

Pantheon Report

Generated at 2018-11-02 19:52:11 (UTC).

Data path: AWS India 1 on `ens5` (*local*) → India on `em1` (*remote*).

Repeated the test of 18 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

NTP offsets were measured against `nets.org.sg` and have been applied to correct the timestamps in logs.

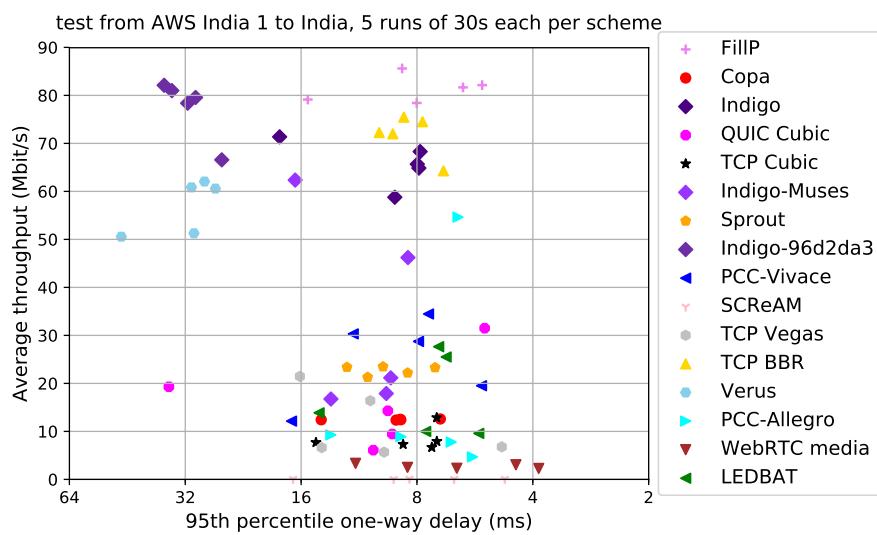
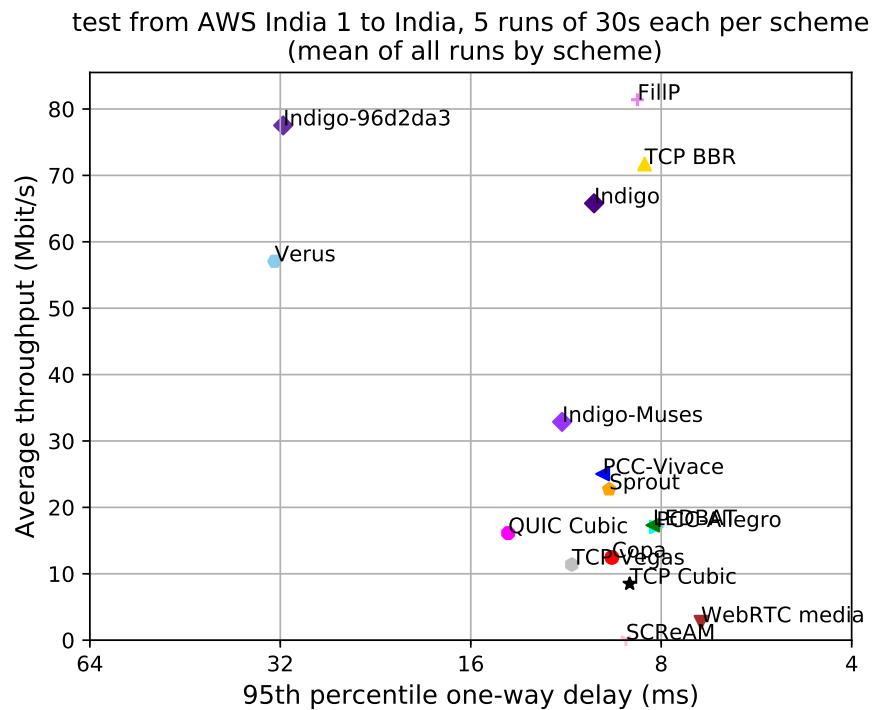
System info:

```
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 @ 794ca3866981572cb73700a276691acf79c60f2b
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbfed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27af942717625ee3a354cc2e802bd
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



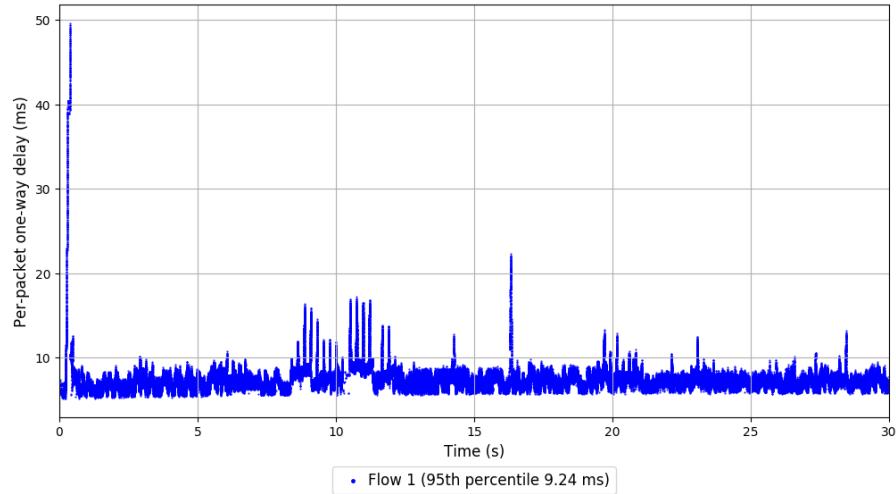
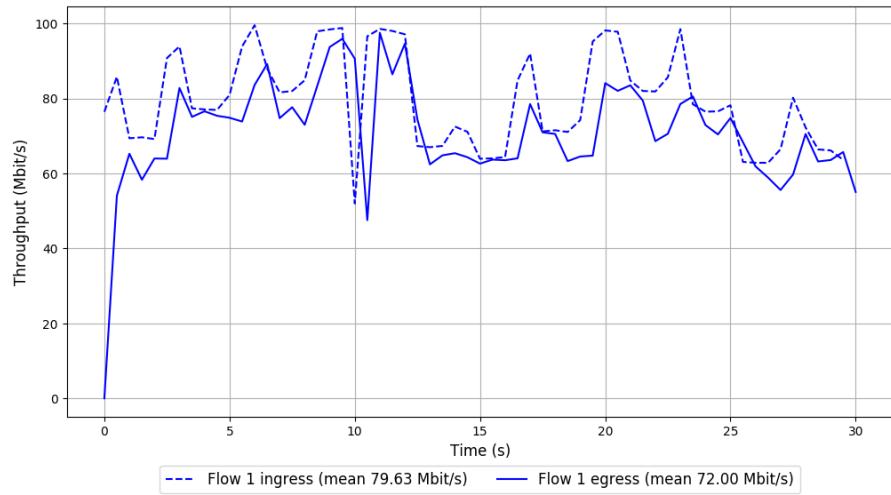
| scheme | # runs | mean avg tput (Mbit/s) flow 1 | mean 95th-%ile delay (ms) flow 1 | mean loss rate (%) flow 1 |
|----------------|--------|----------------------------------|-------------------------------------|------------------------------|
| TCP BBR | 5 | 71.71 | 8.50 | 11.21 |
| Copa | 5 | 12.46 | 9.57 | 44.78 |
| TCP Cubic | 5 | 8.50 | 8.97 | 1.20 |
| FillP | 5 | 81.39 | 8.72 | 13.23 |
| Indigo | 5 | 65.79 | 10.21 | 10.15 |
| Indigo-96d2da3 | 5 | 77.53 | 31.67 | 42.59 |
| LEDBAT | 5 | 17.32 | 8.25 | 0.72 |
| Indigo-Muses | 5 | 32.87 | 11.48 | 8.65 |
| PCC-Allegro | 5 | 17.05 | 8.14 | 4.03 |
| PCC-Expr | 0 | N/A | N/A | N/A |
| QUIC Cubic | 5 | 16.12 | 13.96 | 3.30 |
| SCReAM | 5 | 0.10 | 9.10 | 3.28 |
| Sprout | 5 | 22.73 | 9.67 | 3.01 |
| TaoVA-100x | 0 | N/A | N/A | N/A |
| TCP Vegas | 5 | 11.39 | 11.08 | 1.37 |
| Verus | 5 | 57.06 | 32.67 | 22.78 |
| PCC-Vivace | 5 | 25.04 | 9.90 | 5.26 |
| WebRTC media | 5 | 2.70 | 6.92 | 1.91 |

Run 1: Statistics of TCP BBR

```
Start at: 2018-11-02 18:05:35
End at: 2018-11-02 18:06:05
Local clock offset: 3.551 ms
Remote clock offset: -1.14 ms

# Below is generated by plot.py at 2018-11-02 19:48:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 72.00 Mbit/s
95th percentile per-packet one-way delay: 9.243 ms
Loss rate: 9.57%
-- Flow 1:
Average throughput: 72.00 Mbit/s
95th percentile per-packet one-way delay: 9.243 ms
Loss rate: 9.57%
```

Run 1: Report of TCP BBR — Data Link

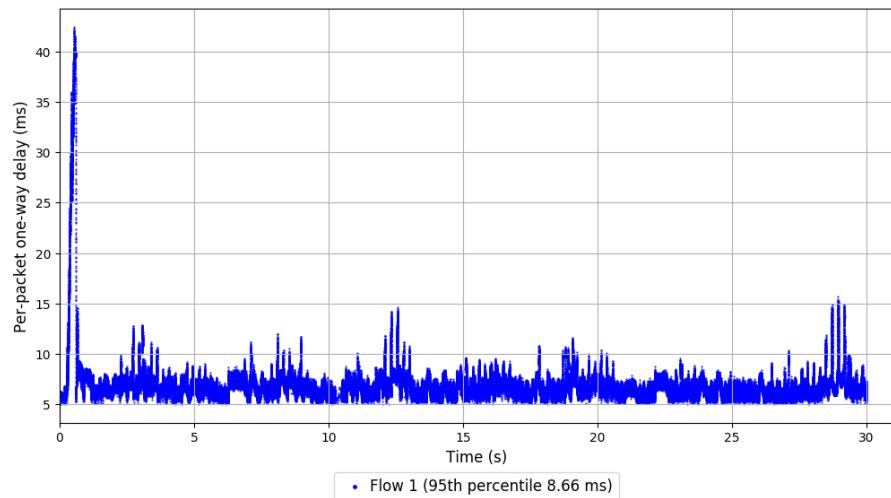
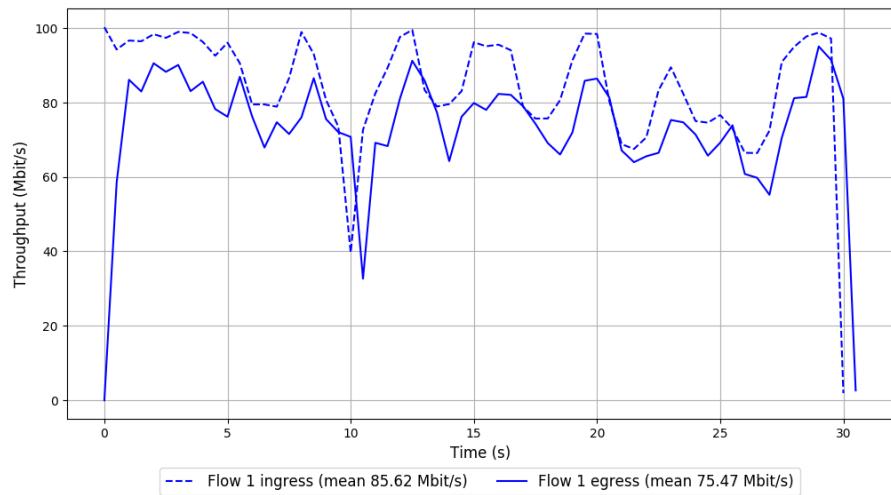


Run 2: Statistics of TCP BBR

```
Start at: 2018-11-02 18:25:57
End at: 2018-11-02 18:26:27
Local clock offset: -4.221 ms
Remote clock offset: -2.606 ms

# Below is generated by plot.py at 2018-11-02 19:48:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 75.47 Mbit/s
95th percentile per-packet one-way delay: 8.657 ms
Loss rate: 11.85%
-- Flow 1:
Average throughput: 75.47 Mbit/s
95th percentile per-packet one-way delay: 8.657 ms
Loss rate: 11.85%
```

Run 2: Report of TCP BBR — Data Link

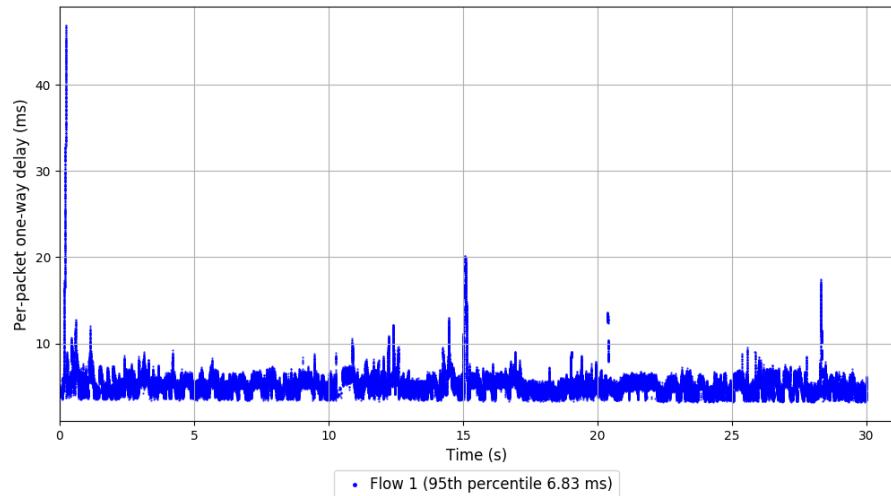
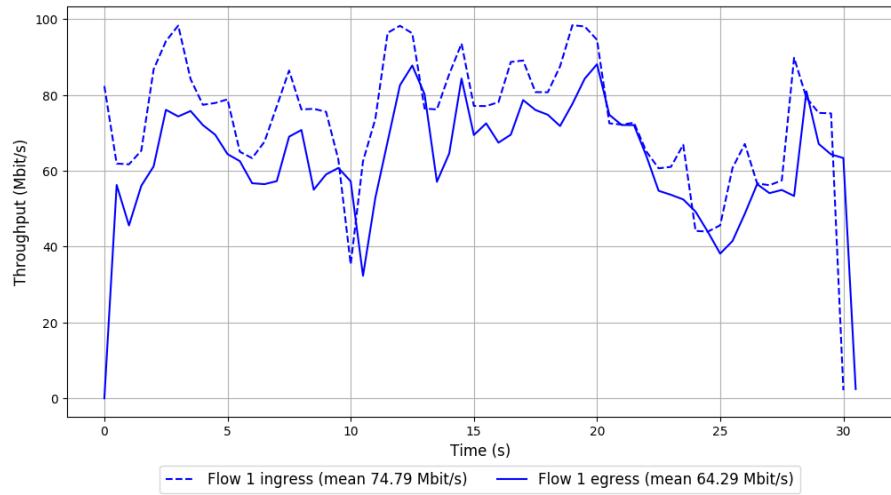


Run 3: Statistics of TCP BBR

```
Start at: 2018-11-02 18:46:10
End at: 2018-11-02 18:46:40
Local clock offset: -13.103 ms
Remote clock offset: -3.427 ms

# Below is generated by plot.py at 2018-11-02 19:48:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 64.29 Mbit/s
95th percentile per-packet one-way delay: 6.827 ms
Loss rate: 14.04%
-- Flow 1:
Average throughput: 64.29 Mbit/s
95th percentile per-packet one-way delay: 6.827 ms
Loss rate: 14.04%
```

Run 3: Report of TCP BBR — Data Link

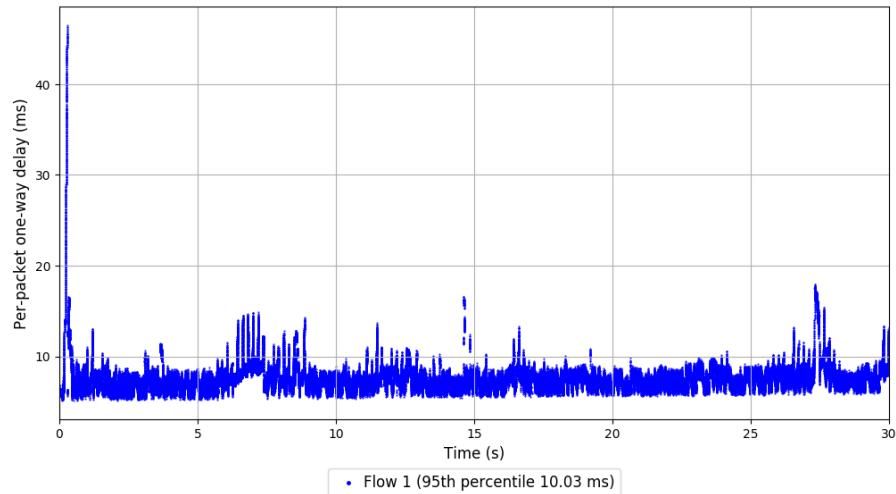
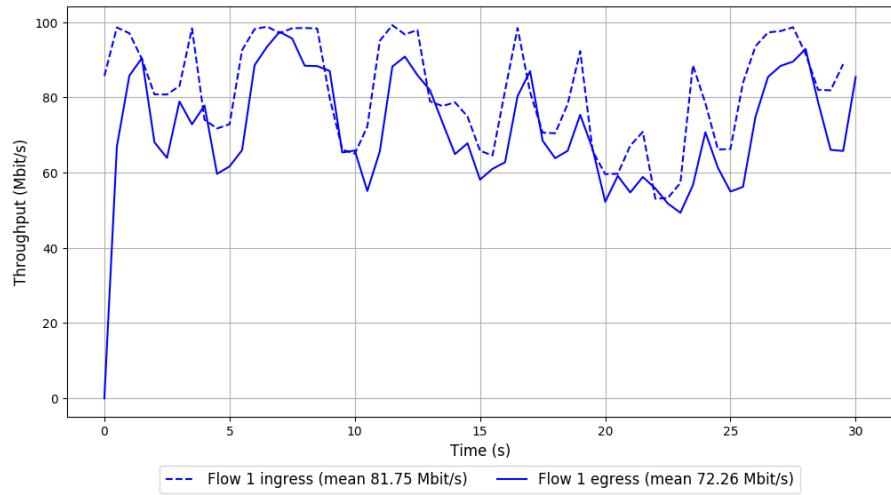


Run 4: Statistics of TCP BBR

```
Start at: 2018-11-02 19:06:20
End at: 2018-11-02 19:06:50
Local clock offset: -19.732 ms
Remote clock offset: -3.48 ms

# Below is generated by plot.py at 2018-11-02 19:48:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 72.26 Mbit/s
95th percentile per-packet one-way delay: 10.027 ms
Loss rate: 11.60%
-- Flow 1:
Average throughput: 72.26 Mbit/s
95th percentile per-packet one-way delay: 10.027 ms
Loss rate: 11.60%
```

Run 4: Report of TCP BBR — Data Link

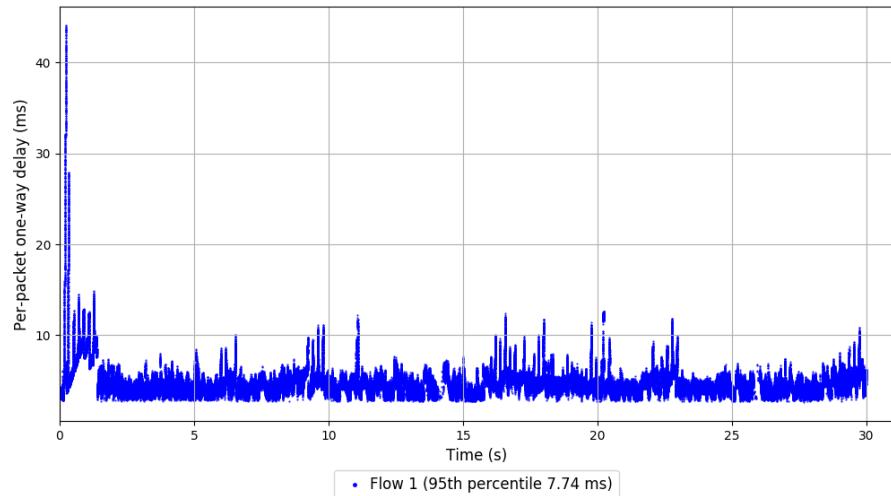
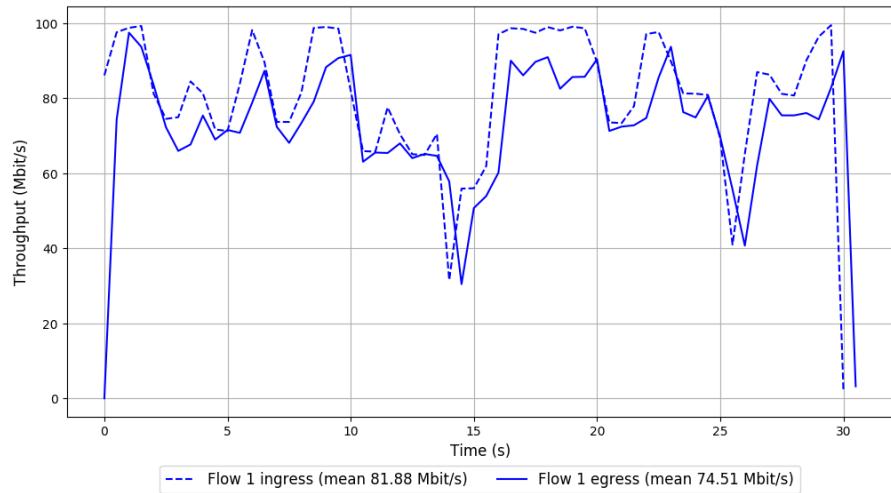


Run 5: Statistics of TCP BBR

```
Start at: 2018-11-02 19:26:29
End at: 2018-11-02 19:26:59
Local clock offset: -8.125 ms
Remote clock offset: -3.508 ms

# Below is generated by plot.py at 2018-11-02 19:48:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 74.51 Mbit/s
95th percentile per-packet one-way delay: 7.740 ms
Loss rate: 8.99%
-- Flow 1:
Average throughput: 74.51 Mbit/s
95th percentile per-packet one-way delay: 7.740 ms
Loss rate: 8.99%
```

Run 5: Report of TCP BBR — Data Link

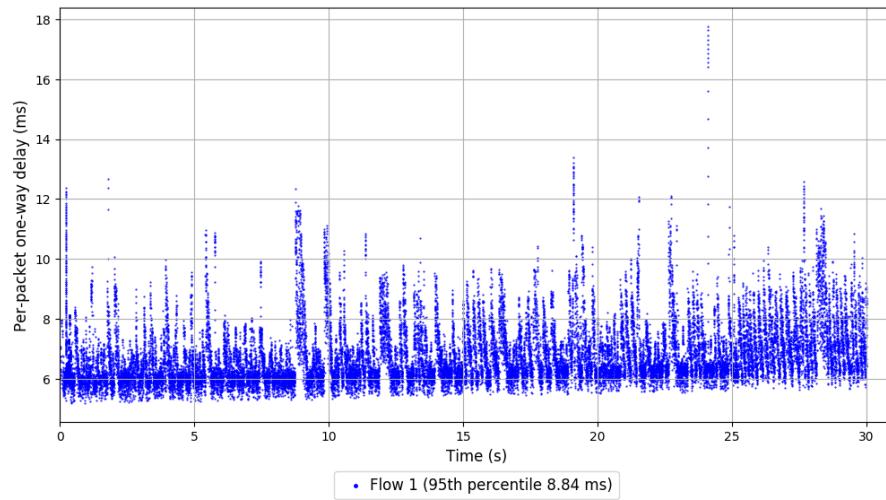
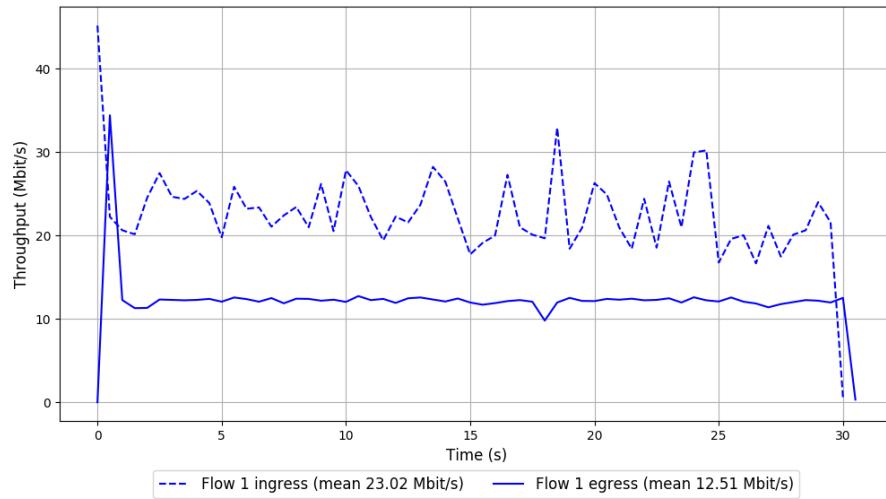


Run 1: Statistics of Copa

```
Start at: 2018-11-02 18:22:34
End at: 2018-11-02 18:23:04
Local clock offset: -6.025 ms
Remote clock offset: -2.292 ms

# Below is generated by plot.py at 2018-11-02 19:48:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.51 Mbit/s
95th percentile per-packet one-way delay: 8.844 ms
Loss rate: 45.65%
-- Flow 1:
Average throughput: 12.51 Mbit/s
95th percentile per-packet one-way delay: 8.844 ms
Loss rate: 45.65%
```

Run 1: Report of Copa — Data Link

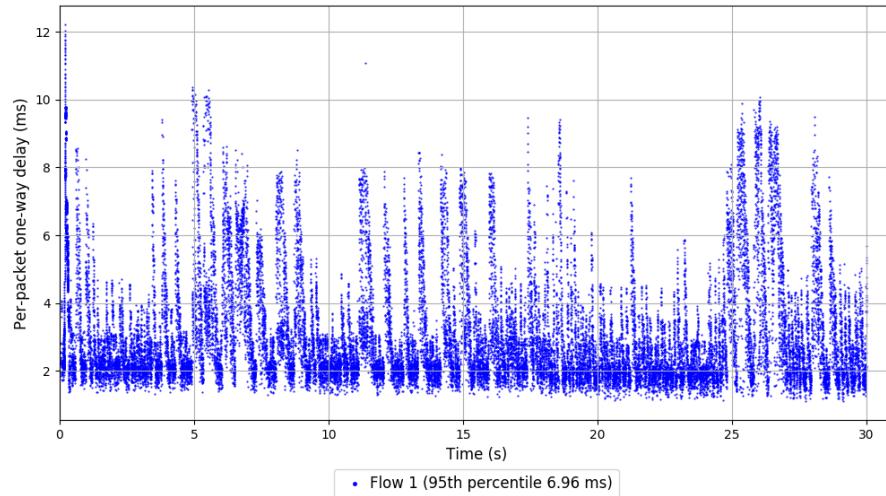
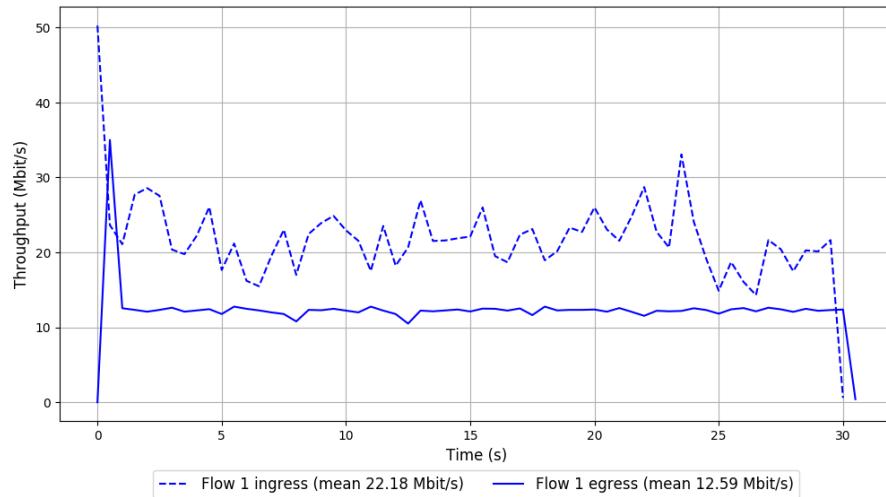


Run 2: Statistics of Copa

```
Start at: 2018-11-02 18:42:49
End at: 2018-11-02 18:43:19
Local clock offset: -7.758 ms
Remote clock offset: -2.775 ms

# Below is generated by plot.py at 2018-11-02 19:48:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.59 Mbit/s
95th percentile per-packet one-way delay: 6.958 ms
Loss rate: 43.24%
-- Flow 1:
Average throughput: 12.59 Mbit/s
95th percentile per-packet one-way delay: 6.958 ms
Loss rate: 43.24%
```

Run 2: Report of Copa — Data Link

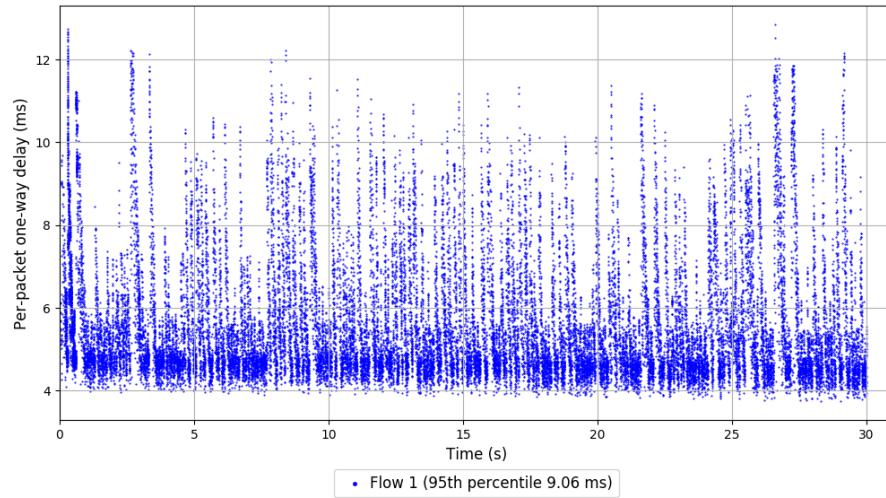
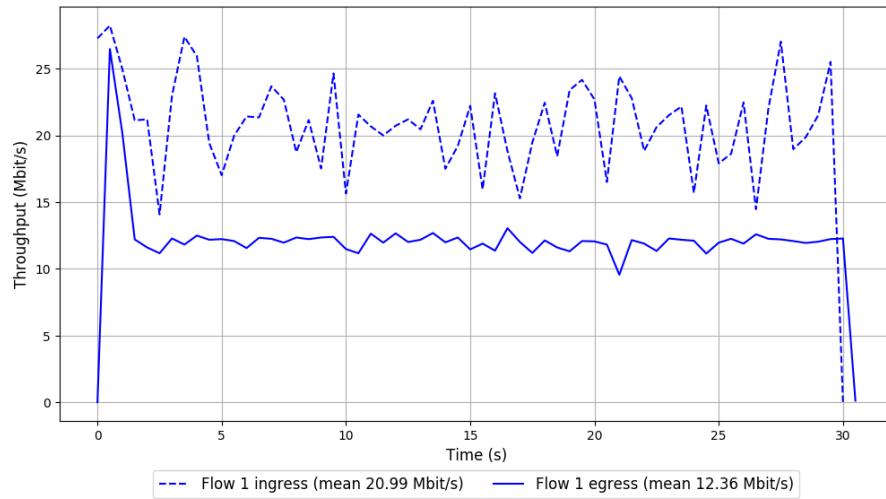


Run 3: Statistics of Copa

```
Start at: 2018-11-02 19:03:00
End at: 2018-11-02 19:03:30
Local clock offset: -22.044 ms
Remote clock offset: -2.872 ms

# Below is generated by plot.py at 2018-11-02 19:48:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.36 Mbit/s
95th percentile per-packet one-way delay: 9.065 ms
Loss rate: 41.12%
-- Flow 1:
Average throughput: 12.36 Mbit/s
95th percentile per-packet one-way delay: 9.065 ms
Loss rate: 41.12%
```

Run 3: Report of Copa — Data Link

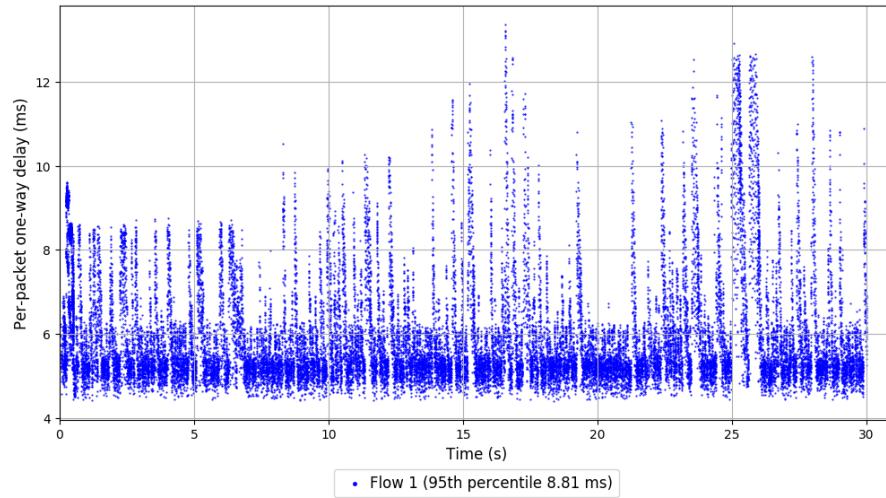
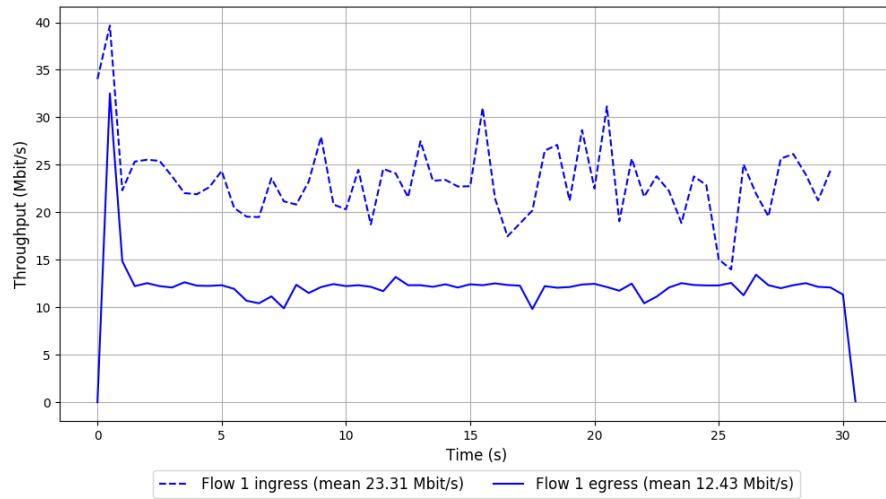


Run 4: Statistics of Copa

```
Start at: 2018-11-02 19:23:08
End at: 2018-11-02 19:23:38
Local clock offset: -8.619 ms
Remote clock offset: -2.963 ms

# Below is generated by plot.py at 2018-11-02 19:48:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.43 Mbit/s
95th percentile per-packet one-way delay: 8.813 ms
Loss rate: 46.67%
-- Flow 1:
Average throughput: 12.43 Mbit/s
95th percentile per-packet one-way delay: 8.813 ms
Loss rate: 46.67%
```

Run 4: Report of Copa — Data Link

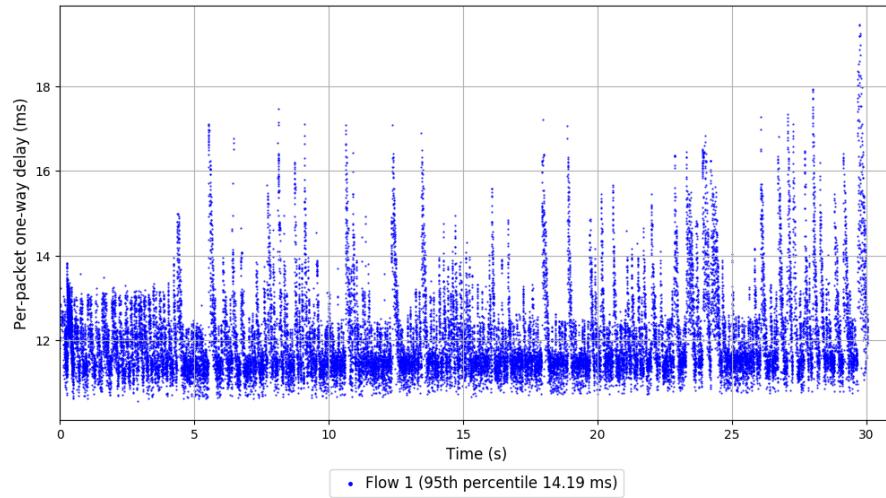
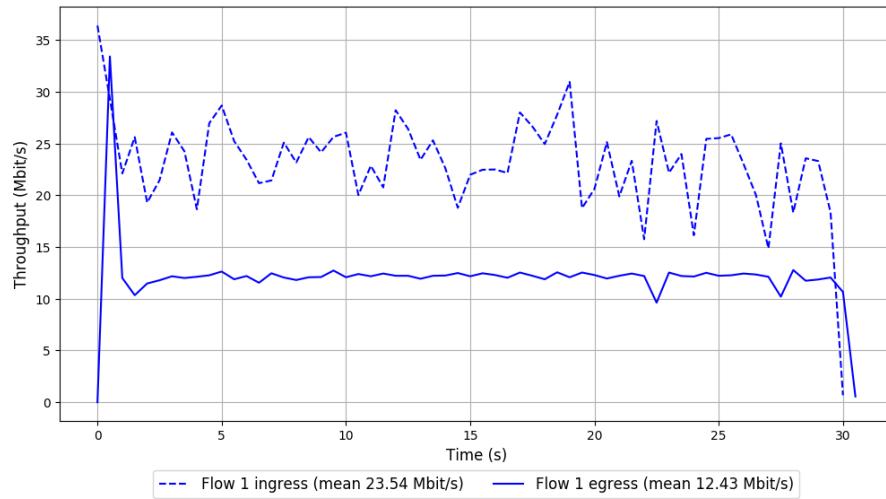


Run 5: Statistics of Copa

```
Start at: 2018-11-02 19:43:31
End at: 2018-11-02 19:44:01
Local clock offset: -1.321 ms
Remote clock offset: -3.165 ms

# Below is generated by plot.py at 2018-11-02 19:48:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.43 Mbit/s
95th percentile per-packet one-way delay: 14.187 ms
Loss rate: 47.22%
-- Flow 1:
Average throughput: 12.43 Mbit/s
95th percentile per-packet one-way delay: 14.187 ms
Loss rate: 47.22%
```

Run 5: Report of Copa — Data Link

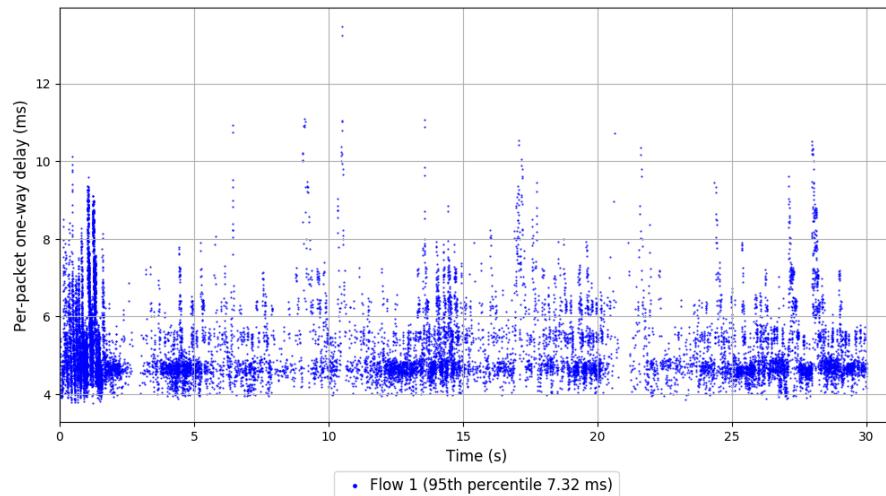
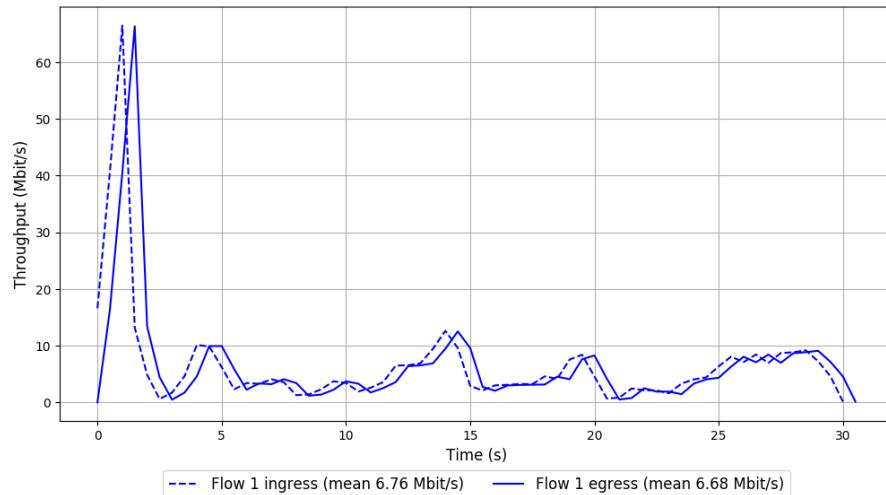


Run 1: Statistics of TCP Cubic

```
Start at: 2018-11-02 18:09:59
End at: 2018-11-02 18:10:29
Local clock offset: 0.313 ms
Remote clock offset: -1.86 ms

# Below is generated by plot.py at 2018-11-02 19:48:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.68 Mbit/s
95th percentile per-packet one-way delay: 7.322 ms
Loss rate: 1.19%
-- Flow 1:
Average throughput: 6.68 Mbit/s
95th percentile per-packet one-way delay: 7.322 ms
Loss rate: 1.19%
```

Run 1: Report of TCP Cubic — Data Link

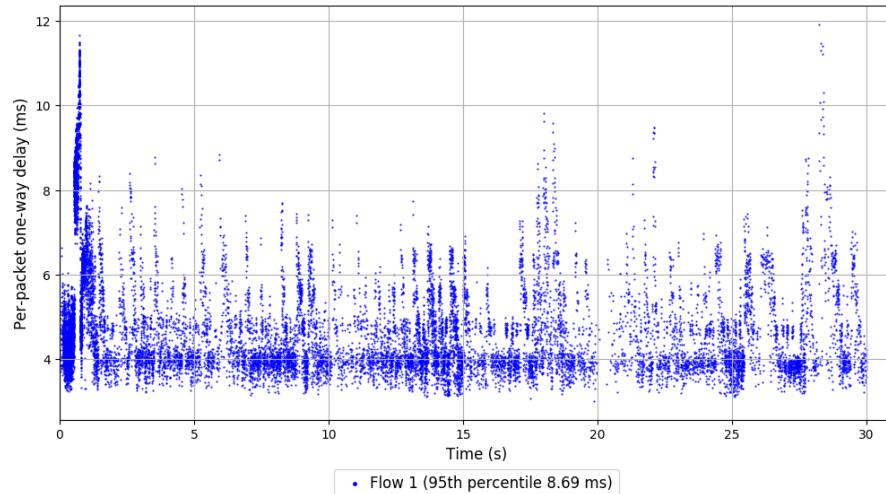
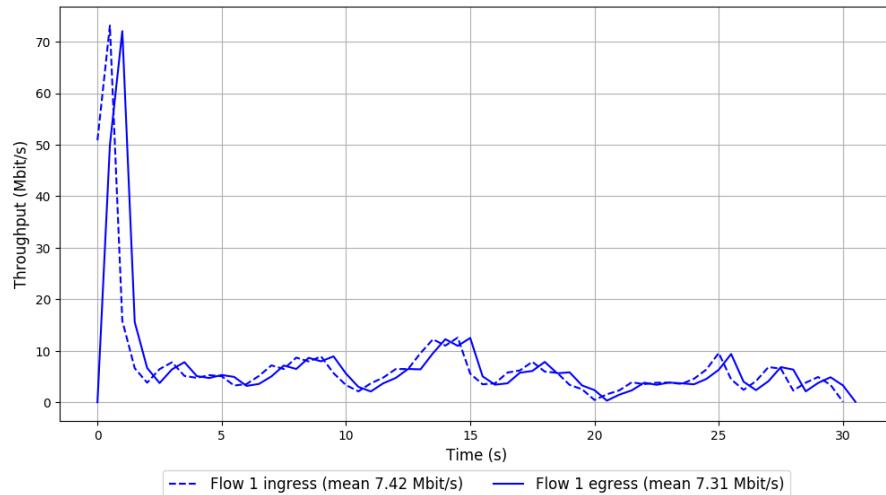


Run 2: Statistics of TCP Cubic

```
Start at: 2018-11-02 18:30:24
End at: 2018-11-02 18:30:54
Local clock offset: -3.343 ms
Remote clock offset: -3.142 ms

# Below is generated by plot.py at 2018-11-02 19:48:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.31 Mbit/s
95th percentile per-packet one-way delay: 8.691 ms
Loss rate: 1.46%
-- Flow 1:
Average throughput: 7.31 Mbit/s
95th percentile per-packet one-way delay: 8.691 ms
Loss rate: 1.46%
```

Run 2: Report of TCP Cubic — Data Link

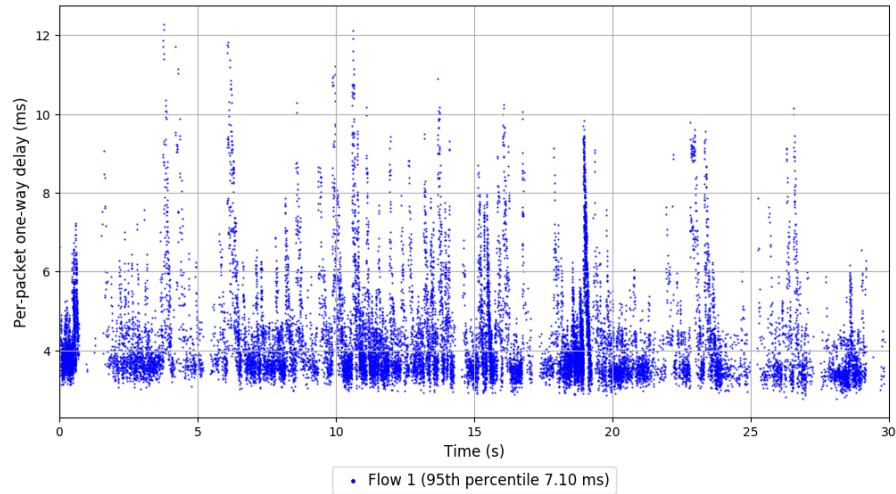
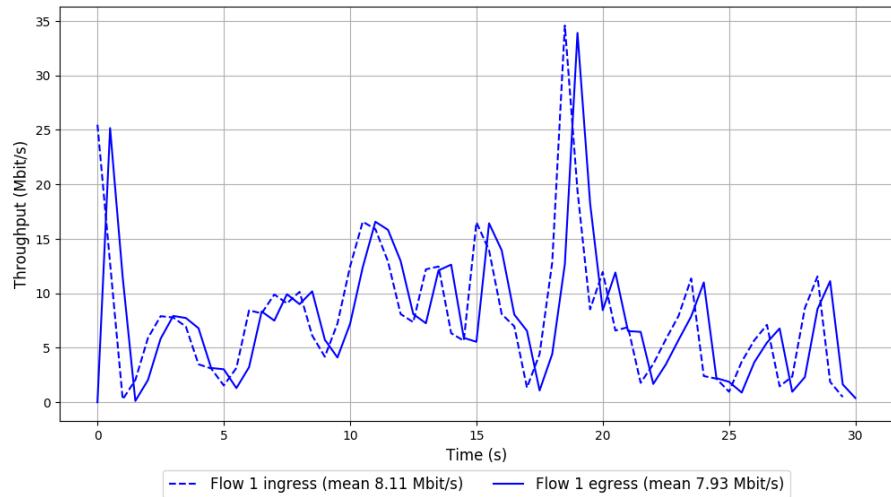


Run 3: Statistics of TCP Cubic

```
Start at: 2018-11-02 18:50:45
End at: 2018-11-02 18:51:15
Local clock offset: -14.302 ms
Remote clock offset: -2.468 ms

# Below is generated by plot.py at 2018-11-02 19:48:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.93 Mbit/s
95th percentile per-packet one-way delay: 7.104 ms
Loss rate: 2.28%
-- Flow 1:
Average throughput: 7.93 Mbit/s
95th percentile per-packet one-way delay: 7.104 ms
Loss rate: 2.28%
```

Run 3: Report of TCP Cubic — Data Link

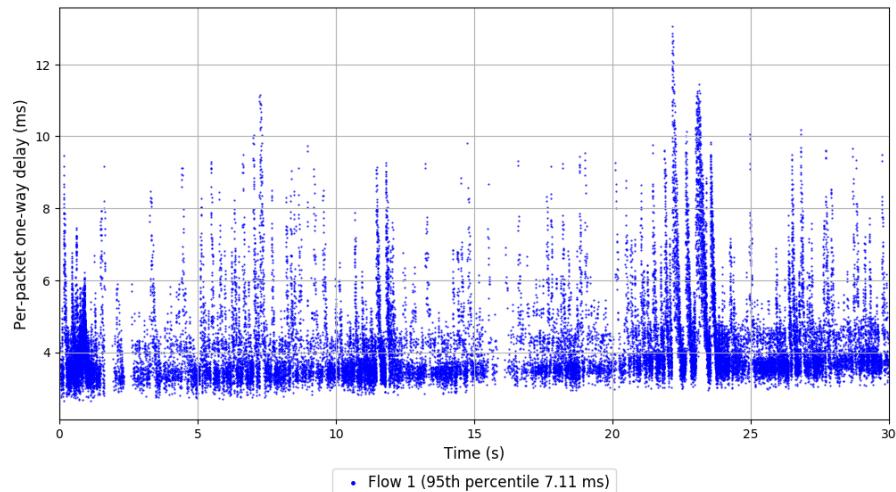
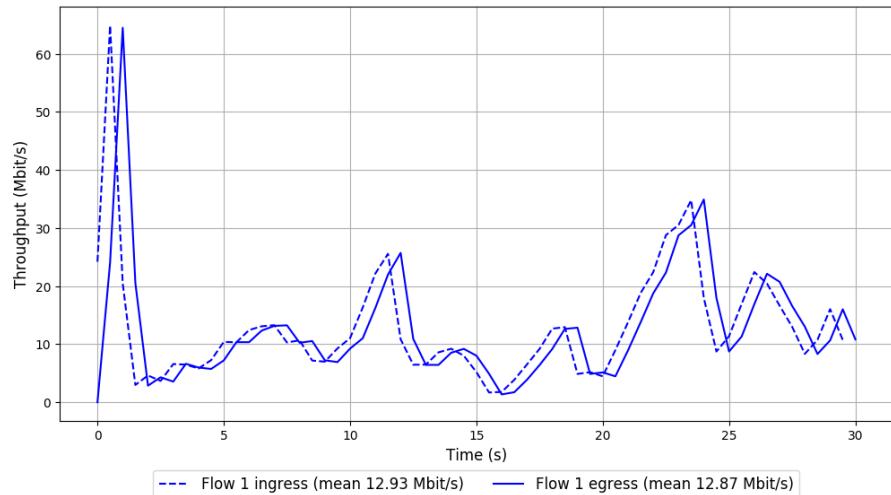


Run 4: Statistics of TCP Cubic

```
Start at: 2018-11-02 19:10:46
End at: 2018-11-02 19:11:16
Local clock offset: -11.929 ms
Remote clock offset: -3.07 ms

# Below is generated by plot.py at 2018-11-02 19:48:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.87 Mbit/s
95th percentile per-packet one-way delay: 7.109 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 12.87 Mbit/s
95th percentile per-packet one-way delay: 7.109 ms
Loss rate: 0.43%
```

Run 4: Report of TCP Cubic — Data Link

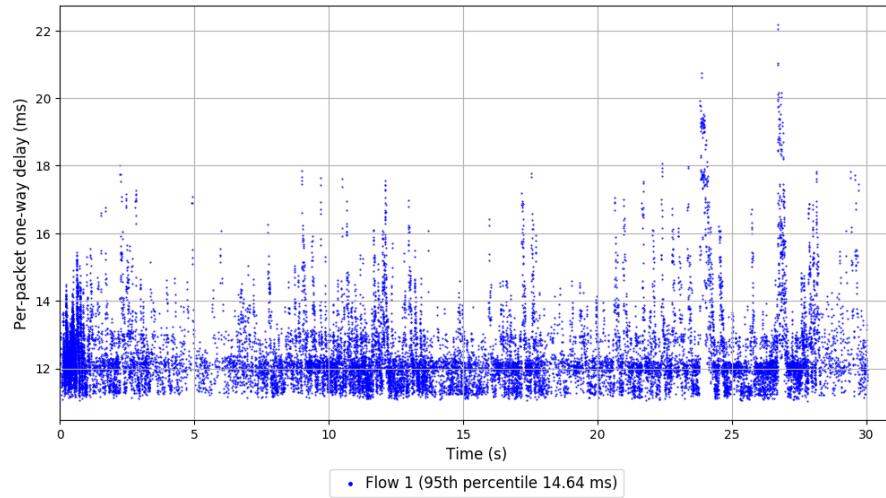
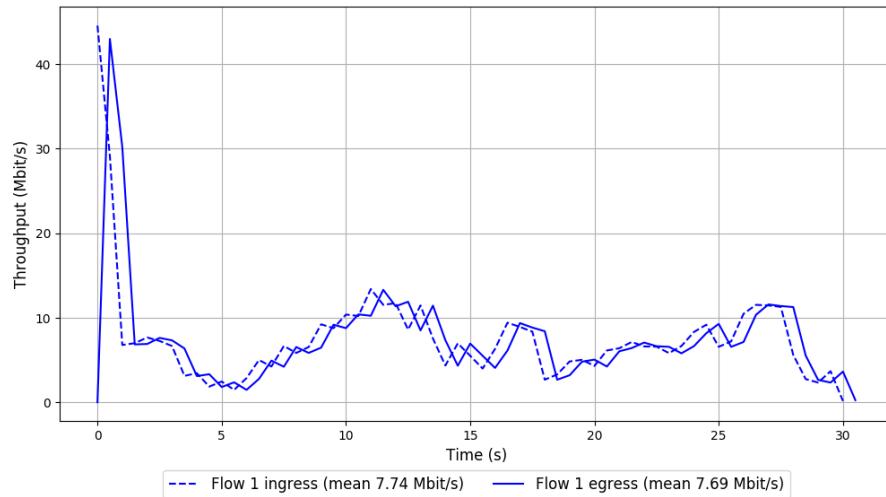


Run 5: Statistics of TCP Cubic

```
Start at: 2018-11-02 19:30:55
End at: 2018-11-02 19:31:25
Local clock offset: -8.639 ms
Remote clock offset: -2.732 ms

# Below is generated by plot.py at 2018-11-02 19:48:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.69 Mbit/s
95th percentile per-packet one-way delay: 14.641 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 7.69 Mbit/s
95th percentile per-packet one-way delay: 14.641 ms
Loss rate: 0.62%
```

Run 5: Report of TCP Cubic — Data Link

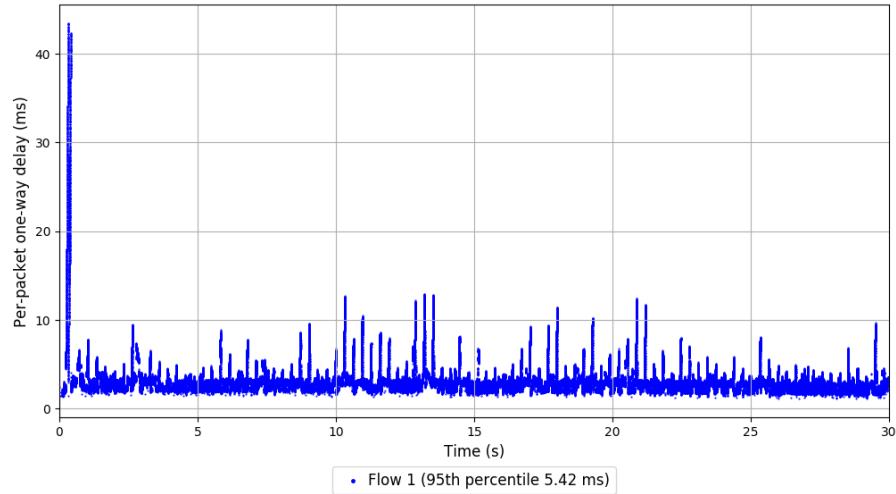
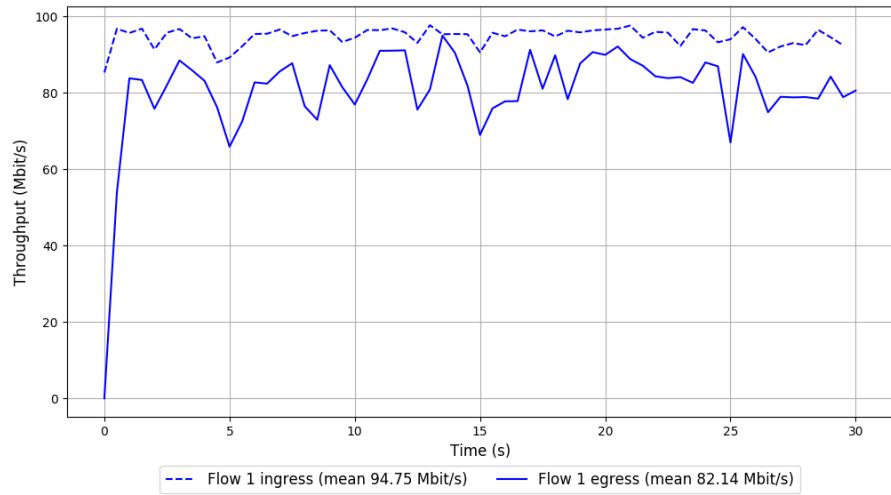


```
Run 1: Statistics of FillP

Start at: 2018-11-02 18:20:09
End at: 2018-11-02 18:20:39
Local clock offset: -3.462 ms
Remote clock offset: -2.157 ms

# Below is generated by plot.py at 2018-11-02 19:48:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 82.14 Mbit/s
95th percentile per-packet one-way delay: 5.416 ms
Loss rate: 13.31%
-- Flow 1:
Average throughput: 82.14 Mbit/s
95th percentile per-packet one-way delay: 5.416 ms
Loss rate: 13.31%
```

Run 1: Report of FillP — Data Link

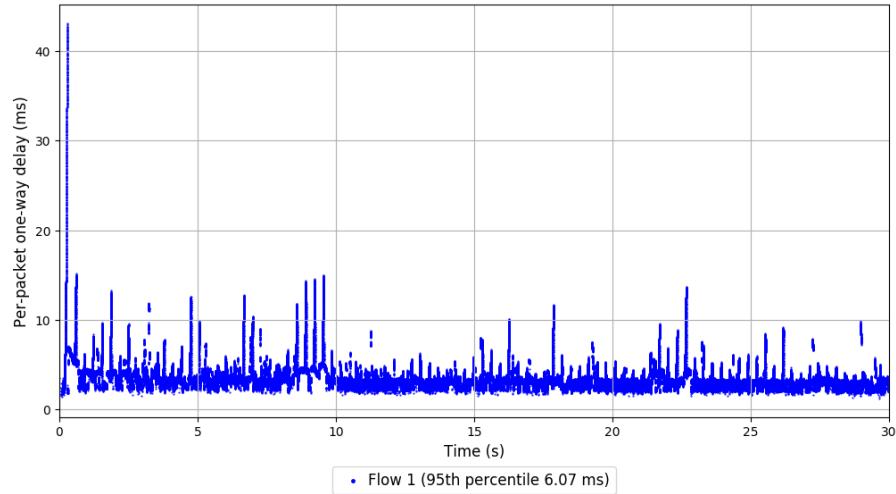
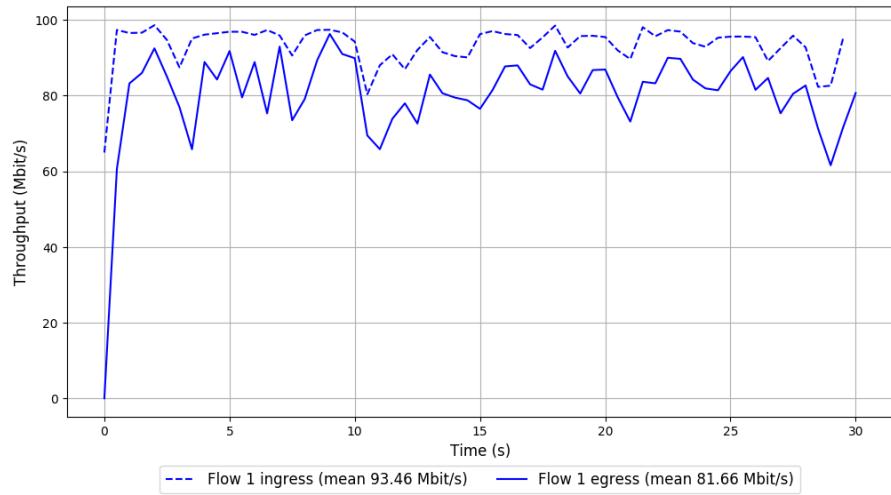


Run 2: Statistics of FillP

```
Start at: 2018-11-02 18:40:34
End at: 2018-11-02 18:41:04
Local clock offset: -6.821 ms
Remote clock offset: -2.443 ms

# Below is generated by plot.py at 2018-11-02 19:48:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 81.66 Mbit/s
95th percentile per-packet one-way delay: 6.074 ms
Loss rate: 12.63%
-- Flow 1:
Average throughput: 81.66 Mbit/s
95th percentile per-packet one-way delay: 6.074 ms
Loss rate: 12.63%
```

Run 2: Report of FillP — Data Link

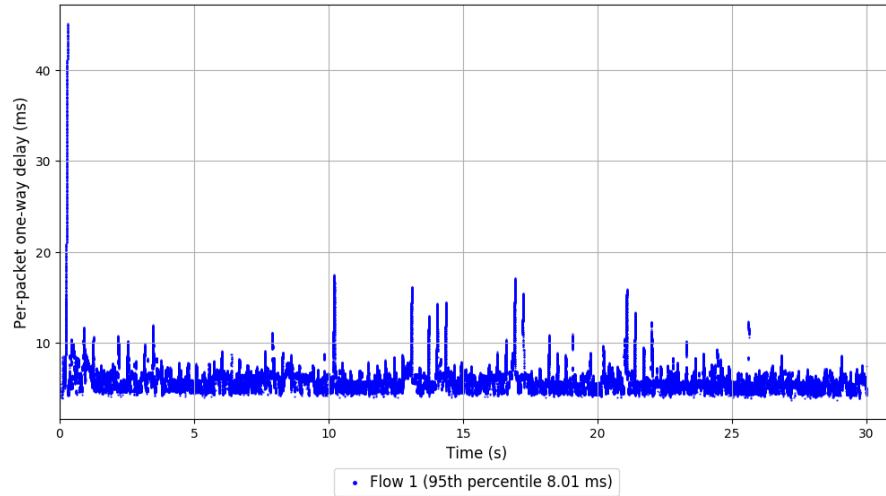
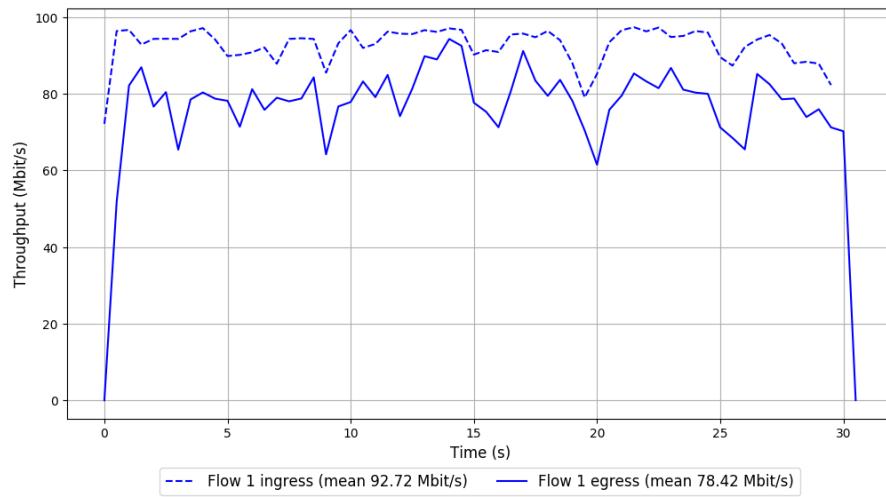


Run 3: Statistics of FillP

```
Start at: 2018-11-02 19:00:43
End at: 2018-11-02 19:01:14
Local clock offset: -21.2 ms
Remote clock offset: -3.327 ms

# Below is generated by plot.py at 2018-11-02 19:48:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 78.42 Mbit/s
95th percentile per-packet one-way delay: 8.012 ms
Loss rate: 15.41%
-- Flow 1:
Average throughput: 78.42 Mbit/s
95th percentile per-packet one-way delay: 8.012 ms
Loss rate: 15.41%
```

Run 3: Report of FillP — Data Link

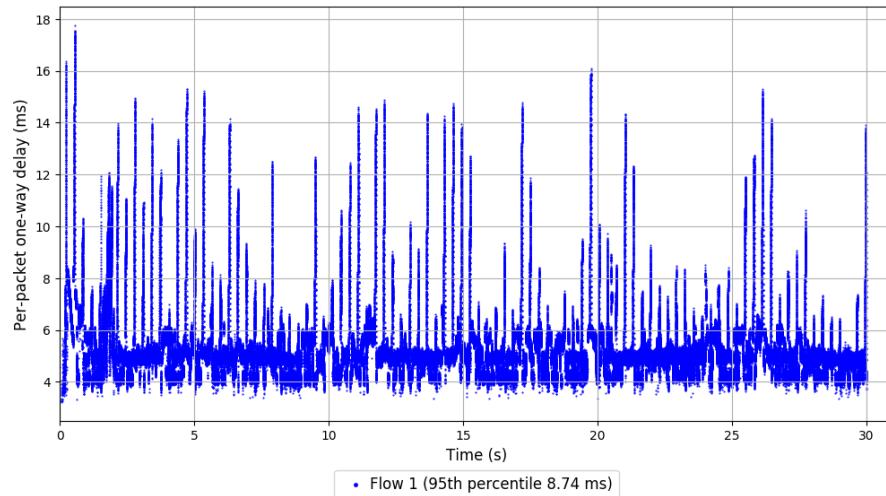
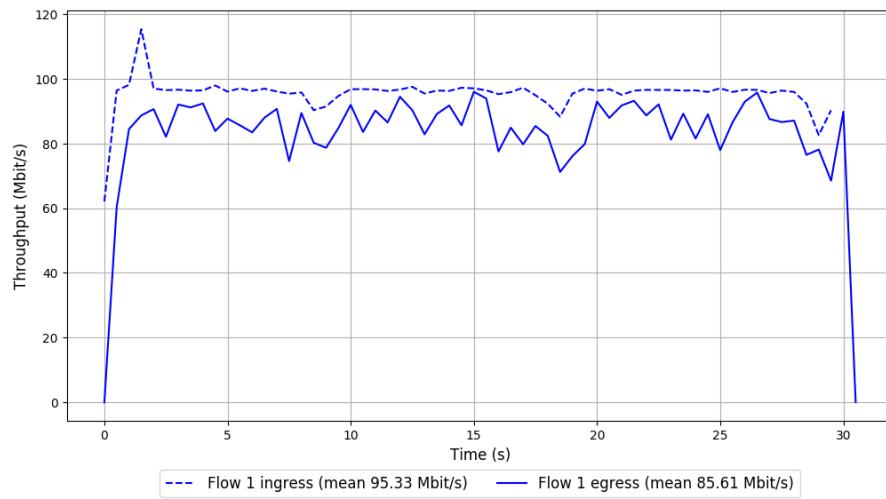


Run 4: Statistics of FillP

```
Start at: 2018-11-02 19:20:52
End at: 2018-11-02 19:21:22
Local clock offset: -7.244 ms
Remote clock offset: -2.554 ms

# Below is generated by plot.py at 2018-11-02 19:49:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.61 Mbit/s
95th percentile per-packet one-way delay: 8.742 ms
Loss rate: 10.20%
-- Flow 1:
Average throughput: 85.61 Mbit/s
95th percentile per-packet one-way delay: 8.742 ms
Loss rate: 10.20%
```

Run 4: Report of FillP — Data Link

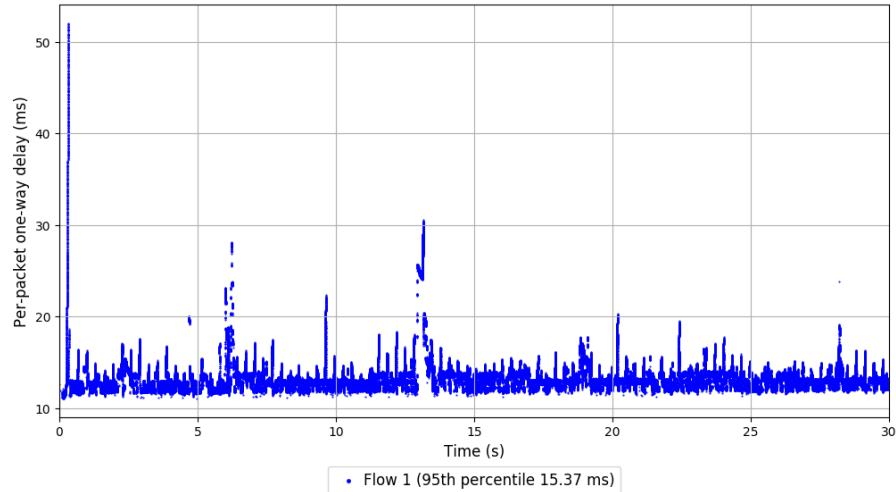
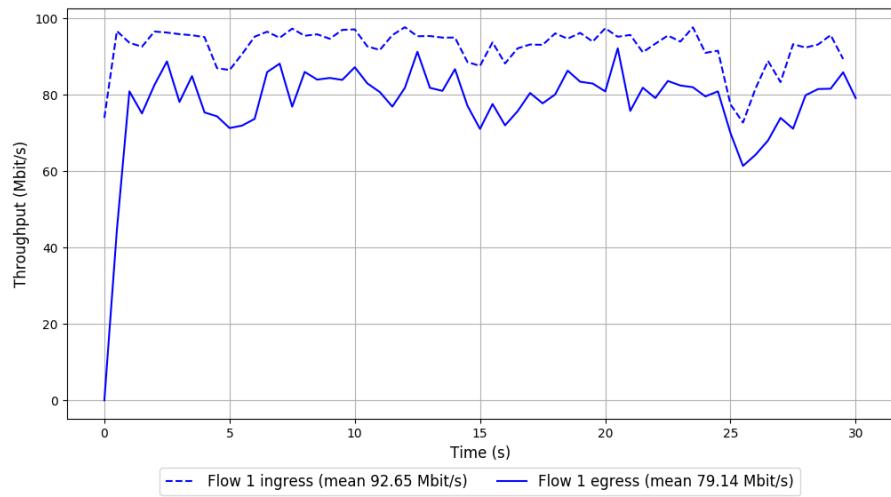


```
Run 5: Statistics of FillP
```

```
Start at: 2018-11-02 19:41:03
End at: 2018-11-02 19:41:33
Local clock offset: -3.226 ms
Remote clock offset: -3.294 ms

# Below is generated by plot.py at 2018-11-02 19:49:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 79.14 Mbit/s
95th percentile per-packet one-way delay: 15.374 ms
Loss rate: 14.59%
-- Flow 1:
Average throughput: 79.14 Mbit/s
95th percentile per-packet one-way delay: 15.374 ms
Loss rate: 14.59%
```

Run 5: Report of FillP — Data Link

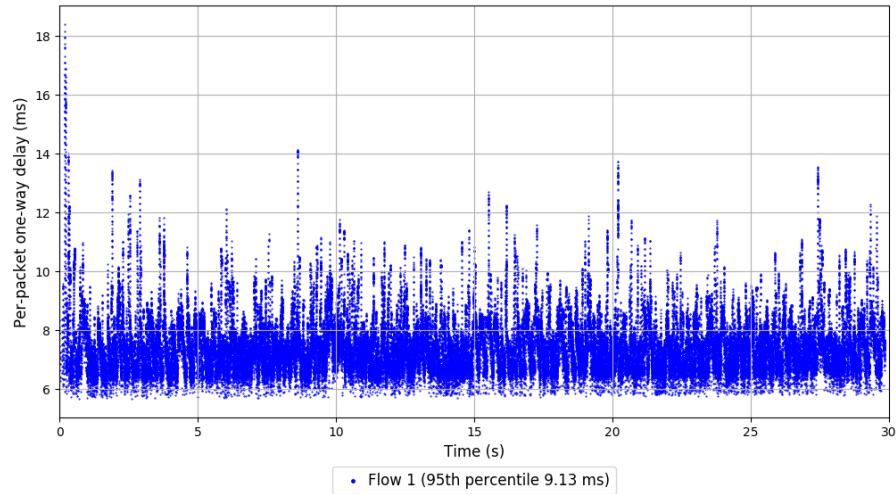
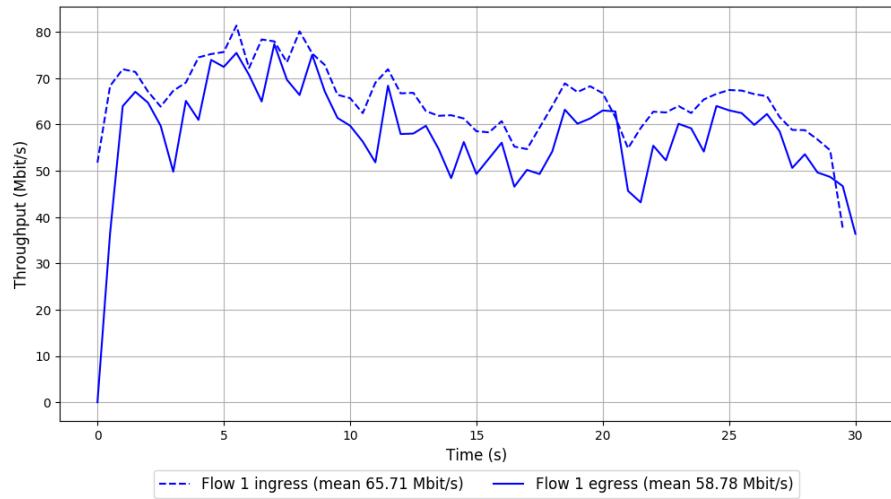


Run 1: Statistics of Indigo

```
Start at: 2018-11-02 18:24:47
End at: 2018-11-02 18:25:17
Local clock offset: -4.554 ms
Remote clock offset: -1.823 ms

# Below is generated by plot.py at 2018-11-02 19:49:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 58.78 Mbit/s
95th percentile per-packet one-way delay: 9.135 ms
Loss rate: 10.54%
-- Flow 1:
Average throughput: 58.78 Mbit/s
95th percentile per-packet one-way delay: 9.135 ms
Loss rate: 10.54%
```

Run 1: Report of Indigo — Data Link

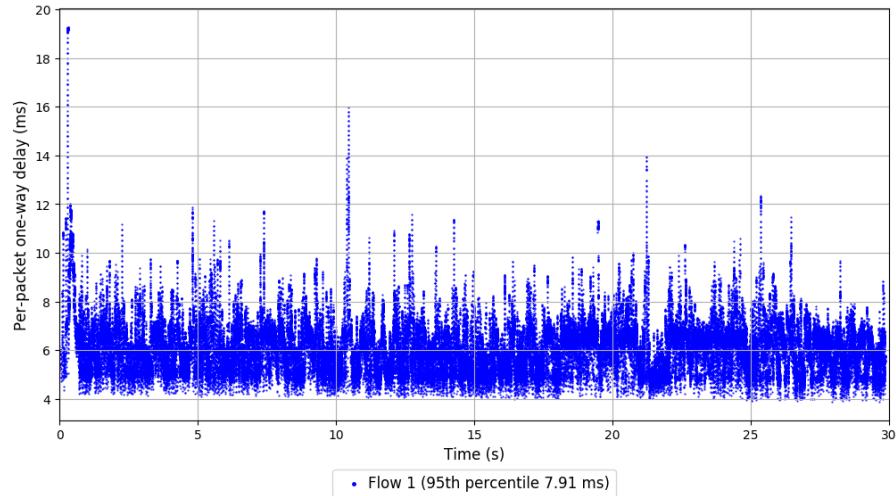
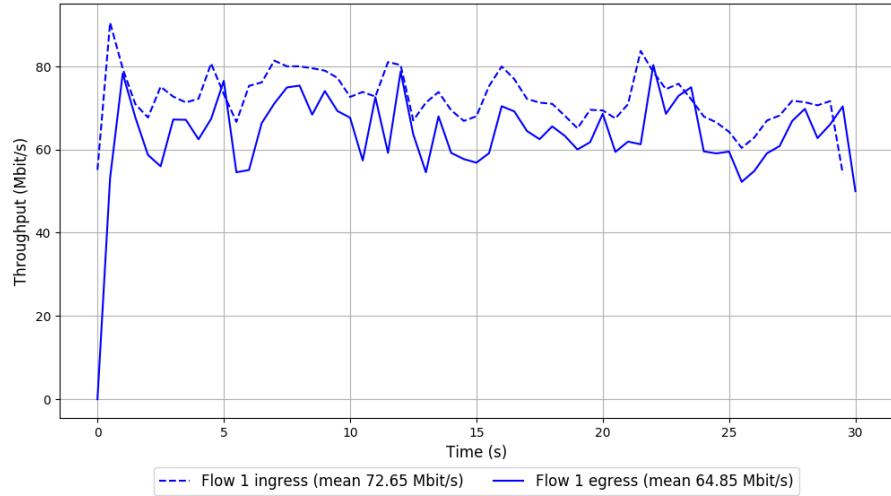


Run 2: Statistics of Indigo

```
Start at: 2018-11-02 18:45:01
End at: 2018-11-02 18:45:31
Local clock offset: -11.512 ms
Remote clock offset: -2.317 ms

# Below is generated by plot.py at 2018-11-02 19:49:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 64.85 Mbit/s
95th percentile per-packet one-way delay: 7.909 ms
Loss rate: 10.73%
-- Flow 1:
Average throughput: 64.85 Mbit/s
95th percentile per-packet one-way delay: 7.909 ms
Loss rate: 10.73%
```

Run 2: Report of Indigo — Data Link

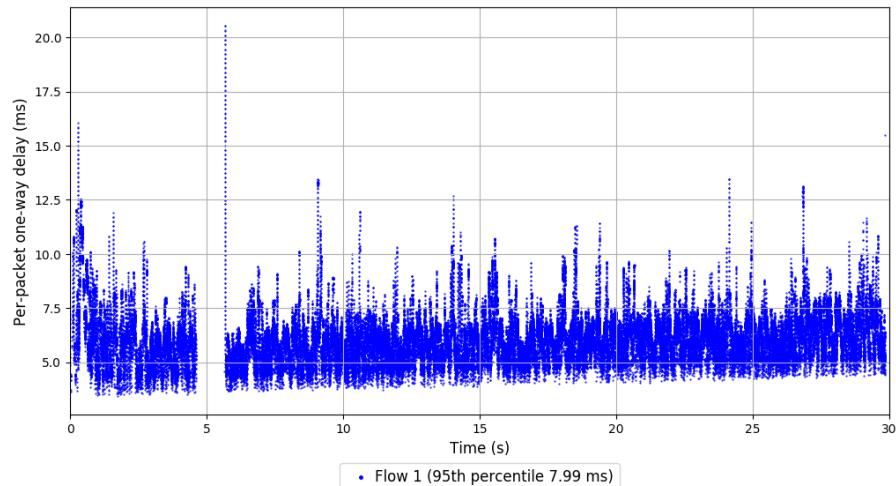
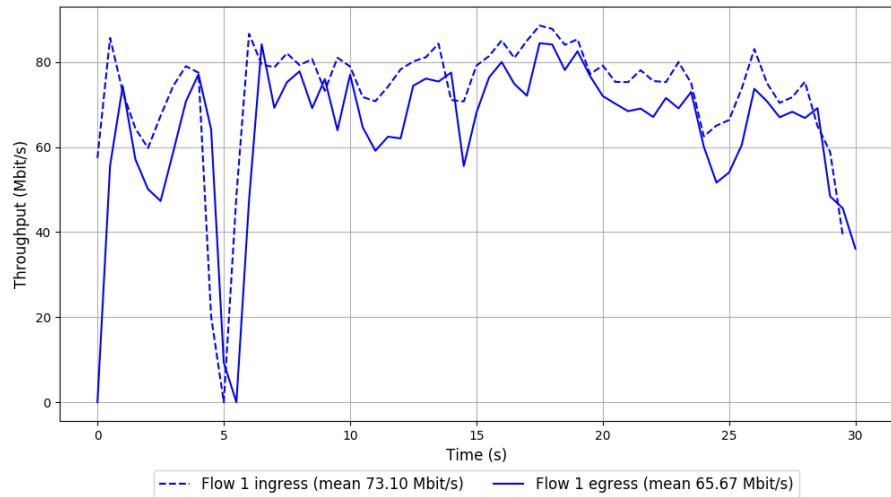


Run 3: Statistics of Indigo

```
Start at: 2018-11-02 19:05:11
End at: 2018-11-02 19:05:41
Local clock offset: -19.714 ms
Remote clock offset: -2.984 ms

# Below is generated by plot.py at 2018-11-02 19:49:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 65.67 Mbit/s
95th percentile per-packet one-way delay: 7.985 ms
Loss rate: 10.13%
-- Flow 1:
Average throughput: 65.67 Mbit/s
95th percentile per-packet one-way delay: 7.985 ms
Loss rate: 10.13%
```

Run 3: Report of Indigo — Data Link

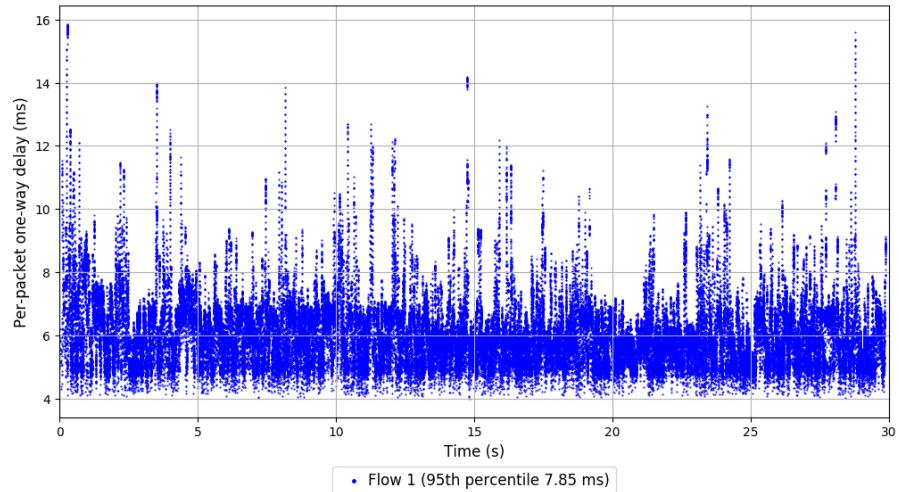
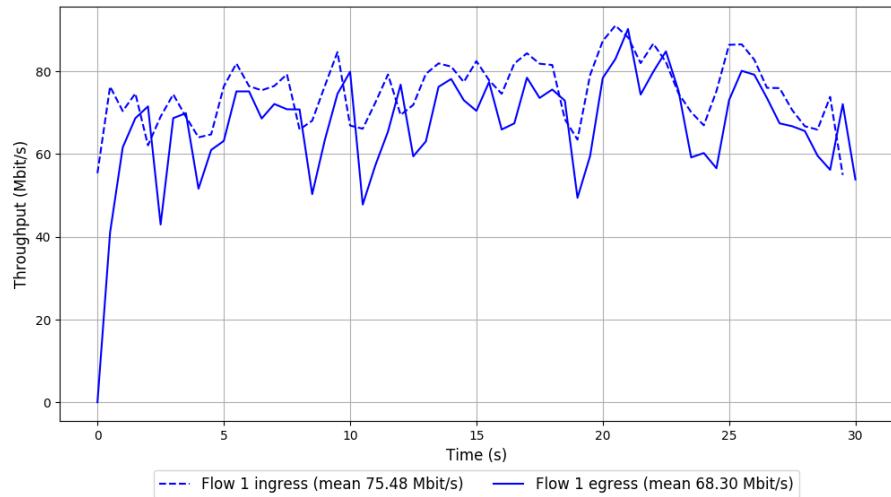


Run 4: Statistics of Indigo

```
Start at: 2018-11-02 19:25:20
End at: 2018-11-02 19:25:50
Local clock offset: -8.403 ms
Remote clock offset: -3.039 ms

# Below is generated by plot.py at 2018-11-02 19:49:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 68.30 Mbit/s
95th percentile per-packet one-way delay: 7.849 ms
Loss rate: 9.51%
-- Flow 1:
Average throughput: 68.30 Mbit/s
95th percentile per-packet one-way delay: 7.849 ms
Loss rate: 9.51%
```

Run 4: Report of Indigo — Data Link

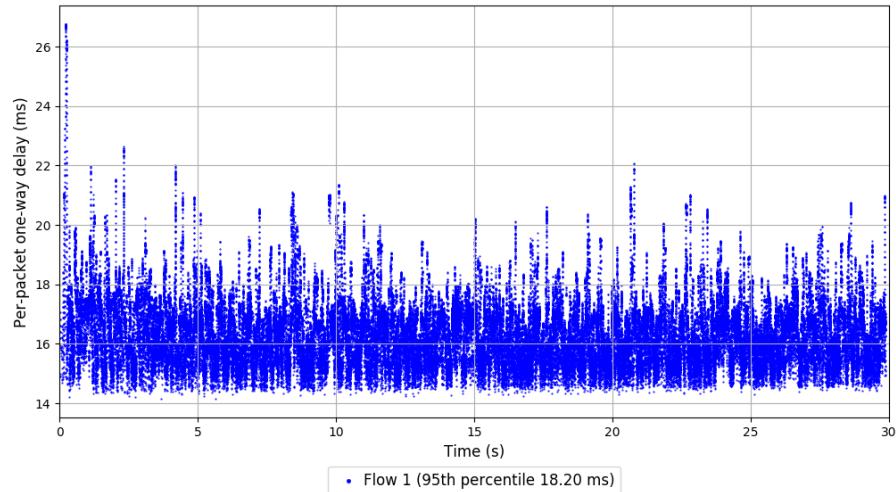
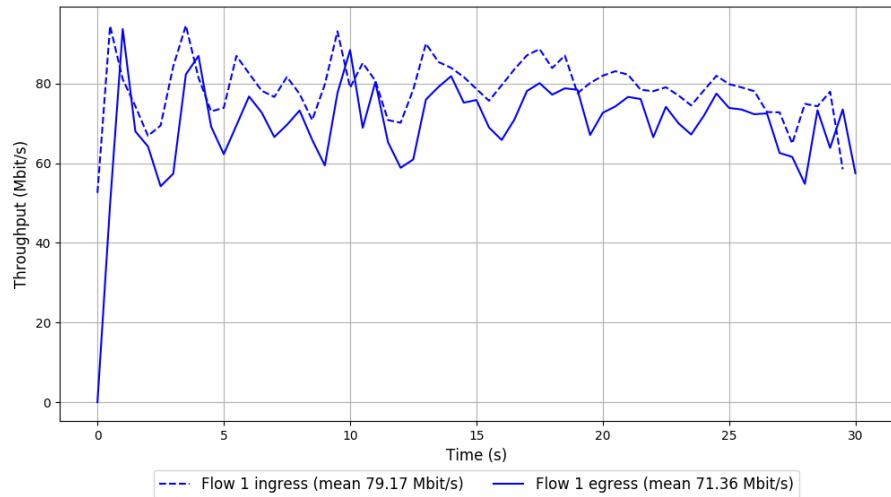


Run 5: Statistics of Indigo

```
Start at: 2018-11-02 19:45:48
End at: 2018-11-02 19:46:18
Local clock offset: -3.581 ms
Remote clock offset: -3.375 ms

# Below is generated by plot.py at 2018-11-02 19:49:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 71.36 Mbit/s
95th percentile per-packet one-way delay: 18.195 ms
Loss rate: 9.86%
-- Flow 1:
Average throughput: 71.36 Mbit/s
95th percentile per-packet one-way delay: 18.195 ms
Loss rate: 9.86%
```

Run 5: Report of Indigo — Data Link

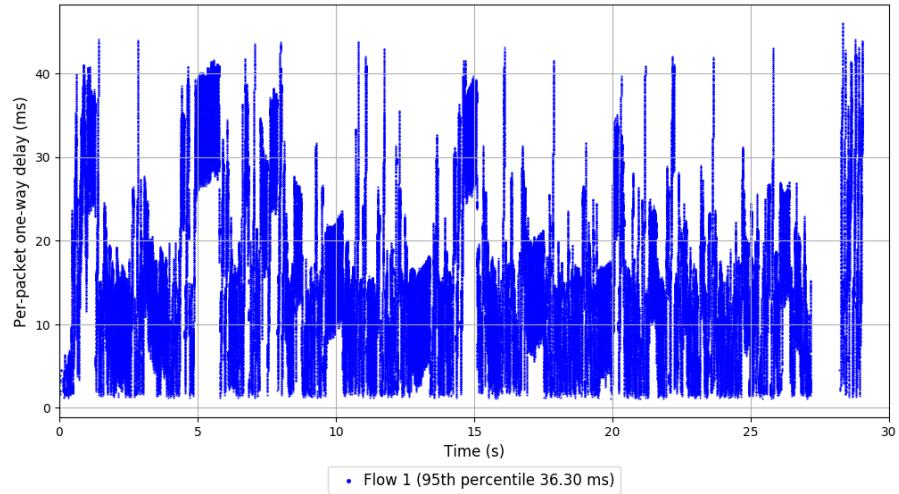
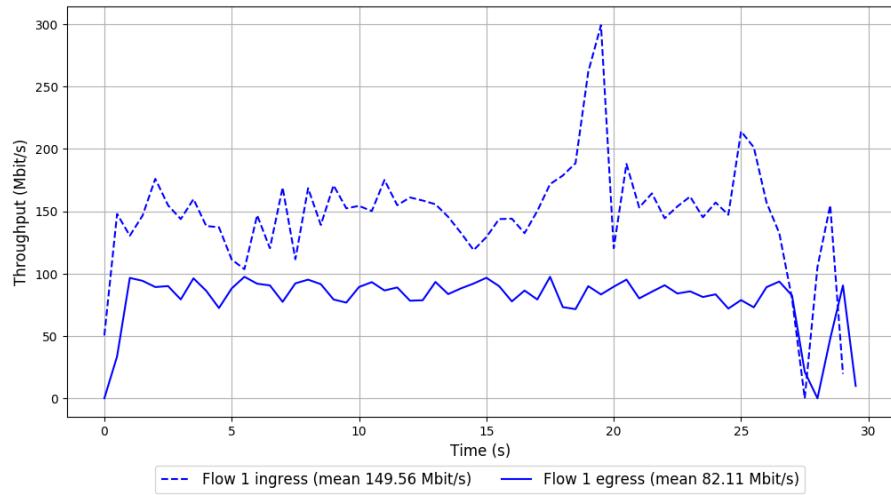


```
Run 1: Statistics of Indigo-96d2da3

Start at: 2018-11-02 18:13:20
End at: 2018-11-02 18:13:50
Local clock offset: 1.42 ms
Remote clock offset: -2.043 ms

# Below is generated by plot.py at 2018-11-02 19:50:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 82.11 Mbit/s
95th percentile per-packet one-way delay: 36.302 ms
Loss rate: 45.09%
-- Flow 1:
Average throughput: 82.11 Mbit/s
95th percentile per-packet one-way delay: 36.302 ms
Loss rate: 45.09%
```

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

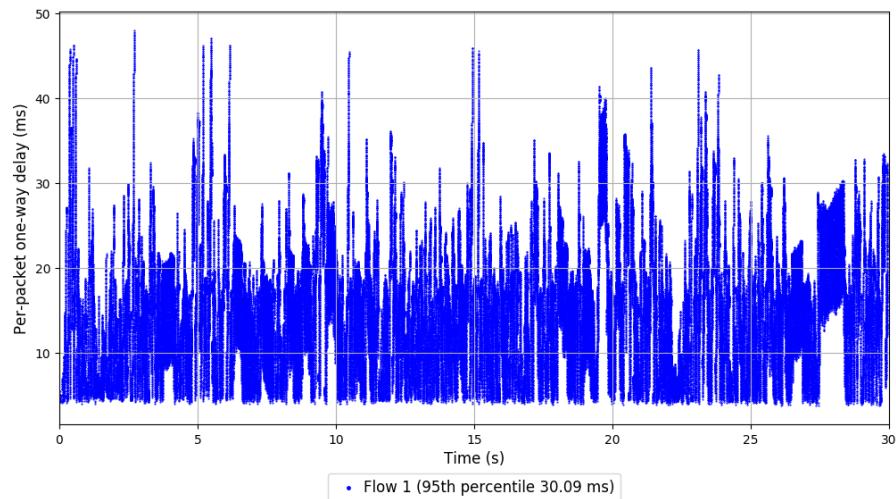
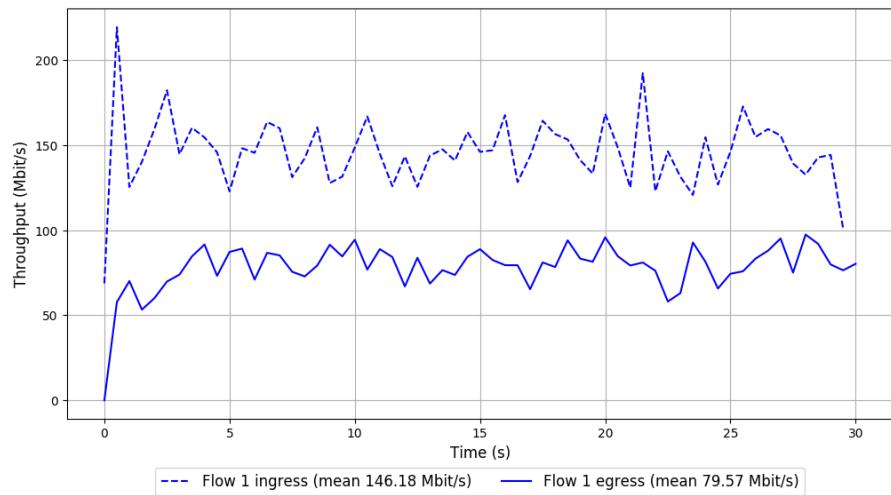


Run 2: Statistics of Indigo-96d2da3

```
Start at: 2018-11-02 18:33:43
End at: 2018-11-02 18:34:13
Local clock offset: -5.205 ms
Remote clock offset: -3.016 ms

# Below is generated by plot.py at 2018-11-02 19:50:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 79.57 Mbit/s
95th percentile per-packet one-way delay: 30.085 ms
Loss rate: 45.52%
-- Flow 1:
Average throughput: 79.57 Mbit/s
95th percentile per-packet one-way delay: 30.085 ms
Loss rate: 45.52%
```

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

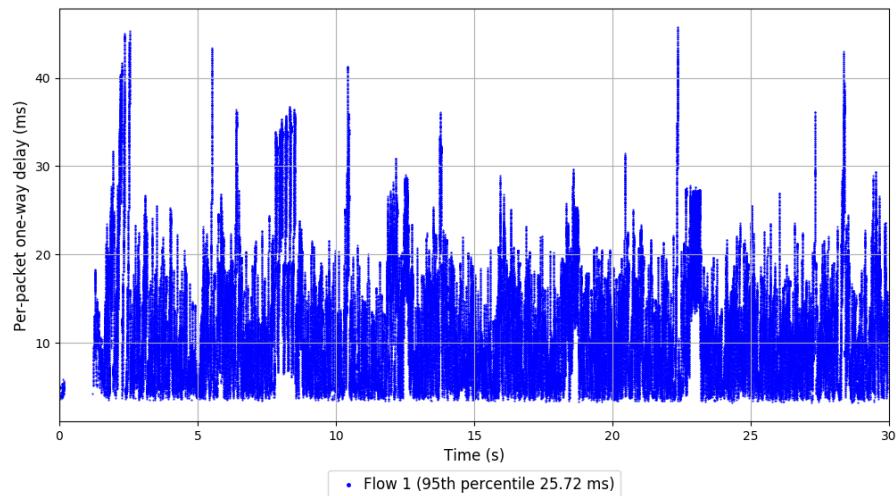
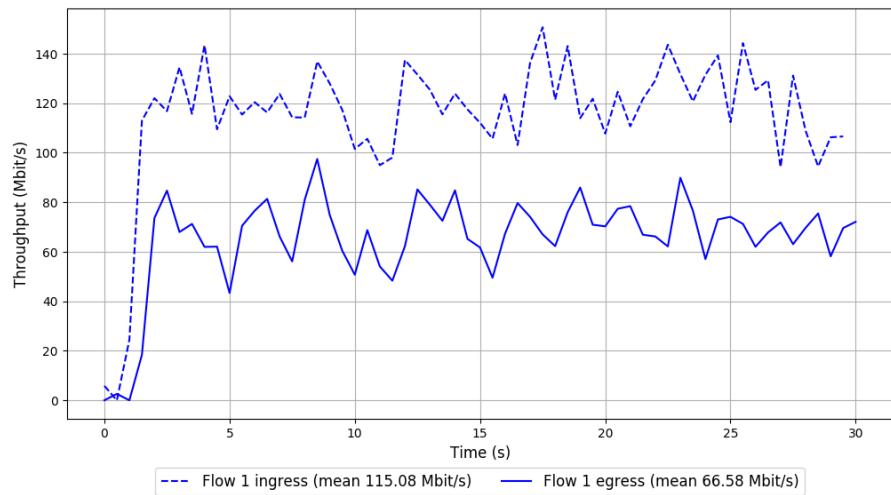


Run 3: Statistics of Indigo-96d2da3

```
Start at: 2018-11-02 18:54:02
End at: 2018-11-02 18:54:32
Local clock offset: -17.572 ms
Remote clock offset: -3.405 ms

# Below is generated by plot.py at 2018-11-02 19:50:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 66.58 Mbit/s
95th percentile per-packet one-way delay: 25.723 ms
Loss rate: 42.13%
-- Flow 1:
Average throughput: 66.58 Mbit/s
95th percentile per-packet one-way delay: 25.723 ms
Loss rate: 42.13%
```

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

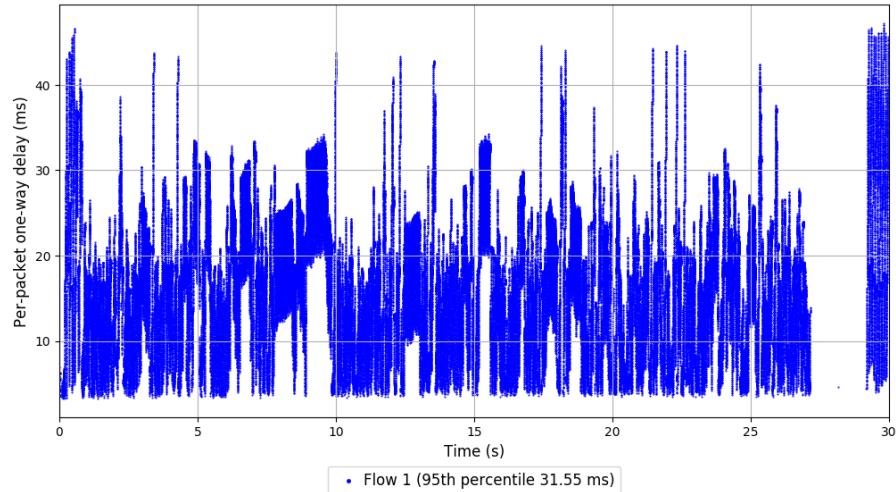
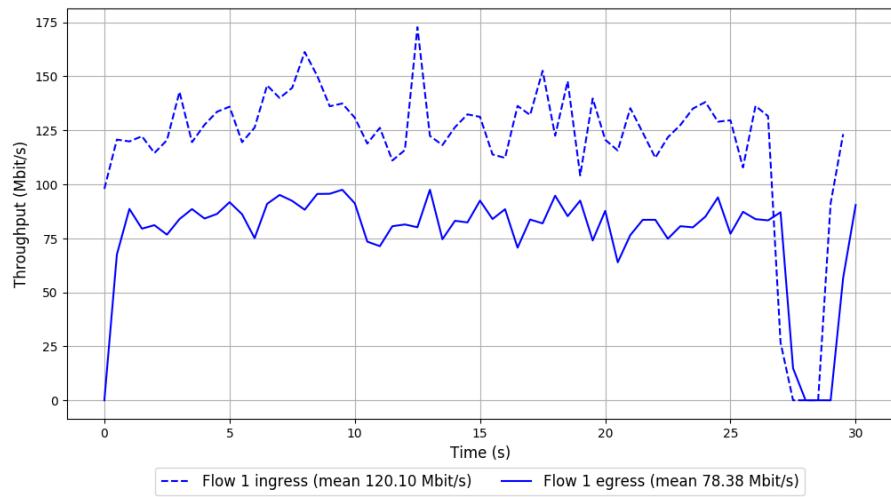


Run 4: Statistics of Indigo-96d2da3

```
Start at: 2018-11-02 19:14:10
End at: 2018-11-02 19:14:40
Local clock offset: -10.576 ms
Remote clock offset: -3.553 ms

# Below is generated by plot.py at 2018-11-02 19:50:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 78.38 Mbit/s
95th percentile per-packet one-way delay: 31.545 ms
Loss rate: 34.65%
-- Flow 1:
Average throughput: 78.38 Mbit/s
95th percentile per-packet one-way delay: 31.545 ms
Loss rate: 34.65%
```

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

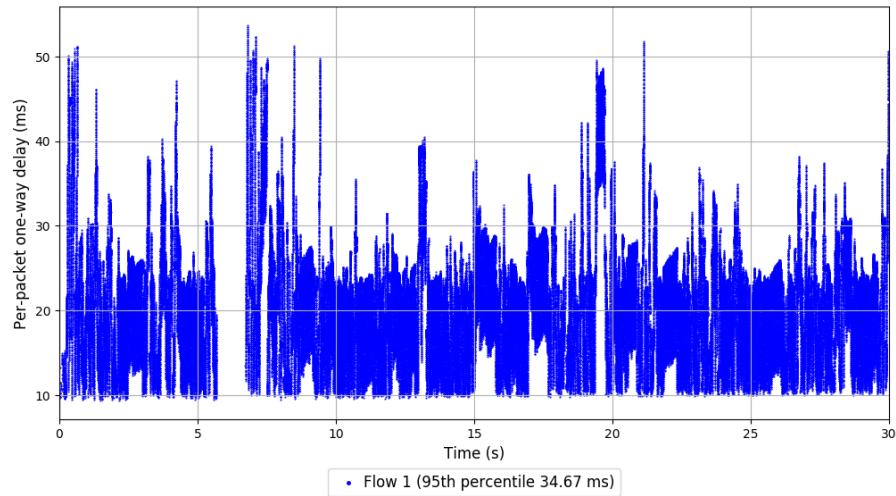
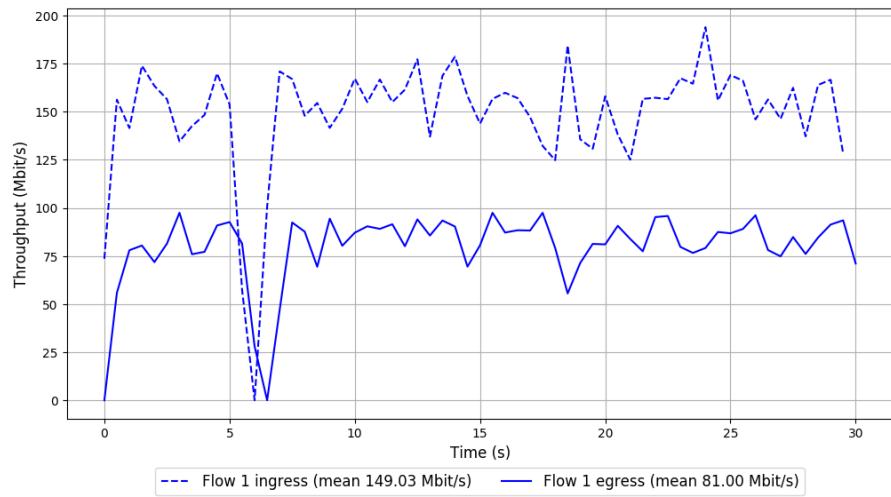


Run 5: Statistics of Indigo-96d2da3

```
Start at: 2018-11-02 19:34:13
End at: 2018-11-02 19:34:43
Local clock offset: -7.483 ms
Remote clock offset: -2.99 ms

# Below is generated by plot.py at 2018-11-02 19:50:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 81.00 Mbit/s
95th percentile per-packet one-way delay: 34.672 ms
Loss rate: 45.58%
-- Flow 1:
Average throughput: 81.00 Mbit/s
95th percentile per-packet one-way delay: 34.672 ms
Loss rate: 45.58%
```

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

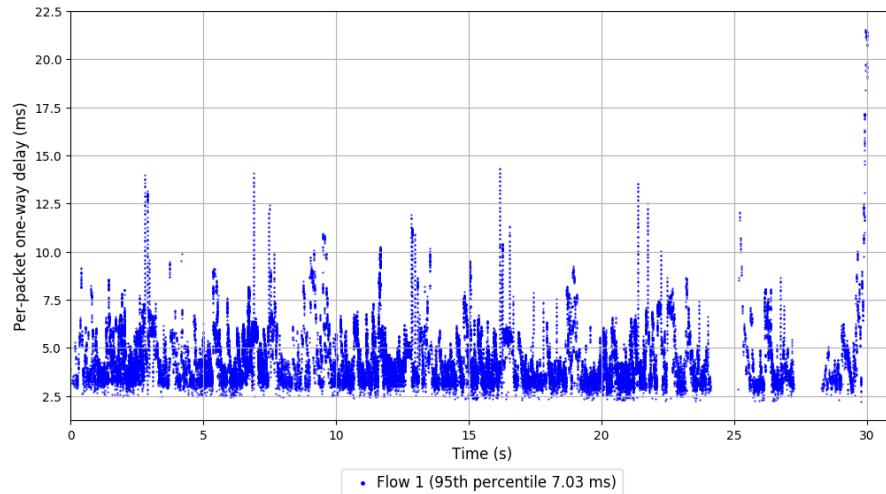
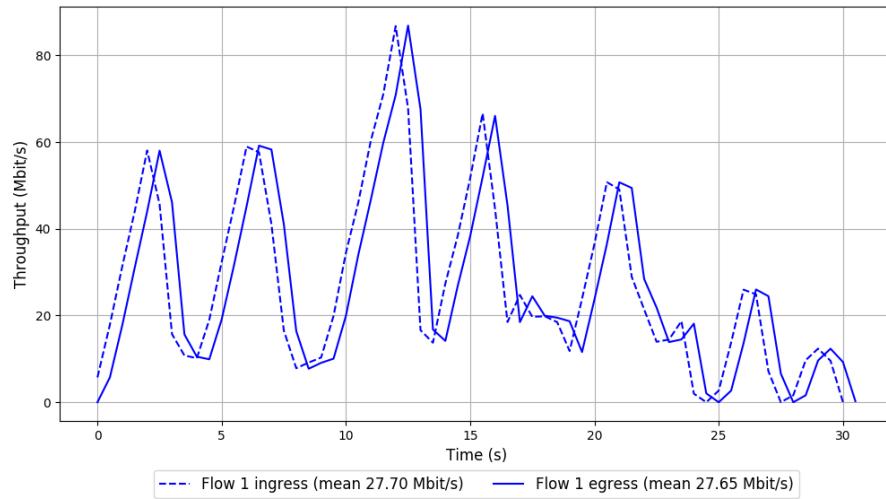


```
Run 1: Statistics of LEDBAT
```

```
Start at: 2018-11-02 18:12:12
End at: 2018-11-02 18:12:42
Local clock offset: 0.886 ms
Remote clock offset: -1.748 ms

# Below is generated by plot.py at 2018-11-02 19:50:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 27.65 Mbit/s
95th percentile per-packet one-way delay: 7.027 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 27.65 Mbit/s
95th percentile per-packet one-way delay: 7.027 ms
Loss rate: 0.20%
```

Run 1: Report of LEDBAT — Data Link

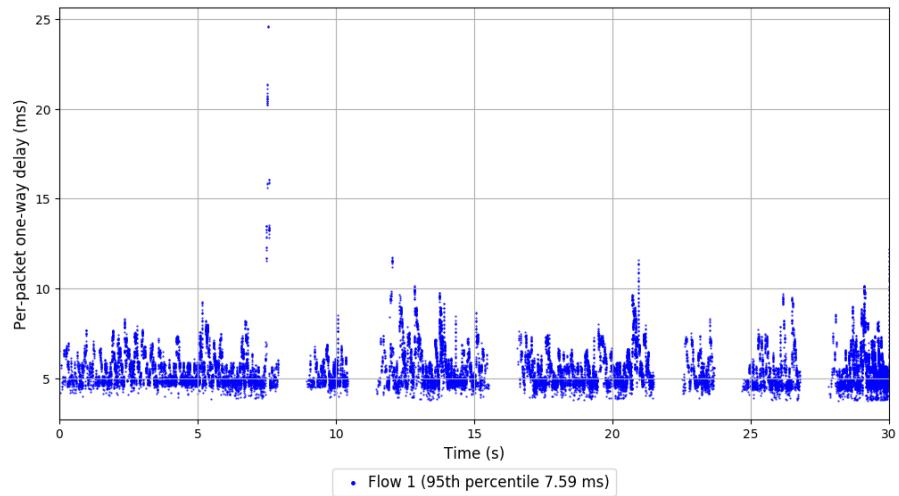
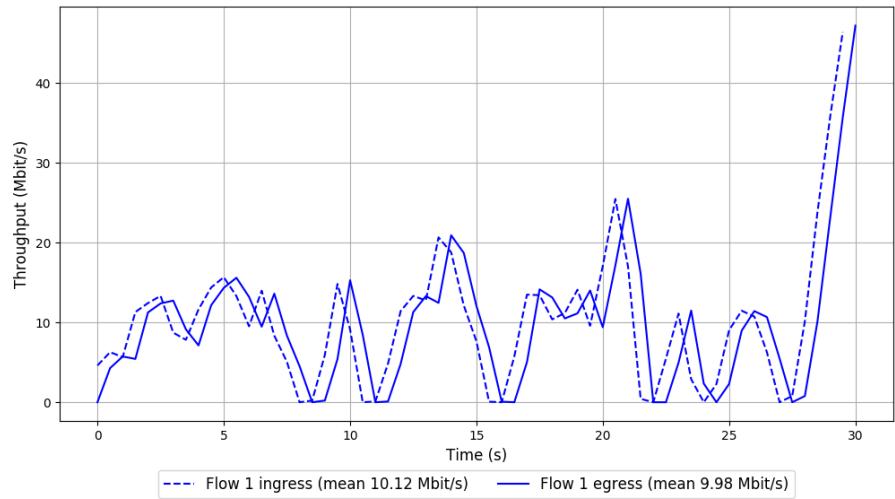


Run 2: Statistics of LEDBAT

```
Start at: 2018-11-02 18:32:37
End at: 2018-11-02 18:33:07
Local clock offset: -4.476 ms
Remote clock offset: -2.764 ms

# Below is generated by plot.py at 2018-11-02 19:50:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.98 Mbit/s
95th percentile per-packet one-way delay: 7.594 ms
Loss rate: 1.30%
-- Flow 1:
Average throughput: 9.98 Mbit/s
95th percentile per-packet one-way delay: 7.594 ms
Loss rate: 1.30%
```

Run 2: Report of LEDBAT — Data Link

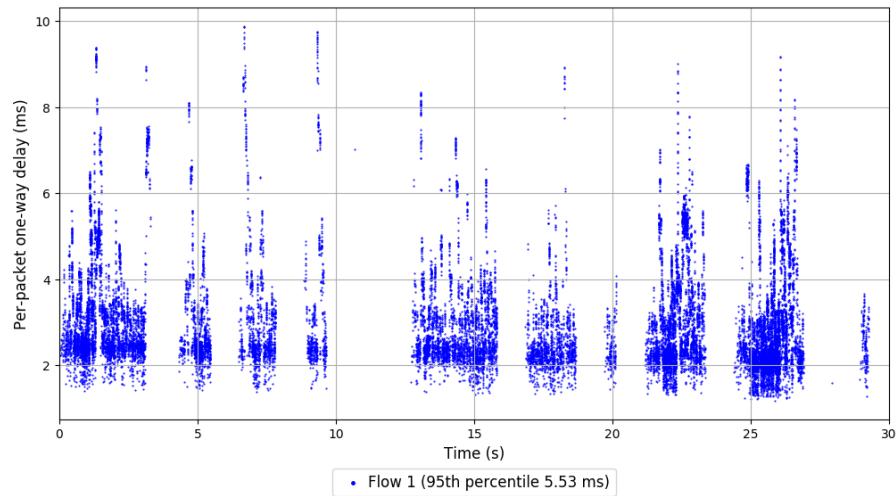
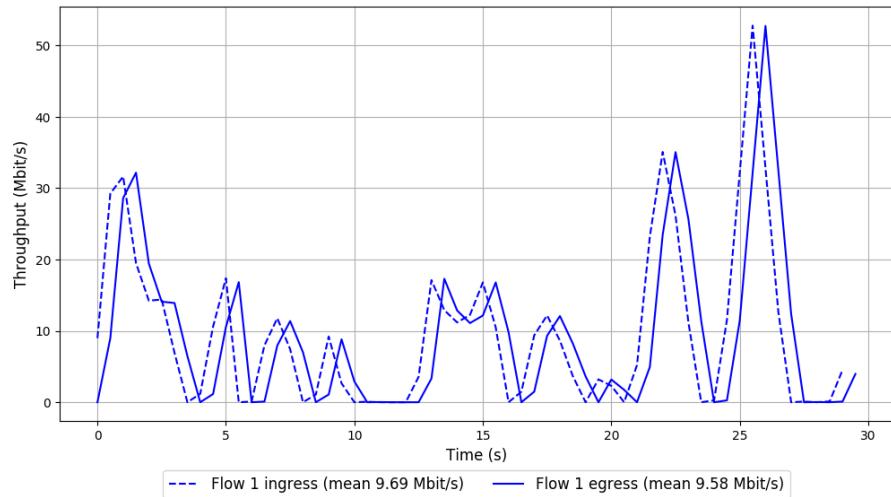


Run 3: Statistics of LEDBAT

```
Start at: 2018-11-02 18:52:56
End at: 2018-11-02 18:53:26
Local clock offset: -14.006 ms
Remote clock offset: -2.9 ms

# Below is generated by plot.py at 2018-11-02 19:50:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.58 Mbit/s
95th percentile per-packet one-way delay: 5.528 ms
Loss rate: 1.21%
-- Flow 1:
Average throughput: 9.58 Mbit/s
95th percentile per-packet one-way delay: 5.528 ms
Loss rate: 1.21%
```

Run 3: Report of LEDBAT — Data Link

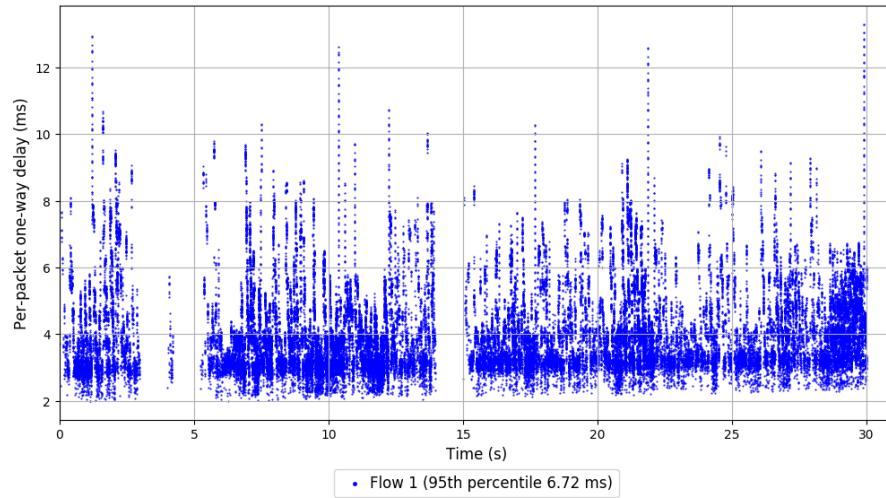
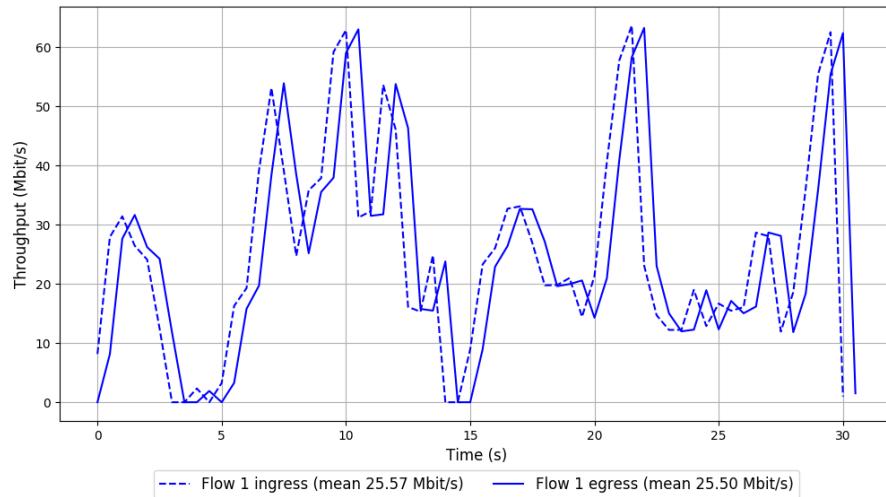


Run 4: Statistics of LEDBAT

```
Start at: 2018-11-02 19:13:03
End at: 2018-11-02 19:13:33
Local clock offset: -9.49 ms
Remote clock offset: -3.499 ms

# Below is generated by plot.py at 2018-11-02 19:50:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 25.50 Mbit/s
95th percentile per-packet one-way delay: 6.721 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 25.50 Mbit/s
95th percentile per-packet one-way delay: 6.721 ms
Loss rate: 0.27%
```

Run 4: Report of LEDBAT — Data Link

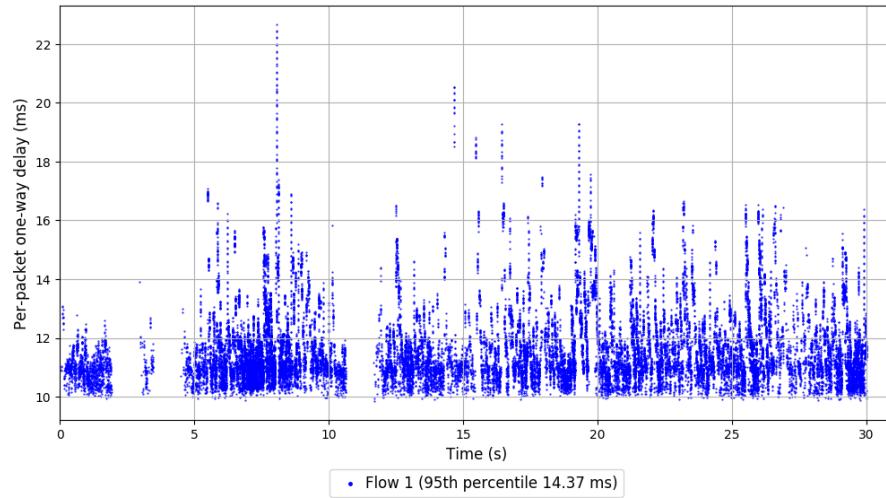
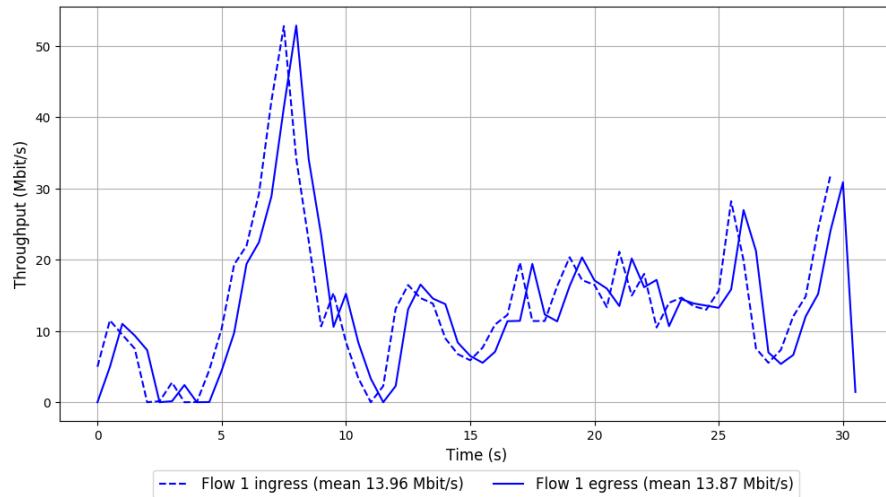


Run 5: Statistics of LEDBAT

```
Start at: 2018-11-02 19:33:06
End at: 2018-11-02 19:33:36
Local clock offset: -8.97 ms
Remote clock offset: -3.728 ms

# Below is generated by plot.py at 2018-11-02 19:50:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.87 Mbit/s
95th percentile per-packet one-way delay: 14.371 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 13.87 Mbit/s
95th percentile per-packet one-way delay: 14.371 ms
Loss rate: 0.61%
```

Run 5: Report of LEDBAT — Data Link

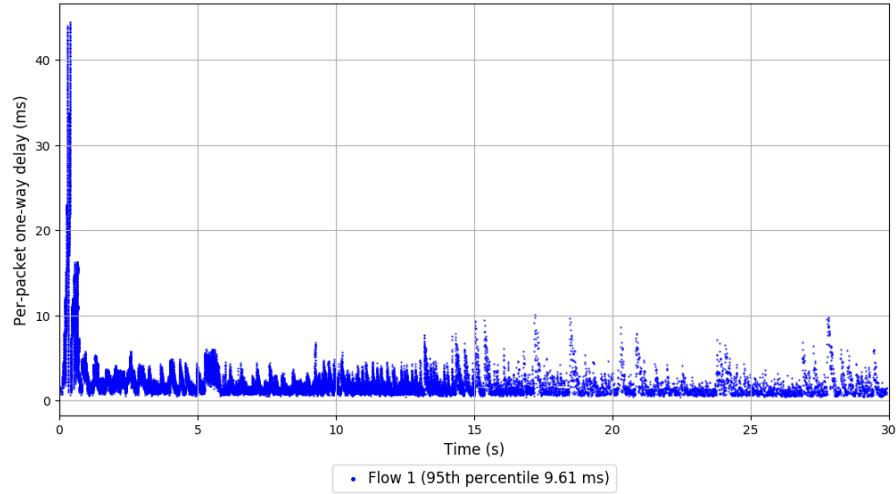
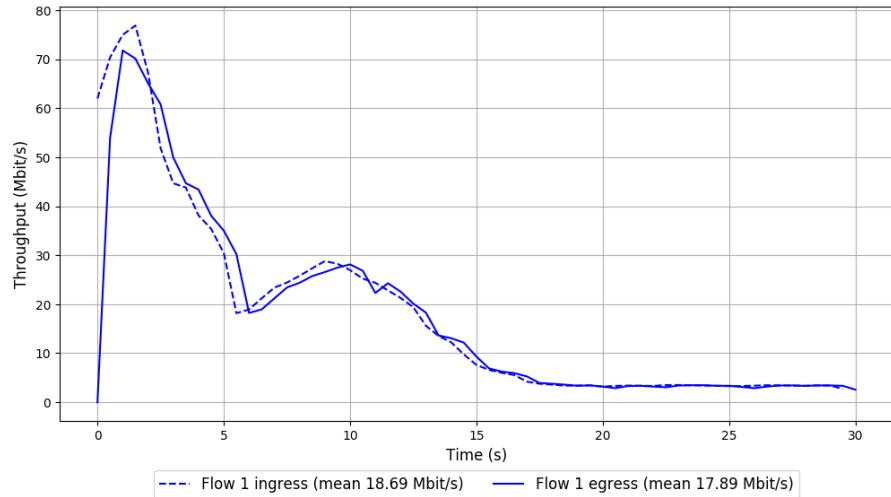


Run 1: Statistics of Indigo-Muses

```
Start at: 2018-11-02 18:14:31
End at: 2018-11-02 18:15:01
Local clock offset: 1.48 ms
Remote clock offset: -2.258 ms

# Below is generated by plot.py at 2018-11-02 19:50:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 17.89 Mbit/s
95th percentile per-packet one-way delay: 9.613 ms
Loss rate: 4.26%
-- Flow 1:
Average throughput: 17.89 Mbit/s
95th percentile per-packet one-way delay: 9.613 ms
Loss rate: 4.26%
```

Run 1: Report of Indigo-Muses — Data Link

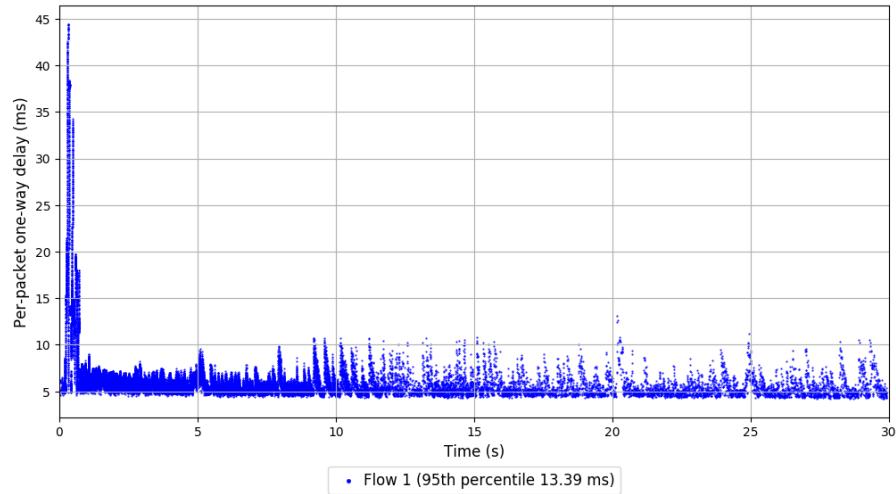
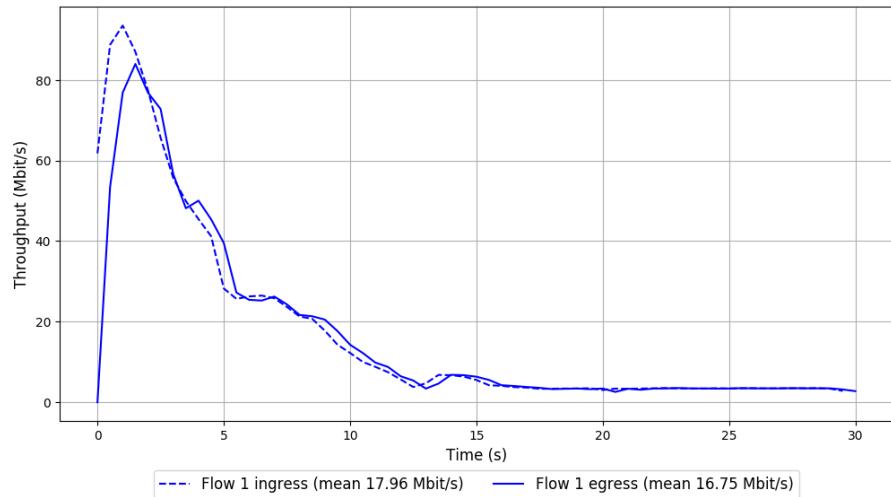


Run 2: Statistics of Indigo-Muses

```
Start at: 2018-11-02 18:34:56
End at: 2018-11-02 18:35:26
Local clock offset: -6.087 ms
Remote clock offset: -2.701 ms

# Below is generated by plot.py at 2018-11-02 19:50:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 16.75 Mbit/s
95th percentile per-packet one-way delay: 13.386 ms
Loss rate: 6.74%
-- Flow 1:
Average throughput: 16.75 Mbit/s
95th percentile per-packet one-way delay: 13.386 ms
Loss rate: 6.74%
```

Run 2: Report of Indigo-Muses — Data Link

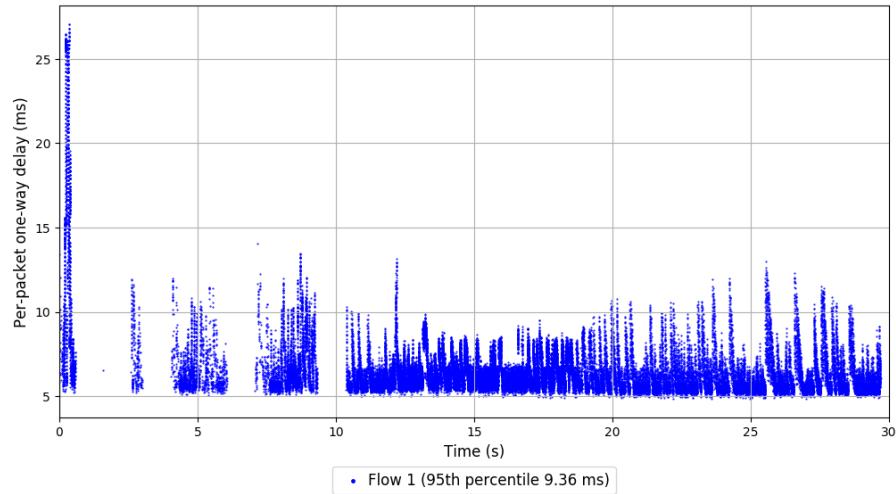
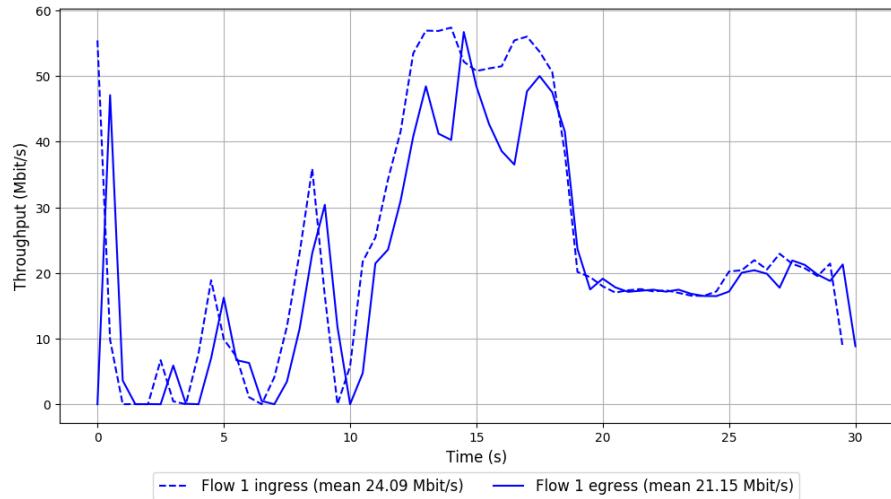


Run 3: Statistics of Indigo-Muses

```
Start at: 2018-11-02 18:55:12
End at: 2018-11-02 18:55:42
Local clock offset: -19.171 ms
Remote clock offset: -3.151 ms

# Below is generated by plot.py at 2018-11-02 19:50:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 21.15 Mbit/s
95th percentile per-packet one-way delay: 9.359 ms
Loss rate: 12.20%
-- Flow 1:
Average throughput: 21.15 Mbit/s
95th percentile per-packet one-way delay: 9.359 ms
Loss rate: 12.20%
```

Run 3: Report of Indigo-Muses — Data Link

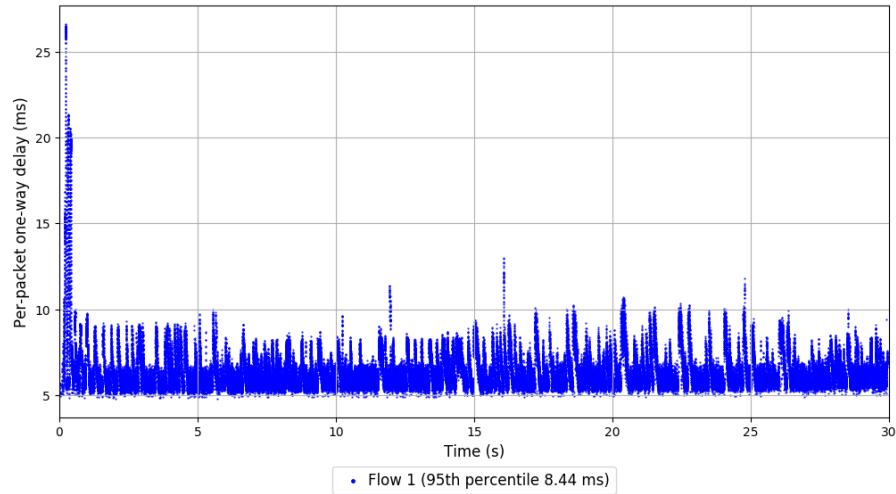
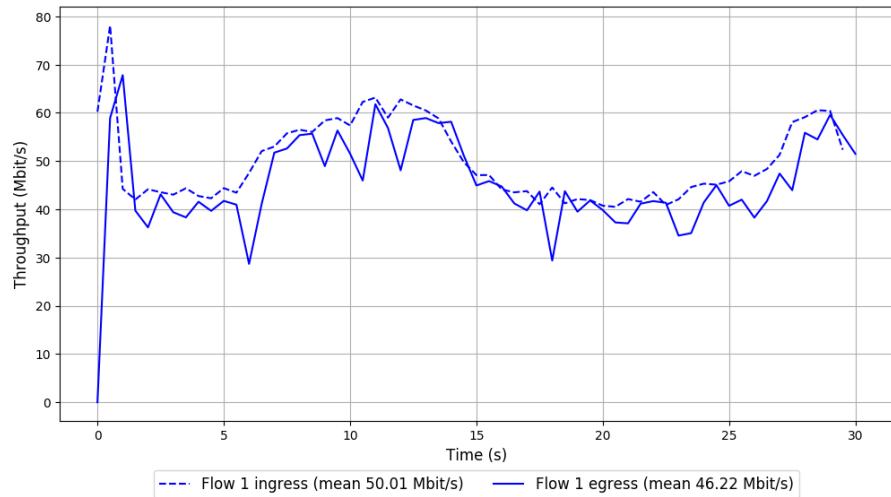


Run 4: Statistics of Indigo-Muses

```
Start at: 2018-11-02 19:15:20
End at: 2018-11-02 19:15:50
Local clock offset: -10.666 ms
Remote clock offset: -3.082 ms

# Below is generated by plot.py at 2018-11-02 19:50:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 46.22 Mbit/s
95th percentile per-packet one-way delay: 8.443 ms
Loss rate: 7.58%
-- Flow 1:
Average throughput: 46.22 Mbit/s
95th percentile per-packet one-way delay: 8.443 ms
Loss rate: 7.58%
```

Run 4: Report of Indigo-Muses — Data Link

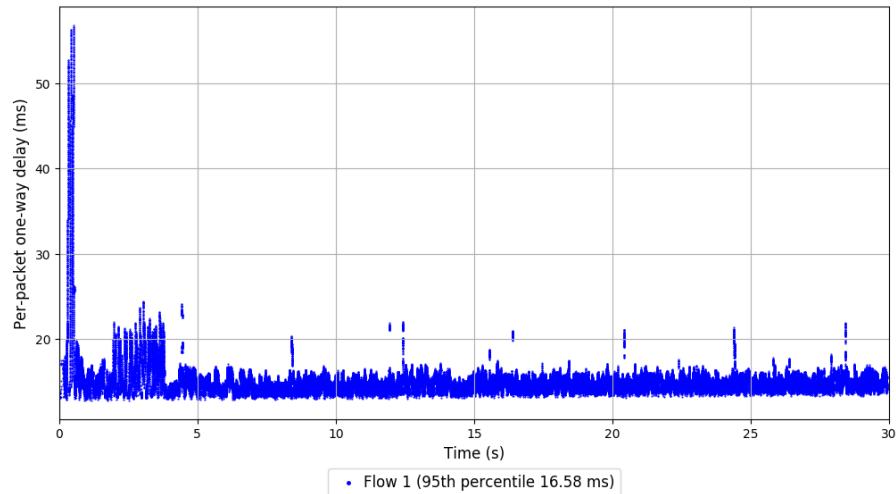
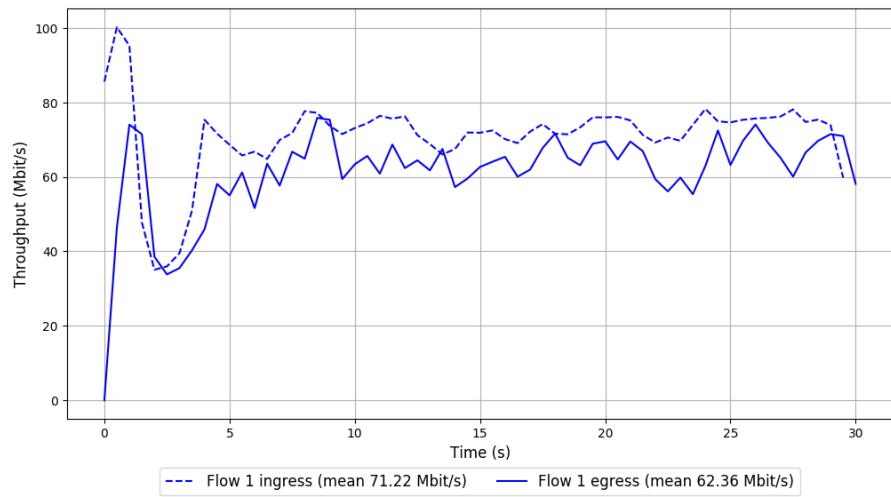


Run 5: Statistics of Indigo-Muses

```
Start at: 2018-11-02 19:35:28
End at: 2018-11-02 19:35:58
Local clock offset: -8.102 ms
Remote clock offset: -1.894 ms

# Below is generated by plot.py at 2018-11-02 19:51:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 62.36 Mbit/s
95th percentile per-packet one-way delay: 16.576 ms
Loss rate: 12.45%
-- Flow 1:
Average throughput: 62.36 Mbit/s
95th percentile per-packet one-way delay: 16.576 ms
Loss rate: 12.45%
```

Run 5: Report of Indigo-Muses — Data Link

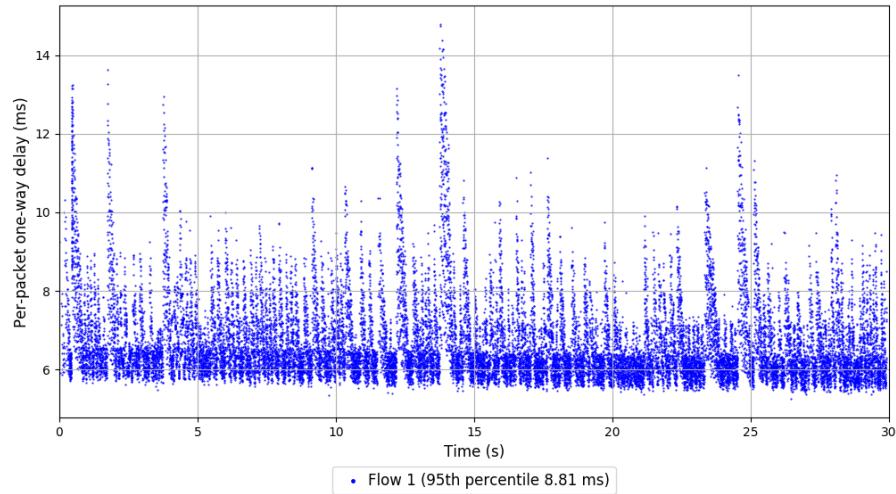
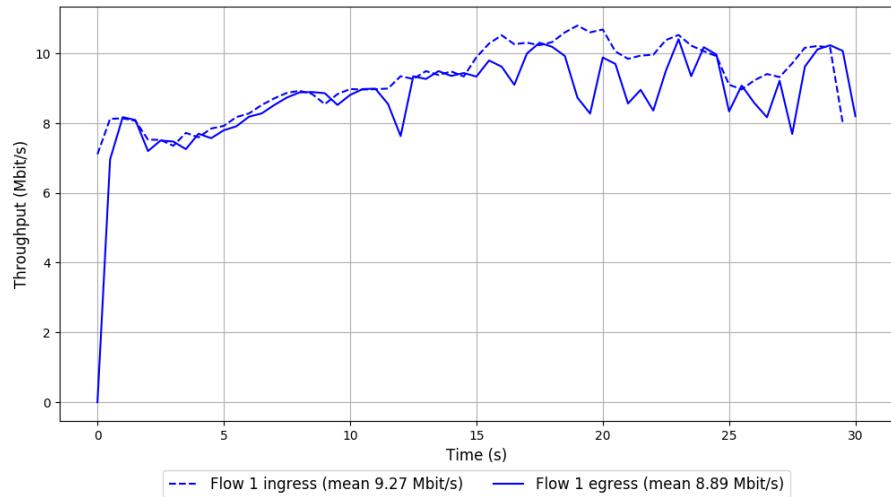


```
Run 1: Statistics of PCC-Allegro
```

```
Start at: 2018-11-02 18:11:06
End at: 2018-11-02 18:11:36
Local clock offset: -1.298 ms
Remote clock offset: -1.524 ms

# Below is generated by plot.py at 2018-11-02 19:51:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 8.89 Mbit/s
95th percentile per-packet one-way delay: 8.808 ms
Loss rate: 4.10%
-- Flow 1:
Average throughput: 8.89 Mbit/s
95th percentile per-packet one-way delay: 8.808 ms
Loss rate: 4.10%
```

Run 1: Report of PCC-Allegro — Data Link

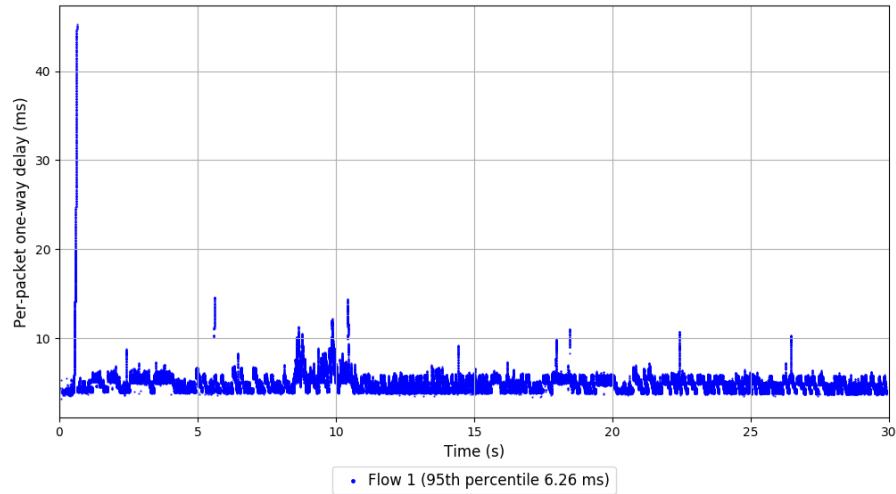
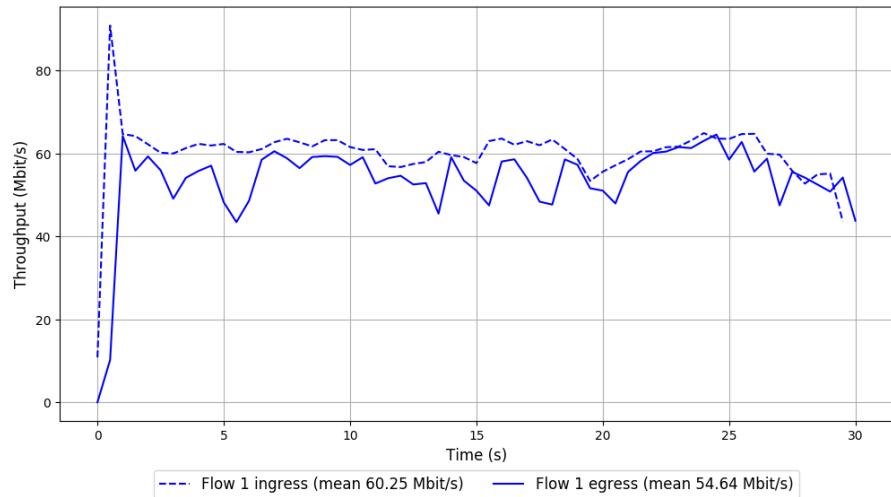


Run 2: Statistics of PCC-Allegro

```
Start at: 2018-11-02 18:31:30
End at: 2018-11-02 18:32:00
Local clock offset: -3.564 ms
Remote clock offset: -2.75 ms

# Below is generated by plot.py at 2018-11-02 19:51:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 54.64 Mbit/s
95th percentile per-packet one-way delay: 6.257 ms
Loss rate: 9.31%
-- Flow 1:
Average throughput: 54.64 Mbit/s
95th percentile per-packet one-way delay: 6.257 ms
Loss rate: 9.31%
```

Run 2: Report of PCC-Allegro — Data Link

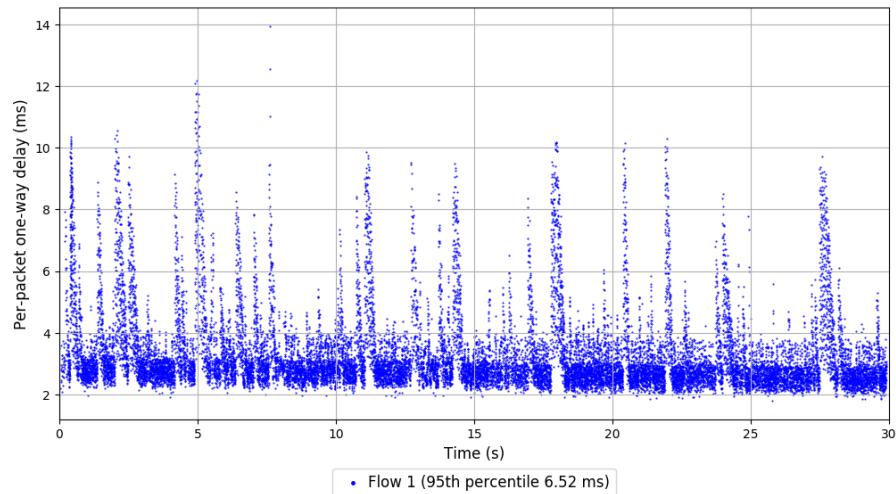
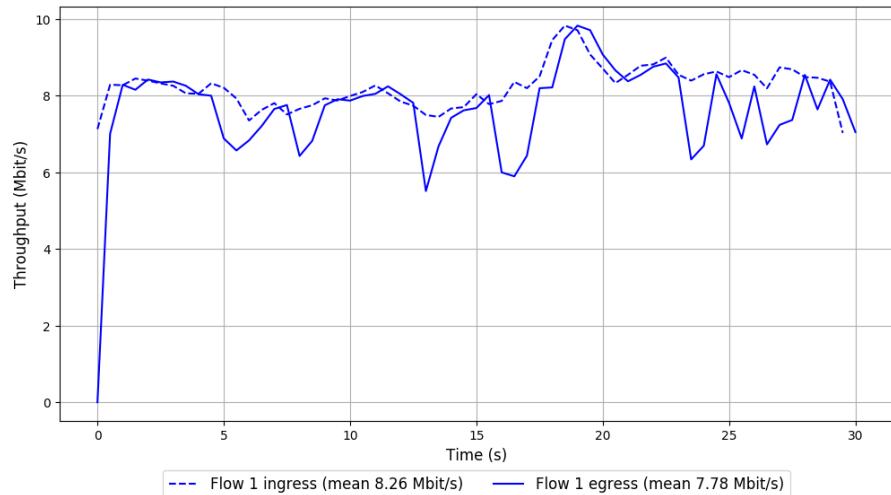


Run 3: Statistics of PCC-Allegro

```
Start at: 2018-11-02 18:51:51
End at: 2018-11-02 18:52:21
Local clock offset: -14.506 ms
Remote clock offset: -3.307 ms

# Below is generated by plot.py at 2018-11-02 19:51:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.78 Mbit/s
95th percentile per-packet one-way delay: 6.517 ms
Loss rate: 5.82%
-- Flow 1:
Average throughput: 7.78 Mbit/s
95th percentile per-packet one-way delay: 6.517 ms
Loss rate: 5.82%
```

Run 3: Report of PCC-Allegro — Data Link

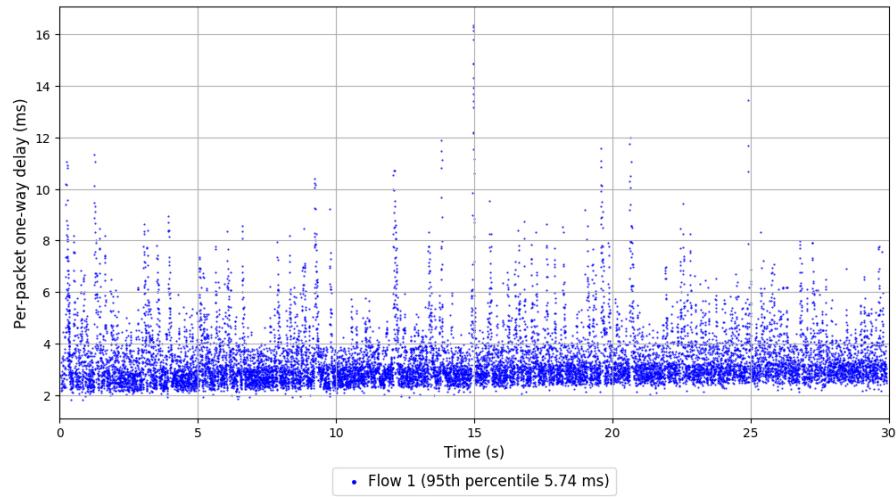
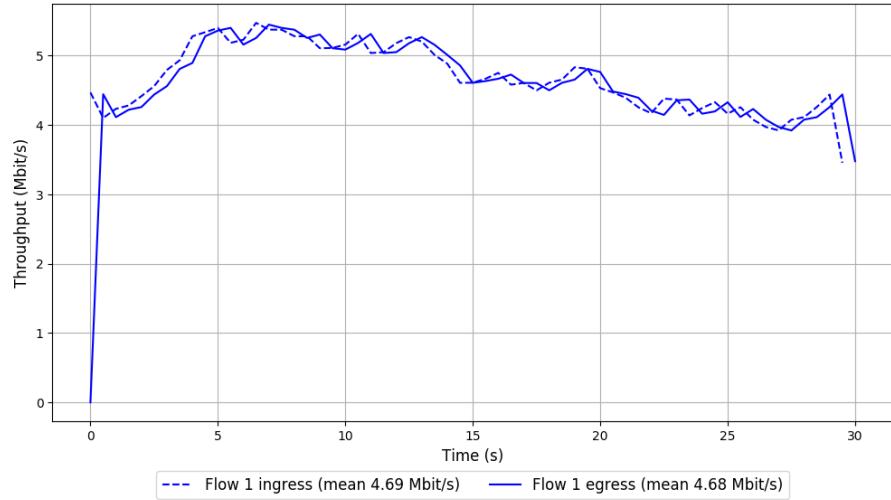


Run 4: Statistics of PCC-Allegro

```
Start at: 2018-11-02 19:11:58
End at: 2018-11-02 19:12:28
Local clock offset: -9.224 ms
Remote clock offset: -2.518 ms

# Below is generated by plot.py at 2018-11-02 19:51:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.68 Mbit/s
95th percentile per-packet one-way delay: 5.738 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 4.68 Mbit/s
95th percentile per-packet one-way delay: 5.738 ms
Loss rate: 0.14%
```

Run 4: Report of PCC-Allegro — Data Link

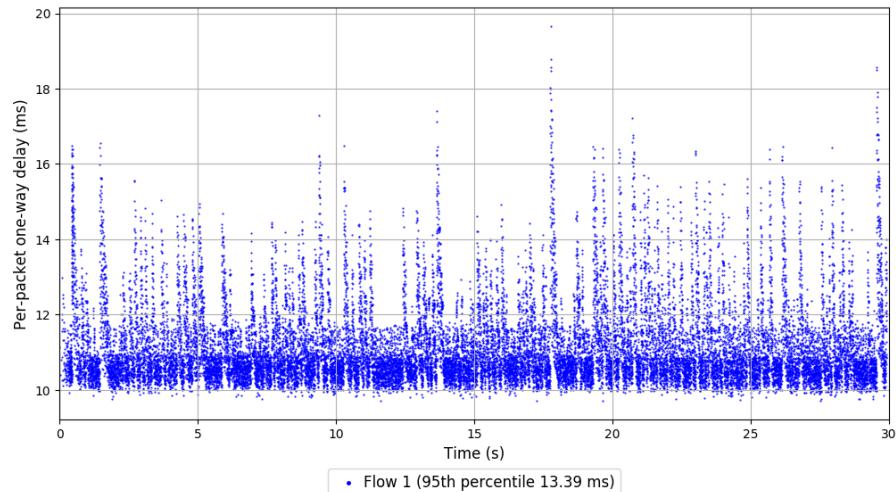
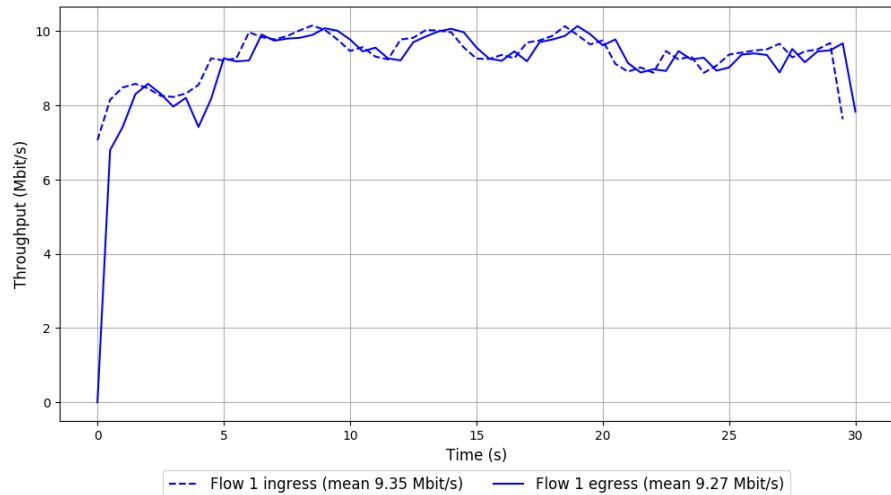


Run 5: Statistics of PCC-Allegro

```
Start at: 2018-11-02 19:32:00
End at: 2018-11-02 19:32:30
Local clock offset: -9.619 ms
Remote clock offset: -3.983 ms

# Below is generated by plot.py at 2018-11-02 19:51:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.27 Mbit/s
95th percentile per-packet one-way delay: 13.393 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 9.27 Mbit/s
95th percentile per-packet one-way delay: 13.393 ms
Loss rate: 0.79%
```

Run 5: Report of PCC-Allegro — Data Link



Run 1: Statistics of PCC-Expr

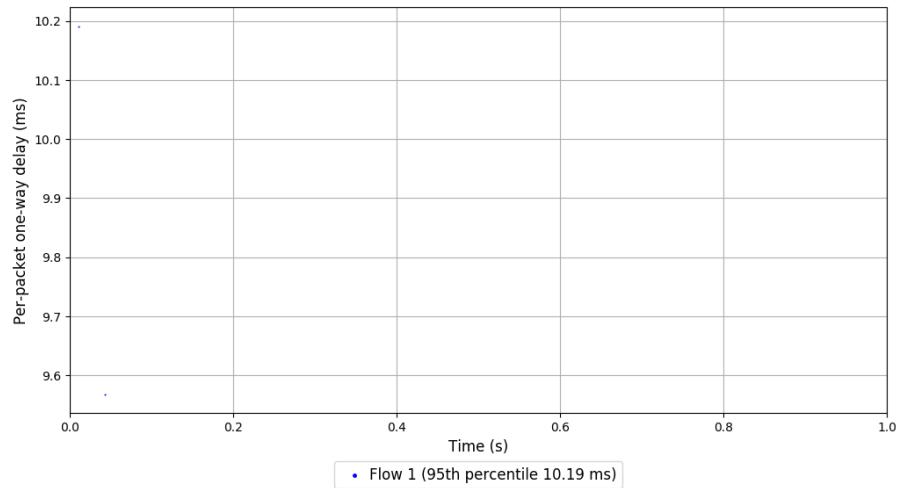
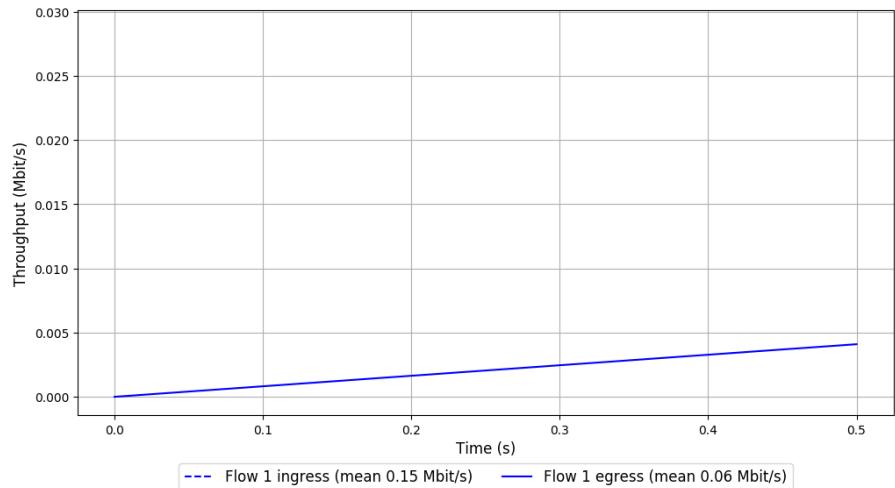
Start at: 2018-11-02 18:08:54

End at: 2018-11-02 18:09:25

Local clock offset: -4.296 ms

Remote clock offset: -2.693 ms

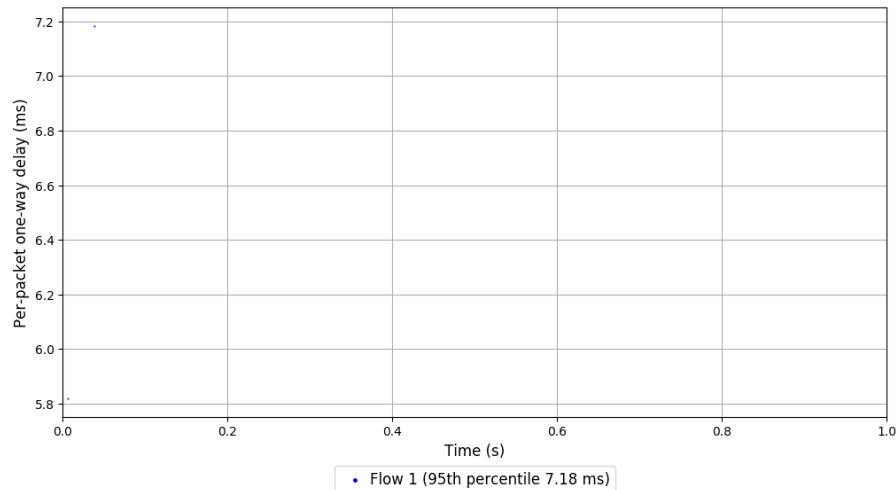
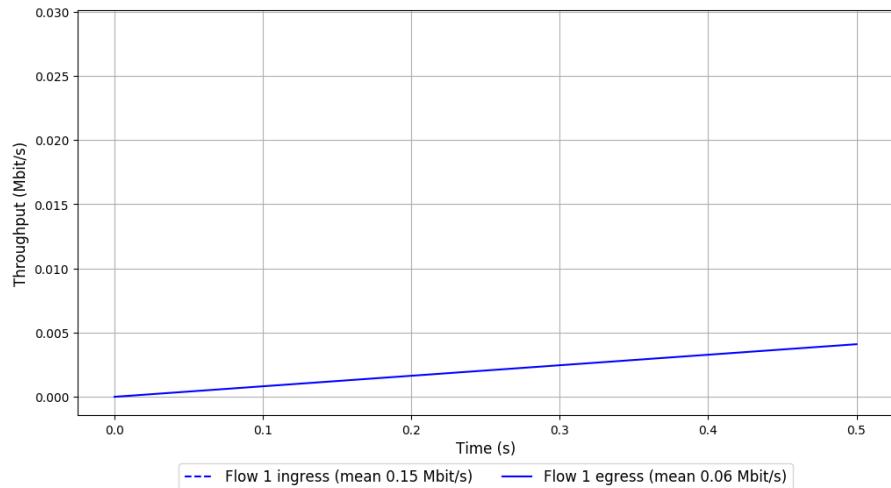
Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2018-11-02 18:29:19
End at: 2018-11-02 18:29:49
Local clock offset: -3.791 ms
Remote clock offset: -2.587 ms

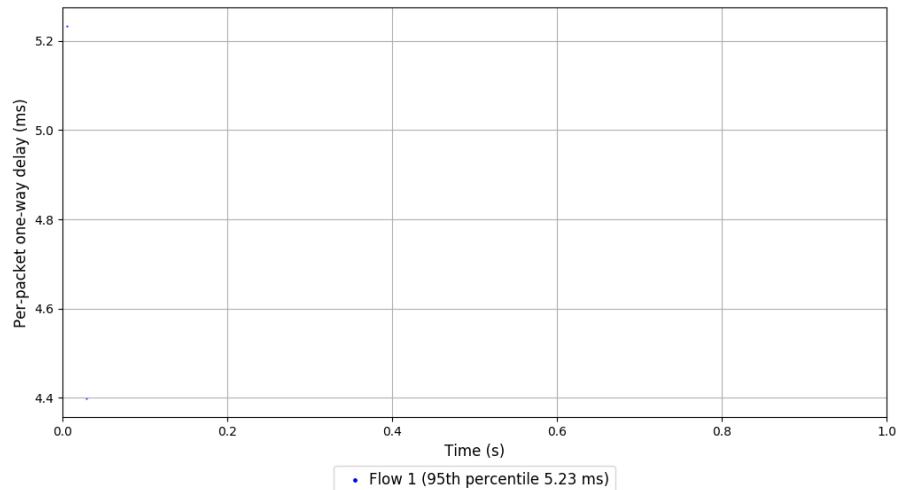
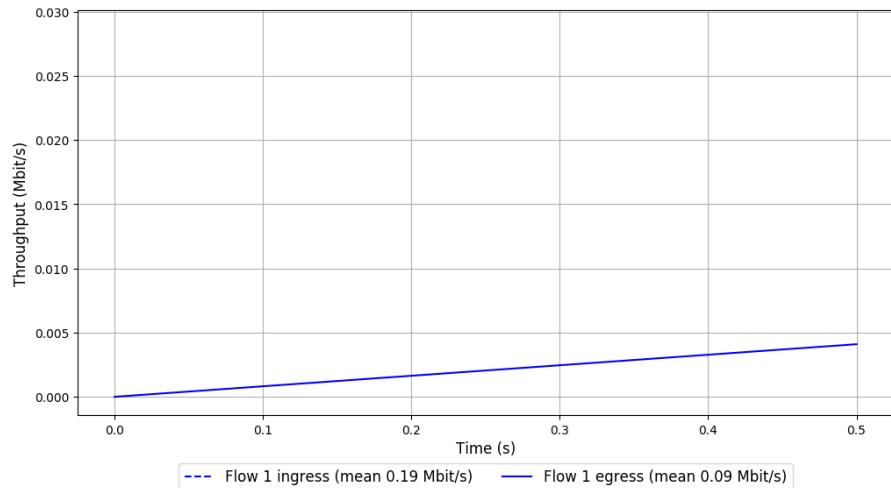
Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-11-02 18:49:36
End at: 2018-11-02 18:50:06
Local clock offset: -14.857 ms
Remote clock offset: -2.573 ms

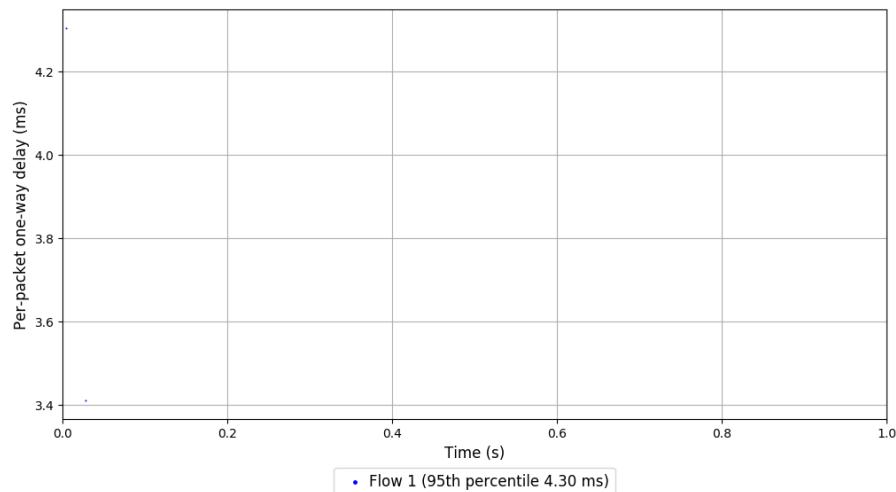
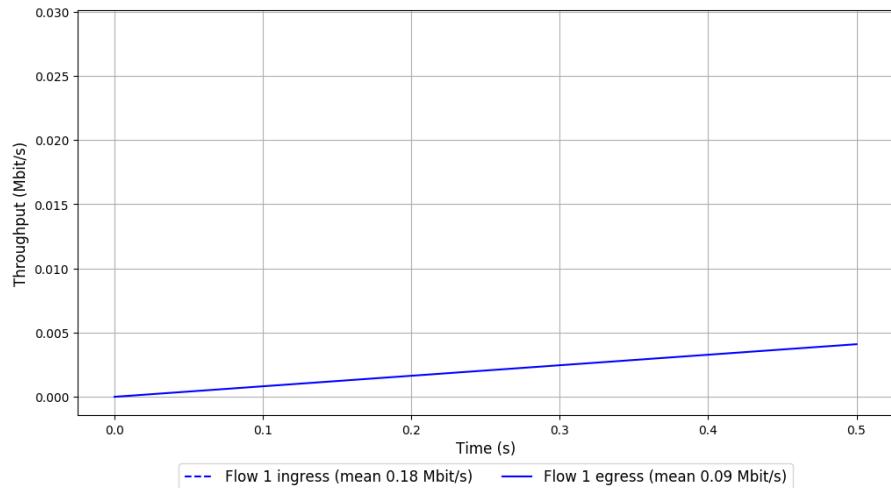
Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

Start at: 2018-11-02 19:09:41
End at: 2018-11-02 19:10:11
Local clock offset: -12.887 ms
Remote clock offset: -2.389 ms

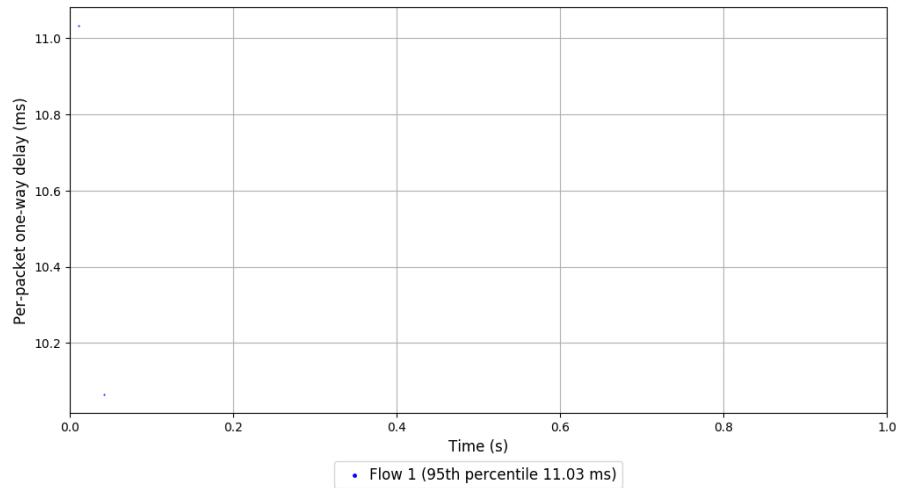
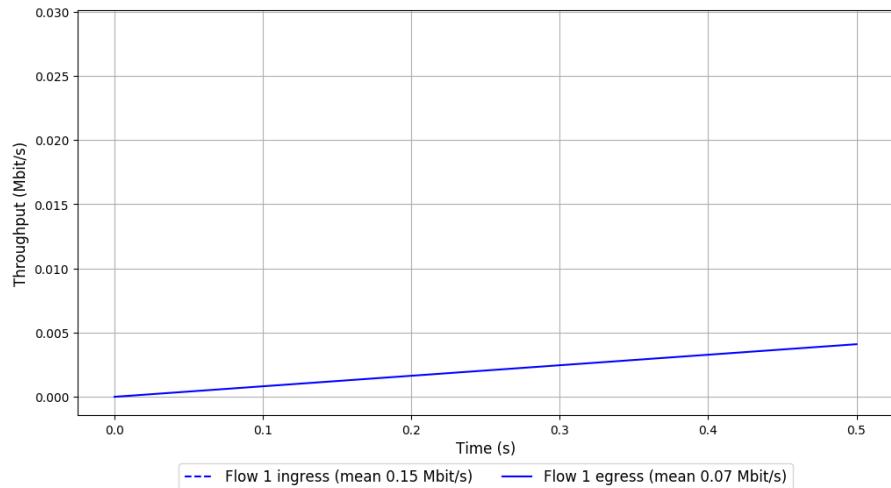
Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-11-02 19:29:50
End at: 2018-11-02 19:30:20
Local clock offset: -7.83 ms
Remote clock offset: -2.732 ms

Run 5: Report of PCC-Expr — Data Link

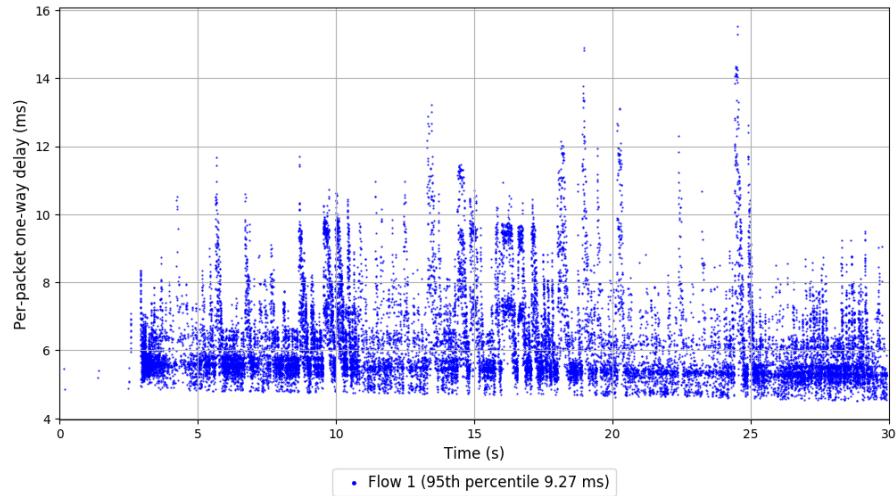
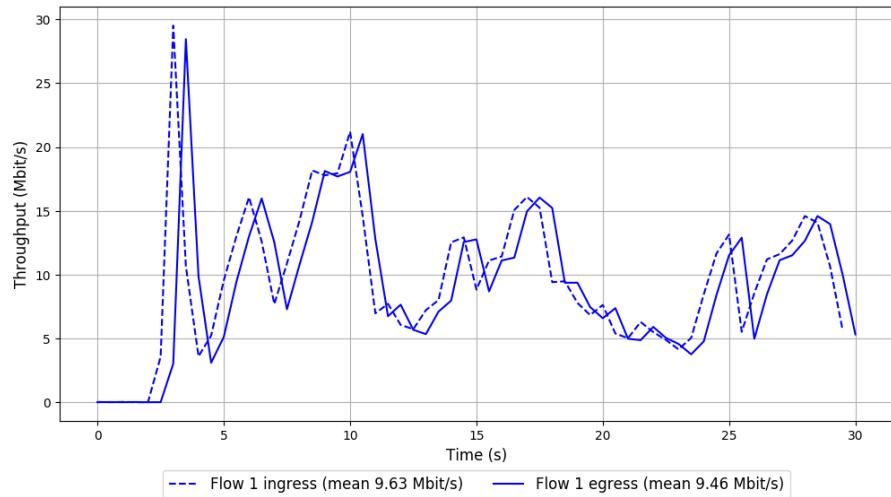


```
Run 1: Statistics of QUIC Cubic
```

```
Start at: 2018-11-02 18:16:44
End at: 2018-11-02 18:17:14
Local clock offset: -4.174 ms
Remote clock offset: -2.172 ms

# Below is generated by plot.py at 2018-11-02 19:51:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.46 Mbit/s
95th percentile per-packet one-way delay: 9.271 ms
Loss rate: 2.32%
-- Flow 1:
Average throughput: 9.46 Mbit/s
95th percentile per-packet one-way delay: 9.271 ms
Loss rate: 2.32%
```

Run 1: Report of QUIC Cubic — Data Link

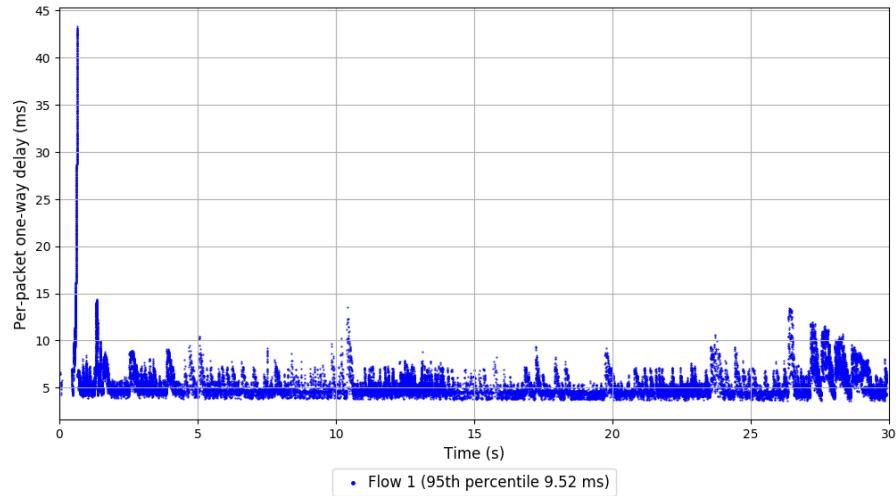
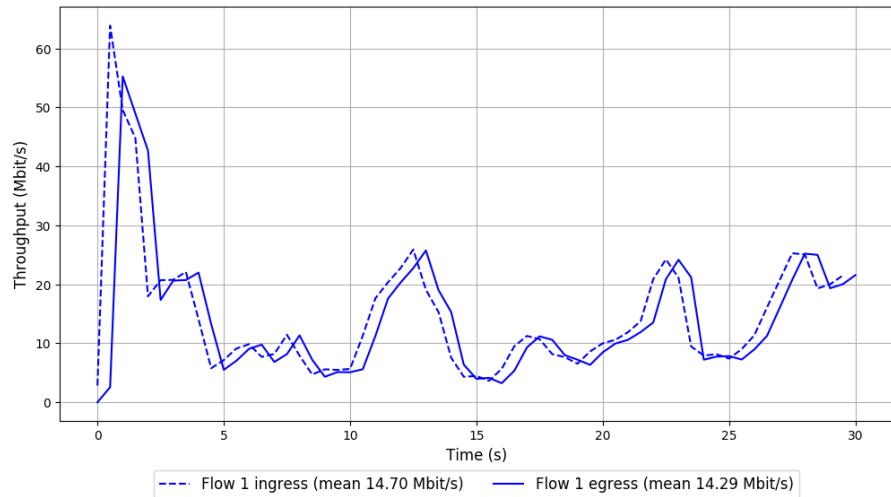


Run 2: Statistics of QUIC Cubic

```
Start at: 2018-11-02 18:37:12
End at: 2018-11-02 18:37:42
Local clock offset: -7.529 ms
Remote clock offset: -2.962 ms

# Below is generated by plot.py at 2018-11-02 19:51:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 14.29 Mbit/s
95th percentile per-packet one-way delay: 9.524 ms
Loss rate: 2.77%
-- Flow 1:
Average throughput: 14.29 Mbit/s
95th percentile per-packet one-way delay: 9.524 ms
Loss rate: 2.77%
```

Run 2: Report of QUIC Cubic — Data Link

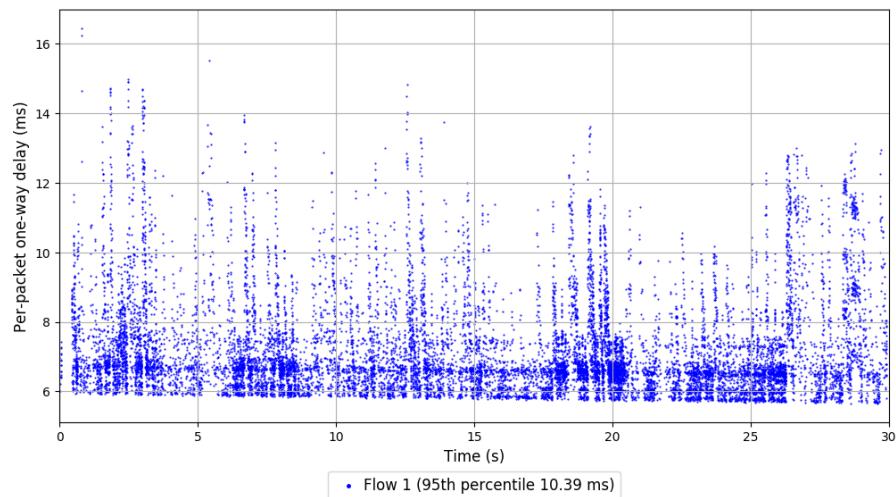
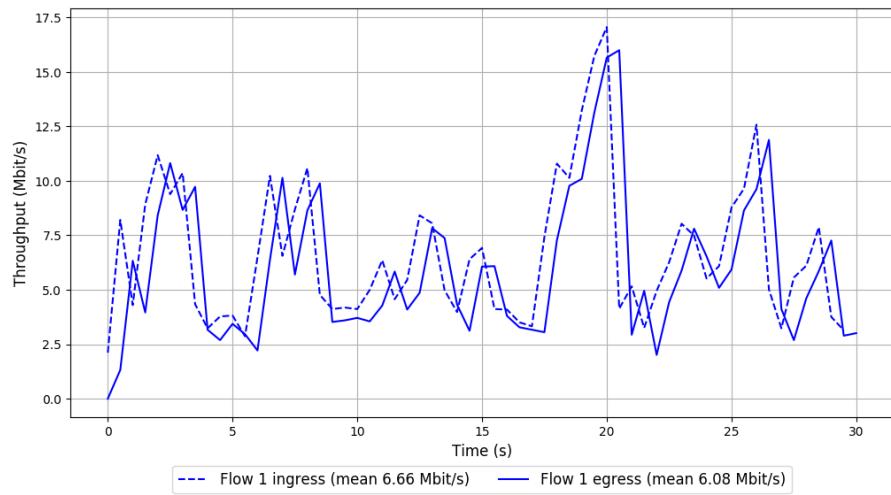


Run 3: Statistics of QUIC Cubic

```
Start at: 2018-11-02 18:57:23
End at: 2018-11-02 18:57:53
Local clock offset: -21.004 ms
Remote clock offset: -3.005 ms

# Below is generated by plot.py at 2018-11-02 19:51:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.08 Mbit/s
95th percentile per-packet one-way delay: 10.390 ms
Loss rate: 8.61%
-- Flow 1:
Average throughput: 6.08 Mbit/s
95th percentile per-packet one-way delay: 10.390 ms
Loss rate: 8.61%
```

Run 3: Report of QUIC Cubic — Data Link

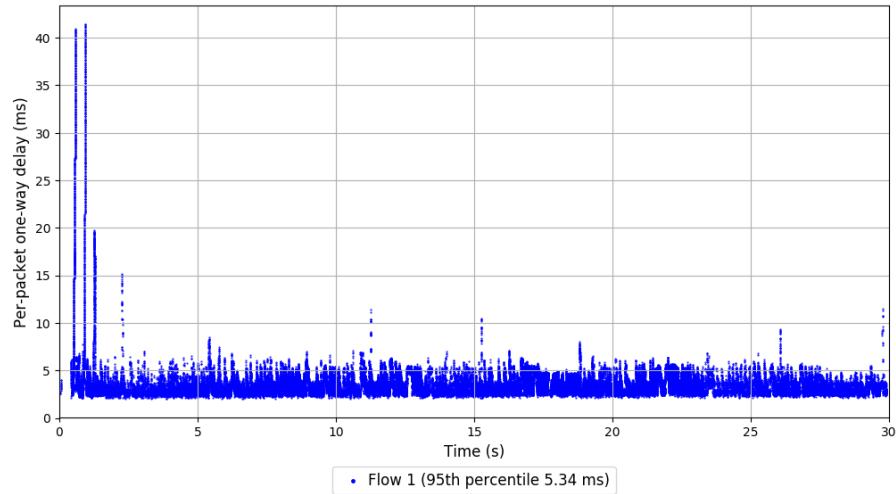
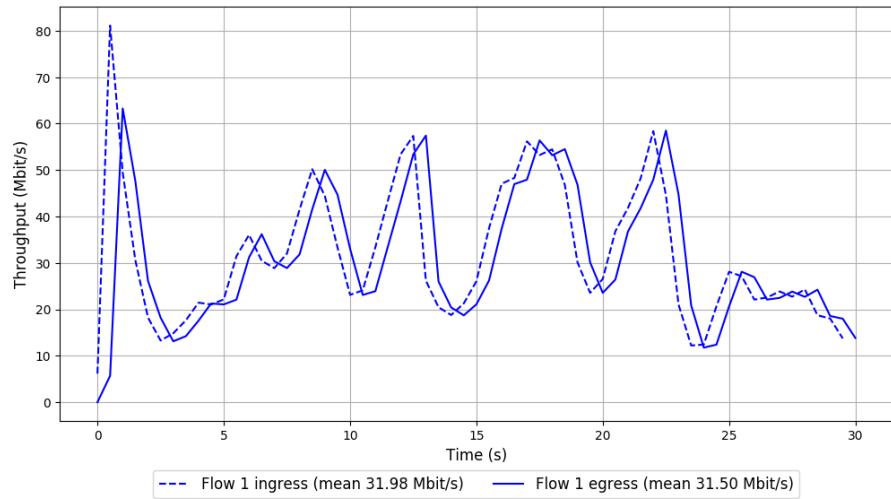


Run 4: Statistics of QUIC Cubic

```
Start at: 2018-11-02 19:17:32
End at: 2018-11-02 19:18:02
Local clock offset: -8.018 ms
Remote clock offset: -3.479 ms

# Below is generated by plot.py at 2018-11-02 19:51:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 31.50 Mbit/s
95th percentile per-packet one-way delay: 5.336 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 31.50 Mbit/s
95th percentile per-packet one-way delay: 5.336 ms
Loss rate: 1.49%
```

Run 4: Report of QUIC Cubic — Data Link

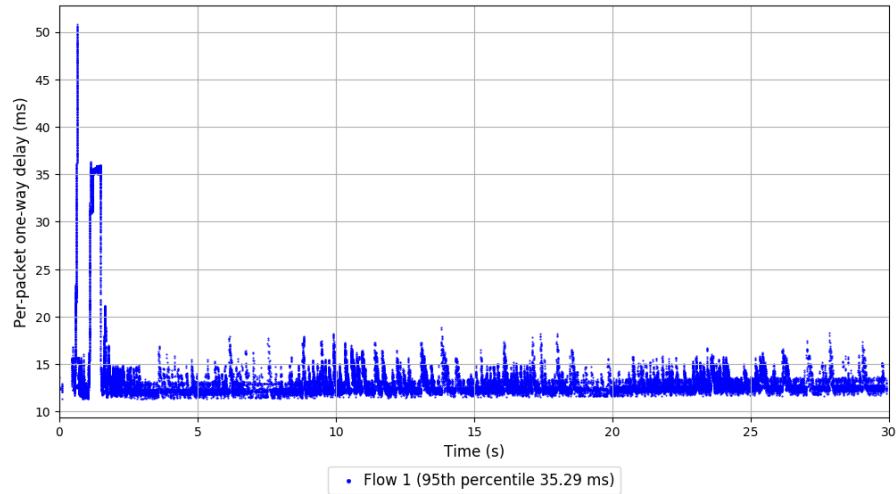
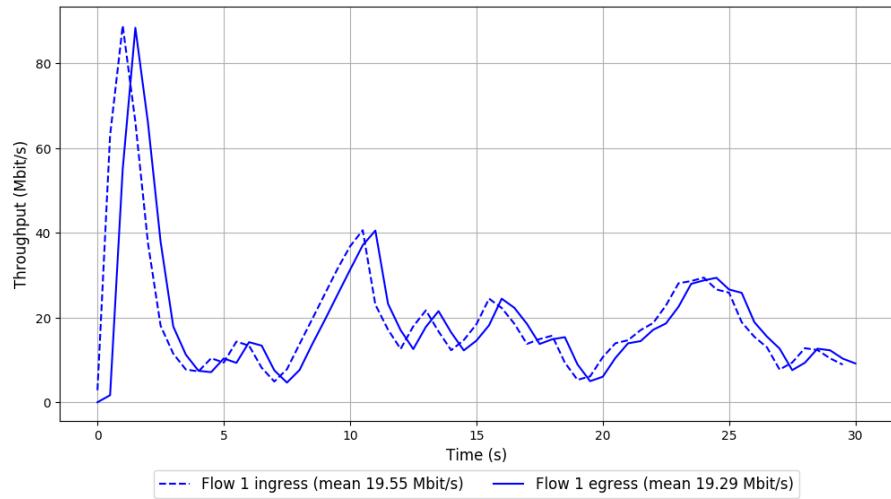


Run 5: Statistics of QUIC Cubic

```
Start at: 2018-11-02 19:37:42
End at: 2018-11-02 19:38:12
Local clock offset: -5.671 ms
Remote clock offset: -2.945 ms

# Below is generated by plot.py at 2018-11-02 19:51:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 19.29 Mbit/s
95th percentile per-packet one-way delay: 35.290 ms
Loss rate: 1.33%
-- Flow 1:
Average throughput: 19.29 Mbit/s
95th percentile per-packet one-way delay: 35.290 ms
Loss rate: 1.33%
```

Run 5: Report of QUIC Cubic — Data Link

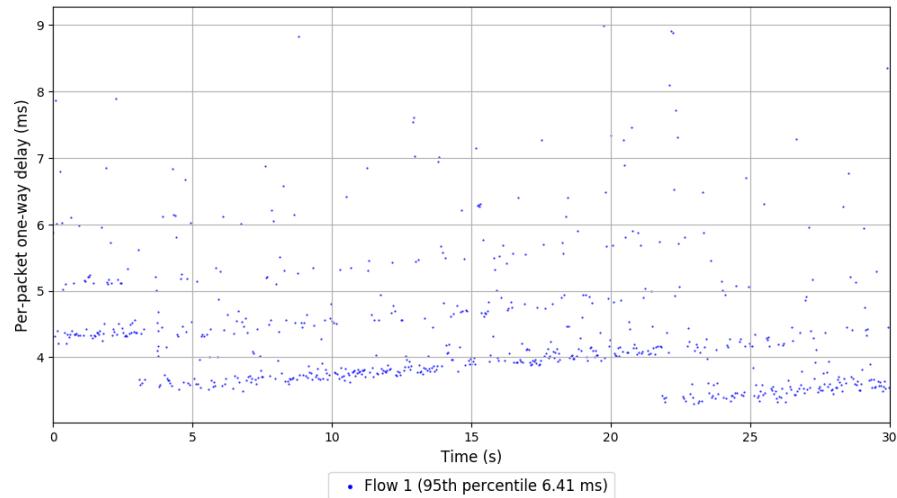
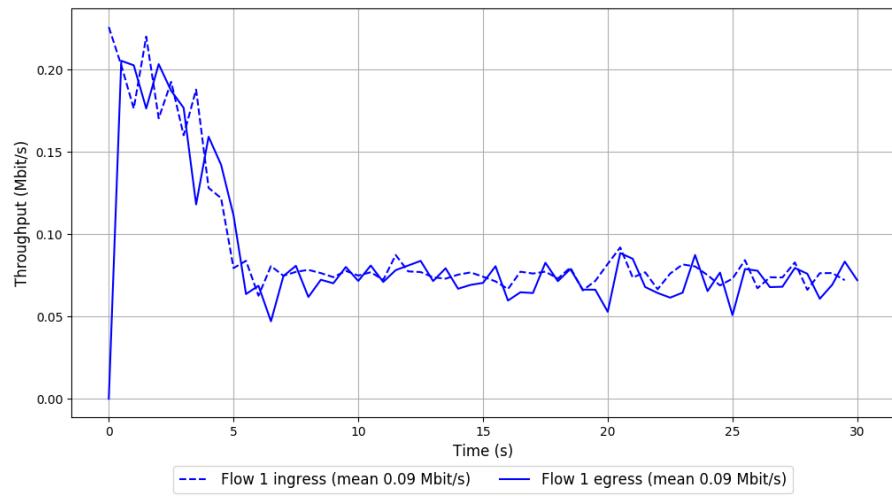


Run 1: Statistics of SCReAM

```
Start at: 2018-11-02 18:15:39
End at: 2018-11-02 18:16:09
Local clock offset: -2.917 ms
Remote clock offset: -2.989 ms

# Below is generated by plot.py at 2018-11-02 19:51:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 6.406 ms
Loss rate: 5.55%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 6.406 ms
Loss rate: 5.55%
```

Run 1: Report of SCReAM — Data Link

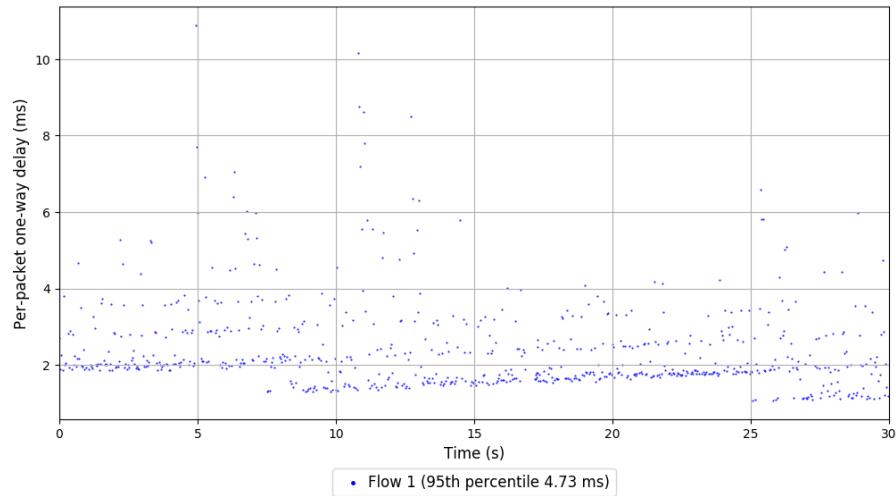
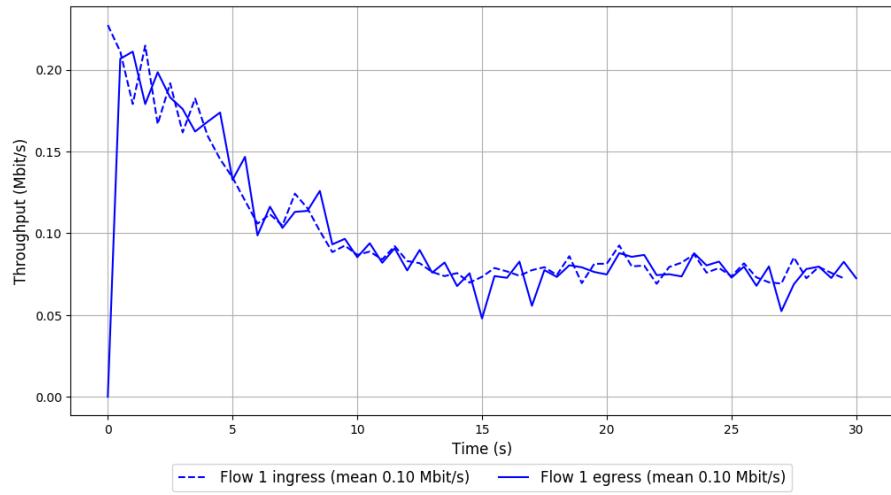


Run 2: Statistics of SCReAM

```
Start at: 2018-11-02 18:36:02
End at: 2018-11-02 18:36:32
Local clock offset: -3.986 ms
Remote clock offset: -2.838 ms

# Below is generated by plot.py at 2018-11-02 19:51:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 4.729 ms
Loss rate: 2.07%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 4.729 ms
Loss rate: 2.07%
```

Run 2: Report of SCReAM — Data Link

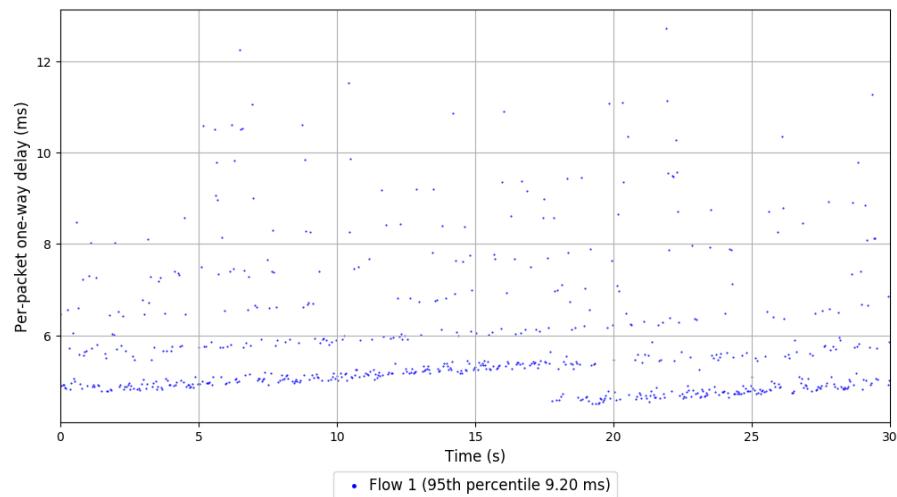
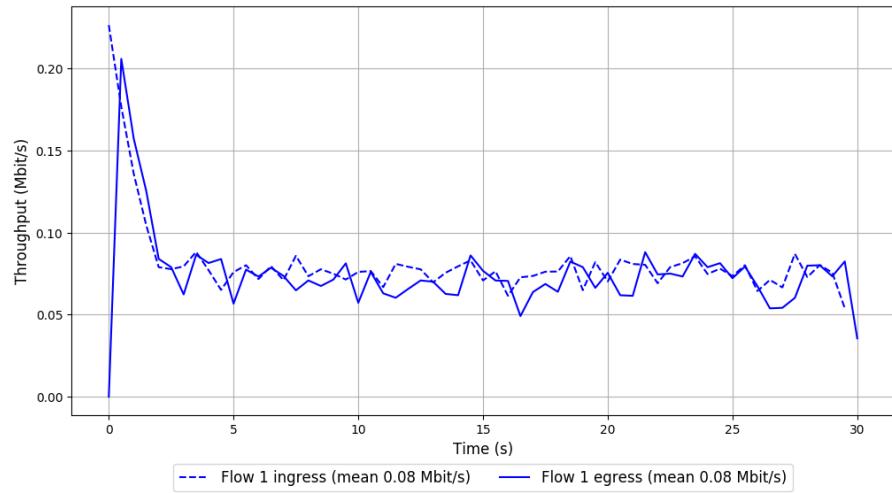


Run 3: Statistics of SCReAM

```
Start at: 2018-11-02 18:56:18
End at: 2018-11-02 18:56:48
Local clock offset: -18.325 ms
Remote clock offset: -2.081 ms

# Below is generated by plot.py at 2018-11-02 19:51:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 9.197 ms
Loss rate: 7.04%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 9.197 ms
Loss rate: 7.04%
```

Run 3: Report of SCReAM — Data Link

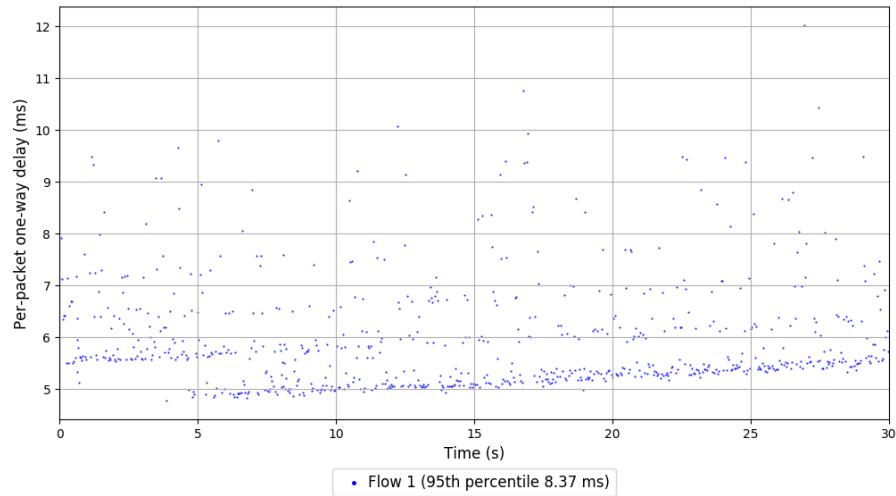
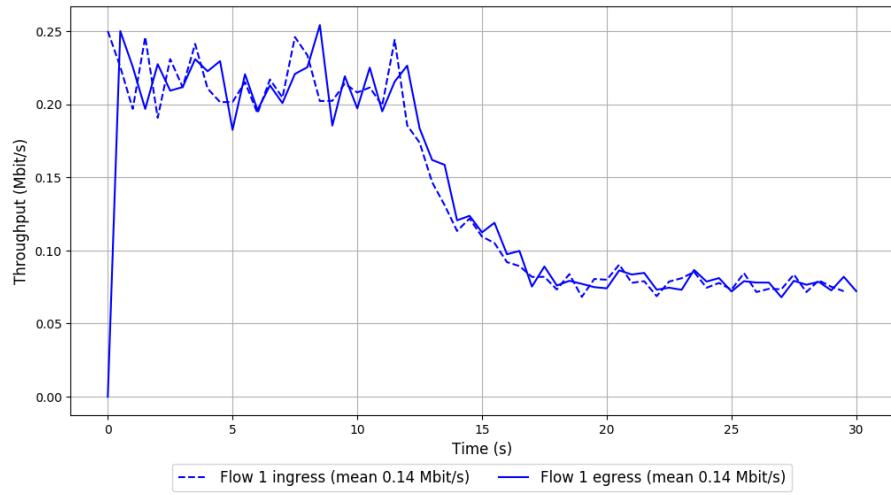


Run 4: Statistics of SCReAM

```
Start at: 2018-11-02 19:16:27
End at: 2018-11-02 19:16:57
Local clock offset: -9.39 ms
Remote clock offset: -2.397 ms

# Below is generated by plot.py at 2018-11-02 19:51:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 8.365 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 8.365 ms
Loss rate: 0.32%
```

Run 4: Report of SCReAM — Data Link

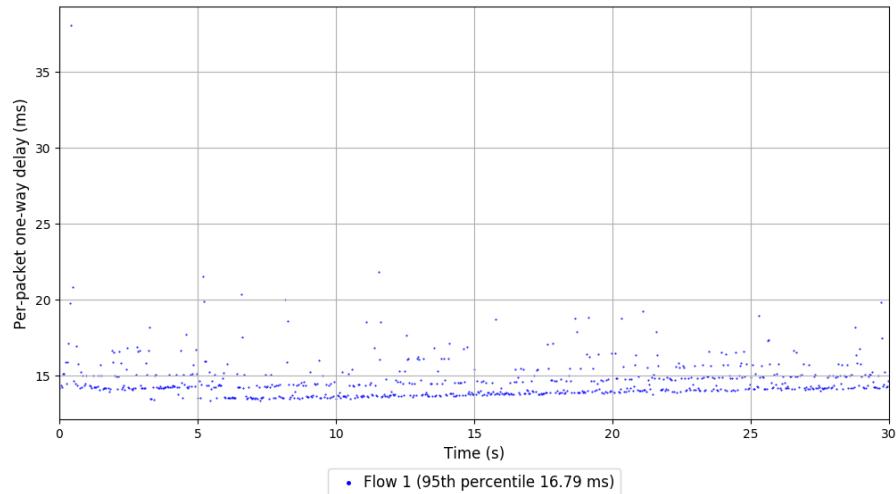
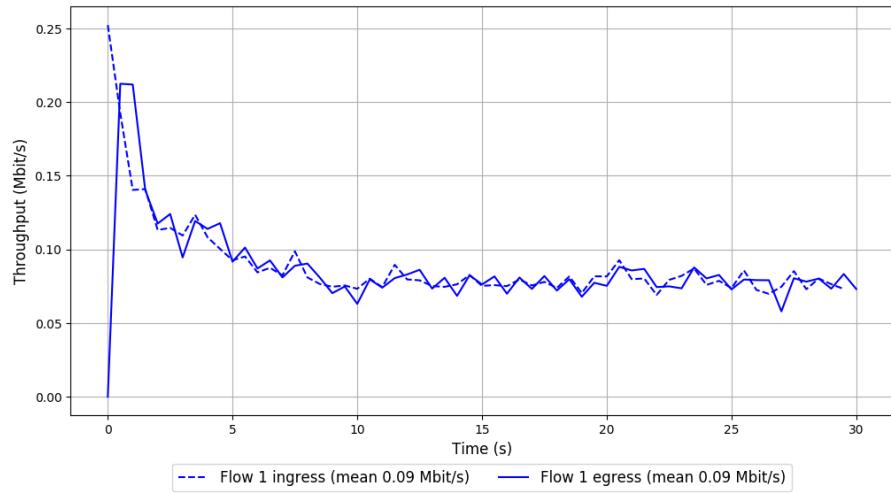


Run 5: Statistics of SCReAM

```
Start at: 2018-11-02 19:36:37
End at: 2018-11-02 19:37:07
Local clock offset: -8.99 ms
Remote clock offset: -2.898 ms

# Below is generated by plot.py at 2018-11-02 19:51:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 16.786 ms
Loss rate: 1.43%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 16.786 ms
Loss rate: 1.43%
```

Run 5: Report of SCReAM — Data Link

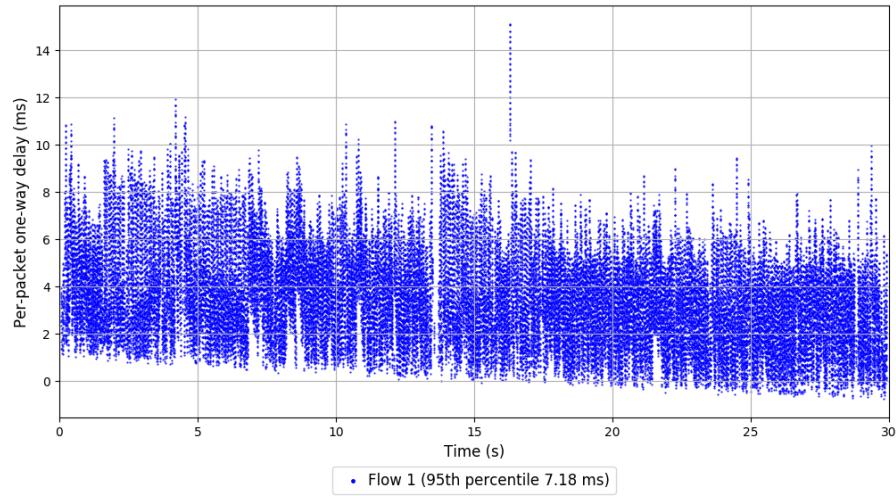
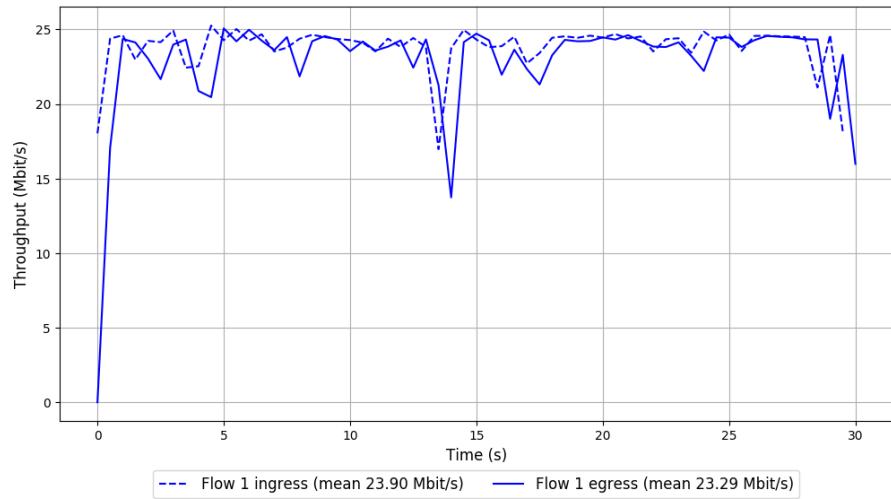


Run 1: Statistics of Sprout

```
Start at: 2018-11-02 18:06:44
End at: 2018-11-02 18:07:14
Local clock offset: 3.498 ms
Remote clock offset: -1.898 ms

# Below is generated by plot.py at 2018-11-02 19:51:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 23.29 Mbit/s
95th percentile per-packet one-way delay: 7.179 ms
Loss rate: 2.51%
-- Flow 1:
Average throughput: 23.29 Mbit/s
95th percentile per-packet one-way delay: 7.179 ms
Loss rate: 2.51%
```

Run 1: Report of Sprout — Data Link

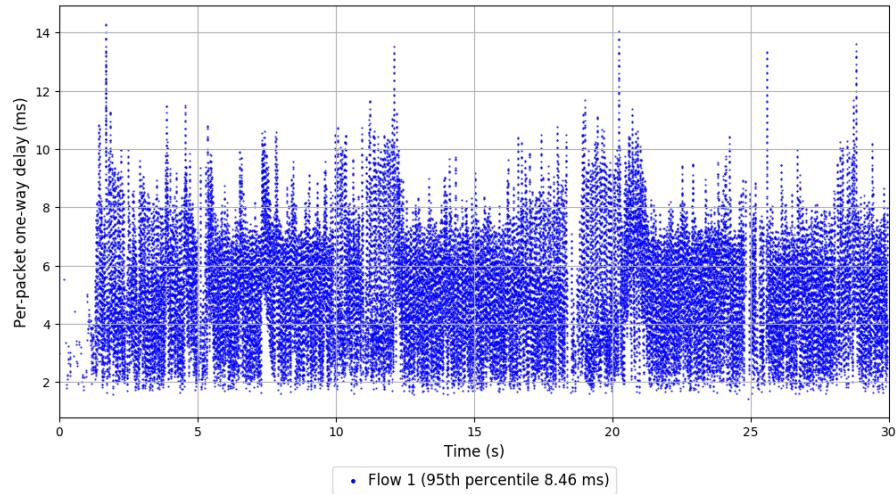
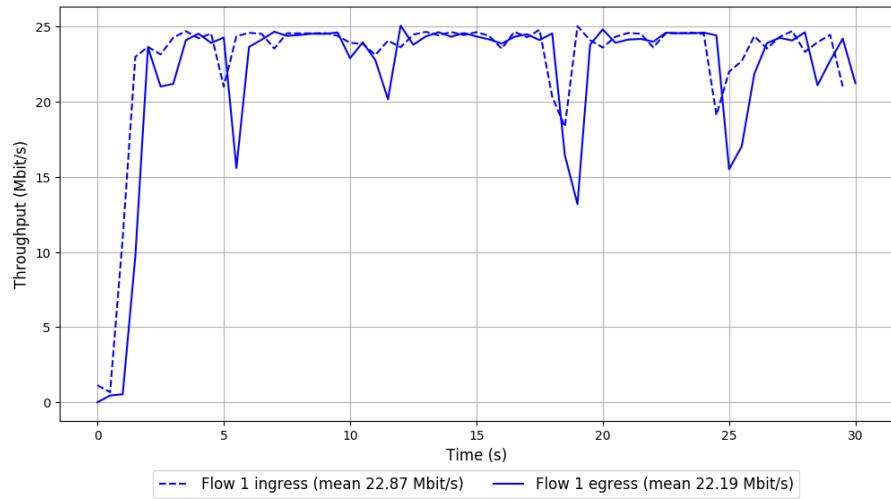


Run 2: Statistics of Sprout

```
Start at: 2018-11-02 18:27:08
End at: 2018-11-02 18:27:38
Local clock offset: 0.039 ms
Remote clock offset: -1.902 ms

# Below is generated by plot.py at 2018-11-02 19:51:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 22.19 Mbit/s
95th percentile per-packet one-way delay: 8.458 ms
Loss rate: 2.97%
-- Flow 1:
Average throughput: 22.19 Mbit/s
95th percentile per-packet one-way delay: 8.458 ms
Loss rate: 2.97%
```

Run 2: Report of Sprout — Data Link

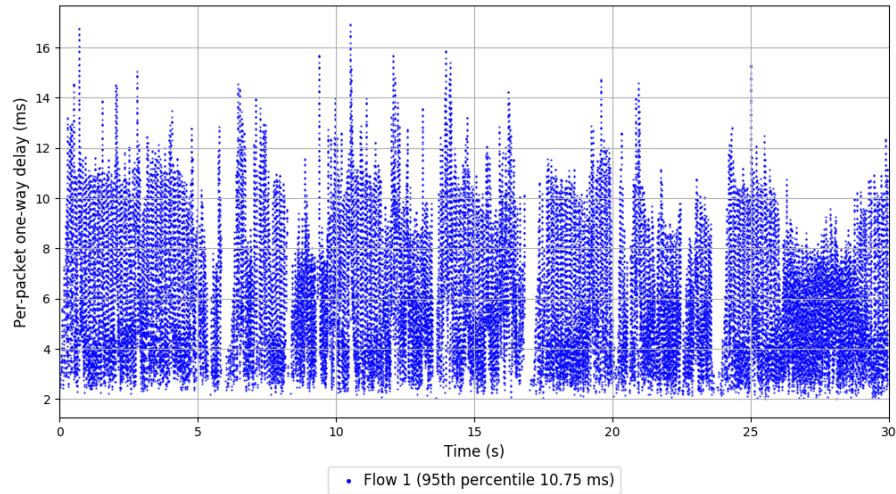
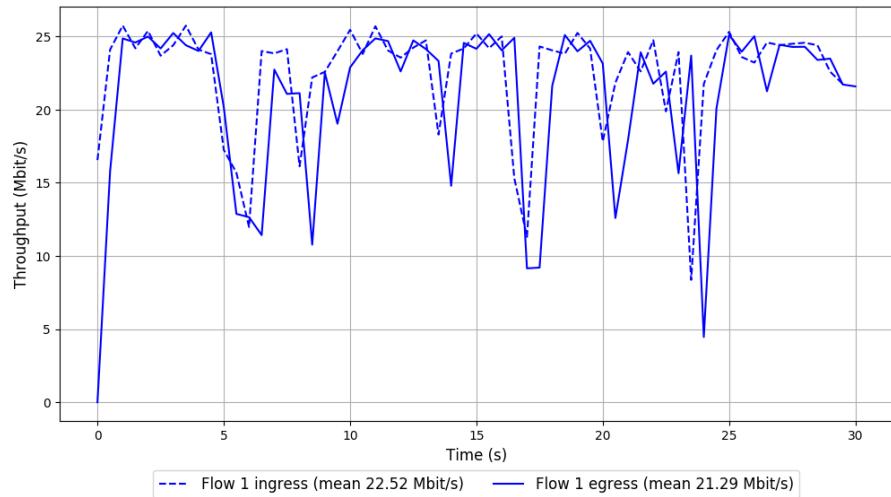


Run 3: Statistics of Sprout

```
Start at: 2018-11-02 18:47:20
End at: 2018-11-02 18:47:50
Local clock offset: -10.885 ms
Remote clock offset: -2.237 ms

# Below is generated by plot.py at 2018-11-02 19:51:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 21.29 Mbit/s
95th percentile per-packet one-way delay: 10.747 ms
Loss rate: 5.42%
-- Flow 1:
Average throughput: 21.29 Mbit/s
95th percentile per-packet one-way delay: 10.747 ms
Loss rate: 5.42%
```

Run 3: Report of Sprout — Data Link

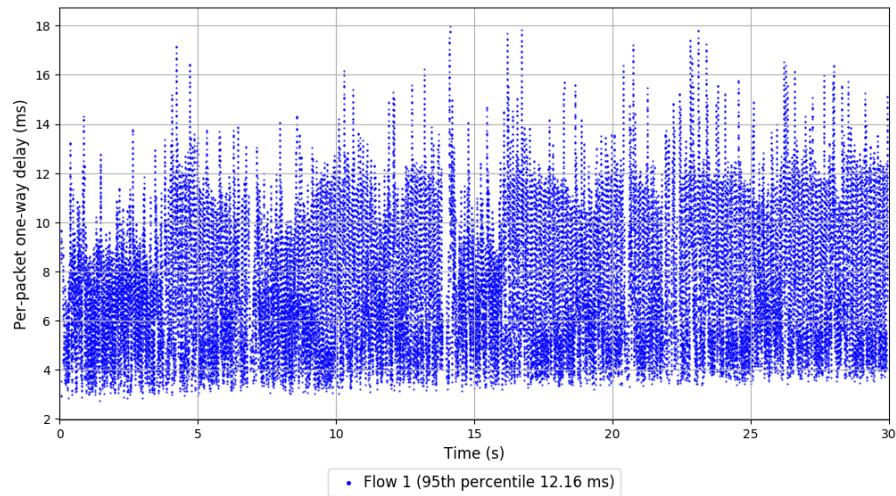
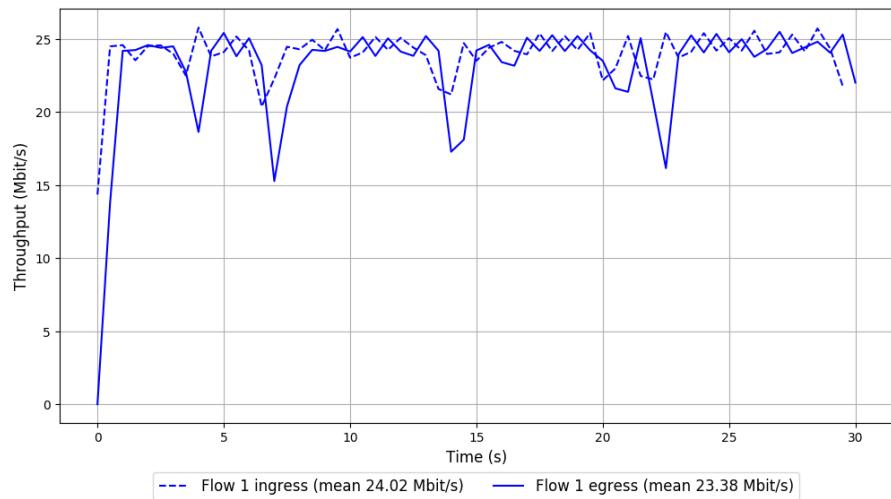


Run 4: Statistics of Sprout

```
Start at: 2018-11-02 19:07:30
End at: 2018-11-02 19:08:00
Local clock offset: -15.518 ms
Remote clock offset: -3.424 ms

# Below is generated by plot.py at 2018-11-02 19:51:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 23.38 Mbit/s
95th percentile per-packet one-way delay: 12.161 ms
Loss rate: 2.65%
-- Flow 1:
Average throughput: 23.38 Mbit/s
95th percentile per-packet one-way delay: 12.161 ms
Loss rate: 2.65%
```

Run 4: Report of Sprout — Data Link

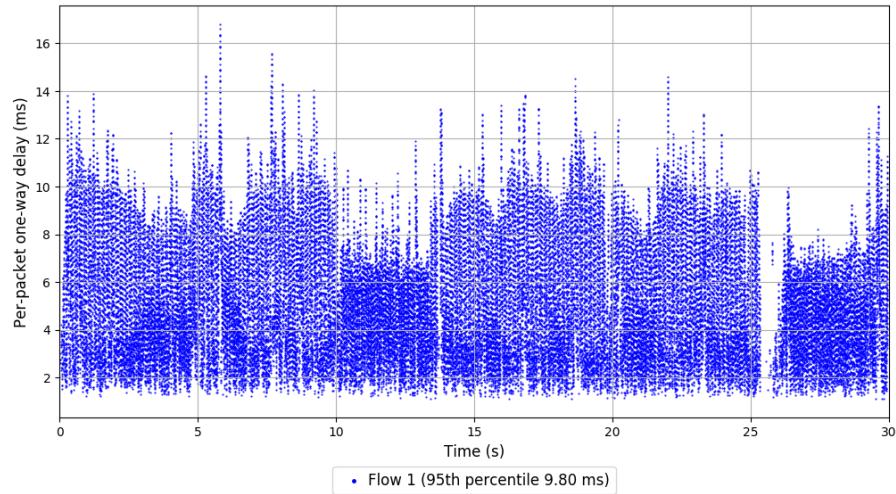
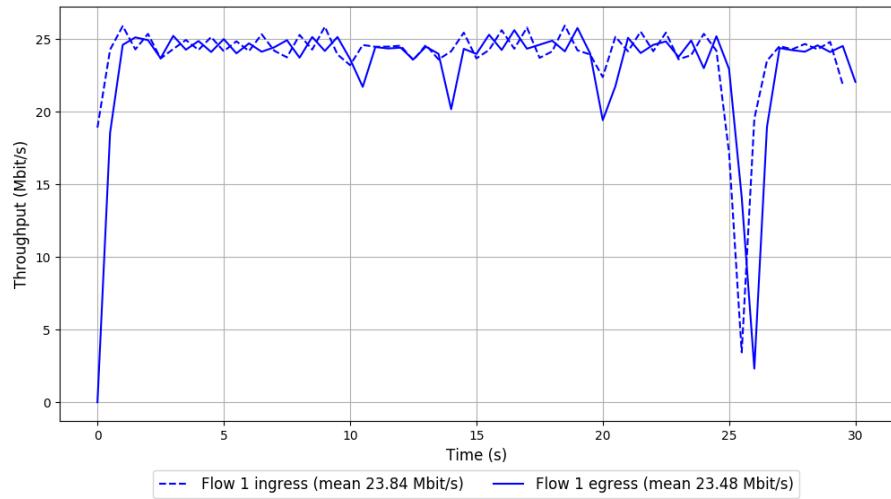


Run 5: Statistics of Sprout

```
Start at: 2018-11-02 19:27:39
End at: 2018-11-02 19:28:09
Local clock offset: -6.432 ms
Remote clock offset: -3.23 ms

# Below is generated by plot.py at 2018-11-02 19:51:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 23.48 Mbit/s
95th percentile per-packet one-way delay: 9.799 ms
Loss rate: 1.50%
-- Flow 1:
Average throughput: 23.48 Mbit/s
95th percentile per-packet one-way delay: 9.799 ms
Loss rate: 1.50%
```

Run 5: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

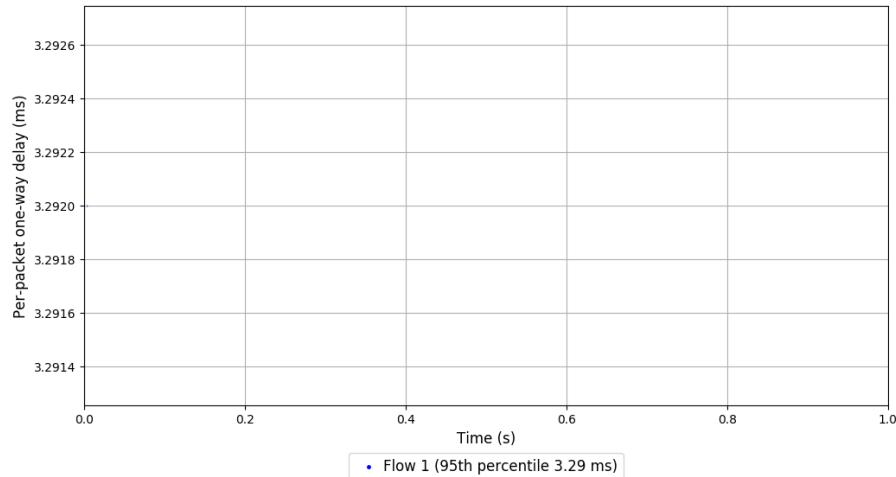
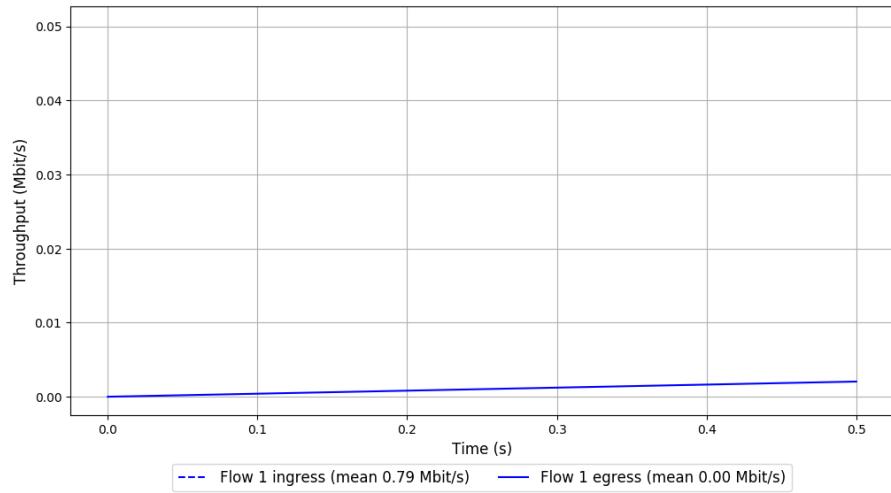
Start at: 2018-11-02 18:19:04

End at: 2018-11-02 18:19:34

Local clock offset: -2.353 ms

Remote clock offset: -2.249 ms

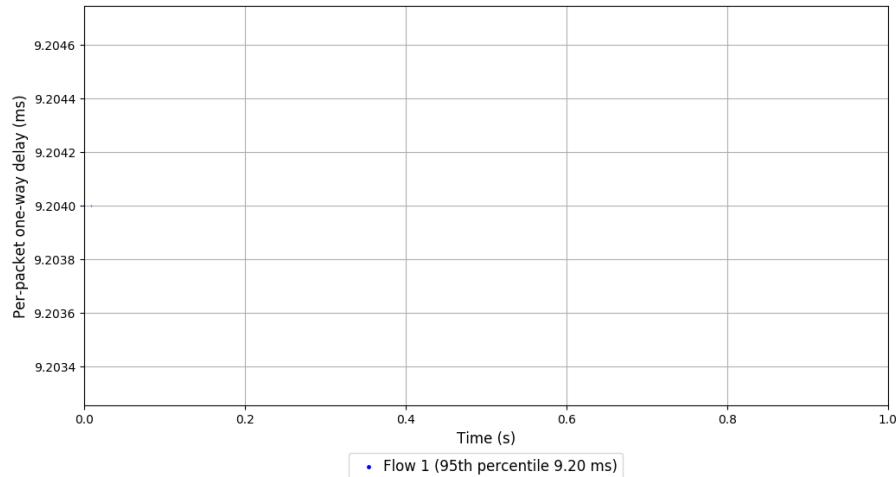
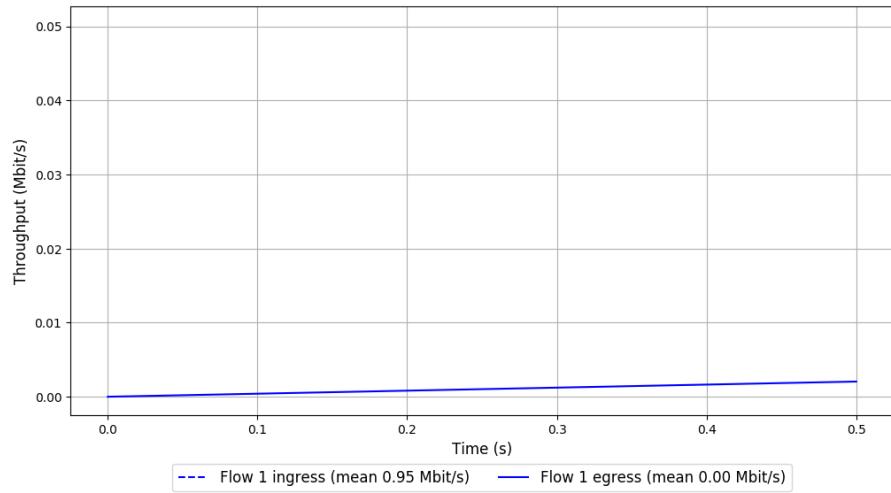
Run 1: Report of TaoVA-100x — Data Link



Run 2: Statistics of TaoVA-100x

Start at: 2018-11-02 18:39:29
End at: 2018-11-02 18:39:59
Local clock offset: -11.704 ms
Remote clock offset: -2.885 ms

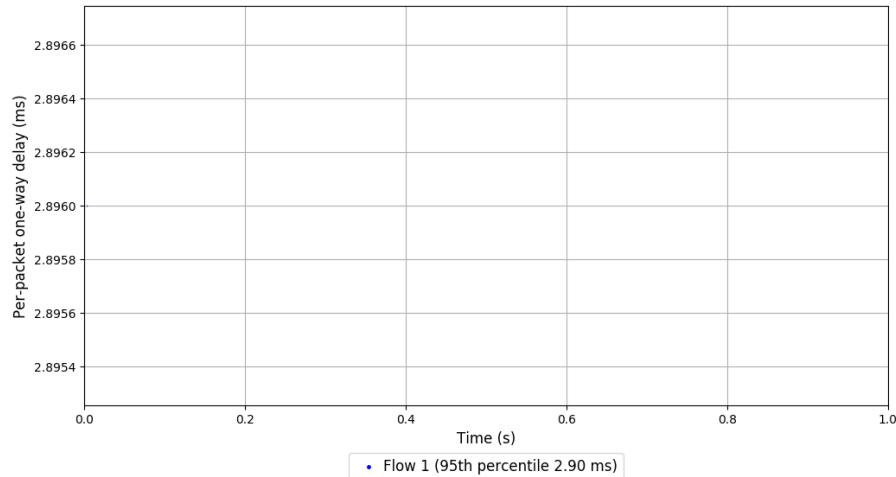
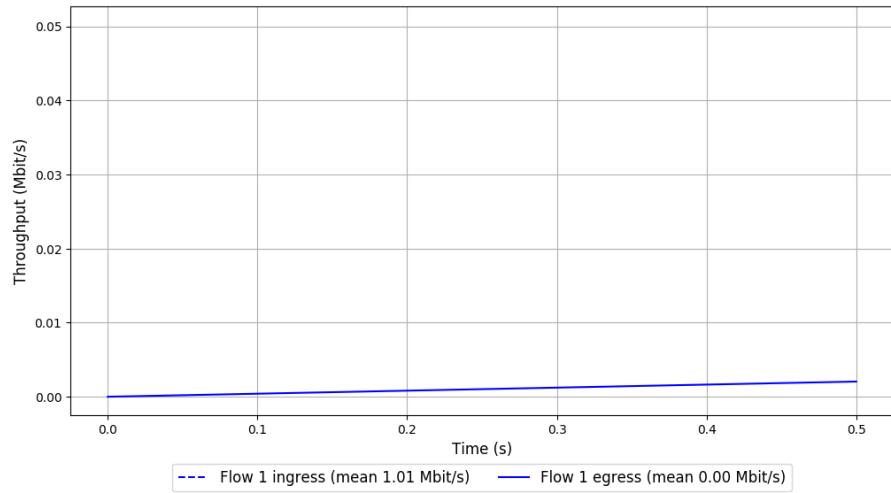
Run 2: Report of TaoVA-100x — Data Link



Run 3: Statistics of TaoVA-100x

Start at: 2018-11-02 18:59:39
End at: 2018-11-02 19:00:09
Local clock offset: -18.527 ms
Remote clock offset: -3.727 ms

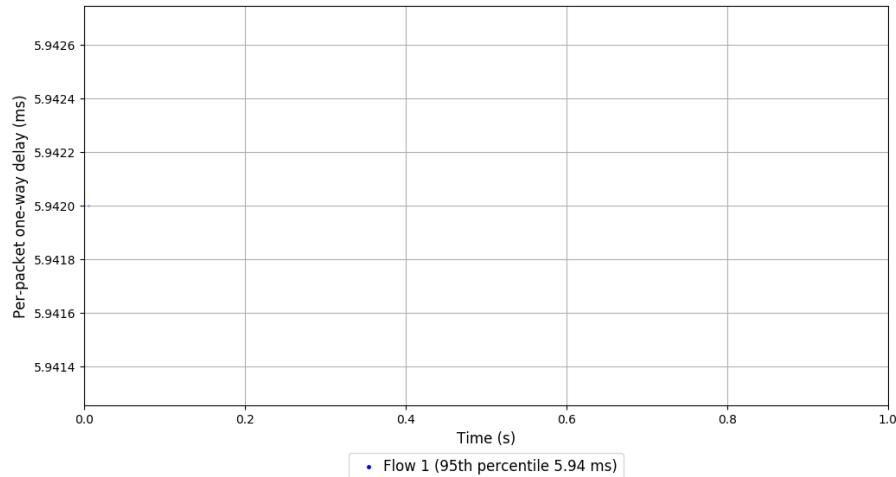
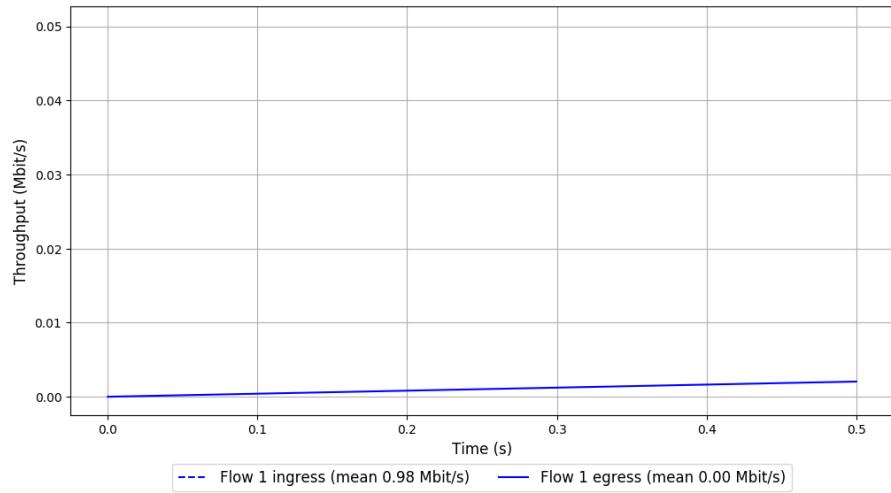
Run 3: Report of TaoVA-100x — Data Link



Run 4: Statistics of TaoVA-100x

Start at: 2018-11-02 19:19:47
End at: 2018-11-02 19:20:17
Local clock offset: -8.24 ms
Remote clock offset: -2.754 ms

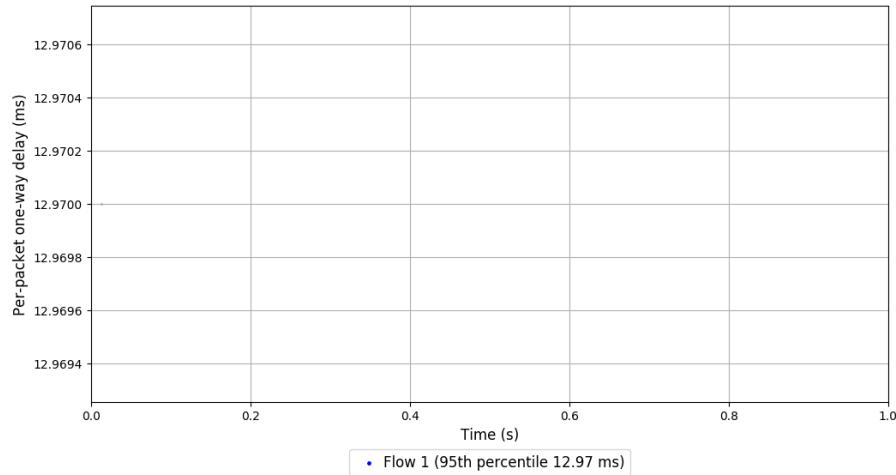
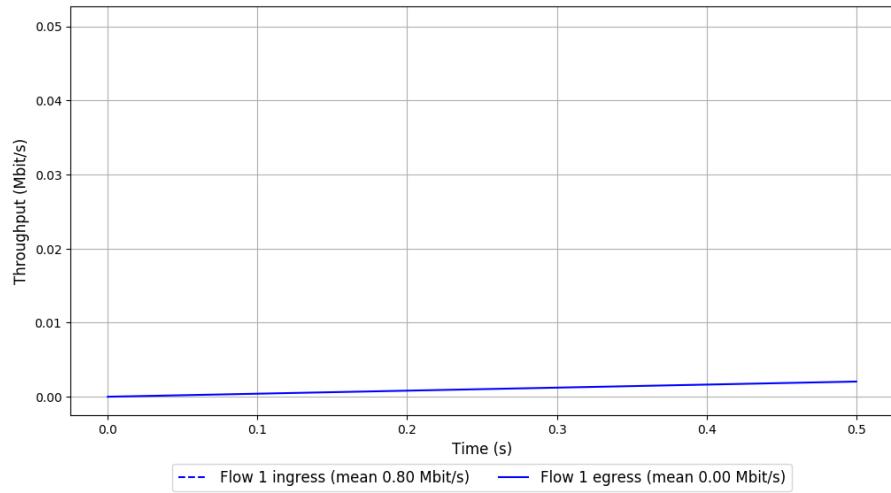
Run 4: Report of TaoVA-100x — Data Link



Run 5: Statistics of TaoVA-100x

Start at: 2018-11-02 19:39:58
End at: 2018-11-02 19:40:28
Local clock offset: -3.816 ms
Remote clock offset: -2.756 ms

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

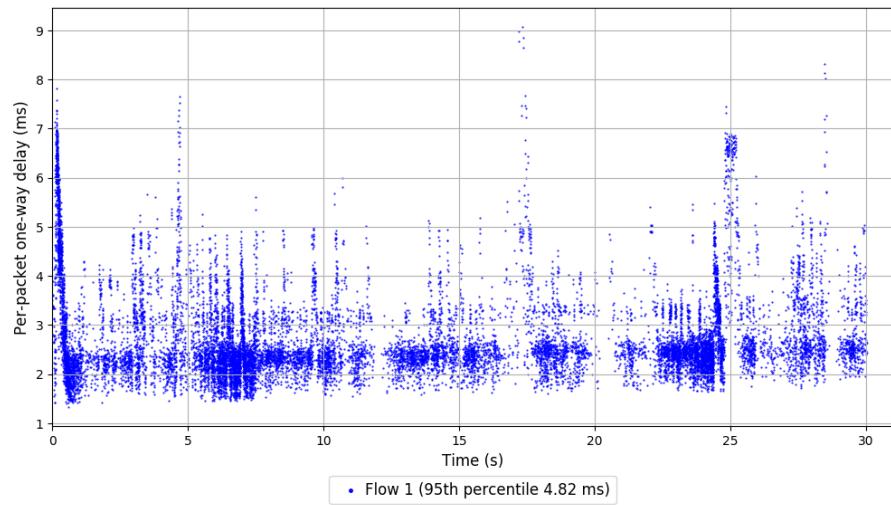
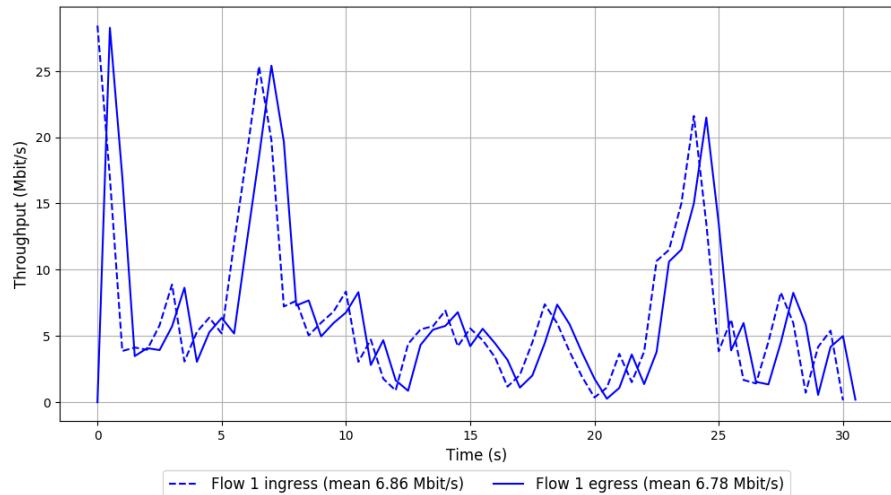


Run 1: Statistics of TCP Vegas

```
Start at: 2018-11-02 18:23:42
End at: 2018-11-02 18:24:12
Local clock offset: -1.778 ms
Remote clock offset: -2.769 ms

# Below is generated by plot.py at 2018-11-02 19:51:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.78 Mbit/s
95th percentile per-packet one-way delay: 4.817 ms
Loss rate: 1.09%
-- Flow 1:
Average throughput: 6.78 Mbit/s
95th percentile per-packet one-way delay: 4.817 ms
Loss rate: 1.09%
```

Run 1: Report of TCP Vegas — Data Link

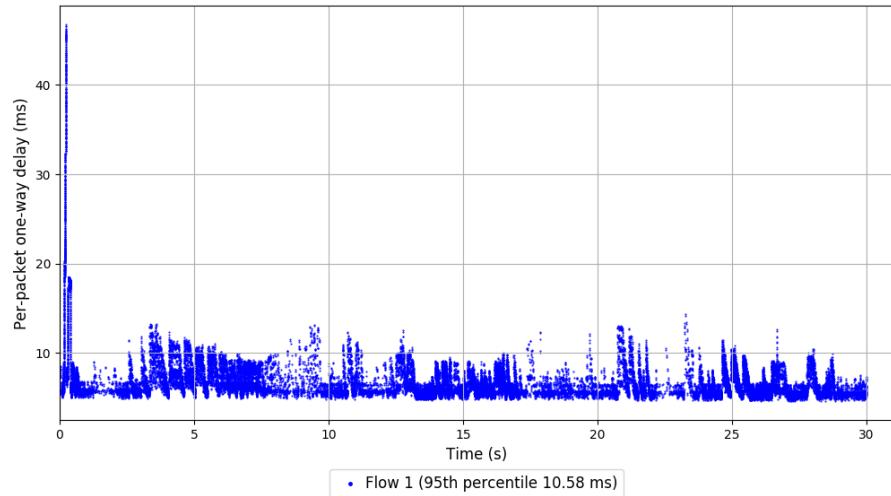
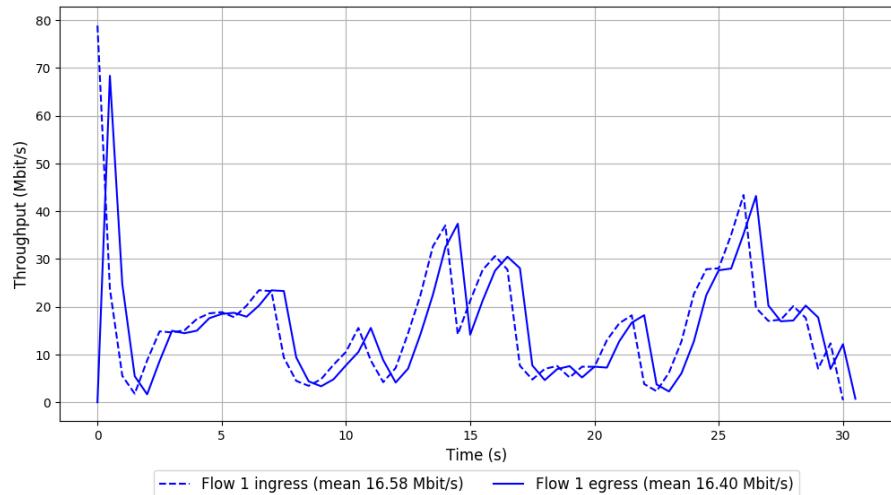


Run 2: Statistics of TCP Vegas

```
Start at: 2018-11-02 18:43:55
End at: 2018-11-02 18:44:25
Local clock offset: -11.653 ms
Remote clock offset: -2.471 ms

# Below is generated by plot.py at 2018-11-02 19:51:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 16.40 Mbit/s
95th percentile per-packet one-way delay: 10.577 ms
Loss rate: 1.13%
-- Flow 1:
Average throughput: 16.40 Mbit/s
95th percentile per-packet one-way delay: 10.577 ms
Loss rate: 1.13%
```

Run 2: Report of TCP Vegas — Data Link

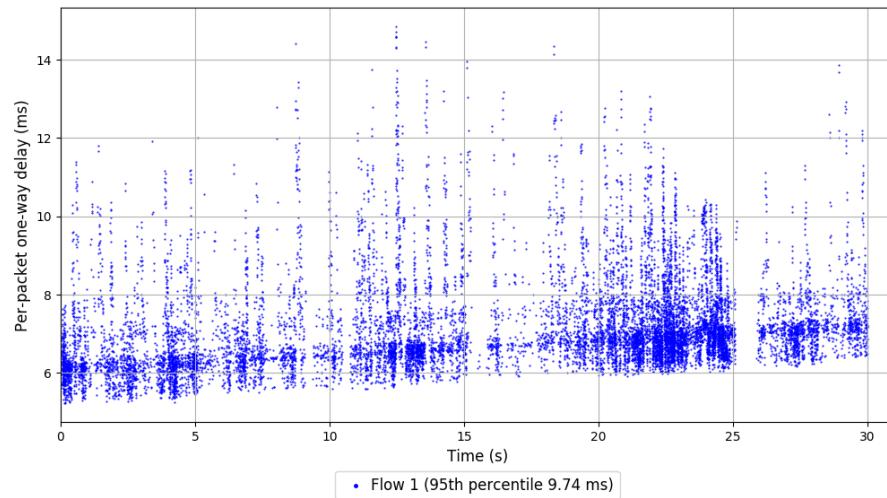
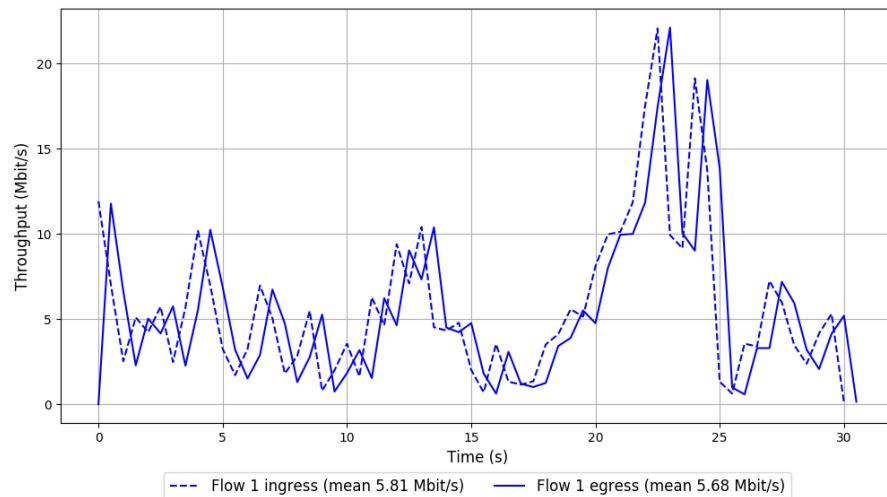


Run 3: Statistics of TCP Vegas

```
Start at: 2018-11-02 19:04:05
End at: 2018-11-02 19:04:36
Local clock offset: -23.699 ms
Remote clock offset: -2.855 ms

# Below is generated by plot.py at 2018-11-02 19:51:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.68 Mbit/s
95th percentile per-packet one-way delay: 9.737 ms
Loss rate: 2.28%
-- Flow 1:
Average throughput: 5.68 Mbit/s
95th percentile per-packet one-way delay: 9.737 ms
Loss rate: 2.28%
```

Run 3: Report of TCP Vegas — Data Link

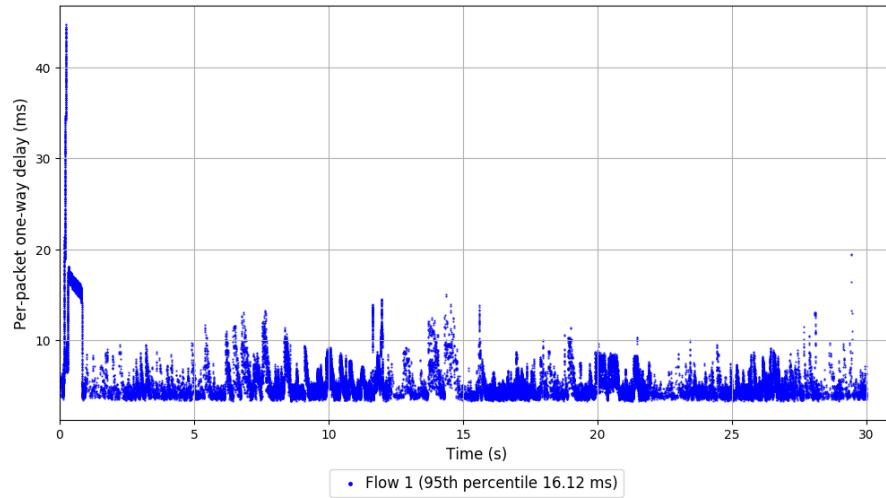
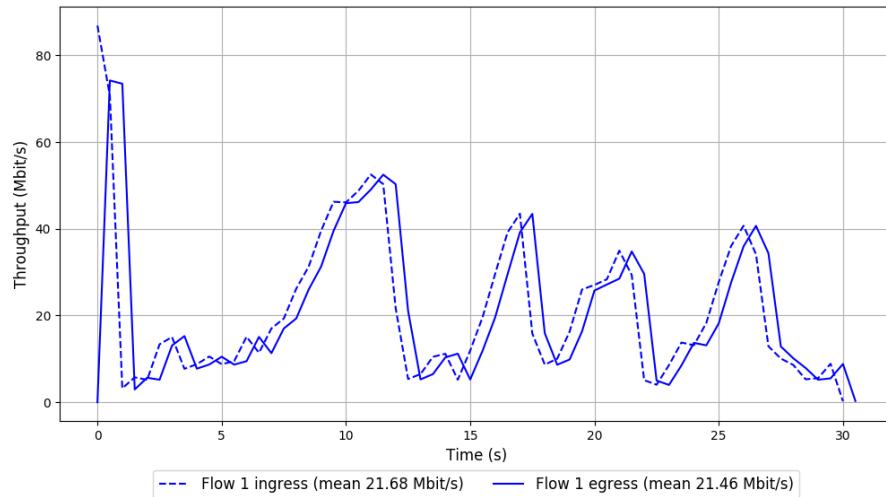


Run 4: Statistics of TCP Vegas

```
Start at: 2018-11-02 19:24:14
End at: 2018-11-02 19:24:44
Local clock offset: -8.394 ms
Remote clock offset: -3.33 ms

# Below is generated by plot.py at 2018-11-02 19:51:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 21.46 Mbit/s
95th percentile per-packet one-way delay: 16.119 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 21.46 Mbit/s
95th percentile per-packet one-way delay: 16.119 ms
Loss rate: 1.00%
```

Run 4: Report of TCP Vegas — Data Link

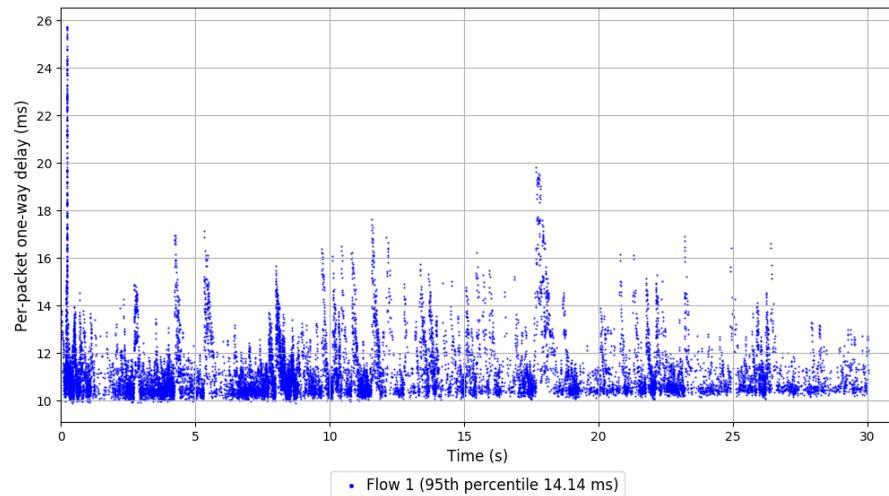
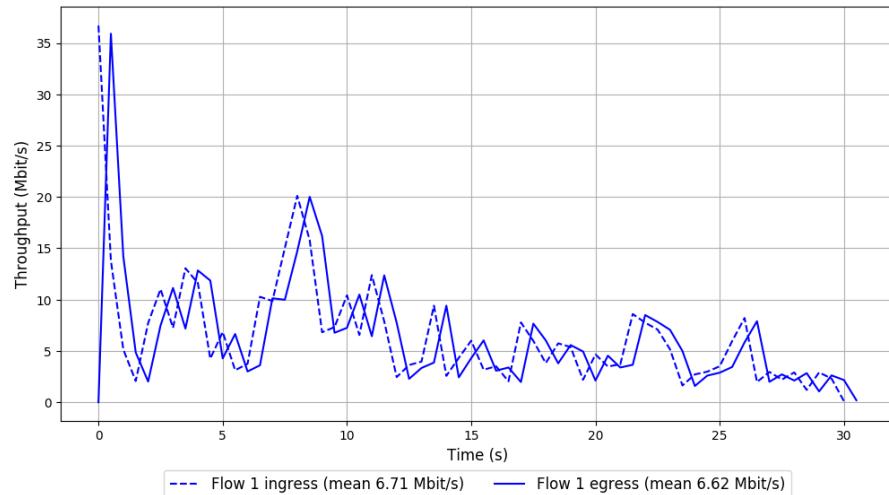


Run 5: Statistics of TCP Vegas

```
Start at: 2018-11-02 19:44:38
End at: 2018-11-02 19:45:08
Local clock offset: -0.973 ms
Remote clock offset: -3.747 ms

# Below is generated by plot.py at 2018-11-02 19:51:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.62 Mbit/s
95th percentile per-packet one-way delay: 14.144 ms
Loss rate: 1.37%
-- Flow 1:
Average throughput: 6.62 Mbit/s
95th percentile per-packet one-way delay: 14.144 ms
Loss rate: 1.37%
```

Run 5: Report of TCP Vegas — Data Link

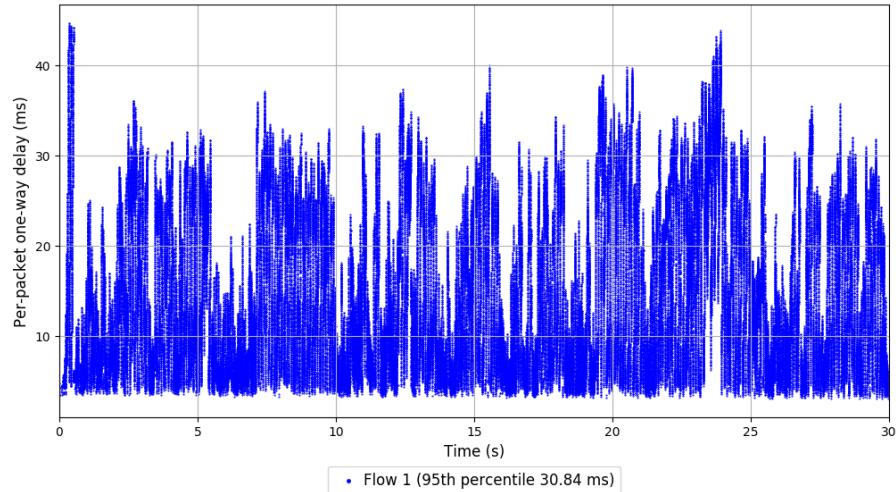
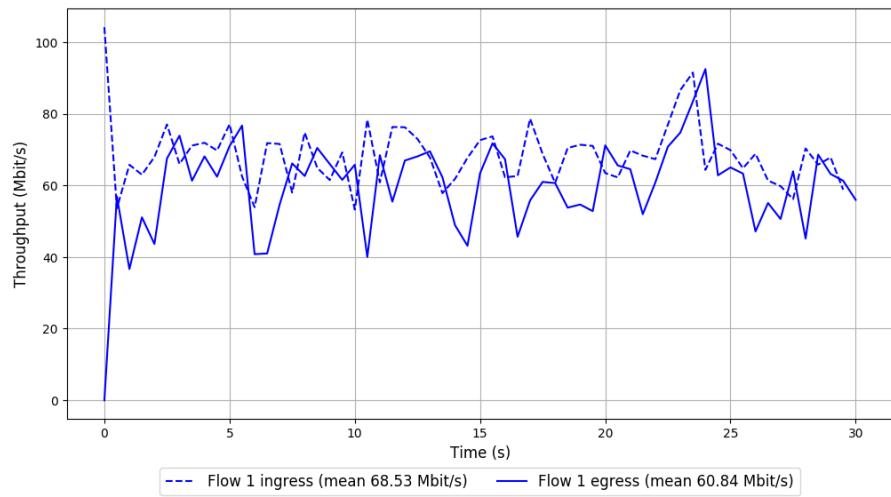


Run 1: Statistics of Verus

```
Start at: 2018-11-02 18:17:52
End at: 2018-11-02 18:18:22
Local clock offset: -2.863 ms
Remote clock offset: -1.319 ms

# Below is generated by plot.py at 2018-11-02 19:52:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 60.84 Mbit/s
95th percentile per-packet one-way delay: 30.838 ms
Loss rate: 11.23%
-- Flow 1:
Average throughput: 60.84 Mbit/s
95th percentile per-packet one-way delay: 30.838 ms
Loss rate: 11.23%
```

Run 1: Report of Verus — Data Link

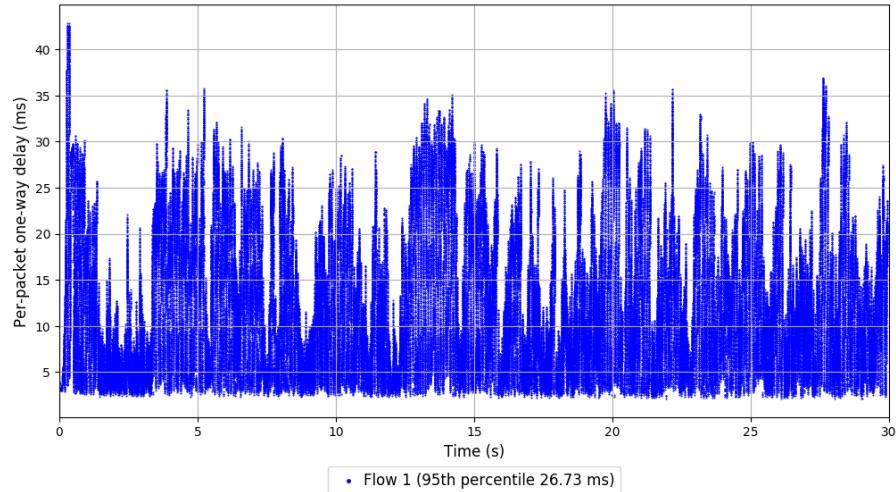
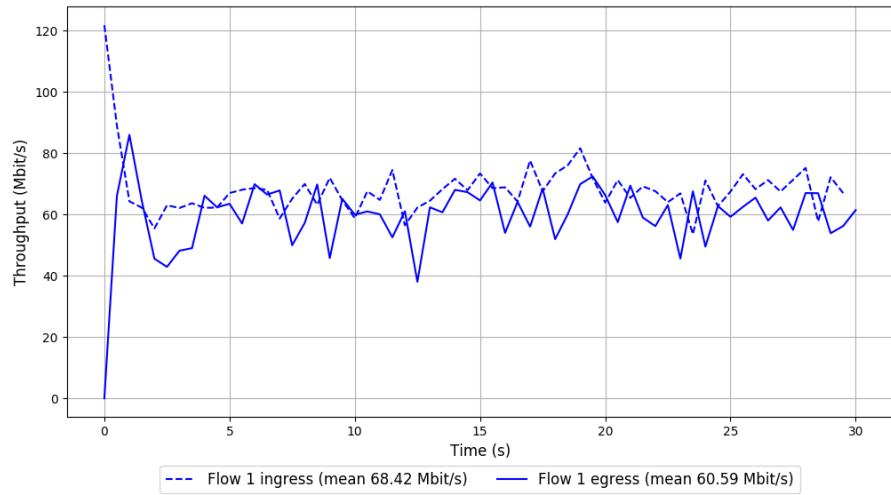


Run 2: Statistics of Verus

```
Start at: 2018-11-02 18:38:19
End at: 2018-11-02 18:38:49
Local clock offset: -8.612 ms
Remote clock offset: -4.801 ms

# Below is generated by plot.py at 2018-11-02 19:52:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 60.59 Mbit/s
95th percentile per-packet one-way delay: 26.725 ms
Loss rate: 11.39%
-- Flow 1:
Average throughput: 60.59 Mbit/s
95th percentile per-packet one-way delay: 26.725 ms
Loss rate: 11.39%
```

Run 2: Report of Verus — Data Link

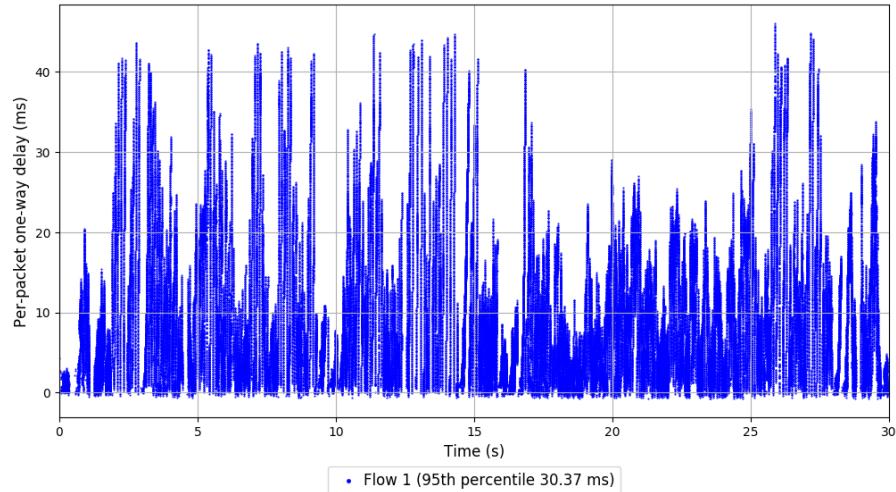
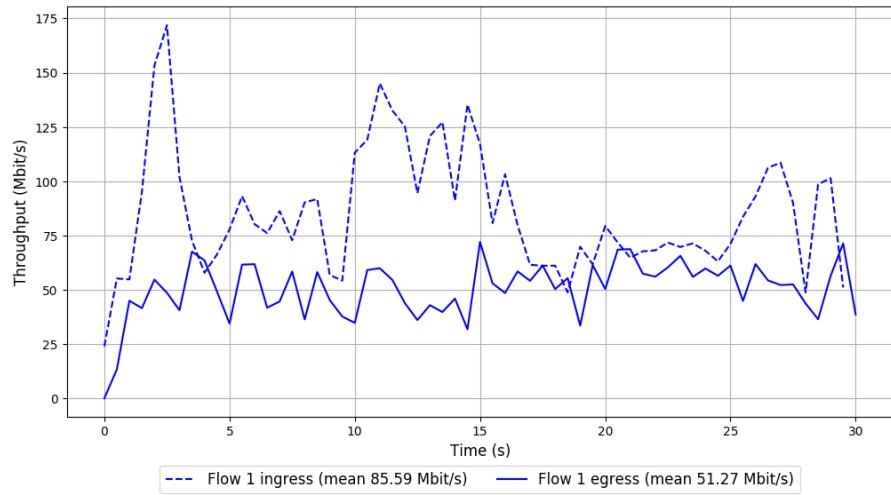


Run 3: Statistics of Verus

```
Start at: 2018-11-02 18:58:29
End at: 2018-11-02 18:58:59
Local clock offset: -16.23 ms
Remote clock offset: -3.628 ms

# Below is generated by plot.py at 2018-11-02 19:52:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 51.27 Mbit/s
95th percentile per-packet one-way delay: 30.374 ms
Loss rate: 40.10%
-- Flow 1:
Average throughput: 51.27 Mbit/s
95th percentile per-packet one-way delay: 30.374 ms
Loss rate: 40.10%
```

Run 3: Report of Verus — Data Link

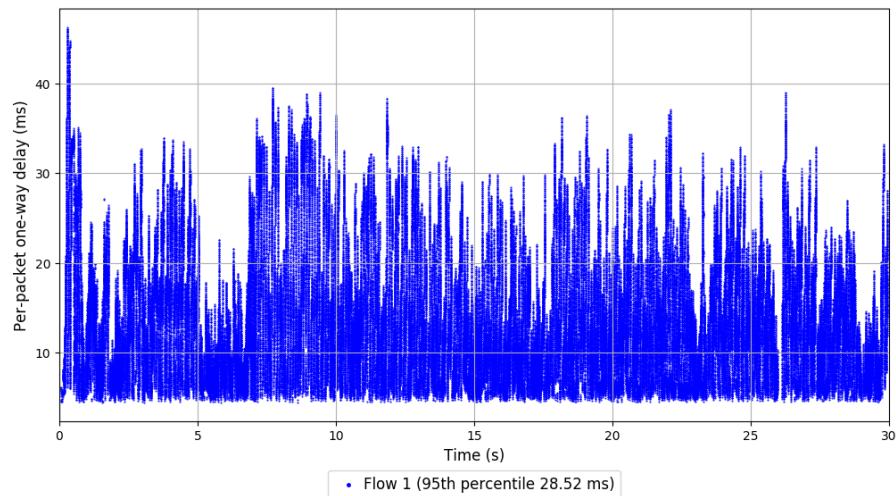
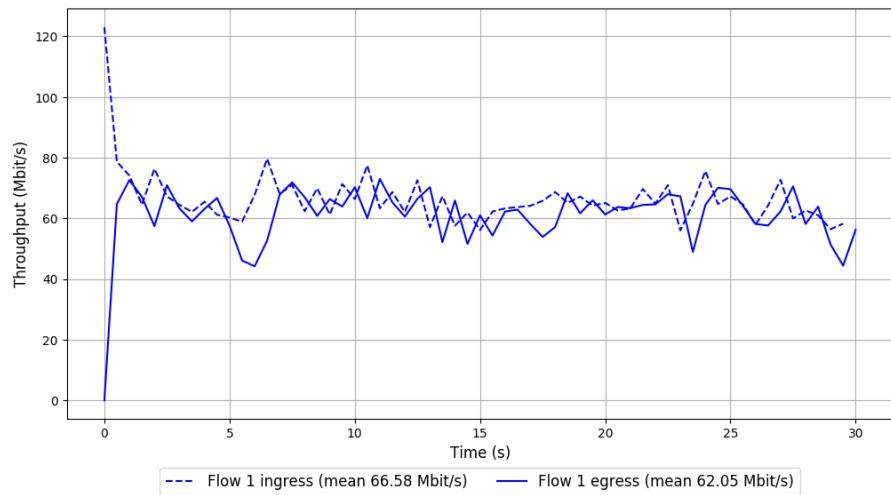


Run 4: Statistics of Verus

```
Start at: 2018-11-02 19:18:38
End at: 2018-11-02 19:19:08
Local clock offset: -9.647 ms
Remote clock offset: -3.42 ms

# Below is generated by plot.py at 2018-11-02 19:52:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 62.05 Mbit/s
95th percentile per-packet one-way delay: 28.522 ms
Loss rate: 6.73%
-- Flow 1:
Average throughput: 62.05 Mbit/s
95th percentile per-packet one-way delay: 28.522 ms
Loss rate: 6.73%
```

Run 4: Report of Verus — Data Link

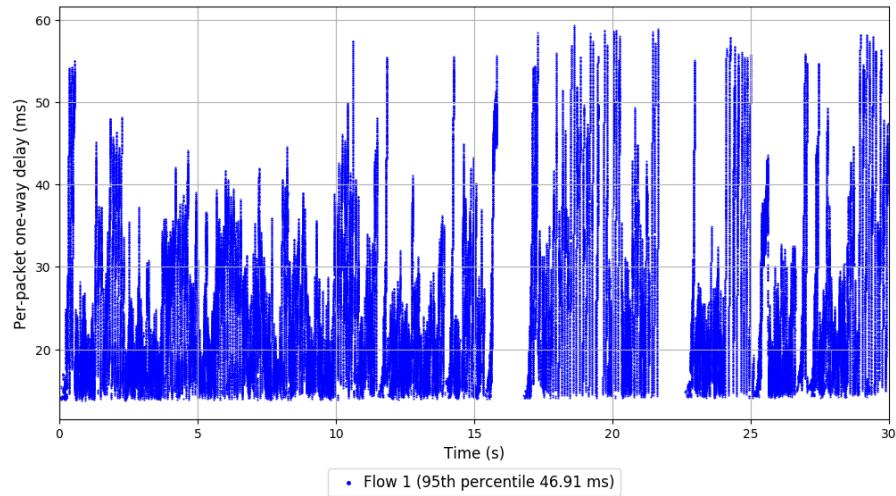
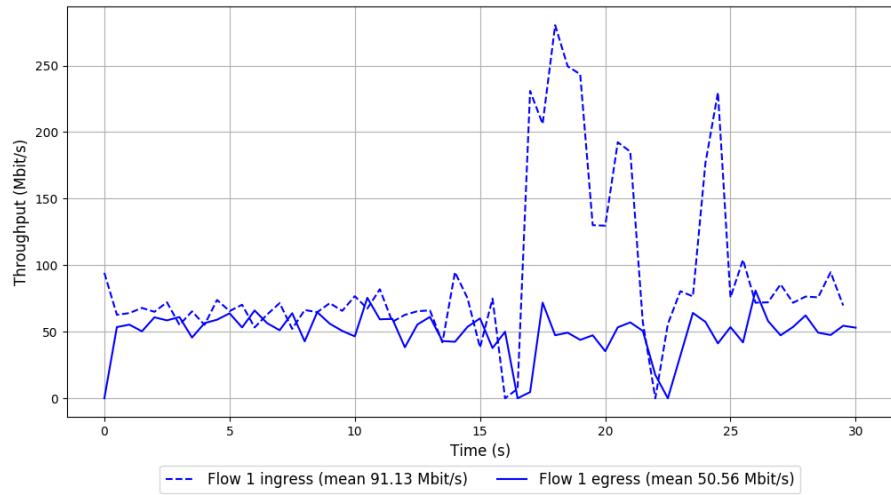


Run 5: Statistics of Verus

```
Start at: 2018-11-02 19:38:48
End at: 2018-11-02 19:39:18
Local clock offset: -6.924 ms
Remote clock offset: -2.528 ms

# Below is generated by plot.py at 2018-11-02 19:52:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 50.56 Mbit/s
95th percentile per-packet one-way delay: 46.907 ms
Loss rate: 44.46%
-- Flow 1:
Average throughput: 50.56 Mbit/s
95th percentile per-packet one-way delay: 46.907 ms
Loss rate: 44.46%
```

Run 5: Report of Verus — Data Link

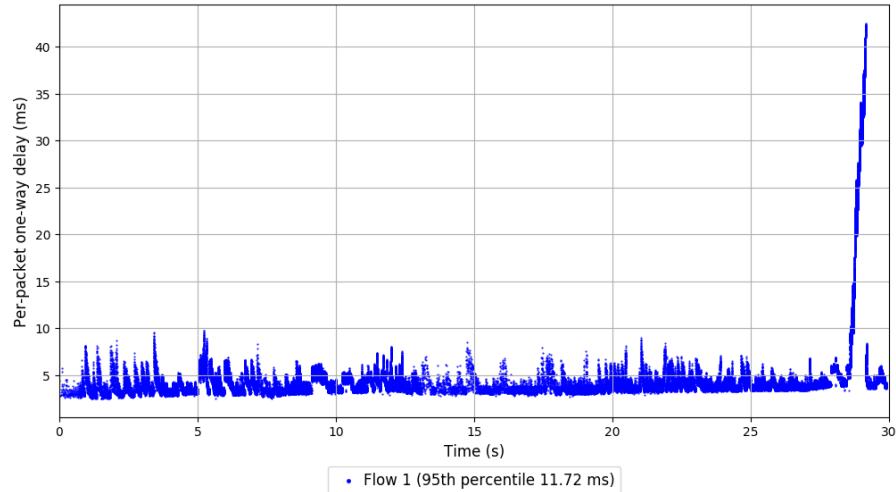
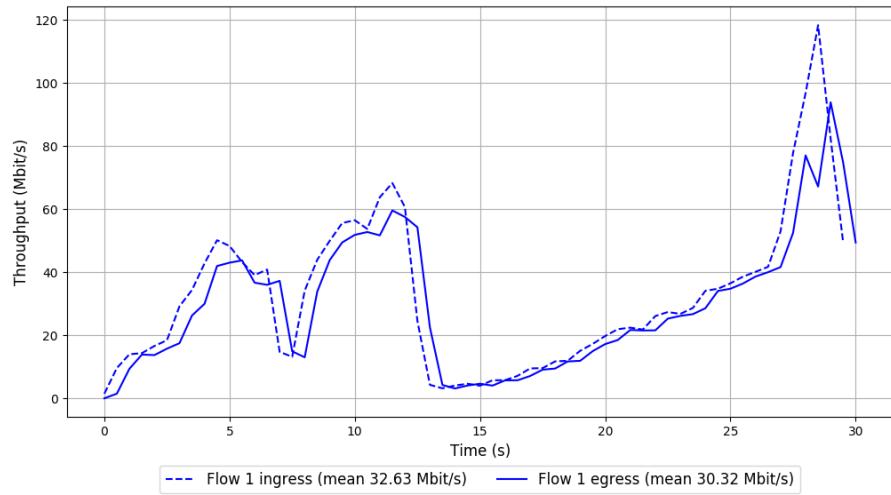


```
Run 1: Statistics of PCC-Vivace
```

```
Start at: 2018-11-02 18:21:27
End at: 2018-11-02 18:21:57
Local clock offset: -5.511 ms
Remote clock offset: -2.888 ms

# Below is generated by plot.py at 2018-11-02 19:52:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 30.32 Mbit/s
95th percentile per-packet one-way delay: 11.717 ms
Loss rate: 7.10%
-- Flow 1:
Average throughput: 30.32 Mbit/s
95th percentile per-packet one-way delay: 11.717 ms
Loss rate: 7.10%
```

Run 1: Report of PCC-Vivace — Data Link

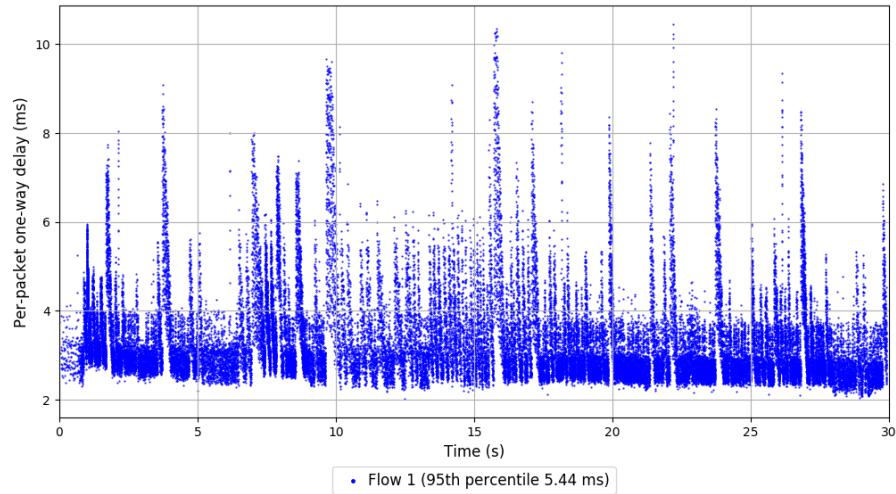
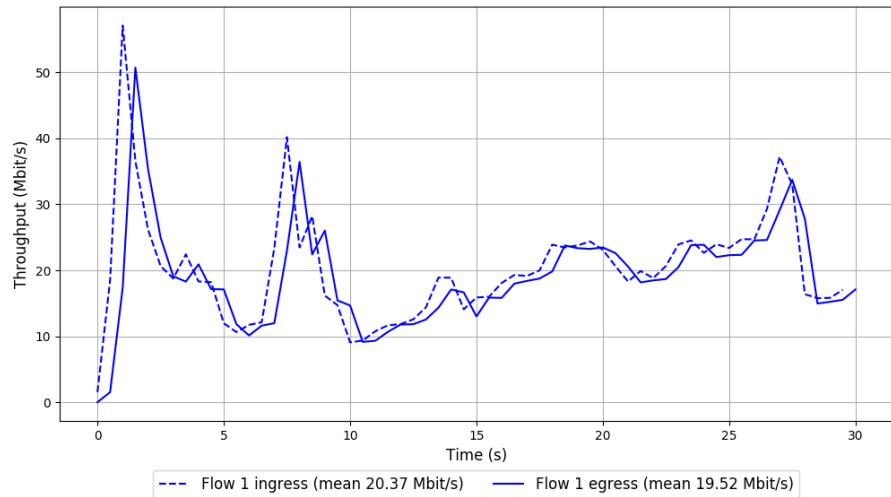


Run 2: Statistics of PCC-Vivace

```
Start at: 2018-11-02 18:41:43
End at: 2018-11-02 18:42:13
Local clock offset: -8.572 ms
Remote clock offset: -2.802 ms

# Below is generated by plot.py at 2018-11-02 19:52:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 19.52 Mbit/s
95th percentile per-packet one-way delay: 5.438 ms
Loss rate: 4.20%
-- Flow 1:
Average throughput: 19.52 Mbit/s
95th percentile per-packet one-way delay: 5.438 ms
Loss rate: 4.20%
```

Run 2: Report of PCC-Vivace — Data Link

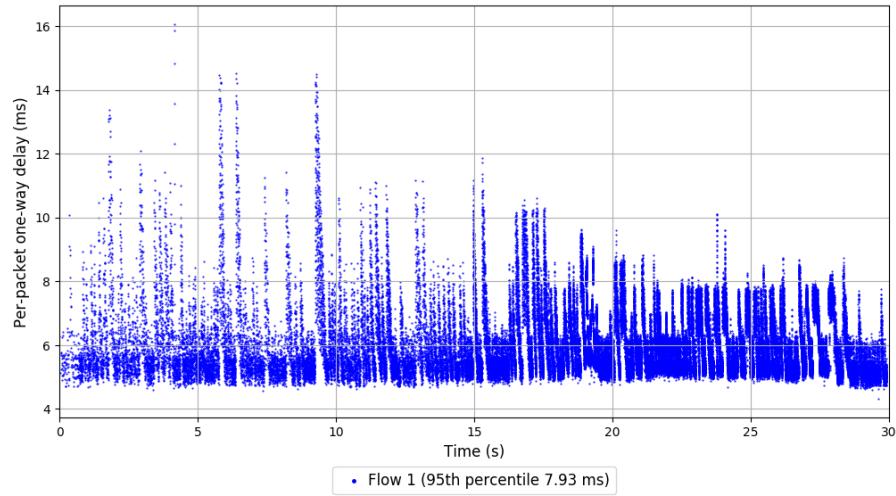
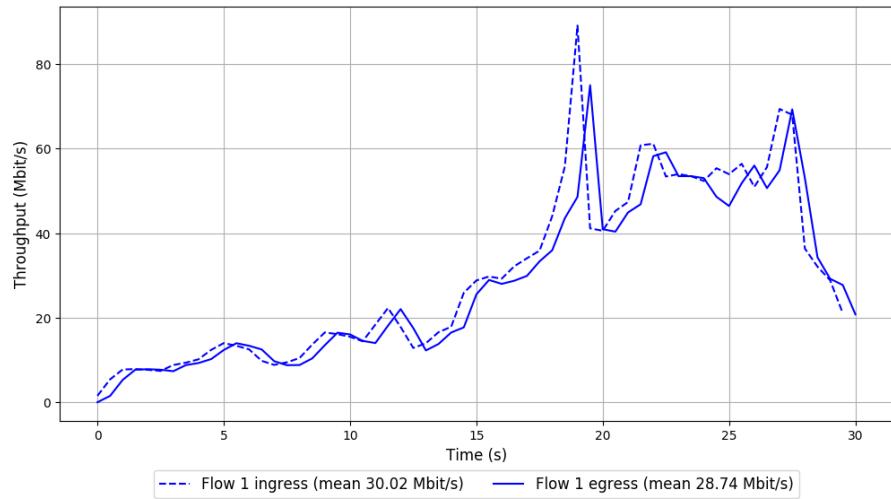


Run 3: Statistics of PCC-Vivace

```
Start at: 2018-11-02 19:01:53
End at: 2018-11-02 19:02:23
Local clock offset: -22.15 ms
Remote clock offset: -2.723 ms

# Below is generated by plot.py at 2018-11-02 19:52:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 28.74 Mbit/s
95th percentile per-packet one-way delay: 7.928 ms
Loss rate: 4.25%
-- Flow 1:
Average throughput: 28.74 Mbit/s
95th percentile per-packet one-way delay: 7.928 ms
Loss rate: 4.25%
```

Run 3: Report of PCC-Vivace — Data Link

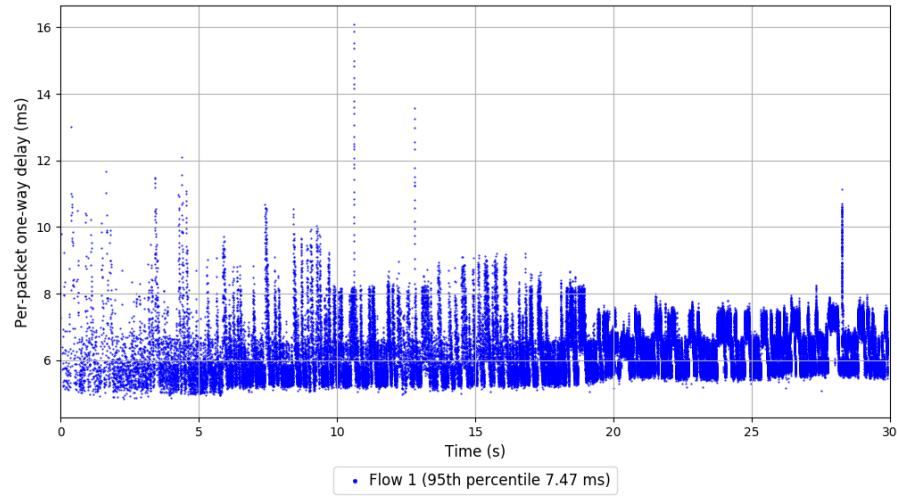
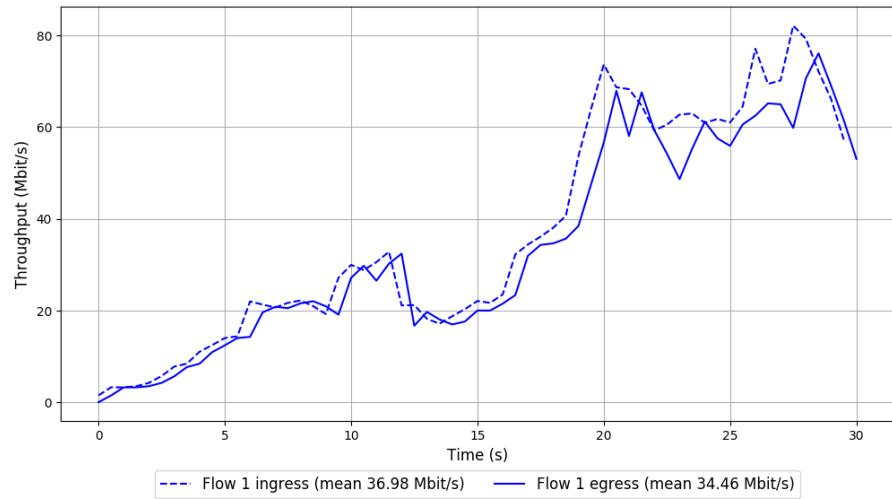


Run 4: Statistics of PCC-Vivace

```
Start at: 2018-11-02 19:22:01
End at: 2018-11-02 19:22:31
Local clock offset: -9.647 ms
Remote clock offset: -2.924 ms

# Below is generated by plot.py at 2018-11-02 19:52:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 34.46 Mbit/s
95th percentile per-packet one-way delay: 7.467 ms
Loss rate: 6.82%
-- Flow 1:
Average throughput: 34.46 Mbit/s
95th percentile per-packet one-way delay: 7.467 ms
Loss rate: 6.82%
```

Run 4: Report of PCC-Vivace — Data Link

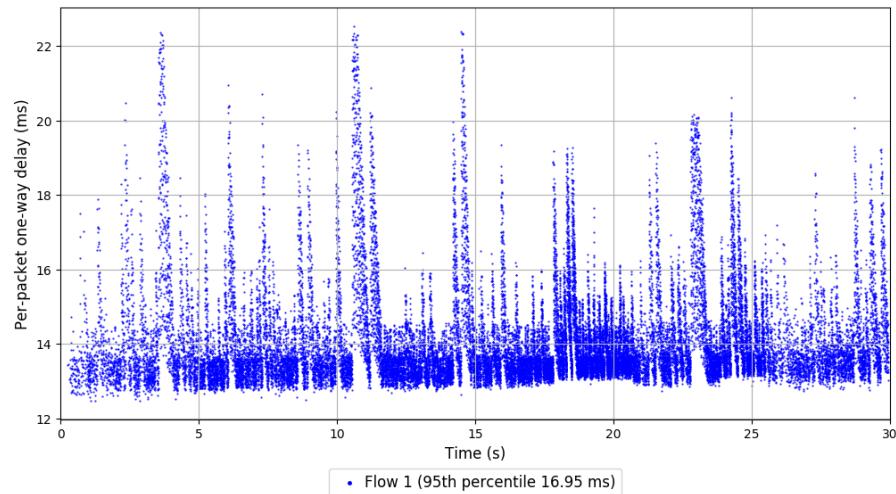
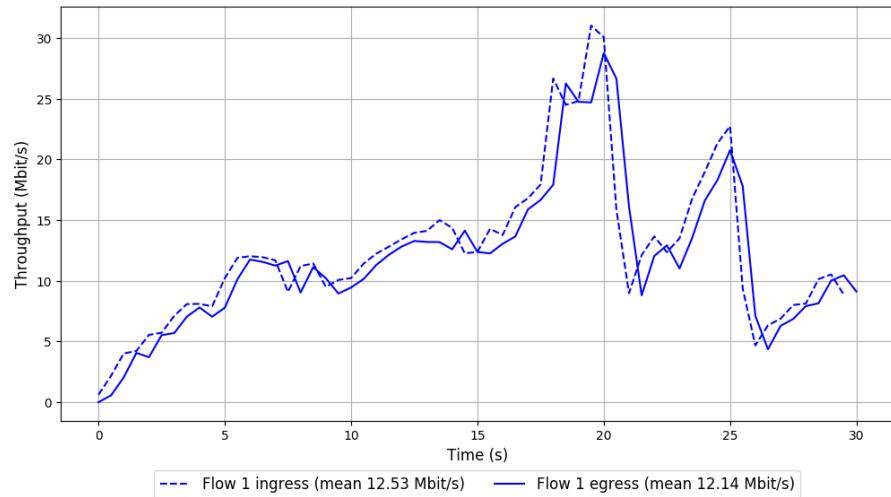


Run 5: Statistics of PCC-Vivace

```
Start at: 2018-11-02 19:42:26
End at: 2018-11-02 19:42:56
Local clock offset: -4.418 ms
Remote clock offset: -3.425 ms

# Below is generated by plot.py at 2018-11-02 19:52:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.14 Mbit/s
95th percentile per-packet one-way delay: 16.949 ms
Loss rate: 3.95%
-- Flow 1:
Average throughput: 12.14 Mbit/s
95th percentile per-packet one-way delay: 16.949 ms
Loss rate: 3.95%
```

Run 5: Report of PCC-Vivace — Data Link

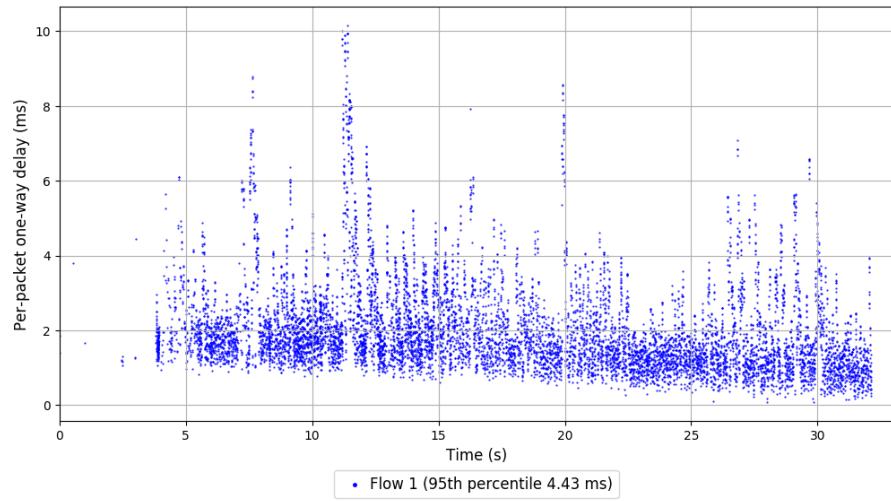
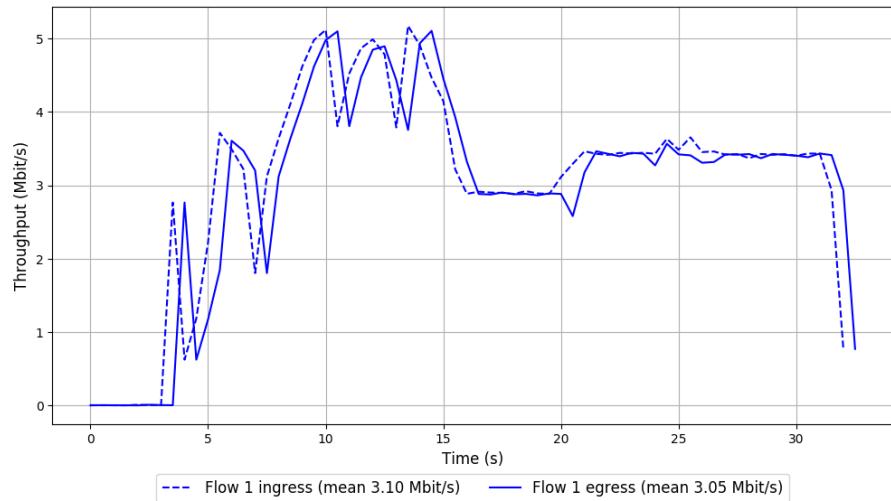


```
Run 1: Statistics of WebRTC media

Start at: 2018-11-02 18:07:49
End at: 2018-11-02 18:08:19
Local clock offset: -0.688 ms
Remote clock offset: -2.609 ms

# Below is generated by plot.py at 2018-11-02 19:52:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.05 Mbit/s
95th percentile per-packet one-way delay: 4.427 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 3.05 Mbit/s
95th percentile per-packet one-way delay: 4.427 ms
Loss rate: 1.49%
```

Run 1: Report of WebRTC media — Data Link

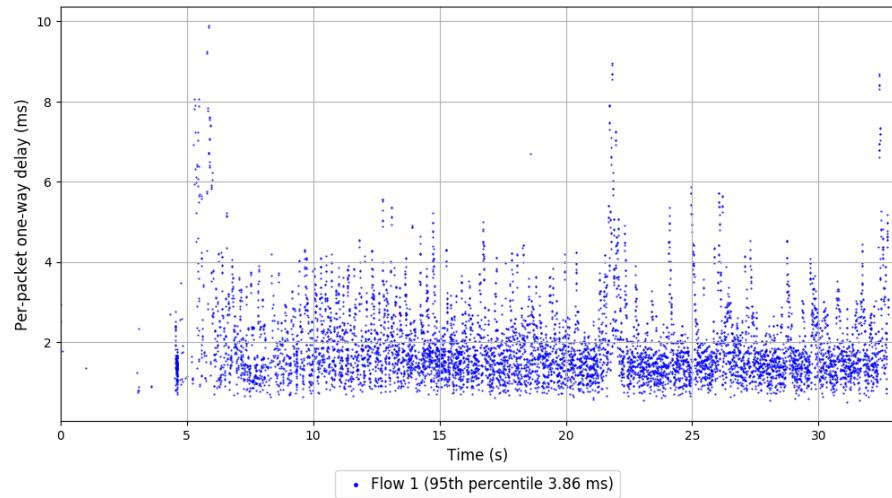
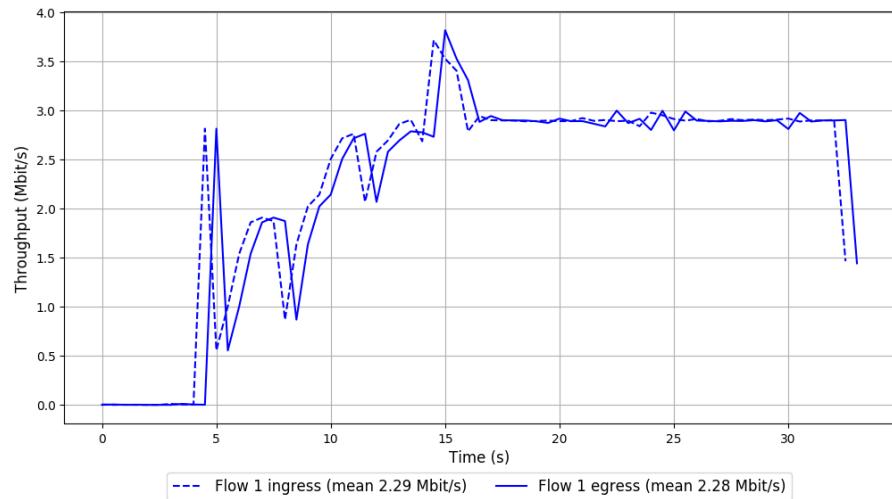


Run 2: Statistics of WebRTC media

```
Start at: 2018-11-02 18:28:14
End at: 2018-11-02 18:28:44
Local clock offset: -0.296 ms
Remote clock offset: -2.973 ms

# Below is generated by plot.py at 2018-11-02 19:52:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 3.862 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 3.862 ms
Loss rate: 0.19%
```

Run 2: Report of WebRTC media — Data Link

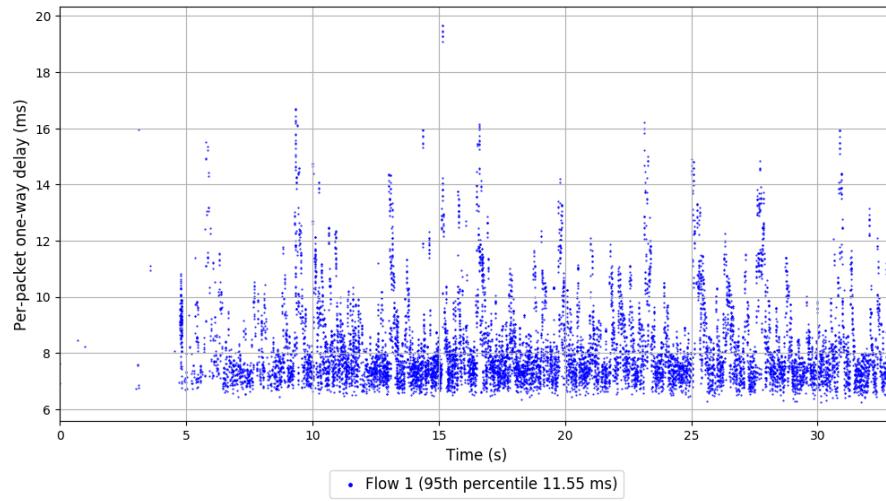
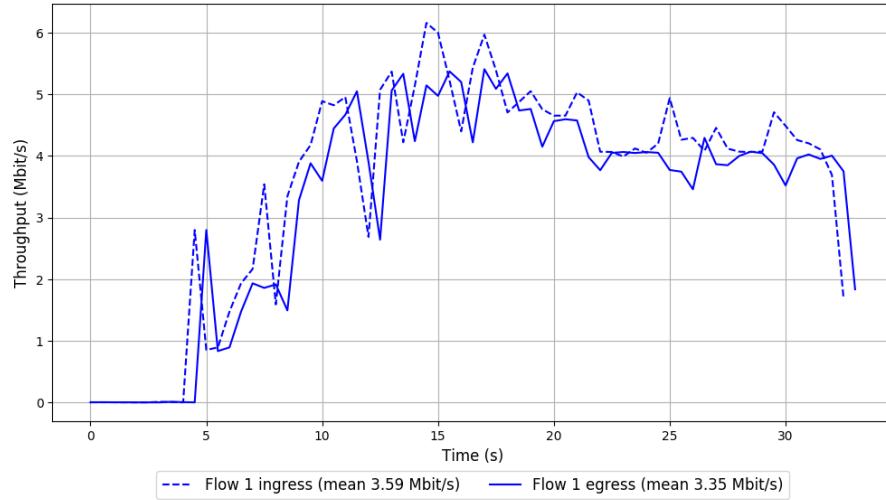


Run 3: Statistics of WebRTC media

```
Start at: 2018-11-02 18:48:26
End at: 2018-11-02 18:48:56
Local clock offset: -15.303 ms
Remote clock offset: -1.614 ms

# Below is generated by plot.py at 2018-11-02 19:52:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.35 Mbit/s
95th percentile per-packet one-way delay: 11.552 ms
Loss rate: 6.59%
-- Flow 1:
Average throughput: 3.35 Mbit/s
95th percentile per-packet one-way delay: 11.552 ms
Loss rate: 6.59%
```

Run 3: Report of WebRTC media — Data Link

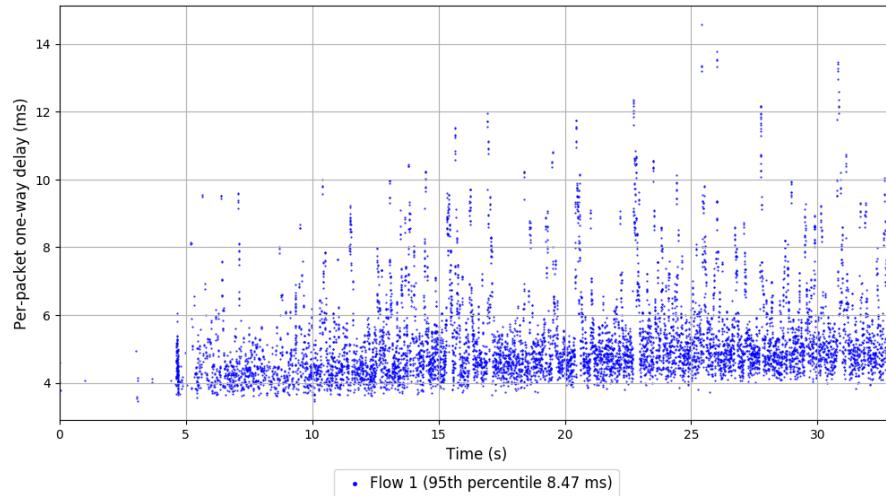
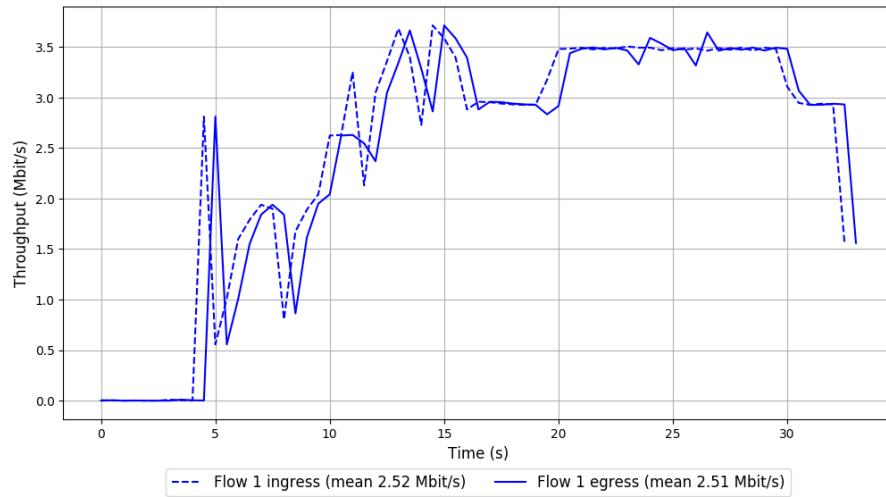


Run 4: Statistics of WebRTC media

```
Start at: 2018-11-02 19:08:36
End at: 2018-11-02 19:09:06
Local clock offset: -14.669 ms
Remote clock offset: -3.197 ms

# Below is generated by plot.py at 2018-11-02 19:52:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.51 Mbit/s
95th percentile per-packet one-way delay: 8.466 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 2.51 Mbit/s
95th percentile per-packet one-way delay: 8.466 ms
Loss rate: 0.60%
```

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

```
Start at: 2018-11-02 19:28:44
End at: 2018-11-02 19:29:14
Local clock offset: -8.563 ms
Remote clock offset: -3.246 ms

# Below is generated by plot.py at 2018-11-02 19:52:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.32 Mbit/s
95th percentile per-packet one-way delay: 6.304 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 2.32 Mbit/s
95th percentile per-packet one-way delay: 6.304 ms
Loss rate: 0.68%
```

Run 5: Report of WebRTC media — Data Link

