Pantheon Report

Generated at 2019-07-12 06:51:45 (UTC).

Data path: AWS Brazil 2 on `ens5` (*local*) →Colombia on `p4p1` (*remote*).

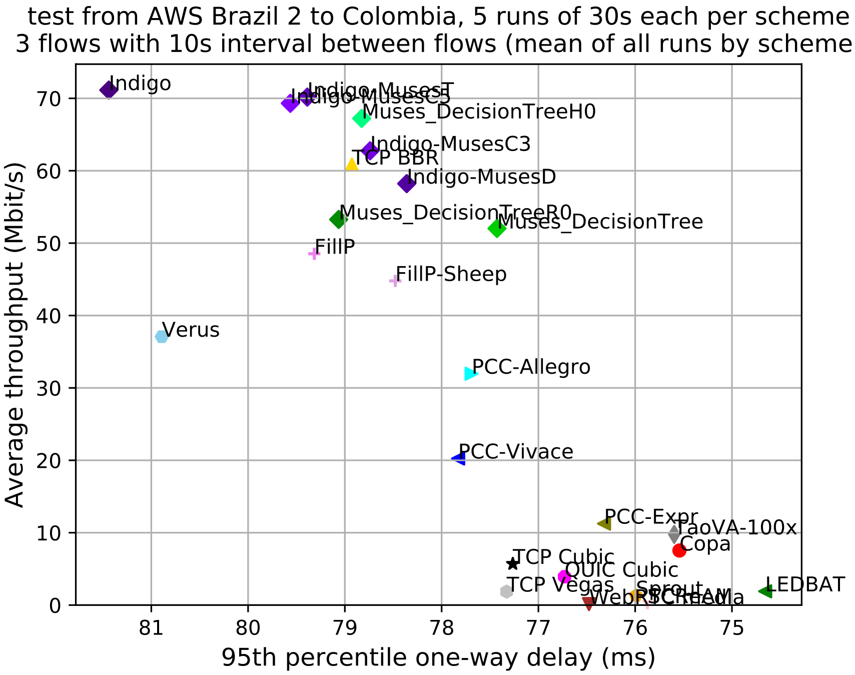
Repeated the test of 24 congestion control schemes 5 times.

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

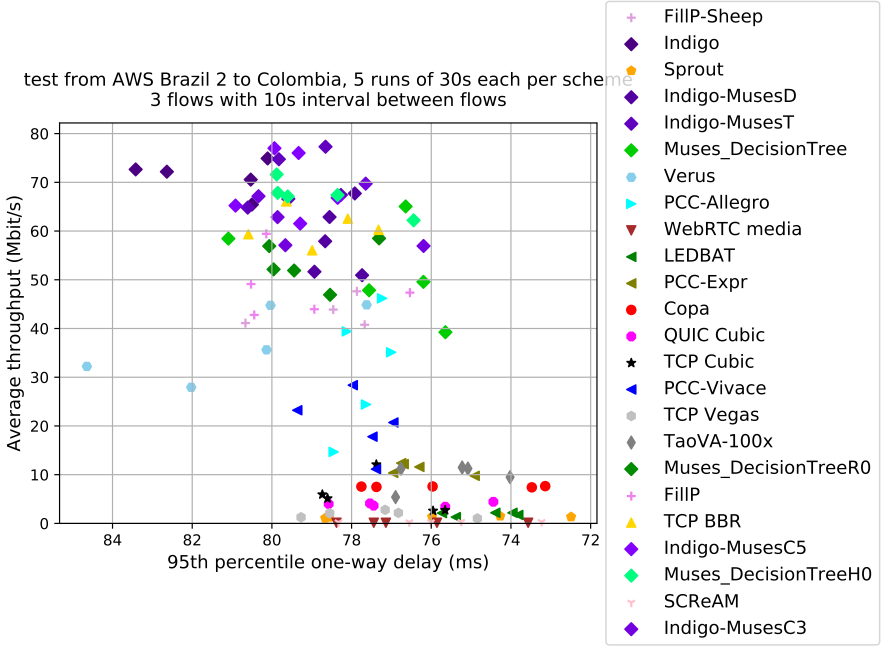
NTP offsets were measured against `gps.ntp.br` and have been applied to correct the timestamps in logs.

```
System info:
Linux 4.15.0-1041-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

```
Git summary:
branch: muses @ 2076e1149a241f3edb4365d686df32342bf9561f
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 5ce721187ad823da20955337730c746486ca4966
third_party/muses_dtree @ 8bb93ffff2b107204a92d8b72449fc0c55e15f00
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
 M src/ScreamClient
 M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
 M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```



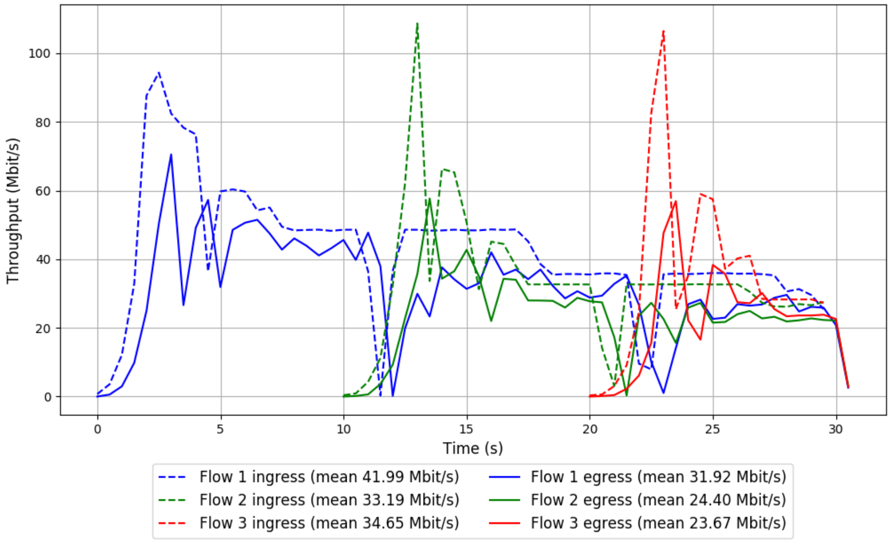
test from AWS Brazil 2 to Colombia, 5 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)

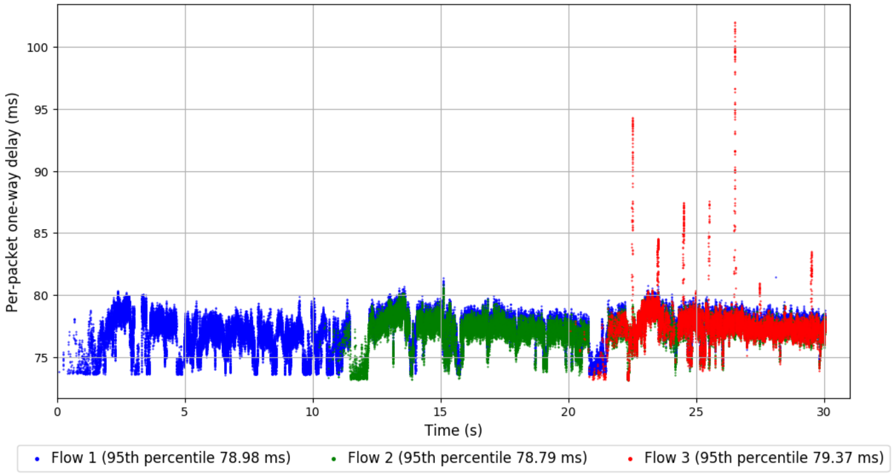

test from AWS Brazil 2 to Colombia, 5 runs of 30s each per scheme
3 flows with 10s interval between flows
Average throughput (Mbit/s)
80
70
60
50
40
30
20
10
0
84
82
80
78
76
74
72
95th percentile one-way delay (ms)
FillP-Sheep
Indigo
Sprout
Indigo-MusesD
Indigo-MusesT
Muses_DecisionTree
Verus
PCC-Allegro
WebRTC media
LEDBAT
PCC-Expr
Copa
QUIC Cubic
TCP Cubic
PCC-Vivace
TCP Vegas
TaoVA-100x
Muses_DecisionTreeR0
FillP
TCP BBR
Indigo-MusesC5
Muses_DecisionTreeH0
SCReAM
Indigo-MusesC3

		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	5	33.37	29.01	24.54	78.31	78.48	79.18	21.19	24.80	29.78
Copa	5	0.00	8.79	5.09	72.95	75.58	75.33	98.41	58.75	64.19
TCP Cubic	5	2.21	1.66	7.33	76.59	77.14	77.21	2.48	2.07	3.06
FillP	5	31.28	17.25	17.39	79.40	78.31	78.35	23.46	30.97	31.80
FillP-Sheep	5	29.40	15.80	14.68	77.77	78.21	78.20	14.49	14.29	15.22
Indigo	5	40.65	34.29	25.29	81.33	81.23	81.67	56.08	71.62	77.98
Indigo-MusesC3	5	44.59	22.02	13.38	78.63	78.13	78.72	15.43	14.90	15.99
Indigo-MusesC5	5	66.50	3.44	2.27	79.33	79.73	79.44	28.87	35.80	32.78
Indigo-MusesD	5	40.14	22.21	12.65	77.89	78.20	78.17	14.90	13.82	21.65
Indigo-MusesT	5	68.05	2.06	2.77	79.35	79.34	79.65	26.30	24.26	25.49
LEDBAT	5	1.00	0.92	0.86	74.53	74.32	74.98	3.49	4.01	4.12
Muses_DecisionTree	5	49.50	2.83	2.05	77.41	76.83	77.57	11.11	14.96	16.08
Muses_DecisionTreeH0	5	61.18	5.20	8.07	78.78	78.26	78.57	16.90	26.03	31.87
Muses_DecisionTreeR0	5	49.70	4.07	2.75	79.01	79.38	78.91	12.11	17.23	19.11
PCC-Allegro	5	24.66	7.91	6.19	76.98	77.85	76.95	4.64	5.01	5.88
PCC-Expr	5	6.57	4.74	4.65	76.44	75.91	75.96	19.54	26.25	32.24
QUIC Cubic	5	1.89	2.04	2.07	75.95	77.17	77.07	1.72	1.91	2.51
SCReAM	5	0.12	0.15	0.18	75.71	75.91	75.87	2.50	1.96	2.18
Sprout	5	0.61	0.72	0.68	75.56	75.29	75.97	4.19	4.76	5.45
TaoVA-100x	5	5.07	4.96	4.21	74.95	75.75	75.68	31.29	19.21	37.04
TCP Vegas	5	0.74	0.85	1.67	77.32	76.65	77.48	3.34	3.01	3.07
Verus	5	27.33	13.23	4.80	80.28	80.34	78.77	87.45	71.38	67.61
PCC-Vivace	5	12.10	8.90	6.83	77.24	77.24	77.07	3.32	3.71	4.57
WebRTC media	5	0.05	0.04	0.04	76.23	75.62	76.30	1.38	3.55	1.19

```
Run 1: Statistics of TCP BBR

Start at: 2019-07-12 04:17:20
End at: 2019-07-12 04:17:50
Local clock offset: -6.682 ms
Remote clock offset: -5.279 ms

# Below is generated by plot.py at 2019-07-12 06:44:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.05 Mbit/s
95th percentile per-packet one-way delay: 78.990 ms
Loss rate: 25.88%
-- Flow 1:
Average throughput: 31.92 Mbit/s
95th percentile per-packet one-way delay: 78.982 ms
Loss rate: 23.97%
-- Flow 2:
Average throughput: 24.40 Mbit/s
95th percentile per-packet one-way delay: 78.791 ms
Loss rate: 26.49%
-- Flow 3:
Average throughput: 23.67 Mbit/s
95th percentile per-packet one-way delay: 79.371 ms
Loss rate: 31.70%
```

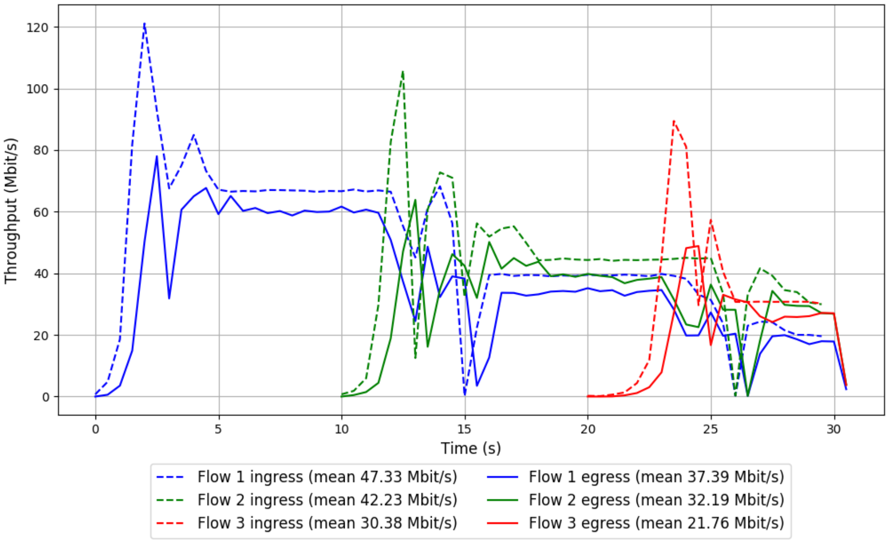
Run 1: Report of TCP BBR — Data Link

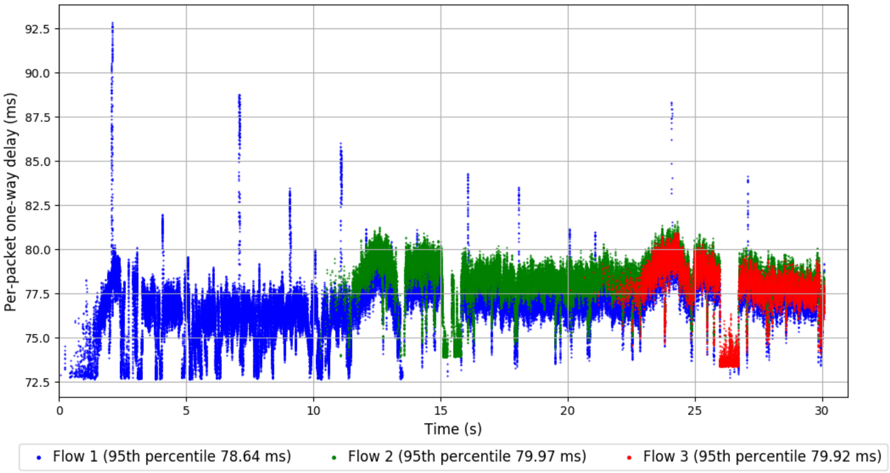




```
Run 2: Statistics of TCP BBR

Start at: 2019-07-12 04:47:49
End at: 2019-07-12 04:48:19
Local clock offset: -5.954 ms
Remote clock offset: -6.017 ms

# Below is generated by plot.py at 2019-07-12 06:44:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 66.07 Mbit/s
95th percentile per-packet one-way delay: 79.637 ms
Loss rate: 22.78%
-- Flow 1:
Average throughput: 37.39 Mbit/s
95th percentile per-packet one-way delay: 78.639 ms
Loss rate: 21.00%
-- Flow 2:
Average throughput: 32.19 Mbit/s
95th percentile per-packet one-way delay: 79.969 ms
Loss rate: 23.77%
-- Flow 3:
Average throughput: 21.76 Mbit/s
95th percentile per-packet one-way delay: 79.916 ms
Loss rate: 28.39%
```

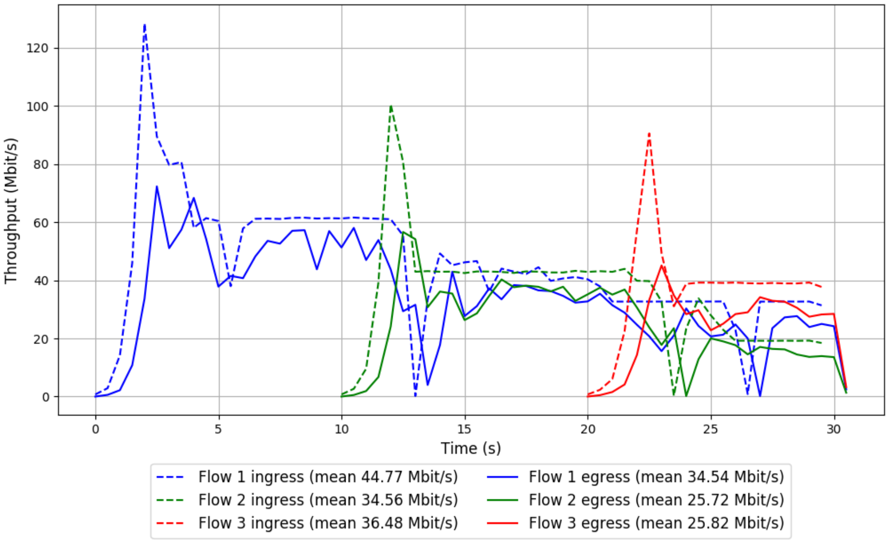
Run 2: Report of TCP BBR — Data Link

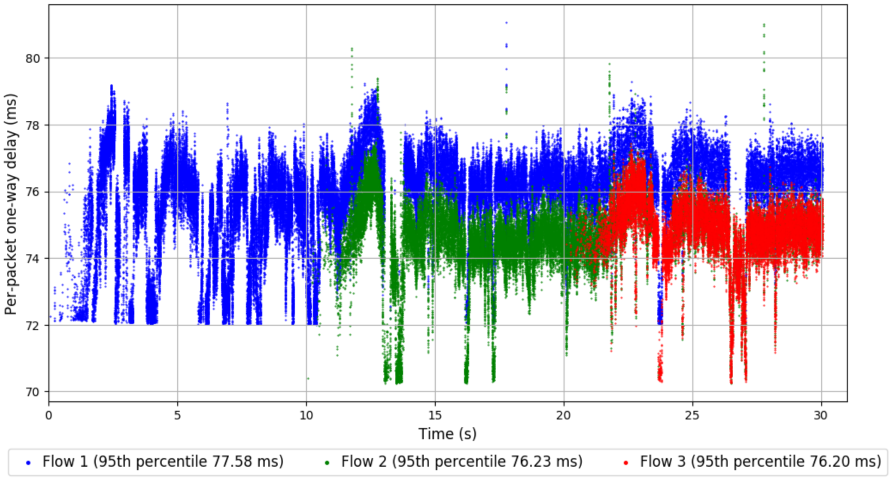




```
Run 3: Statistics of TCP BBR

Start at: 2019-07-12 05:18:31
End at: 2019-07-12 05:19:01
Local clock offset: -8.907 ms
Remote clock offset: -8.35 ms

# Below is generated by plot.py at 2019-07-12 06:44:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 60.25 Mbit/s
95th percentile per-packet one-way delay: 77.324 ms
Loss rate: 24.59%
-- Flow 1:
Average throughput: 34.54 Mbit/s
95th percentile per-packet one-way delay: 77.578 ms
Loss rate: 22.84%
-- Flow 2:
Average throughput: 25.72 Mbit/s
95th percentile per-packet one-way delay: 76.231 ms
Loss rate: 25.56%
-- Flow 3:
Average throughput: 25.82 Mbit/s
95th percentile per-packet one-way delay: 76.205 ms
Loss rate: 29.20%
```

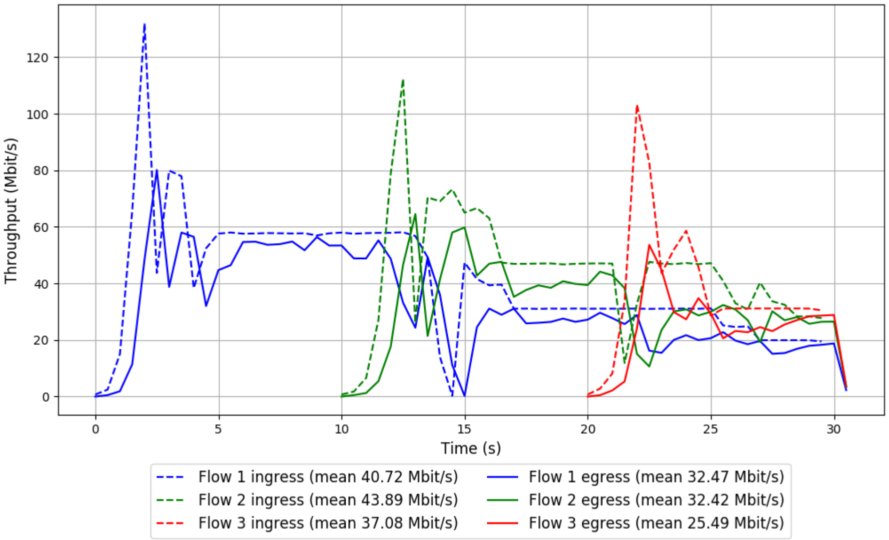
Run 3: Report of TCP BBR — Data Link

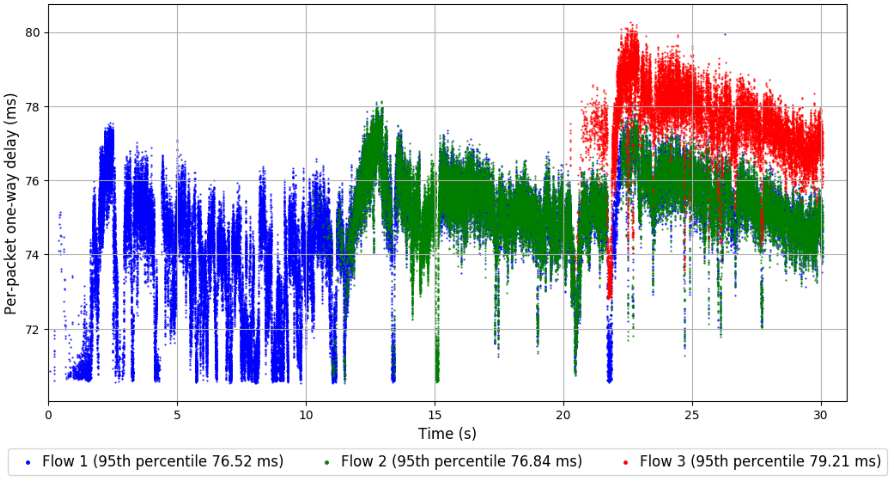




```
Run 4: Statistics of TCP BBR

Start at: 2019-07-12 05:49:11
End at: 2019-07-12 05:49:41
Local clock offset: -7.779 ms
Remote clock offset: -7.51 ms

# Below is generated by plot.py at 2019-07-12 06:44:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 62.54 Mbit/s
95th percentile per-packet one-way delay: 78.095 ms
Loss rate: 23.99%
-- Flow 1:
Average throughput: 32.47 Mbit/s
95th percentile per-packet one-way delay: 76.519 ms
Loss rate: 20.24%
-- Flow 2:
Average throughput: 32.42 Mbit/s
95th percentile per-packet one-way delay: 76.842 ms
Loss rate: 26.13%
-- Flow 3:
Average throughput: 25.49 Mbit/s
95th percentile per-packet one-way delay: 79.212 ms
Loss rate: 31.27%
```

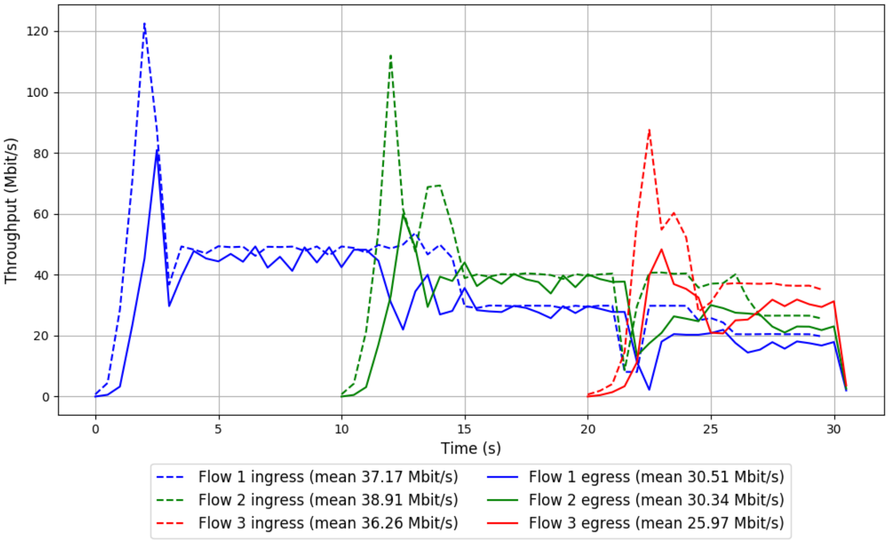
Run 4: Report of TCP BBR — Data Link

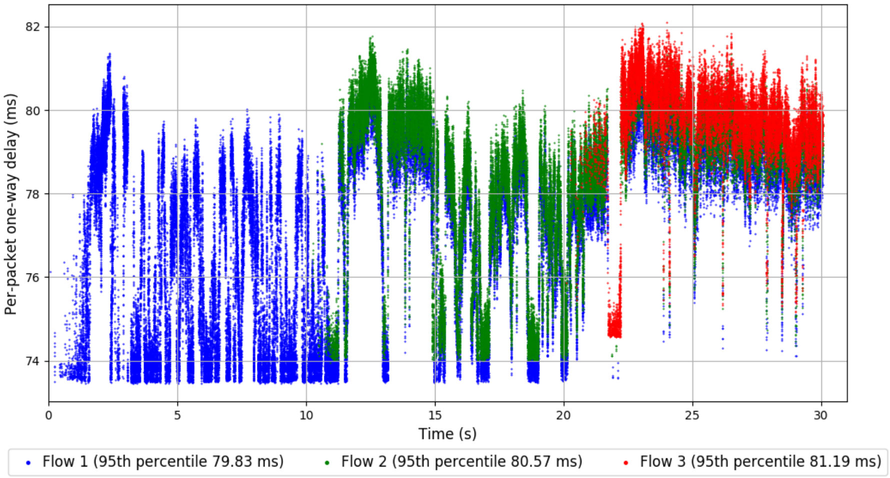




```
Run 5: Statistics of TCP BBR

Start at: 2019-07-12 06:19:26
End at: 2019-07-12 06:19:56
Local clock offset: -7.46 ms
Remote clock offset: -9.401 ms

# Below is generated by plot.py at 2019-07-12 06:44:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 59.35 Mbit/s
95th percentile per-packet one-way delay: 80.591 ms
Loss rate: 21.01%
-- Flow 1:
Average throughput: 30.51 Mbit/s
95th percentile per-packet one-way delay: 79.830 ms
Loss rate: 17.92%
-- Flow 2:
Average throughput: 30.34 Mbit/s
95th percentile per-packet one-way delay: 80.568 ms
Loss rate: 22.04%
-- Flow 3:
Average throughput: 25.97 Mbit/s
95th percentile per-packet one-way delay: 81.194 ms
Loss rate: 28.36%
```

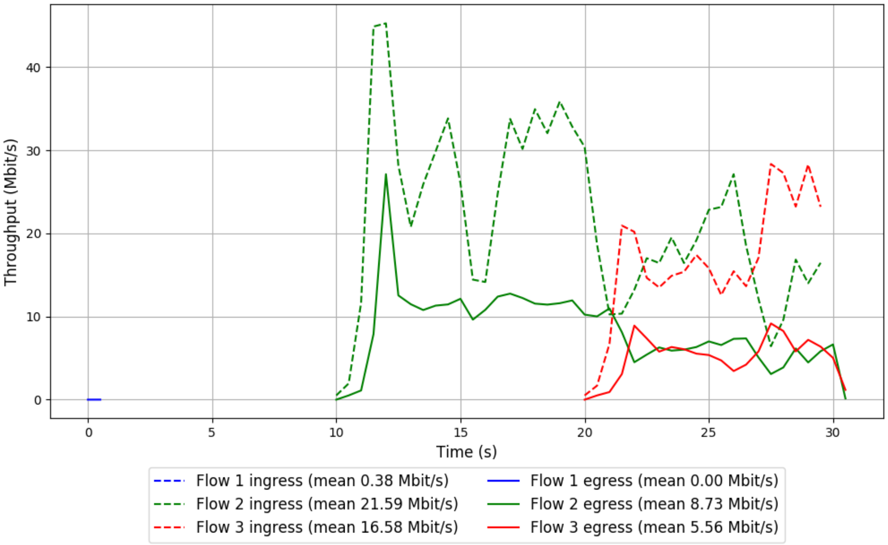
Run 5: Report of TCP BBR — Data Link

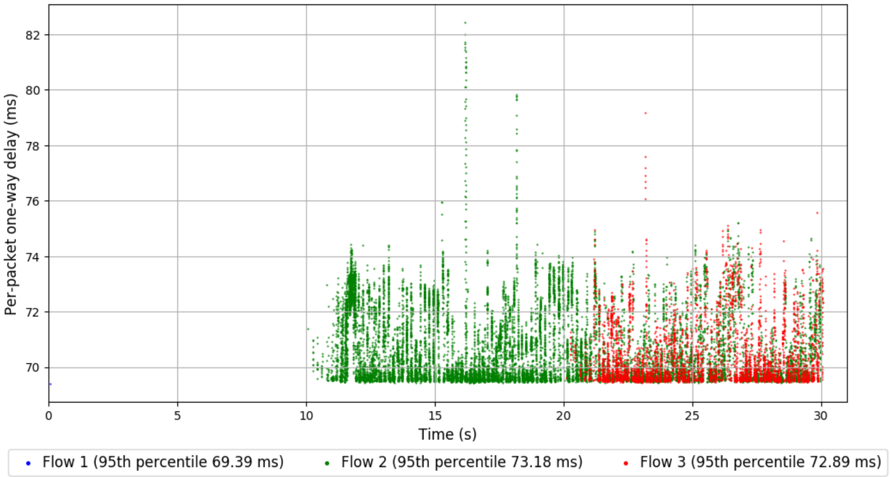




```
Run 1: Statistics of Copa

Start at: 2019-07-12 04:37:32
End at: 2019-07-12 04:38:02
Local clock offset: -6.69 ms
Remote clock offset: -10.293 ms

# Below is generated by plot.py at 2019-07-12 06:44:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.65 Mbit/s
95th percentile per-packet one-way delay: 73.140 ms
Loss rate: 61.48%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 69.392 ms
Loss rate: 98.60%
-- Flow 2:
Average throughput: 8.73 Mbit/s
95th percentile per-packet one-way delay: 73.183 ms
Loss rate: 59.56%
-- Flow 3:
Average throughput: 5.56 Mbit/s
95th percentile per-packet one-way delay: 72.892 ms
Loss rate: 66.43%
```

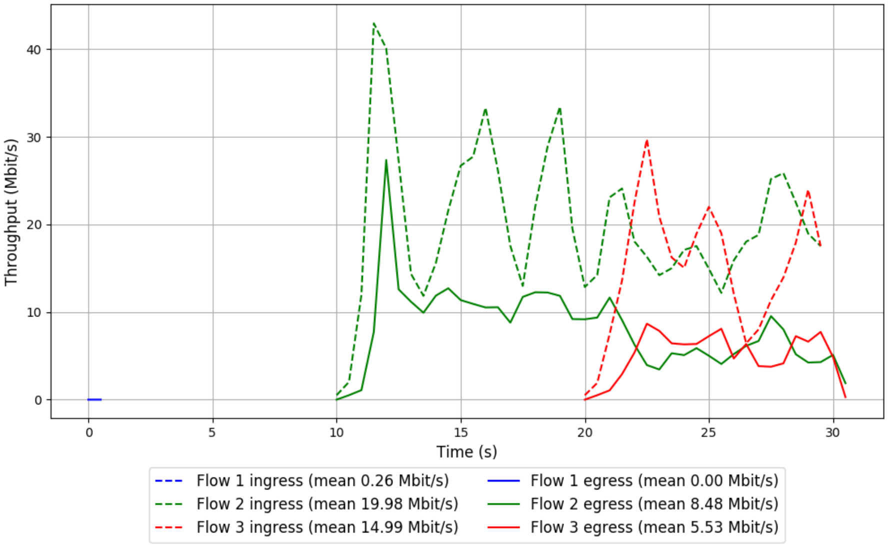
Run 1: Report of Copa — Data Link

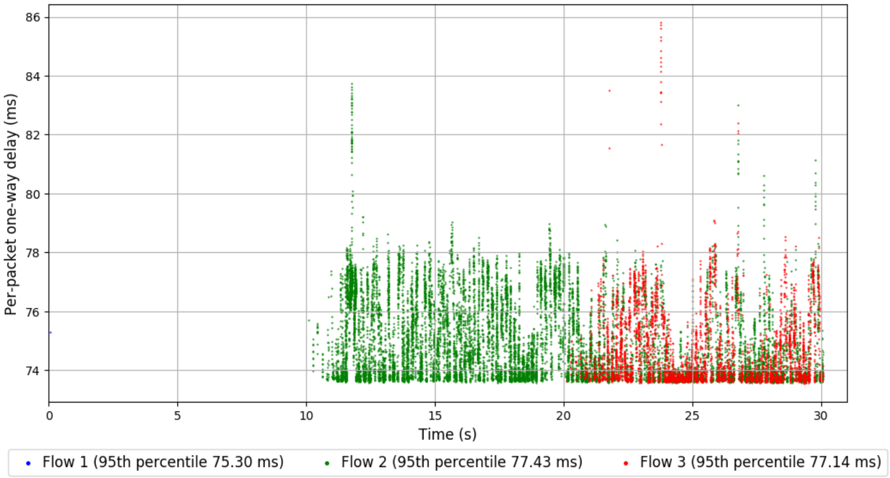




```
Run 2: Statistics of Copa

Start at: 2019-07-12 05:08:19
End at: 2019-07-12 05:08:49
Local clock offset: -8.202 ms
Remote clock offset: -5.466 ms

# Below is generated by plot.py at 2019-07-12 06:44:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.49 Mbit/s
95th percentile per-packet one-way delay: 77.376 ms
Loss rate: 59.09%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 75.302 ms
Loss rate: 97.92%
-- Flow 2:
Average throughput: 8.48 Mbit/s
95th percentile per-packet one-way delay: 77.431 ms
Loss rate: 57.58%
-- Flow 3:
Average throughput: 5.53 Mbit/s
95th percentile per-packet one-way delay: 77.143 ms
Loss rate: 63.11%
```

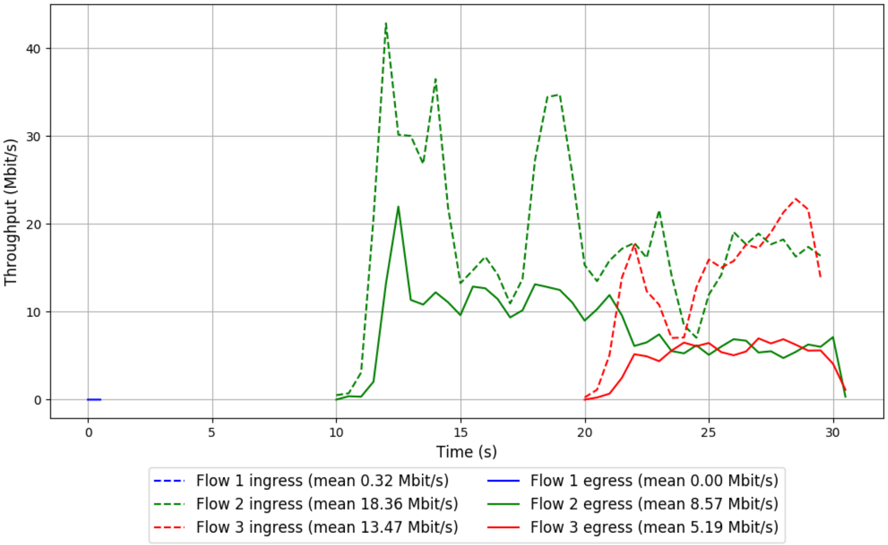
Run 2: Report of Copa — Data Link

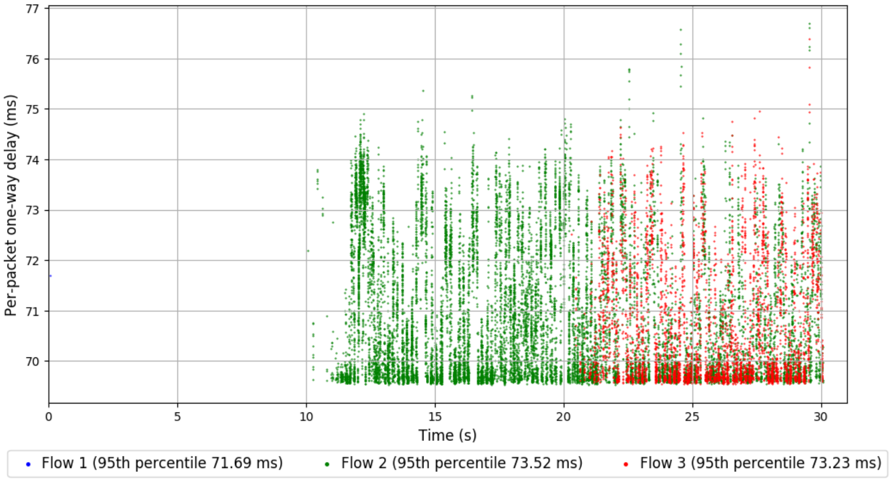




```
Run 3: Statistics of Copa

Start at: 2019-07-12 05:38:50
End at: 2019-07-12 05:39:20
Local clock offset: -7.354 ms
Remote clock offset: -8.224 ms

# Below is generated by plot.py at 2019-07-12 06:44:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.40 Mbit/s
95th percentile per-packet one-way delay: 73.476 ms
Loss rate: 55.70%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 71.693 ms
Loss rate: 98.33%
-- Flow 2:
Average throughput: 8.57 Mbit/s
95th percentile per-packet one-way delay: 73.516 ms
Loss rate: 53.30%
-- Flow 3:
Average throughput: 5.19 Mbit/s
95th percentile per-packet one-way delay: 73.226 ms
Loss rate: 62.24%
```

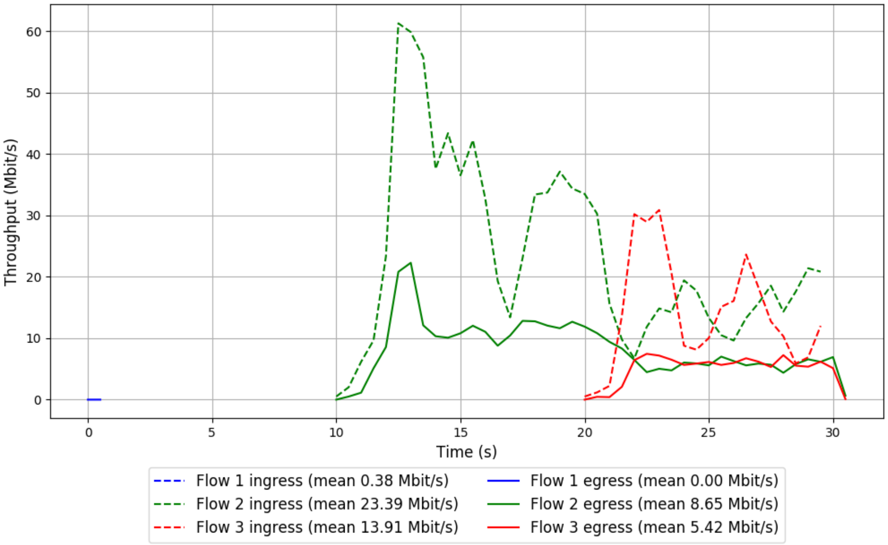
Run 3: Report of Copa — Data Link

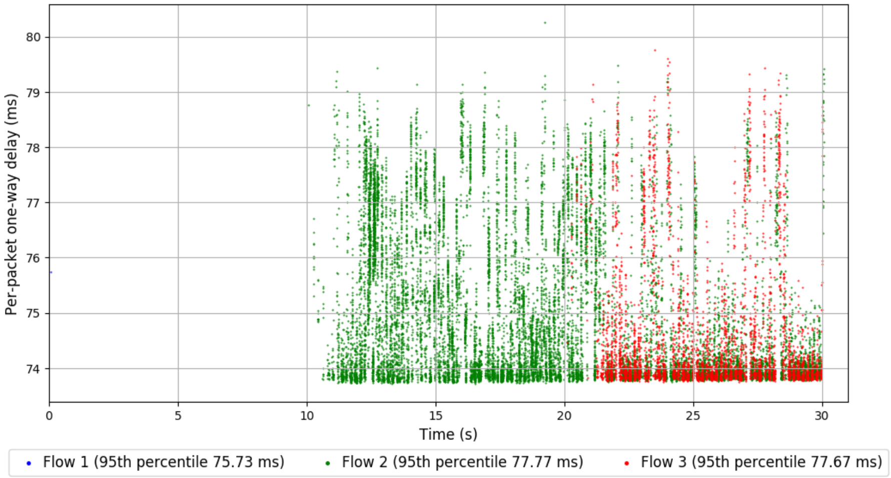




```
Run 4: Statistics of Copa

Start at: 2019-07-12 06:09:24
End at: 2019-07-12 06:09:54
Local clock offset: -7.344 ms
Remote clock offset: -7.274 ms

# Below is generated by plot.py at 2019-07-12 06:44:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.56 Mbit/s
95th percentile per-packet one-way delay: 77.754 ms
Loss rate: 62.57%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 75.733 ms
Loss rate: 98.60%
-- Flow 2:
Average throughput: 8.65 Mbit/s
95th percentile per-packet one-way delay: 77.768 ms
Loss rate: 63.02%
-- Flow 3:
Average throughput: 5.42 Mbit/s
95th percentile per-packet one-way delay: 77.673 ms
Loss rate: 61.01%
```

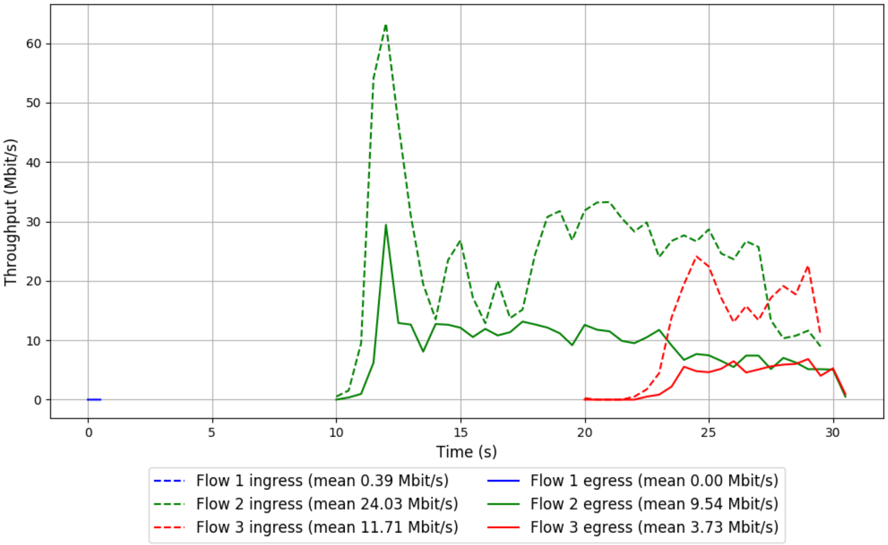
Run 4: Report of Copa — Data Link

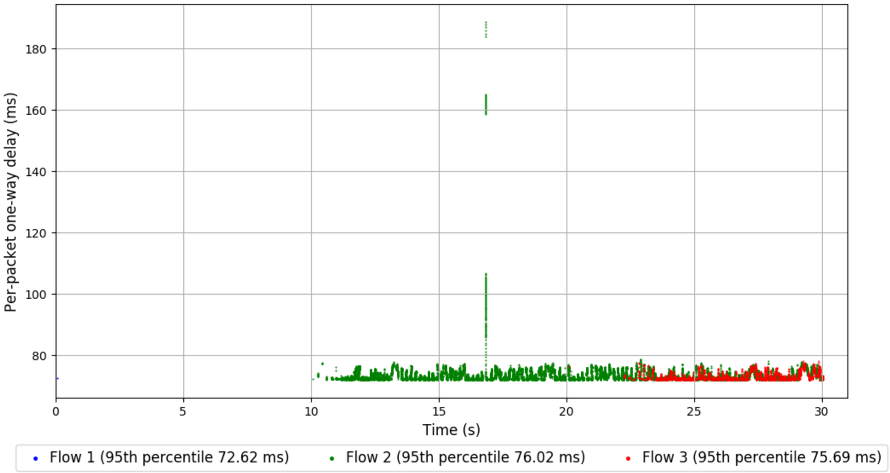




```
Run 5: Statistics of Copa

Start at: 2019-07-12 06:39:46
End at: 2019-07-12 06:40:16
Local clock offset: -5.907 ms
Remote clock offset: -9.741 ms

# Below is generated by plot.py at 2019-07-12 06:44:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.58 Mbit/s
95th percentile per-packet one-way delay: 75.967 ms
Loss rate: 61.85%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 72.621 ms
Loss rate: 98.60%
-- Flow 2:
Average throughput: 9.54 Mbit/s
95th percentile per-packet one-way delay: 76.017 ms
Loss rate: 60.31%
-- Flow 3:
Average throughput: 3.73 Mbit/s
95th percentile per-packet one-way delay: 75.691 ms
Loss rate: 68.14%
```

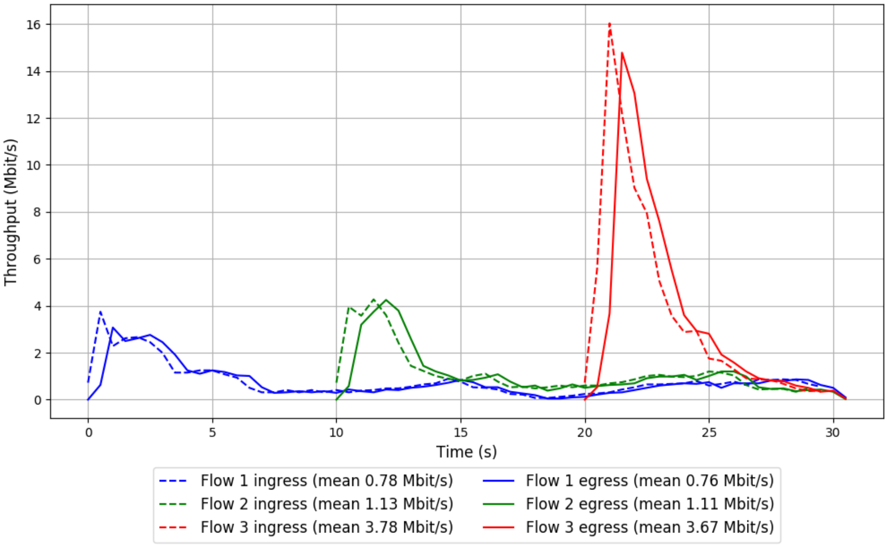
Run 5: Report of Copa — Data Link

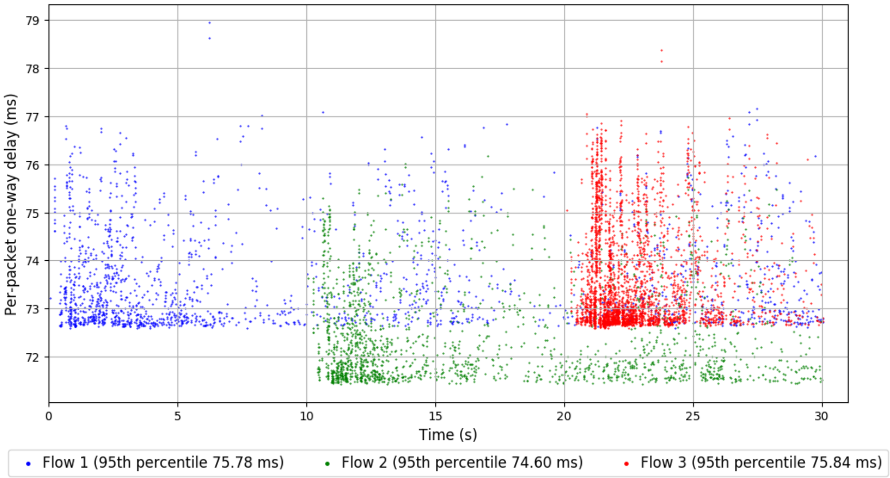




```
Run 1: Statistics of TCP Cubic

Start at: 2019-07-12 04:24:51
End at: 2019-07-12 04:25:21
Local clock offset: -6.713 ms
Remote clock offset: -8.313 ms

# Below is generated by plot.py at 2019-07-12 06:44:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.71 Mbit/s
95th percentile per-packet one-way delay: 75.652 ms
Loss rate: 2.59%
-- Flow 1:
Average throughput: 0.76 Mbit/s
95th percentile per-packet one-way delay: 75.780 ms
Loss rate: 2.67%
-- Flow 2:
Average throughput: 1.11 Mbit/s
95th percentile per-packet one-way delay: 74.601 ms
Loss rate: 2.02%
-- Flow 3:
Average throughput: 3.67 Mbit/s
95th percentile per-packet one-way delay: 75.836 ms
Loss rate: 2.87%
```

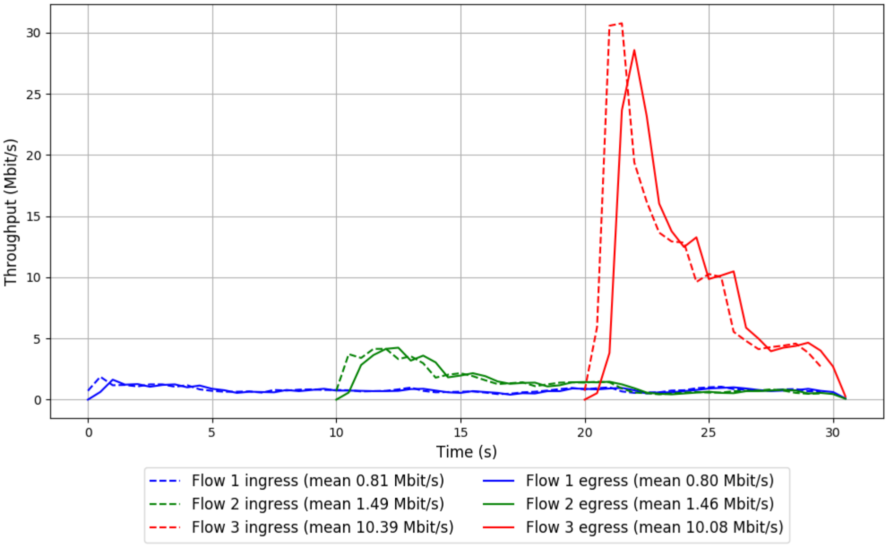
Run 1: Report of TCP Cubic — Data Link

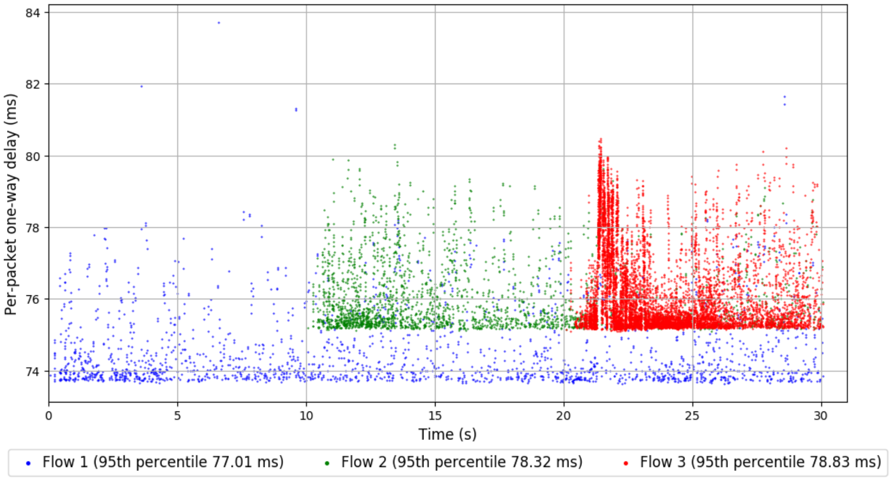




```
Run 2: Statistics of TCP Cubic

Start at: 2019-07-12 04:55:21
End at: 2019-07-12 04:55:51
Local clock offset: -6.818 ms
Remote clock offset: -5.863 ms

# Below is generated by plot.py at 2019-07-12 06:44:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.12 Mbit/s
95th percentile per-packet one-way delay: 78.603 ms
Loss rate: 2.63%
-- Flow 1:
Average throughput: 0.80 Mbit/s
95th percentile per-packet one-way delay: 77.010 ms
Loss rate: 1.92%
-- Flow 2:
Average throughput: 1.46 Mbit/s
95th percentile per-packet one-way delay: 78.324 ms
Loss rate: 1.81%
-- Flow 3:
Average throughput: 10.08 Mbit/s
95th percentile per-packet one-way delay: 78.829 ms
Loss rate: 3.03%
```

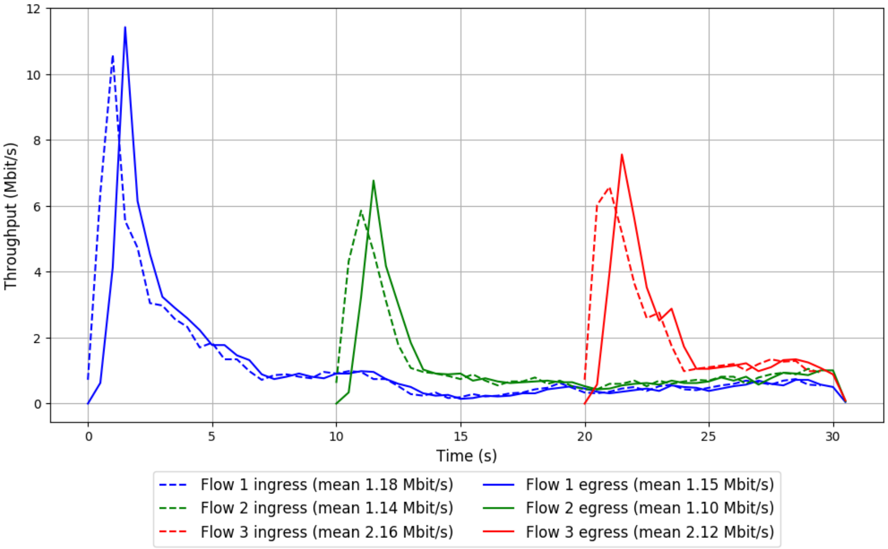
Run 2: Report of TCP Cubic — Data Link

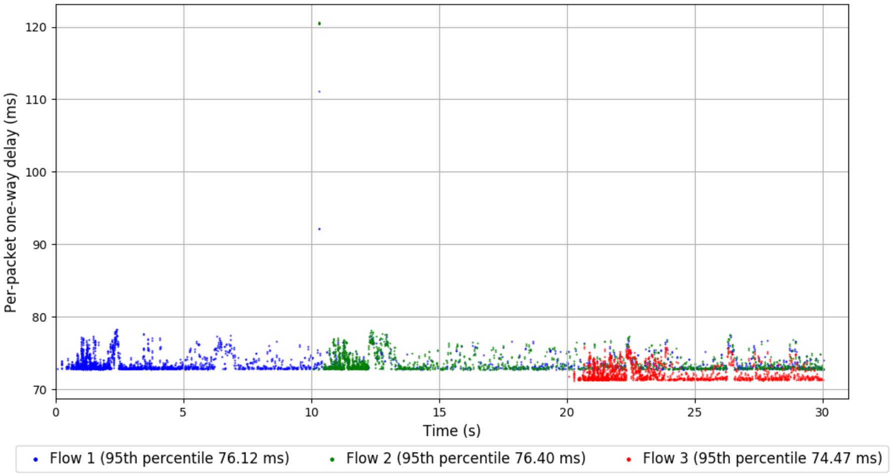




```
Run 3: Statistics of TCP Cubic

Start at: 2019-07-12 05:26:03
End at: 2019-07-12 05:26:33
Local clock offset: -9.506 ms
Remote clock offset: -7.83 ms

# Below is generated by plot.py at 2019-07-12 06:44:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.59 Mbit/s
95th percentile per-packet one-way delay: 75.955 ms
Loss rate: 2.47%
-- Flow 1:
Average throughput: 1.15 Mbit/s
95th percentile per-packet one-way delay: 76.122 ms
Loss rate: 2.53%
-- Flow 2:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 76.404 ms
Loss rate: 2.91%
-- Flow 3:
Average throughput: 2.12 Mbit/s
95th percentile per-packet one-way delay: 74.474 ms
Loss rate: 1.90%
```

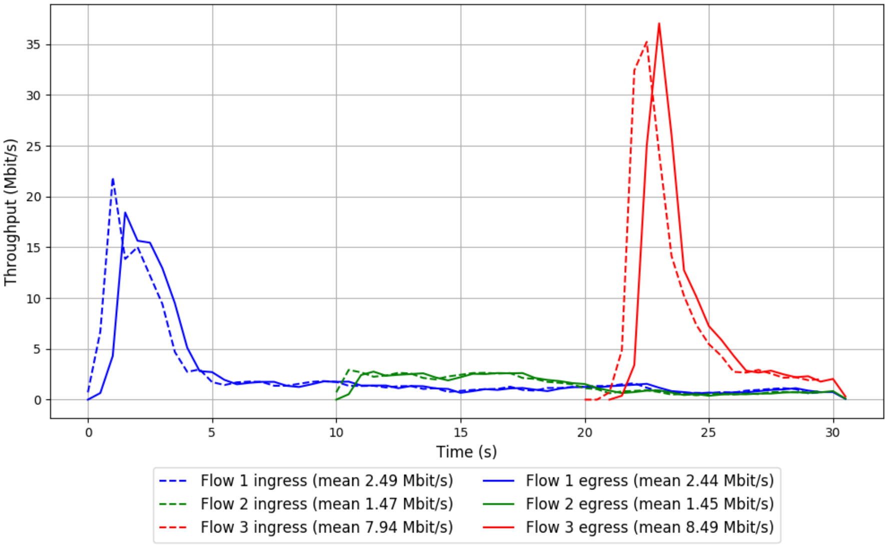
Run 3: Report of TCP Cubic — Data Link

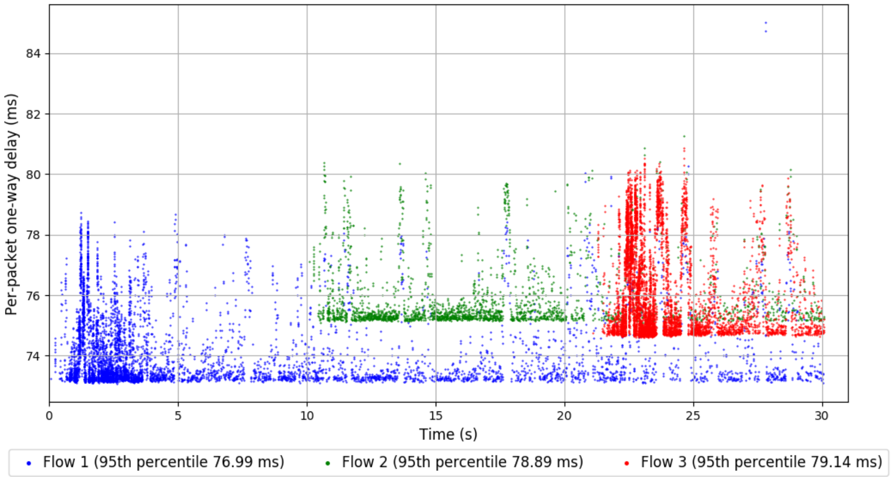




```
Run 4: Statistics of TCP Cubic

Start at: 2019-07-12 05:56:43
End at: 2019-07-12 05:57:13
Local clock offset: -7.188 ms
Remote clock offset: -4.578 ms

# Below is generated by plot.py at 2019-07-12 06:44:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.93 Mbit/s
95th percentile per-packet one-way delay: 78.734 ms
Loss rate: 2.89%
-- Flow 1:
Average throughput: 2.44 Mbit/s
95th percentile per-packet one-way delay: 76.991 ms
Loss rate: 2.06%
-- Flow 2:
Average throughput: 1.45 Mbit/s
95th percentile per-packet one-way delay: 78.895 ms
Loss rate: 1.76%
-- Flow 3:
Average throughput: 8.49 Mbit/s
95th percentile per-packet one-way delay: 79.142 ms
Loss rate: 4.10%
```

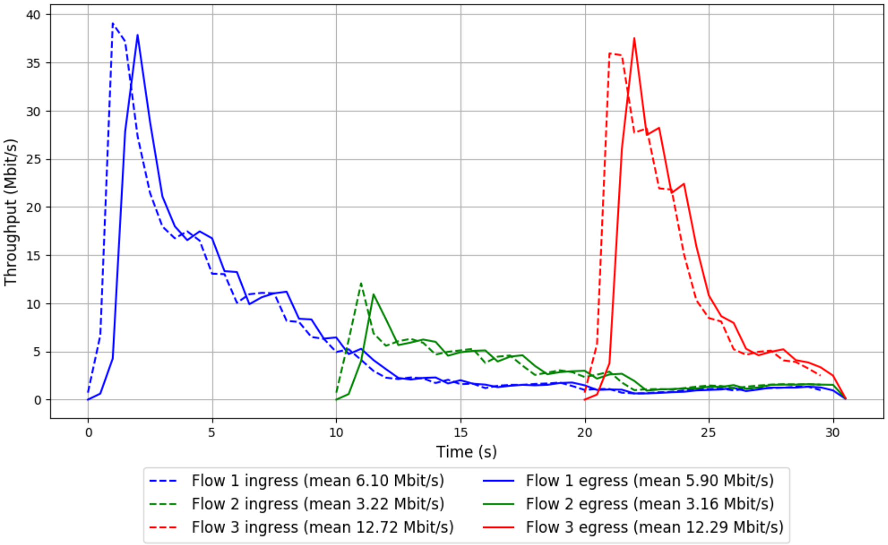
Run 4: Report of TCP Cubic — Data Link

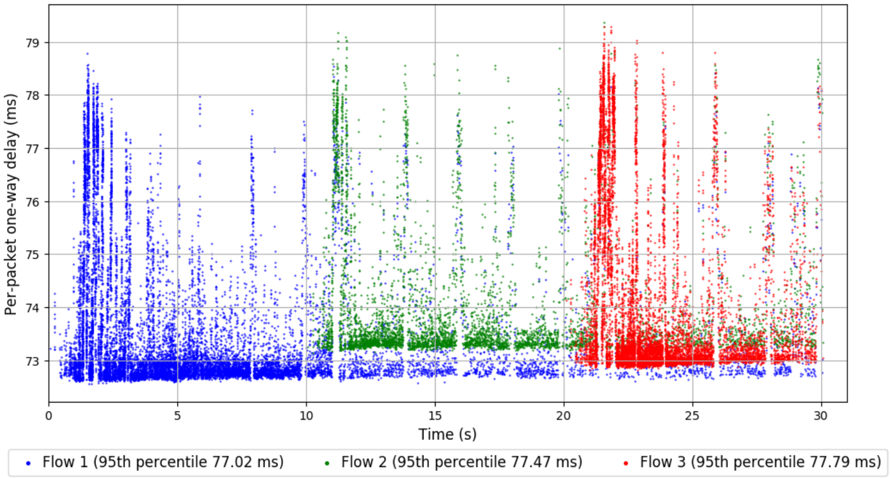




```
Run 5: Statistics of TCP Cubic

Start at: 2019-07-12 06:26:56
End at: 2019-07-12 06:27:26
Local clock offset: -6.416 ms
Remote clock offset: -9.632 ms

# Below is generated by plot.py at 2019-07-12 06:44:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.09 Mbit/s
95th percentile per-packet one-way delay: 77.379 ms
Loss rate: 3.03%
-- Flow 1:
Average throughput: 5.90 Mbit/s
95th percentile per-packet one-way delay: 77.023 ms
Loss rate: 3.20%
-- Flow 2:
Average throughput: 3.16 Mbit/s
95th percentile per-packet one-way delay: 77.469 ms
Loss rate: 1.85%
-- Flow 3:
Average throughput: 12.29 Mbit/s
95th percentile per-packet one-way delay: 77.793 ms
Loss rate: 3.39%
```

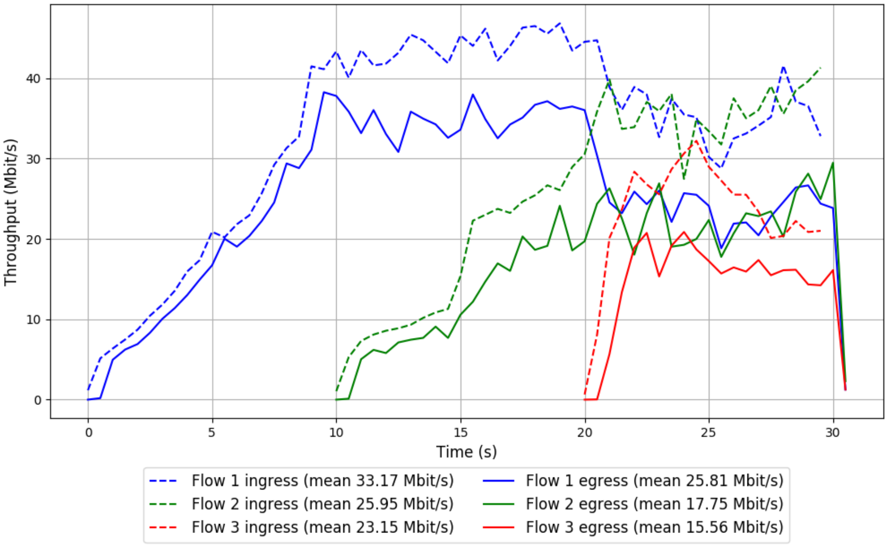
Run 5: Report of TCP Cubic — Data Link

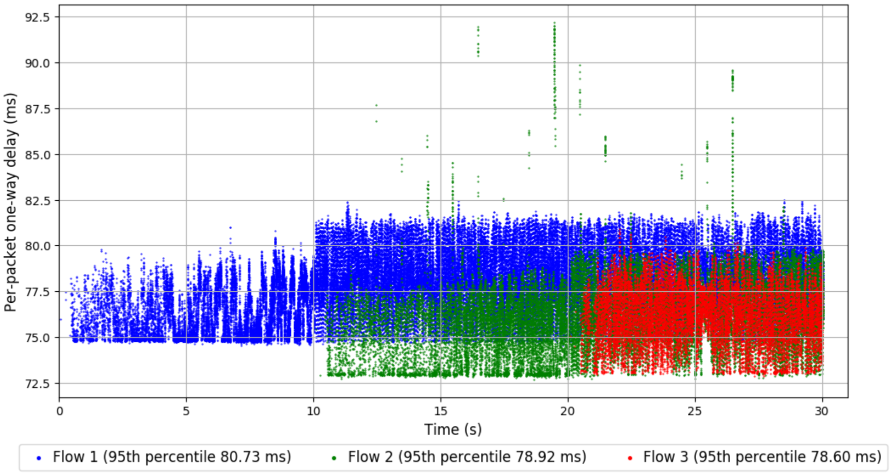




```
Run 1: Statistics of FillP

Start at: 2019-07-12 04:14:49
End at: 2019-07-12 04:15:19
Local clock offset: -5.965 ms
Remote clock offset: -5.387 ms

# Below is generated by plot.py at 2019-07-12 06:45:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 42.78 Mbit/s
95th percentile per-packet one-way delay: 80.443 ms
Loss rate: 26.39%
-- Flow 1:
Average throughput: 25.81 Mbit/s
95th percentile per-packet one-way delay: 80.728 ms
Loss rate: 22.21%
-- Flow 2:
Average throughput: 17.75 Mbit/s
95th percentile per-packet one-way delay: 78.923 ms
Loss rate: 31.60%
-- Flow 3:
Average throughput: 15.56 Mbit/s
95th percentile per-packet one-way delay: 78.599 ms
Loss rate: 32.78%
```

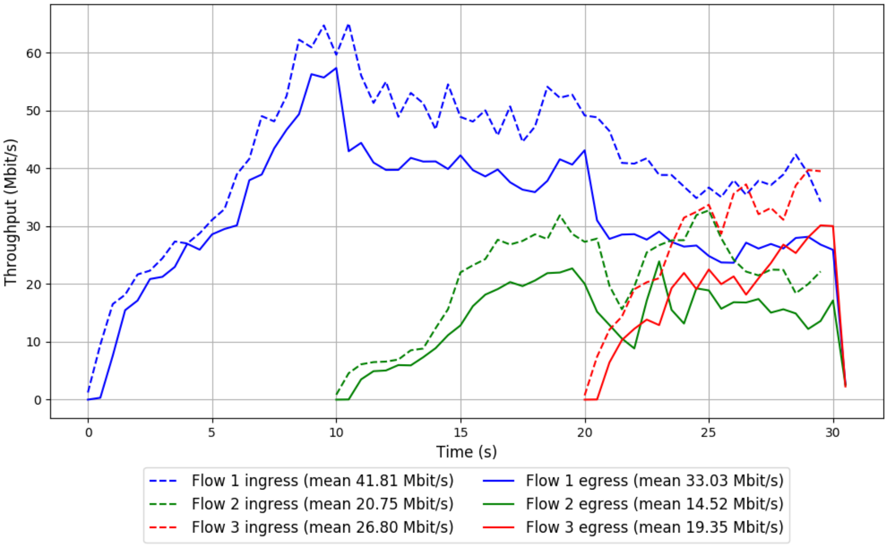
Run 1: Report of FillP — Data Link

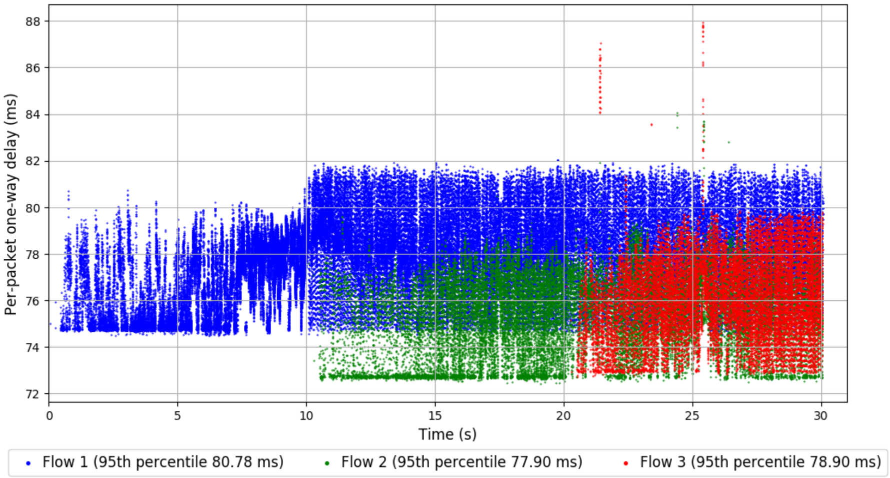




```
Run 2: Statistics of FillP

Start at: 2019-07-12 04:45:09
End at: 2019-07-12 04:45:39
Local clock offset: -6.143 ms
Remote clock offset: -6.252 ms

# Below is generated by plot.py at 2019-07-12 06:45:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 49.12 Mbit/s
95th percentile per-packet one-way delay: 80.525 ms
Loss rate: 23.87%
-- Flow 1:
Average throughput: 33.03 Mbit/s
95th percentile per-packet one-way delay: 80.782 ms
Loss rate: 20.99%
-- Flow 2:
Average throughput: 14.52 Mbit/s
95th percentile per-packet one-way delay: 77.897 ms
Loss rate: 30.05%
-- Flow 3:
Average throughput: 19.35 Mbit/s
95th percentile per-packet one-way delay: 78.899 ms
Loss rate: 27.80%
```

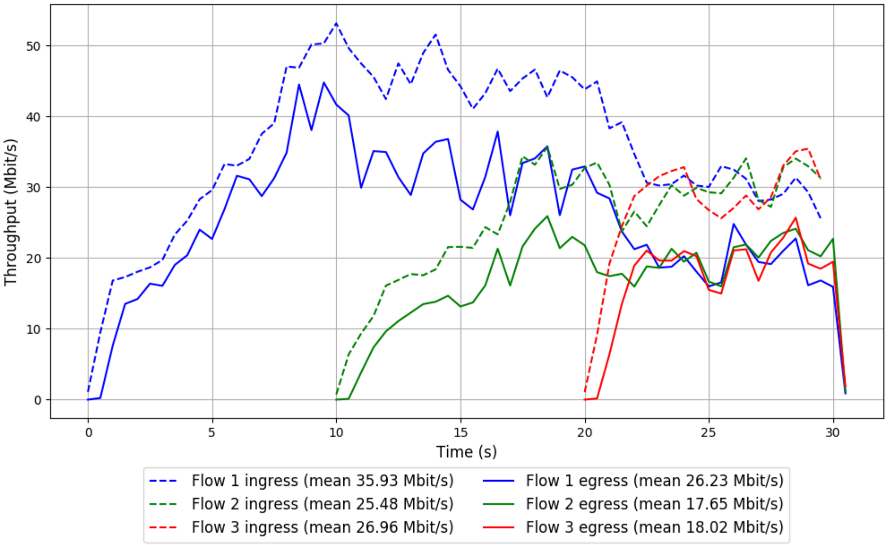
Run 2: Report of FillP — Data Link

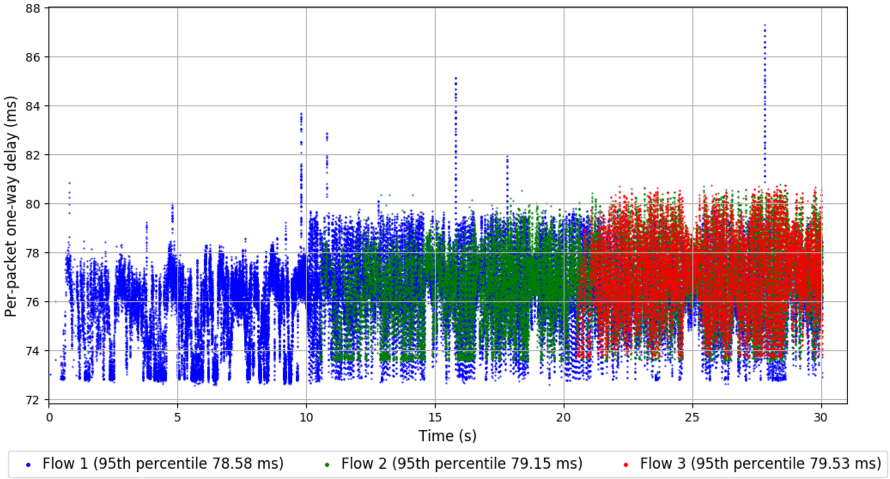




```
Run 3: Statistics of FillP

Start at: 2019-07-12 05:16:01
End at: 2019-07-12 05:16:31
Local clock offset: -8.78 ms
Remote clock offset: -7.121 ms

# Below is generated by plot.py at 2019-07-12 06:45:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 43.96 Mbit/s
95th percentile per-packet one-way delay: 78.935 ms
Loss rate: 28.90%
-- Flow 1:
Average throughput: 26.23 Mbit/s
95th percentile per-packet one-way delay: 78.575 ms
Loss rate: 26.99%
-- Flow 2:
Average throughput: 17.65 Mbit/s
95th percentile per-packet one-way delay: 79.147 ms
Loss rate: 30.72%
-- Flow 3:
Average throughput: 18.02 Mbit/s
95th percentile per-packet one-way delay: 79.535 ms
Loss rate: 33.15%
```

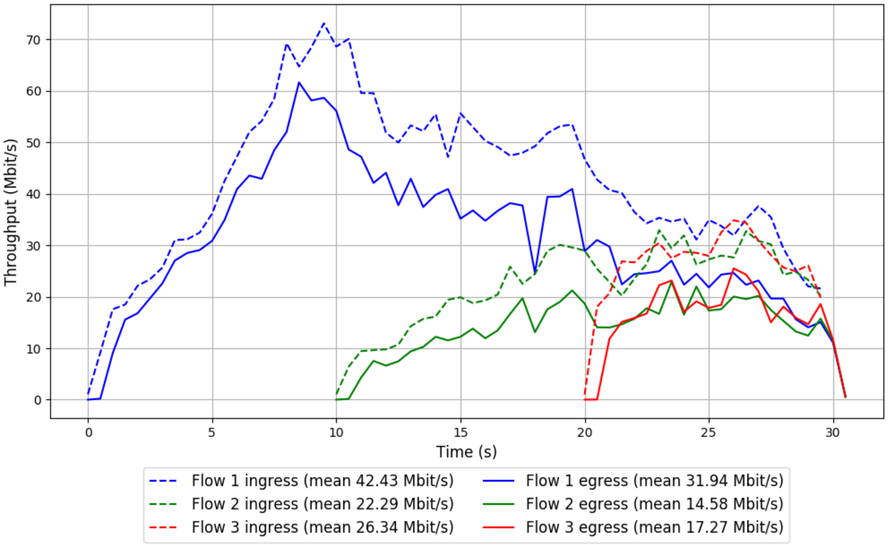
Run 3: Report of FillP — Data Link

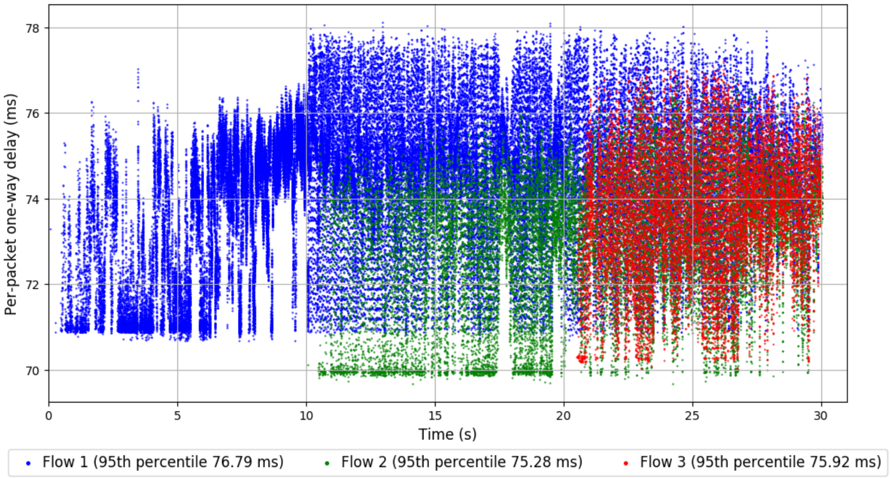




```
Run 4: Statistics of FillP

Start at: 2019-07-12 05:46:42
End at: 2019-07-12 05:47:12
Local clock offset: -8.064 ms
Remote clock offset: -10.212 ms

# Below is generated by plot.py at 2019-07-12 06:45:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 47.36 Mbit/s
95th percentile per-packet one-way delay: 76.536 ms
Loss rate: 28.22%
-- Flow 1:
Average throughput: 31.94 Mbit/s
95th percentile per-packet one-way delay: 76.794 ms
Loss rate: 24.72%
-- Flow 2:
Average throughput: 14.58 Mbit/s
95th percentile per-packet one-way delay: 75.285 ms
Loss rate: 34.57%
-- Flow 3:
Average throughput: 17.27 Mbit/s
95th percentile per-packet one-way delay: 75.921 ms
Loss rate: 34.42%
```

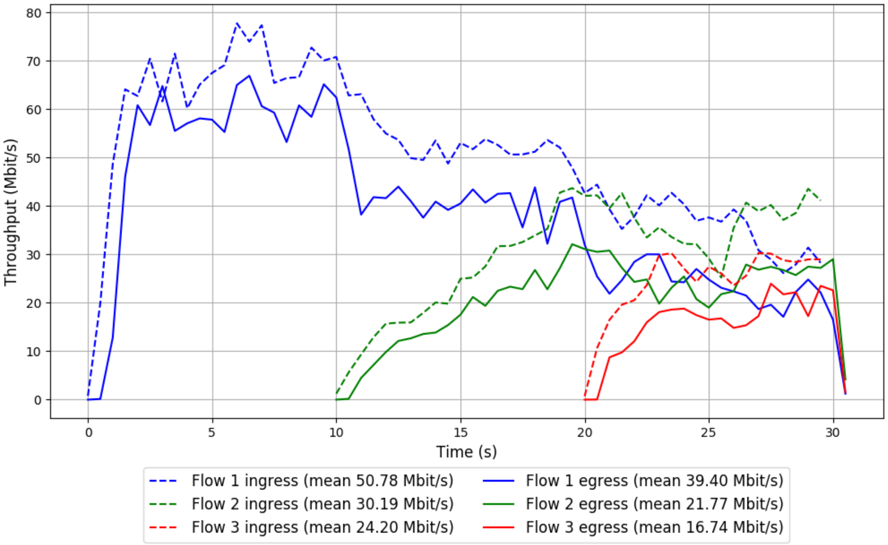
Run 4: Report of FillP — Data Link

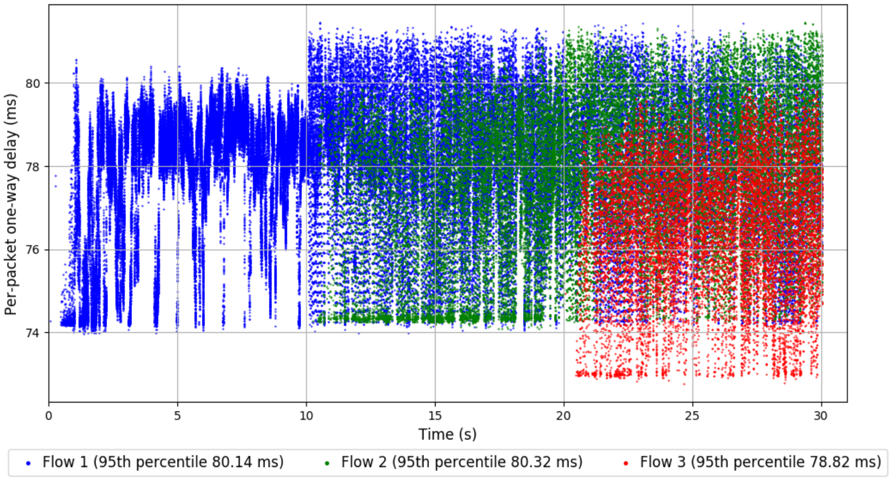




```
Run 5: Statistics of FillP

Start at: 2019-07-12 06:16:56
End at: 2019-07-12 06:17:26
Local clock offset: -7.501 ms
Remote clock offset: -9.51 ms

# Below is generated by plot.py at 2019-07-12 06:45:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 59.43 Mbit/s
95th percentile per-packet one-way delay: 80.140 ms
Loss rate: 24.66%
-- Flow 1:
Average throughput: 39.40 Mbit/s
95th percentile per-packet one-way delay: 80.136 ms
Loss rate: 22.39%
-- Flow 2:
Average throughput: 21.77 Mbit/s
95th percentile per-packet one-way delay: 80.321 ms
Loss rate: 27.91%
-- Flow 3:
Average throughput: 16.74 Mbit/s
95th percentile per-packet one-way delay: 78.818 ms
Loss rate: 30.84%
```

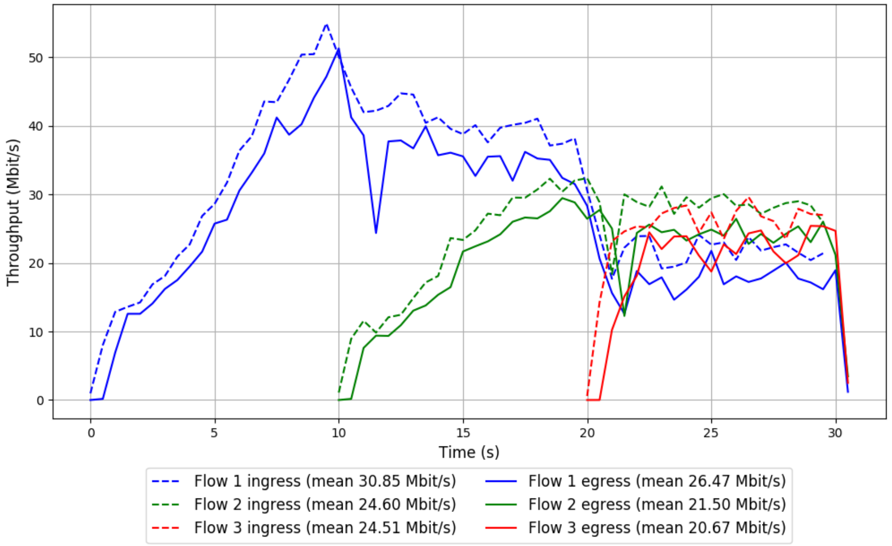
Run 5: Report of FillP — Data Link

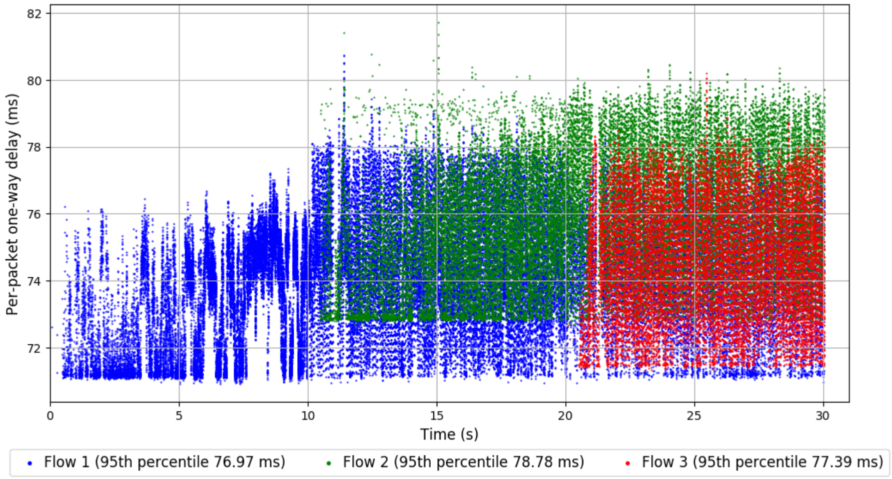




```
Run 1: Statistics of FillP-Sheep

Start at: 2019-07-12 04:31:09
End at: 2019-07-12 04:31:39
Local clock offset: -5.949 ms
Remote clock offset: -7.547 ms

# Below is generated by plot.py at 2019-07-12 06:45:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 47.63 Mbit/s
95th percentile per-packet one-way delay: 77.867 ms
Loss rate: 13.92%
-- Flow 1:
Average throughput: 26.47 Mbit/s
95th percentile per-packet one-way delay: 76.965 ms
Loss rate: 14.18%
-- Flow 2:
Average throughput: 21.50 Mbit/s
95th percentile per-packet one-way delay: 78.780 ms
Loss rate: 12.57%
-- Flow 3:
Average throughput: 20.67 Mbit/s
95th percentile per-packet one-way delay: 77.386 ms
Loss rate: 15.65%
```

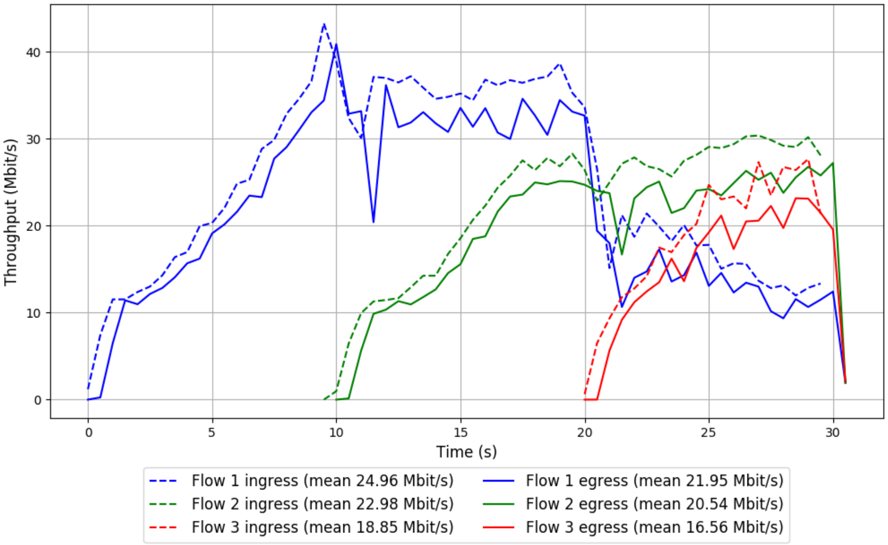
Run 1: Report of FillP-Sheep — Data Link

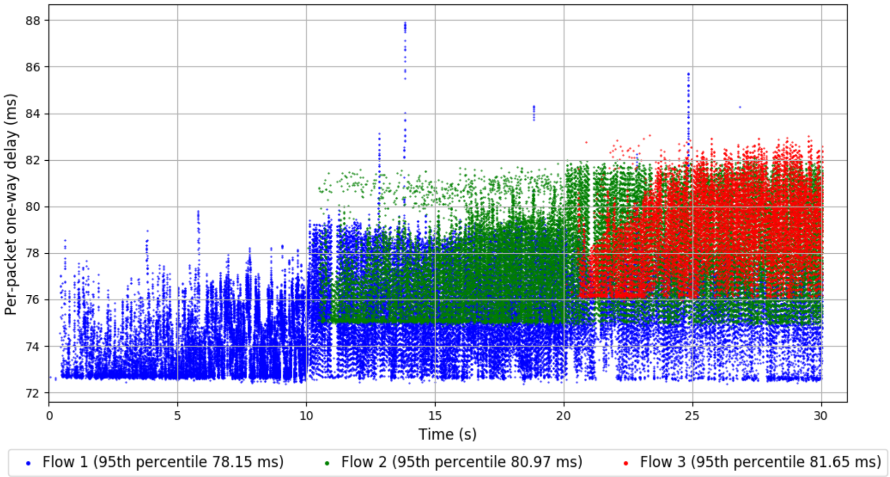




```
Run 2: Statistics of FillP-Sheep

Start at: 2019-07-12 05:01:44
End at: 2019-07-12 05:02:14
Local clock offset: -6.589 ms
Remote clock offset: -5.563 ms

# Below is generated by plot.py at 2019-07-12 06:45:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 41.12 Mbit/s
95th percentile per-packet one-way delay: 80.664 ms
Loss rate: 11.61%
-- Flow 1:
Average throughput: 21.95 Mbit/s
95th percentile per-packet one-way delay: 78.146 ms
Loss rate: 12.08%
-- Flow 2:
Average throughput: 20.54 Mbit/s
95th percentile per-packet one-way delay: 80.965 ms
Loss rate: 10.63%
-- Flow 3:
Average throughput: 16.56 Mbit/s
95th percentile per-packet one-way delay: 81.646 ms
Loss rate: 12.10%
```

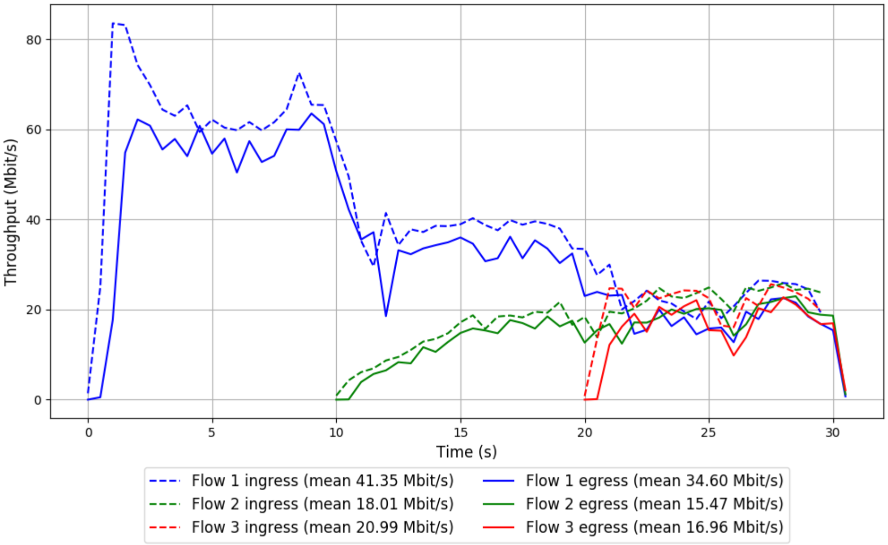
Run 2: Report of FillP-Sheep — Data Link

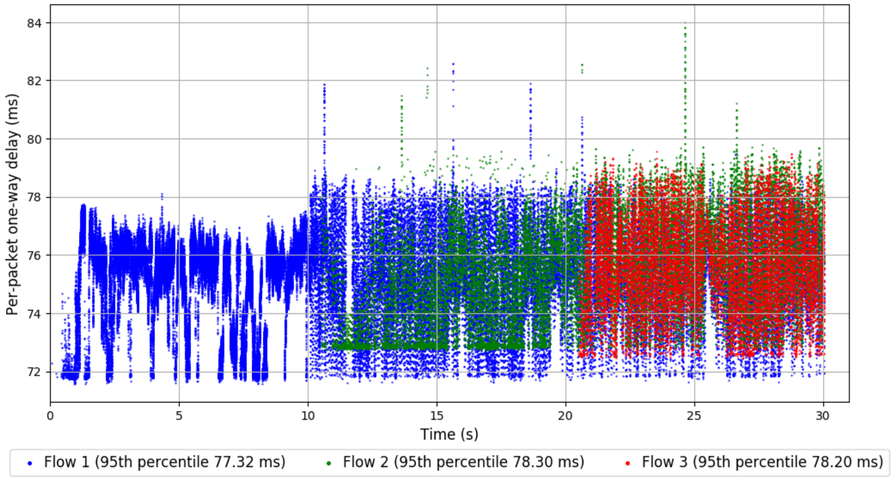




```
Run 3: Statistics of FillP-Sheep

Start at: 2019-07-12 05:32:26
End at: 2019-07-12 05:32:56
Local clock offset: -8.819 ms
Remote clock offset: -6.718 ms

# Below is generated by plot.py at 2019-07-12 06:45:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 50.50 Mbit/s
95th percentile per-packet one-way delay: 77.731 ms
Loss rate: 16.22%
-- Flow 1:
Average throughput: 34.60 Mbit/s
95th percentile per-packet one-way delay: 77.322 ms
Loss rate: 16.33%
-- Flow 2:
Average throughput: 15.47 Mbit/s
95th percentile per-packet one-way delay: 78.301 ms
Loss rate: 14.12%
-- Flow 3:
Average throughput: 16.96 Mbit/s
95th percentile per-packet one-way delay: 78.200 ms
Loss rate: 19.23%
```

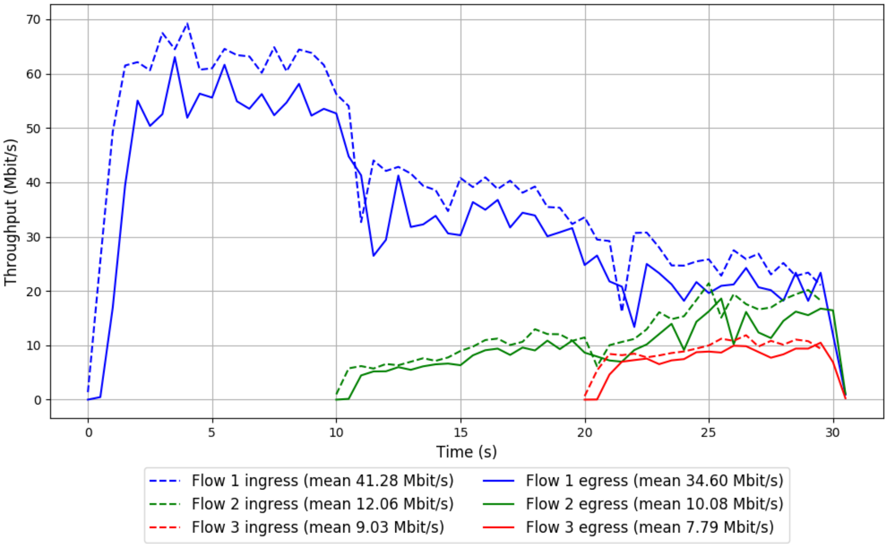
Run 3: Report of FillP-Sheep — Data Link

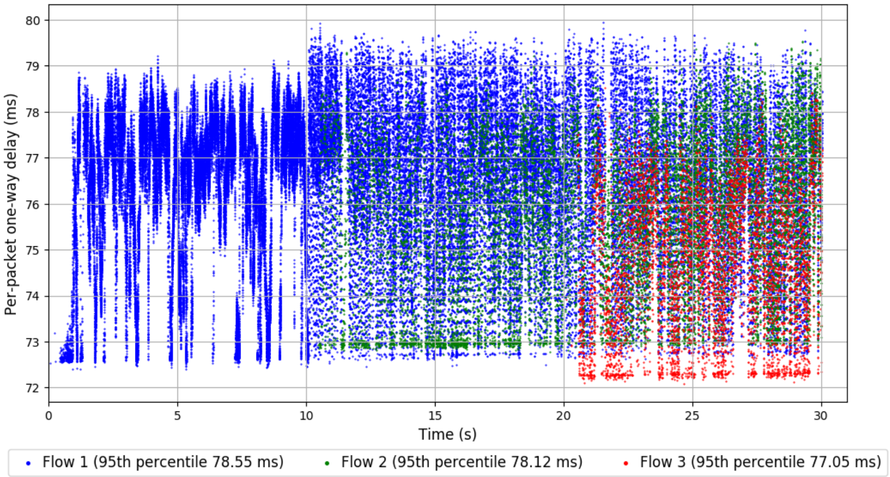




```
Run 4: Statistics of FillP-Sheep

Start at: 2019-07-12 06:03:01
End at: 2019-07-12 06:03:31
Local clock offset: -6.734 ms
Remote clock offset: -8.069 ms

# Below is generated by plot.py at 2019-07-12 06:45:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 43.88 Mbit/s
95th percentile per-packet one-way delay: 78.461 ms
Loss rate: 16.07%
-- Flow 1:
Average throughput: 34.60 Mbit/s
95th percentile per-packet one-way delay: 78.549 ms
Loss rate: 16.16%
-- Flow 2:
Average throughput: 10.08 Mbit/s
95th percentile per-packet one-way delay: 78.121 ms
Loss rate: 16.47%
-- Flow 3:
Average throughput: 7.79 Mbit/s
95th percentile per-packet one-way delay: 77.047 ms
Loss rate: 13.73%
```

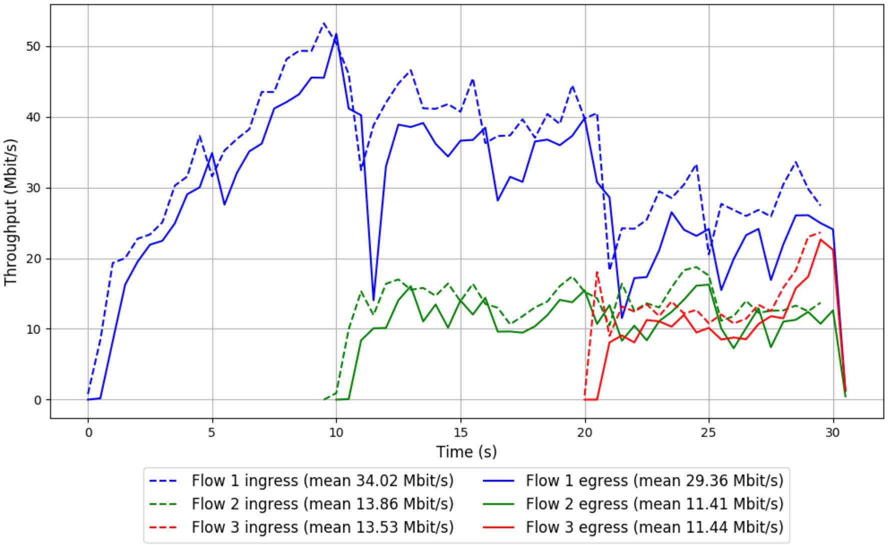
Run 4: Report of FillP-Sheep — Data Link

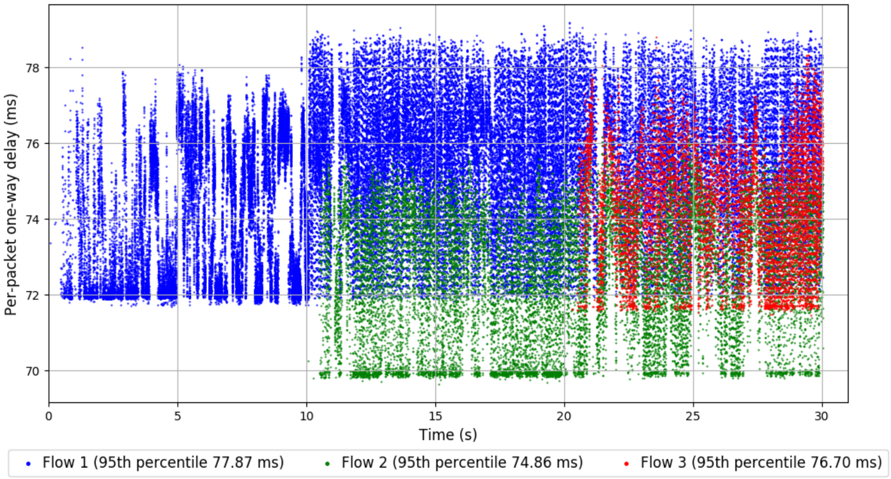




```
Run 5: Statistics of FillP-Sheep

Start at: 2019-07-12 06:33:14
End at: 2019-07-12 06:33:44
Local clock offset: -6.9 ms
Remote clock offset: -13.252 ms

# Below is generated by plot.py at 2019-07-12 06:45:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 40.76 Mbit/s
95th percentile per-packet one-way delay: 77.672 ms
Loss rate: 14.62%
-- Flow 1:
Average throughput: 29.36 Mbit/s
95th percentile per-packet one-way delay: 77.871 ms
Loss rate: 13.69%
-- Flow 2:
Average throughput: 11.41 Mbit/s
95th percentile per-packet one-way delay: 74.865 ms
Loss rate: 17.67%
-- Flow 3:
Average throughput: 11.44 Mbit/s
95th percentile per-packet one-way delay: 76.703 ms
Loss rate: 15.41%
```

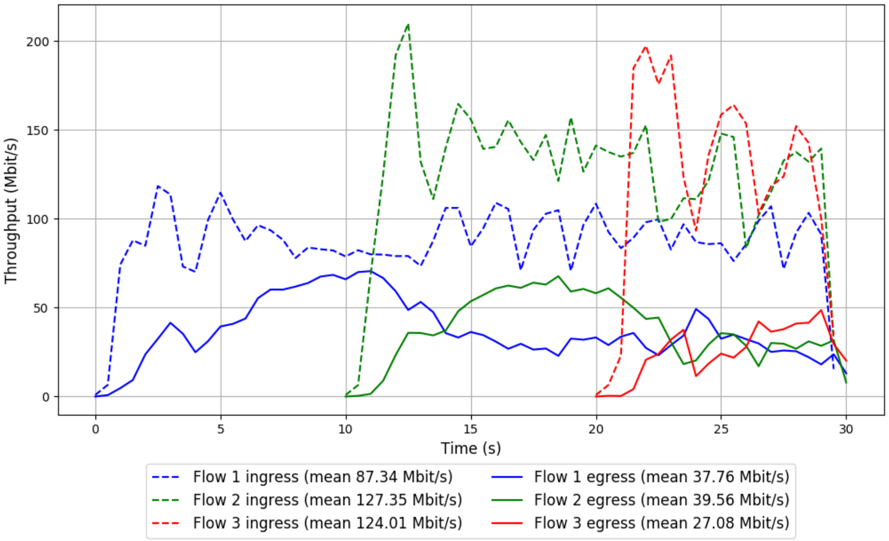
Run 5: Report of FillP-Sheep — Data Link

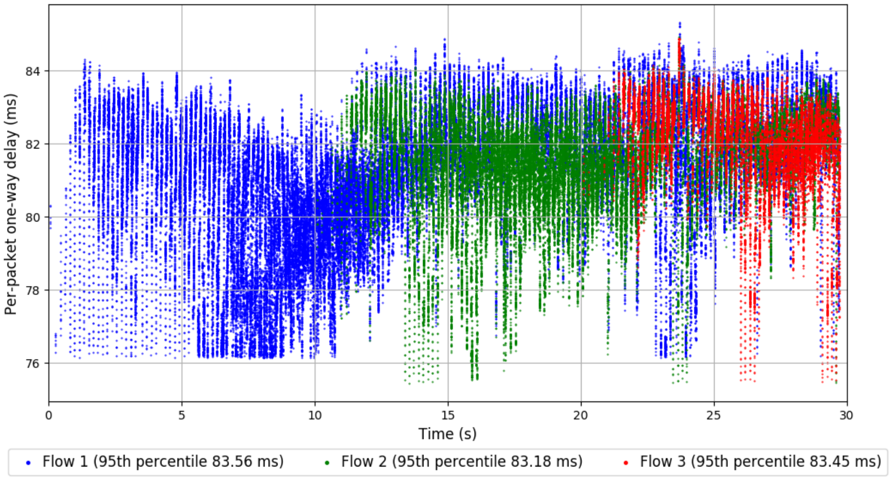




```
Run 1: Statistics of Indigo

Start at: 2019-07-12 04:33:39
End at: 2019-07-12 04:34:09
Local clock offset: -6.908 ms
Remote clock offset: -5.954 ms

# Below is generated by plot.py at 2019-07-12 06:46:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 72.65 Mbit/s
95th percentile per-packet one-way delay: 83.419 ms
Loss rate: 65.67%
-- Flow 1:
Average throughput: 37.76 Mbit/s
95th percentile per-packet one-way delay: 83.559 ms
Loss rate: 56.76%
-- Flow 2:
Average throughput: 39.56 Mbit/s
95th percentile per-packet one-way delay: 83.179 ms
Loss rate: 68.93%
-- Flow 3:
Average throughput: 27.08 Mbit/s
95th percentile per-packet one-way delay: 83.453 ms
Loss rate: 78.16%
```

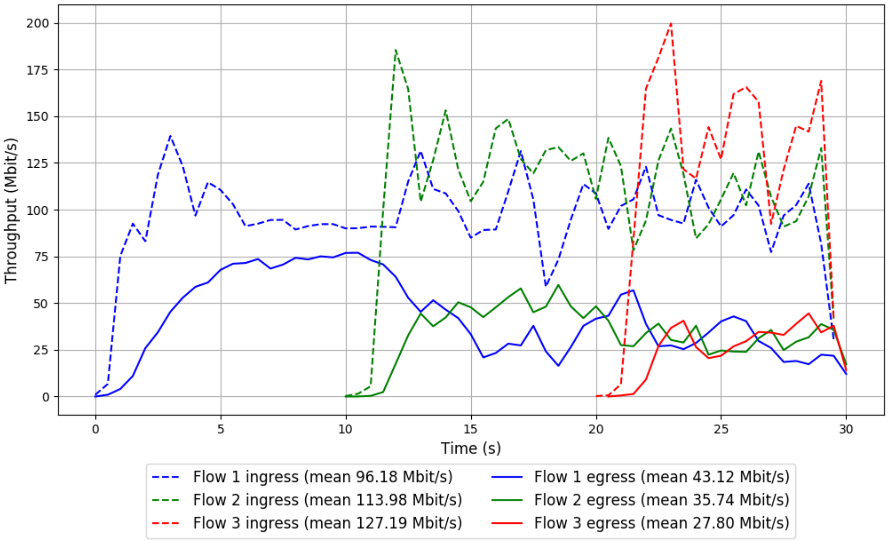
Run 1: Report of Indigo — Data Link

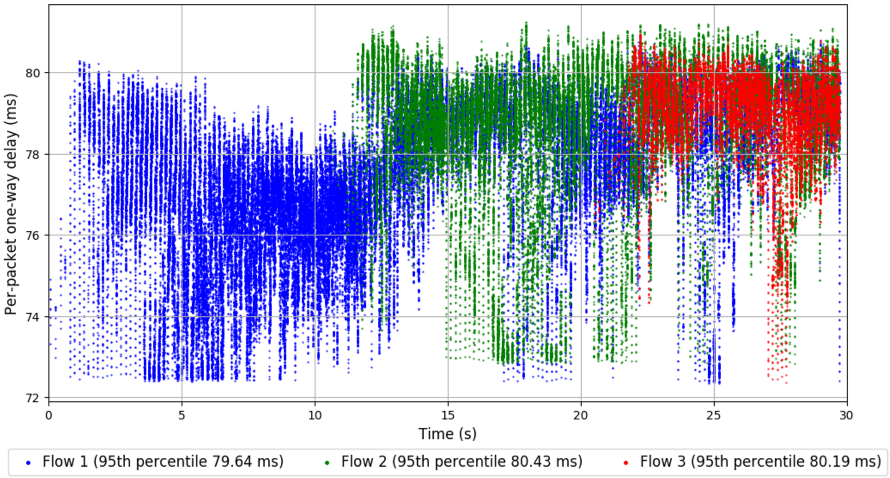




```
Run 2: Statistics of Indigo

Start at: 2019-07-12 05:04:24
End at: 2019-07-12 05:04:54
Local clock offset: -6.988 ms
Remote clock offset: -7.436 ms

# Below is generated by plot.py at 2019-07-12 06:46:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 74.90 Mbit/s
95th percentile per-packet one-way delay: 80.107 ms
Loss rate: 64.24%
-- Flow 1:
Average throughput: 43.12 Mbit/s
95th percentile per-packet one-way delay: 79.642 ms
Loss rate: 55.16%
-- Flow 2:
Average throughput: 35.74 Mbit/s
95th percentile per-packet one-way delay: 80.431 ms
Loss rate: 68.65%
-- Flow 3:
Average throughput: 27.80 Mbit/s
95th percentile per-packet one-way delay: 80.191 ms
Loss rate: 78.14%
```

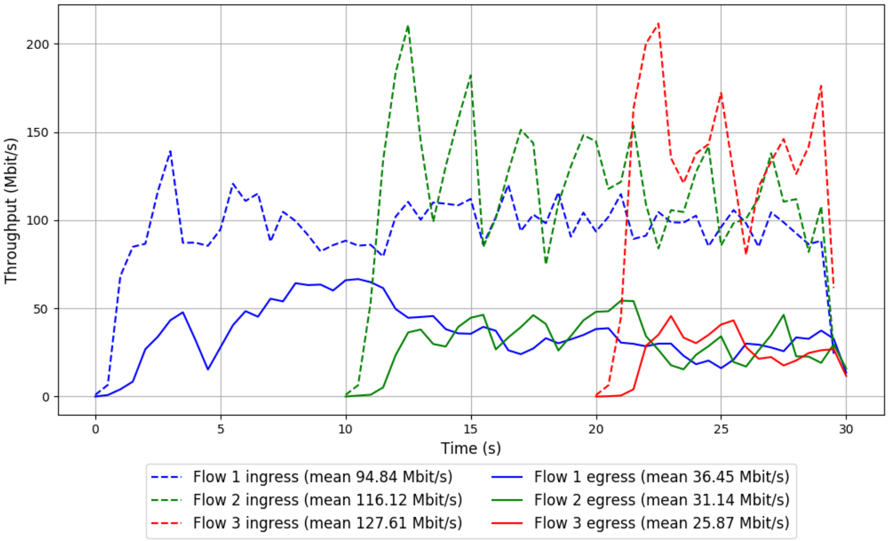
Run 2: Report of Indigo — Data Link

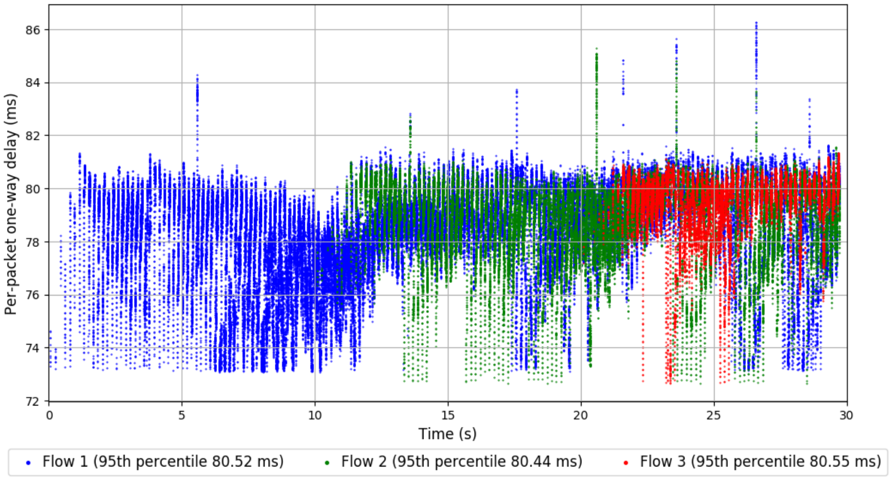




```
Run 3: Statistics of Indigo

Start at: 2019-07-12 05:34:58
End at: 2019-07-12 05:35:28
Local clock offset: -7.698 ms
Remote clock offset: -5.207 ms

# Below is generated by plot.py at 2019-07-12 06:46:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 65.42 Mbit/s
95th percentile per-packet one-way delay: 80.503 ms
Loss rate: 69.27%
-- Flow 1:
Average throughput: 36.45 Mbit/s
95th percentile per-packet one-way delay: 80.518 ms
Loss rate: 61.55%
-- Flow 2:
Average throughput: 31.14 Mbit/s
95th percentile per-packet one-way delay: 80.439 ms
Loss rate: 73.18%
-- Flow 3:
Average throughput: 25.87 Mbit/s
95th percentile per-packet one-way delay: 80.550 ms
Loss rate: 79.72%
```

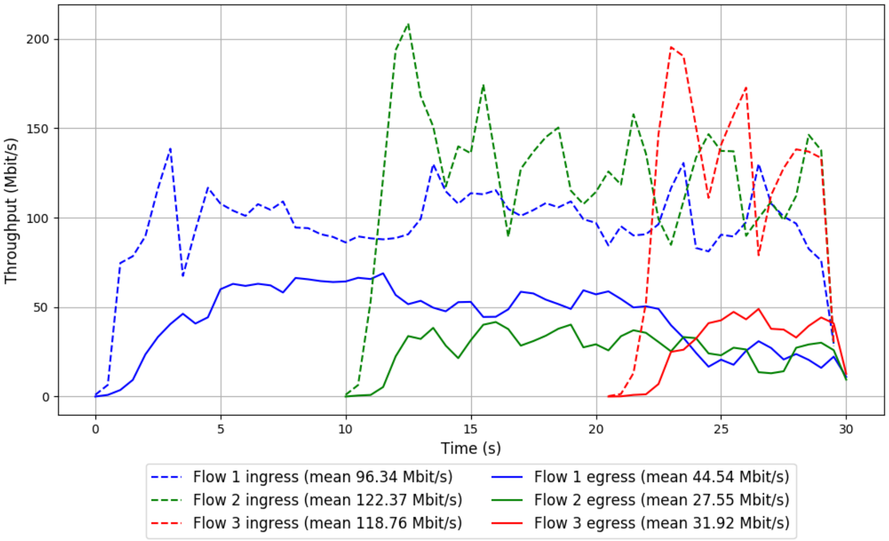
Run 3: Report of Indigo — Data Link

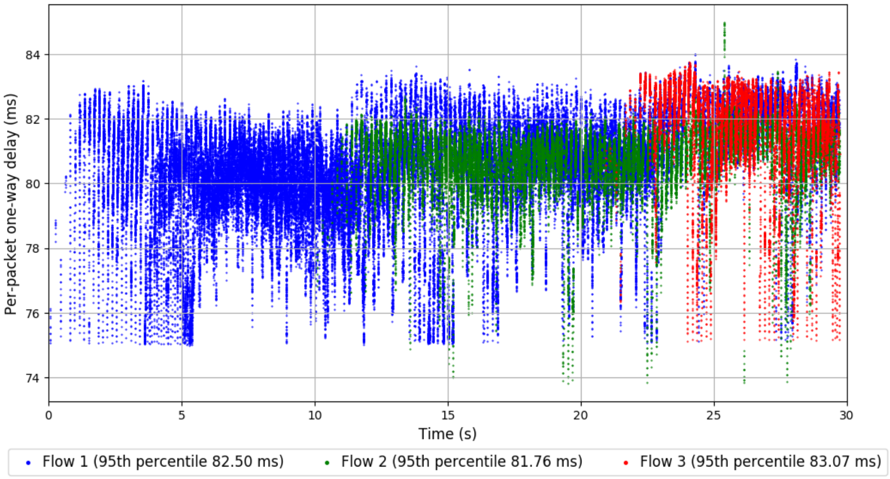




```
Run 4: Statistics of Indigo

Start at: 2019-07-12 06:05:31
End at: 2019-07-12 06:06:01
Local clock offset: -7.435 ms
Remote clock offset: -6.665 ms

# Below is generated by plot.py at 2019-07-12 06:46:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 72.18 Mbit/s
95th percentile per-packet one-way delay: 82.636 ms
Loss rate: 66.01%
-- Flow 1:
Average throughput: 44.54 Mbit/s
95th percentile per-packet one-way delay: 82.504 ms
Loss rate: 53.76%
-- Flow 2:
Average throughput: 27.55 Mbit/s
95th percentile per-packet one-way delay: 81.762 ms
Loss rate: 77.49%
-- Flow 3:
Average throughput: 31.92 Mbit/s
95th percentile per-packet one-way delay: 83.070 ms
Loss rate: 73.13%
```

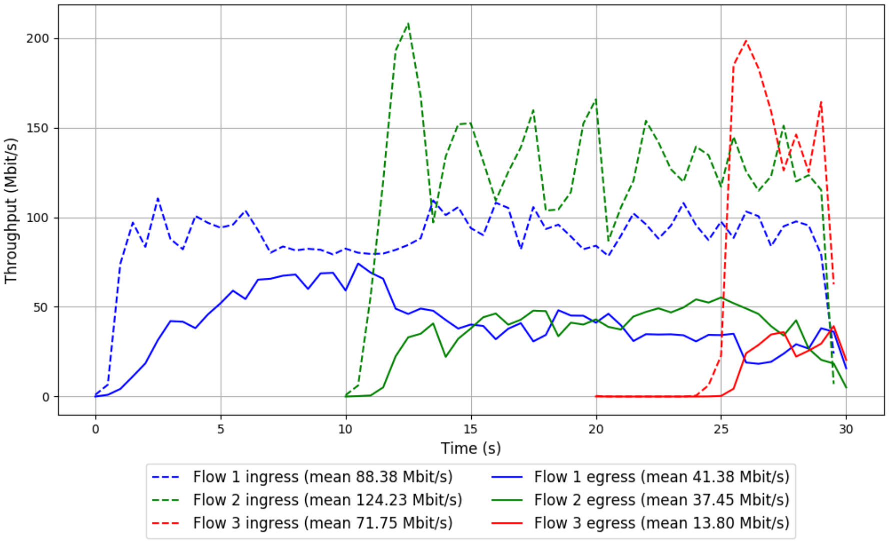
Run 4: Report of Indigo — Data Link

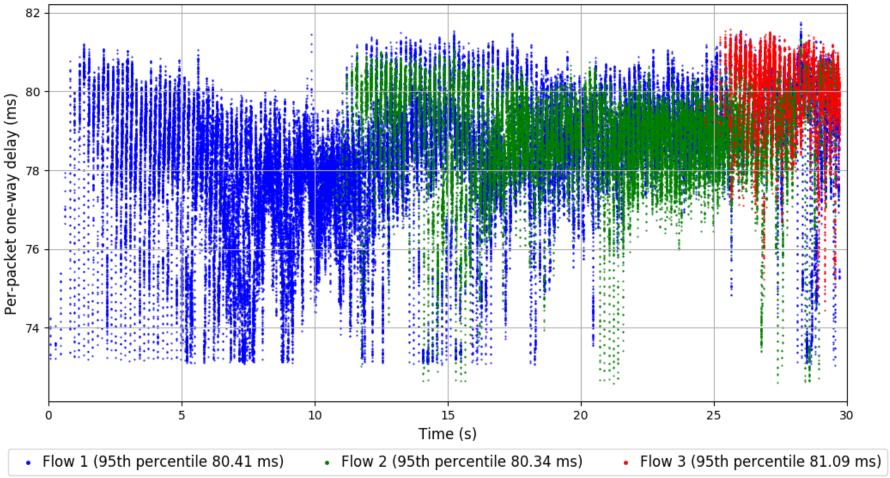




```
Run 5: Statistics of Indigo

Start at: 2019-07-12 06:35:43
End at: 2019-07-12 06:36:13
Local clock offset: -5.872 ms
Remote clock offset: -9.433 ms

# Below is generated by plot.py at 2019-07-12 06:46:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 70.55 Mbit/s
95th percentile per-packet one-way delay: 80.531 ms
Loss rate: 63.55%
-- Flow 1:
Average throughput: 41.38 Mbit/s
95th percentile per-packet one-way delay: 80.414 ms
Loss rate: 53.18%
-- Flow 2:
Average throughput: 37.45 Mbit/s
95th percentile per-packet one-way delay: 80.343 ms
Loss rate: 69.85%
-- Flow 3:
Average throughput: 13.80 Mbit/s
95th percentile per-packet one-way delay: 81.091 ms
Loss rate: 80.77%
```

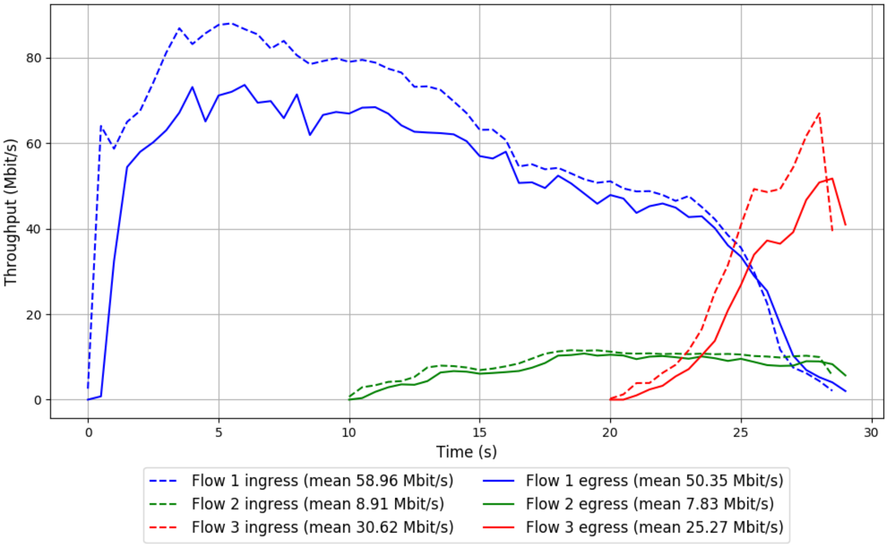
Run 5: Report of Indigo — Data Link

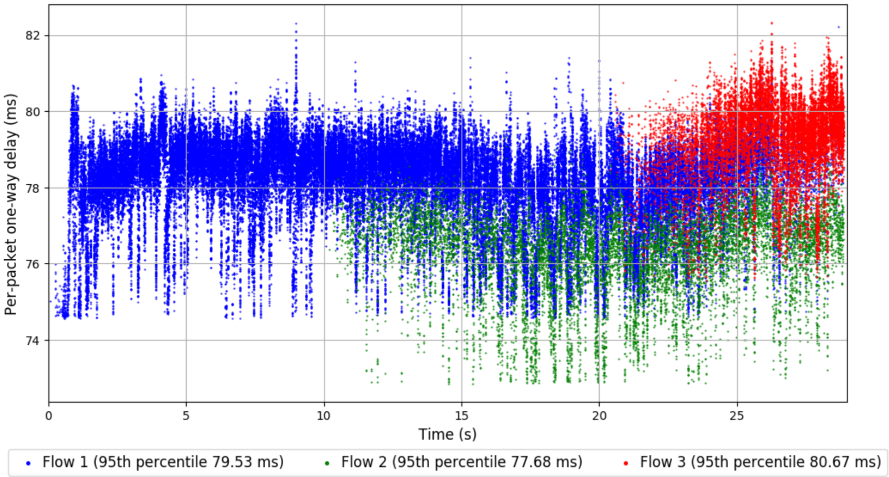




```
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-07-12 04:27:18
End at: 2019-07-12 04:27:48
Local clock offset: -6.98 ms
Remote clock offset: -6.667 ms

# Below is generated by plot.py at 2019-07-12 06:46:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 62.86 Mbit/s
95th percentile per-packet one-way delay: 79.858 ms
Loss rate: 14.75%
-- Flow 1:
Average throughput: 50.35 Mbit/s
95th percentile per-packet one-way delay: 79.526 ms
Loss rate: 14.60%
-- Flow 2:
Average throughput: 7.83 Mbit/s
95th percentile per-packet one-way delay: 77.678 ms
Loss rate: 12.10%
-- Flow 3:
Average throughput: 25.27 Mbit/s
95th percentile per-packet one-way delay: 80.666 ms
Loss rate: 17.47%
```

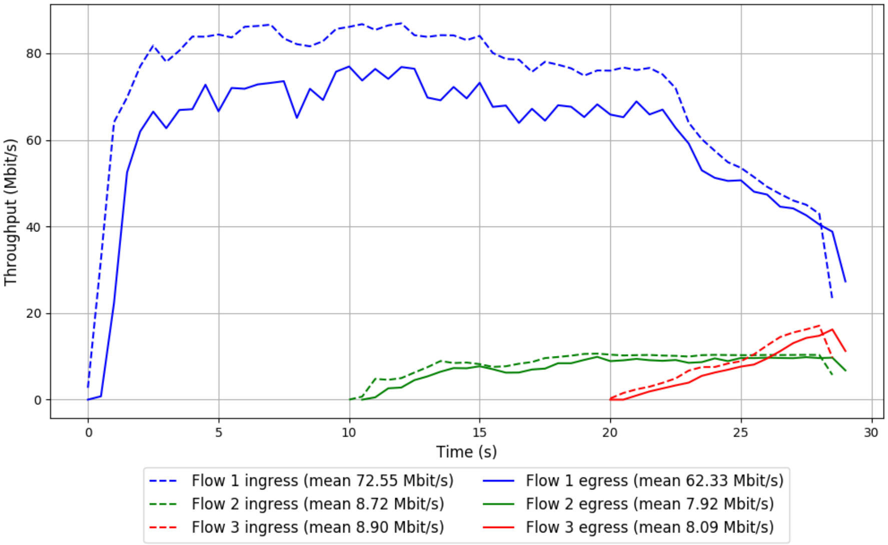
Run 1: Report of Indigo-MusesC3 — Data Link

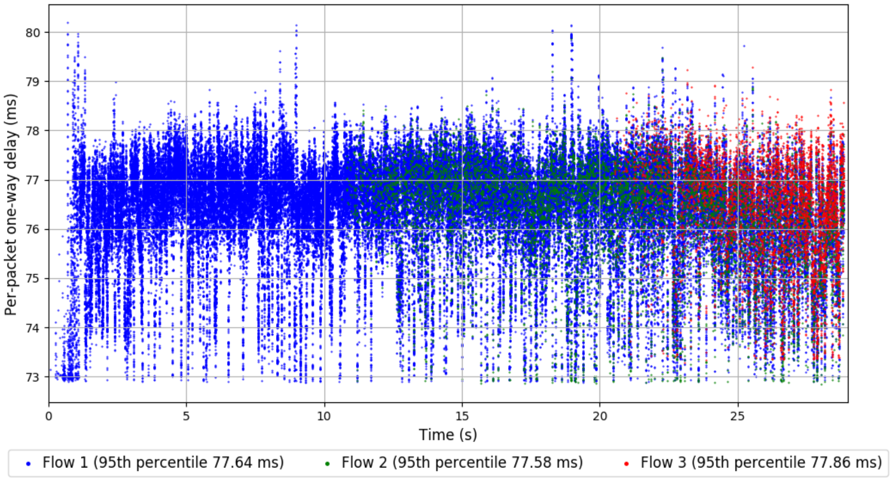




```
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-07-12 04:57:53
End at: 2019-07-12 04:58:23
Local clock offset: -6.337 ms
Remote clock offset: -7.526 ms

# Below is generated by plot.py at 2019-07-12 06:46:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 69.73 Mbit/s
95th percentile per-packet one-way delay: 77.646 ms
Loss rate: 13.75%
-- Flow 1:
Average throughput: 62.33 Mbit/s
95th percentile per-packet one-way delay: 77.641 ms
Loss rate: 14.08%
-- Flow 2:
Average throughput: 7.92 Mbit/s
95th percentile per-packet one-way delay: 77.577 ms
Loss rate: 11.65%
-- Flow 3:
Average throughput: 8.09 Mbit/s
95th percentile per-packet one-way delay: 77.855 ms
Loss rate: 9.05%
```

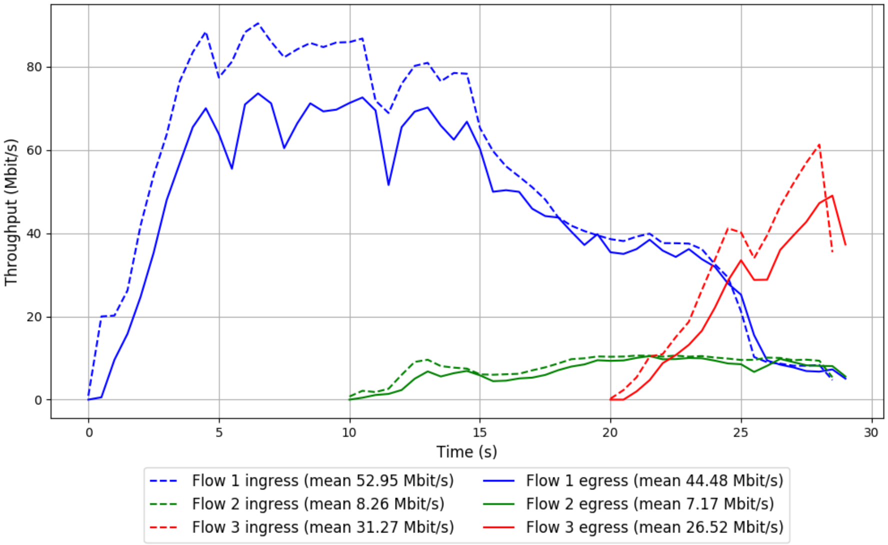
Run 2: Report of Indigo-MusesC3 — Data Link

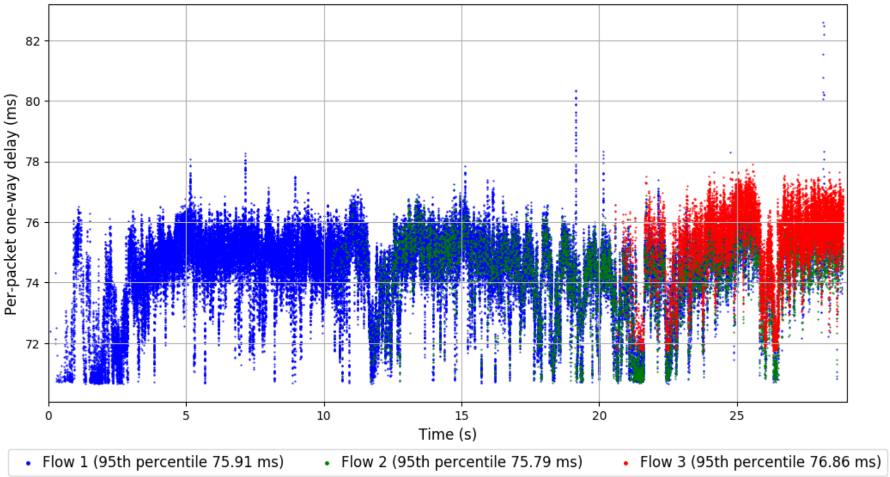




```
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-07-12 05:28:29
End at: 2019-07-12 05:28:59
Local clock offset: -8.6 ms
Remote clock offset: -7.748 ms

# Below is generated by plot.py at 2019-07-12 06:46:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.94 Mbit/s
95th percentile per-packet one-way delay: 76.194 ms
Loss rate: 15.65%
-- Flow 1:
Average throughput: 44.48 Mbit/s
95th percentile per-packet one-way delay: 75.907 ms
Loss rate: 15.98%
-- Flow 2:
Average throughput: 7.17 Mbit/s
95th percentile per-packet one-way delay: 75.791 ms
Loss rate: 13.17%
-- Flow 3:
Average throughput: 26.52 Mbit/s
95th percentile per-packet one-way delay: 76.855 ms
Loss rate: 15.20%
```

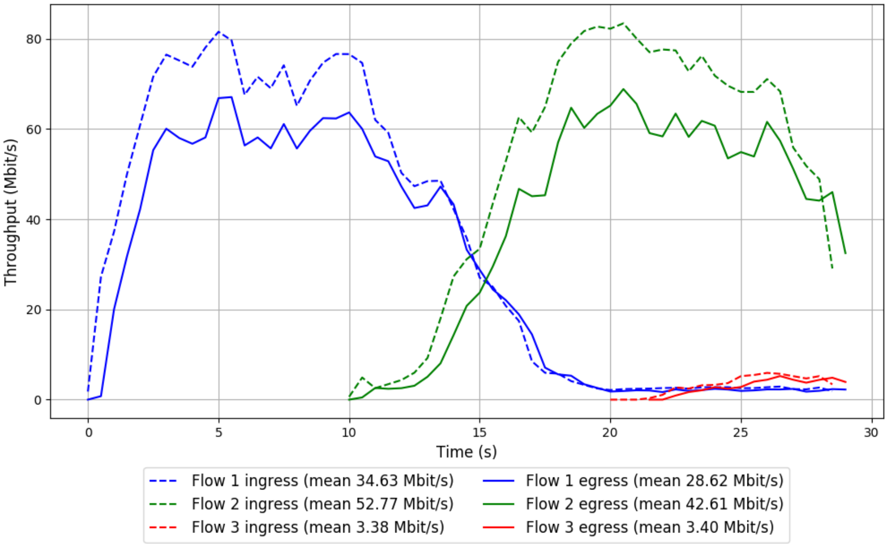
Run 3: Report of Indigo-MusesC3 — Data Link

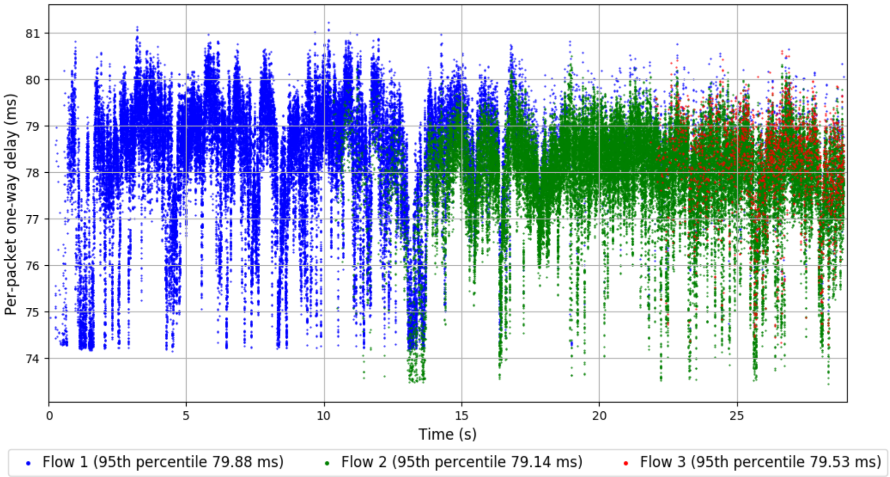




```
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-07-12 05:59:09
End at: 2019-07-12 05:59:39
Local clock offset: -7.779 ms
Remote clock offset: -6.319 ms

# Below is generated by plot.py at 2019-07-12 06:47:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 57.09 Mbit/s
95th percentile per-packet one-way delay: 79.662 ms
Loss rate: 18.29%
-- Flow 1:
Average throughput: 28.62 Mbit/s
95th percentile per-packet one-way delay: 79.884 ms
Loss rate: 17.35%
-- Flow 2:
Average throughput: 42.61 Mbit/s
95th percentile per-packet one-way delay: 79.138 ms
Loss rate: 19.27%
-- Flow 3:
Average throughput: 3.40 Mbit/s
95th percentile per-packet one-way delay: 79.531 ms
Loss rate: 17.14%
```

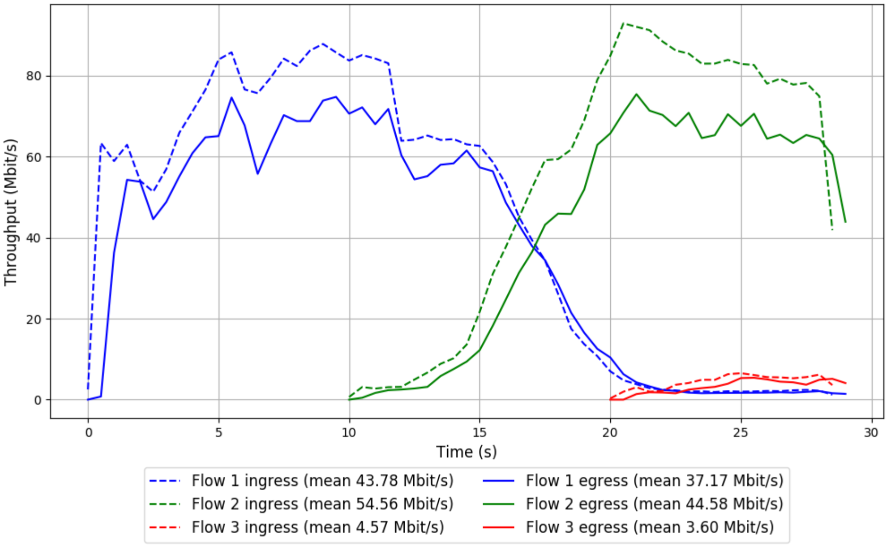
Run 4: Report of Indigo-MusesC3 — Data Link

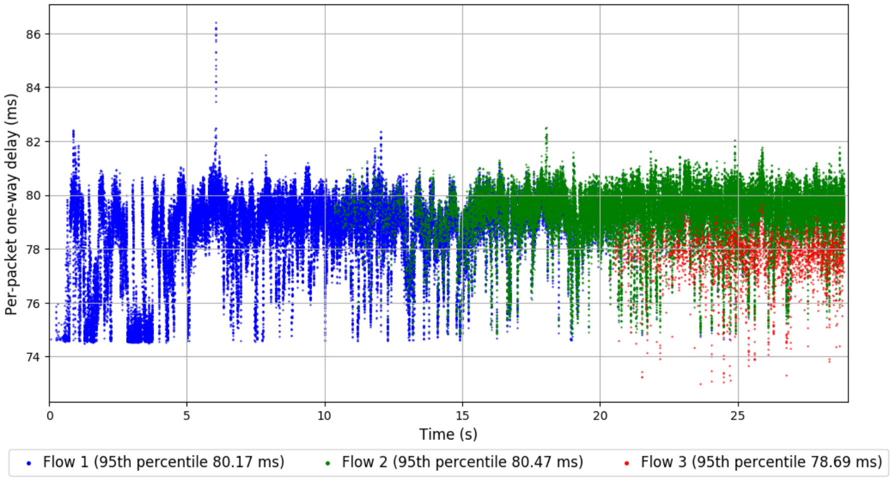




```
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-07-12 06:29:22
End at: 2019-07-12 06:29:52
Local clock offset: -6.368 ms
Remote clock offset: -9.284 ms

# Below is generated by plot.py at 2019-07-12 06:47:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 67.15 Mbit/s
95th percentile per-packet one-way delay: 80.336 ms
Loss rate: 16.61%
-- Flow 1:
Average throughput: 37.17 Mbit/s
95th percentile per-packet one-way delay: 80.173 ms
Loss rate: 15.12%
-- Flow 2:
Average throughput: 44.58 Mbit/s
95th percentile per-packet one-way delay: 80.466 ms
Loss rate: 18.30%
-- Flow 3:
Average throughput: 3.60 Mbit/s
95th percentile per-packet one-way delay: 78.686 ms
Loss rate: 21.09%
```

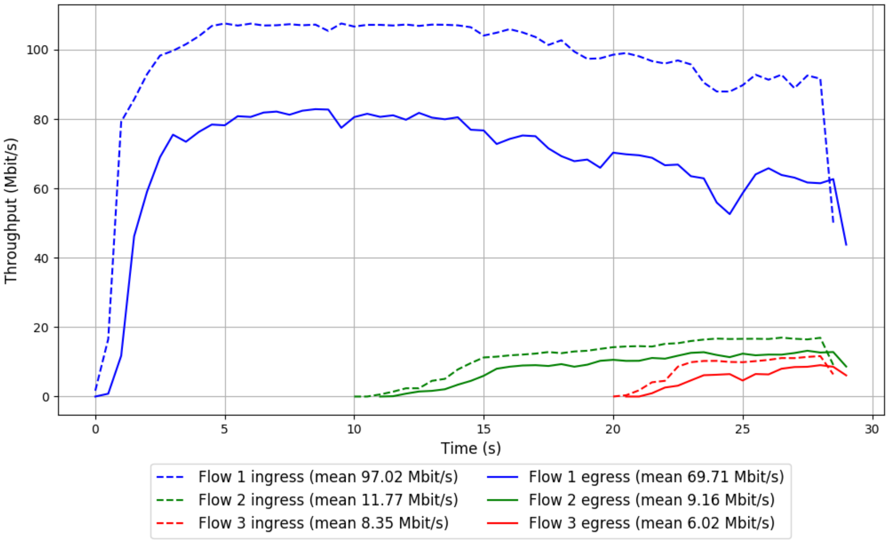
Run 5: Report of Indigo-MusesC3 — Data Link

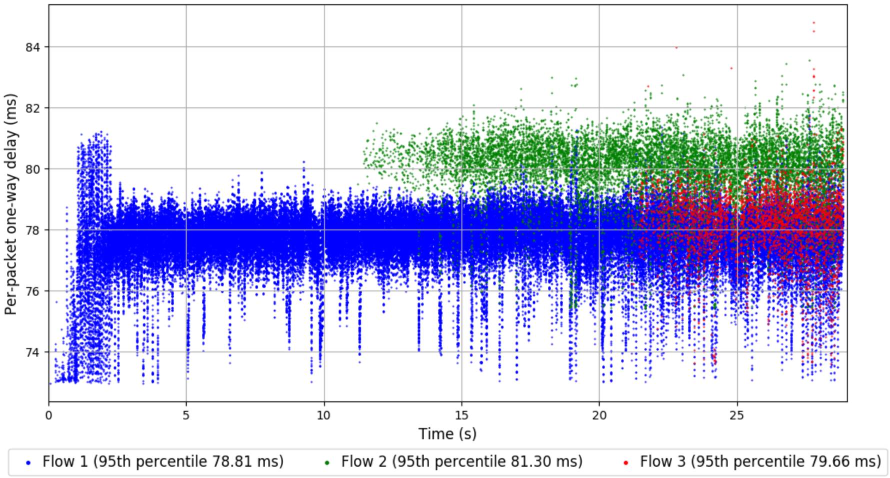




```
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-07-12 04:28:35
End at: 2019-07-12 04:29:05
Local clock offset: -5.964 ms
Remote clock offset: -5.894 ms

# Below is generated by plot.py at 2019-07-12 06:47:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.00 Mbit/s
95th percentile per-packet one-way delay: 79.936 ms
Loss rate: 28.11%
-- Flow 1:
Average throughput: 69.71 Mbit/s
95th percentile per-packet one-way delay: 78.811 ms
Loss rate: 28.15%
-- Flow 2:
Average throughput: 9.16 Mbit/s
95th percentile per-packet one-way delay: 81.303 ms
Loss rate: 26.31%
-- Flow 3:
Average throughput: 6.02 Mbit/s
95th percentile per-packet one-way delay: 79.655 ms
Loss rate: 32.11%
```

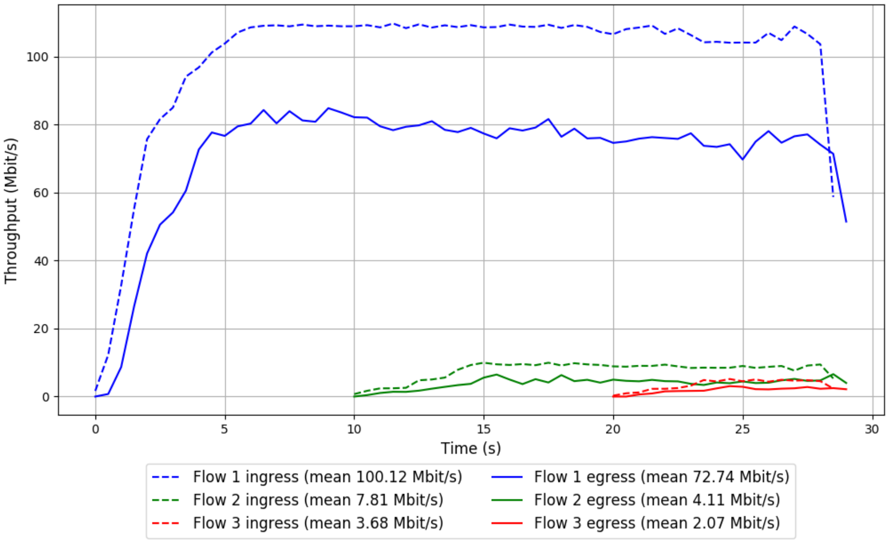
Run 1: Report of Indigo-MusesC5 — Data Link

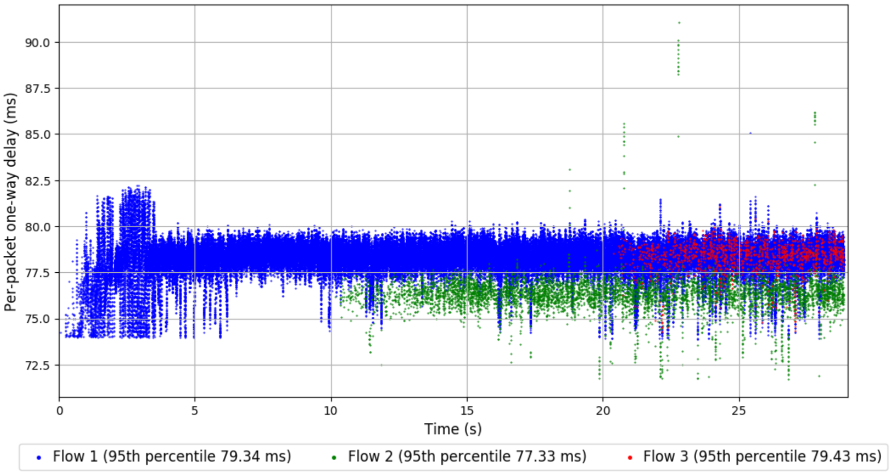




```
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-07-12 04:59:10
End at: 2019-07-12 04:59:40
Local clock offset: -7.148 ms
Remote clock offset: -7.526 ms

# Below is generated by plot.py at 2019-07-12 06:47:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 76.02 Mbit/s
95th percentile per-packet one-way delay: 79.329 ms
Loss rate: 28.47%
-- Flow 1:
Average throughput: 72.74 Mbit/s
95th percentile per-packet one-way delay: 79.338 ms
Loss rate: 27.34%
-- Flow 2:
Average throughput: 4.11 Mbit/s
95th percentile per-packet one-way delay: 77.329 ms
Loss rate: 47.40%
-- Flow 3:
Average throughput: 2.07 Mbit/s
95th percentile per-packet one-way delay: 79.427 ms
Loss rate: 43.70%
```

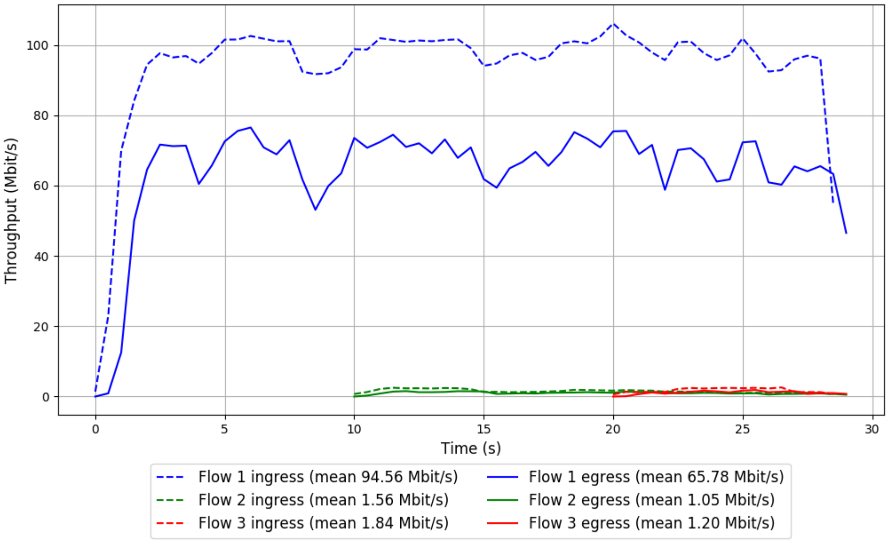
Run 2: Report of Indigo-MusesC5 — Data Link

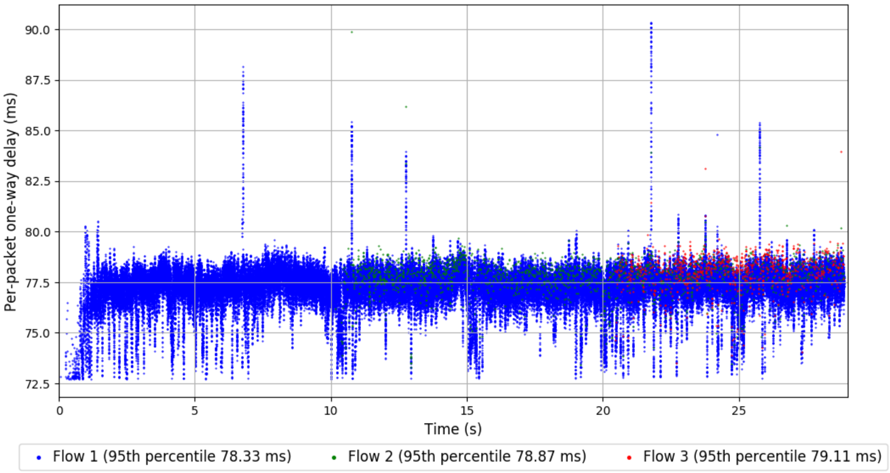




```
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-07-12 05:29:47
End at: 2019-07-12 05:30:17
Local clock offset: -8.489 ms
Remote clock offset: -5.167 ms

# Below is generated by plot.py at 2019-07-12 06:47:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 66.82 Mbit/s
95th percentile per-packet one-way delay: 78.349 ms
Loss rate: 30.47%
-- Flow 1:
Average throughput: 65.78 Mbit/s
95th percentile per-packet one-way delay: 78.327 ms
Loss rate: 30.42%
-- Flow 2:
Average throughput: 1.05 Mbit/s
95th percentile per-packet one-way delay: 78.868 ms
Loss rate: 32.88%
-- Flow 3:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 79.109 ms
Loss rate: 34.85%
```

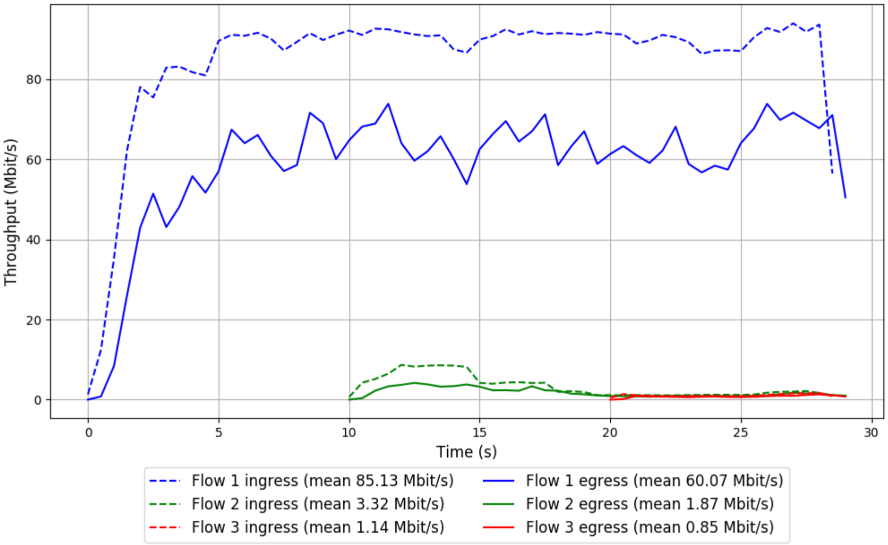
Run 3: Report of Indigo-MusesC5 — Data Link

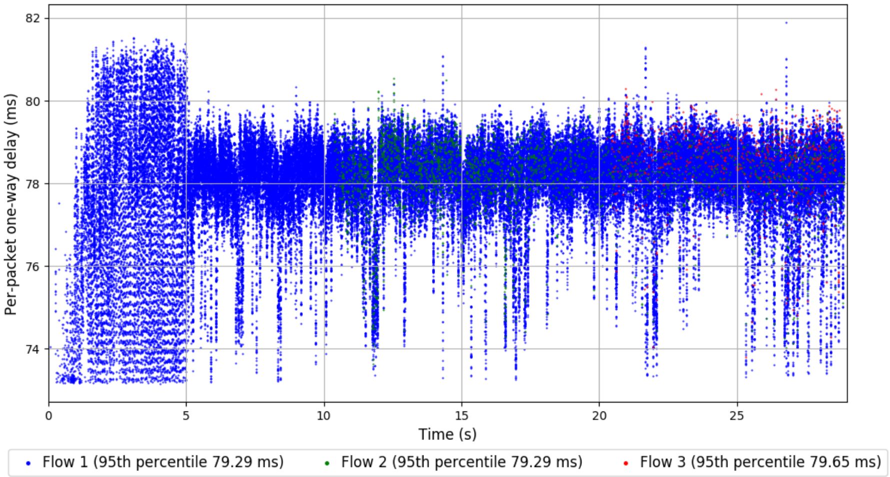




```
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-07-12 06:00:26
End at: 2019-07-12 06:00:56
Local clock offset: -7.728 ms
Remote clock offset: -5.295 ms

# Below is generated by plot.py at 2019-07-12 06:47:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 61.53 Mbit/s
95th percentile per-packet one-way delay: 79.290 ms
Loss rate: 29.77%
-- Flow 1:
Average throughput: 60.07 Mbit/s
95th percentile per-packet one-way delay: 79.286 ms
Loss rate: 29.43%
-- Flow 2:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 79.290 ms
Loss rate: 43.76%
-- Flow 3:
Average throughput: 0.85 Mbit/s
95th percentile per-packet one-way delay: 79.650 ms
Loss rate: 25.63%
```

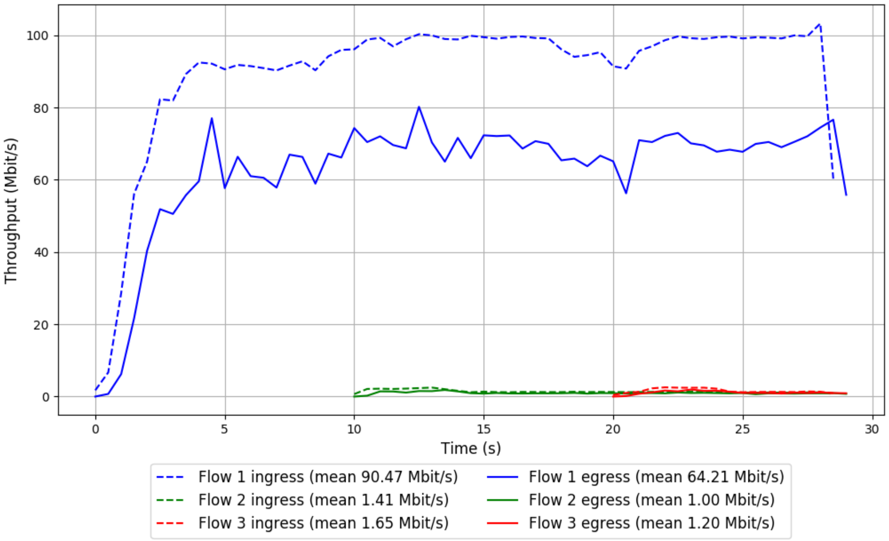
Run 4: Report of Indigo-MusesC5 — Data Link

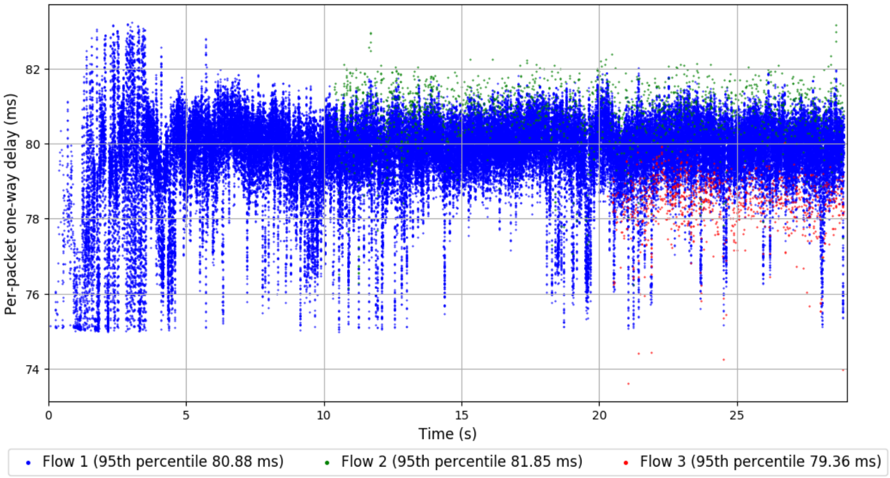




```
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-07-12 06:30:40
End at: 2019-07-12 06:31:10
Local clock offset: -7.063 ms
Remote clock offset: -9.639 ms

# Below is generated by plot.py at 2019-07-12 06:47:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 65.22 Mbit/s
95th percentile per-packet one-way delay: 80.913 ms
Loss rate: 29.01%
-- Flow 1:
Average throughput: 64.21 Mbit/s
95th percentile per-packet one-way delay: 80.882 ms
Loss rate: 29.02%
-- Flow 2:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 81.854 ms
Loss rate: 28.67%
-- Flow 3:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 79.358 ms
Loss rate: 27.62%
```

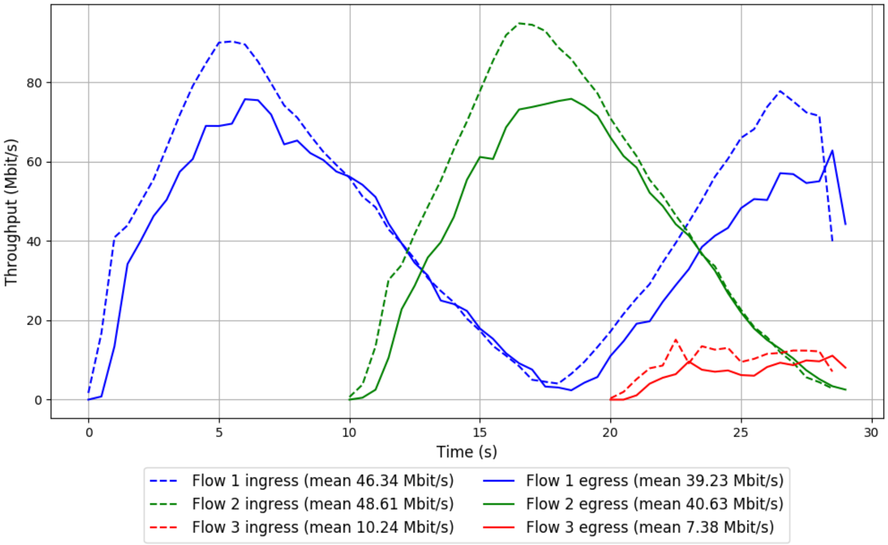
Run 5: Report of Indigo-MusesC5 — Data Link

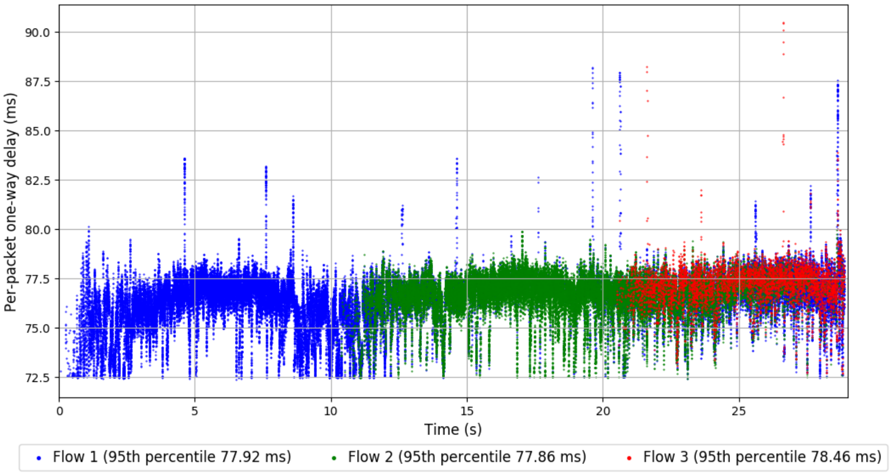




```
Run 1: Statistics of Indigo-MusesD

Start at: 2019-07-12 04:36:16
End at: 2019-07-12 04:36:46
Local clock offset: -5.869 ms
Remote clock offset: -6.665 ms

# Below is generated by plot.py at 2019-07-12 06:47:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 67.72 Mbit/s
95th percentile per-packet one-way delay: 77.919 ms
Loss rate: 16.23%
-- Flow 1:
Average throughput: 39.23 Mbit/s
95th percentile per-packet one-way delay: 77.915 ms
Loss rate: 15.35%
-- Flow 2:
Average throughput: 40.63 Mbit/s
95th percentile per-packet one-way delay: 77.855 ms
Loss rate: 16.40%
-- Flow 3:
Average throughput: 7.38 Mbit/s
95th percentile per-packet one-way delay: 78.464 ms
Loss rate: 27.91%
```

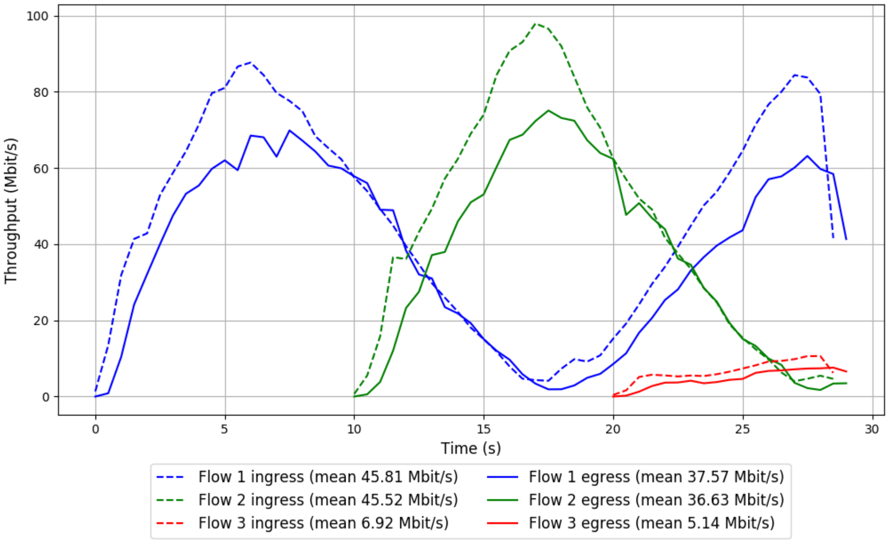
Run 1: Report of Indigo-MusesD — Data Link

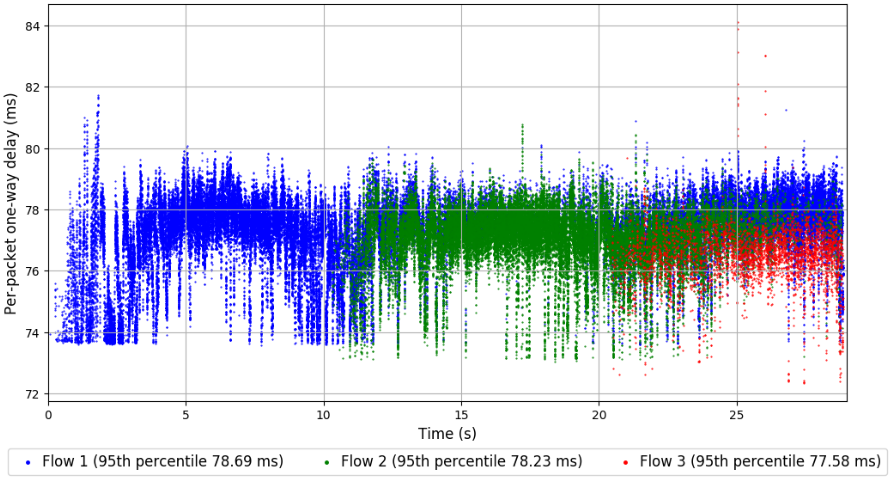




```
Run 2: Statistics of Indigo-MusesD

Start at: 2019-07-12 05:07:02
End at: 2019-07-12 05:07:32
Local clock offset: -8.313 ms
Remote clock offset: -7.185 ms

# Below is generated by plot.py at 2019-07-12 06:47:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 62.88 Mbit/s
95th percentile per-packet one-way delay: 78.553 ms
Loss rate: 18.81%
-- Flow 1:
Average throughput: 37.57 Mbit/s
95th percentile per-packet one-way delay: 78.687 ms
Loss rate: 17.99%
-- Flow 2:
Average throughput: 36.63 Mbit/s
95th percentile per-packet one-way delay: 78.228 ms
Loss rate: 19.60%
-- Flow 3:
Average throughput: 5.14 Mbit/s
95th percentile per-packet one-way delay: 77.577 ms
Loss rate: 25.71%
```

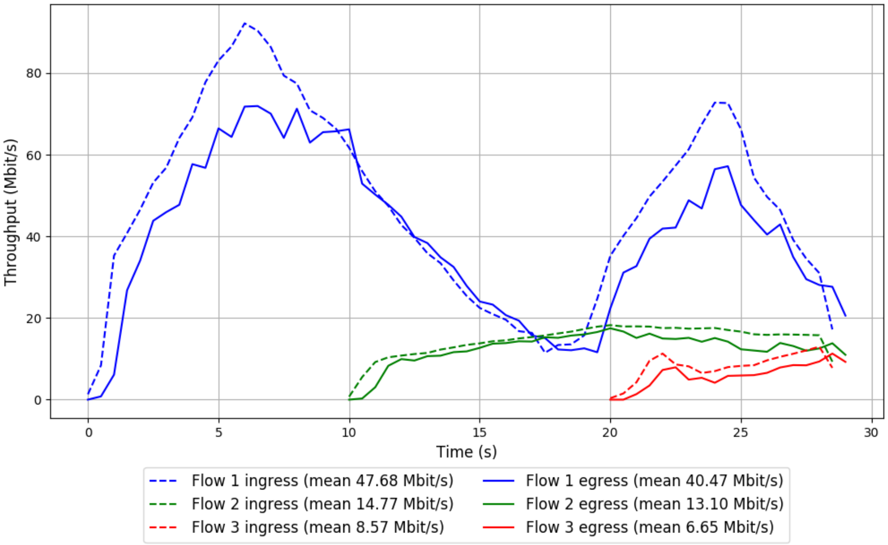
Run 2: Report of Indigo-MusesD — Data Link

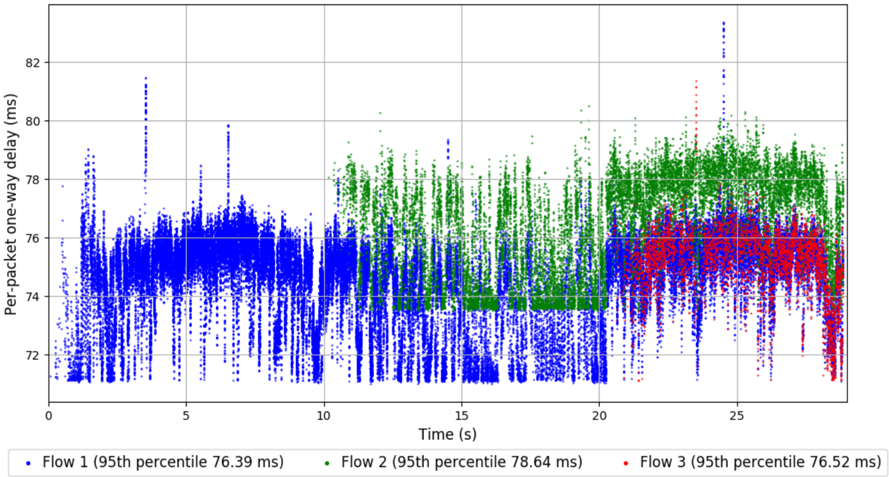




```
Run 3: Statistics of Indigo-MusesD

Start at: 2019-07-12 05:37:34
End at: 2019-07-12 05:38:04
Local clock offset: -7.644 ms
Remote clock offset: -6.67 ms

# Below is generated by plot.py at 2019-07-12 06:47:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 50.94 Mbit/s
95th percentile per-packet one-way delay: 77.736 ms
Loss rate: 14.81%
-- Flow 1:
Average throughput: 40.47 Mbit/s
95th percentile per-packet one-way delay: 76.388 ms
Loss rate: 15.11%
-- Flow 2:
Average throughput: 13.10 Mbit/s
95th percentile per-packet one-way delay: 78.637 ms
Loss rate: 11.33%
-- Flow 3:
Average throughput: 6.65 Mbit/s
95th percentile per-packet one-way delay: 76.517 ms
Loss rate: 22.41%
```

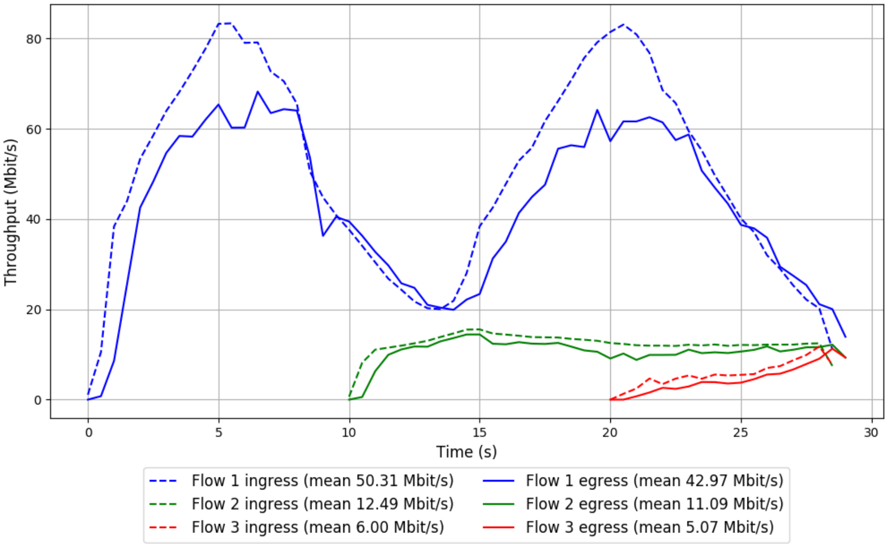
Run 3: Report of Indigo-MusesD — Data Link

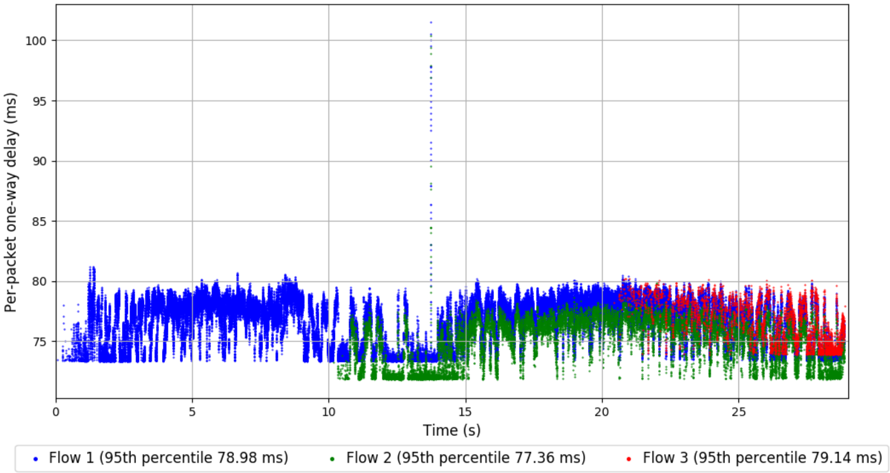




```
Run 4: Statistics of Indigo-MusesD

Start at: 2019-07-12 06:08:08
End at: 2019-07-12 06:08:38
Local clock offset: -6.593 ms
Remote clock offset: -8.129 ms

# Below is generated by plot.py at 2019-07-12 06:48:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 51.65 Mbit/s
95th percentile per-packet one-way delay: 78.932 ms
Loss rate: 14.15%
-- Flow 1:
Average throughput: 42.97 Mbit/s
95th percentile per-packet one-way delay: 78.980 ms
Loss rate: 14.58%
-- Flow 2:
Average throughput: 11.09 Mbit/s
95th percentile per-packet one-way delay: 77.362 ms
Loss rate: 11.20%
-- Flow 3:
Average throughput: 5.07 Mbit/s
95th percentile per-packet one-way delay: 79.138 ms
Loss rate: 15.46%
```

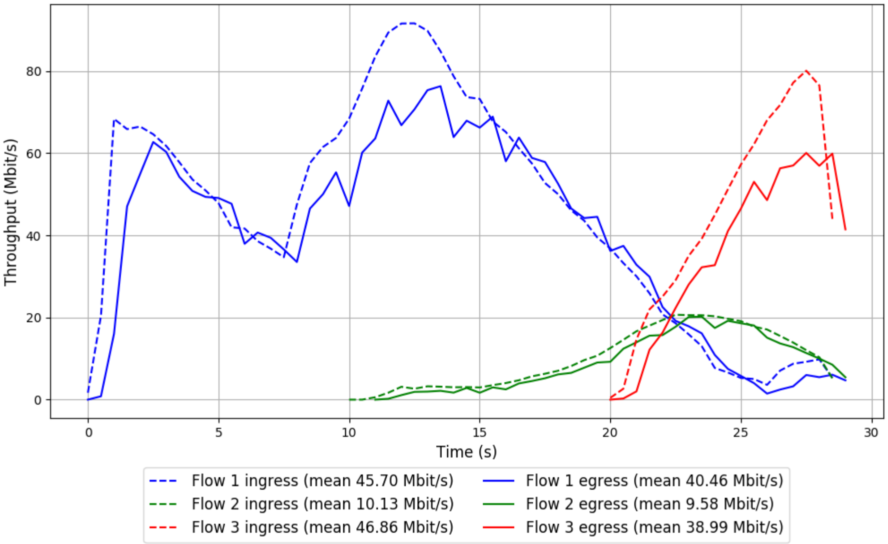
Run 4: Report of Indigo-MusesD — Data Link

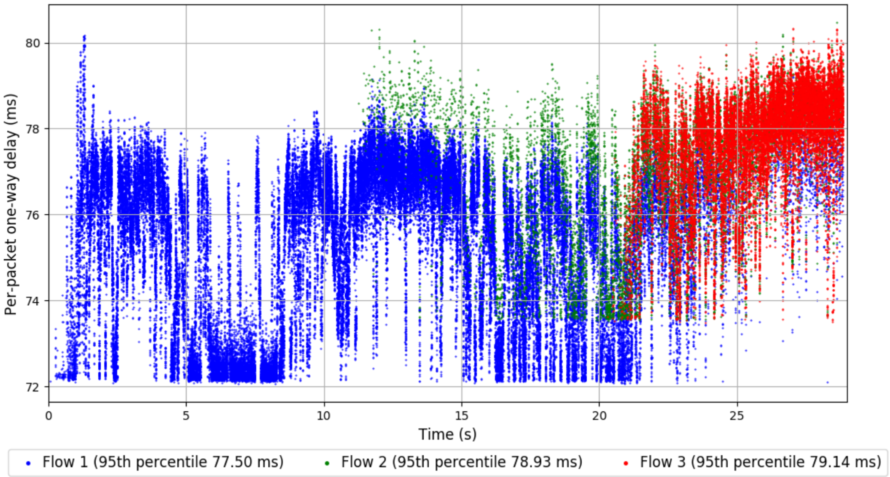




```
Run 5: Statistics of Indigo-MusesD

Start at: 2019-07-12 06:38:29
End at: 2019-07-12 06:38:59
Local clock offset: -6.813 ms
Remote clock offset: -10.691 ms

# Below is generated by plot.py at 2019-07-12 06:48:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 57.90 Mbit/s
95th percentile per-packet one-way delay: 78.663 ms
Loss rate: 12.48%
-- Flow 1:
Average throughput: 40.46 Mbit/s
95th percentile per-packet one-way delay: 77.502 ms
Loss rate: 11.45%
-- Flow 2:
Average throughput: 9.58 Mbit/s
95th percentile per-packet one-way delay: 78.929 ms
Loss rate: 10.58%
-- Flow 3:
Average throughput: 38.99 Mbit/s
95th percentile per-packet one-way delay: 79.143 ms
Loss rate: 16.76%
```

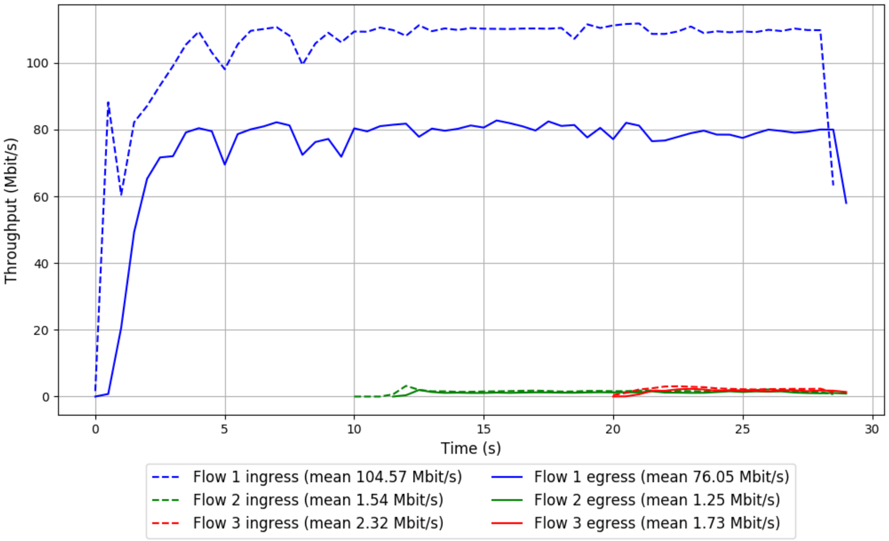
Run 5: Report of Indigo-MusesD — Data Link

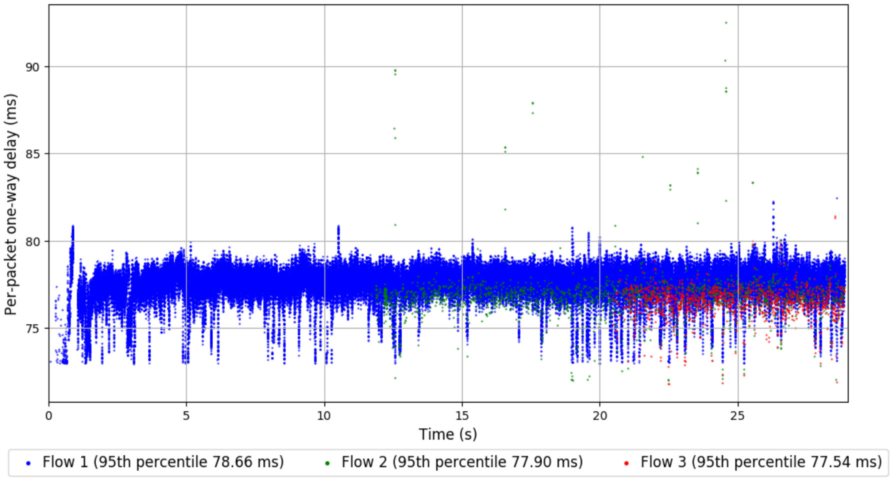




```
Run 1: Statistics of Indigo-MusesT

Start at: 2019-07-12 04:29:52
End at: 2019-07-12 04:30:22
Local clock offset: -6.205 ms
Remote clock offset: -7.15 ms

# Below is generated by plot.py at 2019-07-12 06:48:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.30 Mbit/s
95th percentile per-packet one-way delay: 78.654 ms
Loss rate: 27.24%
-- Flow 1:
Average throughput: 76.05 Mbit/s
95th percentile per-packet one-way delay: 78.658 ms
Loss rate: 27.26%
-- Flow 2:
Average throughput: 1.25 Mbit/s
95th percentile per-packet one-way delay: 77.896 ms
Loss rate: 25.63%
-- Flow 3:
Average throughput: 1.73 Mbit/s
95th percentile per-packet one-way delay: 77.537 ms
Loss rate: 25.56%
```

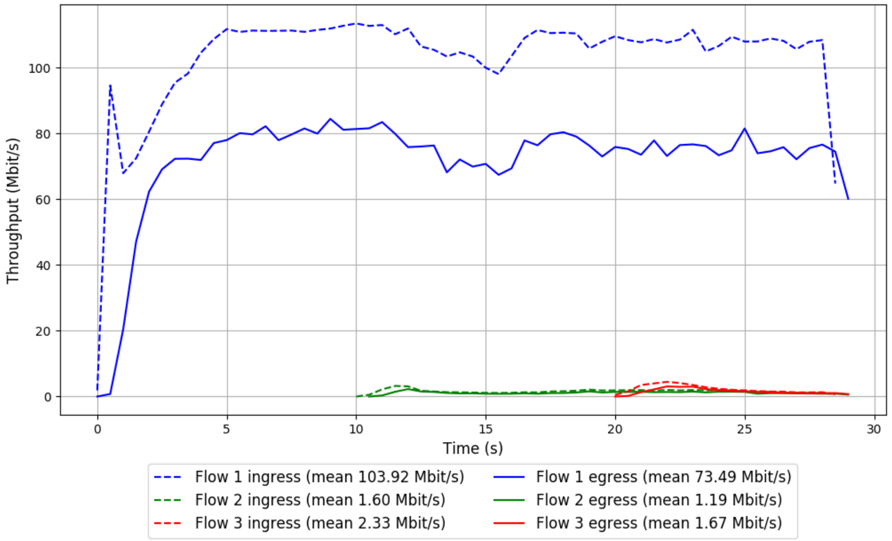
Run 1: Report of Indigo-MusesT — Data Link

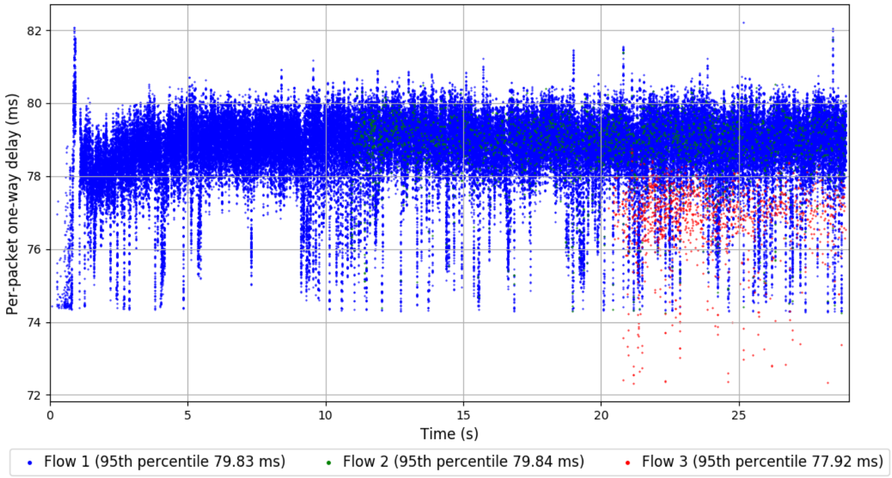




```
Run 2: Statistics of Indigo-MusesT

Start at: 2019-07-12 05:00:27
End at: 2019-07-12 05:00:57
Local clock offset: -6.371 ms
Remote clock offset: -6.112 ms

# Below is generated by plot.py at 2019-07-12 06:48:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 74.73 Mbit/s
95th percentile per-packet one-way delay: 79.825 ms
Loss rate: 29.25%
-- Flow 1:
Average throughput: 73.49 Mbit/s
95th percentile per-packet one-way delay: 79.827 ms
Loss rate: 29.27%
-- Flow 2:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 79.836 ms
Loss rate: 27.51%
-- Flow 3:
Average throughput: 1.67 Mbit/s
95th percentile per-packet one-way delay: 77.917 ms
Loss rate: 28.31%
```

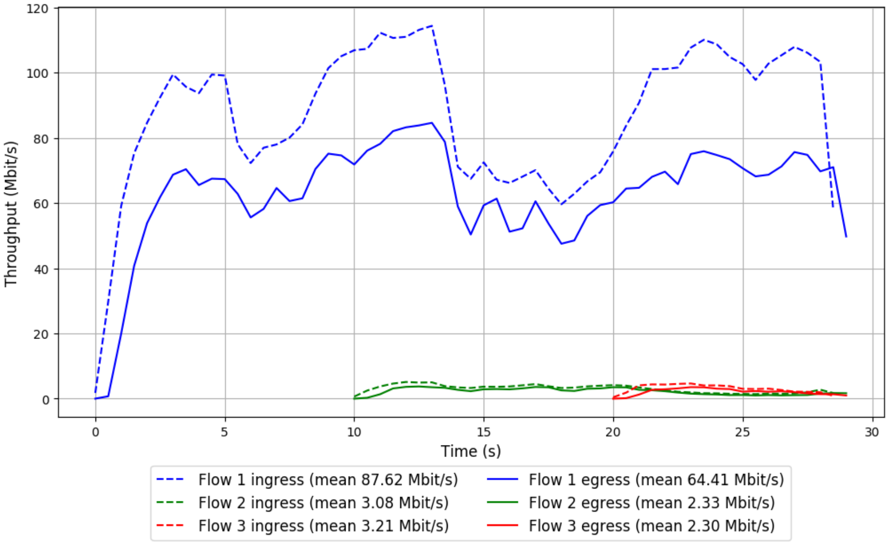
Run 2: Report of Indigo-MusesT — Data Link

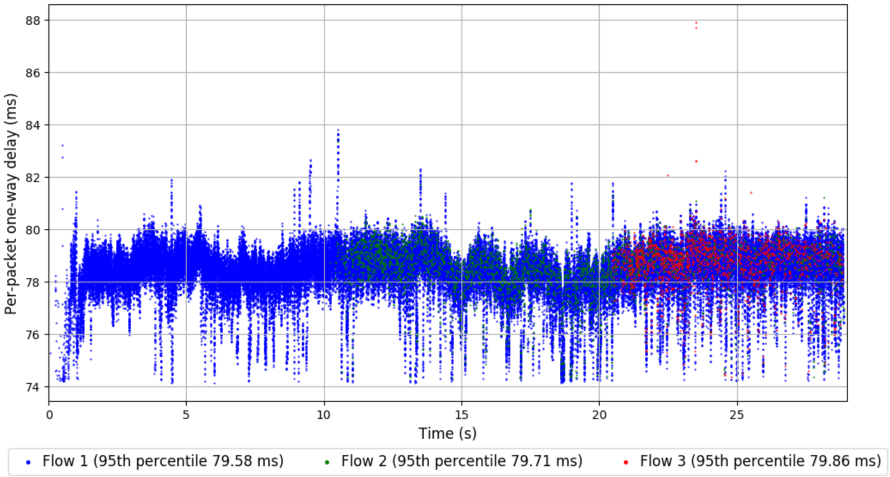




```
Run 3: Statistics of Indigo-MusesT

Start at: 2019-07-12 05:31:09
End at: 2019-07-12 05:31:39
Local clock offset: -9.215 ms
Remote clock offset: -5.208 ms

# Below is generated by plot.py at 2019-07-12 06:48:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 66.60 Mbit/s
95th percentile per-packet one-way delay: 79.587 ms
Loss rate: 26.46%
-- Flow 1:
Average throughput: 64.41 Mbit/s
95th percentile per-packet one-way delay: 79.580 ms
Loss rate: 26.49%
-- Flow 2:
Average throughput: 2.33 Mbit/s
95th percentile per-packet one-way delay: 79.707 ms
Loss rate: 24.22%
-- Flow 3:
Average throughput: 2.30 Mbit/s
95th percentile per-packet one-way delay: 79.857 ms
Loss rate: 28.30%
```

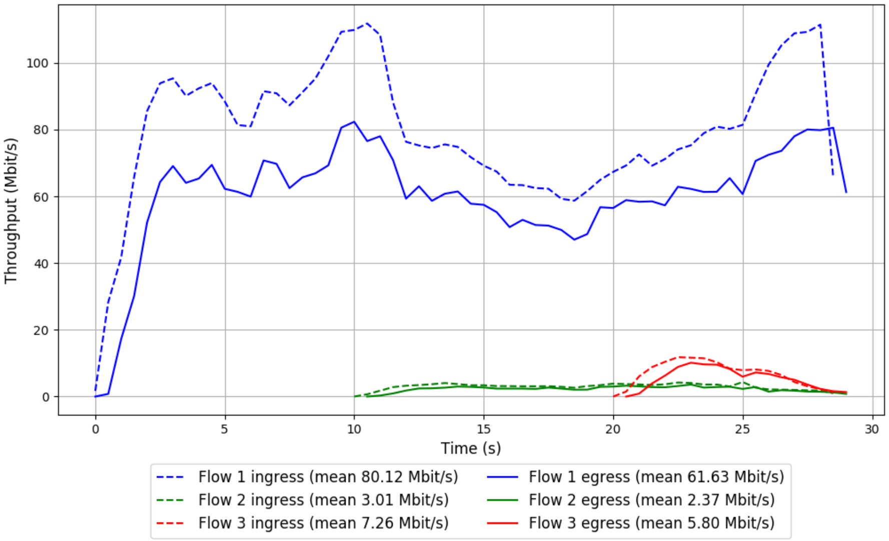
Run 3: Report of Indigo-MusesT — Data Link

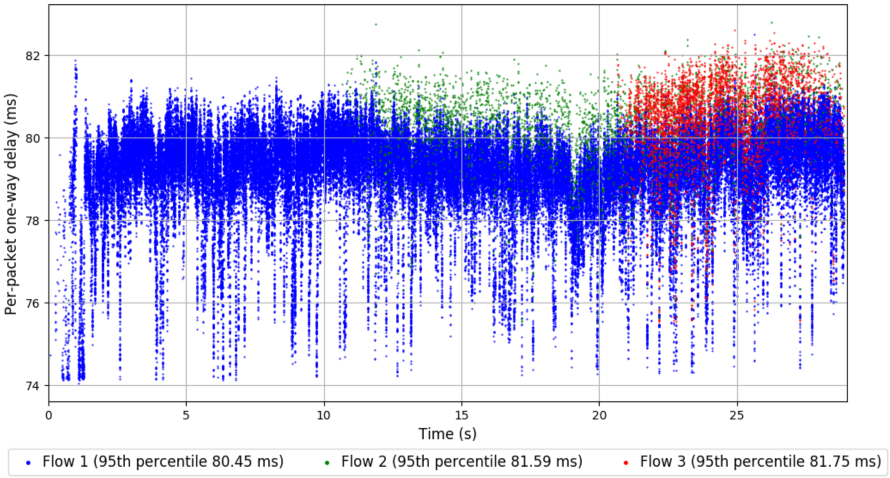




```
Run 4: Statistics of Indigo-MusesT

Start at: 2019-07-12 06:01:44
End at: 2019-07-12 06:02:14
Local clock offset: -7.583 ms
Remote clock offset: -5.22 ms

# Below is generated by plot.py at 2019-07-12 06:48:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 64.81 Mbit/s
95th percentile per-packet one-way delay: 80.607 ms
Loss rate: 23.00%
-- Flow 1:
Average throughput: 61.63 Mbit/s
95th percentile per-packet one-way delay: 80.448 ms
Loss rate: 23.07%
-- Flow 2:
Average throughput: 2.37 Mbit/s
95th percentile per-packet one-way delay: 81.594 ms
Loss rate: 23.48%
-- Flow 3:
Average throughput: 5.80 Mbit/s
95th percentile per-packet one-way delay: 81.749 ms
Loss rate: 20.04%
```

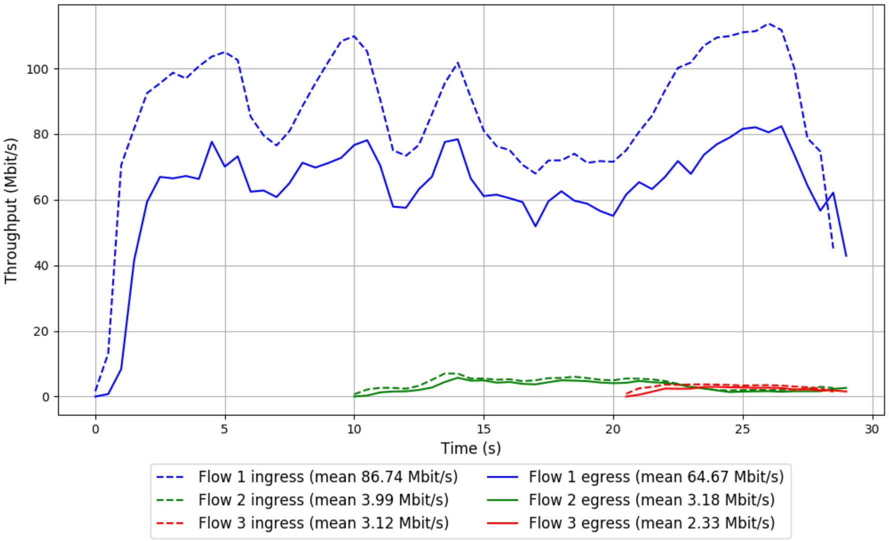
Run 4: Report of Indigo-MusesT — Data Link

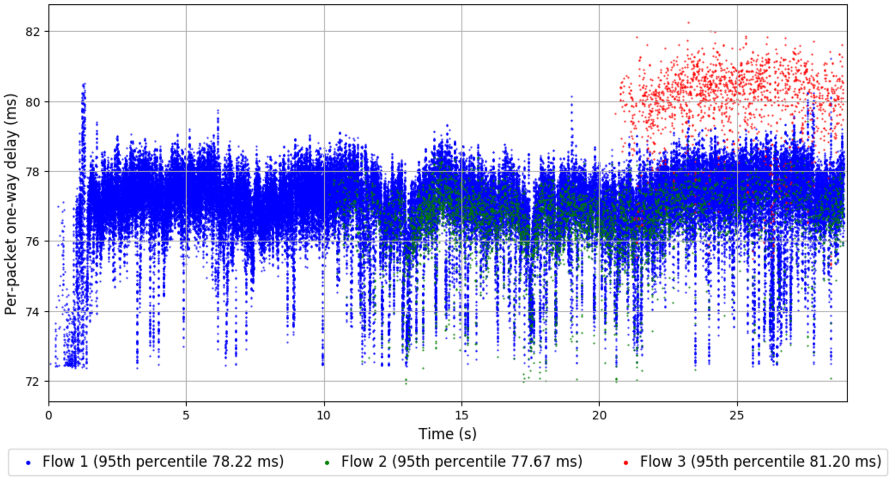




```
Run 5: Statistics of Indigo-MusesT

Start at: 2019-07-12 06:31:58
End at: 2019-07-12 06:32:28
Local clock offset: -6.919 ms
Remote clock offset: -11.317 ms

# Below is generated by plot.py at 2019-07-12 06:48:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 67.40 Mbit/s
95th percentile per-packet one-way delay: 78.268 ms
Loss rate: 25.29%
-- Flow 1:
Average throughput: 64.67 Mbit/s
95th percentile per-packet one-way delay: 78.222 ms
Loss rate: 25.43%
-- Flow 2:
Average throughput: 3.18 Mbit/s
95th percentile per-packet one-way delay: 77.673 ms
Loss rate: 20.48%
-- Flow 3:
Average throughput: 2.33 Mbit/s
95th percentile per-packet one-way delay: 81.197 ms
Loss rate: 25.24%
```

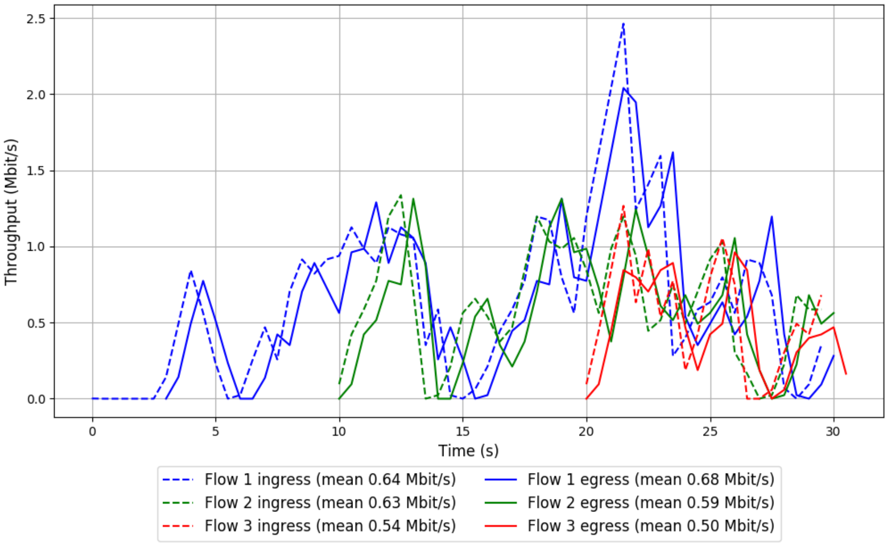
Run 5: Report of Indigo-MusesT — Data Link

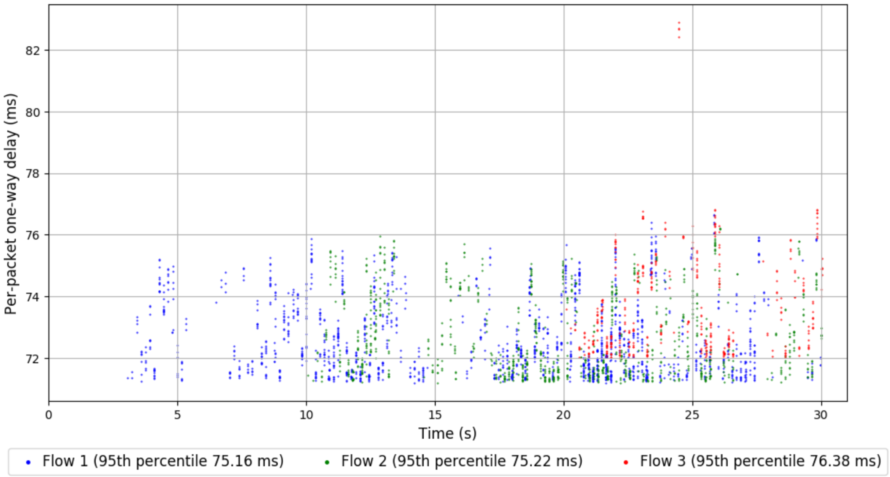




```
Run 1: Statistics of LEDBAT

Start at: 2019-07-12 04:16:06
End at: 2019-07-12 04:16:36
Local clock offset: -5.953 ms
Remote clock offset: -6.936 ms

# Below is generated by plot.py at 2019-07-12 06:48:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.30 Mbit/s
95th percentile per-packet one-way delay: 75.384 ms
Loss rate: 5.88%
-- Flow 1:
Average throughput: 0.68 Mbit/s
95th percentile per-packet one-way delay: 75.164 ms
Loss rate: 5.37%
-- Flow 2:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 75.218 ms
Loss rate: 6.19%
-- Flow 3:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 76.383 ms
Loss rate: 6.98%
```

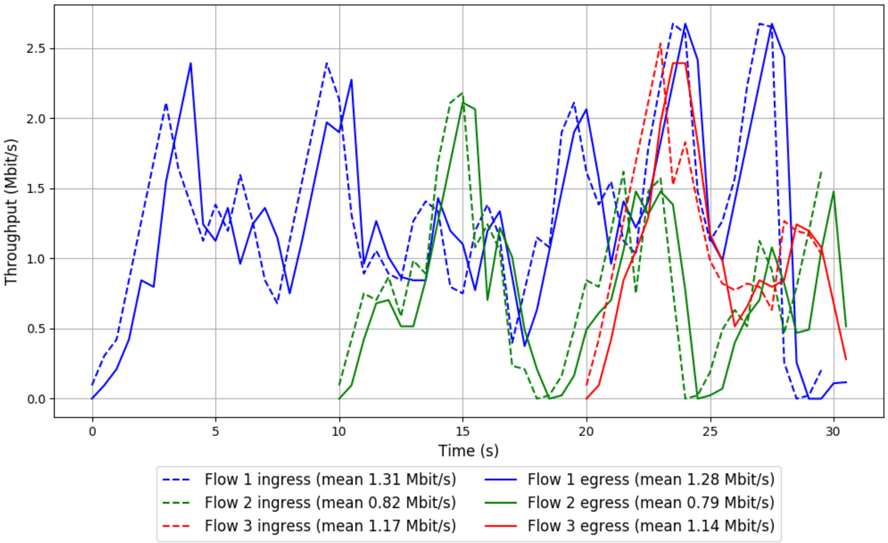
Run 1: Report of LEDBAT — Data Link

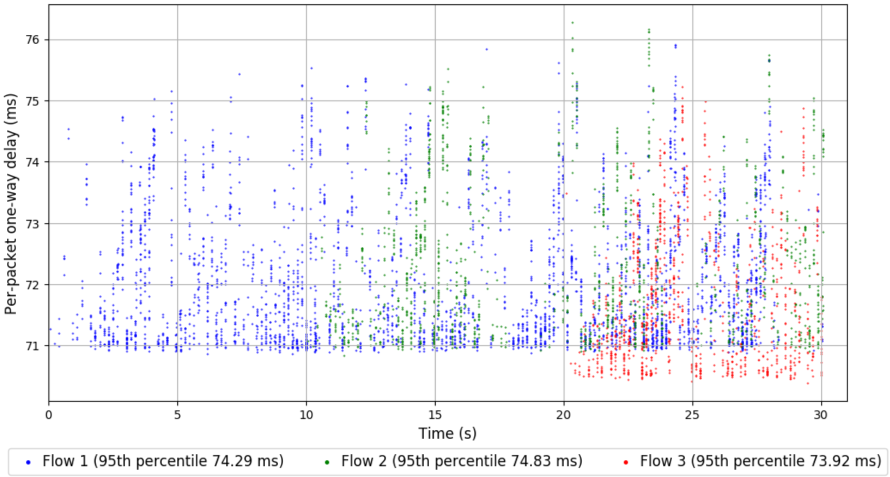




```
Run 2: Statistics of LEDBAT

Start at: 2019-07-12 04:46:35
End at: 2019-07-12 04:47:05
Local clock offset: -6.172 ms
Remote clock offset: -8.722 ms

# Below is generated by plot.py at 2019-07-12 06:48:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.18 Mbit/s
95th percentile per-packet one-way delay: 74.392 ms
Loss rate: 2.57%
-- Flow 1:
Average throughput: 1.28 Mbit/s
95th percentile per-packet one-way delay: 74.291 ms
Loss rate: 2.25%
-- Flow 2:
Average throughput: 0.79 Mbit/s
95th percentile per-packet one-way delay: 74.827 ms
Loss rate: 3.29%
-- Flow 3:
Average throughput: 1.14 Mbit/s
95th percentile per-packet one-way delay: 73.917 ms
Loss rate: 2.63%
```

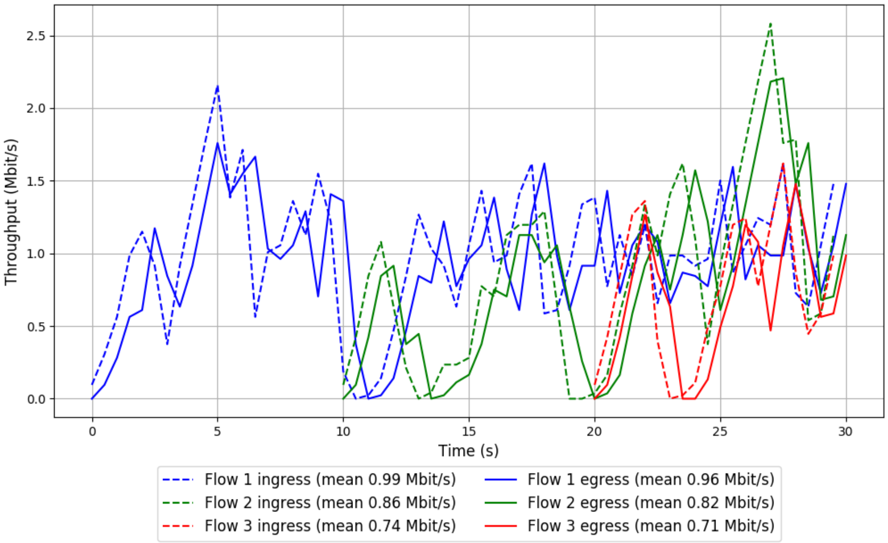
Run 2: Report of LEDBAT — Data Link

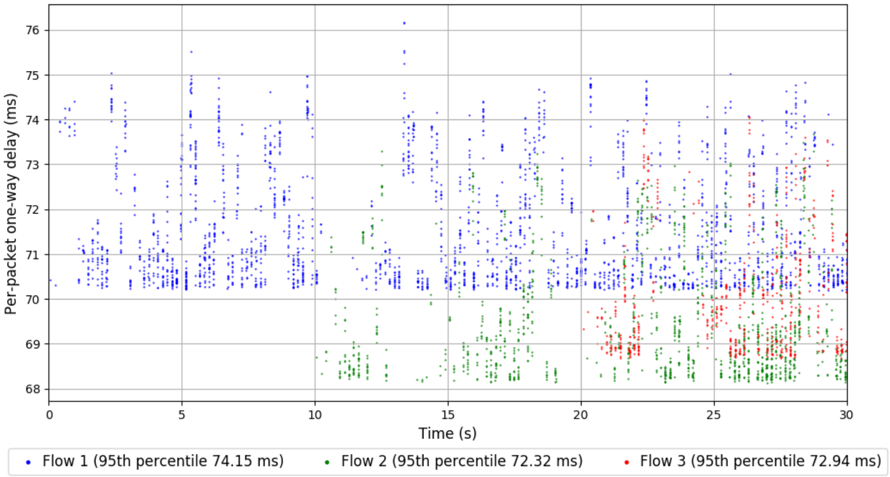




```
Run 3: Statistics of LEDBAT

Start at: 2019-07-12 05:17:17
End at: 2019-07-12 05:17:47
Local clock offset: -8.878 ms
Remote clock offset: -10.561 ms

# Below is generated by plot.py at 2019-07-12 06:48:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.74 Mbit/s
95th percentile per-packet one-way delay: 73.816 ms
Loss rate: 3.52%
-- Flow 1:
Average throughput: 0.96 Mbit/s
95th percentile per-packet one-way delay: 74.152 ms
Loss rate: 2.70%
-- Flow 2:
Average throughput: 0.82 Mbit/s
95th percentile per-packet one-way delay: 72.317 ms
Loss rate: 4.40%
-- Flow 3:
Average throughput: 0.71 Mbit/s
95th percentile per-packet one-way delay: 72.936 ms
Loss rate: 4.79%
```

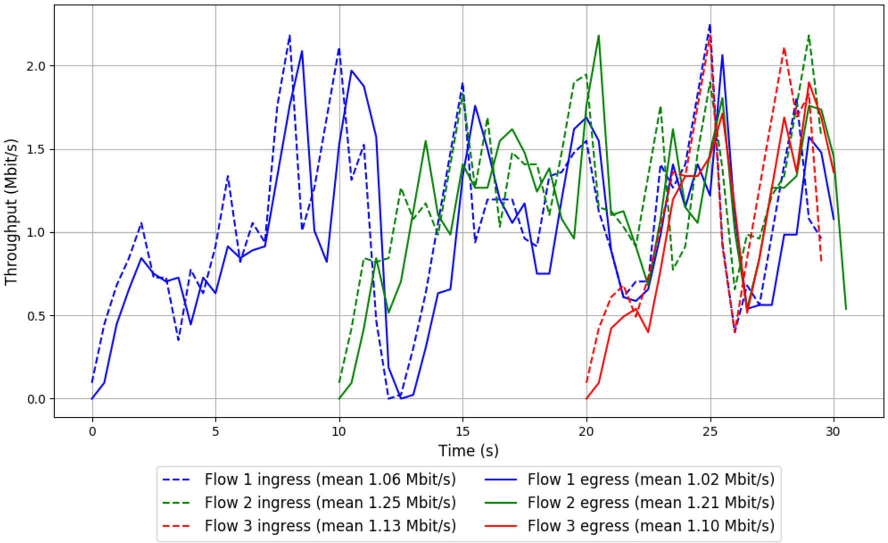
Run 3: Report of LEDBAT — Data Link

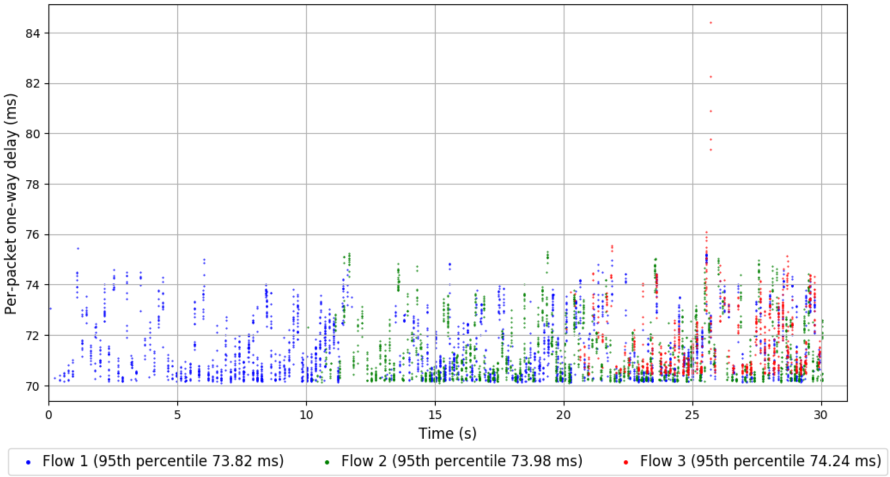




```
Run 4: Statistics of LEDBAT

Start at: 2019-07-12 05:47:58
End at: 2019-07-12 05:48:28
Local clock offset: -7.025 ms
Remote clock offset: -8.97 ms

# Below is generated by plot.py at 2019-07-12 06:48:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.18 Mbit/s
95th percentile per-packet one-way delay: 73.962 ms
Loss rate: 3.57%
-- Flow 1:
Average throughput: 1.02 Mbit/s
95th percentile per-packet one-way delay: 73.821 ms
Loss rate: 3.93%
-- Flow 2:
Average throughput: 1.21 Mbit/s
95th percentile per-packet one-way delay: 73.976 ms
Loss rate: 3.24%
-- Flow 3:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 74.243 ms
Loss rate: 3.27%
```

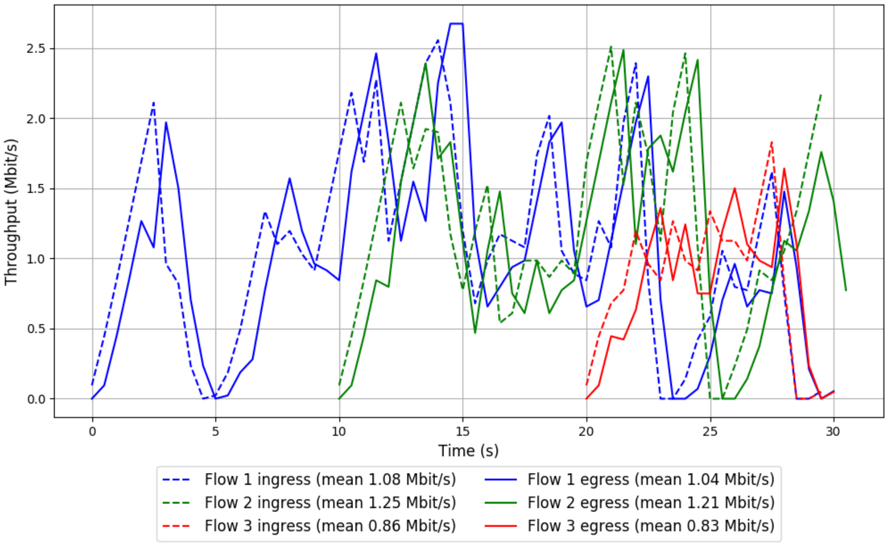
Run 4: Report of LEDBAT — Data Link

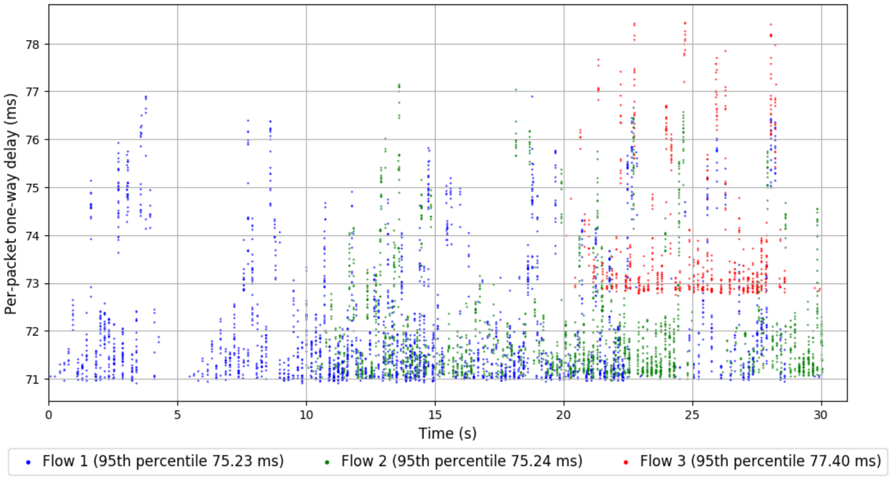




```
Run 5: Statistics of LEDBAT

Start at: 2019-07-12 06:18:13
End at: 2019-07-12 06:18:43
Local clock offset: -6.466 ms
Remote clock offset: -11.908 ms

# Below is generated by plot.py at 2019-07-12 06:48:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.12 Mbit/s
95th percentile per-packet one-way delay: 75.732 ms
Loss rate: 3.07%
-- Flow 1:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 75.231 ms
Loss rate: 3.21%
-- Flow 2:
Average throughput: 1.21 Mbit/s
95th percentile per-packet one-way delay: 75.244 ms
Loss rate: 2.93%
-- Flow 3:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 77.401 ms
Loss rate: 2.92%
```

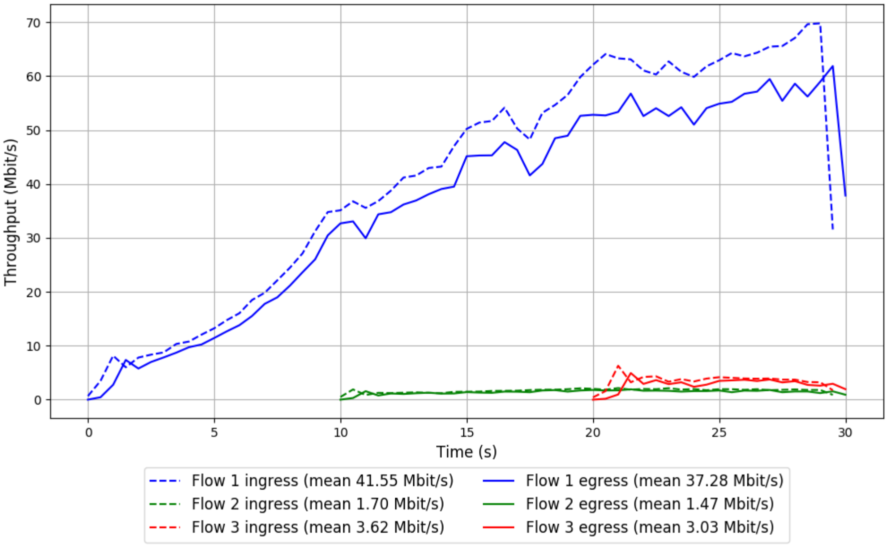
Run 5: Report of LEDBAT — Data Link

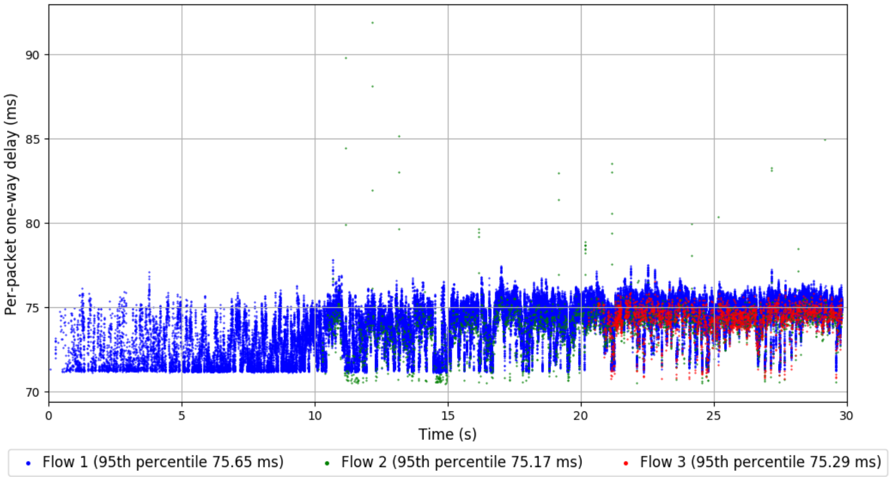




```
Run 1: Statistics of Muses\_DecisionTree

Start at: 2019-07-12 04:18:39
End at: 2019-07-12 04:19:09
Local clock offset: -5.942 ms
Remote clock offset: -7.427 ms

# Below is generated by plot.py at 2019-07-12 06:48:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 39.24 Mbit/s
95th percentile per-packet one-way delay: 75.645 ms
Loss rate: 10.51%
-- Flow 1:
Average throughput: 37.28 Mbit/s
95th percentile per-packet one-way delay: 75.654 ms
Loss rate: 10.26%
-- Flow 2:
Average throughput: 1.47 Mbit/s
95th percentile per-packet one-way delay: 75.175 ms
Loss rate: 13.59%
-- Flow 3:
Average throughput: 3.03 Mbit/s
95th percentile per-packet one-way delay: 75.292 ms
Loss rate: 16.28%
```

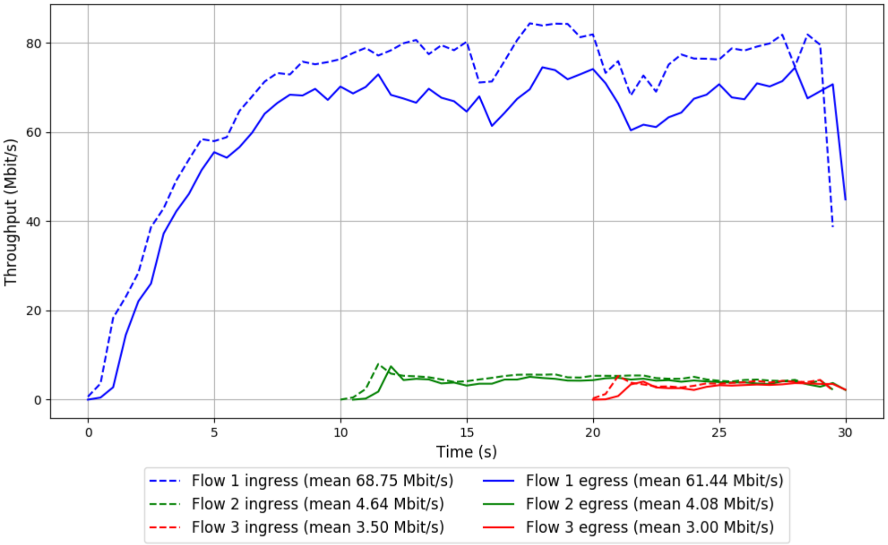
Run 1: Report of Muses_DecisionTree — Data Link

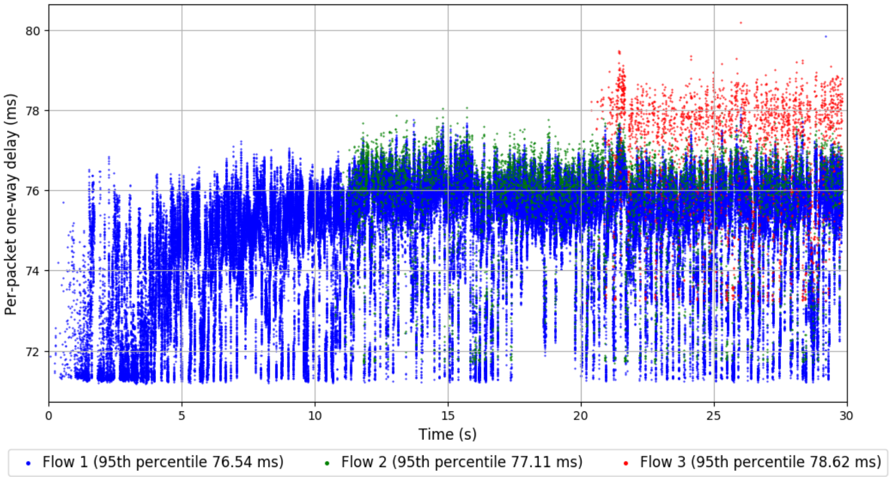




```
Run 2: Statistics of Muses\_DecisionTree

Start at: 2019-07-12 04:49:08
End at: 2019-07-12 04:49:38
Local clock offset: -6.176 ms
Remote clock offset: -7.895 ms

# Below is generated by plot.py at 2019-07-12 06:48:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 65.05 Mbit/s
95th percentile per-packet one-way delay: 76.643 ms
Loss rate: 10.84%
-- Flow 1:
Average throughput: 61.44 Mbit/s
95th percentile per-packet one-way delay: 76.537 ms
Loss rate: 10.62%
-- Flow 2:
Average throughput: 4.08 Mbit/s
95th percentile per-packet one-way delay: 77.113 ms
Loss rate: 14.40%
-- Flow 3:
Average throughput: 3.00 Mbit/s
95th percentile per-packet one-way delay: 78.620 ms
Loss rate: 14.33%
```

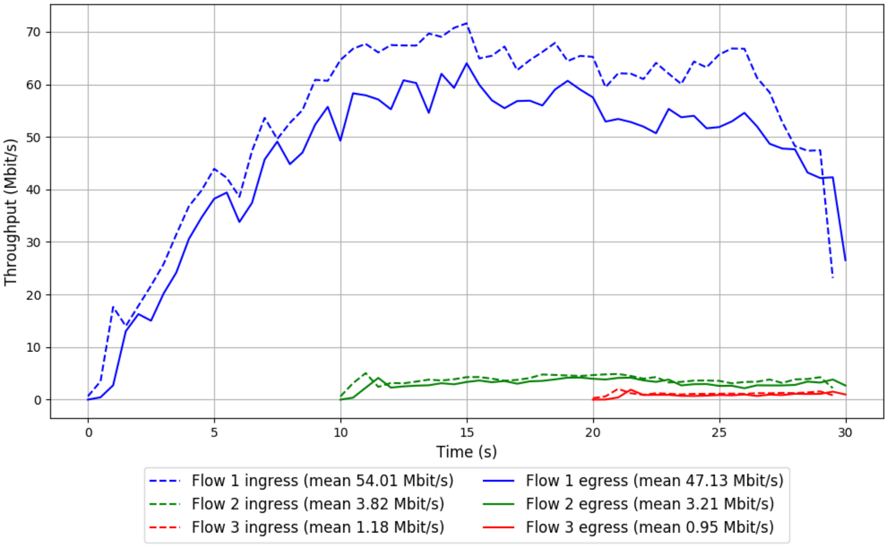
Run 2: Report of Muses_DecisionTree — Data Link

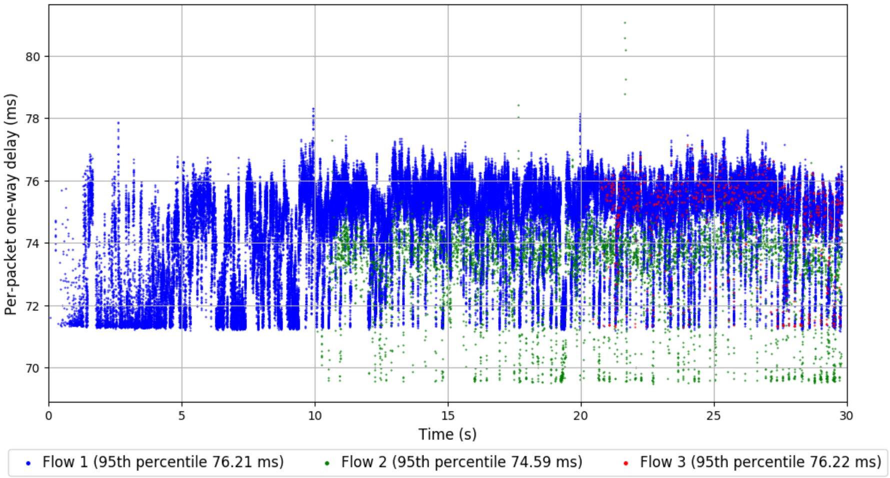




```
Run 3: Statistics of Muses\_DecisionTree

Start at: 2019-07-12 05:19:50
End at: 2019-07-12 05:20:20
Local clock offset: -8.187 ms
Remote clock offset: -8.301 ms

# Below is generated by plot.py at 2019-07-12 06:48:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 49.57 Mbit/s
95th percentile per-packet one-way delay: 76.197 ms
Loss rate: 12.92%
-- Flow 1:
Average throughput: 47.13 Mbit/s
95th percentile per-packet one-way delay: 76.207 ms
Loss rate: 12.72%
-- Flow 2:
Average throughput: 3.21 Mbit/s
95th percentile per-packet one-way delay: 74.588 ms
Loss rate: 16.11%
-- Flow 3:
Average throughput: 0.95 Mbit/s
95th percentile per-packet one-way delay: 76.219 ms
Loss rate: 19.73%
```

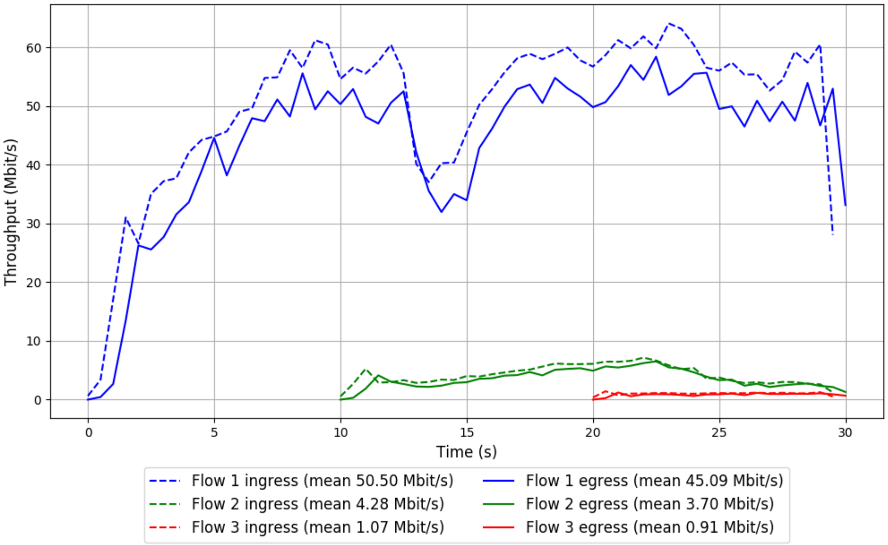
Run 3: Report of Muses_DecisionTree — Data Link

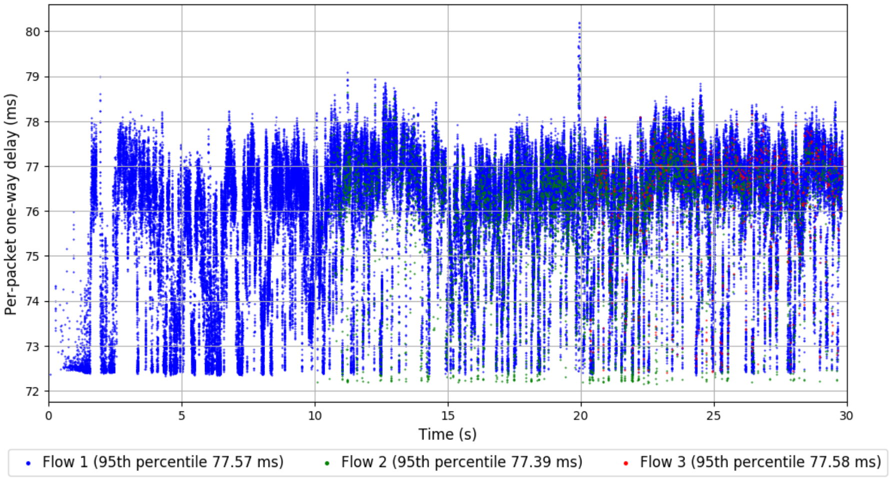




```
Run 4: Statistics of Muses\_DecisionTree

Start at: 2019-07-12 05:50:29
End at: 2019-07-12 05:50:59
Local clock offset: -6.972 ms
Remote clock offset: -7.351 ms

# Below is generated by plot.py at 2019-07-12 06:49:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 47.84 Mbit/s
95th percentile per-packet one-way delay: 77.561 ms
Loss rate: 10.86%
-- Flow 1:
Average throughput: 45.09 Mbit/s
95th percentile per-packet one-way delay: 77.568 ms
Loss rate: 10.69%
-- Flow 2:
Average throughput: 3.70 Mbit/s
95th percentile per-packet one-way delay: 77.385 ms
Loss rate: 13.36%
-- Flow 3:
Average throughput: 0.91 Mbit/s
95th percentile per-packet one-way delay: 77.580 ms
Loss rate: 15.35%
```

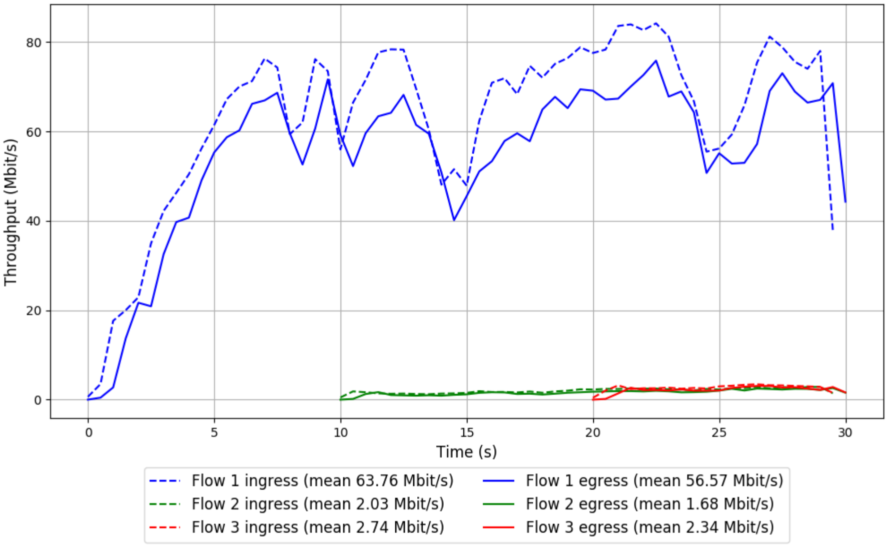
Run 4: Report of Muses_DecisionTree — Data Link

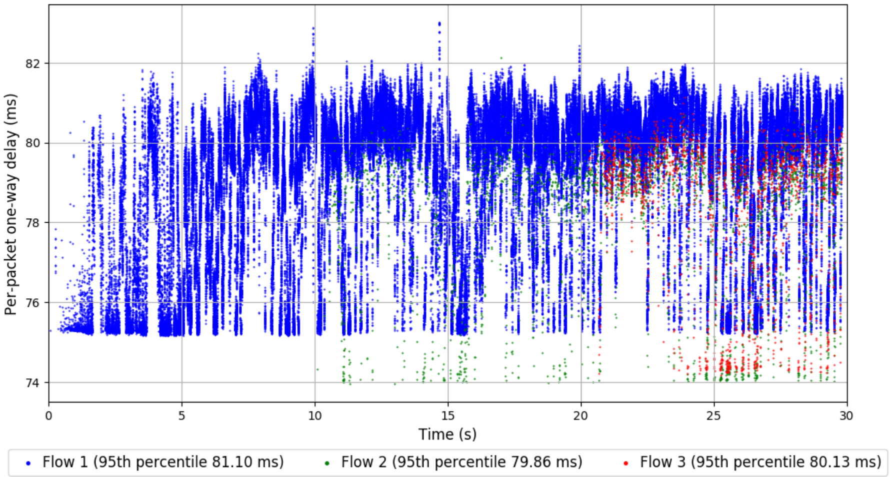




```
Run 5: Statistics of Muses\_DecisionTree

Start at: 2019-07-12 06:20:43
End at: 2019-07-12 06:21:13
Local clock offset: -7.233 ms
Remote clock offset: -8.62 ms

# Below is generated by plot.py at 2019-07-12 06:49:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 58.44 Mbit/s
95th percentile per-packet one-way delay: 81.092 ms
Loss rate: 11.42%
-- Flow 1:
Average throughput: 56.57 Mbit/s
95th percentile per-packet one-way delay: 81.100 ms
Loss rate: 11.25%
-- Flow 2:
Average throughput: 1.68 Mbit/s
95th percentile per-packet one-way delay: 79.864 ms
Loss rate: 17.35%
-- Flow 3:
Average throughput: 2.34 Mbit/s
95th percentile per-packet one-way delay: 80.128 ms
Loss rate: 14.73%
```

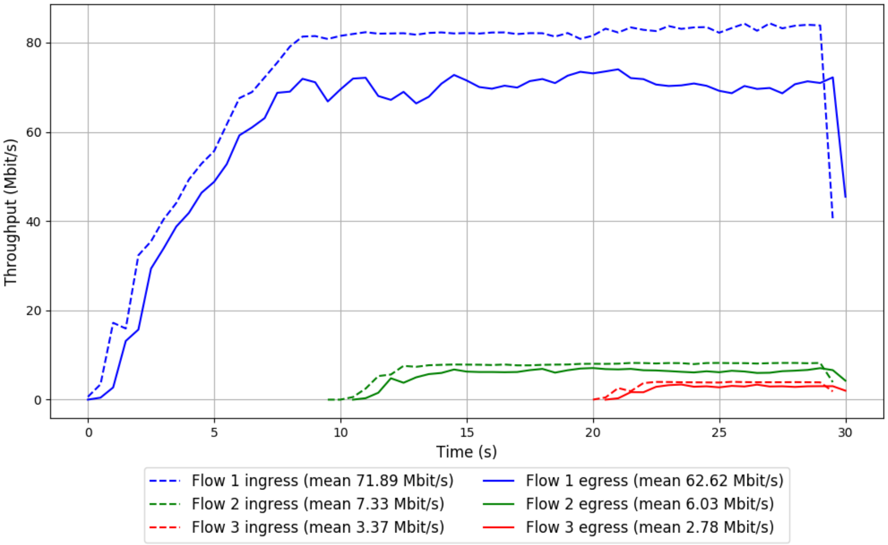
Run 5: Report of Muses_DecisionTree — Data Link

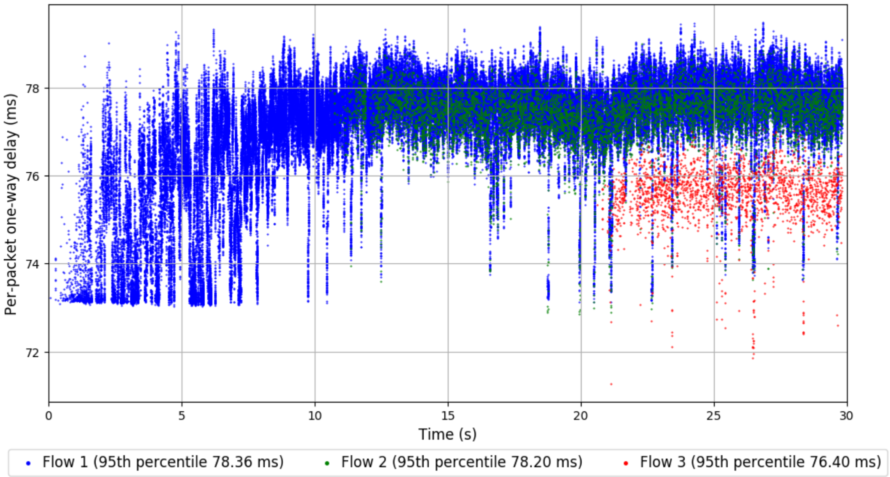




```
Run 1: Statistics of Muses\_DecisionTreeH0

Start at: 2019-07-12 04:34:59
End at: 2019-07-12 04:35:29
Local clock offset: -5.892 ms
Remote clock offset: -8.032 ms

# Below is generated by plot.py at 2019-07-12 06:49:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 67.39 Mbit/s
95th percentile per-packet one-way delay: 78.352 ms
Loss rate: 13.44%
-- Flow 1:
Average throughput: 62.62 Mbit/s
95th percentile per-packet one-way delay: 78.362 ms
Loss rate: 12.88%
-- Flow 2:
Average throughput: 6.03 Mbit/s
95th percentile per-packet one-way delay: 78.205 ms
Loss rate: 19.73%
-- Flow 3:
Average throughput: 2.78 Mbit/s
95th percentile per-packet one-way delay: 76.401 ms
Loss rate: 21.84%
```

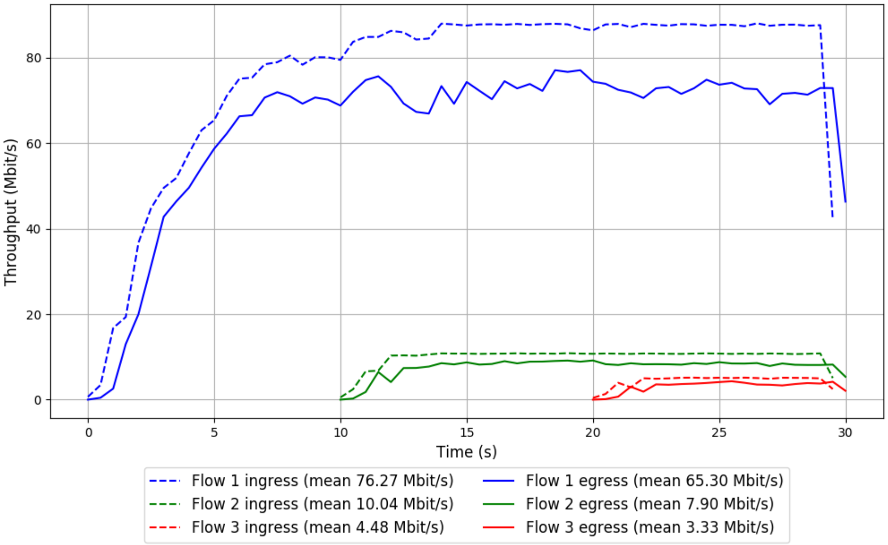
Run 1: Report of Muses_DecisionTreeH0 — Data Link

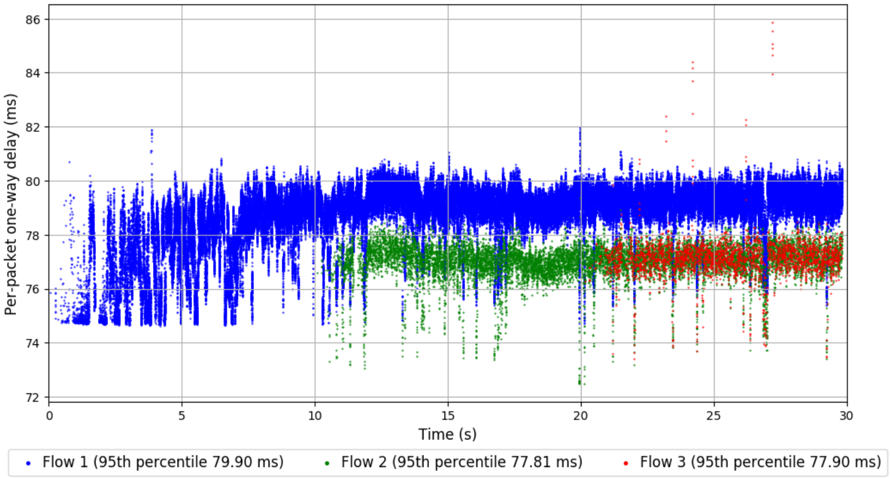




```
Run 2: Statistics of Muses\_DecisionTreeH0

Start at: 2019-07-12 05:05:45
End at: 2019-07-12 05:06:15
Local clock offset: -7.128 ms
Remote clock offset: -5.577 ms

# Below is generated by plot.py at 2019-07-12 06:49:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 71.62 Mbit/s
95th percentile per-packet one-way delay: 79.880 ms
Loss rate: 15.13%
-- Flow 1:
Average throughput: 65.30 Mbit/s
95th percentile per-packet one-way delay: 79.899 ms
Loss rate: 14.38%
-- Flow 2:
Average throughput: 7.90 Mbit/s
95th percentile per-packet one-way delay: 77.808 ms
Loss rate: 21.33%
-- Flow 3:
Average throughput: 3.33 Mbit/s
95th percentile per-packet one-way delay: 77.899 ms
Loss rate: 25.85%
```

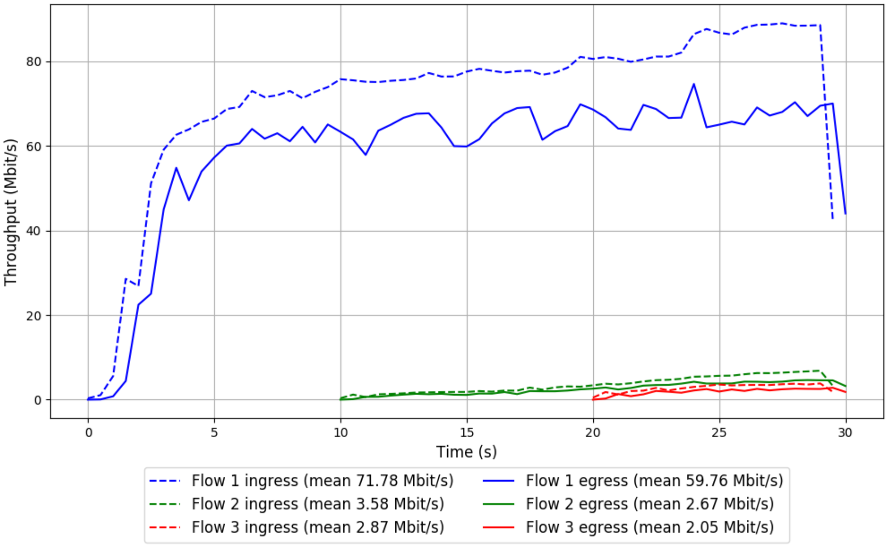
Run 2: Report of Muses_DecisionTreeH0 — Data Link

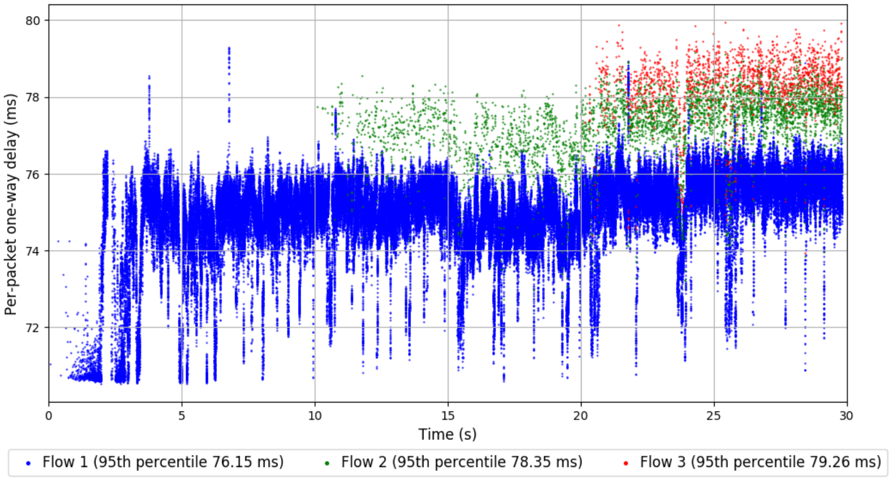




```
Run 3: Statistics of Muses\_DecisionTreeH0

Start at: 2019-07-12 05:36:18
End at: 2019-07-12 05:36:48
Local clock offset: -7.548 ms
Remote clock offset: -7.697 ms

# Below is generated by plot.py at 2019-07-12 06:49:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 62.19 Mbit/s
95th percentile per-packet one-way delay: 76.442 ms
Loss rate: 17.16%
-- Flow 1:
Average throughput: 59.76 Mbit/s
95th percentile per-packet one-way delay: 76.151 ms
Loss rate: 16.74%
-- Flow 2:
Average throughput: 2.67 Mbit/s
95th percentile per-packet one-way delay: 78.349 ms
Loss rate: 25.48%
-- Flow 3:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 79.259 ms
Loss rate: 28.37%
```

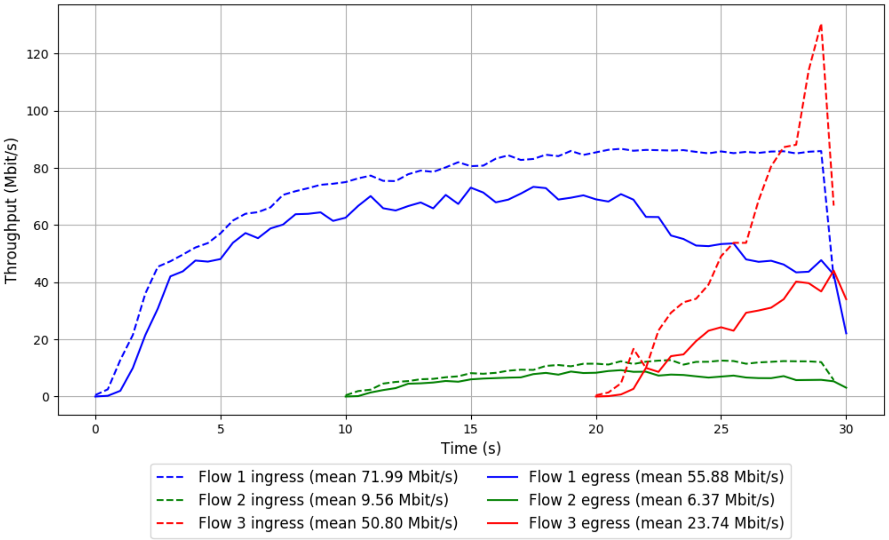
Run 3: Report of Muses_DecisionTreeH0 — Data Link

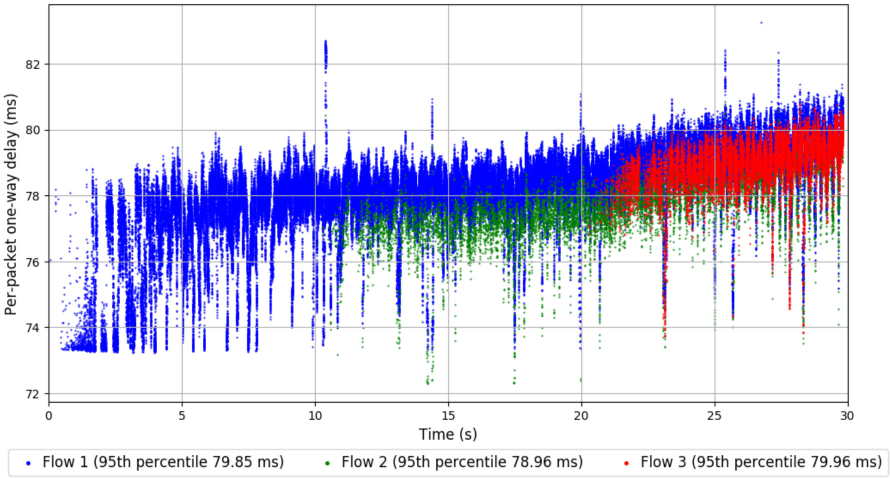




```
Run 4: Statistics of Muses\_DecisionTreeH0

Start at: 2019-07-12 06:06:51
End at: 2019-07-12 06:07:21
Local clock offset: -7.408 ms
Remote clock offset: -8.773 ms

# Below is generated by plot.py at 2019-07-12 06:49:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 67.83 Mbit/s
95th percentile per-packet one-way delay: 79.854 ms
Loss rate: 28.50%
-- Flow 1:
Average throughput: 55.88 Mbit/s
95th percentile per-packet one-way delay: 79.853 ms
Loss rate: 22.37%
-- Flow 2:
Average throughput: 6.37 Mbit/s
95th percentile per-packet one-way delay: 78.956 ms
Loss rate: 33.35%
-- Flow 3:
Average throughput: 23.74 Mbit/s
95th percentile per-packet one-way delay: 79.957 ms
Loss rate: 53.27%
```

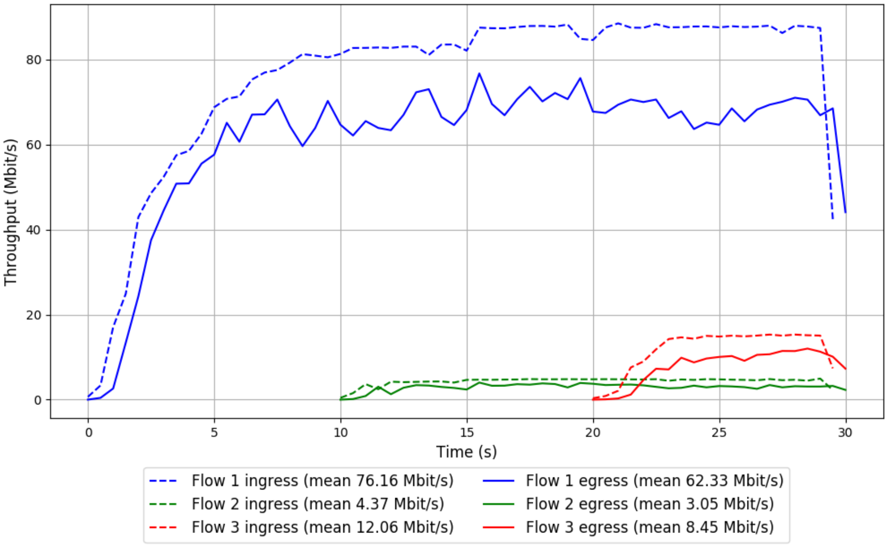
Run 4: Report of Muses_DecisionTreeH0 — Data Link

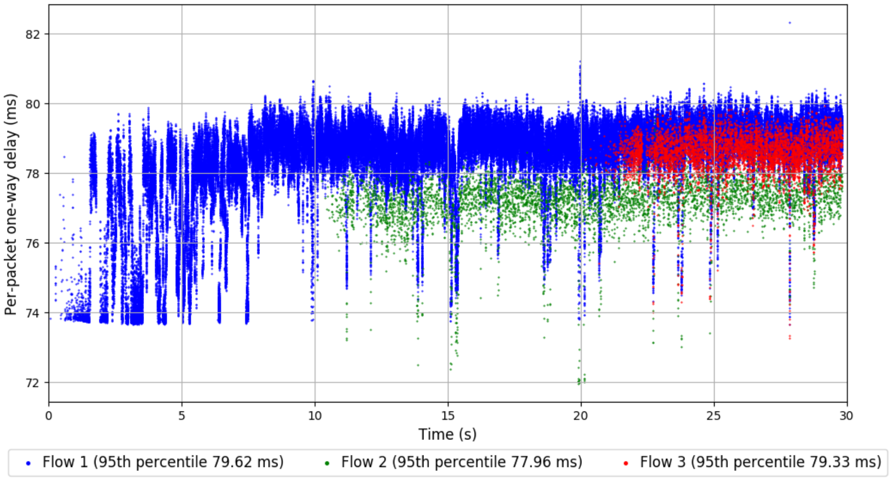




```
Run 5: Statistics of Muses\_DecisionTreeH0

Start at: 2019-07-12 06:37:12
End at: 2019-07-12 06:37:42
Local clock offset: -6.578 ms
Remote clock offset: -10.891 ms

# Below is generated by plot.py at 2019-07-12 06:49:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 67.09 Mbit/s
95th percentile per-packet one-way delay: 79.602 ms
Loss rate: 19.12%
-- Flow 1:
Average throughput: 62.33 Mbit/s
95th percentile per-packet one-way delay: 79.616 ms
Loss rate: 18.14%
-- Flow 2:
Average throughput: 3.05 Mbit/s
95th percentile per-packet one-way delay: 77.964 ms
Loss rate: 30.25%
-- Flow 3:
Average throughput: 8.45 Mbit/s
95th percentile per-packet one-way delay: 79.327 ms
Loss rate: 30.00%
```

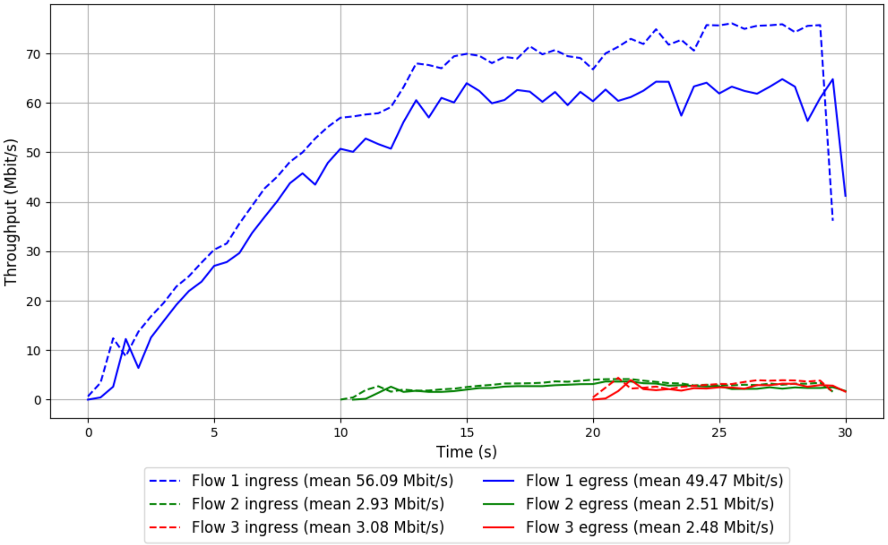
Run 5: Report of Muses_DecisionTreeH0 — Data Link

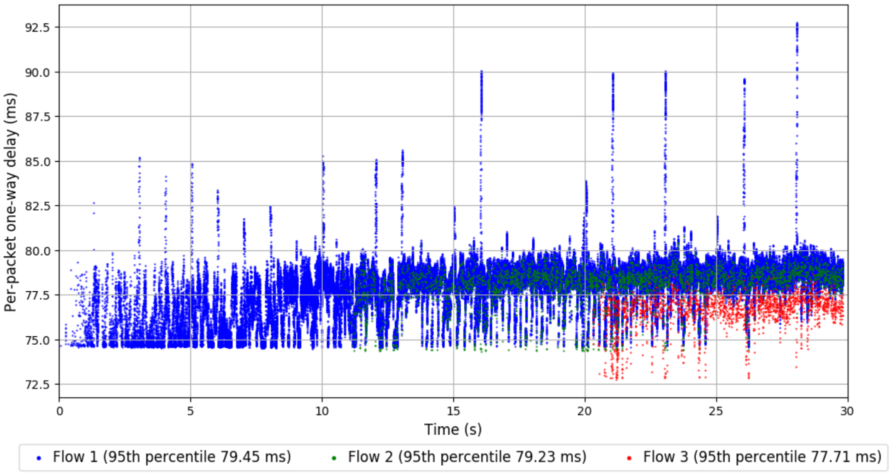




```
Run 1: Statistics of Muses\_DecisionTreeR0

Start at: 2019-07-12 04:23:34
End at: 2019-07-12 04:24:04
Local clock offset: -6.773 ms
Remote clock offset: -6.622 ms

# Below is generated by plot.py at 2019-07-12 06:49:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 51.90 Mbit/s
95th percentile per-packet one-way delay: 79.442 ms
Loss rate: 12.08%
-- Flow 1:
Average throughput: 49.47 Mbit/s
95th percentile per-packet one-way delay: 79.455 ms
Loss rate: 11.79%
-- Flow 2:
Average throughput: 2.51 Mbit/s
95th percentile per-packet one-way delay: 79.227 ms
Loss rate: 16.47%
-- Flow 3:
Average throughput: 2.48 Mbit/s
95th percentile per-packet one-way delay: 77.709 ms
Loss rate: 19.53%
```

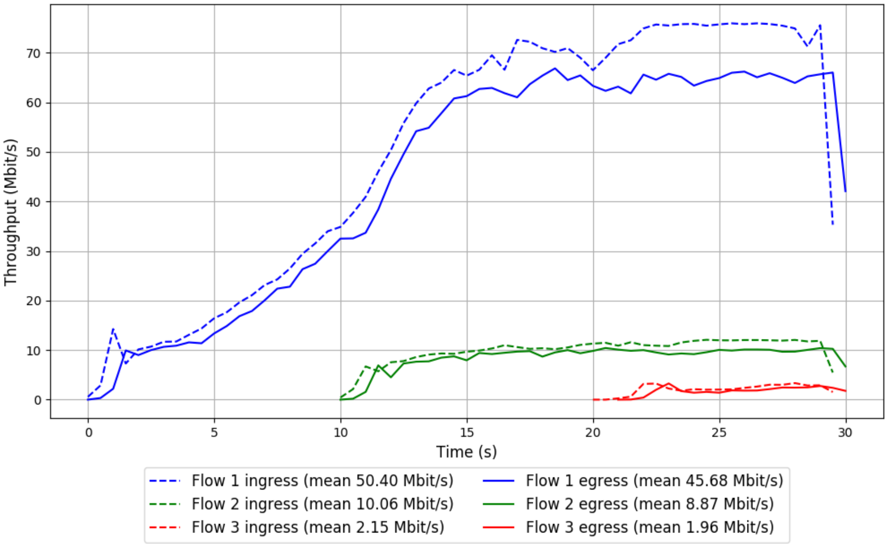
Run 1: Report of Muses_DecisionTreeR0 — Data Link

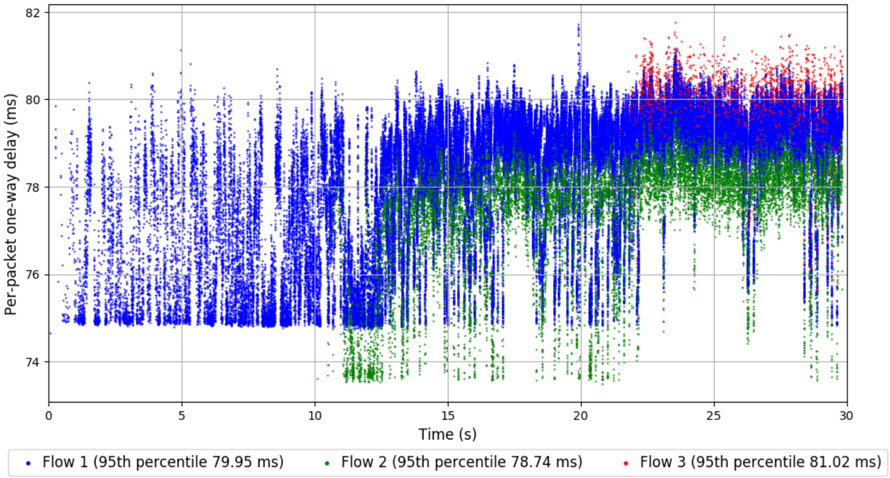




```
Run 2: Statistics of Muses\_DecisionTreeR0

Start at: 2019-07-12 04:54:05
End at: 2019-07-12 04:54:35
Local clock offset: -7.008 ms
Remote clock offset: -5.952 ms

# Below is generated by plot.py at 2019-07-12 06:49:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 52.14 Mbit/s
95th percentile per-packet one-way delay: 79.958 ms
Loss rate: 9.73%
-- Flow 1:
Average throughput: 45.68 Mbit/s
95th percentile per-packet one-way delay: 79.949 ms
Loss rate: 9.34%
-- Flow 2:
Average throughput: 8.87 Mbit/s
95th percentile per-packet one-way delay: 78.742 ms
Loss rate: 11.79%
-- Flow 3:
Average throughput: 1.96 Mbit/s
95th percentile per-packet one-way delay: 81.022 ms
Loss rate: 18.14%
```

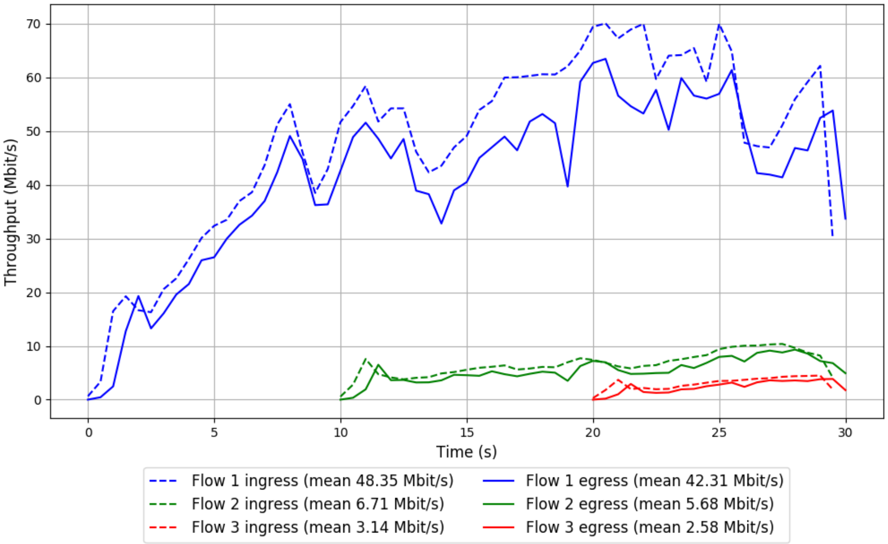
Run 2: Report of Muses_DecisionTreeR0 — Data Link

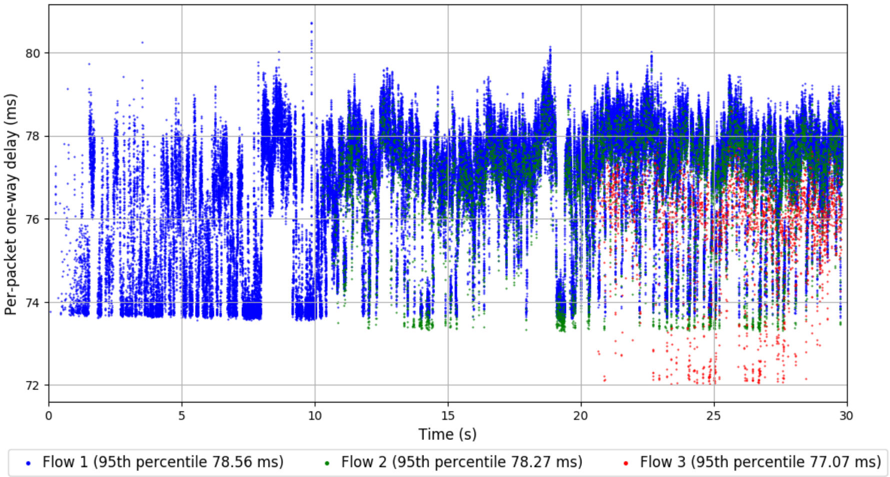




```
Run 3: Statistics of Muses\_DecisionTreeR0

Start at: 2019-07-12 05:24:47
End at: 2019-07-12 05:25:17
Local clock offset: -9.224 ms
Remote clock offset: -7.016 ms

# Below is generated by plot.py at 2019-07-12 06:49:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 46.91 Mbit/s
95th percentile per-packet one-way delay: 78.540 ms
Loss rate: 12.81%
-- Flow 1:
Average throughput: 42.31 Mbit/s
95th percentile per-packet one-way delay: 78.564 ms
Loss rate: 12.47%
-- Flow 2:
Average throughput: 5.68 Mbit/s
95th percentile per-packet one-way delay: 78.273 ms
Loss rate: 15.39%
-- Flow 3:
Average throughput: 2.58 Mbit/s
95th percentile per-packet one-way delay: 77.071 ms
Loss rate: 17.69%
```

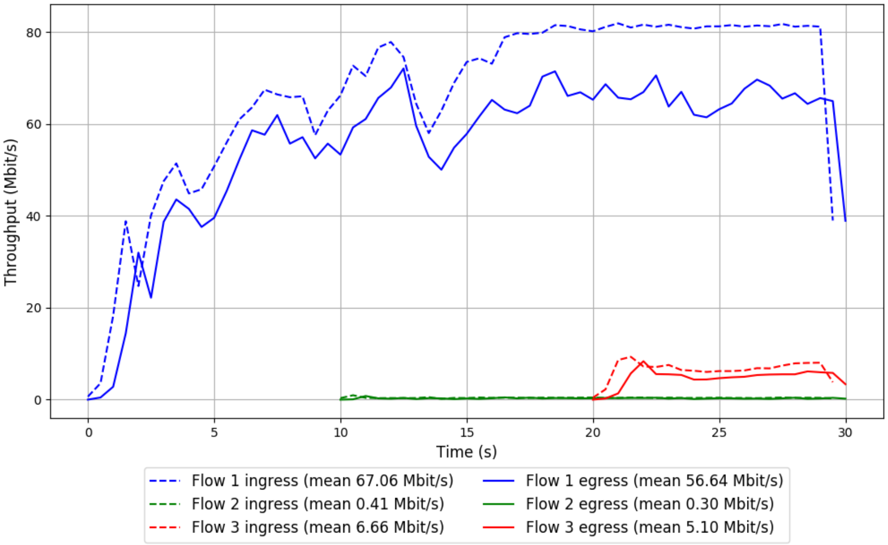
Run 3: Report of Muses_DecisionTreeR0 — Data Link

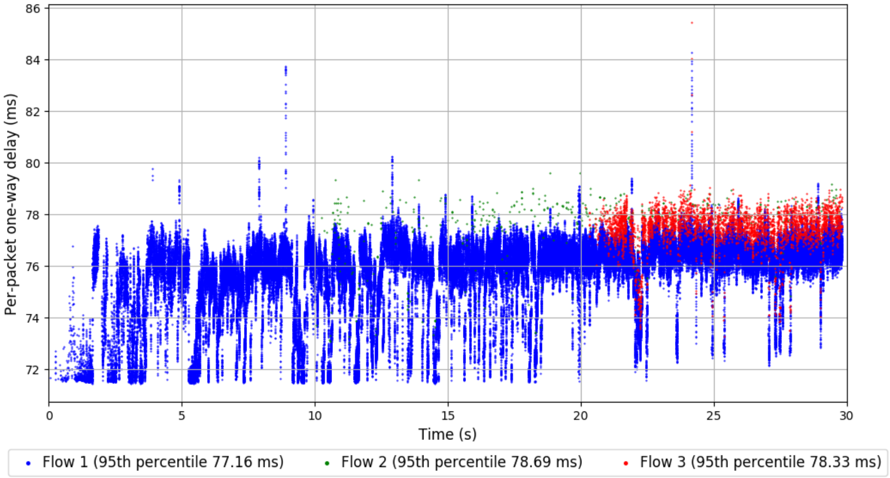




```
Run 4: Statistics of Muses\_DecisionTreeR0

Start at: 2019-07-12 05:55:26
End at: 2019-07-12 05:55:56
Local clock offset: -6.94 ms
Remote clock offset: -6.406 ms

# Below is generated by plot.py at 2019-07-12 06:50:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 58.49 Mbit/s
95th percentile per-packet one-way delay: 77.310 ms
Loss rate: 15.81%
-- Flow 1:
Average throughput: 56.64 Mbit/s
95th percentile per-packet one-way delay: 77.163 ms
Loss rate: 15.52%
-- Flow 2:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 78.685 ms
Loss rate: 26.92%
-- Flow 3:
Average throughput: 5.10 Mbit/s
95th percentile per-packet one-way delay: 78.330 ms
Loss rate: 23.51%
```

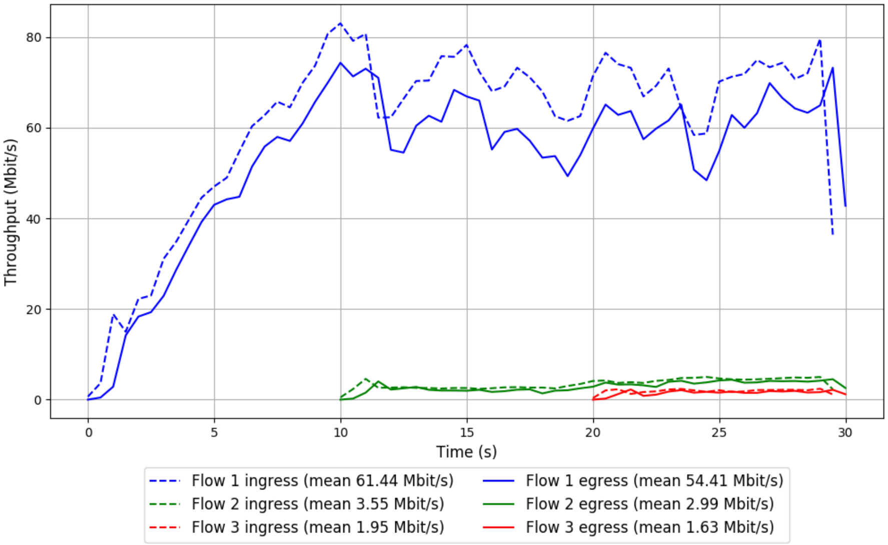
Run 4: Report of Muses_DecisionTreeR0 — Data Link

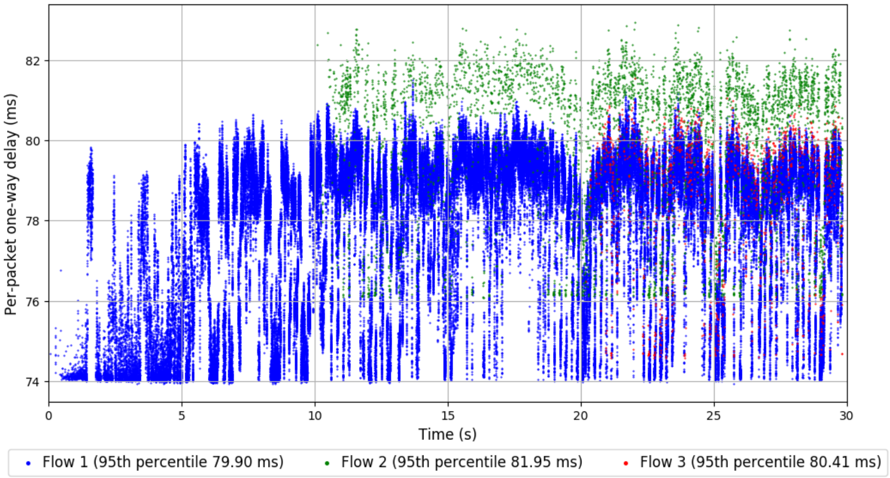




```
Run 5: Statistics of Muses\_DecisionTreeR0

Start at: 2019-07-12 06:25:40
End at: 2019-07-12 06:26:10
Local clock offset: -7.42 ms
Remote clock offset: -9.388 ms

# Below is generated by plot.py at 2019-07-12 06:50:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.91 Mbit/s
95th percentile per-packet one-way delay: 80.067 ms
Loss rate: 11.63%
-- Flow 1:
Average throughput: 54.41 Mbit/s
95th percentile per-packet one-way delay: 79.904 ms
Loss rate: 11.42%
-- Flow 2:
Average throughput: 2.99 Mbit/s
95th percentile per-packet one-way delay: 81.951 ms
Loss rate: 15.60%
-- Flow 3:
Average throughput: 1.63 Mbit/s
95th percentile per-packet one-way delay: 80.413 ms
Loss rate: 16.70%
```

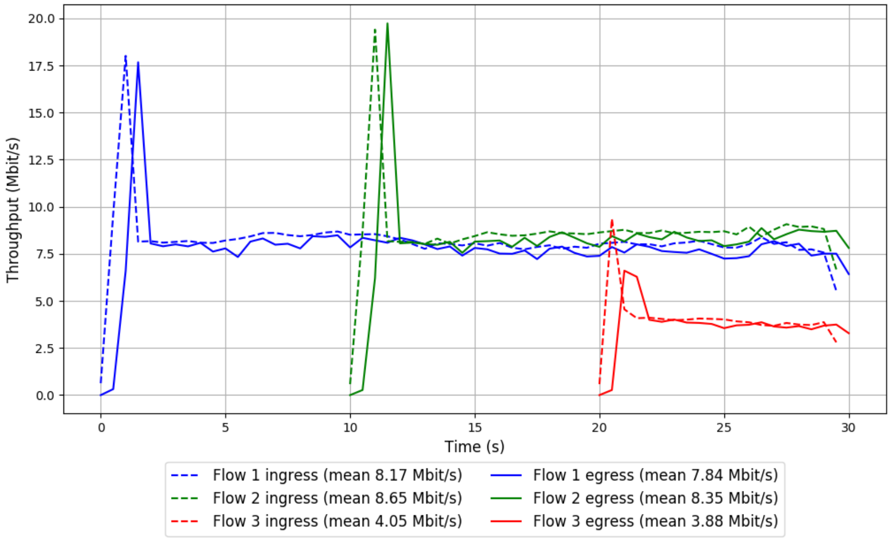
Run 5: Report of Muses_DecisionTreeR0 — Data Link

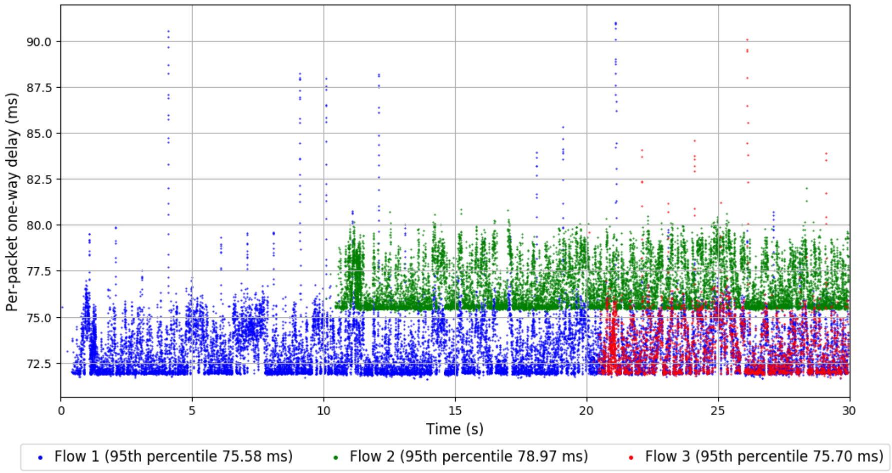




```
Run 1: Statistics of PCC-Allegro

Start at: 2019-07-12 04:19:54
End at: 2019-07-12 04:20:24
Local clock offset: -6.681 ms
Remote clock offset: -6.922 ms

# Below is generated by plot.py at 2019-07-12 06:50:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.68 Mbit/s
95th percentile per-packet one-way delay: 78.450 ms
Loss rate: 3.86%
-- Flow 1:
Average throughput: 7.84 Mbit/s
95th percentile per-packet one-way delay: 75.582 ms
Loss rate: 4.04%
-- Flow 2:
Average throughput: 8.35 Mbit/s
95th percentile per-packet one-way delay: 78.973 ms
Loss rate: 3.47%
-- Flow 3:
Average throughput: 3.88 Mbit/s
95th percentile per-packet one-way delay: 75.705 ms
Loss rate: 4.38%
```

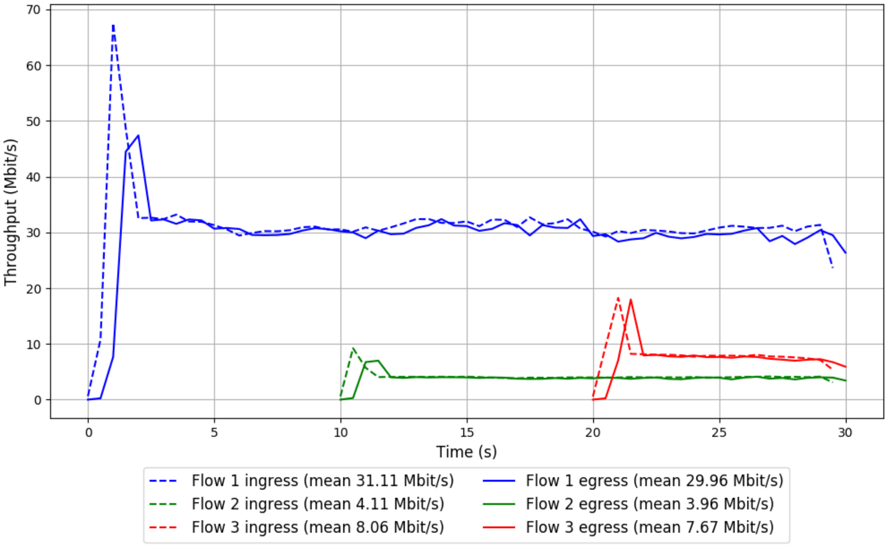
Run 1: Report of PCC-Allegro — Data Link

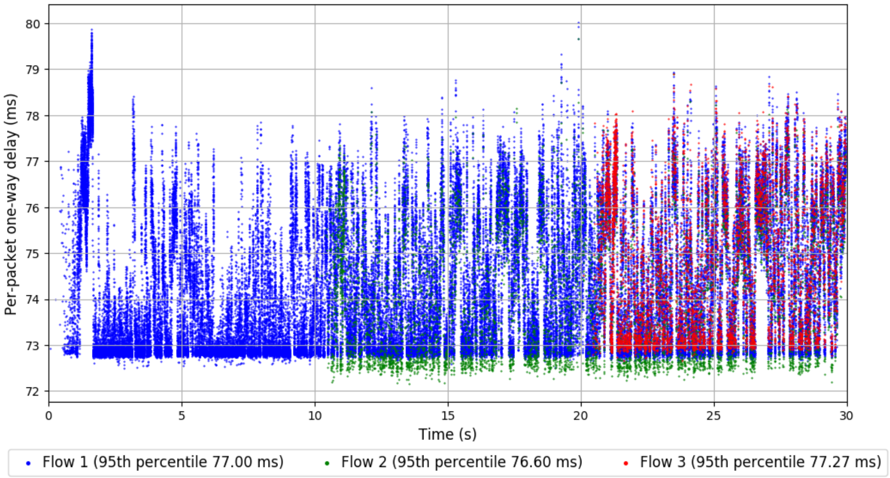




```
Run 2: Statistics of PCC-Allegro

Start at: 2019-07-12 04:50:24
End at: 2019-07-12 04:50:54
Local clock offset: -5.961 ms
Remote clock offset: -8.012 ms

# Below is generated by plot.py at 2019-07-12 06:50:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 35.12 Mbit/s
95th percentile per-packet one-way delay: 77.007 ms
Loss rate: 3.79%
-- Flow 1:
Average throughput: 29.96 Mbit/s
95th percentile per-packet one-way delay: 77.002 ms
Loss rate: 3.71%
-- Flow 2:
Average throughput: 3.96 Mbit/s
95th percentile per-packet one-way delay: 76.599 ms
Loss rate: 3.73%
-- Flow 3:
Average throughput: 7.67 Mbit/s
95th percentile per-packet one-way delay: 77.266 ms
Loss rate: 4.76%
```

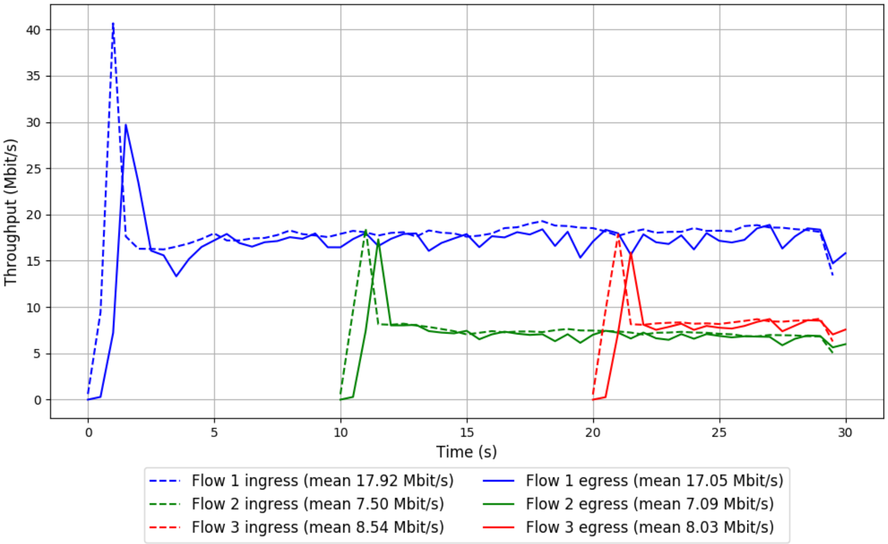
Run 2: Report of PCC-Allegro — Data Link

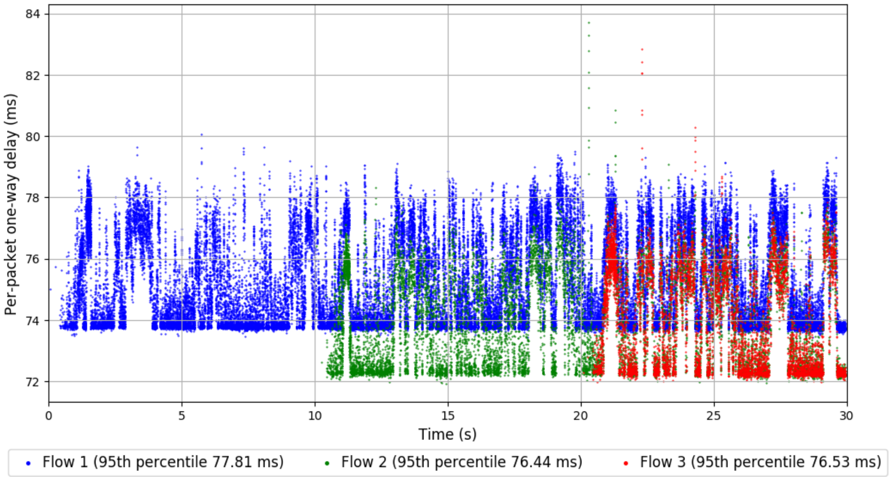




```
Run 3: Statistics of PCC-Allegro

Start at: 2019-07-12 05:21:06
End at: 2019-07-12 05:21:36
Local clock offset: -9.288 ms
Remote clock offset: -6.949 ms

# Below is generated by plot.py at 2019-07-12 06:50:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 24.41 Mbit/s
95th percentile per-packet one-way delay: 77.638 ms
Loss rate: 5.14%
-- Flow 1:
Average throughput: 17.05 Mbit/s
95th percentile per-packet one-way delay: 77.806 ms
Loss rate: 4.90%
-- Flow 2:
Average throughput: 7.09 Mbit/s
95th percentile per-packet one-way delay: 76.442 ms
Loss rate: 5.54%
-- Flow 3:
Average throughput: 8.03 Mbit/s
95th percentile per-packet one-way delay: 76.530 ms
Loss rate: 6.00%
```

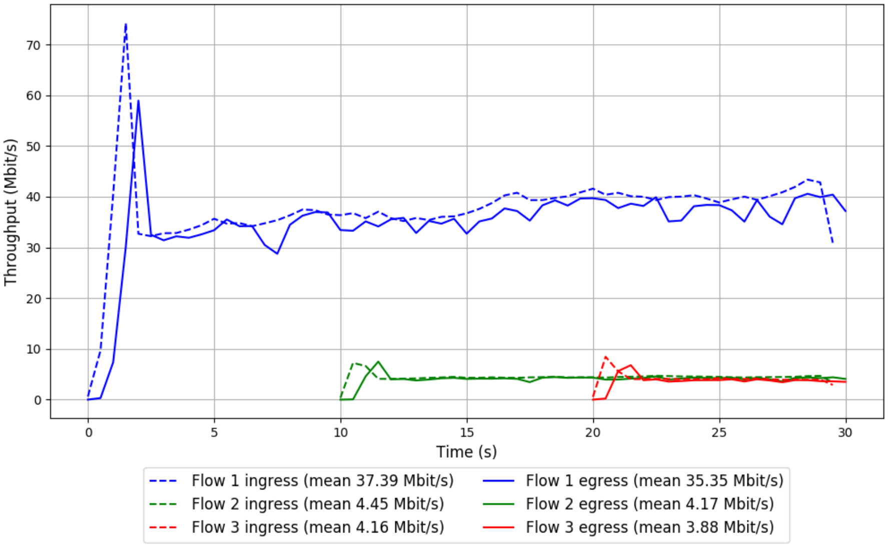
Run 3: Report of PCC-Allegro — Data Link

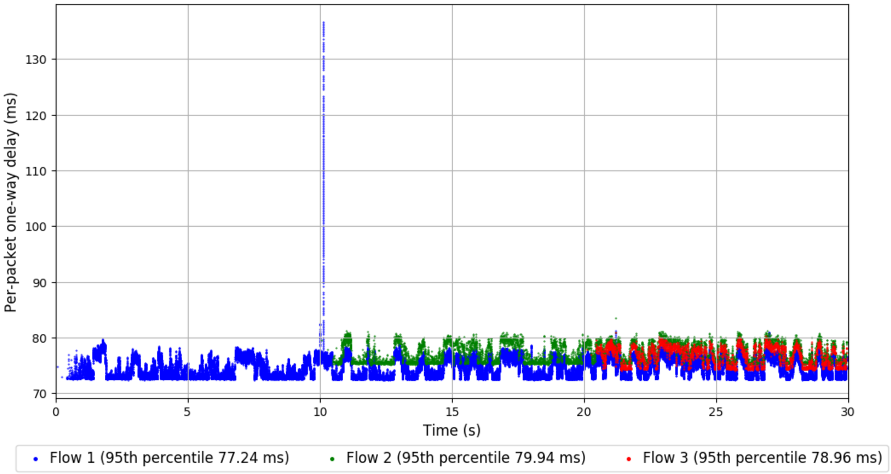




```
Run 4: Statistics of PCC-Allegro

Start at: 2019-07-12 05:51:45
End at: 2019-07-12 05:52:15
Local clock offset: -7.722 ms
Remote clock offset: -5.479 ms

# Below is generated by plot.py at 2019-07-12 06:50:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 39.41 Mbit/s
95th percentile per-packet one-way delay: 78.120 ms
Loss rate: 5.55%
-- Flow 1:
Average throughput: 35.35 Mbit/s
95th percentile per-packet one-way delay: 77.237 ms
Loss rate: 5.45%
-- Flow 2:
Average throughput: 4.17 Mbit/s
95th percentile per-packet one-way delay: 79.936 ms
Loss rate: 6.23%
-- Flow 3:
Average throughput: 3.88 Mbit/s
95th percentile per-packet one-way delay: 78.961 ms
Loss rate: 6.83%
```

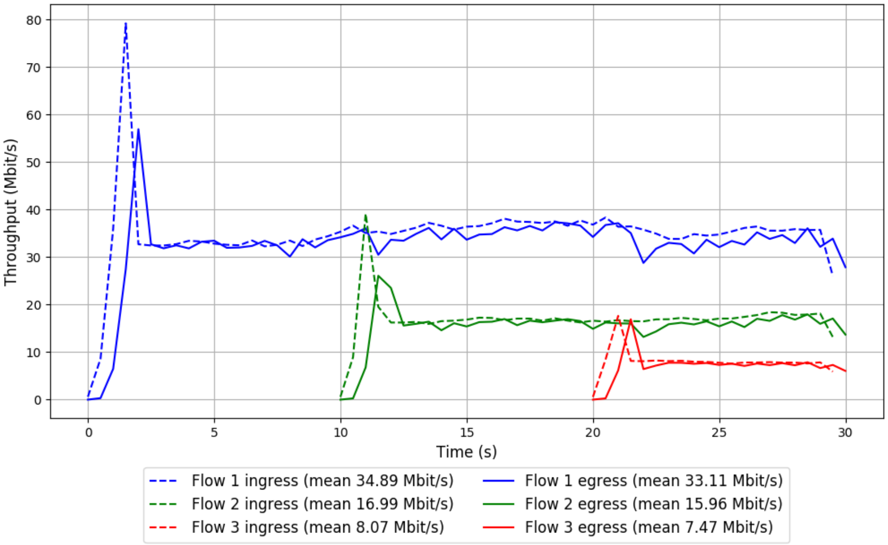
Run 4: Report of PCC-Allegro — Data Link

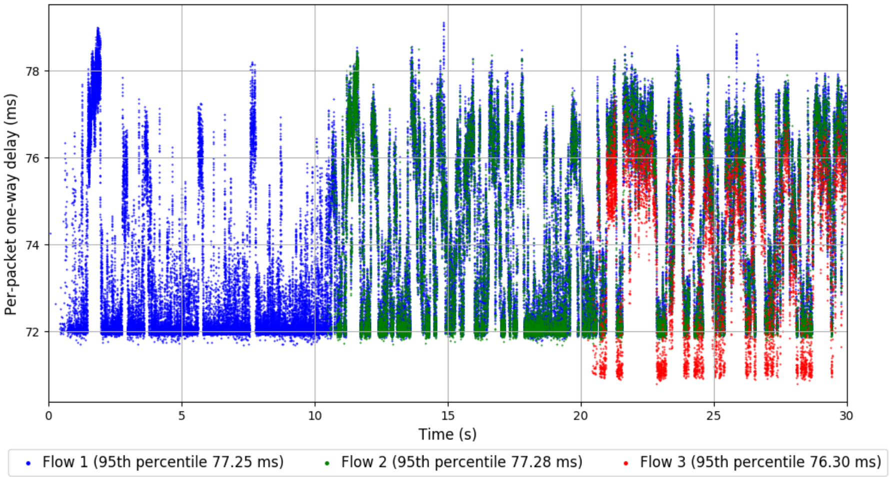




```
Run 5: Statistics of PCC-Allegro

Start at: 2019-07-12 06:22:00
End at: 2019-07-12 06:22:30
Local clock offset: -6.491 ms
Remote clock offset: -10.539 ms

# Below is generated by plot.py at 2019-07-12 06:50:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 46.19 Mbit/s
95th percentile per-packet one-way delay: 77.234 ms
Loss rate: 5.45%
-- Flow 1:
Average throughput: 33.11 Mbit/s
95th percentile per-packet one-way delay: 77.254 ms
Loss rate: 5.09%
-- Flow 2:
Average throughput: 15.96 Mbit/s
95th percentile per-packet one-way delay: 77.279 ms
Loss rate: 6.09%
-- Flow 3:
Average throughput: 7.47 Mbit/s
95th percentile per-packet one-way delay: 76.303 ms
Loss rate: 7.43%
```

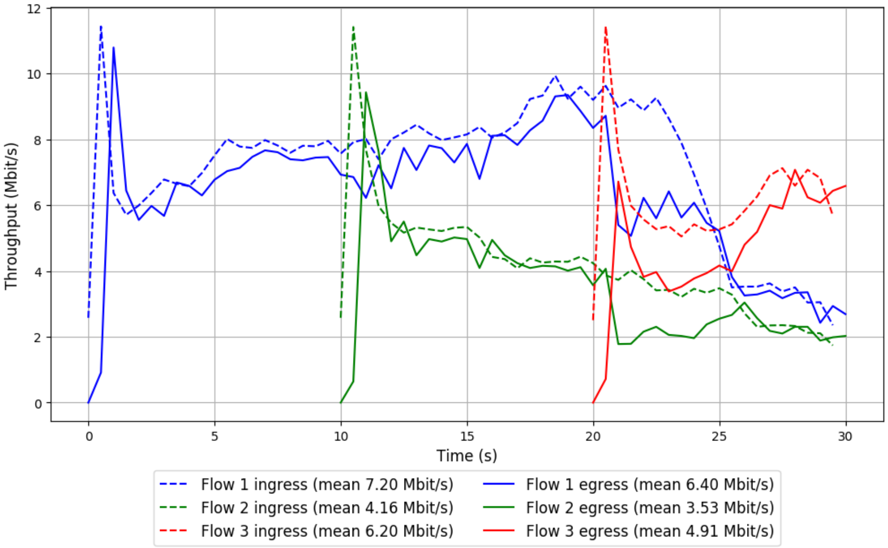
Run 5: Report of PCC-Allegro — Data Link

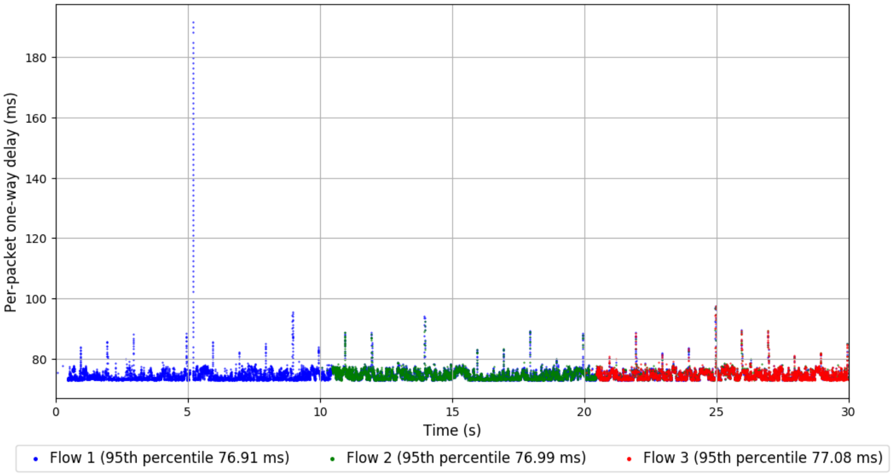




```
Run 1: Statistics of PCC-Expr

Start at: 2019-07-12 04:13:34
End at: 2019-07-12 04:14:04
Local clock offset: -5.89 ms
Remote clock offset: -5.022 ms

# Below is generated by plot.py at 2019-07-12 06:50:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.37 Mbit/s
95th percentile per-packet one-way delay: 76.955 ms
Loss rate: 13.71%
-- Flow 1:
Average throughput: 6.40 Mbit/s
95th percentile per-packet one-way delay: 76.910 ms
Loss rate: 11.14%
-- Flow 2:
Average throughput: 3.53 Mbit/s
95th percentile per-packet one-way delay: 76.989 ms
Loss rate: 15.17%
-- Flow 3:
Average throughput: 4.91 Mbit/s
95th percentile per-packet one-way delay: 77.076 ms
Loss rate: 20.79%
```

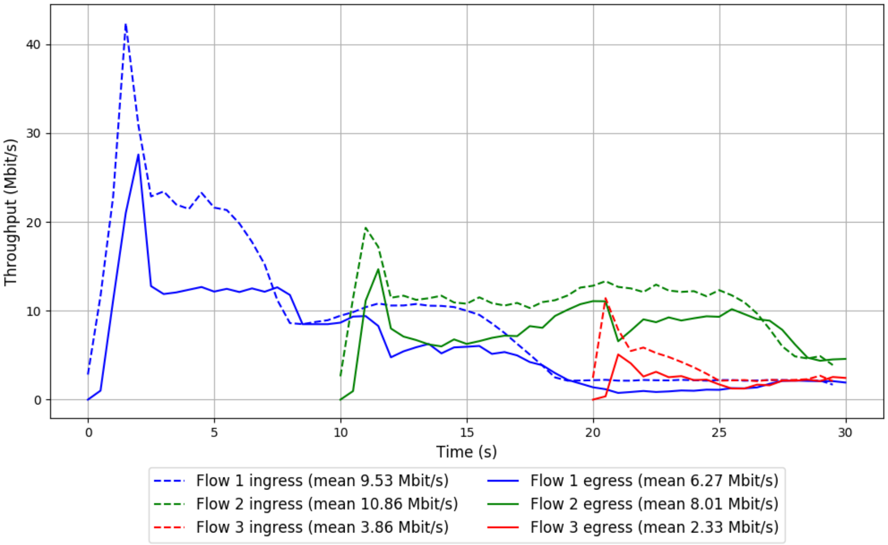
Run 1: Report of PCC-Expr — Data Link

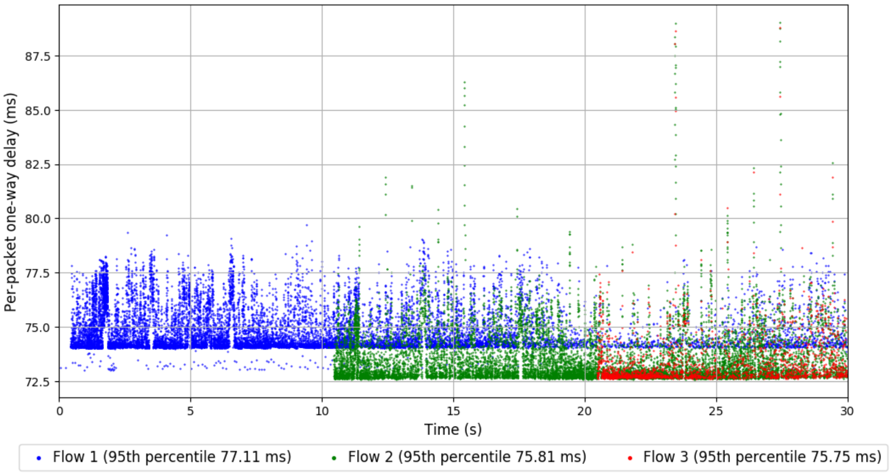




```
Run 2: Statistics of PCC-Expr

Start at: 2019-07-12 04:43:55
End at: 2019-07-12 04:44:25
Local clock offset: -5.984 ms
Remote clock offset: -6.438 ms

# Below is generated by plot.py at 2019-07-12 06:50:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.37 Mbit/s
95th percentile per-packet one-way delay: 76.755 ms
Loss rate: 31.40%
-- Flow 1:
Average throughput: 6.27 Mbit/s
95th percentile per-packet one-way delay: 77.114 ms
Loss rate: 34.20%
-- Flow 2:
Average throughput: 8.01 Mbit/s
95th percentile per-packet one-way delay: 75.805 ms
Loss rate: 26.24%
-- Flow 3:
Average throughput: 2.33 Mbit/s
95th percentile per-packet one-way delay: 75.747 ms
Loss rate: 39.66%
```

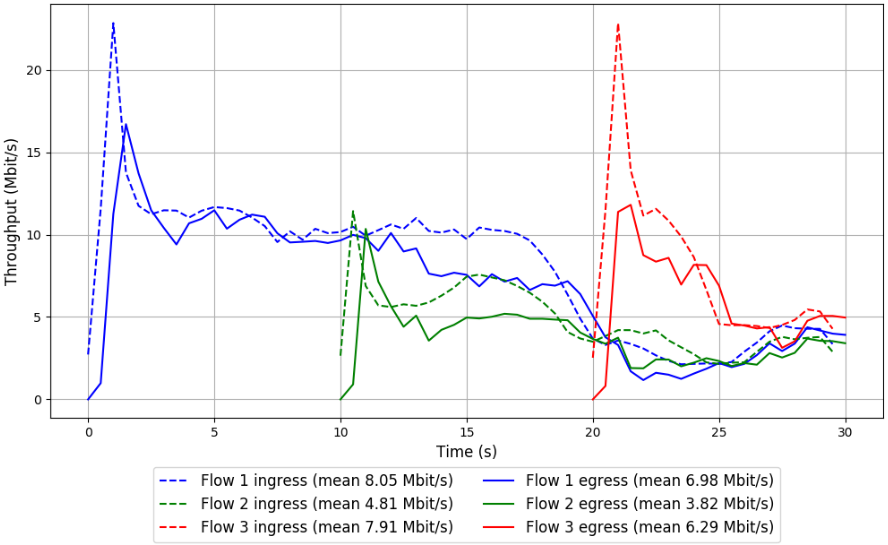
Run 2: Report of PCC-Expr — Data Link

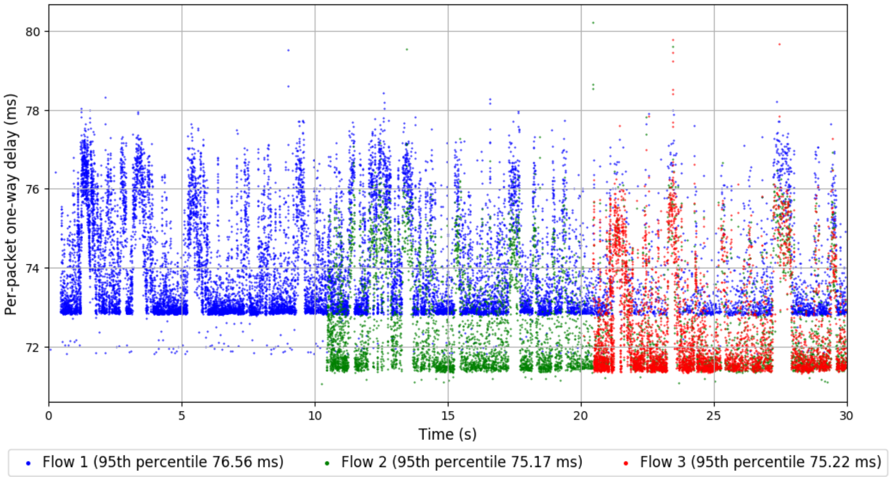




```
Run 3: Statistics of PCC-Expr

Start at: 2019-07-12 05:14:42
End at: 2019-07-12 05:15:12
Local clock offset: -8.186 ms
Remote clock offset: -7.13 ms

# Below is generated by plot.py at 2019-07-12 06:50:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.59 Mbit/s
95th percentile per-packet one-way delay: 76.299 ms
Loss rate: 16.38%
-- Flow 1:
Average throughput: 6.98 Mbit/s
95th percentile per-packet one-way delay: 76.555 ms
Loss rate: 13.34%
-- Flow 2:
Average throughput: 3.82 Mbit/s
95th percentile per-packet one-way delay: 75.172 ms
Loss rate: 20.61%
-- Flow 3:
Average throughput: 6.29 Mbit/s
95th percentile per-packet one-way delay: 75.220 ms
Loss rate: 20.53%
```

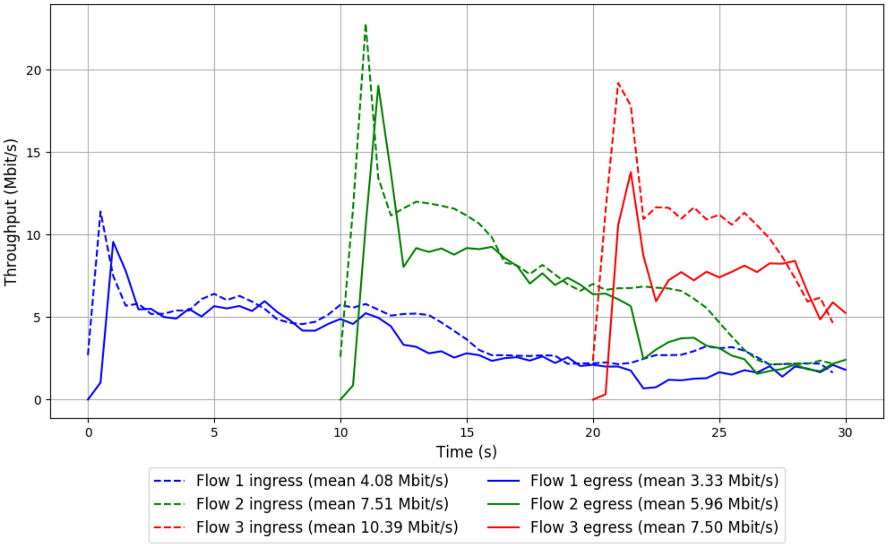
Run 3: Report of PCC-Expr — Data Link

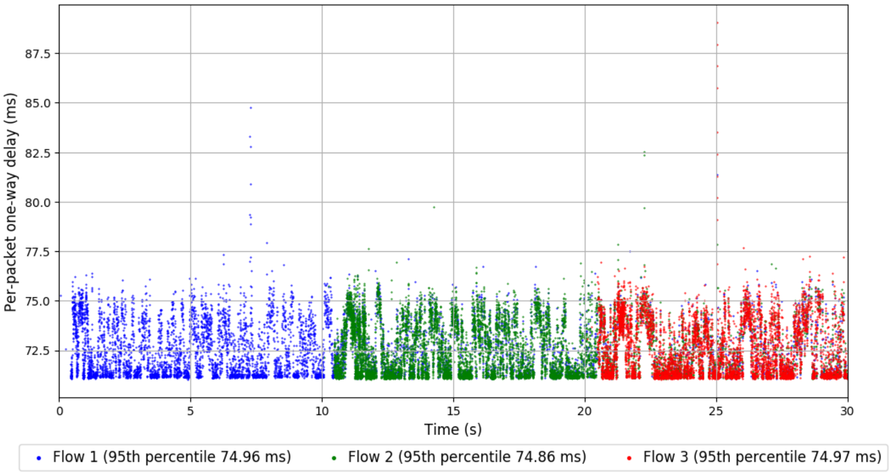




```
Run 4: Statistics of PCC-Expr

Start at: 2019-07-12 05:45:23
End at: 2019-07-12 05:45:53
Local clock offset: -7.035 ms
Remote clock offset: -6.57 ms

# Below is generated by plot.py at 2019-07-12 06:50:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 9.76 Mbit/s
95th percentile per-packet one-way delay: 74.910 ms
Loss rate: 21.95%
-- Flow 1:
Average throughput: 3.33 Mbit/s
95th percentile per-packet one-way delay: 74.964 ms
Loss rate: 18.48%
-- Flow 2:
Average throughput: 5.96 Mbit/s
95th percentile per-packet one-way delay: 74.859 ms
Loss rate: 20.73%
-- Flow 3:
Average throughput: 7.50 Mbit/s
95th percentile per-packet one-way delay: 74.970 ms
Loss rate: 27.84%
```

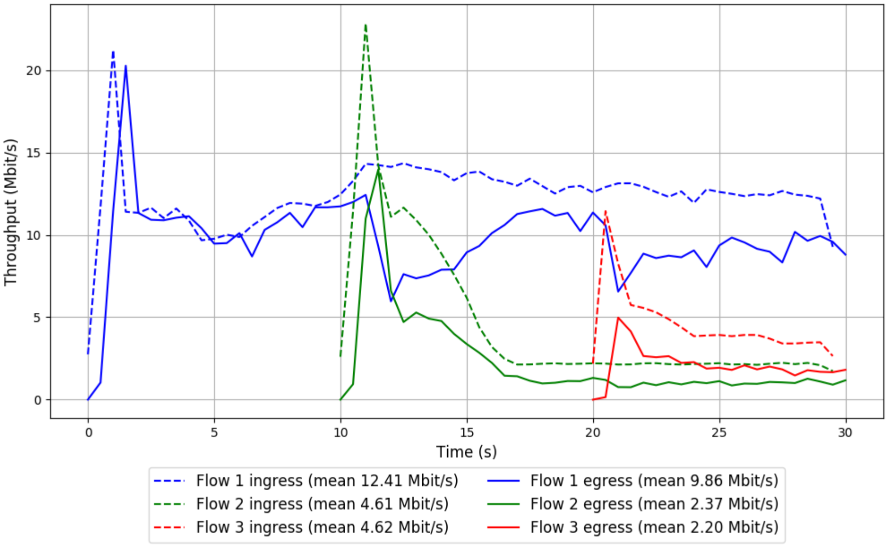
Run 4: Report of PCC-Expr — Data Link

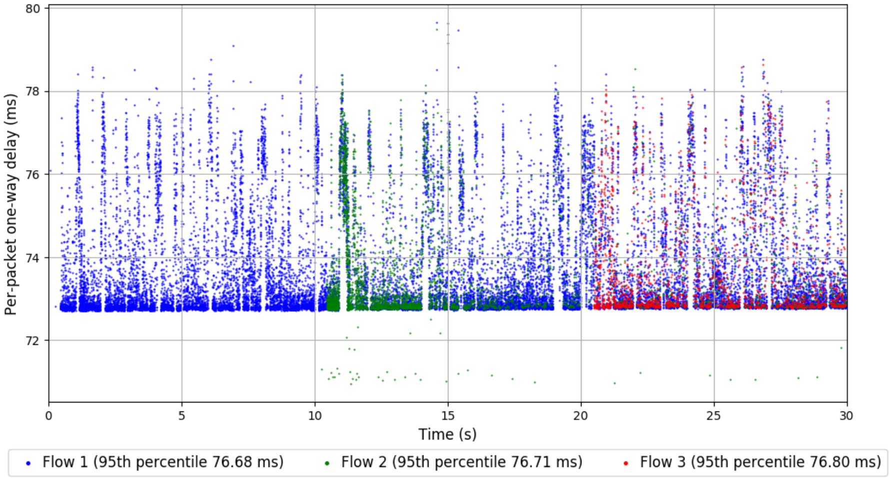




```
Run 5: Statistics of PCC-Expr

Start at: 2019-07-12 06:15:41
End at: 2019-07-12 06:16:11
Local clock offset: -6.461 ms
Remote clock offset: -9.804 ms

# Below is generated by plot.py at 2019-07-12 06:50:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.17 Mbit/s
95th percentile per-packet one-way delay: 76.692 ms
Loss rate: 28.43%
-- Flow 1:
Average throughput: 9.86 Mbit/s
95th percentile per-packet one-way delay: 76.680 ms
Loss rate: 20.52%
-- Flow 2:
Average throughput: 2.37 Mbit/s
95th percentile per-packet one-way delay: 76.707 ms
Loss rate: 48.51%
-- Flow 3:
Average throughput: 2.20 Mbit/s
95th percentile per-packet one-way delay: 76.803 ms
Loss rate: 52.39%
```

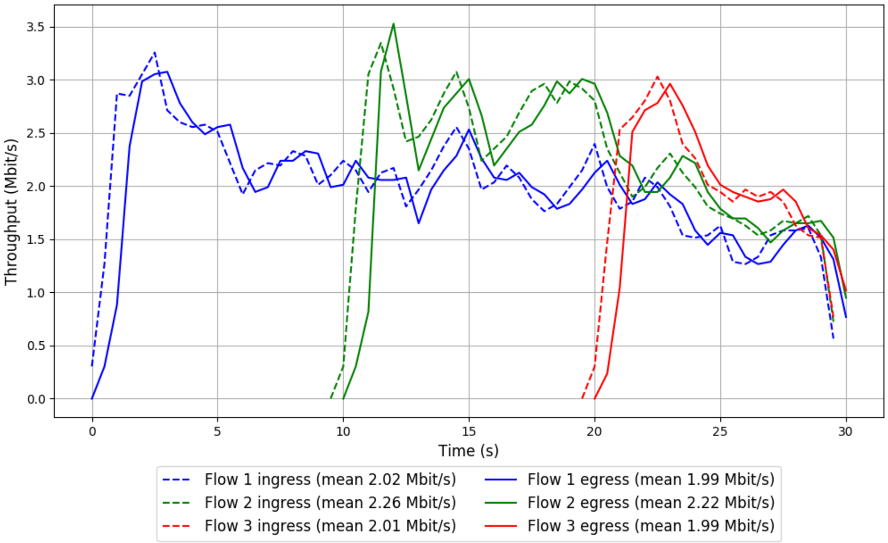
Run 5: Report of PCC-Expr — Data Link

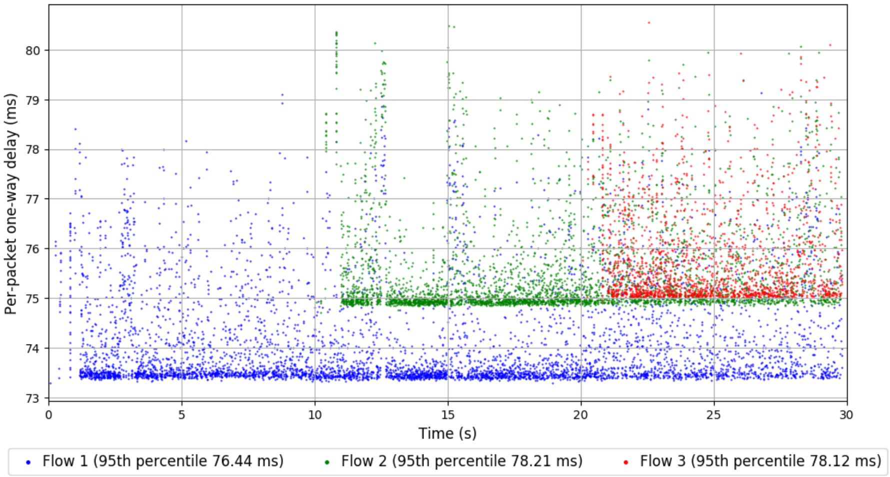




```
Run 1: Statistics of QUIC Cubic

Start at: 2019-07-12 04:32:25
End at: 2019-07-12 04:32:55
Local clock offset: -6.134 ms
Remote clock offset: -6.072 ms

# Below is generated by plot.py at 2019-07-12 06:50:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.11 Mbit/s
95th percentile per-packet one-way delay: 77.538 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 1.99 Mbit/s
95th percentile per-packet one-way delay: 76.444 ms
Loss rate: 1.47%
-- Flow 2:
Average throughput: 2.22 Mbit/s
95th percentile per-packet one-way delay: 78.207 ms
Loss rate: 1.60%
-- Flow 3:
Average throughput: 1.99 Mbit/s
95th percentile per-packet one-way delay: 78.122 ms
Loss rate: 1.27%
```

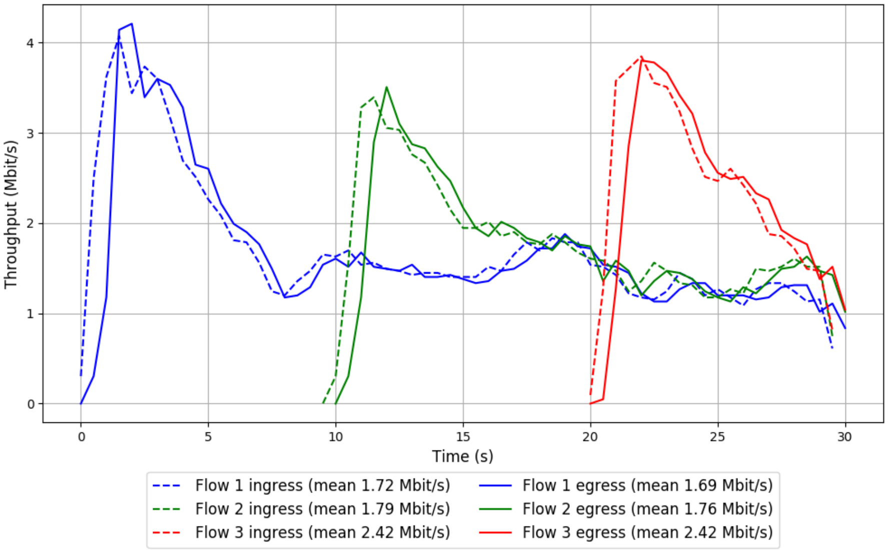
Run 1: Report of QUIC Cubic — Data Link

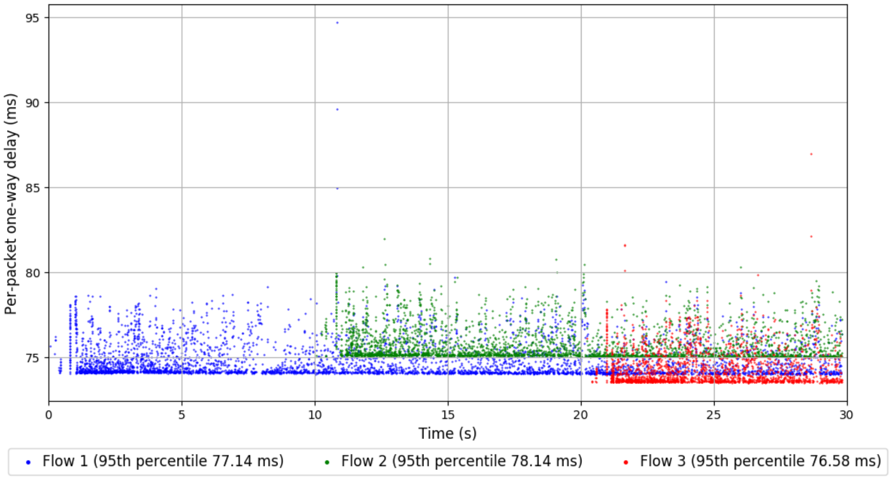




```
Run 2: Statistics of QUIC Cubic

Start at: 2019-07-12 05:03:00
End at: 2019-07-12 05:03:30
Local clock offset: -7.606 ms
Remote clock offset: -5.63 ms

# Below is generated by plot.py at 2019-07-12 06:50:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.64 Mbit/s
95th percentile per-packet one-way delay: 77.447 ms
Loss rate: 1.64%
-- Flow 1:
Average throughput: 1.69 Mbit/s
95th percentile per-packet one-way delay: 77.145 ms
Loss rate: 1.75%
-- Flow 2:
Average throughput: 1.76 Mbit/s
95th percentile per-packet one-way delay: 78.142 ms
Loss rate: 1.69%
-- Flow 3:
Average throughput: 2.42 Mbit/s
95th percentile per-packet one-way delay: 76.582 ms
Loss rate: 1.35%
```

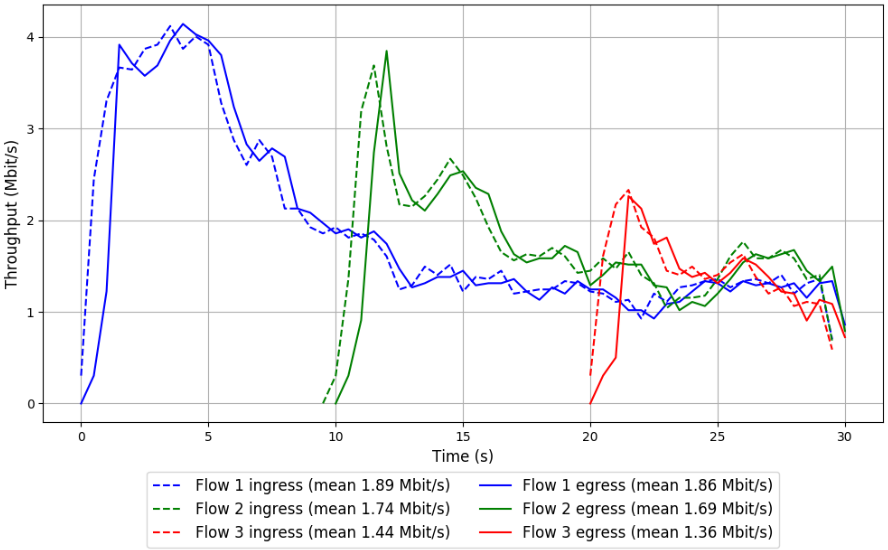
Run 2: Report of QUIC Cubic — Data Link

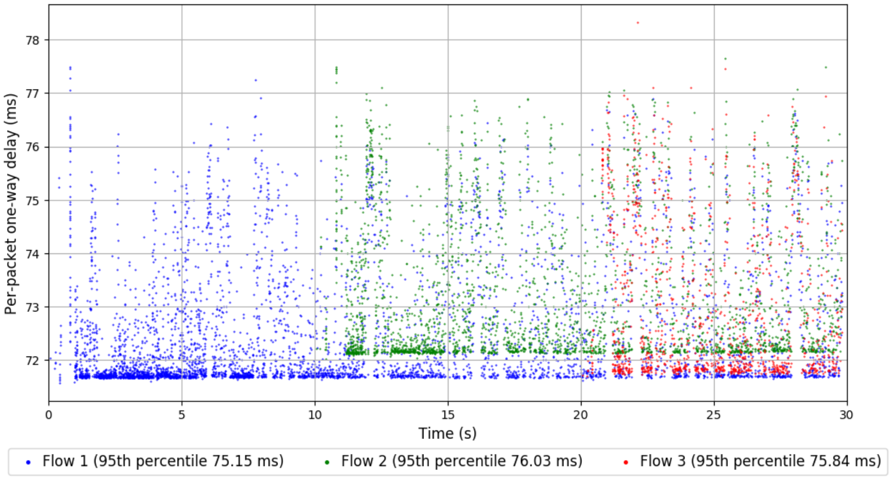




```
Run 3: Statistics of QUIC Cubic

Start at: 2019-07-12 05:33:43
End at: 2019-07-12 05:34:13
Local clock offset: -8.605 ms
Remote clock offset: -8.55 ms

# Below is generated by plot.py at 2019-07-12 06:50:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.43 Mbit/s
95th percentile per-packet one-way delay: 75.649 ms
Loss rate: 2.72%
-- Flow 1:
Average throughput: 1.86 Mbit/s
95th percentile per-packet one-way delay: 75.152 ms
Loss rate: 1.85%
-- Flow 2:
Average throughput: 1.69 Mbit/s
95th percentile per-packet one-way delay: 76.027 ms
Loss rate: 2.92%
-- Flow 3:
Average throughput: 1.36 Mbit/s
95th percentile per-packet one-way delay: 75.841 ms
Loss rate: 5.71%
```

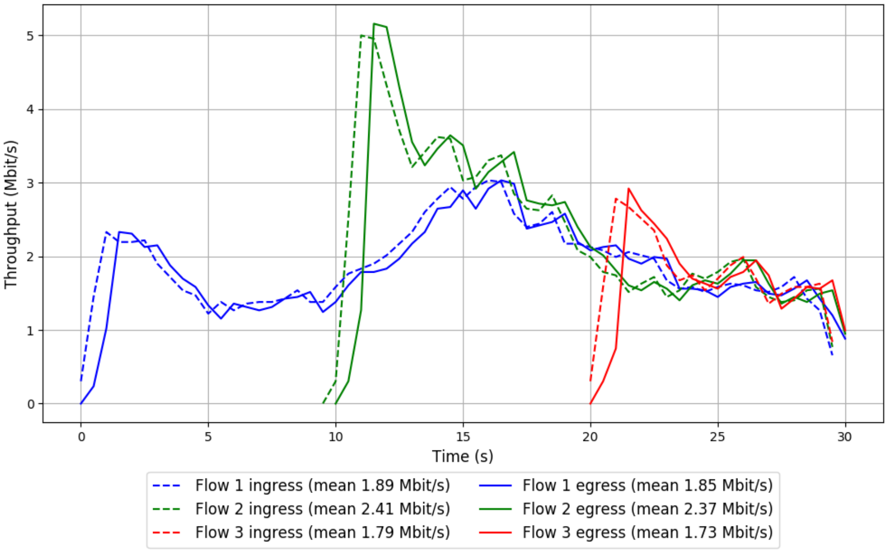
Run 3: Report of QUIC Cubic — Data Link

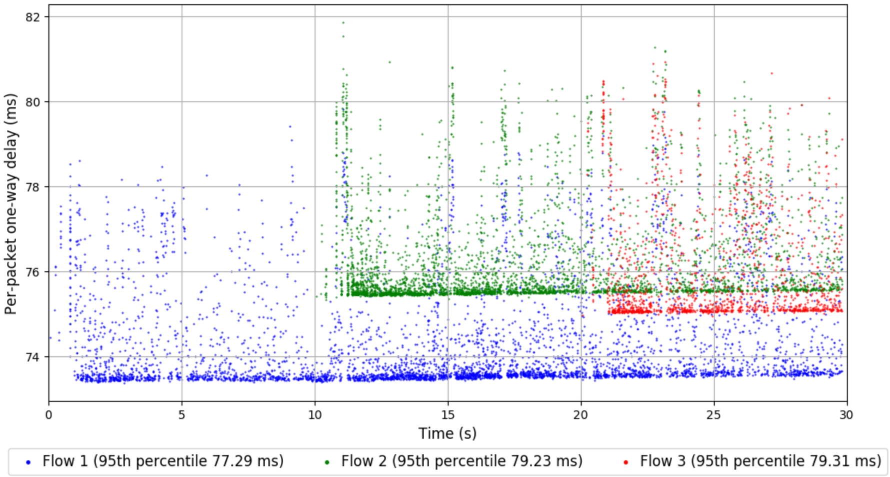




```
Run 4: Statistics of QUIC Cubic

Start at: 2019-07-12 06:04:17
End at: 2019-07-12 06:04:47
Local clock offset: -7.553 ms
Remote clock offset: -6.553 ms

# Below is generated by plot.py at 2019-07-12 06:50:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.00 Mbit/s
95th percentile per-packet one-way delay: 78.575 ms
Loss rate: 1.80%
-- Flow 1:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 77.286 ms
Loss rate: 1.71%
-- Flow 2:
Average throughput: 2.37 Mbit/s
95th percentile per-packet one-way delay: 79.233 ms
Loss rate: 1.52%
-- Flow 3:
Average throughput: 1.73 Mbit/s
95th percentile per-packet one-way delay: 79.306 ms
Loss rate: 2.86%
```

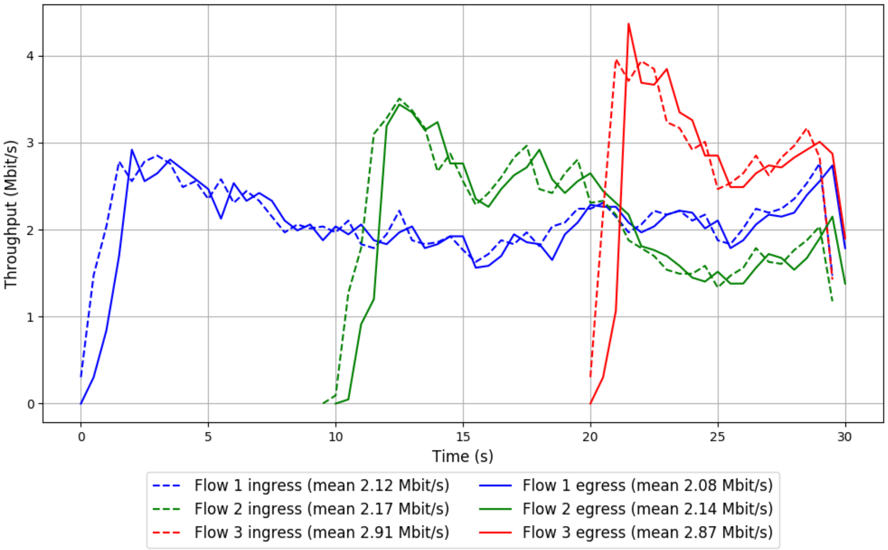
Run 4: Report of QUIC Cubic — Data Link

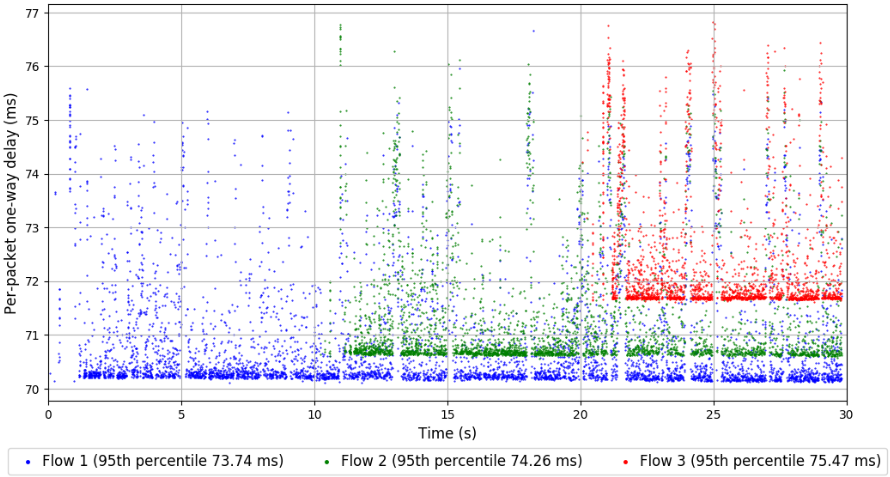




```
Run 5: Statistics of QUIC Cubic

Start at: 2019-07-12 06:34:30
End at: 2019-07-12 06:35:00
Local clock offset: -6.031 ms
Remote clock offset: -12.238 ms

# Below is generated by plot.py at 2019-07-12 06:50:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.44 Mbit/s
95th percentile per-packet one-way delay: 74.441 ms
Loss rate: 1.72%
-- Flow 1:
Average throughput: 2.08 Mbit/s
95th percentile per-packet one-way delay: 73.743 ms
Loss rate: 1.81%
-- Flow 2:
Average throughput: 2.14 Mbit/s
95th percentile per-packet one-way delay: 74.262 ms
Loss rate: 1.82%
-- Flow 3:
Average throughput: 2.87 Mbit/s
95th percentile per-packet one-way delay: 75.475 ms
Loss rate: 1.36%
```

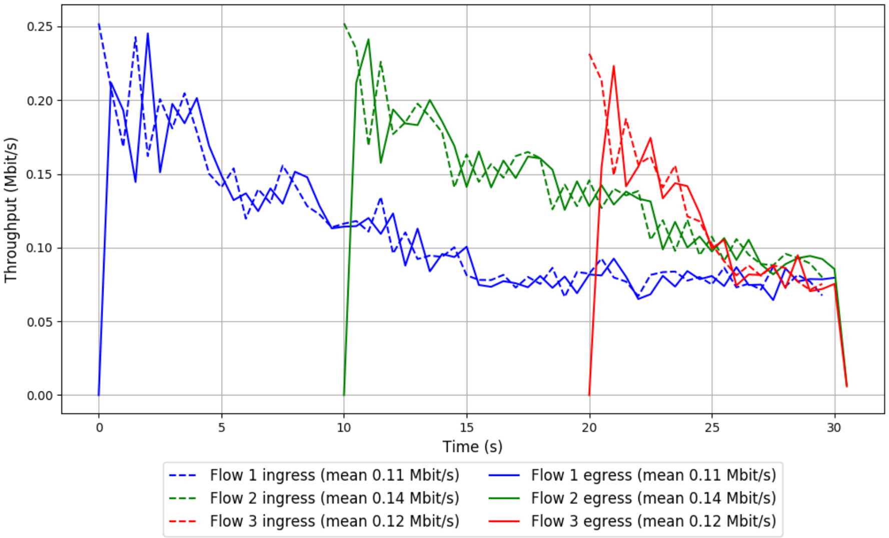
Run 5: Report of QUIC Cubic — Data Link

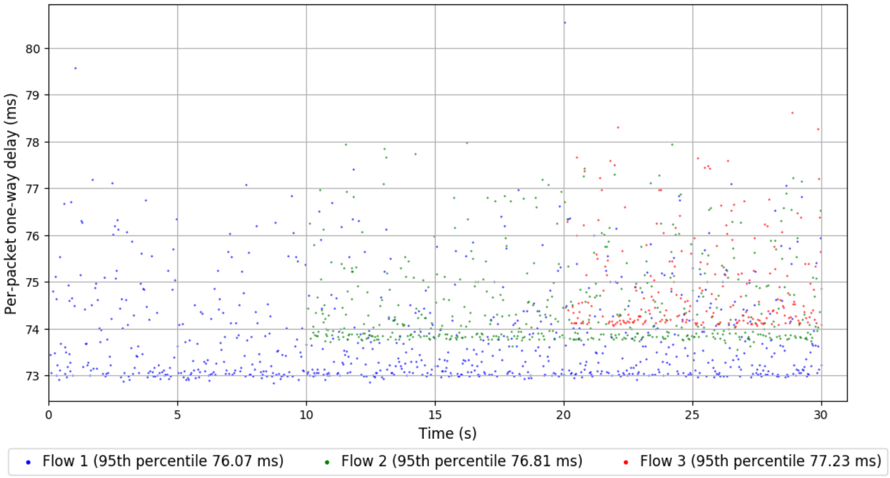




```
Run 1: Statistics of SCReAM

Start at: 2019-07-12 04:21:09
End at: 2019-07-12 04:21:39
Local clock offset: -6.903 ms
Remote clock offset: -7.114 ms

# Below is generated by plot.py at 2019-07-12 06:50:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 76.551 ms
Loss rate: 3.21%
-- Flow 1:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 76.074 ms
Loss rate: 2.87%
-- Flow 2:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 76.809 ms
Loss rate: 2.10%
-- Flow 3:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 77.228 ms
Loss rate: 6.62%
```

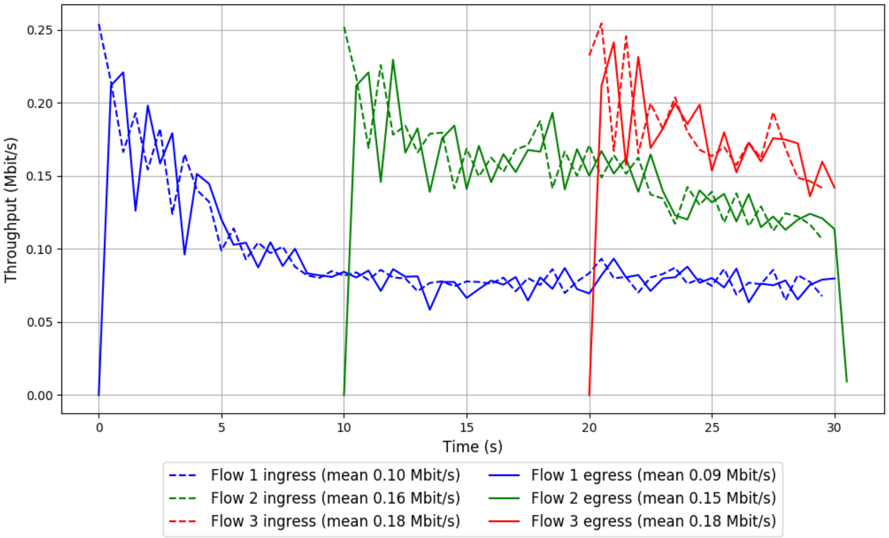
Run 1: Report of SCReAM — Data Link

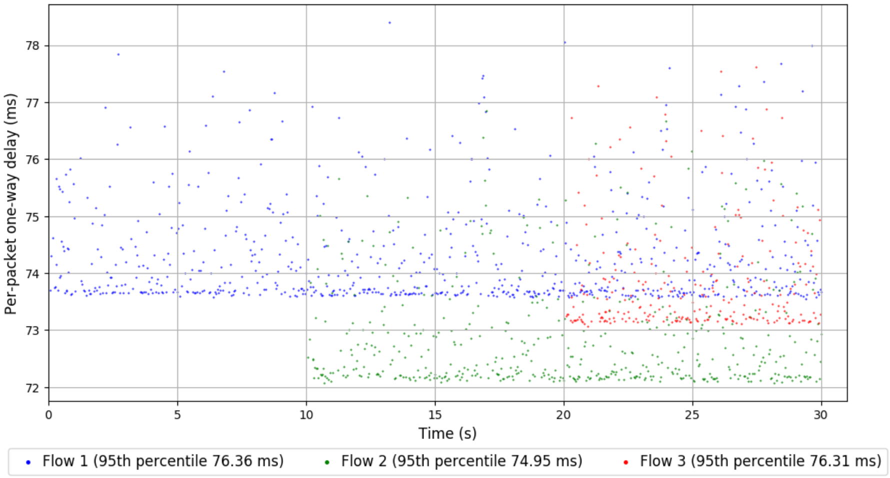




```
Run 2: Statistics of SCReAM

Start at: 2019-07-12 04:51:38
End at: 2019-07-12 04:52:08
Local clock offset: -6.773 ms
Remote clock offset: -8.06 ms

# Below is generated by plot.py at 2019-07-12 06:50:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 76.009 ms
Loss rate: 2.35%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 76.359 ms
Loss rate: 3.35%
-- Flow 2:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 74.955 ms
Loss rate: 1.70%
-- Flow 3:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 76.315 ms
Loss rate: 1.86%
```

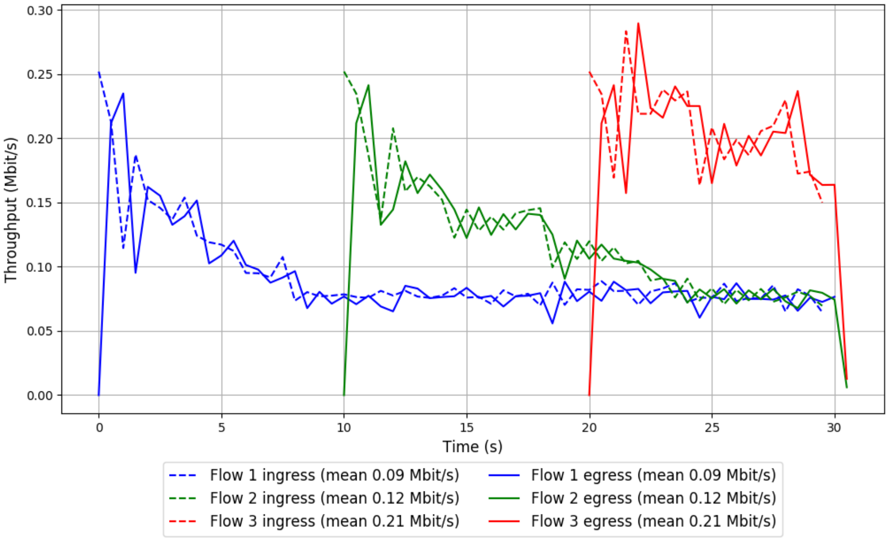
Run 2: Report of SCReAM — Data Link

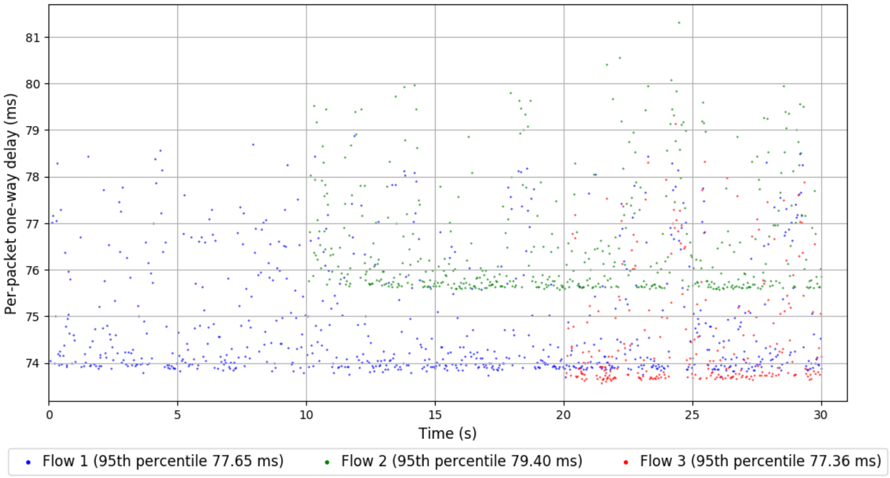




```
Run 3: Statistics of SCReAM

Start at: 2019-07-12 05:22:21
End at: 2019-07-12 05:22:51
Local clock offset: -9.111 ms
Remote clock offset: -5.222 ms

# Below is generated by plot.py at 2019-07-12 06:50:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 78.329 ms
Loss rate: 2.82%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 77.649 ms
Loss rate: 3.75%
-- Flow 2:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 79.397 ms
Loss rate: 3.51%
-- Flow 3:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 77.363 ms
Loss rate: 0.78%
```

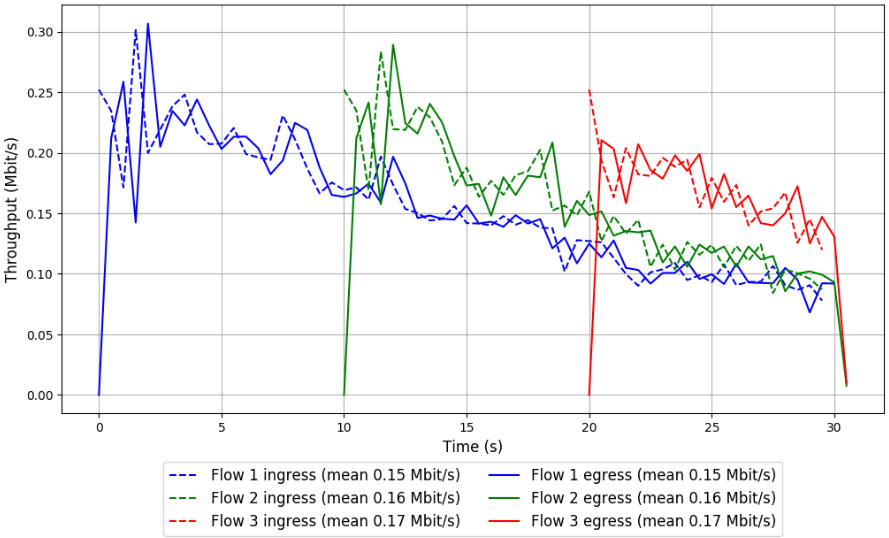
Run 3: Report of SCReAM — Data Link

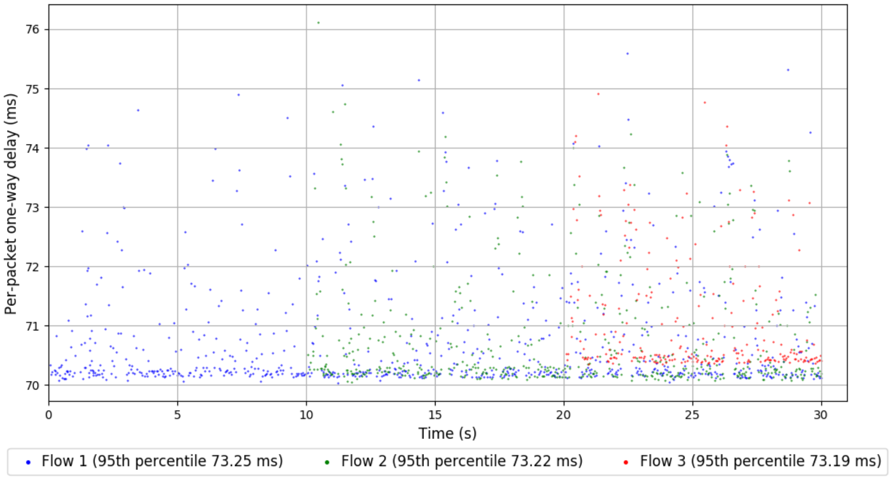




```
Run 4: Statistics of SCReAM

Start at: 2019-07-12 05:53:00
End at: 2019-07-12 05:53:30
Local clock offset: -6.948 ms
Remote clock offset: -7.821 ms

# Below is generated by plot.py at 2019-07-12 06:50:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 73.230 ms
Loss rate: 1.26%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 73.248 ms
Loss rate: 1.12%
-- Flow 2:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 73.224 ms
Loss rate: 1.71%
-- Flow 3:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 73.192 ms
Loss rate: 0.77%
```

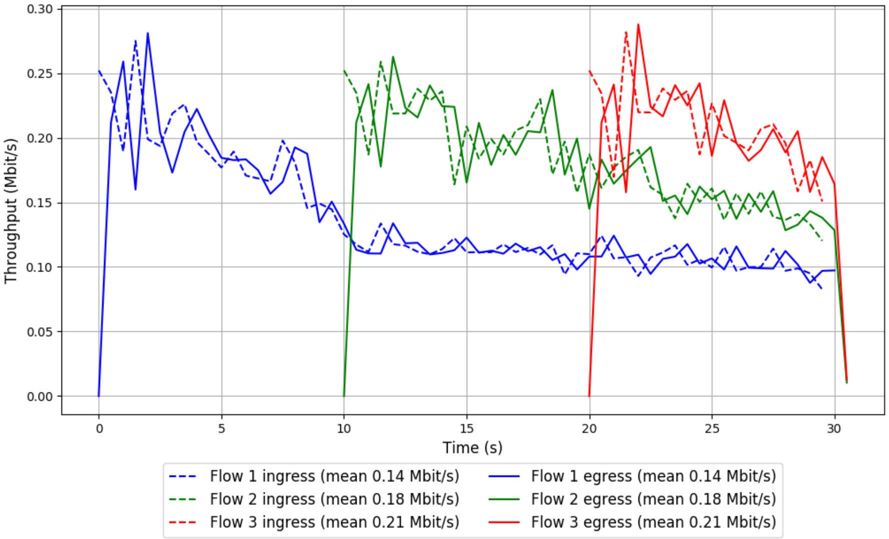
Run 4: Report of SCReAM — Data Link

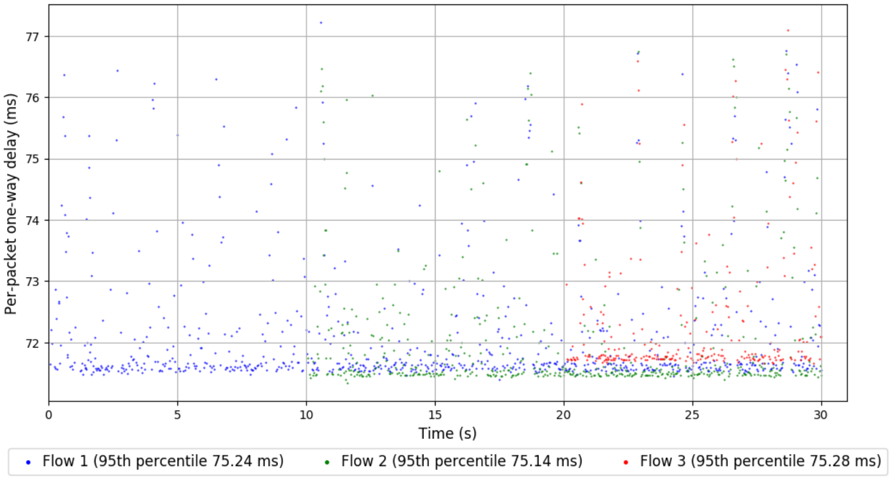




```
Run 5: Statistics of SCReAM

Start at: 2019-07-12 06:23:15
End at: 2019-07-12 06:23:45
Local clock offset: -7.231 ms
Remote clock offset: -11.368 ms

# Below is generated by plot.py at 2019-07-12 06:50:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 75.247 ms
Loss rate: 1.06%
-- Flow 1:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 75.239 ms
Loss rate: 1.42%
-- Flow 2:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 75.142 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 75.275 ms
Loss rate: 0.85%
```

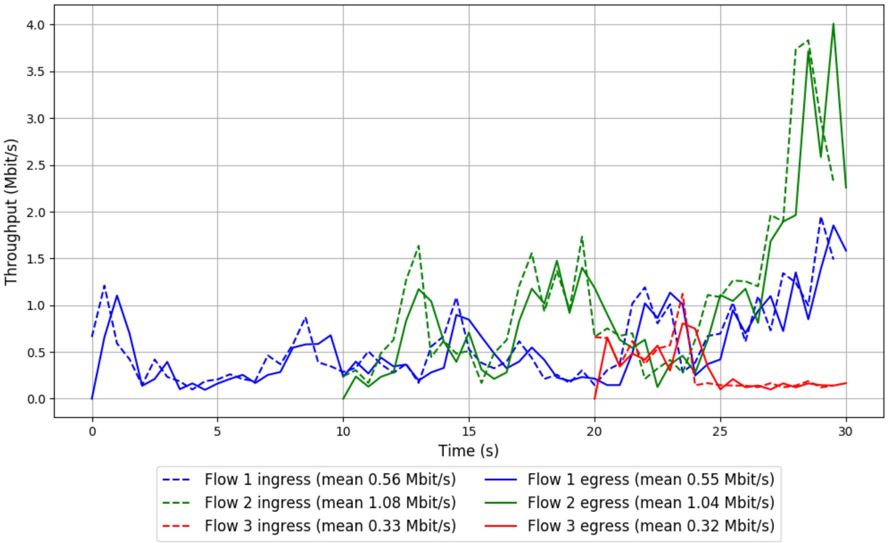
Run 5: Report of SCReAM — Data Link

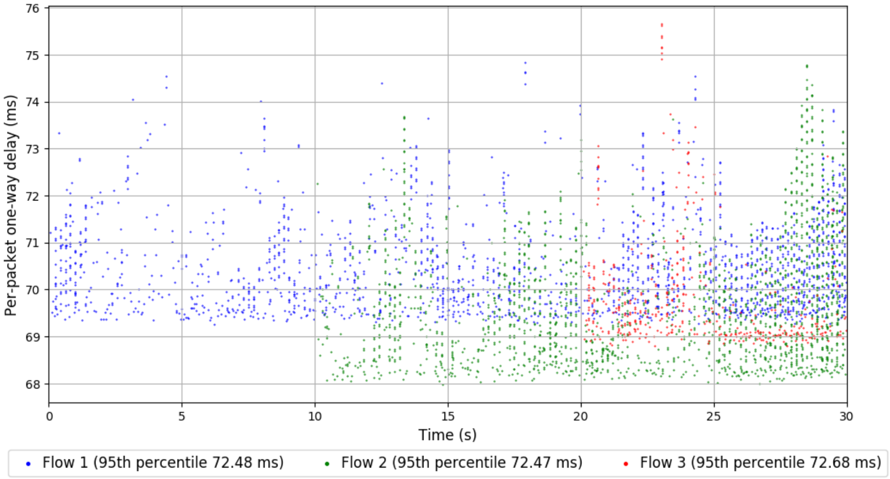




```
Run 1: Statistics of Sprout

Start at: 2019-07-12 04:26:05
End at: 2019-07-12 04:26:35
Local clock offset: -5.961 ms
Remote clock offset: -11.209 ms

# Below is generated by plot.py at 2019-07-12 06:50:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.34 Mbit/s
95th percentile per-packet one-way delay: 72.491 ms
Loss rate: 3.63%
-- Flow 1:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 72.480 ms
Loss rate: 2.39%
-- Flow 2:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 72.467 ms
Loss rate: 4.27%
-- Flow 3:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 72.677 ms
Loss rate: 5.70%
```

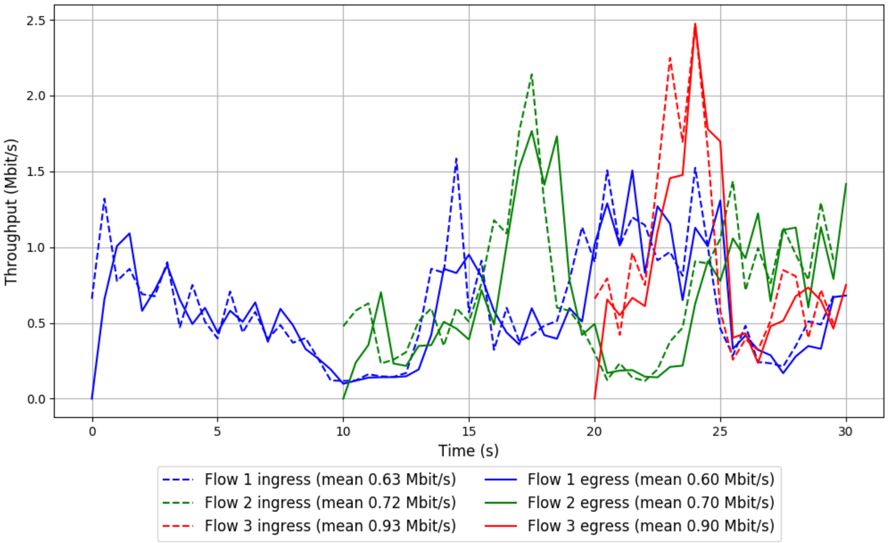
Run 1: Report of Sprout — Data Link

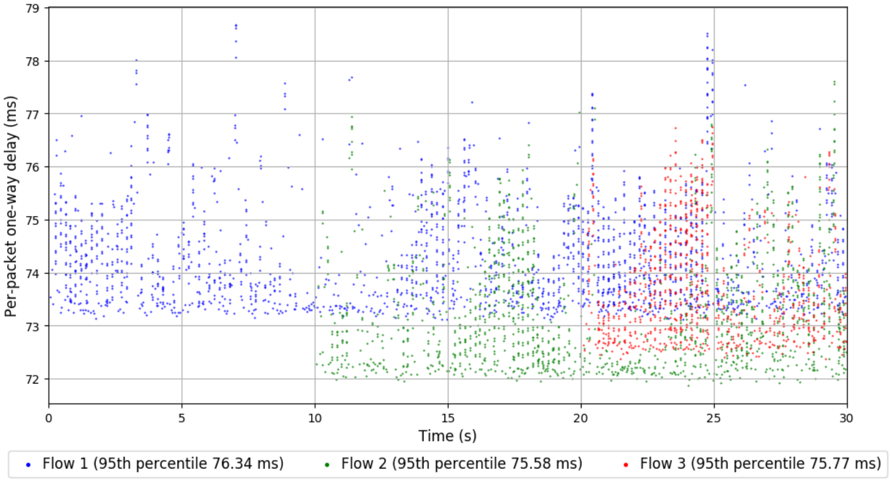




```
Run 2: Statistics of Sprout

Start at: 2019-07-12 04:56:39
End at: 2019-07-12 04:57:10
Local clock offset: -6.053 ms
Remote clock offset: -7.551 ms

# Below is generated by plot.py at 2019-07-12 06:50:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.36 Mbit/s
95th percentile per-packet one-way delay: 75.980 ms
Loss rate: 3.70%
-- Flow 1:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 76.343 ms
Loss rate: 4.11%
-- Flow 2:
Average throughput: 0.70 Mbit/s
95th percentile per-packet one-way delay: 75.576 ms
Loss rate: 3.27%
-- Flow 3:
Average throughput: 0.90 Mbit/s
95th percentile per-packet one-way delay: 75.767 ms
Loss rate: 3.52%
```

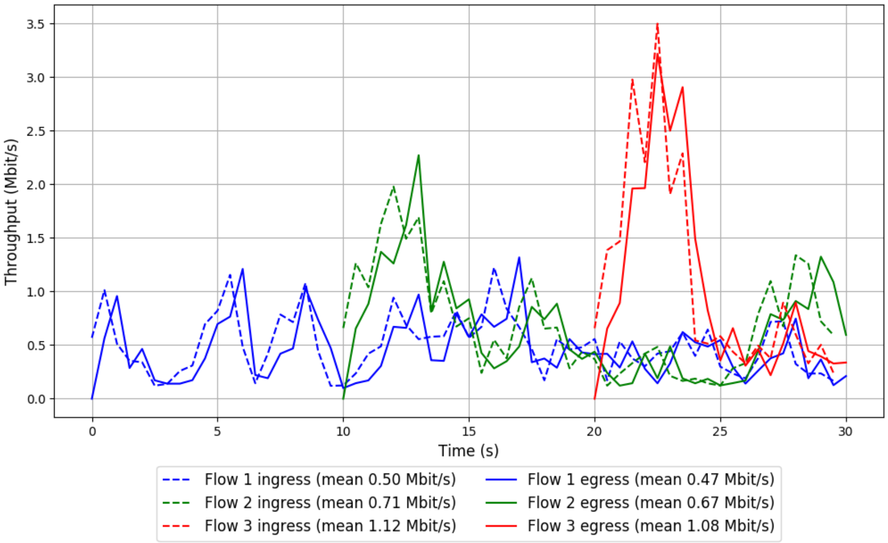
Run 2: Report of Sprout — Data Link

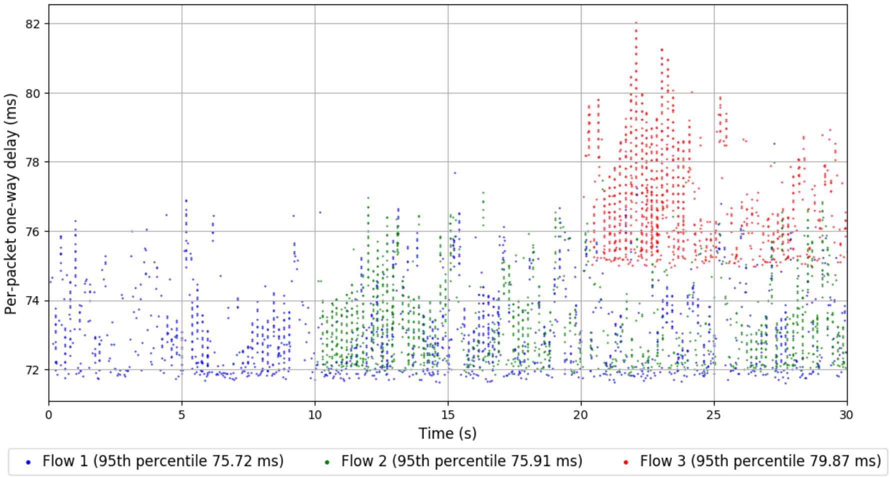




```
Run 3: Statistics of Sprout

Start at: 2019-07-12 05:27:16
End at: 2019-07-12 05:27:46
Local clock offset: -9.542 ms
Remote clock offset: -7.138 ms

# Below is generated by plot.py at 2019-07-12 06:50:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.26 Mbit/s
95th percentile per-packet one-way delay: 78.564 ms
Loss rate: 5.84%
-- Flow 1:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 75.718 ms
Loss rate: 7.17%
-- Flow 2:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 75.913 ms
Loss rate: 5.81%
-- Flow 3:
Average throughput: 1.08 Mbit/s
95th percentile per-packet one-way delay: 79.871 ms
Loss rate: 4.11%
```

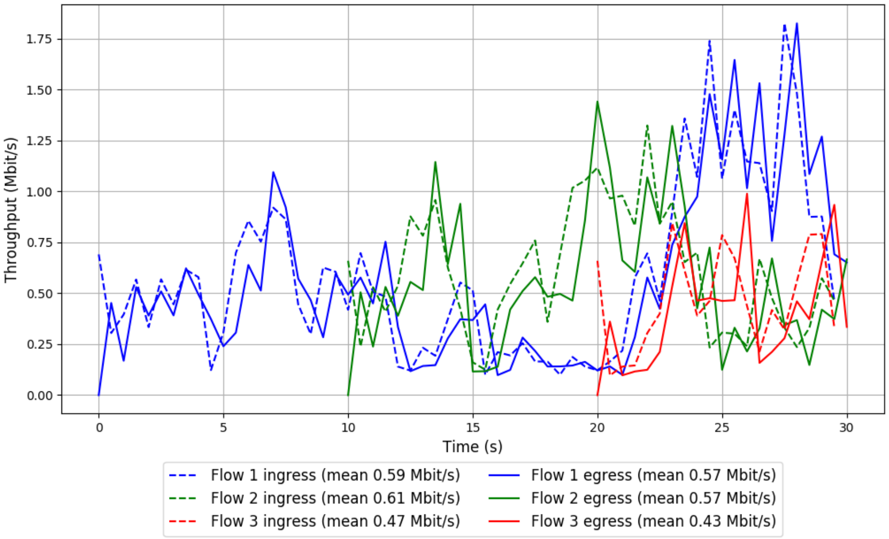
Run 3: Report of Sprout — Data Link

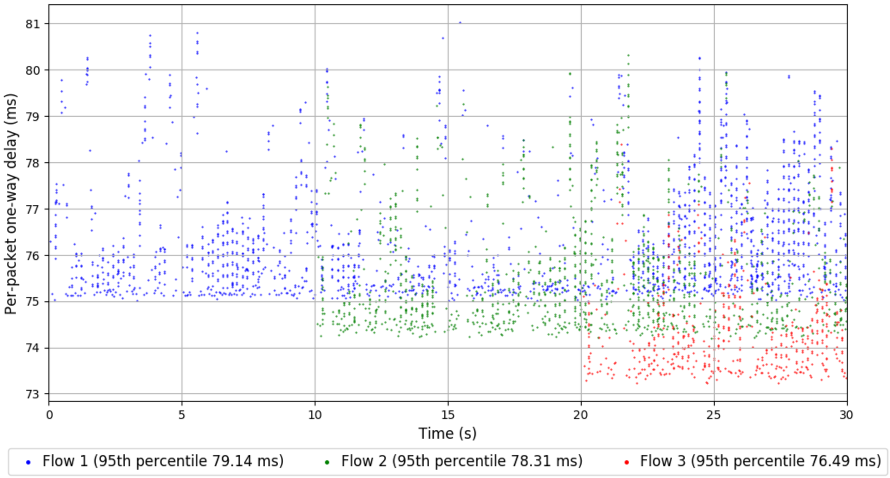




```
Run 4: Statistics of Sprout

Start at: 2019-07-12 05:57:56
End at: 2019-07-12 05:58:26
Local clock offset: -7.976 ms
Remote clock offset: -4.772 ms

# Below is generated by plot.py at 2019-07-12 06:50:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.09 Mbit/s
95th percentile per-packet one-way delay: 78.661 ms
Loss rate: 5.31%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 79.141 ms
Loss rate: 3.59%
-- Flow 2:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 78.305 ms
Loss rate: 6.48%
-- Flow 3:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 76.494 ms
Loss rate: 8.74%
```

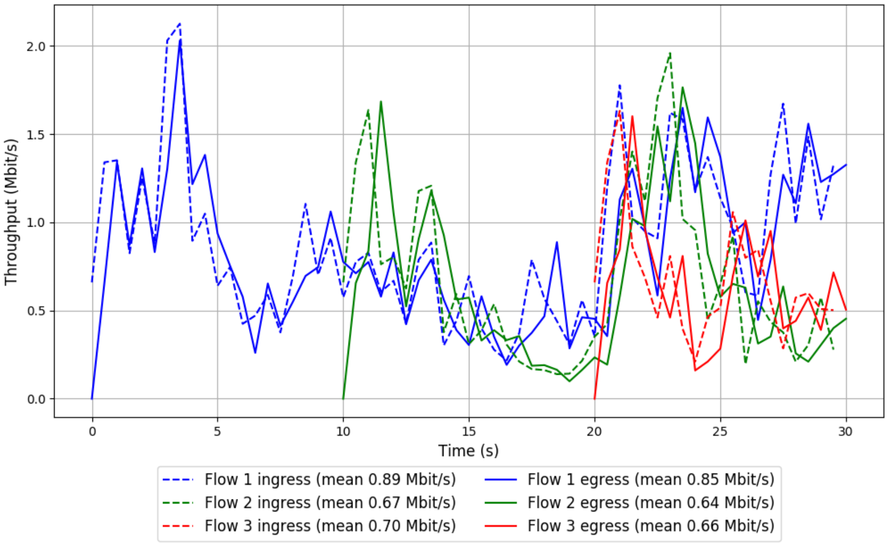
Run 4: Report of Sprout — Data Link

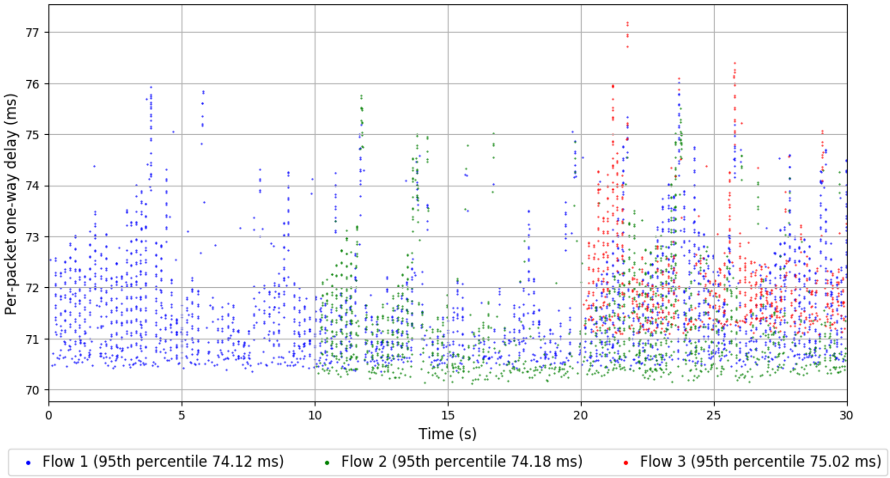




```
Run 5: Statistics of Sprout

Start at: 2019-07-12 06:28:10
End at: 2019-07-12 06:28:40
Local clock offset: -6.492 ms
Remote clock offset: -11.634 ms

# Below is generated by plot.py at 2019-07-12 06:50:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.50 Mbit/s
95th percentile per-packet one-way delay: 74.269 ms
Loss rate: 3.99%
-- Flow 1:
Average throughput: 0.85 Mbit/s
95th percentile per-packet one-way delay: 74.124 ms
Loss rate: 3.70%
-- Flow 2:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 74.180 ms
Loss rate: 3.98%
-- Flow 3:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 75.023 ms
Loss rate: 5.18%
```

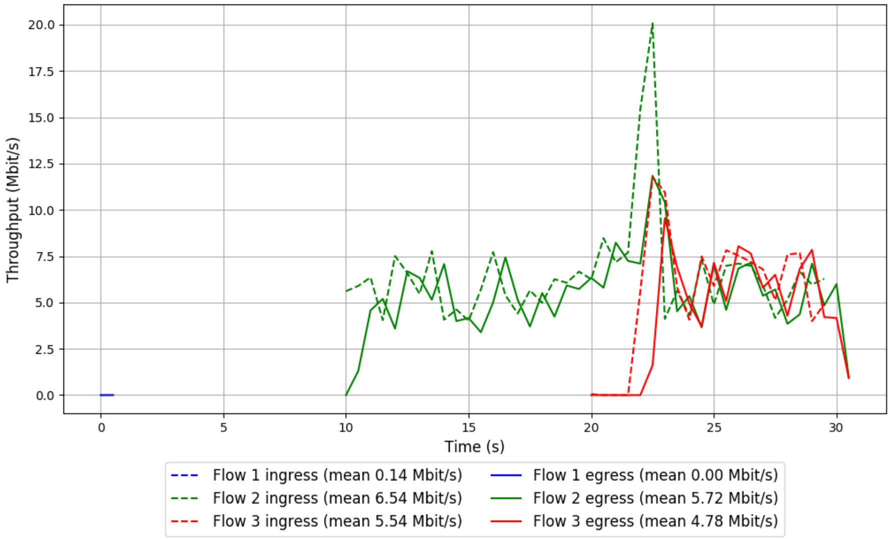
Run 5: Report of Sprout — Data Link

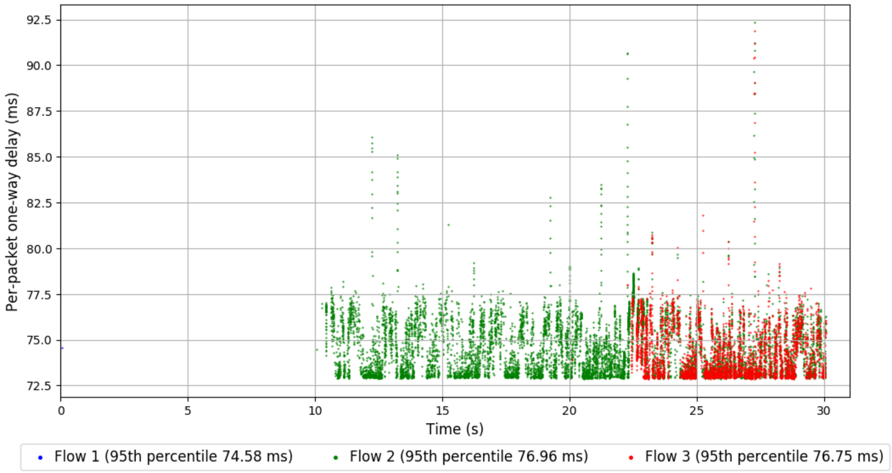




```
Run 1: Statistics of TaoVA-100x

Start at: 2019-07-12 04:12:18
End at: 2019-07-12 04:12:48
Local clock offset: -5.901 ms
Remote clock offset: -5.132 ms

# Below is generated by plot.py at 2019-07-12 06:50:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.40 Mbit/s
95th percentile per-packet one-way delay: 76.896 ms
Loss rate: 12.94%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 74.584 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 5.72 Mbit/s
95th percentile per-packet one-way delay: 76.961 ms
Loss rate: 12.61%
-- Flow 3:
Average throughput: 4.78 Mbit/s
95th percentile per-packet one-way delay: 76.751 ms
Loss rate: 13.71%
```

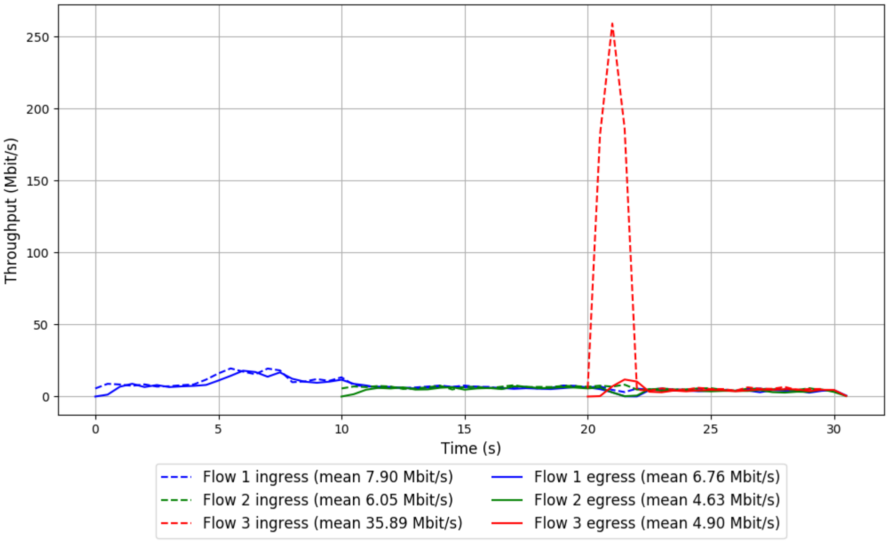
Run 1: Report of TaoVA-100x — Data Link

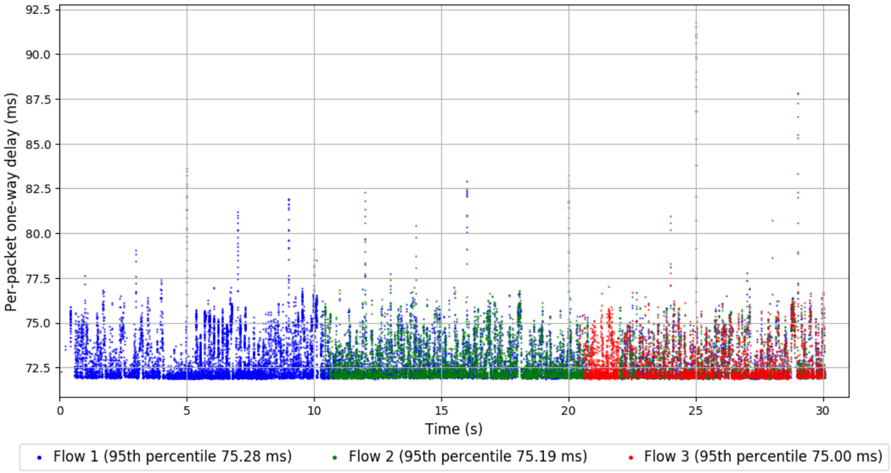




```
Run 2: Statistics of TaoVA-100x

Start at: 2019-07-12 04:42:41
End at: 2019-07-12 04:43:11
Local clock offset: -6.686 ms
Remote clock offset: -7.864 ms

# Below is generated by plot.py at 2019-07-12 06:50:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.47 Mbit/s
95th percentile per-packet one-way delay: 75.224 ms
Loss rate: 51.93%
-- Flow 1:
Average throughput: 6.76 Mbit/s
95th percentile per-packet one-way delay: 75.278 ms
Loss rate: 14.38%
-- Flow 2:
Average throughput: 4.63 Mbit/s
95th percentile per-packet one-way delay: 75.194 ms
Loss rate: 23.54%
-- Flow 3:
Average throughput: 4.90 Mbit/s
95th percentile per-packet one-way delay: 75.004 ms
Loss rate: 86.35%
```

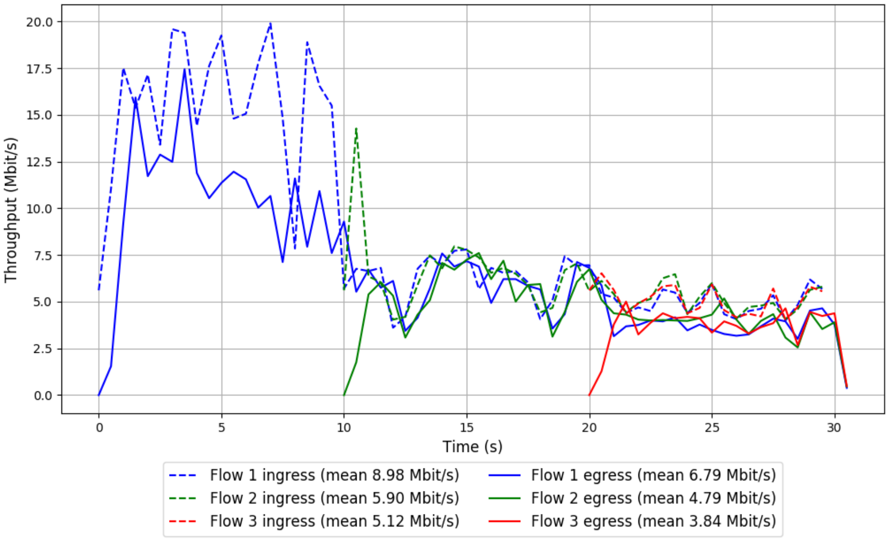
Run 2: Report of TaoVA-100x — Data Link

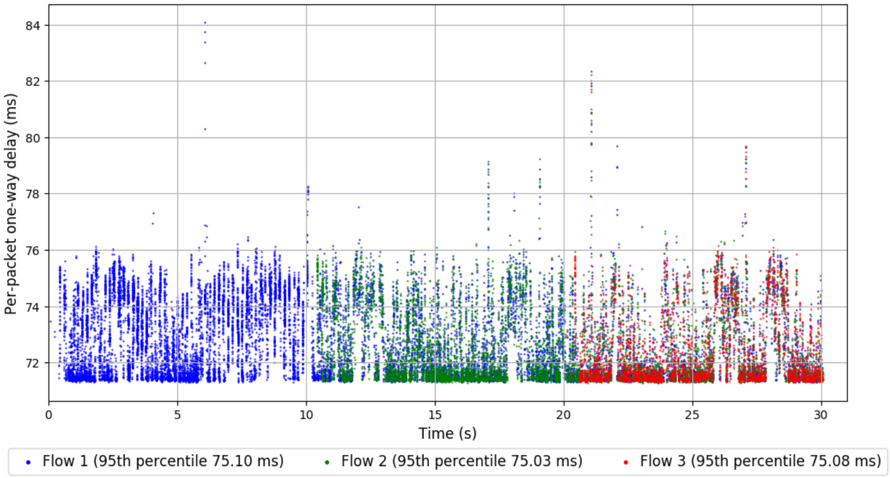




```
Run 3: Statistics of TaoVA-100x

Start at: 2019-07-12 05:13:28
End at: 2019-07-12 05:13:58
Local clock offset: -8.107 ms
Remote clock offset: -7.191 ms

# Below is generated by plot.py at 2019-07-12 06:50:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.26 Mbit/s
95th percentile per-packet one-way delay: 75.080 ms
Loss rate: 22.95%
-- Flow 1:
Average throughput: 6.79 Mbit/s
95th percentile per-packet one-way delay: 75.103 ms
Loss rate: 24.34%
-- Flow 2:
Average throughput: 4.79 Mbit/s
95th percentile per-packet one-way delay: 75.032 ms
Loss rate: 18.93%
-- Flow 3:
Average throughput: 3.84 Mbit/s
95th percentile per-packet one-way delay: 75.085 ms
Loss rate: 24.94%
```

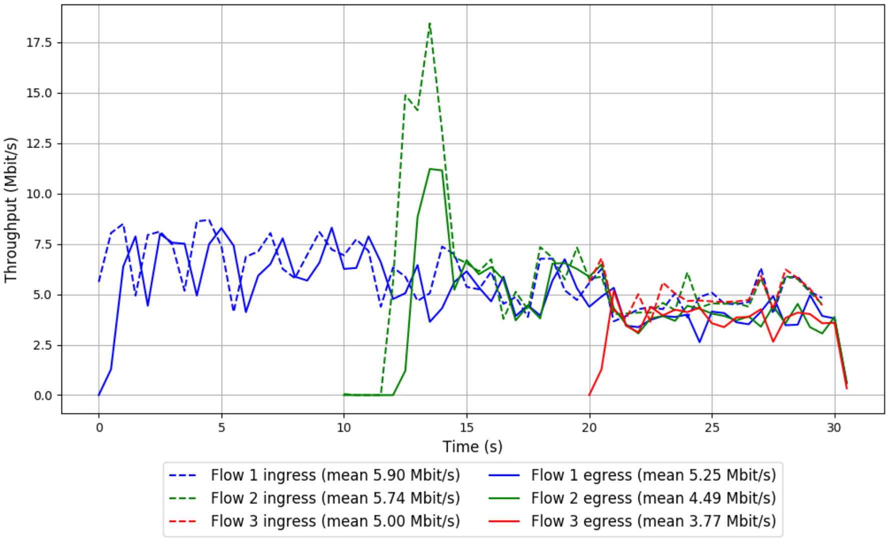
Run 3: Report of TaoVA-100x — Data Link

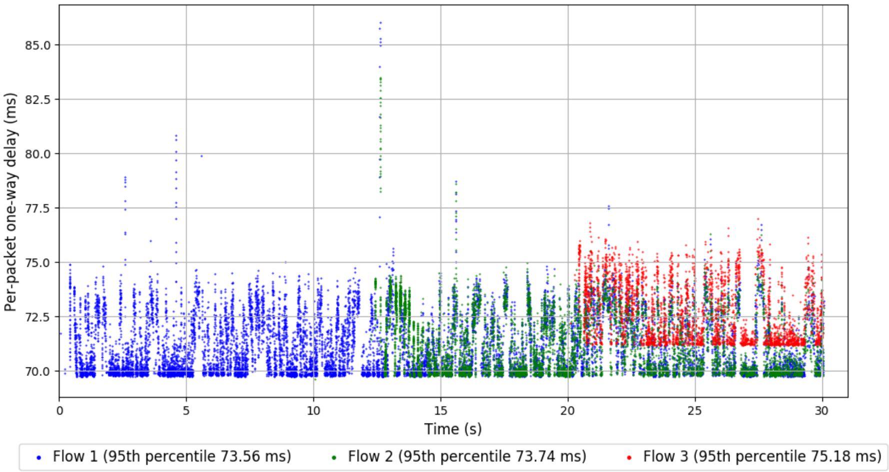




```
Run 4: Statistics of TaoVA-100x

Start at: 2019-07-12 05:44:04
End at: 2019-07-12 05:44:34
Local clock offset: -7.11 ms
Remote clock offset: -7.959 ms

# Below is generated by plot.py at 2019-07-12 06:50:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 9.49 Mbit/s
95th percentile per-packet one-way delay: 74.022 ms
Loss rate: 16.57%
-- Flow 1:
Average throughput: 5.25 Mbit/s
95th percentile per-packet one-way delay: 73.558 ms
Loss rate: 10.94%
-- Flow 2:
Average throughput: 4.49 Mbit/s
95th percentile per-packet one-way delay: 73.738 ms
Loss rate: 21.74%
-- Flow 3:
Average throughput: 3.77 Mbit/s
95th percentile per-packet one-way delay: 75.181 ms
Loss rate: 24.68%
```

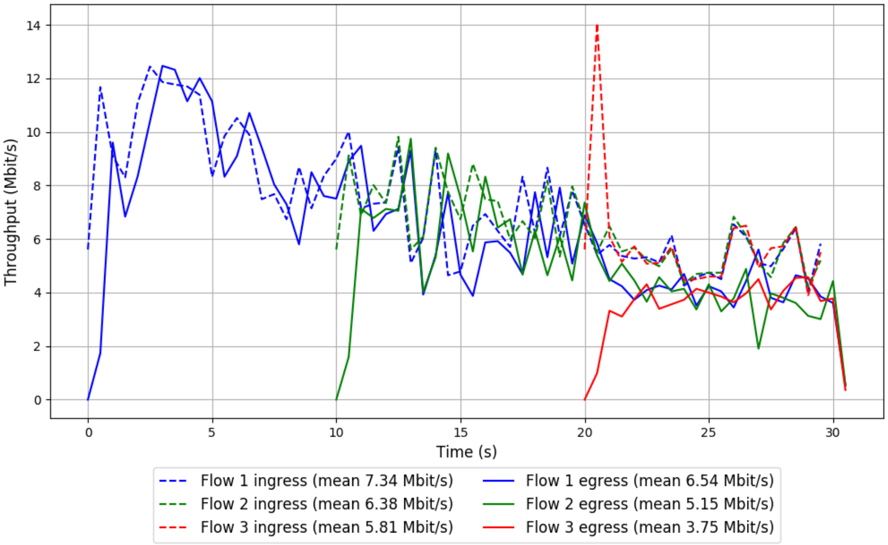
Run 4: Report of TaoVA-100x — Data Link

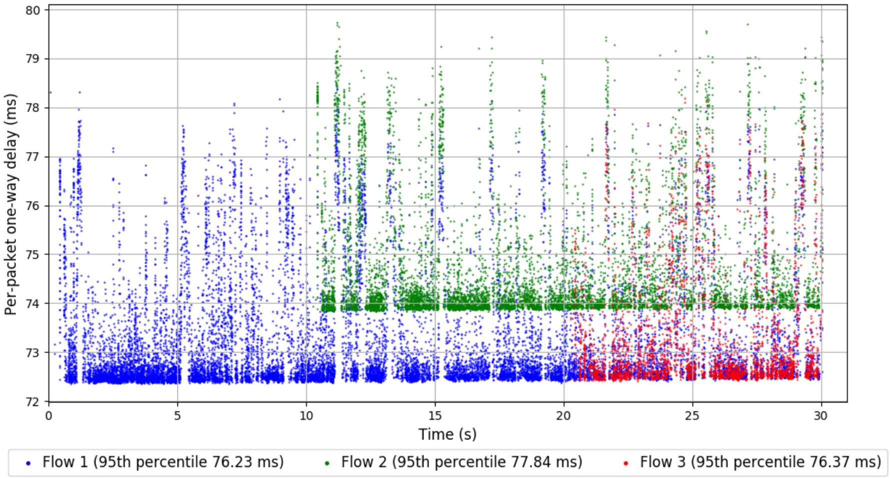




```
Run 5: Statistics of TaoVA-100x

Start at: 2019-07-12 06:14:26
End at: 2019-07-12 06:14:56
Local clock offset: -6.789 ms
Remote clock offset: -8.855 ms

# Below is generated by plot.py at 2019-07-12 06:50:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.22 Mbit/s
95th percentile per-packet one-way delay: 76.761 ms
Loss rate: 17.01%
-- Flow 1:
Average throughput: 6.54 Mbit/s
95th percentile per-packet one-way delay: 76.230 ms
Loss rate: 10.87%
-- Flow 2:
Average throughput: 5.15 Mbit/s
95th percentile per-packet one-way delay: 77.839 ms
Loss rate: 19.21%
-- Flow 3:
Average throughput: 3.75 Mbit/s
95th percentile per-packet one-way delay: 76.371 ms
Loss rate: 35.53%
```

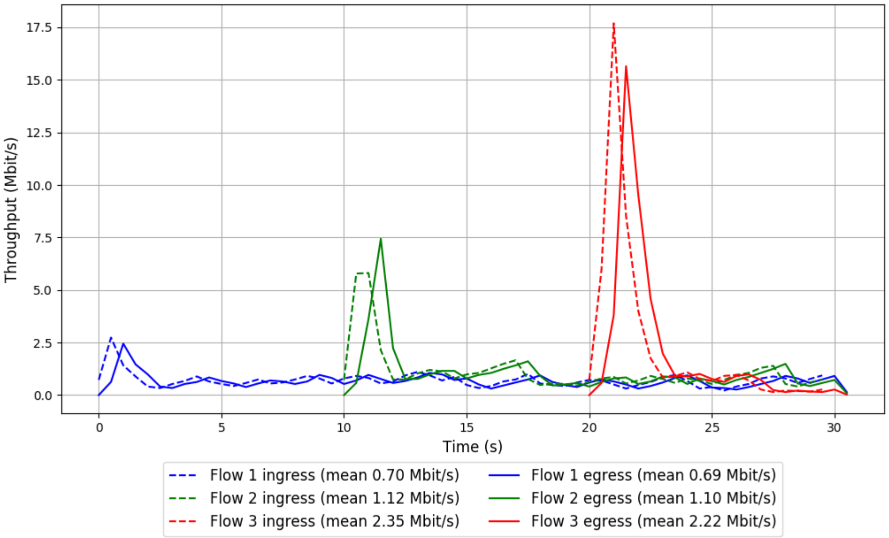
Run 5: Report of TaoVA-100x — Data Link

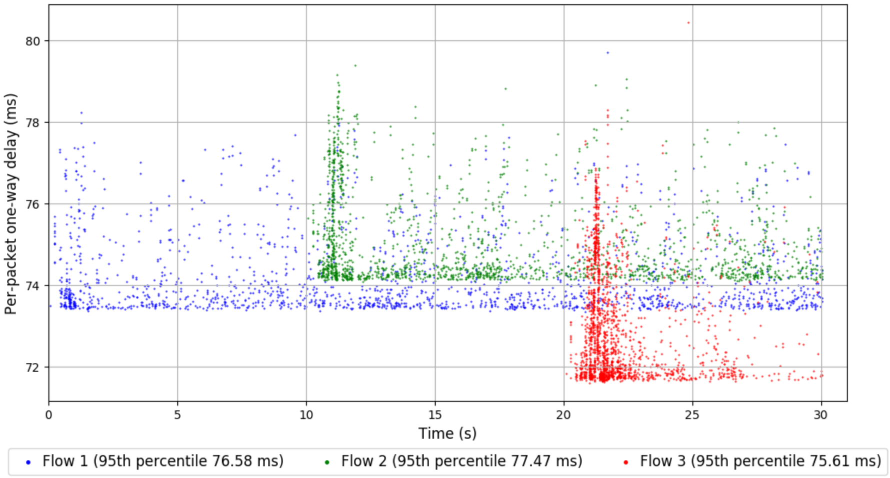




```
Run 1: Statistics of TCP Vegas

Start at: 2019-07-12 04:38:52
End at: 2019-07-12 04:39:22
Local clock offset: -6.69 ms
Remote clock offset: -7.835 ms

# Below is generated by plot.py at 2019-07-12 06:50:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.16 Mbit/s
95th percentile per-packet one-way delay: 76.825 ms
Loss rate: 3.16%
-- Flow 1:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 76.575 ms
Loss rate: 1.94%
-- Flow 2:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 77.473 ms
Loss rate: 1.77%
-- Flow 3:
Average throughput: 2.22 Mbit/s
95th percentile per-packet one-way delay: 75.615 ms
Loss rate: 5.60%
```

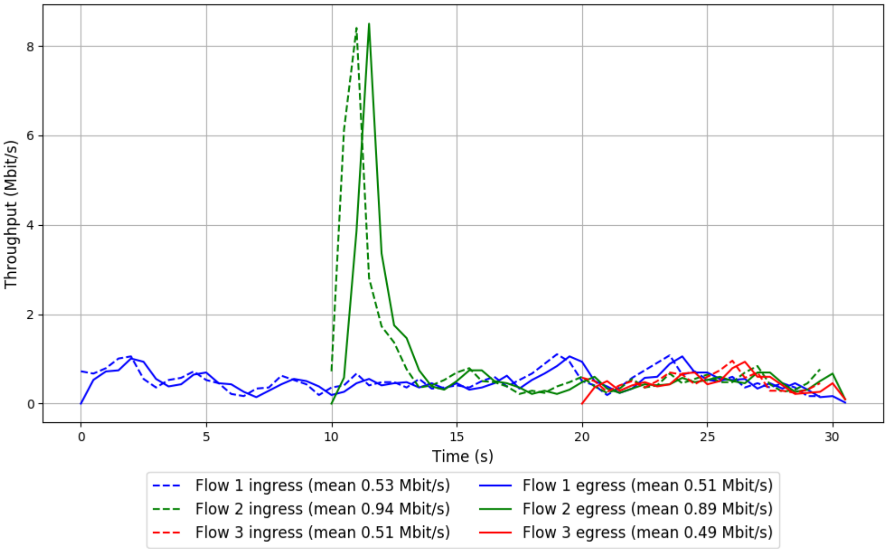
Run 1: Report of TCP Vegas — Data Link

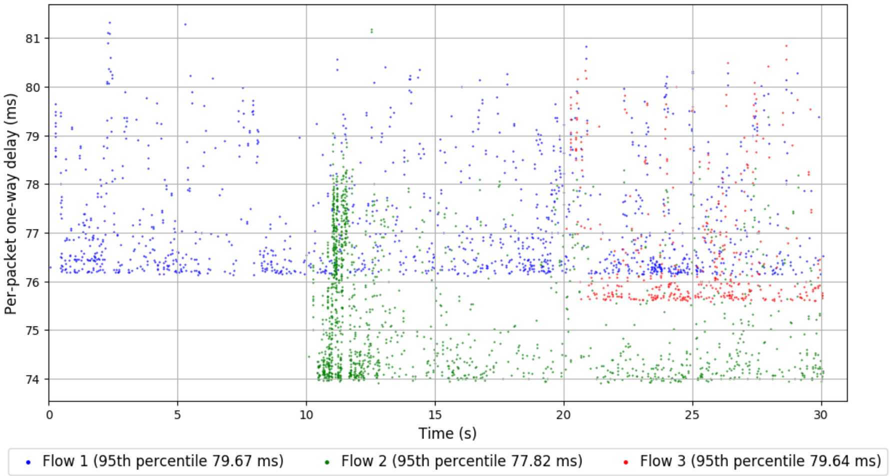




```
Run 2: Statistics of TCP Vegas

Start at: 2019-07-12 05:09:34
End at: 2019-07-12 05:10:04
Local clock offset: -8.311 ms
Remote clock offset: -5.403 ms

# Below is generated by plot.py at 2019-07-12 06:50:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.26 Mbit/s
95th percentile per-packet one-way delay: 79.268 ms
Loss rate: 4.72%
-- Flow 1:
Average throughput: 0.51 Mbit/s
95th percentile per-packet one-way delay: 79.671 ms
Loss rate: 3.93%
-- Flow 2:
Average throughput: 0.89 Mbit/s
95th percentile per-packet one-way delay: 77.821 ms
Loss rate: 5.87%
-- Flow 3:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 79.637 ms
Loss rate: 2.86%
```

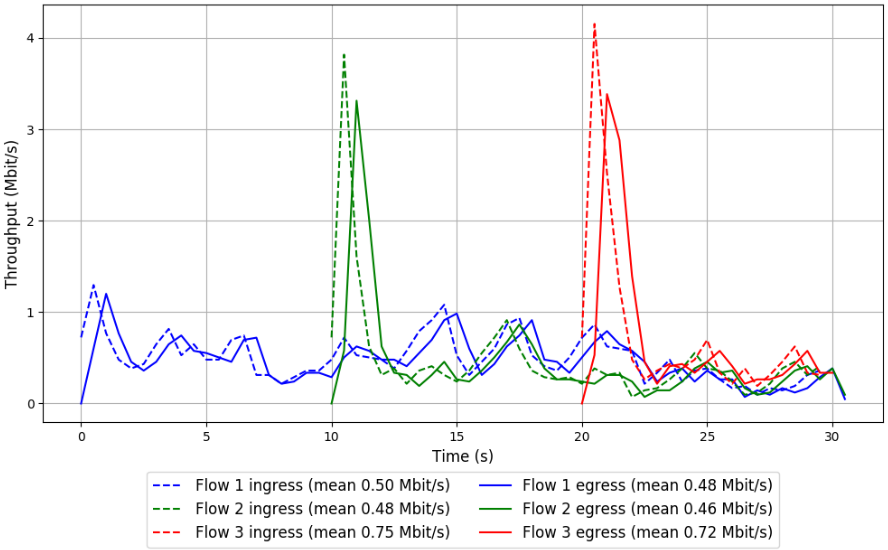
Run 2: Report of TCP Vegas — Data Link

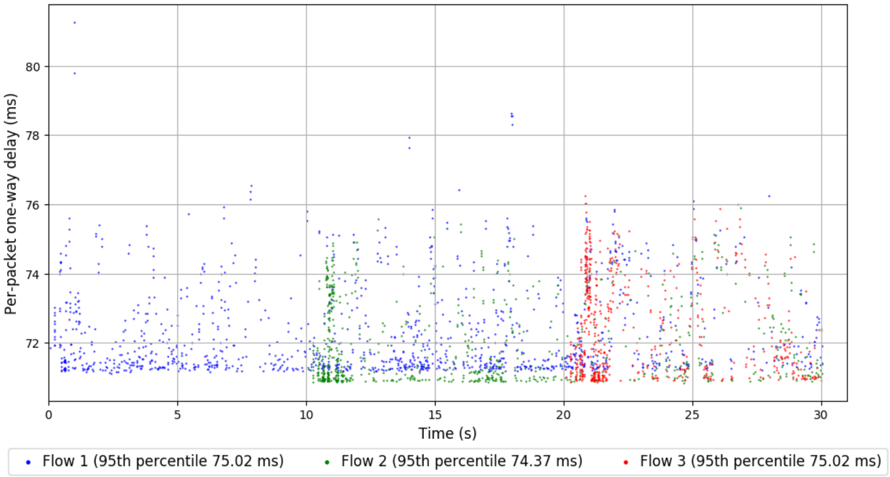




```
Run 3: Statistics of TCP Vegas

Start at: 2019-07-12 05:40:10
End at: 2019-07-12 05:40:40
Local clock offset: -8.069 ms
Remote clock offset: -9.169 ms

# Below is generated by plot.py at 2019-07-12 06:50:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.02 Mbit/s
95th percentile per-packet one-way delay: 74.842 ms
Loss rate: 4.81%
-- Flow 1:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 75.021 ms
Loss rate: 4.69%
-- Flow 2:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 74.371 ms
Loss rate: 5.01%
-- Flow 3:
Average throughput: 0.72 Mbit/s
95th percentile per-packet one-way delay: 75.018 ms
Loss rate: 4.82%
```

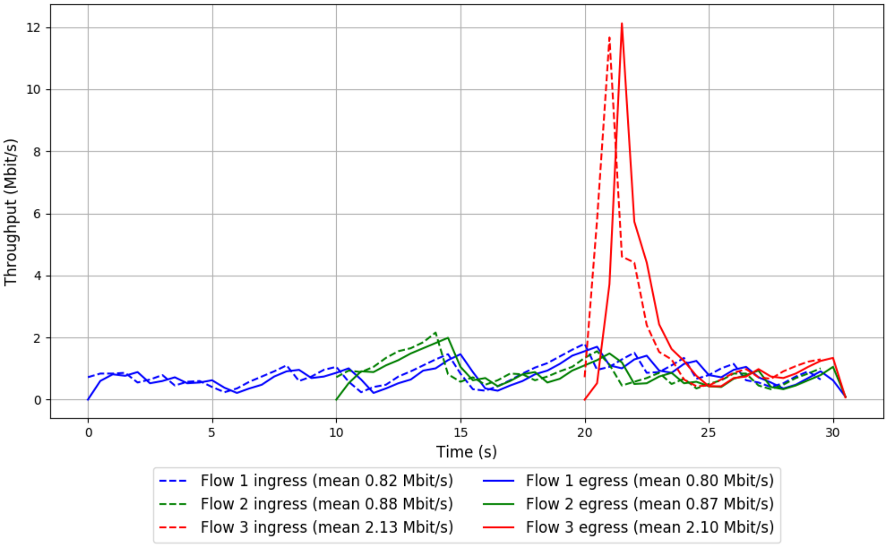
Run 3: Report of TCP Vegas — Data Link

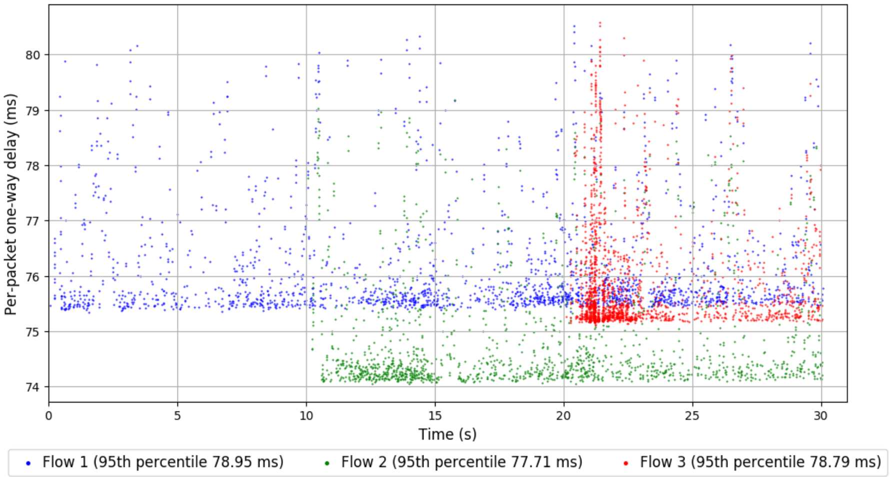




```
Run 4: Statistics of TCP Vegas

Start at: 2019-07-12 06:10:39
End at: 2019-07-12 06:11:09
Local clock offset: -7.349 ms
Remote clock offset: -7.632 ms

# Below is generated by plot.py at 2019-07-12 06:50:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.08 Mbit/s
95th percentile per-packet one-way delay: 78.548 ms
Loss rate: 1.50%
-- Flow 1:
Average throughput: 0.80 Mbit/s
95th percentile per-packet one-way delay: 78.954 ms
Loss rate: 2.05%
-- Flow 2:
Average throughput: 0.87 Mbit/s
95th percentile per-packet one-way delay: 77.709 ms
Loss rate: 1.16%
-- Flow 3:
Average throughput: 2.10 Mbit/s
95th percentile per-packet one-way delay: 78.792 ms
Loss rate: 1.13%
```

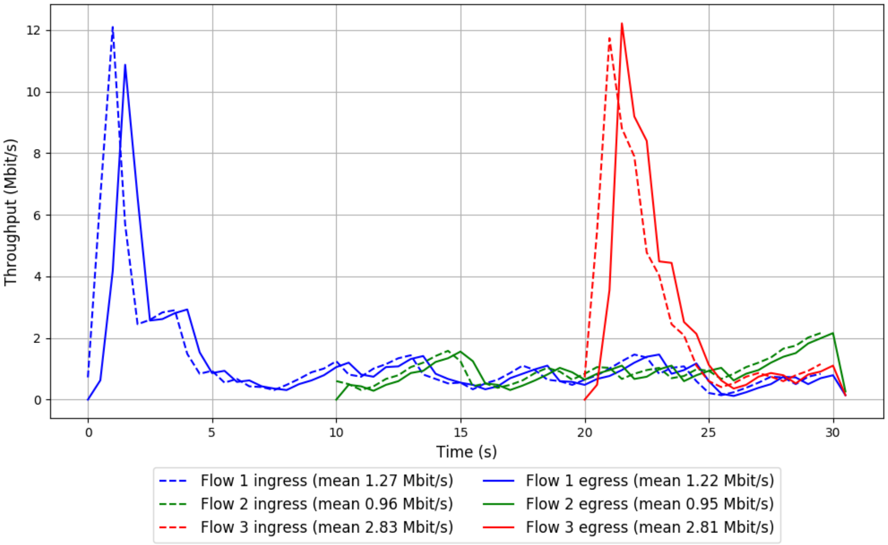
Run 4: Report of TCP Vegas — Data Link

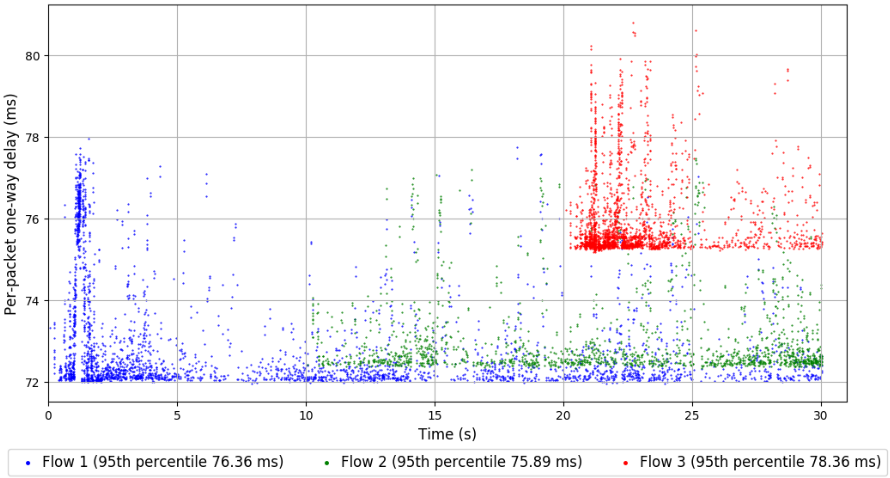




```
Run 5: Statistics of TCP Vegas

Start at: 2019-07-12 06:41:00
End at: 2019-07-12 06:41:30
Local clock offset: -6.428 ms
Remote clock offset: -10.334 ms

# Below is generated by plot.py at 2019-07-12 06:50:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.78 Mbit/s
95th percentile per-packet one-way delay: 77.157 ms
Loss rate: 2.42%
-- Flow 1:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 76.361 ms
Loss rate: 4.09%
-- Flow 2:
Average throughput: 0.95 Mbit/s
95th percentile per-packet one-way delay: 75.890 ms
Loss rate: 1.25%
-- Flow 3:
Average throughput: 2.81 Mbit/s
95th percentile per-packet one-way delay: 78.357 ms
Loss rate: 0.94%
```

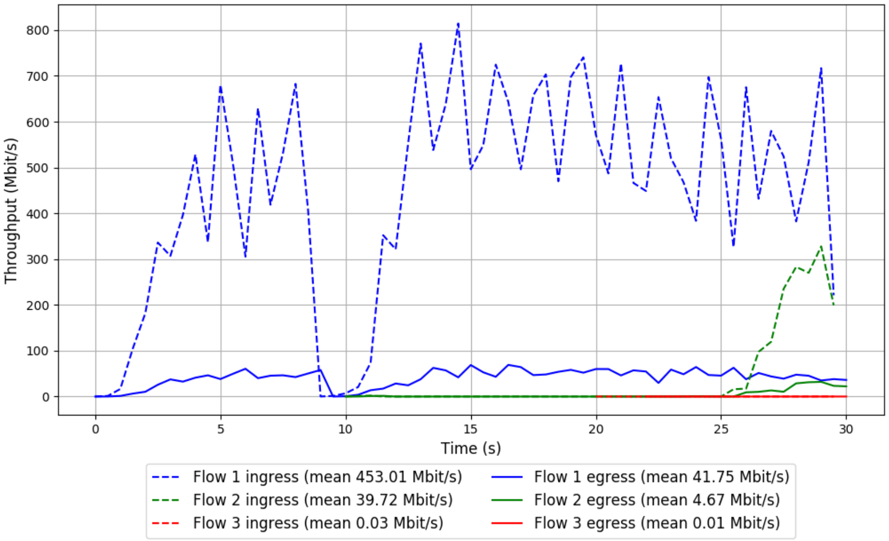
Run 5: Report of TCP Vegas — Data Link

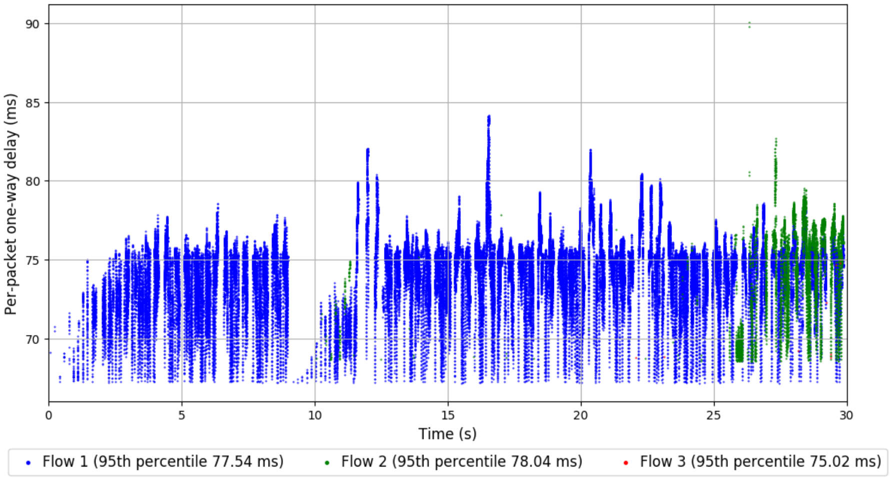




```
Run 1: Statistics of Verus

Start at: 2019-07-12 04:10:49
End at: 2019-07-12 04:11:19
Local clock offset: -6.191 ms
Remote clock offset: -11.245 ms

# Below is generated by plot.py at 2019-07-12 06:51:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 44.85 Mbit/s
95th percentile per-packet one-way delay: 77.622 ms
Loss rate: 90.64%
-- Flow 1:
Average throughput: 41.75 Mbit/s
95th percentile per-packet one-way delay: 77.538 ms
Loss rate: 90.78%
-- Flow 2:
Average throughput: 4.67 Mbit/s
95th percentile per-packet one-way delay: 78.043 ms
Loss rate: 88.24%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 75.023 ms
Loss rate: 62.50%
```

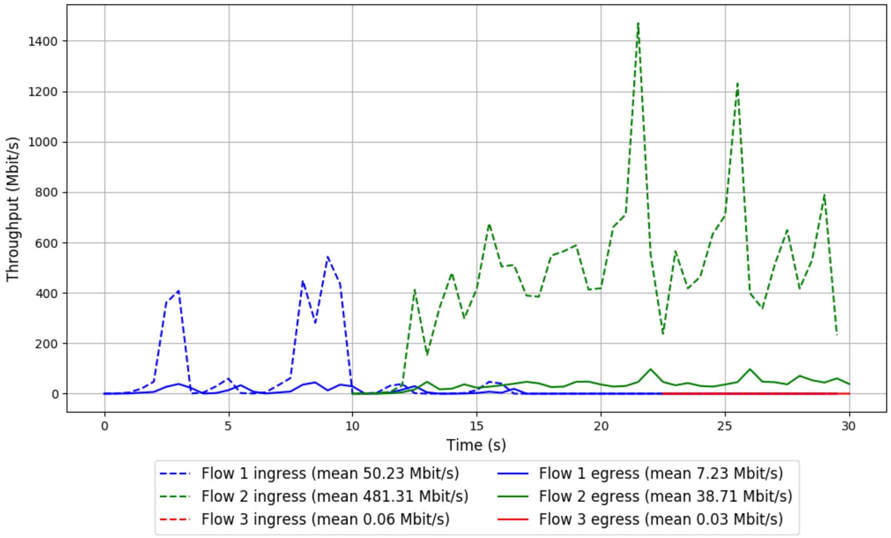
Run 1: Report of Verus — Data Link

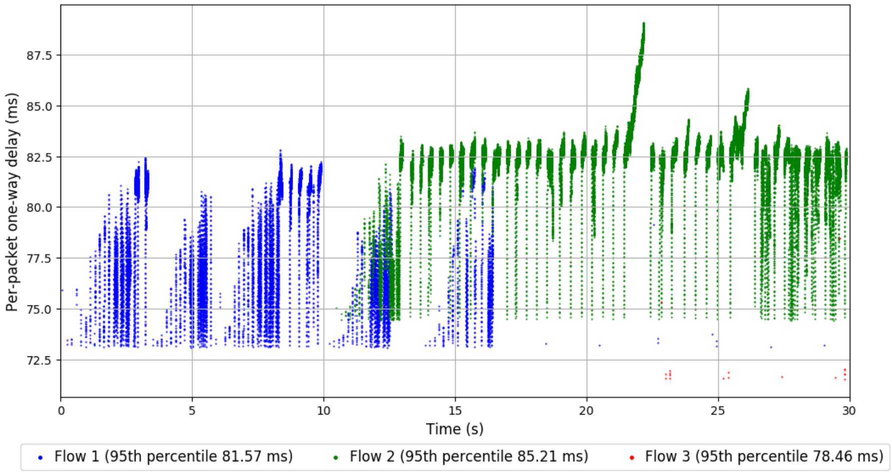




```
Run 2: Statistics of Verus

Start at: 2019-07-12 04:41:21
End at: 2019-07-12 04:41:51
Local clock offset: -5.948 ms
Remote clock offset: -7.819 ms

# Below is generated by plot.py at 2019-07-12 06:51:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 32.23 Mbit/s
95th percentile per-packet one-way delay: 84.643 ms
Loss rate: 91.10%
-- Flow 1:
Average throughput: 7.23 Mbit/s
95th percentile per-packet one-way delay: 81.574 ms
Loss rate: 85.69%
-- Flow 2:
Average throughput: 38.71 Mbit/s
95th percentile per-packet one-way delay: 85.213 ms
Loss rate: 91.95%
-- Flow 3:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 78.461 ms
Loss rate: 47.22%
```

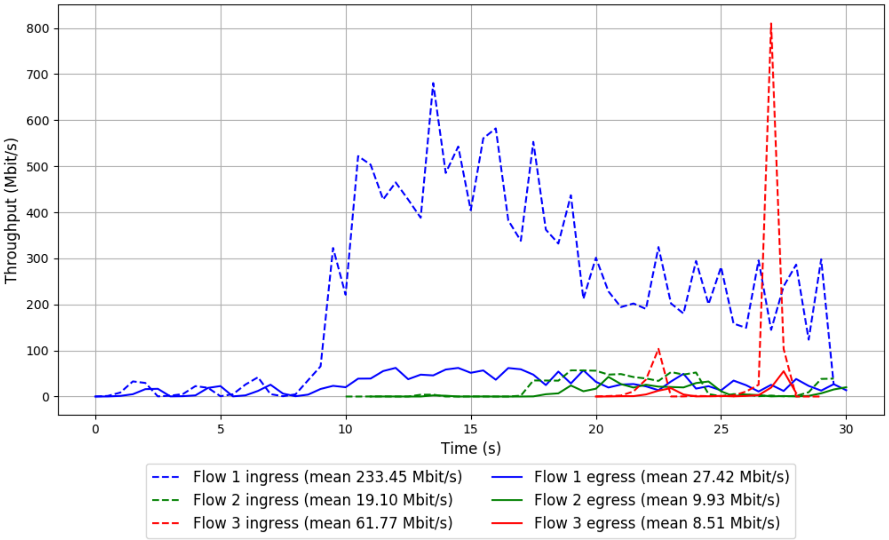
Run 2: Report of Verus — Data Link

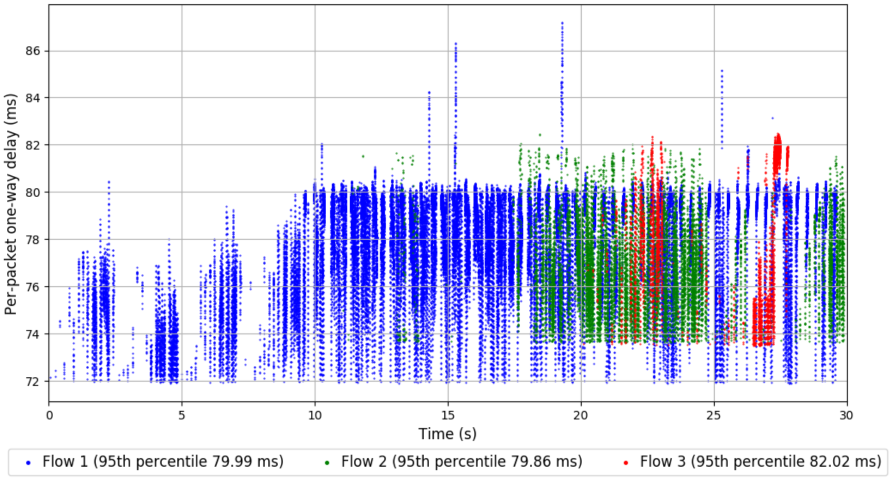




```
Run 3: Statistics of Verus

Start at: 2019-07-12 05:12:08
End at: 2019-07-12 05:12:38
Local clock offset: -7.955 ms
Remote clock offset: -6.7 ms

# Below is generated by plot.py at 2019-07-12 06:51:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 35.62 Mbit/s
95th percentile per-packet one-way delay: 80.135 ms
Loss rate: 86.43%
-- Flow 1:
Average throughput: 27.42 Mbit/s
95th percentile per-packet one-way delay: 79.994 ms
Loss rate: 88.25%
-- Flow 2:
Average throughput: 9.93 Mbit/s
95th percentile per-packet one-way delay: 79.859 ms
Loss rate: 50.61%
-- Flow 3:
Average throughput: 8.51 Mbit/s
95th percentile per-packet one-way delay: 82.024 ms
Loss rate: 88.23%
```

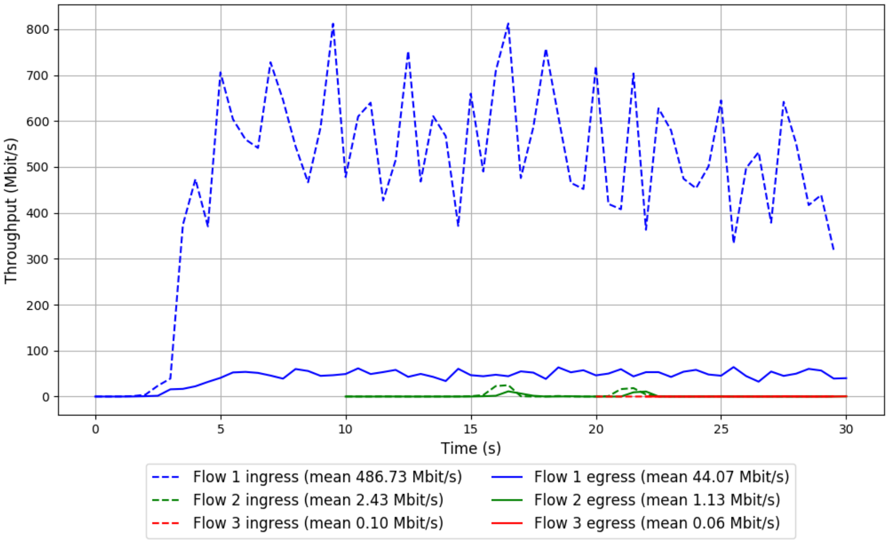
Run 3: Report of Verus — Data Link

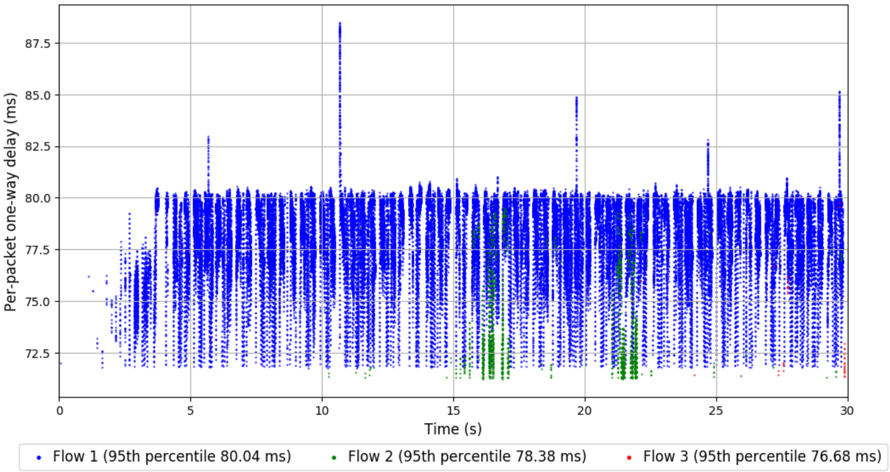




```
Run 4: Statistics of Verus

Start at: 2019-07-12 05:42:42
End at: 2019-07-12 05:43:12
Local clock offset: -8.004 ms
Remote clock offset: -6.999 ms

# Below is generated by plot.py at 2019-07-12 06:51:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 44.75 Mbit/s
95th percentile per-packet one-way delay: 80.035 ms
Loss rate: 90.82%
-- Flow 1:
Average throughput: 44.07 Mbit/s
95th percentile per-packet one-way delay: 80.038 ms
Loss rate: 90.94%
-- Flow 2:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 78.380 ms
Loss rate: 53.54%
-- Flow 3:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 76.676 ms
Loss rate: 51.85%
```

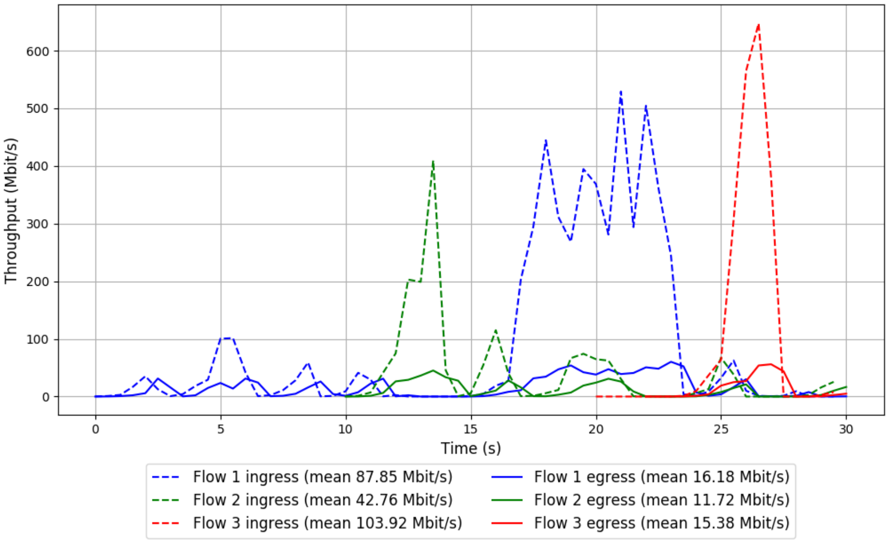
Run 4: Report of Verus — Data Link

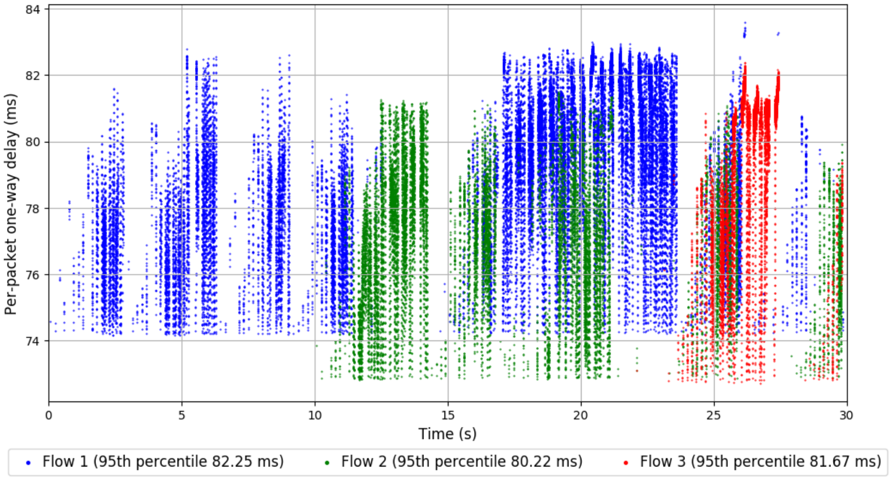




```
Run 5: Statistics of Verus

Start at: 2019-07-12 06:13:08
End at: 2019-07-12 06:13:38
Local clock offset: -6.738 ms
Remote clock offset: -8.556 ms

# Below is generated by plot.py at 2019-07-12 06:51:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 27.93 Mbit/s
95th percentile per-packet one-way delay: 82.024 ms
Loss rate: 81.39%
-- Flow 1:
Average throughput: 16.18 Mbit/s
95th percentile per-packet one-way delay: 82.255 ms
Loss rate: 81.58%
-- Flow 2:
Average throughput: 11.72 Mbit/s
95th percentile per-packet one-way delay: 80.225 ms
Loss rate: 72.58%
-- Flow 3:
Average throughput: 15.38 Mbit/s
95th percentile per-packet one-way delay: 81.670 ms
Loss rate: 88.24%
```

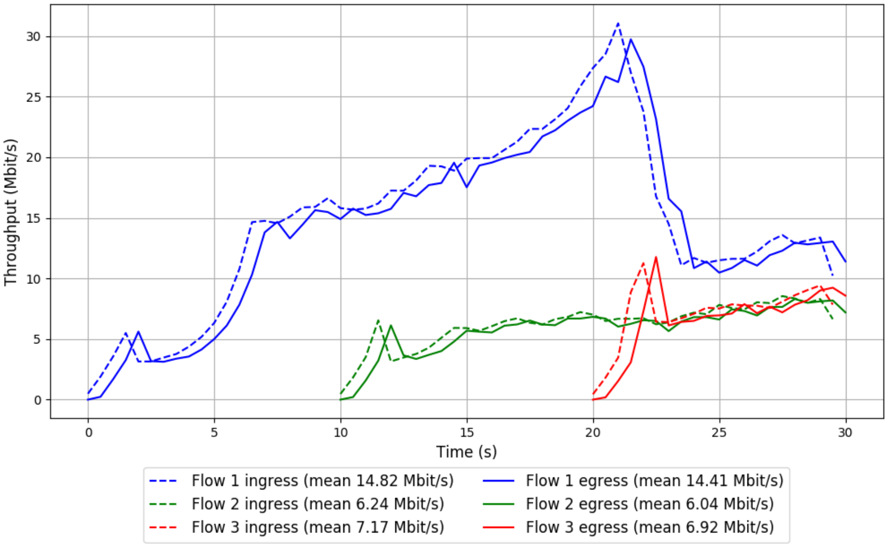
Run 5: Report of Verus — Data Link

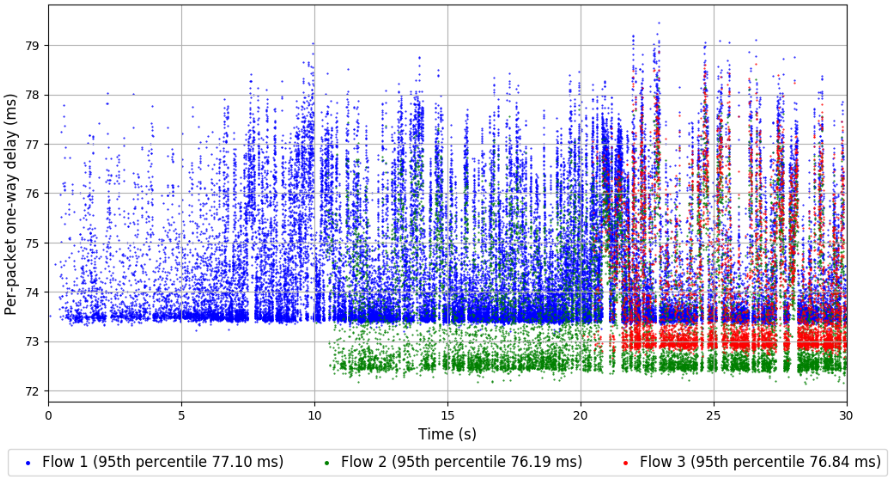




```
Run 1: Statistics of PCC-Vivace

Start at: 2019-07-12 04:40:06
End at: 2019-07-12 04:40:36
Local clock offset: -5.964 ms
Remote clock offset: -8.094 ms

# Below is generated by plot.py at 2019-07-12 06:51:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 20.71 Mbit/s
95th percentile per-packet one-way delay: 76.951 ms
Loss rate: 2.96%
-- Flow 1:
Average throughput: 14.41 Mbit/s
95th percentile per-packet one-way delay: 77.104 ms
Loss rate: 2.80%
-- Flow 2:
Average throughput: 6.04 Mbit/s
95th percentile per-packet one-way delay: 76.186 ms
Loss rate: 3.22%
-- Flow 3:
Average throughput: 6.92 Mbit/s
95th percentile per-packet one-way delay: 76.842 ms
Loss rate: 3.47%
```

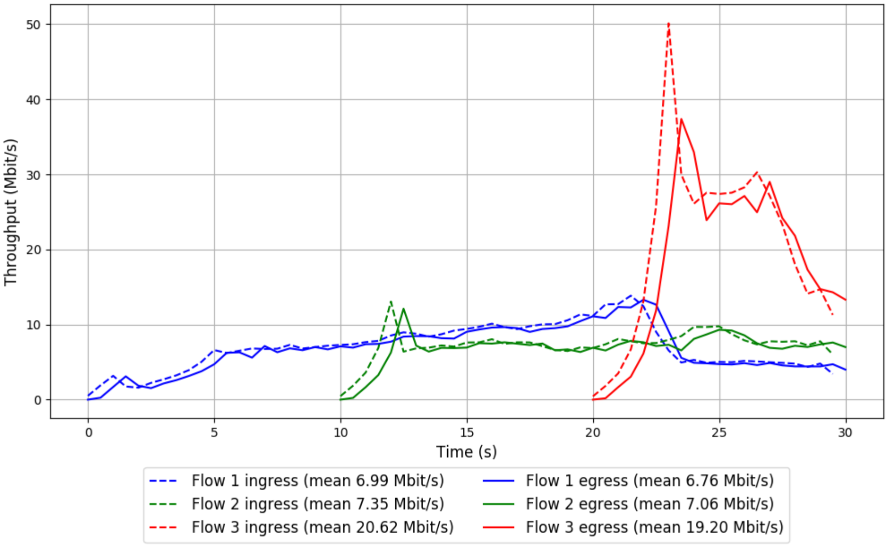
Run 1: Report of PCC-Vivace — Data Link

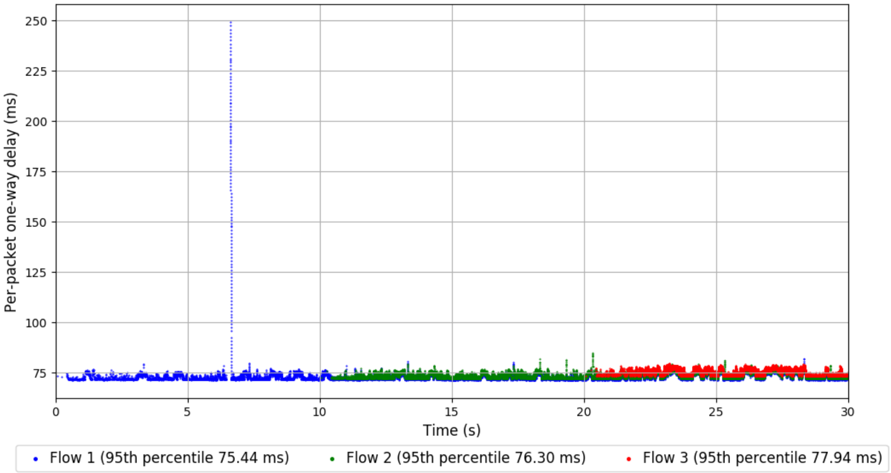




```
Run 2: Statistics of PCC-Vivace

Start at: 2019-07-12 05:10:47
End at: 2019-07-12 05:11:17
Local clock offset: -8.427 ms
Remote clock offset: -7.266 ms

# Below is generated by plot.py at 2019-07-12 06:51:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 17.80 Mbit/s
95th percentile per-packet one-way delay: 77.476 ms
Loss rate: 4.77%
-- Flow 1:
Average throughput: 6.76 Mbit/s
95th percentile per-packet one-way delay: 75.443 ms
Loss rate: 3.26%
-- Flow 2:
Average throughput: 7.06 Mbit/s
95th percentile per-packet one-way delay: 76.298 ms
Loss rate: 3.99%
-- Flow 3:
Average throughput: 19.20 Mbit/s
95th percentile per-packet one-way delay: 77.937 ms
Loss rate: 6.87%
```

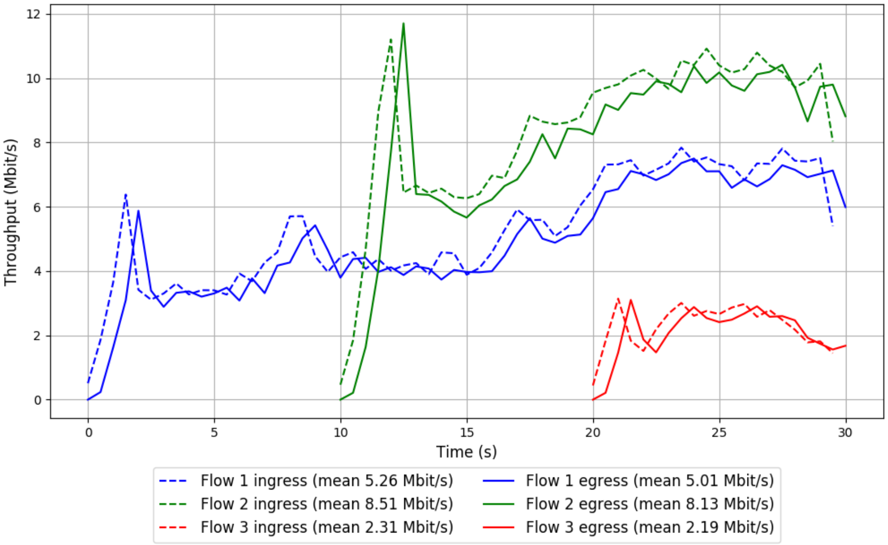
Run 2: Report of PCC-Vivace — Data Link

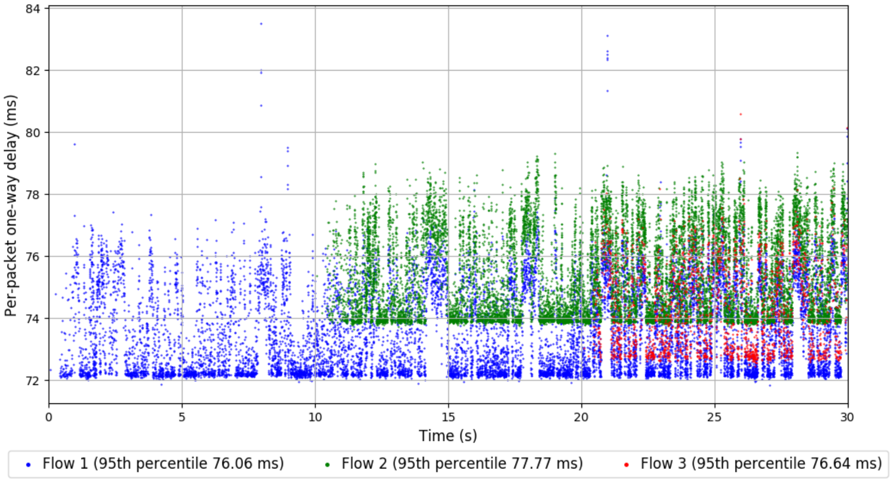




```
Run 3: Statistics of PCC-Vivace

Start at: 2019-07-12 05:41:24
End at: 2019-07-12 05:41:54
Local clock offset: -7.415 ms
Remote clock offset: -5.588 ms

# Below is generated by plot.py at 2019-07-12 06:51:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.14 Mbit/s
95th percentile per-packet one-way delay: 77.388 ms
Loss rate: 4.63%
-- Flow 1:
Average throughput: 5.01 Mbit/s
95th percentile per-packet one-way delay: 76.057 ms
Loss rate: 4.74%
-- Flow 2:
Average throughput: 8.13 Mbit/s
95th percentile per-packet one-way delay: 77.773 ms
Loss rate: 4.44%
-- Flow 3:
Average throughput: 2.19 Mbit/s
95th percentile per-packet one-way delay: 76.641 ms
Loss rate: 5.24%
```

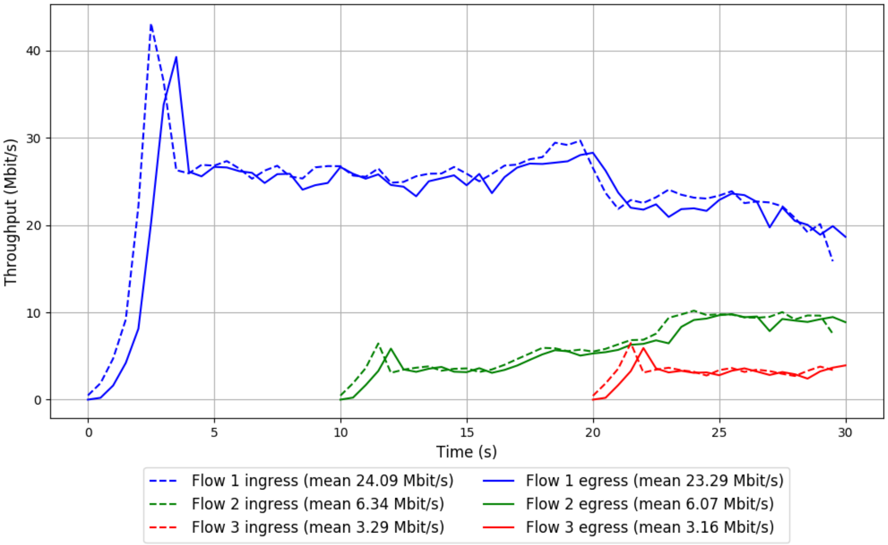
Run 3: Report of PCC-Vivace — Data Link

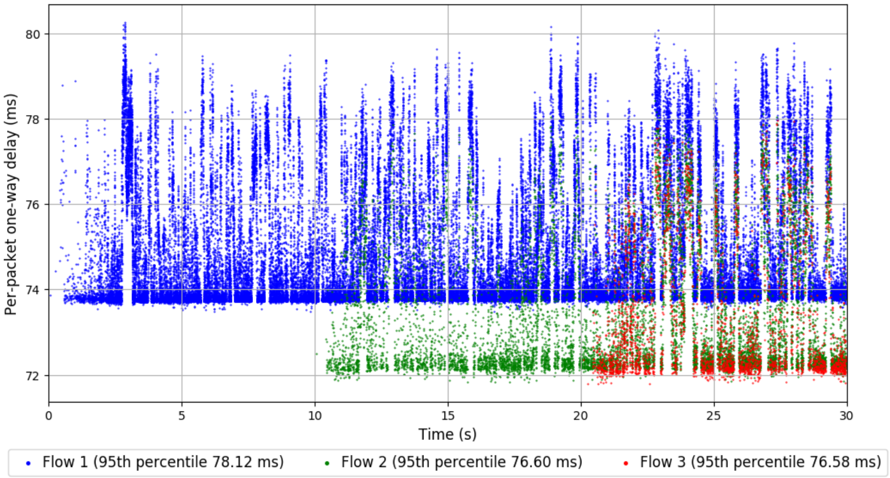




```
Run 4: Statistics of PCC-Vivace

Start at: 2019-07-12 06:11:53
End at: 2019-07-12 06:12:23
Local clock offset: -7.302 ms
Remote clock offset: -9.599 ms

# Below is generated by plot.py at 2019-07-12 06:51:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 28.37 Mbit/s
95th percentile per-packet one-way delay: 77.970 ms
Loss rate: 3.50%
-- Flow 1:
Average throughput: 23.29 Mbit/s
95th percentile per-packet one-way delay: 78.120 ms
Loss rate: 3.34%
-- Flow 2:
Average throughput: 6.07 Mbit/s
95th percentile per-packet one-way delay: 76.597 ms
Loss rate: 4.27%
-- Flow 3:
Average throughput: 3.16 Mbit/s
95th percentile per-packet one-way delay: 76.580 ms
Loss rate: 3.98%
```

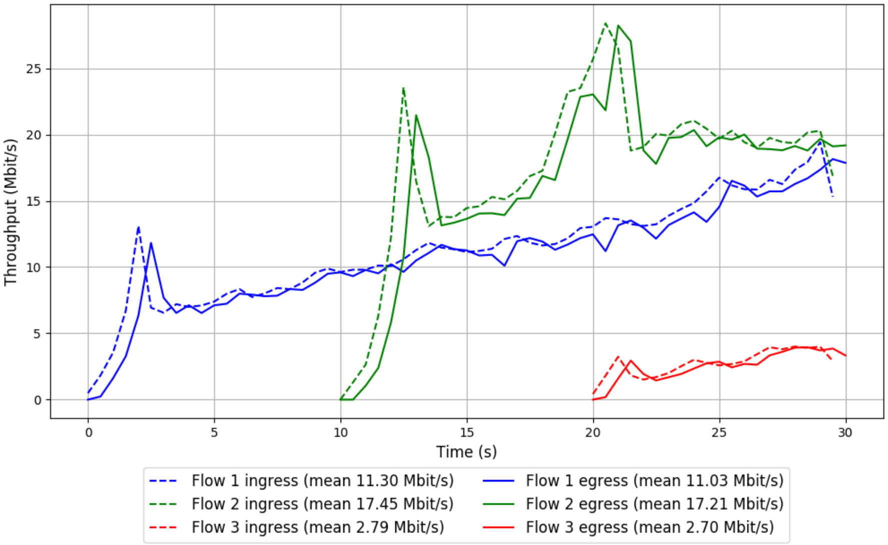
Run 4: Report of PCC-Vivace — Data Link

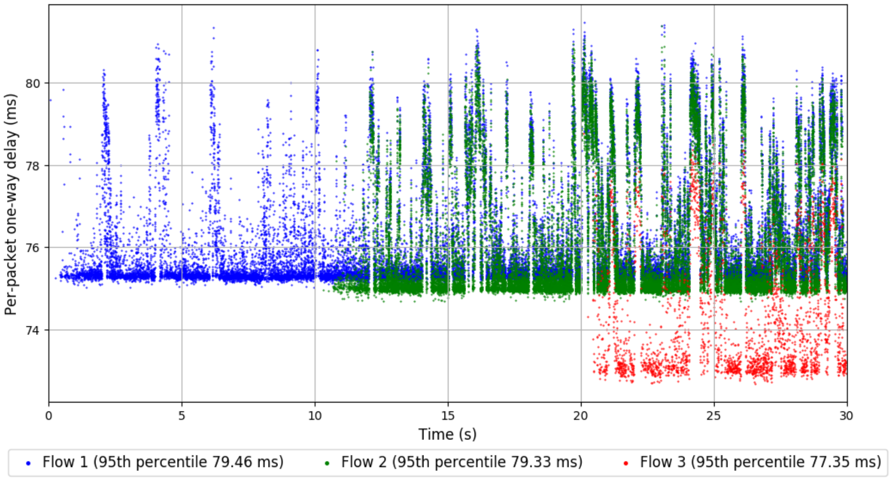




```
Run 5: Statistics of PCC-Vivace

Start at: 2019-07-12 06:42:13
End at: 2019-07-12 06:42:43
Local clock offset: -5.582 ms
Remote clock offset: -8.61 ms

# Below is generated by plot.py at 2019-07-12 06:51:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.22 Mbit/s
95th percentile per-packet one-way delay: 79.363 ms
Loss rate: 2.57%
-- Flow 1:
Average throughput: 11.03 Mbit/s
95th percentile per-packet one-way delay: 79.464 ms
Loss rate: 2.44%
-- Flow 2:
Average throughput: 17.21 Mbit/s
95th percentile per-packet one-way delay: 79.327 ms
Loss rate: 2.64%
-- Flow 3:
Average throughput: 2.70 Mbit/s
95th percentile per-packet one-way delay: 77.348 ms
Loss rate: 3.30%
```

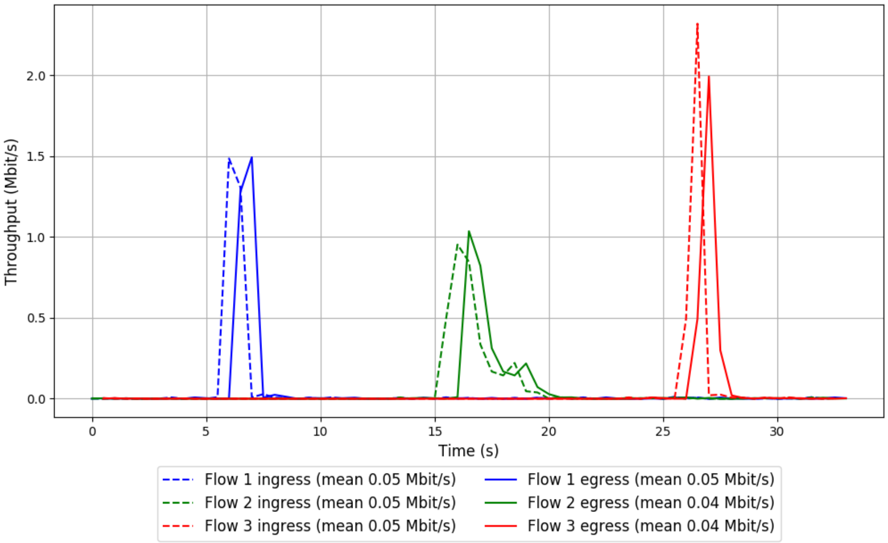
Run 5: Report of PCC-Vivace — Data Link

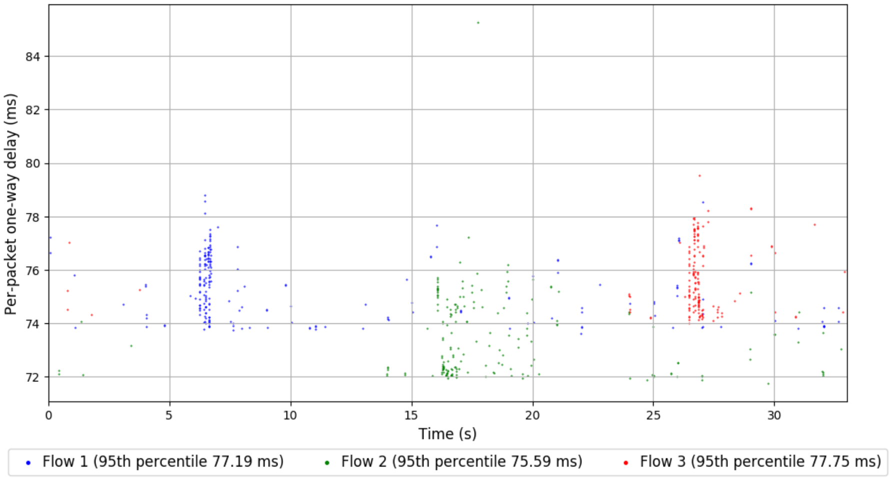




```
Run 1: Statistics of WebRTC media

Start at: 2019-07-12 04:22:21
End at: 2019-07-12 04:22:51
Local clock offset: -6.924 ms
Remote clock offset: -7.287 ms

# Below is generated by plot.py at 2019-07-12 06:51:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 77.443 ms
Loss rate: 5.73%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 77.187 ms
Loss rate: 1.26%
-- Flow 2:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 75.588 ms
Loss rate: 13.02%
-- Flow 3:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 77.748 ms
Loss rate: 2.00%
```

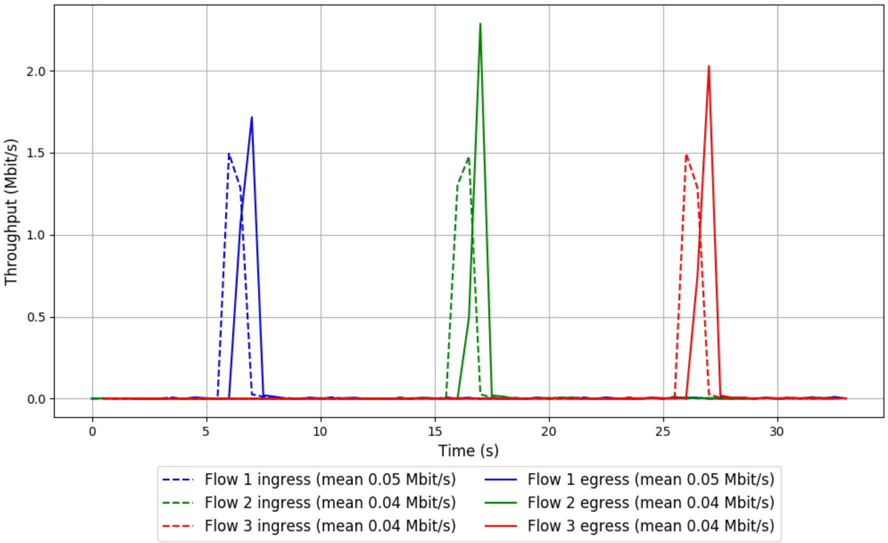
Run 1: Report of WebRTC media — Data Link

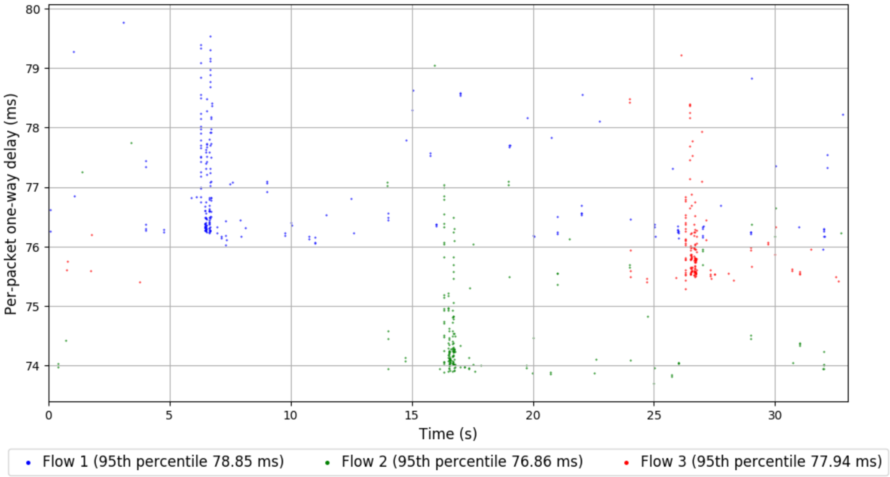




```
Run 2: Statistics of WebRTC media

Start at: 2019-07-12 04:52:51
End at: 2019-07-12 04:53:21
Local clock offset: -6.776 ms
Remote clock offset: -5.955 ms

# Below is generated by plot.py at 2019-07-12 06:51:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 78.378 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 78.849 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 76.855 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 77.939 ms
Loss rate: 0.18%
```

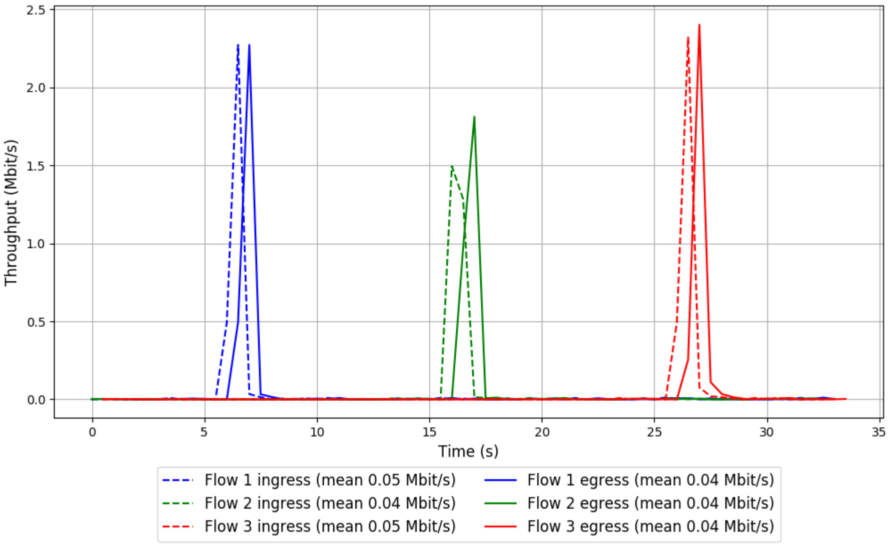
Run 2: Report of WebRTC media — Data Link

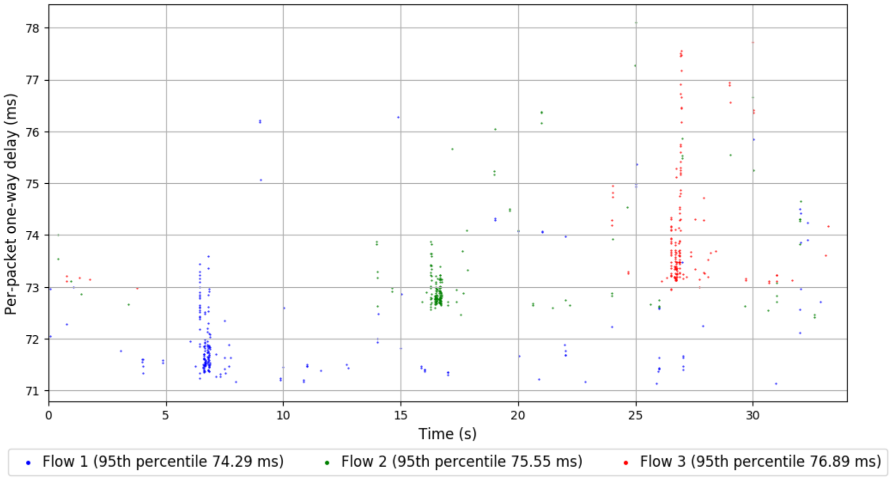




```
Run 3: Statistics of WebRTC media

Start at: 2019-07-12 05:23:34
End at: 2019-07-12 05:24:04
Local clock offset: -9.227 ms
Remote clock offset: -7.796 ms

# Below is generated by plot.py at 2019-07-12 06:51:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 75.857 ms
Loss rate: 1.52%
-- Flow 1:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 74.289 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 75.548 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 76.887 ms
Loss rate: 3.71%
```

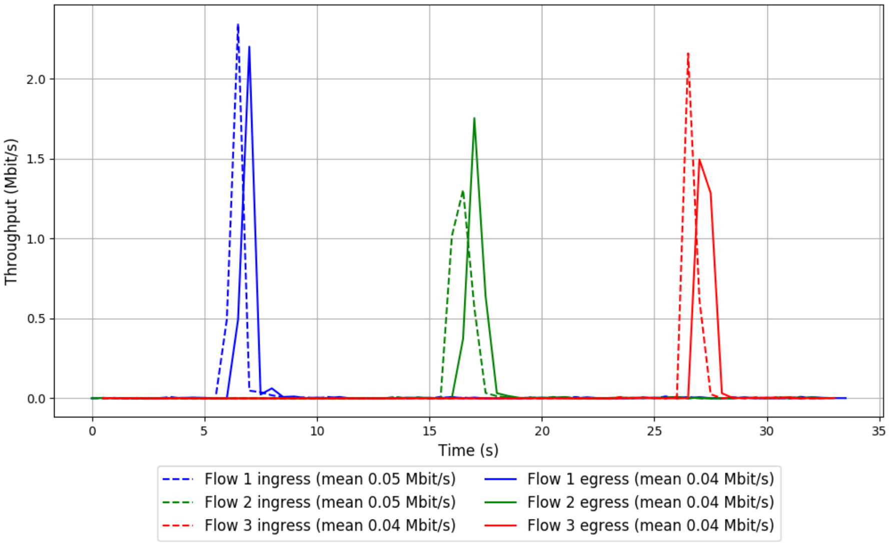
Run 3: Report of WebRTC media — Data Link

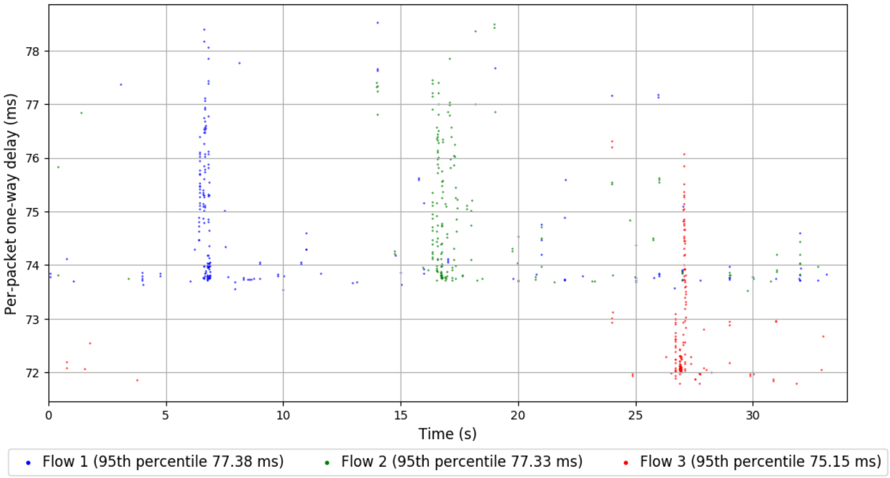




```
Run 4: Statistics of WebRTC media

Start at: 2019-07-12 05:54:13
End at: 2019-07-12 05:54:43
Local clock offset: -6.958 ms
Remote clock offset: -6.019 ms

# Below is generated by plot.py at 2019-07-12 06:51:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 77.139 ms
Loss rate: 3.11%
-- Flow 1:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 77.381 ms
Loss rate: 5.04%
-- Flow 2:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 77.330 ms
Loss rate: 4.00%
-- Flow 3:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 75.150 ms
Loss rate: 0.06%
```

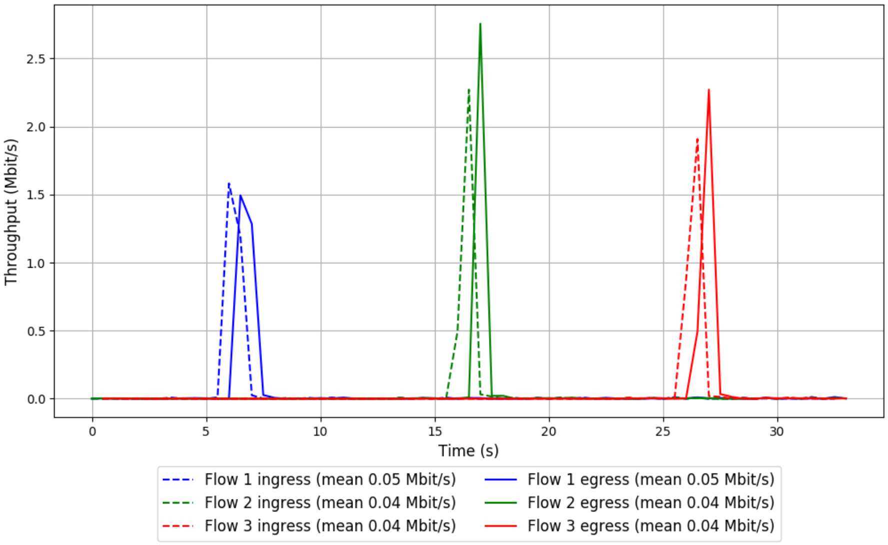
Run 4: Report of WebRTC media — Data Link



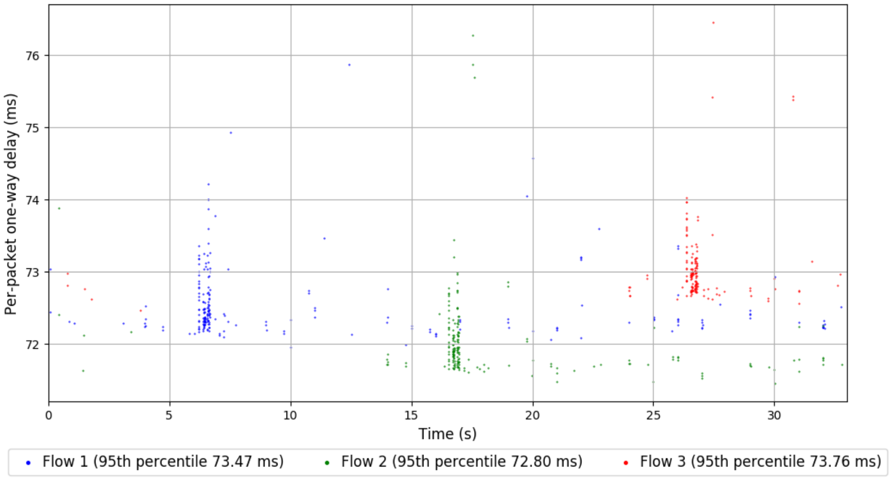


```
Run 5: Statistics of WebRTC media

Start at: 2019-07-12 06:24:27
End at: 2019-07-12 06:24:57
Local clock offset: -6.412 ms
Remote clock offset: -10.682 ms

# Below is generated by plot.py at 2019-07-12 06:51:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 73.569 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 73.469 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 72.799 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 73.762 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link



Throughput (Mbit/s)
0.0
0.5
1.0
1.5
2.0
2.5
0
5
10
15
20
25
30
Time (s)
Flow 1 ingress (mean 0.05 Mbit/s)
Flow 2 ingress (mean 0.04 Mbit/s)
Flow 3 ingress (mean 0.04 Mbit/s)
Flow 1 egress (mean 0.05 Mbit/s)
Flow 2 egress (mean 0.04 Mbit/s)
Flow 3 egress (mean 0.04 Mbit/s)



Per-packet one-way delay (ms)
72
73
74
75
76
0
5
10
15
20
25
30
Time (s)
Flow 1 (95th percentile 73.47 ms)
Flow 2 (95th percentile 72.80 ms)
Flow 3 (95th percentile 73.76 ms)