

Pantheon Report

Generated at 2018-10-03 02:06:17 (UTC).

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

Repeated the test of 18 congestion control schemes 5 times.

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

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

System info:

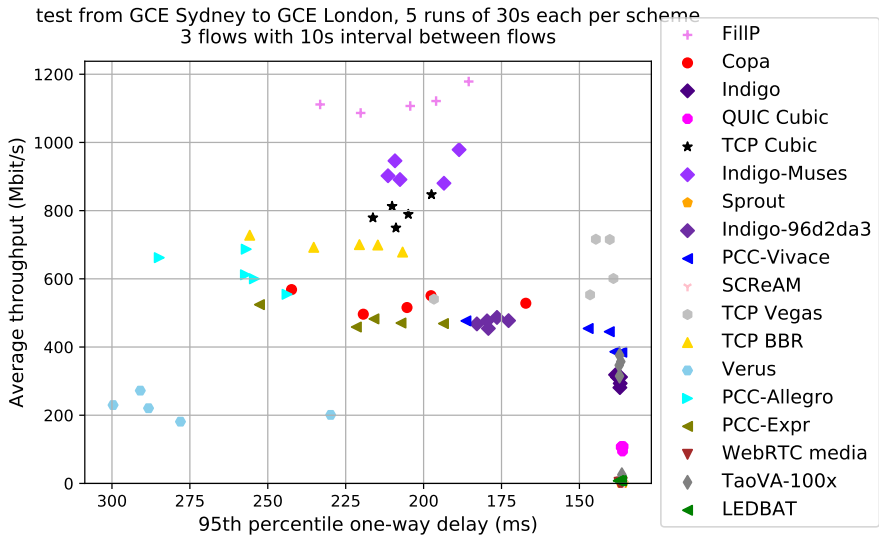
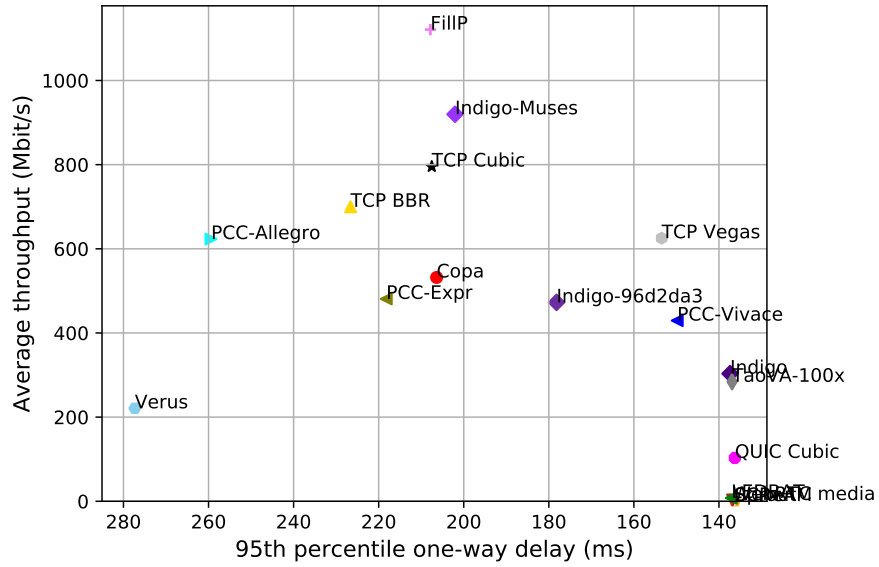
```
Linux 4.15.0-1019-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

```
branch: muses @ 2e19c0464530faa92c63f8217c9971438a26a3be
third_party/fillp @ 5332fc9127c63565e13f4933b336c02d1aabdac6
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-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 Sydney to GCE London, 5 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)



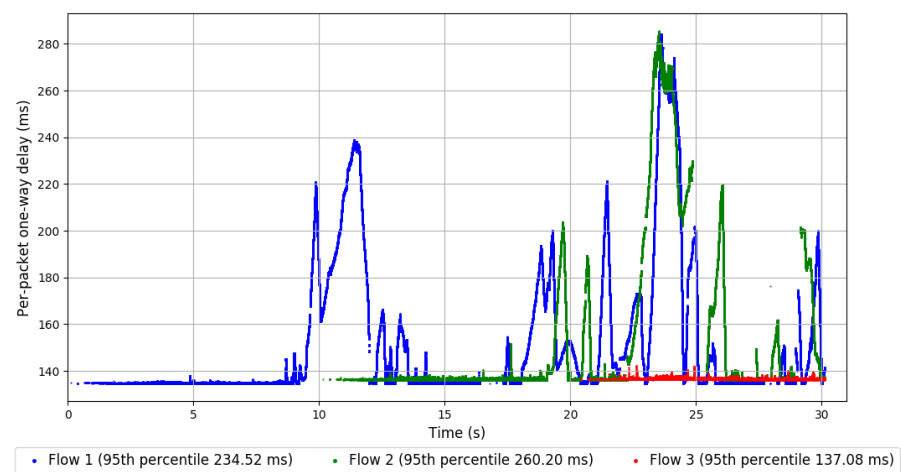
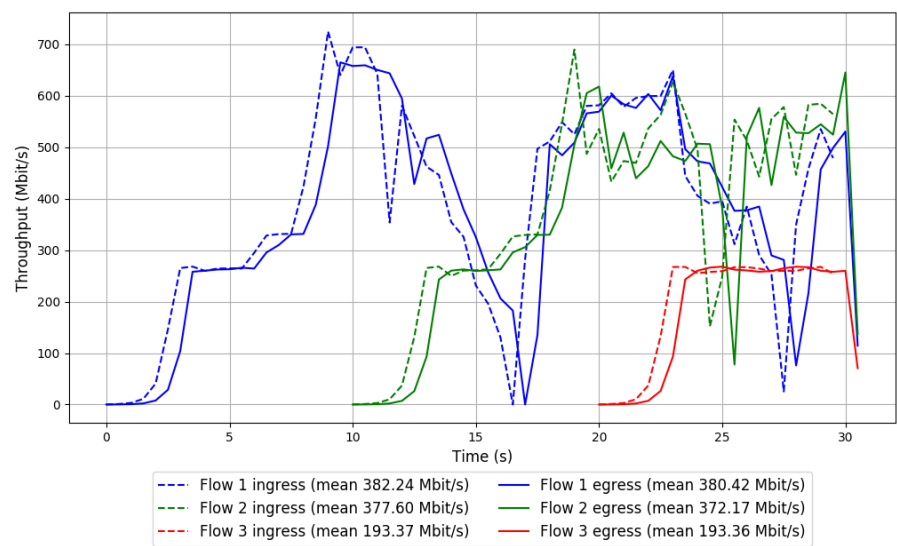
scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	385.54	351.54	241.00	231.78	218.78	182.52	0.64	1.09	0.69
Copa	5	290.93	261.42	201.48	195.03	187.66	198.44	0.06	0.00	0.00
TCP Cubic	5	428.30	426.92	249.38	183.71	196.94	158.80	0.04	0.13	0.22
FillP	5	610.77	554.28	425.14	212.48	195.31	160.91	3.76	1.13	0.14
Indigo	5	163.94	144.36	137.24	137.08	137.45	139.63	0.00	0.00	0.00
Indigo-96d2da3	5	252.49	240.60	190.12	175.20	180.92	181.73	0.03	0.01	0.12
LEDBAT	5	5.06	3.35	1.63	136.90	137.02	136.78	0.00	0.00	0.00
Indigo-Muses	5	528.68	454.82	279.01	197.79	203.02	221.18	0.17	0.19	1.58
PCC-Allegro	5	351.93	292.89	234.64	262.71	240.82	238.58	4.34	2.63	3.16
PCC-Expr	5	296.72	188.77	177.87	224.86	149.88	194.57	1.98	0.00	0.92
QUIC Cubic	5	50.11	56.84	47.63	135.97	136.05	136.06	0.00	0.00	0.00
SCReAM	5	0.22	0.22	0.22	136.35	135.99	136.24	0.00	0.00	0.00
Sprout	5	0.41	0.44	0.46	135.75	136.08	135.92	0.00	0.00	0.00
TaoVA-100x	5	154.13	147.38	94.91	136.39	137.03	142.32	0.00	0.00	0.00
TCP Vegas	5	325.38	314.17	272.86	139.05	154.48	175.85	0.04	0.00	0.13
Verus	5	126.81	110.30	65.13	262.17	249.82	205.70	1.68	4.71	1.76
PCC-Vivace	5	247.23	218.79	110.93	138.86	167.74	143.54	0.00	0.20	0.00
WebRTC media	5	1.79	1.03	0.32	136.32	136.32	136.65	0.00	0.00	0.06

Run 1: Statistics of TCP BBR

Start at: 2018-10-02 20:57:17
End at: 2018-10-02 20:57:47
Local clock offset: -0.014 ms
Remote clock offset: -0.051 ms

Below is generated by plot.py at 2018-10-02 23:50:58
Datalink statistics
-- Total of 3 flows:
Average throughput: 692.57 Mbit/s
95th percentile per-packet one-way delay: 235.255 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 380.42 Mbit/s
95th percentile per-packet one-way delay: 234.519 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 372.17 Mbit/s
95th percentile per-packet one-way delay: 260.200 ms
Loss rate: 1.44%
-- Flow 3:
Average throughput: 193.36 Mbit/s
95th percentile per-packet one-way delay: 137.077 ms
Loss rate: 0.00%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-10-02 21:30:19

End at: 2018-10-02 21:30:49

Local clock offset: -0.316 ms

Remote clock offset: -0.05 ms

Below is generated by plot.py at 2018-10-02 23:52:13

Datalink statistics

-- Total of 3 flows:

Average throughput: 727.97 Mbit/s

95th percentile per-packet one-way delay: 255.797 ms

Loss rate: 1.82%

-- Flow 1:

Average throughput: 422.20 Mbit/s

95th percentile per-packet one-way delay: 255.733 ms

Loss rate: 1.29%

-- Flow 2:

Average throughput: 327.55 Mbit/s

95th percentile per-packet one-way delay: 272.673 ms

Loss rate: 3.52%

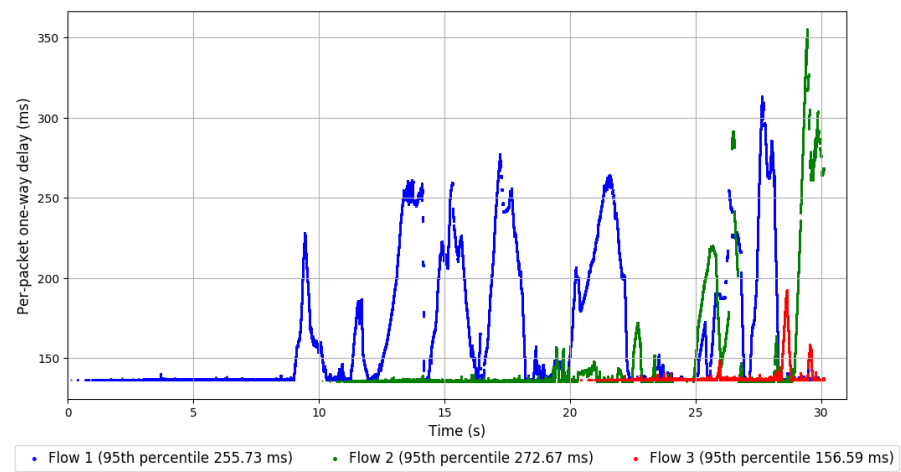
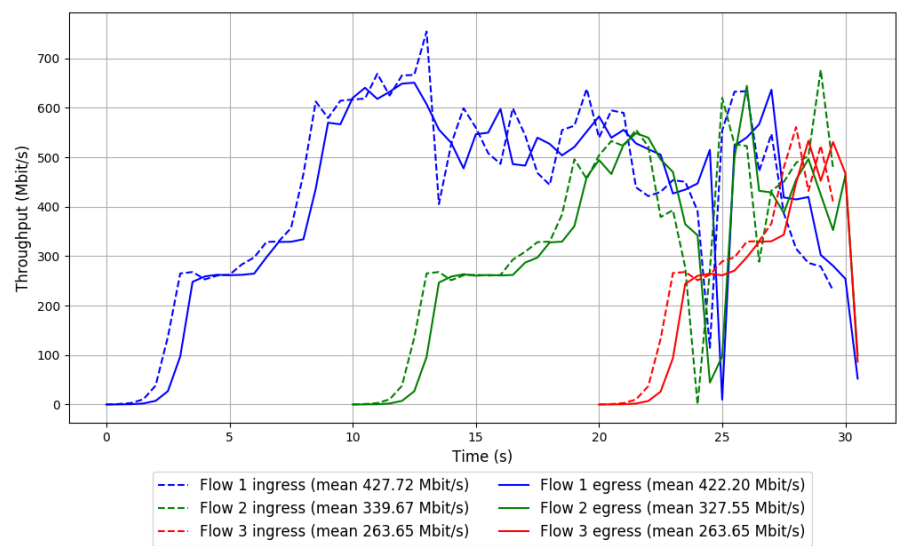
-- Flow 3:

Average throughput: 263.65 Mbit/s

95th percentile per-packet one-way delay: 156.590 ms

Loss rate: 0.01%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-10-02 22:03:28

End at: 2018-10-02 22:03:58

Local clock offset: -0.117 ms

Remote clock offset: 0.225 ms

Below is generated by plot.py at 2018-10-02 23:52:13

Datalink statistics

-- Total of 3 flows:

Average throughput: 678.58 Mbit/s

95th percentile per-packet one-way delay: 206.742 ms

Loss rate: 0.46%

-- Flow 1:

Average throughput: 355.91 Mbit/s

95th percentile per-packet one-way delay: 210.340 ms

Loss rate: 0.43%

-- Flow 2:

Average throughput: 353.24 Mbit/s

95th percentile per-packet one-way delay: 213.770 ms

Loss rate: 0.50%

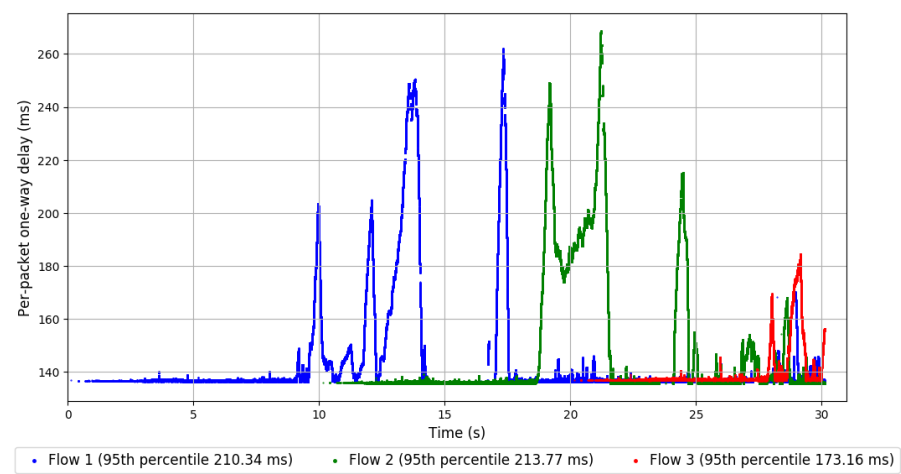
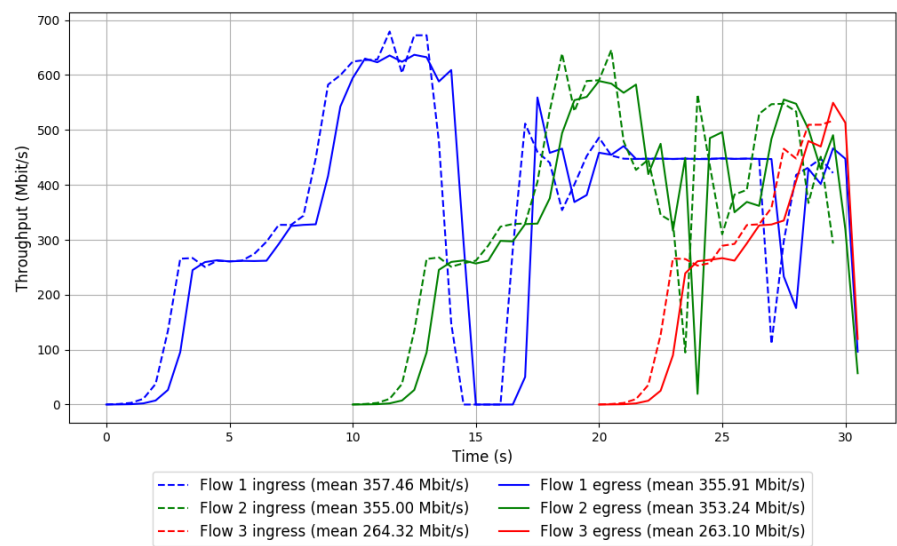
-- Flow 3:

Average throughput: 263.10 Mbit/s

95th percentile per-packet one-way delay: 173.162 ms

Loss rate: 0.46%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2018-10-02 22:36:38

End at: 2018-10-02 22:37:08

Local clock offset: -0.342 ms

Remote clock offset: 0.228 ms

Below is generated by plot.py at 2018-10-02 23:52:13

Datalink statistics

-- Total of 3 flows:

Average throughput: 699.30 Mbit/s

95th percentile per-packet one-way delay: 214.701 ms

Loss rate: 0.42%

-- Flow 1:

Average throughput: 398.20 Mbit/s

95th percentile per-packet one-way delay: 235.134 ms

Loss rate: 0.53%

-- Flow 2:

Average throughput: 335.54 Mbit/s

95th percentile per-packet one-way delay: 166.196 ms

Loss rate: 0.00%

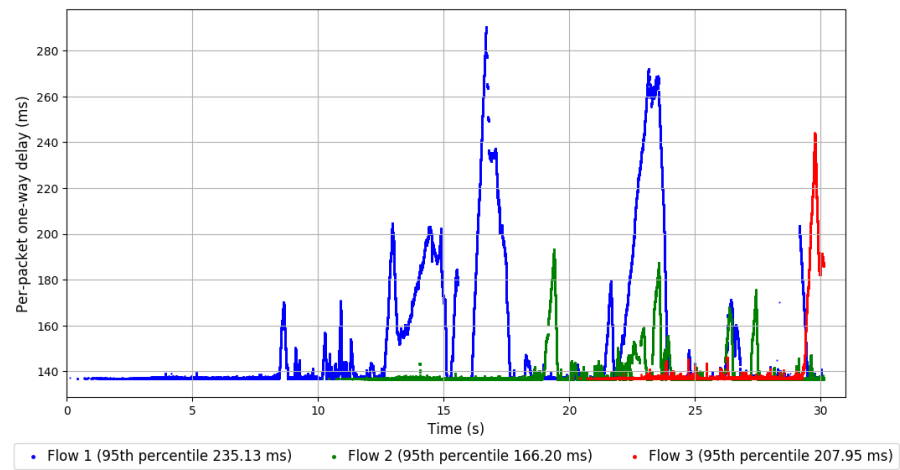
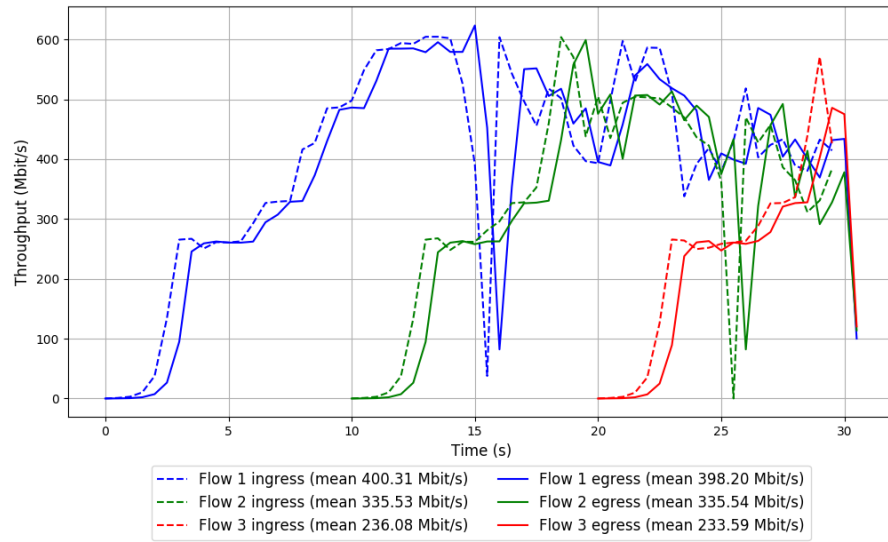
-- Flow 3:

Average throughput: 233.59 Mbit/s

95th percentile per-packet one-way delay: 207.952 ms

Loss rate: 1.05%

Run 4: Report of TCP BBR — Data Link

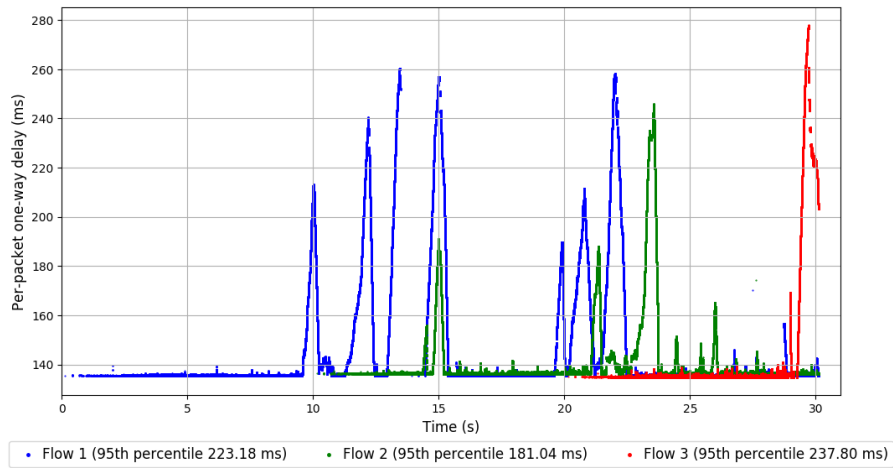
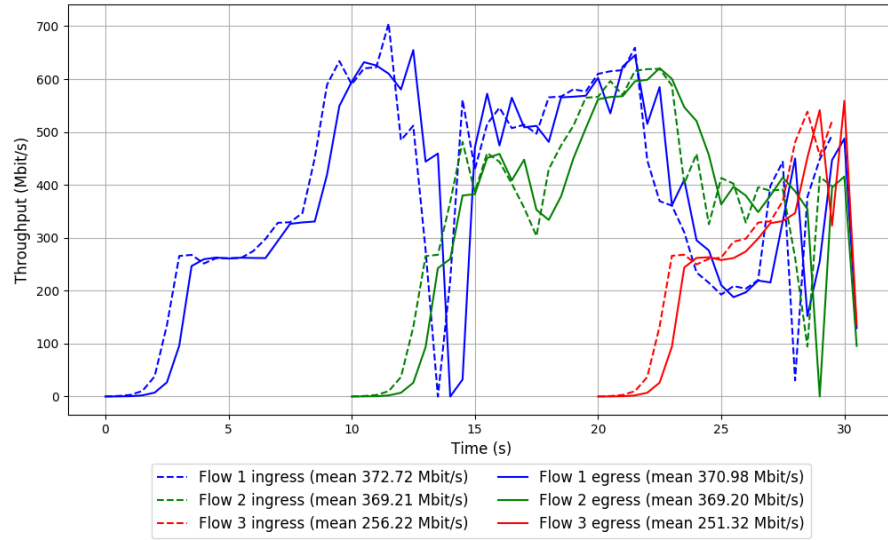


Run 5: Statistics of TCP BBR

Start at: 2018-10-02 23:09:09
End at: 2018-10-02 23:09:39
Local clock offset: -0.147 ms
Remote clock offset: -0.321 ms

Below is generated by plot.py at 2018-10-02 23:52:13
Datalink statistics
-- Total of 3 flows:
Average throughput: 700.41 Mbit/s
95th percentile per-packet one-way delay: 220.591 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 370.98 Mbit/s
95th percentile per-packet one-way delay: 223.180 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 369.20 Mbit/s
95th percentile per-packet one-way delay: 181.045 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 251.32 Mbit/s
95th percentile per-packet one-way delay: 237.801 ms
Loss rate: 1.91%

Run 5: Report of TCP BBR — Data Link

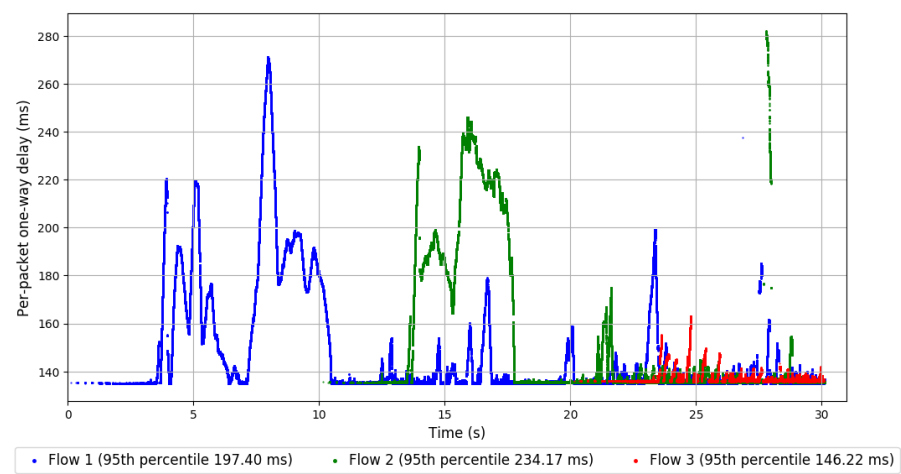
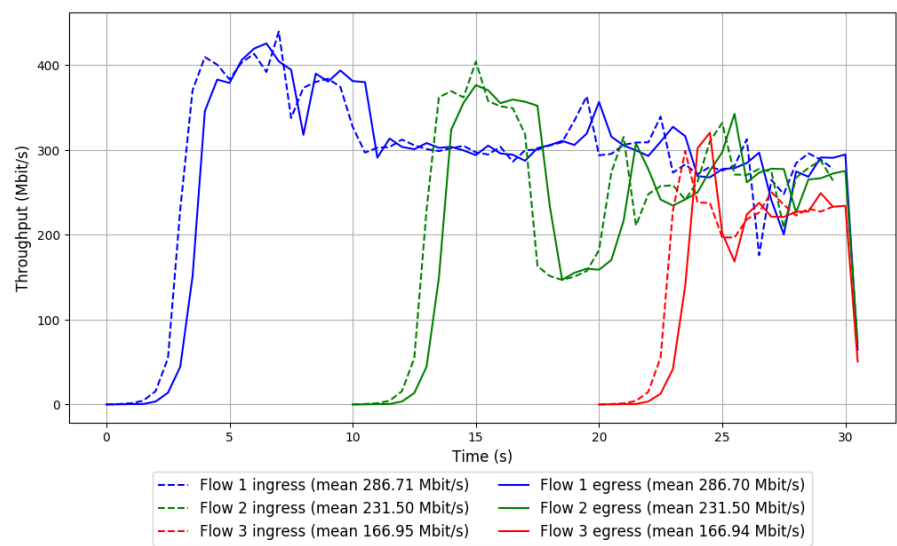


Run 1: Statistics of Copa

Start at: 2018-10-02 21:04:43
End at: 2018-10-02 21:05:13
Local clock offset: -0.136 ms
Remote clock offset: -0.429 ms

Below is generated by plot.py at 2018-10-02 23:55:54
Datalink statistics
-- Total of 3 flows:
Average throughput: 496.29 Mbit/s
95th percentile per-packet one-way delay: 219.352 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 286.70 Mbit/s
95th percentile per-packet one-way delay: 197.399 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 231.50 Mbit/s
95th percentile per-packet one-way delay: 234.166 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 166.94 Mbit/s
95th percentile per-packet one-way delay: 146.221 ms
Loss rate: 0.00%

Run 1: Report of Copa — Data Link

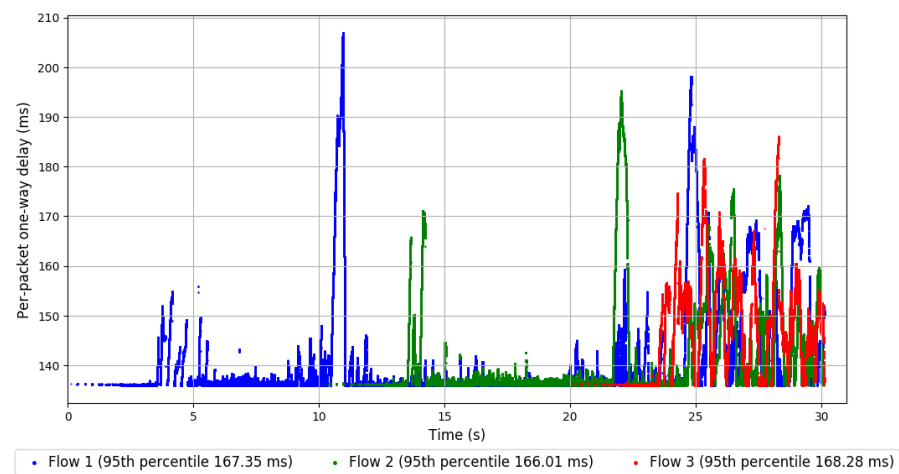
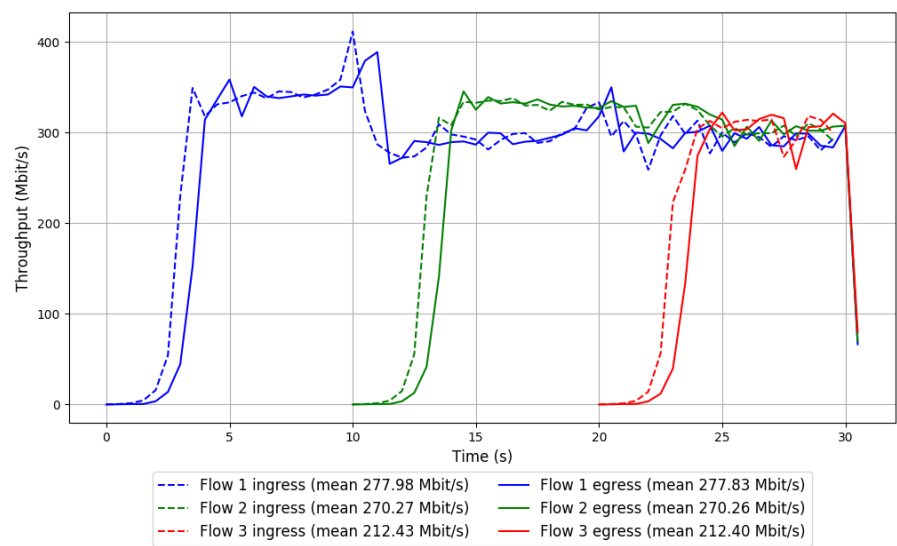


Run 2: Statistics of Copa

Start at: 2018-10-02 21:37:54
End at: 2018-10-02 21:38:24
Local clock offset: -0.089 ms
Remote clock offset: -0.076 ms

Below is generated by plot.py at 2018-10-02 23:57:24
Datalink statistics
-- Total of 3 flows:
Average throughput: 528.41 Mbit/s
95th percentile per-packet one-way delay: 167.204 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 277.83 Mbit/s
95th percentile per-packet one-way delay: 167.352 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 270.26 Mbit/s
95th percentile per-packet one-way delay: 166.006 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 212.40 Mbit/s
95th percentile per-packet one-way delay: 168.284 ms
Loss rate: 0.00%

Run 2: Report of Copa — Data Link

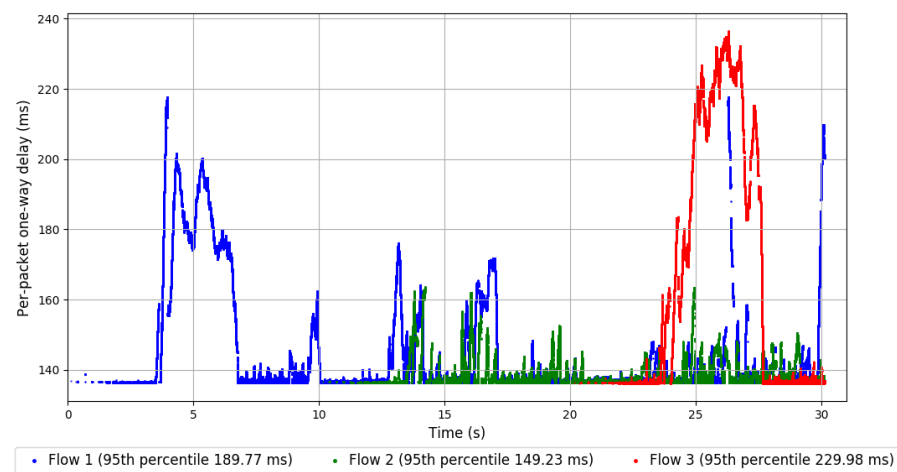
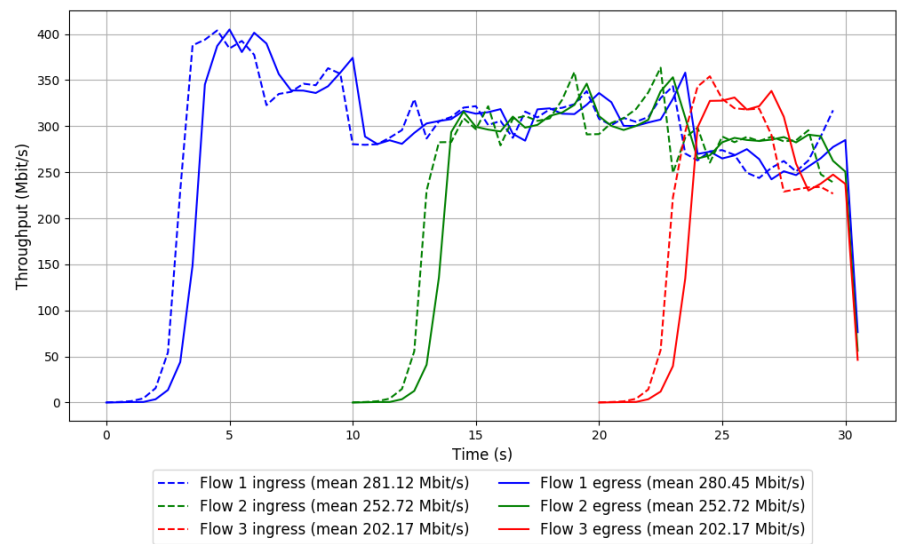


Run 3: Statistics of Copa

Start at: 2018-10-02 22:10:53
End at: 2018-10-02 22:11:23
Local clock offset: -0.277 ms
Remote clock offset: -0.127 ms

Below is generated by plot.py at 2018-10-02 23:57:24
Datalink statistics
-- Total of 3 flows:
Average throughput: 515.85 Mbit/s
95th percentile per-packet one-way delay: 205.327 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 280.45 Mbit/s
95th percentile per-packet one-way delay: 189.771 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 252.72 Mbit/s
95th percentile per-packet one-way delay: 149.229 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 202.17 Mbit/s
95th percentile per-packet one-way delay: 229.978 ms
Loss rate: 0.00%

Run 3: Report of Copa — Data Link

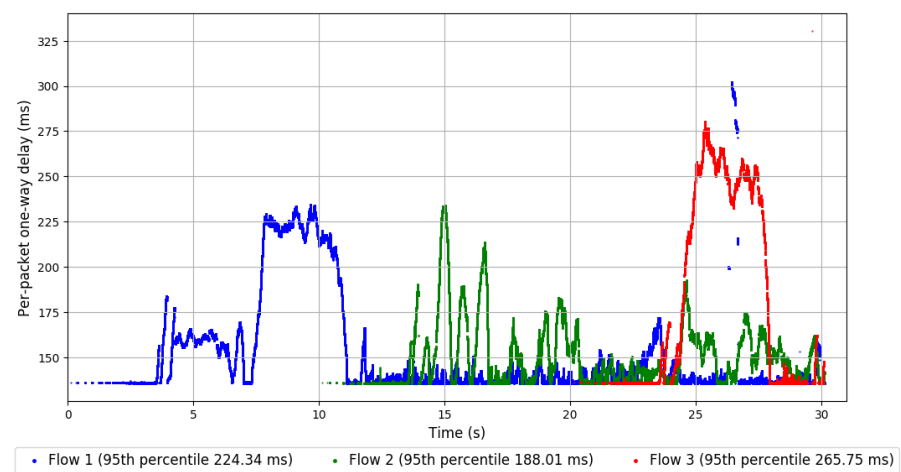
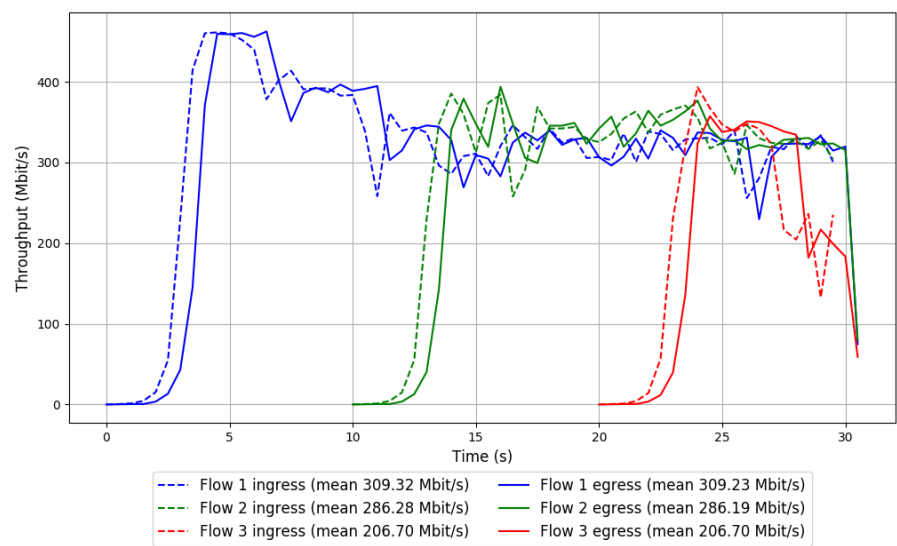


Run 4: Statistics of Copa

Start at: 2018-10-02 22:44:07
End at: 2018-10-02 22:44:37
Local clock offset: -0.222 ms
Remote clock offset: -0.106 ms

Below is generated by plot.py at 2018-10-03 00:15:29
Datalink statistics
-- Total of 3 flows:
Average throughput: 568.42 Mbit/s
95th percentile per-packet one-way delay: 242.375 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 309.23 Mbit/s
95th percentile per-packet one-way delay: 224.335 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 286.19 Mbit/s
95th percentile per-packet one-way delay: 188.013 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 206.70 Mbit/s
95th percentile per-packet one-way delay: 265.754 ms
Loss rate: 0.00%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-10-02 23:16:44

End at: 2018-10-02 23:17:14

Local clock offset: 0.006 ms

Remote clock offset: 0.393 ms

Below is generated by plot.py at 2018-10-03 00:15:29

Datalink statistics

-- Total of 3 flows:

Average throughput: 550.61 Mbit/s

95th percentile per-packet one-way delay: 197.617 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 300.42 Mbit/s

95th percentile per-packet one-way delay: 196.278 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 266.44 Mbit/s

95th percentile per-packet one-way delay: 200.885 ms

Loss rate: 0.00%

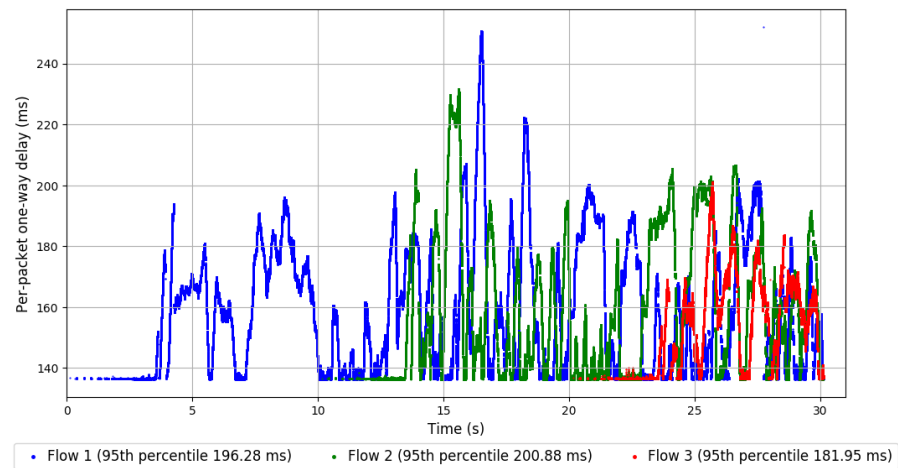
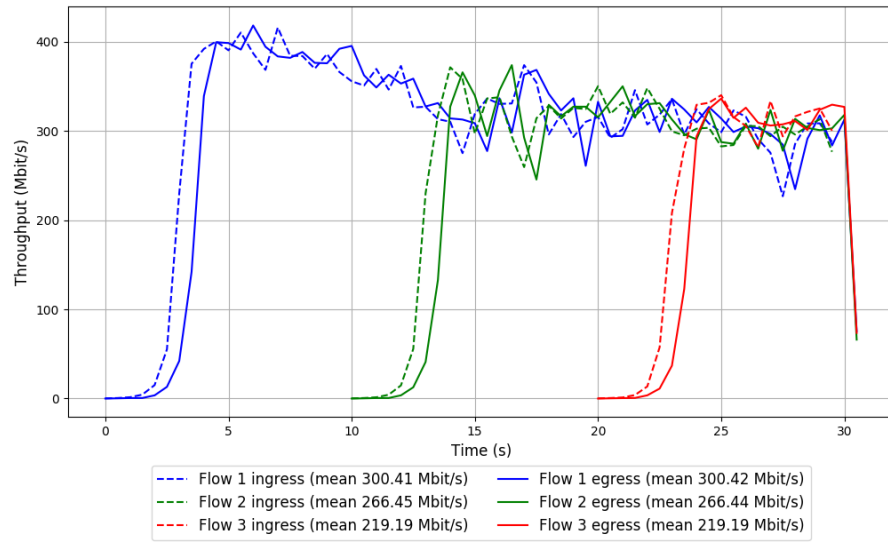
-- Flow 3:

Average throughput: 219.19 Mbit/s

95th percentile per-packet one-way delay: 181.954 ms

Loss rate: 0.00%

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-10-02 20:43:15

End at: 2018-10-02 20:43:45

Local clock offset: -0.156 ms

Remote clock offset: 0.296 ms

Below is generated by plot.py at 2018-10-03 00:15:29

Datalink statistics

-- Total of 3 flows:

Average throughput: 812.80 Mbit/s

95th percentile per-packet one-way delay: 210.108 ms

Loss rate: 0.08%

-- Flow 1:

Average throughput: 450.99 Mbit/s

95th percentile per-packet one-way delay: 222.183 ms

Loss rate: 0.05%

-- Flow 2:

Average throughput: 445.34 Mbit/s

95th percentile per-packet one-way delay: 166.497 ms

Loss rate: 0.05%

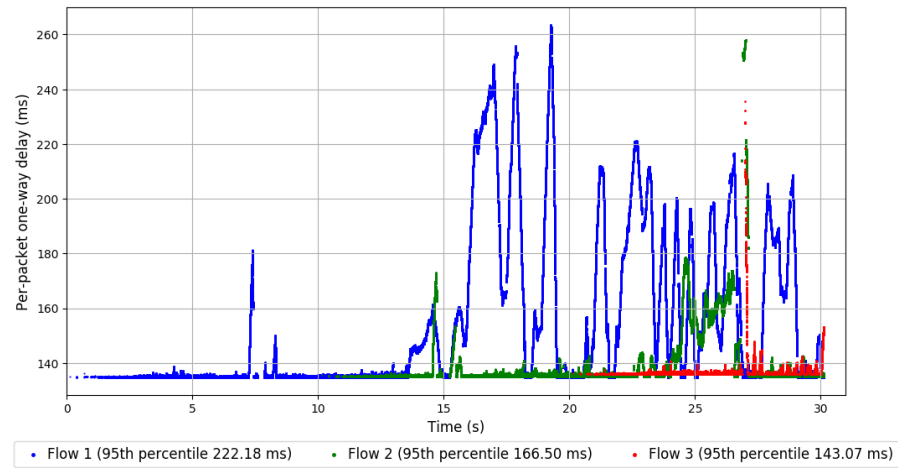
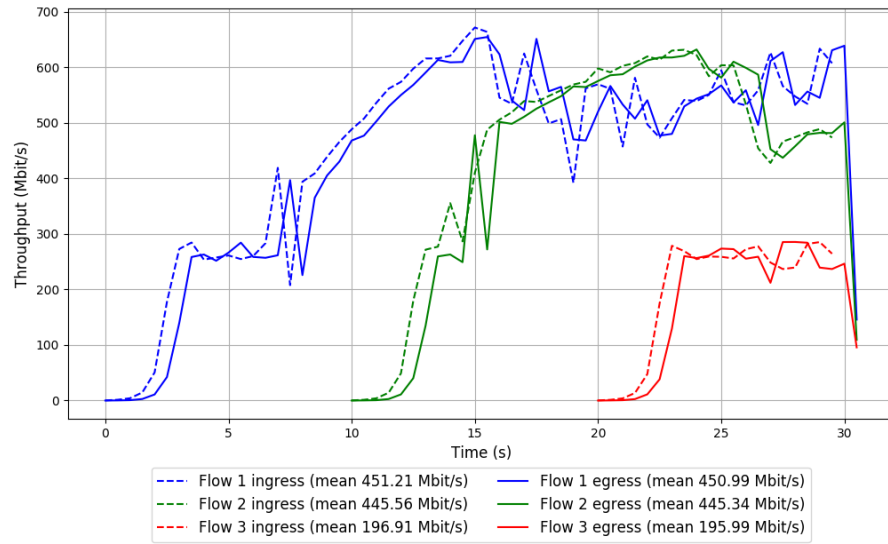
-- Flow 3:

Average throughput: 195.99 Mbit/s

95th percentile per-packet one-way delay: 143.070 ms

Loss rate: 0.46%

Run 1: Report of TCP Cubic — Data Link

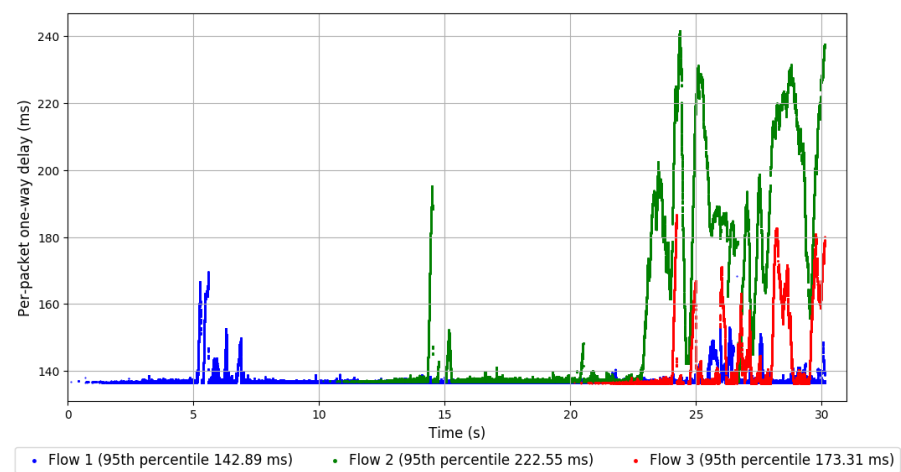
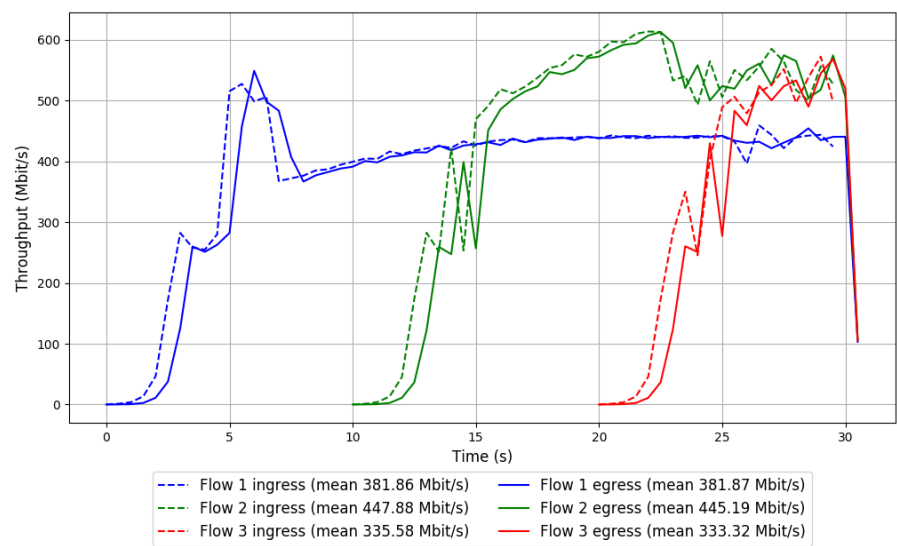


Run 2: Statistics of TCP Cubic

Start at: 2018-10-02 21:16:22
End at: 2018-10-02 21:16:52
Local clock offset: -0.076 ms
Remote clock offset: 0.303 ms

Below is generated by plot.py at 2018-10-03 00:15:29
Datalink statistics
-- Total of 3 flows:
Average throughput: 789.26 Mbit/s
95th percentile per-packet one-way delay: 204.909 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 381.87 Mbit/s
95th percentile per-packet one-way delay: 142.892 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 445.19 Mbit/s
95th percentile per-packet one-way delay: 222.552 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 333.32 Mbit/s
95th percentile per-packet one-way delay: 173.311 ms
Loss rate: 0.66%

Run 2: Report of TCP Cubic — Data Link

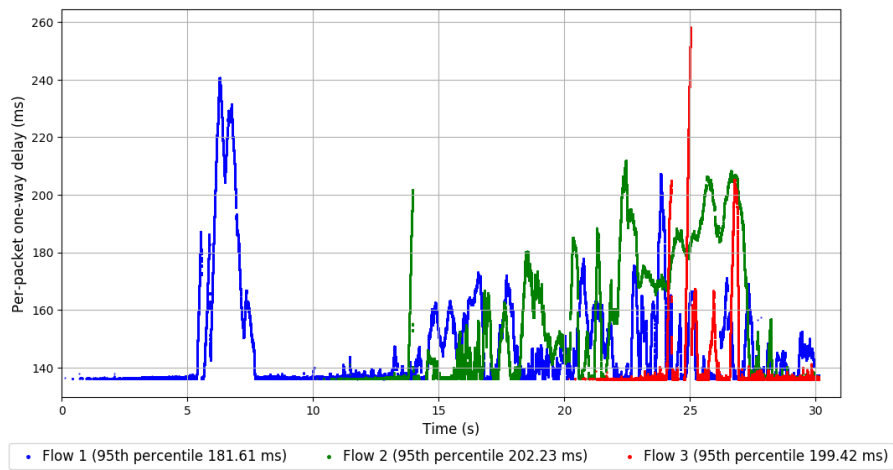
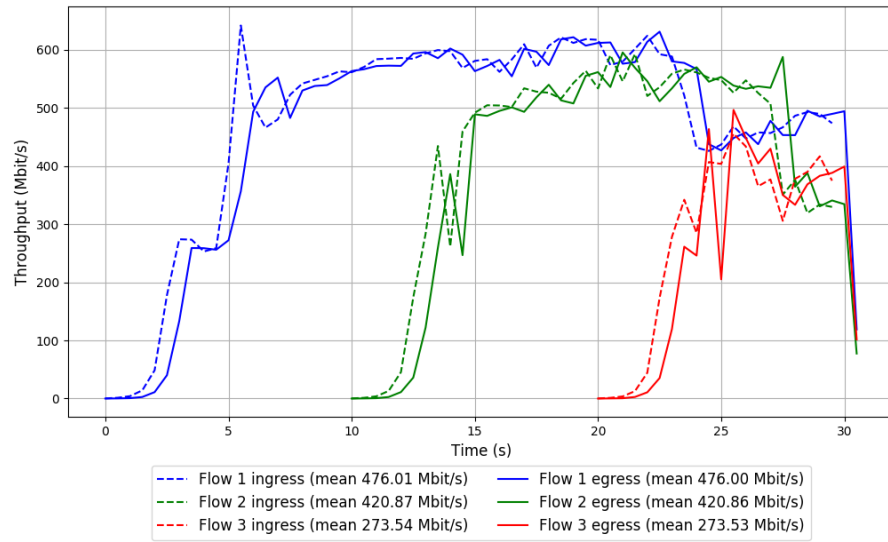


Run 3: Statistics of TCP Cubic

Start at: 2018-10-02 21:49:33
End at: 2018-10-02 21:50:03
Local clock offset: -0.043 ms
Remote clock offset: -0.149 ms

Below is generated by plot.py at 2018-10-03 00:15:29
Datalink statistics
-- Total of 3 flows:
Average throughput: 847.19 Mbit/s
95th percentile per-packet one-way delay: 197.467 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 476.00 Mbit/s
95th percentile per-packet one-way delay: 181.614 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 420.86 Mbit/s
95th percentile per-packet one-way delay: 202.226 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 273.53 Mbit/s
95th percentile per-packet one-way delay: 199.420 ms
Loss rate: 0.00%

Run 3: Report of TCP Cubic — Data Link

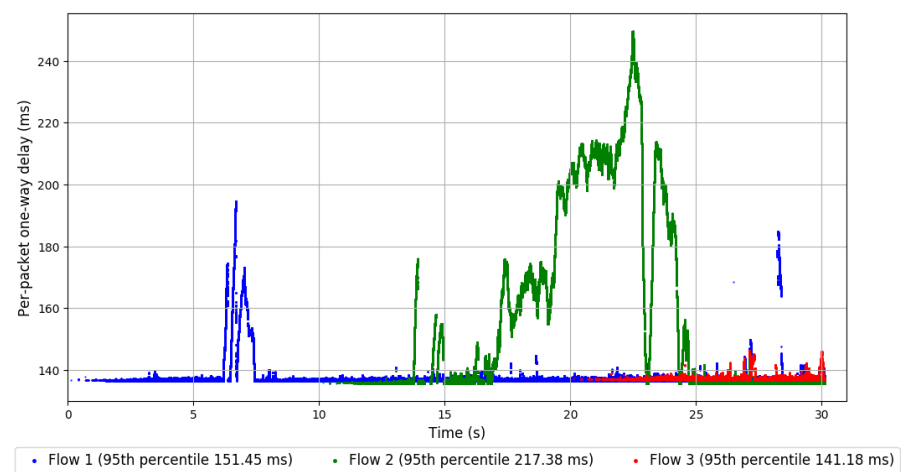
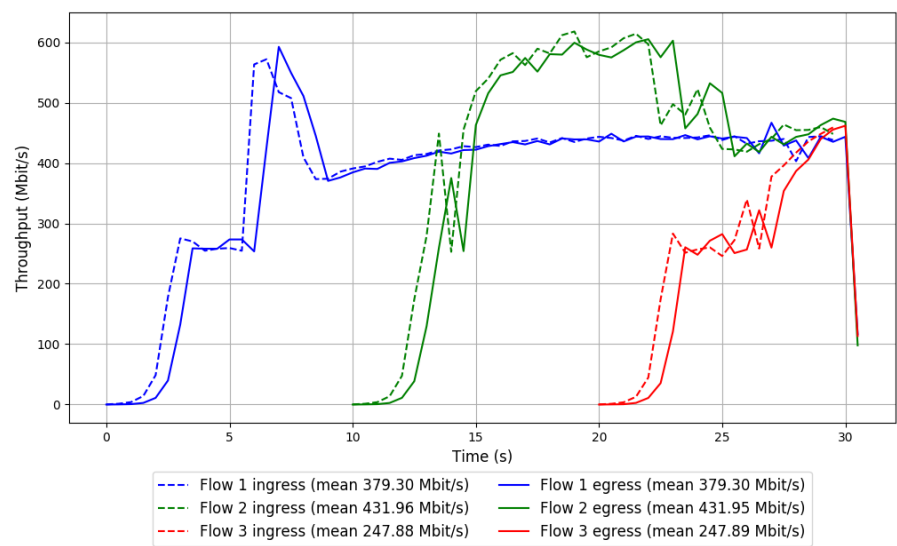


Run 4: Statistics of TCP Cubic

Start at: 2018-10-02 22:22:36
End at: 2018-10-02 22:23:06
Local clock offset: -0.481 ms
Remote clock offset: -0.163 ms

Below is generated by plot.py at 2018-10-03 00:15:29
Datalink statistics
-- Total of 3 flows:
Average throughput: 749.40 Mbit/s
95th percentile per-packet one-way delay: 208.870 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 379.30 Mbit/s
95th percentile per-packet one-way delay: 151.447 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 431.95 Mbit/s
95th percentile per-packet one-way delay: 217.379 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 247.89 Mbit/s
95th percentile per-packet one-way delay: 141.179 ms
Loss rate: 0.00%

Run 4: Report of TCP Cubic — Data Link

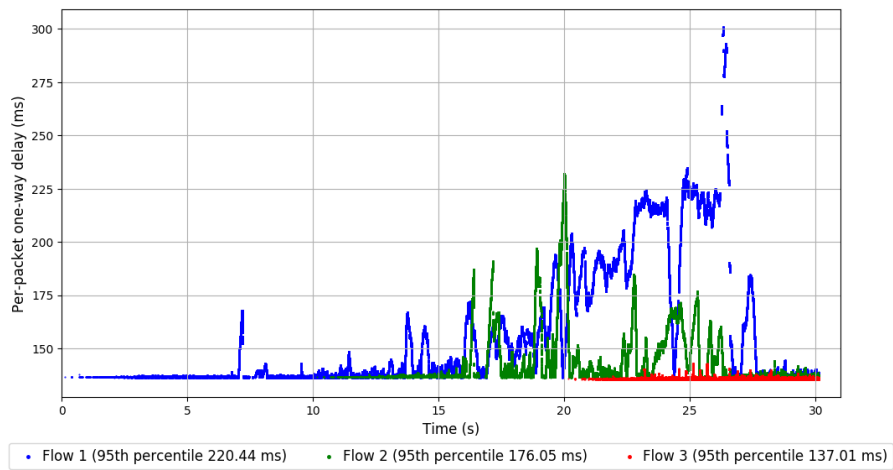
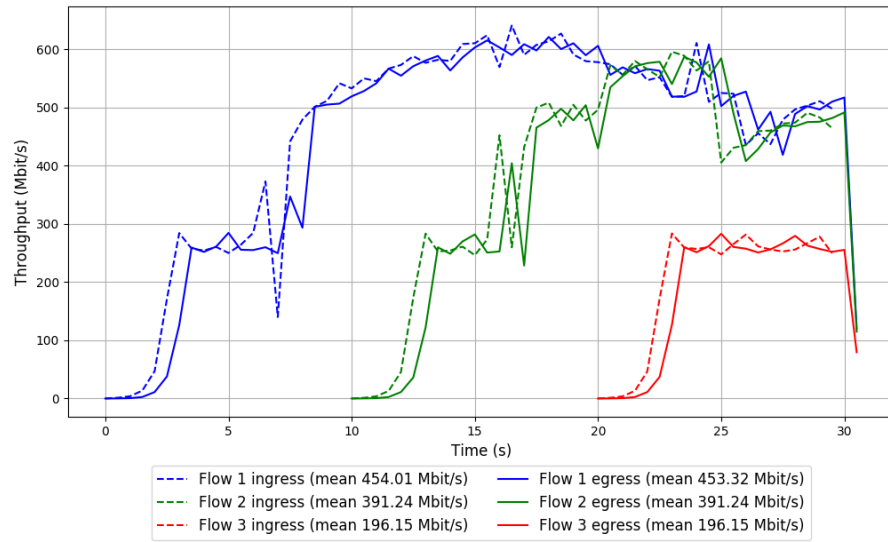


Run 5: Statistics of TCP Cubic

Start at: 2018-10-02 22:55:23
End at: 2018-10-02 22:55:53
Local clock offset: -0.255 ms
Remote clock offset: -0.024 ms

Below is generated by plot.py at 2018-10-03 00:15:29
Datalink statistics
-- Total of 3 flows:
Average throughput: 779.13 Mbit/s
95th percentile per-packet one-way delay: 216.262 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 453.32 Mbit/s
95th percentile per-packet one-way delay: 220.438 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 391.24 Mbit/s
95th percentile per-packet one-way delay: 176.048 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 196.15 Mbit/s
95th percentile per-packet one-way delay: 137.012 ms
Loss rate: 0.00%

Run 5: Report of TCP Cubic — Data Link

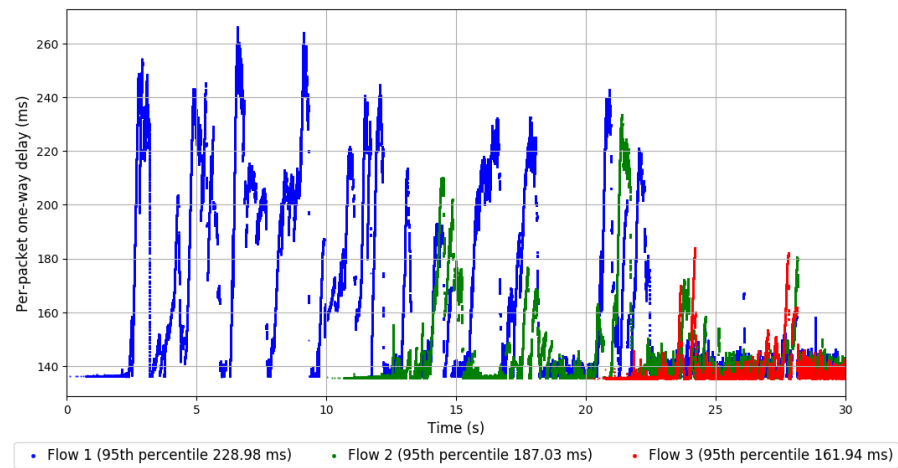
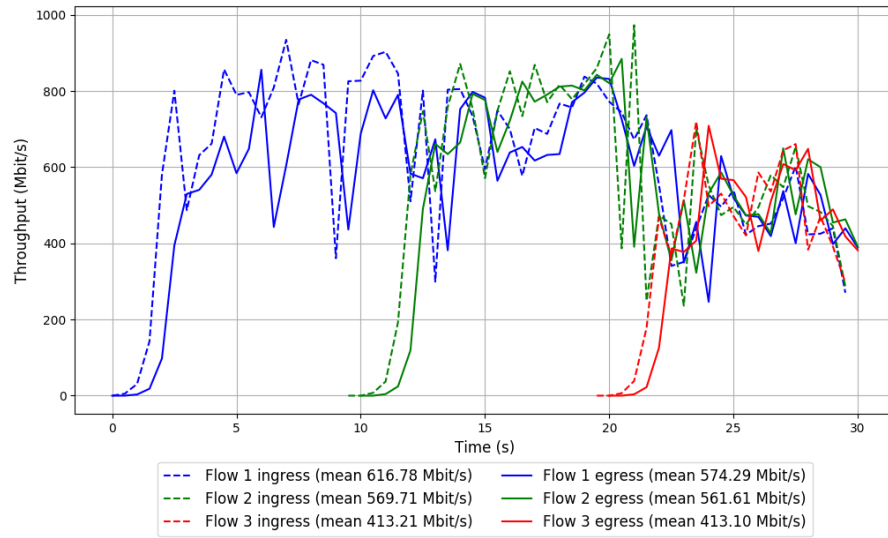


Run 1: Statistics of FillP

Start at: 2018-10-02 20:45:25
End at: 2018-10-02 20:45:55
Local clock offset: -0.06 ms
Remote clock offset: -0.032 ms

Below is generated by plot.py at 2018-10-03 00:27:47
Datalink statistics
-- Total of 3 flows:
Average throughput: 1086.43 Mbit/s
95th percentile per-packet one-way delay: 220.198 ms
Loss rate: 4.22%
-- Flow 1:
Average throughput: 574.29 Mbit/s
95th percentile per-packet one-way delay: 228.984 ms
Loss rate: 6.88%
-- Flow 2:
Average throughput: 561.61 Mbit/s
95th percentile per-packet one-way delay: 187.031 ms
Loss rate: 1.42%
-- Flow 3:
Average throughput: 413.10 Mbit/s
95th percentile per-packet one-way delay: 161.940 ms
Loss rate: 0.02%

Run 1: Report of FillP — Data Link

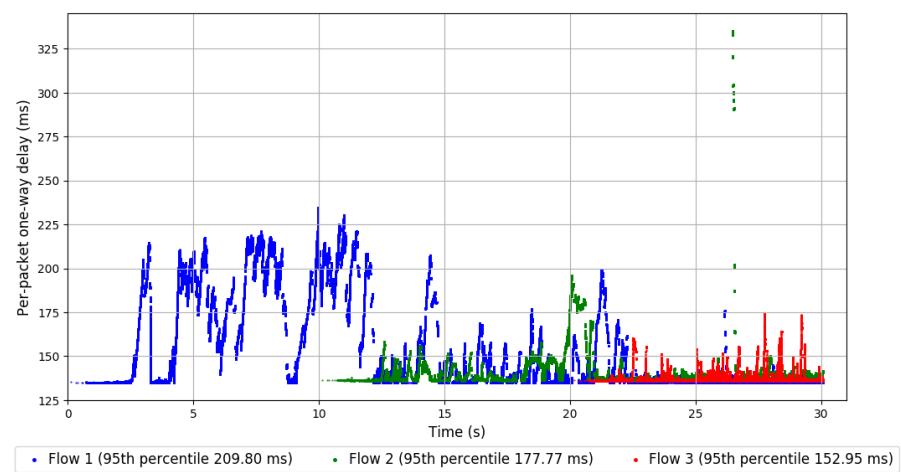
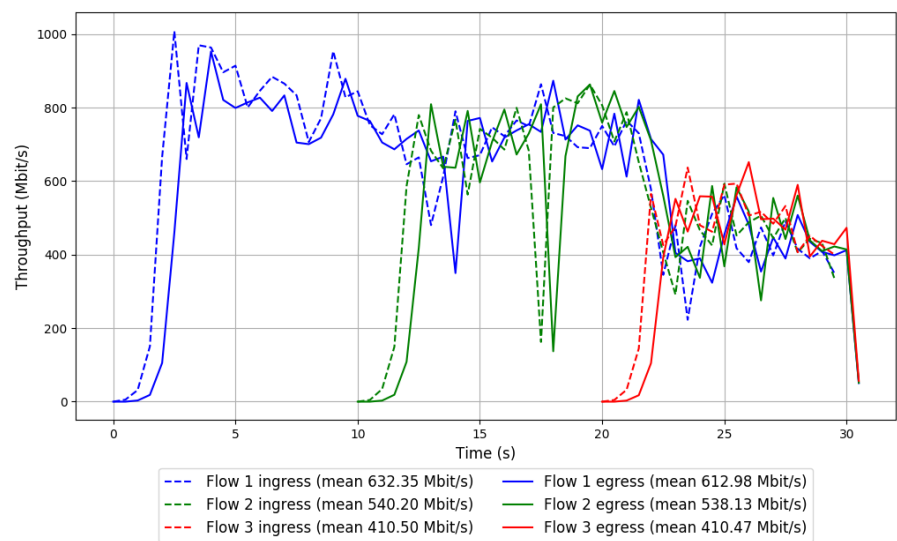


Run 2: Statistics of FillP

Start at: 2018-10-02 21:18:28
End at: 2018-10-02 21:18:58
Local clock offset: -0.03 ms
Remote clock offset: -0.099 ms

Below is generated by plot.py at 2018-10-03 00:41:25
Datalink statistics
-- Total of 3 flows:
Average throughput: 1106.91 Mbit/s
95th percentile per-packet one-way delay: 204.290 ms
Loss rate: 1.83%
-- Flow 1:
Average throughput: 612.98 Mbit/s
95th percentile per-packet one-way delay: 209.802 ms
Loss rate: 3.06%
-- Flow 2:
Average throughput: 538.13 Mbit/s
95th percentile per-packet one-way delay: 177.770 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 410.47 Mbit/s
95th percentile per-packet one-way delay: 152.954 ms
Loss rate: 0.00%

Run 2: Report of FillP — Data Link

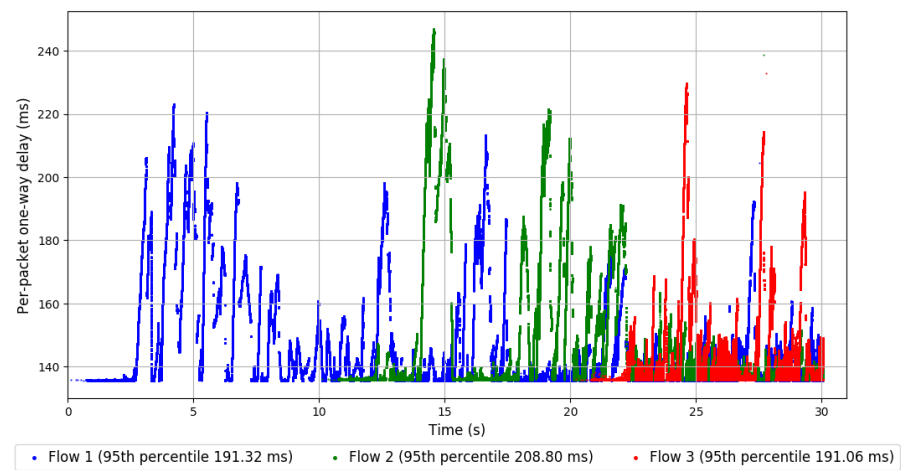
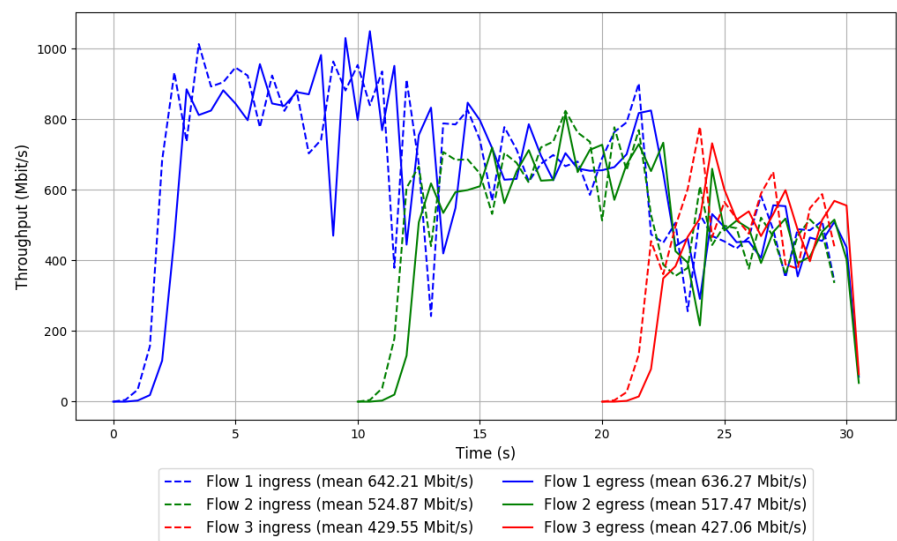


Run 3: Statistics of FillP

Start at: 2018-10-02 21:51:44
End at: 2018-10-02 21:52:14
Local clock offset: -0.372 ms
Remote clock offset: -0.119 ms

Below is generated by plot.py at 2018-10-03 00:43:10
Datalink statistics
-- Total of 3 flows:
Average throughput: 1121.38 Mbit/s
95th percentile per-packet one-way delay: 195.992 ms
Loss rate: 1.02%
-- Flow 1:
Average throughput: 636.27 Mbit/s
95th percentile per-packet one-way delay: 191.319 ms
Loss rate: 0.91%
-- Flow 2:
Average throughput: 517.47 Mbit/s
95th percentile per-packet one-way delay: 208.804 ms
Loss rate: 1.41%
-- Flow 3:
Average throughput: 427.06 Mbit/s
95th percentile per-packet one-way delay: 191.064 ms
Loss rate: 0.58%

Run 3: Report of FillP — Data Link



Run 4: Statistics of FillP

Start at: 2018-10-02 22:24:42

End at: 2018-10-02 22:25:12

Local clock offset: -0.493 ms

Remote clock offset: 0.219 ms

Below is generated by plot.py at 2018-10-03 00:45:57

Datalink statistics

-- Total of 3 flows:

Average throughput: 1178.64 Mbit/s

95th percentile per-packet one-way delay: 185.524 ms

Loss rate: 0.12%

-- Flow 1:

Average throughput: 642.08 Mbit/s

95th percentile per-packet one-way delay: 184.421 ms

Loss rate: 0.08%

-- Flow 2:

Average throughput: 573.60 Mbit/s

95th percentile per-packet one-way delay: 190.531 ms

Loss rate: 0.20%

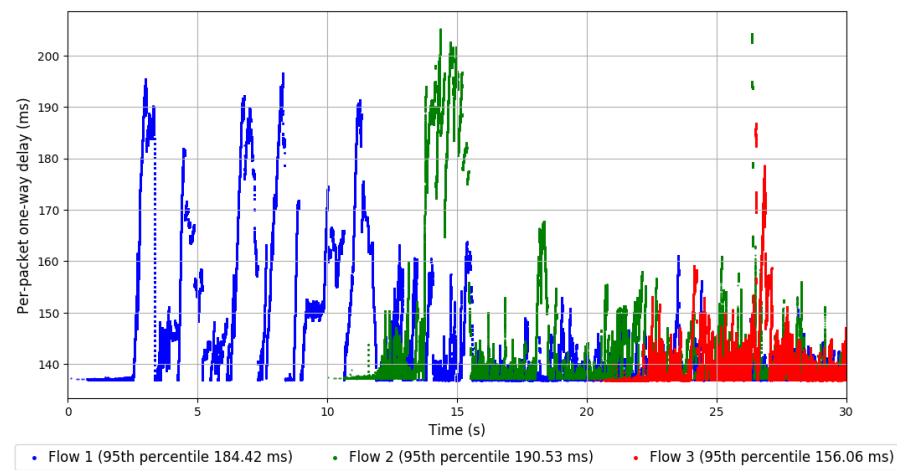
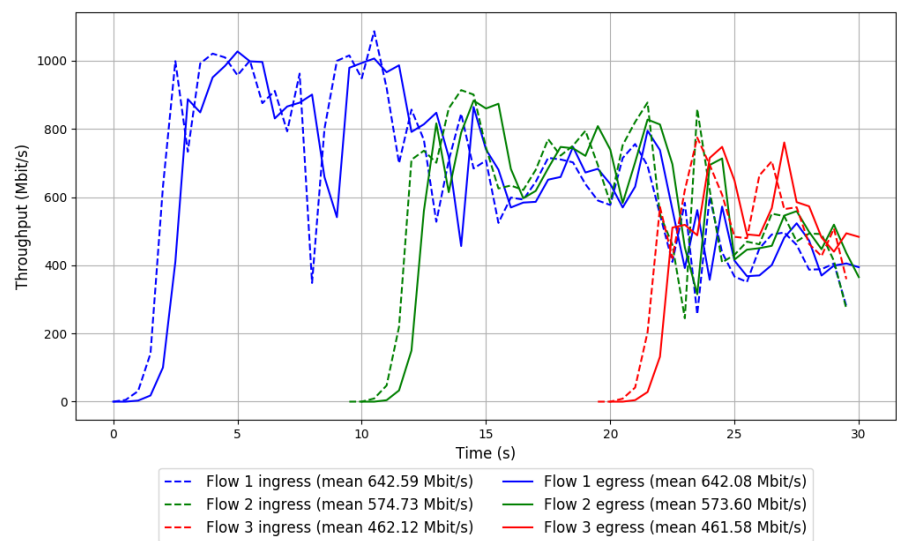
-- Flow 3:

Average throughput: 461.58 Mbit/s

95th percentile per-packet one-way delay: 156.064 ms

Loss rate: 0.10%

Run 4: Report of FillP — Data Link

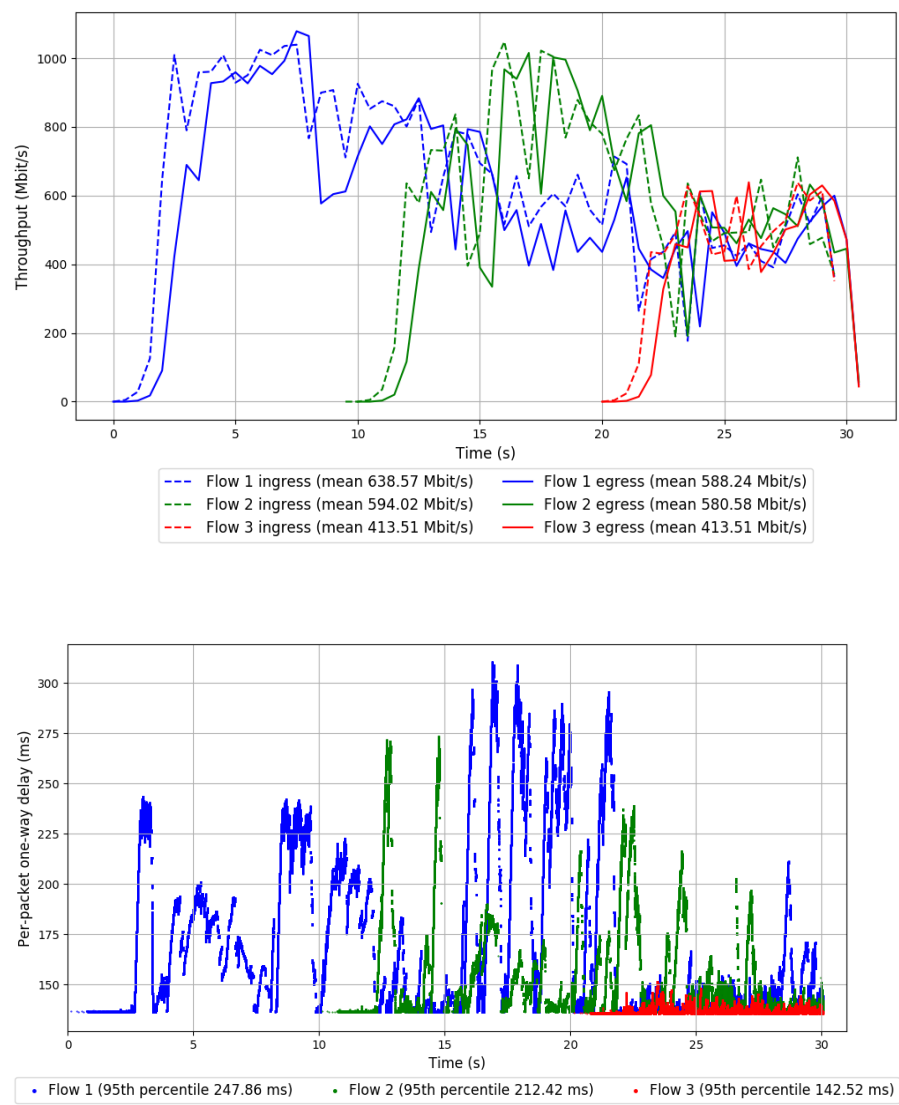


Run 5: Statistics of FillP

Start at: 2018-10-02 22:57:29
End at: 2018-10-02 22:57:59
Local clock offset: -0.339 ms
Remote clock offset: -0.036 ms

Below is generated by plot.py at 2018-10-03 00:46:18
Datalink statistics
-- Total of 3 flows:
Average throughput: 1111.40 Mbit/s
95th percentile per-packet one-way delay: 233.201 ms
Loss rate: 5.05%
-- Flow 1:
Average throughput: 588.24 Mbit/s
95th percentile per-packet one-way delay: 247.857 ms
Loss rate: 7.88%
-- Flow 2:
Average throughput: 580.58 Mbit/s
95th percentile per-packet one-way delay: 212.419 ms
Loss rate: 2.24%
-- Flow 3:
Average throughput: 413.51 Mbit/s
95th percentile per-packet one-way delay: 142.521 ms
Loss rate: 0.00%

Run 5: Report of FillP — Data Link

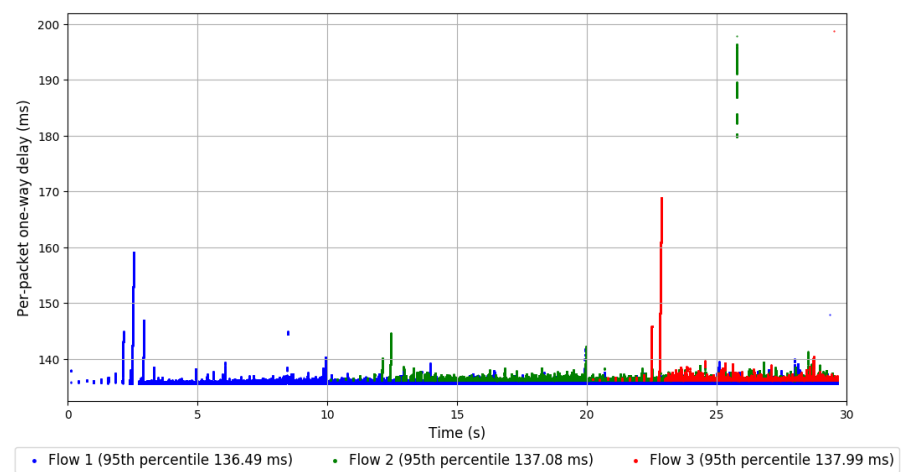
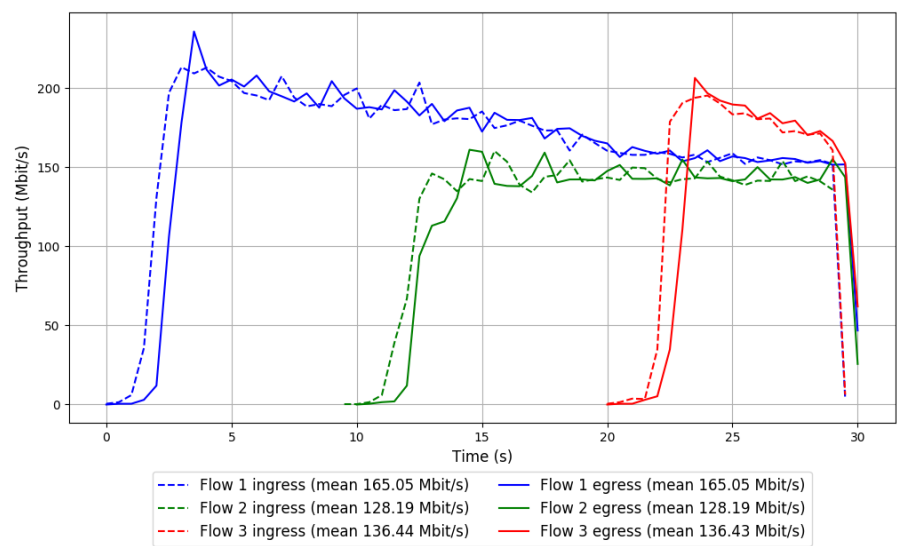


```
Run 1: Statistics of Indigo

Start at: 2018-10-02 21:02:52
End at: 2018-10-02 21:03:22
Local clock offset: -0.129 ms
Remote clock offset: -0.029 ms

# Below is generated by plot.py at 2018-10-03 00:46:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 293.39 Mbit/s
95th percentile per-packet one-way delay: 136.917 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 165.05 Mbit/s
95th percentile per-packet one-way delay: 136.488 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 128.19 Mbit/s
95th percentile per-packet one-way delay: 137.079 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 136.43 Mbit/s
95th percentile per-packet one-way delay: 137.986 ms
Loss rate: 0.01%
```

Run 1: Report of Indigo — Data Link

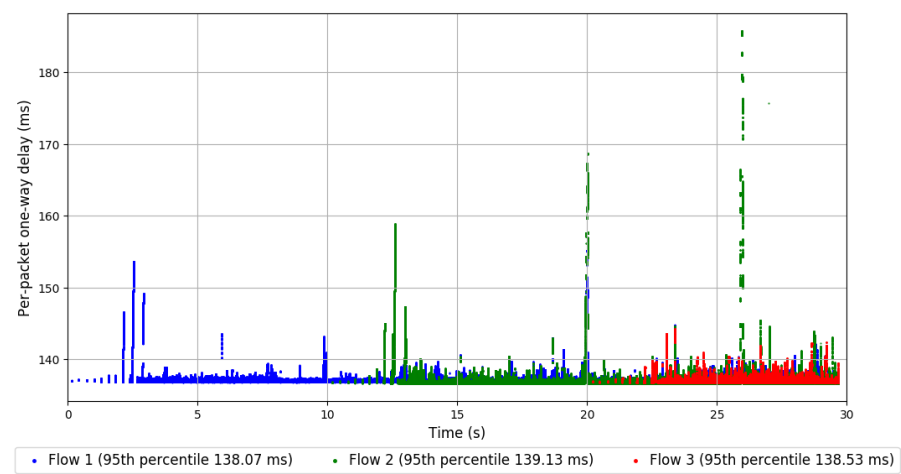
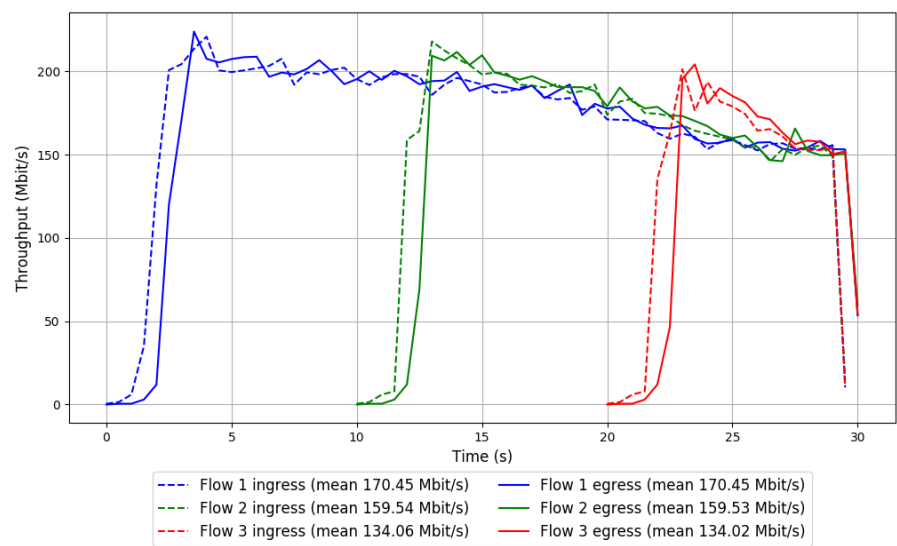


Run 2: Statistics of Indigo

Start at: 2018-10-02 21:36:00
End at: 2018-10-02 21:36:30
Local clock offset: -0.392 ms
Remote clock offset: 0.3 ms

Below is generated by plot.py at 2018-10-03 00:46:18
Datalink statistics
-- Total of 3 flows:
Average throughput: 318.65 Mbit/s
95th percentile per-packet one-way delay: 138.405 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 170.45 Mbit/s
95th percentile per-packet one-way delay: 138.068 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 159.53 Mbit/s
95th percentile per-packet one-way delay: 139.130 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 134.02 Mbit/s
95th percentile per-packet one-way delay: 138.525 ms
Loss rate: 0.00%

Run 2: Report of Indigo — Data Link

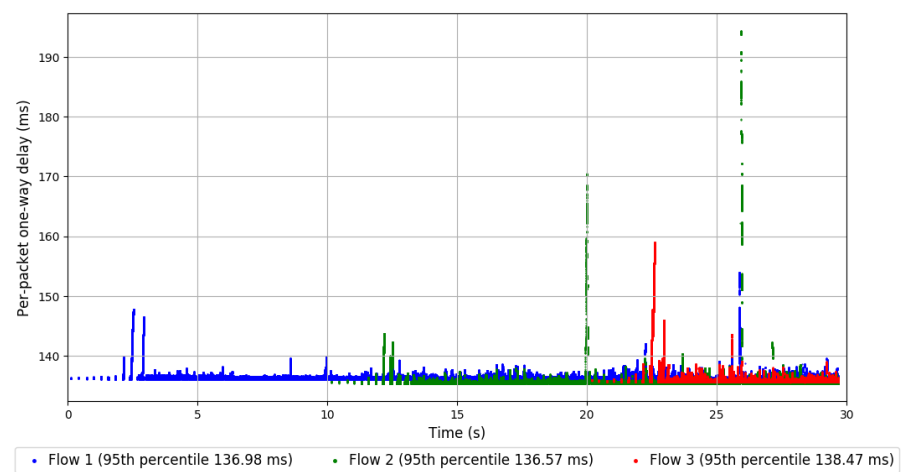
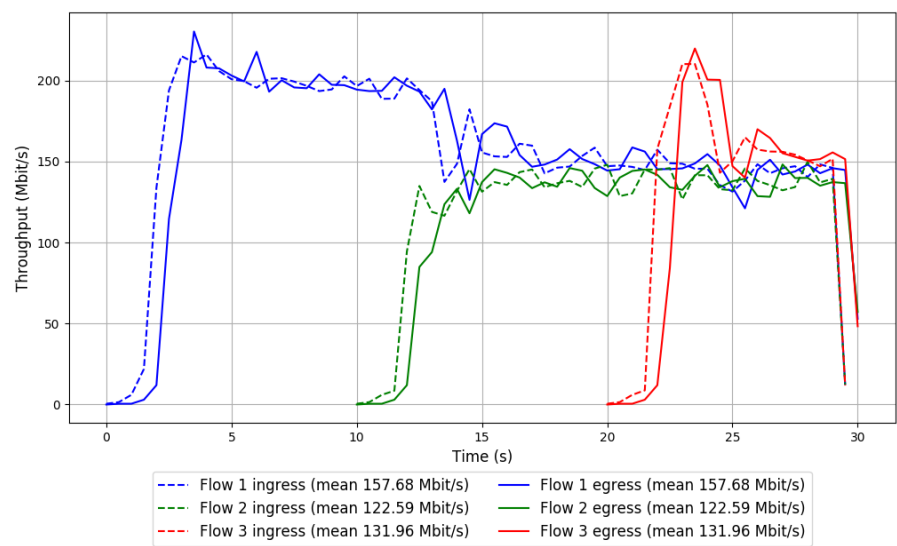


Run 3: Statistics of Indigo

Start at: 2018-10-02 22:09:02
End at: 2018-10-02 22:09:32
Local clock offset: -0.244 ms
Remote clock offset: -0.182 ms

Below is generated by plot.py at 2018-10-03 00:46:18
Datalink statistics
-- Total of 3 flows:
Average throughput: 281.07 Mbit/s
95th percentile per-packet one-way delay: 137.015 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 157.68 Mbit/s
95th percentile per-packet one-way delay: 136.978 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 122.59 Mbit/s
95th percentile per-packet one-way delay: 136.566 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 131.96 Mbit/s
95th percentile per-packet one-way delay: 138.475 ms
Loss rate: 0.00%

Run 3: Report of Indigo — Data Link

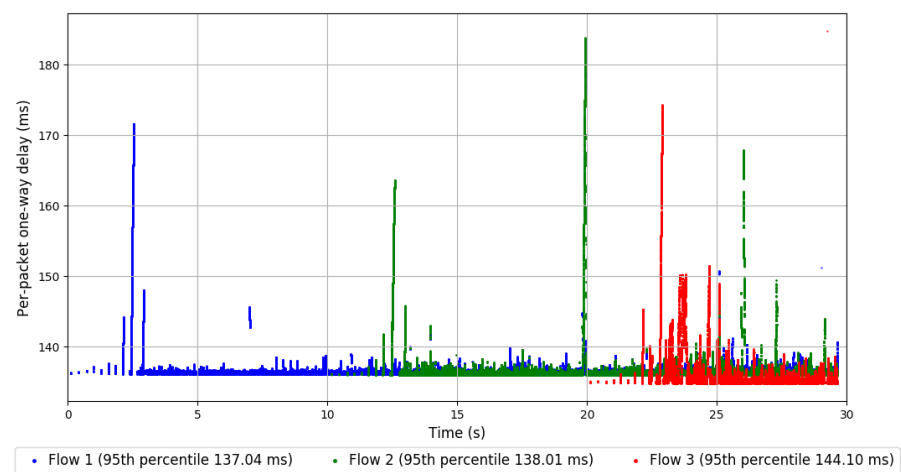
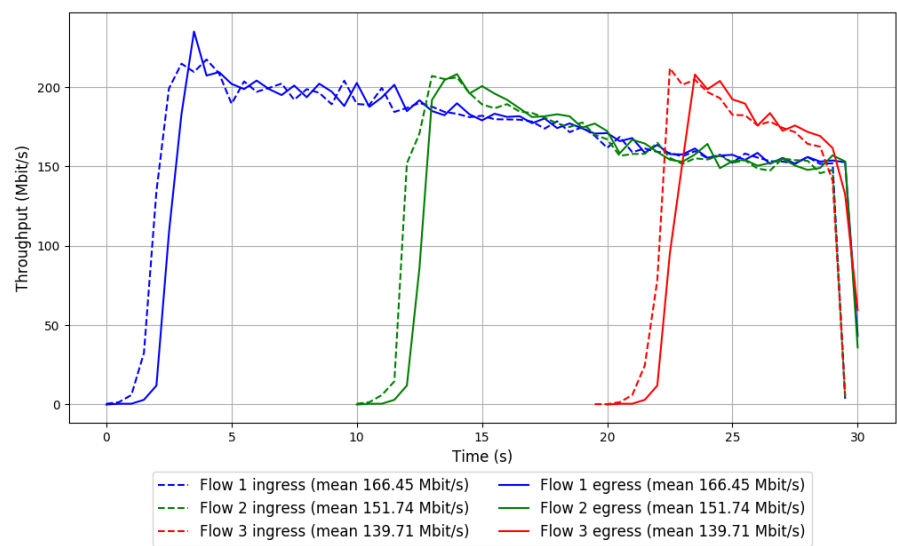


Run 4: Statistics of Indigo

Start at: 2018-10-02 22:42:13
End at: 2018-10-02 22:42:43
Local clock offset: -0.002 ms
Remote clock offset: -0.159 ms

Below is generated by plot.py at 2018-10-03 00:46:18
Datalink statistics
-- Total of 3 flows:
Average throughput: 311.67 Mbit/s
95th percentile per-packet one-way delay: 137.803 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 166.45 Mbit/s
95th percentile per-packet one-way delay: 137.041 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 151.74 Mbit/s
95th percentile per-packet one-way delay: 138.015 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 139.71 Mbit/s
95th percentile per-packet one-way delay: 144.100 ms
Loss rate: 0.00%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-10-02 23:14:50

End at: 2018-10-02 23:15:20

Local clock offset: -0.322 ms

Remote clock offset: -0.32 ms

Below is generated by plot.py at 2018-10-03 00:46:18

Datalink statistics

-- Total of 3 flows:

Average throughput: 312.03 Mbit/s

95th percentile per-packet one-way delay: 136.819 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 160.08 Mbit/s

95th percentile per-packet one-way delay: 136.814 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 159.73 Mbit/s

95th percentile per-packet one-way delay: 136.476 ms

Loss rate: 0.00%

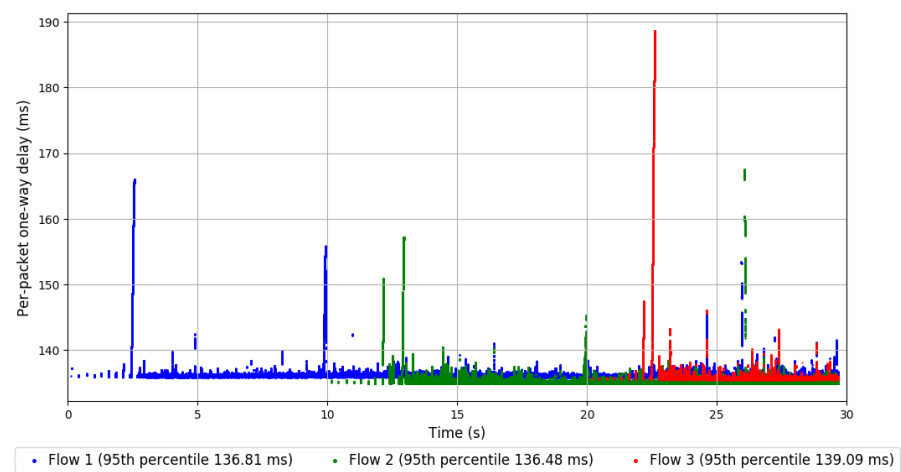
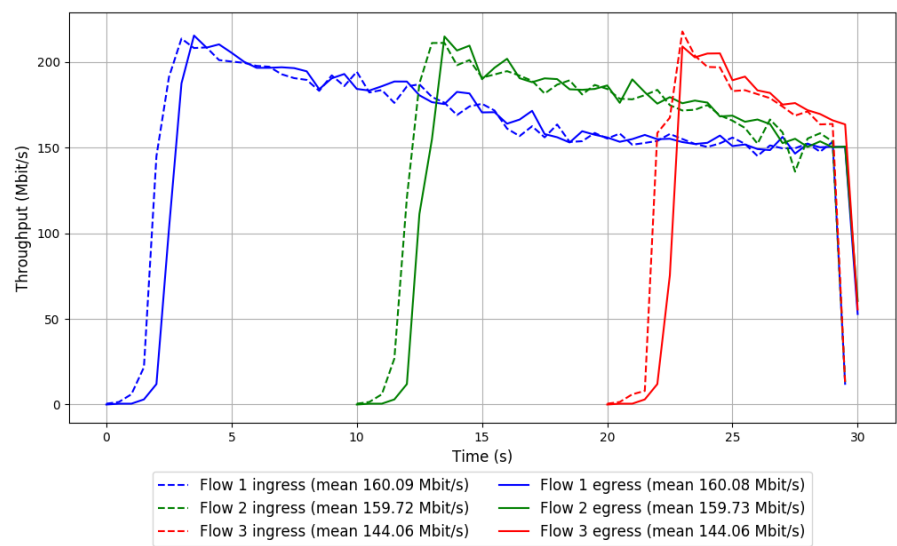
-- Flow 3:

Average throughput: 144.06 Mbit/s

95th percentile per-packet one-way delay: 139.086 ms

Loss rate: 0.00%

Run 5: Report of Indigo — Data Link

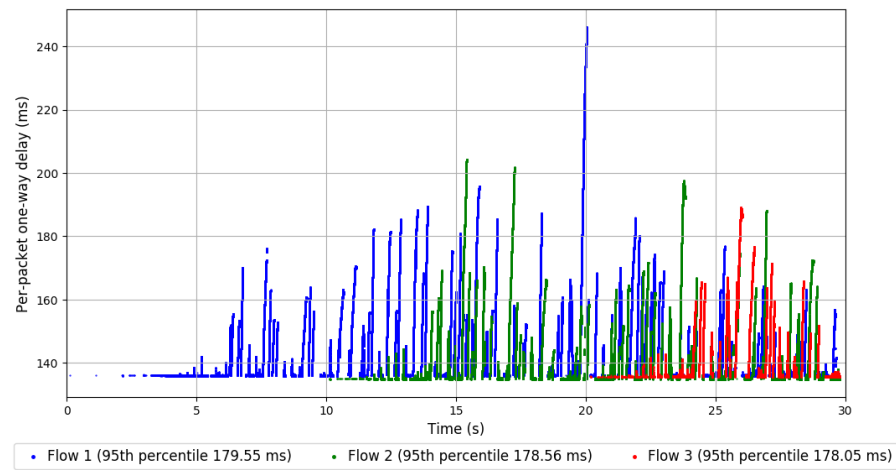
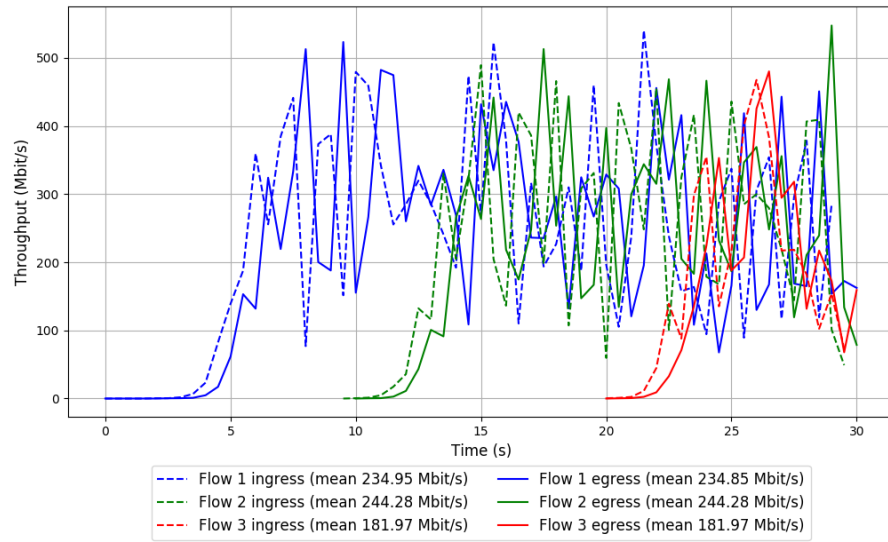


Run 1: Statistics of Indigo-96d2da3

Start at: 2018-10-02 20:54:10
End at: 2018-10-02 20:54:40
Local clock offset: -0.297 ms
Remote clock offset: -0.031 ms

Below is generated by plot.py at 2018-10-03 00:46:18
Datalink statistics
-- Total of 3 flows:
Average throughput: 454.55 Mbit/s
95th percentile per-packet one-way delay: 179.218 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 234.85 Mbit/s
95th percentile per-packet one-way delay: 179.554 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 244.28 Mbit/s
95th percentile per-packet one-way delay: 178.562 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 181.97 Mbit/s
95th percentile per-packet one-way delay: 178.046 ms
Loss rate: 0.00%

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



Run 2: Statistics of Indigo-96d2da3

Start at: 2018-10-02 21:27:12

End at: 2018-10-02 21:27:42

Local clock offset: -0.08 ms

Remote clock offset: 0.291 ms

Below is generated by plot.py at 2018-10-03 00:46:18

Datalink statistics

-- Total of 3 flows:

Average throughput: 477.43 Mbit/s

95th percentile per-packet one-way delay: 172.740 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 258.89 Mbit/s

95th percentile per-packet one-way delay: 174.221 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 238.96 Mbit/s

95th percentile per-packet one-way delay: 171.596 ms

Loss rate: 0.00%

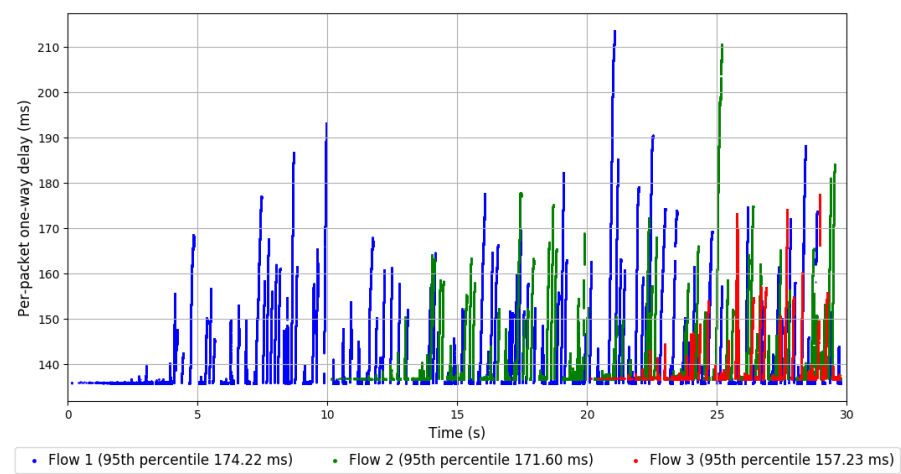
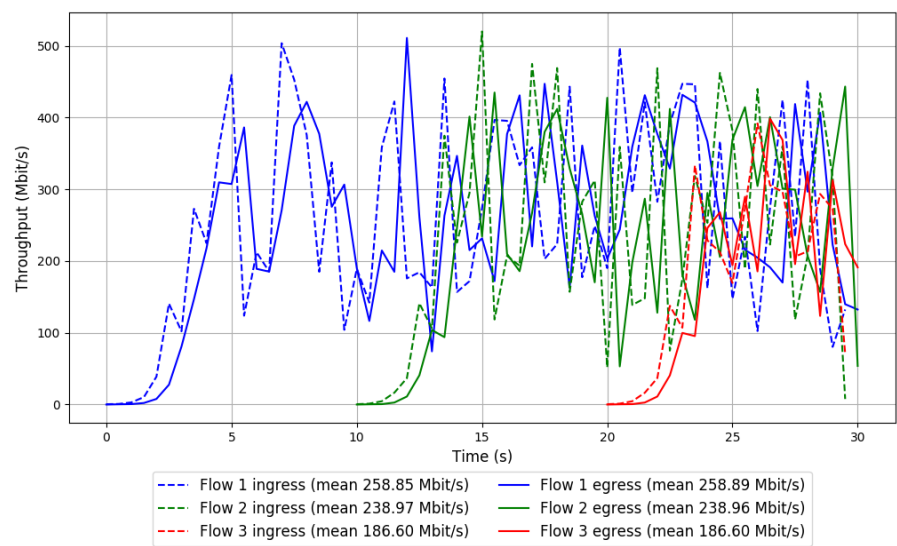
-- Flow 3:

Average throughput: 186.60 Mbit/s

95th percentile per-packet one-way delay: 157.232 ms

Loss rate: 0.00%

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

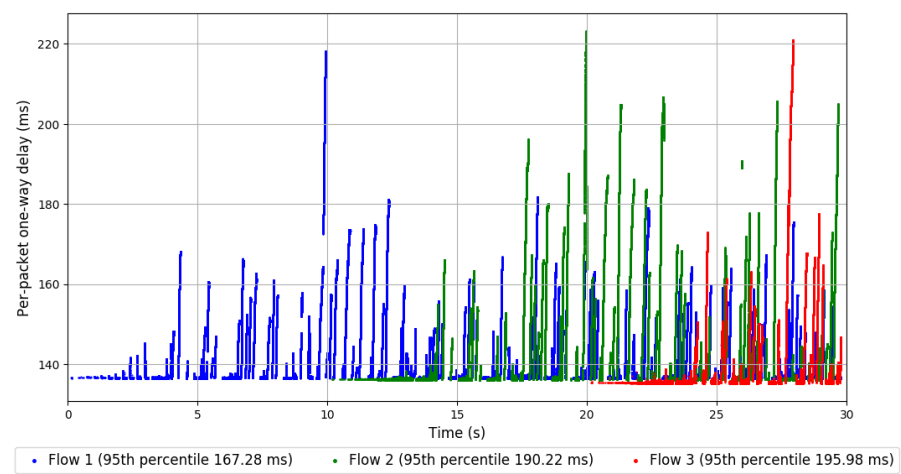
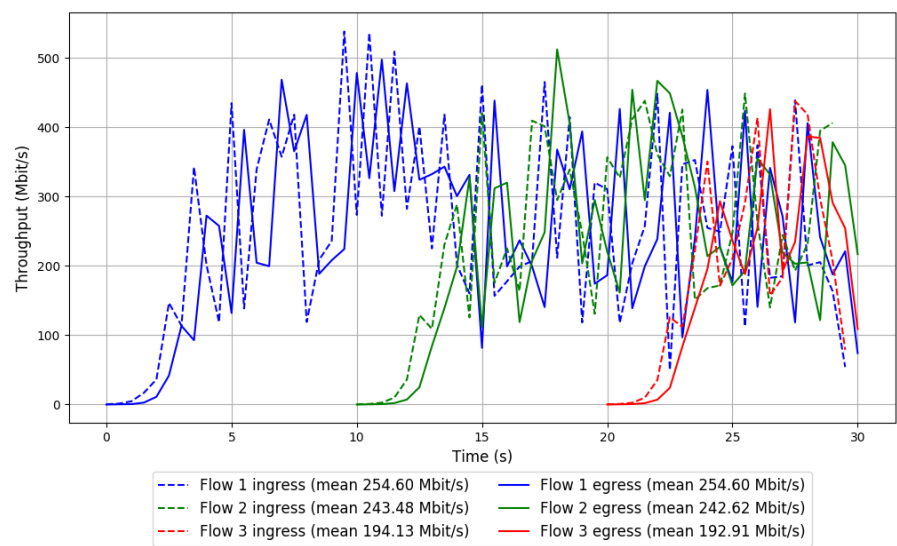


Run 3: Statistics of Indigo-96d2da3

Start at: 2018-10-02 22:00:21
End at: 2018-10-02 22:00:51
Local clock offset: -0.084 ms
Remote clock offset: -0.119 ms

Below is generated by plot.py at 2018-10-03 00:51:22
Datalink statistics
-- Total of 3 flows:
Average throughput: 476.71 Mbit/s
95th percentile per-packet one-way delay: 179.636 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 254.60 Mbit/s
95th percentile per-packet one-way delay: 167.277 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 242.62 Mbit/s
95th percentile per-packet one-way delay: 190.221 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 192.91 Mbit/s
95th percentile per-packet one-way delay: 195.979 ms
Loss rate: 0.60%

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

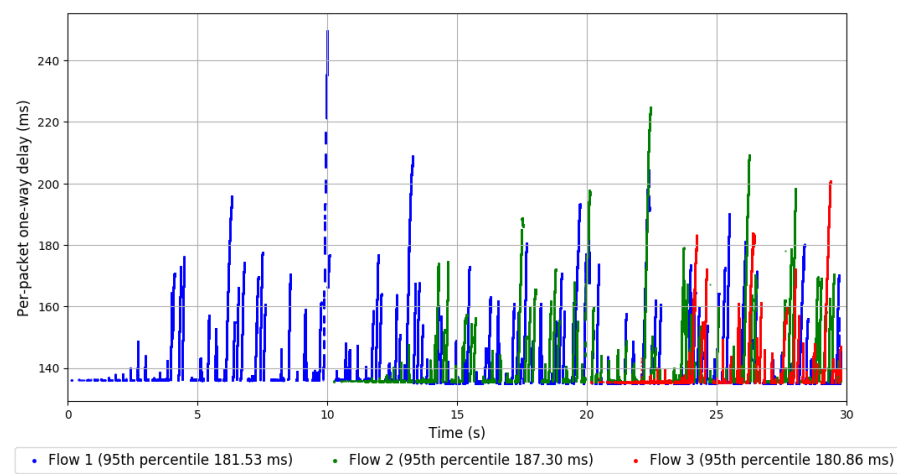
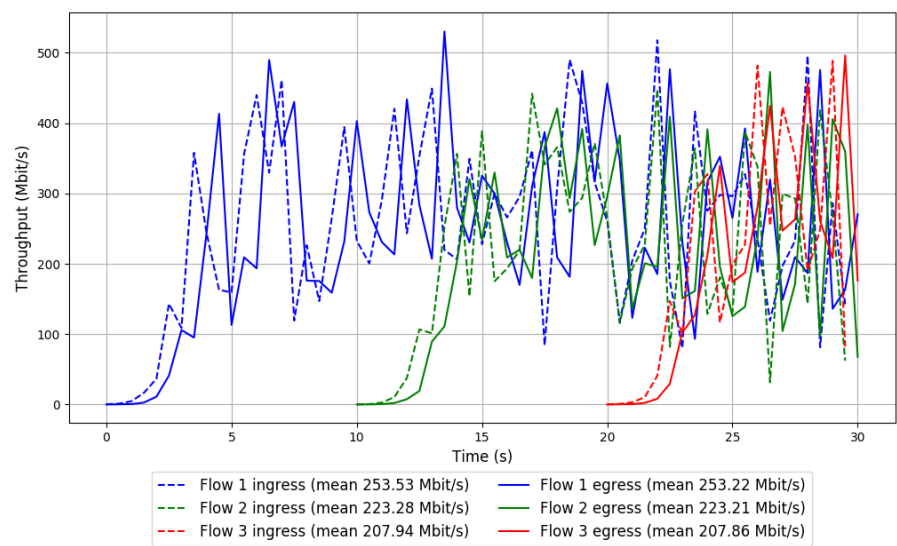


Run 4: Statistics of Indigo-96d2da3

Start at: 2018-10-02 22:33:31
End at: 2018-10-02 22:34:01
Local clock offset: -0.031 ms
Remote clock offset: -0.121 ms

Below is generated by plot.py at 2018-10-03 00:51:47
Datalink statistics
-- Total of 3 flows:
Average throughput: 467.82 Mbit/s
95th percentile per-packet one-way delay: 182.906 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 253.22 Mbit/s
95th percentile per-packet one-way delay: 181.535 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 223.21 Mbit/s
95th percentile per-packet one-way delay: 187.298 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 207.86 Mbit/s
95th percentile per-packet one-way delay: 180.856 ms
Loss rate: 0.00%

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

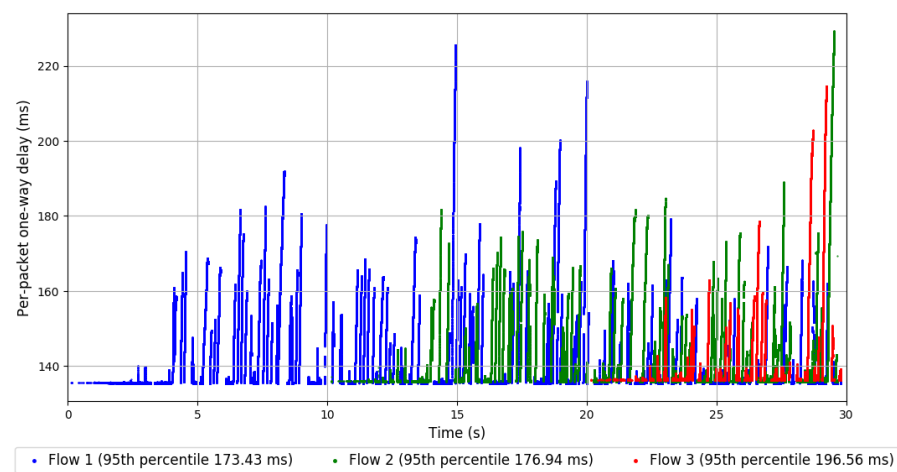
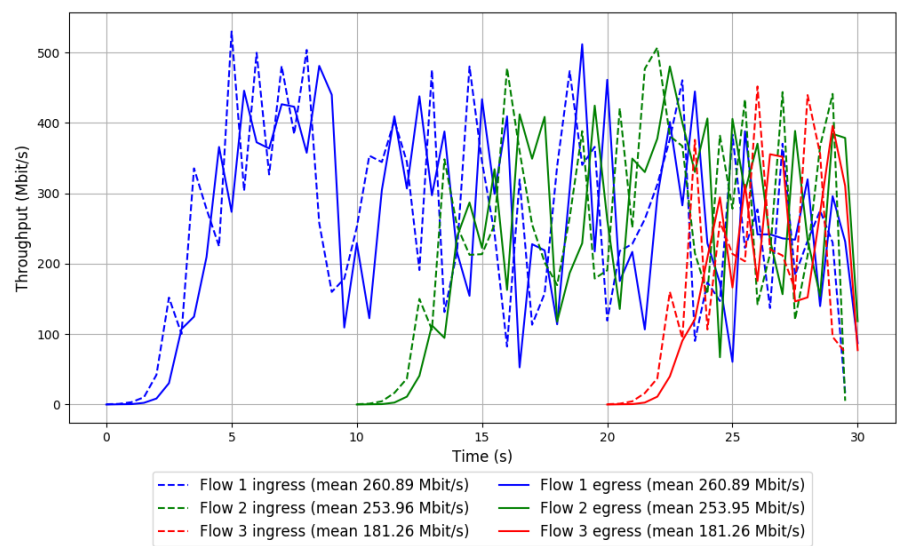


Run 5: Statistics of Indigo-96d2da3

Start at: 2018-10-02 23:06:01
End at: 2018-10-02 23:06:31
Local clock offset: -0.424 ms
Remote clock offset: -0.353 ms

Below is generated by plot.py at 2018-10-03 00:52:26
Datalink statistics
-- Total of 3 flows:
Average throughput: 486.82 Mbit/s
95th percentile per-packet one-way delay: 176.452 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 260.89 Mbit/s
95th percentile per-packet one-way delay: 173.427 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 253.95 Mbit/s
95th percentile per-packet one-way delay: 176.944 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 181.26 Mbit/s
95th percentile per-packet one-way delay: 196.558 ms
Loss rate: 0.00%

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

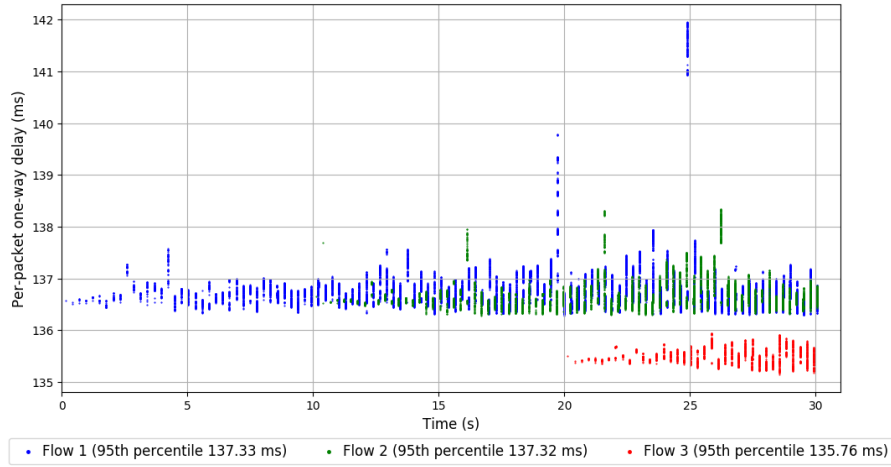
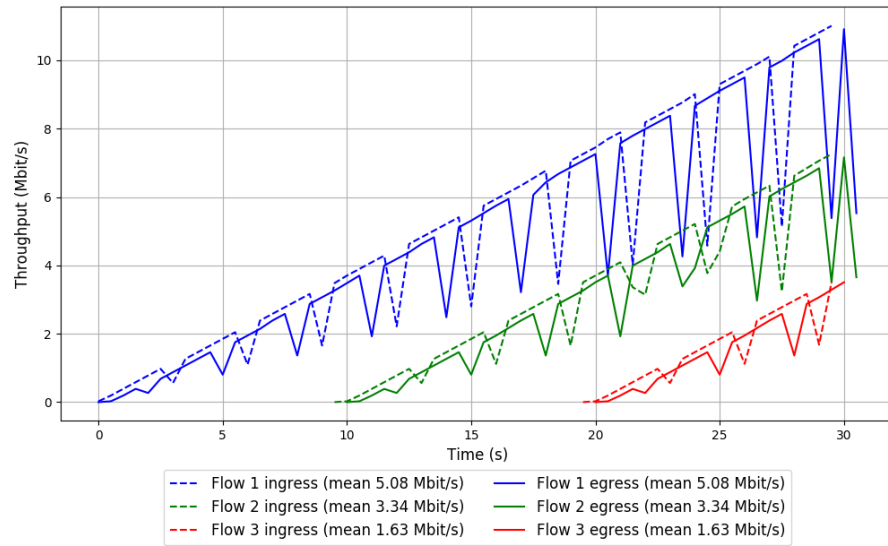


```
Run 1: Statistics of LEDBAT

Start at: 2018-10-02 20:55:58
End at: 2018-10-02 20:56:28
Local clock offset: -0.277 ms
Remote clock offset: -0.05 ms

# Below is generated by plot.py at 2018-10-03 00:52:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.84 Mbit/s
95th percentile per-packet one-way delay: 137.306 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 5.08 Mbit/s
95th percentile per-packet one-way delay: 137.329 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 3.34 Mbit/s
95th percentile per-packet one-way delay: 137.322 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 1.63 Mbit/s
95th percentile per-packet one-way delay: 135.759 ms
Loss rate: 0.00%
```

Run 1: Report of LEDBAT — Data Link

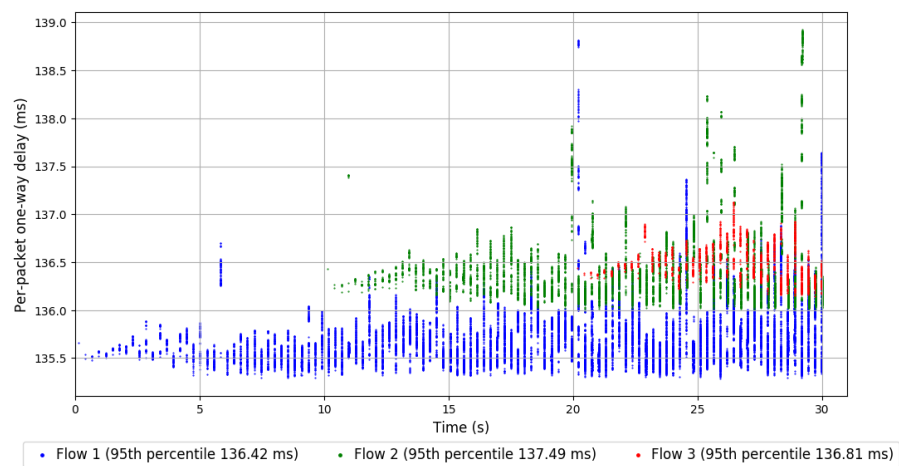
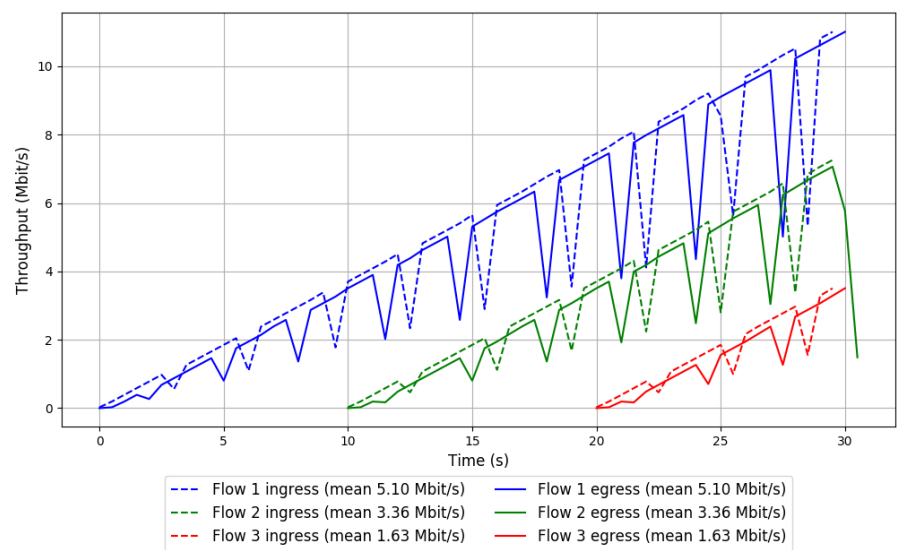


Run 2: Statistics of LEDBAT

Start at: 2018-10-02 21:29:00
End at: 2018-10-02 21:29:30
Local clock offset: -0.051 ms
Remote clock offset: -0.078 ms

Below is generated by plot.py at 2018-10-03 00:52:26
Datalink statistics
-- Total of 3 flows:
Average throughput: 7.86 Mbit/s
95th percentile per-packet one-way delay: 136.800 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 5.10 Mbit/s
95th percentile per-packet one-way delay: 136.424 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 3.36 Mbit/s
95th percentile per-packet one-way delay: 137.485 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 1.63 Mbit/s
95th percentile per-packet one-way delay: 136.812 ms
Loss rate: 0.00%

Run 2: Report of LEDBAT — Data Link

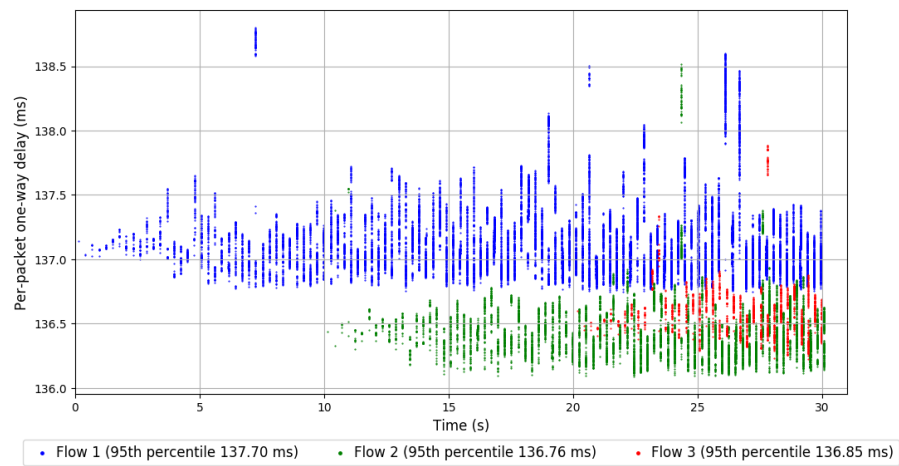
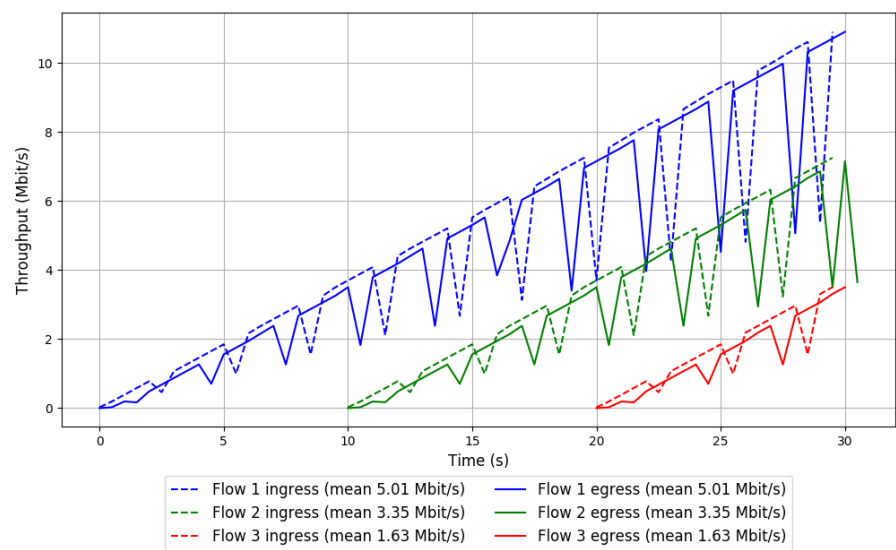


Run 3: Statistics of LEDBAT

Start at: 2018-10-02 22:02:09
End at: 2018-10-02 22:02:39
Local clock offset: -0.417 ms
Remote clock offset: 0.246 ms

Below is generated by plot.py at 2018-10-03 00:52:26
Datalink statistics
-- Total of 3 flows:
Average throughput: 7.75 Mbit/s
95th percentile per-packet one-way delay: 137.549 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 5.01 Mbit/s
95th percentile per-packet one-way delay: 137.698 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 3.35 Mbit/s
95th percentile per-packet one-way delay: 136.758 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 1.63 Mbit/s
95th percentile per-packet one-way delay: 136.855 ms
Loss rate: 0.00%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2018-10-02 22:35:18

End at: 2018-10-02 22:35:48

Local clock offset: -0.414 ms

Remote clock offset: 0.206 ms

Below is generated by plot.py at 2018-10-03 00:52:26

Datalink statistics

-- Total of 3 flows:

Average throughput: 7.83 Mbit/s

95th percentile per-packet one-way delay: 137.404 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 5.09 Mbit/s

95th percentile per-packet one-way delay: 136.750 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 3.34 Mbit/s

95th percentile per-packet one-way delay: 137.666 ms

Loss rate: 0.00%

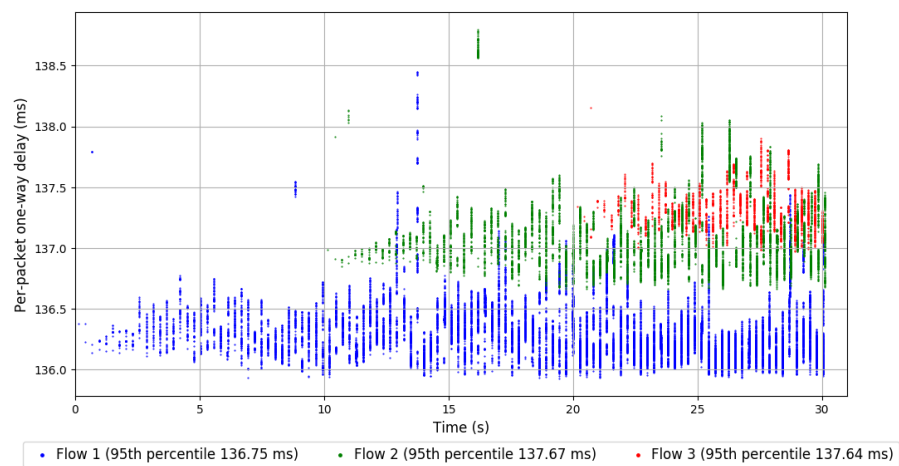
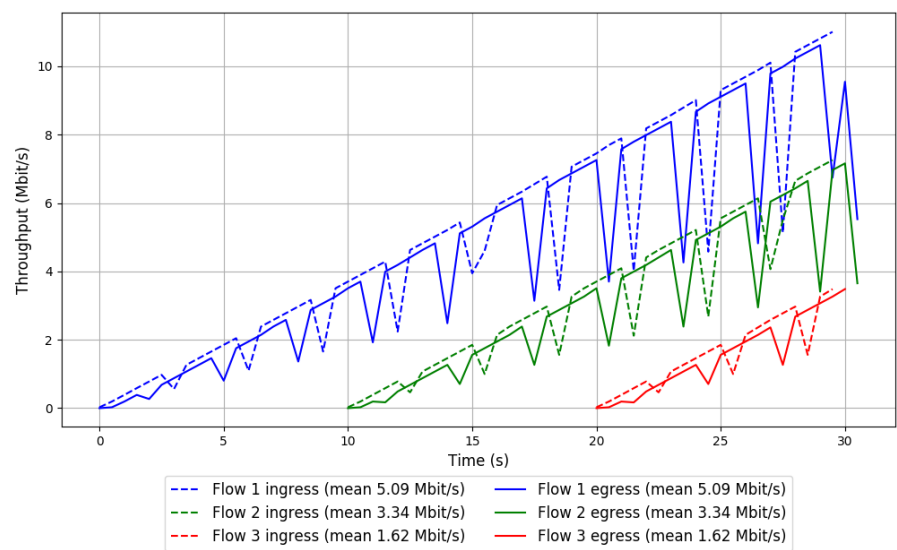
-- Flow 3:

Average throughput: 1.62 Mbit/s

95th percentile per-packet one-way delay: 137.642 ms

Loss rate: 0.00%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-10-02 23:07:50

End at: 2018-10-02 23:08:20

Local clock offset: -0.088 ms

Remote clock offset: 0.026 ms

Below is generated by plot.py at 2018-10-03 00:52:26

Datalink statistics

-- Total of 3 flows:

Average throughput: 7.76 Mbit/s

95th percentile per-packet one-way delay: 136.476 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 5.02 Mbit/s

95th percentile per-packet one-way delay: 136.309 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 3.35 Mbit/s

95th percentile per-packet one-way delay: 135.853 ms

Loss rate: 0.00%

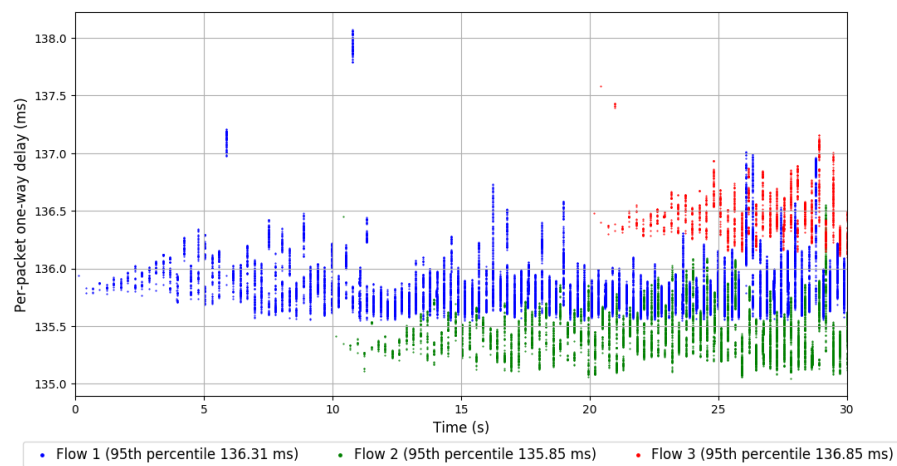
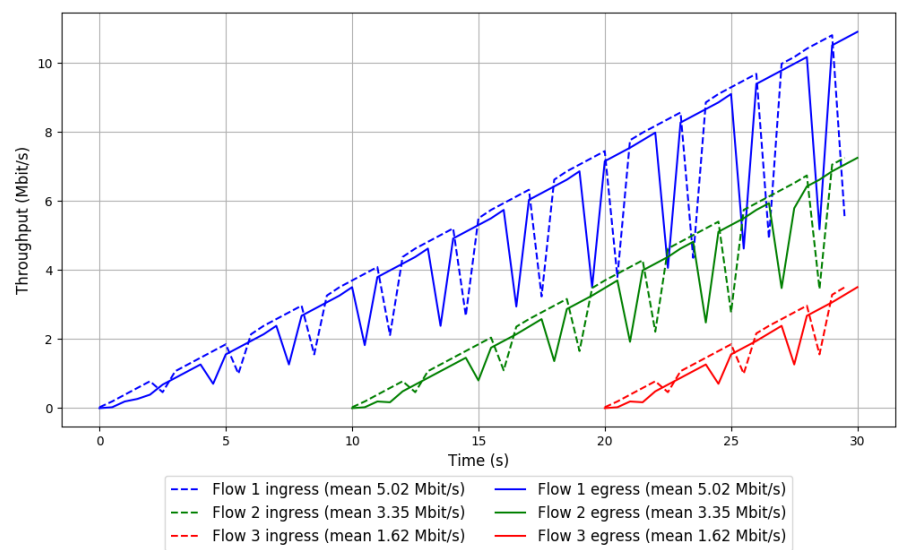
-- Flow 3:

Average throughput: 1.62 Mbit/s

95th percentile per-packet one-way delay: 136.853 ms

Loss rate: 0.00%

Run 5: Report of LEDBAT — Data Link

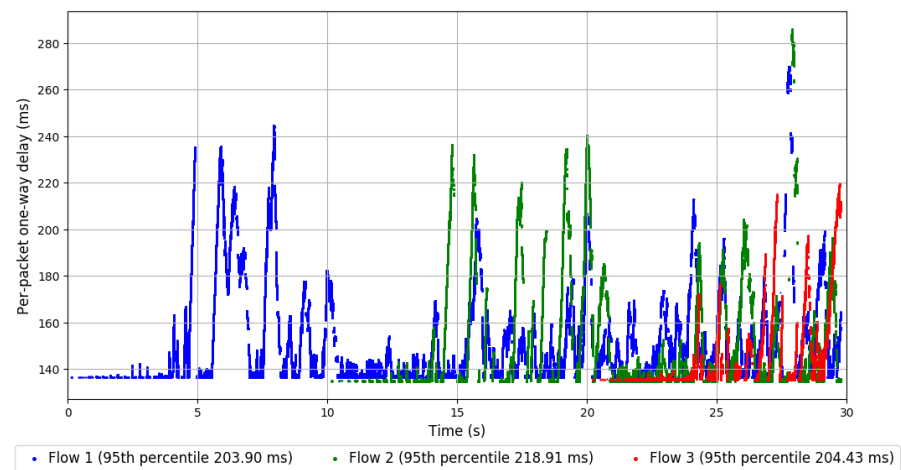
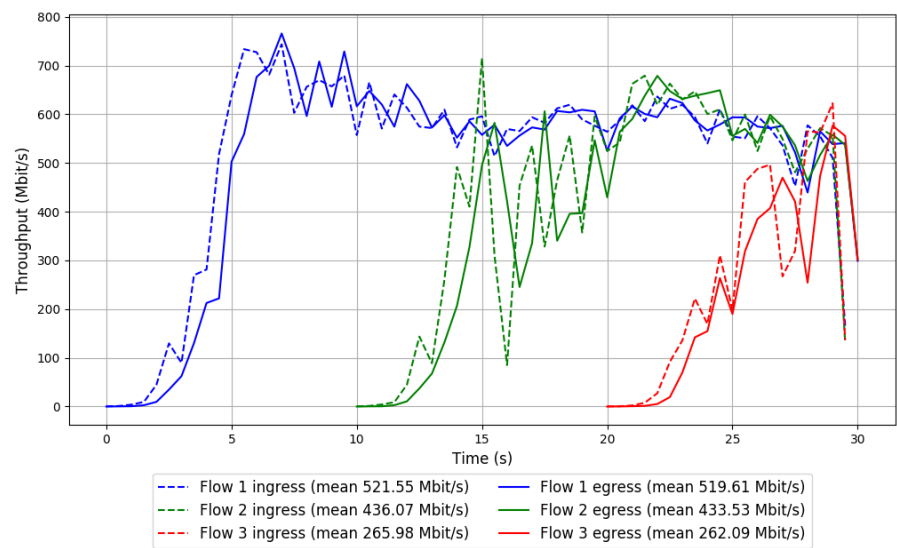


Run 1: Statistics of Indigo-Muses

Start at: 2018-10-02 20:59:21
End at: 2018-10-02 20:59:51
Local clock offset: -0.238 ms
Remote clock offset: -0.032 ms

Below is generated by plot.py at 2018-10-03 01:03:22
Datalink statistics
-- Total of 3 flows:
Average throughput: 891.16 Mbit/s
95th percentile per-packet one-way delay: 207.581 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 519.61 Mbit/s
95th percentile per-packet one-way delay: 203.899 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 433.53 Mbit/s
95th percentile per-packet one-way delay: 218.907 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 262.09 Mbit/s
95th percentile per-packet one-way delay: 204.427 ms
Loss rate: 1.47%

Run 1: Report of Indigo-Muses — Data Link

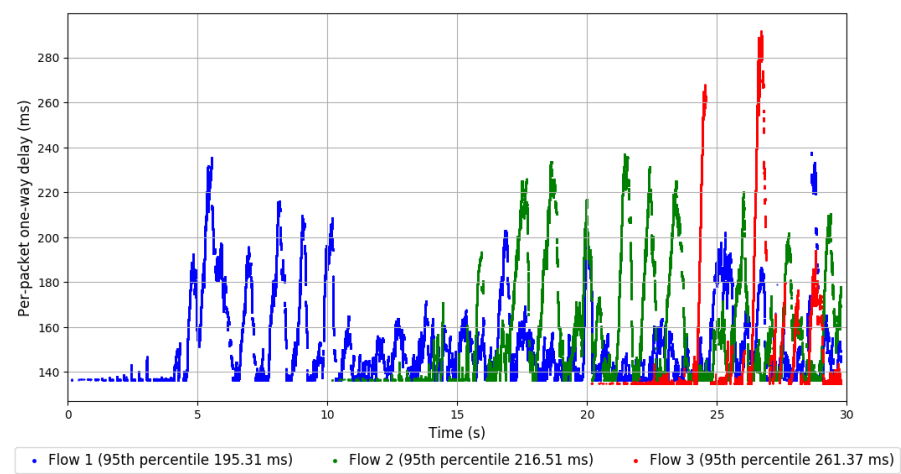
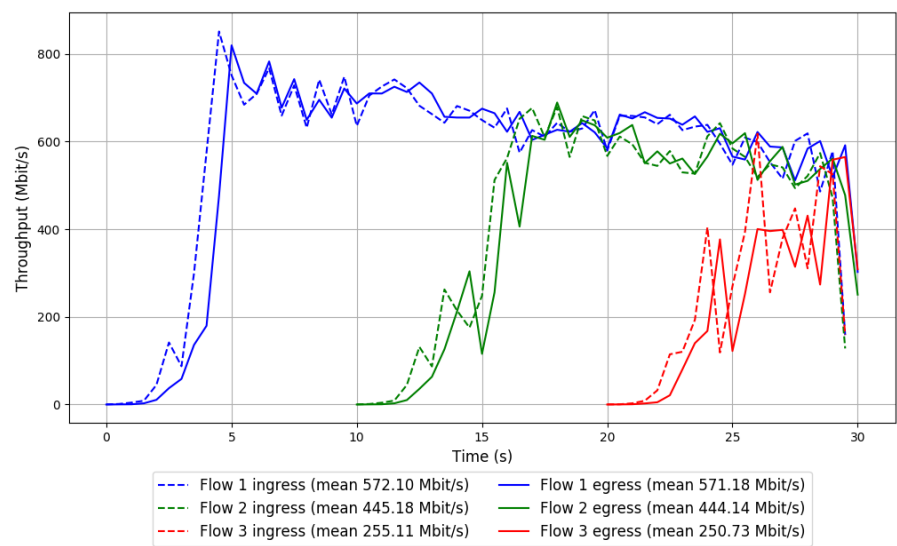


Run 2: Statistics of Indigo-Muses

Start at: 2018-10-02 21:32:28
End at: 2018-10-02 21:32:58
Local clock offset: -0.46 ms
Remote clock offset: -0.426 ms

Below is generated by plot.py at 2018-10-03 01:05:05
Datalink statistics
-- Total of 3 flows:
Average throughput: 946.15 Mbit/s
95th percentile per-packet one-way delay: 209.186 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 571.18 Mbit/s
95th percentile per-packet one-way delay: 195.313 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 444.14 Mbit/s
95th percentile per-packet one-way delay: 216.511 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 250.73 Mbit/s
95th percentile per-packet one-way delay: 261.370 ms
Loss rate: 1.72%

Run 2: Report of Indigo-Muses — Data Link



Run 3: Statistics of Indigo-Muses

Start at: 2018-10-02 22:05:31

End at: 2018-10-02 22:06:01

Local clock offset: -0.261 ms

Remote clock offset: -0.16 ms

Below is generated by plot.py at 2018-10-03 01:05:05

Datalink statistics

-- Total of 3 flows:

Average throughput: 902.34 Mbit/s

95th percentile per-packet one-way delay: 211.420 ms

Loss rate: 0.40%

-- Flow 1:

Average throughput: 501.44 Mbit/s

95th percentile per-packet one-way delay: 211.772 ms

Loss rate: 0.18%

-- Flow 2:

Average throughput: 464.53 Mbit/s

95th percentile per-packet one-way delay: 198.184 ms

Loss rate: 0.11%

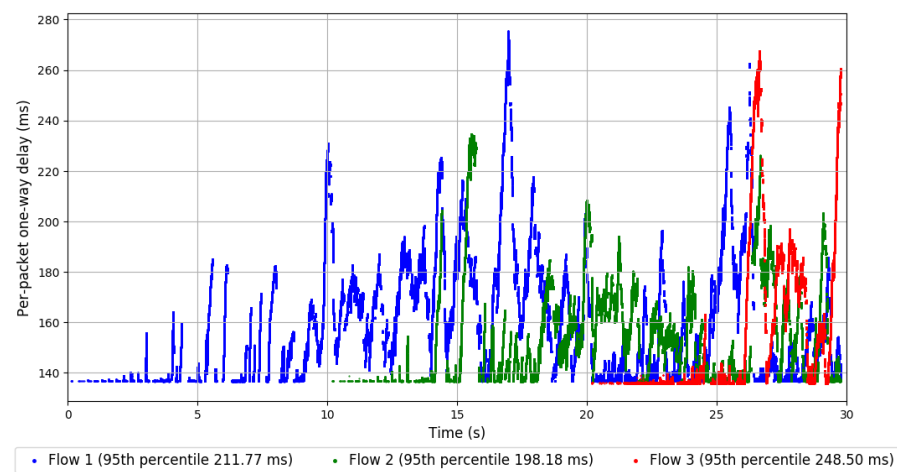
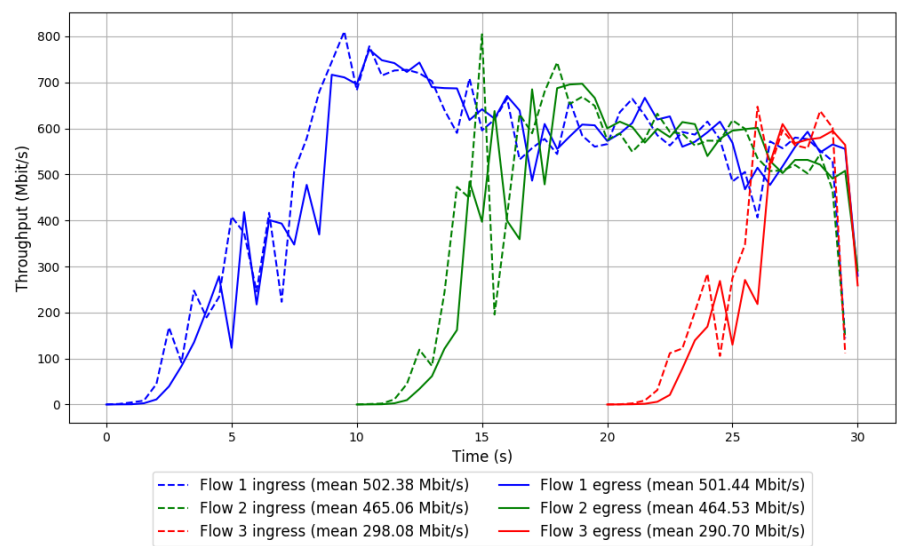
-- Flow 3:

Average throughput: 290.70 Mbit/s

95th percentile per-packet one-way delay: 248.497 ms

Loss rate: 2.46%

Run 3: Report of Indigo-Muses — Data Link



Run 4: Statistics of Indigo-Muses

Start at: 2018-10-02 22:38:43

End at: 2018-10-02 22:39:13

Local clock offset: -0.099 ms

Remote clock offset: -0.14 ms

Below is generated by plot.py at 2018-10-03 01:06:21

Datalink statistics

-- Total of 3 flows:

Average throughput: 880.33 Mbit/s

95th percentile per-packet one-way delay: 193.469 ms

Loss rate: 0.22%

-- Flow 1:

Average throughput: 501.71 Mbit/s

95th percentile per-packet one-way delay: 190.362 ms

Loss rate: 0.03%

-- Flow 2:

Average throughput: 458.87 Mbit/s

95th percentile per-packet one-way delay: 199.370 ms

Loss rate: 0.05%

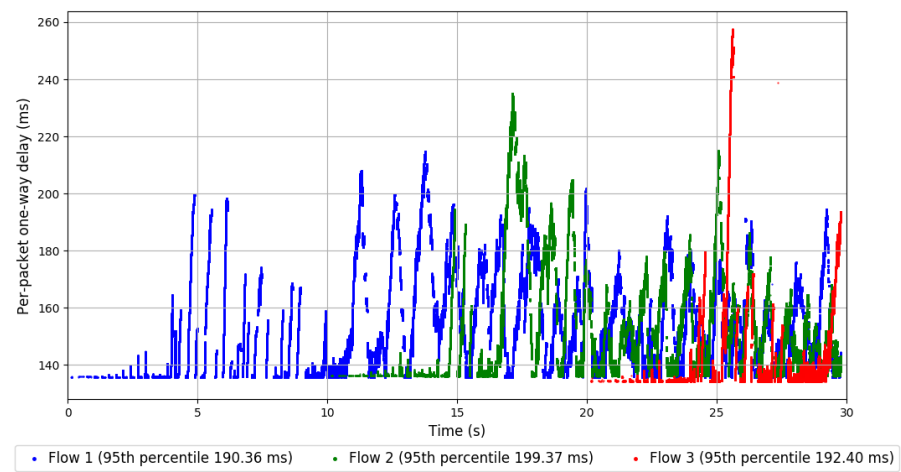
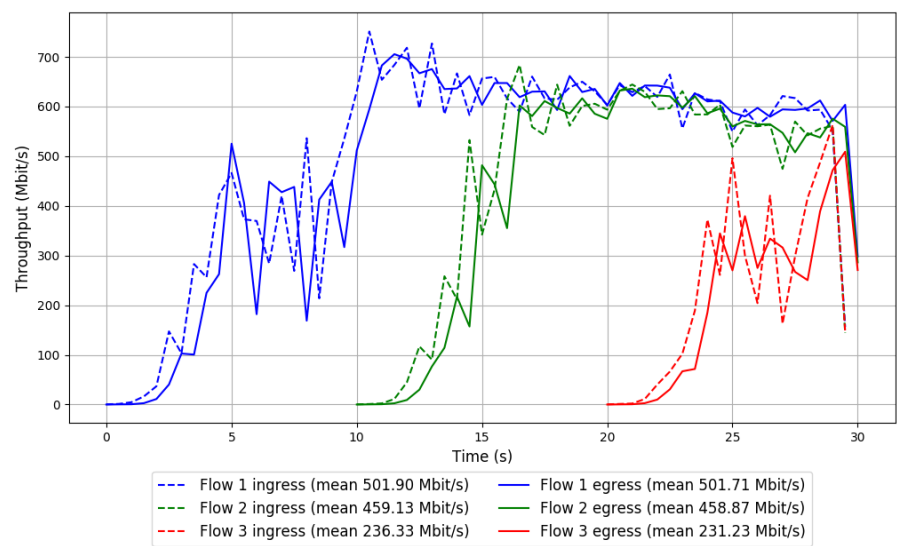
-- Flow 3:

Average throughput: 231.23 Mbit/s

95th percentile per-packet one-way delay: 192.396 ms

Loss rate: 2.09%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-10-02 23:11:14

End at: 2018-10-02 23:11:44

Local clock offset: 0.073 ms

Remote clock offset: 0.015 ms

Below is generated by plot.py at 2018-10-03 01:08:53

Datalink statistics

-- Total of 3 flows:

Average throughput: 978.83 Mbit/s

95th percentile per-packet one-way delay: 188.612 ms

Loss rate: 0.08%

-- Flow 1:

Average throughput: 549.46 Mbit/s

95th percentile per-packet one-way delay: 187.592 ms

Loss rate: 0.10%

-- Flow 2:

Average throughput: 473.02 Mbit/s

95th percentile per-packet one-way delay: 182.117 ms

Loss rate: 0.02%

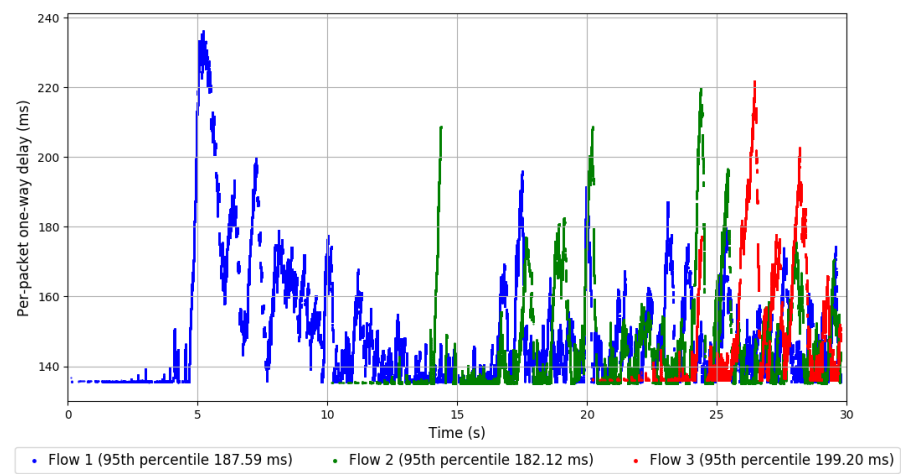
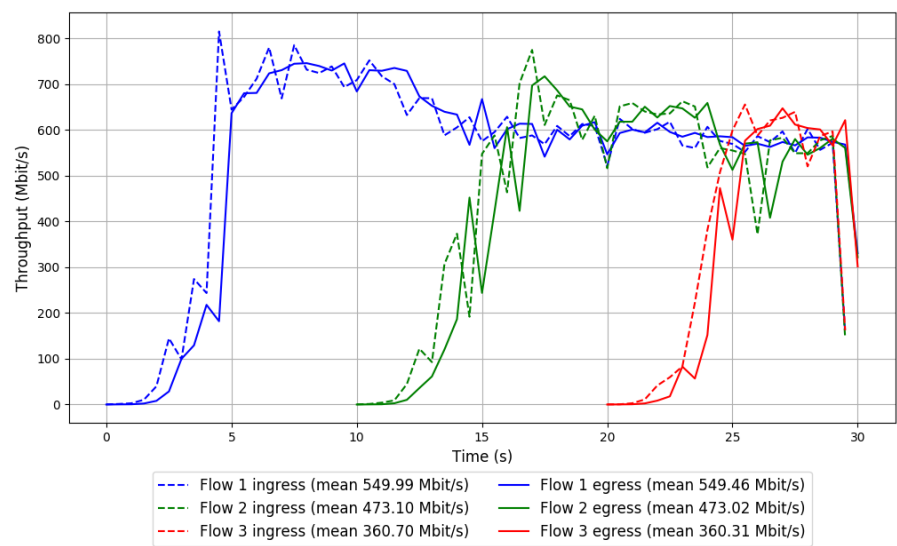
-- Flow 3:

Average throughput: 360.31 Mbit/s

95th percentile per-packet one-way delay: 199.202 ms

Loss rate: 0.14%

Run 5: Report of Indigo-Muses — Data Link

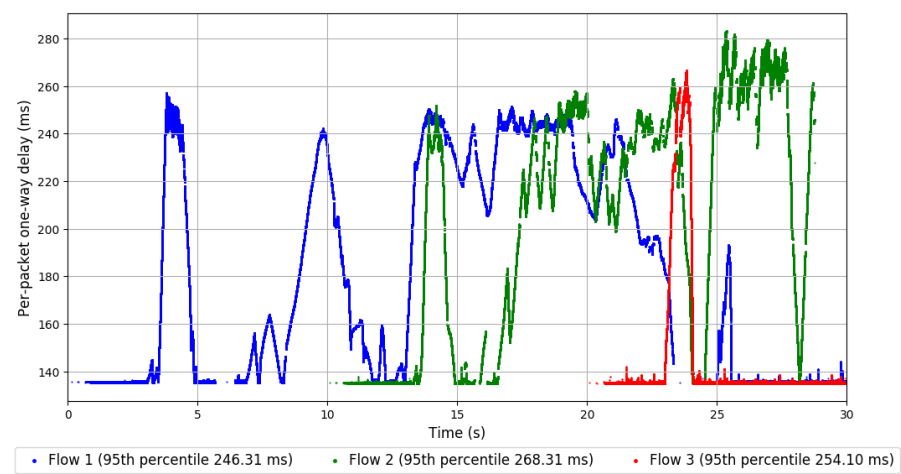
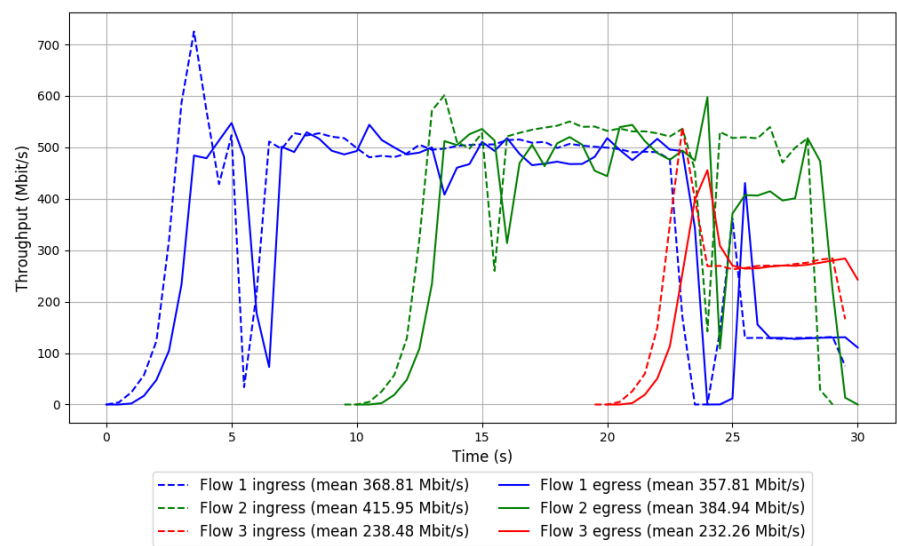


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-10-02 20:47:37
End at: 2018-10-02 20:48:07
Local clock offset: -0.182 ms
Remote clock offset: 0.31 ms

# Below is generated by plot.py at 2018-10-03 01:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 686.92 Mbit/s
95th percentile per-packet one-way delay: 256.913 ms
Loss rate: 4.64%
-- Flow 1:
Average throughput: 357.81 Mbit/s
95th percentile per-packet one-way delay: 246.308 ms
Loss rate: 2.98%
-- Flow 2:
Average throughput: 384.94 Mbit/s
95th percentile per-packet one-way delay: 268.314 ms
Loss rate: 7.46%
-- Flow 3:
Average throughput: 232.26 Mbit/s
95th percentile per-packet one-way delay: 254.099 ms
Loss rate: 2.61%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-10-02 21:20:40

End at: 2018-10-02 21:21:10

Local clock offset: -0.098 ms

Remote clock offset: 0.299 ms

Below is generated by plot.py at 2018-10-03 01:22:44

Datalink statistics

-- Total of 3 flows:

Average throughput: 611.91 Mbit/s

95th percentile per-packet one-way delay: 257.164 ms

Loss rate: 4.71%

-- Flow 1:

Average throughput: 328.36 Mbit/s

95th percentile per-packet one-way delay: 255.267 ms

Loss rate: 6.13%

-- Flow 2:

Average throughput: 306.34 Mbit/s

95th percentile per-packet one-way delay: 224.955 ms

Loss rate: 0.85%

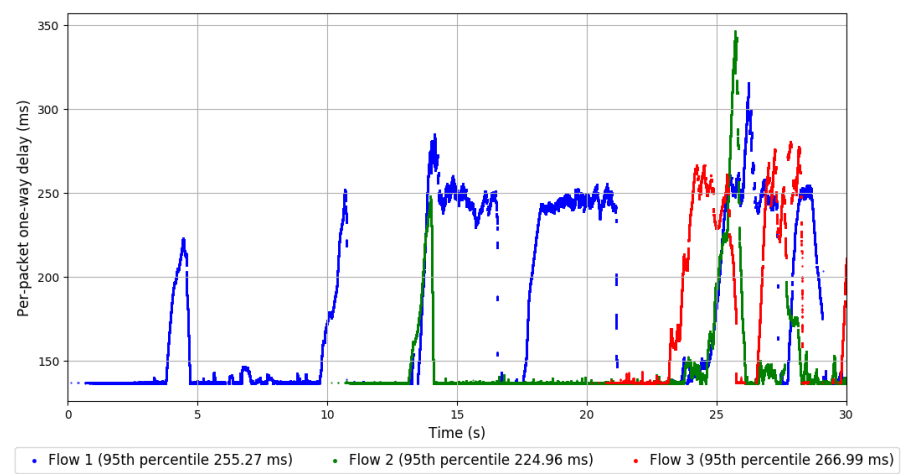
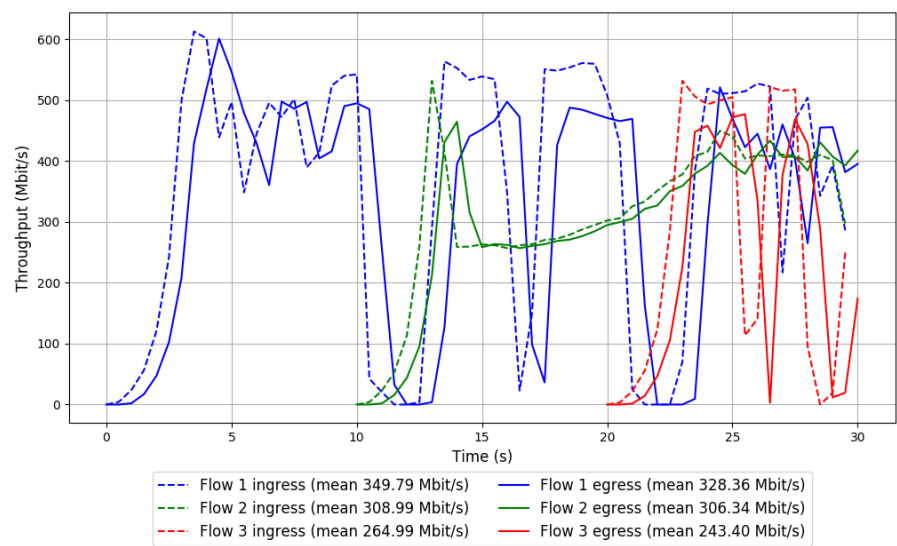
-- Flow 3:

Average throughput: 243.40 Mbit/s

95th percentile per-packet one-way delay: 266.987 ms

Loss rate: 8.12%

Run 2: Report of PCC-Allegro — Data Link

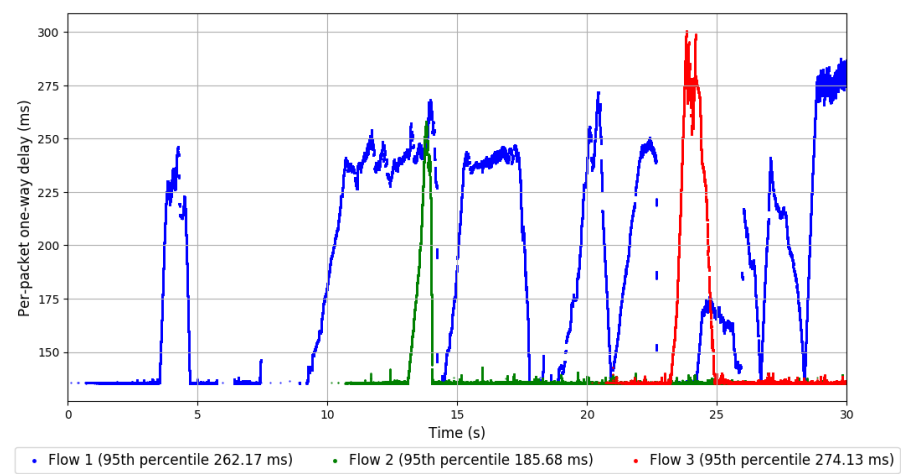
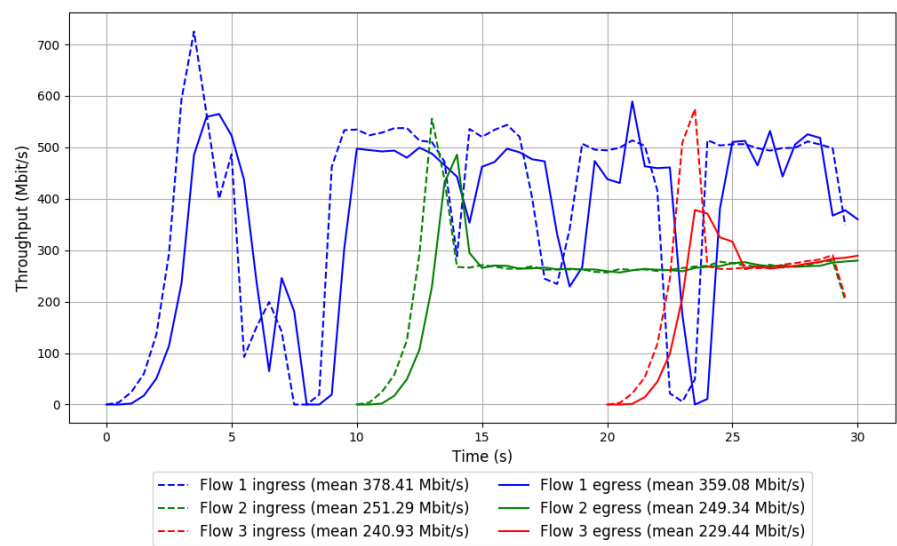


Run 3: Statistics of PCC-Allegro

Start at: 2018-10-02 21:53:58
End at: 2018-10-02 21:54:28
Local clock offset: -0.251 ms
Remote clock offset: -0.444 ms

Below is generated by plot.py at 2018-10-03 01:22:44
Datalink statistics
-- Total of 3 flows:
Average throughput: 600.12 Mbit/s
95th percentile per-packet one-way delay: 254.295 ms
Loss rate: 3.90%
-- Flow 1:
Average throughput: 359.08 Mbit/s
95th percentile per-packet one-way delay: 262.170 ms
Loss rate: 5.10%
-- Flow 2:
Average throughput: 249.34 Mbit/s
95th percentile per-packet one-way delay: 185.675 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 229.44 Mbit/s
95th percentile per-packet one-way delay: 274.128 ms
Loss rate: 4.77%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-10-02 22:26:57

End at: 2018-10-02 22:27:27

Local clock offset: -0.039 ms

Remote clock offset: -0.51 ms

Below is generated by plot.py at 2018-10-03 01:34:35

Datalink statistics

-- Total of 3 flows:

Average throughput: 662.12 Mbit/s

95th percentile per-packet one-way delay: 284.817 ms

Loss rate: 4.44%

-- Flow 1:

Average throughput: 408.91 Mbit/s

95th percentile per-packet one-way delay: 280.415 ms

Loss rate: 5.83%

-- Flow 2:

Average throughput: 266.14 Mbit/s

95th percentile per-packet one-way delay: 299.188 ms

Loss rate: 2.99%

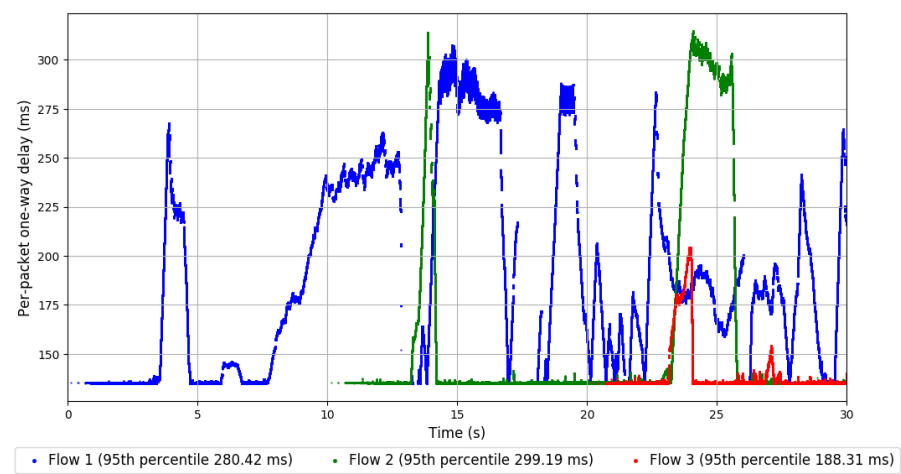
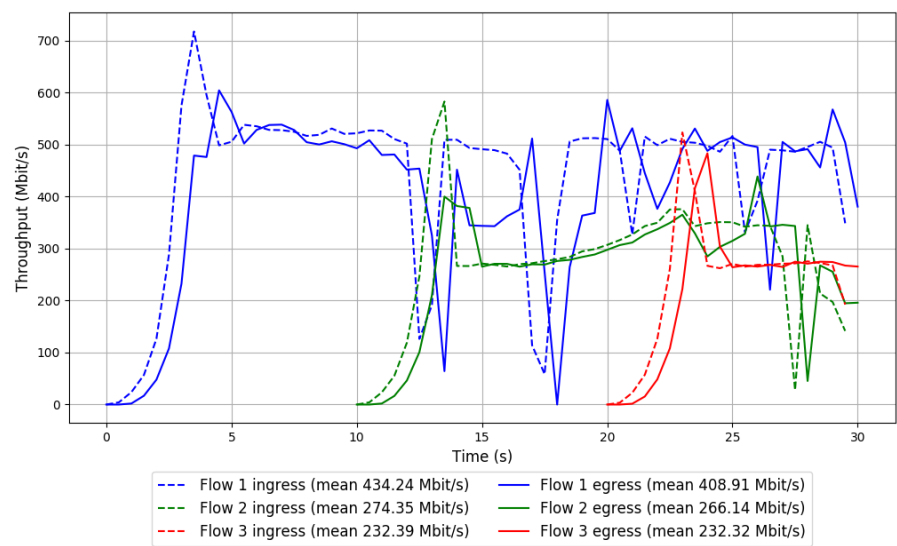
-- Flow 3:

Average throughput: 232.32 Mbit/s

95th percentile per-packet one-way delay: 188.311 ms

Loss rate: 0.00%

Run 4: Report of PCC-Allegro — Data Link

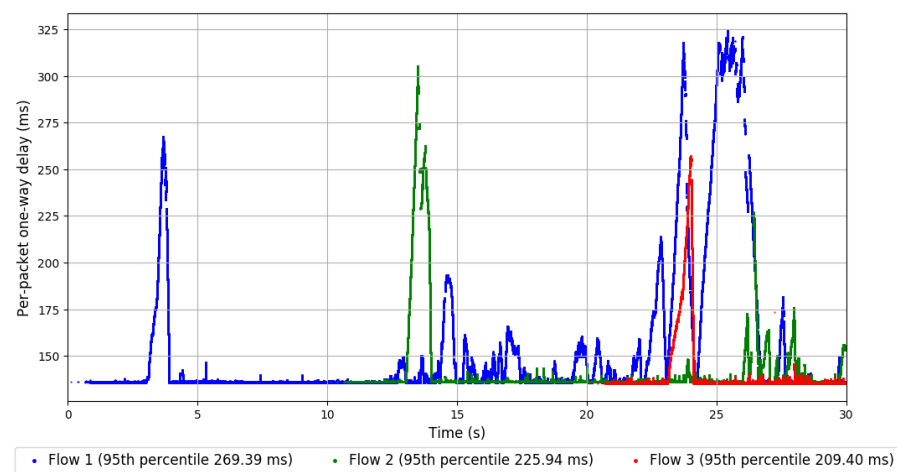
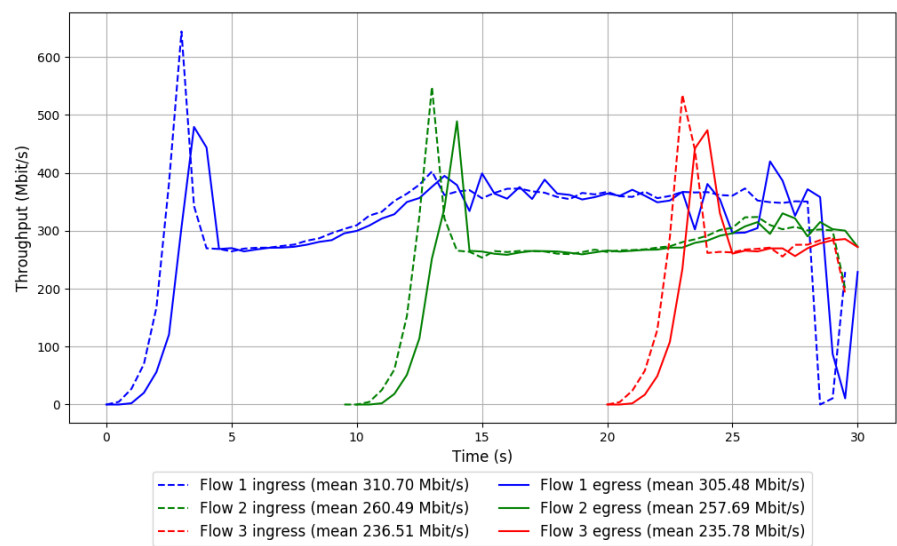


Run 5: Statistics of PCC-Allegro

Start at: 2018-10-02 22:59:43
End at: 2018-10-02 23:00:13
Local clock offset: -0.253 ms
Remote clock offset: -0.406 ms

Below is generated by plot.py at 2018-10-03 01:34:35
Datalink statistics
-- Total of 3 flows:
Average throughput: 554.55 Mbit/s
95th percentile per-packet one-way delay: 243.810 ms
Loss rate: 1.30%
-- Flow 1:
Average throughput: 305.48 Mbit/s
95th percentile per-packet one-way delay: 269.394 ms
Loss rate: 1.68%
-- Flow 2:
Average throughput: 257.69 Mbit/s
95th percentile per-packet one-way delay: 225.944 ms
Loss rate: 1.07%
-- Flow 3:
Average throughput: 235.78 Mbit/s
95th percentile per-packet one-way delay: 209.398 ms
Loss rate: 0.31%

Run 5: Report of PCC-Allegro — Data Link

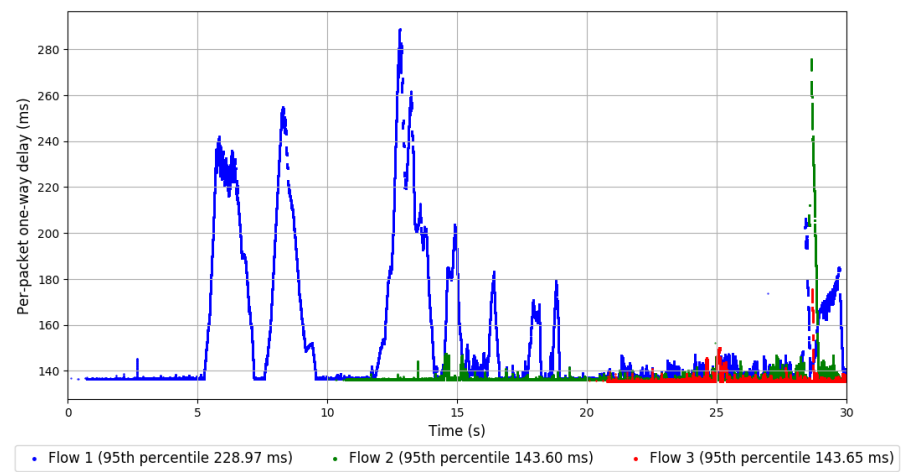
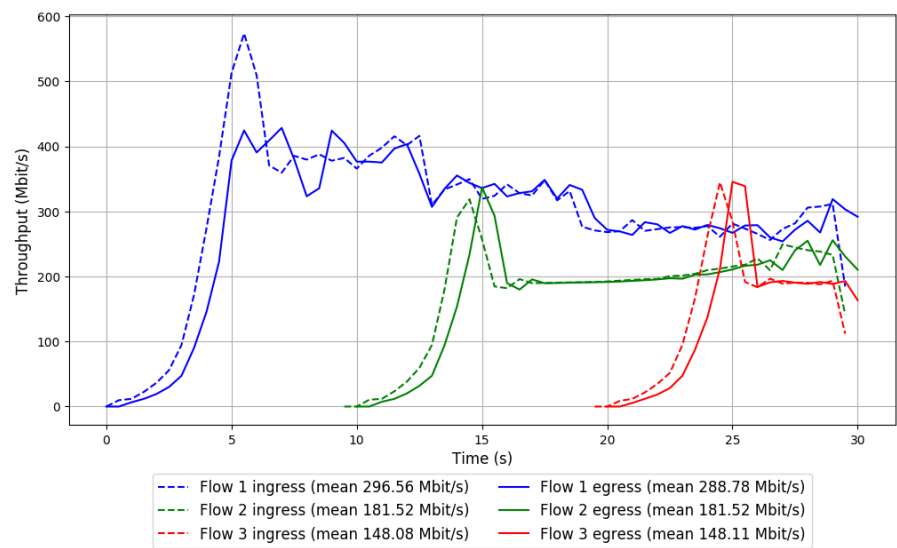


```
Run 1: Statistics of PCC-Expr

Start at: 2018-10-02 21:06:58
End at: 2018-10-02 21:07:28
Local clock offset: -0.209 ms
Remote clock offset: -0.023 ms

# Below is generated by plot.py at 2018-10-03 01:34:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 458.69 Mbit/s
95th percentile per-packet one-way delay: 221.594 ms
Loss rate: 1.67%
-- Flow 1:
Average throughput: 288.78 Mbit/s
95th percentile per-packet one-way delay: 228.969 ms
Loss rate: 2.62%
-- Flow 2:
Average throughput: 181.52 Mbit/s
95th percentile per-packet one-way delay: 143.598 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 148.11 Mbit/s
95th percentile per-packet one-way delay: 143.647 ms
Loss rate: 0.00%
```

Run 1: Report of PCC-Expr — Data Link

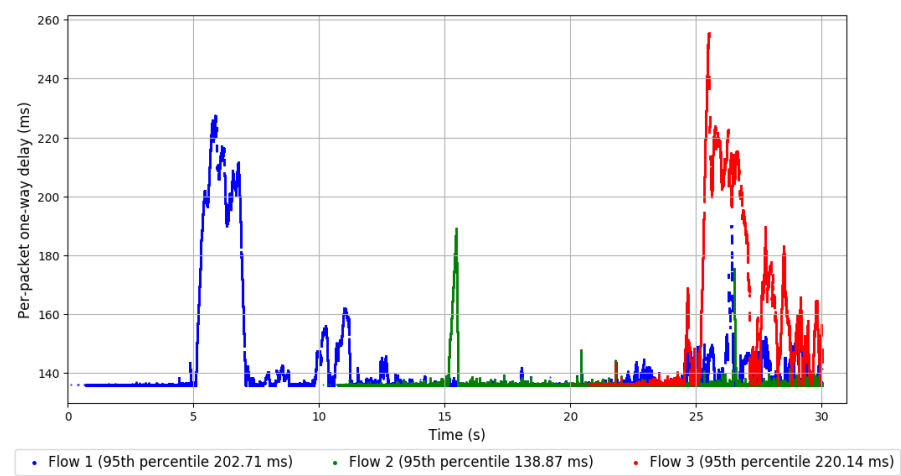
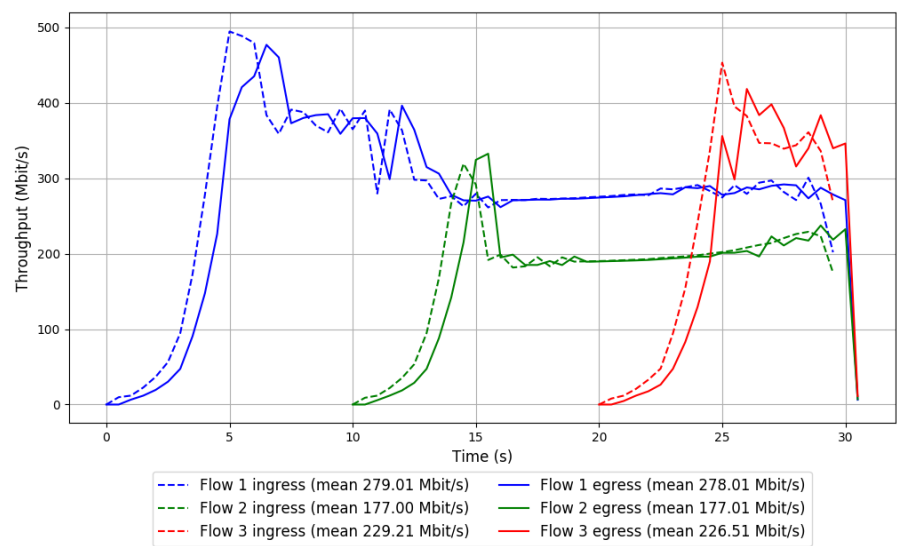


Run 2: Statistics of PCC-Expr

Start at: 2018-10-02 21:40:12
End at: 2018-10-02 21:40:42
Local clock offset: 0.042 ms
Remote clock offset: -0.086 ms

Below is generated by plot.py at 2018-10-03 01:34:35
Datalink statistics
-- Total of 3 flows:
Average throughput: 470.41 Mbit/s
95th percentile per-packet one-way delay: 207.268 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 278.01 Mbit/s
95th percentile per-packet one-way delay: 202.707 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 177.01 Mbit/s
95th percentile per-packet one-way delay: 138.869 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 226.51 Mbit/s
95th percentile per-packet one-way delay: 220.141 ms
Loss rate: 1.17%

Run 2: Report of PCC-Expr — Data Link

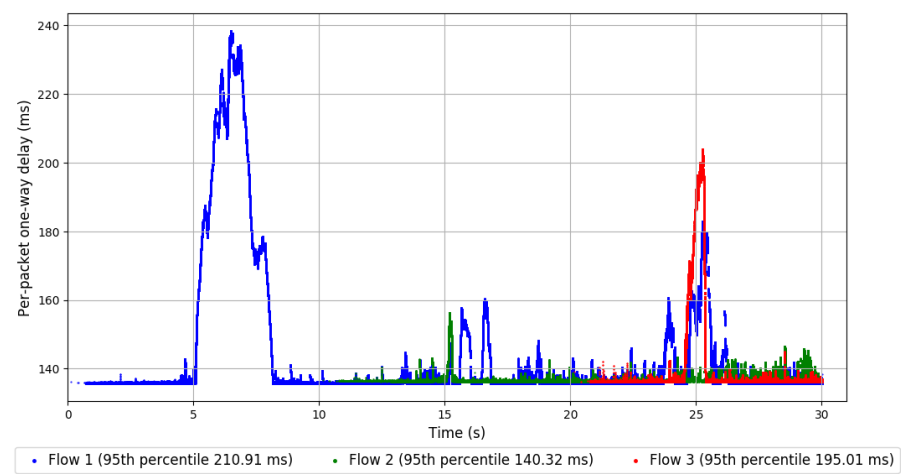
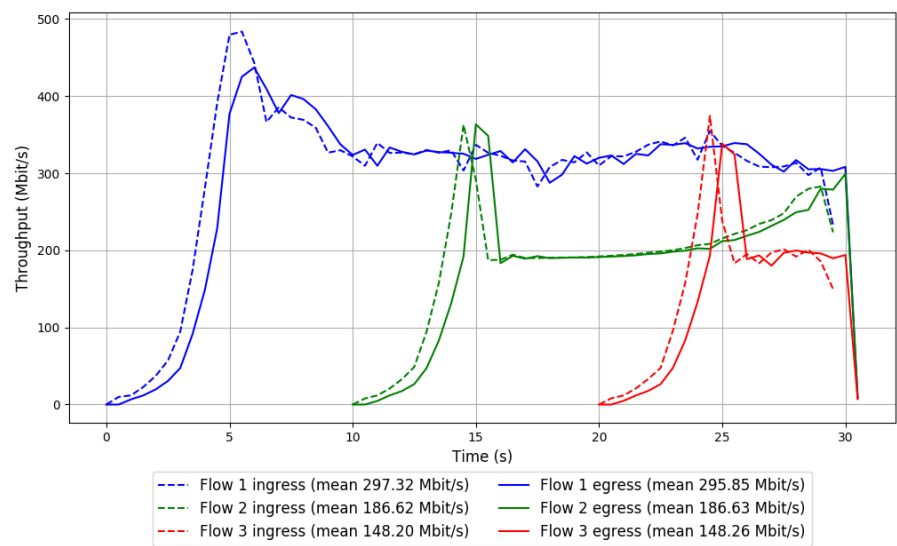


Run 3: Statistics of PCC-Expr

Start at: 2018-10-02 22:13:08
End at: 2018-10-02 22:13:38
Local clock offset: -0.252 ms
Remote clock offset: -0.158 ms

Below is generated by plot.py at 2018-10-03 01:34:35
Datalink statistics
-- Total of 3 flows:
Average throughput: 468.84 Mbit/s
95th percentile per-packet one-way delay: 193.640 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 295.85 Mbit/s
95th percentile per-packet one-way delay: 210.908 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 186.63 Mbit/s
95th percentile per-packet one-way delay: 140.324 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 148.26 Mbit/s
95th percentile per-packet one-way delay: 195.010 ms
Loss rate: 0.00%

Run 3: Report of PCC-Expr — Data Link

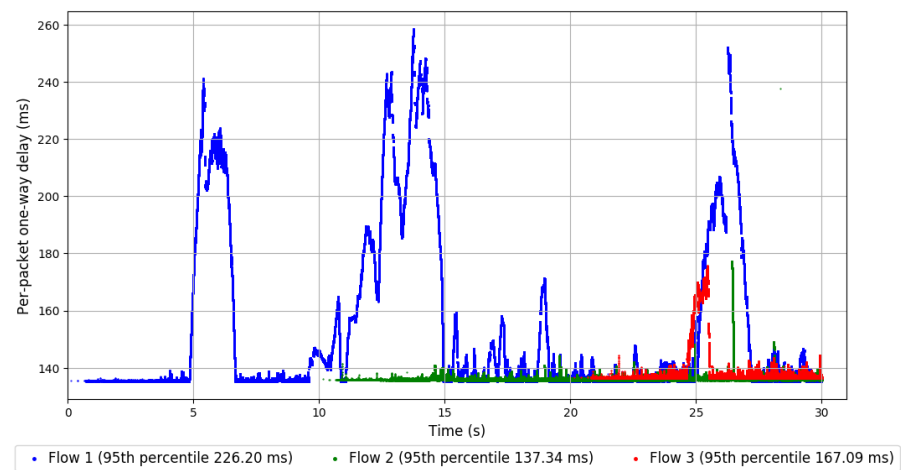
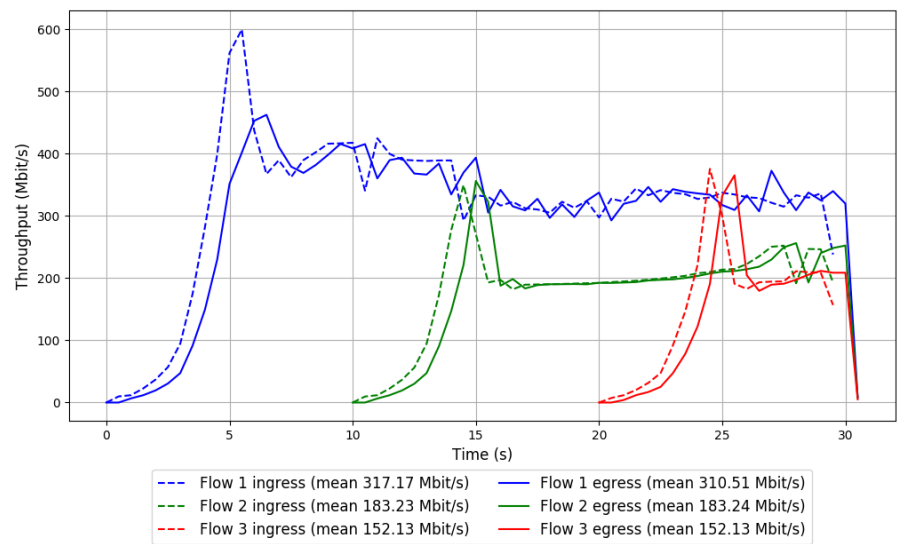


Run 4: Statistics of PCC-Expr

Start at: 2018-10-02 22:46:29
End at: 2018-10-02 22:46:59
Local clock offset: -0.33 ms
Remote clock offset: -0.185 ms

Below is generated by plot.py at 2018-10-03 01:42:05
Datalink statistics
-- Total of 3 flows:
Average throughput: 482.53 Mbit/s
95th percentile per-packet one-way delay: 215.943 ms
Loss rate: 1.36%
-- Flow 1:
Average throughput: 310.51 Mbit/s
95th percentile per-packet one-way delay: 226.199 ms
Loss rate: 2.10%
-- Flow 2:
Average throughput: 183.24 Mbit/s
95th percentile per-packet one-way delay: 137.341 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 152.13 Mbit/s
95th percentile per-packet one-way delay: 167.094 ms
Loss rate: 0.00%

Run 4: Report of PCC-Expr — Data Link

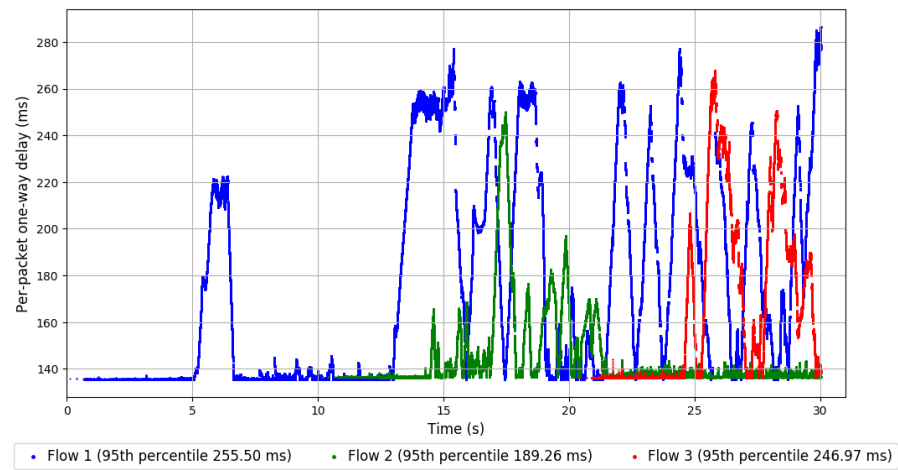
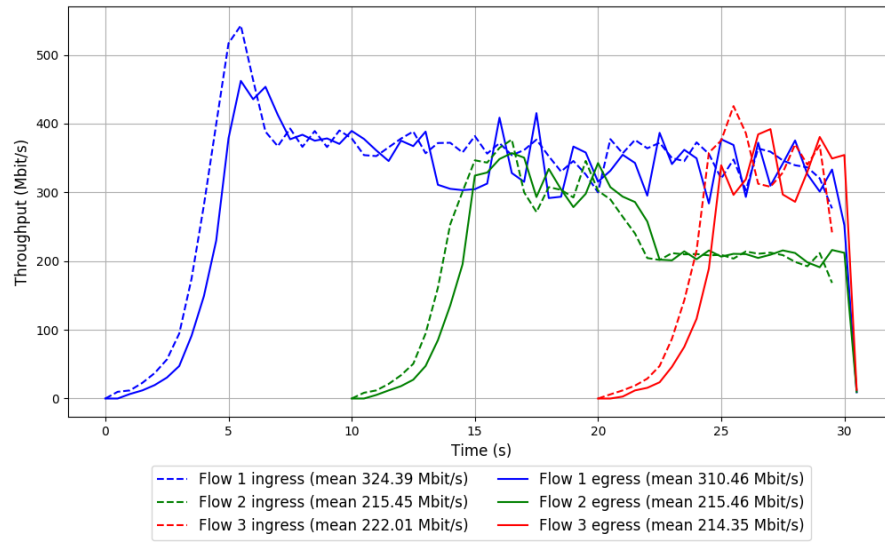


```
Run 5: Statistics of PCC-Expr

Start at: 2018-10-02 23:19:04
End at: 2018-10-02 23:19:34
Local clock offset: -0.157 ms
Remote clock offset: 0.007 ms

# Below is generated by plot.py at 2018-10-03 01:44:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 524.32 Mbit/s
95th percentile per-packet one-way delay: 252.680 ms
Loss rate: 3.04%
-- Flow 1:
Average throughput: 310.46 Mbit/s
95th percentile per-packet one-way delay: 255.504 ms
Loss rate: 4.29%
-- Flow 2:
Average throughput: 215.46 Mbit/s
95th percentile per-packet one-way delay: 189.261 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 214.35 Mbit/s
95th percentile per-packet one-way delay: 246.975 ms
Loss rate: 3.45%
```

Run 5: Report of PCC-Expr — Data Link

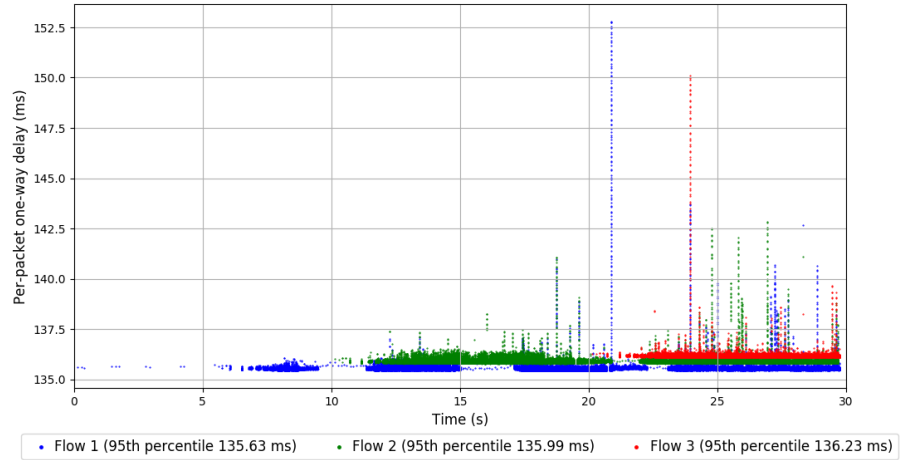
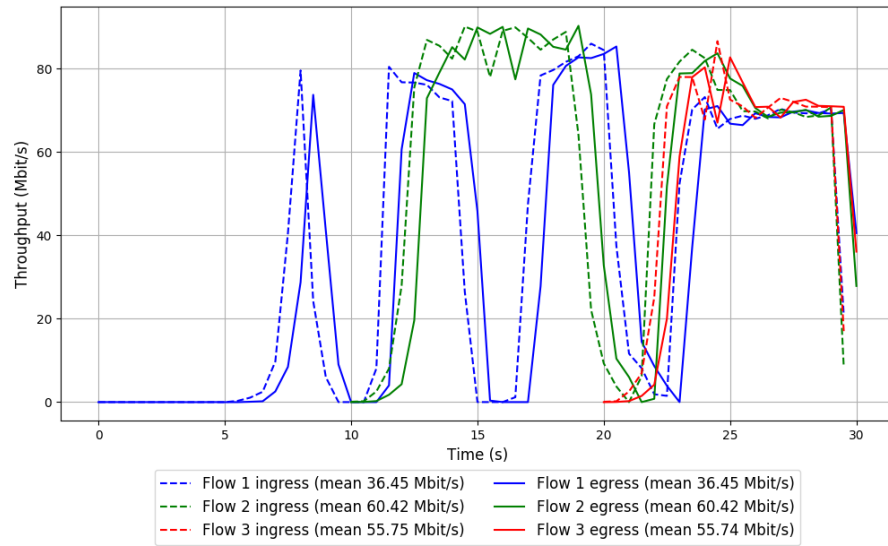


Run 1: Statistics of QUIC Cubic

Start at: 2018-10-02 21:09:06
End at: 2018-10-02 21:09:36
Local clock offset: -0.128 ms
Remote clock offset: -0.406 ms

Below is generated by plot.py at 2018-10-03 01:44:06
Datalink statistics
-- Total of 3 flows:
Average throughput: 94.43 Mbit/s
95th percentile per-packet one-way delay: 136.181 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 36.45 Mbit/s
95th percentile per-packet one-way delay: 135.628 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 60.42 Mbit/s
95th percentile per-packet one-way delay: 135.991 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 55.74 Mbit/s
95th percentile per-packet one-way delay: 136.233 ms
Loss rate: 0.01%

Run 1: Report of QUIC Cubic — Data Link

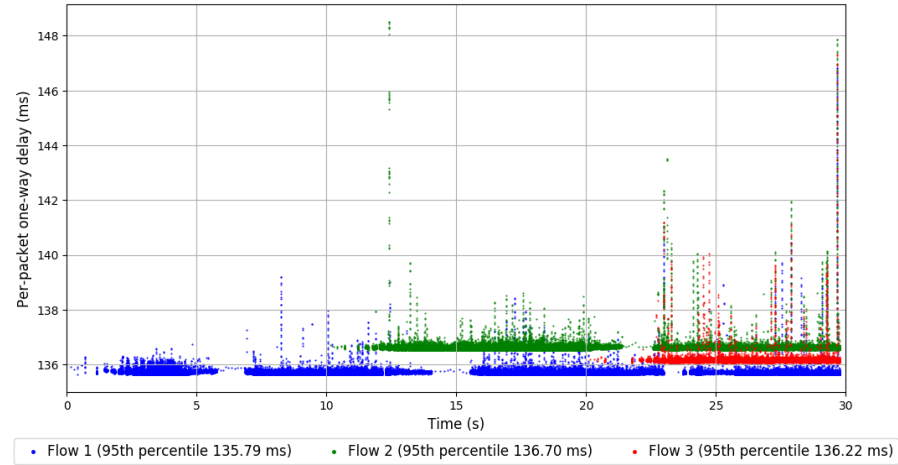
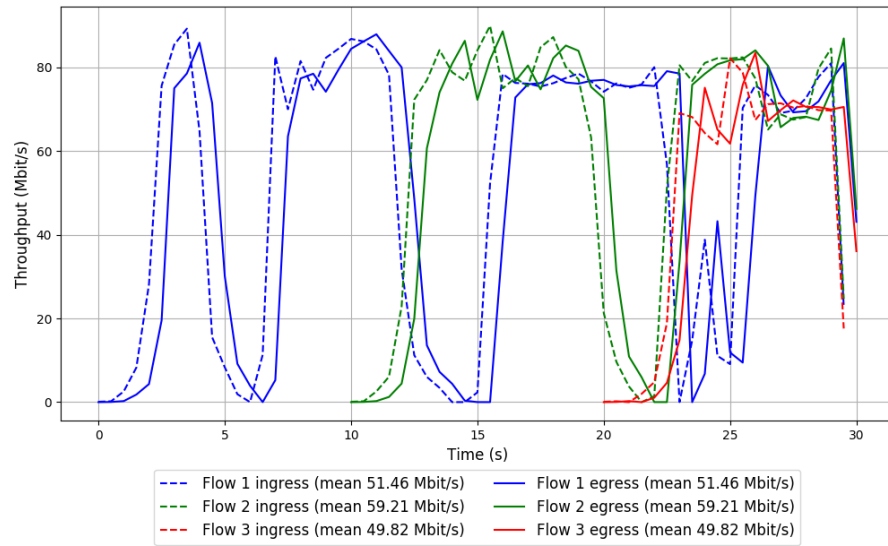


Run 2: Statistics of QUIC Cubic

Start at: 2018-10-02 21:42:23
End at: 2018-10-02 21:42:53
Local clock offset: -0.206 ms
Remote clock offset: -0.081 ms

Below is generated by plot.py at 2018-10-03 01:44:06
Datalink statistics
-- Total of 3 flows:
Average throughput: 106.85 Mbit/s
95th percentile per-packet one-way delay: 136.652 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 51.46 Mbit/s
95th percentile per-packet one-way delay: 135.789 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 59.21 Mbit/s
95th percentile per-packet one-way delay: 136.702 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 49.82 Mbit/s
95th percentile per-packet one-way delay: 136.219 ms
Loss rate: 0.00%

Run 2: Report of QUIC Cubic — Data Link

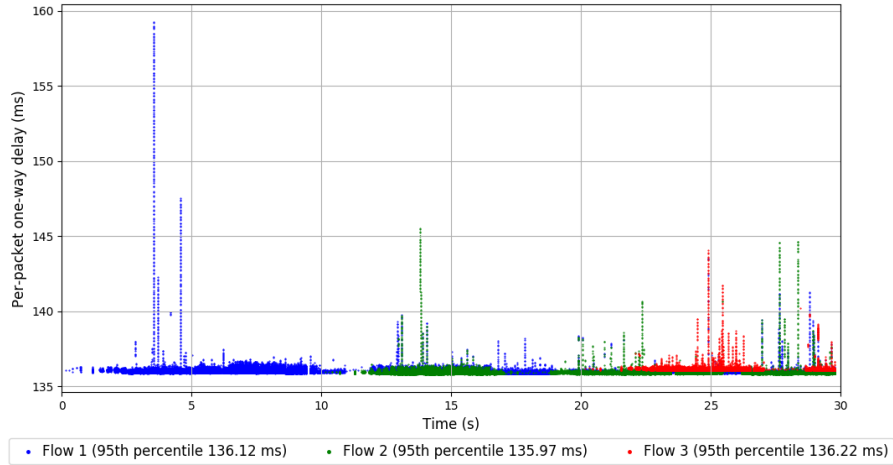
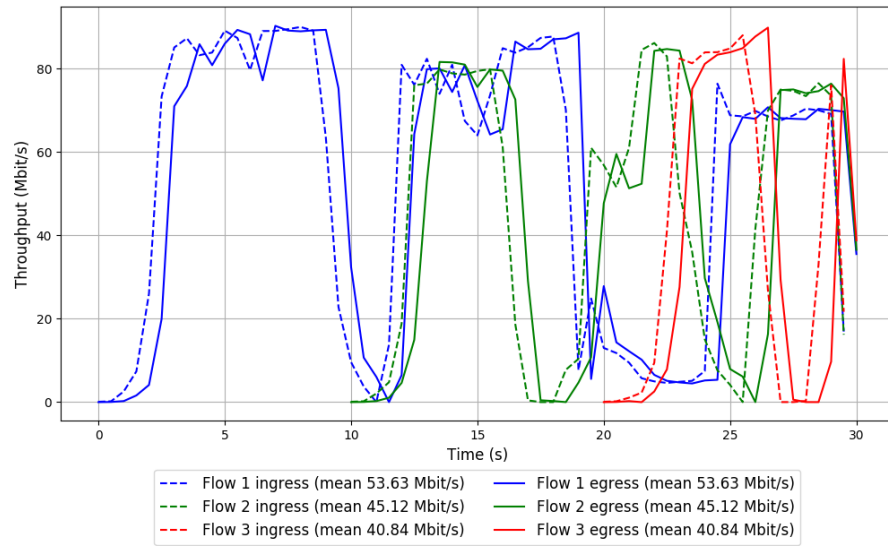


Run 3: Statistics of QUIC Cubic

Start at: 2018-10-02 22:15:18
End at: 2018-10-02 22:15:48
Local clock offset: -0.289 ms
Remote clock offset: -0.489 ms

Below is generated by plot.py at 2018-10-03 01:44:06
Datalink statistics
-- Total of 3 flows:
Average throughput: 96.76 Mbit/s
95th percentile per-packet one-way delay: 136.154 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 53.63 Mbit/s
95th percentile per-packet one-way delay: 136.122 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 45.12 Mbit/s
95th percentile per-packet one-way delay: 135.972 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 40.84 Mbit/s
95th percentile per-packet one-way delay: 136.217 ms
Loss rate: 0.00%

Run 3: Report of QUIC Cubic — Data Link

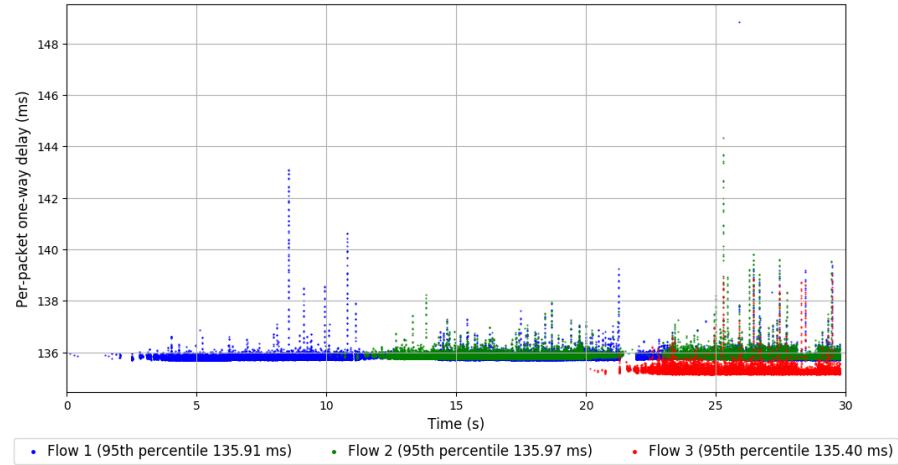
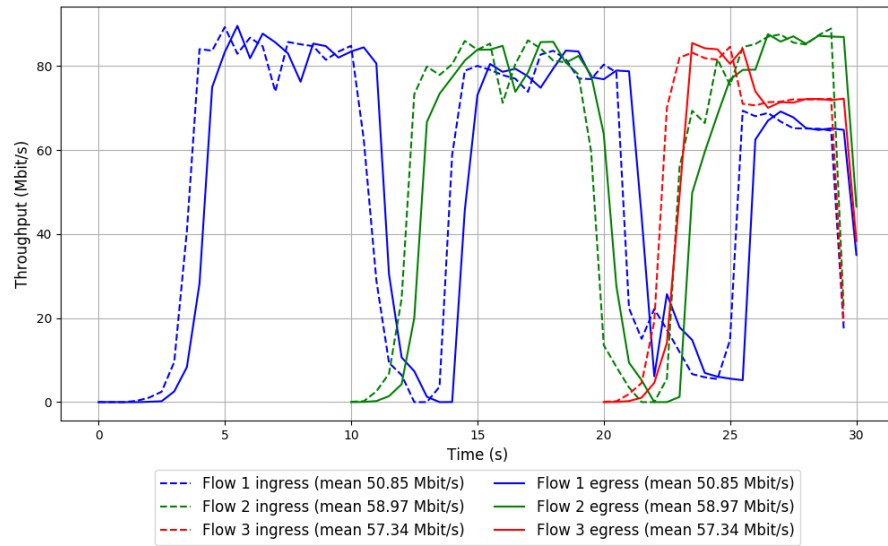


Run 4: Statistics of QUIC Cubic

Start at: 2018-10-02 22:48:41
End at: 2018-10-02 22:49:11
Local clock offset: -0.283 ms
Remote clock offset: -0.103 ms

Below is generated by plot.py at 2018-10-03 01:44:06
Datalink statistics
-- Total of 3 flows:
Average throughput: 108.49 Mbit/s
95th percentile per-packet one-way delay: 135.926 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.85 Mbit/s
95th percentile per-packet one-way delay: 135.911 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 58.97 Mbit/s
95th percentile per-packet one-way delay: 135.970 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 57.34 Mbit/s
95th percentile per-packet one-way delay: 135.399 ms
Loss rate: 0.00%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-10-02 23:21:20

End at: 2018-10-02 23:21:50

Local clock offset: -0.12 ms

Remote clock offset: 0.044 ms

Below is generated by plot.py at 2018-10-03 01:44:06

Datalink statistics

-- Total of 3 flows:

Average throughput: 109.05 Mbit/s

95th percentile per-packet one-way delay: 136.398 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 58.15 Mbit/s

95th percentile per-packet one-way delay: 136.425 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 60.48 Mbit/s

95th percentile per-packet one-way delay: 135.609 ms

Loss rate: 0.00%

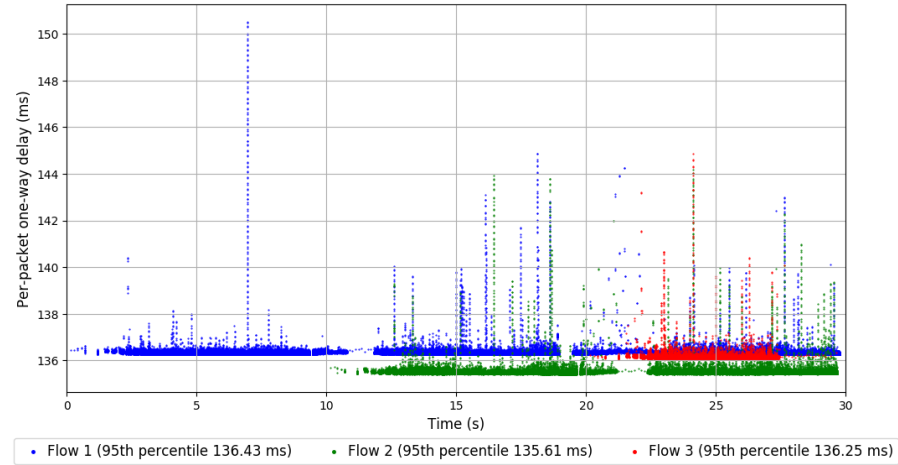
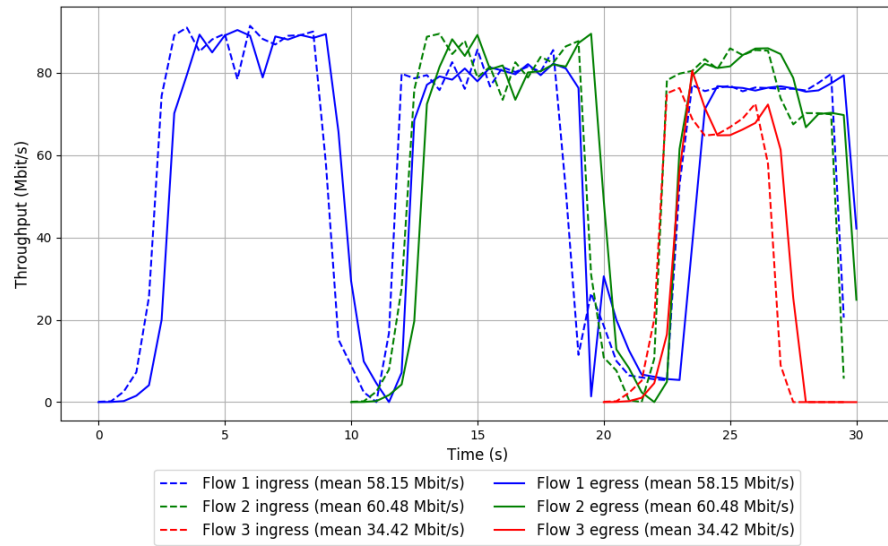
-- Flow 3:

Average throughput: 34.42 Mbit/s

95th percentile per-packet one-way delay: 136.247 ms

Loss rate: 0.00%

Run 5: Report of QUIC Cubic — Data Link

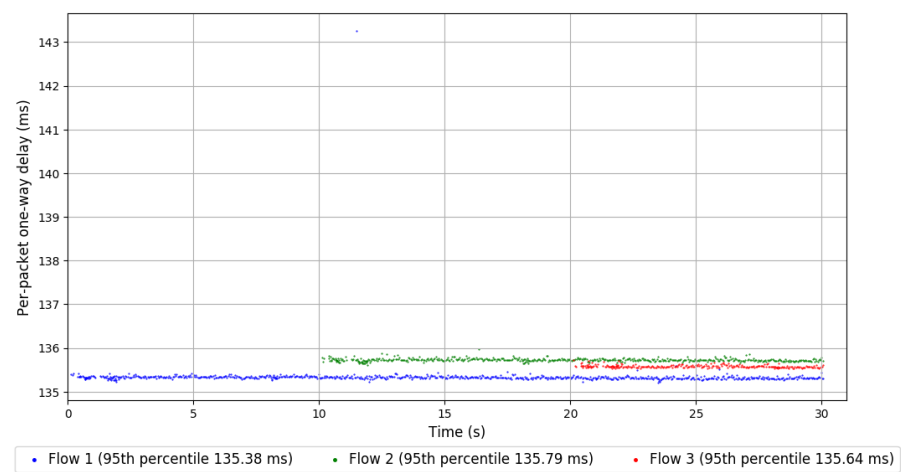
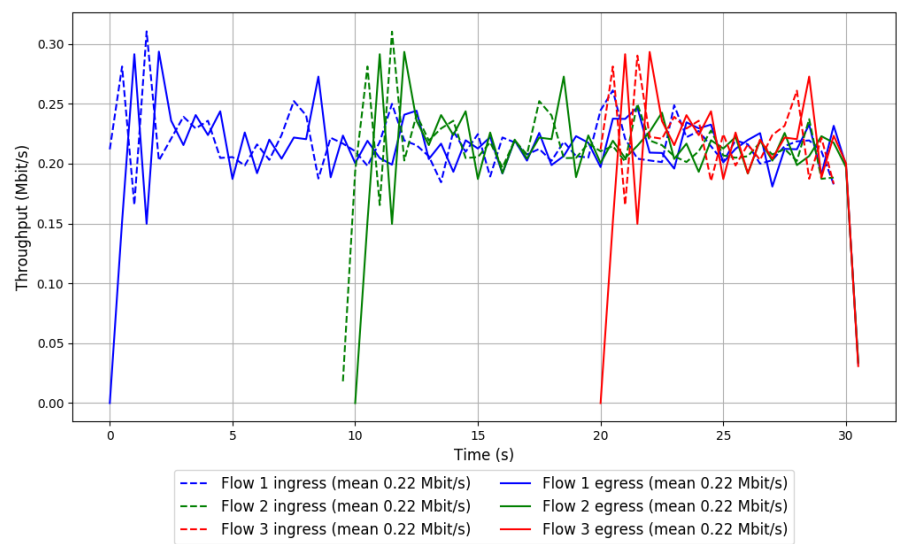


```
Run 1: Statistics of SCReAM

Start at: 2018-10-02 20:52:52
End at: 2018-10-02 20:53:22
Local clock offset: -0.223 ms
Remote clock offset: -0.083 ms

# Below is generated by plot.py at 2018-10-03 01:44:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 135.755 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 135.384 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 135.788 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 135.638 ms
Loss rate: 0.00%
```

Run 1: Report of SReAM — Data Link

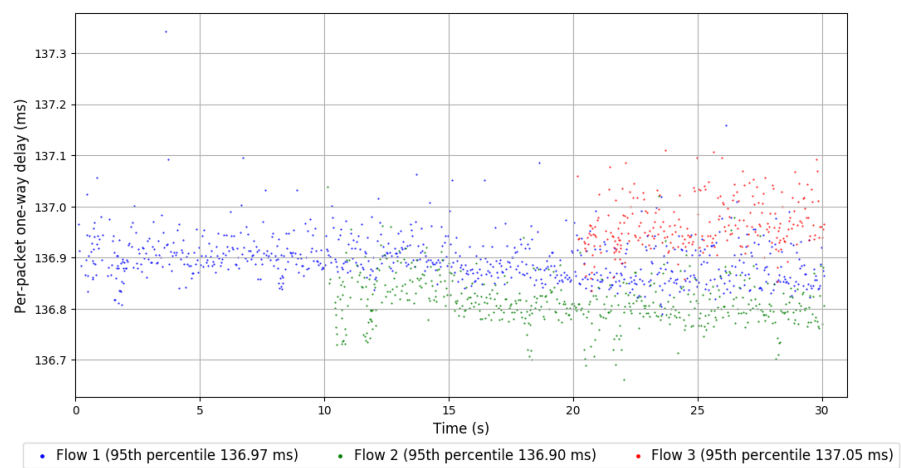
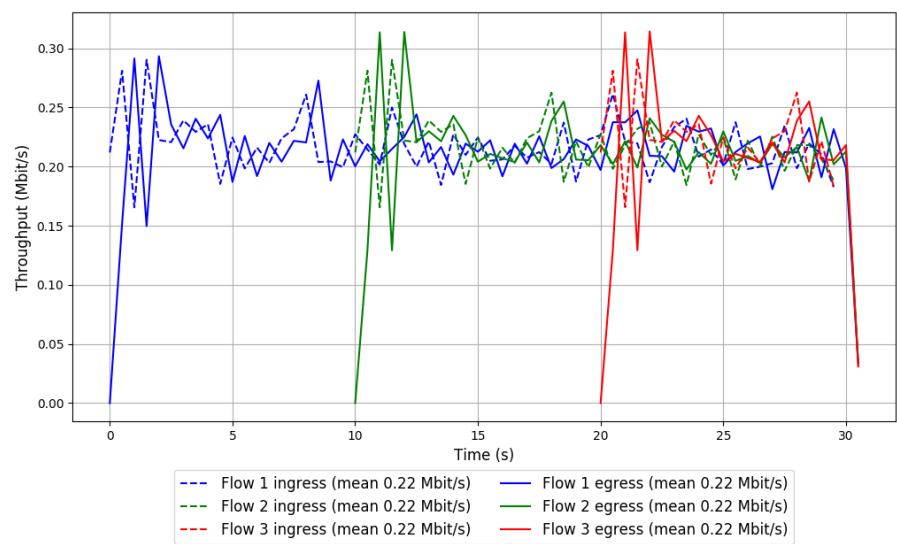


Run 2: Statistics of SReAM

Start at: 2018-10-02 21:25:55
End at: 2018-10-02 21:26:25
Local clock offset: -0.052 ms
Remote clock offset: 0.285 ms

Below is generated by plot.py at 2018-10-03 01:44:06
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 137.005 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 136.969 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 136.895 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 137.048 ms
Loss rate: 0.00%

Run 2: Report of SReAM — Data Link

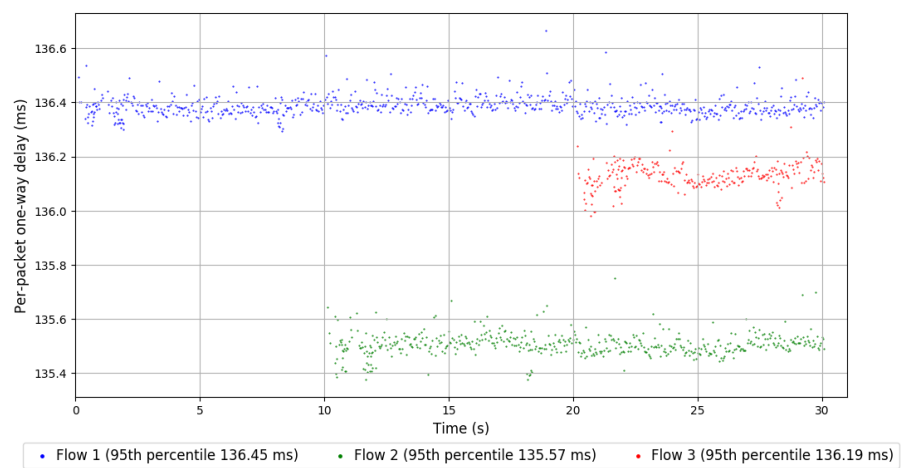
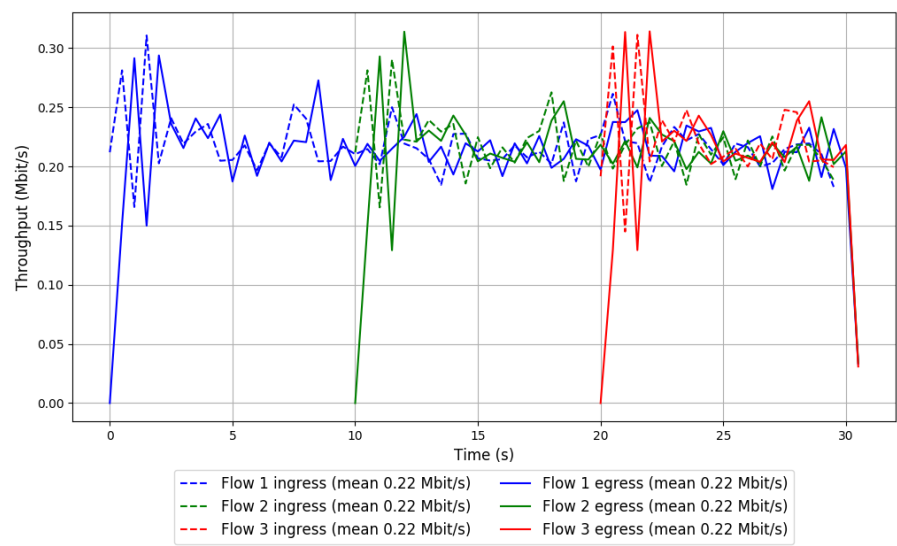


Run 3: Statistics of SReAM

Start at: 2018-10-02 21:59:04
End at: 2018-10-02 21:59:34
Local clock offset: -0.21 ms
Remote clock offset: -0.495 ms

Below is generated by plot.py at 2018-10-03 01:44:06
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 136.426 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 136.448 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 135.575 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 136.194 ms
Loss rate: 0.00%

Run 3: Report of SReAM — Data Link

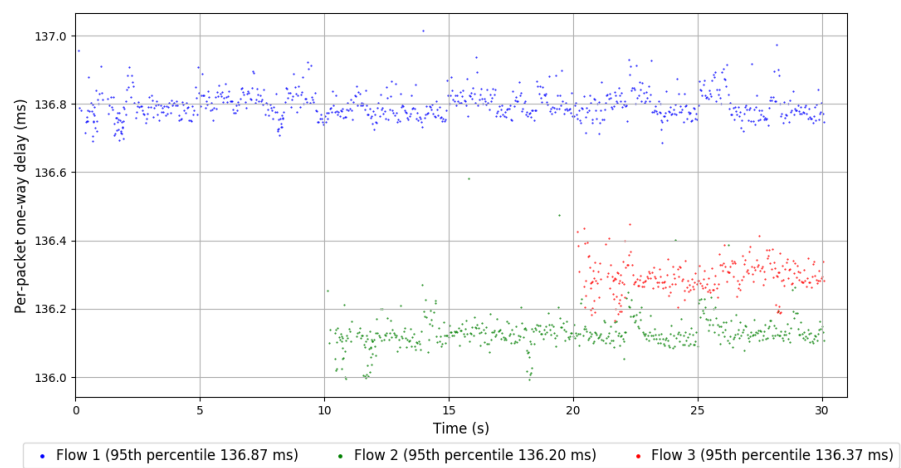
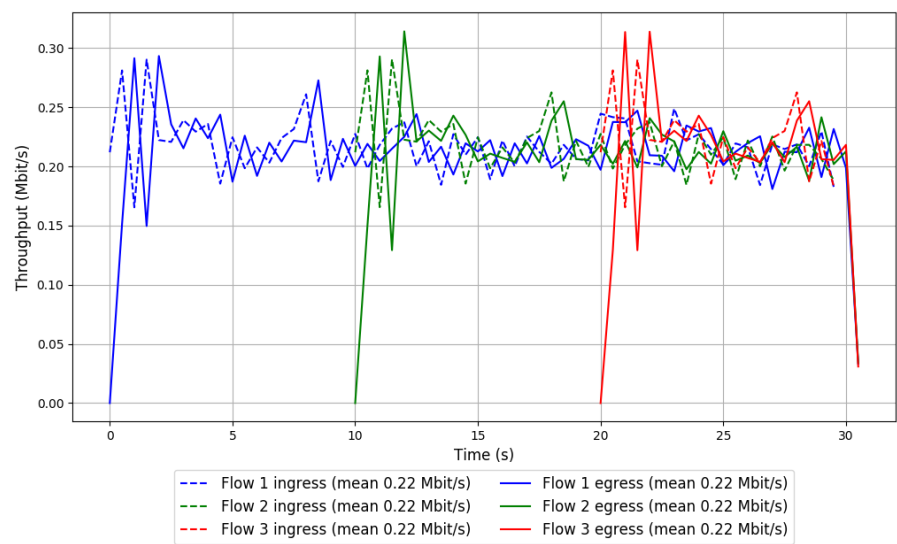


Run 4: Statistics of SReAM

Start at: 2018-10-02 22:32:14
End at: 2018-10-02 22:32:44
Local clock offset: -0.288 ms
Remote clock offset: 0.244 ms

Below is generated by plot.py at 2018-10-03 01:44:06
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 136.845 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 136.874 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 136.204 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 136.373 ms
Loss rate: 0.00%

Run 4: Report of SReAM — Data Link

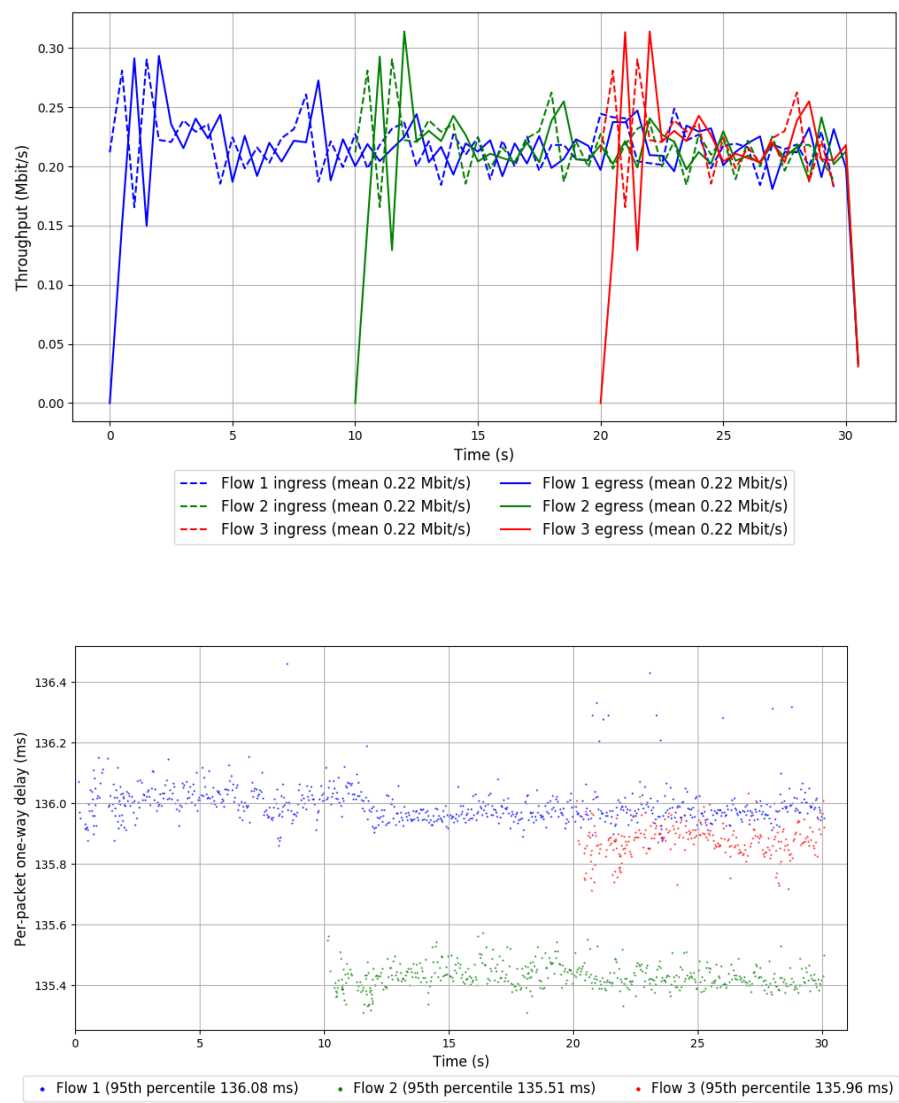


Run 5: Statistics of SReAM

Start at: 2018-10-02 23:04:44
End at: 2018-10-02 23:05:14
Local clock offset: -0.062 ms
Remote clock offset: -0.348 ms

Below is generated by plot.py at 2018-10-03 01:44:06
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 136.054 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 136.076 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 135.508 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 135.964 ms
Loss rate: 0.00%

Run 5: Report of SReAM — Data Link

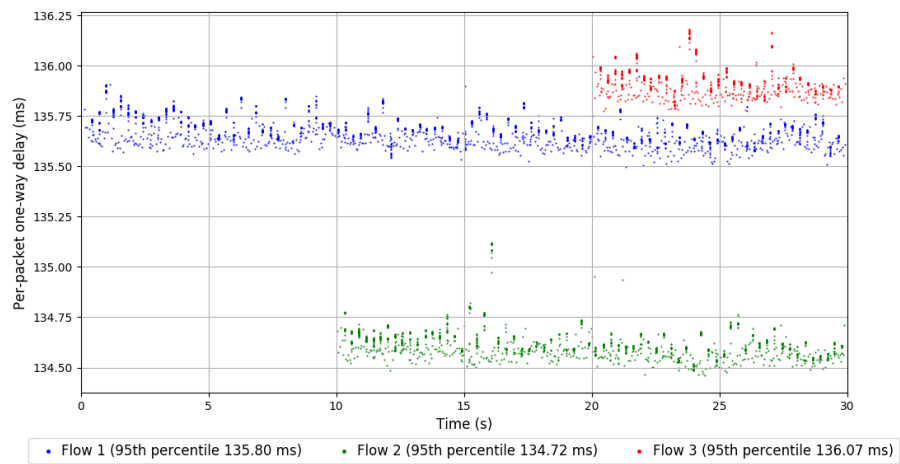
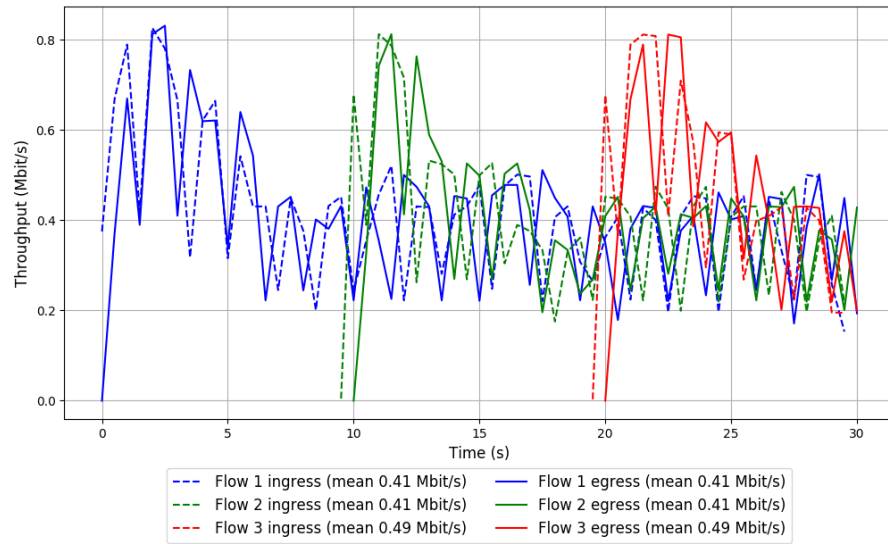


Run 1: Statistics of Sprout

Start at: 2018-10-02 21:01:34
End at: 2018-10-02 21:02:04
Local clock offset: -0.187 ms
Remote clock offset: -0.052 ms

Below is generated by plot.py at 2018-10-03 01:44:06
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.85 Mbit/s
95th percentile per-packet one-way delay: 135.948 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 135.800 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 134.725 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 136.070 ms
Loss rate: 0.00%

Run 1: Report of Sprout — Data Link

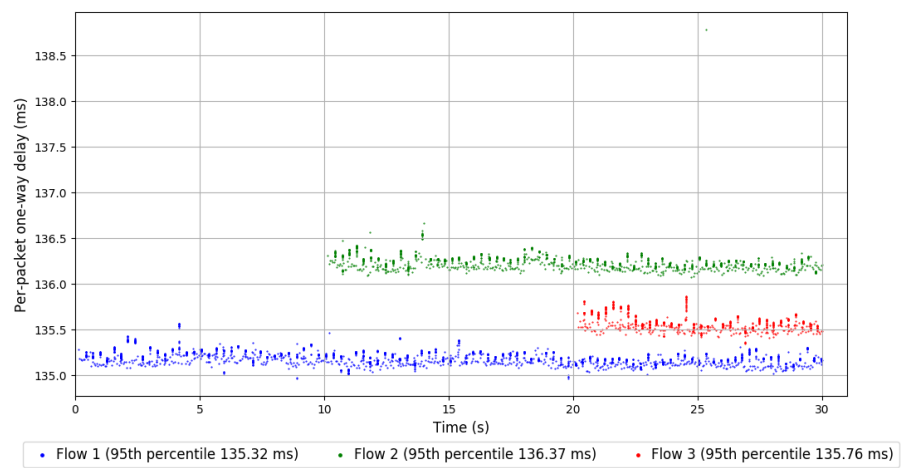
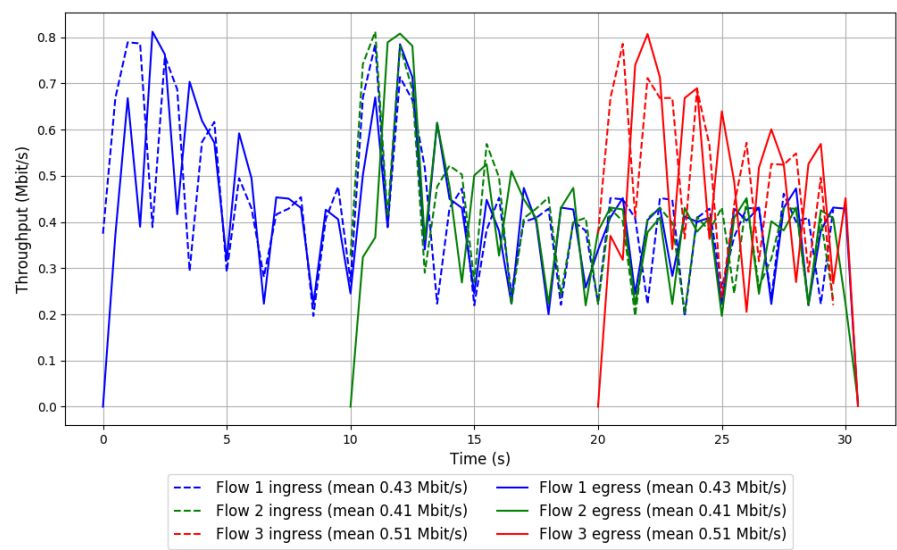


Run 2: Statistics of Sprout

Start at: 2018-10-02 21:34:42
End at: 2018-10-02 21:35:12
Local clock offset: -0.022 ms
Remote clock offset: -0.059 ms

Below is generated by plot.py at 2018-10-03 01:44:06
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.87 Mbit/s
95th percentile per-packet one-way delay: 136.307 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 135.321 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 136.370 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.51 Mbit/s
95th percentile per-packet one-way delay: 135.757 ms
Loss rate: 0.00%

Run 2: Report of Sprout — Data Link

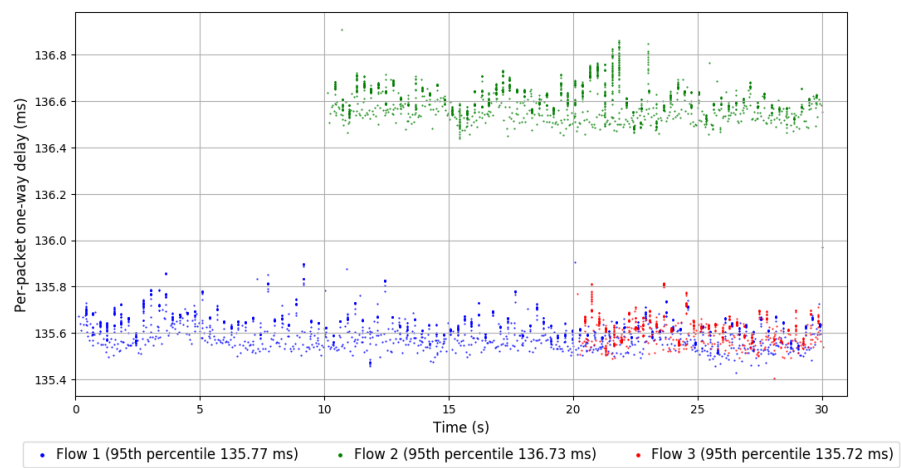
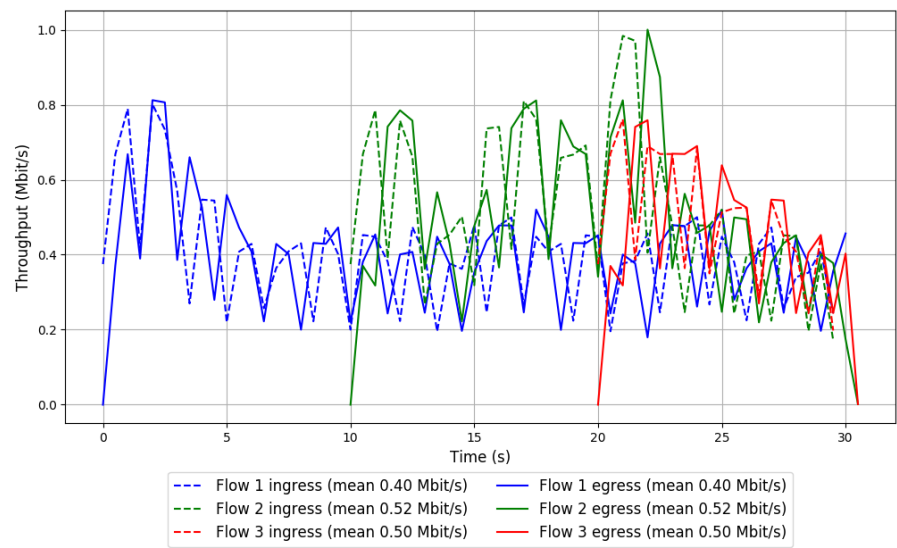


Run 3: Statistics of Sprout

Start at: 2018-10-02 22:07:44
End at: 2018-10-02 22:08:14
Local clock offset: -0.226 ms
Remote clock offset: -0.132 ms

```
# Below is generated by plot.py at 2018-10-03 01:44:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.92 Mbit/s
95th percentile per-packet one-way delay: 136.677 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 135.766 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.52 Mbit/s
95th percentile per-packet one-way delay: 136.732 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 135.724 ms
Loss rate: 0.00%
```

Run 3: Report of Sprout — Data Link

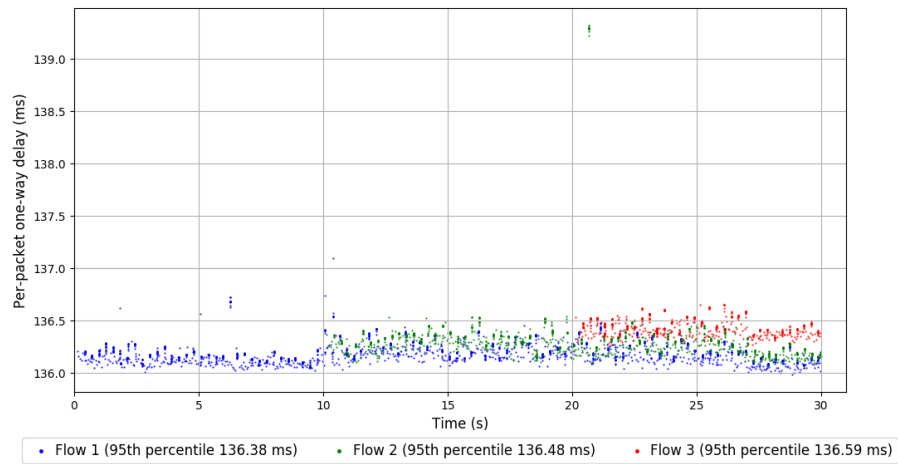
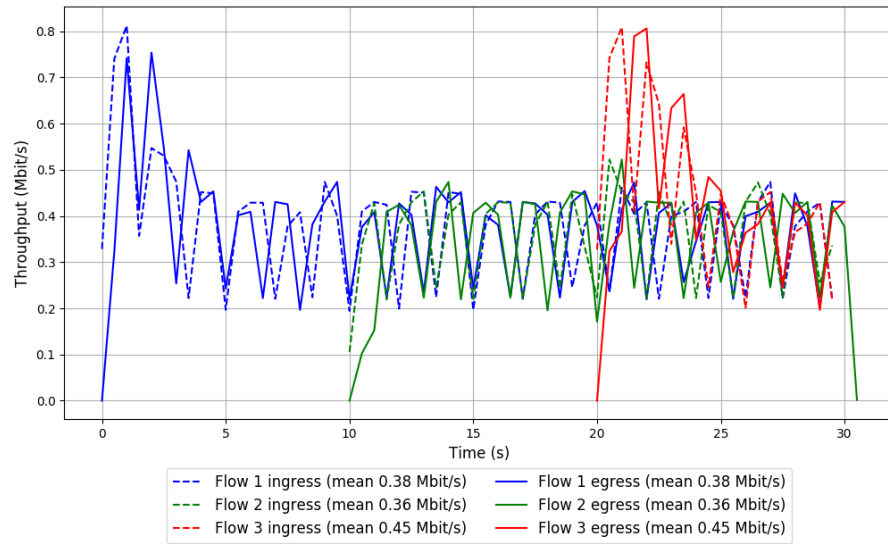


Run 4: Statistics of Sprout

Start at: 2018-10-02 22:40:55
End at: 2018-10-02 22:41:25
Local clock offset: -0.235 ms
Remote clock offset: -0.487 ms

```
# Below is generated by plot.py at 2018-10-03 01:44:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.77 Mbit/s
95th percentile per-packet one-way delay: 136.522 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 136.380 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 136.480 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 136.587 ms
Loss rate: 0.00%
```

Run 4: Report of Sprout — Data Link

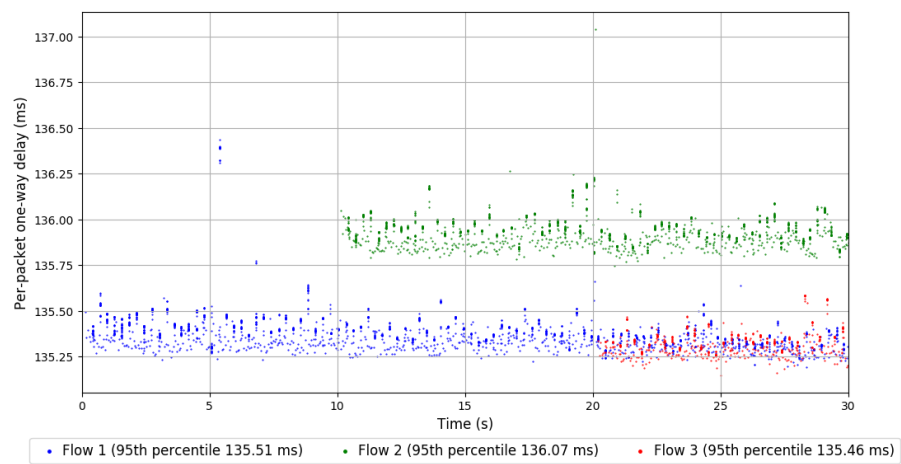
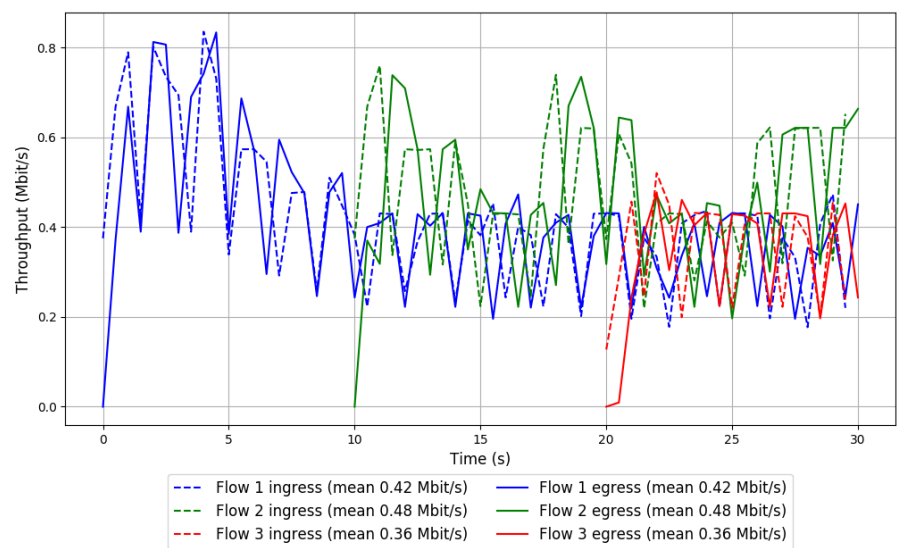


Run 5: Statistics of Sprout

Start at: 2018-10-02 23:13:32
End at: 2018-10-02 23:14:02
Local clock offset: 0.002 ms
Remote clock offset: -0.353 ms

Below is generated by plot.py at 2018-10-03 01:44:06
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.85 Mbit/s
95th percentile per-packet one-way delay: 136.021 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 135.508 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 136.070 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 135.455 ms
Loss rate: 0.00%

Run 5: Report of Sprout — Data Link

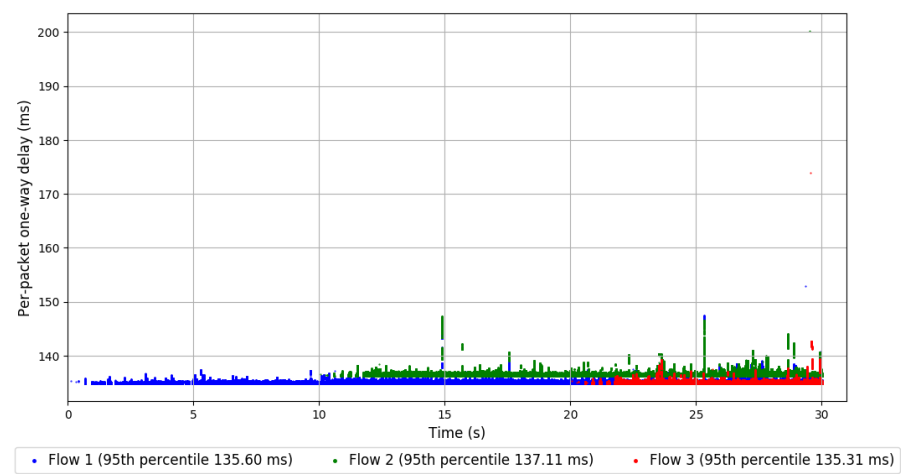
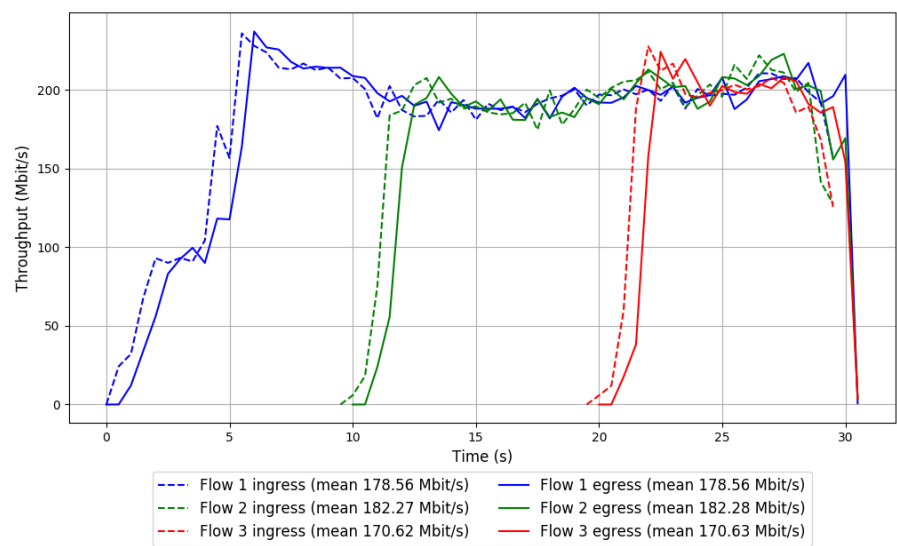


Run 1: Statistics of TaoVA-100x

Start at: 2018-10-02 20:39:14
End at: 2018-10-02 20:39:44
Local clock offset: -0.338 ms
Remote clock offset: -0.045 ms

Below is generated by plot.py at 2018-10-03 01:46:38
Datalink statistics
-- Total of 3 flows:
Average throughput: 357.24 Mbit/s
95th percentile per-packet one-way delay: 136.721 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 178.56 Mbit/s
95th percentile per-packet one-way delay: 135.600 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 182.28 Mbit/s
95th percentile per-packet one-way delay: 137.111 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 170.63 Mbit/s
95th percentile per-packet one-way delay: 135.308 ms
Loss rate: 0.00%

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

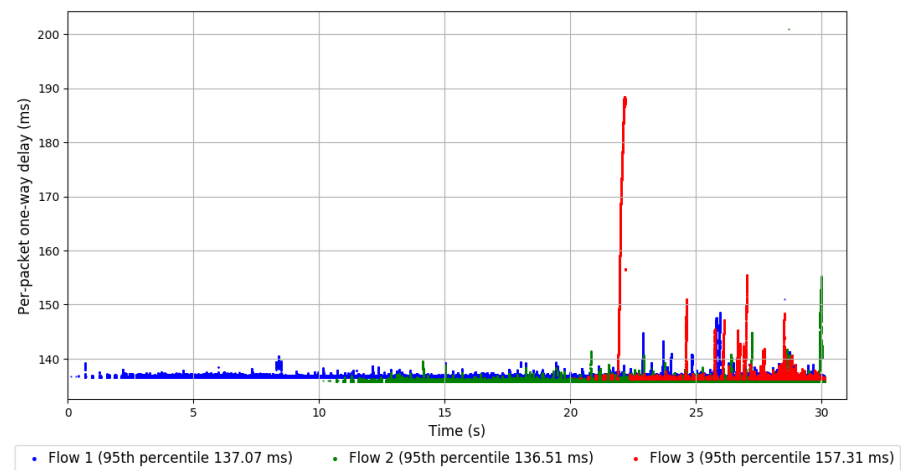
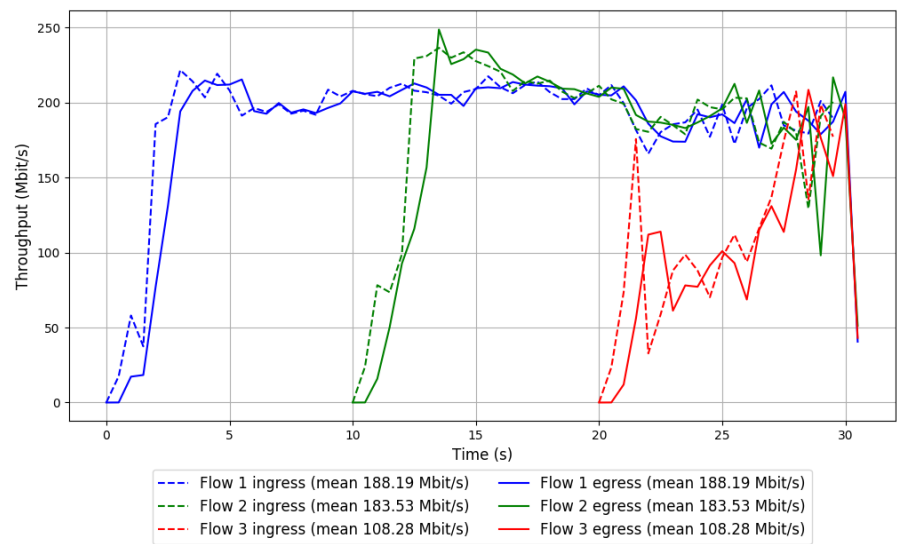


Run 2: Statistics of TaoVA-100x

Start at: 2018-10-02 21:12:26
End at: 2018-10-02 21:12:56
Local clock offset: -0.314 ms
Remote clock offset: -0.057 ms

Below is generated by plot.py at 2018-10-03 01:46:39
Datalink statistics
-- Total of 3 flows:
Average throughput: 346.41 Mbit/s
95th percentile per-packet one-way delay: 137.236 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 188.19 Mbit/s
95th percentile per-packet one-way delay: 137.070 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 183.53 Mbit/s
95th percentile per-packet one-way delay: 136.510 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 108.28 Mbit/s
95th percentile per-packet one-way delay: 157.314 ms
Loss rate: 0.01%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-10-02 21:45:45

End at: 2018-10-02 21:46:15

Local clock offset: -0.237 ms

Remote clock offset: 0.276 ms

Below is generated by plot.py at 2018-10-03 01:46:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 314.74 Mbit/s

95th percentile per-packet one-way delay: 137.132 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 195.44 Mbit/s

95th percentile per-packet one-way delay: 137.063 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 172.96 Mbit/s

95th percentile per-packet one-way delay: 137.272 ms

Loss rate: 0.00%

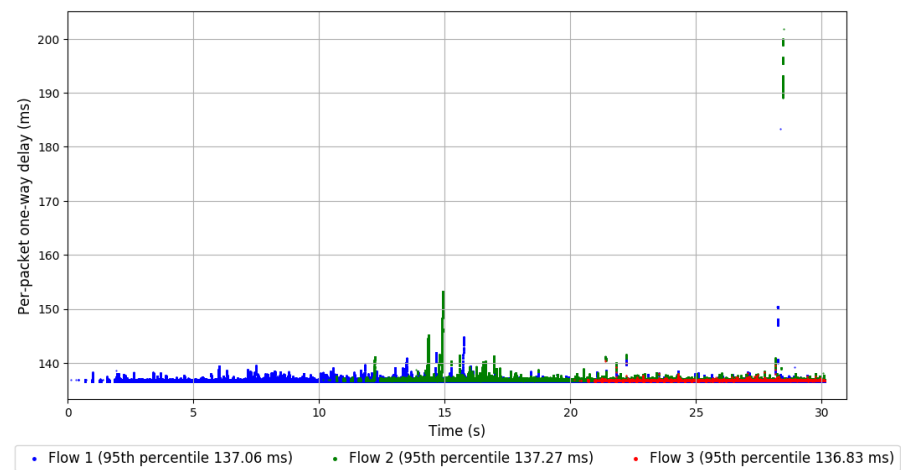
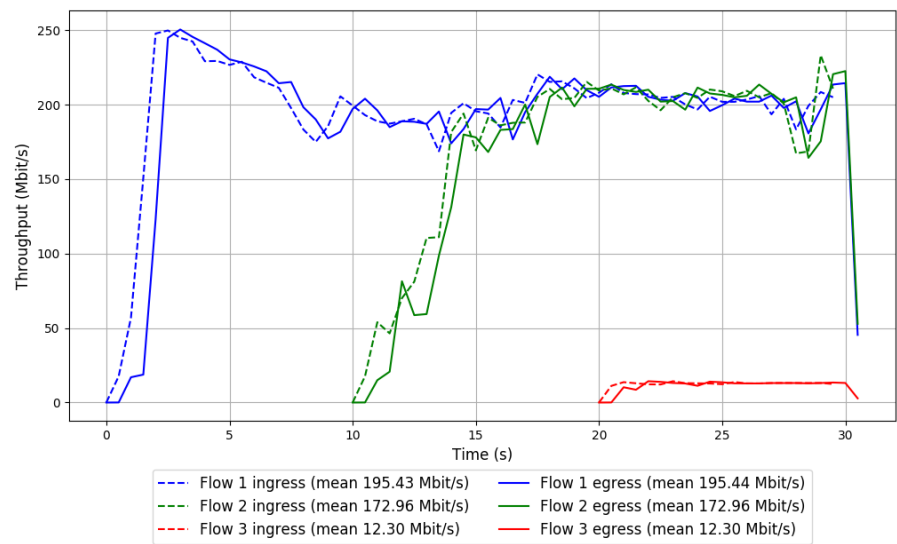
-- Flow 3:

Average throughput: 12.30 Mbit/s

95th percentile per-packet one-way delay: 136.828 ms

Loss rate: 0.00%

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

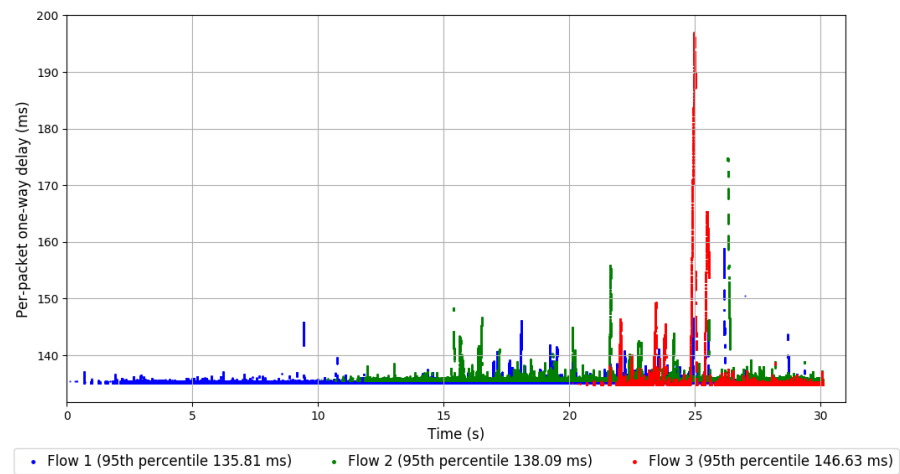
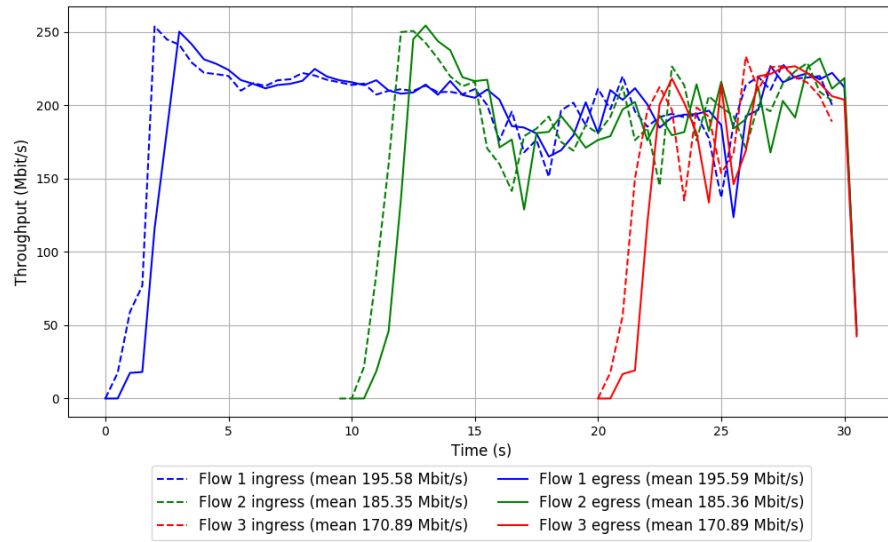


Run 4: Statistics of TaoVA-100x

Start at: 2018-10-02 22:18:42
End at: 2018-10-02 22:19:12
Local clock offset: 0.04 ms
Remote clock offset: -0.517 ms

Below is generated by plot.py at 2018-10-03 01:48:55
Datalink statistics
-- Total of 3 flows:
Average throughput: 375.92 Mbit/s
95th percentile per-packet one-way delay: 137.109 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 195.59 Mbit/s
95th percentile per-packet one-way delay: 135.813 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 185.36 Mbit/s
95th percentile per-packet one-way delay: 138.091 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 170.89 Mbit/s
95th percentile per-packet one-way delay: 146.631 ms
Loss rate: 0.00%

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

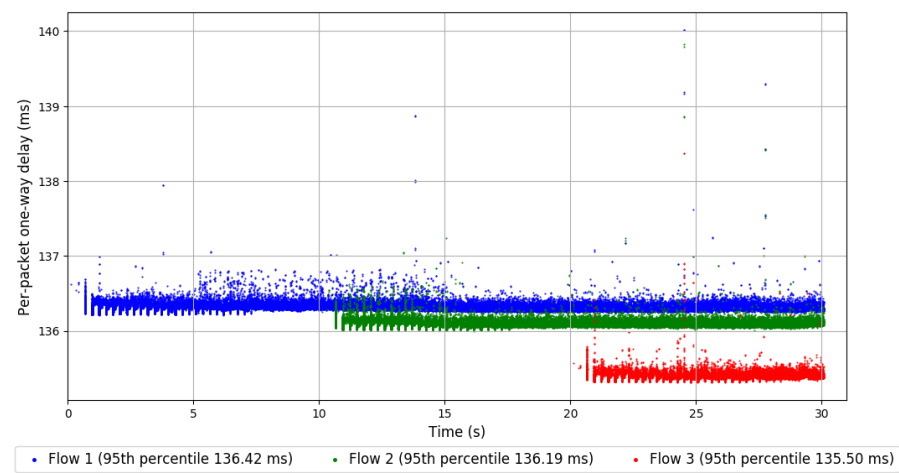
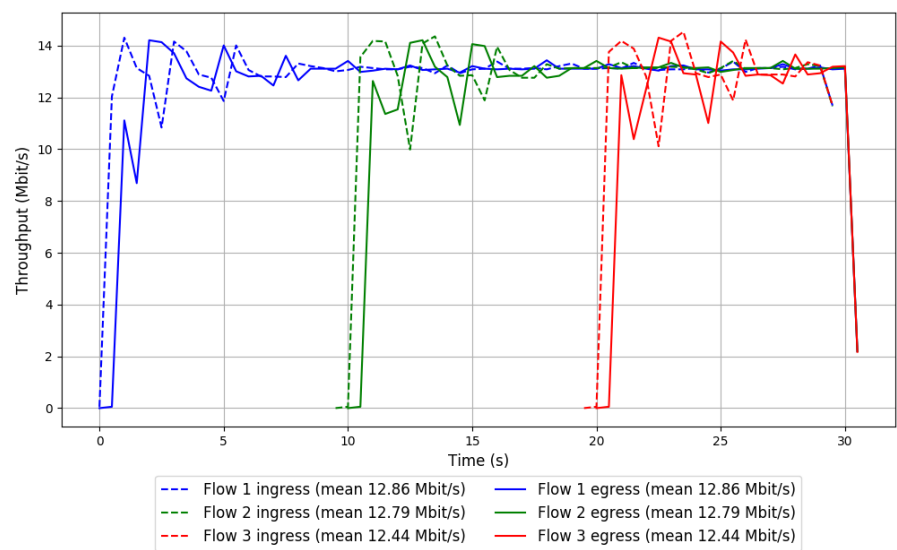


Run 5: Statistics of TaoVA-100x

Start at: 2018-10-02 22:51:58
End at: 2018-10-02 22:52:28
Local clock offset: -0.115 ms
Remote clock offset: -0.081 ms

Below is generated by plot.py at 2018-10-03 01:48:55
Datalink statistics
-- Total of 3 flows:
Average throughput: 25.53 Mbit/s
95th percentile per-packet one-way delay: 136.386 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.86 Mbit/s
95th percentile per-packet one-way delay: 136.416 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 12.79 Mbit/s
95th percentile per-packet one-way delay: 136.191 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 12.44 Mbit/s
95th percentile per-packet one-way delay: 135.496 ms
Loss rate: 0.00%

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

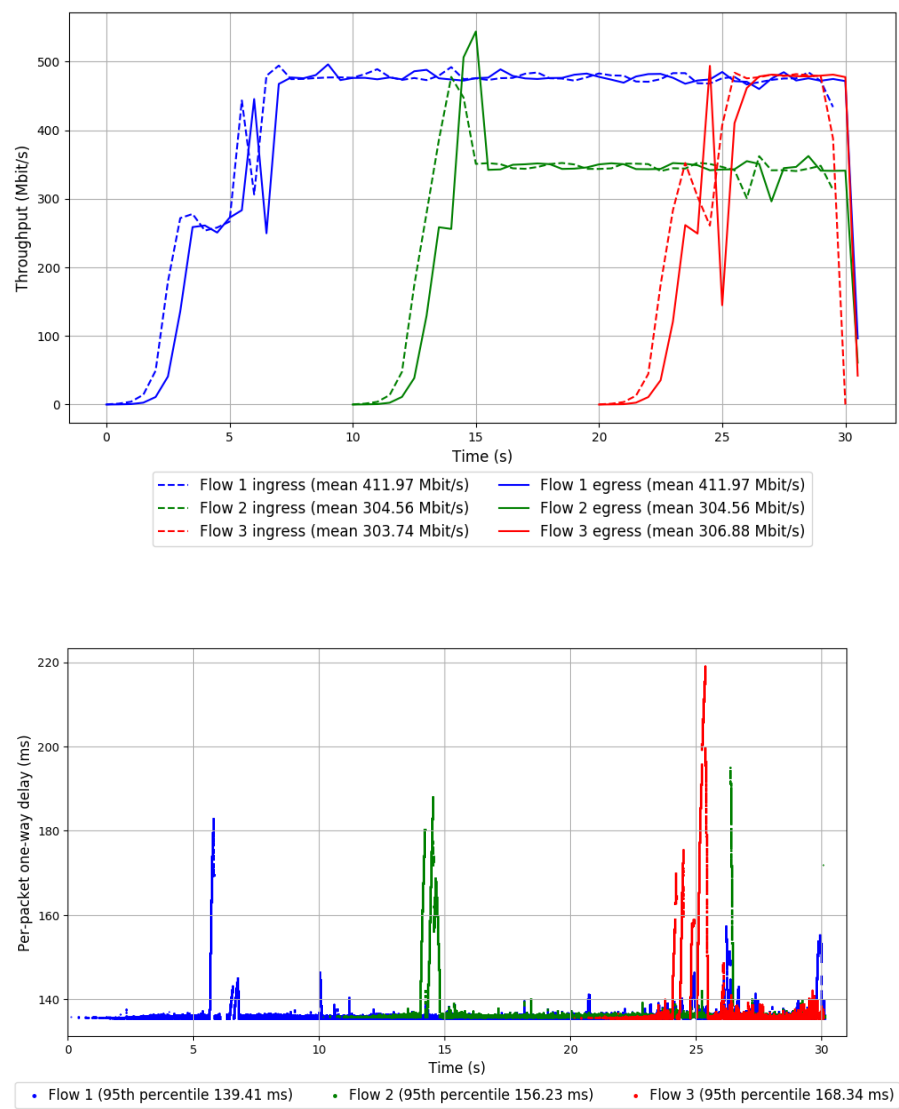


Run 1: Statistics of TCP Vegas

Start at: 2018-10-02 20:41:13
End at: 2018-10-02 20:41:43
Local clock offset: -0.194 ms
Remote clock offset: -0.052 ms

Below is generated by plot.py at 2018-10-03 01:50:29
Datalink statistics
-- Total of 3 flows:
Average throughput: 716.08 Mbit/s
95th percentile per-packet one-way delay: 144.721 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 411.97 Mbit/s
95th percentile per-packet one-way delay: 139.413 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 304.56 Mbit/s
95th percentile per-packet one-way delay: 156.227 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 306.88 Mbit/s
95th percentile per-packet one-way delay: 168.336 ms
Loss rate: 0.00%

Run 1: Report of TCP Vegas — Data Link

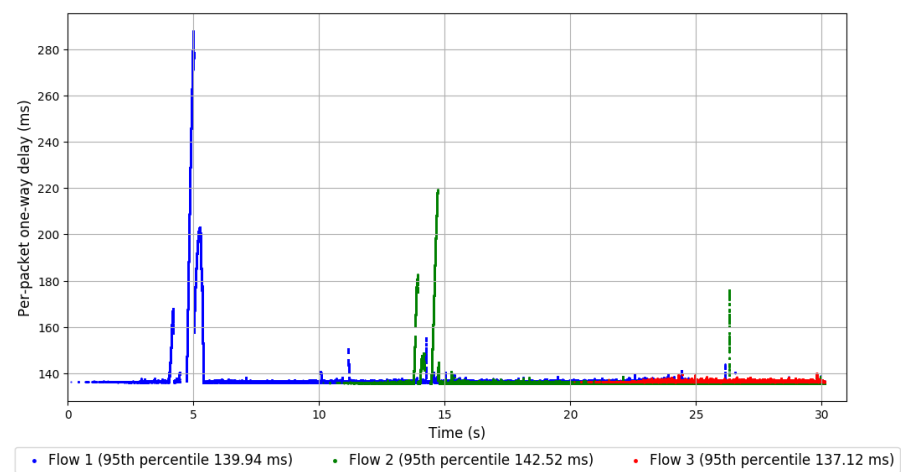
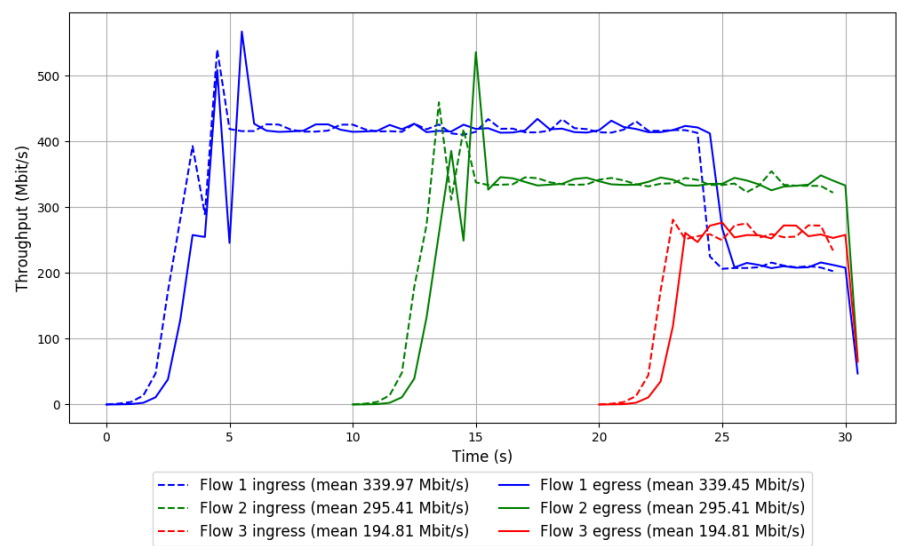


Run 2: Statistics of TCP Vegas

Start at: 2018-10-02 21:14:24
End at: 2018-10-02 21:14:54
Local clock offset: -0.115 ms
Remote clock offset: -0.035 ms

Below is generated by plot.py at 2018-10-03 01:50:29
Datalink statistics
-- Total of 3 flows:
Average throughput: 600.93 Mbit/s
95th percentile per-packet one-way delay: 139.087 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 339.45 Mbit/s
95th percentile per-packet one-way delay: 139.939 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 295.41 Mbit/s
95th percentile per-packet one-way delay: 142.522 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 194.81 Mbit/s
95th percentile per-packet one-way delay: 137.122 ms
Loss rate: 0.00%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2018-10-02 21:47:40

End at: 2018-10-02 21:48:10

Local clock offset: -0.177 ms

Remote clock offset: 0.246 ms

Below is generated by plot.py at 2018-10-03 01:56:14

Datalink statistics

-- Total of 3 flows:

Average throughput: 553.12 Mbit/s

95th percentile per-packet one-way delay: 146.578 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 244.49 Mbit/s

95th percentile per-packet one-way delay: 137.611 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 337.60 Mbit/s

95th percentile per-packet one-way delay: 157.272 ms

Loss rate: 0.00%

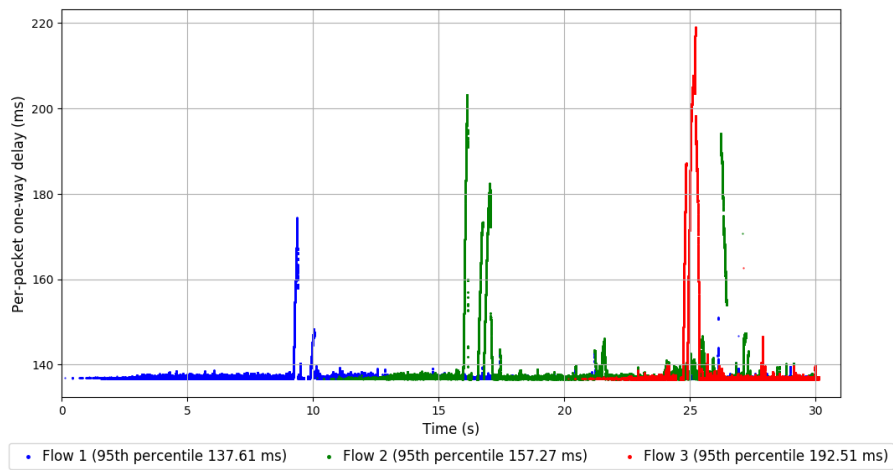
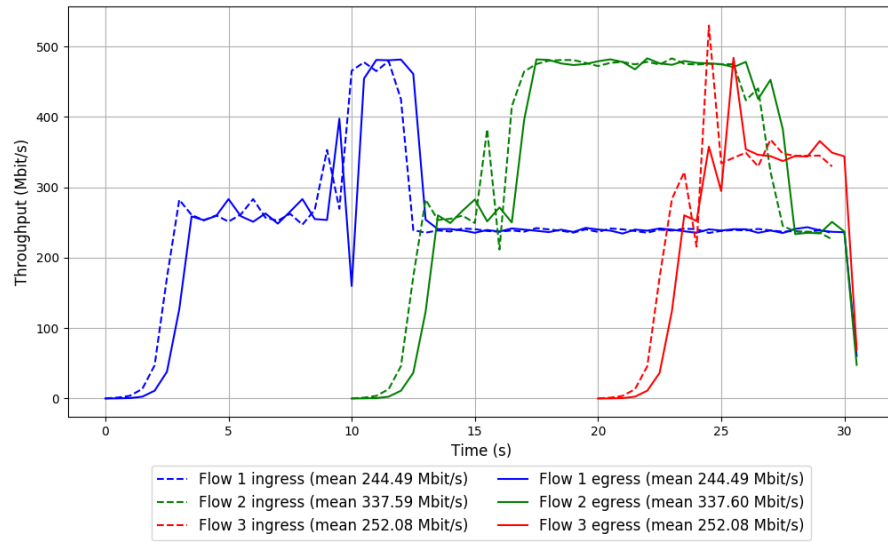
-- Flow 3:

Average throughput: 252.08 Mbit/s

95th percentile per-packet one-way delay: 192.510 ms

Loss rate: 0.00%

Run 3: Report of TCP Vegas — Data Link

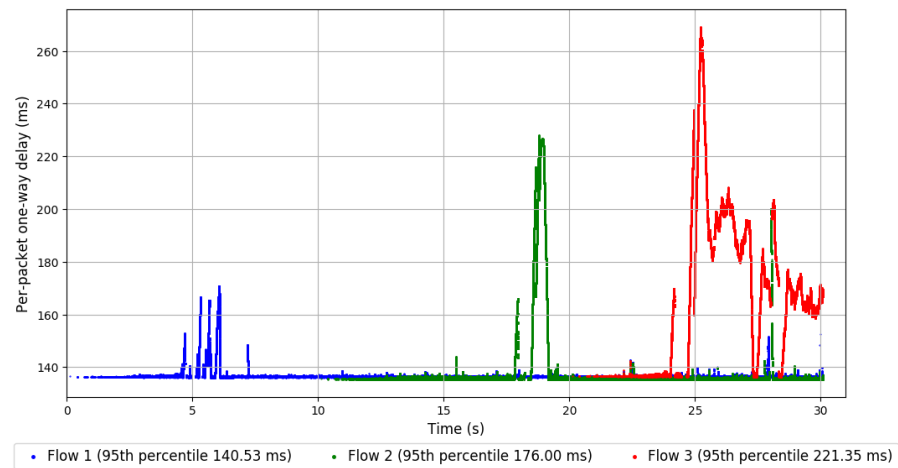
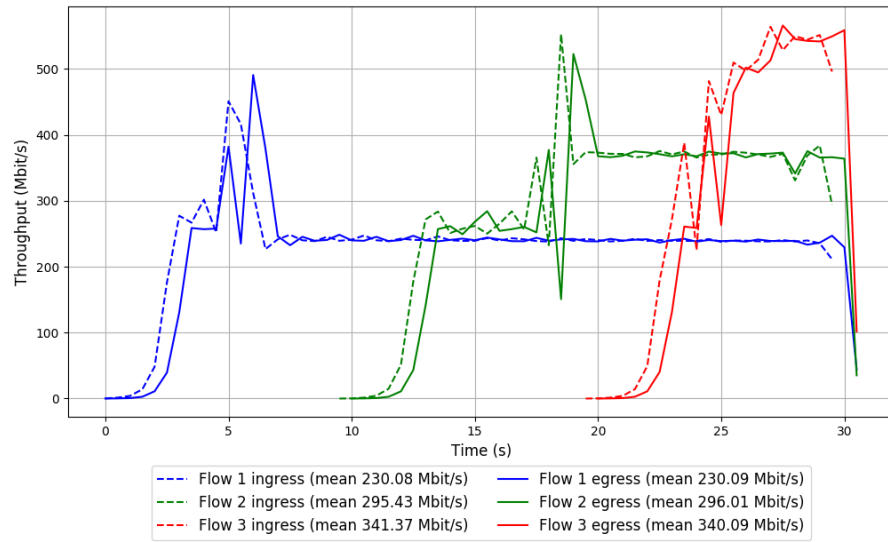


Run 4: Statistics of TCP Vegas

Start at: 2018-10-02 22:20:44
End at: 2018-10-02 22:21:14
Local clock offset: -0.195 ms
Remote clock offset: -0.121 ms

Below is generated by plot.py at 2018-10-03 01:57:38
Datalink statistics
-- Total of 3 flows:
Average throughput: 540.46 Mbit/s
95th percentile per-packet one-way delay: 196.687 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 230.09 Mbit/s
95th percentile per-packet one-way delay: 140.528 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 296.01 Mbit/s
95th percentile per-packet one-way delay: 175.997 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 340.09 Mbit/s
95th percentile per-packet one-way delay: 221.352 ms
Loss rate: 0.37%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2018-10-02 22:53:20

End at: 2018-10-02 22:53:50

Local clock offset: -0.379 ms

Remote clock offset: 0.261 ms

Below is generated by plot.py at 2018-10-03 02:03:05

Datalink statistics

-- Total of 3 flows:

Average throughput: 715.33 Mbit/s

95th percentile per-packet one-way delay: 140.266 ms

Loss rate: 0.06%

-- Flow 1:

Average throughput: 400.88 Mbit/s

95th percentile per-packet one-way delay: 137.776 ms

Loss rate: 0.06%

-- Flow 2:

Average throughput: 337.27 Mbit/s

95th percentile per-packet one-way delay: 140.383 ms

Loss rate: 0.00%

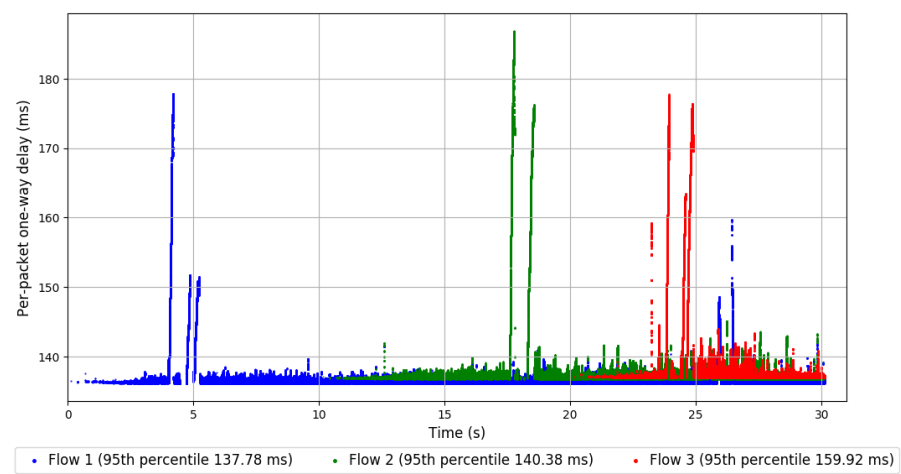
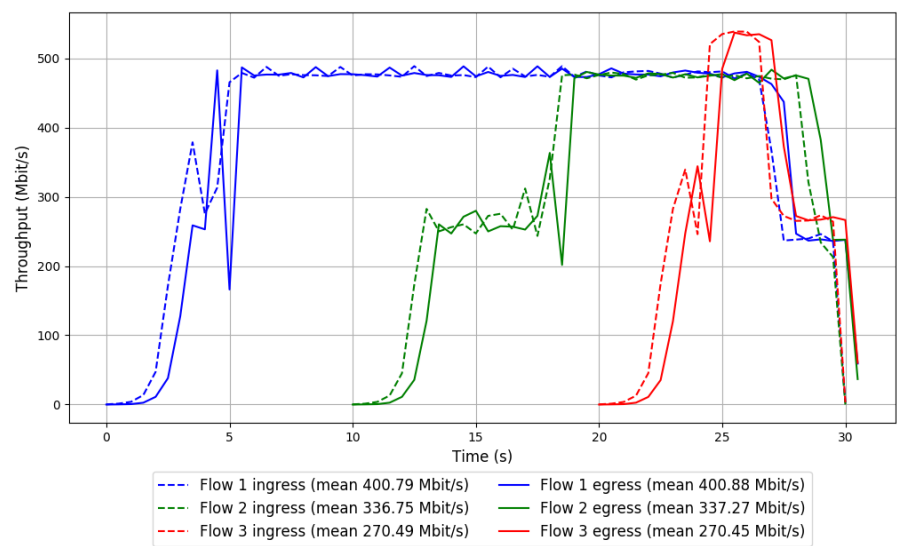
-- Flow 3:

Average throughput: 270.45 Mbit/s

95th percentile per-packet one-way delay: 159.920 ms

Loss rate: 0.27%

Run 5: Report of TCP Vegas — Data Link

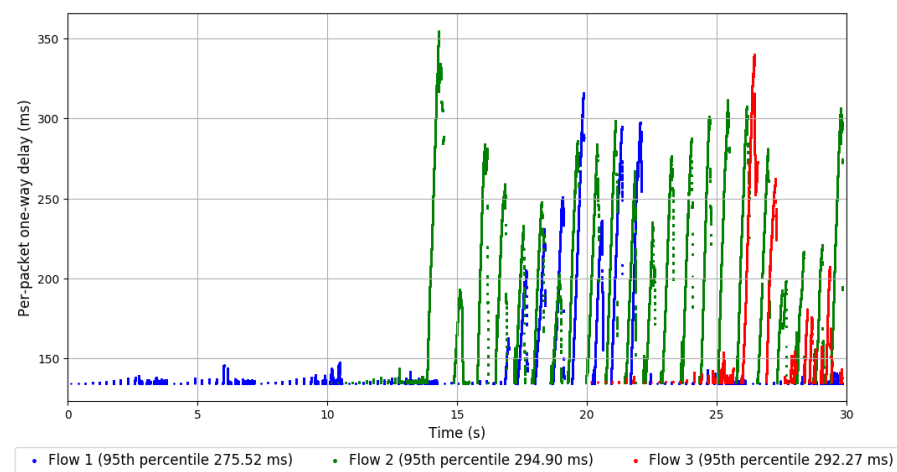
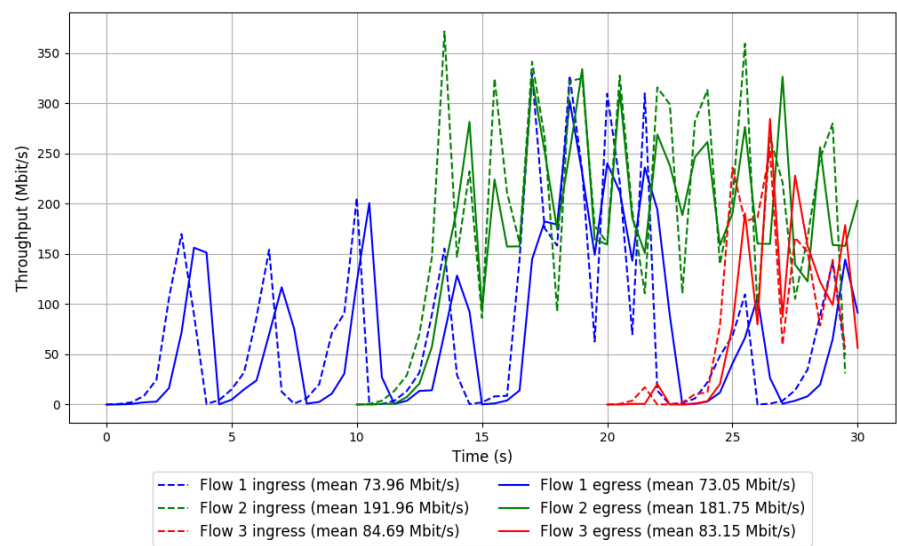


Run 1: Statistics of Verus

Start at: 2018-10-02 20:51:08
End at: 2018-10-02 20:51:38
Local clock offset: -0.21 ms
Remote clock offset: -0.055 ms

Below is generated by plot.py at 2018-10-03 02:03:05
Datalink statistics
-- Total of 3 flows:
Average throughput: 220.60 Mbit/s
95th percentile per-packet one-way delay: 288.265 ms
Loss rate: 3.52%
-- Flow 1:
Average throughput: 73.05 Mbit/s
95th percentile per-packet one-way delay: 275.521 ms
Loss rate: 1.23%
-- Flow 2:
Average throughput: 181.75 Mbit/s
95th percentile per-packet one-way delay: 294.902 ms
Loss rate: 5.21%
-- Flow 3:
Average throughput: 83.15 Mbit/s
95th percentile per-packet one-way delay: 292.270 ms
Loss rate: 1.83%

Run 1: Report of Verus — Data Link

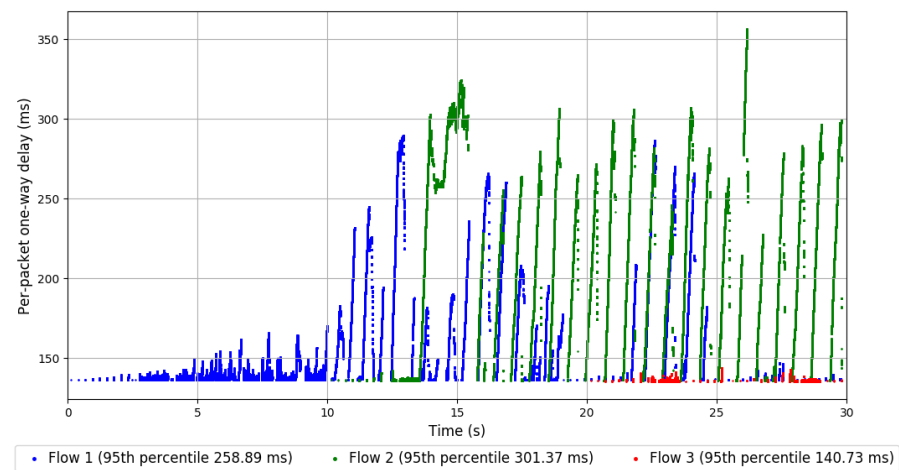
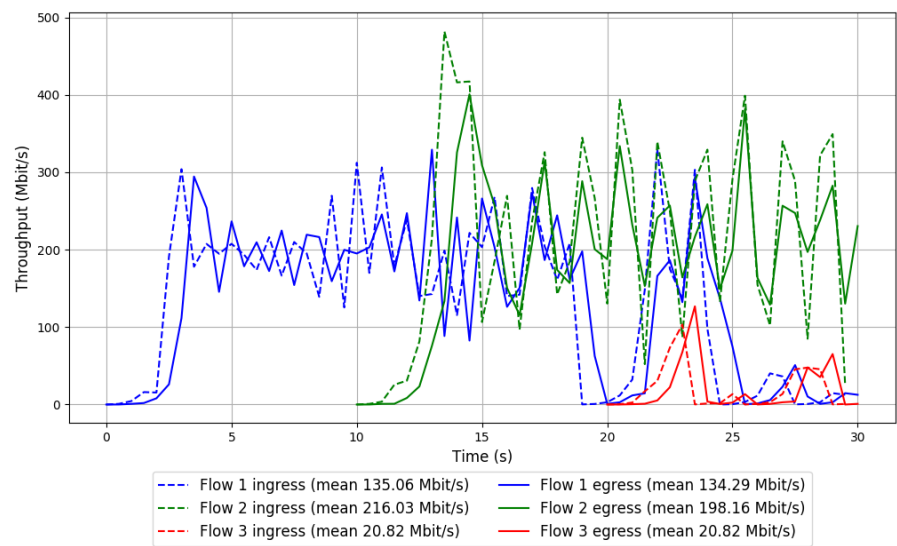


Run 2: Statistics of Verus

Start at: 2018-10-02 21:24:05
End at: 2018-10-02 21:24:35
Local clock offset: -0.054 ms
Remote clock offset: -0.052 ms

Below is generated by plot.py at 2018-10-03 02:03:05
Datalink statistics
-- Total of 3 flows:
Average throughput: 272.19 Mbit/s
95th percentile per-packet one-way delay: 290.909 ms
Loss rate: 4.41%
-- Flow 1:
Average throughput: 134.29 Mbit/s
95th percentile per-packet one-way delay: 258.887 ms
Loss rate: 0.57%
-- Flow 2:
Average throughput: 198.16 Mbit/s
95th percentile per-packet one-way delay: 301.368 ms
Loss rate: 8.24%
-- Flow 3:
Average throughput: 20.82 Mbit/s
95th percentile per-packet one-way delay: 140.732 ms
Loss rate: 0.00%

Run 2: Report of Verus — Data Link

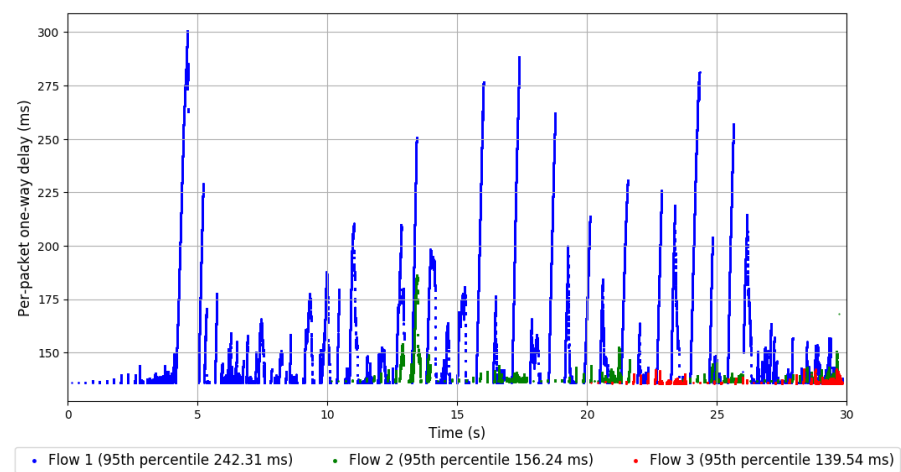
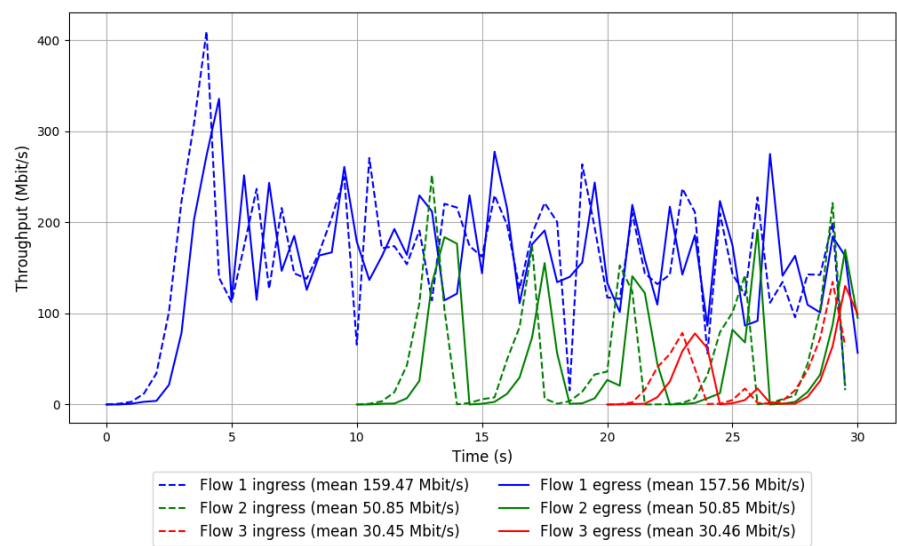


Run 3: Statistics of Verus

Start at: 2018-10-02 21:57:22
End at: 2018-10-02 21:57:52
Local clock offset: -0.29 ms
Remote clock offset: -0.137 ms

Below is generated by plot.py at 2018-10-03 02:03:05
Datalink statistics
-- Total of 3 flows:
Average throughput: 201.01 Mbit/s
95th percentile per-packet one-way delay: 229.823 ms
Loss rate: 0.94%
-- Flow 1:
Average throughput: 157.56 Mbit/s
95th percentile per-packet one-way delay: 242.313 ms
Loss rate: 1.20%
-- Flow 2:
Average throughput: 50.85 Mbit/s
95th percentile per-packet one-way delay: 156.242 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 30.46 Mbit/s
95th percentile per-packet one-way delay: 139.545 ms
Loss rate: 0.00%

Run 3: Report of Verus — Data Link

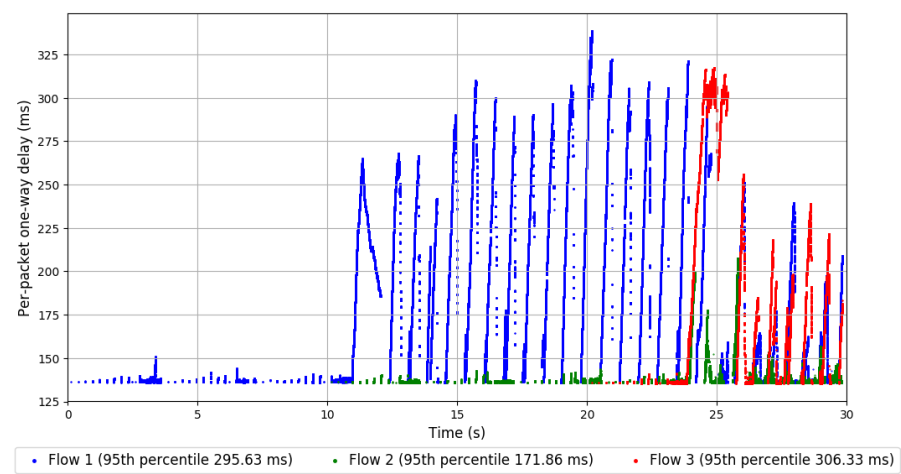
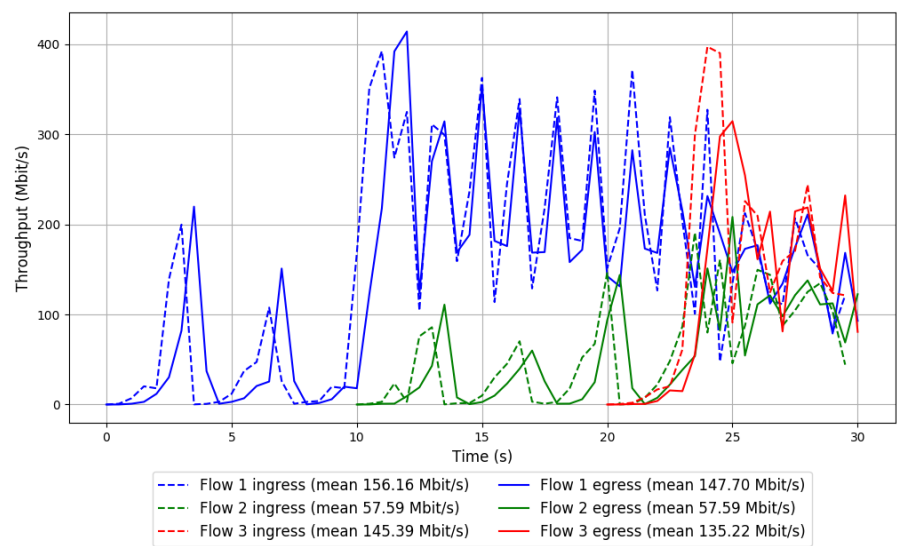


Run 4: Statistics of Verus

Start at: 2018-10-02 22:30:28
End at: 2018-10-02 22:30:58
Local clock offset: -0.109 ms
Remote clock offset: -0.172 ms

Below is generated by plot.py at 2018-10-03 02:03:05
Datalink statistics
-- Total of 3 flows:
Average throughput: 229.79 Mbit/s
95th percentile per-packet one-way delay: 299.645 ms
Loss rate: 4.87%
-- Flow 1:
Average throughput: 147.70 Mbit/s
95th percentile per-packet one-way delay: 295.629 ms
Loss rate: 5.42%
-- Flow 2:
Average throughput: 57.59 Mbit/s
95th percentile per-packet one-way delay: 171.857 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 135.22 Mbit/s
95th percentile per-packet one-way delay: 306.328 ms
Loss rate: 6.99%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-10-02 23:03:04

End at: 2018-10-02 23:03:34

Local clock offset: -0.086 ms

Remote clock offset: 0.035 ms

Below is generated by plot.py at 2018-10-03 02:03:05

Datalink statistics

-- Total of 3 flows:

Average throughput: 181.12 Mbit/s

95th percentile per-packet one-way delay: 278.016 ms

Loss rate: 2.53%

-- Flow 1:

Average throughput: 121.45 Mbit/s

95th percentile per-packet one-way delay: 238.520 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 63.16 Mbit/s

95th percentile per-packet one-way delay: 324.709 ms

Loss rate: 10.10%

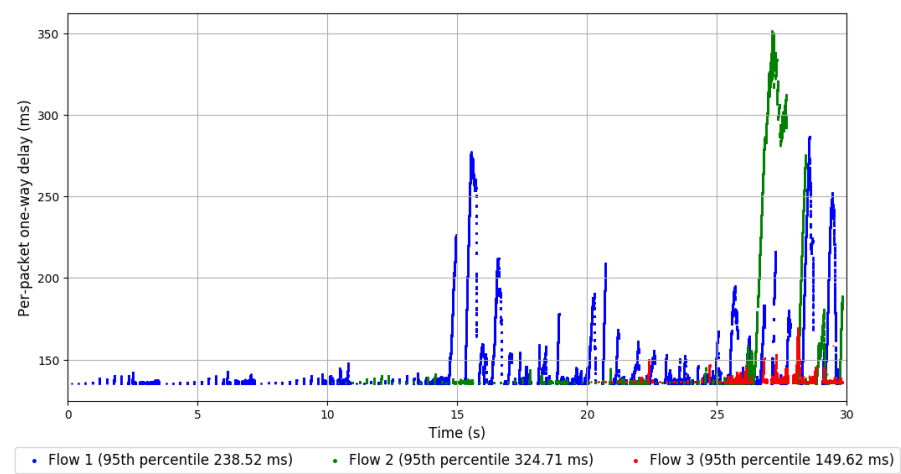
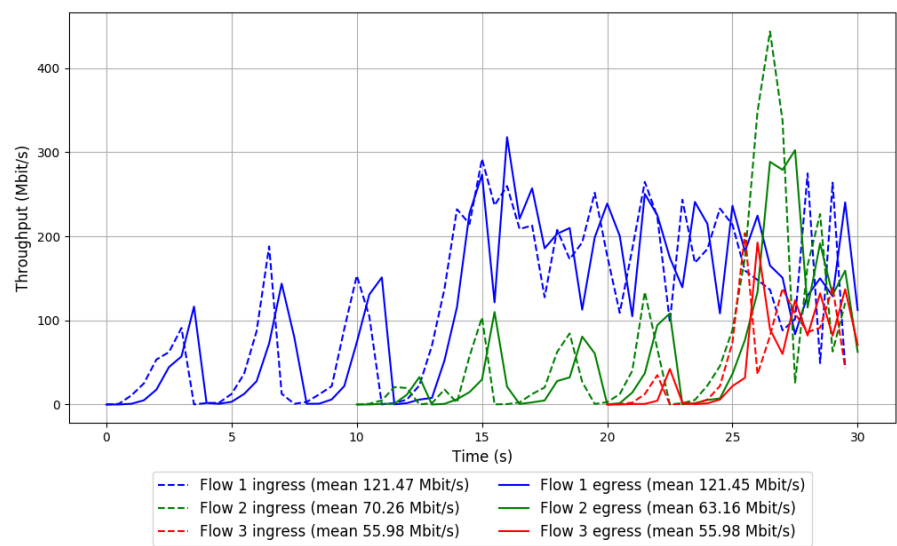
-- Flow 3:

Average throughput: 55.98 Mbit/s

95th percentile per-packet one-way delay: 149.618 ms

Loss rate: 0.00%

Run 5: Report of Verus — Data Link

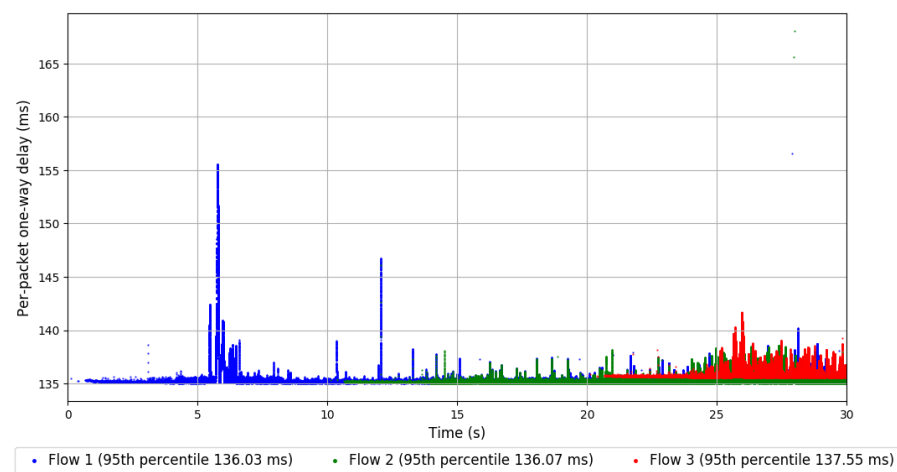
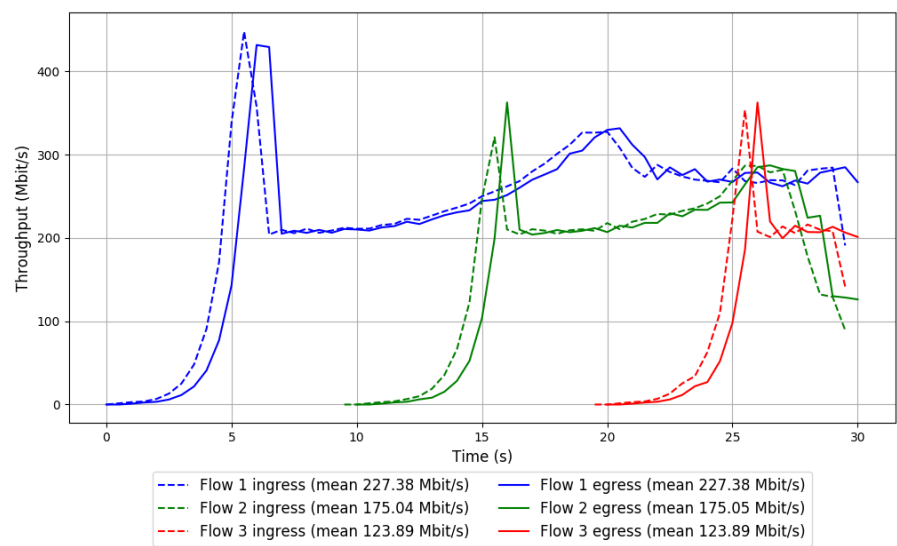


Run 1: Statistics of PCC-Vivace

Start at: 2018-10-02 20:37:22
End at: 2018-10-02 20:37:52
Local clock offset: -0.122 ms
Remote clock offset: -0.047 ms

Below is generated by plot.py at 2018-10-03 02:04:41
Datalink statistics
-- Total of 3 flows:
Average throughput: 384.79 Mbit/s
95th percentile per-packet one-way delay: 136.405 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 227.38 Mbit/s
95th percentile per-packet one-way delay: 136.030 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 175.05 Mbit/s
95th percentile per-packet one-way delay: 136.074 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 123.89 Mbit/s
95th percentile per-packet one-way delay: 137.548 ms
Loss rate: 0.00%

Run 1: Report of PCC-Vivace — Data Link

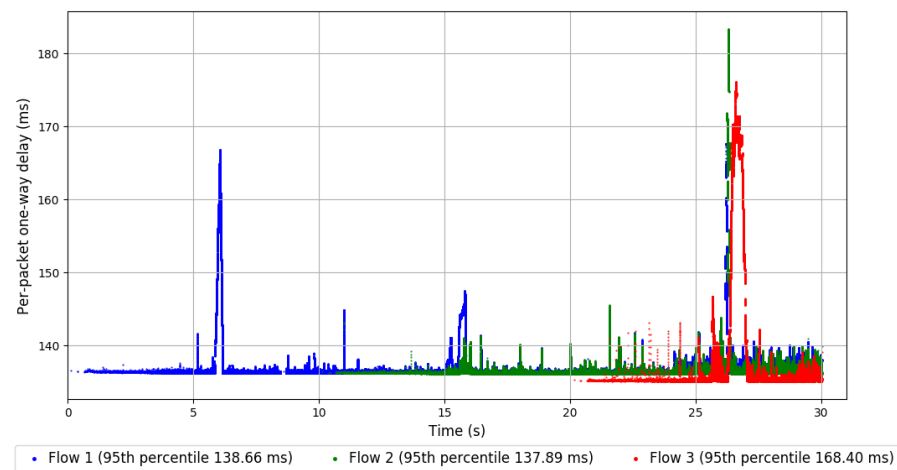
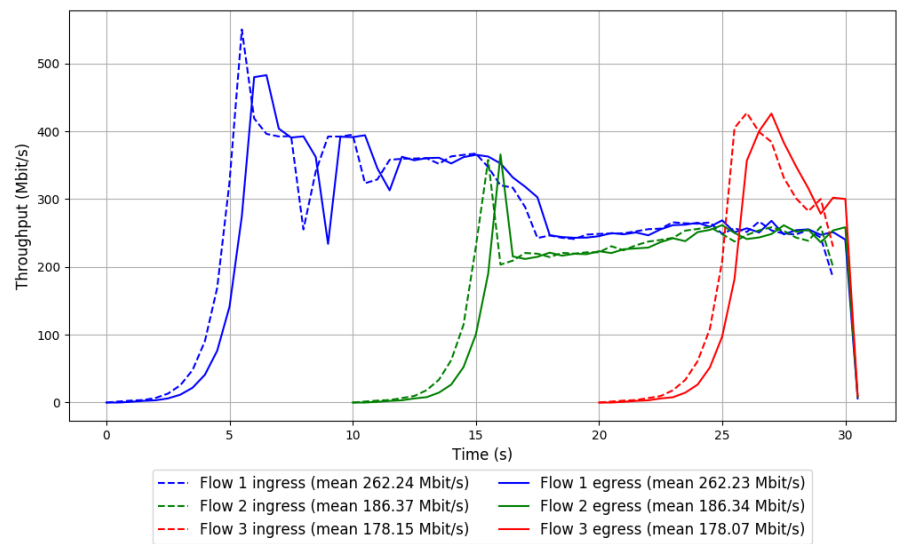


Run 2: Statistics of PCC-Vivace

Start at: 2018-10-02 21:10:31
End at: 2018-10-02 21:11:01
Local clock offset: -0.166 ms
Remote clock offset: -0.053 ms

Below is generated by plot.py at 2018-10-03 02:05:44
Datalink statistics
-- Total of 3 flows:
Average throughput: 444.96 Mbit/s
95th percentile per-packet one-way delay: 140.430 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 262.23 Mbit/s
95th percentile per-packet one-way delay: 138.663 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 186.34 Mbit/s
95th percentile per-packet one-way delay: 137.893 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 178.07 Mbit/s
95th percentile per-packet one-way delay: 168.400 ms
Loss rate: 0.02%

Run 2: Report of PCC-Vivace — Data Link

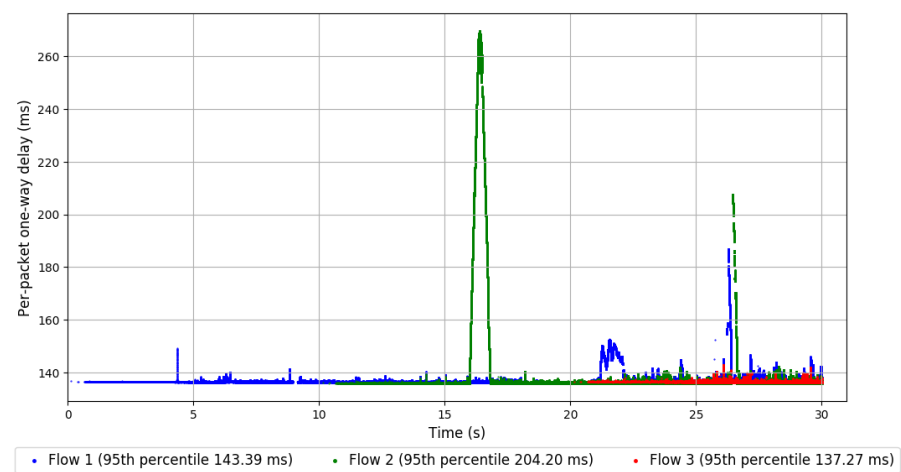
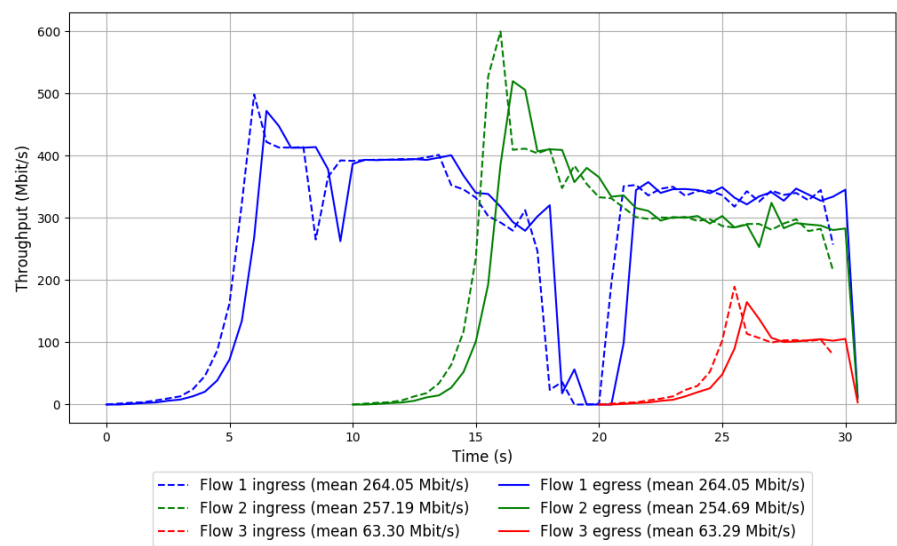


Run 3: Statistics of PCC-Vivace

Start at: 2018-10-02 21:43:48
End at: 2018-10-02 21:44:18
Local clock offset: -0.32 ms
Remote clock offset: -0.047 ms

Below is generated by plot.py at 2018-10-03 02:06:10
Datalink statistics
-- Total of 3 flows:
Average throughput: 454.32 Mbit/s
95th percentile per-packet one-way delay: 147.202 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 264.05 Mbit/s
95th percentile per-packet one-way delay: 143.394 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 254.69 Mbit/s
95th percentile per-packet one-way delay: 204.201 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 63.29 Mbit/s
95th percentile per-packet one-way delay: 137.266 ms
Loss rate: 0.00%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-10-02 22:16:43

End at: 2018-10-02 22:17:13

Local clock offset: -0.218 ms

Remote clock offset: 0.242 ms

Below is generated by plot.py at 2018-10-03 02:06:14

Datalink statistics

-- Total of 3 flows:

Average throughput: 476.63 Mbit/s

95th percentile per-packet one-way delay: 186.431 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 246.69 Mbit/s

95th percentile per-packet one-way delay: 137.649 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 286.57 Mbit/s

95th percentile per-packet one-way delay: 220.117 ms

Loss rate: 0.00%

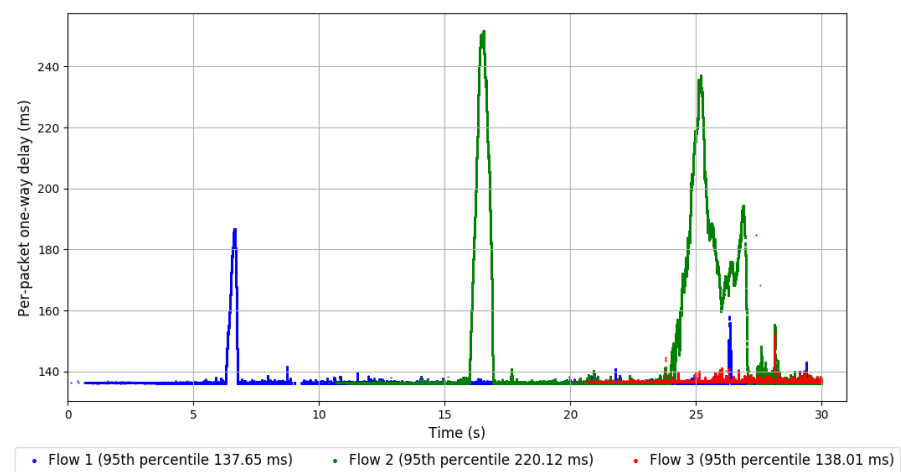
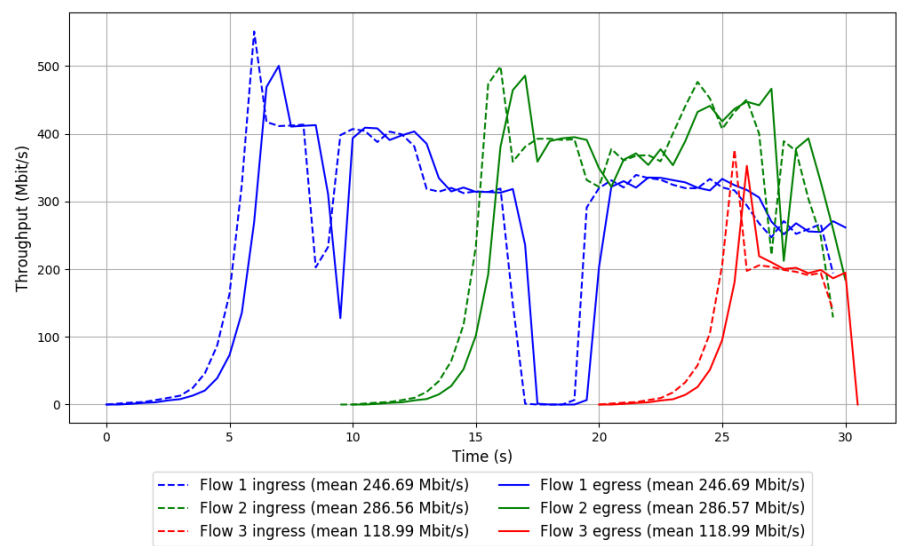
-- Flow 3:

Average throughput: 118.99 Mbit/s

95th percentile per-packet one-way delay: 138.014 ms

Loss rate: 0.00%

Run 4: Report of PCC-Vivace — Data Link

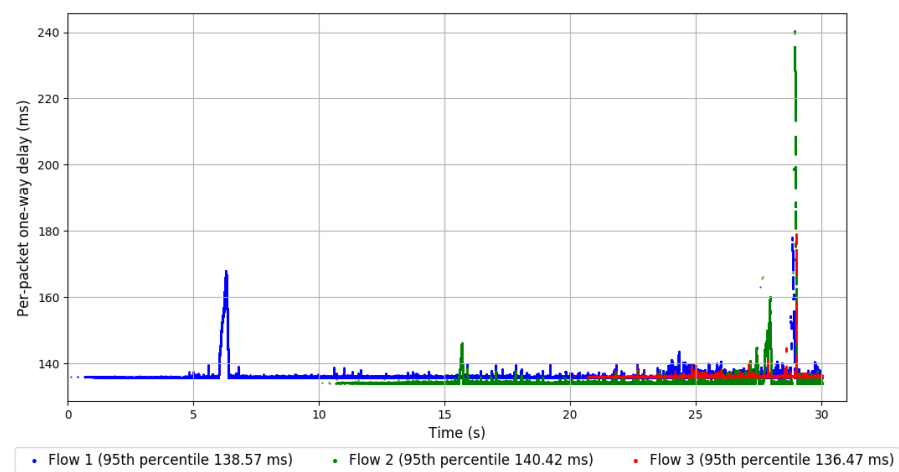
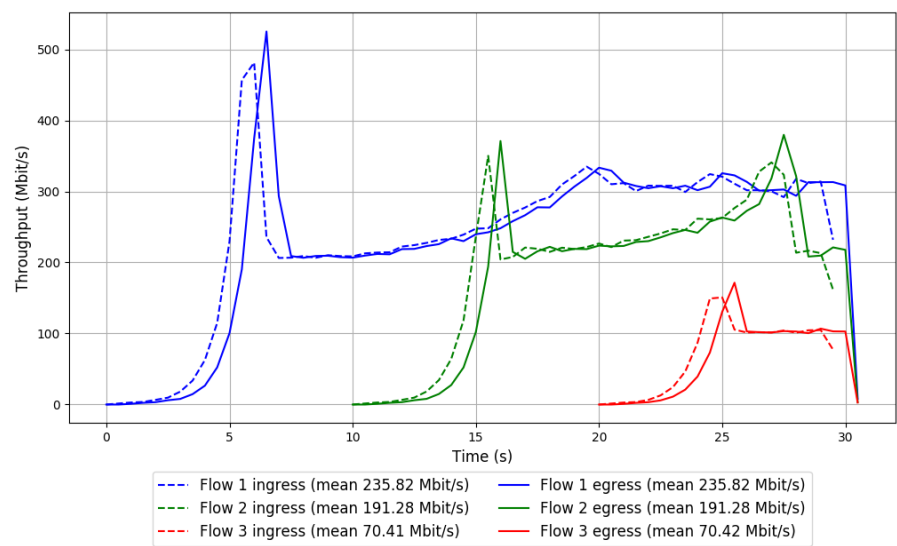


Run 5: Statistics of PCC-Vivace

Start at: 2018-10-02 22:50:07
End at: 2018-10-02 22:50:37
Local clock offset: -0.179 ms
Remote clock offset: -0.461 ms

Below is generated by plot.py at 2018-10-03 02:06:14
Datalink statistics
-- Total of 3 flows:
Average throughput: 386.24 Mbit/s
95th percentile per-packet one-way delay: 138.645 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 235.82 Mbit/s
95th percentile per-packet one-way delay: 138.572 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 191.28 Mbit/s
95th percentile per-packet one-way delay: 140.418 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 70.42 Mbit/s
95th percentile per-packet one-way delay: 136.472 ms
Loss rate: 0.00%

Run 5: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-10-02 20:49:50

End at: 2018-10-02 20:50:20

Local clock offset: -0.125 ms

Remote clock offset: 0.347 ms

Below is generated by plot.py at 2018-10-03 02:06:14

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.36 Mbit/s

95th percentile per-packet one-way delay: 136.731 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 1.89 Mbit/s

95th percentile per-packet one-way delay: 135.753 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 1.16 Mbit/s

95th percentile per-packet one-way delay: 135.043 ms

Loss rate: 0.00%

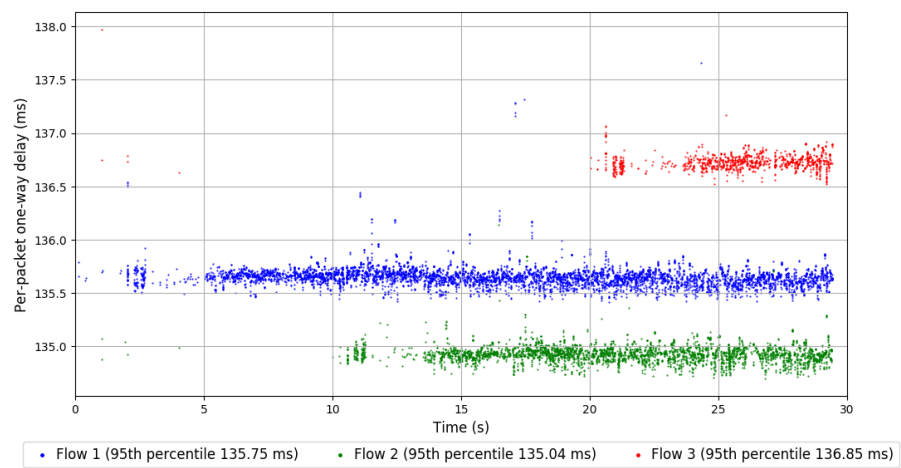
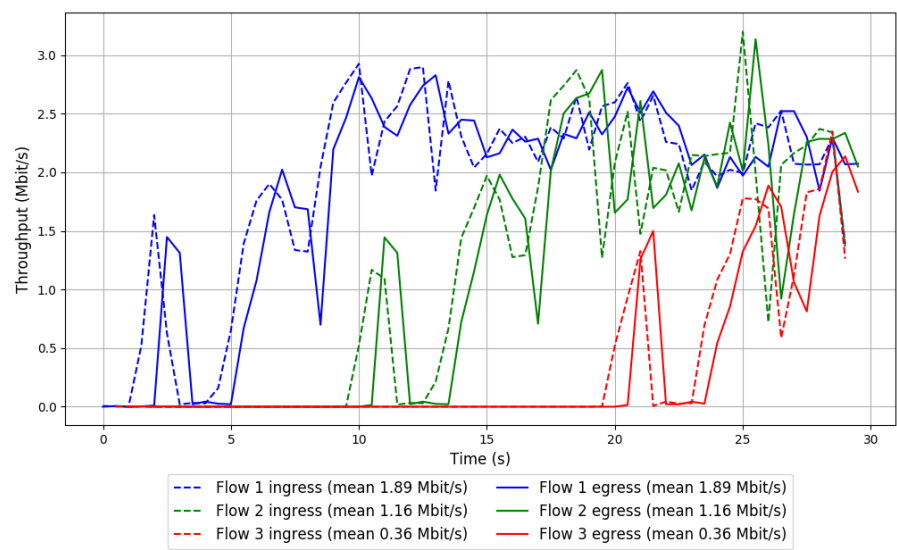
-- Flow 3:

Average throughput: 0.36 Mbit/s

95th percentile per-packet one-way delay: 136.850 ms

Loss rate: 0.00%

Run 1: Report of WebRTC media — Data Link

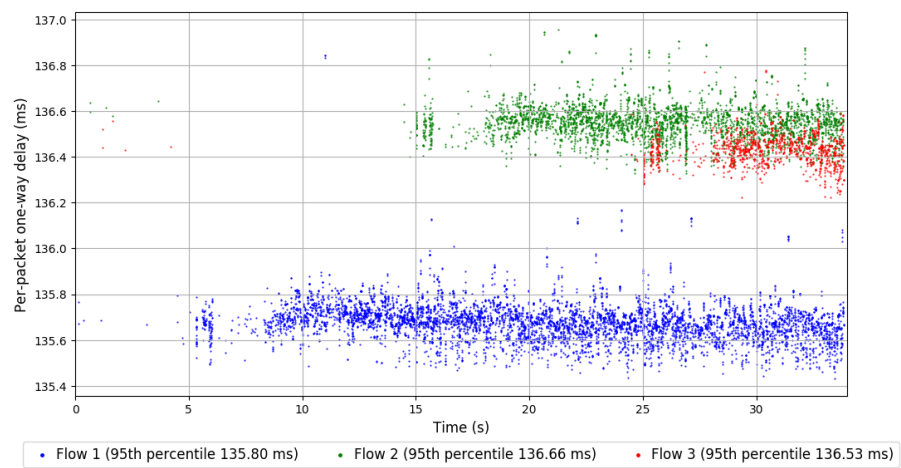
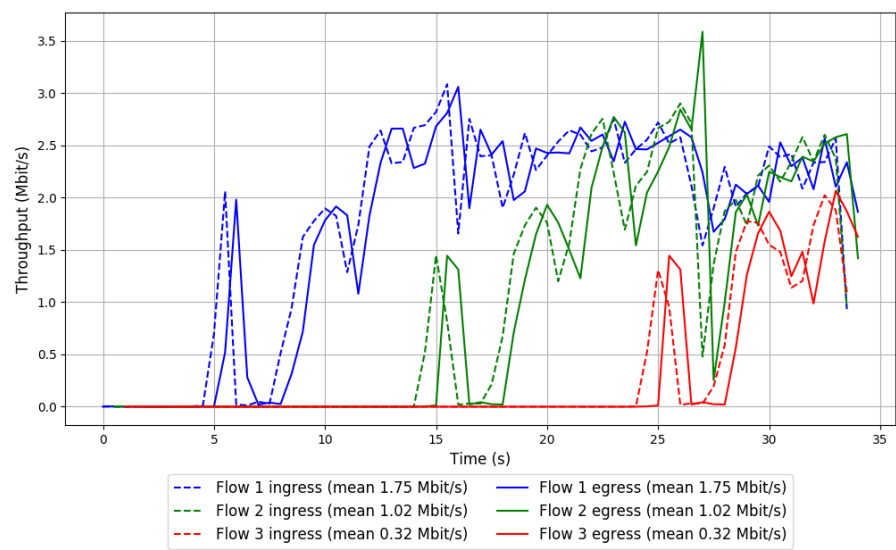


Run 2: Statistics of WebRTC media

Start at: 2018-10-02 21:22:47
End at: 2018-10-02 21:23:17
Local clock offset: -0.168 ms
Remote clock offset: -0.062 ms

Below is generated by plot.py at 2018-10-03 02:06:14
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.07 Mbit/s
95th percentile per-packet one-way delay: 136.612 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.75 Mbit/s
95th percentile per-packet one-way delay: 135.800 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.02 Mbit/s
95th percentile per-packet one-way delay: 136.664 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 136.526 ms
Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-10-02 21:56:04

End at: 2018-10-02 21:56:34

Local clock offset: -0.259 ms

Remote clock offset: 0.24 ms

Below is generated by plot.py at 2018-10-03 02:06:14

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.08 Mbit/s

95th percentile per-packet one-way delay: 137.118 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 1.78 Mbit/s

95th percentile per-packet one-way delay: 137.140 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 1.01 Mbit/s

95th percentile per-packet one-way delay: 136.939 ms

Loss rate: 0.00%

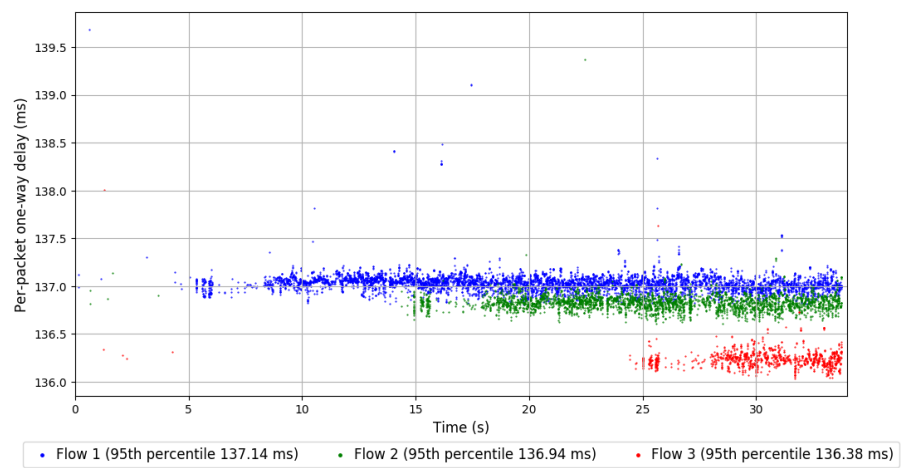
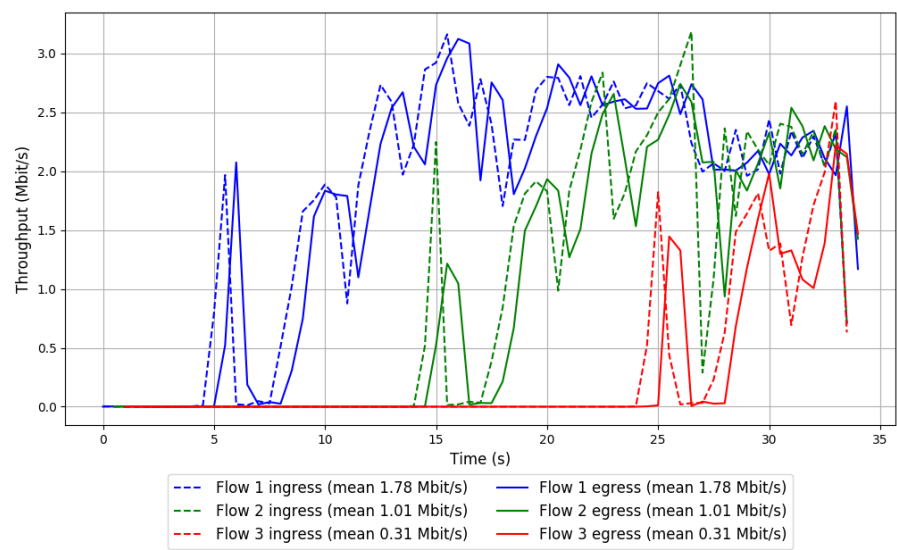
-- Flow 3:

Average throughput: 0.31 Mbit/s

95th percentile per-packet one-way delay: 136.381 ms

Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link

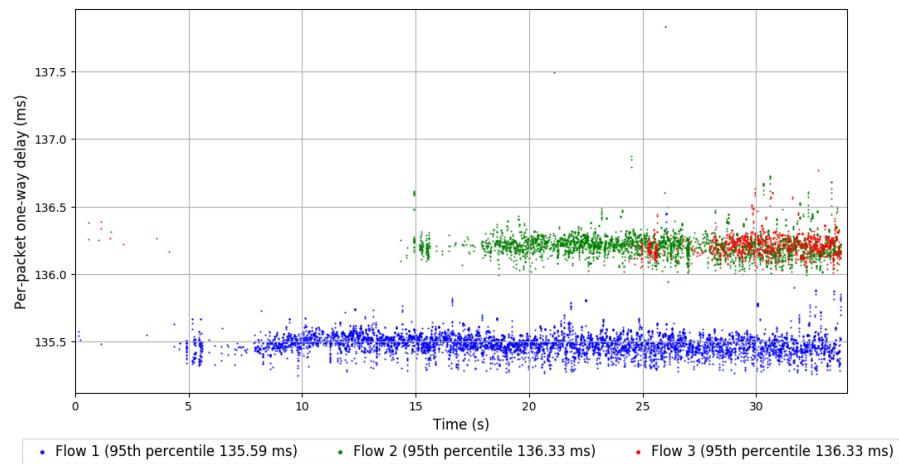
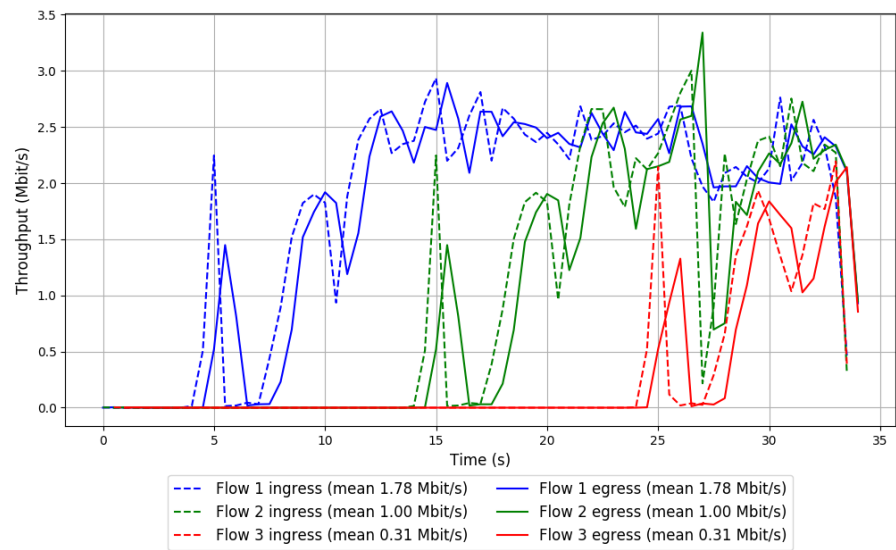


Run 4: Statistics of WebRTC media

Start at: 2018-10-02 22:29:10
End at: 2018-10-02 22:29:40
Local clock offset: -0.098 ms
Remote clock offset: -0.106 ms

Below is generated by plot.py at 2018-10-03 02:06:14
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.07 Mbit/s
95th percentile per-packet one-way delay: 136.285 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.78 Mbit/s
95th percentile per-packet one-way delay: 135.593 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 136.332 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 136.329 ms
Loss rate: 0.00%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-10-02 23:01:45

End at: 2018-10-02 23:02:15

Local clock offset: -0.366 ms

Remote clock offset: 0.315 ms

Below is generated by plot.py at 2018-10-03 02:06:14

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.01 Mbit/s

95th percentile per-packet one-way delay: 137.272 ms

Loss rate: 0.03%

-- Flow 1:

Average throughput: 1.74 Mbit/s

95th percentile per-packet one-way delay: 137.310 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.98 Mbit/s

95th percentile per-packet one-way delay: 136.646 ms

Loss rate: 0.00%

-- Flow 3:

Average throughput: 0.31 Mbit/s

95th percentile per-packet one-way delay: 137.184 ms

Loss rate: 0.29%

Run 5: Report of WebRTC media — Data Link

