:45
End at: 2018-11-16 01:05:15
Local clock offset: -0.005 ms
Remote clock offset: -0.054 ms

Below is generated by plot.py at 2018-11-16 04:28:40
Datalink statistics
-- Total of 3 flows:
Average throughput: 757.40 Mbit/s
95th percentile per-packet one-way delay: 186.256 ms
Loss rate: 6.45%
-- Flow 1:
Average throughput: 379.97 Mbit/s
95th percentile per-packet one-way delay: 190.572 ms
Loss rate: 3.82%
-- Flow 2:
Average throughput: 428.22 Mbit/s
95th percentile per-packet one-way delay: 180.938 ms
Loss rate: 11.22%
-- Flow 3:
Average throughput: 284.80 Mbit/s
95th percentile per-packet one-way delay: 107.009 ms
Loss rate: 1.24%

Run 3: Report of PCC-Allegro — Data Link

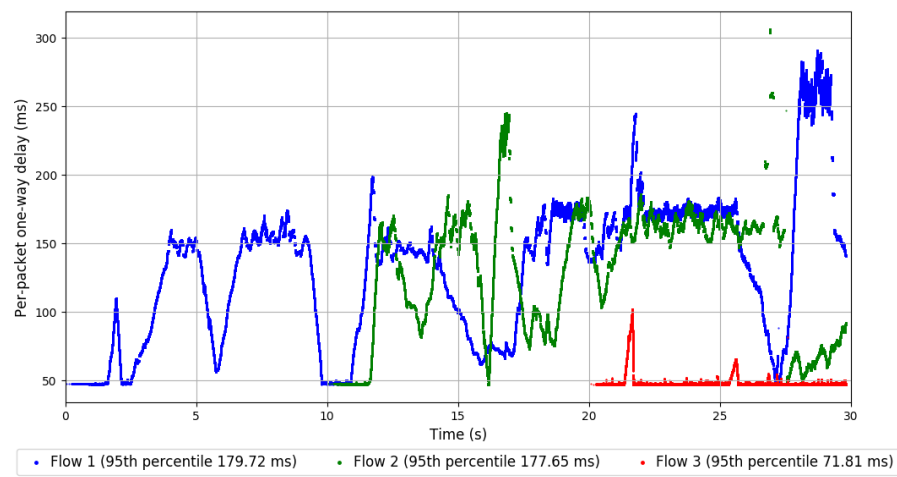
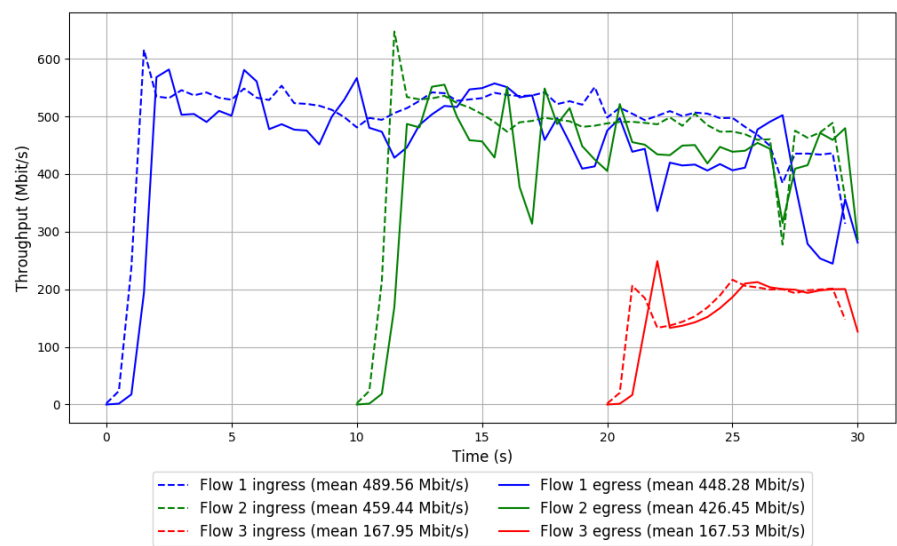


Run 4: Statistics of PCC-Allegro

Start at: 2018-11-16 01:35:36
End at: 2018-11-16 01:36:06
Local clock offset: 0.176 ms
Remote clock offset: -0.063 ms

Below is generated by plot.py at 2018-11-16 04:46:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 786.20 Mbit/s
95th percentile per-packet one-way delay: 178.163 ms
Loss rate: 7.84%
-- Flow 1:
Average throughput: 448.28 Mbit/s
95th percentile per-packet one-way delay: 179.717 ms
Loss rate: 8.73%
-- Flow 2:
Average throughput: 426.45 Mbit/s
95th percentile per-packet one-way delay: 177.652 ms
Loss rate: 7.63%
-- Flow 3:
Average throughput: 167.53 Mbit/s
95th percentile per-packet one-way delay: 71.814 ms
Loss rate: 1.22%

Run 4: Report of PCC-Allegro — Data Link

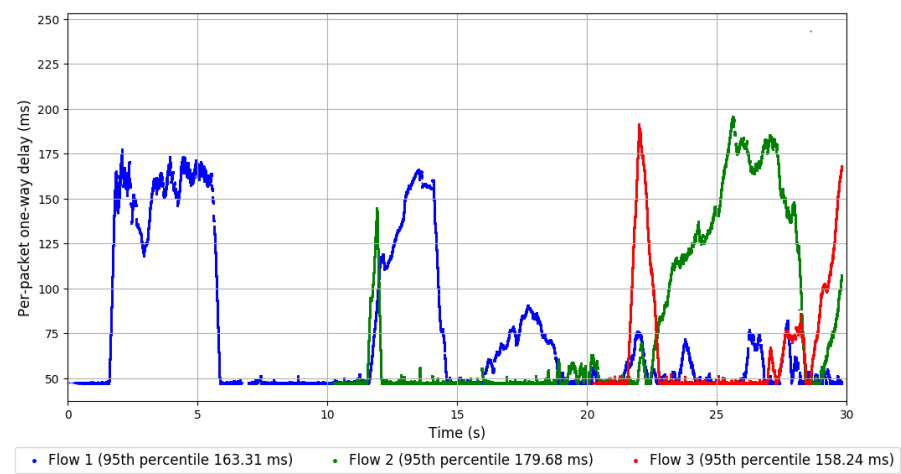
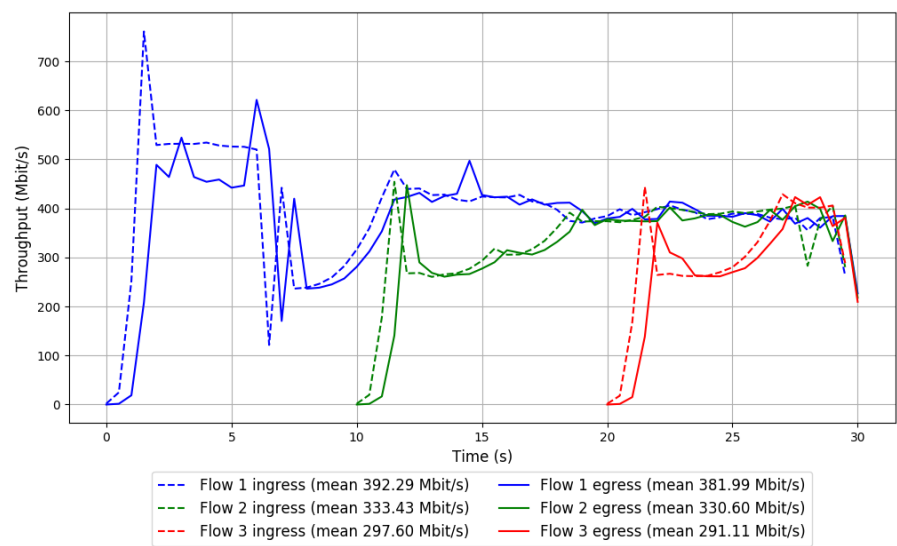


Run 5: Statistics of PCC-Allegro

Start at: 2018-11-16 02:06:47
End at: 2018-11-16 02:07:18
Local clock offset: 0.03 ms
Remote clock offset: -0.055 ms

Below is generated by plot.py at 2018-11-16 04:46:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 696.58 Mbit/s
95th percentile per-packet one-way delay: 166.653 ms
Loss rate: 2.46%
-- Flow 1:
Average throughput: 381.99 Mbit/s
95th percentile per-packet one-way delay: 163.314 ms
Loss rate: 2.94%
-- Flow 2:
Average throughput: 330.60 Mbit/s
95th percentile per-packet one-way delay: 179.683 ms
Loss rate: 1.33%
-- Flow 3:
Average throughput: 291.11 Mbit/s
95th percentile per-packet one-way delay: 158.237 ms
Loss rate: 3.13%

Run 5: Report of PCC-Allegro — Data Link

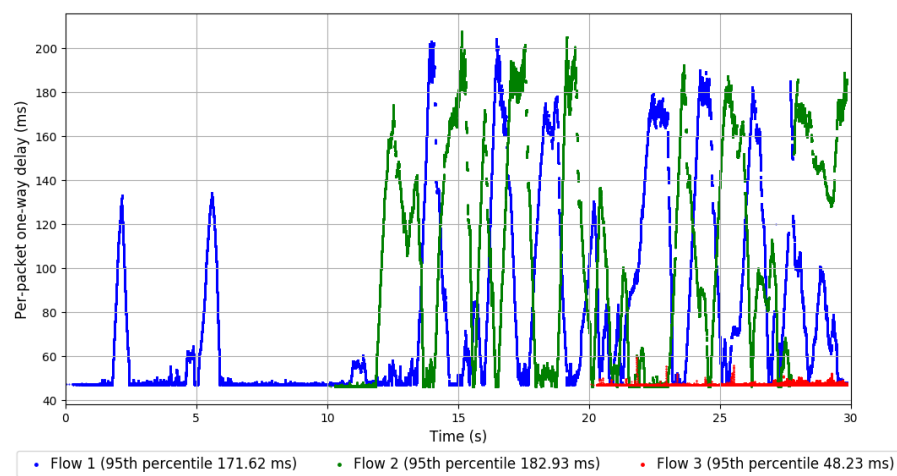
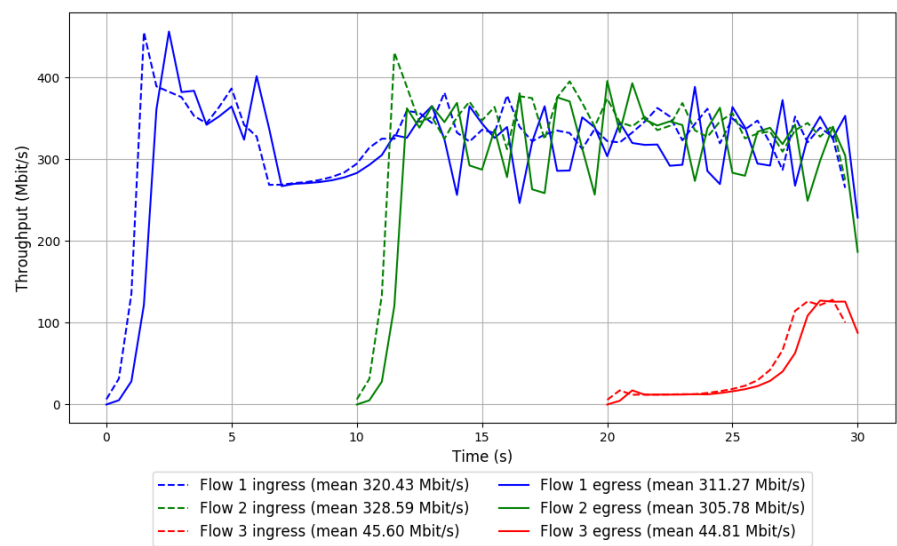


```
Run 1: Statistics of PCC-Expr

Start at: 2018-11-15 23:59:12
End at: 2018-11-15 23:59:42
Local clock offset: -0.077 ms
Remote clock offset: 0.241 ms

# Below is generated by plot.py at 2018-11-16 04:46:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 528.99 Mbit/s
95th percentile per-packet one-way delay: 176.272 ms
Loss rate: 4.82%
-- Flow 1:
Average throughput: 311.27 Mbit/s
95th percentile per-packet one-way delay: 171.623 ms
Loss rate: 3.17%
-- Flow 2:
Average throughput: 305.78 Mbit/s
95th percentile per-packet one-way delay: 182.931 ms
Loss rate: 7.39%
-- Flow 3:
Average throughput: 44.81 Mbit/s
95th percentile per-packet one-way delay: 48.235 ms
Loss rate: 2.71%
```

Run 1: Report of PCC-Expr — Data Link

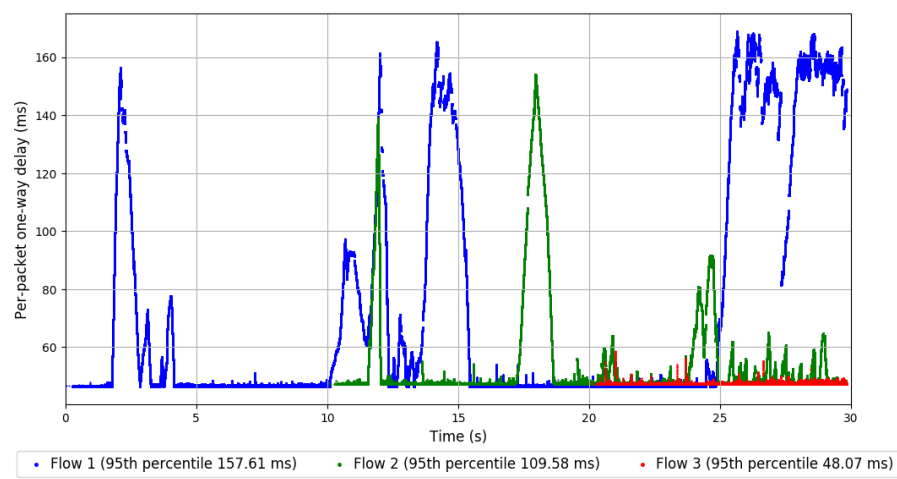
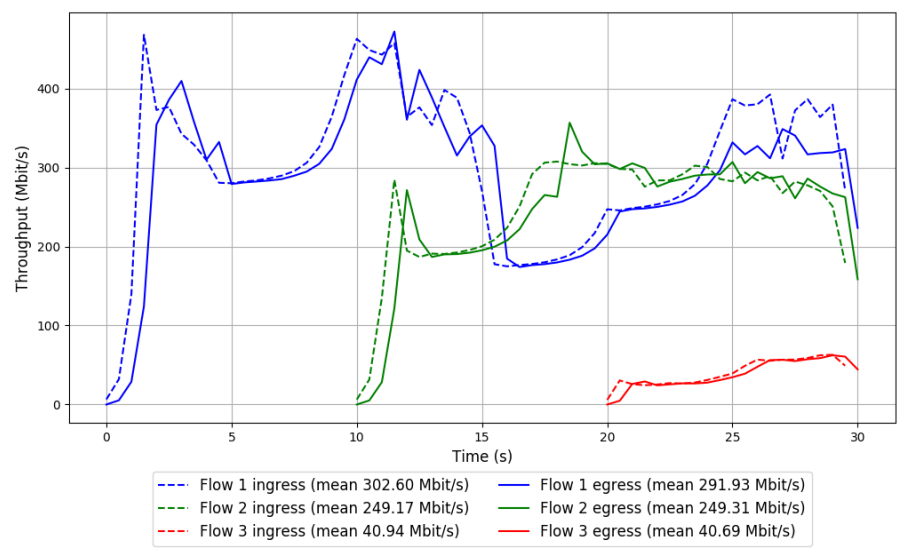


Run 2: Statistics of PCC-Expr

Start at: 2018-11-16 00:30:26
End at: 2018-11-16 00:30:56
Local clock offset: -0.023 ms
Remote clock offset: -0.057 ms

Below is generated by plot.py at 2018-11-16 04:46:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 470.84 Mbit/s
95th percentile per-packet one-way delay: 154.867 ms
Loss rate: 2.59%
-- Flow 1:
Average throughput: 291.93 Mbit/s
95th percentile per-packet one-way delay: 157.608 ms
Loss rate: 3.83%
-- Flow 2:
Average throughput: 249.31 Mbit/s
95th percentile per-packet one-way delay: 109.579 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 40.69 Mbit/s
95th percentile per-packet one-way delay: 48.068 ms
Loss rate: 1.57%

Run 2: Report of PCC-Expr — Data Link

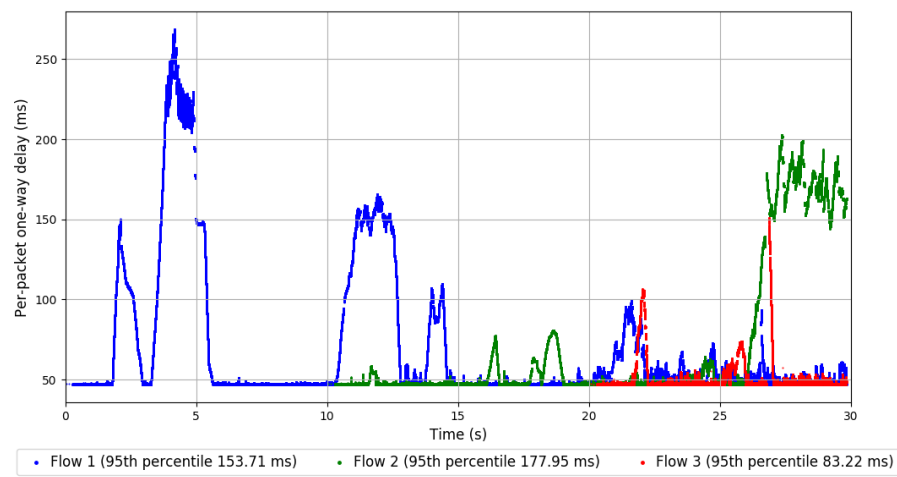
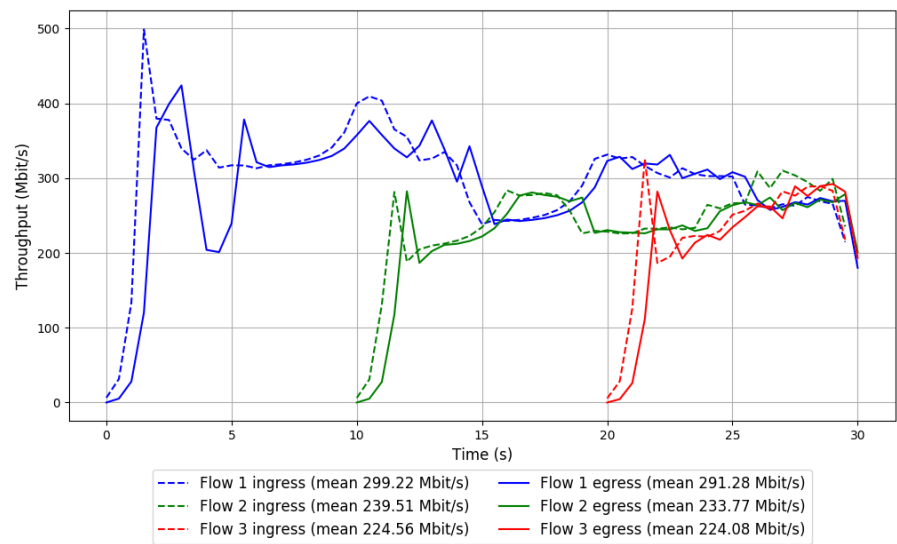


Run 3: Statistics of PCC-Expr

Start at: 2018-11-16 01:01:34
End at: 2018-11-16 01:02:04
Local clock offset: 0.071 ms
Remote clock offset: -0.037 ms

Below is generated by plot.py at 2018-11-16 04:46:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 519.96 Mbit/s
95th percentile per-packet one-way delay: 167.350 ms
Loss rate: 2.70%
-- Flow 1:
Average throughput: 291.28 Mbit/s
95th percentile per-packet one-way delay: 153.713 ms
Loss rate: 2.98%
-- Flow 2:
Average throughput: 233.77 Mbit/s
95th percentile per-packet one-way delay: 177.949 ms
Loss rate: 2.86%
-- Flow 3:
Average throughput: 224.08 Mbit/s
95th percentile per-packet one-way delay: 83.216 ms
Loss rate: 1.20%

Run 3: Report of PCC-Expr — Data Link

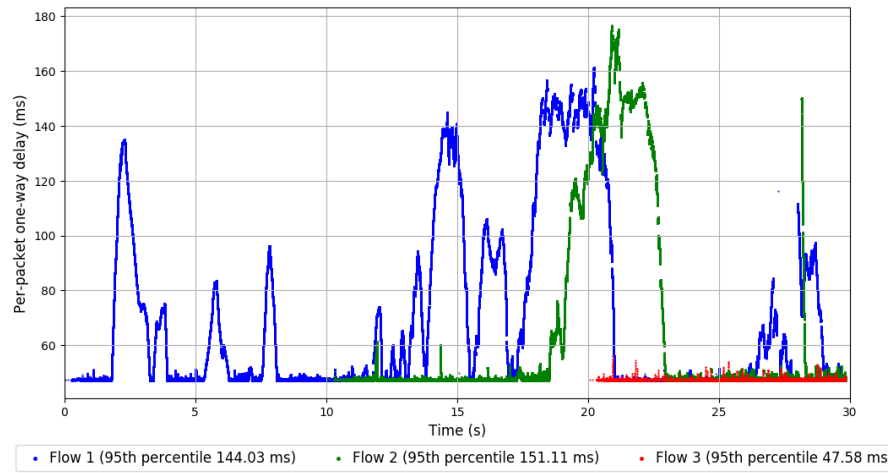
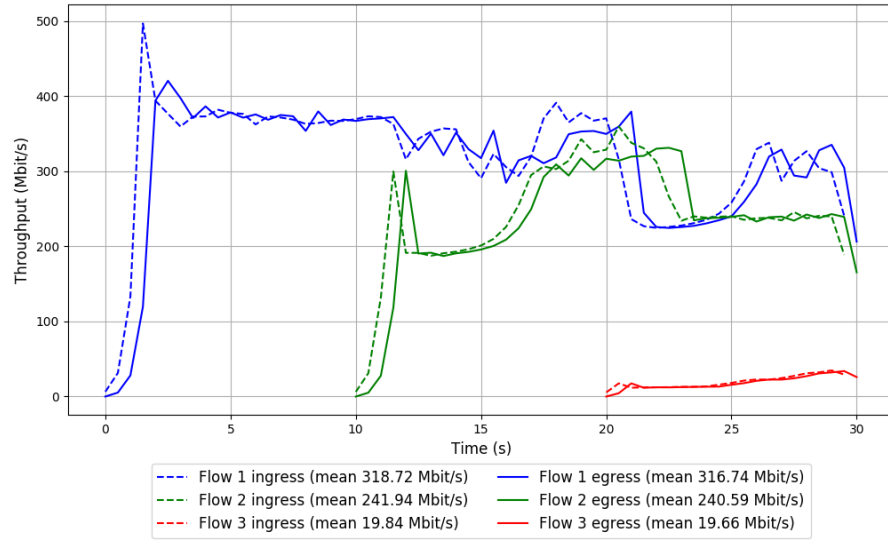


Run 4: Statistics of PCC-Expr

Start at: 2018-11-16 01:32:28
End at: 2018-11-16 01:32:58
Local clock offset: 0.161 ms
Remote clock offset: -0.076 ms

Below is generated by plot.py at 2018-11-16 04:46:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 482.93 Mbit/s
95th percentile per-packet one-way delay: 147.239 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 316.74 Mbit/s
95th percentile per-packet one-way delay: 144.027 ms
Loss rate: 0.94%
-- Flow 2:
Average throughput: 240.59 Mbit/s
95th percentile per-packet one-way delay: 151.108 ms
Loss rate: 1.05%
-- Flow 3:
Average throughput: 19.66 Mbit/s
95th percentile per-packet one-way delay: 47.576 ms
Loss rate: 1.87%

Run 4: Report of PCC-Expr — Data Link

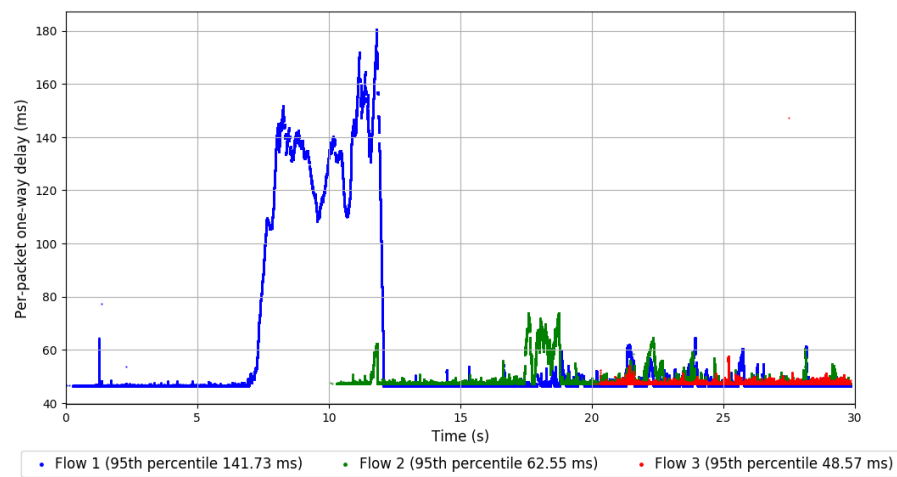
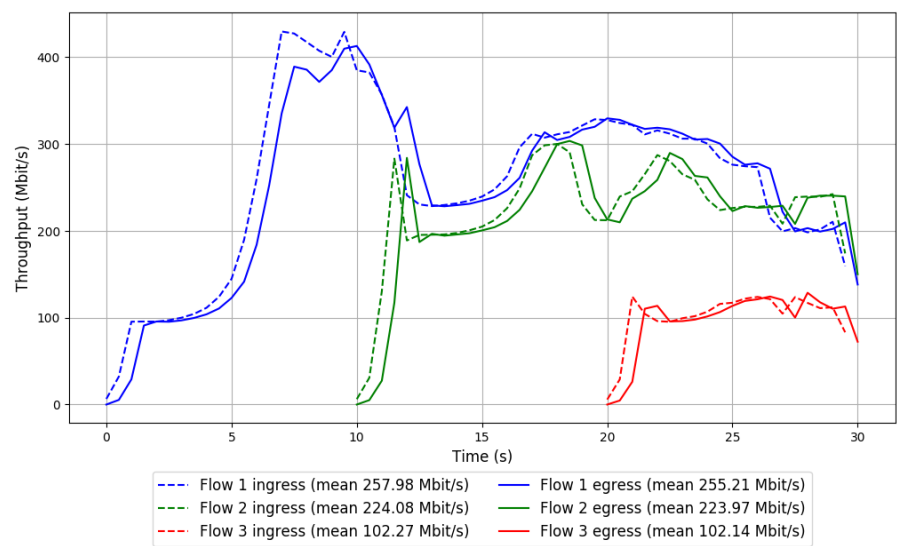


Run 5: Statistics of PCC-Expr

Start at: 2018-11-16 02:03:45
End at: 2018-11-16 02:04:15
Local clock offset: 0.064 ms
Remote clock offset: -0.029 ms

Below is generated by plot.py at 2018-11-16 04:46:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 437.34 Mbit/s
95th percentile per-packet one-way delay: 136.927 ms
Loss rate: 1.07%
-- Flow 1:
Average throughput: 255.21 Mbit/s
95th percentile per-packet one-way delay: 141.729 ms
Loss rate: 1.39%
-- Flow 2:
Average throughput: 223.97 Mbit/s
95th percentile per-packet one-way delay: 62.553 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 102.14 Mbit/s
95th percentile per-packet one-way delay: 48.571 ms
Loss rate: 1.07%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-11-15 23:57:55

End at: 2018-11-15 23:58:25

Local clock offset: 0.318 ms

Remote clock offset: 0.244 ms

Below is generated by plot.py at 2018-11-16 04:46:02

Datalink statistics

-- Total of 3 flows:

Average throughput: 99.99 Mbit/s

95th percentile per-packet one-way delay: 47.584 ms

Loss rate: 0.52%

-- Flow 1:

Average throughput: 49.03 Mbit/s

95th percentile per-packet one-way delay: 46.882 ms

Loss rate: 0.32%

-- Flow 2:

Average throughput: 48.03 Mbit/s

95th percentile per-packet one-way delay: 46.859 ms

Loss rate: 0.63%

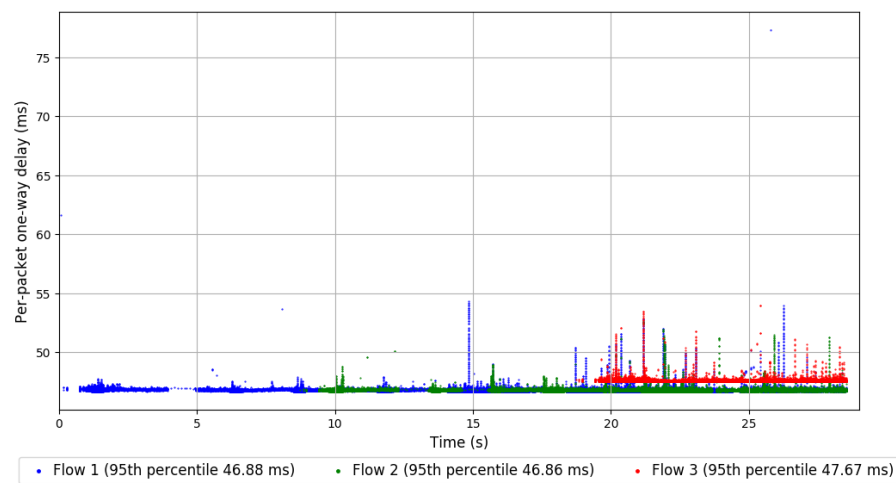
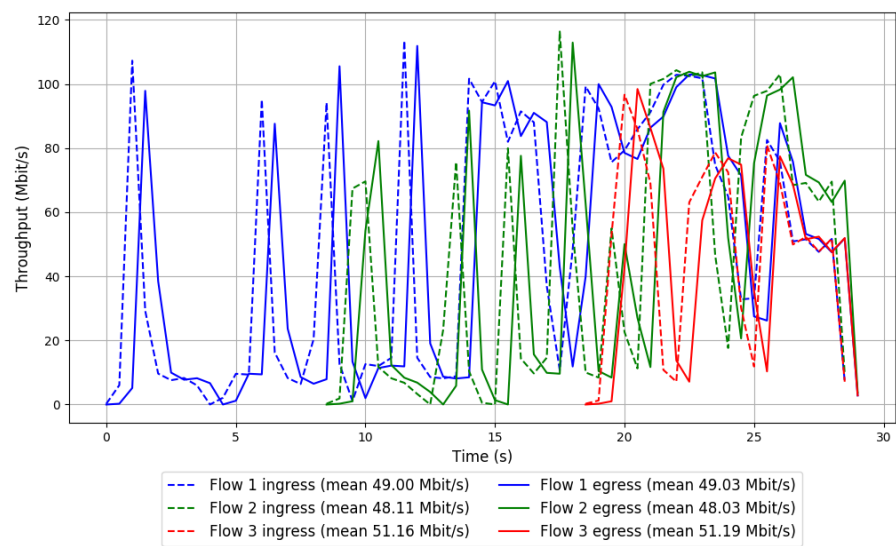
-- Flow 3:

Average throughput: 51.19 Mbit/s

95th percentile per-packet one-way delay: 47.672 ms

Loss rate: 0.89%

Run 1: Report of QUIC Cubic — Data Link

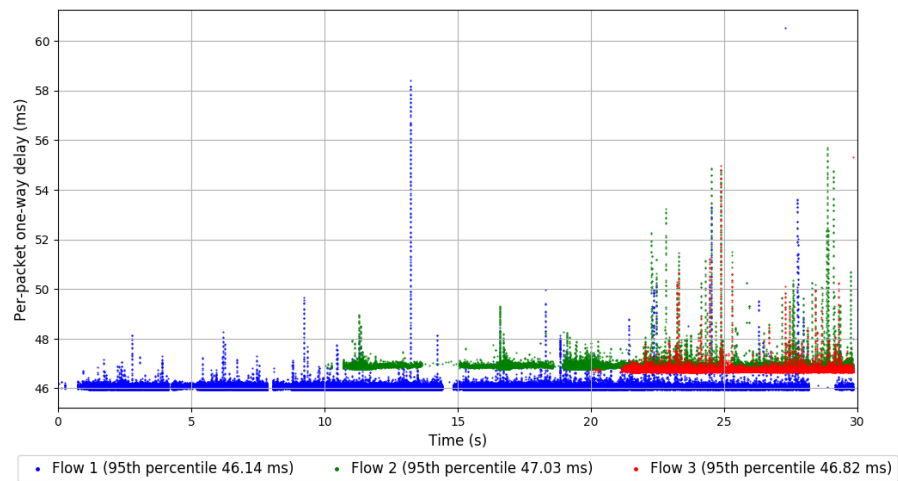
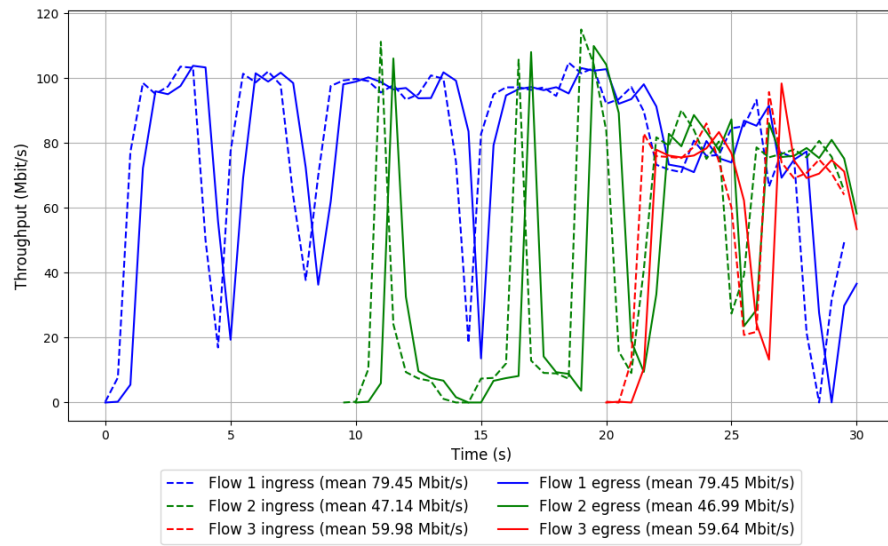


Run 2: Statistics of QUIC Cubic

Start at: 2018-11-16 00:29:07
End at: 2018-11-16 00:29:37
Local clock offset: -0.404 ms
Remote clock offset: -0.042 ms

Below is generated by plot.py at 2018-11-16 04:46:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 130.24 Mbit/s
95th percentile per-packet one-way delay: 46.914 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 79.45 Mbit/s
95th percentile per-packet one-way delay: 46.142 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 46.99 Mbit/s
95th percentile per-packet one-way delay: 47.032 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 59.64 Mbit/s
95th percentile per-packet one-way delay: 46.824 ms
Loss rate: 1.42%

Run 2: Report of QUIC Cubic — Data Link

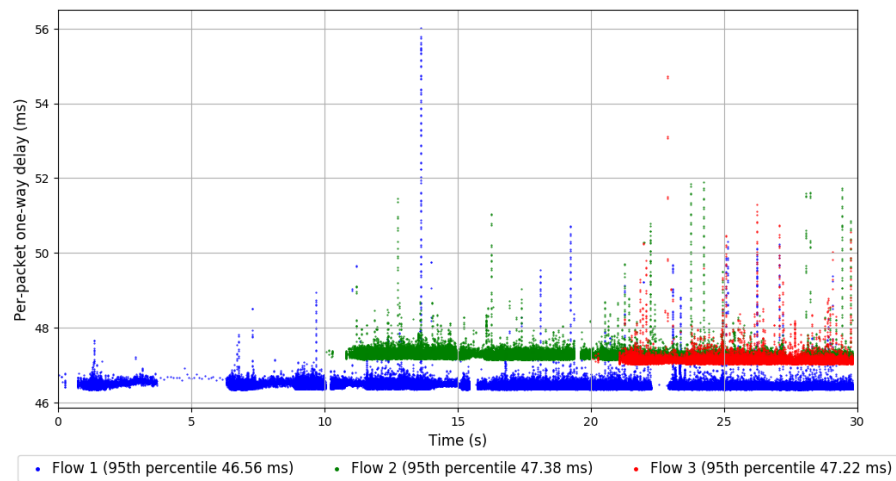
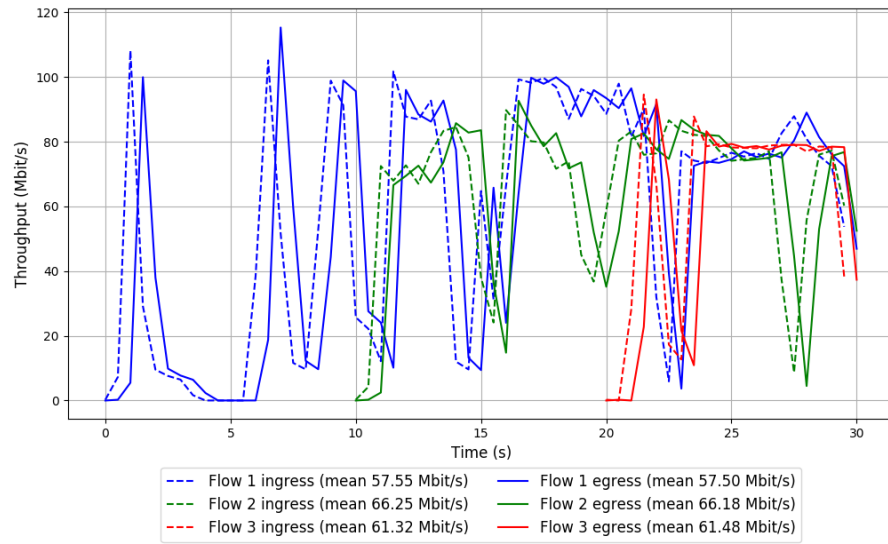


Run 3: Statistics of QUIC Cubic

Start at: 2018-11-16 01:00:15
End at: 2018-11-16 01:00:46
Local clock offset: 0.062 ms
Remote clock offset: -0.066 ms

Below is generated by plot.py at 2018-11-16 04:46:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 121.58 Mbit/s
95th percentile per-packet one-way delay: 47.320 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 57.50 Mbit/s
95th percentile per-packet one-way delay: 46.564 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 66.18 Mbit/s
95th percentile per-packet one-way delay: 47.378 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 61.48 Mbit/s
95th percentile per-packet one-way delay: 47.219 ms
Loss rate: 0.70%

Run 3: Report of QUIC Cubic — Data Link

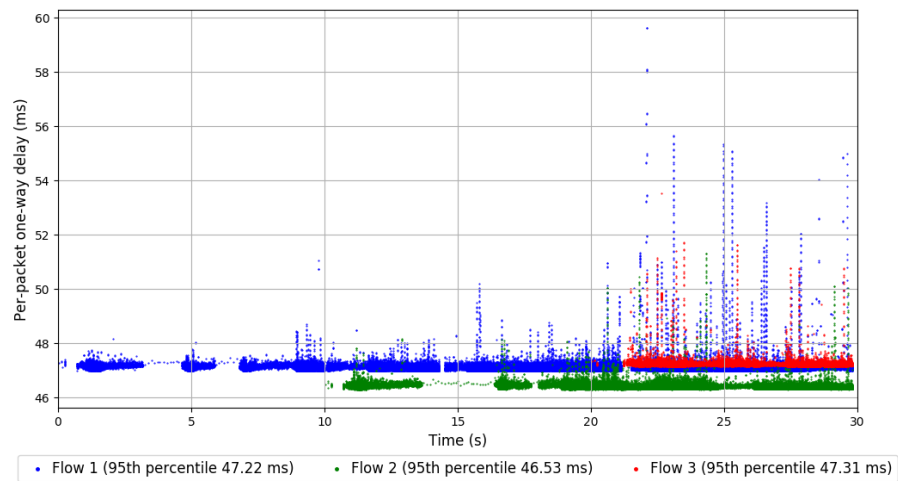
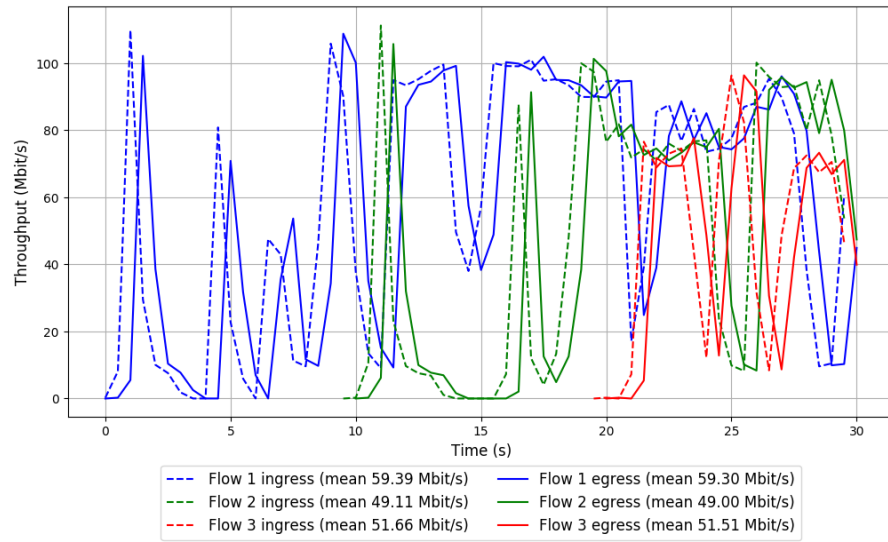


Run 4: Statistics of QUIC Cubic

Start at: 2018-11-16 01:31:10
End at: 2018-11-16 01:31:40
Local clock offset: 0.136 ms
Remote clock offset: -0.073 ms

Below is generated by plot.py at 2018-11-16 04:46:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 108.78 Mbit/s
95th percentile per-packet one-way delay: 47.240 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 59.30 Mbit/s
95th percentile per-packet one-way delay: 47.219 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 49.00 Mbit/s
95th percentile per-packet one-way delay: 46.527 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 51.51 Mbit/s
95th percentile per-packet one-way delay: 47.308 ms
Loss rate: 1.25%

Run 4: Report of QUIC Cubic — Data Link

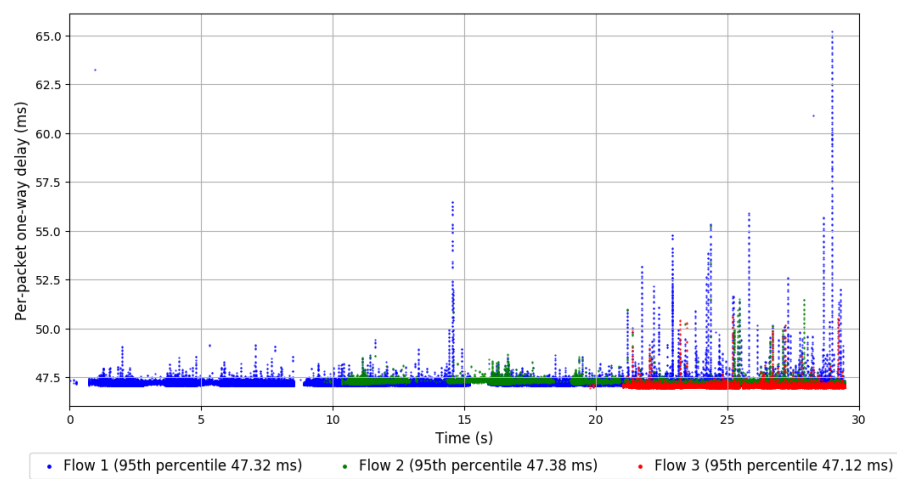
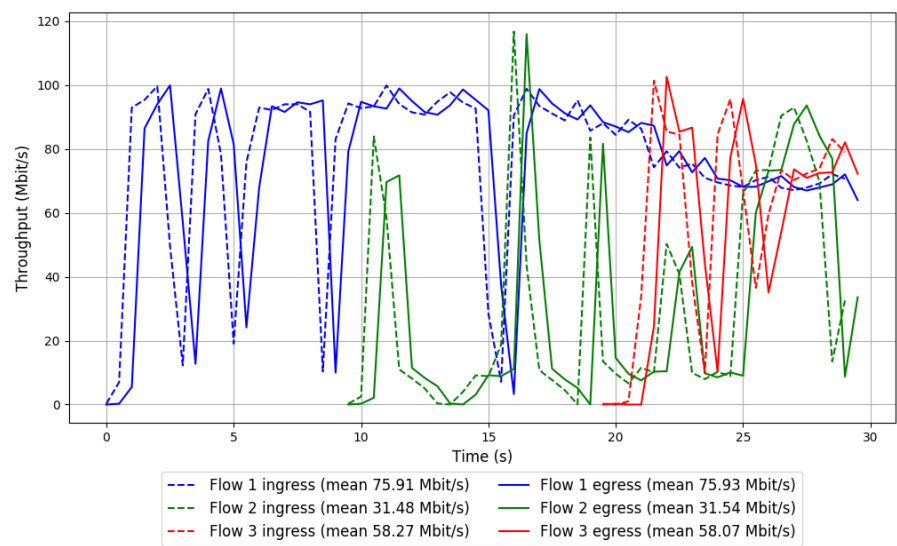


Run 5: Statistics of QUIC Cubic

Start at: 2018-11-16 02:02:27
End at: 2018-11-16 02:02:57
Local clock offset: 0.057 ms
Remote clock offset: -0.078 ms

Below is generated by plot.py at 2018-11-16 04:46:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 116.45 Mbit/s
95th percentile per-packet one-way delay: 47.324 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 75.93 Mbit/s
95th percentile per-packet one-way delay: 47.318 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 31.54 Mbit/s
95th percentile per-packet one-way delay: 47.375 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 58.07 Mbit/s
95th percentile per-packet one-way delay: 47.120 ms
Loss rate: 1.30%

Run 5: Report of QUIC Cubic — Data Link

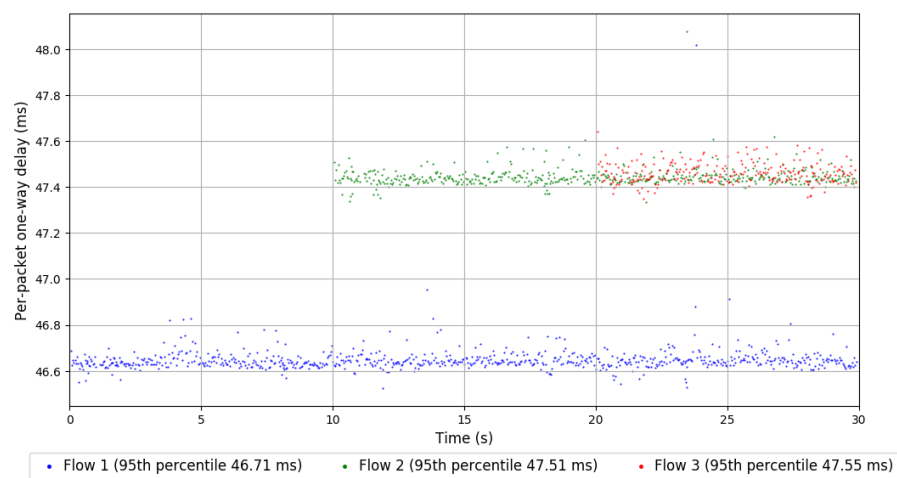
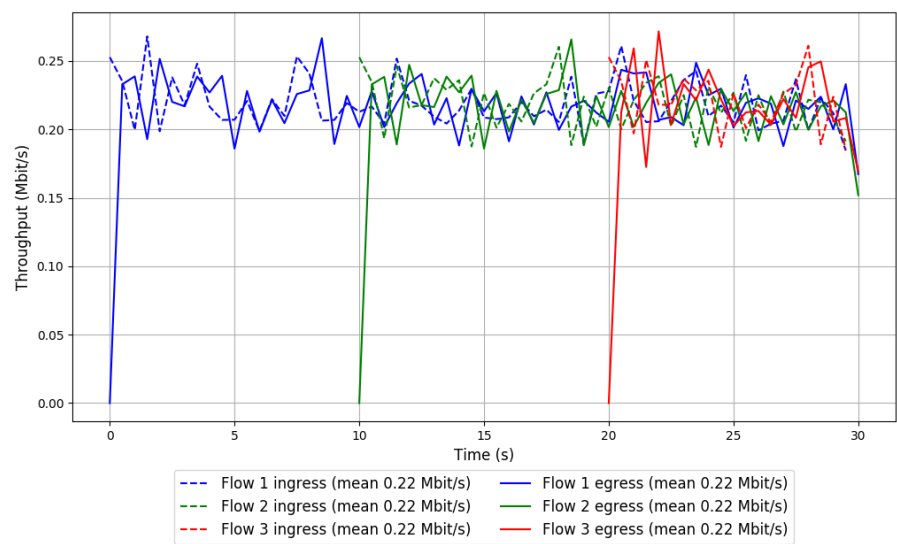


```
Run 1: Statistics of SReAM

Start at: 2018-11-16 00:01:12
End at: 2018-11-16 00:01:42
Local clock offset: -0.005 ms
Remote clock offset: 0.246 ms

# Below is generated by plot.py at 2018-11-16 04:46:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 47.501 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 46.712 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.510 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.547 ms
Loss rate: 1.09%
```

Run 1: Report of SReAM — Data Link

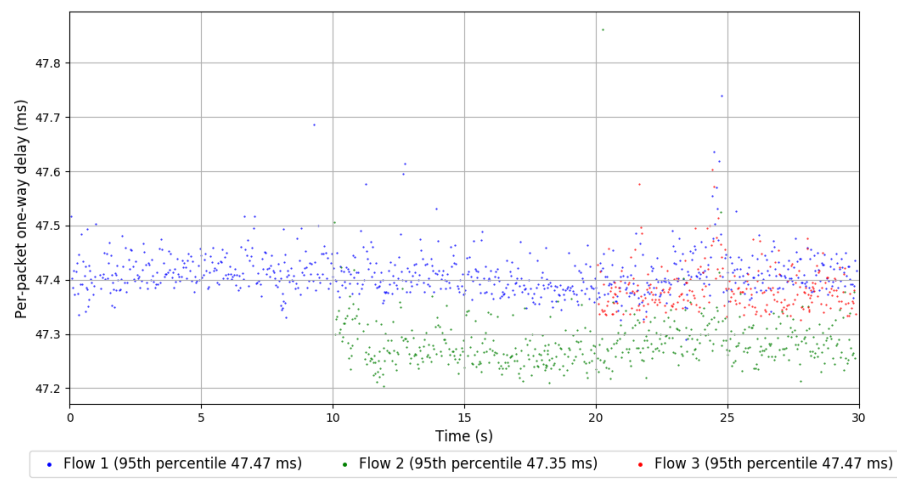
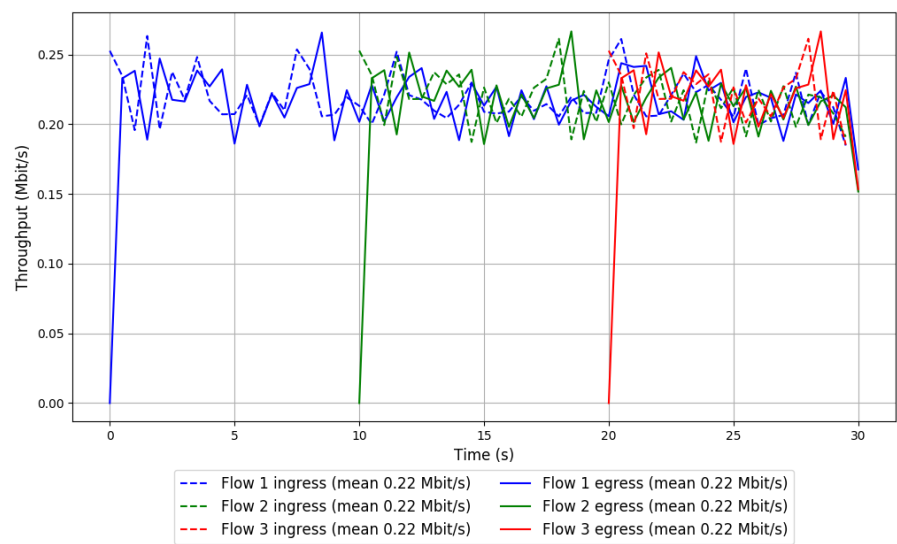


Run 2: Statistics of SReAM

Start at: 2018-11-16 00:32:23
End at: 2018-11-16 00:32:53
Local clock offset: -0.028 ms
Remote clock offset: -0.064 ms

Below is generated by plot.py at 2018-11-16 04:46:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 47.460 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.473 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.348 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.472 ms
Loss rate: 1.09%

Run 2: Report of SReAM — Data Link

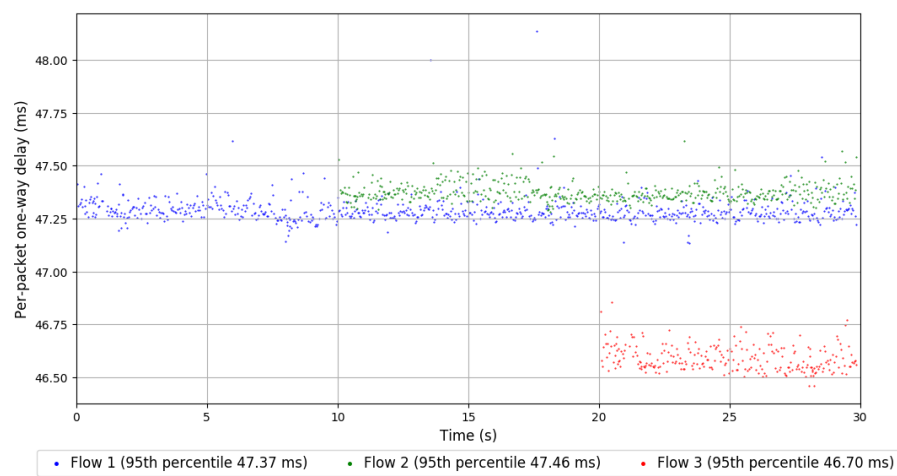
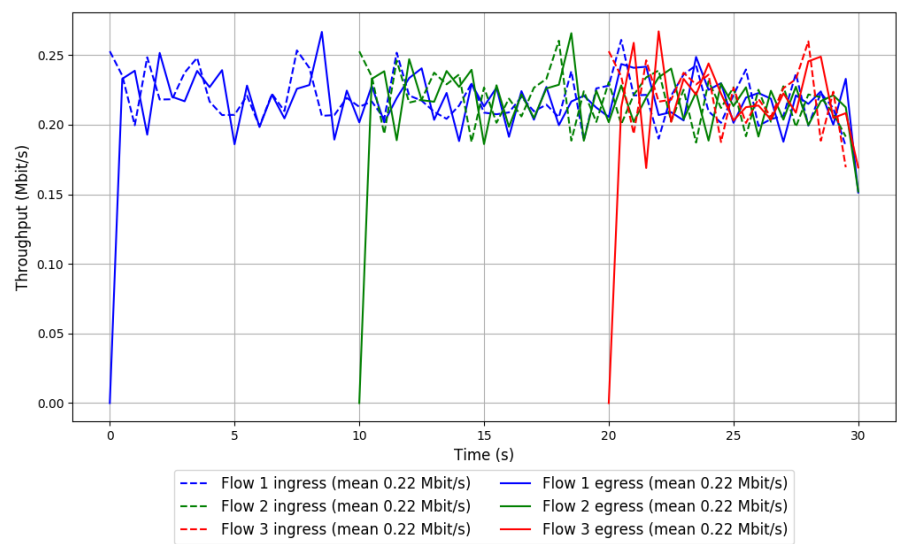


Run 3: Statistics of SReAM

Start at: 2018-11-16 01:03:34
End at: 2018-11-16 01:04:04
Local clock offset: 0.05 ms
Remote clock offset: -0.048 ms

Below is generated by plot.py at 2018-11-16 04:46:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 47.426 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.372 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.459 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 46.701 ms
Loss rate: 0.74%

Run 3: Report of SCReAM — Data Link

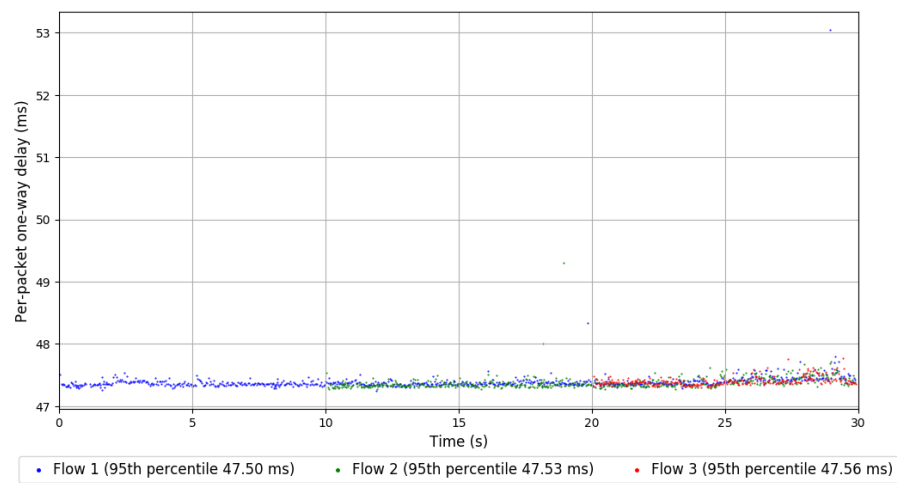
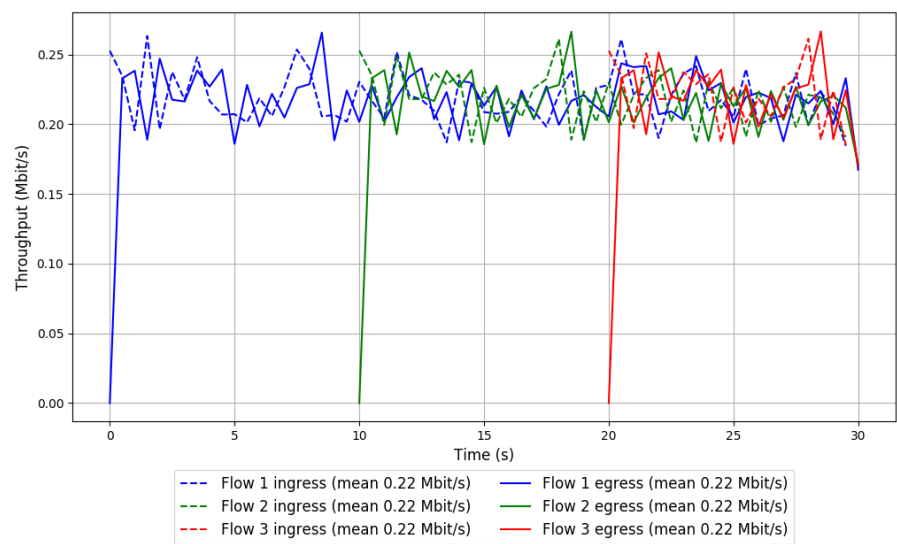


Run 4: Statistics of SReAM

Start at: 2018-11-16 01:34:25
End at: 2018-11-16 01:34:55
Local clock offset: 0.116 ms
Remote clock offset: -0.099 ms

Below is generated by plot.py at 2018-11-16 04:46:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 47.526 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.496 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.526 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.565 ms
Loss rate: 0.70%

Run 4: Report of SReAM — Data Link

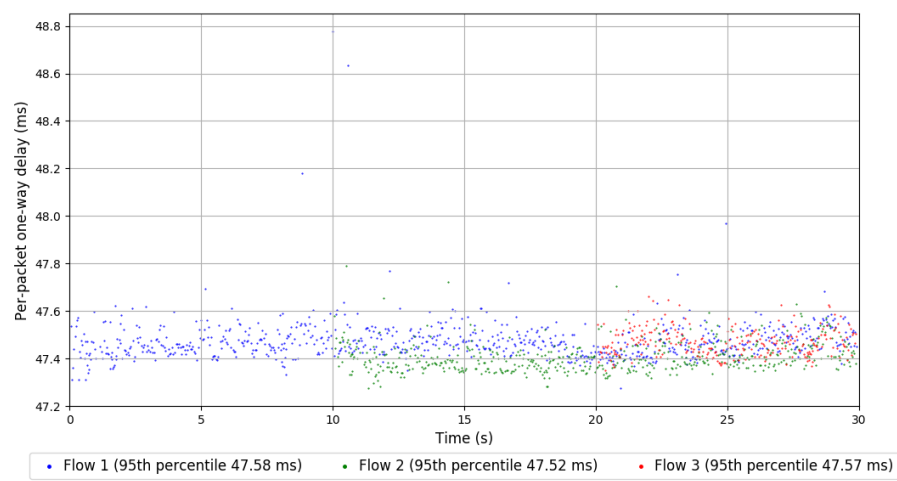
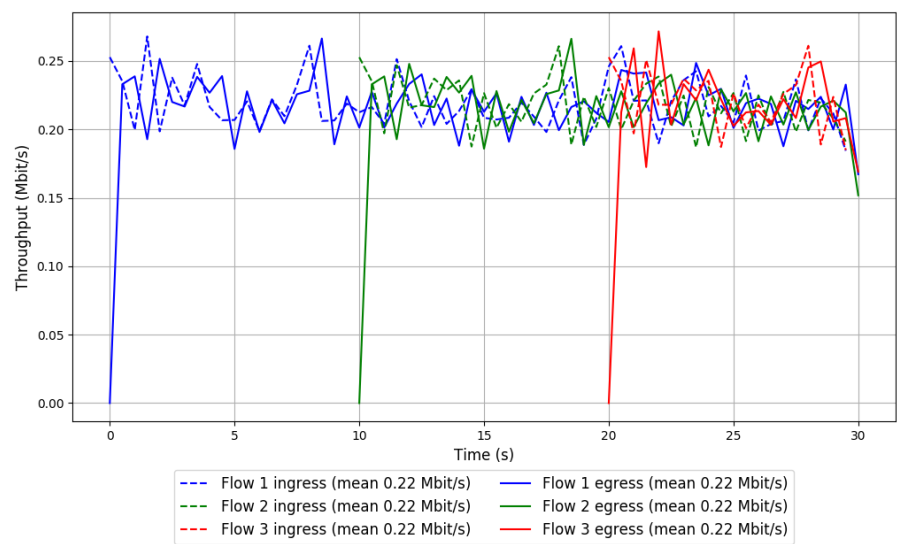


Run 5: Statistics of SReAM

Start at: 2018-11-16 02:05:36
End at: 2018-11-16 02:06:06
Local clock offset: 0.078 ms
Remote clock offset: -0.068 ms

Below is generated by plot.py at 2018-11-16 04:46:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 47.564 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.578 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.524 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.569 ms
Loss rate: 1.09%

Run 5: Report of SReAM — Data Link

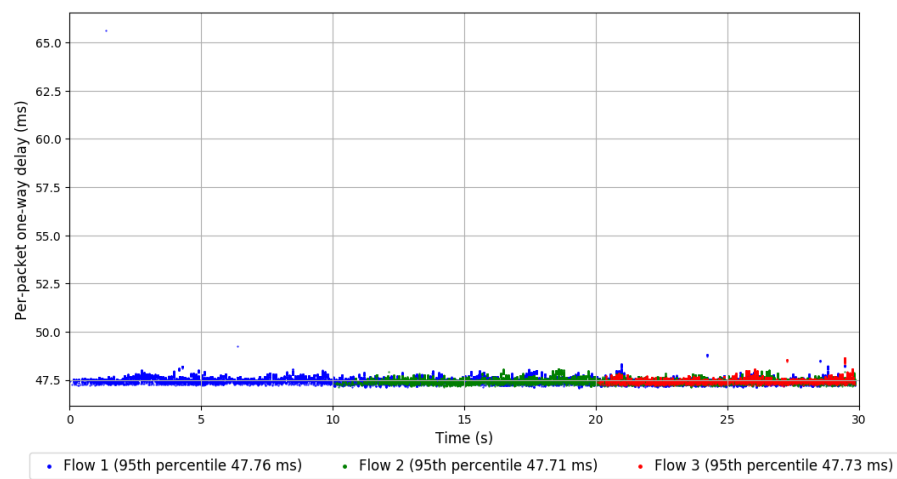
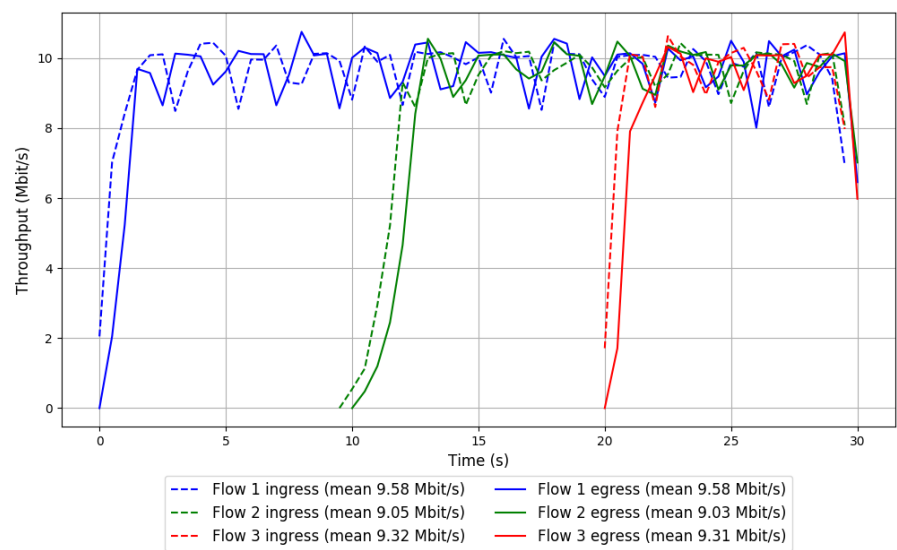


Run 1: Statistics of Sprout

Start at: 2018-11-16 00:22:10
End at: 2018-11-16 00:22:40
Local clock offset: -0.003 ms
Remote clock offset: 0.027 ms

Below is generated by plot.py at 2018-11-16 04:46:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 18.64 Mbit/s
95th percentile per-packet one-way delay: 47.742 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 9.58 Mbit/s
95th percentile per-packet one-way delay: 47.756 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 9.03 Mbit/s
95th percentile per-packet one-way delay: 47.713 ms
Loss rate: 0.47%
-- Flow 3:
Average throughput: 9.31 Mbit/s
95th percentile per-packet one-way delay: 47.729 ms
Loss rate: 1.08%

Run 1: Report of Sprout — Data Link

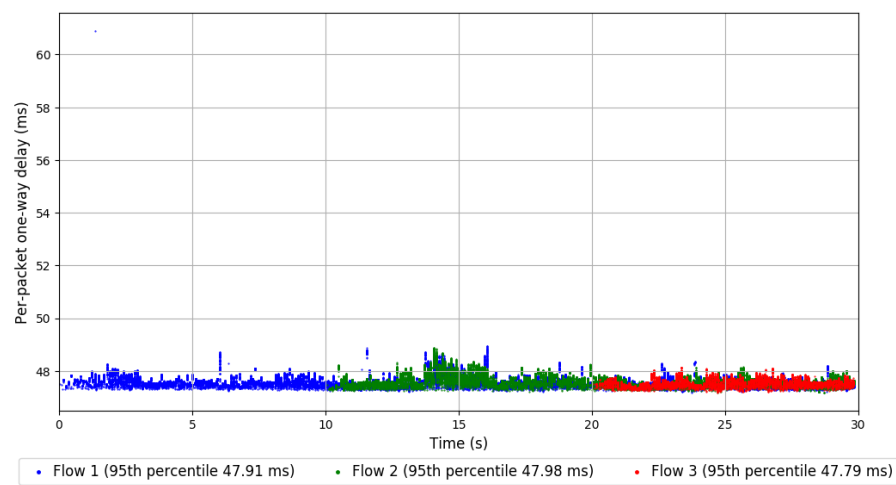
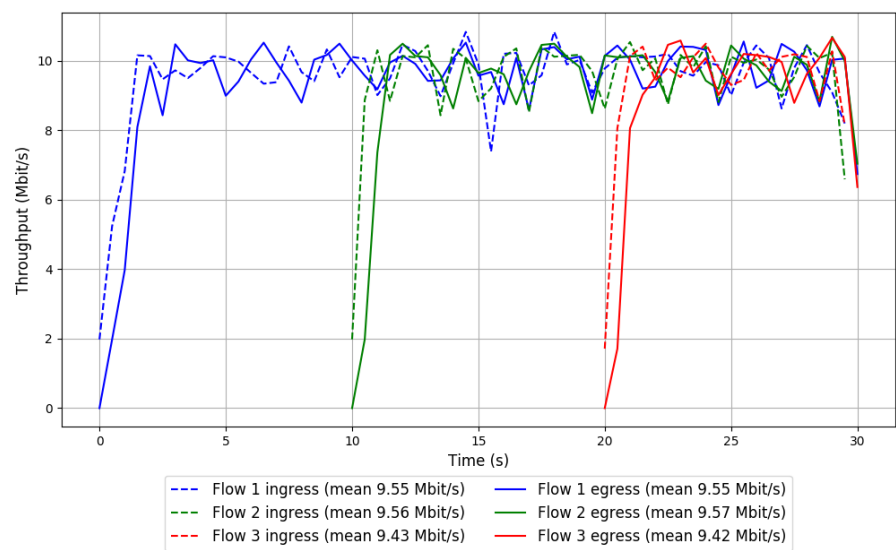


Run 2: Statistics of Sprout

Start at: 2018-11-16 00:53:20
End at: 2018-11-16 00:53:50
Local clock offset: -0.003 ms
Remote clock offset: -0.06 ms

Below is generated by plot.py at 2018-11-16 04:46:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 18.98 Mbit/s
95th percentile per-packet one-way delay: 47.919 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 9.55 Mbit/s
95th percentile per-packet one-way delay: 47.914 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 9.57 Mbit/s
95th percentile per-packet one-way delay: 47.985 ms
Loss rate: 0.27%
-- Flow 3:
Average throughput: 9.42 Mbit/s
95th percentile per-packet one-way delay: 47.789 ms
Loss rate: 1.10%

Run 2: Report of Sprout — Data Link

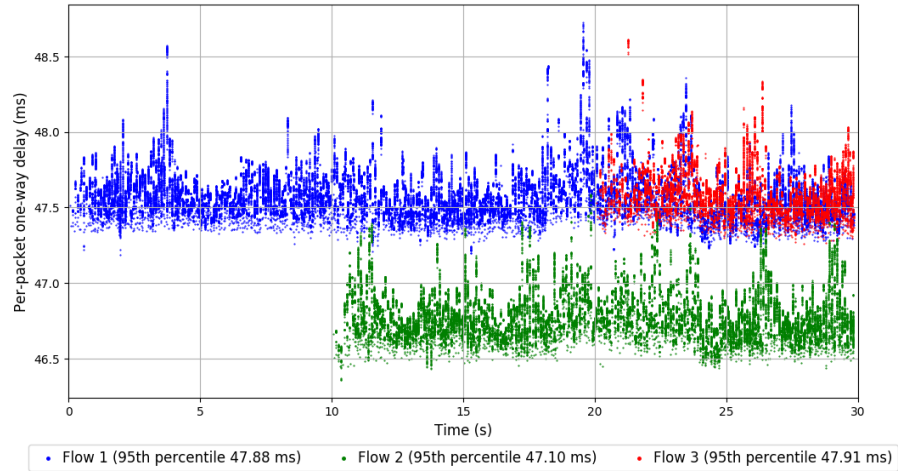
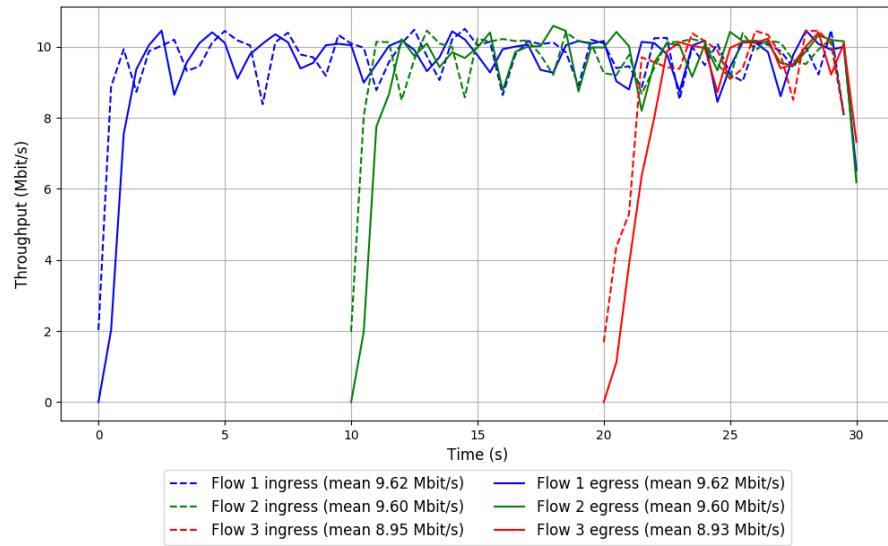


Run 3: Statistics of Sprout

Start at: 2018-11-16 01:24:19
End at: 2018-11-16 01:24:49
Local clock offset: 0.109 ms
Remote clock offset: -0.049 ms

Below is generated by plot.py at 2018-11-16 04:46:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 18.92 Mbit/s
95th percentile per-packet one-way delay: 47.823 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 9.62 Mbit/s
95th percentile per-packet one-way delay: 47.884 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 9.60 Mbit/s
95th percentile per-packet one-way delay: 47.103 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 8.93 Mbit/s
95th percentile per-packet one-way delay: 47.909 ms
Loss rate: 1.14%

Run 3: Report of Sprout — Data Link

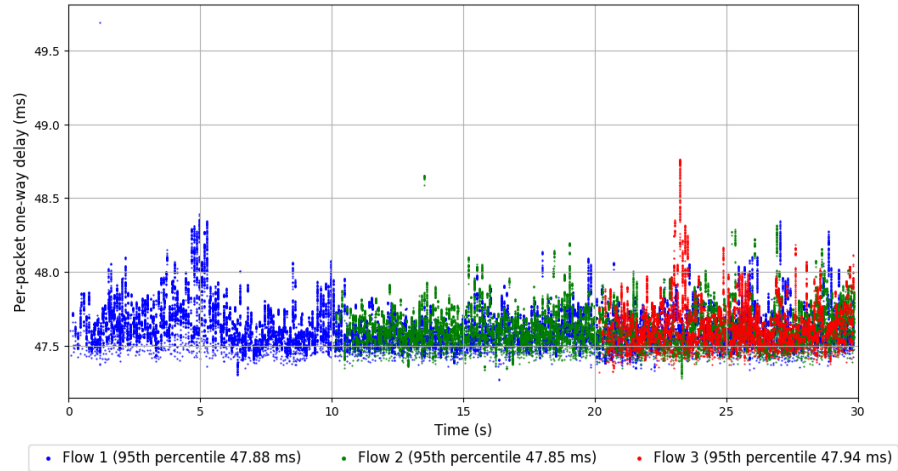
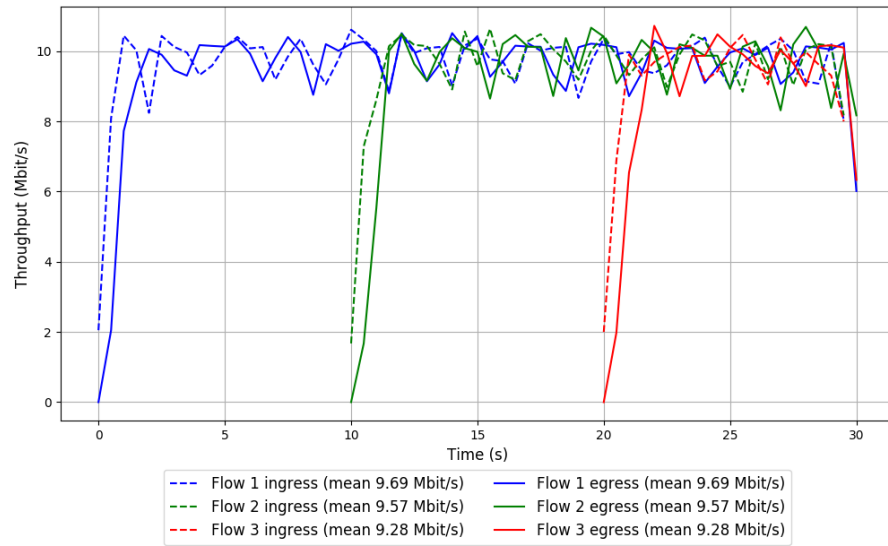


Run 4: Statistics of Sprout

Start at: 2018-11-16 01:55:26
End at: 2018-11-16 01:55:56
Local clock offset: 0.211 ms
Remote clock offset: -0.151 ms

Below is generated by plot.py at 2018-11-16 04:46:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 19.07 Mbit/s
95th percentile per-packet one-way delay: 47.883 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 9.69 Mbit/s
95th percentile per-packet one-way delay: 47.884 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 9.57 Mbit/s
95th percentile per-packet one-way delay: 47.848 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 9.28 Mbit/s
95th percentile per-packet one-way delay: 47.942 ms
Loss rate: 1.10%

Run 4: Report of Sprout — Data Link

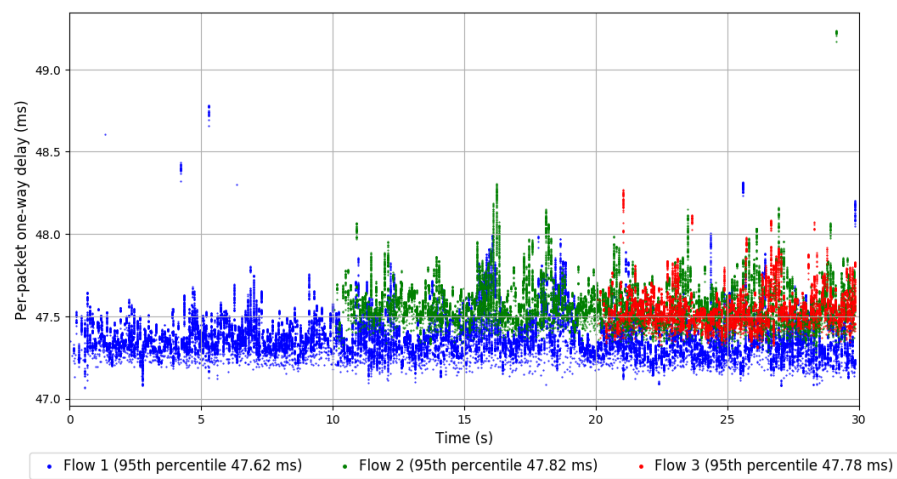
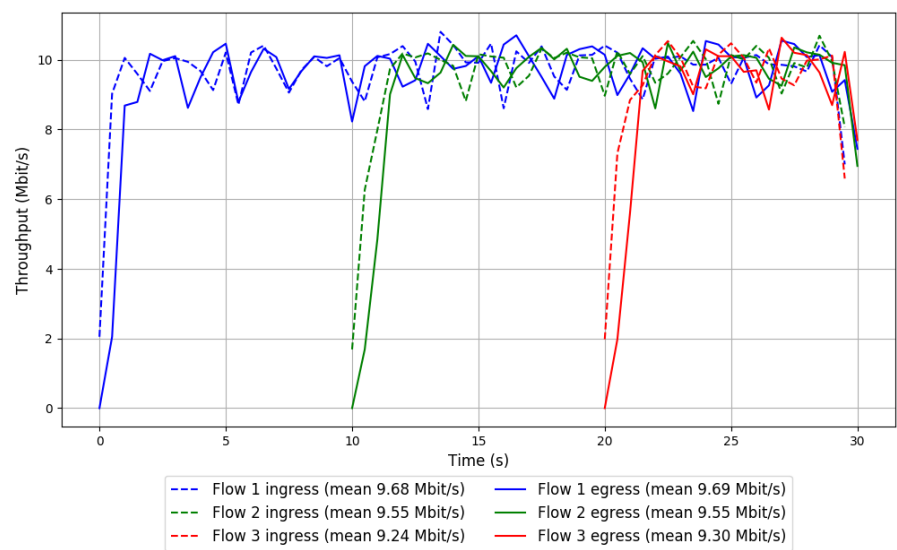


Run 5: Statistics of Sprout

Start at: 2018-11-16 02:26:35
End at: 2018-11-16 02:27:05
Local clock offset: -0.009 ms
Remote clock offset: -0.098 ms

Below is generated by plot.py at 2018-11-16 04:46:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 19.08 Mbit/s
95th percentile per-packet one-way delay: 47.746 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 9.69 Mbit/s
95th percentile per-packet one-way delay: 47.618 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 9.55 Mbit/s
95th percentile per-packet one-way delay: 47.819 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 9.30 Mbit/s
95th percentile per-packet one-way delay: 47.782 ms
Loss rate: 0.29%

Run 5: Report of Sprout — Data Link

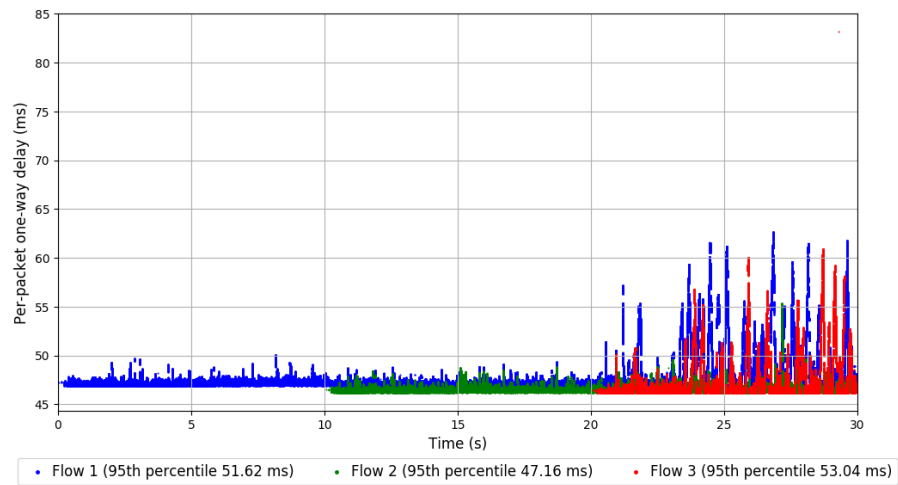
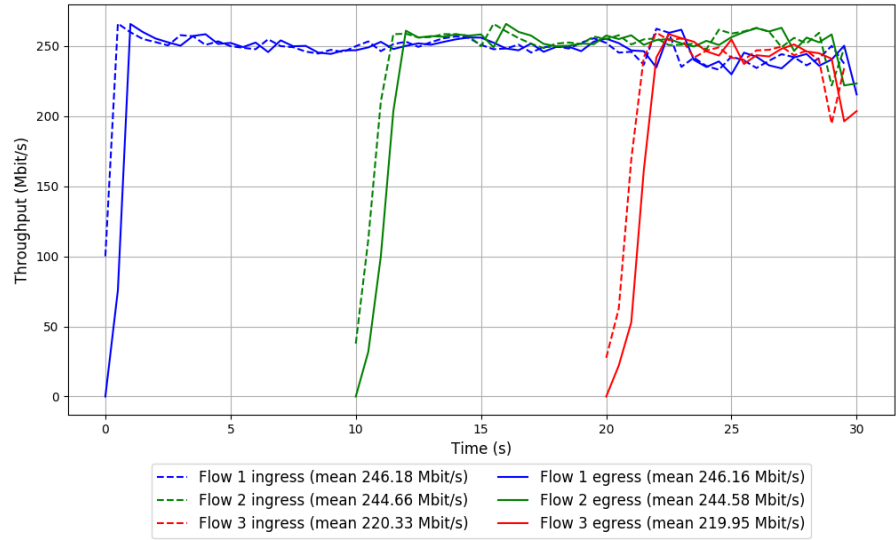


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-11-16 00:18:13
End at: 2018-11-16 00:18:43
Local clock offset: -0.082 ms
Remote clock offset: 0.175 ms

# Below is generated by plot.py at 2018-11-16 04:56:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 481.48 Mbit/s
95th percentile per-packet one-way delay: 50.357 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 246.16 Mbit/s
95th percentile per-packet one-way delay: 51.616 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 244.58 Mbit/s
95th percentile per-packet one-way delay: 47.165 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 219.95 Mbit/s
95th percentile per-packet one-way delay: 53.044 ms
Loss rate: 1.12%
```

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-11-16 00:49:18

End at: 2018-11-16 00:49:48

Local clock offset: -0.015 ms

Remote clock offset: -0.12 ms

Below is generated by plot.py at 2018-11-16 04:56:48

Datalink statistics

-- Total of 3 flows:

Average throughput: 471.29 Mbit/s

95th percentile per-packet one-way delay: 50.477 ms

Loss rate: 0.48%

-- Flow 1:

Average throughput: 240.10 Mbit/s

95th percentile per-packet one-way delay: 49.152 ms

Loss rate: 0.35%

-- Flow 2:

Average throughput: 237.52 Mbit/s

95th percentile per-packet one-way delay: 53.228 ms

Loss rate: 0.52%

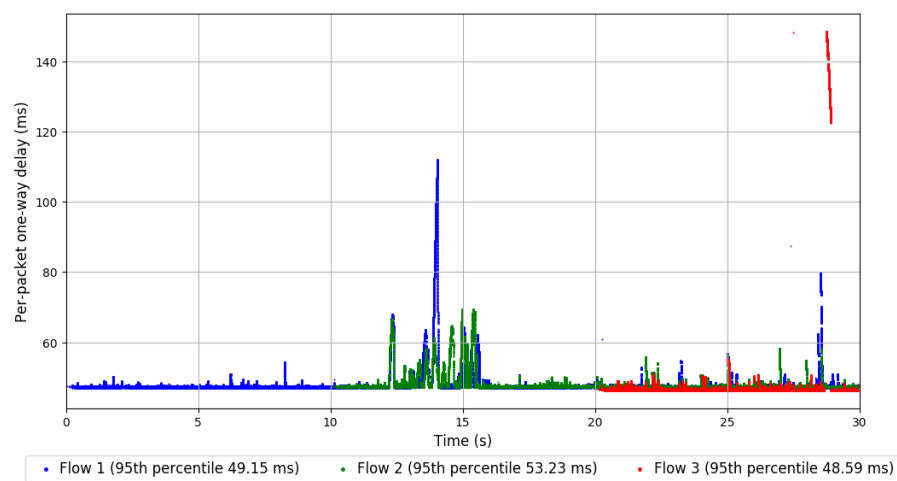
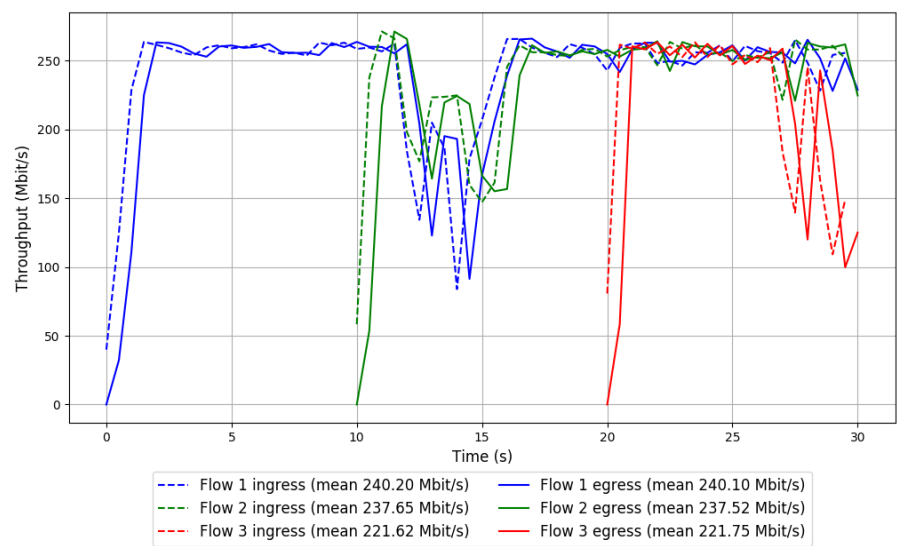
-- Flow 3:

Average throughput: 221.75 Mbit/s

95th percentile per-packet one-way delay: 48.590 ms

Loss rate: 0.83%

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

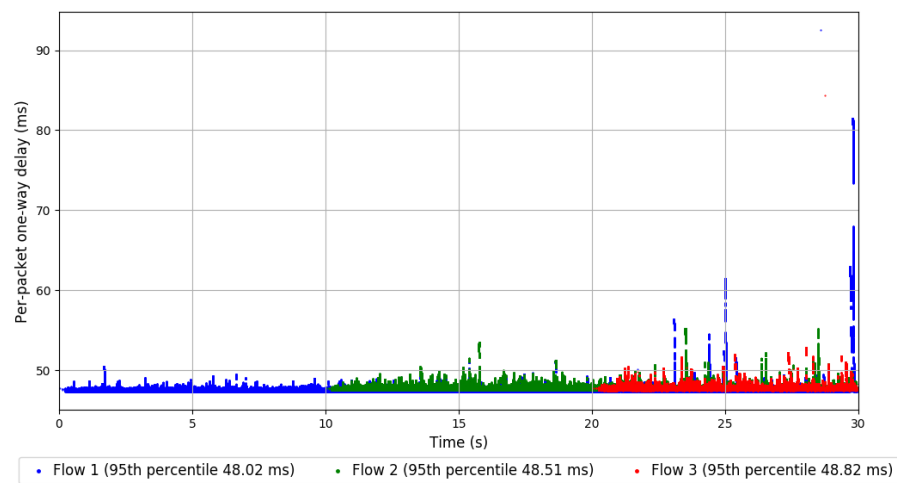
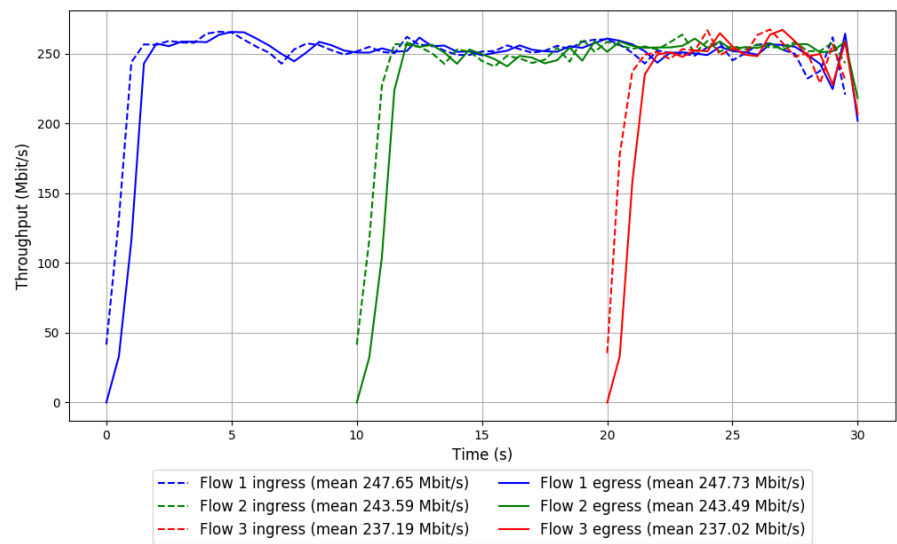


Run 3: Statistics of TaoVA-100x

Start at: 2018-11-16 01:20:18
End at: 2018-11-16 01:20:48
Local clock offset: 0.436 ms
Remote clock offset: -0.047 ms

Below is generated by plot.py at 2018-11-16 04:57:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 488.00 Mbit/s
95th percentile per-packet one-way delay: 48.346 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 247.73 Mbit/s
95th percentile per-packet one-way delay: 48.016 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 243.49 Mbit/s
95th percentile per-packet one-way delay: 48.506 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 237.02 Mbit/s
95th percentile per-packet one-way delay: 48.819 ms
Loss rate: 1.02%

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

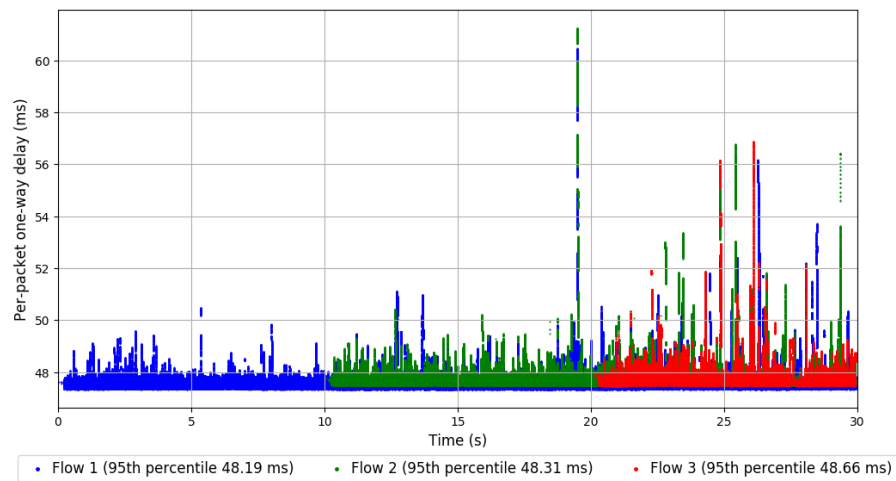
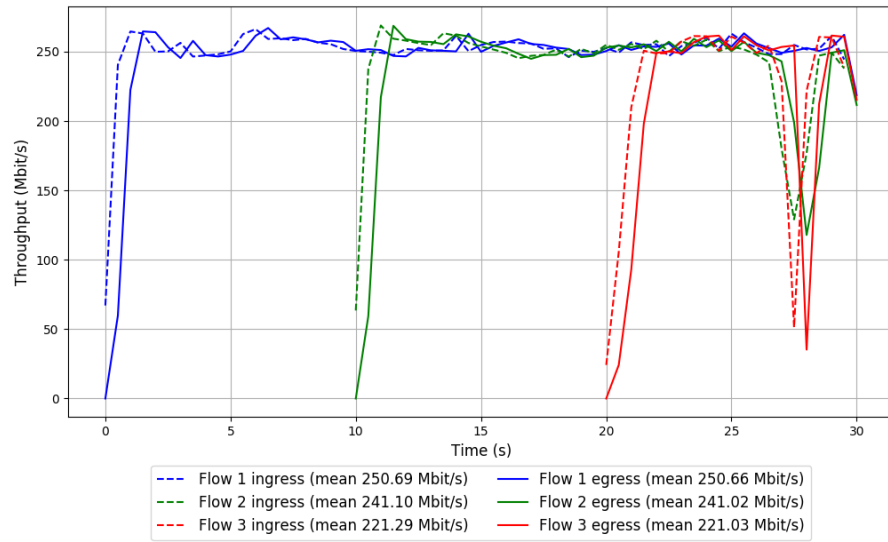


Run 4: Statistics of TaoVA-100x

Start at: 2018-11-16 01:51:22
End at: 2018-11-16 01:51:52
Local clock offset: 0.529 ms
Remote clock offset: -0.084 ms

Below is generated by plot.py at 2018-11-16 04:57:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 483.81 Mbit/s
95th percentile per-packet one-way delay: 48.323 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 250.66 Mbit/s
95th percentile per-packet one-way delay: 48.185 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 241.02 Mbit/s
95th percentile per-packet one-way delay: 48.306 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 221.03 Mbit/s
95th percentile per-packet one-way delay: 48.656 ms
Loss rate: 1.08%

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

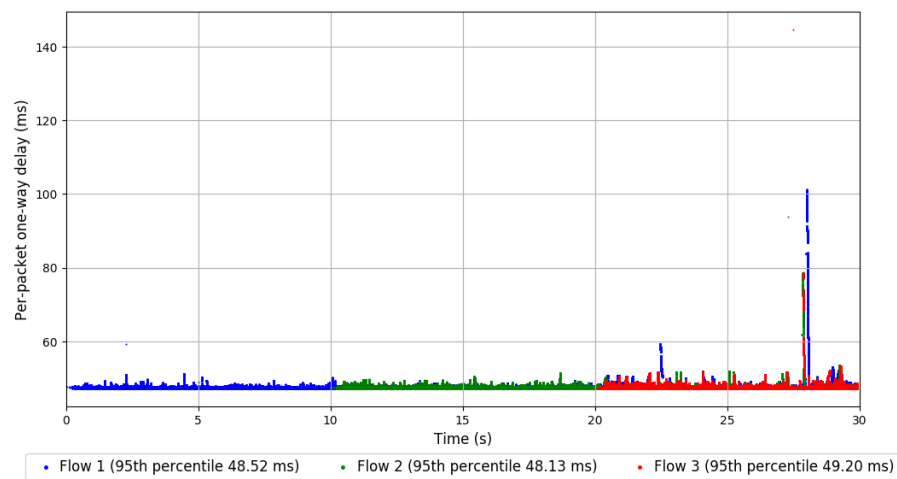
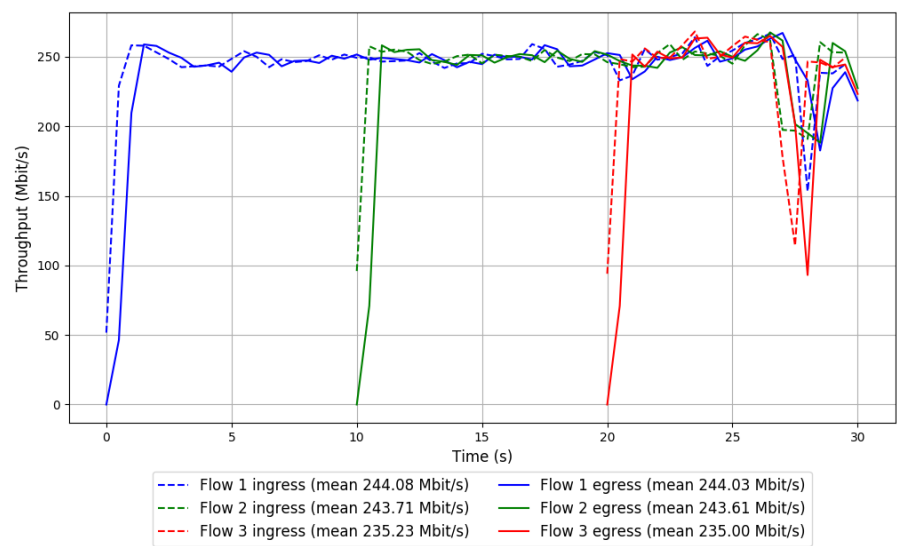


Run 5: Statistics of TaoVA-100x

Start at: 2018-11-16 02:22:33
End at: 2018-11-16 02:23:03
Local clock offset: -0.0 ms
Remote clock offset: -0.081 ms

Below is generated by plot.py at 2018-11-16 05:01:52
Datalink statistics
-- Total of 3 flows:
Average throughput: 483.70 Mbit/s
95th percentile per-packet one-way delay: 48.550 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 244.03 Mbit/s
95th percentile per-packet one-way delay: 48.519 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 243.61 Mbit/s
95th percentile per-packet one-way delay: 48.133 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 235.00 Mbit/s
95th percentile per-packet one-way delay: 49.205 ms
Loss rate: 1.05%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-11-16 00:16:10

End at: 2018-11-16 00:16:40

Local clock offset: -0.056 ms

Remote clock offset: 0.162 ms

Below is generated by plot.py at 2018-11-16 05:07:15

Datalink statistics

-- Total of 3 flows:

Average throughput: 1041.90 Mbit/s

95th percentile per-packet one-way delay: 83.349 ms

Loss rate: 0.54%

-- Flow 1:

Average throughput: 551.52 Mbit/s

95th percentile per-packet one-way delay: 76.833 ms

Loss rate: 0.34%

-- Flow 2:

Average throughput: 520.87 Mbit/s

95th percentile per-packet one-way delay: 83.577 ms

Loss rate: 0.54%

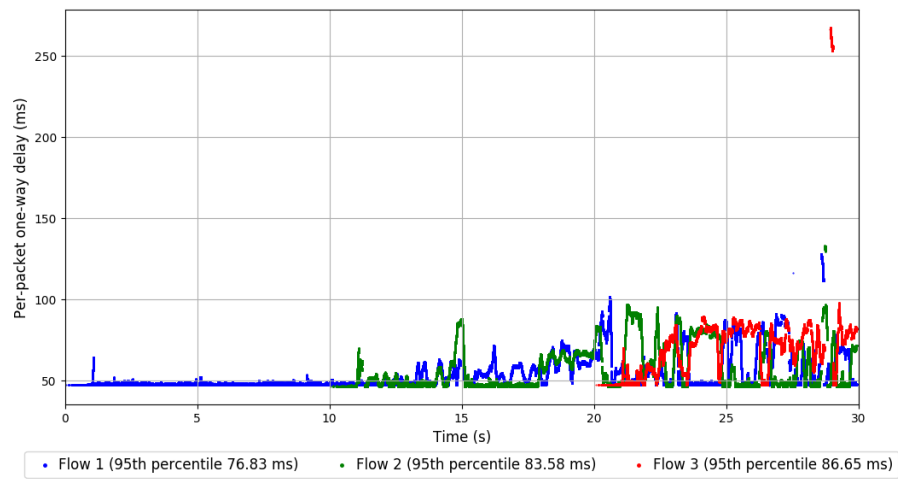
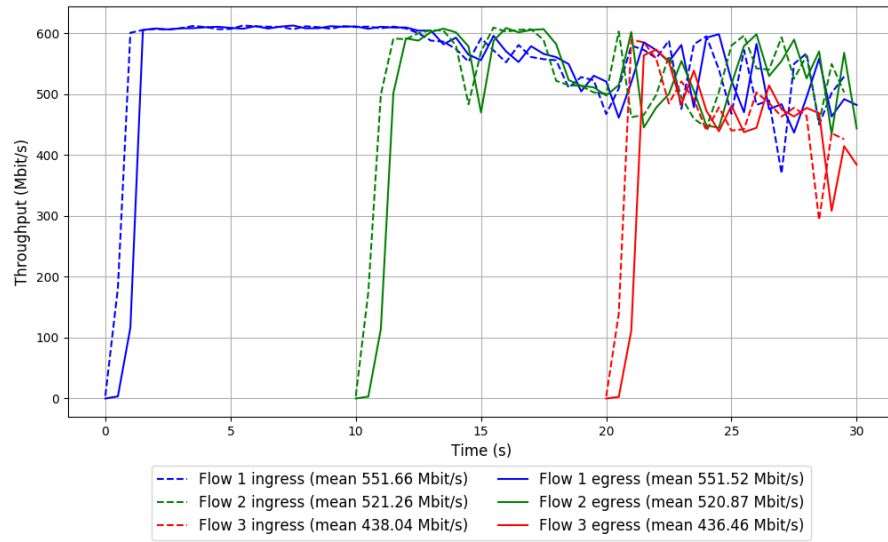
-- Flow 3:

Average throughput: 436.46 Mbit/s

95th percentile per-packet one-way delay: 86.647 ms

Loss rate: 1.31%

Run 1: Report of TCP Vegas — Data Link

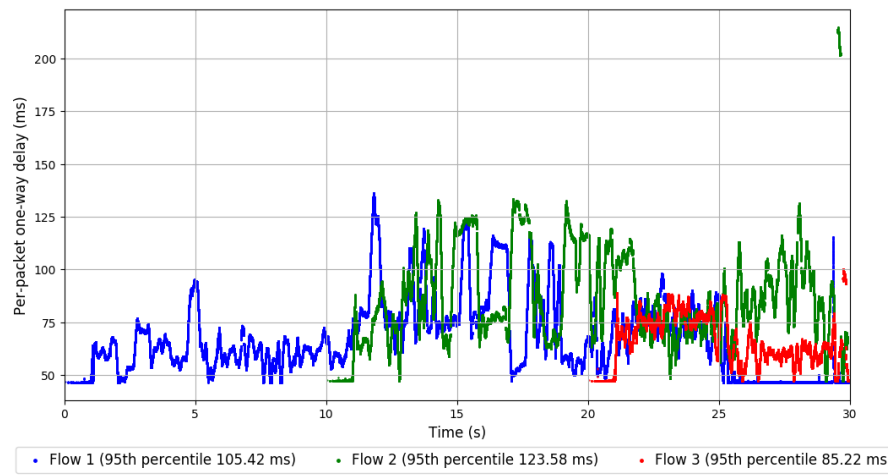
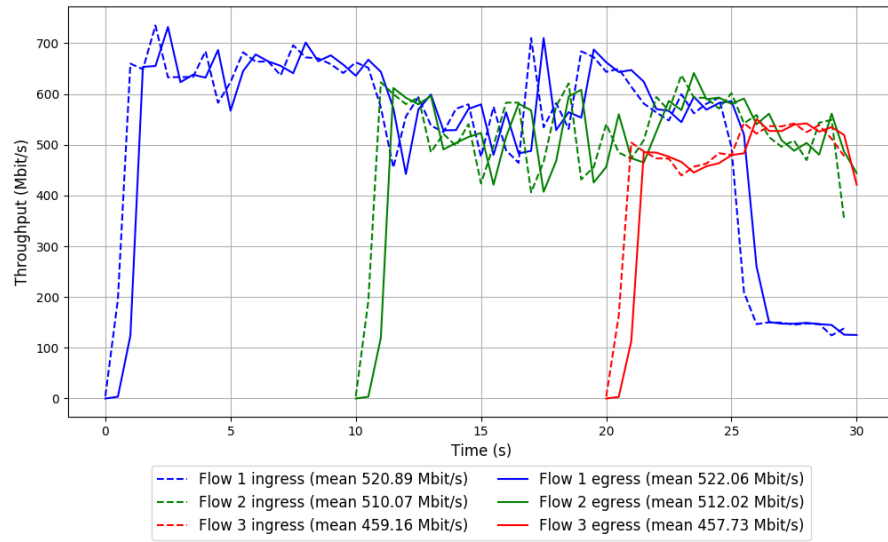


Run 2: Statistics of TCP Vegas

Start at: 2018-11-16 00:47:16
End at: 2018-11-16 00:47:46
Local clock offset: -0.05 ms
Remote clock offset: -0.118 ms

Below is generated by plot.py at 2018-11-16 05:07:15
Datalink statistics
-- Total of 3 flows:
Average throughput: 1013.52 Mbit/s
95th percentile per-packet one-way delay: 114.565 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 522.06 Mbit/s
95th percentile per-packet one-way delay: 105.425 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 512.02 Mbit/s
95th percentile per-packet one-way delay: 123.579 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 457.73 Mbit/s
95th percentile per-packet one-way delay: 85.222 ms
Loss rate: 1.24%

Run 2: Report of TCP Vegas — Data Link

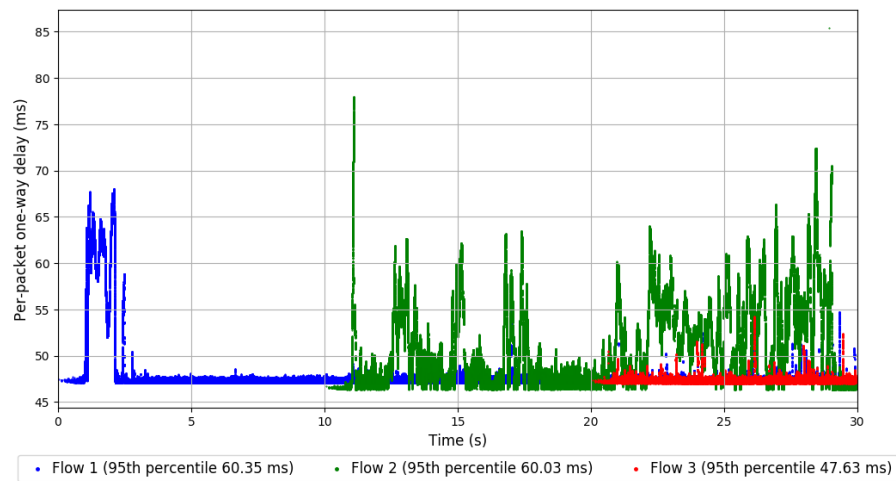
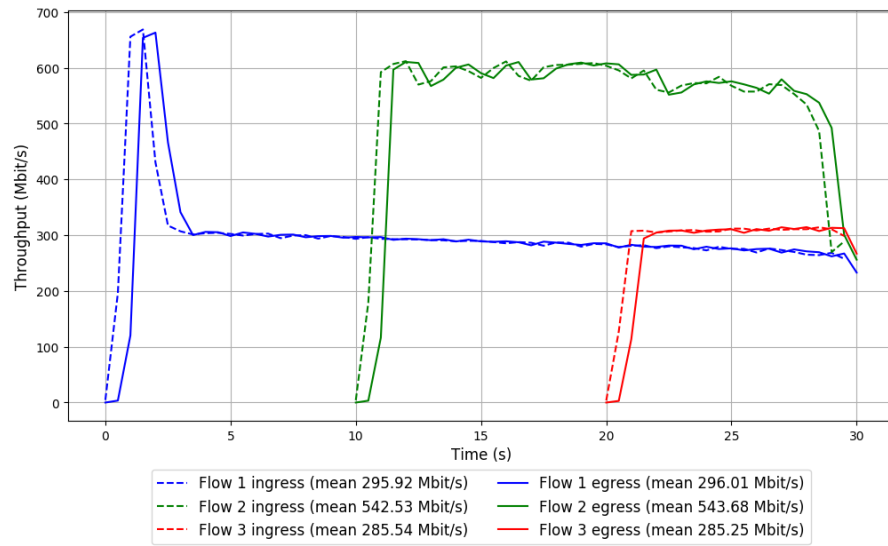


Run 3: Statistics of TCP Vegas

Start at: 2018-11-16 01:18:28
End at: 2018-11-16 01:18:58
Local clock offset: 0.099 ms
Remote clock offset: -0.078 ms

Below is generated by plot.py at 2018-11-16 05:07:15
Datalink statistics
-- Total of 3 flows:
Average throughput: 751.72 Mbit/s
95th percentile per-packet one-way delay: 59.509 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 296.01 Mbit/s
95th percentile per-packet one-way delay: 60.353 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 543.68 Mbit/s
95th percentile per-packet one-way delay: 60.035 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 285.25 Mbit/s
95th percentile per-packet one-way delay: 47.626 ms
Loss rate: 1.04%

Run 3: Report of TCP Vegas — Data Link

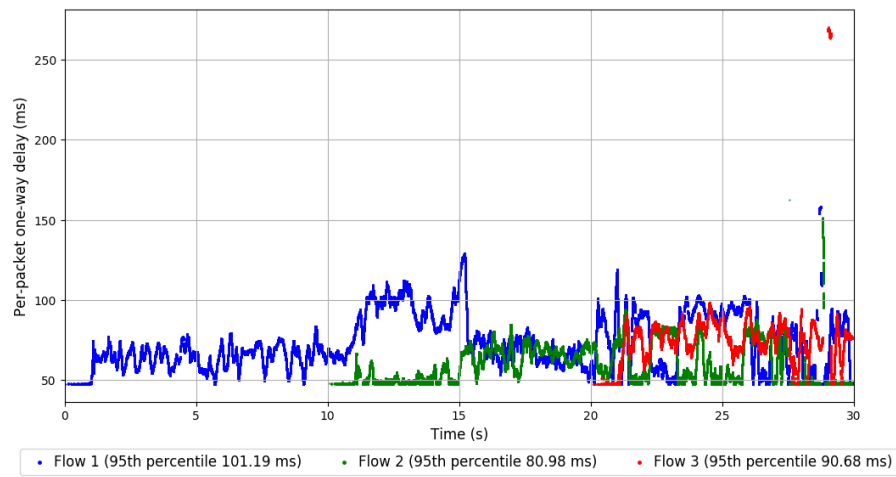
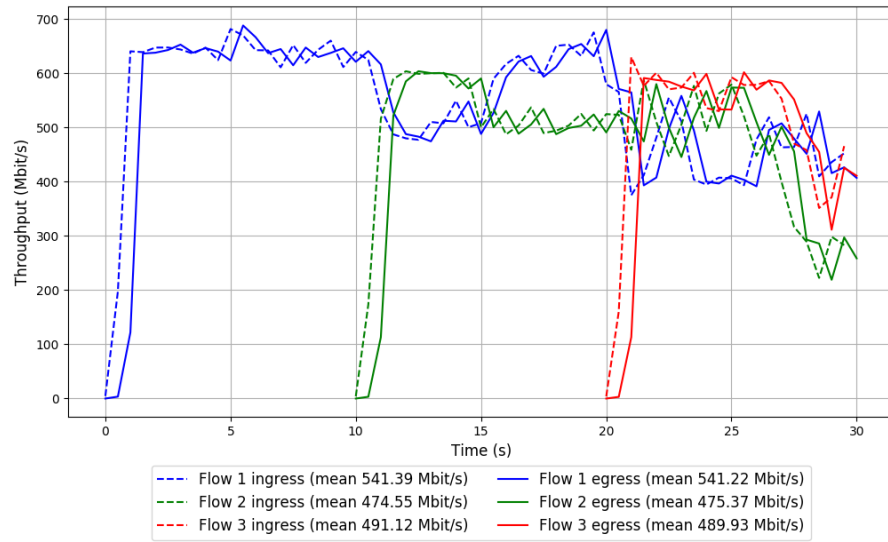


Run 4: Statistics of TCP Vegas

Start at: 2018-11-16 01:49:19
End at: 2018-11-16 01:49:49
Local clock offset: 0.513 ms
Remote clock offset: -0.095 ms

Below is generated by plot.py at 2018-11-16 05:17:36
Datalink statistics
-- Total of 3 flows:
Average throughput: 1019.07 Mbit/s
95th percentile per-packet one-way delay: 97.673 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 541.22 Mbit/s
95th percentile per-packet one-way delay: 101.189 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 475.37 Mbit/s
95th percentile per-packet one-way delay: 80.980 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 489.93 Mbit/s
95th percentile per-packet one-way delay: 90.682 ms
Loss rate: 1.17%

Run 4: Report of TCP Vegas — Data Link

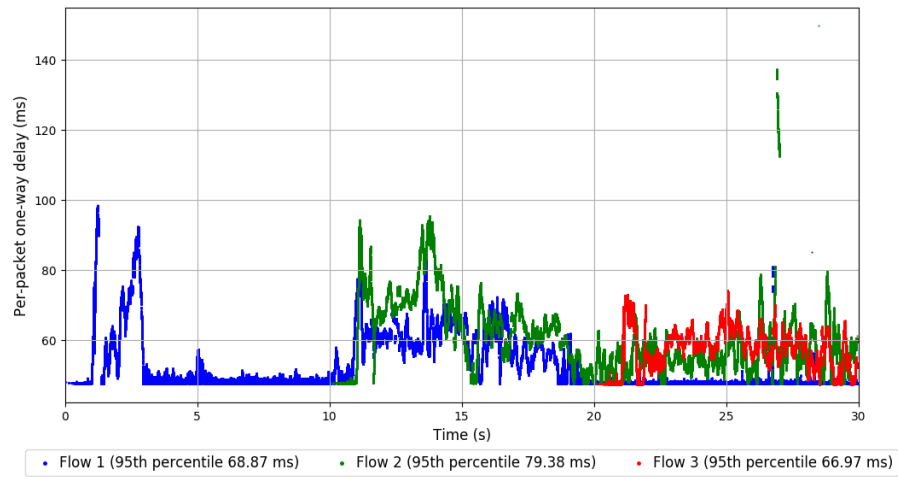
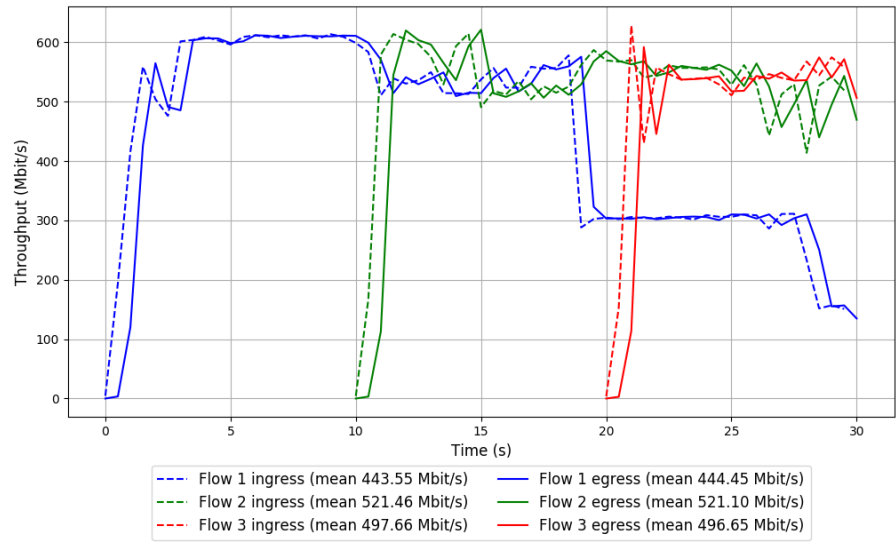


Run 5: Statistics of TCP Vegas

Start at: 2018-11-16 02:20:33
End at: 2018-11-16 02:21:03
Local clock offset: 0.399 ms
Remote clock offset: -0.092 ms

Below is generated by plot.py at 2018-11-16 05:17:36
Datalink statistics
-- Total of 3 flows:
Average throughput: 955.04 Mbit/s
95th percentile per-packet one-way delay: 74.000 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 444.45 Mbit/s
95th percentile per-packet one-way delay: 68.868 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 521.10 Mbit/s
95th percentile per-packet one-way delay: 79.379 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 496.65 Mbit/s
95th percentile per-packet one-way delay: 66.967 ms
Loss rate: 1.15%

Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-11-16 00:14:32

End at: 2018-11-16 00:15:02

Local clock offset: -0.406 ms

Remote clock offset: 0.158 ms

Below is generated by plot.py at 2018-11-16 05:17:36

Datalink statistics

-- Total of 3 flows:

Average throughput: 275.97 Mbit/s

95th percentile per-packet one-way delay: 138.818 ms

Loss rate: 1.33%

-- Flow 1:

Average throughput: 138.88 Mbit/s

95th percentile per-packet one-way delay: 81.497 ms

Loss rate: 0.18%

-- Flow 2:

Average throughput: 136.43 Mbit/s

95th percentile per-packet one-way delay: 109.637 ms

Loss rate: 0.90%

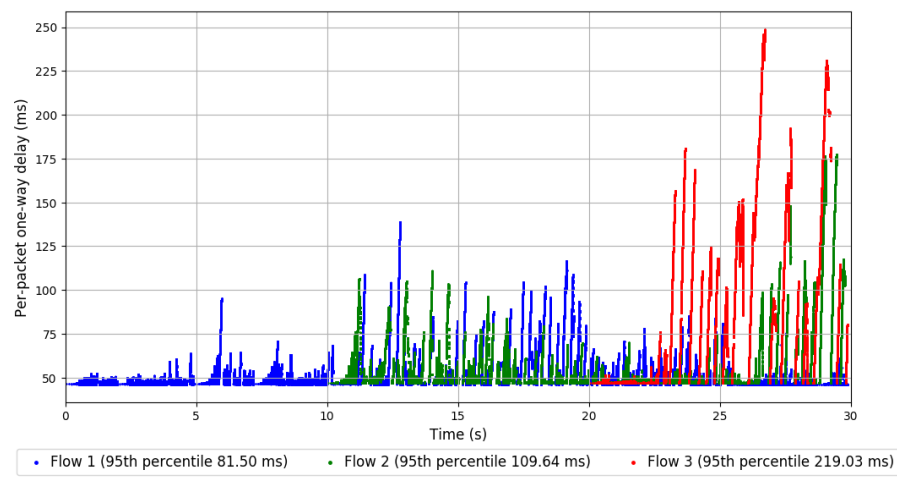
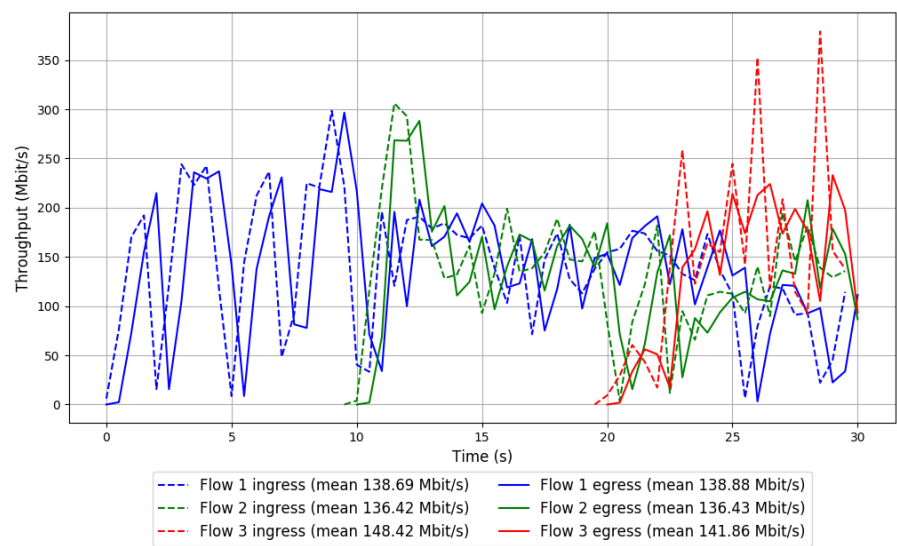
-- Flow 3:

Average throughput: 141.86 Mbit/s

95th percentile per-packet one-way delay: 219.026 ms

Loss rate: 5.37%

Run 1: Report of Verus — Data Link

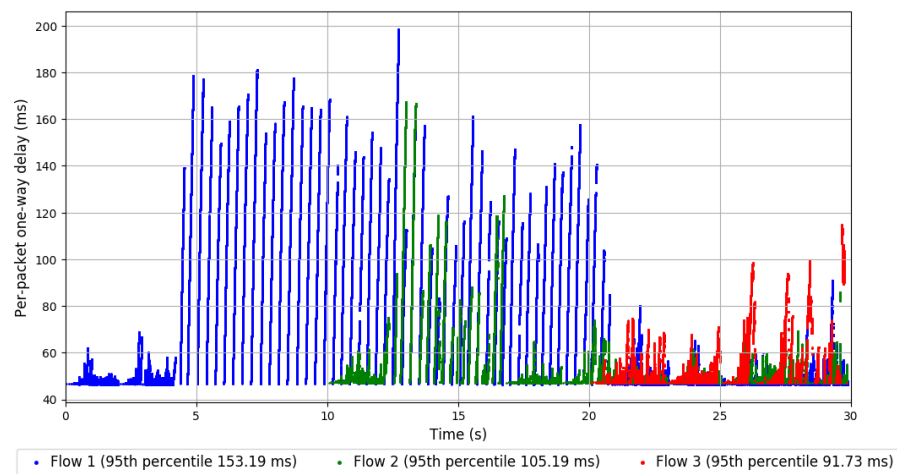
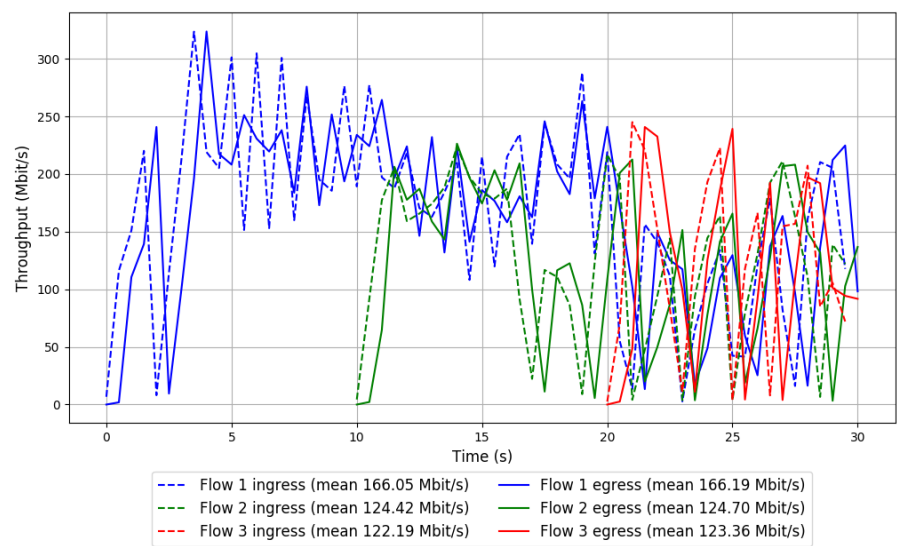


Run 2: Statistics of Verus

Start at: 2018-11-16 00:45:37
End at: 2018-11-16 00:46:07
Local clock offset: -0.009 ms
Remote clock offset: -0.101 ms

Below is generated by plot.py at 2018-11-16 05:17:36
Datalink statistics
-- Total of 3 flows:
Average throughput: 289.40 Mbit/s
95th percentile per-packet one-way delay: 144.601 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 166.19 Mbit/s
95th percentile per-packet one-way delay: 153.192 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 124.70 Mbit/s
95th percentile per-packet one-way delay: 105.195 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 123.36 Mbit/s
95th percentile per-packet one-way delay: 91.727 ms
Loss rate: 0.01%

Run 2: Report of Verus — Data Link

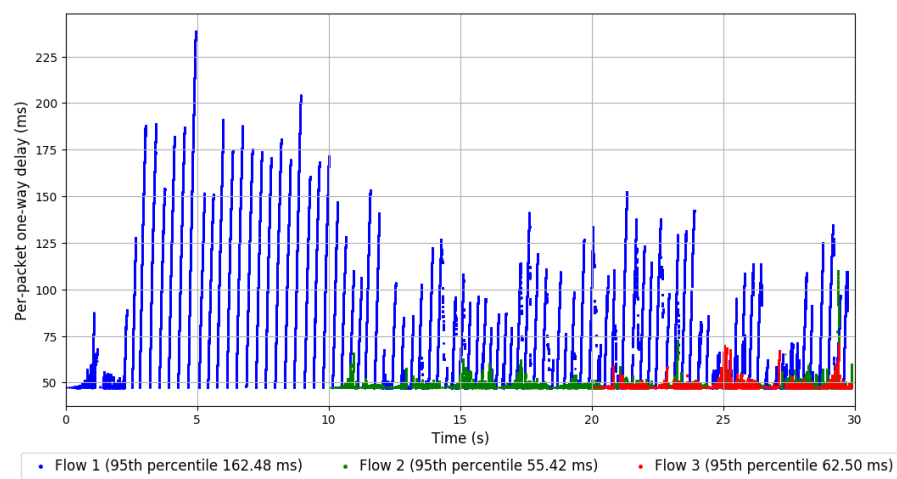
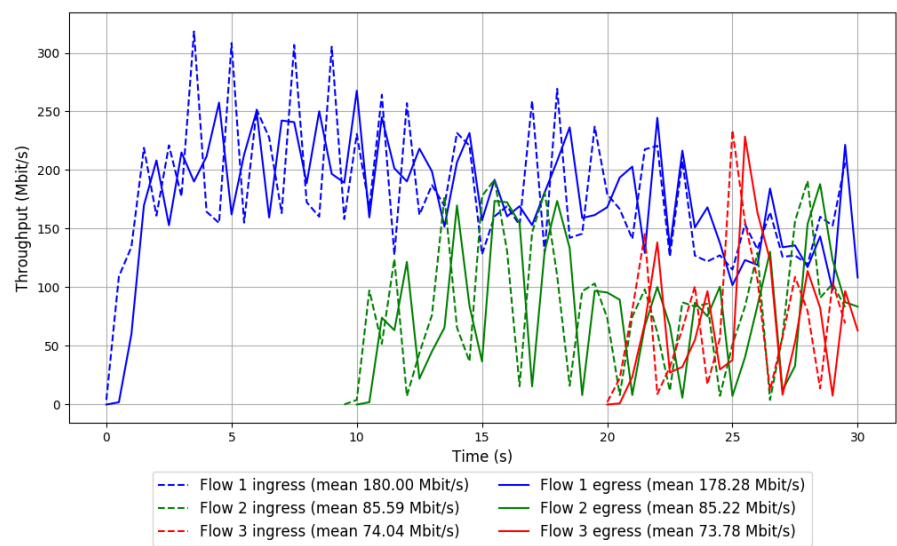


Run 3: Statistics of Verus

Start at: 2018-11-16 01:16:51
End at: 2018-11-16 01:17:21
Local clock offset: 0.091 ms
Remote clock offset: -0.073 ms

Below is generated by plot.py at 2018-11-16 05:17:36
Datalink statistics
-- Total of 3 flows:
Average throughput: 259.30 Mbit/s
95th percentile per-packet one-way delay: 153.146 ms
Loss rate: 1.09%
-- Flow 1:
Average throughput: 178.28 Mbit/s
95th percentile per-packet one-way delay: 162.477 ms
Loss rate: 1.26%
-- Flow 2:
Average throughput: 85.22 Mbit/s
95th percentile per-packet one-way delay: 55.425 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 73.78 Mbit/s
95th percentile per-packet one-way delay: 62.499 ms
Loss rate: 1.30%

Run 3: Report of Verus — Data Link

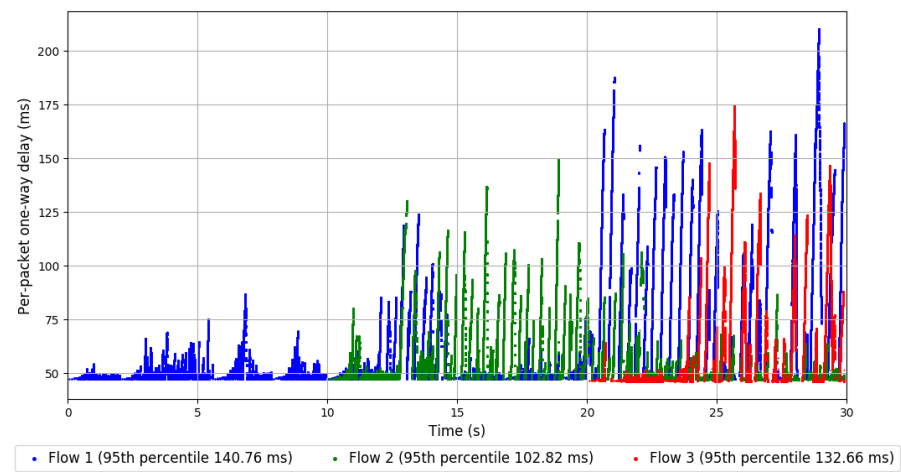
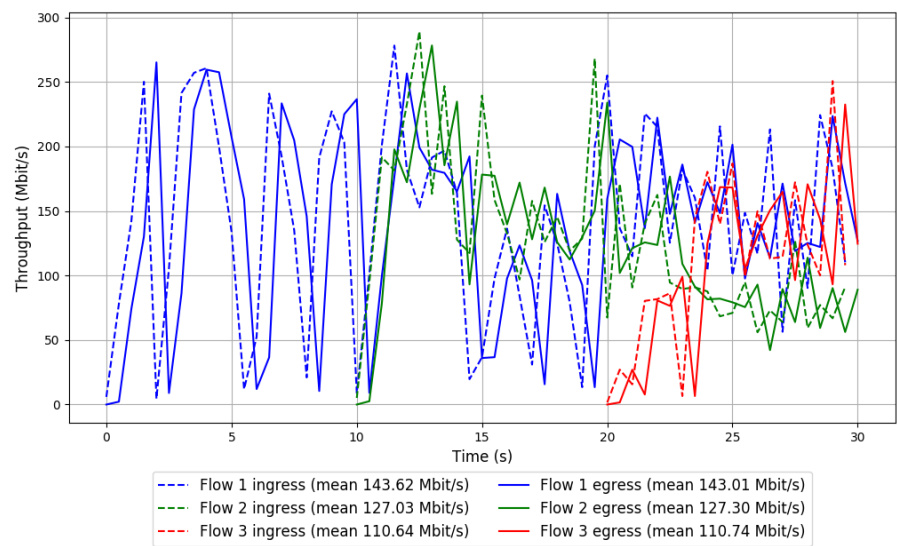


Run 4: Statistics of Verus

Start at: 2018-11-16 01:47:43
End at: 2018-11-16 01:48:13
Local clock offset: 0.192 ms
Remote clock offset: -0.088 ms

Below is generated by plot.py at 2018-11-16 05:17:36
Datalink statistics
-- Total of 3 flows:
Average throughput: 263.98 Mbit/s
95th percentile per-packet one-way delay: 130.683 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 143.01 Mbit/s
95th percentile per-packet one-way delay: 140.762 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 127.30 Mbit/s
95th percentile per-packet one-way delay: 102.820 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 110.74 Mbit/s
95th percentile per-packet one-way delay: 132.661 ms
Loss rate: 0.40%

Run 4: Report of Verus — Data Link

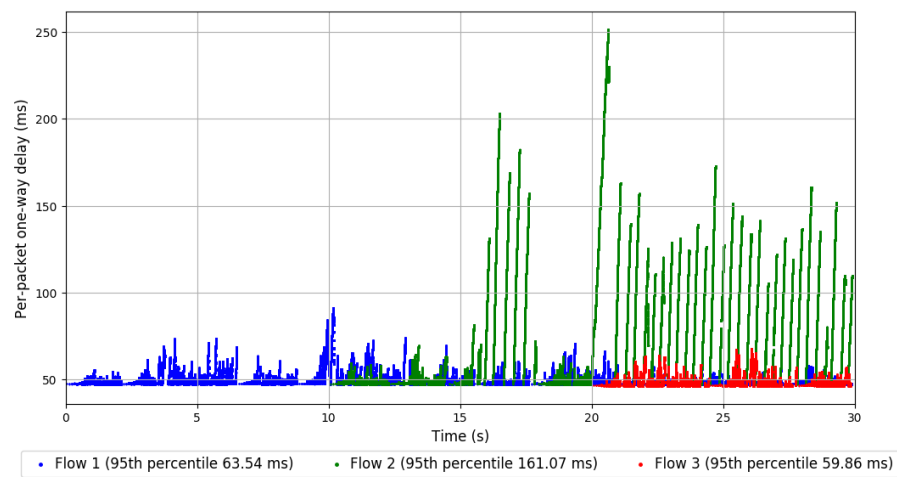
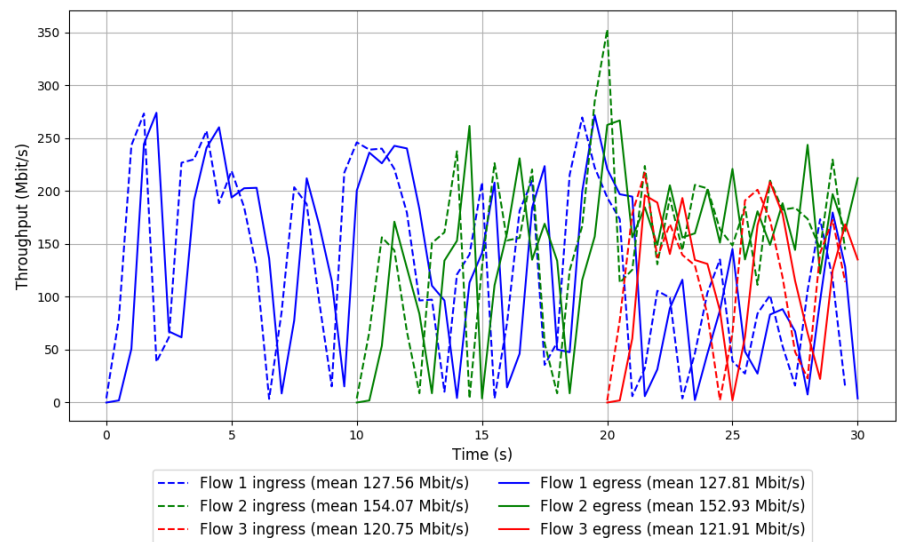


Run 5: Statistics of Verus

Start at: 2018-11-16 02:18:56
End at: 2018-11-16 02:19:26
Local clock offset: -0.007 ms
Remote clock offset: -0.053 ms

Below is generated by plot.py at 2018-11-16 05:17:41
Datalink statistics
-- Total of 3 flows:
Average throughput: 269.28 Mbit/s
95th percentile per-packet one-way delay: 130.734 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 127.81 Mbit/s
95th percentile per-packet one-way delay: 63.543 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 152.93 Mbit/s
95th percentile per-packet one-way delay: 161.069 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 121.91 Mbit/s
95th percentile per-packet one-way delay: 59.860 ms
Loss rate: 0.00%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-11-16 00:11:28

End at: 2018-11-16 00:11:58

Local clock offset: -0.063 ms

Remote clock offset: 0.287 ms

Below is generated by plot.py at 2018-11-16 05:19:11

Datalink statistics

-- Total of 3 flows:

Average throughput: 609.09 Mbit/s

95th percentile per-packet one-way delay: 54.977 ms

Loss rate: 0.40%

-- Flow 1:

Average throughput: 321.63 Mbit/s

95th percentile per-packet one-way delay: 72.601 ms

Loss rate: 0.29%

-- Flow 2:

Average throughput: 329.90 Mbit/s

95th percentile per-packet one-way delay: 50.586 ms

Loss rate: 0.47%

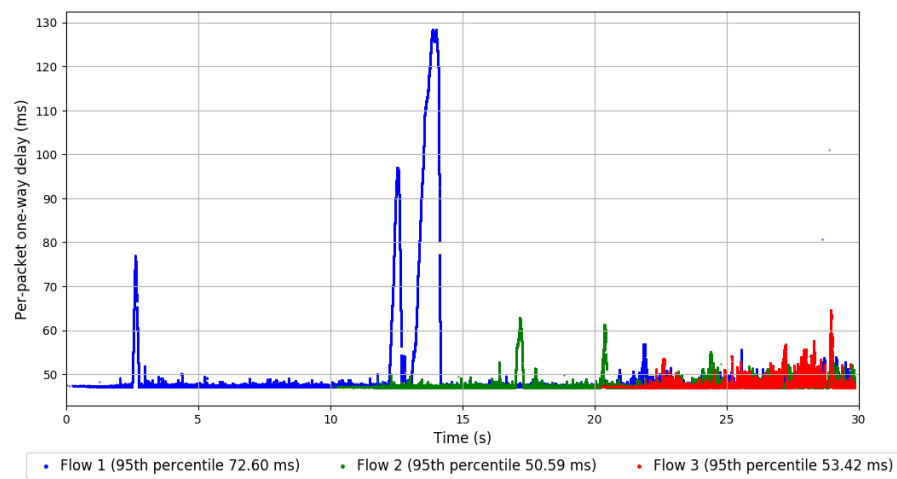
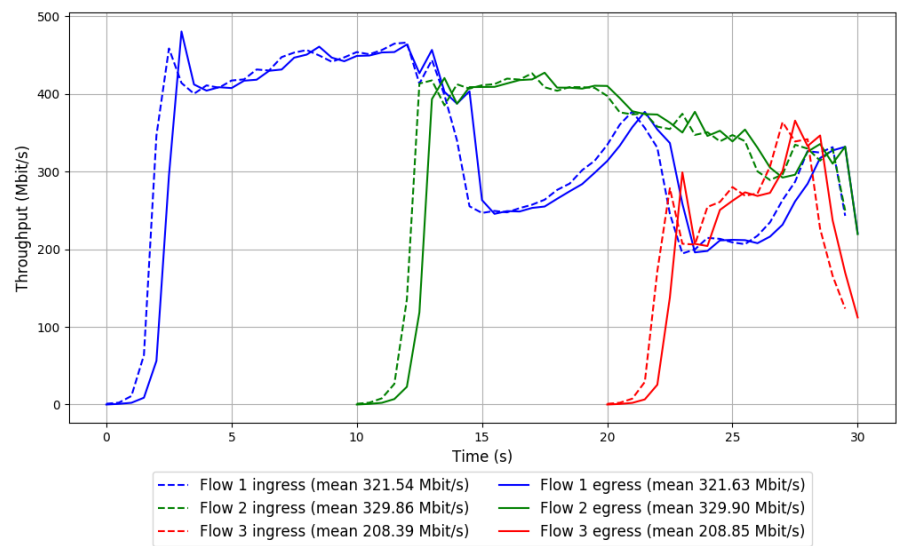
-- Flow 3:

Average throughput: 208.85 Mbit/s

95th percentile per-packet one-way delay: 53.416 ms

Loss rate: 0.74%

Run 1: Report of PCC-Vivace — Data Link

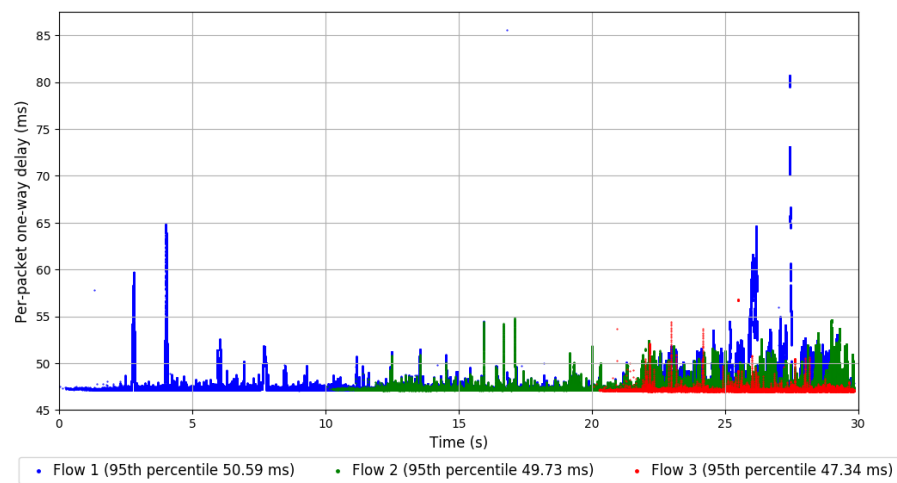
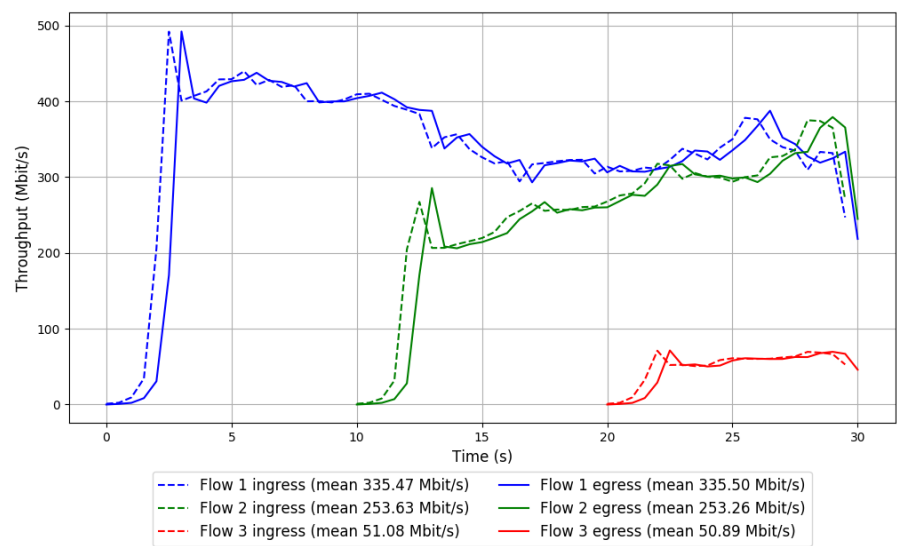


Run 2: Statistics of PCC-Vivace

Start at: 2018-11-16 00:42:39
End at: 2018-11-16 00:43:09
Local clock offset: -0.039 ms
Remote clock offset: -0.082 ms

Below is generated by plot.py at 2018-11-16 05:19:11
Datalink statistics
-- Total of 3 flows:
Average throughput: 520.36 Mbit/s
95th percentile per-packet one-way delay: 50.128 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 335.50 Mbit/s
95th percentile per-packet one-way delay: 50.588 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 253.26 Mbit/s
95th percentile per-packet one-way delay: 49.734 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 50.89 Mbit/s
95th percentile per-packet one-way delay: 47.343 ms
Loss rate: 1.33%

Run 2: Report of PCC-Vivace — Data Link

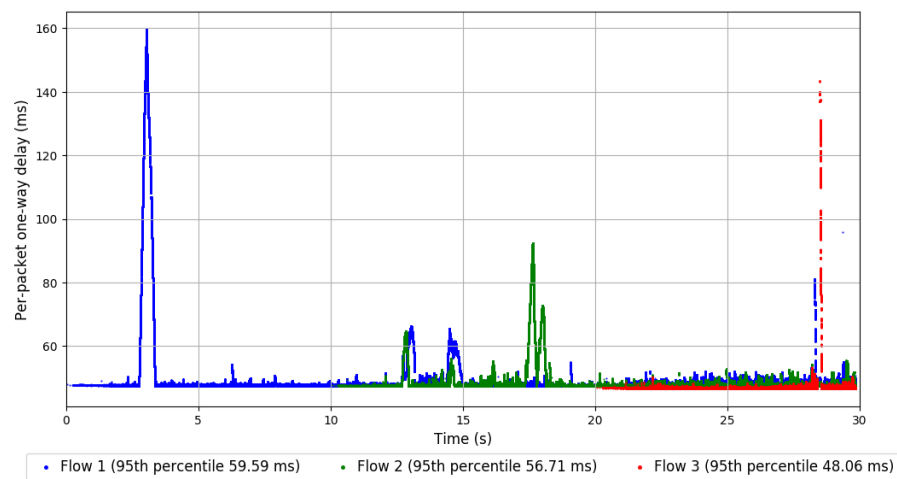
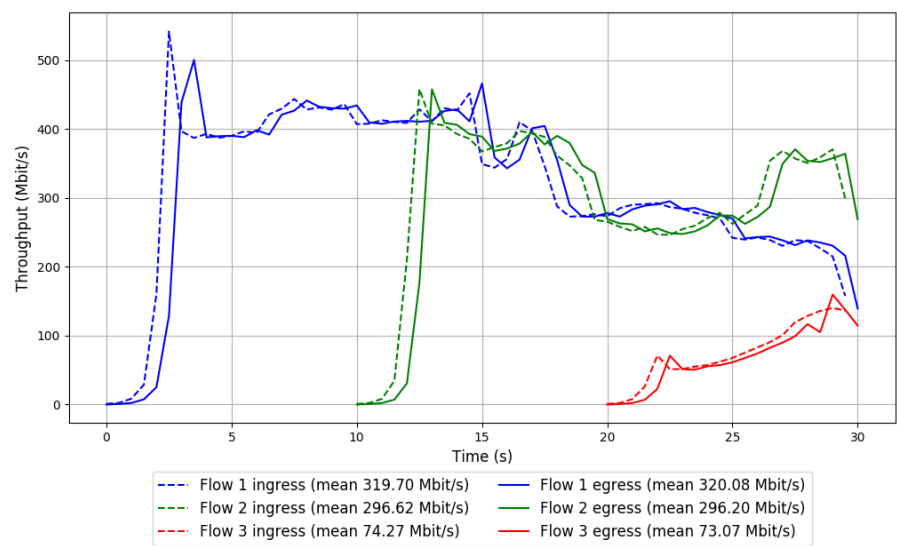


Run 3: Statistics of PCC-Vivace

Start at: 2018-11-16 01:13:51
End at: 2018-11-16 01:14:21
Local clock offset: 0.455 ms
Remote clock offset: -0.074 ms

Below is generated by plot.py at 2018-11-16 05:19:11
Datalink statistics
-- Total of 3 flows:
Average throughput: 540.59 Mbit/s
95th percentile per-packet one-way delay: 58.279 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 320.08 Mbit/s
95th percentile per-packet one-way delay: 59.587 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 296.20 Mbit/s
95th percentile per-packet one-way delay: 56.710 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 73.07 Mbit/s
95th percentile per-packet one-way delay: 48.056 ms
Loss rate: 2.57%

Run 3: Report of PCC-Vivace — Data Link

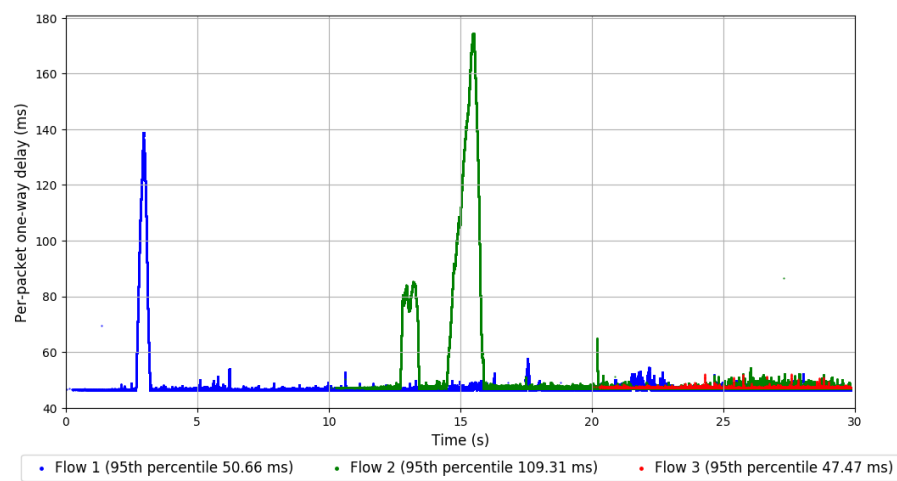
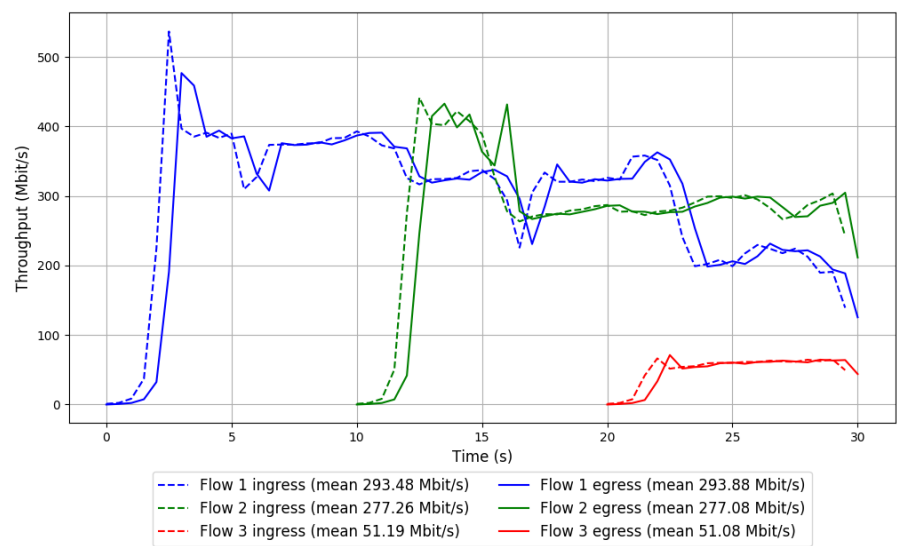


Run 4: Statistics of PCC-Vivace

Start at: 2018-11-16 01:44:46
End at: 2018-11-16 01:45:16
Local clock offset: 0.159 ms
Remote clock offset: -0.091 ms

Below is generated by plot.py at 2018-11-16 05:19:39
Datalink statistics
-- Total of 3 flows:
Average throughput: 494.60 Mbit/s
95th percentile per-packet one-way delay: 79.510 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 293.88 Mbit/s
95th percentile per-packet one-way delay: 50.662 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 277.08 Mbit/s
95th percentile per-packet one-way delay: 109.306 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 51.08 Mbit/s
95th percentile per-packet one-way delay: 47.470 ms
Loss rate: 1.18%

Run 4: Report of PCC-Vivace — Data Link

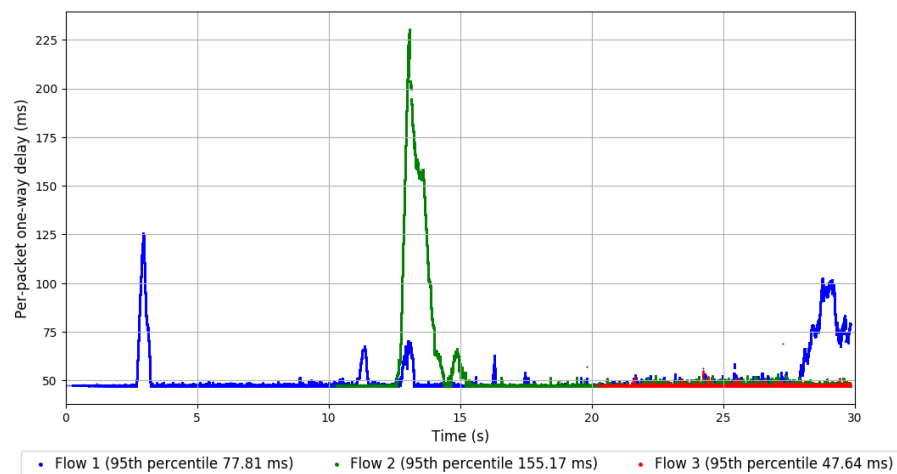
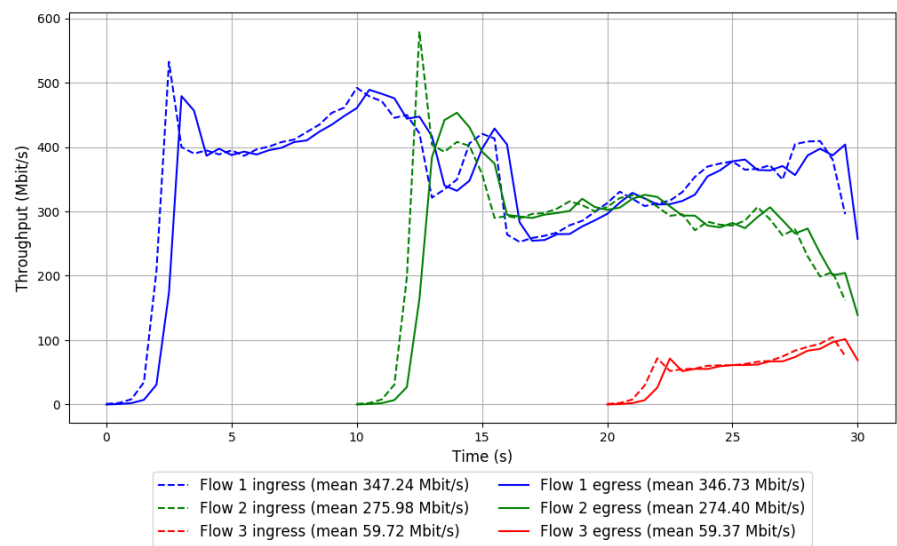


Run 5: Statistics of PCC-Vivace

Start at: 2018-11-16 02:15:55
End at: 2018-11-16 02:16:25
Local clock offset: 0.054 ms
Remote clock offset: -0.047 ms

Below is generated by plot.py at 2018-11-16 05:19:47
Datalink statistics
-- Total of 3 flows:
Average throughput: 548.39 Mbit/s
95th percentile per-packet one-way delay: 89.595 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 346.73 Mbit/s
95th percentile per-packet one-way delay: 77.811 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 274.40 Mbit/s
95th percentile per-packet one-way delay: 155.169 ms
Loss rate: 1.05%
-- Flow 3:
Average throughput: 59.37 Mbit/s
95th percentile per-packet one-way delay: 47.637 ms
Loss rate: 1.55%

Run 5: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-11-16 00:13:20

End at: 2018-11-16 00:13:51

Local clock offset: -0.051 ms

Remote clock offset: 0.226 ms

Below is generated by plot.py at 2018-11-16 05:19:47

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.21 Mbit/s

95th percentile per-packet one-way delay: 47.354 ms

Loss rate: 0.45%

-- Flow 1:

Average throughput: 1.55 Mbit/s

95th percentile per-packet one-way delay: 47.368 ms

Loss rate: 0.45%

-- Flow 2:

Average throughput: 1.21 Mbit/s

95th percentile per-packet one-way delay: 47.345 ms

Loss rate: 0.29%

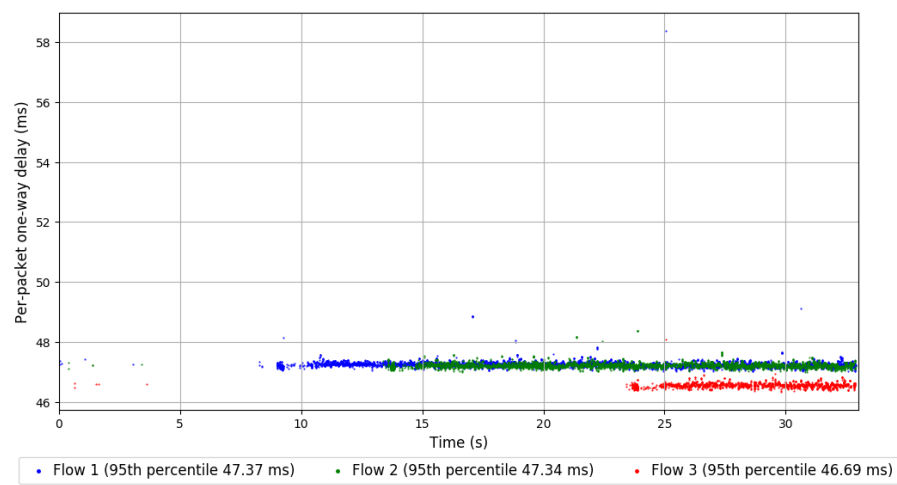
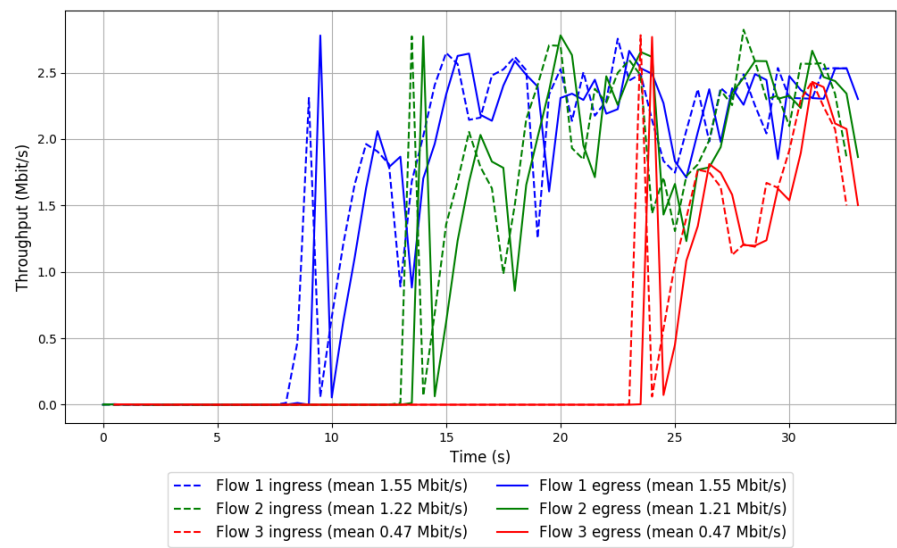
-- Flow 3:

Average throughput: 0.47 Mbit/s

95th percentile per-packet one-way delay: 46.688 ms

Loss rate: 0.84%

Run 1: Report of WebRTC media — Data Link

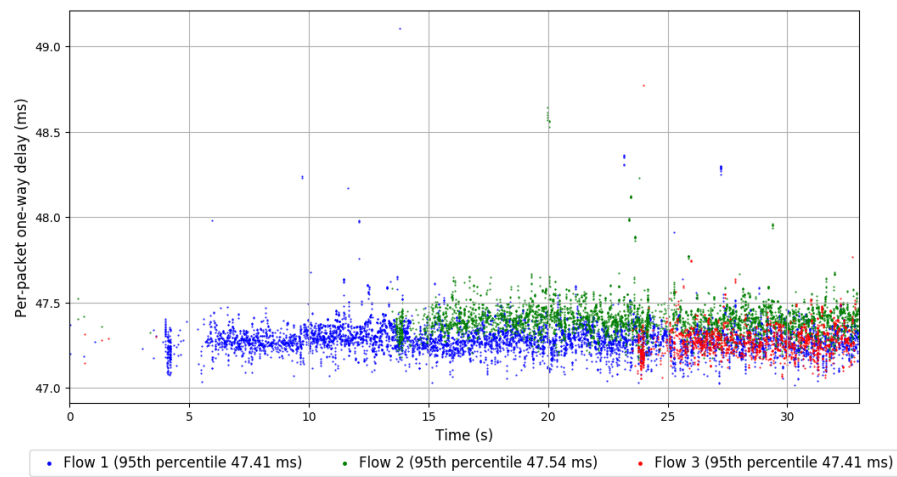
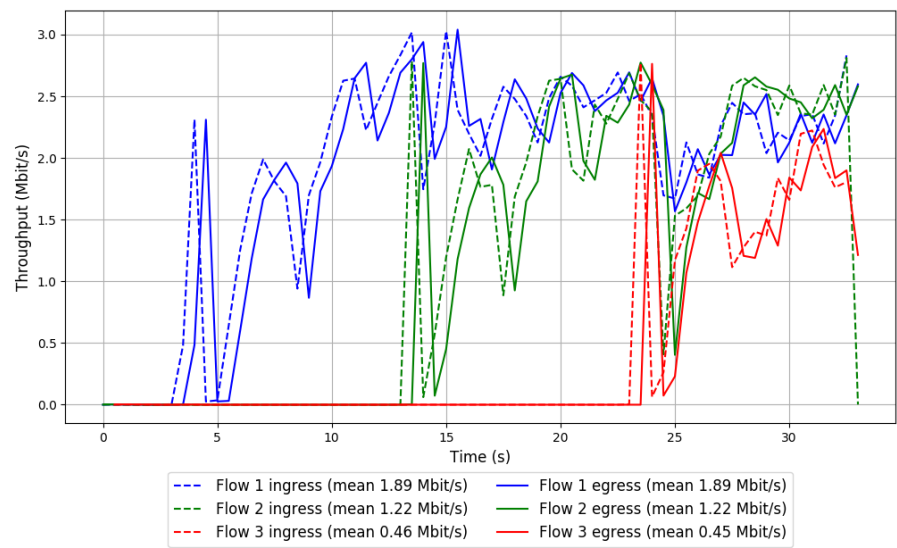


Run 2: Statistics of WebRTC media

Start at: 2018-11-16 00:44:26
End at: 2018-11-16 00:44:56
Local clock offset: -0.04 ms
Remote clock offset: -0.126 ms

Below is generated by plot.py at 2018-11-16 05:19:47
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.54 Mbit/s
95th percentile per-packet one-way delay: 47.492 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 47.415 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 47.544 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 47.410 ms
Loss rate: 2.42%

Run 2: Report of WebRTC media — Data Link

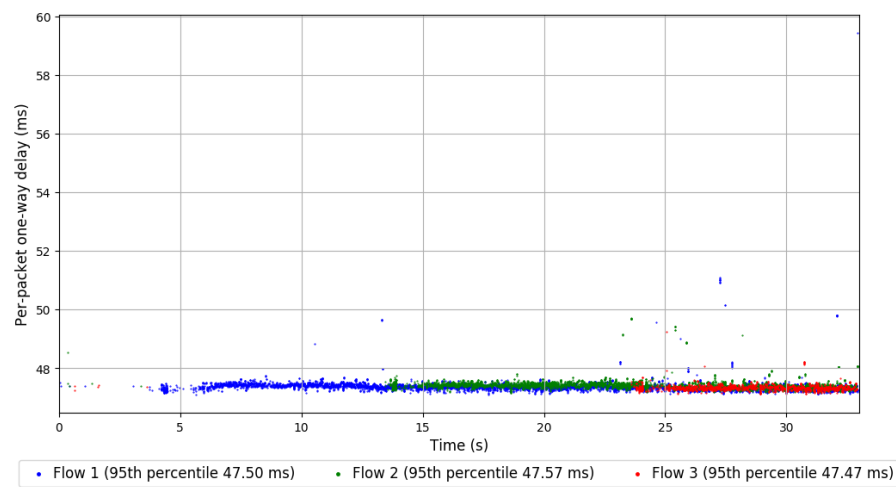
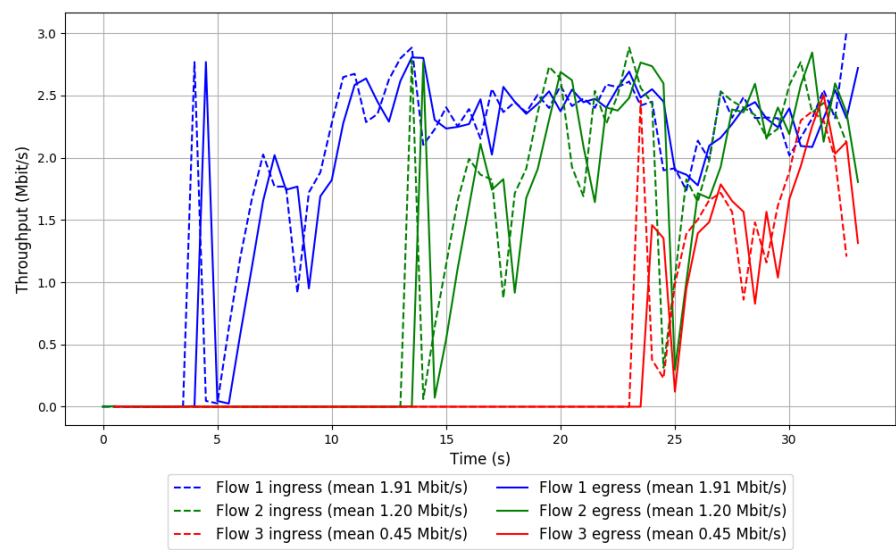


Run 3: Statistics of WebRTC media

Start at: 2018-11-16 01:15:39
End at: 2018-11-16 01:16:09
Local clock offset: 0.093 ms
Remote clock offset: -0.021 ms

Below is generated by plot.py at 2018-11-16 05:19:47
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.54 Mbit/s
95th percentile per-packet one-way delay: 47.528 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 1.91 Mbit/s
95th percentile per-packet one-way delay: 47.502 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 47.566 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 47.465 ms
Loss rate: 0.08%

Run 3: Report of WebRTC media — Data Link

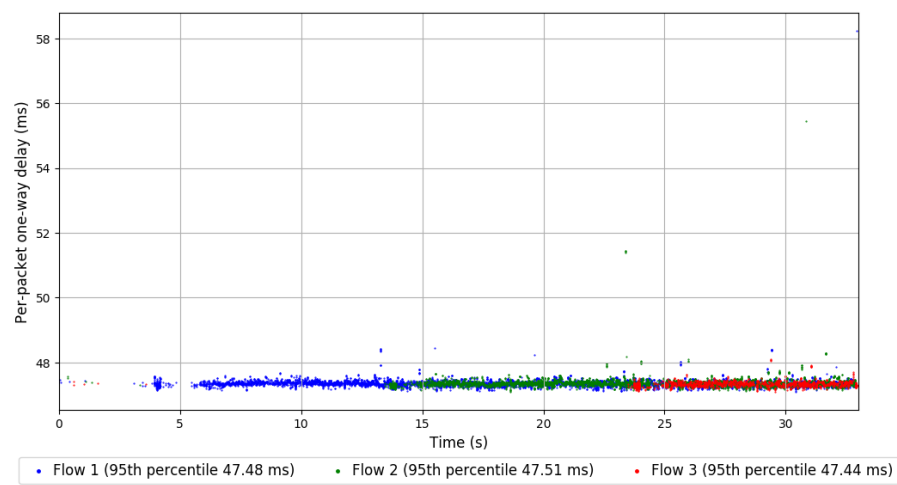
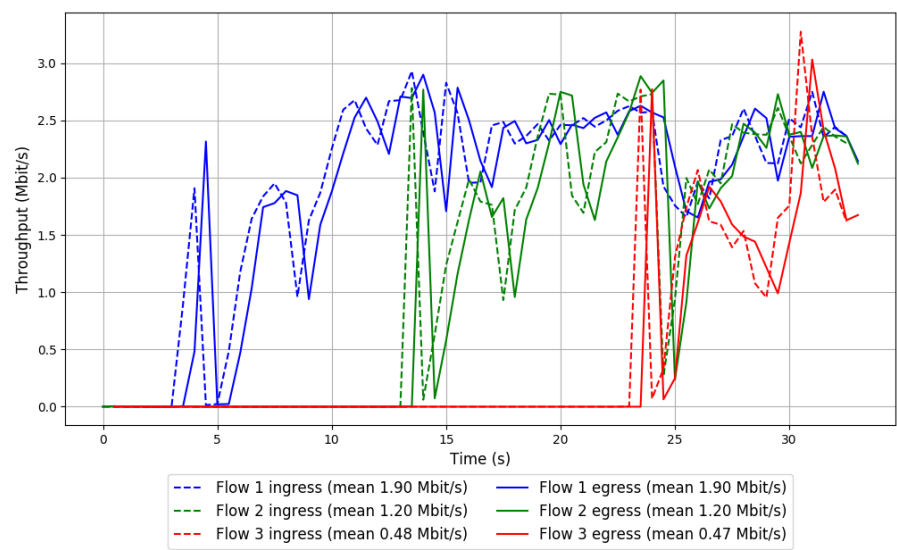


Run 4: Statistics of WebRTC media

Start at: 2018-11-16 01:46:31
End at: 2018-11-16 01:47:01
Local clock offset: 0.145 ms
Remote clock offset: -0.058 ms

Below is generated by plot.py at 2018-11-16 05:19:47
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.55 Mbit/s
95th percentile per-packet one-way delay: 47.489 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 47.483 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 47.510 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 47.439 ms
Loss rate: 0.69%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-11-16 02:17:44
End at: 2018-11-16 02:18:14
Local clock offset: 0.057 ms
Remote clock offset: -0.069 ms

Below is generated by plot.py at 2018-11-16 05:19:47
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.47 Mbit/s
95th percentile per-packet one-way delay: 47.599 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 47.572 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 1.17 Mbit/s
95th percentile per-packet one-way delay: 47.624 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 47.588 ms
Loss rate: 2.41%

Run 5: Report of WebRTC media — Data Link

