Pantheon Report

Generated at 2018-10-09 19:46:00 (UTC).

Data path: AWS Brazil 1 on `ens5` (*local*) →Brazil 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.
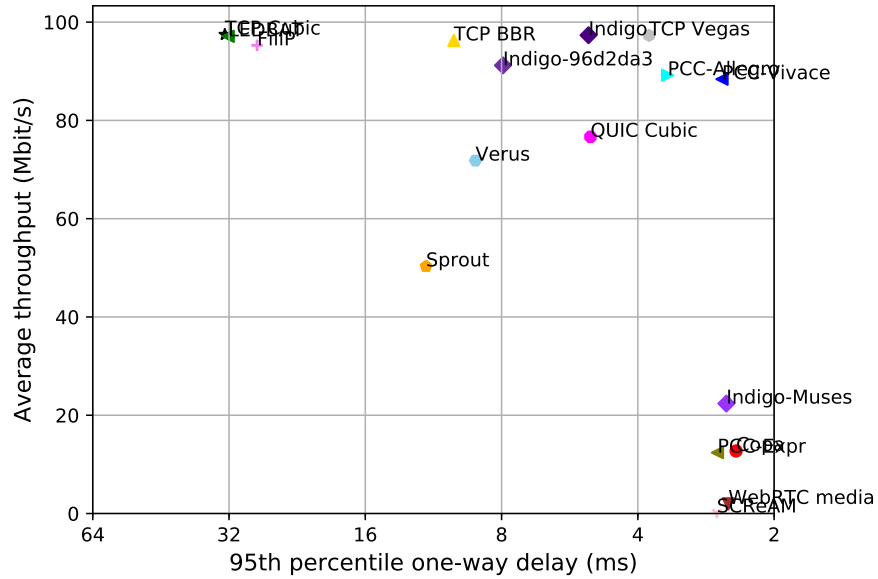
```
System info:
Linux 4.15.0-1023-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

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
```
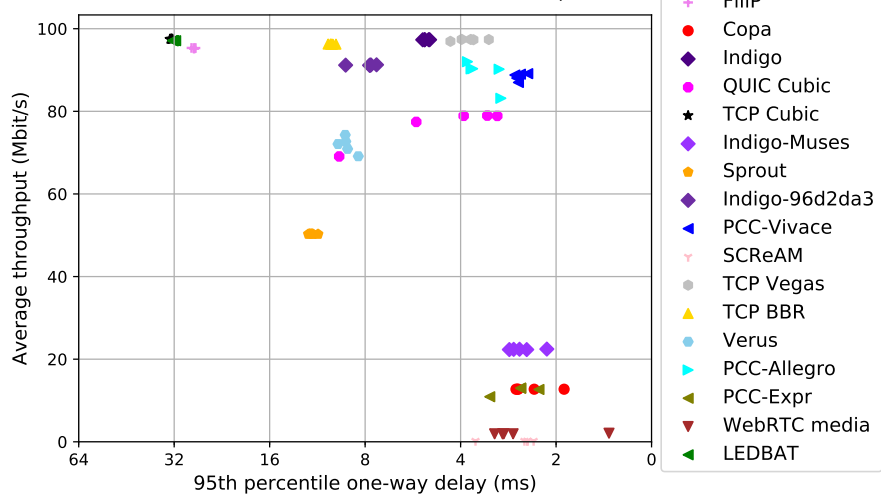
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

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

test from AWS Brazil 1 to Brazil, 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	96.27	10.20	0.00
Copa	5	12.73	2.43	64.49
TCP Cubic	5	97.47	32.69	0.01
FillP	5	95.28	27.75	1.18
Indigo	5	97.33	5.14	0.00
Indigo-96d2da3	5	91.19	7.94	0.00
LEDBAT	5	97.11	32.14	0.01
Indigo-Muses	5	22.38	2.55	0.00
PCC-Allegro	5	89.19	3.44	0.00
PCC-Expr	4	12.39	2.67	42.32
QUIC Cubic	5	76.66	5.09	0.27
SCReAM	5	0.22	2.68	0.00
Sprout	5	50.30	11.75	0.00
TaoVA-100x	0	N/A	N/A	N/A
TCP Vegas	5	97.30	3.78	0.00
Verus	5	71.83	9.14	0.94
PCC-Vivace	5	88.39	2.61	0.00
WebRTC media	5	1.96	2.52	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2018-10-09 18:10:18
End at: 2018-10-09 18:10:48
Local clock offset: 0.041 ms
Remote clock offset: 0.234 ms


# Below is generated by plot.py at 2018-10-09 19:37:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.28 Mbit/s
95th percentile per-packet one-way delay: 10.465 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 96.28 Mbit/s
95th percentile per-packet one-way delay: 10.465 ms
Loss rate: 0.00%
```
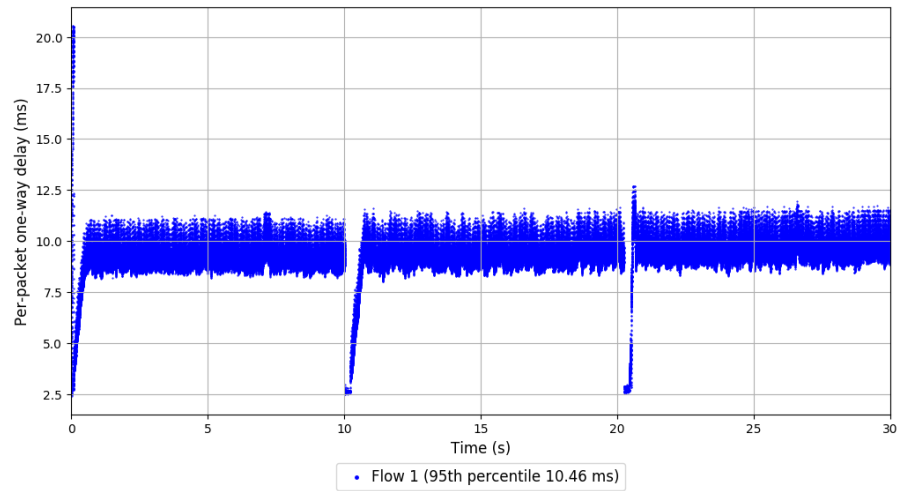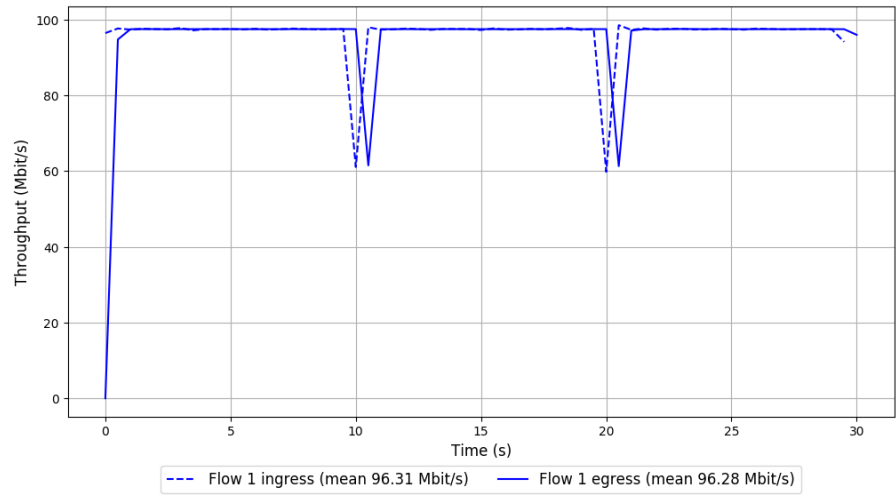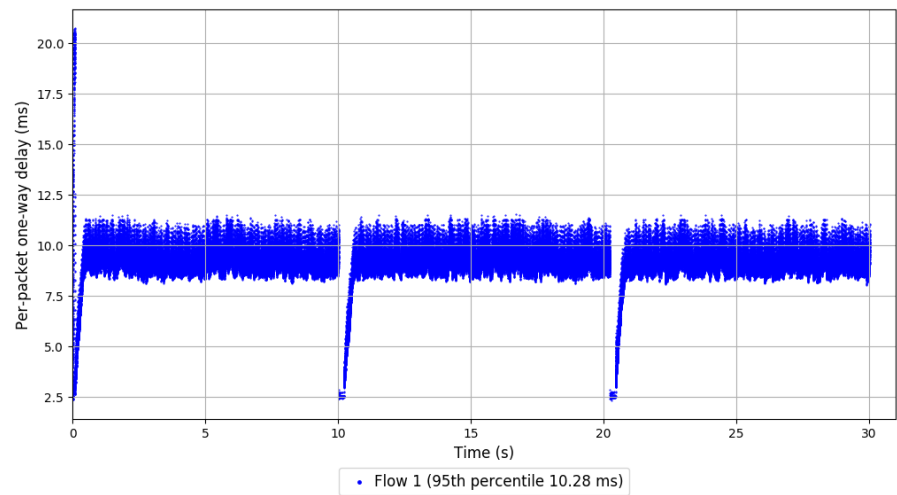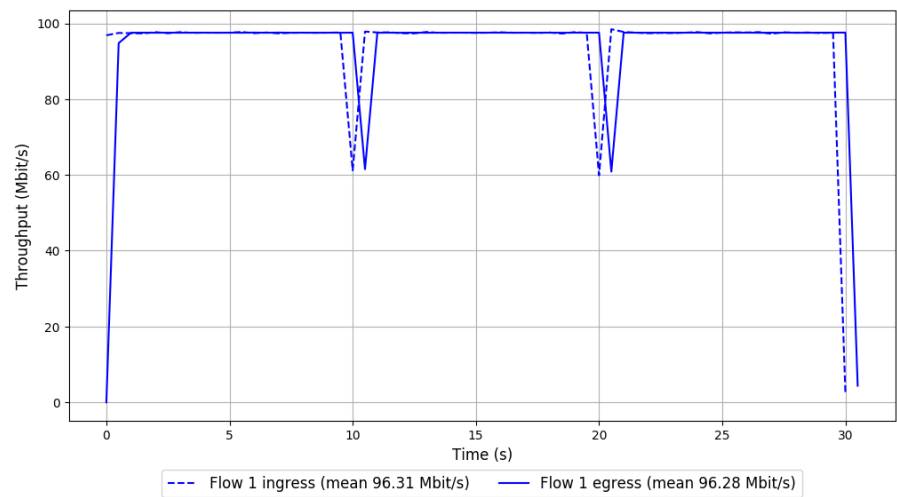
Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2018-10-09 18:30:22
End at: 2018-10-09 18:30:52
Local clock offset: -3.902 ms
Remote clock offset: 0.41 ms


# Below is generated by plot.py at 2018-10-09 19:37:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.28 Mbit/s
95th percentile per-packet one-way delay: 10.284 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 96.28 Mbit/s
95th percentile per-packet one-way delay: 10.284 ms
Loss rate: 0.00%
```
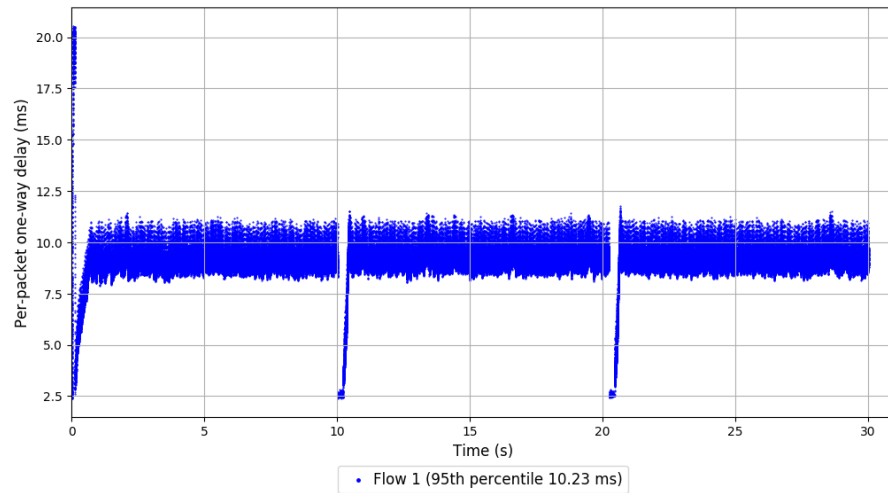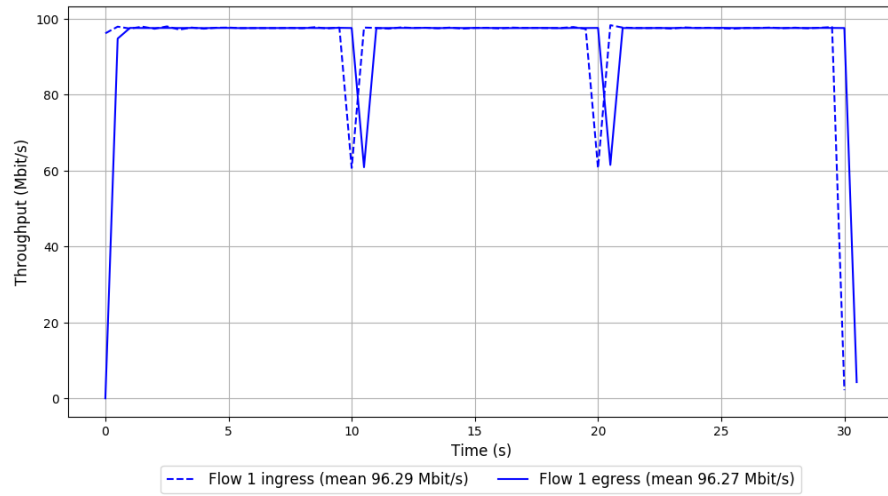
Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2018-10-09 18:50:25
End at: 2018-10-09 18:50:55
Local clock offset: -1.642 ms
Remote clock offset: 0.851 ms

# Below is generated by plot.py at 2018-10-09 19:37:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.27 Mbit/s
95th percentile per-packet one-way delay: 10.231 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 96.27 Mbit/s
95th percentile per-packet one-way delay: 10.231 ms
Loss rate: 0.00%
```
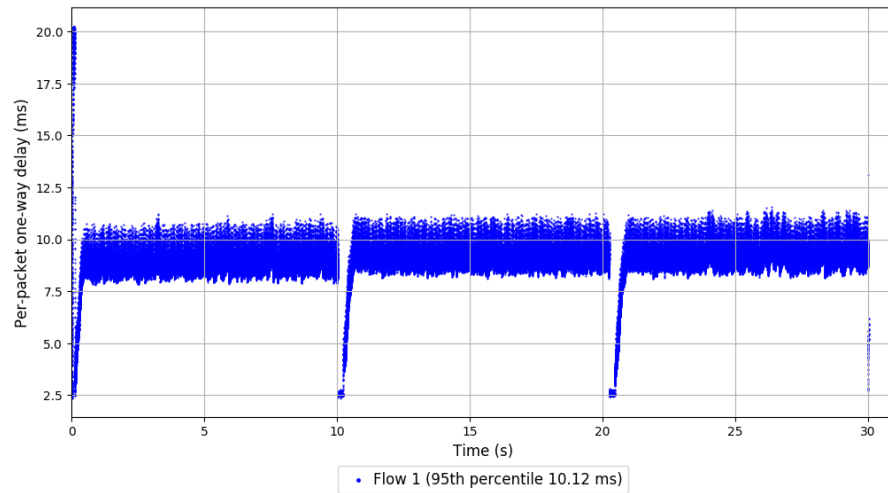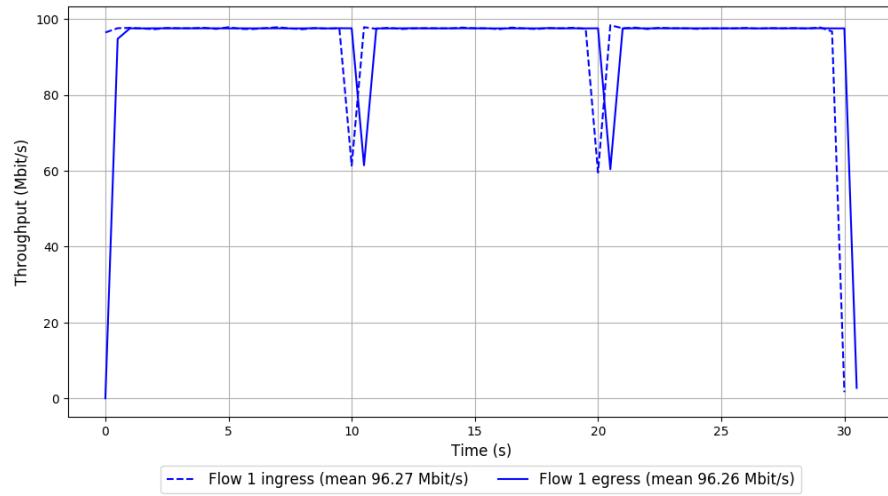
Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 96.29 Mbit/s)   Flow 1 egress (mean 96.27 Mbit/s)

Flow 1 (95th percentile 10.23 ms)

```
Run 4: Statistics of TCP BBR

Start at: 2018-10-09 19:10:29
End at: 2018-10-09 19:10:59
Local clock offset: -0.239 ms
Remote clock offset: 0.959 ms


# Below is generated by plot.py at 2018-10-09 19:37:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.26 Mbit/s
95th percentile per-packet one-way delay: 10.117 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 96.26 Mbit/s
95th percentile per-packet one-way delay: 10.117 ms
Loss rate: 0.00%
```

Run 4: Report of TCP BBR — Data Link

```
Run 5: Statistics of TCP BBR

Start at: 2018-10-09 19:30:33
End at: 2018-10-09 19:31:03
Local clock offset: -2.275 ms
Remote clock offset: 0.866 ms


# Below is generated by plot.py at 2018-10-09 19:38:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.26 Mbit/s
95th percentile per-packet one-way delay: 9.890 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 96.26 Mbit/s
95th percentile per-packet one-way delay: 9.890 ms
Loss rate: 0.00%
```
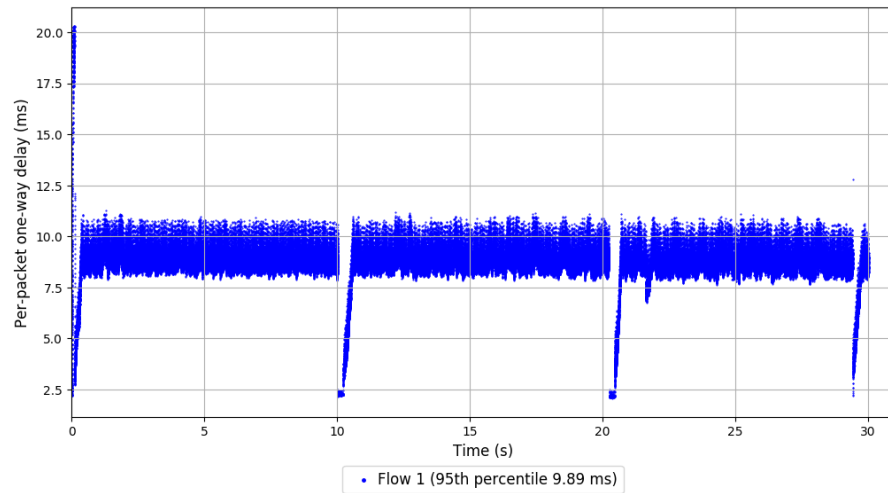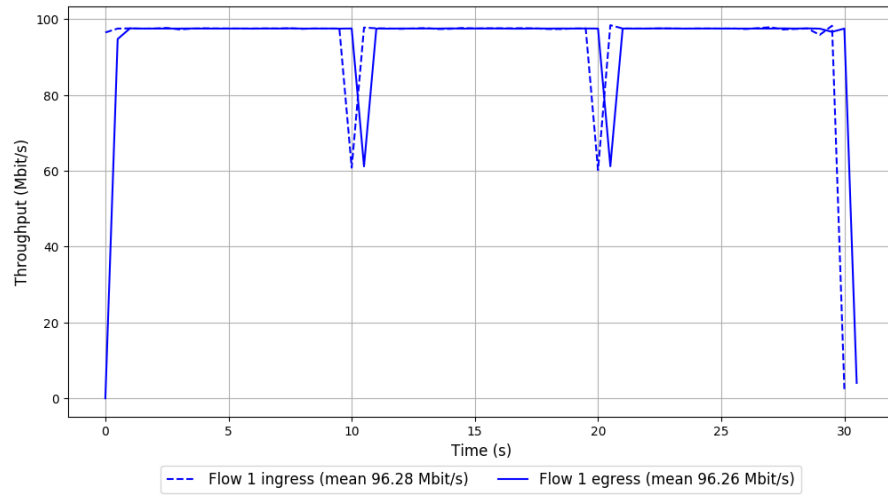
Run 5: Report of TCP BBR — Data Link

```
Run 1: Statistics of Copa

Start at: 2018-10-09 18:12:34
End at: 2018-10-09 18:13:04
Local clock offset: -0.593 ms
Remote clock offset: 0.204 ms


# Below is generated by plot.py at 2018-10-09 19:38:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.73 Mbit/s
95th percentile per-packet one-way delay: 1.832 ms
Loss rate: 64.43%
-- Flow 1:
Average throughput: 12.73 Mbit/s
95th percentile per-packet one-way delay: 1.832 ms
Loss rate: 64.43%
```
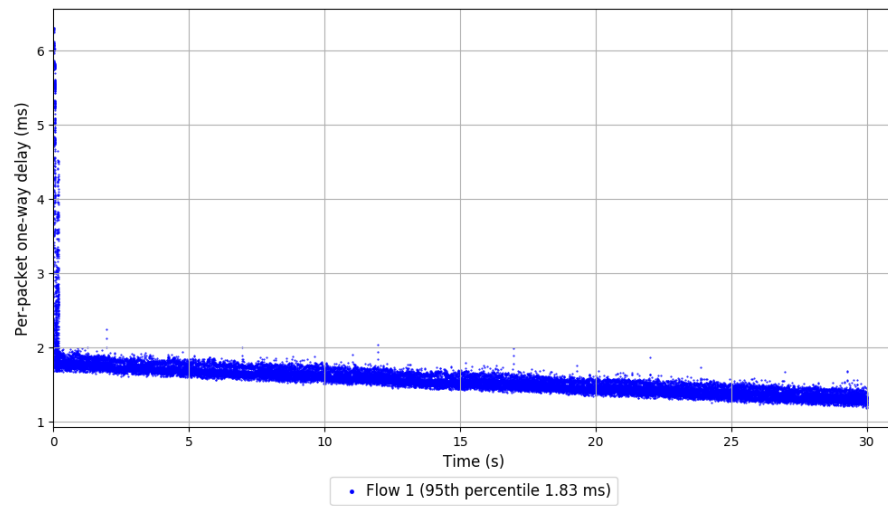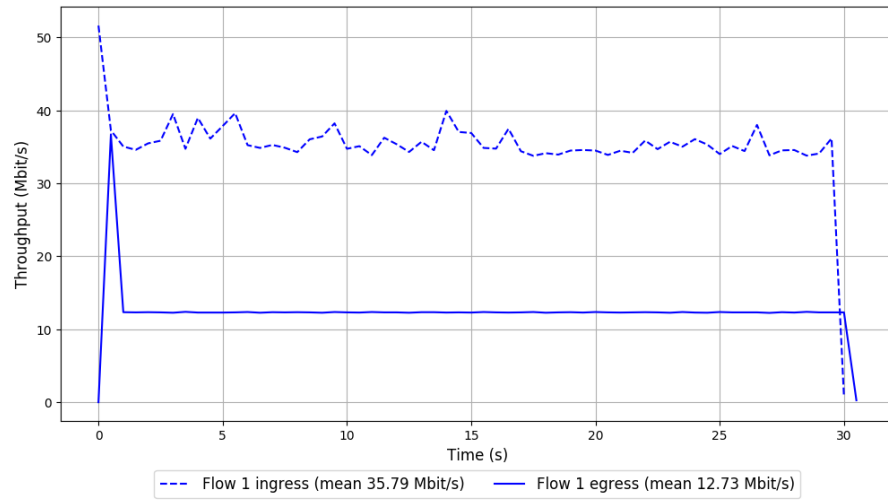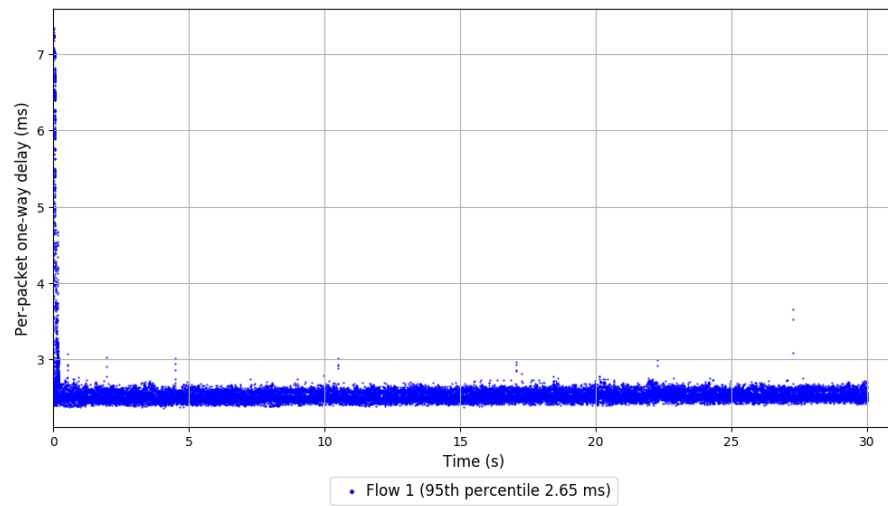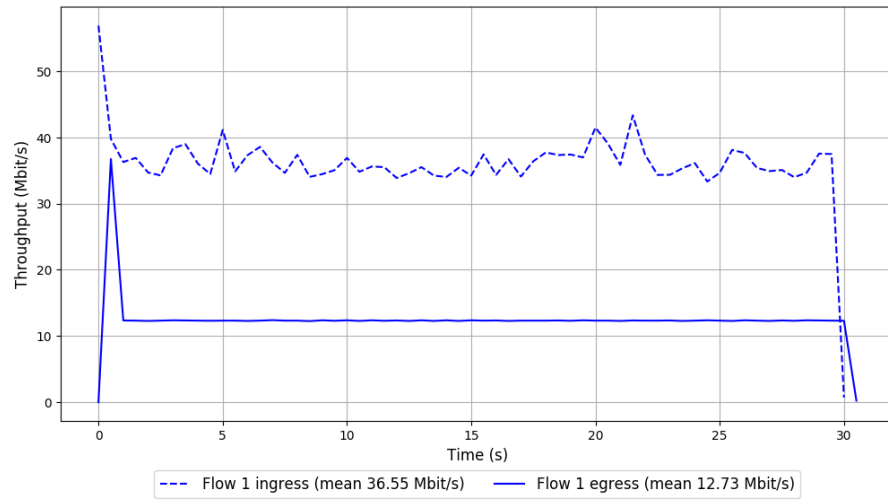
Run 1: Report of Copa — Data Link

Flow 1 ingress (mean 35.79 Mbit/s)   Flow 1 egress (mean 12.73 Mbit/s)

Flow 1 (95th percentile 1.83 ms)

```
Run 2: Statistics of Copa

Start at: 2018-10-09 18:32:38
End at: 2018-10-09 18:33:08
Local clock offset: -3.85 ms
Remote clock offset: 0.394 ms

# Below is generated by plot.py at 2018-10-09 19:38:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.73 Mbit/s
95th percentile per-packet one-way delay: 2.651 ms
Loss rate: 65.17%
-- Flow 1:
Average throughput: 12.73 Mbit/s
95th percentile per-packet one-way delay: 2.651 ms
Loss rate: 65.17%
```
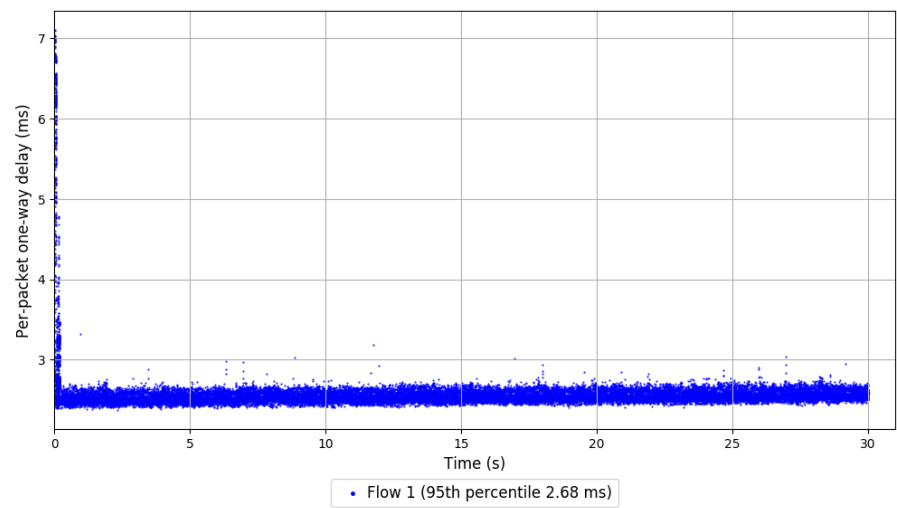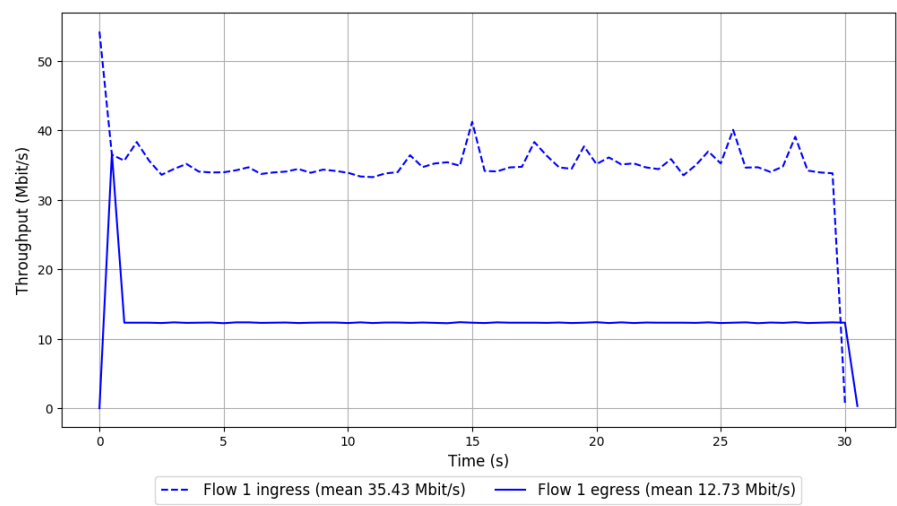
Run 2: Report of Copa — Data Link

Flow 1 ingress (mean 36.55 Mbit/s) — — —   Flow 1 egress (mean 12.73 Mbit/s) ———

• Flow 1 (95th percentile 2.65 ms)

```
Run 3: Statistics of Copa

Start at: 2018-10-09 18:52:41
End at: 2018-10-09 18:53:11
Local clock offset: -1.381 ms
Remote clock offset: 0.897 ms


# Below is generated by plot.py at 2018-10-09 19:38:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.73 Mbit/s
95th percentile per-packet one-way delay: 2.676 ms
Loss rate: 64.07%
-- Flow 1:
Average throughput: 12.73 Mbit/s
95th percentile per-packet one-way delay: 2.676 ms
Loss rate: 64.07%
```
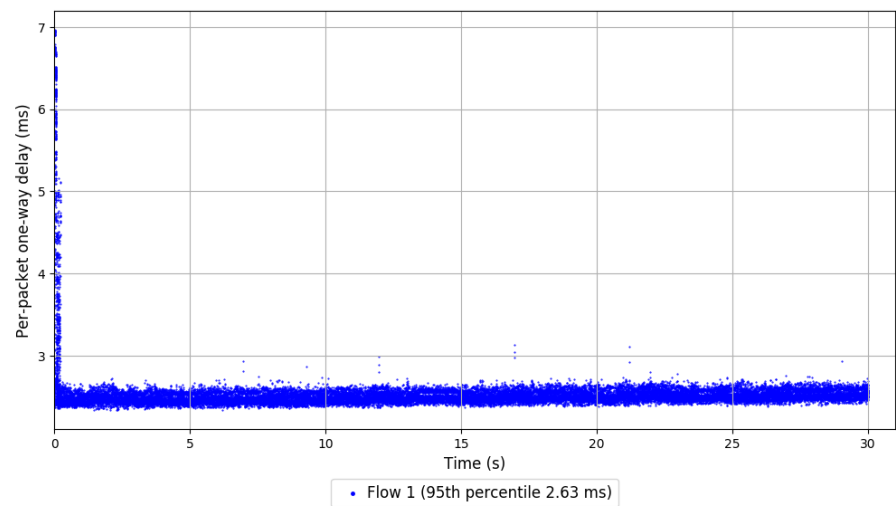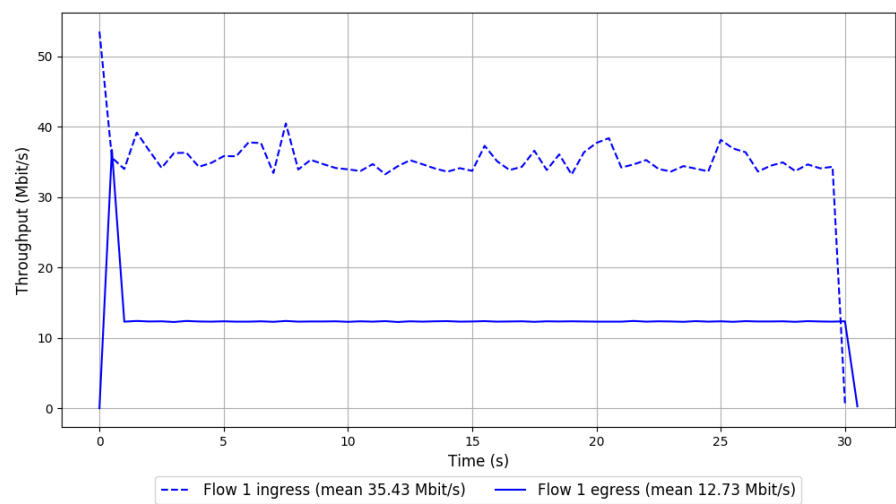
Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2018-10-09 19:12:45
End at: 2018-10-09 19:13:15
Local clock offset: -0.018 ms
Remote clock offset: 0.945 ms


# Below is generated by plot.py at 2018-10-09 19:38:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.73 Mbit/s
95th percentile per-packet one-way delay: 2.632 ms
Loss rate: 64.08%
-- Flow 1:
Average throughput: 12.73 Mbit/s
95th percentile per-packet one-way delay: 2.632 ms
Loss rate: 64.08%
```
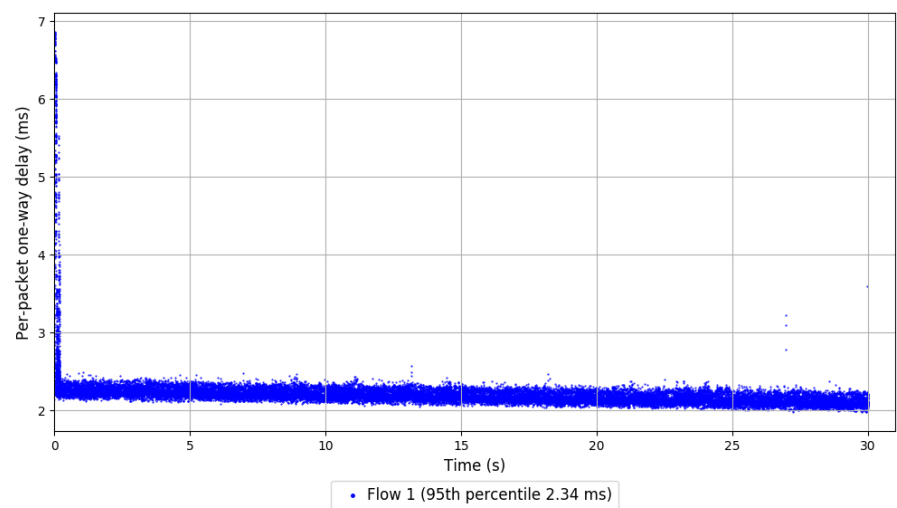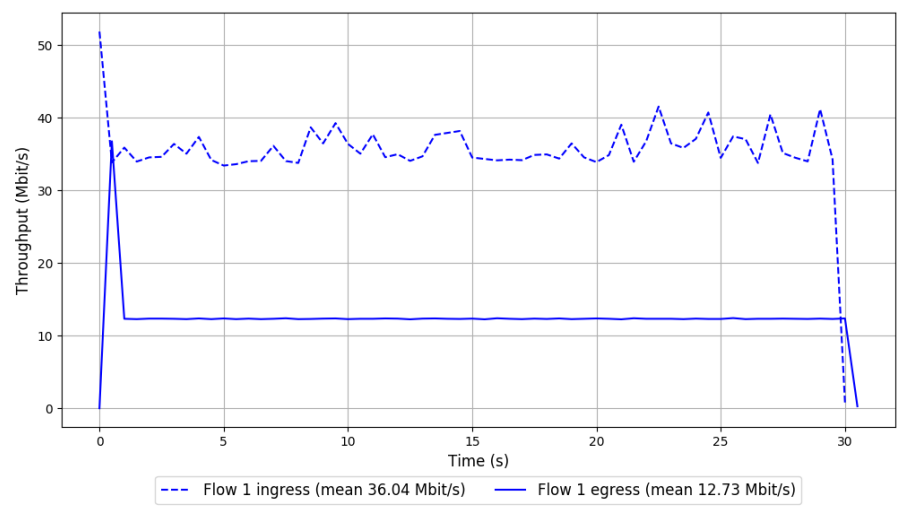
Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2018-10-09 19:32:49
End at: 2018-10-09 19:33:19
Local clock offset: -3.158 ms
Remote clock offset: 0.837 ms


# Below is generated by plot.py at 2018-10-09 19:38:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.73 Mbit/s
95th percentile per-packet one-way delay: 2.344 ms
Loss rate: 64.68%
-- Flow 1:
Average throughput: 12.73 Mbit/s
95th percentile per-packet one-way delay: 2.344 ms
Loss rate: 64.68%
```

Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2018-10-09 18:08:05
End at: 2018-10-09 18:08:35
Local clock offset: -0.999 ms
Remote clock offset: 0.196 ms


# Below is generated by plot.py at 2018-10-09 19:38:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 97.47 Mbit/s
95th percentile per-packet one-way delay: 33.001 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 97.47 Mbit/s
95th percentile per-packet one-way delay: 33.001 ms
Loss rate: 0.01%
```
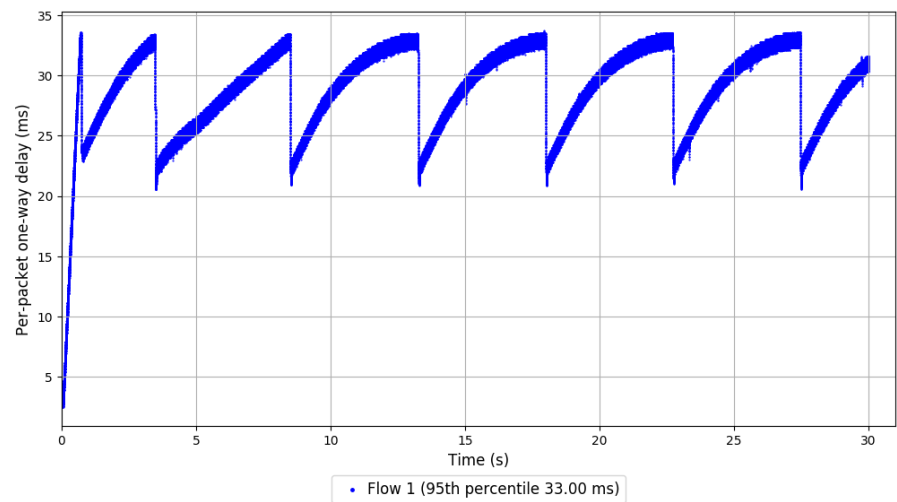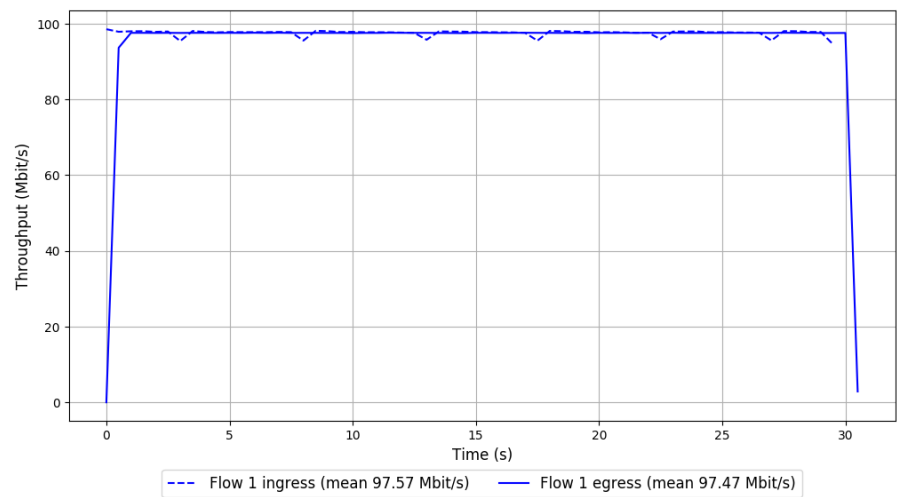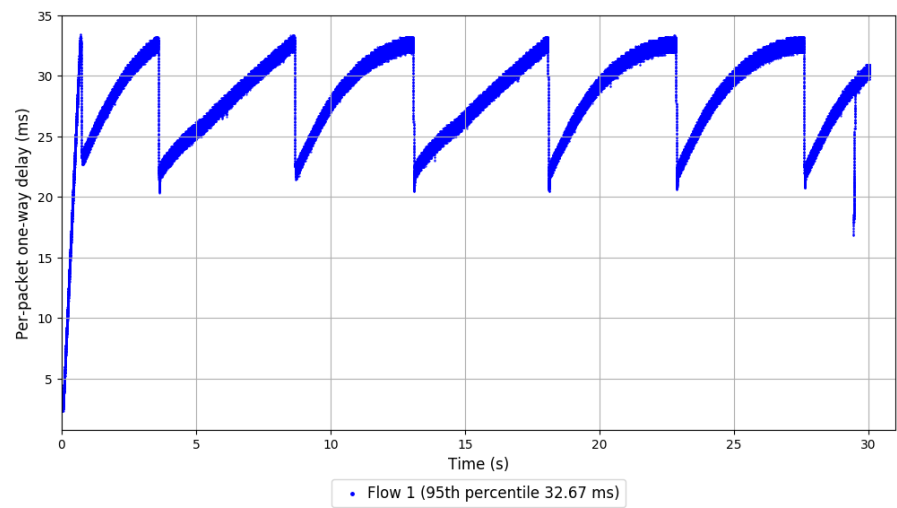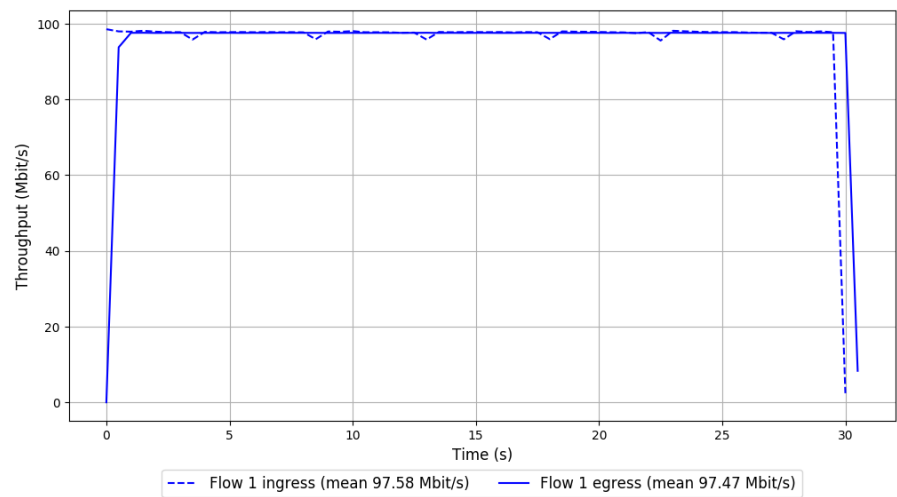
Run 1: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 97.57 Mbit/s)   Flow 1 egress (mean 97.47 Mbit/s)

Flow 1 (95th percentile 33.00 ms)

```
Run 2: Statistics of TCP Cubic

Start at: 2018-10-09 18:28:09
End at: 2018-10-09 18:28:39
Local clock offset: -3.956 ms
Remote clock offset: 0.342 ms

# Below is generated by plot.py at 2018-10-09 19:38:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 97.47 Mbit/s
95th percentile per-packet one-way delay: 32.667 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 97.47 Mbit/s
95th percentile per-packet one-way delay: 32.667 ms
Loss rate: 0.01%
```
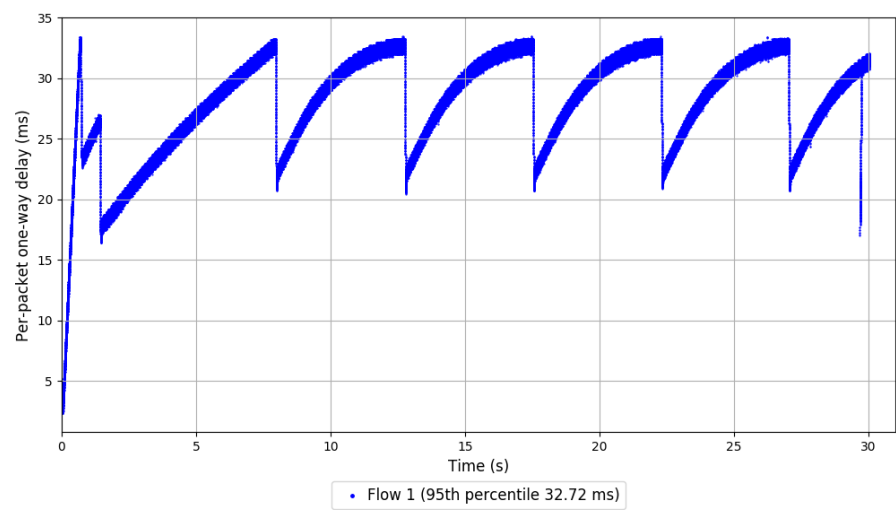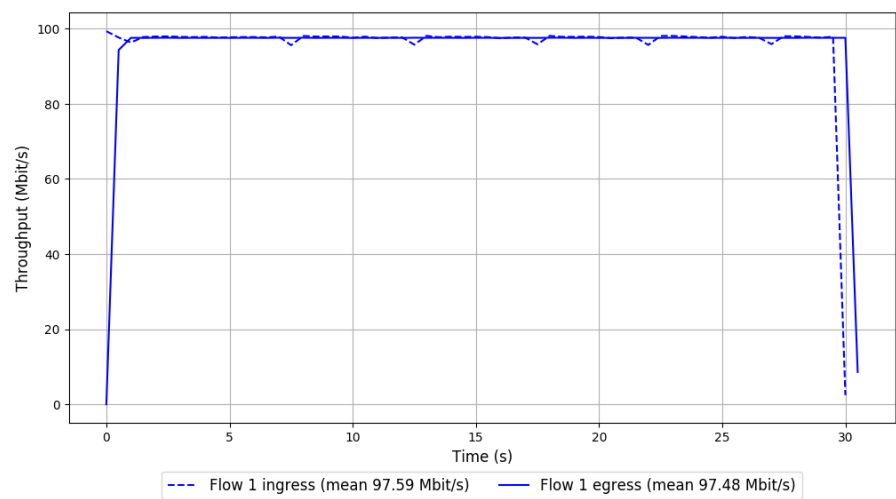
Run 2: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 97.58 Mbit/s) ——— Flow 1 egress (mean 97.47 Mbit/s)

• Flow 1 (95th percentile 32.67 ms)

```
Run 3: Statistics of TCP Cubic

Start at: 2018-10-09 18:48:13
End at: 2018-10-09 18:48:43
Local clock offset: -1.953 ms
Remote clock offset: 0.723 ms


# Below is generated by plot.py at 2018-10-09 19:38:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 97.48 Mbit/s
95th percentile per-packet one-way delay: 32.722 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 97.48 Mbit/s
95th percentile per-packet one-way delay: 32.722 ms
Loss rate: 0.01%
```
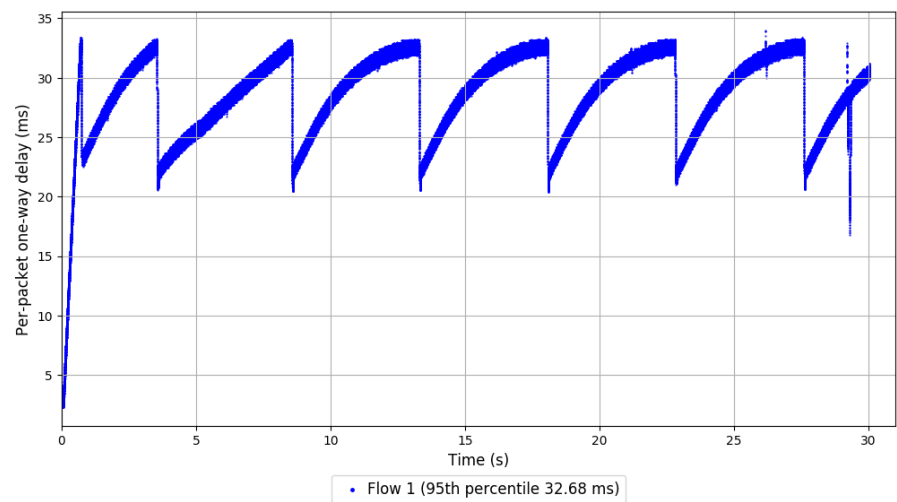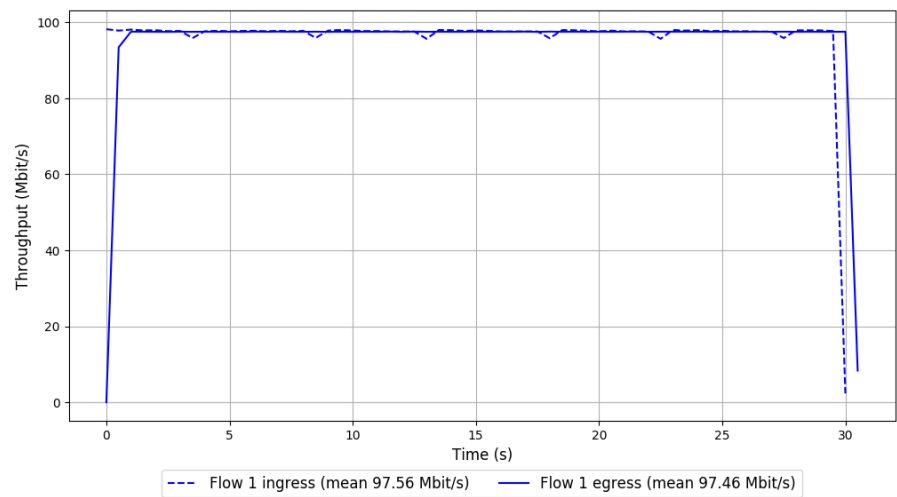
Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 97.59 Mbit/s) — — — Flow 1 egress (mean 97.48 Mbit/s)

Flow 1 (95th percentile 32.72 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2018-10-09 19:08:17
End at: 2018-10-09 19:08:47
Local clock offset: -0.456 ms
Remote clock offset: 0.875 ms


# Below is generated by plot.py at 2018-10-09 19:39:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 97.46 Mbit/s
95th percentile per-packet one-way delay: 32.682 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 97.46 Mbit/s
95th percentile per-packet one-way delay: 32.682 ms
Loss rate: 0.01%
```
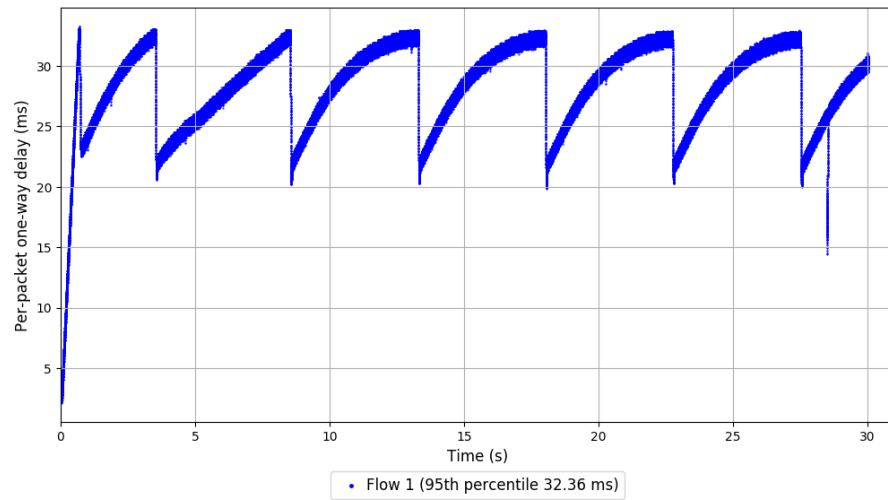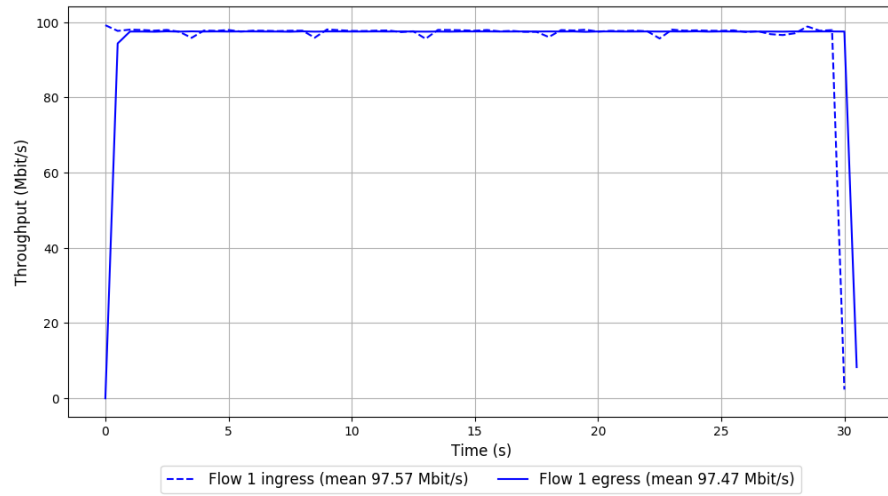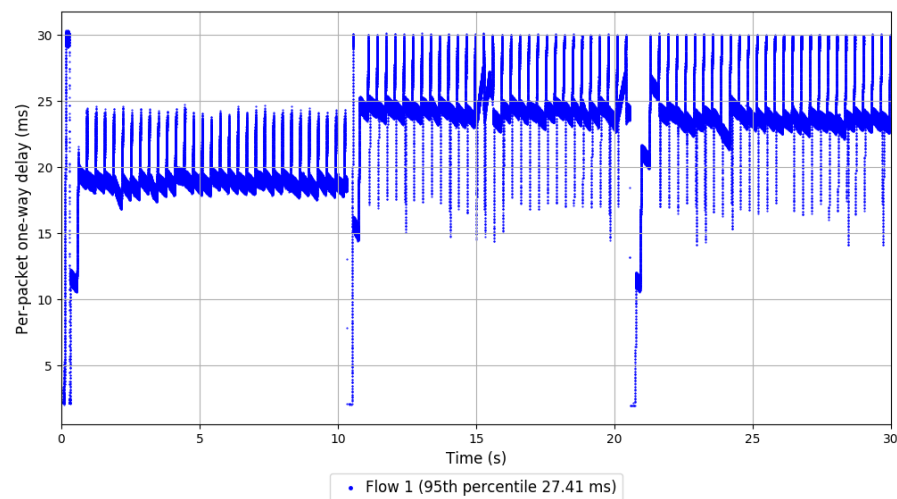
Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2018-10-09 19:28:21
End at: 2018-10-09 19:28:51
Local clock offset: -1.079 ms
Remote clock offset: 0.883 ms


# Below is generated by plot.py at 2018-10-09 19:39:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 97.47 Mbit/s
95th percentile per-packet one-way delay: 32.358 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 97.47 Mbit/s
95th percentile per-packet one-way delay: 32.358 ms
Loss rate: 0.01%
```

Run 5: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 97.57 Mbit/s)   Flow 1 egress (mean 97.47 Mbit/s)

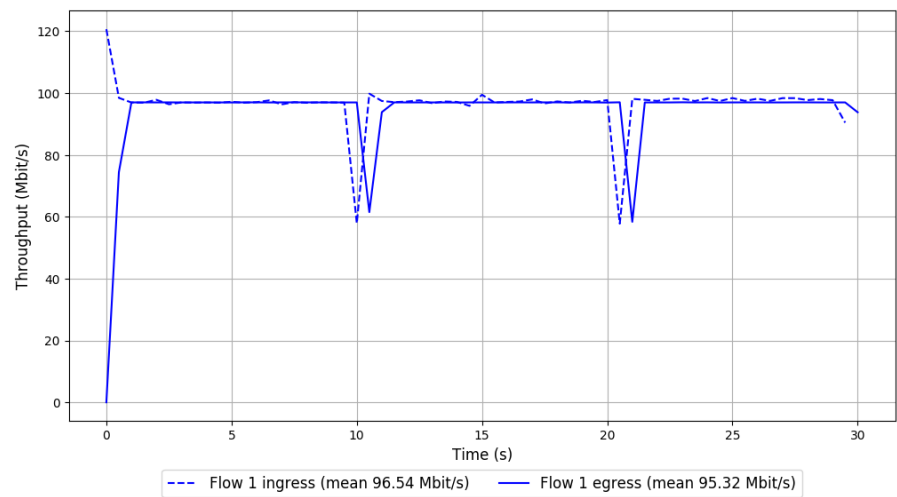Flow 1 (95th percentile 32.36 ms)

```
Run 1: Statistics of FillP

Start at: 2018-10-09 18:14:44
End at: 2018-10-09 18:15:14
Local clock offset: -2.658 ms
Remote clock offset: 0.243 ms


# Below is generated by plot.py at 2018-10-09 19:39:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.32 Mbit/s
95th percentile per-packet one-way delay: 27.413 ms
Loss rate: 1.18%
-- Flow 1:
Average throughput: 95.32 Mbit/s
95th percentile per-packet one-way delay: 27.413 ms
Loss rate: 1.18%
```
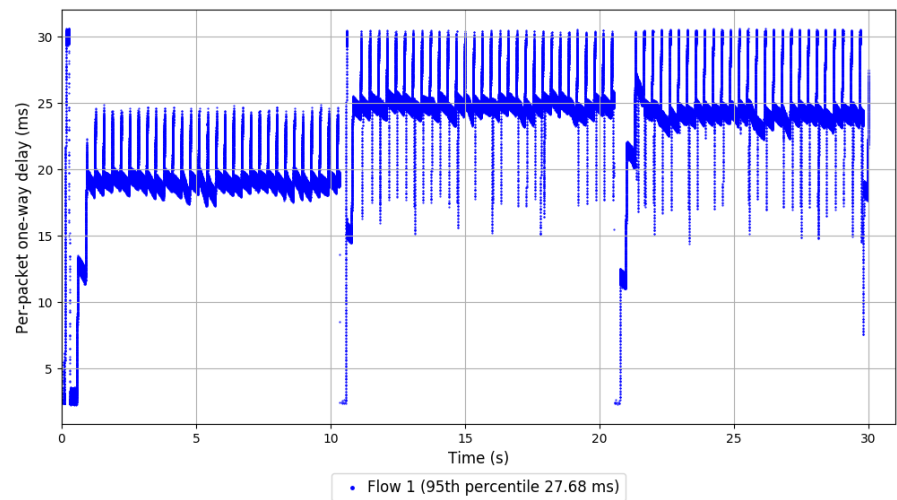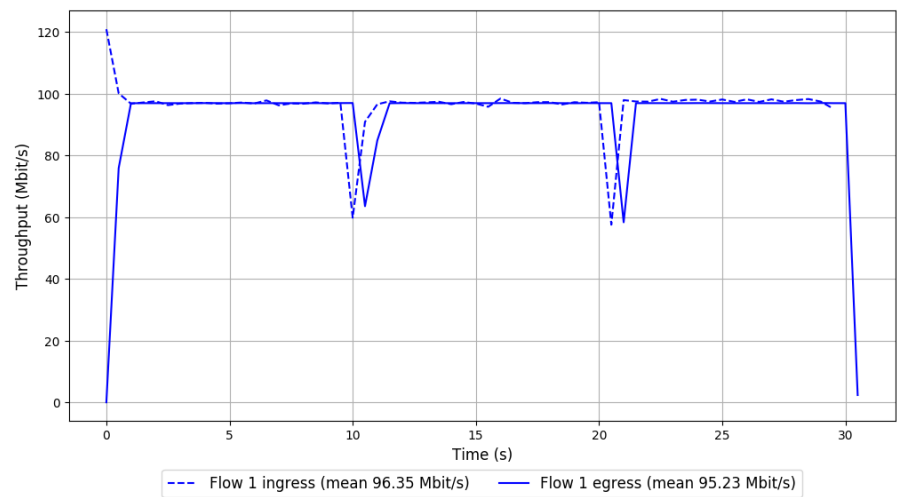
Run 1: Report of FillP — Data Link

Flow 1 ingress (mean 96.54 Mbit/s) --- Flow 1 egress (mean 95.32 Mbit/s)

Flow 1 (95th percentile 27.41 ms)

```
Run 2: Statistics of FillP

Start at: 2018-10-09 18:34:48
End at: 2018-10-09 18:35:18
Local clock offset: -3.622 ms
Remote clock offset: 0.406 ms


# Below is generated by plot.py at 2018-10-09 19:39:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.23 Mbit/s
95th percentile per-packet one-way delay: 27.683 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 95.23 Mbit/s
95th percentile per-packet one-way delay: 27.683 ms
Loss rate: 1.08%
```
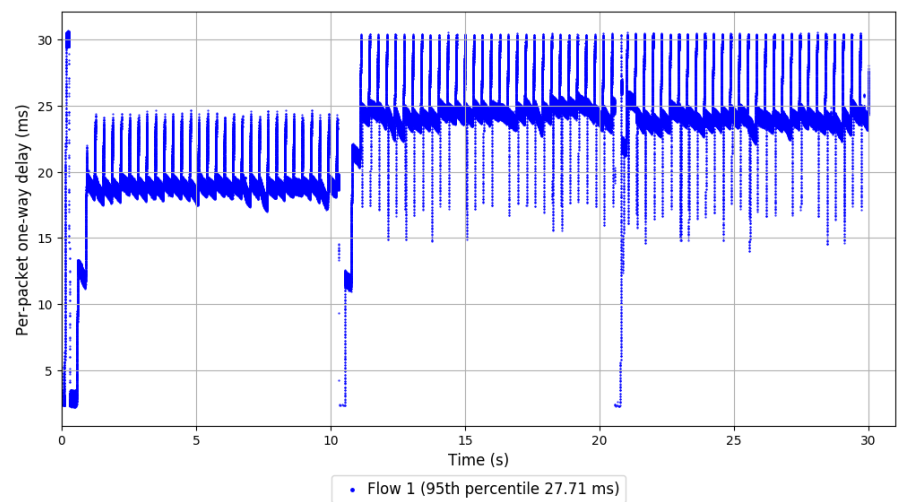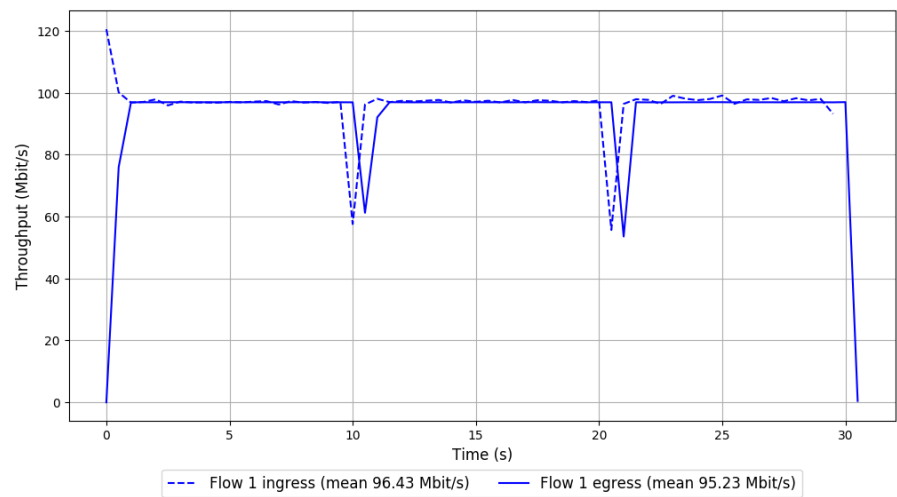
Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2018-10-09 18:54:52
End at: 2018-10-09 18:55:22
Local clock offset: -1.018 ms
Remote clock offset: 0.974 ms


# Below is generated by plot.py at 2018-10-09 19:39:26
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.23 Mbit/s
95th percentile per-packet one-way delay: 27.711 ms
Loss rate: 1.16%
-- Flow 1:
Average throughput: 95.23 Mbit/s
95th percentile per-packet one-way delay: 27.711 ms
Loss rate: 1.16%
```

Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2018-10-09 19:14:56
End at: 2018-10-09 19:15:26
Local clock offset: 0.172 ms
Remote clock offset: 0.883 ms


# Below is generated by plot.py at 2018-10-09 19:39:43
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.35 Mbit/s
95th percentile per-packet one-way delay: 28.225 ms
Loss rate: 1.33%
-- Flow 1:
Average throughput: 95.35 Mbit/s
95th percentile per-packet one-way delay: 28.225 ms
Loss rate: 1.33%
```
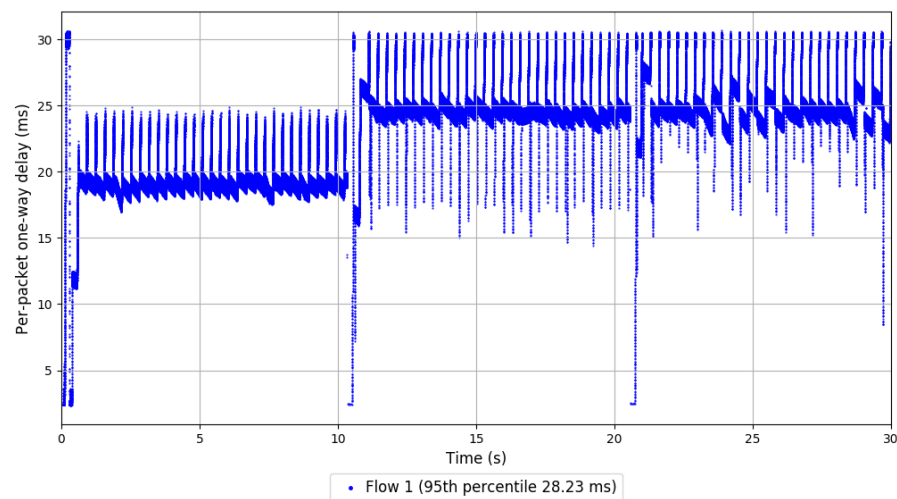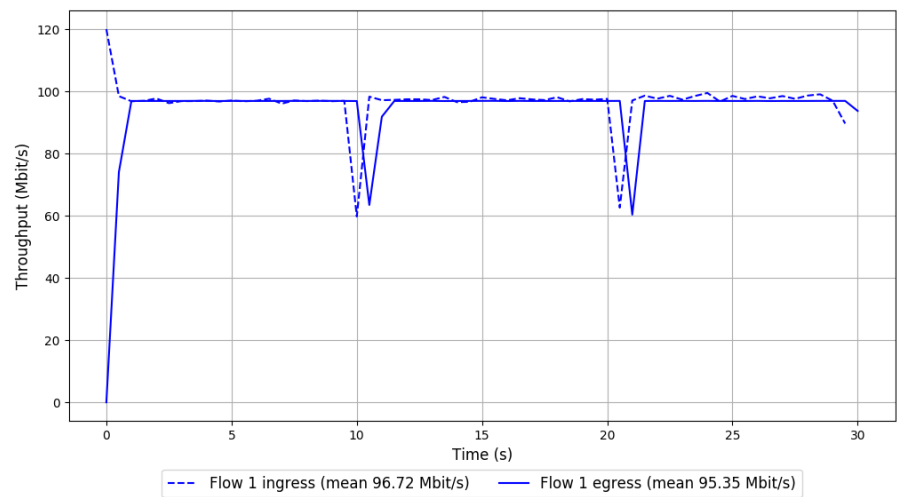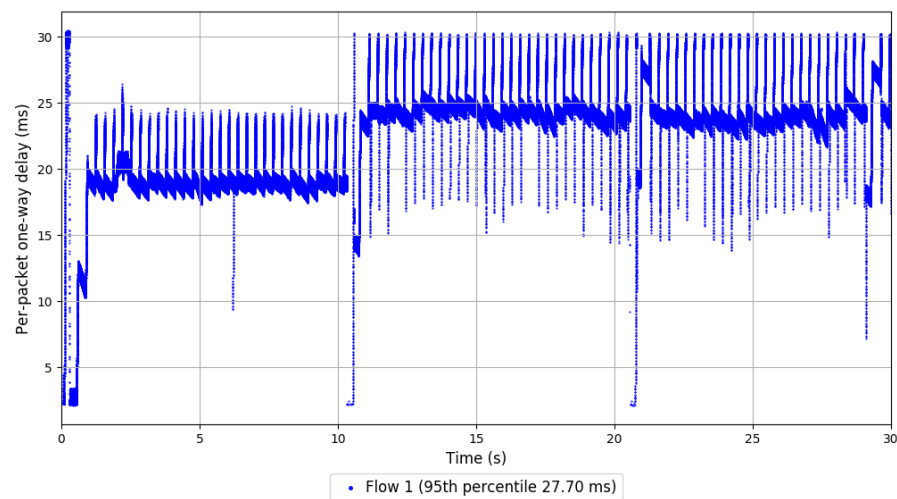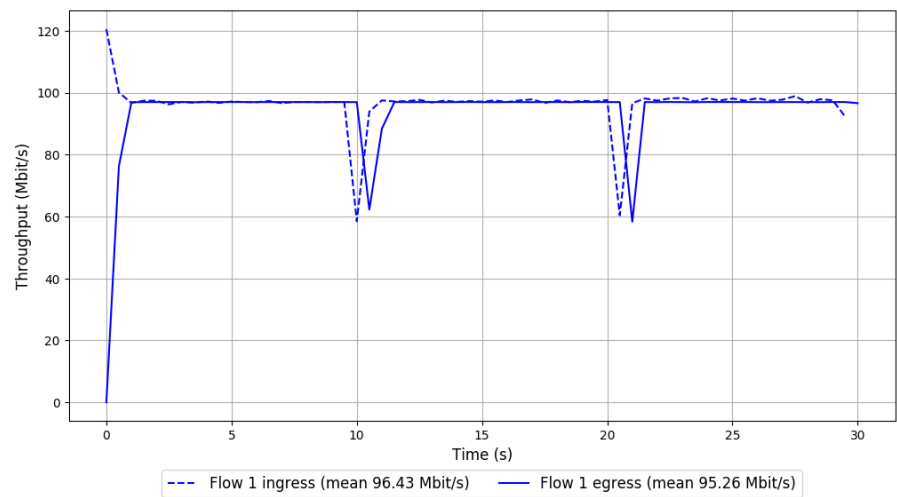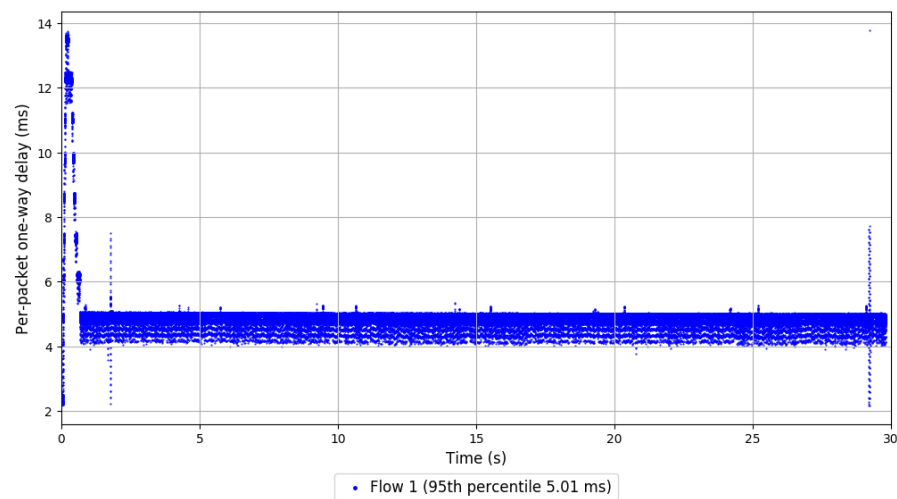
Run 4: Report of FillP — Data Link

Flow 1 ingress (mean 96.72 Mbit/s)   Flow 1 egress (mean 95.35 Mbit/s)

Flow 1 (95th percentile 28.23 ms)

```
Run 5: Statistics of FillP

Start at: 2018-10-09 19:35:00
End at: 2018-10-09 19:35:30
Local clock offset: -3.853 ms
Remote clock offset: 0.819 ms


# Below is generated by plot.py at 2018-10-09 19:39:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.26 Mbit/s
95th percentile per-packet one-way delay: 27.696 ms
Loss rate: 1.14%
-- Flow 1:
Average throughput: 95.26 Mbit/s
95th percentile per-packet one-way delay: 27.696 ms
Loss rate: 1.14%
```

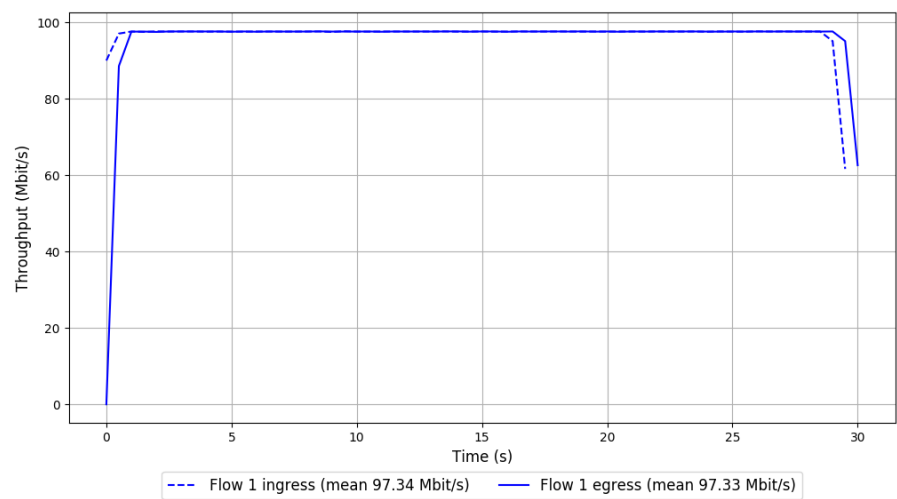Run 5: Report of FillP — Data Link

```
Run 1: Statistics of Indigo

Start at: 2018-10-09 18:01:16
End at: 2018-10-09 18:01:46
Local clock offset: -4.644 ms
Remote clock offset: 0.185 ms


# Below is generated by plot.py at 2018-10-09 19:39:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 97.33 Mbit/s
95th percentile per-packet one-way delay: 5.010 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 97.33 Mbit/s
95th percentile per-packet one-way delay: 5.010 ms
Loss rate: 0.00%
```
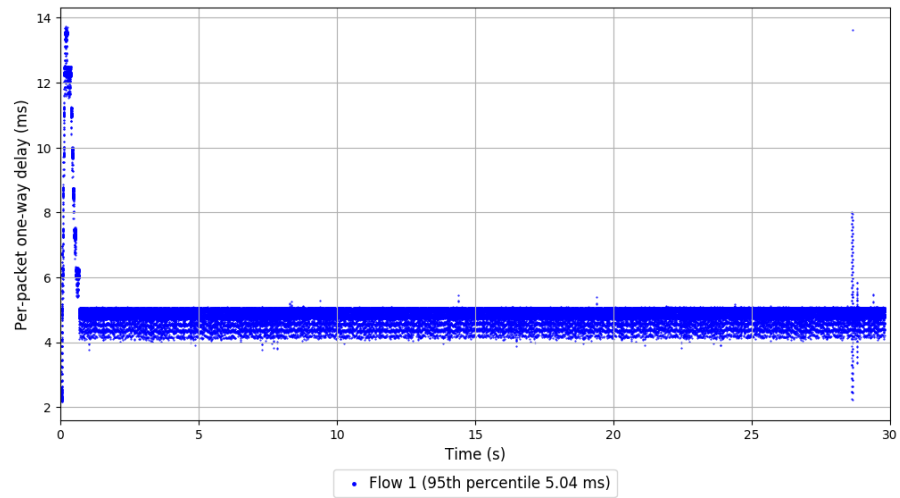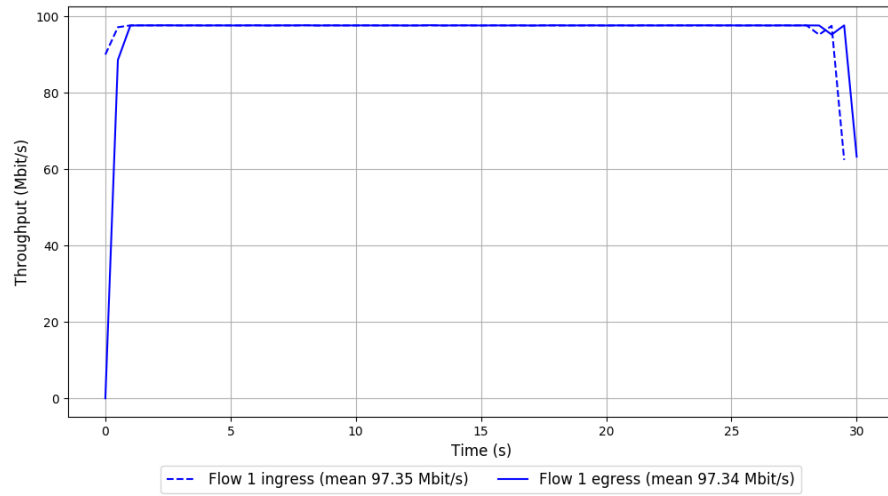
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-10-09 18:21:20
End at: 2018-10-09 18:21:50
Local clock offset: -4.1 ms
Remote clock offset: 0.209 ms


# Below is generated by plot.py at 2018-10-09 19:40:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 97.34 Mbit/s
95th percentile per-packet one-way delay: 5.044 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 97.34 Mbit/s
95th percentile per-packet one-way delay: 5.044 ms
Loss rate: 0.00%
```
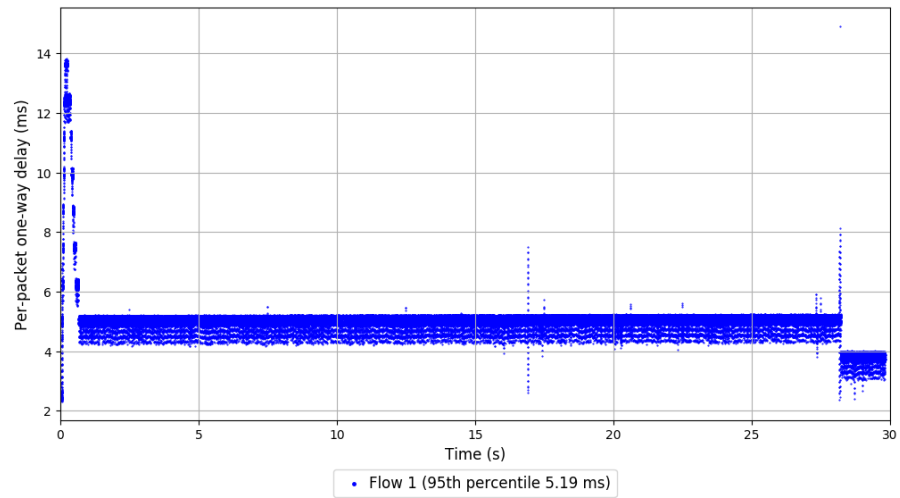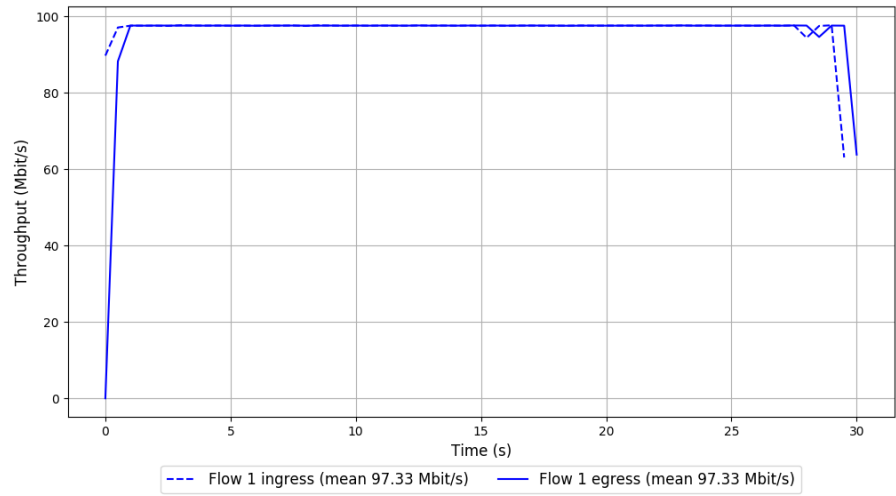
Run 2: Report of Indigo — Data Link

Flow 1 ingress (mean 97.35 Mbit/s)   Flow 1 egress (mean 97.34 Mbit/s)

Flow 1 (95th percentile 5.04 ms)

```
Run 3: Statistics of Indigo

Start at: 2018-10-09 18:41:24
End at: 2018-10-09 18:41:54
Local clock offset: -2.873 ms
Remote clock offset: 0.483 ms


# Below is generated by plot.py at 2018-10-09 19:40:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 97.33 Mbit/s
95th percentile per-packet one-way delay: 5.192 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 97.33 Mbit/s
95th percentile per-packet one-way delay: 5.192 ms
Loss rate: 0.00%
```
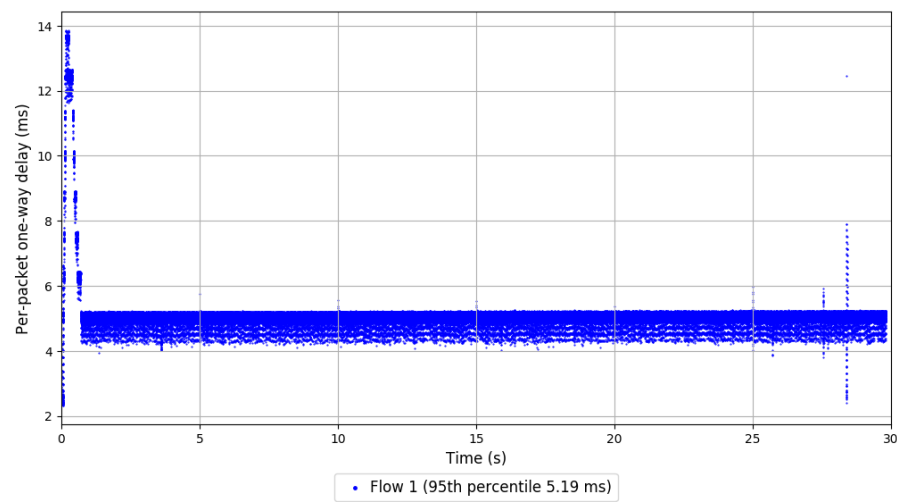
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-10-09 19:01:28
End at: 2018-10-09 19:01:58
Local clock offset: -1.036 ms
Remote clock offset: 0.935 ms


# Below is generated by plot.py at 2018-10-09 19:40:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 97.34 Mbit/s
95th percentile per-packet one-way delay: 5.191 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 97.34 Mbit/s
95th percentile per-packet one-way delay: 5.191 ms
Loss rate: 0.00%
```
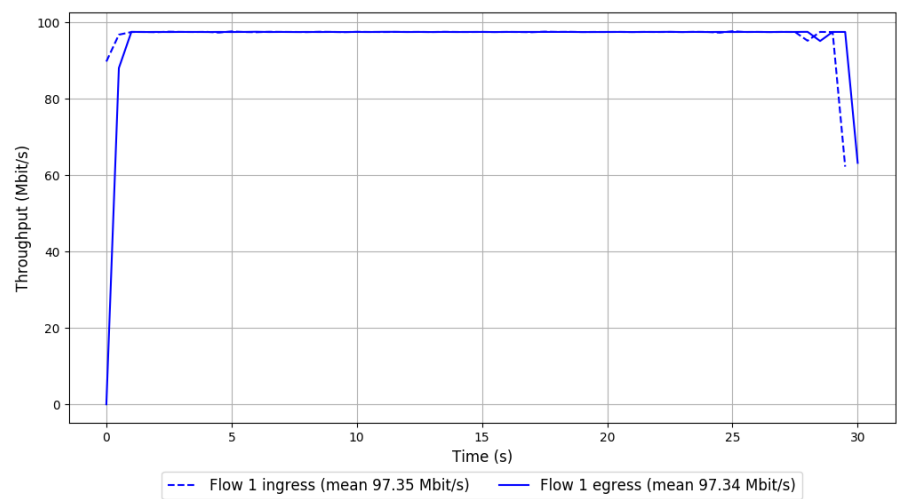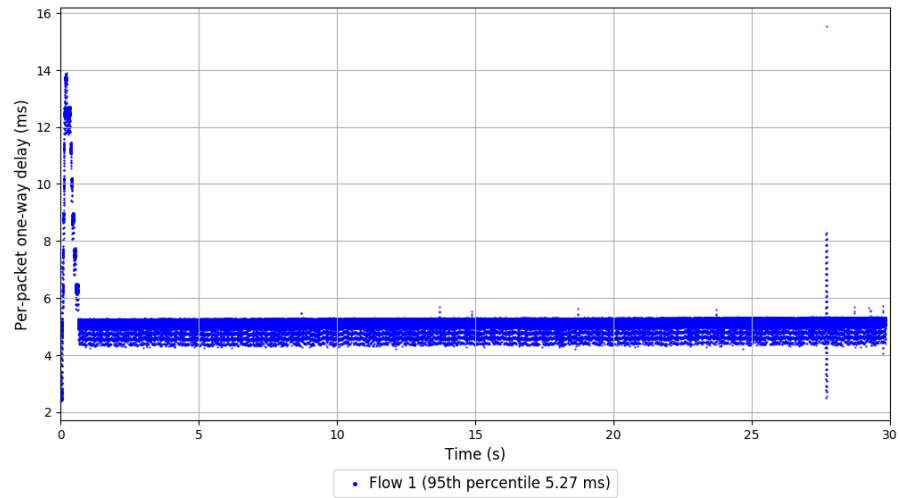
Run 4: Report of Indigo — Data Link

Flow 1 ingress (mean 97.35 Mbit/s)   Flow 1 egress (mean 97.34 Mbit/s)

Flow 1 (95th percentile 5.19 ms)

```
Run 5: Statistics of Indigo

Start at: 2018-10-09 19:21:32
End at: 2018-10-09 19:22:02
Local clock offset: 0.898 ms
Remote clock offset: 0.815 ms


# Below is generated by plot.py at 2018-10-09 19:40:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 97.32 Mbit/s
95th percentile per-packet one-way delay: 5.266 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 97.32 Mbit/s
95th percentile per-packet one-way delay: 5.266 ms
Loss rate: 0.00%
```
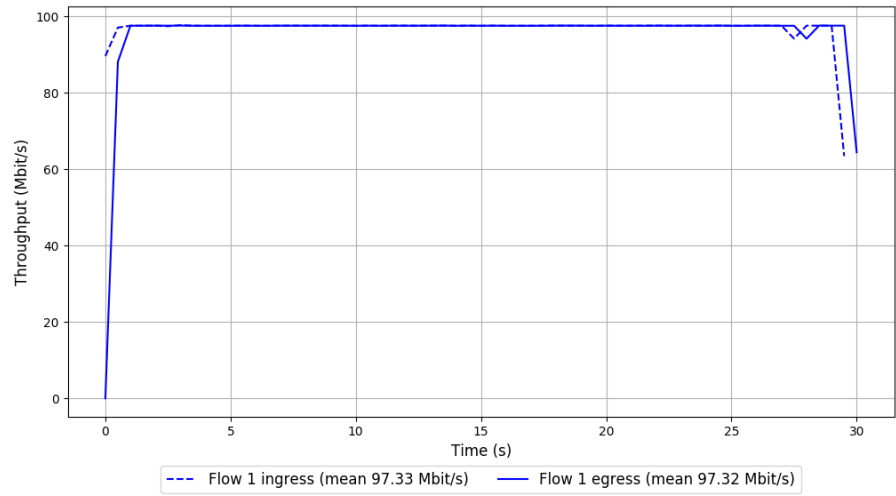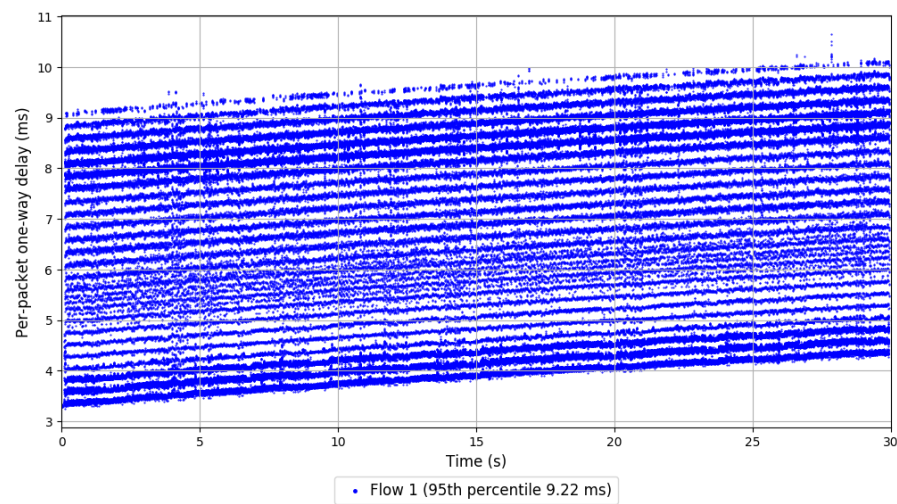
Run 5: Report of Indigo — Data Link

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

Start at: 2018-10-09 17:56:52
End at: 2018-10-09 17:57:22
Local clock offset: -2.212 ms
Remote clock offset: 0.23 ms


# Below is generated by plot.py at 2018-10-09 19:40:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.18 Mbit/s
95th percentile per-packet one-way delay: 9.216 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 91.18 Mbit/s
95th percentile per-packet one-way delay: 9.216 ms
Loss rate: 0.00%
```
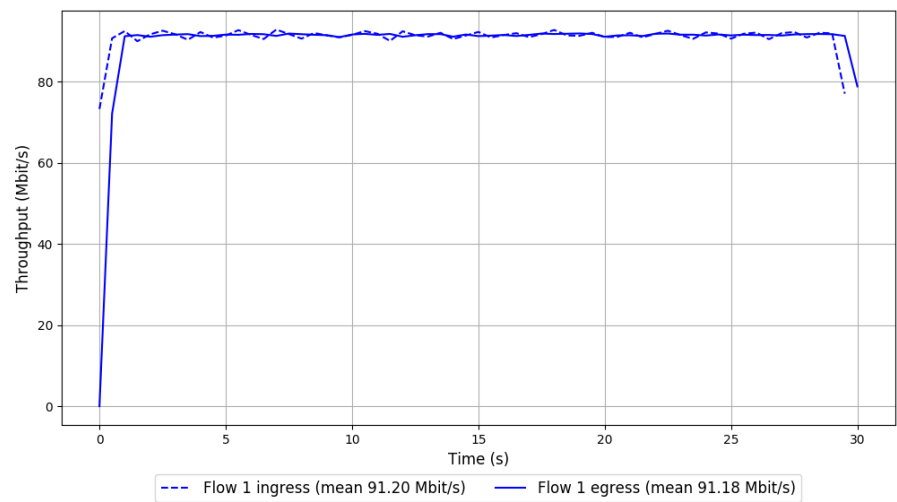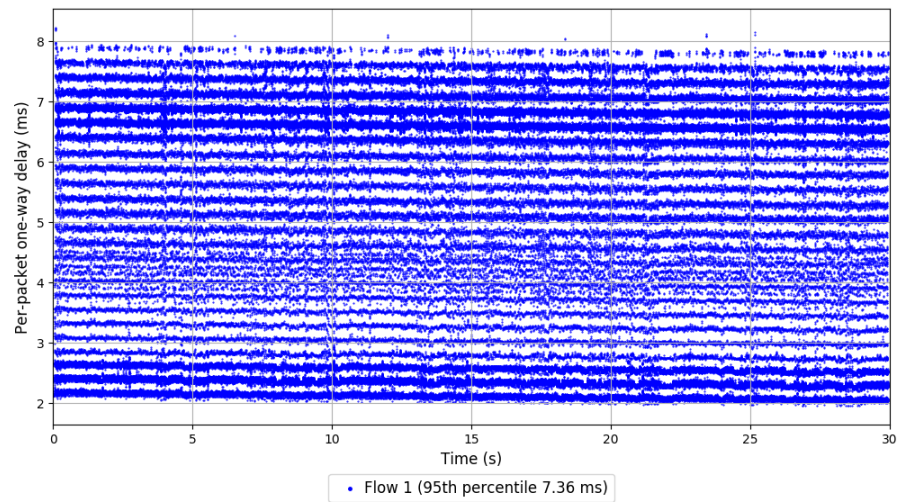
Run 1: Report of Indigo-96d2da3 — Data Link

Flow 1 ingress (mean 91.20 Mbit/s)   Flow 1 egress (mean 91.18 Mbit/s)

Flow 1 (95th percentile 9.22 ms)

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

Start at: 2018-10-09 18:16:56
End at: 2018-10-09 18:17:26
Local clock offset: -3.58 ms
Remote clock offset: 0.191 ms


# Below is generated by plot.py at 2018-10-09 19:40:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.26 Mbit/s
95th percentile per-packet one-way delay: 7.364 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 91.26 Mbit/s
95th percentile per-packet one-way delay: 7.364 ms
Loss rate: 0.00%
```
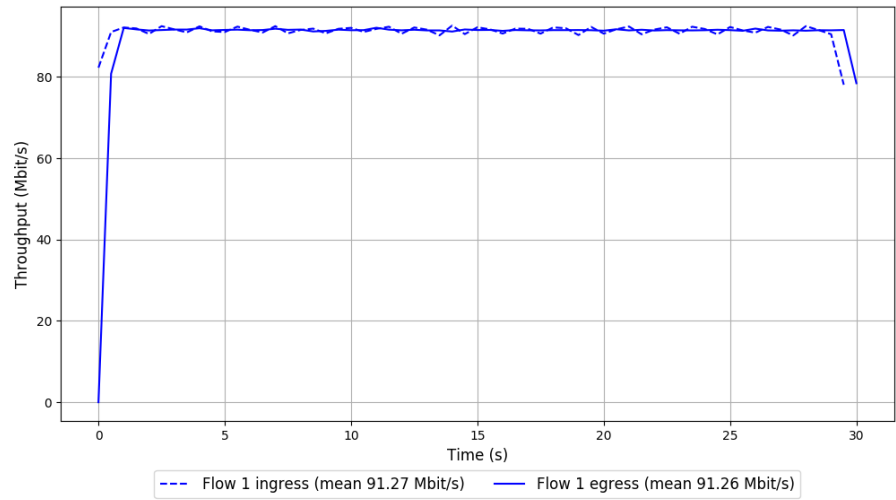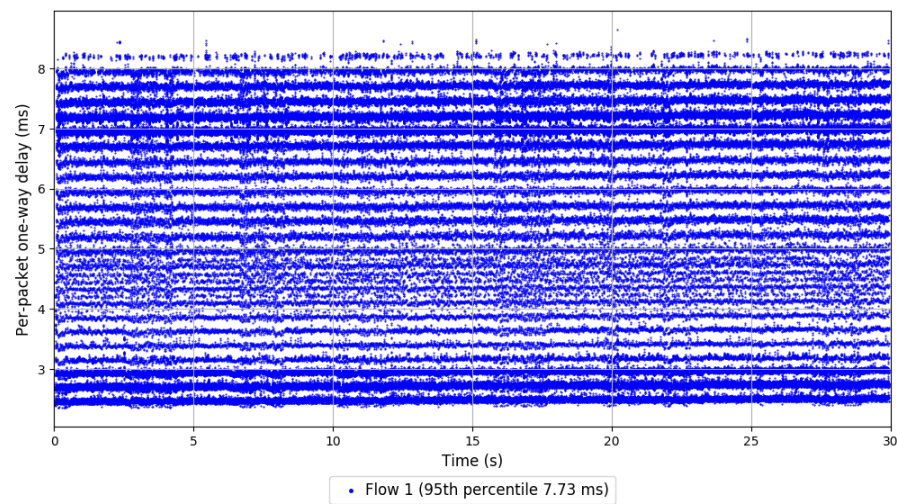
Run 2: Report of Indigo-96d2da3 — Data Link

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

Start at: 2018-10-09 18:37:01
End at: 2018-10-09 18:37:31
Local clock offset: -3.413 ms
Remote clock offset: 0.439 ms


# Below is generated by plot.py at 2018-10-09 19:40:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.17 Mbit/s
95th percentile per-packet one-way delay: 7.730 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 91.17 Mbit/s
95th percentile per-packet one-way delay: 7.730 ms
Loss rate: 0.00%
```
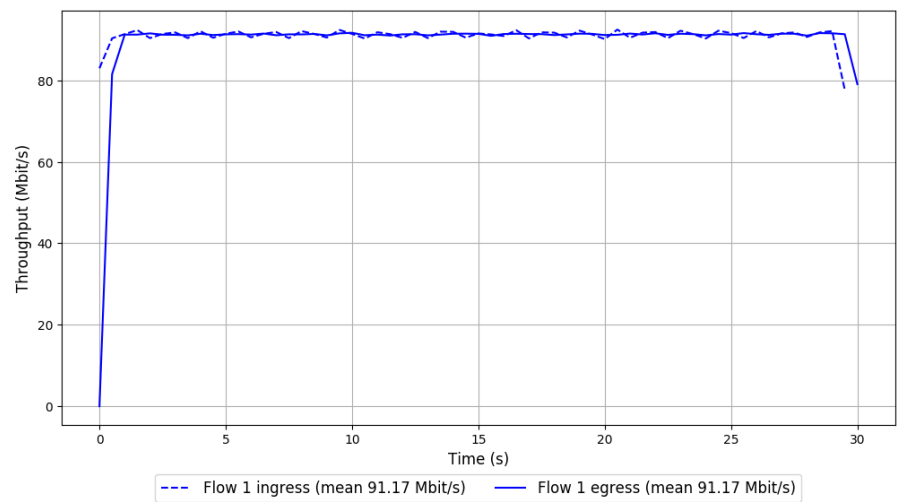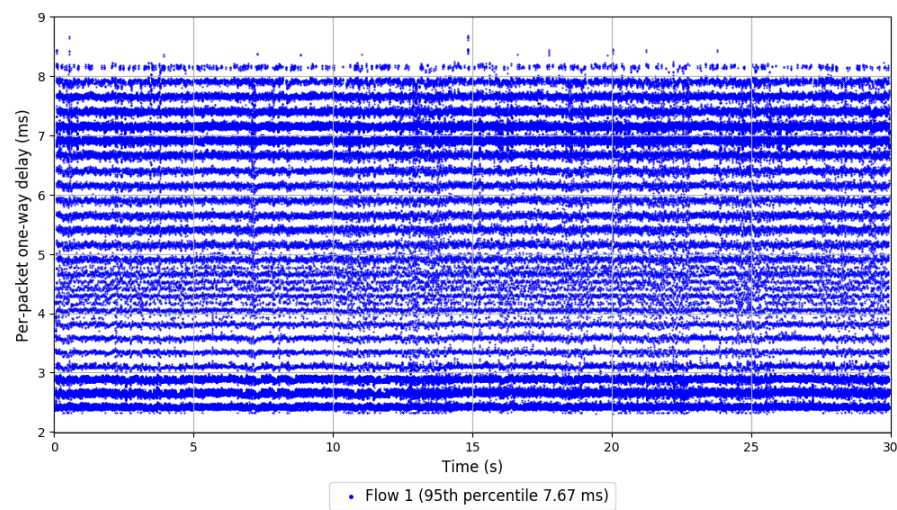
Run 3: Report of Indigo-96d2da3 — Data Link

Flow 1 ingress (mean 91.17 Mbit/s) ---- Flow 1 egress (mean 91.17 Mbit/s)

• Flow 1 (95th percentile 7.73 ms)

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

Start at: 2018-10-09 18:57:04
End at: 2018-10-09 18:57:34
Local clock offset: -1.032 ms
Remote clock offset: 1.086 ms


# Below is generated by plot.py at 2018-10-09 19:41:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.23 Mbit/s
95th percentile per-packet one-way delay: 7.671 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 91.23 Mbit/s
95th percentile per-packet one-way delay: 7.671 ms
Loss rate: 0.00%
```
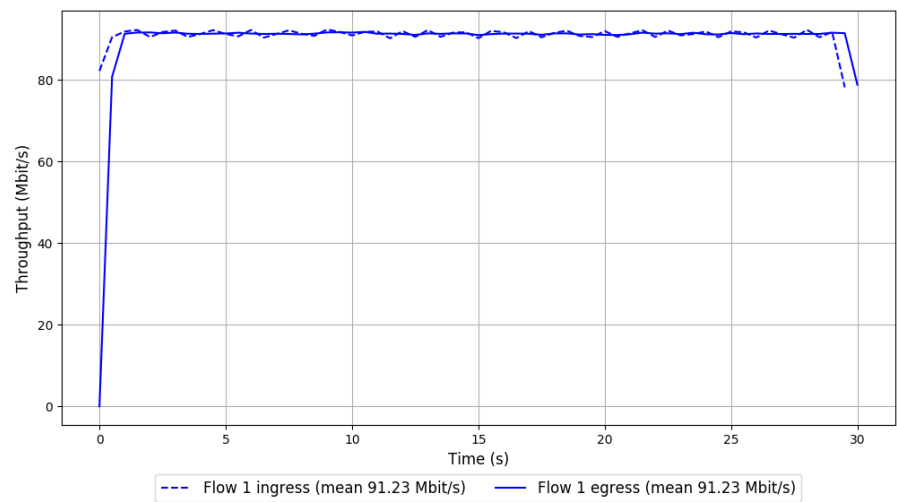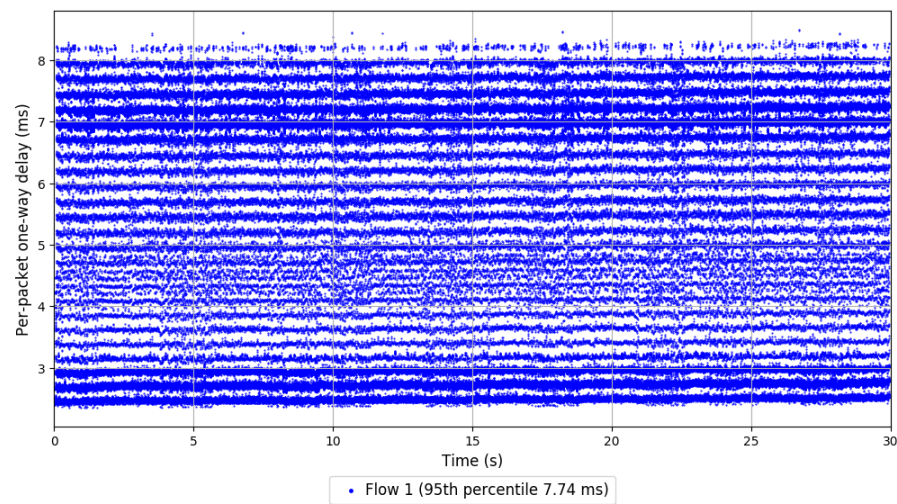
Run 4: Report of Indigo-96d2da3 — Data Link

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

Start at: 2018-10-09 19:17:08
End at: 2018-10-09 19:17:38
Local clock offset: 0.484 ms
Remote clock offset: 0.934 ms


# Below is generated by plot.py at 2018-10-09 19:41:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.13 Mbit/s
95th percentile per-packet one-way delay: 7.738 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 91.13 Mbit/s
95th percentile per-packet one-way delay: 7.738 ms
Loss rate: 0.00%
```
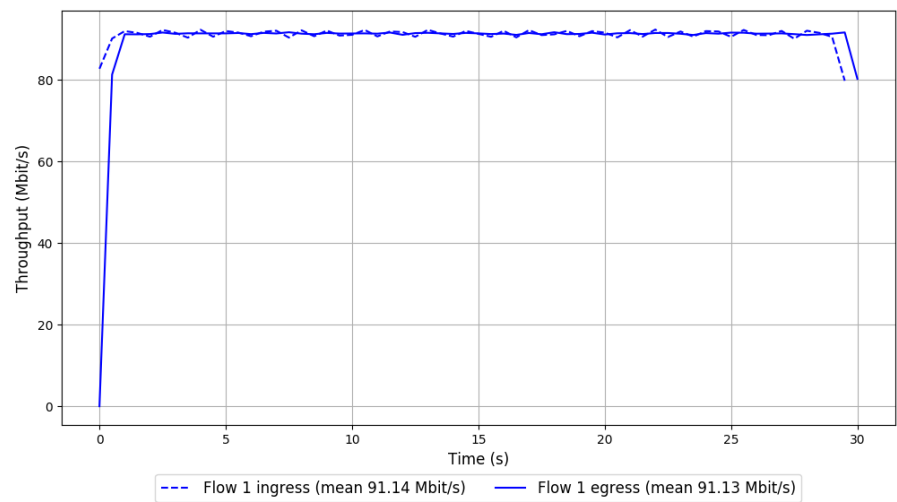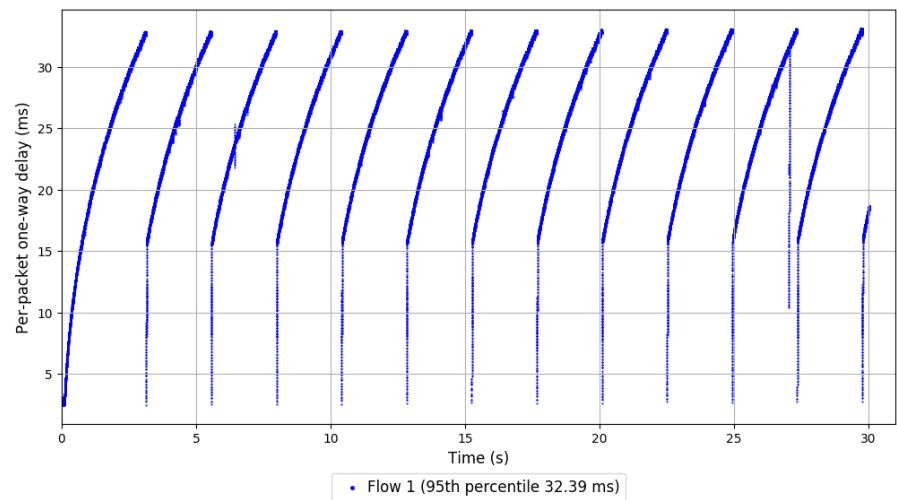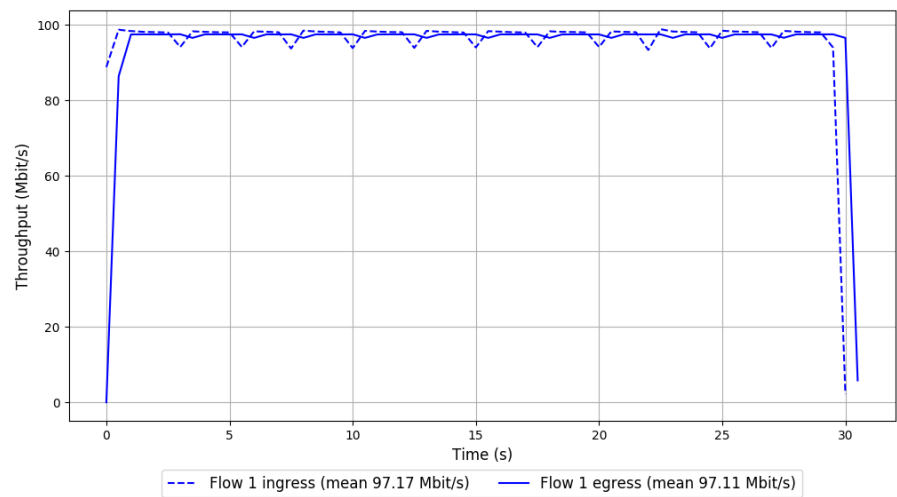
Run 5: Report of Indigo-96d2da3 — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2018-10-09 18:05:50
End at: 2018-10-09 18:06:20
Local clock offset: -2.247 ms
Remote clock offset: 0.085 ms

# Below is generated by plot.py at 2018-10-09 19:41:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 97.11 Mbit/s
95th percentile per-packet one-way delay: 32.393 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 97.11 Mbit/s
95th percentile per-packet one-way delay: 32.393 ms
Loss rate: 0.01%
```

Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2018-10-09 18:25:54
End at: 2018-10-09 18:26:24
Local clock offset: -3.964 ms
Remote clock offset: 0.37 ms


# Below is generated by plot.py at 2018-10-09 19:41:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 97.11 Mbit/s
95th percentile per-packet one-way delay: 32.195 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 97.11 Mbit/s
95th percentile per-packet one-way delay: 32.195 ms
Loss rate: 0.01%
```
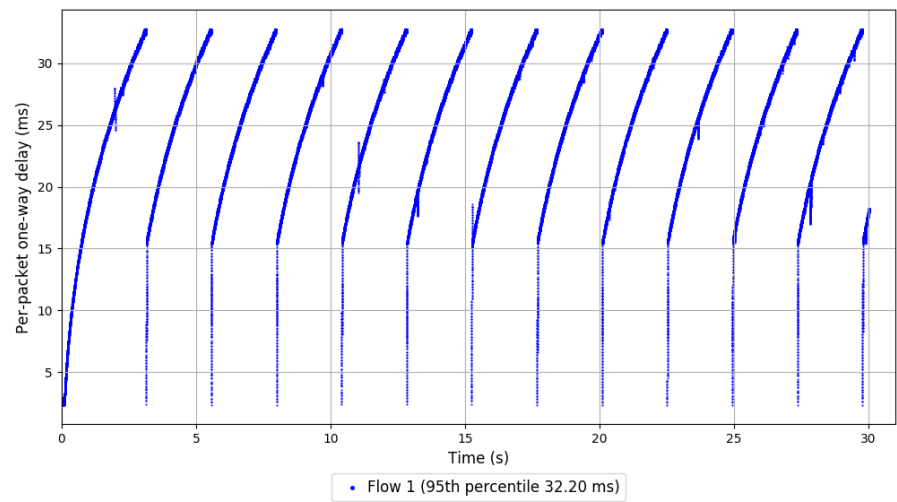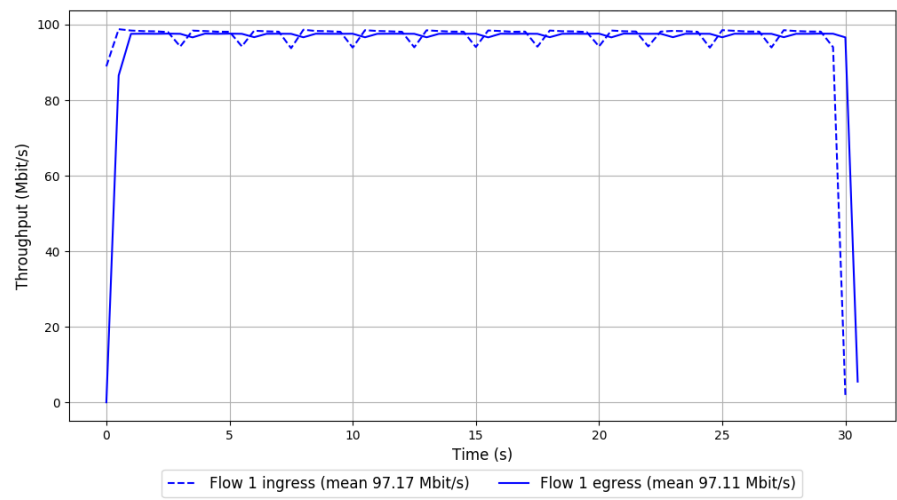
Run 2: Report of LEDBAT — Data Link

Flow 1 ingress (mean 97.17 Mbit/s) — Flow 1 egress (mean 97.11 Mbit/s)

· Flow 1 (95th percentile 32.20 ms)

```
Run 3: Statistics of LEDBAT

Start at: 2018-10-09 18:45:58
End at: 2018-10-09 18:46:28
Local clock offset: -2.293 ms
Remote clock offset: 0.591 ms


# Below is generated by plot.py at 2018-10-09 19:41:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 97.11 Mbit/s
95th percentile per-packet one-way delay: 32.149 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 97.11 Mbit/s
95th percentile per-packet one-way delay: 32.149 ms
Loss rate: 0.01%
```
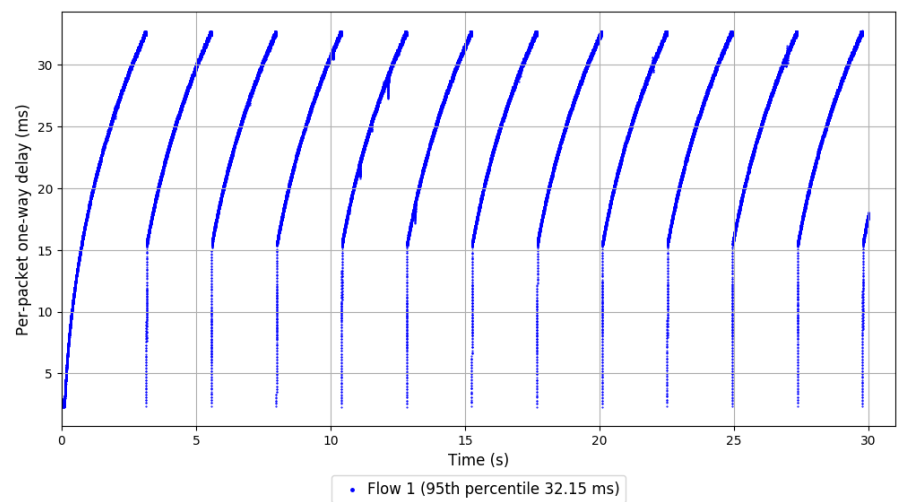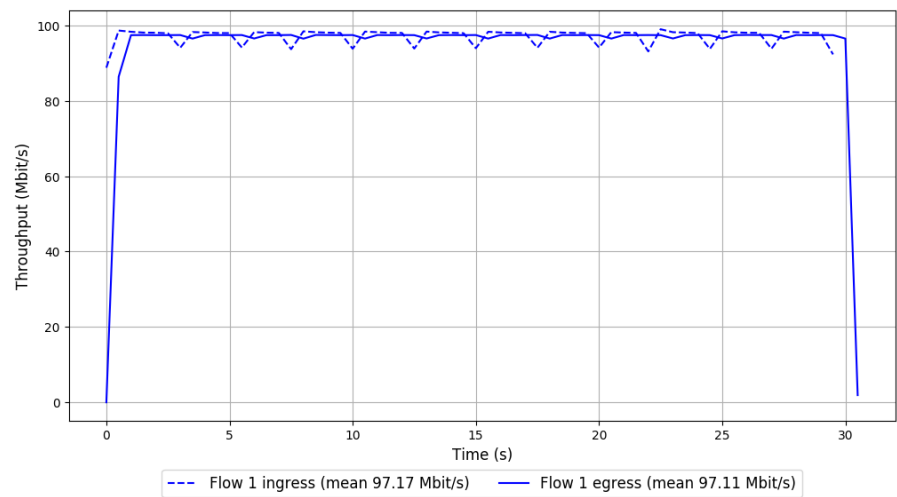
Run 3: Report of LEDBAT — Data Link

Flow 1 ingress (mean 97.17 Mbit/s)   Flow 1 egress (mean 97.11 Mbit/s)

Flow 1 (95th percentile 32.15 ms)

70

```
Run 4: Statistics of LEDBAT

Start at: 2018-10-09 19:06:02
End at: 2018-10-09 19:06:32
Local clock offset: -0.734 ms
Remote clock offset: 1.003 ms


# Below is generated by plot.py at 2018-10-09 19:41:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 97.11 Mbit/s
95th percentile per-packet one-way delay: 32.306 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 97.11 Mbit/s
95th percentile per-packet one-way delay: 32.306 ms
Loss rate: 0.01%
```
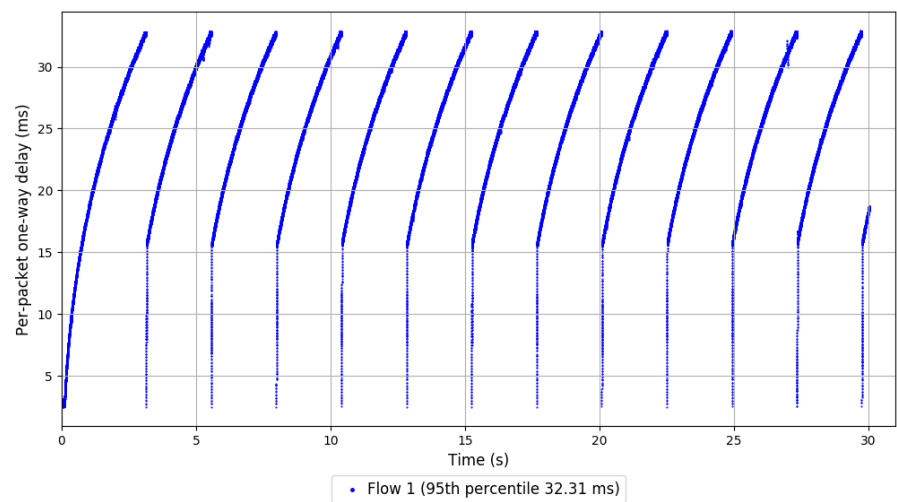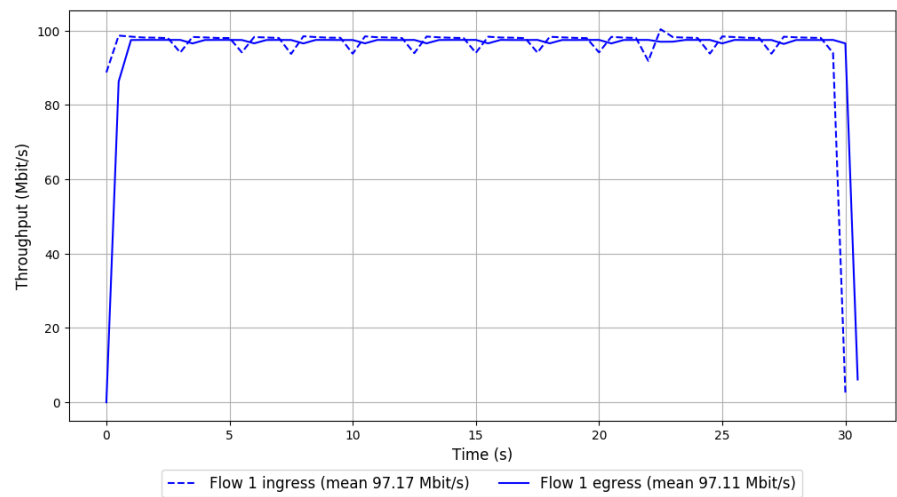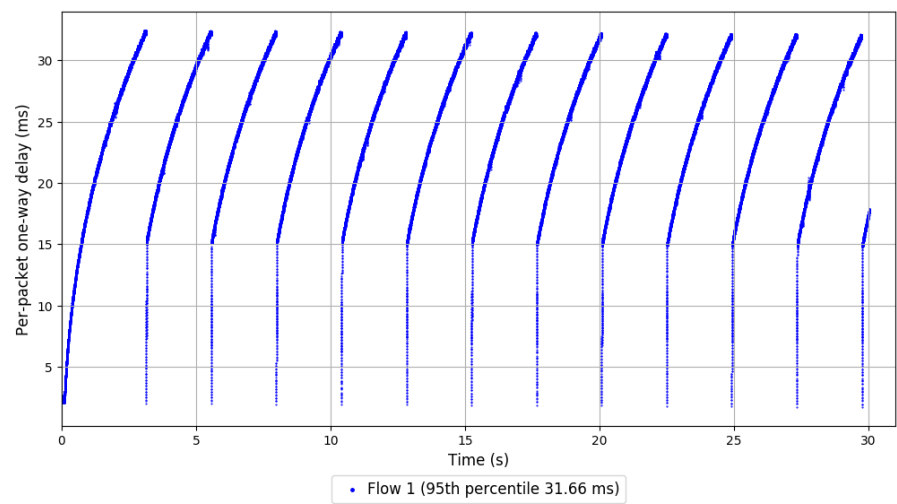
Run 4: Report of LEDBAT — Data Link

Flow 1 ingress (mean 97.17 Mbit/s)   Flow 1 egress (mean 97.11 Mbit/s)

Flow 1 (95th percentile 32.31 ms)

```
Run 5: Statistics of LEDBAT

Start at: 2018-10-09 19:26:06
End at: 2018-10-09 19:26:36
Local clock offset: 0.439 ms
Remote clock offset: 0.858 ms


# Below is generated by plot.py at 2018-10-09 19:42:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 97.10 Mbit/s
95th percentile per-packet one-way delay: 31.662 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 97.10 Mbit/s
95th percentile per-packet one-way delay: 31.662 ms
Loss rate: 0.01%
```
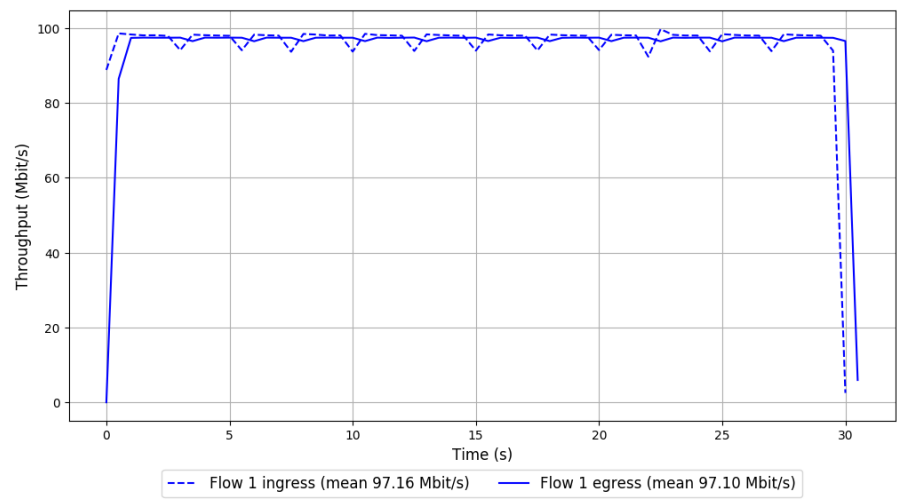
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of Indigo-Muses

Start at: 2018-10-09 18:13:39
End at: 2018-10-09 18:14:09
Local clock offset: -1.777 ms
Remote clock offset: 0.159 ms


# Below is generated by plot.py at 2018-10-09 19:42:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 22.45 Mbit/s
95th percentile per-packet one-way delay: 2.139 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 22.45 Mbit/s
95th percentile per-packet one-way delay: 2.139 ms
Loss rate: 0.00%
```
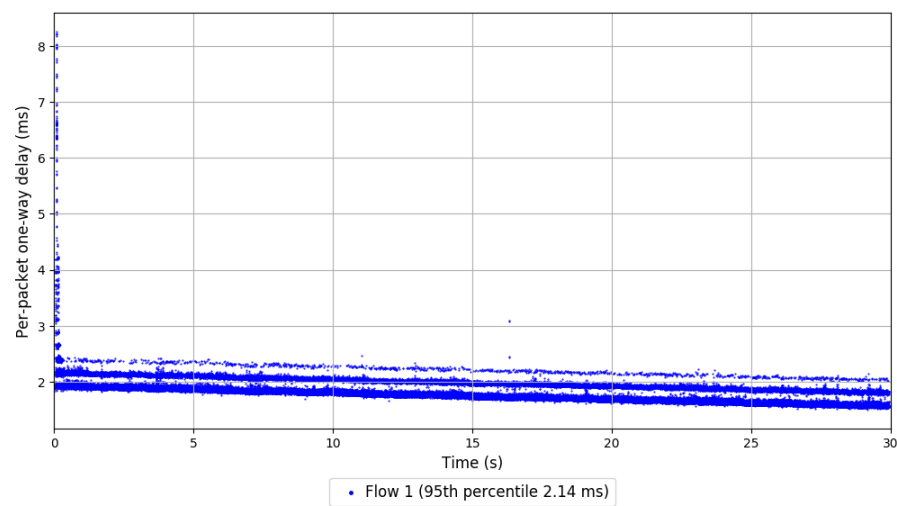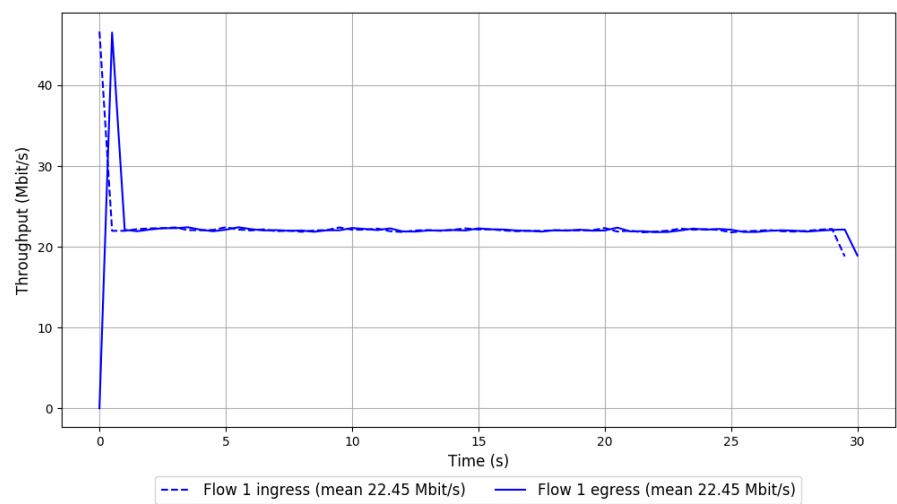
Run 1: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 22.45 Mbit/s)   Flow 1 egress (mean 22.45 Mbit/s)

• Flow 1 (95th percentile 2.14 ms)

```
Run 2: Statistics of Indigo-Muses

Start at: 2018-10-09 18:33:43
End at: 2018-10-09 18:34:13
Local clock offset: -3.691 ms
Remote clock offset: 0.32 ms


# Below is generated by plot.py at 2018-10-09 19:42:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 22.40 Mbit/s
95th percentile per-packet one-way delay: 2.608 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 22.40 Mbit/s
95th percentile per-packet one-way delay: 2.608 ms
Loss rate: 0.00%
```
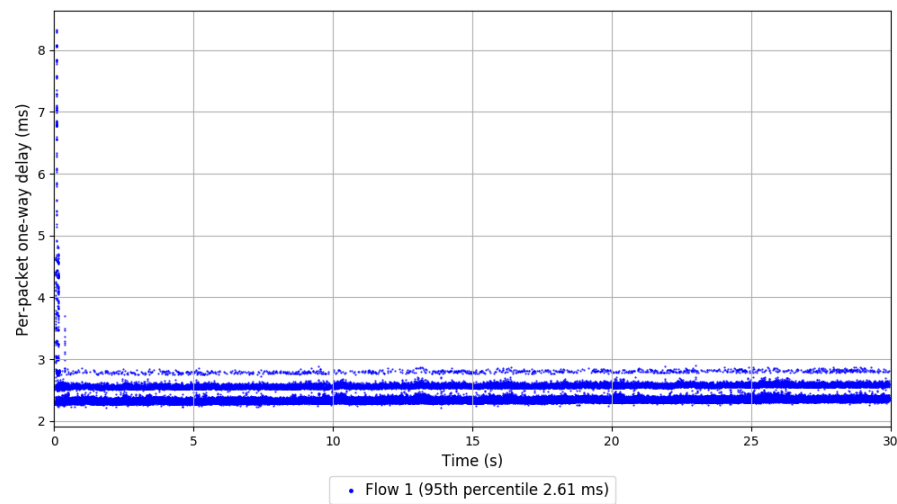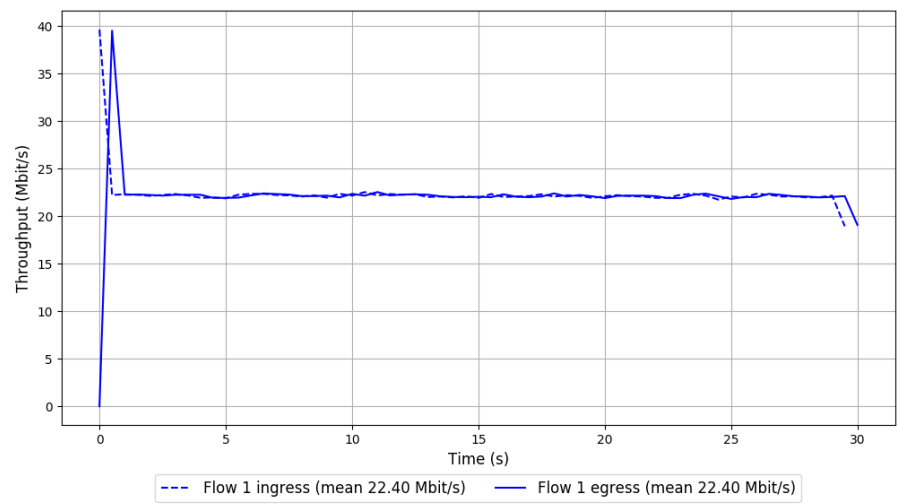
Run 2: Report of Indigo-Muses — Data Link

```
Run 3: Statistics of Indigo-Muses

Start at: 2018-10-09 18:53:47
End at: 2018-10-09 18:54:17
Local clock offset: -1.205 ms
Remote clock offset: 0.965 ms


# Below is generated by plot.py at 2018-10-09 19:42:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 22.33 Mbit/s
95th percentile per-packet one-way delay: 2.808 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 22.33 Mbit/s
95th percentile per-packet one-way delay: 2.808 ms
Loss rate: 0.00%
```
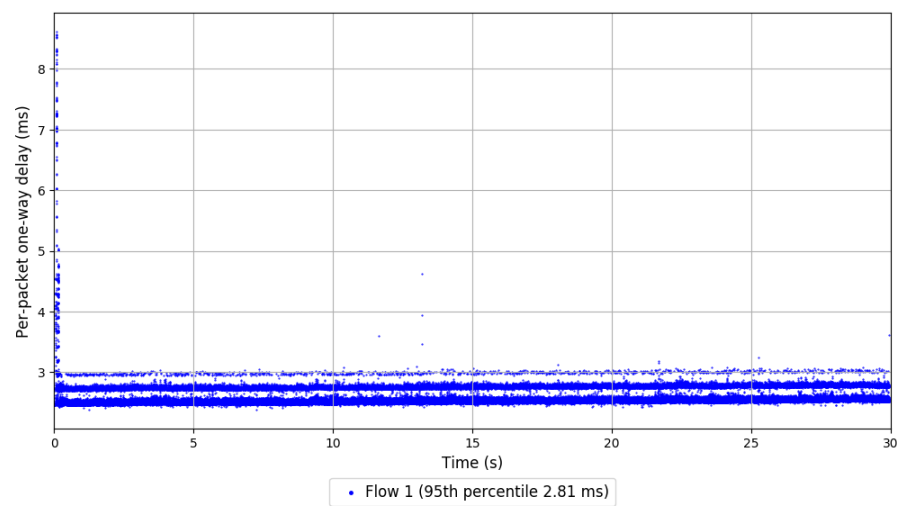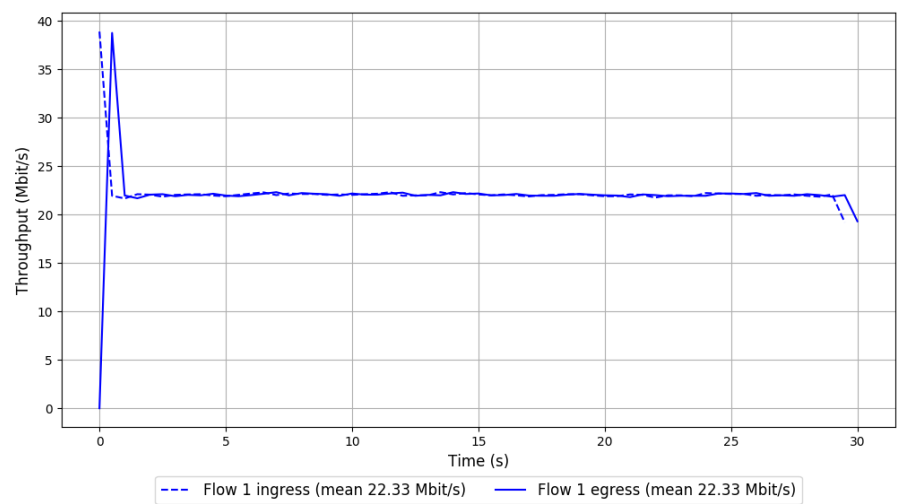
Run 3: Report of Indigo-Muses — Data Link

```
Run 4: Statistics of Indigo-Muses

Start at: 2018-10-09 19:13:50
End at: 2018-10-09 19:14:20
Local clock offset: 0.121 ms
Remote clock offset: 0.934 ms


# Below is generated by plot.py at 2018-10-09 19:42:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 22.38 Mbit/s
95th percentile per-packet one-way delay: 2.721 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 22.38 Mbit/s
95th percentile per-packet one-way delay: 2.721 ms
Loss rate: 0.00%
```
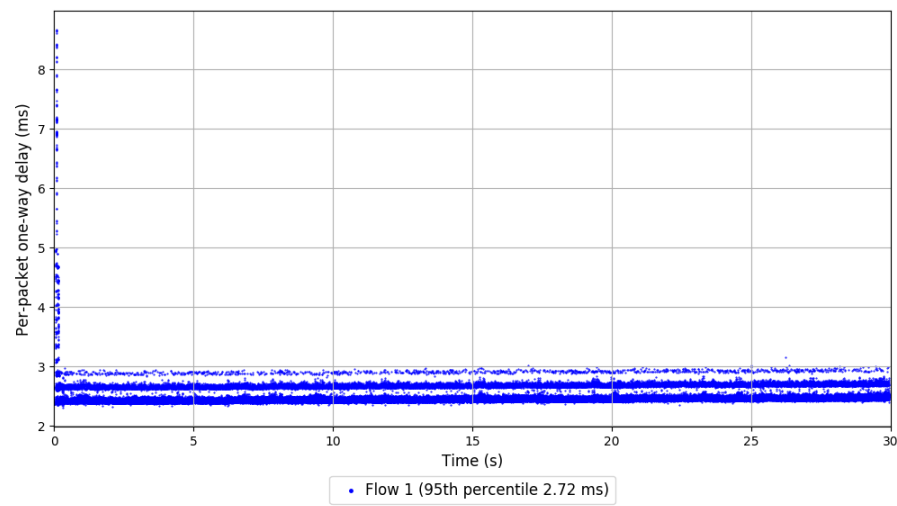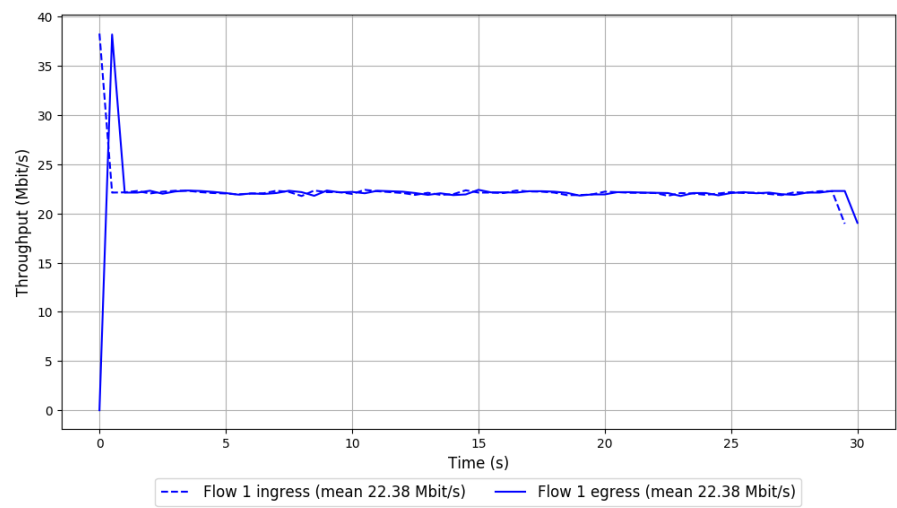
Run 4: Report of Indigo-Muses — Data Link

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-10-09 19:33:55
End at: 2018-10-09 19:34:25
Local clock offset: -3.504 ms
Remote clock offset: 0.823 ms


# Below is generated by plot.py at 2018-10-09 19:42:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 22.32 Mbit/s
95th percentile per-packet one-way delay: 2.475 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 22.32 Mbit/s
95th percentile per-packet one-way delay: 2.475 ms
Loss rate: 0.00%
```
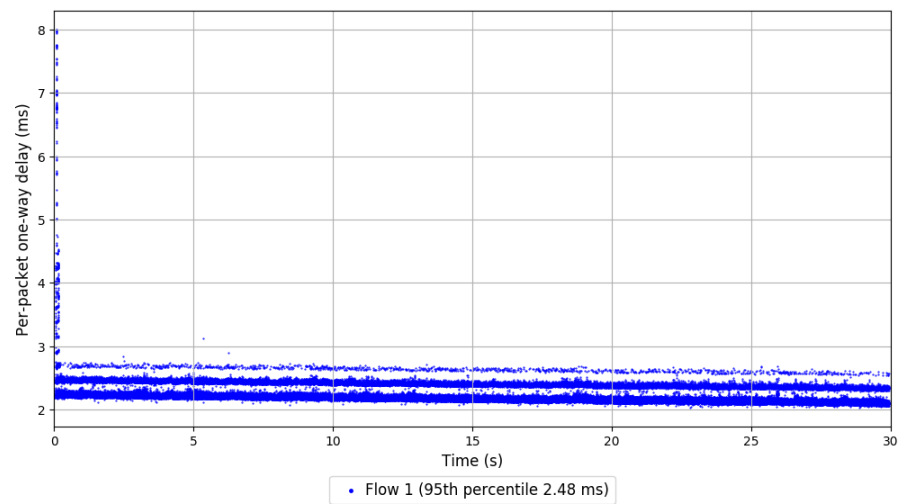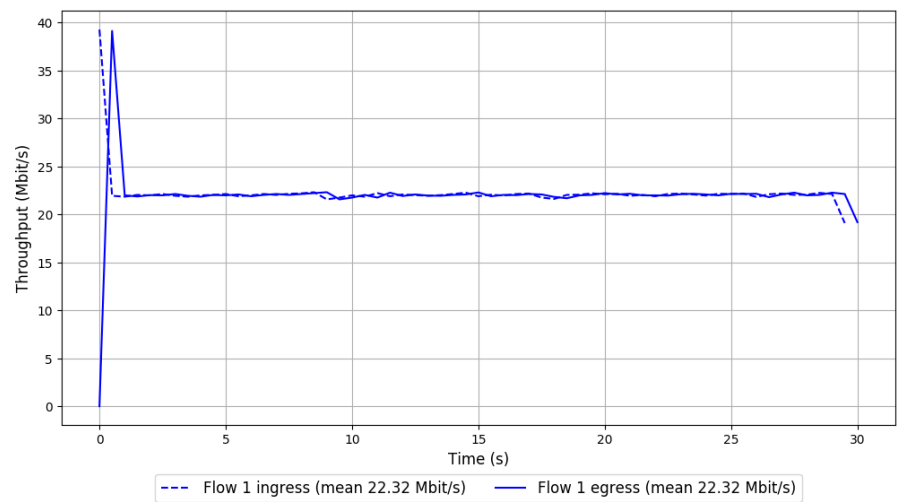
Run 5: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 22.32 Mbit/s)   Flow 1 egress (mean 22.32 Mbit/s)
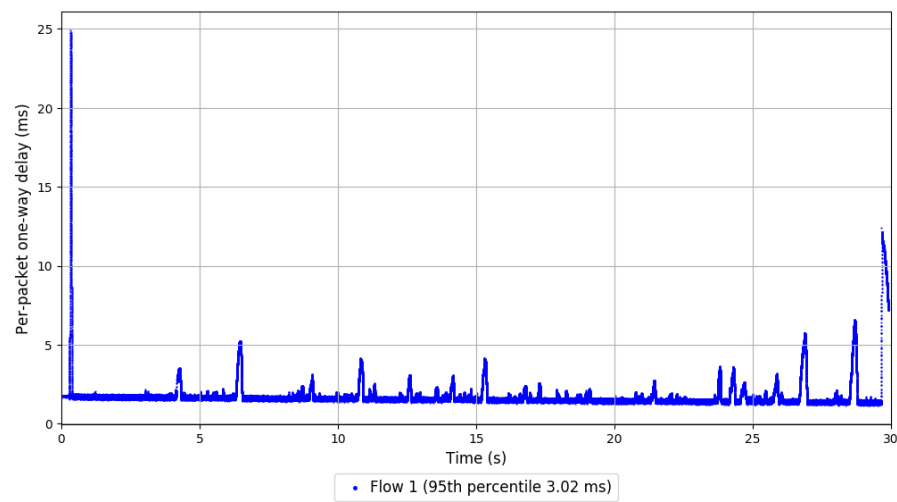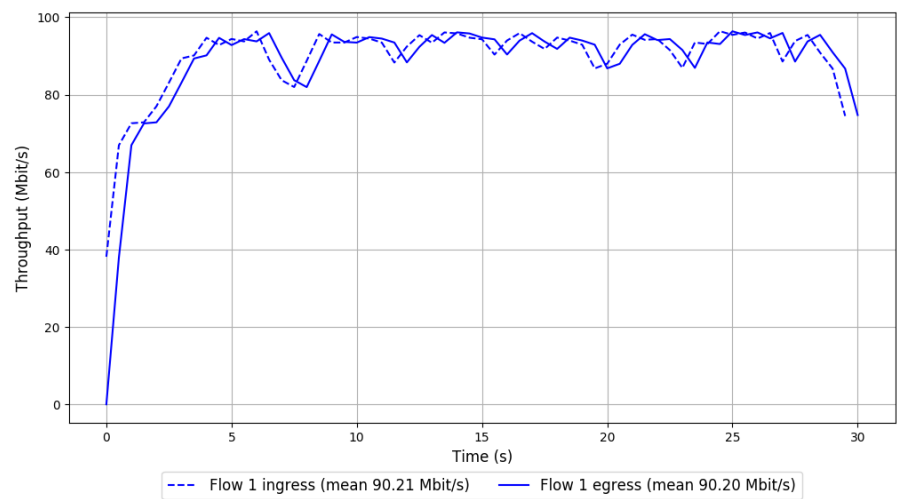

Flow 1 (95th percentile 2.48 ms)

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-10-09 18:00:09
End at: 2018-10-09 18:00:39
Local clock offset: -3.449 ms
Remote clock offset: 0.224 ms


# Below is generated by plot.py at 2018-10-09 19:42:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 90.20 Mbit/s
95th percentile per-packet one-way delay: 3.024 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 90.20 Mbit/s
95th percentile per-packet one-way delay: 3.024 ms
Loss rate: 0.00%
```

Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-10-09 18:20:13
End at: 2018-10-09 18:20:43
Local clock offset: -4.16 ms
Remote clock offset: 0.348 ms


# Below is generated by plot.py at 2018-10-09 19:42:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.01 Mbit/s
95th percentile per-packet one-way delay: 3.806 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 92.01 Mbit/s
95th percentile per-packet one-way delay: 3.806 ms
Loss rate: 0.00%
```
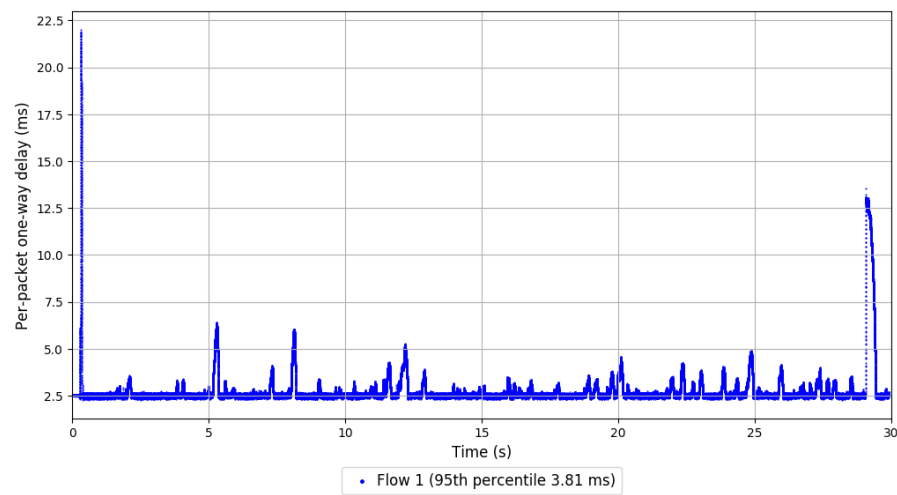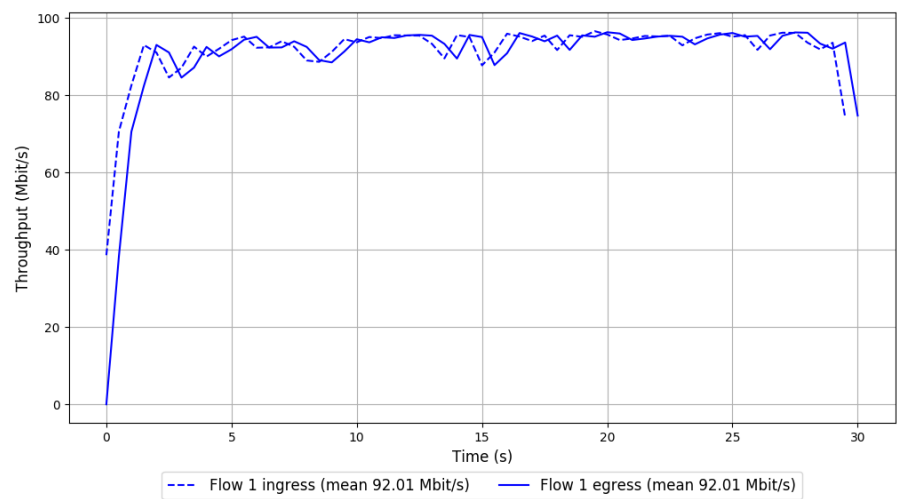
Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-10-09 18:40:17
End at: 2018-10-09 18:40:47
Local clock offset: -3.062 ms
Remote clock offset: 0.378 ms


# Below is generated by plot.py at 2018-10-09 19:42:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 83.16 Mbit/s
95th percentile per-packet one-way delay: 2.986 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 83.16 Mbit/s
95th percentile per-packet one-way delay: 2.986 ms
Loss rate: 0.00%
```
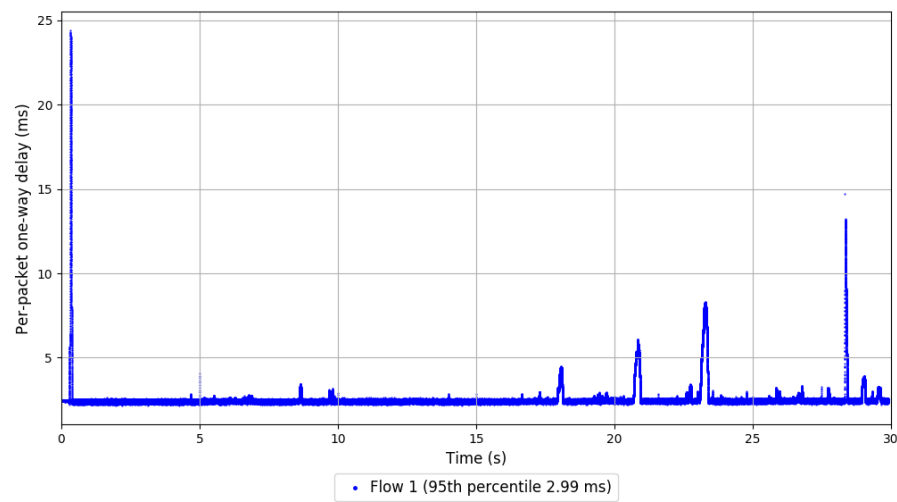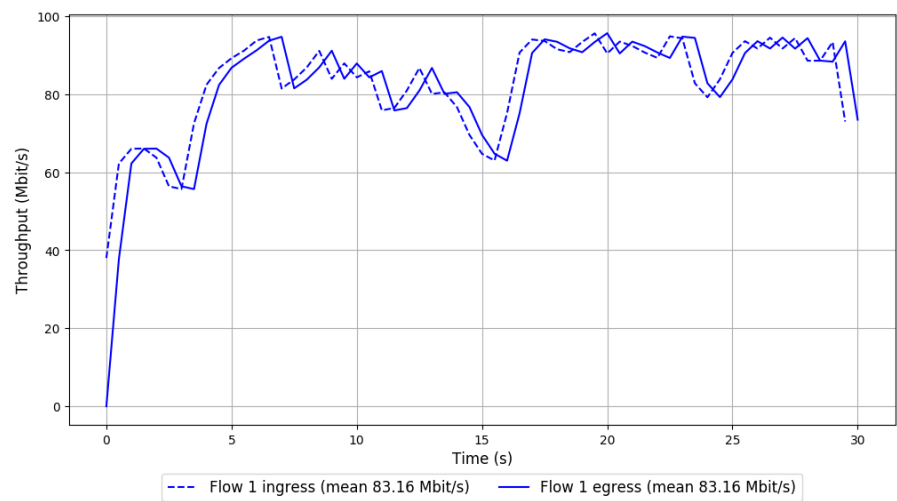
Run 3: Report of PCC-Allegro — Data Link

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-10-09 19:00:21
End at: 2018-10-09 19:00:51
Local clock offset: -1.068 ms
Remote clock offset: 0.995 ms


# Below is generated by plot.py at 2018-10-09 19:43:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 90.28 Mbit/s
95th percentile per-packet one-way delay: 3.707 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 90.28 Mbit/s
95th percentile per-packet one-way delay: 3.707 ms
Loss rate: 0.00%
```
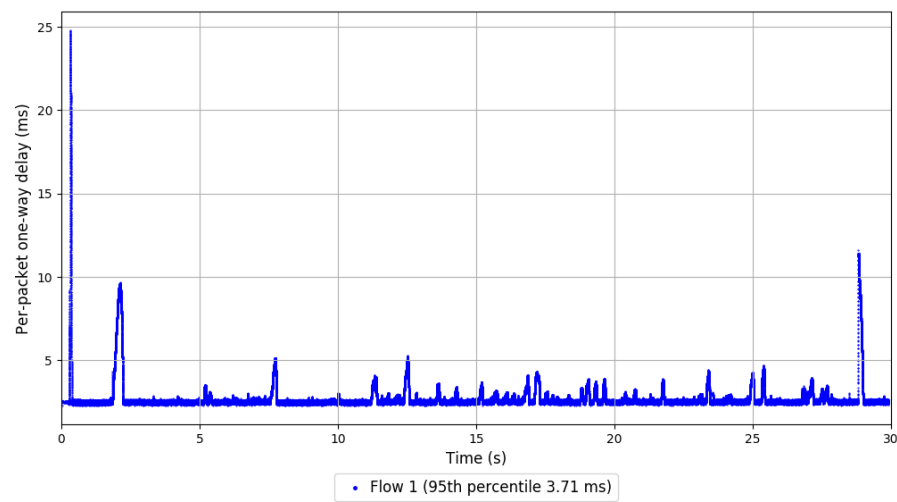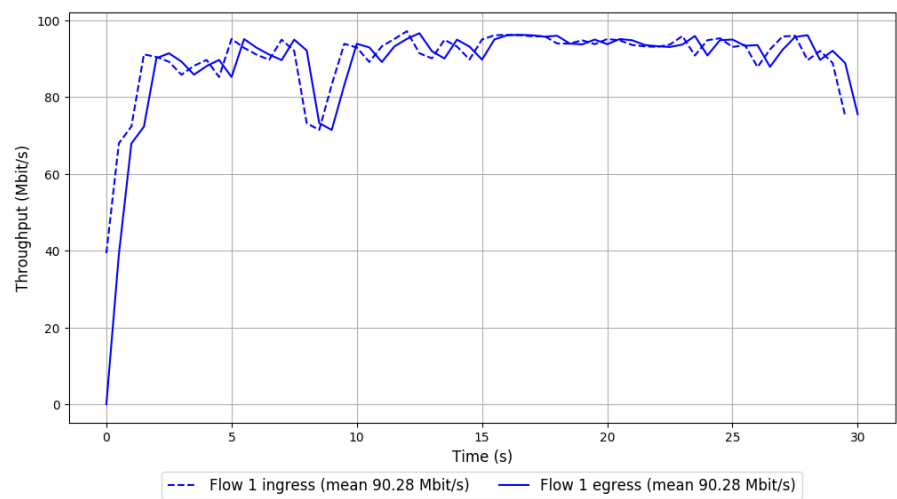
Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 90.28 Mbit/s)   Flow 1 egress (mean 90.28 Mbit/s)

Flow 1 (95th percentile 3.71 ms)

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-10-09 19:20:25
End at: 2018-10-09 19:20:55
Local clock offset: 0.845 ms
Remote clock offset: 0.802 ms


# Below is generated by plot.py at 2018-10-09 19:43:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 90.31 Mbit/s
95th percentile per-packet one-way delay: 3.665 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 90.31 Mbit/s
95th percentile per-packet one-way delay: 3.665 ms
Loss rate: 0.00%
```
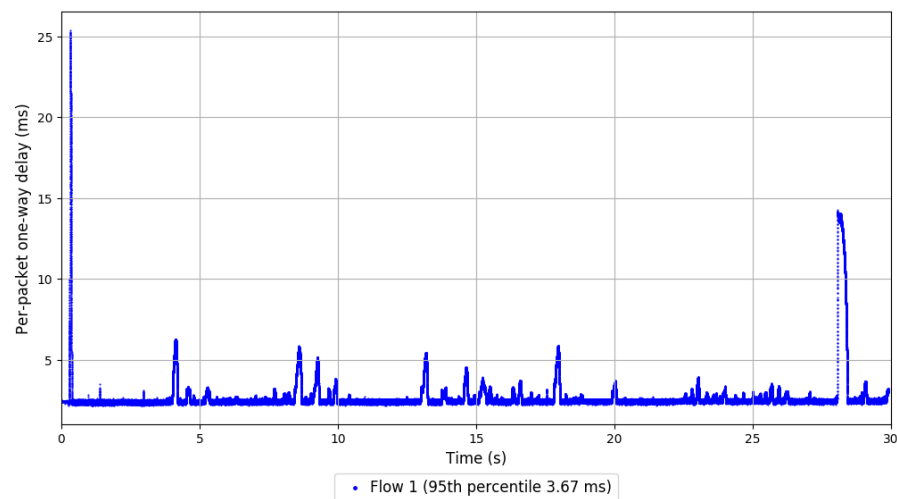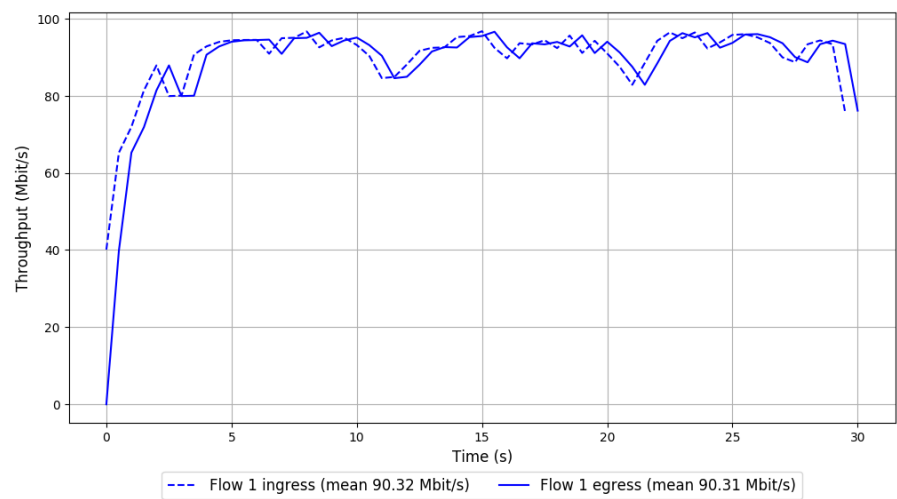
Run 5: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 90.32 Mbit/s)   Flow 1 egress (mean 90.31 Mbit/s)

Flow 1 (95th percentile 3.67 ms)
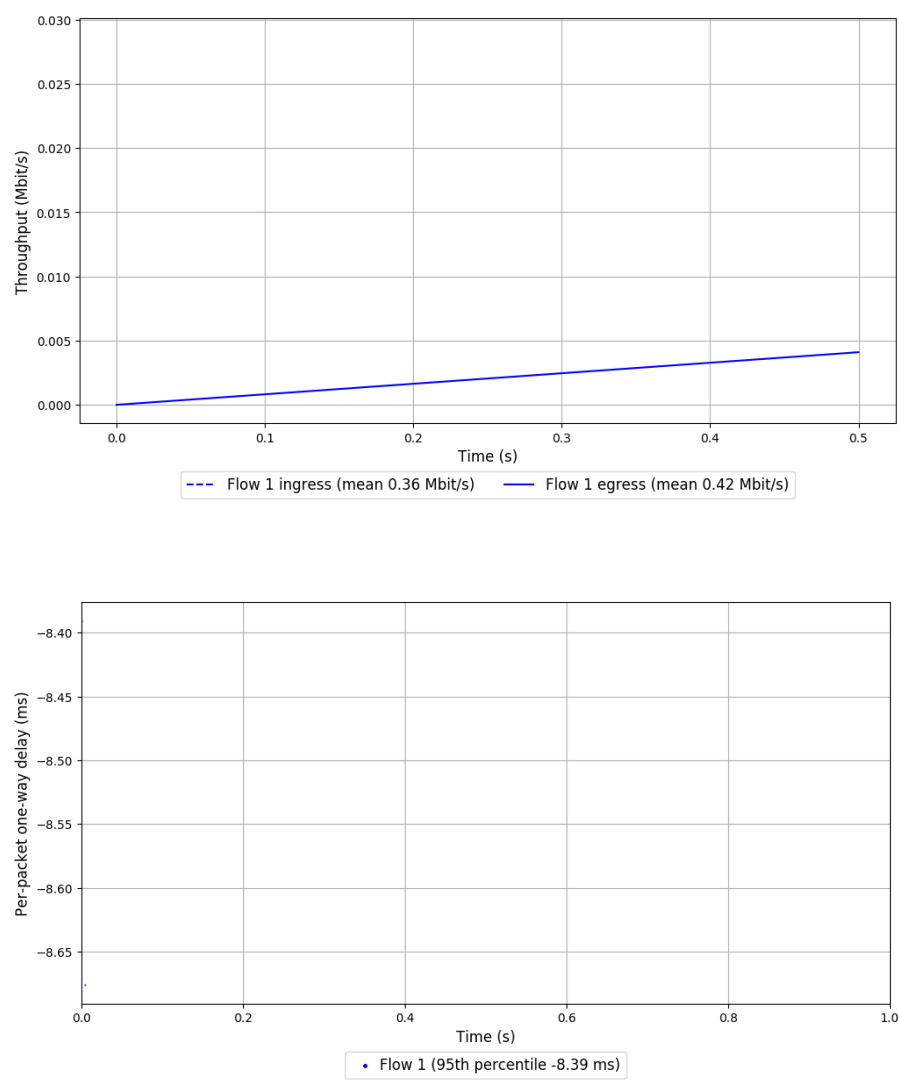
```
Run 1: Statistics of PCC-Expr

Start at: 2018-10-09 17:55:48
End at: 2018-10-09 17:56:18
Local clock offset: 11.143 ms
Remote clock offset: 0.237 ms
```

Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2018-10-09 18:15:51
End at: 2018-10-09 18:16:21
Local clock offset: -3.222 ms
Remote clock offset: 0.232 ms


# Below is generated by plot.py at 2018-10-09 19:43:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.67 Mbit/s
95th percentile per-packet one-way delay: 2.265 ms
Loss rate: 44.64%
-- Flow 1:
Average throughput: 12.67 Mbit/s
95th percentile per-packet one-way delay: 2.265 ms
Loss rate: 44.64%
```
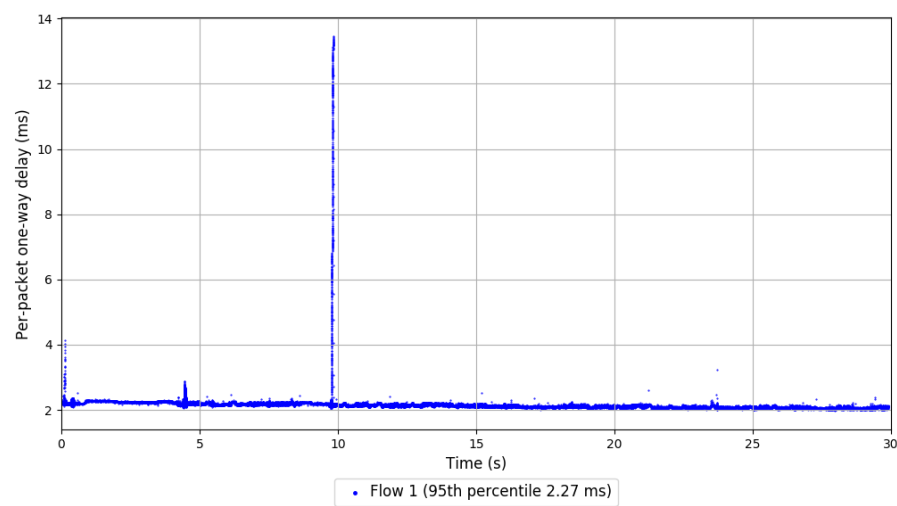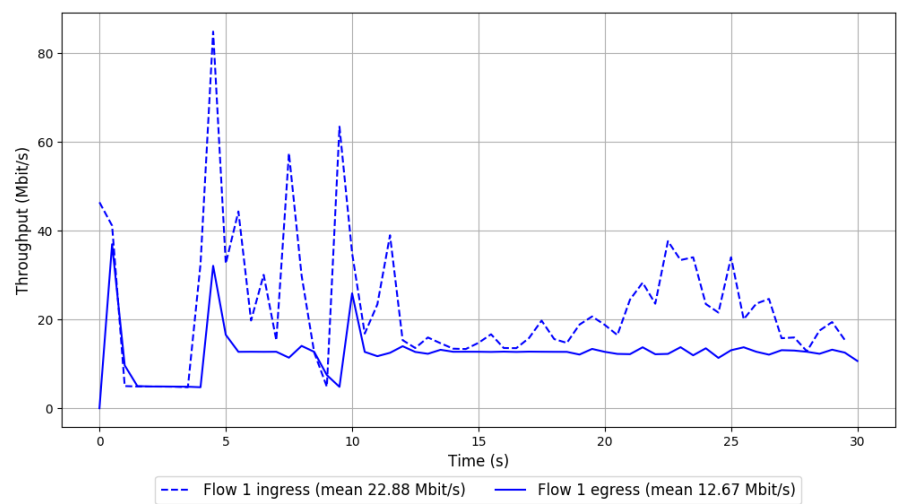
Run 2: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 22.88 Mbit/s) --- Flow 1 egress (mean 12.67 Mbit/s)

Flow 1 (95th percentile 2.27 ms)

```
Run 3: Statistics of PCC-Expr

Start at: 2018-10-09 18:35:56
End at: 2018-10-09 18:36:26
Local clock offset: -3.512 ms
Remote clock offset: 0.432 ms


# Below is generated by plot.py at 2018-10-09 19:43:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.96 Mbit/s
95th percentile per-packet one-way delay: 2.585 ms
Loss rate: 42.17%
-- Flow 1:
Average throughput: 12.96 Mbit/s
95th percentile per-packet one-way delay: 2.585 ms
Loss rate: 42.17%
```
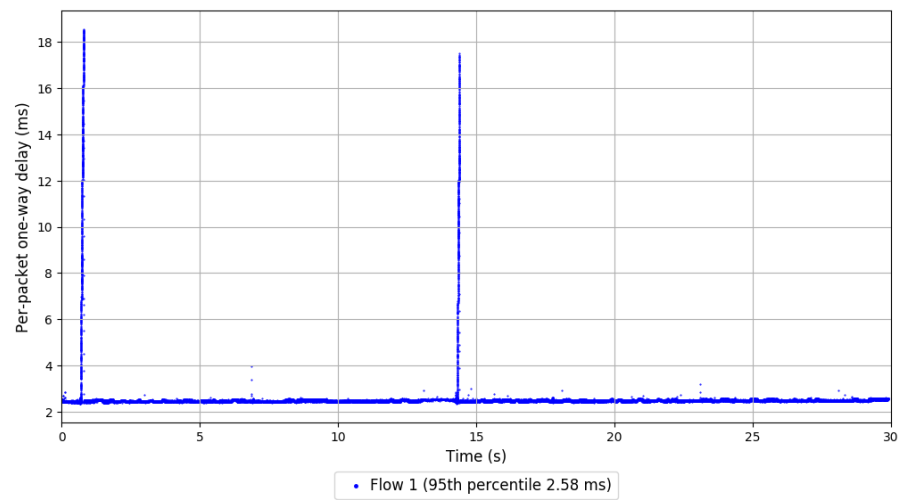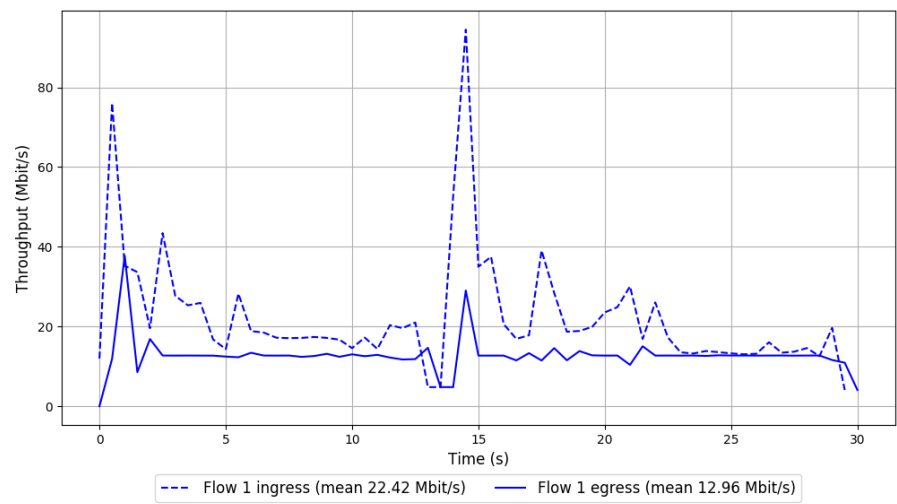
Run 3: Report of PCC-Expr — Data Link

```
Run 4: Statistics of PCC-Expr

Start at: 2018-10-09 18:55:59
End at: 2018-10-09 18:56:29
Local clock offset: -1.008 ms
Remote clock offset: 0.979 ms

# Below is generated by plot.py at 2018-10-09 19:43:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 10.91 Mbit/s
95th percentile per-packet one-way delay: 3.237 ms
Loss rate: 49.11%
-- Flow 1:
Average throughput: 10.91 Mbit/s
95th percentile per-packet one-way delay: 3.237 ms
Loss rate: 49.11%
```
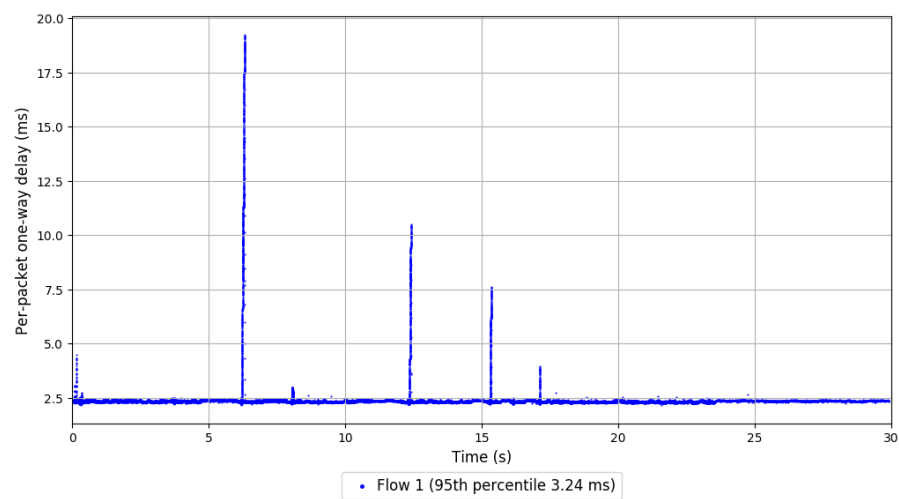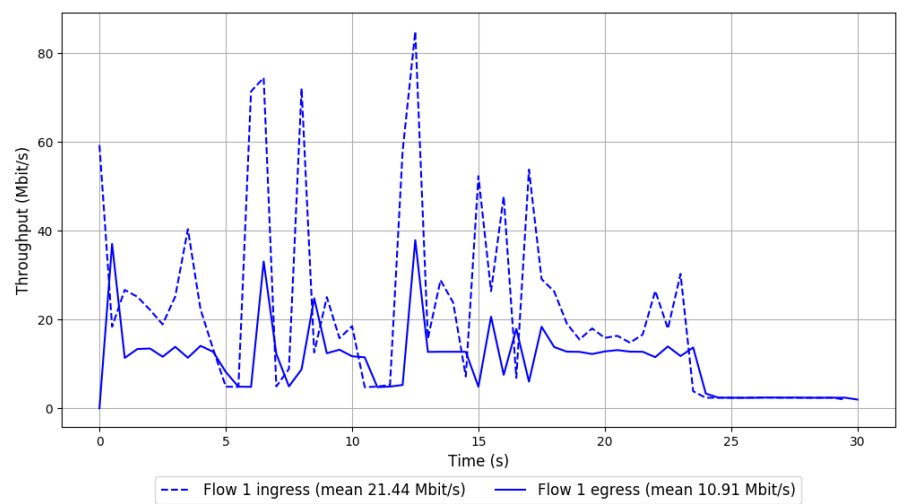
Run 4: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 21.44 Mbit/s) --- Flow 1 egress (mean 10.91 Mbit/s)

Flow 1 (95th percentile 3.24 ms)

```
Run 5: Statistics of PCC-Expr

Start at: 2018-10-09 19:16:03
End at: 2018-10-09 19:16:33
Local clock offset: 0.288 ms
Remote clock offset: 0.868 ms


# Below is generated by plot.py at 2018-10-09 19:43:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.00 Mbit/s
95th percentile per-packet one-way delay: 2.586 ms
Loss rate: 33.37%
-- Flow 1:
Average throughput: 13.00 Mbit/s
95th percentile per-packet one-way delay: 2.586 ms
Loss rate: 33.37%
```
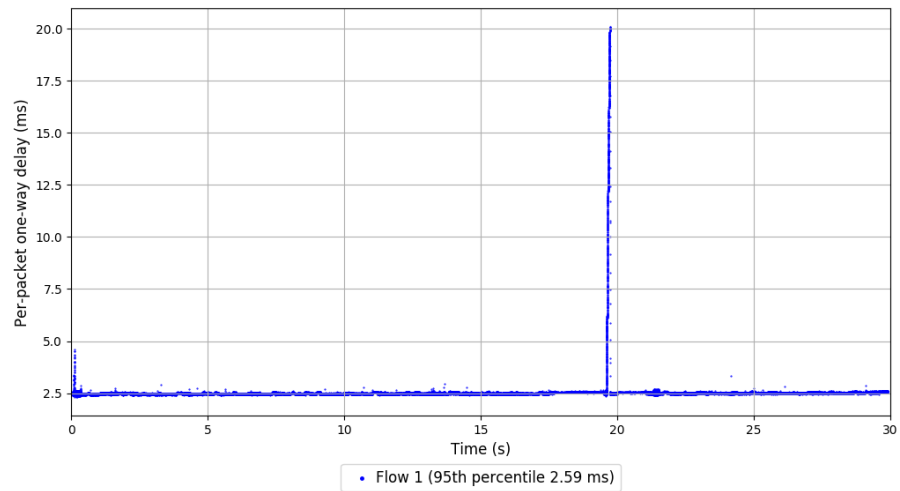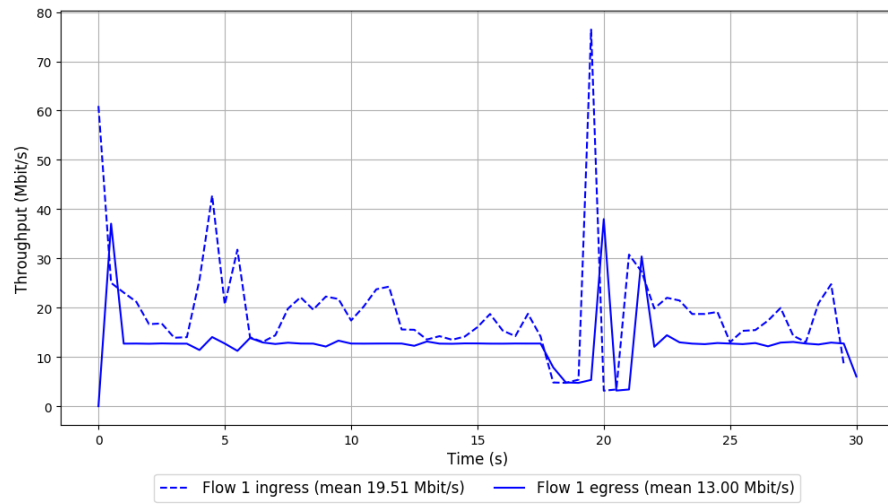
Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-10-09 18:03:35
End at: 2018-10-09 18:04:05
Local clock offset: -4.264 ms
Remote clock offset: 0.24 ms


# Below is generated by plot.py at 2018-10-09 19:43:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 69.08 Mbit/s
95th percentile per-packet one-way delay: 9.658 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 69.08 Mbit/s
95th percentile per-packet one-way delay: 9.658 ms
Loss rate: 0.36%
```
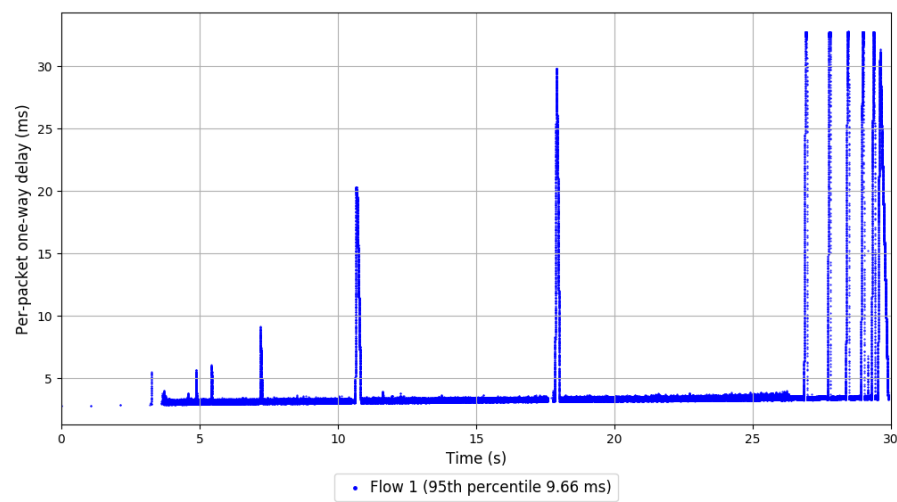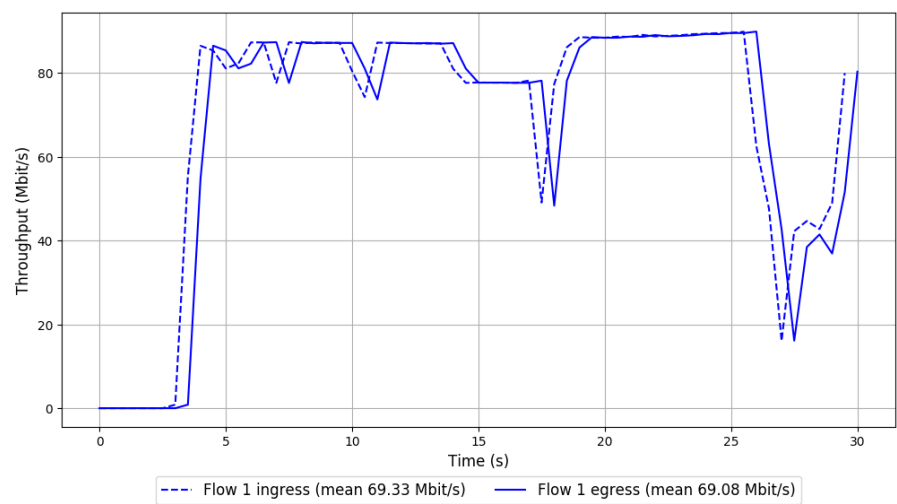
Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-10-09 18:23:38
End at: 2018-10-09 18:24:08
Local clock offset: -4.008 ms
Remote clock offset: 0.354 ms


# Below is generated by plot.py at 2018-10-09 19:43:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 78.97 Mbit/s
95th percentile per-packet one-way delay: 3.295 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 78.97 Mbit/s
95th percentile per-packet one-way delay: 3.295 ms
Loss rate: 0.26%
```
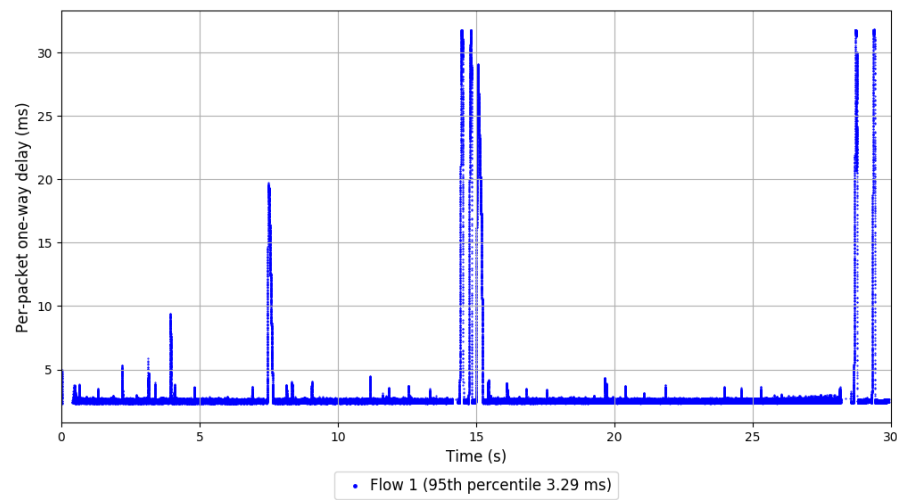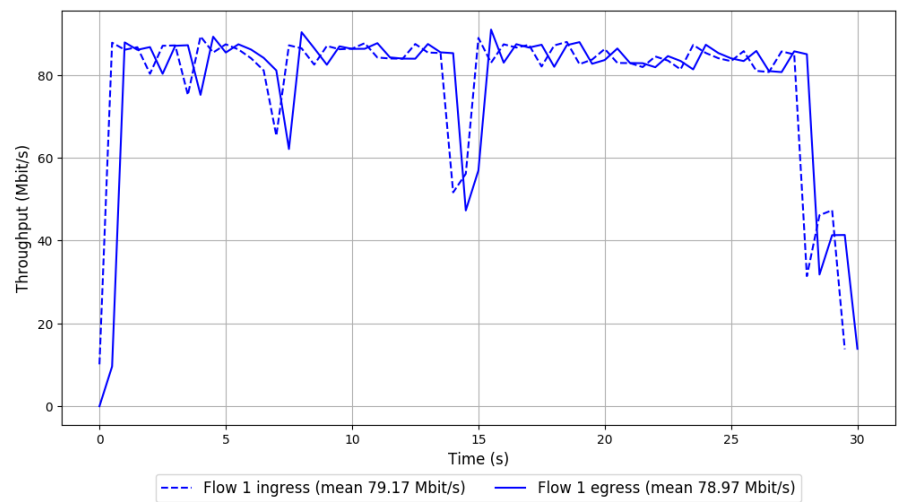
Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-10-09 18:43:42
End at: 2018-10-09 18:44:12
Local clock offset: -2.611 ms
Remote clock offset: 0.568 ms


# Below is generated by plot.py at 2018-10-09 19:43:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 78.90 Mbit/s
95th percentile per-packet one-way delay: 3.065 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 78.90 Mbit/s
95th percentile per-packet one-way delay: 3.065 ms
Loss rate: 0.19%
```
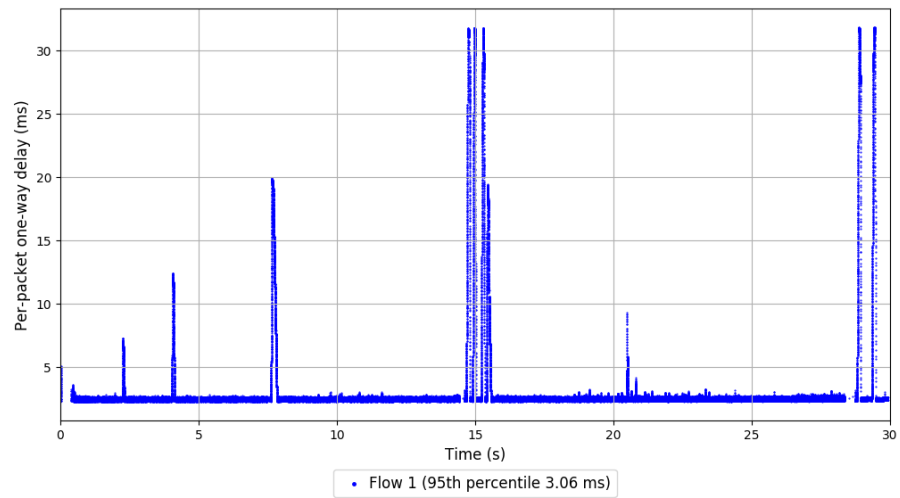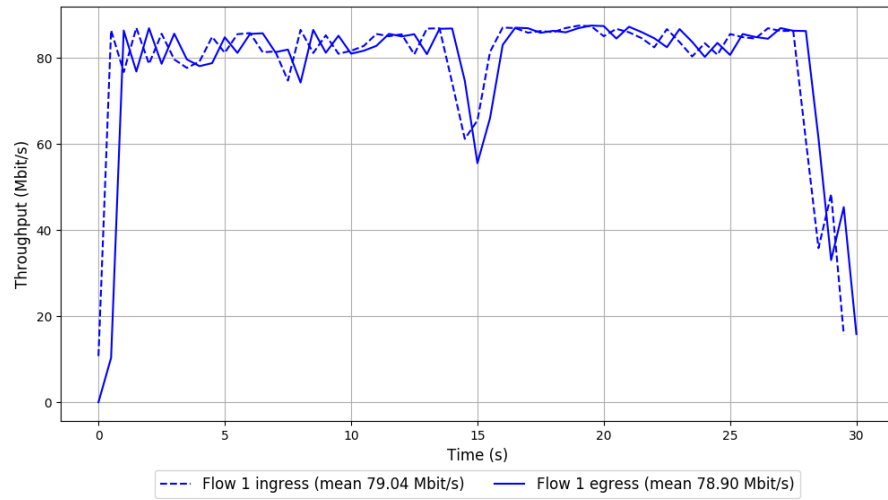
Run 3: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 79.04 Mbit/s) ----   Flow 1 egress (mean 78.90 Mbit/s) ——

• Flow 1 (95th percentile 3.06 ms)

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-10-09 19:03:46
End at: 2018-10-09 19:04:16
Local clock offset: -0.822 ms
Remote clock offset: 0.927 ms


# Below is generated by plot.py at 2018-10-09 19:43:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.44 Mbit/s
95th percentile per-packet one-way delay: 5.519 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 77.44 Mbit/s
95th percentile per-packet one-way delay: 5.519 ms
Loss rate: 0.36%
```
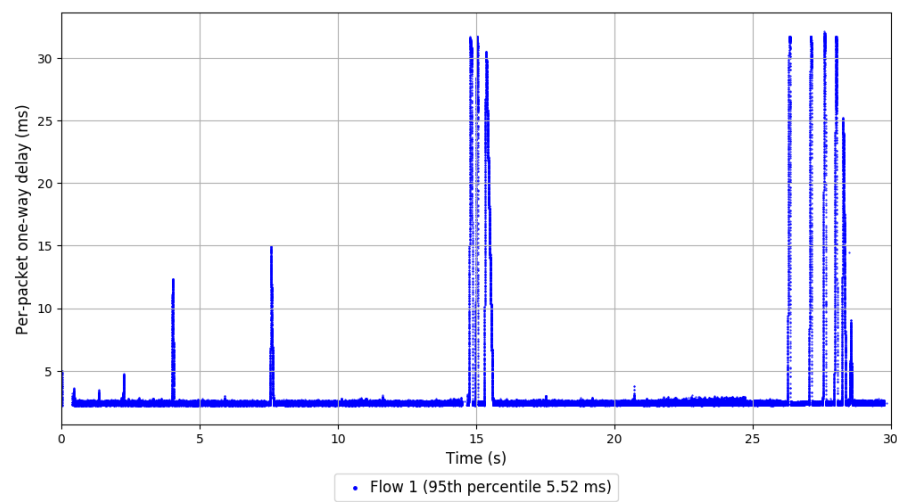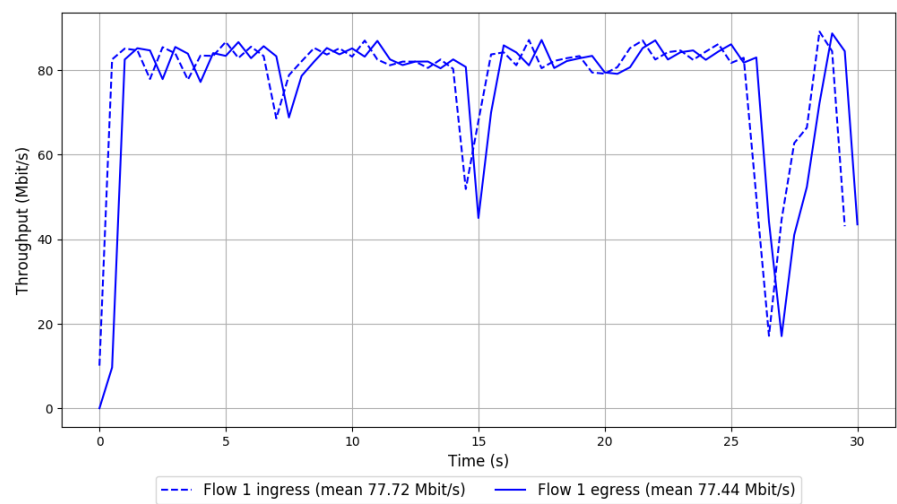
Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 77.72 Mbit/s) ---- Flow 1 egress (mean 77.44 Mbit/s)

Flow 1 (95th percentile 5.52 ms)

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-10-09 19:23:50
End at: 2018-10-09 19:24:20
Local clock offset: 1.272 ms
Remote clock offset: 0.873 ms


# Below is generated by plot.py at 2018-10-09 19:43:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 78.92 Mbit/s
95th percentile per-packet one-way delay: 3.912 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 78.92 Mbit/s
95th percentile per-packet one-way delay: 3.912 ms
Loss rate: 0.19%
```
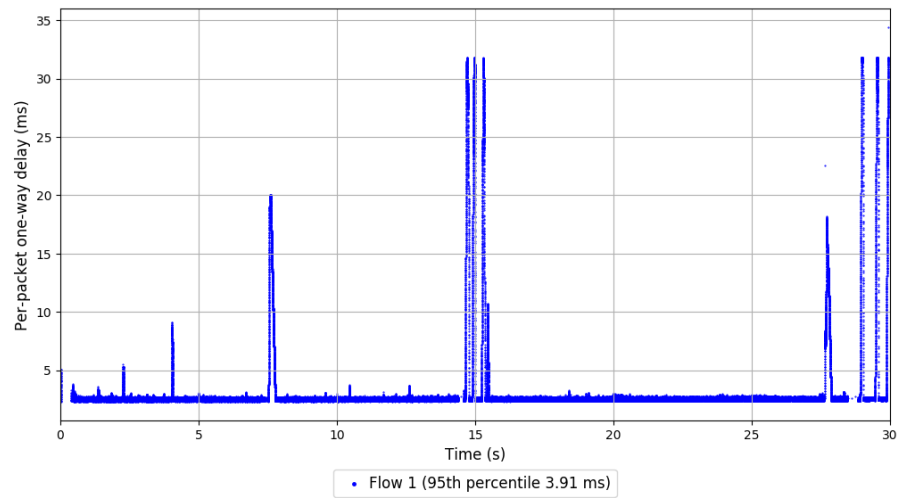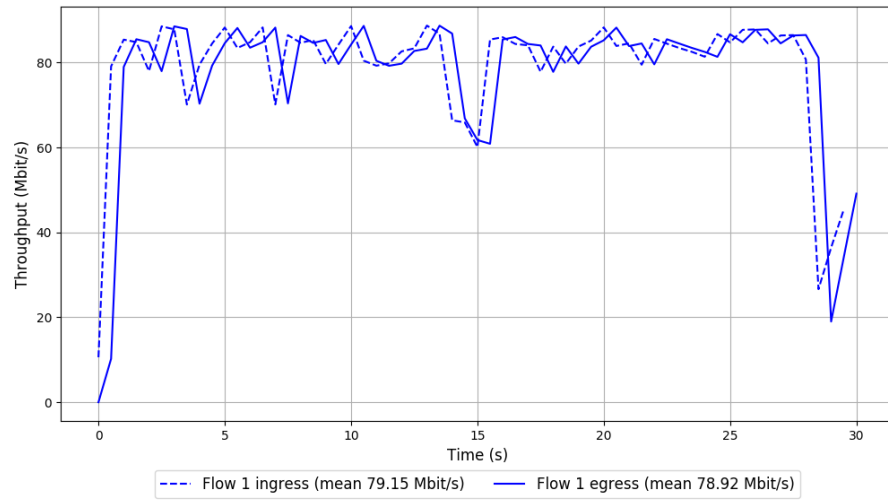
Run 5: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 79.15 Mbit/s)   —— Flow 1 egress (mean 78.92 Mbit/s)
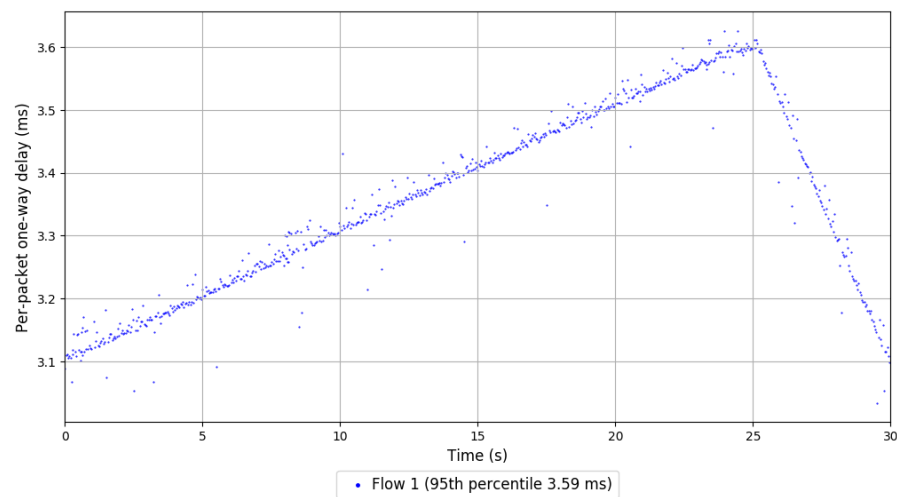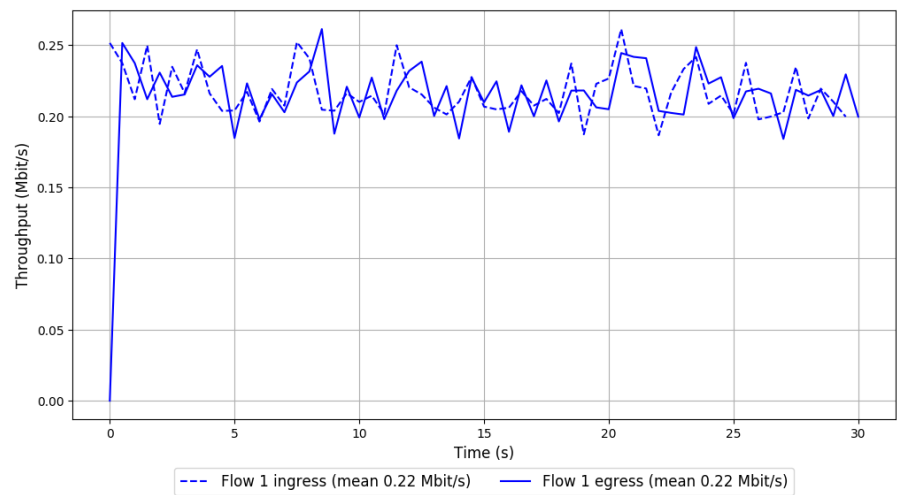

· Flow 1 (95th percentile 3.91 ms)

```
Run 1: Statistics of SCReAM

Start at: 2018-10-09 17:58:00
End at: 2018-10-09 17:58:30
Local clock offset: 0.003 ms
Remote clock offset: 0.239 ms


# Below is generated by plot.py at 2018-10-09 19:43:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 3.590 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 3.590 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 3.59 ms)

```
Run 2: Statistics of SCReAM

Start at: 2018-10-09 18:18:04
End at: 2018-10-09 18:18:34
Local clock offset: -3.829 ms
Remote clock offset: 0.332 ms


# Below is generated by plot.py at 2018-10-09 19:43:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.354 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.354 ms
Loss rate: 0.00%
```
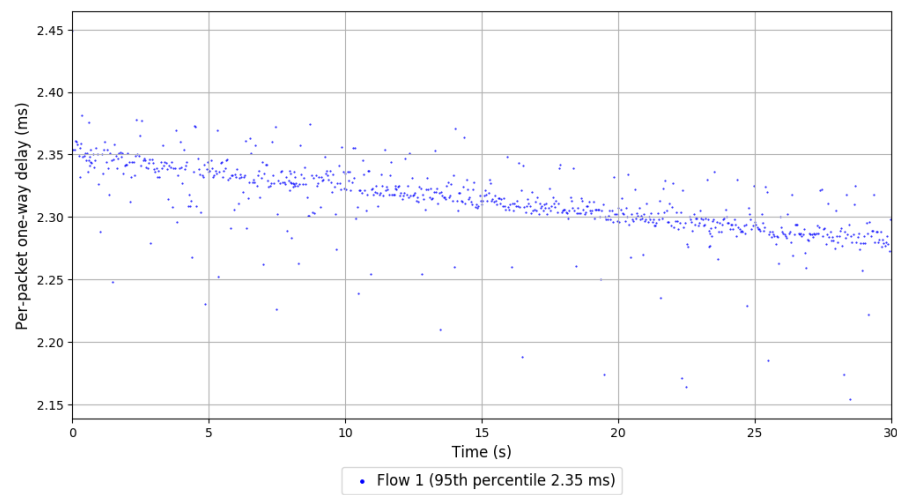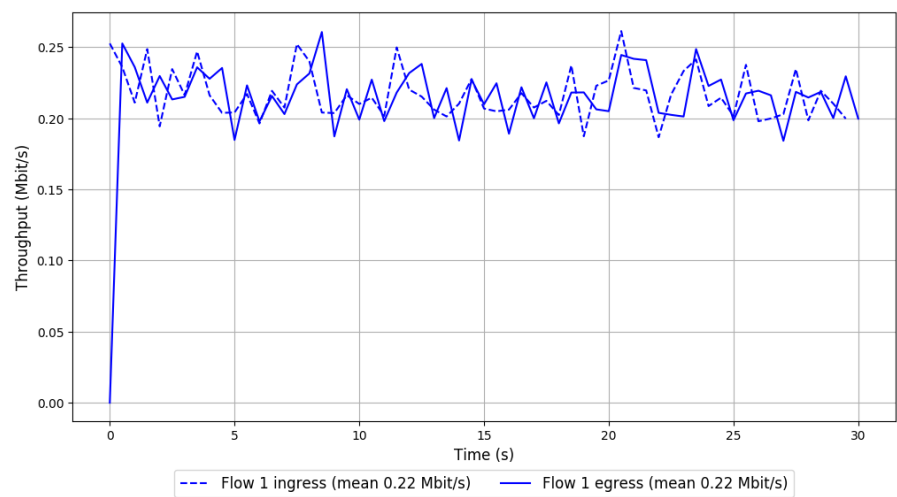
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-10-09 18:38:09
End at: 2018-10-09 18:38:39
Local clock offset: -3.316 ms
Remote clock offset: 0.323 ms


# Below is generated by plot.py at 2018-10-09 19:43:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.458 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.458 ms
Loss rate: 0.00%
```
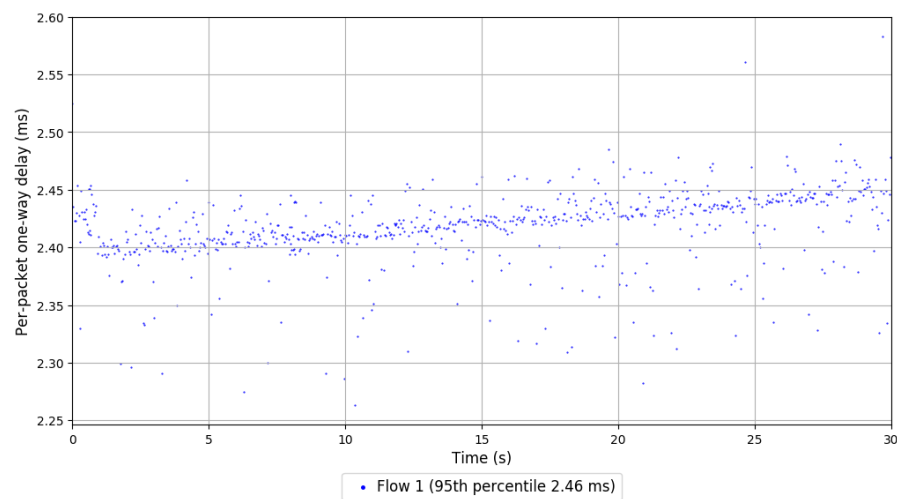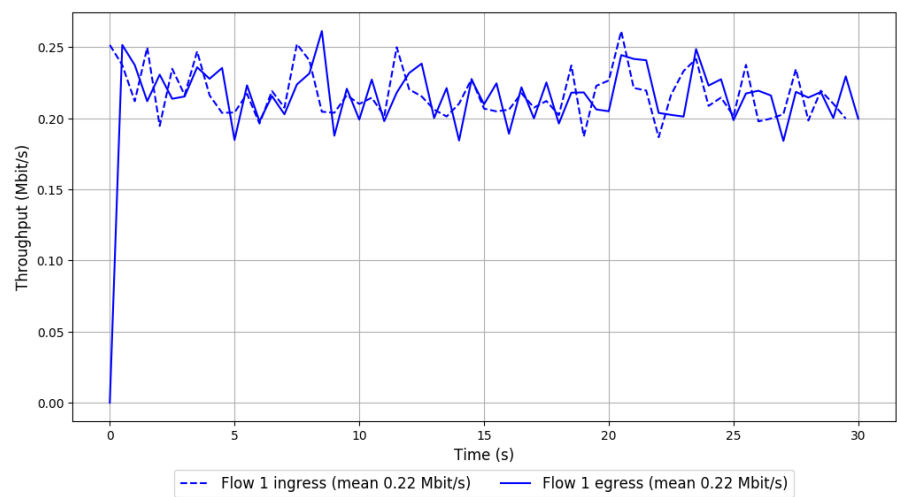
Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2018-10-09 18:58:12
End at: 2018-10-09 18:58:42
Local clock offset: -1.031 ms
Remote clock offset: 1.056 ms


# Below is generated by plot.py at 2018-10-09 19:43:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.466 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.466 ms
Loss rate: 0.00%
```
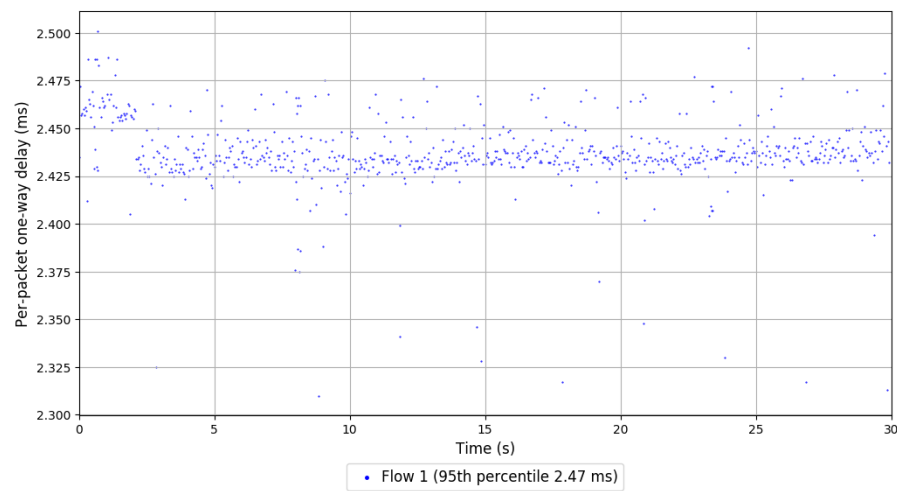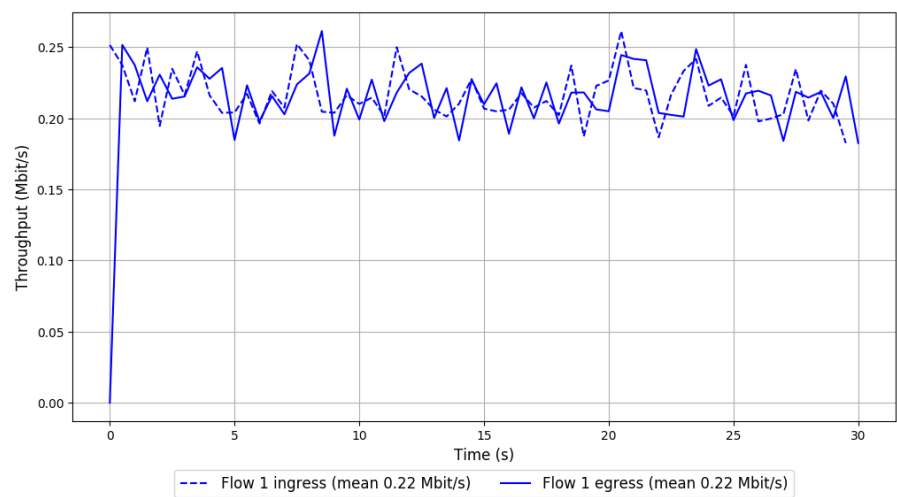
Run 4: Report of SCReAM — Data Link

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

Flow 1 (95th percentile 2.47 ms)

```
Run 5: Statistics of SCReAM

Start at: 2018-10-09 19:18:16
End at: 2018-10-09 19:18:46
Local clock offset: 0.621 ms
Remote clock offset: 0.899 ms


# Below is generated by plot.py at 2018-10-09 19:43:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.517 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.517 ms
Loss rate: 0.00%
```
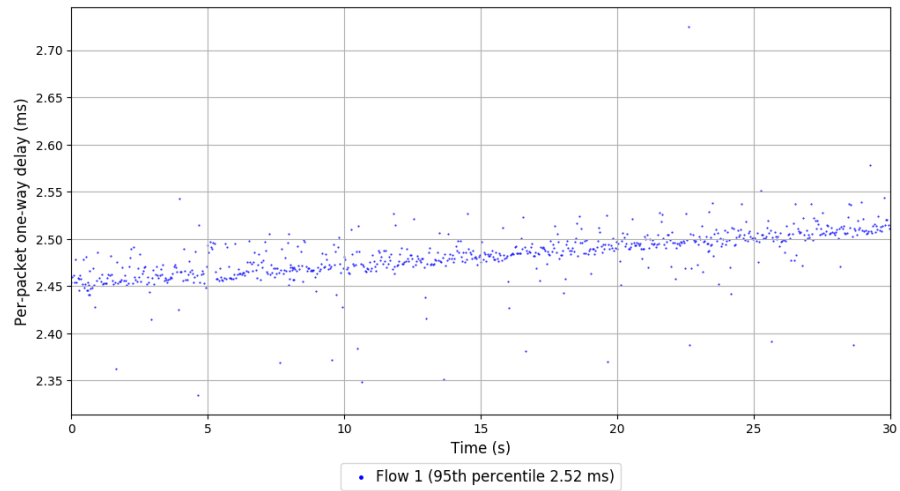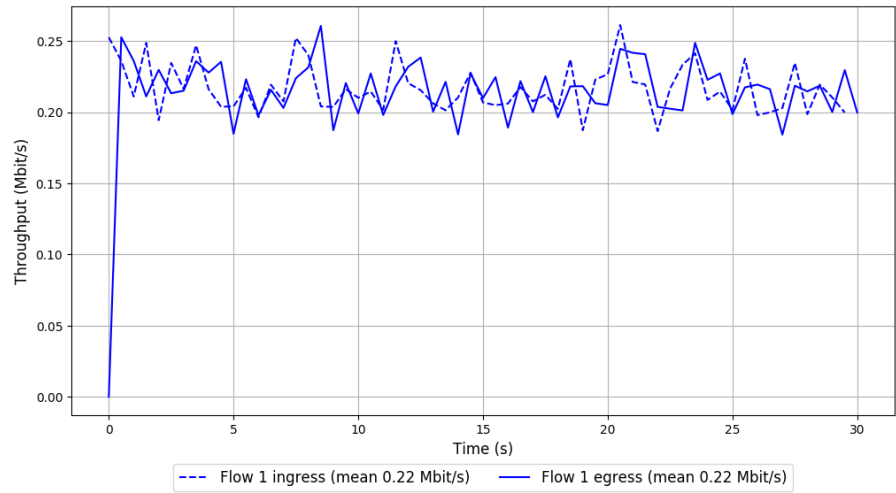
Run 5: Report of SCReAM — Data Link

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```
Run 1: Statistics of Sprout

Start at: 2018-10-09 18:06:59
End at: 2018-10-09 18:07:29
Local clock offset: -1.562 ms
Remote clock offset: 0.189 ms


# Below is generated by plot.py at 2018-10-09 19:43:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 50.27 Mbit/s
95th percentile per-packet one-way delay: 12.081 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.27 Mbit/s
95th percentile per-packet one-way delay: 12.081 ms
Loss rate: 0.00%
```
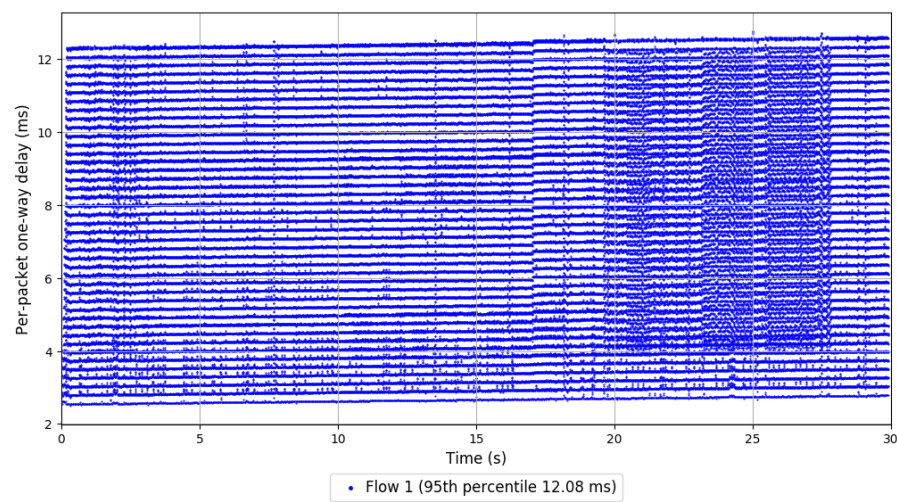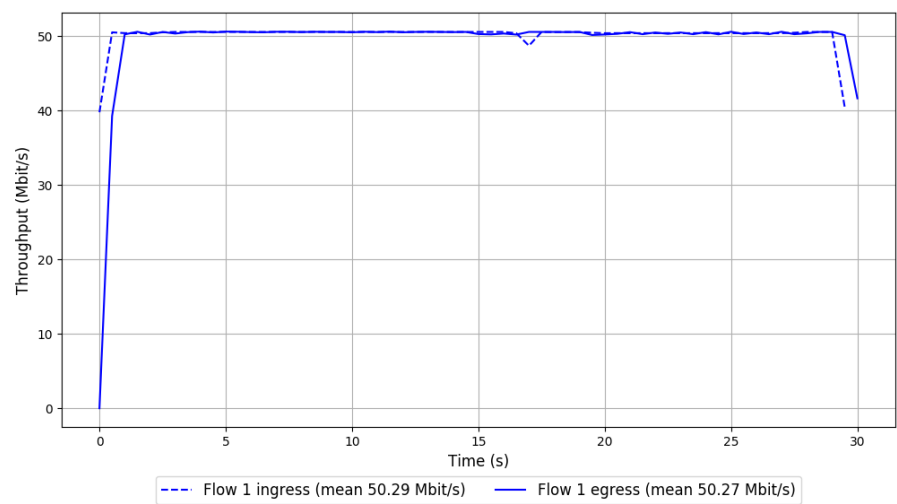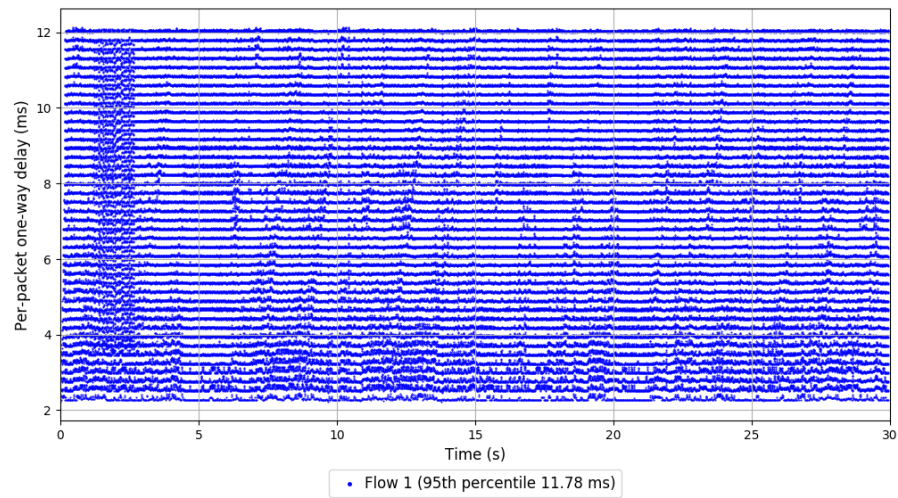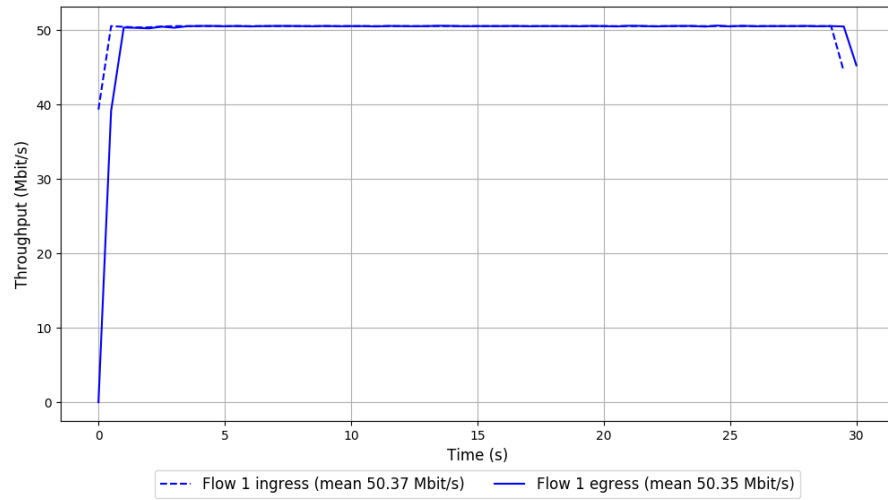
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-10-09 18:27:04
End at: 2018-10-09 18:27:34
Local clock offset: -3.929 ms
Remote clock offset: 0.306 ms


# Below is generated by plot.py at 2018-10-09 19:43:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 50.35 Mbit/s
95th percentile per-packet one-way delay: 11.775 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.35 Mbit/s
95th percentile per-packet one-way delay: 11.775 ms
Loss rate: 0.00%
```

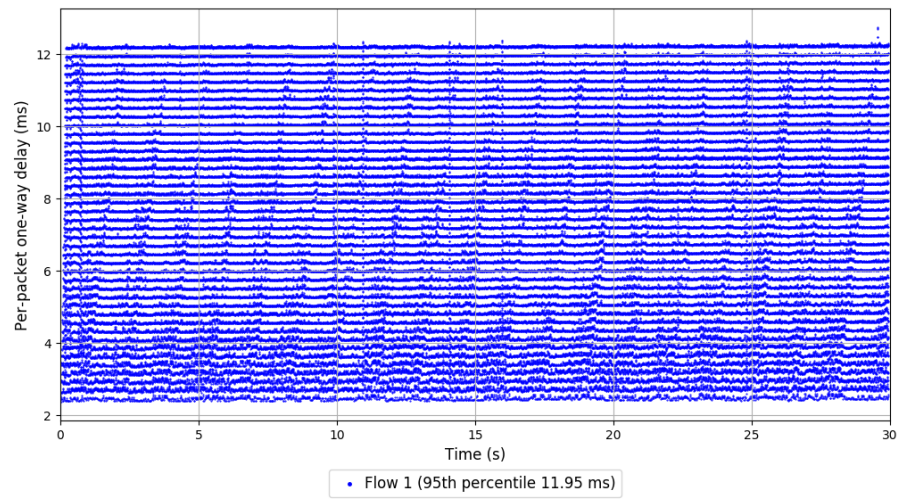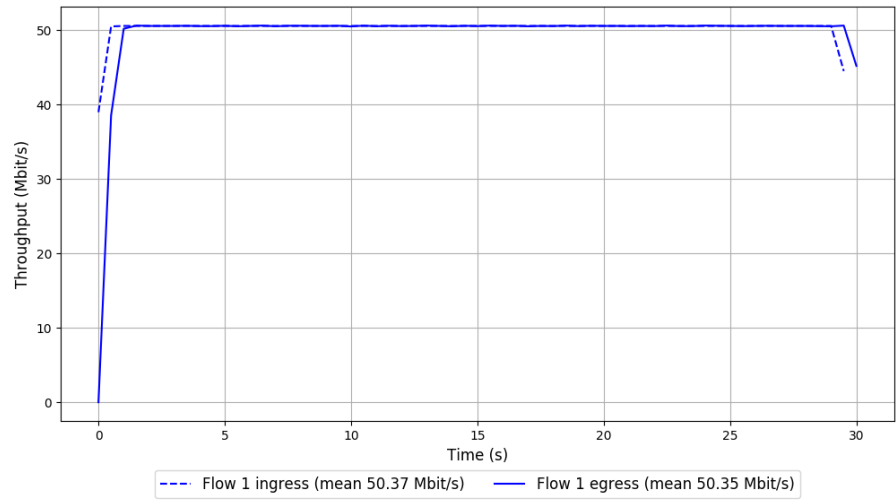## Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-10-09 18:47:07
End at: 2018-10-09 18:47:37
Local clock offset: -2.109 ms
Remote clock offset: 0.735 ms


# Below is generated by plot.py at 2018-10-09 19:43:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 50.35 Mbit/s
95th percentile per-packet one-way delay: 11.954 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.35 Mbit/s
95th percentile per-packet one-way delay: 11.954 ms
Loss rate: 0.00%
```

Run 3: Report of Sprout — Data Link

Flow 1 ingress (mean 50.37 Mbit/s)   Flow 1 egress (mean 50.35 Mbit/s)

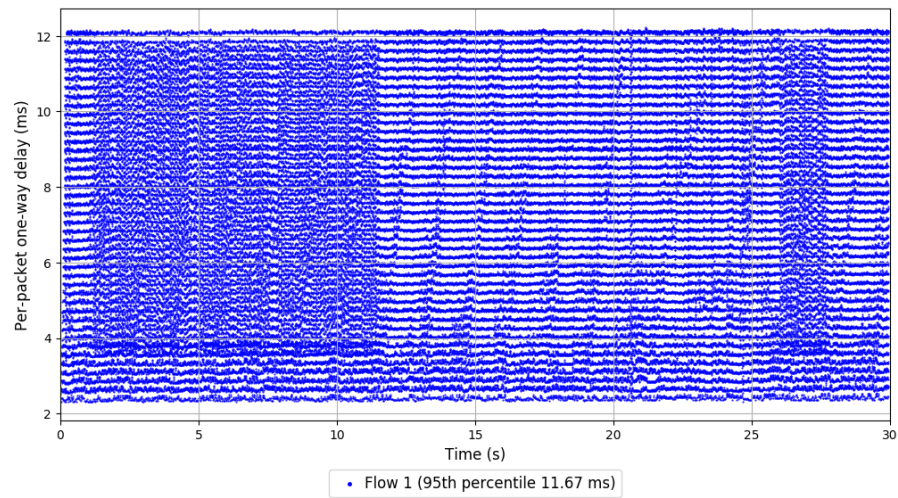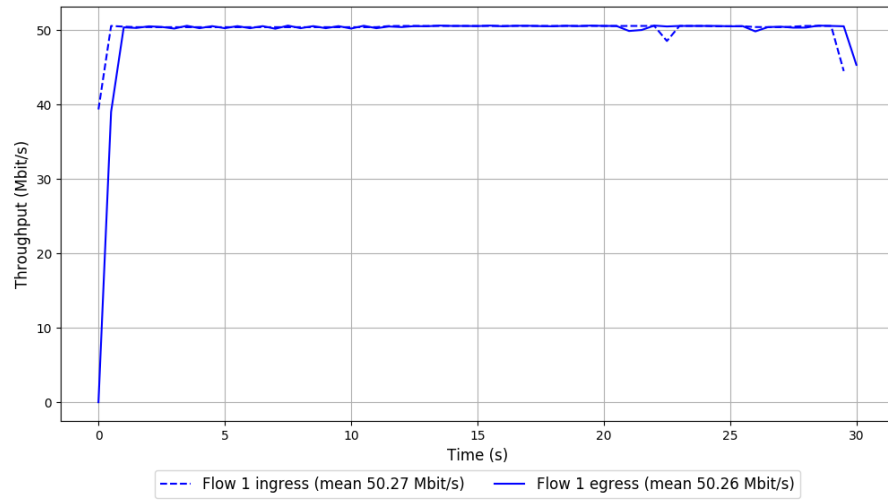

• Flow 1 (95th percentile 11.95 ms)

```
Run 4: Statistics of Sprout

Start at: 2018-10-09 19:07:11
End at: 2018-10-09 19:07:41
Local clock offset: -0.544 ms
Remote clock offset: 0.925 ms


# Below is generated by plot.py at 2018-10-09 19:43:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 50.26 Mbit/s
95th percentile per-packet one-way delay: 11.671 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.26 Mbit/s
95th percentile per-packet one-way delay: 11.671 ms
Loss rate: 0.00%
```

Run 4: Report of Sprout — Data Link

Flow 1 ingress (mean 50.27 Mbit/s)   Flow 1 egress (mean 50.26 Mbit/s)

• Flow 1 (95th percentile 11.67 ms)

```
Run 5: Statistics of Sprout

Start at: 2018-10-09 19:27:15
End at: 2018-10-09 19:27:45
Local clock offset: -0.288 ms
Remote clock offset: 0.788 ms


# Below is generated by plot.py at 2018-10-09 19:44:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 50.27 Mbit/s
95th percentile per-packet one-way delay: 11.258 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.27 Mbit/s
95th percentile per-packet one-way delay: 11.258 ms
Loss rate: 0.00%
```
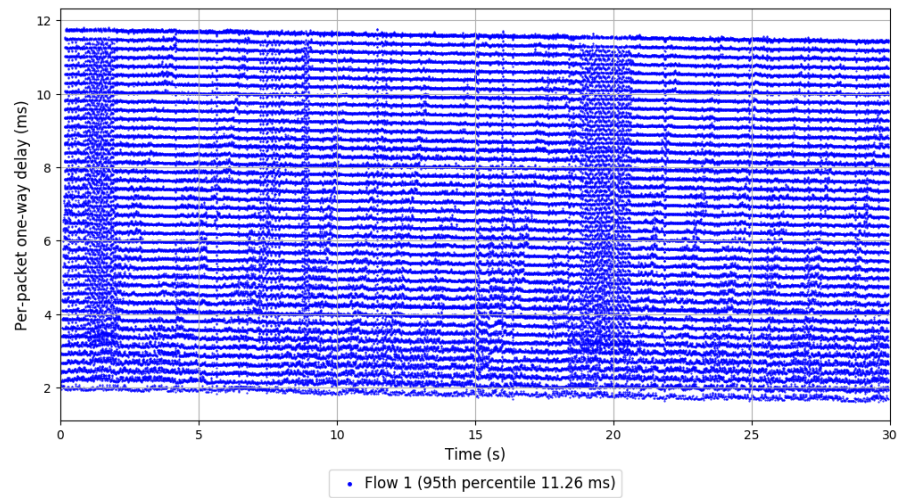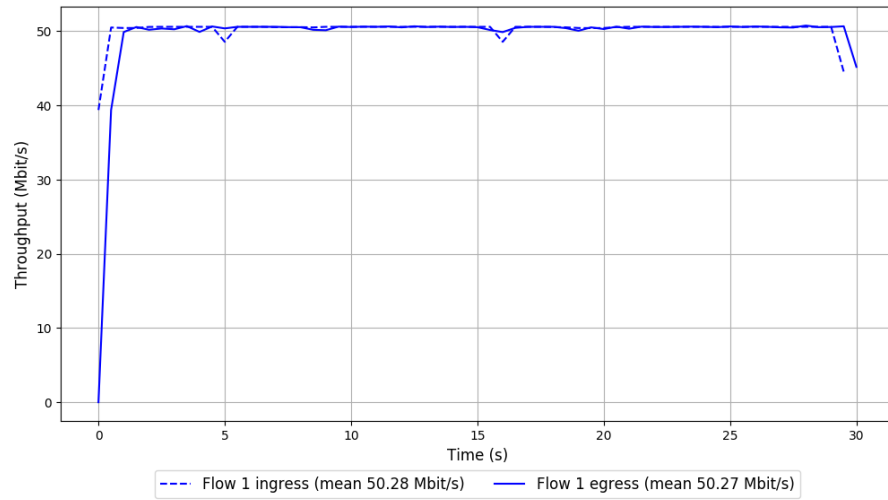
Run 5: Report of Sprout — Data Link

Flow 1 ingress (mean 50.28 Mbit/s)   Flow 1 egress (mean 50.27 Mbit/s)

• Flow 1 (95th percentile 11.26 ms)
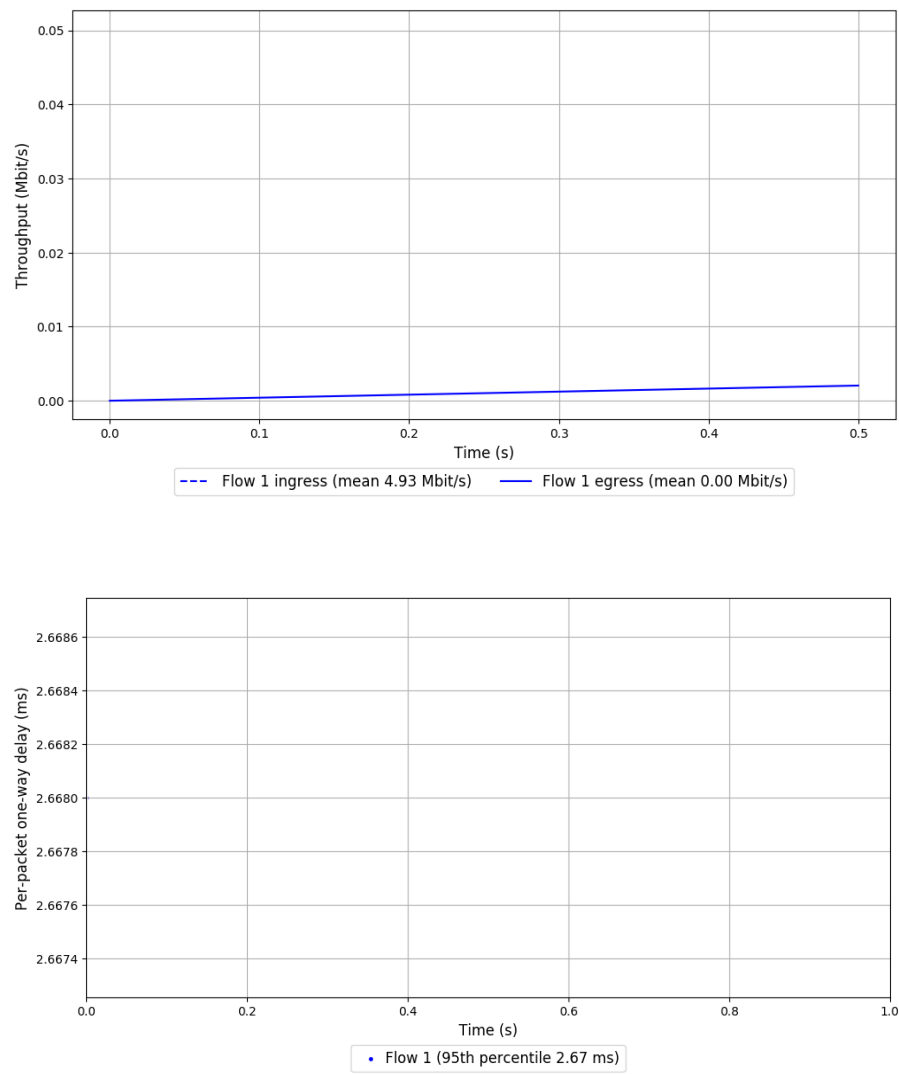
```
Run 1: Statistics of TaoVA-100x

Start at: 2018-10-09 18:09:13
End at: 2018-10-09 18:09:43
Local clock offset: -0.446 ms
Remote clock offset: 0.271 ms
```

Run 1: Report of TaoVA-100x — Data Link
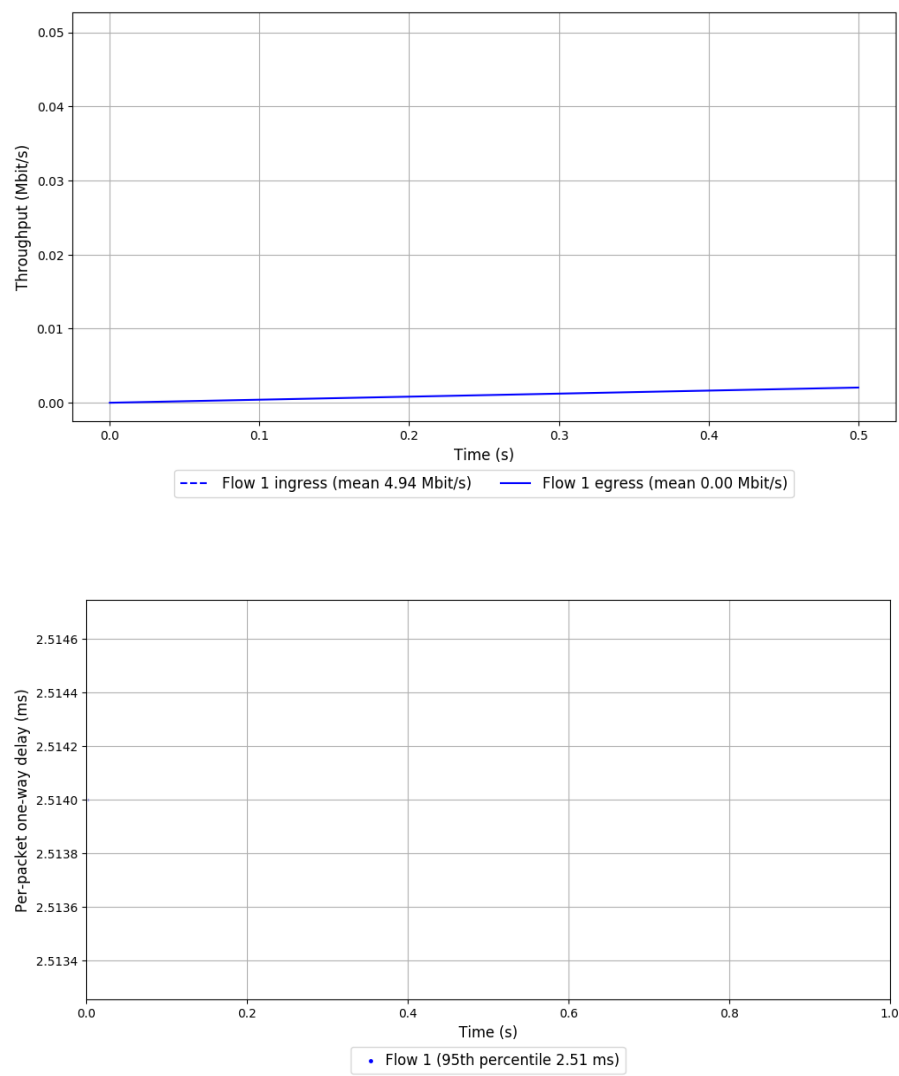
```
Run 2: Statistics of TaoVA-100x

Start at: 2018-10-09 18:29:17
End at: 2018-10-09 18:29:47
Local clock offset: -3.995 ms
Remote clock offset: 0.324 ms
```

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

Flow 1 ingress (mean 4.94 Mbit/s)   Flow 1 egress (mean 0.00 Mbit/s)

• Flow 1 (95th percentile 2.51 ms)
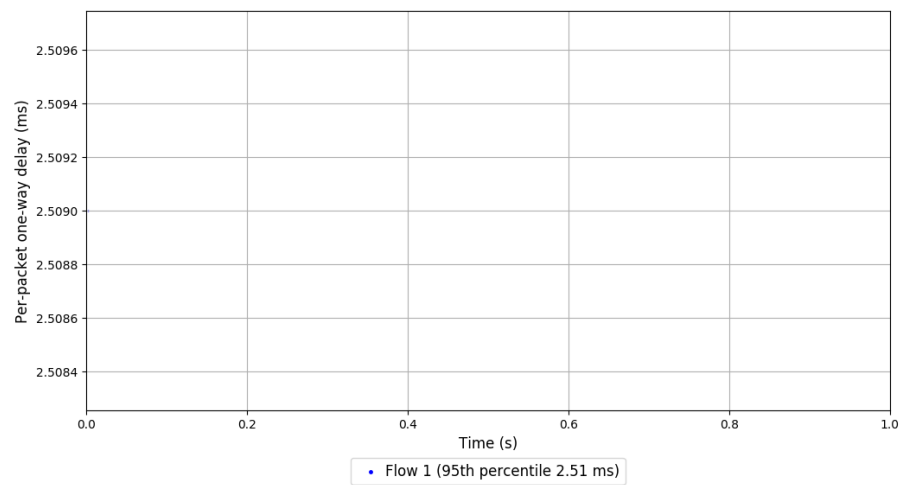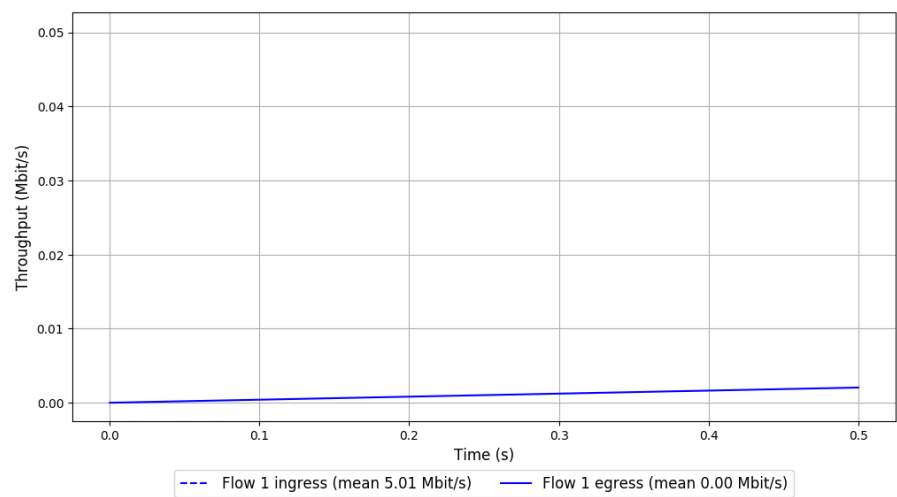
```
Run 3: Statistics of TaoVA-100x

Start at: 2018-10-09 18:49:21
End at: 2018-10-09 18:49:51
Local clock offset: -1.861 ms
Remote clock offset: 0.764 ms
```

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

Flow 1 ingress (mean 5.01 Mbit/s) —— Flow 1 egress (mean 0.00 Mbit/s)

• Flow 1 (95th percentile 2.51 ms)
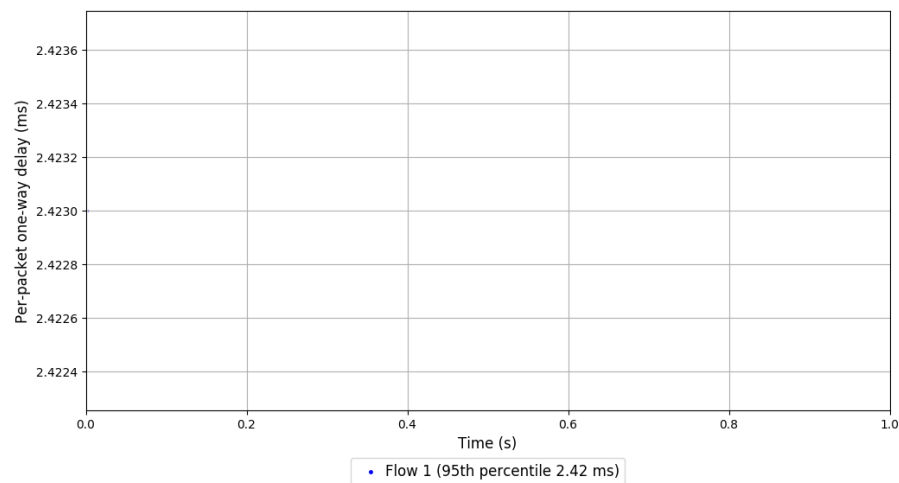
```
Run 4: Statistics of TaoVA-100x

Start at: 2018-10-09 19:09:25
End at: 2018-10-09 19:09:55
Local clock offset: -0.354 ms
Remote clock offset: 0.882 ms
```
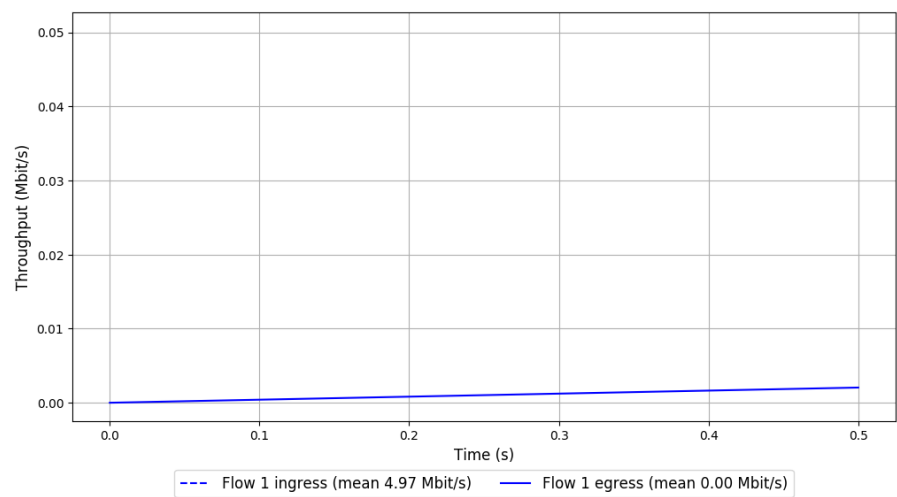
Run 4: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 4.97 Mbit/s)   Flow 1 egress (mean 0.00 Mbit/s)

Flow 1 (95th percentile 2.42 ms)
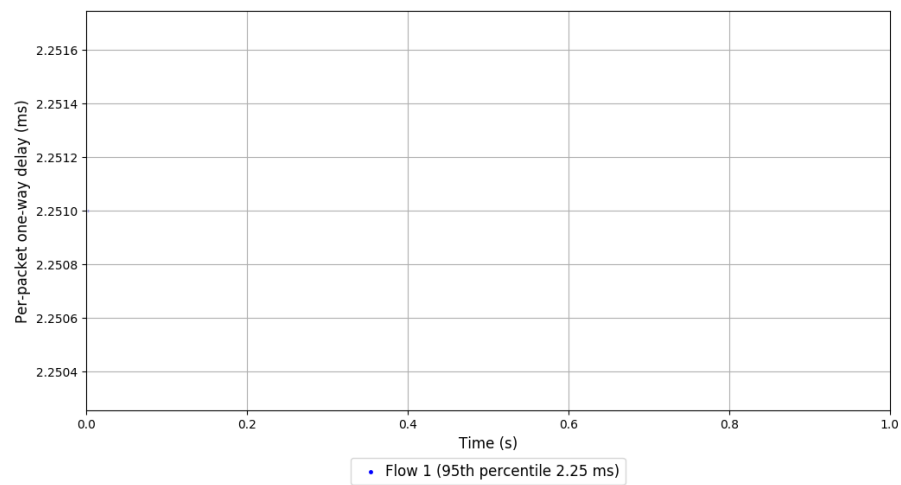
```
Run 5: Statistics of TaoVA-100x

Start at: 2018-10-09 19:29:29
End at: 2018-10-09 19:29:59
Local clock offset: -1.677 ms
Remote clock offset: 0.806 ms
```
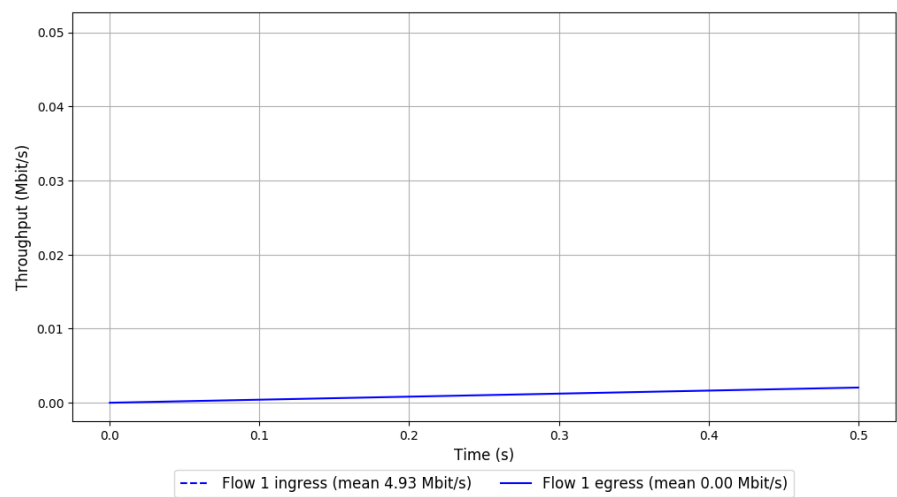
Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 4.93 Mbit/s) — — — Flow 1 egress (mean 0.00 Mbit/s)

Flow 1 (95th percentile 2.25 ms)

```
Run 1: Statistics of TCP Vegas

Start at: 2018-10-09 18:11:25
End at: 2018-10-09 18:11:56
Local clock offset: 0.483 ms
Remote clock offset: 0.149 ms


# Below is generated by plot.py at 2018-10-09 19:44:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 97.38 Mbit/s
95th percentile per-packet one-way delay: 3.259 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 97.38 Mbit/s
95th percentile per-packet one-way delay: 3.259 ms
Loss rate: 0.00%
```
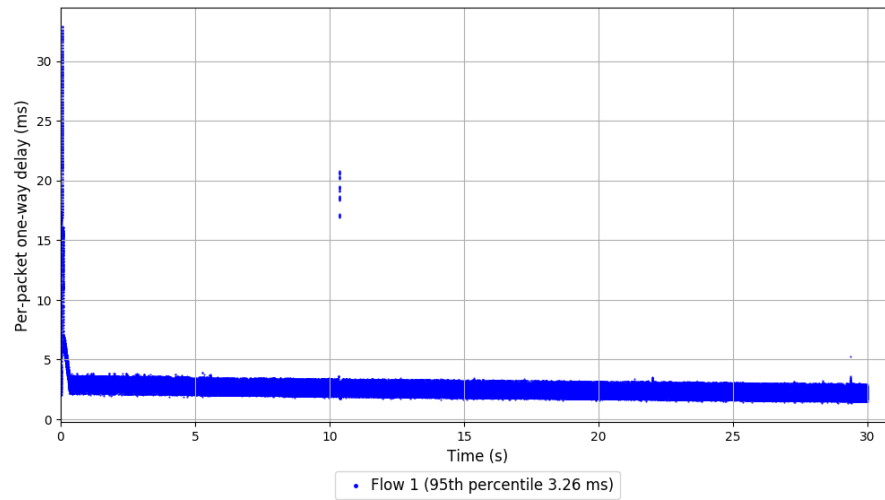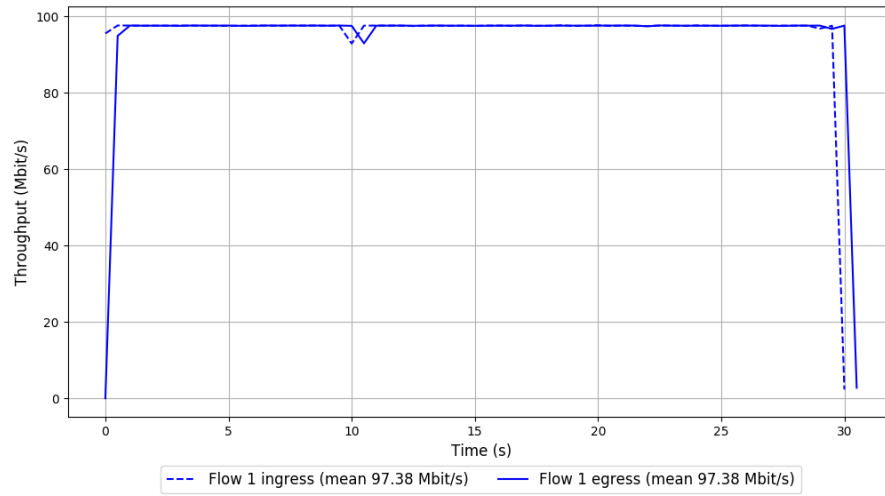
Run 1: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 97.38 Mbit/s)   Flow 1 egress (mean 97.38 Mbit/s)

Flow 1 (95th percentile 3.26 ms)

```
Run 2: Statistics of TCP Vegas

Start at: 2018-10-09 18:31:30
End at: 2018-10-09 18:32:00
Local clock offset: -3.838 ms
Remote clock offset: 0.35 ms


# Below is generated by plot.py at 2018-10-09 19:44:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 97.40 Mbit/s
95th percentile per-packet one-way delay: 3.716 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 97.40 Mbit/s
95th percentile per-packet one-way delay: 3.716 ms
Loss rate: 0.00%
```
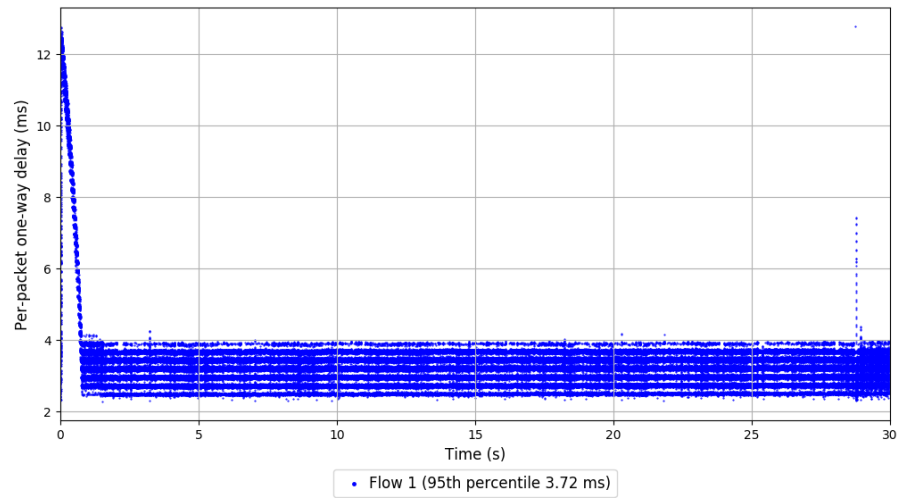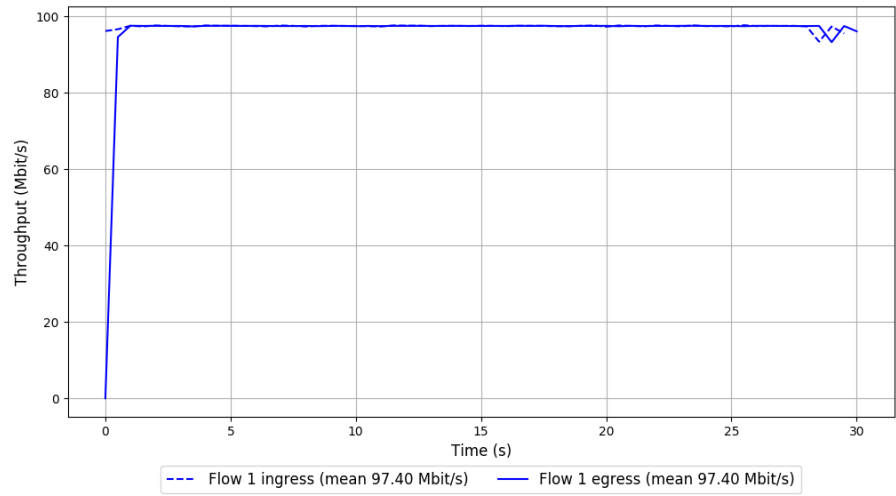
Run 2: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 97.40 Mbit/s) ----   Flow 1 egress (mean 97.40 Mbit/s) ——

Flow 1 (95th percentile 3.72 ms)

```
Run 3: Statistics of TCP Vegas

Start at: 2018-10-09 18:51:33
End at: 2018-10-09 18:52:03
Local clock offset: -1.492 ms
Remote clock offset: 0.899 ms


# Below is generated by plot.py at 2018-10-09 19:44:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.94 Mbit/s
95th percentile per-packet one-way delay: 4.307 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 96.94 Mbit/s
95th percentile per-packet one-way delay: 4.307 ms
Loss rate: 0.00%
```
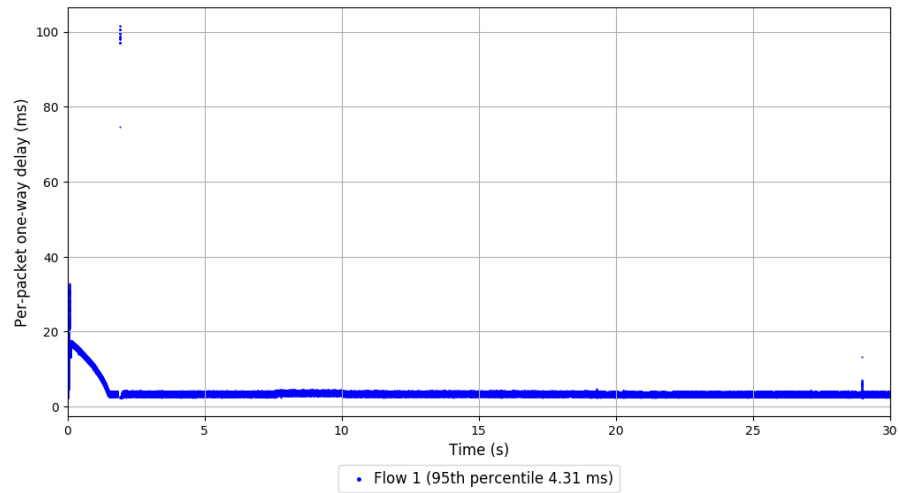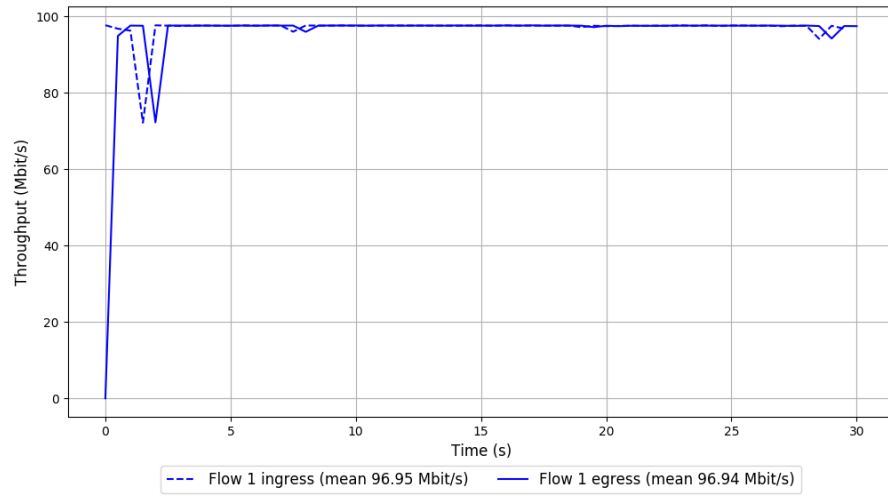
Run 3: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 96.95 Mbit/s)   Flow 1 egress (mean 96.94 Mbit/s)

Flow 1 (95th percentile 4.31 ms)

```
Run 4: Statistics of TCP Vegas

Start at: 2018-10-09 19:11:37
End at: 2018-10-09 19:12:07
Local clock offset: -0.117 ms
Remote clock offset: 0.911 ms


# Below is generated by plot.py at 2018-10-09 19:45:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 97.43 Mbit/s
95th percentile per-packet one-way delay: 3.970 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 97.43 Mbit/s
95th percentile per-packet one-way delay: 3.970 ms
Loss rate: 0.00%
```
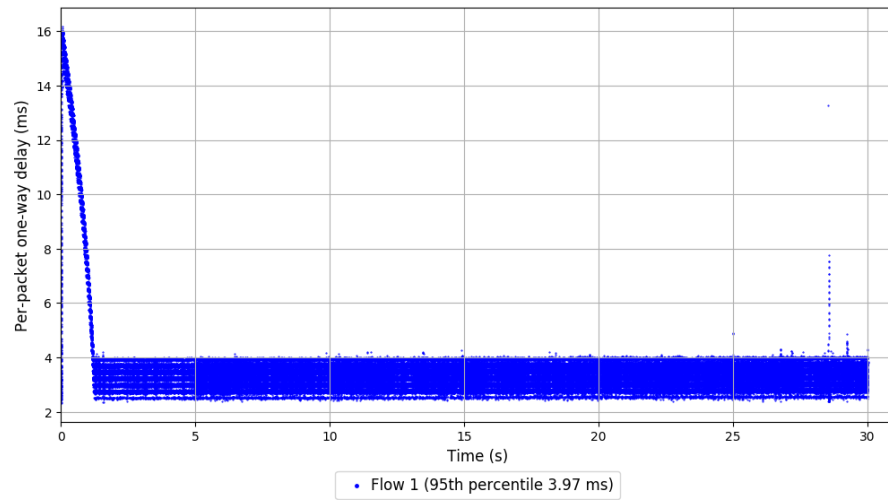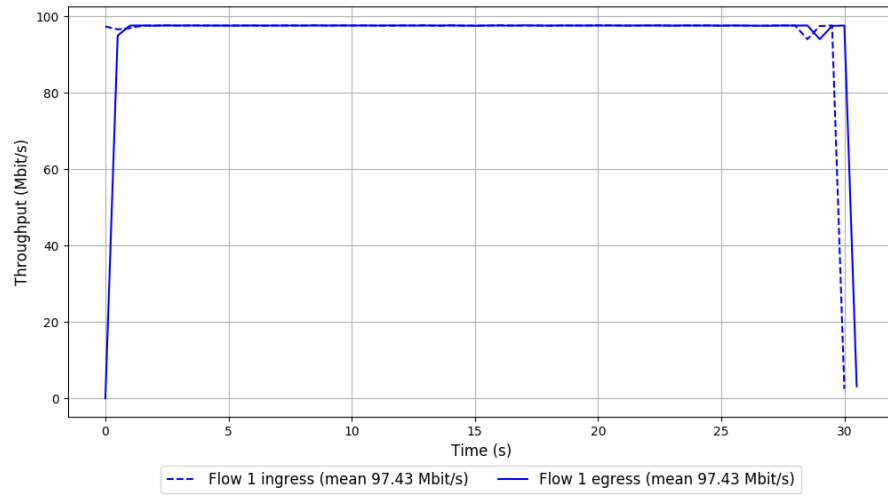
Run 4: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 97.43 Mbit/s)   Flow 1 egress (mean 97.43 Mbit/s)

Flow 1 (95th percentile 3.97 ms)

```
Run 5: Statistics of TCP Vegas

Start at: 2018-10-09 19:31:41
End at: 2018-10-09 19:32:11
Local clock offset: -2.71 ms
Remote clock offset: 0.855 ms


# Below is generated by plot.py at 2018-10-09 19:45:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 97.33 Mbit/s
95th percentile per-packet one-way delay: 3.644 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 97.33 Mbit/s
95th percentile per-packet one-way delay: 3.644 ms
Loss rate: 0.00%
```
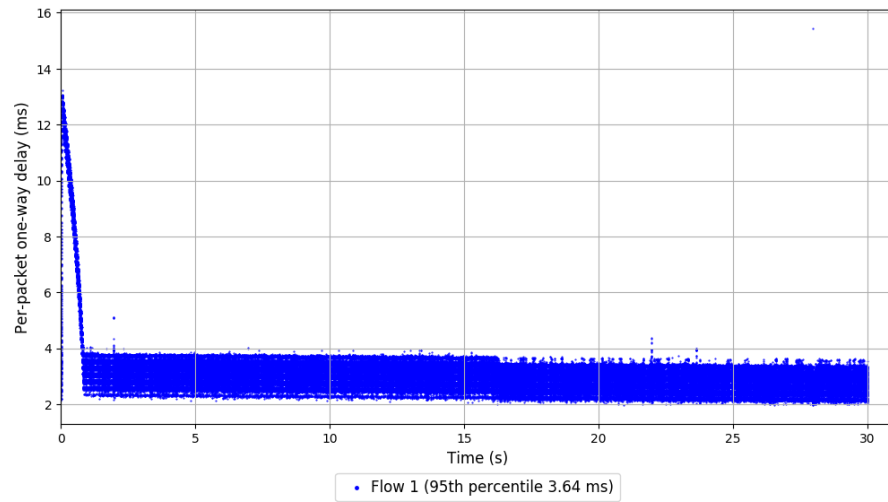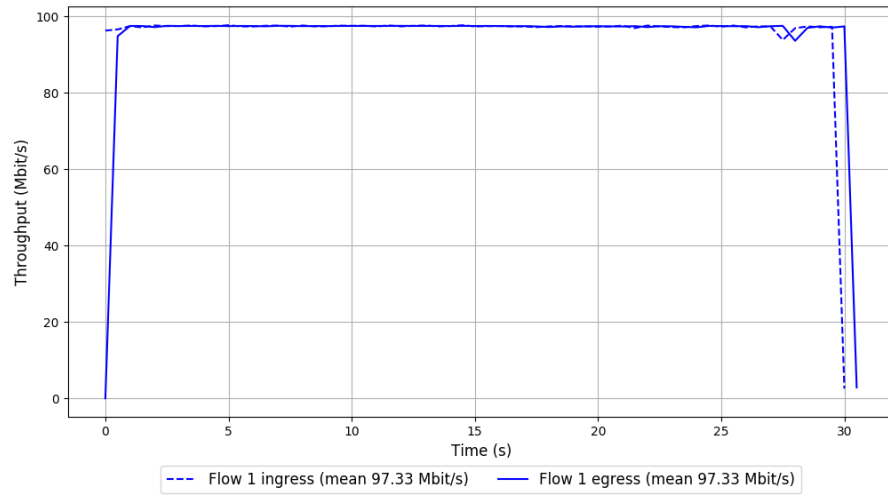
Run 5: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 97.33 Mbit/s) — Flow 1 egress (mean 97.33 Mbit/s)

Flow 1 (95th percentile 3.64 ms)

```
Run 1: Statistics of Verus

Start at: 2018-10-09 18:04:42
End at: 2018-10-09 18:05:12
Local clock offset: -3.093 ms
Remote clock offset: 0.228 ms


# Below is generated by plot.py at 2018-10-09 19:45:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 72.71 Mbit/s
95th percentile per-packet one-way delay: 9.208 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 72.71 Mbit/s
95th percentile per-packet one-way delay: 9.208 ms
Loss rate: 0.92%
```
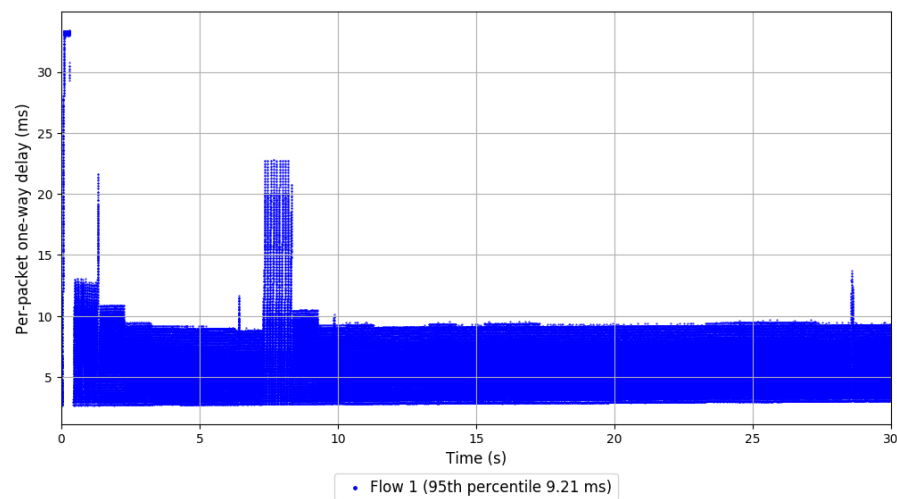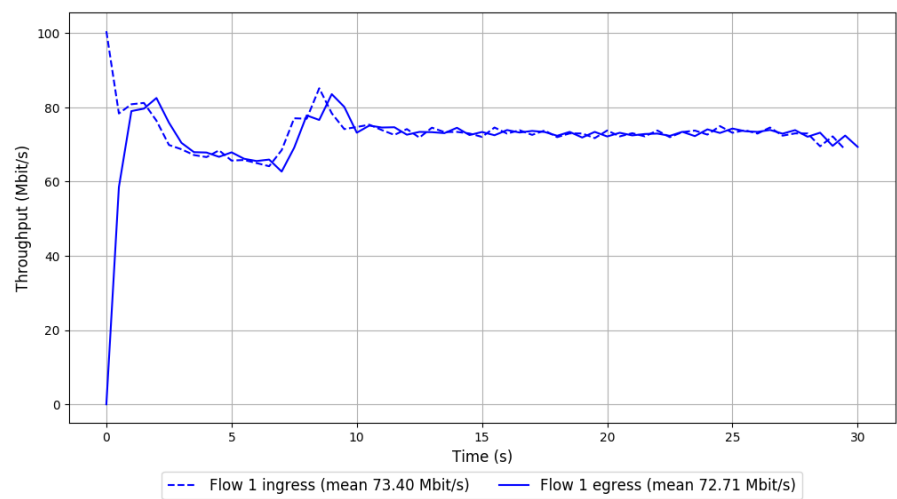
Run 1: Report of Verus — Data Link

Flow 1 ingress (mean 73.40 Mbit/s)   Flow 1 egress (mean 72.71 Mbit/s)

Flow 1 (95th percentile 9.21 ms)

```
Run 2: Statistics of Verus

Start at: 2018-10-09 18:24:46
End at: 2018-10-09 18:25:16
Local clock offset: -3.922 ms
Remote clock offset: 0.371 ms


# Below is generated by plot.py at 2018-10-09 19:45:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 74.30 Mbit/s
95th percentile per-packet one-way delay: 9.244 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 74.30 Mbit/s
95th percentile per-packet one-way delay: 9.244 ms
Loss rate: 0.90%
```
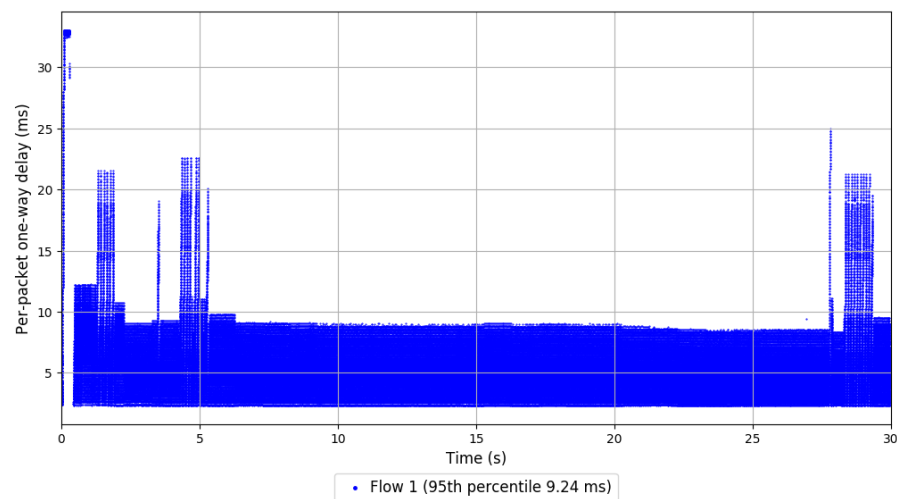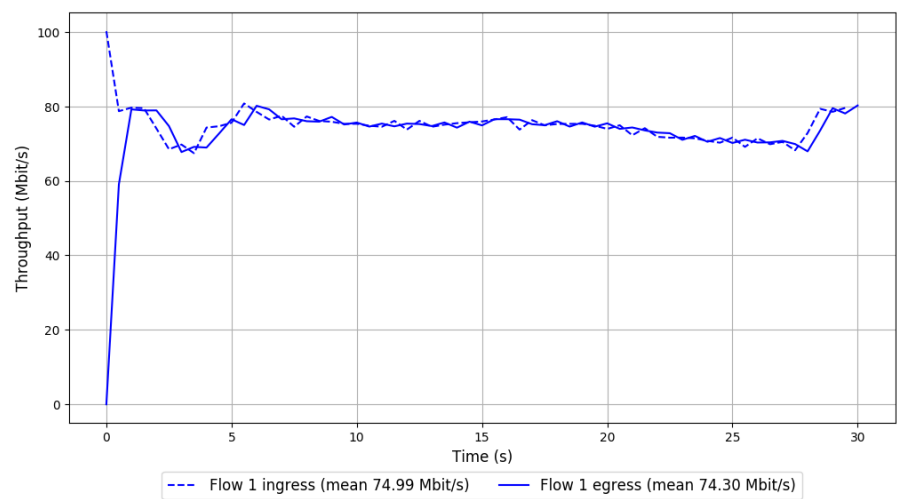
Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2018-10-09 18:44:50
End at: 2018-10-09 18:45:20
Local clock offset: -2.475 ms
Remote clock offset: 0.542 ms


# Below is generated by plot.py at 2018-10-09 19:45:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 72.09 Mbit/s
95th percentile per-packet one-way delay: 9.739 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 72.09 Mbit/s
95th percentile per-packet one-way delay: 9.739 ms
Loss rate: 0.95%
```
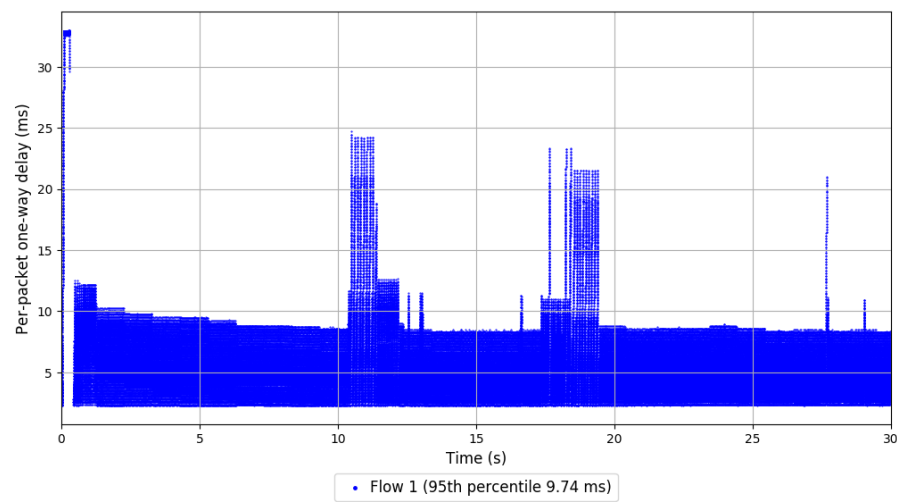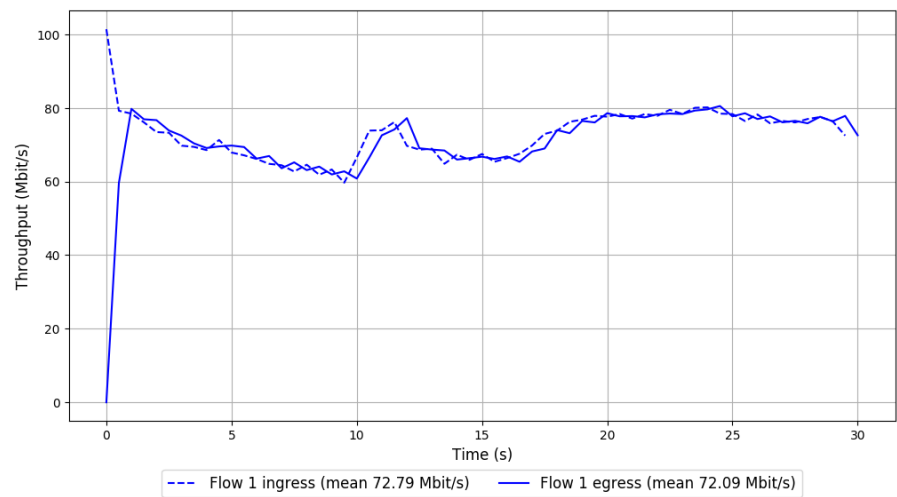
Run 3: Report of Verus — Data Link

Flow 1 ingress (mean 72.79 Mbit/s)   Flow 1 egress (mean 72.09 Mbit/s)

Flow 1 (95th percentile 9.74 ms)

```
Run 4: Statistics of Verus

Start at: 2018-10-09 19:04:54
End at: 2018-10-09 19:05:24
Local clock offset: -0.816 ms
Remote clock offset: 0.91 ms


# Below is generated by plot.py at 2018-10-09 19:45:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 70.91 Mbit/s
95th percentile per-packet one-way delay: 9.086 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 70.91 Mbit/s
95th percentile per-packet one-way delay: 9.086 ms
Loss rate: 0.95%
```
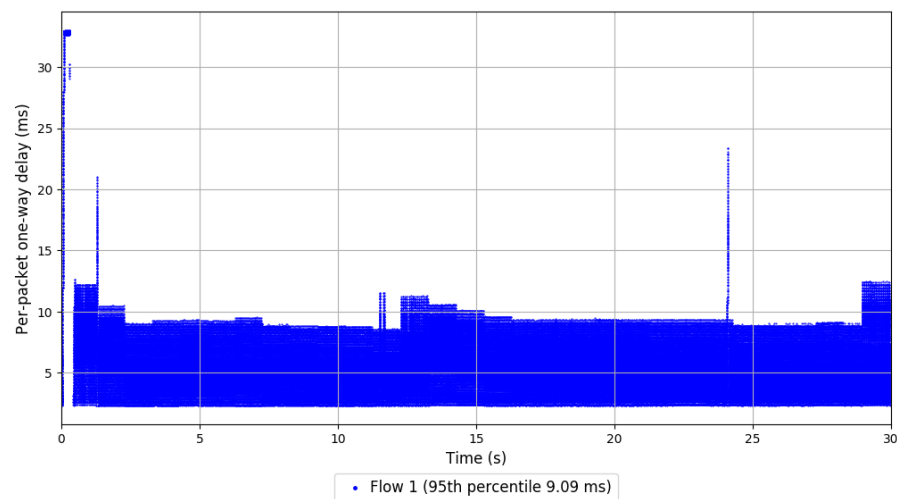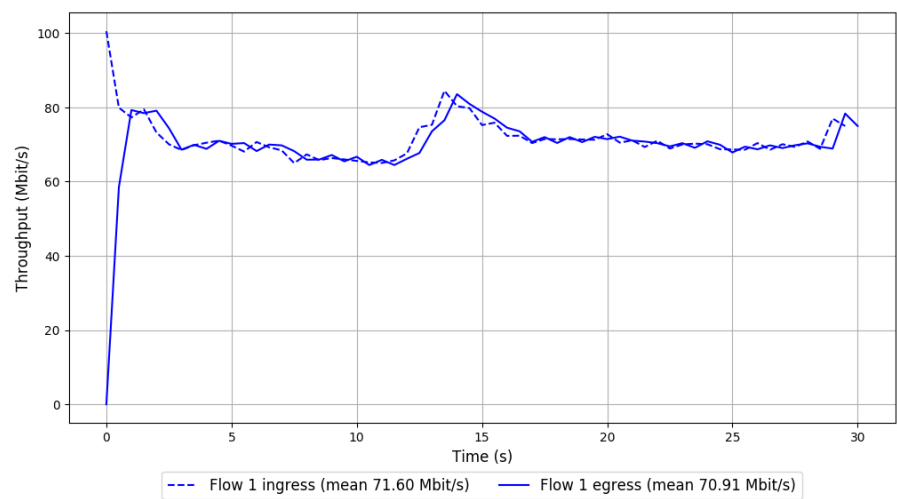
Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-10-09 19:24:58
End at: 2018-10-09 19:25:28
Local clock offset: 1.34 ms
Remote clock offset: 0.828 ms


# Below is generated by plot.py at 2018-10-09 19:45:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 69.12 Mbit/s
95th percentile per-packet one-way delay: 8.407 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 69.12 Mbit/s
95th percentile per-packet one-way delay: 8.407 ms
Loss rate: 0.97%
```
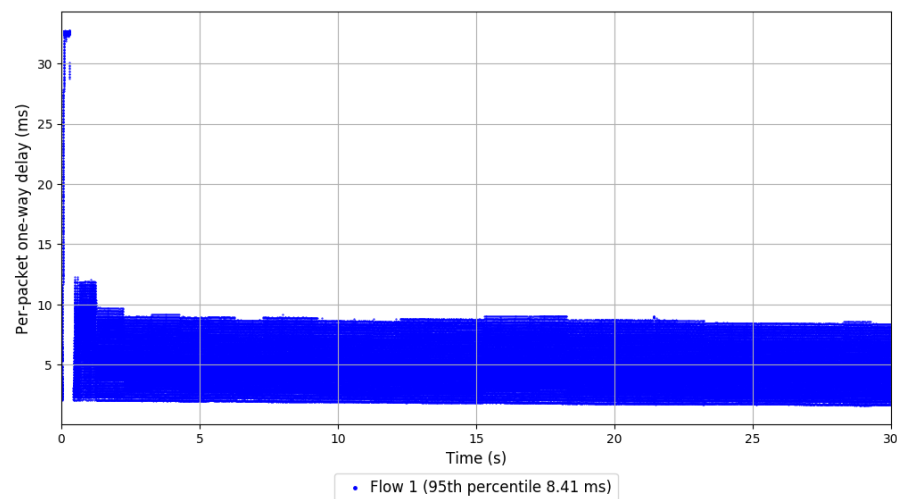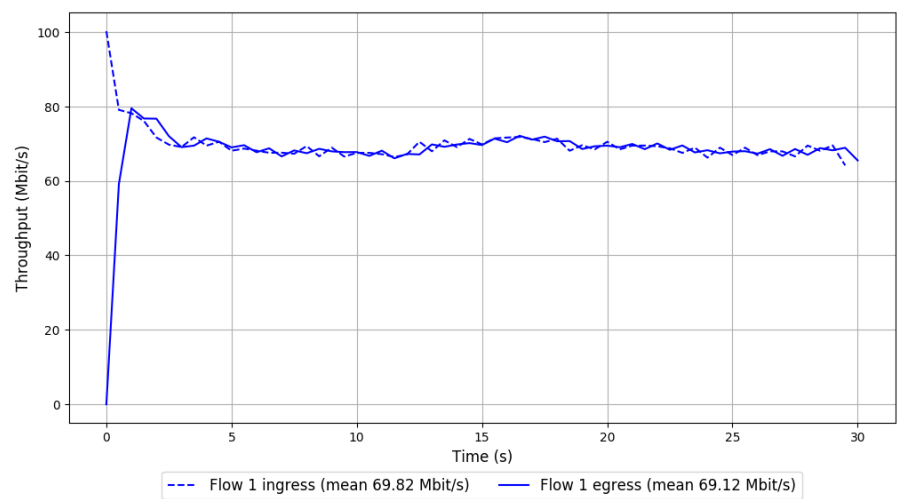
Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-10-09 18:02:25
End at: 2018-10-09 18:02:55
Local clock offset: -4.841 ms
Remote clock offset: 0.069 ms


# Below is generated by plot.py at 2018-10-09 19:45:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.79 Mbit/s
95th percentile per-packet one-way delay: 2.698 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 88.79 Mbit/s
95th percentile per-packet one-way delay: 2.698 ms
Loss rate: 0.00%
```
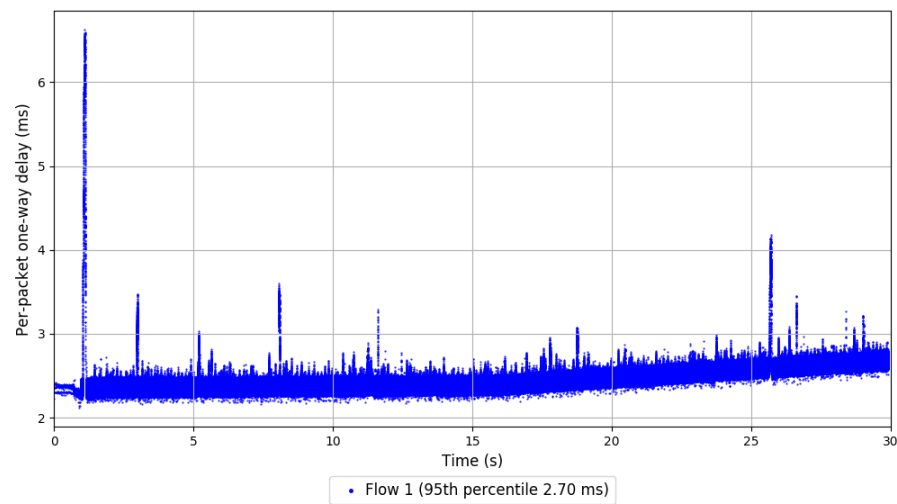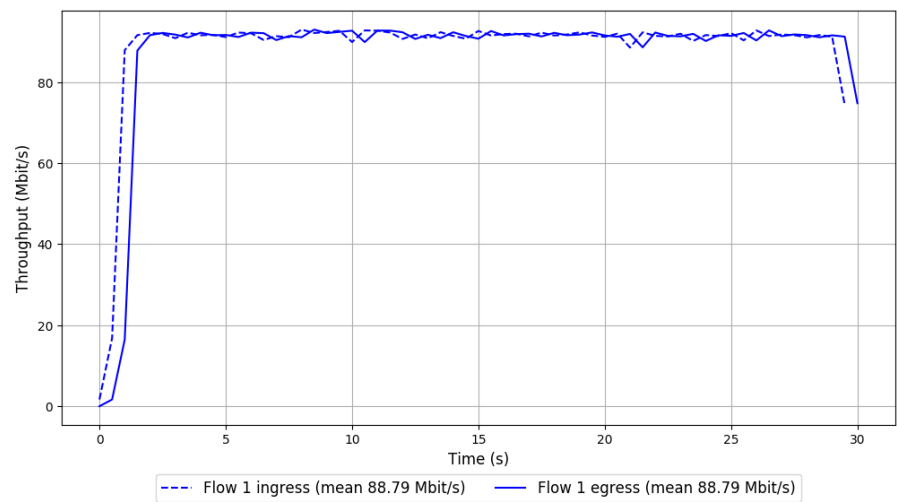
Run 1: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 88.79 Mbit/s) --- Flow 1 egress (mean 88.79 Mbit/s)

Flow 1 (95th percentile 2.70 ms)

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-10-09 18:22:29
End at: 2018-10-09 18:22:59
Local clock offset: -4.072 ms
Remote clock offset: 0.364 ms


# Below is generated by plot.py at 2018-10-09 19:45:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.99 Mbit/s
95th percentile per-packet one-way delay: 2.591 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 88.99 Mbit/s
95th percentile per-packet one-way delay: 2.591 ms
Loss rate: 0.00%
```
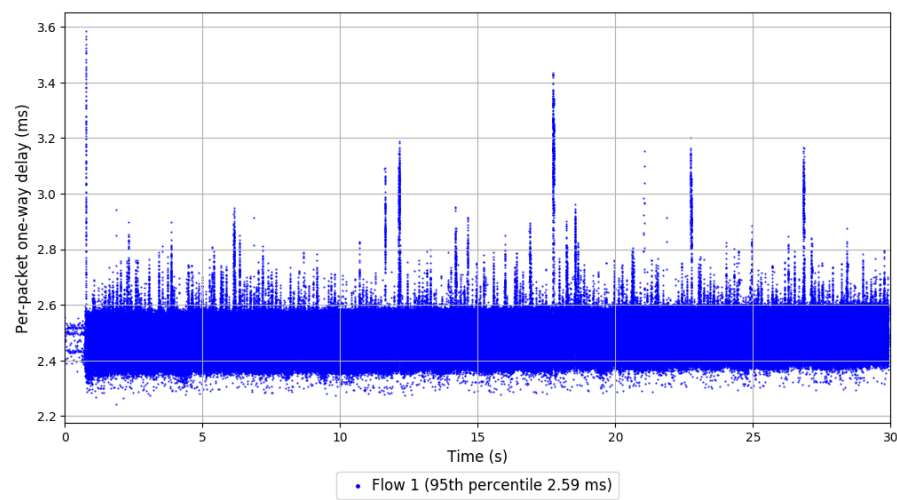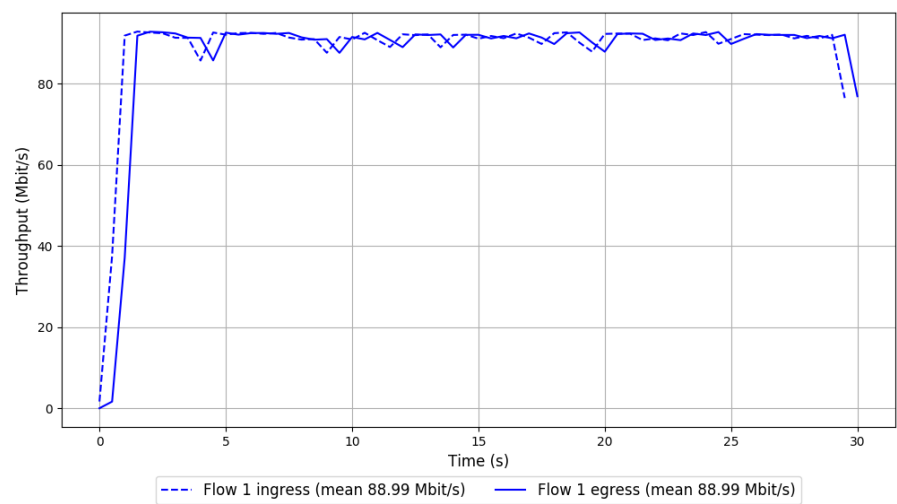
Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-10-09 18:42:33
End at: 2018-10-09 18:43:03
Local clock offset: -2.732 ms
Remote clock offset: 0.574 ms


# Below is generated by plot.py at 2018-10-09 19:45:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.99 Mbit/s
95th percentile per-packet one-way delay: 2.629 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 86.99 Mbit/s
95th percentile per-packet one-way delay: 2.629 ms
Loss rate: 0.00%
```
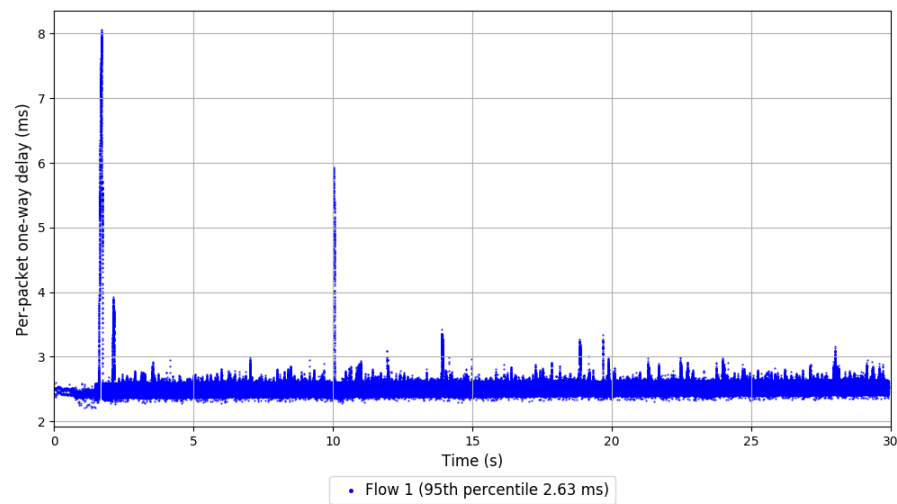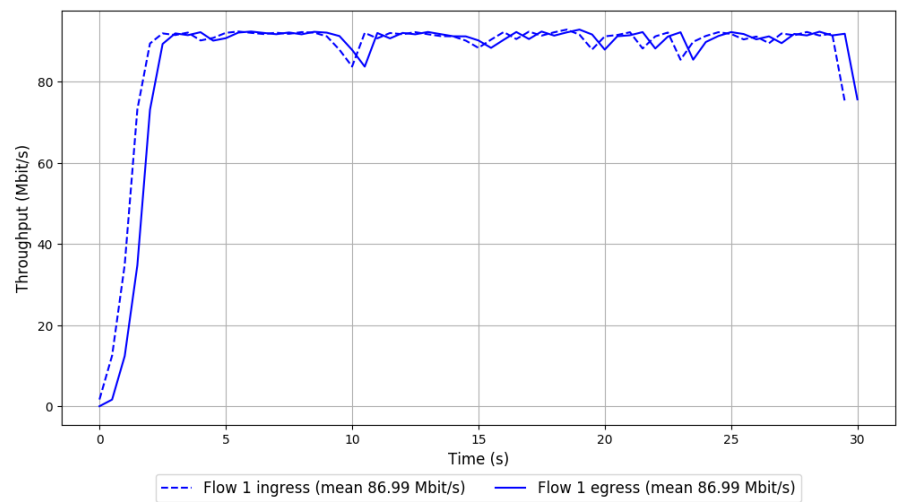
Run 3: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 86.99 Mbit/s)   Flow 1 egress (mean 86.99 Mbit/s)

• Flow 1 (95th percentile 2.63 ms)

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-10-09 19:02:37
End at: 2018-10-09 19:03:07
Local clock offset: -0.892 ms
Remote clock offset: 0.885 ms


# Below is generated by plot.py at 2018-10-09 19:45:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.12 Mbit/s
95th percentile per-packet one-way delay: 2.457 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 89.12 Mbit/s
95th percentile per-packet one-way delay: 2.457 ms
Loss rate: 0.00%
```
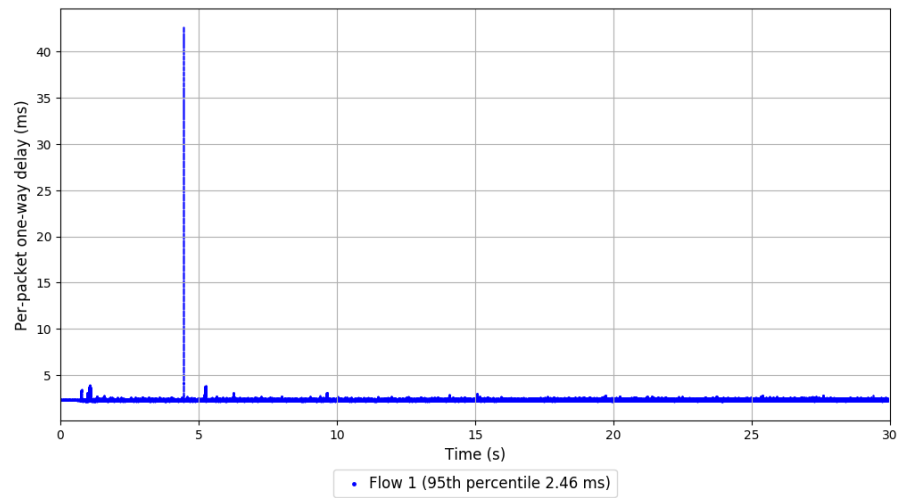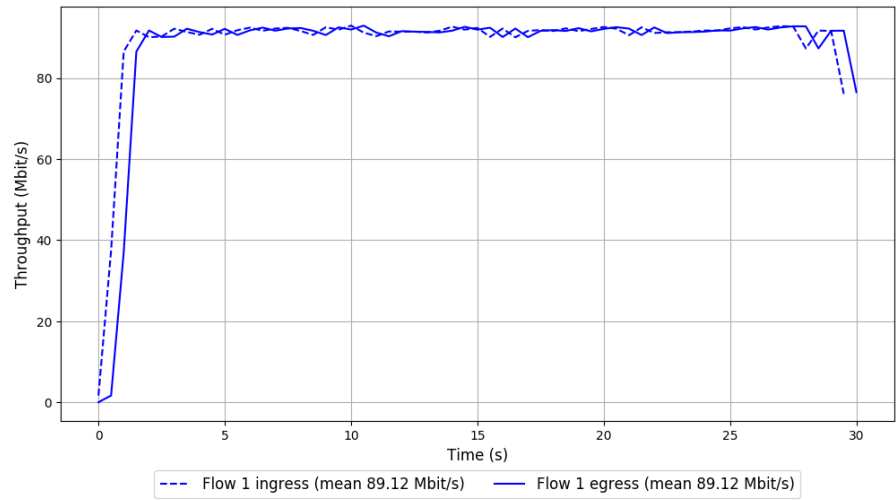
Run 4: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 89.12 Mbit/s) --- Flow 1 egress (mean 89.12 Mbit/s)

Flow 1 (95th percentile 2.46 ms)

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-10-09 19:22:41
End at: 2018-10-09 19:23:11
Local clock offset: 1.068 ms
Remote clock offset: 0.845 ms


# Below is generated by plot.py at 2018-10-09 19:45:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.05 Mbit/s
95th percentile per-packet one-way delay: 2.662 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 88.05 Mbit/s
95th percentile per-packet one-way delay: 2.662 ms
Loss rate: 0.00%
```
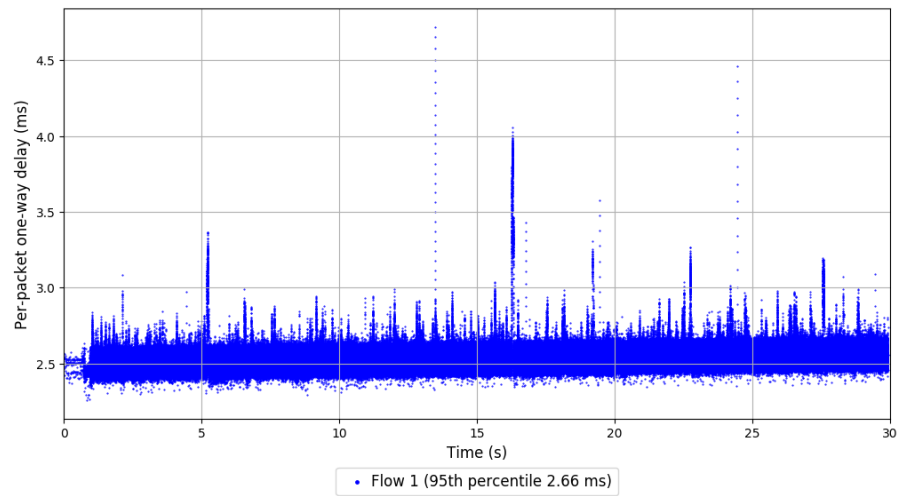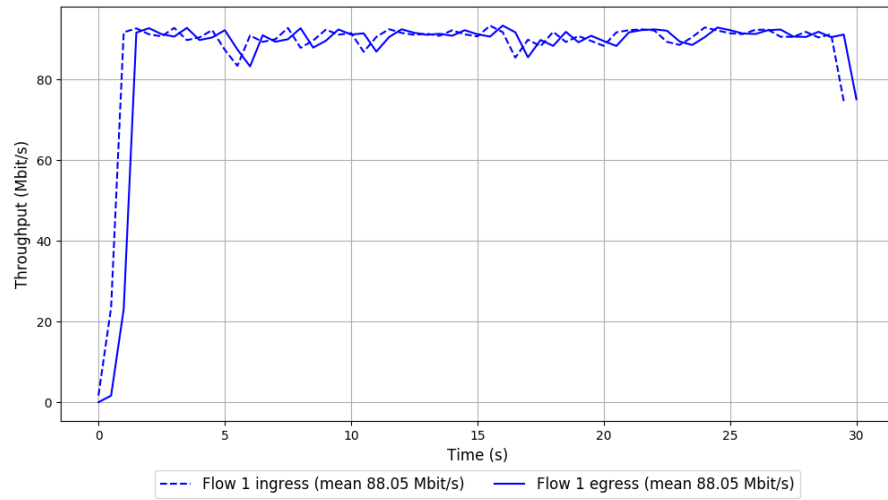
Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2018-10-09 17:59:05
End at: 2018-10-09 17:59:35
Local clock offset: -0.339 ms
Remote clock offset: 0.231 ms


# Below is generated by plot.py at 2018-10-09 19:45:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.08 Mbit/s
95th percentile per-packet one-way delay: 0.891 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.08 Mbit/s
95th percentile per-packet one-way delay: 0.891 ms
Loss rate: 0.00%
```
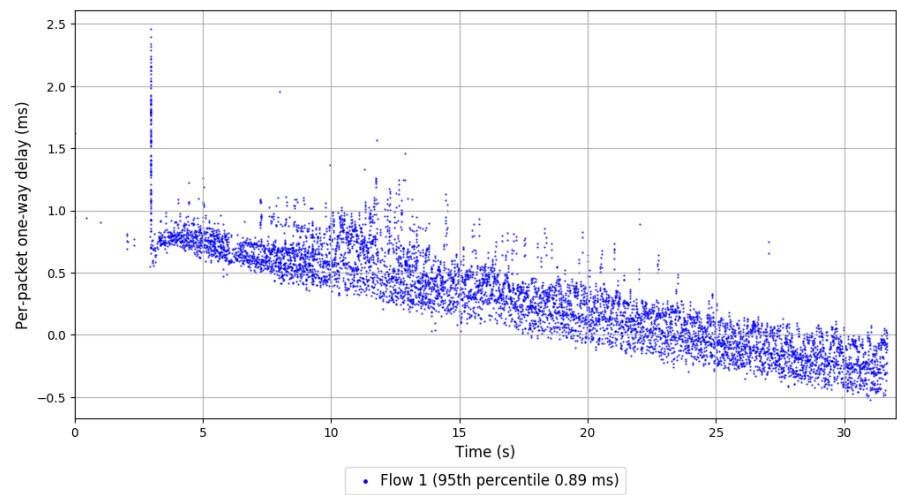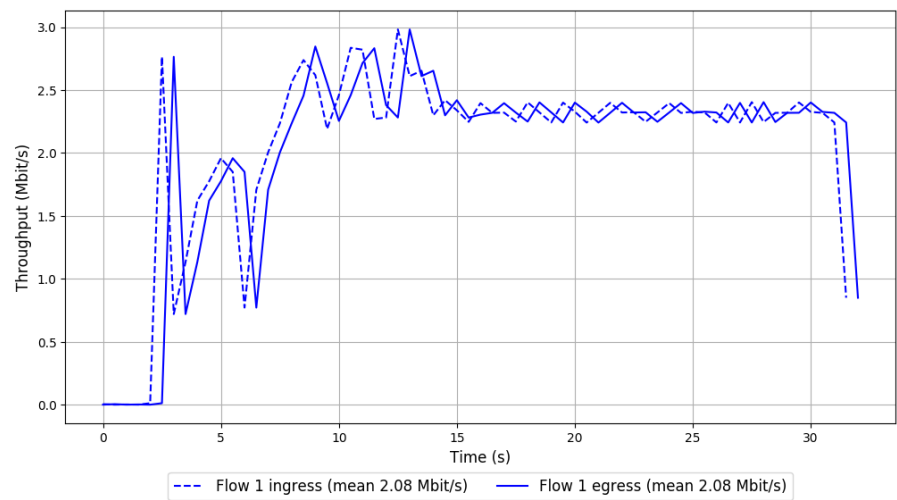
Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-10-09 18:19:09
End at: 2018-10-09 18:19:39
Local clock offset: -3.986 ms
Remote clock offset: 0.237 ms


# Below is generated by plot.py at 2018-10-09 19:45:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 2.925 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 2.925 ms
Loss rate: 0.00%
```
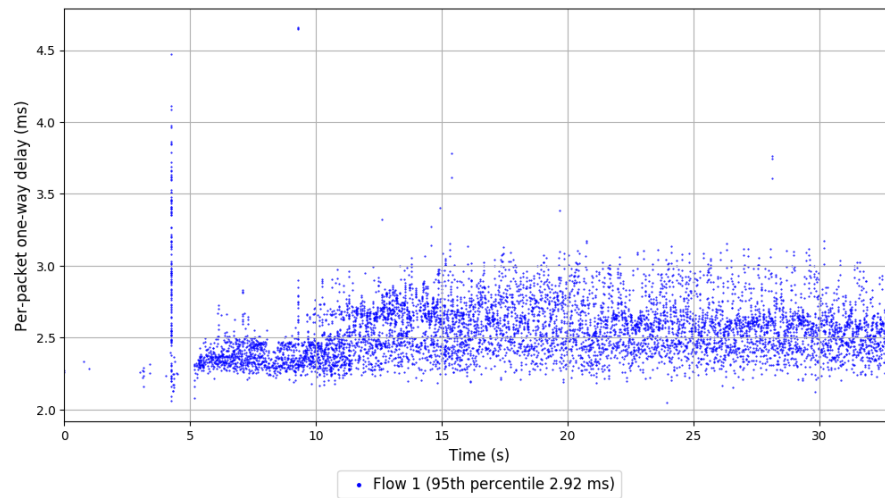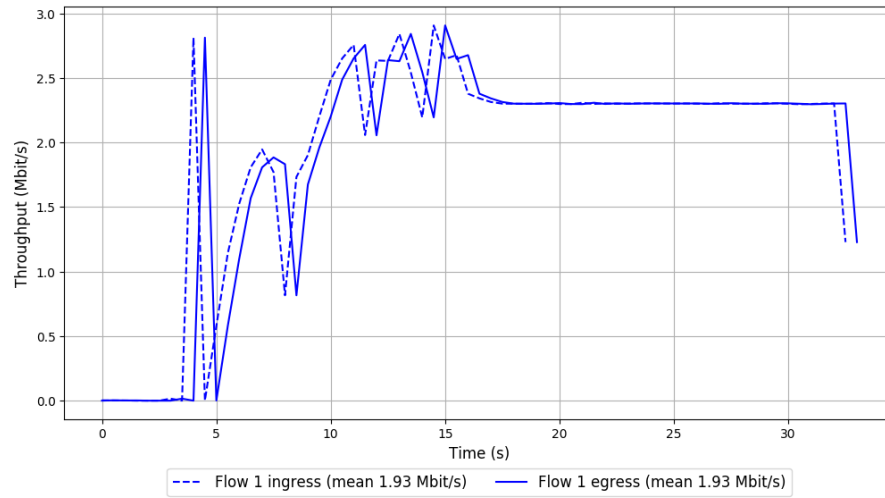
Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-10-09 18:39:13
End at: 2018-10-09 18:39:43
Local clock offset: -3.147 ms
Remote clock offset: 0.411 ms


# Below is generated by plot.py at 2018-10-09 19:45:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 3.125 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 3.125 ms
Loss rate: 0.00%
```
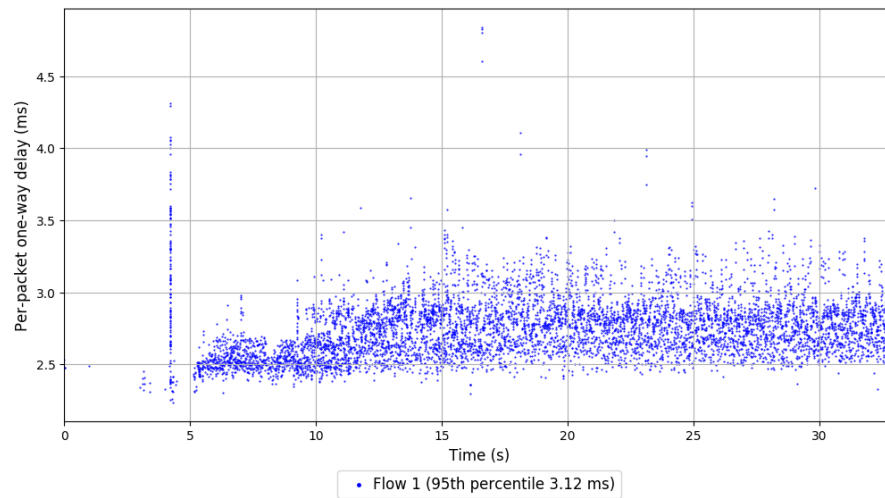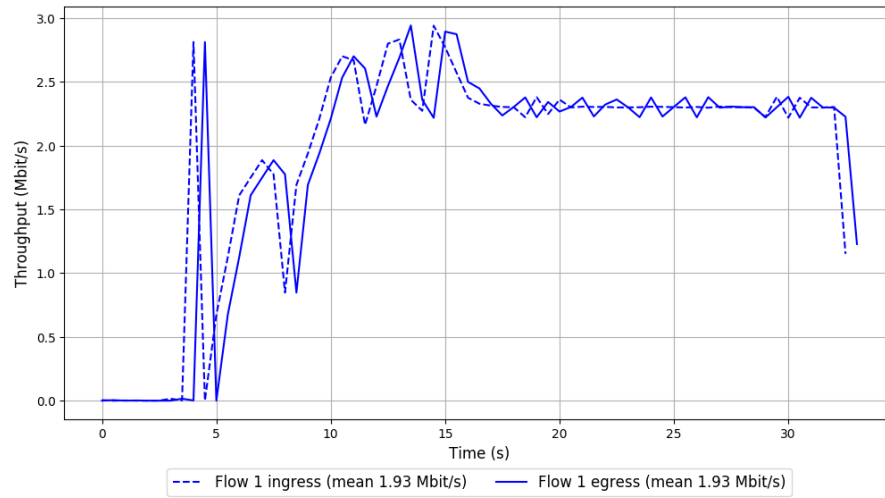
Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-10-09 18:59:16
End at: 2018-10-09 18:59:46
Local clock offset: -1.032 ms
Remote clock offset: 0.901 ms


# Below is generated by plot.py at 2018-10-09 19:45:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 2.732 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 2.732 ms
Loss rate: 0.00%
```
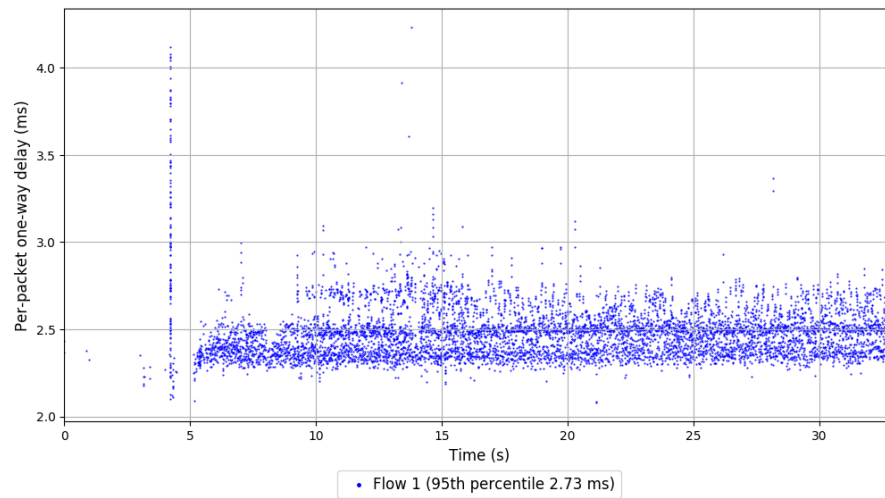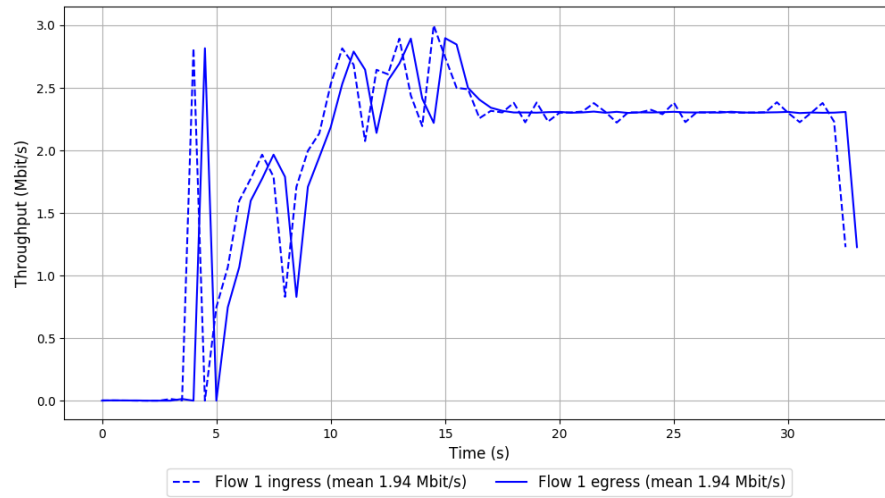
Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-10-09 19:19:20
End at: 2018-10-09 19:19:51
Local clock offset: 0.729 ms
Remote clock offset: 0.899 ms


# Below is generated by plot.py at 2018-10-09 19:45:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: 2.950 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: 2.950 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link

Flow 1 ingress (mean 1.92 Mbit/s) ----- Flow 1 egress (mean 1.92 Mbit/s)

• Flow 1 (95th percentile 2.95 ms)