Pantheon Report

Generated at 2018-10-26 01:25:37 (UTC).

Data path: AWS Brazil 2 on `ens5` (*local*) →Colombia on `p4p1` (*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 `gps.ntp.br` and have been applied to correct the timestamps in logs.
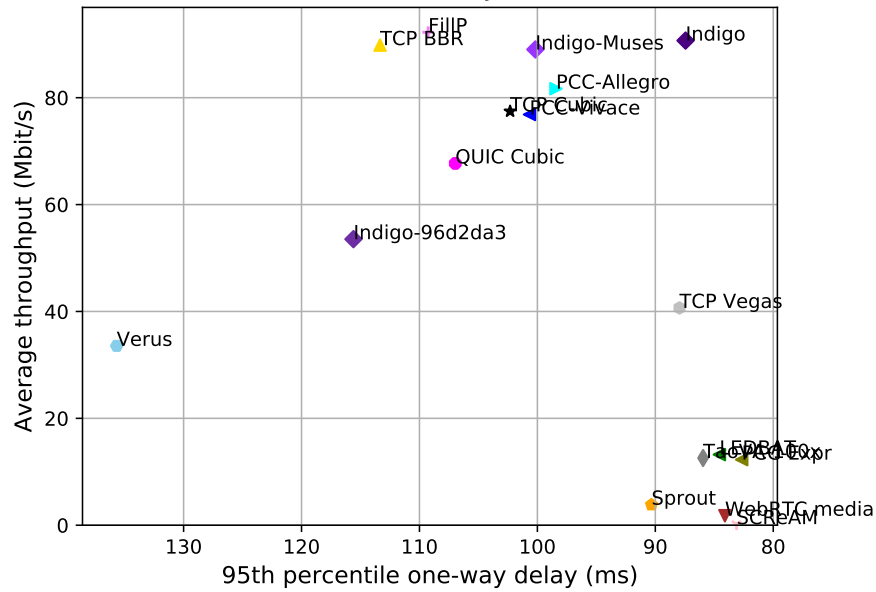
```
System info:
Linux 4.15.0-1023-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ 2e19c0464530faa92c63f8217c9971438a26a3be
third_party/fillp @ 5332fc9127c63565e13f4933b336c02d1aabdac6
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 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
```
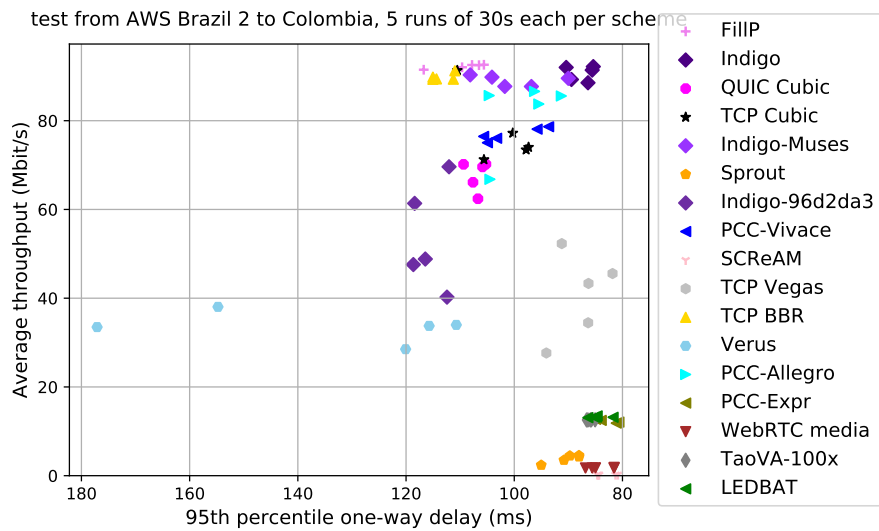
```
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

test from AWS Brazil 2 to Colombia, 5 runs of 30s each per scheme
(mean of all runs by scheme)

test from AWS Brazil 2 to Colombia, 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	89.84	113.34	2.74
Copa	0	N/A	N/A	N/A
TCP Cubic	5	77.45	102.31	0.83
FillP	5	92.25	109.26	2.50
Indigo	5	90.69	87.44	0.76
Indigo-96d2da3	5	53.53	115.60	45.81
LEDBAT	5	13.22	84.57	0.00
Indigo-Muses	5	89.02	100.17	2.43
PCC-Allegro	5	81.68	98.42	1.52
PCC-Expr	4	12.27	82.68	54.45
QUIC Cubic	5	67.70	106.96	0.45
SCReAM	5	0.21	83.11	0.13
Sprout	5	3.84	90.33	0.15
TaoVA-100x	5	12.58	85.95	25.32
TCP Vegas	5	40.66	87.95	1.47
Verus	5	33.56	135.68	43.61
PCC-Vivace	5	76.86	100.67	0.09
WebRTC media	5	1.77	84.10	0.04

```
Run 1: Statistics of TCP BBR

Start at: 2018-10-25 23:32:44
End at: 2018-10-25 23:33:14
Local clock offset: -1.576 ms
Remote clock offset: 3.241 ms

# Below is generated by plot.py at 2018-10-26 01:19:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.34 Mbit/s
95th percentile per-packet one-way delay: 115.041 ms
Loss rate: 3.04%
-- Flow 1:
Average throughput: 89.34 Mbit/s
95th percentile per-packet one-way delay: 115.041 ms
Loss rate: 3.04%
```
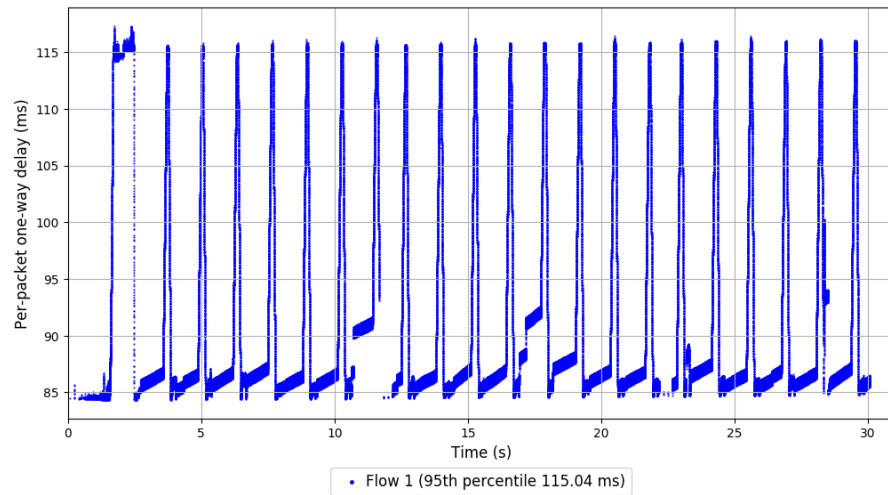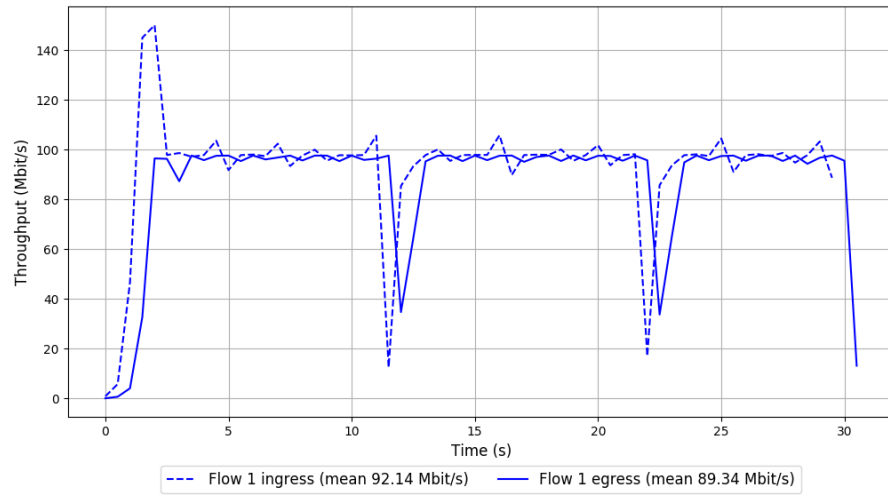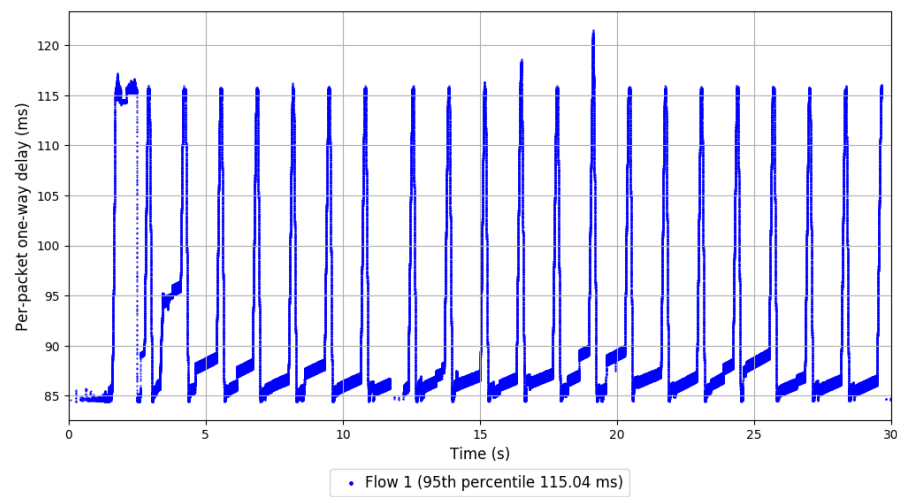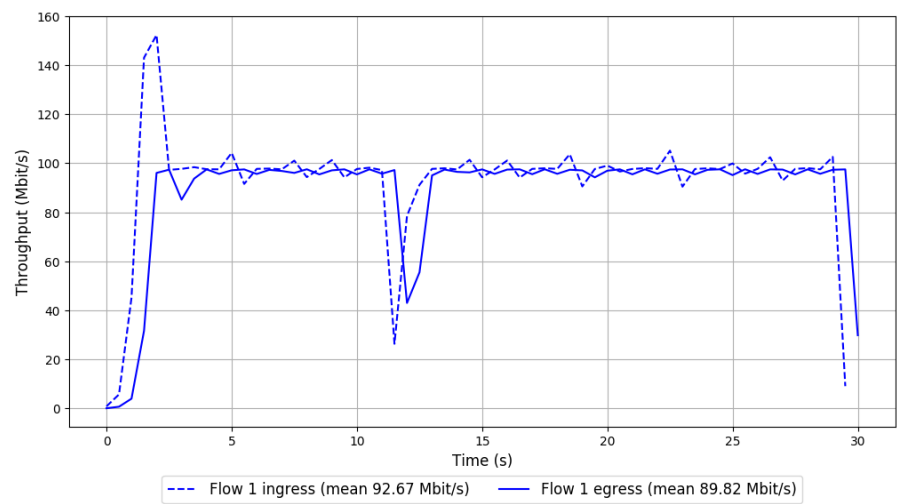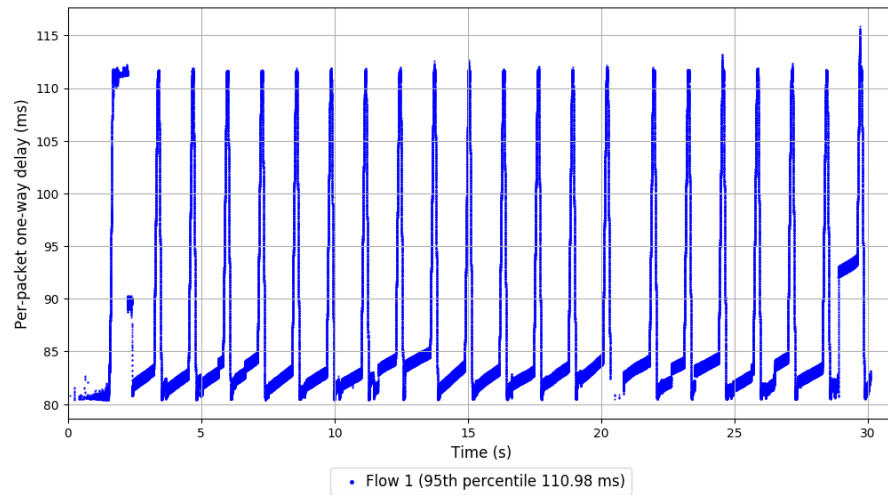
Run 1: Report of TCP BBR — Data Link

Flow 1 ingress (mean 92.14 Mbit/s)   Flow 1 egress (mean 89.34 Mbit/s)

Flow 1 (95th percentile 115.04 ms)

```
Run 2: Statistics of TCP BBR

Start at: 2018-10-25 23:53:42
End at: 2018-10-25 23:54:12
Local clock offset: 1.726 ms
Remote clock offset: 4.417 ms


# Below is generated by plot.py at 2018-10-26 01:19:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.82 Mbit/s
95th percentile per-packet one-way delay: 115.039 ms
Loss rate: 3.08%
-- Flow 1:
Average throughput: 89.82 Mbit/s
95th percentile per-packet one-way delay: 115.039 ms
Loss rate: 3.08%
```
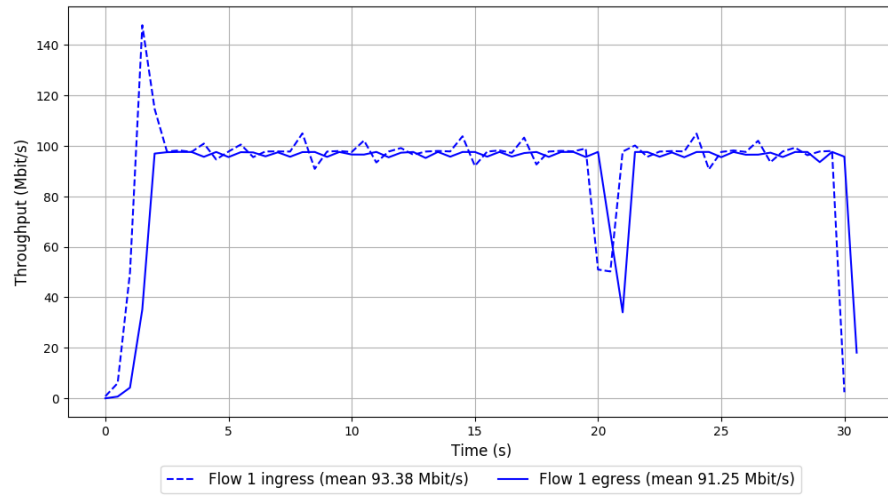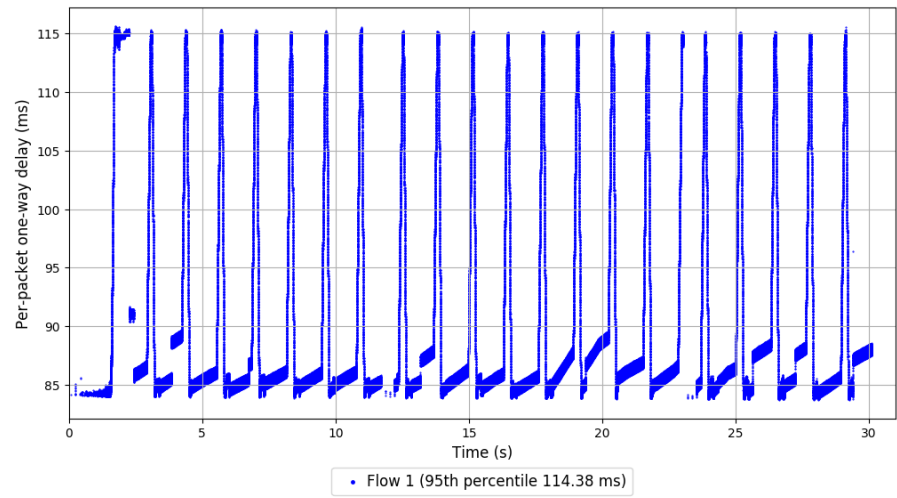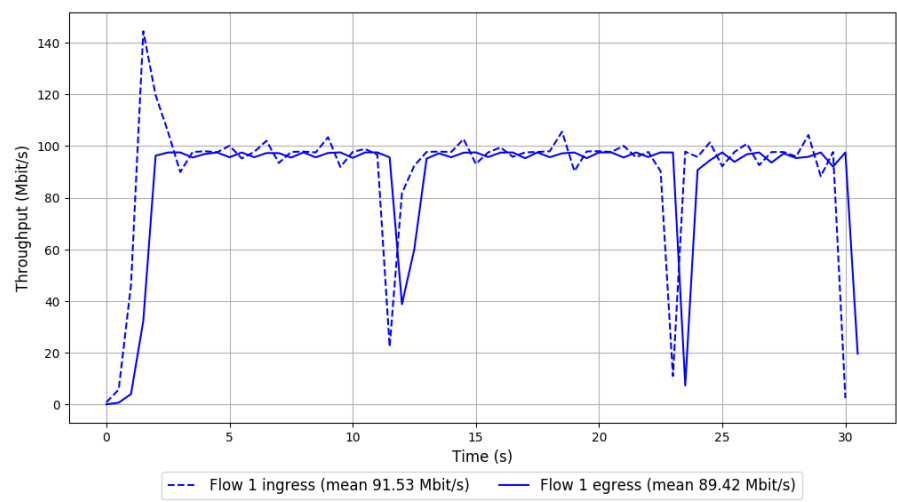
Run 2: Report of TCP BBR — Data Link

Flow 1 ingress (mean 92.67 Mbit/s) --- Flow 1 egress (mean 89.82 Mbit/s)

· Flow 1 (95th percentile 115.04 ms)

```
Run 3: Statistics of TCP BBR

Start at: 2018-10-26 00:14:41
End at: 2018-10-26 00:15:11
Local clock offset: 3.795 ms
Remote clock offset: 0.956 ms

# Below is generated by plot.py at 2018-10-26 01:19:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.25 Mbit/s
95th percentile per-packet one-way delay: 110.977 ms
Loss rate: 2.27%
-- Flow 1:
Average throughput: 91.25 Mbit/s
95th percentile per-packet one-way delay: 110.977 ms
Loss rate: 2.27%
```
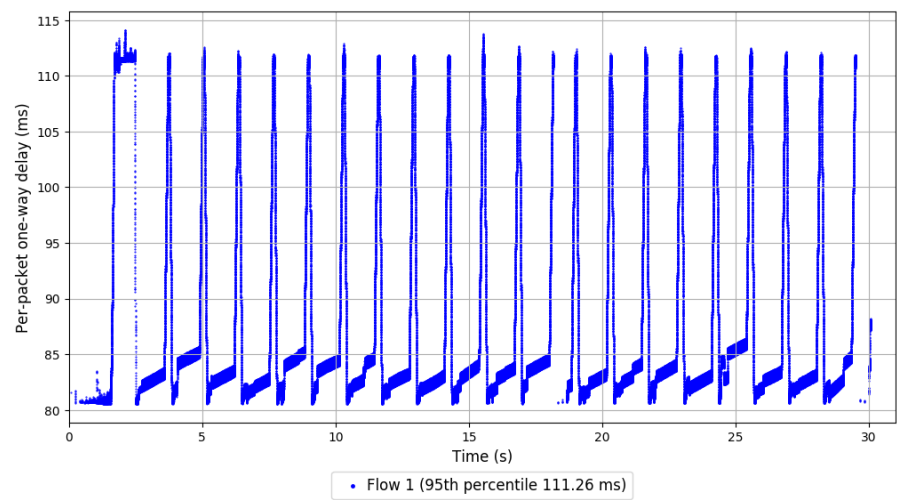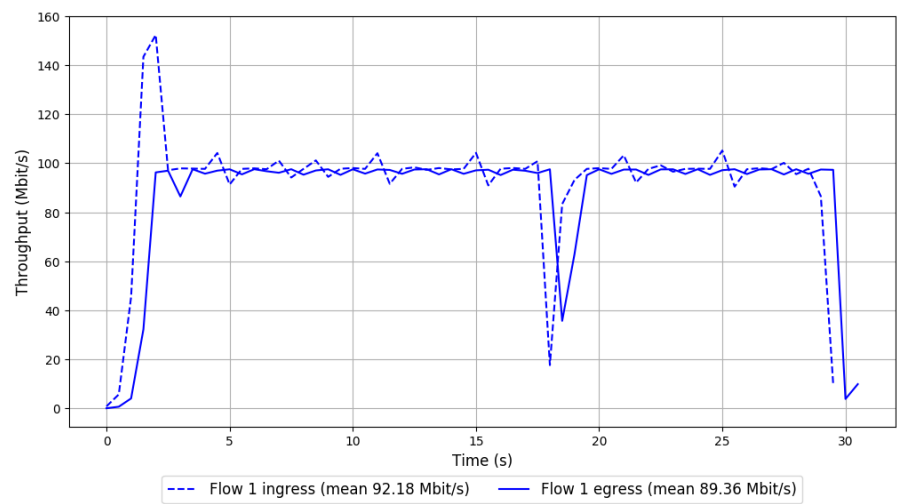
Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 93.38 Mbit/s)   Flow 1 egress (mean 91.25 Mbit/s)

Flow 1 (95th percentile 110.98 ms)

```
Run 4: Statistics of TCP BBR

Start at: 2018-10-26 00:35:39
End at: 2018-10-26 00:36:10
Local clock offset: 5.938 ms
Remote clock offset: 5.24 ms


# Below is generated by plot.py at 2018-10-26 01:19:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.42 Mbit/s
95th percentile per-packet one-way delay: 114.383 ms
Loss rate: 2.29%
-- Flow 1:
Average throughput: 89.42 Mbit/s
95th percentile per-packet one-way delay: 114.383 ms
Loss rate: 2.29%
```

Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 91.53 Mbit/s)   Flow 1 egress (mean 89.42 Mbit/s)

Flow 1 (95th percentile 114.38 ms)

```
Run 5: Statistics of TCP BBR

Start at: 2018-10-26 00:56:48
End at: 2018-10-26 00:57:18
Local clock offset: 4.43 ms
Remote clock offset: 2.264 ms


# Below is generated by plot.py at 2018-10-26 01:19:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.36 Mbit/s
95th percentile per-packet one-way delay: 111.262 ms
Loss rate: 3.04%
-- Flow 1:
Average throughput: 89.36 Mbit/s
95th percentile per-packet one-way delay: 111.262 ms
Loss rate: 3.04%
```

Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 92.18 Mbit/s)   Flow 1 egress (mean 89.36 Mbit/s)

Flow 1 (95th percentile 111.26 ms)

```
Run 1: Statistics of Copa

Start at: 2018-10-25 23:51:26
End at: 2018-10-25 23:51:57
Local clock offset: 4.607 ms
Remote clock offset: 3.967 ms
```

Run 1: Report of Copa — Data Link
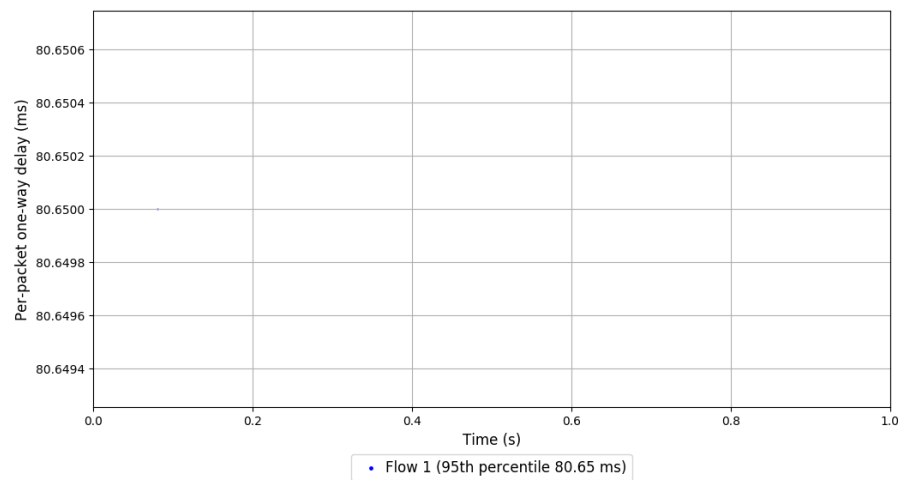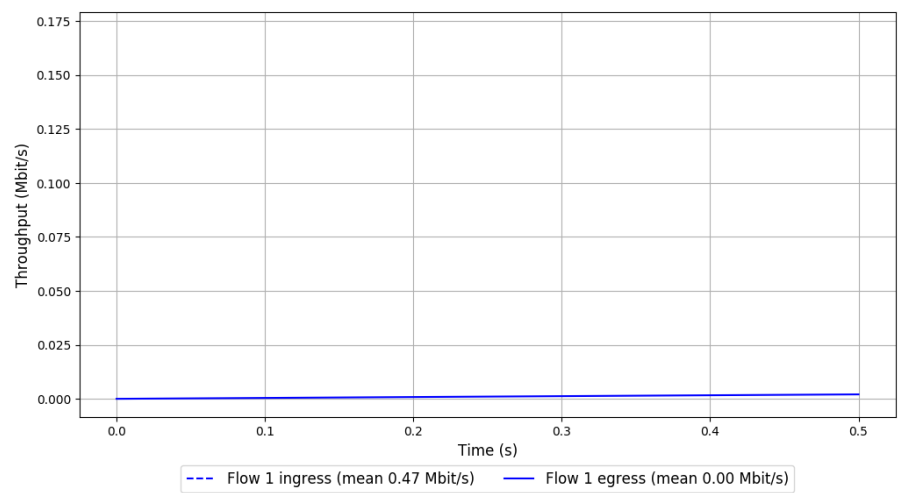
Run 2: Statistics of Copa

Start at: 2018-10-26 00:12:25
End at: 2018-10-26 00:12:55
Local clock offset: 3.432 ms
Remote clock offset: 0.763 ms

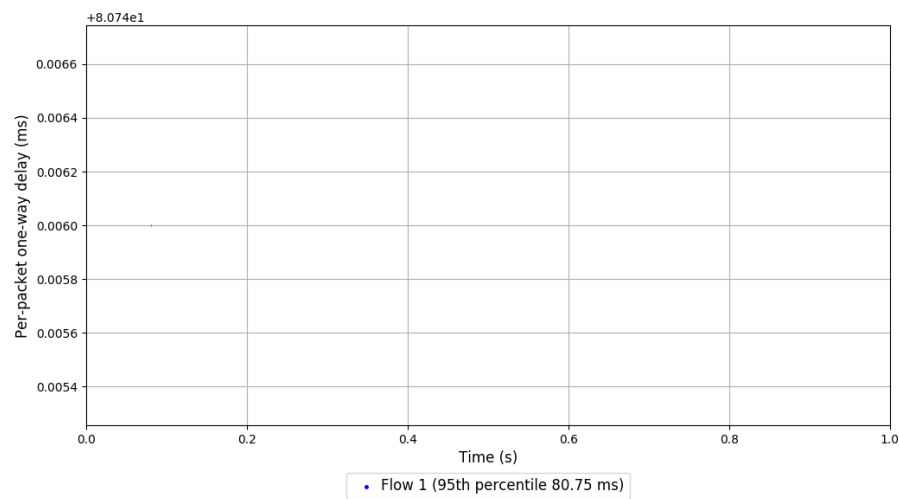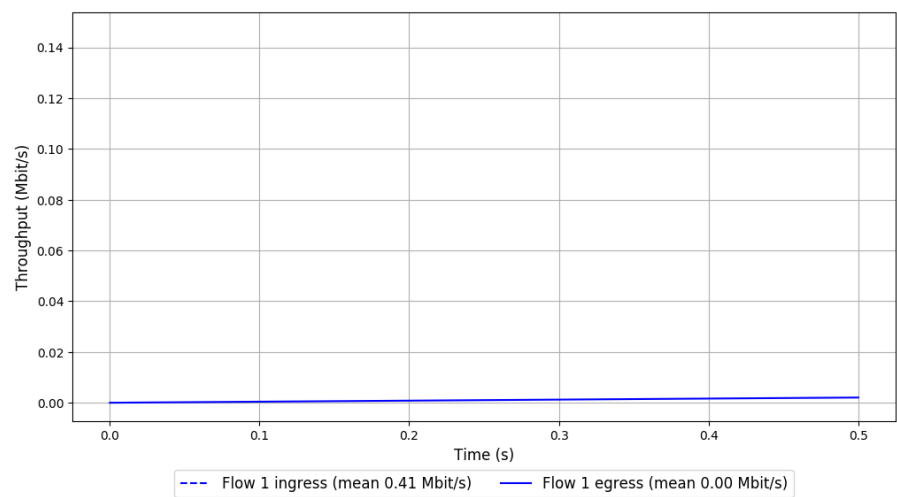## Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2018-10-26 00:33:23
End at: 2018-10-26 00:33:53
Local clock offset: 7.704 ms
Remote clock offset: 5.692 ms
```

Run 3: Report of Copa — Data Link

Run 4: Statistics of Copa

Start at: 2018-10-26 00:54:32
End at: 2018-10-26 00:55:02
Local clock offset: 4.004 ms
Remote clock offset: 1.934 ms

Run 4: Report of Copa — Data Link

Flow 1 ingress (mean 0.47 Mbit/s) --- Flow 1 egress (mean 0.00 Mbit/s)

Flow 1 (95th percentile 80.65 ms)

```
Run 5: Statistics of Copa

Start at: 2018-10-26 01:15:42
End at: 2018-10-26 01:16:12
Local clock offset: 8.067 ms
Remote clock offset: 2.03 ms
```

Run 5: Report of Copa — Data Link

Flow 1 ingress (mean 0.41 Mbit/s) —— Flow 1 egress (mean 0.00 Mbit/s)

• Flow 1 (95th percentile 80.75 ms)

```
Run 1: Statistics of TCP Cubic

Start at: 2018-10-25 23:50:16
End at: 2018-10-25 23:50:46
Local clock offset: 2.02 ms
Remote clock offset: 4.282 ms


# Below is generated by plot.py at 2018-10-26 01:19:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 73.45 Mbit/s
95th percentile per-packet one-way delay: 97.810 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 73.45 Mbit/s
95th percentile per-packet one-way delay: 97.810 ms
Loss rate: 0.81%
```
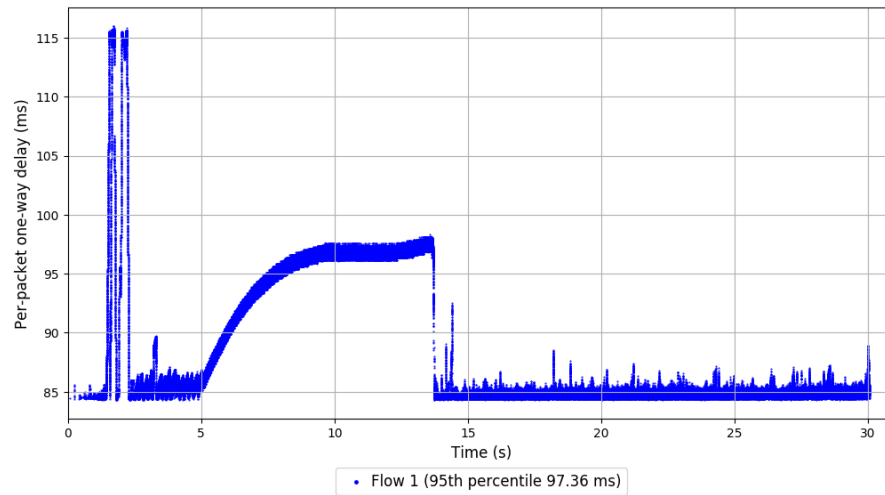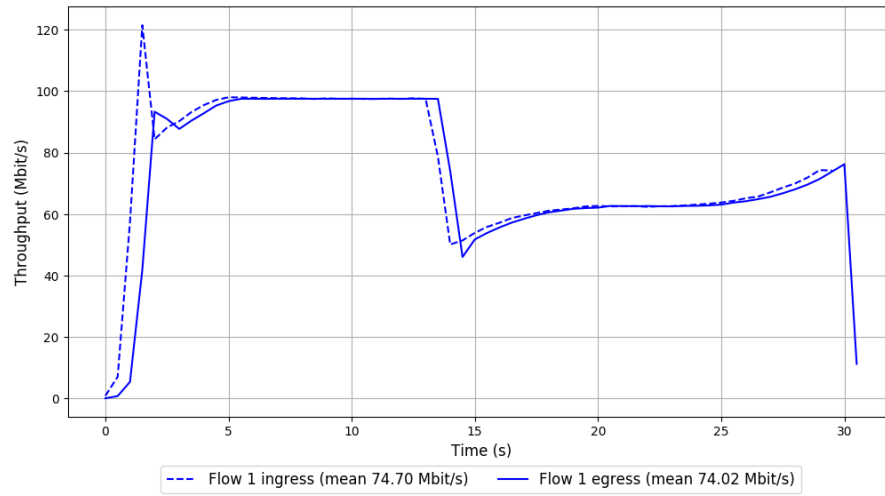
Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-10-26 00:11:14
End at: 2018-10-26 00:11:44
Local clock offset: 3.329 ms
Remote clock offset: 4.245 ms


# Below is generated by plot.py at 2018-10-26 01:19:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 74.02 Mbit/s
95th percentile per-packet one-way delay: 97.360 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 74.02 Mbit/s
95th percentile per-packet one-way delay: 97.360 ms
Loss rate: 0.91%
```
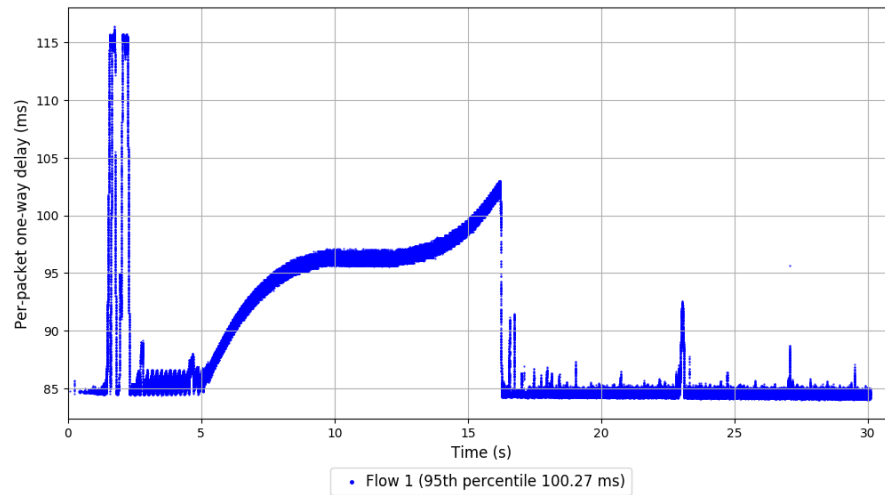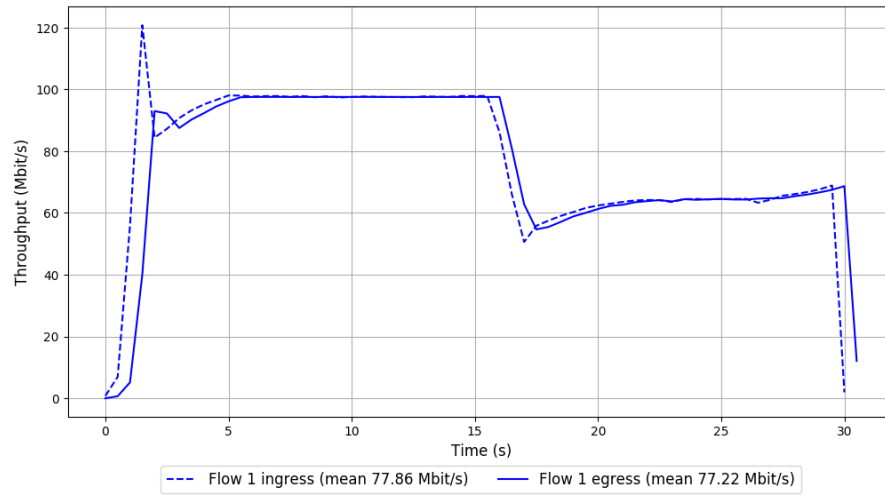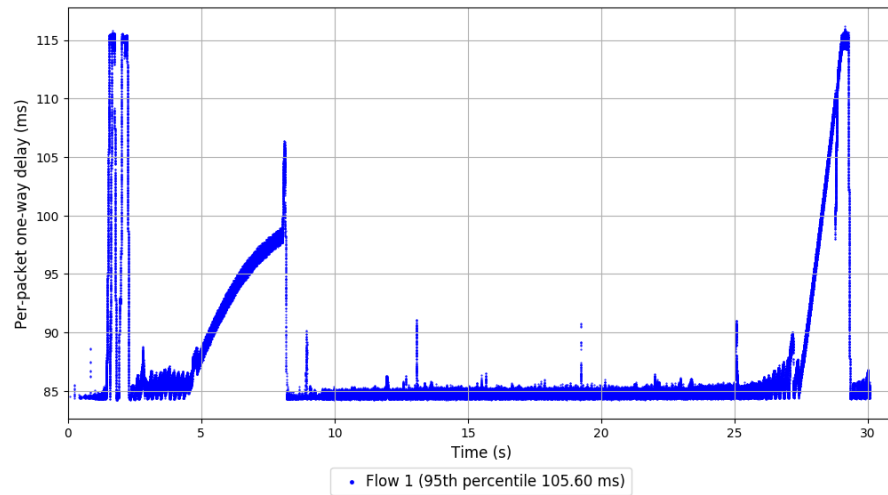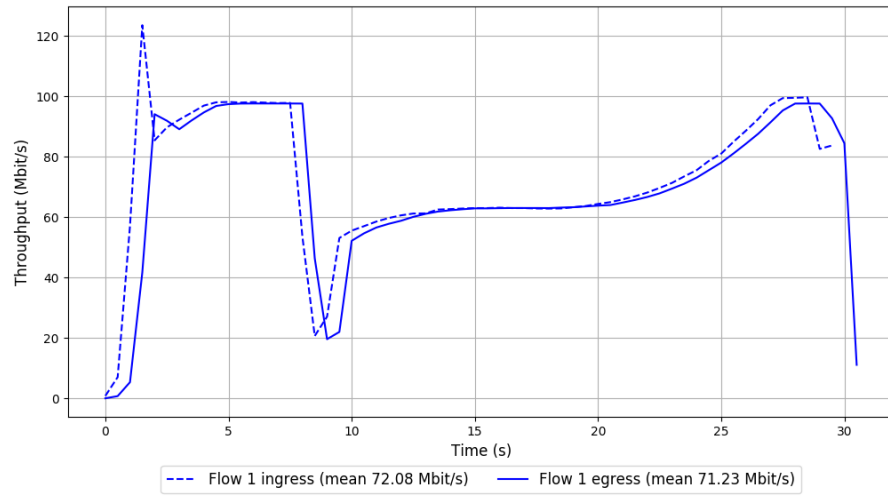
Run 2: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 74.70 Mbit/s) —— Flow 1 egress (mean 74.02 Mbit/s)

• Flow 1 (95th percentile 97.36 ms)

```
Run 3: Statistics of TCP Cubic

Start at: 2018-10-26 00:32:12
End at: 2018-10-26 00:32:42
Local clock offset: 8.537 ms
Remote clock offset: 5.659 ms


# Below is generated by plot.py at 2018-10-26 01:19:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.22 Mbit/s
95th percentile per-packet one-way delay: 100.272 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 77.22 Mbit/s
95th percentile per-packet one-way delay: 100.272 ms
Loss rate: 0.83%
```
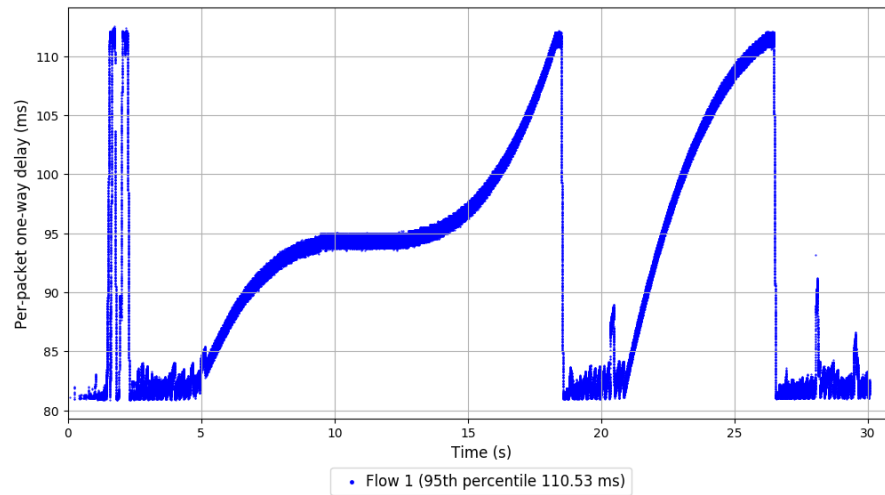
Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 77.86 Mbit/s) ---- Flow 1 egress (mean 77.22 Mbit/s)

• Flow 1 (95th percentile 100.27 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2018-10-26 00:53:20
End at: 2018-10-26 00:53:50
Local clock offset: 3.95 ms
Remote clock offset: 5.618 ms


# Below is generated by plot.py at 2018-10-26 01:20:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 71.23 Mbit/s
95th percentile per-packet one-way delay: 105.601 ms
Loss rate: 1.17%
-- Flow 1:
Average throughput: 71.23 Mbit/s
95th percentile per-packet one-way delay: 105.601 ms
Loss rate: 1.17%
```
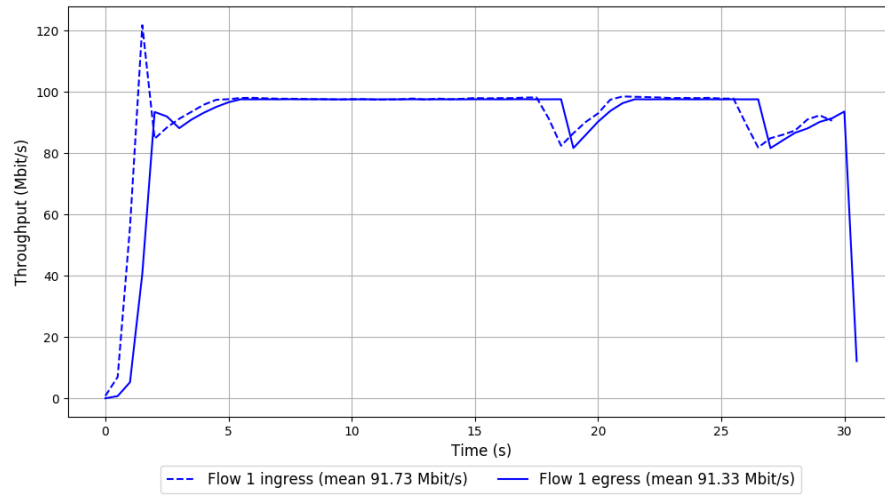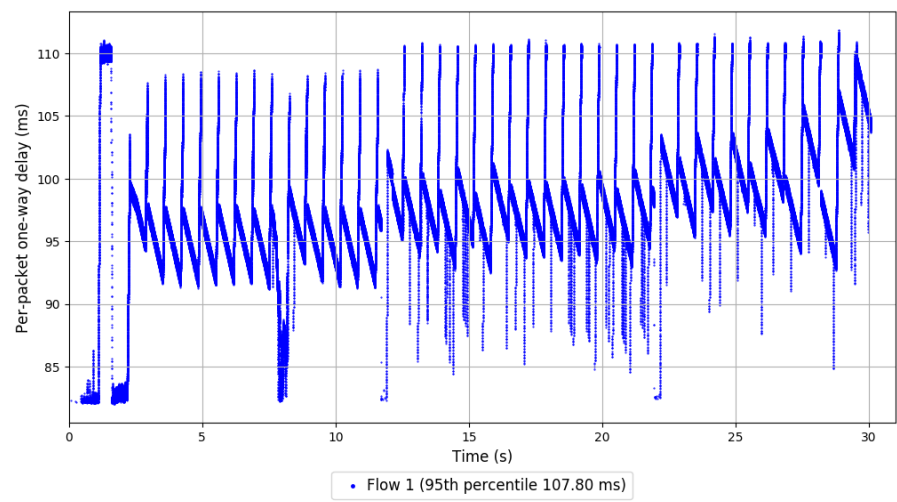
Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2018-10-26 01:14:31
End at: 2018-10-26 01:15:01
Local clock offset: 7.831 ms
Remote clock offset: 2.127 ms


# Below is generated by plot.py at 2018-10-26 01:20:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.33 Mbit/s
95th percentile per-packet one-way delay: 110.526 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 91.33 Mbit/s
95th percentile per-packet one-way delay: 110.526 ms
Loss rate: 0.44%
```
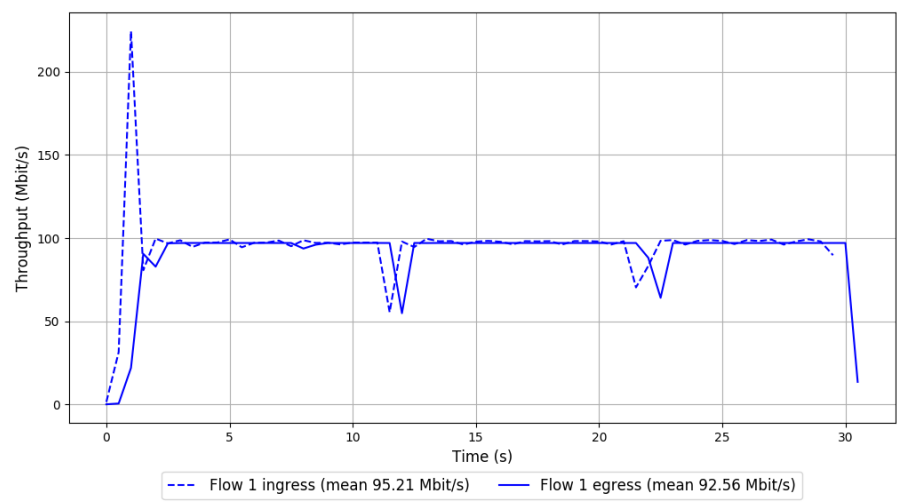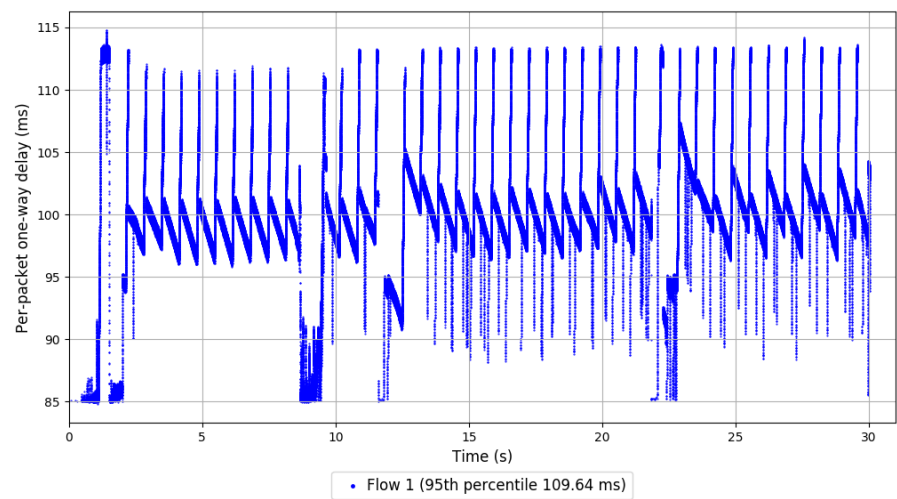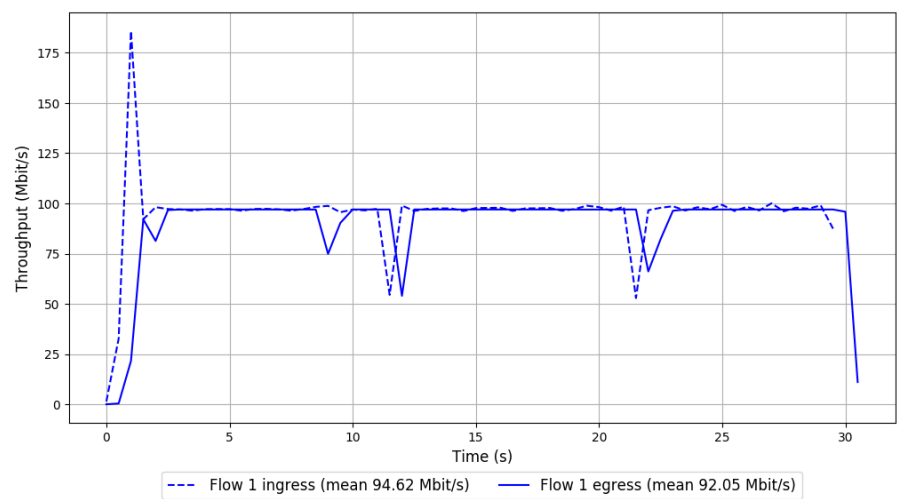
Run 5: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 91.73 Mbit/s) ---- Flow 1 egress (mean 91.33 Mbit/s) ——

Flow 1 (95th percentile 110.53 ms)

```
Run 1: Statistics of FillP

Start at: 2018-10-25 23:37:20
End at: 2018-10-25 23:37:50
Local clock offset: 1.883 ms
Remote clock offset: 0.108 ms


# Below is generated by plot.py at 2018-10-26 01:20:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.56 Mbit/s
95th percentile per-packet one-way delay: 107.803 ms
Loss rate: 2.72%
-- Flow 1:
Average throughput: 92.56 Mbit/s
95th percentile per-packet one-way delay: 107.803 ms
Loss rate: 2.72%
```
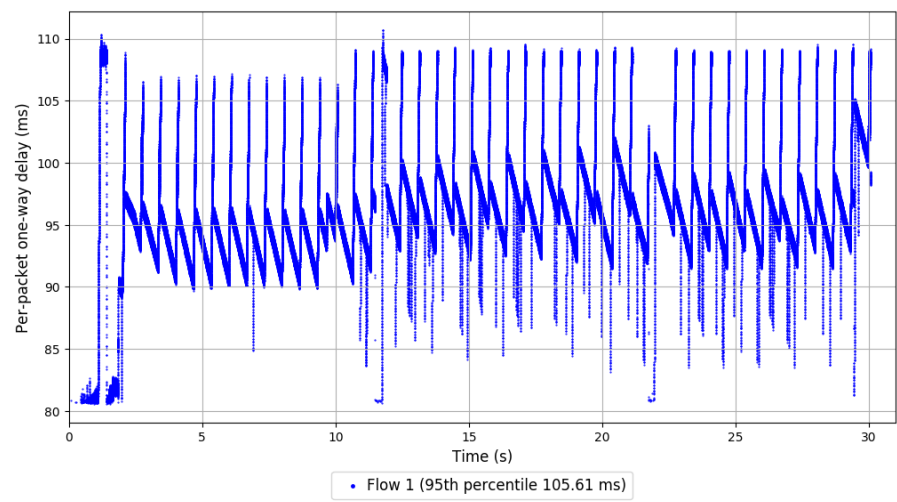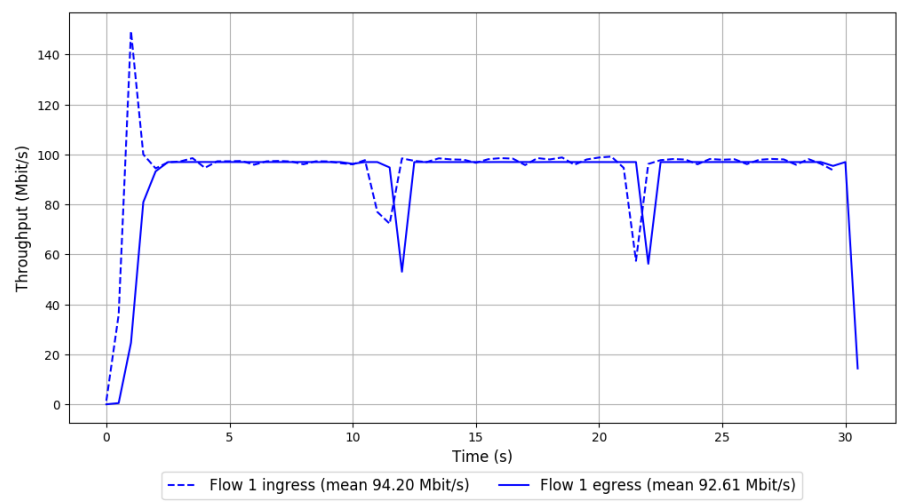
Run 1: Report of FillP — Data Link

Flow 1 ingress (mean 95.21 Mbit/s) ----   Flow 1 egress (mean 92.56 Mbit/s) ——

Flow 1 (95th percentile 107.80 ms)

```
Run 2: Statistics of FillP

Start at: 2018-10-25 23:58:19
End at: 2018-10-25 23:58:49
Local clock offset: 2.894 ms
Remote clock offset: 4.227 ms


# Below is generated by plot.py at 2018-10-26 01:20:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.05 Mbit/s
95th percentile per-packet one-way delay: 109.639 ms
Loss rate: 2.66%
-- Flow 1:
Average throughput: 92.05 Mbit/s
95th percentile per-packet one-way delay: 109.639 ms
Loss rate: 2.66%
```
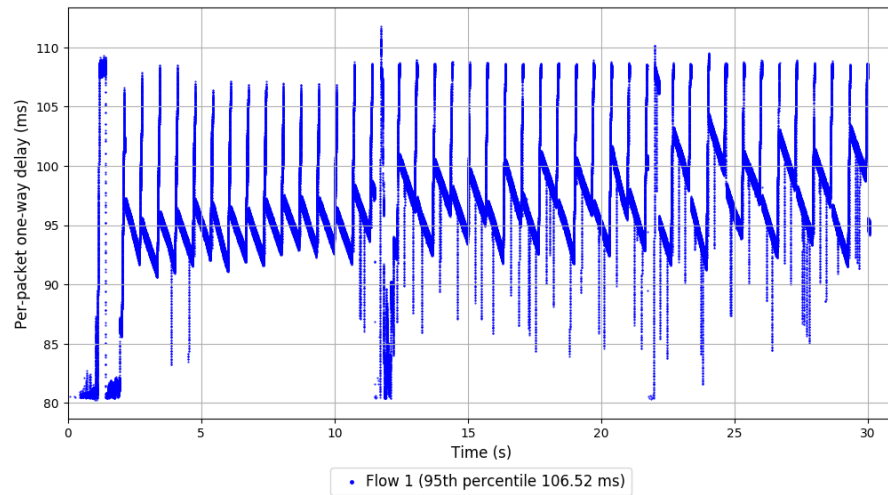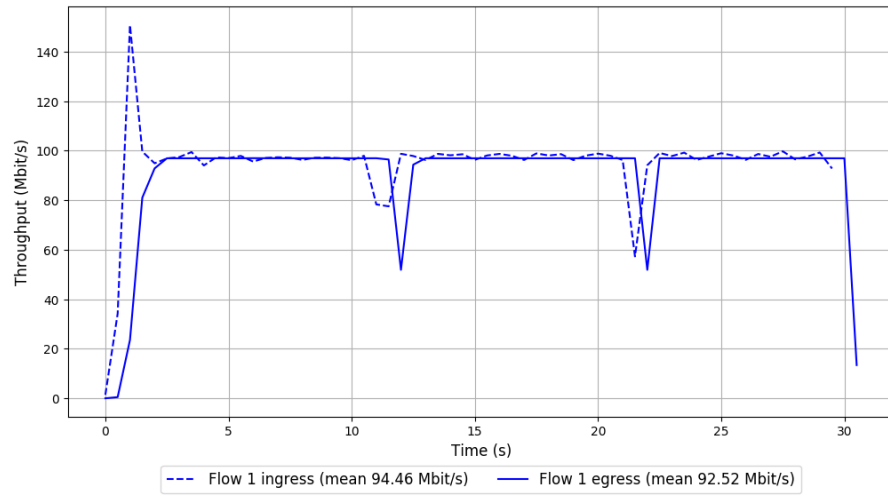
Run 2: Report of FillP — Data Link

Flow 1 ingress (mean 94.62 Mbit/s)   Flow 1 egress (mean 92.05 Mbit/s)

Flow 1 (95th percentile 109.64 ms)

```
Run 3: Statistics of FillP

Start at: 2018-10-26 00:19:18
End at: 2018-10-26 00:19:48
Local clock offset: 5.003 ms
Remote clock offset: 1.145 ms

# Below is generated by plot.py at 2018-10-26 01:20:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.61 Mbit/s
95th percentile per-packet one-way delay: 105.609 ms
Loss rate: 1.63%
-- Flow 1:
Average throughput: 92.61 Mbit/s
95th percentile per-packet one-way delay: 105.609 ms
Loss rate: 1.63%
```
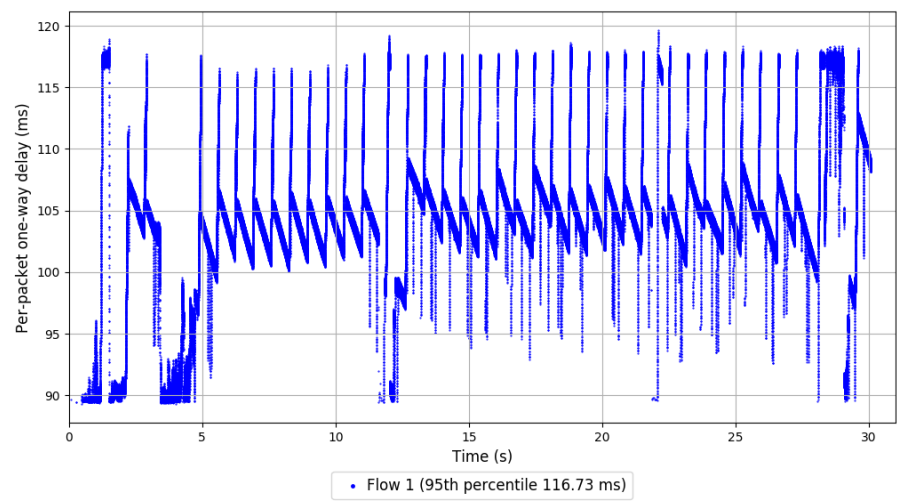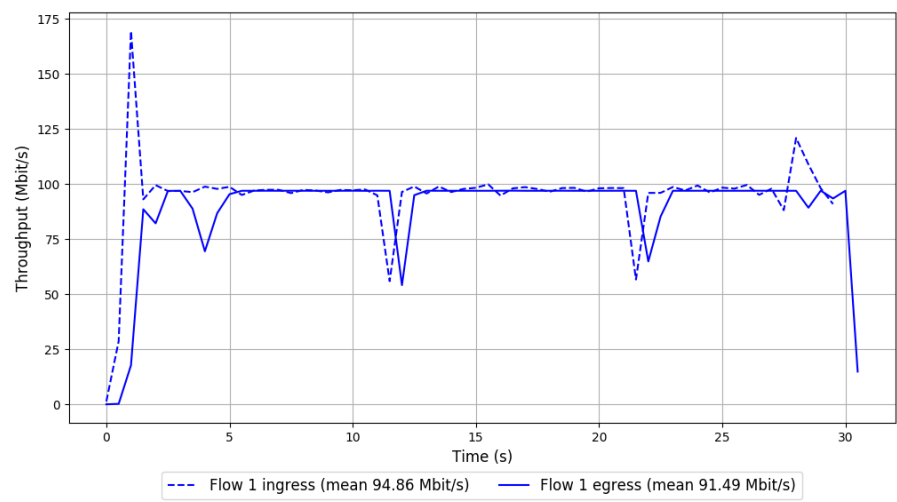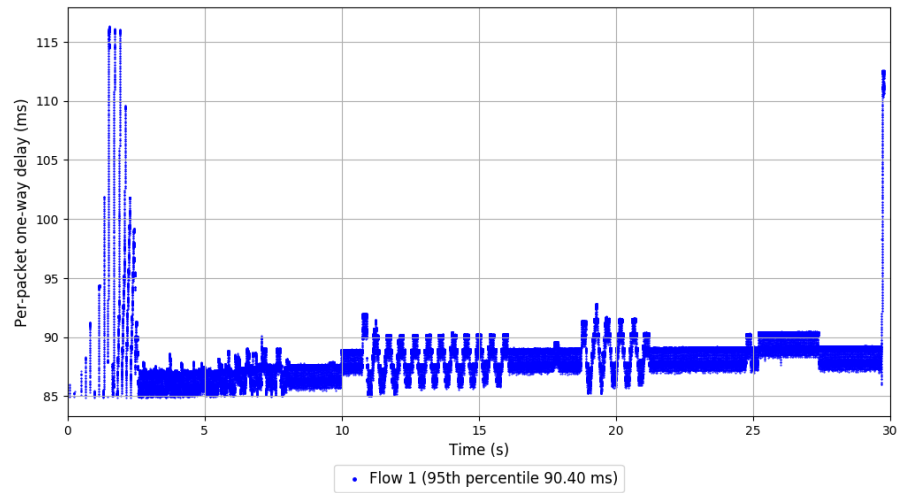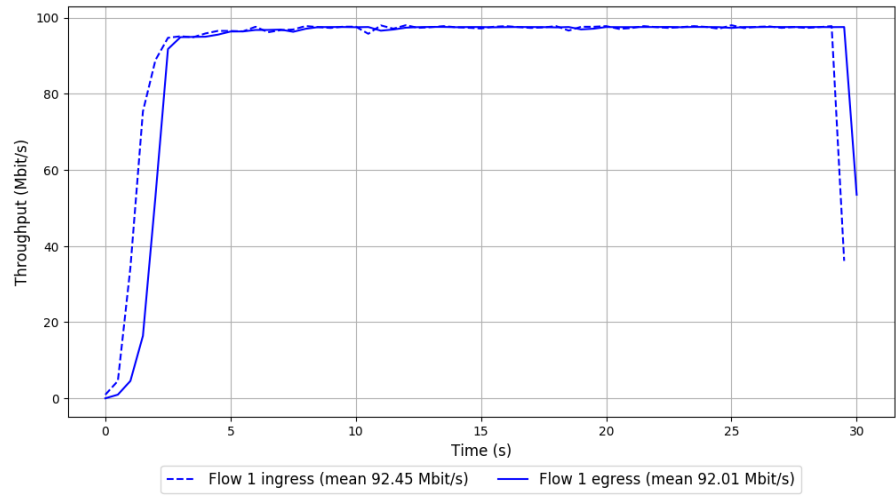
Run 3: Report of FillP — Data Link

Flow 1 ingress (mean 94.20 Mbit/s)   Flow 1 egress (mean 92.61 Mbit/s)

• Flow 1 (95th percentile 105.61 ms)

```
Run 4: Statistics of FillP

Start at: 2018-10-26 00:40:16
End at: 2018-10-26 00:40:46
Local clock offset: 4.203 ms
Remote clock offset: 1.756 ms


# Below is generated by plot.py at 2018-10-26 01:20:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.52 Mbit/s
95th percentile per-packet one-way delay: 106.521 ms
Loss rate: 2.01%
-- Flow 1:
Average throughput: 92.52 Mbit/s
95th percentile per-packet one-way delay: 106.521 ms
Loss rate: 2.01%
```

Run 4: Report of FillP — Data Link

Flow 1 ingress (mean 94.46 Mbit/s) --- Flow 1 egress (mean 92.52 Mbit/s)

· Flow 1 (95th percentile 106.52 ms)

```
Run 5: Statistics of FillP

Start at: 2018-10-26 01:01:25
End at: 2018-10-26 01:01:55
Local clock offset: 5.208 ms
Remote clock offset: 5.655 ms


# Below is generated by plot.py at 2018-10-26 01:20:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.49 Mbit/s
95th percentile per-packet one-way delay: 116.735 ms
Loss rate: 3.50%
-- Flow 1:
Average throughput: 91.49 Mbit/s
95th percentile per-packet one-way delay: 116.735 ms
Loss rate: 3.50%
```
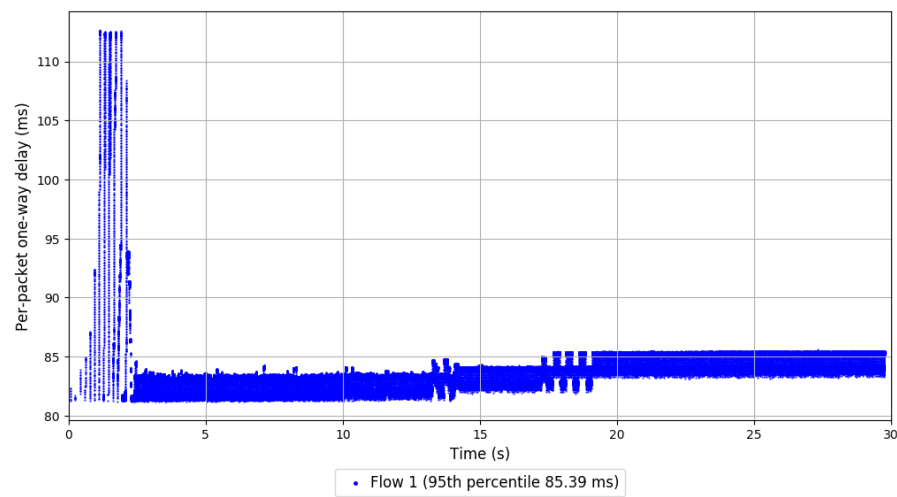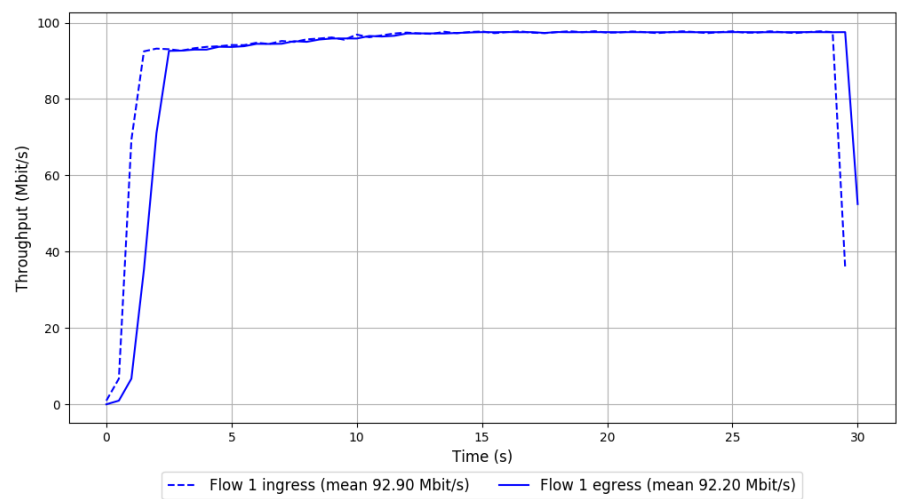
Run 5: Report of FillP — Data Link

```
Run 1: Statistics of Indigo

Start at: 2018-10-25 23:38:32
End at: 2018-10-25 23:39:02
Local clock offset: 3.254 ms
Remote clock offset: 3.899 ms


# Below is generated by plot.py at 2018-10-26 01:20:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.01 Mbit/s
95th percentile per-packet one-way delay: 90.399 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 92.01 Mbit/s
95th percentile per-packet one-way delay: 90.399 ms
Loss rate: 0.38%
```
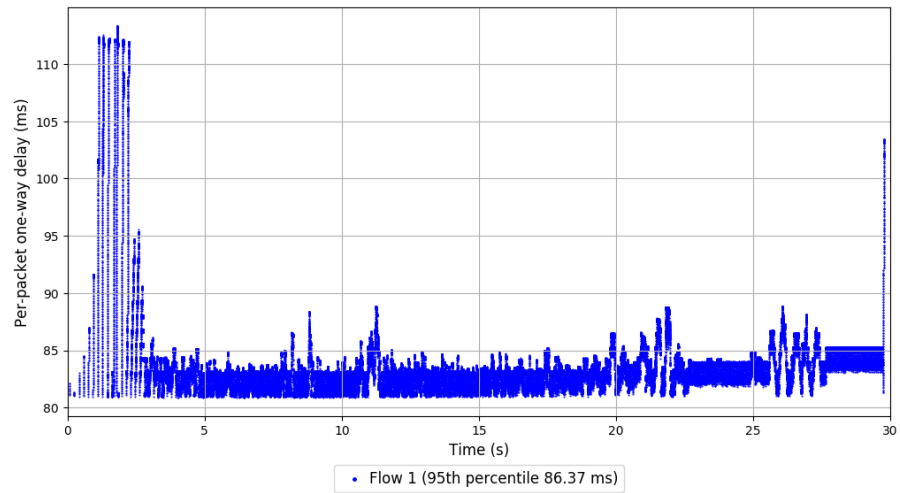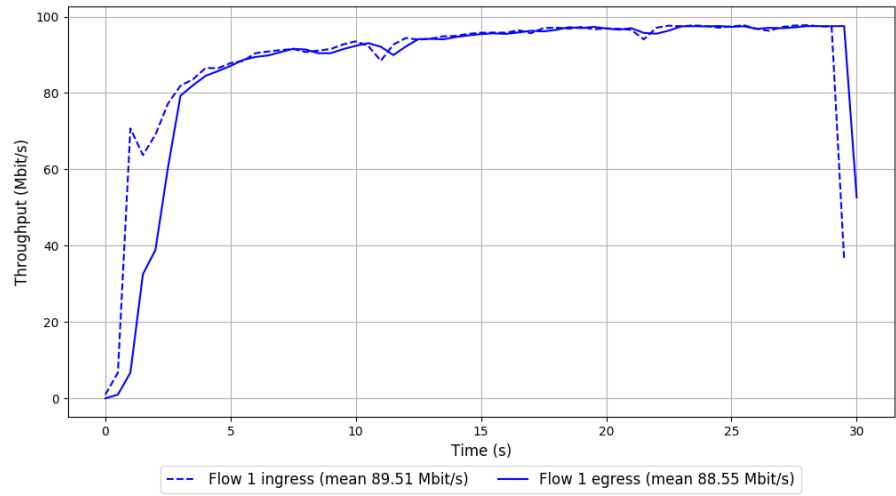
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-10-25 23:59:30
End at: 2018-10-26 00:00:01
Local clock offset: 3.192 ms
Remote clock offset: 1.001 ms


# Below is generated by plot.py at 2018-10-26 01:21:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.20 Mbit/s
95th percentile per-packet one-way delay: 85.391 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 92.20 Mbit/s
95th percentile per-packet one-way delay: 85.391 ms
Loss rate: 0.75%
```
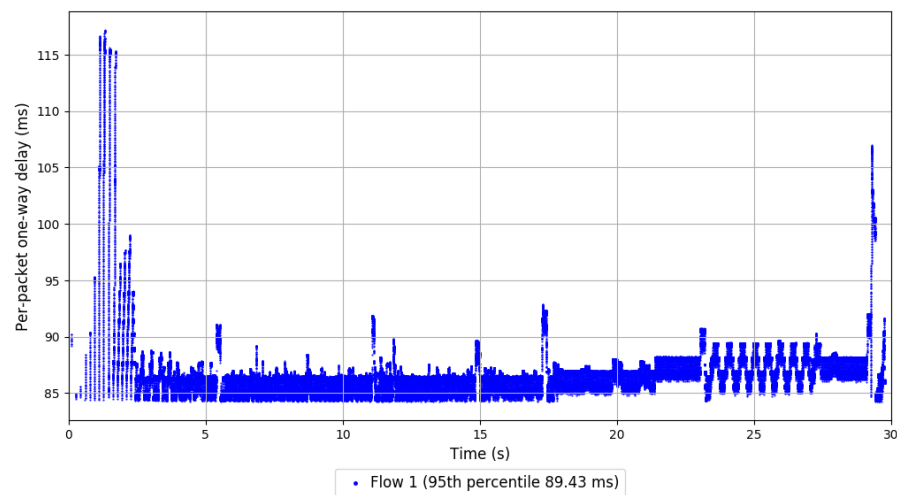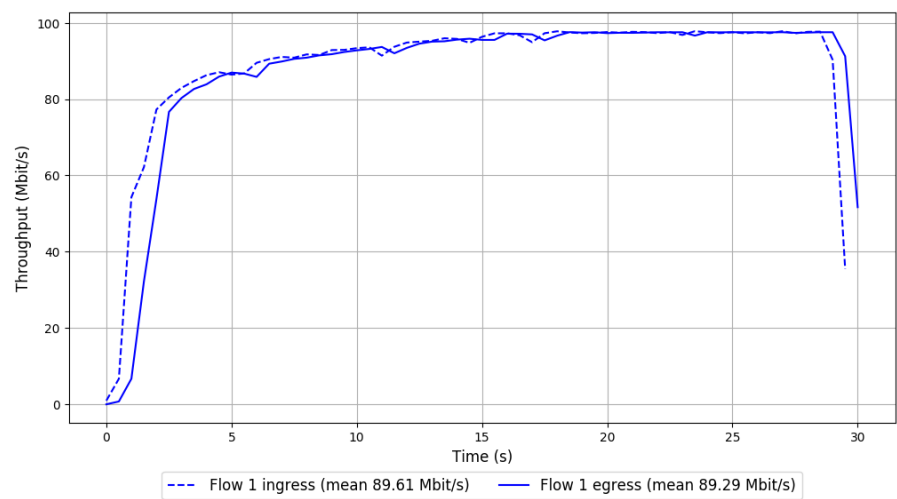
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2018-10-26 00:20:29
End at: 2018-10-26 00:21:00
Local clock offset: 5.422 ms
Remote clock offset: 1.597 ms


# Below is generated by plot.py at 2018-10-26 01:21:30
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.55 Mbit/s
95th percentile per-packet one-way delay: 86.374 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 88.55 Mbit/s
95th percentile per-packet one-way delay: 86.374 ms
Loss rate: 1.00%
```
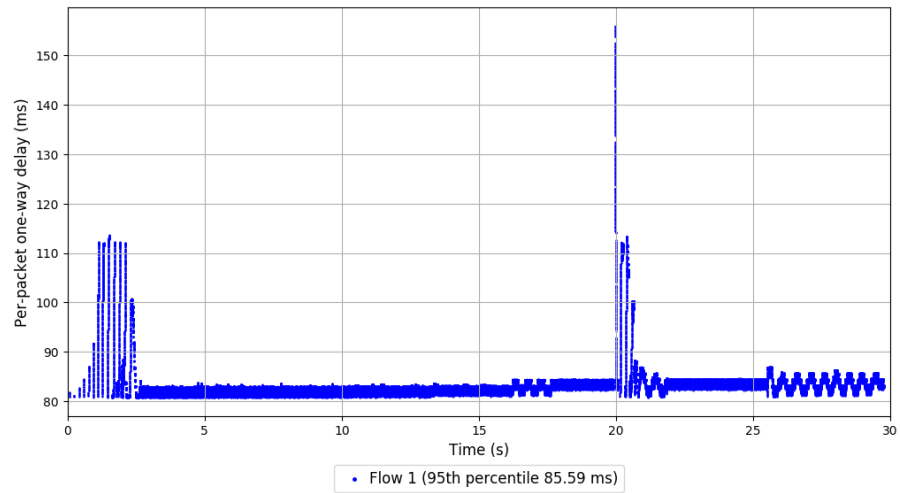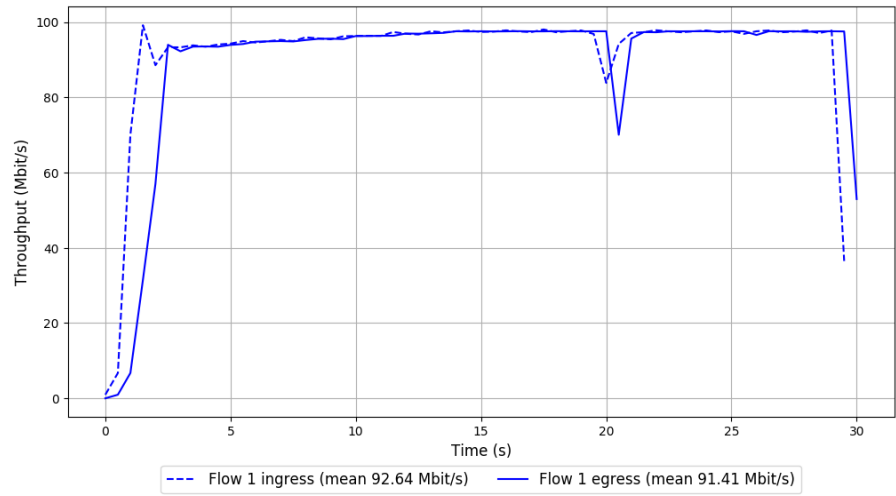
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-10-26 00:41:27
End at: 2018-10-26 00:41:57
Local clock offset: 3.882 ms
Remote clock offset: 5.829 ms

# Below is generated by plot.py at 2018-10-26 01:21:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.29 Mbit/s
95th percentile per-packet one-way delay: 89.429 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 89.29 Mbit/s
95th percentile per-packet one-way delay: 89.429 ms
Loss rate: 0.37%
```
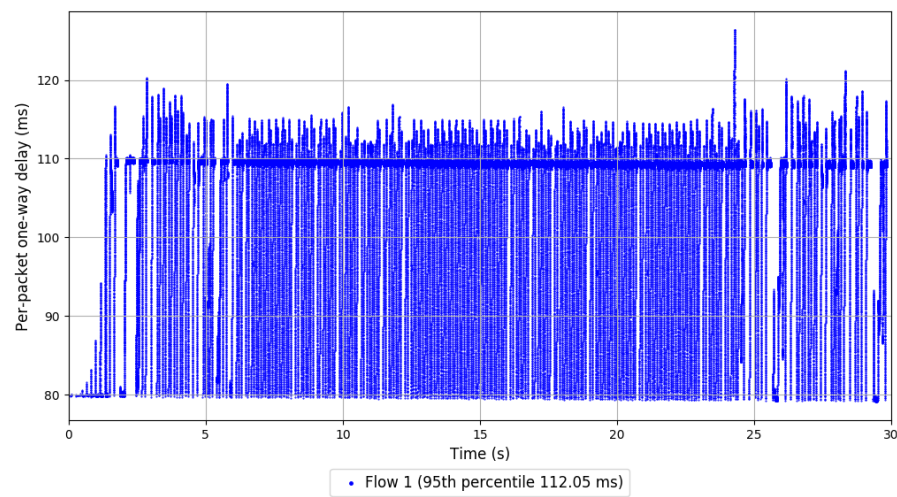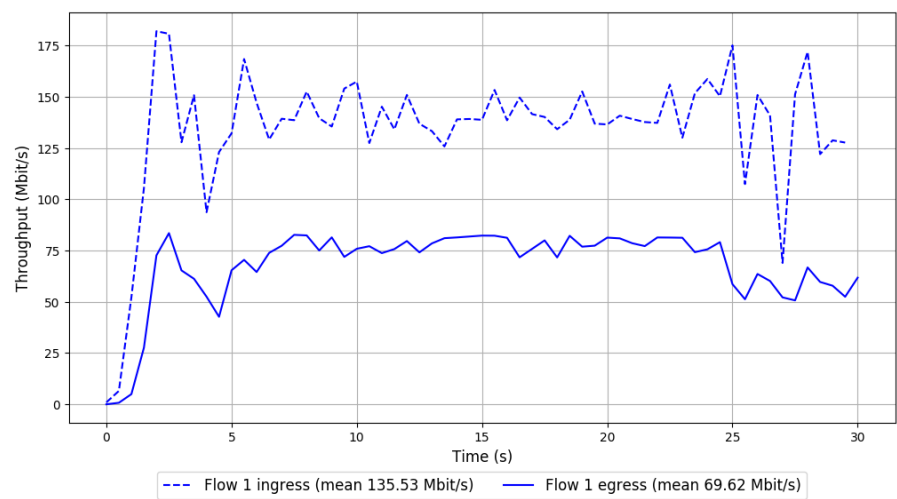
Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2018-10-26 01:02:36
End at: 2018-10-26 01:03:06
Local clock offset: 5.394 ms
Remote clock offset: 1.912 ms


# Below is generated by plot.py at 2018-10-26 01:21:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.41 Mbit/s
95th percentile per-packet one-way delay: 85.595 ms
Loss rate: 1.32%
-- Flow 1:
Average throughput: 91.41 Mbit/s
95th percentile per-packet one-way delay: 85.595 ms
Loss rate: 1.32%
```
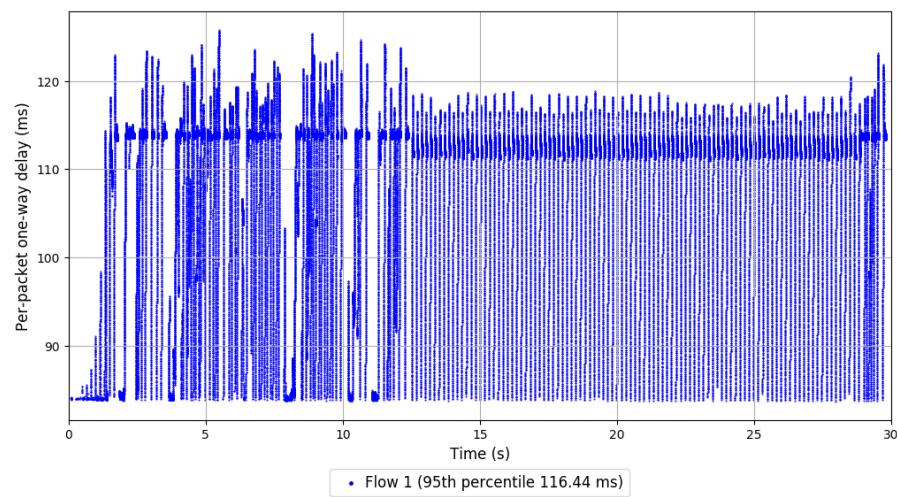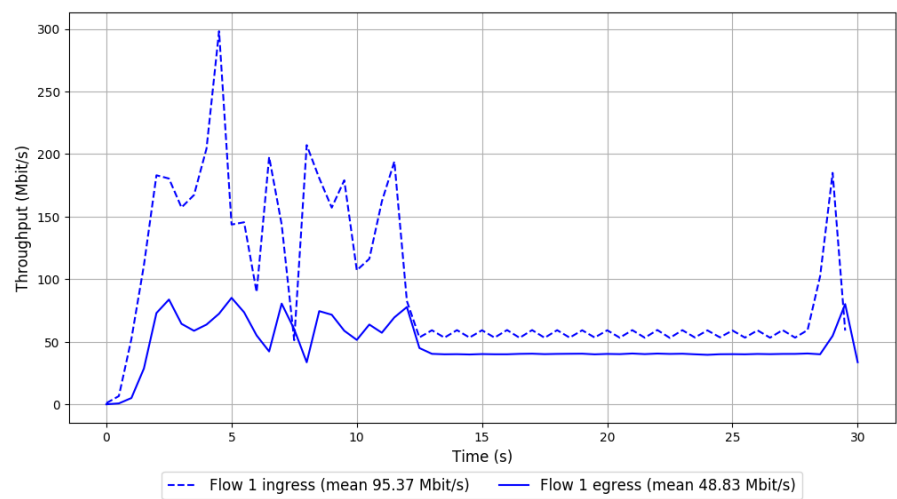
Run 5: Report of Indigo — Data Link

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

Start at: 2018-10-25 23:40:55
End at: 2018-10-25 23:41:25
Local clock offset: 3.679 ms
Remote clock offset: 0.078 ms

# Below is generated by plot.py at 2018-10-26 01:21:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 69.62 Mbit/s
95th percentile per-packet one-way delay: 112.054 ms
Loss rate: 48.58%
-- Flow 1:
Average throughput: 69.62 Mbit/s
95th percentile per-packet one-way delay: 112.054 ms
Loss rate: 48.58%
```
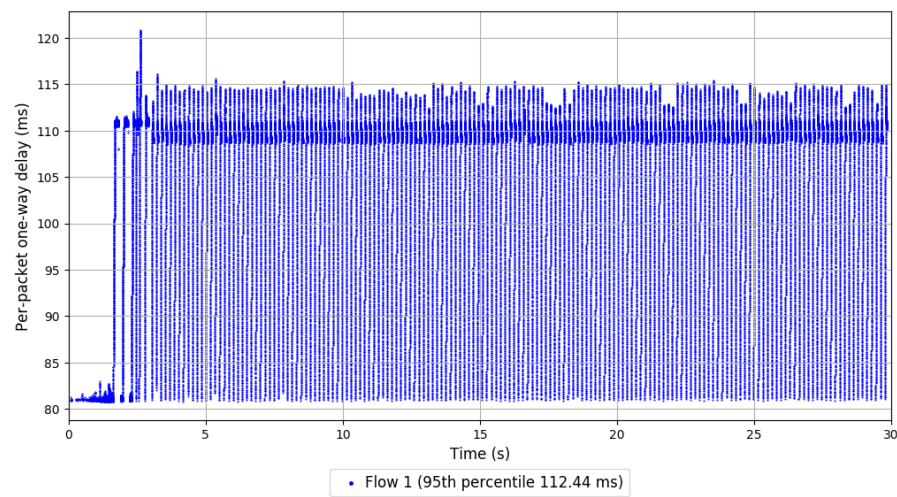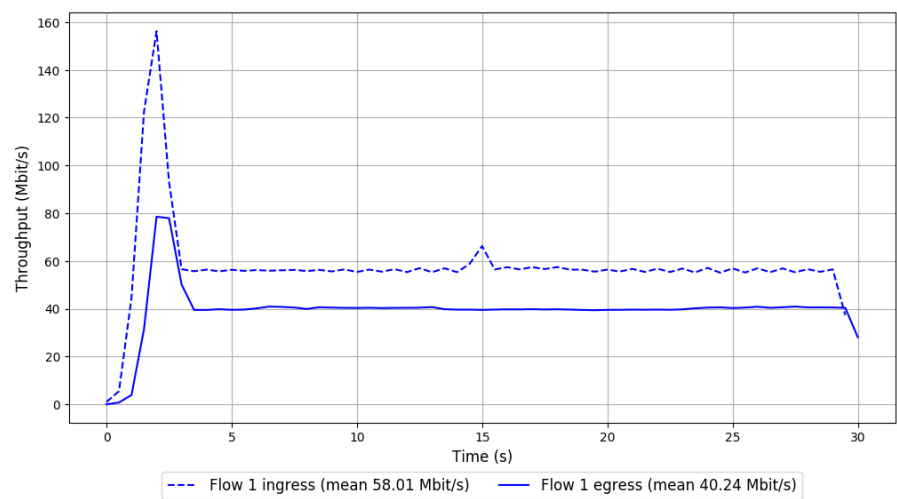
Run 1: Report of Indigo-96d2da3 — Data Link

Flow 1 ingress (mean 135.53 Mbit/s) ---- Flow 1 egress (mean 69.62 Mbit/s) ——

• Flow 1 (95th percentile 112.05 ms)

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

Start at: 2018-10-26 00:01:54
End at: 2018-10-26 00:02:24
Local clock offset: 4.048 ms
Remote clock offset: 4.242 ms


# Below is generated by plot.py at 2018-10-26 01:21:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 48.83 Mbit/s
95th percentile per-packet one-way delay: 116.441 ms
Loss rate: 48.75%
-- Flow 1:
Average throughput: 48.83 Mbit/s
95th percentile per-packet one-way delay: 116.441 ms
Loss rate: 48.75%
```
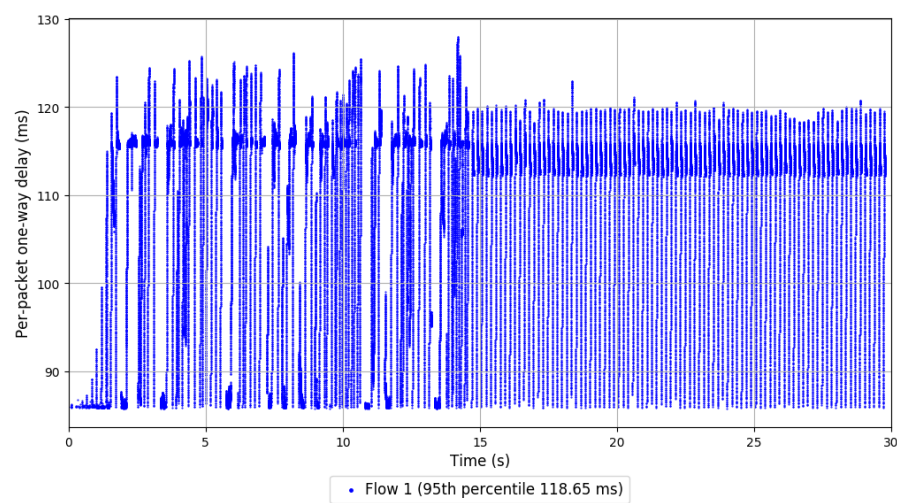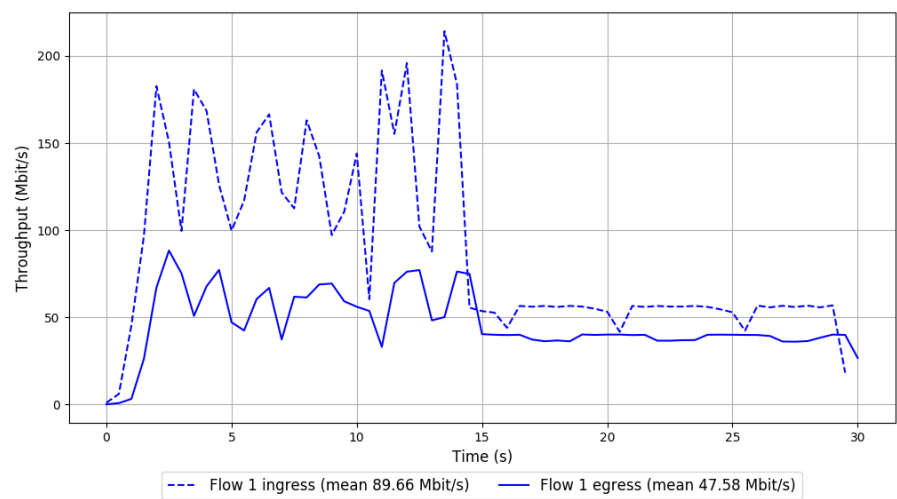
Run 2: Report of Indigo-96d2da3 — Data Link

Flow 1 ingress (mean 95.37 Mbit/s) --- Flow 1 egress (mean 48.83 Mbit/s)

• Flow 1 (95th percentile 116.44 ms)

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

Start at: 2018-10-26 00:22:53
End at: 2018-10-26 00:23:23
Local clock offset: 6.049 ms
Remote clock offset: 1.737 ms


# Below is generated by plot.py at 2018-10-26 01:21:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 40.24 Mbit/s
95th percentile per-packet one-way delay: 112.435 ms
Loss rate: 30.56%
-- Flow 1:
Average throughput: 40.24 Mbit/s
95th percentile per-packet one-way delay: 112.435 ms
Loss rate: 30.56%
```
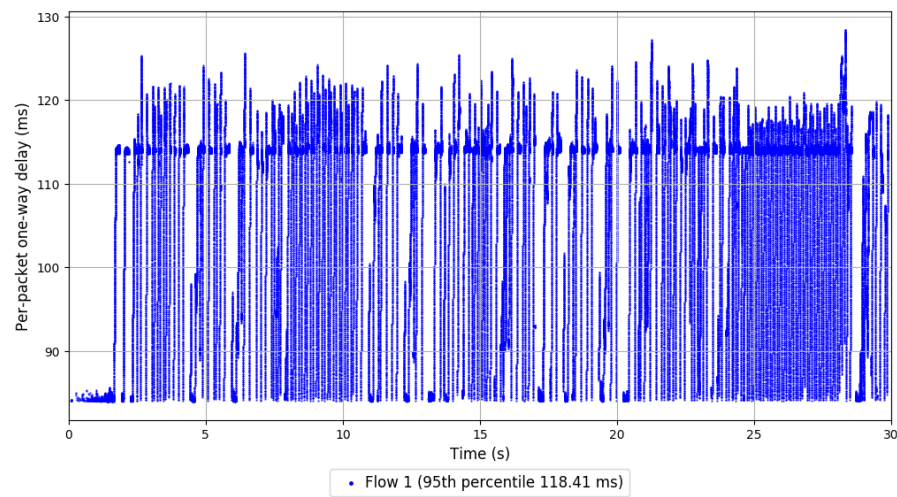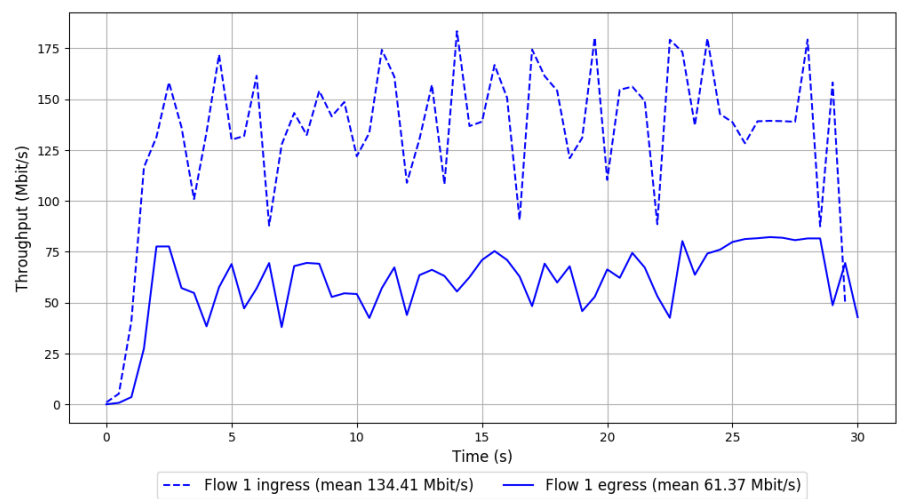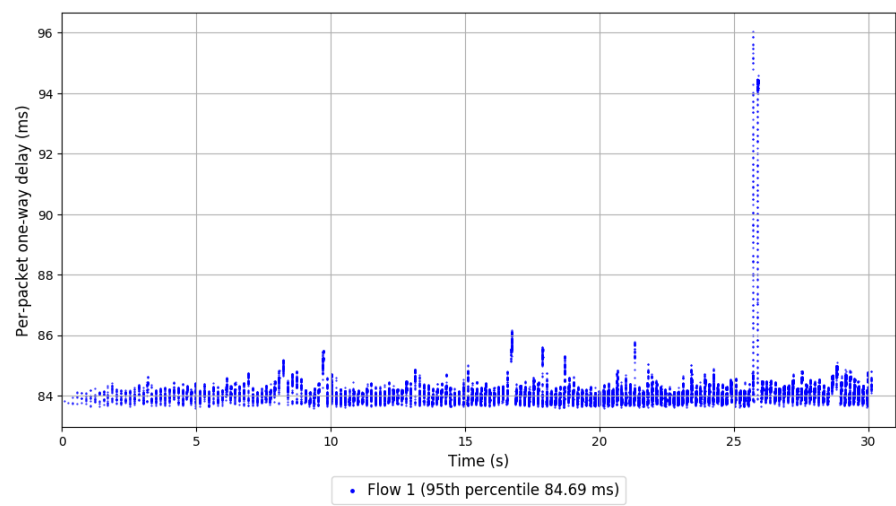
Run 3: Report of Indigo-96d2da3 — Data Link

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

Start at: 2018-10-26 00:43:51
End at: 2018-10-26 00:44:21
Local clock offset: 3.637 ms
Remote clock offset: 2.062 ms


# Below is generated by plot.py at 2018-10-26 01:21:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 47.58 Mbit/s
95th percentile per-packet one-way delay: 118.652 ms
Loss rate: 46.88%
-- Flow 1:
Average throughput: 47.58 Mbit/s
95th percentile per-packet one-way delay: 118.652 ms
Loss rate: 46.88%
```
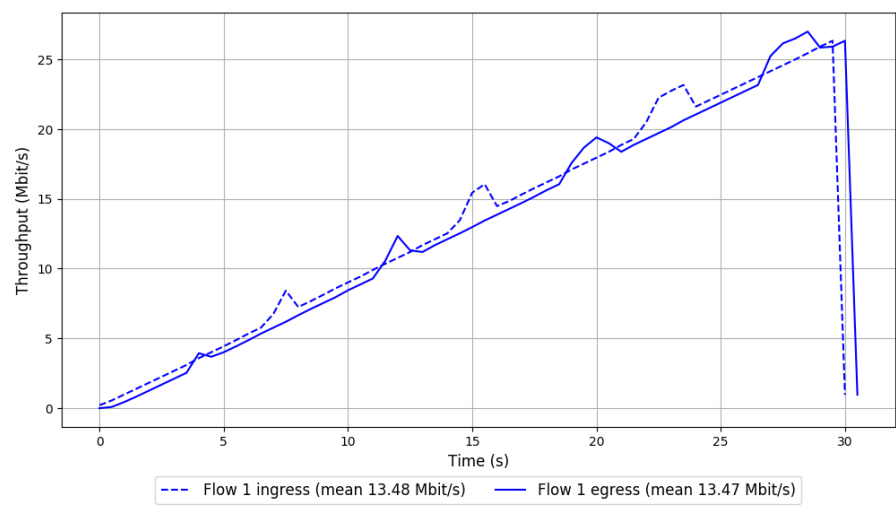
Run 4: Report of Indigo-96d2da3 — Data Link

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

Start at: 2018-10-26 01:05:00
End at: 2018-10-26 01:05:30
Local clock offset: 5.867 ms
Remote clock offset: 5.55 ms


# Below is generated by plot.py at 2018-10-26 01:22:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 61.37 Mbit/s
95th percentile per-packet one-way delay: 118.412 ms
Loss rate: 54.30%
-- Flow 1:
Average throughput: 61.37 Mbit/s
95th percentile per-packet one-way delay: 118.412 ms
Loss rate: 54.30%
```
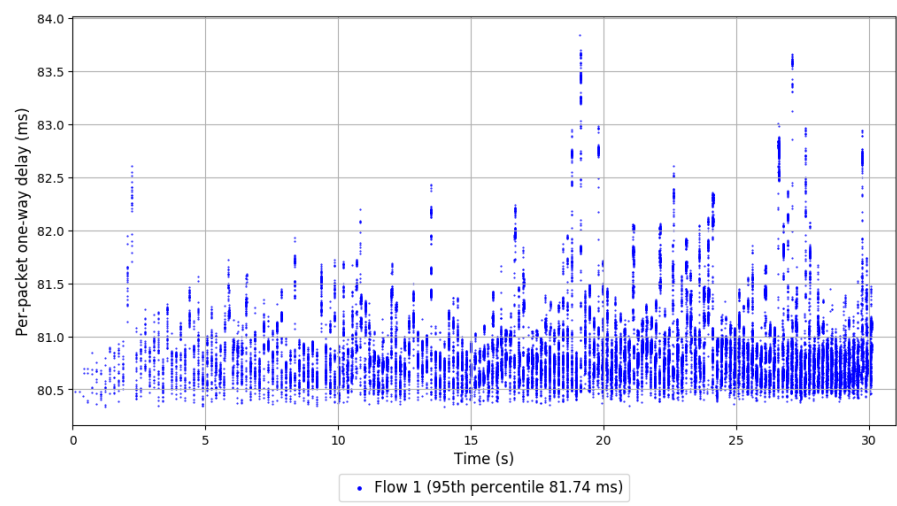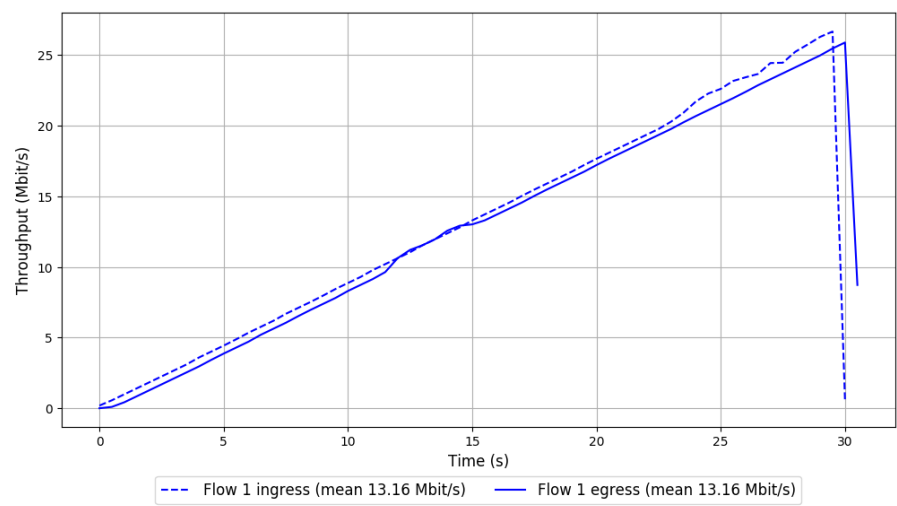
Run 5: Report of Indigo-96d2da3 — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2018-10-25 23:52:34
End at: 2018-10-25 23:53:04
Local clock offset: 1.554 ms
Remote clock offset: 3.51 ms


# Below is generated by plot.py at 2018-10-26 01:22:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.47 Mbit/s
95th percentile per-packet one-way delay: 84.687 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 13.47 Mbit/s
95th percentile per-packet one-way delay: 84.687 ms
Loss rate: 0.00%
```
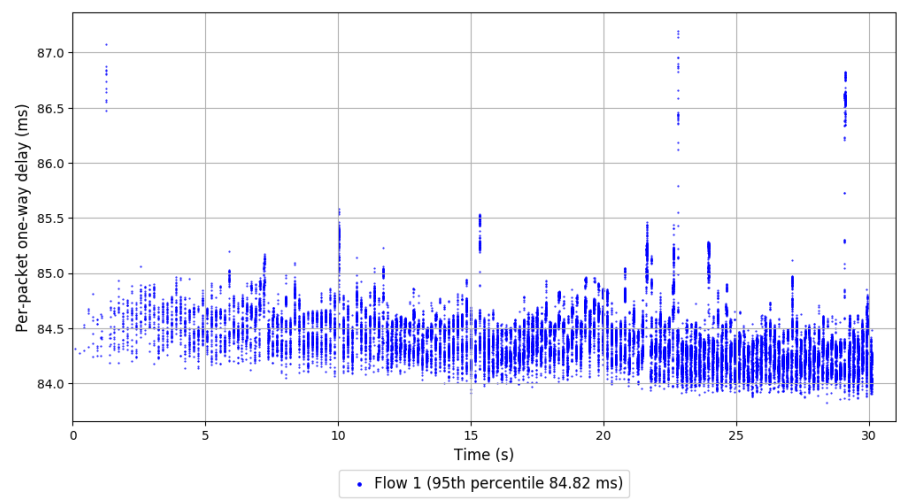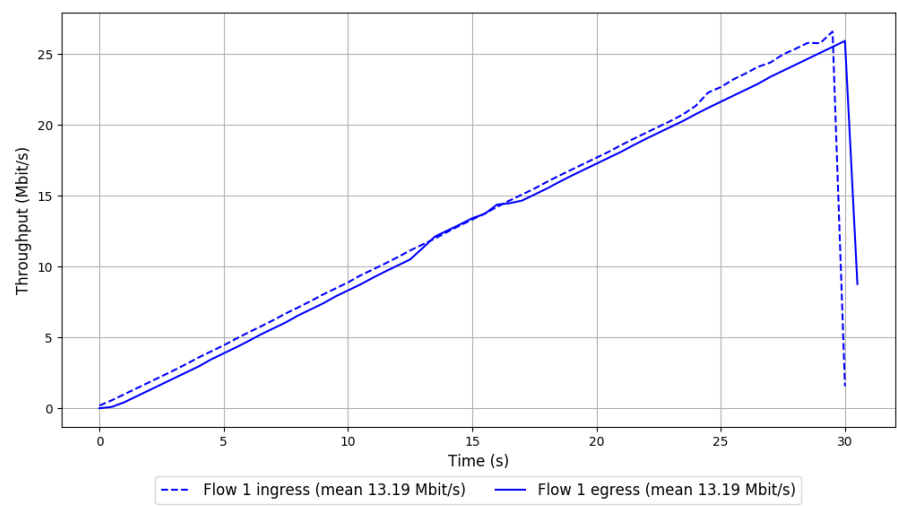
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2018-10-26 00:13:33
End at: 2018-10-26 00:14:03
Local clock offset: 3.656 ms
Remote clock offset: 0.931 ms


# Below is generated by plot.py at 2018-10-26 01:22:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.16 Mbit/s
95th percentile per-packet one-way delay: 81.742 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 13.16 Mbit/s
95th percentile per-packet one-way delay: 81.742 ms
Loss rate: 0.00%
```
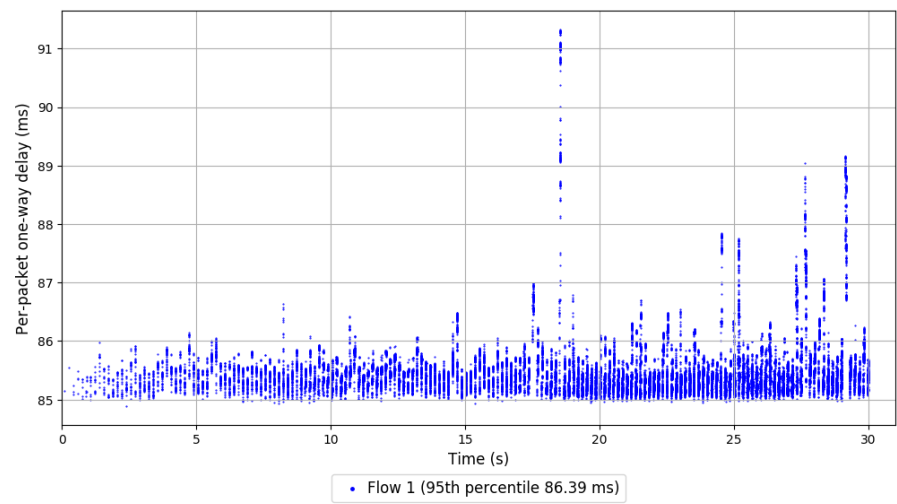
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2018-10-26 00:34:30
End at: 2018-10-26 00:35:00
Local clock offset: 6.645 ms
Remote clock offset: 5.31 ms


# Below is generated by plot.py at 2018-10-26 01:22:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.19 Mbit/s
95th percentile per-packet one-way delay: 84.821 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 13.19 Mbit/s
95th percentile per-packet one-way delay: 84.821 ms
Loss rate: 0.00%
```
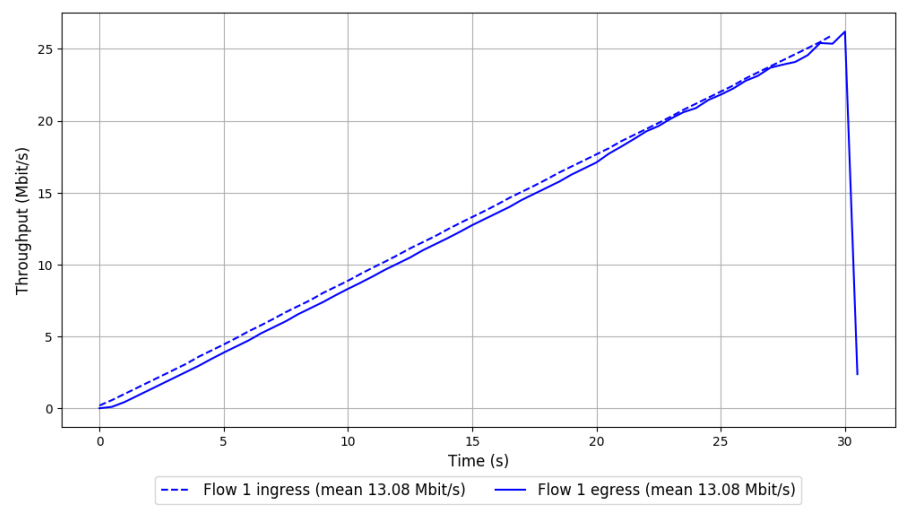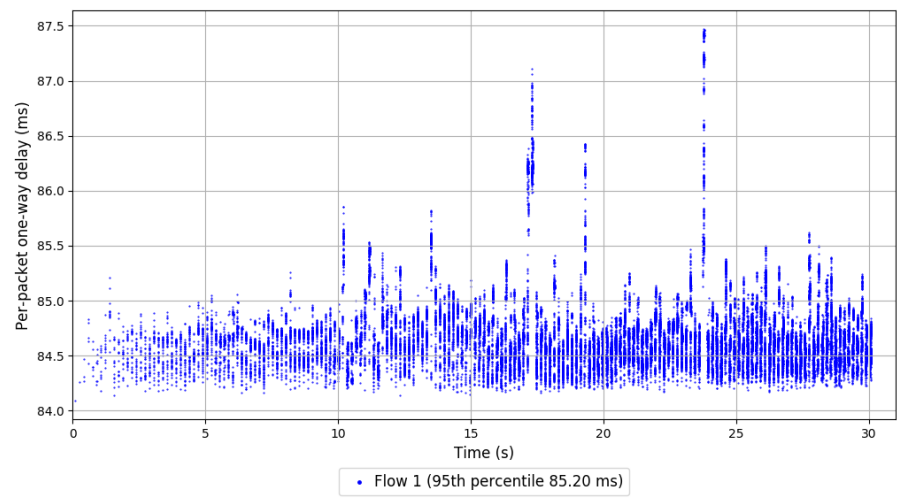
Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2018-10-26 00:55:39
End at: 2018-10-26 00:56:09
Local clock offset: 4.21 ms
Remote clock offset: 5.924 ms


# Below is generated by plot.py at 2018-10-26 01:22:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.08 Mbit/s
95th percentile per-packet one-way delay: 86.392 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 13.08 Mbit/s
95th percentile per-packet one-way delay: 86.392 ms
Loss rate: 0.00%
```
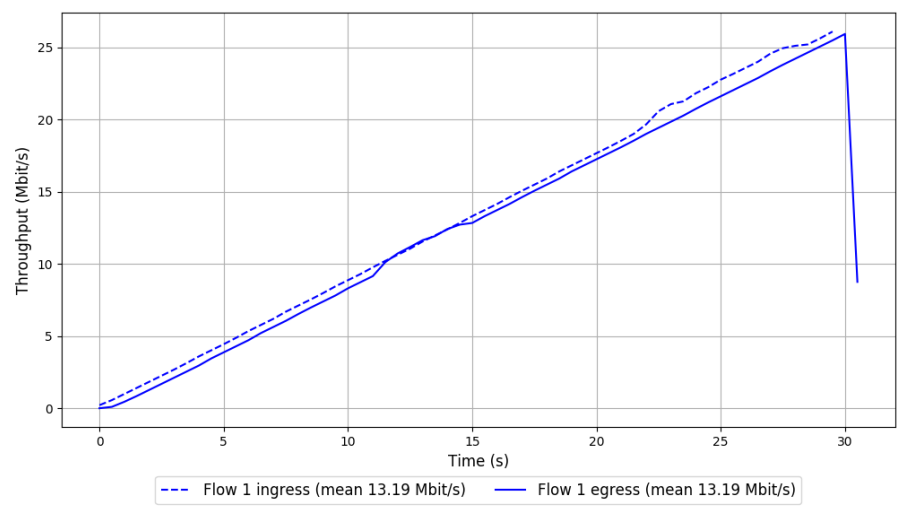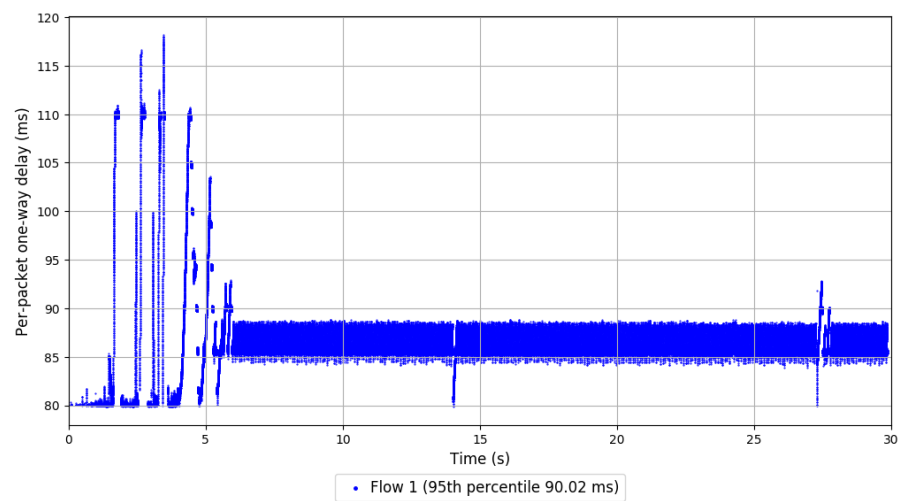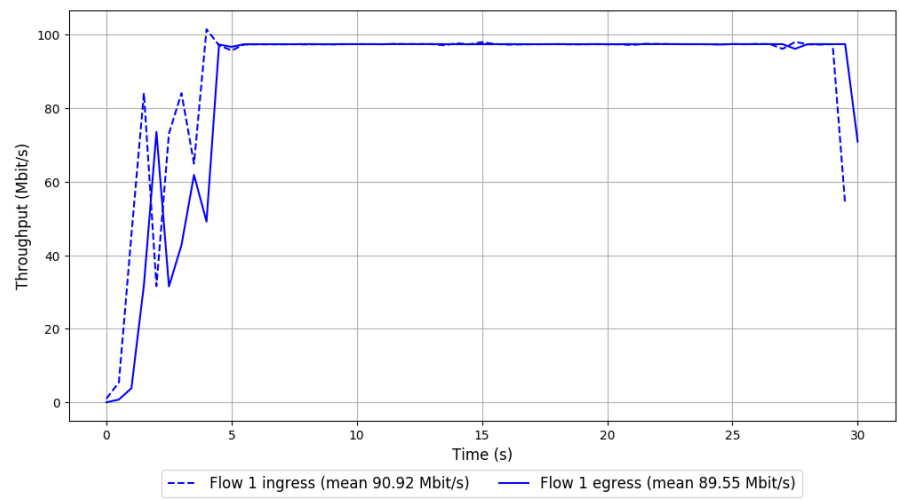
Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2018-10-26 01:16:49
End at: 2018-10-26 01:17:20
Local clock offset: 8.321 ms
Remote clock offset: 5.882 ms


# Below is generated by plot.py at 2018-10-26 01:22:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.19 Mbit/s
95th percentile per-packet one-way delay: 85.199 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 13.19 Mbit/s
95th percentile per-packet one-way delay: 85.199 ms
Loss rate: 0.00%
```

Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of Indigo-Muses

Start at: 2018-10-25 23:49:04
End at: 2018-10-25 23:49:34
Local clock offset: 2.617 ms
Remote clock offset: 0.14 ms


# Below is generated by plot.py at 2018-10-26 01:22:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.55 Mbit/s
95th percentile per-packet one-way delay: 90.016 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 89.55 Mbit/s
95th percentile per-packet one-way delay: 90.016 ms
Loss rate: 1.48%
```
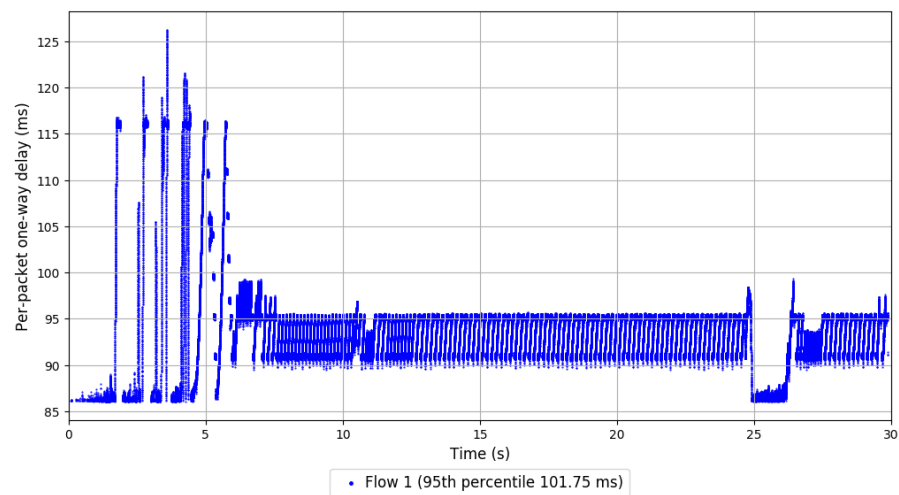
Run 1: Report of Indigo-Muses — Data Link

```
Run 2: Statistics of Indigo-Muses

Start at: 2018-10-26 00:10:03
End at: 2018-10-26 00:10:33
Local clock offset: 3.177 ms
Remote clock offset: 1.273 ms


# Below is generated by plot.py at 2018-10-26 01:22:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 87.73 Mbit/s
95th percentile per-packet one-way delay: 101.750 ms
Loss rate: 3.62%
-- Flow 1:
Average throughput: 87.73 Mbit/s
95th percentile per-packet one-way delay: 101.750 ms
Loss rate: 3.62%
```
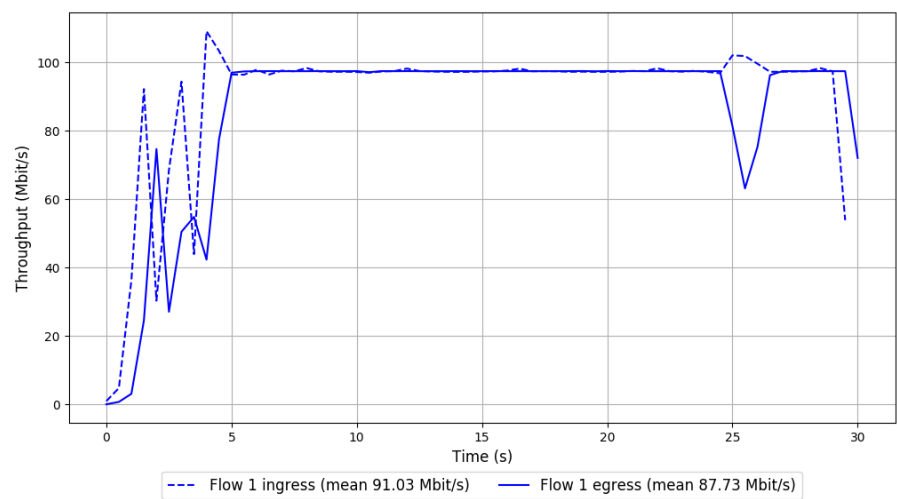
Run 2: Report of Indigo-Muses — Data Link

```
Run 3: Statistics of Indigo-Muses

Start at: 2018-10-26 00:31:00
End at: 2018-10-26 00:31:30
Local clock offset: 8.98 ms
Remote clock offset: 5.101 ms


# Below is generated by plot.py at 2018-10-26 01:22:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.81 Mbit/s
95th percentile per-packet one-way delay: 104.121 ms
Loss rate: 2.77%
-- Flow 1:
Average throughput: 89.81 Mbit/s
95th percentile per-packet one-way delay: 104.121 ms
Loss rate: 2.77%
```
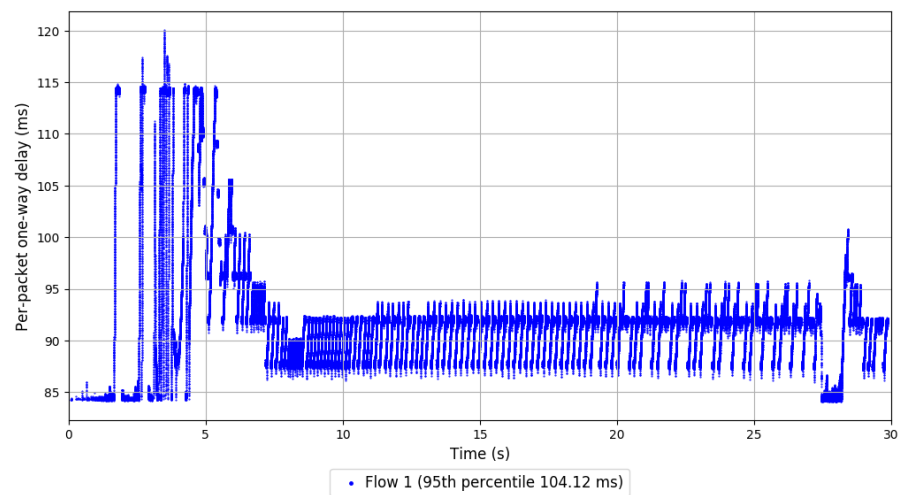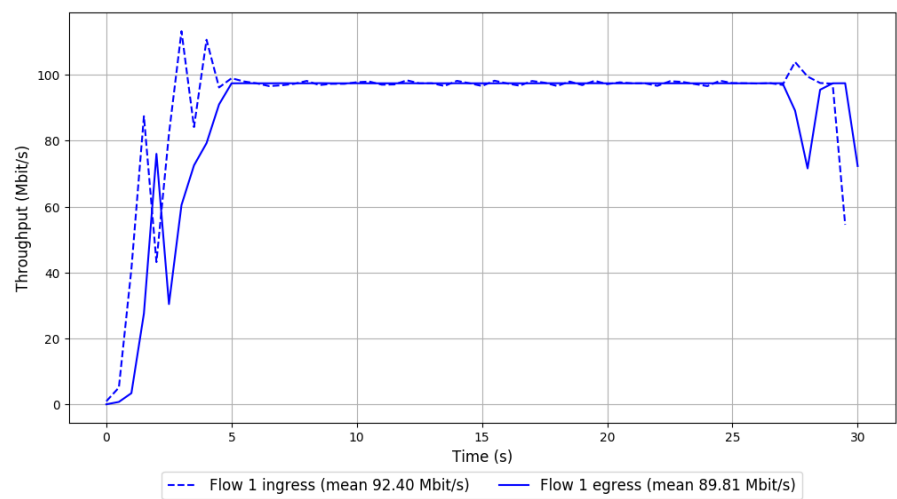
Run 3: Report of Indigo-Muses — Data Link

```
Run 4: Statistics of Indigo-Muses

Start at: 2018-10-26 00:51:58
End at: 2018-10-26 00:52:28
Local clock offset: 3.801 ms
Remote clock offset: 5.552 ms


# Below is generated by plot.py at 2018-10-26 01:22:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 90.32 Mbit/s
95th percentile per-packet one-way delay: 108.140 ms
Loss rate: 1.89%
-- Flow 1:
Average throughput: 90.32 Mbit/s
95th percentile per-packet one-way delay: 108.140 ms
Loss rate: 1.89%
```
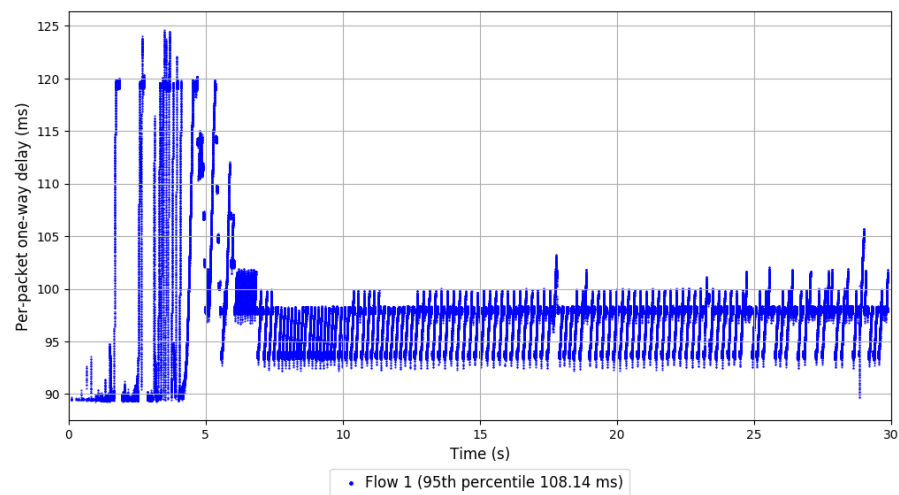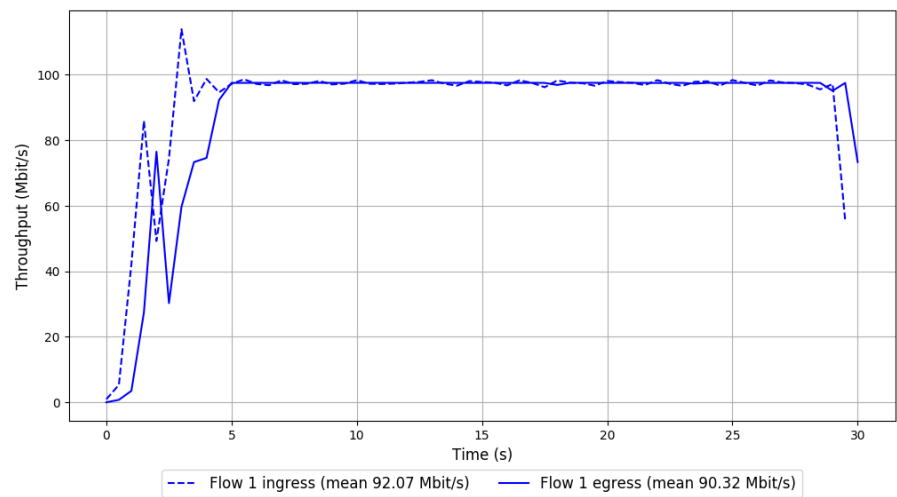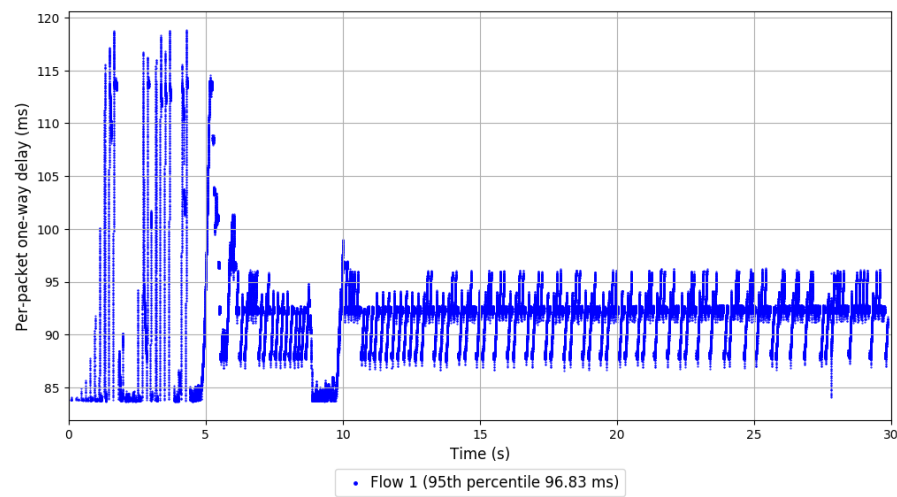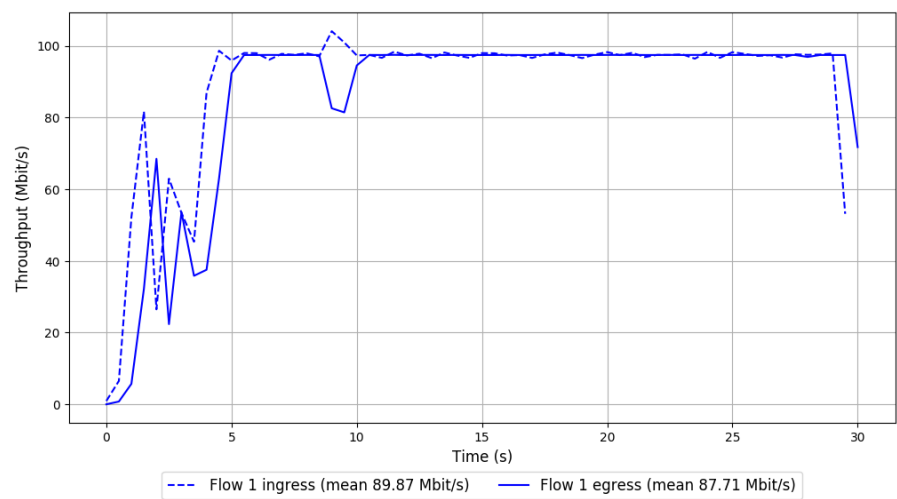
Run 4: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 92.07 Mbit/s)   Flow 1 egress (mean 90.32 Mbit/s)

Flow 1 (95th percentile 108.14 ms)

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-10-26 01:13:19
End at: 2018-10-26 01:13:49
Local clock offset: 7.578 ms
Remote clock offset: 5.376 ms


# Below is generated by plot.py at 2018-10-26 01:22:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 87.71 Mbit/s
95th percentile per-packet one-way delay: 96.833 ms
Loss rate: 2.38%
-- Flow 1:
Average throughput: 87.71 Mbit/s
95th percentile per-packet one-way delay: 96.833 ms
Loss rate: 2.38%
```
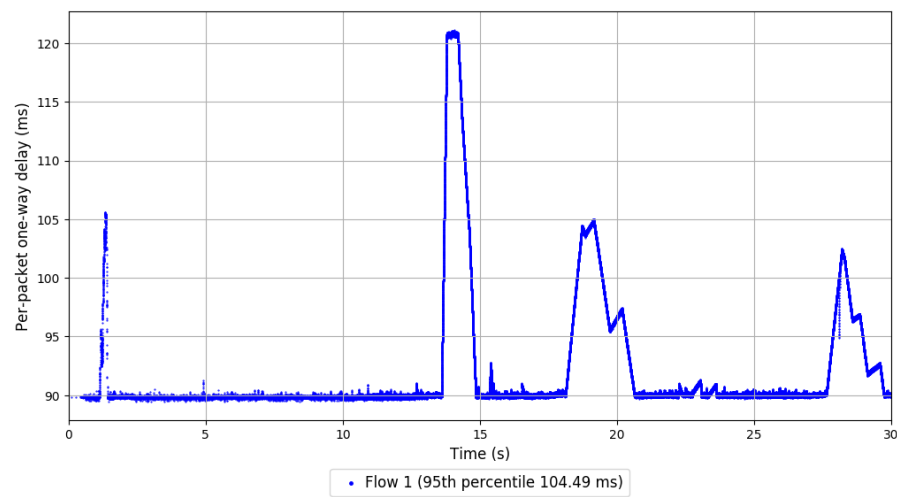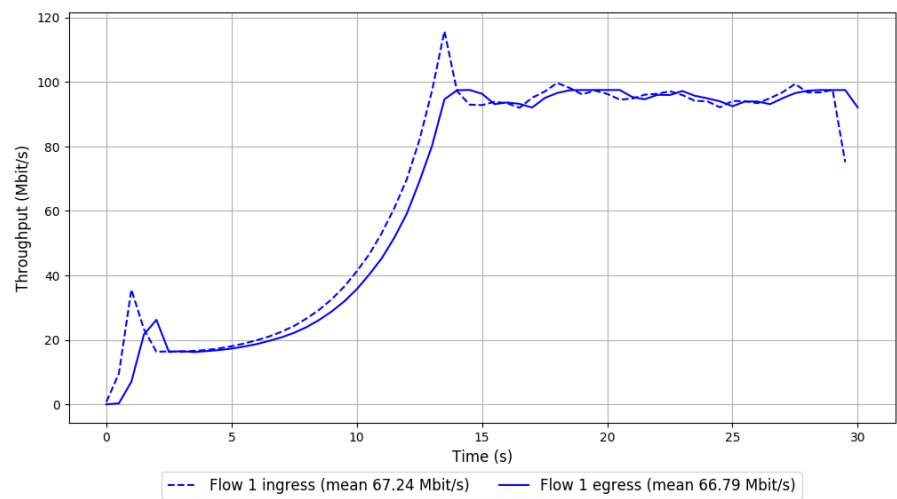
Run 5: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 89.87 Mbit/s)   Flow 1 egress (mean 87.71 Mbit/s)

Flow 1 (95th percentile 96.83 ms)

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-10-25 23:44:27
End at: 2018-10-25 23:44:57
Local clock offset: 1.036 ms
Remote clock offset: 3.699 ms

# Below is generated by plot.py at 2018-10-26 01:22:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 66.79 Mbit/s
95th percentile per-packet one-way delay: 104.491 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 66.79 Mbit/s
95th percentile per-packet one-way delay: 104.491 ms
Loss rate: 0.68%
```
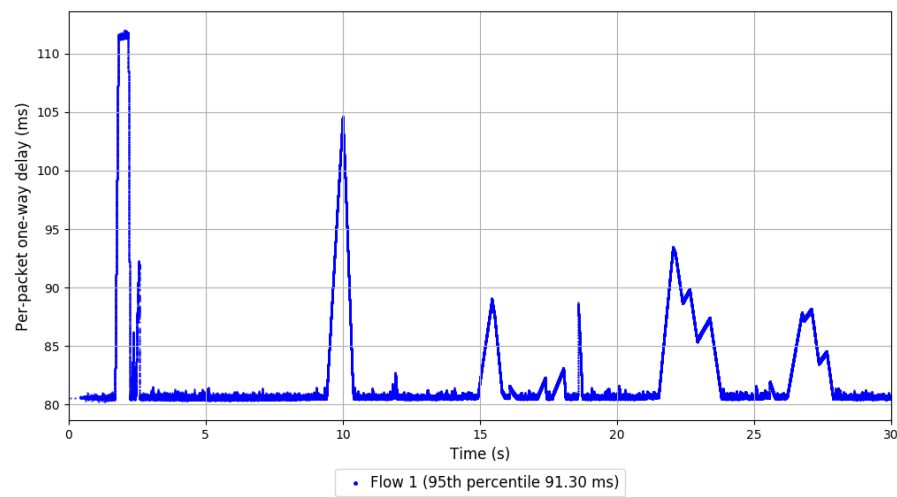
Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-10-26 00:05:25
End at: 2018-10-26 00:05:55
Local clock offset: 3.202 ms
Remote clock offset: 0.665 ms


# Below is generated by plot.py at 2018-10-26 01:23:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.57 Mbit/s
95th percentile per-packet one-way delay: 91.296 ms
Loss rate: 1.71%
-- Flow 1:
Average throughput: 85.57 Mbit/s
95th percentile per-packet one-way delay: 91.296 ms
Loss rate: 1.71%
```
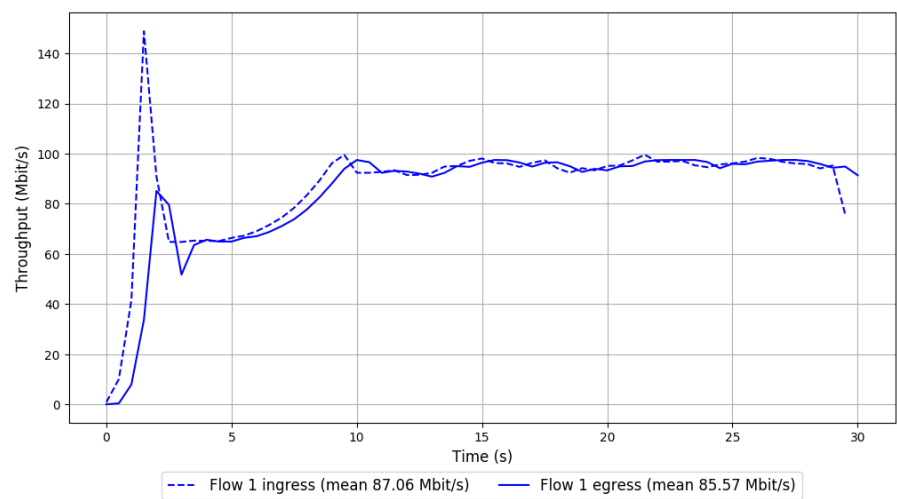
Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-10-26 00:26:23
End at: 2018-10-26 00:26:53
Local clock offset: 7.261 ms
Remote clock offset: 1.319 ms


# Below is generated by plot.py at 2018-10-26 01:23:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 83.76 Mbit/s
95th percentile per-packet one-way delay: 95.454 ms
Loss rate: 1.64%
-- Flow 1:
Average throughput: 83.76 Mbit/s
95th percentile per-packet one-way delay: 95.454 ms
Loss rate: 1.64%
```
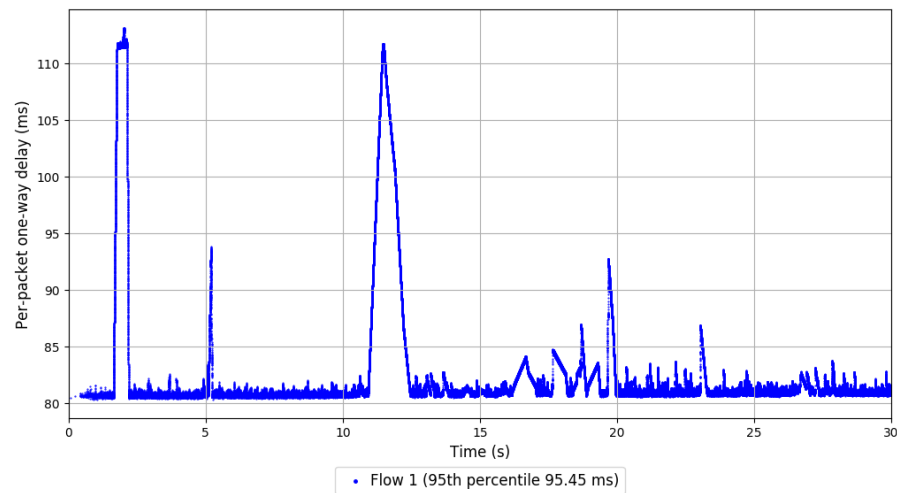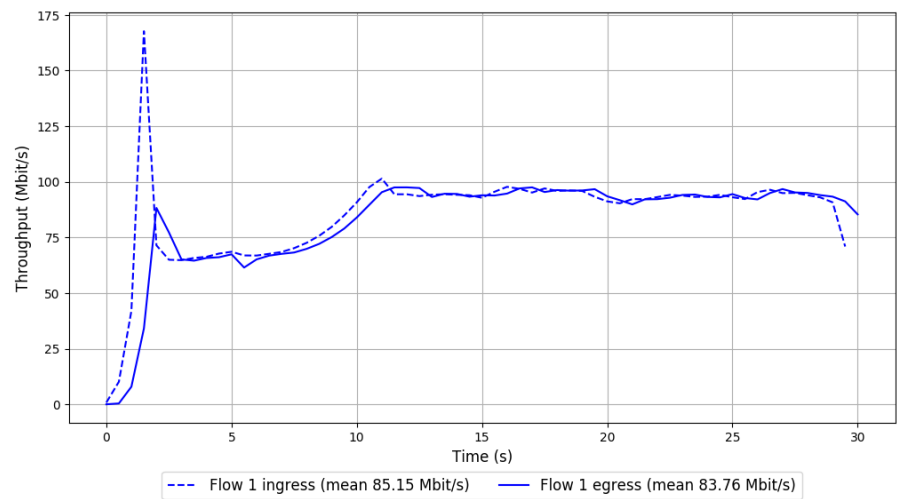
Run 3: Report of PCC-Allegro — Data Link

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-10-26 00:47:20
End at: 2018-10-26 00:47:50
Local clock offset: 3.52 ms
Remote clock offset: 5.998 ms


# Below is generated by plot.py at 2018-10-26 01:23:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.67 Mbit/s
95th percentile per-packet one-way delay: 104.625 ms
Loss rate: 2.16%
-- Flow 1:
Average throughput: 85.67 Mbit/s
95th percentile per-packet one-way delay: 104.625 ms
Loss rate: 2.16%
```
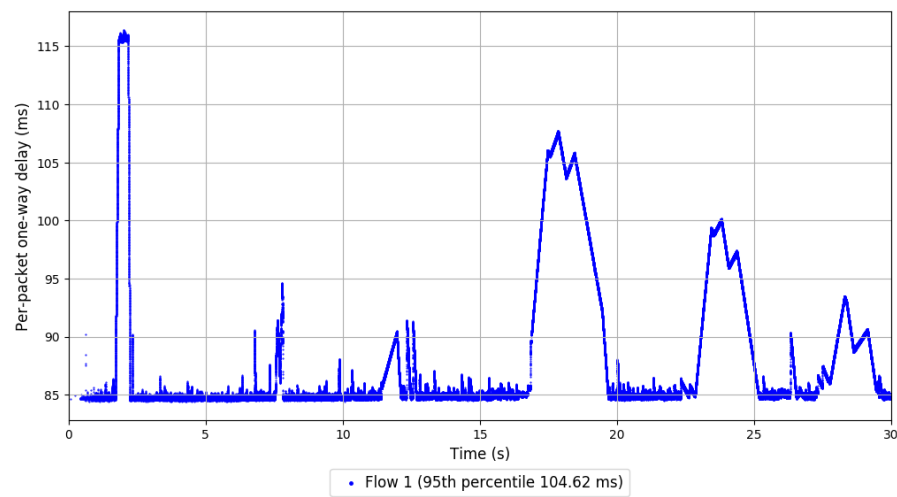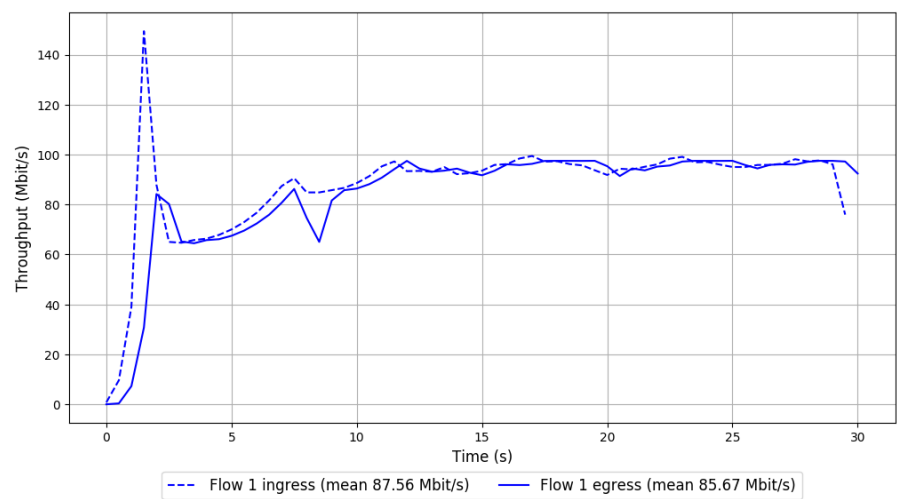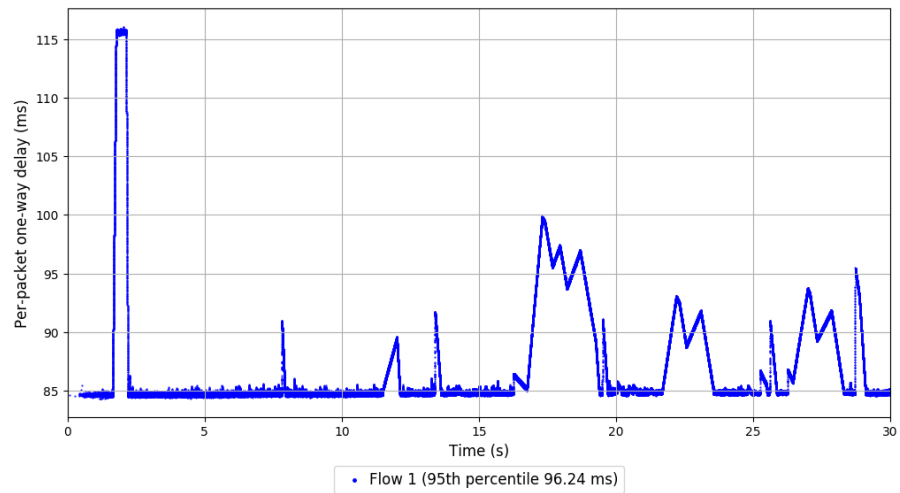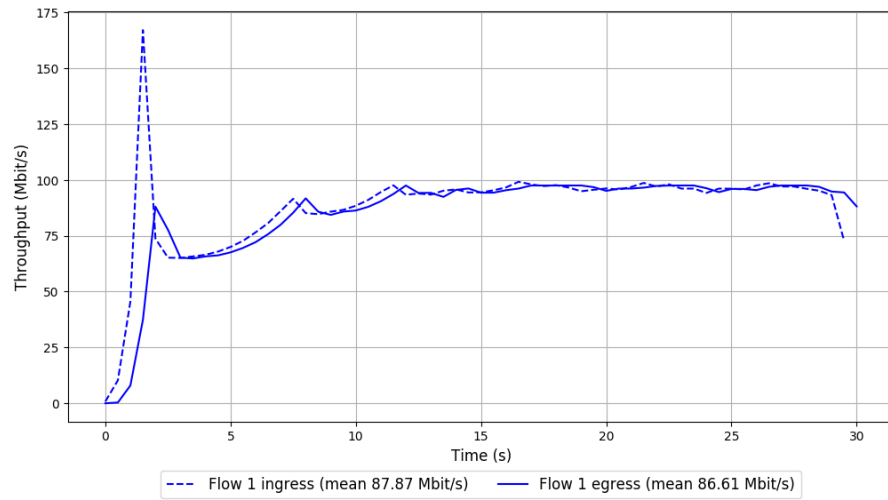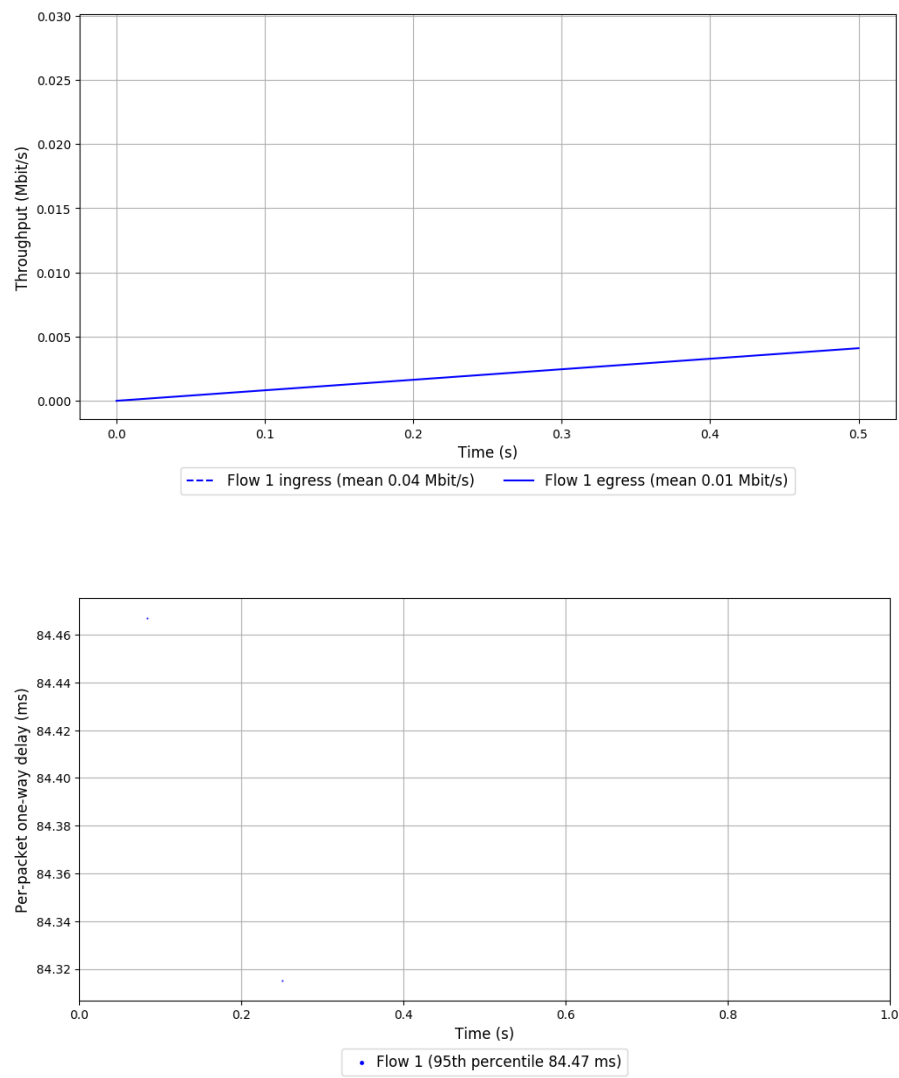
Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 87.56 Mbit/s)   Flow 1 egress (mean 85.67 Mbit/s)

Flow 1 (95th percentile 104.62 ms)

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-10-26 01:08:31
End at: 2018-10-26 01:09:01
Local clock offset: 6.607 ms
Remote clock offset: 5.88 ms


# Below is generated by plot.py at 2018-10-26 01:24:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.61 Mbit/s
95th percentile per-packet one-way delay: 96.242 ms
Loss rate: 1.43%
-- Flow 1:
Average throughput: 86.61 Mbit/s
95th percentile per-packet one-way delay: 96.242 ms
Loss rate: 1.43%
```
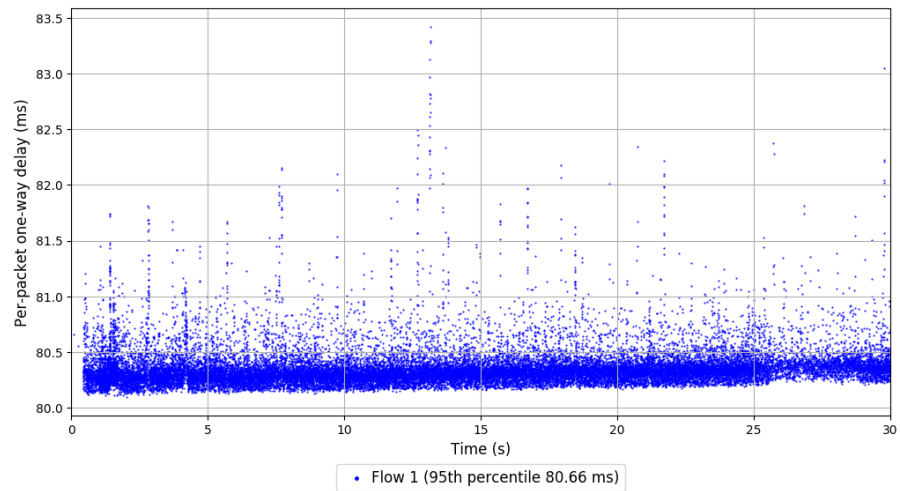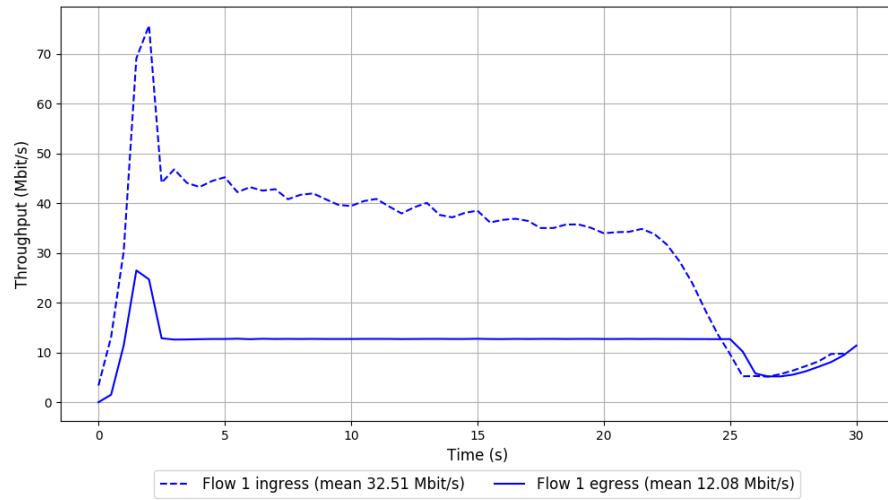
Run 5: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 87.87 Mbit/s) —— Flow 1 egress (mean 86.61 Mbit/s)

• Flow 1 (95th percentile 96.24 ms)

```
Run 1: Statistics of PCC-Expr

Start at: 2018-10-25 23:33:57
End at: 2018-10-25 23:34:27
Local clock offset: -0.659 ms
Remote clock offset: 3.116 ms
```

Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2018-10-25 23:54:54
End at: 2018-10-25 23:55:24
Local clock offset: 1.878 ms
Remote clock offset: 0.275 ms


# Below is generated by plot.py at 2018-10-26 01:24:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.08 Mbit/s
95th percentile per-packet one-way delay: 80.664 ms
Loss rate: 62.85%
-- Flow 1:
Average throughput: 12.08 Mbit/s
95th percentile per-packet one-way delay: 80.664 ms
Loss rate: 62.85%
```

Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2018-10-26 00:15:53
End at: 2018-10-26 00:16:23
Local clock offset: 4.087 ms
Remote clock offset: 5.097 ms


# Below is generated by plot.py at 2018-10-26 01:24:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.71 Mbit/s
95th percentile per-packet one-way delay: 84.962 ms
Loss rate: 54.93%
-- Flow 1:
Average throughput: 12.71 Mbit/s
95th percentile per-packet one-way delay: 84.962 ms
Loss rate: 54.93%
```
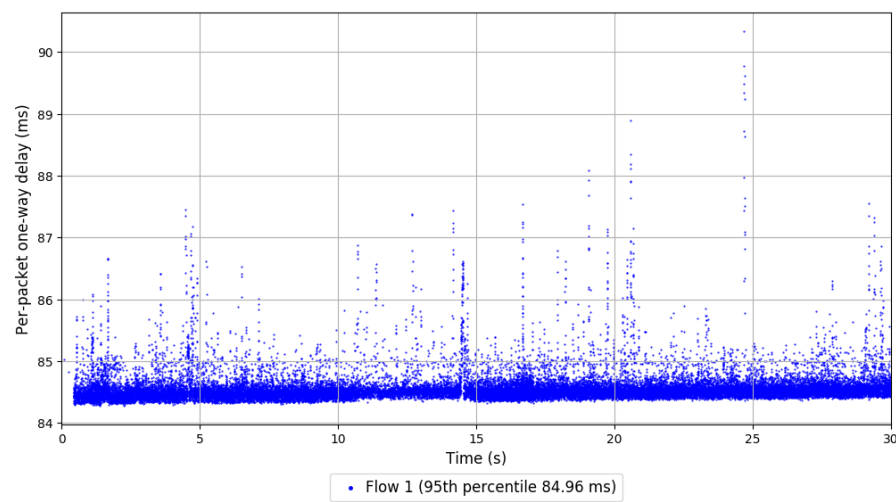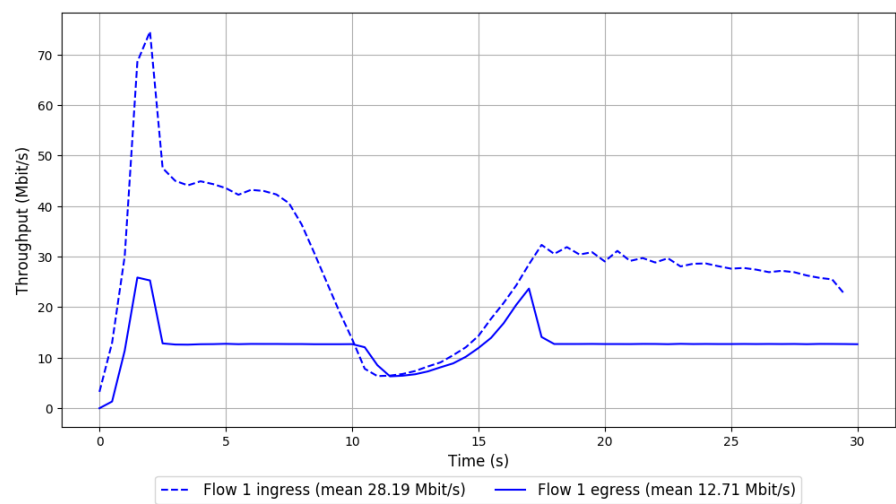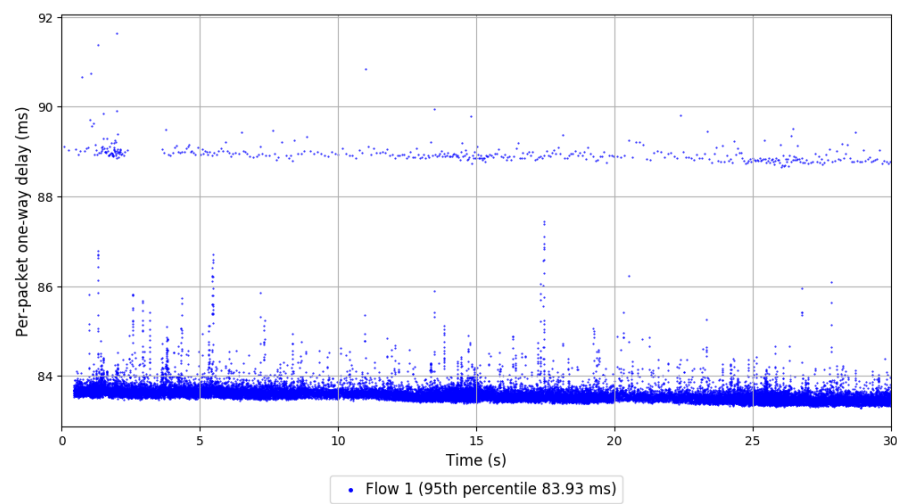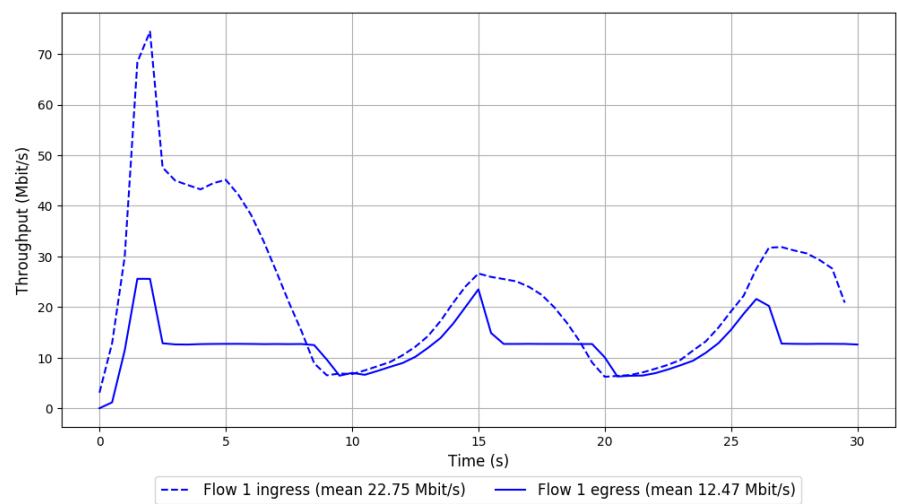
Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 28.19 Mbit/s) --- Flow 1 egress (mean 12.71 Mbit/s)

Flow 1 (95th percentile 84.96 ms)

```
Run 4: Statistics of PCC-Expr

Start at: 2018-10-26 00:36:51
End at: 2018-10-26 00:37:21
Local clock offset: 5.476 ms
Remote clock offset: 5.32 ms


# Below is generated by plot.py at 2018-10-26 01:24:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.47 Mbit/s
95th percentile per-packet one-way delay: 83.934 ms
Loss rate: 45.21%
-- Flow 1:
Average throughput: 12.47 Mbit/s
95th percentile per-packet one-way delay: 83.934 ms
Loss rate: 45.21%
```
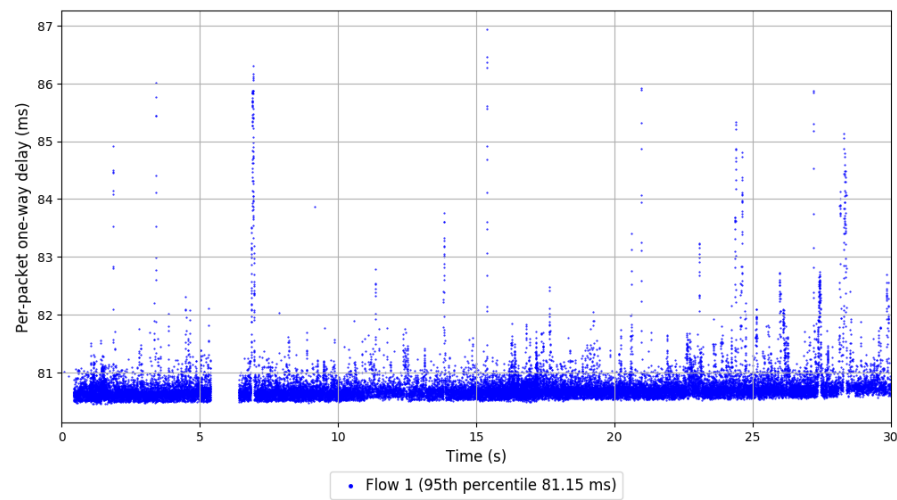
Run 4: Report of PCC-Expr — Data Link

```
Run 5: Statistics of PCC-Expr

Start at: 2018-10-26 00:58:00
End at: 2018-10-26 00:58:30
Local clock offset: 4.637 ms
Remote clock offset: 2.261 ms


# Below is generated by plot.py at 2018-10-26 01:24:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.84 Mbit/s
95th percentile per-packet one-way delay: 81.154 ms
Loss rate: 54.79%
-- Flow 1:
Average throughput: 11.84 Mbit/s
95th percentile per-packet one-way delay: 81.154 ms
Loss rate: 54.79%
```
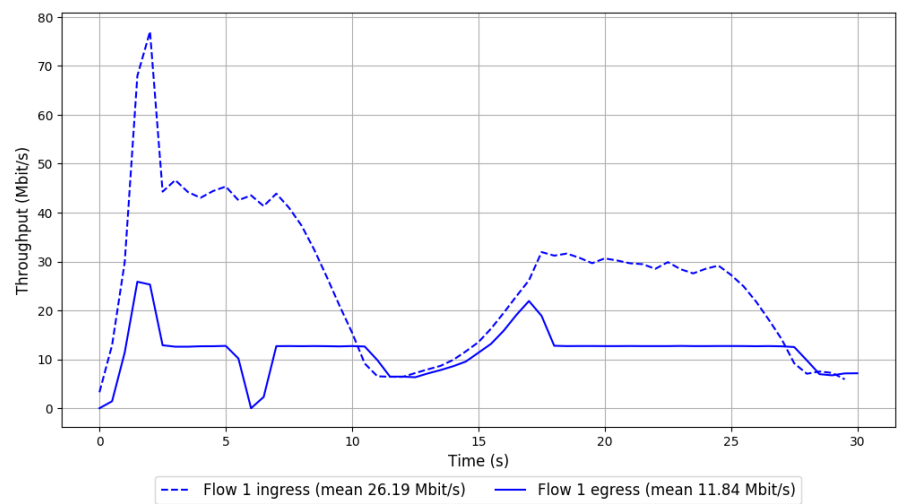
Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-10-25 23:39:45
End at: 2018-10-25 23:40:15
Local clock offset: 4.451 ms
Remote clock offset: 0.019 ms


# Below is generated by plot.py at 2018-10-26 01:24:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 62.41 Mbit/s
95th percentile per-packet one-way delay: 106.710 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 62.41 Mbit/s
95th percentile per-packet one-way delay: 106.710 ms
Loss rate: 0.49%
```
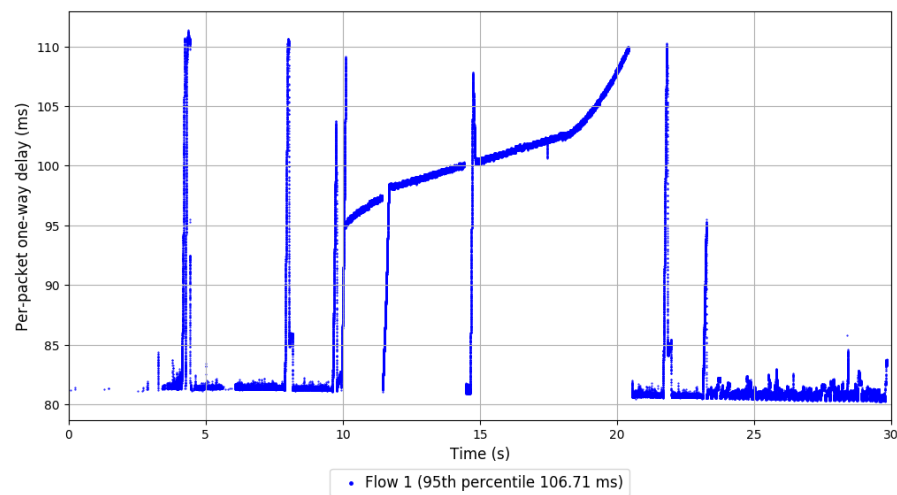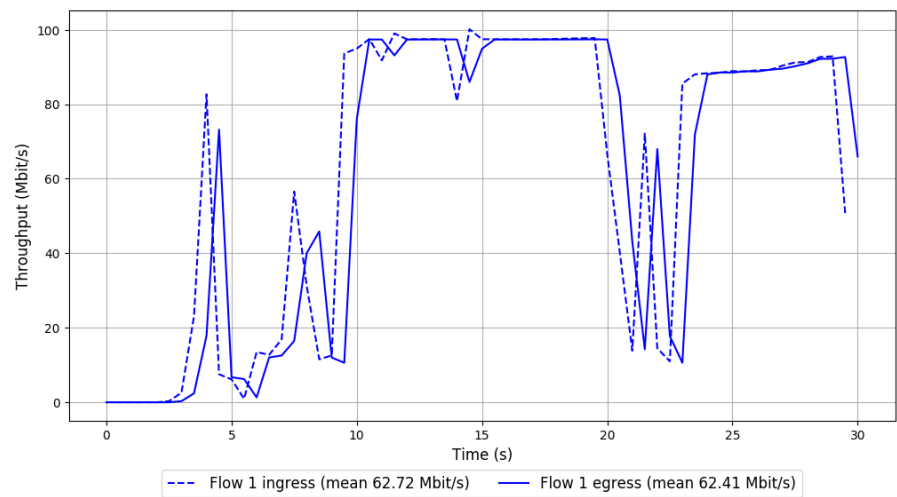
Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-10-26 00:00:43
End at: 2018-10-26 00:01:13
Local clock offset: 3.566 ms
Remote clock offset: 4.288 ms


# Below is generated by plot.py at 2018-10-26 01:24:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 70.17 Mbit/s
95th percentile per-packet one-way delay: 109.373 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 70.17 Mbit/s
95th percentile per-packet one-way delay: 109.373 ms
Loss rate: 0.43%
```
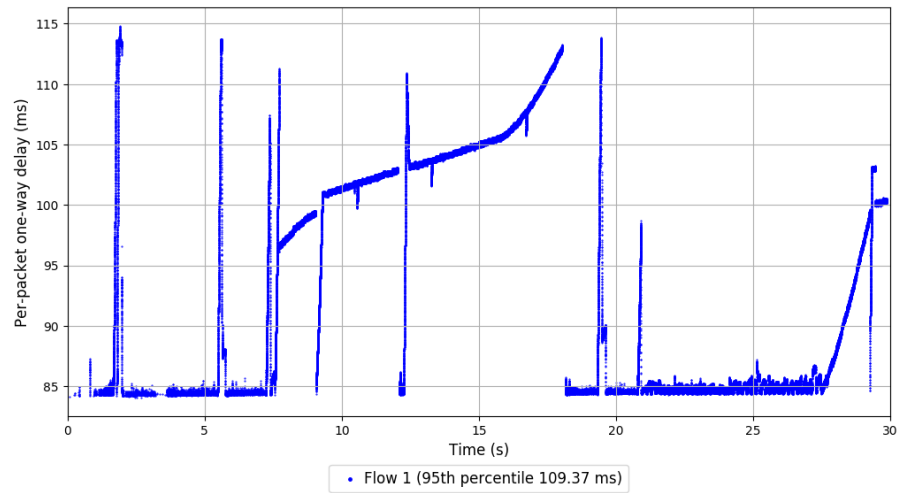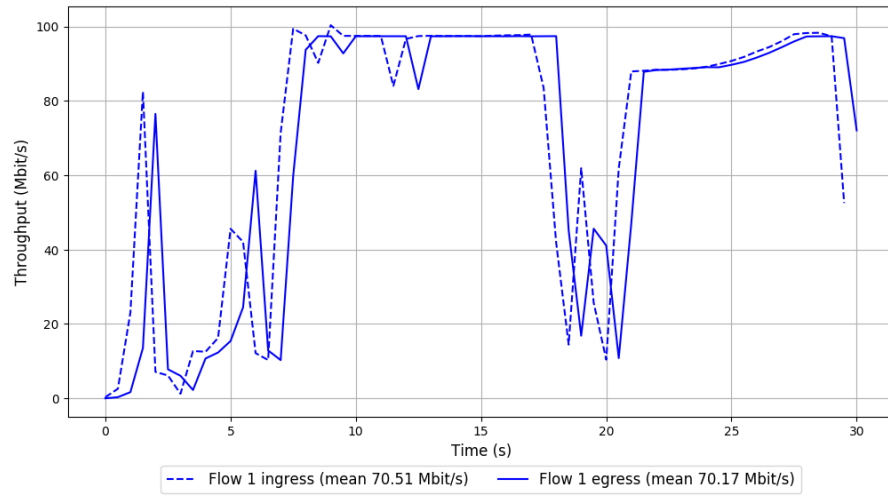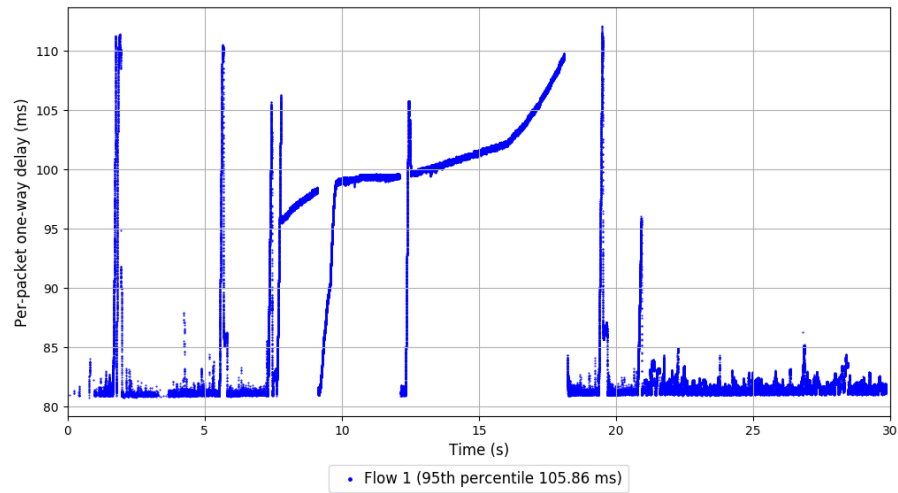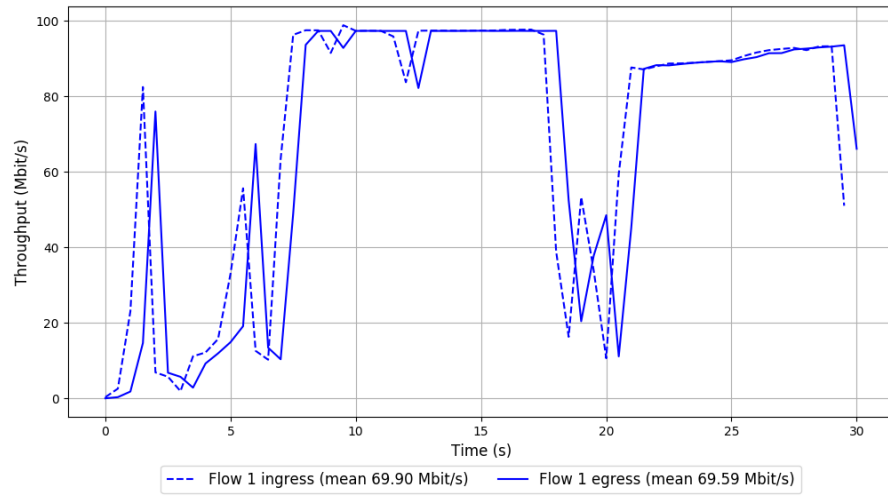
Run 2: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 70.51 Mbit/s)   Flow 1 egress (mean 70.17 Mbit/s)

• Flow 1 (95th percentile 109.37 ms)

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-10-26 00:21:42
End at: 2018-10-26 00:22:12
Local clock offset: 5.76 ms
Remote clock offset: 1.675 ms


# Below is generated by plot.py at 2018-10-26 01:24:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 69.59 Mbit/s
95th percentile per-packet one-way delay: 105.863 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 69.59 Mbit/s
95th percentile per-packet one-way delay: 105.863 ms
Loss rate: 0.44%
```
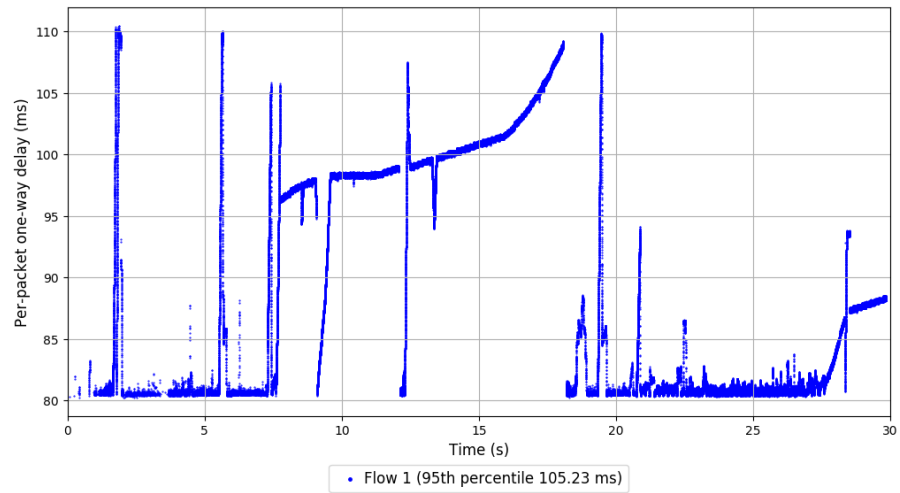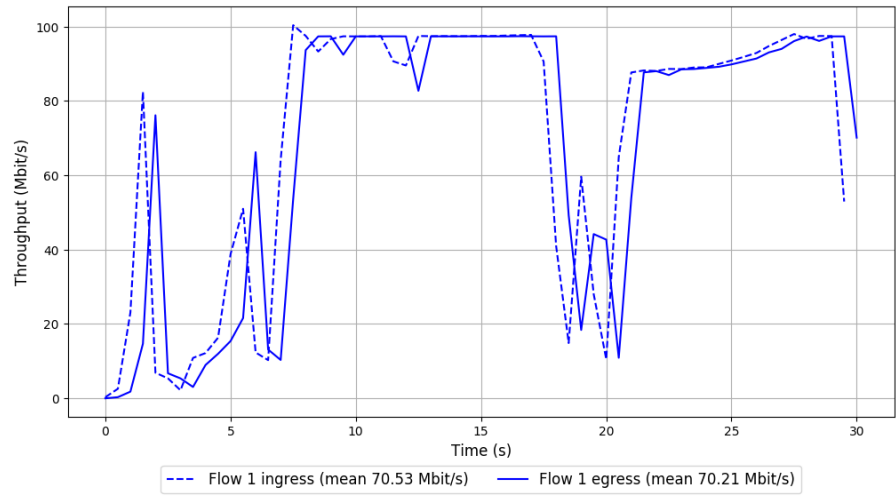
Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-10-26 00:42:40
End at: 2018-10-26 00:43:10
Local clock offset: 3.719 ms
Remote clock offset: 1.667 ms


# Below is generated by plot.py at 2018-10-26 01:24:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 70.21 Mbit/s
95th percentile per-packet one-way delay: 105.233 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 70.21 Mbit/s
95th percentile per-packet one-way delay: 105.233 ms
Loss rate: 0.43%
```
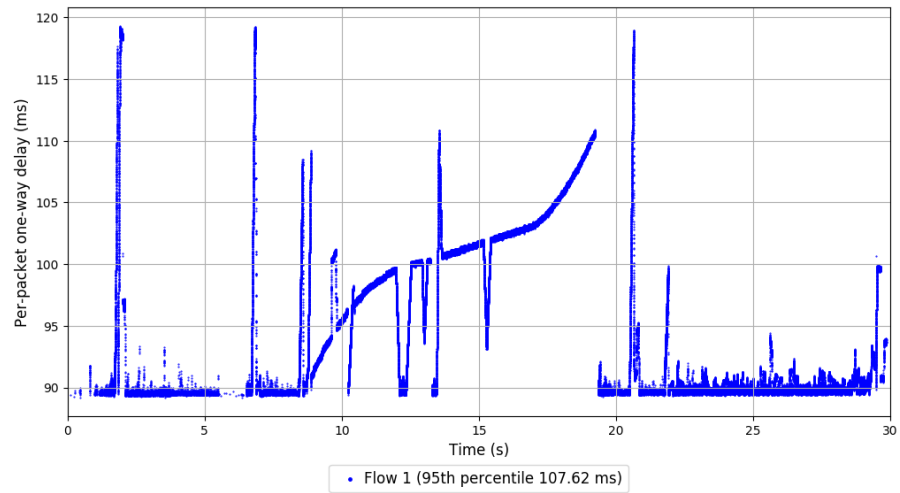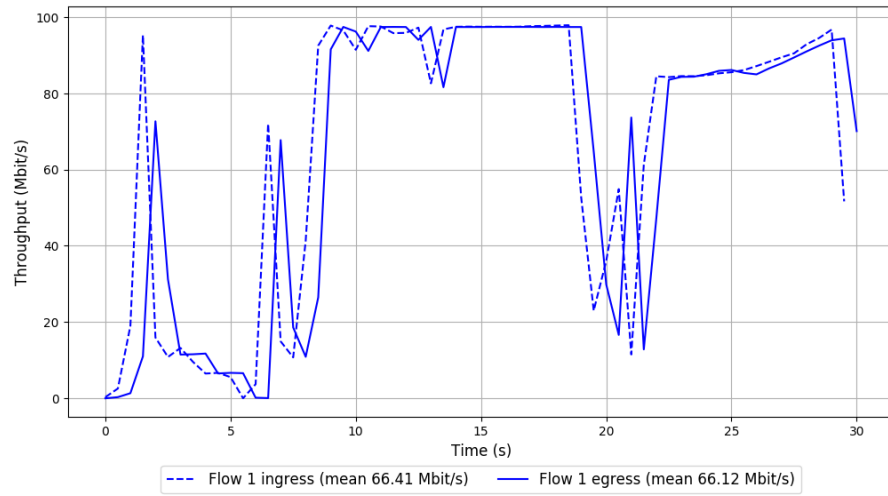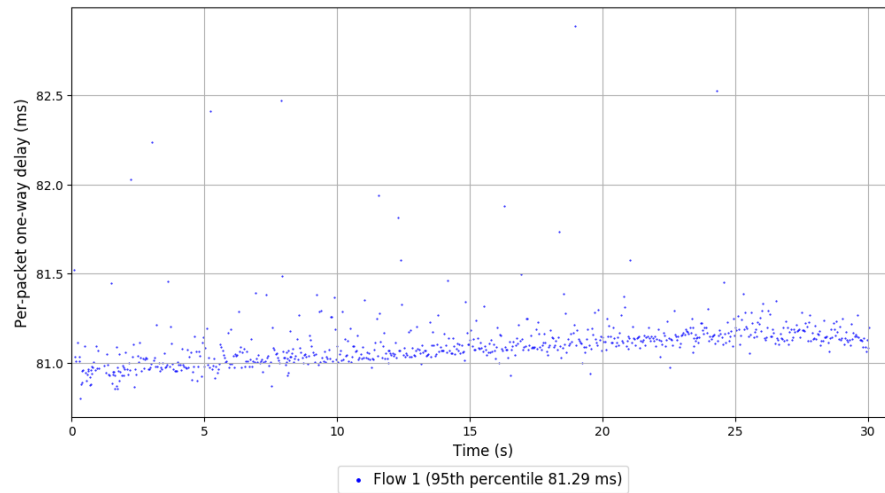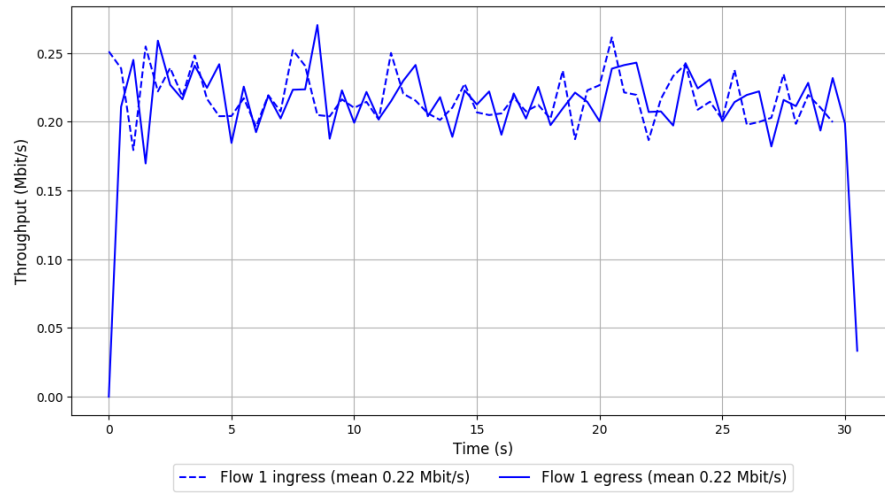
Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 70.53 Mbit/s)   Flow 1 egress (mean 70.21 Mbit/s)

Flow 1 (95th percentile 105.23 ms)

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-10-26 01:03:49
End at: 2018-10-26 01:04:19
Local clock offset: 5.549 ms
Remote clock offset: 5.547 ms


# Below is generated by plot.py at 2018-10-26 01:24:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 66.12 Mbit/s
95th percentile per-packet one-way delay: 107.625 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 66.12 Mbit/s
95th percentile per-packet one-way delay: 107.625 ms
Loss rate: 0.44%
```

Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2018-10-25 23:47:57
End at: 2018-10-25 23:48:27
Local clock offset: 2.073 ms
Remote clock offset: 0.312 ms


# Below is generated by plot.py at 2018-10-26 01:24:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 81.293 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 81.293 ms
Loss rate: 0.00%
```
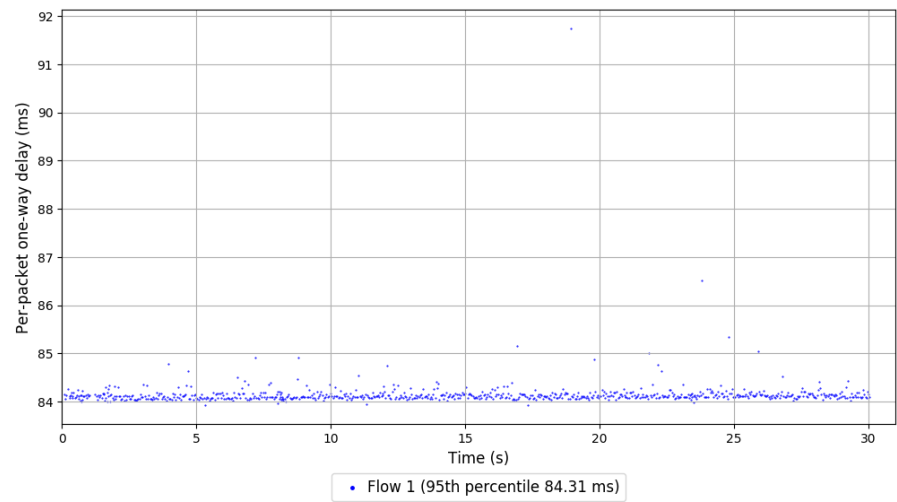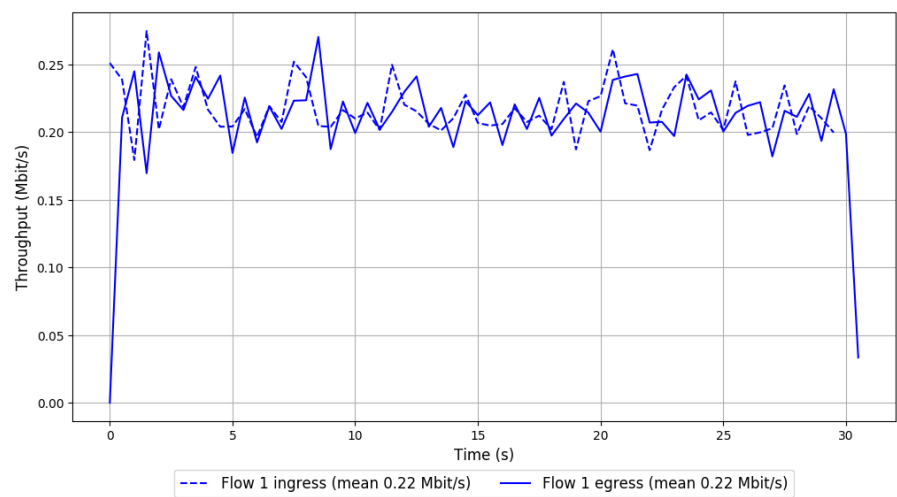
Run 1: Report of SCReAM — Data Link

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

• Flow 1 (95th percentile 81.29 ms)

```
Run 2: Statistics of SCReAM

Start at: 2018-10-26 00:08:56
End at: 2018-10-26 00:09:26
Local clock offset: 3.099 ms
Remote clock offset: 4.511 ms

# Below is generated by plot.py at 2018-10-26 01:24:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 84.315 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 84.315 ms
Loss rate: 0.00%
```
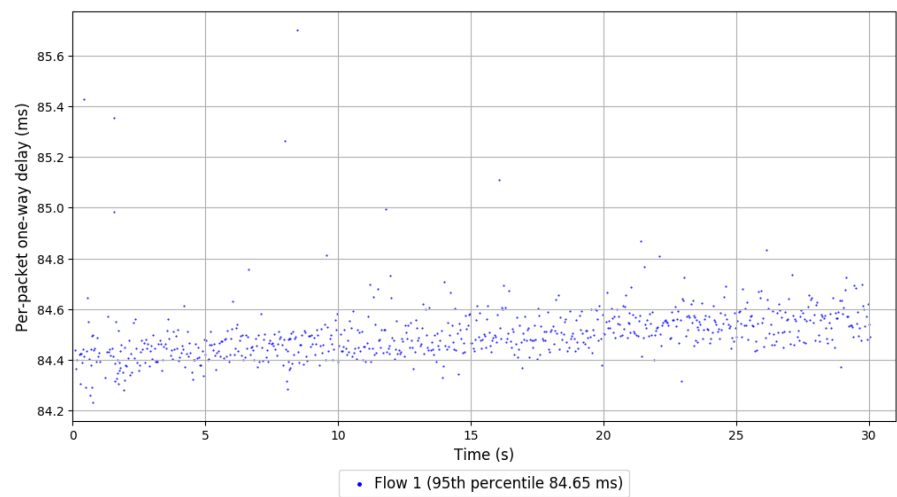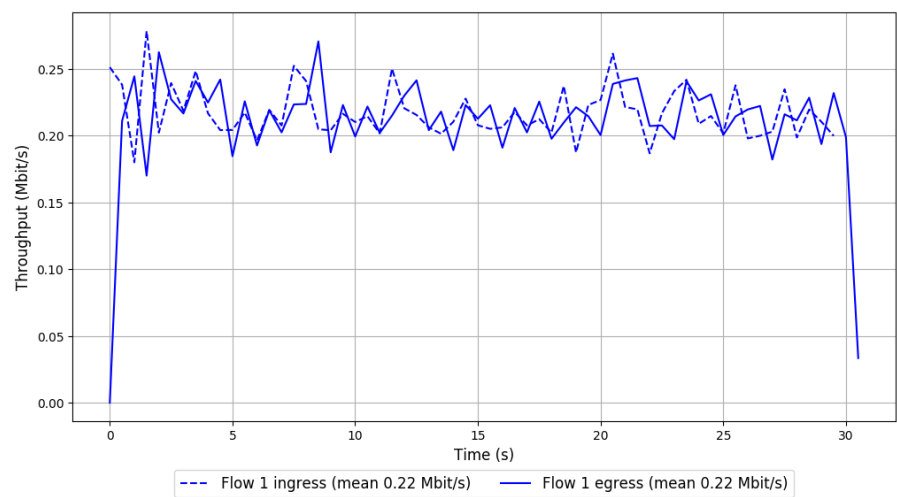
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-10-26 00:29:53
End at: 2018-10-26 00:30:23
Local clock offset: 8.494 ms
Remote clock offset: 5.125 ms


# Below is generated by plot.py at 2018-10-26 01:24:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 84.646 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 84.646 ms
Loss rate: 0.00%
```
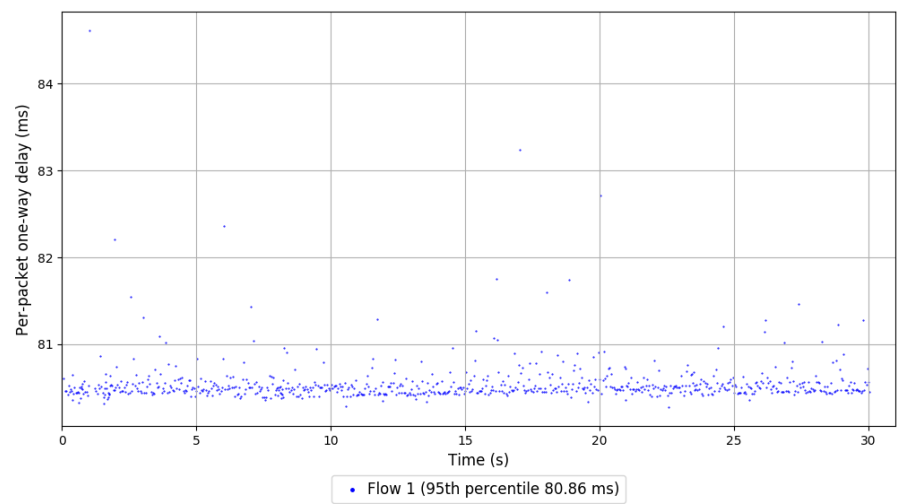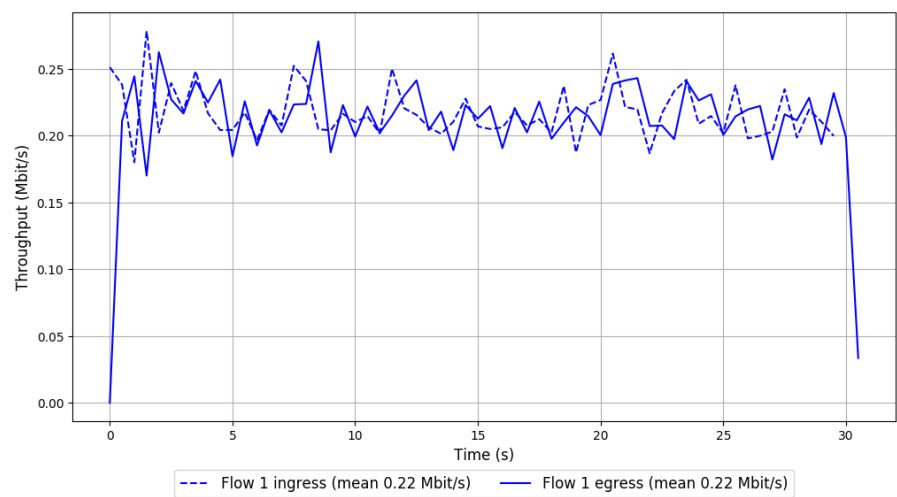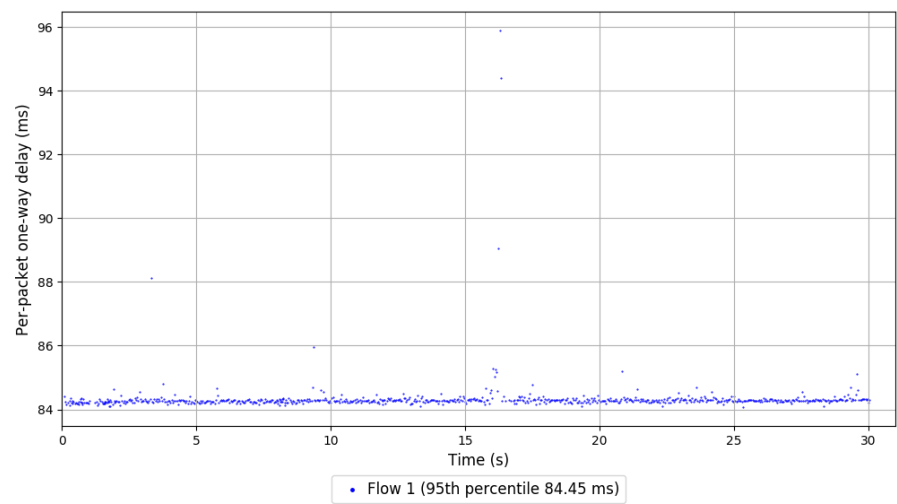
Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2018-10-26 00:50:51
End at: 2018-10-26 00:51:21
Local clock offset: 3.594 ms
Remote clock offset: 1.859 ms


# Below is generated by plot.py at 2018-10-26 01:24:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 80.860 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 80.860 ms
Loss rate: 0.00%
```

Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-10-26 01:12:12
End at: 2018-10-26 01:12:42
Local clock offset: 7.286 ms
Remote clock offset: 5.335 ms


# Below is generated by plot.py at 2018-10-26 01:24:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 84.450 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 84.450 ms
Loss rate: 0.67%
```
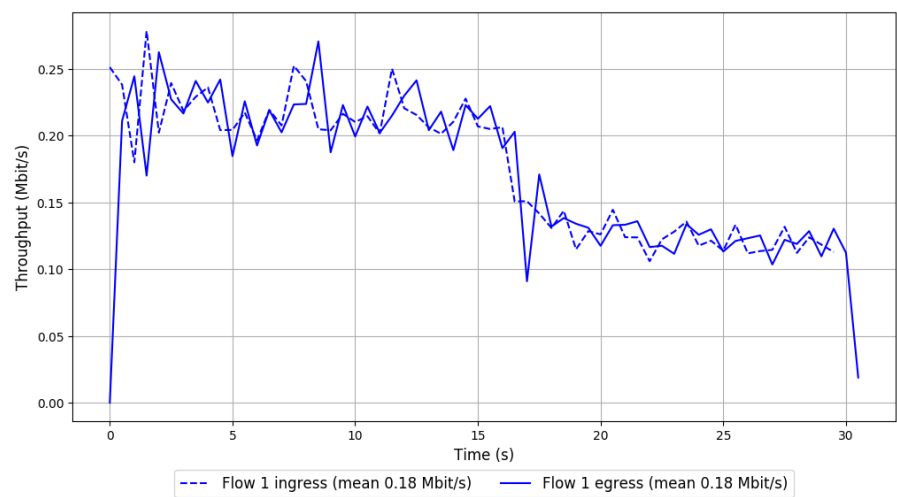
Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2018-10-25 23:35:04
End at: 2018-10-25 23:35:34
Local clock offset: -0.437 ms
Remote clock offset: -0.17 ms


# Below is generated by plot.py at 2018-10-26 01:24:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.48 Mbit/s
95th percentile per-packet one-way delay: 89.730 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 4.48 Mbit/s
95th percentile per-packet one-way delay: 89.730 ms
Loss rate: 0.01%
```
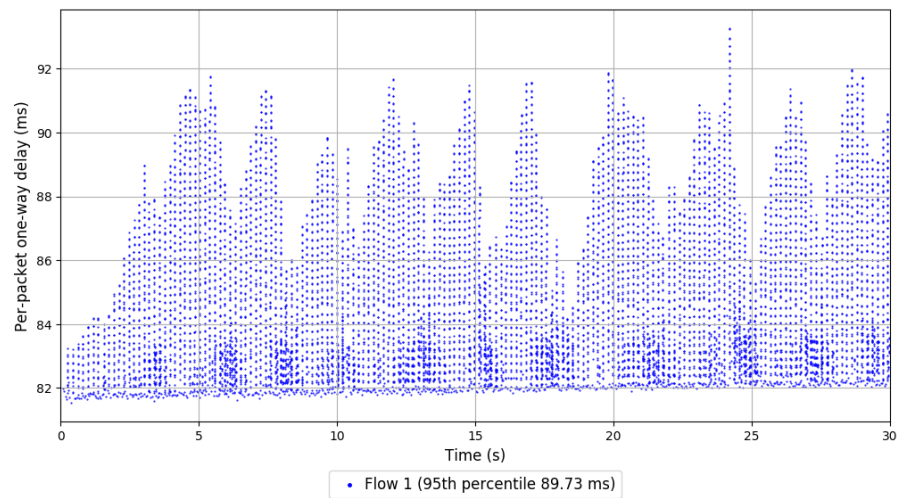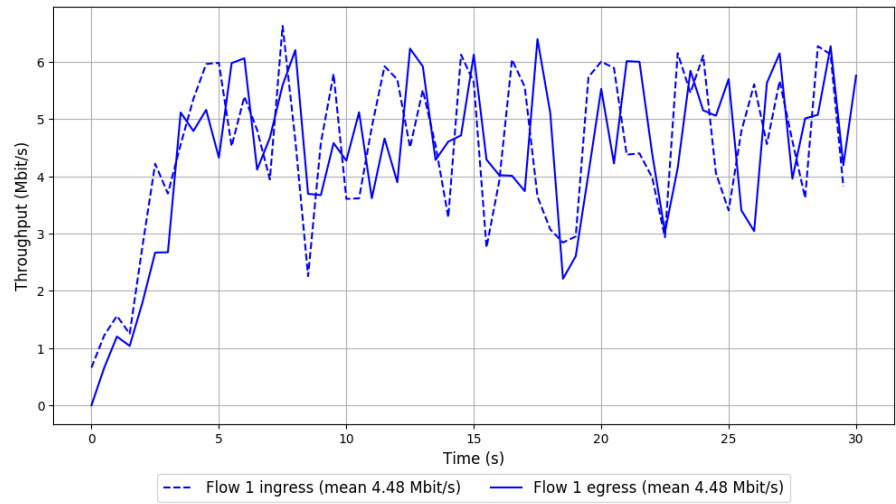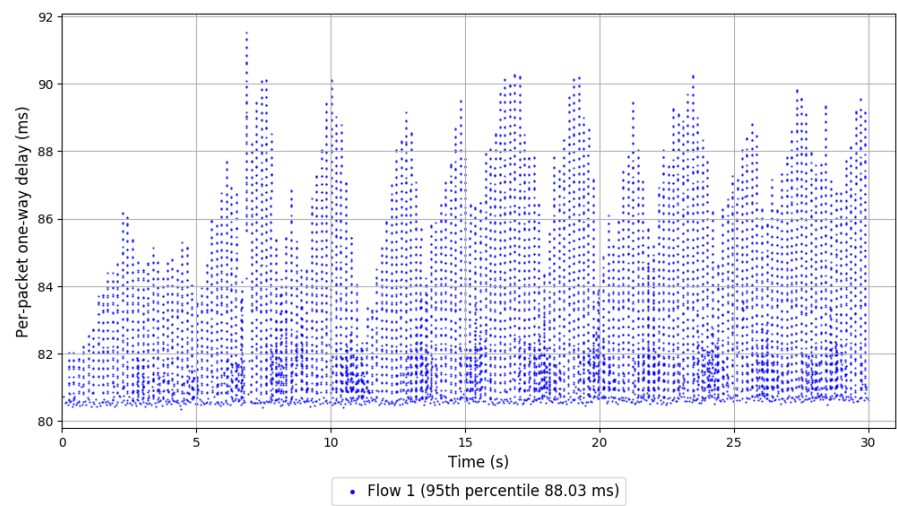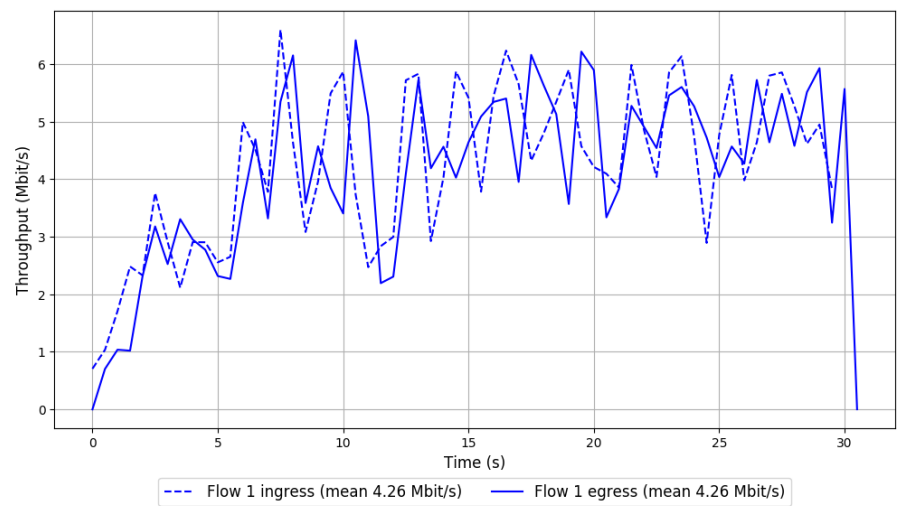
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-10-25 23:56:03
End at: 2018-10-25 23:56:33
Local clock offset: 2.057 ms
Remote clock offset: 0.411 ms


# Below is generated by plot.py at 2018-10-26 01:24:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.26 Mbit/s
95th percentile per-packet one-way delay: 88.028 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.26 Mbit/s
95th percentile per-packet one-way delay: 88.028 ms
Loss rate: 0.00%
```

Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-10-26 00:17:02
End at: 2018-10-26 00:17:32
Local clock offset: 4.475 ms
Remote clock offset: 4.466 ms


# Below is generated by plot.py at 2018-10-26 01:24:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.51 Mbit/s
95th percentile per-packet one-way delay: 90.816 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 3.51 Mbit/s
95th percentile per-packet one-way delay: 90.816 ms
Loss rate: 0.30%
```
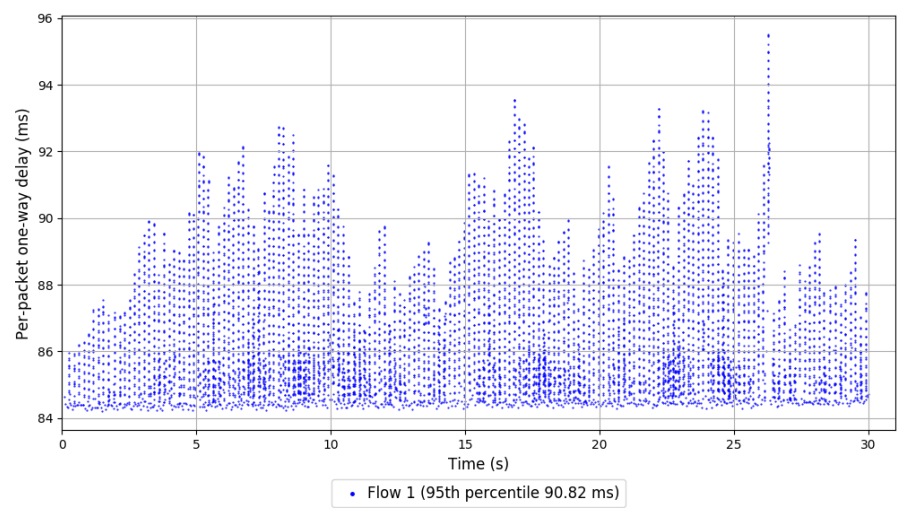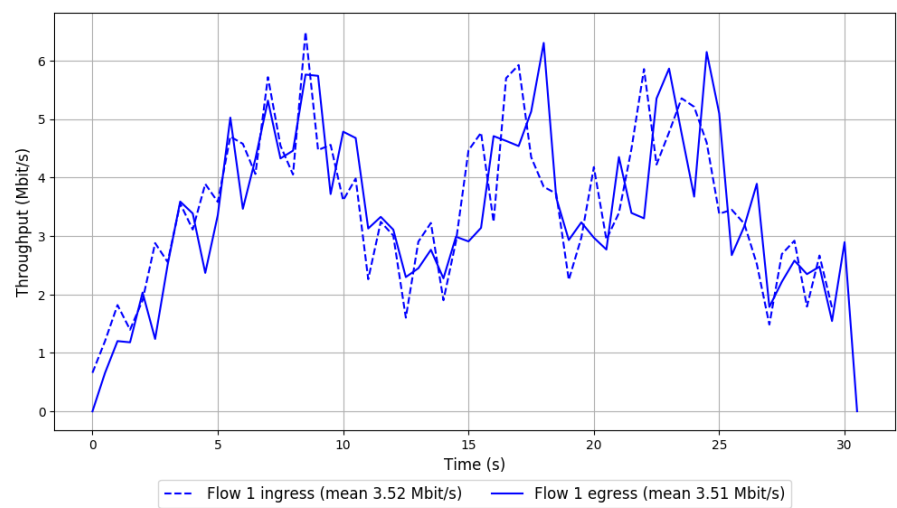
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-10-26 00:38:00
End at: 2018-10-26 00:38:30
Local clock offset: 4.849 ms
Remote clock offset: 1.595 ms


# Below is generated by plot.py at 2018-10-26 01:24:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.56 Mbit/s
95th percentile per-packet one-way delay: 88.039 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 4.56 Mbit/s
95th percentile per-packet one-way delay: 88.039 ms
Loss rate: 0.10%
```
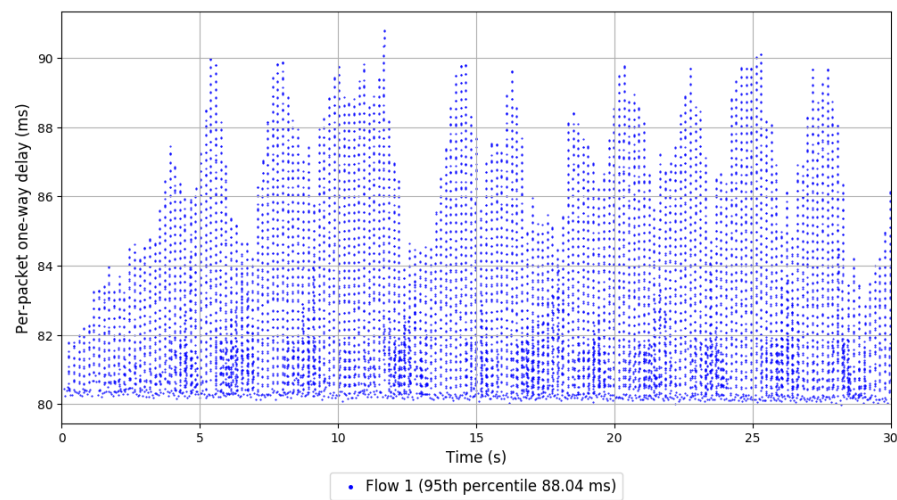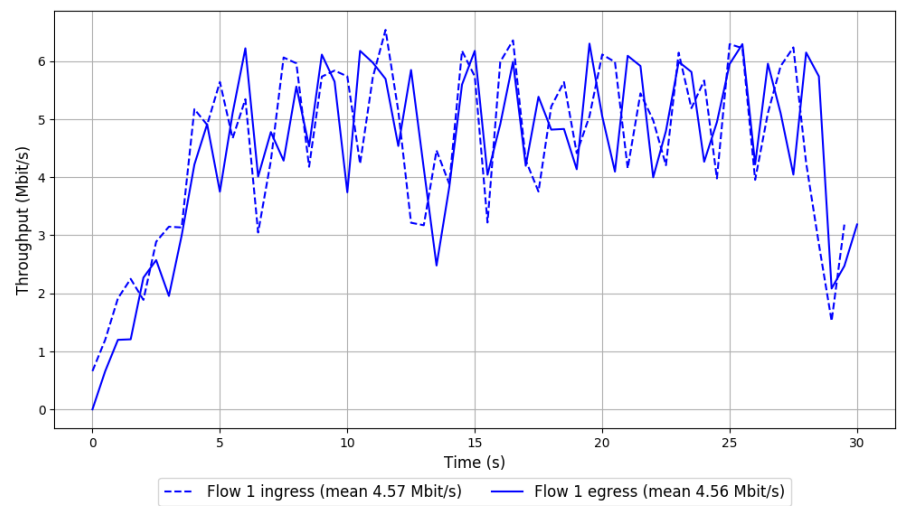
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2018-10-26 00:59:08
End at: 2018-10-26 00:59:38
Local clock offset: 4.811 ms
Remote clock offset: 6.032 ms


# Below is generated by plot.py at 2018-10-26 01:24:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.38 Mbit/s
95th percentile per-packet one-way delay: 95.014 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 2.38 Mbit/s
95th percentile per-packet one-way delay: 95.014 ms
Loss rate: 0.36%
```
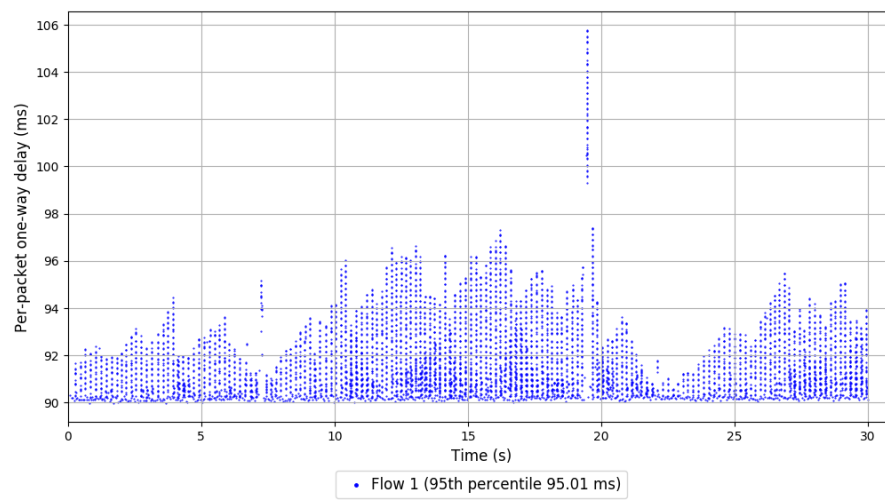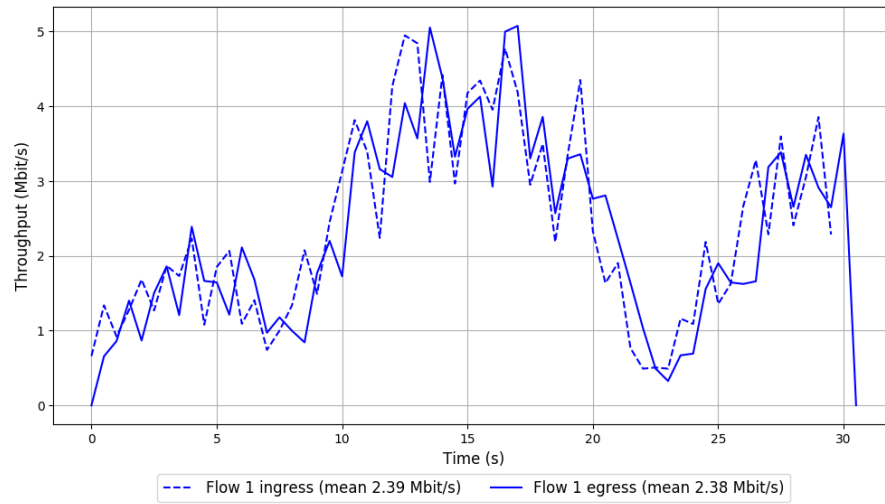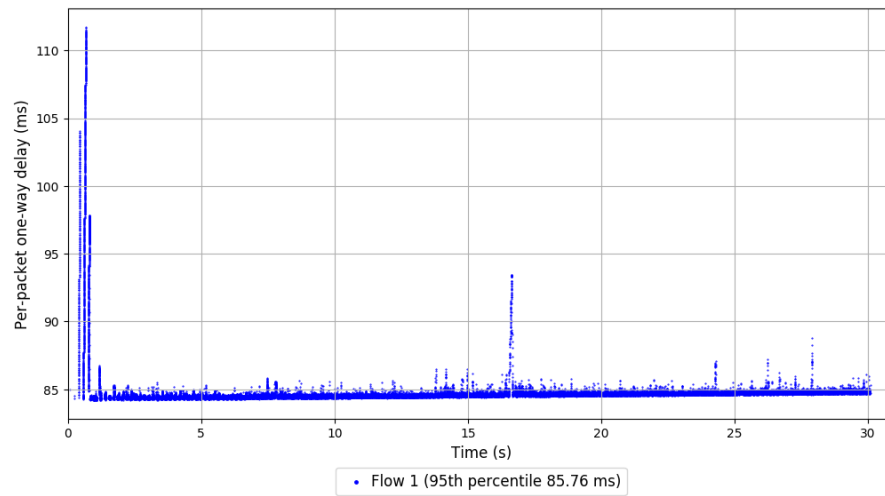
Run 5: Report of Sprout — Data Link

Flow 1 ingress (mean 2.39 Mbit/s)   Flow 1 egress (mean 2.38 Mbit/s)

Flow 1 (95th percentile 95.01 ms)

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

Start at: 2018-10-25 23:36:11
End at: 2018-10-25 23:36:41
Local clock offset: 0.759 ms
Remote clock offset: 3.226 ms


# Below is generated by plot.py at 2018-10-26 01:24:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.60 Mbit/s
95th percentile per-packet one-way delay: 85.762 ms
Loss rate: 21.83%
-- Flow 1:
Average throughput: 12.60 Mbit/s
95th percentile per-packet one-way delay: 85.762 ms
Loss rate: 21.83%
```
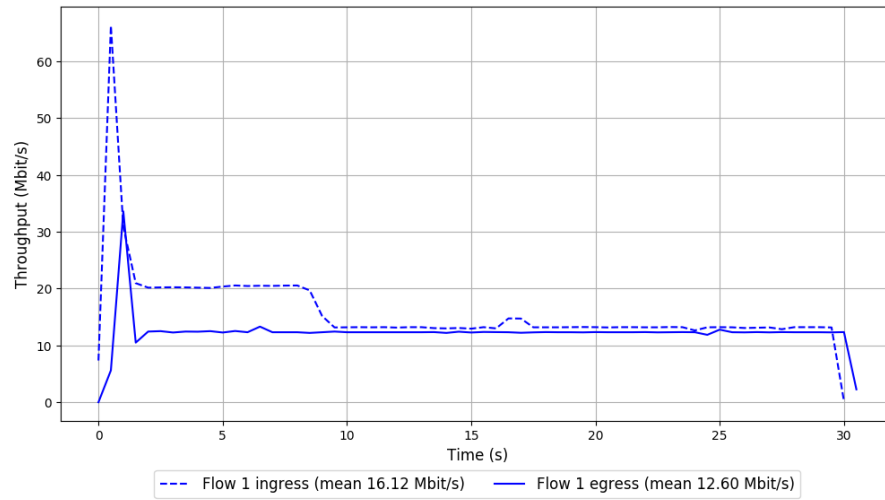
Run 1: Report of TaoVA-100x — Data Link

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

Start at: 2018-10-25 23:57:10
End at: 2018-10-25 23:57:40
Local clock offset: 2.303 ms
Remote clock offset: 4.143 ms

# Below is generated by plot.py at 2018-10-26 01:24:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.58 Mbit/s
95th percentile per-packet one-way delay: 85.931 ms
Loss rate: 23.96%
-- Flow 1:
Average throughput: 12.58 Mbit/s
95th percentile per-packet one-way delay: 85.931 ms
Loss rate: 23.96%
```
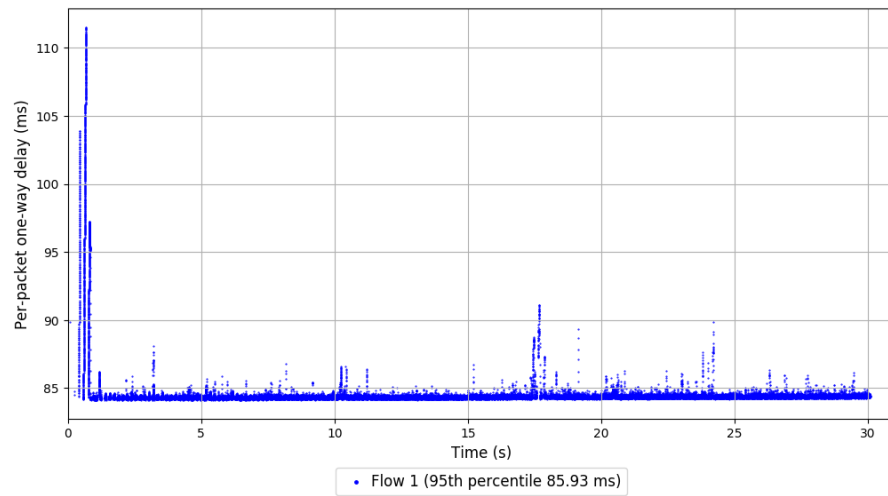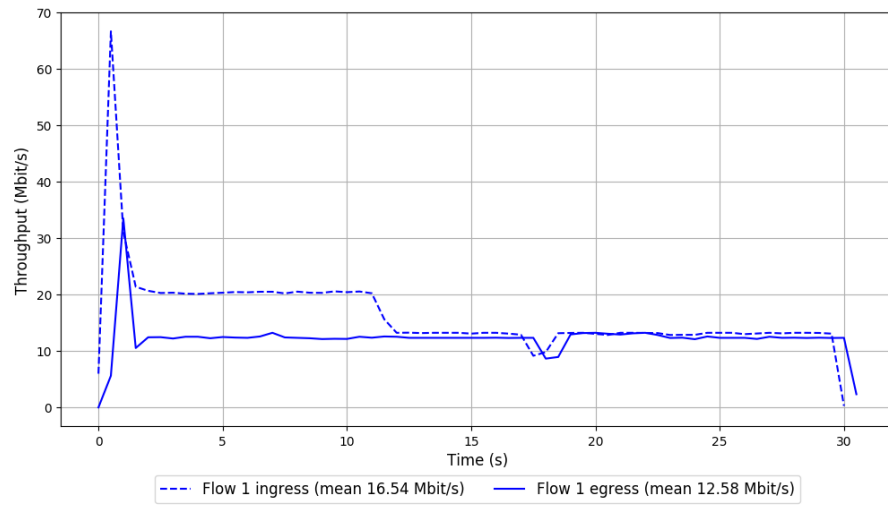
Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2018-10-26 00:18:10
End at: 2018-10-26 00:18:40
Local clock offset: 4.767 ms
Remote clock offset: 4.847 ms


# Below is generated by plot.py at 2018-10-26 01:24:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.56 Mbit/s
95th percentile per-packet one-way delay: 86.386 ms
Loss rate: 22.36%
-- Flow 1:
Average throughput: 12.56 Mbit/s
95th percentile per-packet one-way delay: 86.386 ms
Loss rate: 22.36%
```
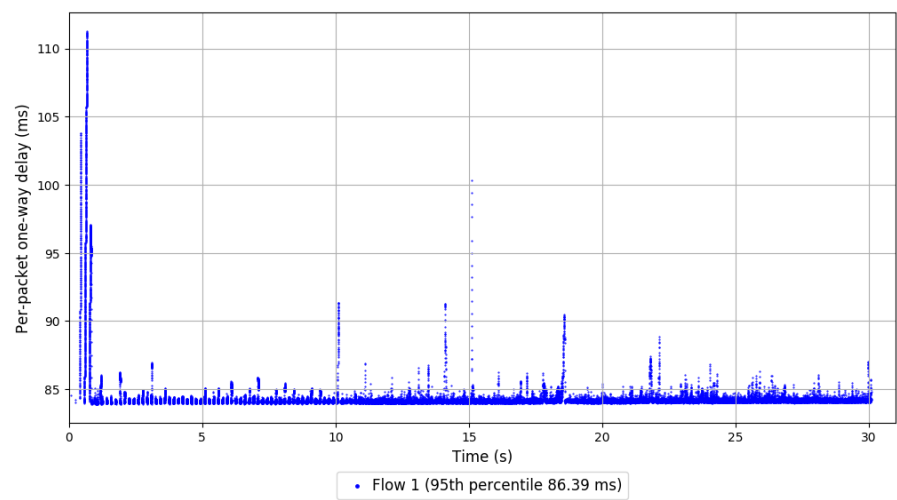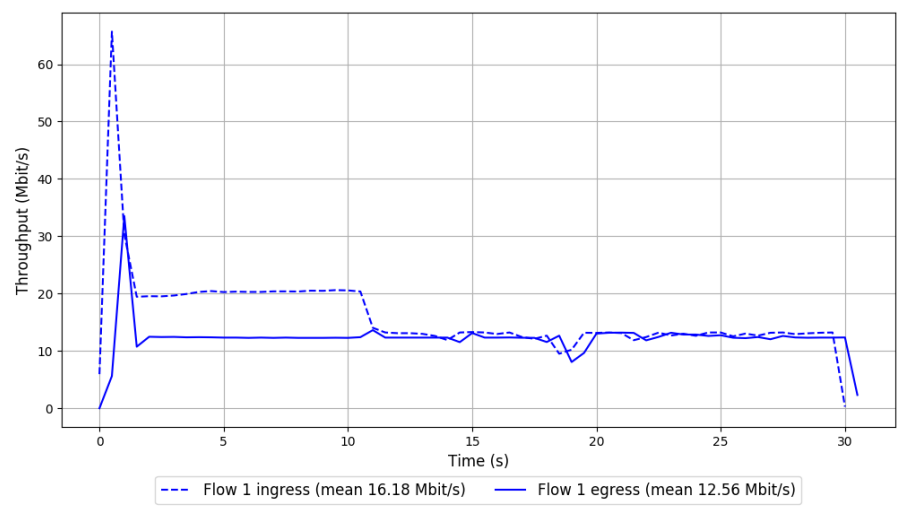
Run 3: Report of TaoVA-100x — Data Link

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

Start at: 2018-10-26 00:39:08
End at: 2018-10-26 00:39:38
Local clock offset: 4.54 ms
Remote clock offset: 5.282 ms

# Below is generated by plot.py at 2018-10-26 01:24:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.59 Mbit/s
95th percentile per-packet one-way delay: 85.049 ms
Loss rate: 31.75%
-- Flow 1:
Average throughput: 12.59 Mbit/s
95th percentile per-packet one-way delay: 85.049 ms
Loss rate: 31.75%
```
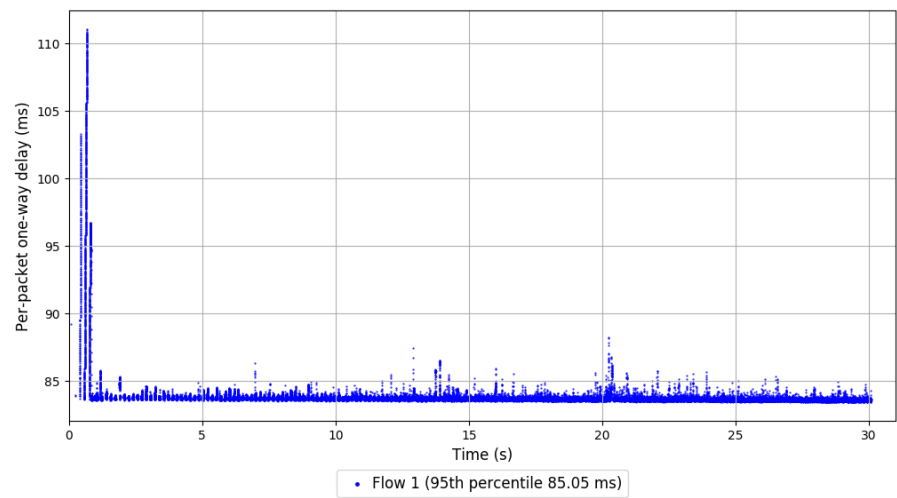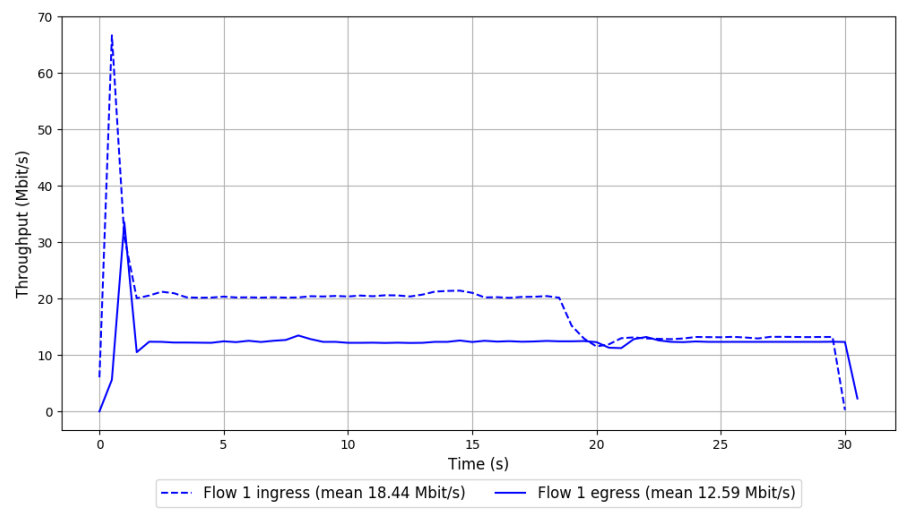
Run 4: Report of TaoVA-100x — Data Link

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

Start at: 2018-10-26 01:00:16
End at: 2018-10-26 01:00:46
Local clock offset: 4.929 ms
Remote clock offset: 5.666 ms

# Below is generated by plot.py at 2018-10-26 01:24:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.56 Mbit/s
95th percentile per-packet one-way delay: 86.622 ms
Loss rate: 26.68%
-- Flow 1:
Average throughput: 12.56 Mbit/s
95th percentile per-packet one-way delay: 86.622 ms
Loss rate: 26.68%
```
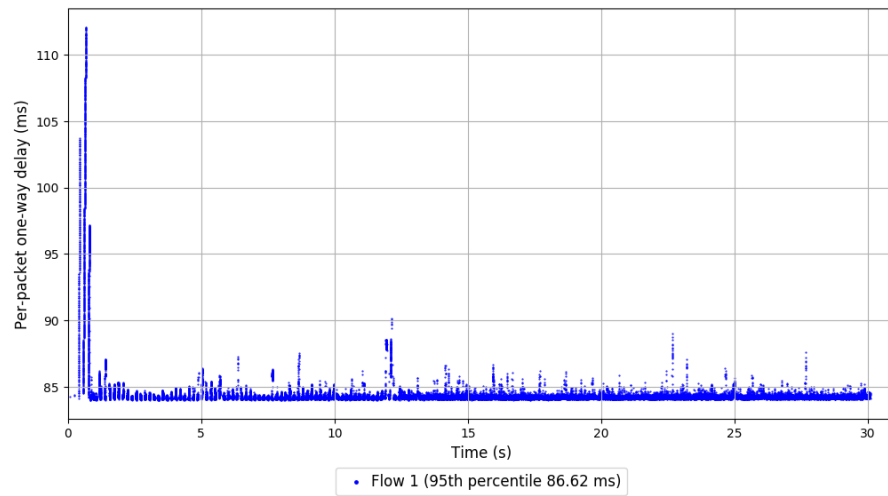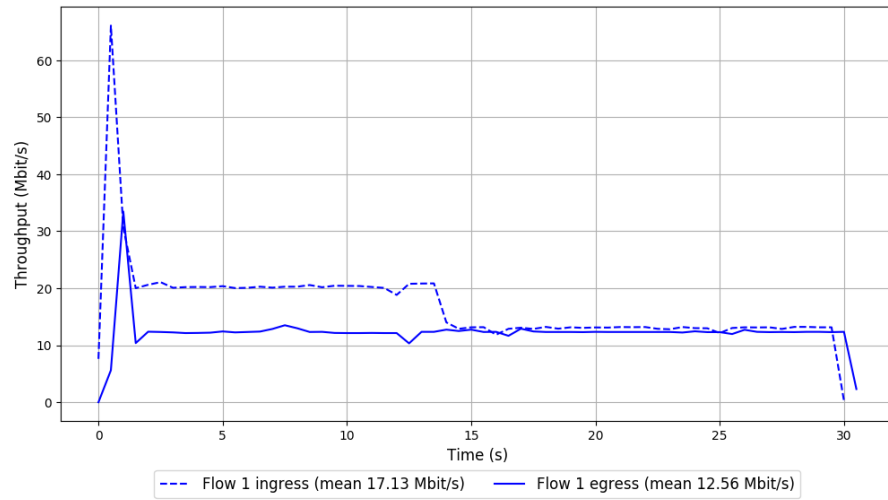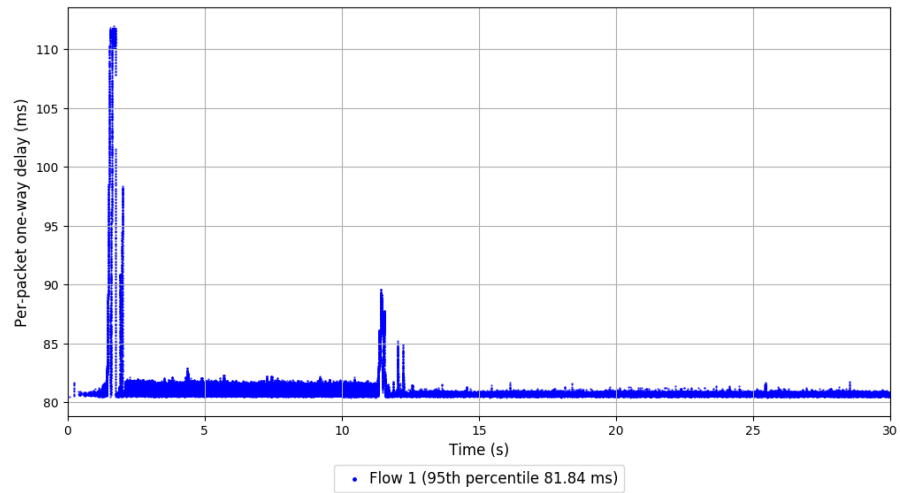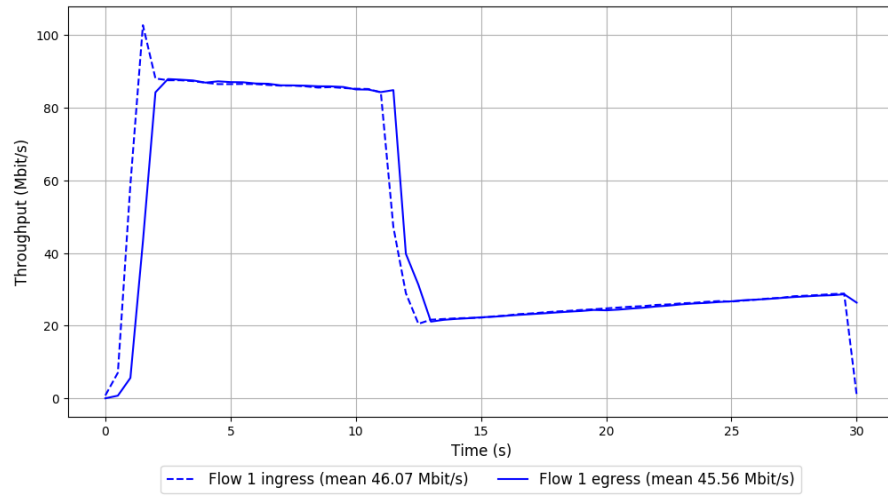
Run 5: Report of TaoVA-100x — Data Link

```
Run 1: Statistics of TCP Vegas

Start at: 2018-10-25 23:43:16
End at: 2018-10-25 23:43:47
Local clock offset: 1.095 ms
Remote clock offset: -0.229 ms


# Below is generated by plot.py at 2018-10-26 01:24:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 45.56 Mbit/s
95th percentile per-packet one-way delay: 81.837 ms
Loss rate: 1.55%
-- Flow 1:
Average throughput: 45.56 Mbit/s
95th percentile per-packet one-way delay: 81.837 ms
Loss rate: 1.55%
```

Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2018-10-26 00:04:16
End at: 2018-10-26 00:04:46
Local clock offset: 3.401 ms
Remote clock offset: 4.855 ms


# Below is generated by plot.py at 2018-10-26 01:24:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 43.32 Mbit/s
95th percentile per-packet one-way delay: 86.282 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 43.32 Mbit/s
95th percentile per-packet one-way delay: 86.282 ms
Loss rate: 0.84%
```
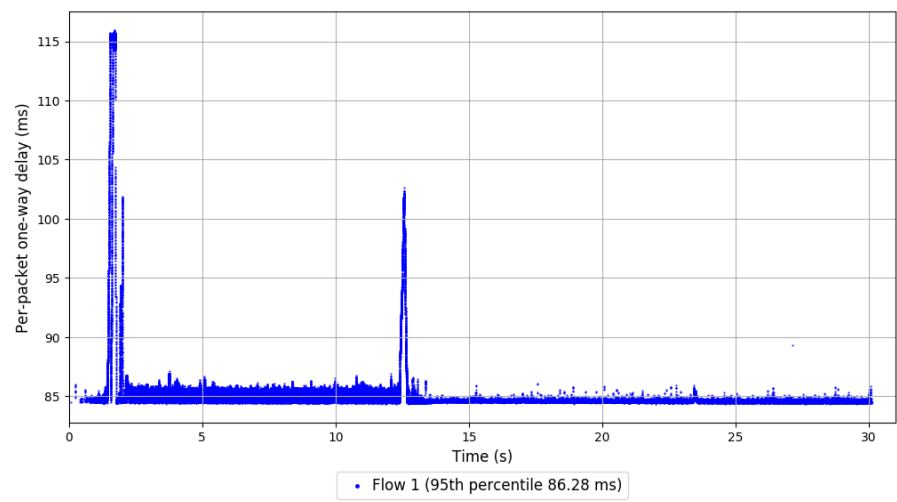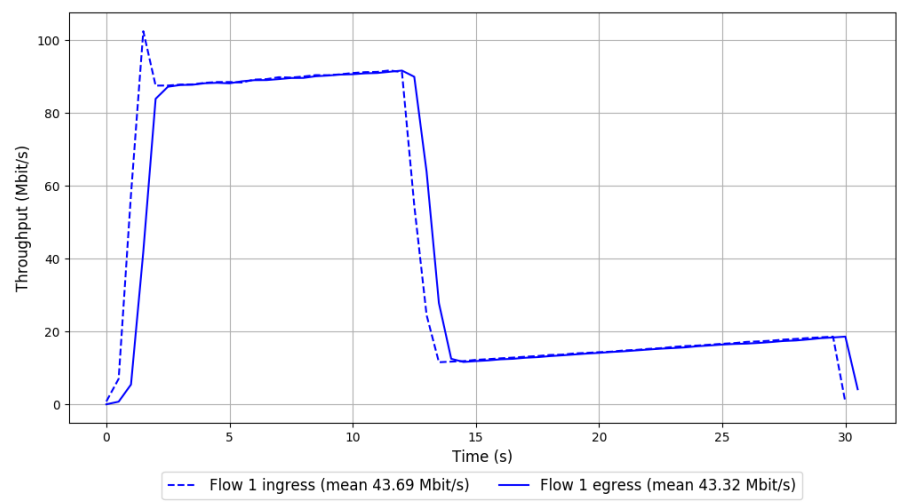
Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2018-10-26 00:25:13
End at: 2018-10-26 00:25:43
Local clock offset: 6.788 ms
Remote clock offset: 5.083 ms


# Below is generated by plot.py at 2018-10-26 01:24:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 52.30 Mbit/s
95th percentile per-packet one-way delay: 91.218 ms
Loss rate: 1.14%
-- Flow 1:
Average throughput: 52.30 Mbit/s
95th percentile per-packet one-way delay: 91.218 ms
Loss rate: 1.14%
```
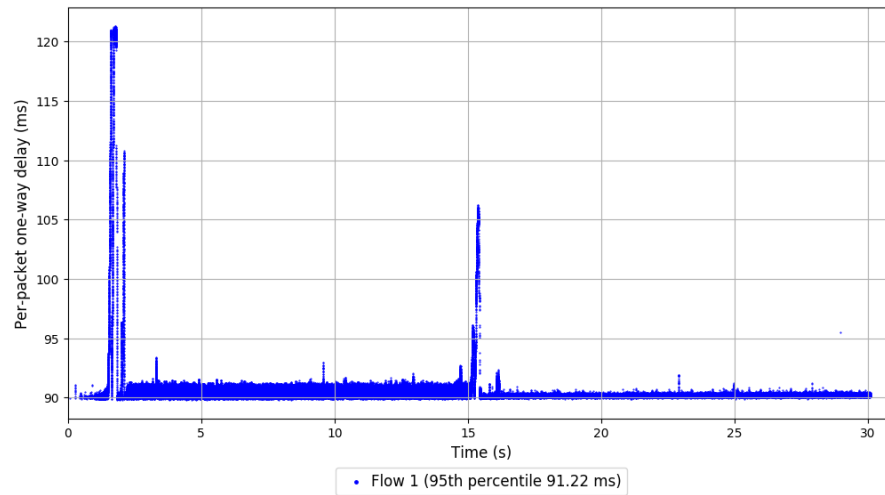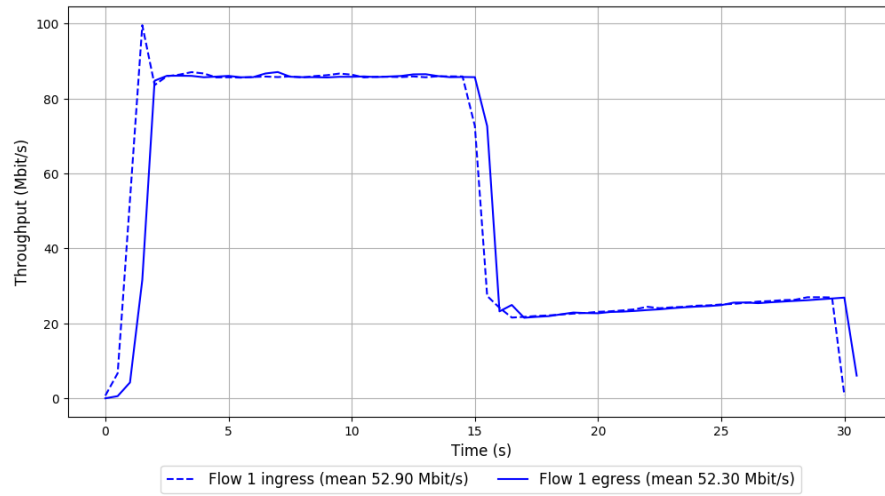
Run 3: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 52.90 Mbit/s) — — — — Flow 1 egress (mean 52.30 Mbit/s) ———

• Flow 1 (95th percentile 91.22 ms)

```
Run 4: Statistics of TCP Vegas

Start at: 2018-10-26 00:46:11
End at: 2018-10-26 00:46:41
Local clock offset: 3.425 ms
Remote clock offset: 5.432 ms


# Below is generated by plot.py at 2018-10-26 01:24:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 34.46 Mbit/s
95th percentile per-packet one-way delay: 86.343 ms
Loss rate: 1.28%
-- Flow 1:
Average throughput: 34.46 Mbit/s
95th percentile per-packet one-way delay: 86.343 ms
Loss rate: 1.28%
```
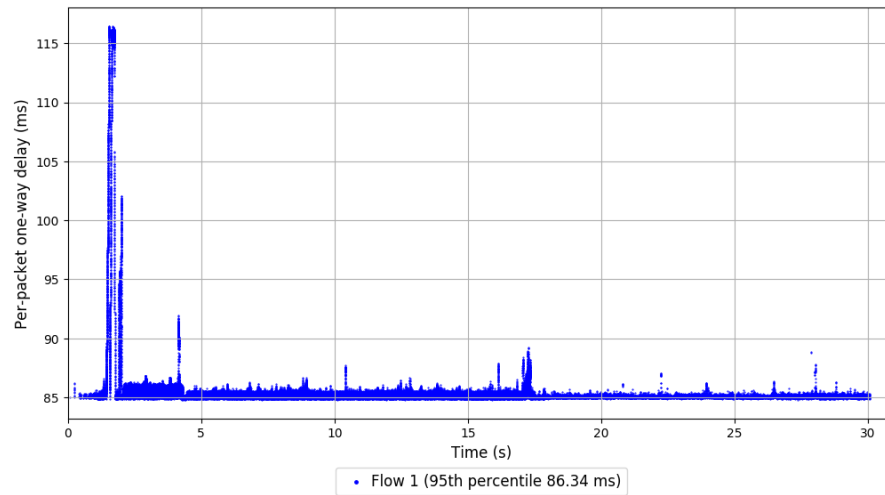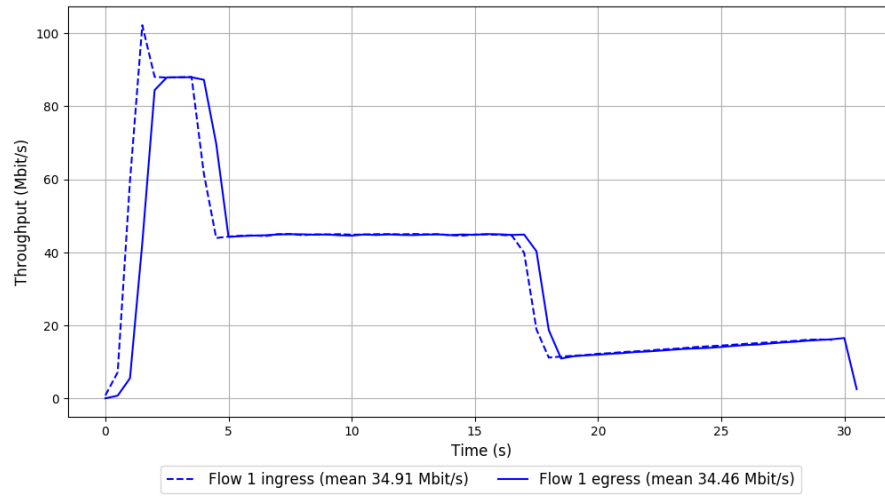
Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2018-10-26 01:07:22
End at: 2018-10-26 01:07:52
Local clock offset: 6.275 ms
Remote clock offset: 6.242 ms


# Below is generated by plot.py at 2018-10-26 01:24:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 27.65 Mbit/s
95th percentile per-packet one-way delay: 94.073 ms
Loss rate: 2.55%
-- Flow 1:
Average throughput: 27.65 Mbit/s
95th percentile per-packet one-way delay: 94.073 ms
Loss rate: 2.55%
```
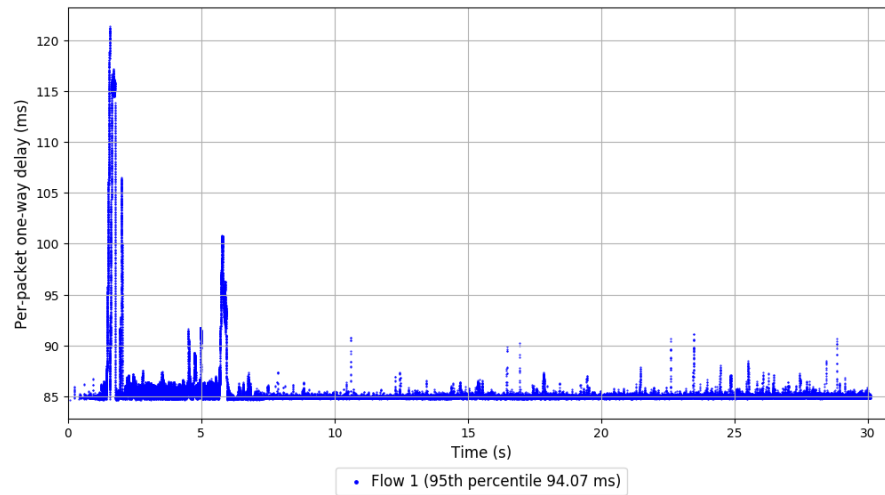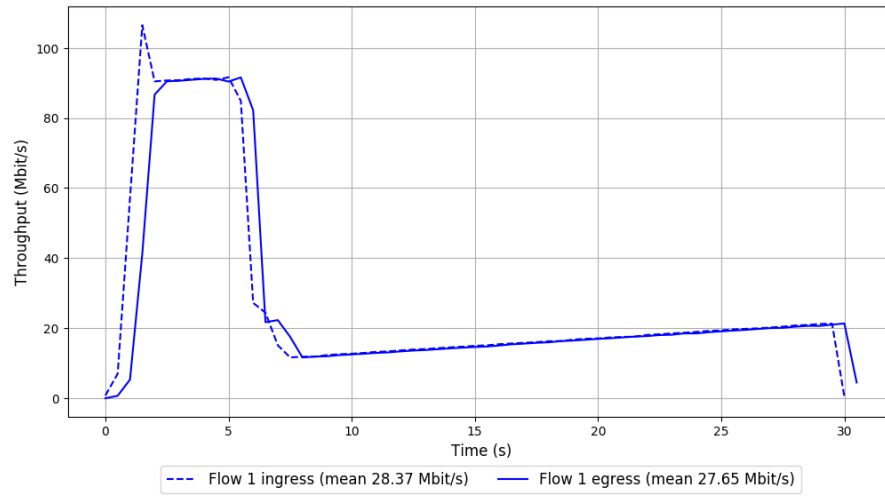
Run 5: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 28.37 Mbit/s) Flow 1 egress (mean 27.65 Mbit/s)

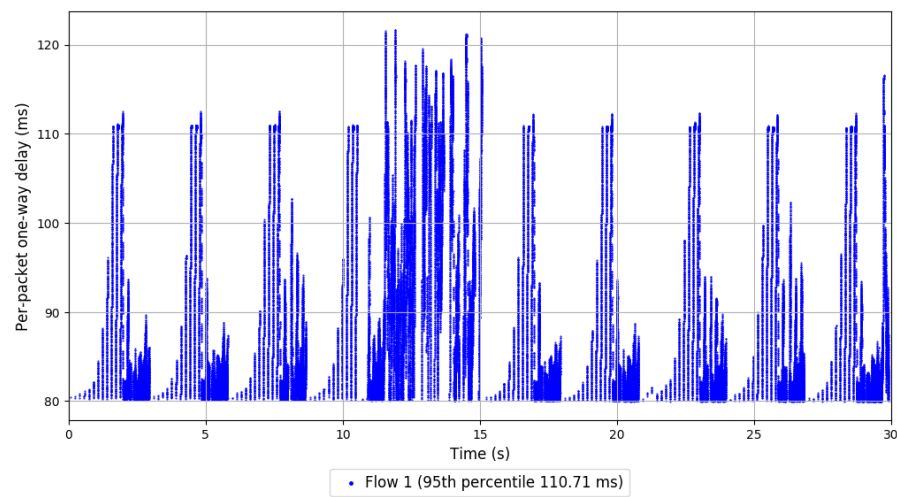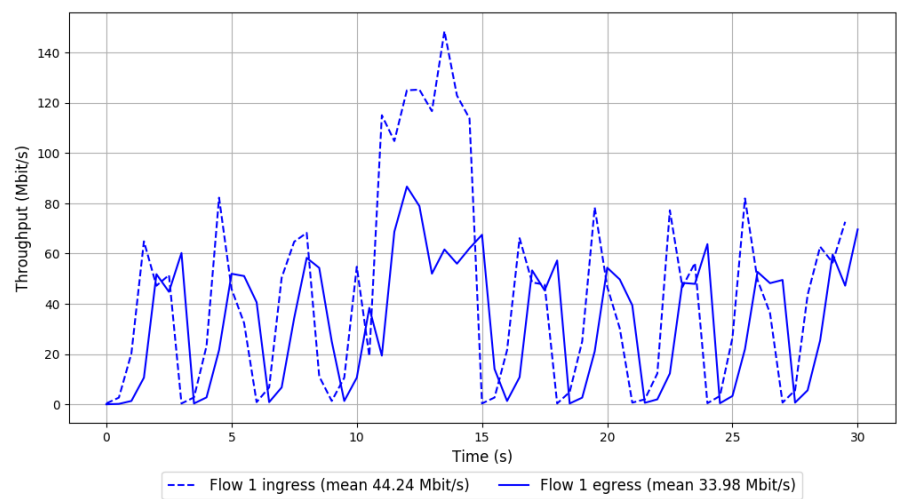Flow 1 (95th percentile 94.07 ms)

```
Run 1: Statistics of Verus

Start at: 2018-10-25 23:42:07
End at: 2018-10-25 23:42:37
Local clock offset: 1.519 ms
Remote clock offset: -0.334 ms


# Below is generated by plot.py at 2018-10-26 01:24:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 33.98 Mbit/s
95th percentile per-packet one-way delay: 110.711 ms
Loss rate: 23.17%
-- Flow 1:
Average throughput: 33.98 Mbit/s
95th percentile per-packet one-way delay: 110.711 ms
Loss rate: 23.17%
```

Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-10-26 00:03:05
End at: 2018-10-26 00:03:35
Local clock offset: 3.614 ms
Remote clock offset: 4.365 ms


# Below is generated by plot.py at 2018-10-26 01:25:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 38.05 Mbit/s
95th percentile per-packet one-way delay: 154.760 ms
Loss rate: 69.01%
-- Flow 1:
Average throughput: 38.05 Mbit/s
95th percentile per-packet one-way delay: 154.760 ms
Loss rate: 69.01%
```
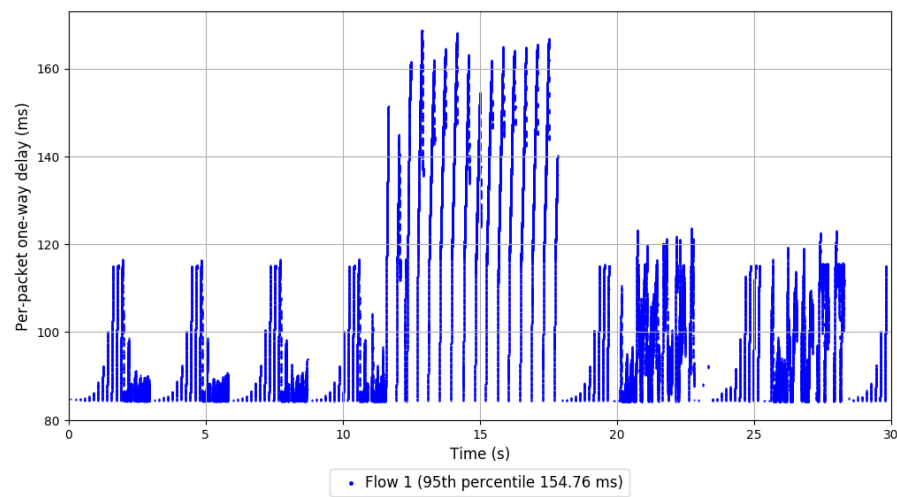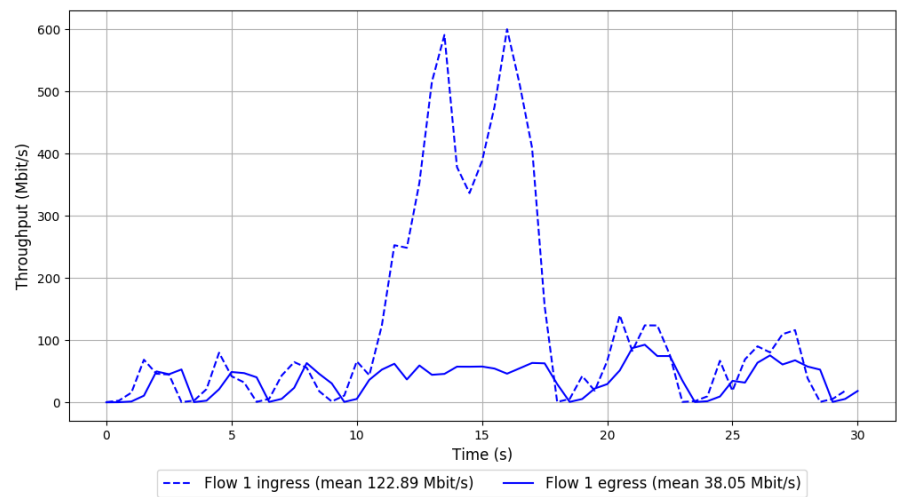
Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2018-10-26 00:24:03
End at: 2018-10-26 00:24:33
Local clock offset: 6.43 ms
Remote clock offset: 5.055 ms


# Below is generated by plot.py at 2018-10-26 01:25:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 33.76 Mbit/s
95th percentile per-packet one-way delay: 115.730 ms
Loss rate: 29.11%
-- Flow 1:
Average throughput: 33.76 Mbit/s
95th percentile per-packet one-way delay: 115.730 ms
Loss rate: 29.11%
```
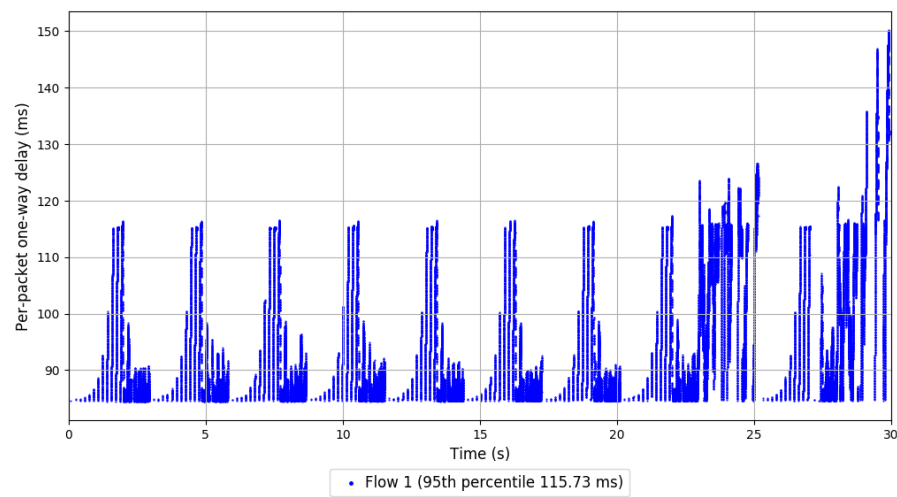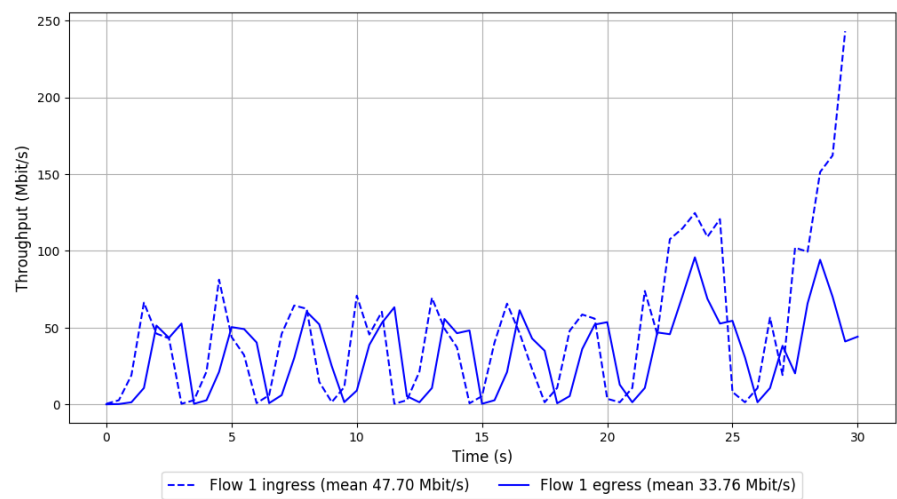
Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2018-10-26 00:45:01
End at: 2018-10-26 00:45:31
Local clock offset: 3.41 ms
Remote clock offset: 5.218 ms

# Below is generated by plot.py at 2018-10-26 01:25:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 28.51 Mbit/s
95th percentile per-packet one-way delay: 120.077 ms
Loss rate: 15.44%
-- Flow 1:
Average throughput: 28.51 Mbit/s
95th percentile per-packet one-way delay: 120.077 ms
Loss rate: 15.44%
```
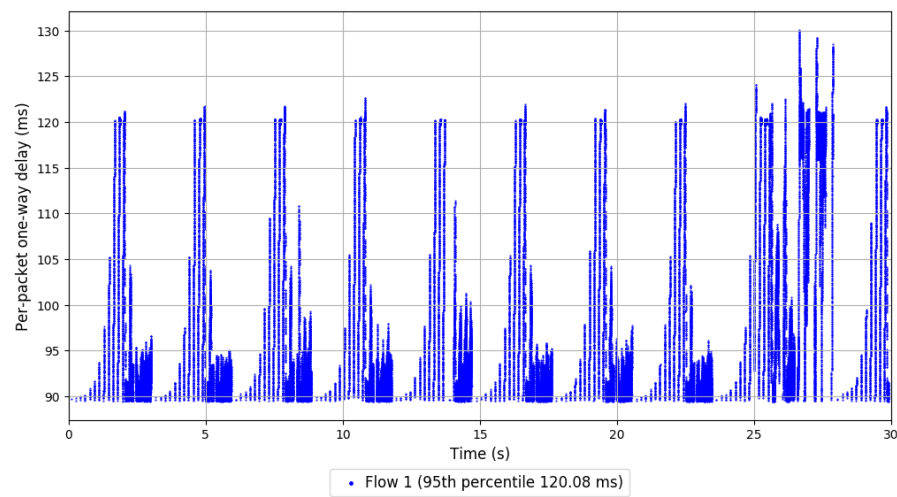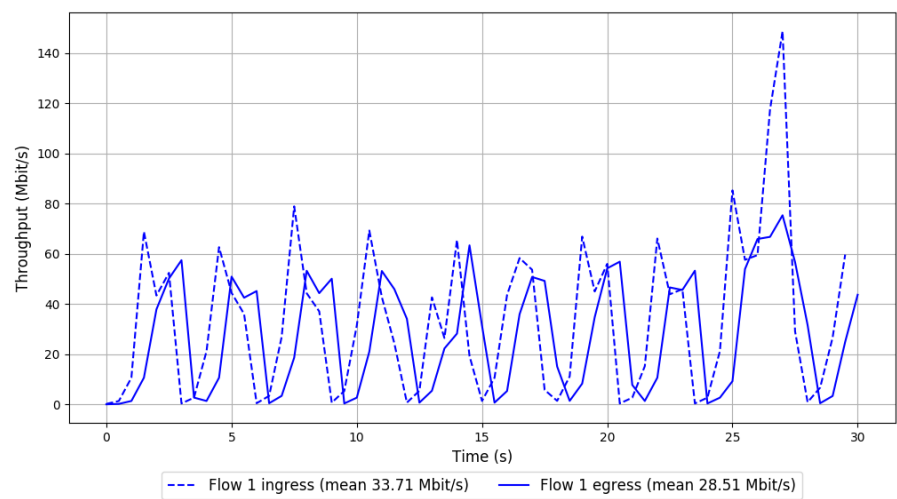
Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-10-26 01:06:11
End at: 2018-10-26 01:06:41
Local clock offset: 6.117 ms
Remote clock offset: 2.256 ms


# Below is generated by plot.py at 2018-10-26 01:25:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 33.49 Mbit/s
95th percentile per-packet one-way delay: 177.101 ms
Loss rate: 81.34%
-- Flow 1:
Average throughput: 33.49 Mbit/s
95th percentile per-packet one-way delay: 177.101 ms
Loss rate: 81.34%
```
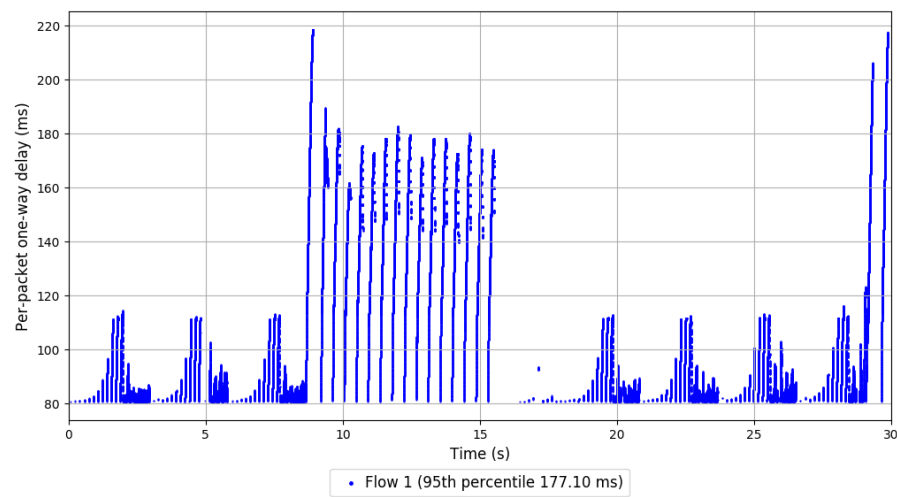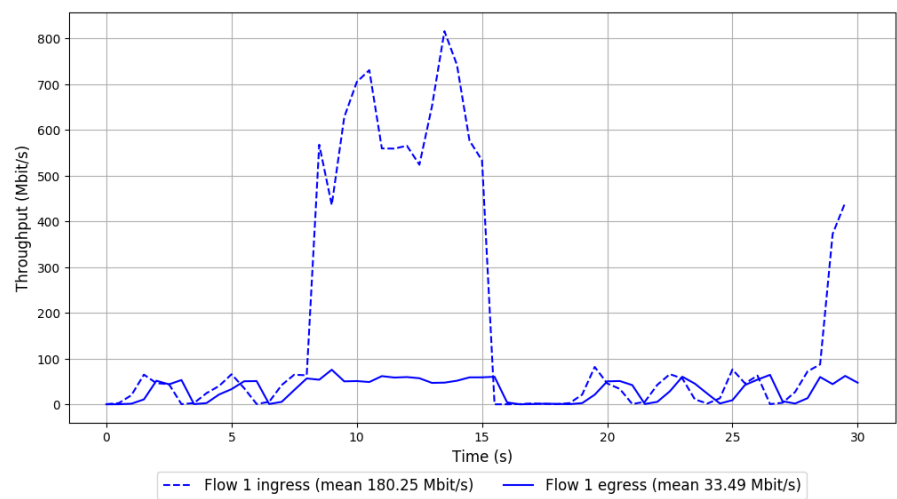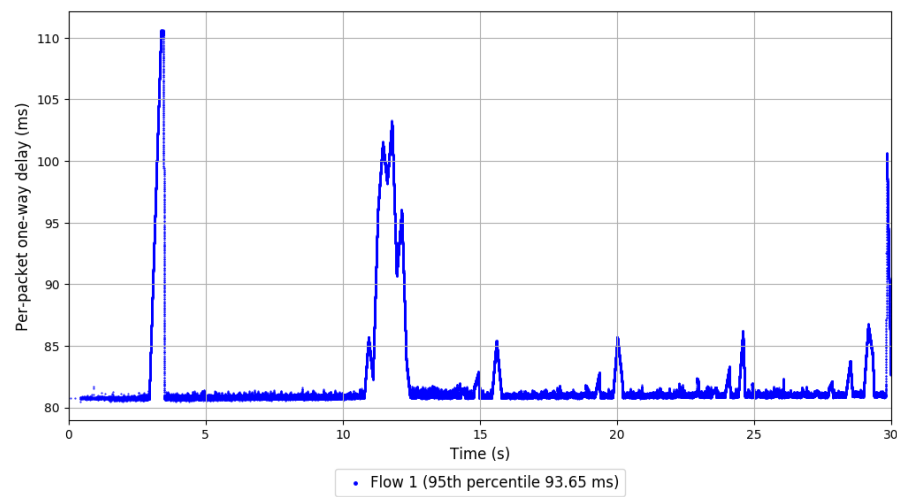
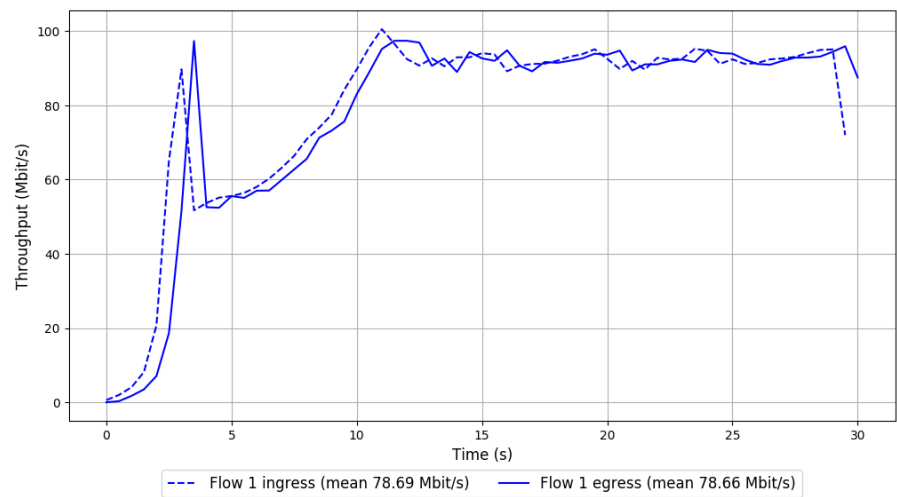## Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-10-25 23:45:37
End at: 2018-10-25 23:46:07
Local clock offset: 1.267 ms
Remote clock offset: -0.116 ms


# Below is generated by plot.py at 2018-10-26 01:25:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 78.66 Mbit/s
95th percentile per-packet one-way delay: 93.653 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 78.66 Mbit/s
95th percentile per-packet one-way delay: 93.653 ms
Loss rate: 0.03%
```

Run 1: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 78.69 Mbit/s) —— Flow 1 egress (mean 78.66 Mbit/s)

• Flow 1 (95th percentile 93.65 ms)

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-10-26 00:06:36
End at: 2018-10-26 00:07:06
Local clock offset: 3.107 ms
Remote clock offset: 4.761 ms


# Below is generated by plot.py at 2018-10-26 01:25:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 76.46 Mbit/s
95th percentile per-packet one-way delay: 105.663 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 76.46 Mbit/s
95th percentile per-packet one-way delay: 105.663 ms
Loss rate: 0.12%
```
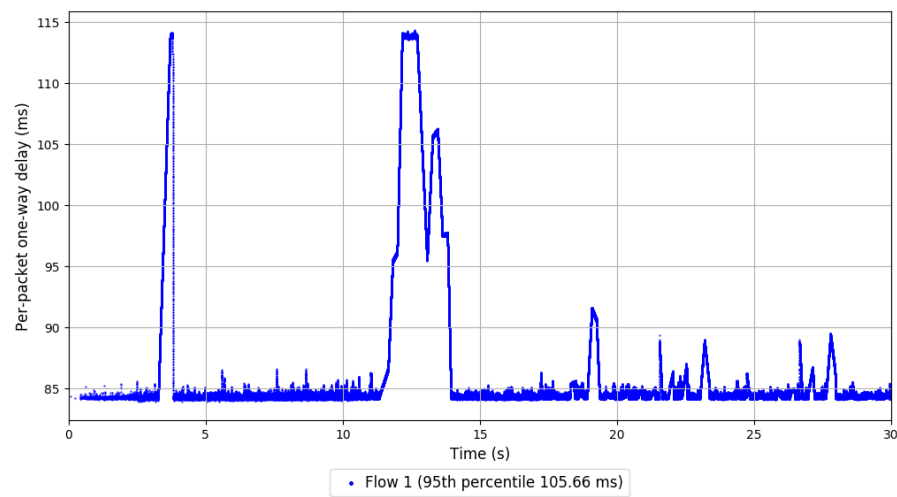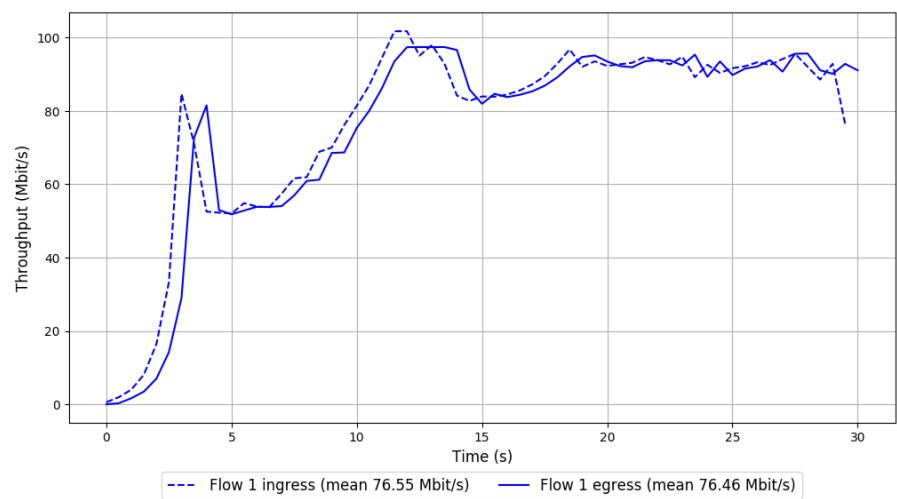
Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-10-26 00:27:33
End at: 2018-10-26 00:28:03
Local clock offset: 7.635 ms
Remote clock offset: 1.375 ms


# Below is generated by plot.py at 2018-10-26 01:25:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 78.10 Mbit/s
95th percentile per-packet one-way delay: 95.787 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 78.10 Mbit/s
95th percentile per-packet one-way delay: 95.787 ms
Loss rate: 0.03%
```
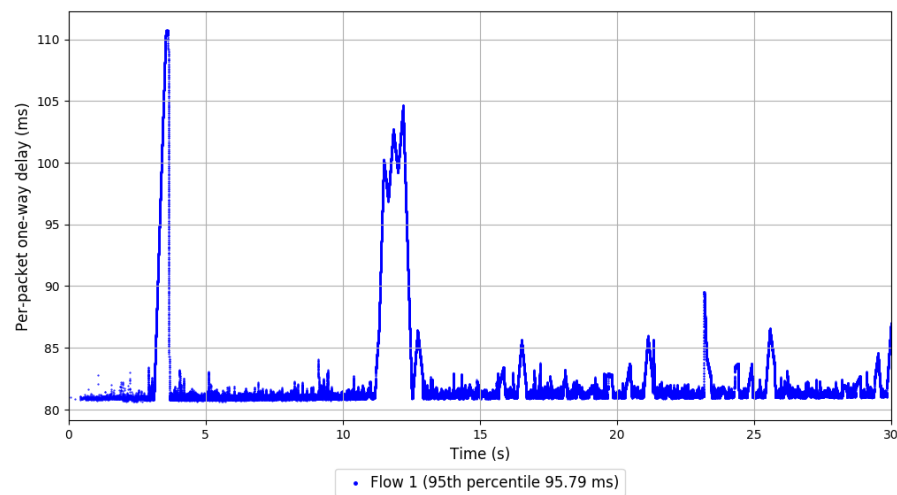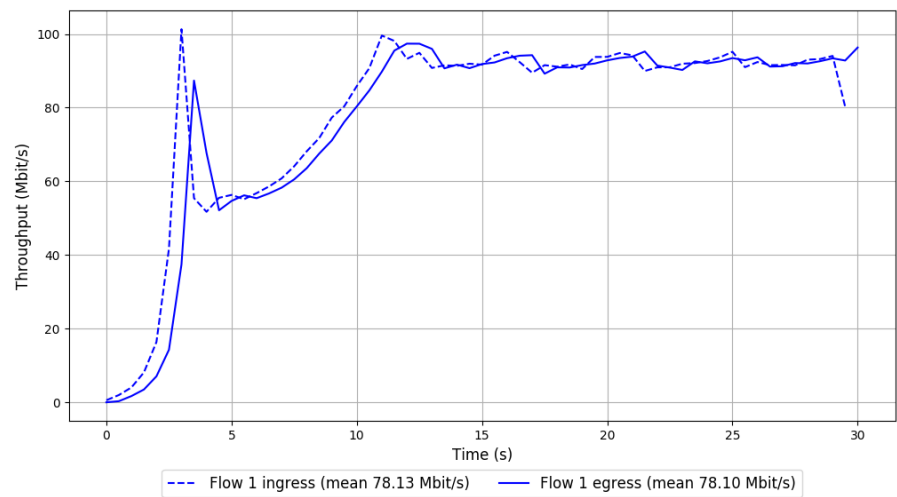
Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-10-26 00:48:31
End at: 2018-10-26 00:49:01
Local clock offset: 3.486 ms
Remote clock offset: 2.156 ms


# Below is generated by plot.py at 2018-10-26 01:25:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 75.04 Mbit/s
95th percentile per-packet one-way delay: 104.966 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 75.04 Mbit/s
95th percentile per-packet one-way delay: 104.966 ms
Loss rate: 0.14%
```
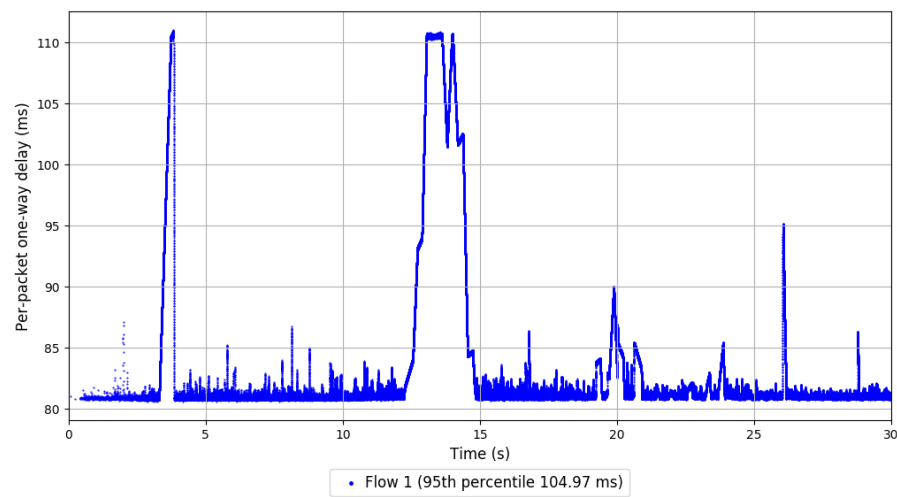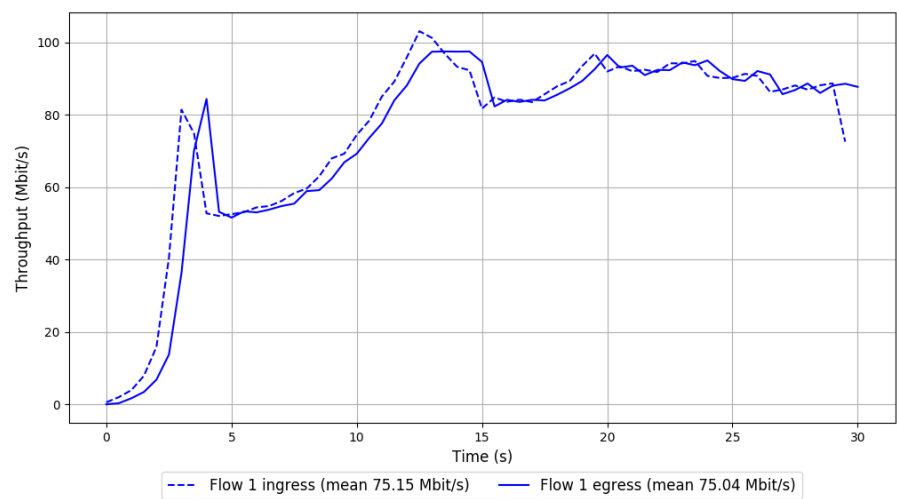
Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-10-26 01:09:50
End at: 2018-10-26 01:10:21
Local clock offset: 6.738 ms
Remote clock offset: 2.337 ms


# Below is generated by plot.py at 2018-10-26 01:25:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 76.04 Mbit/s
95th percentile per-packet one-way delay: 103.260 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 76.04 Mbit/s
95th percentile per-packet one-way delay: 103.260 ms
Loss rate: 0.13%
```
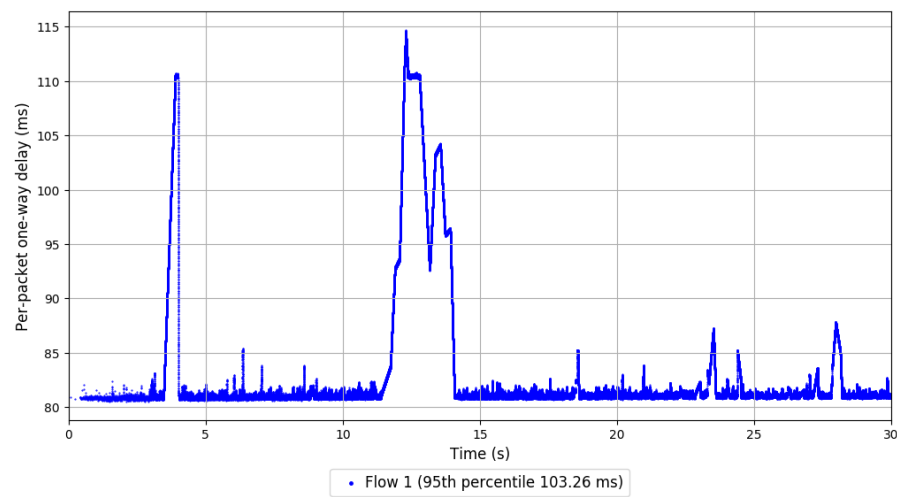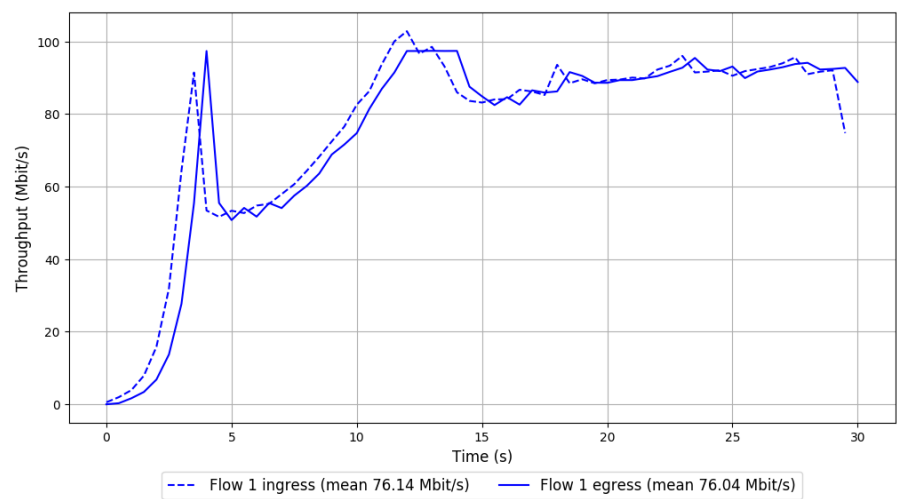
Run 5: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 76.14 Mbit/s)　　Flow 1 egress (mean 76.04 Mbit/s)

Flow 1 (95th percentile 103.26 ms)

```
Run 1: Statistics of WebRTC media

Start at: 2018-10-25 23:46:49
End at: 2018-10-25 23:47:19
Local clock offset: 1.8 ms
Remote clock offset: 4.322 ms


# Below is generated by plot.py at 2018-10-26 01:25:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.73 Mbit/s
95th percentile per-packet one-way delay: 85.581 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.73 Mbit/s
95th percentile per-packet one-way delay: 85.581 ms
Loss rate: 0.00%
```
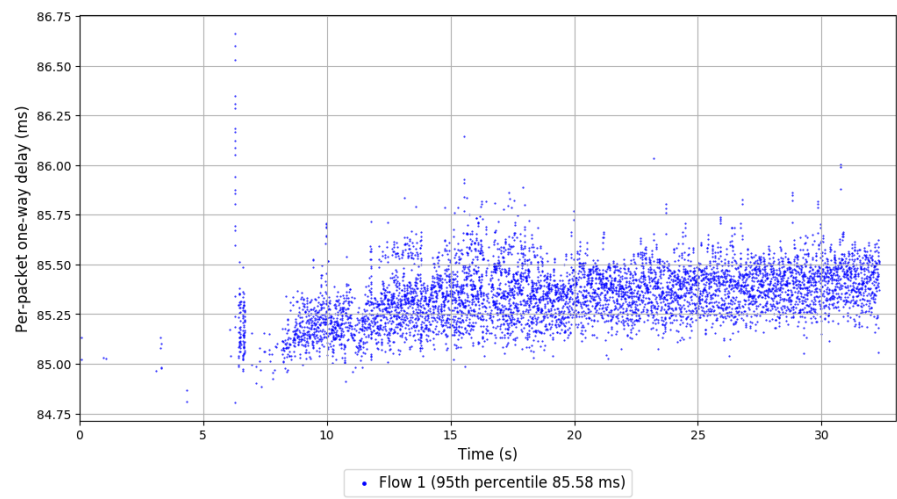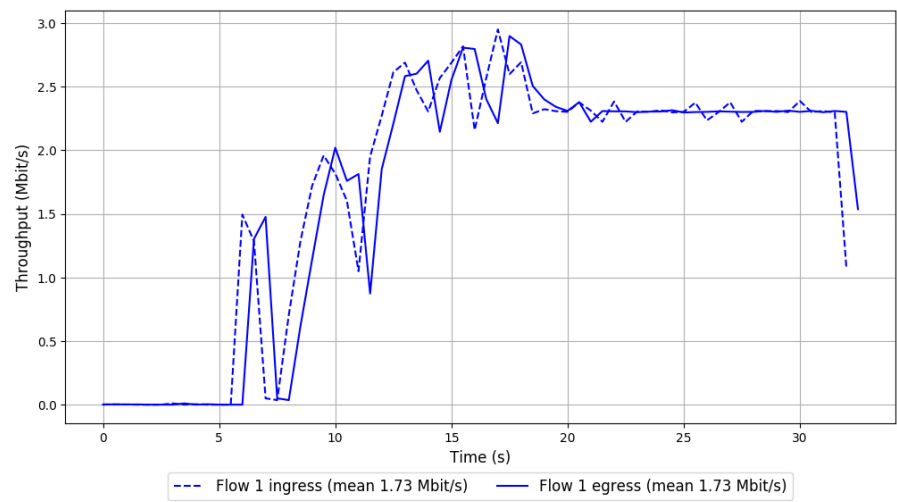
Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-10-26 00:07:48
End at: 2018-10-26 00:08:18
Local clock offset: 3.01 ms
Remote clock offset: 5.021 ms


# Below is generated by plot.py at 2018-10-26 01:25:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.77 Mbit/s
95th percentile per-packet one-way delay: 84.989 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.77 Mbit/s
95th percentile per-packet one-way delay: 84.989 ms
Loss rate: 0.00%
```
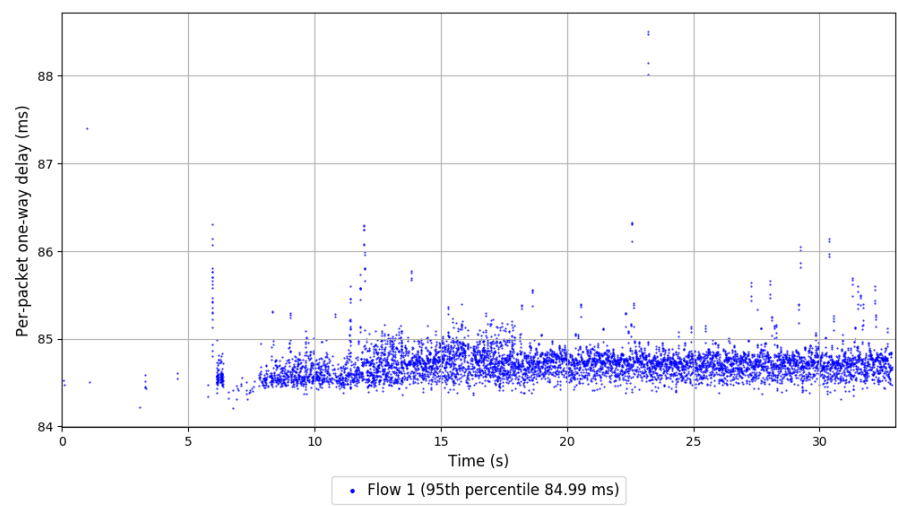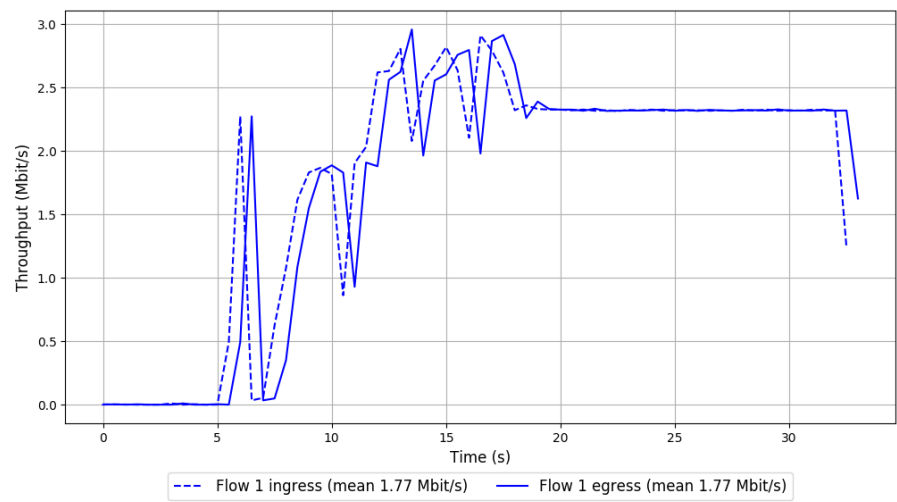
Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-10-26 00:28:46
End at: 2018-10-26 00:29:16
Local clock offset: 8.141 ms
Remote clock offset: 1.668 ms


# Below is generated by plot.py at 2018-10-26 01:25:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.74 Mbit/s
95th percentile per-packet one-way delay: 81.565 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.74 Mbit/s
95th percentile per-packet one-way delay: 81.565 ms
Loss rate: 0.00%
```
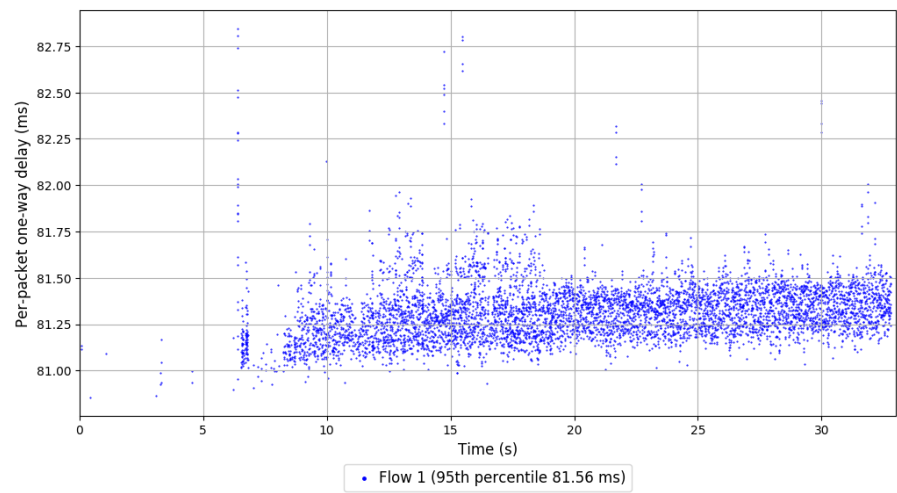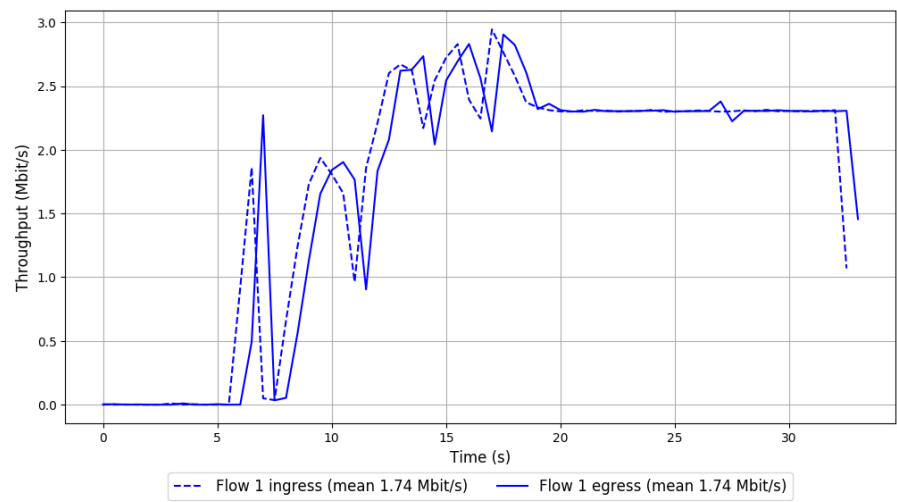
Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-10-26 00:49:43
End at: 2018-10-26 00:50:13
Local clock offset: 3.614 ms
Remote clock offset: 2.057 ms


# Below is generated by plot.py at 2018-10-26 01:25:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.74 Mbit/s
95th percentile per-packet one-way delay: 86.836 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.74 Mbit/s
95th percentile per-packet one-way delay: 86.836 ms
Loss rate: 0.00%
```
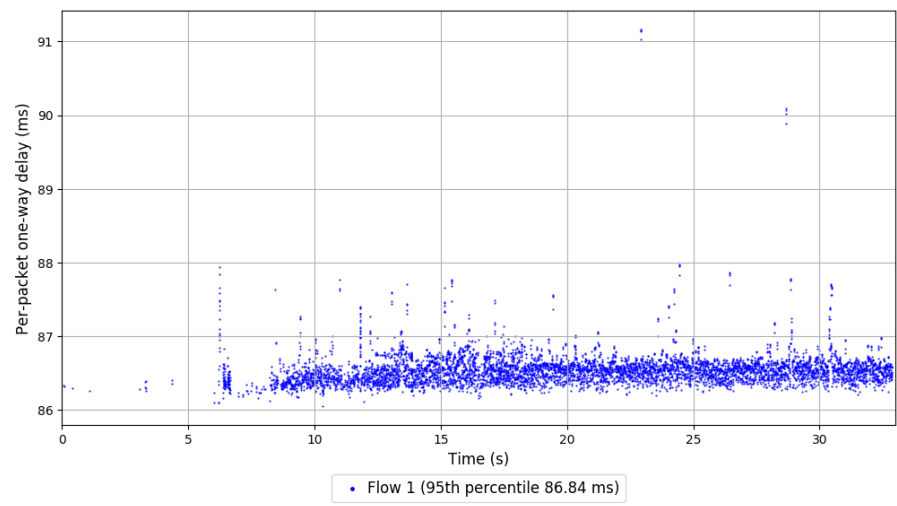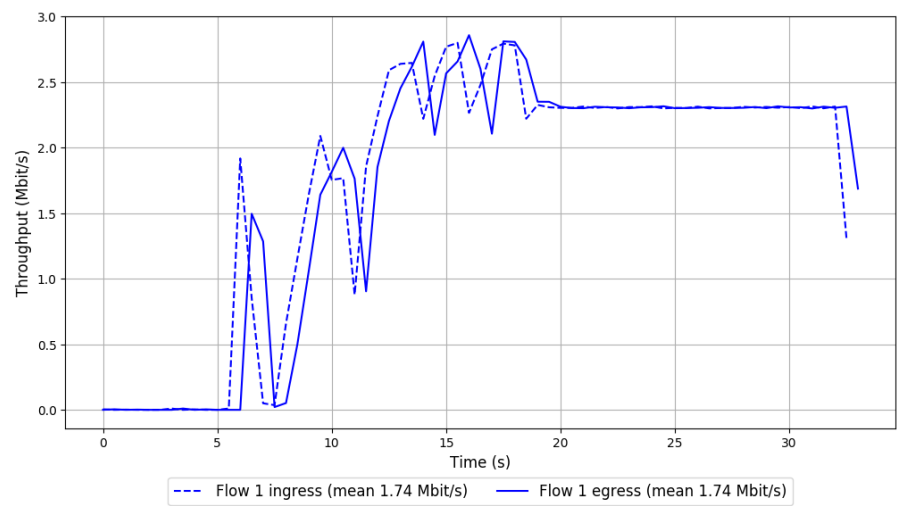
Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-10-26 01:11:04
End at: 2018-10-26 01:11:34
Local clock offset: 6.97 ms
Remote clock offset: 2.069 ms


# Below is generated by plot.py at 2018-10-26 01:25:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 81.525 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 81.525 ms
Loss rate: 0.20%
```

Run 5: Report of WebRTC media — Data Link