

Pantheon Report

Generated at 2018-10-10 02:18:00 (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:

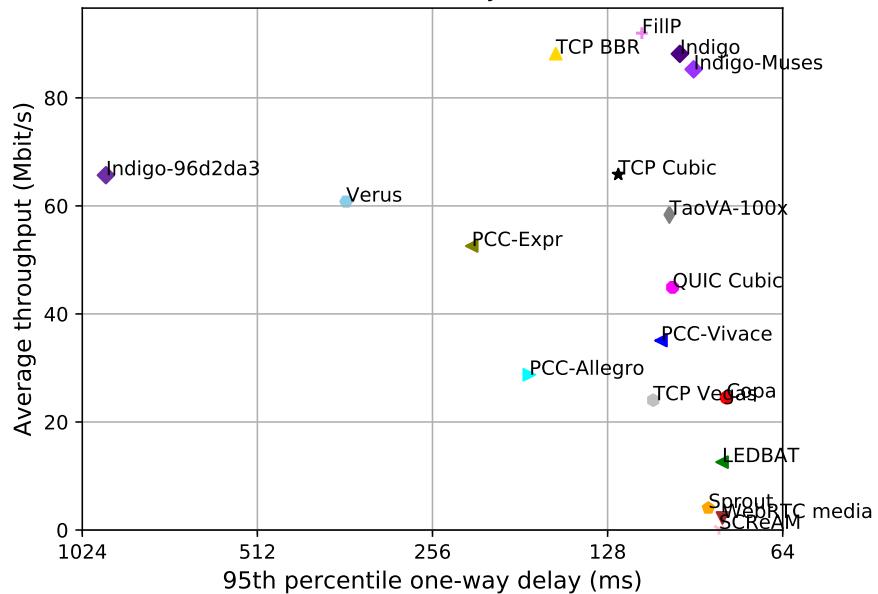
```
Linux 4.15.0-1023-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

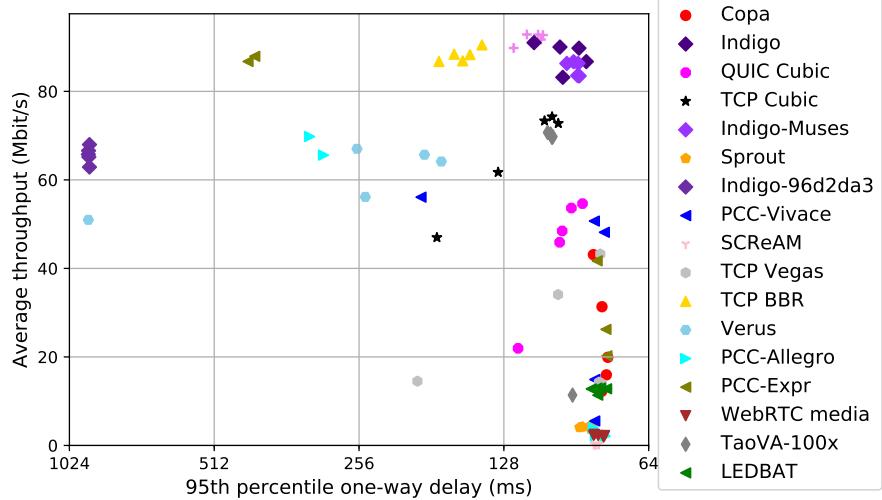
```
branch: muses @ 2e19c0464530faa92c63f8217c9971438a26a3be
third_party/fillp @ 5332fc9127c63565e13f4933b336c02d1aabdac6
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
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)



test from Colombia to AWS Brazil 2, 5 runs of 30s each per scheme



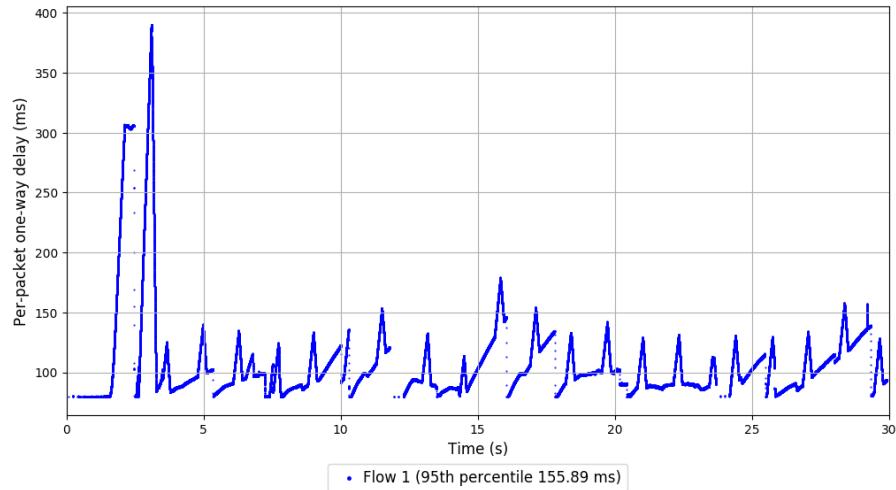
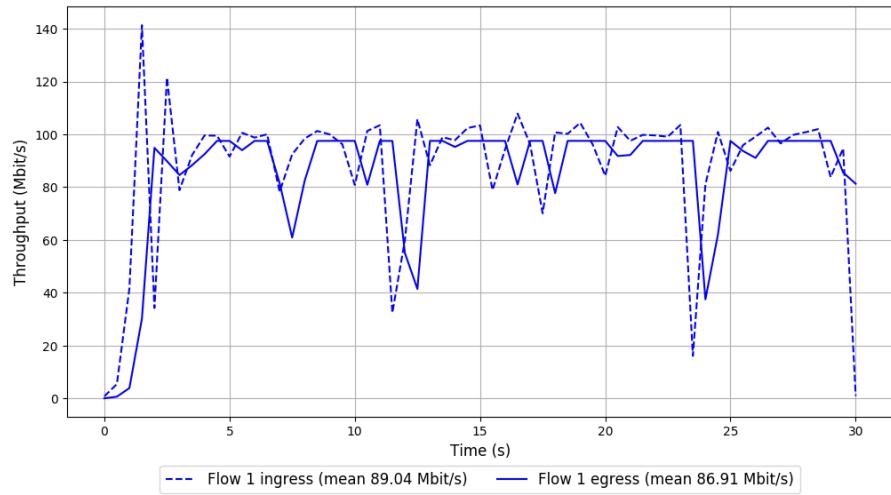
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	88.17	157.12	2.59
Copa	5	24.51	79.94	0.50
TCP Cubic	5	65.81	122.71	0.68
FillP	5	91.98	111.76	1.40
Indigo	5	88.14	96.16	1.08
Indigo-96d2da3	5	65.68	932.63	5.52
LEDBAT	5	12.58	81.37	0.92
Indigo-Muses	5	85.28	91.06	1.19
PCC-Allegro	5	28.74	174.52	0.66
PCC-Expr	5	52.57	219.18	1.34
QUIC Cubic	5	44.92	98.98	1.25
SCReAM	5	0.22	82.37	0.59
Sprout	5	4.09	85.90	0.82
TaoVA-100x	5	58.36	100.24	0.95
TCP Vegas	5	24.03	106.88	0.56
Verus	5	60.80	360.39	2.07
PCC-Vivace	5	35.08	103.63	1.15
WebRTC media	5	2.23	81.24	0.50

Run 1: Statistics of TCP BBR

```
Start at: 2018-10-10 00:30:04
End at: 2018-10-10 00:30:34
Local clock offset: -2.347 ms
Remote clock offset: -5.628 ms

# Below is generated by plot.py at 2018-10-10 02:11:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.91 Mbit/s
95th percentile per-packet one-way delay: 155.890 ms
Loss rate: 2.94%
-- Flow 1:
Average throughput: 86.91 Mbit/s
95th percentile per-packet one-way delay: 155.890 ms
Loss rate: 2.94%
```

Run 1: Report of TCP BBR — Data Link

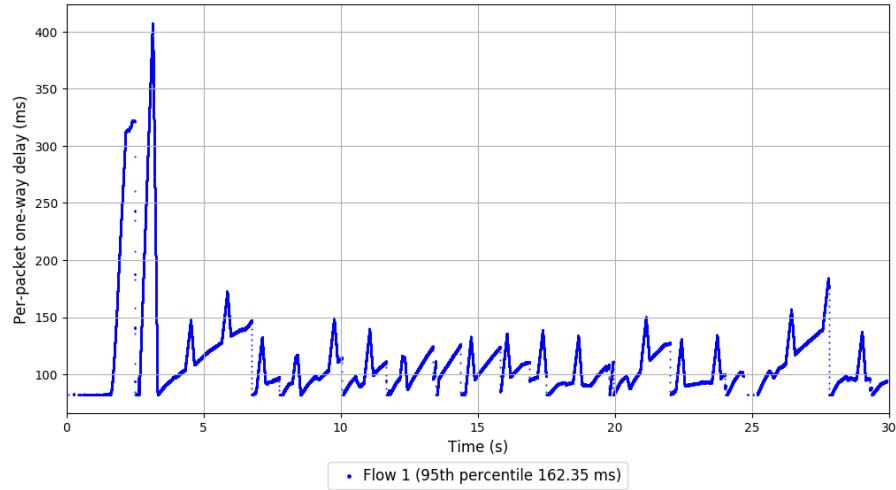
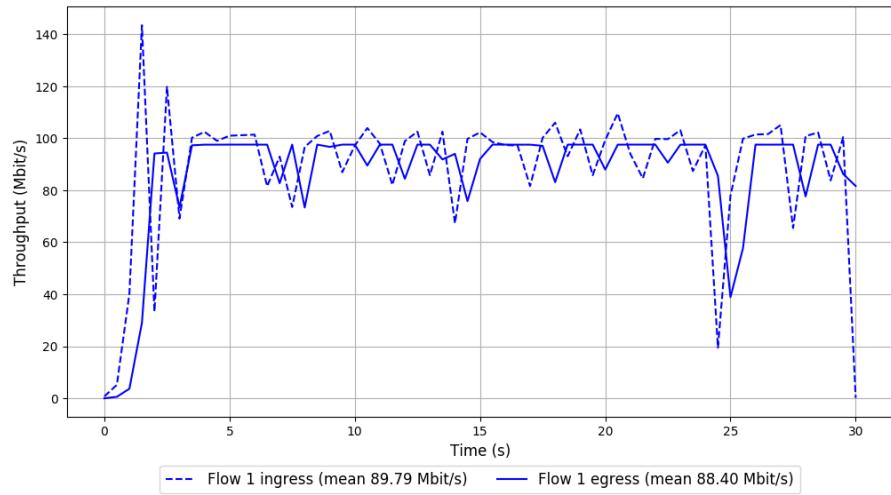


Run 2: Statistics of TCP BBR

```
Start at: 2018-10-10 00:51:32
End at: 2018-10-10 00:52:02
Local clock offset: -9.145 ms
Remote clock offset: -7.998 ms

# Below is generated by plot.py at 2018-10-10 02:11:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.40 Mbit/s
95th percentile per-packet one-way delay: 162.349 ms
Loss rate: 2.09%
-- Flow 1:
Average throughput: 88.40 Mbit/s
95th percentile per-packet one-way delay: 162.349 ms
Loss rate: 2.09%
```

Run 2: Report of TCP BBR — Data Link

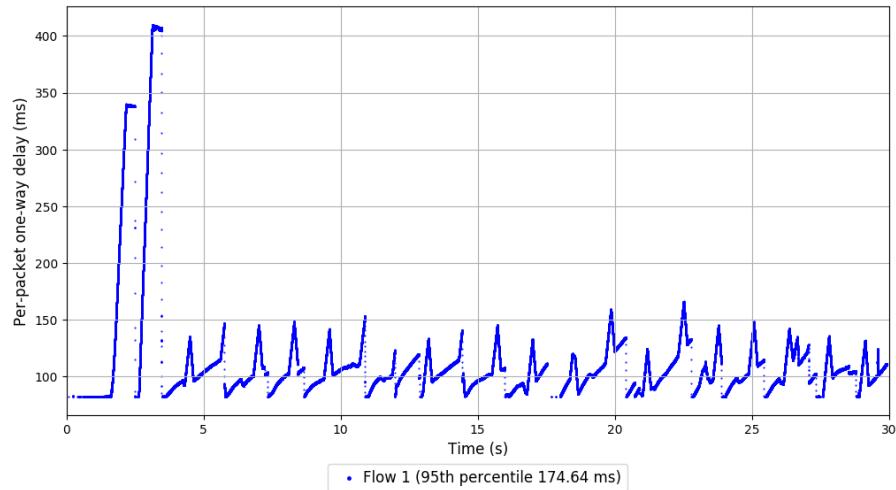
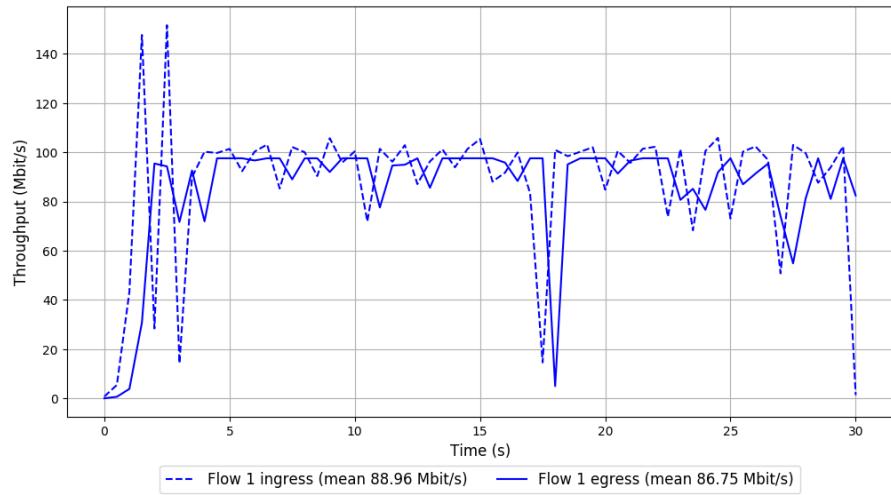


Run 3: Statistics of TCP BBR

```
Start at: 2018-10-10 01:12:44
End at: 2018-10-10 01:13:14
Local clock offset: -3.633 ms
Remote clock offset: -7.516 ms

# Below is generated by plot.py at 2018-10-10 02:11:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.75 Mbit/s
95th percentile per-packet one-way delay: 174.643 ms
Loss rate: 3.02%
-- Flow 1:
Average throughput: 86.75 Mbit/s
95th percentile per-packet one-way delay: 174.643 ms
Loss rate: 3.02%
```

Run 3: Report of TCP BBR — Data Link

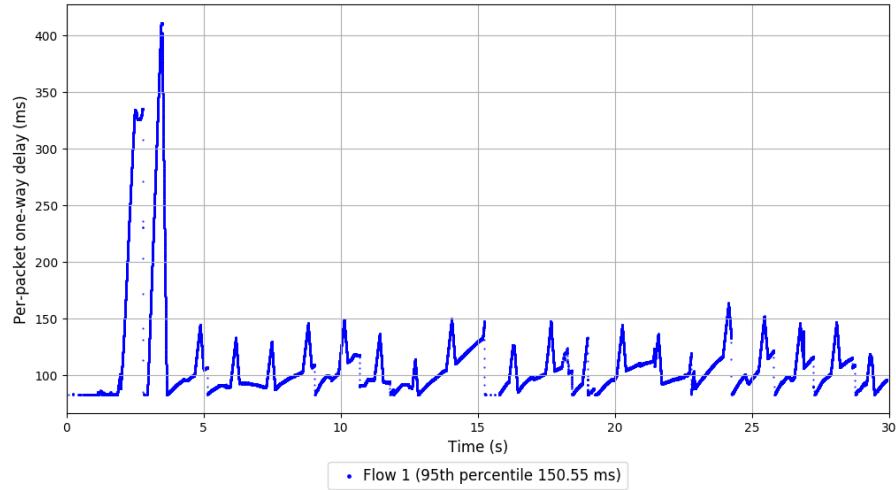
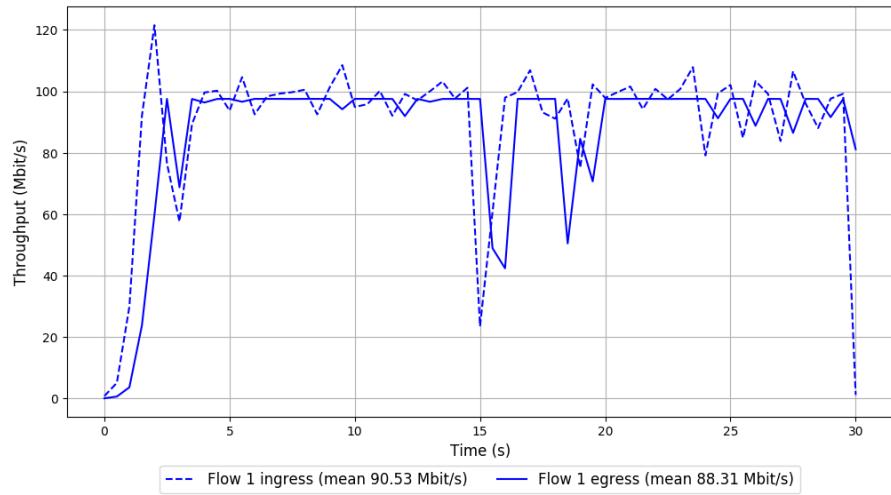


Run 4: Statistics of TCP BBR

```
Start at: 2018-10-10 01:34:09
End at: 2018-10-10 01:34:39
Local clock offset: -6.125 ms
Remote clock offset: -7.399 ms

# Below is generated by plot.py at 2018-10-10 02:11:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.31 Mbit/s
95th percentile per-packet one-way delay: 150.553 ms
Loss rate: 3.02%
-- Flow 1:
Average throughput: 88.31 Mbit/s
95th percentile per-packet one-way delay: 150.553 ms
Loss rate: 3.02%
```

Run 4: Report of TCP BBR — Data Link

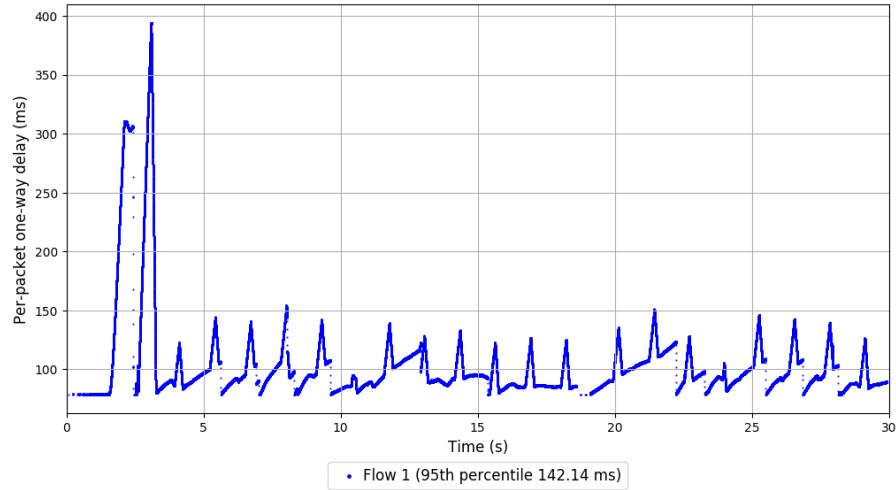
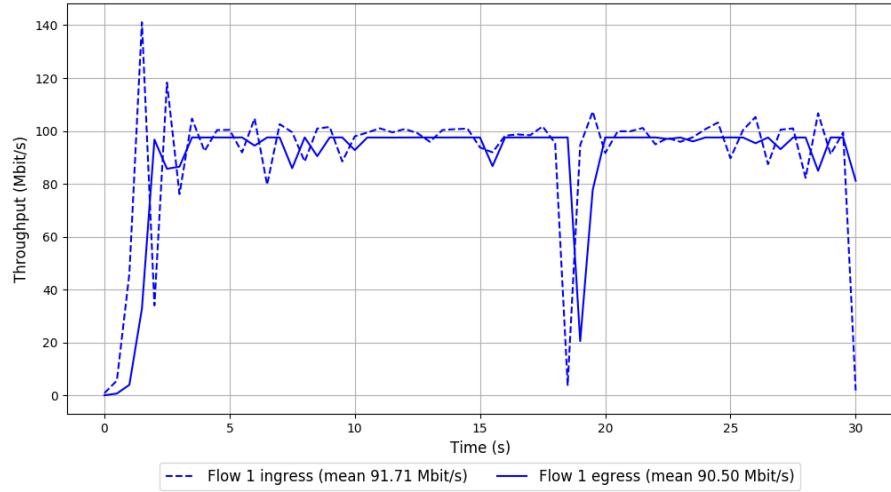


Run 5: Statistics of TCP BBR

```
Start at: 2018-10-10 01:55:34
End at: 2018-10-10 01:56:04
Local clock offset: -7.986 ms
Remote clock offset: -3.983 ms

# Below is generated by plot.py at 2018-10-10 02:11:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 90.50 Mbit/s
95th percentile per-packet one-way delay: 142.143 ms
Loss rate: 1.88%
-- Flow 1:
Average throughput: 90.50 Mbit/s
95th percentile per-packet one-way delay: 142.143 ms
Loss rate: 1.88%
```

Run 5: Report of TCP BBR — Data Link

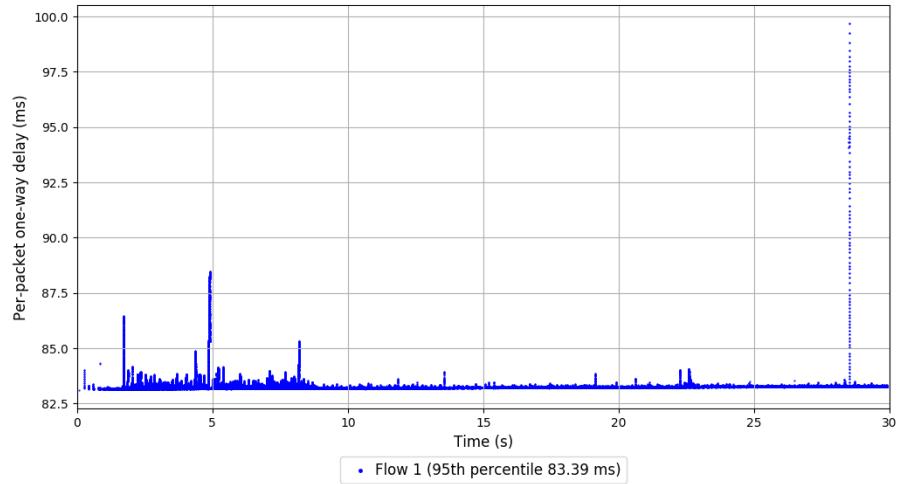
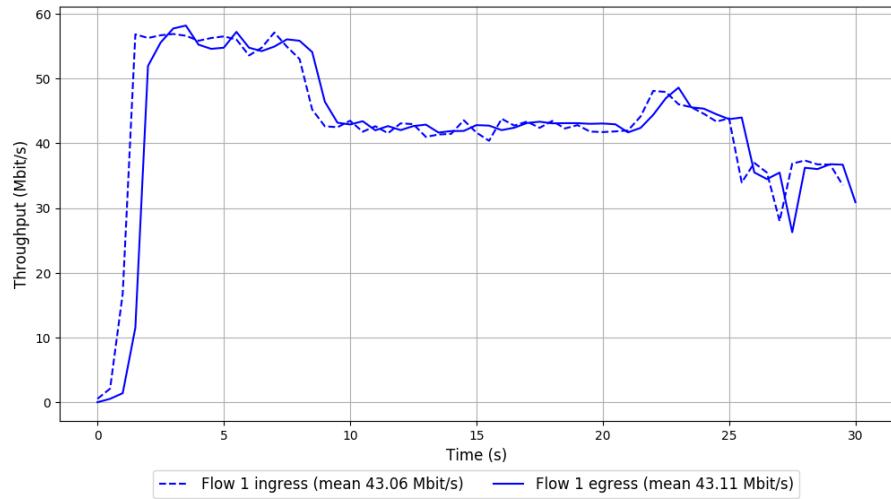


Run 1: Statistics of Copa

```
Start at: 2018-10-10 00:43:23
End at: 2018-10-10 00:43:54
Local clock offset: -7.585 ms
Remote clock offset: -8.432 ms

# Below is generated by plot.py at 2018-10-10 02:11:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 43.11 Mbit/s
95th percentile per-packet one-way delay: 83.393 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 43.11 Mbit/s
95th percentile per-packet one-way delay: 83.393 ms
Loss rate: 0.42%
```

Run 1: Report of Copa — Data Link

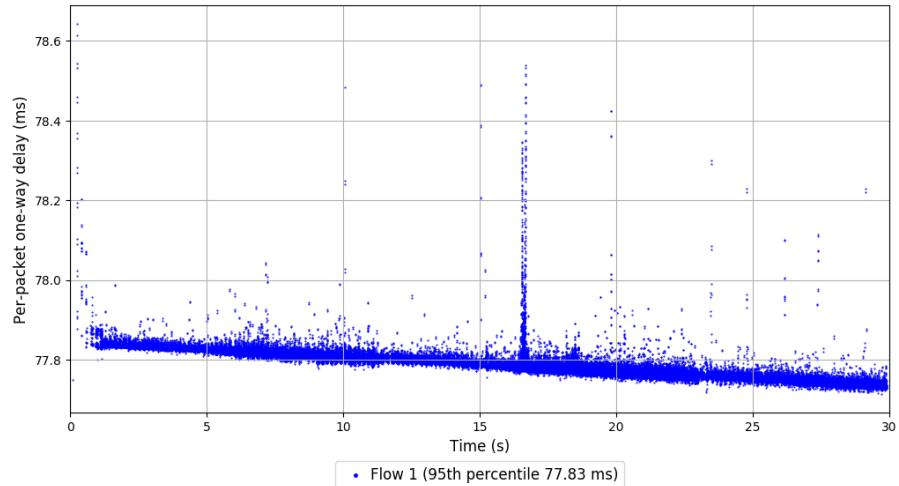
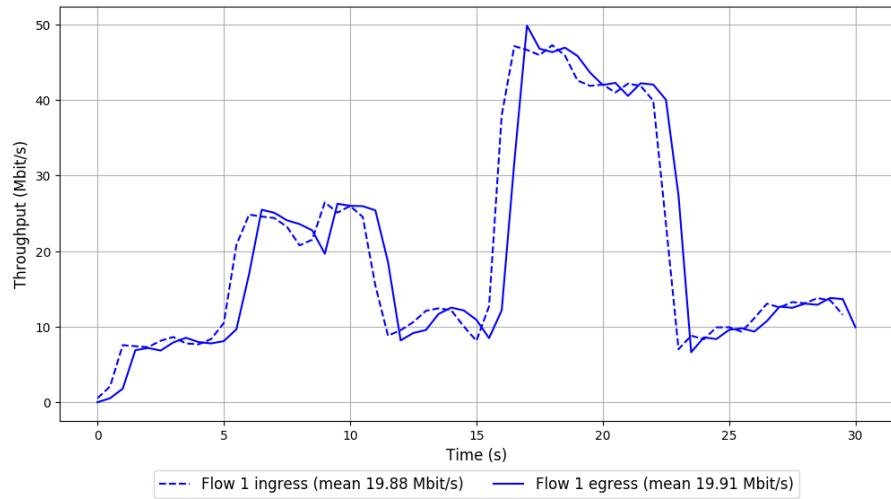


Run 2: Statistics of Copa

```
Start at: 2018-10-10 01:04:35
End at: 2018-10-10 01:05:05
Local clock offset: -4.974 ms
Remote clock offset: -3.075 ms

# Below is generated by plot.py at 2018-10-10 02:11:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 19.91 Mbit/s
95th percentile per-packet one-way delay: 77.832 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 19.91 Mbit/s
95th percentile per-packet one-way delay: 77.832 ms
Loss rate: 0.37%
```

Run 2: Report of Copa — Data Link

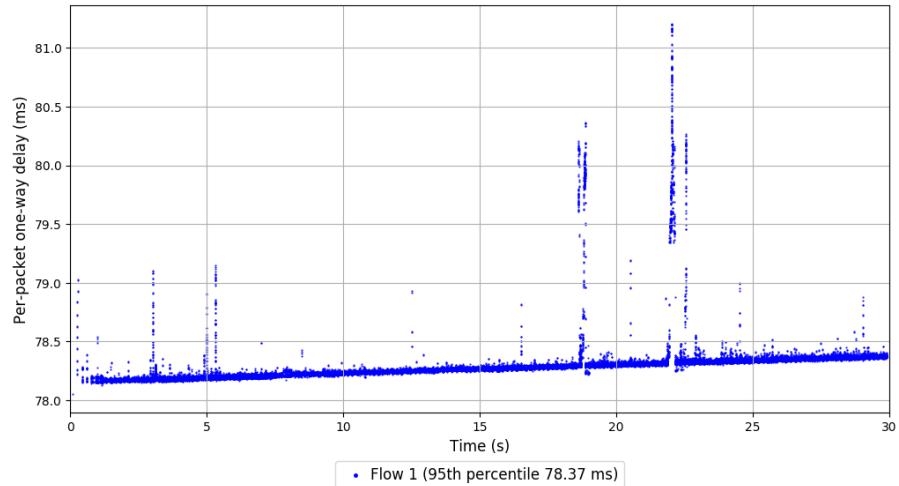
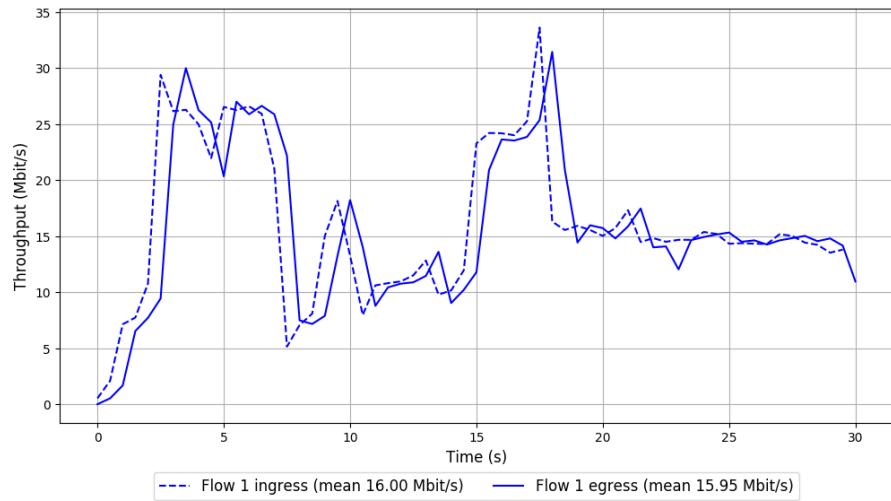


Run 3: Statistics of Copa

```
Start at: 2018-10-10 01:25:48
End at: 2018-10-10 01:26:18
Local clock offset: -3.541 ms
Remote clock offset: -3.098 ms

# Below is generated by plot.py at 2018-10-10 02:11:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 15.95 Mbit/s
95th percentile per-packet one-way delay: 78.367 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 15.95 Mbit/s
95th percentile per-packet one-way delay: 78.367 ms
Loss rate: 0.86%
```

Run 3: Report of Copa — Data Link

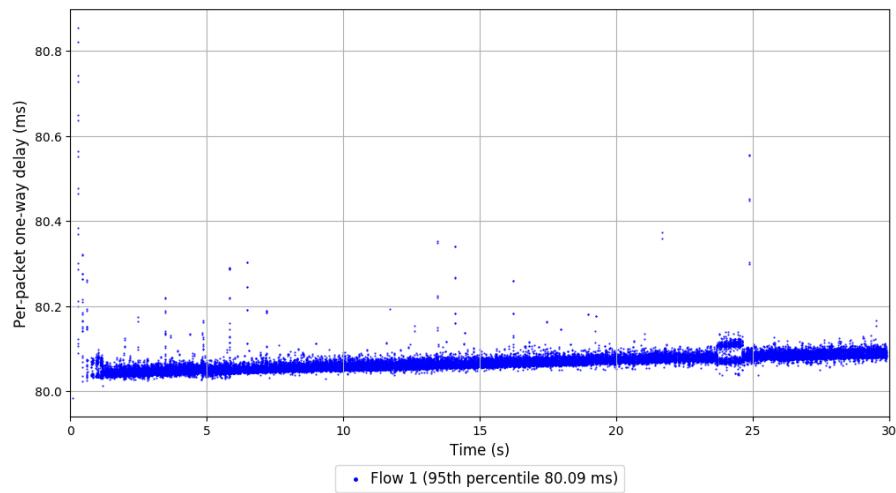
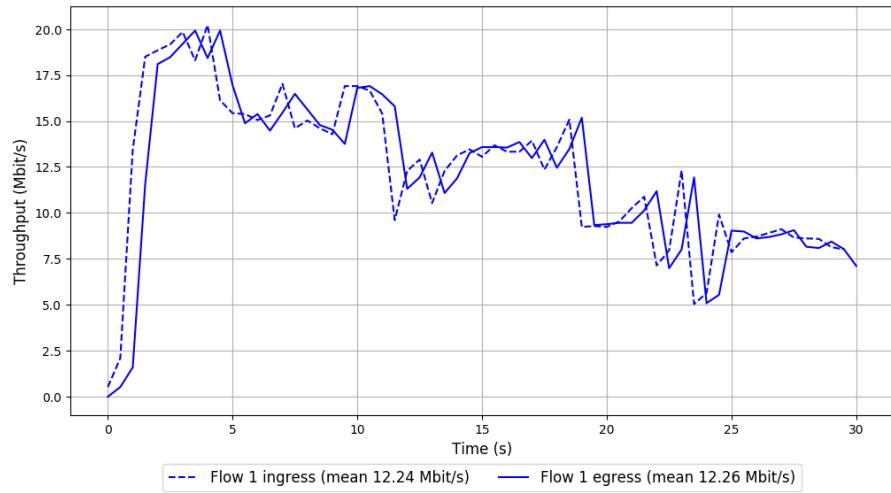


Run 4: Statistics of Copa

```
Start at: 2018-10-10 01:47:22
End at: 2018-10-10 01:47:52
Local clock offset: -7.959 ms
Remote clock offset: -4.331 ms

# Below is generated by plot.py at 2018-10-10 02:11:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.26 Mbit/s
95th percentile per-packet one-way delay: 80.089 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 12.26 Mbit/s
95th percentile per-packet one-way delay: 80.089 ms
Loss rate: 0.39%
```

Run 4: Report of Copa — Data Link

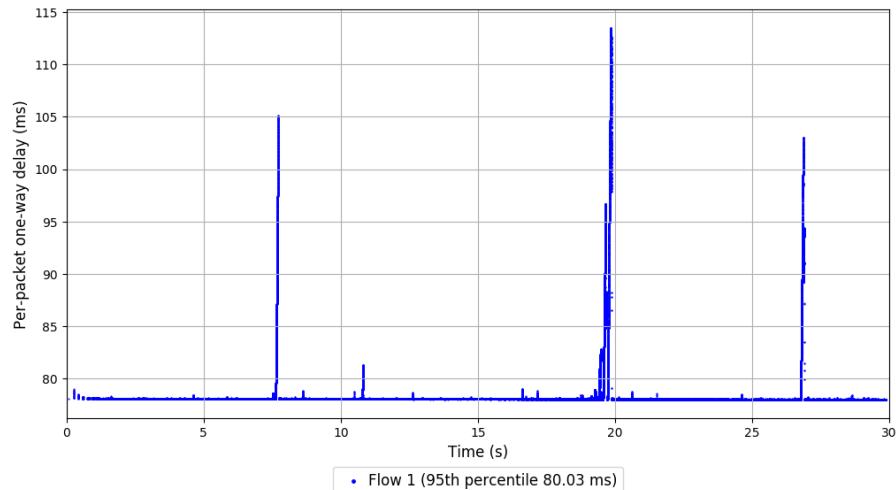
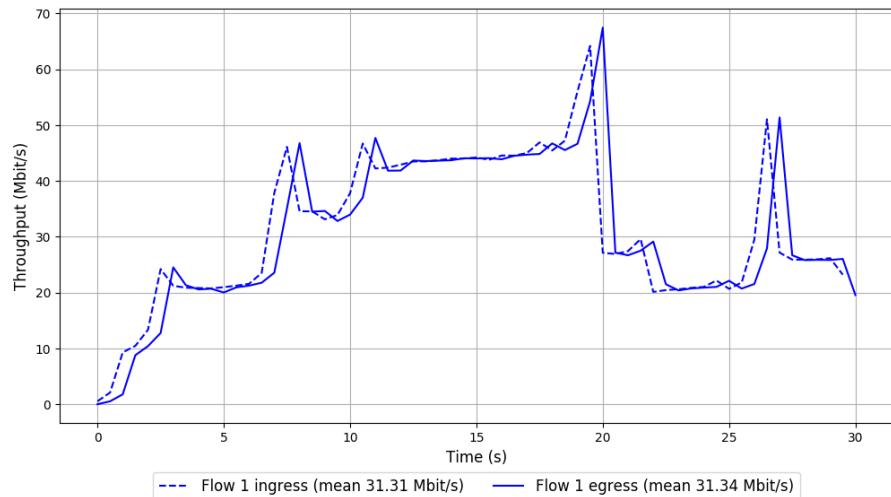


Run 5: Statistics of Copa

```
Start at: 2018-10-10 02:08:35
End at: 2018-10-10 02:09:05
Local clock offset: -1.892 ms
Remote clock offset: -2.524 ms

# Below is generated by plot.py at 2018-10-10 02:11:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 31.34 Mbit/s
95th percentile per-packet one-way delay: 80.028 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 31.34 Mbit/s
95th percentile per-packet one-way delay: 80.028 ms
Loss rate: 0.44%
```

Run 5: Report of Copa — Data Link

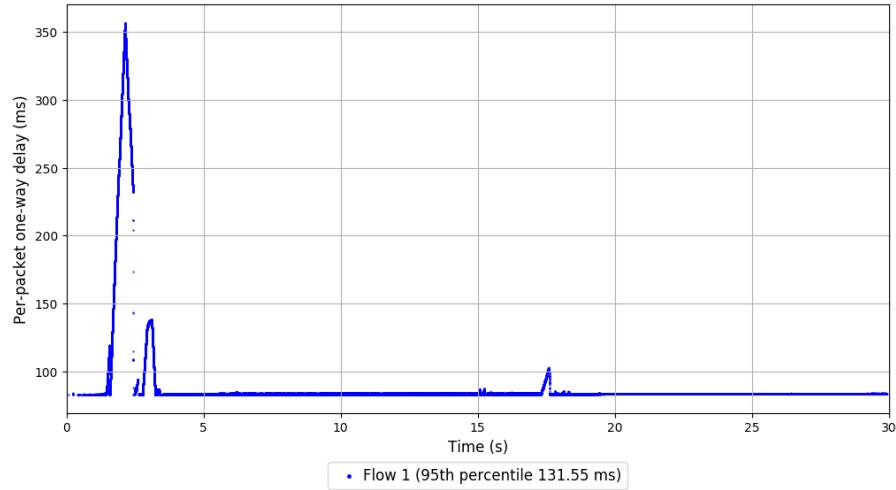
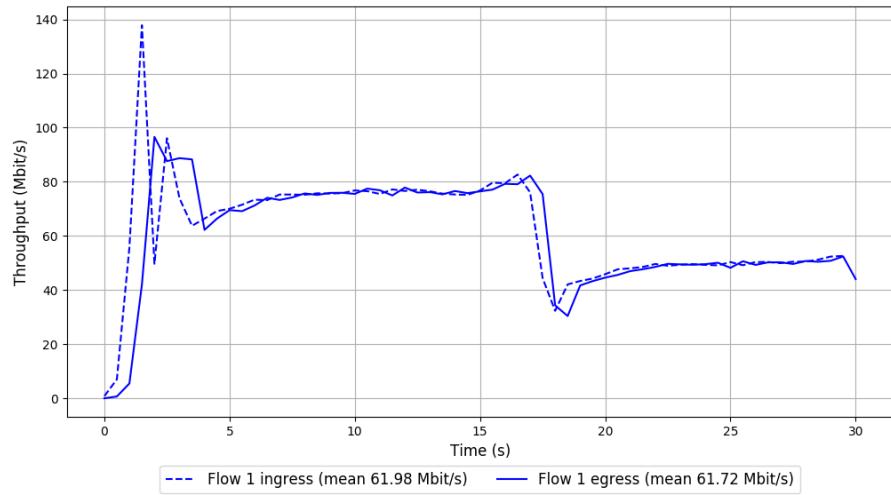


```
Run 1: Statistics of TCP Cubic
```

```
Start at: 2018-10-10 00:28:53
End at: 2018-10-10 00:29:23
Local clock offset: -1.382 ms
Remote clock offset: -8.428 ms

# Below is generated by plot.py at 2018-10-10 02:11:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 61.72 Mbit/s
95th percentile per-packet one-way delay: 131.546 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 61.72 Mbit/s
95th percentile per-packet one-way delay: 131.546 ms
Loss rate: 0.96%
```

Run 1: Report of TCP Cubic — Data Link

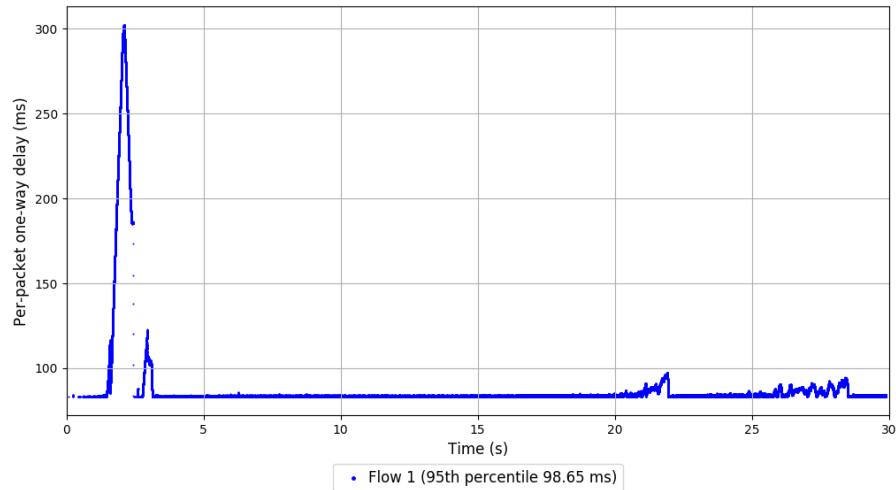
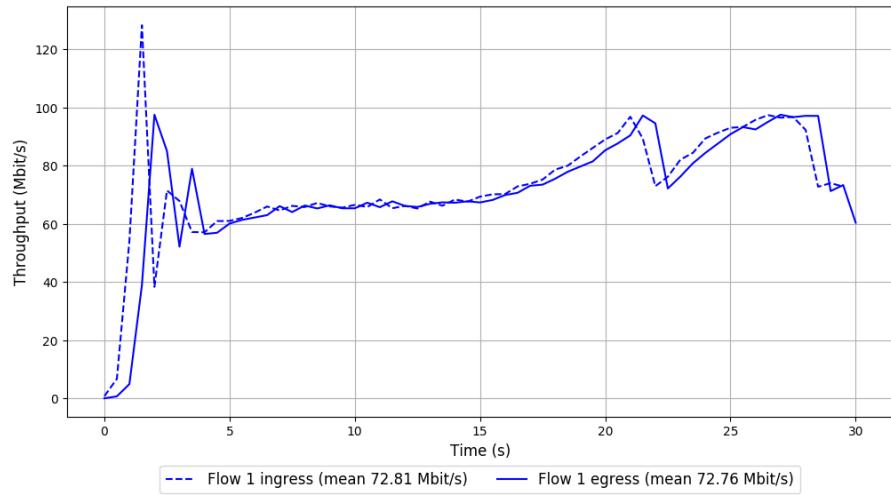


Run 2: Statistics of TCP Cubic

```
Start at: 2018-10-10 00:50:21
End at: 2018-10-10 00:50:51
Local clock offset: -8.879 ms
Remote clock offset: -7.95 ms

# Below is generated by plot.py at 2018-10-10 02:12:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 72.76 Mbit/s
95th percentile per-packet one-way delay: 98.652 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 72.76 Mbit/s
95th percentile per-packet one-way delay: 98.652 ms
Loss rate: 0.63%
```

Run 2: Report of TCP Cubic — Data Link

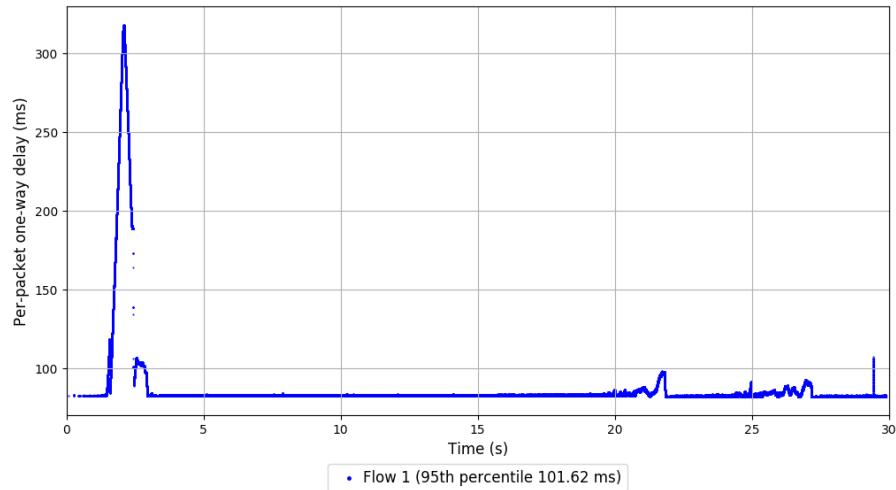
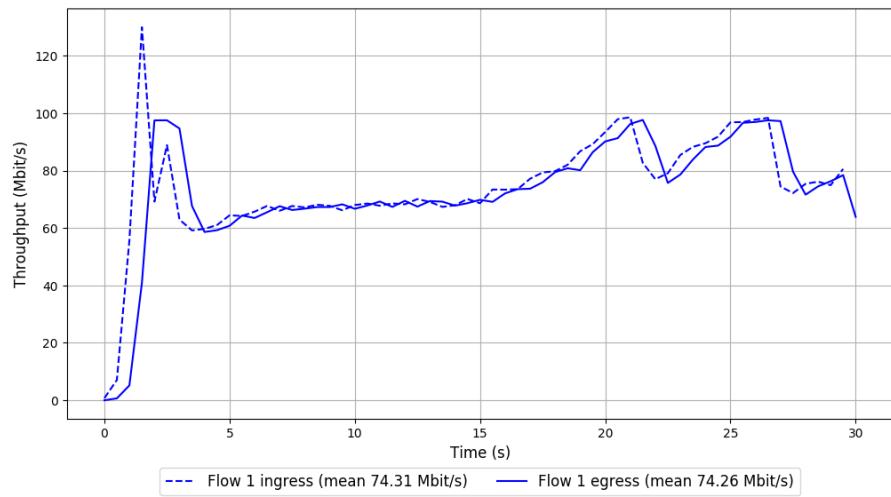


```
Run 3: Statistics of TCP Cubic
```

```
Start at: 2018-10-10 01:11:32
End at: 2018-10-10 01:12:02
Local clock offset: -3.823 ms
Remote clock offset: -7.544 ms

# Below is generated by plot.py at 2018-10-10 02:12:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 74.26 Mbit/s
95th percentile per-packet one-way delay: 101.624 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 74.26 Mbit/s
95th percentile per-packet one-way delay: 101.624 ms
Loss rate: 0.64%
```

Run 3: Report of TCP Cubic — Data Link

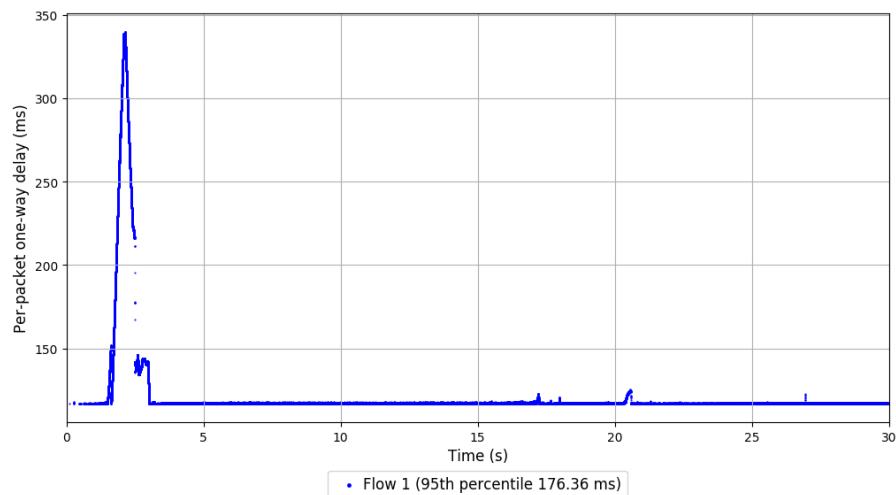
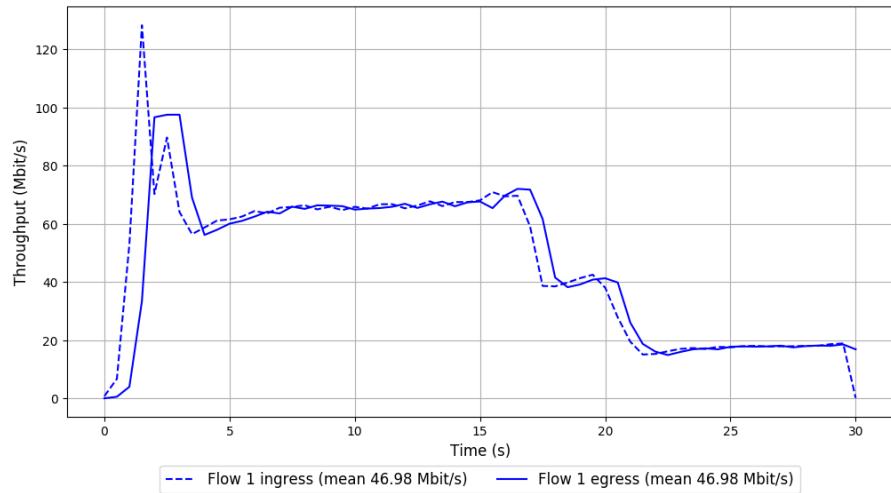


Run 4: Statistics of TCP Cubic

```
Start at: 2018-10-10 01:32:50
End at: 2018-10-10 01:33:20
Local clock offset: -5.873 ms
Remote clock offset: -41.89 ms

# Below is generated by plot.py at 2018-10-10 02:12:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 46.98 Mbit/s
95th percentile per-packet one-way delay: 176.359 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 46.98 Mbit/s
95th percentile per-packet one-way delay: 176.359 ms
Loss rate: 0.55%
```

Run 4: Report of TCP Cubic — Data Link

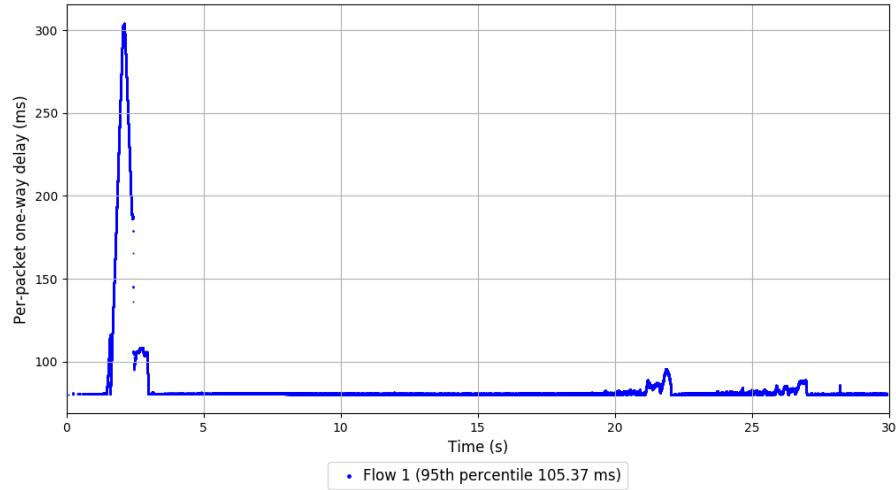
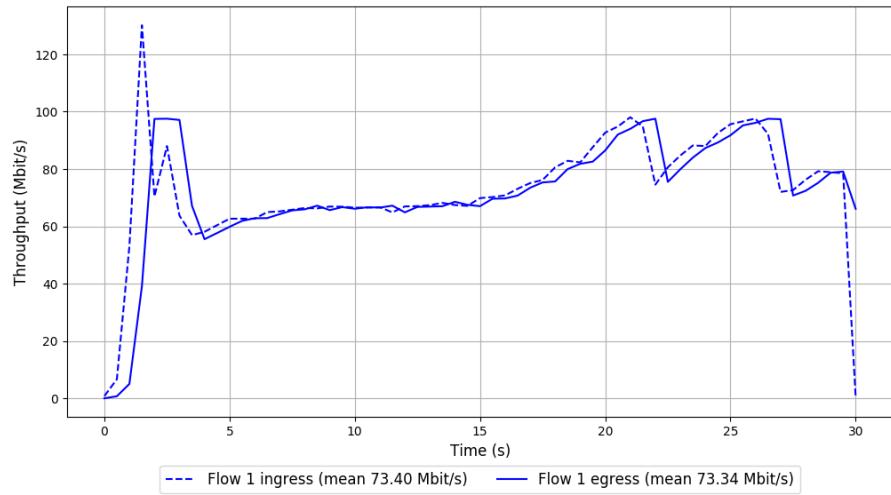


Run 5: Statistics of TCP Cubic

```
Start at: 2018-10-10 01:54:22
End at: 2018-10-10 01:54:52
Local clock offset: -8.562 ms
Remote clock offset: -4.568 ms

# Below is generated by plot.py at 2018-10-10 02:12:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 73.34 Mbit/s
95th percentile per-packet one-way delay: 105.367 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 73.34 Mbit/s
95th percentile per-packet one-way delay: 105.367 ms
Loss rate: 0.63%
```

Run 5: Report of TCP Cubic — Data Link

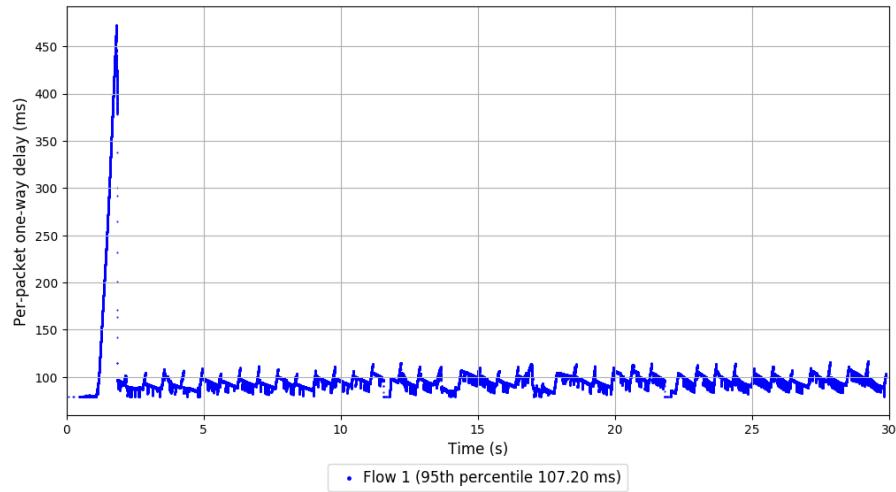
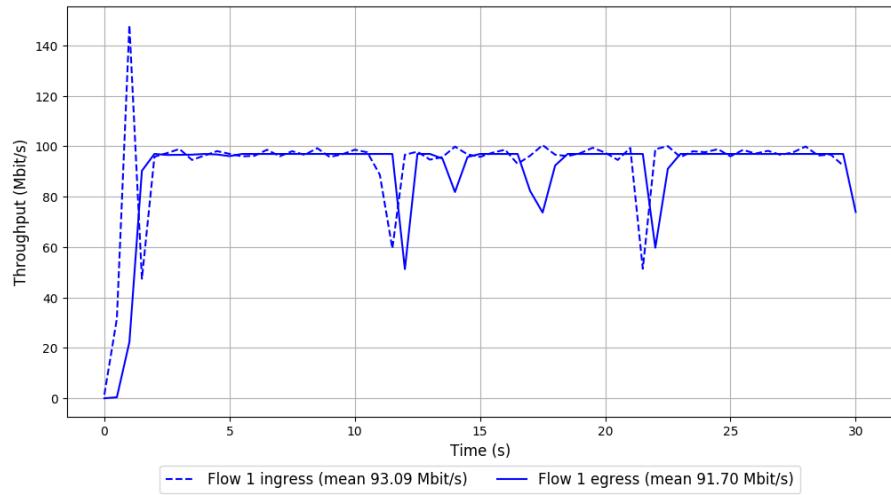


```
Run 1: Statistics of FillP
```

```
Start at: 2018-10-10 00:34:54
End at: 2018-10-10 00:35:24
Local clock offset: -4.89 ms
Remote clock offset: -5.471 ms

# Below is generated by plot.py at 2018-10-10 02:12:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.70 Mbit/s
95th percentile per-packet one-way delay: 107.200 ms
Loss rate: 2.03%
-- Flow 1:
Average throughput: 91.70 Mbit/s
95th percentile per-packet one-way delay: 107.200 ms
Loss rate: 2.03%
```

Run 1: Report of FillP — Data Link

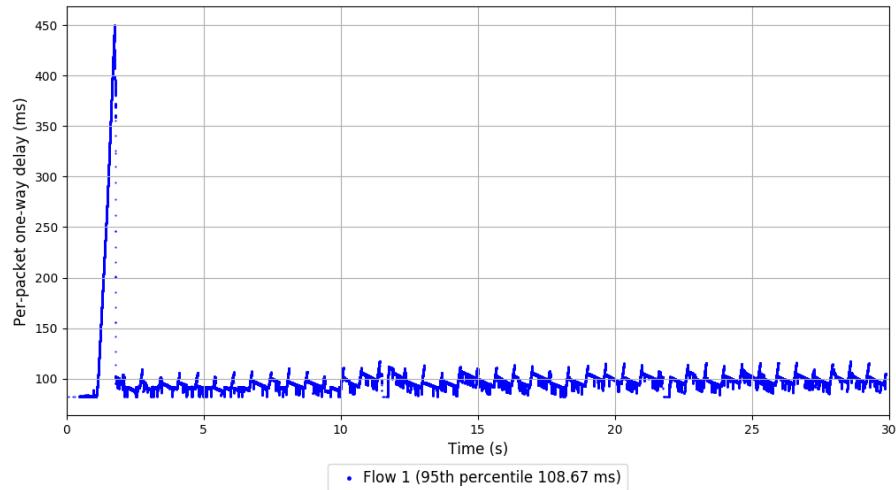
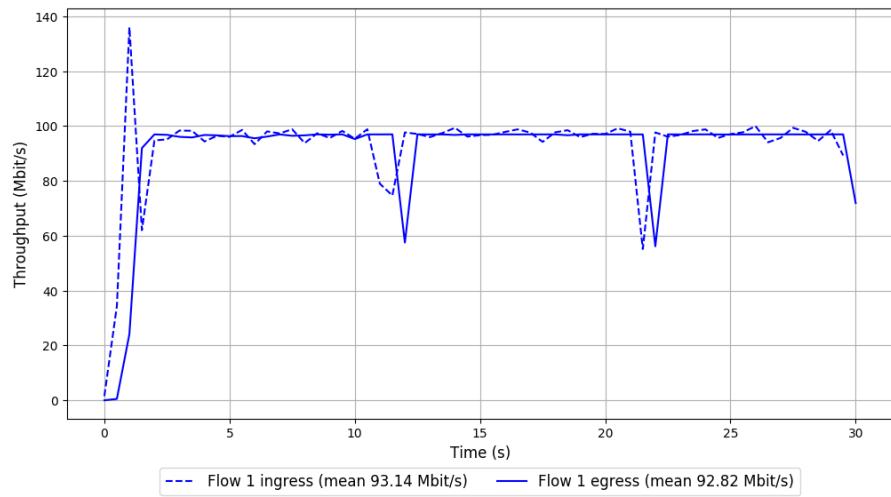


Run 2: Statistics of FillP

```
Start at: 2018-10-10 00:56:19
End at: 2018-10-10 00:56:49
Local clock offset: -8.542 ms
Remote clock offset: -7.949 ms

# Below is generated by plot.py at 2018-10-10 02:12:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.82 Mbit/s
95th percentile per-packet one-way delay: 108.665 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 92.82 Mbit/s
95th percentile per-packet one-way delay: 108.665 ms
Loss rate: 0.89%
```

Run 2: Report of FillP — Data Link

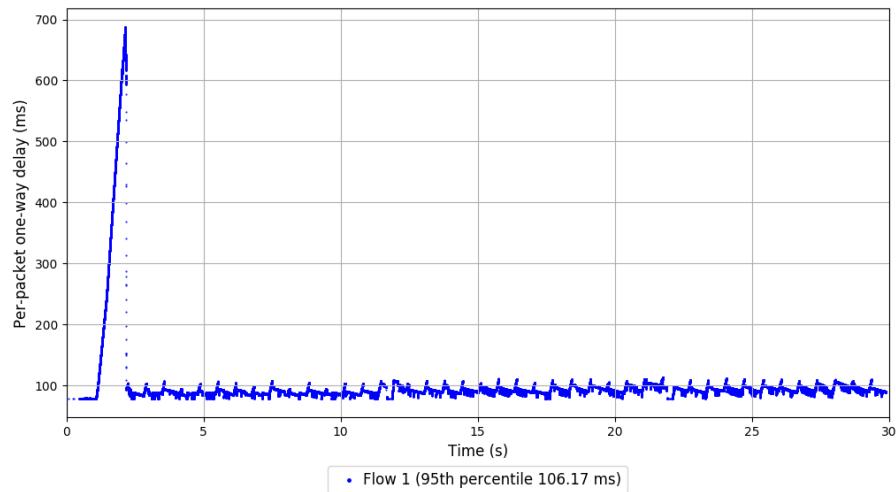
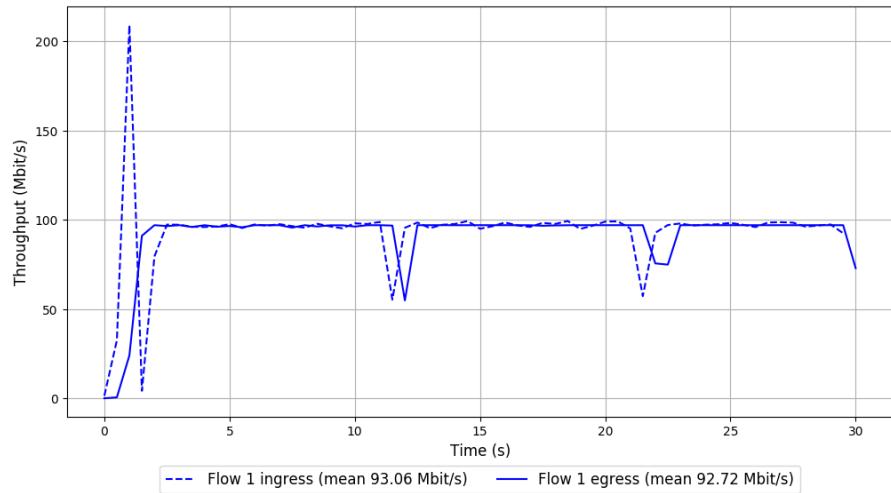


Run 3: Statistics of FillP

```
Start at: 2018-10-10 01:17:29
End at: 2018-10-10 01:17:59
Local clock offset: -3.379 ms
Remote clock offset: -3.215 ms

# Below is generated by plot.py at 2018-10-10 02:12:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.72 Mbit/s
95th percentile per-packet one-way delay: 106.165 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 92.72 Mbit/s
95th percentile per-packet one-way delay: 106.165 ms
Loss rate: 0.93%
```

Run 3: Report of FillP — Data Link

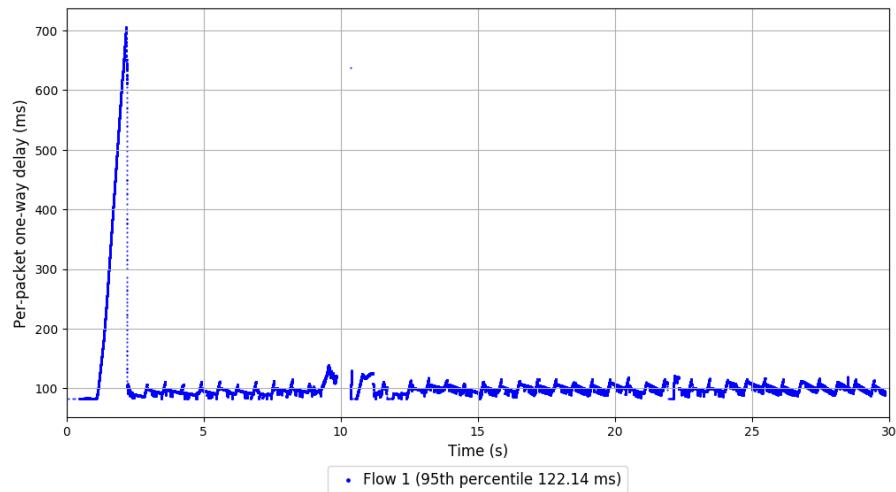
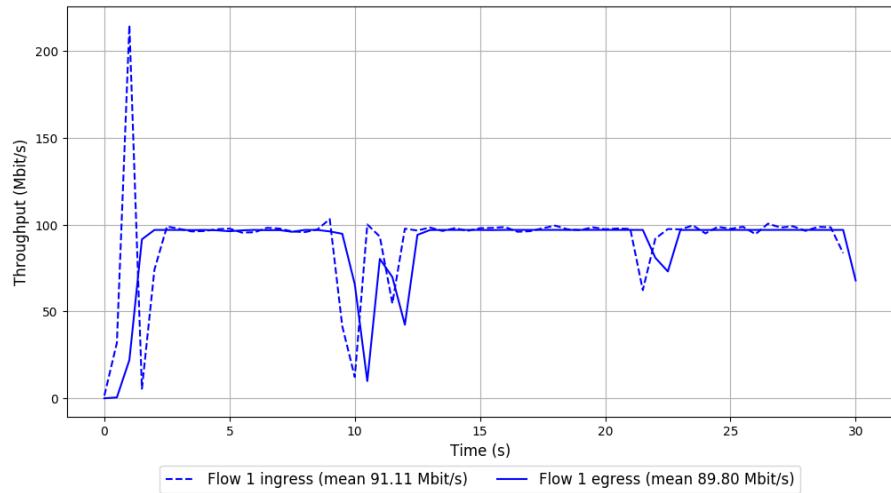


Run 4: Statistics of FillP

```
Start at: 2018-10-10 01:38:59
End at: 2018-10-10 01:39:29
Local clock offset: -7.062 ms
Remote clock offset: -7.488 ms

# Below is generated by plot.py at 2018-10-10 02:13:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.80 Mbit/s
95th percentile per-packet one-way delay: 122.140 ms
Loss rate: 1.97%
-- Flow 1:
Average throughput: 89.80 Mbit/s
95th percentile per-packet one-way delay: 122.140 ms
Loss rate: 1.97%
```

Run 4: Report of FillP — Data Link

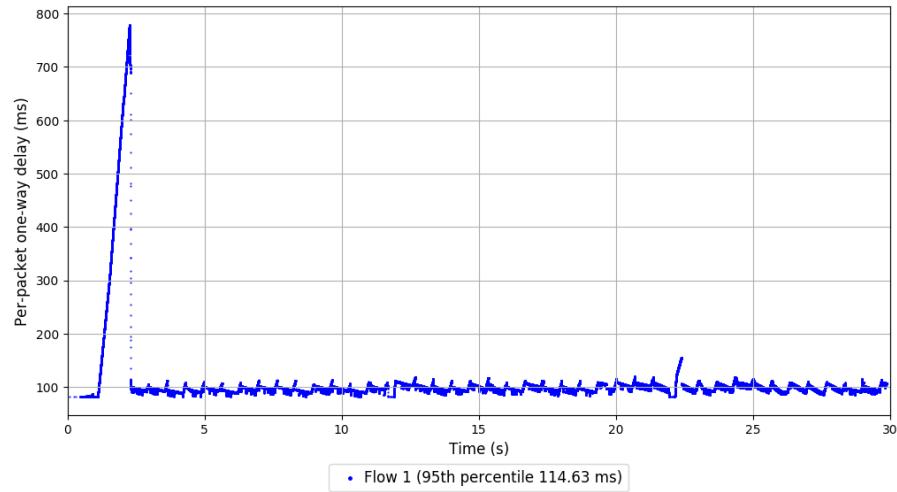
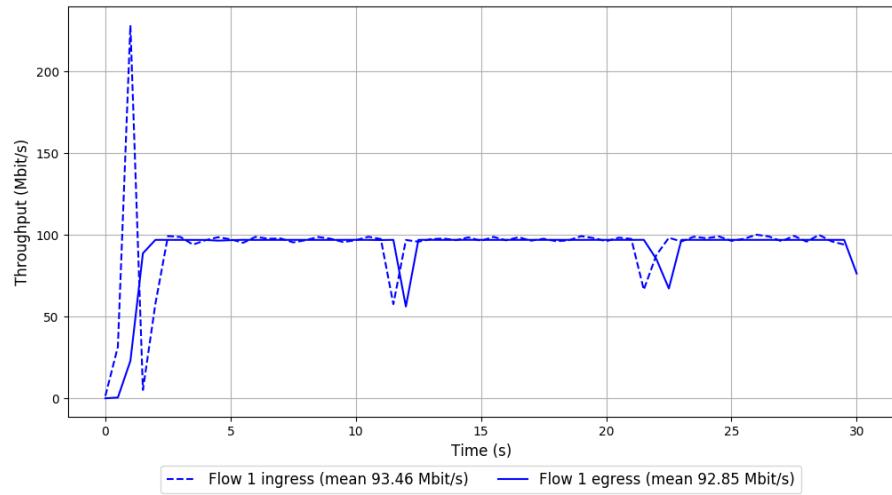


Run 5: Statistics of FillP

```
Start at: 2018-10-10 02:00:20
End at: 2018-10-10 02:00:50
Local clock offset: -4.758 ms
Remote clock offset: -7.344 ms

# Below is generated by plot.py at 2018-10-10 02:13:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.85 Mbit/s
95th percentile per-packet one-way delay: 114.631 ms
Loss rate: 1.20%
-- Flow 1:
Average throughput: 92.85 Mbit/s
95th percentile per-packet one-way delay: 114.631 ms
Loss rate: 1.20%
```

Run 5: Report of FillP — Data Link

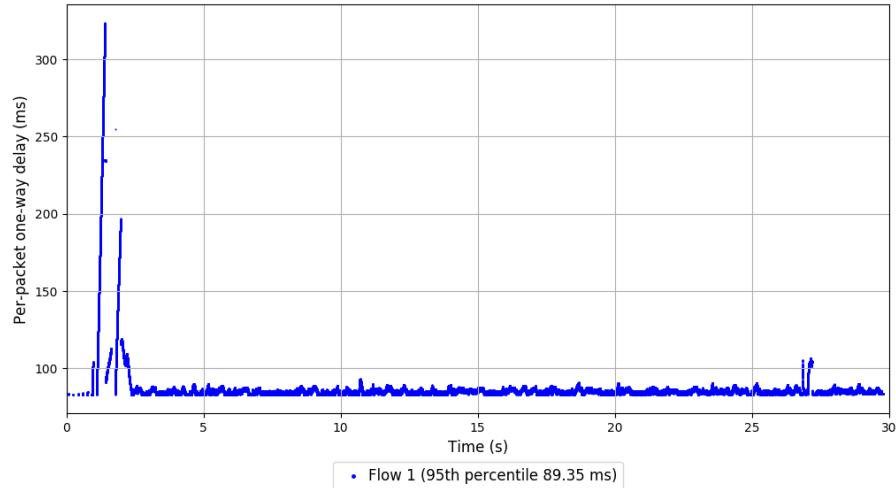
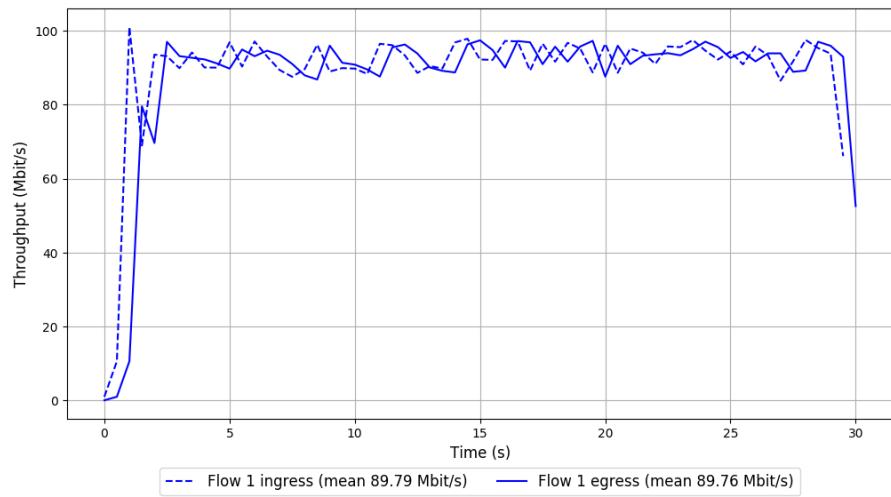


Run 1: Statistics of Indigo

```
Start at: 2018-10-10 00:33:36
End at: 2018-10-10 00:34:06
Local clock offset: -4.39 ms
Remote clock offset: -8.407 ms

# Below is generated by plot.py at 2018-10-10 02:13:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.76 Mbit/s
95th percentile per-packet one-way delay: 89.353 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 89.76 Mbit/s
95th percentile per-packet one-way delay: 89.353 ms
Loss rate: 0.58%
```

Run 1: Report of Indigo — Data Link

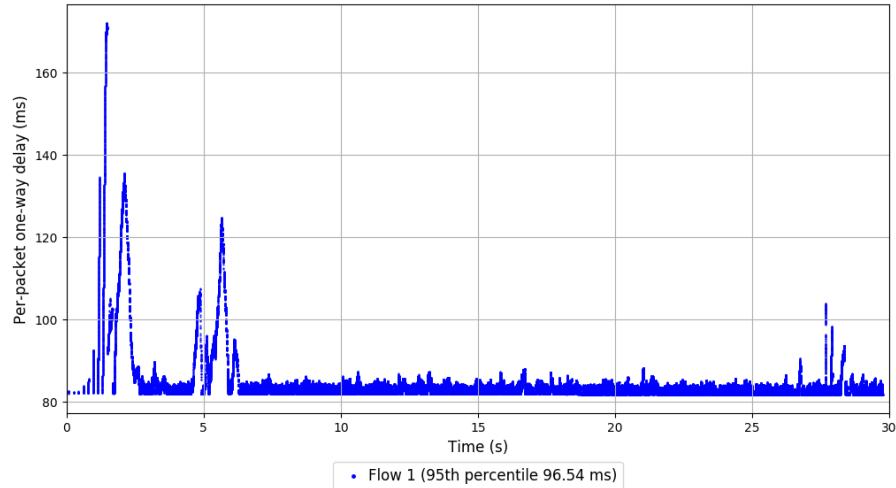
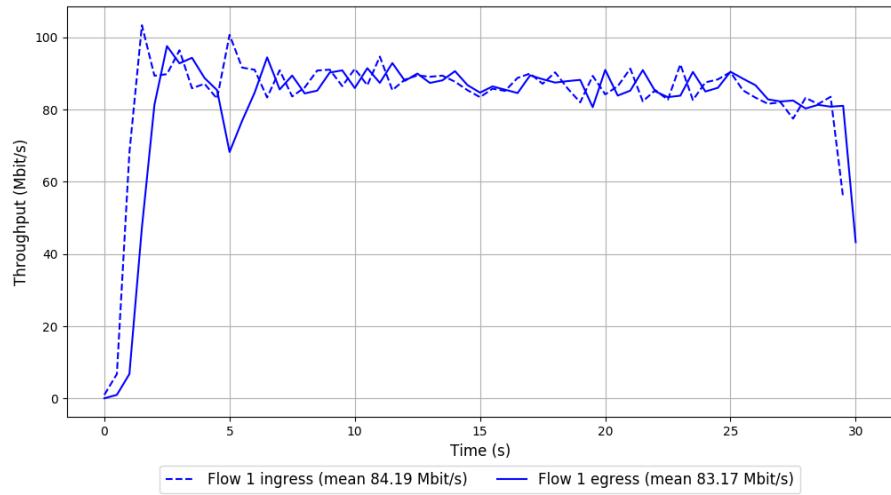


Run 2: Statistics of Indigo

```
Start at: 2018-10-10 00:55:06
End at: 2018-10-10 00:55:36
Local clock offset: -9.443 ms
Remote clock offset: -8.007 ms

# Below is generated by plot.py at 2018-10-10 02:13:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 83.17 Mbit/s
95th percentile per-packet one-way delay: 96.543 ms
Loss rate: 1.73%
-- Flow 1:
Average throughput: 83.17 Mbit/s
95th percentile per-packet one-way delay: 96.543 ms
Loss rate: 1.73%
```

Run 2: Report of Indigo — Data Link

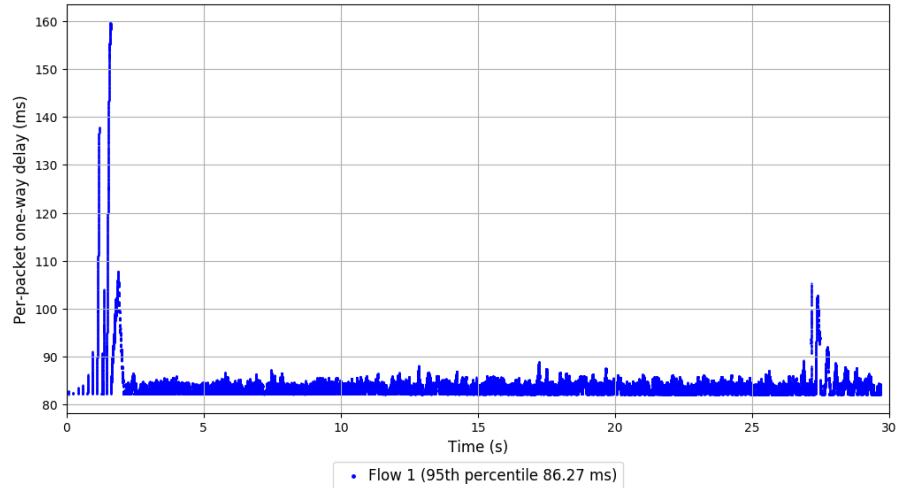
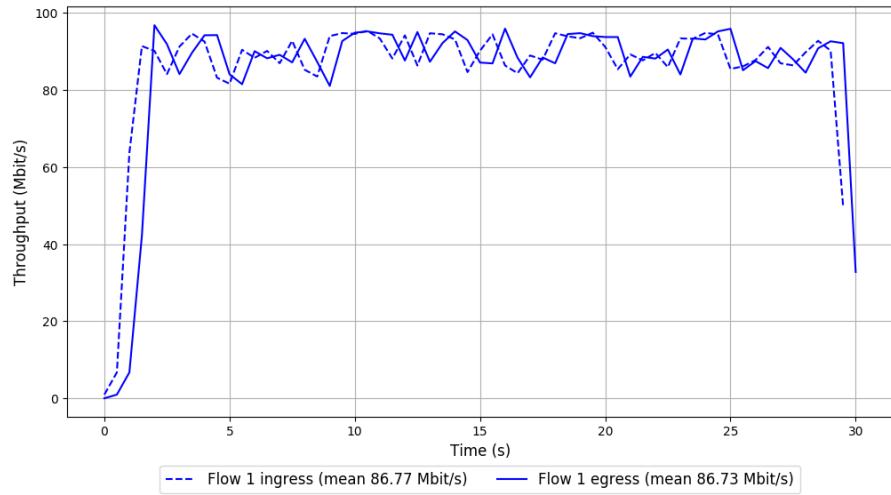


Run 3: Statistics of Indigo

```
Start at: 2018-10-10 01:16:16
End at: 2018-10-10 01:16:46
Local clock offset: -3.383 ms
Remote clock offset: -7.619 ms

# Below is generated by plot.py at 2018-10-10 02:13:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.73 Mbit/s
95th percentile per-packet one-way delay: 86.268 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 86.73 Mbit/s
95th percentile per-packet one-way delay: 86.268 ms
Loss rate: 0.60%
```

Run 3: Report of Indigo — Data Link

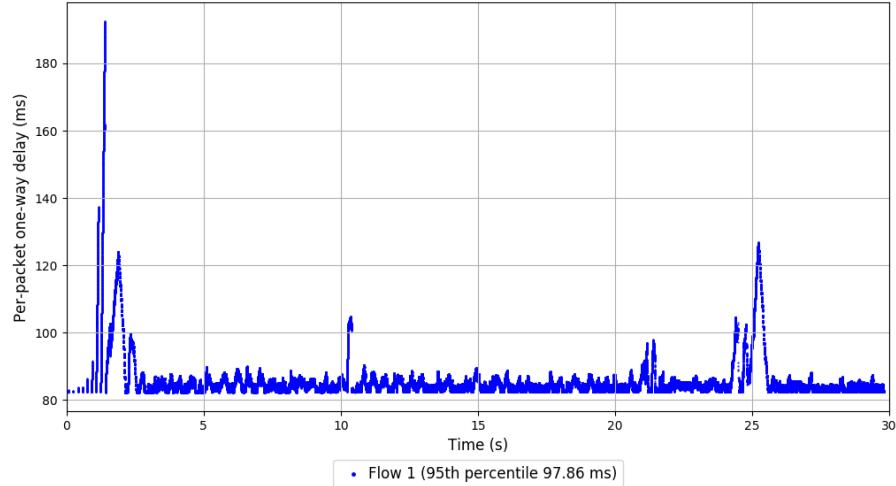
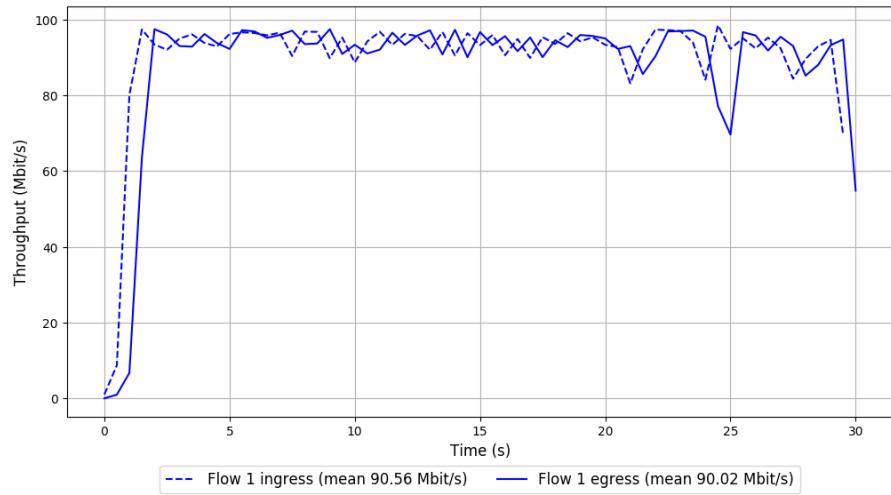


Run 4: Statistics of Indigo

```
Start at: 2018-10-10 01:37:46
End at: 2018-10-10 01:38:16
Local clock offset: -6.798 ms
Remote clock offset: -6.637 ms

# Below is generated by plot.py at 2018-10-10 02:13:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 90.02 Mbit/s
95th percentile per-packet one-way delay: 97.861 ms
Loss rate: 1.13%
-- Flow 1:
Average throughput: 90.02 Mbit/s
95th percentile per-packet one-way delay: 97.861 ms
Loss rate: 1.13%
```

Run 4: Report of Indigo — Data Link

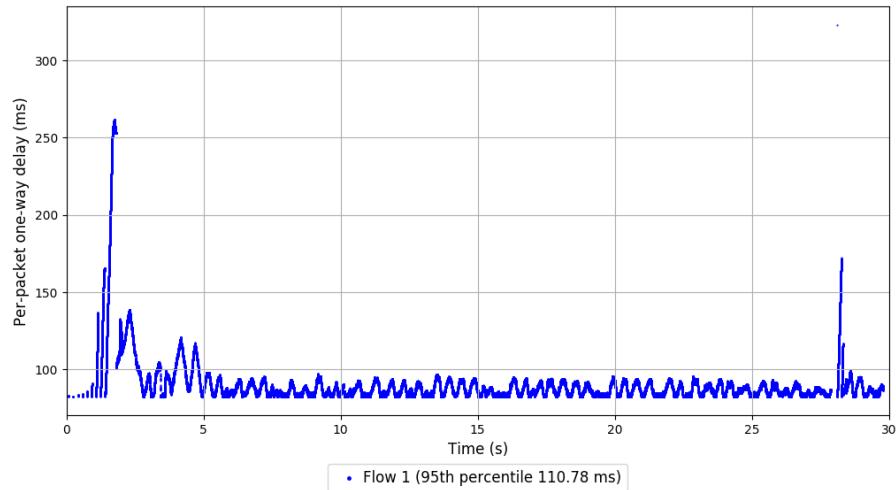
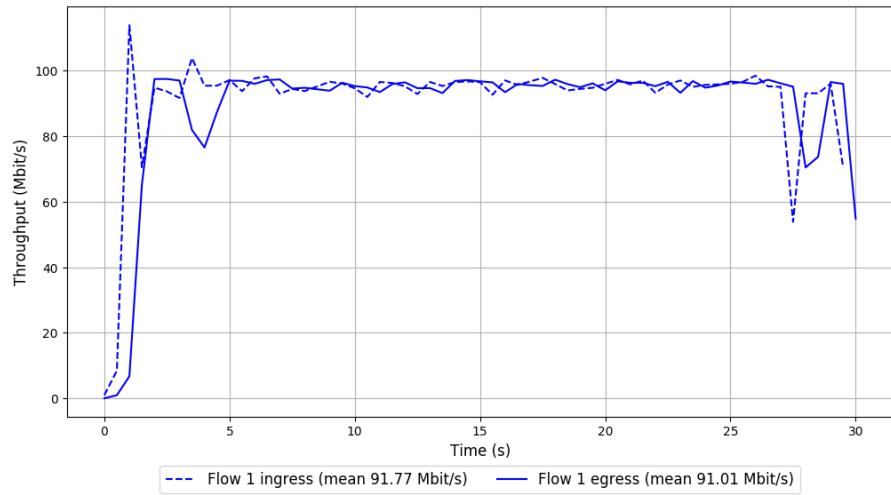


Run 5: Statistics of Indigo

```
Start at: 2018-10-10 01:59:07
End at: 2018-10-10 01:59:37
Local clock offset: -5.432 ms
Remote clock offset: -7.281 ms

# Below is generated by plot.py at 2018-10-10 02:13:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.01 Mbit/s
95th percentile per-packet one-way delay: 110.778 ms
Loss rate: 1.37%
-- Flow 1:
Average throughput: 91.01 Mbit/s
95th percentile per-packet one-way delay: 110.778 ms
Loss rate: 1.37%
```

Run 5: Report of Indigo — Data Link

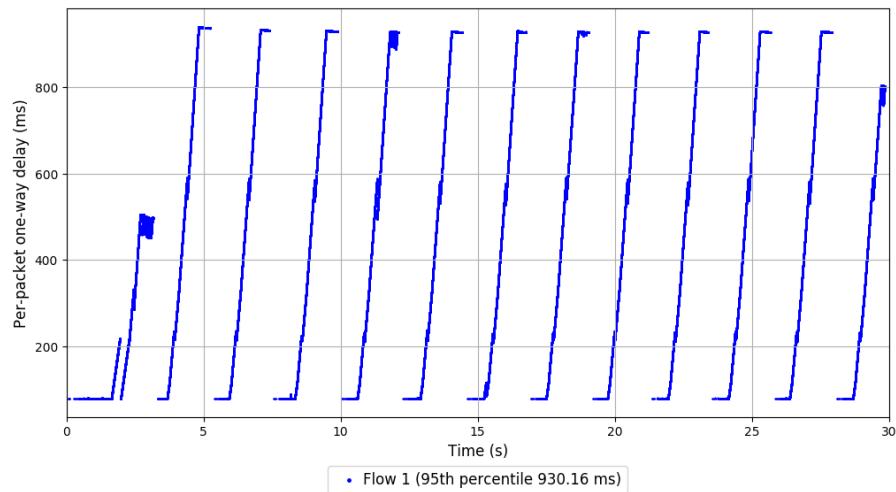
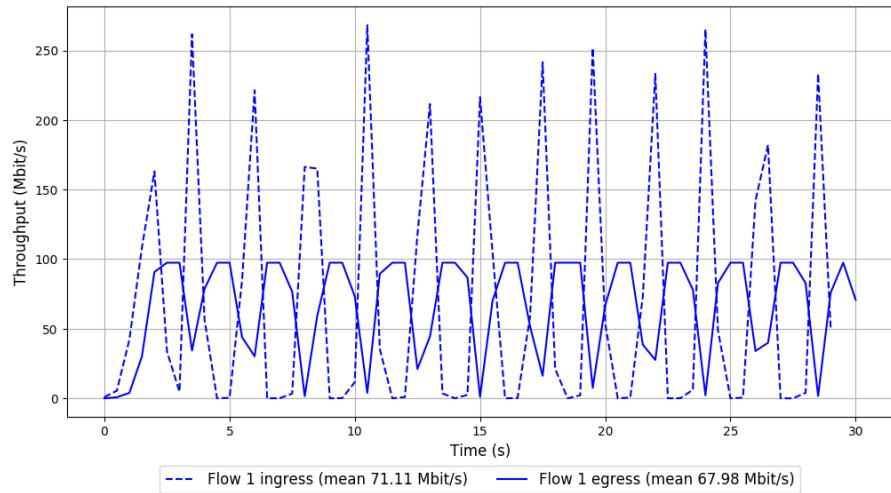


```
Run 1: Statistics of Indigo-96d2da3

Start at: 2018-10-10 00:25:25
End at: 2018-10-10 00:25:55
Local clock offset: 1.525 ms
Remote clock offset: -3.429 ms

# Below is generated by plot.py at 2018-10-10 02:13:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 67.98 Mbit/s
95th percentile per-packet one-way delay: 930.160 ms
Loss rate: 2.64%
-- Flow 1:
Average throughput: 67.98 Mbit/s
95th percentile per-packet one-way delay: 930.160 ms
Loss rate: 2.64%
```

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

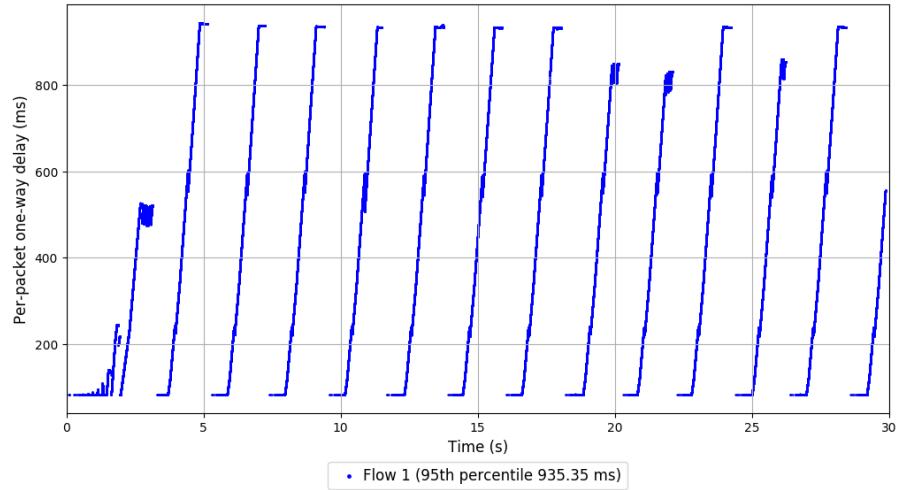
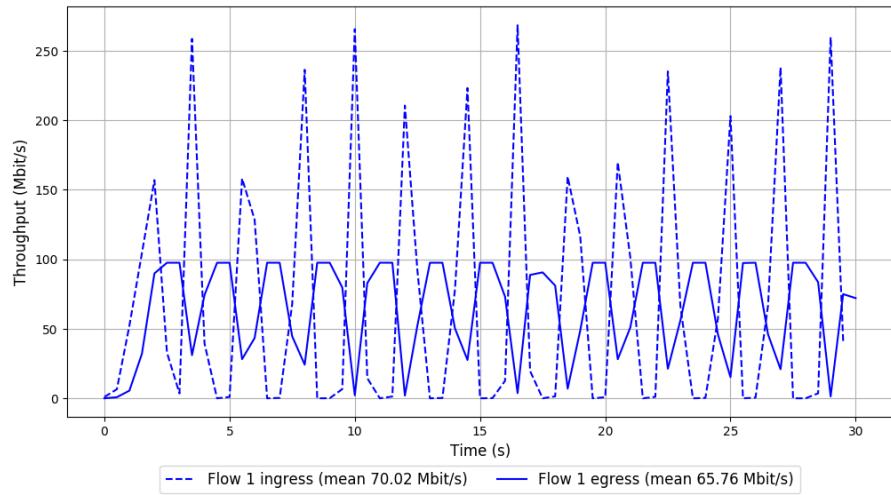


Run 2: Statistics of Indigo-96d2da3

```
Start at: 2018-10-10 00:46:53
End at: 2018-10-10 00:47:23
Local clock offset: -8.296 ms
Remote clock offset: -8.168 ms

# Below is generated by plot.py at 2018-10-10 02:13:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 65.76 Mbit/s
95th percentile per-packet one-way delay: 935.345 ms
Loss rate: 5.84%
-- Flow 1:
Average throughput: 65.76 Mbit/s
95th percentile per-packet one-way delay: 935.345 ms
Loss rate: 5.84%
```

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

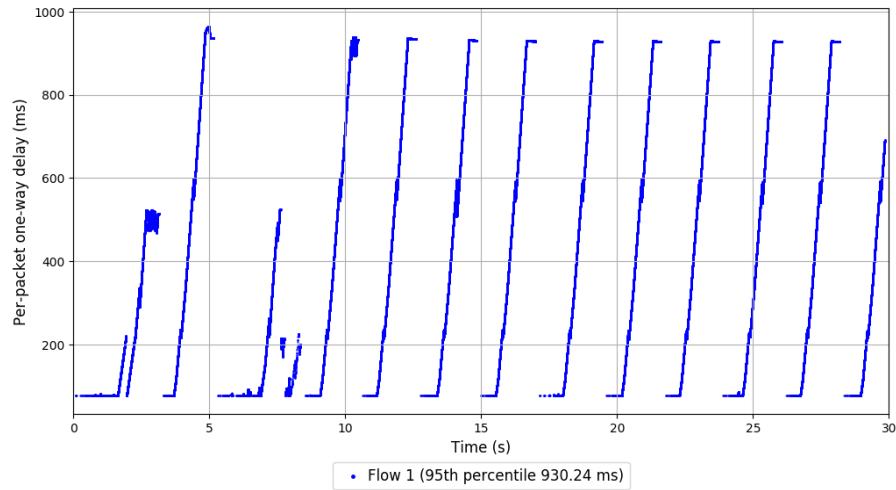
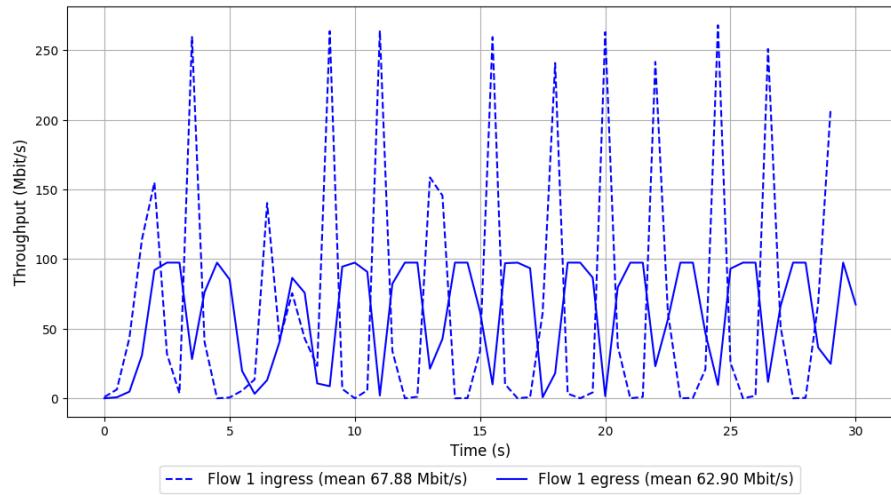


Run 3: Statistics of Indigo-96d2da3

```
Start at: 2018-10-10 01:08:02
End at: 2018-10-10 01:08:32
Local clock offset: -4.233 ms
Remote clock offset: -3.269 ms

# Below is generated by plot.py at 2018-10-10 02:14:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 62.90 Mbit/s
95th percentile per-packet one-way delay: 930.236 ms
Loss rate: 6.24%
-- Flow 1:
Average throughput: 62.90 Mbit/s
95th percentile per-packet one-way delay: 930.236 ms
Loss rate: 6.24%
```

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

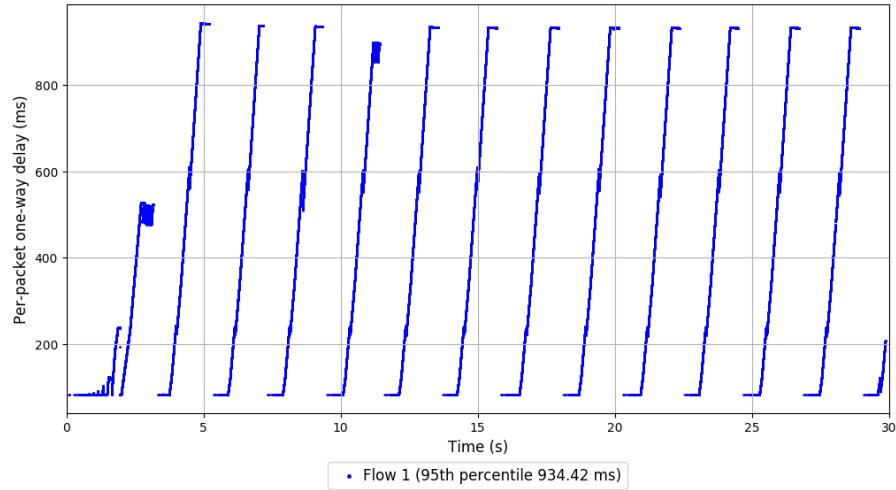
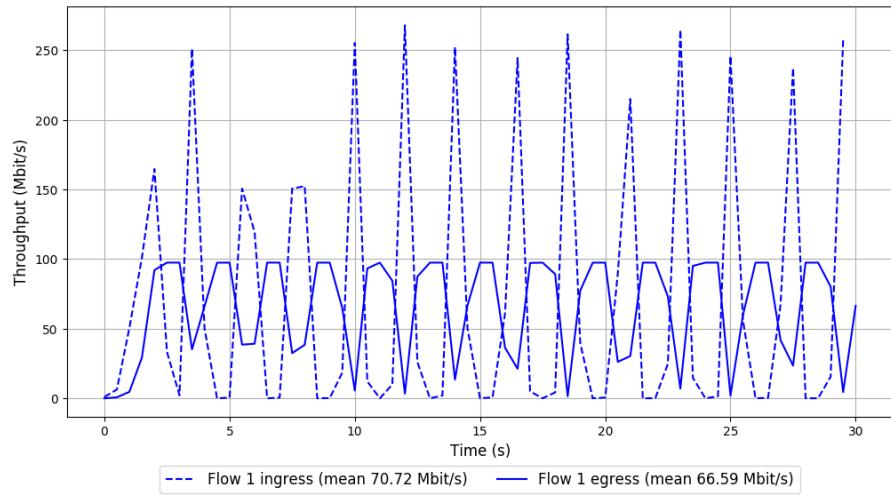


Run 4: Statistics of Indigo-96d2da3

```
Start at: 2018-10-10 01:29:19
End at: 2018-10-10 01:29:49
Local clock offset: -4.843 ms
Remote clock offset: -7.507 ms

# Below is generated by plot.py at 2018-10-10 02:14:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 66.59 Mbit/s
95th percentile per-packet one-way delay: 934.420 ms
Loss rate: 6.35%
-- Flow 1:
Average throughput: 66.59 Mbit/s
95th percentile per-packet one-way delay: 934.420 ms
Loss rate: 6.35%
```

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

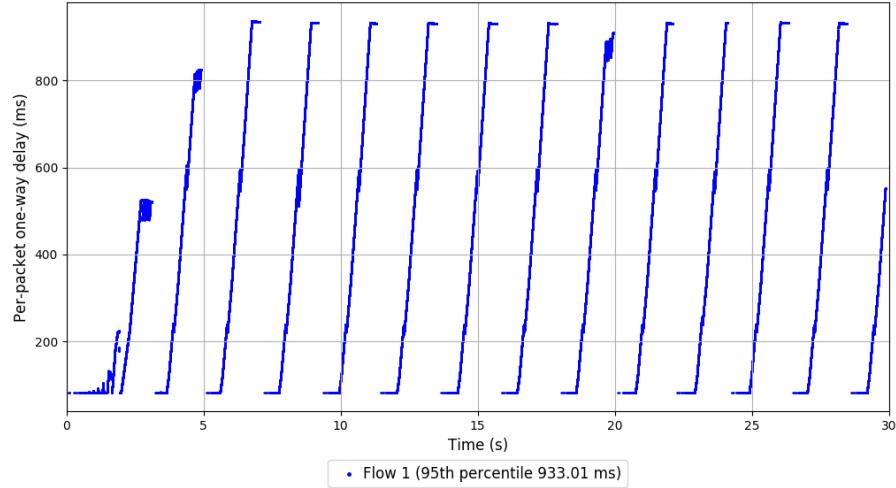
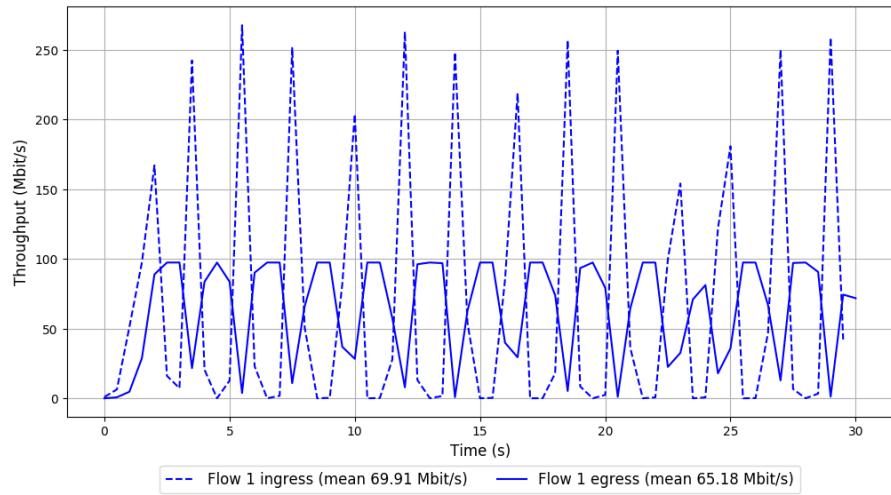


Run 5: Statistics of Indigo-96d2da3

```
Start at: 2018-10-10 01:50:47
End at: 2018-10-10 01:51:17
Local clock offset: -8.27 ms
Remote clock offset: -5.979 ms

# Below is generated by plot.py at 2018-10-10 02:14:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 65.18 Mbit/s
95th percentile per-packet one-way delay: 933.006 ms
Loss rate: 6.53%
-- Flow 1:
Average throughput: 65.18 Mbit/s
95th percentile per-packet one-way delay: 933.006 ms
Loss rate: 6.53%
```

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

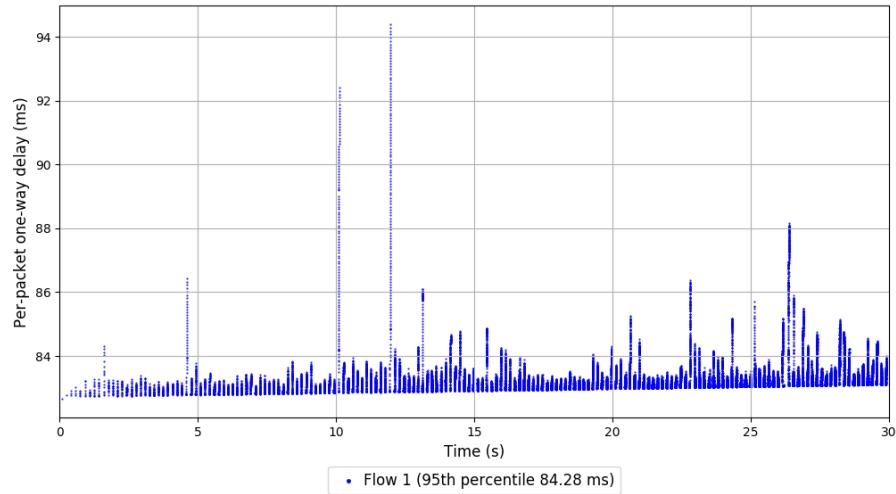
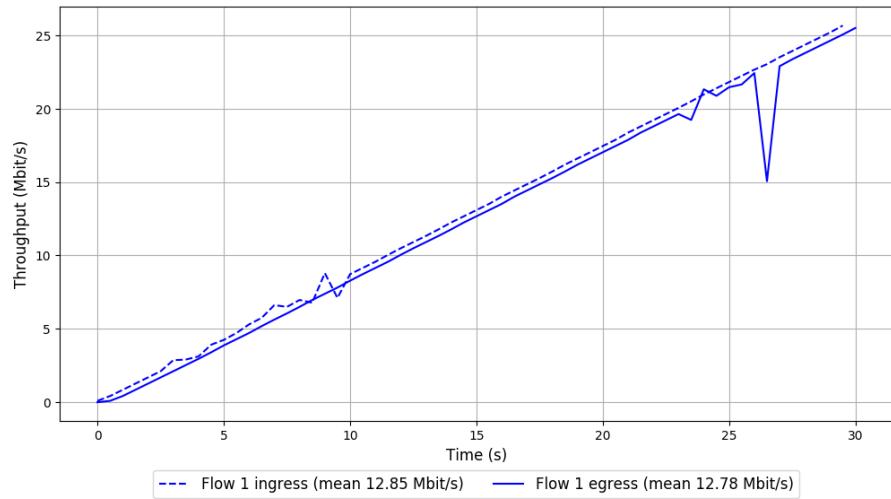


```
Run 1: Statistics of LEDBAT
```

```
Start at: 2018-10-10 00:27:44
End at: 2018-10-10 00:28:14
Local clock offset: -0.52 ms
Remote clock offset: -8.427 ms

# Below is generated by plot.py at 2018-10-10 02:14:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.78 Mbit/s
95th percentile per-packet one-way delay: 84.277 ms
Loss rate: 1.12%
-- Flow 1:
Average throughput: 12.78 Mbit/s
95th percentile per-packet one-way delay: 84.277 ms
Loss rate: 1.12%
```

Run 1: Report of LEDBAT — Data Link

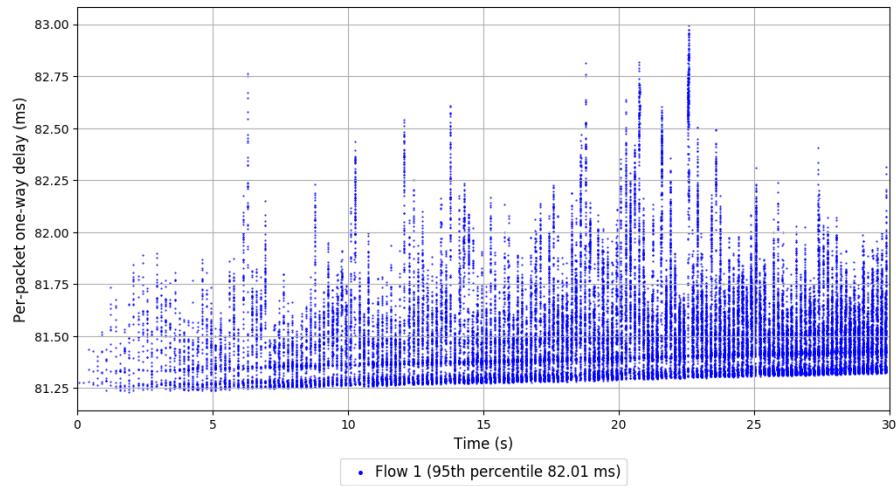
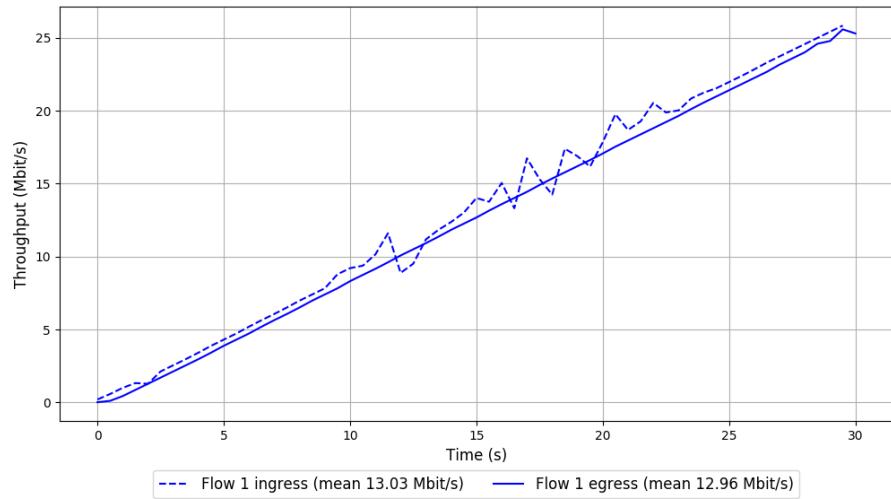


```
Run 2: Statistics of LEDBAT
```

```
Start at: 2018-10-10 00:49:12
End at: 2018-10-10 00:49:42
Local clock offset: -8.699 ms
Remote clock offset: -6.137 ms

# Below is generated by plot.py at 2018-10-10 02:14:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.96 Mbit/s
95th percentile per-packet one-way delay: 82.014 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 12.96 Mbit/s
95th percentile per-packet one-way delay: 82.014 ms
Loss rate: 1.11%
```

Run 2: Report of LEDBAT — Data Link

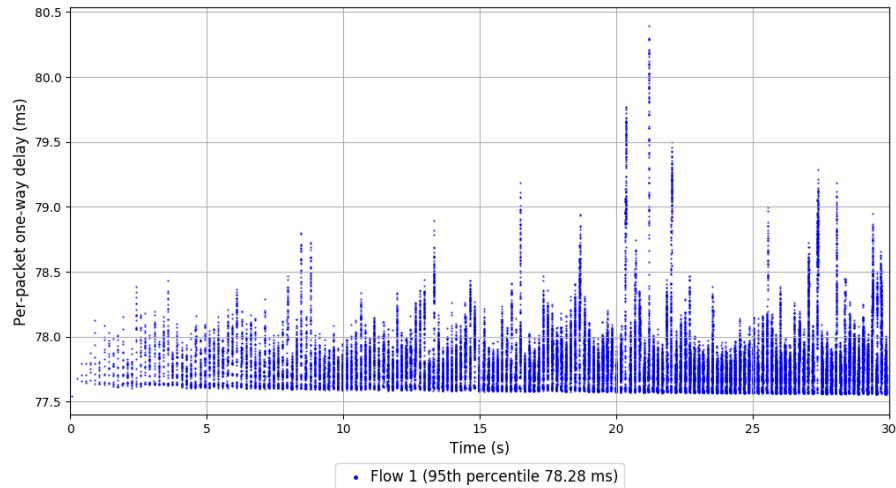
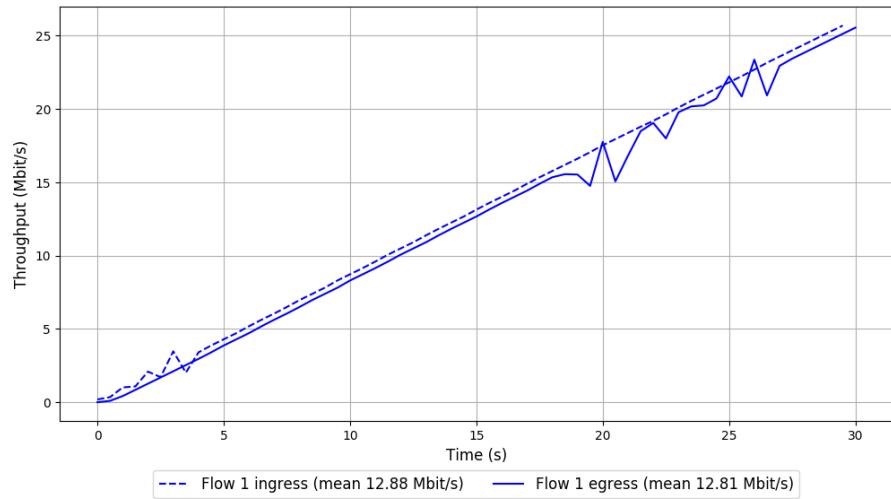


```
Run 3: Statistics of LEDBAT
```

```
Start at: 2018-10-10 01:10:24
End at: 2018-10-10 01:10:54
Local clock offset: -3.967 ms
Remote clock offset: -3.239 ms

# Below is generated by plot.py at 2018-10-10 02:14:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.81 Mbit/s
95th percentile per-packet one-way delay: 78.284 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 12.81 Mbit/s
95th percentile per-packet one-way delay: 78.284 ms
Loss rate: 1.11%
```

Run 3: Report of LEDBAT — Data Link

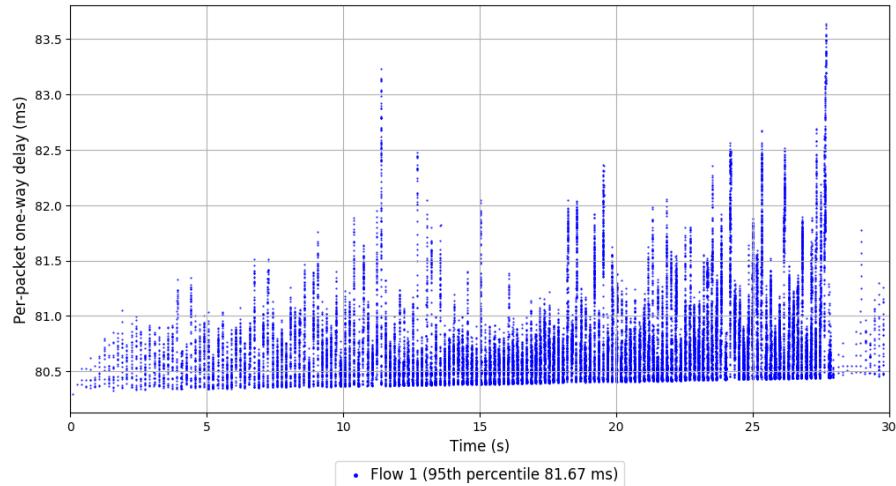
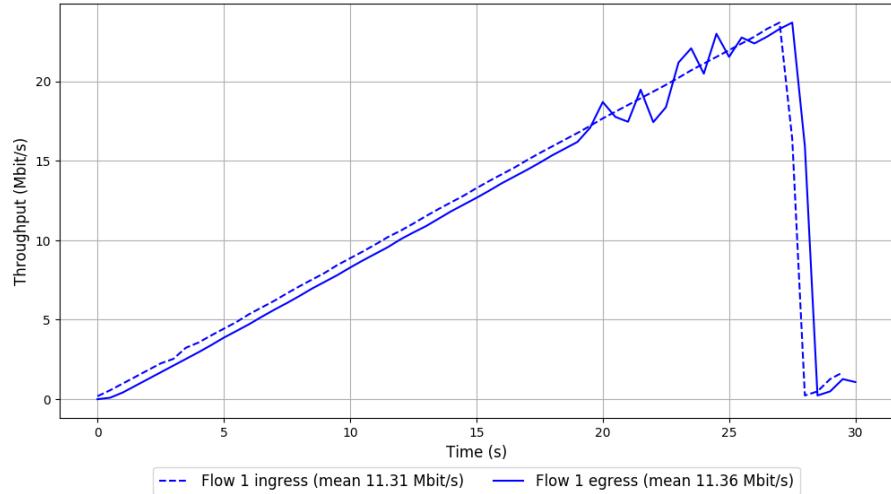


Run 4: Statistics of LEDBAT

```
Start at: 2018-10-10 01:31:40
End at: 2018-10-10 01:32:10
Local clock offset: -5.566 ms
Remote clock offset: -5.438 ms

# Below is generated by plot.py at 2018-10-10 02:14:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.36 Mbit/s
95th percentile per-packet one-way delay: 81.673 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 11.36 Mbit/s
95th percentile per-packet one-way delay: 81.673 ms
Loss rate: 0.16%
```

Run 4: Report of LEDBAT — Data Link

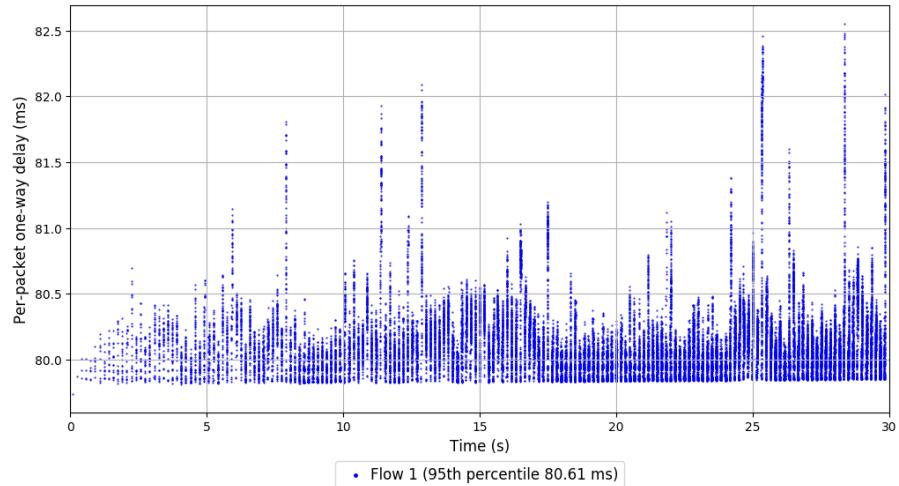
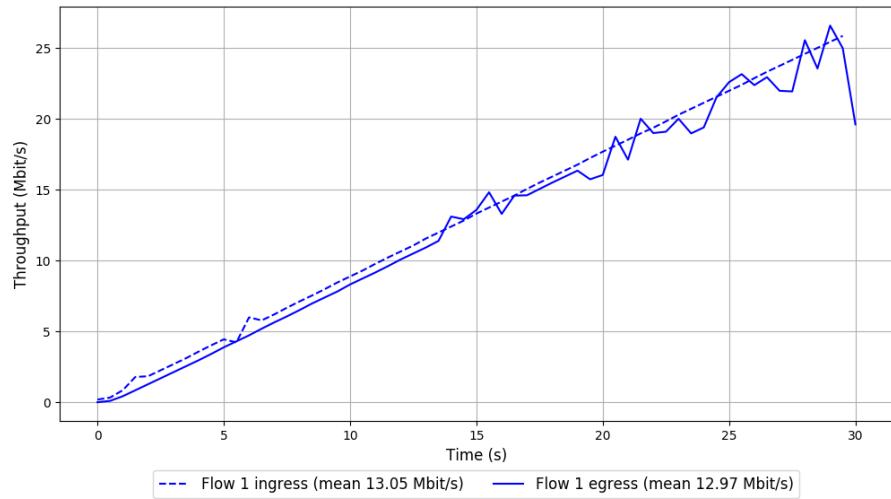


Run 5: Statistics of LEDBAT

```
Start at: 2018-10-10 01:53:13
End at: 2018-10-10 01:53:44
Local clock offset: -8.467 ms
Remote clock offset: -4.904 ms

# Below is generated by plot.py at 2018-10-10 02:14:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.97 Mbit/s
95th percentile per-packet one-way delay: 80.615 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 12.97 Mbit/s
95th percentile per-packet one-way delay: 80.615 ms
Loss rate: 1.11%
```

Run 5: Report of LEDBAT — Data Link

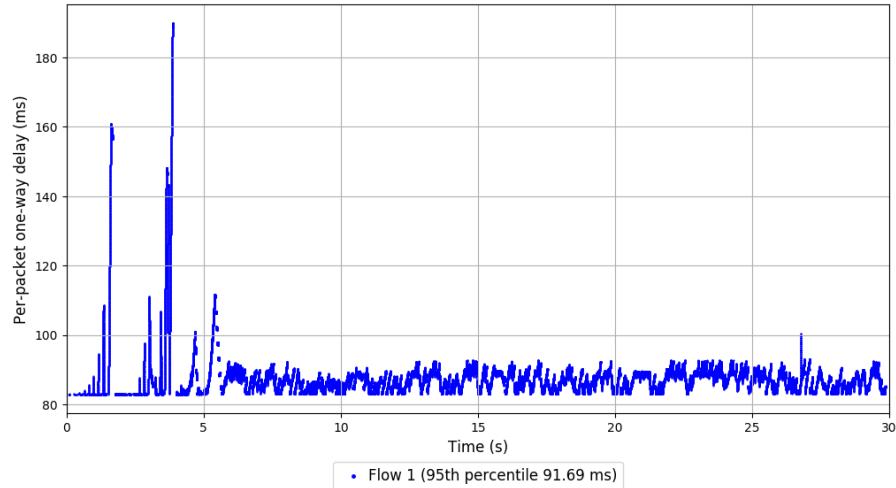
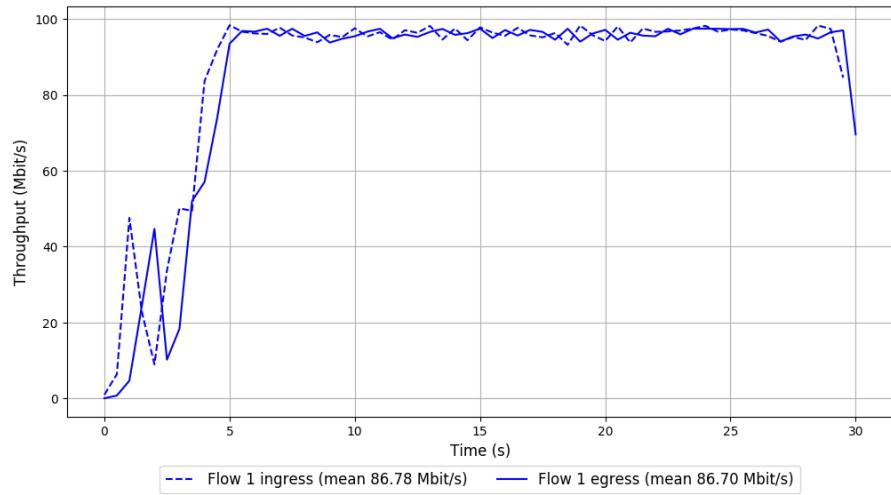


Run 1: Statistics of Indigo-Muses

```
Start at: 2018-10-10 00:32:24
End at: 2018-10-10 00:32:54
Local clock offset: -3.701 ms
Remote clock offset: -8.496 ms

# Below is generated by plot.py at 2018-10-10 02:14:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.70 Mbit/s
95th percentile per-packet one-way delay: 91.690 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 86.70 Mbit/s
95th percentile per-packet one-way delay: 91.690 ms
Loss rate: 0.63%
```

Run 1: Report of Indigo-Muses — Data Link

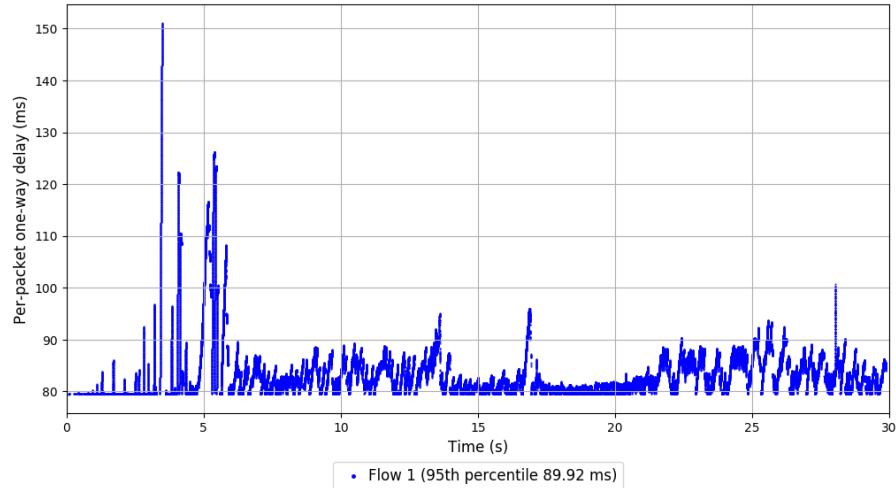
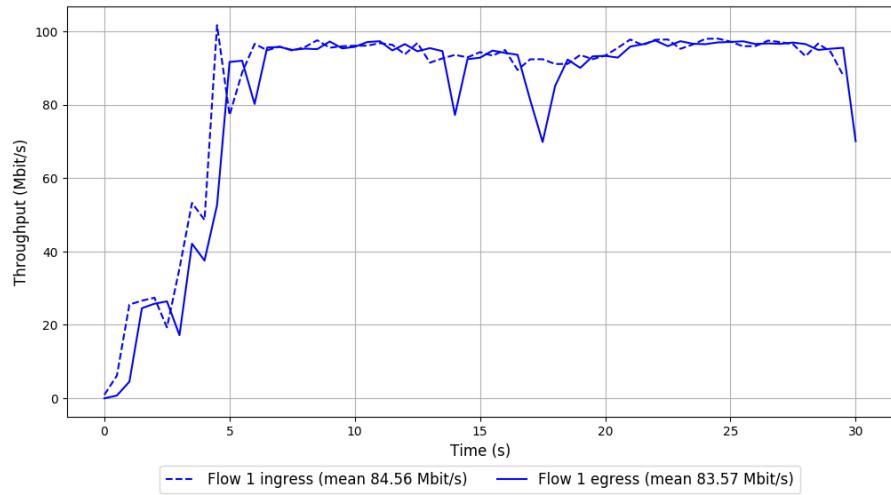


Run 2: Statistics of Indigo-Muses

```
Start at: 2018-10-10 00:53:54
End at: 2018-10-10 00:54:24
Local clock offset: -9.509 ms
Remote clock offset: -4.311 ms

# Below is generated by plot.py at 2018-10-10 02:14:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 83.57 Mbit/s
95th percentile per-packet one-way delay: 89.923 ms
Loss rate: 1.72%
-- Flow 1:
Average throughput: 83.57 Mbit/s
95th percentile per-packet one-way delay: 89.923 ms
Loss rate: 1.72%
```

Run 2: Report of Indigo-Muses — Data Link

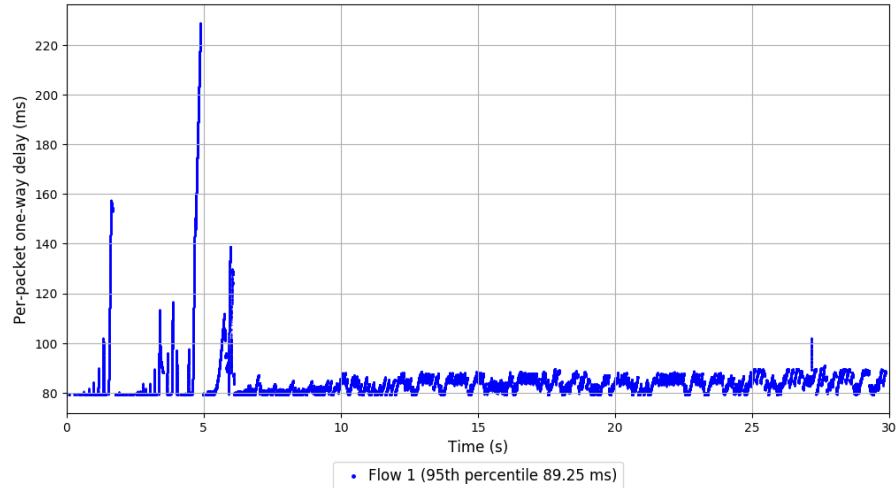
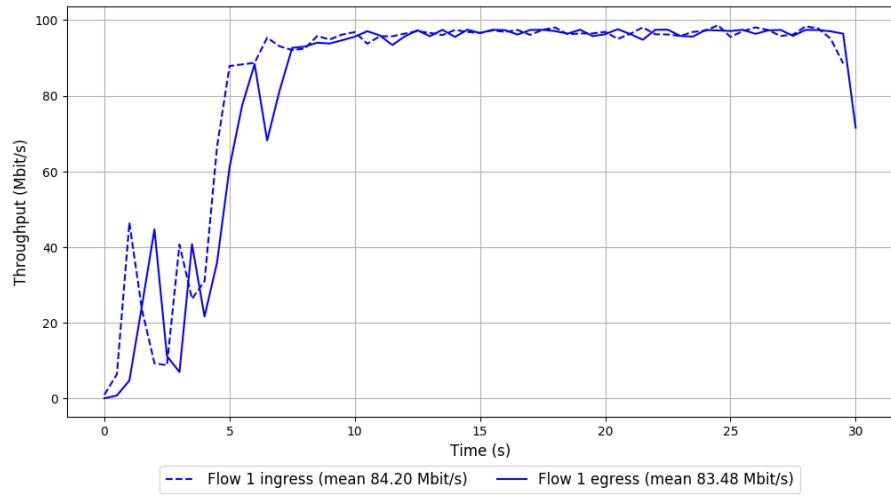


Run 3: Statistics of Indigo-Muses

```
Start at: 2018-10-10 01:15:05
End at: 2018-10-10 01:15:35
Local clock offset: -3.458 ms
Remote clock offset: -3.902 ms

# Below is generated by plot.py at 2018-10-10 02:14:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 83.48 Mbit/s
95th percentile per-packet one-way delay: 89.245 ms
Loss rate: 1.39%
-- Flow 1:
Average throughput: 83.48 Mbit/s
95th percentile per-packet one-way delay: 89.245 ms
Loss rate: 1.39%
```

Run 3: Report of Indigo-Muses — Data Link

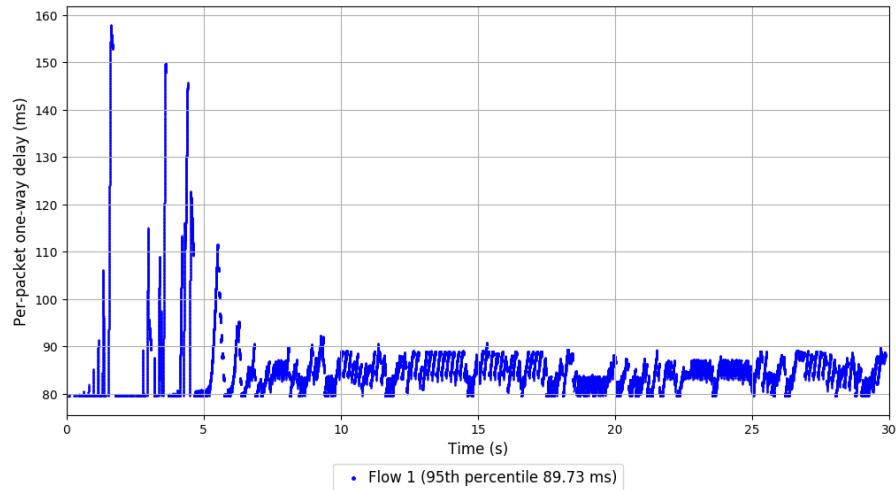
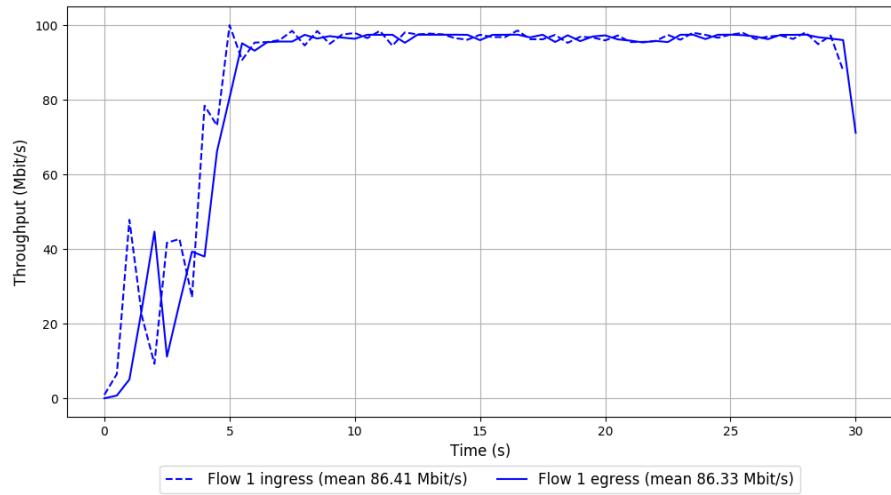


Run 4: Statistics of Indigo-Muses

```
Start at: 2018-10-10 01:36:34
End at: 2018-10-10 01:37:04
Local clock offset: -6.628 ms
Remote clock offset: -4.425 ms

# Below is generated by plot.py at 2018-10-10 02:14:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.33 Mbit/s
95th percentile per-packet one-way delay: 89.735 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 86.33 Mbit/s
95th percentile per-packet one-way delay: 89.735 ms
Loss rate: 0.65%
```

Run 4: Report of Indigo-Muses — Data Link

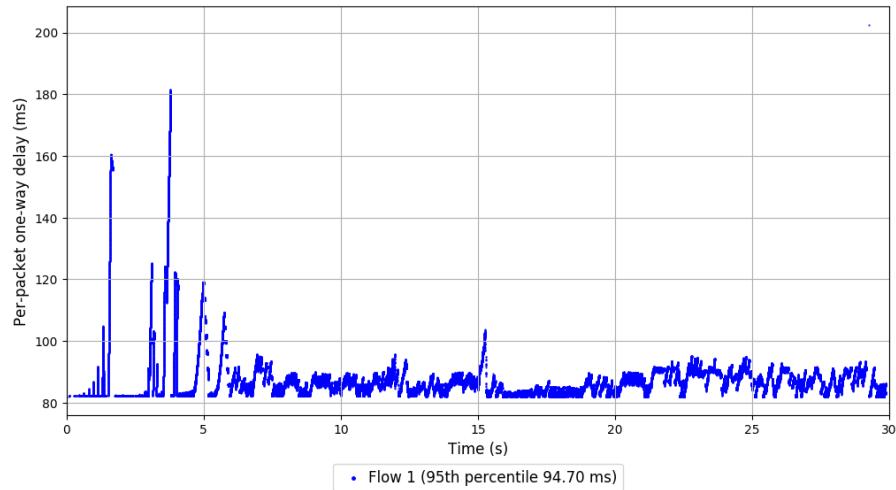
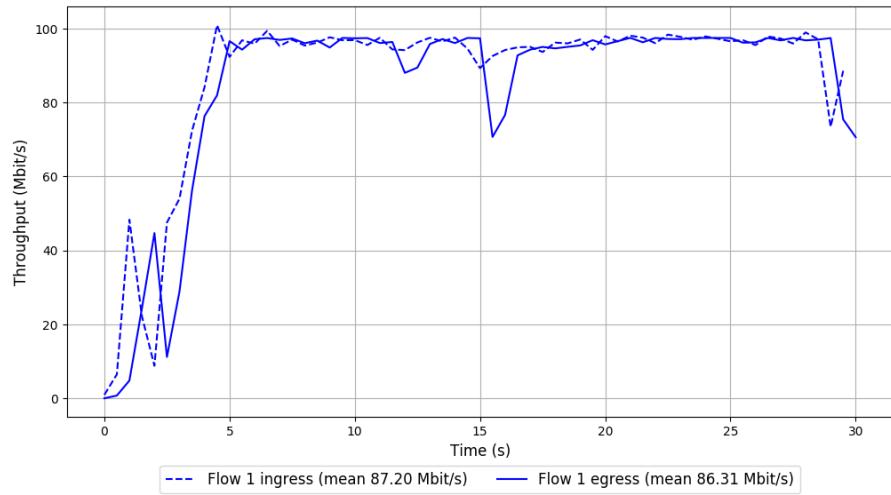


Run 5: Statistics of Indigo-Muses

```
Start at: 2018-10-10 01:57:55
End at: 2018-10-10 01:58:25
Local clock offset: -6.198 ms
Remote clock offset: -7.399 ms

# Below is generated by plot.py at 2018-10-10 02:15:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.31 Mbit/s
95th percentile per-packet one-way delay: 94.702 ms
Loss rate: 1.57%
-- Flow 1:
Average throughput: 86.31 Mbit/s
95th percentile per-packet one-way delay: 94.702 ms
Loss rate: 1.57%
```

Run 5: Report of Indigo-Muses — Data Link

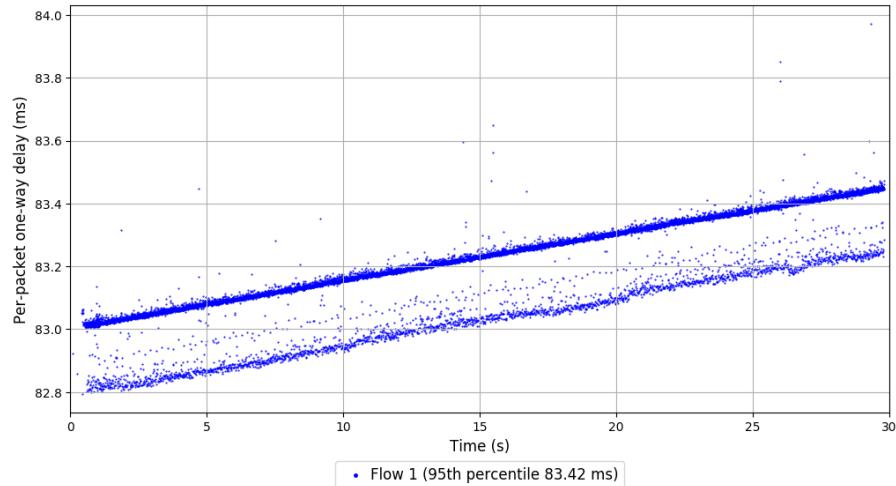
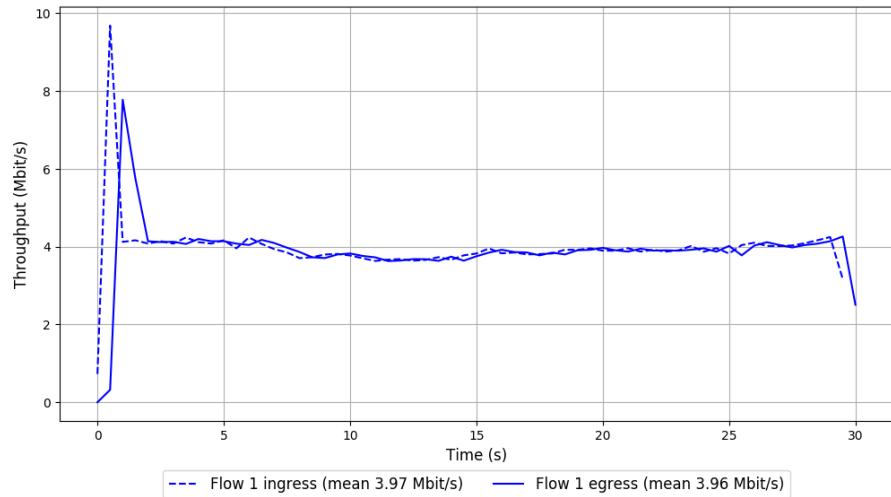


```
Run 1: Statistics of PCC-Allegro
```

```
Start at: 2018-10-10 00:26:36
End at: 2018-10-10 00:27:06
Local clock offset: 0.515 ms
Remote clock offset: -8.447 ms

# Below is generated by plot.py at 2018-10-10 02:15:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.96 Mbit/s
95th percentile per-packet one-way delay: 83.424 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 3.96 Mbit/s
95th percentile per-packet one-way delay: 83.424 ms
Loss rate: 0.57%
```

Run 1: Report of PCC-Allegro — Data Link

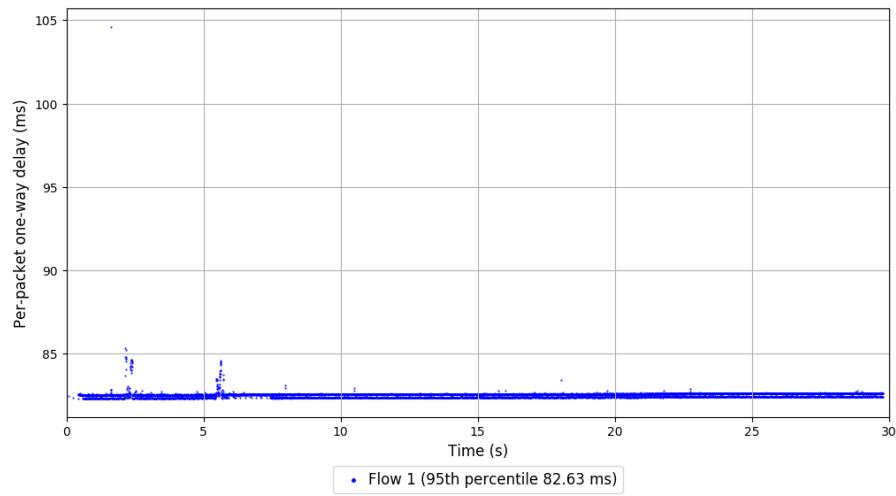
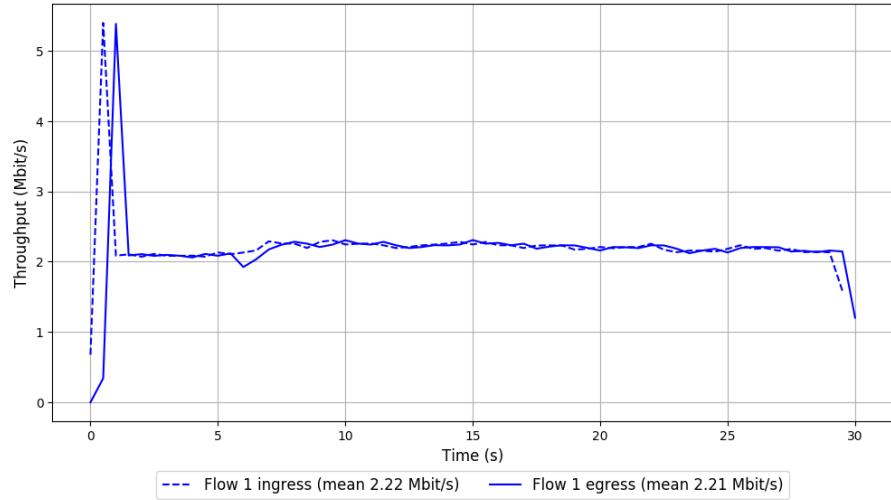


Run 2: Statistics of PCC-Allegro

```
Start at: 2018-10-10 00:48:05
End at: 2018-10-10 00:48:35
Local clock offset: -8.533 ms
Remote clock offset: -8.183 ms

# Below is generated by plot.py at 2018-10-10 02:15:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.21 Mbit/s
95th percentile per-packet one-way delay: 82.632 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 2.21 Mbit/s
95th percentile per-packet one-way delay: 82.632 ms
Loss rate: 0.75%
```

Run 2: Report of PCC-Allegro — Data Link

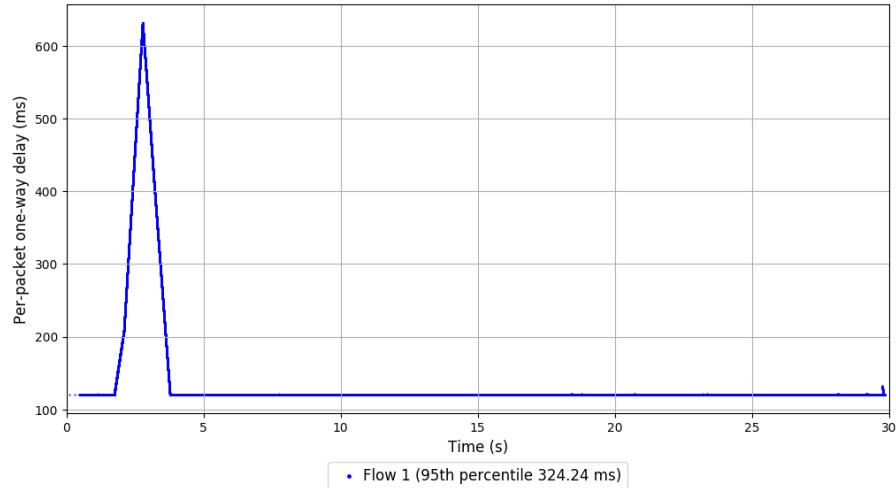
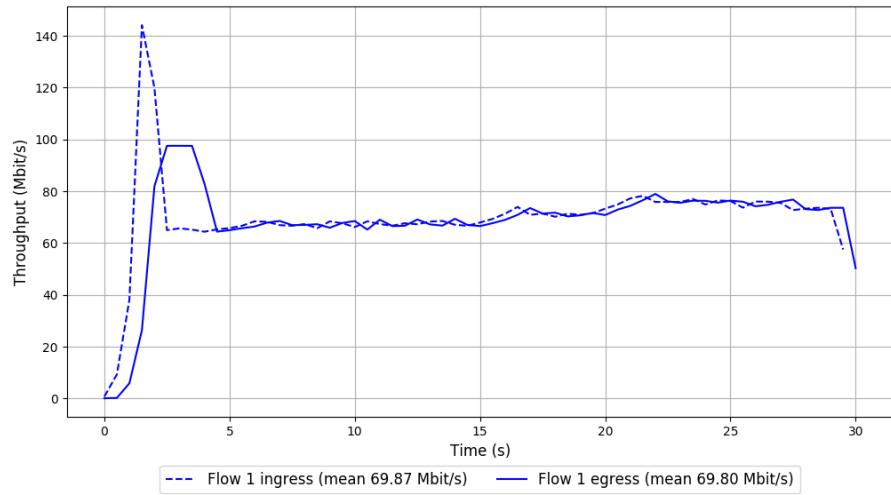


Run 3: Statistics of PCC-Allegro

```
Start at: 2018-10-10 01:09:14
End at: 2018-10-10 01:09:44
Local clock offset: -4.049 ms
Remote clock offset: -45.195 ms

# Below is generated by plot.py at 2018-10-10 02:15:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 69.80 Mbit/s
95th percentile per-packet one-way delay: 324.241 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 69.80 Mbit/s
95th percentile per-packet one-way delay: 324.241 ms
Loss rate: 0.65%
```

Run 3: Report of PCC-Allegro — Data Link

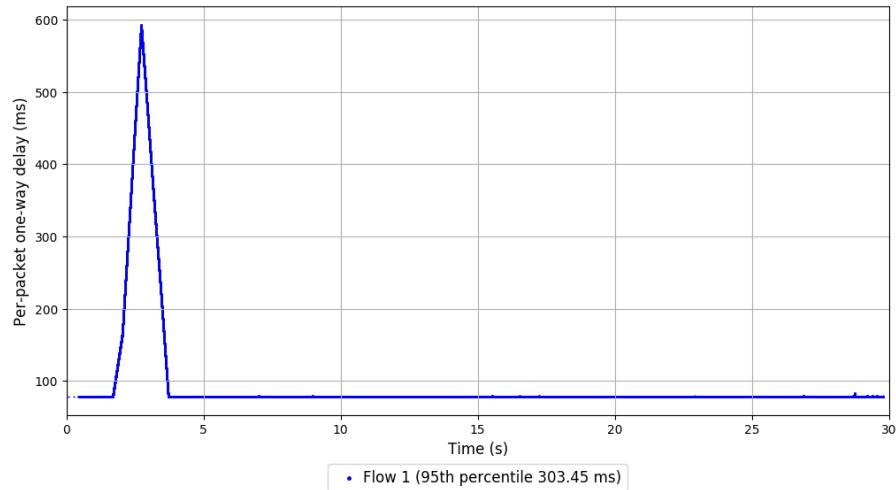
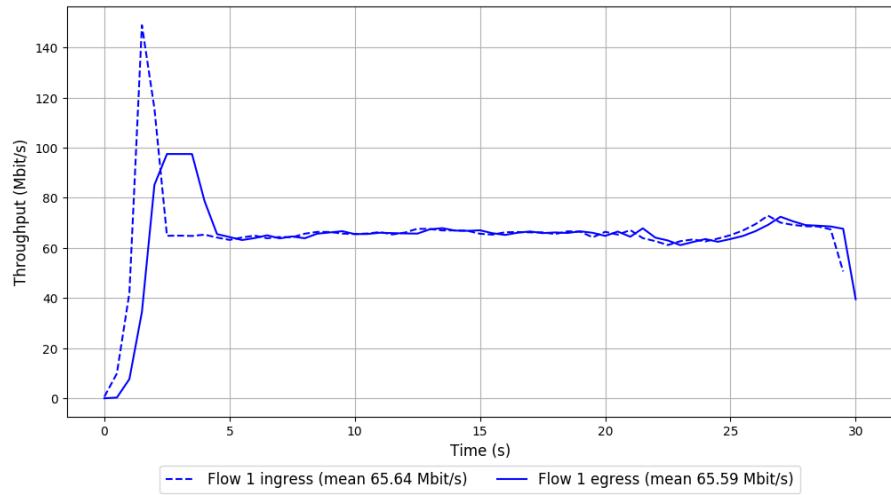


Run 4: Statistics of PCC-Allegro

```
Start at: 2018-10-10 01:30:30
End at: 2018-10-10 01:31:00
Local clock offset: -5.247 ms
Remote clock offset: -2.788 ms

# Below is generated by plot.py at 2018-10-10 02:15:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 65.59 Mbit/s
95th percentile per-packet one-way delay: 303.446 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 65.59 Mbit/s
95th percentile per-packet one-way delay: 303.446 ms
Loss rate: 0.62%
```

Run 4: Report of PCC-Allegro — Data Link

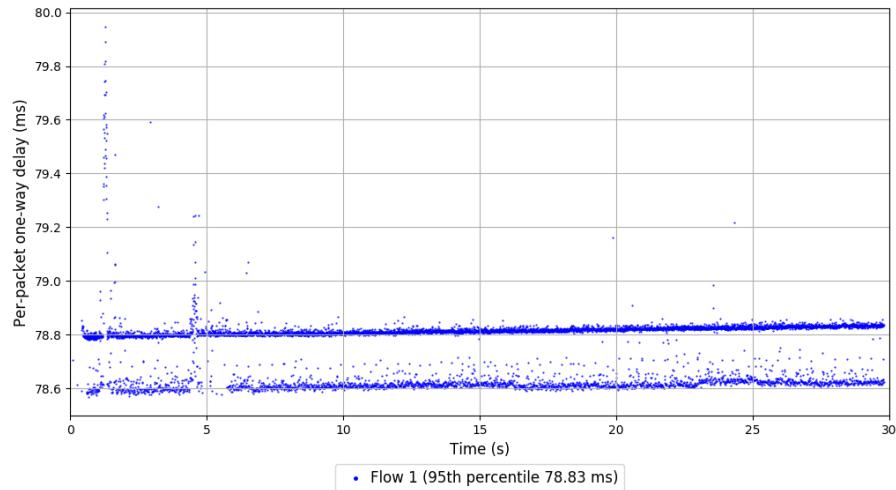
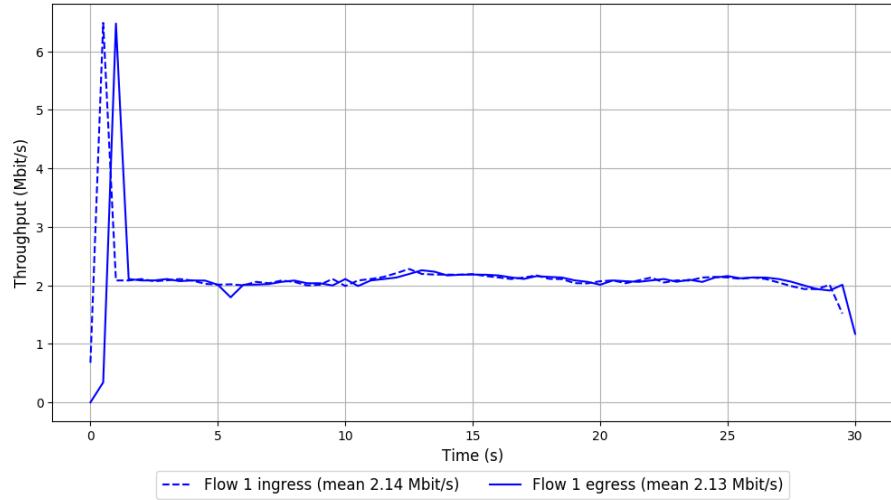


Run 5: Statistics of PCC-Allegro

```
Start at: 2018-10-10 01:52:06
End at: 2018-10-10 01:52:36
Local clock offset: -8.378 ms
Remote clock offset: -3.859 ms

# Below is generated by plot.py at 2018-10-10 02:15:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.13 Mbit/s
95th percentile per-packet one-way delay: 78.835 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 2.13 Mbit/s
95th percentile per-packet one-way delay: 78.835 ms
Loss rate: 0.73%
```

Run 5: Report of PCC-Allegro — Data Link

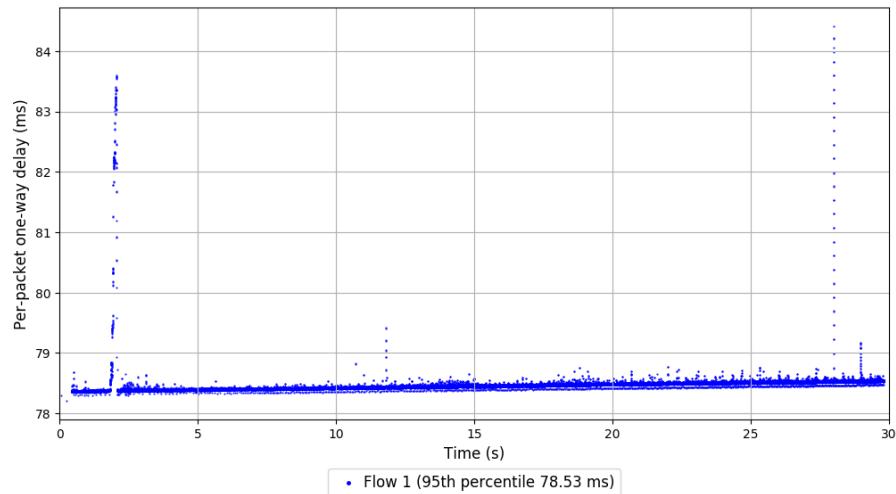
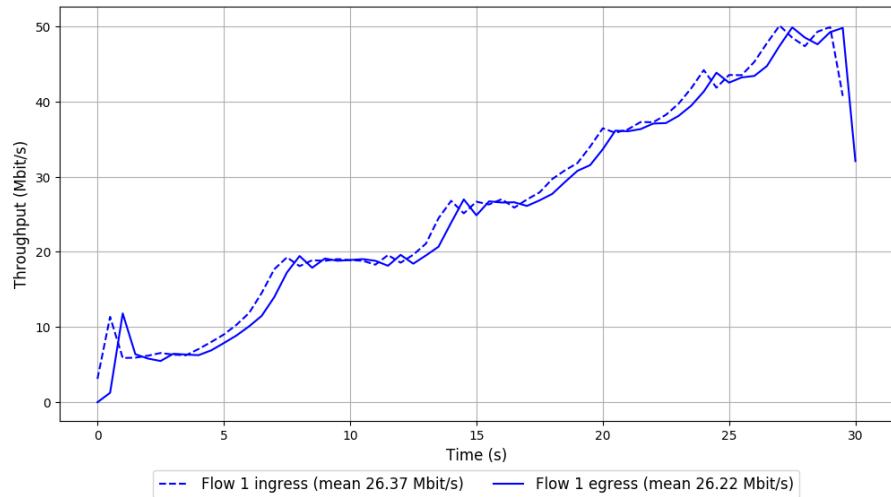


```
Run 1: Statistics of PCC-Expr
```

```
Start at: 2018-10-10 00:36:08
End at: 2018-10-10 00:36:38
Local clock offset: -5.447 ms
Remote clock offset: -3.793 ms

# Below is generated by plot.py at 2018-10-10 02:15:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 26.22 Mbit/s
95th percentile per-packet one-way delay: 78.535 ms
Loss rate: 1.10%
-- Flow 1:
Average throughput: 26.22 Mbit/s
95th percentile per-packet one-way delay: 78.535 ms
Loss rate: 1.10%
```

Run 1: Report of PCC-Expr — Data Link

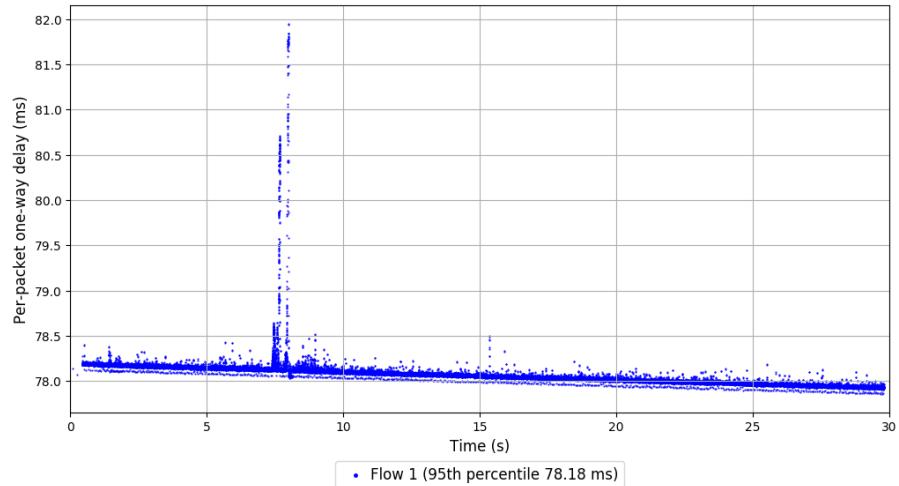
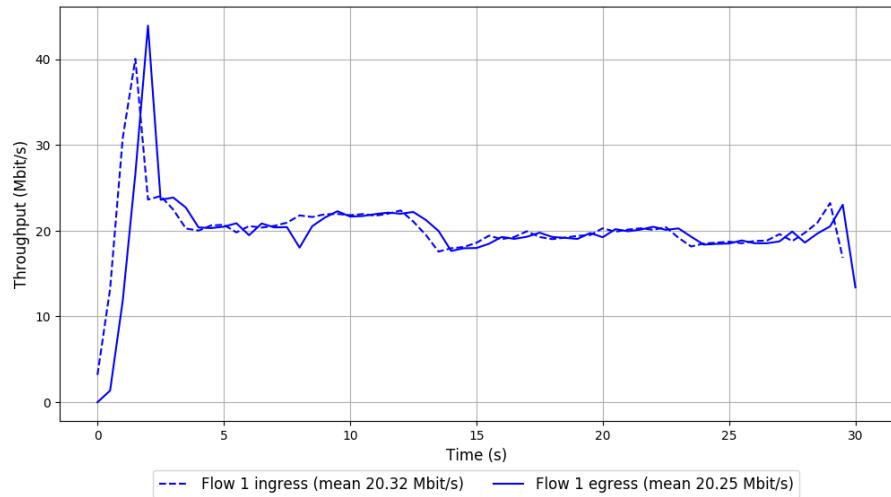


Run 2: Statistics of PCC-Expr

```
Start at: 2018-10-10 00:57:30
End at: 2018-10-10 00:58:00
Local clock offset: -7.843 ms
Remote clock offset: -3.982 ms

# Below is generated by plot.py at 2018-10-10 02:15:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 20.25 Mbit/s
95th percentile per-packet one-way delay: 78.179 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 20.25 Mbit/s
95th percentile per-packet one-way delay: 78.179 ms
Loss rate: 0.91%
```

Run 2: Report of PCC-Expr — Data Link

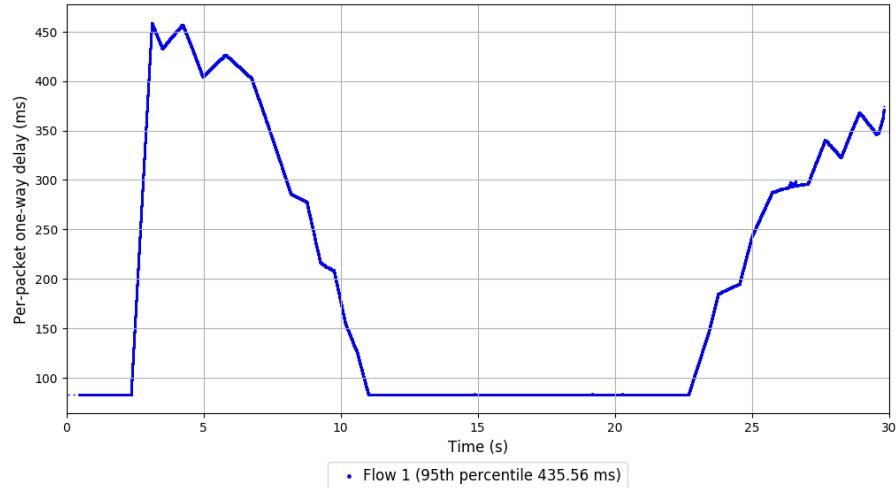
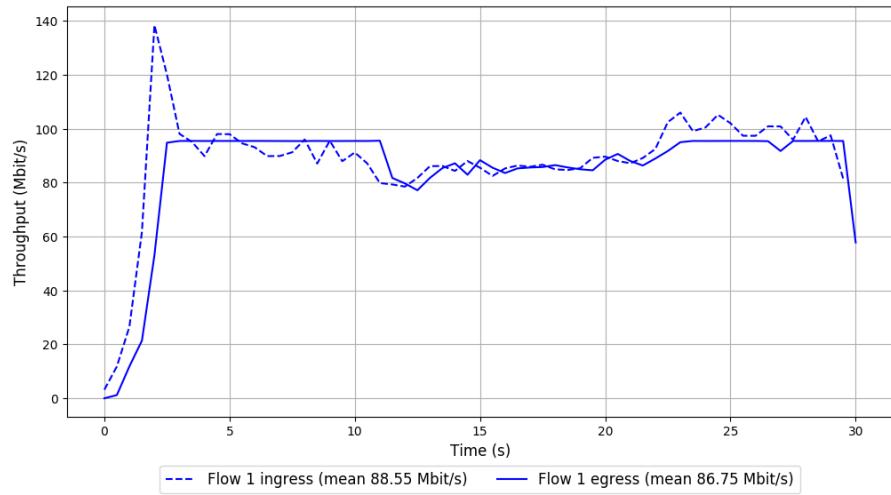


Run 3: Statistics of PCC-Expr

```
Start at: 2018-10-10 01:18:41
End at: 2018-10-10 01:19:11
Local clock offset: -3.307 ms
Remote clock offset: -7.566 ms

# Below is generated by plot.py at 2018-10-10 02:16:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.75 Mbit/s
95th percentile per-packet one-way delay: 435.557 ms
Loss rate: 2.57%
-- Flow 1:
Average throughput: 86.75 Mbit/s
95th percentile per-packet one-way delay: 435.557 ms
Loss rate: 2.57%
```

Run 3: Report of PCC-Expr — Data Link

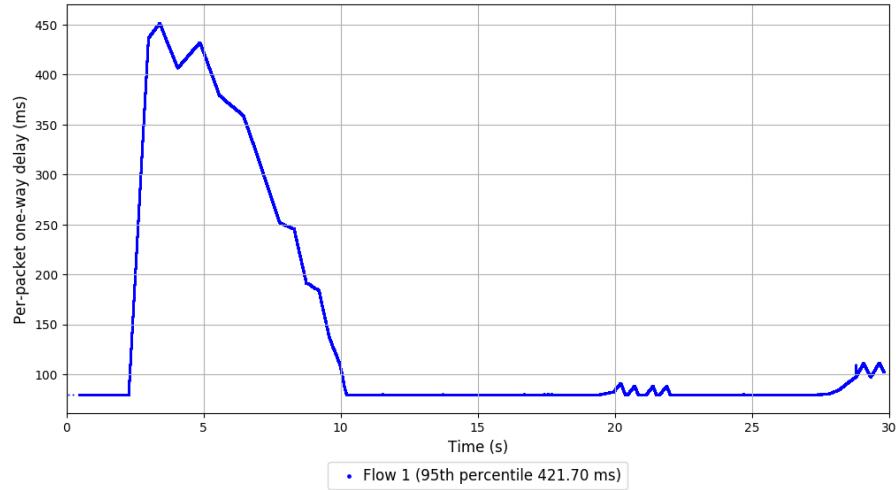
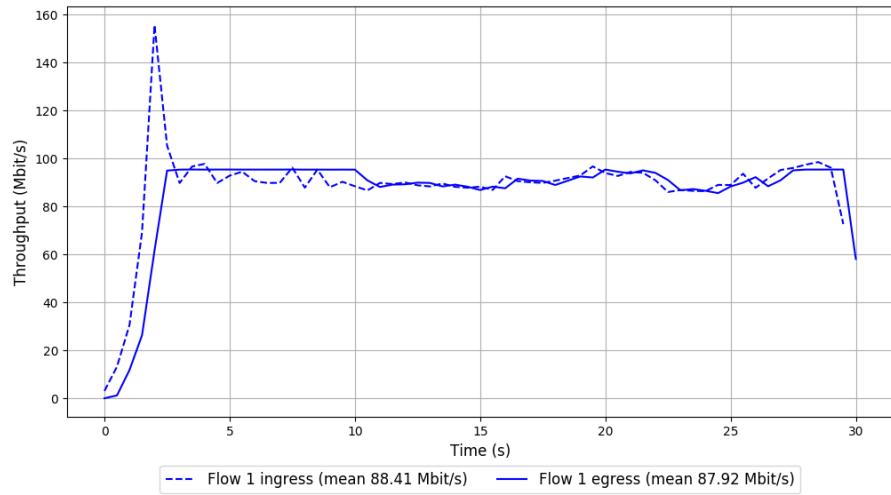


Run 4: Statistics of PCC-Expr

```
Start at: 2018-10-10 01:40:11
End at: 2018-10-10 01:40:41
Local clock offset: -7.223 ms
Remote clock offset: -5.235 ms

# Below is generated by plot.py at 2018-10-10 02:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 87.92 Mbit/s
95th percentile per-packet one-way delay: 421.702 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 87.92 Mbit/s
95th percentile per-packet one-way delay: 421.702 ms
Loss rate: 1.11%
```

Run 4: Report of PCC-Expr — Data Link

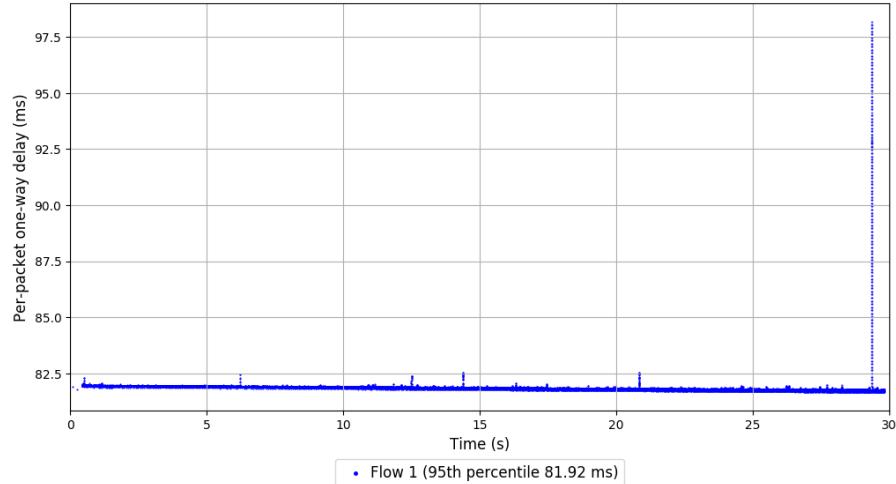
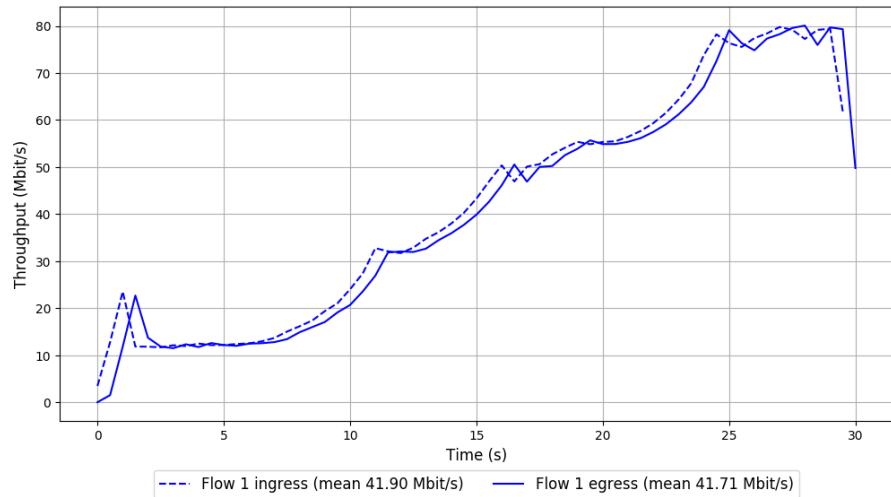


Run 5: Statistics of PCC-Expr

```
Start at: 2018-10-10 02:01:31
End at: 2018-10-10 02:02:01
Local clock offset: -4.225 ms
Remote clock offset: -7.348 ms

# Below is generated by plot.py at 2018-10-10 02:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 41.71 Mbit/s
95th percentile per-packet one-way delay: 81.915 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 41.71 Mbit/s
95th percentile per-packet one-way delay: 81.915 ms
Loss rate: 1.00%
```

Run 5: Report of PCC-Expr — Data Link

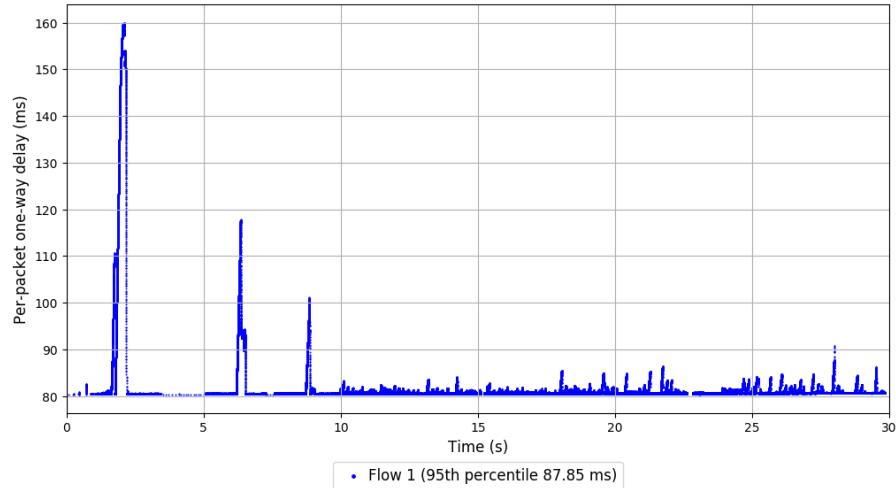
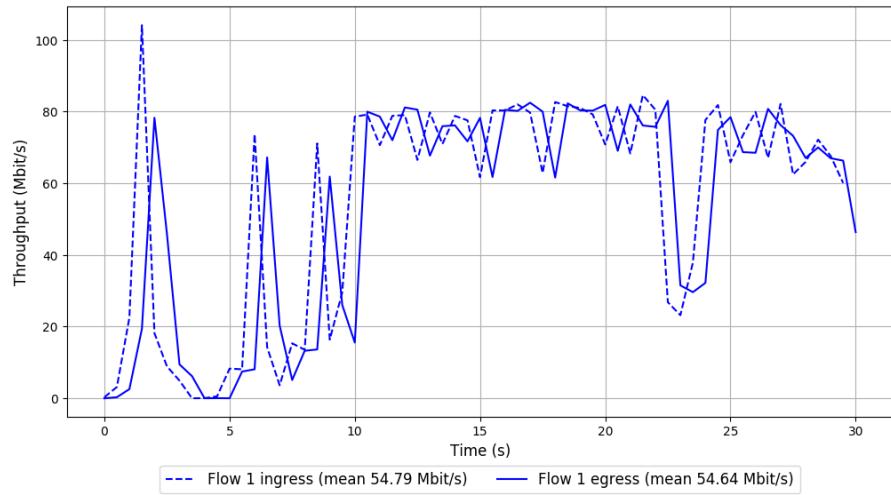


Run 1: Statistics of QUIC Cubic

```
Start at: 2018-10-10 00:37:20
End at: 2018-10-10 00:37:50
Local clock offset: -5.952 ms
Remote clock offset: -6.281 ms

# Below is generated by plot.py at 2018-10-10 02:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 54.64 Mbit/s
95th percentile per-packet one-way delay: 87.850 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 54.64 Mbit/s
95th percentile per-packet one-way delay: 87.850 ms
Loss rate: 0.82%
```

Run 1: Report of QUIC Cubic — Data Link

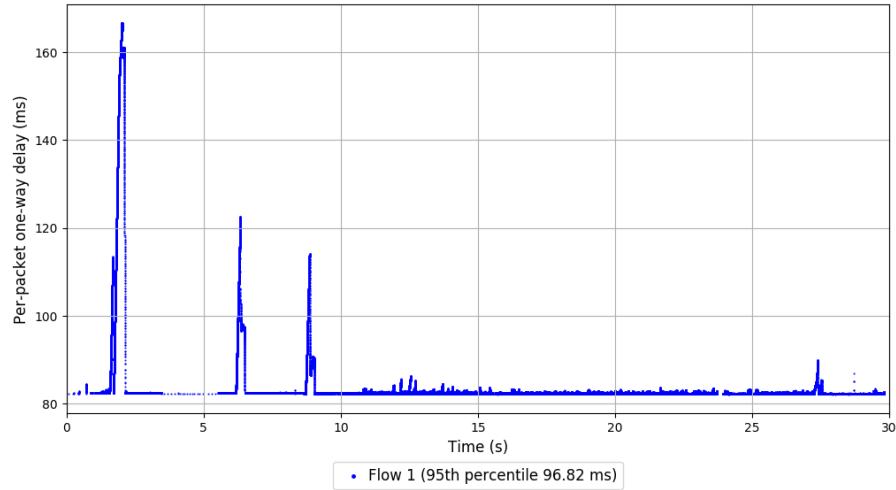
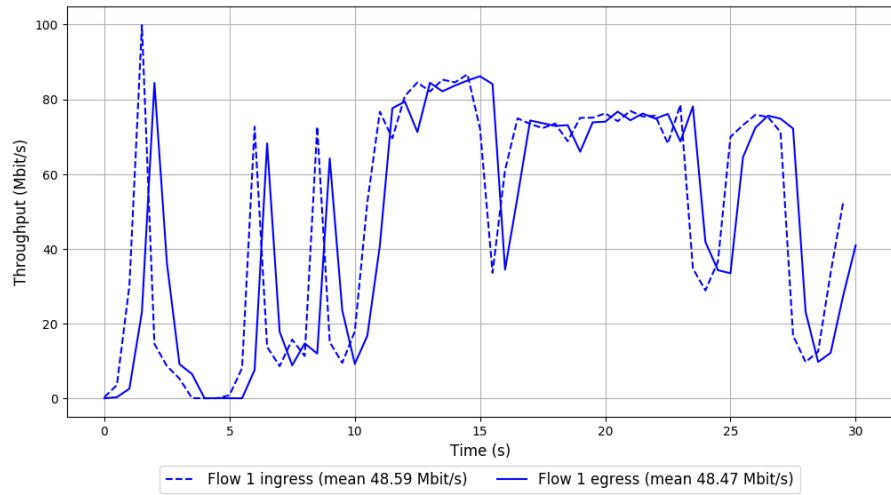


Run 2: Statistics of QUIC Cubic

```
Start at: 2018-10-10 00:58:40
End at: 2018-10-10 00:59:10
Local clock offset: -7.23 ms
Remote clock offset: -7.974 ms

# Below is generated by plot.py at 2018-10-10 02:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 48.47 Mbit/s
95th percentile per-packet one-way delay: 96.822 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 48.47 Mbit/s
95th percentile per-packet one-way delay: 96.822 ms
Loss rate: 0.80%
```

Run 2: Report of QUIC Cubic — Data Link

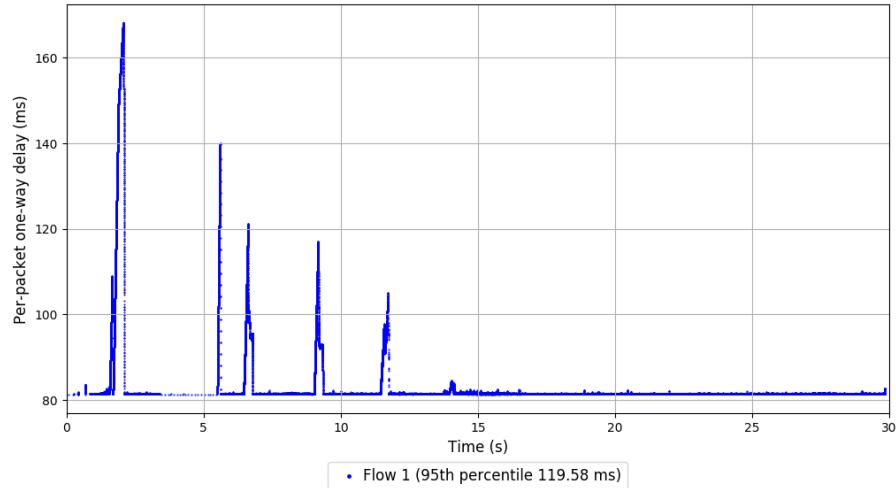
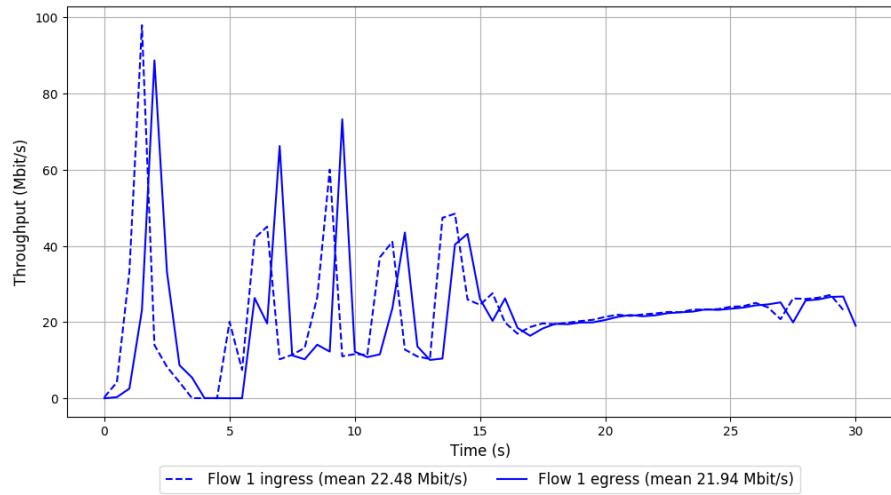


Run 3: Statistics of QUIC Cubic

```
Start at: 2018-10-10 01:19:55
End at: 2018-10-10 01:20:26
Local clock offset: -3.208 ms
Remote clock offset: -6.974 ms

# Below is generated by plot.py at 2018-10-10 02:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 21.94 Mbit/s
95th percentile per-packet one-way delay: 119.579 ms
Loss rate: 2.91%
-- Flow 1:
Average throughput: 21.94 Mbit/s
95th percentile per-packet one-way delay: 119.579 ms
Loss rate: 2.91%
```

Run 3: Report of QUIC Cubic — Data Link

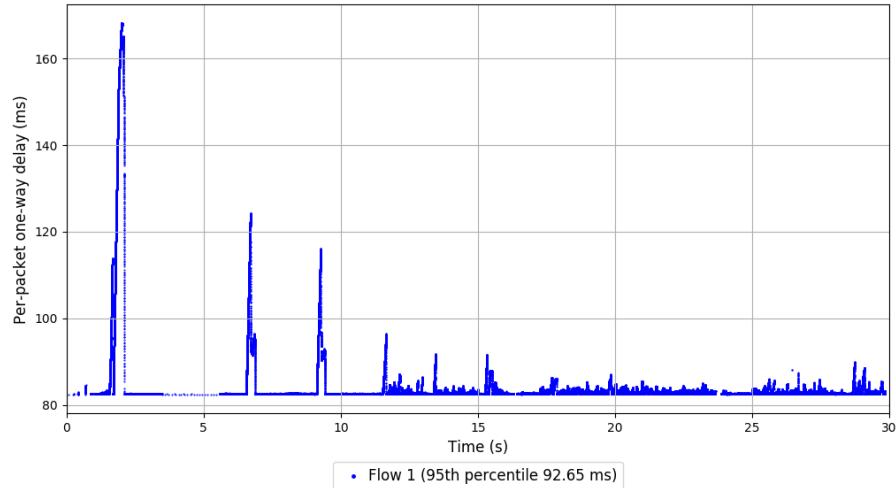
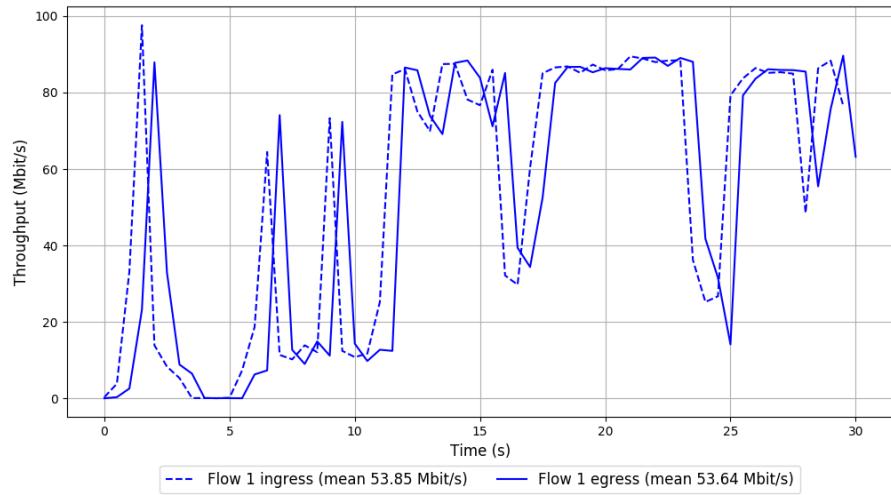


Run 4: Statistics of QUIC Cubic

```
Start at: 2018-10-10 01:41:25
End at: 2018-10-10 01:41:55
Local clock offset: -7.317 ms
Remote clock offset: -7.448 ms

# Below is generated by plot.py at 2018-10-10 02:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 53.64 Mbit/s
95th percentile per-packet one-way delay: 92.651 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 53.64 Mbit/s
95th percentile per-packet one-way delay: 92.651 ms
Loss rate: 0.92%
```

Run 4: Report of QUIC Cubic — Data Link

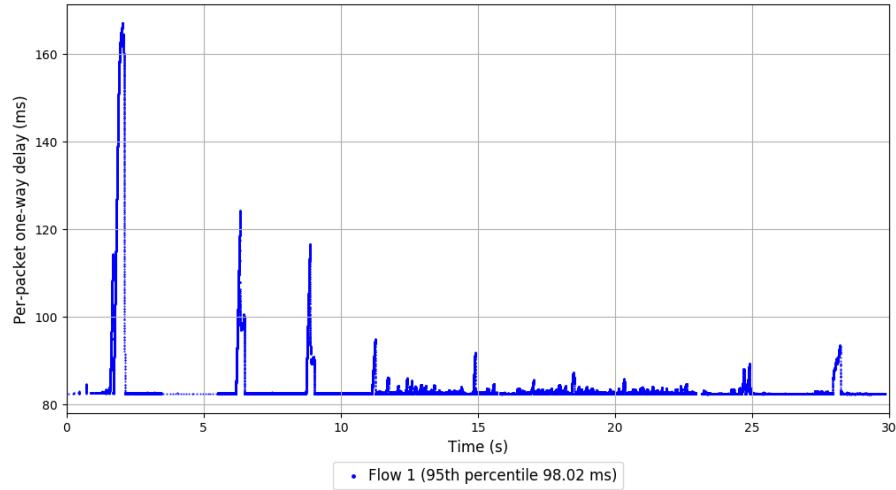
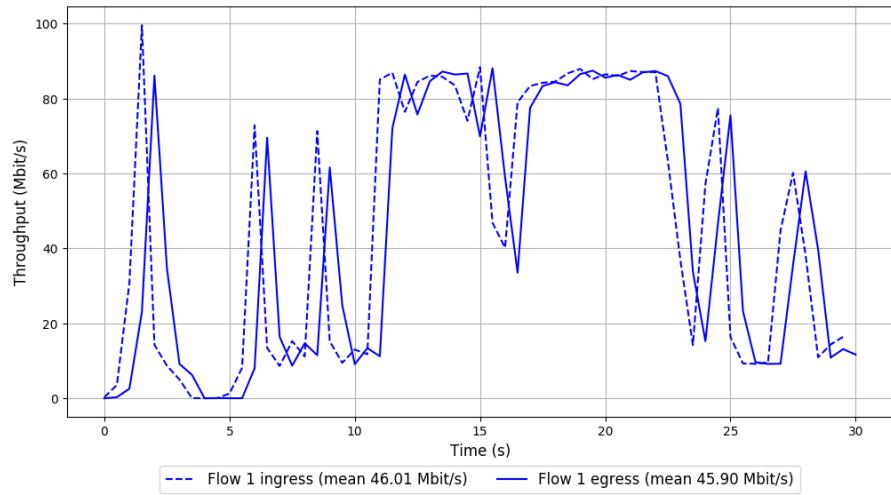


Run 5: Statistics of QUIC Cubic

```
Start at: 2018-10-10 02:02:42
End at: 2018-10-10 02:03:12
Local clock offset: -3.71 ms
Remote clock offset: -7.514 ms

# Below is generated by plot.py at 2018-10-10 02:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 45.90 Mbit/s
95th percentile per-packet one-way delay: 98.022 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 45.90 Mbit/s
95th percentile per-packet one-way delay: 98.022 ms
Loss rate: 0.78%
```

Run 5: Report of QUIC Cubic — Data Link

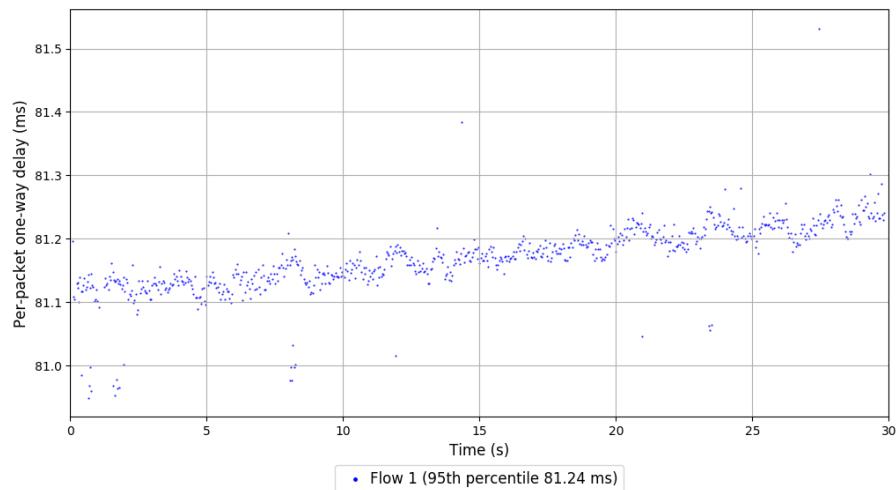
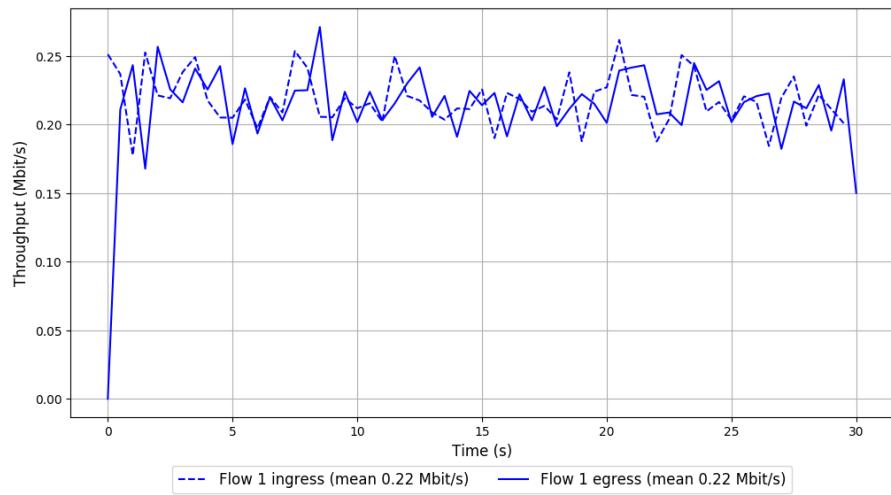


Run 1: Statistics of SCReAM

```
Start at: 2018-10-10 00:42:16
End at: 2018-10-10 00:42:46
Local clock offset: -7.304 ms
Remote clock offset: -6.225 ms

# Below is generated by plot.py at 2018-10-10 02:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 81.239 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 81.239 ms
Loss rate: 0.64%
```

Run 1: Report of SCReAM — Data Link

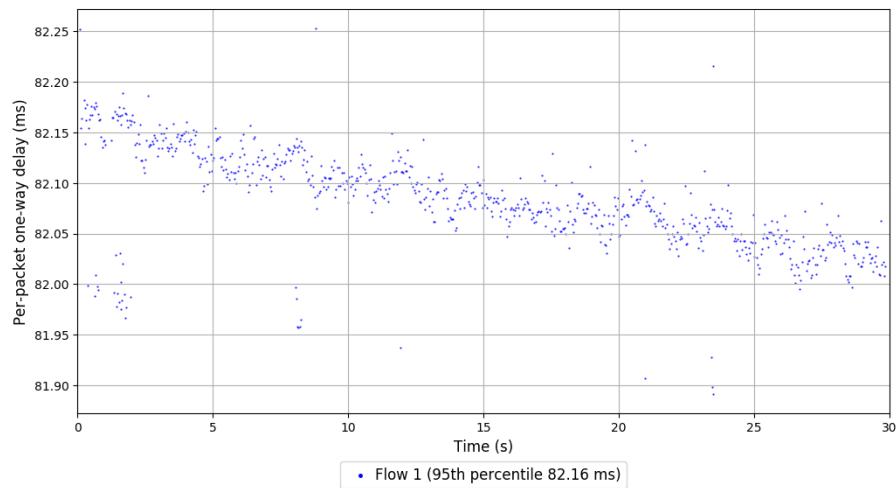
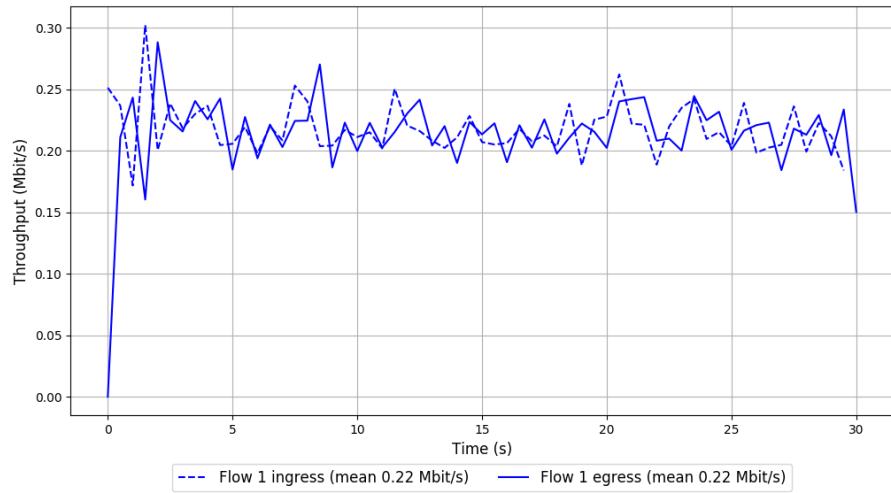


Run 2: Statistics of SCReAM

```
Start at: 2018-10-10 01:03:28
End at: 2018-10-10 01:03:58
Local clock offset: -5.271 ms
Remote clock offset: -7.691 ms

# Below is generated by plot.py at 2018-10-10 02:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 82.160 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 82.160 ms
Loss rate: 0.51%
```

Run 2: Report of SCReAM — Data Link

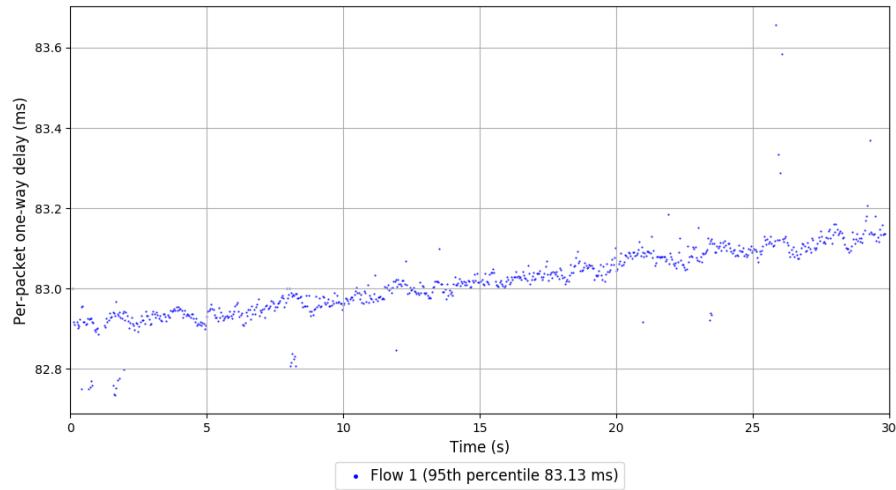
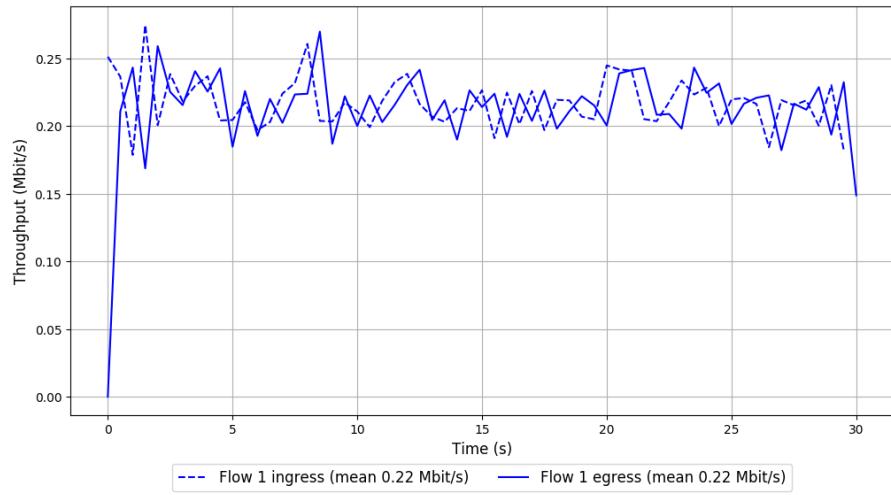


Run 3: Statistics of SCReAM

```
Start at: 2018-10-10 01:24:41
End at: 2018-10-10 01:25:11
Local clock offset: -3.108 ms
Remote clock offset: -7.491 ms

# Below is generated by plot.py at 2018-10-10 02:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 83.130 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 83.130 ms
Loss rate: 0.51%
```

Run 3: Report of SCReAM — Data Link

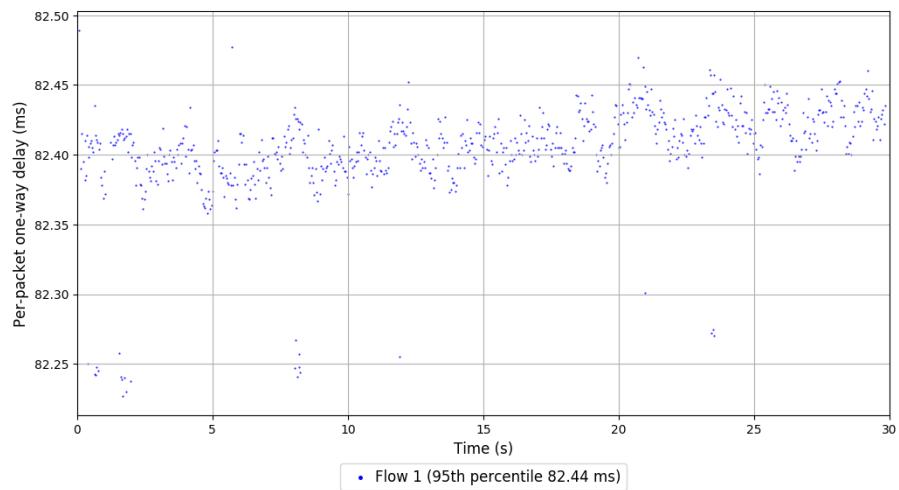
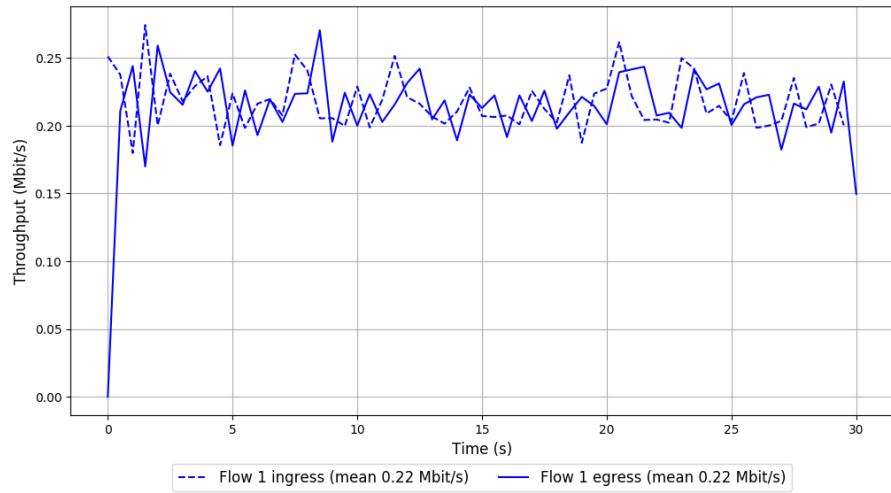


Run 4: Statistics of SCReAM

```
Start at: 2018-10-10 01:46:15
End at: 2018-10-10 01:46:45
Local clock offset: -7.922 ms
Remote clock offset: -7.375 ms

# Below is generated by plot.py at 2018-10-10 02:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 82.442 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 82.442 ms
Loss rate: 0.64%
```

Run 4: Report of SCReAM — Data Link

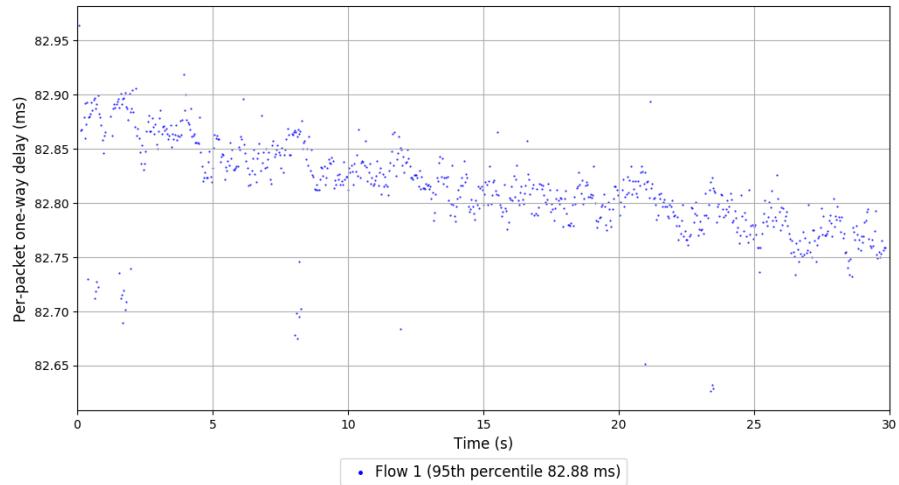
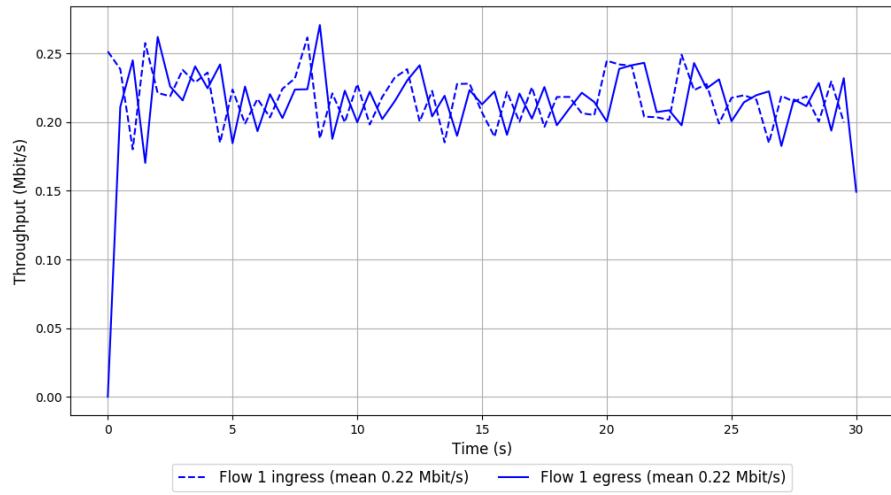


Run 5: Statistics of SCReAM

```
Start at: 2018-10-10 02:07:28
End at: 2018-10-10 02:07:58
Local clock offset: -2.263 ms
Remote clock offset: -7.359 ms

# Below is generated by plot.py at 2018-10-10 02:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 82.882 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 82.882 ms
Loss rate: 0.64%
```

Run 5: Report of SCReAM — Data Link

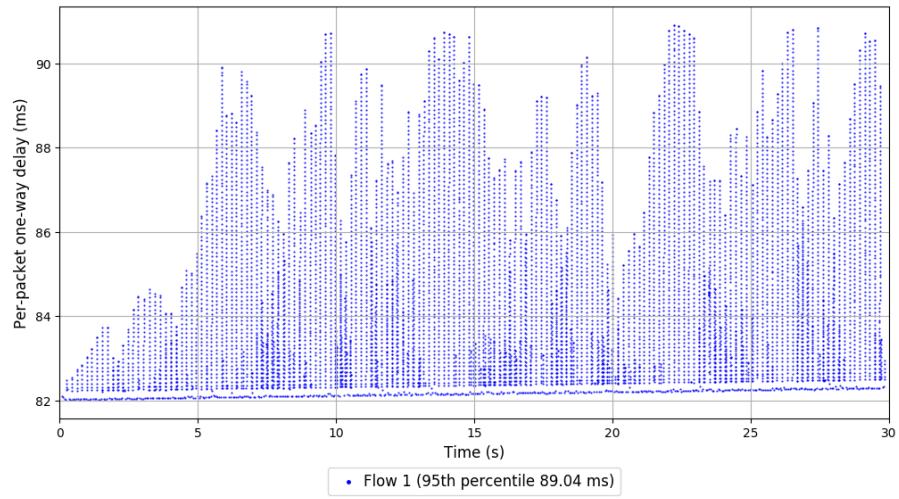
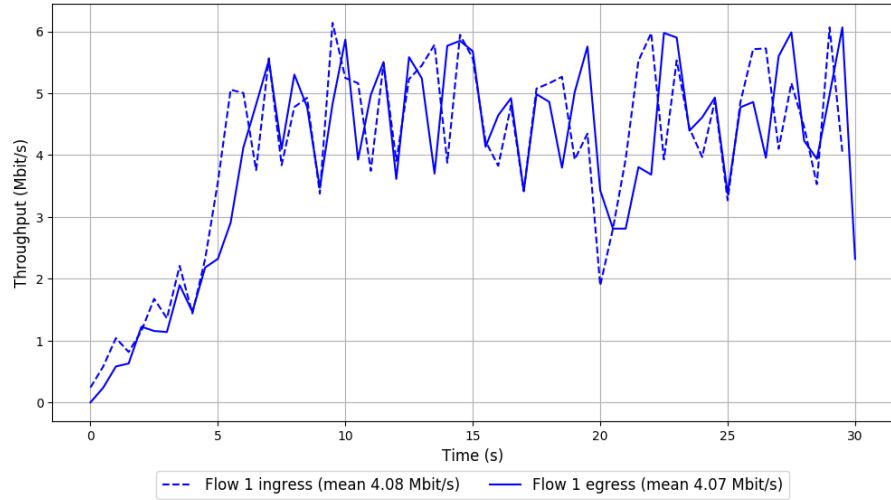


Run 1: Statistics of Sprout

```
Start at: 2018-10-10 00:31:16
End at: 2018-10-10 00:31:46
Local clock offset: -3.117 ms
Remote clock offset: -8.439 ms

# Below is generated by plot.py at 2018-10-10 02:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.07 Mbit/s
95th percentile per-packet one-way delay: 89.040 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 4.07 Mbit/s
95th percentile per-packet one-way delay: 89.040 ms
Loss rate: 0.71%
```

Run 1: Report of Sprout — Data Link

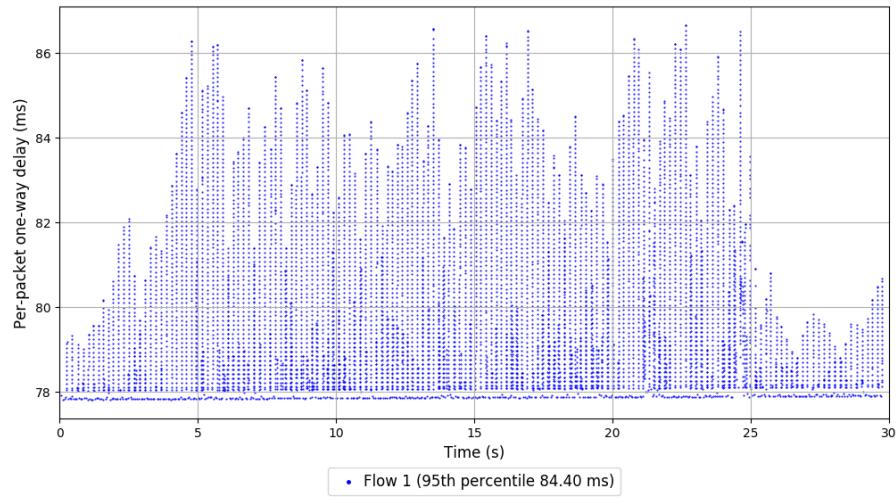
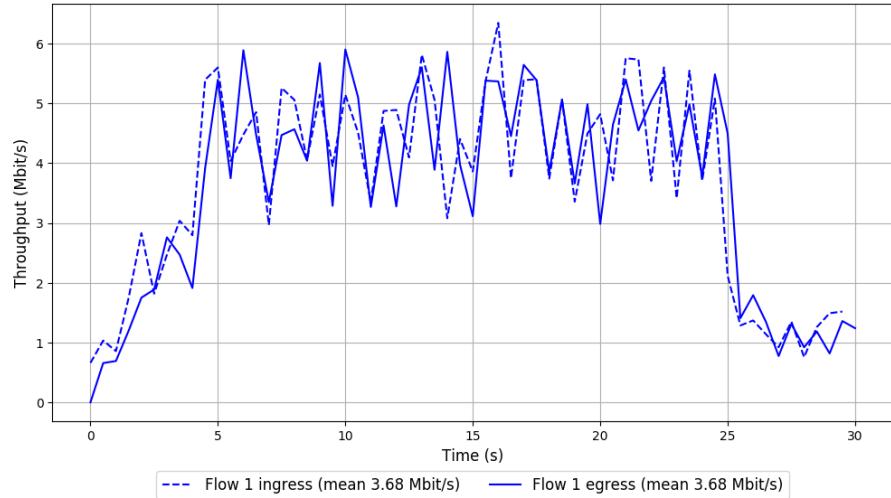


Run 2: Statistics of Sprout

```
Start at: 2018-10-10 00:52:46
End at: 2018-10-10 00:53:16
Local clock offset: -9.284 ms
Remote clock offset: -3.012 ms

# Below is generated by plot.py at 2018-10-10 02:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.68 Mbit/s
95th percentile per-packet one-way delay: 84.397 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 3.68 Mbit/s
95th percentile per-packet one-way delay: 84.397 ms
Loss rate: 0.82%
```

Run 2: Report of Sprout — Data Link

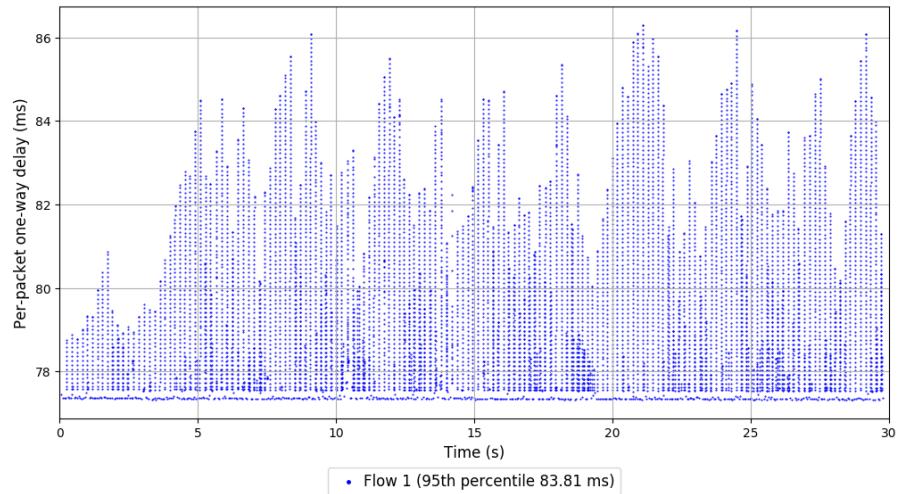
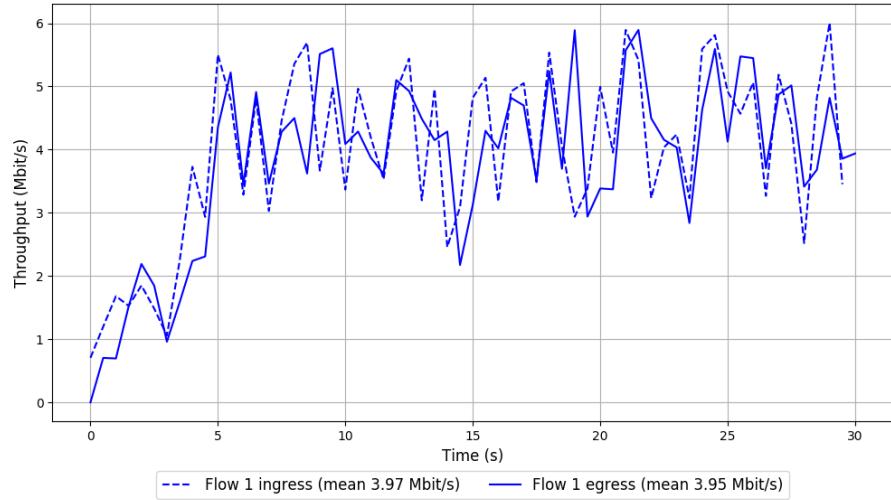


Run 3: Statistics of Sprout

```
Start at: 2018-10-10 01:13:57
End at: 2018-10-10 01:14:27
Local clock offset: -3.603 ms
Remote clock offset: -3.095 ms

# Below is generated by plot.py at 2018-10-10 02:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.95 Mbit/s
95th percentile per-packet one-way delay: 83.812 ms
Loss rate: 1.13%
-- Flow 1:
Average throughput: 3.95 Mbit/s
95th percentile per-packet one-way delay: 83.812 ms
Loss rate: 1.13%
```

Run 3: Report of Sprout — Data Link

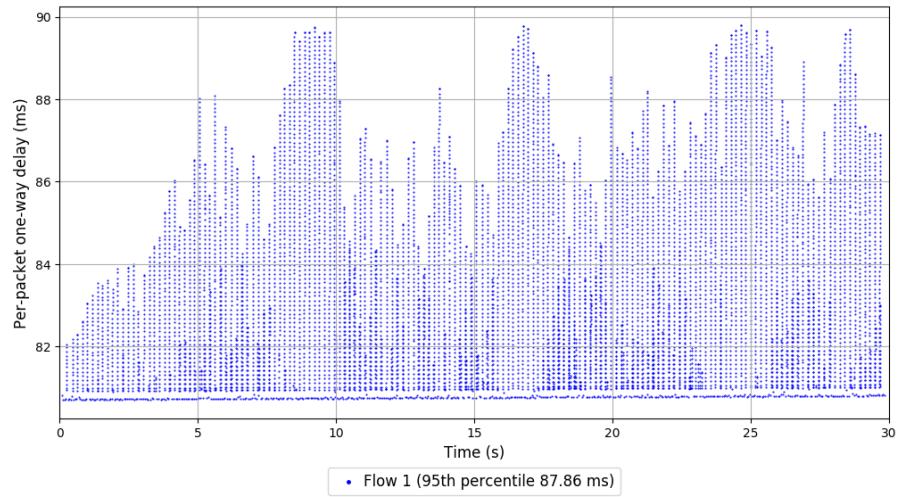
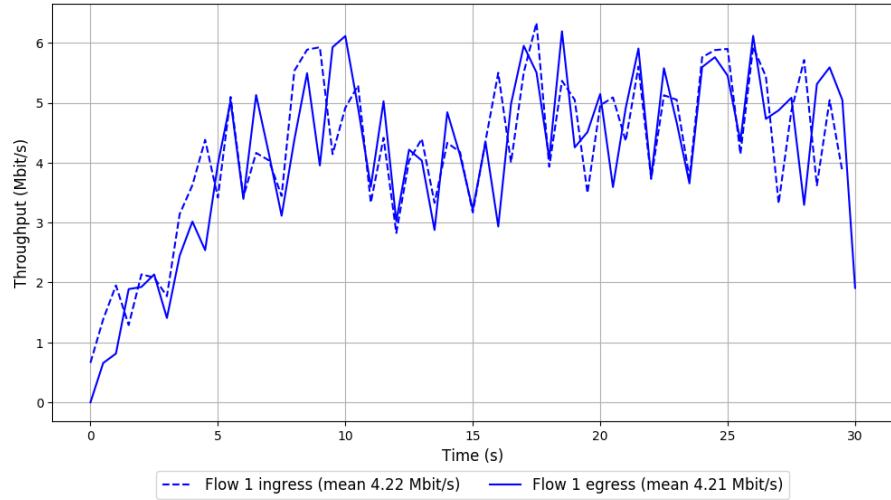


Run 4: Statistics of Sprout

```
Start at: 2018-10-10 01:35:26
End at: 2018-10-10 01:35:56
Local clock offset: -6.389 ms
Remote clock offset: -5.467 ms

# Below is generated by plot.py at 2018-10-10 02:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.21 Mbit/s
95th percentile per-packet one-way delay: 87.863 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 4.21 Mbit/s
95th percentile per-packet one-way delay: 87.863 ms
Loss rate: 0.77%
```

Run 4: Report of Sprout — Data Link

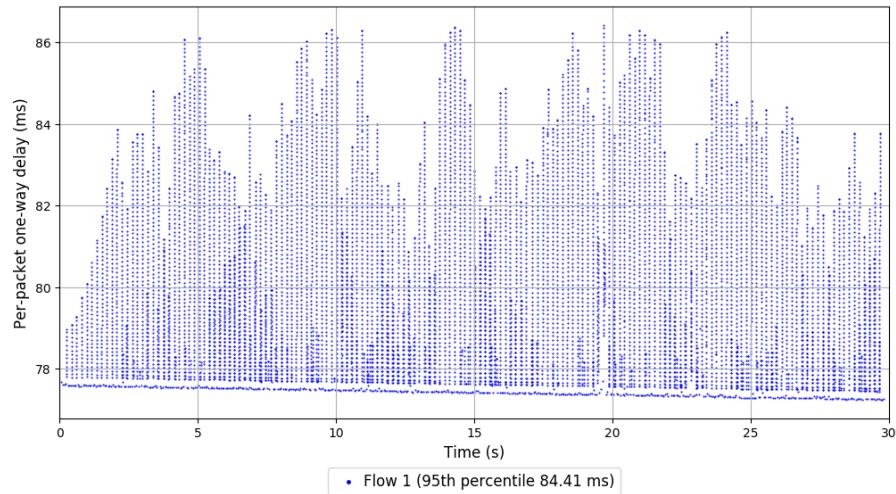
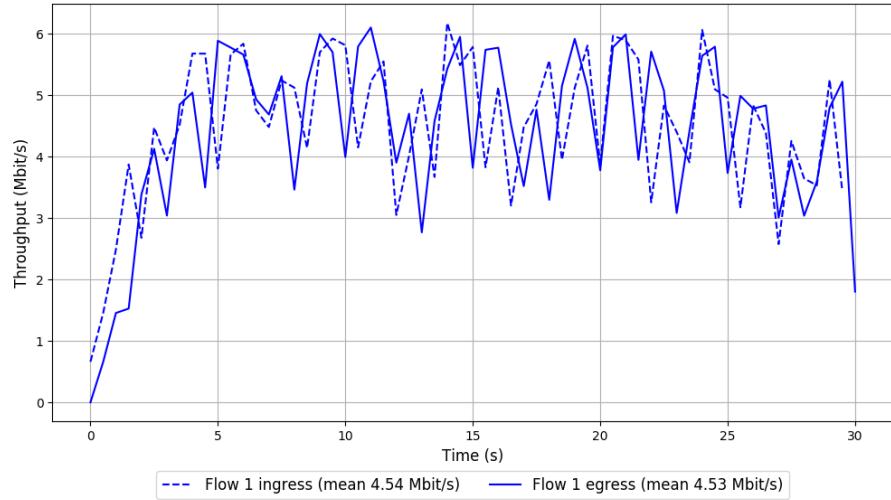


Run 5: Statistics of Sprout

```
Start at: 2018-10-10 01:56:47
End at: 2018-10-10 01:57:17
Local clock offset: -7.127 ms
Remote clock offset: -3.366 ms

# Below is generated by plot.py at 2018-10-10 02:16:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.53 Mbit/s
95th percentile per-packet one-way delay: 84.412 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 4.53 Mbit/s
95th percentile per-packet one-way delay: 84.412 ms
Loss rate: 0.65%
```

Run 5: Report of Sprout — Data Link

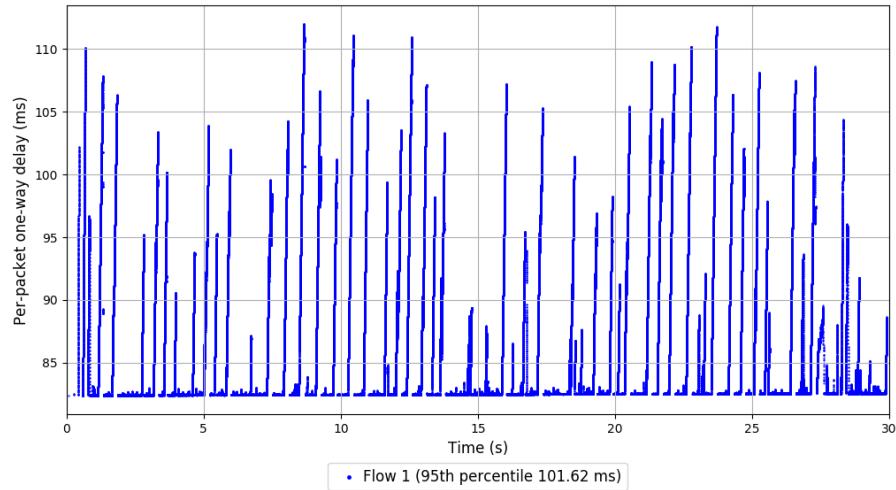
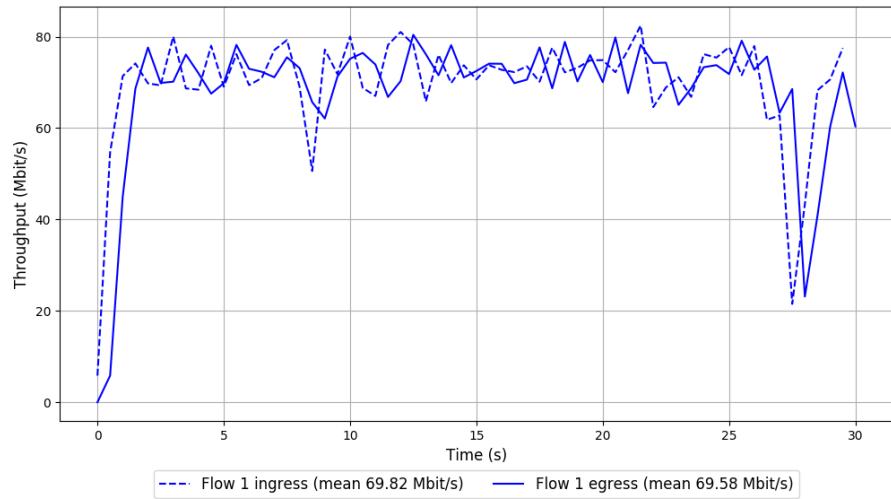


Run 1: Statistics of TaoVA-100x

```
Start at: 2018-10-10 00:39:40
End at: 2018-10-10 00:40:10
Local clock offset: -6.626 ms
Remote clock offset: -8.475 ms

# Below is generated by plot.py at 2018-10-10 02:17:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 69.58 Mbit/s
95th percentile per-packet one-way delay: 101.620 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 69.58 Mbit/s
95th percentile per-packet one-way delay: 101.620 ms
Loss rate: 0.78%
```

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

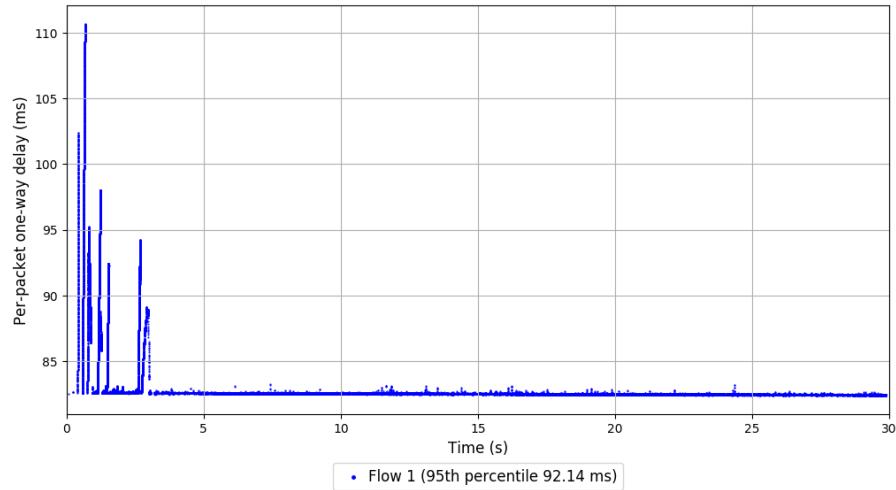
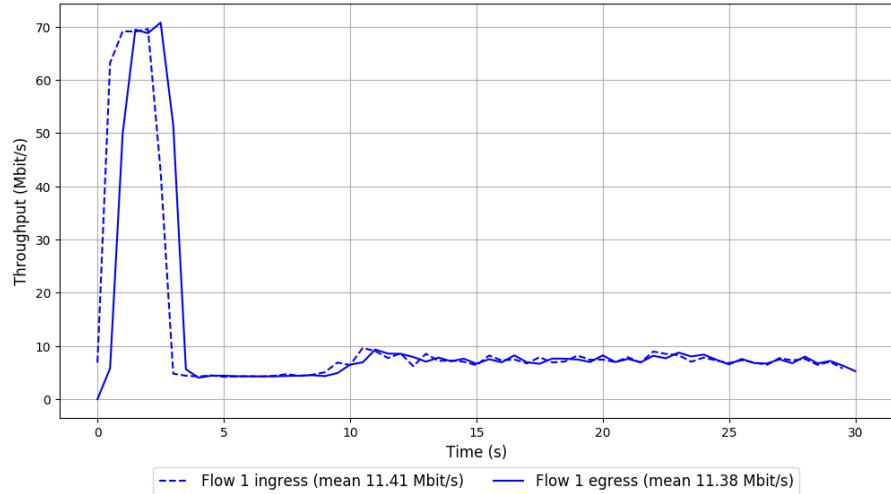


Run 2: Statistics of TaoVA-100x

```
Start at: 2018-10-10 01:01:08
End at: 2018-10-10 01:01:38
Local clock offset: -6.088 ms
Remote clock offset: -7.899 ms

# Below is generated by plot.py at 2018-10-10 02:17:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.38 Mbit/s
95th percentile per-packet one-way delay: 92.142 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 11.38 Mbit/s
95th percentile per-packet one-way delay: 92.142 ms
Loss rate: 0.77%
```

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

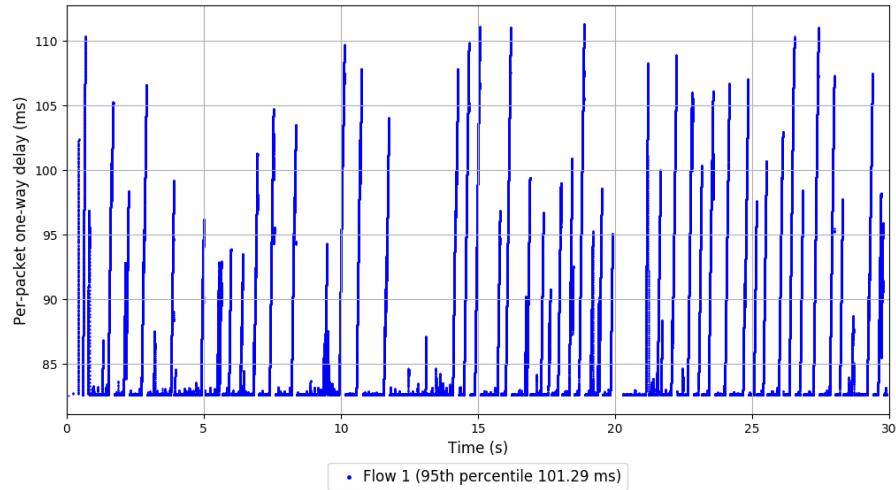
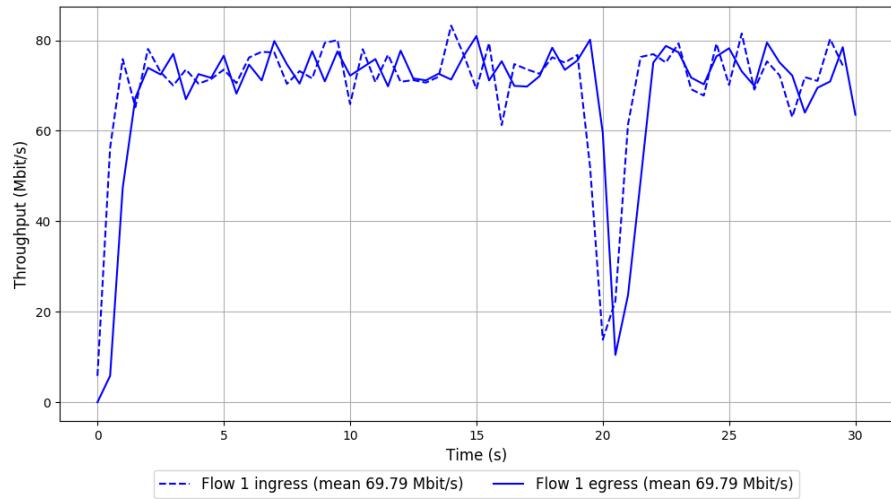


Run 3: Statistics of TaoVA-100x

```
Start at: 2018-10-10 01:22:16
End at: 2018-10-10 01:22:46
Local clock offset: -3.2 ms
Remote clock offset: -7.597 ms

# Below is generated by plot.py at 2018-10-10 02:17:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 69.79 Mbit/s
95th percentile per-packet one-way delay: 101.291 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 69.79 Mbit/s
95th percentile per-packet one-way delay: 101.291 ms
Loss rate: 0.56%
```

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

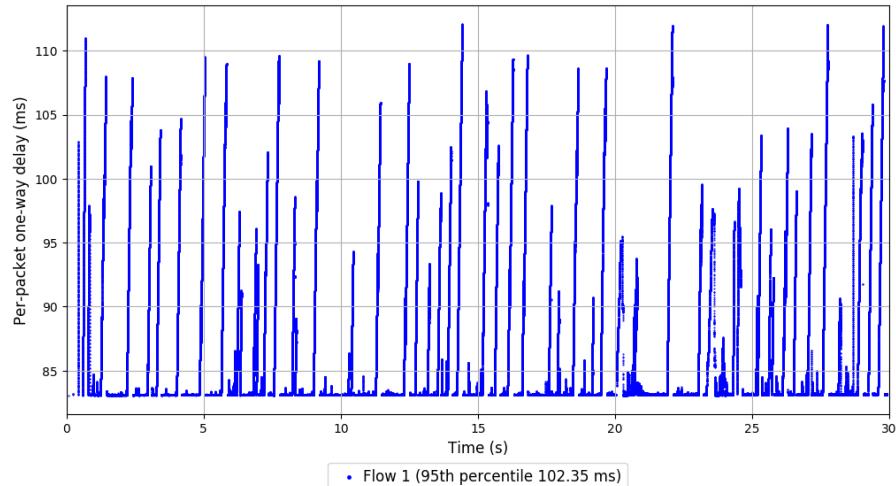
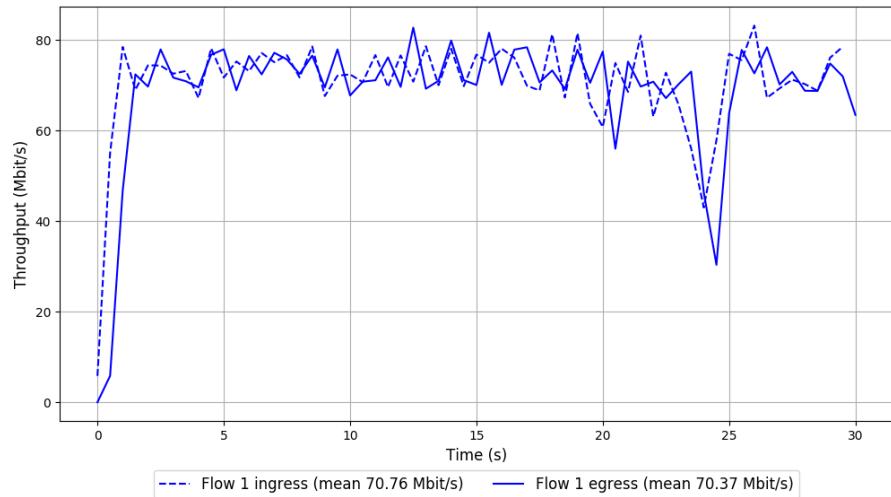


Run 4: Statistics of TaoVA-100x

```
Start at: 2018-10-10 01:43:47
End at: 2018-10-10 01:44:17
Local clock offset: -7.606 ms
Remote clock offset: -7.34 ms

# Below is generated by plot.py at 2018-10-10 02:17:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 70.37 Mbit/s
95th percentile per-packet one-way delay: 102.349 ms
Loss rate: 1.10%
-- Flow 1:
Average throughput: 70.37 Mbit/s
95th percentile per-packet one-way delay: 102.349 ms
Loss rate: 1.10%
```

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

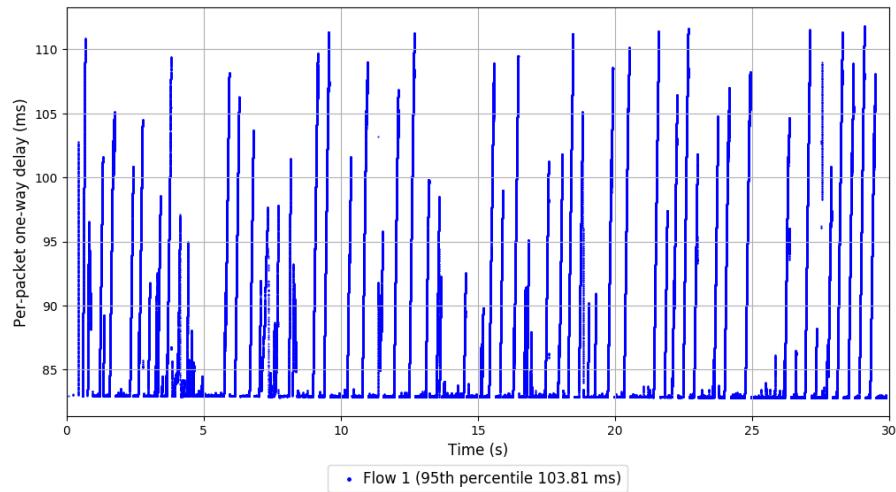
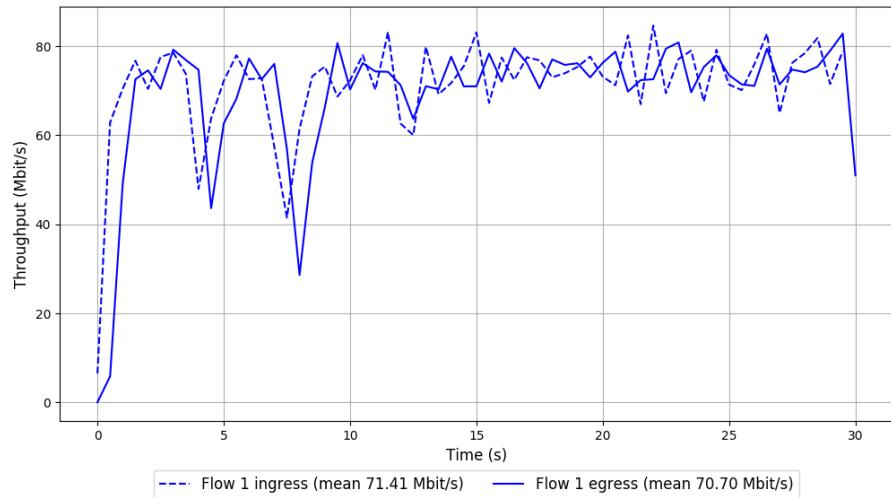


Run 5: Statistics of TaoVA-100x

```
Start at: 2018-10-10 02:05:03
End at: 2018-10-10 02:05:33
Local clock offset: -2.851 ms
Remote clock offset: -7.43 ms

# Below is generated by plot.py at 2018-10-10 02:17:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 70.70 Mbit/s
95th percentile per-packet one-way delay: 103.813 ms
Loss rate: 1.53%
-- Flow 1:
Average throughput: 70.70 Mbit/s
95th percentile per-packet one-way delay: 103.813 ms
Loss rate: 1.53%
```

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

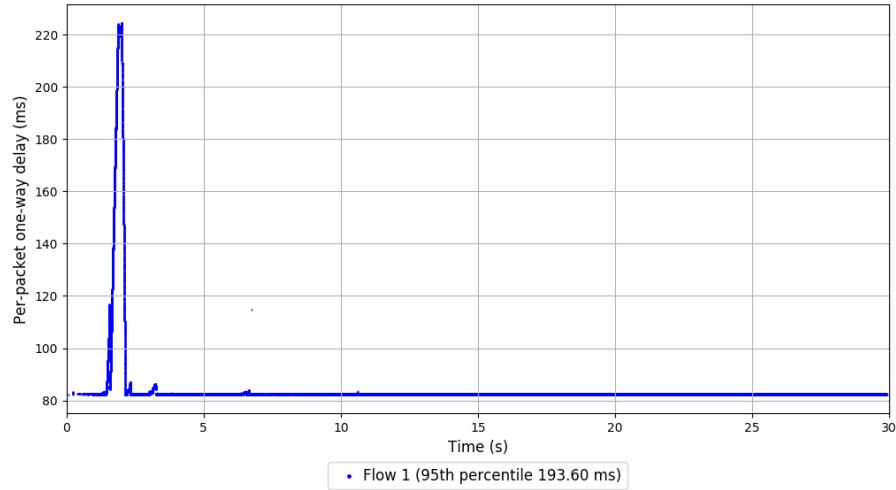
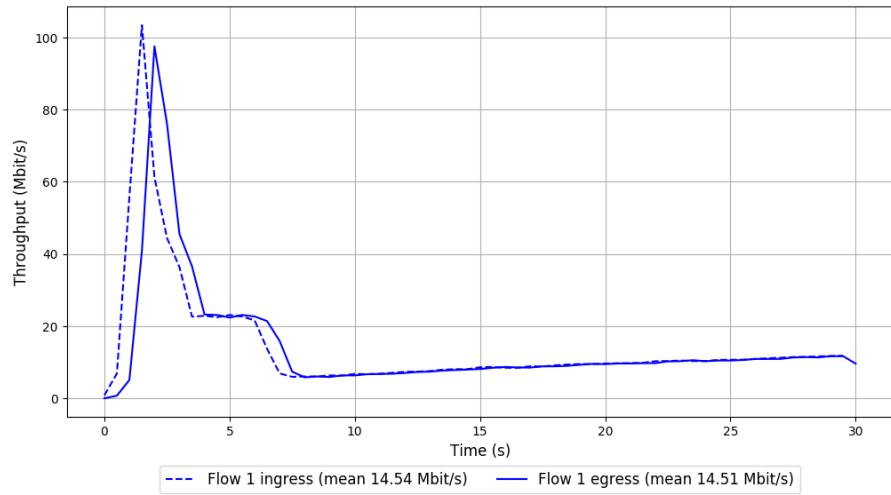


Run 1: Statistics of TCP Vegas

```
Start at: 2018-10-10 00:23:04
End at: 2018-10-10 00:23:34
Local clock offset: 2.089 ms
Remote clock offset: -8.442 ms

# Below is generated by plot.py at 2018-10-10 02:17:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 14.51 Mbit/s
95th percentile per-packet one-way delay: 193.602 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 14.51 Mbit/s
95th percentile per-packet one-way delay: 193.602 ms
Loss rate: 0.74%
```

Run 1: Report of TCP Vegas — Data Link

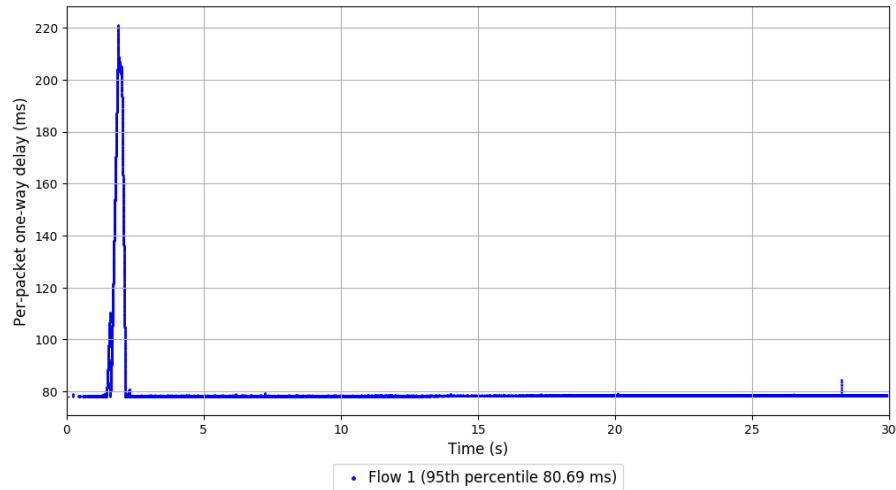
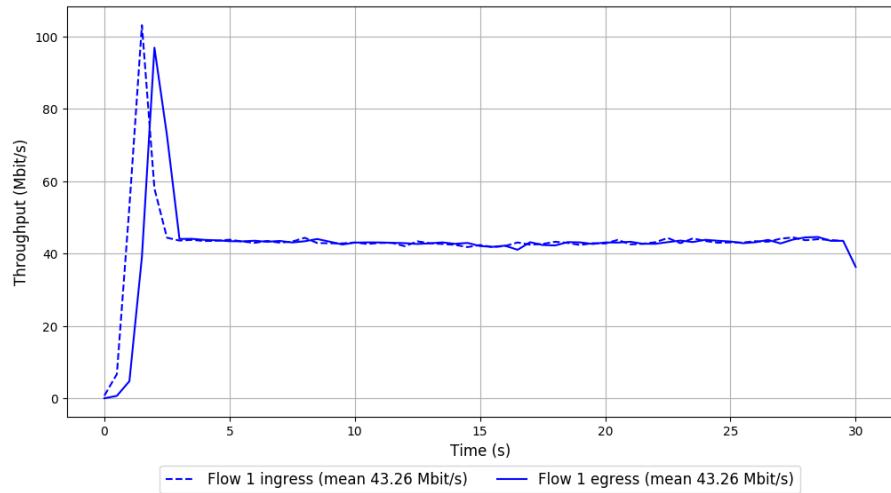


Run 2: Statistics of TCP Vegas

```
Start at: 2018-10-10 00:44:35
End at: 2018-10-10 00:45:05
Local clock offset: -7.853 ms
Remote clock offset: -3.598 ms

# Below is generated by plot.py at 2018-10-10 02:17:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 43.26 Mbit/s
95th percentile per-packet one-way delay: 80.695 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 43.26 Mbit/s
95th percentile per-packet one-way delay: 80.695 ms
Loss rate: 0.56%
```

Run 2: Report of TCP Vegas — Data Link

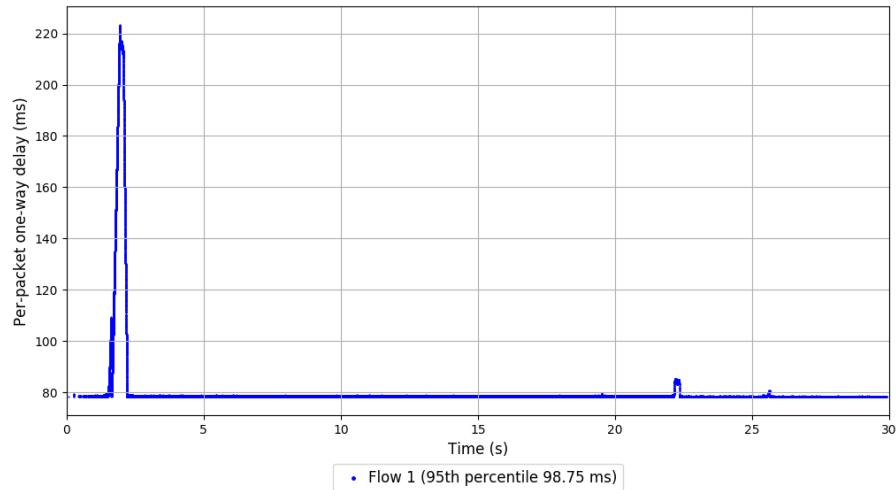
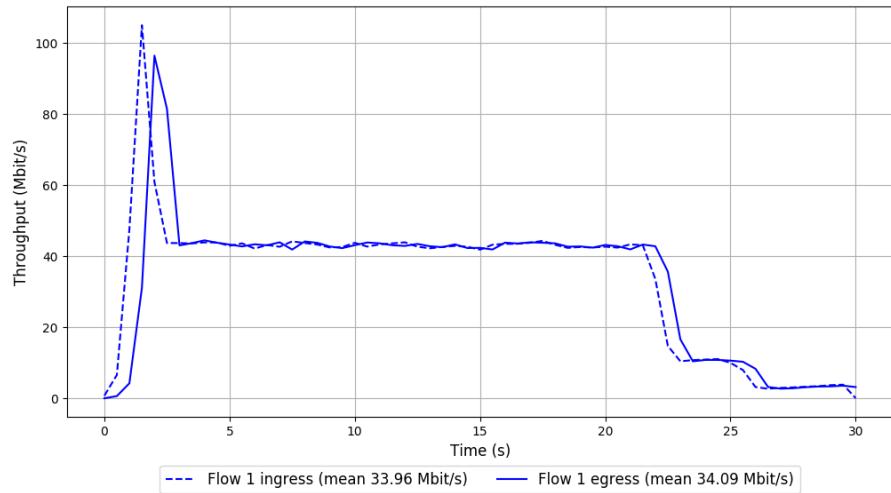


Run 3: Statistics of TCP Vegas

```
Start at: 2018-10-10 01:05:45
End at: 2018-10-10 01:06:15
Local clock offset: -4.764 ms
Remote clock offset: -3.56 ms

# Below is generated by plot.py at 2018-10-10 02:17:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 34.09 Mbit/s
95th percentile per-packet one-way delay: 98.755 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 34.09 Mbit/s
95th percentile per-packet one-way delay: 98.755 ms
Loss rate: 0.20%
```

Run 3: Report of TCP Vegas — Data Link

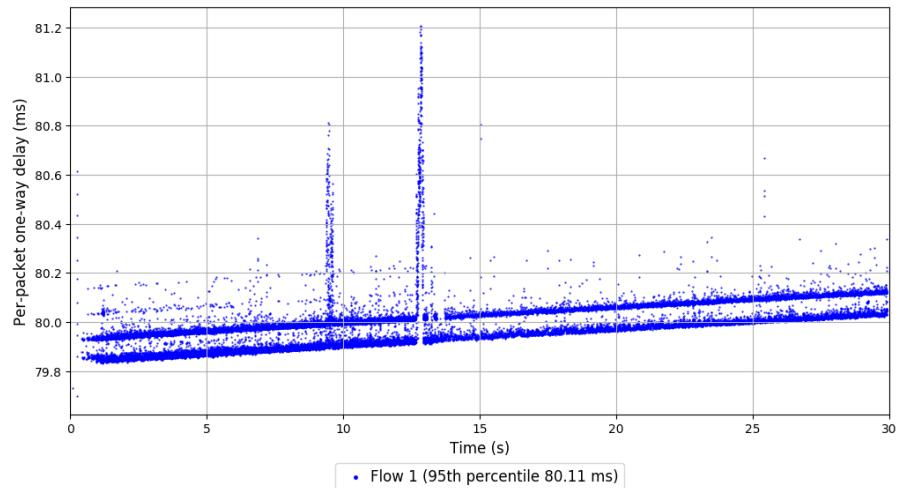
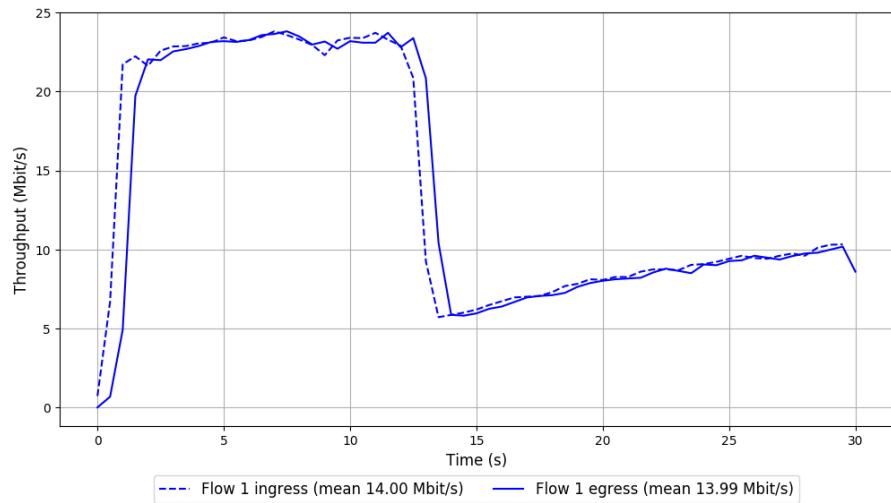


Run 4: Statistics of TCP Vegas

```
Start at: 2018-10-10 01:26:58
End at: 2018-10-10 01:27:28
Local clock offset: -4.073 ms
Remote clock offset: -4.05 ms

# Below is generated by plot.py at 2018-10-10 02:17:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.99 Mbit/s
95th percentile per-packet one-way delay: 80.111 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 13.99 Mbit/s
95th percentile per-packet one-way delay: 80.111 ms
Loss rate: 0.60%
```

Run 4: Report of TCP Vegas — Data Link

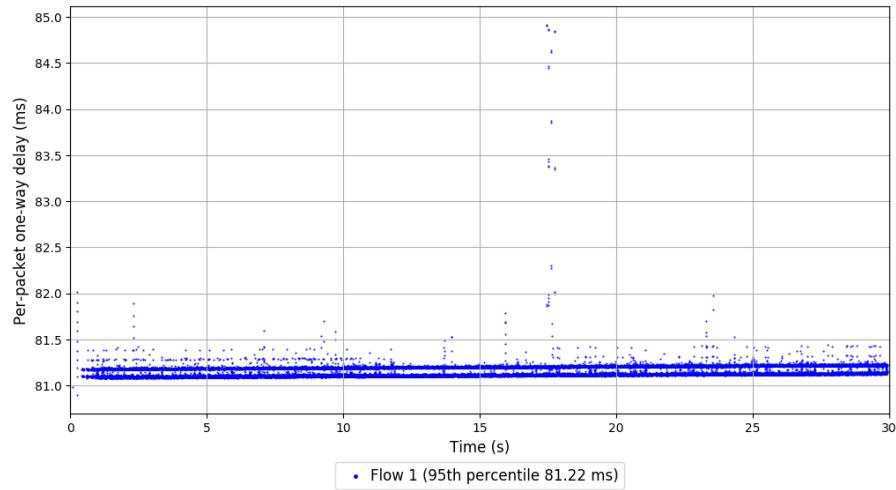
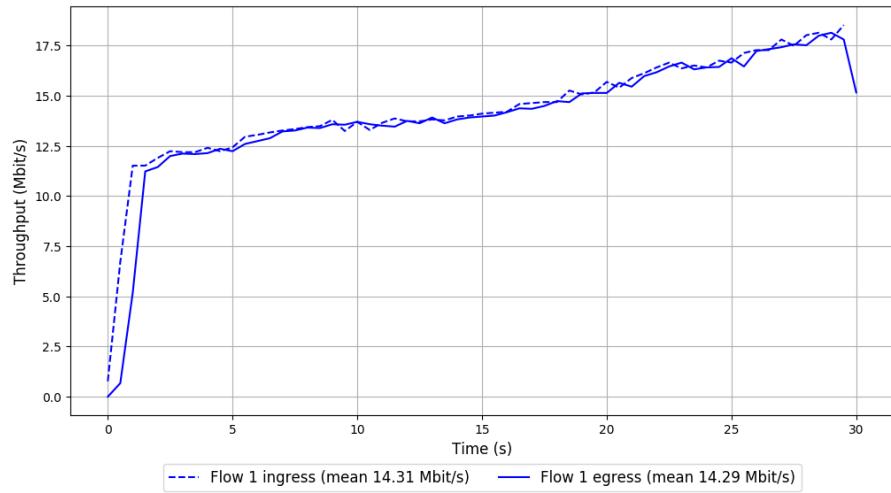


Run 5: Statistics of TCP Vegas

```
Start at: 2018-10-10 01:48:31
End at: 2018-10-10 01:49:01
Local clock offset: -8.134 ms
Remote clock offset: -5.976 ms

# Below is generated by plot.py at 2018-10-10 02:17:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 14.29 Mbit/s
95th percentile per-packet one-way delay: 81.219 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 14.29 Mbit/s
95th percentile per-packet one-way delay: 81.219 ms
Loss rate: 0.70%
```

Run 5: Report of TCP Vegas — Data Link

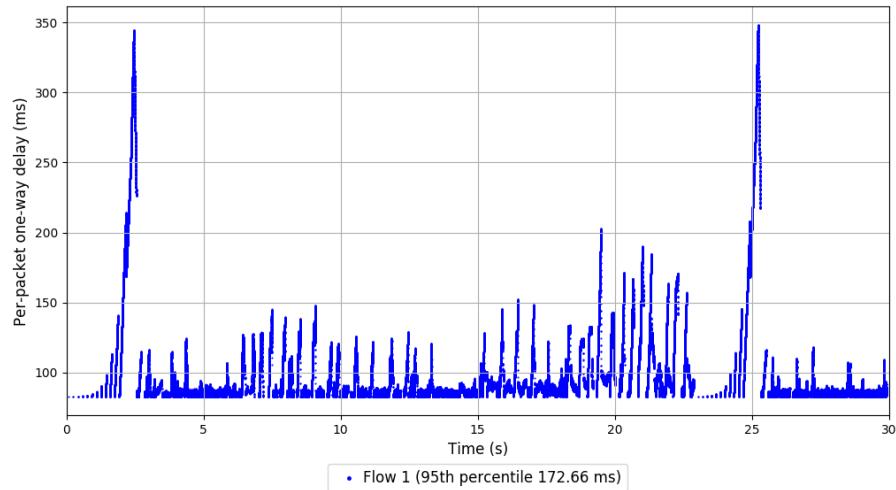
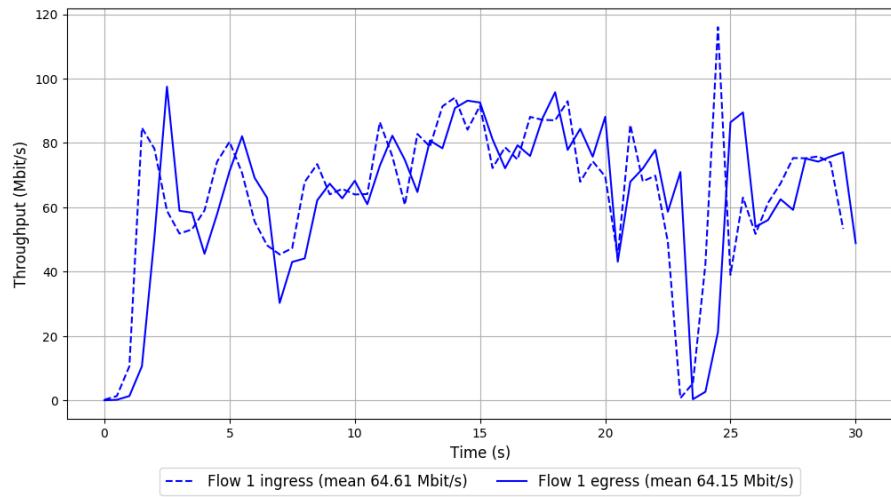


Run 1: Statistics of Verus

```
Start at: 2018-10-10 00:41:04
End at: 2018-10-10 00:41:34
Local clock offset: -6.988 ms
Remote clock offset: -8.427 ms

# Below is generated by plot.py at 2018-10-10 02:17:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 64.15 Mbit/s
95th percentile per-packet one-way delay: 172.659 ms
Loss rate: 1.24%
-- Flow 1:
Average throughput: 64.15 Mbit/s
95th percentile per-packet one-way delay: 172.659 ms
Loss rate: 1.24%
```

Run 1: Report of Verus — Data Link

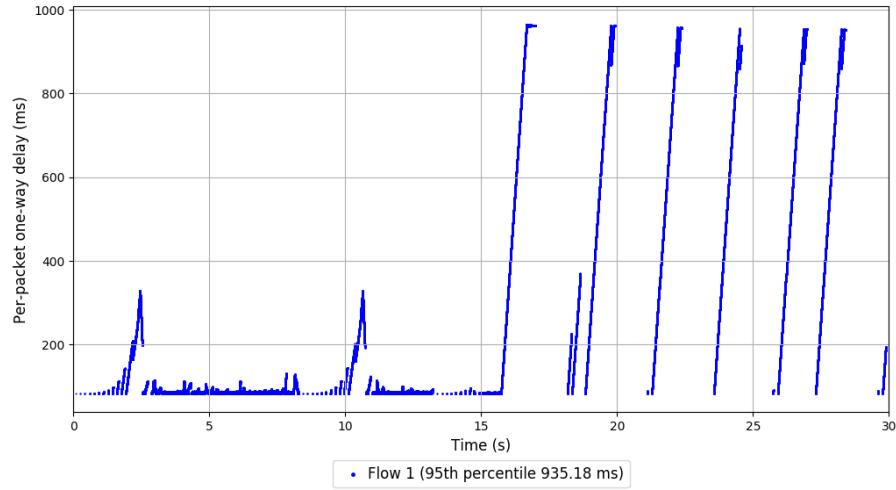
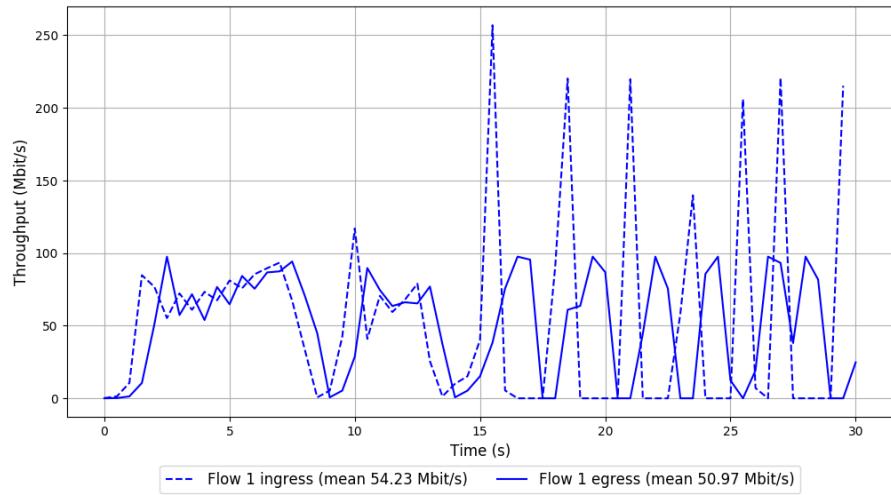


Run 2: Statistics of Verus

```
Start at: 2018-10-10 01:02:17
End at: 2018-10-10 01:02:47
Local clock offset: -5.588 ms
Remote clock offset: -7.81 ms

# Below is generated by plot.py at 2018-10-10 02:17:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 50.97 Mbit/s
95th percentile per-packet one-way delay: 935.178 ms
Loss rate: 6.30%
-- Flow 1:
Average throughput: 50.97 Mbit/s
95th percentile per-packet one-way delay: 935.178 ms
Loss rate: 6.30%
```

Run 2: Report of Verus — Data Link

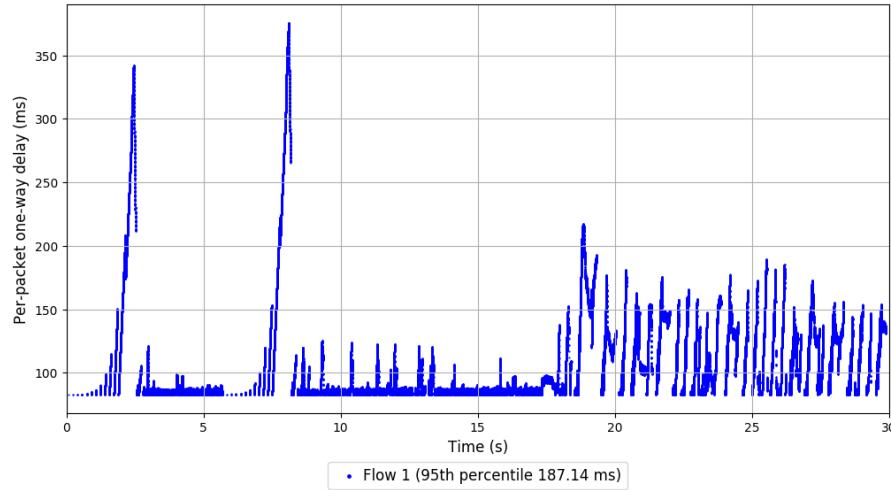
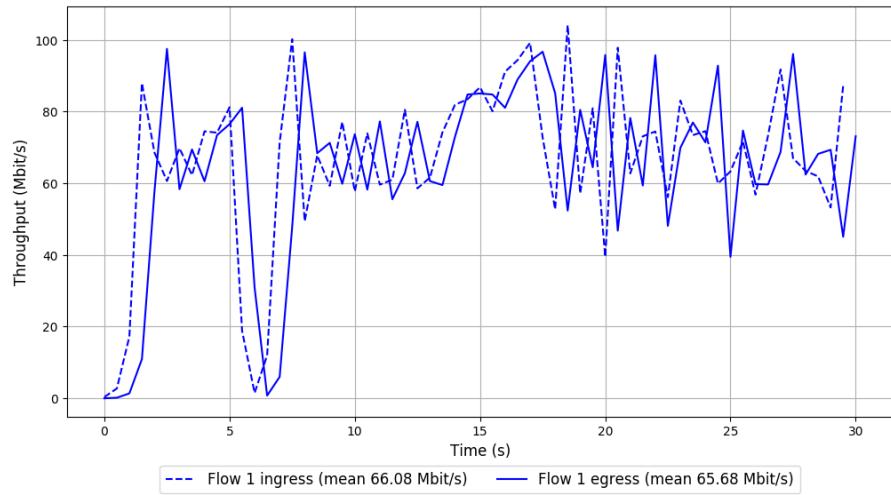


Run 3: Statistics of Verus

```
Start at: 2018-10-10 01:23:30
End at: 2018-10-10 01:24:00
Local clock offset: -3.176 ms
Remote clock offset: -7.593 ms

# Below is generated by plot.py at 2018-10-10 02:17:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 65.68 Mbit/s
95th percentile per-packet one-way delay: 187.141 ms
Loss rate: 0.94%
-- Flow 1:
Average throughput: 65.68 Mbit/s
95th percentile per-packet one-way delay: 187.141 ms
Loss rate: 0.94%
```

Run 3: Report of Verus — Data Link

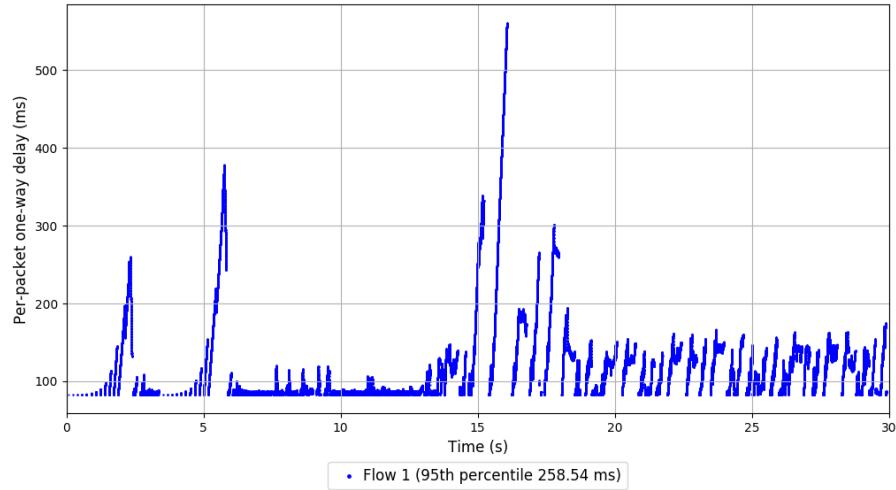
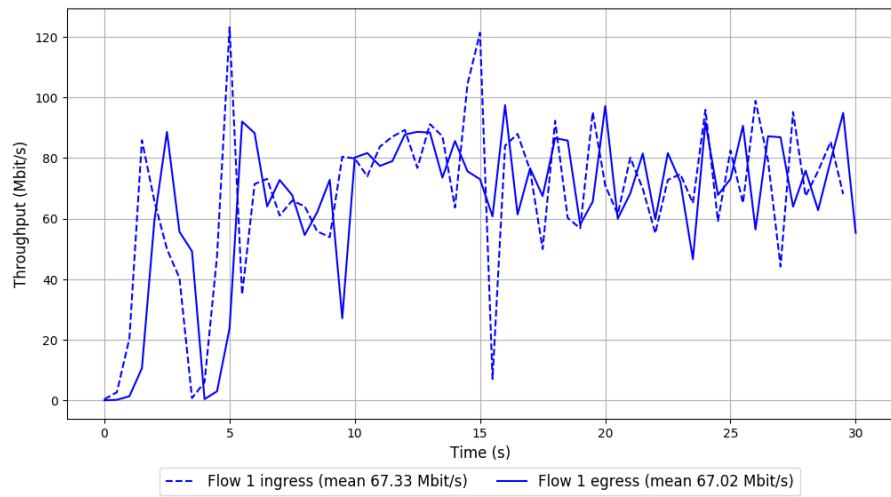


Run 4: Statistics of Verus

```
Start at: 2018-10-10 01:45:02
End at: 2018-10-10 01:45:32
Local clock offset: -7.817 ms
Remote clock offset: -7.478 ms

# Below is generated by plot.py at 2018-10-10 02:17:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 67.02 Mbit/s
95th percentile per-packet one-way delay: 258.539 ms
Loss rate: 1.02%
-- Flow 1:
Average throughput: 67.02 Mbit/s
95th percentile per-packet one-way delay: 258.539 ms
Loss rate: 1.02%
```

Run 4: Report of Verus — Data Link

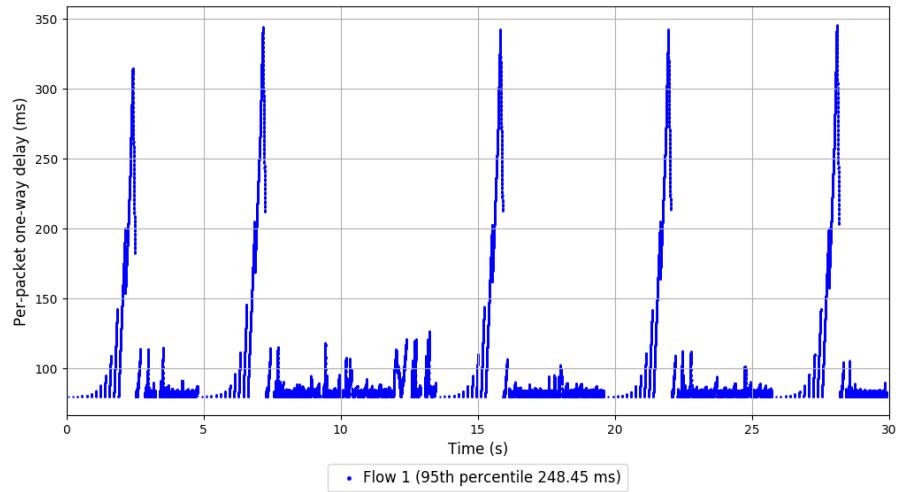
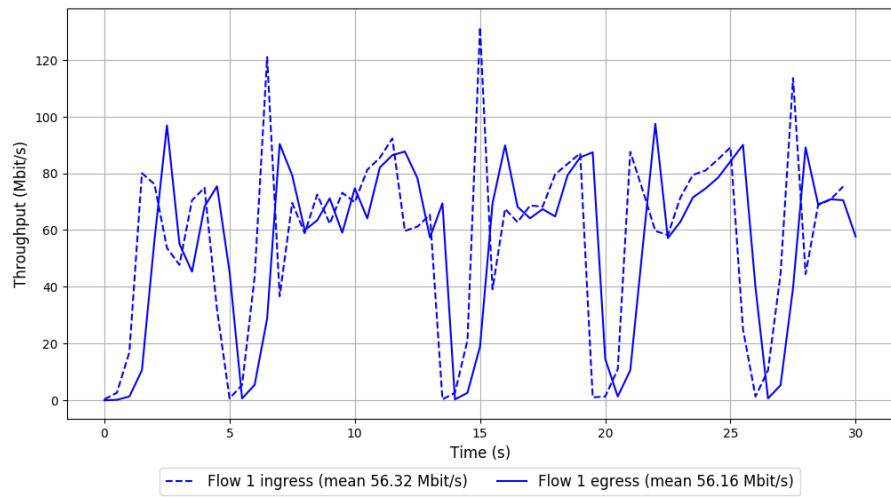


Run 5: Statistics of Verus

```
Start at: 2018-10-10 02:06:17
End at: 2018-10-10 02:06:47
Local clock offset: -2.485 ms
Remote clock offset: -4.546 ms

# Below is generated by plot.py at 2018-10-10 02:17:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 56.16 Mbit/s
95th percentile per-packet one-way delay: 248.449 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 56.16 Mbit/s
95th percentile per-packet one-way delay: 248.449 ms
Loss rate: 0.83%
```

Run 5: Report of Verus — Data Link

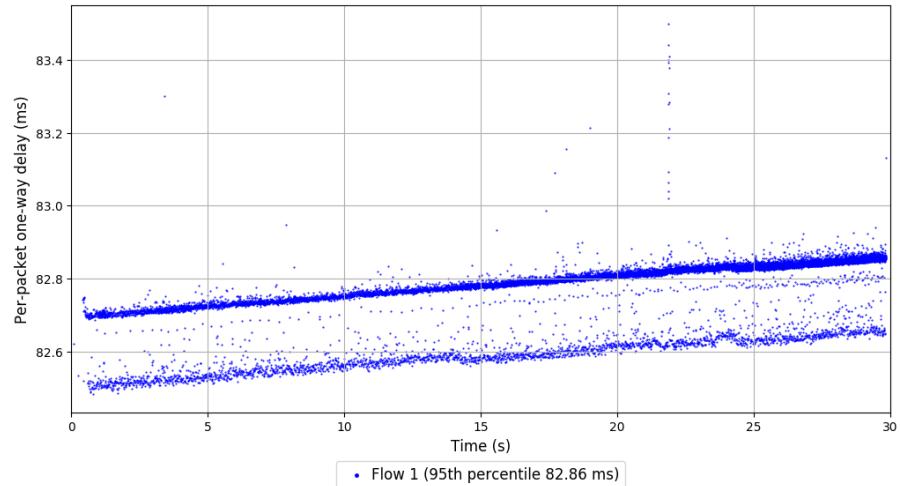
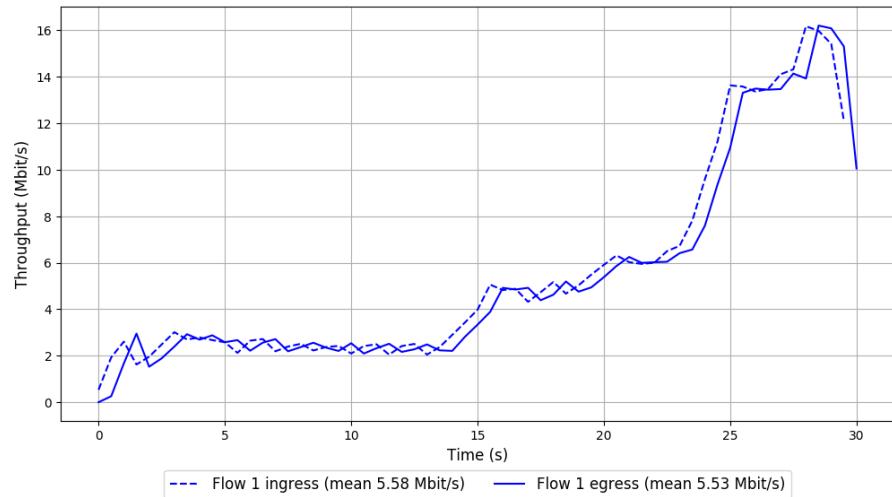


```
Run 1: Statistics of PCC-Vivace
```

```
Start at: 2018-10-10 00:38:32
End at: 2018-10-10 00:39:02
Local clock offset: -6.288 ms
Remote clock offset: -8.484 ms

# Below is generated by plot.py at 2018-10-10 02:17:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.53 Mbit/s
95th percentile per-packet one-way delay: 82.855 ms
Loss rate: 1.39%
-- Flow 1:
Average throughput: 5.53 Mbit/s
95th percentile per-packet one-way delay: 82.855 ms
Loss rate: 1.39%
```

Run 1: Report of PCC-Vivace — Data Link

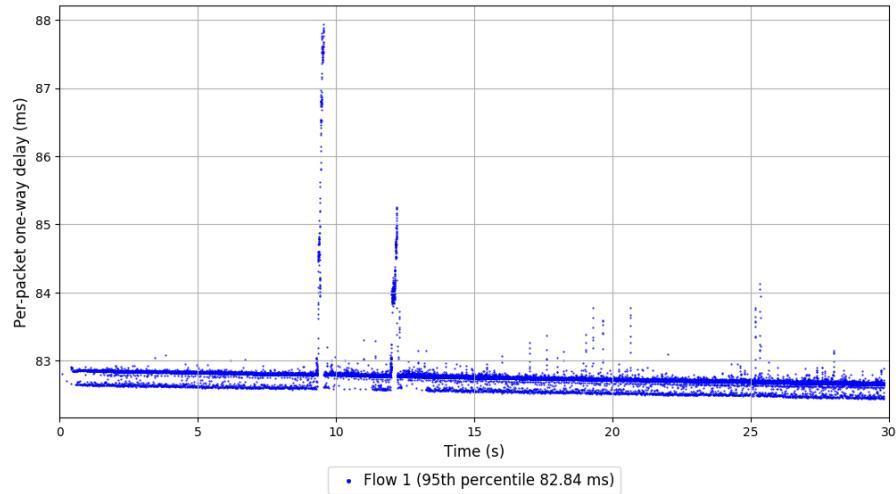
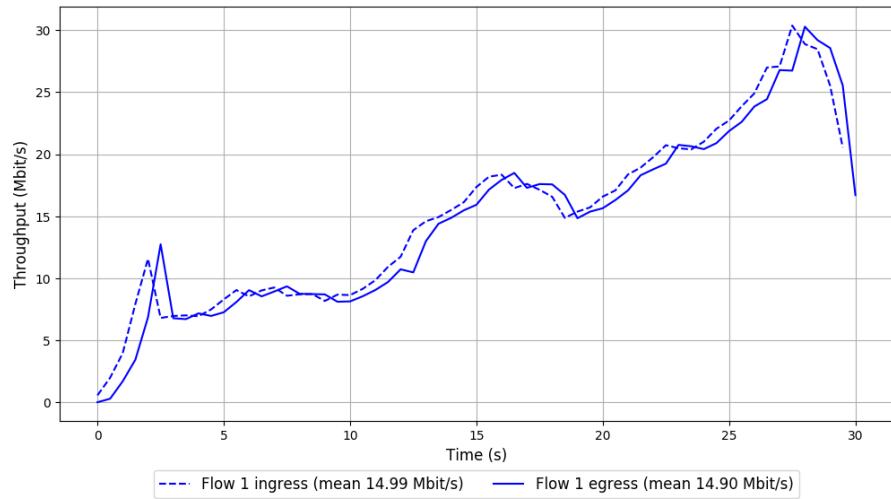


Run 2: Statistics of PCC-Vivace

```
Start at: 2018-10-10 00:59:58
End at: 2018-10-10 01:00:28
Local clock offset: -6.63 ms
Remote clock offset: -7.896 ms

# Below is generated by plot.py at 2018-10-10 02:17:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 14.90 Mbit/s
95th percentile per-packet one-way delay: 82.838 ms
Loss rate: 1.19%
-- Flow 1:
Average throughput: 14.90 Mbit/s
95th percentile per-packet one-way delay: 82.838 ms
Loss rate: 1.19%
```

Run 2: Report of PCC-Vivace — Data Link

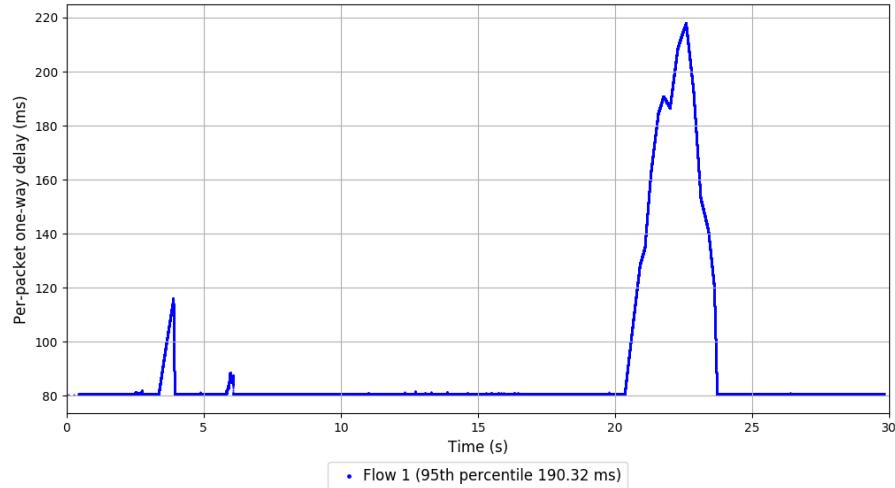
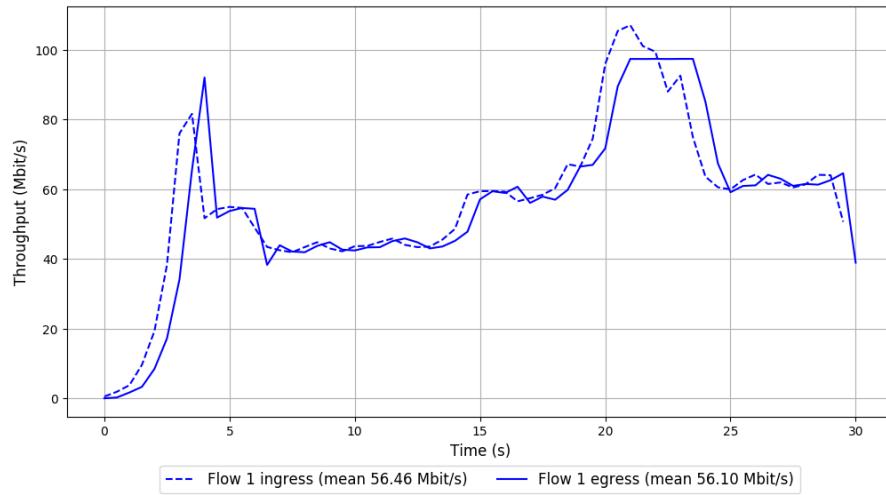


Run 3: Statistics of PCC-Vivace

```
Start at: 2018-10-10 01:21:04
End at: 2018-10-10 01:21:34
Local clock offset: -3.183 ms
Remote clock offset: -5.06 ms

# Below is generated by plot.py at 2018-10-10 02:17:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 56.10 Mbit/s
95th percentile per-packet one-way delay: 190.317 ms
Loss rate: 1.23%
-- Flow 1:
Average throughput: 56.10 Mbit/s
95th percentile per-packet one-way delay: 190.317 ms
Loss rate: 1.23%
```

Run 3: Report of PCC-Vivace — Data Link

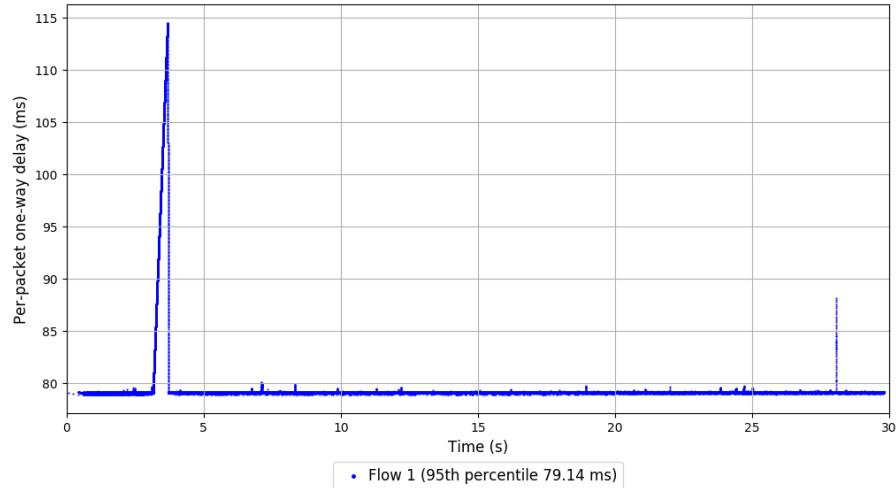
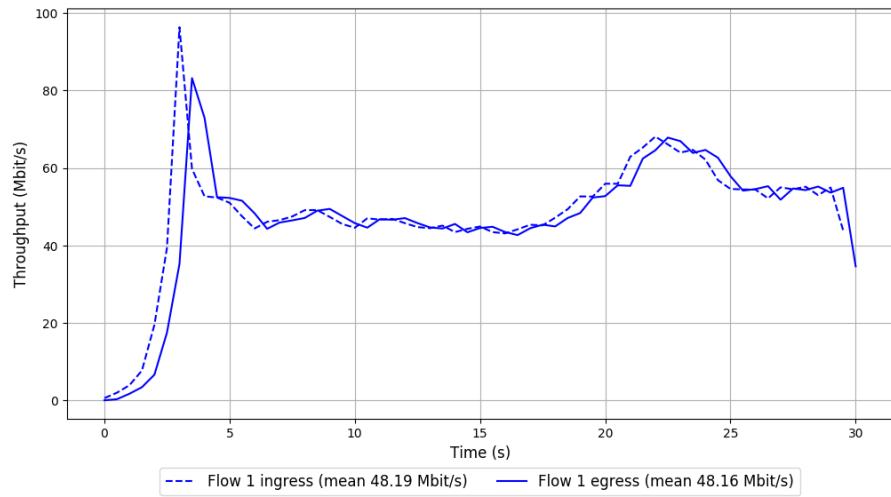


Run 4: Statistics of PCC-Vivace

```
Start at: 2018-10-10 01:42:36
End at: 2018-10-10 01:43:06
Local clock offset: -7.54 ms
Remote clock offset: -3.591 ms

# Below is generated by plot.py at 2018-10-10 02:17:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 48.16 Mbit/s
95th percentile per-packet one-way delay: 79.141 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 48.16 Mbit/s
95th percentile per-packet one-way delay: 79.141 ms
Loss rate: 0.62%
```

Run 4: Report of PCC-Vivace — Data Link

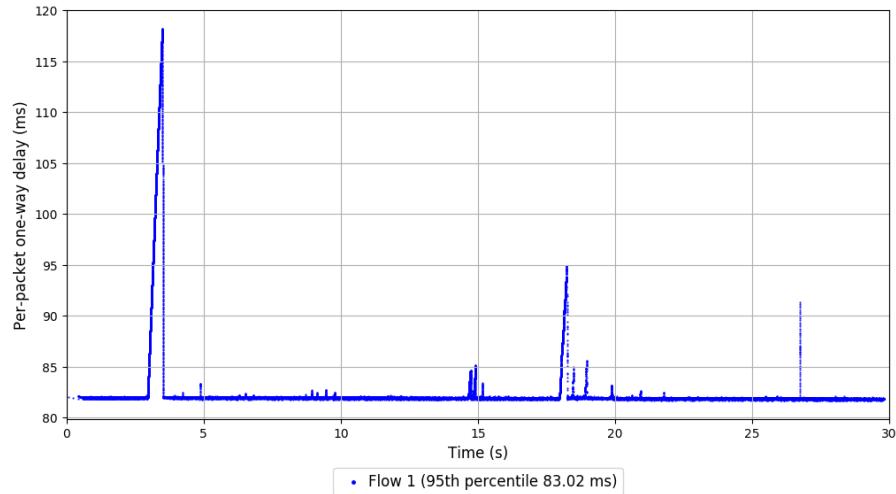
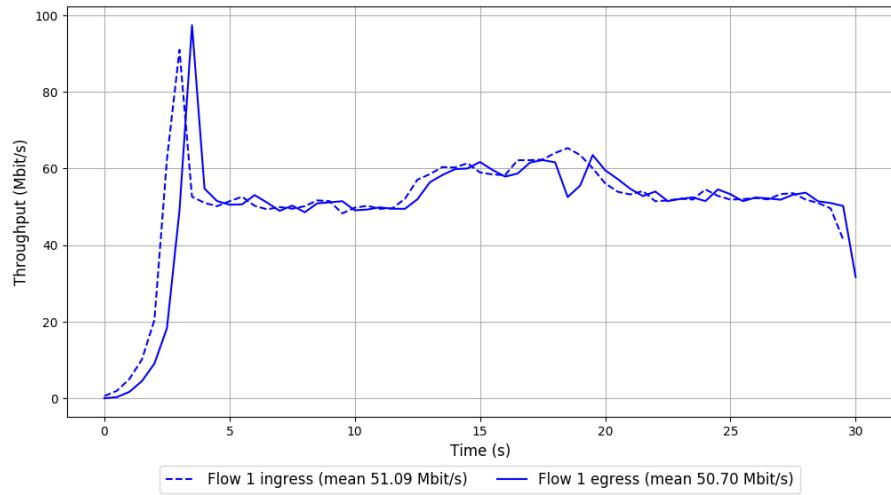


Run 5: Statistics of PCC-Vivace

```
Start at: 2018-10-10 02:03:52
End at: 2018-10-10 02:04:22
Local clock offset: -3.225 ms
Remote clock offset: -7.351 ms

# Below is generated by plot.py at 2018-10-10 02:17:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 50.70 Mbit/s
95th percentile per-packet one-way delay: 83.018 ms
Loss rate: 1.33%
-- Flow 1:
Average throughput: 50.70 Mbit/s
95th percentile per-packet one-way delay: 83.018 ms
Loss rate: 1.33%
```

Run 5: Report of PCC-Vivace — Data Link

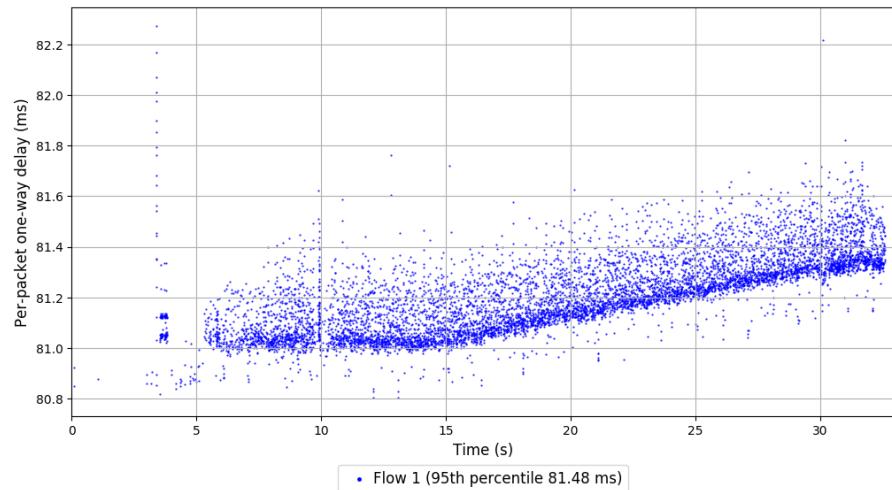
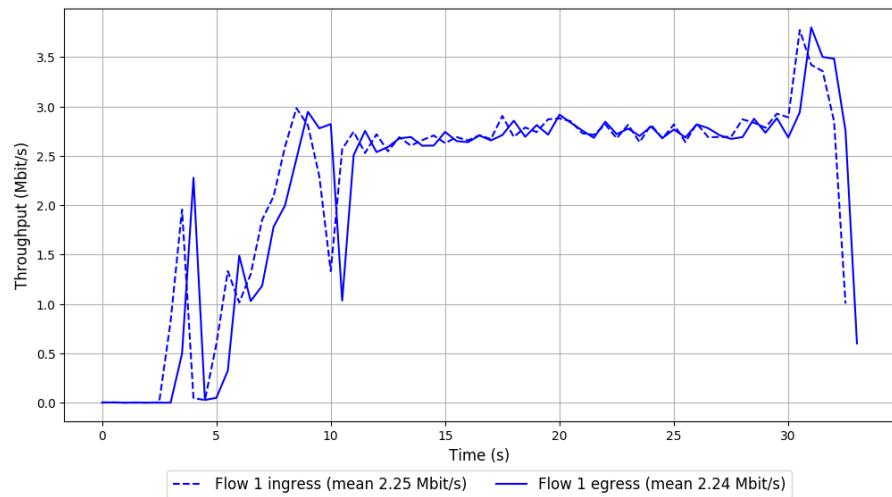


```
Run 1: Statistics of WebRTC media
```

```
Start at: 2018-10-10 00:24:18
End at: 2018-10-10 00:24:48
Local clock offset: 2.166 ms
Remote clock offset: -7.306 ms

# Below is generated by plot.py at 2018-10-10 02:17:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 81.477 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 81.477 ms
Loss rate: 0.61%
```

Run 1: Report of WebRTC media — Data Link

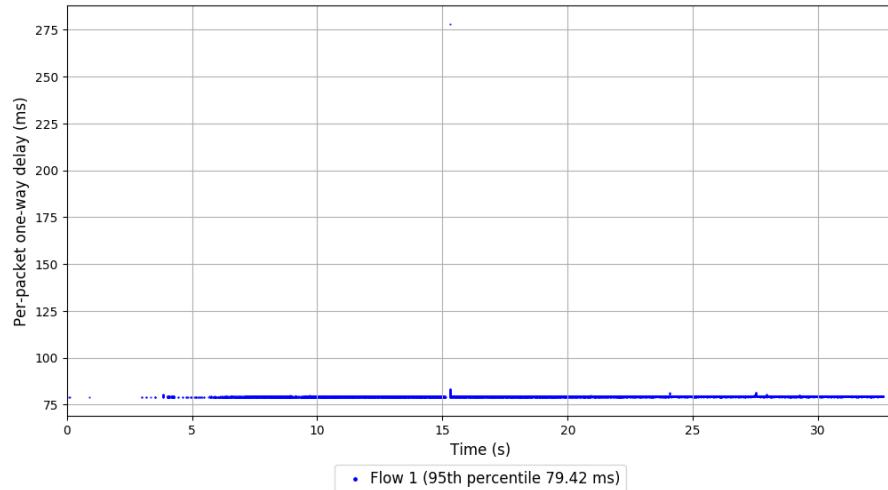
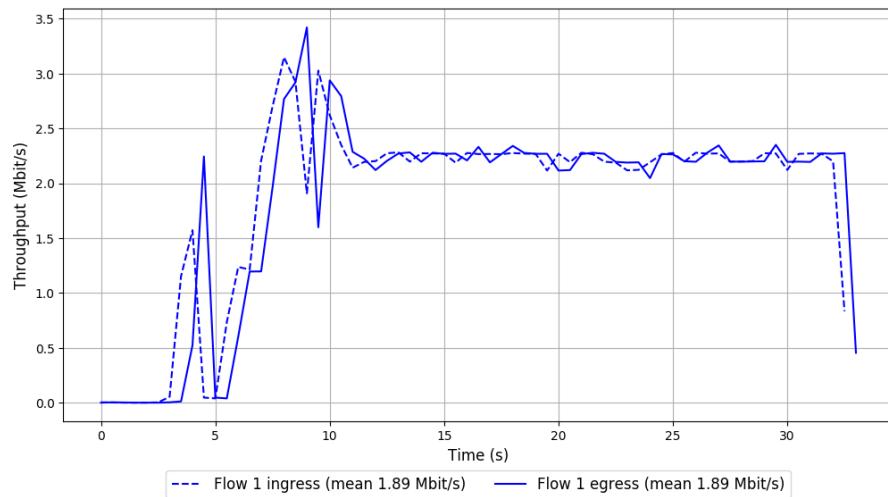


Run 2: Statistics of WebRTC media

```
Start at: 2018-10-10 00:45:46
End at: 2018-10-10 00:46:16
Local clock offset: -8.045 ms
Remote clock offset: -4.977 ms

# Below is generated by plot.py at 2018-10-10 02:17:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 79.416 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 79.416 ms
Loss rate: 0.55%
```

Run 2: Report of WebRTC media — Data Link

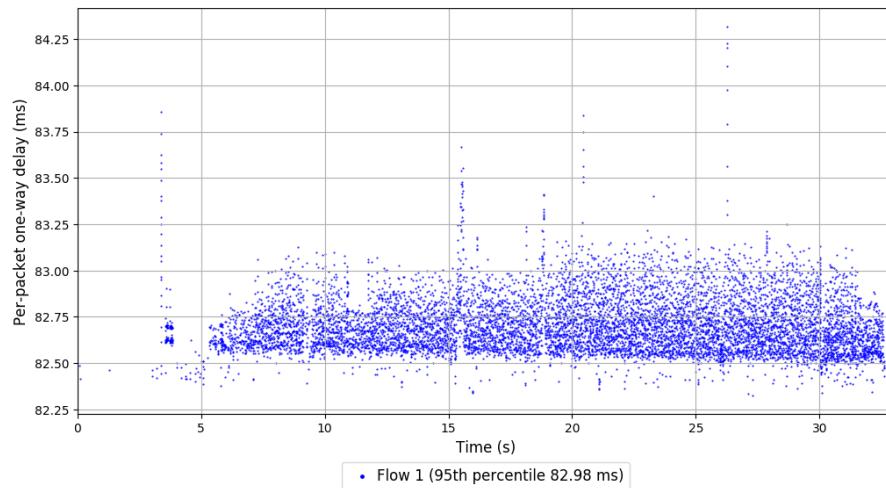
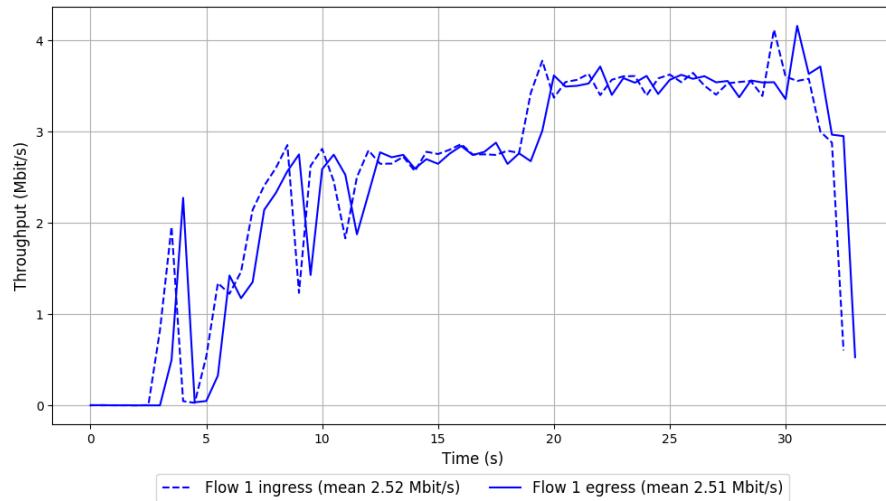


Run 3: Statistics of WebRTC media

```
Start at: 2018-10-10 01:06:54
End at: 2018-10-10 01:07:24
Local clock offset: -4.413 ms
Remote clock offset: -7.668 ms

# Below is generated by plot.py at 2018-10-10 02:17:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.51 Mbit/s
95th percentile per-packet one-way delay: 82.984 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 2.51 Mbit/s
95th percentile per-packet one-way delay: 82.984 ms
Loss rate: 0.58%
```

Run 3: Report of WebRTC media — Data Link

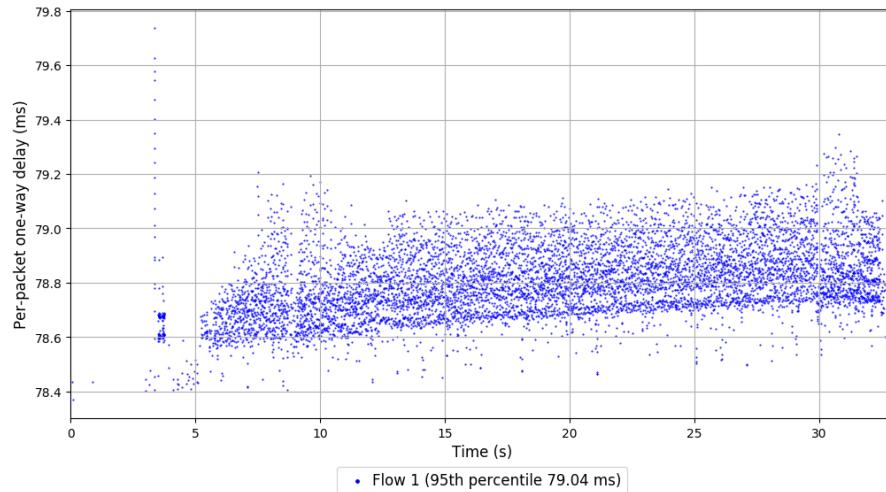
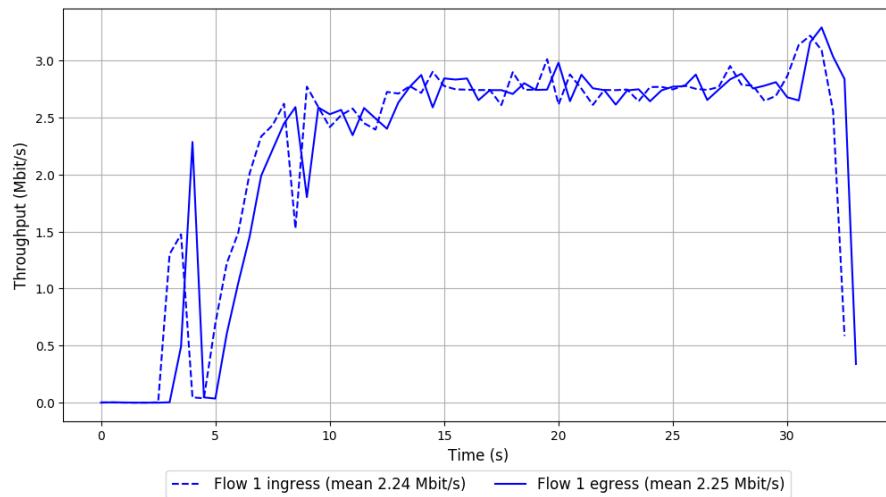


Run 4: Statistics of WebRTC media

```
Start at: 2018-10-10 01:28:11
End at: 2018-10-10 01:28:41
Local clock offset: -4.501 ms
Remote clock offset: -3.524 ms

# Below is generated by plot.py at 2018-10-10 02:17:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 79.042 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 79.042 ms
Loss rate: 0.33%
```

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

```
Start at: 2018-10-10 01:49:39
End at: 2018-10-10 01:50:09
Local clock offset: -8.246 ms
Remote clock offset: -7.398 ms

# Below is generated by plot.py at 2018-10-10 02:17:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 83.272 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 83.272 ms
Loss rate: 0.44%
```

Run 5: Report of WebRTC media — Data Link

