Pantheon Report

Generated at 2018-10-09 19:46:30 (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.
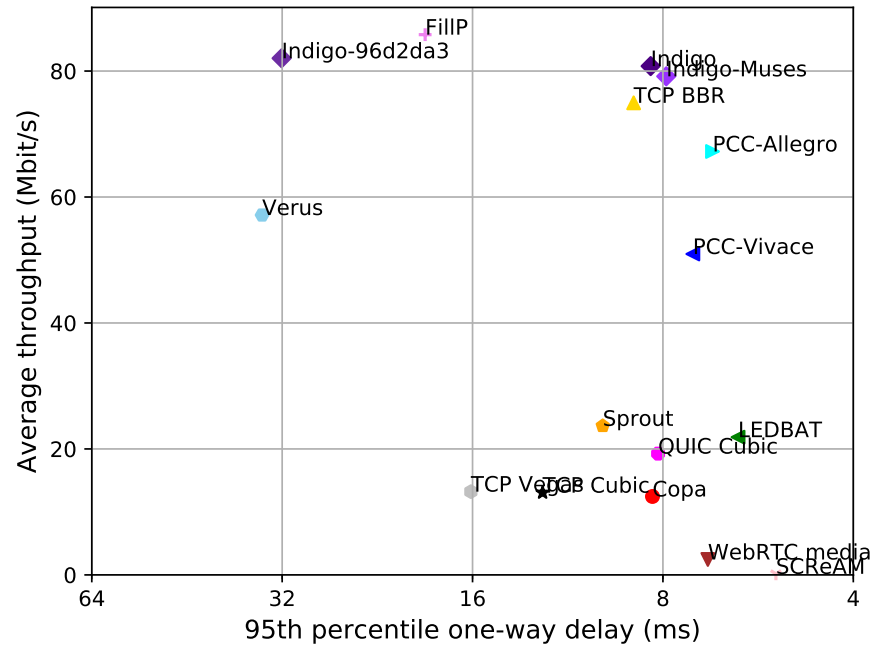
```
System info:
Linux 4.15.0-1023-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ 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 @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
 M src/ScreamClient
 M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
 M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
```
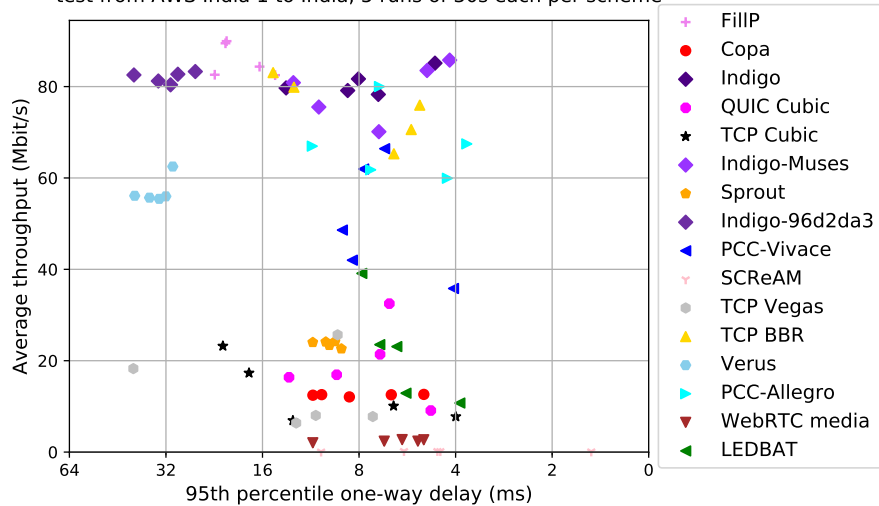
```
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

test from AWS India 1 to India, 5 runs of 30s each per scheme
(mean of all runs by scheme)

test from AWS India 1 to India, 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	74.95	8.90	10.89
Copa	5	12.46	8.31	67.43
TCP Cubic	5	13.06	12.40	0.59
FillP	5	85.78	19.01	12.19
Indigo	5	80.79	8.37	8.60
Indigo-96d2da3	5	82.03	32.07	47.41
LEDBAT	5	21.87	6.09	0.34
Indigo-Muses	5	79.16	7.90	10.64
PCC-Allegro	5	67.23	6.68	8.90
PCC-Expr	0	N/A	N/A	N/A
QUIC Cubic	5	19.26	8.14	1.67
SCReAM	5	0.17	5.30	0.44
Sprout	5	23.67	9.96	1.41
TaoVA-100x	0	N/A	N/A	N/A
TCP Vegas	5	13.22	16.10	1.43
Verus	5	57.14	34.43	24.62
PCC-Vivace	5	50.95	7.17	6.93
WebRTC media	5	2.45	6.79	0.54

```
Run 1: Statistics of TCP BBR

Start at: 2018-10-09 18:01:18
End at: 2018-10-09 18:01:48
Local clock offset: 1.596 ms
Remote clock offset: -2.154 ms


# Below is generated by plot.py at 2018-10-09 19:41:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 65.30 Mbit/s
95th percentile per-packet one-way delay: 6.230 ms
Loss rate: 13.24%
-- Flow 1:
Average throughput: 65.30 Mbit/s
95th percentile per-packet one-way delay: 6.230 ms
Loss rate: 13.24%
```
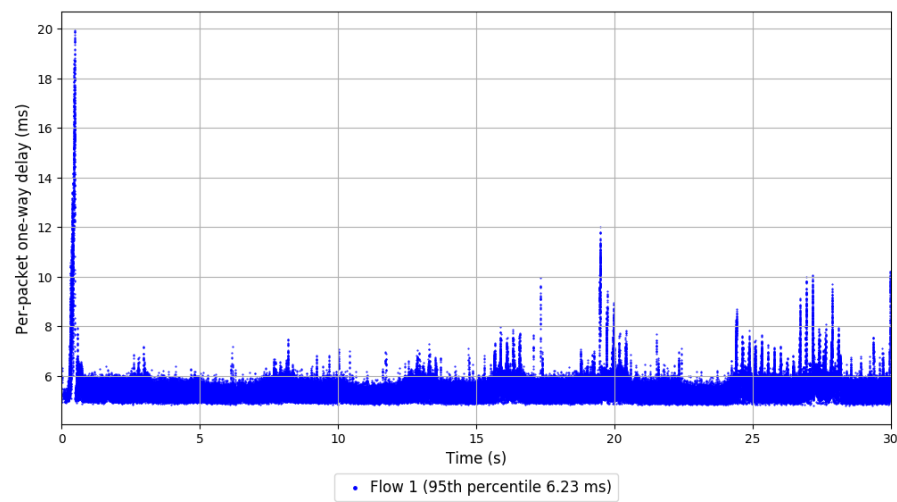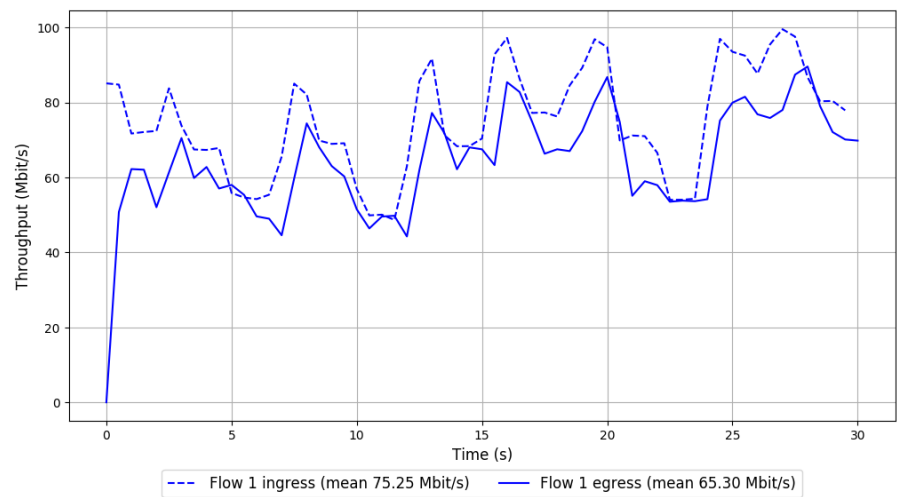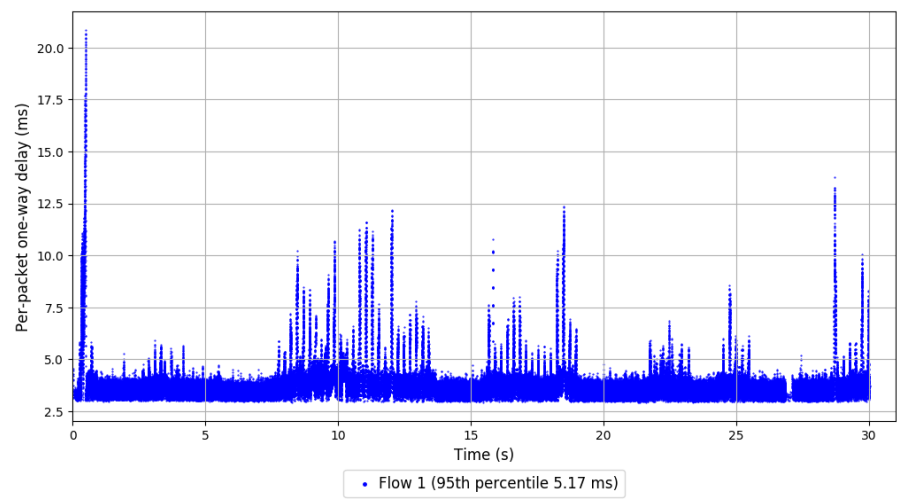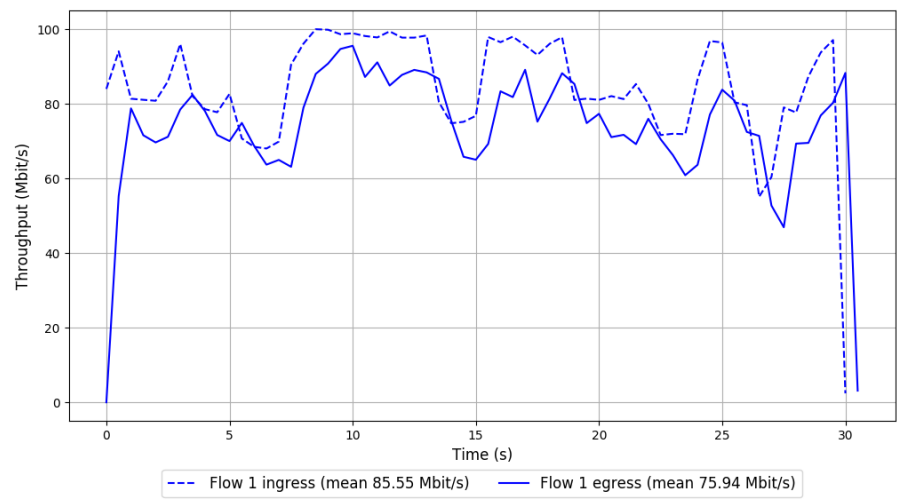
Run 1: Report of TCP BBR — Data Link

Flow 1 ingress (mean 75.25 Mbit/s)   Flow 1 egress (mean 65.30 Mbit/s)

Flow 1 (95th percentile 6.23 ms)

```
Run 2: Statistics of TCP BBR

Start at: 2018-10-09 18:22:17
End at: 2018-10-09 18:22:47
Local clock offset: 1.72 ms
Remote clock offset: -1.771 ms


# Below is generated by plot.py at 2018-10-09 19:41:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 75.94 Mbit/s
95th percentile per-packet one-way delay: 5.174 ms
Loss rate: 11.24%
-- Flow 1:
Average throughput: 75.94 Mbit/s
95th percentile per-packet one-way delay: 5.174 ms
Loss rate: 11.24%
```
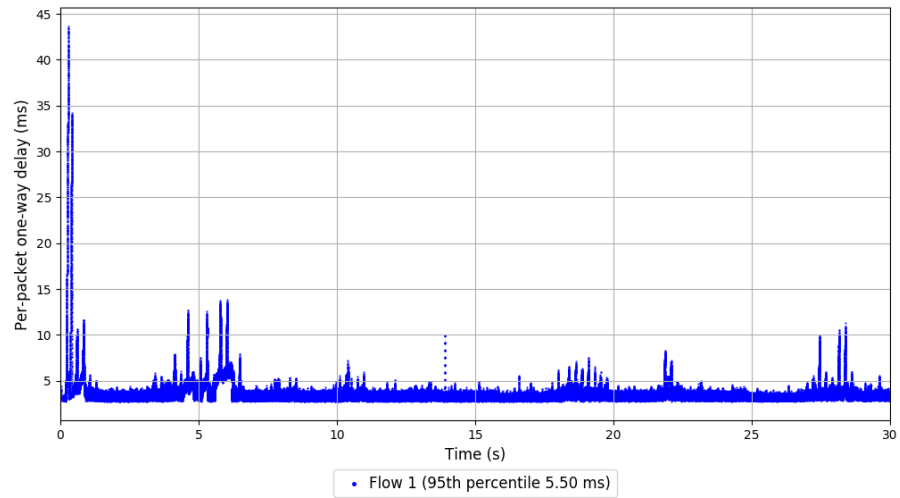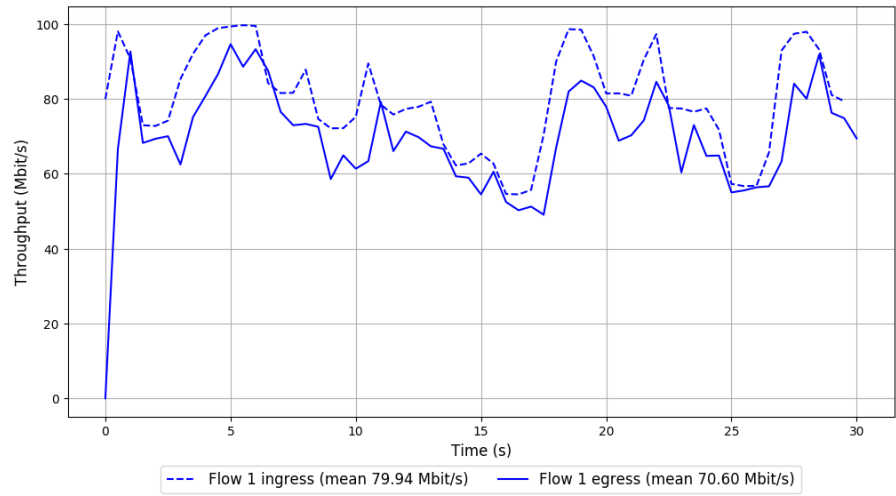
Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2018-10-09 18:43:00
End at: 2018-10-09 18:43:30
Local clock offset: 1.704 ms
Remote clock offset: -1.378 ms


# Below is generated by plot.py at 2018-10-09 19:41:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 70.60 Mbit/s
95th percentile per-packet one-way delay: 5.501 ms
Loss rate: 11.68%
-- Flow 1:
Average throughput: 70.60 Mbit/s
95th percentile per-packet one-way delay: 5.501 ms
Loss rate: 11.68%
```
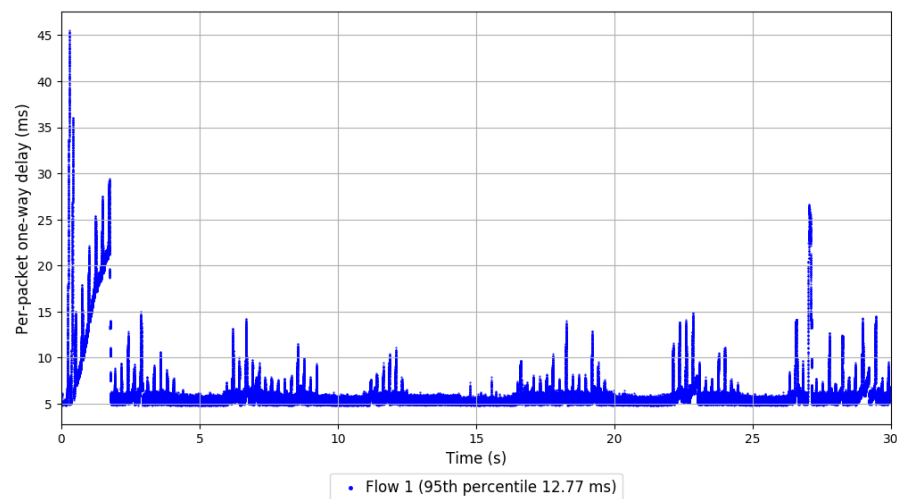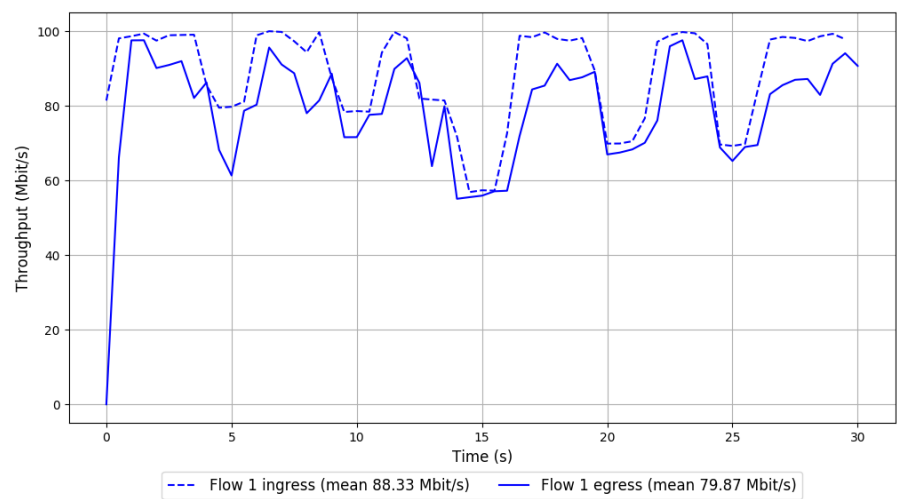
Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 79.94 Mbit/s)   Flow 1 egress (mean 70.60 Mbit/s)

Flow 1 (95th percentile 5.50 ms)

```
Run 4: Statistics of TCP BBR

Start at: 2018-10-09 19:03:58
End at: 2018-10-09 19:04:28
Local clock offset: 1.864 ms
Remote clock offset: -1.055 ms


# Below is generated by plot.py at 2018-10-09 19:41:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 79.87 Mbit/s
95th percentile per-packet one-way delay: 12.769 ms
Loss rate: 9.57%
-- Flow 1:
Average throughput: 79.87 Mbit/s
95th percentile per-packet one-way delay: 12.769 ms
Loss rate: 9.57%
```
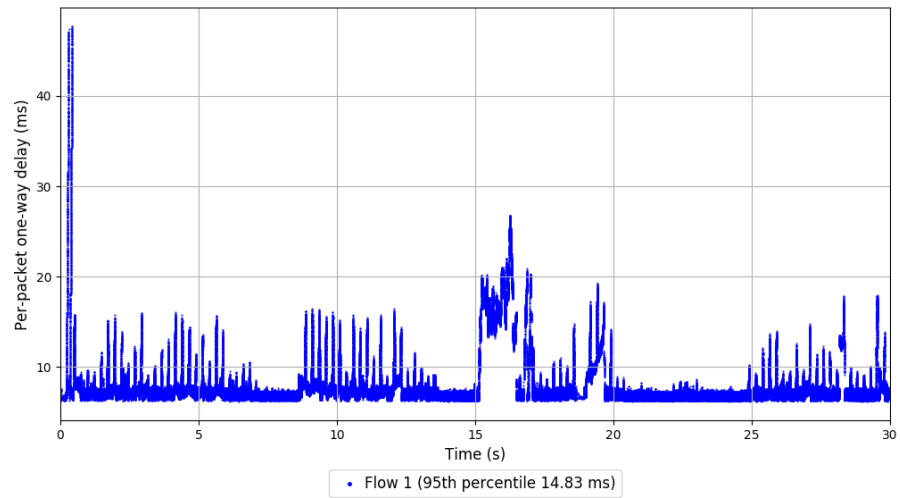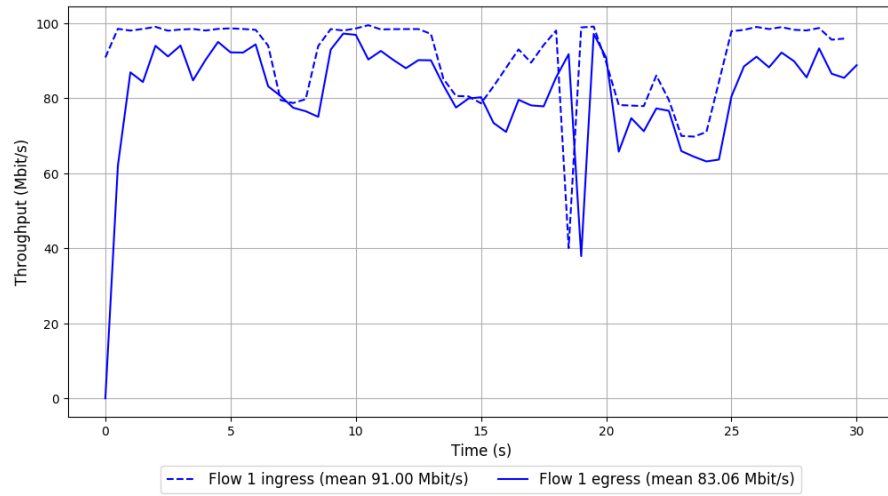
Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 88.33 Mbit/s)   Flow 1 egress (mean 79.87 Mbit/s)

Flow 1 (95th percentile 12.77 ms)

```
Run 5: Statistics of TCP BBR

Start at: 2018-10-09 19:24:45
End at: 2018-10-09 19:25:15
Local clock offset: 2.424 ms
Remote clock offset: -1.54 ms


# Below is generated by plot.py at 2018-10-09 19:41:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 83.06 Mbit/s
95th percentile per-packet one-way delay: 14.826 ms
Loss rate: 8.72%
-- Flow 1:
Average throughput: 83.06 Mbit/s
95th percentile per-packet one-way delay: 14.826 ms
Loss rate: 8.72%
```
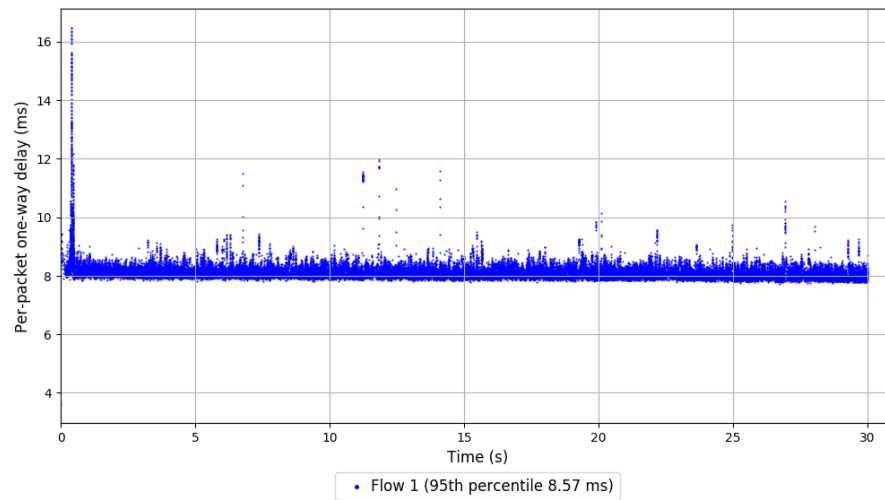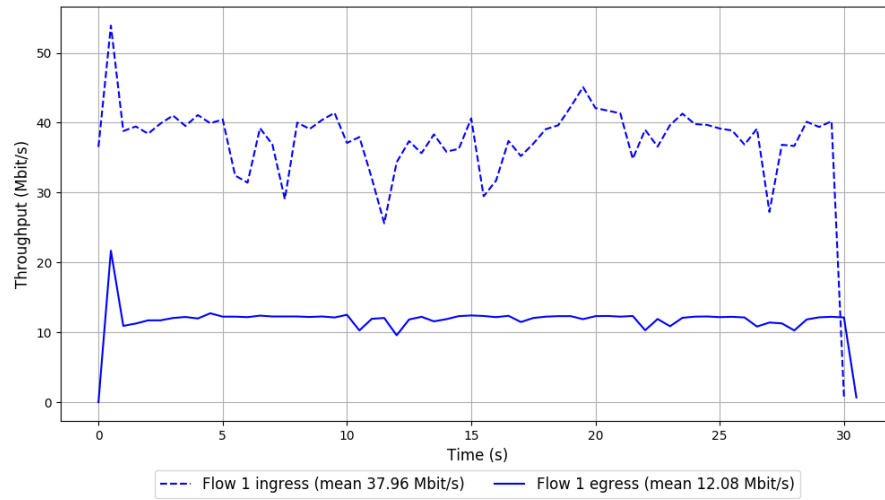
Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 91.00 Mbit/s) --- Flow 1 egress (mean 83.06 Mbit/s)

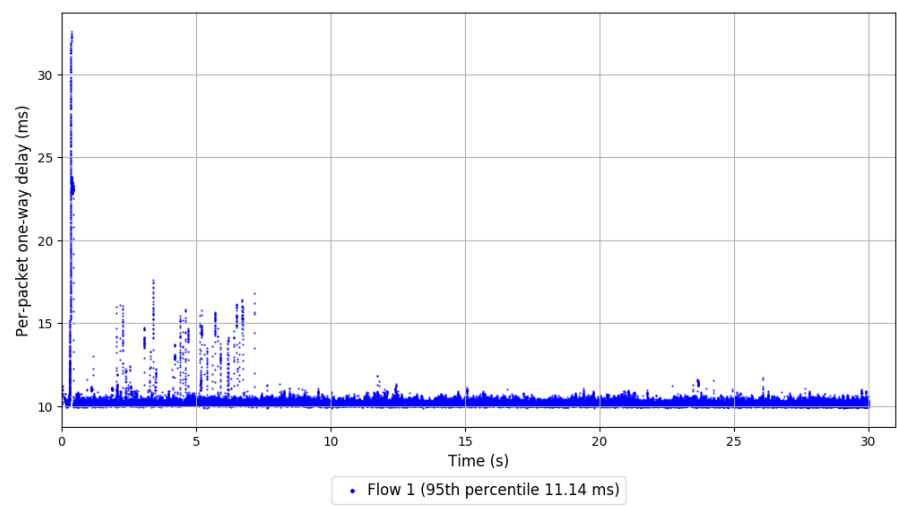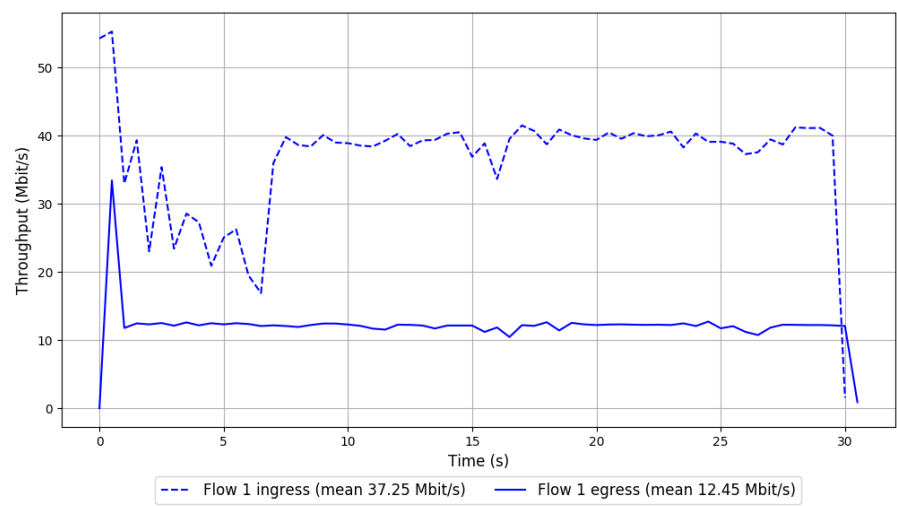Flow 1 (95th percentile 14.83 ms)

```
Run 1: Statistics of Copa

Start at: 2018-10-09 18:00:12
End at: 2018-10-09 18:00:42
Local clock offset: 3.652 ms
Remote clock offset: -2.791 ms


# Below is generated by plot.py at 2018-10-09 19:41:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.08 Mbit/s
95th percentile per-packet one-way delay: 8.575 ms
Loss rate: 68.19%
-- Flow 1:
Average throughput: 12.08 Mbit/s
95th percentile per-packet one-way delay: 8.575 ms
Loss rate: 68.19%
```

Run 1: Report of Copa — Data Link

Flow 1 ingress (mean 37.96 Mbit/s) --- Flow 1 egress (mean 12.08 Mbit/s)

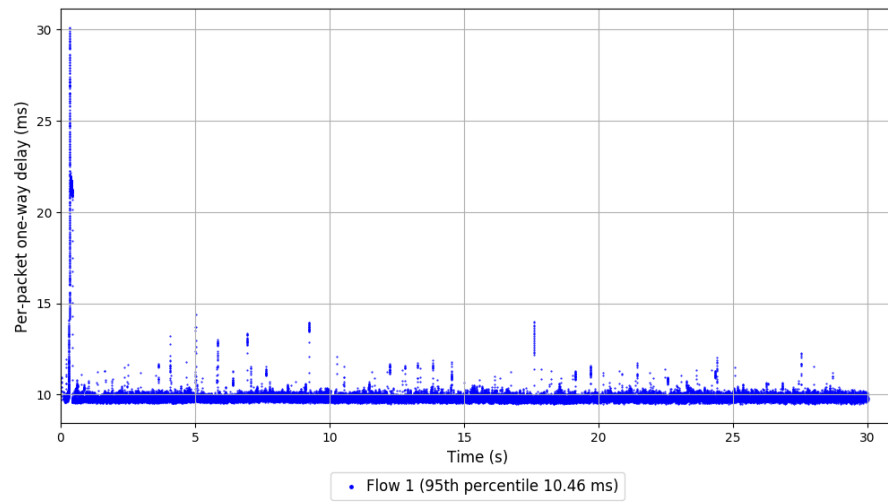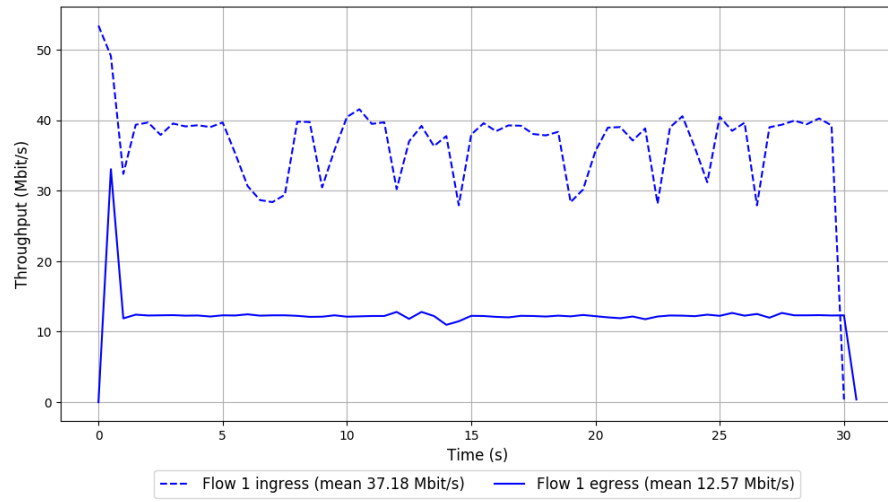Flow 1 (95th percentile 8.57 ms)

```
Run 2: Statistics of Copa

Start at: 2018-10-09 18:21:11
End at: 2018-10-09 18:21:41
Local clock offset: 0.228 ms
Remote clock offset: -1.874 ms


# Below is generated by plot.py at 2018-10-09 19:41:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.45 Mbit/s
95th percentile per-packet one-way delay: 11.144 ms
Loss rate: 66.58%
-- Flow 1:
Average throughput: 12.45 Mbit/s
95th percentile per-packet one-way delay: 11.144 ms
Loss rate: 66.58%
```
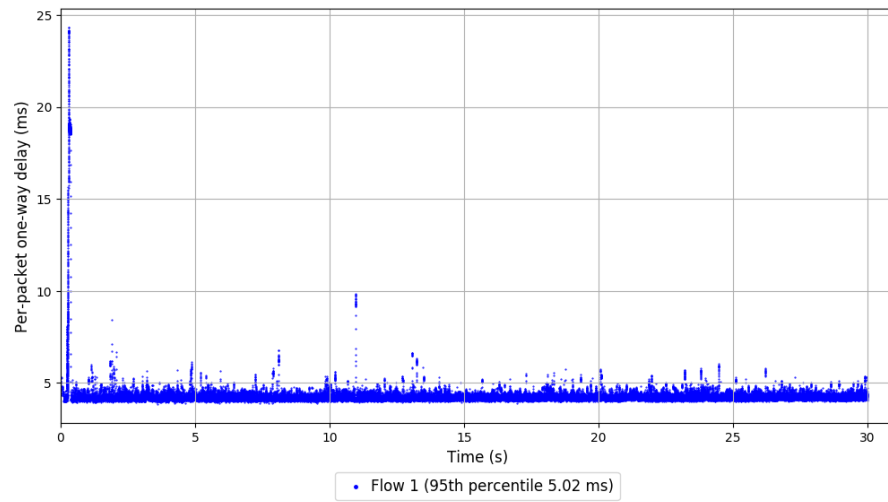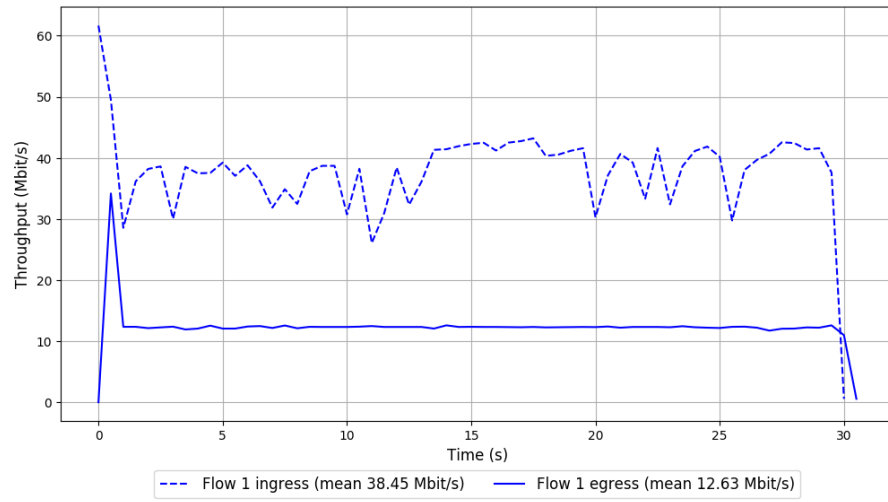
Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2018-10-09 18:41:52
End at: 2018-10-09 18:42:22
Local clock offset: 0.61 ms
Remote clock offset: -1.206 ms


# Below is generated by plot.py at 2018-10-09 19:41:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.57 Mbit/s
95th percentile per-packet one-way delay: 10.462 ms
Loss rate: 66.19%
-- Flow 1:
Average throughput: 12.57 Mbit/s
95th percentile per-packet one-way delay: 10.462 ms
Loss rate: 66.19%
```
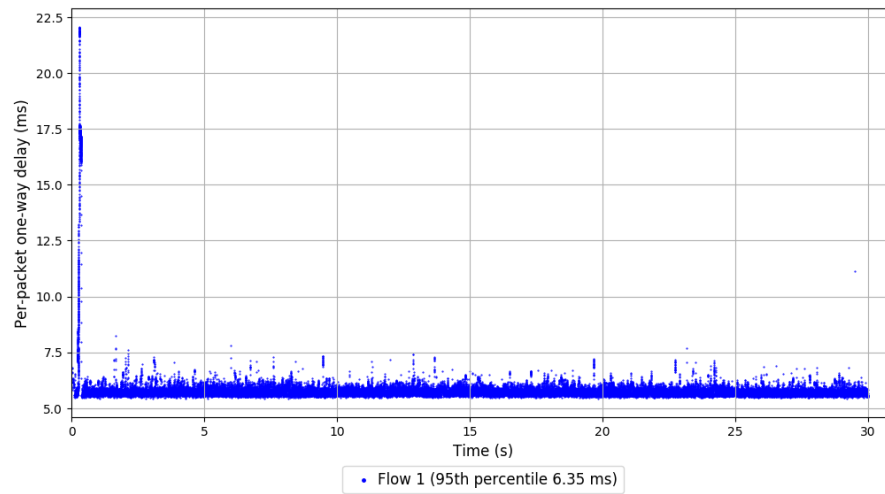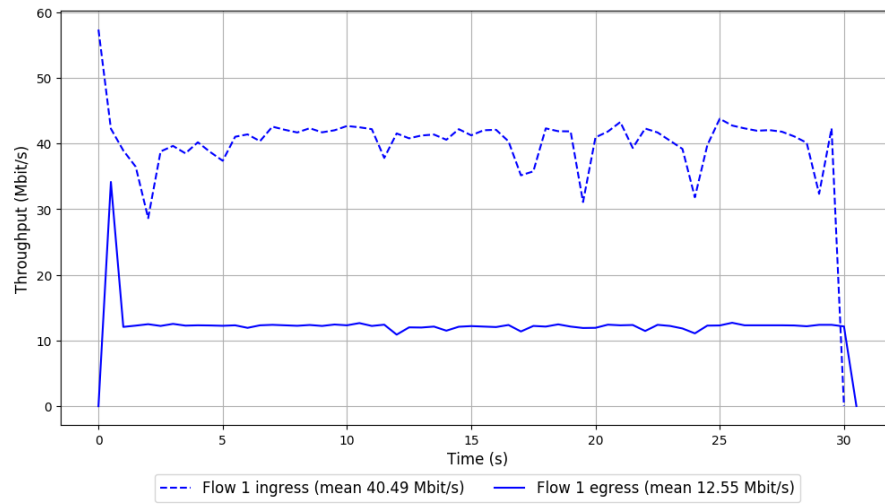
Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2018-10-09 19:02:51
End at: 2018-10-09 19:03:21
Local clock offset: 2.796 ms
Remote clock offset: -1.625 ms


# Below is generated by plot.py at 2018-10-09 19:41:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.63 Mbit/s
95th percentile per-packet one-way delay: 5.024 ms
Loss rate: 67.17%
-- Flow 1:
Average throughput: 12.63 Mbit/s
95th percentile per-packet one-way delay: 5.024 ms
Loss rate: 67.17%
```
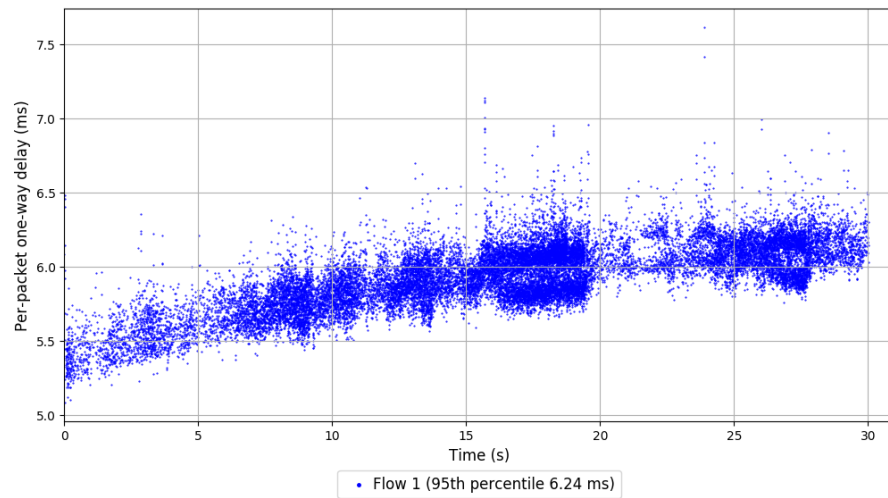
Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2018-10-09 19:23:38
End at: 2018-10-09 19:24:08
Local clock offset: 3.459 ms
Remote clock offset: -1.292 ms

# Below is generated by plot.py at 2018-10-09 19:41:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.55 Mbit/s
95th percentile per-packet one-way delay: 6.347 ms
Loss rate: 69.01%
-- Flow 1:
Average throughput: 12.55 Mbit/s
95th percentile per-packet one-way delay: 6.347 ms
Loss rate: 69.01%
```

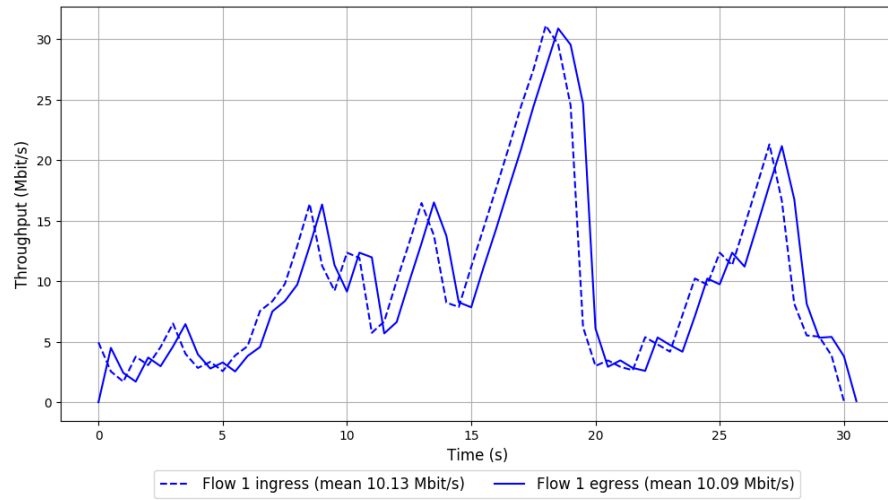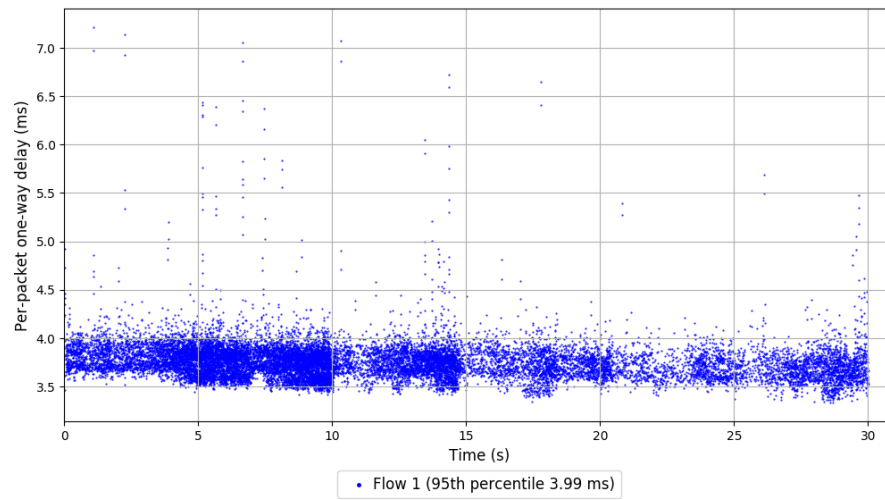Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2018-10-09 17:55:49
End at: 2018-10-09 17:56:19
Local clock offset: -0.973 ms
Remote clock offset: -3.545 ms

# Below is generated by plot.py at 2018-10-09 19:41:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 10.09 Mbit/s
95th percentile per-packet one-way delay: 6.244 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 10.09 Mbit/s
95th percentile per-packet one-way delay: 6.244 ms
Loss rate: 0.39%
```

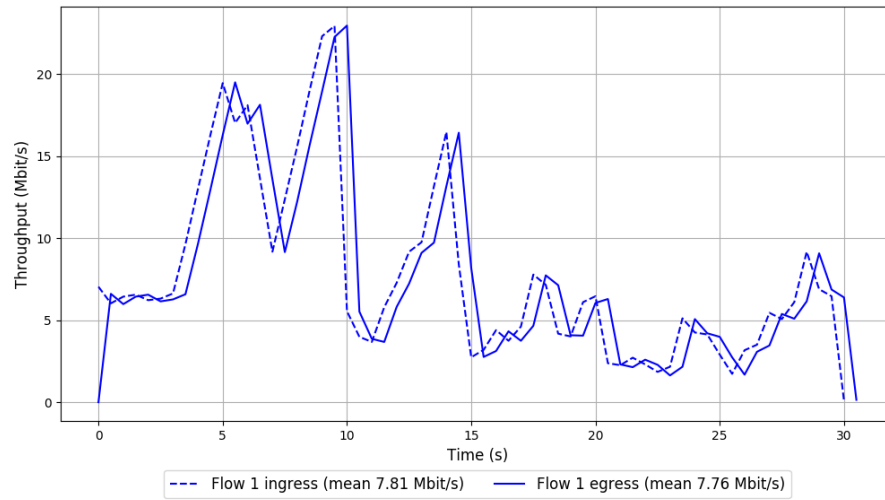Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-10-09 18:16:45
End at: 2018-10-09 18:17:15
Local clock offset: 1.566 ms
Remote clock offset: -2.197 ms


# Below is generated by plot.py at 2018-10-09 19:41:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.76 Mbit/s
95th percentile per-packet one-way delay: 3.993 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 7.76 Mbit/s
95th percentile per-packet one-way delay: 3.993 ms
Loss rate: 0.66%
```

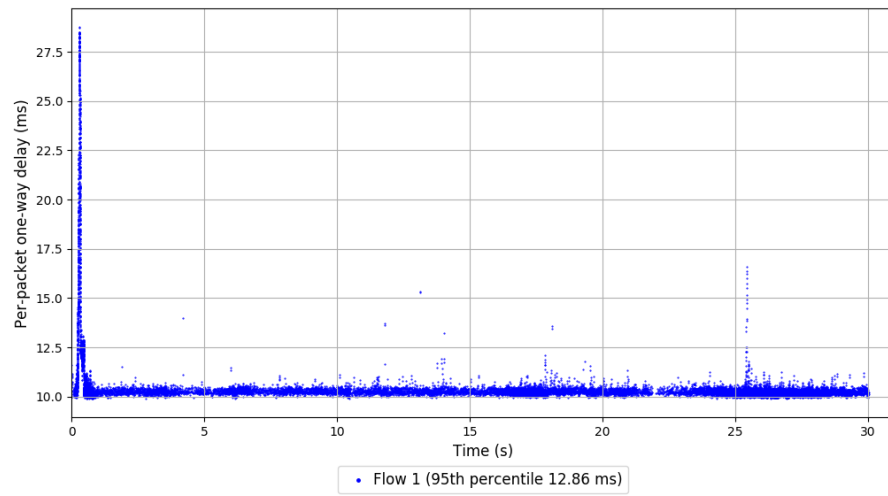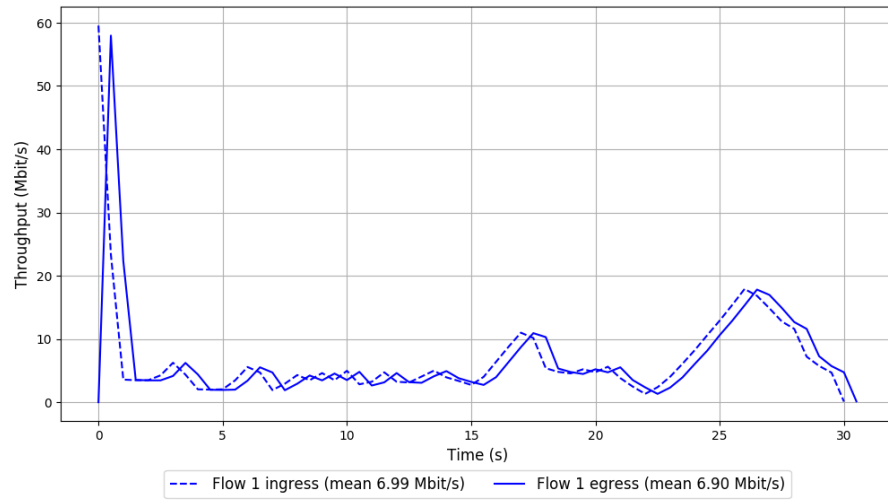Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2018-10-09 18:37:26
End at: 2018-10-09 18:37:56
Local clock offset: -0.817 ms
Remote clock offset: -2.321 ms


# Below is generated by plot.py at 2018-10-09 19:41:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.90 Mbit/s
95th percentile per-packet one-way delay: 12.862 ms
Loss rate: 1.25%
-- Flow 1:
Average throughput: 6.90 Mbit/s
95th percentile per-packet one-way delay: 12.862 ms
Loss rate: 1.25%
```
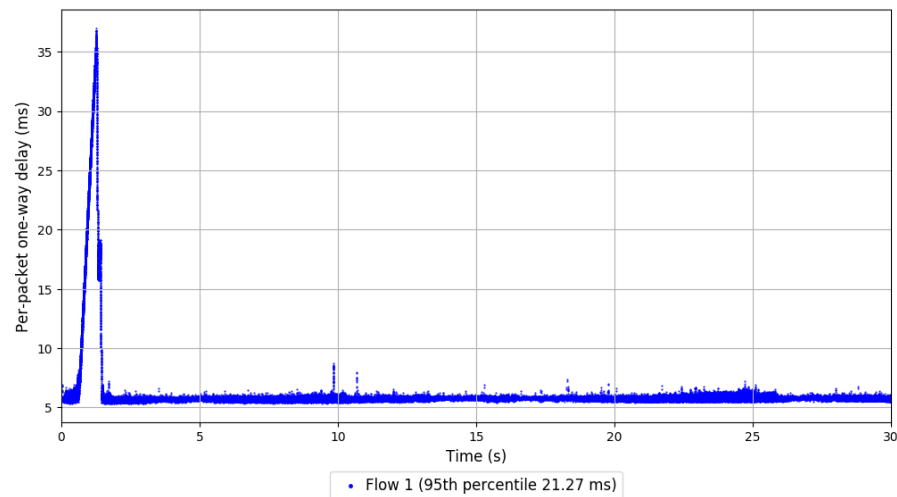
Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 6.99 Mbit/s)   Flow 1 egress (mean 6.90 Mbit/s)

Flow 1 (95th percentile 12.86 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2018-10-09 18:58:22
End at: 2018-10-09 18:58:52
Local clock offset: -0.186 ms
Remote clock offset: -1.55 ms


# Below is generated by plot.py at 2018-10-09 19:41:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 23.21 Mbit/s
95th percentile per-packet one-way delay: 21.265 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 23.21 Mbit/s
95th percentile per-packet one-way delay: 21.265 ms
Loss rate: 0.12%
```
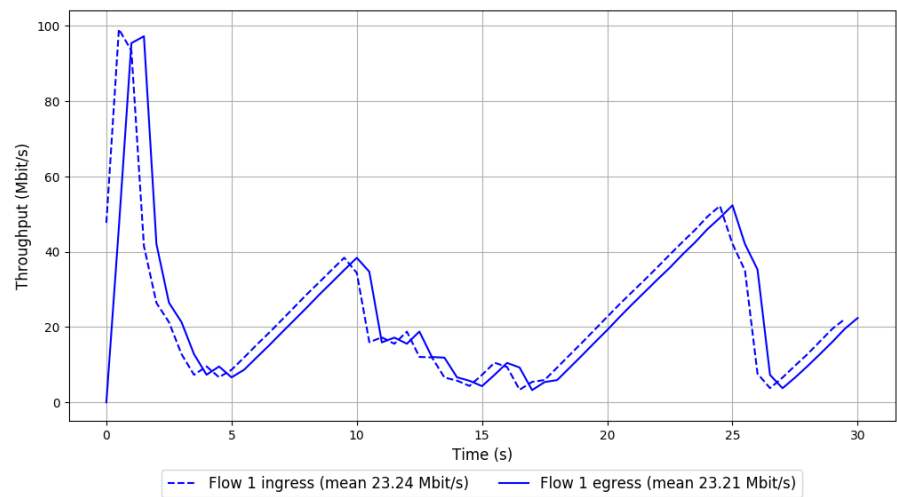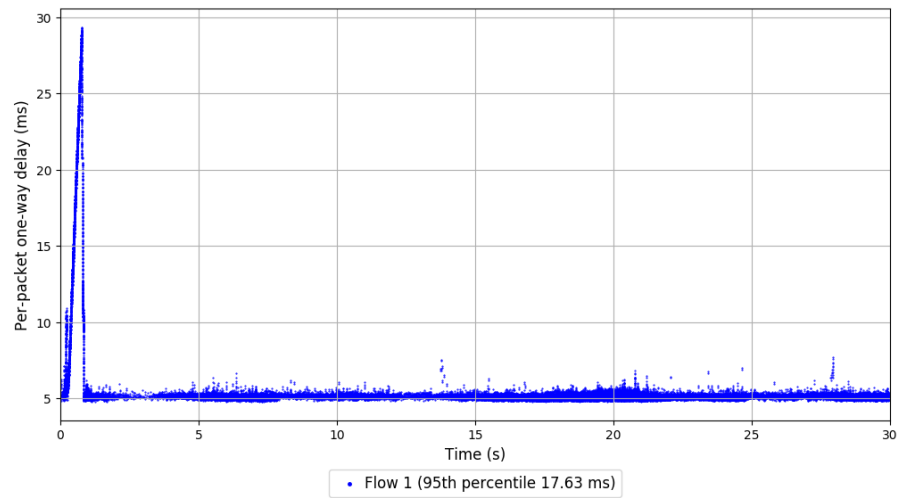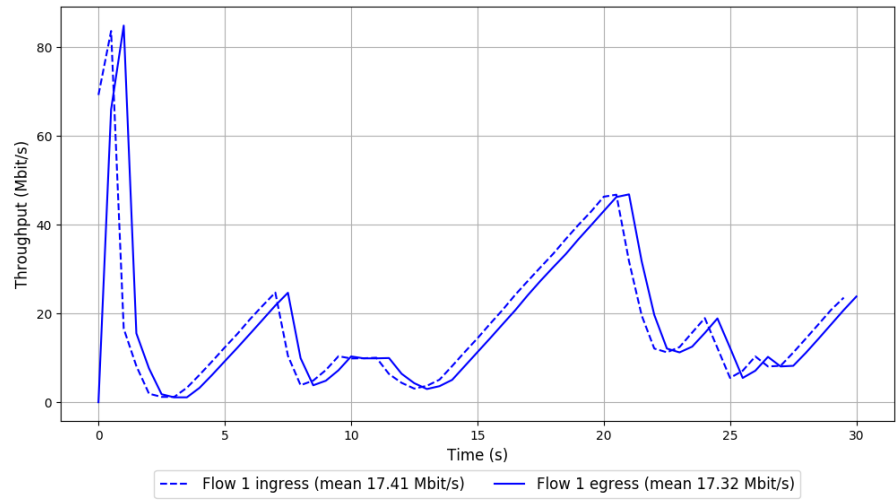
Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2018-10-09 19:19:11
End at: 2018-10-09 19:19:41
Local clock offset: 2.4 ms
Remote clock offset: -2.684 ms


# Below is generated by plot.py at 2018-10-09 19:41:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 17.32 Mbit/s
95th percentile per-packet one-way delay: 17.626 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 17.32 Mbit/s
95th percentile per-packet one-way delay: 17.626 ms
Loss rate: 0.51%
```

Run 5: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 17.41 Mbit/s) --- Flow 1 egress (mean 17.32 Mbit/s)

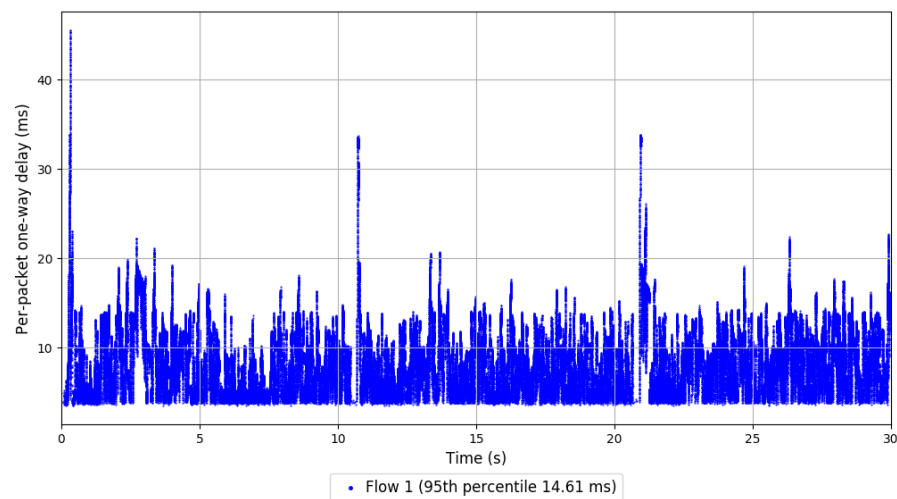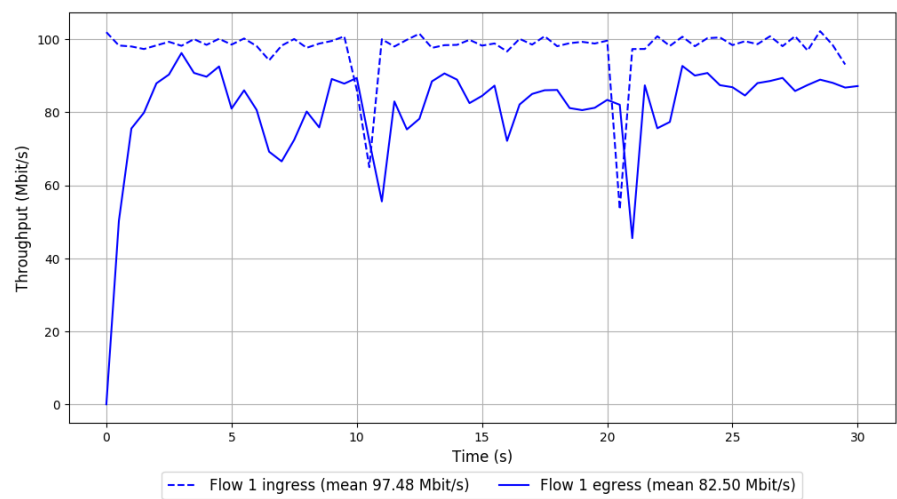
Flow 1 (95th percentile 17.63 ms)

```
Run 1: Statistics of FillP

Start at: 2018-10-09 18:04:54
End at: 2018-10-09 18:05:24
Local clock offset: 2.468 ms
Remote clock offset: -2.693 ms


# Below is generated by plot.py at 2018-10-09 19:42:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 82.50 Mbit/s
95th percentile per-packet one-way delay: 14.613 ms
Loss rate: 15.34%
-- Flow 1:
Average throughput: 82.50 Mbit/s
95th percentile per-packet one-way delay: 14.613 ms
Loss rate: 15.34%
```
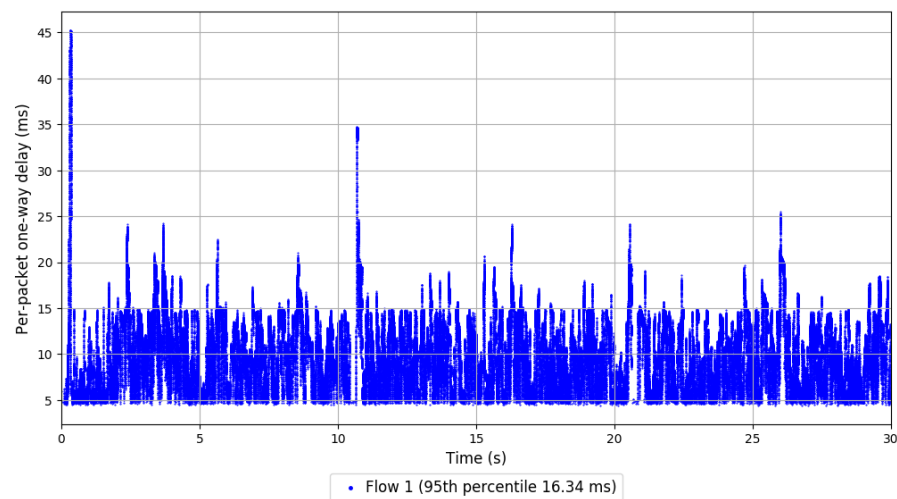
Run 1: Report of FillP — Data Link

Flow 1 ingress (mean 97.48 Mbit/s) --- Flow 1 egress (mean 82.50 Mbit/s)

Flow 1 (95th percentile 14.61 ms)

```
Run 2: Statistics of FillP

Start at: 2018-10-09 18:25:53
End at: 2018-10-09 18:26:23
Local clock offset: -0.136 ms
Remote clock offset: -1.75 ms

# Below is generated by plot.py at 2018-10-09 19:42:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 84.37 Mbit/s
95th percentile per-packet one-way delay: 16.341 ms
Loss rate: 13.87%
-- Flow 1:
Average throughput: 84.37 Mbit/s
95th percentile per-packet one-way delay: 16.341 ms
Loss rate: 13.87%
```
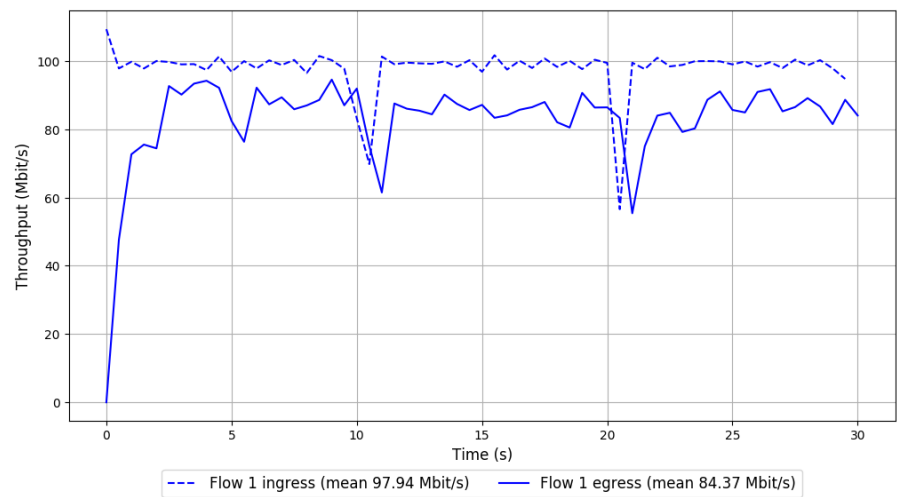
Run 2: Report of FillP — Data Link

Flow 1 ingress (mean 97.94 Mbit/s) — Flow 1 egress (mean 84.37 Mbit/s)

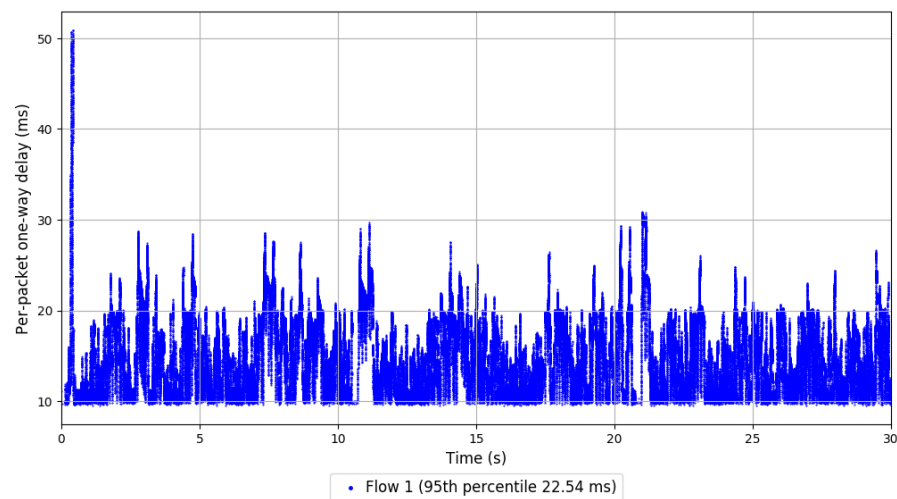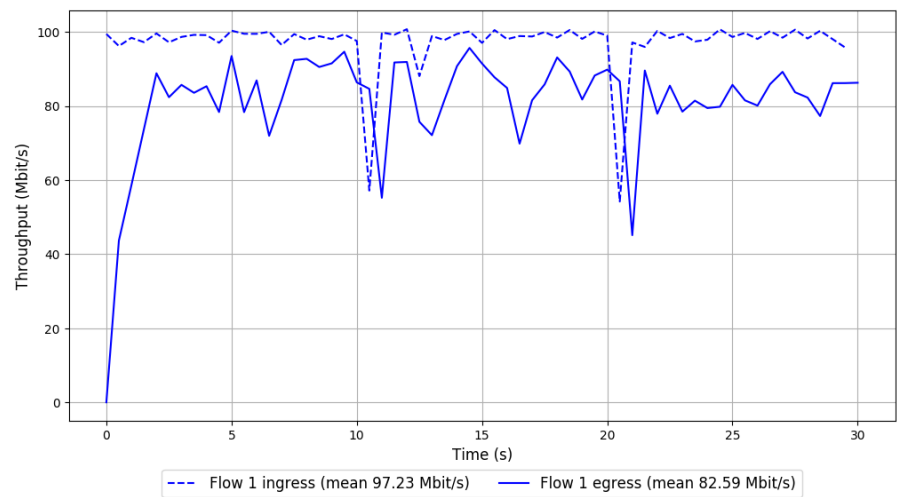• Flow 1 (95th percentile 16.34 ms)

```
Run 3: Statistics of FillP

Start at: 2018-10-09 18:46:41
End at: 2018-10-09 18:47:11
Local clock offset: -0.057 ms
Remote clock offset: -1.566 ms


# Below is generated by plot.py at 2018-10-09 19:42:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 82.59 Mbit/s
95th percentile per-packet one-way delay: 22.539 ms
Loss rate: 15.05%
-- Flow 1:
Average throughput: 82.59 Mbit/s
95th percentile per-packet one-way delay: 22.539 ms
Loss rate: 15.05%
```
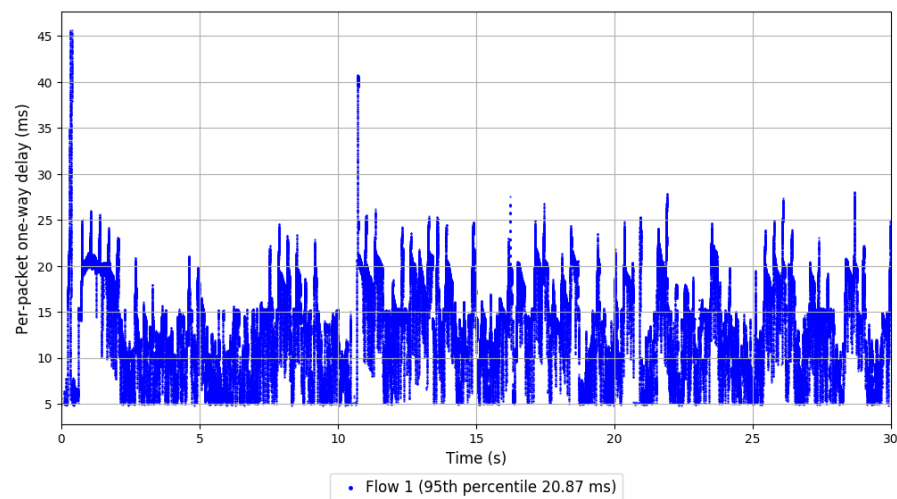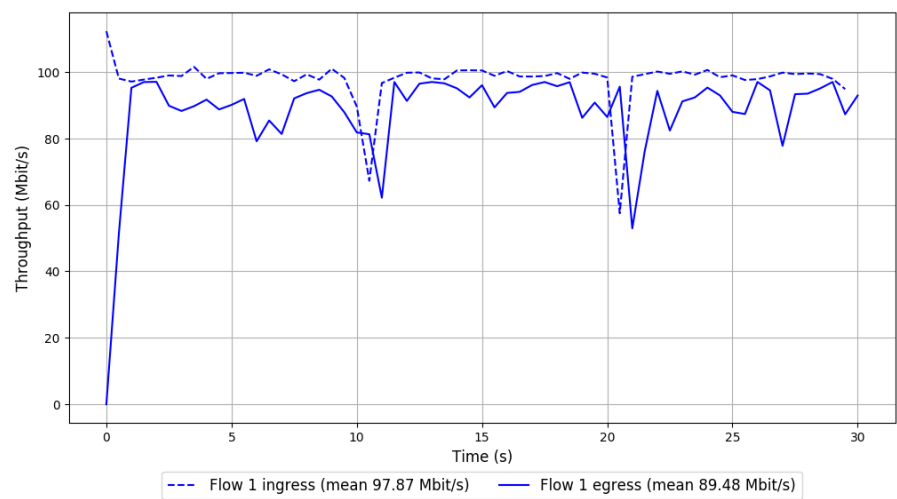
Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2018-10-09 19:07:39
End at: 2018-10-09 19:08:09
Local clock offset: 2.543 ms
Remote clock offset: -0.597 ms


# Below is generated by plot.py at 2018-10-09 19:42:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.48 Mbit/s
95th percentile per-packet one-way delay: 20.871 ms
Loss rate: 8.53%
-- Flow 1:
Average throughput: 89.48 Mbit/s
95th percentile per-packet one-way delay: 20.871 ms
Loss rate: 8.53%
```

Run 4: Report of FillP — Data Link

Flow 1 ingress (mean 97.87 Mbit/s)   Flow 1 egress (mean 89.48 Mbit/s)

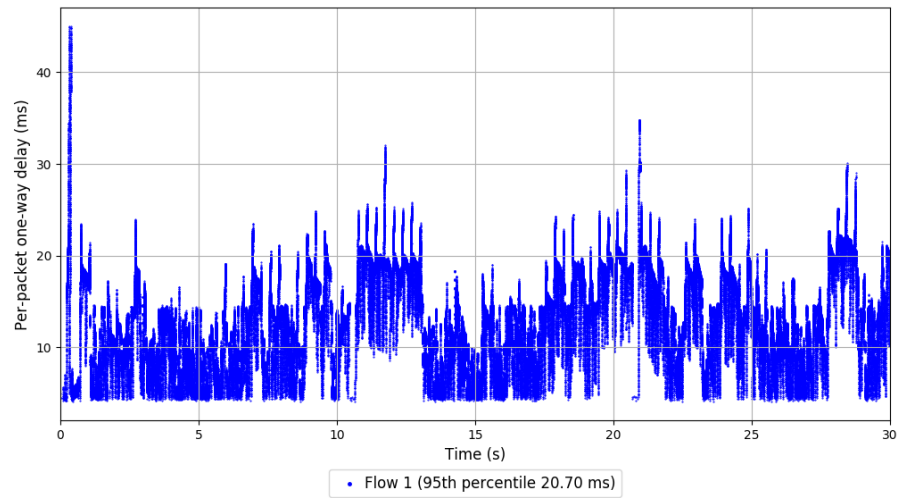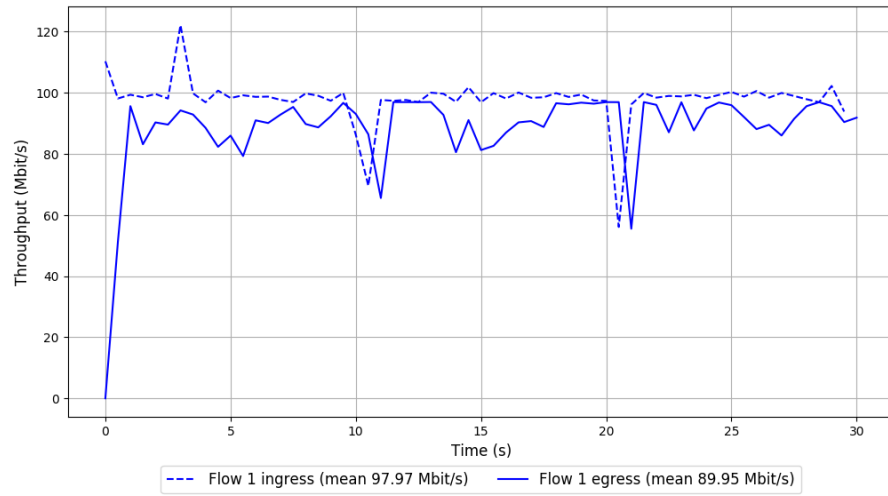• Flow 1 (95th percentile 20.87 ms)

```
Run 5: Statistics of FillP

Start at: 2018-10-09 19:28:20
End at: 2018-10-09 19:28:50
Local clock offset: 3.26 ms
Remote clock offset: -1.628 ms


# Below is generated by plot.py at 2018-10-09 19:42:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.95 Mbit/s
95th percentile per-packet one-way delay: 20.703 ms
Loss rate: 8.14%
-- Flow 1:
Average throughput: 89.95 Mbit/s
95th percentile per-packet one-way delay: 20.703 ms
Loss rate: 8.14%
```
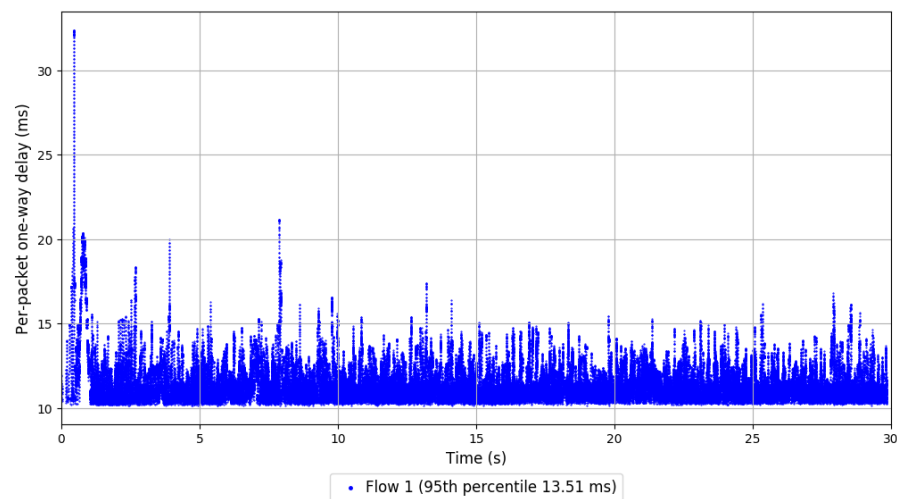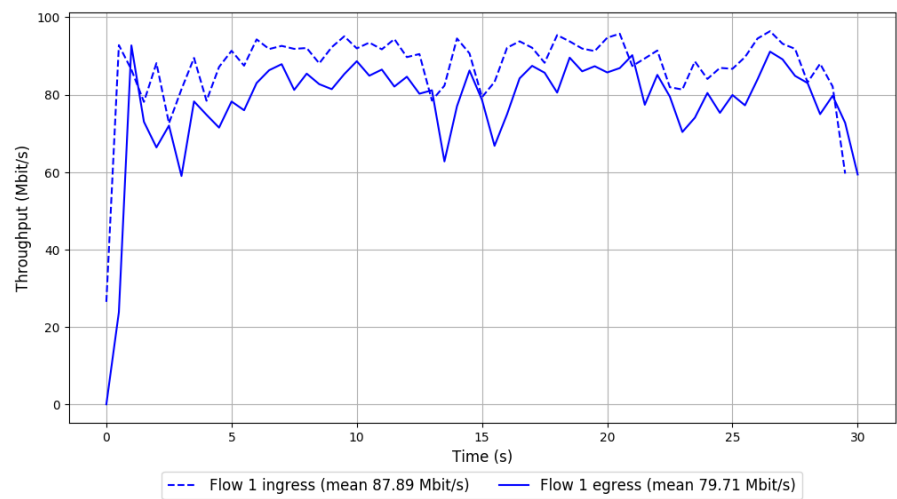
Run 5: Report of FillP — Data Link

Flow 1 ingress (mean 97.97 Mbit/s) --- Flow 1 egress (mean 89.95 Mbit/s)

· Flow 1 (95th percentile 20.70 ms)

```
Run 1: Statistics of Indigo

Start at: 2018-10-09 18:07:17
End at: 2018-10-09 18:07:47
Local clock offset: 2.576 ms
Remote clock offset: -1.798 ms


# Below is generated by plot.py at 2018-10-09 19:42:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 79.71 Mbit/s
95th percentile per-packet one-way delay: 13.508 ms
Loss rate: 9.31%
-- Flow 1:
Average throughput: 79.71 Mbit/s
95th percentile per-packet one-way delay: 13.508 ms
Loss rate: 9.31%
```

Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-10-09 18:28:16
End at: 2018-10-09 18:28:46
Local clock offset: 1.932 ms
Remote clock offset: -2.531 ms


# Below is generated by plot.py at 2018-10-09 19:42:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.13 Mbit/s
95th percentile per-packet one-way delay: 4.638 ms
Loss rate: 8.12%
-- Flow 1:
Average throughput: 85.13 Mbit/s
95th percentile per-packet one-way delay: 4.638 ms
Loss rate: 8.12%
```
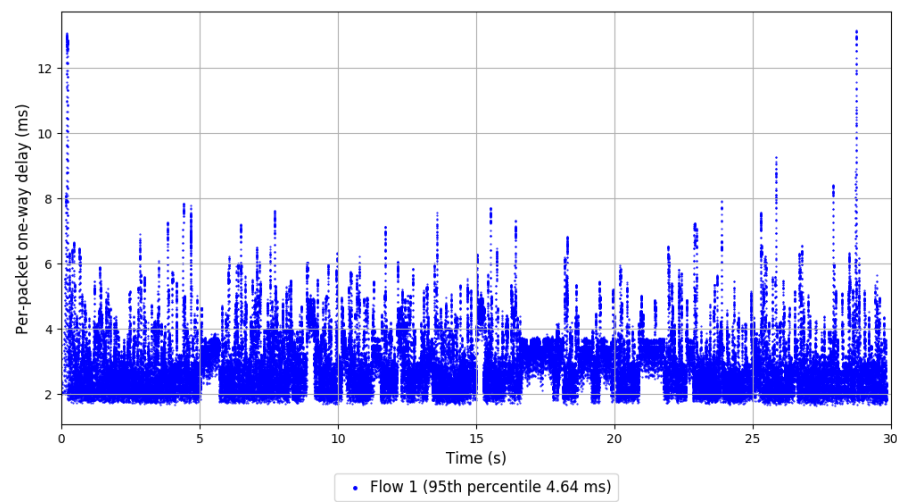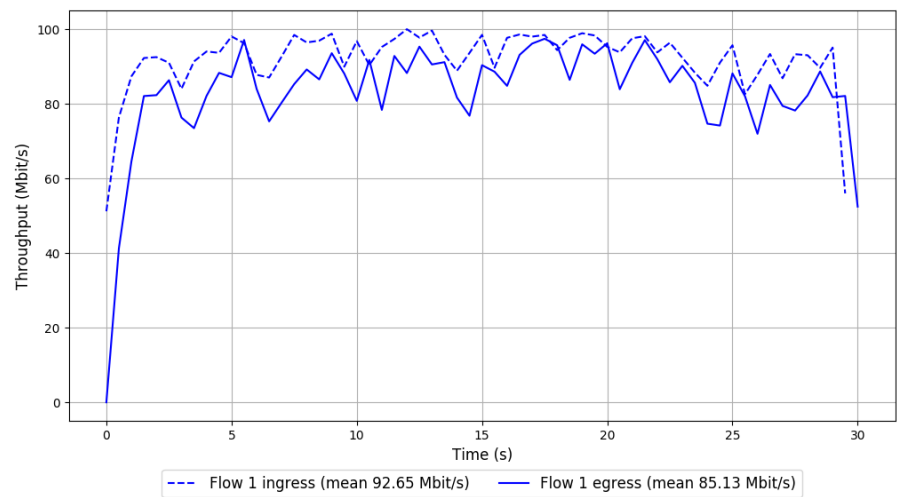
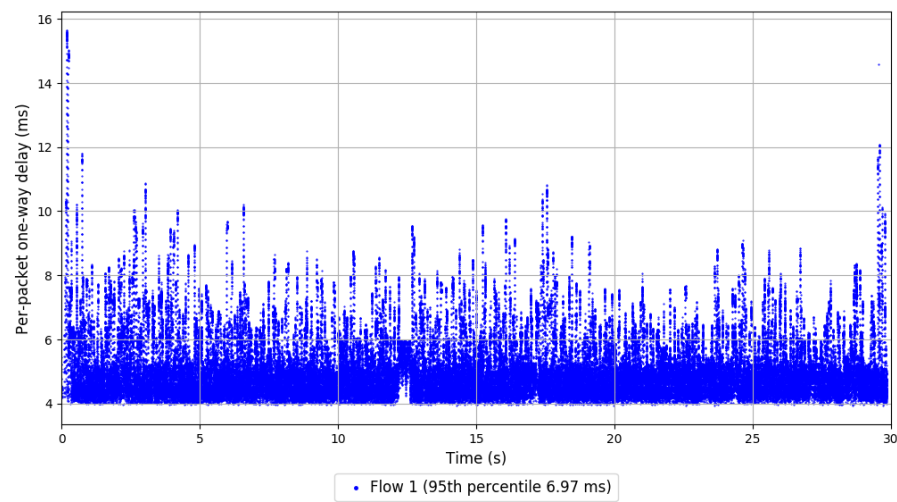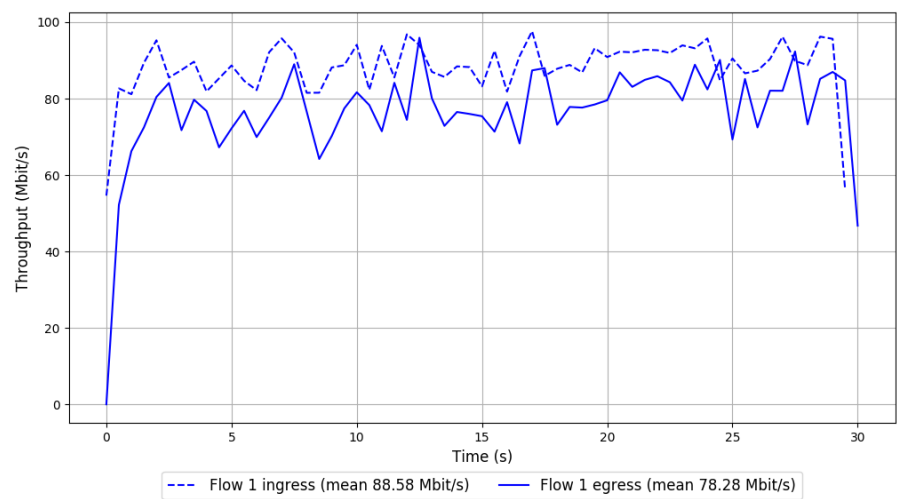Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2018-10-09 18:48:59
End at: 2018-10-09 18:49:29
Local clock offset: -0.093 ms
Remote clock offset: -1.883 ms


# Below is generated by plot.py at 2018-10-09 19:42:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 78.28 Mbit/s
95th percentile per-packet one-way delay: 6.966 ms
Loss rate: 11.62%
-- Flow 1:
Average throughput: 78.28 Mbit/s
95th percentile per-packet one-way delay: 6.966 ms
Loss rate: 11.62%
```

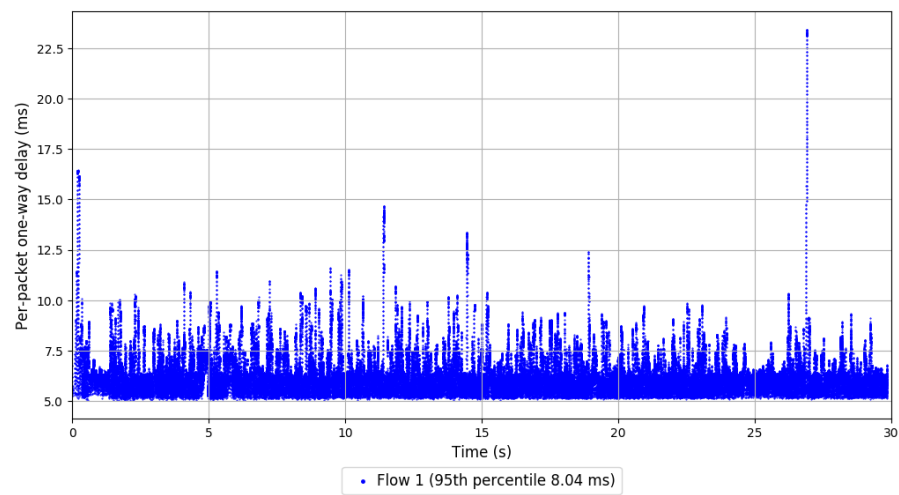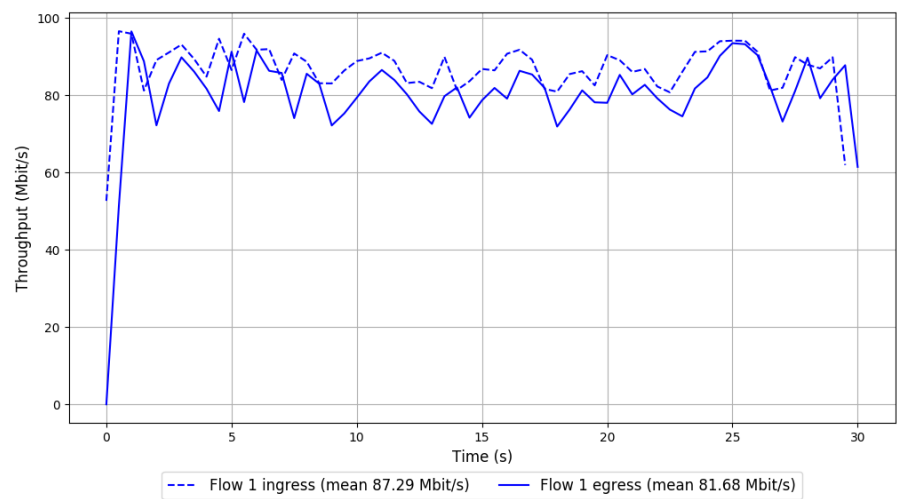## Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-10-09 19:09:56
End at: 2018-10-09 19:10:27
Local clock offset: 2.669 ms
Remote clock offset: -1.404 ms


# Below is generated by plot.py at 2018-10-09 19:43:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 81.68 Mbit/s
95th percentile per-packet one-way delay: 8.036 ms
Loss rate: 6.43%
-- Flow 1:
Average throughput: 81.68 Mbit/s
95th percentile per-packet one-way delay: 8.036 ms
Loss rate: 6.43%
```

Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2018-10-09 19:30:40
End at: 2018-10-09 19:31:10
Local clock offset: 2.866 ms
Remote clock offset: -1.49 ms


# Below is generated by plot.py at 2018-10-09 19:43:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 79.14 Mbit/s
95th percentile per-packet one-way delay: 8.680 ms
Loss rate: 7.51%
-- Flow 1:
Average throughput: 79.14 Mbit/s
95th percentile per-packet one-way delay: 8.680 ms
Loss rate: 7.51%
```
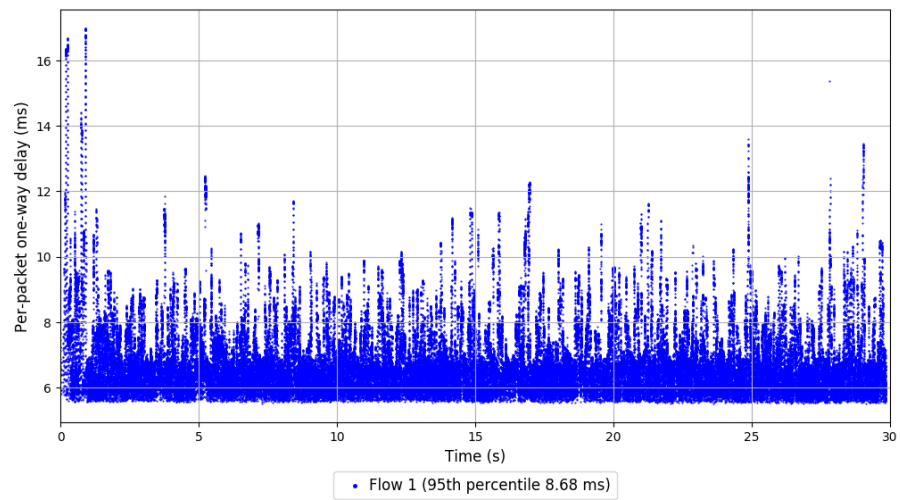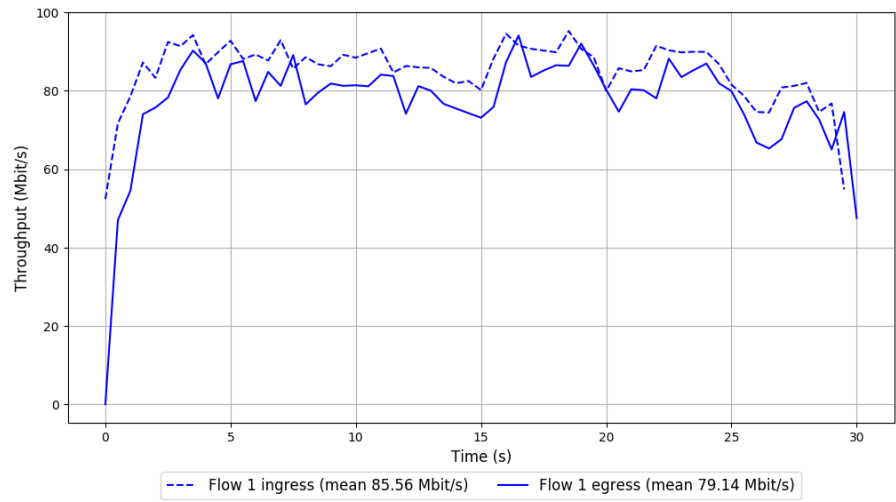
Run 5: Report of Indigo — Data Link

Flow 1 ingress (mean 85.56 Mbit/s) ----- Flow 1 egress (mean 79.14 Mbit/s)

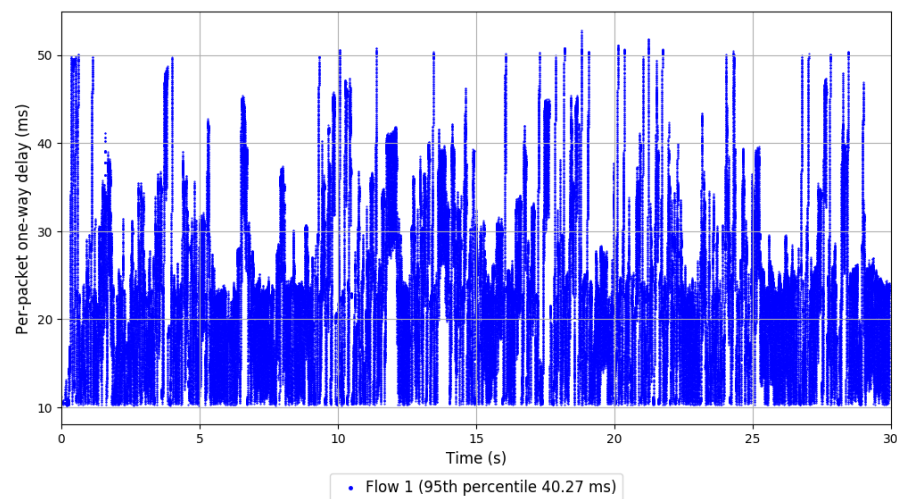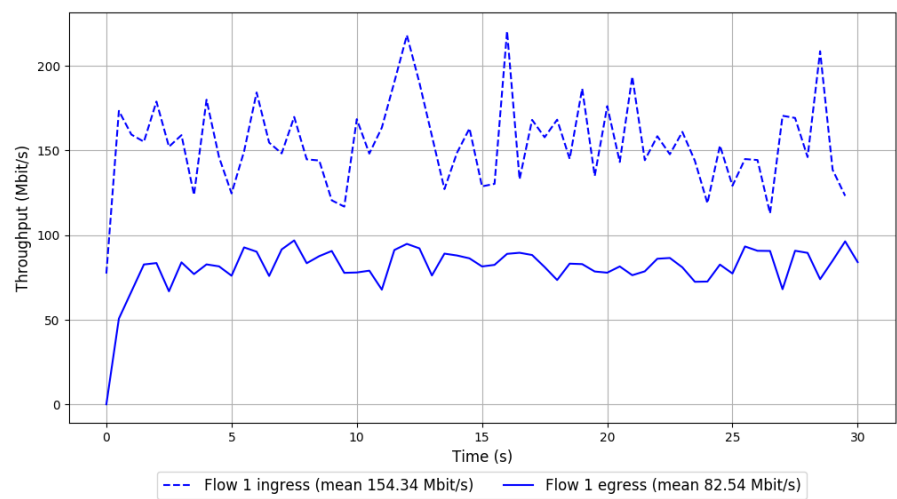Flow 1 (95th percentile 8.68 ms)

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

Start at: 2018-10-09 18:10:59
End at: 2018-10-09 18:11:29
Local clock offset: 1.883 ms
Remote clock offset: -2.624 ms


# Below is generated by plot.py at 2018-10-09 19:43:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 82.54 Mbit/s
95th percentile per-packet one-way delay: 40.274 ms
Loss rate: 46.50%
-- Flow 1:
Average throughput: 82.54 Mbit/s
95th percentile per-packet one-way delay: 40.274 ms
Loss rate: 46.50%
```

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

```
Run 2: Statistics of Indigo-96d2da3

Start at: 2018-10-09 18:31:44
End at: 2018-10-09 18:32:14
Local clock offset: 1.45 ms
Remote clock offset: -1.8 ms


# Below is generated by plot.py at 2018-10-09 19:43:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 82.71 Mbit/s
95th percentile per-packet one-way delay: 29.383 ms
Loss rate: 48.10%
-- Flow 1:
Average throughput: 82.71 Mbit/s
95th percentile per-packet one-way delay: 29.383 ms
Loss rate: 48.10%
```
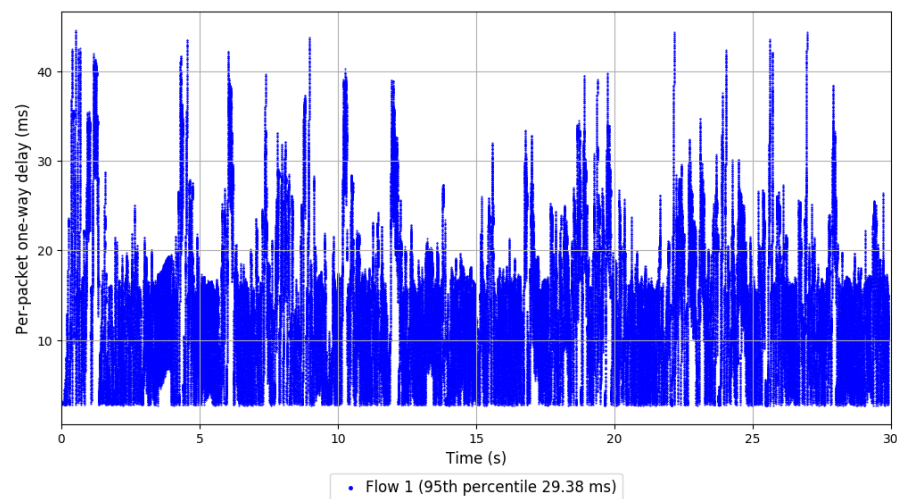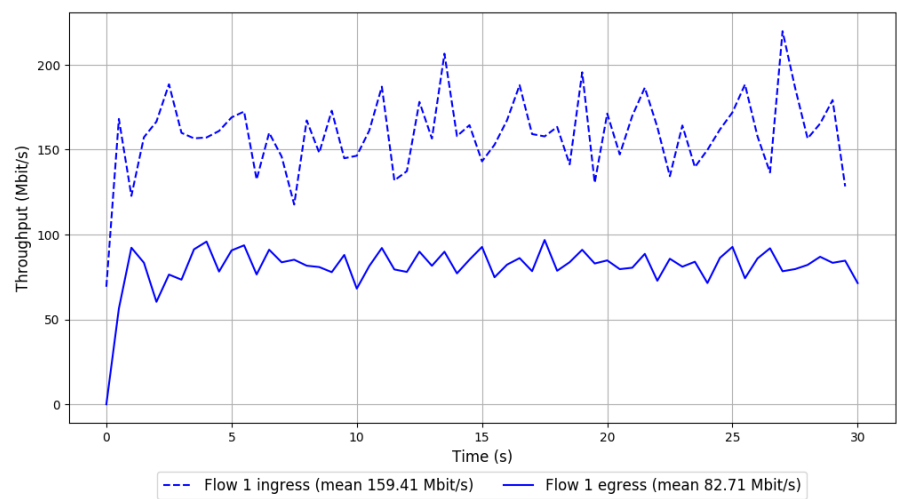
Run 2: Report of Indigo-96d2da3 — Data Link

```
Run 3: Statistics of Indigo-96d2da3

Start at: 2018-10-09 18:52:34
End at: 2018-10-09 18:53:04
Local clock offset: 1.411 ms
Remote clock offset: -2.087 ms


# Below is generated by plot.py at 2018-10-09 19:43:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 81.22 Mbit/s
95th percentile per-packet one-way delay: 33.794 ms
Loss rate: 47.51%
-- Flow 1:
Average throughput: 81.22 Mbit/s
95th percentile per-packet one-way delay: 33.794 ms
Loss rate: 47.51%
```
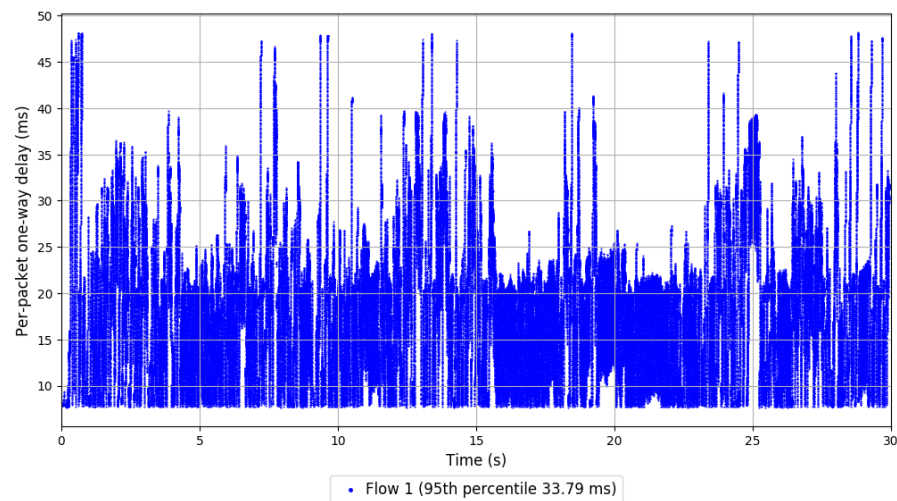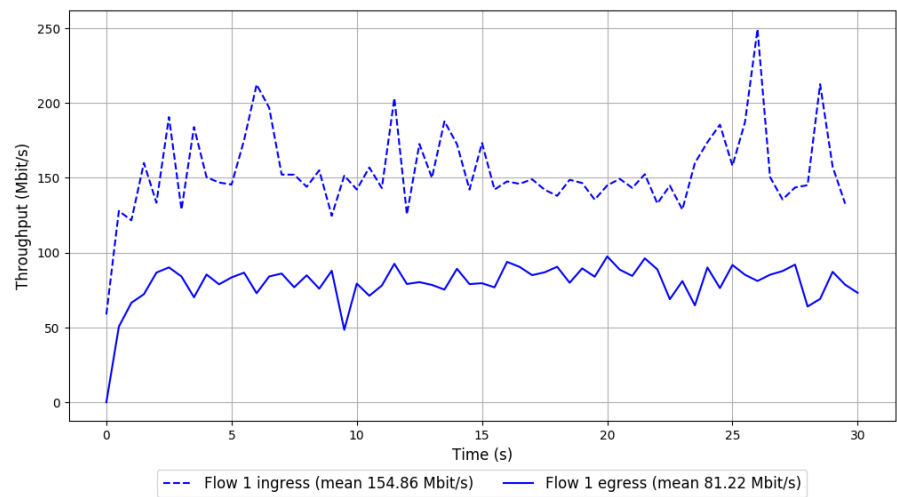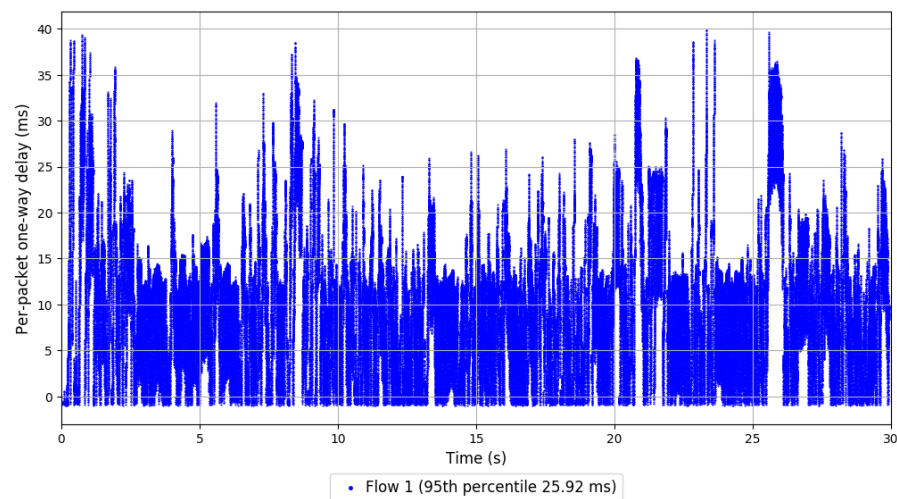
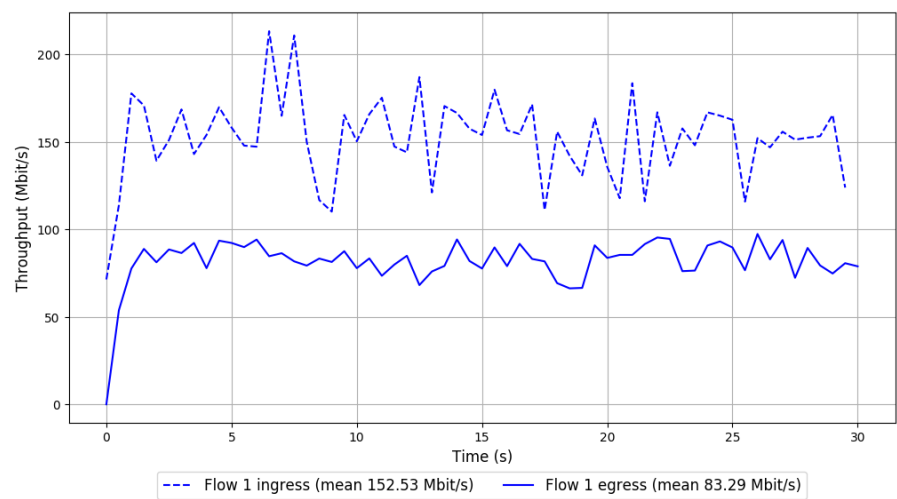Run 3: Report of Indigo-96d2da3 — Data Link

```
Run 4: Statistics of Indigo-96d2da3

Start at: 2018-10-09 19:13:29
End at: 2018-10-09 19:13:59
Local clock offset: 1.325 ms
Remote clock offset: -8.382 ms

# Below is generated by plot.py at 2018-10-09 19:43:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 83.29 Mbit/s
95th percentile per-packet one-way delay: 25.918 ms
Loss rate: 45.38%
-- Flow 1:
Average throughput: 83.29 Mbit/s
95th percentile per-packet one-way delay: 25.918 ms
Loss rate: 45.38%
```

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

```
Run 5: Statistics of Indigo-96d2da3

Start at: 2018-10-09 19:34:12
End at: 2018-10-09 19:34:42
Local clock offset: 2.448 ms
Remote clock offset: -1.079 ms


# Below is generated by plot.py at 2018-10-09 19:43:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 80.39 Mbit/s
95th percentile per-packet one-way delay: 30.959 ms
Loss rate: 49.56%
-- Flow 1:
Average throughput: 80.39 Mbit/s
95th percentile per-packet one-way delay: 30.959 ms
Loss rate: 49.56%
```
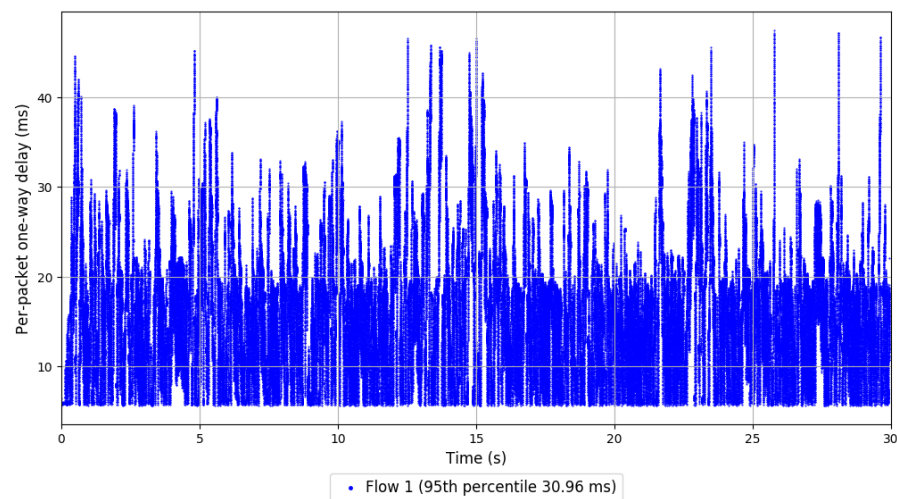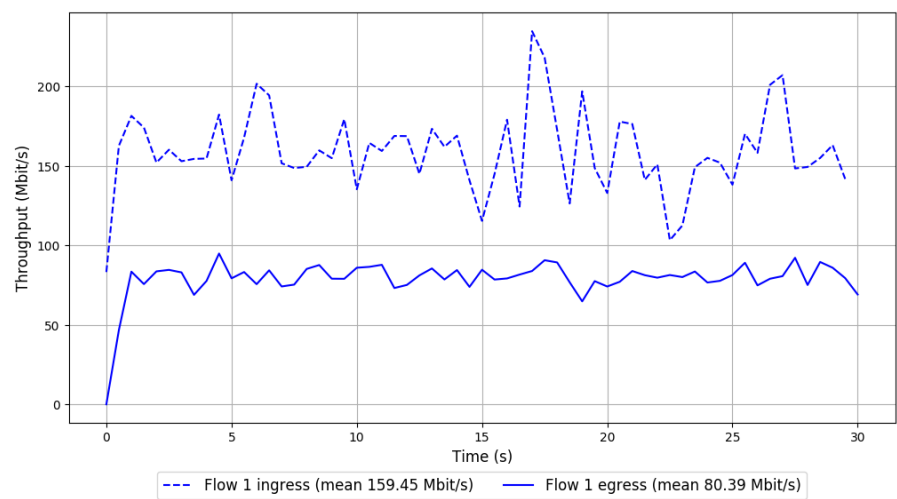
Run 5: Report of Indigo-96d2da3 — Data Link

Flow 1 ingress (mean 159.45 Mbit/s) --- Flow 1 egress (mean 80.39 Mbit/s)

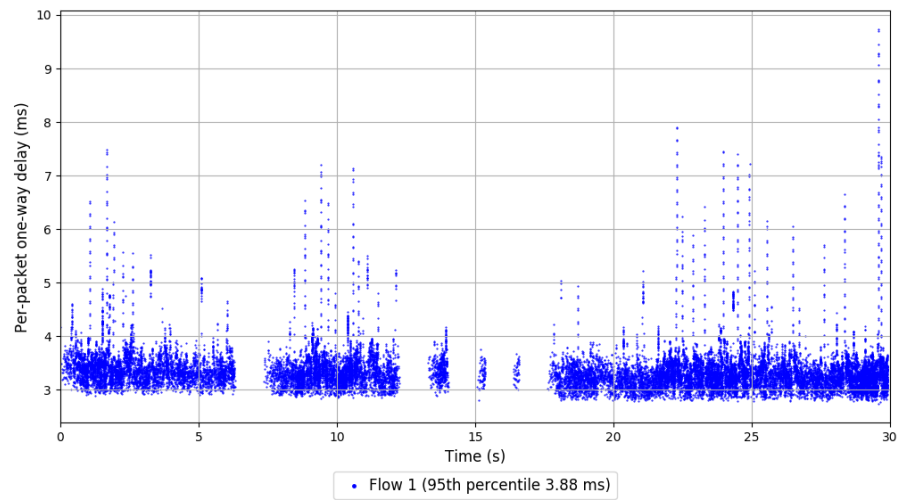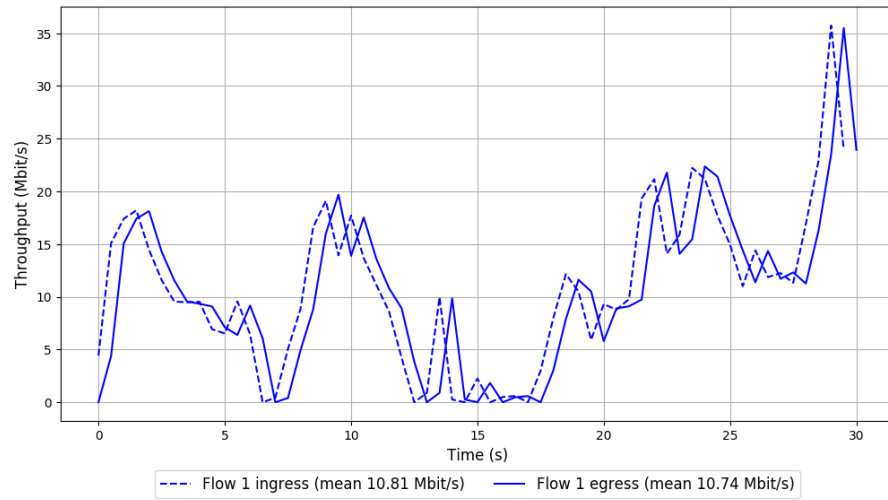

• Flow 1 (95th percentile 30.96 ms)

```
Run 1: Statistics of LEDBAT

Start at: 2018-10-09 18:15:39
End at: 2018-10-09 18:16:09
Local clock offset: 2.599 ms
Remote clock offset: -1.994 ms


# Below is generated by plot.py at 2018-10-09 19:43:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 10.74 Mbit/s
95th percentile per-packet one-way delay: 3.880 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 10.74 Mbit/s
95th percentile per-packet one-way delay: 3.880 ms
Loss rate: 0.73%
```

Run 1: Report of LEDBAT — Data Link

Flow 1 ingress (mean 10.81 Mbit/s) — — —   Flow 1 egress (mean 10.74 Mbit/s) ———
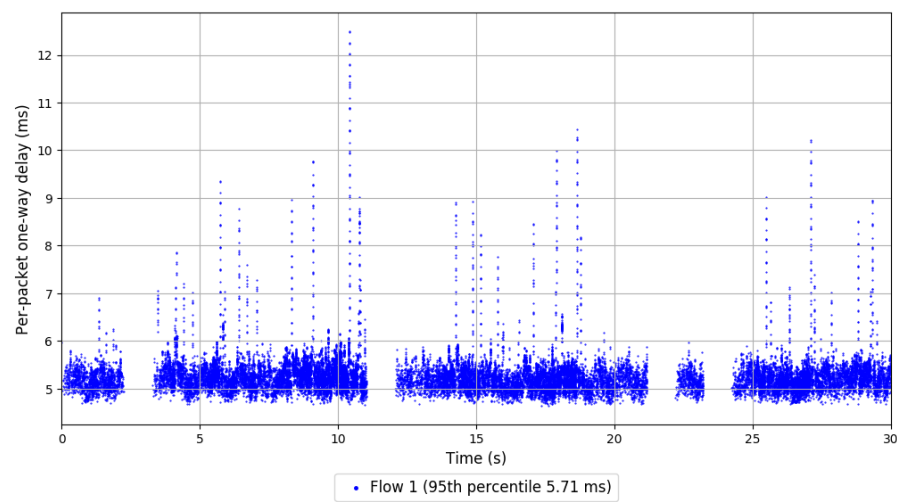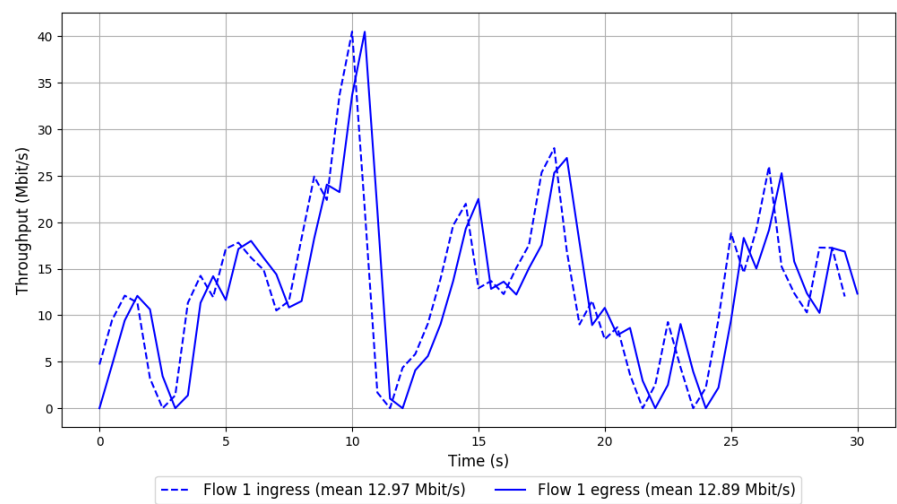

Flow 1 (95th percentile 3.88 ms)

```
Run 2: Statistics of LEDBAT

Start at: 2018-10-09 18:36:20
End at: 2018-10-09 18:36:50
Local clock offset: -0.526 ms
Remote clock offset: -1.815 ms

# Below is generated by plot.py at 2018-10-09 19:43:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.89 Mbit/s
95th percentile per-packet one-way delay: 5.713 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 12.89 Mbit/s
95th percentile per-packet one-way delay: 5.713 ms
Loss rate: 0.65%
```
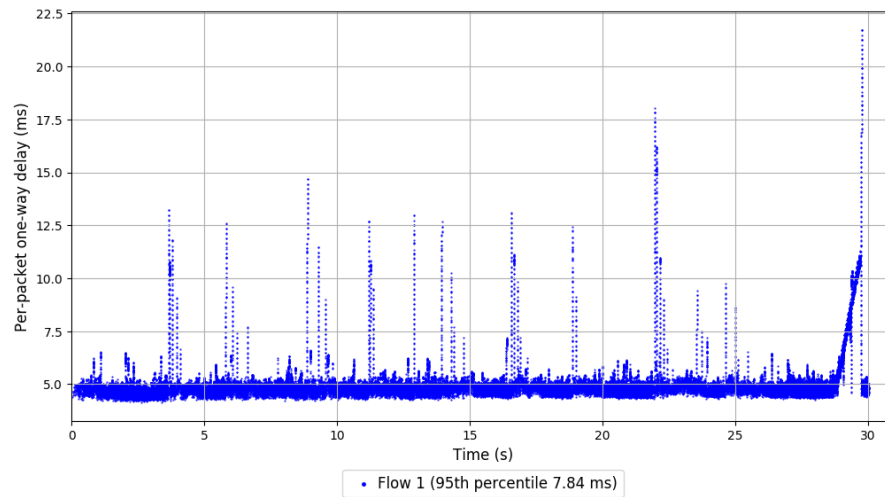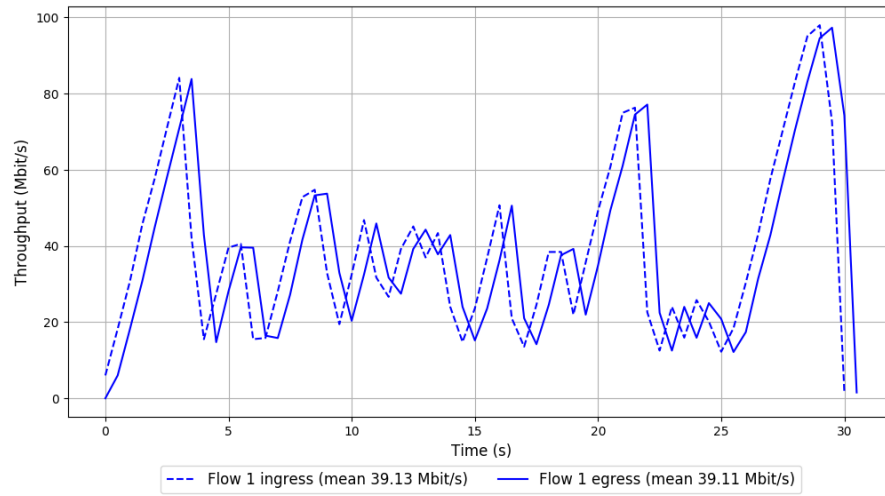
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2018-10-09 18:57:11
End at: 2018-10-09 18:57:41
Local clock offset: 0.672 ms
Remote clock offset: -1.559 ms


# Below is generated by plot.py at 2018-10-09 19:43:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 39.11 Mbit/s
95th percentile per-packet one-way delay: 7.844 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 39.11 Mbit/s
95th percentile per-packet one-way delay: 7.844 ms
Loss rate: 0.05%
```

Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2018-10-09 19:18:03
End at: 2018-10-09 19:18:33
Local clock offset: 2.173 ms
Remote clock offset: -2.0 ms


# Below is generated by plot.py at 2018-10-09 19:43:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 23.52 Mbit/s
95th percentile per-packet one-way delay: 6.895 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 23.52 Mbit/s
95th percentile per-packet one-way delay: 6.895 ms
Loss rate: 0.14%
```
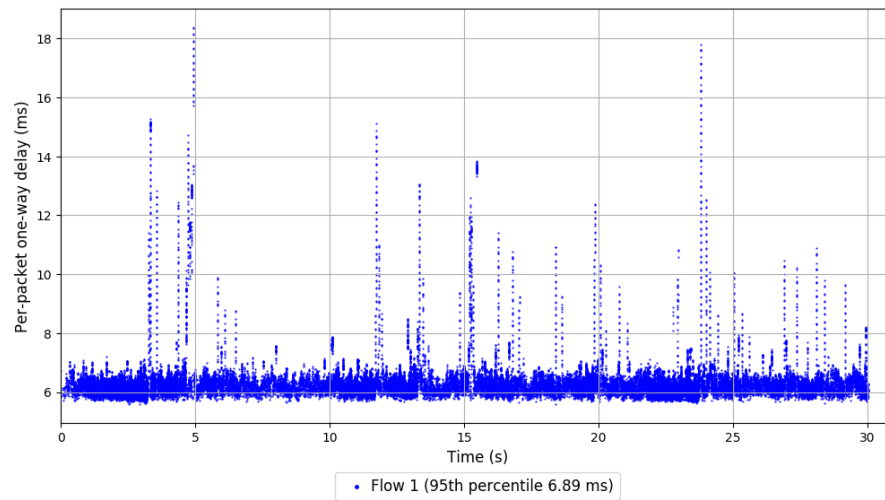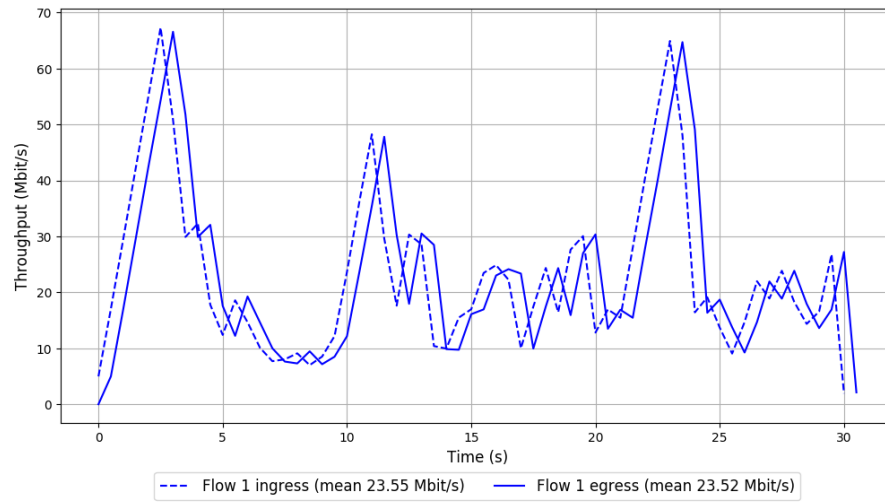
Run 4: Report of LEDBAT — Data Link

Flow 1 ingress (mean 23.55 Mbit/s) --- Flow 1 egress (mean 23.52 Mbit/s)
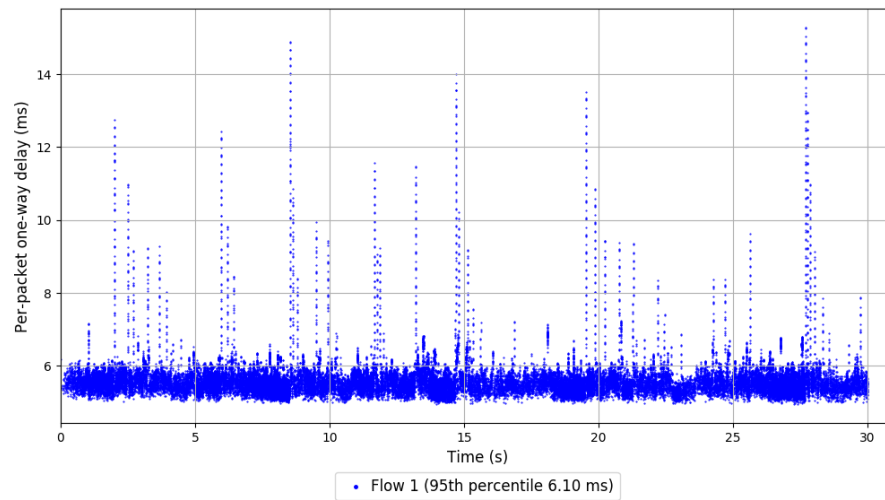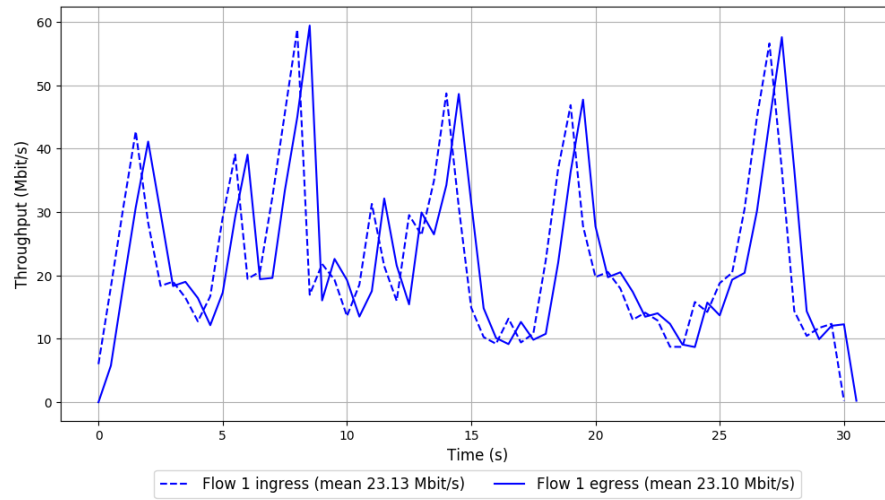

Flow 1 (95th percentile 6.89 ms)

```
Run 5: Statistics of LEDBAT

Start at: 2018-10-09 19:38:59
End at: 2018-10-09 19:39:29
Local clock offset: 1.523 ms
Remote clock offset: -2.607 ms

# Below is generated by plot.py at 2018-10-09 19:43:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 23.10 Mbit/s
95th percentile per-packet one-way delay: 6.101 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 23.10 Mbit/s
95th percentile per-packet one-way delay: 6.101 ms
Loss rate: 0.15%
```

Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of Indigo-Muses

Start at: 2018-10-09 18:08:42
End at: 2018-10-09 18:09:12
Local clock offset: 3.474 ms
Remote clock offset: -2.55 ms


# Below is generated by plot.py at 2018-10-09 19:44:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 75.52 Mbit/s
95th percentile per-packet one-way delay: 10.679 ms
Loss rate: 10.83%
-- Flow 1:
Average throughput: 75.52 Mbit/s
95th percentile per-packet one-way delay: 10.679 ms
Loss rate: 10.83%
```
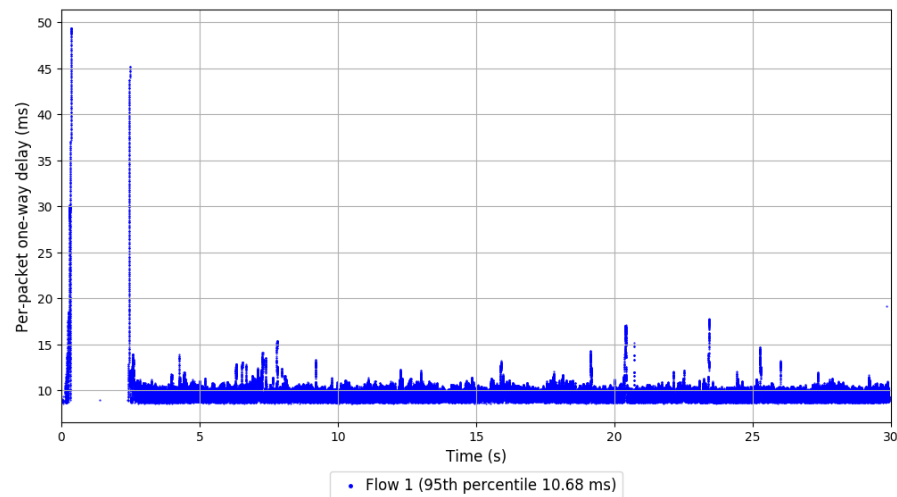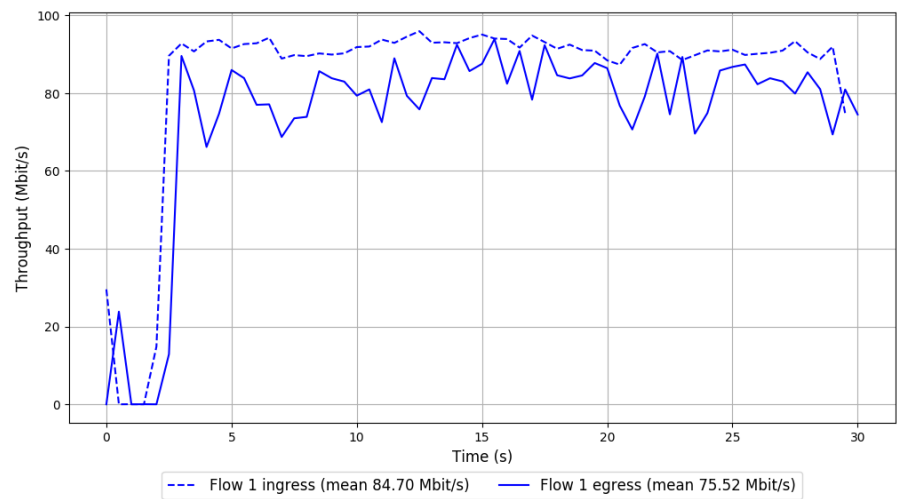
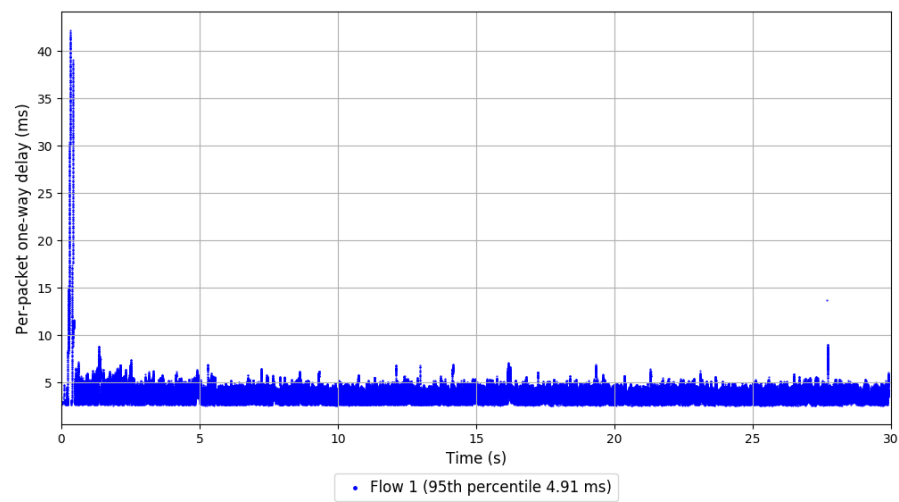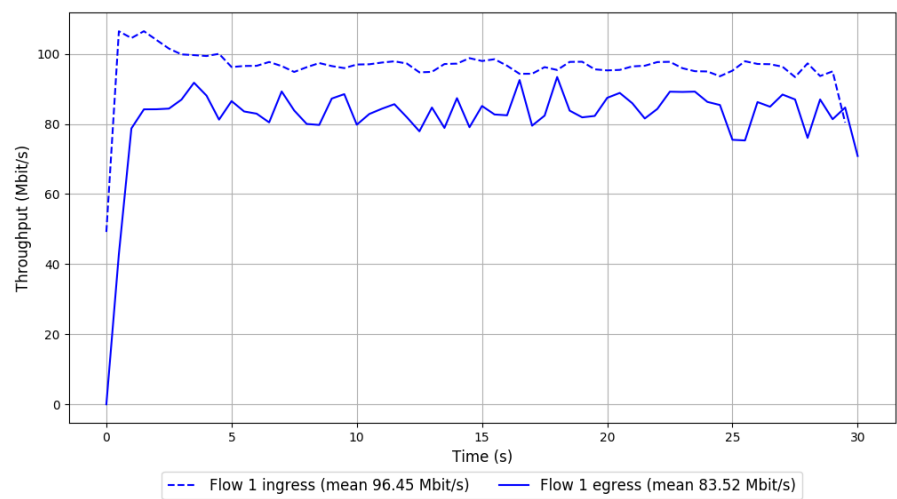# Run 1: Report of Indigo-Muses — Data Link

```
Run 2: Statistics of Indigo-Muses

Start at: 2018-10-09 18:29:29
End at: 2018-10-09 18:29:59
Local clock offset: 1.659 ms
Remote clock offset: -1.829 ms


# Below is generated by plot.py at 2018-10-09 19:44:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 83.52 Mbit/s
95th percentile per-packet one-way delay: 4.910 ms
Loss rate: 13.41%
-- Flow 1:
Average throughput: 83.52 Mbit/s
95th percentile per-packet one-way delay: 4.910 ms
Loss rate: 13.41%
```

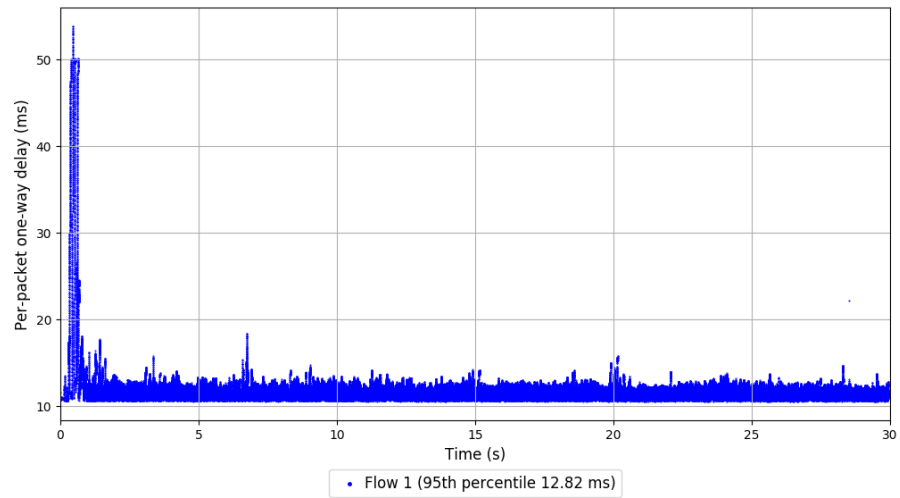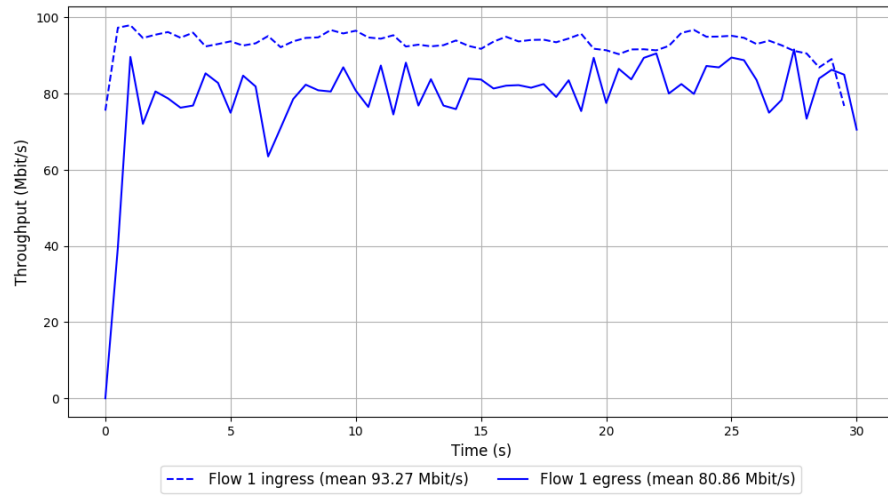Run 2: Report of Indigo-Muses — Data Link

```
Run 3: Statistics of Indigo-Muses

Start at: 2018-10-09 18:50:17
End at: 2018-10-09 18:50:47
Local clock offset: -0.664 ms
Remote clock offset: -1.315 ms


# Below is generated by plot.py at 2018-10-09 19:44:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 80.86 Mbit/s
95th percentile per-packet one-way delay: 12.820 ms
Loss rate: 13.31%
-- Flow 1:
Average throughput: 80.86 Mbit/s
95th percentile per-packet one-way delay: 12.820 ms
Loss rate: 13.31%
```

Run 3: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 93.27 Mbit/s)   Flow 1 egress (mean 80.86 Mbit/s)
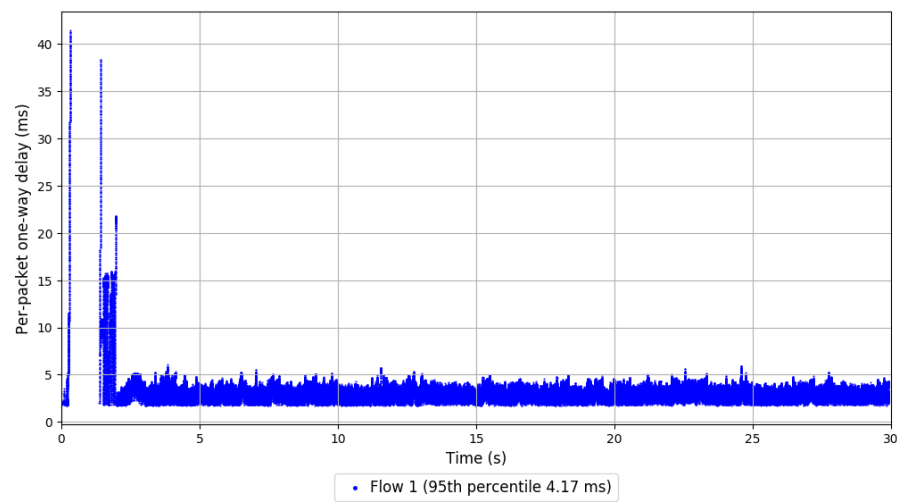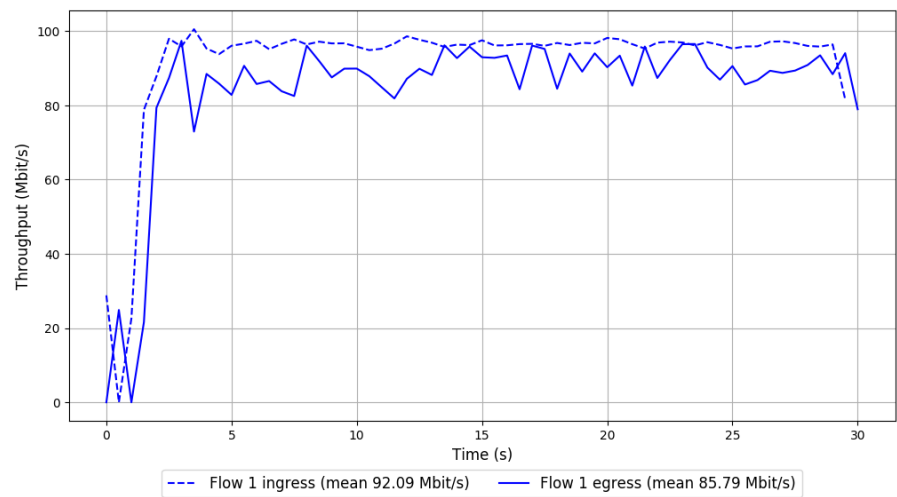

Flow 1 (95th percentile 12.82 ms)

```
Run 4: Statistics of Indigo-Muses

Start at: 2018-10-09 19:11:09
End at: 2018-10-09 19:11:39
Local clock offset: 4.226 ms
Remote clock offset: -2.514 ms


# Below is generated by plot.py at 2018-10-09 19:44:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.79 Mbit/s
95th percentile per-packet one-way delay: 4.174 ms
Loss rate: 6.84%
-- Flow 1:
Average throughput: 85.79 Mbit/s
95th percentile per-packet one-way delay: 4.174 ms
Loss rate: 6.84%
```

Run 4: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 92.09 Mbit/s)   Flow 1 egress (mean 85.79 Mbit/s)

• Flow 1 (95th percentile 4.17 ms)

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-10-09 19:31:52
End at: 2018-10-09 19:32:22
Local clock offset: 3.023 ms
Remote clock offset: -1.882 ms


# Below is generated by plot.py at 2018-10-09 19:44:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 70.13 Mbit/s
95th percentile per-packet one-way delay: 6.938 ms
Loss rate: 8.81%
-- Flow 1:
Average throughput: 70.13 Mbit/s
95th percentile per-packet one-way delay: 6.938 ms
Loss rate: 8.81%
```
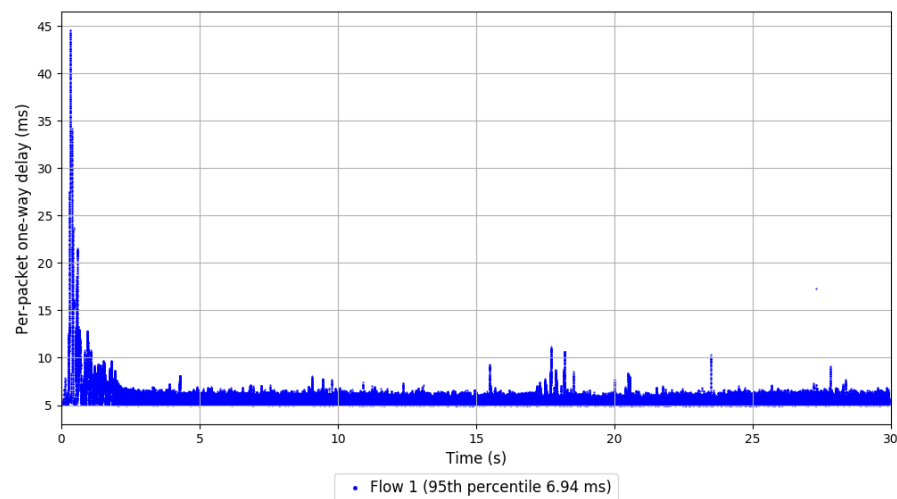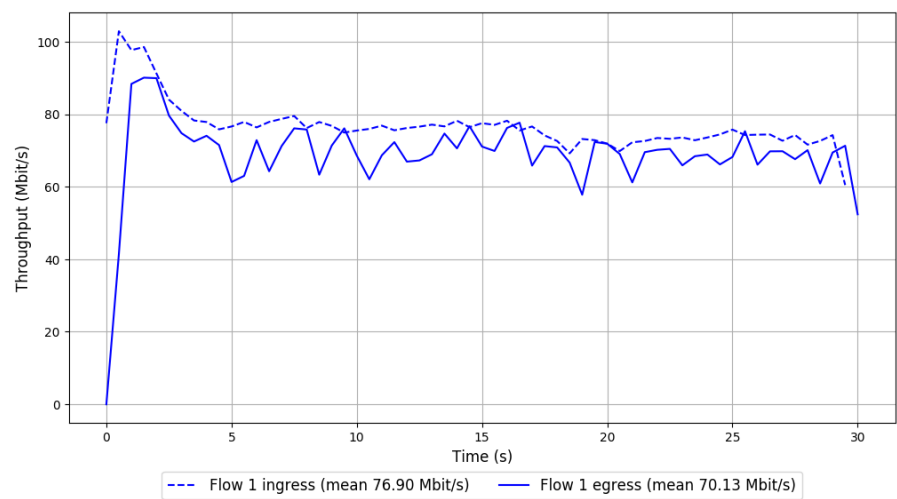
Run 5: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 76.90 Mbit/s)   Flow 1 egress (mean 70.13 Mbit/s)

Flow 1 (95th percentile 6.94 ms)

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-10-09 18:02:35
End at: 2018-10-09 18:03:05
Local clock offset: 2.993 ms
Remote clock offset: -2.411 ms


# Below is generated by plot.py at 2018-10-09 19:44:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 67.46 Mbit/s
95th percentile per-packet one-way delay: 3.690 ms
Loss rate: 10.41%
-- Flow 1:
Average throughput: 67.46 Mbit/s
95th percentile per-packet one-way delay: 3.690 ms
Loss rate: 10.41%
```
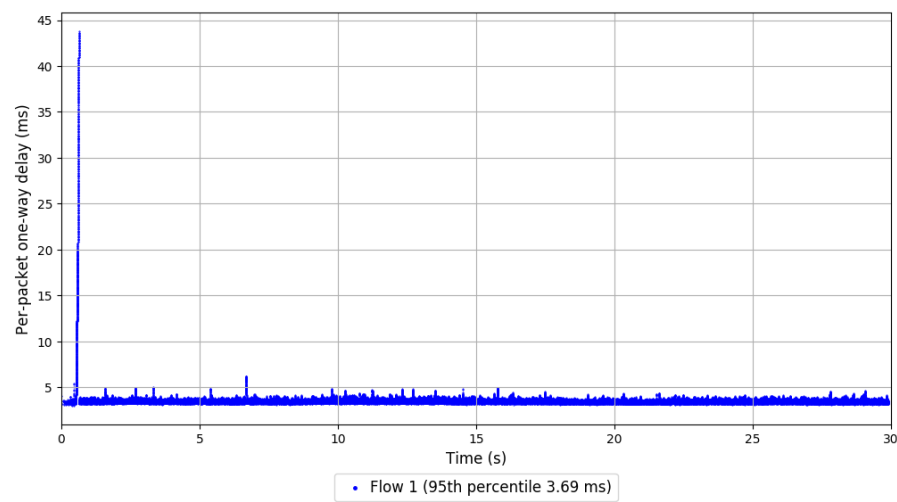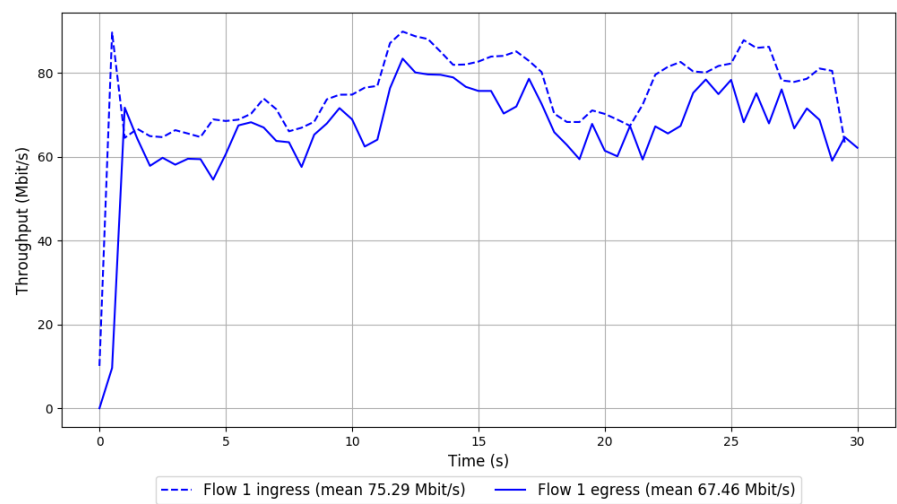
Run 1: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 75.29 Mbit/s)   Flow 1 egress (mean 67.46 Mbit/s)

Flow 1 (95th percentile 3.69 ms)

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-10-09 18:23:33
End at: 2018-10-09 18:24:03
Local clock offset: 0.747 ms
Remote clock offset: -1.879 ms


# Below is generated by plot.py at 2018-10-09 19:44:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 59.93 Mbit/s
95th percentile per-packet one-way delay: 4.242 ms
Loss rate: 8.72%
-- Flow 1:
Average throughput: 59.93 Mbit/s
95th percentile per-packet one-way delay: 4.242 ms
Loss rate: 8.72%
```
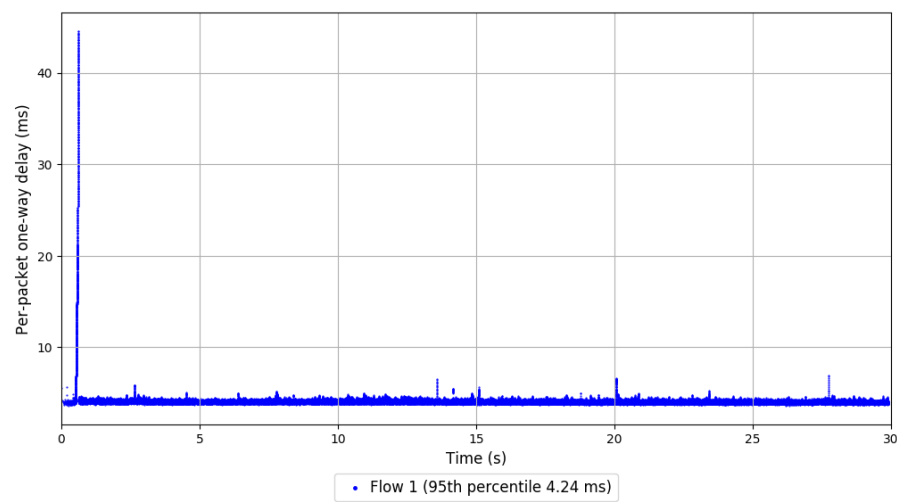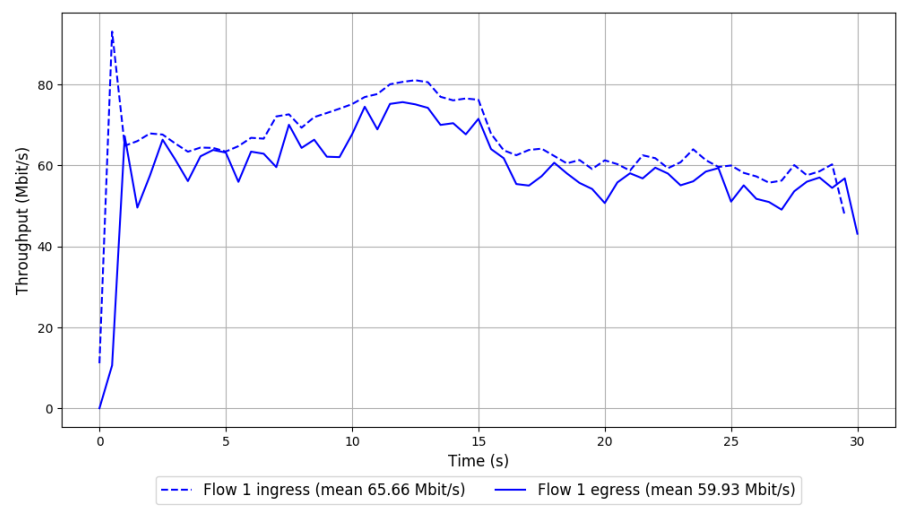
Run 2: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 65.66 Mbit/s)   Flow 1 egress (mean 59.93 Mbit/s)
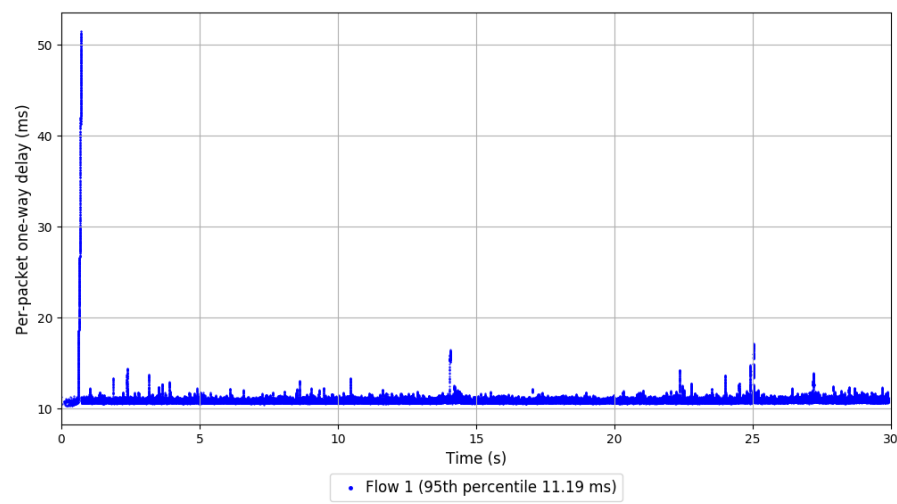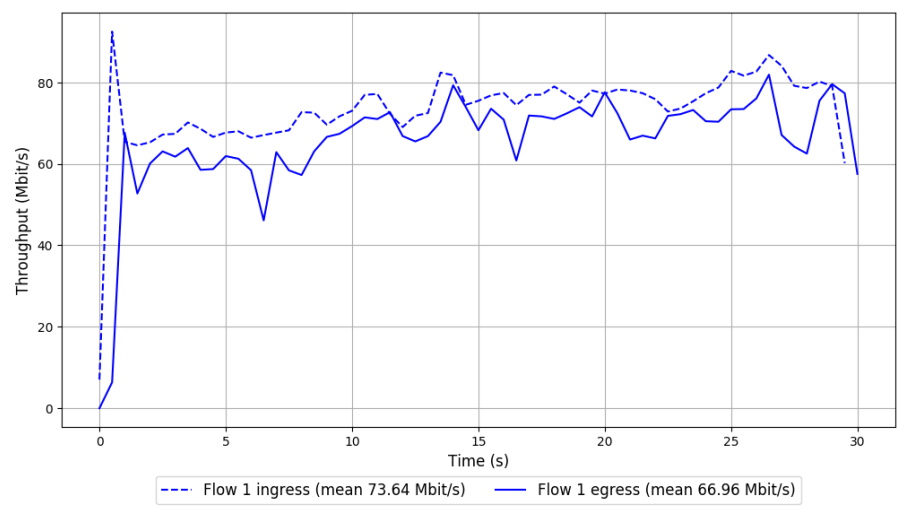

Flow 1 (95th percentile 4.24 ms)

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-10-09 18:44:16
End at: 2018-10-09 18:44:46
Local clock offset: -1.304 ms
Remote clock offset: -2.117 ms


# Below is generated by plot.py at 2018-10-09 19:44:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 66.96 Mbit/s
95th percentile per-packet one-way delay: 11.190 ms
Loss rate: 9.08%
-- Flow 1:
Average throughput: 66.96 Mbit/s
95th percentile per-packet one-way delay: 11.190 ms
Loss rate: 9.08%
```

Run 3: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 73.64 Mbit/s)   Flow 1 egress (mean 66.96 Mbit/s)

Flow 1 (95th percentile 11.19 ms)

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-10-09 19:05:15
End at: 2018-10-09 19:05:45
Local clock offset: 1.245 ms
Remote clock offset: -0.712 ms


# Below is generated by plot.py at 2018-10-09 19:45:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 61.78 Mbit/s
95th percentile per-packet one-way delay: 7.358 ms
Loss rate: 11.68%
-- Flow 1:
Average throughput: 61.78 Mbit/s
95th percentile per-packet one-way delay: 7.358 ms
Loss rate: 11.68%
```
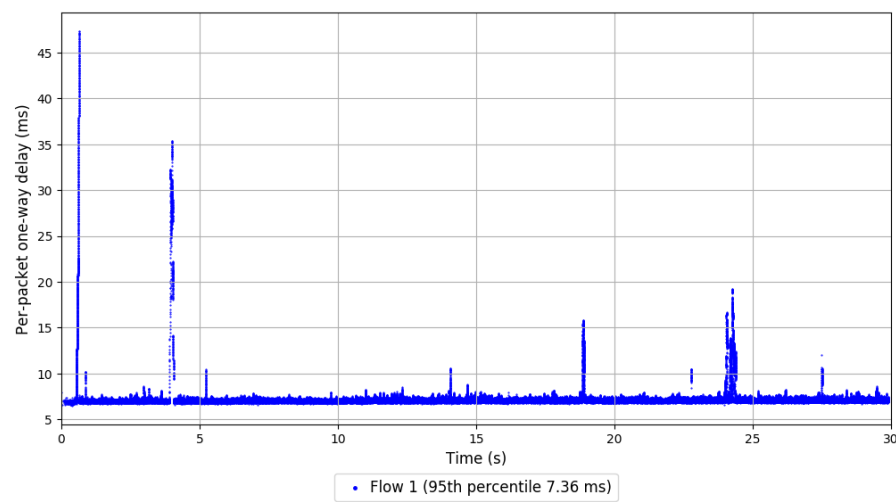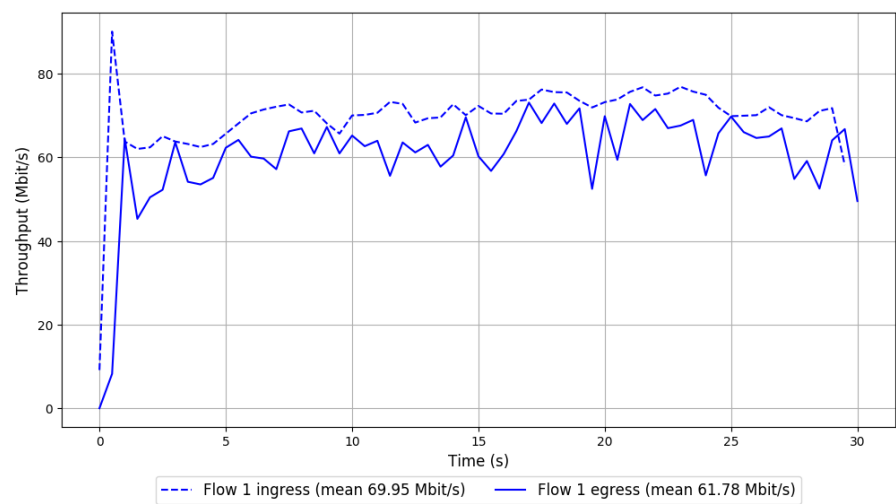
Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 69.95 Mbit/s)   Flow 1 egress (mean 61.78 Mbit/s)

Flow 1 (95th percentile 7.36 ms)

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-10-09 19:25:57
End at: 2018-10-09 19:26:27
Local clock offset: 3.177 ms
Remote clock offset: -2.254 ms


# Below is generated by plot.py at 2018-10-09 19:45:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 80.01 Mbit/s
95th percentile per-packet one-way delay: 6.909 ms
Loss rate: 4.61%
-- Flow 1:
Average throughput: 80.01 Mbit/s
95th percentile per-packet one-way delay: 6.909 ms
Loss rate: 4.61%
```
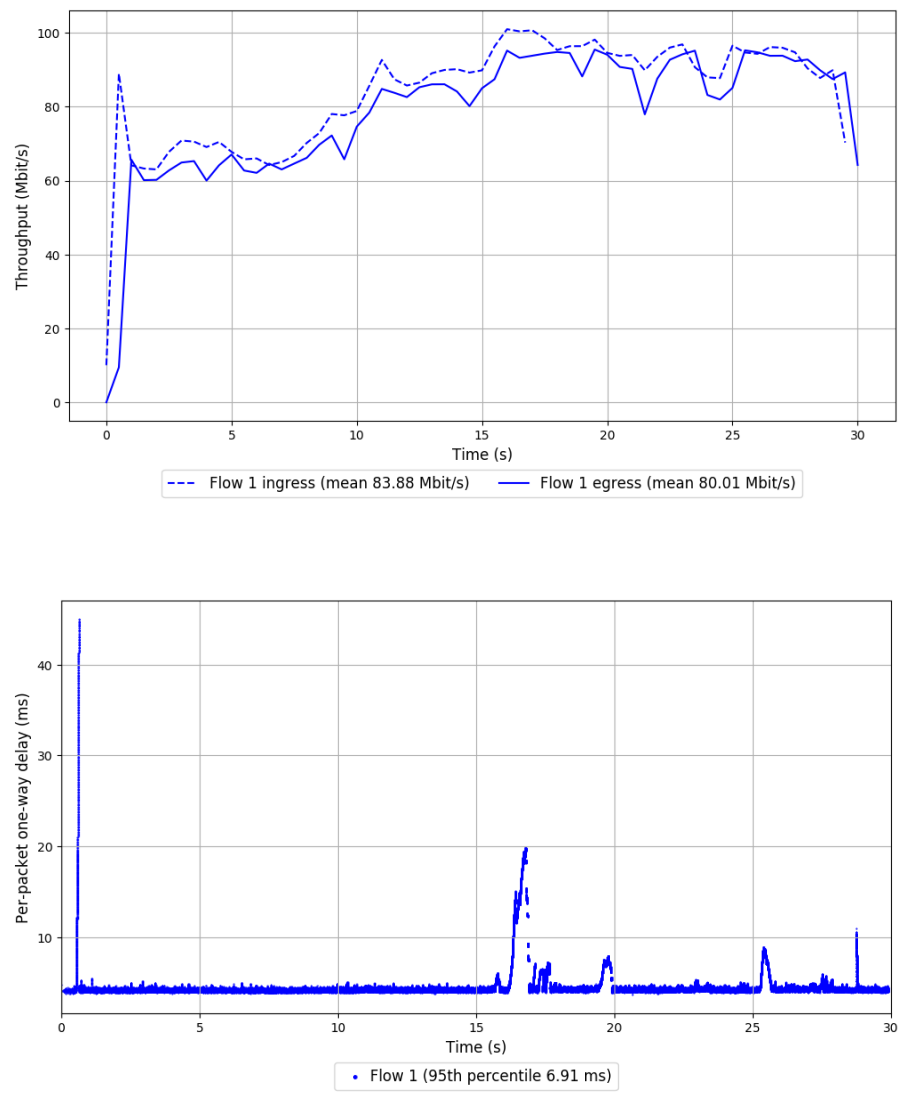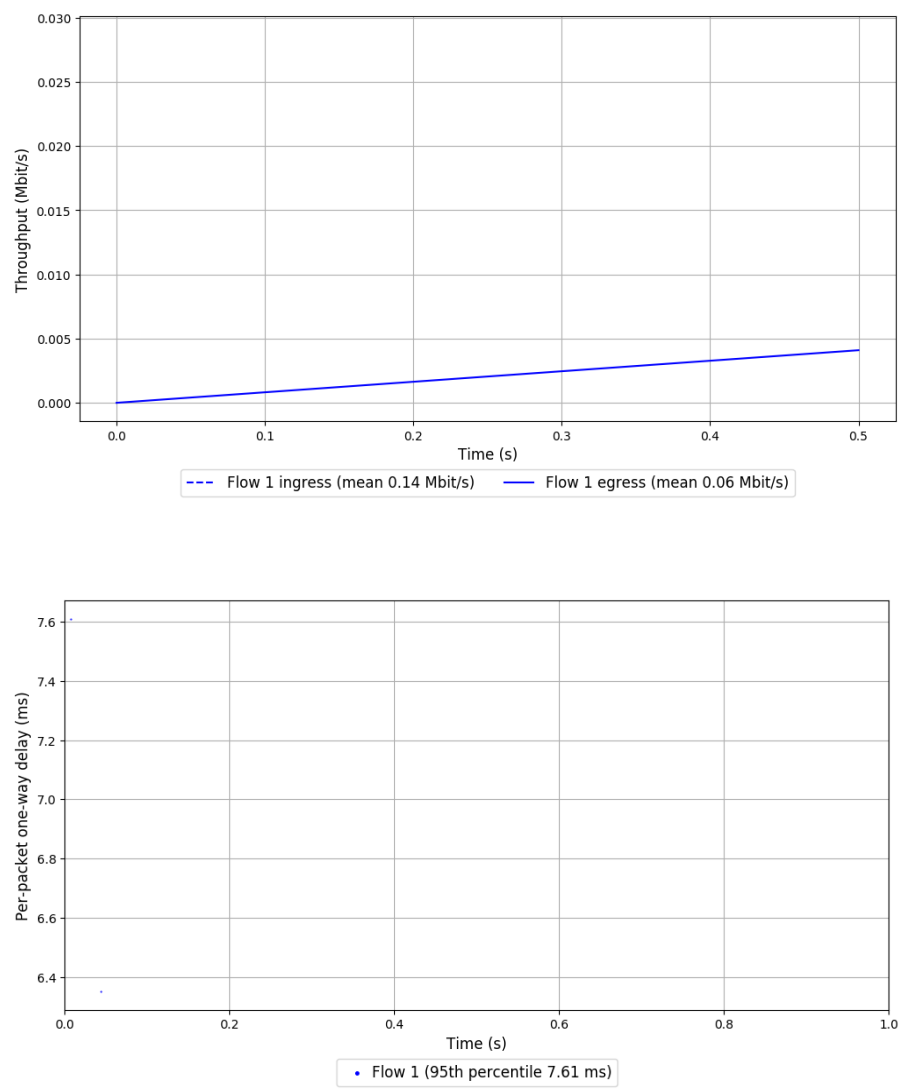
Run 5: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 83.88 Mbit/s) Flow 1 egress (mean 80.01 Mbit/s)

Flow 1 (95th percentile 6.91 ms)

```
Run 1: Statistics of PCC-Expr

Start at: 2018-10-09 17:59:07
End at: 2018-10-09 17:59:37
Local clock offset: 0.426 ms
Remote clock offset: -8.105 ms
```

Run 1: Report of PCC-Expr — Data Link
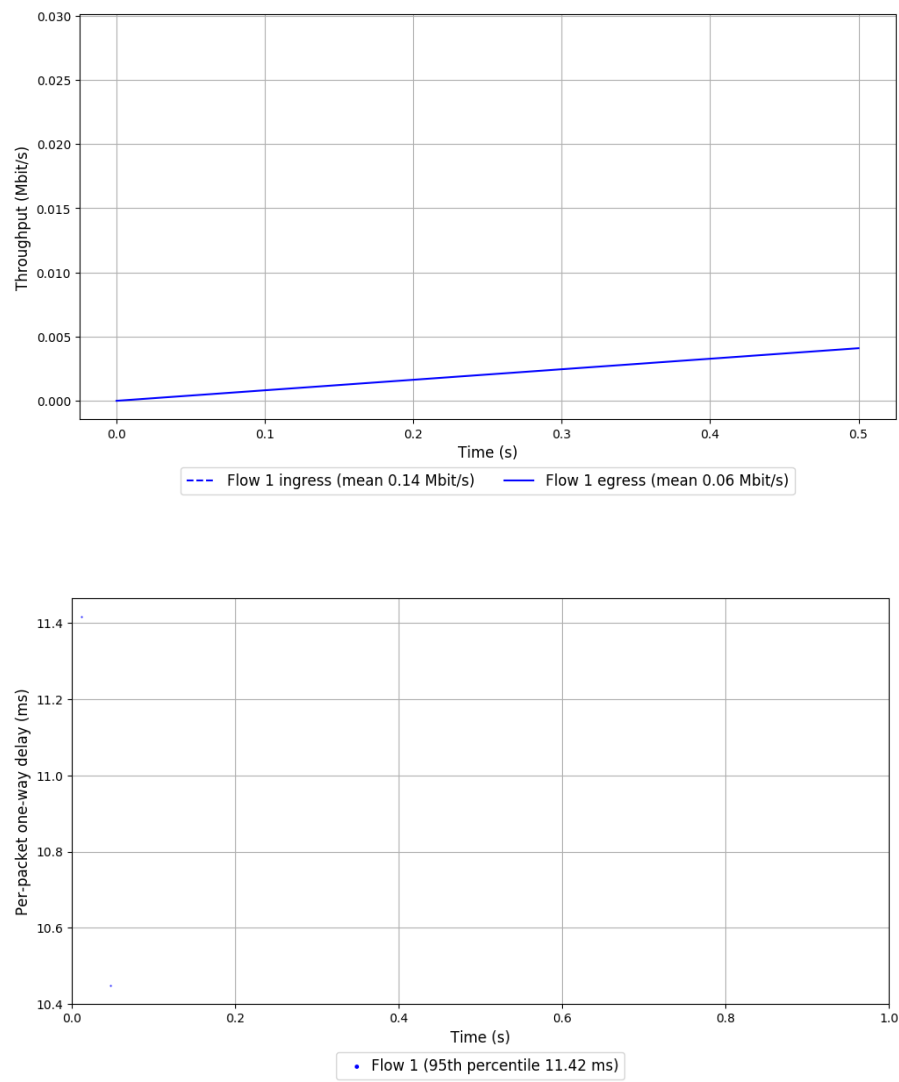
```
Run 2: Statistics of PCC-Expr

Start at: 2018-10-09 18:20:06
End at: 2018-10-09 18:20:36
Local clock offset: -0.37 ms
Remote clock offset: -2.024 ms
```

Run 2: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 0.14 Mbit/s) — Flow 1 egress (mean 0.06 Mbit/s)

Flow 1 (95th percentile 11.42 ms)
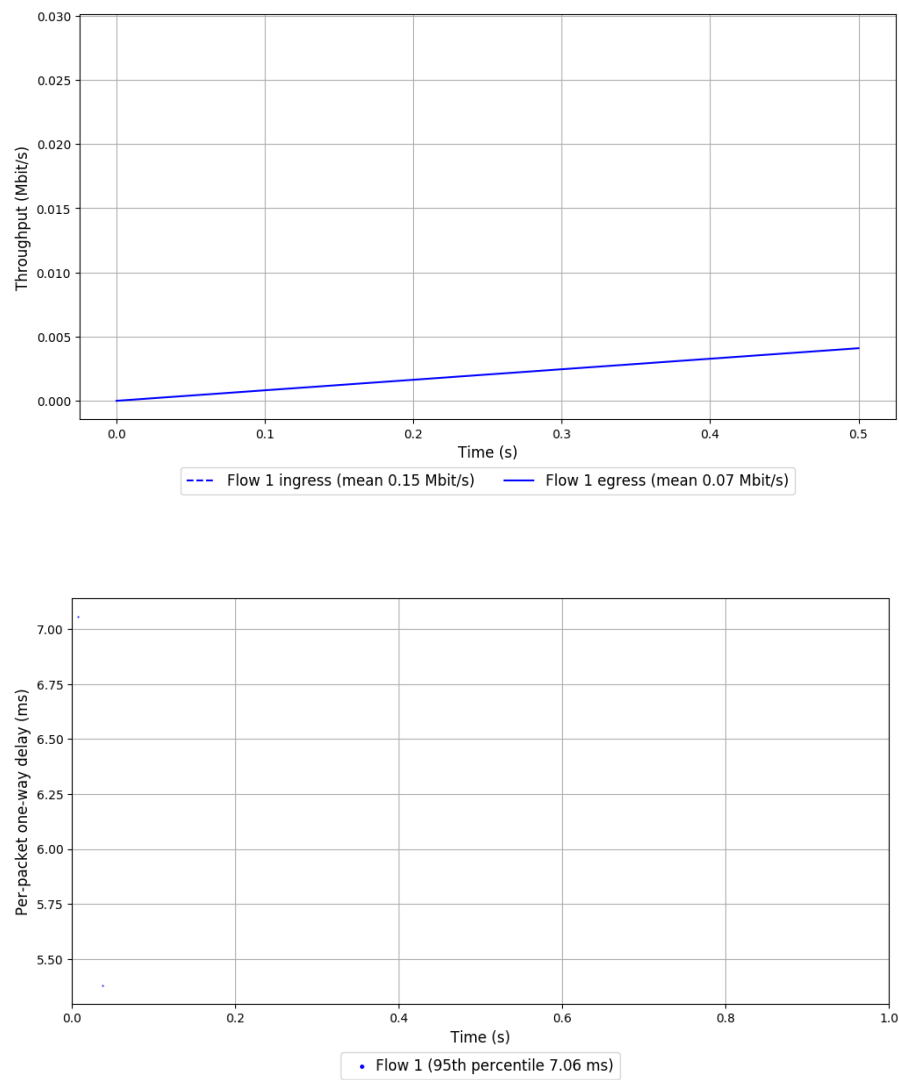
```
Run 3: Statistics of PCC-Expr

Start at: 2018-10-09 18:40:47
End at: 2018-10-09 18:41:17
Local clock offset: -0.677 ms
Remote clock offset: -1.344 ms
```

Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 0.15 Mbit/s)   Flow 1 egress (mean 0.07 Mbit/s)

Flow 1 (95th percentile 7.06 ms)
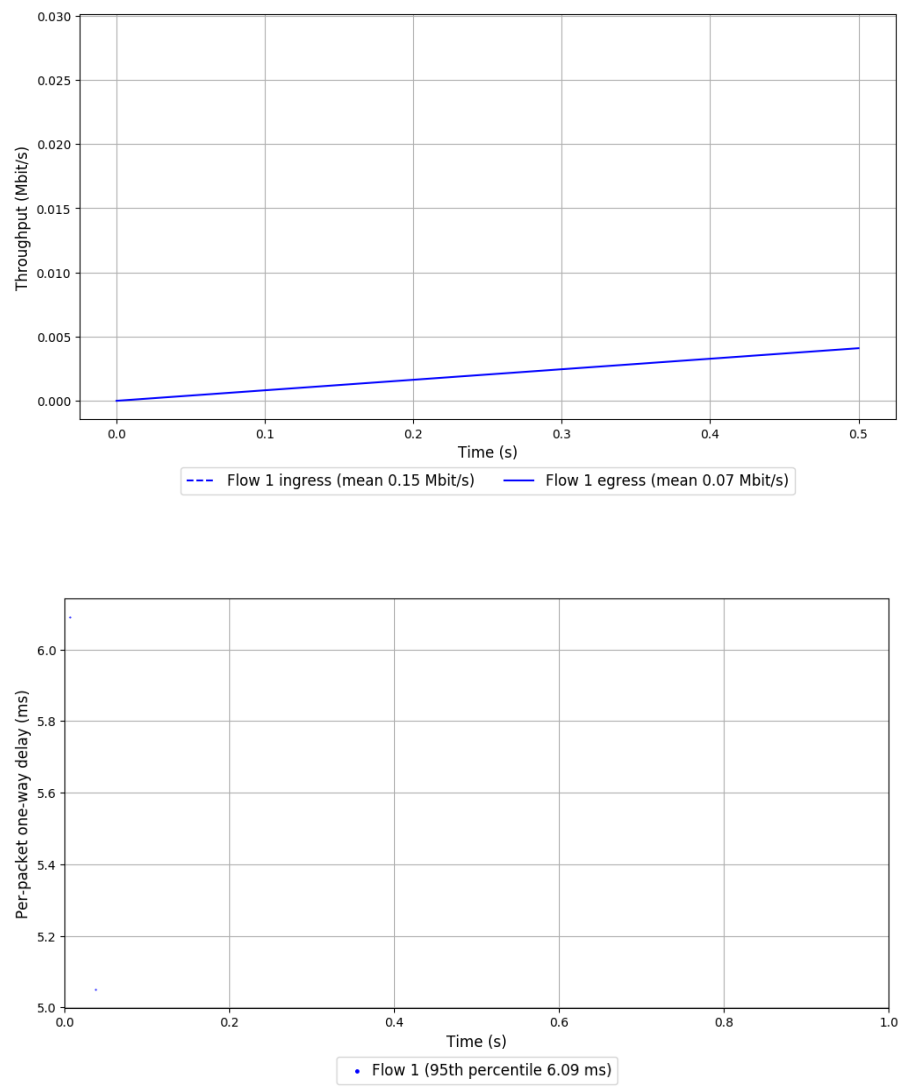
Run 4: Statistics of PCC-Expr

Start at: 2018-10-09 19:01:46
End at: 2018-10-09 19:02:16
Local clock offset: 1.624 ms
Remote clock offset: -1.587 ms

Run 4: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 0.15 Mbit/s) --- Flow 1 egress (mean 0.07 Mbit/s)

Flow 1 (95th percentile 6.09 ms)
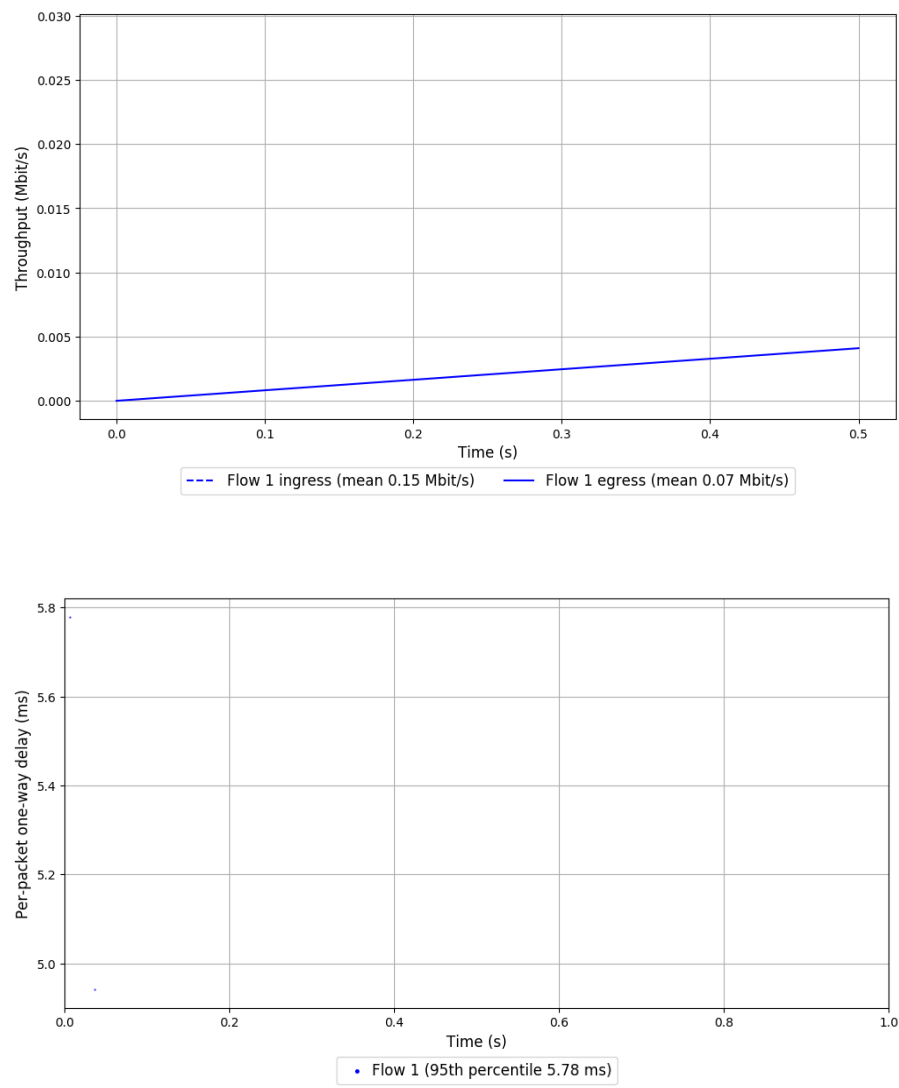
```
Run 5: Statistics of PCC-Expr

Start at: 2018-10-09 19:22:33
End at: 2018-10-09 19:23:03
Local clock offset: 2.249 ms
Remote clock offset: -2.245 ms
```

Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-10-09 17:58:01
End at: 2018-10-09 17:58:31
Local clock offset: 2.997 ms
Remote clock offset: -3.338 ms

# Below is generated by plot.py at 2018-10-09 19:45:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 16.93 Mbit/s
95th percentile per-packet one-way delay: 9.394 ms
Loss rate: 1.78%
-- Flow 1:
Average throughput: 16.93 Mbit/s
95th percentile per-packet one-way delay: 9.394 ms
Loss rate: 1.78%
```
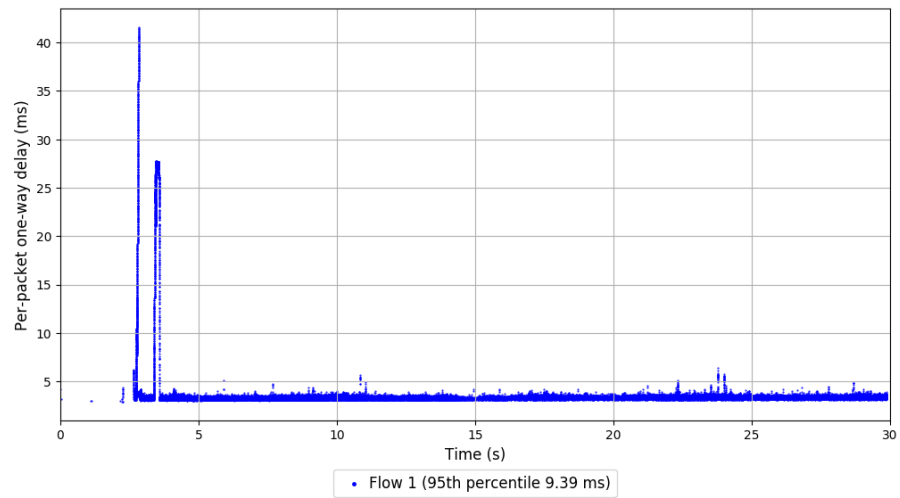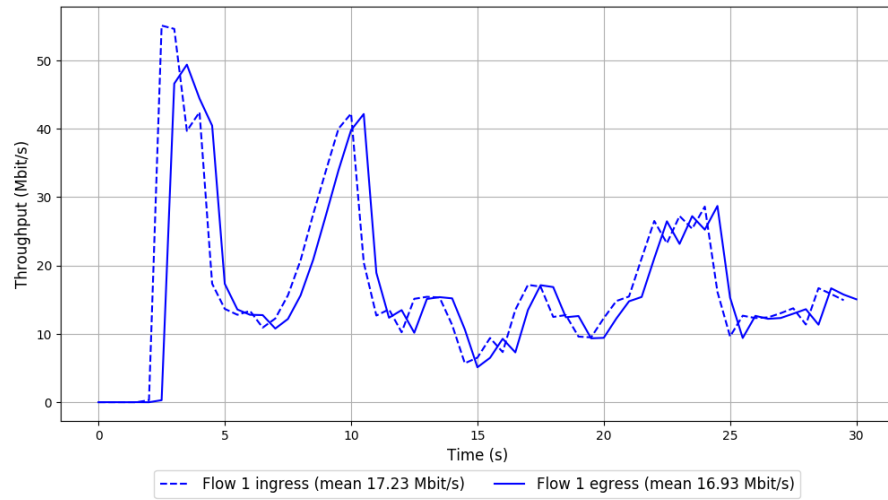
Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-10-09 18:19:00
End at: 2018-10-09 18:19:30
Local clock offset: 0.631 ms
Remote clock offset: -1.773 ms


# Below is generated by plot.py at 2018-10-09 19:45:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.10 Mbit/s
95th percentile per-packet one-way delay: 4.779 ms
Loss rate: 2.28%
-- Flow 1:
Average throughput: 9.10 Mbit/s
95th percentile per-packet one-way delay: 4.779 ms
Loss rate: 2.28%
```
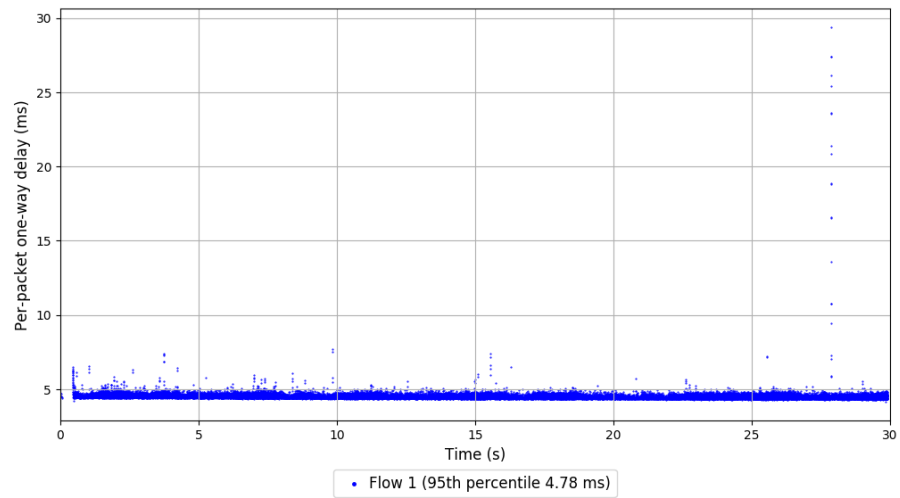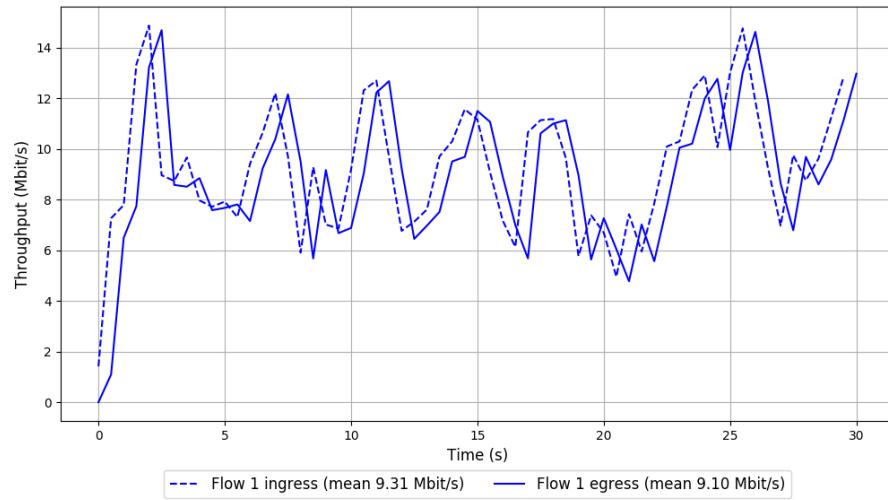
Run 2: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 9.31 Mbit/s) — — —   Flow 1 egress (mean 9.10 Mbit/s) ———
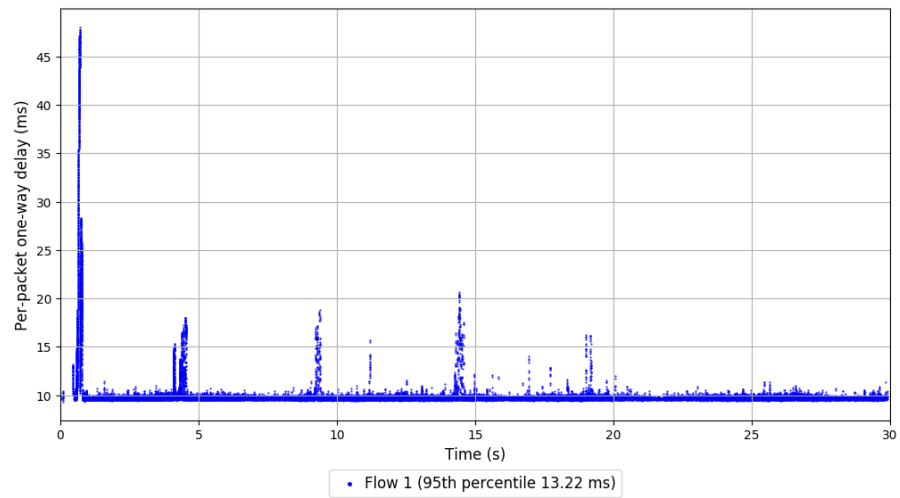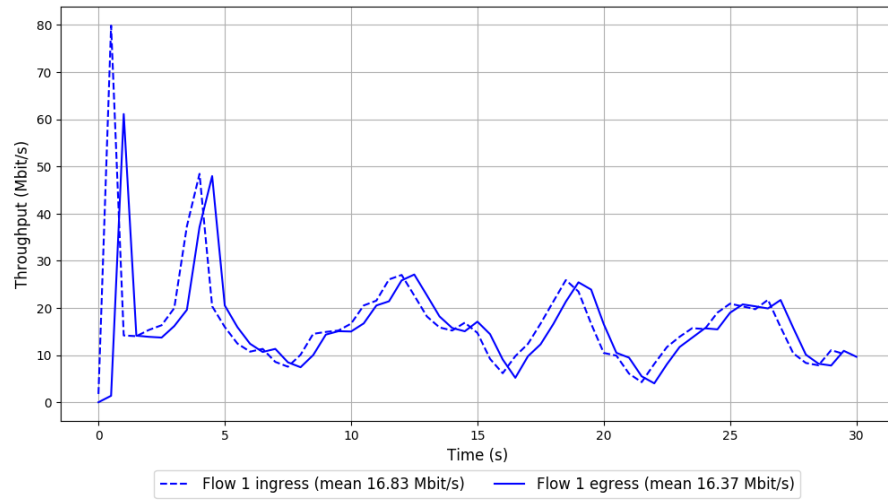

· Flow 1 (95th percentile 4.78 ms)

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-10-09 18:39:40
End at: 2018-10-09 18:40:10
Local clock offset: -0.022 ms
Remote clock offset: -1.864 ms


# Below is generated by plot.py at 2018-10-09 19:45:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 16.37 Mbit/s
95th percentile per-packet one-way delay: 13.225 ms
Loss rate: 2.74%
-- Flow 1:
Average throughput: 16.37 Mbit/s
95th percentile per-packet one-way delay: 13.225 ms
Loss rate: 2.74%
```

Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-10-09 19:00:38
End at: 2018-10-09 19:01:08
Local clock offset: 1.011 ms
Remote clock offset: -0.75 ms


# Below is generated by plot.py at 2018-10-09 19:45:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 21.40 Mbit/s
95th percentile per-packet one-way delay: 6.879 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 21.40 Mbit/s
95th percentile per-packet one-way delay: 6.879 ms
Loss rate: 0.70%
```
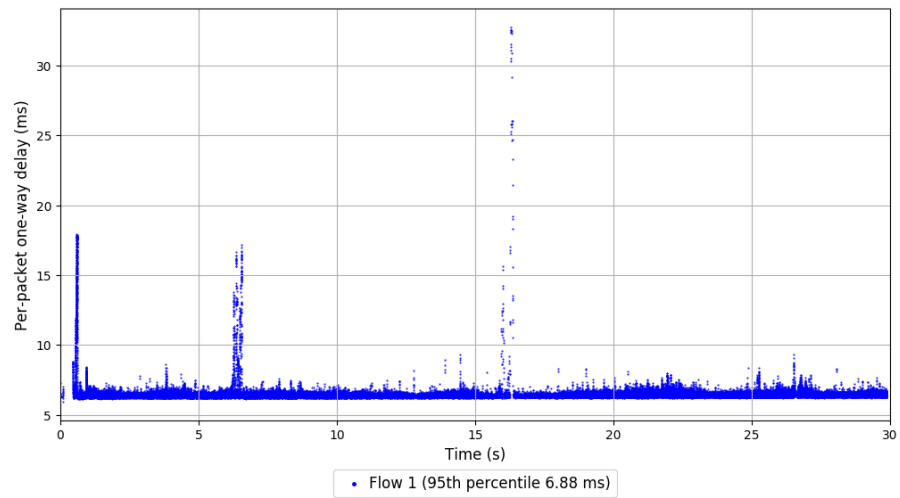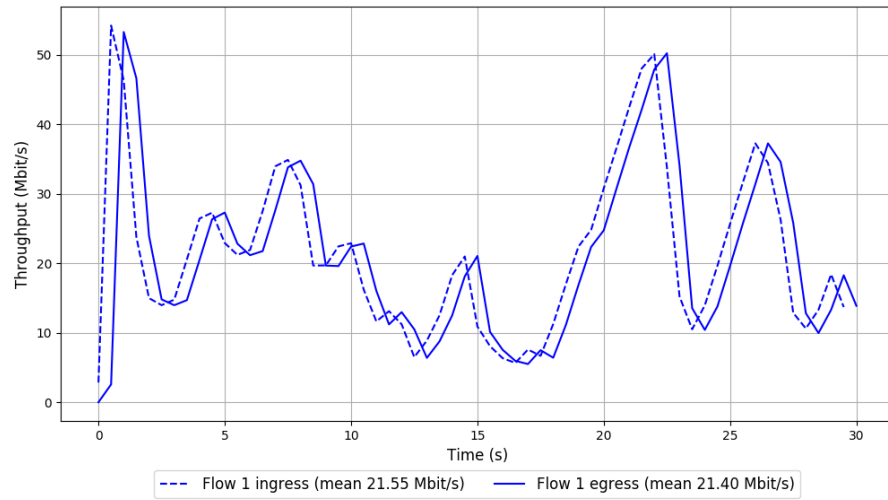
Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 21.55 Mbit/s) --- Flow 1 egress (mean 21.40 Mbit/s)
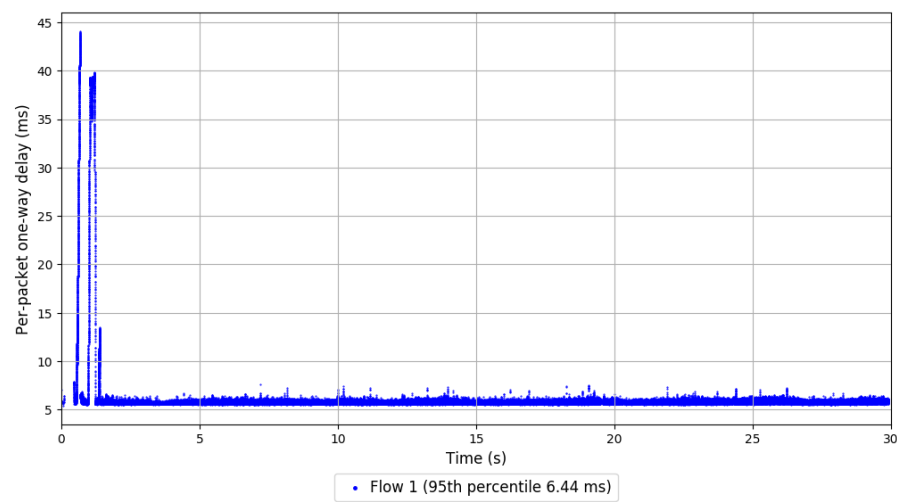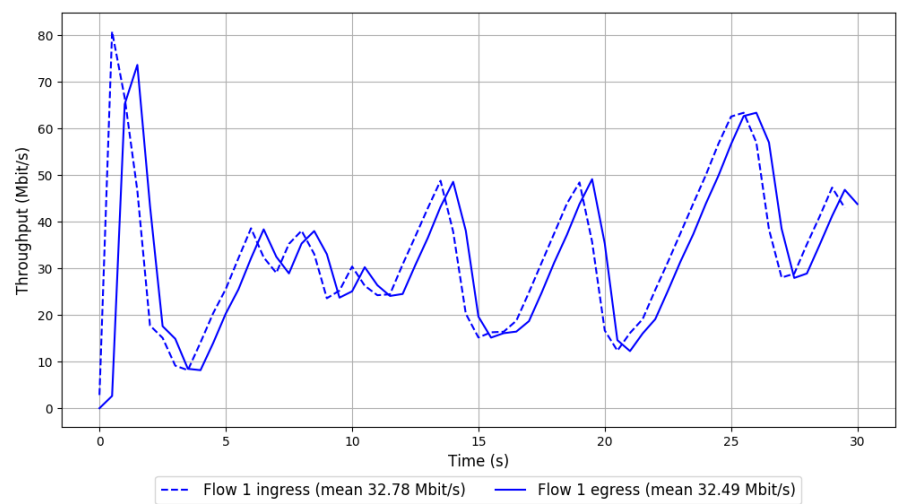

Flow 1 (95th percentile 6.88 ms)

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-10-09 19:21:25
End at: 2018-10-09 19:21:55
Local clock offset: 2.315 ms
Remote clock offset: -1.389 ms


# Below is generated by plot.py at 2018-10-09 19:45:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 32.49 Mbit/s
95th percentile per-packet one-way delay: 6.436 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 32.49 Mbit/s
95th percentile per-packet one-way delay: 6.436 ms
Loss rate: 0.87%
```
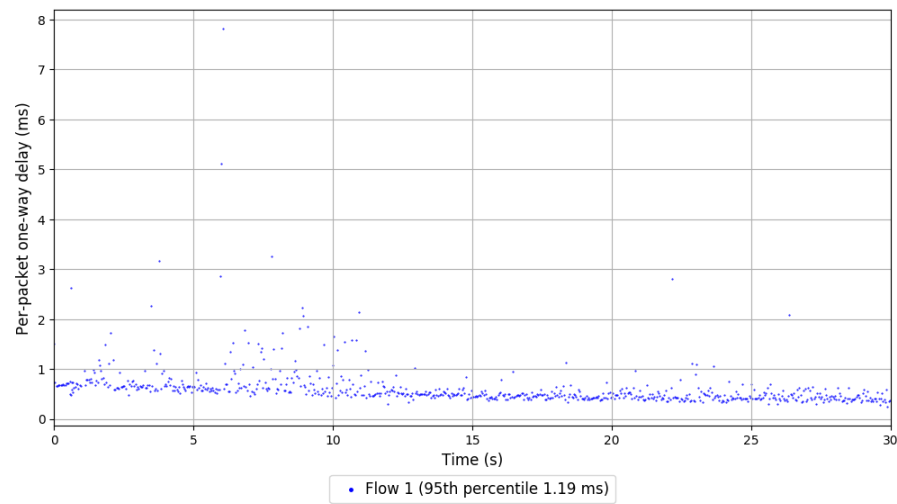
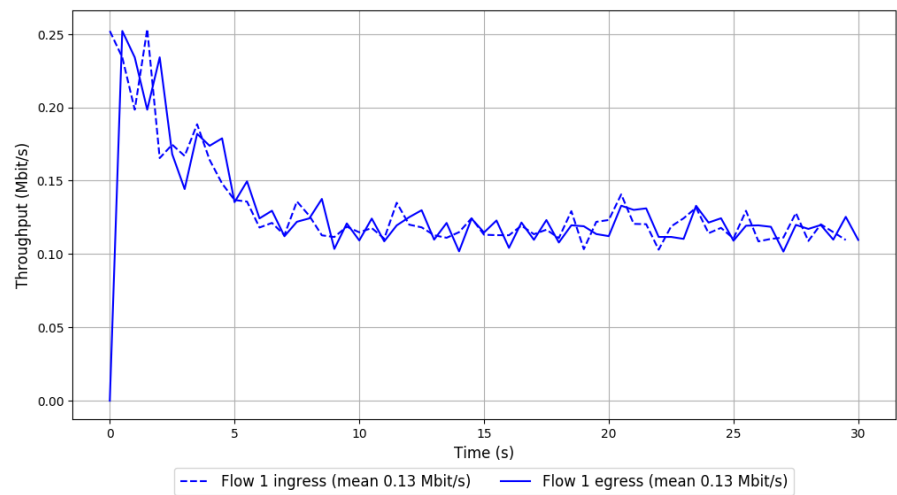Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2018-10-09 18:14:34
End at: 2018-10-09 18:15:04
Local clock offset: 5.033 ms
Remote clock offset: -2.364 ms


# Below is generated by plot.py at 2018-10-09 19:45:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 1.190 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 1.190 ms
Loss rate: 0.40%
```

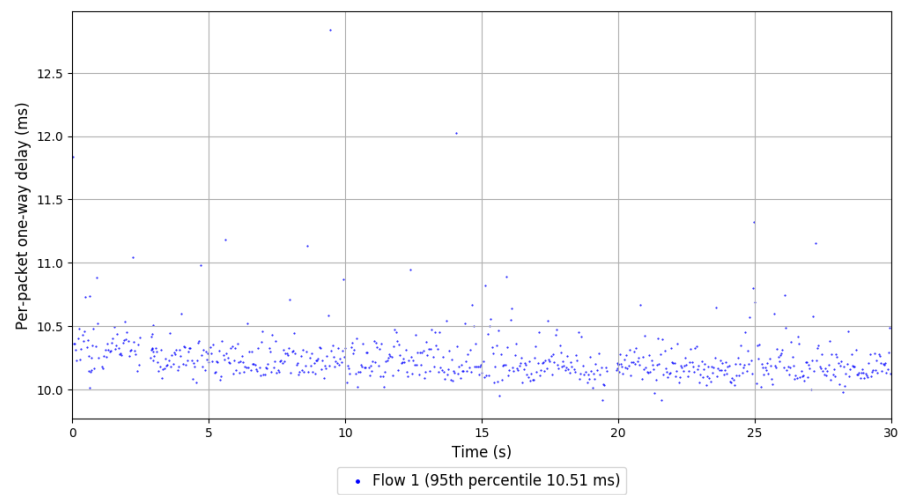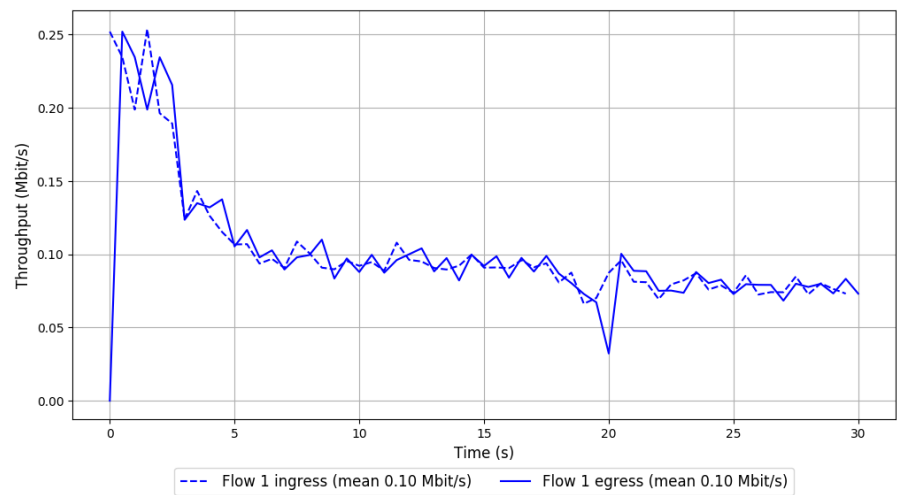# Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2018-10-09 18:35:15
End at: 2018-10-09 18:35:45
Local clock offset: 0.101 ms
Remote clock offset: -1.206 ms


# Below is generated by plot.py at 2018-10-09 19:45:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 10.505 ms
Loss rate: 1.62%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 10.505 ms
Loss rate: 1.62%
```

Run 2: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.10 Mbit/s) —— Flow 1 egress (mean 0.10 Mbit/s)

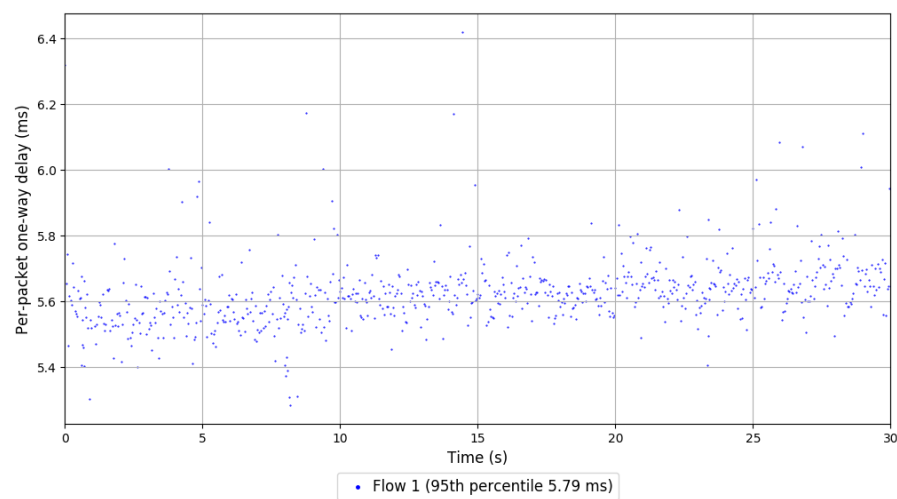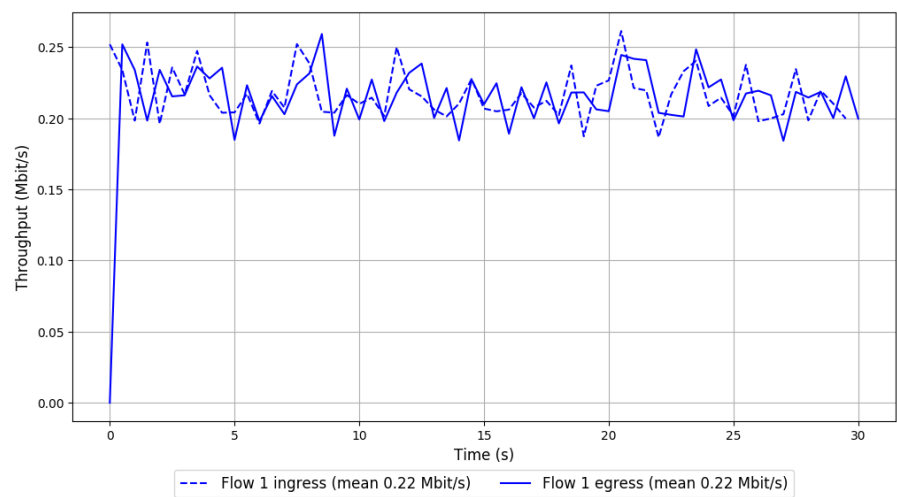

• Flow 1 (95th percentile 10.51 ms)

```
Run 3: Statistics of SCReAM

Start at: 2018-10-09 18:56:06
End at: 2018-10-09 18:56:36
Local clock offset: -0.232 ms
Remote clock offset: -1.038 ms


# Below is generated by plot.py at 2018-10-09 19:45:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 5.794 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 5.794 ms
Loss rate: 0.00%
```

Run 3: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.22 Mbit/s) --- Flow 1 egress (mean 0.22 Mbit/s)
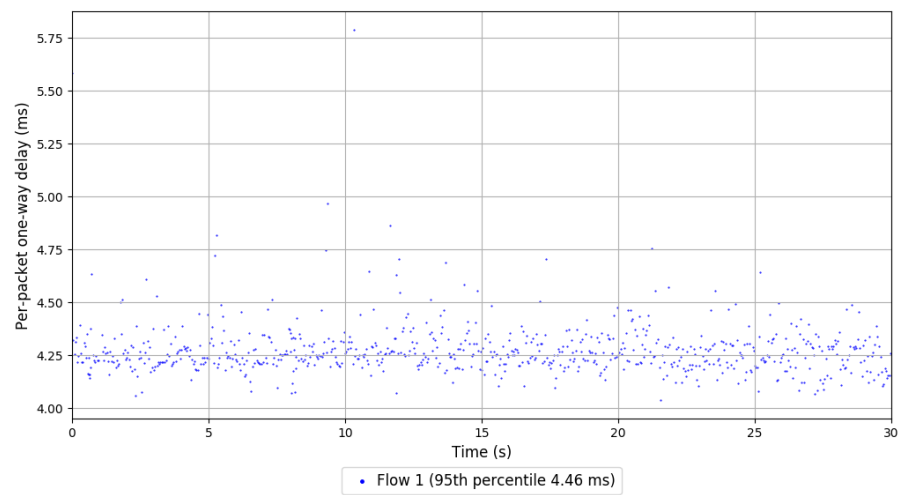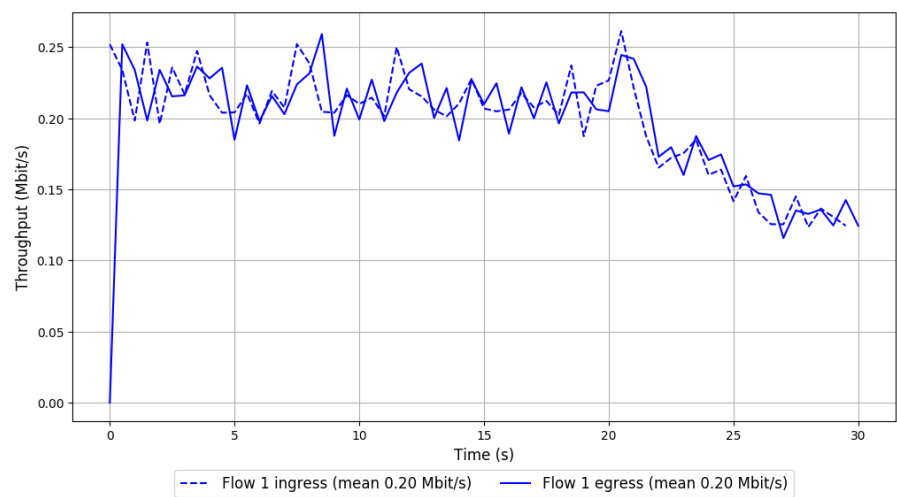

Flow 1 (95th percentile 5.79 ms)

```
Run 4: Statistics of SCReAM

Start at: 2018-10-09 19:16:58
End at: 2018-10-09 19:17:28
Local clock offset: 2.925 ms
Remote clock offset: -1.998 ms


# Below is generated by plot.py at 2018-10-09 19:45:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 4.464 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 4.464 ms
Loss rate: 0.16%
```

Run 4: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.20 Mbit/s) --- Flow 1 egress (mean 0.20 Mbit/s)
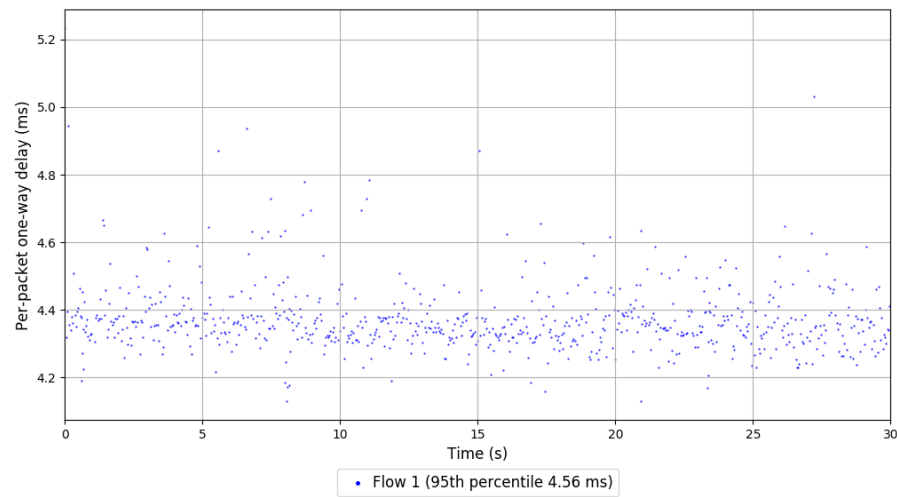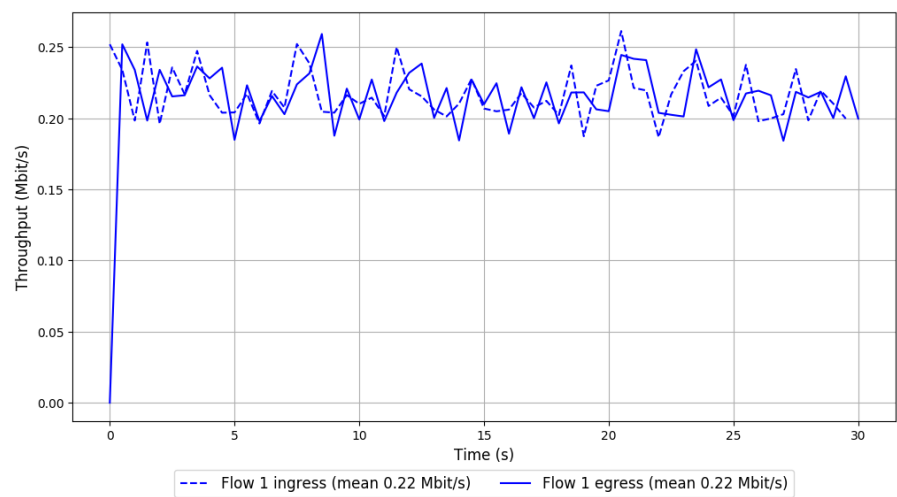

• Flow 1 (95th percentile 4.46 ms)

```
Run 5: Statistics of SCReAM

Start at: 2018-10-09 19:37:54
End at: 2018-10-09 19:38:24
Local clock offset: 3.073 ms
Remote clock offset: -1.899 ms


# Below is generated by plot.py at 2018-10-09 19:45:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 4.558 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 4.558 ms
Loss rate: 0.00%
```

Run 5: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.22 Mbit/s) --- Flow 1 egress (mean 0.22 Mbit/s)

Flow 1 (95th percentile 4.56 ms)

```
Run 1: Statistics of Sprout

Start at: 2018-10-09 17:56:55
End at: 2018-10-09 17:57:25
Local clock offset: 1.092 ms
Remote clock offset: -3.392 ms


# Below is generated by plot.py at 2018-10-09 19:45:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 24.20 Mbit/s
95th percentile per-packet one-way delay: 9.507 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 24.20 Mbit/s
95th percentile per-packet one-way delay: 9.507 ms
Loss rate: 0.10%
```
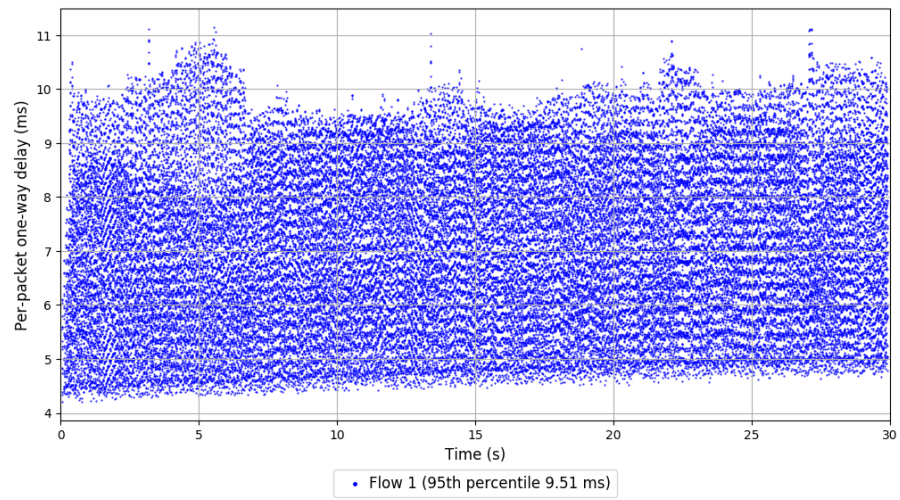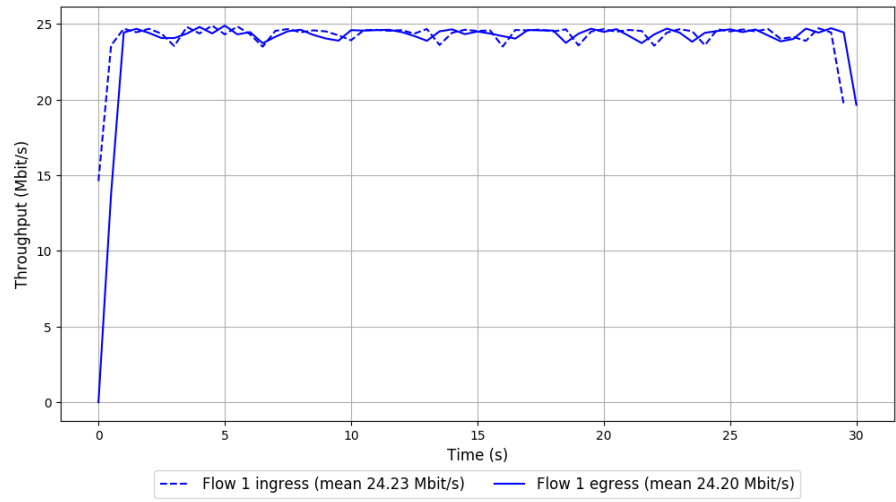
Run 1: Report of Sprout — Data Link

Flow 1 ingress (mean 24.23 Mbit/s) —— Flow 1 egress (mean 24.20 Mbit/s)
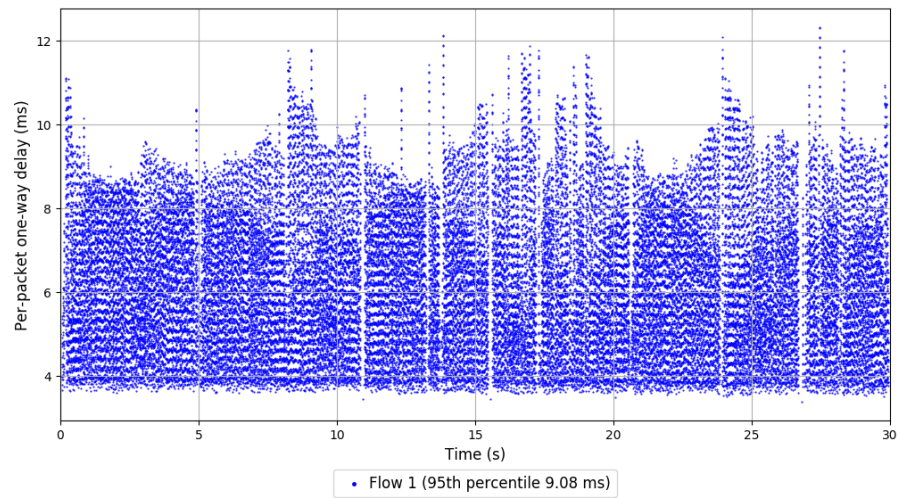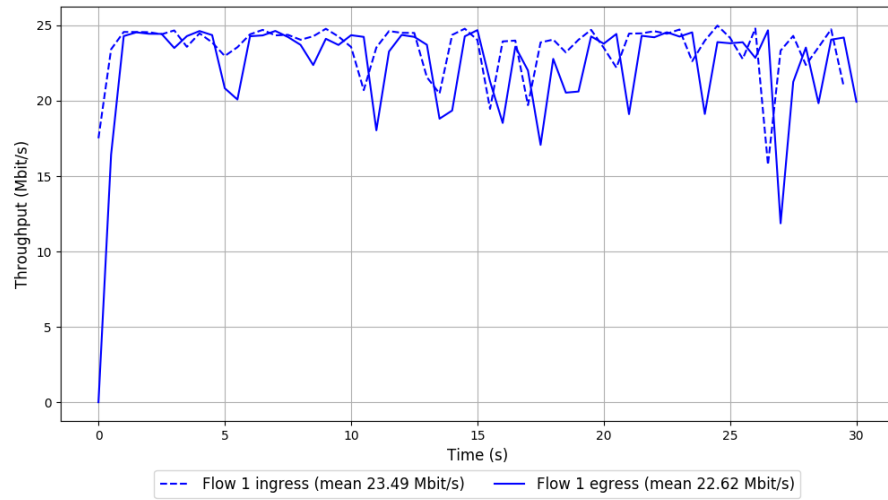

• Flow 1 (95th percentile 9.51 ms)

```
Run 2: Statistics of Sprout

Start at: 2018-10-09 18:17:52
End at: 2018-10-09 18:18:22
Local clock offset: 1.83 ms
Remote clock offset: -1.591 ms


# Below is generated by plot.py at 2018-10-09 19:45:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 22.62 Mbit/s
95th percentile per-packet one-way delay: 9.080 ms
Loss rate: 3.72%
-- Flow 1:
Average throughput: 22.62 Mbit/s
95th percentile per-packet one-way delay: 9.080 ms
Loss rate: 3.72%
```

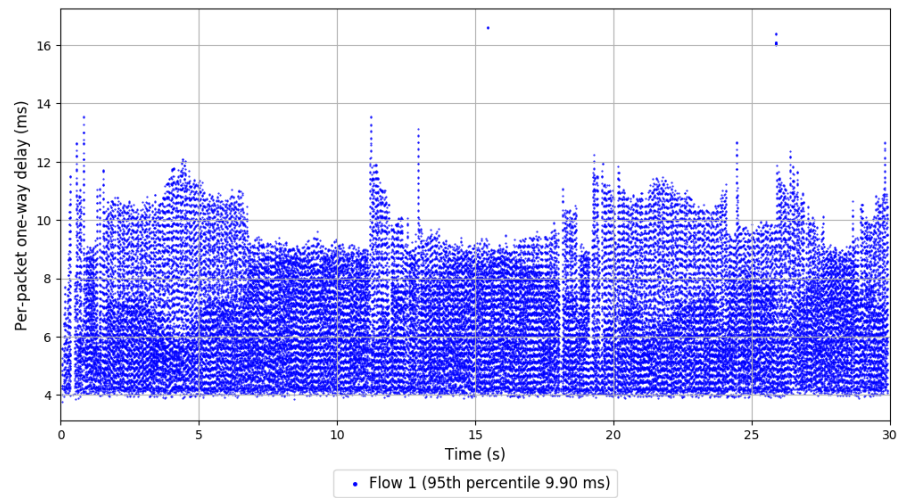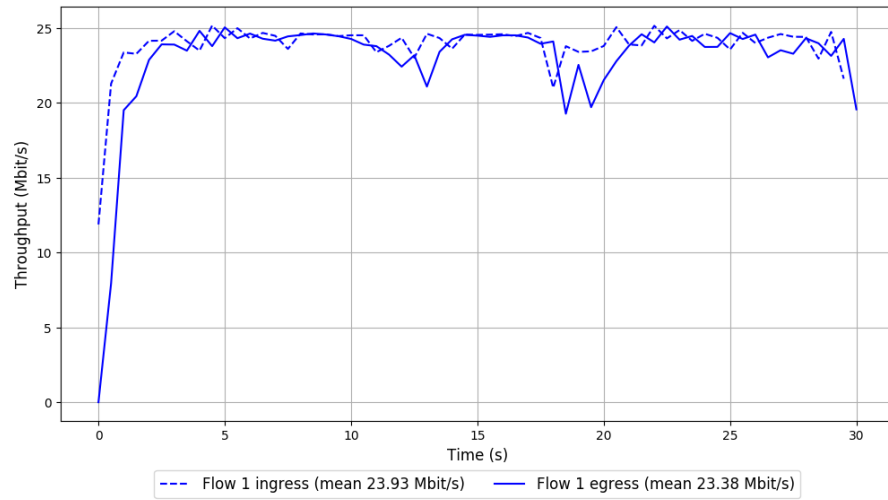Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-10-09 18:38:32
End at: 2018-10-09 18:39:02
Local clock offset: -0.35 ms
Remote clock offset: -2.408 ms


# Below is generated by plot.py at 2018-10-09 19:45:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 23.38 Mbit/s
95th percentile per-packet one-way delay: 9.904 ms
Loss rate: 2.43%
-- Flow 1:
Average throughput: 23.38 Mbit/s
95th percentile per-packet one-way delay: 9.904 ms
Loss rate: 2.43%
```
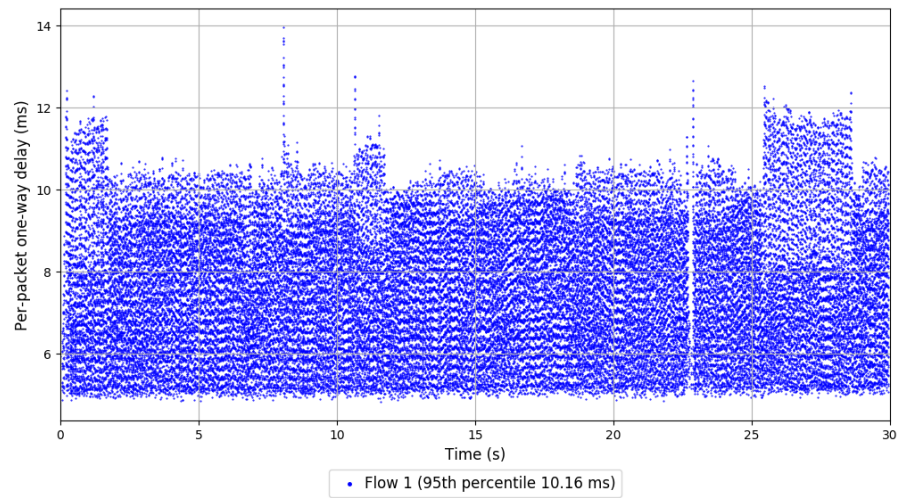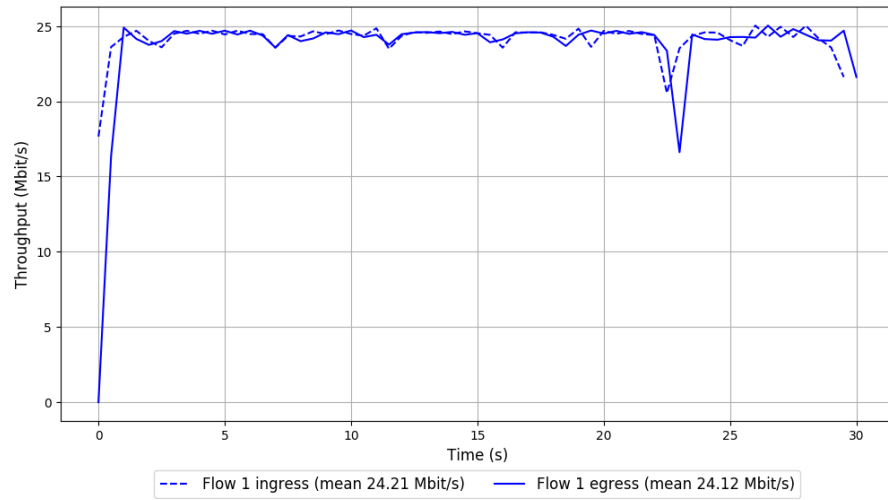
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-10-09 18:59:30
End at: 2018-10-09 19:00:00
Local clock offset: 1.016 ms
Remote clock offset: -1.912 ms


# Below is generated by plot.py at 2018-10-09 19:45:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 24.12 Mbit/s
95th percentile per-packet one-way delay: 10.157 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 24.12 Mbit/s
95th percentile per-packet one-way delay: 10.157 ms
Loss rate: 0.37%
```

Run 4: Report of Sprout — Data Link

Flow 1 ingress (mean 24.21 Mbit/s)   Flow 1 egress (mean 24.12 Mbit/s)
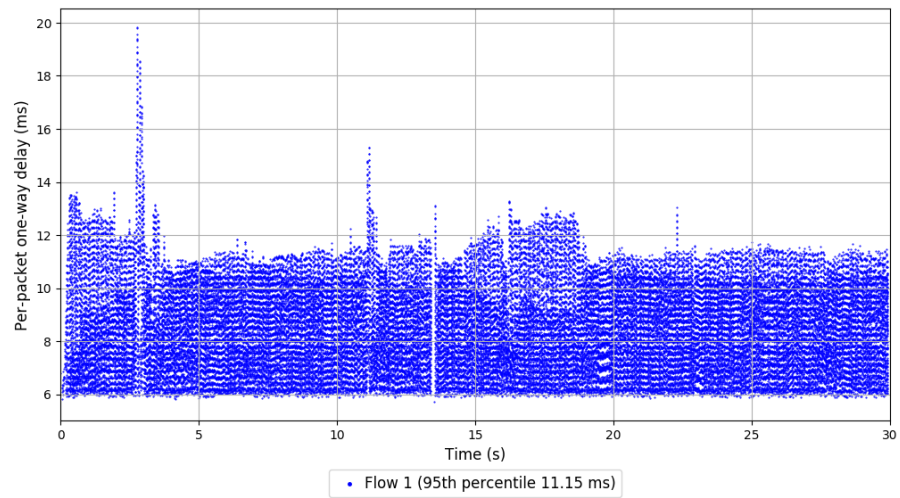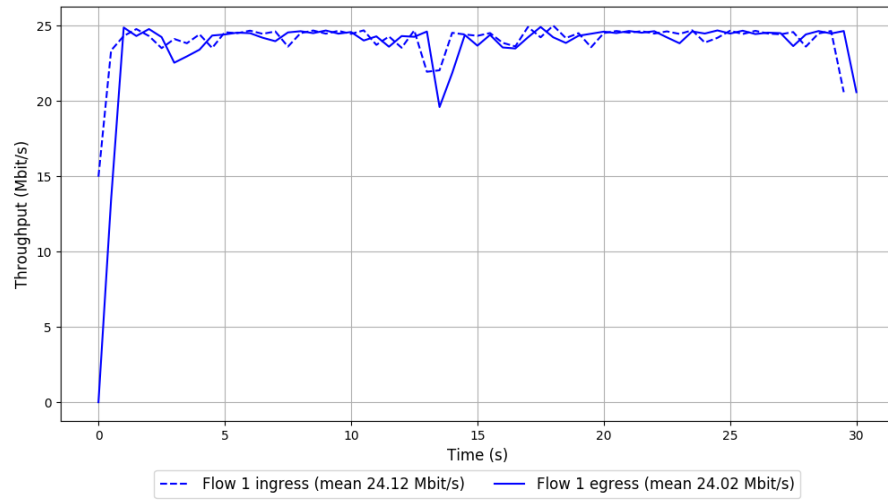

Flow 1 (95th percentile 10.16 ms)

```
Run 5: Statistics of Sprout

Start at: 2018-10-09 19:20:18
End at: 2018-10-09 19:20:48
Local clock offset: 2.652 ms
Remote clock offset: -1.524 ms


# Below is generated by plot.py at 2018-10-09 19:45:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 24.02 Mbit/s
95th percentile per-packet one-way delay: 11.153 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 24.02 Mbit/s
95th percentile per-packet one-way delay: 11.153 ms
Loss rate: 0.44%
```

Run 5: Report of Sprout — Data Link

Flow 1 ingress (mean 24.12 Mbit/s)   Flow 1 egress (mean 24.02 Mbit/s)

Flow 1 (95th percentile 11.15 ms)
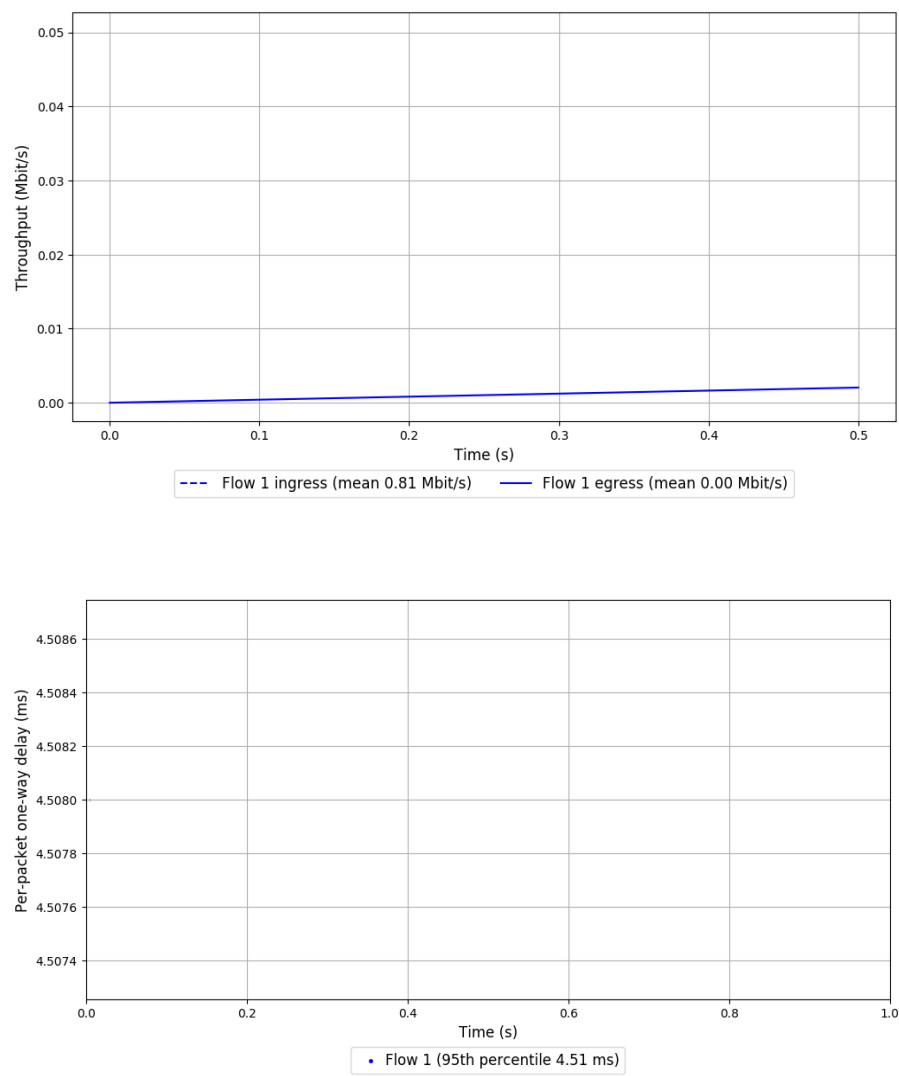
```
Run 1: Statistics of TaoVA-100x

Start at: 2018-10-09 18:09:54
End at: 2018-10-09 18:10:24
Local clock offset: 3.154 ms
Remote clock offset: -2.265 ms
```

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

Flow 1 ingress (mean 0.81 Mbit/s)   Flow 1 egress (mean 0.00 Mbit/s)

Flow 1 (95th percentile 4.51 ms)
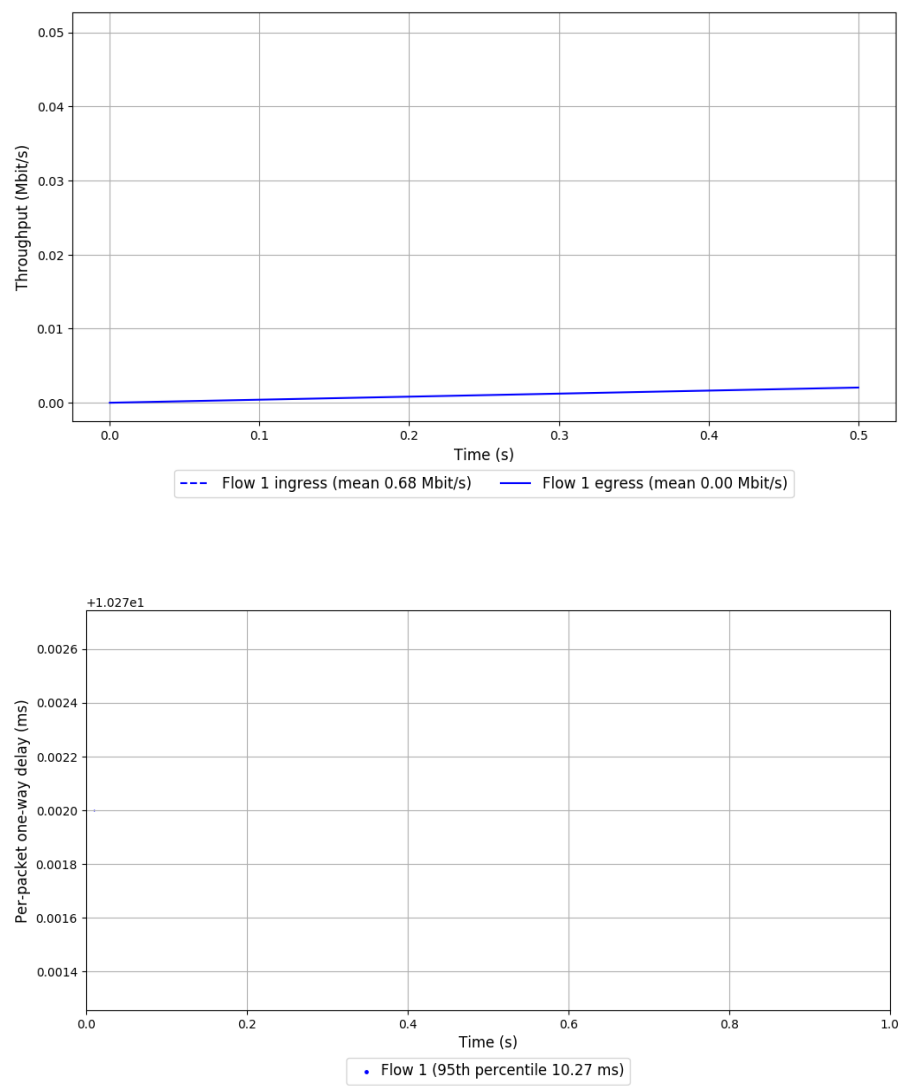
136

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

Start at: 2018-10-09 18:30:39
End at: 2018-10-09 18:31:09
Local clock offset: -0.254 ms
Remote clock offset: -2.477 ms
```

Run 2: Report of TaoVA-100x — Data Link
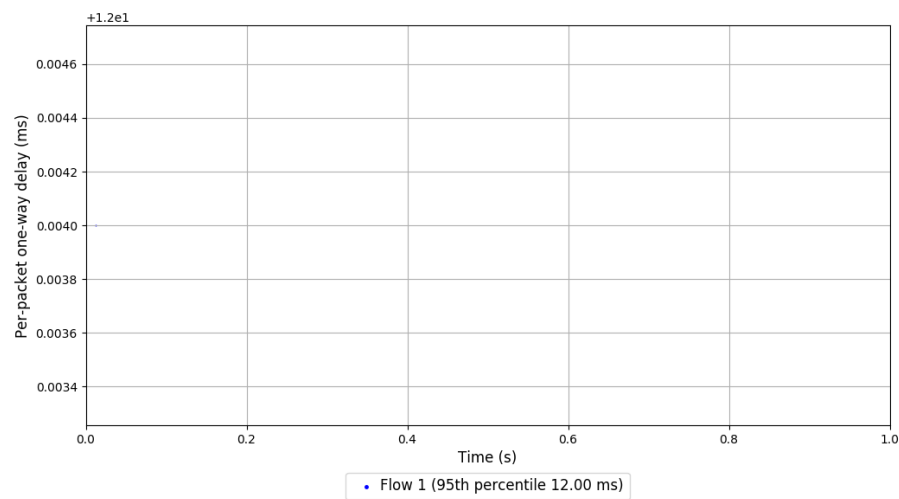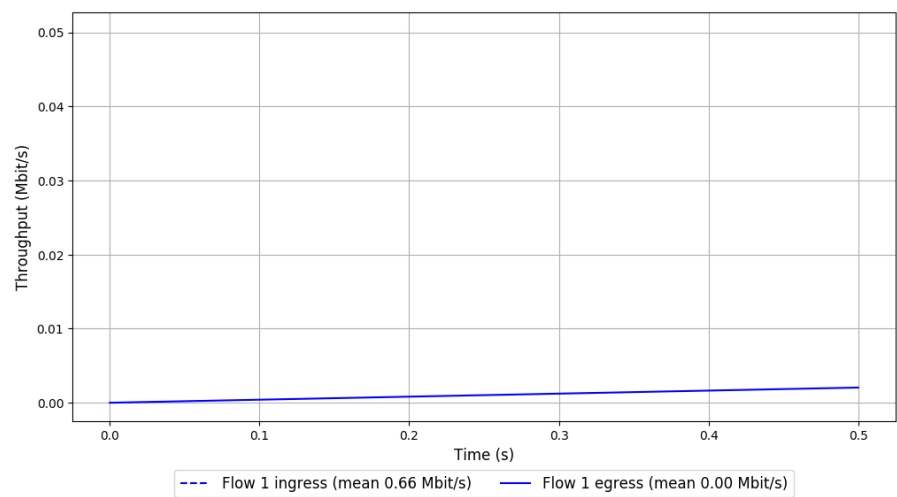
```
Run 3: Statistics of TaoVA-100x

Start at: 2018-10-09 18:51:29
End at: 2018-10-09 18:51:59
Local clock offset: -0.848 ms
Remote clock offset: -1.277 ms
```

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

Flow 1 ingress (mean 0.66 Mbit/s) Flow 1 egress (mean 0.00 Mbit/s)

Flow 1 (95th percentile 12.00 ms)
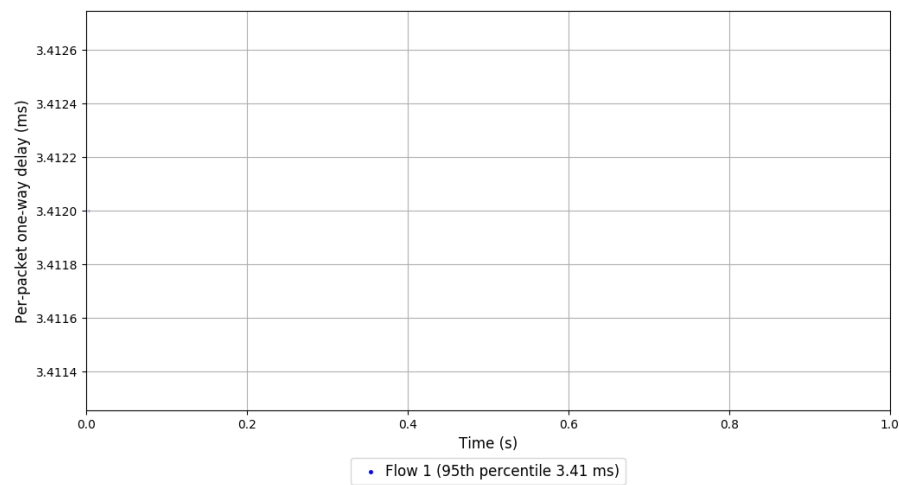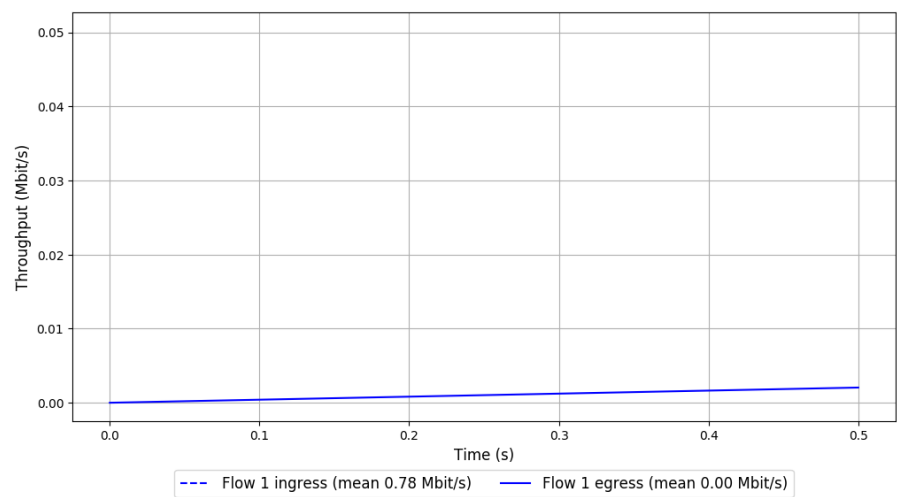
```
Run 4: Statistics of TaoVA-100x

Start at: 2018-10-09 19:12:24
End at: 2018-10-09 19:12:54
Local clock offset: 5.026 ms
Remote clock offset: -1.757 ms
```

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

Flow 1 ingress (mean 0.78 Mbit/s)   Flow 1 egress (mean 0.00 Mbit/s)

Flow 1 (95th percentile 3.41 ms)
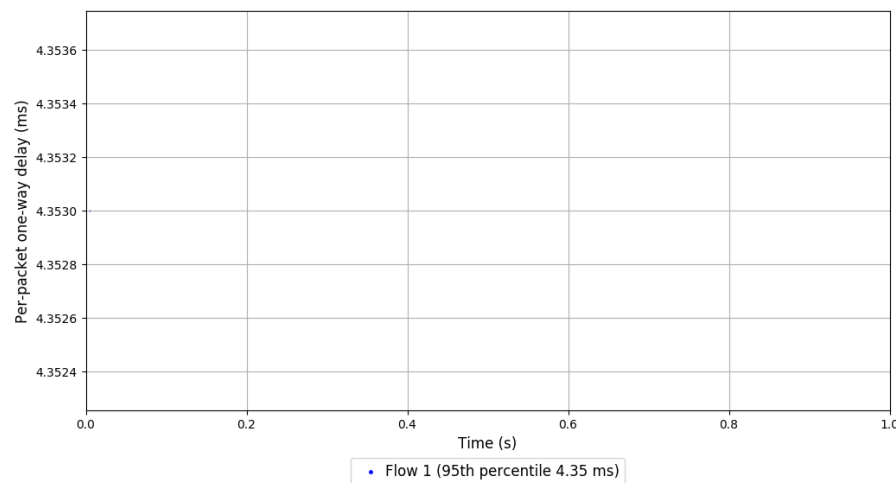
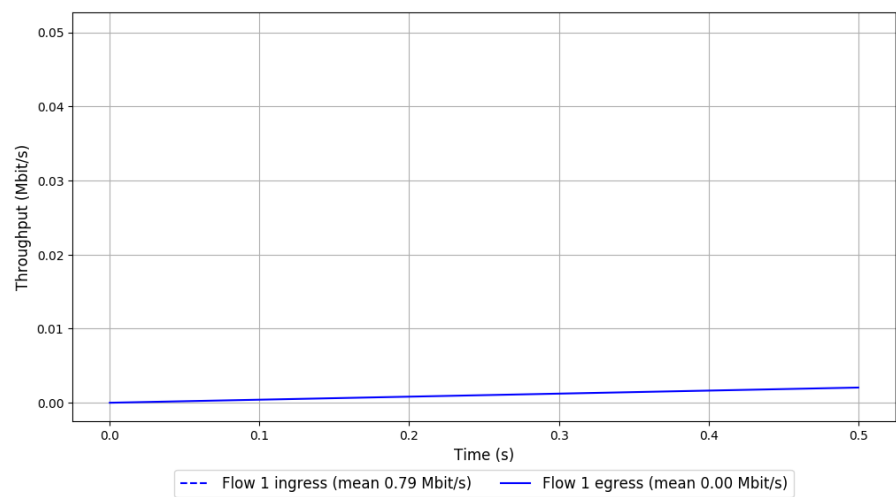```
Run 5: Statistics of TaoVA-100x

Start at: 2018-10-09 19:33:07
End at: 2018-10-09 19:33:37
Local clock offset: 2.902 ms
Remote clock offset: -2.61 ms
```

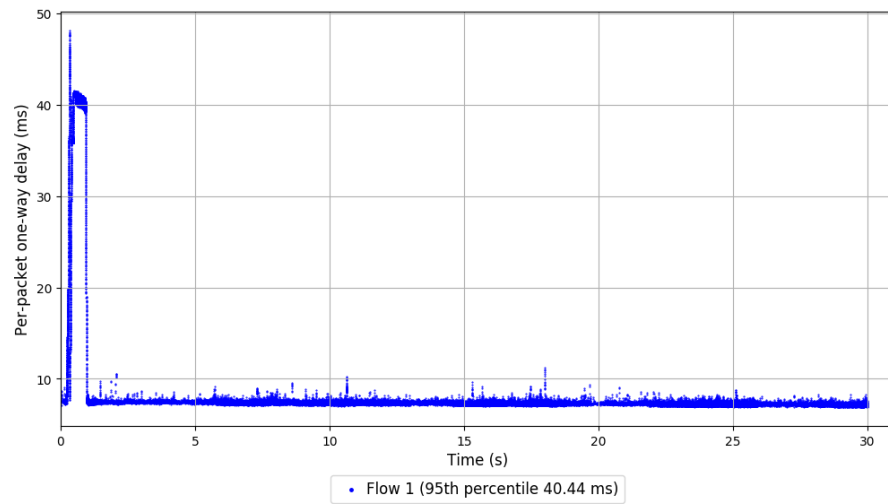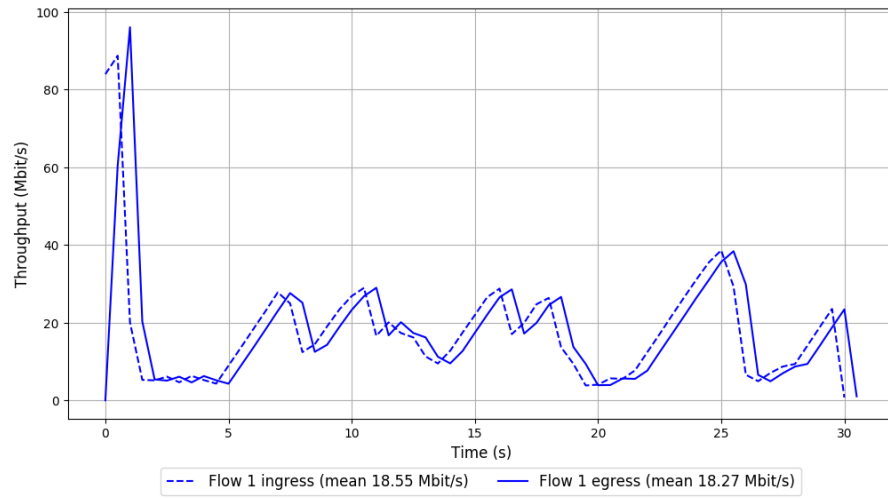## Run 5: Report of TaoVA-100x — Data Link

```
Run 1: Statistics of TCP Vegas

Start at: 2018-10-09 18:12:11
End at: 2018-10-09 18:12:41
Local clock offset: 4.551 ms
Remote clock offset: -2.763 ms


# Below is generated by plot.py at 2018-10-09 19:45:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 18.27 Mbit/s
95th percentile per-packet one-way delay: 40.437 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 18.27 Mbit/s
95th percentile per-packet one-way delay: 40.437 ms
Loss rate: 1.49%
```

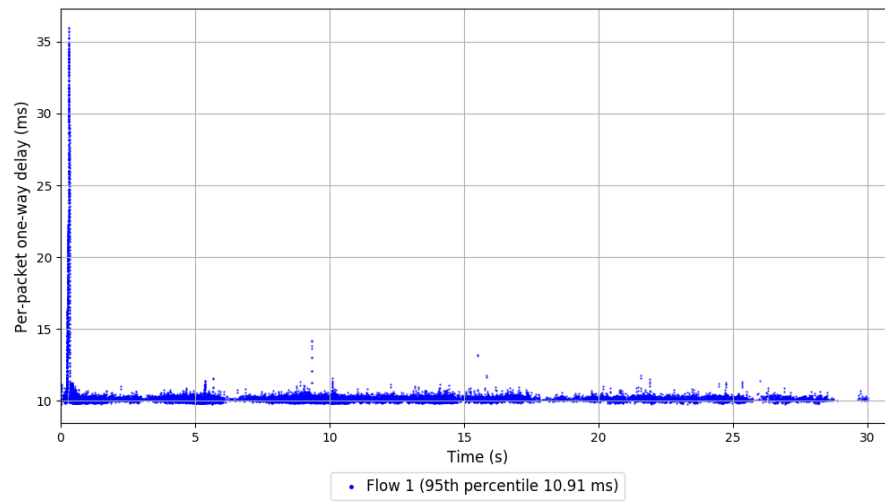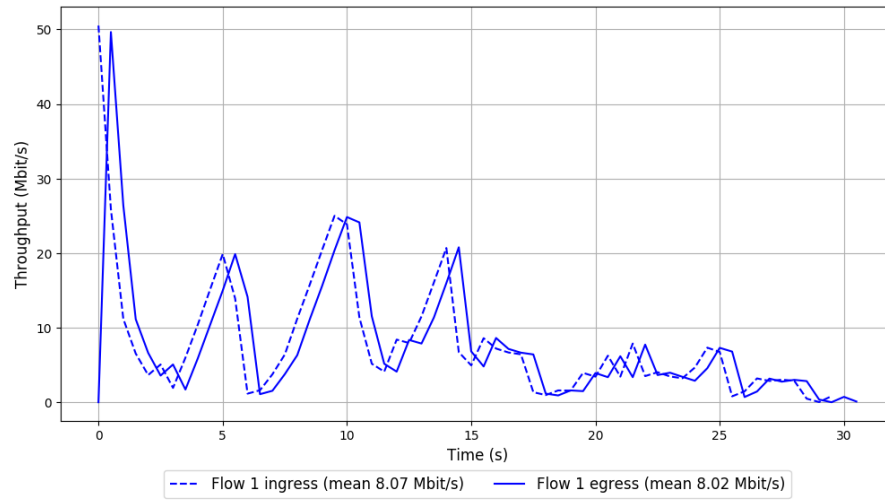# Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2018-10-09 18:32:55
End at: 2018-10-09 18:33:25
Local clock offset: -0.031 ms
Remote clock offset: -1.703 ms


# Below is generated by plot.py at 2018-10-09 19:45:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 8.02 Mbit/s
95th percentile per-packet one-way delay: 10.914 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 8.02 Mbit/s
95th percentile per-packet one-way delay: 10.914 ms
Loss rate: 0.60%
```

Run 2: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 8.07 Mbit/s) — — —   Flow 1 egress (mean 8.02 Mbit/s) ———

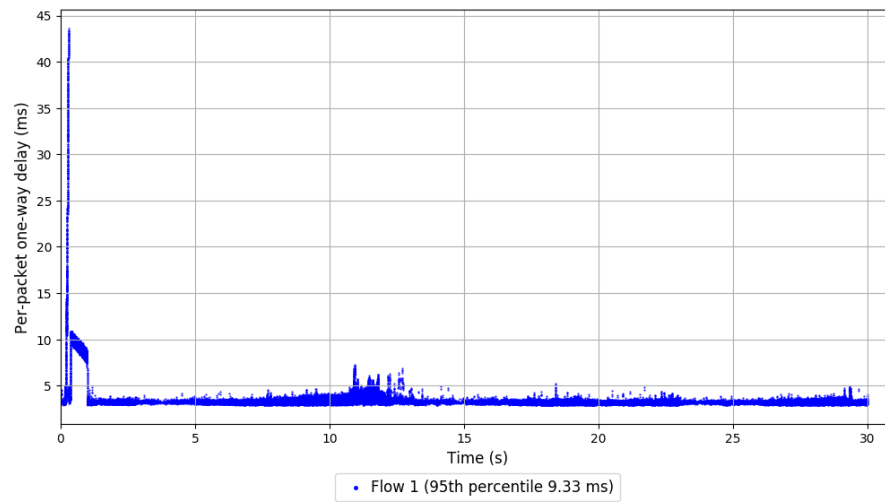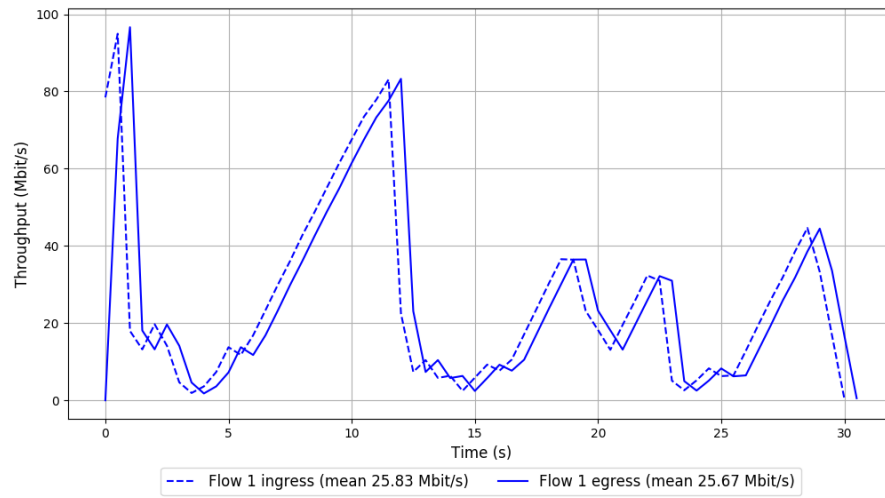

• Flow 1 (95th percentile 10.91 ms)

```
Run 3: Statistics of TCP Vegas

Start at: 2018-10-09 18:53:47
End at: 2018-10-09 18:54:17
Local clock offset: 1.802 ms
Remote clock offset: -0.965 ms


# Below is generated by plot.py at 2018-10-09 19:45:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 25.67 Mbit/s
95th percentile per-packet one-way delay: 9.331 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 25.67 Mbit/s
95th percentile per-packet one-way delay: 9.331 ms
Loss rate: 0.65%
```

Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2018-10-09 19:14:42
End at: 2018-10-09 19:15:12
Local clock offset: 4.339 ms
Remote clock offset: -1.41 ms


# Below is generated by plot.py at 2018-10-09 19:45:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.37 Mbit/s
95th percentile per-packet one-way delay: 12.563 ms
Loss rate: 3.06%
-- Flow 1:
Average throughput: 6.37 Mbit/s
95th percentile per-packet one-way delay: 12.563 ms
Loss rate: 3.06%
```
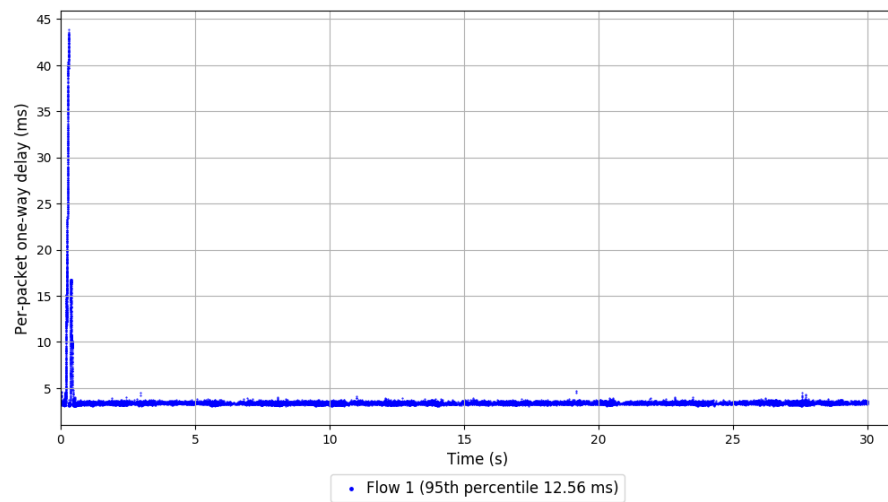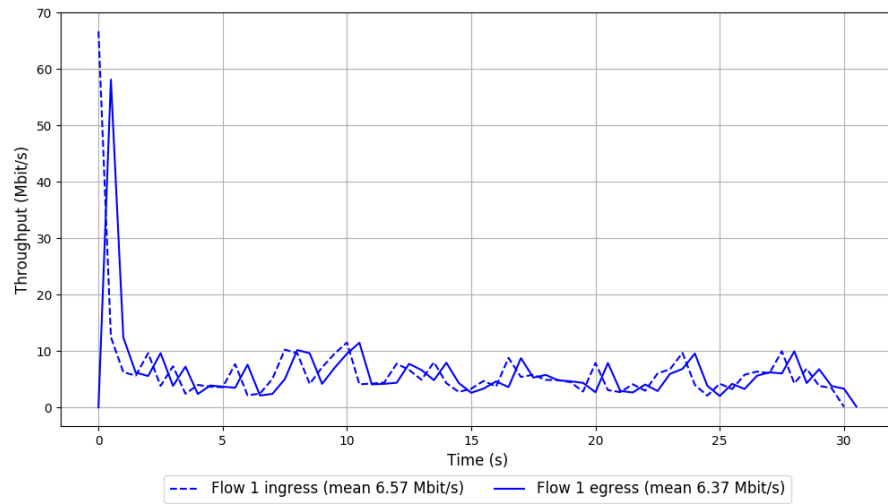
Run 4: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 6.57 Mbit/s) ----   Flow 1 egress (mean 6.37 Mbit/s) ——
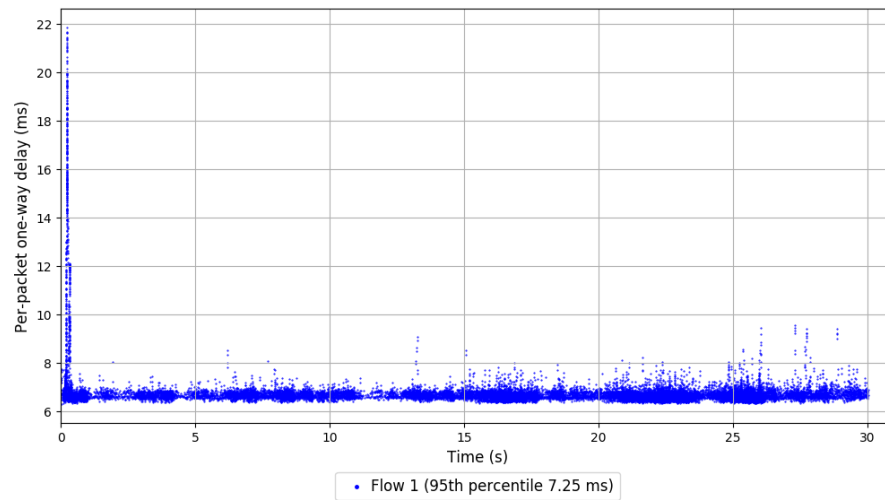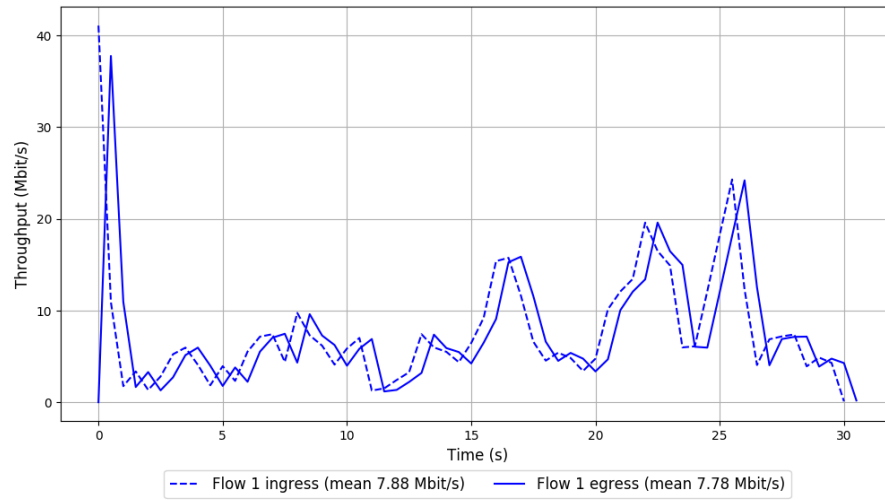

Flow 1 (95th percentile 12.56 ms)

```
Run 5: Statistics of TCP Vegas

Start at: 2018-10-09 19:35:31
End at: 2018-10-09 19:36:01
Local clock offset: 2.416 ms
Remote clock offset: -1.165 ms


# Below is generated by plot.py at 2018-10-09 19:45:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.78 Mbit/s
95th percentile per-packet one-way delay: 7.248 ms
Loss rate: 1.36%
-- Flow 1:
Average throughput: 7.78 Mbit/s
95th percentile per-packet one-way delay: 7.248 ms
Loss rate: 1.36%
```

Run 5: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 7.88 Mbit/s)   Flow 1 egress (mean 7.78 Mbit/s)
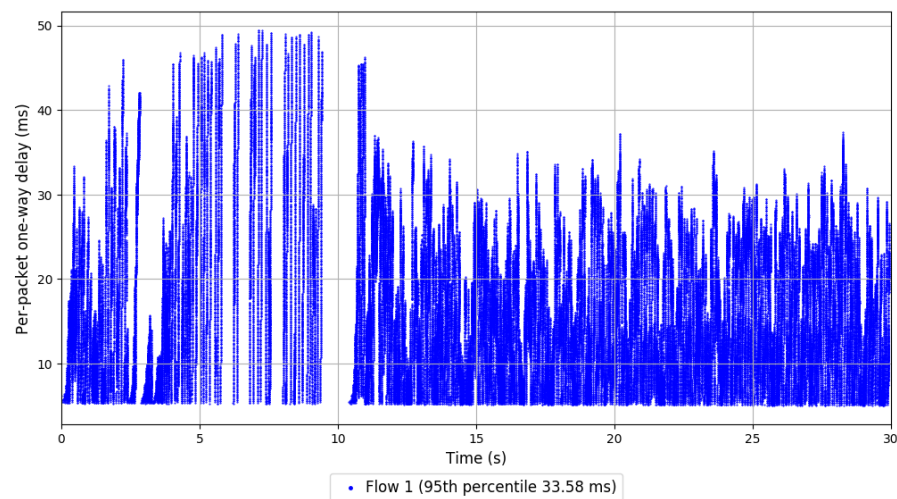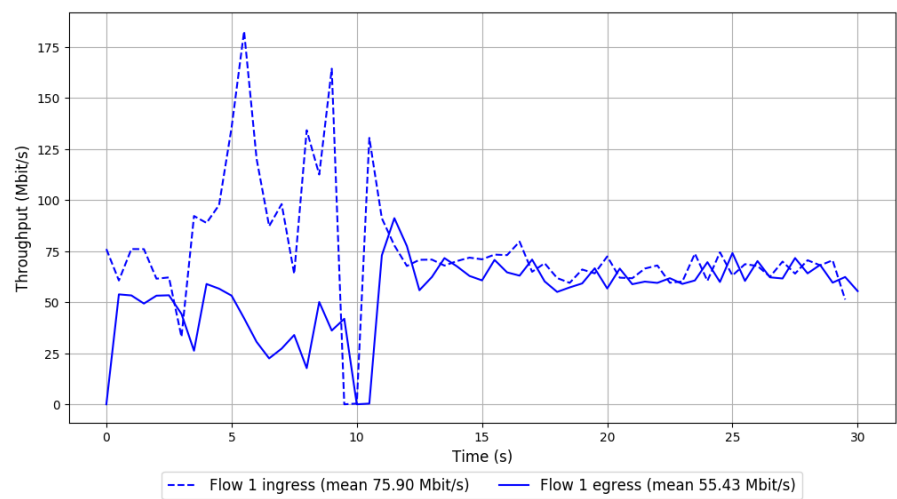

Flow 1 (95th percentile 7.25 ms)

```
Run 1: Statistics of Verus

Start at: 2018-10-09 18:13:17
End at: 2018-10-09 18:13:47
Local clock offset: 1.444 ms
Remote clock offset: -1.672 ms


# Below is generated by plot.py at 2018-10-09 19:46:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 55.43 Mbit/s
95th percentile per-packet one-way delay: 33.584 ms
Loss rate: 26.92%
-- Flow 1:
Average throughput: 55.43 Mbit/s
95th percentile per-packet one-way delay: 33.584 ms
Loss rate: 26.92%
```

Run 1: Report of Verus — Data Link

Flow 1 ingress (mean 75.90 Mbit/s)   Flow 1 egress (mean 55.43 Mbit/s)

• Flow 1 (95th percentile 33.58 ms)

```
Run 2: Statistics of Verus

Start at: 2018-10-09 18:34:01
End at: 2018-10-09 18:34:31
Local clock offset: 0.303 ms
Remote clock offset: -1.48 ms


# Below is generated by plot.py at 2018-10-09 19:46:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 55.98 Mbit/s
95th percentile per-packet one-way delay: 32.025 ms
Loss rate: 24.23%
-- Flow 1:
Average throughput: 55.98 Mbit/s
95th percentile per-packet one-way delay: 32.025 ms
Loss rate: 24.23%
```
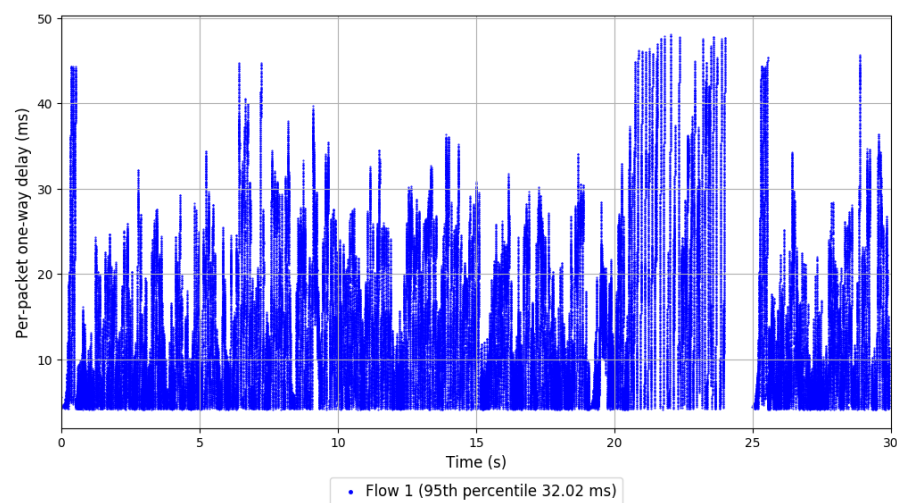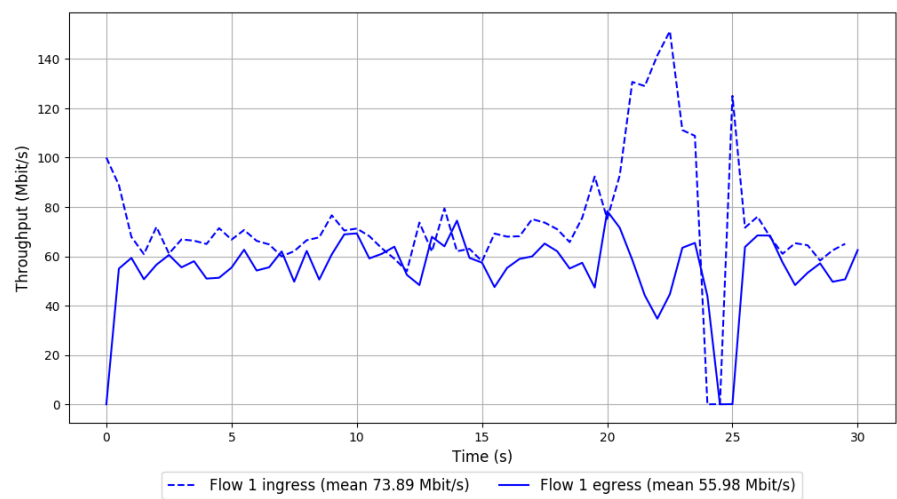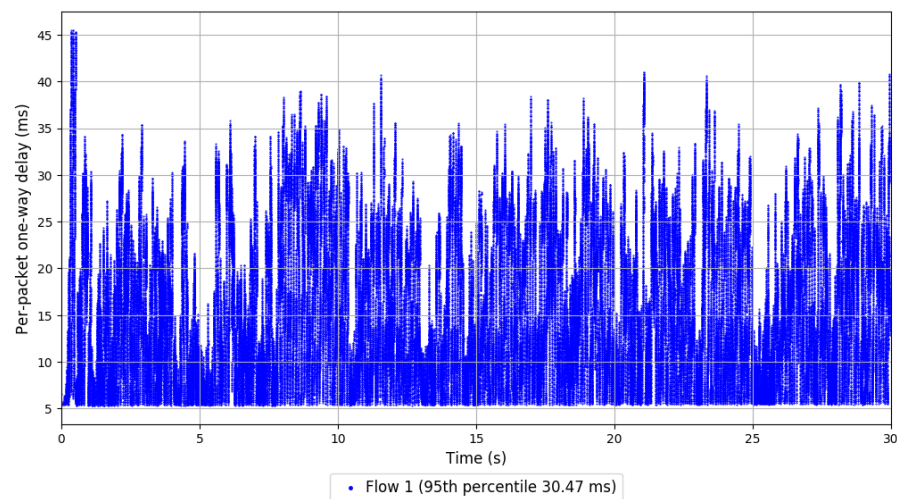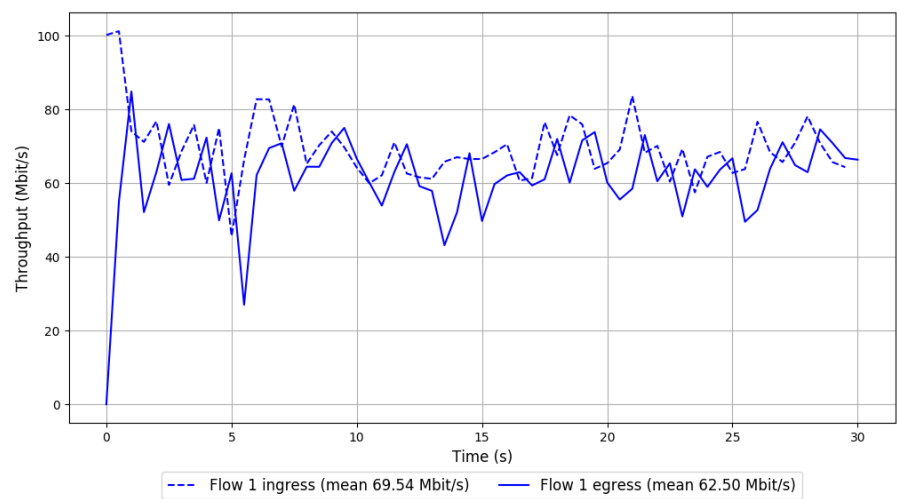
Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2018-10-09 18:54:54
End at: 2018-10-09 18:55:24
Local clock offset: -0.829 ms
Remote clock offset: -1.255 ms


# Below is generated by plot.py at 2018-10-09 19:46:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 62.50 Mbit/s
95th percentile per-packet one-way delay: 30.467 ms
Loss rate: 10.09%
-- Flow 1:
Average throughput: 62.50 Mbit/s
95th percentile per-packet one-way delay: 30.467 ms
Loss rate: 10.09%
```

Run 3: Report of Verus — Data Link

Flow 1 ingress (mean 69.54 Mbit/s)   Flow 1 egress (mean 62.50 Mbit/s)

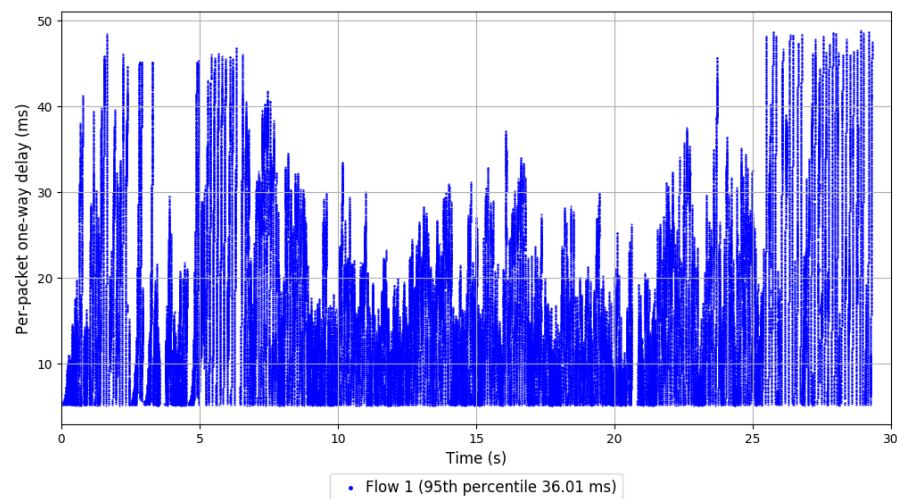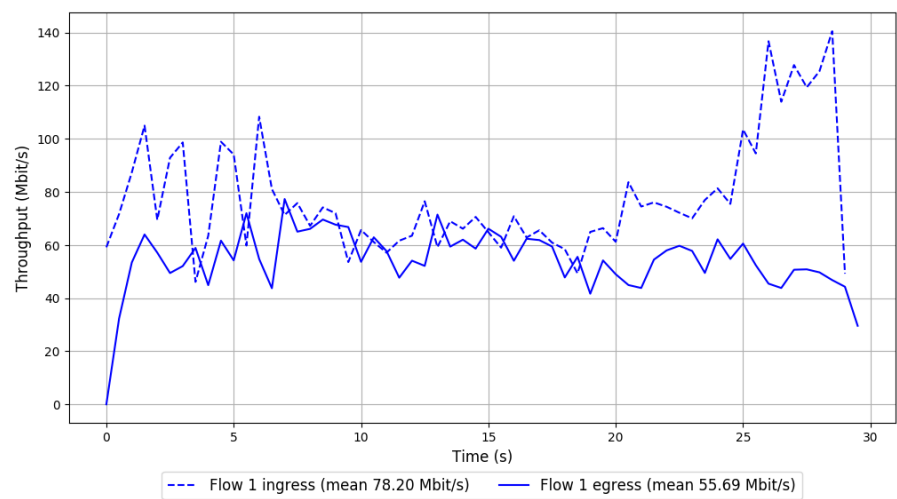

• Flow 1 (95th percentile 30.47 ms)

```
Run 4: Statistics of Verus

Start at: 2018-10-09 19:15:47
End at: 2018-10-09 19:16:17
Local clock offset: 1.662 ms
Remote clock offset: -2.082 ms


# Below is generated by plot.py at 2018-10-09 19:46:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 55.69 Mbit/s
95th percentile per-packet one-way delay: 36.010 ms
Loss rate: 28.72%
-- Flow 1:
Average throughput: 55.69 Mbit/s
95th percentile per-packet one-way delay: 36.010 ms
Loss rate: 28.72%
```

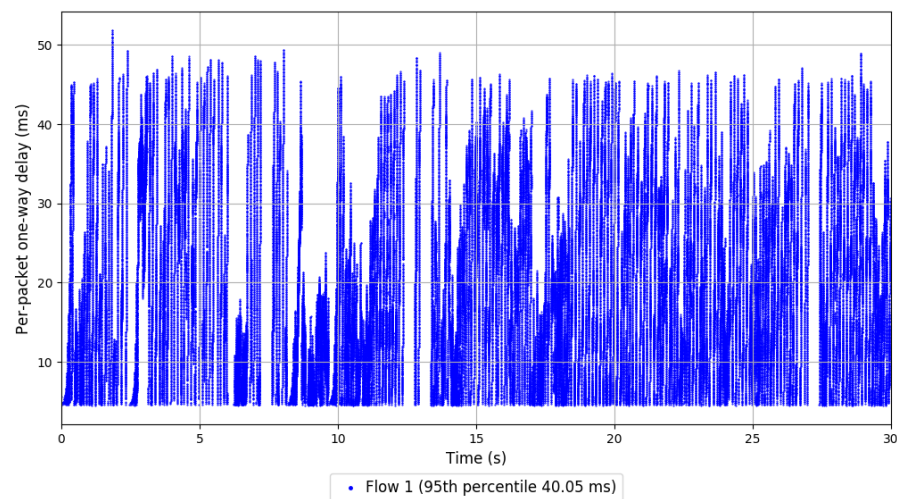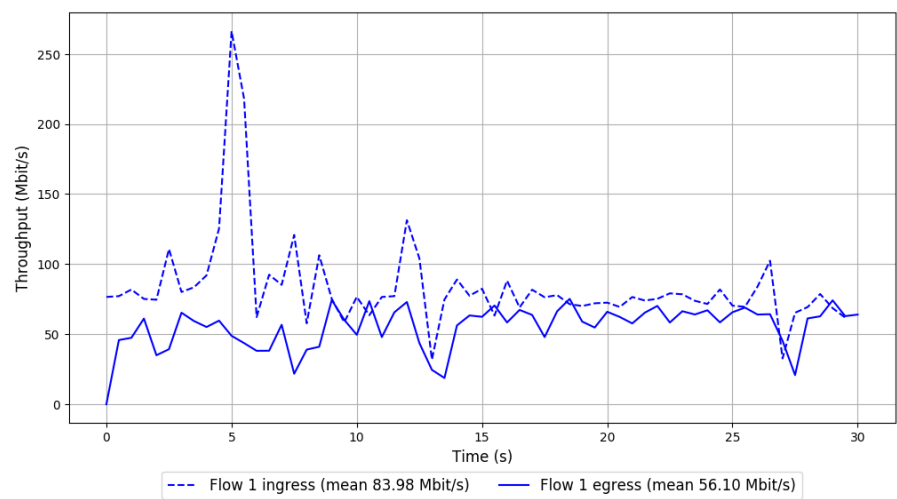## Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-10-09 19:36:41
End at: 2018-10-09 19:37:11
Local clock offset: 2.798 ms
Remote clock offset: -2.578 ms


# Below is generated by plot.py at 2018-10-09 19:46:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 56.10 Mbit/s
95th percentile per-packet one-way delay: 40.047 ms
Loss rate: 33.15%
-- Flow 1:
Average throughput: 56.10 Mbit/s
95th percentile per-packet one-way delay: 40.047 ms
Loss rate: 33.15%
```

Run 5: Report of Verus — Data Link

Flow 1 ingress (mean 83.98 Mbit/s)   Flow 1 egress (mean 56.10 Mbit/s)

• Flow 1 (95th percentile 40.05 ms)

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-10-09 18:03:44
End at: 2018-10-09 18:04:14
Local clock offset: 2.129 ms
Remote clock offset: -2.895 ms


# Below is generated by plot.py at 2018-10-09 19:46:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 35.81 Mbit/s
95th percentile per-packet one-way delay: 4.061 ms
Loss rate: 8.54%
-- Flow 1:
Average throughput: 35.81 Mbit/s
95th percentile per-packet one-way delay: 4.061 ms
Loss rate: 8.54%
```
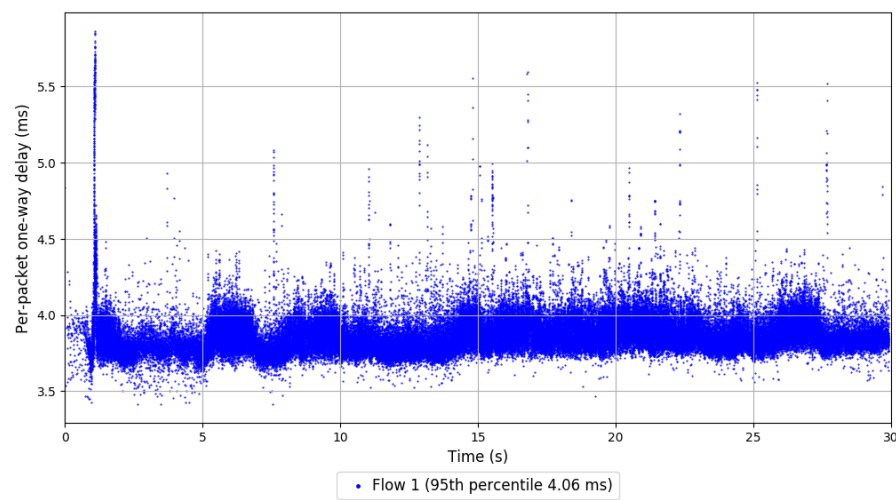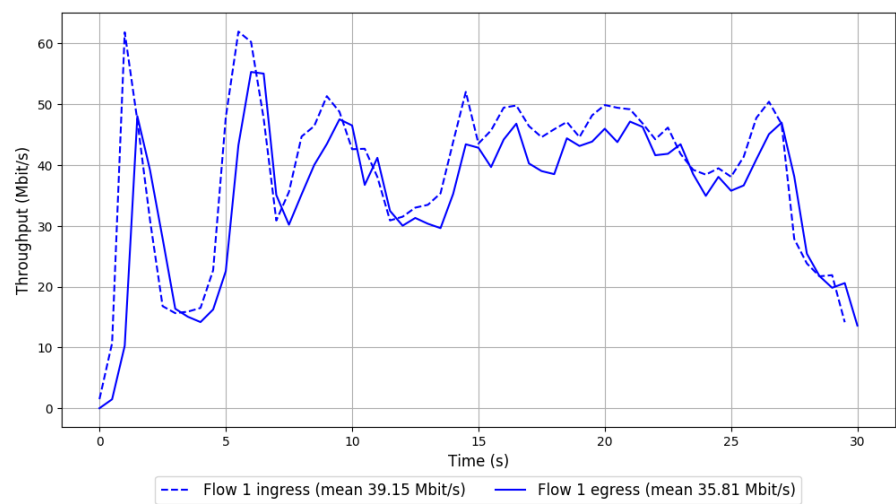
Run 1: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 39.15 Mbit/s) --- Flow 1 egress (mean 35.81 Mbit/s)

Flow 1 (95th percentile 4.06 ms)

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-10-09 18:24:42
End at: 2018-10-09 18:25:12
Local clock offset: 2.077 ms
Remote clock offset: -1.873 ms


# Below is generated by plot.py at 2018-10-09 19:46:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 42.00 Mbit/s
95th percentile per-packet one-way delay: 8.396 ms
Loss rate: 7.48%
-- Flow 1:
Average throughput: 42.00 Mbit/s
95th percentile per-packet one-way delay: 8.396 ms
Loss rate: 7.48%
```
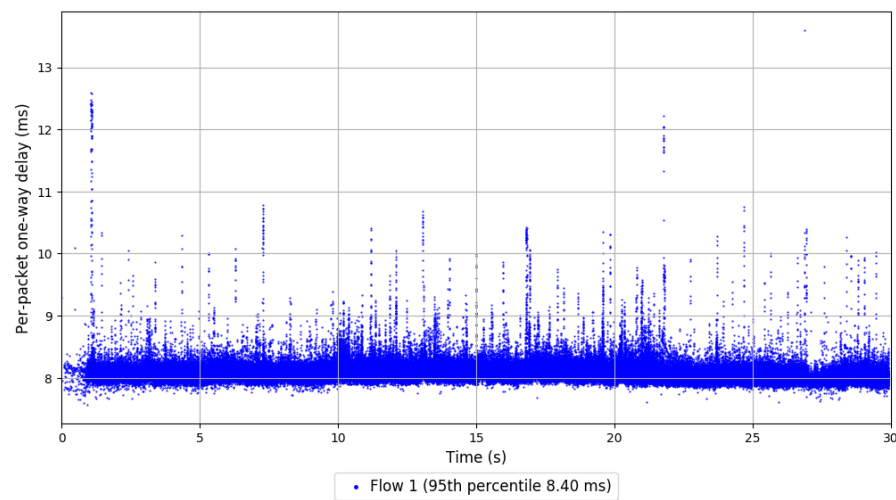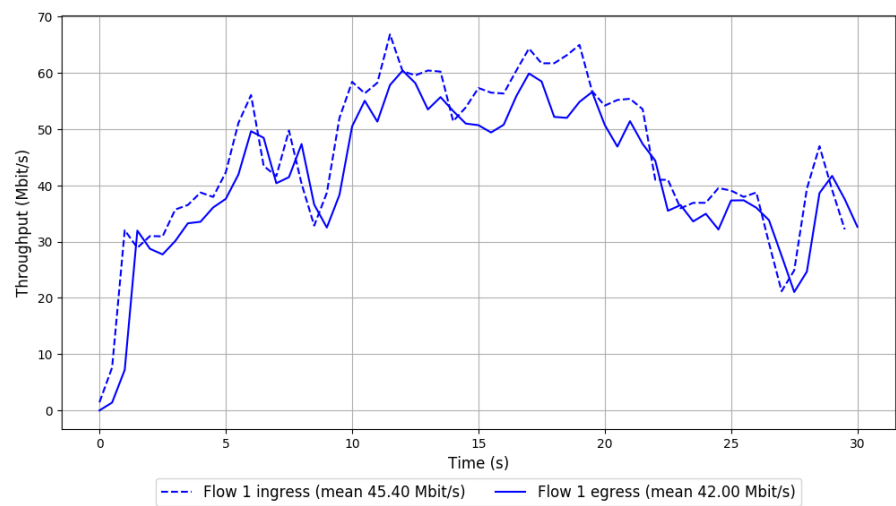
Run 2: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 45.40 Mbit/s) —— Flow 1 egress (mean 42.00 Mbit/s)

• Flow 1 (95th percentile 8.40 ms)

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-10-09 18:45:28
End at: 2018-10-09 18:45:58
Local clock offset: 1.341 ms
Remote clock offset: -1.541 ms


# Below is generated by plot.py at 2018-10-09 19:46:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 48.59 Mbit/s
95th percentile per-packet one-way delay: 9.019 ms
Loss rate: 7.17%
-- Flow 1:
Average throughput: 48.59 Mbit/s
95th percentile per-packet one-way delay: 9.019 ms
Loss rate: 7.17%
```
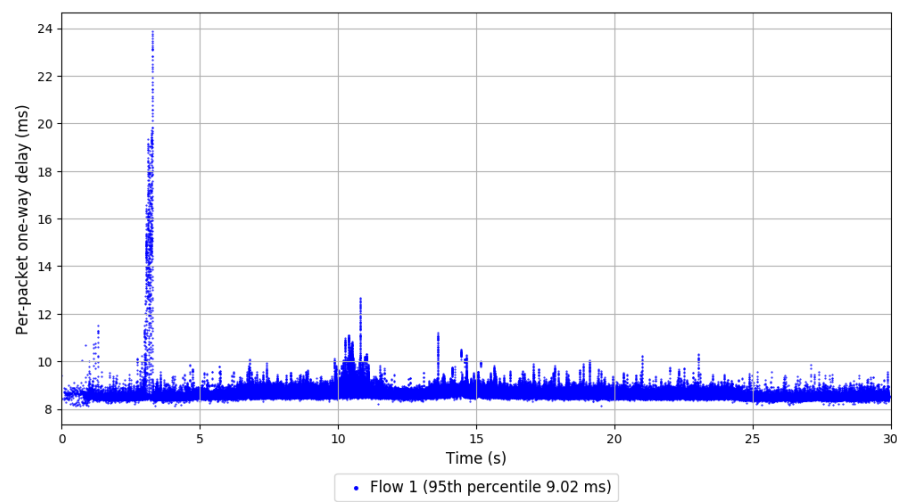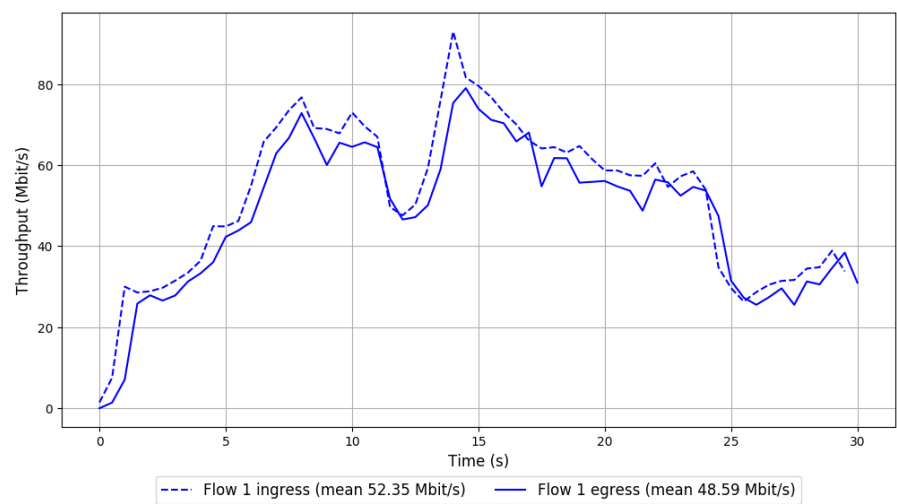
Run 3: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 52.35 Mbit/s) ----- Flow 1 egress (mean 48.59 Mbit/s)

• Flow 1 (95th percentile 9.02 ms)

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-10-09 19:06:26
End at: 2018-10-09 19:06:56
Local clock offset: 1.123 ms
Remote clock offset: -1.91 ms


# Below is generated by plot.py at 2018-10-09 19:46:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 66.41 Mbit/s
95th percentile per-packet one-way delay: 6.658 ms
Loss rate: 5.73%
-- Flow 1:
Average throughput: 66.41 Mbit/s
95th percentile per-packet one-way delay: 6.658 ms
Loss rate: 5.73%
```
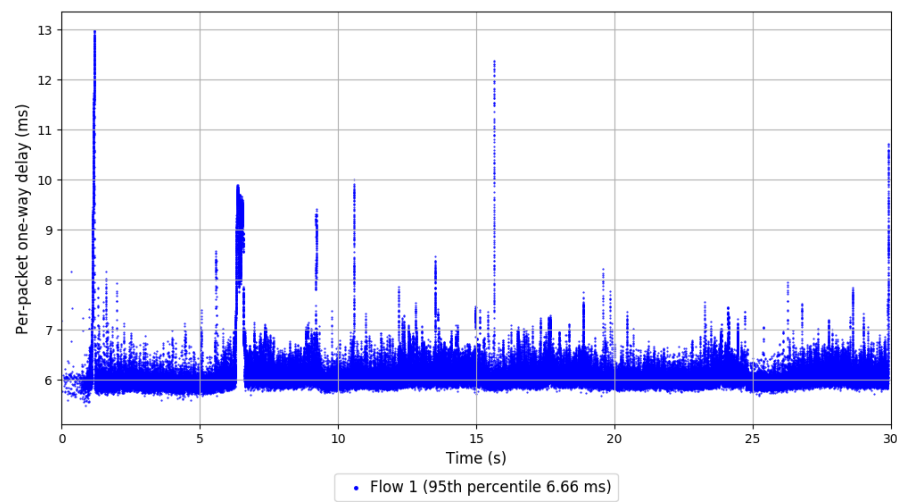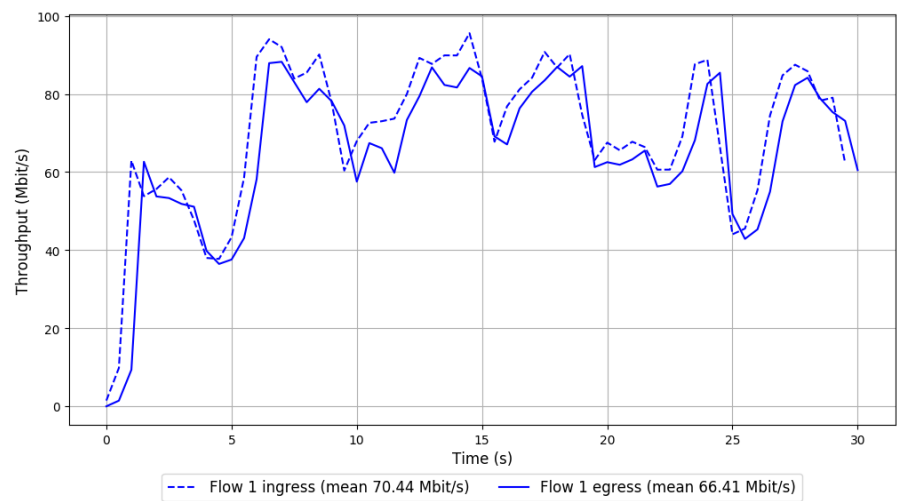
Run 4: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 70.44 Mbit/s) --- Flow 1 egress (mean 66.41 Mbit/s)

Flow 1 (95th percentile 6.66 ms)

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```
Run 5: Statistics of PCC-Vivace

Start at: 2018-10-09 19:27:07
End at: 2018-10-09 19:27:37
Local clock offset: 2.557 ms
Remote clock offset: -0.899 ms


# Below is generated by plot.py at 2018-10-09 19:46:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 61.96 Mbit/s
95th percentile per-packet one-way delay: 7.740 ms
Loss rate: 5.72%
-- Flow 1:
Average throughput: 61.96 Mbit/s
95th percentile per-packet one-way delay: 7.740 ms
Loss rate: 5.72%
```
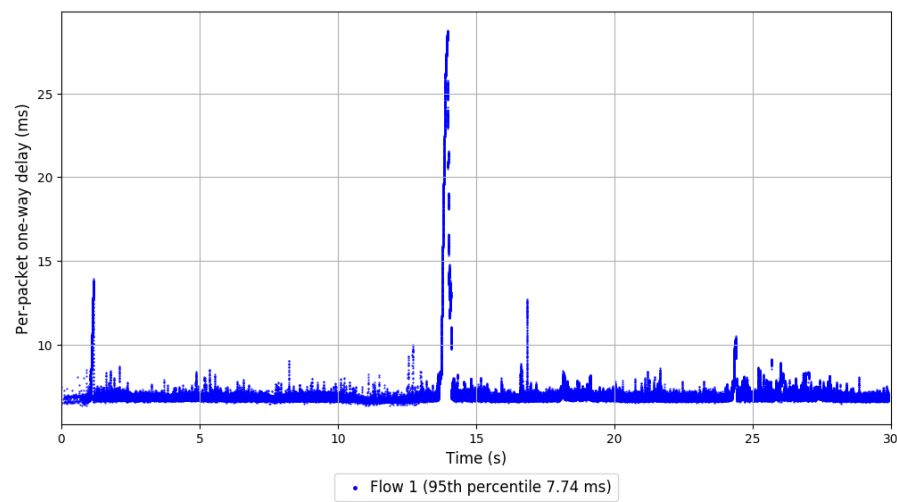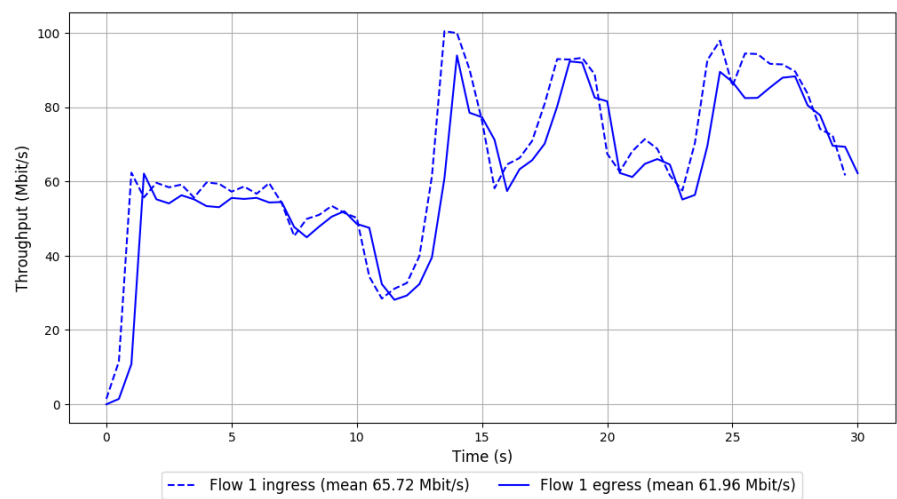
Run 5: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 65.72 Mbit/s)   Flow 1 egress (mean 61.96 Mbit/s)
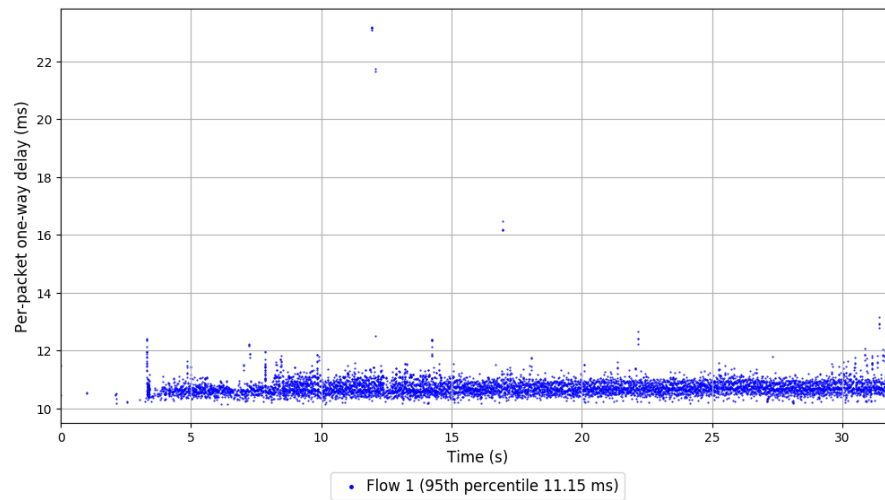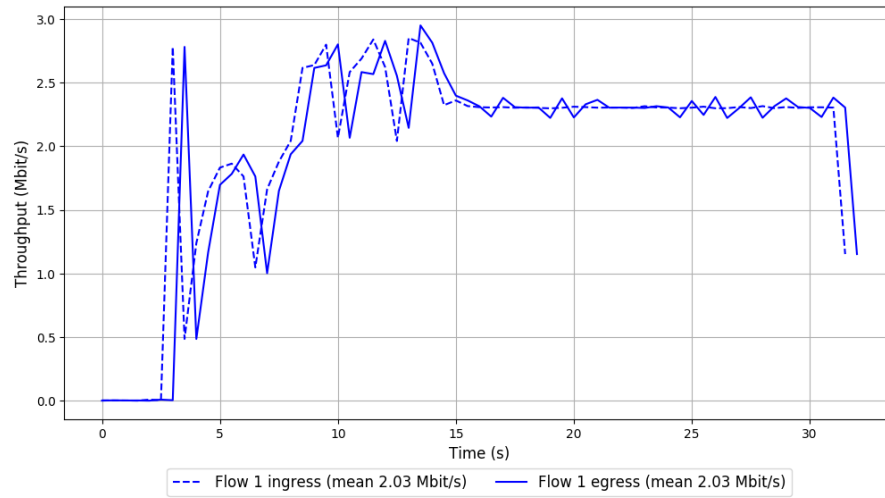

Flow 1 (95th percentile 7.74 ms)

```
Run 1: Statistics of WebRTC media

Start at: 2018-10-09 18:06:06
End at: 2018-10-09 18:06:36
Local clock offset: 2.244 ms
Remote clock offset: -1.864 ms


# Below is generated by plot.py at 2018-10-09 19:46:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.03 Mbit/s
95th percentile per-packet one-way delay: 11.150 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.03 Mbit/s
95th percentile per-packet one-way delay: 11.150 ms
Loss rate: 0.00%
```

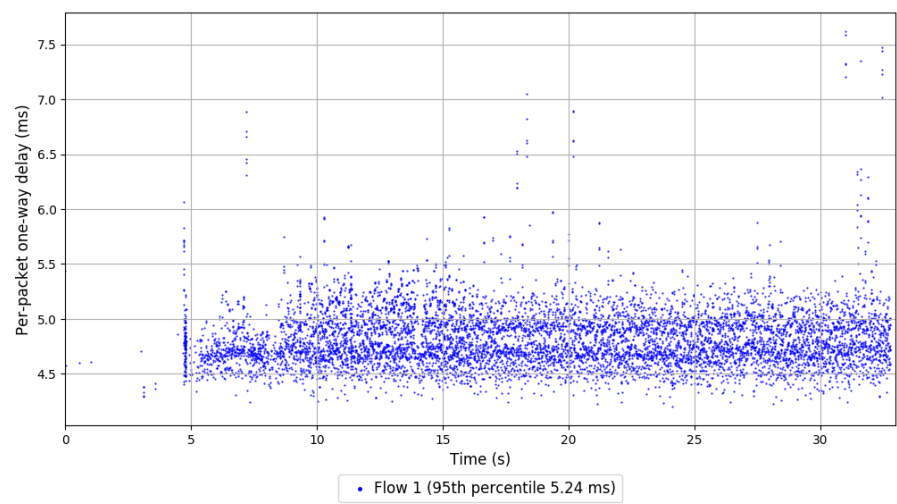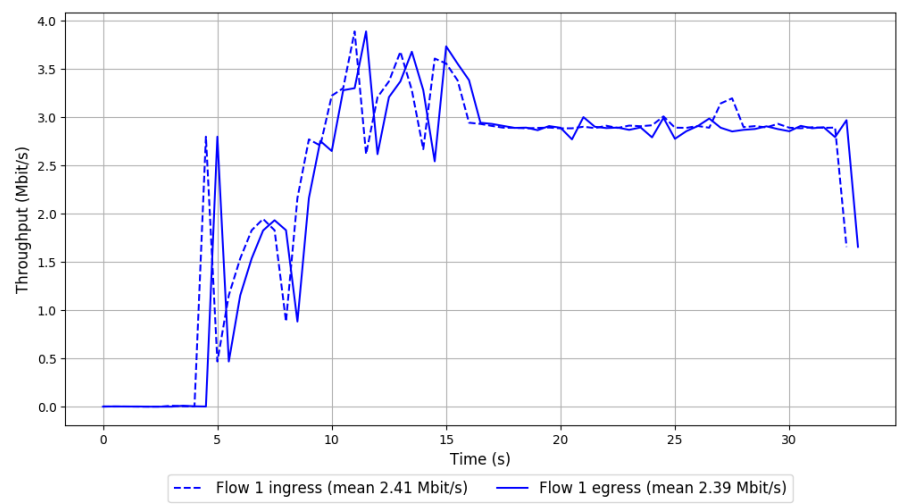Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-10-09 18:27:11
End at: 2018-10-09 18:27:41
Local clock offset: 0.128 ms
Remote clock offset: -1.631 ms


# Below is generated by plot.py at 2018-10-09 19:46:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.39 Mbit/s
95th percentile per-packet one-way delay: 5.243 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 2.39 Mbit/s
95th percentile per-packet one-way delay: 5.243 ms
Loss rate: 0.65%
```

Run 2: Report of WebRTC media — Data Link

Flow 1 ingress (mean 2.41 Mbit/s)   Flow 1 egress (mean 2.39 Mbit/s)
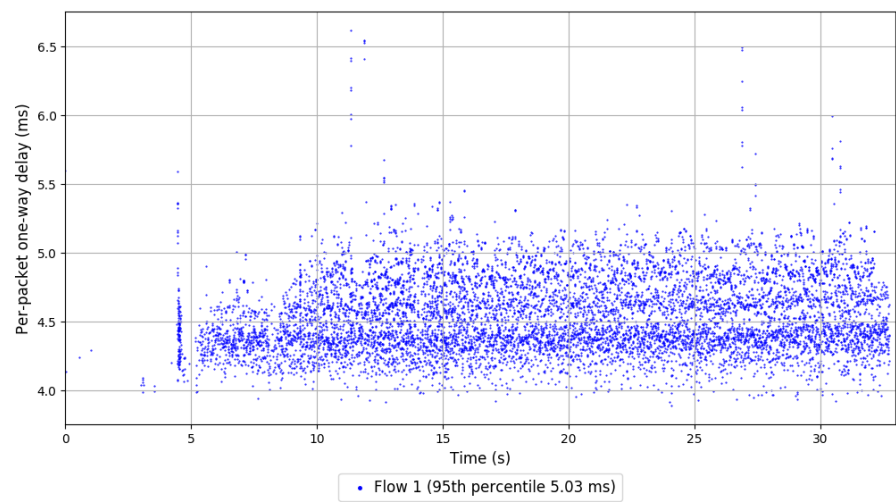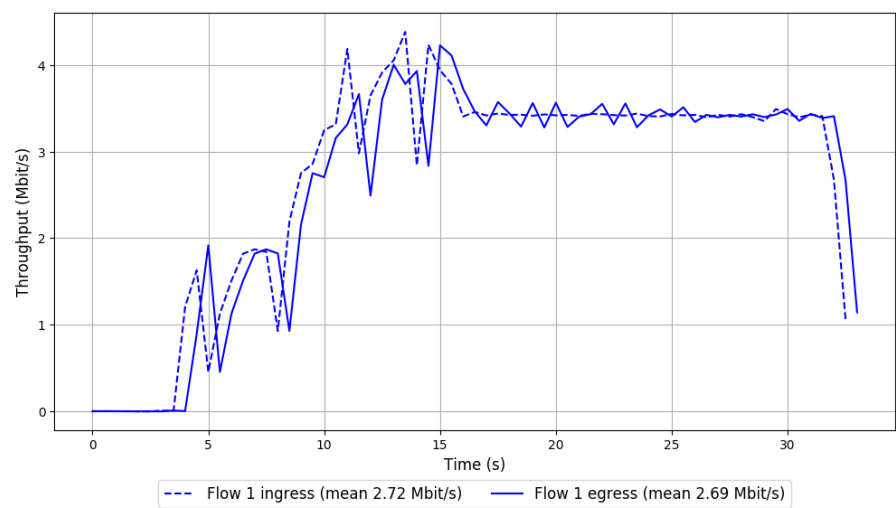

Flow 1 (95th percentile 5.24 ms)

```
Run 3: Statistics of WebRTC media

Start at: 2018-10-09 18:47:54
End at: 2018-10-09 18:48:24
Local clock offset: -0.063 ms
Remote clock offset: -1.689 ms


# Below is generated by plot.py at 2018-10-09 19:46:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.69 Mbit/s
95th percentile per-packet one-way delay: 5.027 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 2.69 Mbit/s
95th percentile per-packet one-way delay: 5.027 ms
Loss rate: 1.05%
```

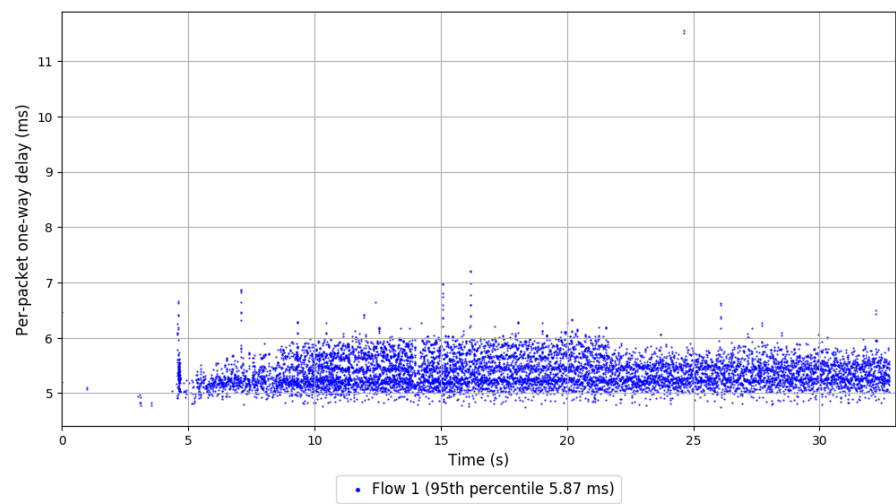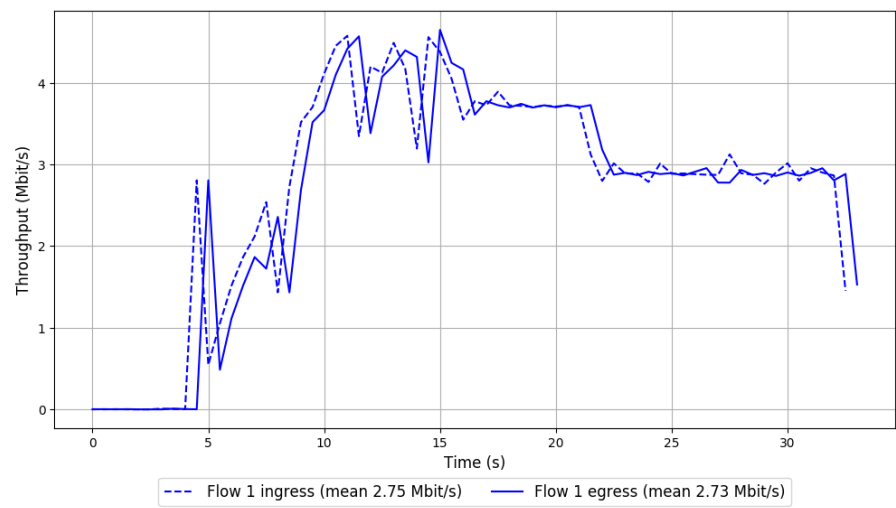Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-10-09 19:08:51
End at: 2018-10-09 19:09:21
Local clock offset: 1.857 ms
Remote clock offset: -1.462 ms


# Below is generated by plot.py at 2018-10-09 19:46:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.73 Mbit/s
95th percentile per-packet one-way delay: 5.870 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 2.73 Mbit/s
95th percentile per-packet one-way delay: 5.870 ms
Loss rate: 0.63%
```

Run 4: Report of WebRTC media — Data Link

Flow 1 ingress (mean 2.75 Mbit/s)   Flow 1 egress (mean 2.73 Mbit/s)

• Flow 1 (95th percentile 5.87 ms)

```
Run 5: Statistics of WebRTC media

Start at: 2018-10-09 19:29:35
End at: 2018-10-09 19:30:05
Local clock offset: 2.632 ms
Remote clock offset: -1.4 ms


# Below is generated by plot.py at 2018-10-09 19:46:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.39 Mbit/s
95th percentile per-packet one-way delay: 6.676 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 2.39 Mbit/s
95th percentile per-packet one-way delay: 6.676 ms
Loss rate: 0.38%
```

Run 5: Report of WebRTC media — Data Link