

Pantheon Report

Generated at 2018-10-26 08:06:13 (UTC).
Data path: Colombia on p4p1 (*remote*) → AWS Brazil 2 on ens5 (*local*).
Repeated the test of 18 congestion control schemes 5 times.
Each test lasted for 30 seconds running 1 flow.
NTP offsets were measured against gps.ntp.br and have been applied to correct the timestamps in logs.

System info:

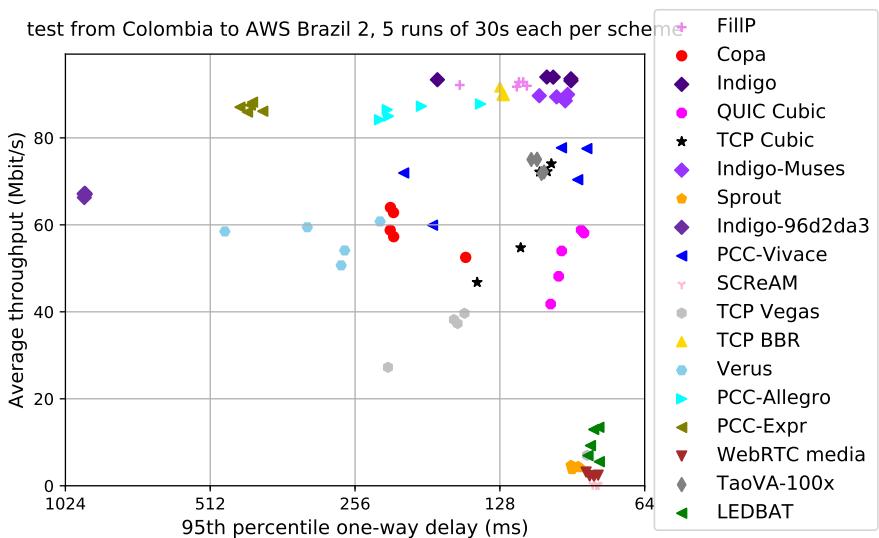
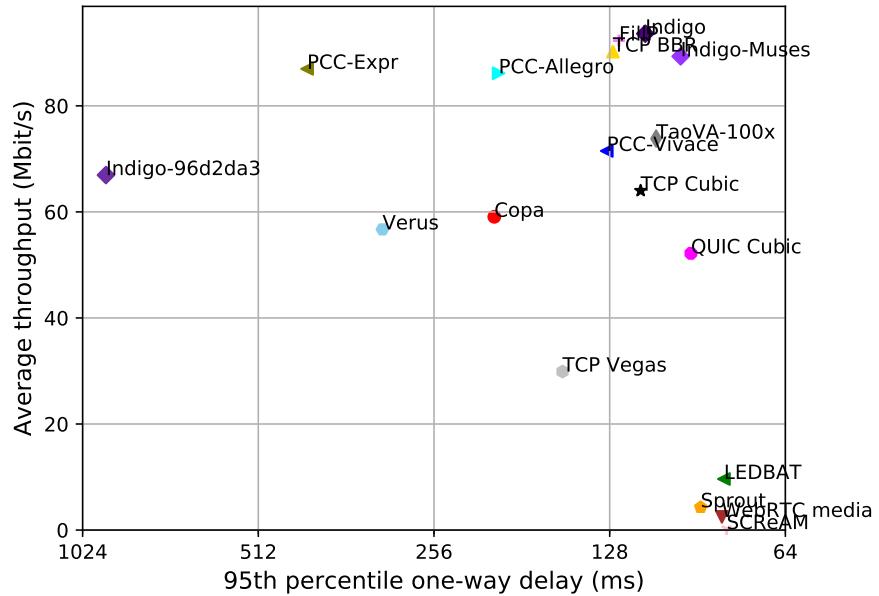
```
Linux 4.15.0-1023-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

```
branch: muses @ 2e19c0464530faa92c63f8217c9971438a26a3be
third_party/fillp @ 5332fc9127c63565e13f4933b336c02d1aabdac6
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbfed0c6349ae986009b4fa8643c40a
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 Colombia to AWS Brazil 2, 5 runs of 30s each per scheme
(mean of all runs by scheme)



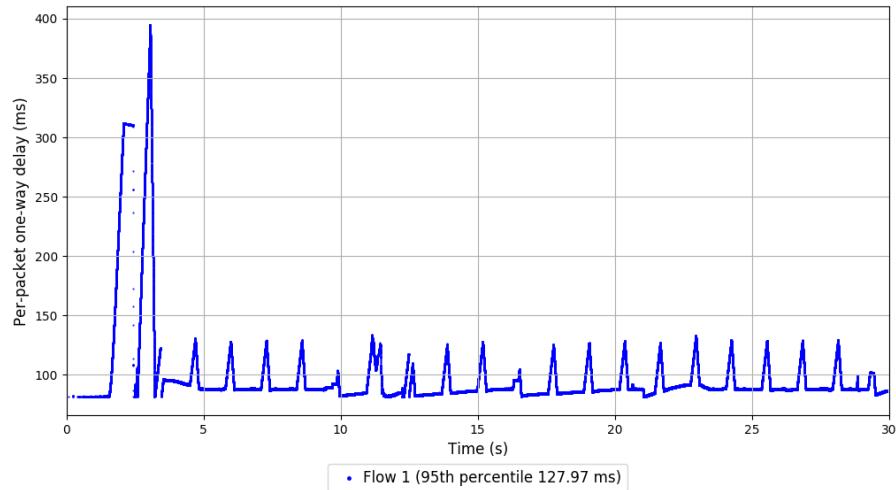
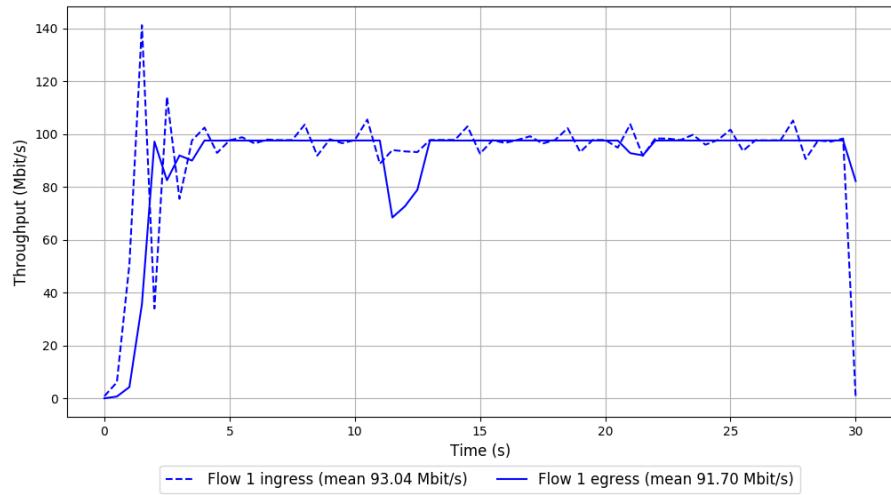
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	90.23	126.38	1.28
Copa	5	59.08	201.79	2.20
TCP Cubic	5	64.00	113.29	0.96
FillP	5	92.31	123.39	1.98
Indigo	5	93.61	111.23	1.31
Indigo-96d2da3	5	66.95	933.97	5.75
LEDBAT	5	9.63	81.57	1.38
Indigo-Muses	5	89.34	96.74	1.09
PCC-Allegro	5	86.14	198.37	1.37
PCC-Expr	5	86.98	422.34	1.80
QUIC Cubic	5	52.18	92.90	0.96
SCReAM	5	0.19	80.71	0.95
Sprout	5	4.30	89.41	0.72
TaoVA-100x	5	73.82	106.58	0.59
TCP Vegas	5	29.89	154.17	0.76
Verus	5	56.70	313.73	1.29
PCC-Vivace	5	71.50	129.50	1.22
WebRTC media	5	2.48	82.22	0.71

Run 1: Statistics of TCP BBR

```
Start at: 2018-10-26 06:23:17
End at: 2018-10-26 06:23:47
Local clock offset: -1.989 ms
Remote clock offset: -6.45 ms

# Below is generated by plot.py at 2018-10-26 07:57:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.70 Mbit/s
95th percentile per-packet one-way delay: 127.974 ms
Loss rate: 1.97%
-- Flow 1:
Average throughput: 91.70 Mbit/s
95th percentile per-packet one-way delay: 127.974 ms
Loss rate: 1.97%
```

Run 1: Report of TCP BBR — Data Link

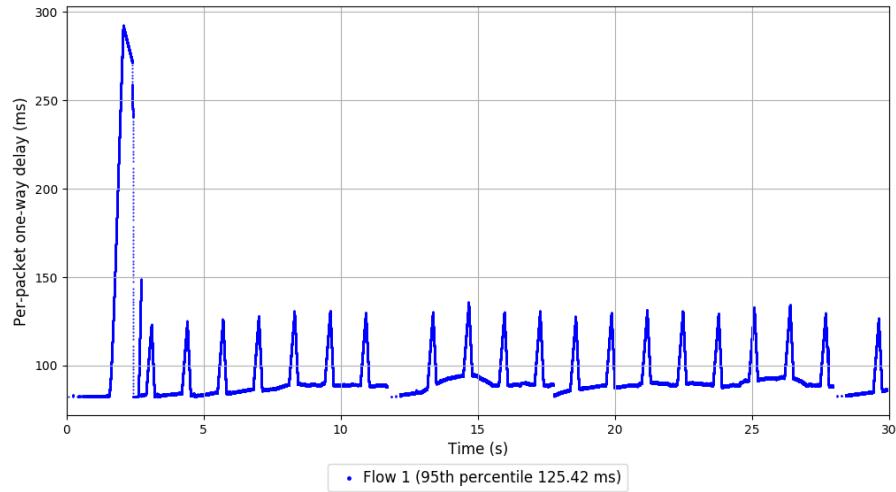
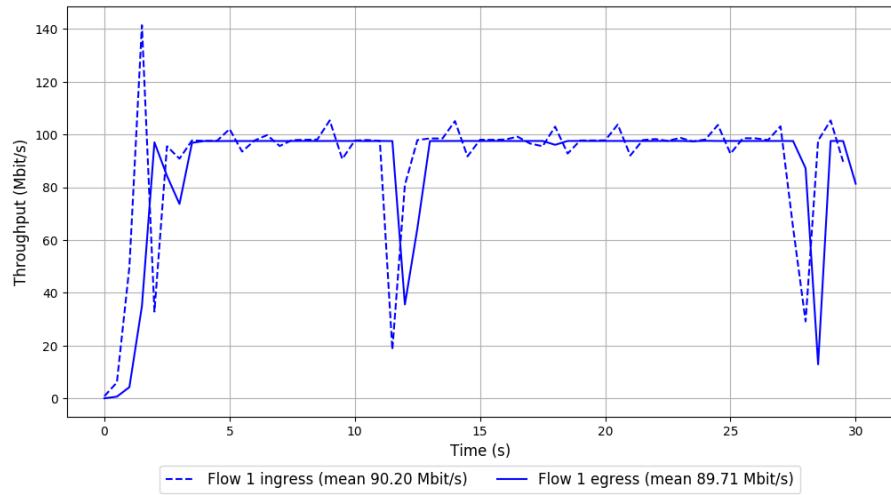


Run 2: Statistics of TCP BBR

```
Start at: 2018-10-26 06:44:34
End at: 2018-10-26 06:45:04
Local clock offset: -5.411 ms
Remote clock offset: -5.566 ms

# Below is generated by plot.py at 2018-10-26 07:57:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.71 Mbit/s
95th percentile per-packet one-way delay: 125.422 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 89.71 Mbit/s
95th percentile per-packet one-way delay: 125.422 ms
Loss rate: 1.08%
```

Run 2: Report of TCP BBR — Data Link

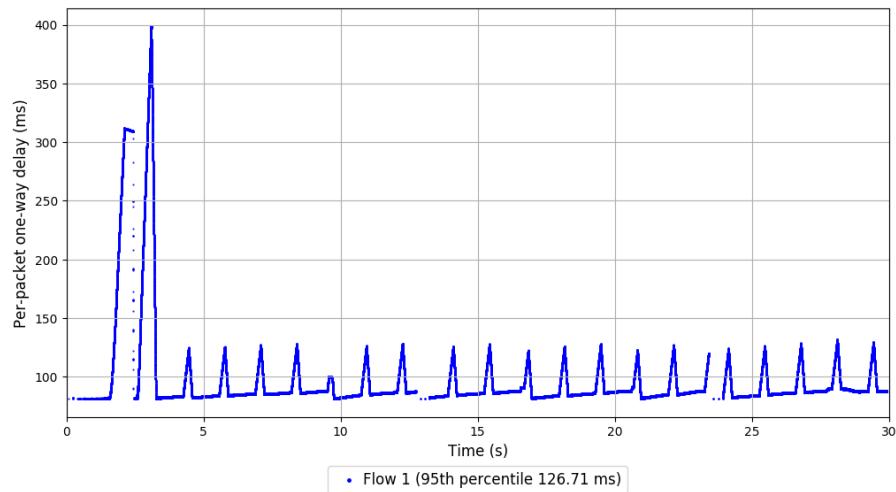
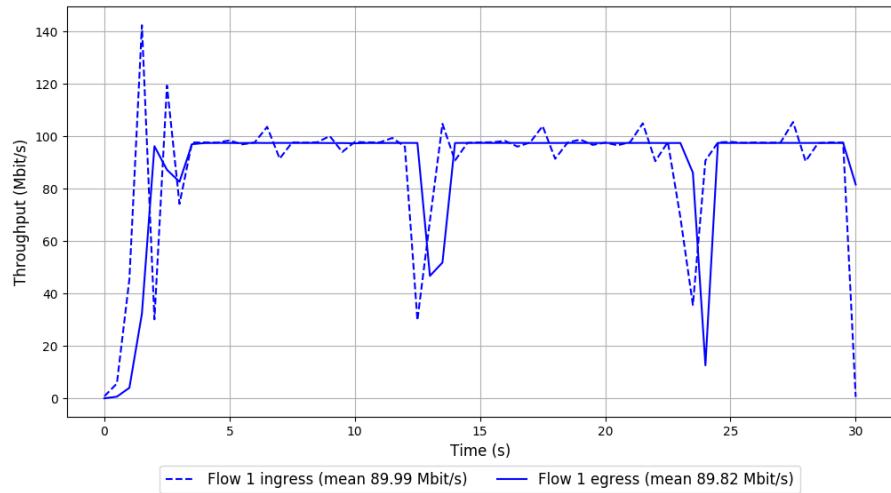


Run 3: Statistics of TCP BBR

```
Start at: 2018-10-26 07:05:52
End at: 2018-10-26 07:06:22
Local clock offset: -6.824 ms
Remote clock offset: -0.756 ms

# Below is generated by plot.py at 2018-10-26 07:57:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.82 Mbit/s
95th percentile per-packet one-way delay: 126.714 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 89.82 Mbit/s
95th percentile per-packet one-way delay: 126.714 ms
Loss rate: 0.74%
```

Run 3: Report of TCP BBR — Data Link

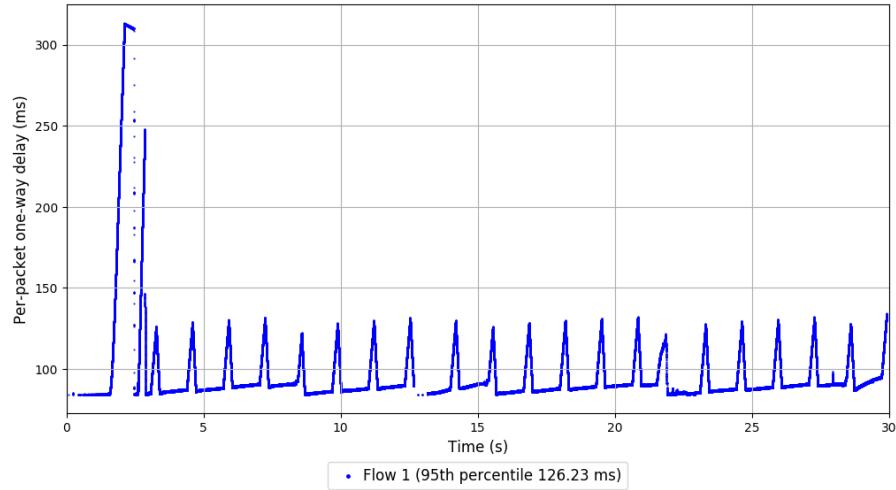
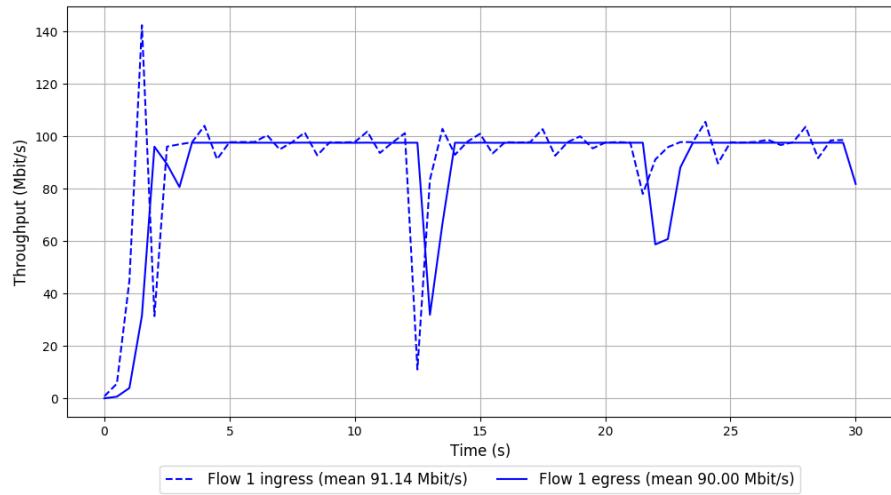


Run 4: Statistics of TCP BBR

```
Start at: 2018-10-26 07:27:06
End at: 2018-10-26 07:27:36
Local clock offset: -7.012 ms
Remote clock offset: -2.453 ms

# Below is generated by plot.py at 2018-10-26 07:57:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 90.00 Mbit/s
95th percentile per-packet one-way delay: 126.235 ms
Loss rate: 1.80%
-- Flow 1:
Average throughput: 90.00 Mbit/s
95th percentile per-packet one-way delay: 126.235 ms
Loss rate: 1.80%
```

Run 4: Report of TCP BBR — Data Link

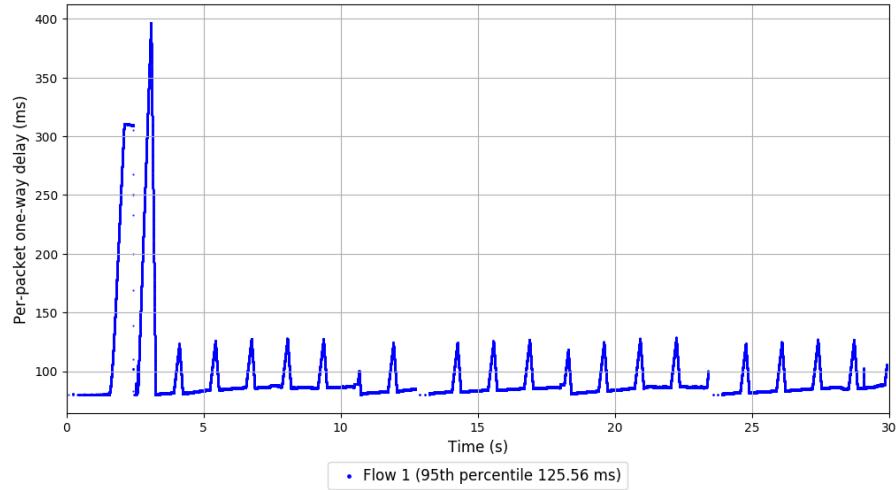
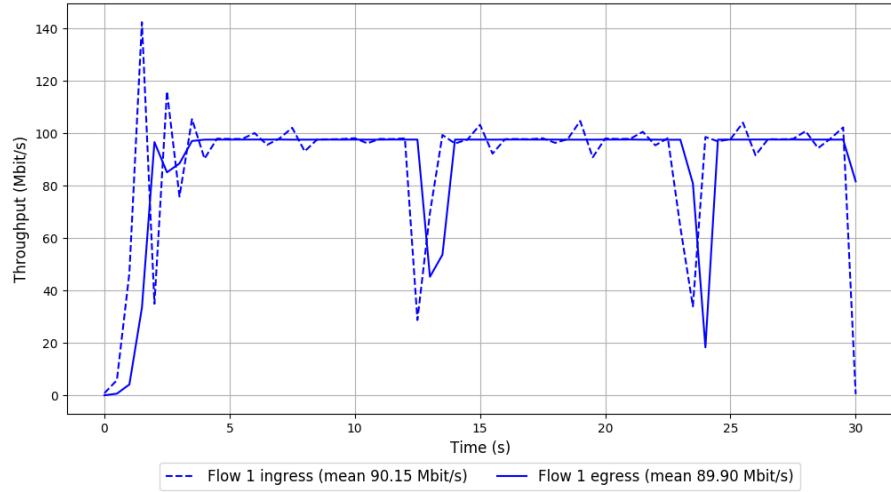


Run 5: Statistics of TCP BBR

```
Start at: 2018-10-26 07:48:32
End at: 2018-10-26 07:49:02
Local clock offset: -1.53 ms
Remote clock offset: 2.114 ms

# Below is generated by plot.py at 2018-10-26 07:57:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.90 Mbit/s
95th percentile per-packet one-way delay: 125.565 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 89.90 Mbit/s
95th percentile per-packet one-way delay: 125.565 ms
Loss rate: 0.82%
```

Run 5: Report of TCP BBR — Data Link

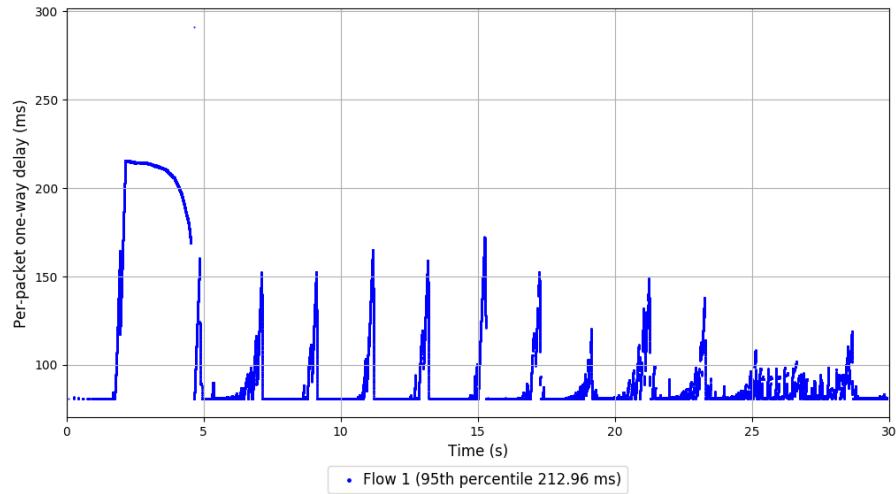
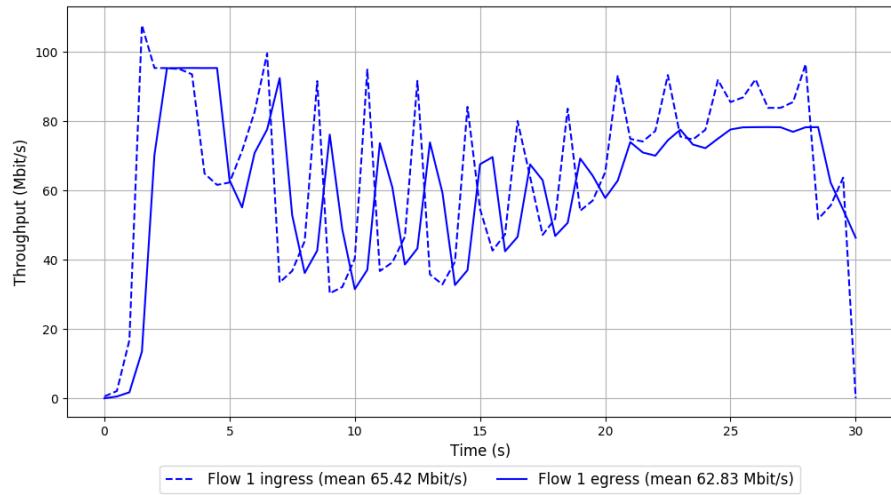


Run 1: Statistics of Copa

```
Start at: 2018-10-26 06:19:48
End at: 2018-10-26 06:20:18
Local clock offset: -2.3 ms
Remote clock offset: -3.37 ms

# Below is generated by plot.py at 2018-10-26 07:57:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 62.83 Mbit/s
95th percentile per-packet one-way delay: 212.962 ms
Loss rate: 4.50%
-- Flow 1:
Average throughput: 62.83 Mbit/s
95th percentile per-packet one-way delay: 212.962 ms
Loss rate: 4.50%
```

Run 1: Report of Copa — Data Link

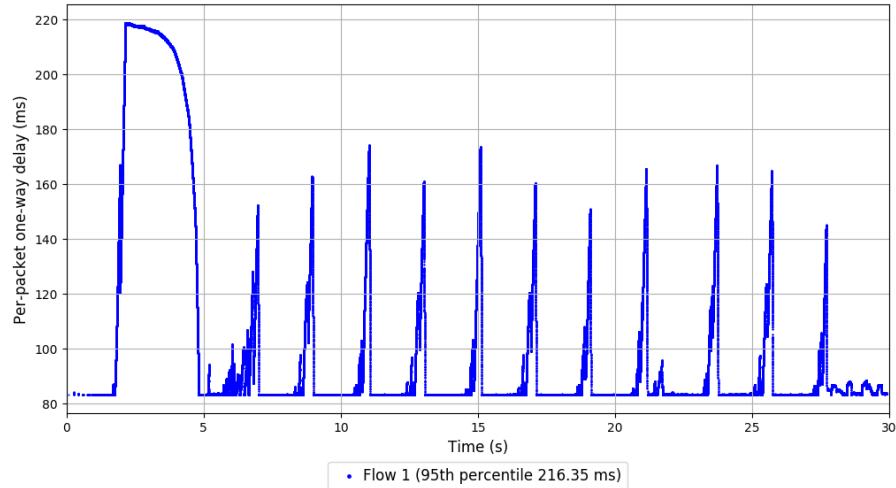
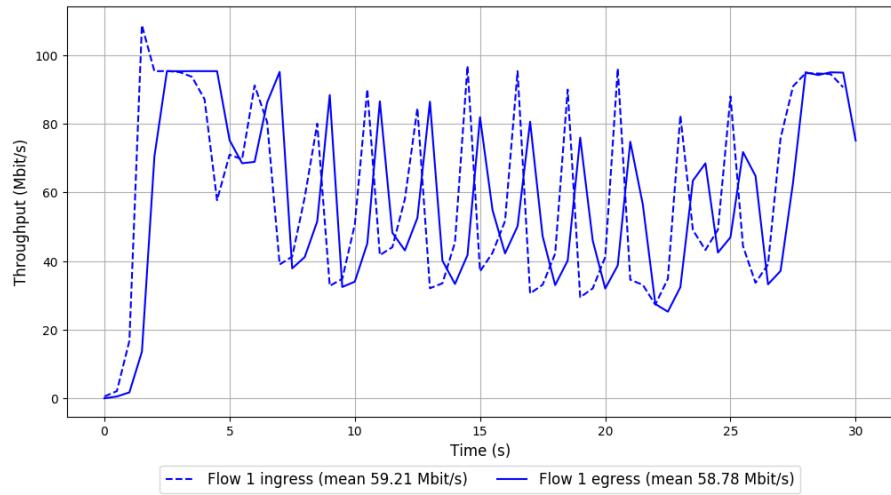


Run 2: Statistics of Copa

```
Start at: 2018-10-26 06:41:06
End at: 2018-10-26 06:41:36
Local clock offset: -4.88 ms
Remote clock offset: -5.322 ms

# Below is generated by plot.py at 2018-10-26 07:57:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 58.78 Mbit/s
95th percentile per-packet one-way delay: 216.346 ms
Loss rate: 1.26%
-- Flow 1:
Average throughput: 58.78 Mbit/s
95th percentile per-packet one-way delay: 216.346 ms
Loss rate: 1.26%
```

Run 2: Report of Copa — Data Link

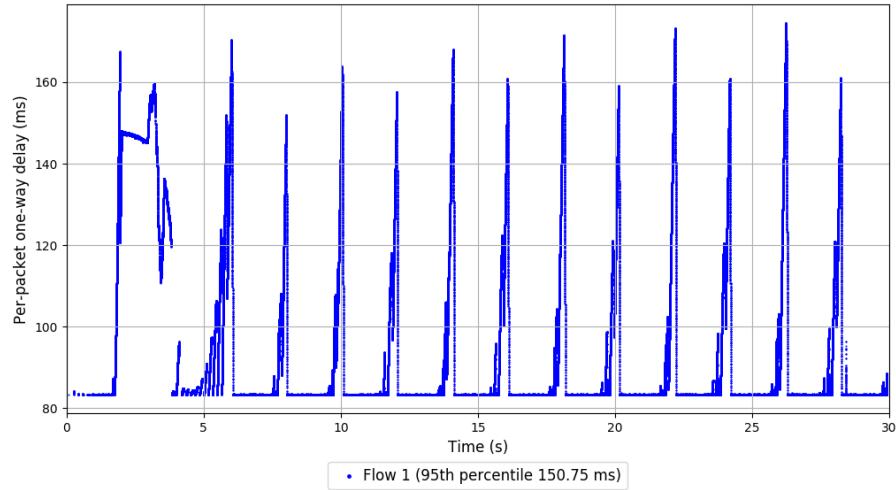
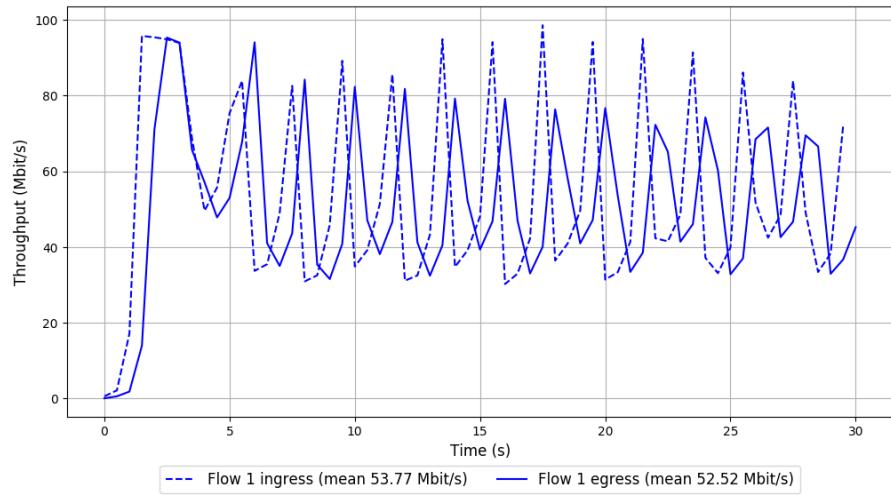


Run 3: Statistics of Copa

```
Start at: 2018-10-26 07:02:25
End at: 2018-10-26 07:02:55
Local clock offset: -6.858 ms
Remote clock offset: -4.37 ms

# Below is generated by plot.py at 2018-10-26 07:57:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 52.52 Mbit/s
95th percentile per-packet one-way delay: 150.745 ms
Loss rate: 2.86%
-- Flow 1:
Average throughput: 52.52 Mbit/s
95th percentile per-packet one-way delay: 150.745 ms
Loss rate: 2.86%
```

Run 3: Report of Copa — Data Link

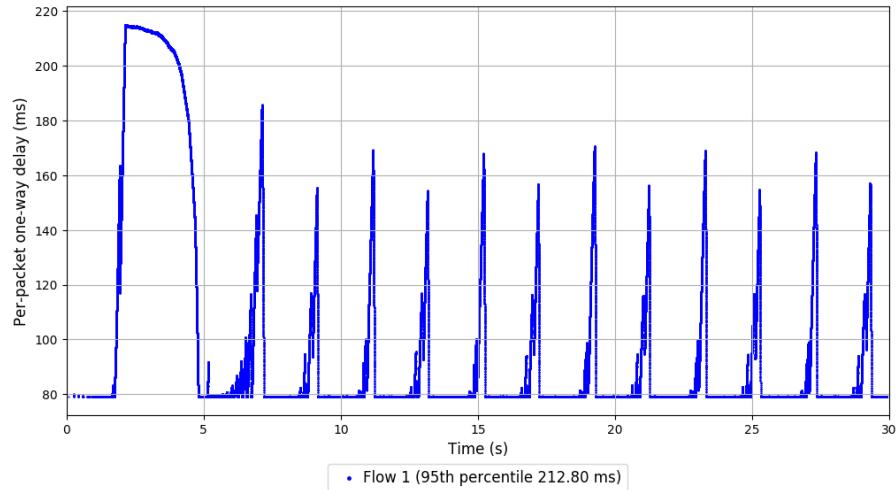
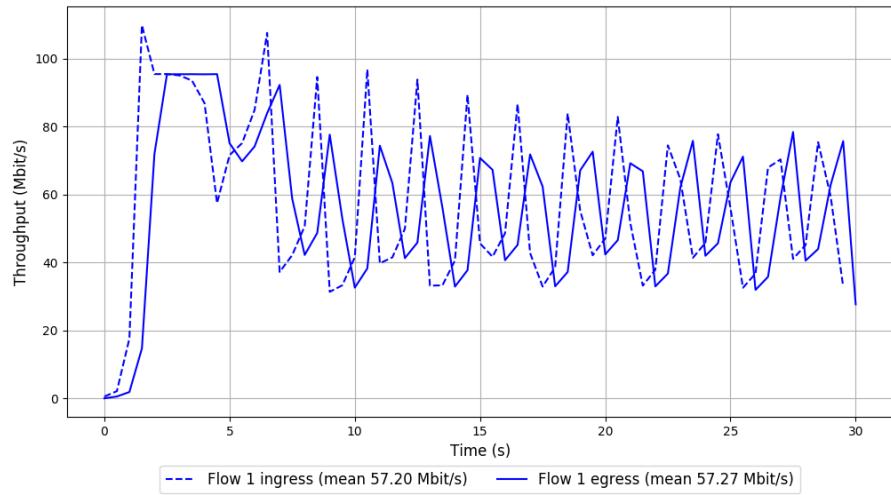


Run 4: Statistics of Copa

```
Start at: 2018-10-26 07:23:39
End at: 2018-10-26 07:24:09
Local clock offset: -6.936 ms
Remote clock offset: 0.649 ms

# Below is generated by plot.py at 2018-10-26 07:58:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 57.27 Mbit/s
95th percentile per-packet one-way delay: 212.796 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 57.27 Mbit/s
95th percentile per-packet one-way delay: 212.796 ms
Loss rate: 0.41%
```

Run 4: Report of Copa — Data Link

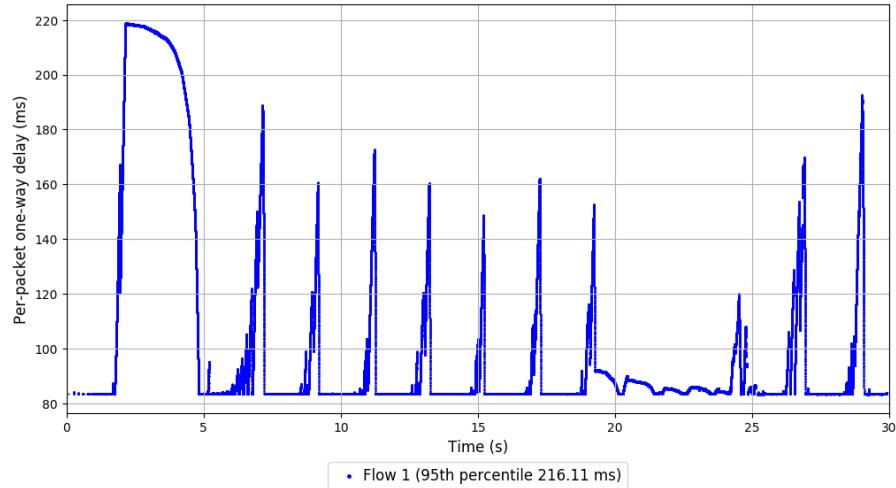
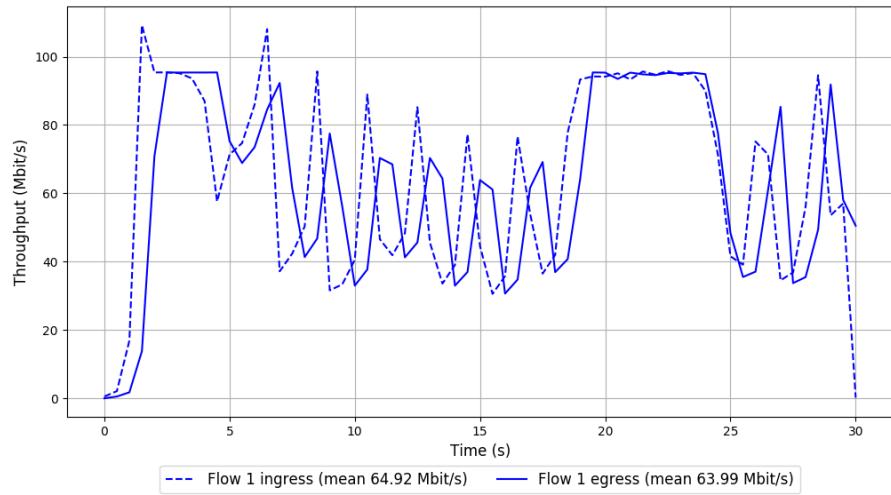


Run 5: Statistics of Copa

```
Start at: 2018-10-26 07:45:04
End at: 2018-10-26 07:45:34
Local clock offset: -2.252 ms
Remote clock offset: -1.757 ms

# Below is generated by plot.py at 2018-10-26 07:58:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 63.99 Mbit/s
95th percentile per-packet one-way delay: 216.114 ms
Loss rate: 1.97%
-- Flow 1:
Average throughput: 63.99 Mbit/s
95th percentile per-packet one-way delay: 216.114 ms
Loss rate: 1.97%
```

Run 5: Report of Copa — Data Link

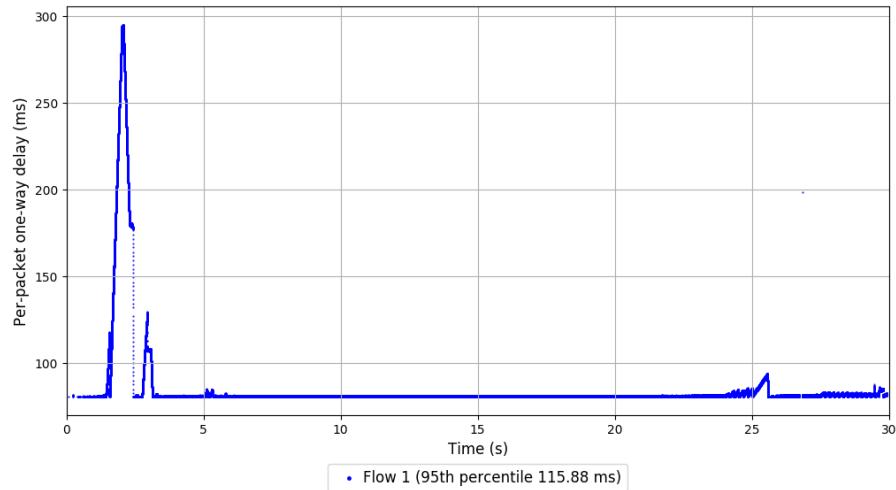
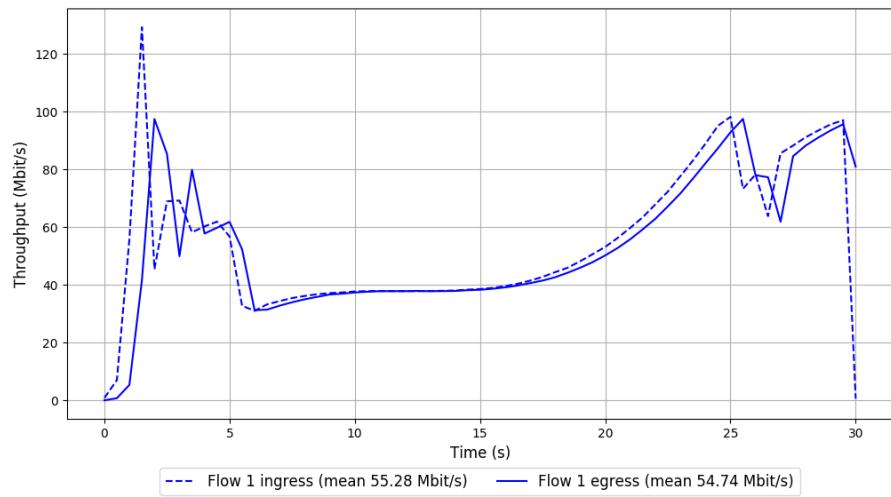


```
Run 1: Statistics of TCP Cubic
```

```
Start at: 2018-10-26 06:17:23
End at: 2018-10-26 06:17:53
Local clock offset: -2.629 ms
Remote clock offset: -2.96 ms

# Below is generated by plot.py at 2018-10-26 07:58:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 54.74 Mbit/s
95th percentile per-packet one-way delay: 115.879 ms
Loss rate: 1.52%
-- Flow 1:
Average throughput: 54.74 Mbit/s
95th percentile per-packet one-way delay: 115.879 ms
Loss rate: 1.52%
```

Run 1: Report of TCP Cubic — Data Link

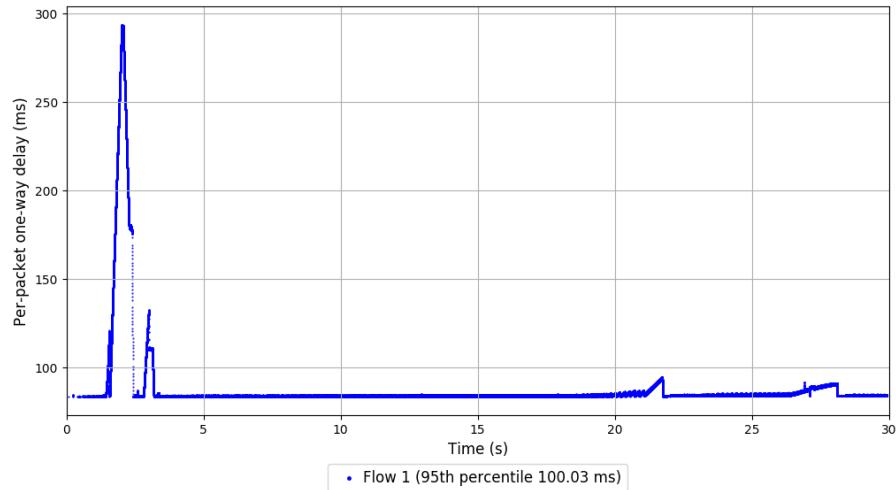
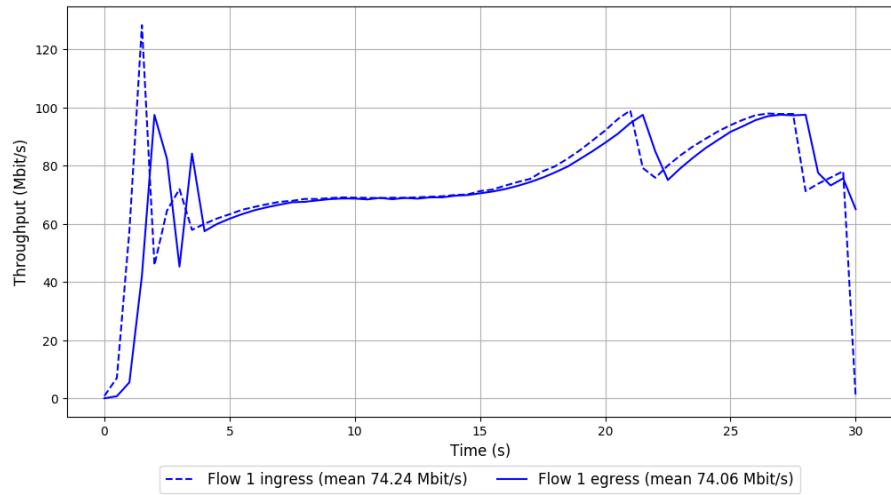


Run 2: Statistics of TCP Cubic

```
Start at: 2018-10-26 06:38:41
End at: 2018-10-26 06:39:11
Local clock offset: -4.266 ms
Remote clock offset: -6.093 ms

# Below is generated by plot.py at 2018-10-26 07:58:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 74.06 Mbit/s
95th percentile per-packet one-way delay: 100.027 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 74.06 Mbit/s
95th percentile per-packet one-way delay: 100.027 ms
Loss rate: 0.79%
```

Run 2: Report of TCP Cubic — Data Link

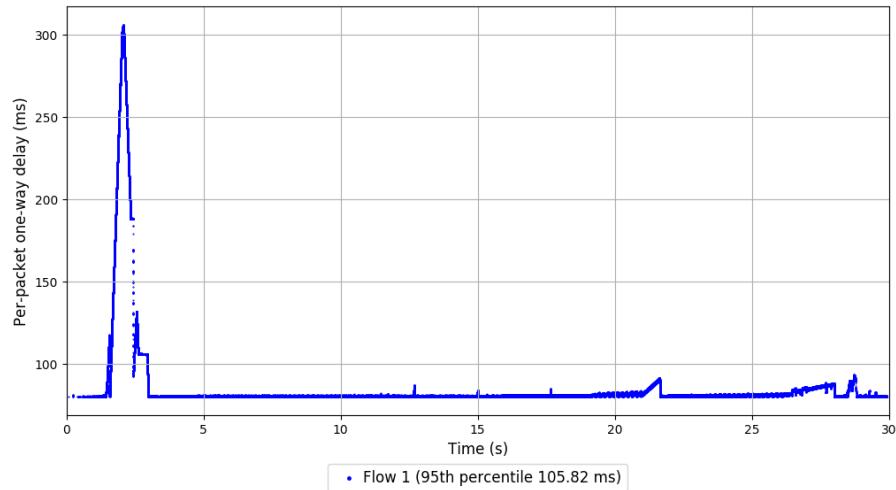
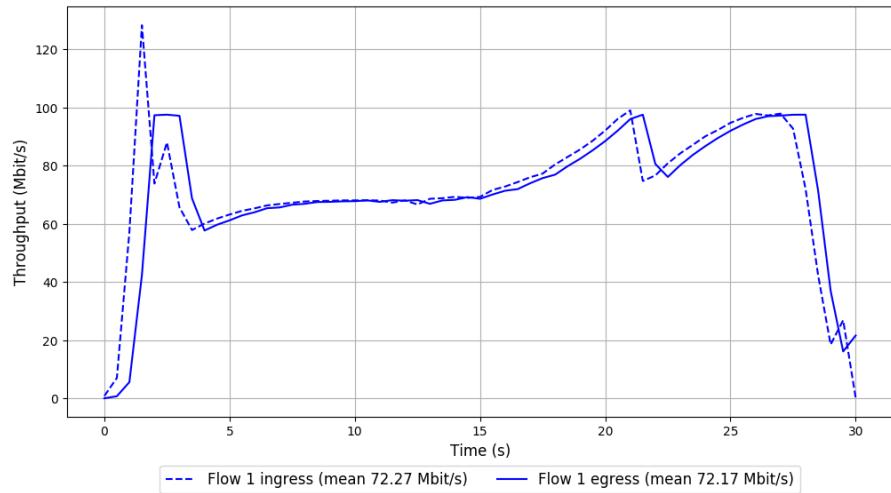


Run 3: Statistics of TCP Cubic

```
Start at: 2018-10-26 06:59:59
End at: 2018-10-26 07:00:29
Local clock offset: -6.854 ms
Remote clock offset: -0.771 ms

# Below is generated by plot.py at 2018-10-26 07:58:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 72.17 Mbit/s
95th percentile per-packet one-way delay: 105.818 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 72.17 Mbit/s
95th percentile per-packet one-way delay: 105.818 ms
Loss rate: 0.68%
```

Run 3: Report of TCP Cubic — Data Link

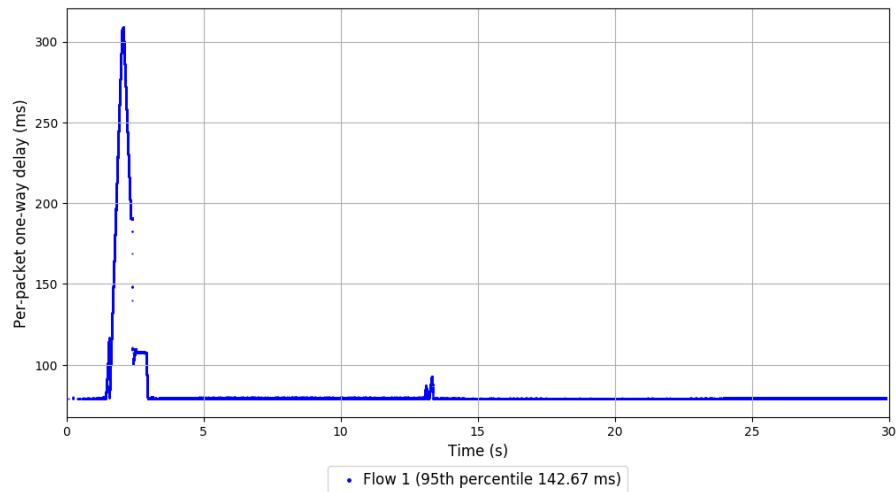
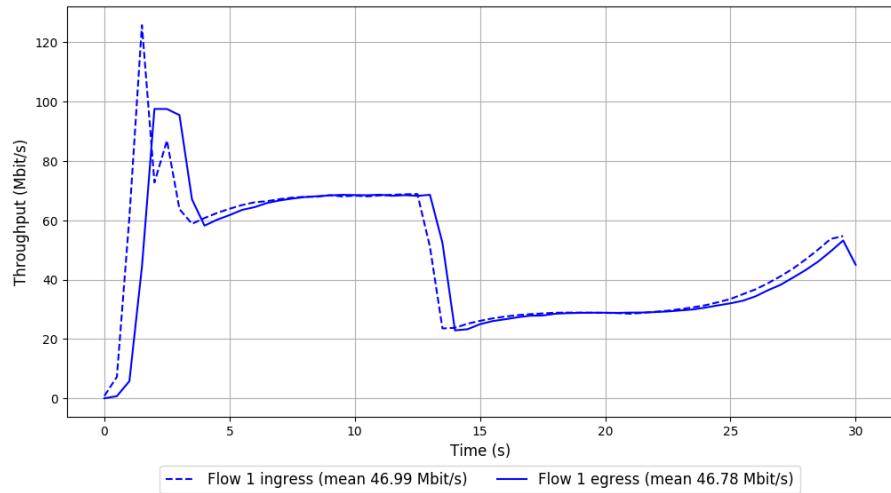


Run 4: Statistics of TCP Cubic

```
Start at: 2018-10-26 07:21:15
End at: 2018-10-26 07:21:45
Local clock offset: -6.876 ms
Remote clock offset: 0.6 ms

# Below is generated by plot.py at 2018-10-26 07:58:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 46.78 Mbit/s
95th percentile per-packet one-way delay: 142.673 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 46.78 Mbit/s
95th percentile per-packet one-way delay: 142.673 ms
Loss rate: 0.98%
```

Run 4: Report of TCP Cubic — Data Link

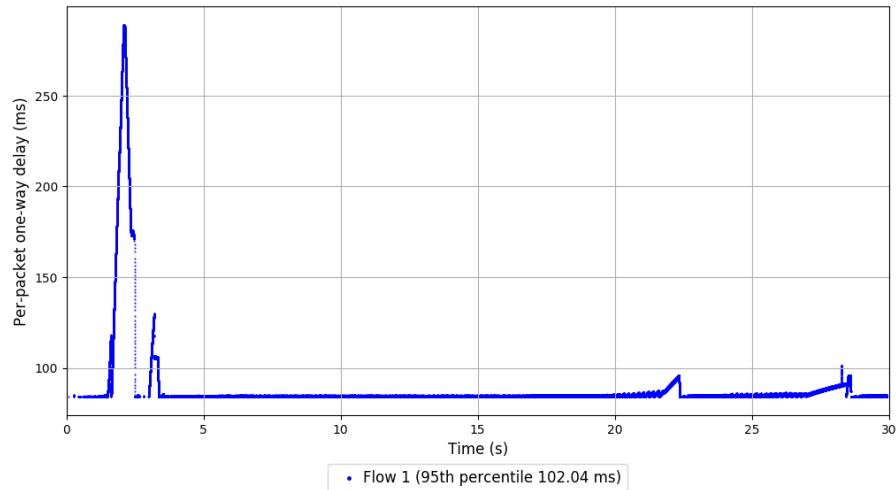
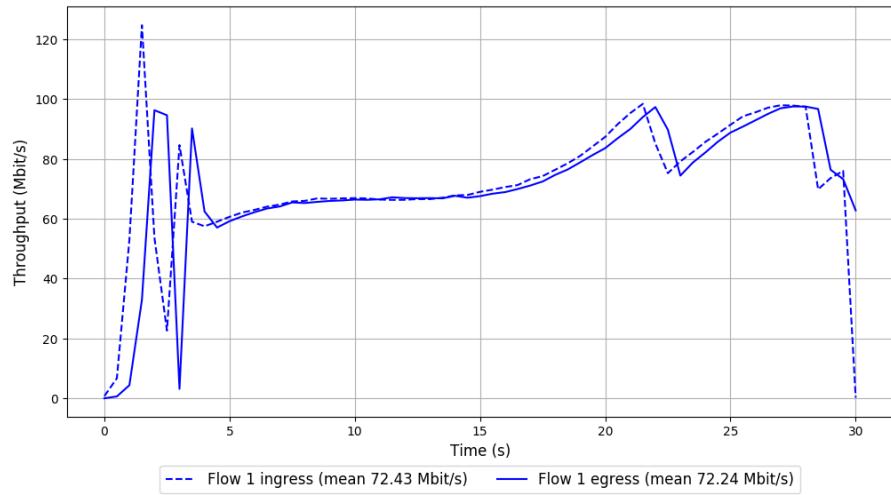


Run 5: Statistics of TCP Cubic

```
Start at: 2018-10-26 07:42:38
End at: 2018-10-26 07:43:08
Local clock offset: -2.633 ms
Remote clock offset: -1.672 ms

# Below is generated by plot.py at 2018-10-26 07:58:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 72.24 Mbit/s
95th percentile per-packet one-way delay: 102.036 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 72.24 Mbit/s
95th percentile per-packet one-way delay: 102.036 ms
Loss rate: 0.82%
```

Run 5: Report of TCP Cubic — Data Link

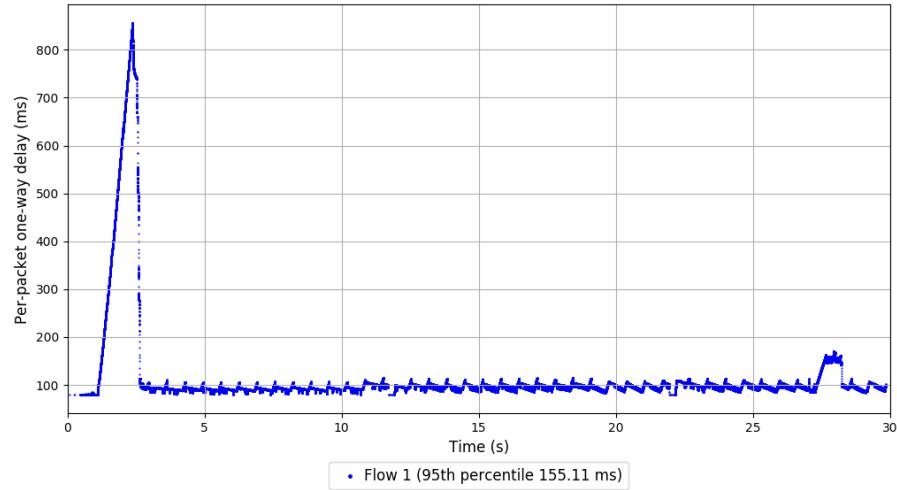
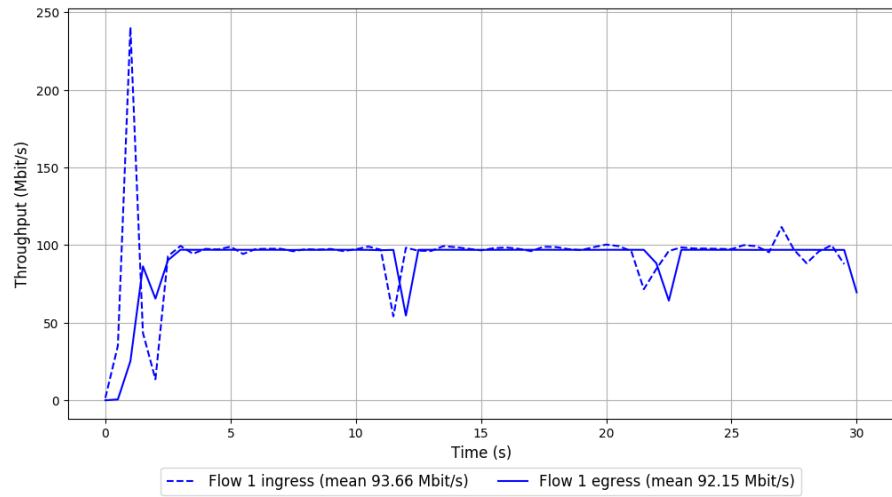


```
Run 1: Statistics of FillP
```

```
Start at: 2018-10-26 06:11:27
End at: 2018-10-26 06:11:57
Local clock offset: -3.685 ms
Remote clock offset: -2.515 ms

# Below is generated by plot.py at 2018-10-26 07:59:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.15 Mbit/s
95th percentile per-packet one-way delay: 155.106 ms
Loss rate: 2.14%
-- Flow 1:
Average throughput: 92.15 Mbit/s
95th percentile per-packet one-way delay: 155.106 ms
Loss rate: 2.14%
```

Run 1: Report of FillP — Data Link

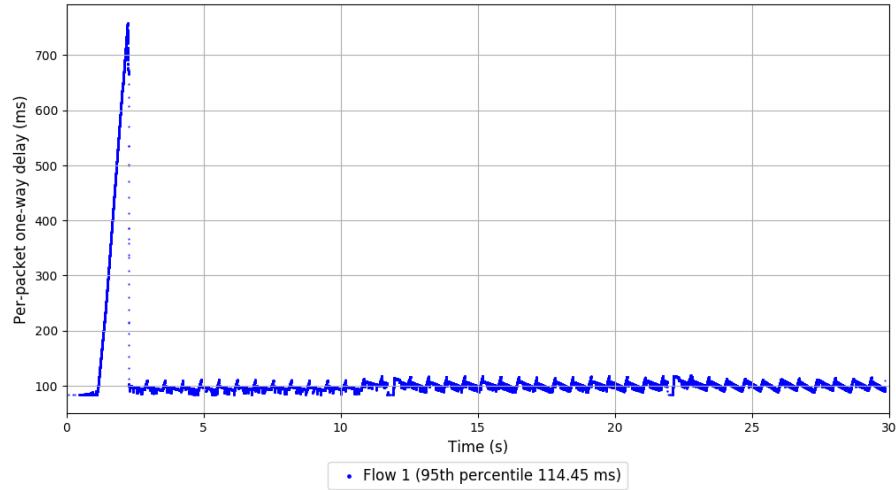
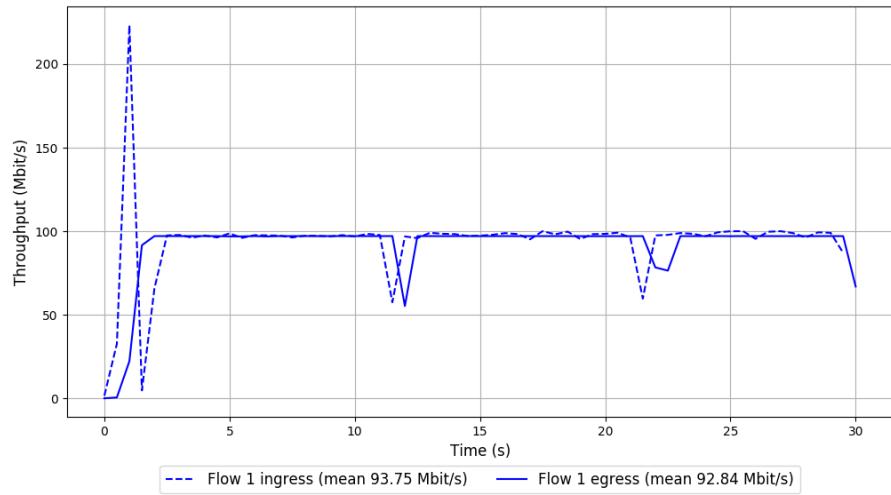


Run 2: Statistics of FillP

```
Start at: 2018-10-26 06:32:44
End at: 2018-10-26 06:33:14
Local clock offset: -2.074 ms
Remote clock offset: -5.991 ms

# Below is generated by plot.py at 2018-10-26 07:59:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.84 Mbit/s
95th percentile per-packet one-way delay: 114.450 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 92.84 Mbit/s
95th percentile per-packet one-way delay: 114.450 ms
Loss rate: 1.48%
```

Run 2: Report of FillP — Data Link

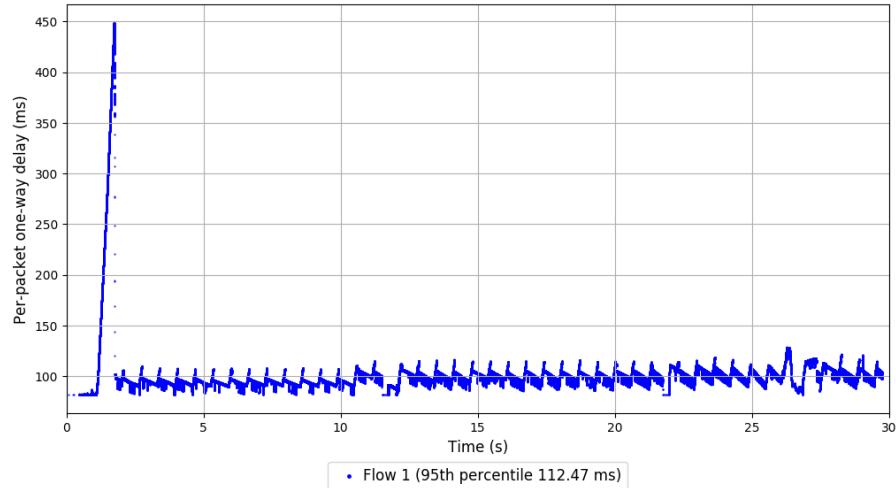
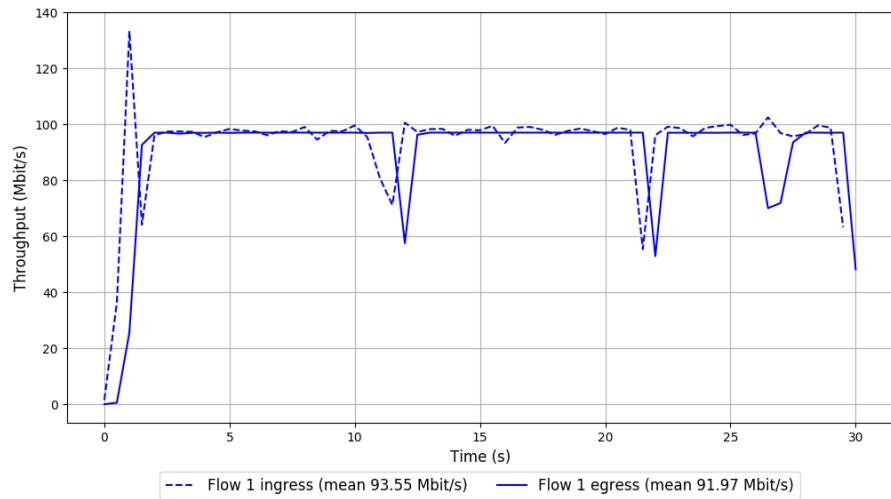


```
Run 3: Statistics of FillP
```

```
Start at: 2018-10-26 06:54:02
End at: 2018-10-26 06:54:32
Local clock offset: -6.417 ms
Remote clock offset: -4.433 ms

# Below is generated by plot.py at 2018-10-26 07:59:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.97 Mbit/s
95th percentile per-packet one-way delay: 112.474 ms
Loss rate: 2.23%
-- Flow 1:
Average throughput: 91.97 Mbit/s
95th percentile per-packet one-way delay: 112.474 ms
Loss rate: 2.23%
```

Run 3: Report of FillP — Data Link

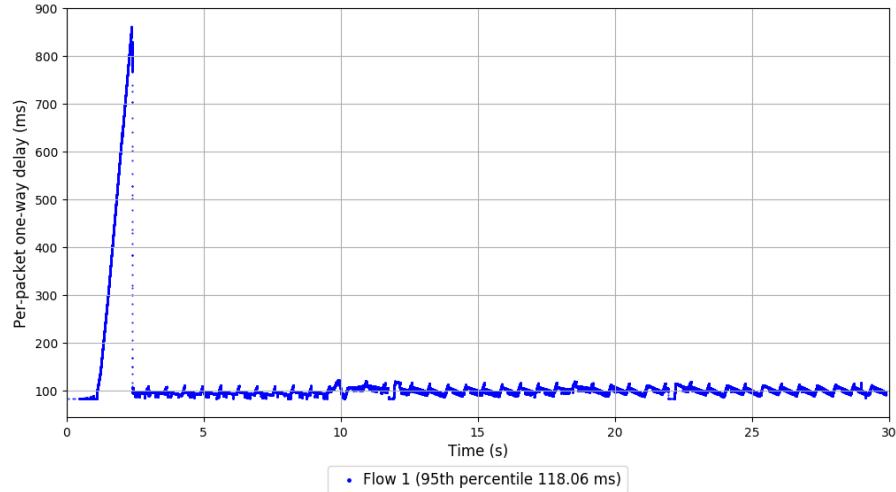
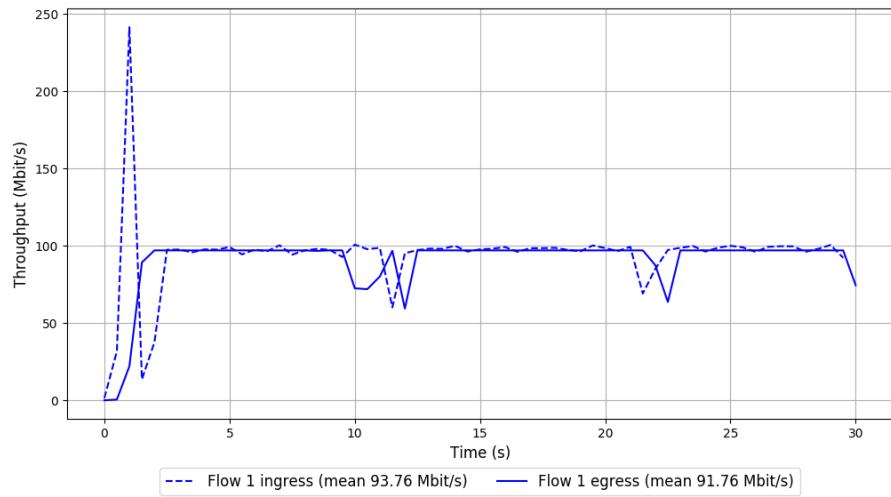


Run 4: Statistics of FillP

```
Start at: 2018-10-26 07:15:18
End at: 2018-10-26 07:15:48
Local clock offset: -6.838 ms
Remote clock offset: -3.074 ms

# Below is generated by plot.py at 2018-10-26 07:59:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.76 Mbit/s
95th percentile per-packet one-way delay: 118.055 ms
Loss rate: 2.67%
-- Flow 1:
Average throughput: 91.76 Mbit/s
95th percentile per-packet one-way delay: 118.055 ms
Loss rate: 2.67%
```

Run 4: Report of FillP — Data Link

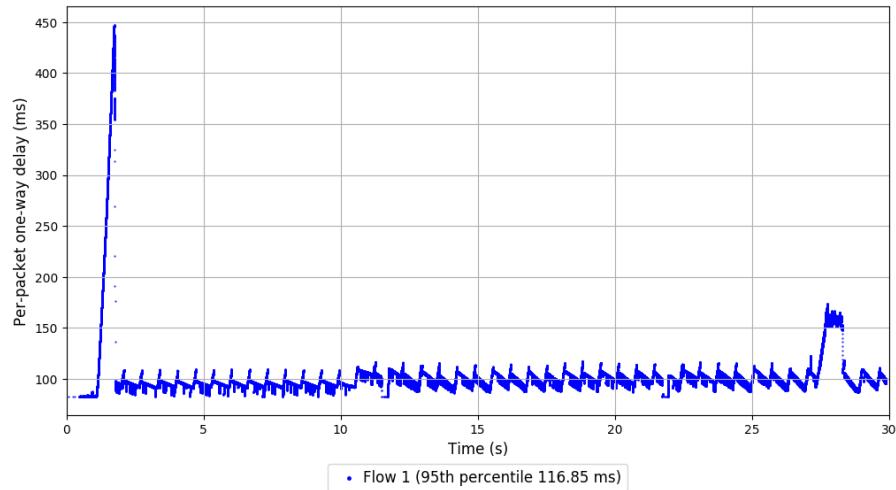
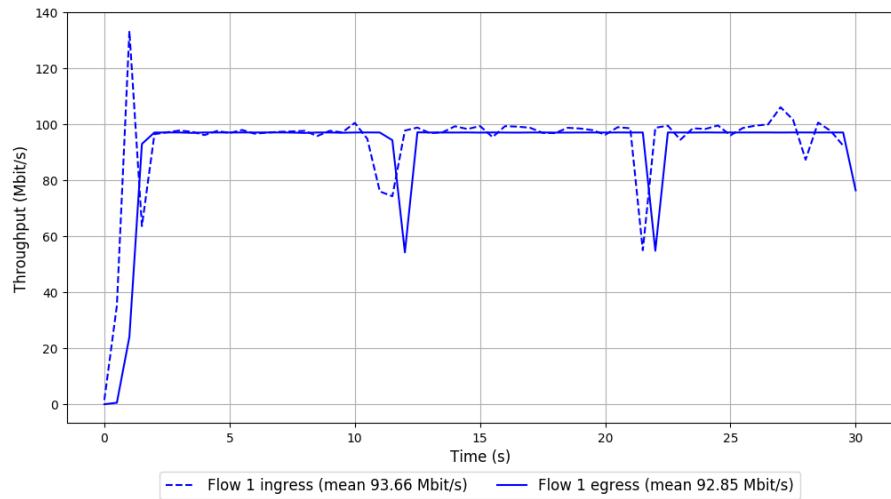


Run 5: Statistics of FillP

```
Start at: 2018-10-26 07:36:41
End at: 2018-10-26 07:37:11
Local clock offset: -4.377 ms
Remote clock offset: -2.521 ms

# Below is generated by plot.py at 2018-10-26 07:59:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.85 Mbit/s
95th percentile per-packet one-way delay: 116.851 ms
Loss rate: 1.40%
-- Flow 1:
Average throughput: 92.85 Mbit/s
95th percentile per-packet one-way delay: 116.851 ms
Loss rate: 1.40%
```

Run 5: Report of FillP — Data Link

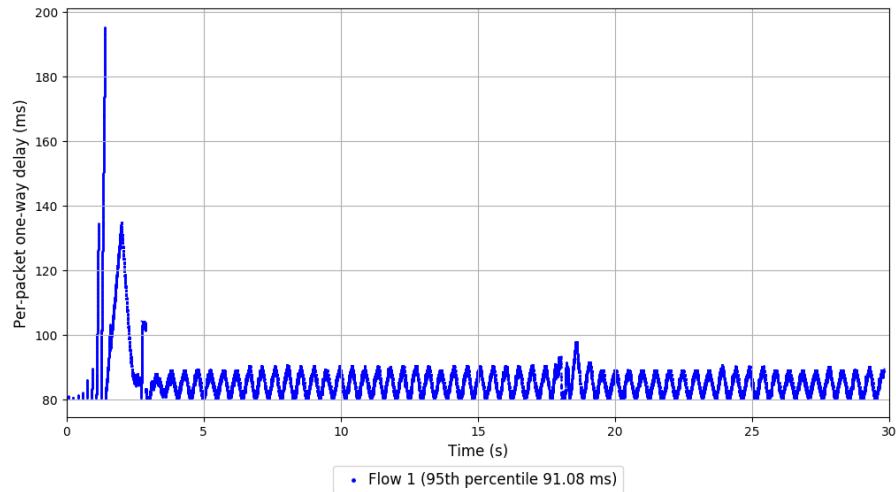
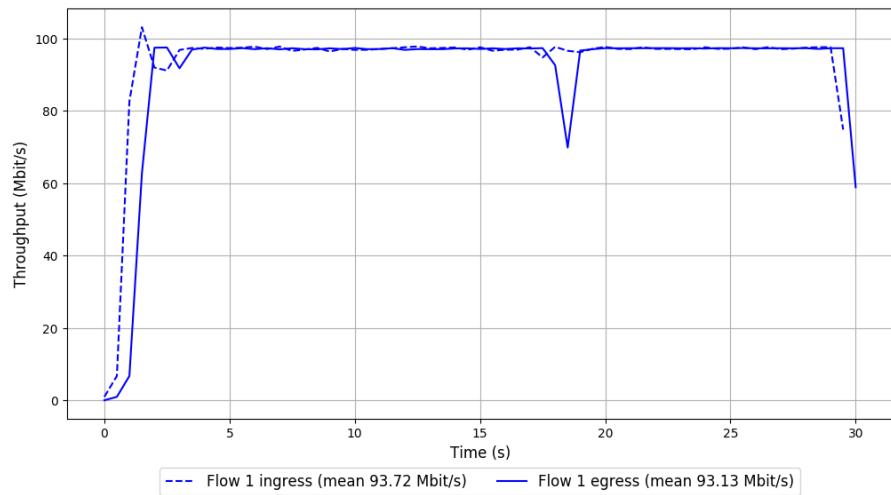


Run 1: Statistics of Indigo

```
Start at: 2018-10-26 06:16:10
End at: 2018-10-26 06:16:40
Local clock offset: -2.769 ms
Remote clock offset: -3.323 ms

# Below is generated by plot.py at 2018-10-26 07:59:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.13 Mbit/s
95th percentile per-packet one-way delay: 91.076 ms
Loss rate: 1.17%
-- Flow 1:
Average throughput: 93.13 Mbit/s
95th percentile per-packet one-way delay: 91.076 ms
Loss rate: 1.17%
```

Run 1: Report of Indigo — Data Link

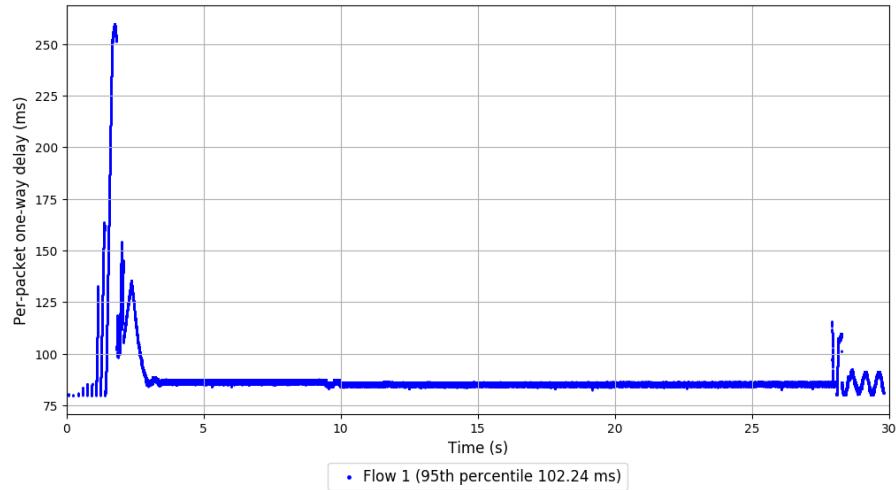
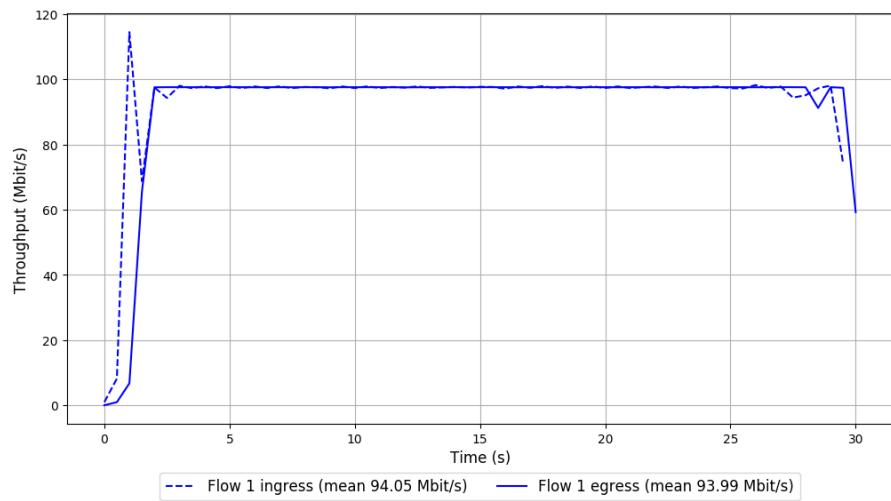


Run 2: Statistics of Indigo

```
Start at: 2018-10-26 06:37:28
End at: 2018-10-26 06:37:58
Local clock offset: -4.044 ms
Remote clock offset: -2.601 ms

# Below is generated by plot.py at 2018-10-26 07:59:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.99 Mbit/s
95th percentile per-packet one-way delay: 102.239 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 93.99 Mbit/s
95th percentile per-packet one-way delay: 102.239 ms
Loss rate: 0.61%
```

Run 2: Report of Indigo — Data Link

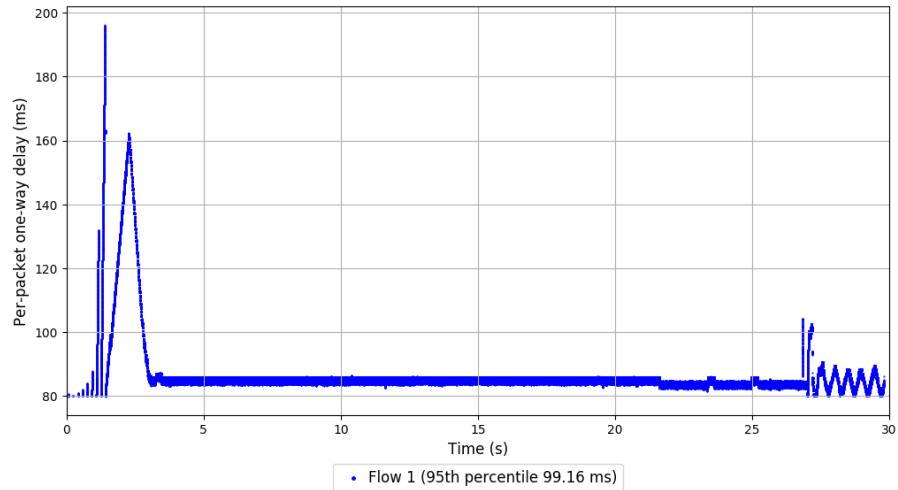
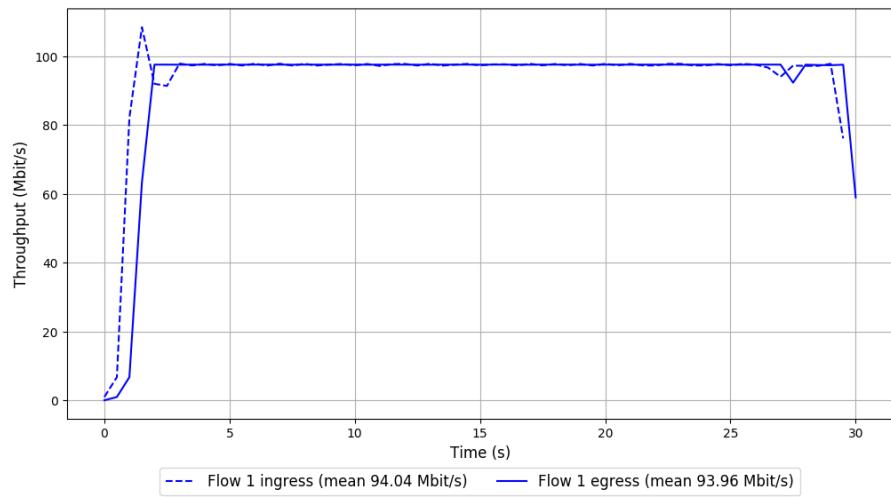


Run 3: Statistics of Indigo

```
Start at: 2018-10-26 06:58:46
End at: 2018-10-26 06:59:16
Local clock offset: -6.729 ms
Remote clock offset: -0.466 ms

# Below is generated by plot.py at 2018-10-26 08:00:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.96 Mbit/s
95th percentile per-packet one-way delay: 99.155 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 93.96 Mbit/s
95th percentile per-packet one-way delay: 99.155 ms
Loss rate: 0.63%
```

Run 3: Report of Indigo — Data Link

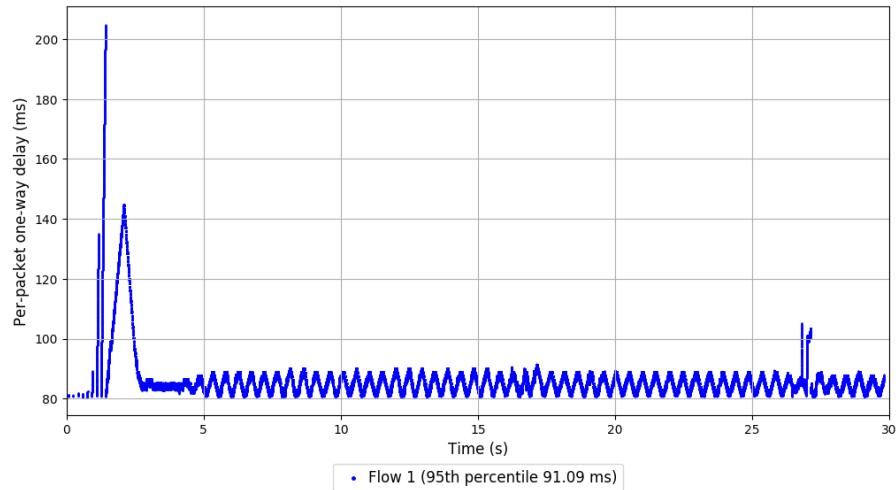
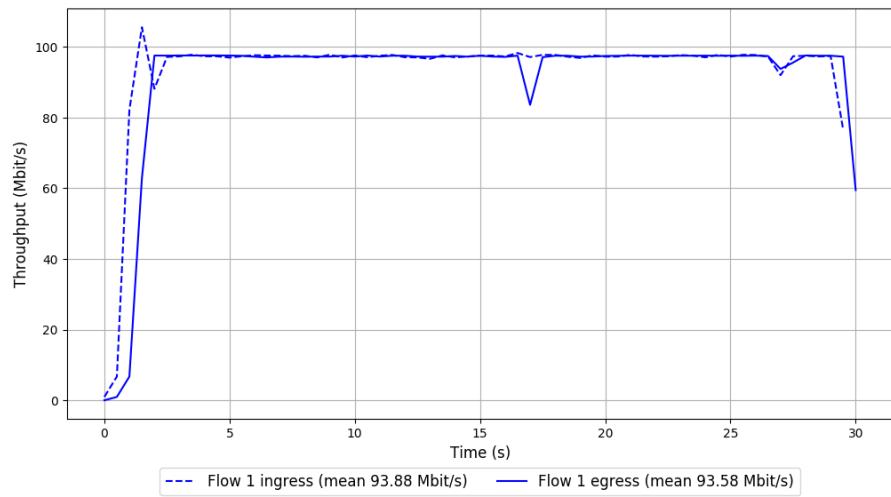


Run 4: Statistics of Indigo

```
Start at: 2018-10-26 07:20:02
End at: 2018-10-26 07:20:32
Local clock offset: -6.851 ms
Remote clock offset: 0.47 ms

# Below is generated by plot.py at 2018-10-26 08:00:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.58 Mbit/s
95th percentile per-packet one-way delay: 91.087 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 93.58 Mbit/s
95th percentile per-packet one-way delay: 91.087 ms
Loss rate: 0.86%
```

Run 4: Report of Indigo — Data Link

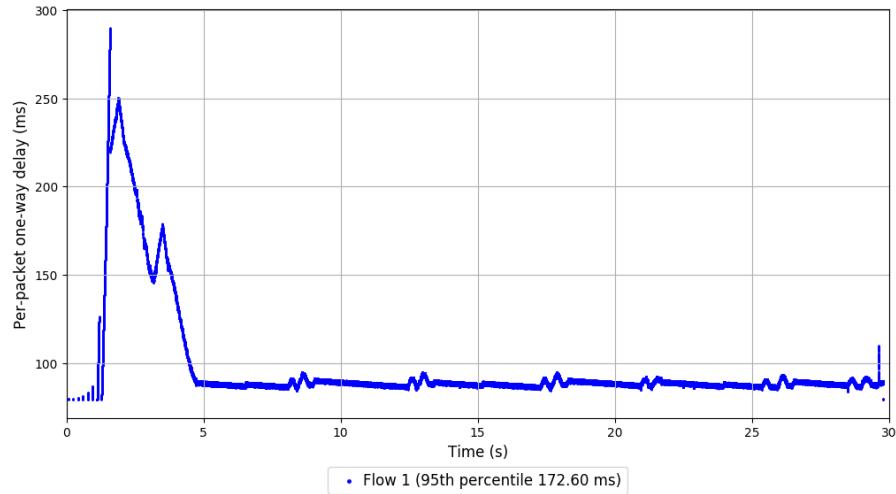
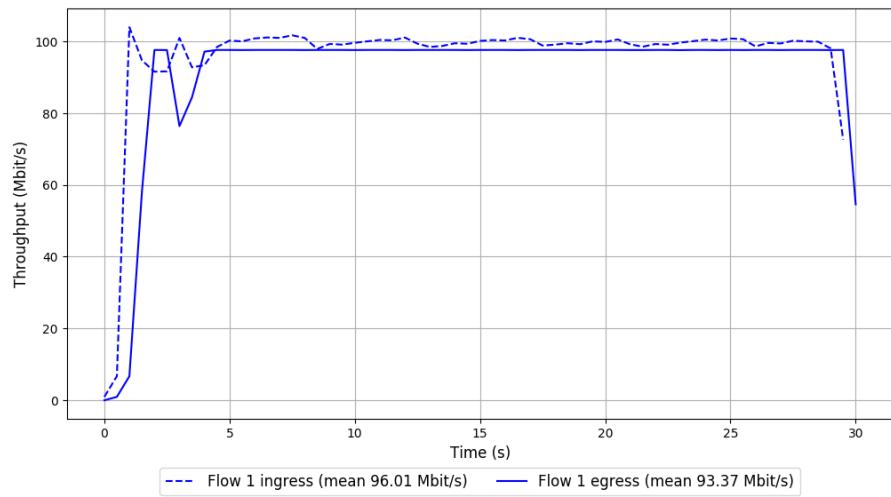


Run 5: Statistics of Indigo

```
Start at: 2018-10-26 07:41:25
End at: 2018-10-26 07:41:55
Local clock offset: -2.913 ms
Remote clock offset: 1.597 ms

# Below is generated by plot.py at 2018-10-26 08:00:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.37 Mbit/s
95th percentile per-packet one-way delay: 172.598 ms
Loss rate: 3.28%
-- Flow 1:
Average throughput: 93.37 Mbit/s
95th percentile per-packet one-way delay: 172.598 ms
Loss rate: 3.28%
```

Run 5: Report of Indigo — Data Link

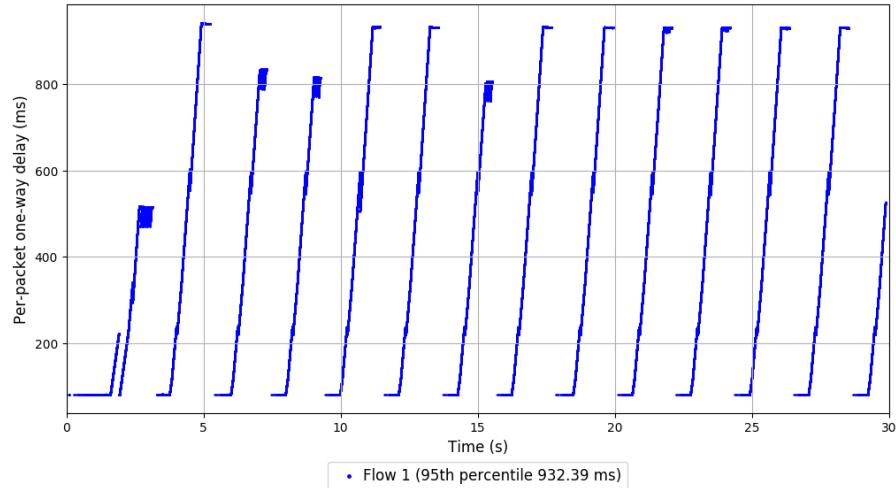
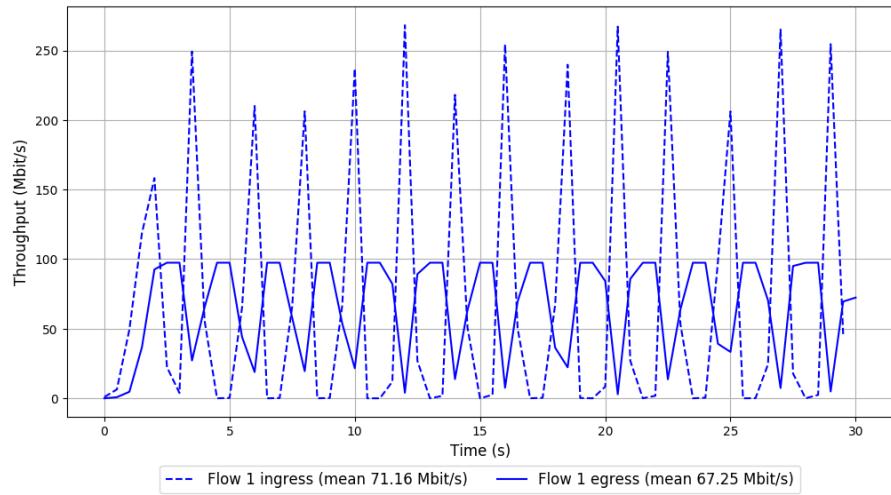


```
Run 1: Statistics of Indigo-96d2da3
```

```
Start at: 2018-10-26 06:13:45
End at: 2018-10-26 06:14:15
Local clock offset: -3.183 ms
Remote clock offset: -2.593 ms

# Below is generated by plot.py at 2018-10-26 08:00:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 67.25 Mbit/s
95th percentile per-packet one-way delay: 932.389 ms
Loss rate: 5.31%
-- Flow 1:
Average throughput: 67.25 Mbit/s
95th percentile per-packet one-way delay: 932.389 ms
Loss rate: 5.31%
```

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

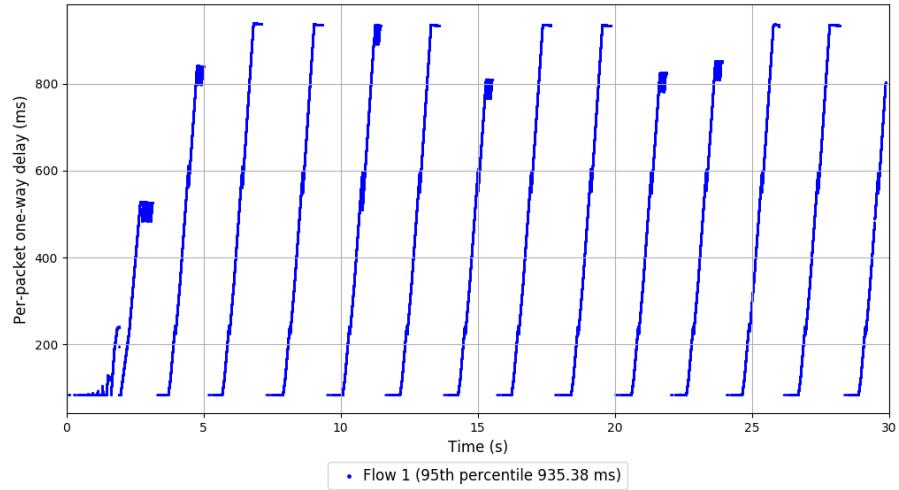
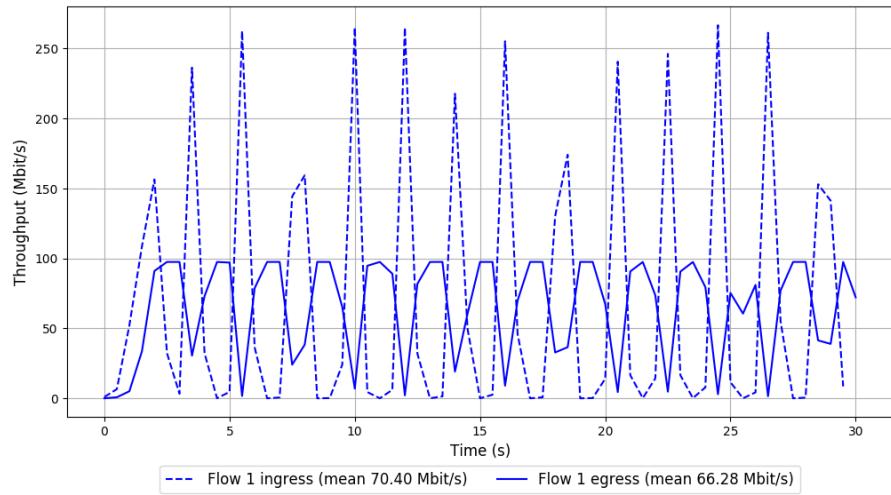


Run 2: Statistics of Indigo-96d2da3

```
Start at: 2018-10-26 06:35:03
End at: 2018-10-26 06:35:33
Local clock offset: -3.089 ms
Remote clock offset: -5.881 ms

# Below is generated by plot.py at 2018-10-26 08:00:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 66.28 Mbit/s
95th percentile per-packet one-way delay: 935.384 ms
Loss rate: 5.29%
-- Flow 1:
Average throughput: 66.28 Mbit/s
95th percentile per-packet one-way delay: 935.384 ms
Loss rate: 5.29%
```

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

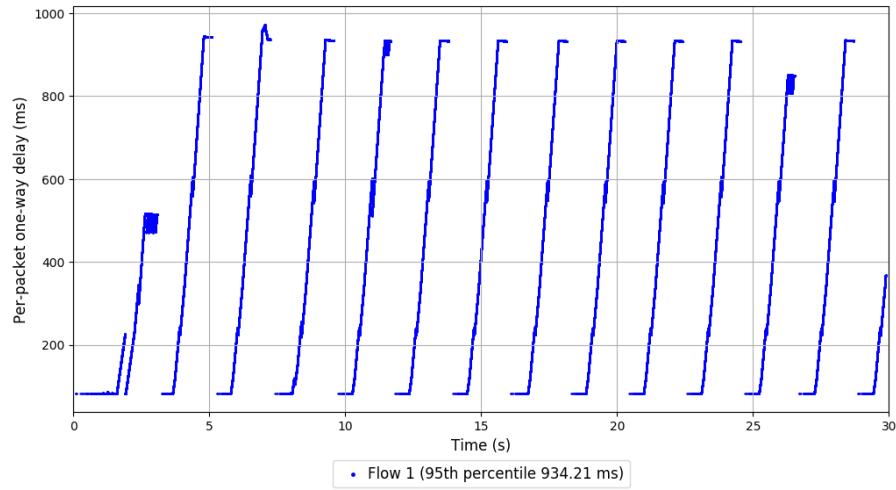
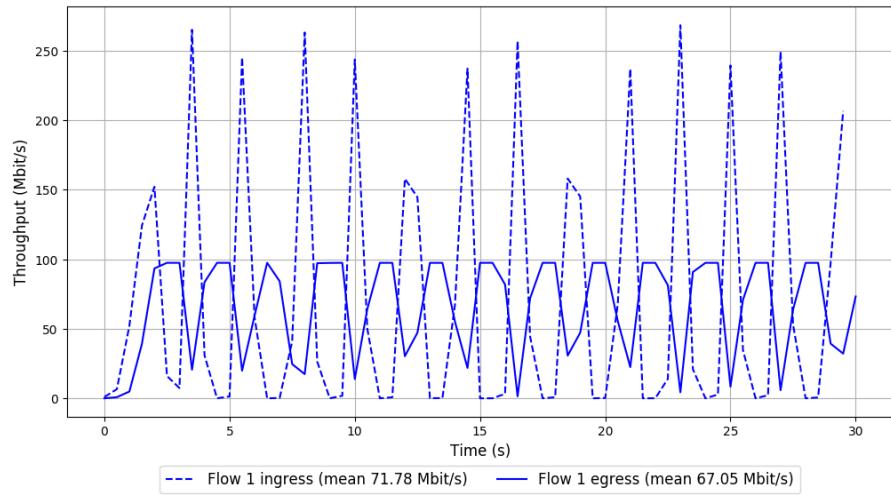


Run 3: Statistics of Indigo-96d2da3

```
Start at: 2018-10-26 06:56:21
End at: 2018-10-26 06:56:51
Local clock offset: -6.697 ms
Remote clock offset: -4.267 ms

# Below is generated by plot.py at 2018-10-26 08:00:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 67.05 Mbit/s
95th percentile per-packet one-way delay: 934.208 ms
Loss rate: 7.04%
-- Flow 1:
Average throughput: 67.05 Mbit/s
95th percentile per-packet one-way delay: 934.208 ms
Loss rate: 7.04%
```

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

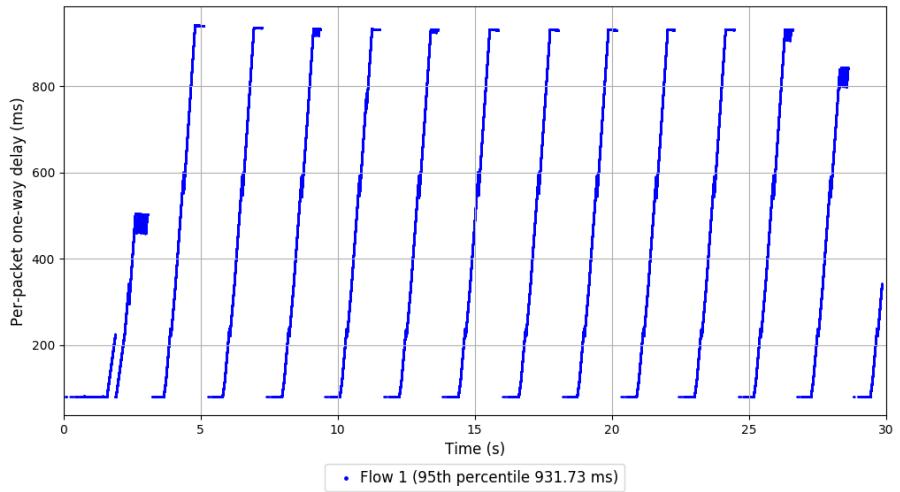
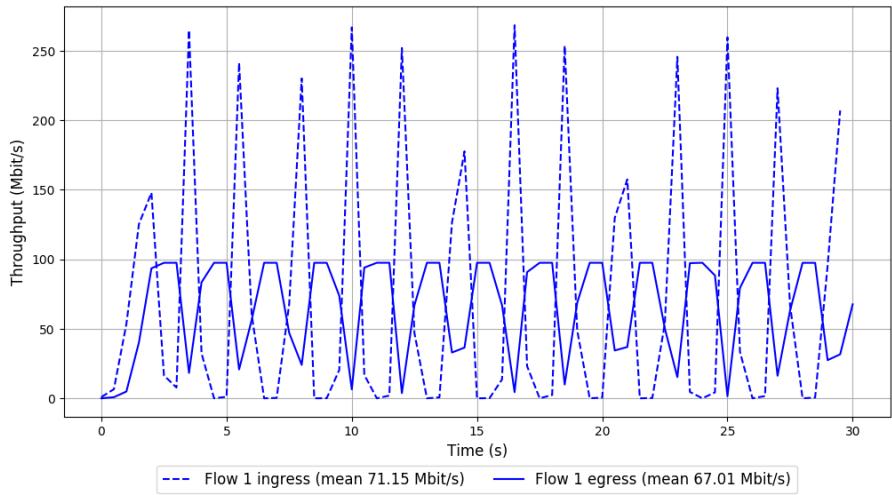


Run 4: Statistics of Indigo-96d2da3

```
Start at: 2018-10-26 07:17:37
End at: 2018-10-26 07:18:07
Local clock offset: -6.802 ms
Remote clock offset: -0.02 ms

# Below is generated by plot.py at 2018-10-26 08:00:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 67.01 Mbit/s
95th percentile per-packet one-way delay: 931.730 ms
Loss rate: 6.34%
-- Flow 1:
Average throughput: 67.01 Mbit/s
95th percentile per-packet one-way delay: 931.730 ms
Loss rate: 6.34%
```

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

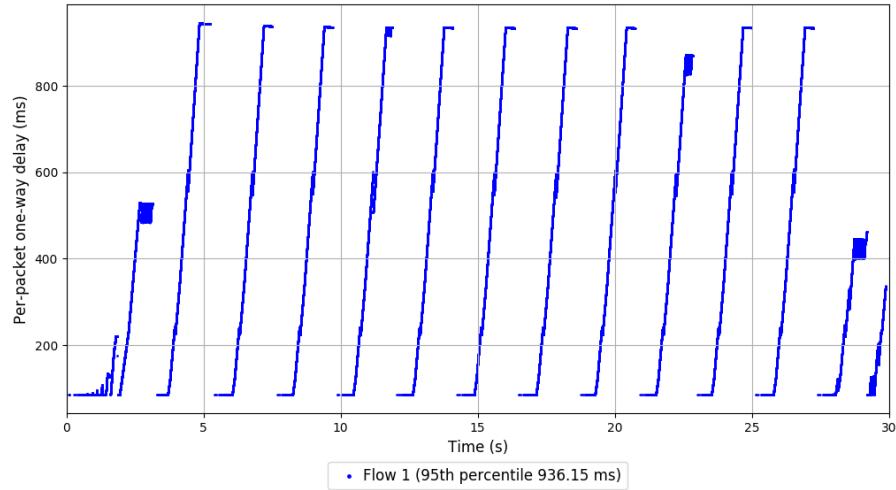
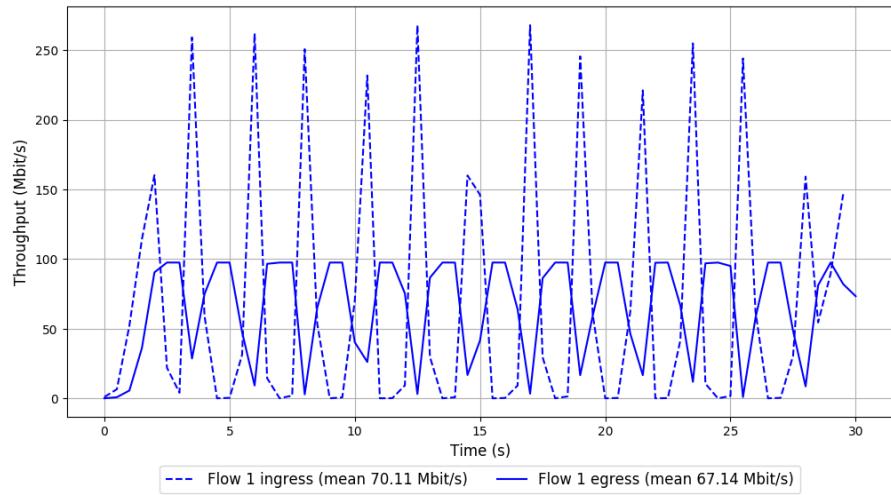


Run 5: Statistics of Indigo-96d2da3

```
Start at: 2018-10-26 07:39:00
End at: 2018-10-26 07:39:30
Local clock offset: -3.739 ms
Remote clock offset: -2.211 ms

# Below is generated by plot.py at 2018-10-26 08:00:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 67.14 Mbit/s
95th percentile per-packet one-way delay: 936.149 ms
Loss rate: 4.77%
-- Flow 1:
Average throughput: 67.14 Mbit/s
95th percentile per-packet one-way delay: 936.149 ms
Loss rate: 4.77%
```

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

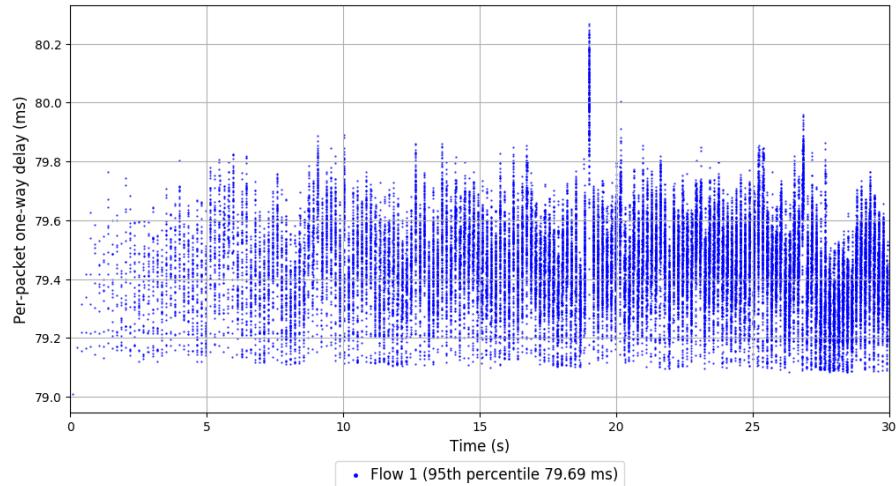
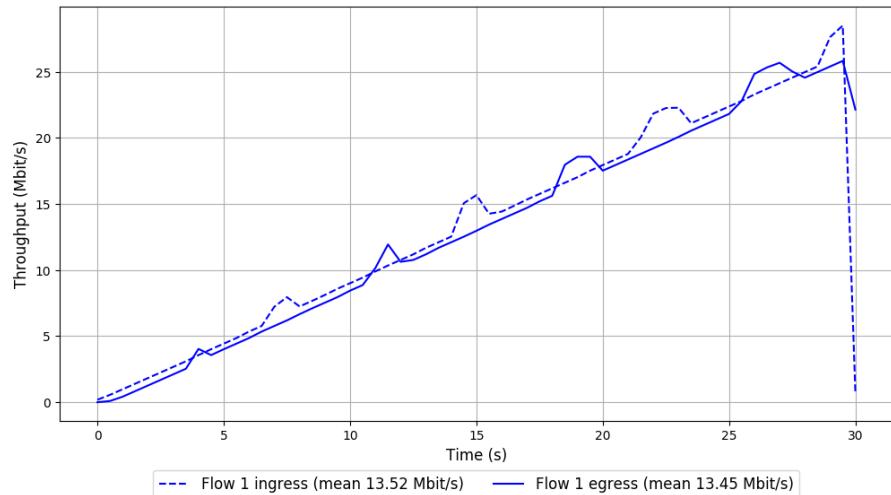


```
Run 1: Statistics of LEDBAT
```

```
Start at: 2018-10-26 06:26:51
End at: 2018-10-26 06:27:21
Local clock offset: -1.73 ms
Remote clock offset: -3.393 ms

# Below is generated by plot.py at 2018-10-26 08:00:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.45 Mbit/s
95th percentile per-packet one-way delay: 79.689 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 13.45 Mbit/s
95th percentile per-packet one-way delay: 79.689 ms
Loss rate: 1.08%
```

Run 1: Report of LEDBAT — Data Link

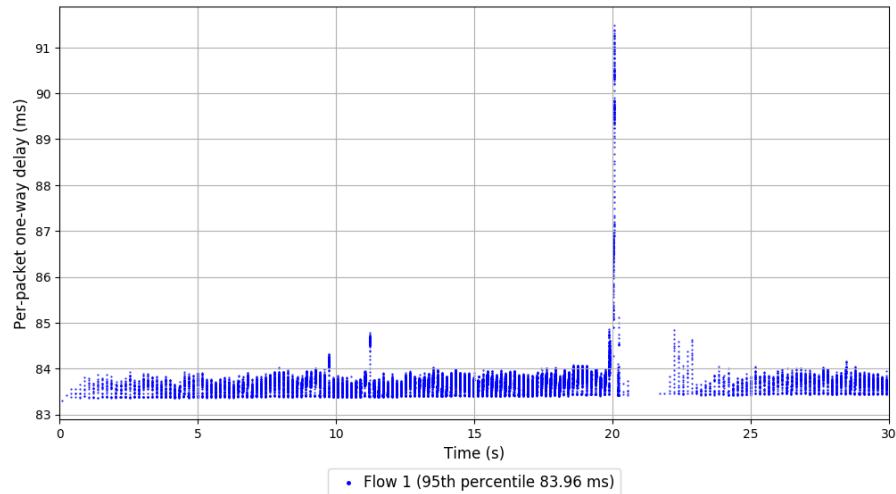
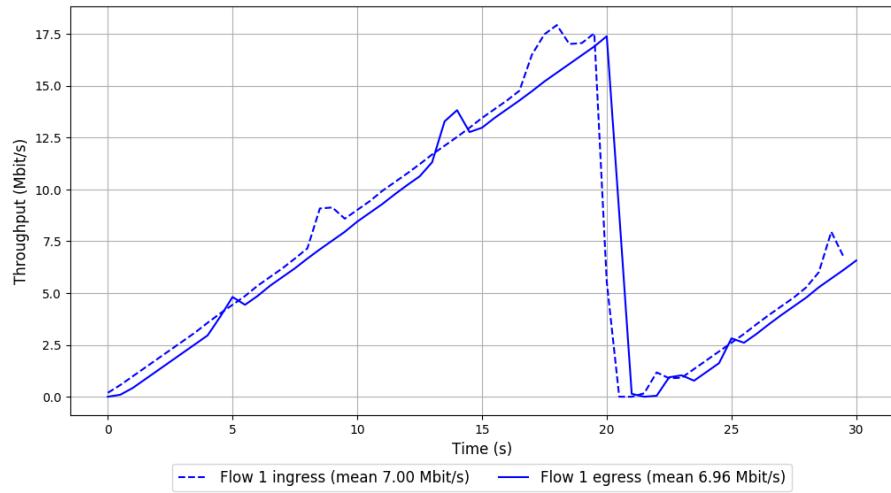


Run 2: Statistics of LEDBAT

```
Start at: 2018-10-26 06:48:08
End at: 2018-10-26 06:48:38
Local clock offset: -5.95 ms
Remote clock offset: -5.335 ms

# Below is generated by plot.py at 2018-10-26 08:00:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.96 Mbit/s
95th percentile per-packet one-way delay: 83.960 ms
Loss rate: 1.13%
-- Flow 1:
Average throughput: 6.96 Mbit/s
95th percentile per-packet one-way delay: 83.960 ms
Loss rate: 1.13%
```

Run 2: Report of LEDBAT — Data Link

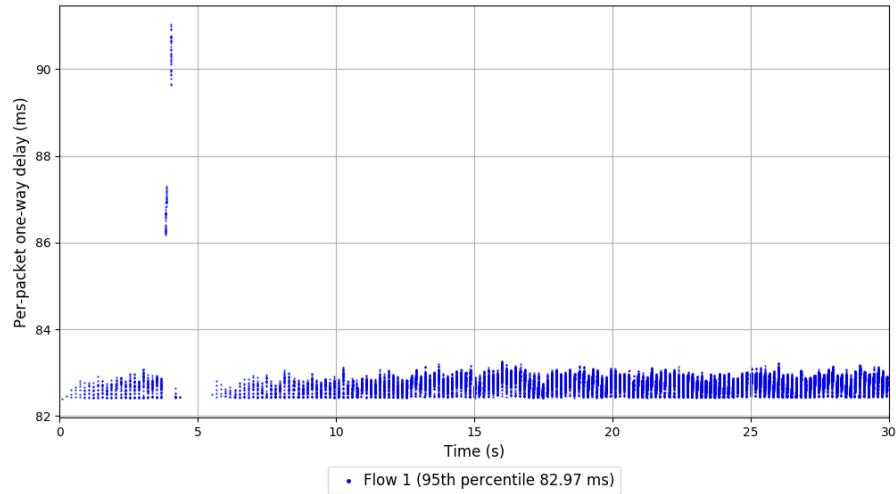
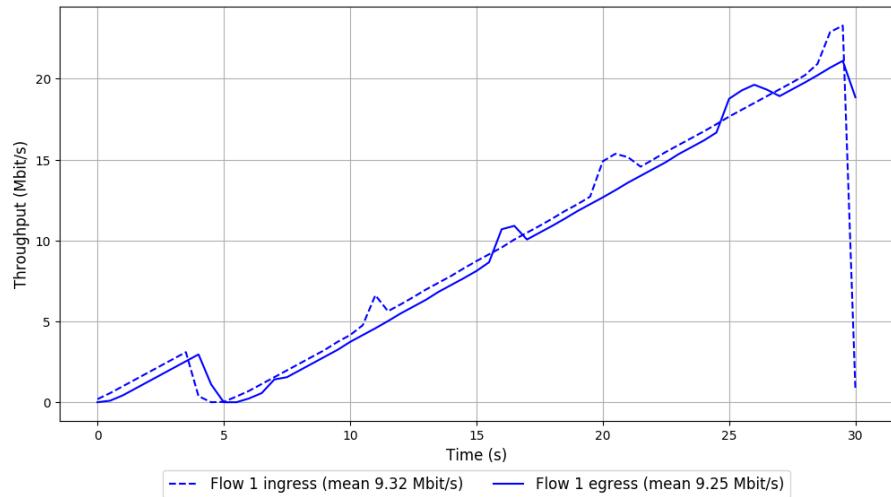


Run 3: Statistics of LEDBAT

```
Start at: 2018-10-26 07:09:24
End at: 2018-10-26 07:09:54
Local clock offset: -6.741 ms
Remote clock offset: -3.381 ms

# Below is generated by plot.py at 2018-10-26 08:00:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.25 Mbit/s
95th percentile per-packet one-way delay: 82.973 ms
Loss rate: 1.35%
-- Flow 1:
Average throughput: 9.25 Mbit/s
95th percentile per-packet one-way delay: 82.973 ms
Loss rate: 1.35%
```

Run 3: Report of LEDBAT — Data Link

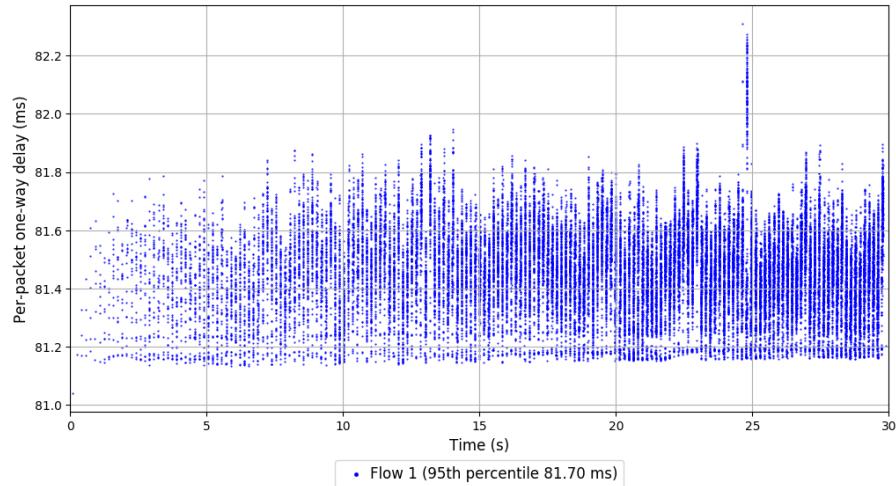
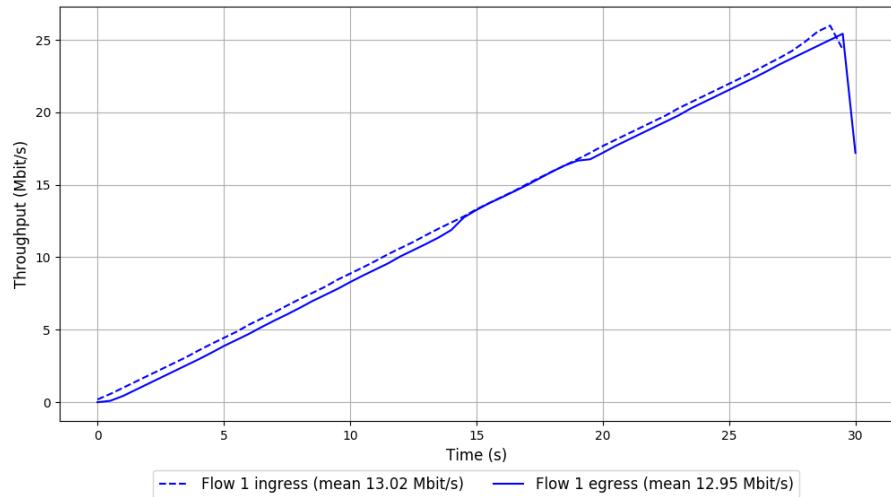


Run 4: Statistics of LEDBAT

```
Start at: 2018-10-26 07:30:39
End at: 2018-10-26 07:31:09
Local clock offset: -7.168 ms
Remote clock offset: 1.094 ms

# Below is generated by plot.py at 2018-10-26 08:00:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.95 Mbit/s
95th percentile per-packet one-way delay: 81.701 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 12.95 Mbit/s
95th percentile per-packet one-way delay: 81.701 ms
Loss rate: 1.11%
```

Run 4: Report of LEDBAT — Data Link

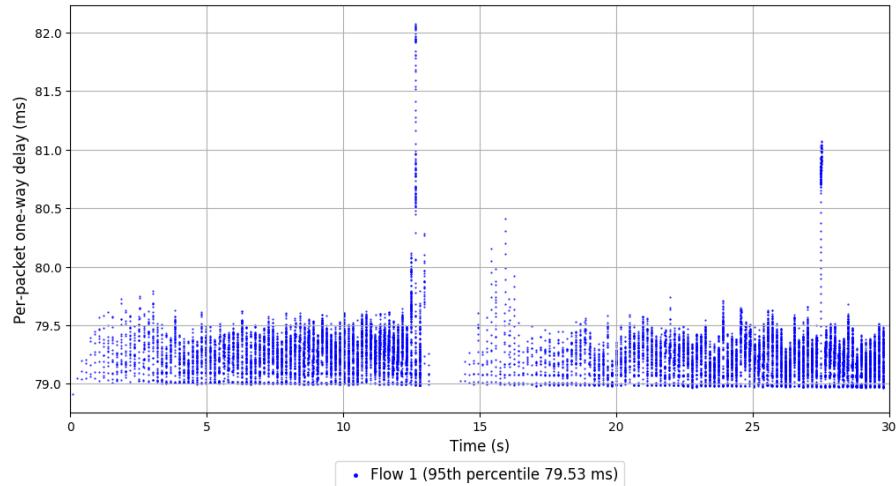
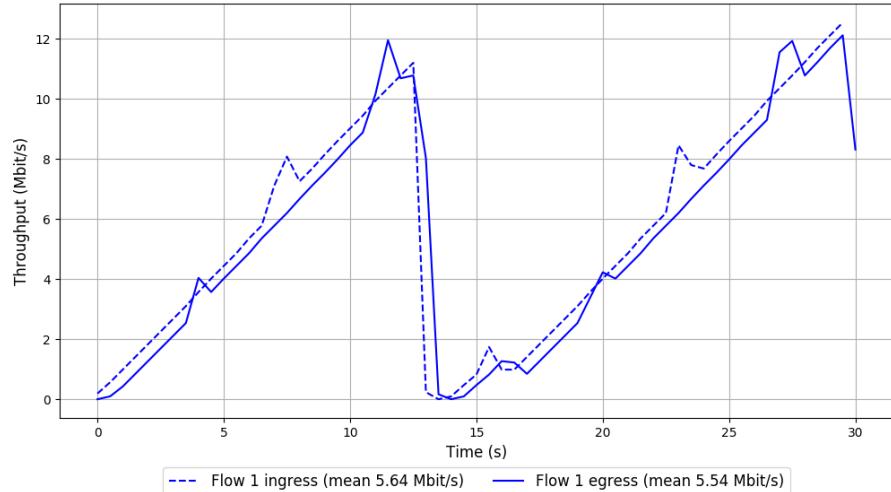


Run 5: Statistics of LEDBAT

```
Start at: 2018-10-26 07:52:15
End at: 2018-10-26 07:52:45
Local clock offset: -1.053 ms
Remote clock offset: 1.52 ms

# Below is generated by plot.py at 2018-10-26 08:00:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.54 Mbit/s
95th percentile per-packet one-way delay: 79.526 ms
Loss rate: 2.21%
-- Flow 1:
Average throughput: 5.54 Mbit/s
95th percentile per-packet one-way delay: 79.526 ms
Loss rate: 2.21%
```

Run 5: Report of LEDBAT — Data Link

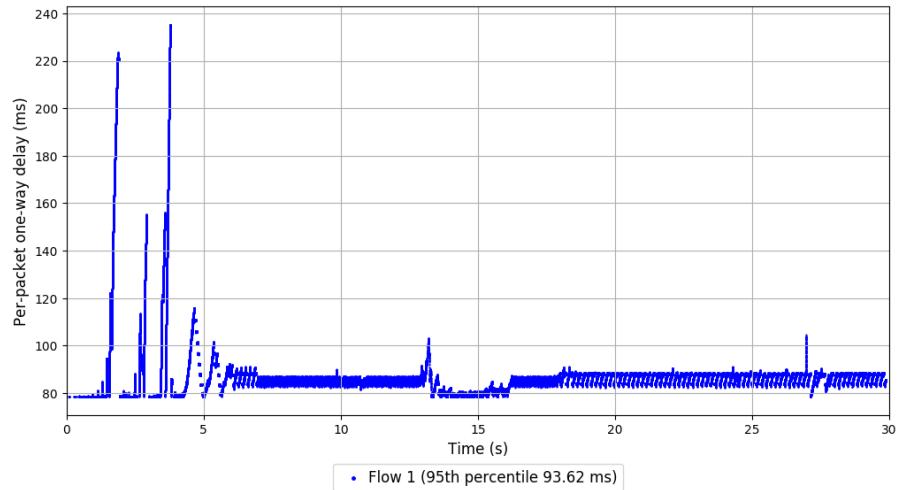
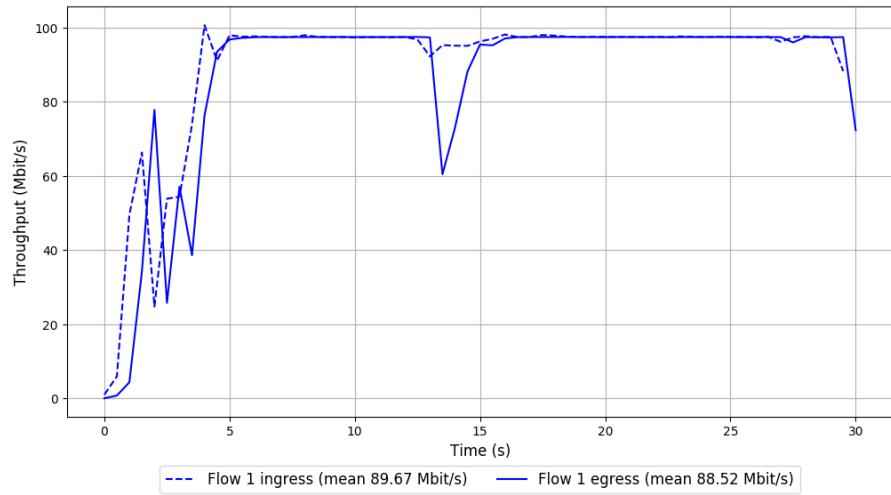


Run 1: Statistics of Indigo-Muses

```
Start at: 2018-10-26 06:10:15
End at: 2018-10-26 06:10:45
Local clock offset: -4.127 ms
Remote clock offset: -2.981 ms

# Below is generated by plot.py at 2018-10-26 08:01:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.52 Mbit/s
95th percentile per-packet one-way delay: 93.617 ms
Loss rate: 1.82%
-- Flow 1:
Average throughput: 88.52 Mbit/s
95th percentile per-packet one-way delay: 93.617 ms
Loss rate: 1.82%
```

Run 1: Report of Indigo-Muses — Data Link

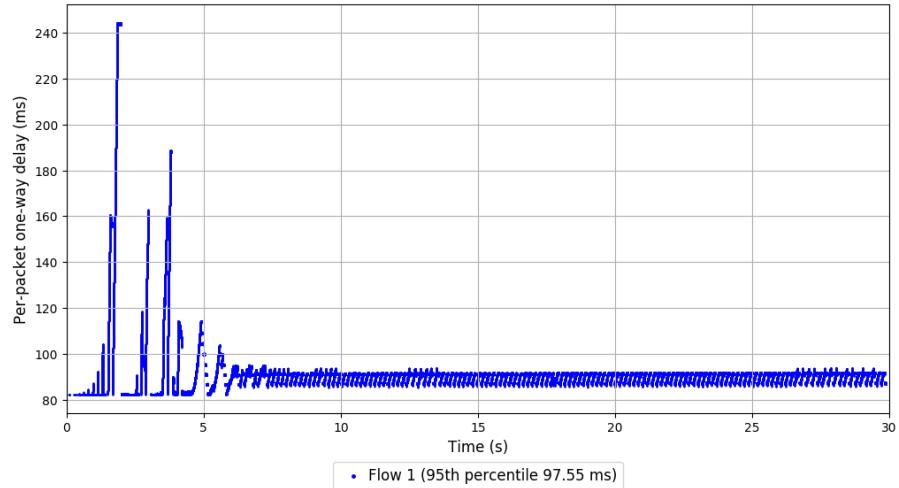
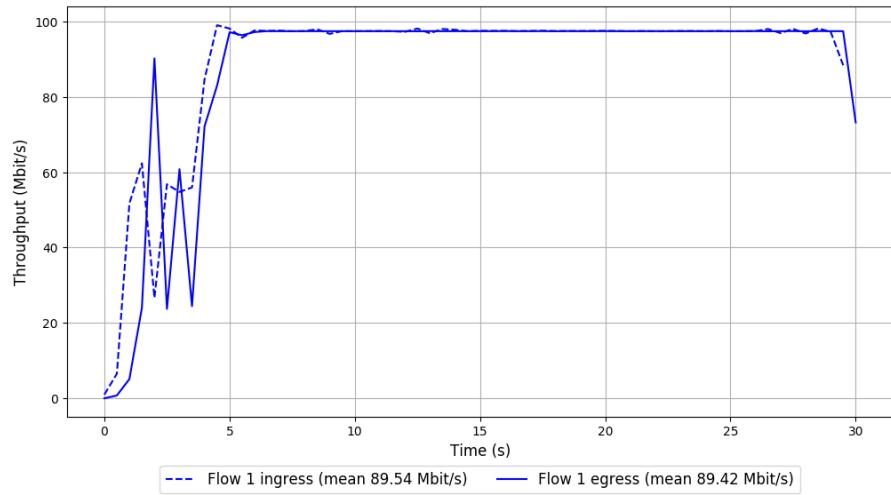


Run 2: Statistics of Indigo-Muses

```
Start at: 2018-10-26 06:31:32
End at: 2018-10-26 06:32:02
Local clock offset: -1.59 ms
Remote clock offset: -6.068 ms

# Below is generated by plot.py at 2018-10-26 08:01:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.42 Mbit/s
95th percentile per-packet one-way delay: 97.550 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 89.42 Mbit/s
95th percentile per-packet one-way delay: 97.550 ms
Loss rate: 0.67%
```

Run 2: Report of Indigo-Muses — Data Link

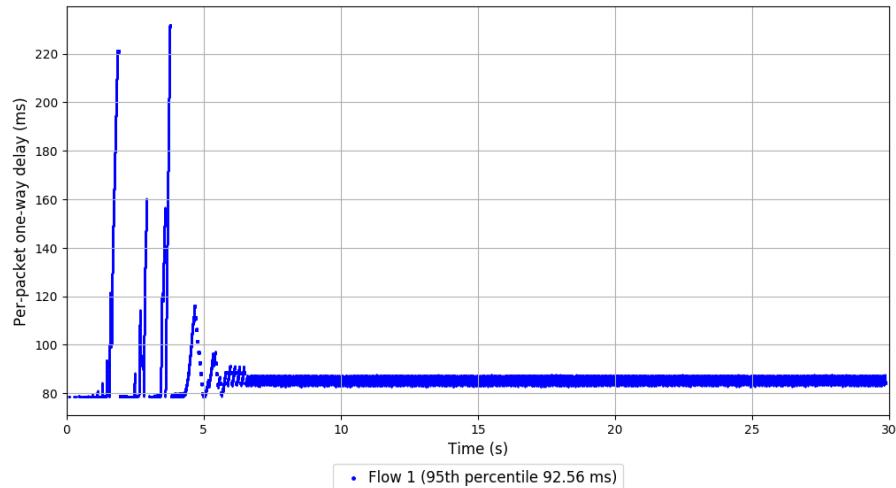
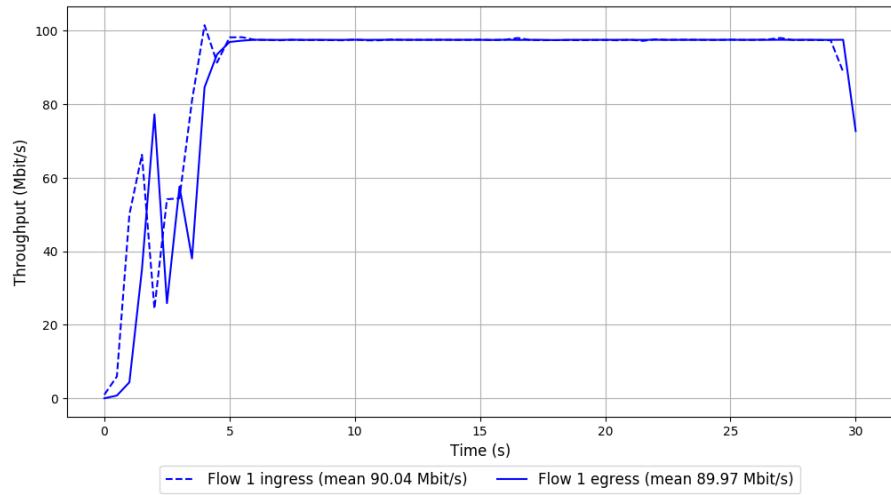


Run 3: Statistics of Indigo-Muses

```
Start at: 2018-10-26 06:52:49
End at: 2018-10-26 06:53:19
Local clock offset: -6.364 ms
Remote clock offset: -1.142 ms

# Below is generated by plot.py at 2018-10-26 08:01:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.97 Mbit/s
95th percentile per-packet one-way delay: 92.556 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 89.97 Mbit/s
95th percentile per-packet one-way delay: 92.556 ms
Loss rate: 0.62%
```

Run 3: Report of Indigo-Muses — Data Link

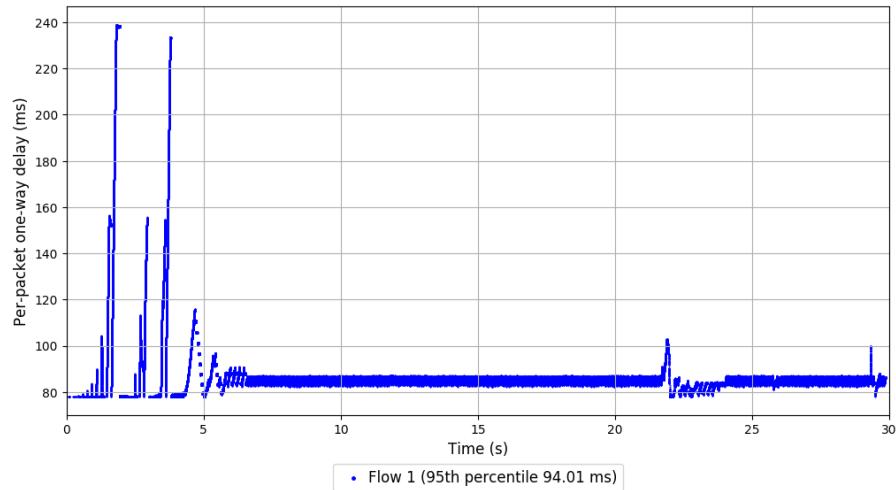
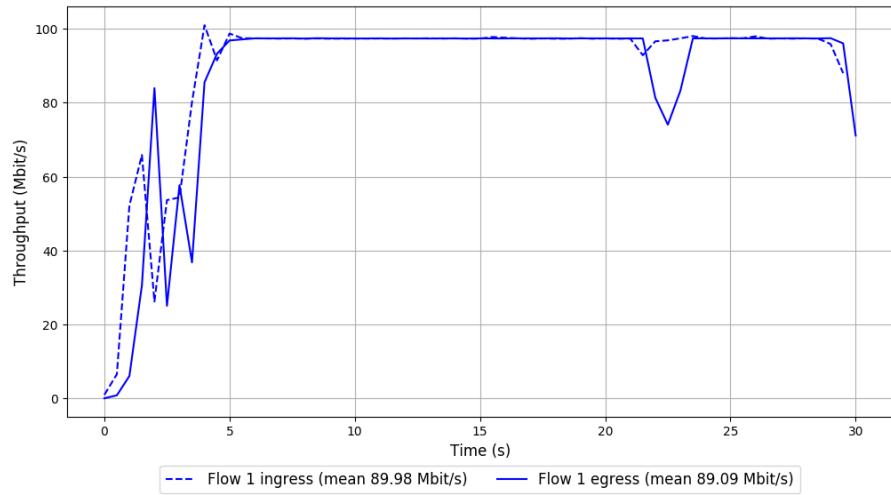


Run 4: Statistics of Indigo-Muses

```
Start at: 2018-10-26 07:14:06
End at: 2018-10-26 07:14:36
Local clock offset: -6.896 ms
Remote clock offset: 0.616 ms

# Below is generated by plot.py at 2018-10-26 08:01:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.09 Mbit/s
95th percentile per-packet one-way delay: 94.011 ms
Loss rate: 1.53%
-- Flow 1:
Average throughput: 89.09 Mbit/s
95th percentile per-packet one-way delay: 94.011 ms
Loss rate: 1.53%
```

Run 4: Report of Indigo-Muses — Data Link

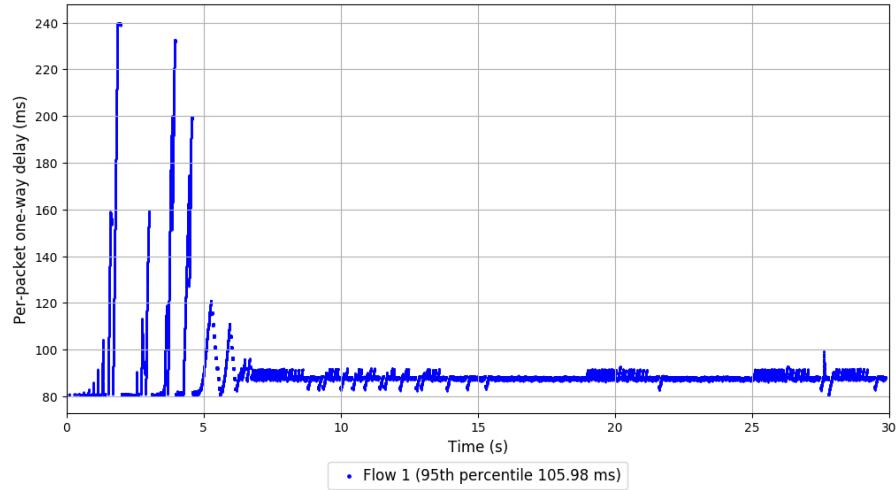
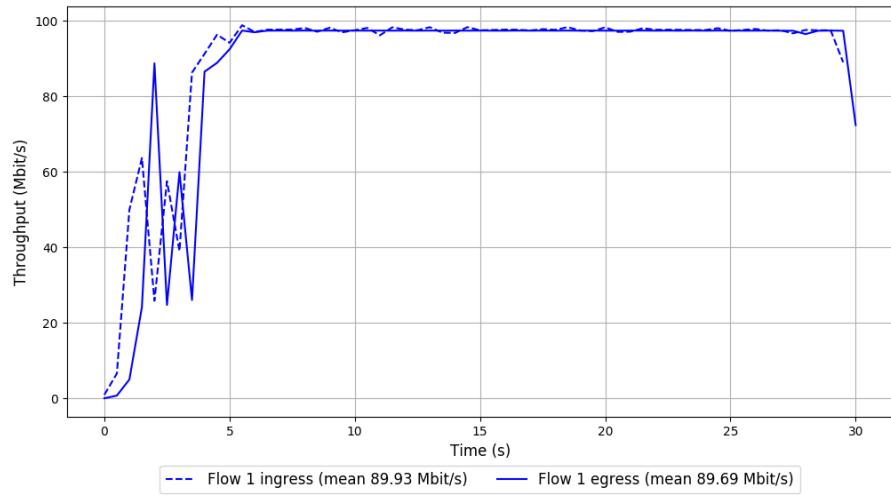


Run 5: Statistics of Indigo-Muses

```
Start at: 2018-10-26 07:35:29
End at: 2018-10-26 07:35:59
Local clock offset: -4.965 ms
Remote clock offset: 1.306 ms

# Below is generated by plot.py at 2018-10-26 08:01:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.69 Mbit/s
95th percentile per-packet one-way delay: 105.982 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 89.69 Mbit/s
95th percentile per-packet one-way delay: 105.982 ms
Loss rate: 0.82%
```

Run 5: Report of Indigo-Muses — Data Link

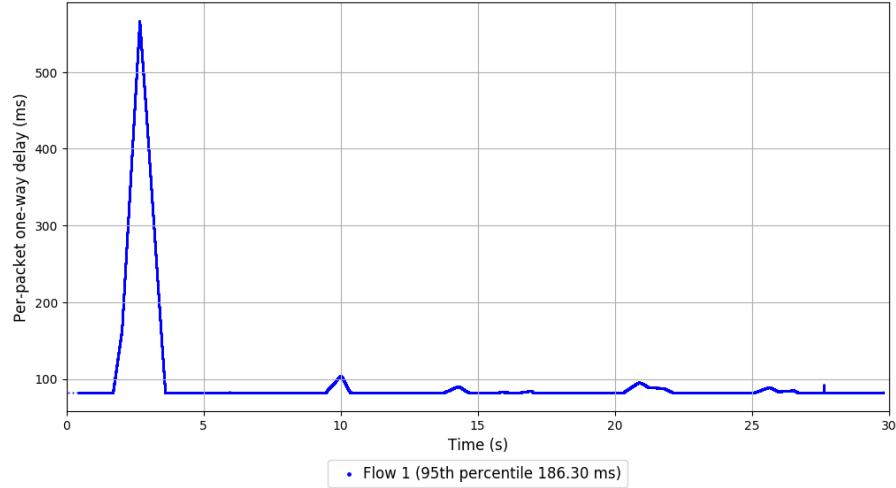
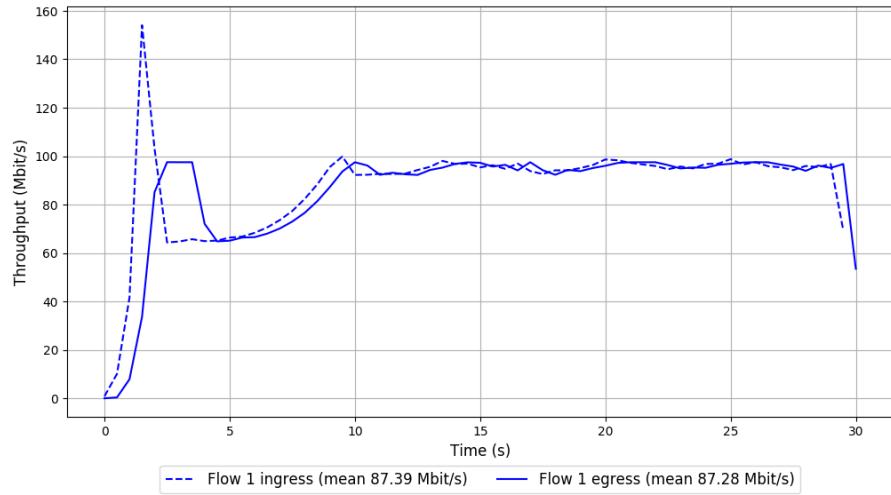


```
Run 1: Statistics of PCC-Allegro
```

```
Start at: 2018-10-26 06:24:29
End at: 2018-10-26 06:24:59
Local clock offset: -2.036 ms
Remote clock offset: -6.749 ms

# Below is generated by plot.py at 2018-10-26 08:01:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 87.28 Mbit/s
95th percentile per-packet one-way delay: 186.298 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 87.28 Mbit/s
95th percentile per-packet one-way delay: 186.298 ms
Loss rate: 0.68%
```

Run 1: Report of PCC-Allegro — Data Link

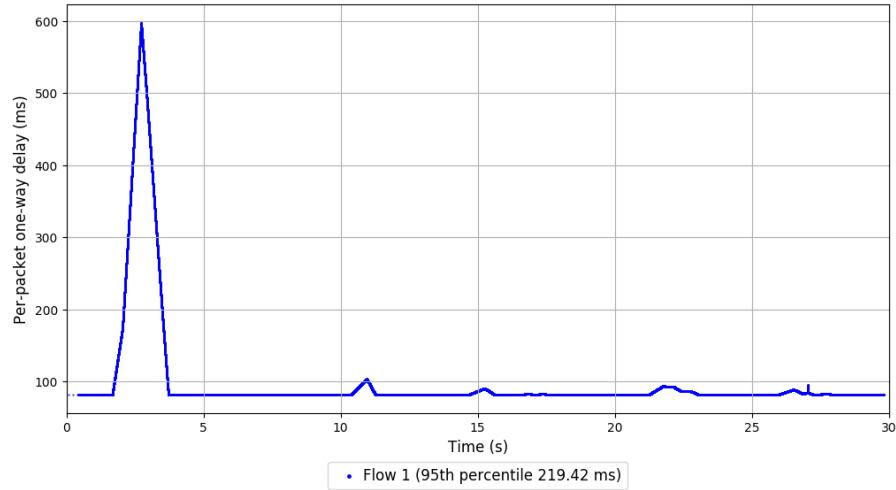
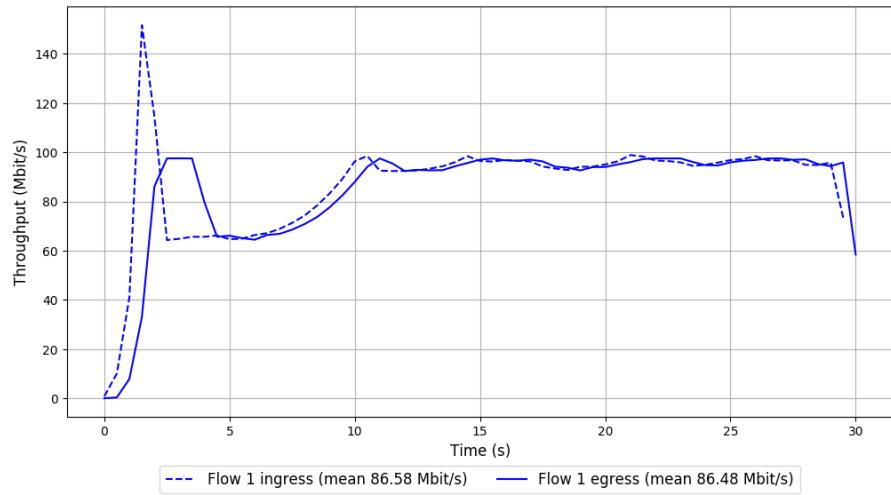


Run 2: Statistics of PCC-Allegro

```
Start at: 2018-10-26 06:45:46
End at: 2018-10-26 06:46:16
Local clock offset: -5.572 ms
Remote clock offset: -5.051 ms

# Below is generated by plot.py at 2018-10-26 08:01:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.48 Mbit/s
95th percentile per-packet one-way delay: 219.421 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 86.48 Mbit/s
95th percentile per-packet one-way delay: 219.421 ms
Loss rate: 0.66%
```

Run 2: Report of PCC-Allegro — Data Link

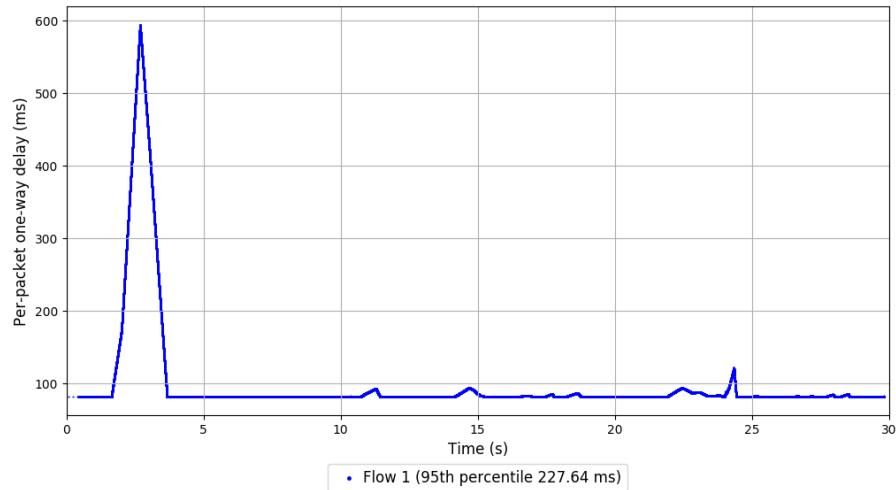
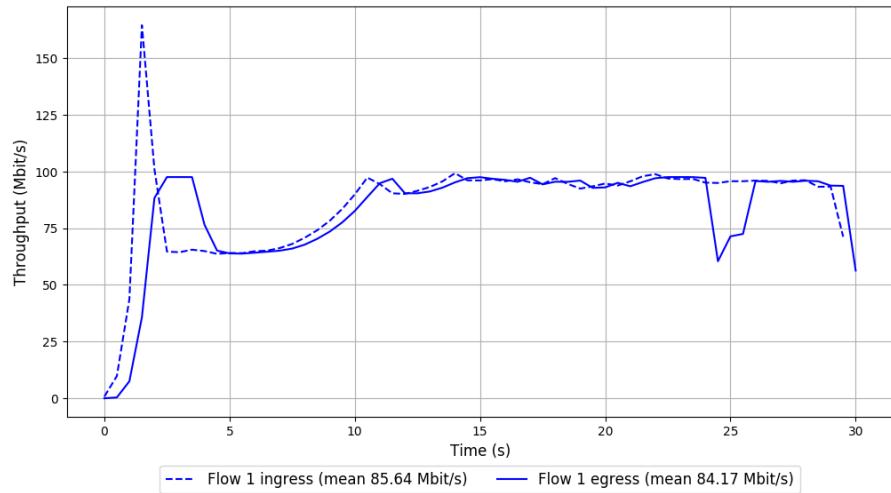


Run 3: Statistics of PCC-Allegro

```
Start at: 2018-10-26 07:07:04
End at: 2018-10-26 07:07:34
Local clock offset: -6.737 ms
Remote clock offset: -3.758 ms

# Below is generated by plot.py at 2018-10-26 08:01:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 84.17 Mbit/s
95th percentile per-packet one-way delay: 227.644 ms
Loss rate: 2.24%
-- Flow 1:
Average throughput: 84.17 Mbit/s
95th percentile per-packet one-way delay: 227.644 ms
Loss rate: 2.24%
```

Run 3: Report of PCC-Allegro — Data Link

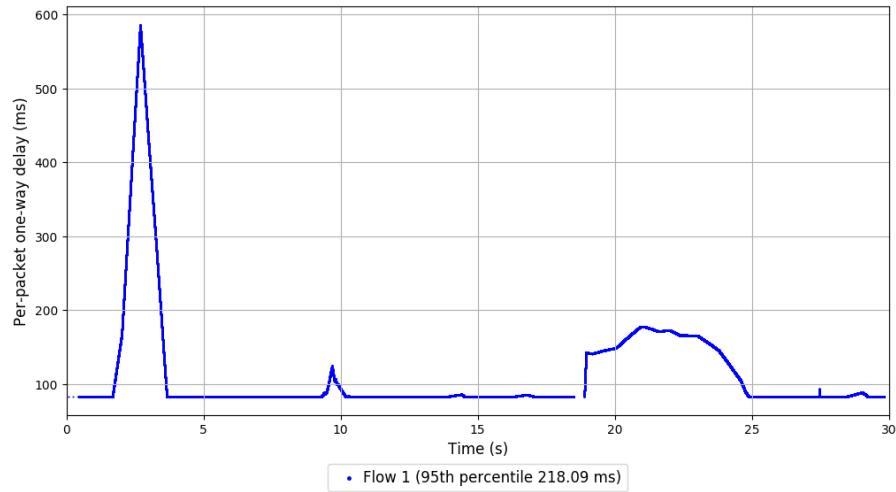
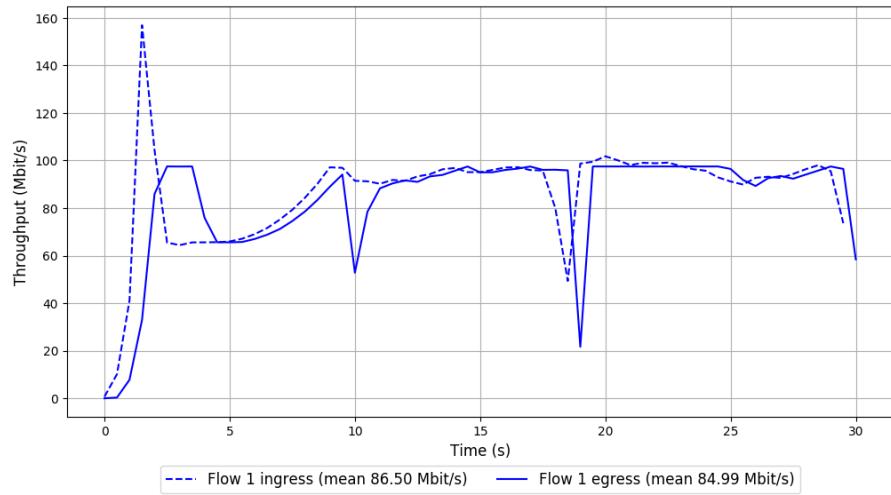


Run 4: Statistics of PCC-Allegro

```
Start at: 2018-10-26 07:28:18
End at: 2018-10-26 07:28:48
Local clock offset: -7.042 ms
Remote clock offset: -2.524 ms

# Below is generated by plot.py at 2018-10-26 08:02:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 84.99 Mbit/s
95th percentile per-packet one-way delay: 218.094 ms
Loss rate: 2.29%
-- Flow 1:
Average throughput: 84.99 Mbit/s
95th percentile per-packet one-way delay: 218.094 ms
Loss rate: 2.29%
```

Run 4: Report of PCC-Allegro — Data Link

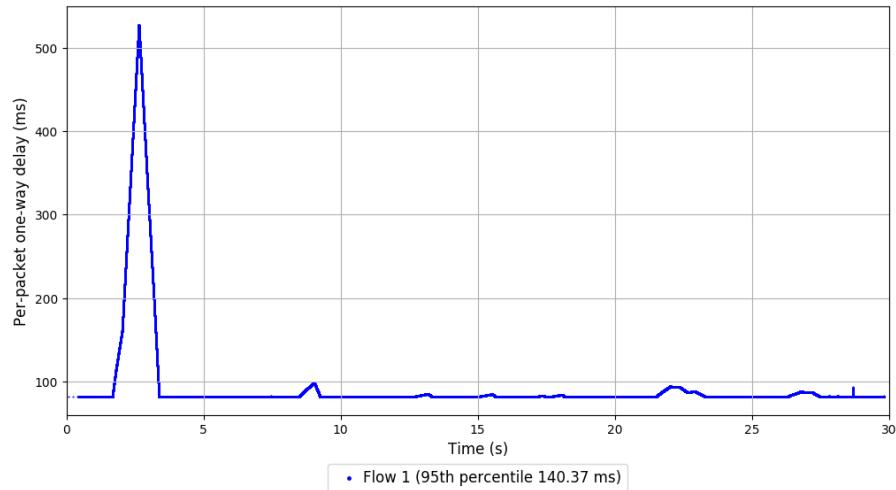
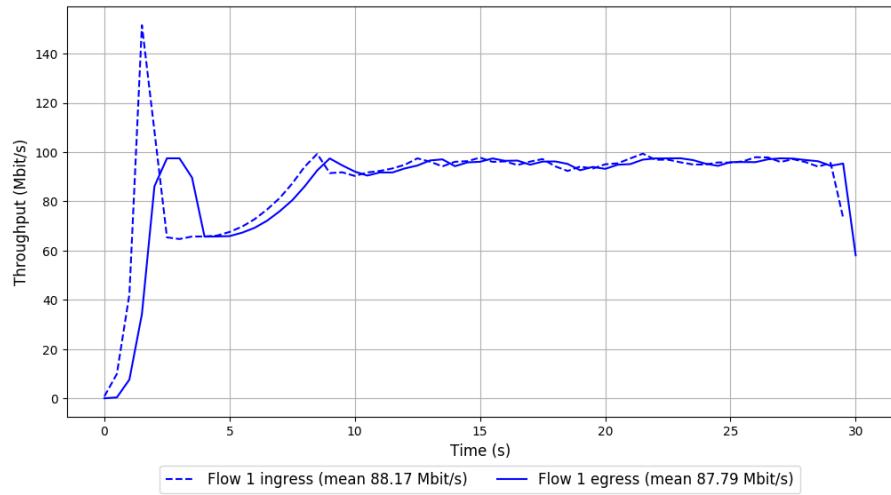


Run 5: Statistics of PCC-Allegro

```
Start at: 2018-10-26 07:49:54
End at: 2018-10-26 07:50:24
Local clock offset: -1.481 ms
Remote clock offset: -1.484 ms

# Below is generated by plot.py at 2018-10-26 08:02:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 87.79 Mbit/s
95th percentile per-packet one-way delay: 140.374 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 87.79 Mbit/s
95th percentile per-packet one-way delay: 140.374 ms
Loss rate: 0.97%
```

Run 5: Report of PCC-Allegro — Data Link

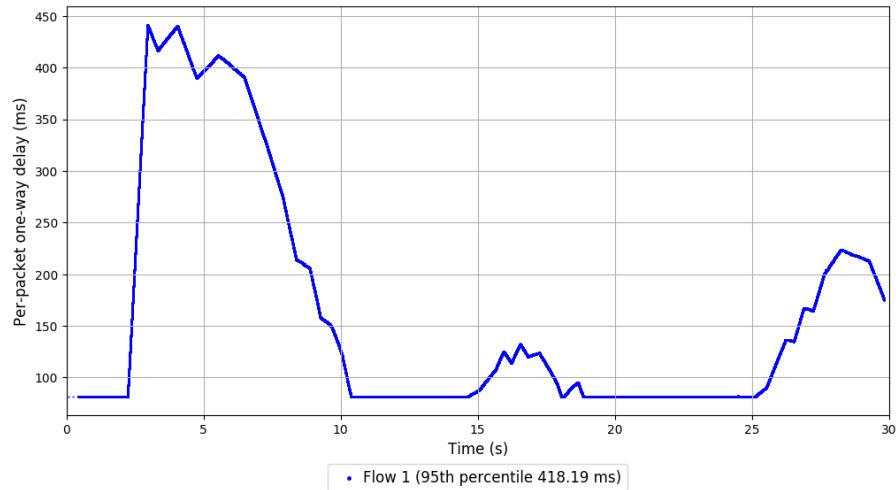
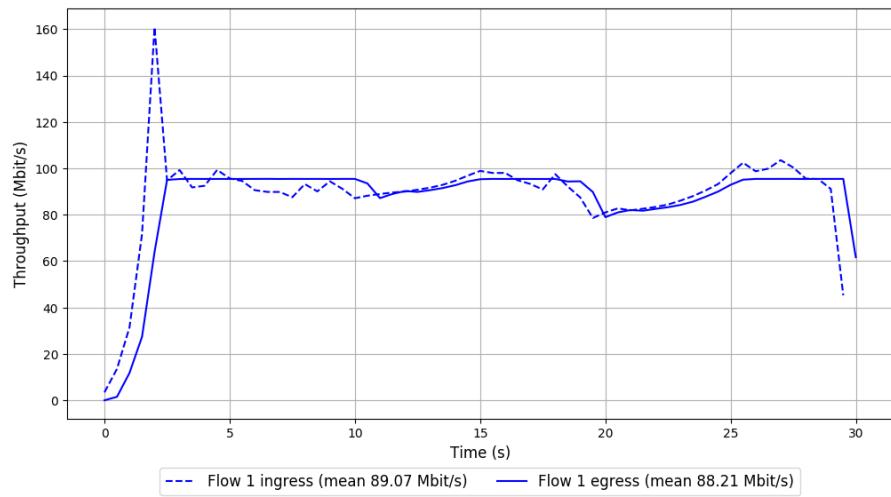


```
Run 1: Statistics of PCC-Expr
```

```
Start at: 2018-10-26 06:18:33
End at: 2018-10-26 06:19:03
Local clock offset: -2.591 ms
Remote clock offset: -6.38 ms

# Below is generated by plot.py at 2018-10-26 08:03:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.21 Mbit/s
95th percentile per-packet one-way delay: 418.188 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 88.21 Mbit/s
95th percentile per-packet one-way delay: 418.188 ms
Loss rate: 1.00%
```

Run 1: Report of PCC-Expr — Data Link

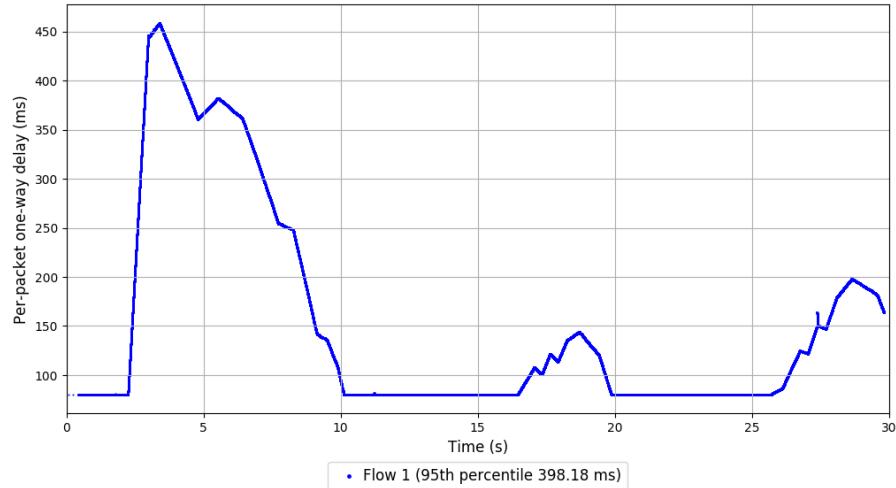
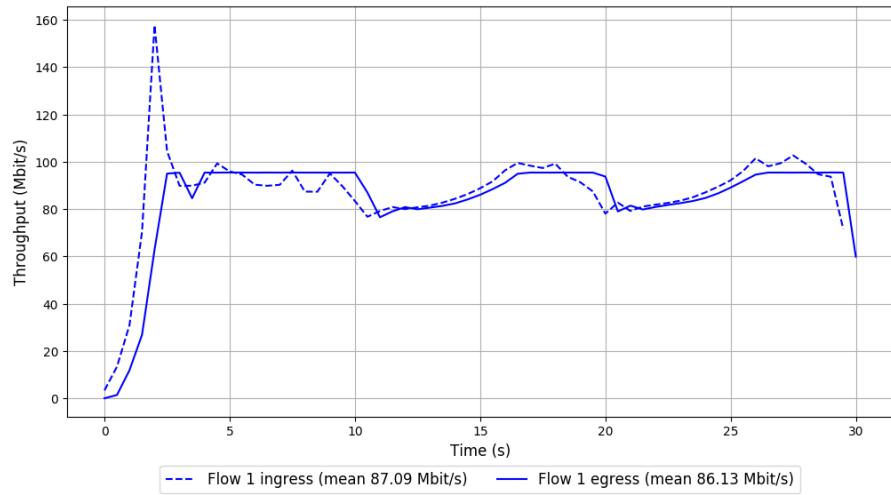


Run 2: Statistics of PCC-Expr

```
Start at: 2018-10-26 06:39:52
End at: 2018-10-26 06:40:22
Local clock offset: -4.606 ms
Remote clock offset: -2.041 ms

# Below is generated by plot.py at 2018-10-26 08:03:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.13 Mbit/s
95th percentile per-packet one-way delay: 398.178 ms
Loss rate: 1.65%
-- Flow 1:
Average throughput: 86.13 Mbit/s
95th percentile per-packet one-way delay: 398.178 ms
Loss rate: 1.65%
```

Run 2: Report of PCC-Expr — Data Link

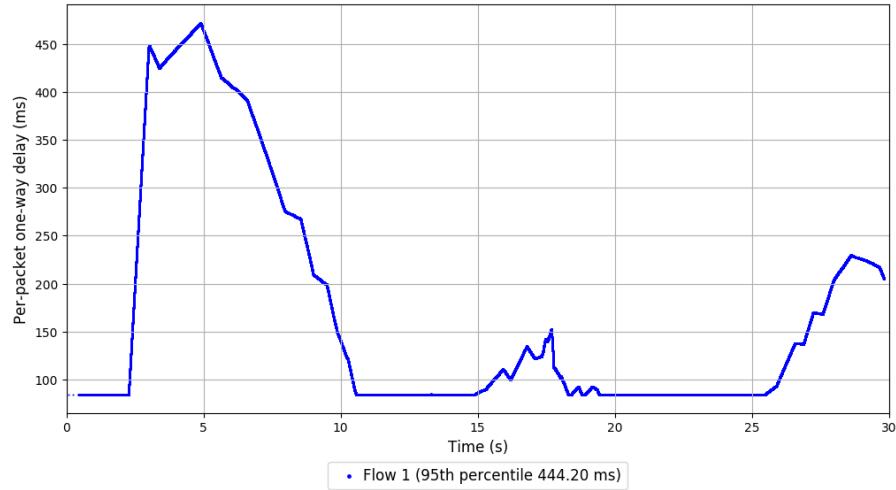
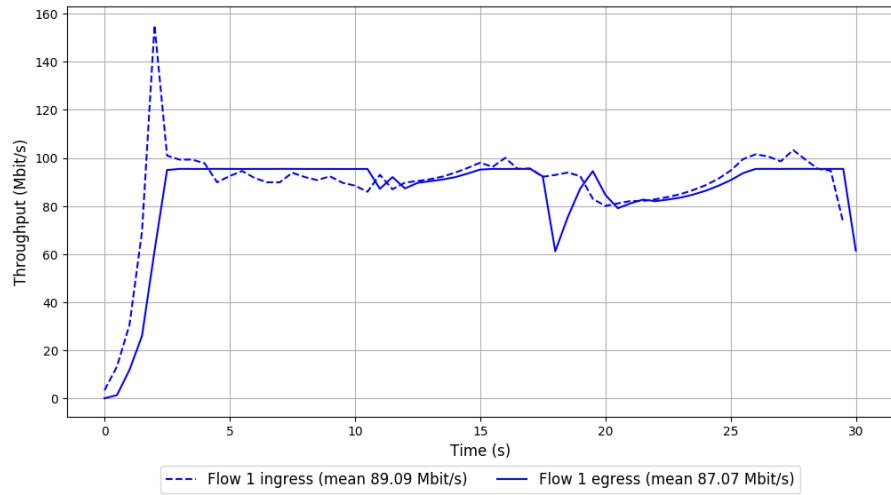


Run 3: Statistics of PCC-Expr

```
Start at: 2018-10-26 07:01:10
End at: 2018-10-26 07:01:40
Local clock offset: -6.996 ms
Remote clock offset: -3.952 ms

# Below is generated by plot.py at 2018-10-26 08:03:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 87.07 Mbit/s
95th percentile per-packet one-way delay: 444.200 ms
Loss rate: 2.81%
-- Flow 1:
Average throughput: 87.07 Mbit/s
95th percentile per-packet one-way delay: 444.200 ms
Loss rate: 2.81%
```

Run 3: Report of PCC-Expr — Data Link

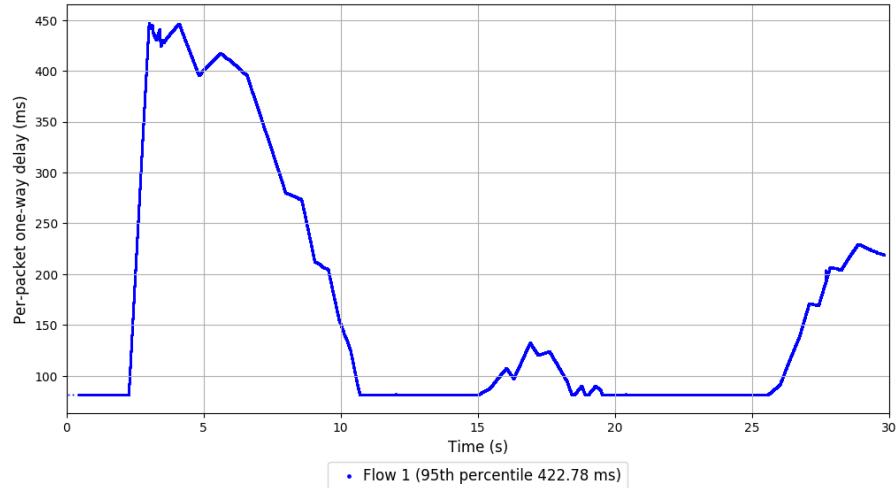
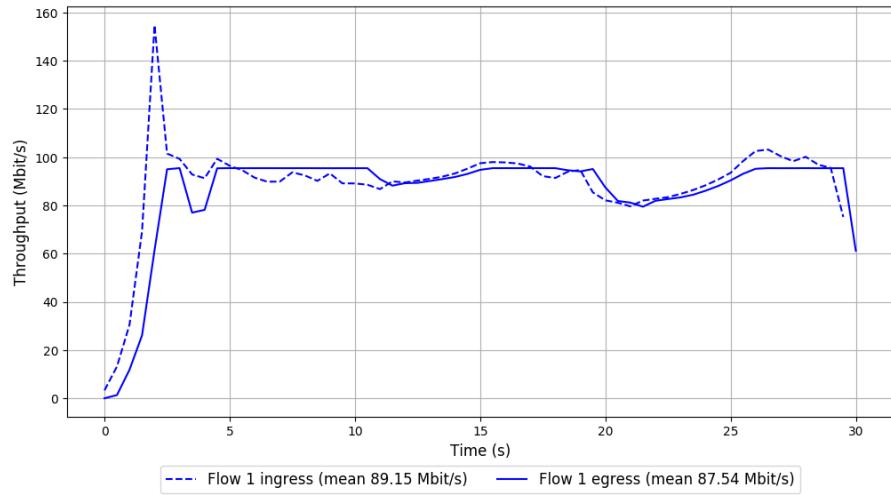


Run 4: Statistics of PCC-Expr

```
Start at: 2018-10-26 07:22:25
End at: 2018-10-26 07:22:55
Local clock offset: -6.906 ms
Remote clock offset: 0.236 ms

# Below is generated by plot.py at 2018-10-26 08:03:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 87.54 Mbit/s
95th percentile per-packet one-way delay: 422.777 ms
Loss rate: 2.35%
-- Flow 1:
Average throughput: 87.54 Mbit/s
95th percentile per-packet one-way delay: 422.777 ms
Loss rate: 2.35%
```

Run 4: Report of PCC-Expr — Data Link

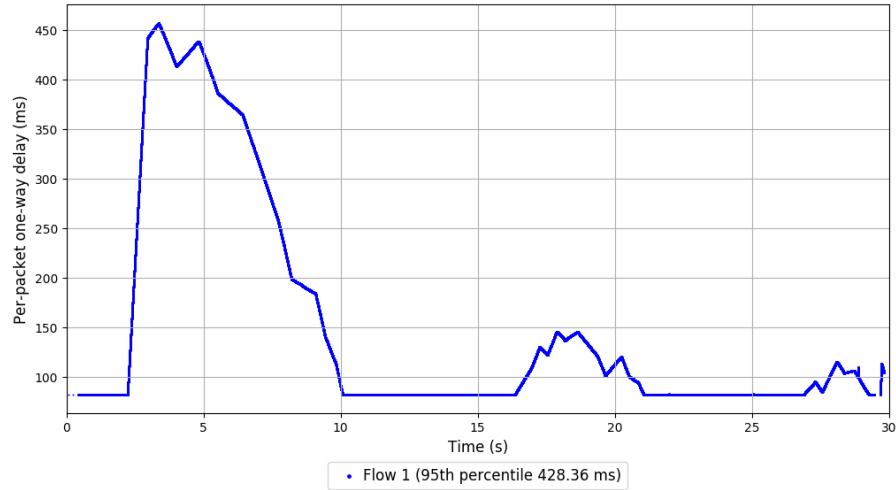
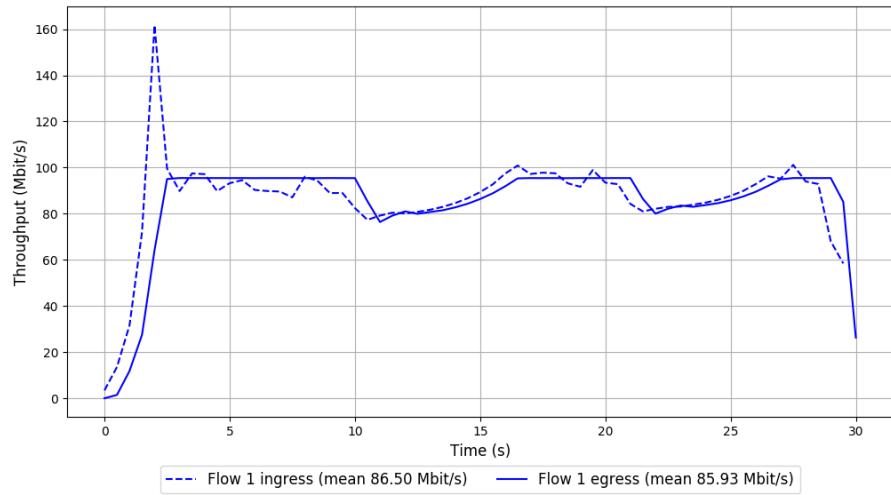


Run 5: Statistics of PCC-Expr

```
Start at: 2018-10-26 07:43:49
End at: 2018-10-26 07:44:19
Local clock offset: -2.456 ms
Remote clock offset: -2.086 ms

# Below is generated by plot.py at 2018-10-26 08:03:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.93 Mbit/s
95th percentile per-packet one-way delay: 428.359 ms
Loss rate: 1.20%
-- Flow 1:
Average throughput: 85.93 Mbit/s
95th percentile per-packet one-way delay: 428.359 ms
Loss rate: 1.20%
```

Run 5: Report of PCC-Expr — Data Link

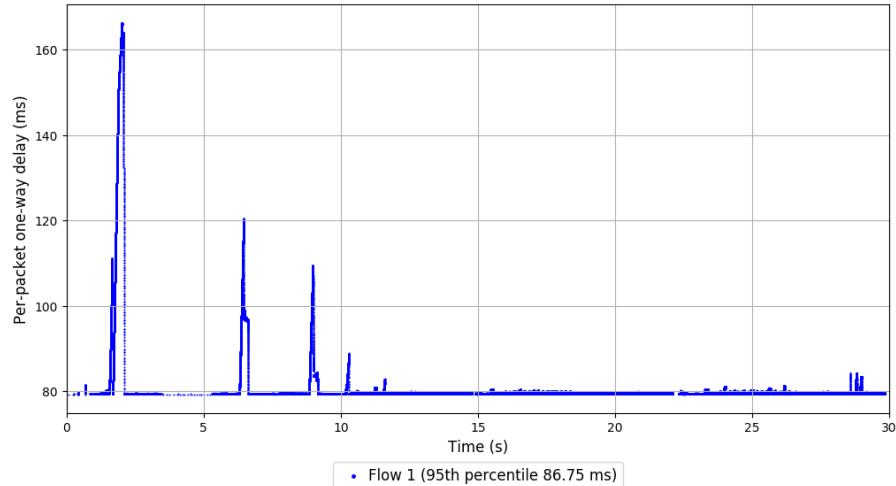
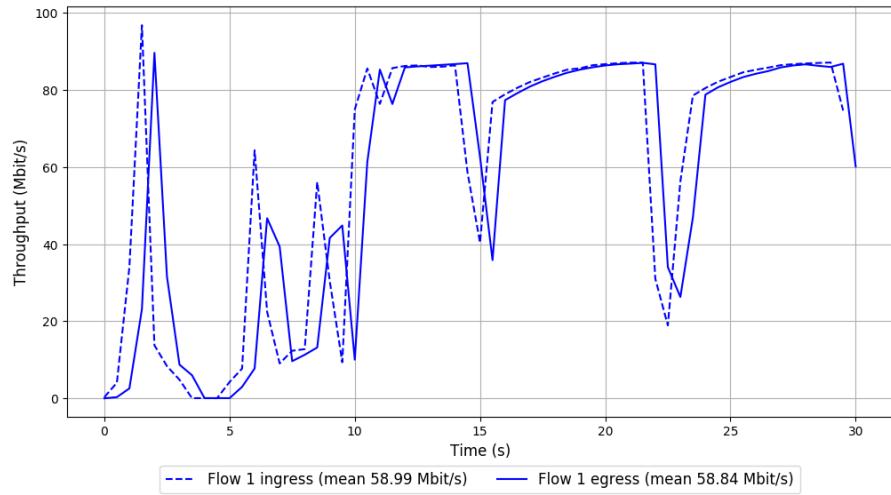


```
Run 1: Statistics of QUIC Cubic
```

```
Start at: 2018-10-26 06:25:40
End at: 2018-10-26 06:26:10
Local clock offset: -1.87 ms
Remote clock offset: -2.972 ms

# Below is generated by plot.py at 2018-10-26 08:03:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 58.84 Mbit/s
95th percentile per-packet one-way delay: 86.747 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 58.84 Mbit/s
95th percentile per-packet one-way delay: 86.747 ms
Loss rate: 0.81%
```

Run 1: Report of QUIC Cubic — Data Link

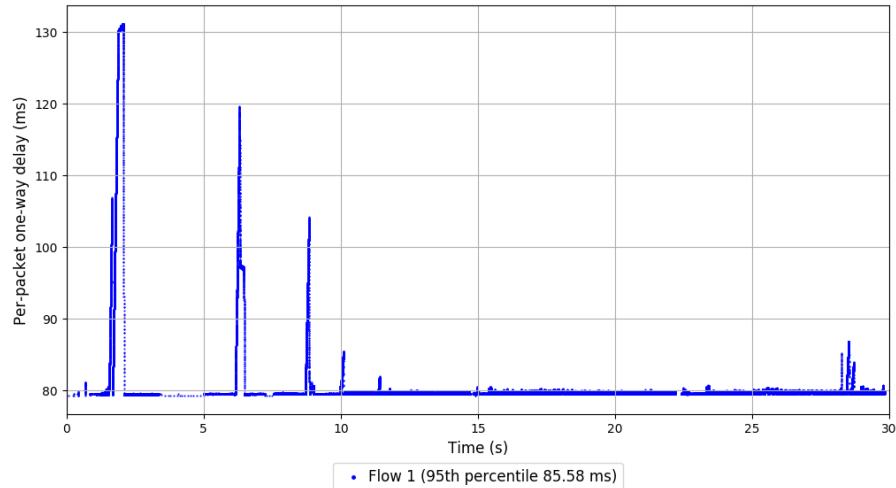
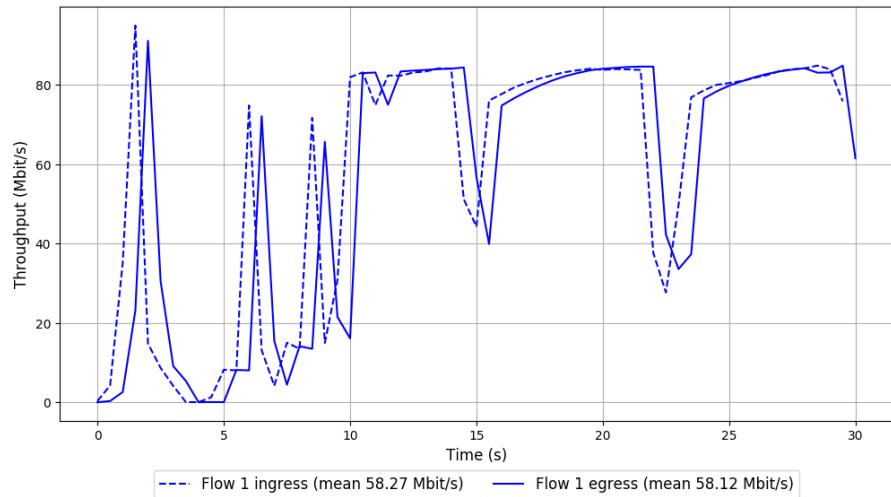


Run 2: Statistics of QUIC Cubic

```
Start at: 2018-10-26 06:46:56
End at: 2018-10-26 06:47:26
Local clock offset: -5.751 ms
Remote clock offset: -1.54 ms

# Below is generated by plot.py at 2018-10-26 08:03:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 58.12 Mbit/s
95th percentile per-packet one-way delay: 85.581 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 58.12 Mbit/s
95th percentile per-packet one-way delay: 85.581 ms
Loss rate: 0.80%
```

Run 2: Report of QUIC Cubic — Data Link

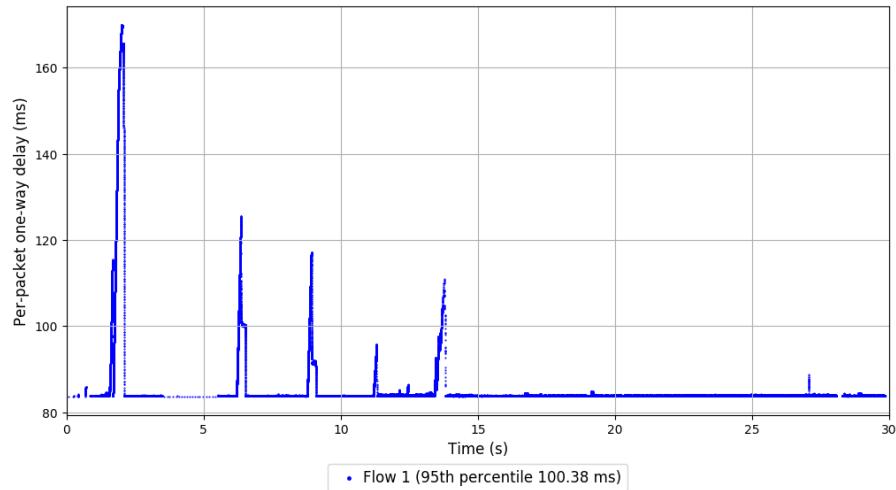
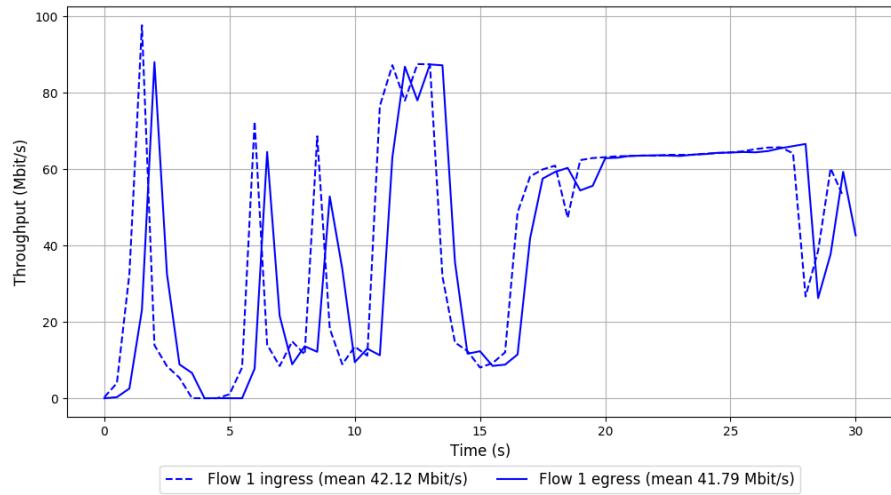


Run 3: Statistics of QUIC Cubic

```
Start at: 2018-10-26 07:08:14
End at: 2018-10-26 07:08:44
Local clock offset: -6.74 ms
Remote clock offset: -3.443 ms

# Below is generated by plot.py at 2018-10-26 08:03:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 41.79 Mbit/s
95th percentile per-packet one-way delay: 100.375 ms
Loss rate: 1.35%
-- Flow 1:
Average throughput: 41.79 Mbit/s
95th percentile per-packet one-way delay: 100.375 ms
Loss rate: 1.35%
```

Run 3: Report of QUIC Cubic — Data Link

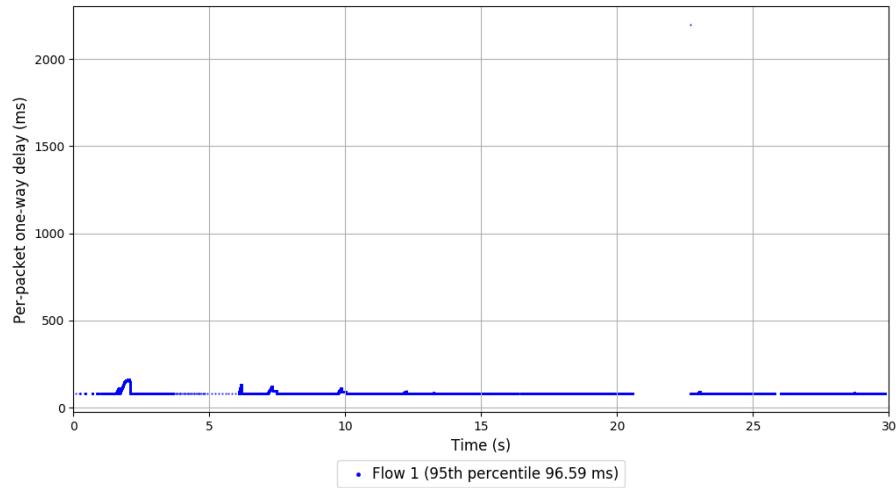
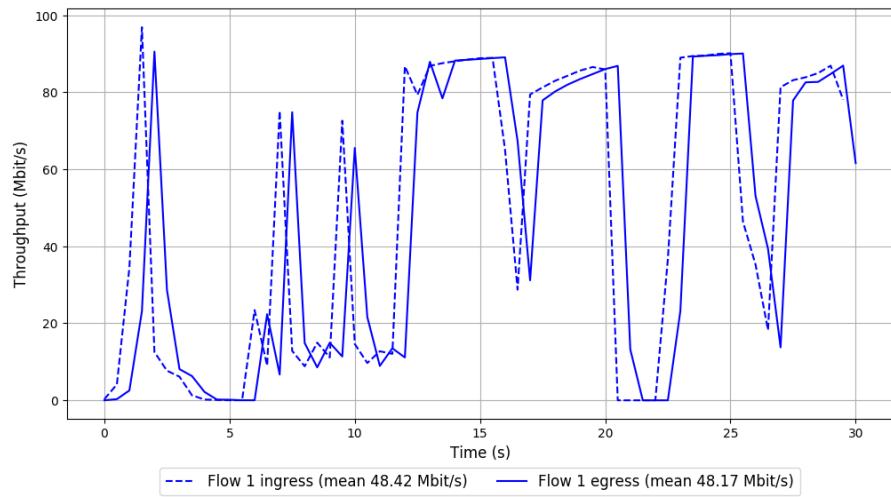


Run 4: Statistics of QUIC Cubic

```
Start at: 2018-10-26 07:29:29
End at: 2018-10-26 07:29:59
Local clock offset: -7.13 ms
Remote clock offset: 1.3 ms

# Below is generated by plot.py at 2018-10-26 08:03:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 48.17 Mbit/s
95th percentile per-packet one-way delay: 96.591 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 48.17 Mbit/s
95th percentile per-packet one-way delay: 96.591 ms
Loss rate: 1.05%
```

Run 4: Report of QUIC Cubic — Data Link

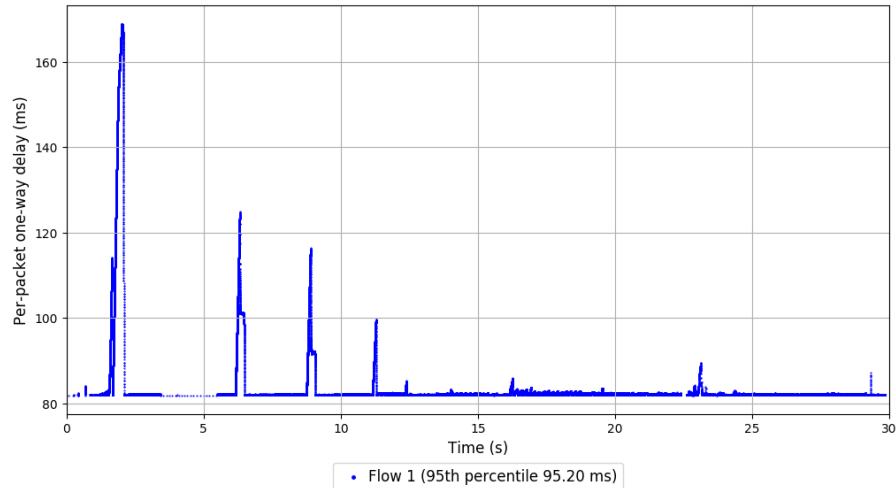
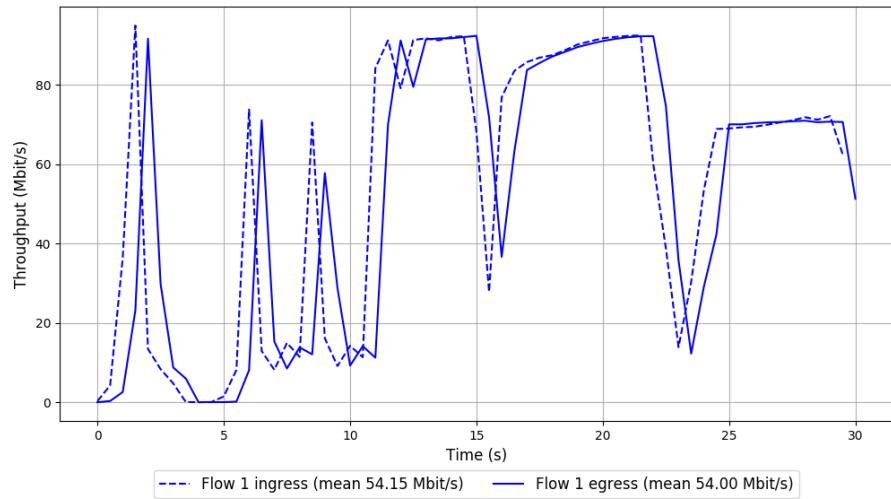


Run 5: Statistics of QUIC Cubic

```
Start at: 2018-10-26 07:51:05
End at: 2018-10-26 07:51:35
Local clock offset: -1.214 ms
Remote clock offset: -1.876 ms

# Below is generated by plot.py at 2018-10-26 08:04:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 54.00 Mbit/s
95th percentile per-packet one-way delay: 95.204 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 54.00 Mbit/s
95th percentile per-packet one-way delay: 95.204 ms
Loss rate: 0.81%
```

Run 5: Report of QUIC Cubic — Data Link

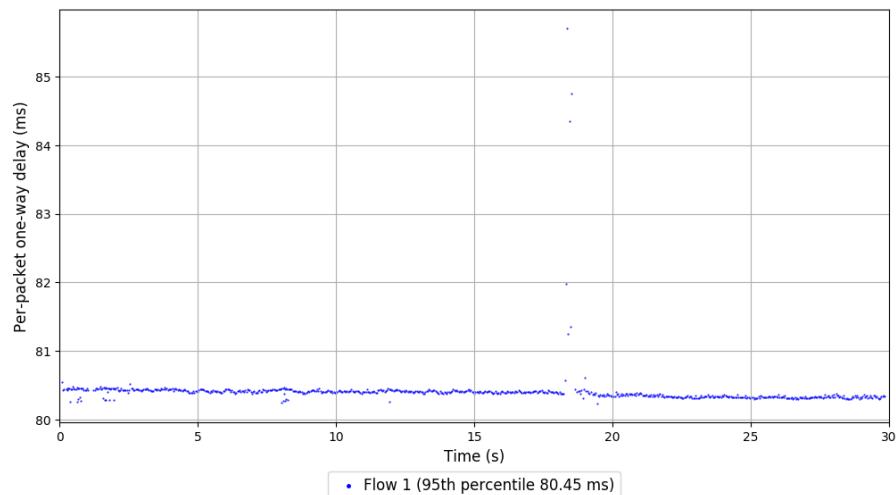
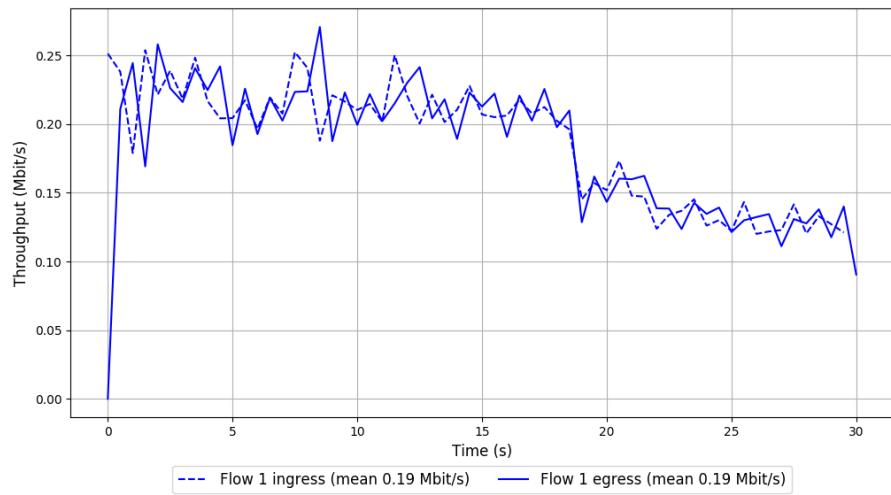


Run 1: Statistics of SCReAM

```
Start at: 2018-10-26 06:22:10
End at: 2018-10-26 06:22:40
Local clock offset: -2.095 ms
Remote clock offset: -3.053 ms

# Below is generated by plot.py at 2018-10-26 08:04:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 80.455 ms
Loss rate: 1.07%
-- Flow 1:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 80.455 ms
Loss rate: 1.07%
```

Run 1: Report of SCReAM — Data Link

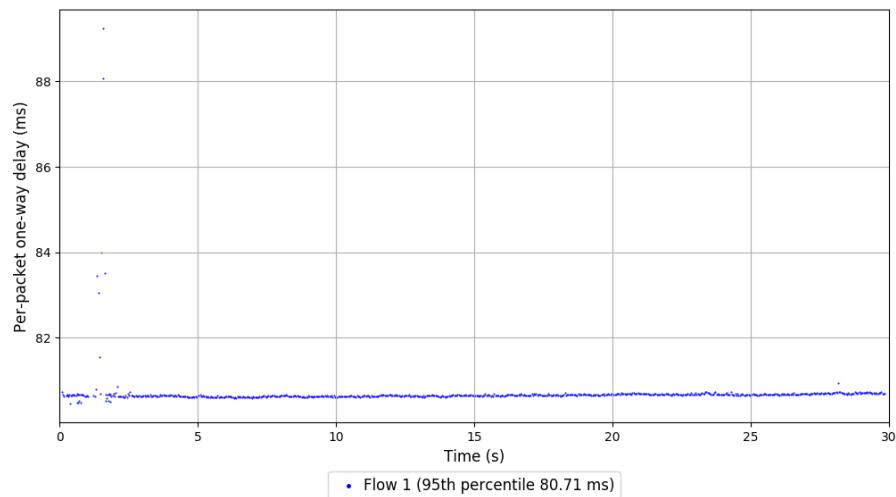
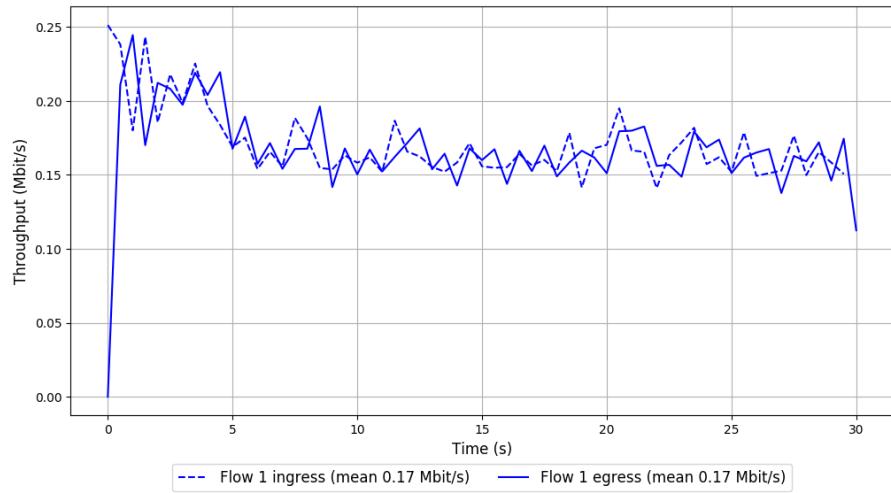


Run 2: Statistics of SCReAM

```
Start at: 2018-10-26 06:43:26
End at: 2018-10-26 06:43:56
Local clock offset: -5.204 ms
Remote clock offset: -2.386 ms

# Below is generated by plot.py at 2018-10-26 08:04:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 80.713 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 80.713 ms
Loss rate: 0.81%
```

Run 2: Report of SCReAM — Data Link

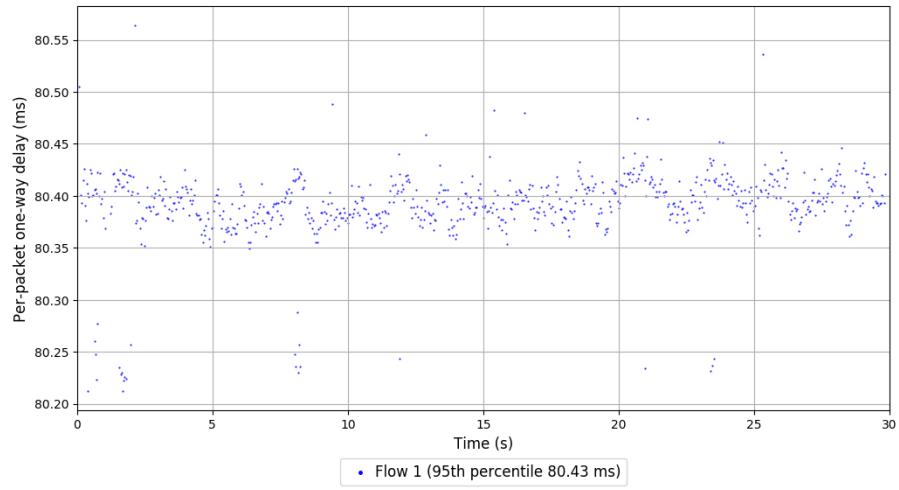
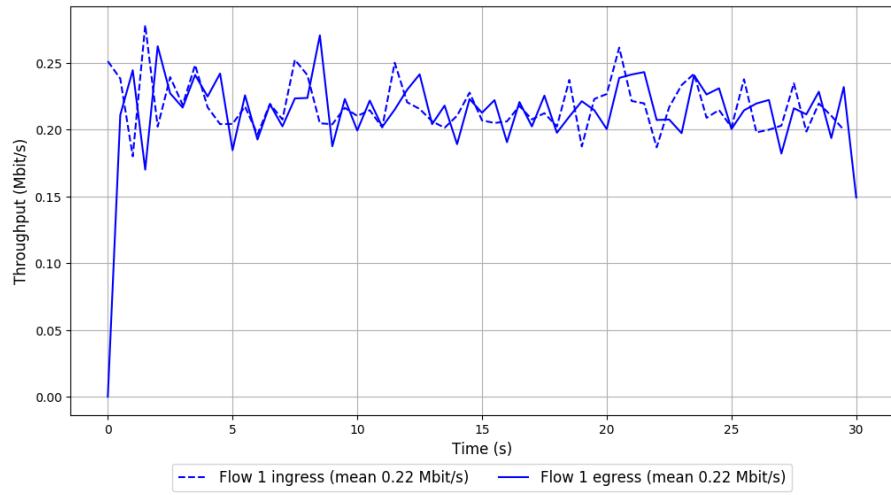


Run 3: Statistics of SCReAM

```
Start at: 2018-10-26 07:04:45
End at: 2018-10-26 07:05:15
Local clock offset: -6.783 ms
Remote clock offset: -0.736 ms

# Below is generated by plot.py at 2018-10-26 08:04:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 80.426 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 80.426 ms
Loss rate: 0.64%
```

Run 3: Report of SCReAM — Data Link

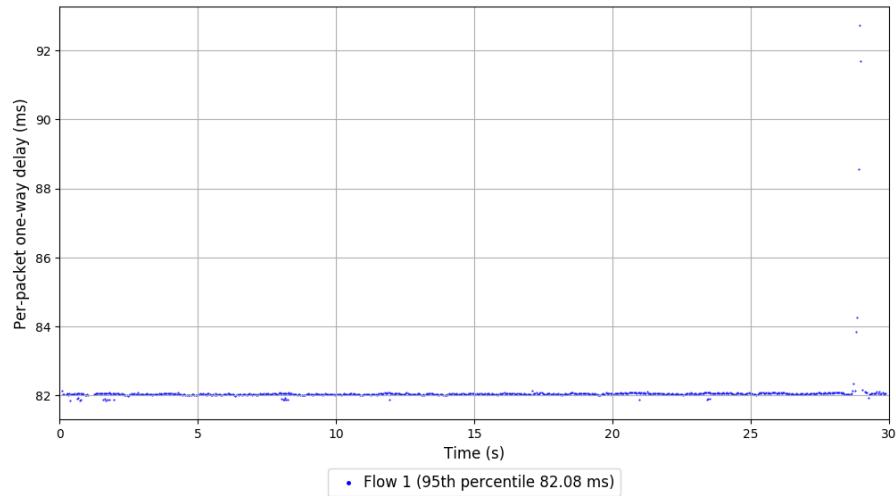
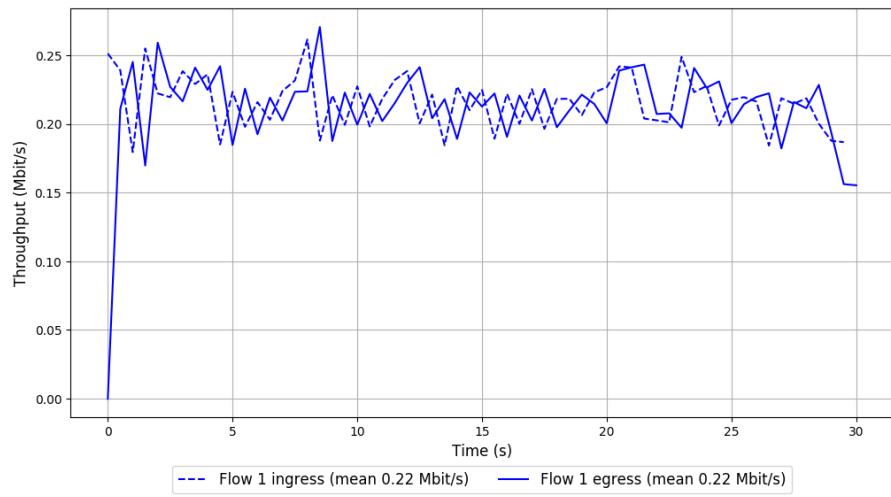


Run 4: Statistics of SCReAM

```
Start at: 2018-10-26 07:25:59
End at: 2018-10-26 07:26:29
Local clock offset: -7.128 ms
Remote clock offset: -2.595 ms

# Below is generated by plot.py at 2018-10-26 08:04:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 82.078 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 82.078 ms
Loss rate: 0.75%
```

Run 4: Report of SCReAM — Data Link

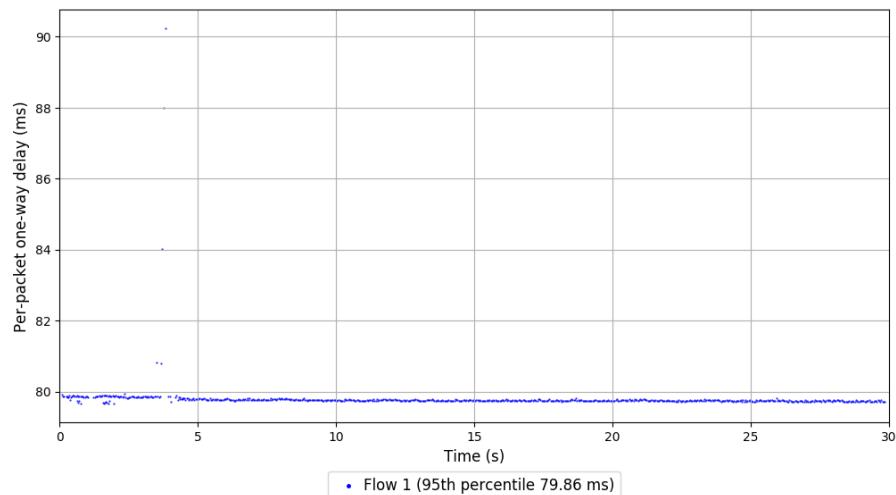
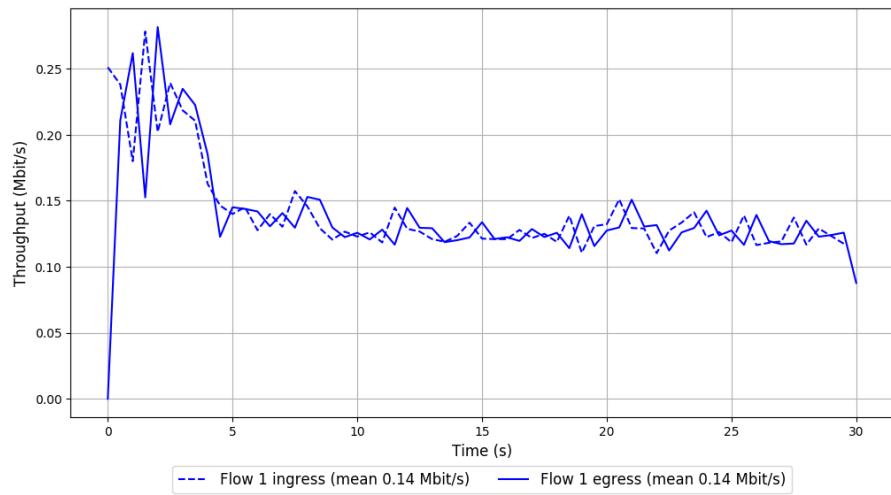


Run 5: Statistics of SCReAM

```
Start at: 2018-10-26 07:47:24
End at: 2018-10-26 07:47:54
Local clock offset: -1.697 ms
Remote clock offset: 1.835 ms

# Below is generated by plot.py at 2018-10-26 08:04:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 79.864 ms
Loss rate: 1.47%
-- Flow 1:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 79.864 ms
Loss rate: 1.47%
```

Run 5: Report of SCReAM — Data Link

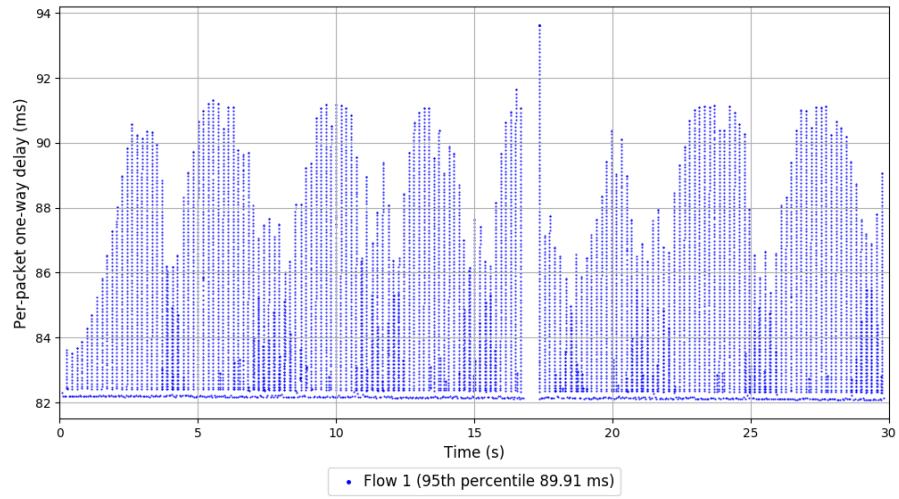
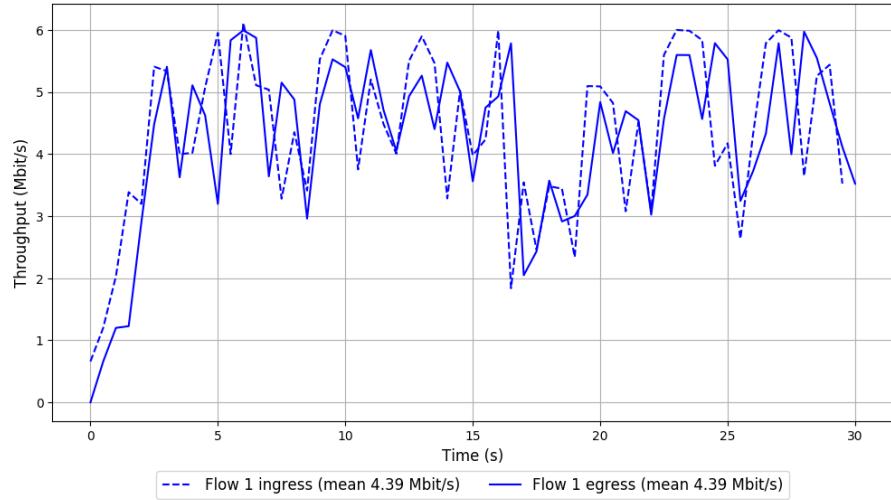


Run 1: Statistics of Sprout

```
Start at: 2018-10-26 06:12:38
End at: 2018-10-26 06:13:08
Local clock offset: -3.488 ms
Remote clock offset: -6.692 ms

# Below is generated by plot.py at 2018-10-26 08:04:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.39 Mbit/s
95th percentile per-packet one-way delay: 89.907 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 4.39 Mbit/s
95th percentile per-packet one-way delay: 89.907 ms
Loss rate: 0.67%
```

Run 1: Report of Sprout — Data Link

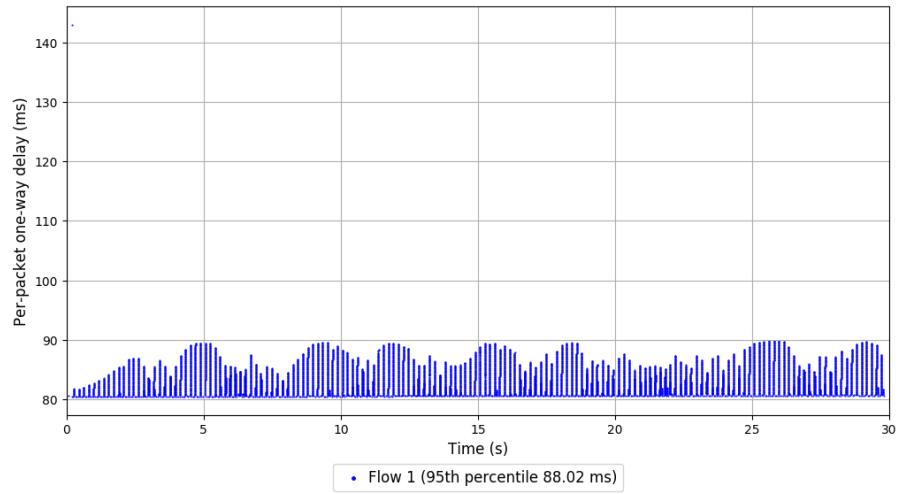
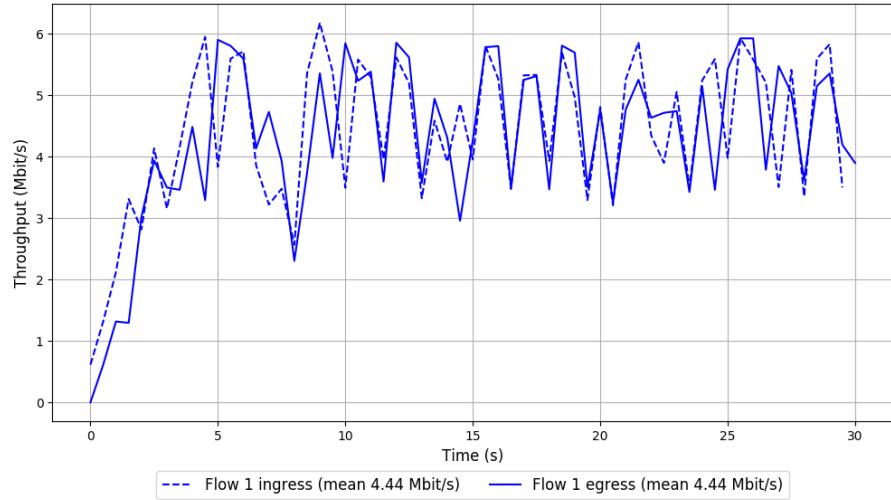


Run 2: Statistics of Sprout

```
Start at: 2018-10-26 06:33:55
End at: 2018-10-26 06:34:25
Local clock offset: -2.774 ms
Remote clock offset: -2.197 ms

# Below is generated by plot.py at 2018-10-26 08:04:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.44 Mbit/s
95th percentile per-packet one-way delay: 88.019 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 4.44 Mbit/s
95th percentile per-packet one-way delay: 88.019 ms
Loss rate: 0.56%
```

Run 2: Report of Sprout — Data Link

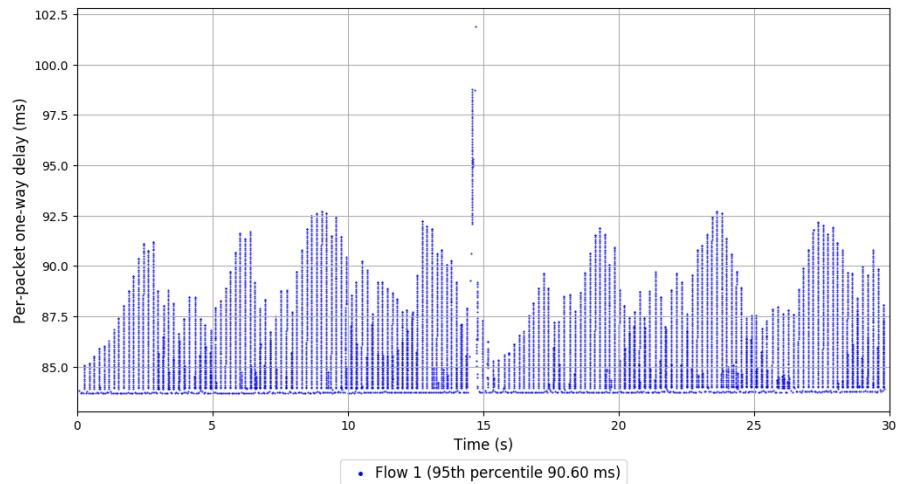
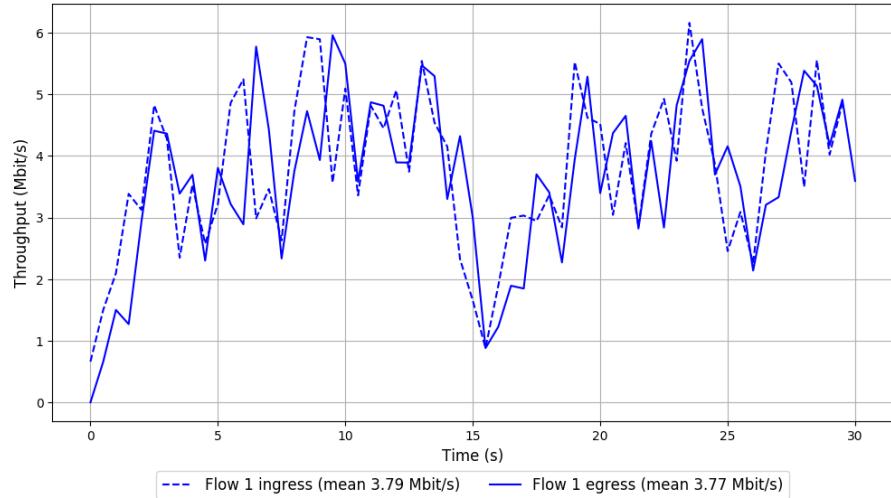


Run 3: Statistics of Sprout

```
Start at: 2018-10-26 06:55:13
End at: 2018-10-26 06:55:43
Local clock offset: -6.555 ms
Remote clock offset: -4.498 ms

# Below is generated by plot.py at 2018-10-26 08:04:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.77 Mbit/s
95th percentile per-packet one-way delay: 90.603 ms
Loss rate: 1.24%
-- Flow 1:
Average throughput: 3.77 Mbit/s
95th percentile per-packet one-way delay: 90.603 ms
Loss rate: 1.24%
```

Run 3: Report of Sprout — Data Link

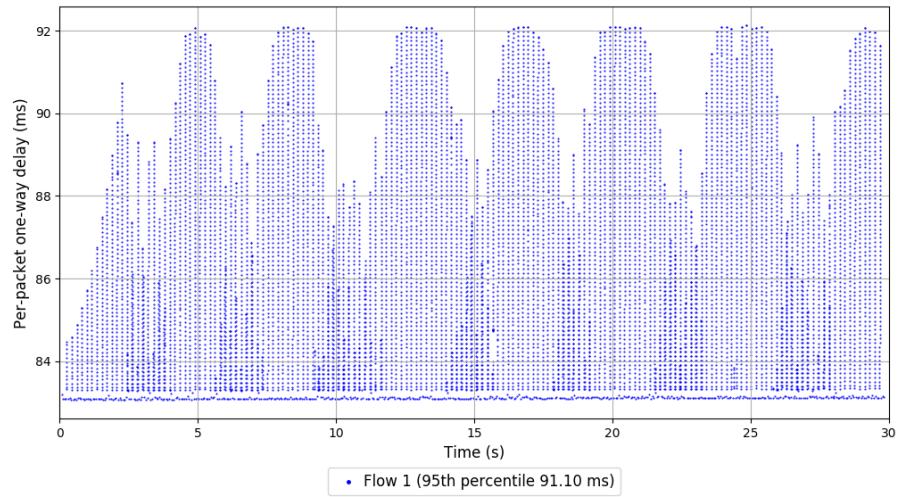
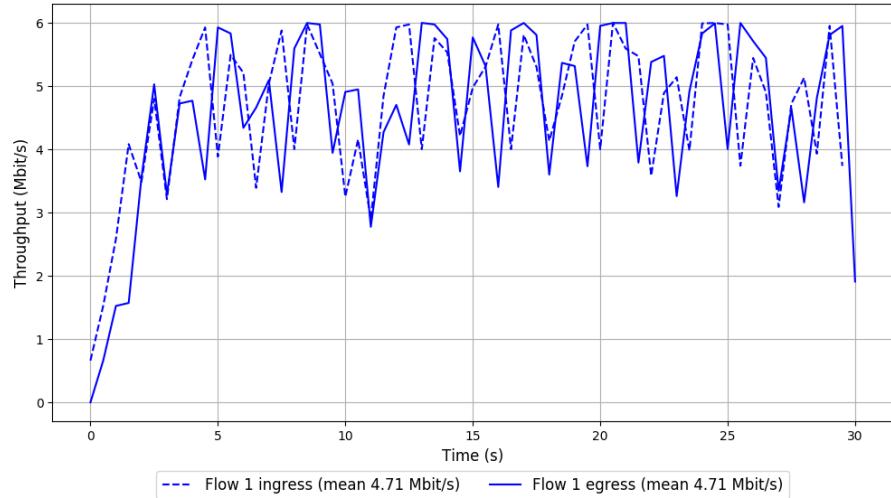


Run 4: Statistics of Sprout

```
Start at: 2018-10-26 07:16:29
End at: 2018-10-26 07:16:59
Local clock offset: -6.79 ms
Remote clock offset: -3.429 ms

# Below is generated by plot.py at 2018-10-26 08:04:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.71 Mbit/s
95th percentile per-packet one-way delay: 91.104 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 4.71 Mbit/s
95th percentile per-packet one-way delay: 91.104 ms
Loss rate: 0.65%
```

Run 4: Report of Sprout — Data Link

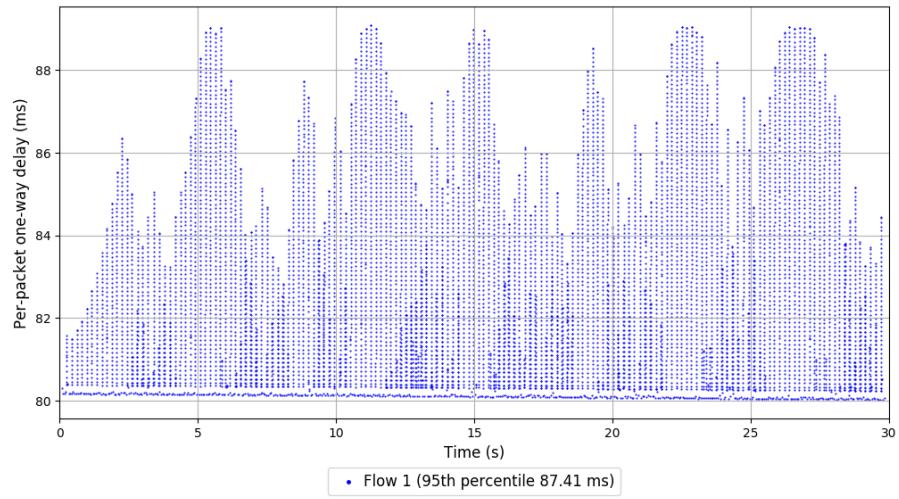
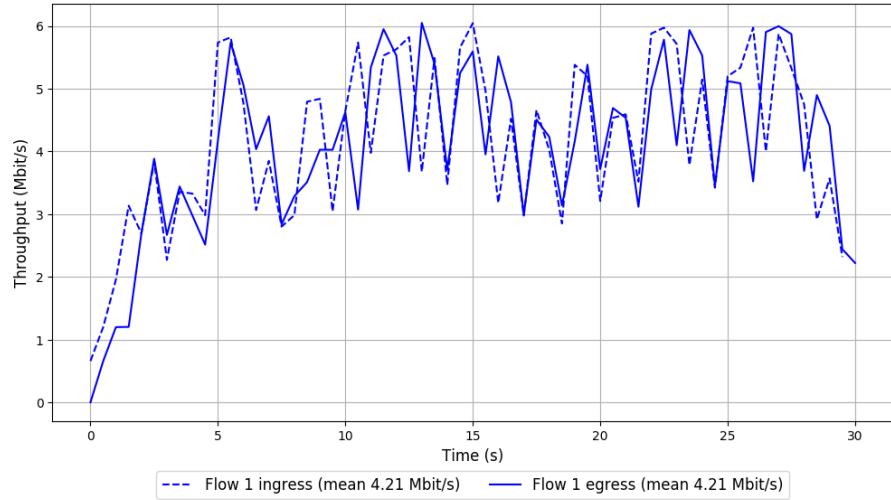


Run 5: Statistics of Sprout

```
Start at: 2018-10-26 07:37:52
End at: 2018-10-26 07:38:22
Local clock offset: -4.122 ms
Remote clock offset: 1.932 ms

# Below is generated by plot.py at 2018-10-26 08:04:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.21 Mbit/s
95th percentile per-packet one-way delay: 87.406 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 4.21 Mbit/s
95th percentile per-packet one-way delay: 87.406 ms
Loss rate: 0.49%
```

Run 5: Report of Sprout — Data Link

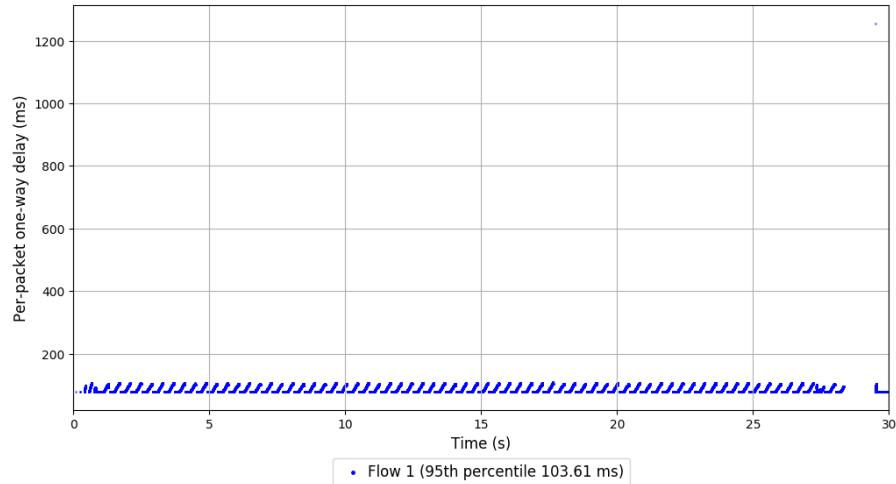
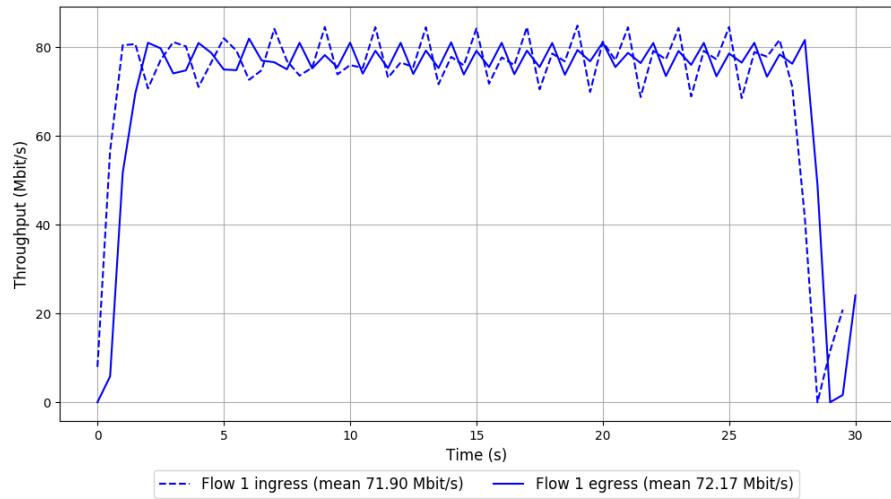


Run 1: Statistics of TaoVA-100x

```
Start at: 2018-10-26 06:14:56
End at: 2018-10-26 06:15:26
Local clock offset: -3.004 ms
Remote clock offset: -2.928 ms

# Below is generated by plot.py at 2018-10-26 08:05:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 72.17 Mbit/s
95th percentile per-packet one-way delay: 103.608 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 72.17 Mbit/s
95th percentile per-packet one-way delay: 103.608 ms
Loss rate: 0.17%
```

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

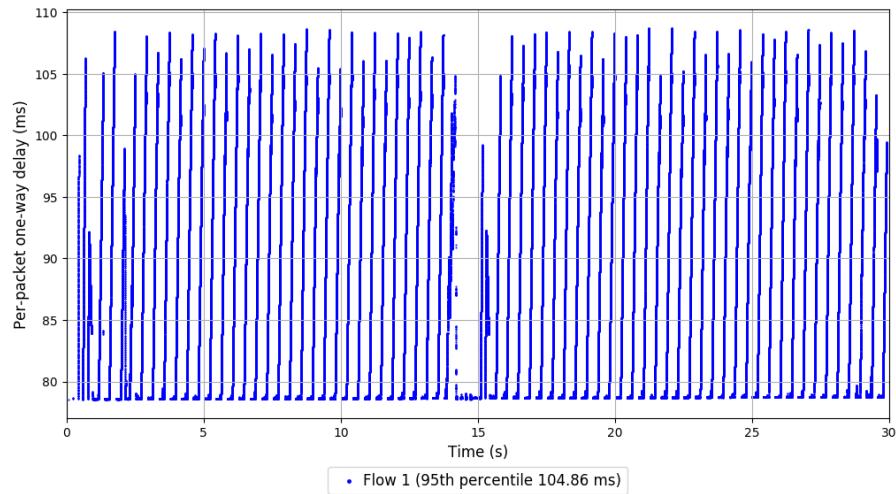
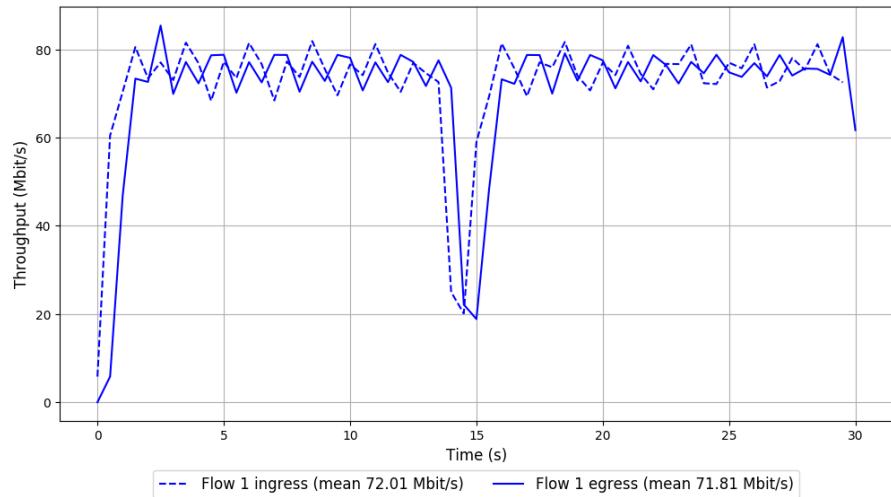


Run 2: Statistics of TaoVA-100x

```
Start at: 2018-10-26 06:36:14
End at: 2018-10-26 06:36:44
Local clock offset: -3.46 ms
Remote clock offset: -1.983 ms

# Below is generated by plot.py at 2018-10-26 08:05:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 71.81 Mbit/s
95th percentile per-packet one-way delay: 104.862 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 71.81 Mbit/s
95th percentile per-packet one-way delay: 104.862 ms
Loss rate: 0.82%
```

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

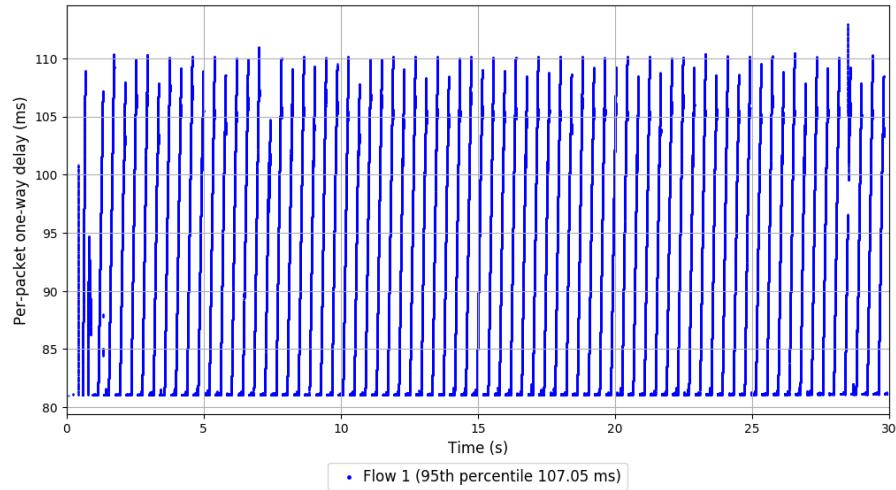
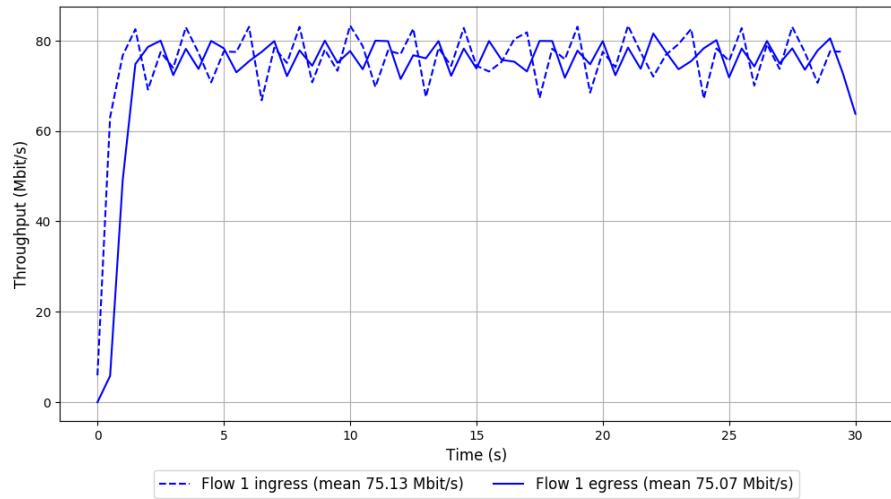


Run 3: Statistics of TaoVA-100x

```
Start at: 2018-10-26 06:57:32
End at: 2018-10-26 06:58:02
Local clock offset: -6.789 ms
Remote clock offset: -0.811 ms

# Below is generated by plot.py at 2018-10-26 08:05:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 75.07 Mbit/s
95th percentile per-packet one-way delay: 107.051 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 75.07 Mbit/s
95th percentile per-packet one-way delay: 107.051 ms
Loss rate: 0.63%
```

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

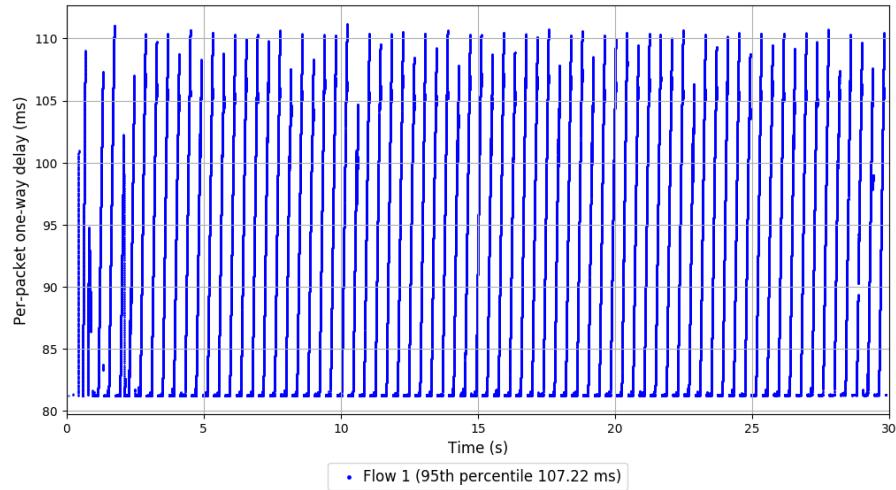
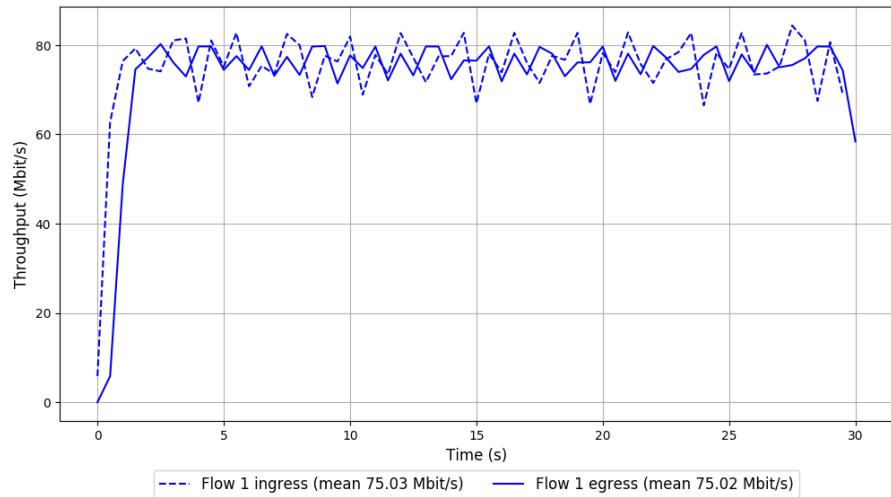


Run 4: Statistics of TaoVA-100x

```
Start at: 2018-10-26 07:18:48
End at: 2018-10-26 07:19:18
Local clock offset: -6.815 ms
Remote clock offset: 0.402 ms

# Below is generated by plot.py at 2018-10-26 08:05:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 75.02 Mbit/s
95th percentile per-packet one-way delay: 107.216 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 75.02 Mbit/s
95th percentile per-packet one-way delay: 107.216 ms
Loss rate: 0.57%
```

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

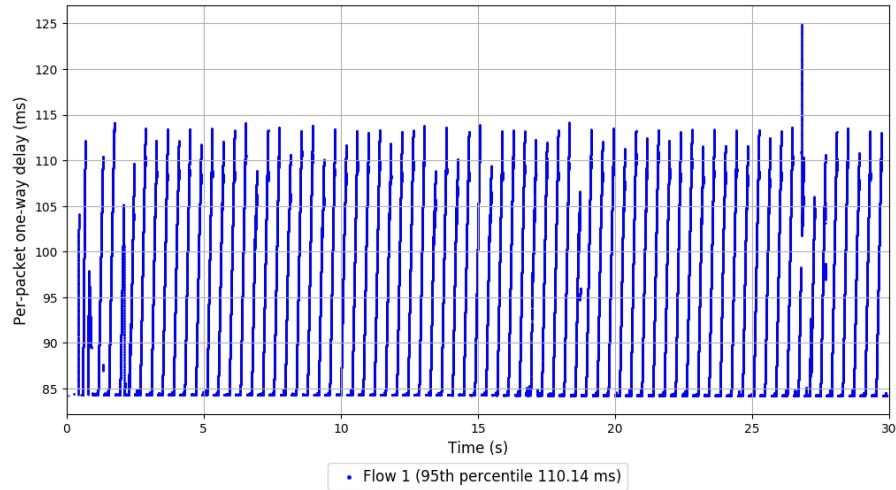
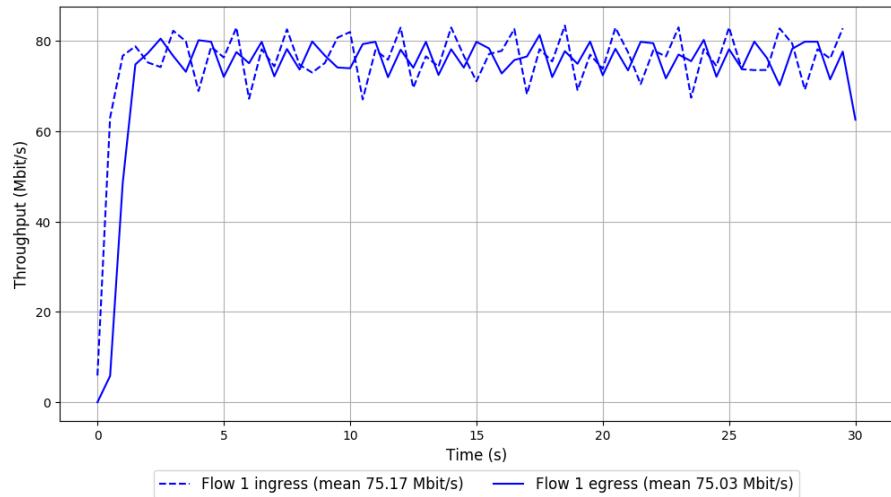


Run 5: Statistics of TaoVA-100x

```
Start at: 2018-10-26 07:40:11
End at: 2018-10-26 07:40:41
Local clock offset: -3.273 ms
Remote clock offset: -2.218 ms

# Below is generated by plot.py at 2018-10-26 08:05:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 75.03 Mbit/s
95th percentile per-packet one-way delay: 110.139 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 75.03 Mbit/s
95th percentile per-packet one-way delay: 110.139 ms
Loss rate: 0.77%
```

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

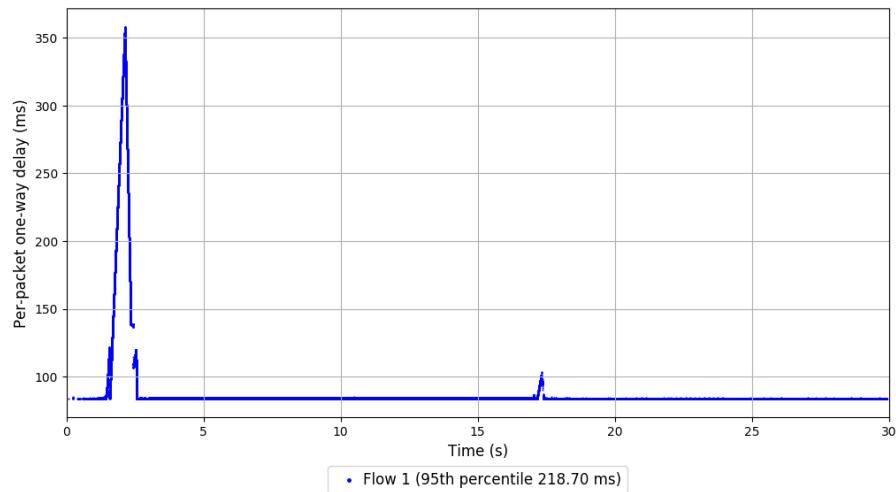
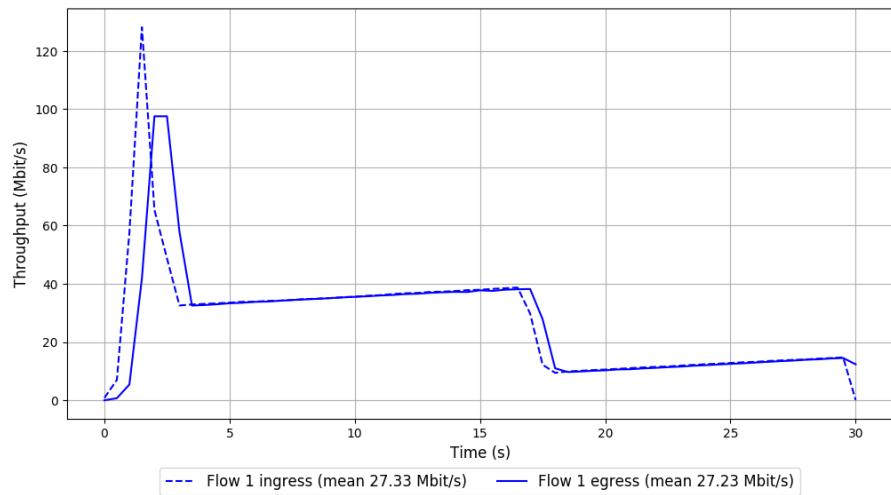


Run 1: Statistics of TCP Vegas

```
Start at: 2018-10-26 06:29:11
End at: 2018-10-26 06:29:41
Local clock offset: -1.608 ms
Remote clock offset: -6.33 ms

# Below is generated by plot.py at 2018-10-26 08:05:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 27.23 Mbit/s
95th percentile per-packet one-way delay: 218.700 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 27.23 Mbit/s
95th percentile per-packet one-way delay: 218.700 ms
Loss rate: 0.89%
```

Run 1: Report of TCP Vegas — Data Link

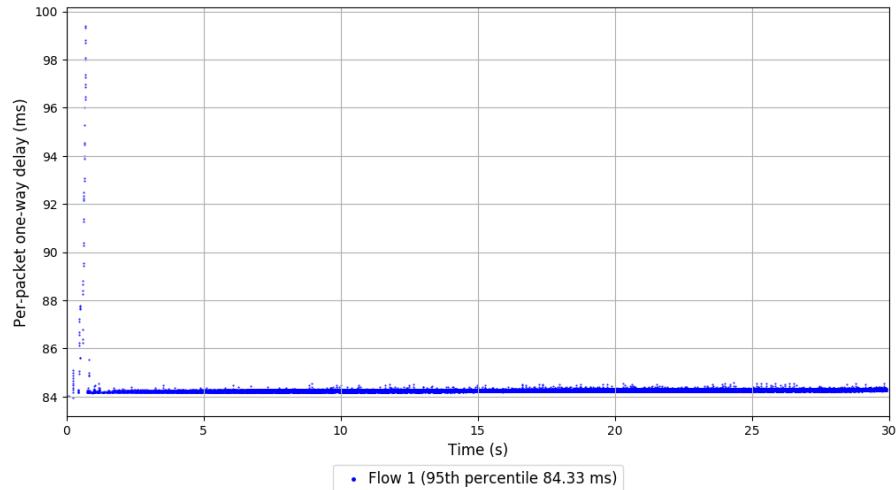
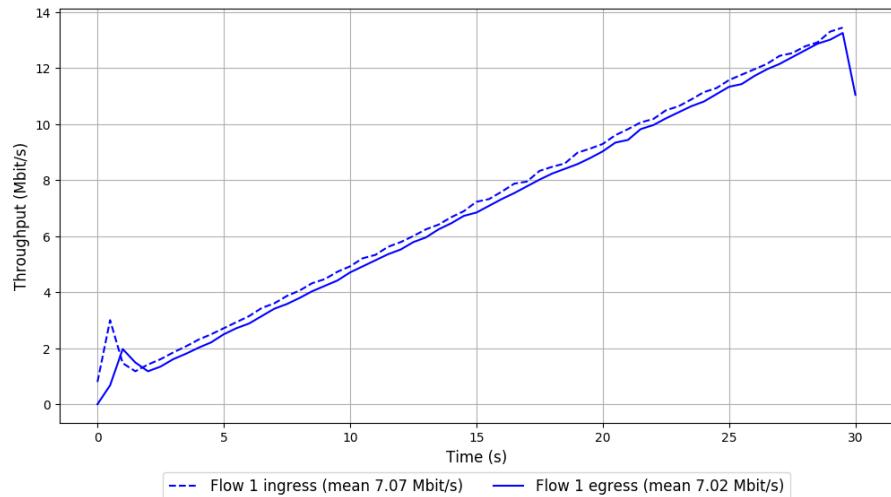


Run 2: Statistics of TCP Vegas

```
Start at: 2018-10-26 06:50:27
End at: 2018-10-26 06:50:57
Local clock offset: -6.135 ms
Remote clock offset: -5.057 ms

# Below is generated by plot.py at 2018-10-26 08:05:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.02 Mbit/s
95th percentile per-packet one-way delay: 84.328 ms
Loss rate: 1.26%
-- Flow 1:
Average throughput: 7.02 Mbit/s
95th percentile per-packet one-way delay: 84.328 ms
Loss rate: 1.26%
```

Run 2: Report of TCP Vegas — Data Link

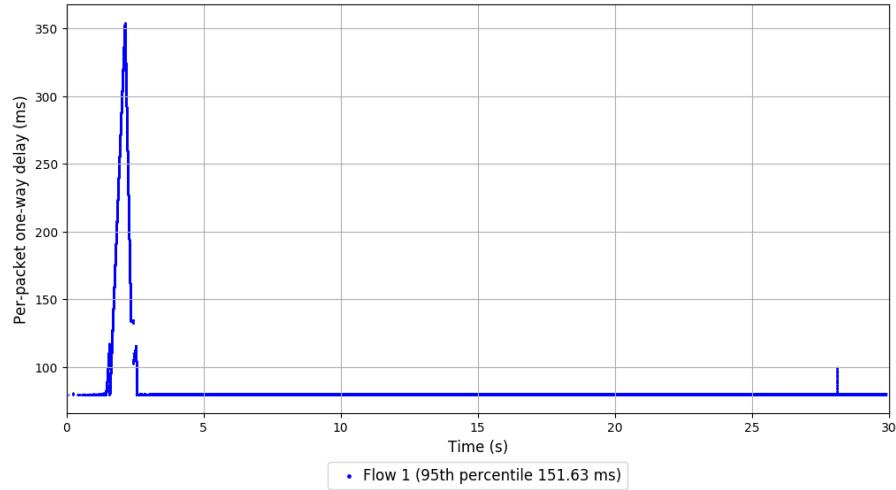
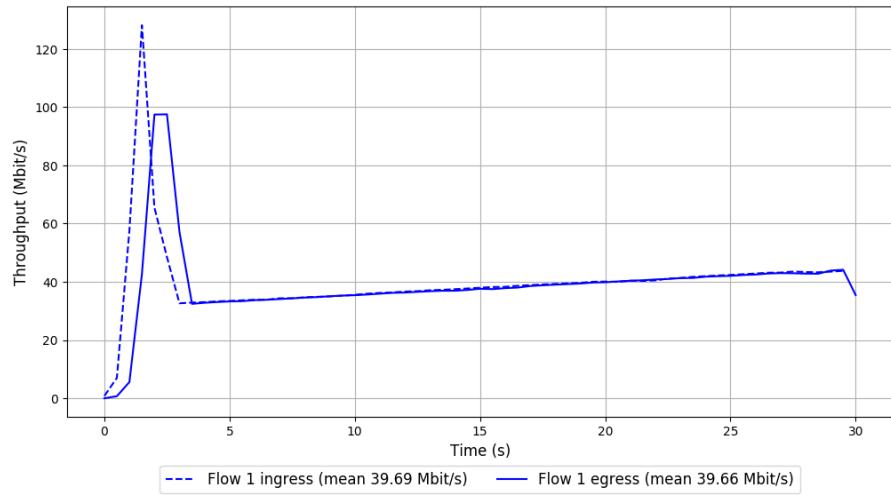


Run 3: Statistics of TCP Vegas

```
Start at: 2018-10-26 07:11:44
End at: 2018-10-26 07:12:14
Local clock offset: -6.742 ms
Remote clock offset: 0.474 ms

# Below is generated by plot.py at 2018-10-26 08:05:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 39.66 Mbit/s
95th percentile per-packet one-way delay: 151.630 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 39.66 Mbit/s
95th percentile per-packet one-way delay: 151.630 ms
Loss rate: 0.64%
```

Run 3: Report of TCP Vegas — Data Link

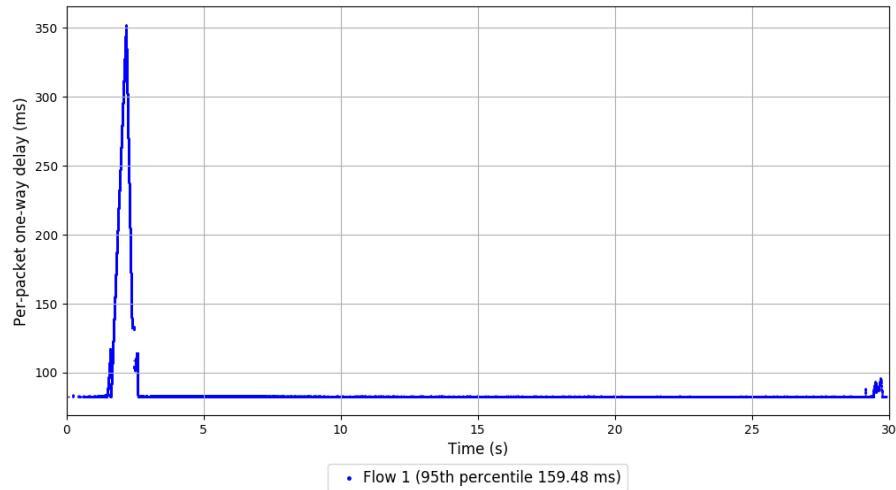
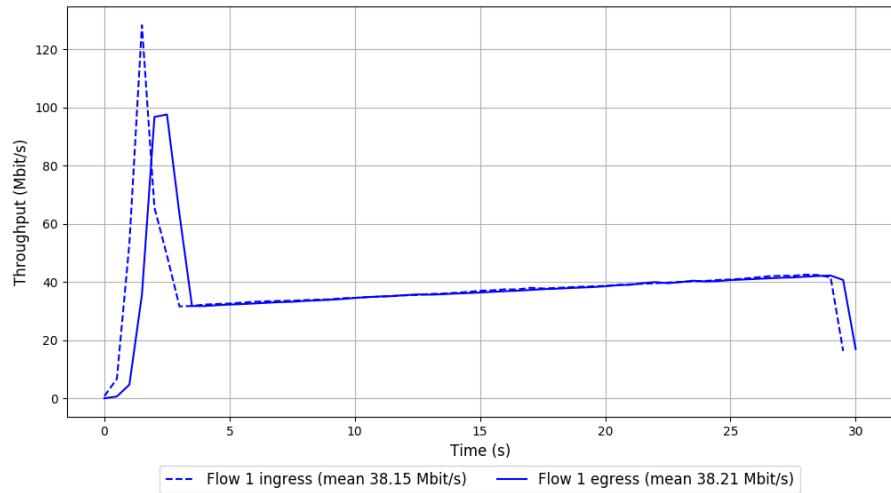


Run 4: Statistics of TCP Vegas

```
Start at: 2018-10-26 07:32:58
End at: 2018-10-26 07:33:28
Local clock offset: -6.377 ms
Remote clock offset: -2.107 ms

# Below is generated by plot.py at 2018-10-26 08:05:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 38.21 Mbit/s
95th percentile per-packet one-way delay: 159.476 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 38.21 Mbit/s
95th percentile per-packet one-way delay: 159.476 ms
Loss rate: 0.40%
```

Run 4: Report of TCP Vegas — Data Link

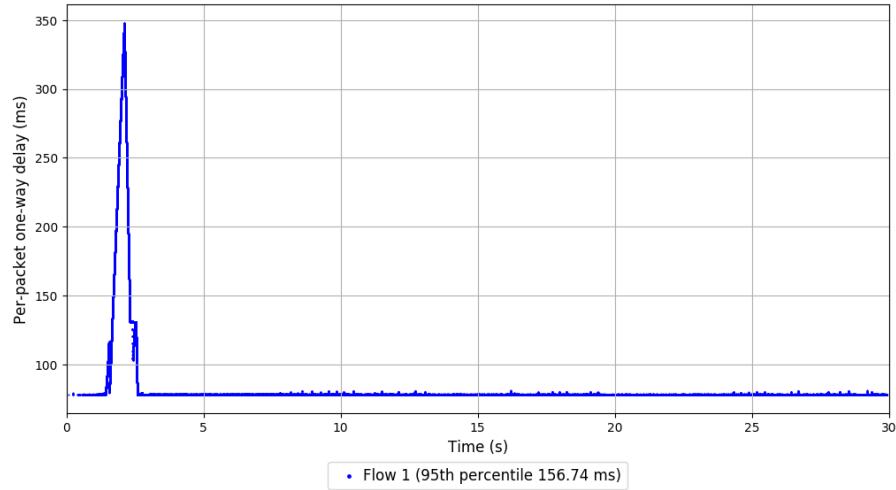
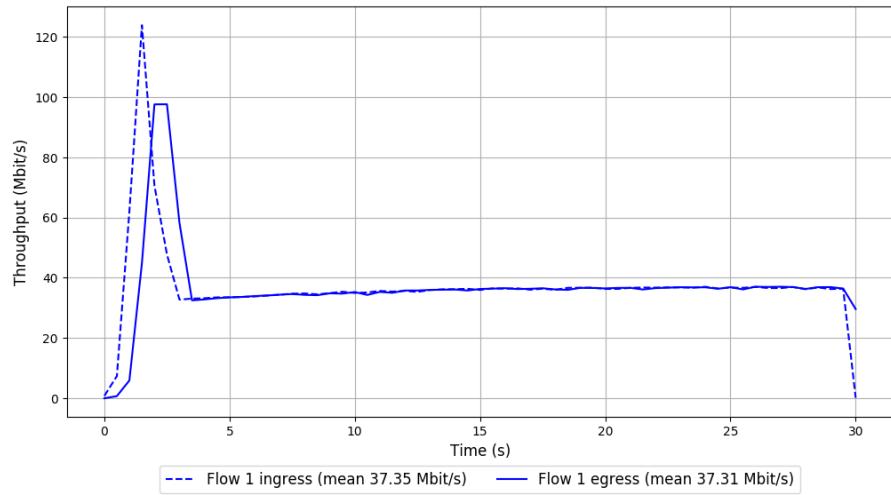


Run 5: Statistics of TCP Vegas

```
Start at: 2018-10-26 07:54:35
End at: 2018-10-26 07:55:05
Local clock offset: -0.889 ms
Remote clock offset: 2.342 ms

# Below is generated by plot.py at 2018-10-26 08:05:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 37.31 Mbit/s
95th percentile per-packet one-way delay: 156.739 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 37.31 Mbit/s
95th percentile per-packet one-way delay: 156.739 ms
Loss rate: 0.63%
```

Run 5: Report of TCP Vegas — Data Link

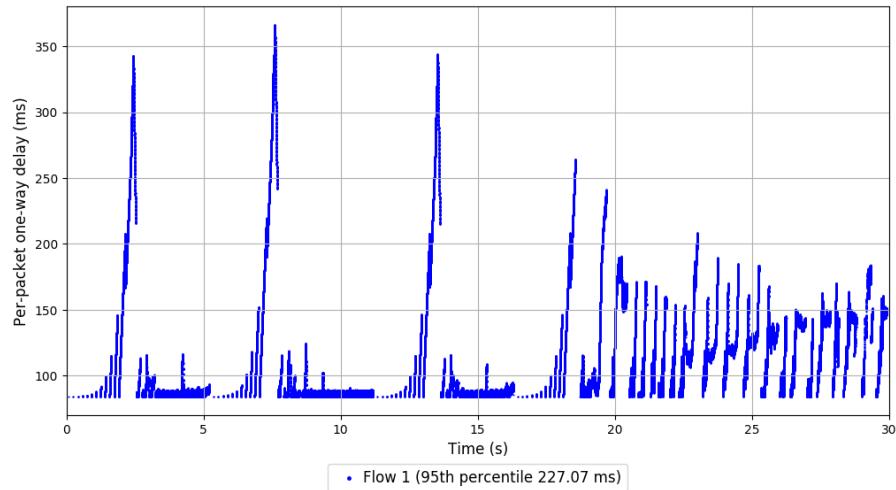
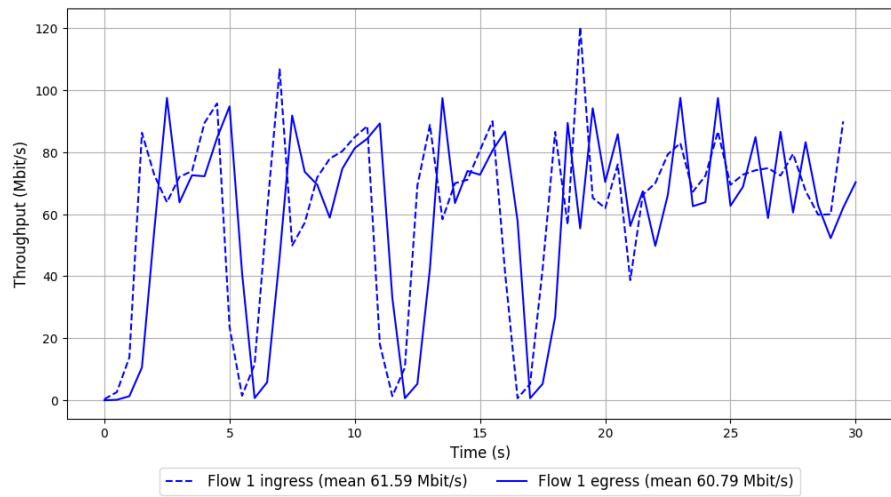


Run 1: Statistics of Verus

```
Start at: 2018-10-26 06:27:59
End at: 2018-10-26 06:28:29
Local clock offset: -1.795 ms
Remote clock offset: -6.73 ms

# Below is generated by plot.py at 2018-10-26 08:05:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 60.79 Mbit/s
95th percentile per-packet one-way delay: 227.073 ms
Loss rate: 1.57%
-- Flow 1:
Average throughput: 60.79 Mbit/s
95th percentile per-packet one-way delay: 227.073 ms
Loss rate: 1.57%
```

Run 1: Report of Verus — Data Link

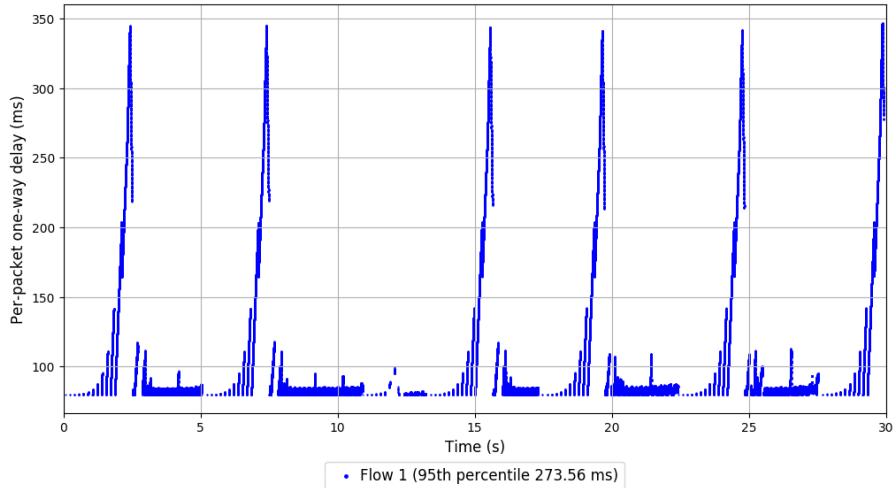
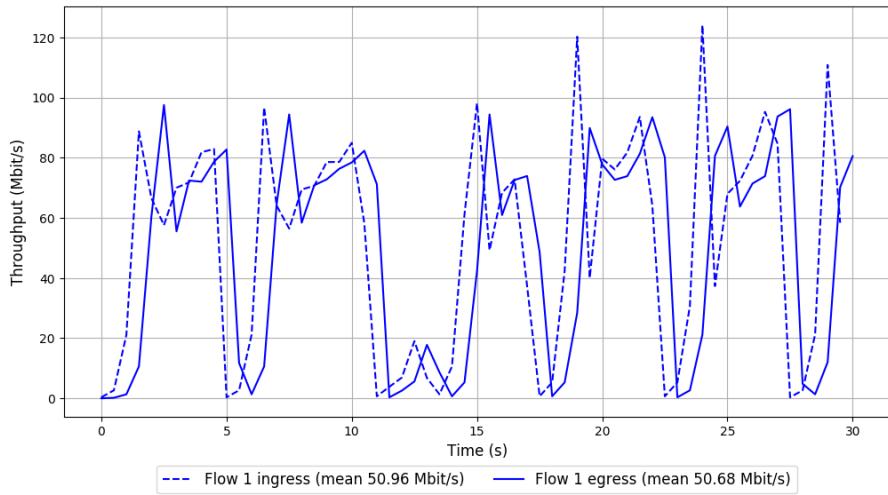


Run 2: Statistics of Verus

```
Start at: 2018-10-26 06:49:16
End at: 2018-10-26 06:49:46
Local clock offset: -6.014 ms
Remote clock offset: -1.938 ms

# Below is generated by plot.py at 2018-10-26 08:05:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 50.68 Mbit/s
95th percentile per-packet one-way delay: 273.564 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 50.68 Mbit/s
95th percentile per-packet one-way delay: 273.564 ms
Loss rate: 1.08%
```

Run 2: Report of Verus — Data Link

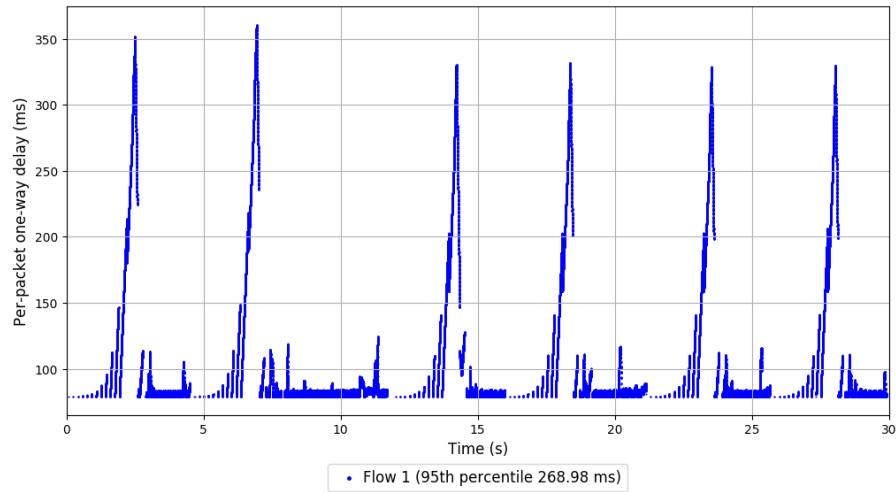
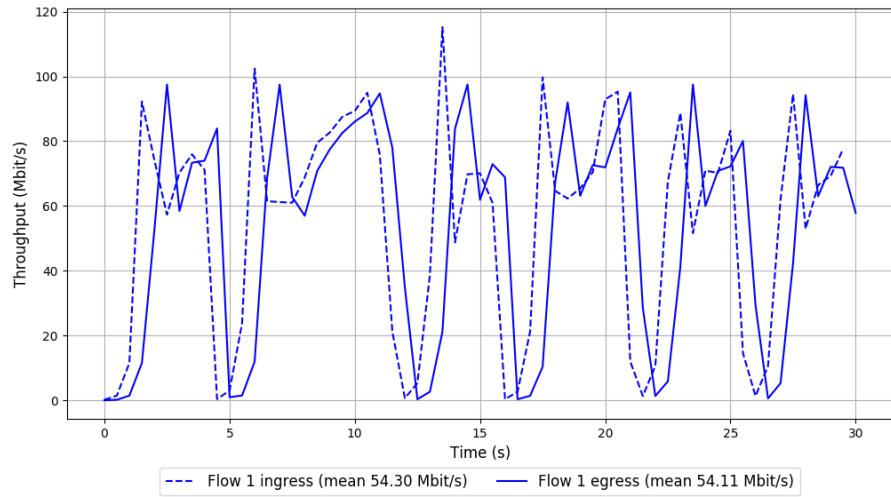


Run 3: Statistics of Verus

```
Start at: 2018-10-26 07:10:33
End at: 2018-10-26 07:11:03
Local clock offset: -6.852 ms
Remote clock offset: 0.103 ms

# Below is generated by plot.py at 2018-10-26 08:05:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 54.11 Mbit/s
95th percentile per-packet one-way delay: 268.977 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 54.11 Mbit/s
95th percentile per-packet one-way delay: 268.977 ms
Loss rate: 0.90%
```

Run 3: Report of Verus — Data Link

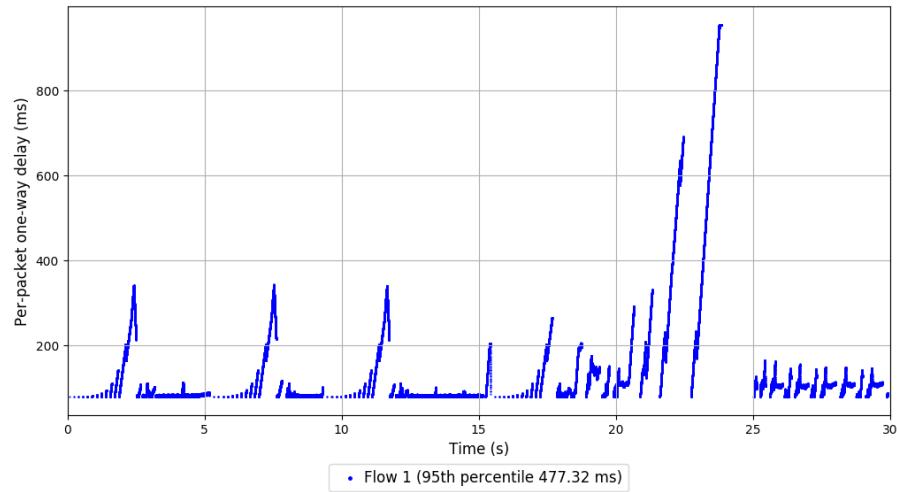
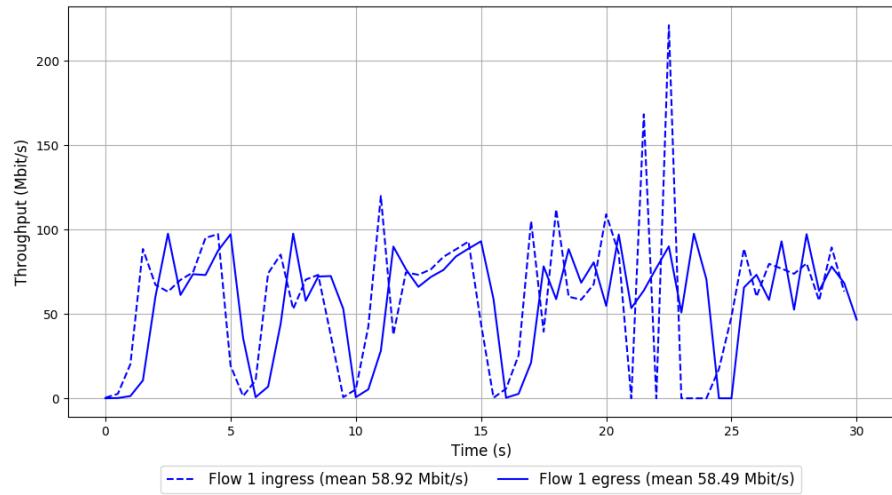


Run 4: Statistics of Verus

```
Start at: 2018-10-26 07:31:47
End at: 2018-10-26 07:32:17
Local clock offset: -7.11 ms
Remote clock offset: 1.329 ms

# Below is generated by plot.py at 2018-10-26 08:05:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 58.49 Mbit/s
95th percentile per-packet one-way delay: 477.318 ms
Loss rate: 1.26%
-- Flow 1:
Average throughput: 58.49 Mbit/s
95th percentile per-packet one-way delay: 477.318 ms
Loss rate: 1.26%
```

Run 4: Report of Verus — Data Link

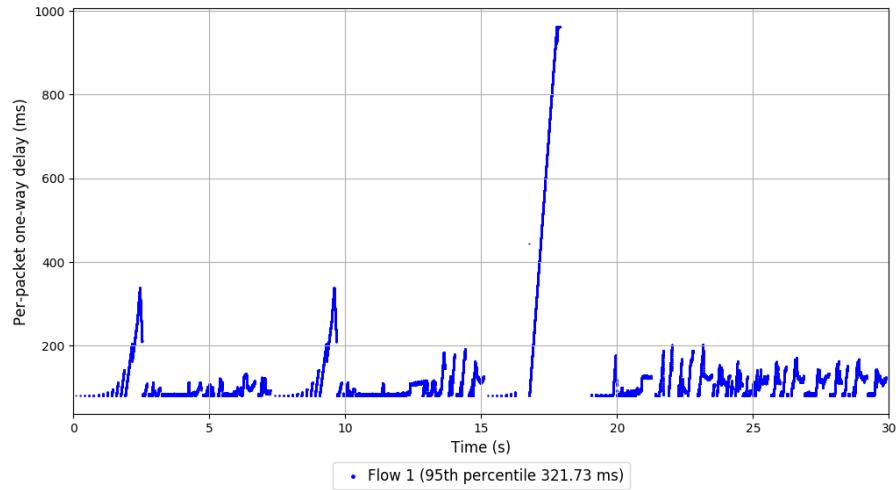
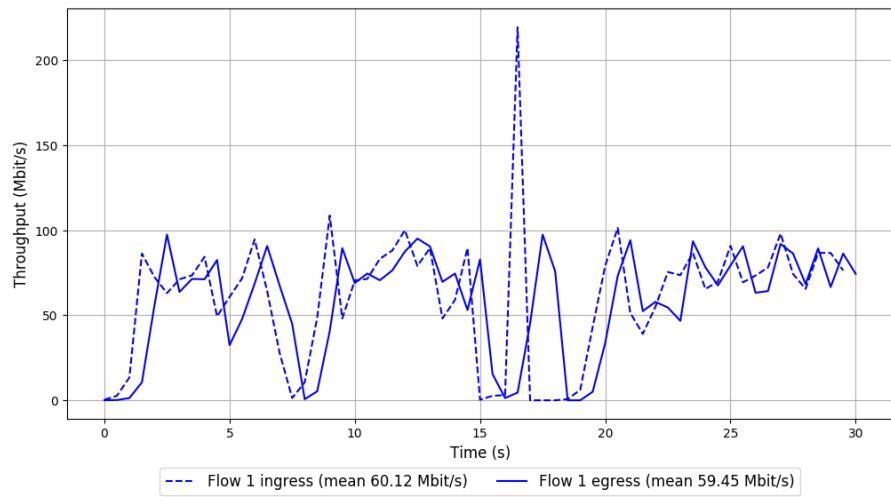


Run 5: Statistics of Verus

```
Start at: 2018-10-26 07:53:23
End at: 2018-10-26 07:53:53
Local clock offset: -0.937 ms
Remote clock offset: 2.33 ms

# Below is generated by plot.py at 2018-10-26 08:05:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 59.45 Mbit/s
95th percentile per-packet one-way delay: 321.731 ms
Loss rate: 1.66%
-- Flow 1:
Average throughput: 59.45 Mbit/s
95th percentile per-packet one-way delay: 321.731 ms
Loss rate: 1.66%
```

Run 5: Report of Verus — Data Link

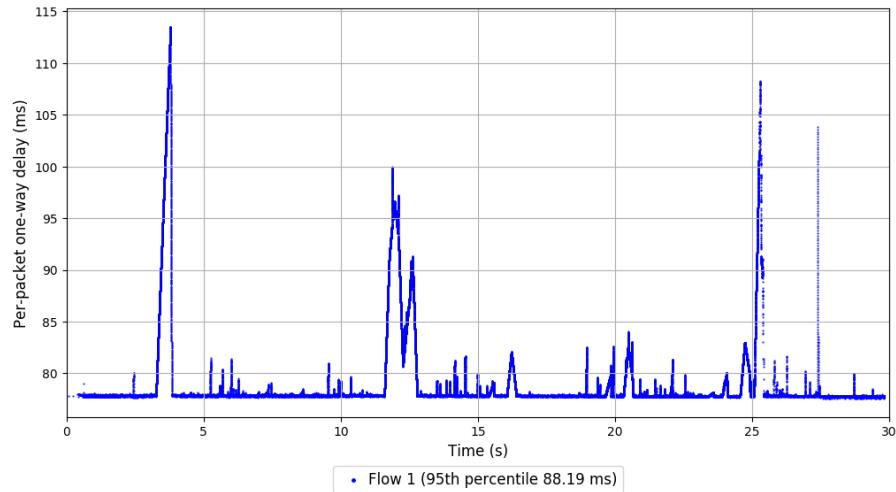
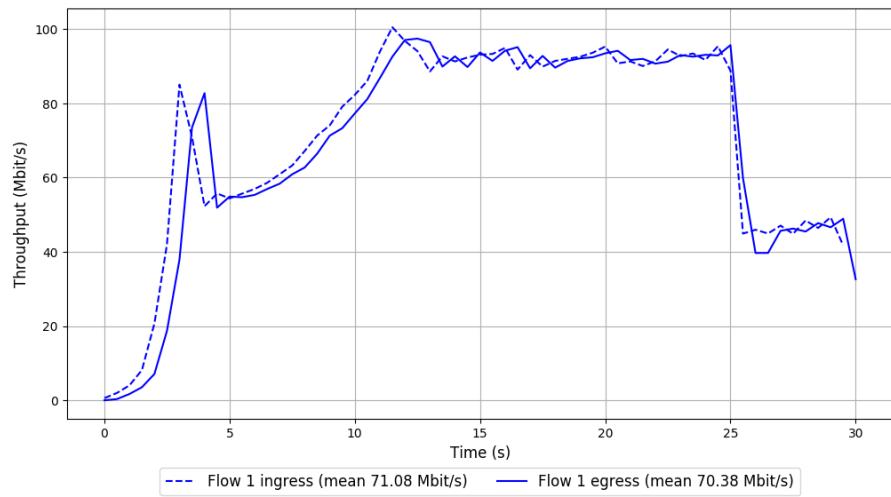


```
Run 1: Statistics of PCC-Vivace
```

```
Start at: 2018-10-26 06:09:03
End at: 2018-10-26 06:09:33
Local clock offset: -4.54 ms
Remote clock offset: -2.391 ms

# Below is generated by plot.py at 2018-10-26 08:06:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 70.38 Mbit/s
95th percentile per-packet one-way delay: 88.190 ms
Loss rate: 1.52%
-- Flow 1:
Average throughput: 70.38 Mbit/s
95th percentile per-packet one-way delay: 88.190 ms
Loss rate: 1.52%
```

Run 1: Report of PCC-Vivace — Data Link

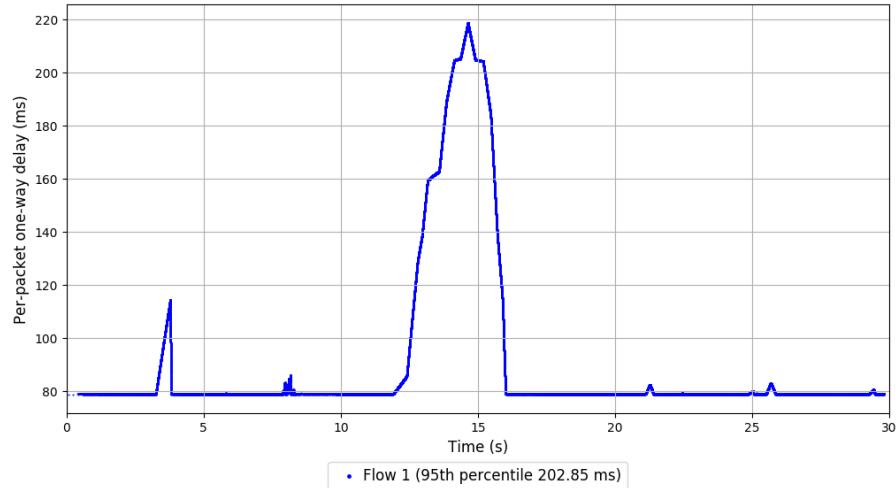
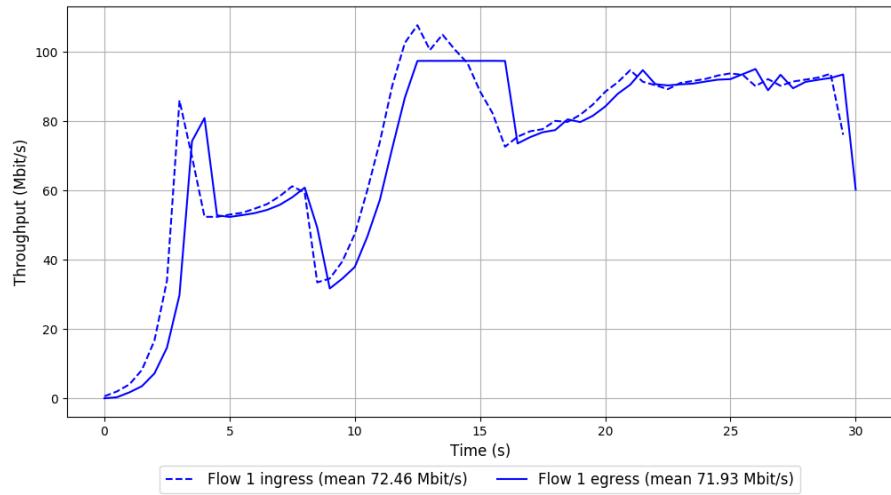


Run 2: Statistics of PCC-Vivace

```
Start at: 2018-10-26 06:30:20
End at: 2018-10-26 06:30:50
Local clock offset: -1.531 ms
Remote clock offset: -3.049 ms

# Below is generated by plot.py at 2018-10-26 08:06:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 71.93 Mbit/s
95th percentile per-packet one-way delay: 202.850 ms
Loss rate: 1.27%
-- Flow 1:
Average throughput: 71.93 Mbit/s
95th percentile per-packet one-way delay: 202.850 ms
Loss rate: 1.27%
```

Run 2: Report of PCC-Vivace — Data Link

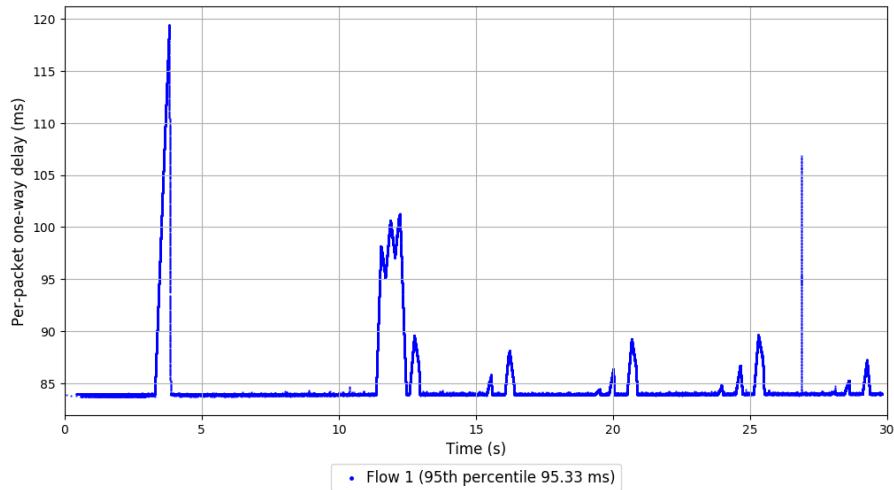
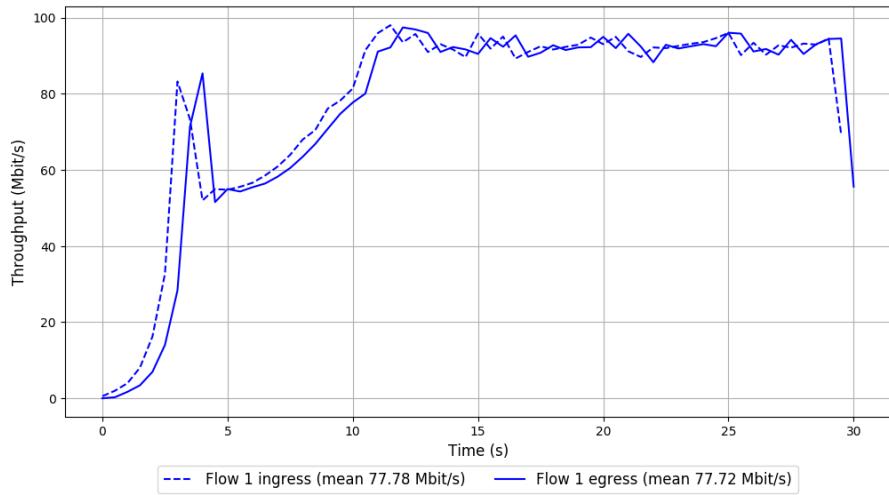


Run 3: Statistics of PCC-Vivace

```
Start at: 2018-10-26 06:51:35
End at: 2018-10-26 06:52:05
Local clock offset: -6.213 ms
Remote clock offset: -4.709 ms

# Below is generated by plot.py at 2018-10-26 08:06:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.72 Mbit/s
95th percentile per-packet one-way delay: 95.327 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 77.72 Mbit/s
95th percentile per-packet one-way delay: 95.327 ms
Loss rate: 0.64%
```

Run 3: Report of PCC-Vivace — Data Link

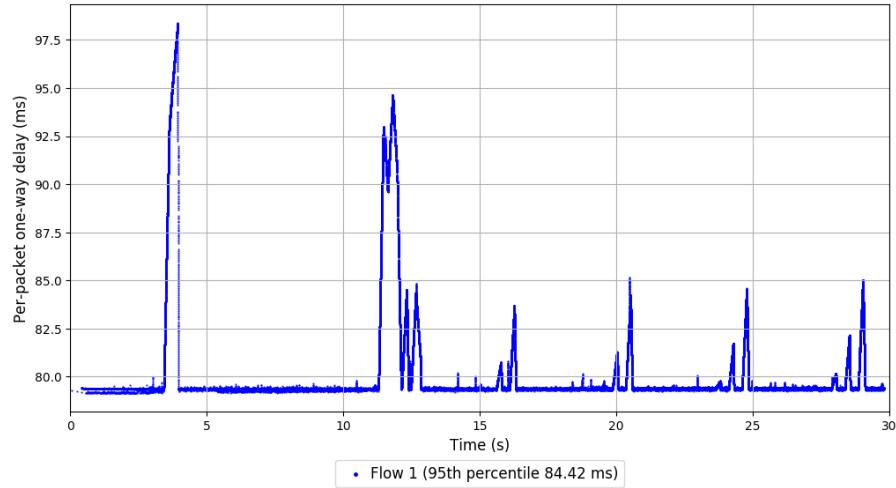
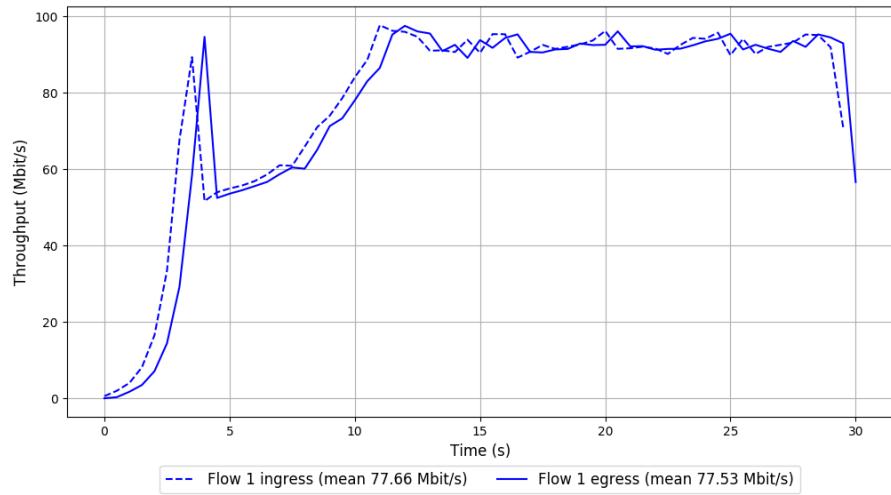


Run 4: Statistics of PCC-Vivace

```
Start at: 2018-10-26 07:12:54
End at: 2018-10-26 07:13:24
Local clock offset: -6.744 ms
Remote clock offset: 0.106 ms

# Below is generated by plot.py at 2018-10-26 08:06:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.53 Mbit/s
95th percentile per-packet one-way delay: 84.421 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 77.53 Mbit/s
95th percentile per-packet one-way delay: 84.421 ms
Loss rate: 0.71%
```

Run 4: Report of PCC-Vivace — Data Link

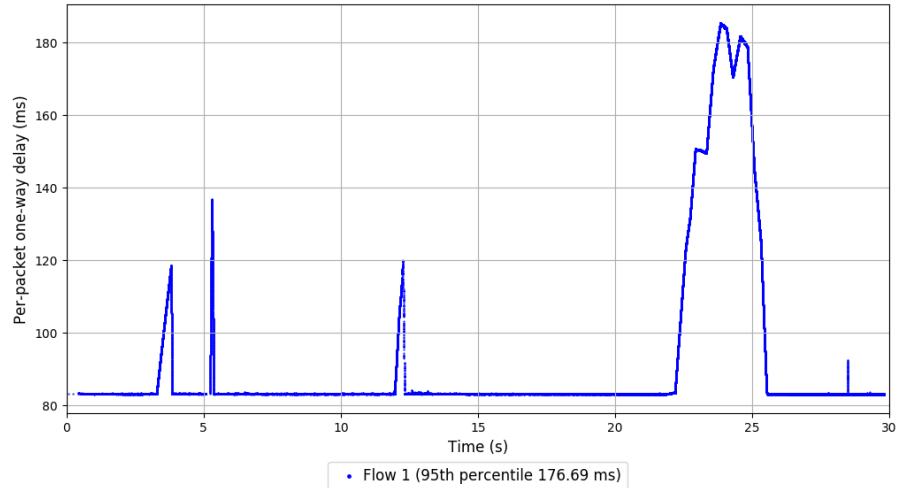
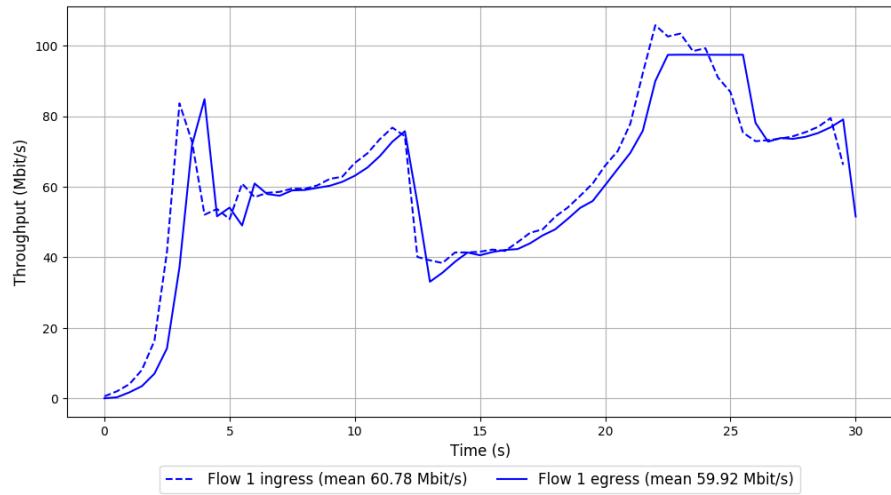


Run 5: Statistics of PCC-Vivace

```
Start at: 2018-10-26 07:34:16
End at: 2018-10-26 07:34:46
Local clock offset: -5.579 ms
Remote clock offset: -2.099 ms

# Below is generated by plot.py at 2018-10-26 08:06:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 59.92 Mbit/s
95th percentile per-packet one-way delay: 176.691 ms
Loss rate: 1.96%
-- Flow 1:
Average throughput: 59.92 Mbit/s
95th percentile per-packet one-way delay: 176.691 ms
Loss rate: 1.96%
```

Run 5: Report of PCC-Vivace — Data Link

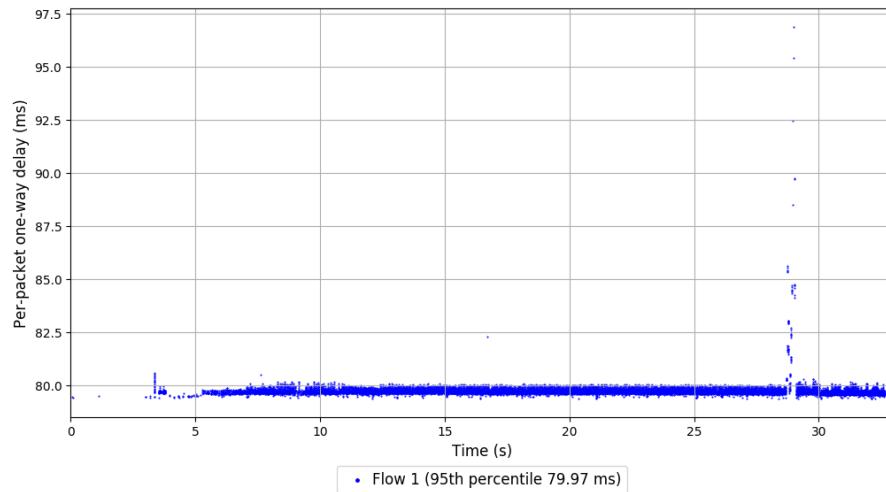
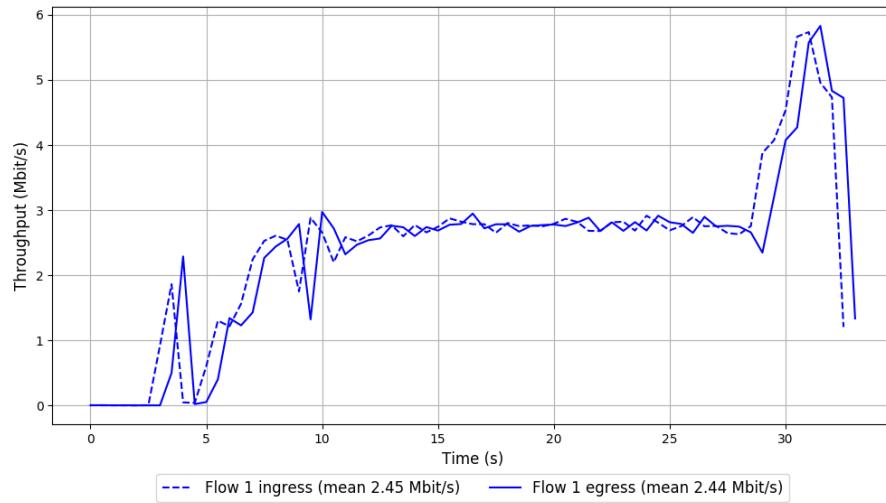


```
Run 1: Statistics of WebRTC media

Start at: 2018-10-26 06:21:02
End at: 2018-10-26 06:21:32
Local clock offset: -2.27 ms
Remote clock offset: -3.27 ms

# Below is generated by plot.py at 2018-10-26 08:06:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.44 Mbit/s
95th percentile per-packet one-way delay: 79.972 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 2.44 Mbit/s
95th percentile per-packet one-way delay: 79.972 ms
Loss rate: 1.05%
```

Run 1: Report of WebRTC media — Data Link

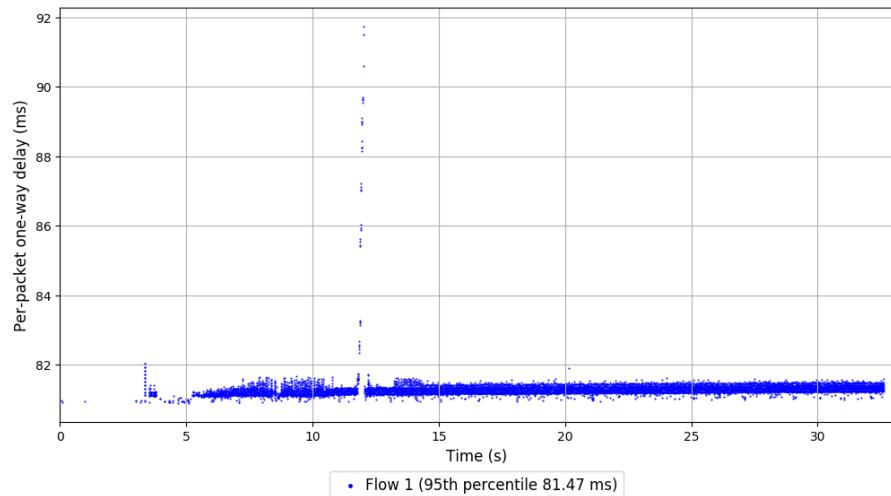
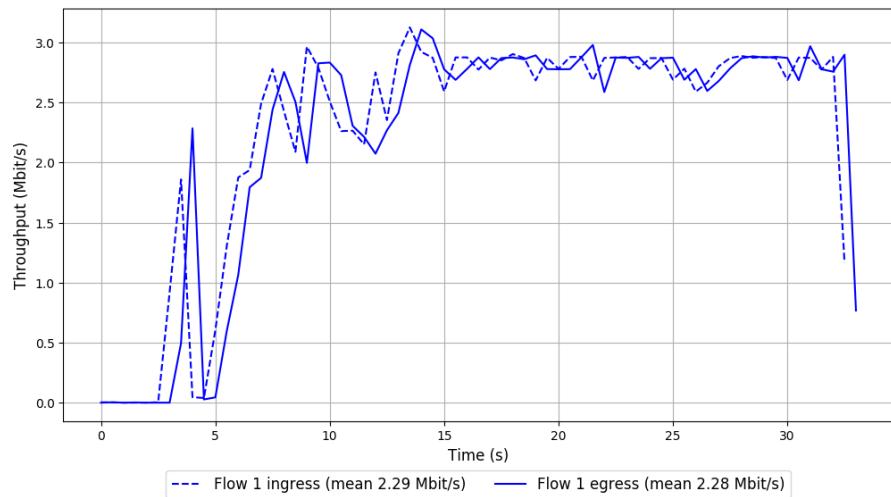


Run 2: Statistics of WebRTC media

```
Start at: 2018-10-26 06:42:19
End at: 2018-10-26 06:42:49
Local clock offset: -5.025 ms
Remote clock offset: -1.969 ms

# Below is generated by plot.py at 2018-10-26 08:06:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 81.474 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 81.474 ms
Loss rate: 0.92%
```

Run 2: Report of WebRTC media — Data Link

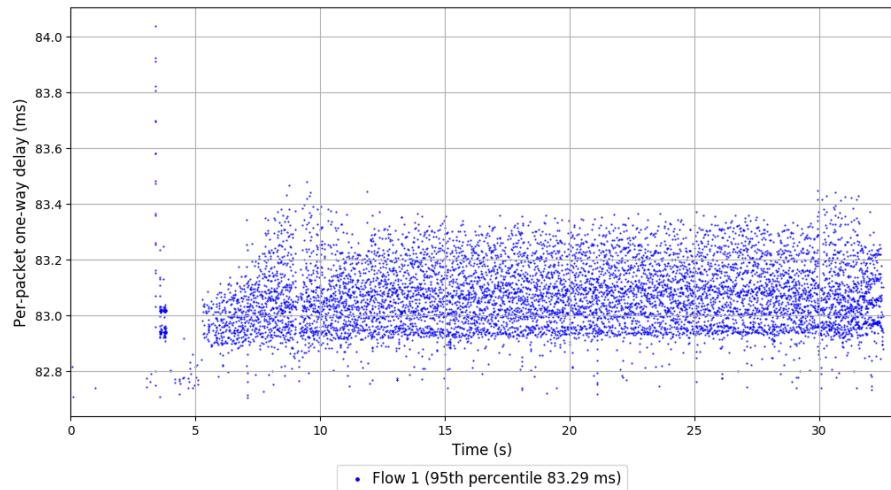
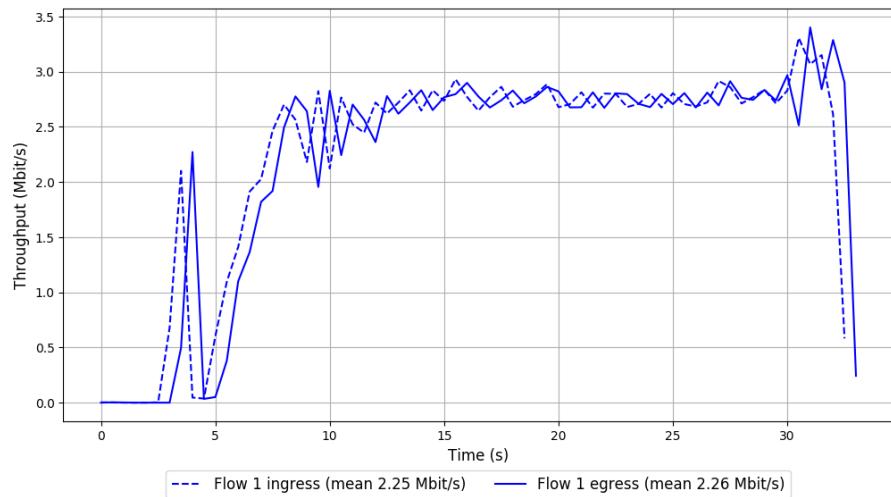


Run 3: Statistics of WebRTC media

```
Start at: 2018-10-26 07:03:37
End at: 2018-10-26 07:04:07
Local clock offset: -6.815 ms
Remote clock offset: -3.873 ms

# Below is generated by plot.py at 2018-10-26 08:06:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 83.287 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 83.287 ms
Loss rate: 0.39%
```

Run 3: Report of WebRTC media — Data Link

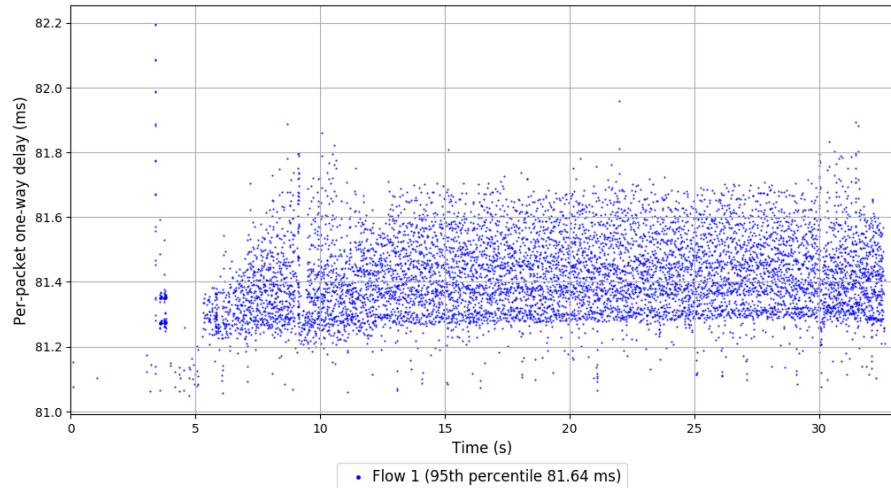
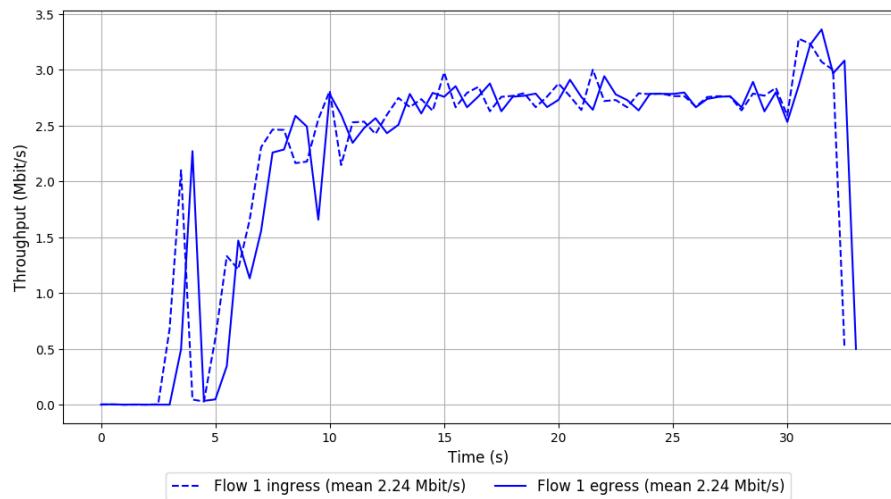


Run 4: Statistics of WebRTC media

```
Start at: 2018-10-26 07:24:52
End at: 2018-10-26 07:25:22
Local clock offset: -6.978 ms
Remote clock offset: 0.759 ms

# Below is generated by plot.py at 2018-10-26 08:06:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 81.640 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 81.640 ms
Loss rate: 0.30%
```

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

```
Start at: 2018-10-26 07:46:17
End at: 2018-10-26 07:46:47
Local clock offset: -1.871 ms
Remote clock offset: -2.16 ms

# Below is generated by plot.py at 2018-10-26 08:06:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.16 Mbit/s
95th percentile per-packet one-way delay: 84.714 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 3.16 Mbit/s
95th percentile per-packet one-way delay: 84.714 ms
Loss rate: 0.87%
```

Run 5: Report of WebRTC media — Data Link

