Pantheon Report

Generated at 2017-09-18 17:15:05 (UTC).

Data path: AWS Brazil 1 Ethernet (*local*) →Brazil Ethernet (*remote*).

Repeated the test of 10 congestion control schemes 10 times.

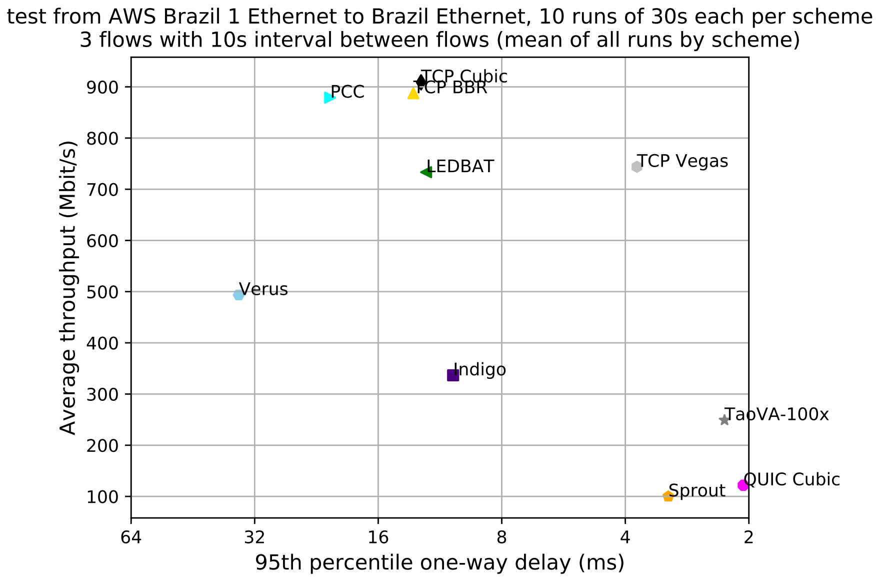
Each test lasted for 30 seconds running 3 flows with 10-second interval between two flows.

Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

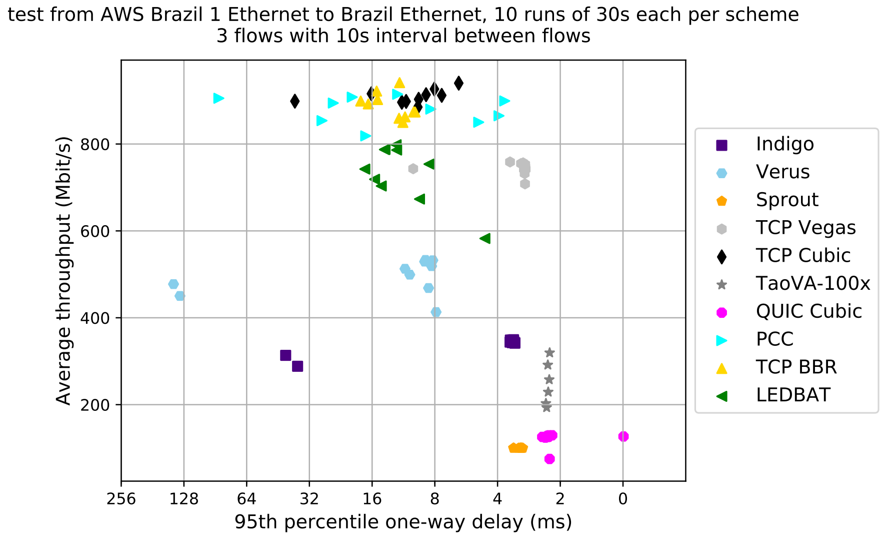
Tested BBR with qdisc of Fair Queuing (`fq`), and other schemes with the default Linux qdisc (`pfifo_fast`).

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

```
Git summary:
branch: master @ 57453dc11f8da93a2e03eea75289fea01b816298
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
 M datagrump/sender.cc
third_party/genericCC @ f7ca42f251bf49b432bb71de6d13fa903515c366
third_party/indigo @ b19f3730105f9aa95452552af924e3719b03cc55
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
 M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ baf443516dea3eeddeccaf9b916cc313273ca4f4
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/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream @ c3370fd7bd17265a79aeb34e4016ad23f5965885
third_party/sourdough @ f1a14bffe749737437f61b1eaeeb30b267cde681
third_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce
 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/webrtc @ a488197ddd041ace68a42849b2540ad834825f42
```



test from AWS Brazil 1 Ethernet to Brazil Ethernet, 10 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)

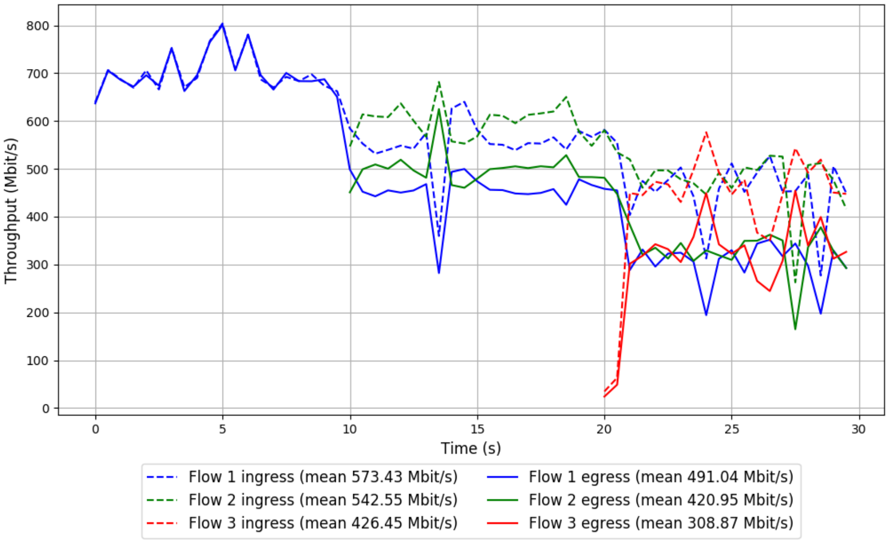


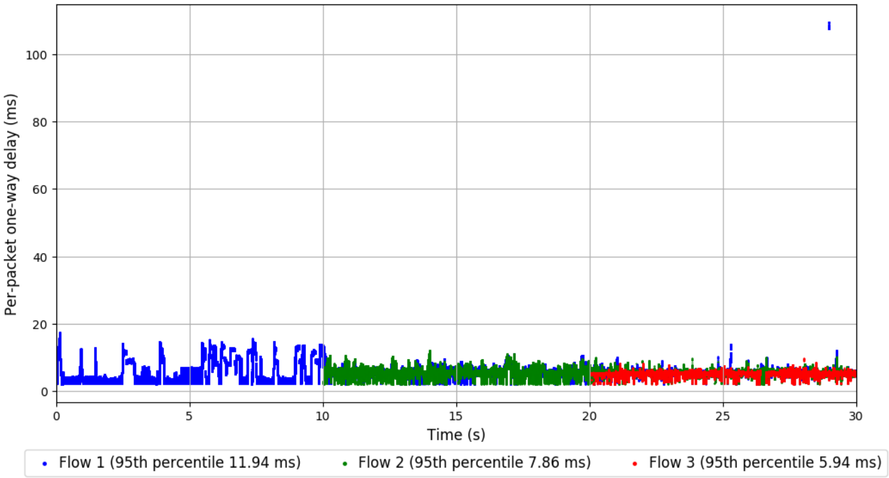
test from AWS Brazil 1 Ethernet to Brazil Ethernet, 10 runs of 30s each per scheme
3 flows with 10s interval between flows

		mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
scheme	# runs	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	10	515.74	410.57	299.02	14.68	7.80	6.82	14.07	22.78	28.43
TCP Cubic	10	561.12	362.31	320.87	13.28	5.11	5.13	0.02	0.03	0.03
Indigo	10	171.86	171.82	156.19	10.46	3.32	3.69	0.04	0.00	0.00
LEDBAT	10	404.82	357.24	279.36	13.58	9.68	4.90	0.05	0.09	0.12
PCC	10	711.15	193.98	118.09	23.52	3.65	7.71	0.14	0.05	0.20
QUIC Cubic	10	61.76	63.38	54.71	2.14	2.08	2.99	0.00	0.00	0.00
Sprout	10	50.22	50.12	49.88	3.13	3.12	3.20	0.00	0.00	0.00
TaoVA-100x	6	106.37	141.13	172.55	2.29	2.29	2.30	0.00	0.00	0.00
TCP Vegas	10	424.17	325.78	309.29	4.34	2.95	2.92	0.00	0.00	0.00
Verus	10	283.60	213.72	203.87	9.11	8.63	53.76	1.26	2.46	9.02

```
Run 1: Statistics of TCP BBR

Start at: 2017-09-18 10:59:39
End at: 2017-09-18 11:00:09
Local clock offset: -2.111 ms
Remote clock offset: 0.513 ms

# Below is generated by plot.py at 2017-09-18 15:45:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 873.70 Mbit/s
95th percentile per-packet one-way delay: 9.948 ms
Loss rate: 18.80%
-- Flow 1:
Average throughput: 491.04 Mbit/s
95th percentile per-packet one-way delay: 11.936 ms
Loss rate: 14.36%
-- Flow 2:
Average throughput: 420.95 Mbit/s
95th percentile per-packet one-way delay: 7.856 ms
Loss rate: 22.40%
-- Flow 3:
Average throughput: 308.87 Mbit/s
95th percentile per-packet one-way delay: 5.942 ms
Loss rate: 27.58%
```

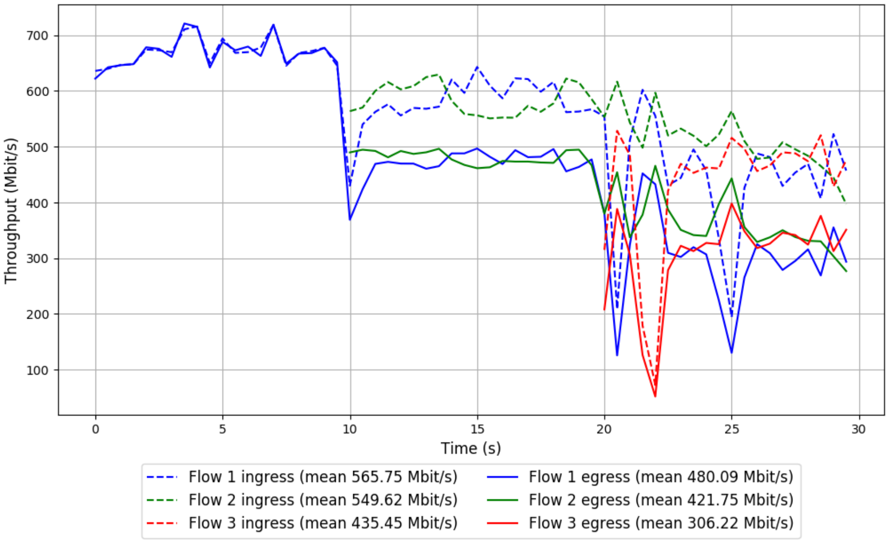
Run 1: Report of TCP BBR — Data Link

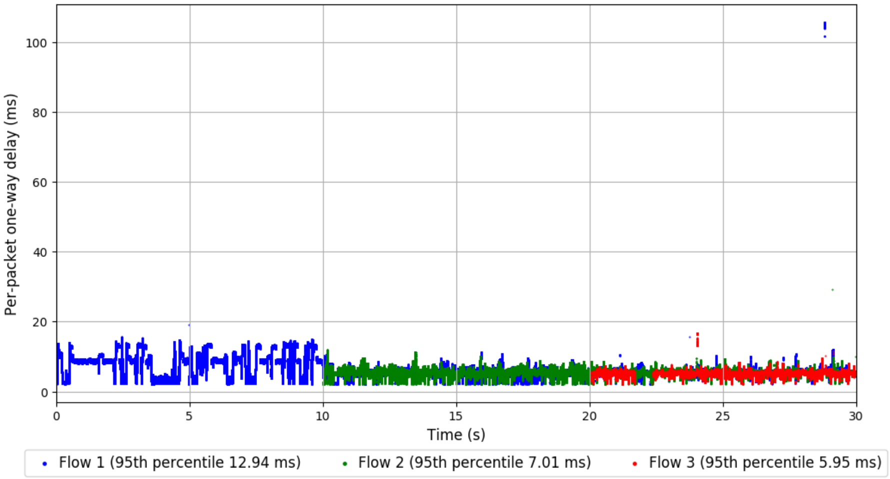




```
Run 2: Statistics of TCP BBR

Start at: 2017-09-18 11:14:31
End at: 2017-09-18 11:15:01
Local clock offset: -2.08 ms
Remote clock offset: 0.192 ms

# Below is generated by plot.py at 2017-09-18 15:45:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 862.50 Mbit/s
95th percentile per-packet one-way delay: 11.117 ms
Loss rate: 19.84%
-- Flow 1:
Average throughput: 480.09 Mbit/s
95th percentile per-packet one-way delay: 12.941 ms
Loss rate: 15.13%
-- Flow 2:
Average throughput: 421.75 Mbit/s
95th percentile per-packet one-way delay: 7.011 ms
Loss rate: 23.24%
-- Flow 3:
Average throughput: 306.22 Mbit/s
95th percentile per-packet one-way delay: 5.954 ms
Loss rate: 29.68%
```

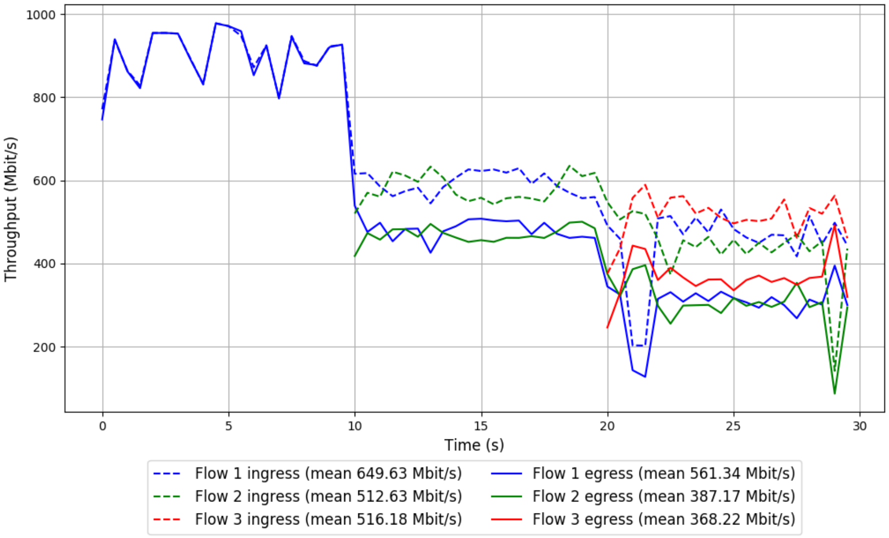
Run 2: Report of TCP BBR — Data Link

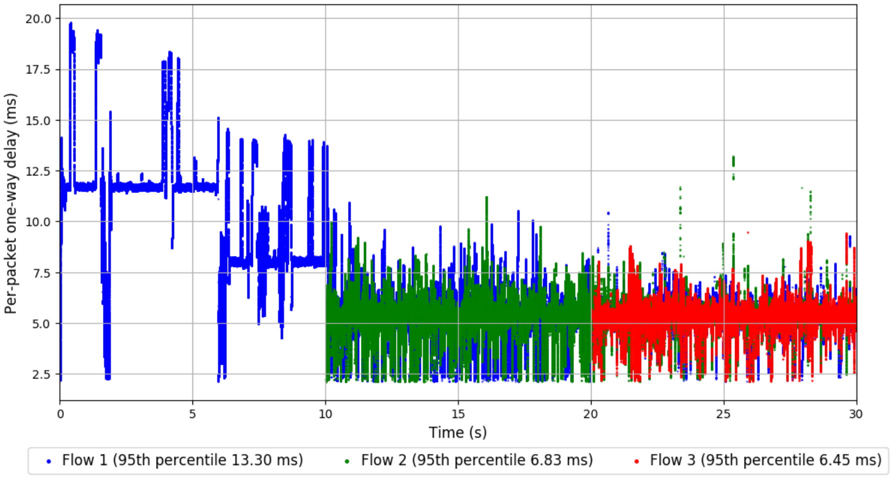




```
Run 3: Statistics of TCP BBR

Start at: 2017-09-18 11:29:26
End at: 2017-09-18 11:29:56
Local clock offset: -2.221 ms
Remote clock offset: -0.153 ms

# Below is generated by plot.py at 2017-09-18 15:46:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 941.27 Mbit/s
95th percentile per-packet one-way delay: 11.808 ms
Loss rate: 19.00%
-- Flow 1:
Average throughput: 561.34 Mbit/s
95th percentile per-packet one-way delay: 13.298 ms
Loss rate: 13.58%
-- Flow 2:
Average throughput: 387.17 Mbit/s
95th percentile per-packet one-way delay: 6.834 ms
Loss rate: 24.46%
-- Flow 3:
Average throughput: 368.22 Mbit/s
95th percentile per-packet one-way delay: 6.445 ms
Loss rate: 28.66%
```

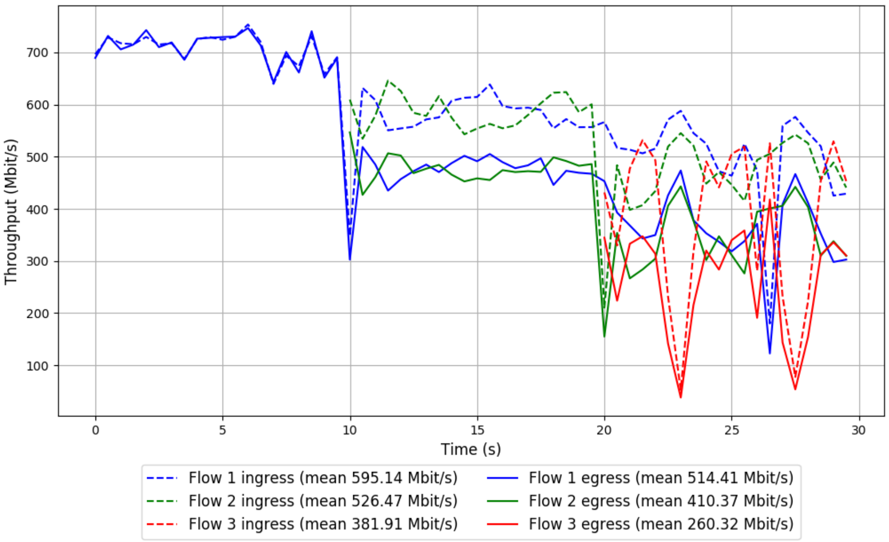
Run 3: Report of TCP BBR — Data Link

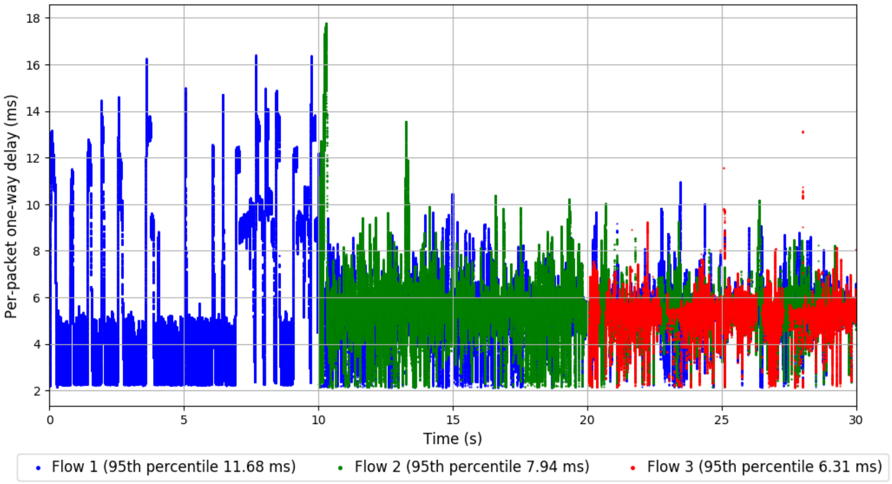




```
Run 4: Statistics of TCP BBR

Start at: 2017-09-18 11:44:11
End at: 2017-09-18 11:44:41
Local clock offset: -2.237 ms
Remote clock offset: -0.039 ms

# Below is generated by plot.py at 2017-09-18 15:46:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 874.05 Mbit/s
95th percentile per-packet one-way delay: 10.105 ms
Loss rate: 18.49%
-- Flow 1:
Average throughput: 514.41 Mbit/s
95th percentile per-packet one-way delay: 11.677 ms
Loss rate: 13.56%
-- Flow 2:
Average throughput: 410.37 Mbit/s
95th percentile per-packet one-way delay: 7.936 ms
Loss rate: 22.04%
-- Flow 3:
Average throughput: 260.32 Mbit/s
95th percentile per-packet one-way delay: 6.310 ms
Loss rate: 31.83%
```

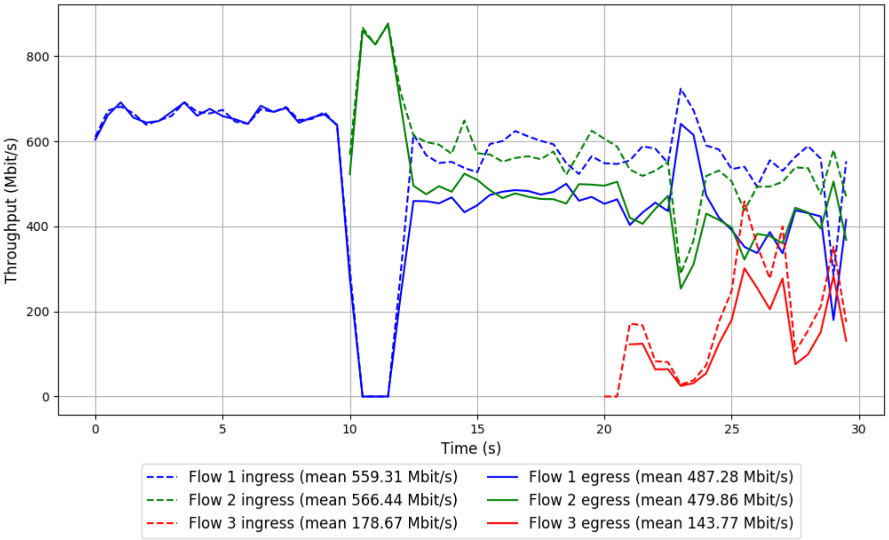
Run 4: Report of TCP BBR — Data Link

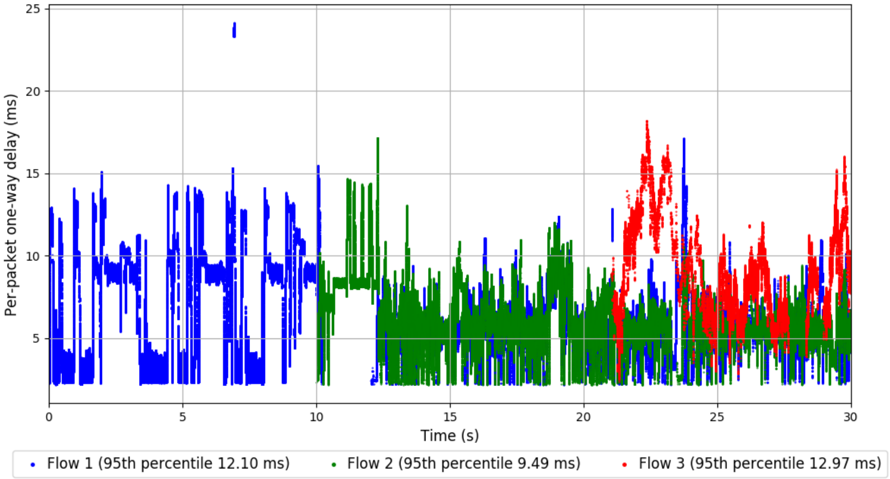




```
Run 5: Statistics of TCP BBR

Start at: 2017-09-18 11:59:03
End at: 2017-09-18 11:59:33
Local clock offset: -2.2 ms
Remote clock offset: 0.082 ms

# Below is generated by plot.py at 2017-09-18 15:46:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 849.70 Mbit/s
95th percentile per-packet one-way delay: 11.390 ms
Loss rate: 14.66%
-- Flow 1:
Average throughput: 487.28 Mbit/s
95th percentile per-packet one-way delay: 12.101 ms
Loss rate: 12.87%
-- Flow 2:
Average throughput: 479.86 Mbit/s
95th percentile per-packet one-way delay: 9.486 ms
Loss rate: 15.27%
-- Flow 3:
Average throughput: 143.77 Mbit/s
95th percentile per-packet one-way delay: 12.969 ms
Loss rate: 27.69%
```

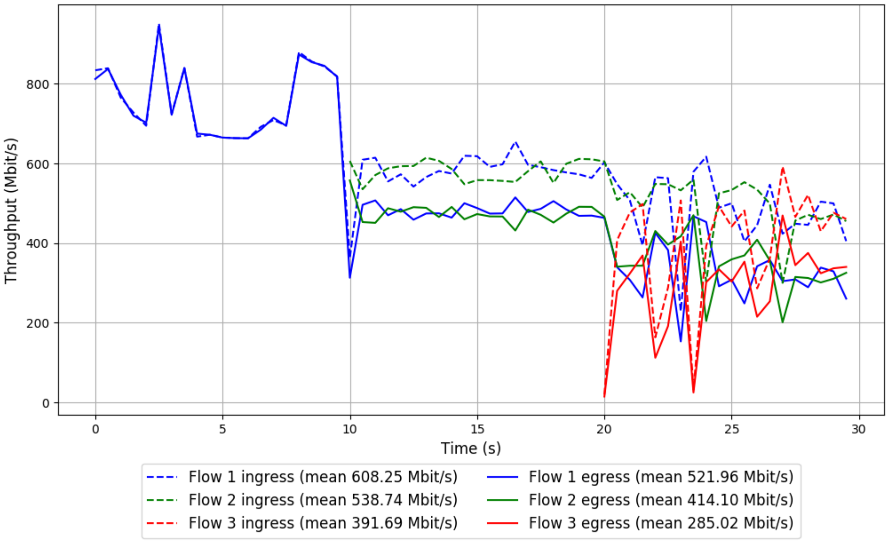
Run 5: Report of TCP BBR — Data Link

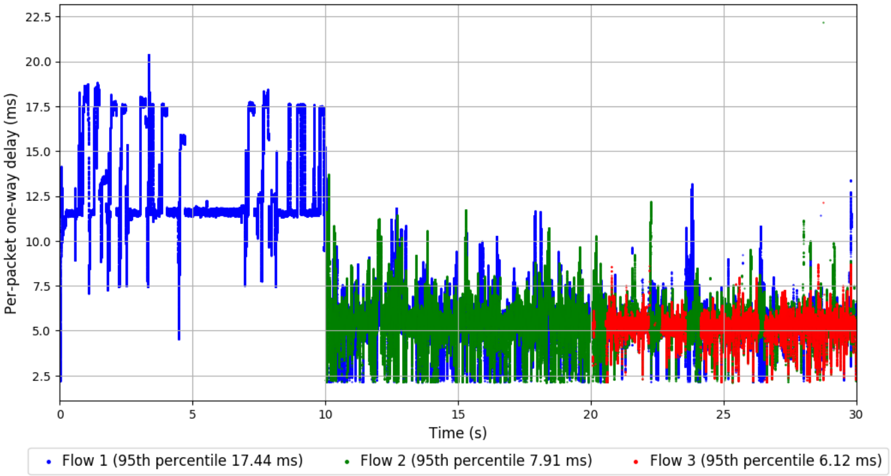




```
Run 6: Statistics of TCP BBR

Start at: 2017-09-18 12:13:54
End at: 2017-09-18 12:14:24
Local clock offset: -2.207 ms
Remote clock offset: 0.036 ms

# Below is generated by plot.py at 2017-09-18 15:46:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 892.33 Mbit/s
95th percentile per-packet one-way delay: 16.694 ms
Loss rate: 18.65%
-- Flow 1:
Average throughput: 521.96 Mbit/s
95th percentile per-packet one-way delay: 17.436 ms
Loss rate: 14.18%
-- Flow 2:
Average throughput: 414.10 Mbit/s
95th percentile per-packet one-way delay: 7.909 ms
Loss rate: 23.12%
-- Flow 3:
Average throughput: 285.02 Mbit/s
95th percentile per-packet one-way delay: 6.116 ms
Loss rate: 27.23%
```

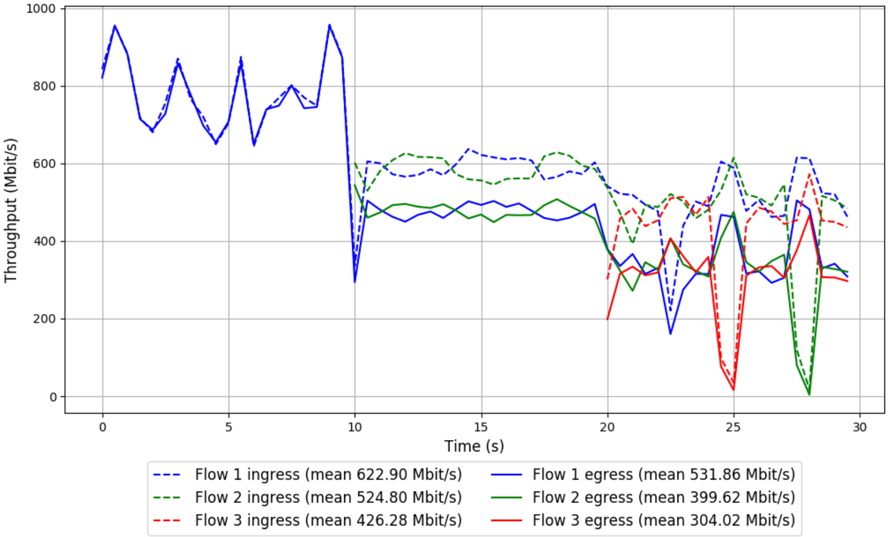
Run 6: Report of TCP BBR — Data Link

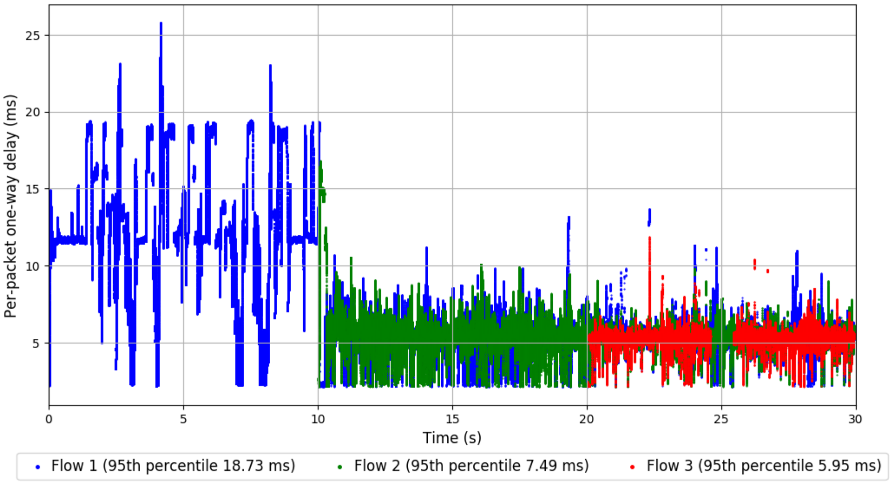




```
Run 7: Statistics of TCP BBR

Start at: 2017-09-18 12:28:46
End at: 2017-09-18 12:29:16
Local clock offset: -2.165 ms
Remote clock offset: 0.113 ms

# Below is generated by plot.py at 2017-09-18 15:46:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 898.92 Mbit/s
95th percentile per-packet one-way delay: 18.146 ms
Loss rate: 19.29%
-- Flow 1:
Average throughput: 531.86 Mbit/s
95th percentile per-packet one-way delay: 18.729 ms
Loss rate: 14.61%
-- Flow 2:
Average throughput: 399.62 Mbit/s
95th percentile per-packet one-way delay: 7.490 ms
Loss rate: 23.84%
-- Flow 3:
Average throughput: 304.02 Mbit/s
95th percentile per-packet one-way delay: 5.950 ms
Loss rate: 28.68%
```

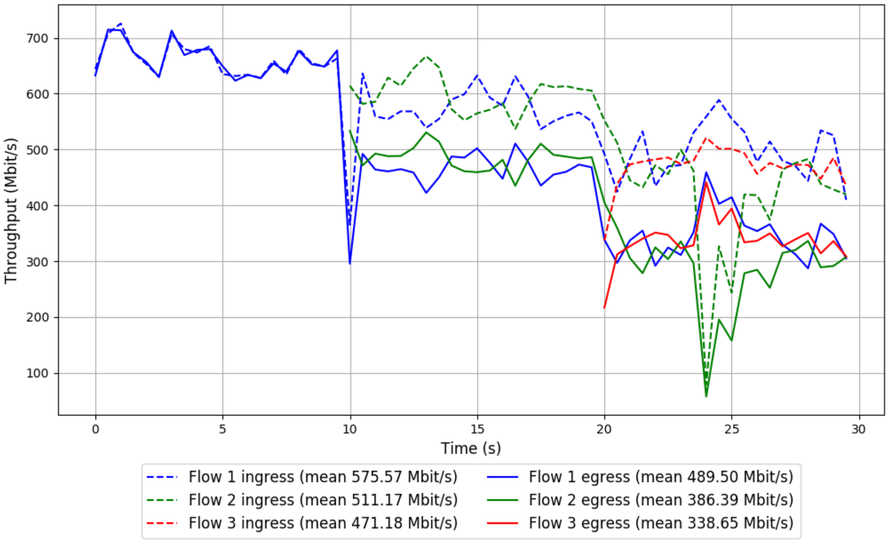
Run 7: Report of TCP BBR — Data Link

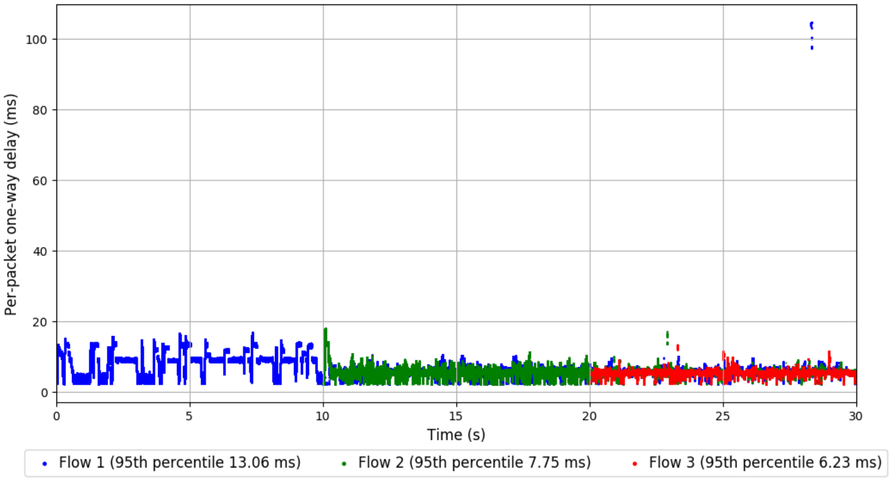




```
Run 8: Statistics of TCP BBR

Start at: 2017-09-18 12:43:44
End at: 2017-09-18 12:44:14
Local clock offset: -2.23 ms
Remote clock offset: 0.095 ms

# Below is generated by plot.py at 2017-09-18 15:46:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 859.23 Mbit/s
95th percentile per-packet one-way delay: 11.878 ms
Loss rate: 19.87%
-- Flow 1:
Average throughput: 489.50 Mbit/s
95th percentile per-packet one-way delay: 13.060 ms
Loss rate: 14.94%
-- Flow 2:
Average throughput: 386.39 Mbit/s
95th percentile per-packet one-way delay: 7.754 ms
Loss rate: 24.40%
-- Flow 3:
Average throughput: 338.65 Mbit/s
95th percentile per-packet one-way delay: 6.228 ms
Loss rate: 28.11%
```

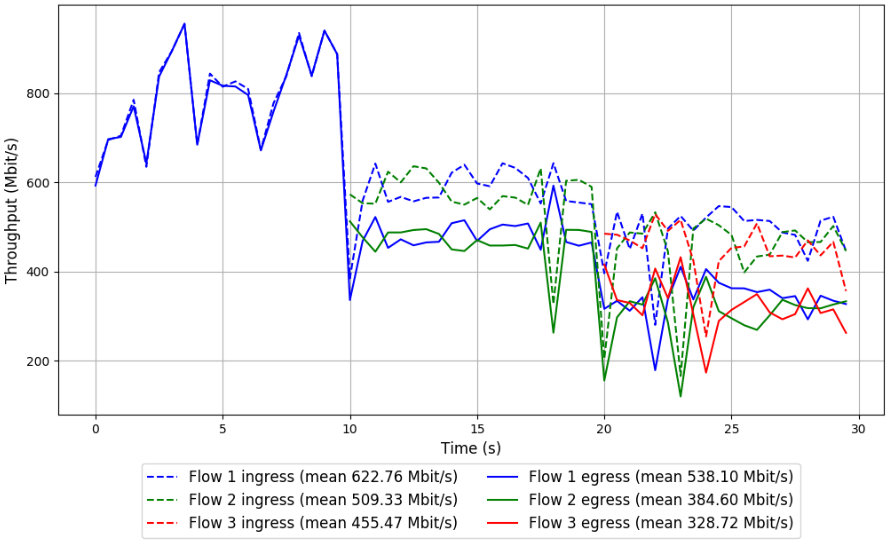
Run 8: Report of TCP BBR — Data Link

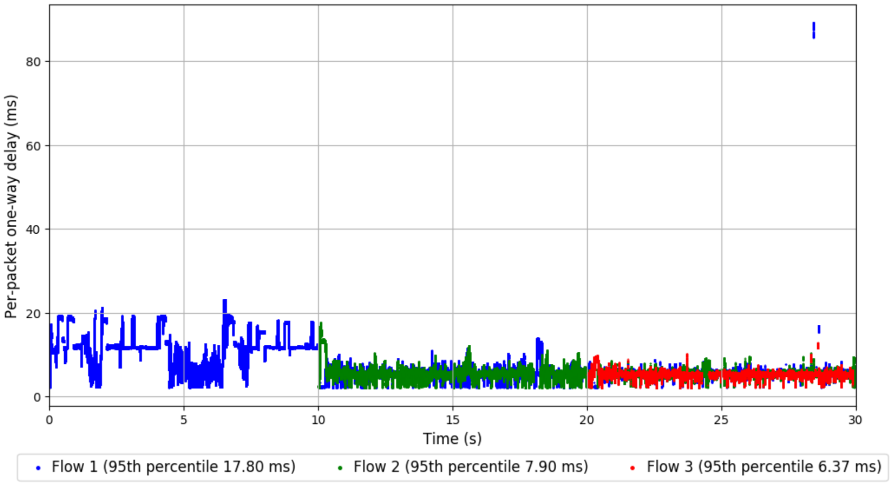




```
Run 9: Statistics of TCP BBR

Start at: 2017-09-18 12:58:40
End at: 2017-09-18 12:59:10
Local clock offset: -2.138 ms
Remote clock offset: 0.081 ms

# Below is generated by plot.py at 2017-09-18 15:58:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 902.35 Mbit/s
95th percentile per-packet one-way delay: 15.062 ms
Loss rate: 18.83%
-- Flow 1:
Average throughput: 538.10 Mbit/s
95th percentile per-packet one-way delay: 17.800 ms
Loss rate: 13.59%
-- Flow 2:
Average throughput: 384.60 Mbit/s
95th percentile per-packet one-way delay: 7.897 ms
Loss rate: 24.48%
-- Flow 3:
Average throughput: 328.72 Mbit/s
95th percentile per-packet one-way delay: 6.371 ms
Loss rate: 27.82%
```

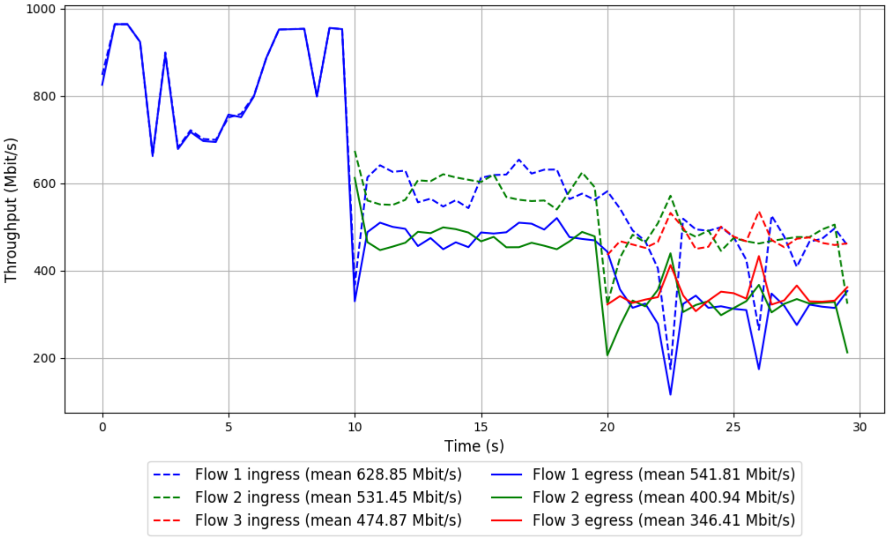
Run 9: Report of TCP BBR — Data Link

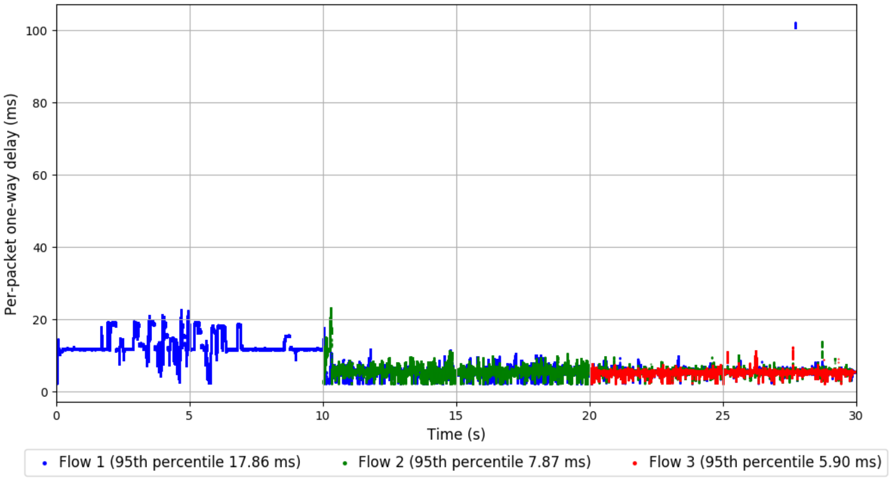




```
Run 10: Statistics of TCP BBR

Start at: 2017-09-18 13:13:36
End at: 2017-09-18 13:14:06
Local clock offset: -2.157 ms
Remote clock offset: -0.021 ms

# Below is generated by plot.py at 2017-09-18 15:59:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 921.86 Mbit/s
95th percentile per-packet one-way delay: 15.217 ms
Loss rate: 18.97%
-- Flow 1:
Average throughput: 541.81 Mbit/s
95th percentile per-packet one-way delay: 17.856 ms
Loss rate: 13.83%
-- Flow 2:
Average throughput: 400.94 Mbit/s
95th percentile per-packet one-way delay: 7.867 ms
Loss rate: 24.55%
-- Flow 3:
Average throughput: 346.41 Mbit/s
95th percentile per-packet one-way delay: 5.900 ms
Loss rate: 27.05%
```

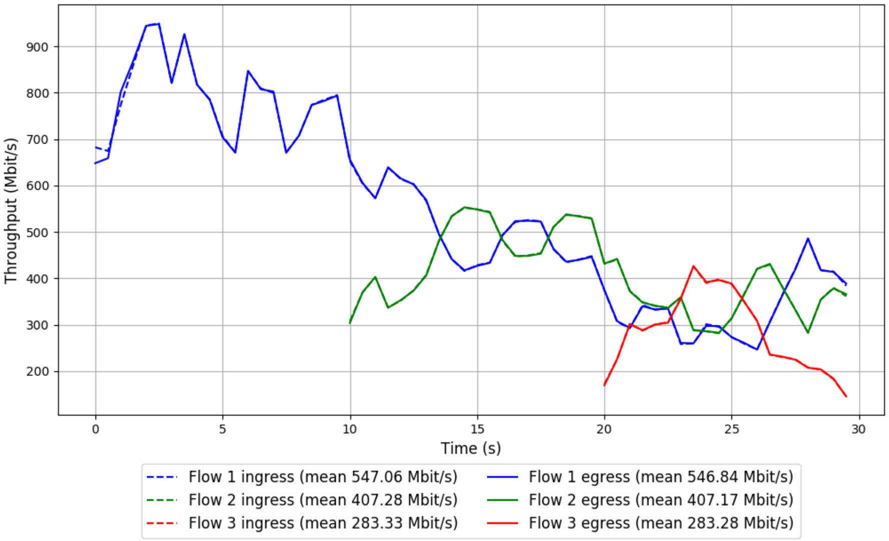
Run 10: Report of TCP BBR — Data Link

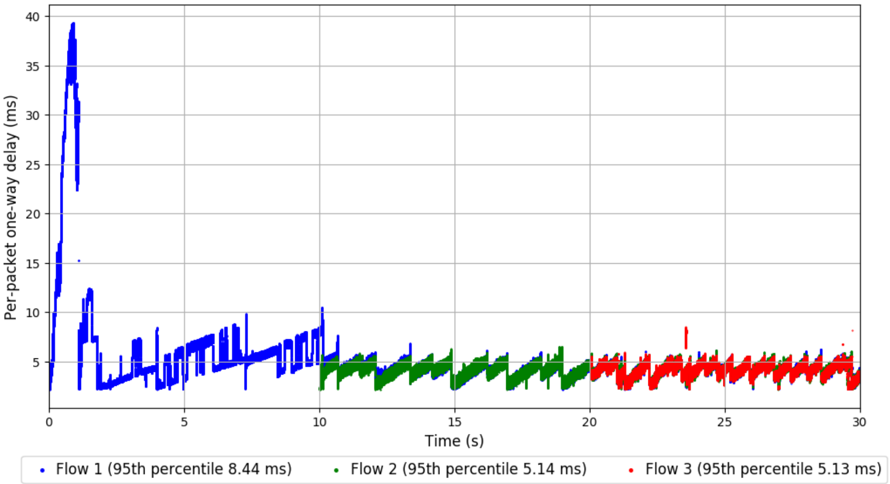




```
Run 1: Statistics of TCP Cubic

Start at: 2017-09-18 10:48:04
End at: 2017-09-18 10:48:34
Local clock offset: -2.099 ms
Remote clock offset: 0.783 ms

# Below is generated by plot.py at 2017-09-18 15:59:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 911.99 Mbit/s
95th percentile per-packet one-way delay: 7.413 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 546.84 Mbit/s
95th percentile per-packet one-way delay: 8.440 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 407.17 Mbit/s
95th percentile per-packet one-way delay: 5.144 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 283.28 Mbit/s
95th percentile per-packet one-way delay: 5.127 ms
Loss rate: 0.03%
```

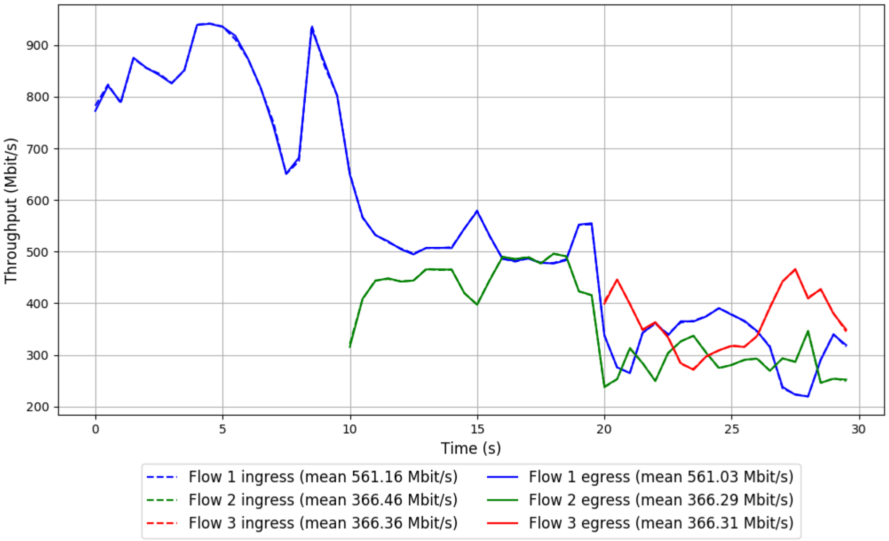
Run 1: Report of TCP Cubic — Data Link

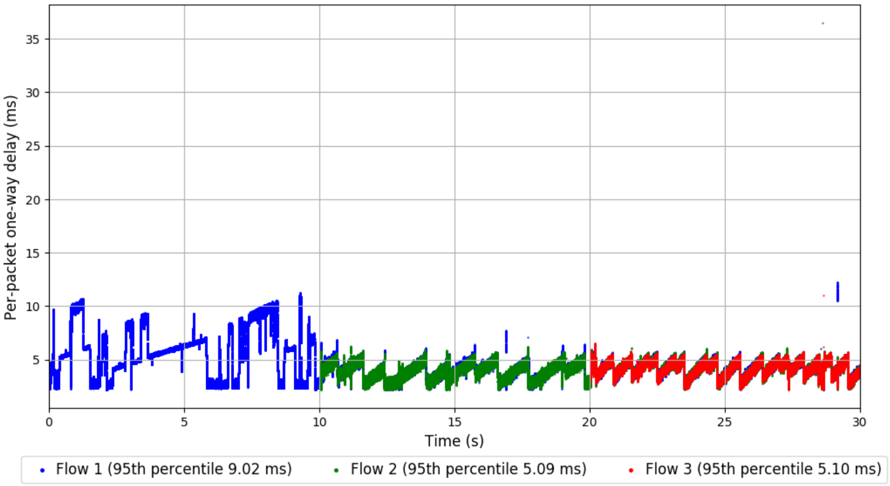




```
Run 2: Statistics of TCP Cubic

Start at: 2017-09-18 11:02:54
End at: 2017-09-18 11:03:24
Local clock offset: -2.096 ms
Remote clock offset: 0.465 ms

# Below is generated by plot.py at 2017-09-18 15:59:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 926.50 Mbit/s
95th percentile per-packet one-way delay: 8.037 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 561.03 Mbit/s
95th percentile per-packet one-way delay: 9.021 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 366.29 Mbit/s
95th percentile per-packet one-way delay: 5.091 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 366.31 Mbit/s
95th percentile per-packet one-way delay: 5.098 ms
Loss rate: 0.01%
```

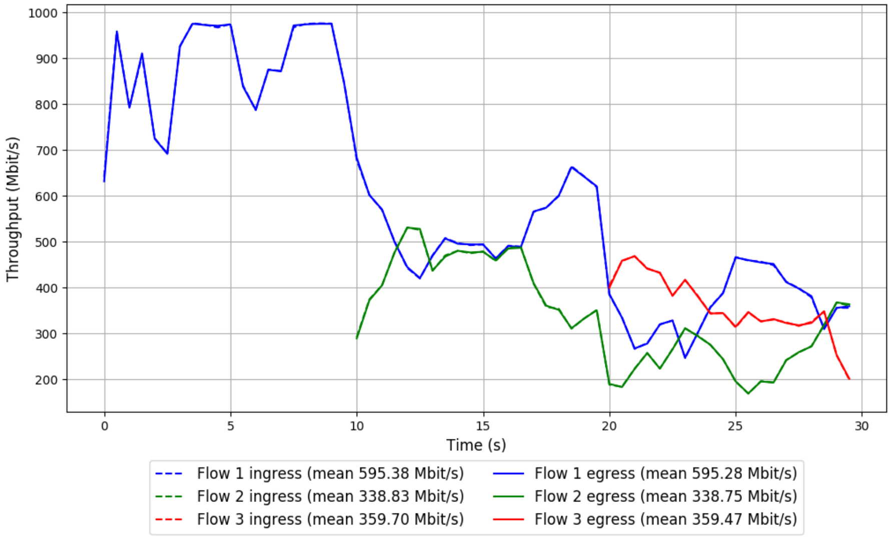
Run 2: Report of TCP Cubic — Data Link

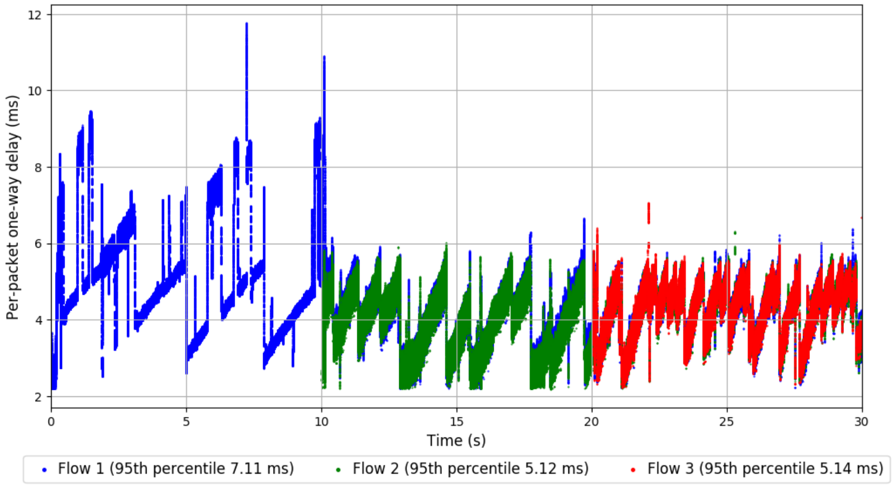




```
Run 3: Statistics of TCP Cubic

Start at: 2017-09-18 11:17:44
End at: 2017-09-18 11:18:14
Local clock offset: -2.111 ms
Remote clock offset: 0.078 ms

# Below is generated by plot.py at 2017-09-18 15:59:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 940.02 Mbit/s
95th percentile per-packet one-way delay: 6.142 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 595.28 Mbit/s
95th percentile per-packet one-way delay: 7.106 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 338.75 Mbit/s
95th percentile per-packet one-way delay: 5.123 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 359.47 Mbit/s
95th percentile per-packet one-way delay: 5.144 ms
Loss rate: 0.03%
```

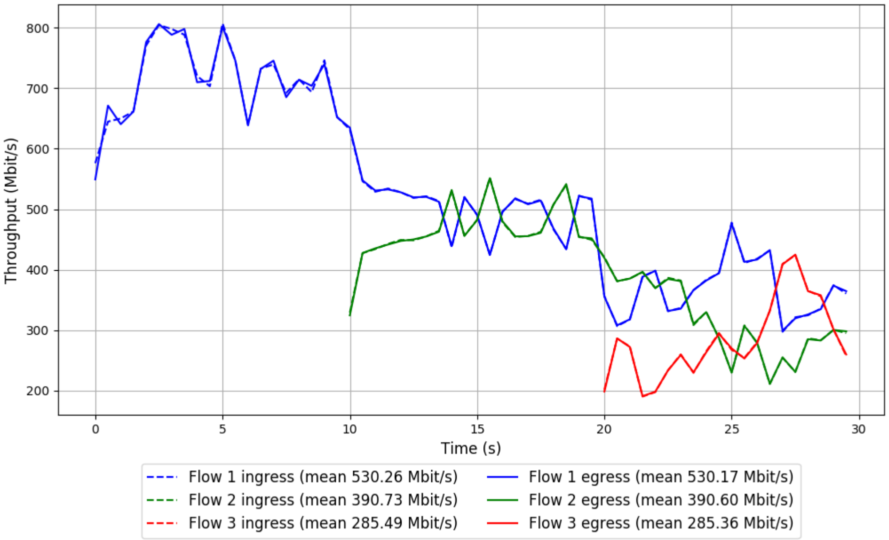
Run 3: Report of TCP Cubic — Data Link

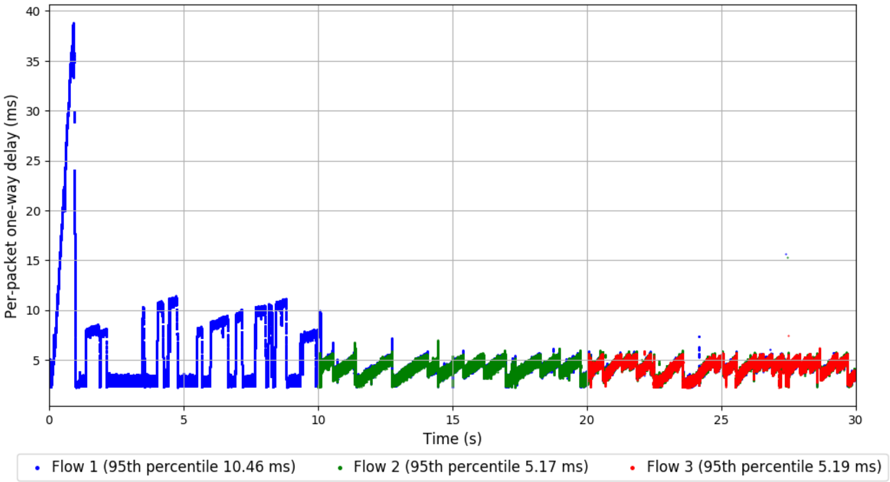




```
Run 4: Statistics of TCP Cubic

Start at: 2017-09-18 11:32:43
End at: 2017-09-18 11:33:13
Local clock offset: -2.255 ms
Remote clock offset: -0.034 ms

# Below is generated by plot.py at 2017-09-18 15:59:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 885.00 Mbit/s
95th percentile per-packet one-way delay: 9.651 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 530.17 Mbit/s
95th percentile per-packet one-way delay: 10.461 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 390.60 Mbit/s
95th percentile per-packet one-way delay: 5.167 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 285.36 Mbit/s
95th percentile per-packet one-way delay: 5.192 ms
Loss rate: 0.04%
```

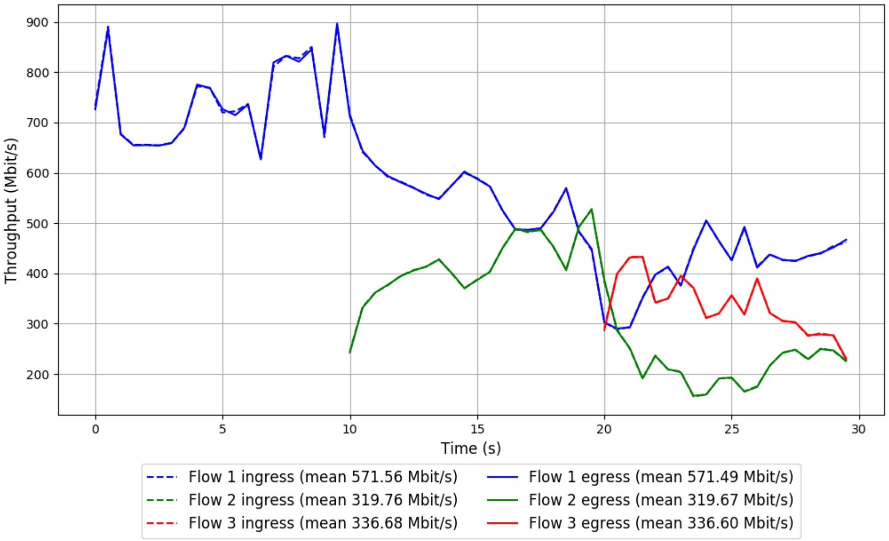
Run 4: Report of TCP Cubic — Data Link

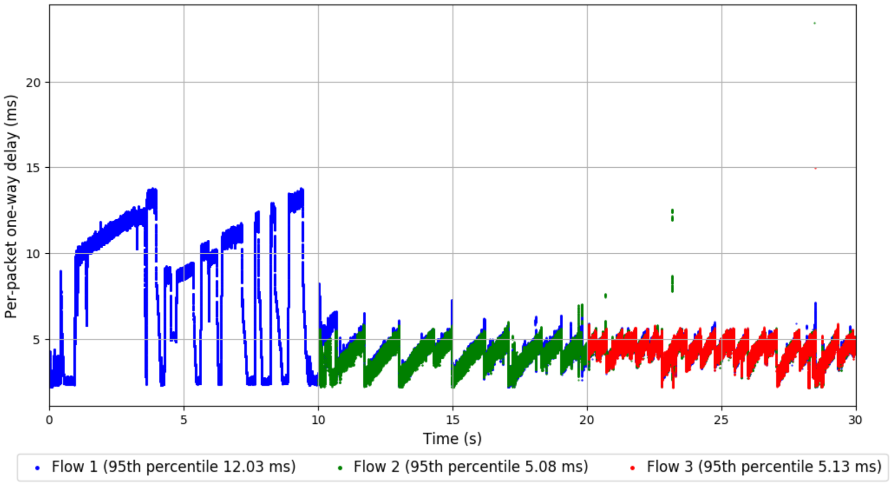




```
Run 5: Statistics of TCP Cubic

Start at: 2017-09-18 11:47:27
End at: 2017-09-18 11:47:57
Local clock offset: -2.191 ms
Remote clock offset: 0.045 ms

# Below is generated by plot.py at 2017-09-18 15:59:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 896.11 Mbit/s
95th percentile per-packet one-way delay: 11.520 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 571.49 Mbit/s
95th percentile per-packet one-way delay: 12.026 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 319.67 Mbit/s
95th percentile per-packet one-way delay: 5.078 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 336.60 Mbit/s
95th percentile per-packet one-way delay: 5.133 ms
Loss rate: 0.01%
```

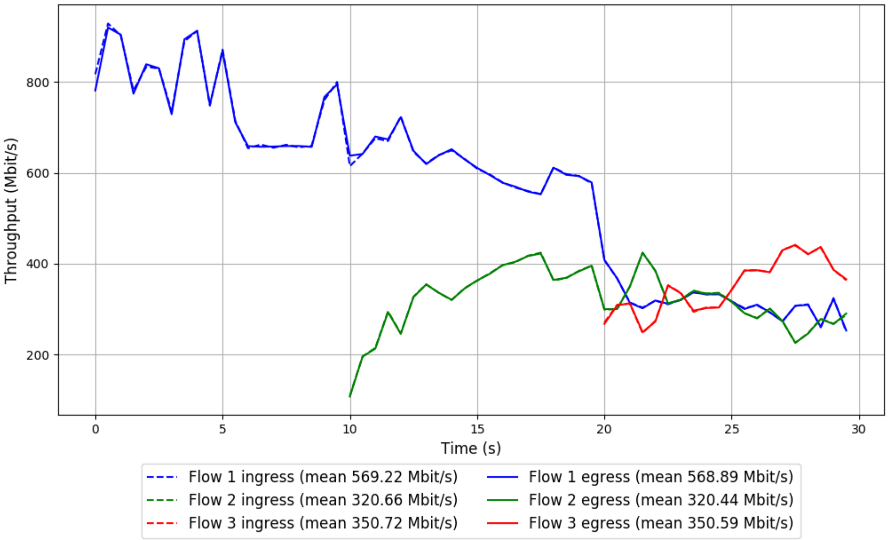
Run 5: Report of TCP Cubic — Data Link

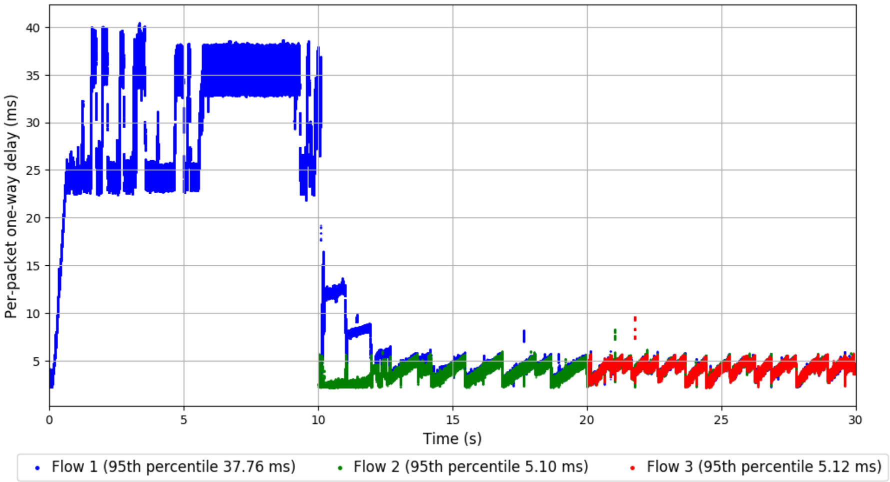




```
Run 6: Statistics of TCP Cubic

Start at: 2017-09-18 12:02:15
End at: 2017-09-18 12:02:45
Local clock offset: -2.228 ms
Remote clock offset: 0.073 ms

# Below is generated by plot.py at 2017-09-18 15:59:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 898.57 Mbit/s
95th percentile per-packet one-way delay: 37.561 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 568.89 Mbit/s
95th percentile per-packet one-way delay: 37.760 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 320.44 Mbit/s
95th percentile per-packet one-way delay: 5.104 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 350.59 Mbit/s
95th percentile per-packet one-way delay: 5.115 ms
Loss rate: 0.02%
```

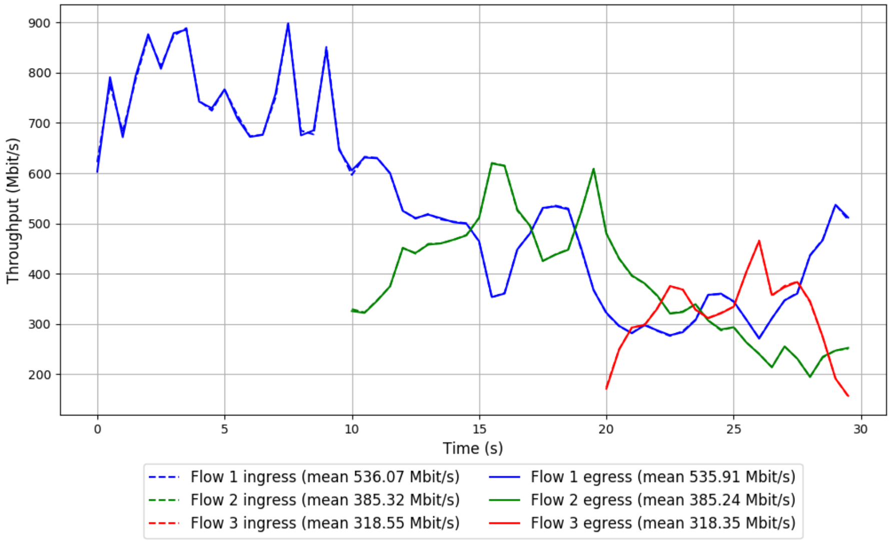
Run 6: Report of TCP Cubic — Data Link

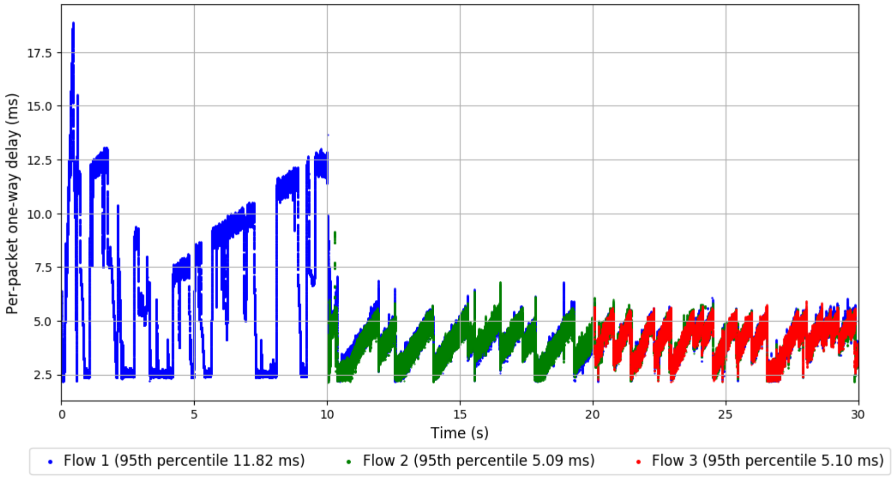




```
Run 7: Statistics of TCP Cubic

Start at: 2017-09-18 12:17:08
End at: 2017-09-18 12:17:38
Local clock offset: -2.255 ms
Remote clock offset: 0.033 ms

# Below is generated by plot.py at 2017-09-18 16:10:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 898.00 Mbit/s
95th percentile per-packet one-way delay: 10.985 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 535.91 Mbit/s
95th percentile per-packet one-way delay: 11.819 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 385.24 Mbit/s
95th percentile per-packet one-way delay: 5.089 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 318.35 Mbit/s
95th percentile per-packet one-way delay: 5.103 ms
Loss rate: 0.06%
```

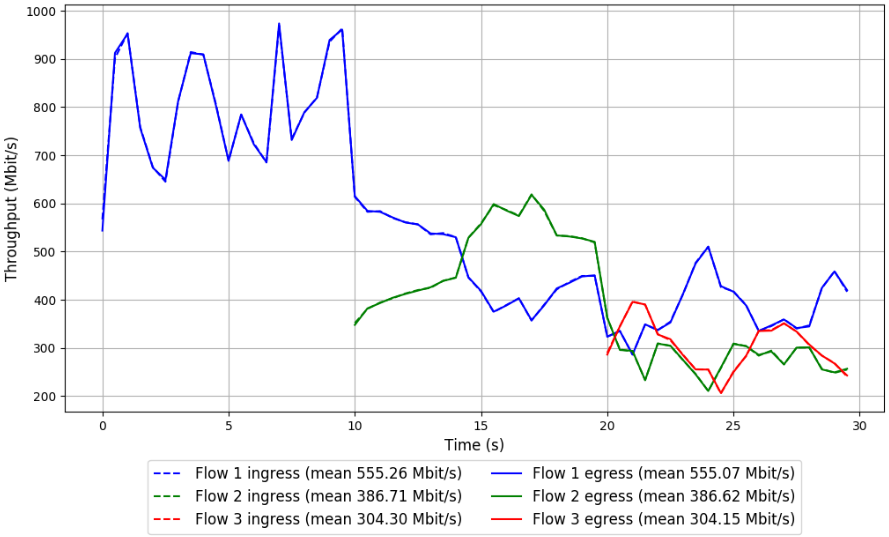
Run 7: Report of TCP Cubic — Data Link

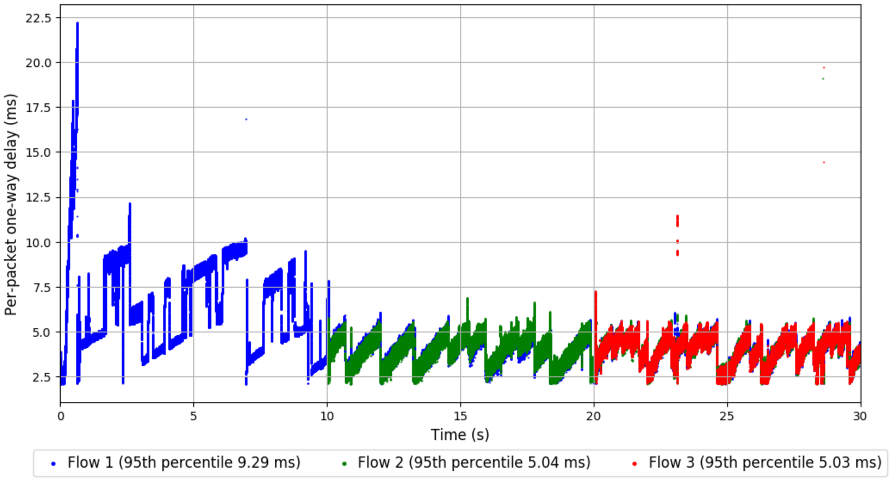




```
Run 8: Statistics of TCP Cubic

Start at: 2017-09-18 12:32:01
End at: 2017-09-18 12:32:31
Local clock offset: -2.18 ms
Remote clock offset: 0.057 ms

# Below is generated by plot.py at 2017-09-18 16:11:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 913.52 Mbit/s
95th percentile per-packet one-way delay: 8.813 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 555.07 Mbit/s
95th percentile per-packet one-way delay: 9.285 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 386.62 Mbit/s
95th percentile per-packet one-way delay: 5.043 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 304.15 Mbit/s
95th percentile per-packet one-way delay: 5.033 ms
Loss rate: 0.04%
```

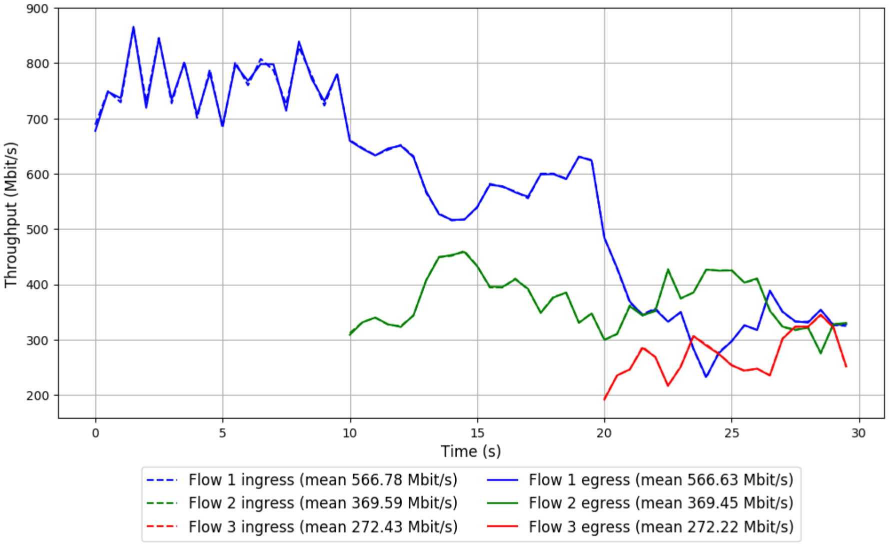
Run 8: Report of TCP Cubic — Data Link

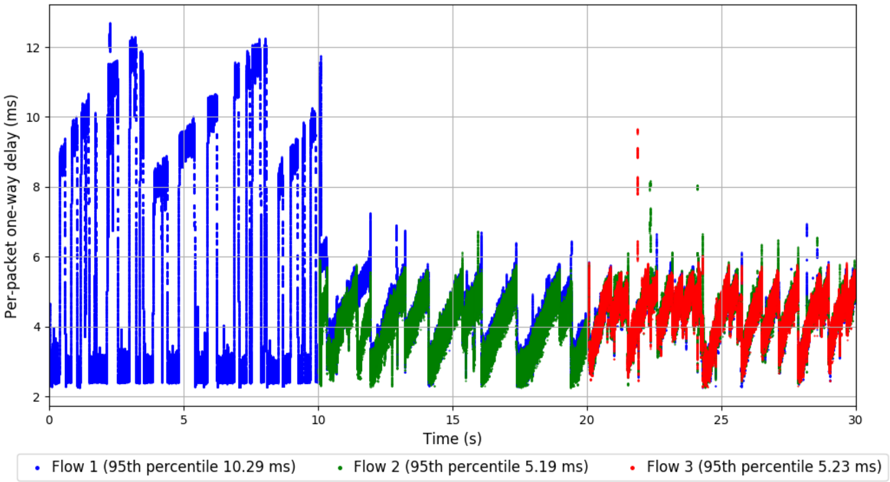




```
Run 9: Statistics of TCP Cubic

Start at: 2017-09-18 12:46:55
End at: 2017-09-18 12:47:25
Local clock offset: -2.204 ms
Remote clock offset: 0.139 ms

# Below is generated by plot.py at 2017-09-18 16:11:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 902.91 Mbit/s
95th percentile per-packet one-way delay: 9.567 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 566.63 Mbit/s
95th percentile per-packet one-way delay: 10.286 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 369.45 Mbit/s
95th percentile per-packet one-way delay: 5.186 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 272.22 Mbit/s
95th percentile per-packet one-way delay: 5.226 ms
Loss rate: 0.06%
```

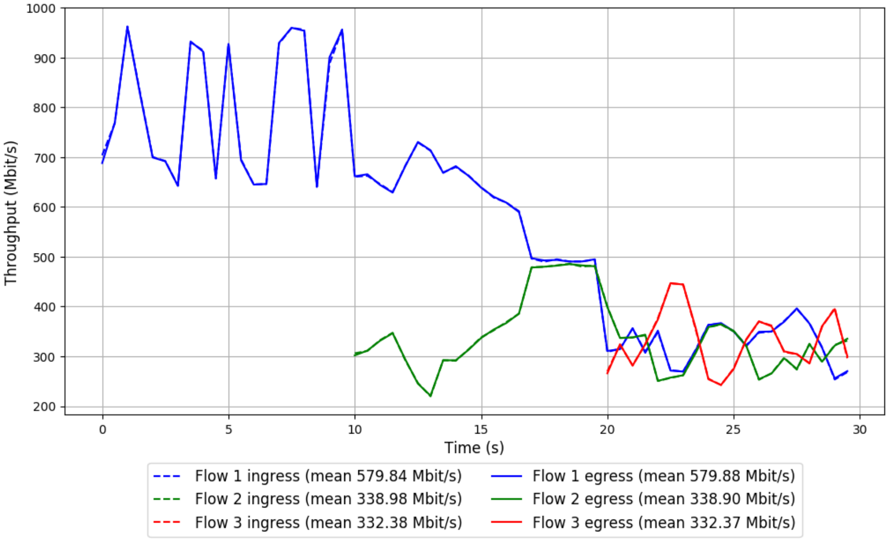
Run 9: Report of TCP Cubic — Data Link

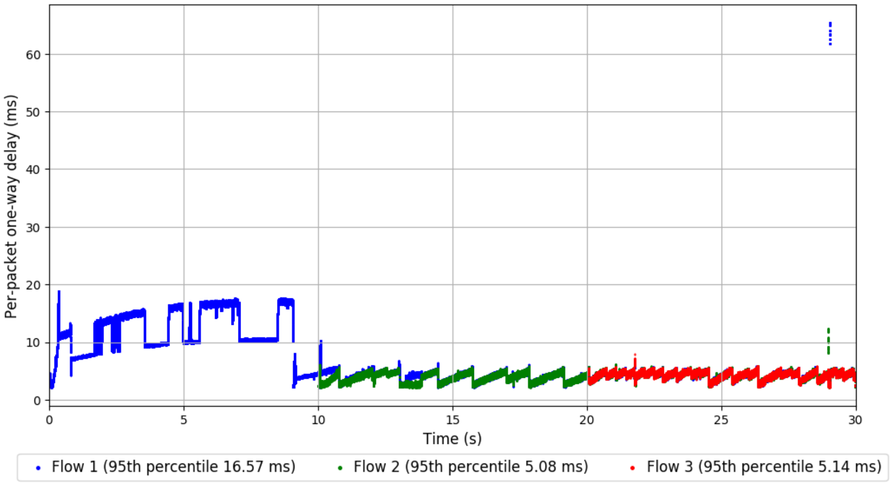




```
Run 10: Statistics of TCP Cubic

Start at: 2017-09-18 13:01:54
End at: 2017-09-18 13:02:24
Local clock offset: -2.14 ms
Remote clock offset: -0.004 ms

# Below is generated by plot.py at 2017-09-18 16:11:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 915.77 Mbit/s
95th percentile per-packet one-way delay: 16.127 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 579.88 Mbit/s
95th percentile per-packet one-way delay: 16.574 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 338.90 Mbit/s
95th percentile per-packet one-way delay: 5.080 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 332.37 Mbit/s
95th percentile per-packet one-way delay: 5.140 ms
Loss rate: 0.02%
```

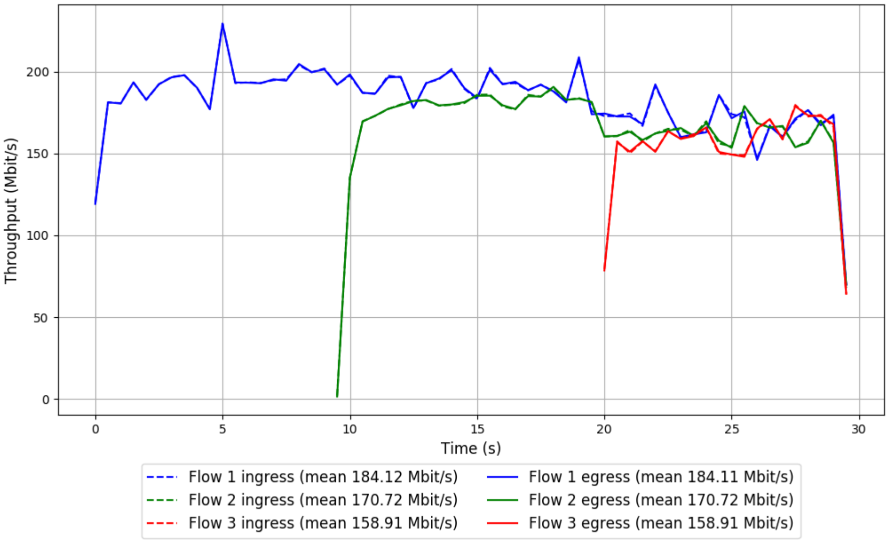
Run 10: Report of TCP Cubic — Data Link

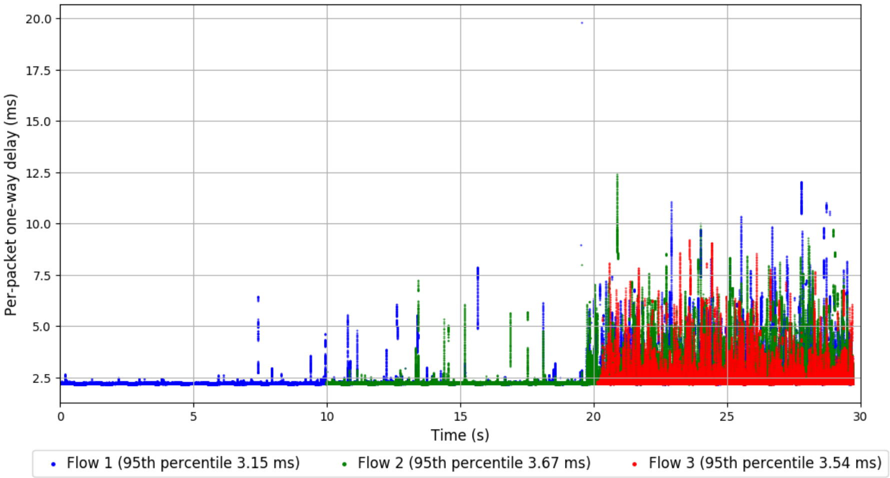




```
Run 1: Statistics of Indigo

Start at: 2017-09-18 10:46:41
End at: 2017-09-18 10:47:11
Local clock offset: -2.076 ms
Remote clock offset: 0.816 ms

# Below is generated by plot.py at 2017-09-18 16:11:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 348.79 Mbit/s
95th percentile per-packet one-way delay: 3.403 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 184.11 Mbit/s
95th percentile per-packet one-way delay: 3.154 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 170.72 Mbit/s
95th percentile per-packet one-way delay: 3.675 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 158.91 Mbit/s
95th percentile per-packet one-way delay: 3.543 ms
Loss rate: 0.00%
```

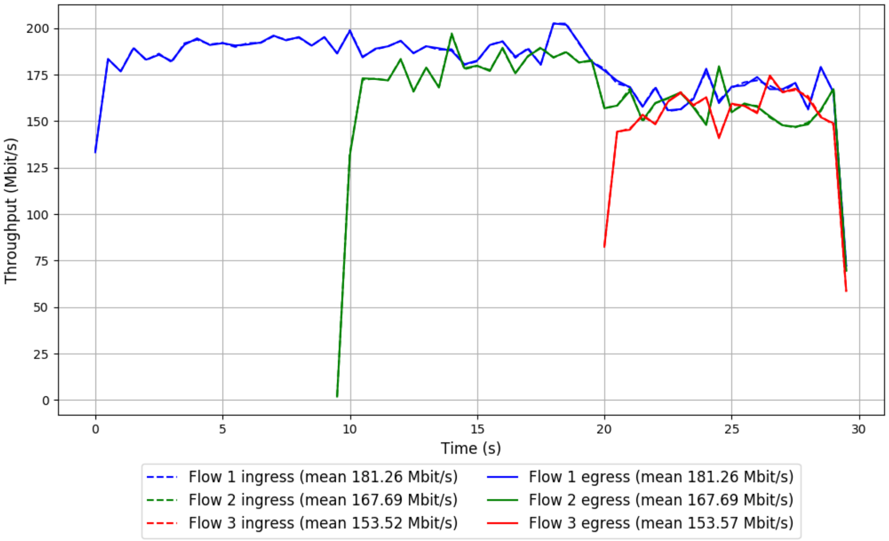
Run 1: Report of Indigo — Data Link

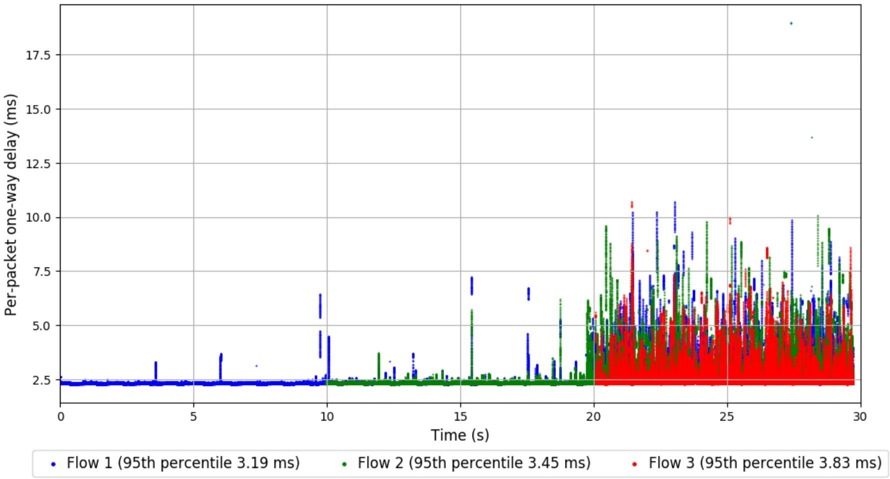




```
Run 2: Statistics of Indigo

Start at: 2017-09-18 11:01:31
End at: 2017-09-18 11:02:01
Local clock offset: -2.175 ms
Remote clock offset: 0.511 ms

# Below is generated by plot.py at 2017-09-18 16:11:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 342.60 Mbit/s
95th percentile per-packet one-way delay: 3.402 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 181.26 Mbit/s
95th percentile per-packet one-way delay: 3.190 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 167.69 Mbit/s
95th percentile per-packet one-way delay: 3.453 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 153.57 Mbit/s
95th percentile per-packet one-way delay: 3.830 ms
Loss rate: 0.00%
```

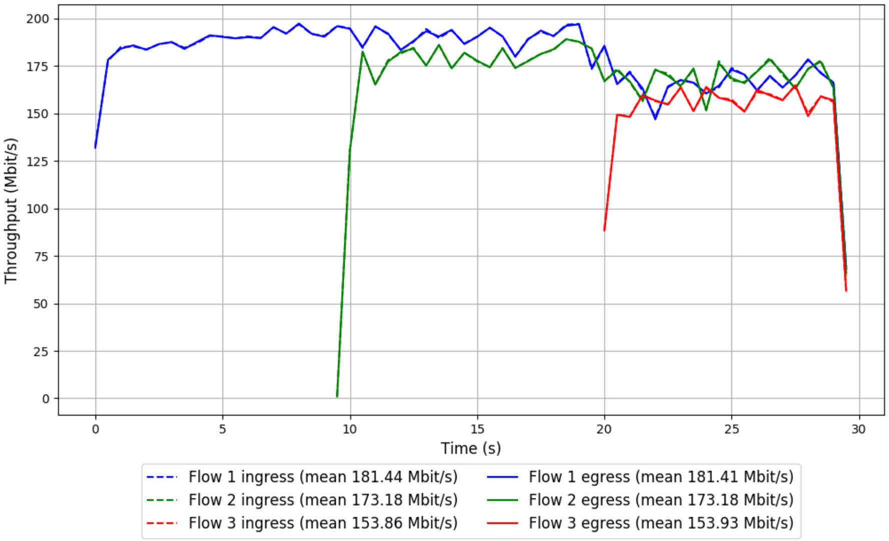
Run 2: Report of Indigo — Data Link

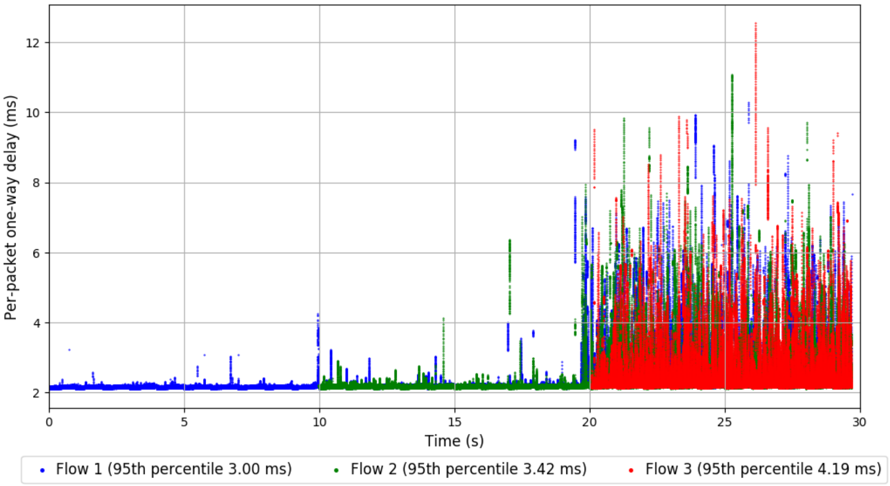




```
Run 3: Statistics of Indigo

Start at: 2017-09-18 11:16:21
End at: 2017-09-18 11:16:52
Local clock offset: -2.095 ms
Remote clock offset: 0.045 ms

# Below is generated by plot.py at 2017-09-18 16:11:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 346.30 Mbit/s
95th percentile per-packet one-way delay: 3.347 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 181.41 Mbit/s
95th percentile per-packet one-way delay: 3.000 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 173.18 Mbit/s
95th percentile per-packet one-way delay: 3.423 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 153.93 Mbit/s
95th percentile per-packet one-way delay: 4.187 ms
Loss rate: 0.00%
```

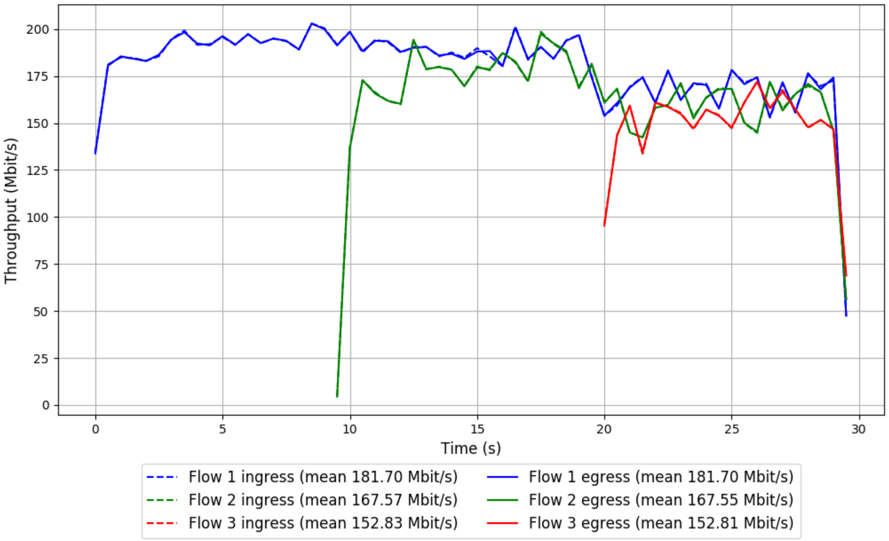
Run 3: Report of Indigo — Data Link

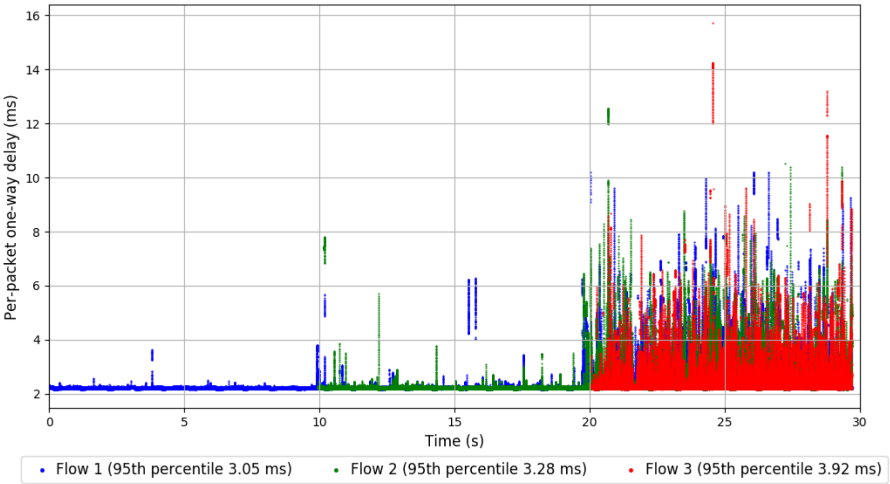




```
Run 4: Statistics of Indigo

Start at: 2017-09-18 11:31:20
End at: 2017-09-18 11:31:50
Local clock offset: -2.215 ms
Remote clock offset: -0.078 ms

# Below is generated by plot.py at 2017-09-18 16:11:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 342.70 Mbit/s
95th percentile per-packet one-way delay: 3.302 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 181.70 Mbit/s
95th percentile per-packet one-way delay: 3.049 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 167.55 Mbit/s
95th percentile per-packet one-way delay: 3.276 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 152.81 Mbit/s
95th percentile per-packet one-way delay: 3.921 ms
Loss rate: 0.01%
```

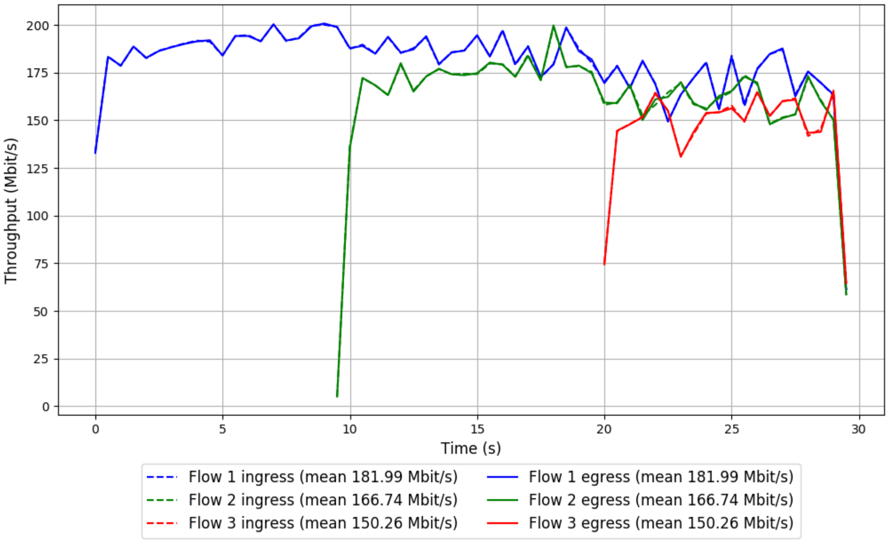
Run 4: Report of Indigo — Data Link

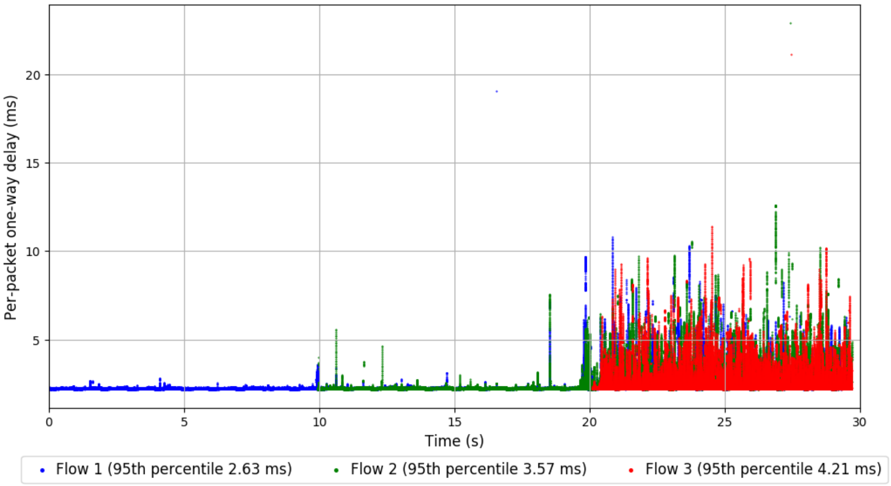




```
Run 5: Statistics of Indigo

Start at: 2017-09-18 11:46:05
End at: 2017-09-18 11:46:35
Local clock offset: -2.2 ms
Remote clock offset: 0.068 ms

# Below is generated by plot.py at 2017-09-18 16:11:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 341.45 Mbit/s
95th percentile per-packet one-way delay: 3.303 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 181.99 Mbit/s
95th percentile per-packet one-way delay: 2.635 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 166.74 Mbit/s
95th percentile per-packet one-way delay: 3.574 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 150.26 Mbit/s
95th percentile per-packet one-way delay: 4.212 ms
Loss rate: 0.00%
```

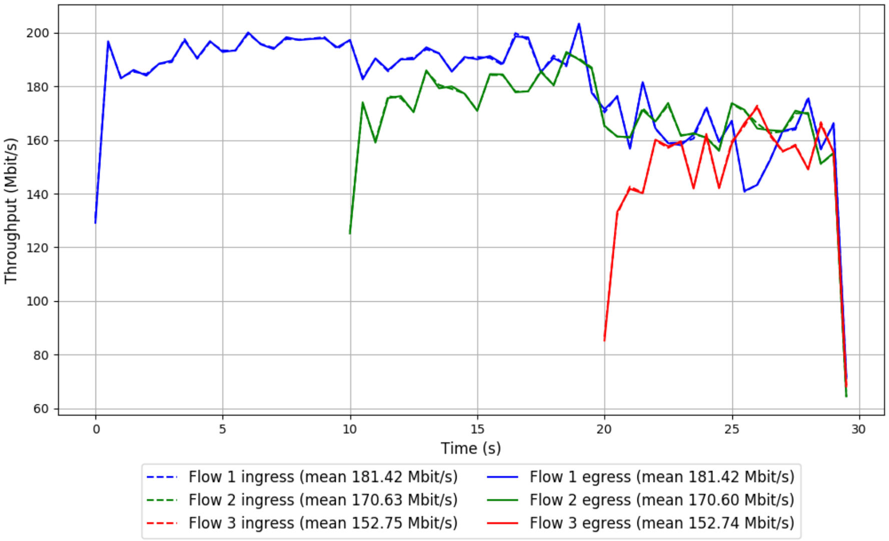
Run 5: Report of Indigo — Data Link

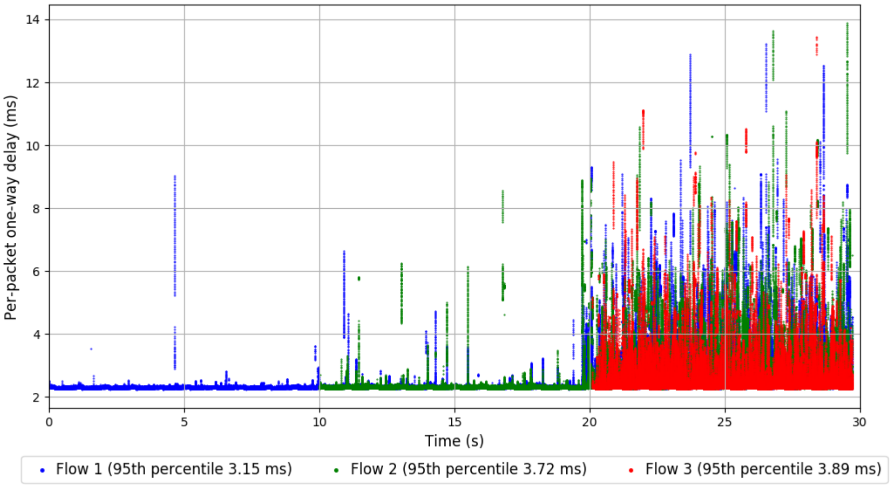




```
Run 6: Statistics of Indigo

Start at: 2017-09-18 12:00:51
End at: 2017-09-18 12:01:21
Local clock offset: -2.279 ms
Remote clock offset: 0.088 ms

# Below is generated by plot.py at 2017-09-18 16:11:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 343.95 Mbit/s
95th percentile per-packet one-way delay: 3.484 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 181.42 Mbit/s
95th percentile per-packet one-way delay: 3.150 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 170.60 Mbit/s
95th percentile per-packet one-way delay: 3.718 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 152.74 Mbit/s
95th percentile per-packet one-way delay: 3.887 ms
Loss rate: 0.00%
```

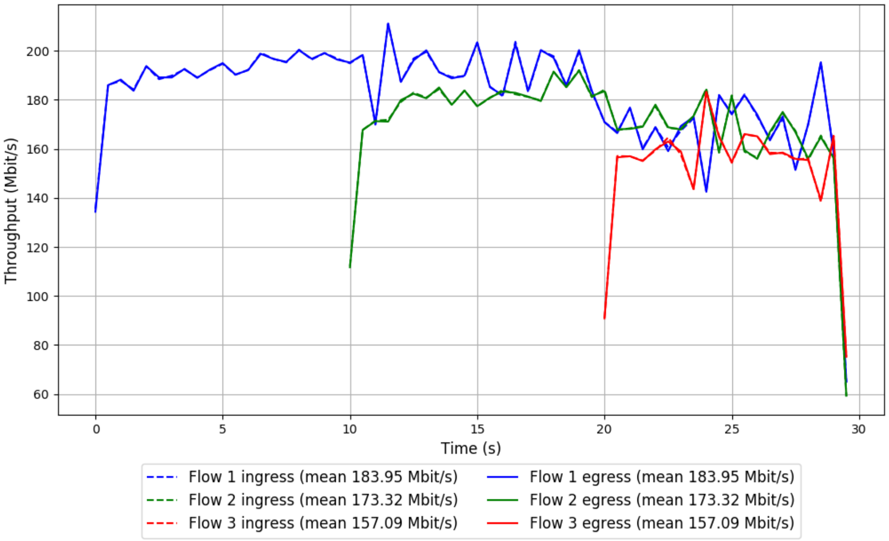
Run 6: Report of Indigo — Data Link

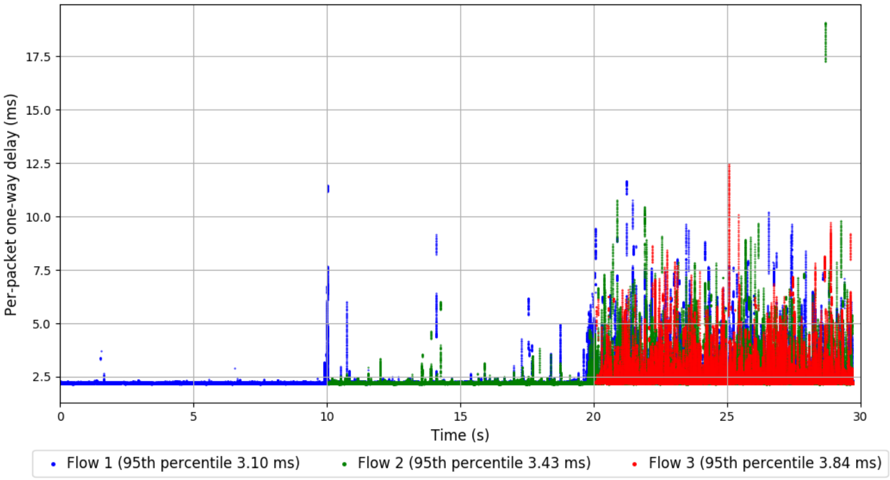




```
Run 7: Statistics of Indigo

Start at: 2017-09-18 12:15:45
End at: 2017-09-18 12:16:15
Local clock offset: -2.176 ms
Remote clock offset: 0.097 ms

# Below is generated by plot.py at 2017-09-18 16:11:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 349.51 Mbit/s
95th percentile per-packet one-way delay: 3.352 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 183.95 Mbit/s
95th percentile per-packet one-way delay: 3.101 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 173.32 Mbit/s
95th percentile per-packet one-way delay: 3.430 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 157.09 Mbit/s
95th percentile per-packet one-way delay: 3.844 ms
Loss rate: 0.00%
```

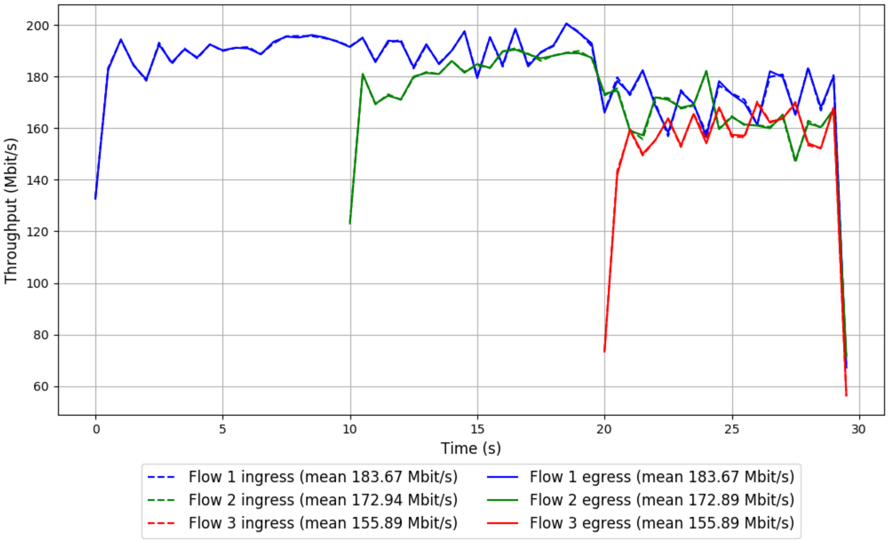
Run 7: Report of Indigo — Data Link

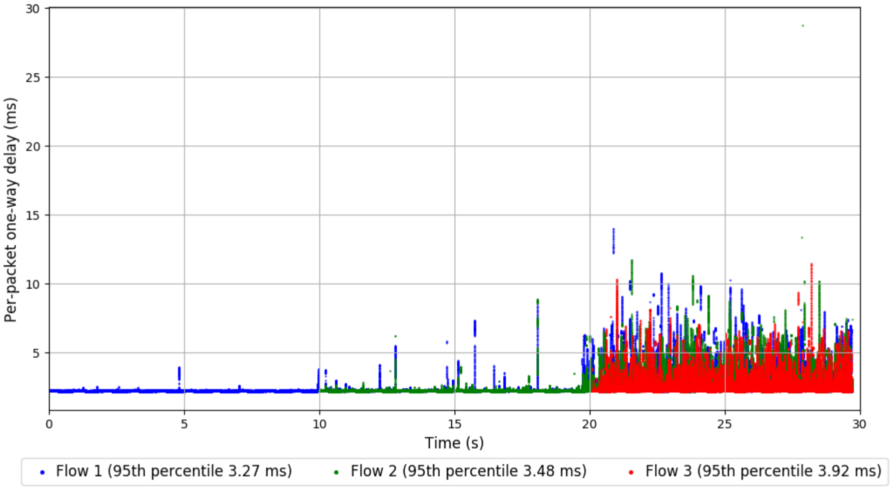




```
Run 8: Statistics of Indigo

Start at: 2017-09-18 12:30:38
End at: 2017-09-18 12:31:08
Local clock offset: -2.197 ms
Remote clock offset: 0.135 ms

# Below is generated by plot.py at 2017-09-18 16:11:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 348.73 Mbit/s
95th percentile per-packet one-way delay: 3.474 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 183.67 Mbit/s
95th percentile per-packet one-way delay: 3.274 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 172.89 Mbit/s
95th percentile per-packet one-way delay: 3.482 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 155.89 Mbit/s
95th percentile per-packet one-way delay: 3.923 ms
Loss rate: 0.00%
```

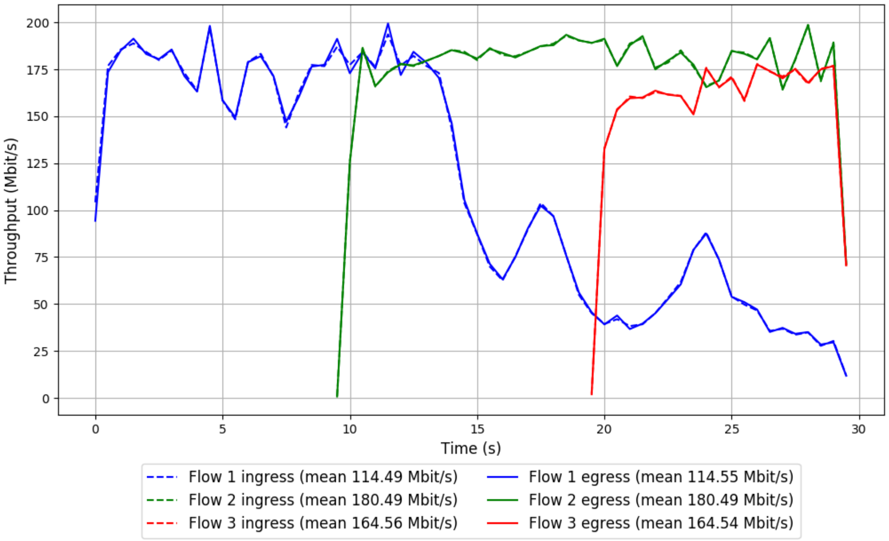
Run 8: Report of Indigo — Data Link

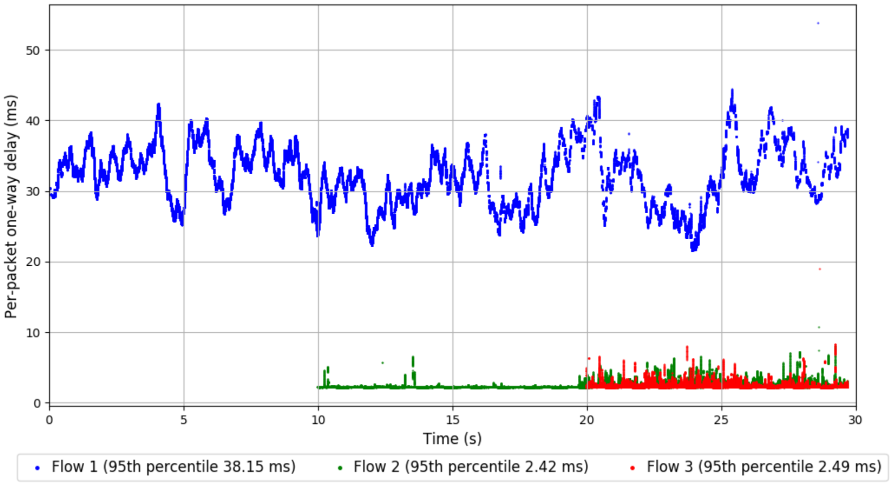




```
Run 9: Statistics of Indigo

Start at: 2017-09-18 12:45:35
End at: 2017-09-18 12:46:05
Local clock offset: -2.132 ms
Remote clock offset: 0.072 ms

# Below is generated by plot.py at 2017-09-18 16:12:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 288.36 Mbit/s
95th percentile per-packet one-way delay: 36.456 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 114.55 Mbit/s
95th percentile per-packet one-way delay: 38.149 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 180.49 Mbit/s
95th percentile per-packet one-way delay: 2.416 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 164.54 Mbit/s
95th percentile per-packet one-way delay: 2.491 ms
Loss rate: 0.00%
```

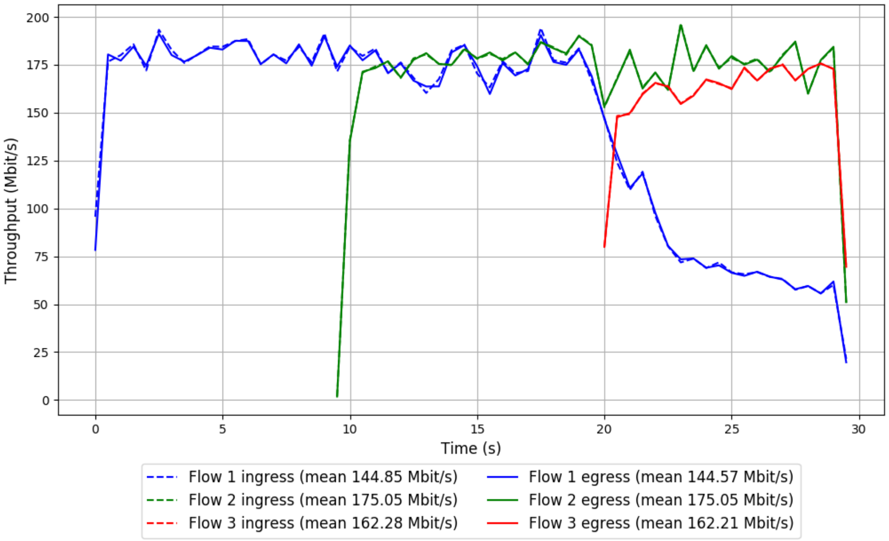
Run 9: Report of Indigo — Data Link

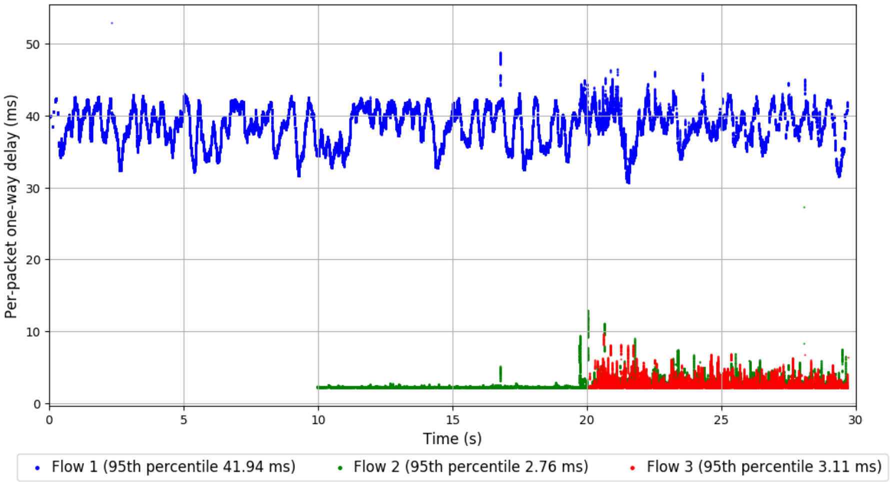




```
Run 10: Statistics of Indigo

Start at: 2017-09-18 13:00:33
End at: 2017-09-18 13:01:03
Local clock offset: -2.096 ms
Remote clock offset: 0.092 ms

# Below is generated by plot.py at 2017-09-18 16:12:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 313.48 Mbit/s
95th percentile per-packet one-way delay: 41.591 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 144.57 Mbit/s
95th percentile per-packet one-way delay: 41.944 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 175.05 Mbit/s
95th percentile per-packet one-way delay: 2.762 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 162.21 Mbit/s
95th percentile per-packet one-way delay: 3.107 ms
Loss rate: 0.00%
```

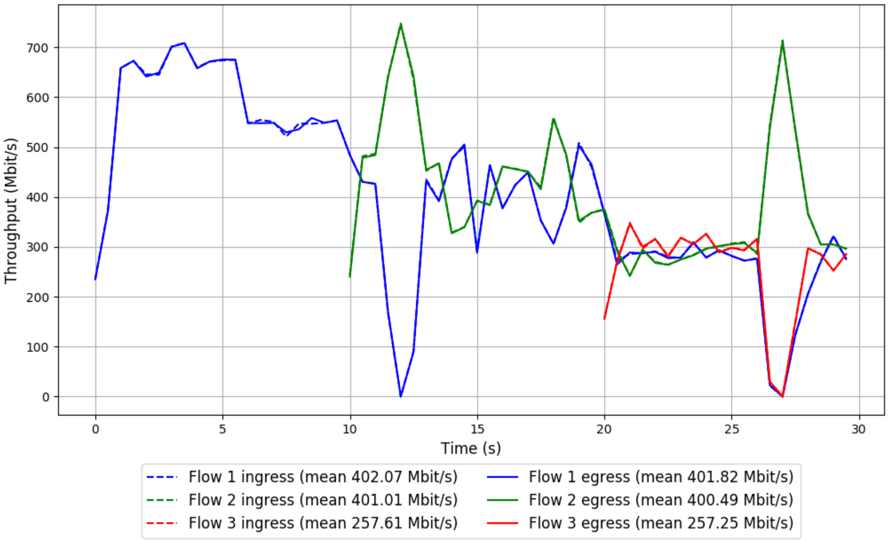
Run 10: Report of Indigo — Data Link

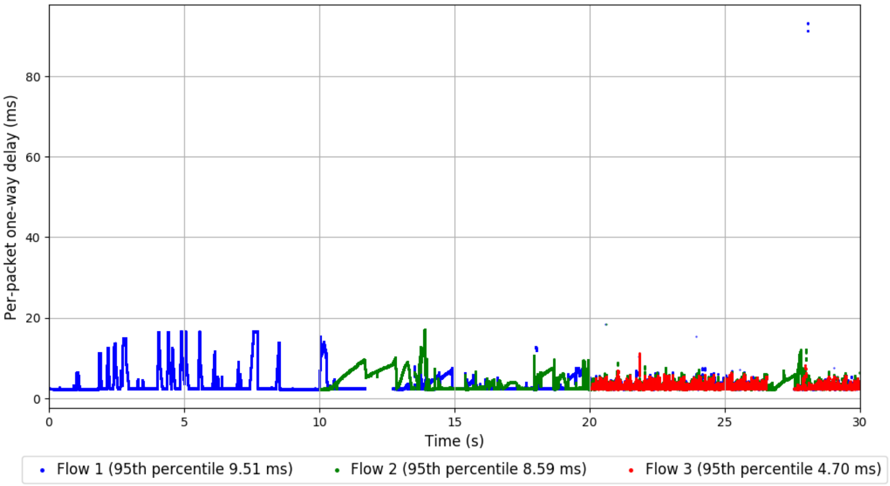




```
Run 1: Statistics of LEDBAT

Start at: 2017-09-18 10:54:48
End at: 2017-09-18 10:55:18
Local clock offset: -2.108 ms
Remote clock offset: 0.693 ms

# Below is generated by plot.py at 2017-09-18 16:19:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 753.76 Mbit/s
95th percentile per-packet one-way delay: 8.536 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 401.82 Mbit/s
95th percentile per-packet one-way delay: 9.513 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 400.49 Mbit/s
95th percentile per-packet one-way delay: 8.591 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 257.25 Mbit/s
95th percentile per-packet one-way delay: 4.700 ms
Loss rate: 0.13%
```

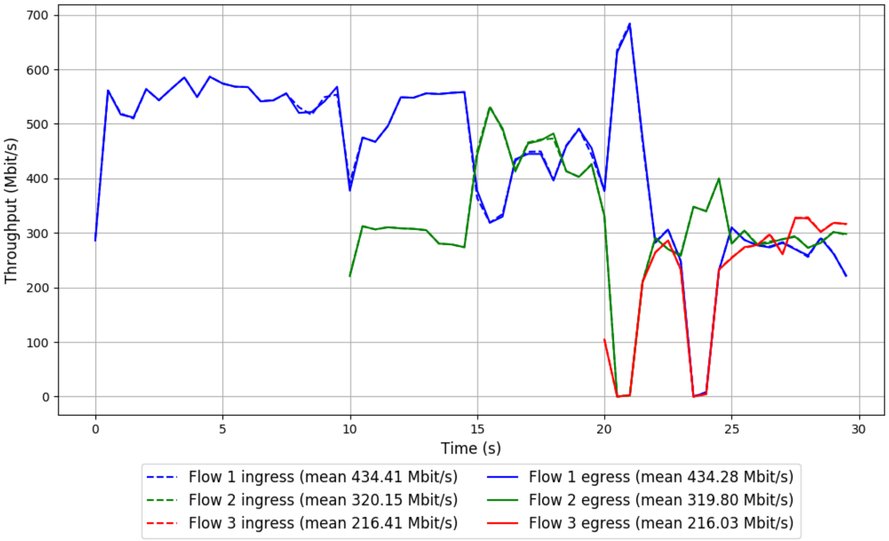
Run 1: Report of LEDBAT — Data Link

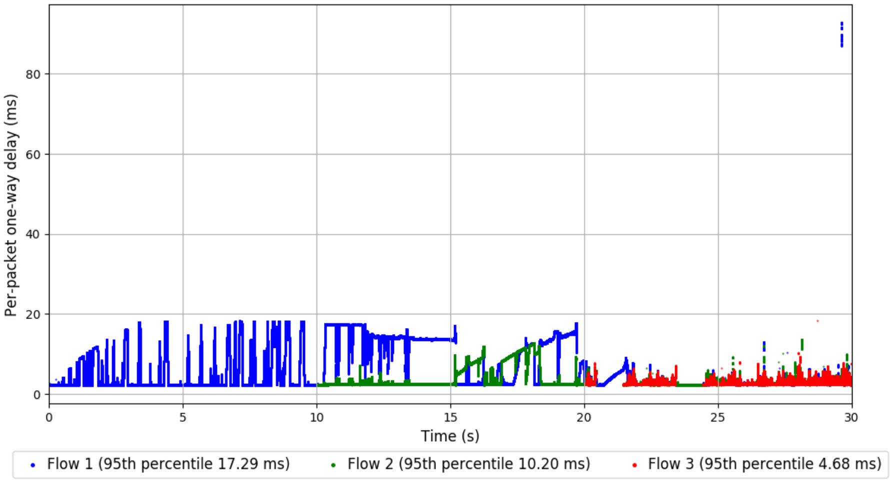




```
Run 2: Statistics of LEDBAT

Start at: 2017-09-18 11:09:43
End at: 2017-09-18 11:10:13
Local clock offset: -2.142 ms
Remote clock offset: 0.348 ms

# Below is generated by plot.py at 2017-09-18 16:19:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 718.79 Mbit/s
95th percentile per-packet one-way delay: 15.573 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 434.28 Mbit/s
95th percentile per-packet one-way delay: 17.290 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 319.80 Mbit/s
95th percentile per-packet one-way delay: 10.199 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 216.03 Mbit/s
95th percentile per-packet one-way delay: 4.676 ms
Loss rate: 0.15%
```

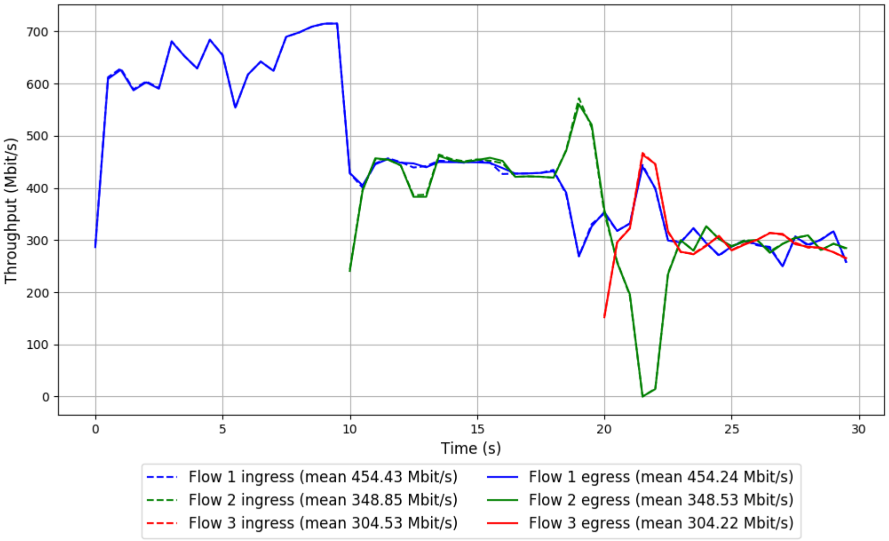
Run 2: Report of LEDBAT — Data Link

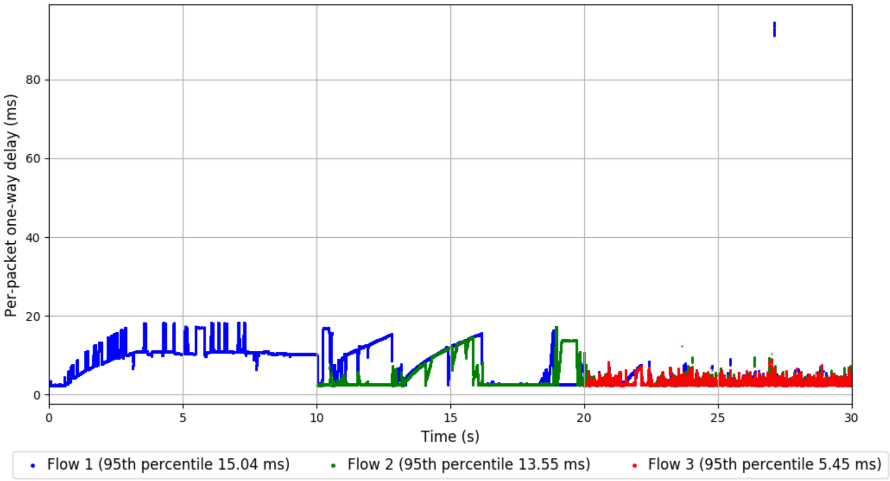




```
Run 3: Statistics of LEDBAT

Start at: 2017-09-18 11:24:31
End at: 2017-09-18 11:25:01
Local clock offset: -2.182 ms
Remote clock offset: -0.102 ms

# Below is generated by plot.py at 2017-09-18 16:22:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 787.22 Mbit/s
95th percentile per-packet one-way delay: 13.970 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 454.24 Mbit/s
95th percentile per-packet one-way delay: 15.035 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 348.53 Mbit/s
95th percentile per-packet one-way delay: 13.552 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 304.22 Mbit/s
95th percentile per-packet one-way delay: 5.449 ms
Loss rate: 0.10%
```

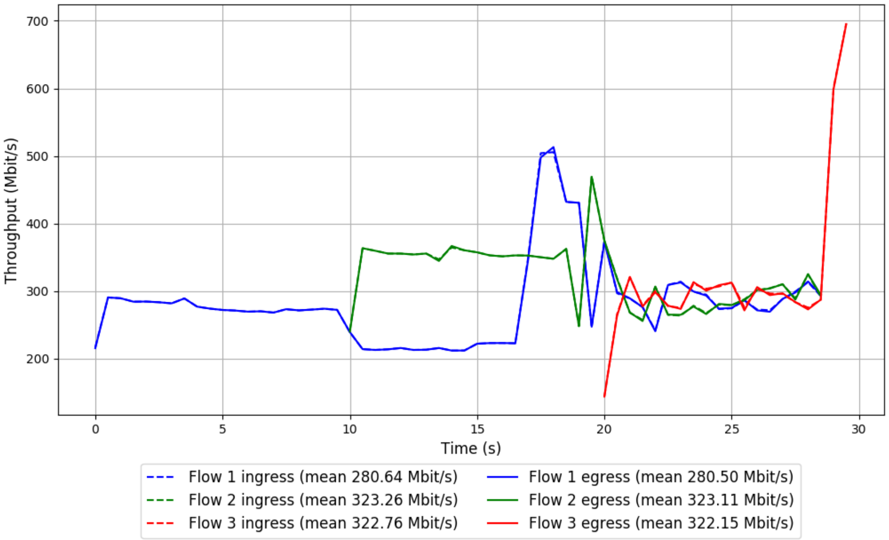
Run 3: Report of LEDBAT — Data Link

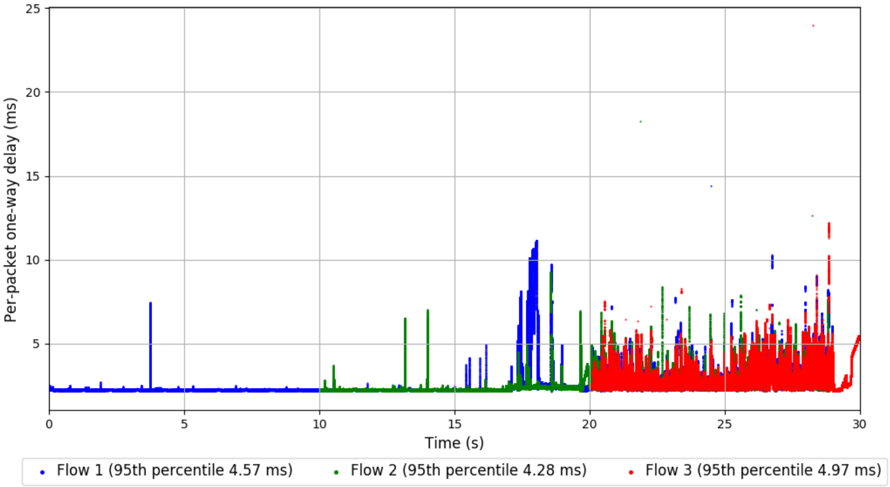




```
Run 4: Statistics of LEDBAT

Start at: 2017-09-18 11:39:30
End at: 2017-09-18 11:40:00
Local clock offset: -2.213 ms
Remote clock offset: 0.008 ms

# Below is generated by plot.py at 2017-09-18 16:22:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 582.53 Mbit/s
95th percentile per-packet one-way delay: 4.602 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 280.50 Mbit/s
95th percentile per-packet one-way delay: 4.569 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 323.11 Mbit/s
95th percentile per-packet one-way delay: 4.277 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 322.15 Mbit/s
95th percentile per-packet one-way delay: 4.970 ms
Loss rate: 0.19%
```

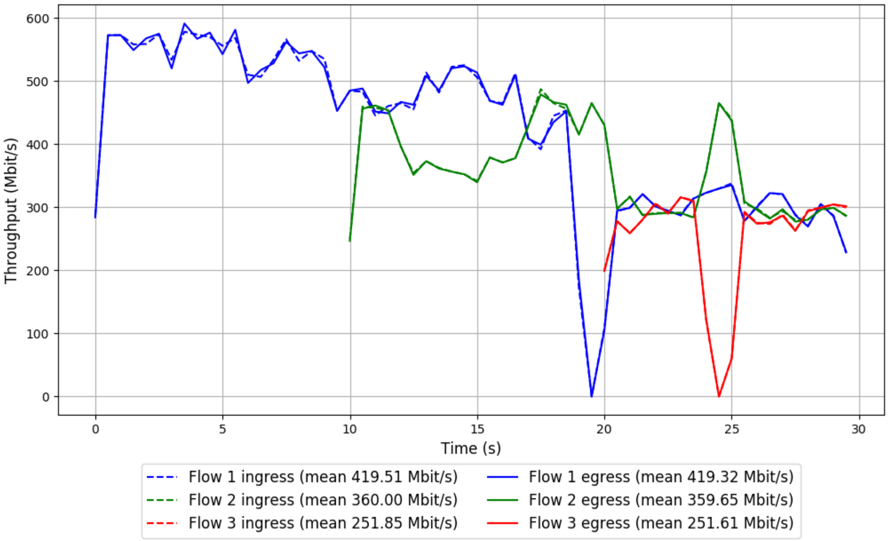
Run 4: Report of LEDBAT — Data Link

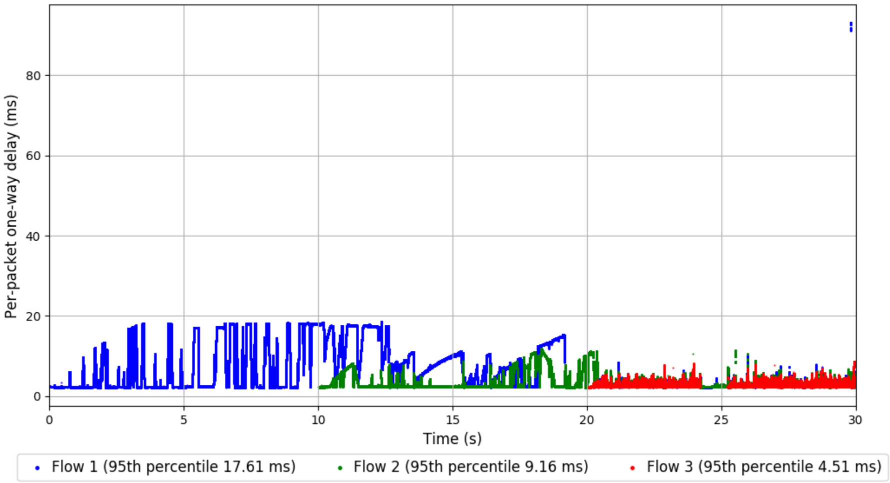




```
Run 5: Statistics of LEDBAT

Start at: 2017-09-18 11:54:17
End at: 2017-09-18 11:54:47
Local clock offset: -2.184 ms
Remote clock offset: 0.065 ms

# Below is generated by plot.py at 2017-09-18 16:22:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 742.30 Mbit/s
95th percentile per-packet one-way delay: 17.342 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 419.32 Mbit/s
95th percentile per-packet one-way delay: 17.609 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 359.65 Mbit/s
95th percentile per-packet one-way delay: 9.164 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 251.61 Mbit/s
95th percentile per-packet one-way delay: 4.509 ms
Loss rate: 0.09%
```

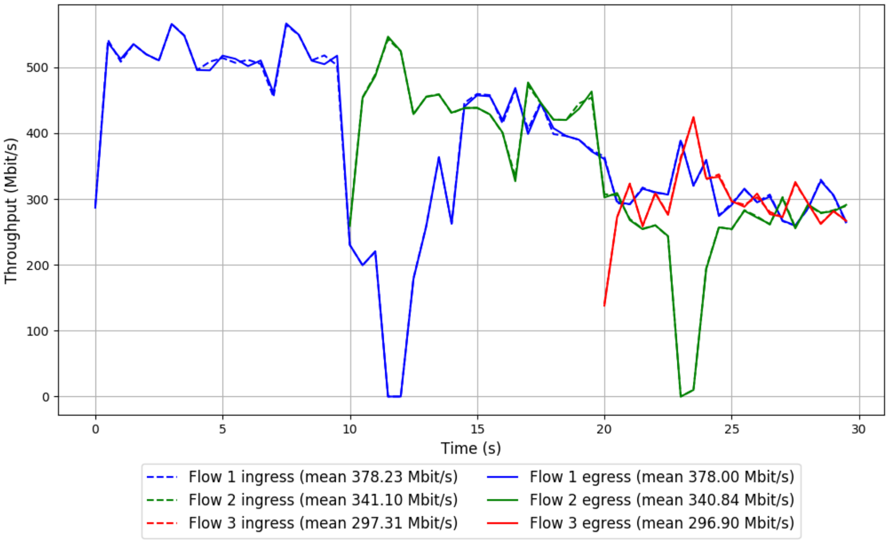
Run 5: Report of LEDBAT — Data Link

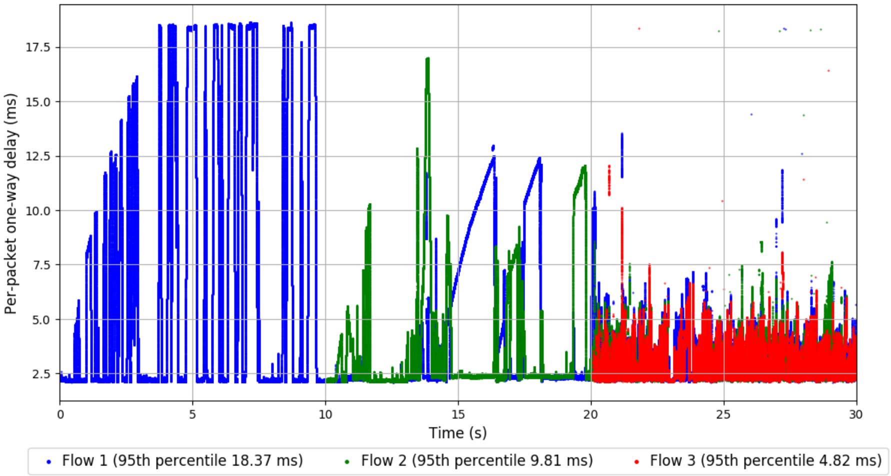




```
Run 6: Statistics of LEDBAT

Start at: 2017-09-18 12:09:05
End at: 2017-09-18 12:09:35
Local clock offset: -2.195 ms
Remote clock offset: 0.033 ms

# Below is generated by plot.py at 2017-09-18 16:22:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 703.37 Mbit/s
95th percentile per-packet one-way delay: 14.461 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 378.00 Mbit/s
95th percentile per-packet one-way delay: 18.367 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 340.84 Mbit/s
95th percentile per-packet one-way delay: 9.807 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 296.90 Mbit/s
95th percentile per-packet one-way delay: 4.819 ms
Loss rate: 0.13%
```

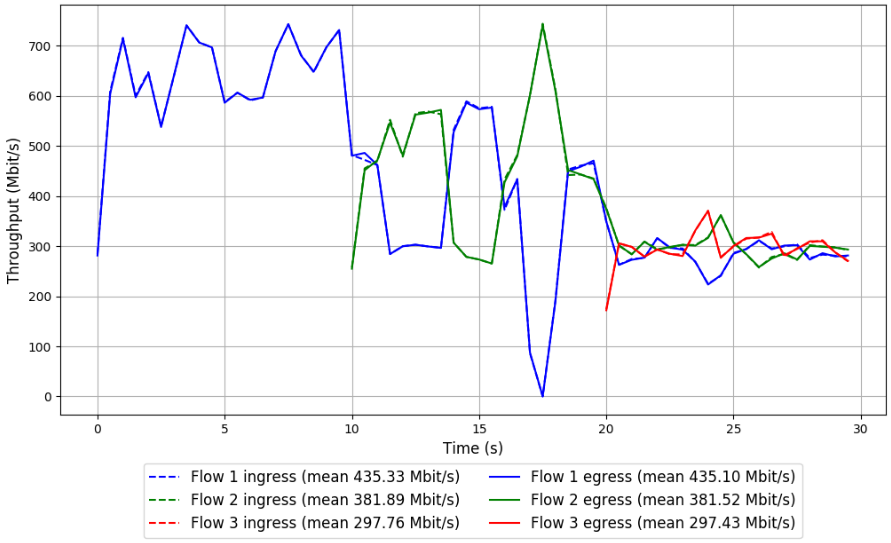
Run 6: Report of LEDBAT — Data Link

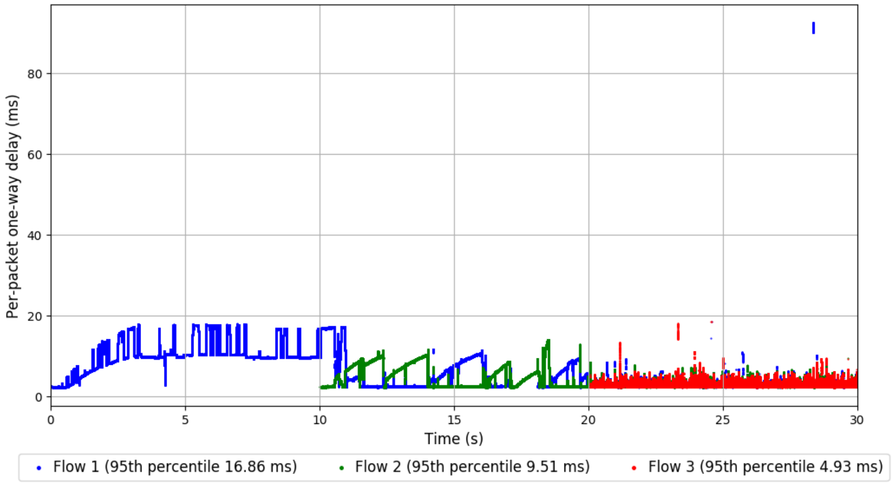




```
Run 7: Statistics of LEDBAT

Start at: 2017-09-18 12:23:56
End at: 2017-09-18 12:24:26
Local clock offset: -2.244 ms
Remote clock offset: 0.12 ms

# Below is generated by plot.py at 2017-09-18 16:23:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 787.62 Mbit/s
95th percentile per-packet one-way delay: 13.875 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 435.10 Mbit/s
95th percentile per-packet one-way delay: 16.862 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 381.52 Mbit/s
95th percentile per-packet one-way delay: 9.511 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 297.43 Mbit/s
95th percentile per-packet one-way delay: 4.931 ms
Loss rate: 0.08%
```

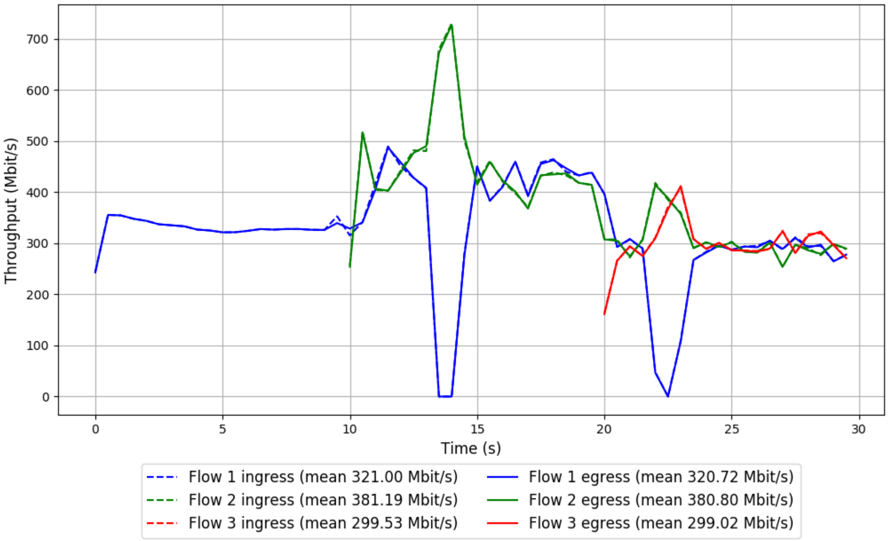
Run 7: Report of LEDBAT — Data Link

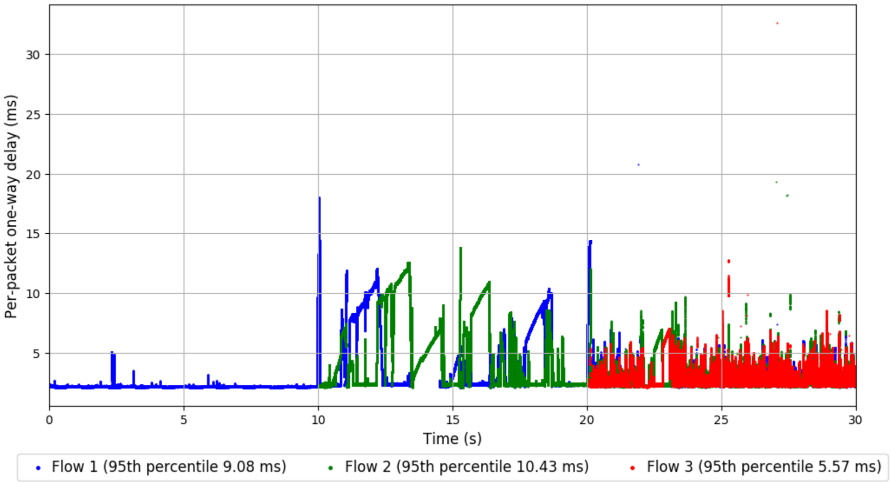




```
Run 8: Statistics of LEDBAT

Start at: 2017-09-18 12:38:57
End at: 2017-09-18 12:39:27
Local clock offset: -2.168 ms
Remote clock offset: 0.057 ms

# Below is generated by plot.py at 2017-09-18 16:23:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 673.29 Mbit/s
95th percentile per-packet one-way delay: 9.479 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 320.72 Mbit/s
95th percentile per-packet one-way delay: 9.083 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 380.80 Mbit/s
95th percentile per-packet one-way delay: 10.425 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 299.02 Mbit/s
95th percentile per-packet one-way delay: 5.568 ms
Loss rate: 0.16%
```

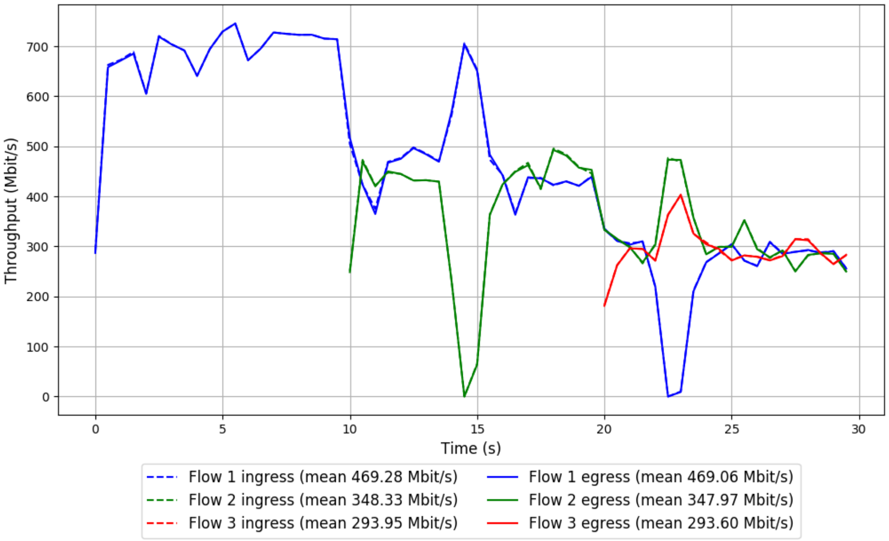
Run 8: Report of LEDBAT — Data Link

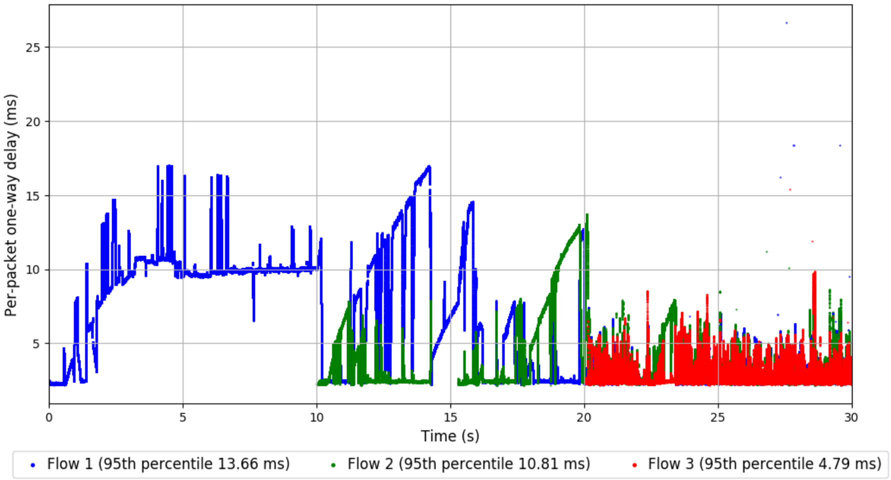




```
Run 9: Statistics of LEDBAT

Start at: 2017-09-18 12:53:48
End at: 2017-09-18 12:54:18
Local clock offset: -2.121 ms
Remote clock offset: 0.122 ms

# Below is generated by plot.py at 2017-09-18 16:30:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 798.25 Mbit/s
95th percentile per-packet one-way delay: 12.273 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 469.06 Mbit/s
95th percentile per-packet one-way delay: 13.664 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 347.97 Mbit/s
95th percentile per-packet one-way delay: 10.813 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 293.60 Mbit/s
95th percentile per-packet one-way delay: 4.791 ms
Loss rate: 0.12%
```

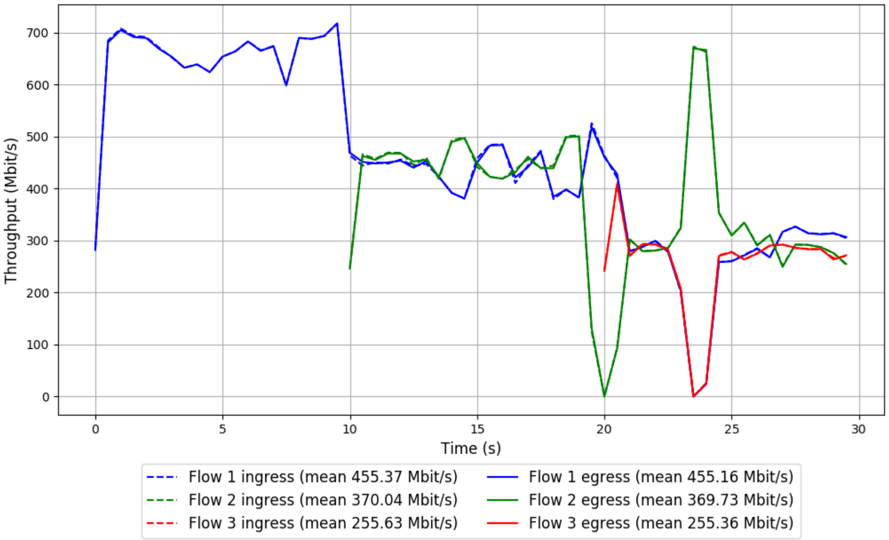
Run 9: Report of LEDBAT — Data Link

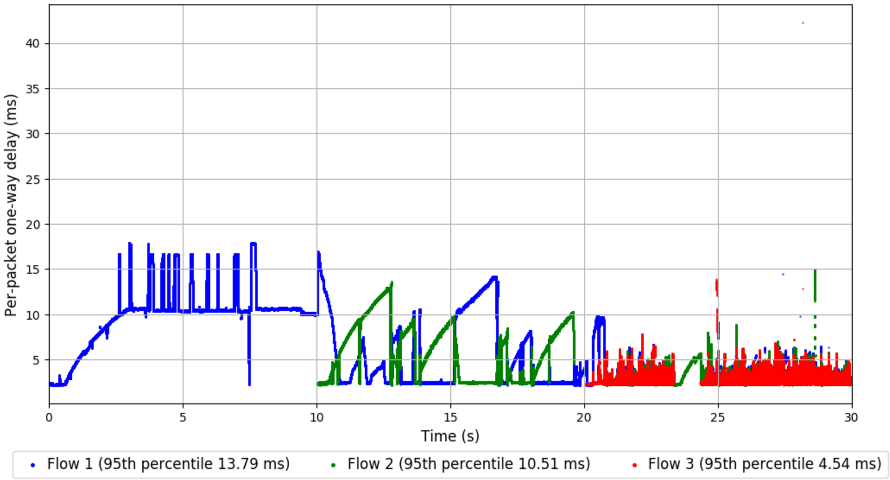




```
Run 10: Statistics of LEDBAT

Start at: 2017-09-18 13:08:44
End at: 2017-09-18 13:09:14
Local clock offset: -2.186 ms
Remote clock offset: -0.016 ms

# Below is generated by plot.py at 2017-09-18 16:30:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 786.13 Mbit/s
95th percentile per-packet one-way delay: 12.203 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 455.16 Mbit/s
95th percentile per-packet one-way delay: 13.791 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 369.73 Mbit/s
95th percentile per-packet one-way delay: 10.509 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 255.36 Mbit/s
95th percentile per-packet one-way delay: 4.538 ms
Loss rate: 0.10%
```

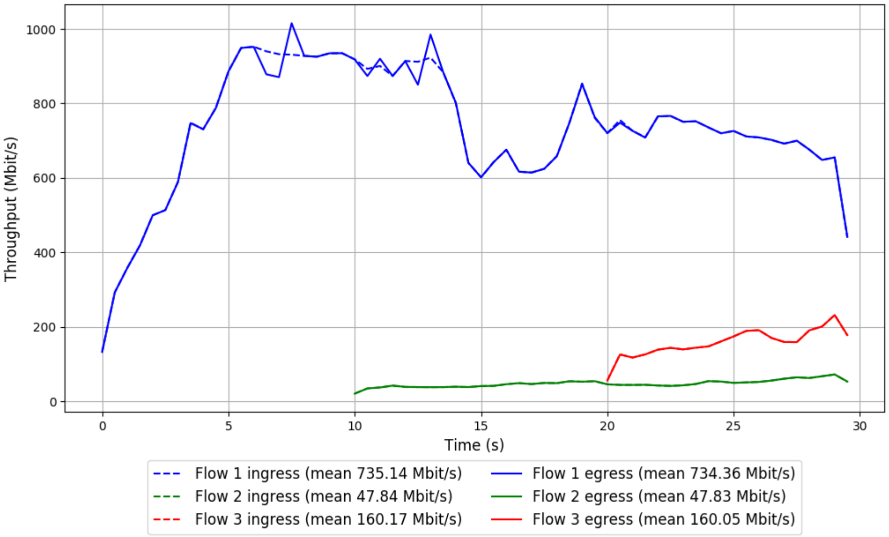
Run 10: Report of LEDBAT — Data Link

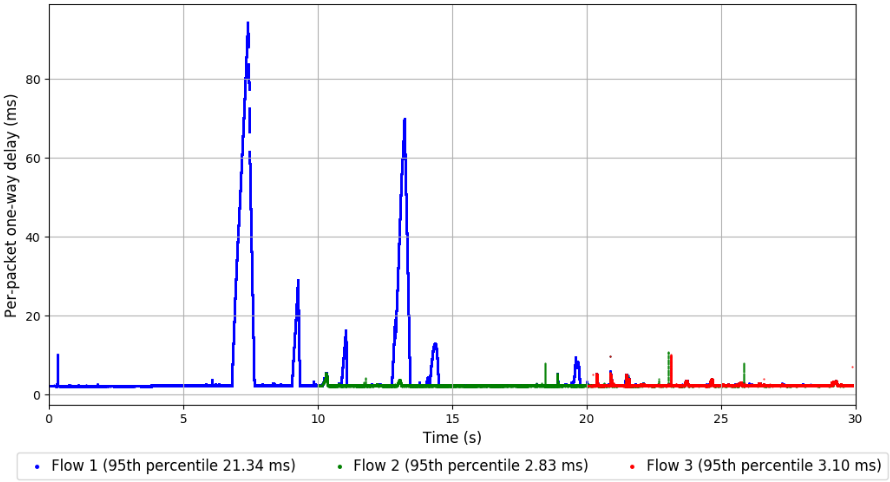




```
Run 1: Statistics of PCC

Start at: 2017-09-18 10:49:45
End at: 2017-09-18 10:50:15
Local clock offset: -2.111 ms
Remote clock offset: 0.695 ms

# Below is generated by plot.py at 2017-09-18 16:31:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 818.69 Mbit/s
95th percentile per-packet one-way delay: 17.166 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 734.36 Mbit/s
95th percentile per-packet one-way delay: 21.345 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 47.83 Mbit/s
95th percentile per-packet one-way delay: 2.827 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 160.05 Mbit/s
95th percentile per-packet one-way delay: 3.105 ms
Loss rate: 0.02%
```

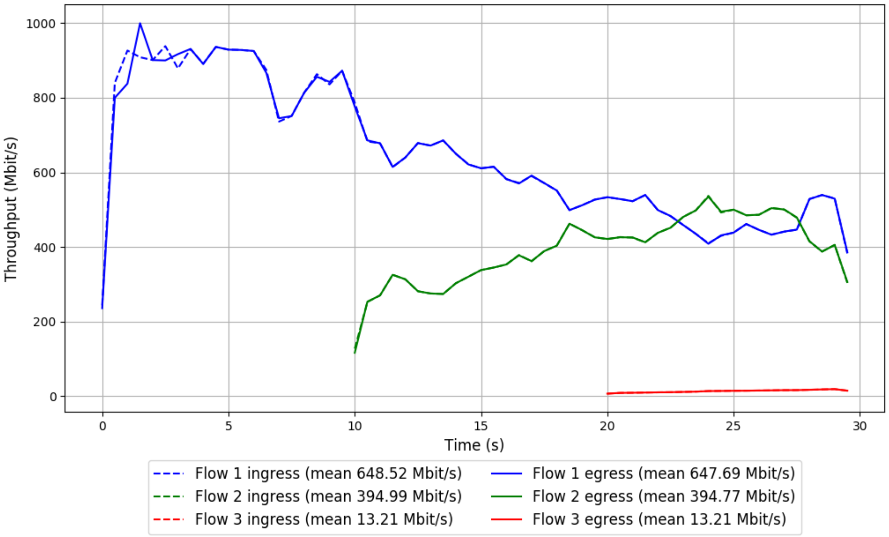
Run 1: Report of PCC — Data Link

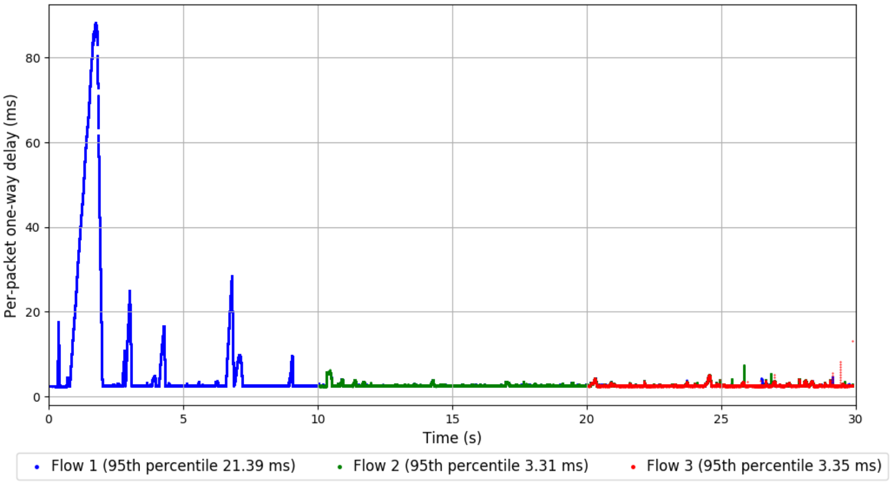




```
Run 2: Statistics of PCC

Start at: 2017-09-18 11:04:35
End at: 2017-09-18 11:05:05
Local clock offset: -2.182 ms
Remote clock offset: 0.459 ms

# Below is generated by plot.py at 2017-09-18 16:35:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 914.47 Mbit/s
95th percentile per-packet one-way delay: 12.066 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 647.69 Mbit/s
95th percentile per-packet one-way delay: 21.391 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 394.77 Mbit/s
95th percentile per-packet one-way delay: 3.310 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 13.21 Mbit/s
95th percentile per-packet one-way delay: 3.346 ms
Loss rate: 0.00%
```

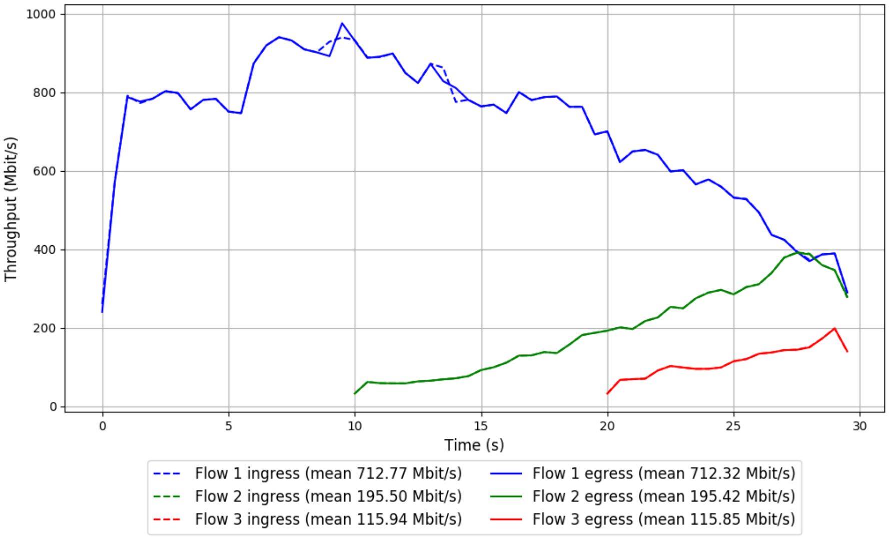
Run 2: Report of PCC — Data Link

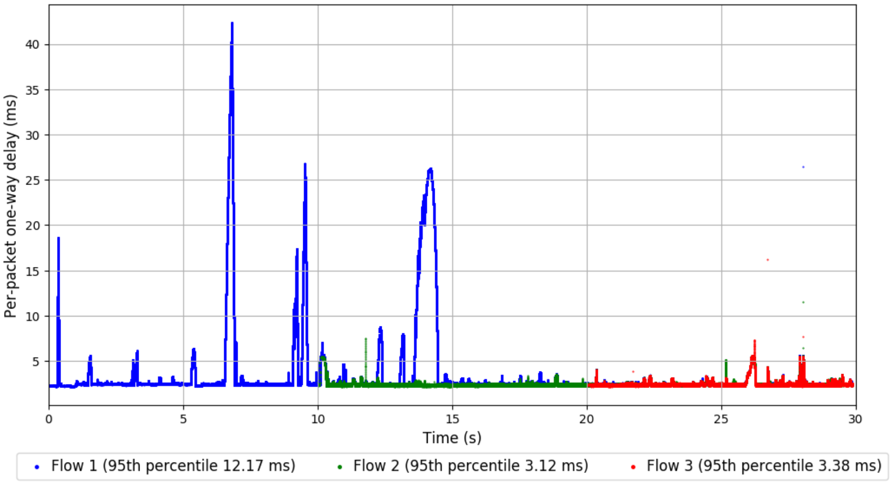




```
Run 3: Statistics of PCC

Start at: 2017-09-18 11:19:27
End at: 2017-09-18 11:19:57
Local clock offset: -2.103 ms
Remote clock offset: 0.031 ms

# Below is generated by plot.py at 2017-09-18 16:35:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 880.36 Mbit/s
95th percentile per-packet one-way delay: 8.365 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 712.32 Mbit/s
95th percentile per-packet one-way delay: 12.172 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 195.42 Mbit/s
95th percentile per-packet one-way delay: 3.115 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 115.85 Mbit/s
95th percentile per-packet one-way delay: 3.380 ms
Loss rate: 0.07%
```

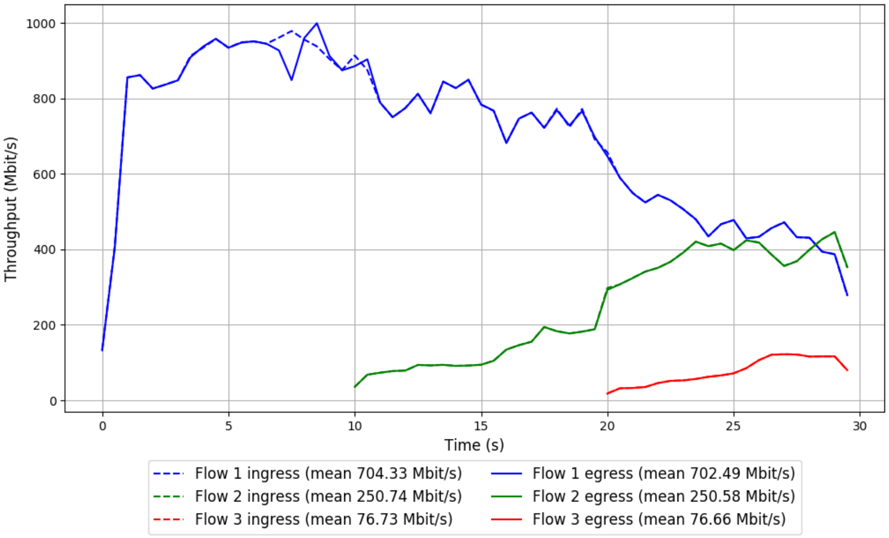
Run 3: Report of PCC — Data Link

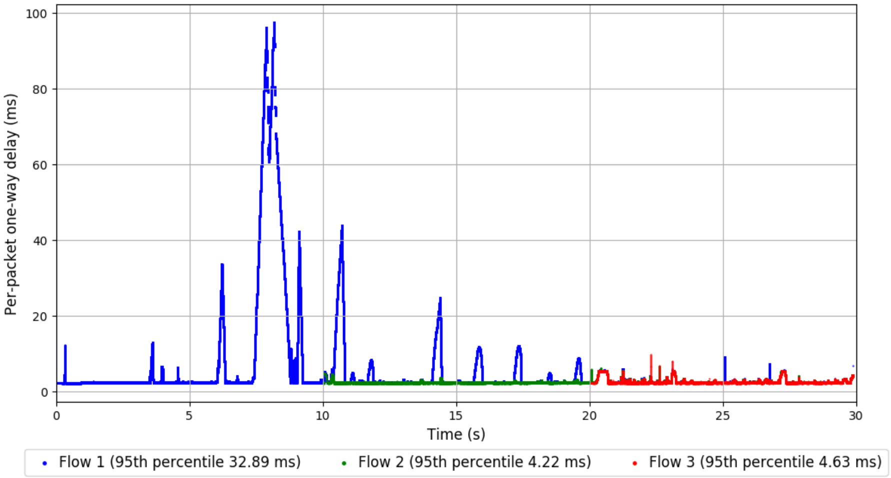




```
Run 4: Statistics of PCC

Start at: 2017-09-18 11:34:23
End at: 2017-09-18 11:34:53
Local clock offset: -2.218 ms
Remote clock offset: -0.093 ms

# Below is generated by plot.py at 2017-09-18 16:35:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 894.28 Mbit/s
95th percentile per-packet one-way delay: 24.567 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 702.49 Mbit/s
95th percentile per-packet one-way delay: 32.889 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 250.58 Mbit/s
95th percentile per-packet one-way delay: 4.223 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 76.66 Mbit/s
95th percentile per-packet one-way delay: 4.630 ms
Loss rate: 0.08%
```

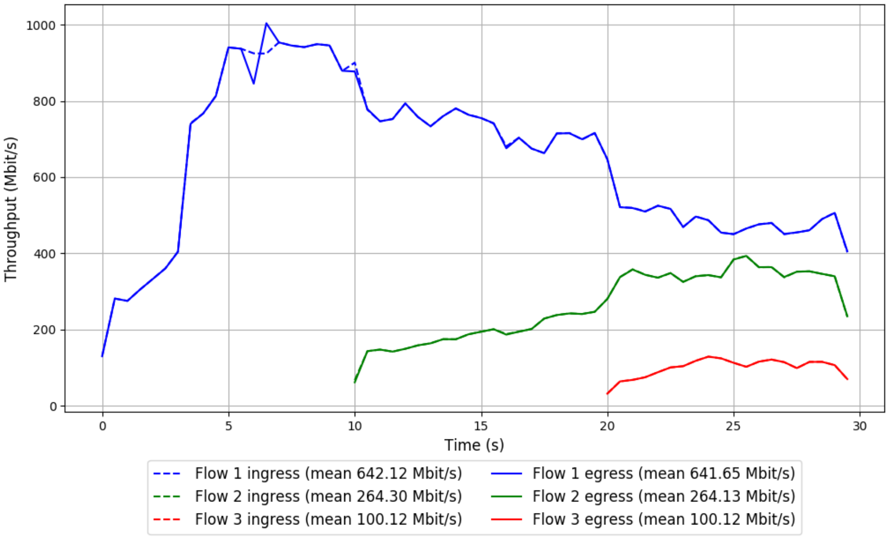
Run 4: Report of PCC — Data Link

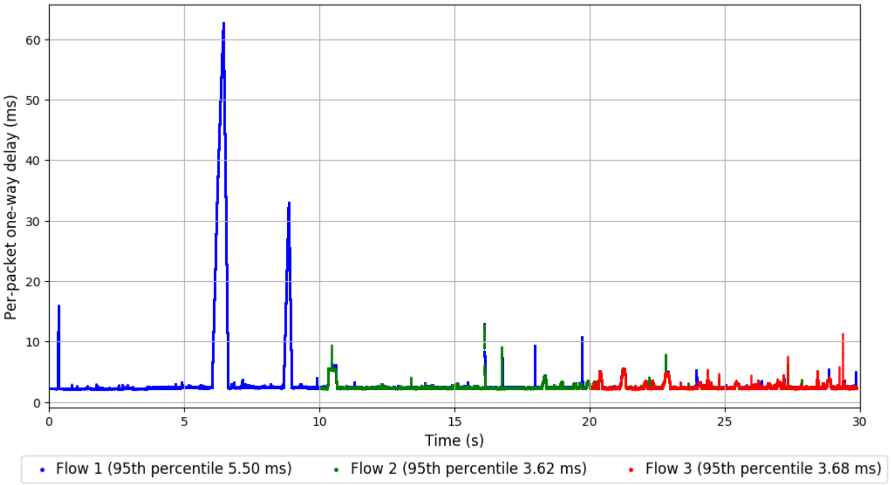




```
Run 5: Statistics of PCC

Start at: 2017-09-18 11:49:08
End at: 2017-09-18 11:49:38
Local clock offset: -2.218 ms
Remote clock offset: 0.052 ms

# Below is generated by plot.py at 2017-09-18 16:35:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 850.12 Mbit/s
95th percentile per-packet one-way delay: 4.925 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 641.65 Mbit/s
95th percentile per-packet one-way delay: 5.500 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 264.13 Mbit/s
95th percentile per-packet one-way delay: 3.618 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 100.12 Mbit/s
95th percentile per-packet one-way delay: 3.680 ms
Loss rate: 0.00%
```

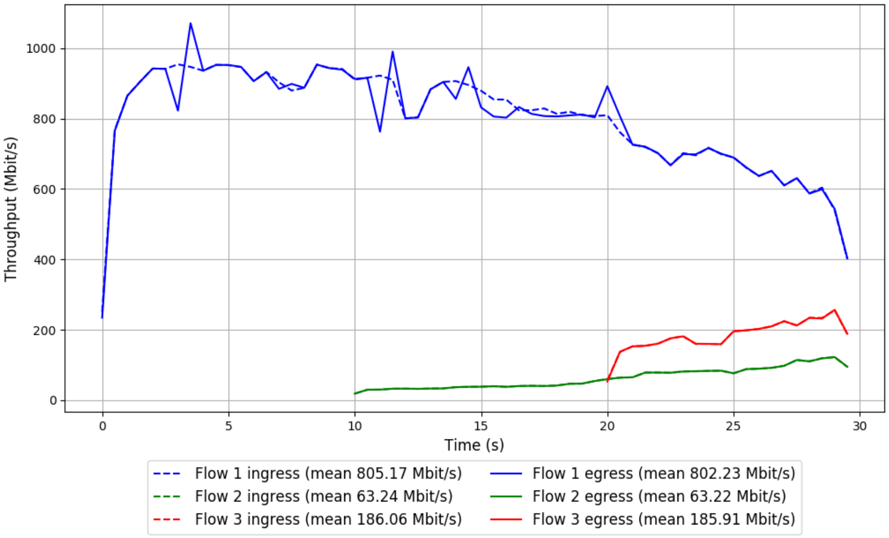
Run 5: Report of PCC — Data Link

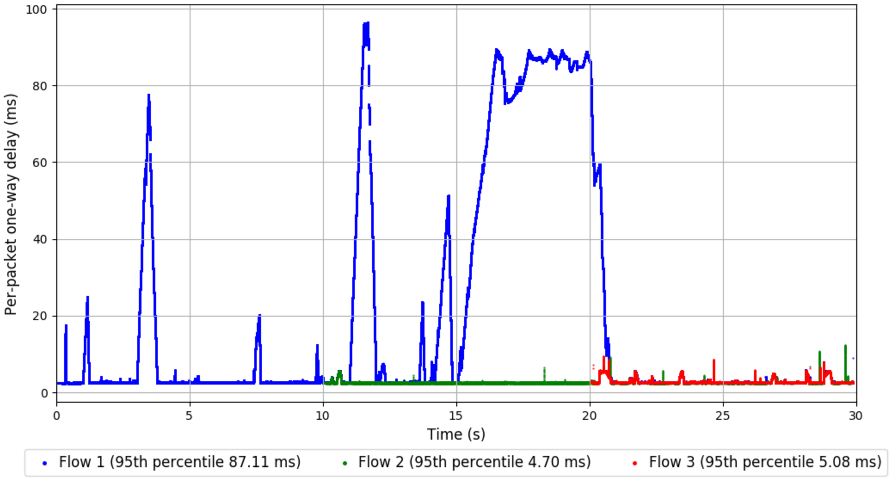




```
Run 6: Statistics of PCC

Start at: 2017-09-18 12:03:56
End at: 2017-09-18 12:04:26
Local clock offset: -2.273 ms
Remote clock offset: 0.095 ms

# Below is generated by plot.py at 2017-09-18 16:36:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 905.32 Mbit/s
95th percentile per-packet one-way delay: 86.996 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 802.23 Mbit/s
95th percentile per-packet one-way delay: 87.112 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 63.22 Mbit/s
95th percentile per-packet one-way delay: 4.699 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 185.91 Mbit/s
95th percentile per-packet one-way delay: 5.076 ms
Loss rate: 0.08%
```

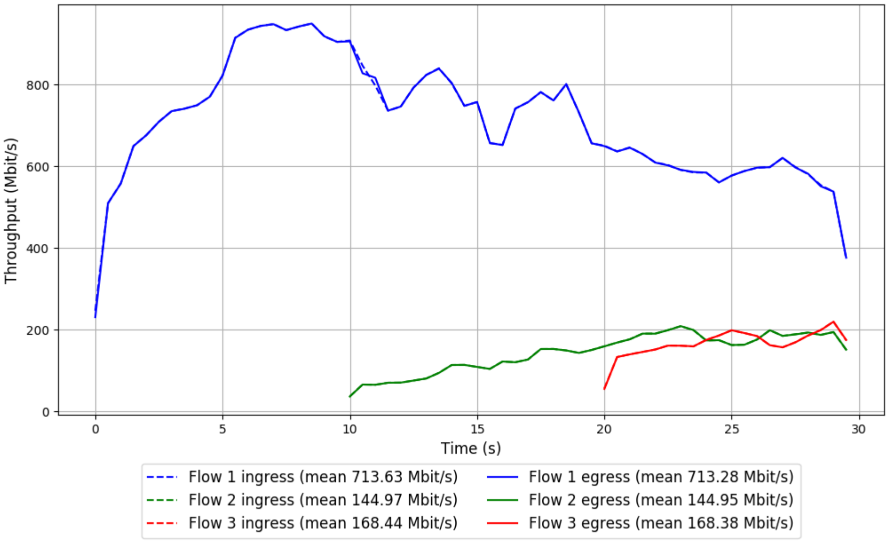
Run 6: Report of PCC — Data Link

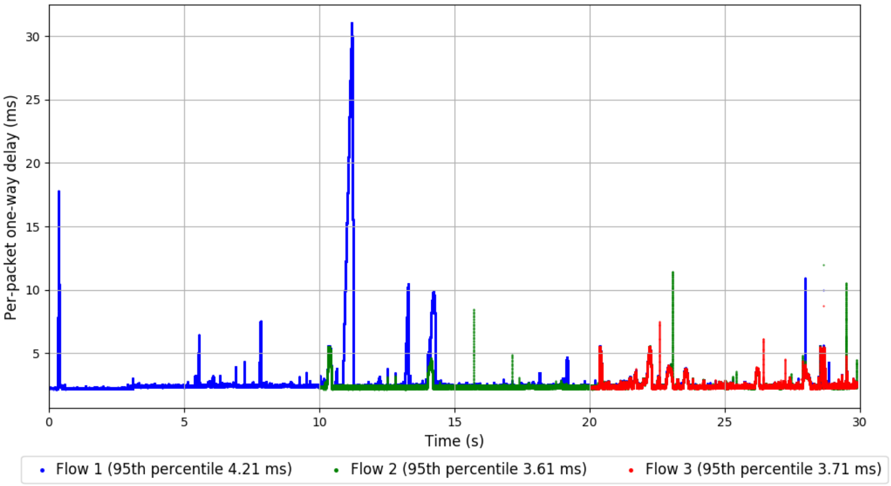




```
Run 7: Statistics of PCC

Start at: 2017-09-18 12:18:49
End at: 2017-09-18 12:19:19
Local clock offset: -2.197 ms
Remote clock offset: 0.091 ms

# Below is generated by plot.py at 2017-09-18 16:44:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 864.97 Mbit/s
95th percentile per-packet one-way delay: 3.936 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 713.28 Mbit/s
95th percentile per-packet one-way delay: 4.213 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 144.95 Mbit/s
95th percentile per-packet one-way delay: 3.612 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 168.38 Mbit/s
95th percentile per-packet one-way delay: 3.706 ms
Loss rate: 0.03%
```

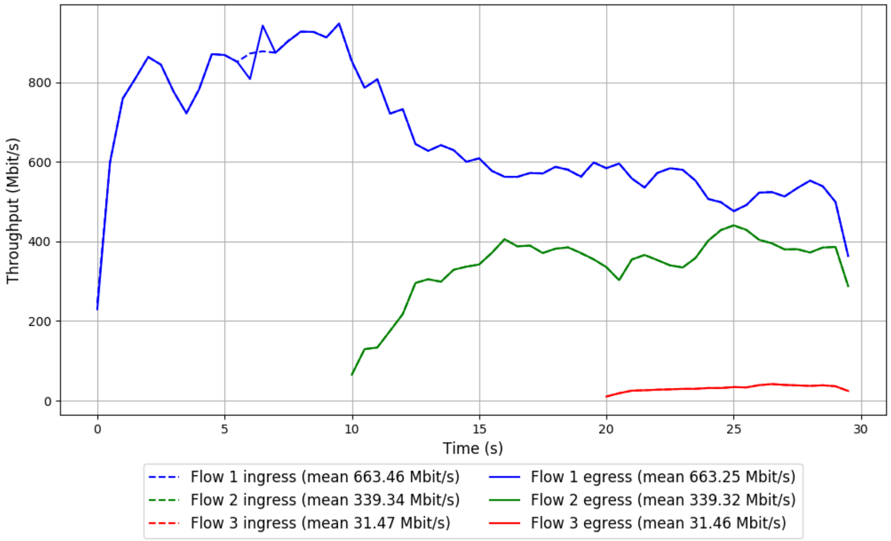
Run 7: Report of PCC — Data Link

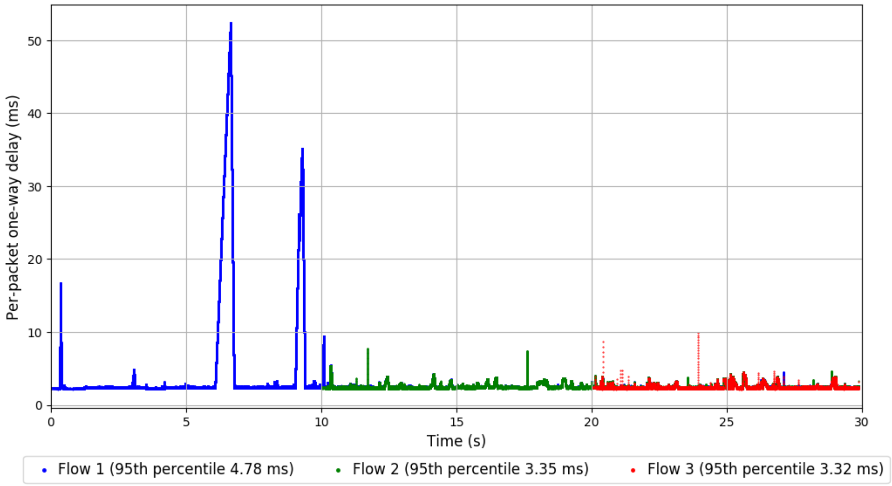




```
Run 8: Statistics of PCC

Start at: 2017-09-18 12:33:43
End at: 2017-09-18 12:34:13
Local clock offset: -2.18 ms
Remote clock offset: 0.119 ms

# Below is generated by plot.py at 2017-09-18 16:44:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 899.17 Mbit/s
95th percentile per-packet one-way delay: 3.694 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 663.25 Mbit/s
95th percentile per-packet one-way delay: 4.778 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 339.32 Mbit/s
95th percentile per-packet one-way delay: 3.351 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 31.46 Mbit/s
95th percentile per-packet one-way delay: 3.316 ms
Loss rate: 0.01%
```

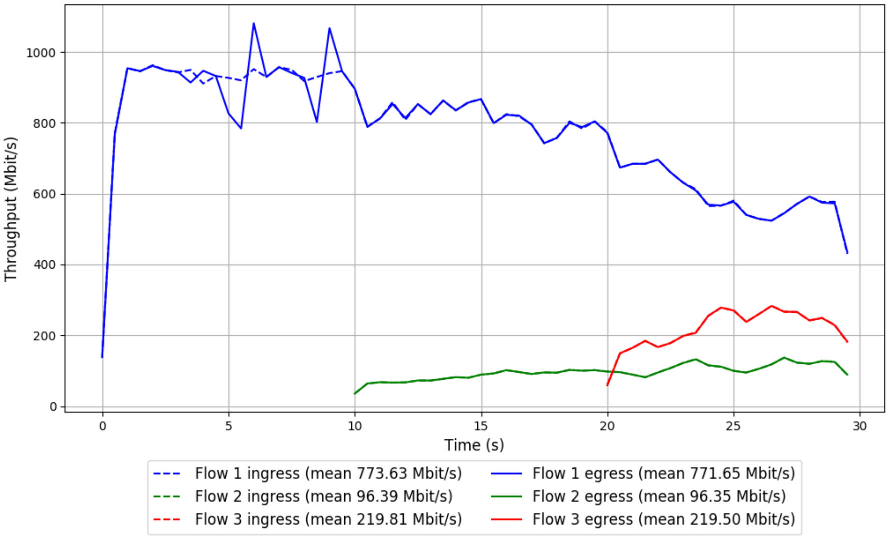
Run 8: Report of PCC — Data Link

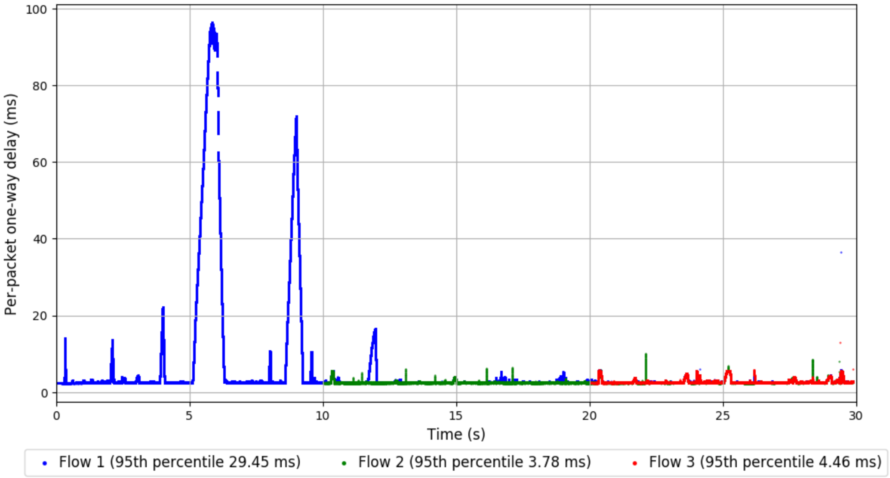




```
Run 9: Statistics of PCC

Start at: 2017-09-18 12:48:36
End at: 2017-09-18 12:49:06
Local clock offset: -2.185 ms
Remote clock offset: 0.158 ms

# Below is generated by plot.py at 2017-09-18 16:45:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 907.93 Mbit/s
95th percentile per-packet one-way delay: 19.928 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 771.65 Mbit/s
95th percentile per-packet one-way delay: 29.452 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 96.35 Mbit/s
95th percentile per-packet one-way delay: 3.784 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 219.50 Mbit/s
95th percentile per-packet one-way delay: 4.465 ms
Loss rate: 0.11%
```

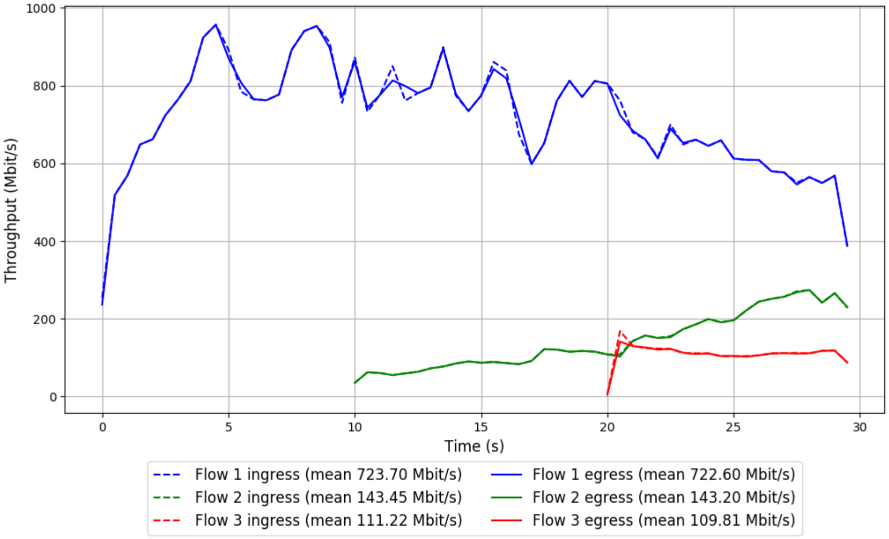
Run 9: Report of PCC — Data Link

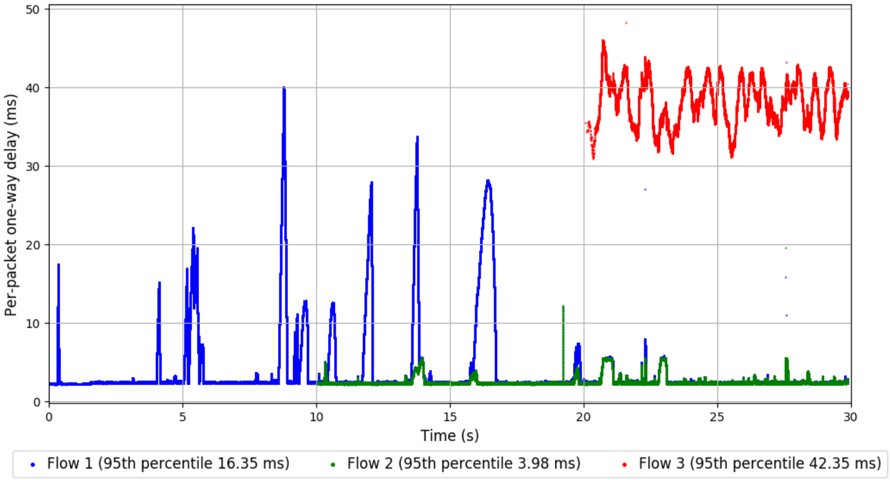




```
Run 10: Statistics of PCC

Start at: 2017-09-18 13:03:35
End at: 2017-09-18 13:04:05
Local clock offset: -2.111 ms
Remote clock offset: 0.085 ms

# Below is generated by plot.py at 2017-09-18 16:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 853.81 Mbit/s
95th percentile per-packet one-way delay: 27.834 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 722.60 Mbit/s
95th percentile per-packet one-way delay: 16.353 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 143.20 Mbit/s
95th percentile per-packet one-way delay: 3.980 ms
Loss rate: 0.17%
-- Flow 3:
Average throughput: 109.81 Mbit/s
95th percentile per-packet one-way delay: 42.347 ms
Loss rate: 1.57%
```

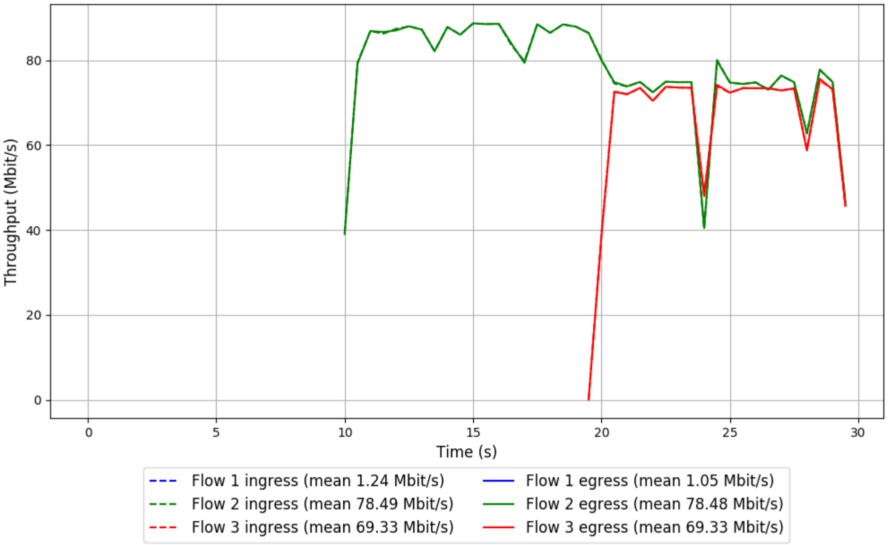
Run 10: Report of PCC — Data Link

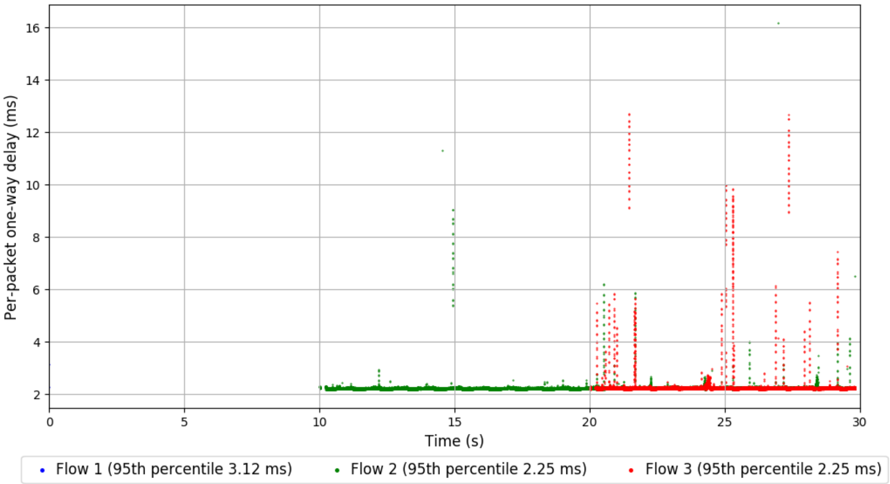




```
Run 1: Statistics of QUIC Cubic

Start at: 2017-09-18 10:53:41
End at: 2017-09-18 10:54:11
Local clock offset: -2.118 ms
Remote clock offset: 0.705 ms

# Below is generated by plot.py at 2017-09-18 16:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 75.00 Mbit/s
95th percentile per-packet one-way delay: 2.250 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.05 Mbit/s
95th percentile per-packet one-way delay: 3.125 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 78.48 Mbit/s
95th percentile per-packet one-way delay: 2.249 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 69.33 Mbit/s
95th percentile per-packet one-way delay: 2.253 ms
Loss rate: 0.00%
```

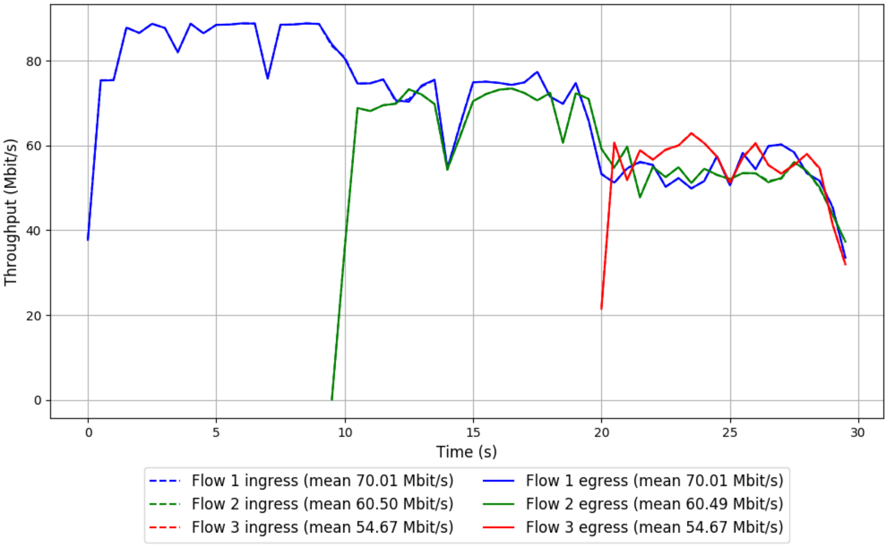
Run 1: Report of QUIC Cubic — Data Link

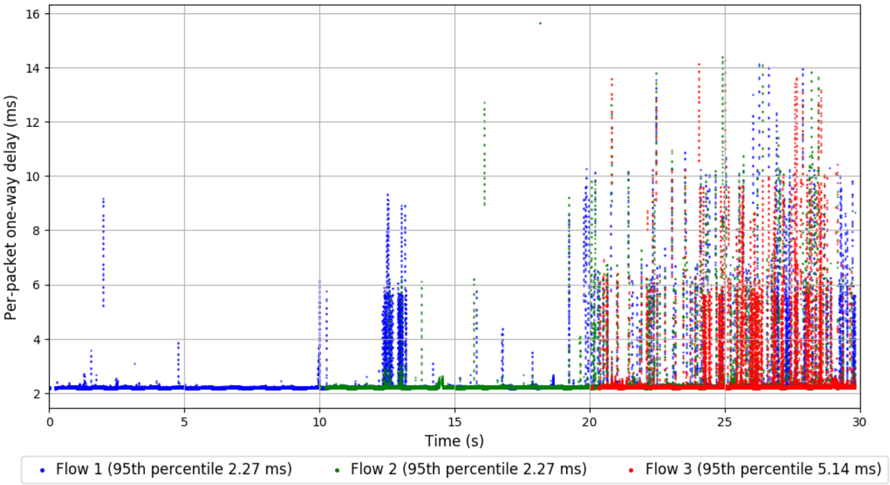




```
Run 2: Statistics of QUIC Cubic

Start at: 2017-09-18 11:08:34
End at: 2017-09-18 11:09:04
Local clock offset: -2.053 ms
Remote clock offset: 0.408 ms

# Below is generated by plot.py at 2017-09-18 16:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 128.16 Mbit/s
95th percentile per-packet one-way delay: 2.312 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 70.01 Mbit/s
95th percentile per-packet one-way delay: 2.265 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 60.49 Mbit/s
95th percentile per-packet one-way delay: 2.269 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 54.67 Mbit/s
95th percentile per-packet one-way delay: 5.141 ms
Loss rate: 0.00%
```

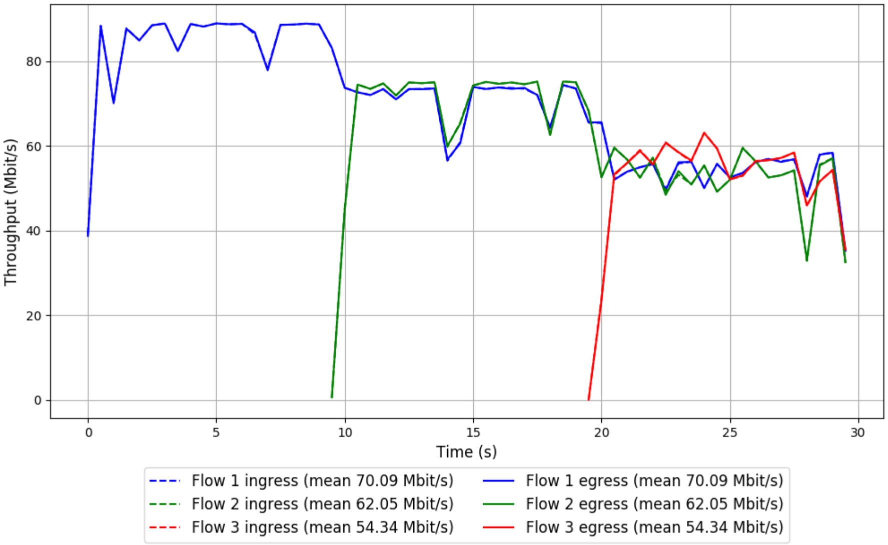
Run 2: Report of QUIC Cubic — Data Link

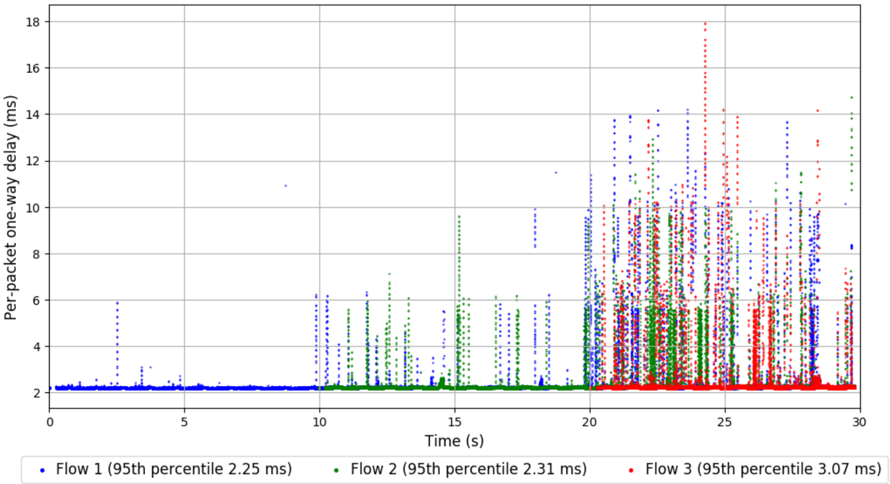




```
Run 3: Statistics of QUIC Cubic

Start at: 2017-09-18 11:23:22
End at: 2017-09-18 11:23:52
Local clock offset: -2.101 ms
Remote clock offset: -0.028 ms

# Below is generated by plot.py at 2017-09-18 16:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 129.32 Mbit/s
95th percentile per-packet one-way delay: 2.272 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 70.09 Mbit/s
95th percentile per-packet one-way delay: 2.253 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 62.05 Mbit/s
95th percentile per-packet one-way delay: 2.310 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 54.34 Mbit/s
95th percentile per-packet one-way delay: 3.072 ms
Loss rate: 0.00%
```

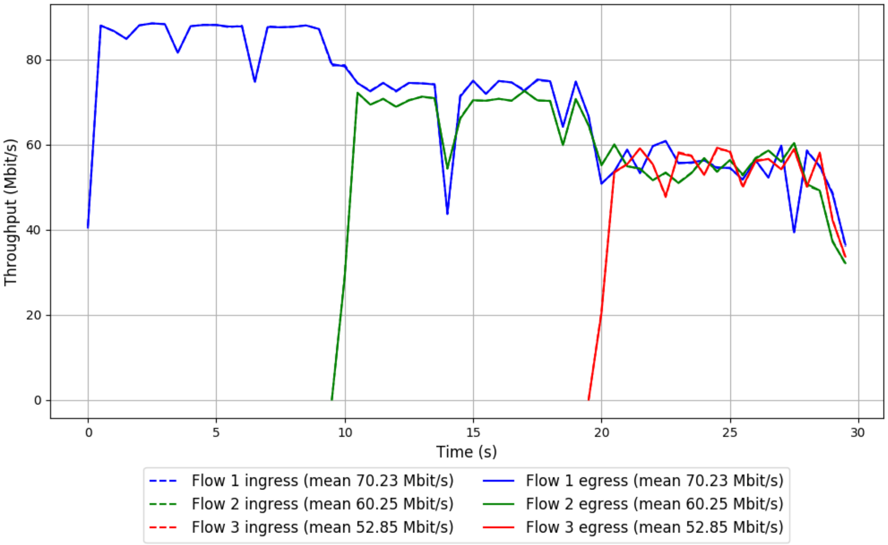
Run 3: Report of QUIC Cubic — Data Link

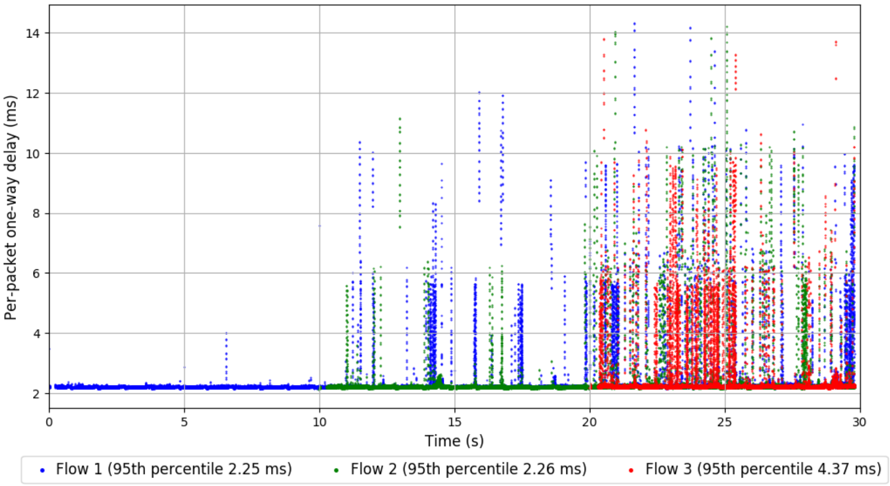




```
Run 4: Statistics of QUIC Cubic

Start at: 2017-09-18 11:38:20
End at: 2017-09-18 11:38:50
Local clock offset: -2.192 ms
Remote clock offset: 0.006 ms

# Below is generated by plot.py at 2017-09-18 16:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 127.71 Mbit/s
95th percentile per-packet one-way delay: 2.278 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 70.23 Mbit/s
95th percentile per-packet one-way delay: 2.254 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 60.25 Mbit/s
95th percentile per-packet one-way delay: 2.257 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 52.85 Mbit/s
95th percentile per-packet one-way delay: 4.370 ms
Loss rate: 0.00%
```

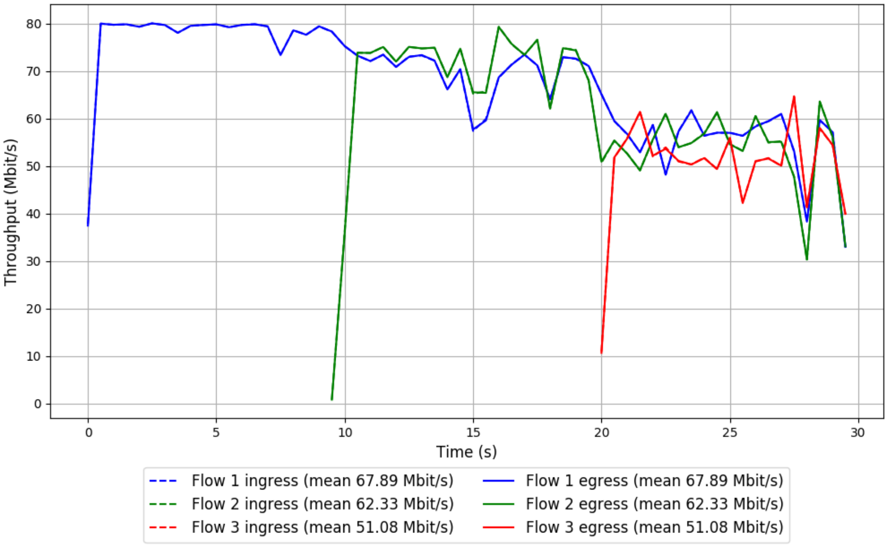
Run 4: Report of QUIC Cubic — Data Link

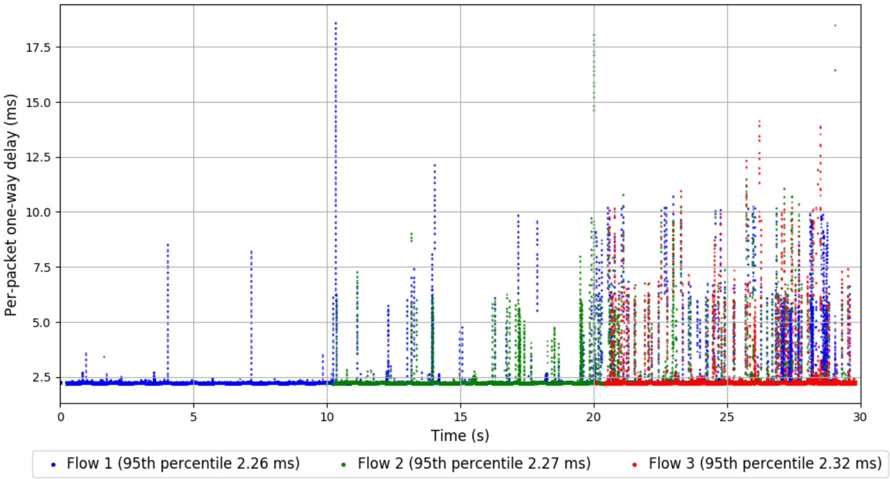




```
Run 5: Statistics of QUIC Cubic

Start at: 2017-09-18 11:53:08
End at: 2017-09-18 11:53:38
Local clock offset: -2.198 ms
Remote clock offset: 0.068 ms

# Below is generated by plot.py at 2017-09-18 16:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 126.14 Mbit/s
95th percentile per-packet one-way delay: 2.267 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 67.89 Mbit/s
95th percentile per-packet one-way delay: 2.260 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 62.33 Mbit/s
95th percentile per-packet one-way delay: 2.269 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 51.08 Mbit/s
95th percentile per-packet one-way delay: 2.317 ms
Loss rate: 0.00%
```

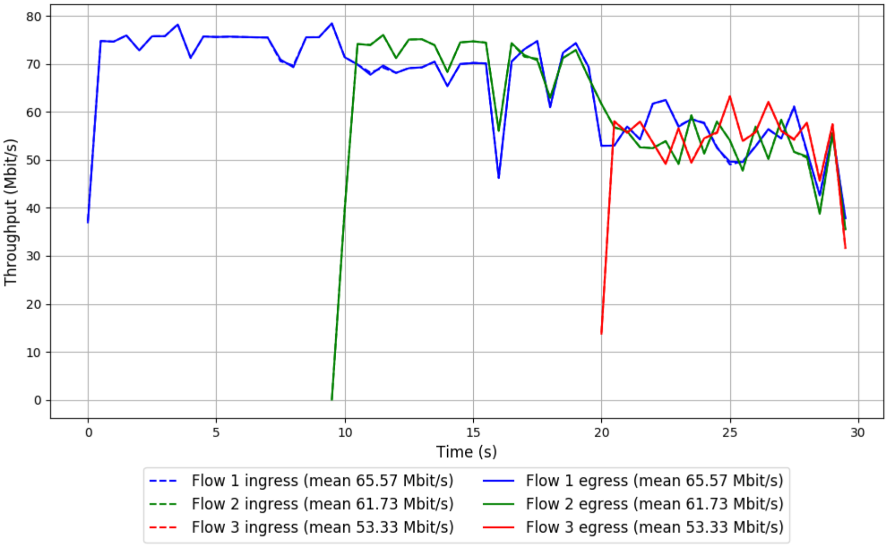
Run 5: Report of QUIC Cubic — Data Link

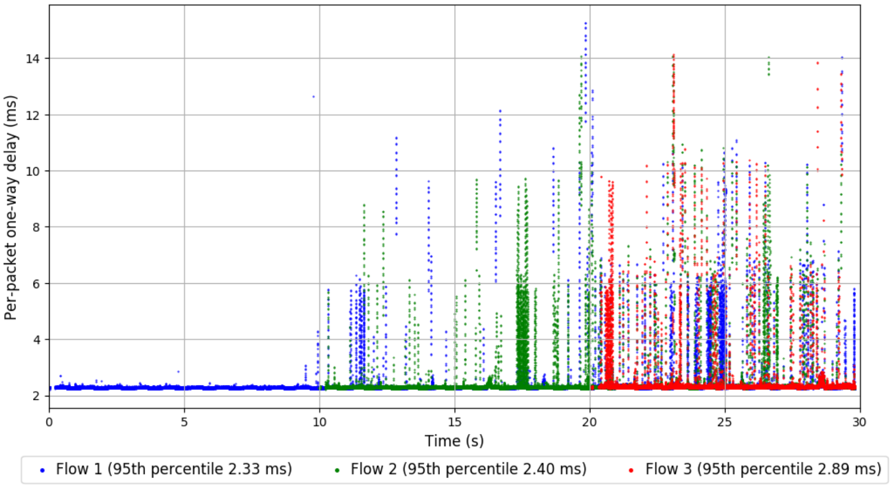




```
Run 6: Statistics of QUIC Cubic

Start at: 2017-09-18 12:07:55
End at: 2017-09-18 12:08:25
Local clock offset: -2.257 ms
Remote clock offset: 0.102 ms

# Below is generated by plot.py at 2017-09-18 16:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 124.11 Mbit/s
95th percentile per-packet one-way delay: 2.358 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 65.57 Mbit/s
95th percentile per-packet one-way delay: 2.328 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 61.73 Mbit/s
95th percentile per-packet one-way delay: 2.400 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 53.33 Mbit/s
95th percentile per-packet one-way delay: 2.894 ms
Loss rate: 0.00%
```

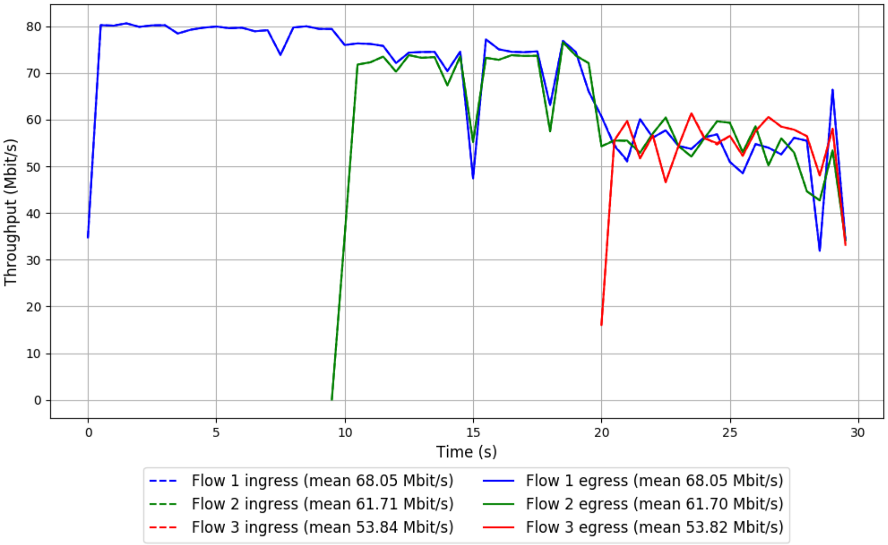
Run 6: Report of QUIC Cubic — Data Link

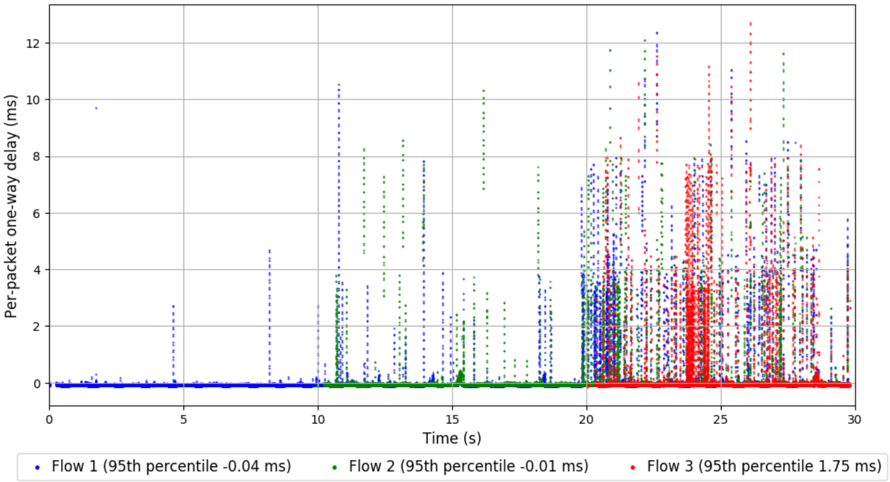




```
Run 7: Statistics of QUIC Cubic

Start at: 2017-09-18 12:22:46
End at: 2017-09-18 12:23:16
Local clock offset: -2.236 ms
Remote clock offset: -2.24 ms

# Below is generated by plot.py at 2017-09-18 16:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 126.76 Mbit/s
95th percentile per-packet one-way delay: -0.017 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 68.05 Mbit/s
95th percentile per-packet one-way delay: -0.036 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 61.70 Mbit/s
95th percentile per-packet one-way delay: -0.013 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 53.82 Mbit/s
95th percentile per-packet one-way delay: 1.751 ms
Loss rate: 0.02%
```

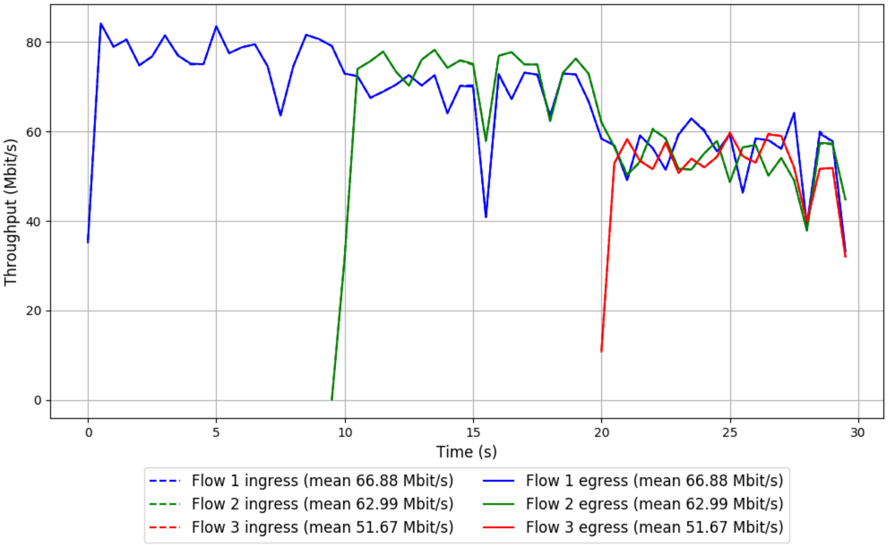
Run 7: Report of QUIC Cubic — Data Link

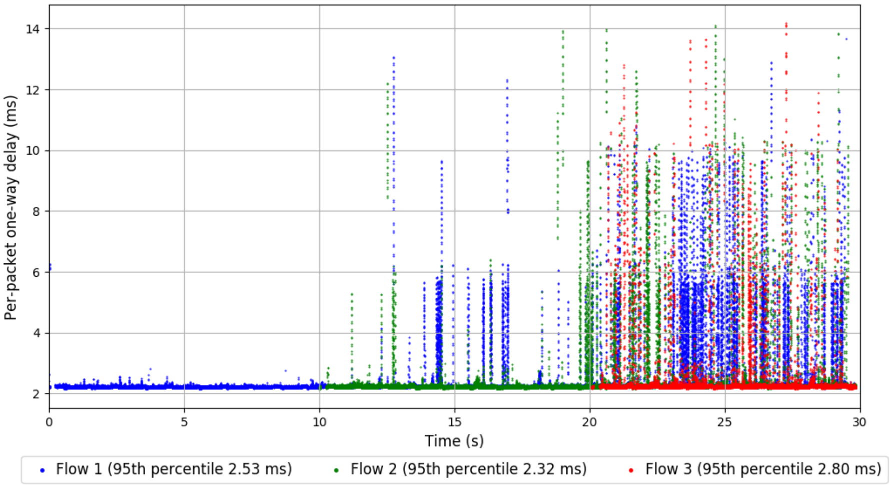




```
Run 8: Statistics of QUIC Cubic

Start at: 2017-09-18 12:37:47
End at: 2017-09-18 12:38:17
Local clock offset: -2.154 ms
Remote clock offset: 0.132 ms

# Below is generated by plot.py at 2017-09-18 16:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 125.70 Mbit/s
95th percentile per-packet one-way delay: 2.441 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 66.88 Mbit/s
95th percentile per-packet one-way delay: 2.532 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 62.99 Mbit/s
95th percentile per-packet one-way delay: 2.318 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 51.67 Mbit/s
95th percentile per-packet one-way delay: 2.797 ms
Loss rate: 0.00%
```

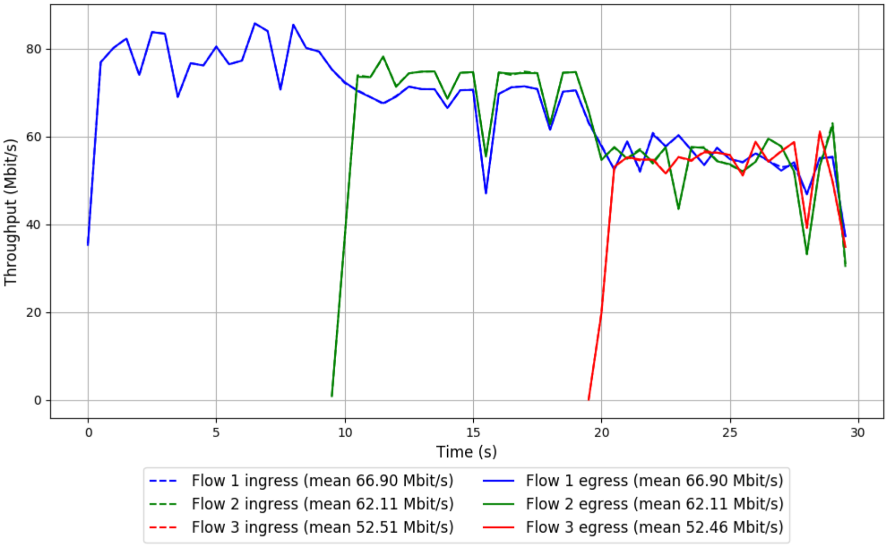
Run 8: Report of QUIC Cubic — Data Link

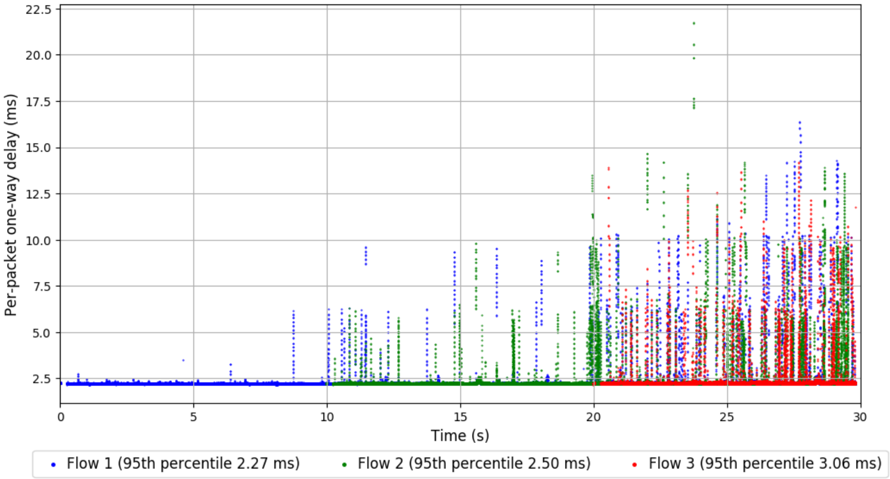




```
Run 9: Statistics of QUIC Cubic

Start at: 2017-09-18 12:52:38
End at: 2017-09-18 12:53:08
Local clock offset: -2.106 ms
Remote clock offset: 0.136 ms

# Below is generated by plot.py at 2017-09-18 16:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 125.56 Mbit/s
95th percentile per-packet one-way delay: 2.290 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 66.90 Mbit/s
95th percentile per-packet one-way delay: 2.270 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 62.11 Mbit/s
95th percentile per-packet one-way delay: 2.505 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 52.46 Mbit/s
95th percentile per-packet one-way delay: 3.059 ms
Loss rate: 0.00%
```

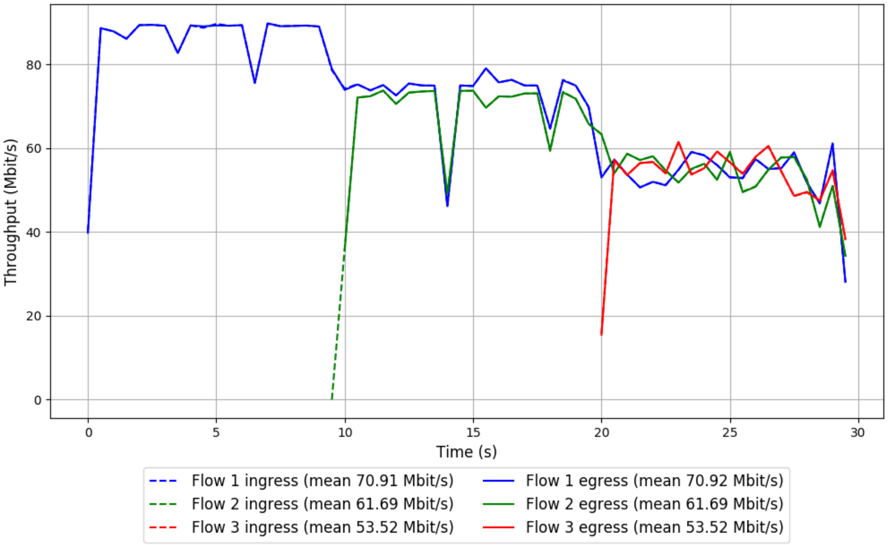
Run 9: Report of QUIC Cubic — Data Link

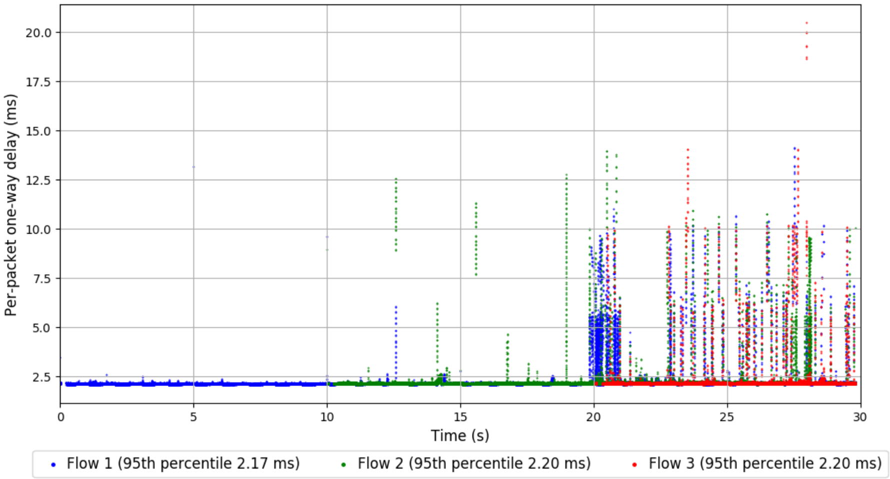




```
Run 10: Statistics of QUIC Cubic

Start at: 2017-09-18 13:07:34
End at: 2017-09-18 13:08:04
Local clock offset: -2.146 ms
Remote clock offset: -0.064 ms

# Below is generated by plot.py at 2017-09-18 16:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 129.43 Mbit/s
95th percentile per-packet one-way delay: 2.187 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 70.92 Mbit/s
95th percentile per-packet one-way delay: 2.173 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 61.69 Mbit/s
95th percentile per-packet one-way delay: 2.196 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 53.52 Mbit/s
95th percentile per-packet one-way delay: 2.199 ms
Loss rate: 0.00%
```

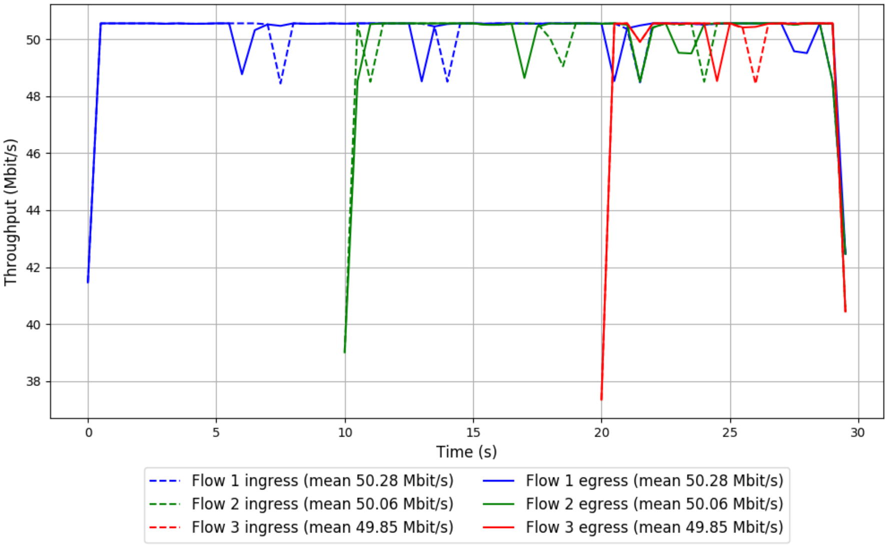
Run 10: Report of QUIC Cubic — Data Link

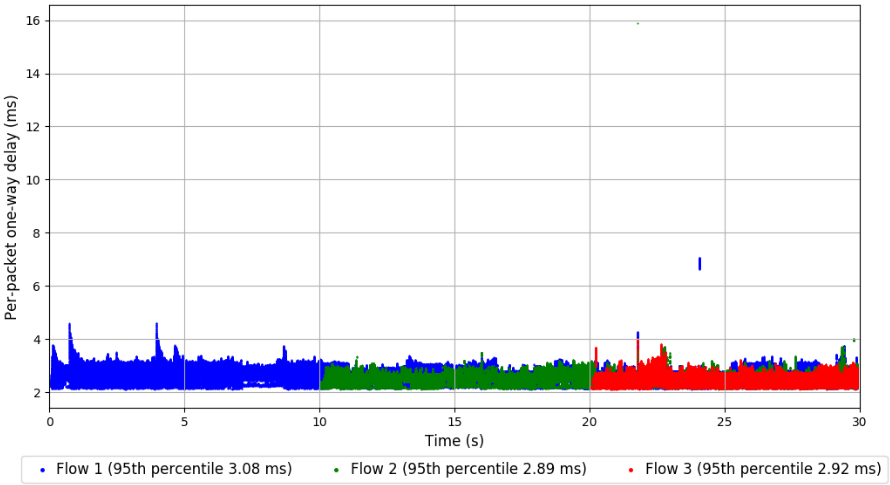




```
Run 1: Statistics of Sprout

Start at: 2017-09-18 10:51:14
End at: 2017-09-18 10:51:44
Local clock offset: -2.086 ms
Remote clock offset: 0.69 ms

# Below is generated by plot.py at 2017-09-18 16:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 100.05 Mbit/s
95th percentile per-packet one-way delay: 3.026 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.28 Mbit/s
95th percentile per-packet one-way delay: 3.081 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.06 Mbit/s
95th percentile per-packet one-way delay: 2.890 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 49.85 Mbit/s
95th percentile per-packet one-way delay: 2.916 ms
Loss rate: 0.00%
```

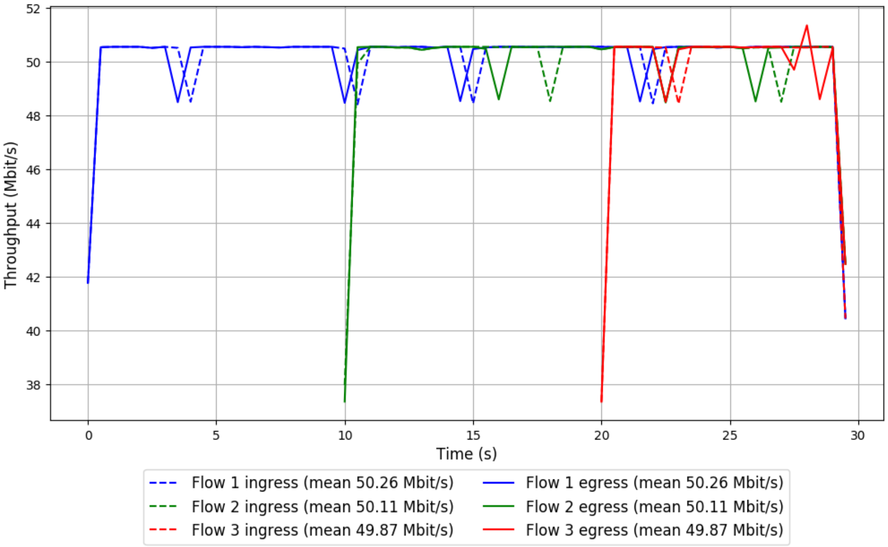
Run 1: Report of Sprout — Data Link

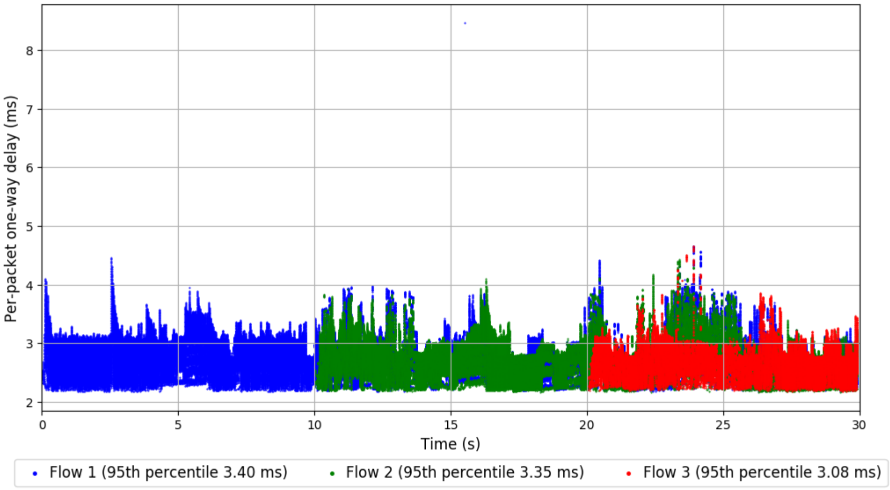




```
Run 2: Statistics of Sprout

Start at: 2017-09-18 11:06:07
End at: 2017-09-18 11:06:37
Local clock offset: -2.079 ms
Remote clock offset: 0.42 ms

# Below is generated by plot.py at 2017-09-18 16:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 100.06 Mbit/s
95th percentile per-packet one-way delay: 3.344 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.26 Mbit/s
95th percentile per-packet one-way delay: 3.400 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.11 Mbit/s
95th percentile per-packet one-way delay: 3.350 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 49.87 Mbit/s
95th percentile per-packet one-way delay: 3.085 ms
Loss rate: 0.00%
```

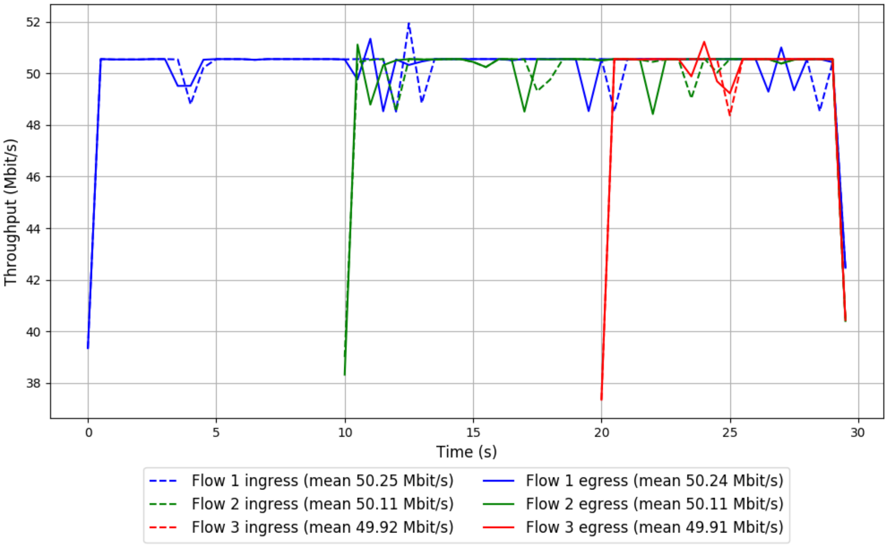
Run 2: Report of Sprout — Data Link

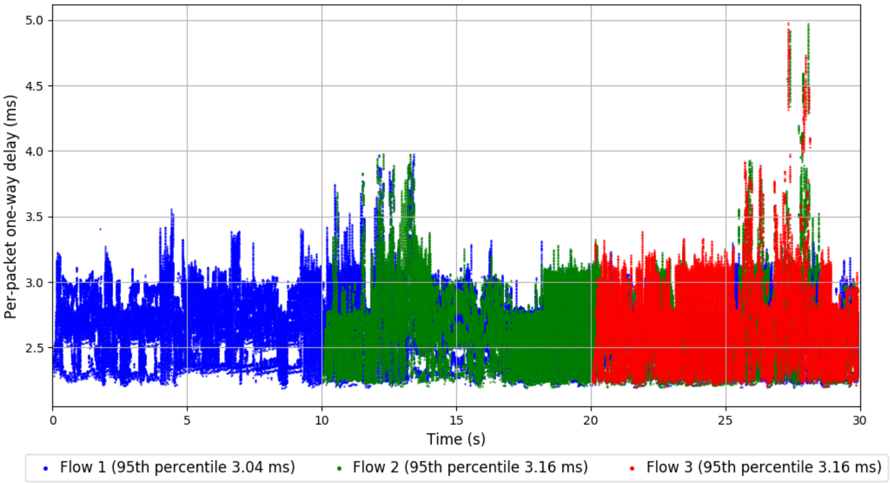




```
Run 3: Statistics of Sprout

Start at: 2017-09-18 11:20:57
End at: 2017-09-18 11:21:27
Local clock offset: -2.185 ms
Remote clock offset: -0.052 ms

# Below is generated by plot.py at 2017-09-18 16:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 100.05 Mbit/s
95th percentile per-packet one-way delay: 3.101 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.24 Mbit/s
95th percentile per-packet one-way delay: 3.043 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.11 Mbit/s
95th percentile per-packet one-way delay: 3.162 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 49.91 Mbit/s
95th percentile per-packet one-way delay: 3.160 ms
Loss rate: 0.00%
```

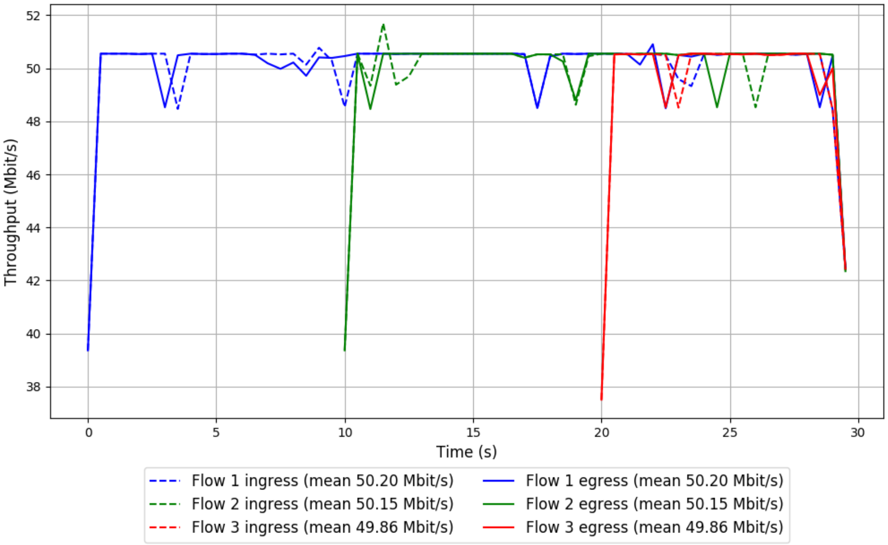
Run 3: Report of Sprout — Data Link

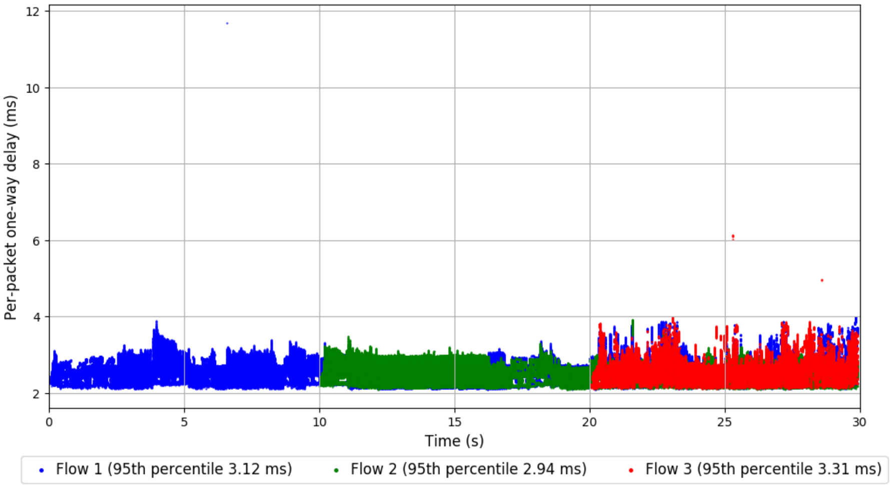




```
Run 4: Statistics of Sprout

Start at: 2017-09-18 11:35:55
End at: 2017-09-18 11:36:25
Local clock offset: -2.199 ms
Remote clock offset: -0.073 ms

# Below is generated by plot.py at 2017-09-18 16:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 100.04 Mbit/s
95th percentile per-packet one-way delay: 3.079 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.20 Mbit/s
95th percentile per-packet one-way delay: 3.124 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.15 Mbit/s
95th percentile per-packet one-way delay: 2.939 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 49.86 Mbit/s
95th percentile per-packet one-way delay: 3.305 ms
Loss rate: 0.00%
```

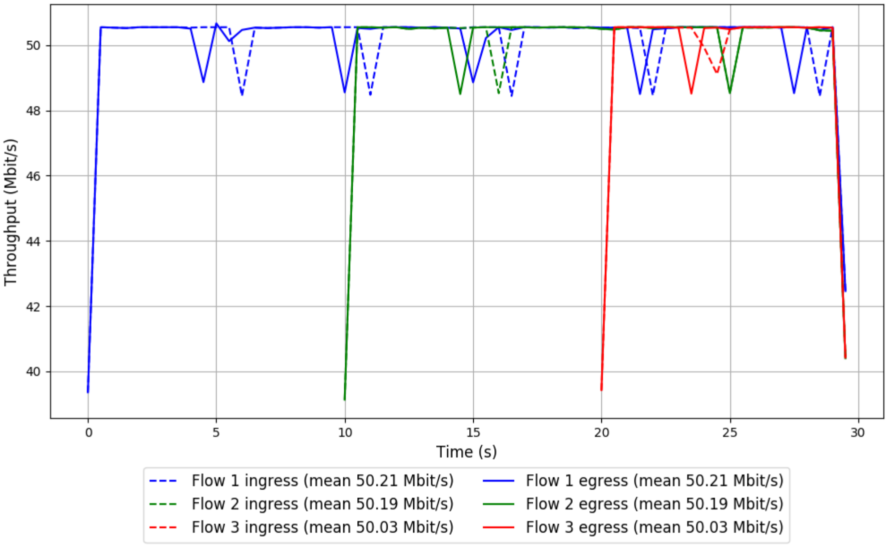
Run 4: Report of Sprout — Data Link

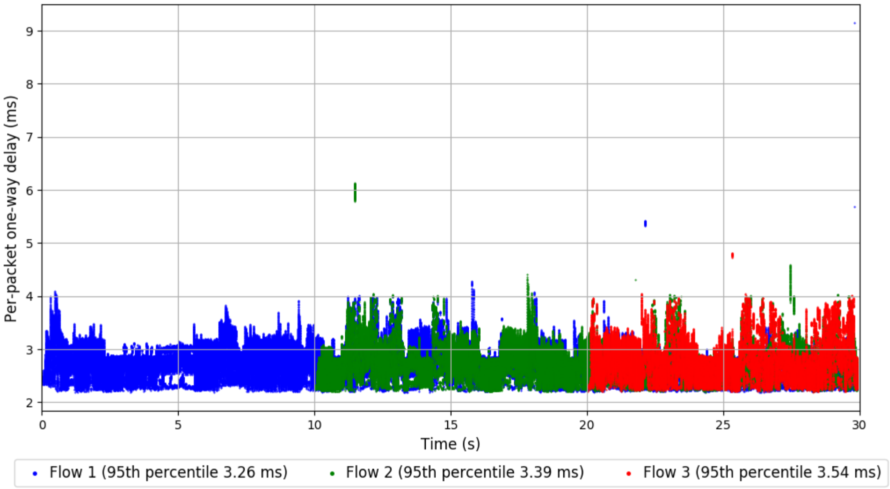




```
Run 5: Statistics of Sprout

Start at: 2017-09-18 11:50:38
End at: 2017-09-18 11:51:08
Local clock offset: -2.217 ms
Remote clock offset: 0.069 ms

# Below is generated by plot.py at 2017-09-18 16:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 100.08 Mbit/s
95th percentile per-packet one-way delay: 3.358 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.21 Mbit/s
95th percentile per-packet one-way delay: 3.260 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.19 Mbit/s
95th percentile per-packet one-way delay: 3.394 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 50.03 Mbit/s
95th percentile per-packet one-way delay: 3.542 ms
Loss rate: 0.00%
```

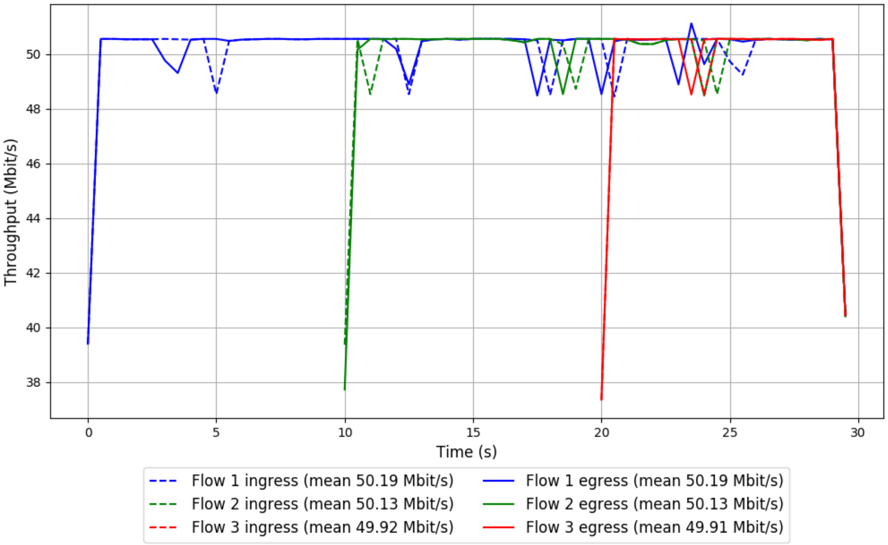
Run 5: Report of Sprout — Data Link

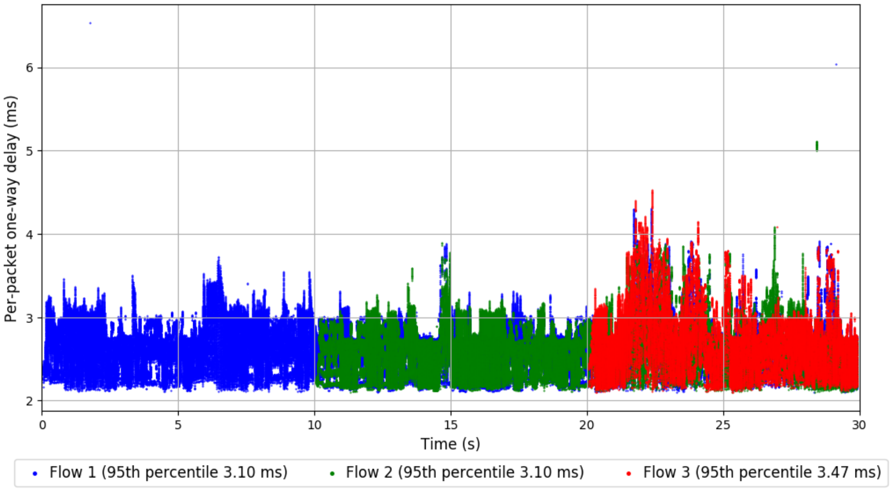




```
Run 6: Statistics of Sprout

Start at: 2017-09-18 12:05:28
End at: 2017-09-18 12:05:58
Local clock offset: -2.196 ms
Remote clock offset: 0.027 ms

# Below is generated by plot.py at 2017-09-18 16:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 100.01 Mbit/s
95th percentile per-packet one-way delay: 3.169 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.19 Mbit/s
95th percentile per-packet one-way delay: 3.099 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.13 Mbit/s
95th percentile per-packet one-way delay: 3.100 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 49.91 Mbit/s
95th percentile per-packet one-way delay: 3.474 ms
Loss rate: 0.00%
```

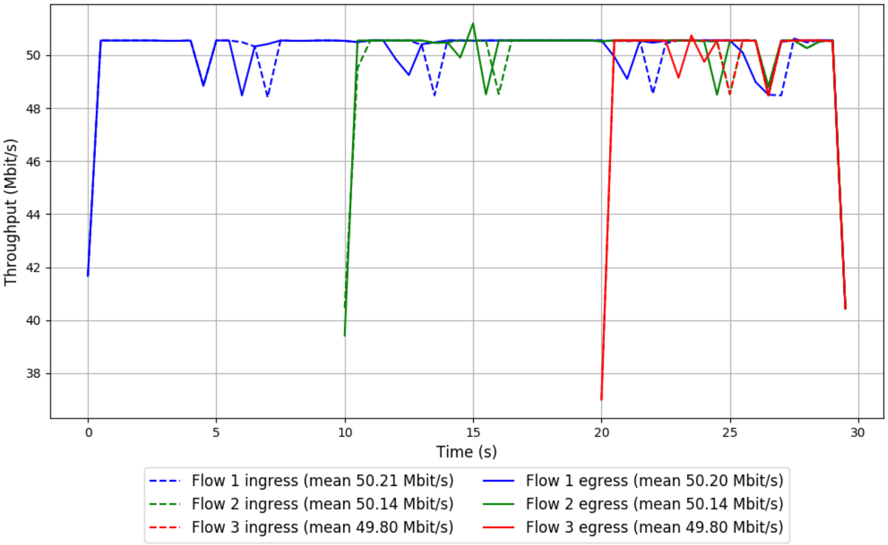
Run 6: Report of Sprout — Data Link

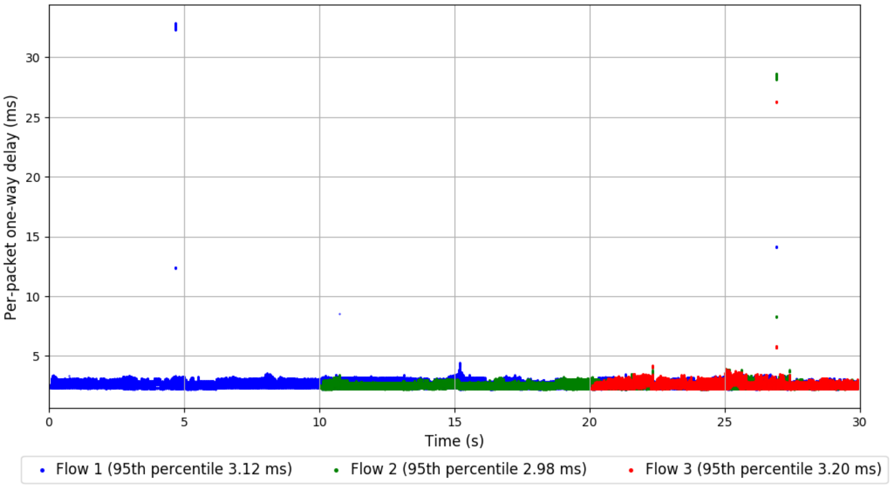




```
Run 7: Statistics of Sprout

Start at: 2017-09-18 12:20:19
End at: 2017-09-18 12:20:49
Local clock offset: -2.208 ms
Remote clock offset: 0.122 ms

# Below is generated by plot.py at 2017-09-18 16:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.98 Mbit/s
95th percentile per-packet one-way delay: 3.102 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.20 Mbit/s
95th percentile per-packet one-way delay: 3.115 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.14 Mbit/s
95th percentile per-packet one-way delay: 2.985 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 49.80 Mbit/s
95th percentile per-packet one-way delay: 3.200 ms
Loss rate: 0.00%
```

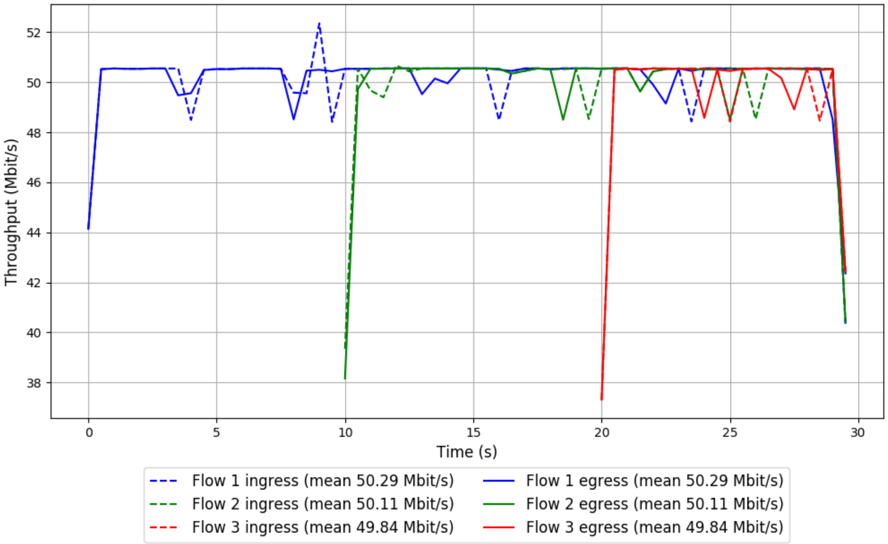
Run 7: Report of Sprout — Data Link

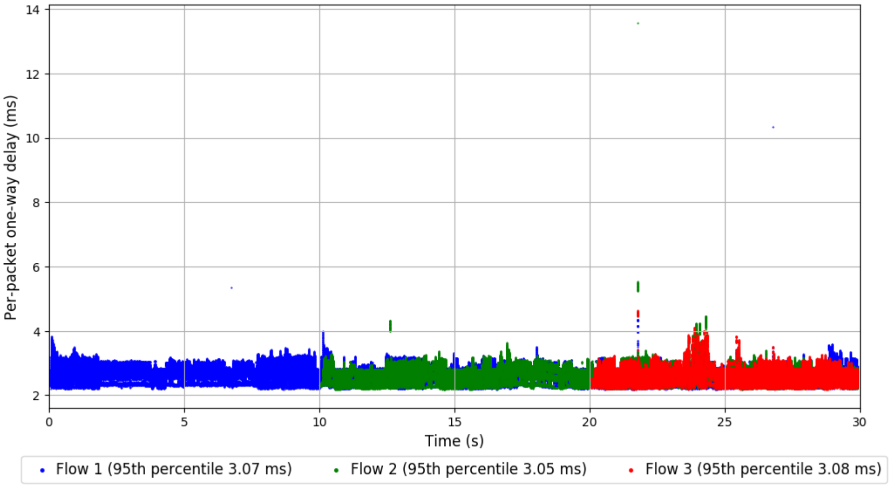




```
Run 8: Statistics of Sprout

Start at: 2017-09-18 12:35:14
End at: 2017-09-18 12:35:44
Local clock offset: -2.18 ms
Remote clock offset: 0.121 ms

# Below is generated by plot.py at 2017-09-18 16:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 100.08 Mbit/s
95th percentile per-packet one-way delay: 3.063 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.29 Mbit/s
95th percentile per-packet one-way delay: 3.066 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.11 Mbit/s
95th percentile per-packet one-way delay: 3.048 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 49.84 Mbit/s
95th percentile per-packet one-way delay: 3.084 ms
Loss rate: 0.00%
```

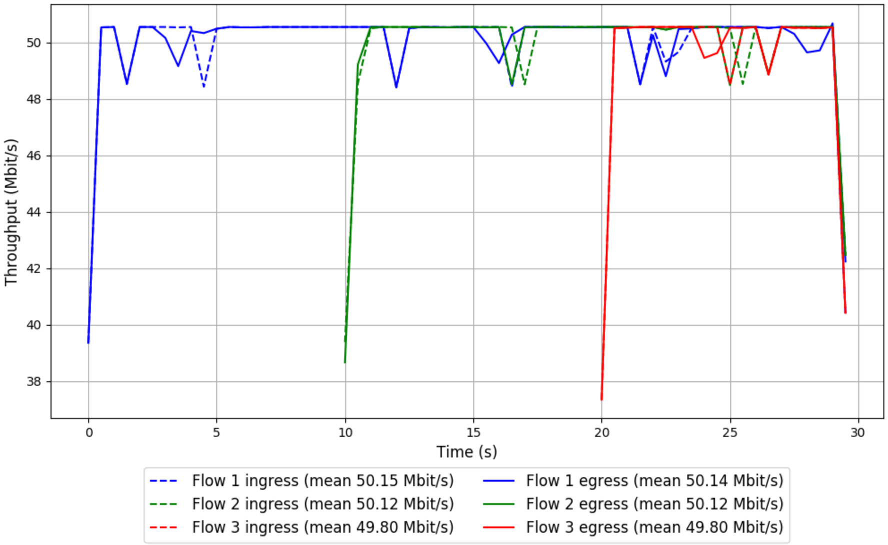
Run 8: Report of Sprout — Data Link

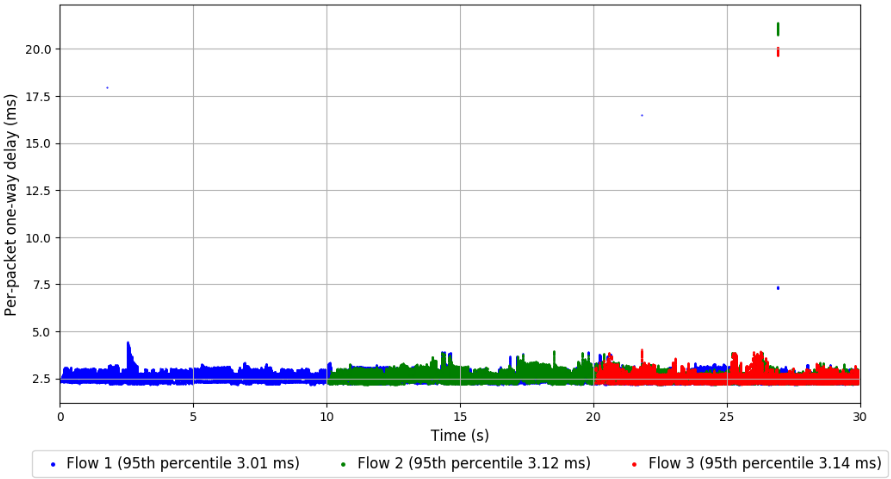




```
Run 9: Statistics of Sprout

Start at: 2017-09-18 12:50:08
End at: 2017-09-18 12:50:38
Local clock offset: -2.128 ms
Remote clock offset: 0.142 ms

# Below is generated by plot.py at 2017-09-18 16:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.92 Mbit/s
95th percentile per-packet one-way delay: 3.066 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.14 Mbit/s
95th percentile per-packet one-way delay: 3.014 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.12 Mbit/s
95th percentile per-packet one-way delay: 3.125 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 49.80 Mbit/s
95th percentile per-packet one-way delay: 3.138 ms
Loss rate: 0.00%
```

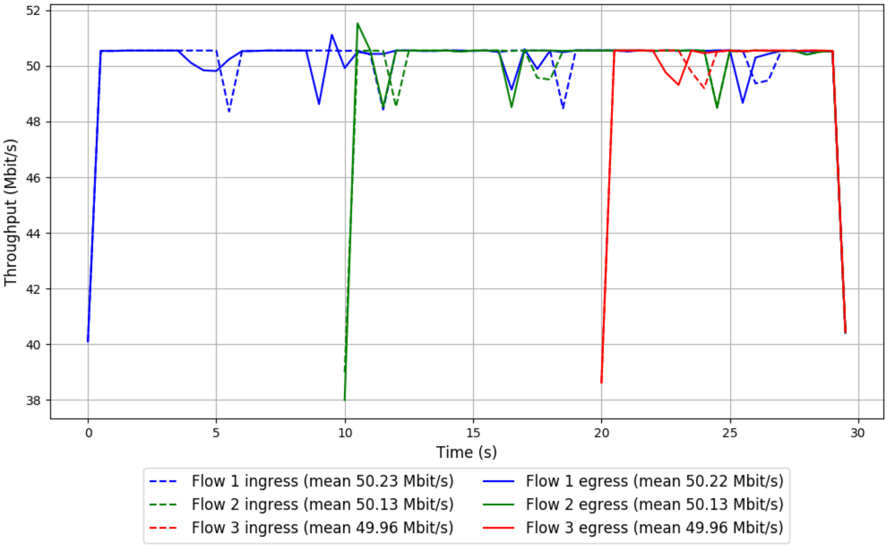
Run 9: Report of Sprout — Data Link

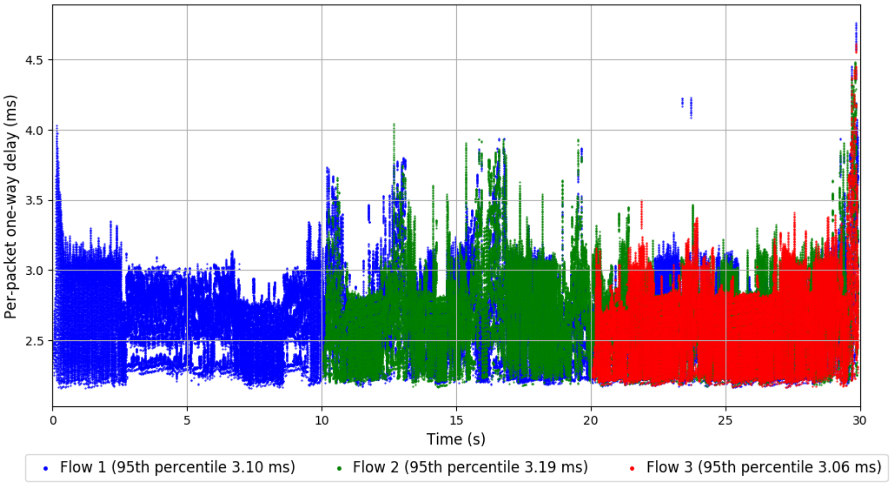




```
Run 10: Statistics of Sprout

Start at: 2017-09-18 13:05:05
End at: 2017-09-18 13:05:35
Local clock offset: -2.112 ms
Remote clock offset: 0.057 ms

# Below is generated by plot.py at 2017-09-18 16:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 100.07 Mbit/s
95th percentile per-packet one-way delay: 3.121 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.22 Mbit/s
95th percentile per-packet one-way delay: 3.105 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.13 Mbit/s
95th percentile per-packet one-way delay: 3.185 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 49.96 Mbit/s
95th percentile per-packet one-way delay: 3.063 ms
Loss rate: 0.00%
```

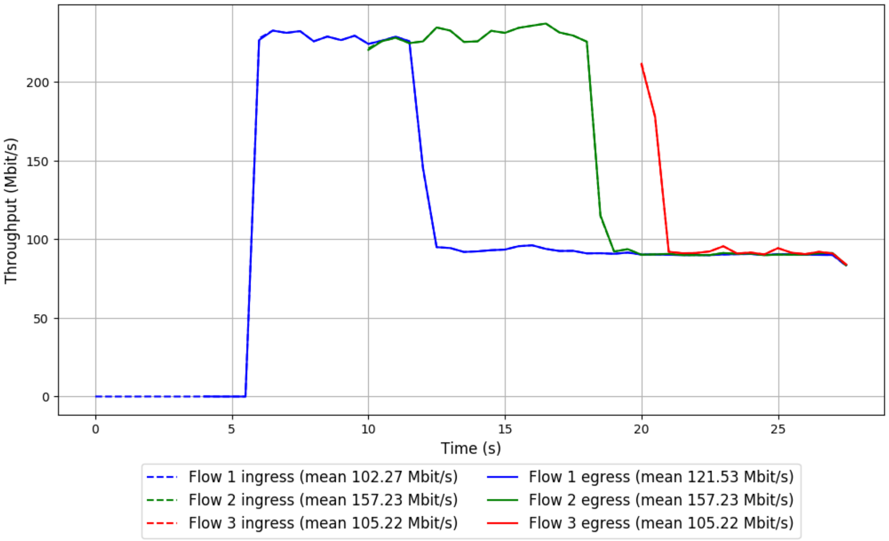
Run 10: Report of Sprout — Data Link

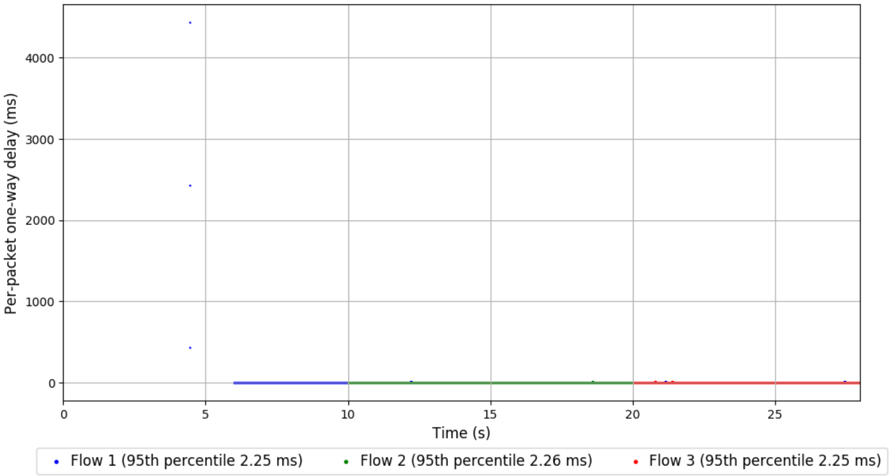




```
Run 1: Statistics of TaoVA-100x

Start at: 2017-09-18 10:52:21
End at: 2017-09-18 10:52:51
Local clock offset: -2.101 ms
Remote clock offset: 0.727 ms
```

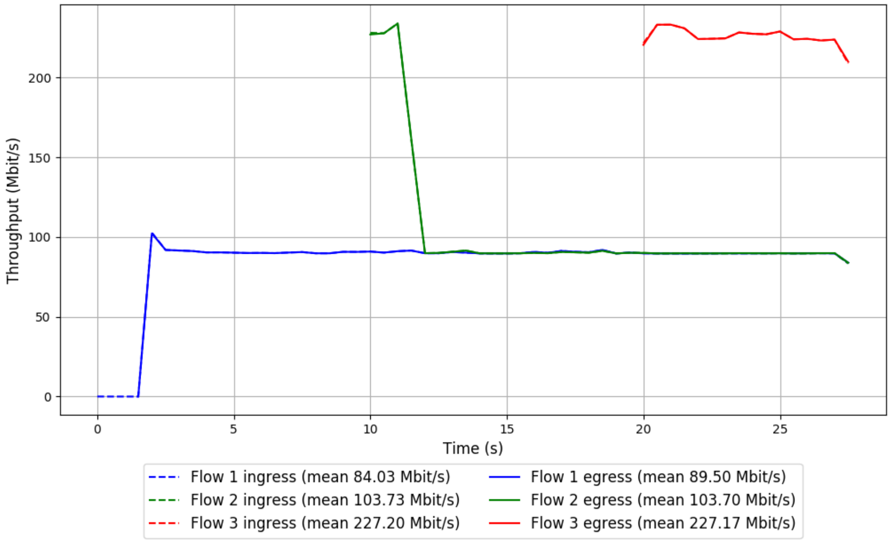
Run 1: Report of TaoVA-100x — Data Link

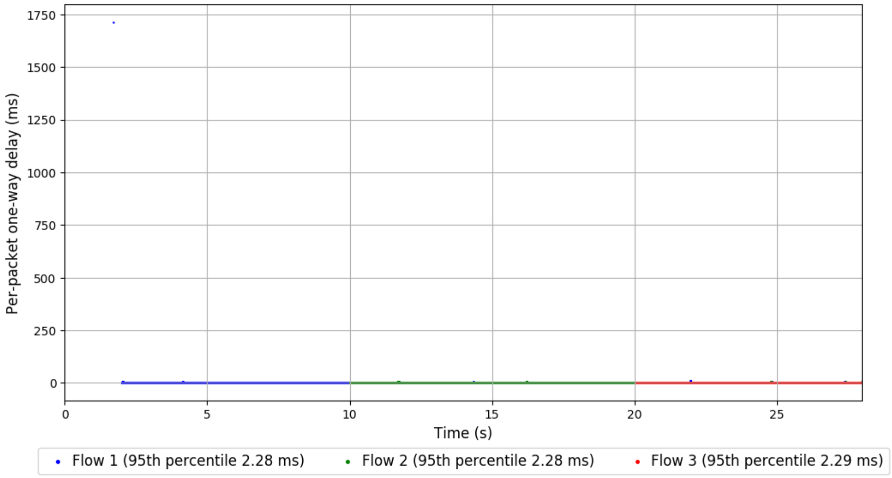




```
Run 2: Statistics of TaoVA-100x

Start at: 2017-09-18 11:07:14
End at: 2017-09-18 11:07:44
Local clock offset: -2.079 ms
Remote clock offset: 0.424 ms

# Below is generated by plot.py at 2017-09-18 16:49:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 229.10 Mbit/s
95th percentile per-packet one-way delay: 2.285 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 89.50 Mbit/s
95th percentile per-packet one-way delay: 2.281 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 103.70 Mbit/s
95th percentile per-packet one-way delay: 2.282 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 227.17 Mbit/s
95th percentile per-packet one-way delay: 2.290 ms
Loss rate: 0.00%
```

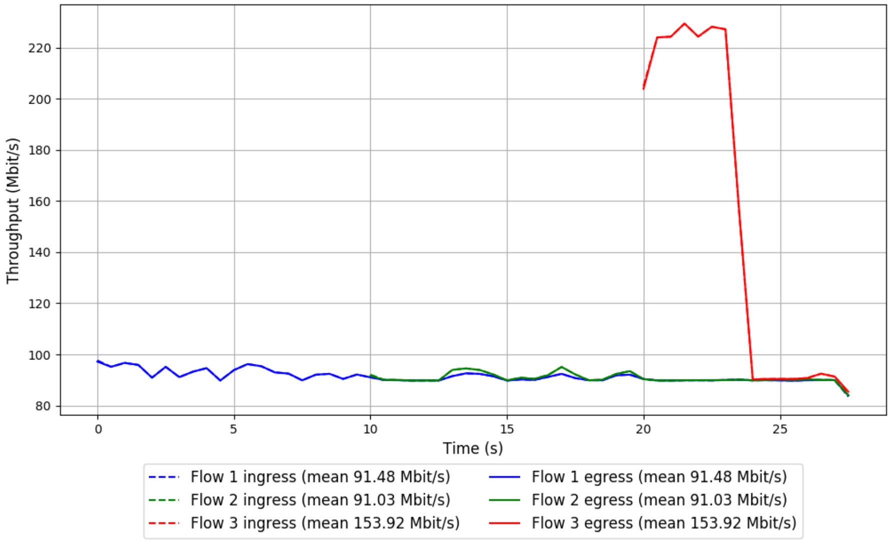
Run 2: Report of TaoVA-100x — Data Link

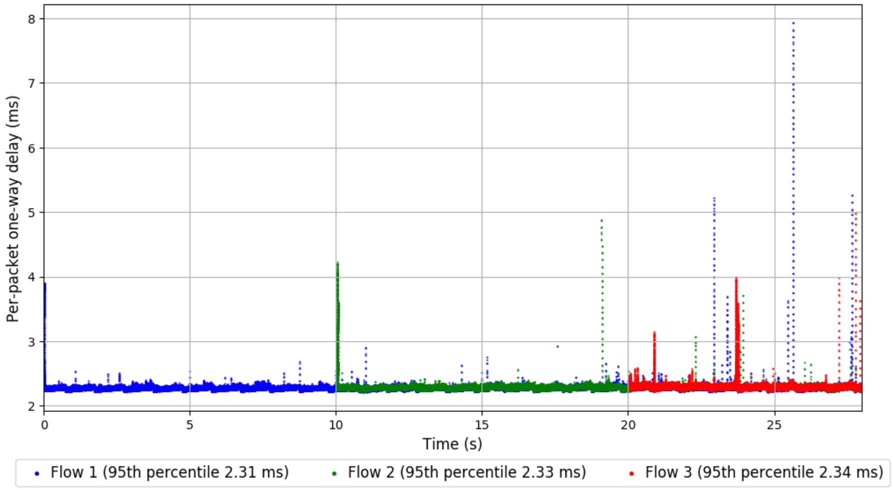




```
Run 3: Statistics of TaoVA-100x

Start at: 2017-09-18 11:22:04
End at: 2017-09-18 11:22:34
Local clock offset: -2.162 ms
Remote clock offset: 0.005 ms

# Below is generated by plot.py at 2017-09-18 16:49:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 193.49 Mbit/s
95th percentile per-packet one-way delay: 2.325 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 91.48 Mbit/s
95th percentile per-packet one-way delay: 2.314 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 91.03 Mbit/s
95th percentile per-packet one-way delay: 2.326 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 153.92 Mbit/s
95th percentile per-packet one-way delay: 2.336 ms
Loss rate: 0.00%
```

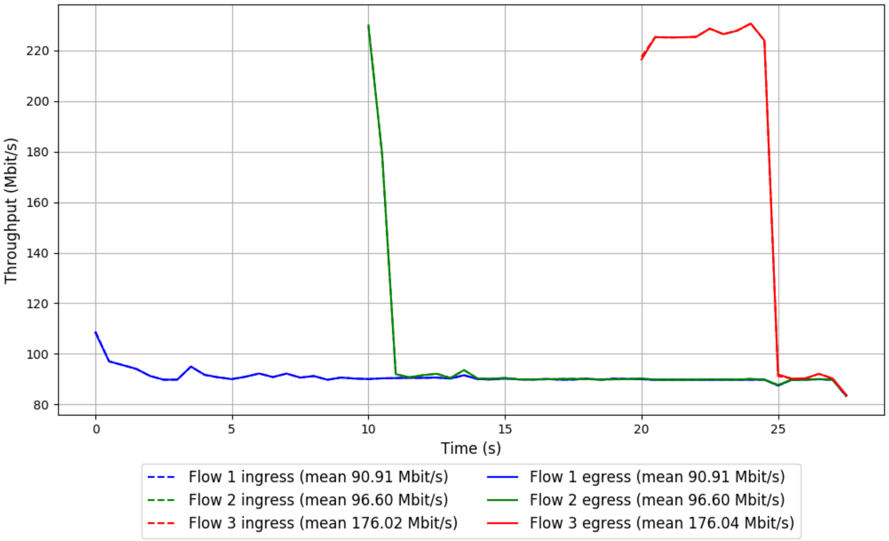
Run 3: Report of TaoVA-100x — Data Link

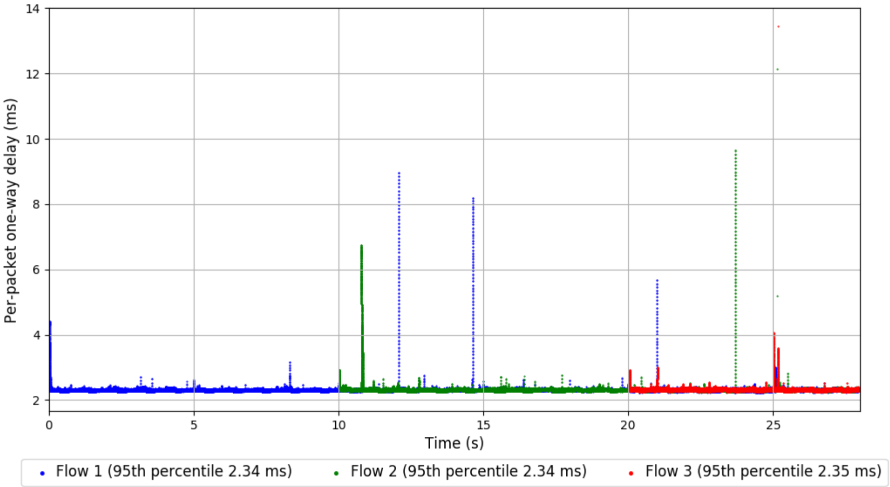




```
Run 4: Statistics of TaoVA-100x

Start at: 2017-09-18 11:37:01
End at: 2017-09-18 11:37:31
Local clock offset: -2.283 ms
Remote clock offset: 0.003 ms

# Below is generated by plot.py at 2017-09-18 16:49:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 202.88 Mbit/s
95th percentile per-packet one-way delay: 2.344 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 90.91 Mbit/s
95th percentile per-packet one-way delay: 2.341 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 96.60 Mbit/s
95th percentile per-packet one-way delay: 2.344 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 176.04 Mbit/s
95th percentile per-packet one-way delay: 2.348 ms
Loss rate: 0.00%
```

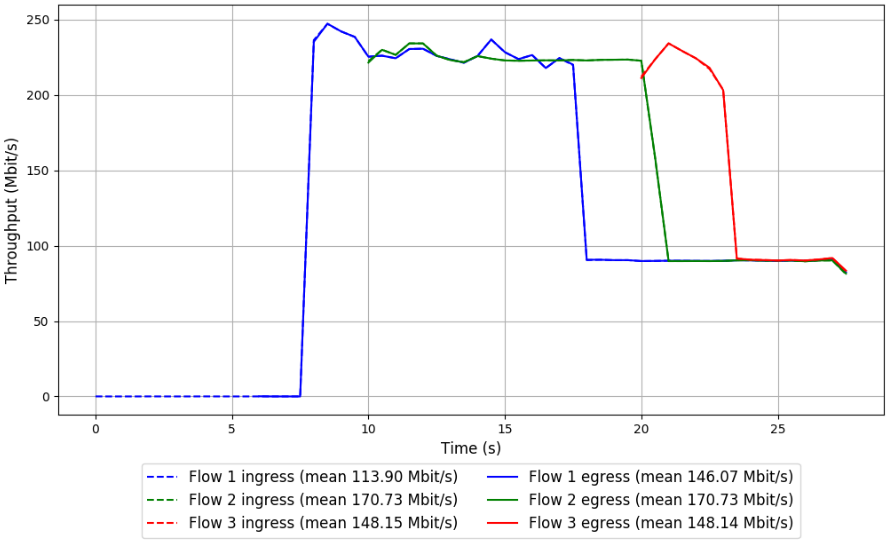
Run 4: Report of TaoVA-100x — Data Link

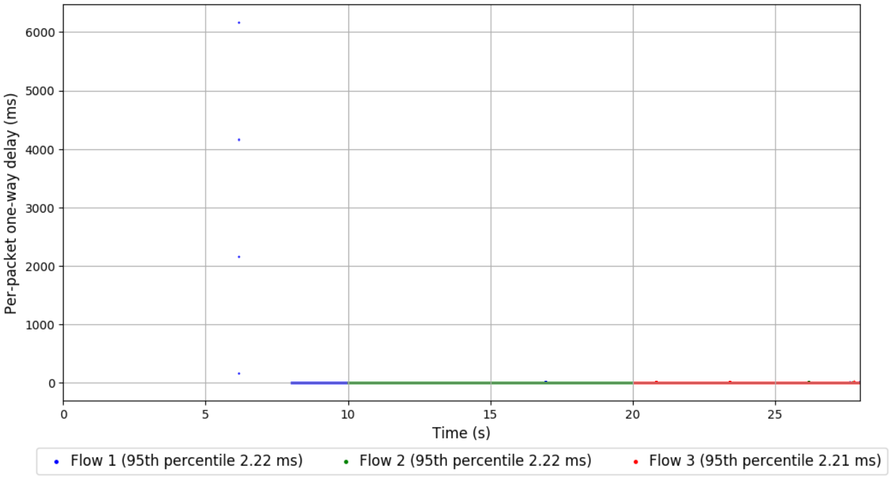




```
Run 5: Statistics of TaoVA-100x

Start at: 2017-09-18 11:51:44
End at: 2017-09-18 11:52:14
Local clock offset: -2.21 ms
Remote clock offset: 0.014 ms
```

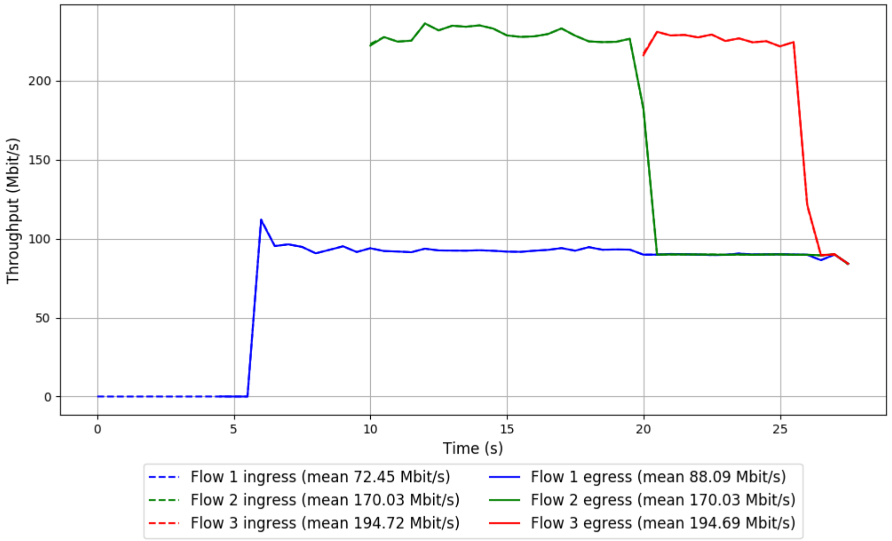
Run 5: Report of TaoVA-100x — Data Link

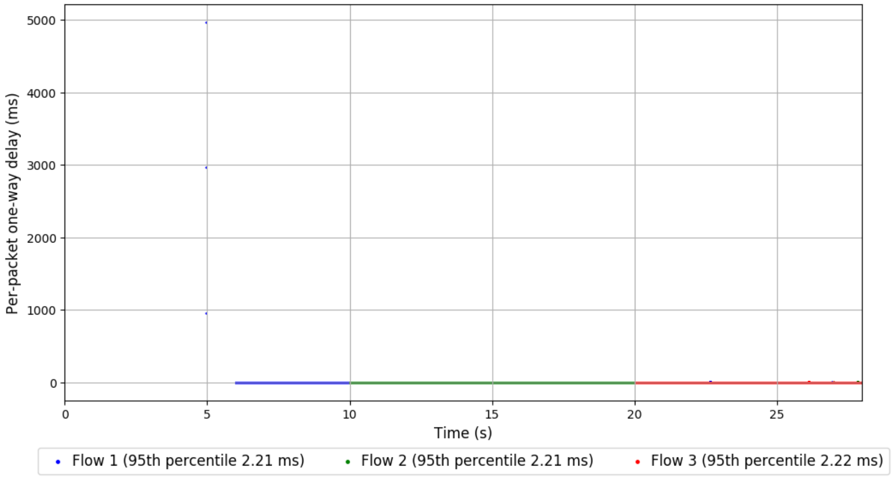




```
Run 6: Statistics of TaoVA-100x

Start at: 2017-09-18 12:06:34
End at: 2017-09-18 12:07:04
Local clock offset: -2.206 ms
Remote clock offset: 0.035 ms
```

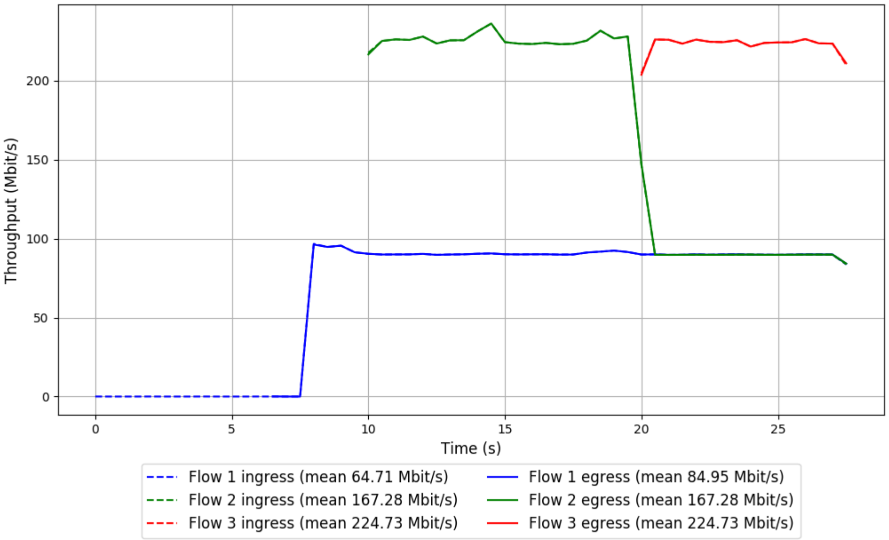
Run 6: Report of TaoVA-100x — Data Link

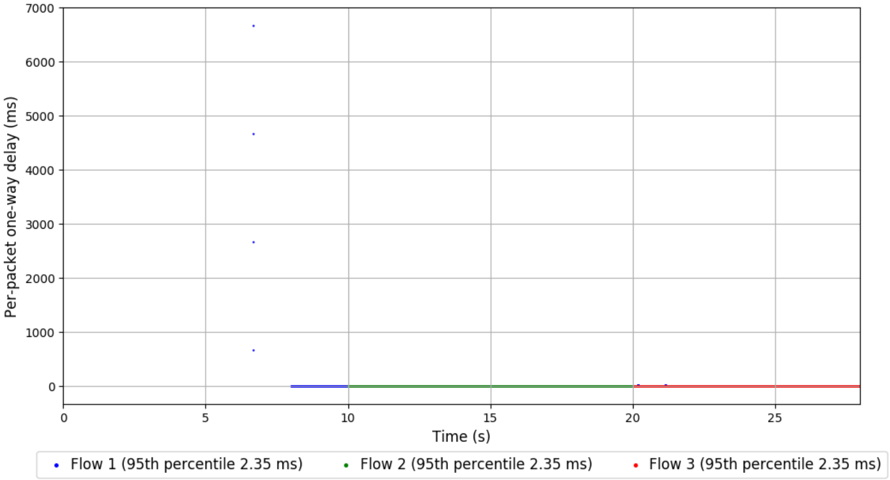




```
Run 7: Statistics of TaoVA-100x

Start at: 2017-09-18 12:21:26
End at: 2017-09-18 12:21:56
Local clock offset: -2.293 ms
Remote clock offset: 0.093 ms
```

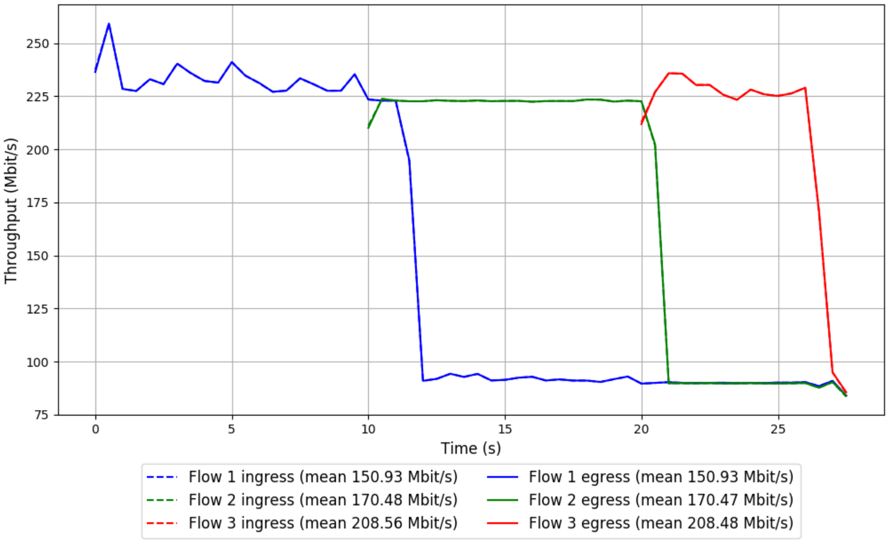
Run 7: Report of TaoVA-100x — Data Link

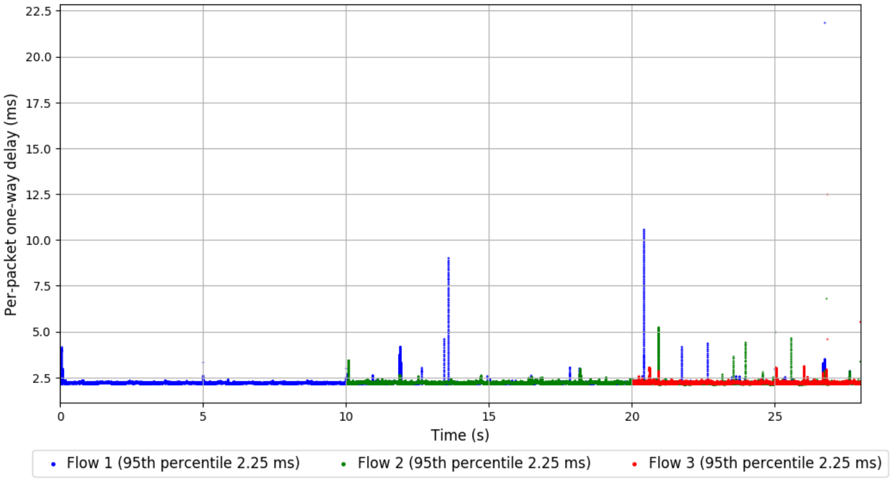




```
Run 8: Statistics of TaoVA-100x

Start at: 2017-09-18 12:36:20
End at: 2017-09-18 12:36:50
Local clock offset: -2.229 ms
Remote clock offset: 0.048 ms

# Below is generated by plot.py at 2017-09-18 16:55:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 319.44 Mbit/s
95th percentile per-packet one-way delay: 2.249 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 150.93 Mbit/s
95th percentile per-packet one-way delay: 2.245 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 170.47 Mbit/s
95th percentile per-packet one-way delay: 2.251 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 208.48 Mbit/s
95th percentile per-packet one-way delay: 2.255 ms
Loss rate: 0.00%
```

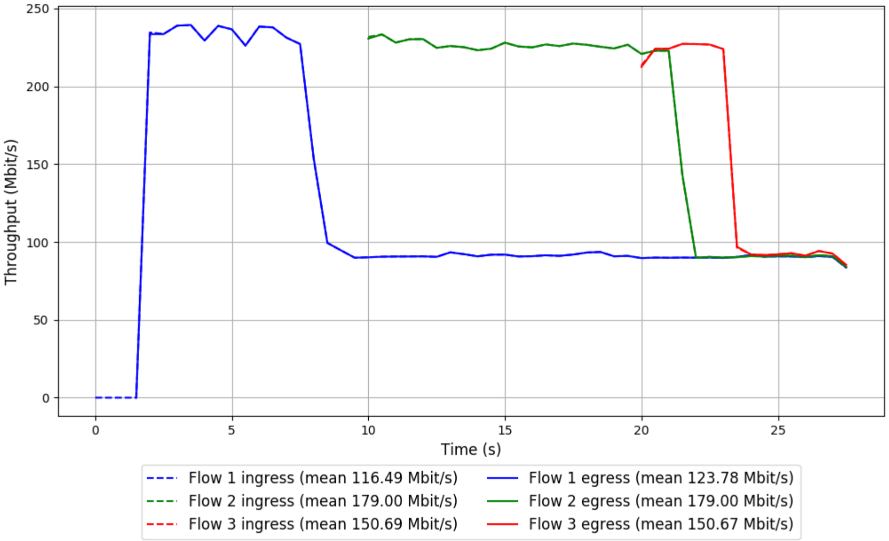
Run 8: Report of TaoVA-100x — Data Link

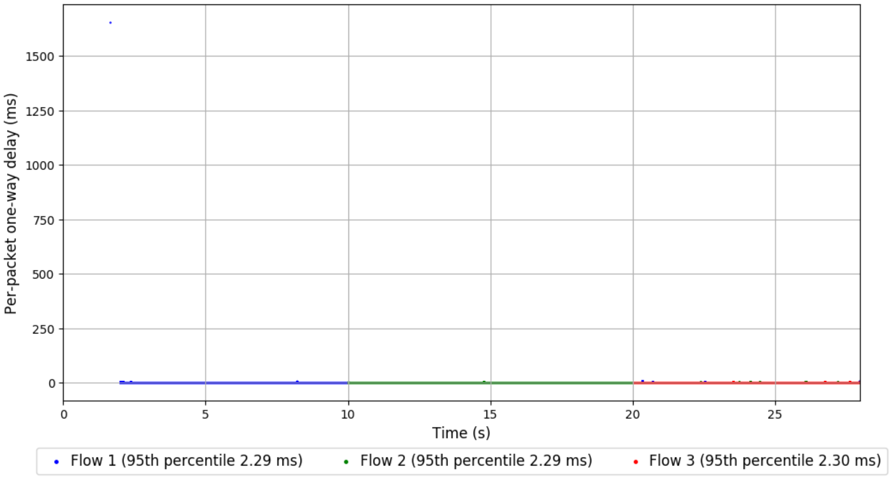




```
Run 9: Statistics of TaoVA-100x

Start at: 2017-09-18 12:51:15
End at: 2017-09-18 12:51:45
Local clock offset: -2.136 ms
Remote clock offset: 0.151 ms

# Below is generated by plot.py at 2017-09-18 16:55:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 291.40 Mbit/s
95th percentile per-packet one-way delay: 2.295 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 123.78 Mbit/s
95th percentile per-packet one-way delay: 2.290 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 179.00 Mbit/s
95th percentile per-packet one-way delay: 2.295 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 150.67 Mbit/s
95th percentile per-packet one-way delay: 2.302 ms
Loss rate: 0.01%
```

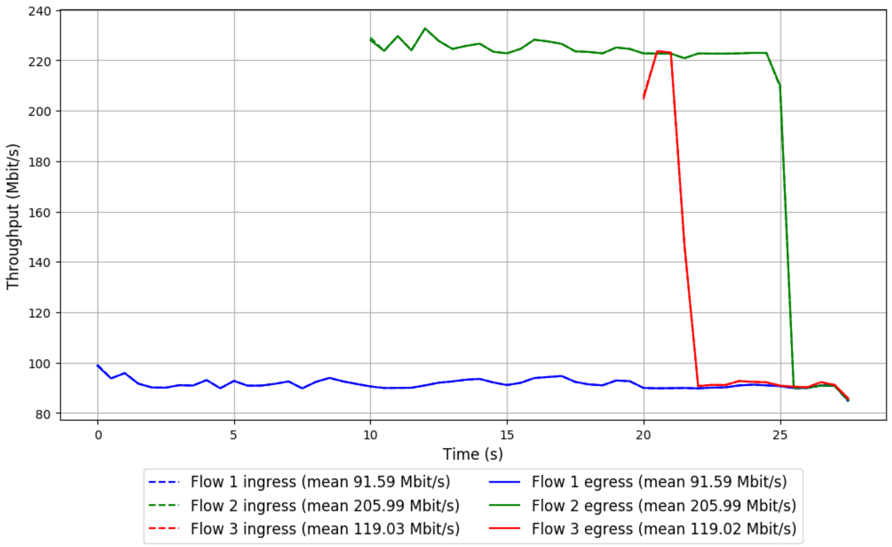
Run 9: Report of TaoVA-100x — Data Link

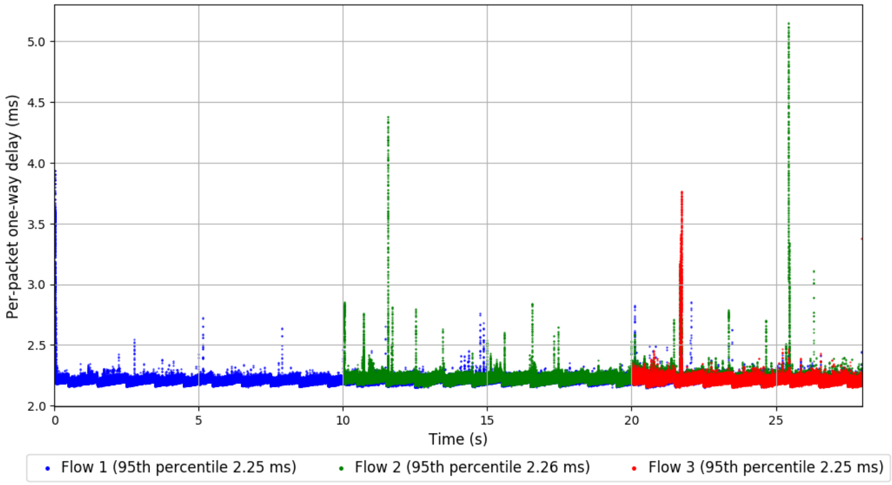




```
Run 10: Statistics of TaoVA-100x

Start at: 2017-09-18 13:06:12
End at: 2017-09-18 13:06:42
Local clock offset: -2.126 ms
Remote clock offset: 0.037 ms

# Below is generated by plot.py at 2017-09-18 16:55:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 257.60 Mbit/s
95th percentile per-packet one-way delay: 2.259 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 91.59 Mbit/s
95th percentile per-packet one-way delay: 2.252 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 205.99 Mbit/s
95th percentile per-packet one-way delay: 2.263 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 119.02 Mbit/s
95th percentile per-packet one-way delay: 2.255 ms
Loss rate: 0.01%
```

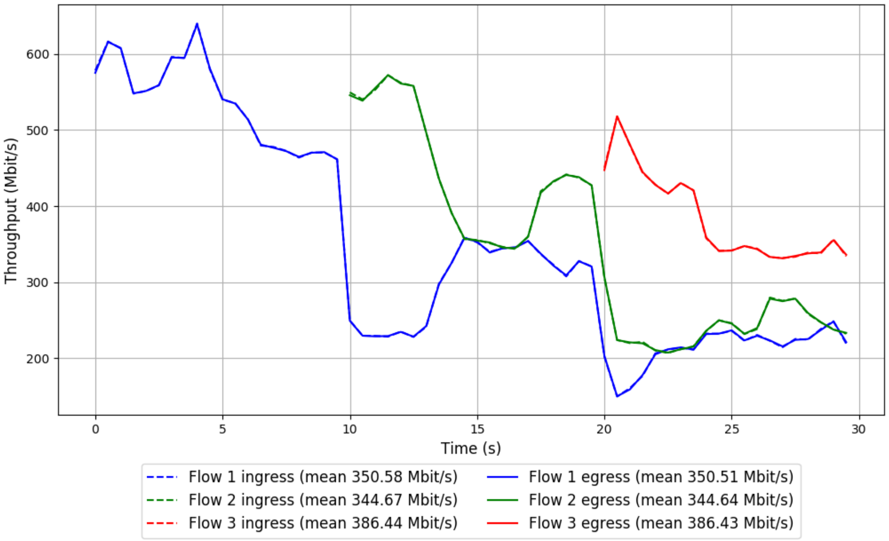
Run 10: Report of TaoVA-100x — Data Link

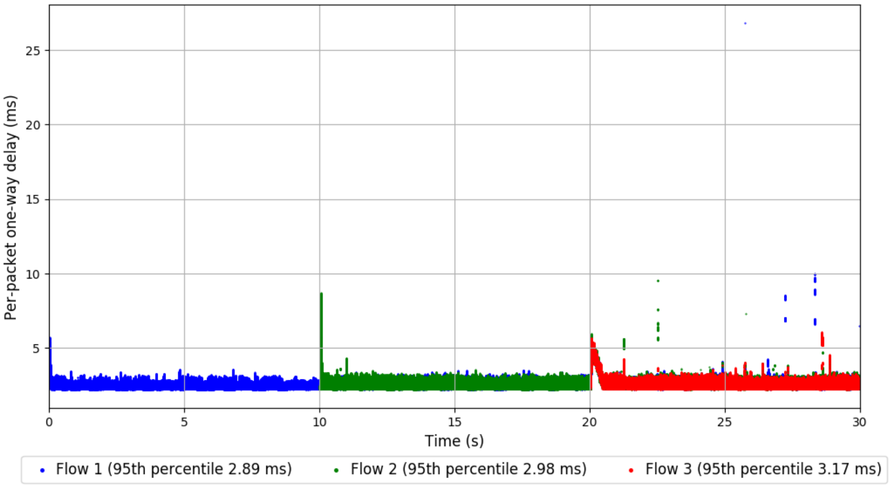




```
Run 1: Statistics of TCP Vegas

Start at: 2017-09-18 10:56:33
End at: 2017-09-18 10:57:03
Local clock offset: -2.114 ms
Remote clock offset: 0.64 ms

# Below is generated by plot.py at 2017-09-18 16:59:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 708.20 Mbit/s
95th percentile per-packet one-way delay: 2.953 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 350.51 Mbit/s
95th percentile per-packet one-way delay: 2.893 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 344.64 Mbit/s
95th percentile per-packet one-way delay: 2.985 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 386.43 Mbit/s
95th percentile per-packet one-way delay: 3.171 ms
Loss rate: 0.00%
```

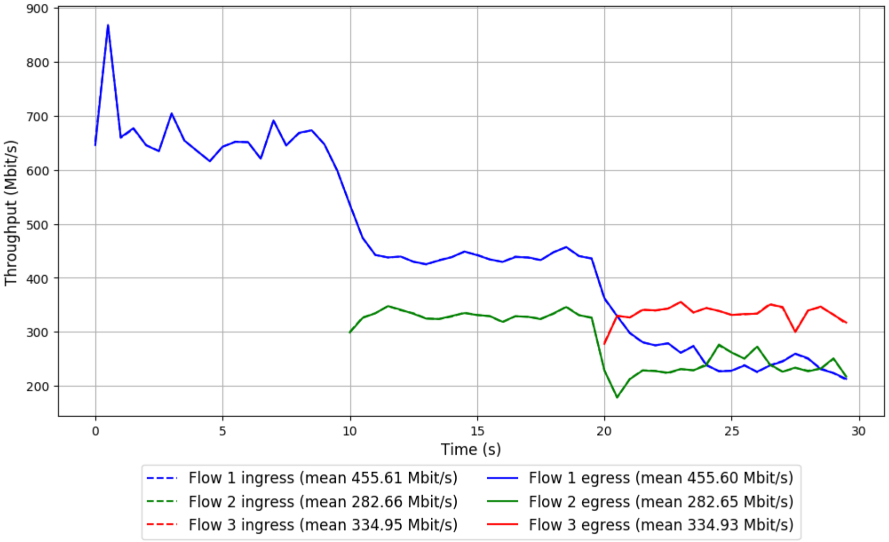
Run 1: Report of TCP Vegas — Data Link

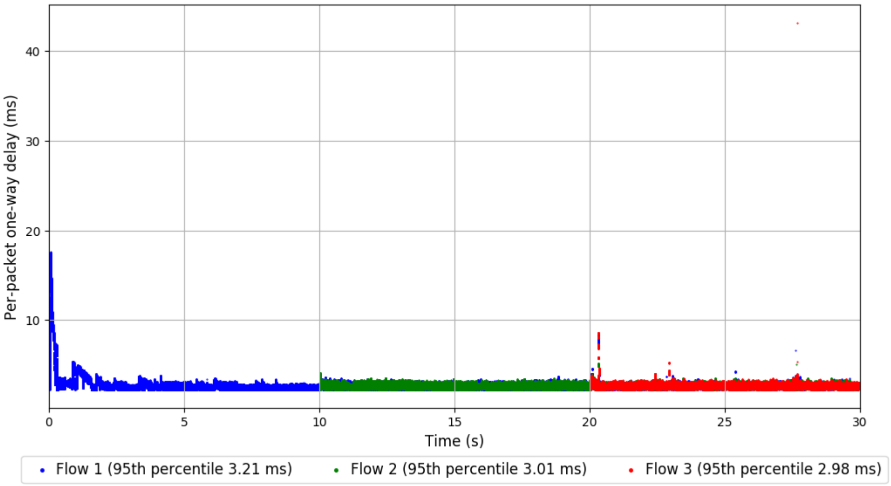




```
Run 2: Statistics of TCP Vegas

Start at: 2017-09-18 11:11:26
End at: 2017-09-18 11:11:56
Local clock offset: -2.13 ms
Remote clock offset: 0.344 ms

# Below is generated by plot.py at 2017-09-18 17:00:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 754.96 Mbit/s
95th percentile per-packet one-way delay: 3.085 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 455.60 Mbit/s
95th percentile per-packet one-way delay: 3.214 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 282.65 Mbit/s
95th percentile per-packet one-way delay: 3.010 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 334.93 Mbit/s
95th percentile per-packet one-way delay: 2.980 ms
Loss rate: 0.00%
```

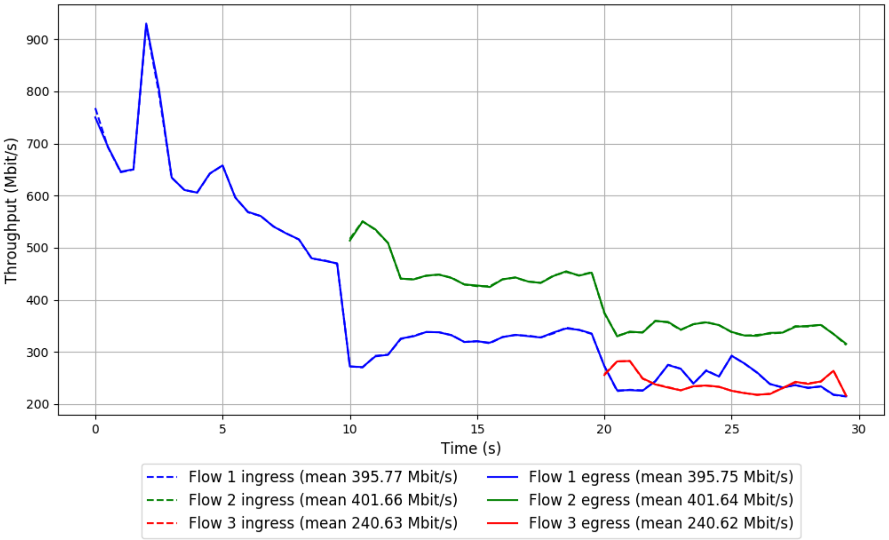
Run 2: Report of TCP Vegas — Data Link

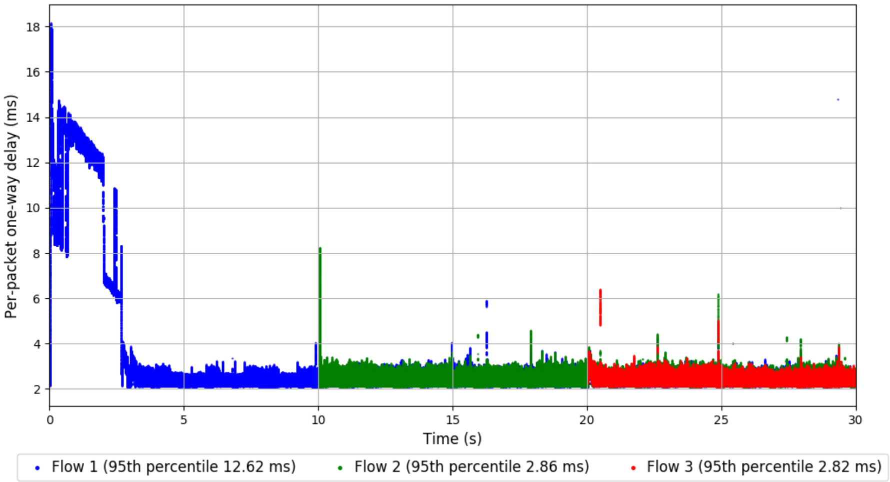




```
Run 3: Statistics of TCP Vegas

Start at: 2017-09-18 11:26:18
End at: 2017-09-18 11:26:48
Local clock offset: -2.146 ms
Remote clock offset: -0.155 ms

# Below is generated by plot.py at 2017-09-18 17:01:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 743.09 Mbit/s
95th percentile per-packet one-way delay: 10.160 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 395.75 Mbit/s
95th percentile per-packet one-way delay: 12.617 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 401.64 Mbit/s
95th percentile per-packet one-way delay: 2.856 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 240.62 Mbit/s
95th percentile per-packet one-way delay: 2.817 ms
Loss rate: 0.00%
```

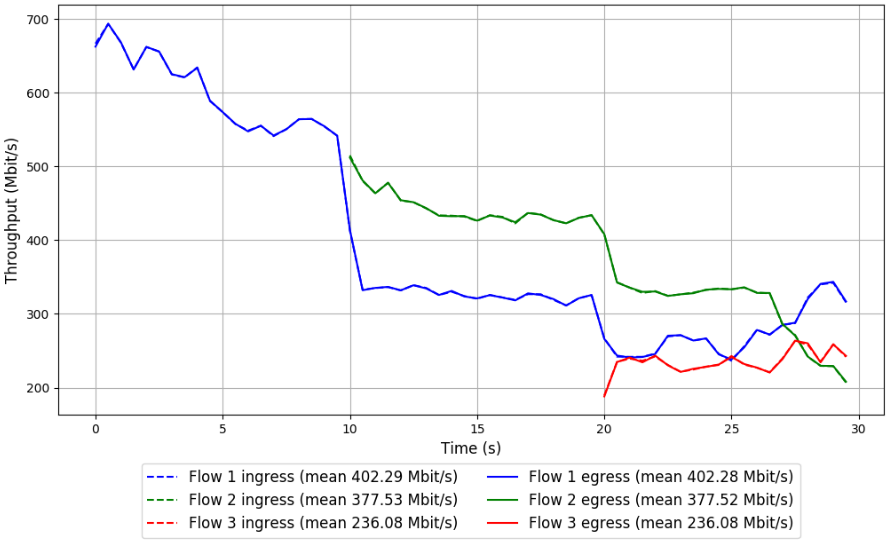
Run 3: Report of TCP Vegas — Data Link

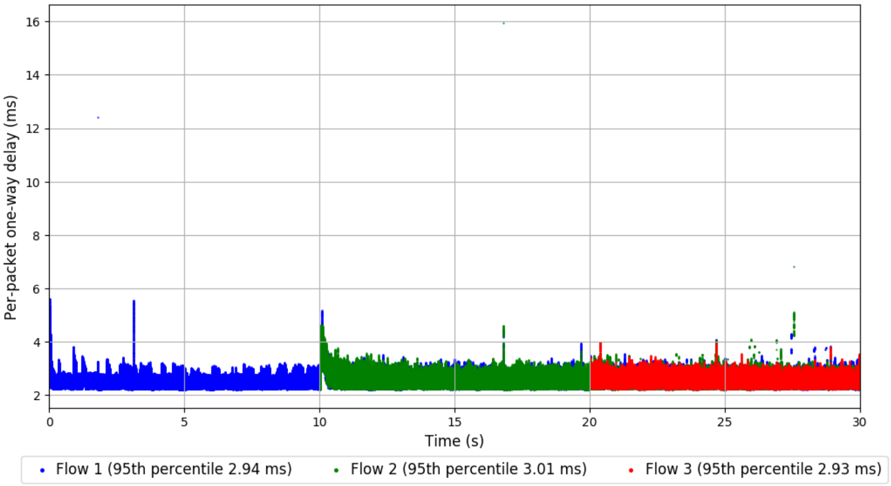




```
Run 4: Statistics of TCP Vegas

Start at: 2017-09-18 11:41:04
End at: 2017-09-18 11:41:34
Local clock offset: -2.279 ms
Remote clock offset: -0.002 ms

# Below is generated by plot.py at 2017-09-18 17:01:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 732.04 Mbit/s
95th percentile per-packet one-way delay: 2.965 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 402.28 Mbit/s
95th percentile per-packet one-way delay: 2.945 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 377.52 Mbit/s
95th percentile per-packet one-way delay: 3.008 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 236.08 Mbit/s
95th percentile per-packet one-way delay: 2.930 ms
Loss rate: 0.00%
```

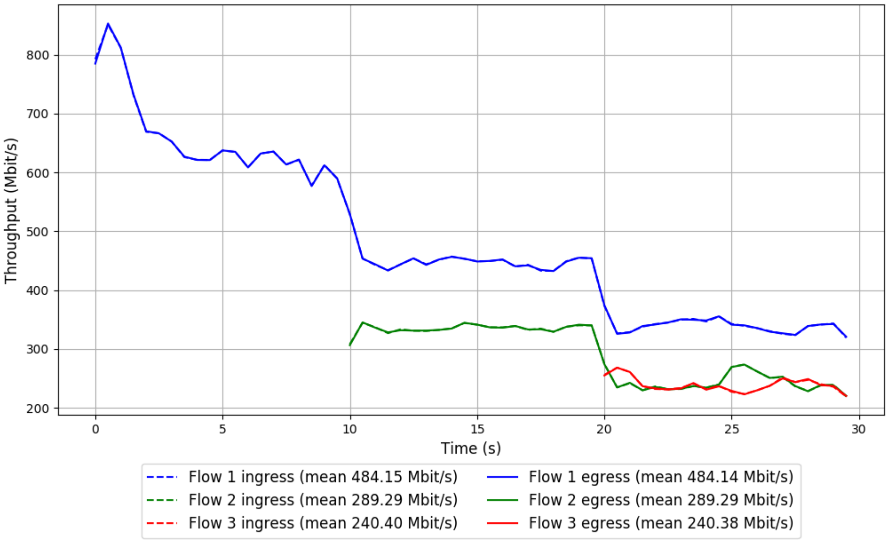
Run 4: Report of TCP Vegas — Data Link

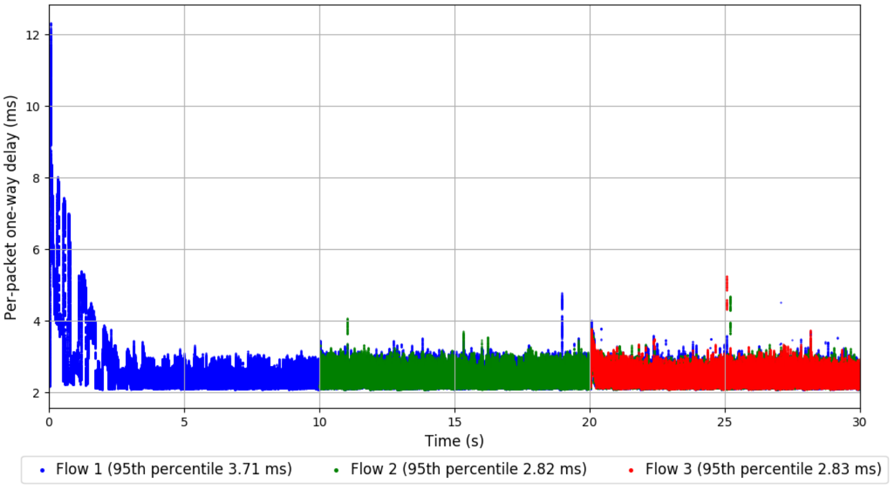




```
Run 5: Statistics of TCP Vegas

Start at: 2017-09-18 11:56:01
End at: 2017-09-18 11:56:31
Local clock offset: -2.189 ms
Remote clock offset: 0.0 ms

# Below is generated by plot.py at 2017-09-18 17:02:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 756.56 Mbit/s
95th percentile per-packet one-way delay: 3.016 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 484.14 Mbit/s
95th percentile per-packet one-way delay: 3.715 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 289.29 Mbit/s
95th percentile per-packet one-way delay: 2.820 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 240.38 Mbit/s
95th percentile per-packet one-way delay: 2.827 ms
Loss rate: 0.00%
```

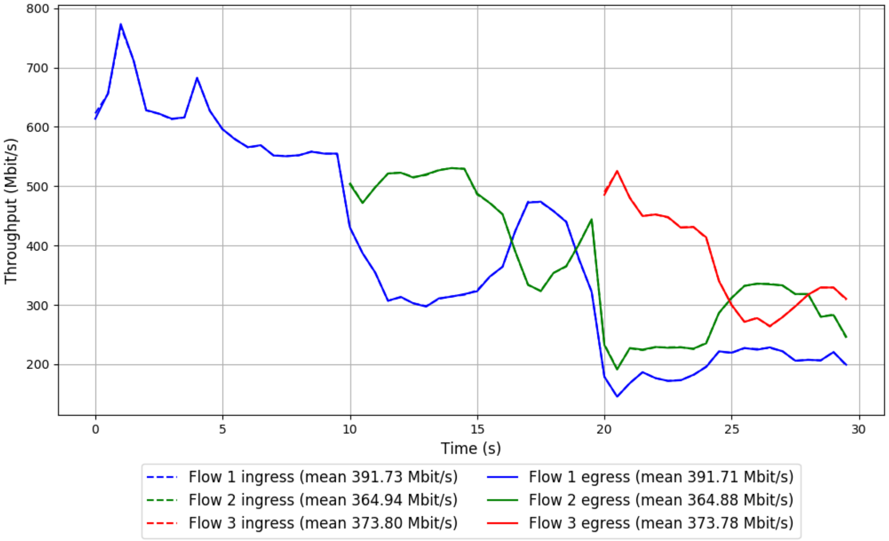
Run 5: Report of TCP Vegas — Data Link

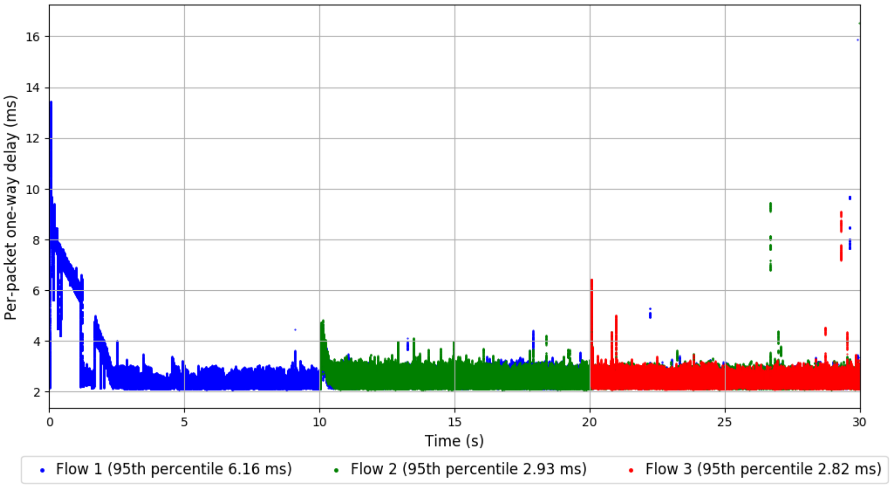




```
Run 6: Statistics of TCP Vegas

Start at: 2017-09-18 12:10:46
End at: 2017-09-18 12:11:16
Local clock offset: -2.173 ms
Remote clock offset: 0.037 ms

# Below is generated by plot.py at 2017-09-18 17:06:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 758.72 Mbit/s
95th percentile per-packet one-way delay: 3.485 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 391.71 Mbit/s
95th percentile per-packet one-way delay: 6.155 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 364.88 Mbit/s
95th percentile per-packet one-way delay: 2.934 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 373.78 Mbit/s
95th percentile per-packet one-way delay: 2.819 ms
Loss rate: 0.03%
```

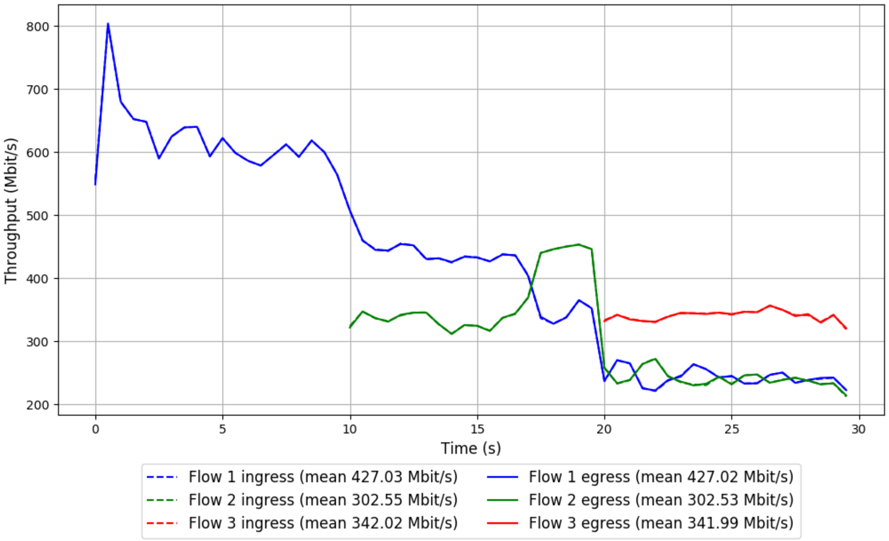
Run 6: Report of TCP Vegas — Data Link

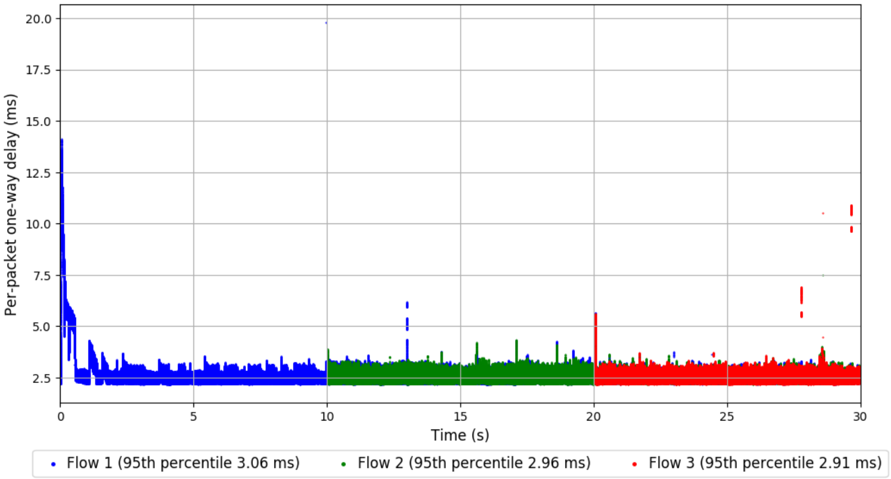




```
Run 7: Statistics of TCP Vegas

Start at: 2017-09-18 12:25:42
End at: 2017-09-18 12:26:12
Local clock offset: -2.181 ms
Remote clock offset: 0.134 ms

# Below is generated by plot.py at 2017-09-18 17:06:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 742.08 Mbit/s
95th percentile per-packet one-way delay: 2.989 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 427.02 Mbit/s
95th percentile per-packet one-way delay: 3.058 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 302.53 Mbit/s
95th percentile per-packet one-way delay: 2.956 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 341.99 Mbit/s
95th percentile per-packet one-way delay: 2.910 ms
Loss rate: 0.01%
```

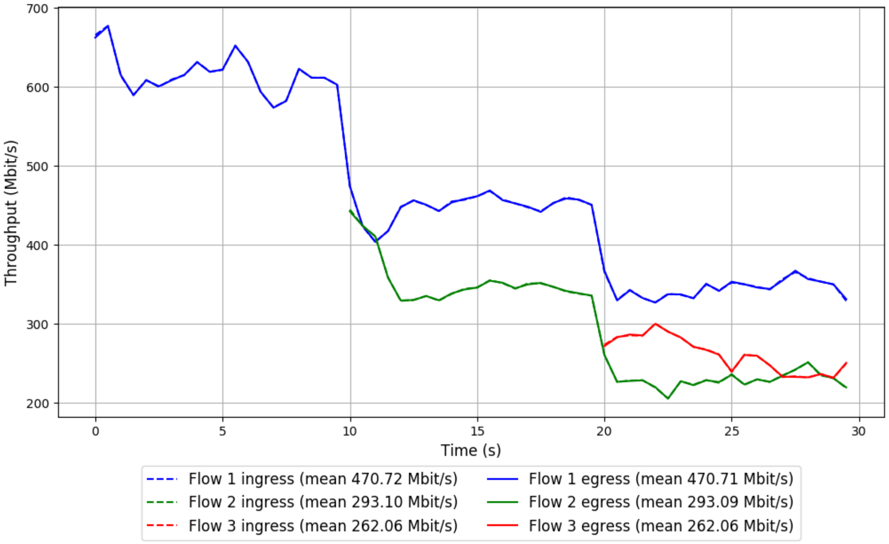
Run 7: Report of TCP Vegas — Data Link

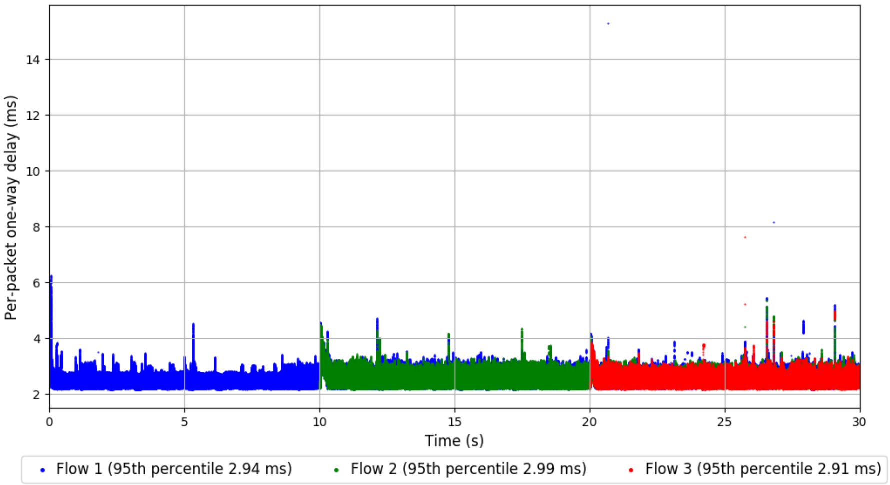




```
Run 8: Statistics of TCP Vegas

Start at: 2017-09-18 12:40:37
End at: 2017-09-18 12:41:07
Local clock offset: -2.18 ms
Remote clock offset: 0.115 ms

# Below is generated by plot.py at 2017-09-18 17:06:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 753.02 Mbit/s
95th percentile per-packet one-way delay: 2.948 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 470.71 Mbit/s
95th percentile per-packet one-way delay: 2.936 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 293.09 Mbit/s
95th percentile per-packet one-way delay: 2.988 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 262.06 Mbit/s
95th percentile per-packet one-way delay: 2.914 ms
Loss rate: 0.00%
```

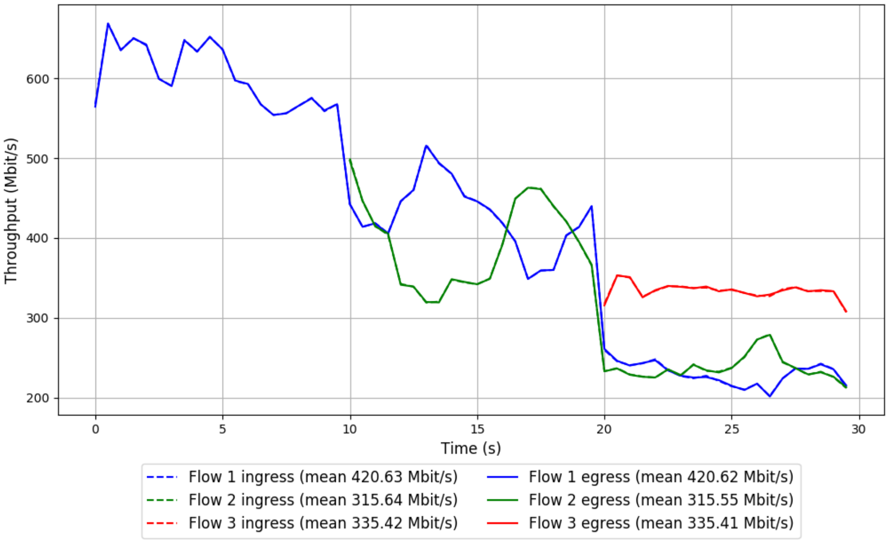
Run 8: Report of TCP Vegas — Data Link

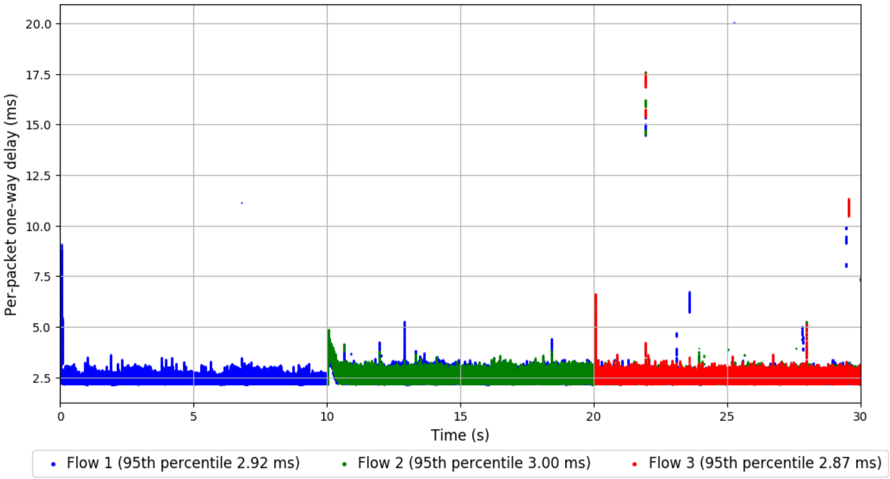




```
Run 9: Statistics of TCP Vegas

Start at: 2017-09-18 12:55:34
End at: 2017-09-18 12:56:04
Local clock offset: -2.112 ms
Remote clock offset: 0.104 ms

# Below is generated by plot.py at 2017-09-18 17:10:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 742.00 Mbit/s
95th percentile per-packet one-way delay: 2.933 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 420.62 Mbit/s
95th percentile per-packet one-way delay: 2.915 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 315.55 Mbit/s
95th percentile per-packet one-way delay: 2.999 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 335.41 Mbit/s
95th percentile per-packet one-way delay: 2.871 ms
Loss rate: 0.00%
```

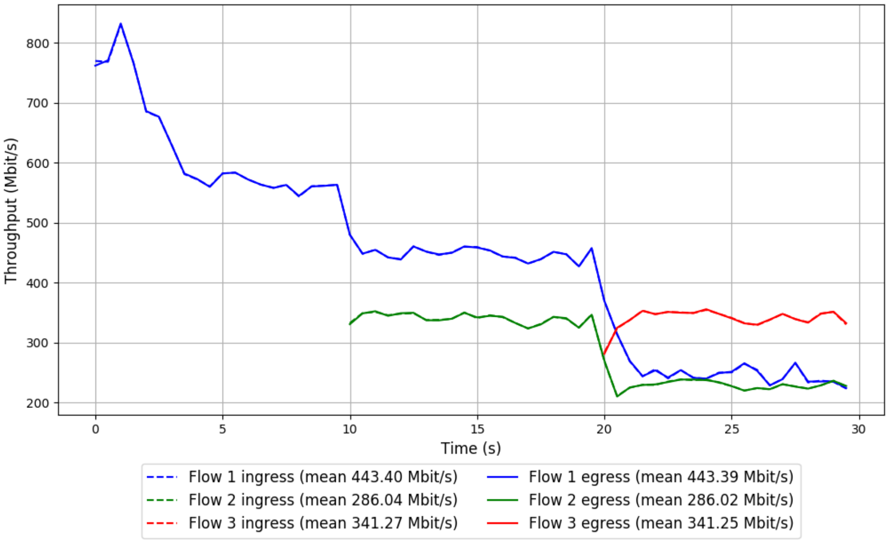
Run 9: Report of TCP Vegas — Data Link

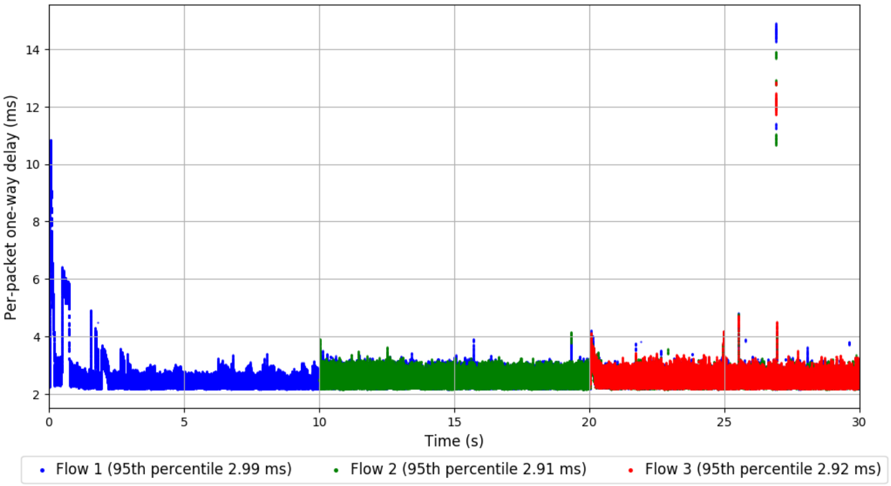




```
Run 10: Statistics of TCP Vegas

Start at: 2017-09-18 13:10:30
End at: 2017-09-18 13:11:00
Local clock offset: -2.162 ms
Remote clock offset: -0.016 ms

# Below is generated by plot.py at 2017-09-18 17:11:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 747.12 Mbit/s
95th percentile per-packet one-way delay: 2.943 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 443.39 Mbit/s
95th percentile per-packet one-way delay: 2.988 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 286.02 Mbit/s
95th percentile per-packet one-way delay: 2.908 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 341.25 Mbit/s
95th percentile per-packet one-way delay: 2.915 ms
Loss rate: 0.00%
```

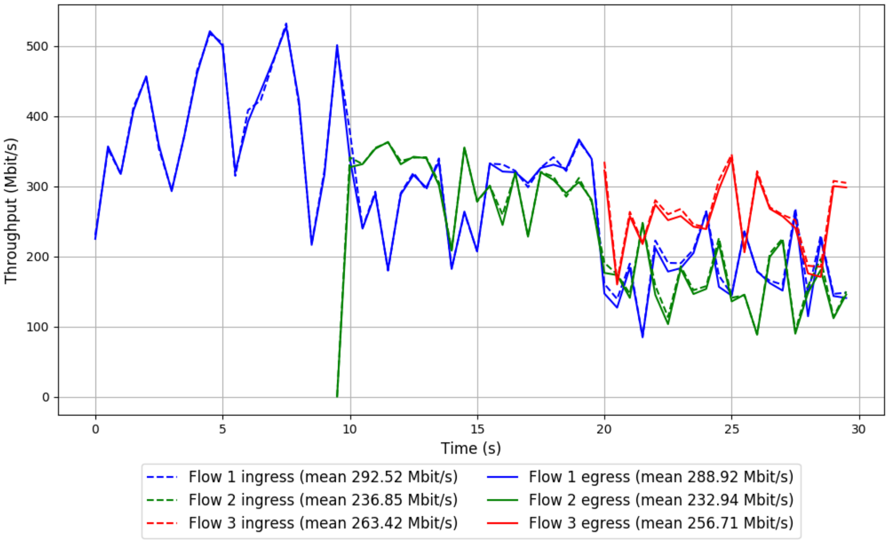
Run 10: Report of TCP Vegas — Data Link

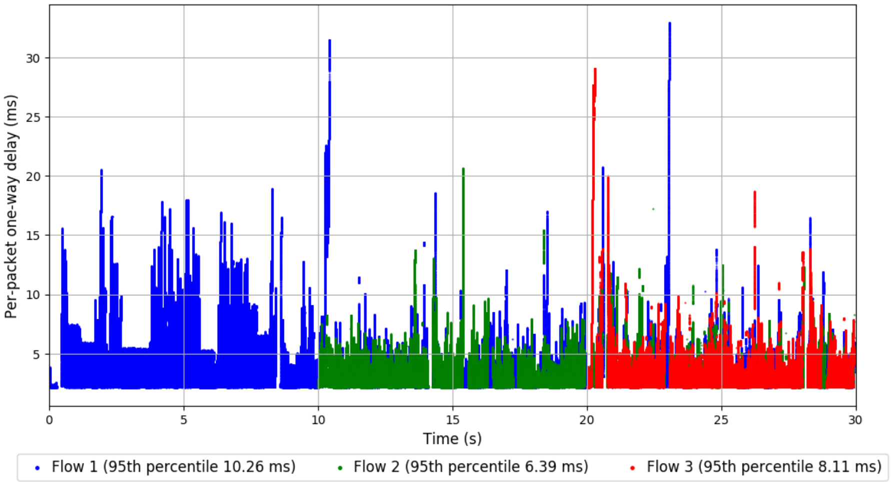




```
Run 1: Statistics of Verus

Start at: 2017-09-18 10:58:06
End at: 2017-09-18 10:58:36
Local clock offset: -2.109 ms
Remote clock offset: 0.528 ms

# Below is generated by plot.py at 2017-09-18 17:11:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 529.27 Mbit/s
95th percentile per-packet one-way delay: 8.955 ms
Loss rate: 1.55%
-- Flow 1:
Average throughput: 288.92 Mbit/s
95th percentile per-packet one-way delay: 10.262 ms
Loss rate: 1.22%
-- Flow 2:
Average throughput: 232.94 Mbit/s
95th percentile per-packet one-way delay: 6.391 ms
Loss rate: 1.64%
-- Flow 3:
Average throughput: 256.71 Mbit/s
95th percentile per-packet one-way delay: 8.105 ms
Loss rate: 2.51%
```

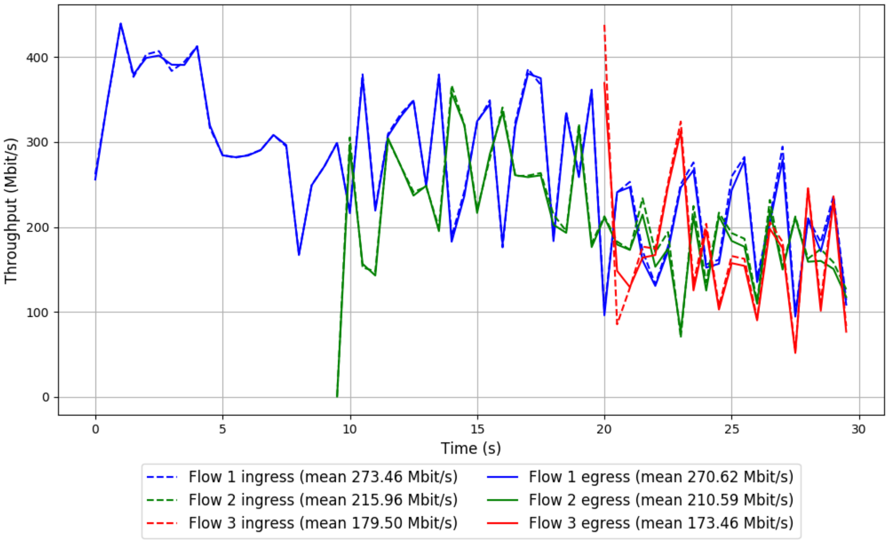
Run 1: Report of Verus — Data Link

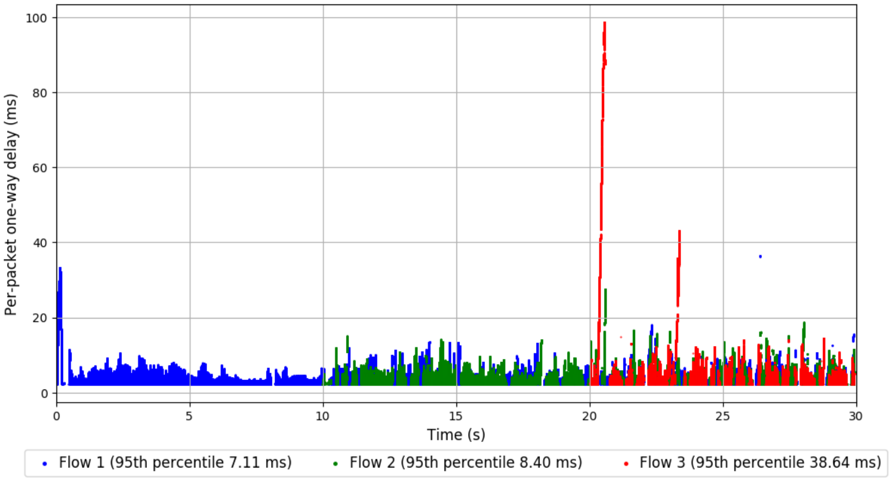




```
Run 2: Statistics of Verus

Start at: 2017-09-18 11:13:00
End at: 2017-09-18 11:13:30
Local clock offset: -2.161 ms
Remote clock offset: 0.254 ms

# Below is generated by plot.py at 2017-09-18 17:11:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 468.46 Mbit/s
95th percentile per-packet one-way delay: 8.575 ms
Loss rate: 1.76%
-- Flow 1:
Average throughput: 270.62 Mbit/s
95th percentile per-packet one-way delay: 7.110 ms
Loss rate: 1.04%
-- Flow 2:
Average throughput: 210.59 Mbit/s
95th percentile per-packet one-way delay: 8.401 ms
Loss rate: 2.48%
-- Flow 3:
Average throughput: 173.46 Mbit/s
95th percentile per-packet one-way delay: 38.642 ms
Loss rate: 3.34%
```

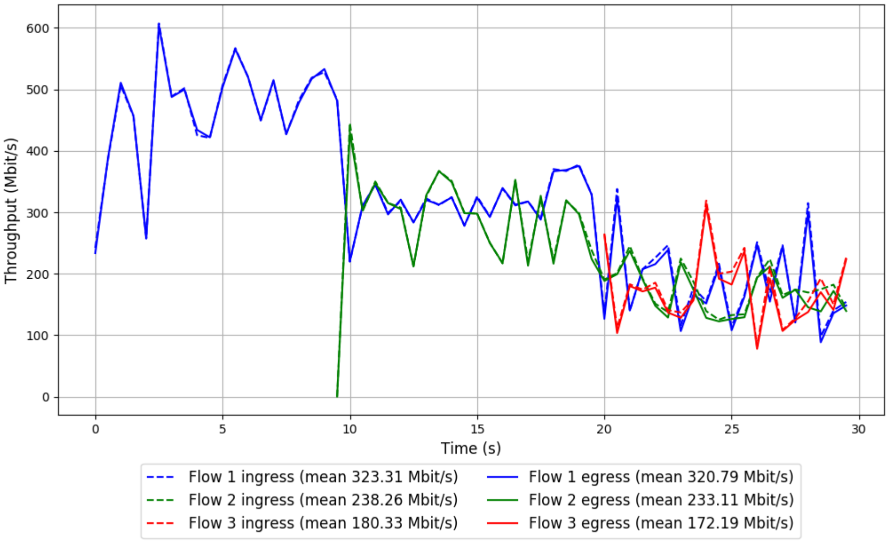
Run 2: Report of Verus — Data Link

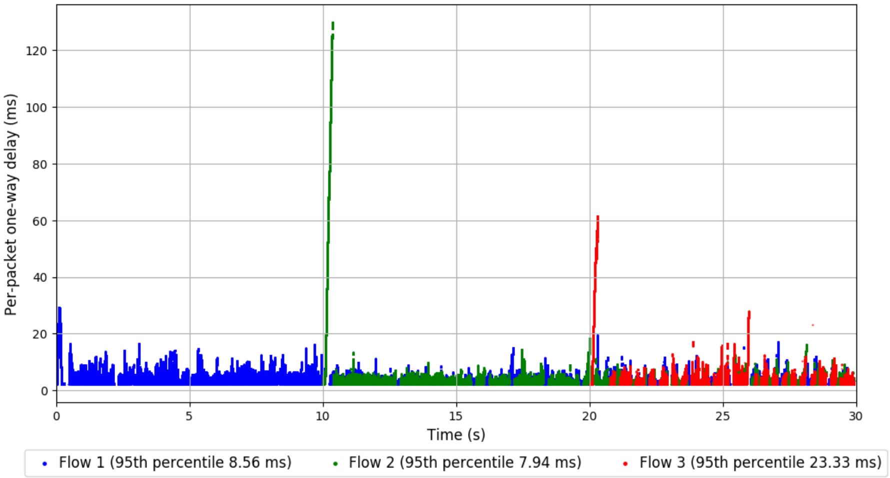




```
Run 3: Statistics of Verus

Start at: 2017-09-18 11:27:52
End at: 2017-09-18 11:28:22
Local clock offset: -2.212 ms
Remote clock offset: -0.057 ms

# Below is generated by plot.py at 2017-09-18 17:11:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 533.08 Mbit/s
95th percentile per-packet one-way delay: 8.873 ms
Loss rate: 1.59%
-- Flow 1:
Average throughput: 320.79 Mbit/s
95th percentile per-packet one-way delay: 8.557 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 233.11 Mbit/s
95th percentile per-packet one-way delay: 7.938 ms
Loss rate: 2.16%
-- Flow 3:
Average throughput: 172.19 Mbit/s
95th percentile per-packet one-way delay: 23.326 ms
Loss rate: 4.51%
```

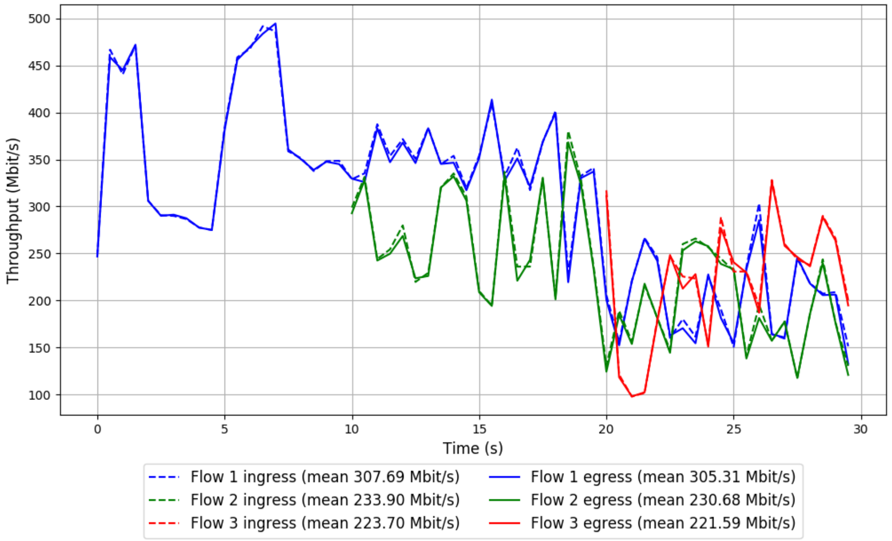
Run 3: Report of Verus — Data Link

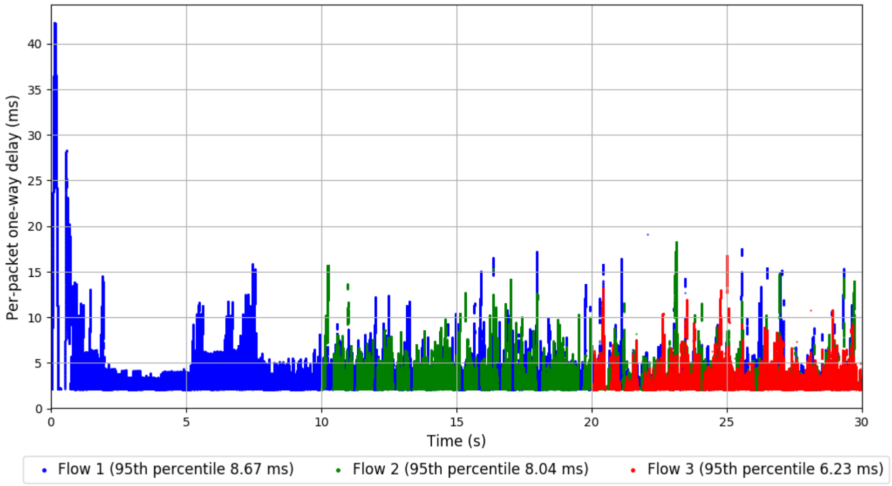




```
Run 4: Statistics of Verus

Start at: 2017-09-18 11:42:38
End at: 2017-09-18 11:43:08
Local clock offset: -2.22 ms
Remote clock offset: -0.069 ms

# Below is generated by plot.py at 2017-09-18 17:13:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 532.35 Mbit/s
95th percentile per-packet one-way delay: 8.179 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 305.31 Mbit/s
95th percentile per-packet one-way delay: 8.674 ms
Loss rate: 0.77%
-- Flow 2:
Average throughput: 230.68 Mbit/s
95th percentile per-packet one-way delay: 8.038 ms
Loss rate: 1.36%
-- Flow 3:
Average throughput: 221.59 Mbit/s
95th percentile per-packet one-way delay: 6.230 ms
Loss rate: 0.92%
```

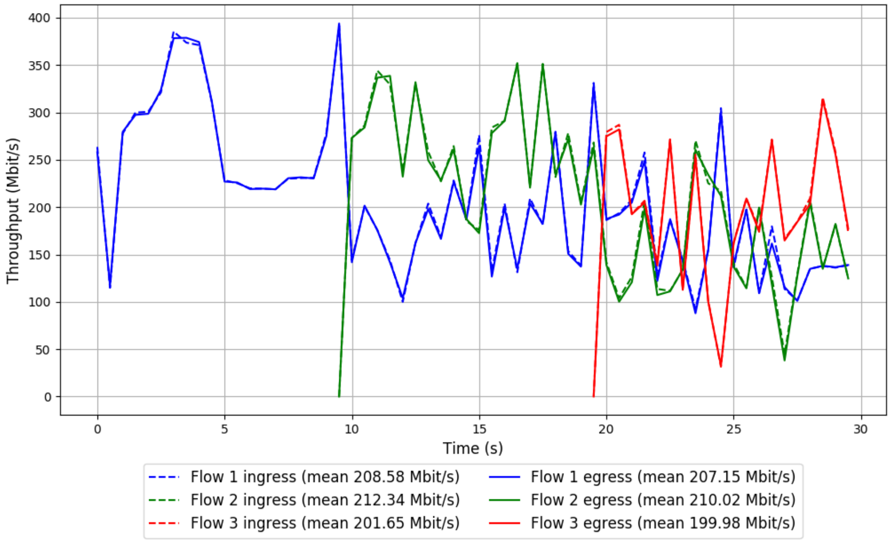
Run 4: Report of Verus — Data Link

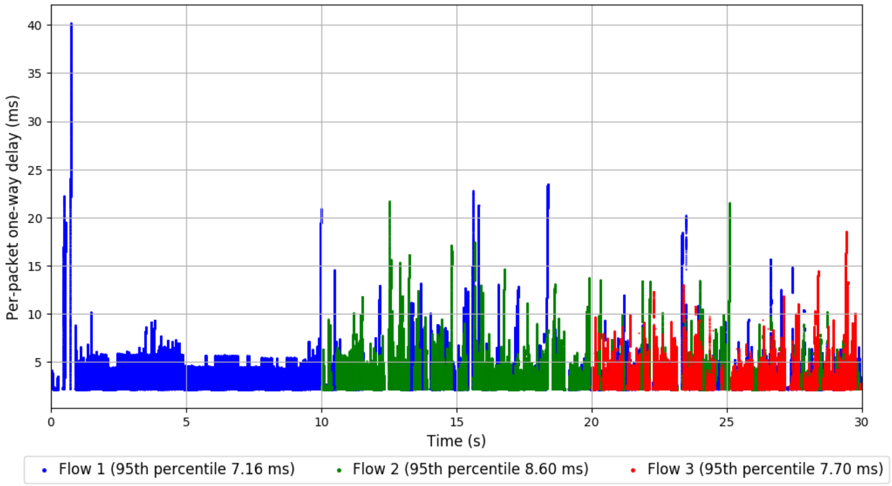




```
Run 5: Statistics of Verus

Start at: 2017-09-18 11:57:36
End at: 2017-09-18 11:58:06
Local clock offset: -2.211 ms
Remote clock offset: 0.069 ms

# Below is generated by plot.py at 2017-09-18 17:13:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 413.16 Mbit/s
95th percentile per-packet one-way delay: 7.890 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 207.15 Mbit/s
95th percentile per-packet one-way delay: 7.164 ms
Loss rate: 0.68%
-- Flow 2:
Average throughput: 210.02 Mbit/s
95th percentile per-packet one-way delay: 8.597 ms
Loss rate: 1.09%
-- Flow 3:
Average throughput: 199.98 Mbit/s
95th percentile per-packet one-way delay: 7.700 ms
Loss rate: 0.83%
```

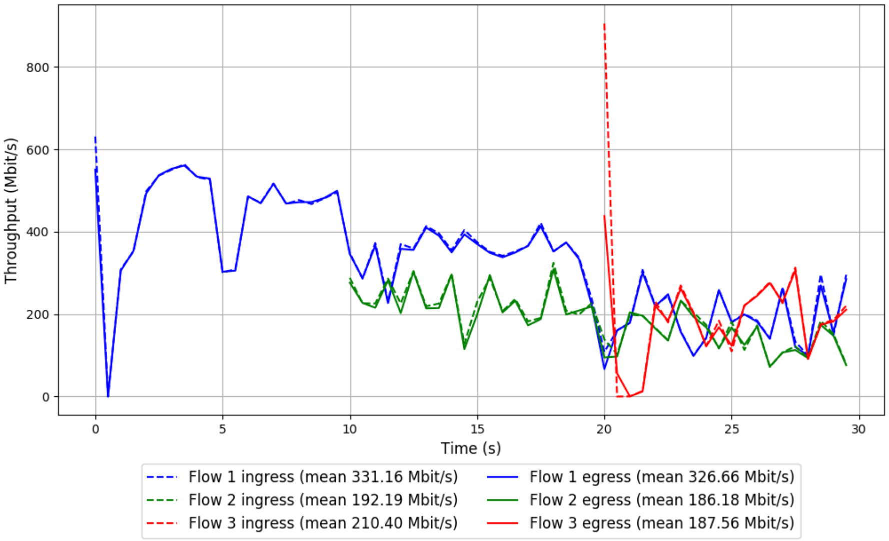
Run 5: Report of Verus — Data Link

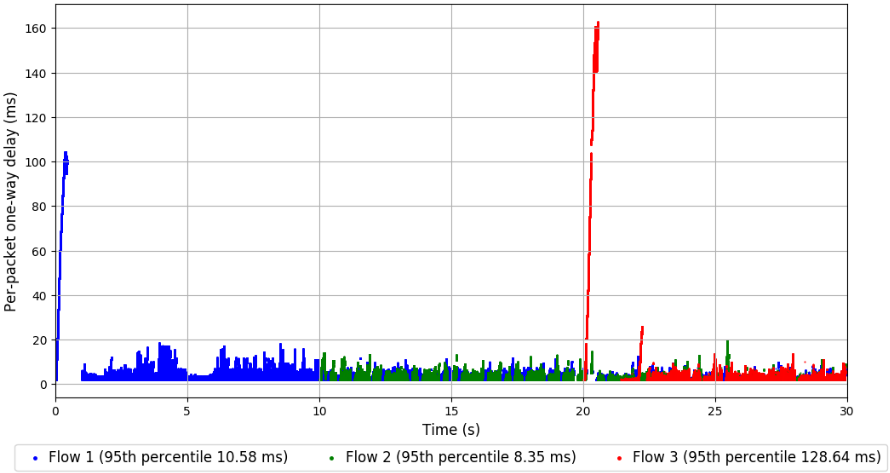




```
Run 6: Statistics of Verus

Start at: 2017-09-18 12:12:21
End at: 2017-09-18 12:12:51
Local clock offset: -2.168 ms
Remote clock offset: 0.083 ms

# Below is generated by plot.py at 2017-09-18 17:13:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 512.78 Mbit/s
95th percentile per-packet one-way delay: 11.126 ms
Loss rate: 3.03%
-- Flow 1:
Average throughput: 326.66 Mbit/s
95th percentile per-packet one-way delay: 10.576 ms
Loss rate: 1.37%
-- Flow 2:
Average throughput: 186.18 Mbit/s
95th percentile per-packet one-way delay: 8.345 ms
Loss rate: 3.10%
-- Flow 3:
Average throughput: 187.56 Mbit/s
95th percentile per-packet one-way delay: 128.639 ms
Loss rate: 10.83%
```

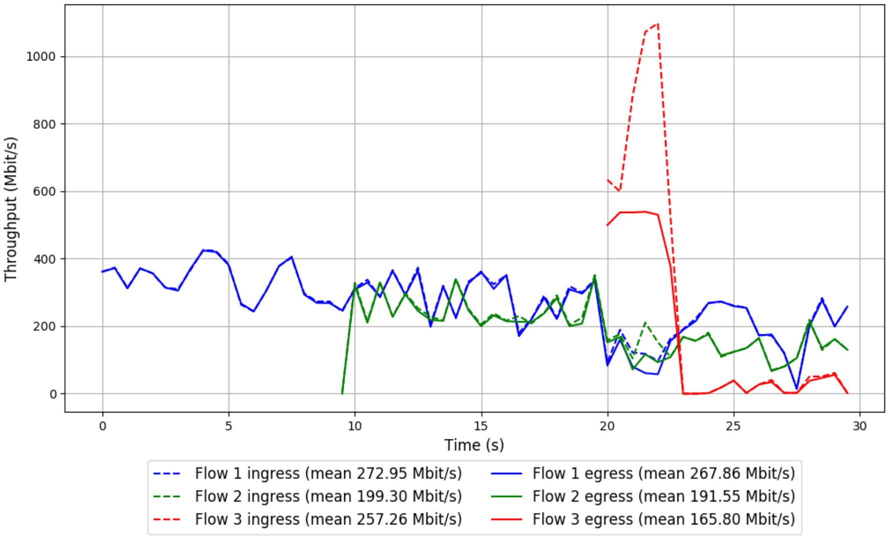
Run 6: Report of Verus — Data Link

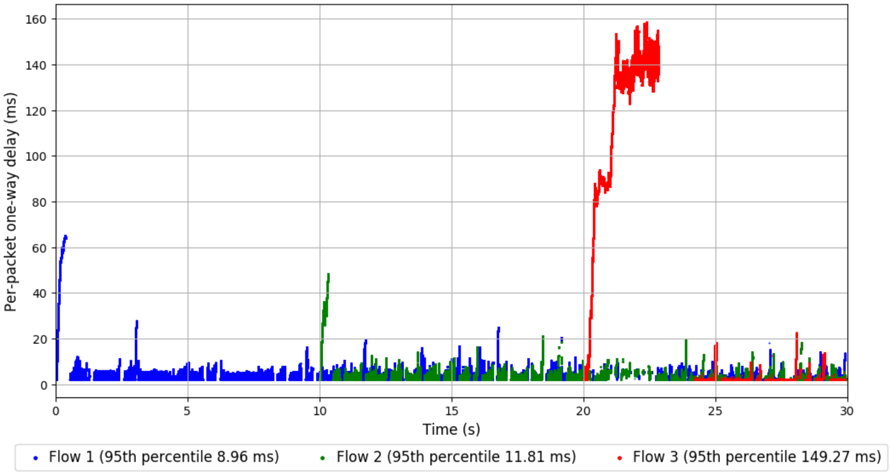




```
Run 7: Statistics of Verus

Start at: 2017-09-18 12:27:17
End at: 2017-09-18 12:27:47
Local clock offset: -2.172 ms
Remote clock offset: 0.129 ms

# Below is generated by plot.py at 2017-09-18 17:14:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 450.24 Mbit/s
95th percentile per-packet one-way delay: 133.768 ms
Loss rate: 8.25%
-- Flow 1:
Average throughput: 267.86 Mbit/s
95th percentile per-packet one-way delay: 8.961 ms
Loss rate: 1.83%
-- Flow 2:
Average throughput: 191.55 Mbit/s
95th percentile per-packet one-way delay: 11.811 ms
Loss rate: 3.88%
-- Flow 3:
Average throughput: 165.80 Mbit/s
95th percentile per-packet one-way delay: 149.271 ms
Loss rate: 35.55%
```

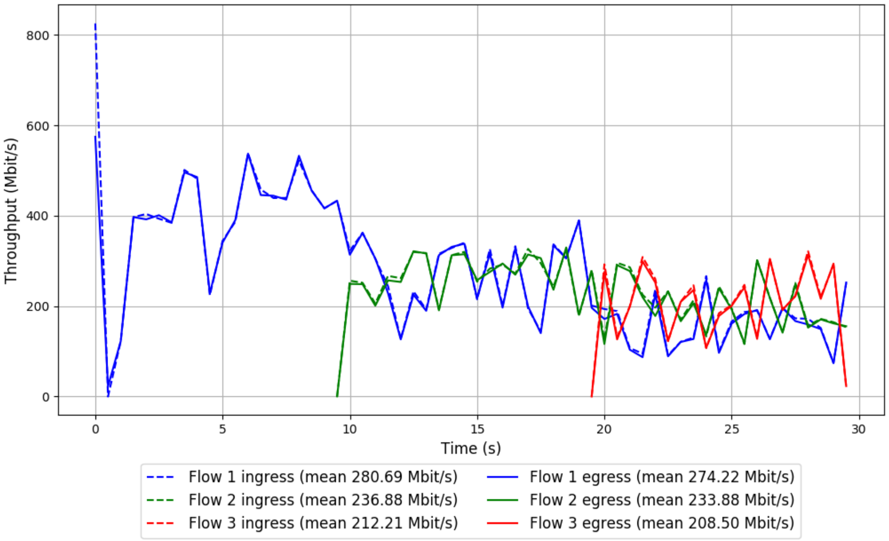
Run 7: Report of Verus — Data Link

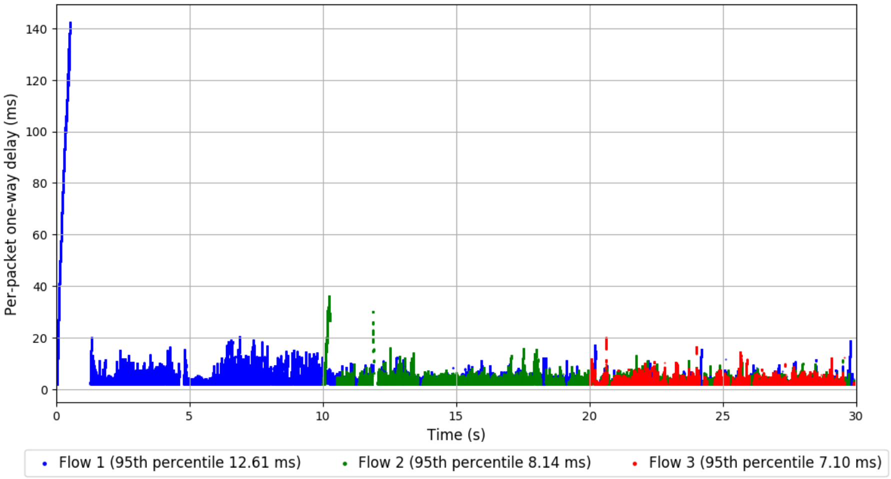




```
Run 8: Statistics of Verus

Start at: 2017-09-18 12:42:12
End at: 2017-09-18 12:42:42
Local clock offset: -2.153 ms
Remote clock offset: 0.055 ms

# Below is generated by plot.py at 2017-09-18 17:14:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 499.24 Mbit/s
95th percentile per-packet one-way delay: 10.554 ms
Loss rate: 1.91%
-- Flow 1:
Average throughput: 274.22 Mbit/s
95th percentile per-packet one-way delay: 12.609 ms
Loss rate: 2.30%
-- Flow 2:
Average throughput: 233.88 Mbit/s
95th percentile per-packet one-way delay: 8.136 ms
Loss rate: 1.26%
-- Flow 3:
Average throughput: 208.50 Mbit/s
95th percentile per-packet one-way delay: 7.100 ms
Loss rate: 1.76%
```

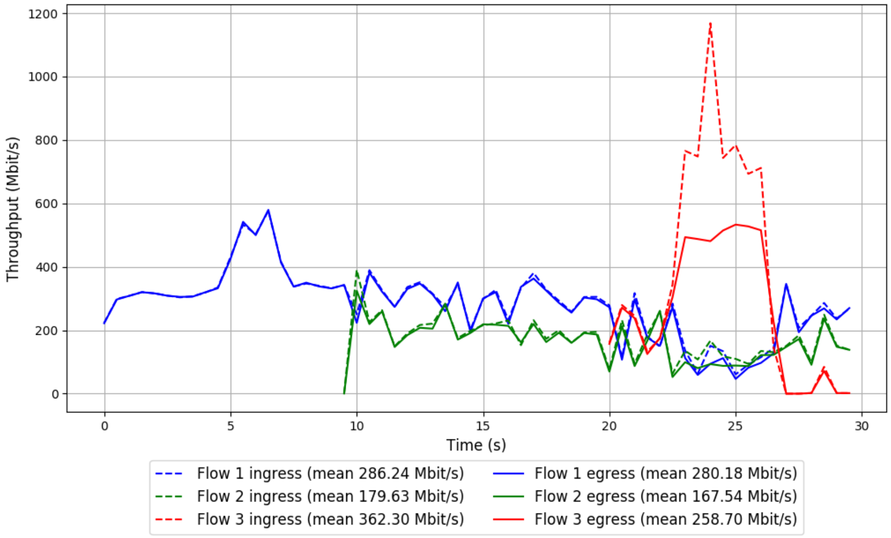
Run 8: Report of Verus — Data Link

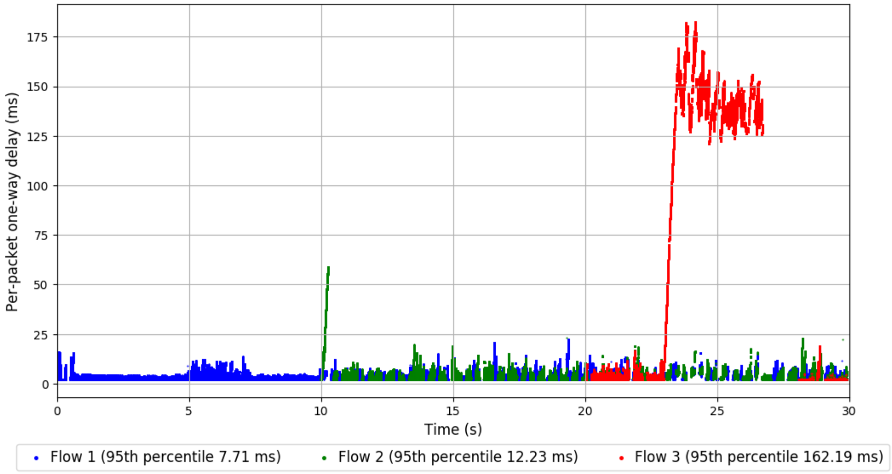




```
Run 9: Statistics of Verus

Start at: 2017-09-18 12:57:09
End at: 2017-09-18 12:57:39
Local clock offset: -2.131 ms
Remote clock offset: 0.01 ms

# Below is generated by plot.py at 2017-09-18 17:15:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 477.48 Mbit/s
95th percentile per-packet one-way delay: 143.594 ms
Loss rate: 9.22%
-- Flow 1:
Average throughput: 280.18 Mbit/s
95th percentile per-packet one-way delay: 7.710 ms
Loss rate: 2.12%
-- Flow 2:
Average throughput: 167.54 Mbit/s
95th percentile per-packet one-way delay: 12.232 ms
Loss rate: 6.73%
-- Flow 3:
Average throughput: 258.70 Mbit/s
95th percentile per-packet one-way delay: 162.194 ms
Loss rate: 28.63%
```

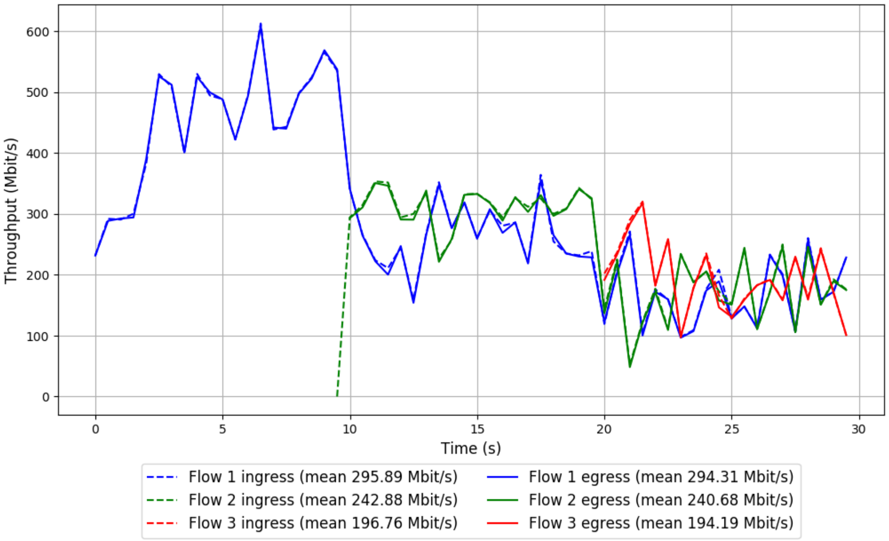
Run 9: Report of Verus — Data Link



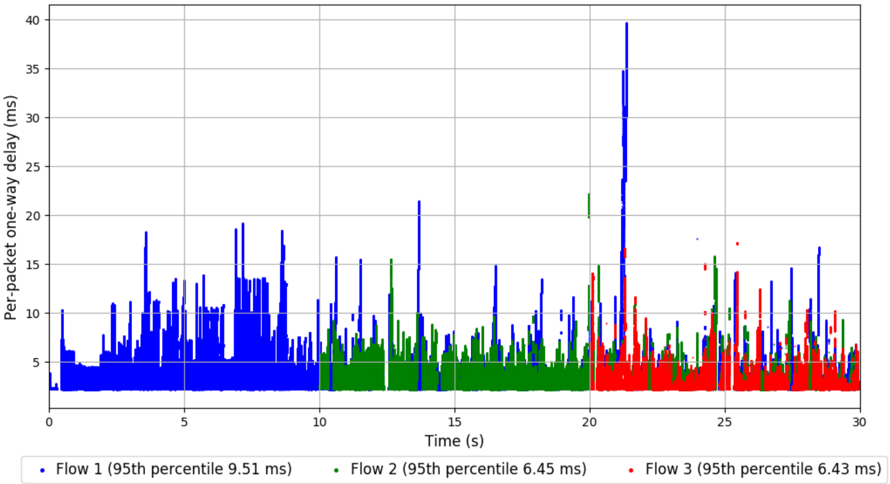


```
Run 10: Statistics of Verus

Start at: 2017-09-18 13:12:04
End at: 2017-09-18 13:12:34
Local clock offset: -2.182 ms
Remote clock offset: -0.016 ms

# Below is generated by plot.py at 2017-09-18 17:15:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 518.88 Mbit/s
95th percentile per-packet one-way delay: 8.291 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 294.31 Mbit/s
95th percentile per-packet one-way delay: 9.509 ms
Loss rate: 0.53%
-- Flow 2:
Average throughput: 240.68 Mbit/s
95th percentile per-packet one-way delay: 6.451 ms
Loss rate: 0.91%
-- Flow 3:
Average throughput: 194.19 Mbit/s
95th percentile per-packet one-way delay: 6.428 ms
Loss rate: 1.31%
```

Run 10: Report of Verus — Data Link



Throughput (Mbit/s)
600
500
400
300
200
100
0
0
5
10
15
20
25
30
Time (s)
Flow 1 ingress (mean 295.89 Mbit/s)
Flow 2 ingress (mean 242.88 Mbit/s)
Flow 3 ingress (mean 196.76 Mbit/s)
Flow 1 egress (mean 294.31 Mbit/s)
Flow 2 egress (mean 240.68 Mbit/s)
Flow 3 egress (mean 194.19 Mbit/s)



Per-packet one-way delay (ms)
40
35
30
25
20
15
10
5
0
5
10
15
20
25
30
Time (s)
Flow 1 (95th percentile 9.51 ms)
Flow 2 (95th percentile 6.45 ms)
Flow 3 (95th percentile 6.43 ms)