Pantheon Report

Generated at 2017-12-05 20:28:24 (UTC).

Data path: GCE Tokyo Ethernet (*remote*) →GCE Iowa Ethernet (*local*).

Repeated the test of 14 congestion control schemes 10 times.

Each test lasted for 30 seconds running 1 flow.
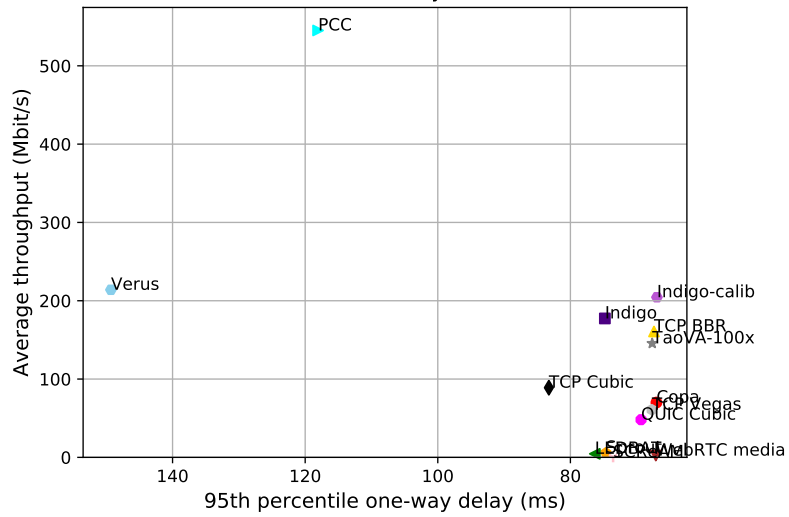
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

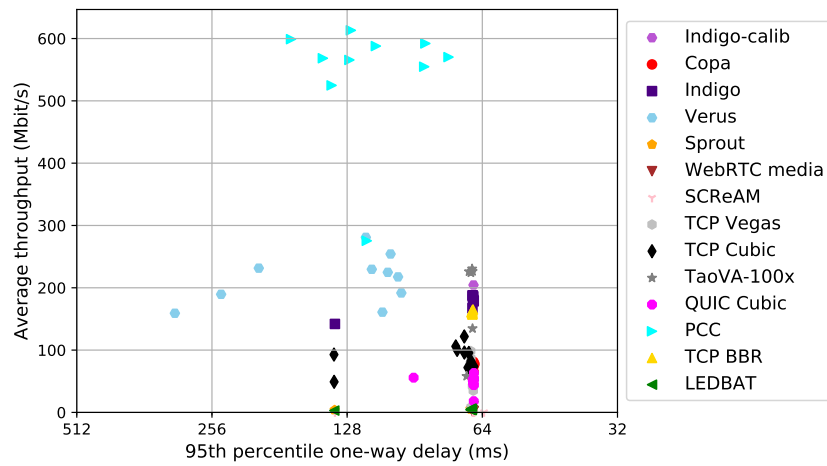Tested BBR with qdisc of Fair Queuing (`fq`), and other schemes with the default Linux qdisc (`pfifo_fast`).

```
Git summary:
branch: indigos @ e3a57ad5ac5cfcaca0e3f983c8dd4cc3509e0262
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
 M datagrump/sender.cc
third_party/genericCC @ b5b7c38e8391001927dc41c6cfa2627d03dde737
third_party/indigo @ b19f3730105f9aa95452552af924e3719b03cc55
third_party/indigo-cellular @ aee99e8eb842cb053f8c9a80e28cd256a930bbc2
third_party/indigo-no-calib @ 7224f2202e8a044d8306fa0b983ad84360c53d89
third_party/indigo-no-cwnd @ 3e58442c04028a11d7b02456e137604633ba2d6c
third_party/indigo-no-delivery-rate @ 57caa40858b964906edff4876d5a7e5bfff666c5
third_party/indigo-no-queuing-delay @ 03455460fd1a8ffbdad86fabb936fdca204b80db
third_party/indigo-no-send-rate @ b39dfa6b2c5f19cb7cd89626cb4f5bb81f9fecda
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
 M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ baf443516dea3eeddeccaf9b916cc313273ca4f4
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/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream @ c3370fd7bd17265a79aeb34e4016ad23f5965885
third_party/sourdough @ f1a14bffe749737437f61b1eaeeb30b267cde681
third_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce
 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/webrtc @ a488197ddd041ace68a42849b2540ad834825f42
```

test from GCE Tokyo Ethernet to GCE Iowa Ethernet, 10 runs of 30s each per scheme
(mean of all runs by scheme)

test from GCE Tokyo Ethernet to GCE Iowa Ethernet, 10 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	10	160.76	67.39	0.53
TCP Cubic	10	88.98	83.25	0.66
LEDBAT	8	4.51	76.33	1.01
PCC	10	545.14	118.05	1.20
QUIC Cubic	10	48.12	69.35	0.71
SCReAM	10	0.21	73.56	0.42
WebRTC media	10	2.25	67.12	0.57
Sprout	10	5.83	74.65	0.61
TaoVA-100x	8	145.57	67.66	0.38
TCP Vegas	7	60.80	67.72	0.53
Verus	10	213.99	149.30	1.43
Copa	9	70.00	67.03	0.38
Indigo	9	177.39	74.80	0.46
Indigo-calib	1	204.49	66.95	0.65

```
Run 1: Statistics of TCP BBR

Start at: 2017-12-05 16:21:14
End at: 2017-12-05 16:21:44

# Below is generated by plot.py at 2017-12-05 19:53:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 164.09 Mbit/s
95th percentile per-packet one-way delay: 67.335 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 164.09 Mbit/s
95th percentile per-packet one-way delay: 67.335 ms
Loss rate: 0.48%
```
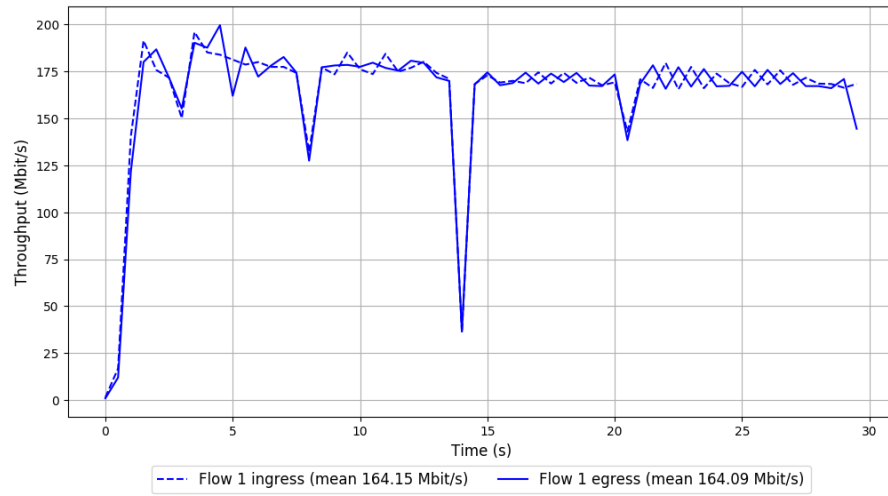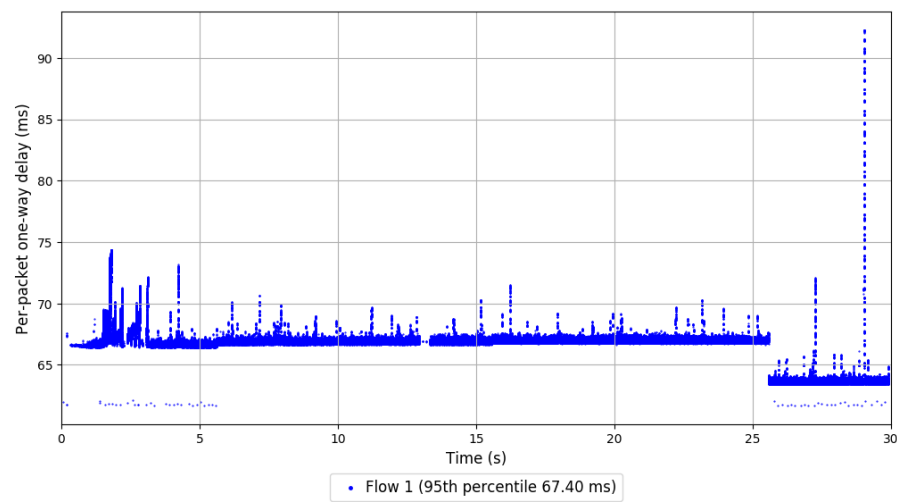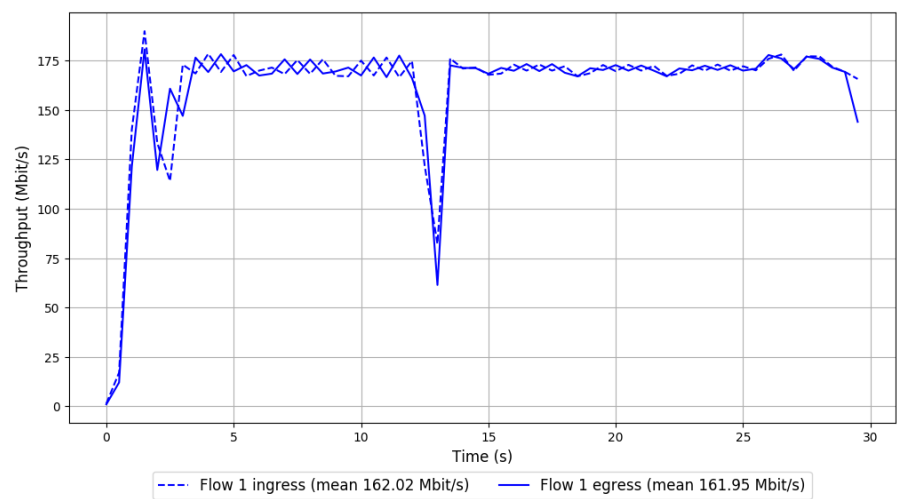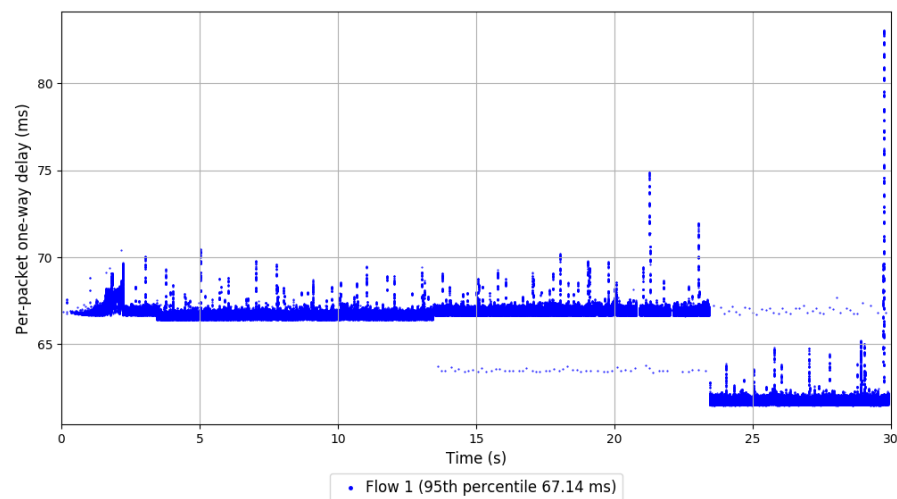
Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2017-12-05 16:31:32
End at: 2017-12-05 16:32:02

# Below is generated by plot.py at 2017-12-05 19:53:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 161.95 Mbit/s
95th percentile per-packet one-way delay: 67.399 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 161.95 Mbit/s
95th percentile per-packet one-way delay: 67.399 ms
Loss rate: 0.47%
```
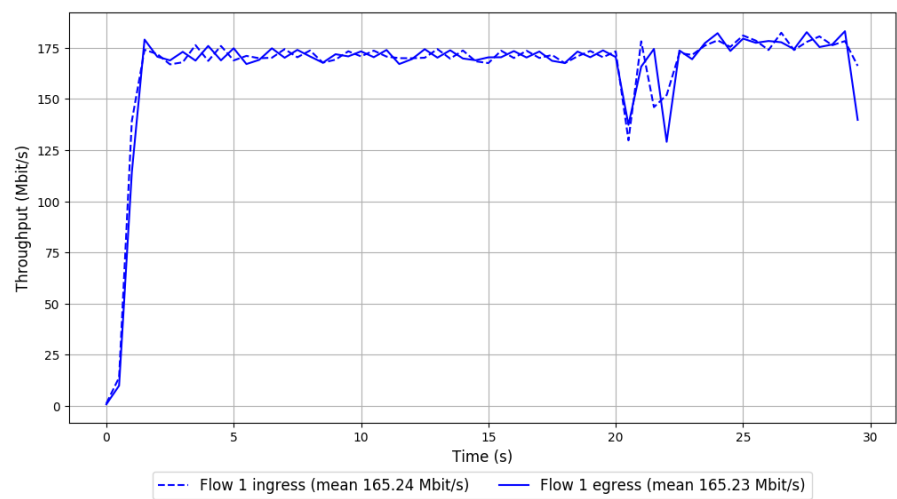
Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2017-12-05 16:41:44
End at: 2017-12-05 16:42:14

# Below is generated by plot.py at 2017-12-05 19:53:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 165.23 Mbit/s
95th percentile per-packet one-way delay: 67.141 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 165.23 Mbit/s
95th percentile per-packet one-way delay: 67.141 ms
Loss rate: 0.46%
```
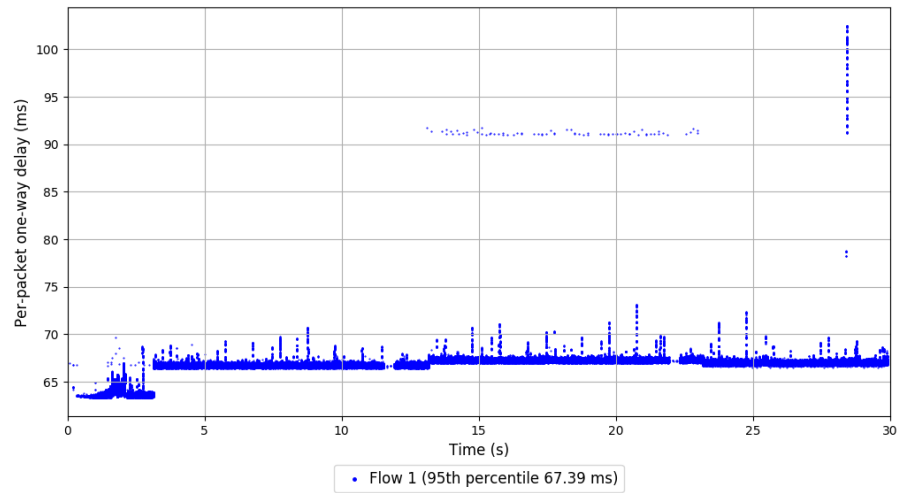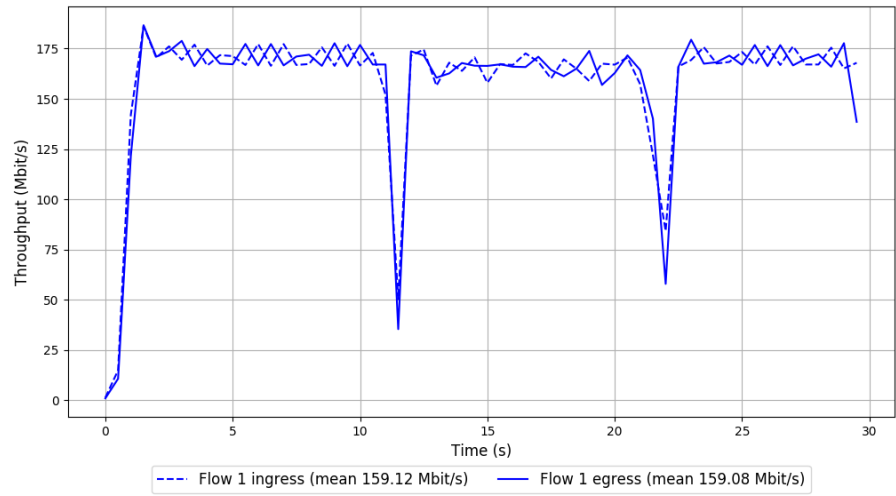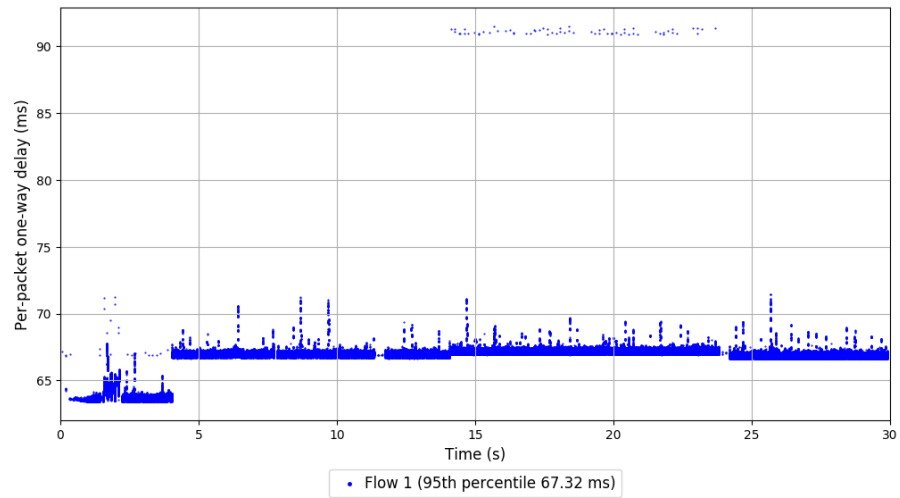
Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 165.24 Mbit/s)   Flow 1 egress (mean 165.23 Mbit/s)

Flow 1 (95th percentile 67.14 ms)

```
Run 4: Statistics of TCP BBR

Start at: 2017-12-05 16:52:14
End at: 2017-12-05 16:52:44

# Below is generated by plot.py at 2017-12-05 19:53:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 159.08 Mbit/s
95th percentile per-packet one-way delay: 67.392 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 159.08 Mbit/s
95th percentile per-packet one-way delay: 67.392 ms
Loss rate: 0.48%
```
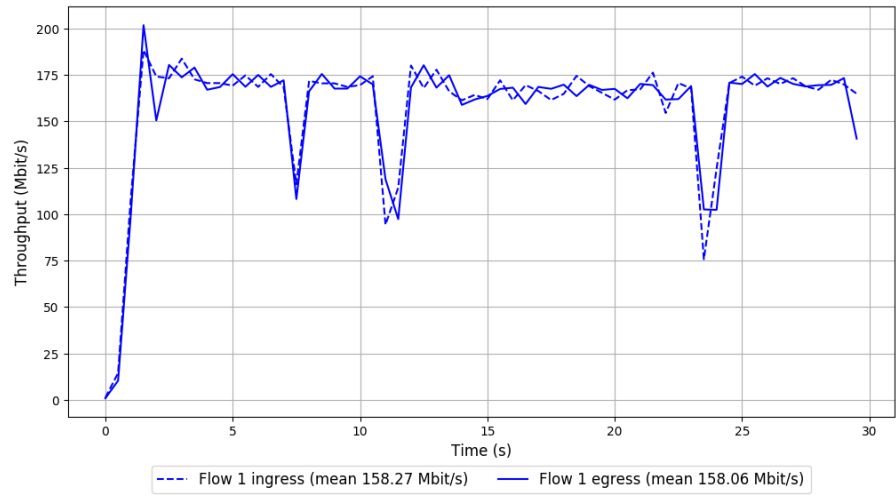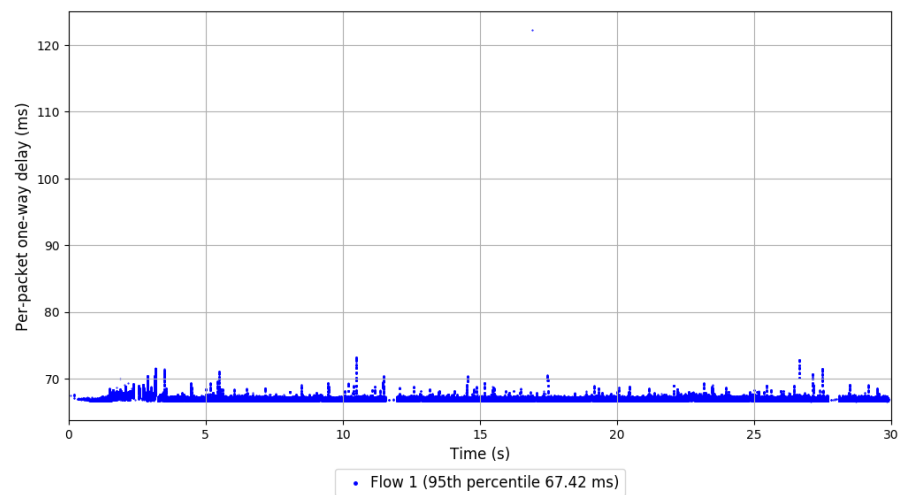
Run 4: Report of TCP BBR — Data Link

```
Run 5: Statistics of TCP BBR

Start at: 2017-12-05 17:02:33
End at: 2017-12-05 17:03:03

# Below is generated by plot.py at 2017-12-05 19:53:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 158.06 Mbit/s
95th percentile per-packet one-way delay: 67.324 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 158.06 Mbit/s
95th percentile per-packet one-way delay: 67.324 ms
Loss rate: 0.58%
```
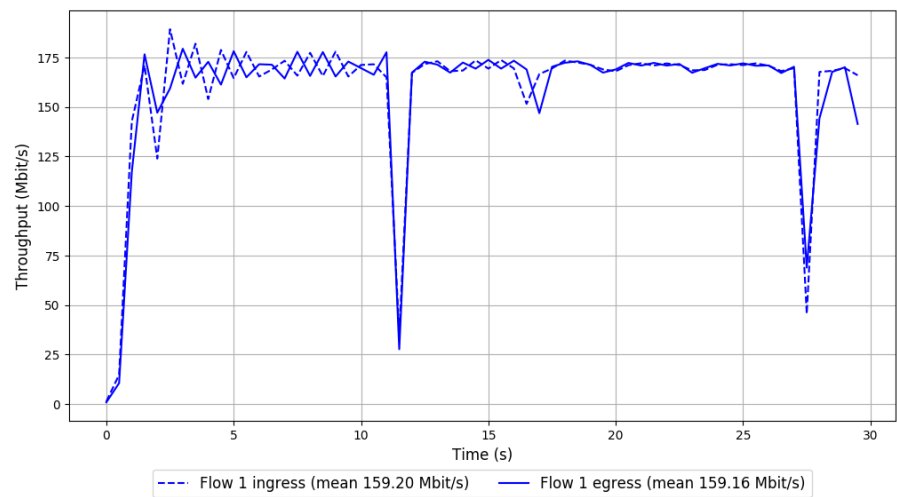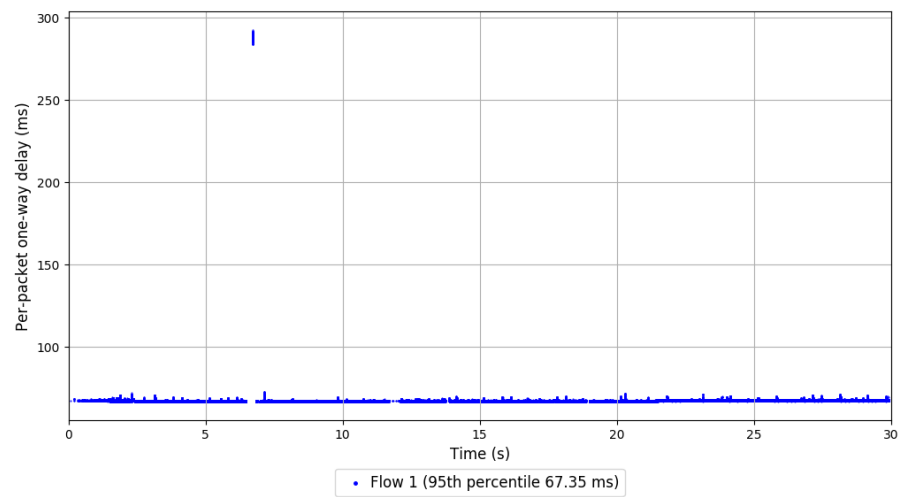
Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 158.27 Mbit/s)   Flow 1 egress (mean 158.06 Mbit/s)

Flow 1 (95th percentile 67.32 ms)

```
Run 6: Statistics of TCP BBR

Start at: 2017-12-05 17:13:00
End at: 2017-12-05 17:13:30

# Below is generated by plot.py at 2017-12-05 19:53:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 159.16 Mbit/s
95th percentile per-packet one-way delay: 67.422 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 159.16 Mbit/s
95th percentile per-packet one-way delay: 67.422 ms
Loss rate: 0.50%
```
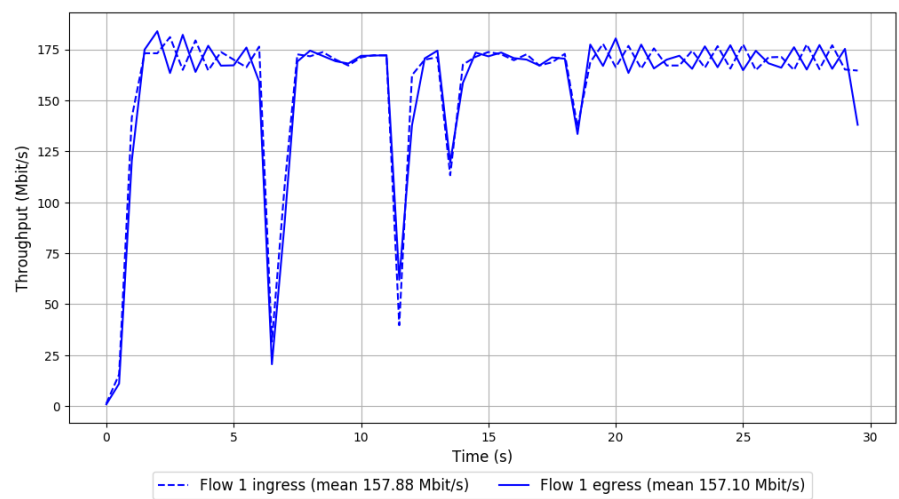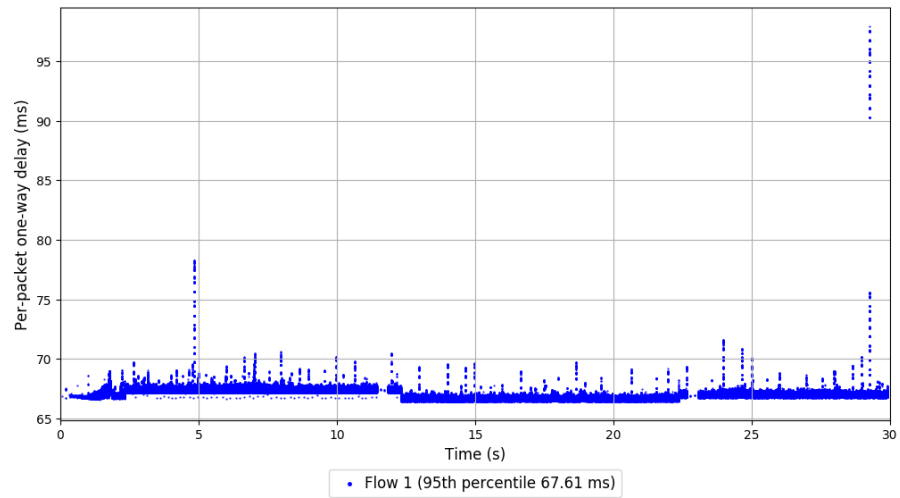
Run 6: Report of TCP BBR — Data Link

Flow 1 ingress (mean 159.20 Mbit/s)   Flow 1 egress (mean 159.16 Mbit/s)

Flow 1 (95th percentile 67.42 ms)

```
Run 7: Statistics of TCP BBR

Start at: 2017-12-05 17:23:16
End at: 2017-12-05 17:23:46

# Below is generated by plot.py at 2017-12-05 19:53:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 157.10 Mbit/s
95th percentile per-packet one-way delay: 67.353 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 157.10 Mbit/s
95th percentile per-packet one-way delay: 67.353 ms
Loss rate: 0.93%
```
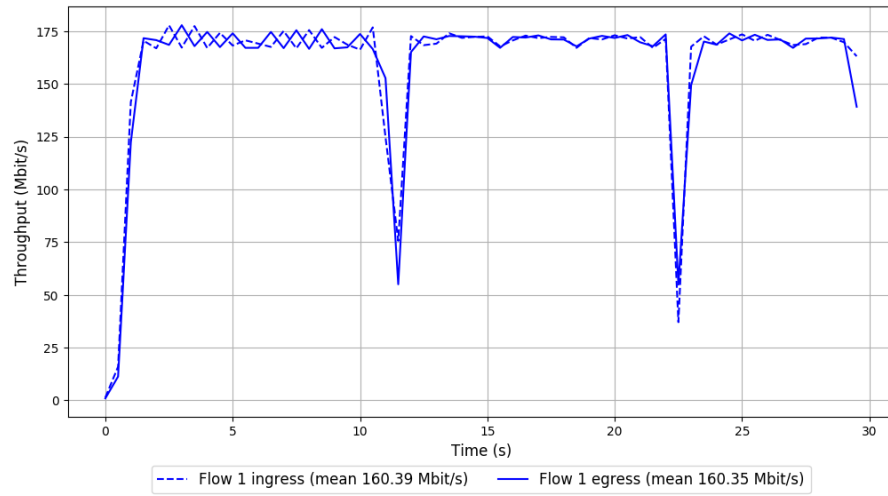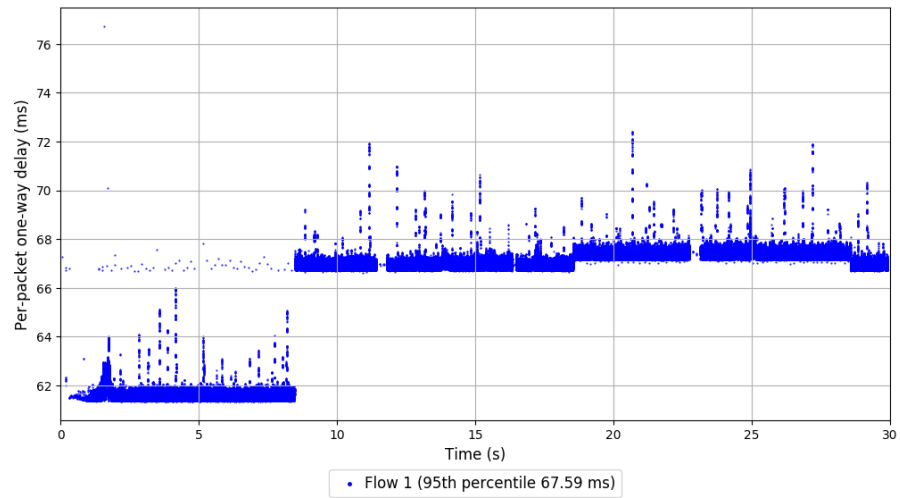
Run 7: Report of TCP BBR — Data Link

```
Run 8: Statistics of TCP BBR

Start at: 2017-12-05 17:33:45
End at: 2017-12-05 17:34:15

# Below is generated by plot.py at 2017-12-05 19:53:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 160.35 Mbit/s
95th percentile per-packet one-way delay: 67.607 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 160.35 Mbit/s
95th percentile per-packet one-way delay: 67.607 ms
Loss rate: 0.47%
```
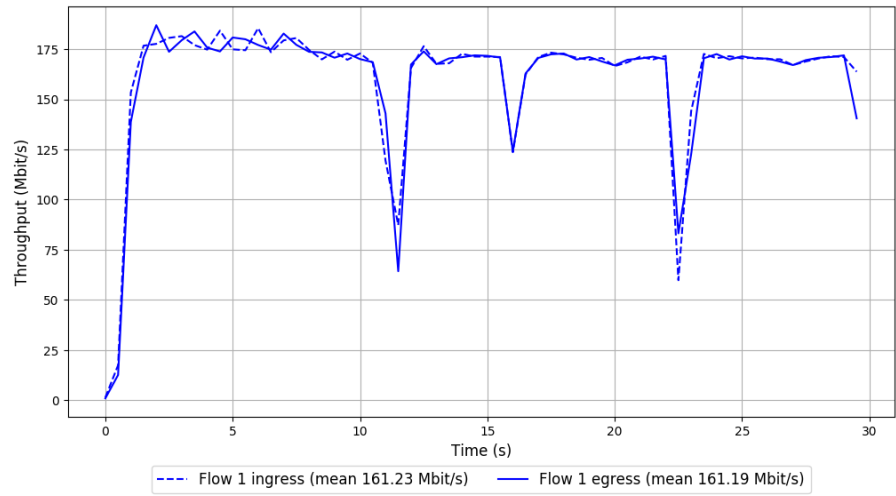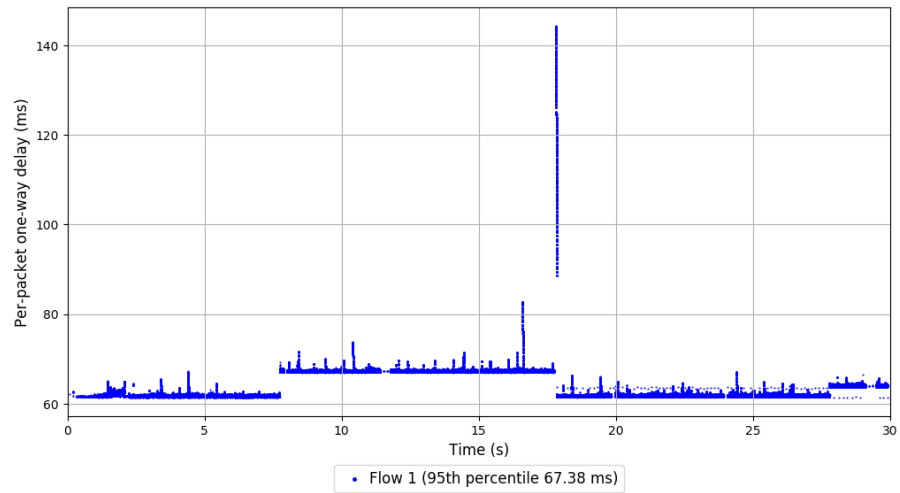
Run 8: Report of TCP BBR — Data Link

Flow 1 ingress (mean 160.39 Mbit/s)   Flow 1 egress (mean 160.35 Mbit/s)

Flow 1 (95th percentile 67.61 ms)

```
Run 9: Statistics of TCP BBR

Start at: 2017-12-05 17:44:39
End at: 2017-12-05 17:45:09

# Below is generated by plot.py at 2017-12-05 19:56:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 161.19 Mbit/s
95th percentile per-packet one-way delay: 67.592 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 161.19 Mbit/s
95th percentile per-packet one-way delay: 67.592 ms
Loss rate: 0.47%
```
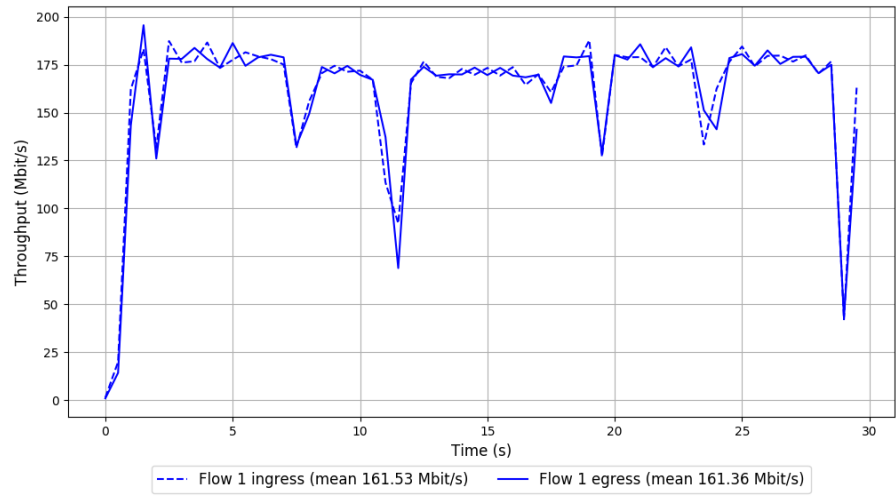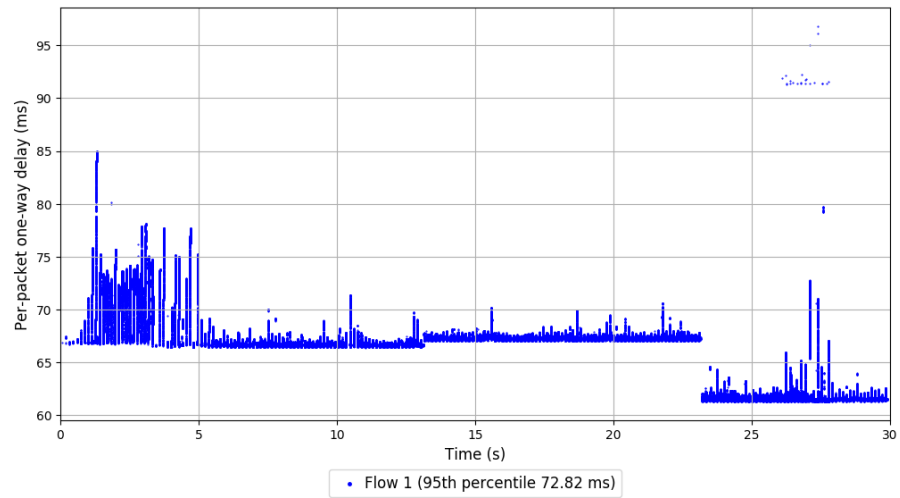
Run 9: Report of TCP BBR — Data Link

Flow 1 ingress (mean 161.23 Mbit/s)   Flow 1 egress (mean 161.19 Mbit/s)

Flow 1 (95th percentile 67.59 ms)

```
Run 10: Statistics of TCP BBR

Start at: 2017-12-05 17:54:49
End at: 2017-12-05 17:55:19

# Below is generated by plot.py at 2017-12-05 19:56:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 161.36 Mbit/s
95th percentile per-packet one-way delay: 67.384 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 161.36 Mbit/s
95th percentile per-packet one-way delay: 67.384 ms
Loss rate: 0.48%
```
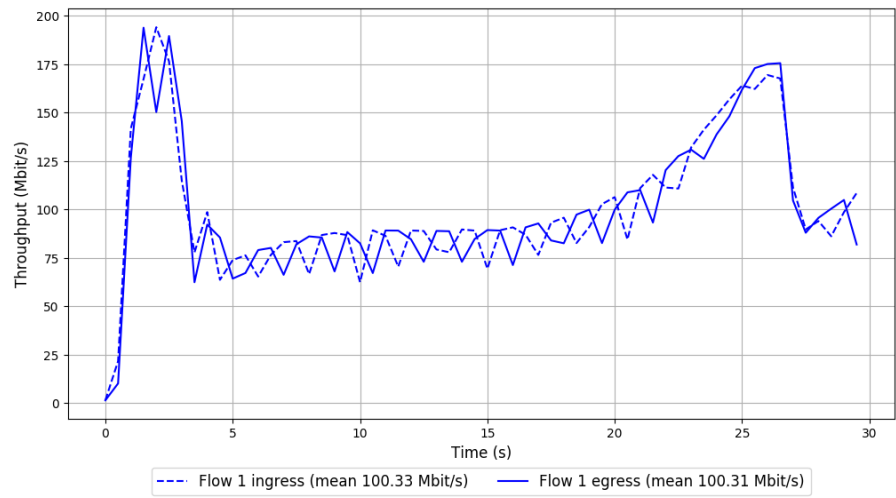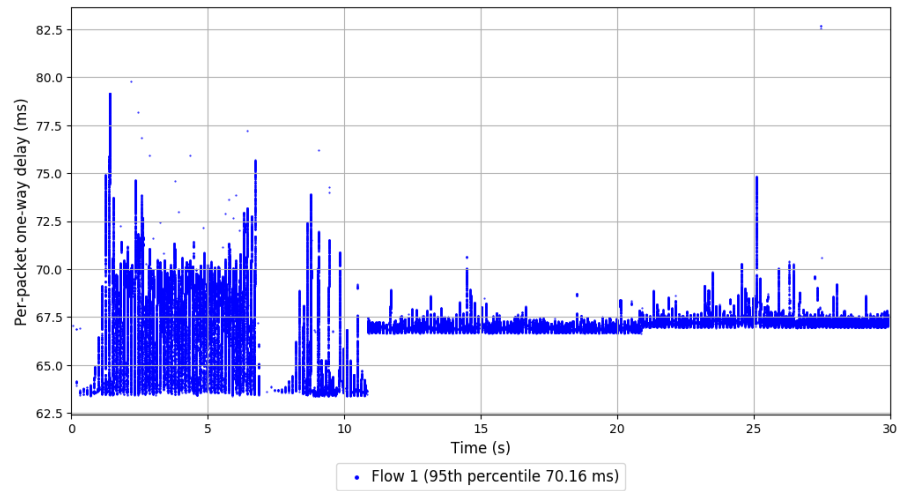
Run 10: Report of TCP BBR — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2017-12-05 16:23:24
End at: 2017-12-05 16:23:54

# Below is generated by plot.py at 2017-12-05 19:56:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 100.31 Mbit/s
95th percentile per-packet one-way delay: 72.821 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 100.31 Mbit/s
95th percentile per-packet one-way delay: 72.821 ms
Loss rate: 0.46%
```
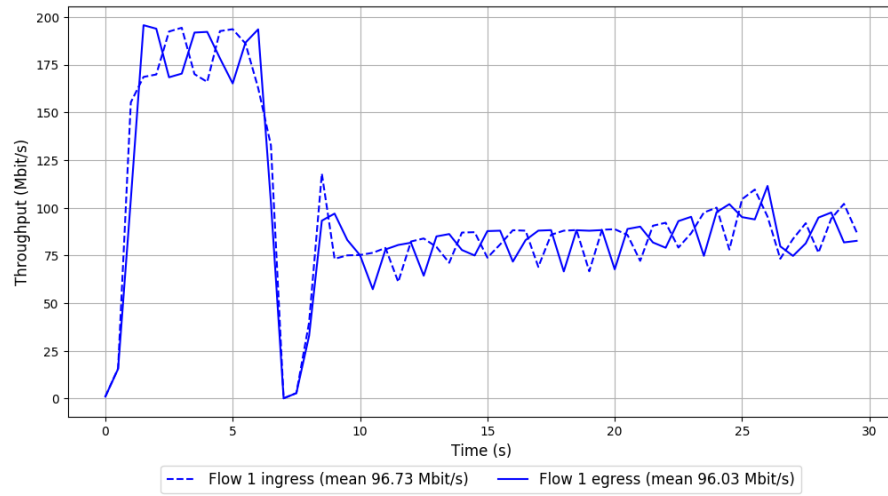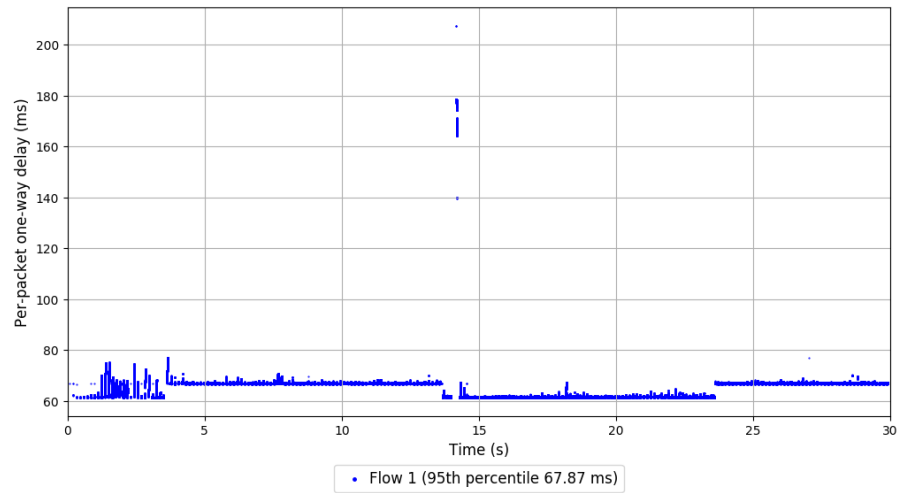
Run 1: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 100.33 Mbit/s) ----   Flow 1 egress (mean 100.31 Mbit/s) ——

• Flow 1 (95th percentile 72.82 ms)

```
Run 2: Statistics of TCP Cubic

Start at: 2017-12-05 16:33:36
End at: 2017-12-05 16:34:06

# Below is generated by plot.py at 2017-12-05 19:56:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.03 Mbit/s
95th percentile per-packet one-way delay: 70.164 ms
Loss rate: 1.17%
-- Flow 1:
Average throughput: 96.03 Mbit/s
95th percentile per-packet one-way delay: 70.164 ms
Loss rate: 1.17%
```
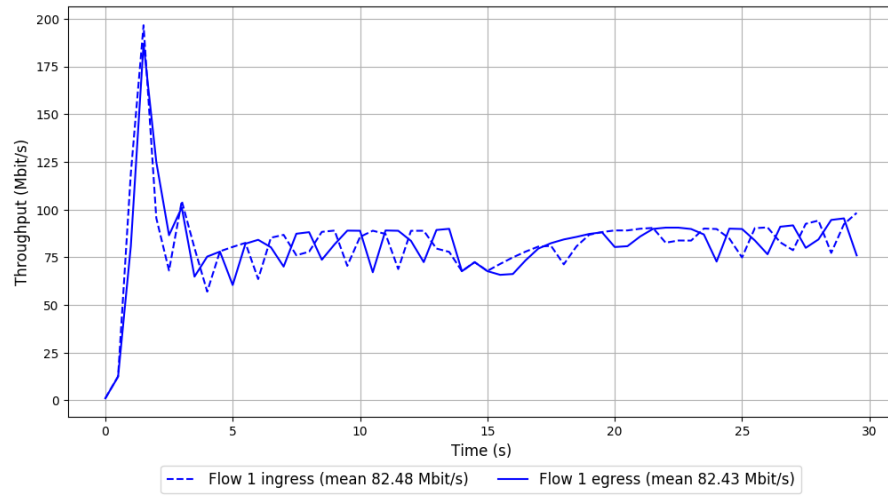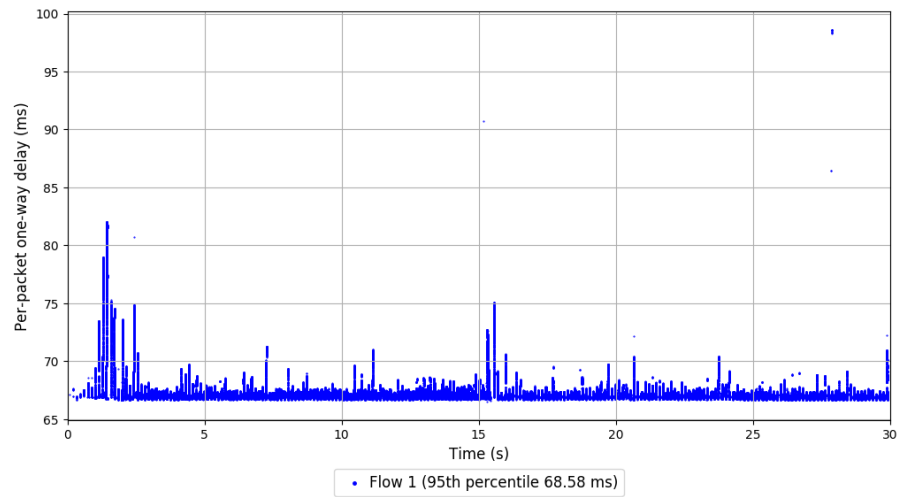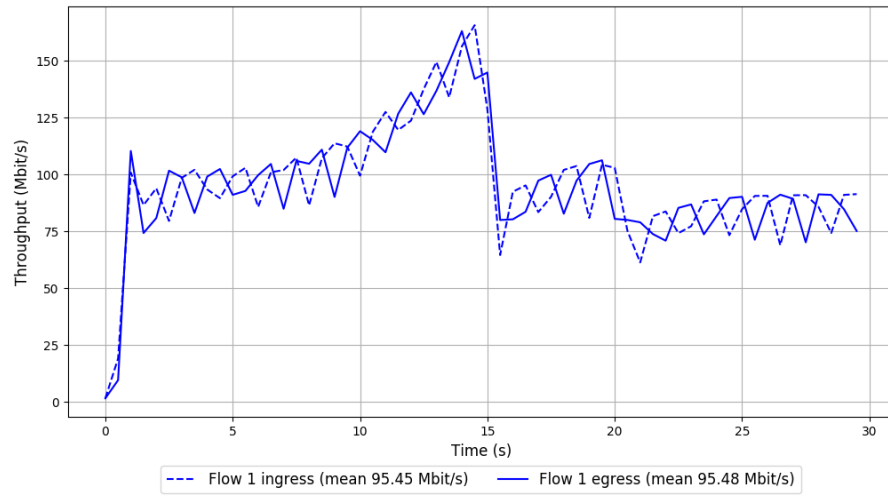
Run 2: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 96.73 Mbit/s) — Flow 1 egress (mean 96.03 Mbit/s)

Flow 1 (95th percentile 70.16 ms)

```
Run 3: Statistics of TCP Cubic

Start at: 2017-12-05 16:43:54
End at: 2017-12-05 16:44:24

# Below is generated by plot.py at 2017-12-05 19:56:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 82.43 Mbit/s
95th percentile per-packet one-way delay: 67.867 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 82.43 Mbit/s
95th percentile per-packet one-way delay: 67.867 ms
Loss rate: 0.51%
```
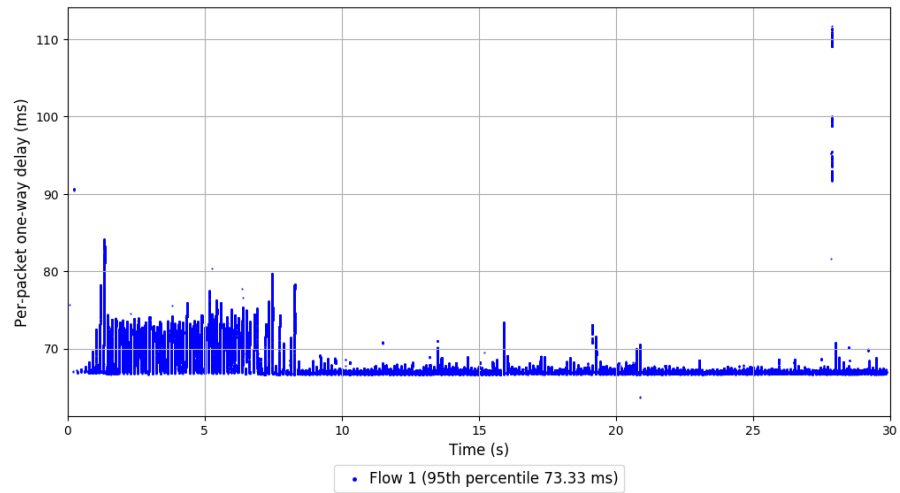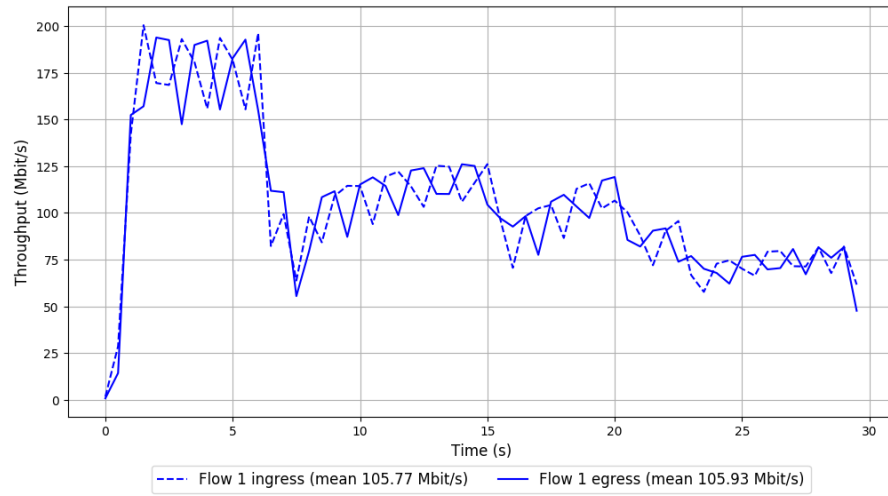
Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 82.48 Mbit/s)   Flow 1 egress (mean 82.43 Mbit/s)

Flow 1 (95th percentile 67.87 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2017-12-05 16:54:23
End at: 2017-12-05 16:54:53

# Below is generated by plot.py at 2017-12-05 19:56:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.48 Mbit/s
95th percentile per-packet one-way delay: 68.584 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 95.48 Mbit/s
95th percentile per-packet one-way delay: 68.584 ms
Loss rate: 0.41%
```
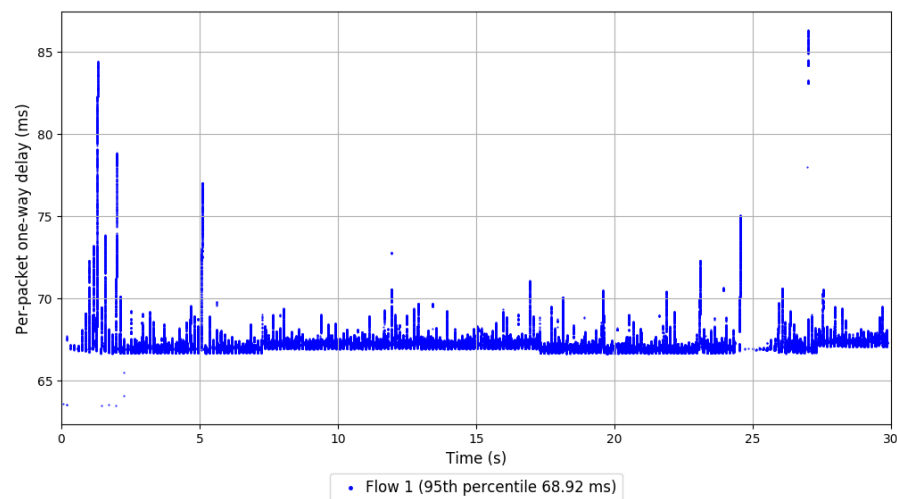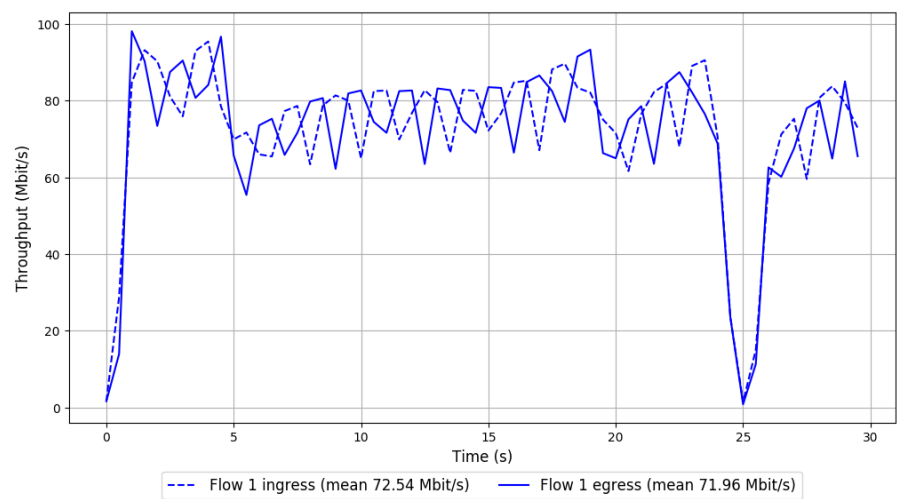
Run 4: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 95.45 Mbit/s) --- Flow 1 egress (mean 95.48 Mbit/s)

Flow 1 (95th percentile 68.58 ms)

```
Run 5: Statistics of TCP Cubic

Start at: 2017-12-05 17:04:40
End at: 2017-12-05 17:05:10

# Below is generated by plot.py at 2017-12-05 19:56:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 105.93 Mbit/s
95th percentile per-packet one-way delay: 73.332 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 105.93 Mbit/s
95th percentile per-packet one-way delay: 73.332 ms
Loss rate: 0.33%
```
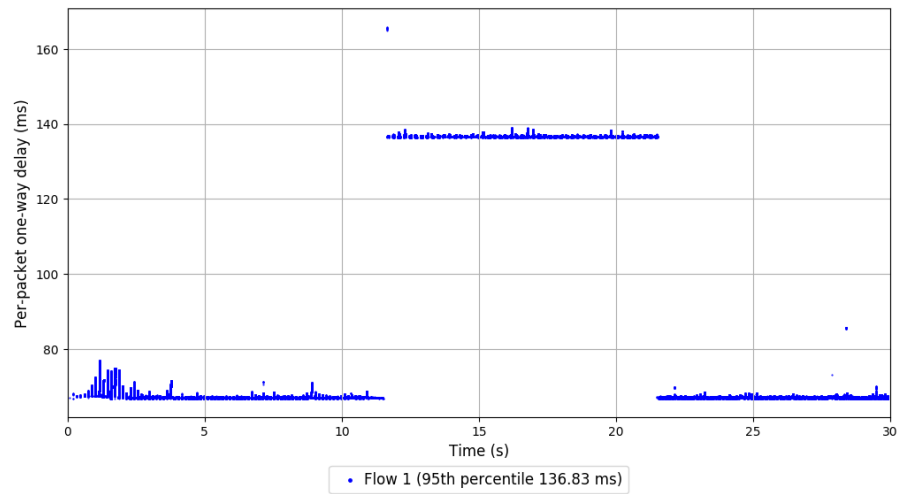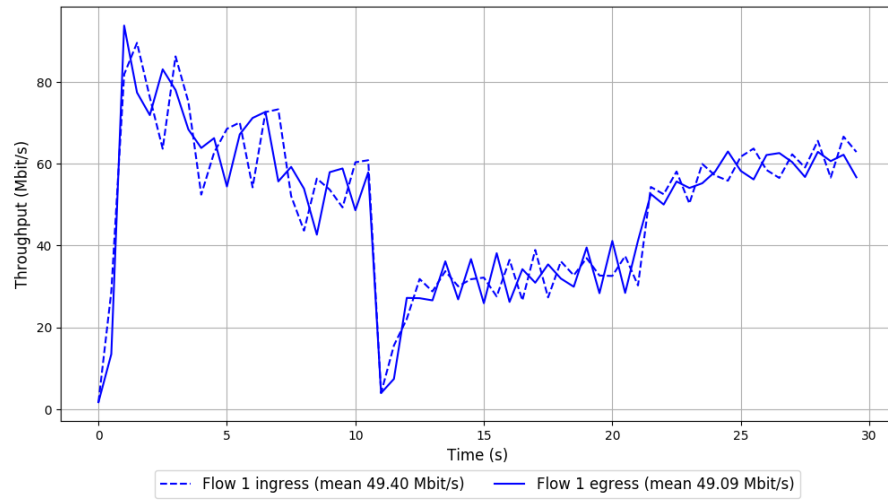
Run 5: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 105.77 Mbit/s)   Flow 1 egress (mean 105.93 Mbit/s)

Flow 1 (95th percentile 73.33 ms)

```
Run 6: Statistics of TCP Cubic

Start at: 2017-12-05 17:15:10
End at: 2017-12-05 17:15:40

# Below is generated by plot.py at 2017-12-05 19:56:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 71.96 Mbit/s
95th percentile per-packet one-way delay: 68.925 ms
Loss rate: 1.23%
-- Flow 1:
Average throughput: 71.96 Mbit/s
95th percentile per-packet one-way delay: 68.925 ms
Loss rate: 1.23%
```
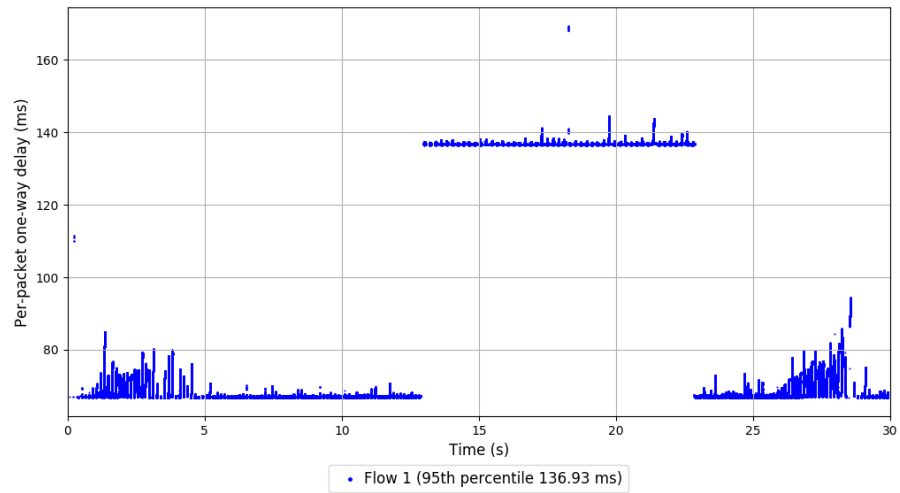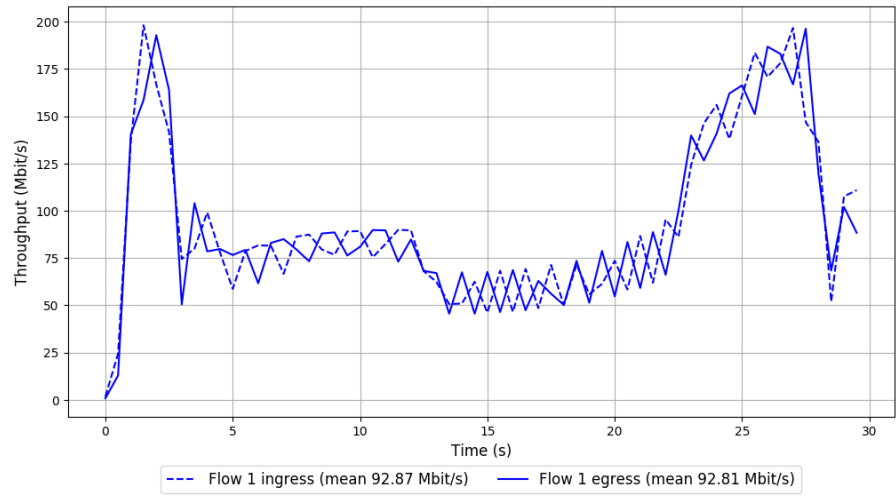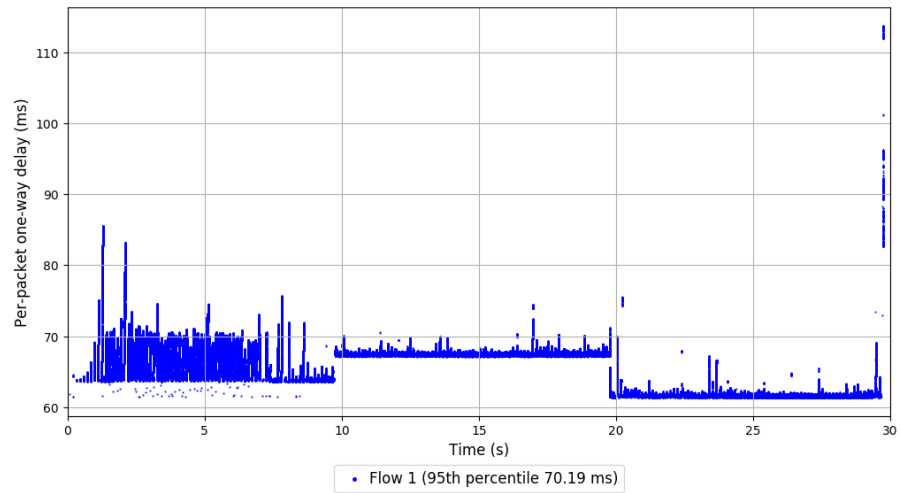
Run 6: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 72.54 Mbit/s)   Flow 1 egress (mean 71.96 Mbit/s)

Flow 1 (95th percentile 68.92 ms)

```
Run 7: Statistics of TCP Cubic

Start at: 2017-12-05 17:25:26
End at: 2017-12-05 17:25:56

# Below is generated by plot.py at 2017-12-05 19:56:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 49.09 Mbit/s
95th percentile per-packet one-way delay: 136.827 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 49.09 Mbit/s
95th percentile per-packet one-way delay: 136.827 ms
Loss rate: 1.08%
```
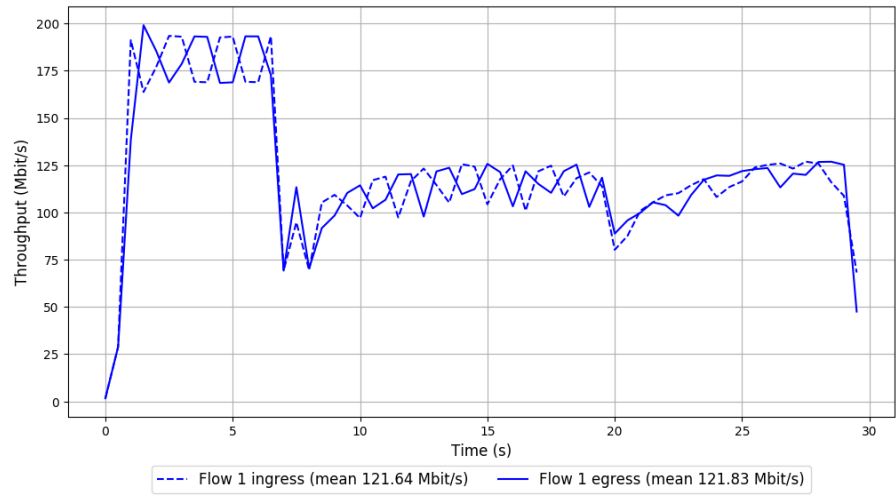
Run 7: Report of TCP Cubic — Data Link

```
Run 8: Statistics of TCP Cubic

Start at: 2017-12-05 17:35:54
End at: 2017-12-05 17:36:24

# Below is generated by plot.py at 2017-12-05 19:56:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.81 Mbit/s
95th percentile per-packet one-way delay: 136.931 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 92.81 Mbit/s
95th percentile per-packet one-way delay: 136.931 ms
Loss rate: 0.51%
```
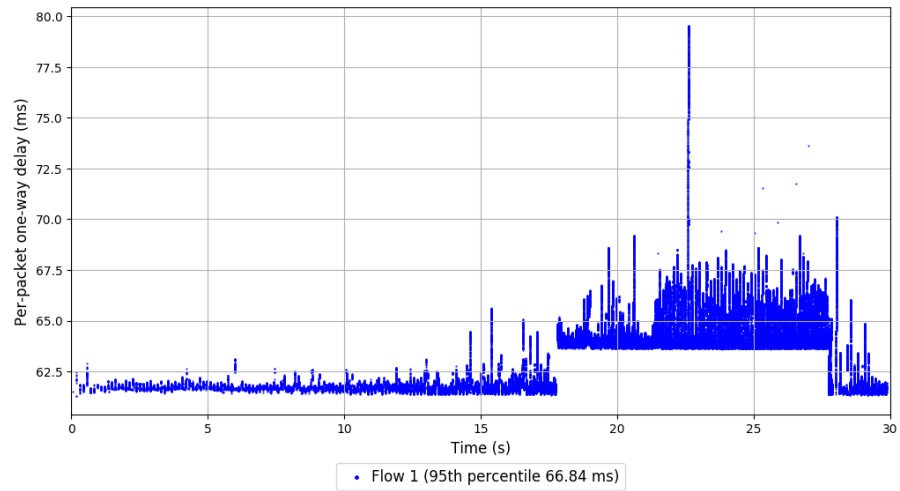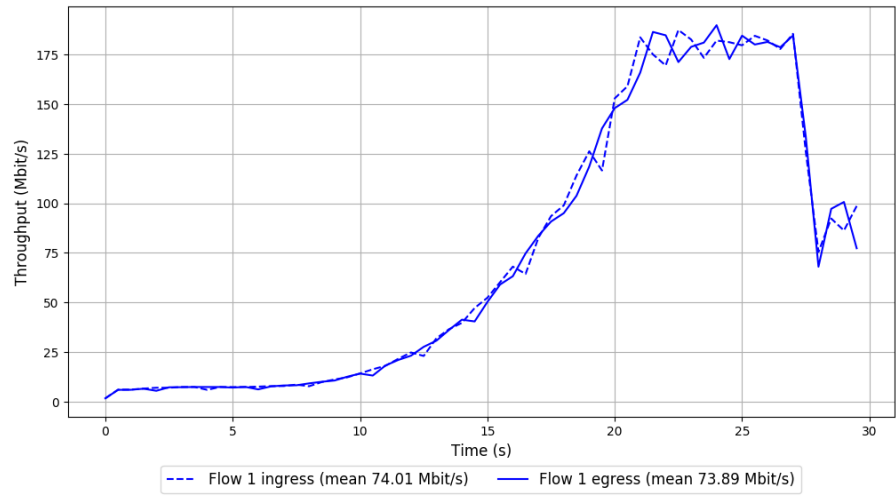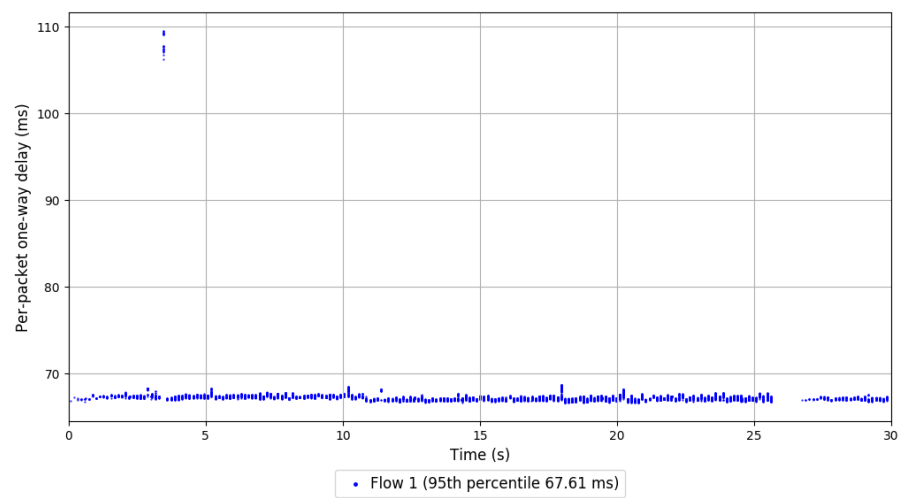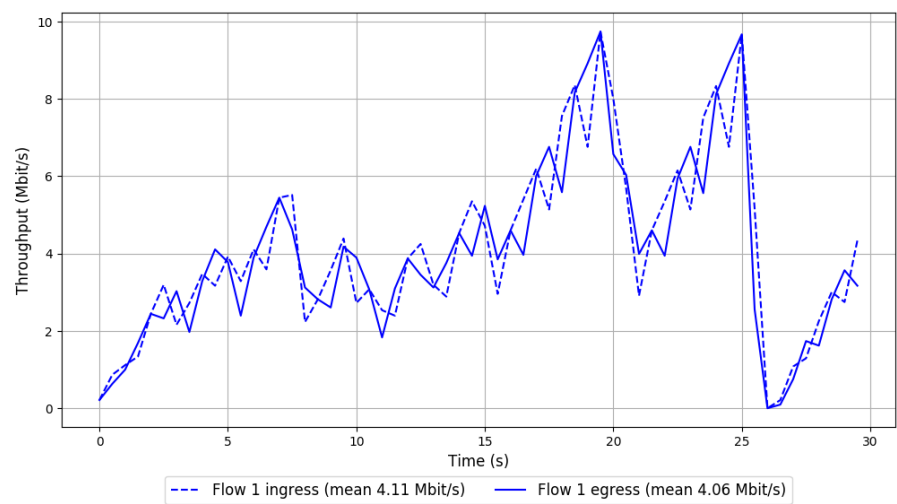
Run 8: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 92.87 Mbit/s)   Flow 1 egress (mean 92.81 Mbit/s)

· Flow 1 (95th percentile 136.93 ms)

```
Run 9: Statistics of TCP Cubic

Start at: 2017-12-05 17:46:47
End at: 2017-12-05 17:47:17

# Below is generated by plot.py at 2017-12-05 19:57:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 121.83 Mbit/s
95th percentile per-packet one-way delay: 70.194 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 121.83 Mbit/s
95th percentile per-packet one-way delay: 70.194 ms
Loss rate: 0.29%
```
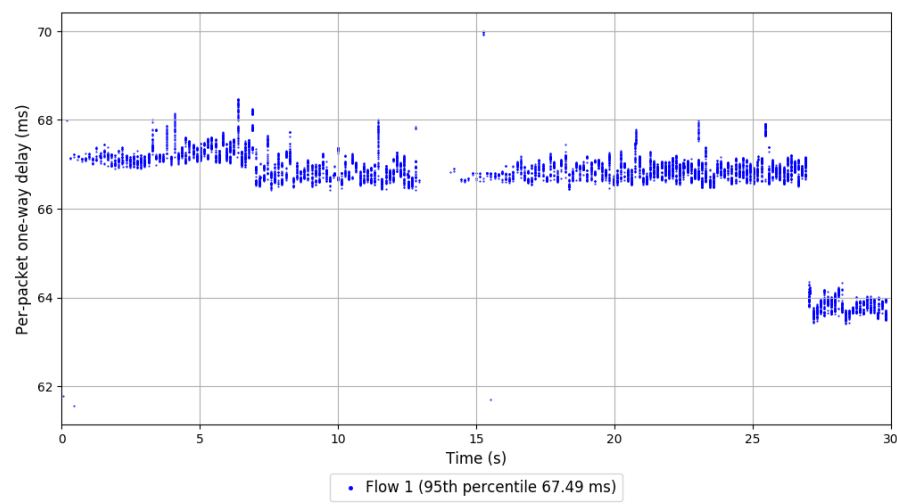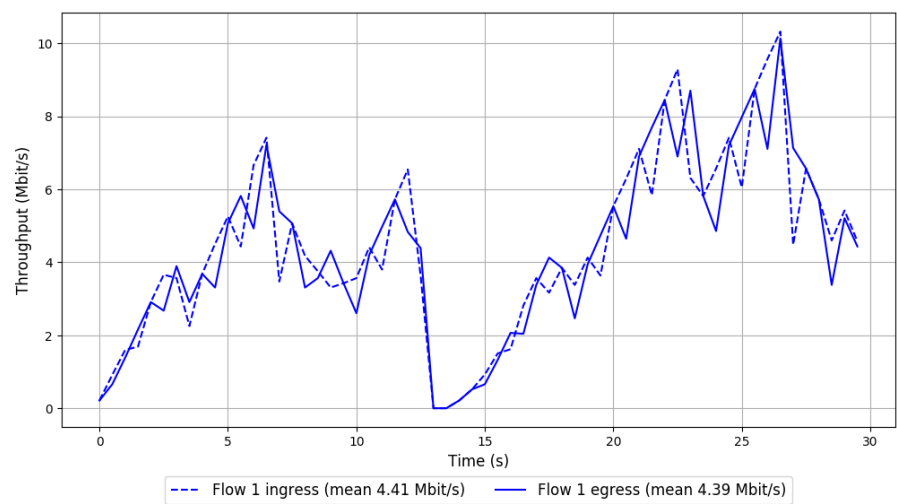
Run 9: Report of TCP Cubic — Data Link

```
Run 10: Statistics of TCP Cubic

Start at: 2017-12-05 17:56:59
End at: 2017-12-05 17:57:29

# Below is generated by plot.py at 2017-12-05 19:57:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 73.89 Mbit/s
95th percentile per-packet one-way delay: 66.844 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 73.89 Mbit/s
95th percentile per-packet one-way delay: 66.844 ms
Loss rate: 0.59%
```
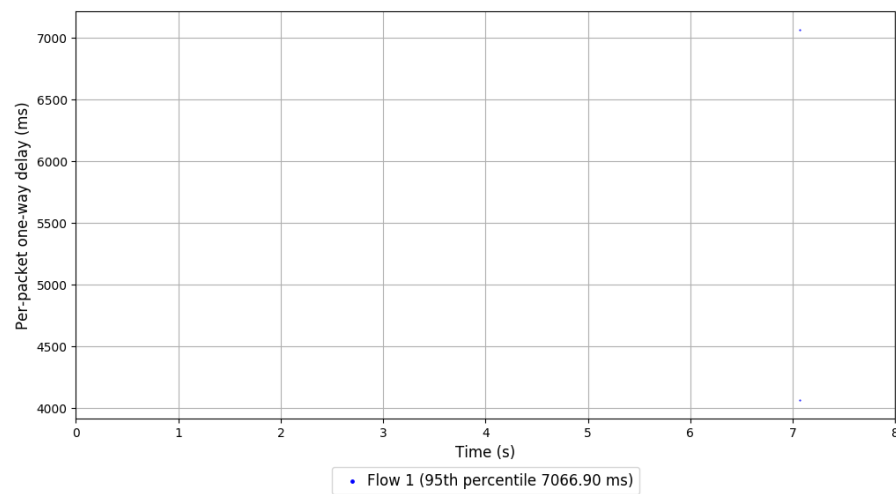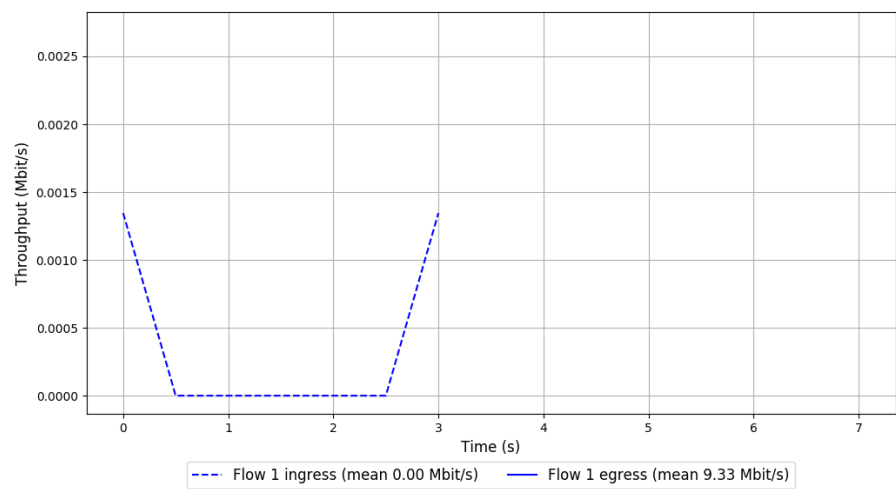
Run 10: Report of TCP Cubic — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2017-12-05 16:19:06
End at: 2017-12-05 16:19:36

# Below is generated by plot.py at 2017-12-05 19:57:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.06 Mbit/s
95th percentile per-packet one-way delay: 67.606 ms
Loss rate: 1.59%
-- Flow 1:
Average throughput: 4.06 Mbit/s
95th percentile per-packet one-way delay: 67.606 ms
Loss rate: 1.59%
```
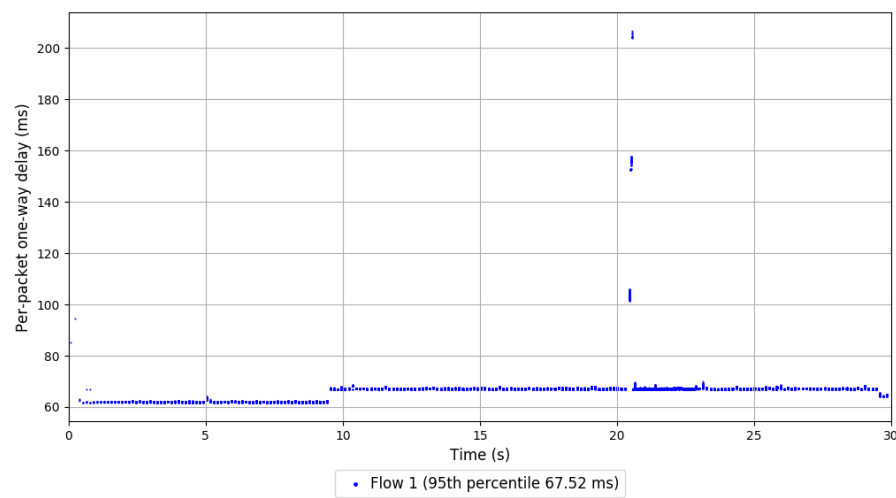
Run 1: Report of LEDBAT — Data Link

Flow 1 ingress (mean 4.11 Mbit/s)   Flow 1 egress (mean 4.06 Mbit/s)

Flow 1 (95th percentile 67.61 ms)

```
Run 2: Statistics of LEDBAT

Start at: 2017-12-05 16:29:20
End at: 2017-12-05 16:29:50

# Below is generated by plot.py at 2017-12-05 19:57:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.39 Mbit/s
95th percentile per-packet one-way delay: 67.494 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 4.39 Mbit/s
95th percentile per-packet one-way delay: 67.494 ms
Loss rate: 0.98%
```
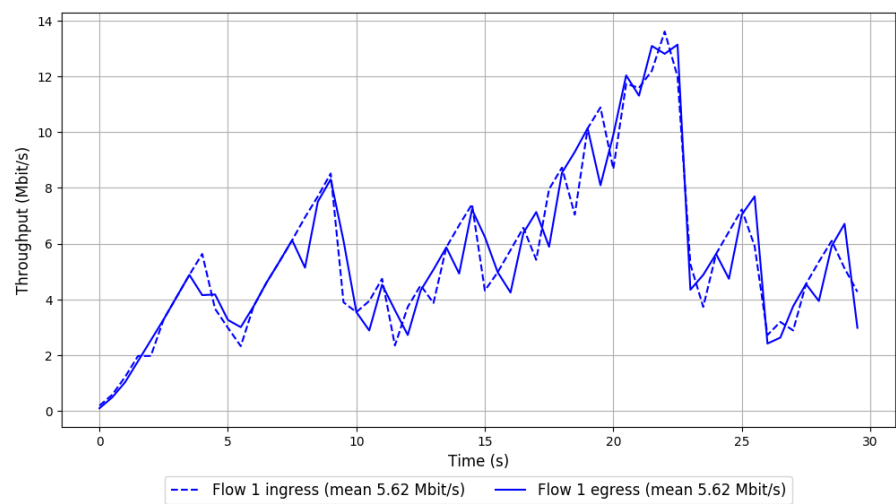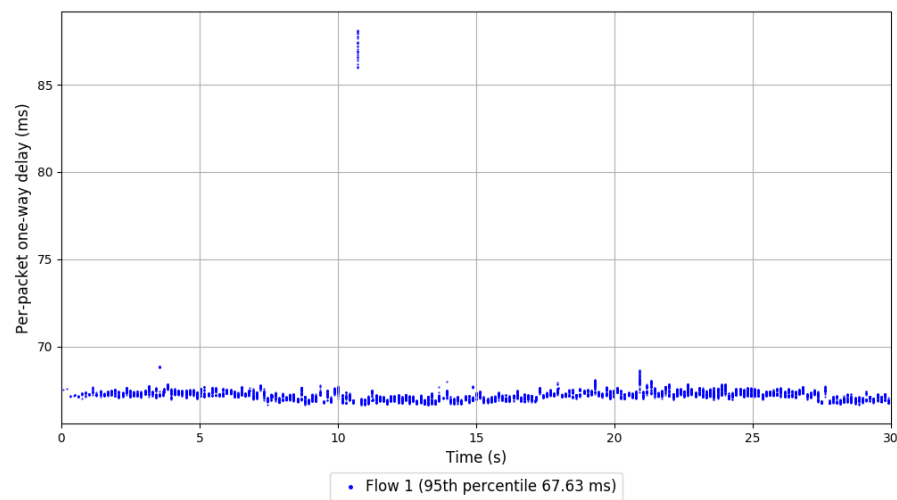
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2017-12-05 16:39:38
End at: 2017-12-05 16:40:08
```

Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2017-12-05 16:50:08
End at: 2017-12-05 16:50:38

# Below is generated by plot.py at 2017-12-05 19:57:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.62 Mbit/s
95th percentile per-packet one-way delay: 67.520 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 5.62 Mbit/s
95th percentile per-packet one-way delay: 67.520 ms
Loss rate: 0.43%
```
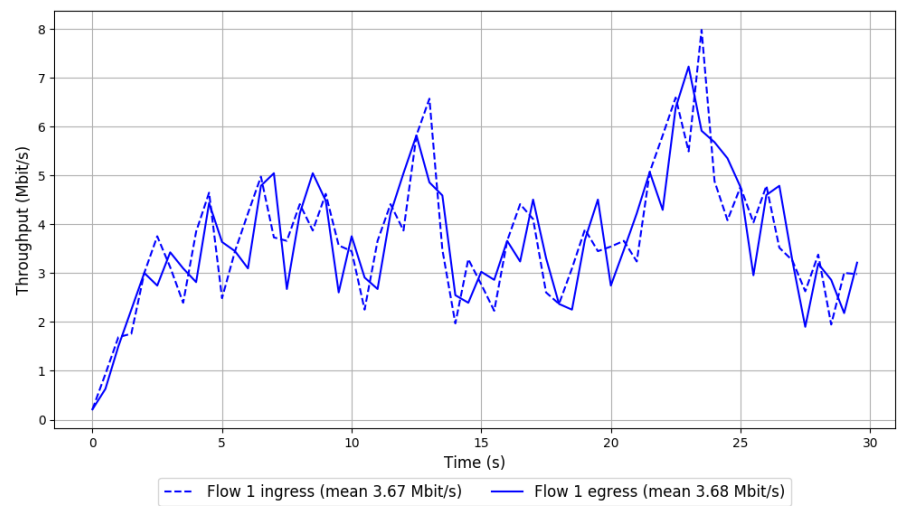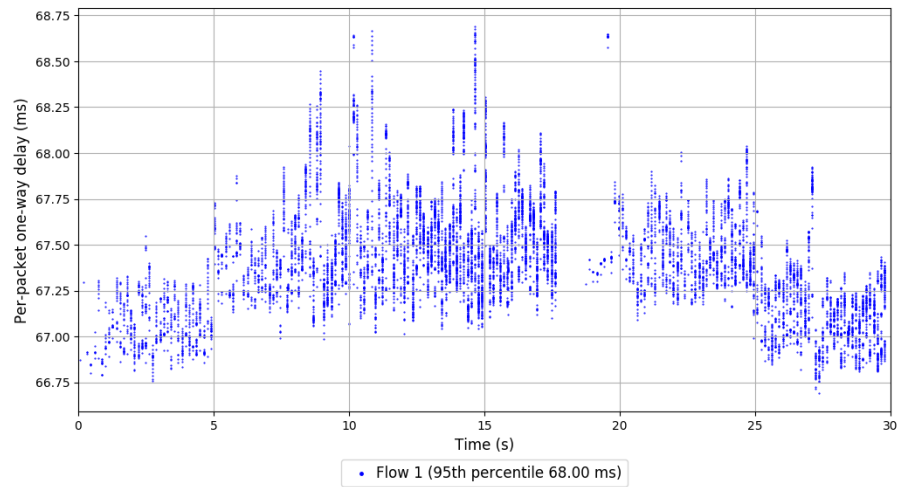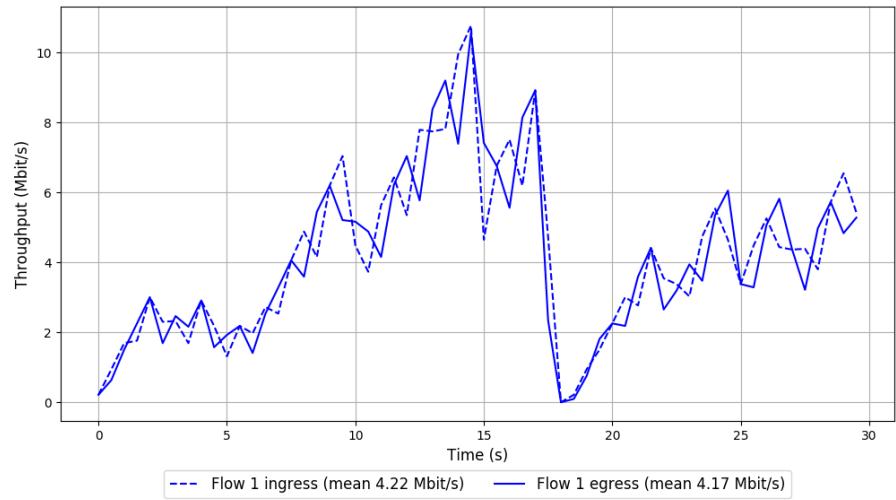
Run 4: Report of LEDBAT — Data Link

Flow 1 ingress (mean 5.62 Mbit/s) --- Flow 1 egress (mean 5.62 Mbit/s)

Flow 1 (95th percentile 67.52 ms)

```
Run 5: Statistics of LEDBAT

Start at: 2017-12-05 17:00:30
End at: 2017-12-05 17:01:00

# Below is generated by plot.py at 2017-12-05 19:57:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.68 Mbit/s
95th percentile per-packet one-way delay: 67.629 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 3.68 Mbit/s
95th percentile per-packet one-way delay: 67.629 ms
Loss rate: 0.42%
```
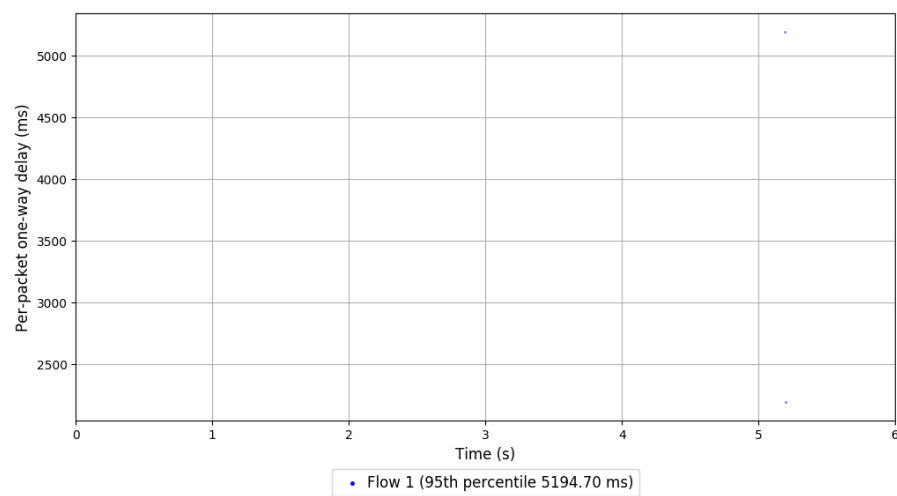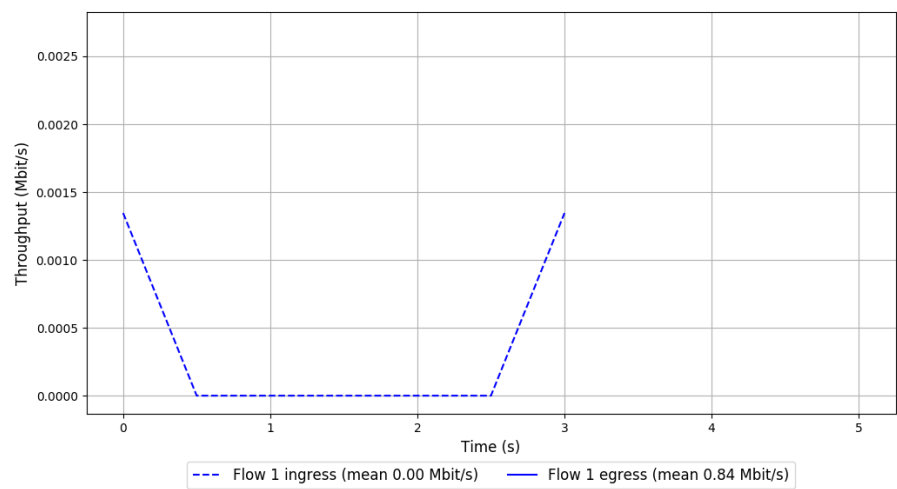
Run 5: Report of LEDBAT — Data Link

Flow 1 ingress (mean 3.67 Mbit/s)   Flow 1 egress (mean 3.68 Mbit/s)

• Flow 1 (95th percentile 67.63 ms)

```
Run 6: Statistics of LEDBAT

Start at: 2017-12-05 17:10:52
End at: 2017-12-05 17:11:22

# Below is generated by plot.py at 2017-12-05 19:57:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 4.17 Mbit/s
95th percentile per-packet one-way delay: 68.005 ms
Loss rate: 1.77%
-- Flow 1:
Average throughput: 4.17 Mbit/s
95th percentile per-packet one-way delay: 68.005 ms
Loss rate: 1.77%
```
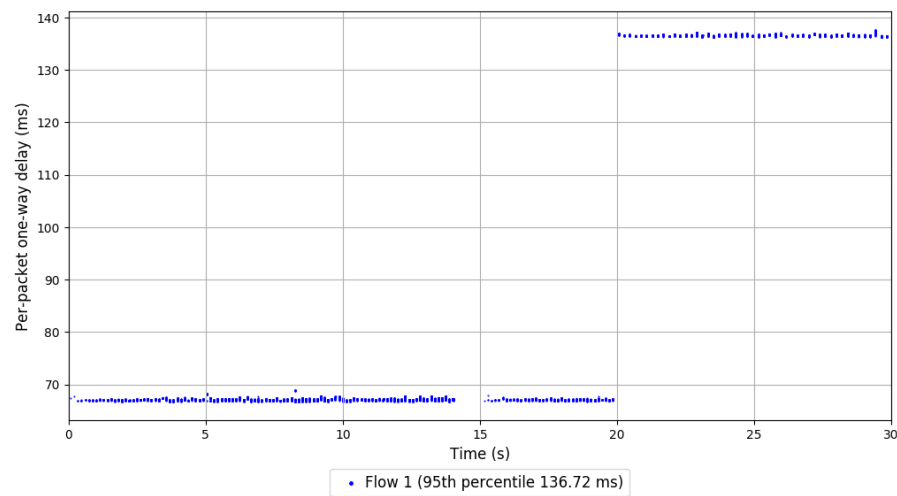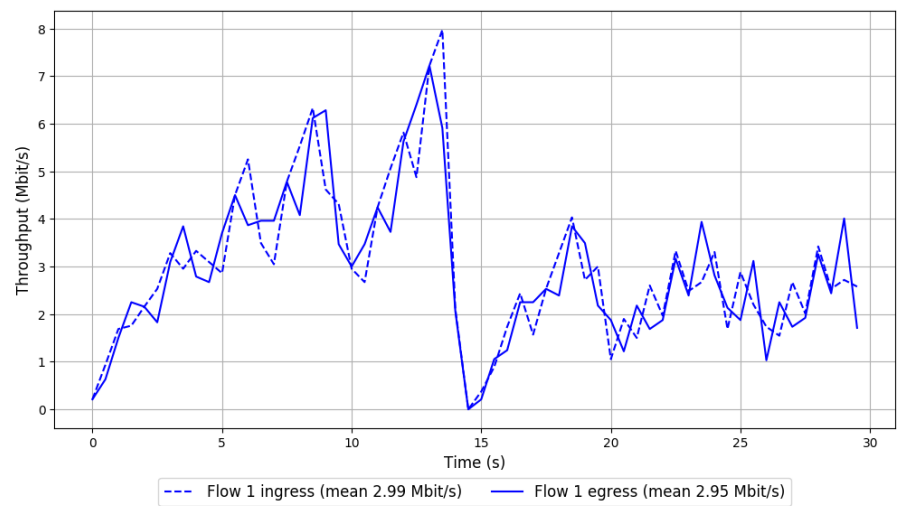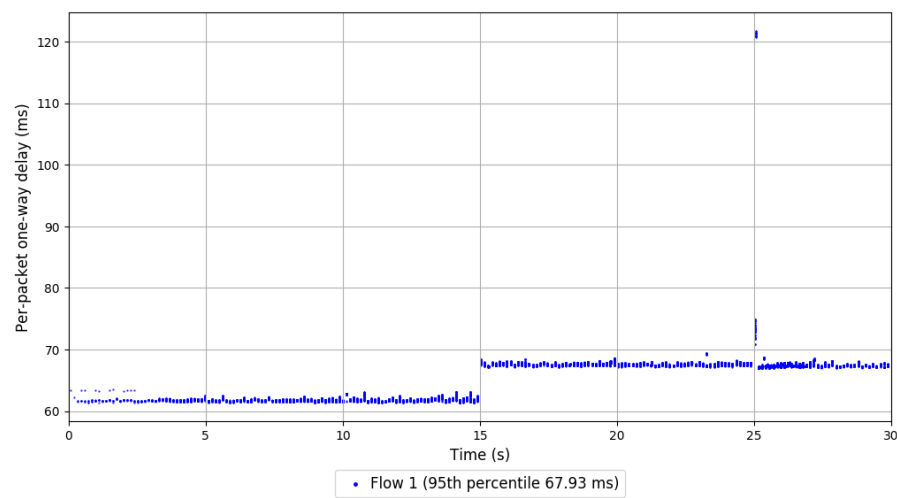
Run 6: Report of LEDBAT — Data Link

Run 7: Statistics of LEDBAT

Start at: 2017-12-05 17:21:12
End at: 2017-12-05 17:21:42

Run 7: Report of LEDBAT — Data Link

Flow 1 ingress (mean 0.00 Mbit/s) — — — Flow 1 egress (mean 0.84 Mbit/s)

• Flow 1 (95th percentile 5194.70 ms)

```
Run 8: Statistics of LEDBAT

Start at: 2017-12-05 17:31:37
End at: 2017-12-05 17:32:07

# Below is generated by plot.py at 2017-12-05 19:57:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.95 Mbit/s
95th percentile per-packet one-way delay: 136.723 ms
Loss rate: 1.98%
-- Flow 1:
Average throughput: 2.95 Mbit/s
95th percentile per-packet one-way delay: 136.723 ms
Loss rate: 1.98%
```
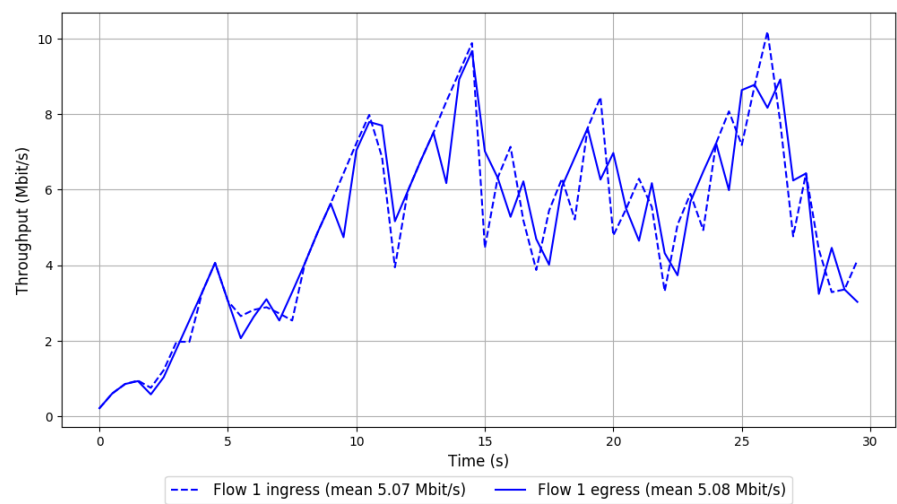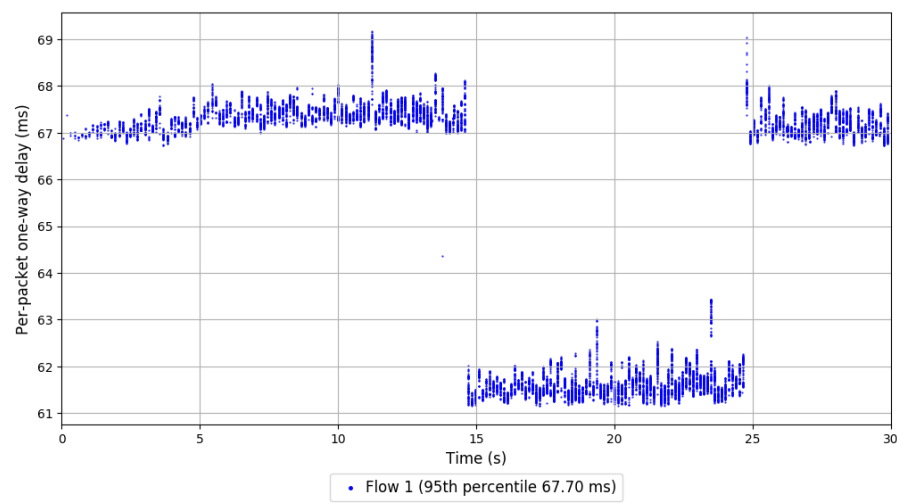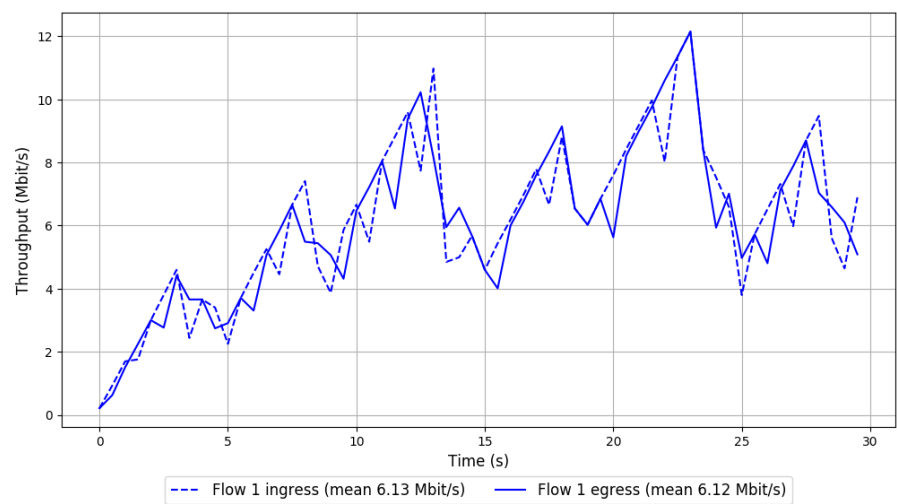
Run 8: Report of LEDBAT — Data Link

Flow 1 ingress (mean 2.99 Mbit/s)   Flow 1 egress (mean 2.95 Mbit/s)

Flow 1 (95th percentile 136.72 ms)

```
Run 9: Statistics of LEDBAT

Start at: 2017-12-05 17:42:32
End at: 2017-12-05 17:43:02

# Below is generated by plot.py at 2017-12-05 19:57:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.08 Mbit/s
95th percentile per-packet one-way delay: 67.929 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 5.08 Mbit/s
95th percentile per-packet one-way delay: 67.929 ms
Loss rate: 0.36%
```
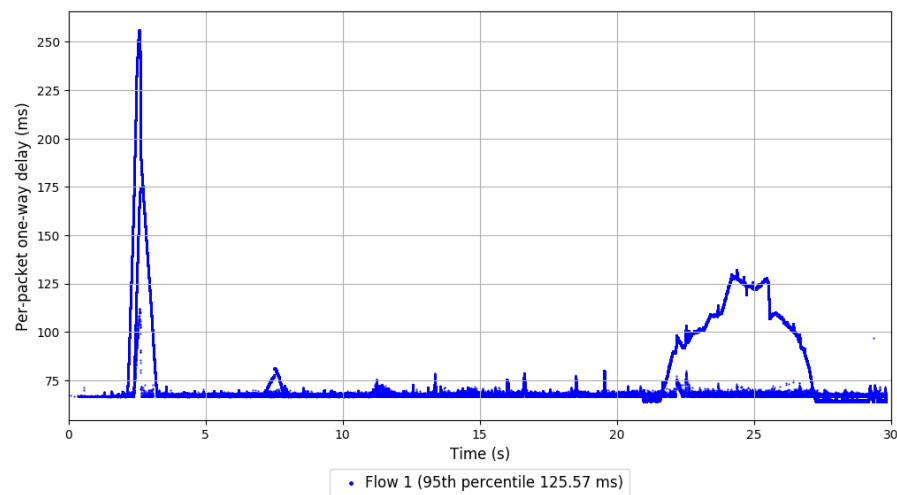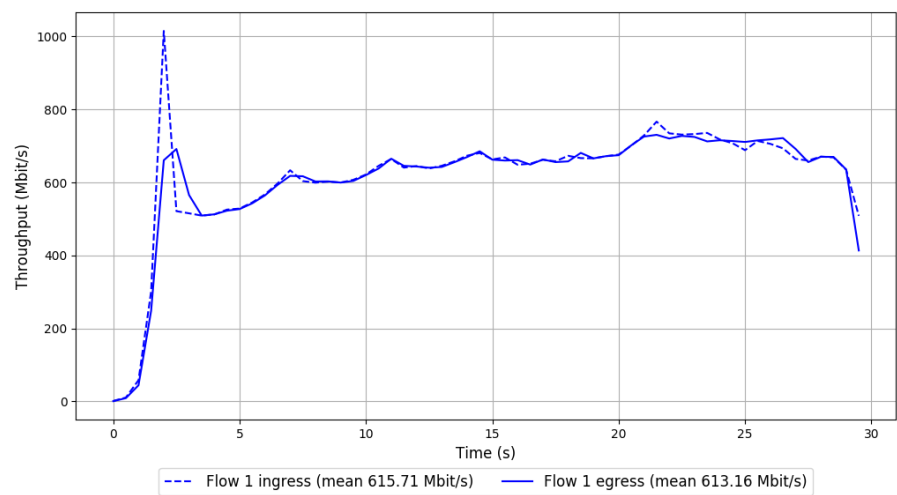
Run 9: Report of LEDBAT — Data Link

Flow 1 ingress (mean 5.07 Mbit/s)   Flow 1 egress (mean 5.08 Mbit/s)

Flow 1 (95th percentile 67.93 ms)

```
Run 10: Statistics of LEDBAT

Start at: 2017-12-05 17:52:42
End at: 2017-12-05 17:53:12

# Below is generated by plot.py at 2017-12-05 19:57:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.12 Mbit/s
95th percentile per-packet one-way delay: 67.696 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 6.12 Mbit/s
95th percentile per-packet one-way delay: 67.696 ms
Loss rate: 0.53%
```
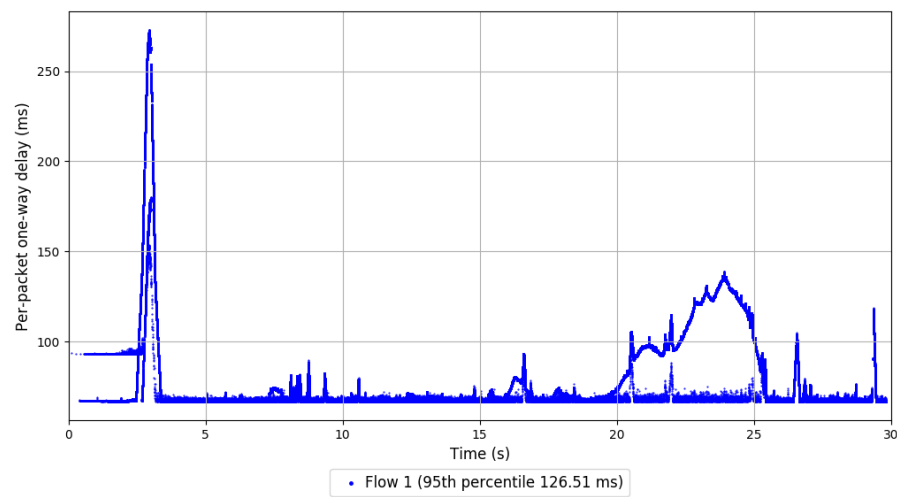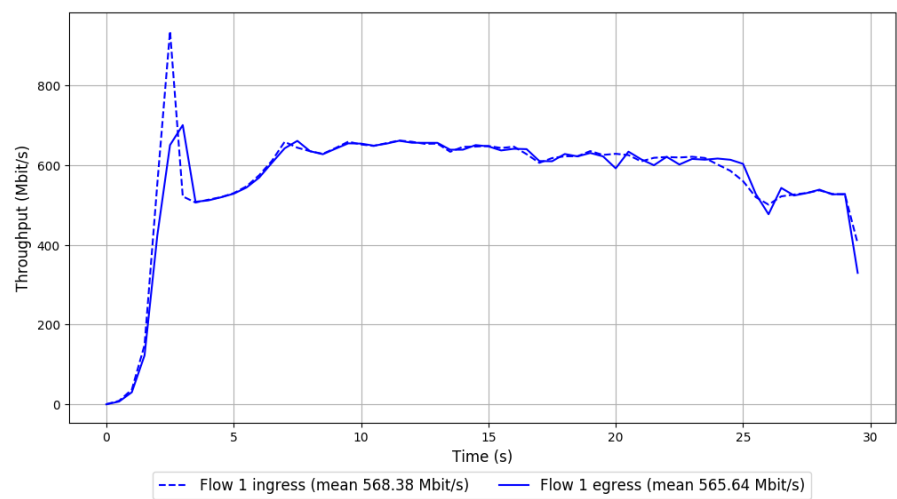
Run 10: Report of LEDBAT — Data Link

Flow 1 ingress (mean 6.13 Mbit/s)   Flow 1 egress (mean 6.12 Mbit/s)

Flow 1 (95th percentile 67.70 ms)

```
Run 1: Statistics of PCC

Start at: 2017-12-05 16:26:16
End at: 2017-12-05 16:26:46

# Below is generated by plot.py at 2017-12-05 20:06:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 613.16 Mbit/s
95th percentile per-packet one-way delay: 125.571 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 613.16 Mbit/s
95th percentile per-packet one-way delay: 125.571 ms
Loss rate: 0.86%
```
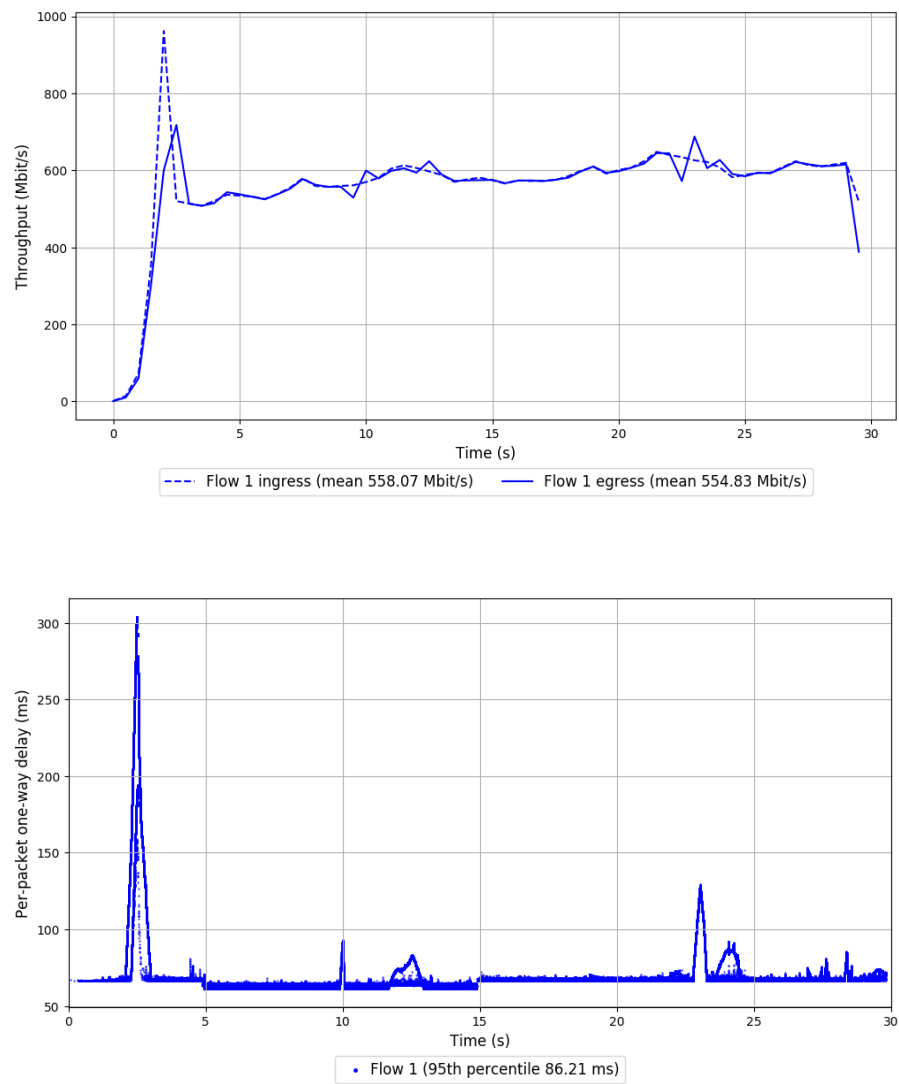
Run 1: Report of PCC — Data Link

Flow 1 ingress (mean 615.71 Mbit/s)   Flow 1 egress (mean 613.16 Mbit/s)

• Flow 1 (95th percentile 125.57 ms)

```
Run 2: Statistics of PCC

Start at: 2017-12-05 16:36:34
End at: 2017-12-05 16:37:04

# Below is generated by plot.py at 2017-12-05 20:06:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 565.64 Mbit/s
95th percentile per-packet one-way delay: 126.509 ms
Loss rate: 1.02%
-- Flow 1:
Average throughput: 565.64 Mbit/s
95th percentile per-packet one-way delay: 126.509 ms
Loss rate: 1.02%
```
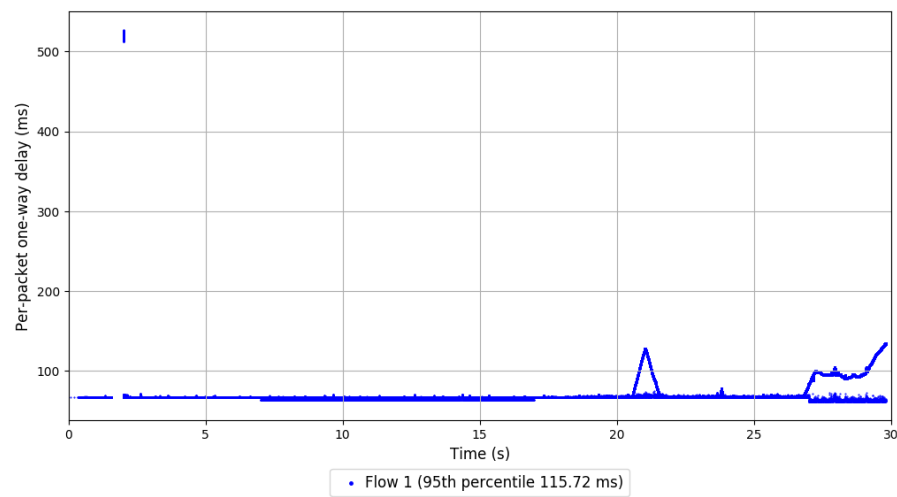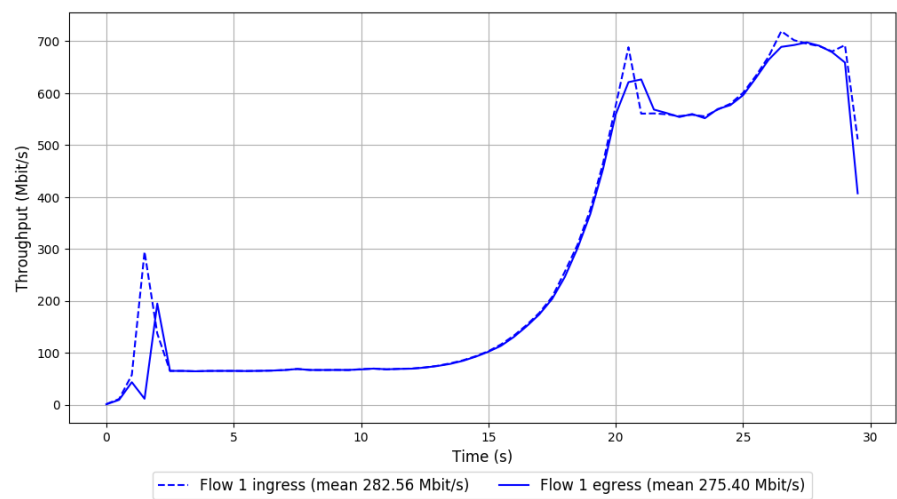
Run 2: Report of PCC — Data Link

```
Run 3: Statistics of PCC

Start at: 2017-12-05 16:47:02
End at: 2017-12-05 16:47:32

# Below is generated by plot.py at 2017-12-05 20:06:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 554.83 Mbit/s
95th percentile per-packet one-way delay: 86.211 ms
Loss rate: 1.15%
-- Flow 1:
Average throughput: 554.83 Mbit/s
95th percentile per-packet one-way delay: 86.211 ms
Loss rate: 1.15%
```
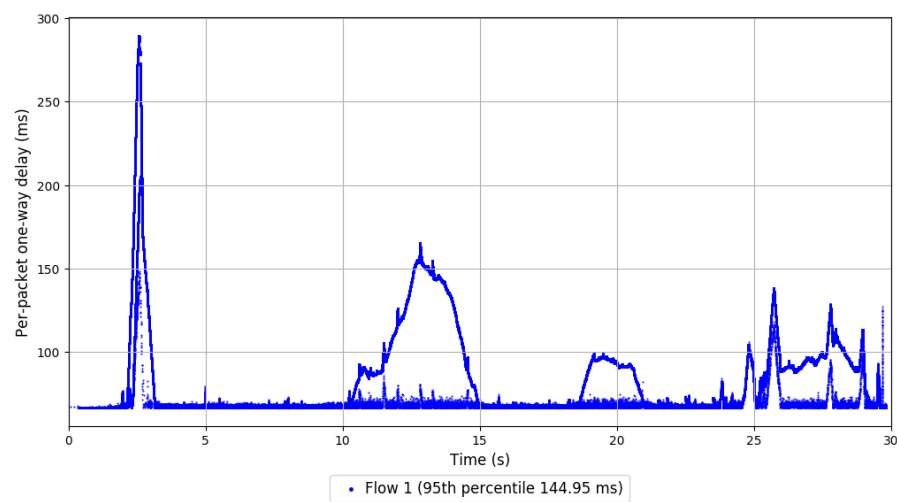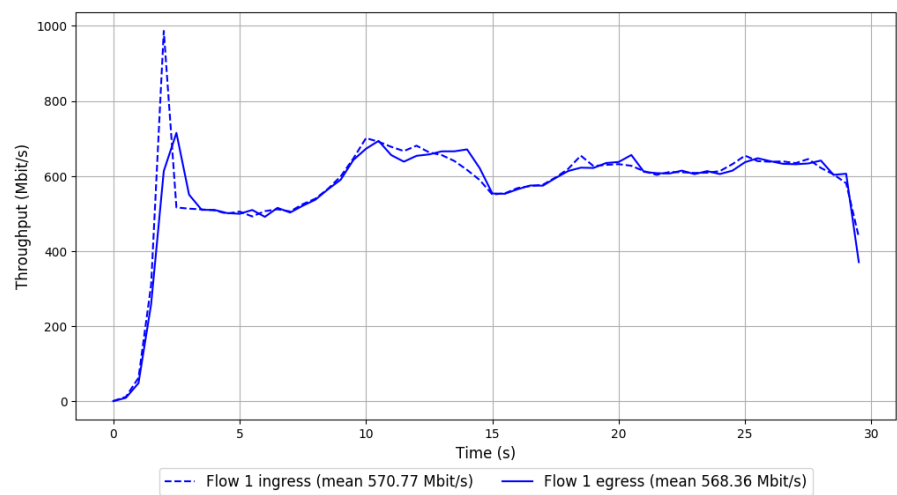
Run 3: Report of PCC — Data Link

Flow 1 ingress (mean 558.07 Mbit/s)   Flow 1 egress (mean 554.83 Mbit/s)

Flow 1 (95th percentile 86.21 ms)

```
Run 4: Statistics of PCC

Start at: 2017-12-05 16:57:20
End at: 2017-12-05 16:57:50

# Below is generated by plot.py at 2017-12-05 20:06:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 275.40 Mbit/s
95th percentile per-packet one-way delay: 115.720 ms
Loss rate: 2.97%
-- Flow 1:
Average throughput: 275.40 Mbit/s
95th percentile per-packet one-way delay: 115.720 ms
Loss rate: 2.97%
```
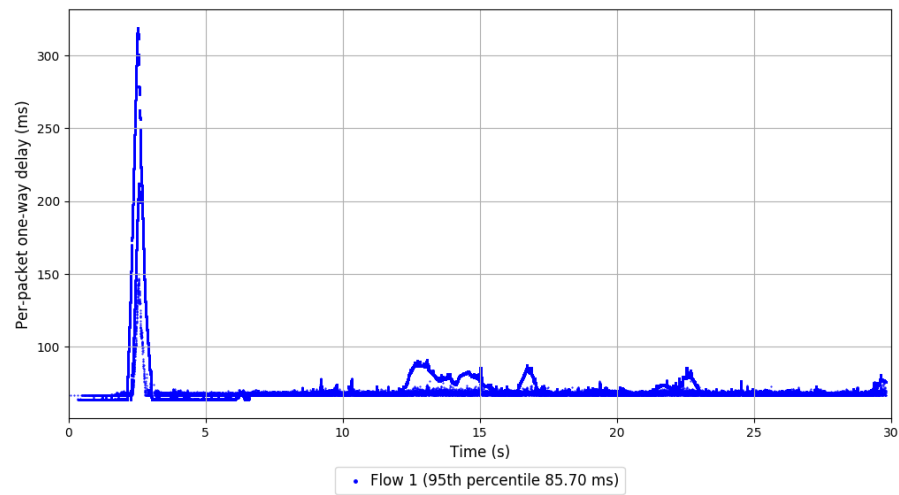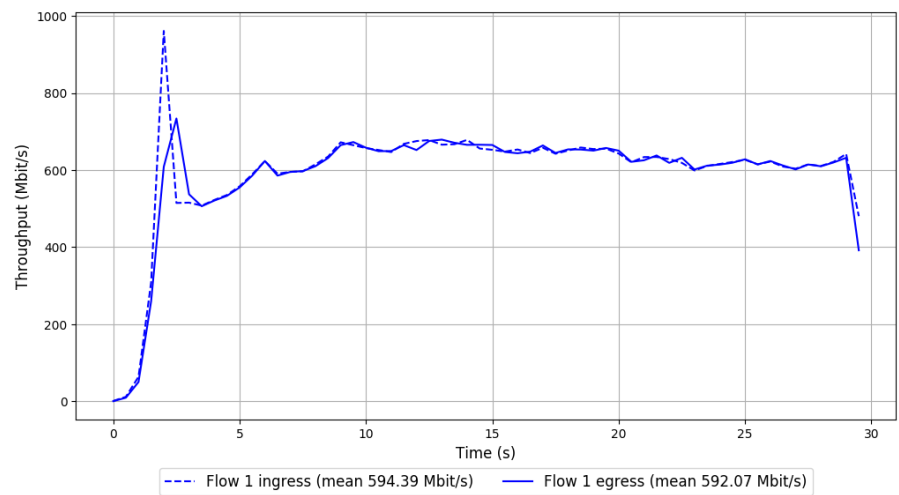
Run 4: Report of PCC — Data Link

```
Run 5: Statistics of PCC

Start at: 2017-12-05 17:07:37
End at: 2017-12-05 17:08:07

# Below is generated by plot.py at 2017-12-05 20:06:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 568.36 Mbit/s
95th percentile per-packet one-way delay: 144.954 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 568.36 Mbit/s
95th percentile per-packet one-way delay: 144.954 ms
Loss rate: 0.87%
```
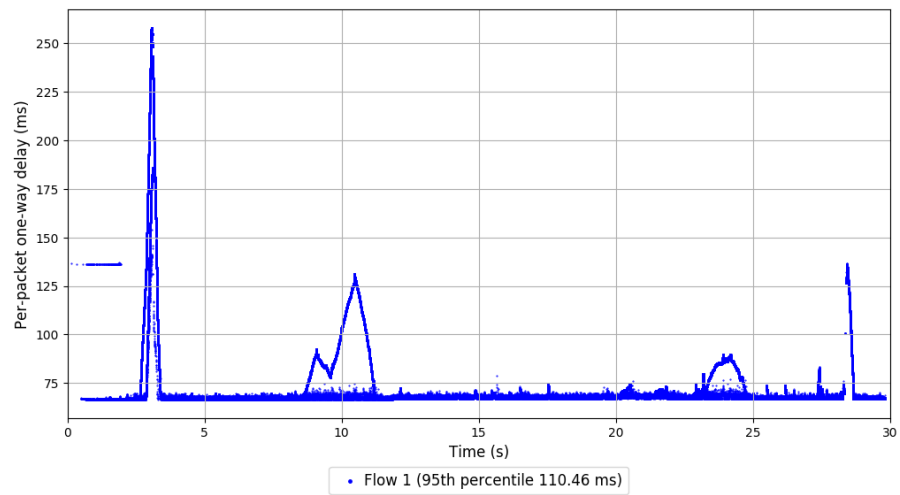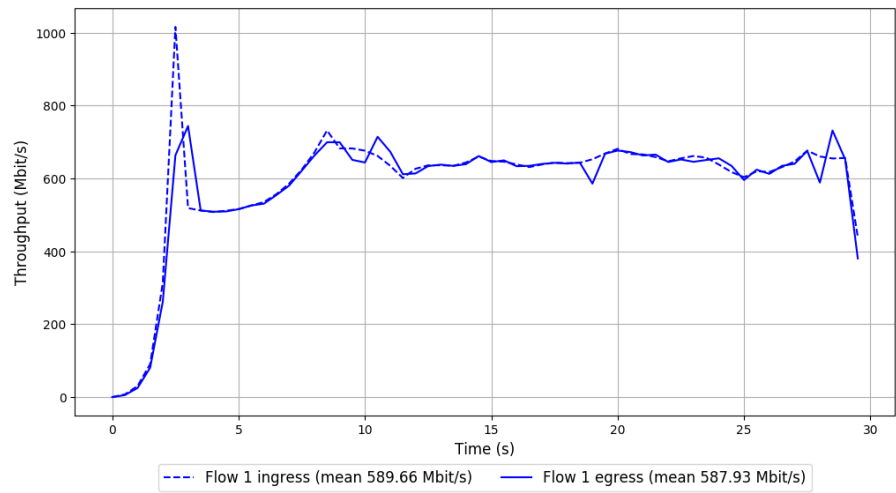
Run 5: Report of PCC — Data Link

```
Run 6: Statistics of PCC

Start at: 2017-12-05 17:18:00
End at: 2017-12-05 17:18:30

# Below is generated by plot.py at 2017-12-05 20:06:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 592.07 Mbit/s
95th percentile per-packet one-way delay: 85.698 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 592.07 Mbit/s
95th percentile per-packet one-way delay: 85.698 ms
Loss rate: 0.84%
```
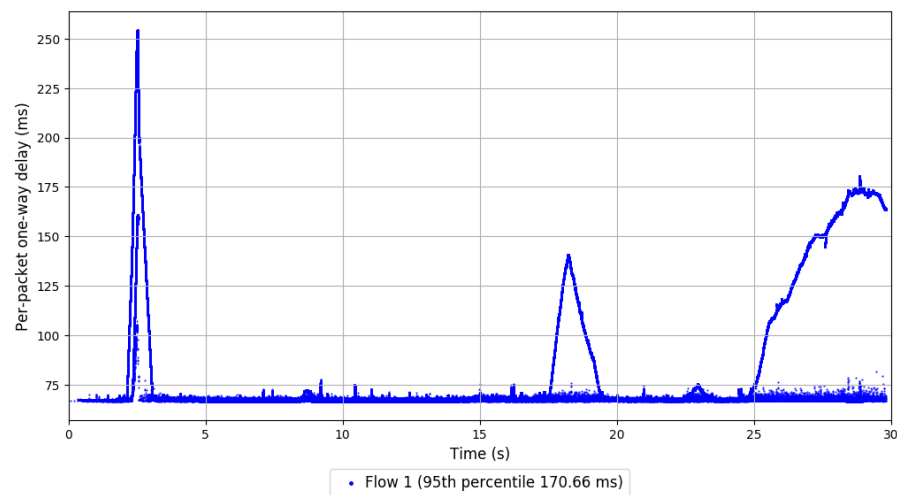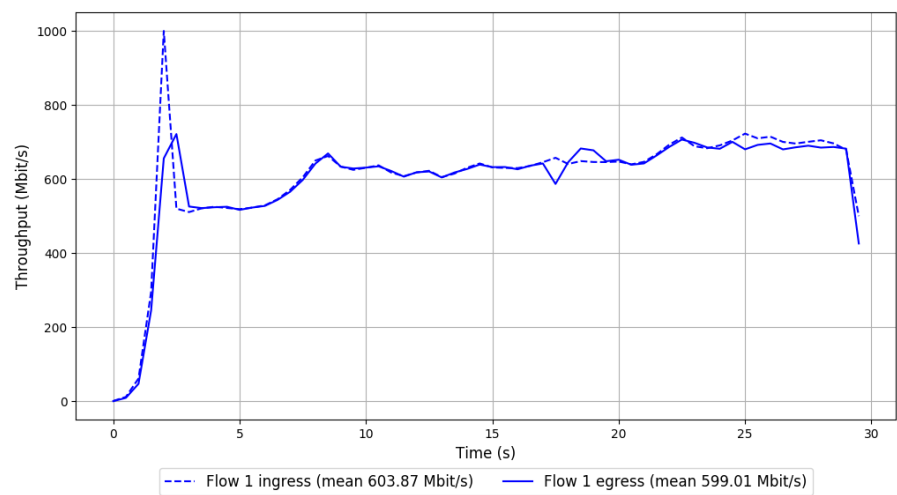
Run 6: Report of PCC — Data Link

Flow 1 ingress (mean 594.39 Mbit/s) — Flow 1 egress (mean 592.07 Mbit/s)

• Flow 1 (95th percentile 85.70 ms)

```
Run 7: Statistics of PCC

Start at: 2017-12-05 17:28:15
End at: 2017-12-05 17:28:45

# Below is generated by plot.py at 2017-12-05 20:06:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 587.93 Mbit/s
95th percentile per-packet one-way delay: 110.460 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 587.93 Mbit/s
95th percentile per-packet one-way delay: 110.460 ms
Loss rate: 0.97%
```
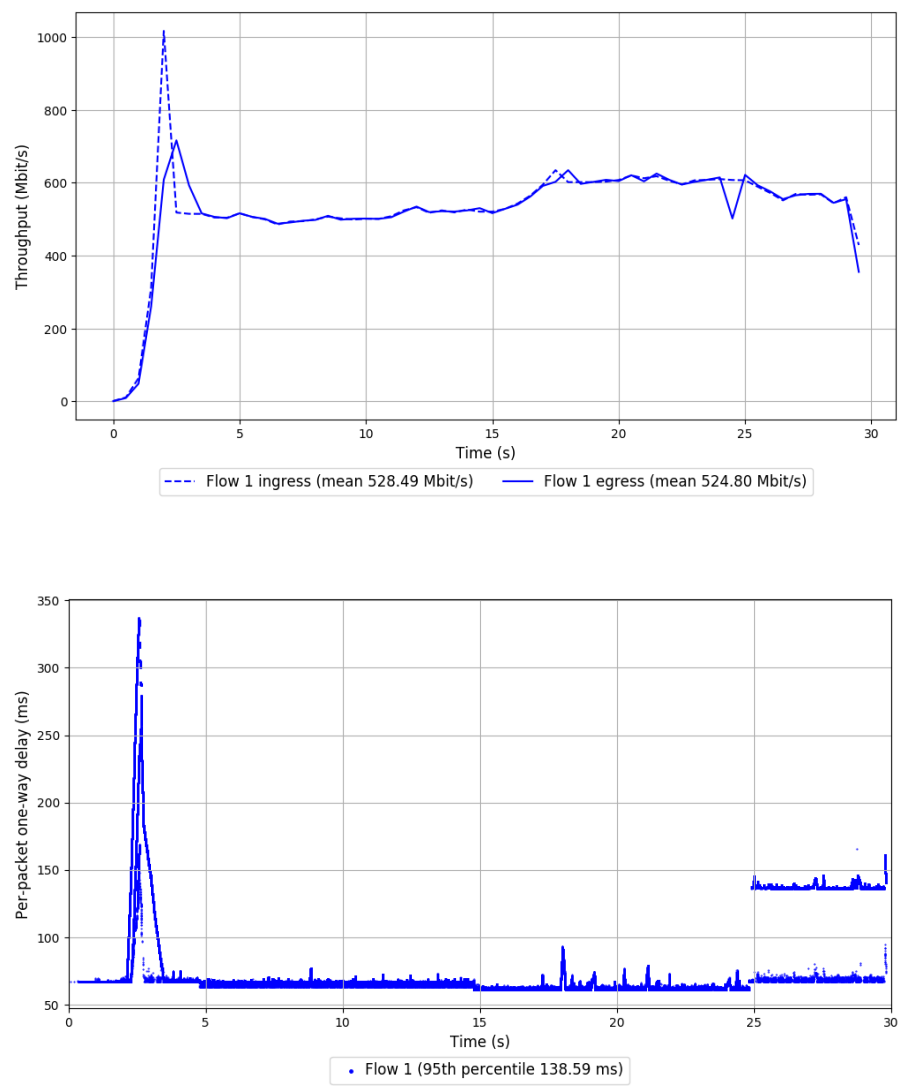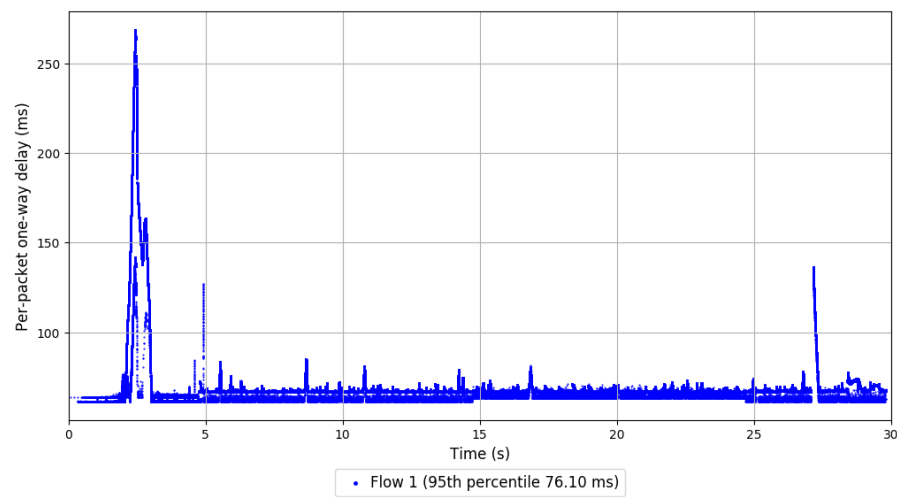
Run 7: Report of PCC — Data Link

Flow 1 ingress (mean 589.66 Mbit/s) — Flow 1 egress (mean 587.93 Mbit/s)

• Flow 1 (95th percentile 110.46 ms)

```
Run 8: Statistics of PCC

Start at: 2017-12-05 17:39:02
End at: 2017-12-05 17:39:32

# Below is generated by plot.py at 2017-12-05 20:08:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 599.01 Mbit/s
95th percentile per-packet one-way delay: 170.660 ms
Loss rate: 1.25%
-- Flow 1:
Average throughput: 599.01 Mbit/s
95th percentile per-packet one-way delay: 170.660 ms
Loss rate: 1.25%
```
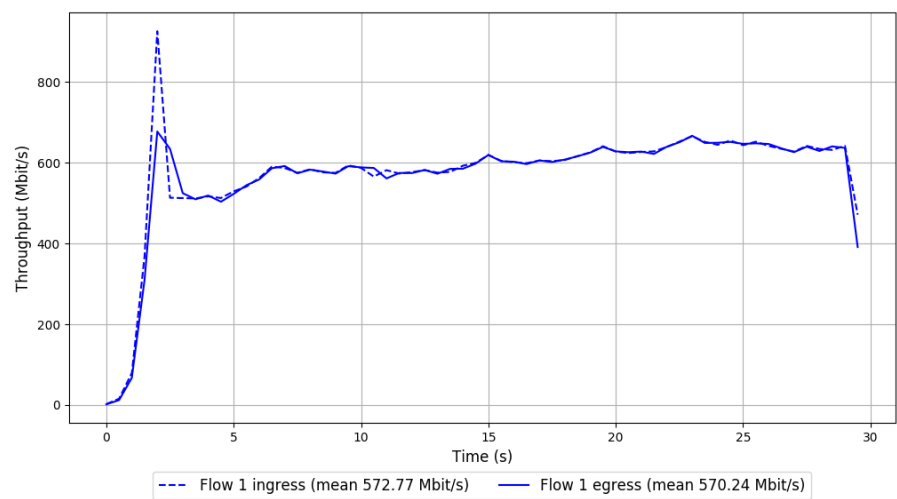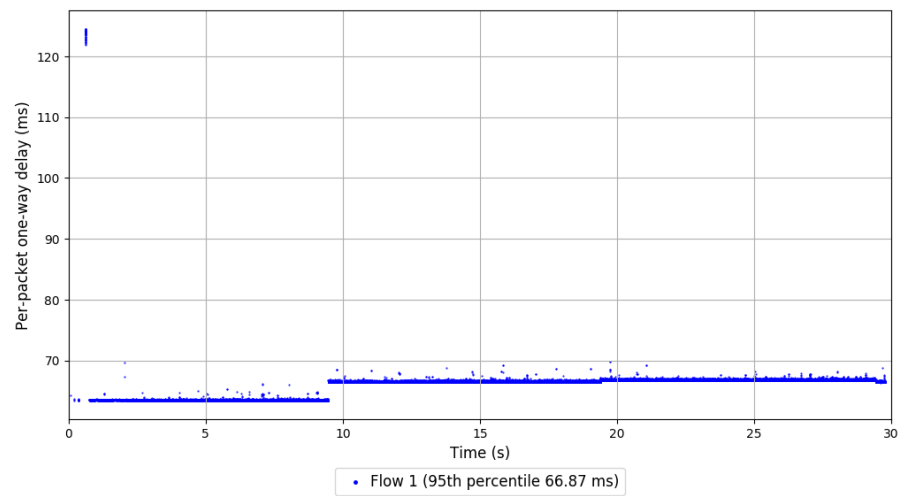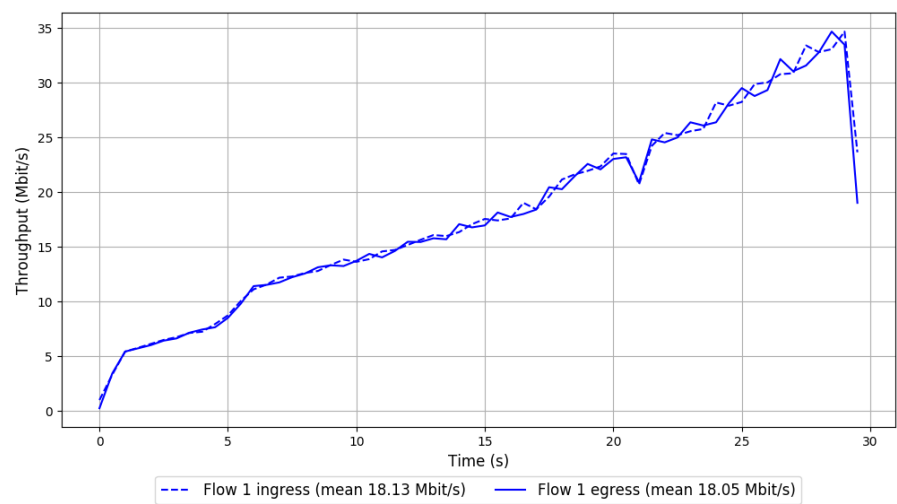
Run 8: Report of PCC — Data Link

Flow 1 ingress (mean 603.87 Mbit/s)   Flow 1 egress (mean 599.01 Mbit/s)

• Flow 1 (95th percentile 170.66 ms)

```
Run 9: Statistics of PCC

Start at: 2017-12-05 17:49:42
End at: 2017-12-05 17:50:12

# Below is generated by plot.py at 2017-12-05 20:11:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 524.80 Mbit/s
95th percentile per-packet one-way delay: 138.592 ms
Loss rate: 1.14%
-- Flow 1:
Average throughput: 524.80 Mbit/s
95th percentile per-packet one-way delay: 138.592 ms
Loss rate: 1.14%
```
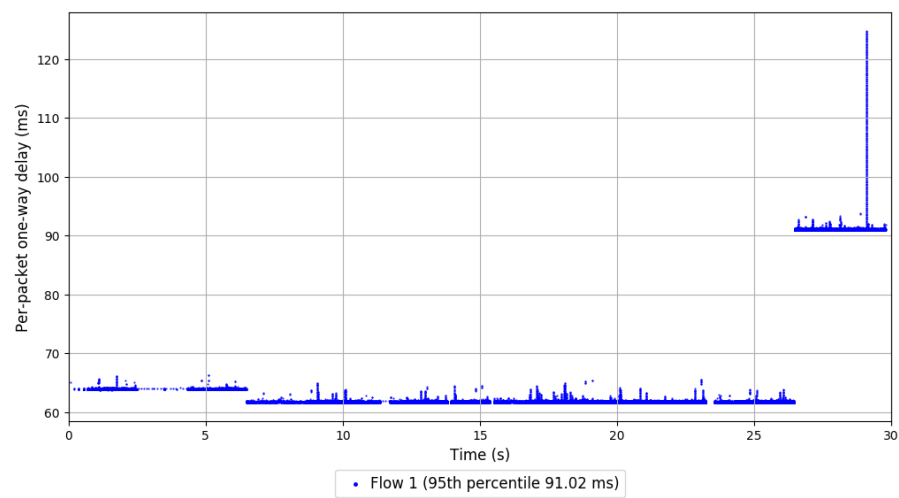
Run 9: Report of PCC — Data Link

```
Run 10: Statistics of PCC

Start at: 2017-12-05 18:00:02
End at: 2017-12-05 18:00:32

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 570.24 Mbit/s
95th percentile per-packet one-way delay: 76.101 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 570.24 Mbit/s
95th percentile per-packet one-way delay: 76.101 ms
Loss rate: 0.88%
```
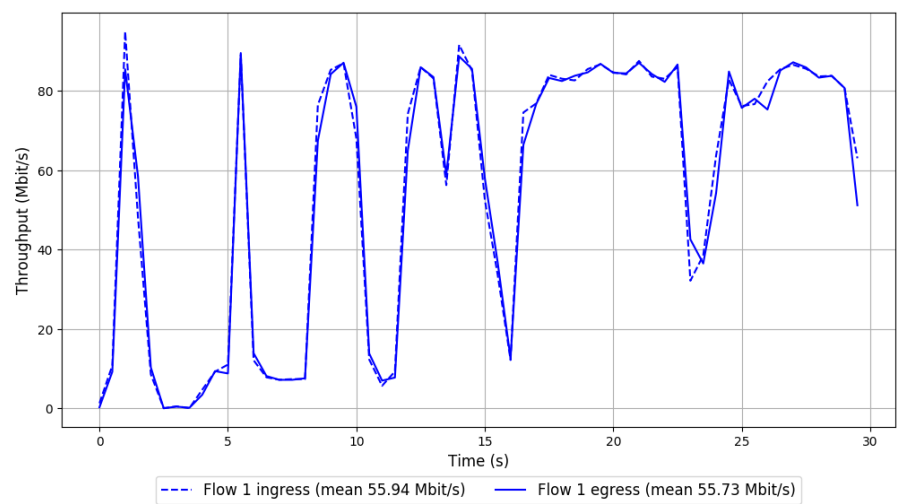
Run 10: Report of PCC — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2017-12-05 16:24:08
End at: 2017-12-05 16:24:38

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 18.05 Mbit/s
95th percentile per-packet one-way delay: 66.874 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 18.05 Mbit/s
95th percentile per-packet one-way delay: 66.874 ms
Loss rate: 0.86%
```
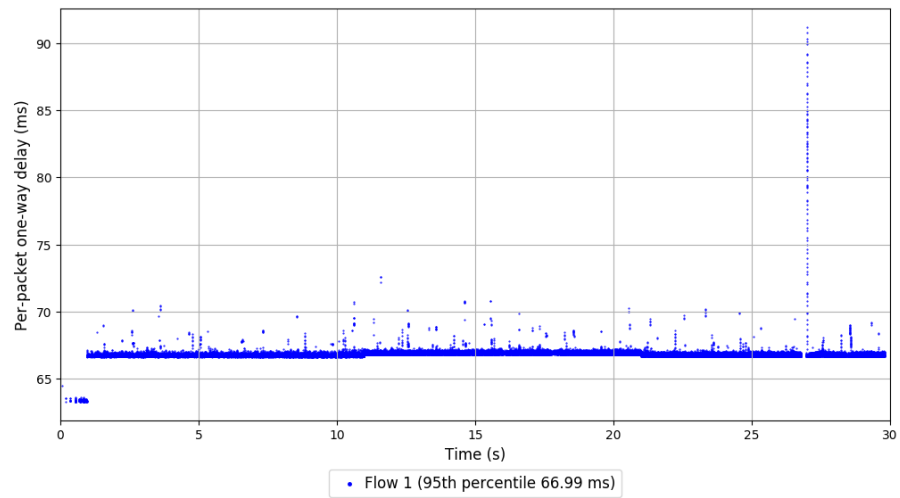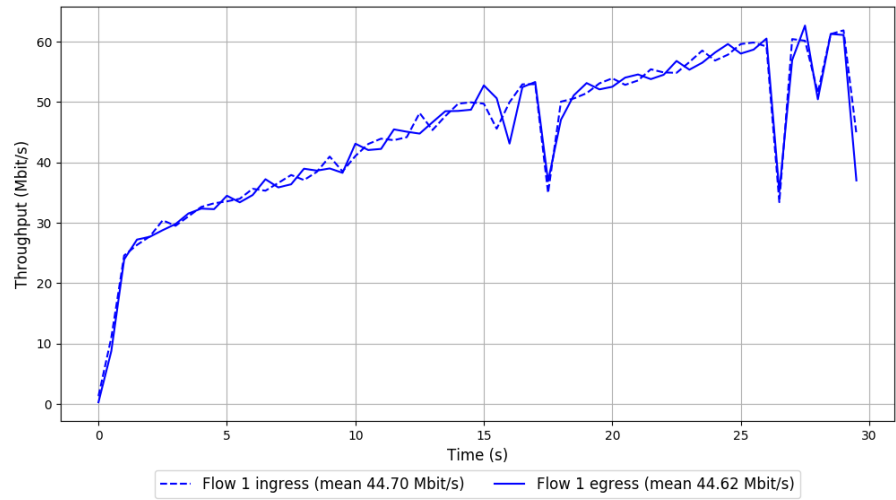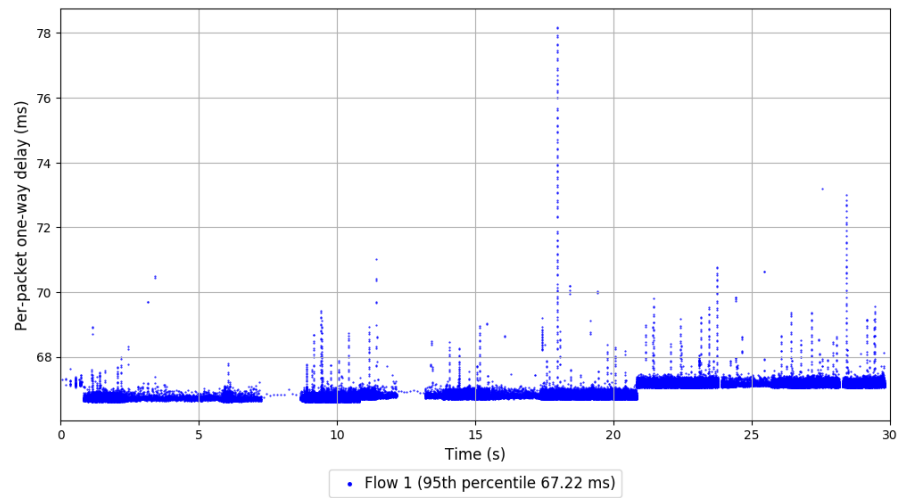
Run 1: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 18.13 Mbit/s)   —— Flow 1 egress (mean 18.05 Mbit/s)

• Flow 1 (95th percentile 66.87 ms)

```
Run 2: Statistics of QUIC Cubic

Start at: 2017-12-05 16:34:20
End at: 2017-12-05 16:34:51

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 55.73 Mbit/s
95th percentile per-packet one-way delay: 91.023 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 55.73 Mbit/s
95th percentile per-packet one-way delay: 91.023 ms
Loss rate: 0.81%
```
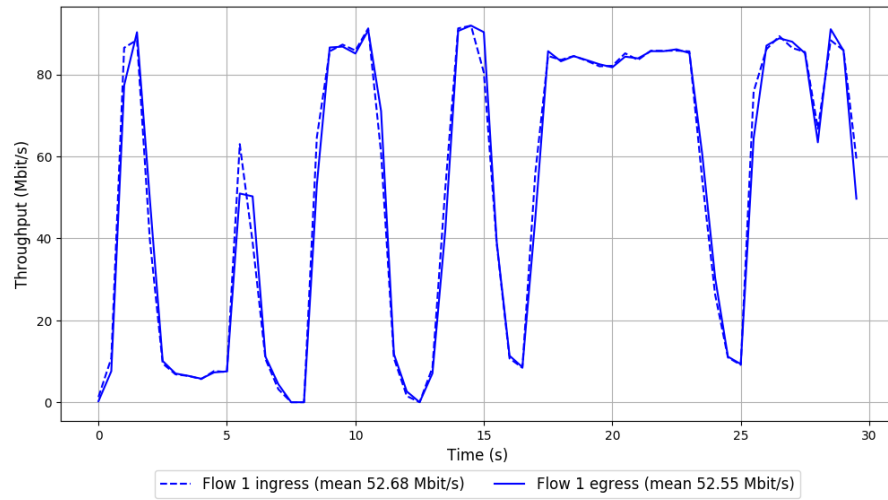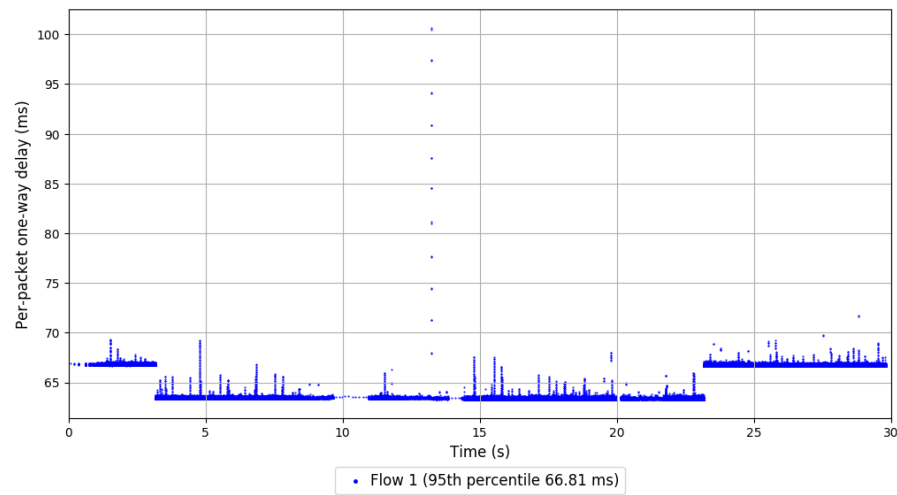
Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2017-12-05 16:44:36
End at: 2017-12-05 16:45:06


# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 44.62 Mbit/s
95th percentile per-packet one-way delay: 66.991 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 44.62 Mbit/s
95th percentile per-packet one-way delay: 66.991 ms
Loss rate: 0.62%
```
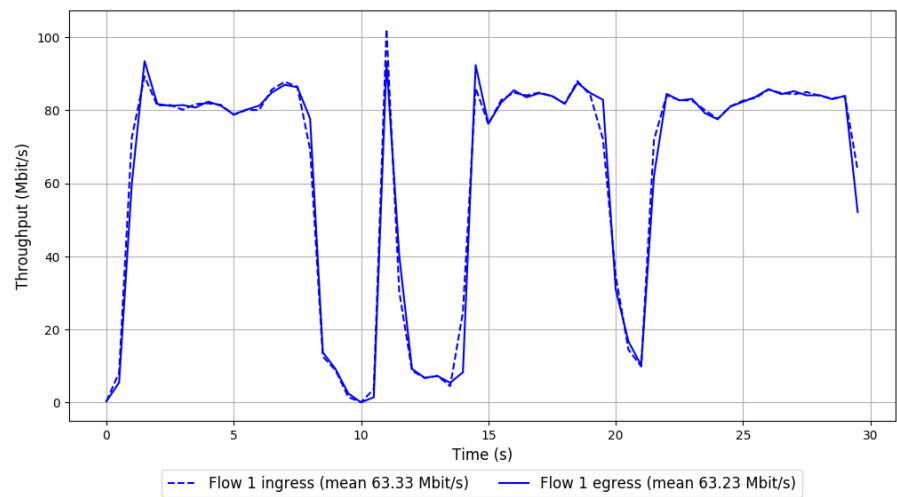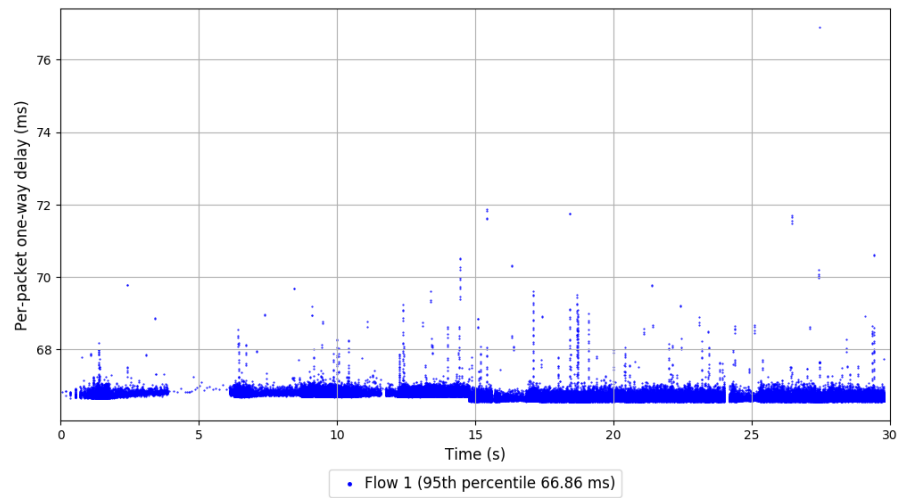
Run 3: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 44.70 Mbit/s)   Flow 1 egress (mean 44.62 Mbit/s)

Flow 1 (95th percentile 66.99 ms)

```
Run 4: Statistics of QUIC Cubic

Start at: 2017-12-05 16:55:06
End at: 2017-12-05 16:55:36

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 52.55 Mbit/s
95th percentile per-packet one-way delay: 67.221 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 52.55 Mbit/s
95th percentile per-packet one-way delay: 67.221 ms
Loss rate: 0.68%
```
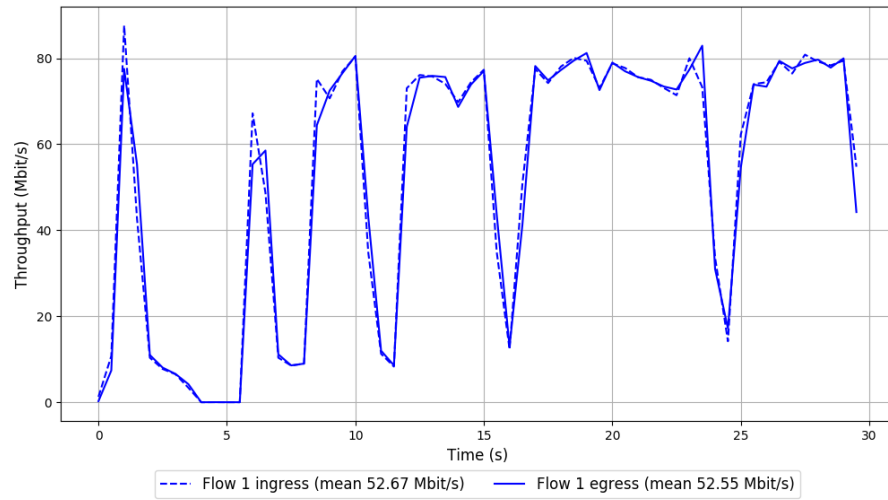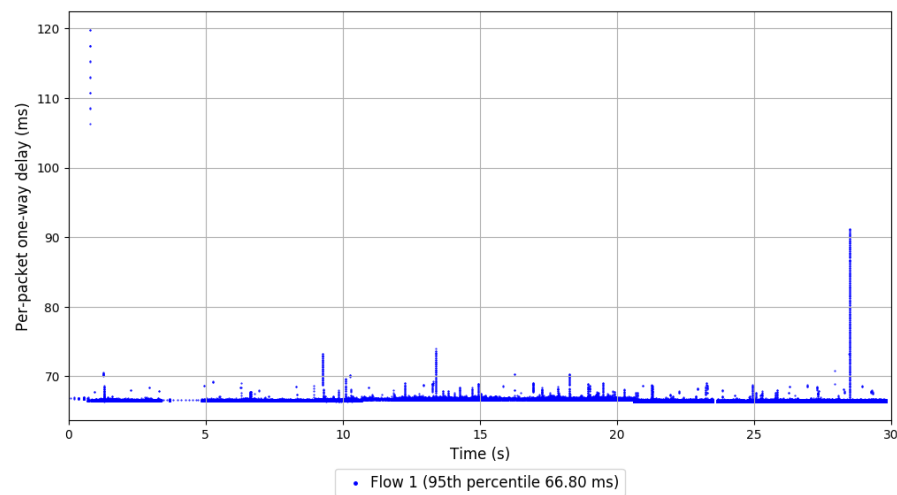
Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 52.68 Mbit/s) ----- Flow 1 egress (mean 52.55 Mbit/s)

Flow 1 (95th percentile 67.22 ms)

```
Run 5: Statistics of QUIC Cubic

Start at: 2017-12-05 17:05:24
End at: 2017-12-05 17:05:54

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 63.23 Mbit/s
95th percentile per-packet one-way delay: 66.815 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 63.23 Mbit/s
95th percentile per-packet one-way delay: 66.815 ms
Loss rate: 0.60%
```
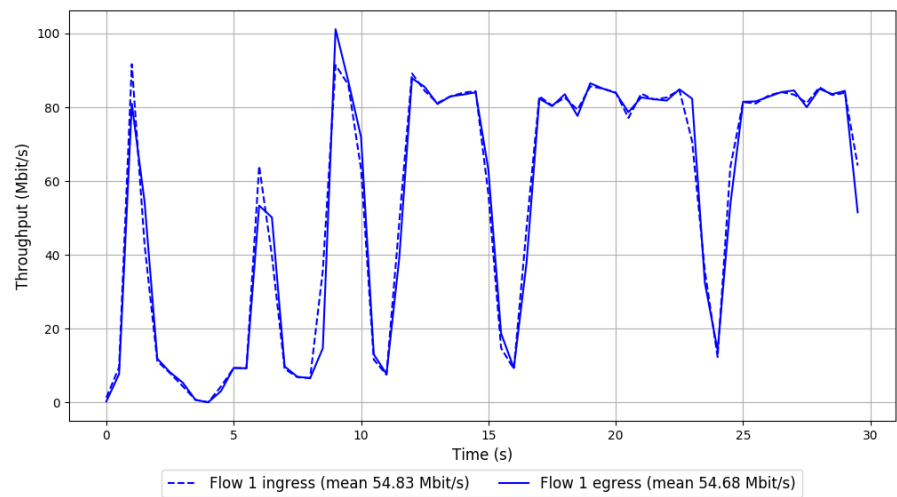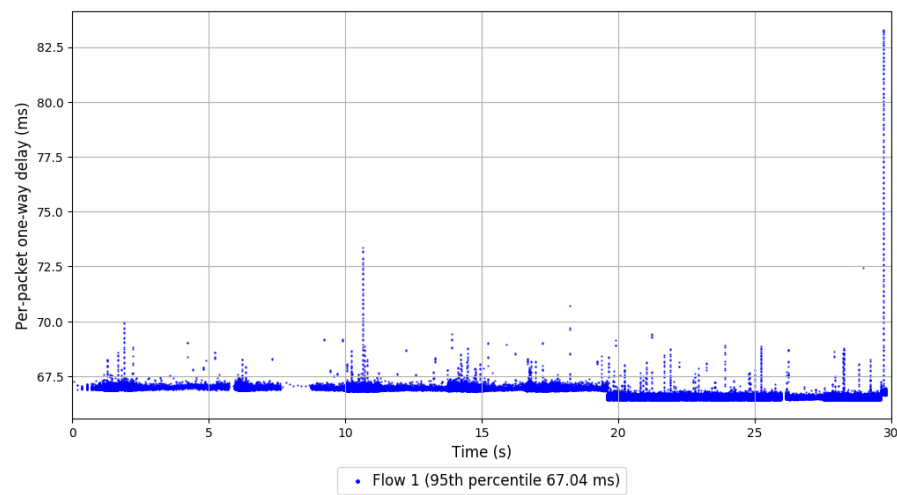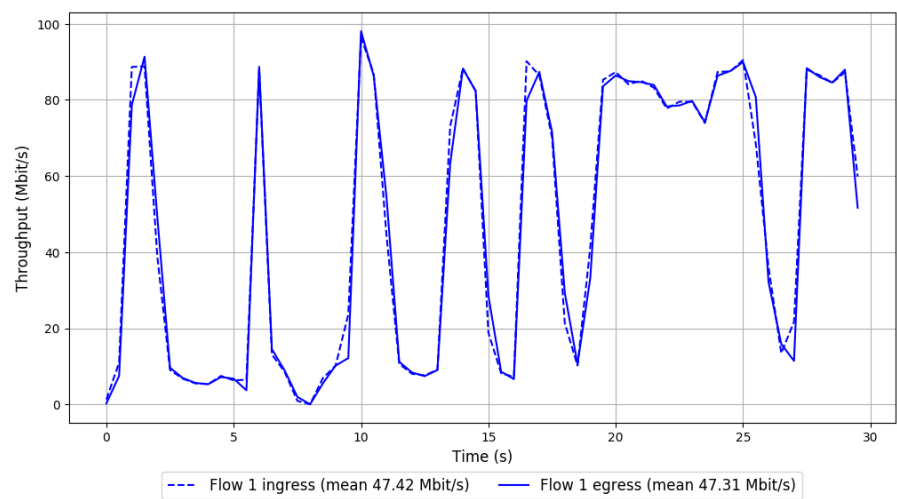
Run 5: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 63.33 Mbit/s)   Flow 1 egress (mean 63.23 Mbit/s)

Flow 1 (95th percentile 66.81 ms)

```
Run 6: Statistics of QUIC Cubic

Start at: 2017-12-05 17:15:52
End at: 2017-12-05 17:16:22

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 52.55 Mbit/s
95th percentile per-packet one-way delay: 66.865 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 52.55 Mbit/s
95th percentile per-packet one-way delay: 66.865 ms
Loss rate: 0.67%
```
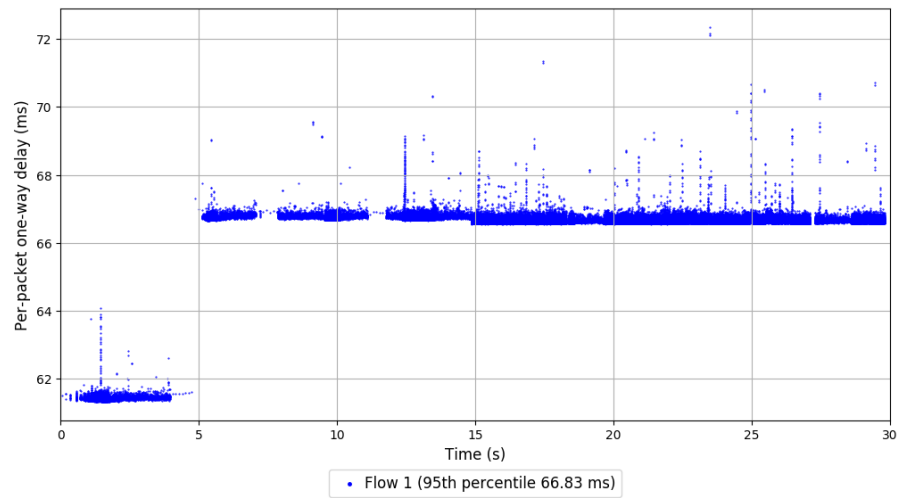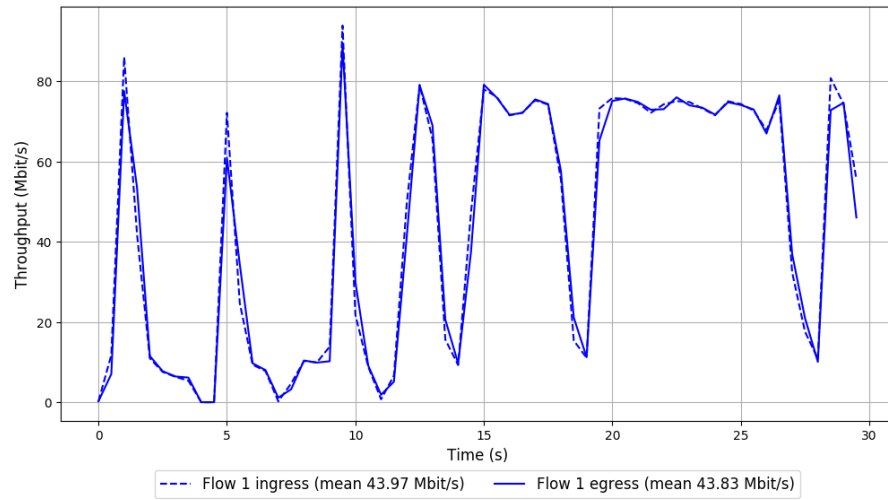
Run 6: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 52.67 Mbit/s) ------- Flow 1 egress (mean 52.55 Mbit/s)

Flow 1 (95th percentile 66.86 ms)

```
Run 7: Statistics of QUIC Cubic

Start at: 2017-12-05 17:26:06
End at: 2017-12-05 17:26:36

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 54.68 Mbit/s
95th percentile per-packet one-way delay: 66.798 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 54.68 Mbit/s
95th percentile per-packet one-way delay: 66.798 ms
Loss rate: 0.72%
```
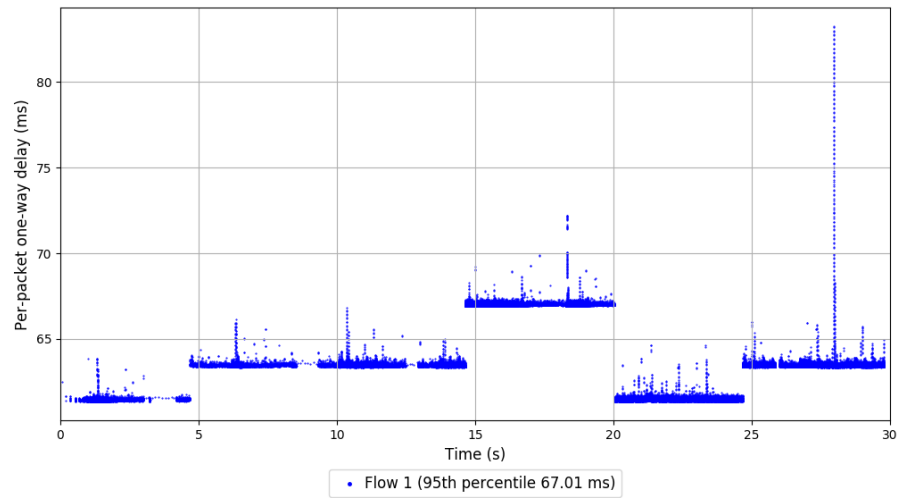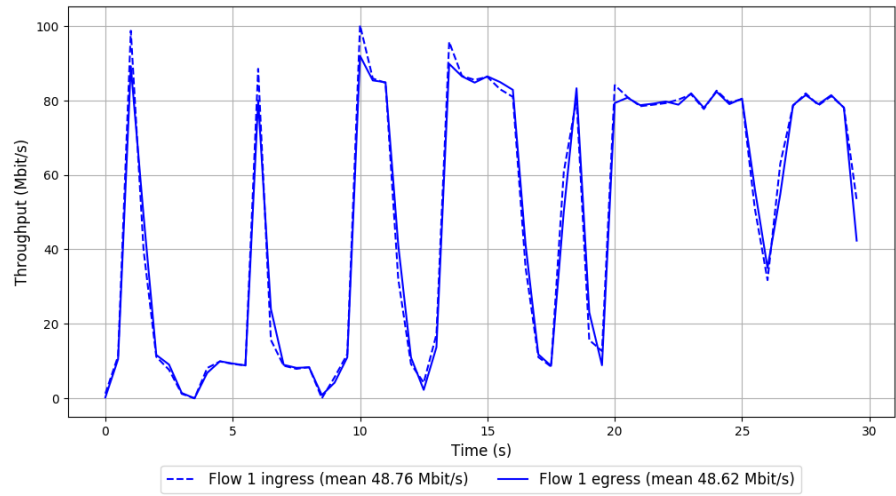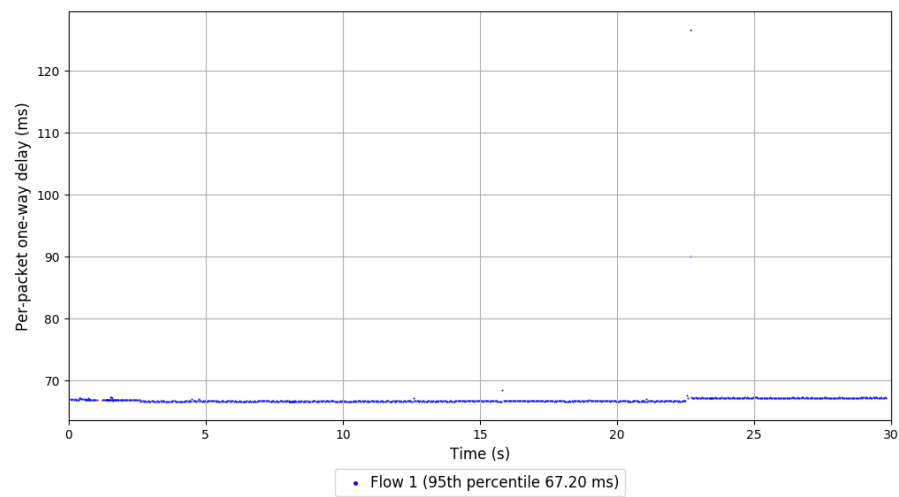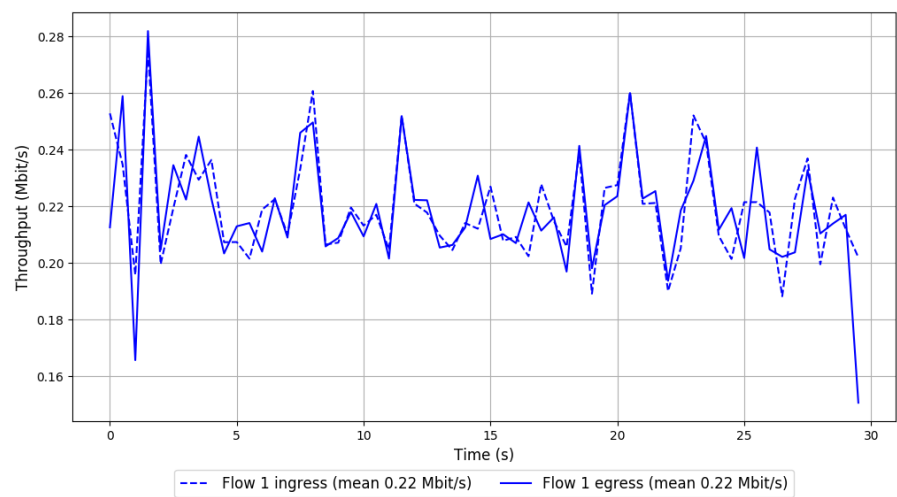
Run 7: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 54.83 Mbit/s)   Flow 1 egress (mean 54.68 Mbit/s)

Flow 1 (95th percentile 66.80 ms)

```
Run 8: Statistics of QUIC Cubic

Start at: 2017-12-05 17:36:37
End at: 2017-12-05 17:37:07

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 47.31 Mbit/s
95th percentile per-packet one-way delay: 67.038 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 47.31 Mbit/s
95th percentile per-packet one-way delay: 67.038 ms
Loss rate: 0.68%
```

Run 8: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 47.42 Mbit/s) --- Flow 1 egress (mean 47.31 Mbit/s)
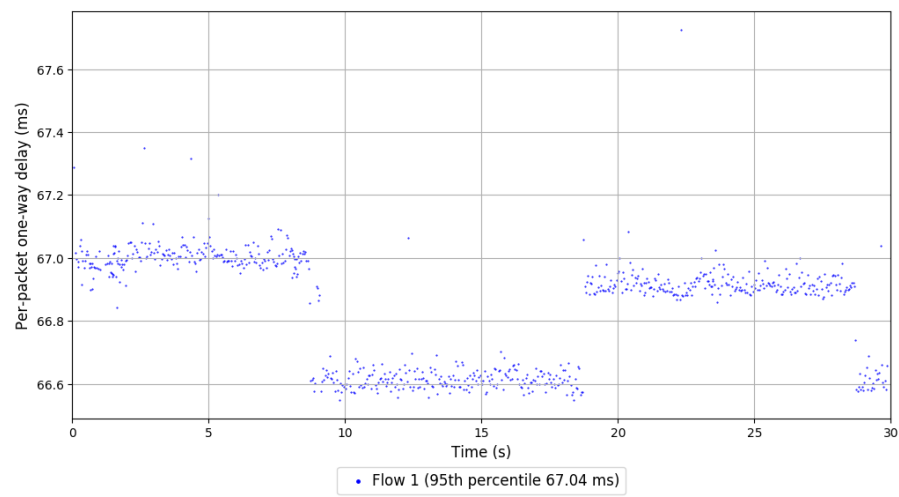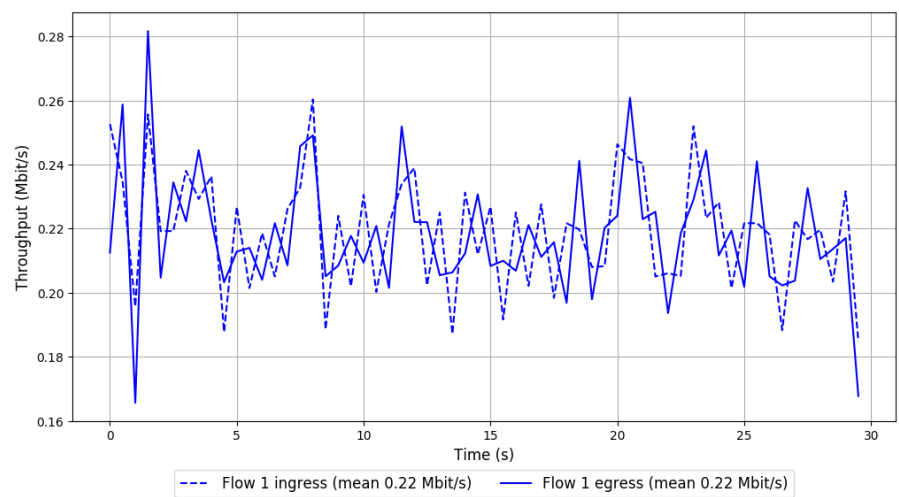

Flow 1 (95th percentile 67.04 ms)

99

```
Run 9: Statistics of QUIC Cubic

Start at: 2017-12-05 17:47:32
End at: 2017-12-05 17:48:02

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 43.83 Mbit/s
95th percentile per-packet one-way delay: 66.828 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 43.83 Mbit/s
95th percentile per-packet one-way delay: 66.828 ms
Loss rate: 0.74%
```

Run 9: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 43.97 Mbit/s) ----- Flow 1 egress (mean 43.83 Mbit/s)

• Flow 1 (95th percentile 66.83 ms)

```
Run 10: Statistics of QUIC Cubic

Start at: 2017-12-05 17:57:42
End at: 2017-12-05 17:58:12

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 48.62 Mbit/s
95th percentile per-packet one-way delay: 67.010 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 48.62 Mbit/s
95th percentile per-packet one-way delay: 67.010 ms
Loss rate: 0.71%
```
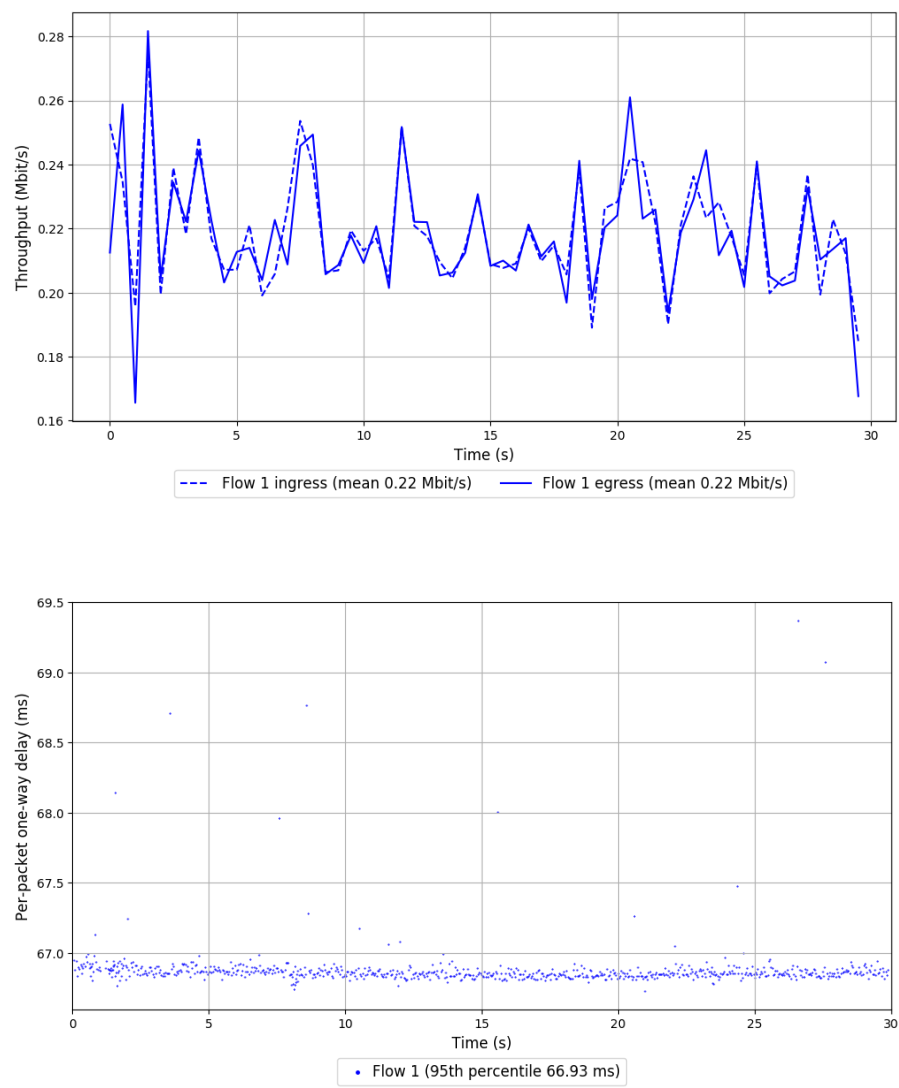
Run 10: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2017-12-05 16:19:44
End at: 2017-12-05 16:20:15

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 67.197 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 67.197 ms
Loss rate: 0.64%
```
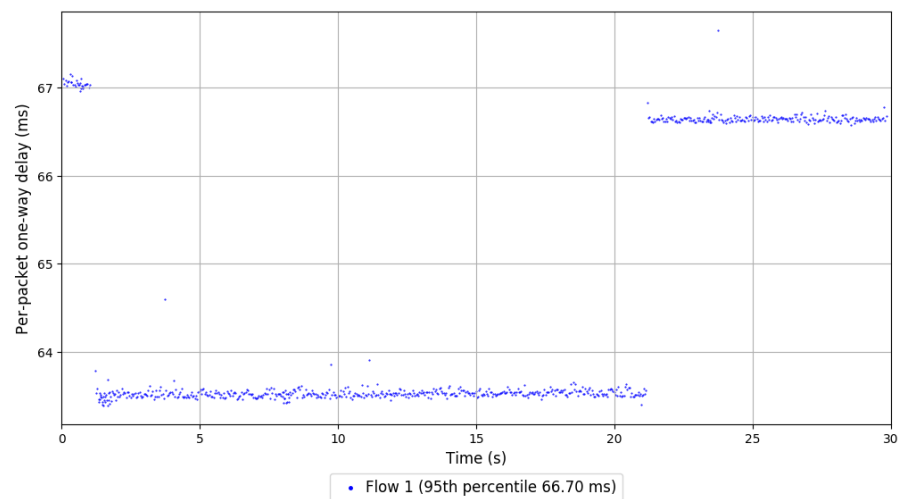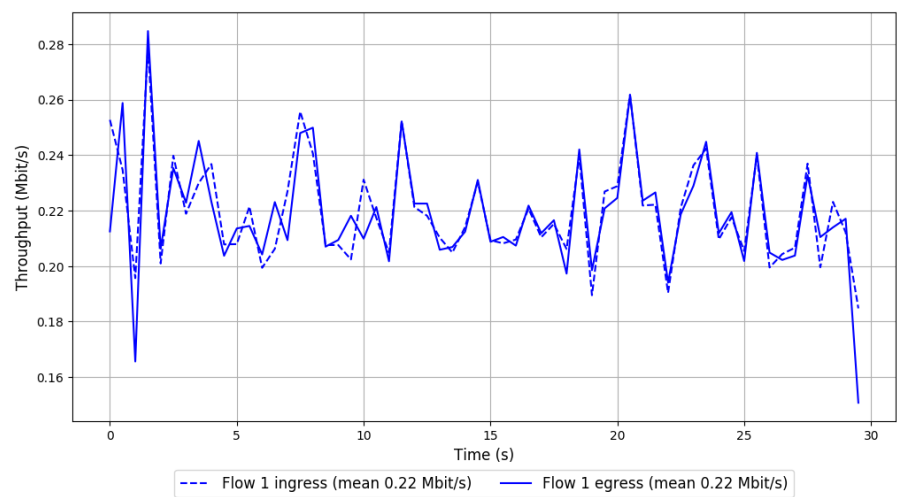
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2017-12-05 16:29:58
End at: 2017-12-05 16:30:28

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 67.040 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 67.040 ms
Loss rate: 0.38%
```
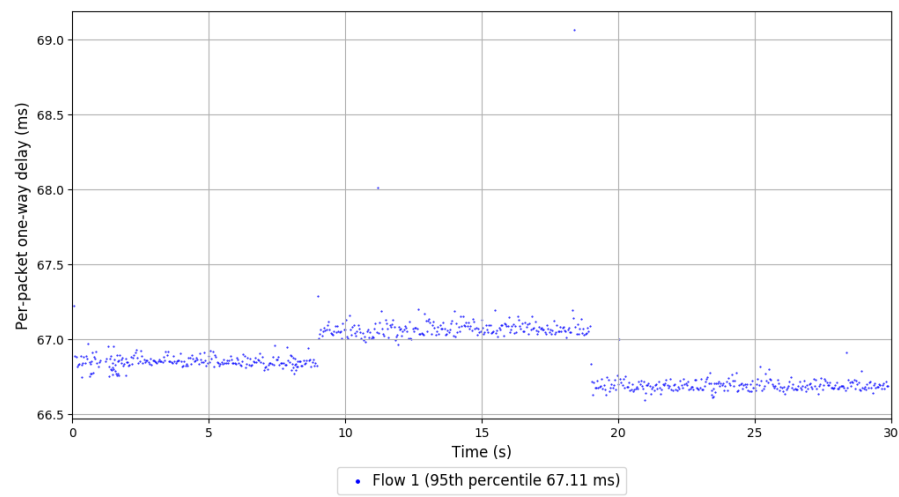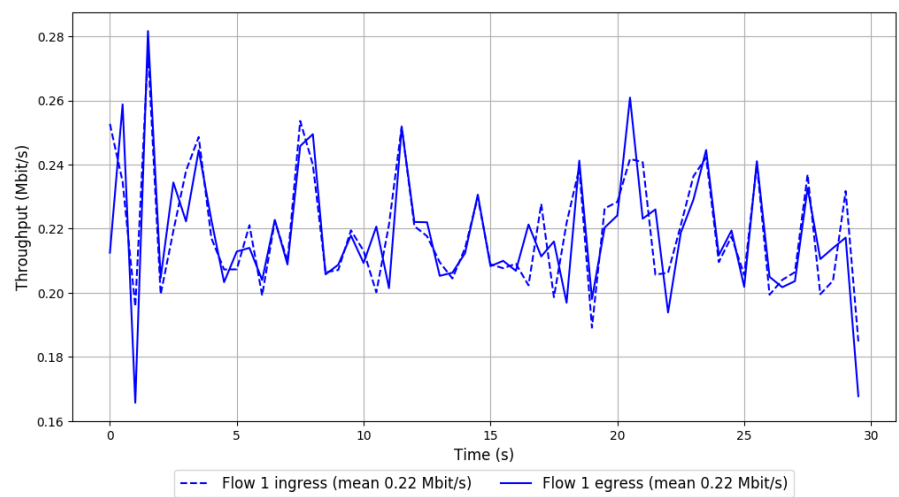
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2017-12-05 16:40:15
End at: 2017-12-05 16:40:45

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 66.934 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 66.934 ms
Loss rate: 0.38%
```
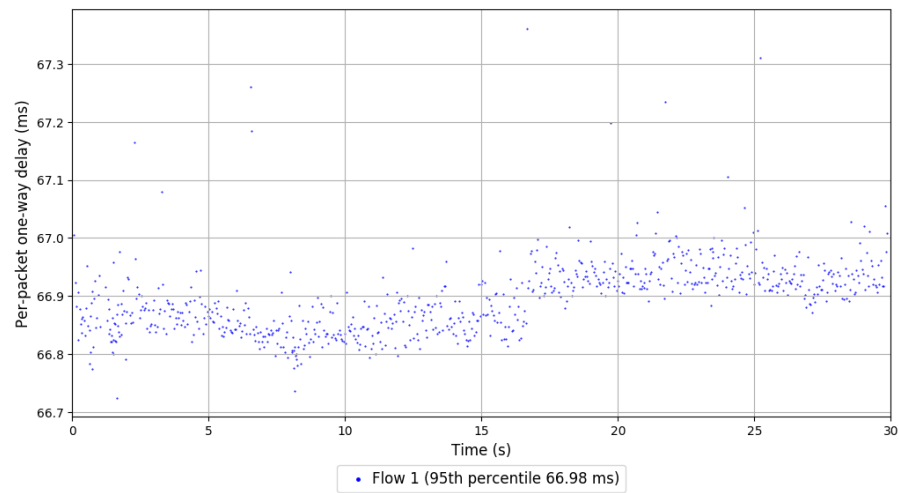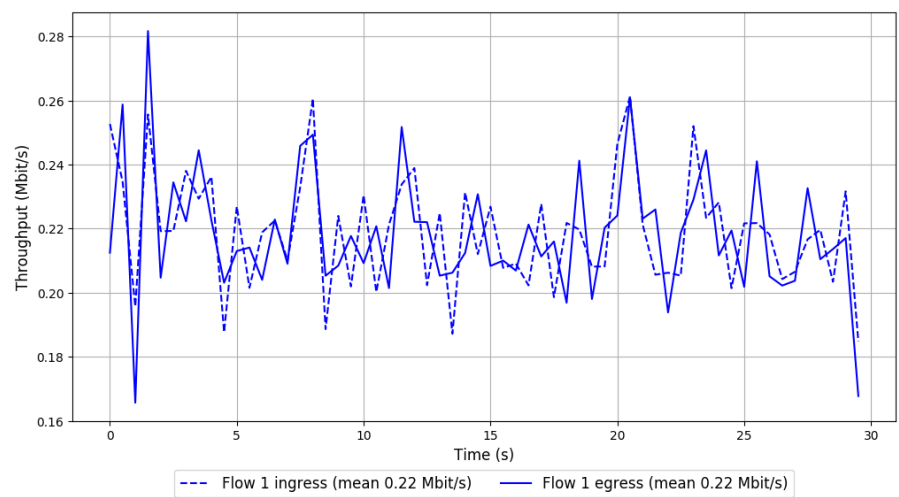
Run 3: Report of SCReAM — Data Link

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

Flow 1 (95th percentile 66.93 ms)

```
Run 4: Statistics of SCReAM

Start at: 2017-12-05 16:50:46
End at: 2017-12-05 16:51:16

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 66.702 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 66.702 ms
Loss rate: 0.51%
```
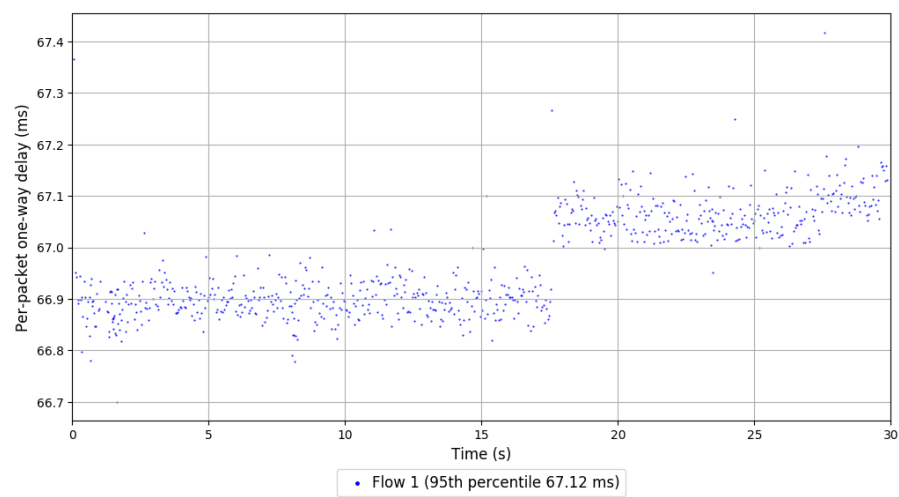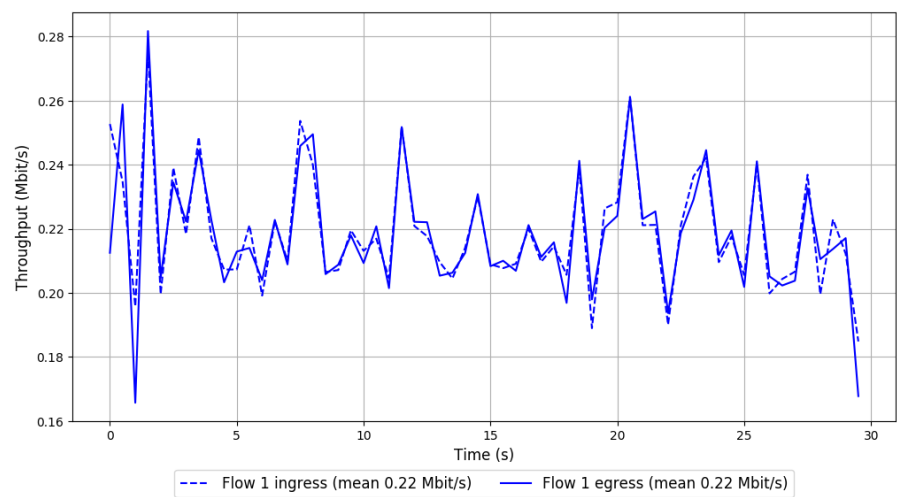
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2017-12-05 17:01:08
End at: 2017-12-05 17:01:38

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 67.112 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 67.112 ms
Loss rate: 0.38%
```
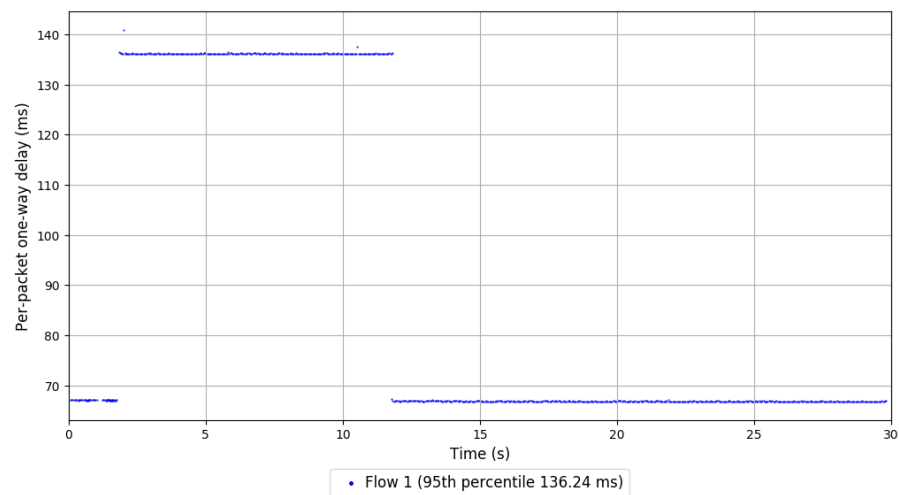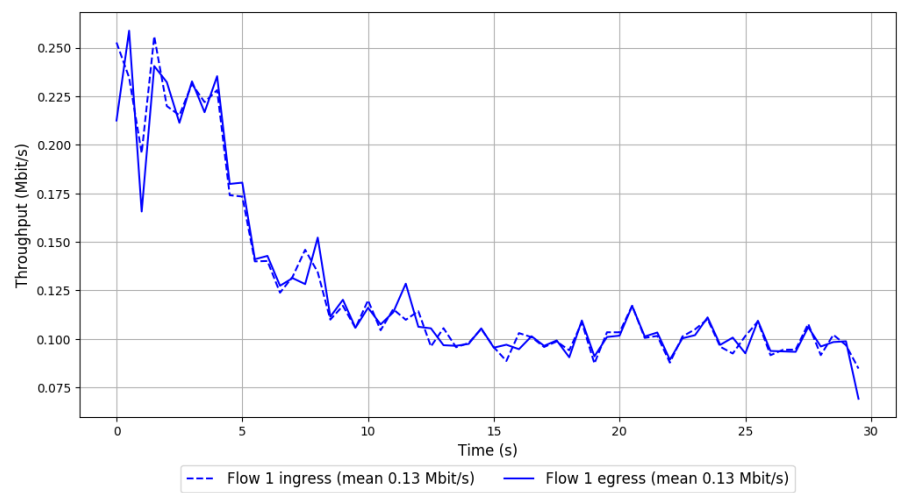
Run 5: Report of SCReAM — Data Link

```
Run 6: Statistics of SCReAM

Start at: 2017-12-05 17:11:30
End at: 2017-12-05 17:12:00


# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 66.983 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 66.983 ms
Loss rate: 0.38%
```
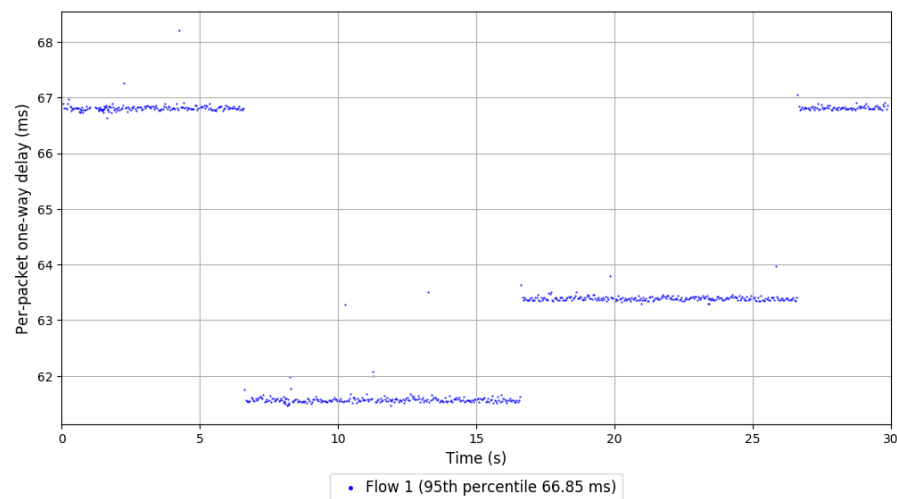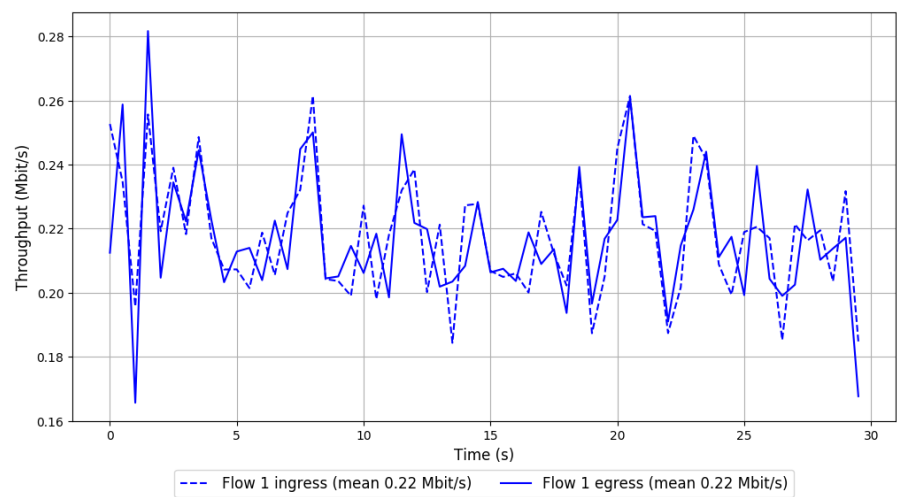
Run 6: Report of SCReAM — Data Link

```
Run 7: Statistics of SCReAM

Start at: 2017-12-05 17:21:49
End at: 2017-12-05 17:22:20

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 67.119 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 67.119 ms
Loss rate: 0.38%
```
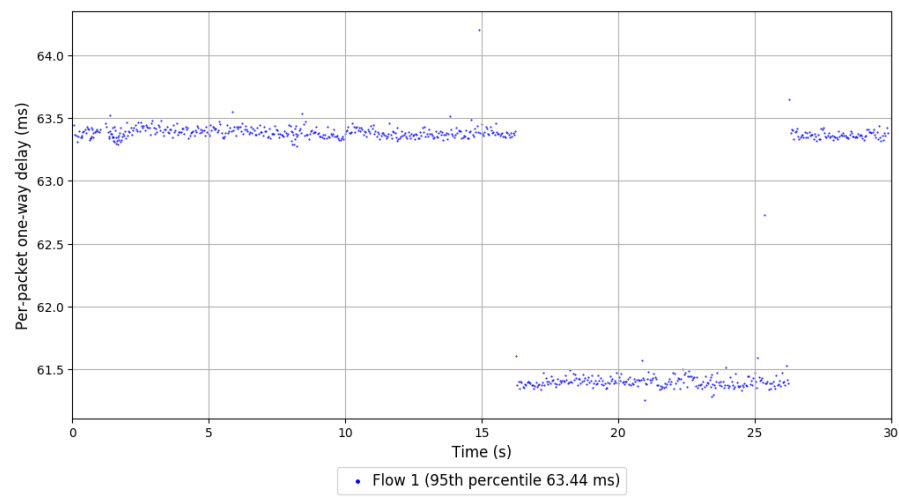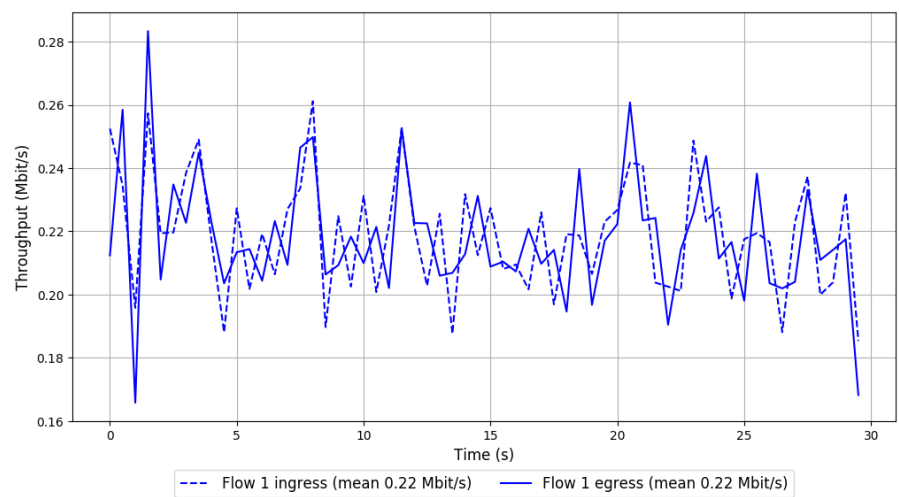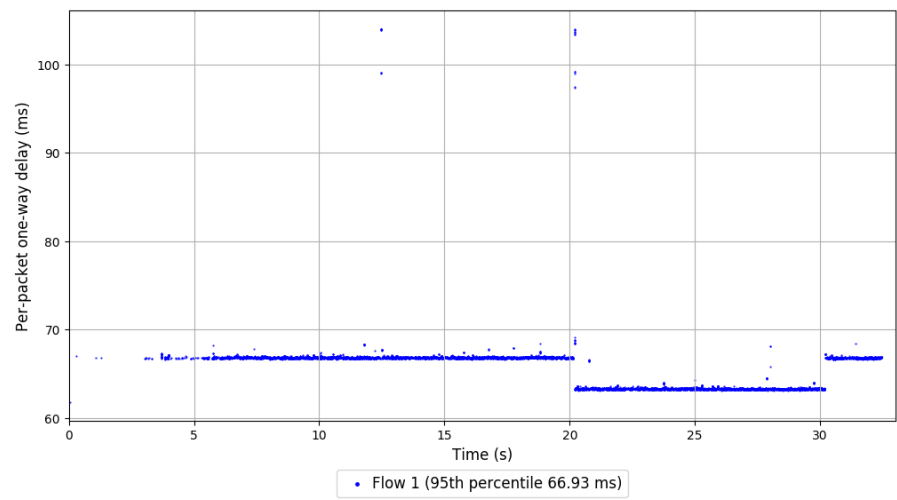
Run 7: Report of SCReAM — Data Link

```
Run 8: Statistics of SCReAM

Start at: 2017-12-05 17:32:15
End at: 2017-12-05 17:32:45

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 136.236 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 136.236 ms
Loss rate: 0.40%
```

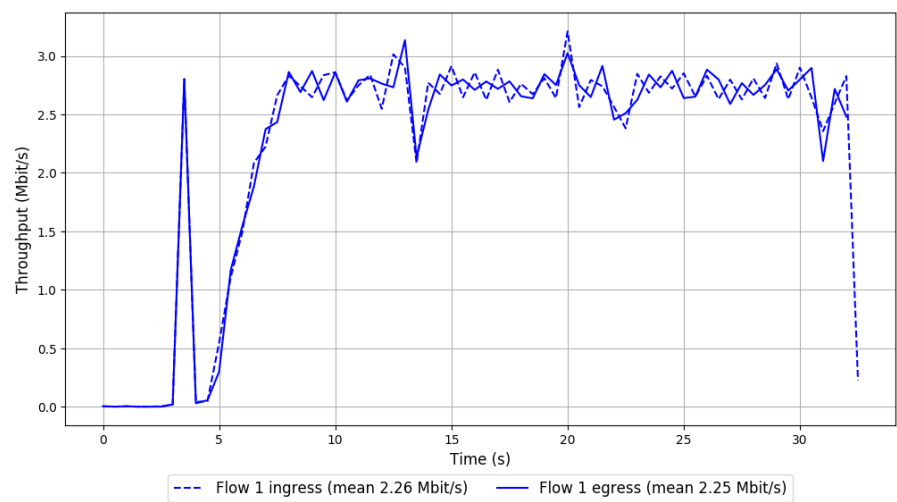Run 8: Report of SCReAM — Data Link

```
Run 9: Statistics of SCReAM

Start at: 2017-12-05 17:43:10
End at: 2017-12-05 17:43:41

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 66.846 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 66.846 ms
Loss rate: 0.38%
```
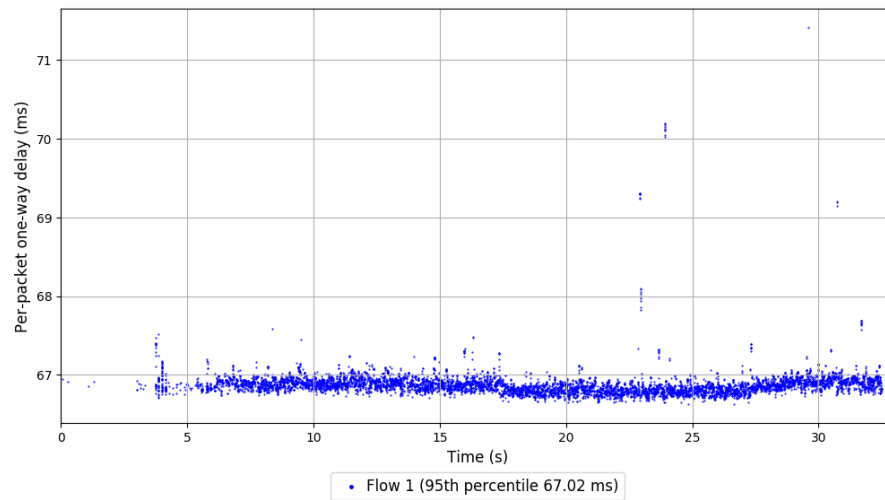
Run 9: Report of SCReAM — Data Link

```
Run 10: Statistics of SCReAM

Start at: 2017-12-05 17:53:21
End at: 2017-12-05 17:53:51

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.436 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.436 ms
Loss rate: 0.38%
```
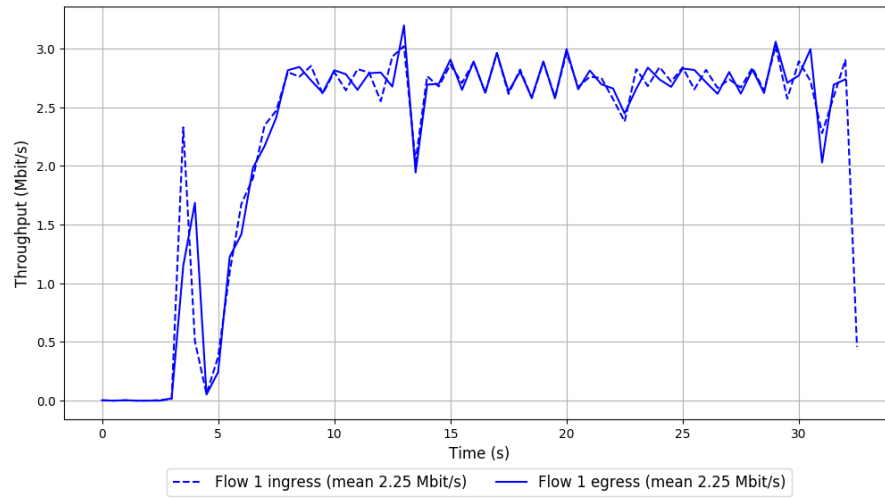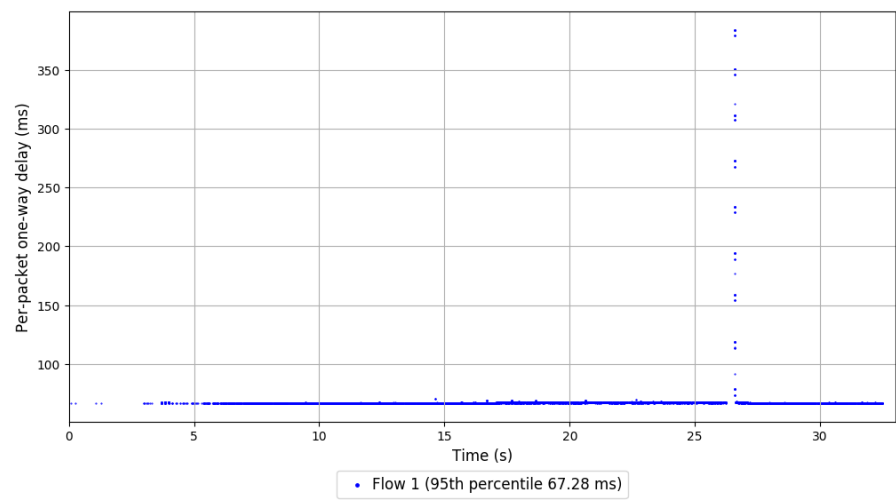
Run 10: Report of SCReAM — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2017-12-05 16:28:00
End at: 2017-12-05 16:28:30

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 66.934 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 66.934 ms
Loss rate: 0.58%
```
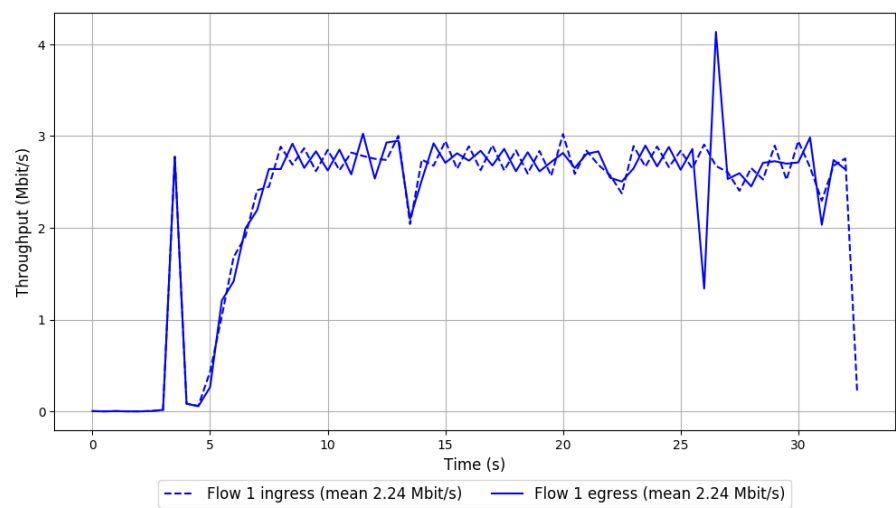
Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2017-12-05 16:38:12
End at: 2017-12-05 16:38:42

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 67.019 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 67.019 ms
Loss rate: 0.62%
```
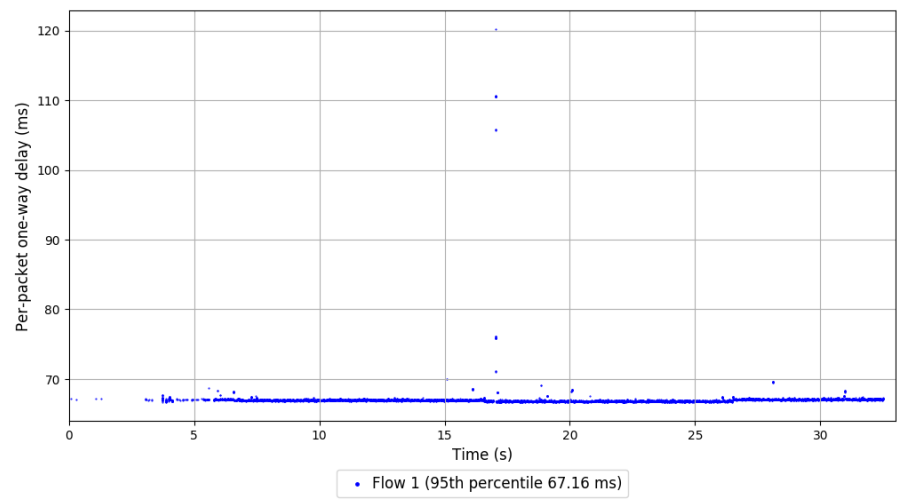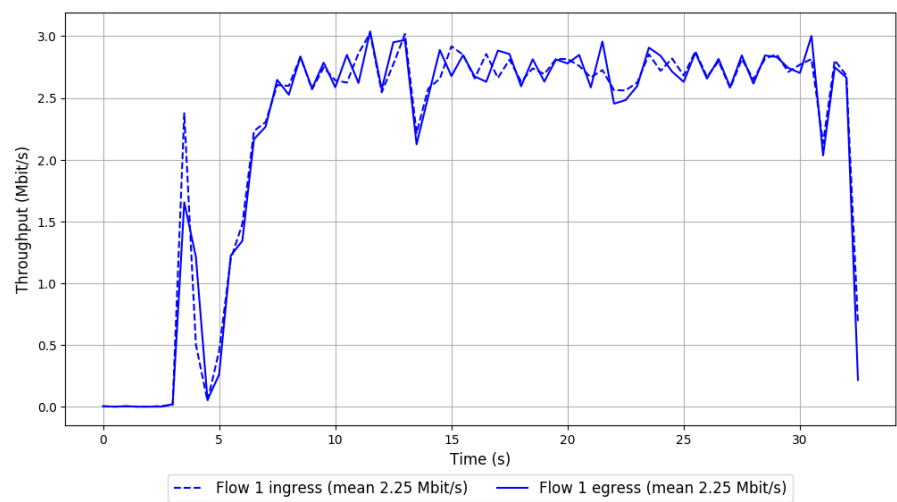
Run 2: Report of WebRTC media — Data Link

Flow 1 ingress (mean 2.25 Mbit/s)   Flow 1 egress (mean 2.25 Mbit/s)

Flow 1 (95th percentile 67.02 ms)

```
Run 3: Statistics of WebRTC media

Start at: 2017-12-05 16:48:43
End at: 2017-12-05 16:49:13

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 67.281 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 67.281 ms
Loss rate: 0.46%
```
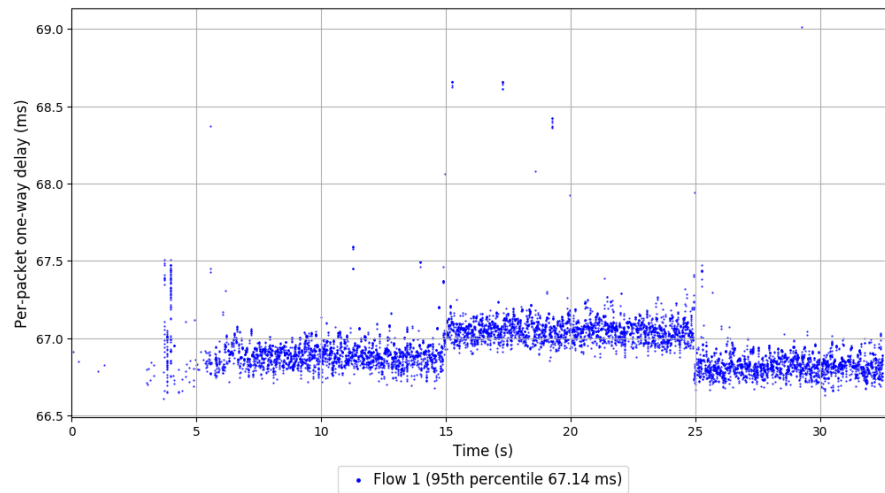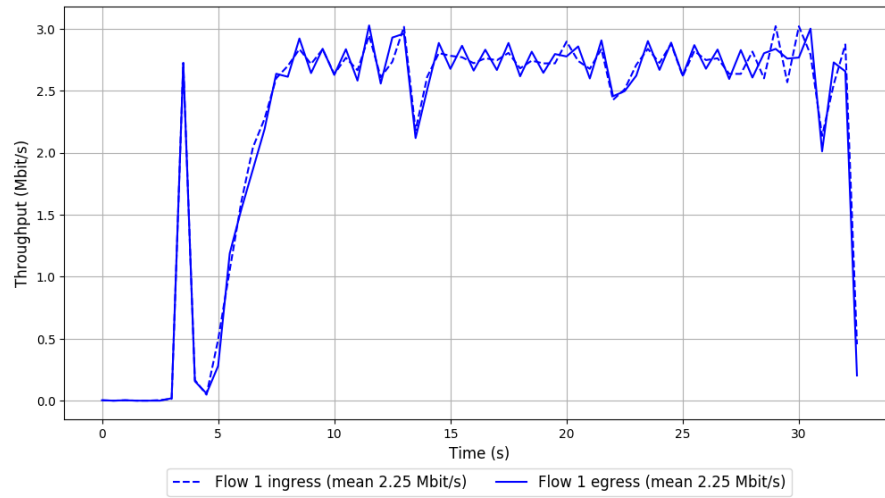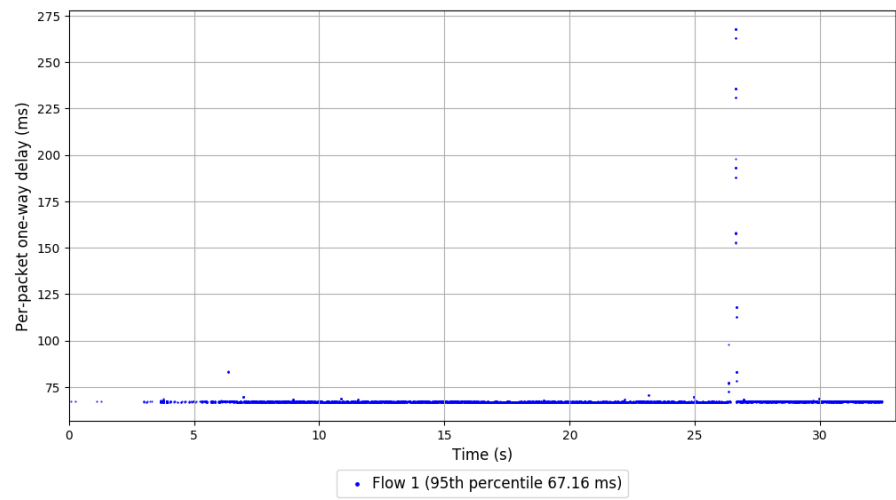
Run 3: Report of WebRTC media — Data Link

Flow 1 ingress (mean 2.24 Mbit/s) ——— Flow 1 egress (mean 2.24 Mbit/s)

· Flow 1 (95th percentile 67.28 ms)

```
Run 4: Statistics of WebRTC media

Start at: 2017-12-05 16:58:53
End at: 2017-12-05 16:59:23

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 67.157 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 67.157 ms
Loss rate: 0.61%
```
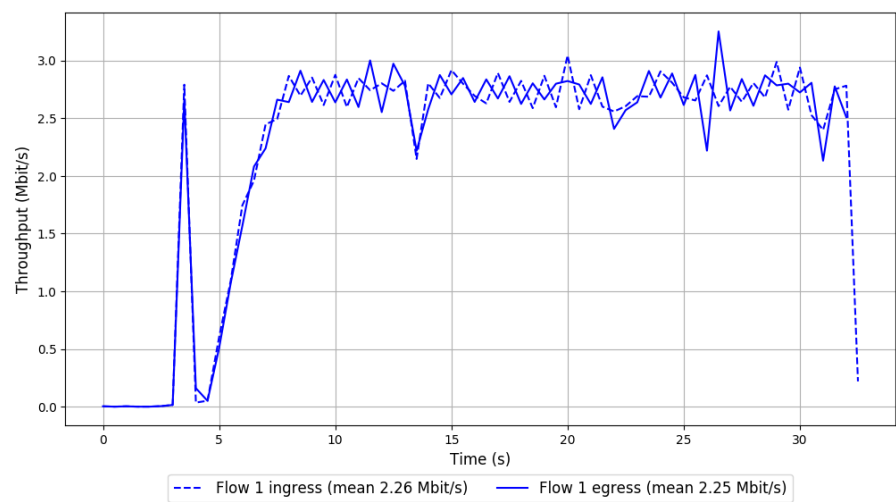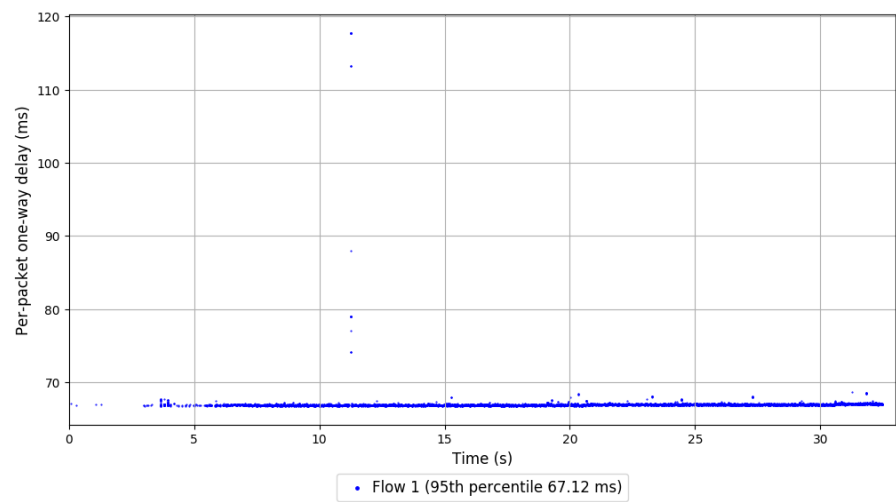
Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2017-12-05 17:09:15
End at: 2017-12-05 17:09:45

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 67.136 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 67.136 ms
Loss rate: 0.47%
```
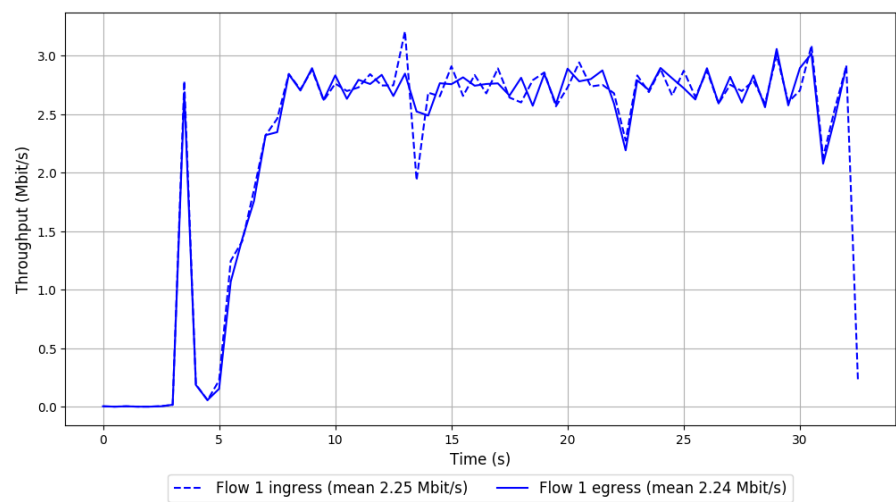
Run 5: Report of WebRTC media — Data Link

```
Run 6: Statistics of WebRTC media

Start at: 2017-12-05 17:19:43
End at: 2017-12-05 17:20:13

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 67.155 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 67.155 ms
Loss rate: 0.60%
```
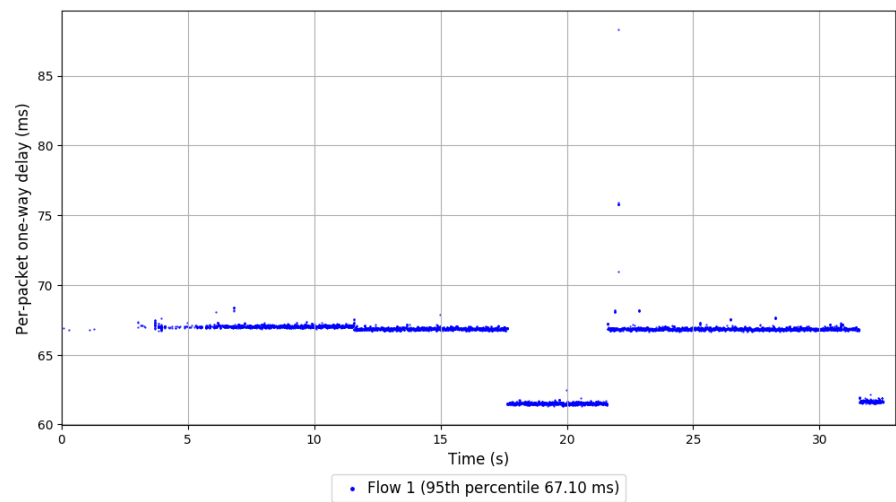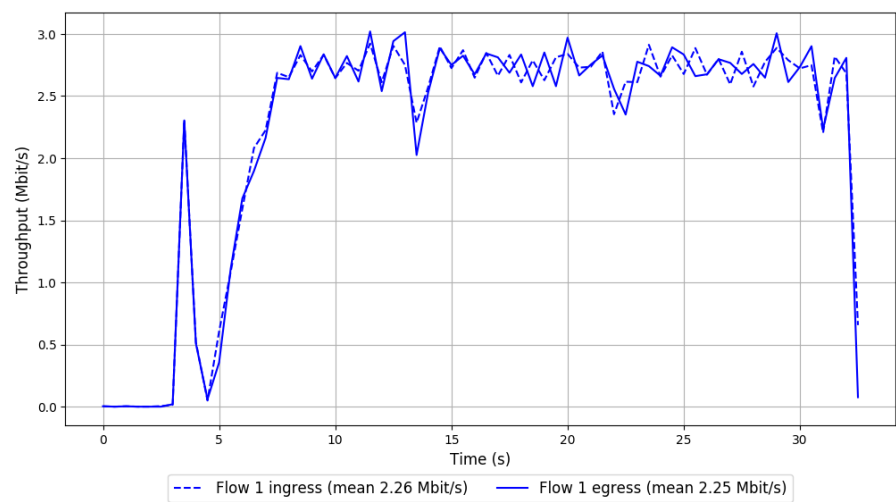
Run 6: Report of WebRTC media — Data Link

```
Run 7: Statistics of WebRTC media

Start at: 2017-12-05 17:29:59
End at: 2017-12-05 17:30:29

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 67.118 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 67.118 ms
Loss rate: 0.52%
```
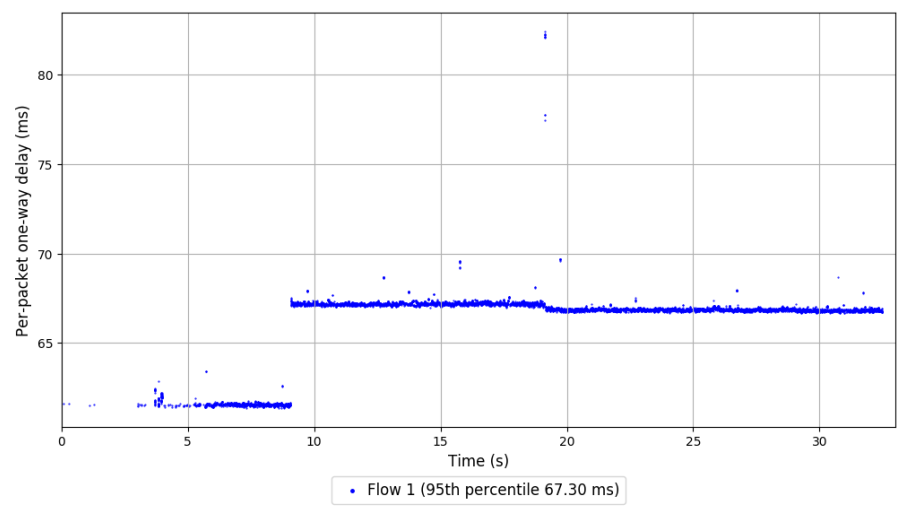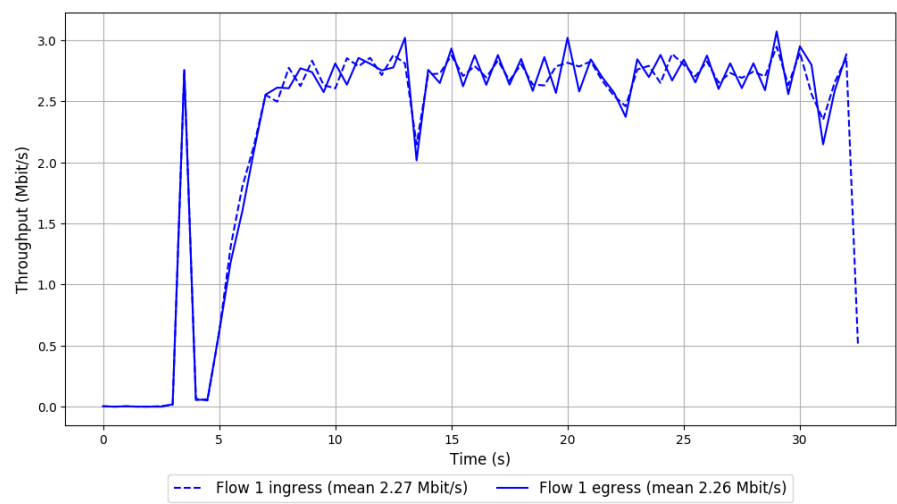
Run 7: Report of WebRTC media — Data Link

```
Run 8: Statistics of WebRTC media

Start at: 2017-12-05 17:40:48
End at: 2017-12-05 17:41:18

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 67.096 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 67.096 ms
Loss rate: 0.60%
```
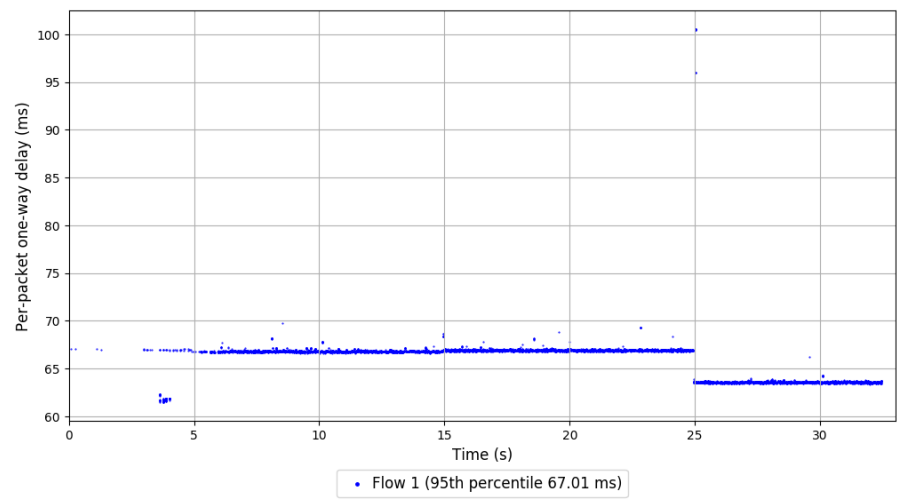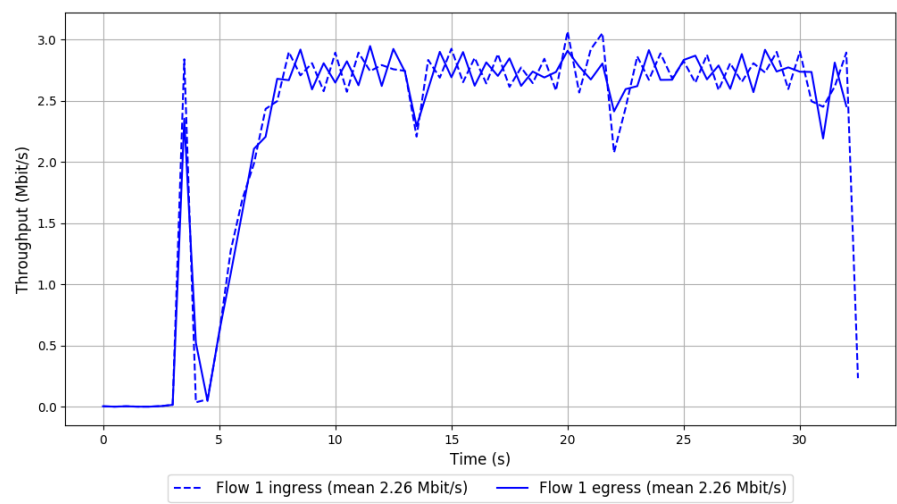
Run 8: Report of WebRTC media — Data Link

```
Run 9: Statistics of WebRTC media

Start at: 2017-12-05 17:51:21
End at: 2017-12-05 17:51:51

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 67.295 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 67.295 ms
Loss rate: 0.61%
```
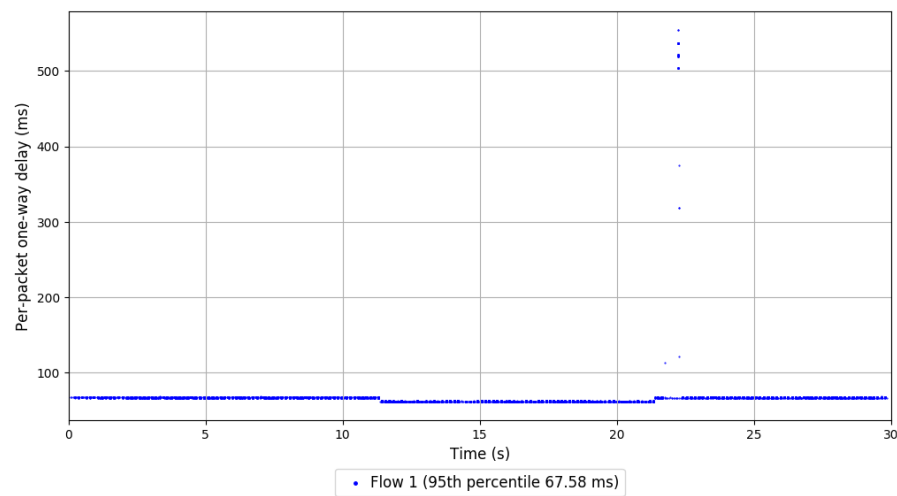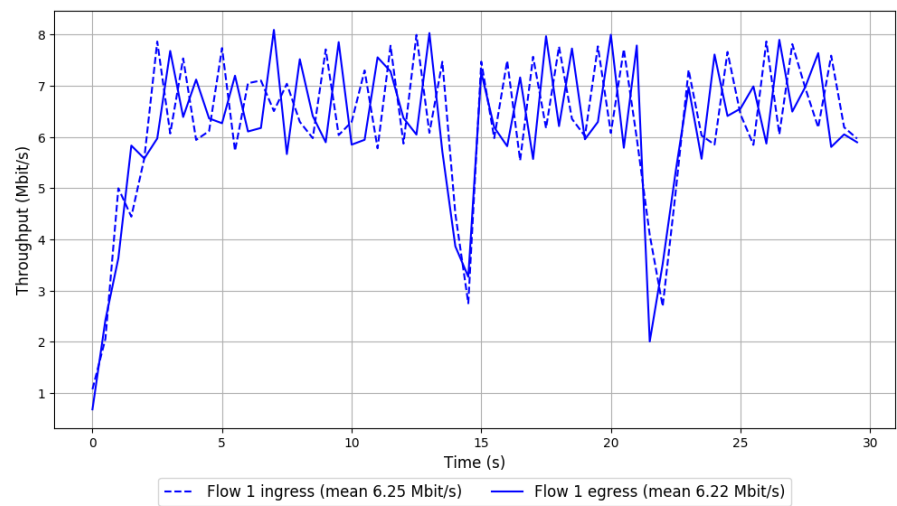
Run 9: Report of WebRTC media — Data Link

Flow 1 ingress (mean 2.27 Mbit/s)   Flow 1 egress (mean 2.26 Mbit/s)

Flow 1 (95th percentile 67.30 ms)

```
Run 10: Statistics of WebRTC media

Start at: 2017-12-05 18:01:45
End at: 2017-12-05 18:02:15

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 67.006 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 67.006 ms
Loss rate: 0.61%
```
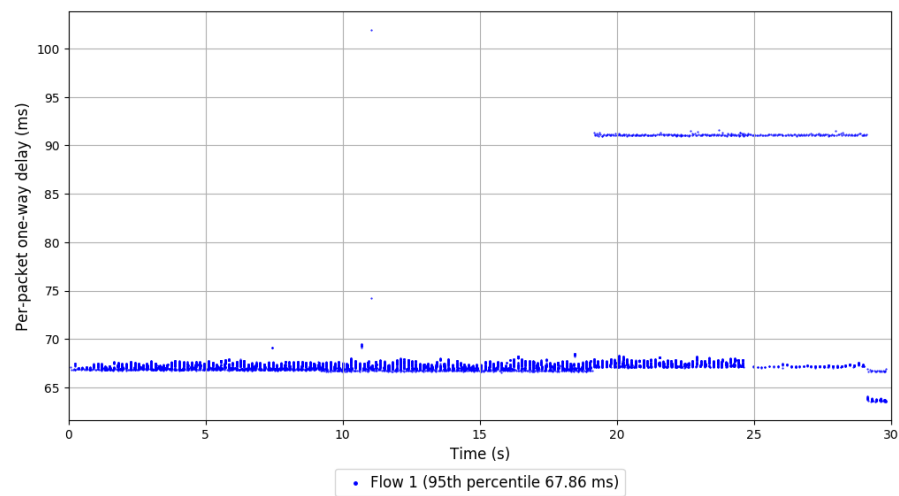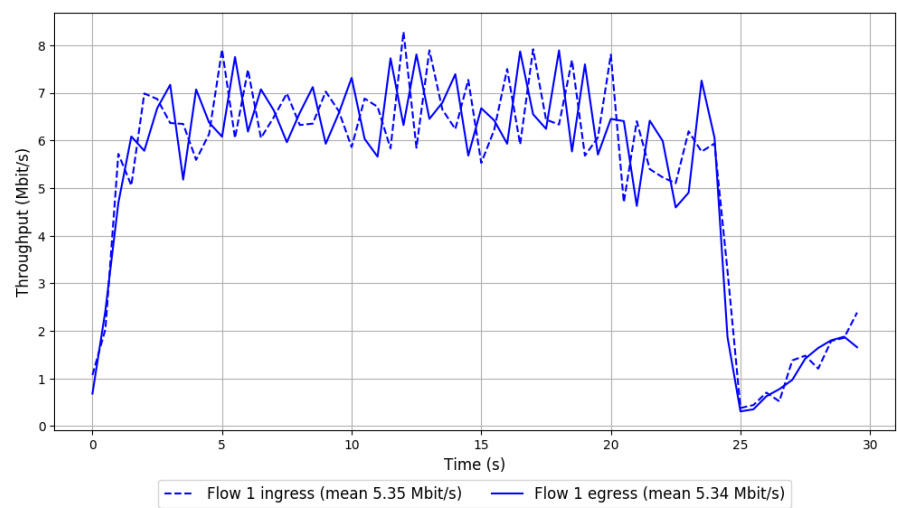
Run 10: Report of WebRTC media — Data Link

```
Run 1: Statistics of Sprout

Start at: 2017-12-05 16:22:46
End at: 2017-12-05 16:23:16

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.22 Mbit/s
95th percentile per-packet one-way delay: 67.581 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 6.22 Mbit/s
95th percentile per-packet one-way delay: 67.581 ms
Loss rate: 1.05%
```
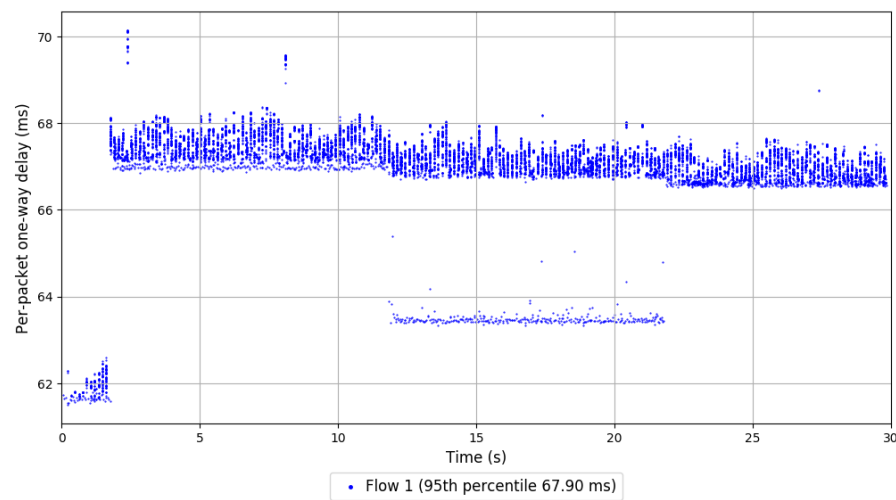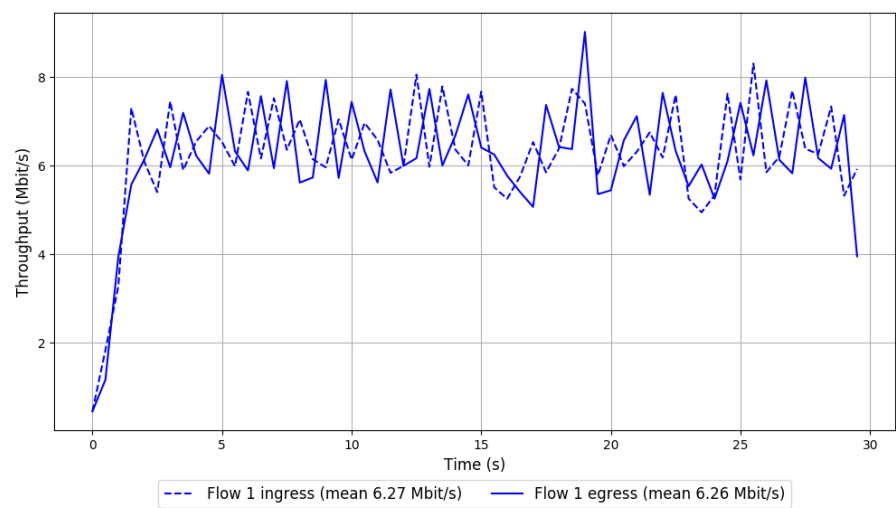
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2017-12-05 16:32:58
End at: 2017-12-05 16:33:28

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.34 Mbit/s
95th percentile per-packet one-way delay: 67.855 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 5.34 Mbit/s
95th percentile per-packet one-way delay: 67.855 ms
Loss rate: 0.72%
```
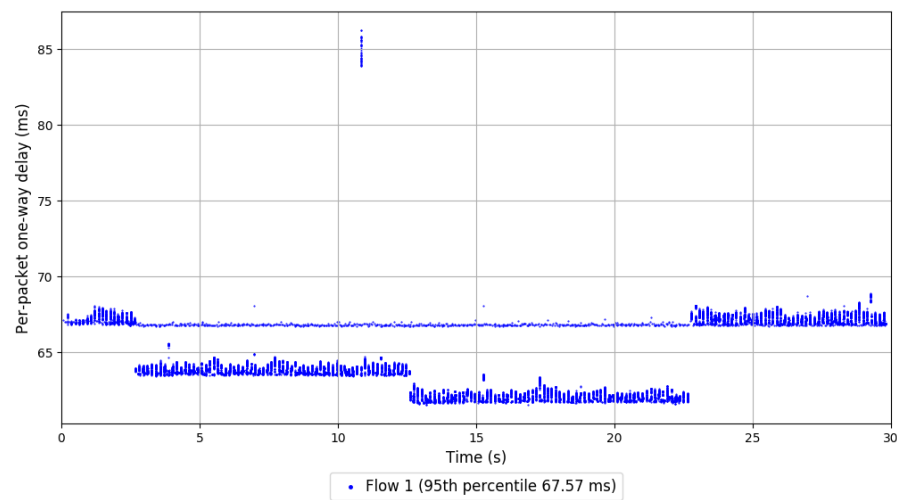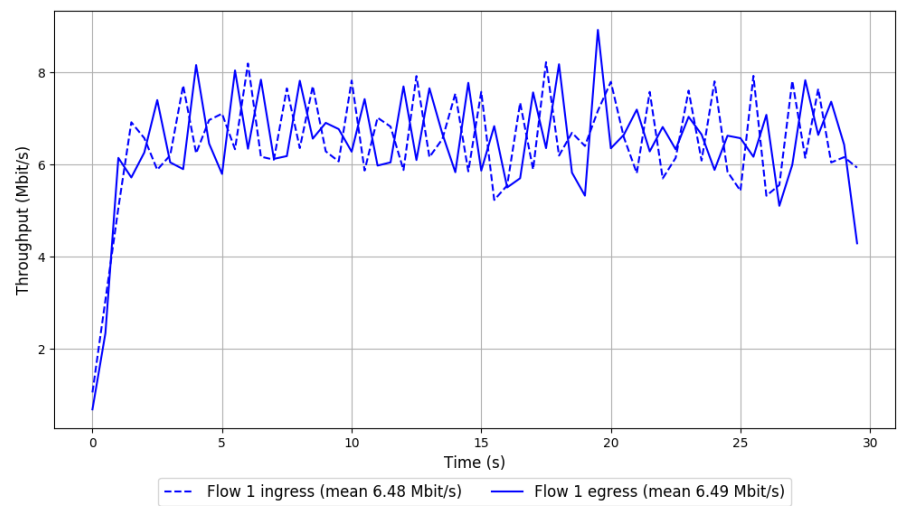
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2017-12-05 16:43:15
End at: 2017-12-05 16:43:45


# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.26 Mbit/s
95th percentile per-packet one-way delay: 67.903 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 6.26 Mbit/s
95th percentile per-packet one-way delay: 67.903 ms
Loss rate: 0.53%
```
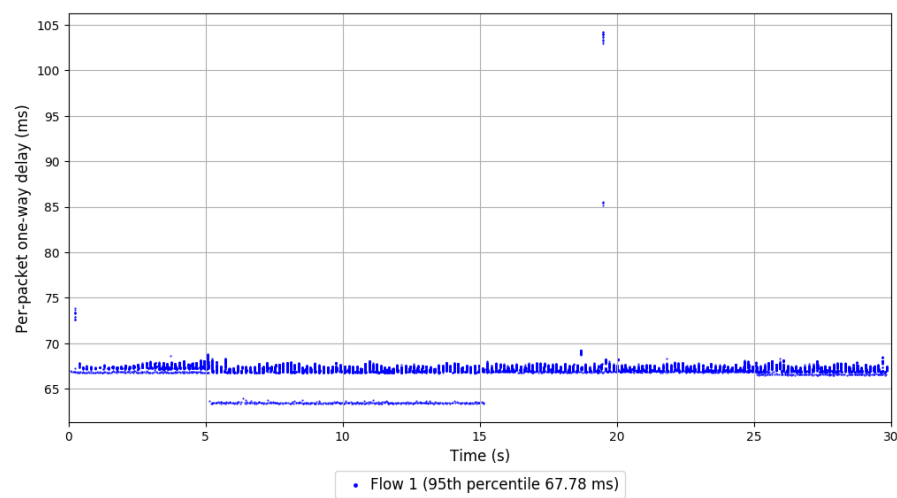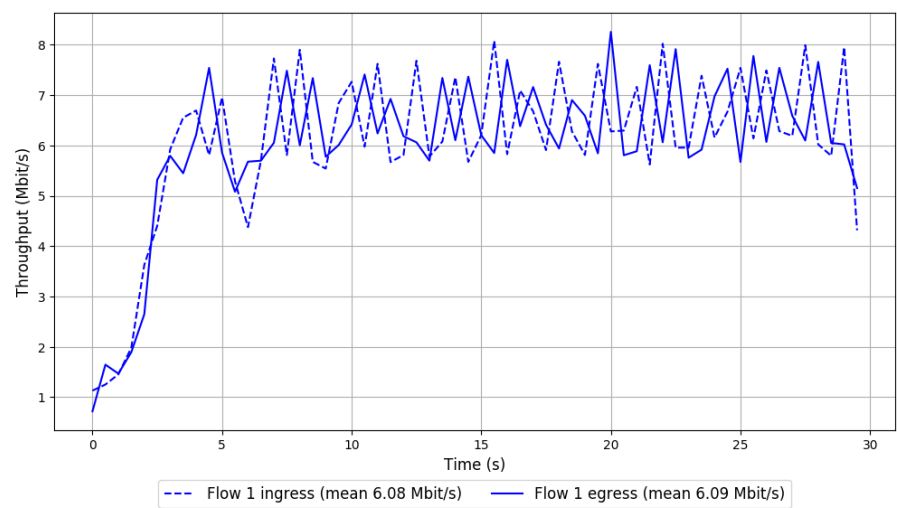
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2017-12-05 16:53:44
End at: 2017-12-05 16:54:14

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.49 Mbit/s
95th percentile per-packet one-way delay: 67.568 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 6.49 Mbit/s
95th percentile per-packet one-way delay: 67.568 ms
Loss rate: 0.51%
```
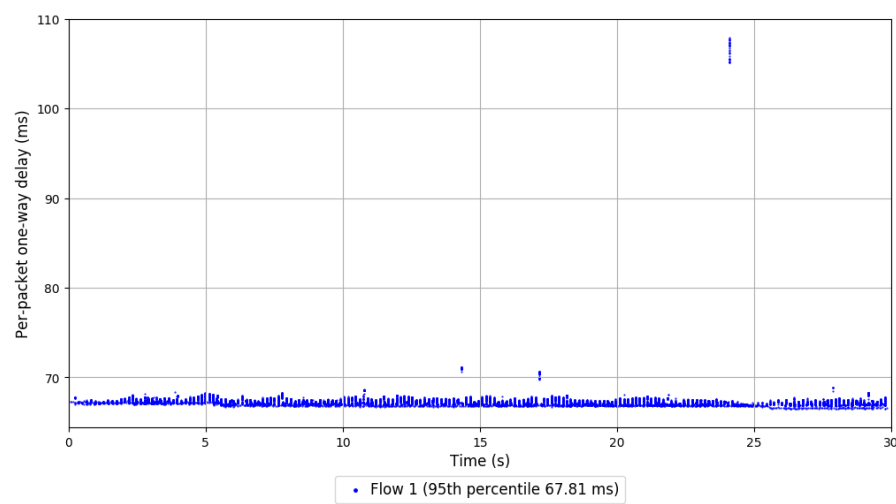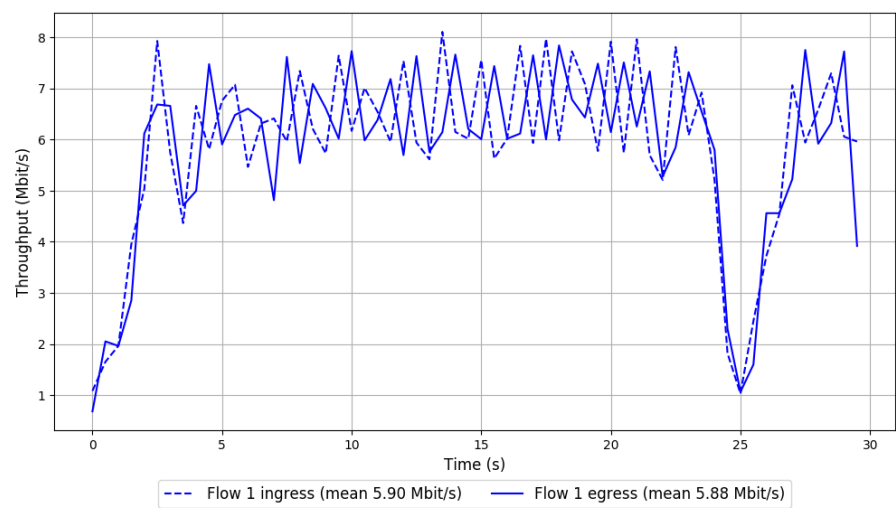
Run 4: Report of Sprout — Data Link

Flow 1 ingress (mean 6.48 Mbit/s)   Flow 1 egress (mean 6.49 Mbit/s)

Flow 1 (95th percentile 67.57 ms)

```
Run 5: Statistics of Sprout

Start at: 2017-12-05 17:04:02
End at: 2017-12-05 17:04:32

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.09 Mbit/s
95th percentile per-packet one-way delay: 67.784 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 6.09 Mbit/s
95th percentile per-packet one-way delay: 67.784 ms
Loss rate: 0.34%
```
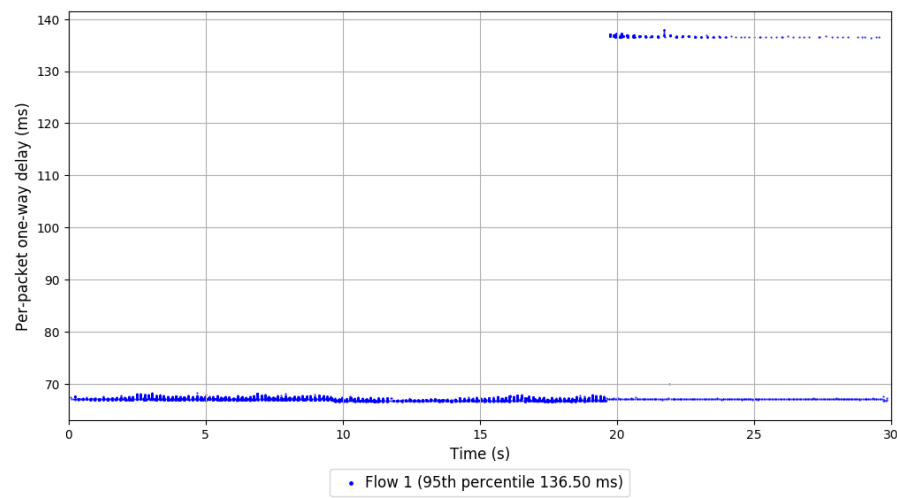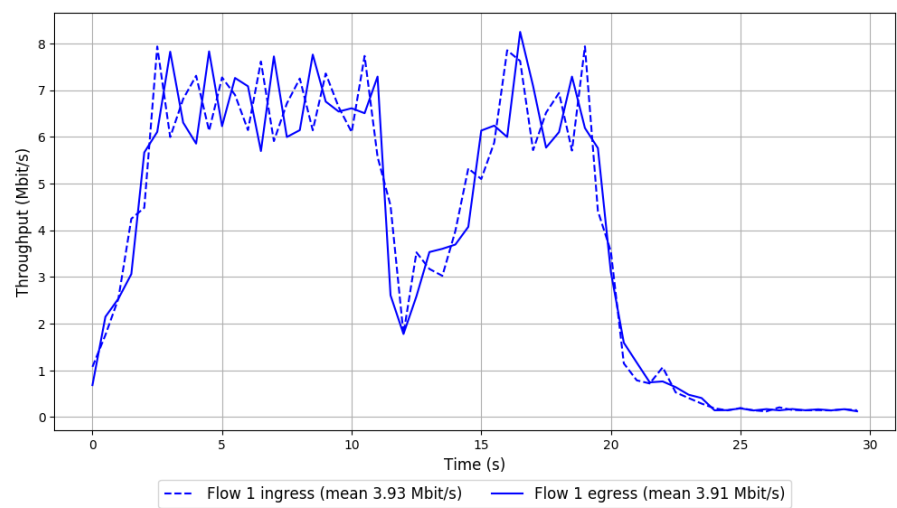
Run 5: Report of Sprout — Data Link

Flow 1 ingress (mean 6.08 Mbit/s) ---- Flow 1 egress (mean 6.09 Mbit/s) ——

Flow 1 (95th percentile 67.78 ms)

```
Run 6: Statistics of Sprout

Start at: 2017-12-05 17:14:32
End at: 2017-12-05 17:15:02

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.88 Mbit/s
95th percentile per-packet one-way delay: 67.815 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 5.88 Mbit/s
95th percentile per-packet one-way delay: 67.815 ms
Loss rate: 0.64%
```
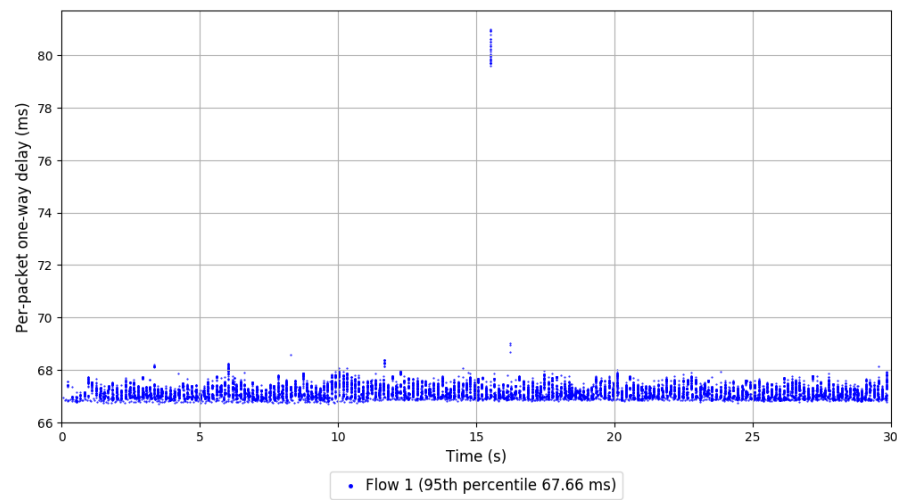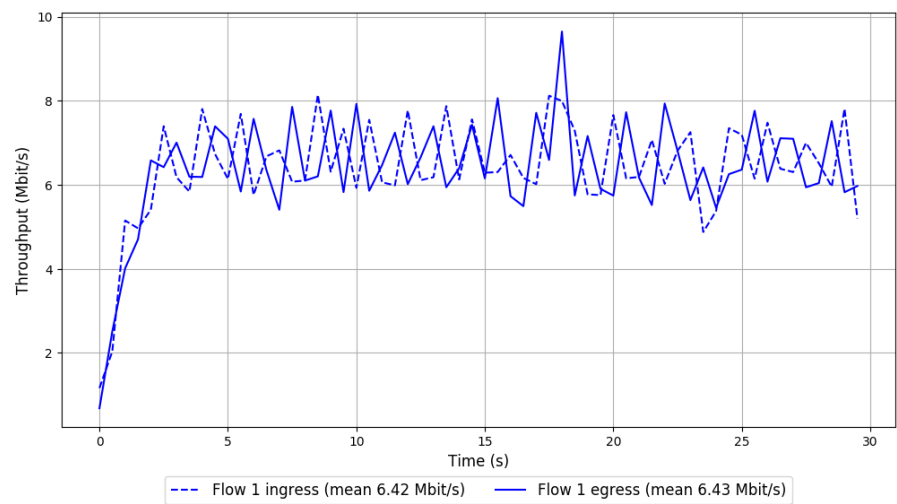
Run 6: Report of Sprout — Data Link

Flow 1 ingress (mean 5.90 Mbit/s) —— Flow 1 egress (mean 5.88 Mbit/s)

• Flow 1 (95th percentile 67.81 ms)

```
Run 7: Statistics of Sprout

Start at: 2017-12-05 17:24:47
End at: 2017-12-05 17:25:17


# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.91 Mbit/s
95th percentile per-packet one-way delay: 136.505 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 3.91 Mbit/s
95th percentile per-packet one-way delay: 136.505 ms
Loss rate: 0.84%
```
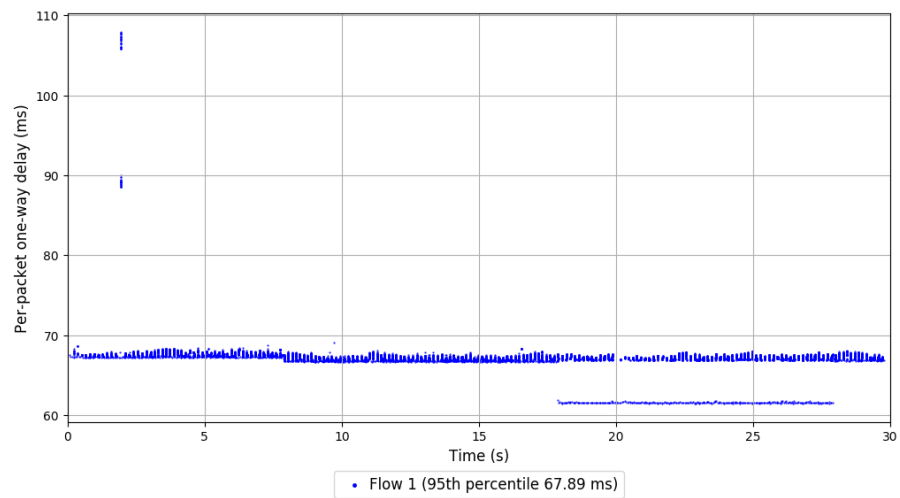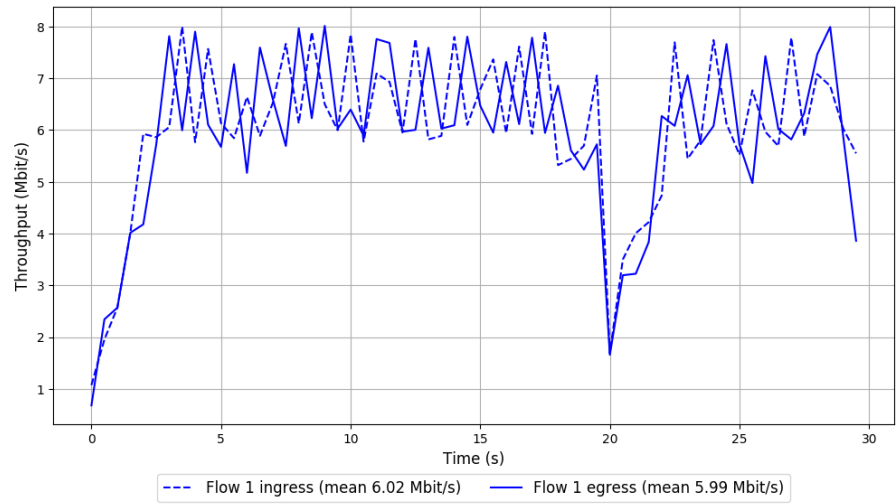
Run 7: Report of Sprout — Data Link

Flow 1 ingress (mean 3.93 Mbit/s) — Flow 1 egress (mean 3.91 Mbit/s)

• Flow 1 (95th percentile 136.50 ms)

```
Run 8: Statistics of Sprout

Start at: 2017-12-05 17:35:16
End at: 2017-12-05 17:35:46

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.43 Mbit/s
95th percentile per-packet one-way delay: 67.657 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 6.43 Mbit/s
95th percentile per-packet one-way delay: 67.657 ms
Loss rate: 0.37%
```
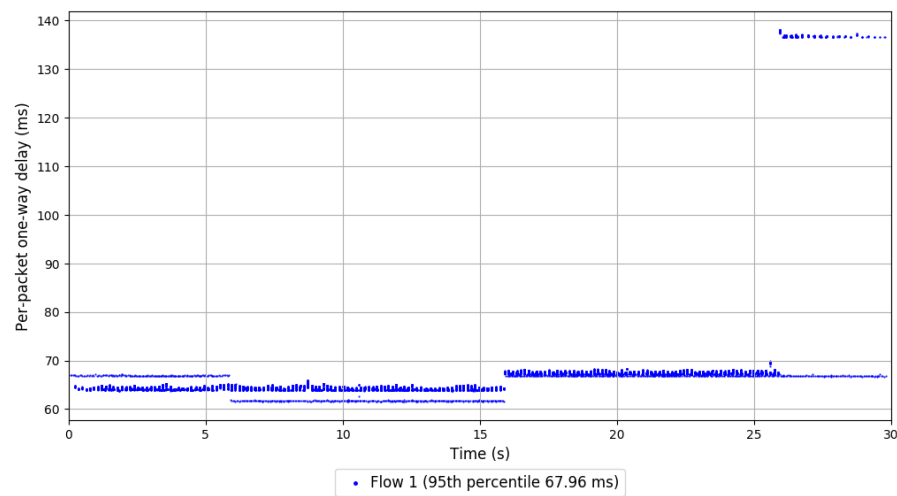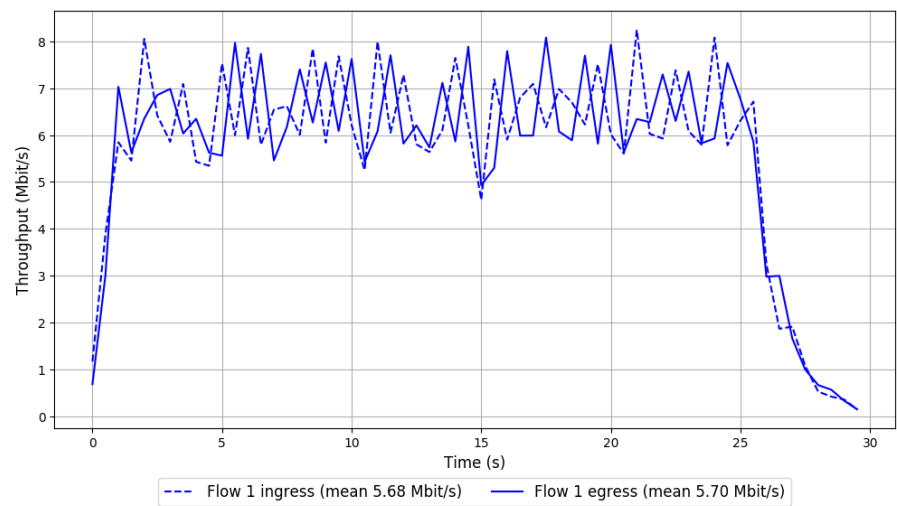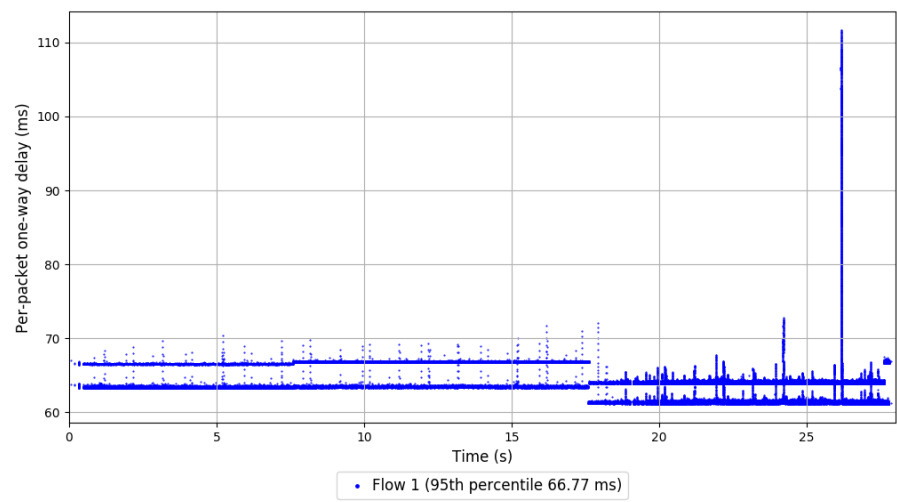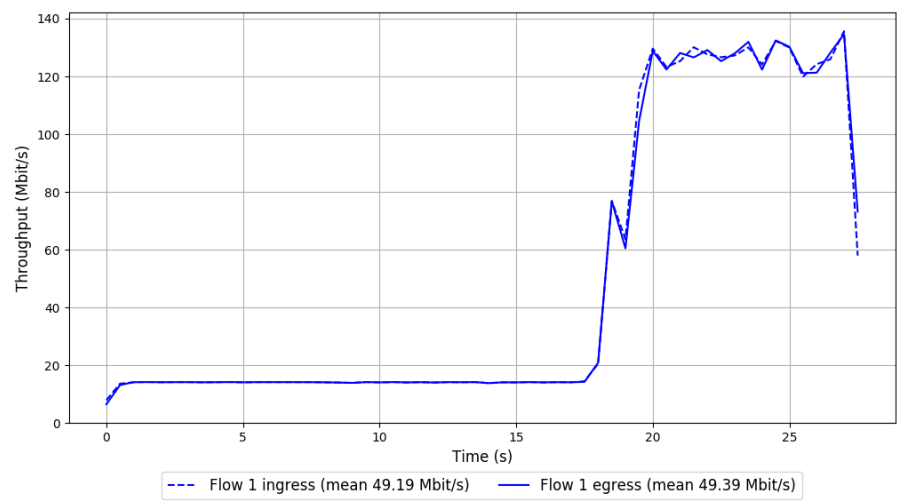
Run 8: Report of Sprout — Data Link

```
Run 9: Statistics of Sprout

Start at: 2017-12-05 17:46:09
End at: 2017-12-05 17:46:39


# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.99 Mbit/s
95th percentile per-packet one-way delay: 67.891 ms
Loss rate: 1.12%
-- Flow 1:
Average throughput: 5.99 Mbit/s
95th percentile per-packet one-way delay: 67.891 ms
Loss rate: 1.12%
```
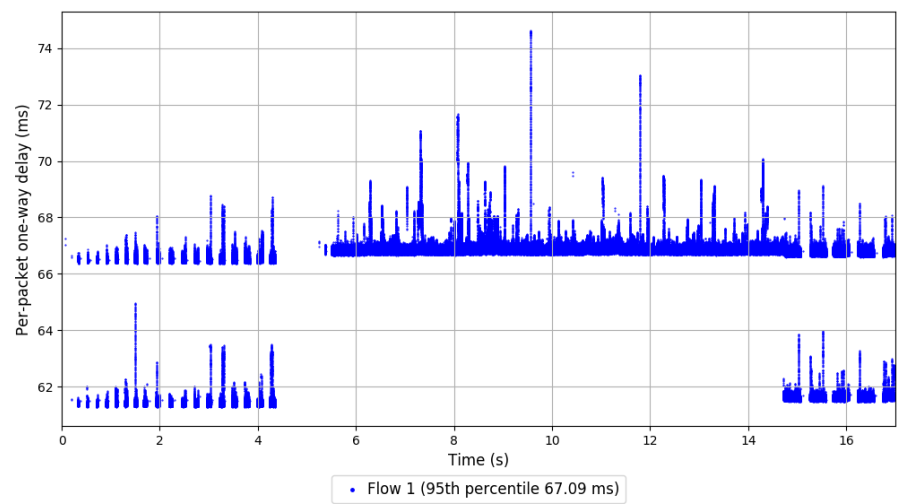
Run 9: Report of Sprout — Data Link

```
Run 10: Statistics of Sprout

Start at: 2017-12-05 17:56:21
End at: 2017-12-05 17:56:51

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.70 Mbit/s
95th percentile per-packet one-way delay: 67.962 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 5.70 Mbit/s
95th percentile per-packet one-way delay: 67.962 ms
Loss rate: 0.02%
```
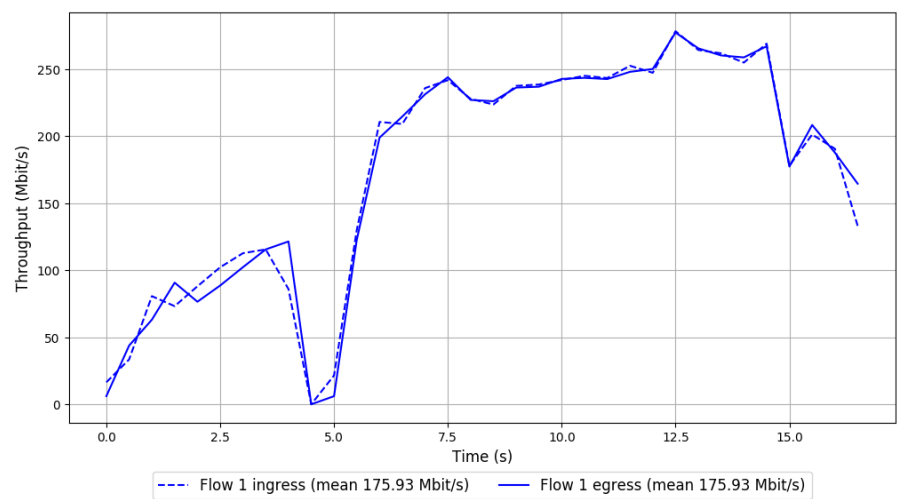
Run 10: Report of Sprout — Data Link

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

Start at: 2017-12-05 16:28:37
End at: 2017-12-05 16:29:08

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 49.39 Mbit/s
95th percentile per-packet one-way delay: 66.774 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 49.39 Mbit/s
95th percentile per-packet one-way delay: 66.774 ms
Loss rate: 0.07%
```
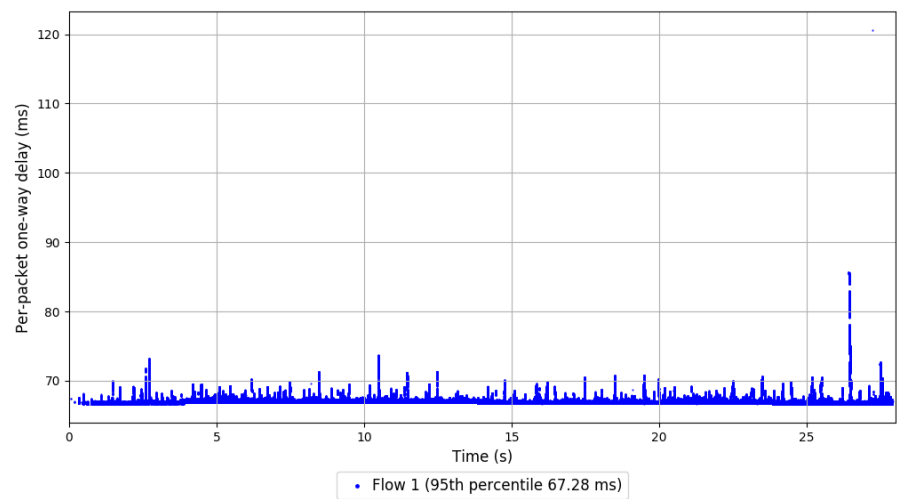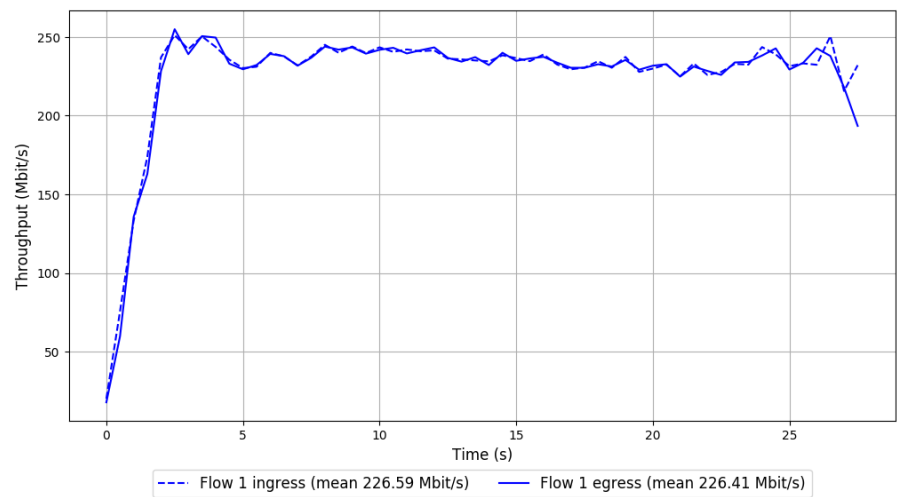
Run 1: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 49.19 Mbit/s) —— Flow 1 egress (mean 49.39 Mbit/s)

• Flow 1 (95th percentile 66.77 ms)

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

Start at: 2017-12-05 16:38:50
End at: 2017-12-05 16:39:20
```

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

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

Start at: 2017-12-05 16:49:21
End at: 2017-12-05 16:49:51
```

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

169

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

Start at: 2017-12-05 16:59:31
End at: 2017-12-05 17:00:01

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 226.41 Mbit/s
95th percentile per-packet one-way delay: 67.283 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 226.41 Mbit/s
95th percentile per-packet one-way delay: 67.283 ms
Loss rate: 0.56%
```
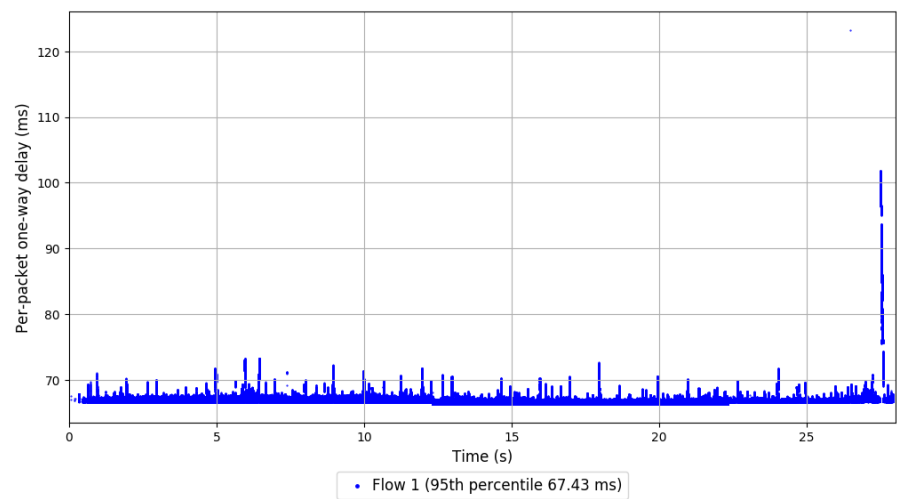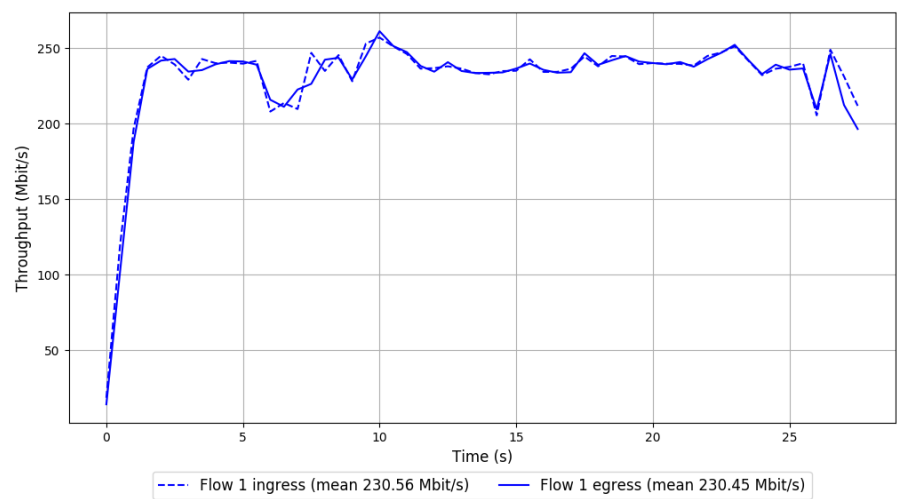
Run 4: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 226.59 Mbit/s)   Flow 1 egress (mean 226.41 Mbit/s)

Flow 1 (95th percentile 67.28 ms)

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

Start at: 2017-12-05 17:09:53
End at: 2017-12-05 17:10:23

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 230.45 Mbit/s
95th percentile per-packet one-way delay: 67.429 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 230.45 Mbit/s
95th percentile per-packet one-way delay: 67.429 ms
Loss rate: 0.53%
```
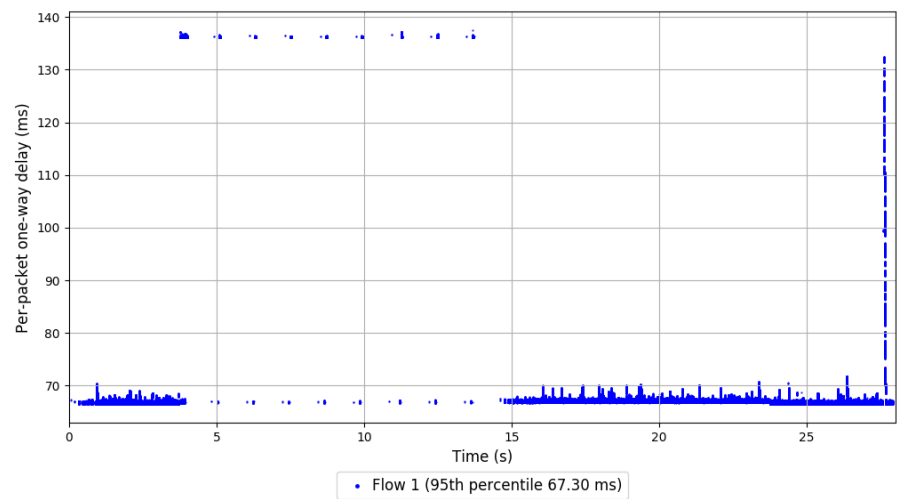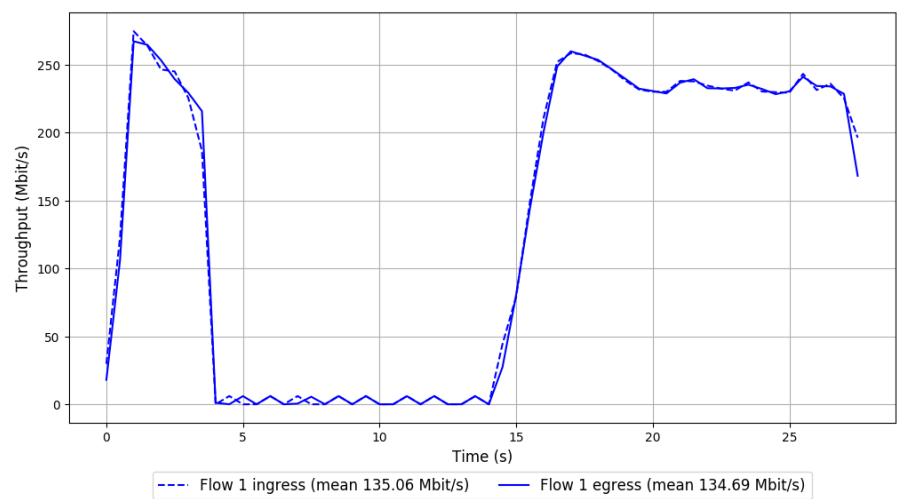
Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 230.56 Mbit/s)　　Flow 1 egress (mean 230.45 Mbit/s)

Flow 1 (95th percentile 67.43 ms)

```
Run 6: Statistics of TaoVA-100x

Start at: 2017-12-05 17:20:21
End at: 2017-12-05 17:20:51

# Below is generated by plot.py at 2017-12-05 20:16:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 134.69 Mbit/s
95th percentile per-packet one-way delay: 67.296 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 134.69 Mbit/s
95th percentile per-packet one-way delay: 67.296 ms
Loss rate: 0.75%
```
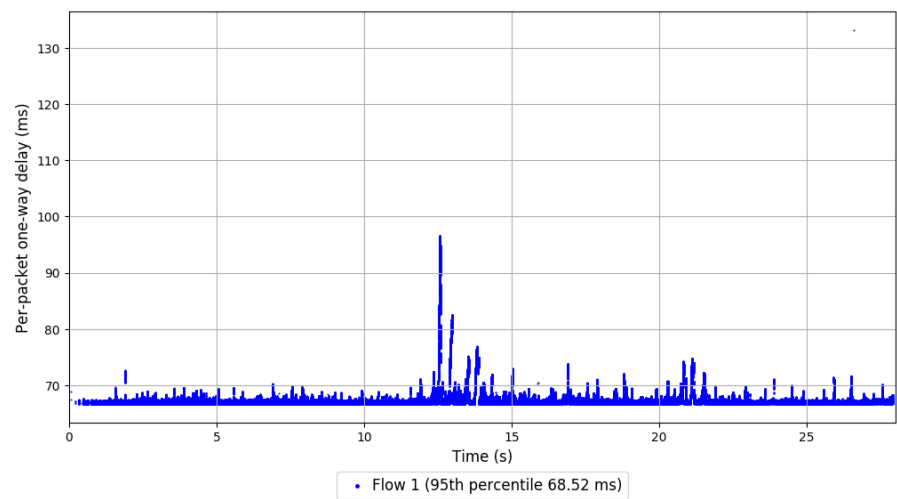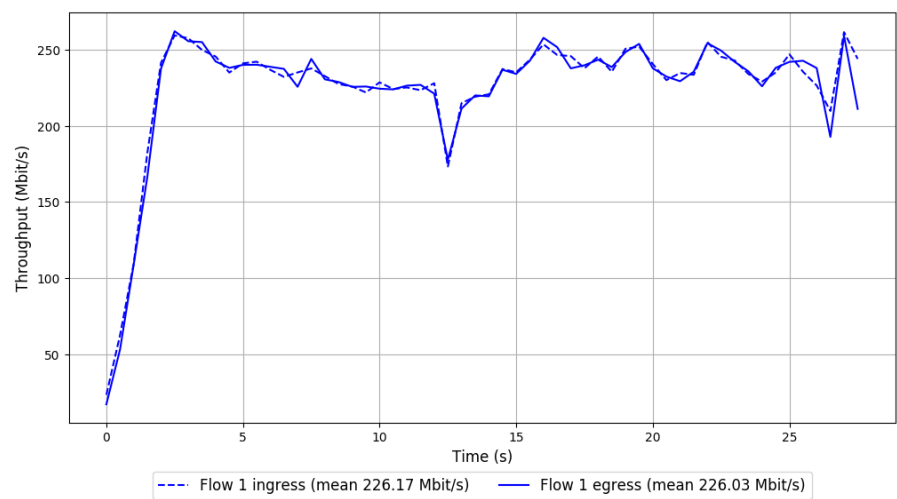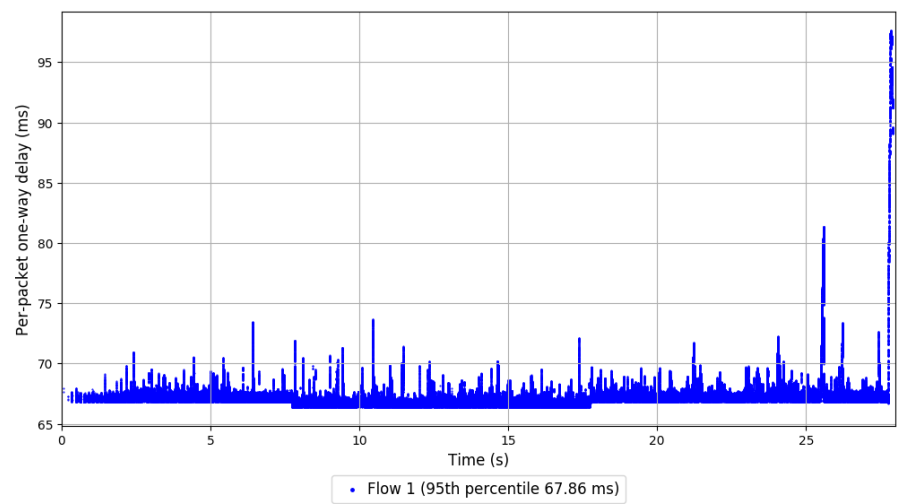
Run 6: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 135.06 Mbit/s) --- Flow 1 egress (mean 134.69 Mbit/s)

Flow 1 (95th percentile 67.30 ms)

```
Run 7: Statistics of TaoVA-100x

Start at: 2017-12-05 17:30:38
End at: 2017-12-05 17:31:08

# Below is generated by plot.py at 2017-12-05 20:17:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 226.03 Mbit/s
95th percentile per-packet one-way delay: 68.522 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 226.03 Mbit/s
95th percentile per-packet one-way delay: 68.522 ms
Loss rate: 0.54%
```
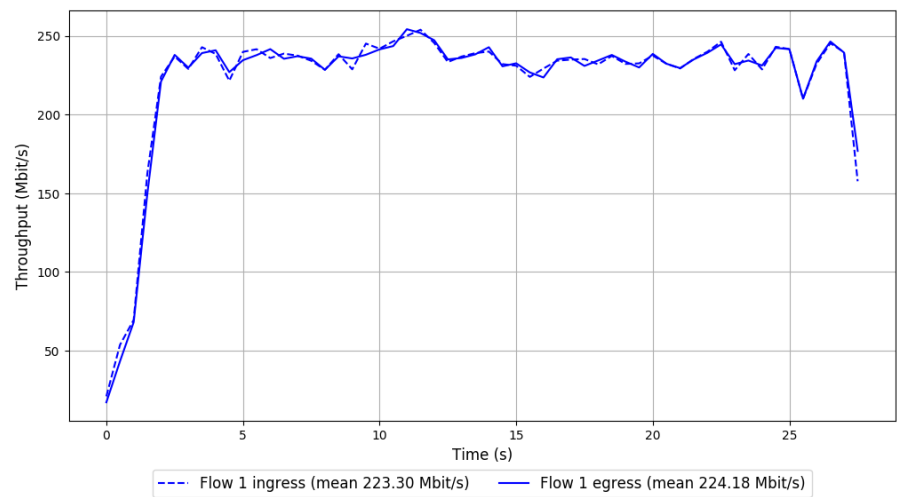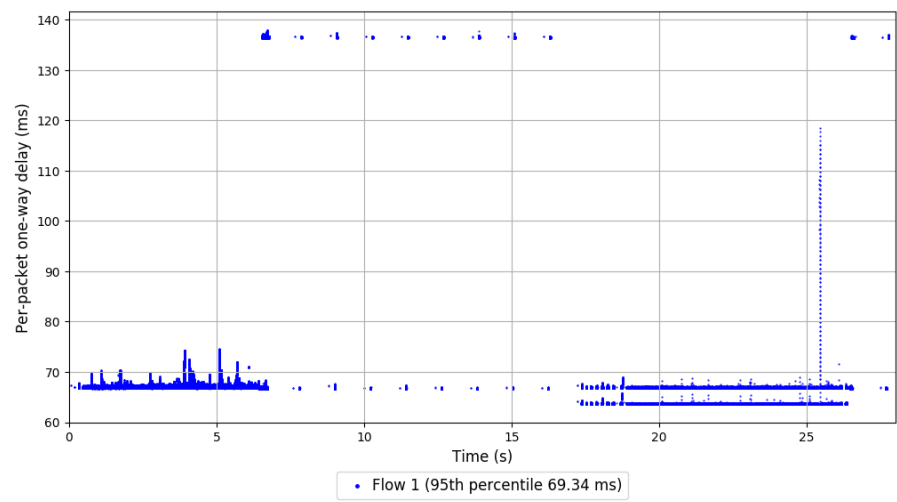
Run 7: Report of TaoVA-100x — Data Link

```
Run 8: Statistics of TaoVA-100x

Start at: 2017-12-05 17:41:27
End at: 2017-12-05 17:41:57

# Below is generated by plot.py at 2017-12-05 20:19:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 224.18 Mbit/s
95th percentile per-packet one-way delay: 67.862 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 224.18 Mbit/s
95th percentile per-packet one-way delay: 67.862 ms
Loss rate: 0.09%
```
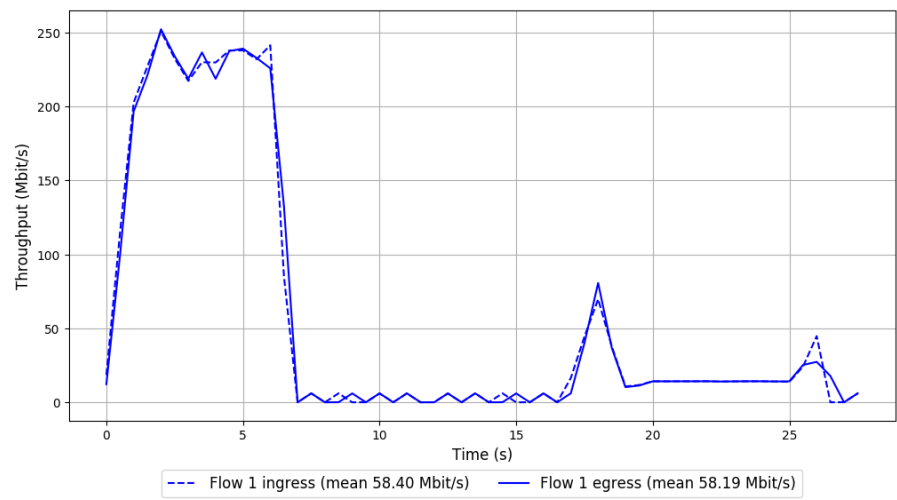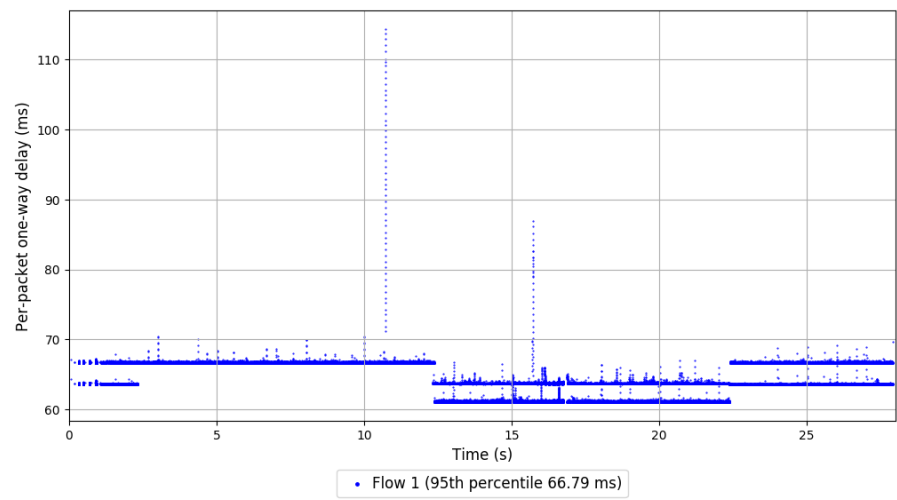
Run 8: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 223.30 Mbit/s)   Flow 1 egress (mean 224.18 Mbit/s)
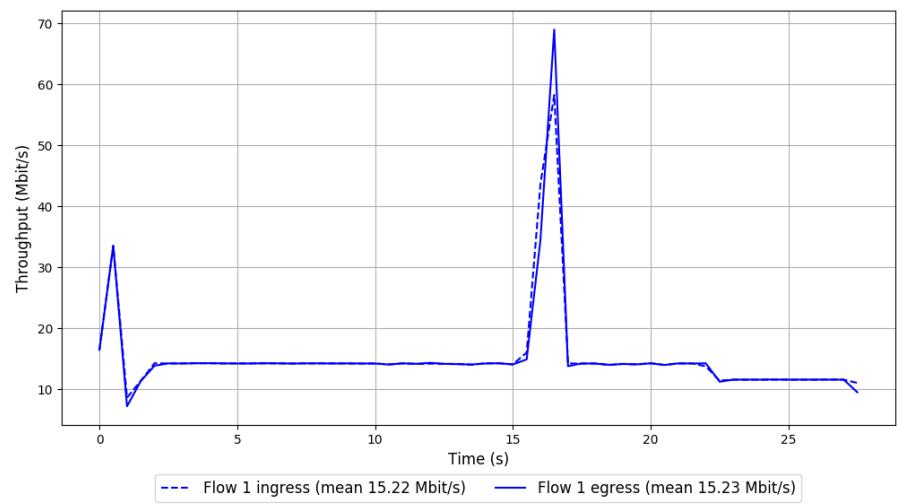

Flow 1 (95th percentile 67.86 ms)

```
Run 9: Statistics of TaoVA-100x

Start at: 2017-12-05 17:51:59
End at: 2017-12-05 17:52:29

# Below is generated by plot.py at 2017-12-05 20:19:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 58.19 Mbit/s
95th percentile per-packet one-way delay: 69.342 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 58.19 Mbit/s
95th percentile per-packet one-way delay: 69.342 ms
Loss rate: 0.12%
```
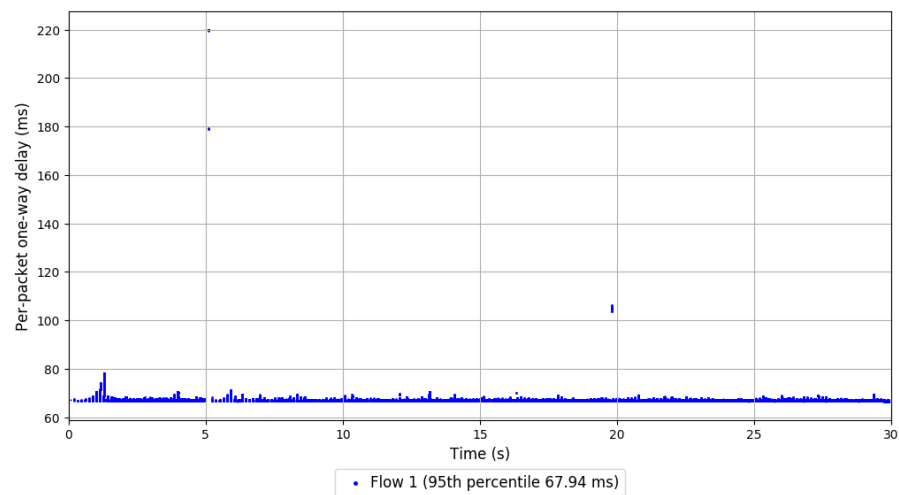
Run 9: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 58.40 Mbit/s) --- Flow 1 egress (mean 58.19 Mbit/s)

Flow 1 (95th percentile 69.34 ms)

```
Run 10: Statistics of TaoVA-100x

Start at: 2017-12-05 18:02:23
End at: 2017-12-05 18:02:53

# Below is generated by plot.py at 2017-12-05 20:19:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 15.23 Mbit/s
95th percentile per-packet one-way delay: 66.792 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 15.23 Mbit/s
95th percentile per-packet one-way delay: 66.792 ms
Loss rate: 0.35%
```
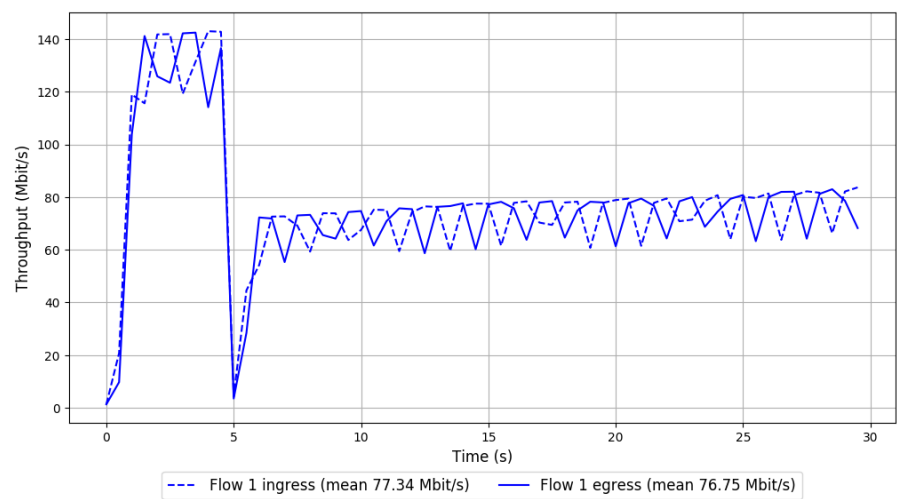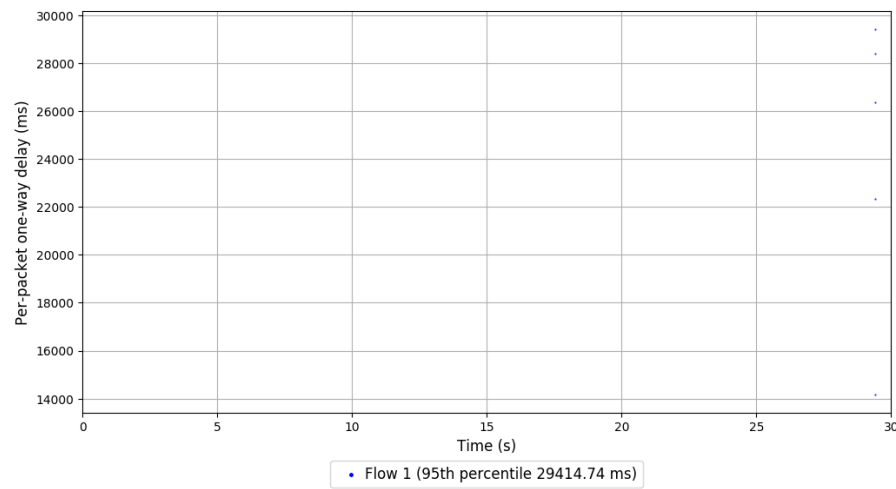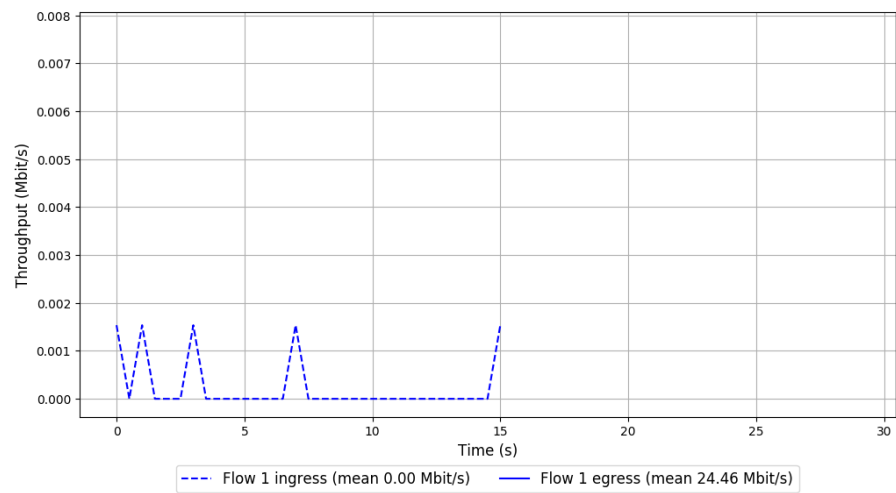
Run 10: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 15.22 Mbit/s)   Flow 1 egress (mean 15.23 Mbit/s)

Flow 1 (95th percentile 66.79 ms)

```
Run 1: Statistics of TCP Vegas

Start at: 2017-12-05 16:27:17
End at: 2017-12-05 16:27:47

# Below is generated by plot.py at 2017-12-05 20:19:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 76.75 Mbit/s
95th percentile per-packet one-way delay: 67.944 ms
Loss rate: 1.21%
-- Flow 1:
Average throughput: 76.75 Mbit/s
95th percentile per-packet one-way delay: 67.944 ms
Loss rate: 1.21%
```
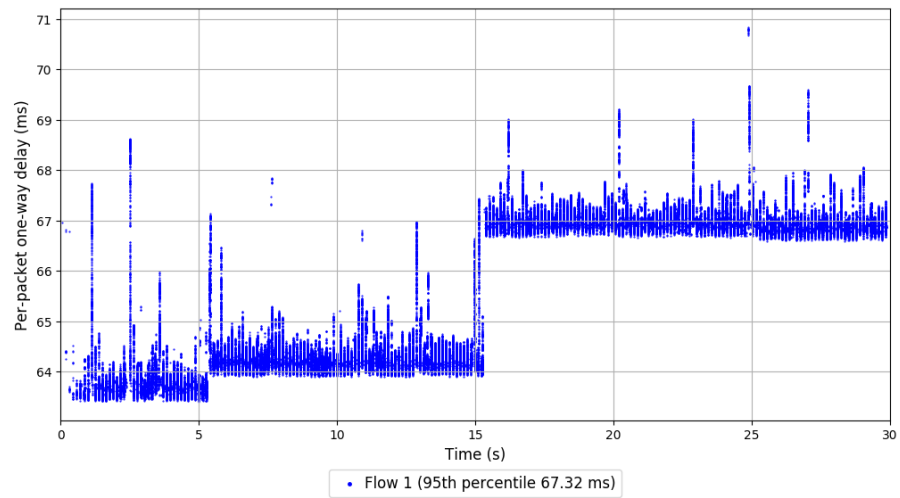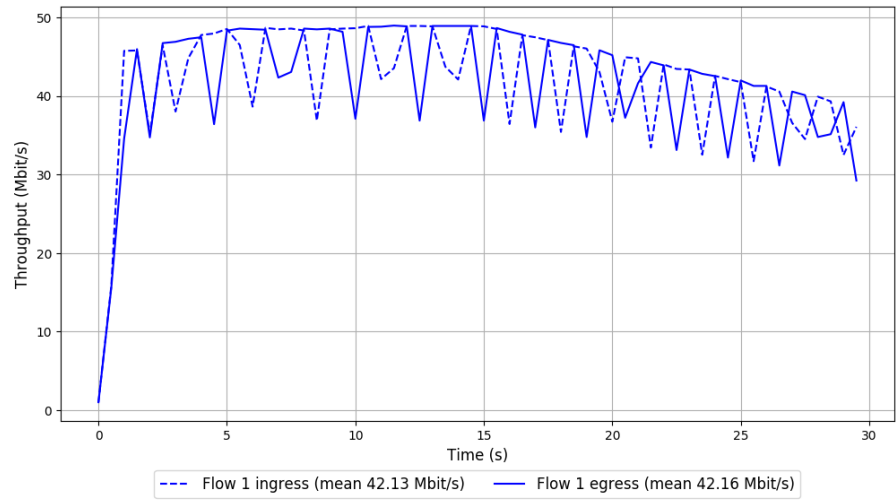
Run 1: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 77.34 Mbit/s) —— Flow 1 egress (mean 76.75 Mbit/s)

• Flow 1 (95th percentile 67.94 ms)

```
Run 2: Statistics of TCP Vegas

Start at: 2017-12-05 16:37:35
End at: 2017-12-05 16:38:05
```

Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2017-12-05 16:48:02
End at: 2017-12-05 16:48:32

# Below is generated by plot.py at 2017-12-05 20:19:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 42.16 Mbit/s
95th percentile per-packet one-way delay: 67.319 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 42.16 Mbit/s
95th percentile per-packet one-way delay: 67.319 ms
Loss rate: 0.38%
```
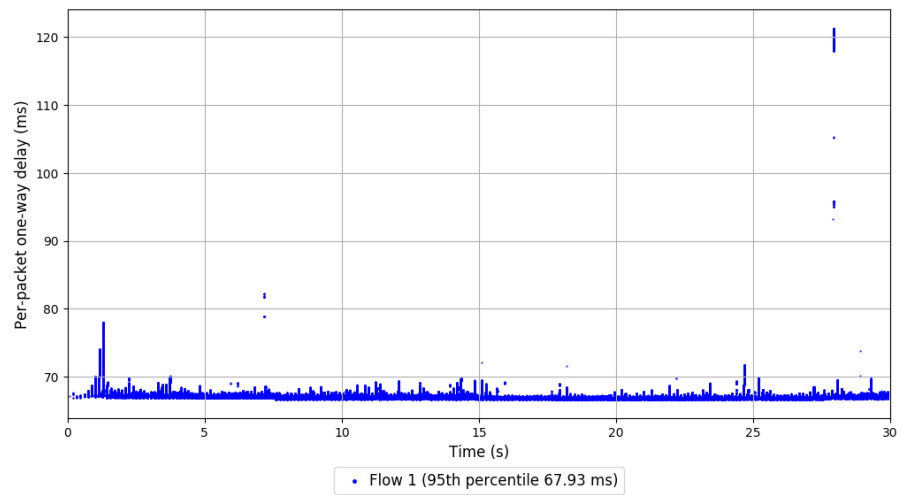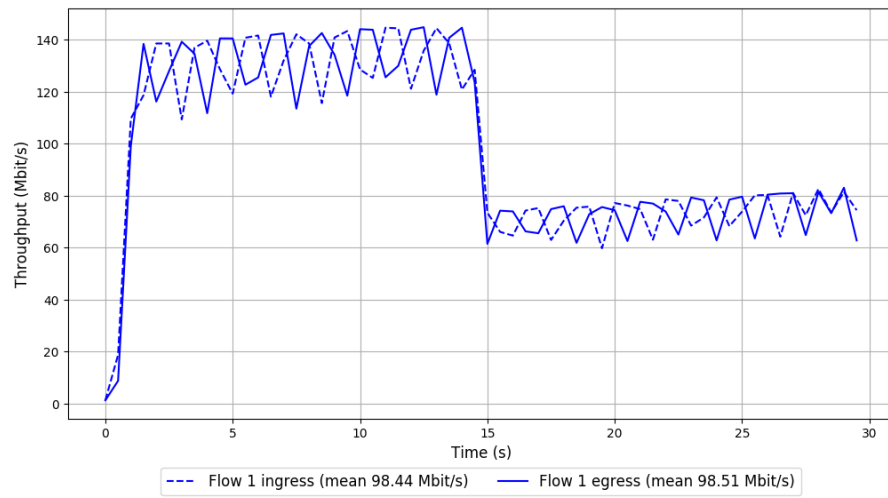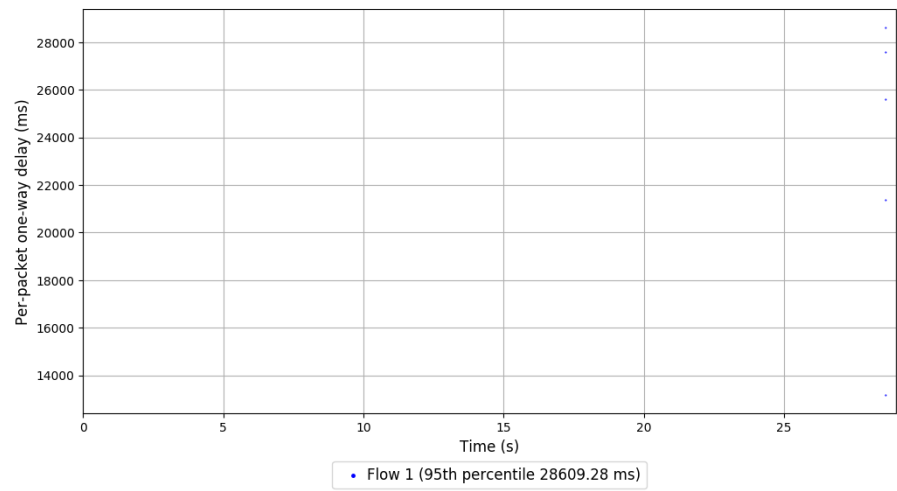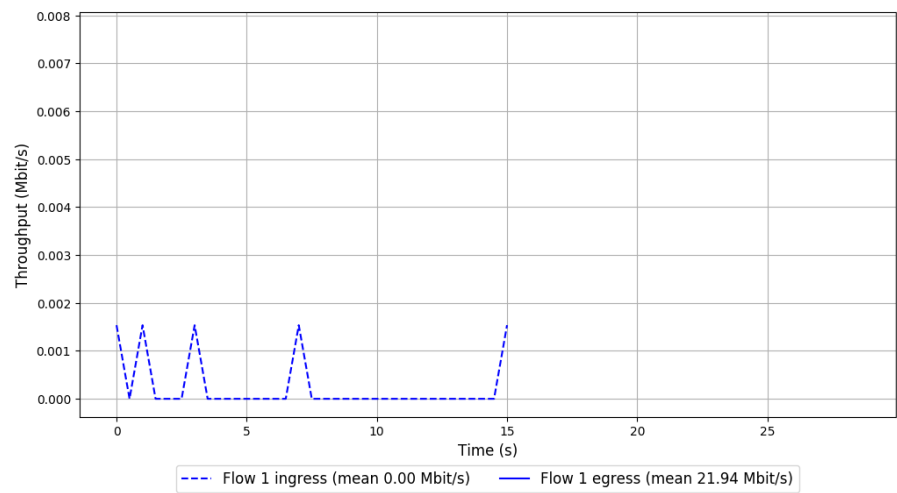
Run 3: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 42.13 Mbit/s)　　Flow 1 egress (mean 42.16 Mbit/s)

Flow 1 (95th percentile 67.32 ms)

```
Run 4: Statistics of TCP Vegas

Start at: 2017-12-05 16:58:10
End at: 2017-12-05 16:58:40

# Below is generated by plot.py at 2017-12-05 20:19:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 98.51 Mbit/s
95th percentile per-packet one-way delay: 67.933 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 98.51 Mbit/s
95th percentile per-packet one-way delay: 67.933 ms
Loss rate: 0.38%
```
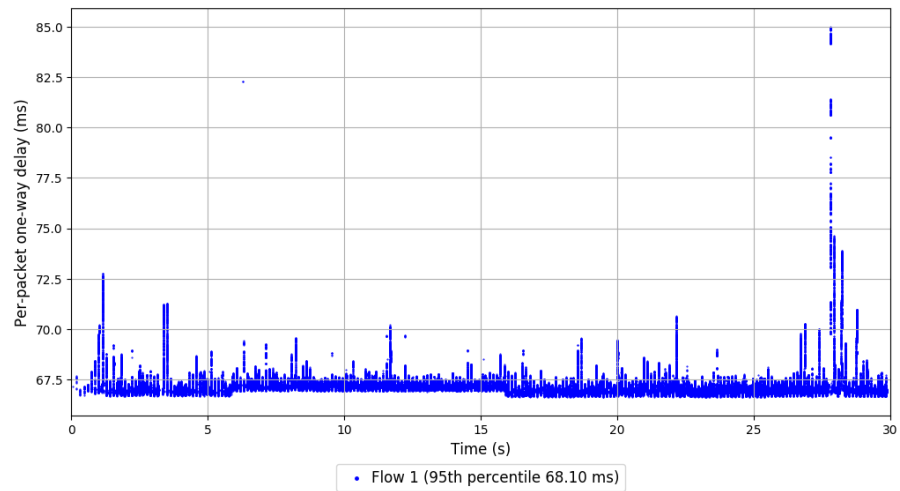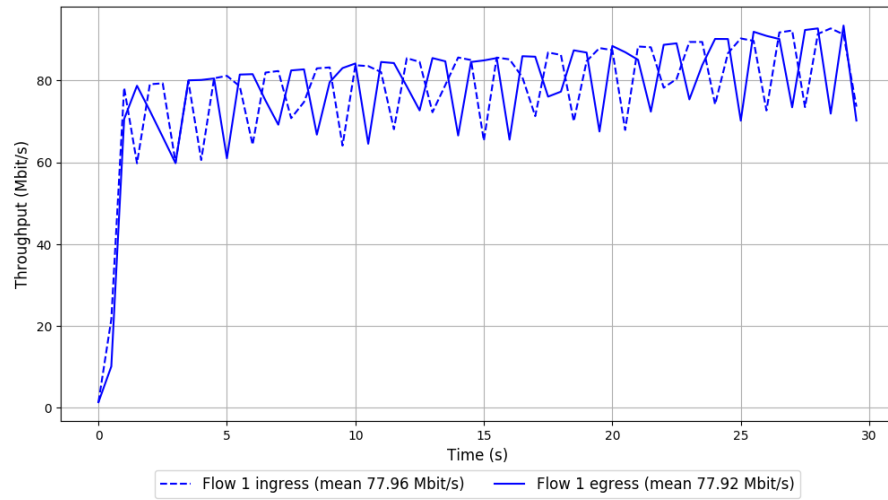
Run 4: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 98.44 Mbit/s)   Flow 1 egress (mean 98.51 Mbit/s)

Flow 1 (95th percentile 67.93 ms)

Run 5: Statistics of TCP Vegas

Start at: 2017-12-05 17:08:37
End at: 2017-12-05 17:09:07

Run 5: Report of TCP Vegas — Data Link

```
Run 6: Statistics of TCP Vegas

Start at: 2017-12-05 17:19:01
End at: 2017-12-05 17:19:31

# Below is generated by plot.py at 2017-12-05 20:19:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.92 Mbit/s
95th percentile per-packet one-way delay: 68.096 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 77.92 Mbit/s
95th percentile per-packet one-way delay: 68.096 ms
Loss rate: 0.51%
```
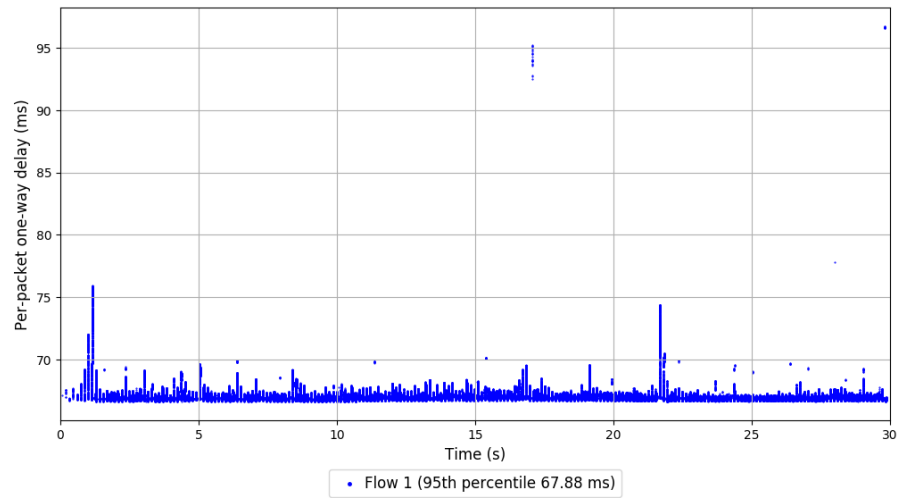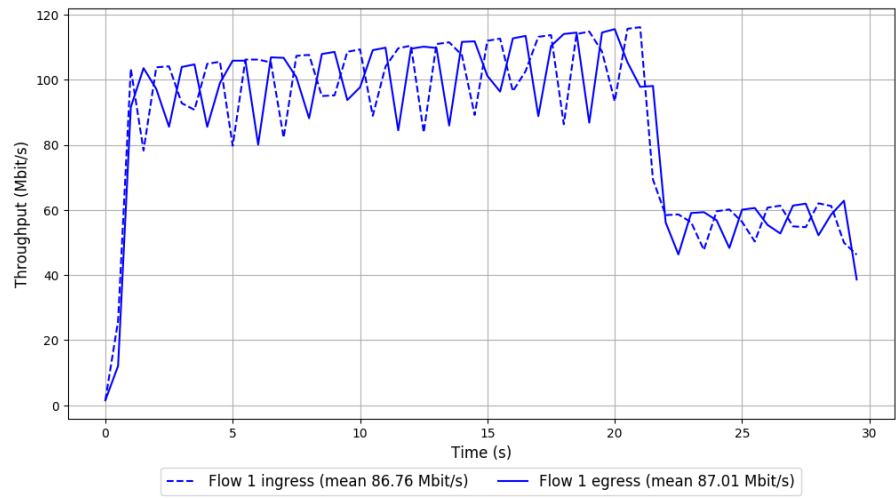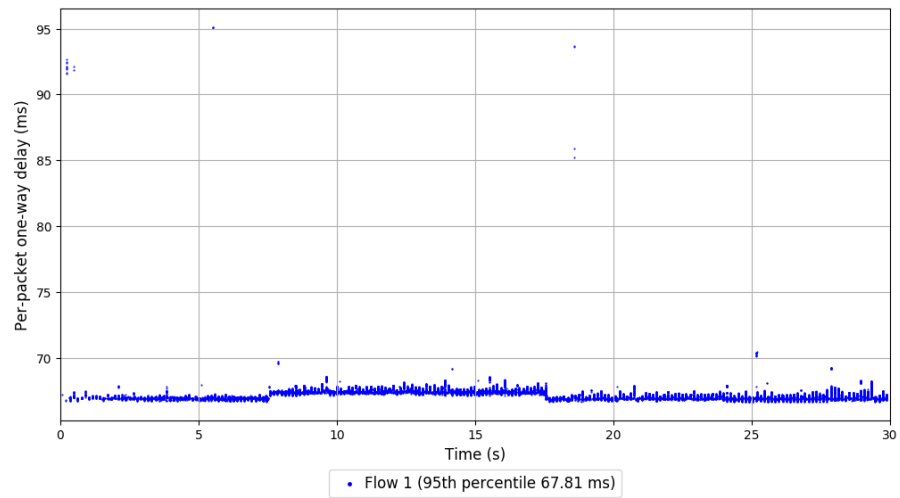
Run 6: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 77.96 Mbit/s)   Flow 1 egress (mean 77.92 Mbit/s)

Flow 1 (95th percentile 68.10 ms)

```
Run 7: Statistics of TCP Vegas

Start at: 2017-12-05 17:29:16
End at: 2017-12-05 17:29:46

# Below is generated by plot.py at 2017-12-05 20:19:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 87.01 Mbit/s
95th percentile per-packet one-way delay: 67.879 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 87.01 Mbit/s
95th percentile per-packet one-way delay: 67.879 ms
Loss rate: 0.16%
```
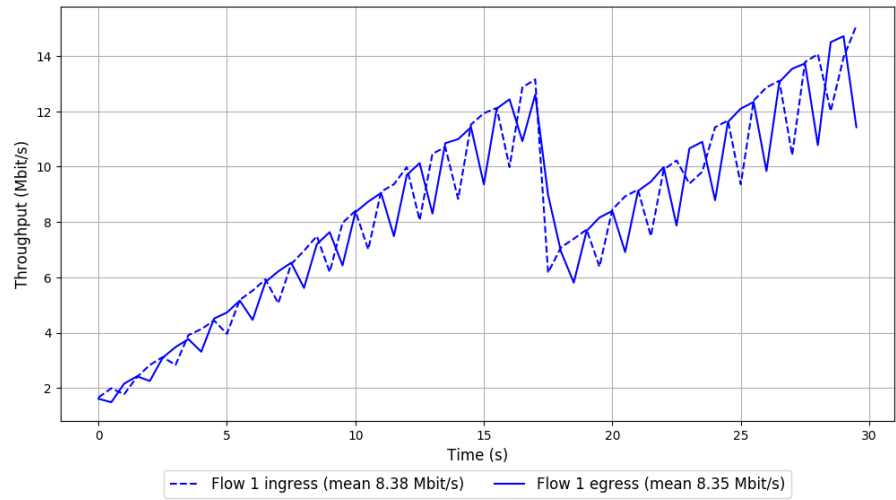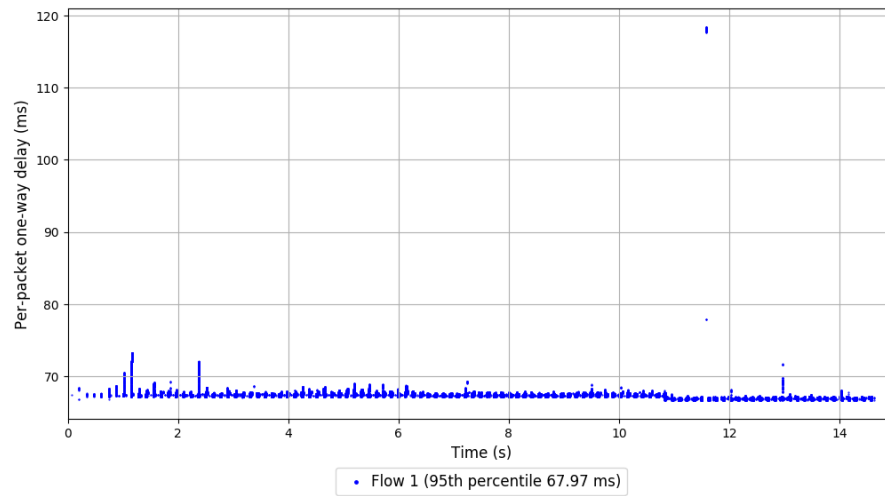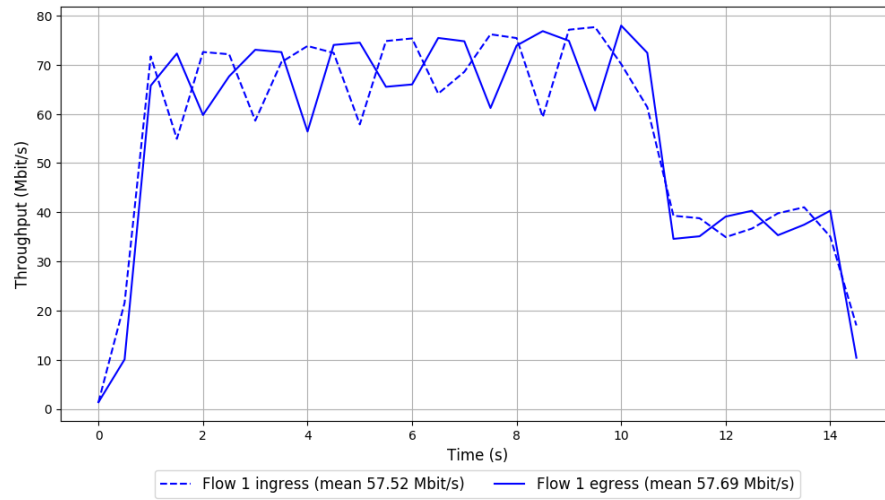
Run 7: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 86.76 Mbit/s)   Flow 1 egress (mean 87.01 Mbit/s)

Flow 1 (95th percentile 67.88 ms)

```
Run 8: Statistics of TCP Vegas

Start at: 2017-12-05 17:40:10
End at: 2017-12-05 17:40:40

# Below is generated by plot.py at 2017-12-05 20:19:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 8.35 Mbit/s
95th percentile per-packet one-way delay: 67.806 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 8.35 Mbit/s
95th percentile per-packet one-way delay: 67.806 ms
Loss rate: 0.78%
```
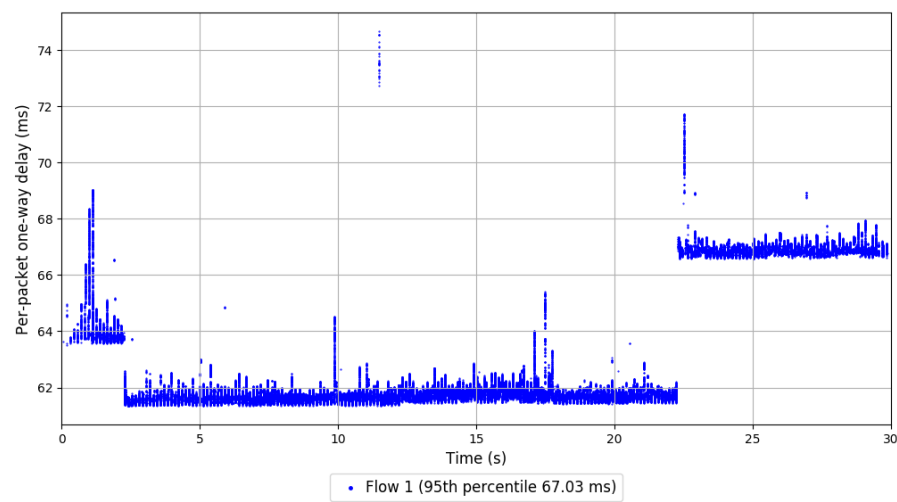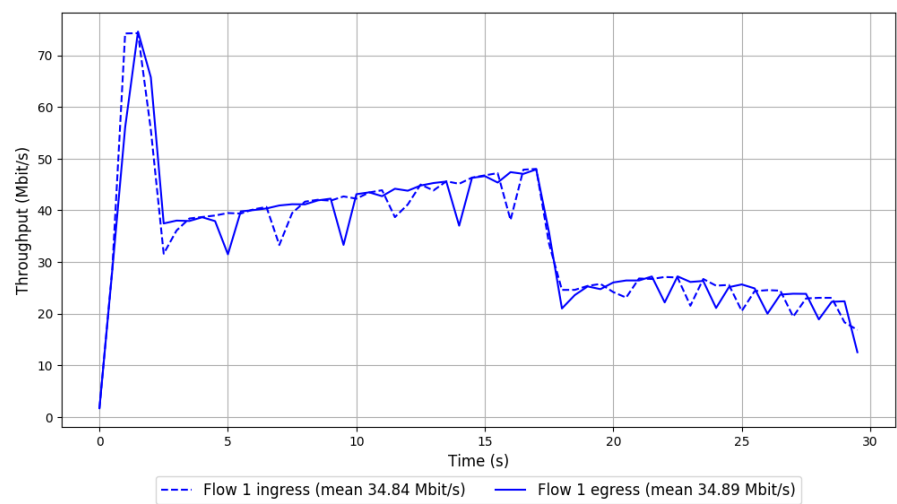
Run 8: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 8.38 Mbit/s) --- Flow 1 egress (mean 8.35 Mbit/s)

Flow 1 (95th percentile 67.81 ms)

Run 9: Statistics of TCP Vegas

Start at: 2017-12-05 17:50:41
End at: 2017-12-05 17:51:11

Run 9: Report of TCP Vegas — Data Link

```
Run 10: Statistics of TCP Vegas

Start at: 2017-12-05 18:01:05
End at: 2017-12-05 18:01:35

# Below is generated by plot.py at 2017-12-05 20:19:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 34.89 Mbit/s
95th percentile per-packet one-way delay: 67.033 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 34.89 Mbit/s
95th percentile per-packet one-way delay: 67.033 ms
Loss rate: 0.27%
```
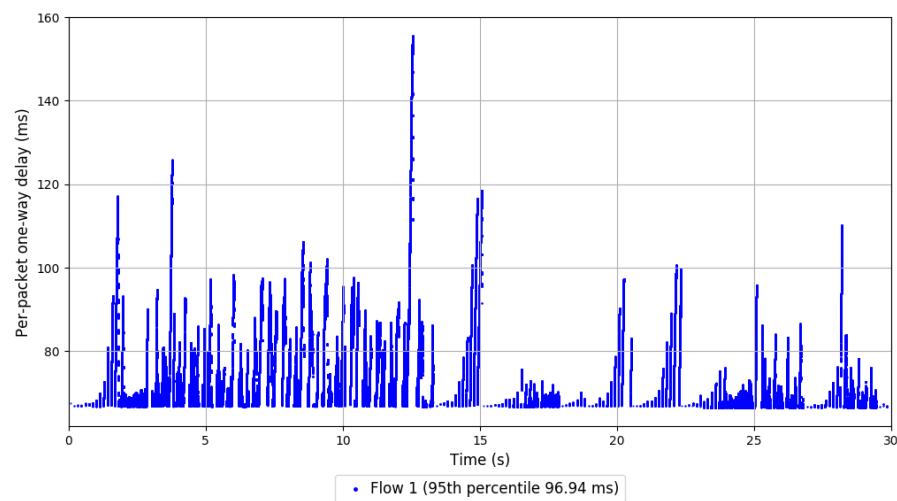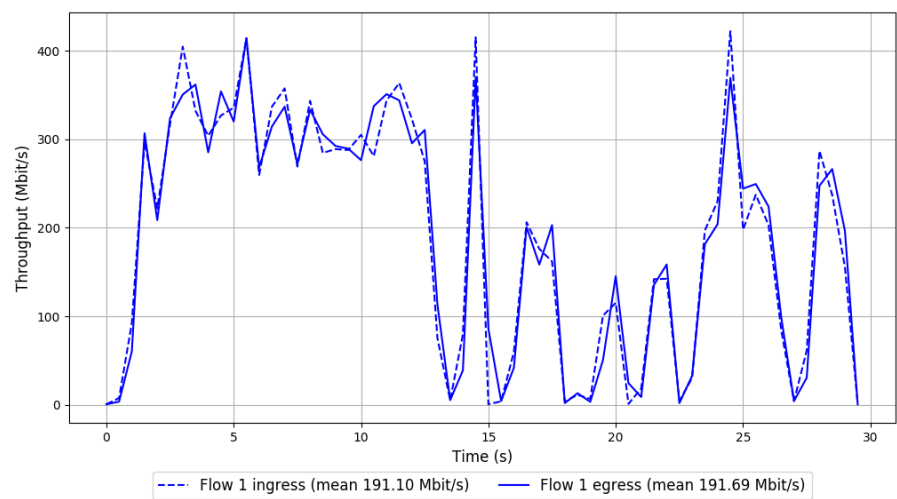
Run 10: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2017-12-05 16:25:24
End at: 2017-12-05 16:25:54

# Below is generated by plot.py at 2017-12-05 20:19:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 191.69 Mbit/s
95th percentile per-packet one-way delay: 96.936 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 191.69 Mbit/s
95th percentile per-packet one-way delay: 96.936 ms
Loss rate: 0.16%
```
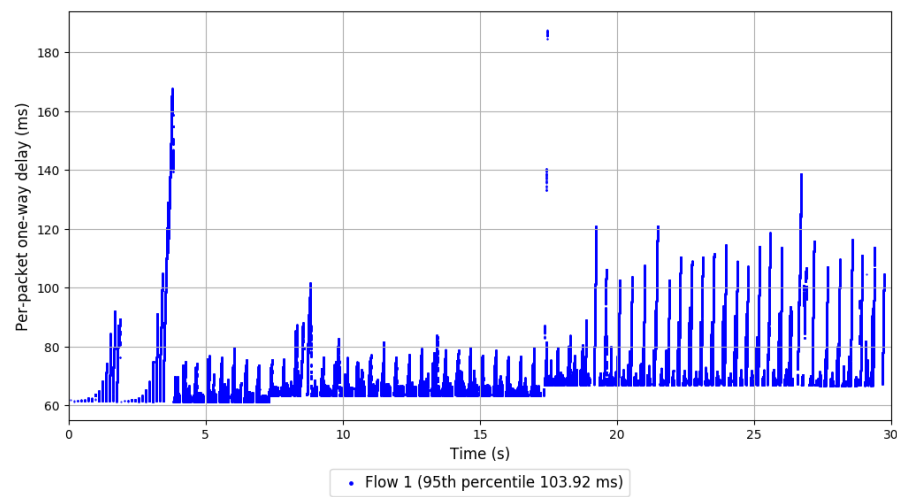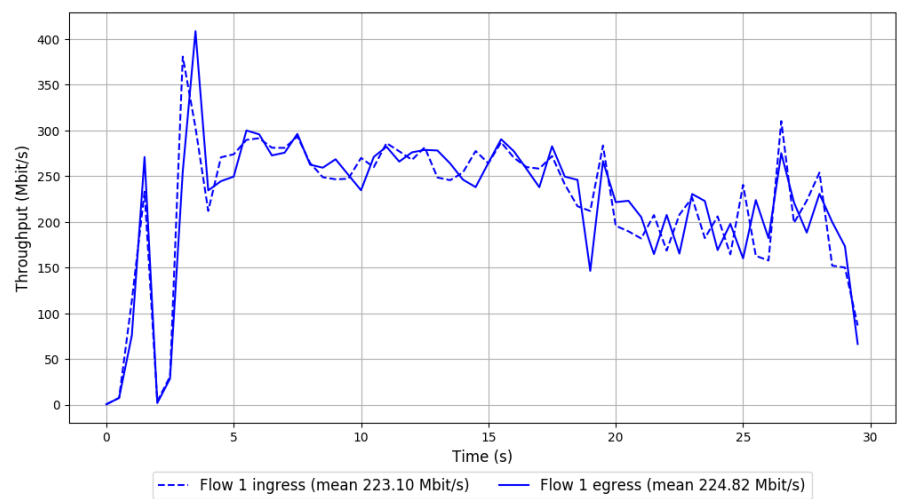
Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2017-12-05 16:35:40
End at: 2017-12-05 16:36:10

# Below is generated by plot.py at 2017-12-05 20:19:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 224.82 Mbit/s
95th percentile per-packet one-way delay: 103.916 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 224.82 Mbit/s
95th percentile per-packet one-way delay: 103.916 ms
Loss rate: 0.23%
```
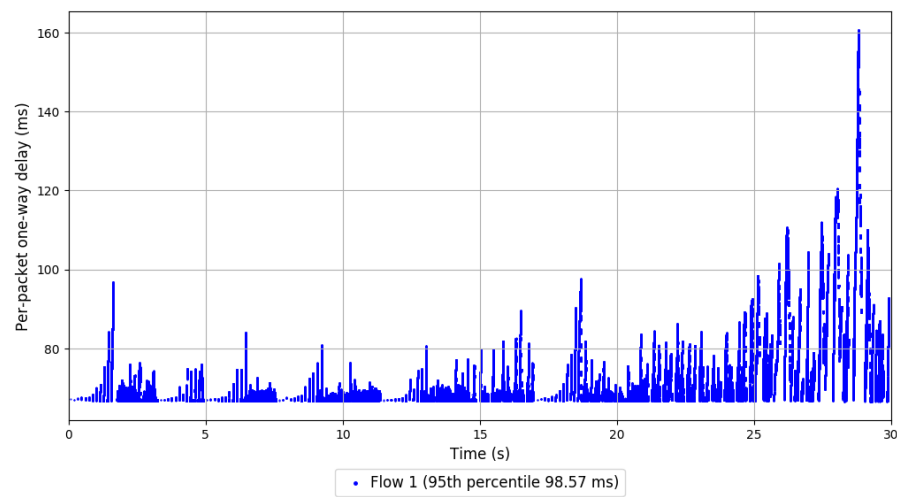
Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2017-12-05 16:46:09
End at: 2017-12-05 16:46:39

# Below is generated by plot.py at 2017-12-05 20:19:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 217.47 Mbit/s
95th percentile per-packet one-way delay: 98.574 ms
Loss rate: 1.31%
-- Flow 1:
Average throughput: 217.47 Mbit/s
95th percentile per-packet one-way delay: 98.574 ms
Loss rate: 1.31%
```
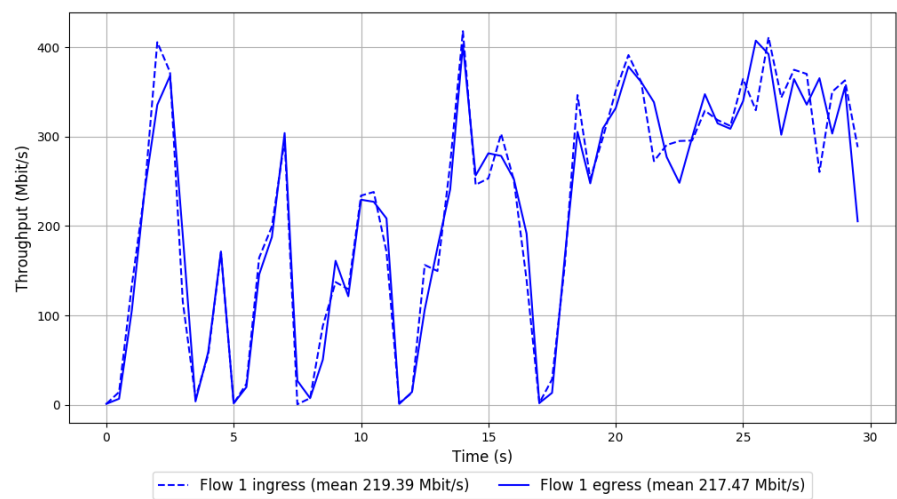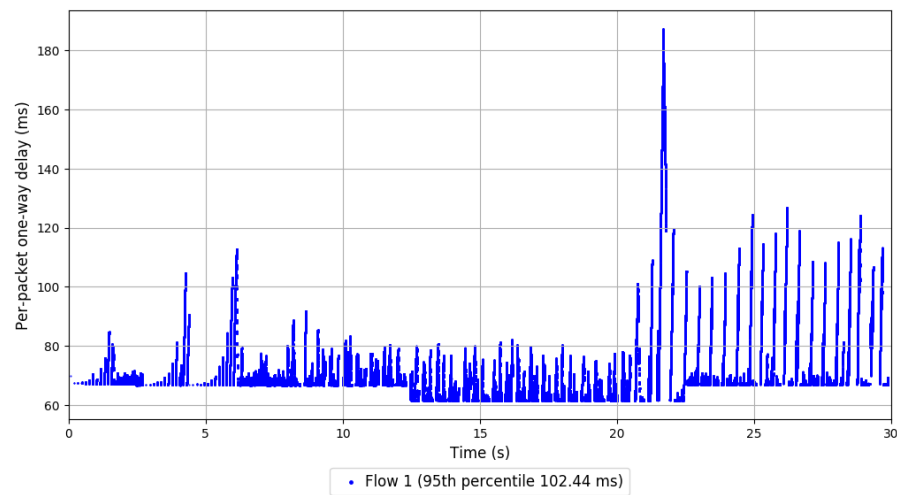
Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2017-12-05 16:56:25
End at: 2017-12-05 16:56:55

# Below is generated by plot.py at 2017-12-05 20:20:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 254.22 Mbit/s
95th percentile per-packet one-way delay: 102.436 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 254.22 Mbit/s
95th percentile per-packet one-way delay: 102.436 ms
Loss rate: 0.25%
```
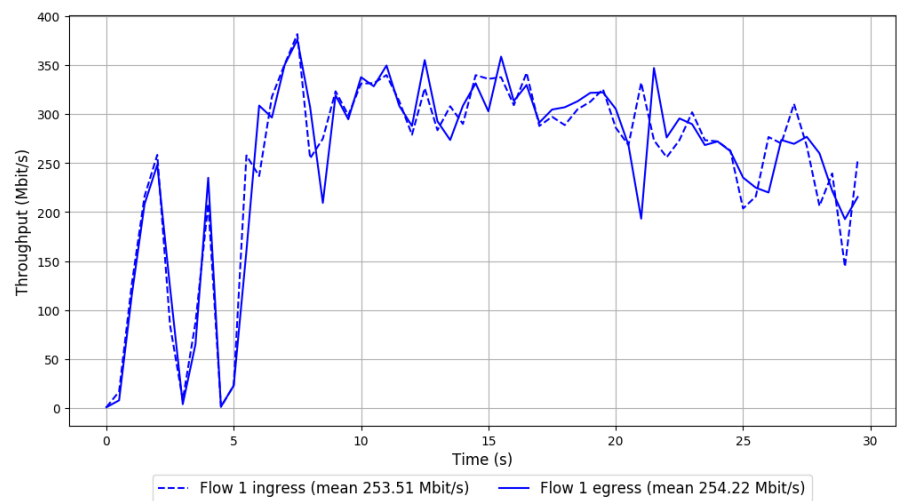
Run 4: Report of Verus — Data Link

Flow 1 ingress (mean 253.51 Mbit/s) ----   Flow 1 egress (mean 254.22 Mbit/s) ——

Flow 1 (95th percentile 102.44 ms)

```
Run 5: Statistics of Verus

Start at: 2017-12-05 17:06:43
End at: 2017-12-05 17:07:13

# Below is generated by plot.py at 2017-12-05 20:20:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 229.68 Mbit/s
95th percentile per-packet one-way delay: 112.798 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 229.68 Mbit/s
95th percentile per-packet one-way delay: 112.798 ms
Loss rate: 0.28%
```
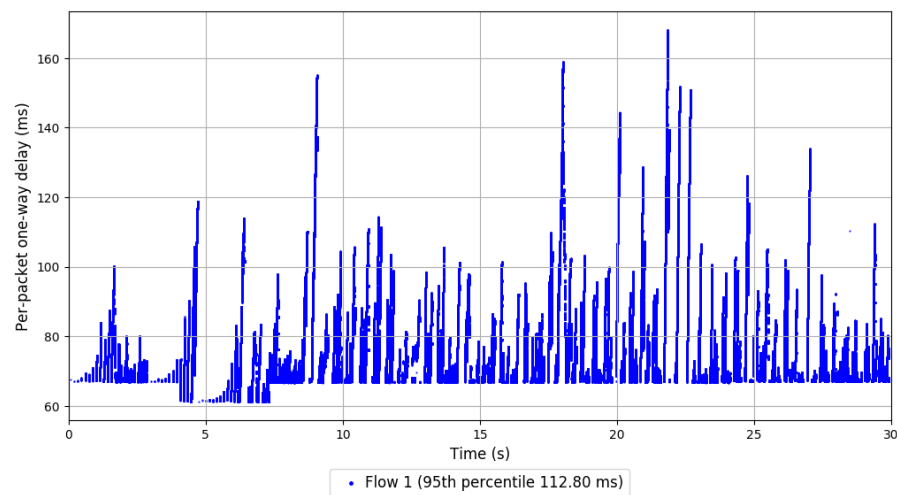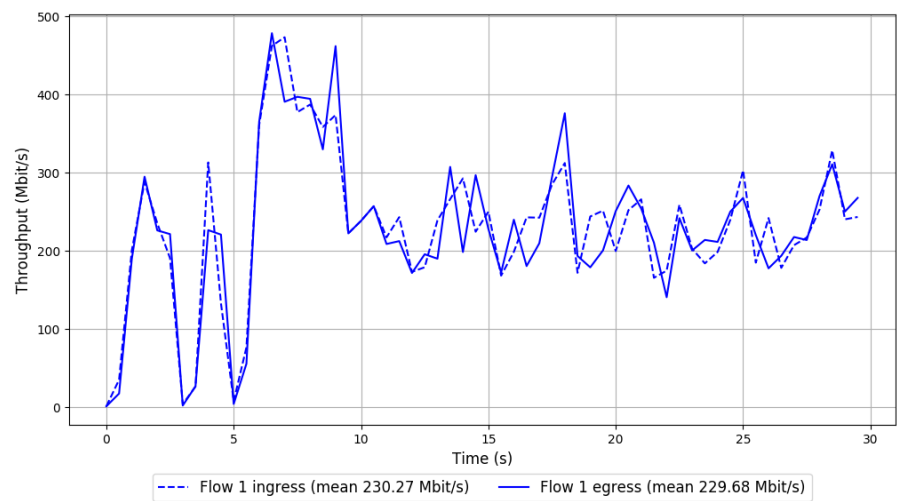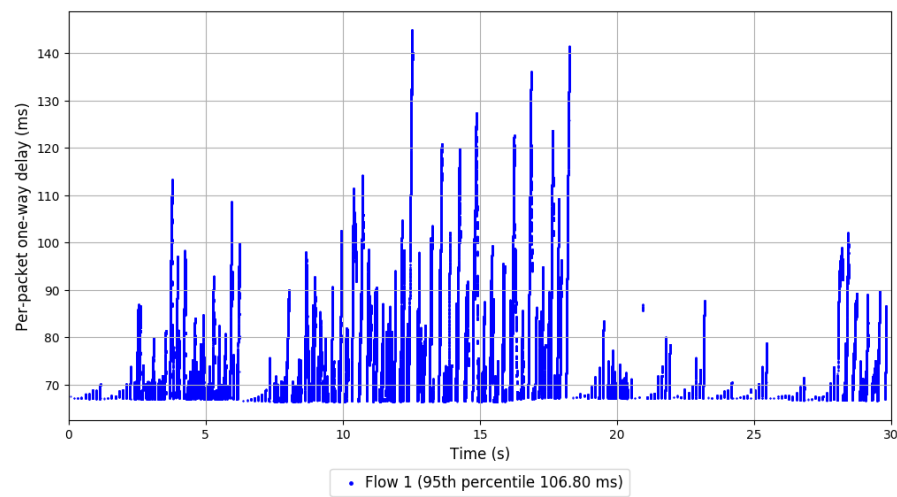
Run 5: Report of Verus — Data Link

```
Run 6: Statistics of Verus

Start at: 2017-12-05 17:17:11
End at: 2017-12-05 17:17:41


# Below is generated by plot.py at 2017-12-05 20:20:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 160.88 Mbit/s
95th percentile per-packet one-way delay: 106.796 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 160.88 Mbit/s
95th percentile per-packet one-way delay: 106.796 ms
Loss rate: 0.01%
```
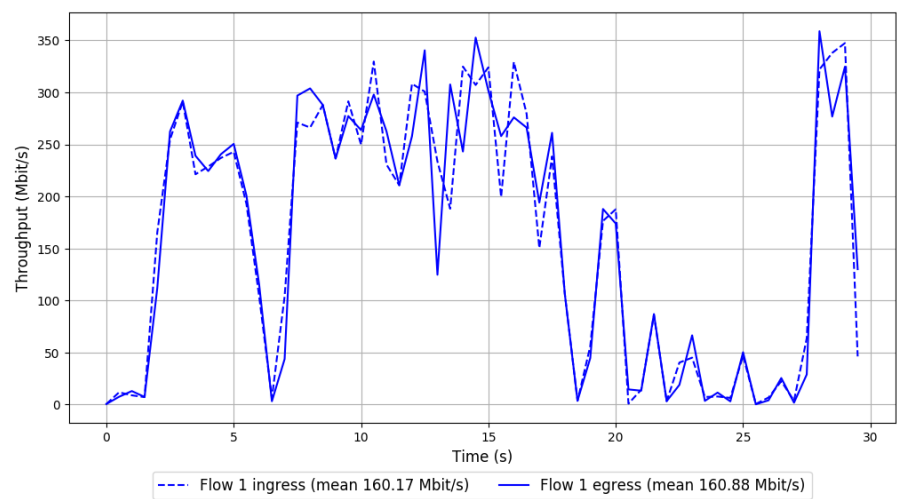
Run 6: Report of Verus — Data Link

```
Run 7: Statistics of Verus

Start at: 2017-12-05 17:27:25
End at: 2017-12-05 17:27:55

# Below is generated by plot.py at 2017-12-05 20:20:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 159.13 Mbit/s
95th percentile per-packet one-way delay: 309.625 ms
Loss rate: 4.34%
-- Flow 1:
Average throughput: 159.13 Mbit/s
95th percentile per-packet one-way delay: 309.625 ms
Loss rate: 4.34%
```
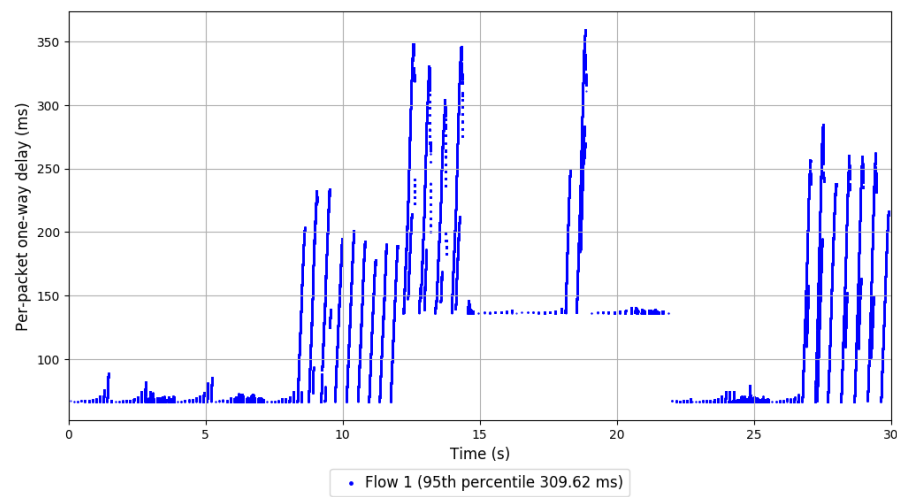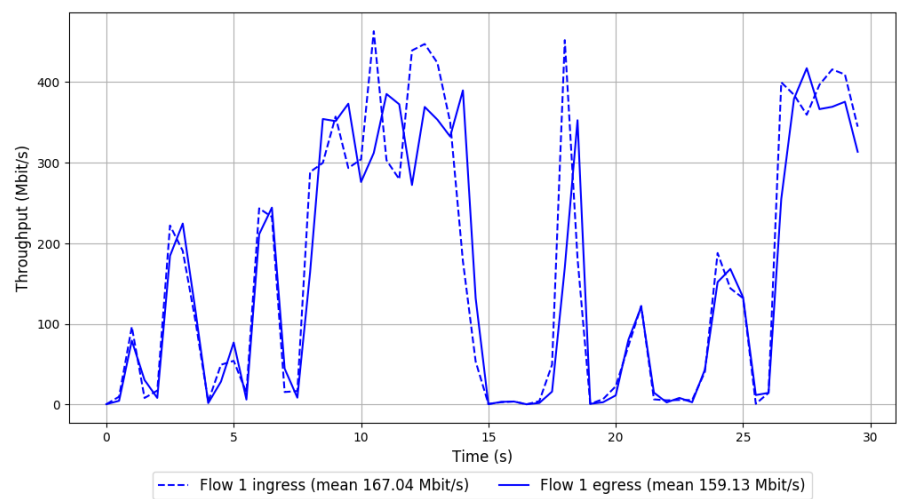
Run 7: Report of Verus — Data Link

```
Run 8: Statistics of Verus

Start at: 2017-12-05 17:38:06
End at: 2017-12-05 17:38:36

# Below is generated by plot.py at 2017-12-05 20:23:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 231.51 Mbit/s
95th percentile per-packet one-way delay: 201.358 ms
Loss rate: 1.20%
-- Flow 1:
Average throughput: 231.51 Mbit/s
95th percentile per-packet one-way delay: 201.358 ms
Loss rate: 1.20%
```
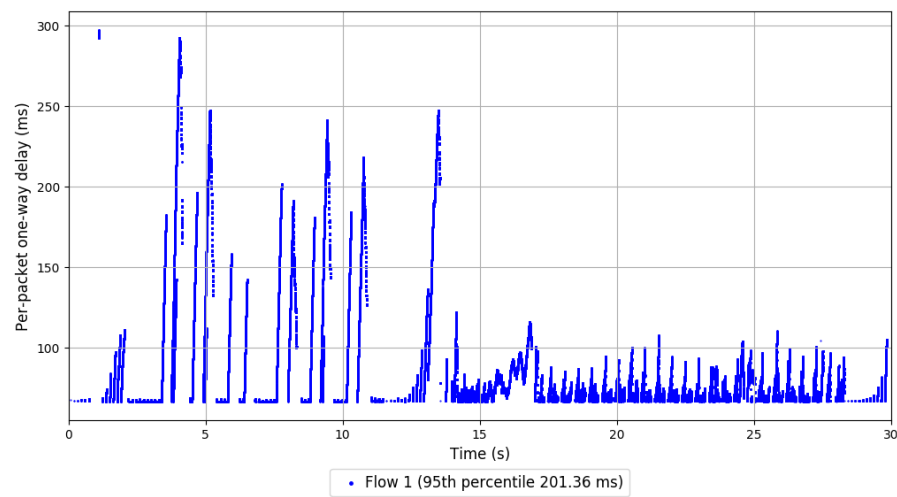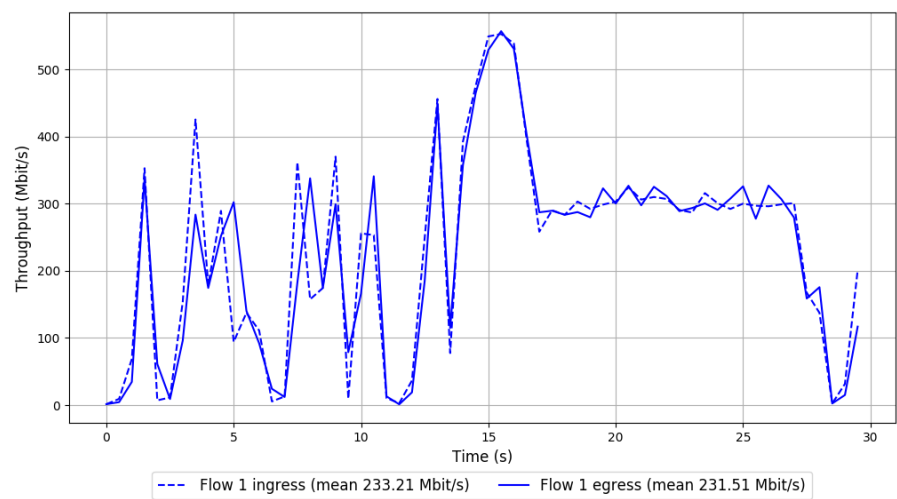
Run 8: Report of Verus — Data Link

Flow 1 ingress (mean 233.21 Mbit/s)   Flow 1 egress (mean 231.51 Mbit/s)

• Flow 1 (95th percentile 201.36 ms)

```
Run 9: Statistics of Verus

Start at: 2017-12-05 17:48:50
End at: 2017-12-05 17:49:20

# Below is generated by plot.py at 2017-12-05 20:23:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 189.53 Mbit/s
95th percentile per-packet one-way delay: 244.242 ms
Loss rate: 3.85%
-- Flow 1:
Average throughput: 189.53 Mbit/s
95th percentile per-packet one-way delay: 244.242 ms
Loss rate: 3.85%
```
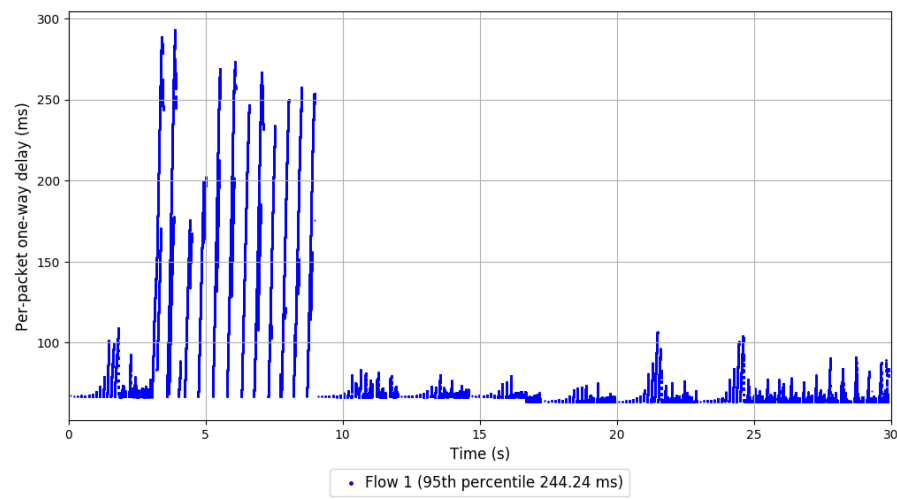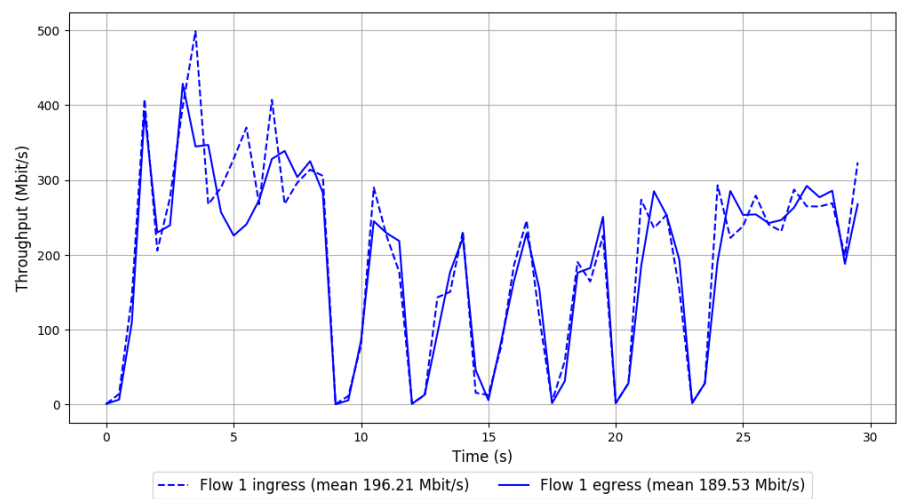
Run 9: Report of Verus — Data Link

```
Run 10: Statistics of Verus

Start at: 2017-12-05 17:59:01
End at: 2017-12-05 17:59:31

# Below is generated by plot.py at 2017-12-05 20:24:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 280.97 Mbit/s
95th percentile per-packet one-way delay: 116.296 ms
Loss rate: 2.65%
-- Flow 1:
Average throughput: 280.97 Mbit/s
95th percentile per-packet one-way delay: 116.296 ms
Loss rate: 2.65%
```
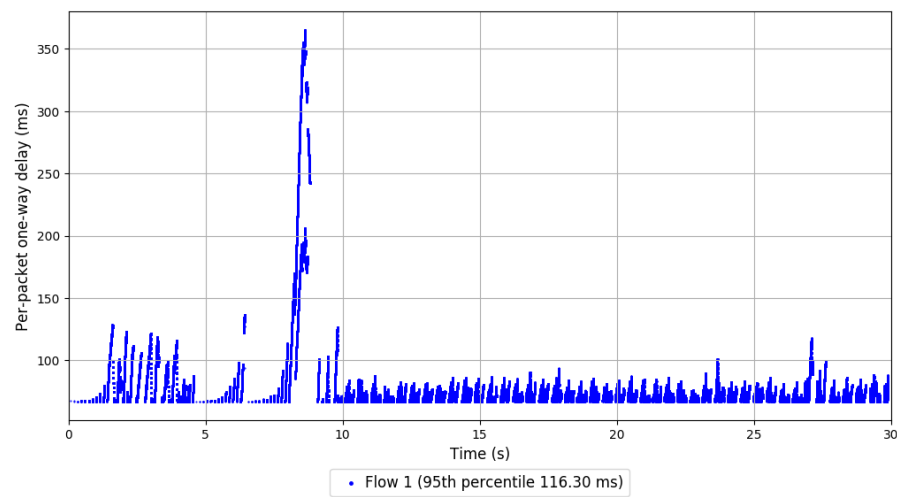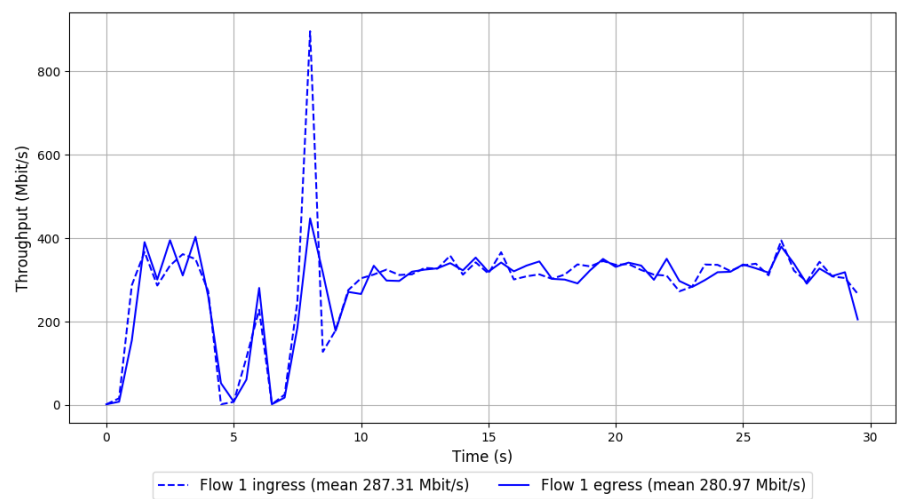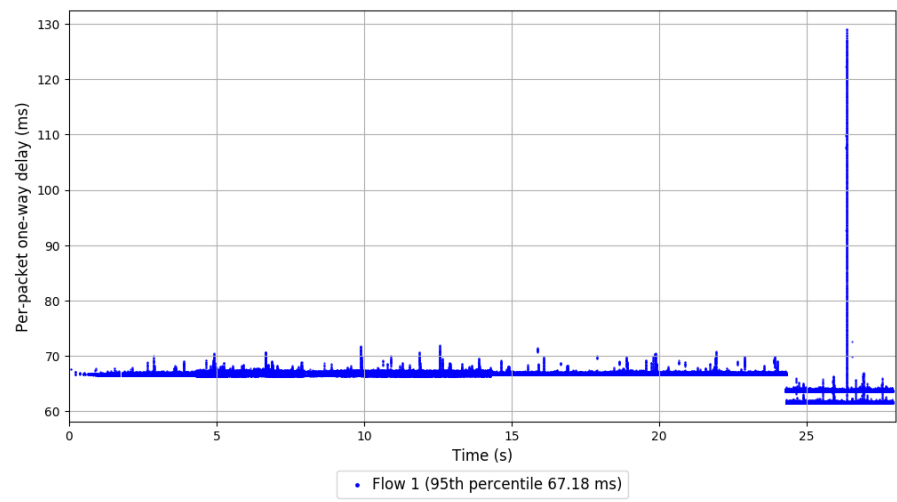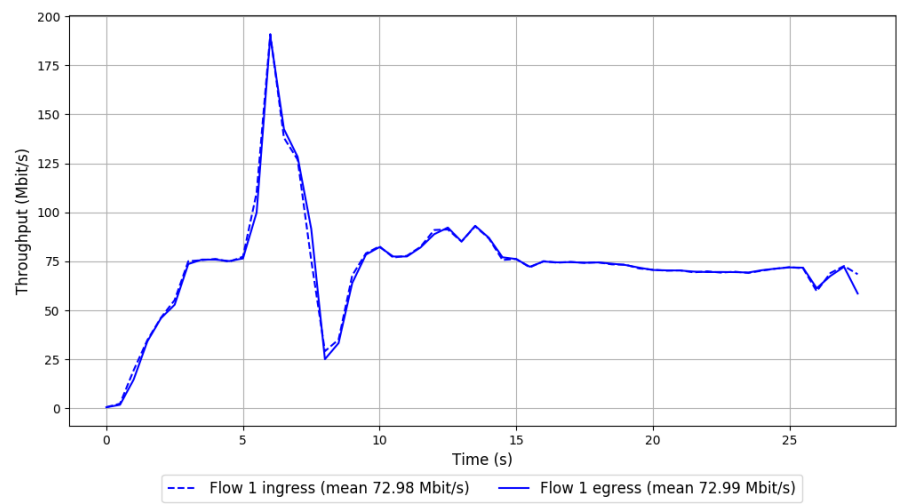
Run 10: Report of Verus — Data Link

```
Run 1: Statistics of Copa

Start at: 2017-12-05 16:22:01
End at: 2017-12-05 16:22:31

# Below is generated by plot.py at 2017-12-05 20:24:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 72.99 Mbit/s
95th percentile per-packet one-way delay: 67.176 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 72.99 Mbit/s
95th percentile per-packet one-way delay: 67.176 ms
Loss rate: 0.46%
```
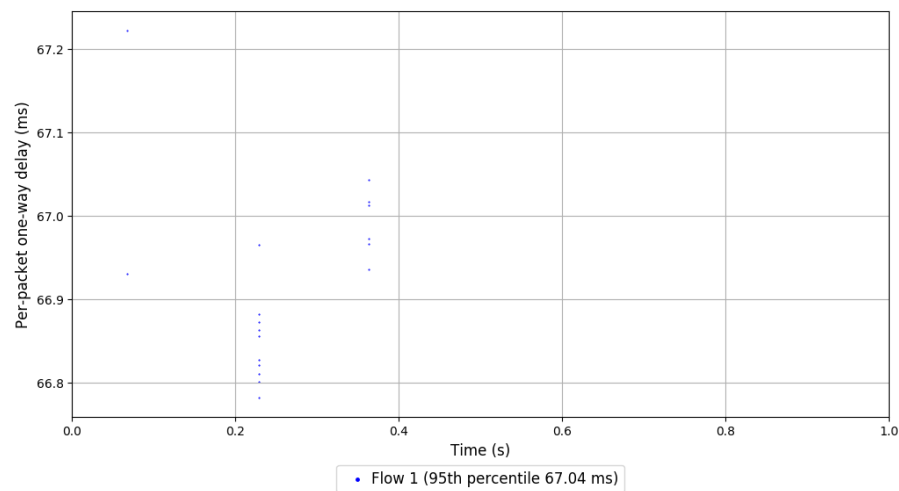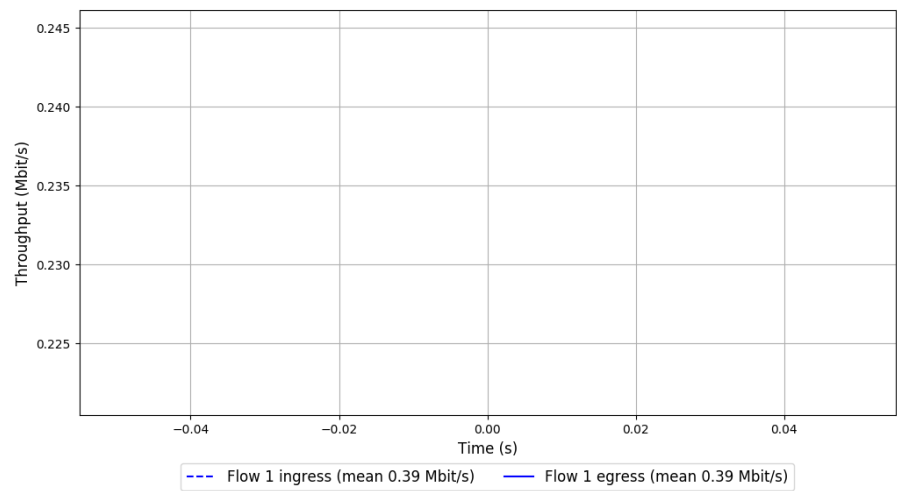
Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2017-12-05 16:32:20
End at: 2017-12-05 16:32:50
```

Run 2: Report of Copa — Data Link

Flow 1 ingress (mean 0.39 Mbit/s) ——— Flow 1 egress (mean 0.39 Mbit/s)

• Flow 1 (95th percentile 67.04 ms)

```
Run 3: Statistics of Copa

Start at: 2017-12-05 16:42:30
End at: 2017-12-05 16:43:00

# Below is generated by plot.py at 2017-12-05 20:24:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 76.26 Mbit/s
95th percentile per-packet one-way delay: 66.860 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 76.26 Mbit/s
95th percentile per-packet one-way delay: 66.860 ms
Loss rate: 0.27%
```
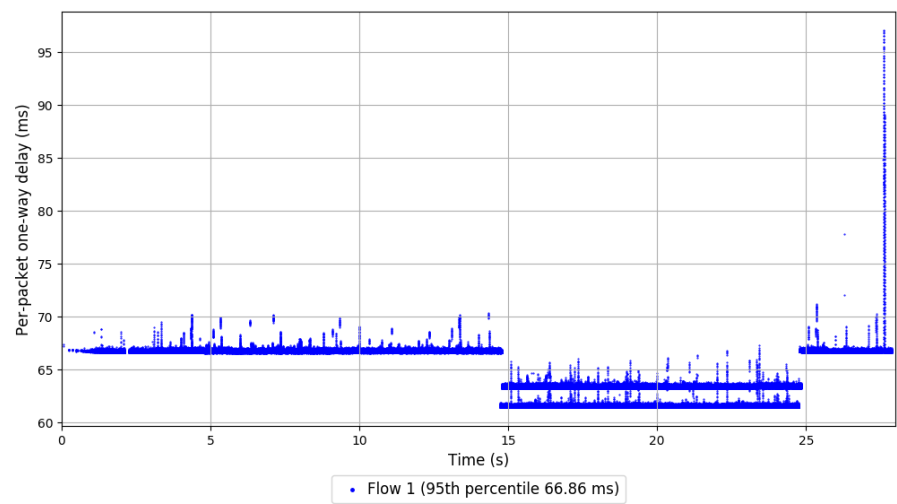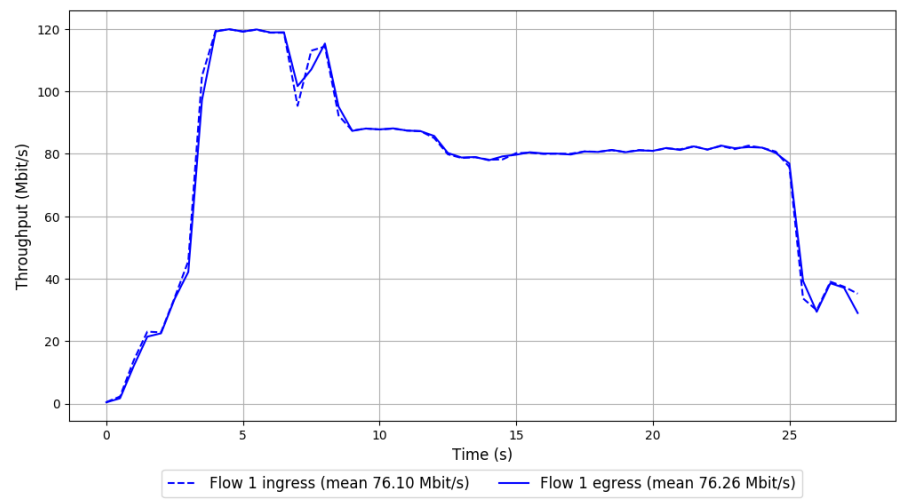
Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2017-12-05 16:53:00
End at: 2017-12-05 16:53:30

# Below is generated by plot.py at 2017-12-05 20:24:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 65.11 Mbit/s
95th percentile per-packet one-way delay: 66.912 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 65.11 Mbit/s
95th percentile per-packet one-way delay: 66.912 ms
Loss rate: 0.30%
```
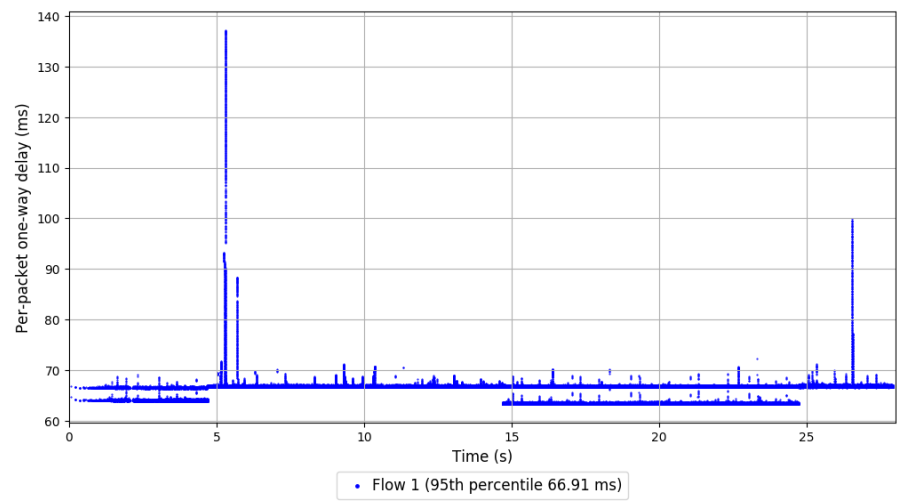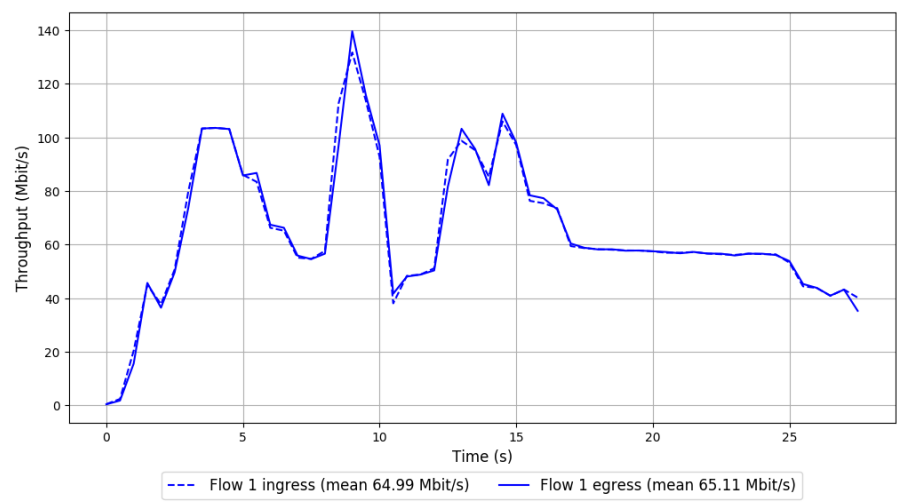
Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2017-12-05 17:03:20
End at: 2017-12-05 17:03:50

# Below is generated by plot.py at 2017-12-05 20:24:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 55.51 Mbit/s
95th percentile per-packet one-way delay: 67.132 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 55.51 Mbit/s
95th percentile per-packet one-way delay: 67.132 ms
Loss rate: 0.57%
```
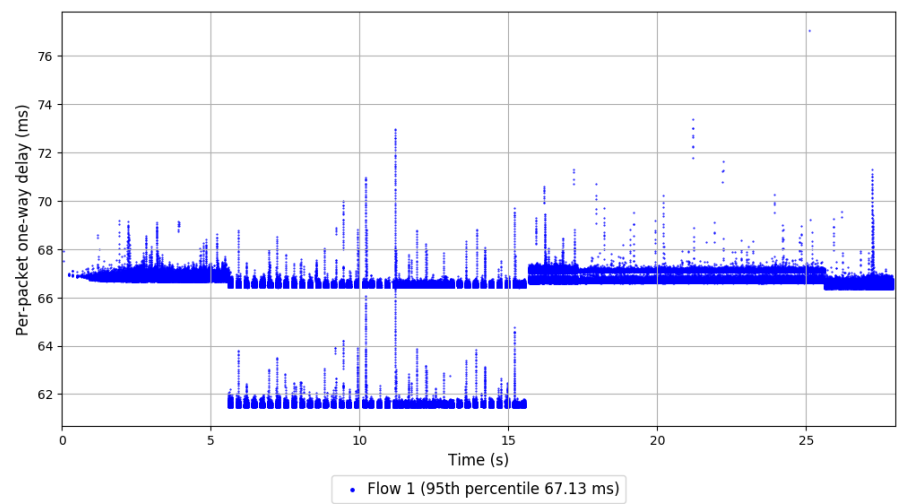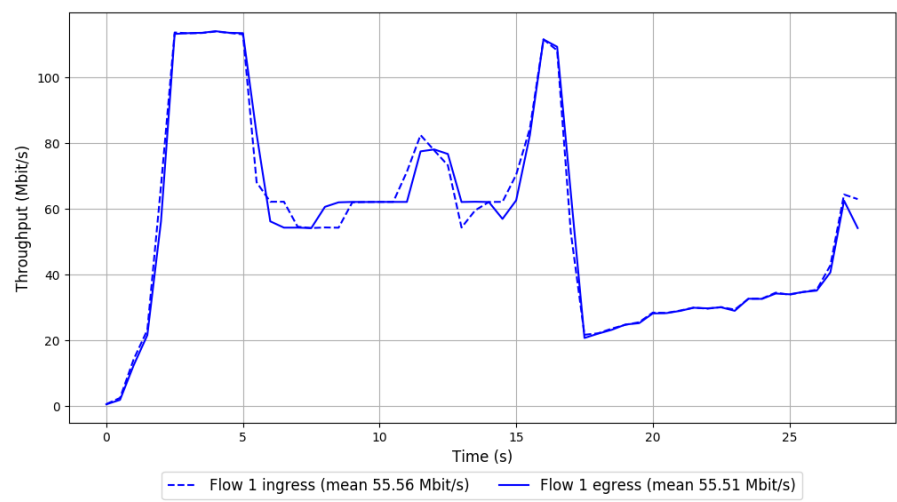
Run 5: Report of Copa — Data Link

Flow 1 ingress (mean 55.56 Mbit/s)   Flow 1 egress (mean 55.51 Mbit/s)

• Flow 1 (95th percentile 67.13 ms)

233

```
Run 6: Statistics of Copa

Start at: 2017-12-05 17:13:47
End at: 2017-12-05 17:14:17

# Below is generated by plot.py at 2017-12-05 20:24:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 72.93 Mbit/s
95th percentile per-packet one-way delay: 67.254 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 72.93 Mbit/s
95th percentile per-packet one-way delay: 67.254 ms
Loss rate: 0.43%
```
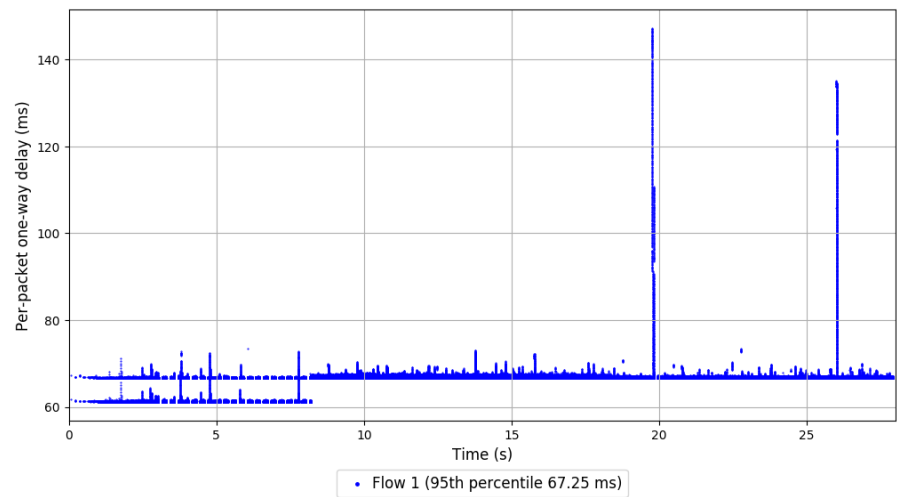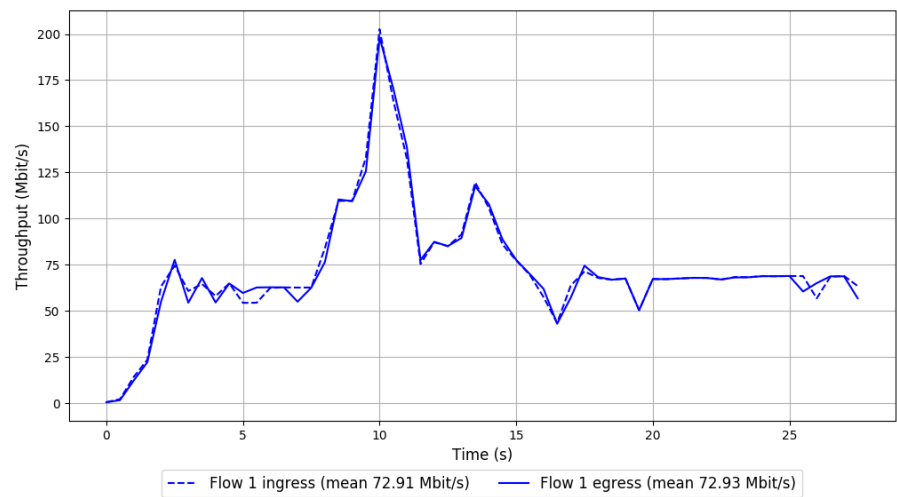
Run 6: Report of Copa — Data Link

```
Run 7: Statistics of Copa

Start at: 2017-12-05 17:24:02
End at: 2017-12-05 17:24:32

# Below is generated by plot.py at 2017-12-05 20:24:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 81.24 Mbit/s
95th percentile per-packet one-way delay: 66.977 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 81.24 Mbit/s
95th percentile per-packet one-way delay: 66.977 ms
Loss rate: 0.46%
```
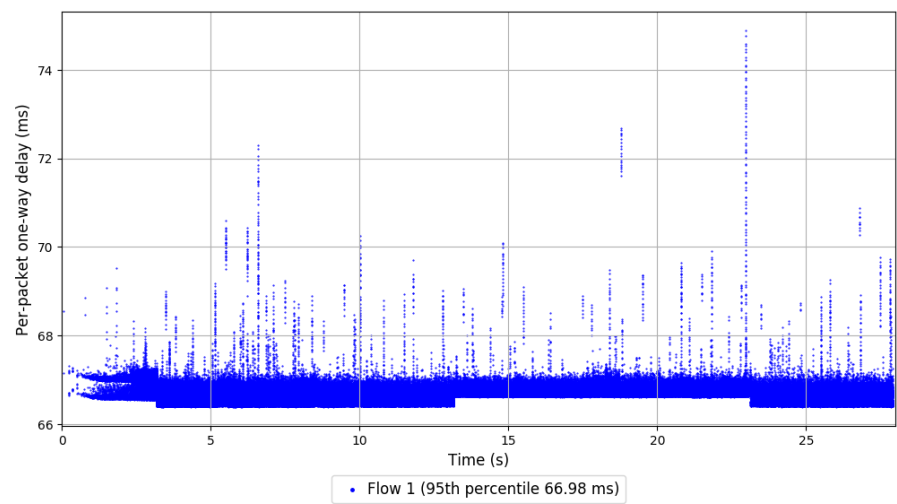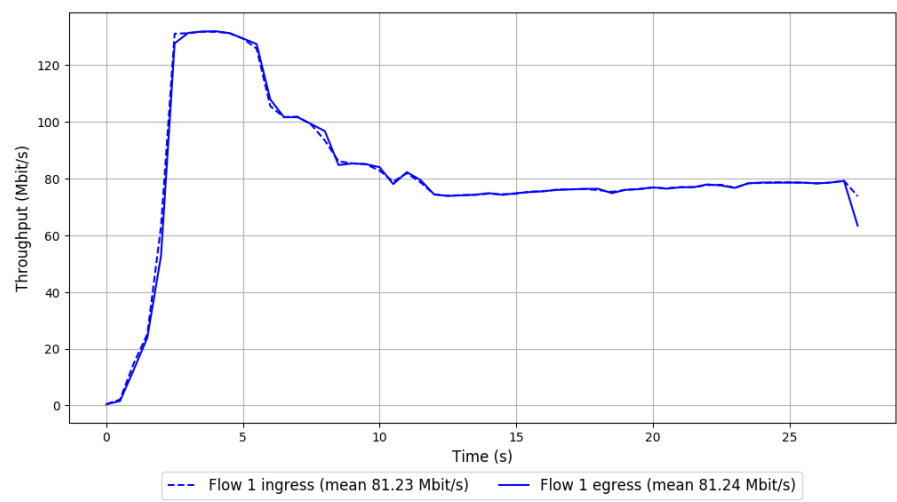
Run 7: Report of Copa — Data Link

```
Run 8: Statistics of Copa

Start at: 2017-12-05 17:34:31
End at: 2017-12-05 17:35:01

# Below is generated by plot.py at 2017-12-05 20:24:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 72.60 Mbit/s
95th percentile per-packet one-way delay: 67.072 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 72.60 Mbit/s
95th percentile per-packet one-way delay: 67.072 ms
Loss rate: 0.40%
```
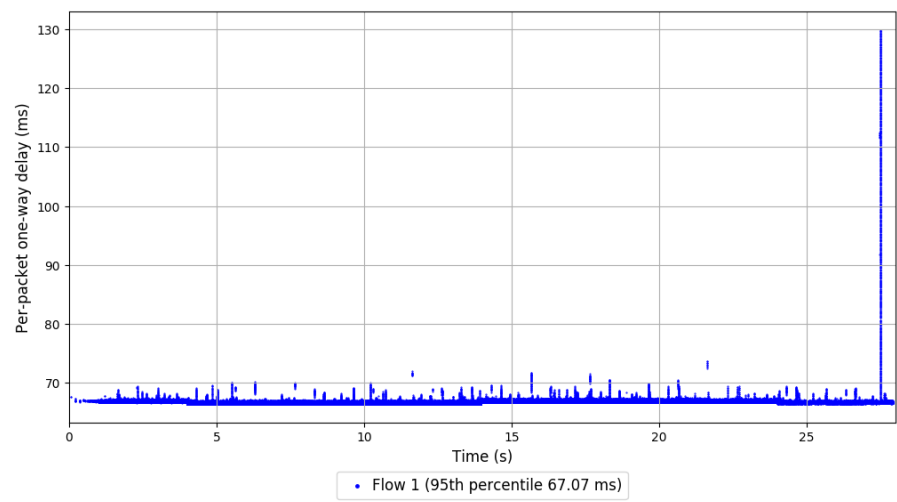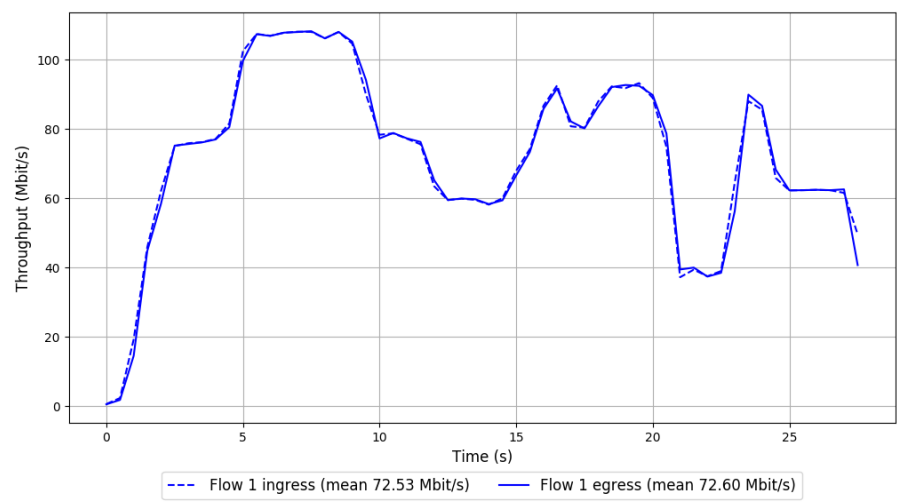
Run 8: Report of Copa — Data Link

Flow 1 ingress (mean 72.53 Mbit/s)   Flow 1 egress (mean 72.60 Mbit/s)

Flow 1 (95th percentile 67.07 ms)

```
Run 9: Statistics of Copa

Start at: 2017-12-05 17:45:26
End at: 2017-12-05 17:45:56

# Below is generated by plot.py at 2017-12-05 20:24:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 55.57 Mbit/s
95th percentile per-packet one-way delay: 67.209 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 55.57 Mbit/s
95th percentile per-packet one-way delay: 67.209 ms
Loss rate: 0.06%
```
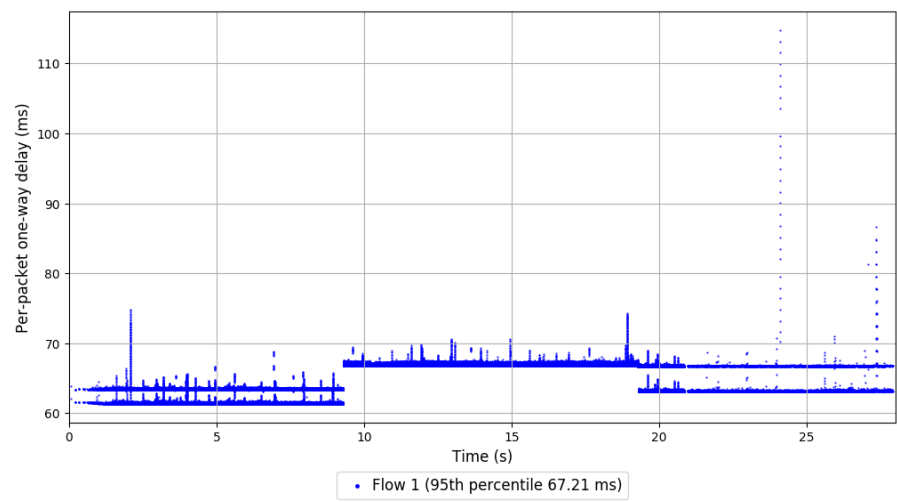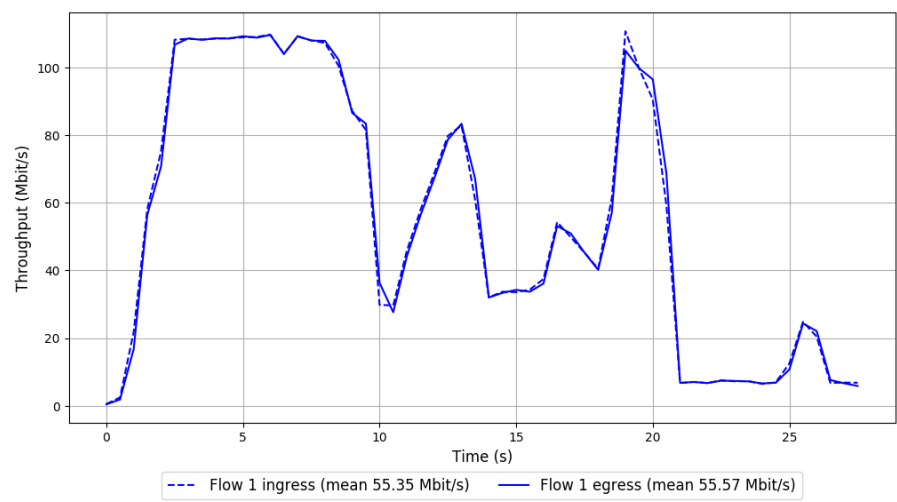
Run 9: Report of Copa — Data Link

Flow 1 ingress (mean 55.35 Mbit/s) —— Flow 1 egress (mean 55.57 Mbit/s)

• Flow 1 (95th percentile 67.21 ms)

```
Run 10: Statistics of Copa

Start at: 2017-12-05 17:55:36
End at: 2017-12-05 17:56:06

# Below is generated by plot.py at 2017-12-05 20:24:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.78 Mbit/s
95th percentile per-packet one-way delay: 66.640 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 77.78 Mbit/s
95th percentile per-packet one-way delay: 66.640 ms
Loss rate: 0.47%
```
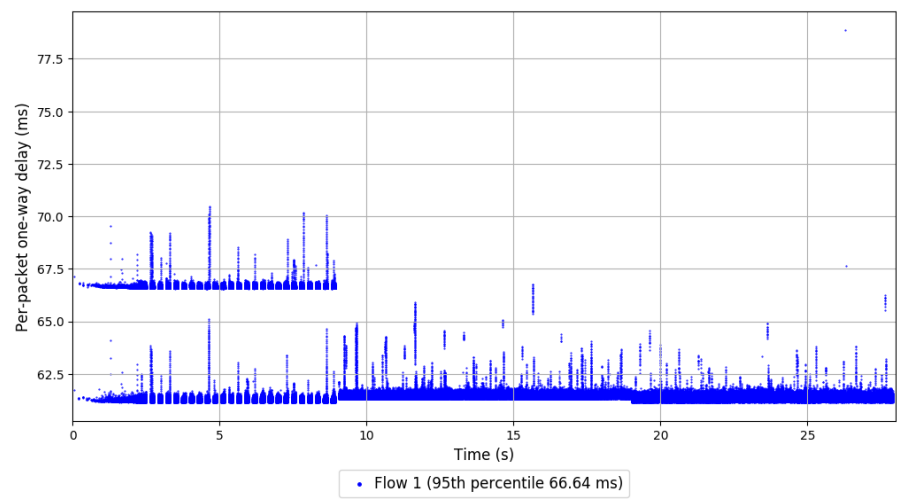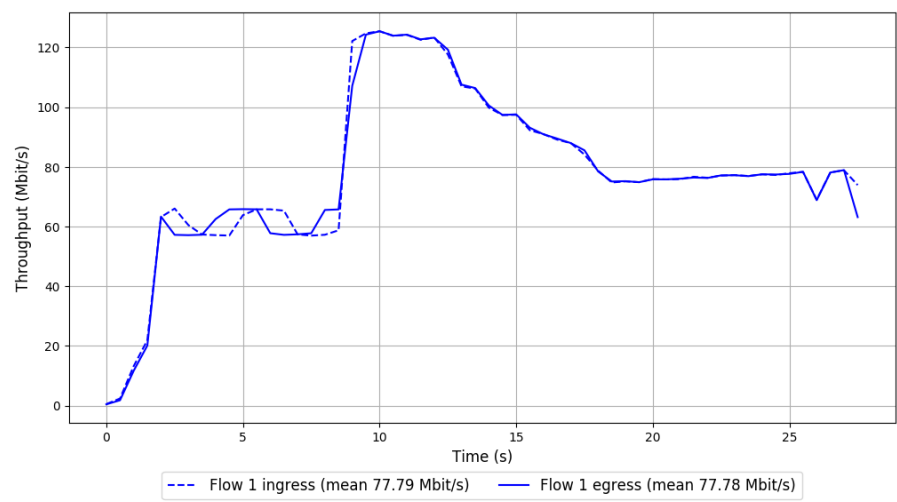
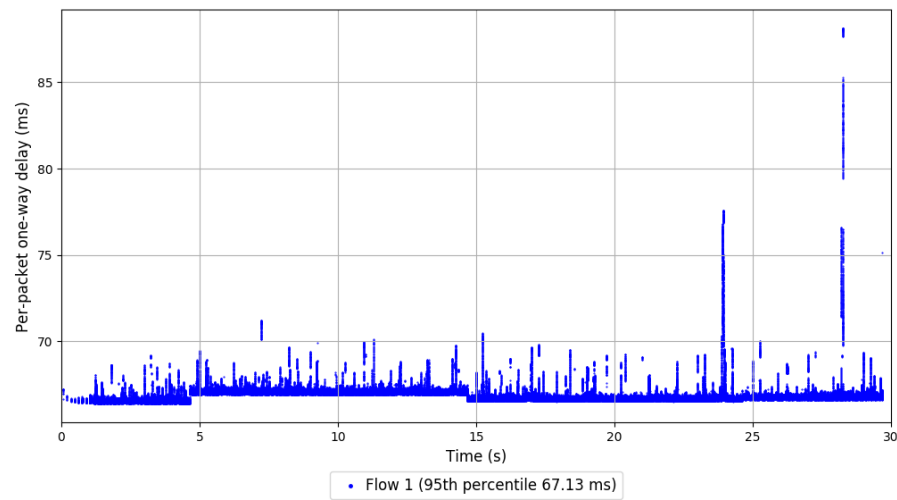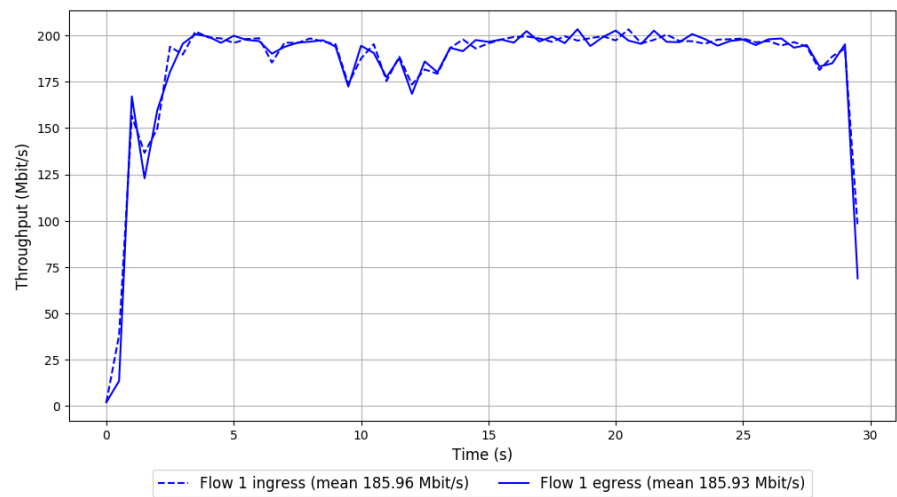Run 10: Report of Copa — Data Link

```
Run 1: Statistics of Indigo

Start at: 2017-12-05 16:20:22
End at: 2017-12-05 16:20:52

# Below is generated by plot.py at 2017-12-05 20:26:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 185.93 Mbit/s
95th percentile per-packet one-way delay: 67.127 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 185.93 Mbit/s
95th percentile per-packet one-way delay: 67.127 ms
Loss rate: 0.47%
```

Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2017-12-05 16:30:36
End at: 2017-12-05 16:31:06

# Below is generated by plot.py at 2017-12-05 20:26:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 186.62 Mbit/s
95th percentile per-packet one-way delay: 67.118 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 186.62 Mbit/s
95th percentile per-packet one-way delay: 67.118 ms
Loss rate: 0.44%
```
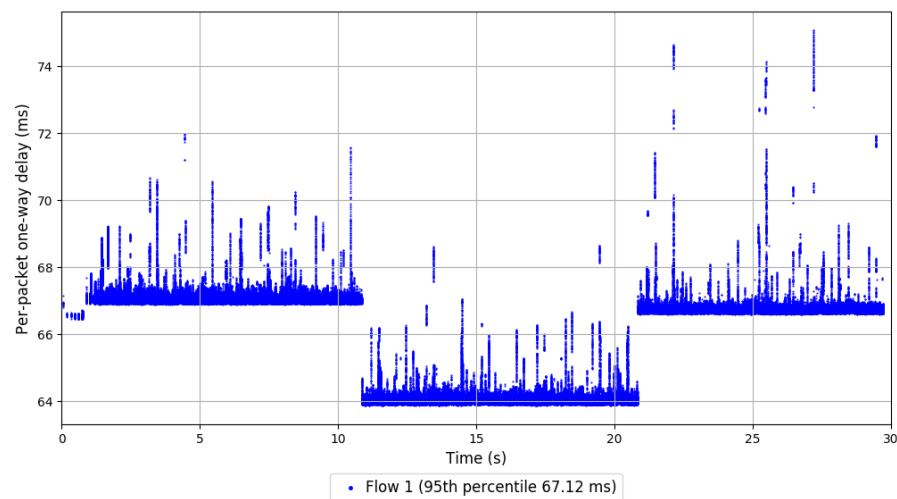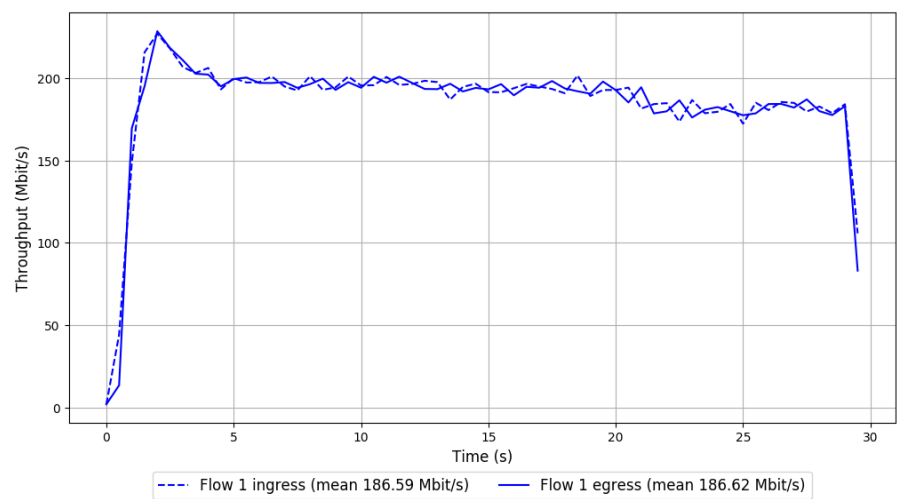
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2017-12-05 16:40:53
End at: 2017-12-05 16:41:23

# Below is generated by plot.py at 2017-12-05 20:26:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 181.70 Mbit/s
95th percentile per-packet one-way delay: 67.143 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 181.70 Mbit/s
95th percentile per-packet one-way delay: 67.143 ms
Loss rate: 0.70%
```
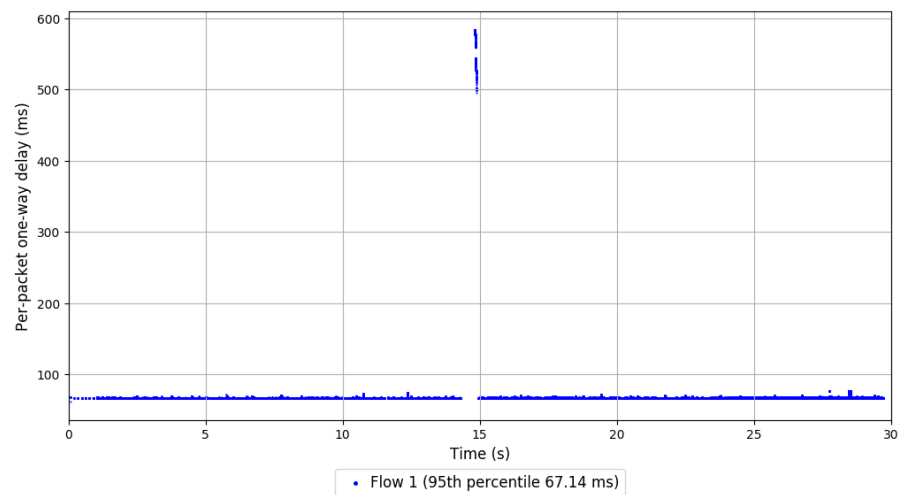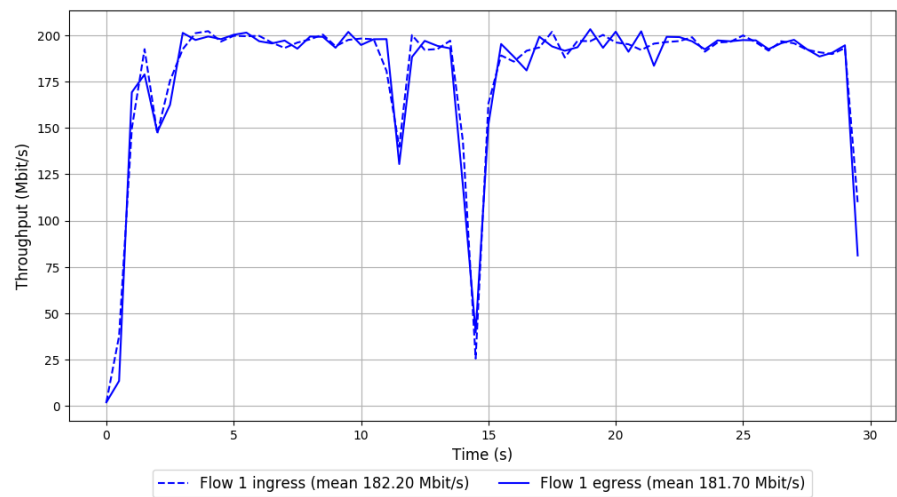
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2017-12-05 16:51:24
End at: 2017-12-05 16:51:54

# Below is generated by plot.py at 2017-12-05 20:27:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 179.56 Mbit/s
95th percentile per-packet one-way delay: 66.875 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 179.56 Mbit/s
95th percentile per-packet one-way delay: 66.875 ms
Loss rate: 0.46%
```
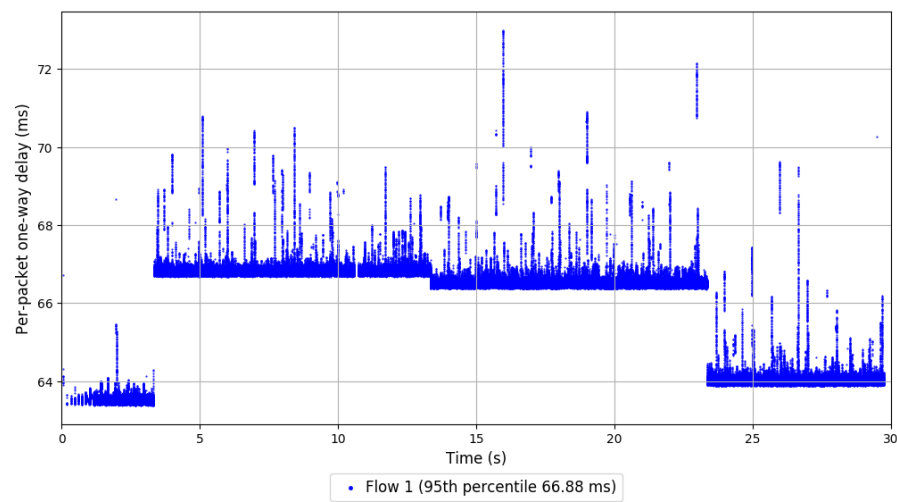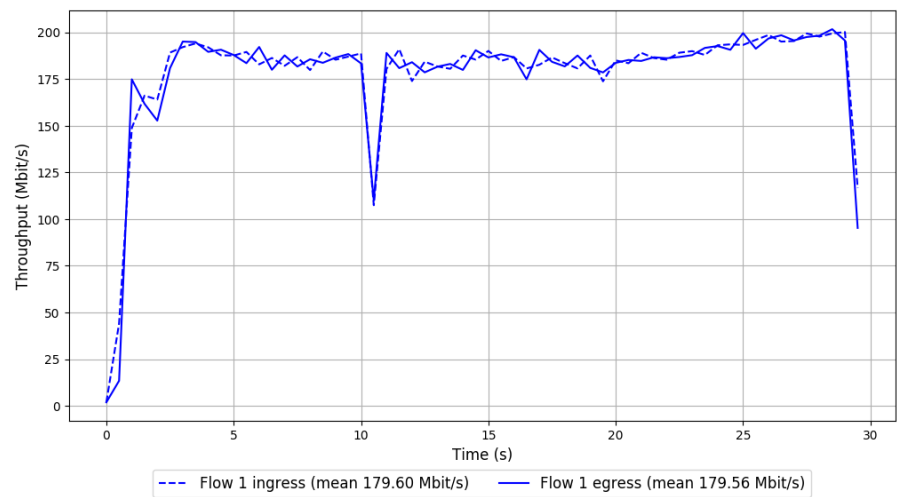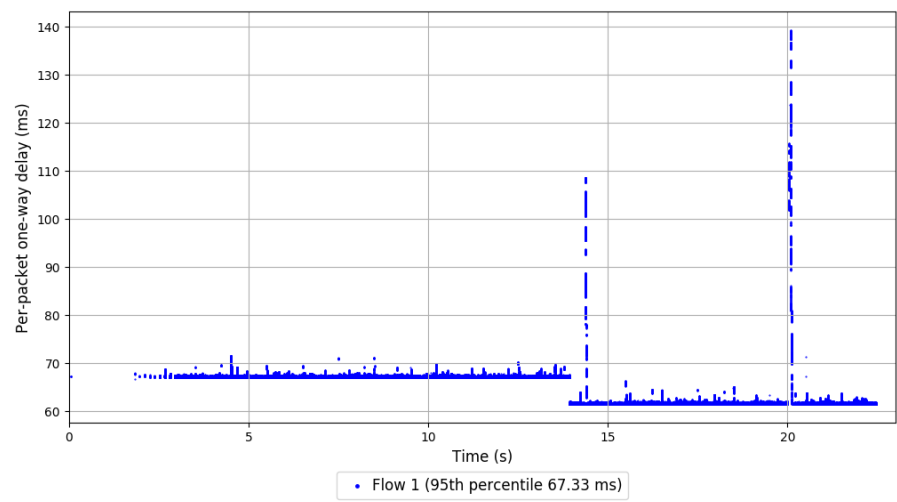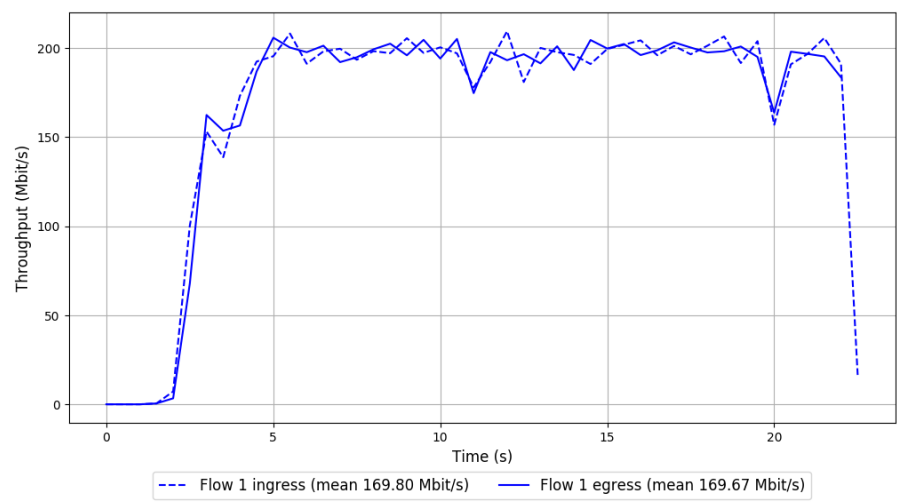
Run 4: Report of Indigo — Data Link

Run 5: Statistics of Indigo

Start at: 2017-12-05 17:01:46
End at: 2017-12-05 17:02:16

Run 5: Report of Indigo — Data Link

Flow 1 ingress (mean 169.80 Mbit/s)   Flow 1 egress (mean 169.67 Mbit/s)

Flow 1 (95th percentile 67.33 ms)

```
Run 6: Statistics of Indigo

Start at: 2017-12-05 17:12:08
End at: 2017-12-05 17:12:38

# Below is generated by plot.py at 2017-12-05 20:27:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 187.26 Mbit/s
95th percentile per-packet one-way delay: 67.185 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 187.26 Mbit/s
95th percentile per-packet one-way delay: 67.185 ms
Loss rate: 0.56%
```
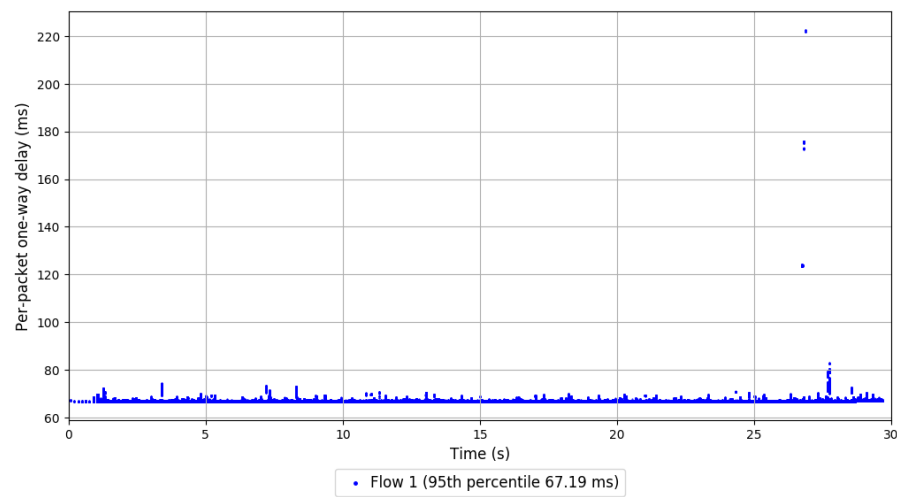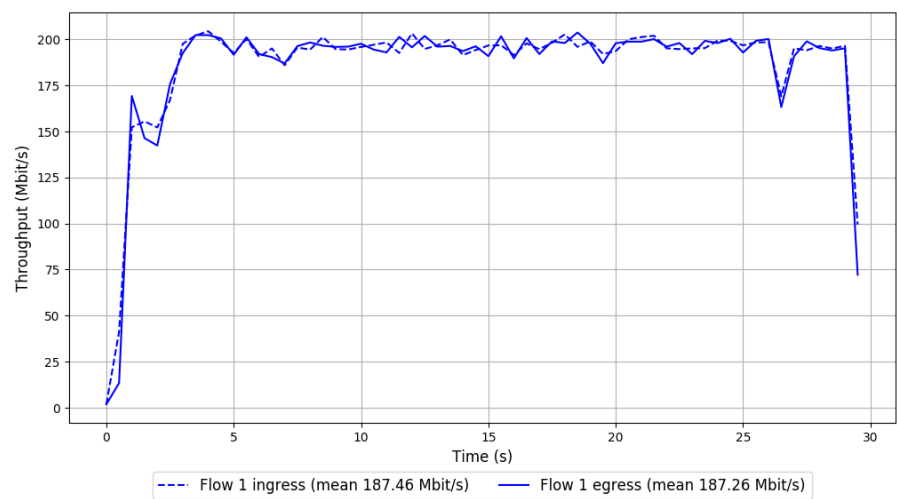
Run 6: Report of Indigo — Data Link

Flow 1 ingress (mean 187.46 Mbit/s)   Flow 1 egress (mean 187.26 Mbit/s)

Flow 1 (95th percentile 67.19 ms)

```
Run 7: Statistics of Indigo

Start at: 2017-12-05 17:22:27
End at: 2017-12-05 17:22:57

# Below is generated by plot.py at 2017-12-05 20:27:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 141.99 Mbit/s
95th percentile per-packet one-way delay: 136.273 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 141.99 Mbit/s
95th percentile per-packet one-way delay: 136.273 ms
Loss rate: 0.31%
```
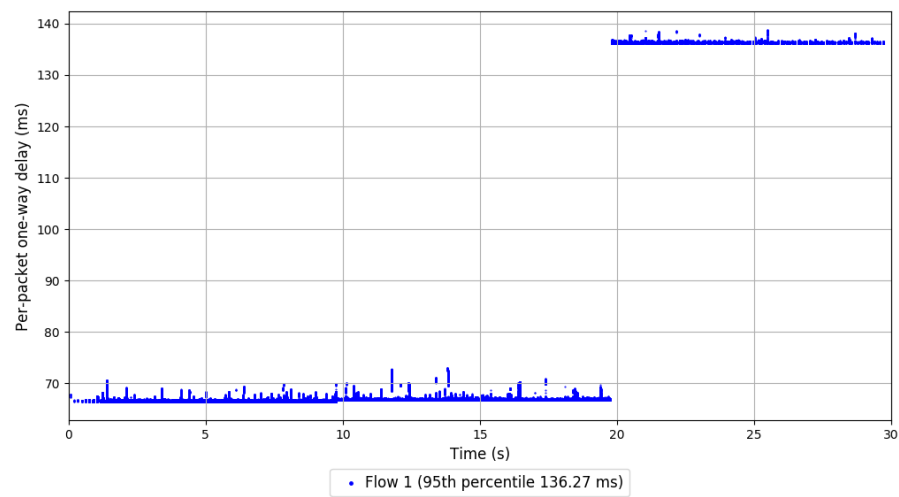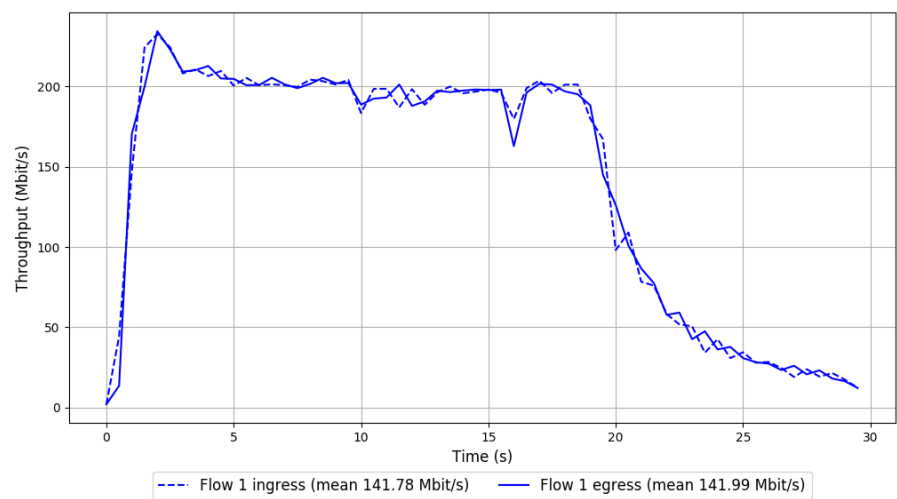
Run 7: Report of Indigo — Data Link

```
Run 8: Statistics of Indigo

Start at: 2017-12-05 17:32:53
End at: 2017-12-05 17:33:23

# Below is generated by plot.py at 2017-12-05 20:27:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 187.93 Mbit/s
95th percentile per-packet one-way delay: 67.277 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 187.93 Mbit/s
95th percentile per-packet one-way delay: 67.277 ms
Loss rate: 0.43%
```
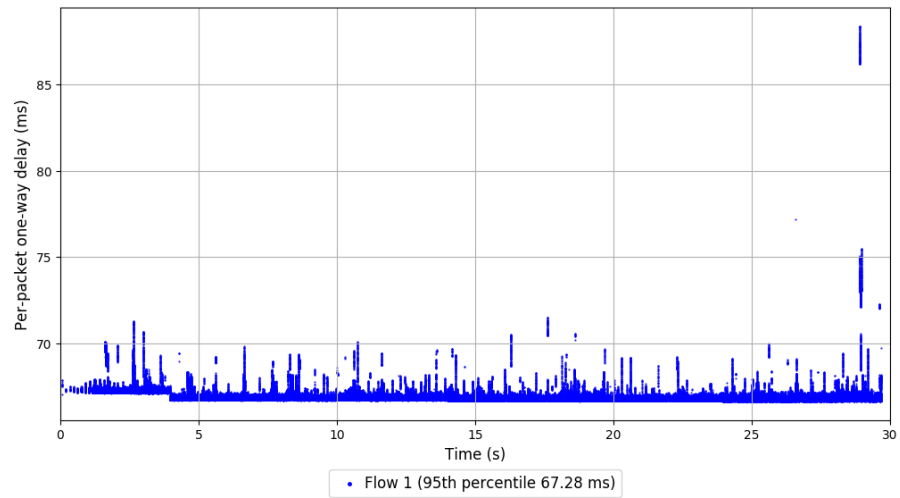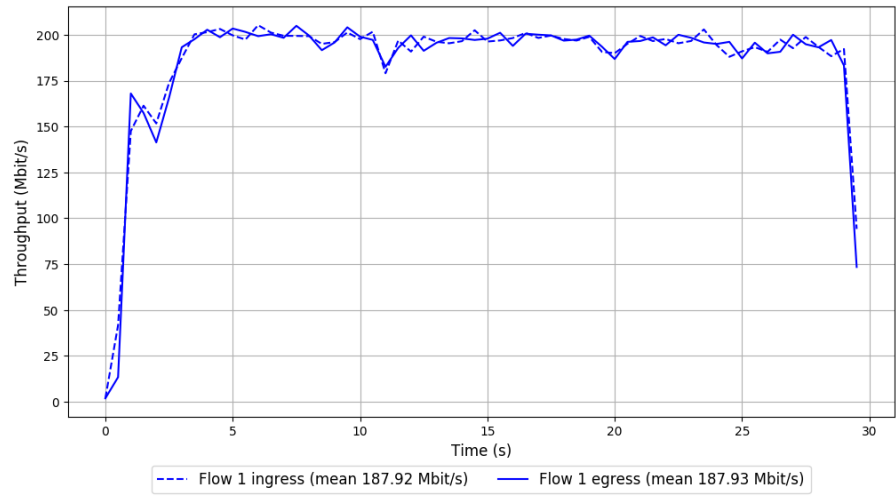
Run 8: Report of Indigo — Data Link

```
Run 9: Statistics of Indigo

Start at: 2017-12-05 17:43:48
End at: 2017-12-05 17:44:18

# Below is generated by plot.py at 2017-12-05 20:28:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 167.26 Mbit/s
95th percentile per-packet one-way delay: 67.325 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 167.26 Mbit/s
95th percentile per-packet one-way delay: 67.325 ms
Loss rate: 0.49%
```
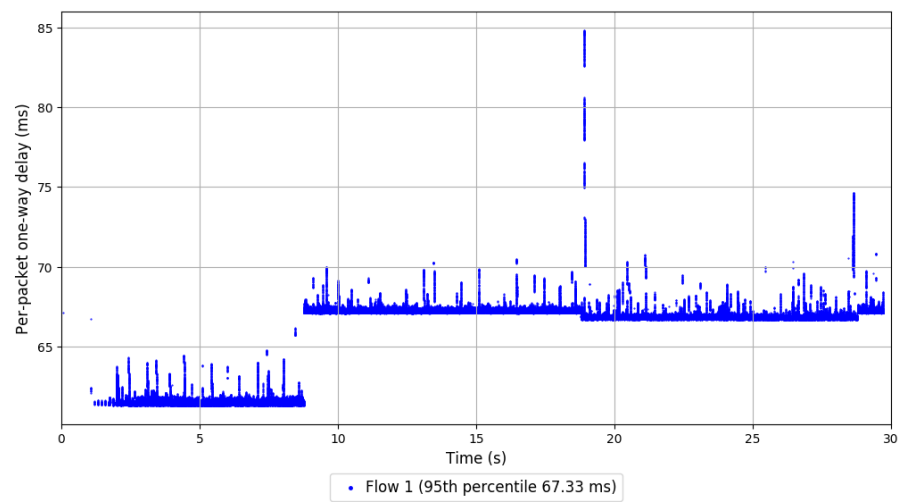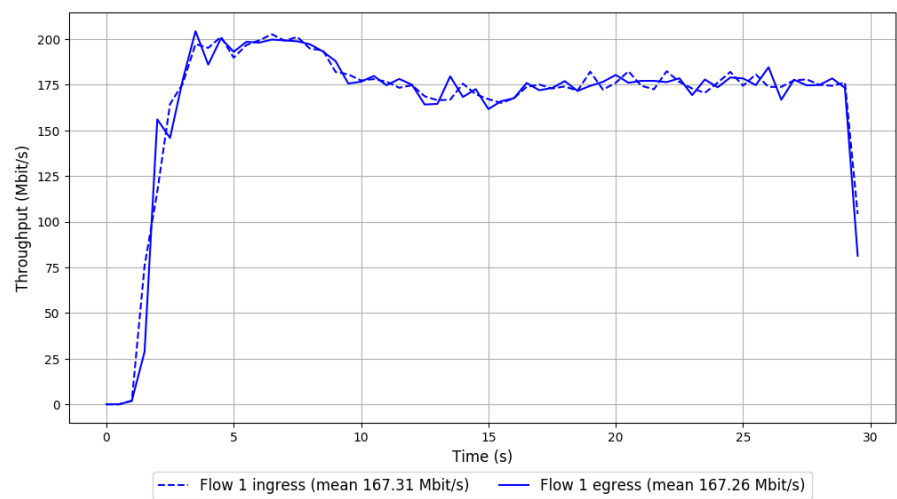
Run 9: Report of Indigo — Data Link

```
Run 10: Statistics of Indigo

Start at: 2017-12-05 17:53:58
End at: 2017-12-05 17:54:28

# Below is generated by plot.py at 2017-12-05 20:28:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 178.27 Mbit/s
95th percentile per-packet one-way delay: 66.893 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 178.27 Mbit/s
95th percentile per-packet one-way delay: 66.893 ms
Loss rate: 0.27%
```
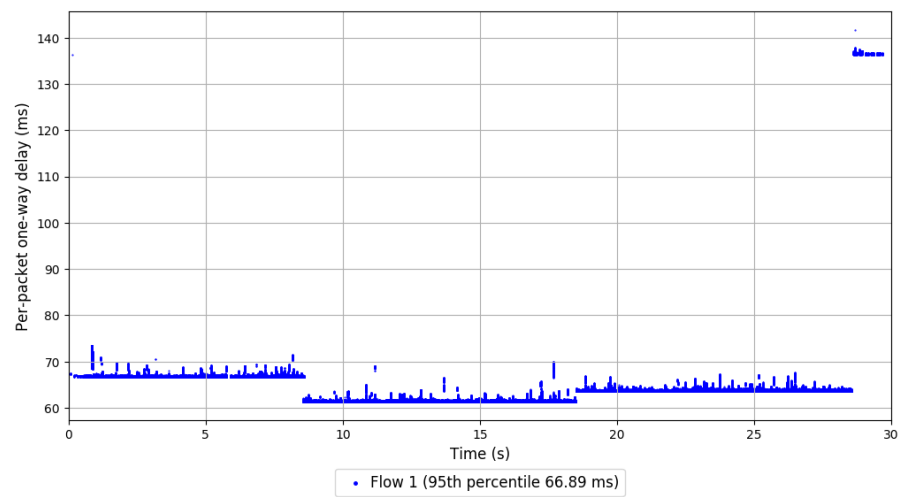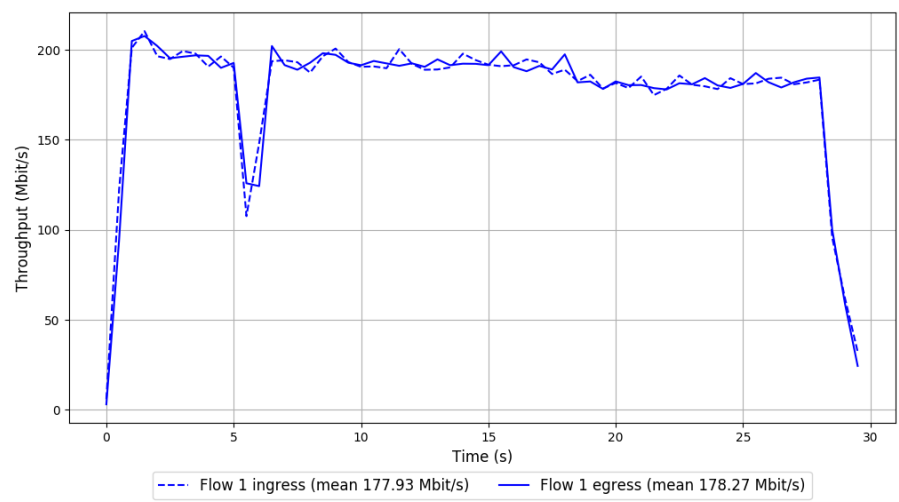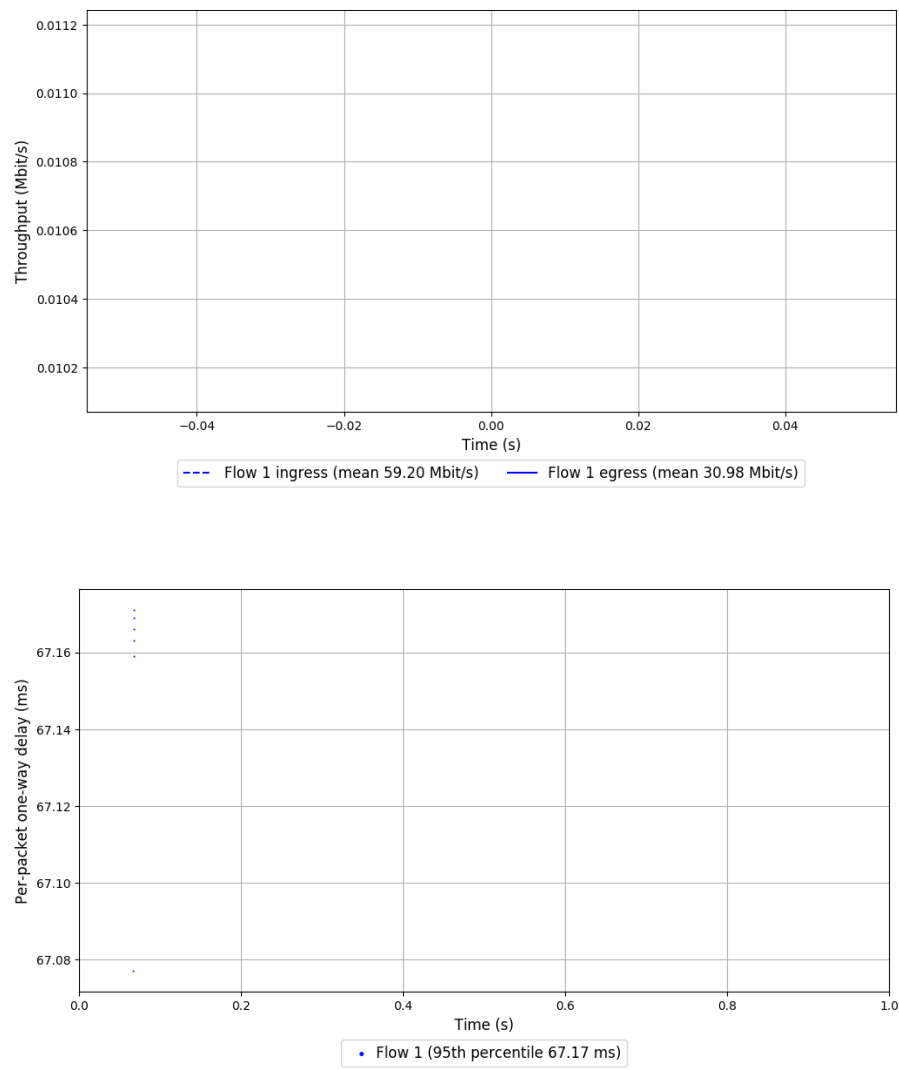
Run 10: Report of Indigo — Data Link

Run 1: Statistics of Indigo-calib

Start at: 2017-12-05 16:24:47
End at: 2017-12-05 16:25:17

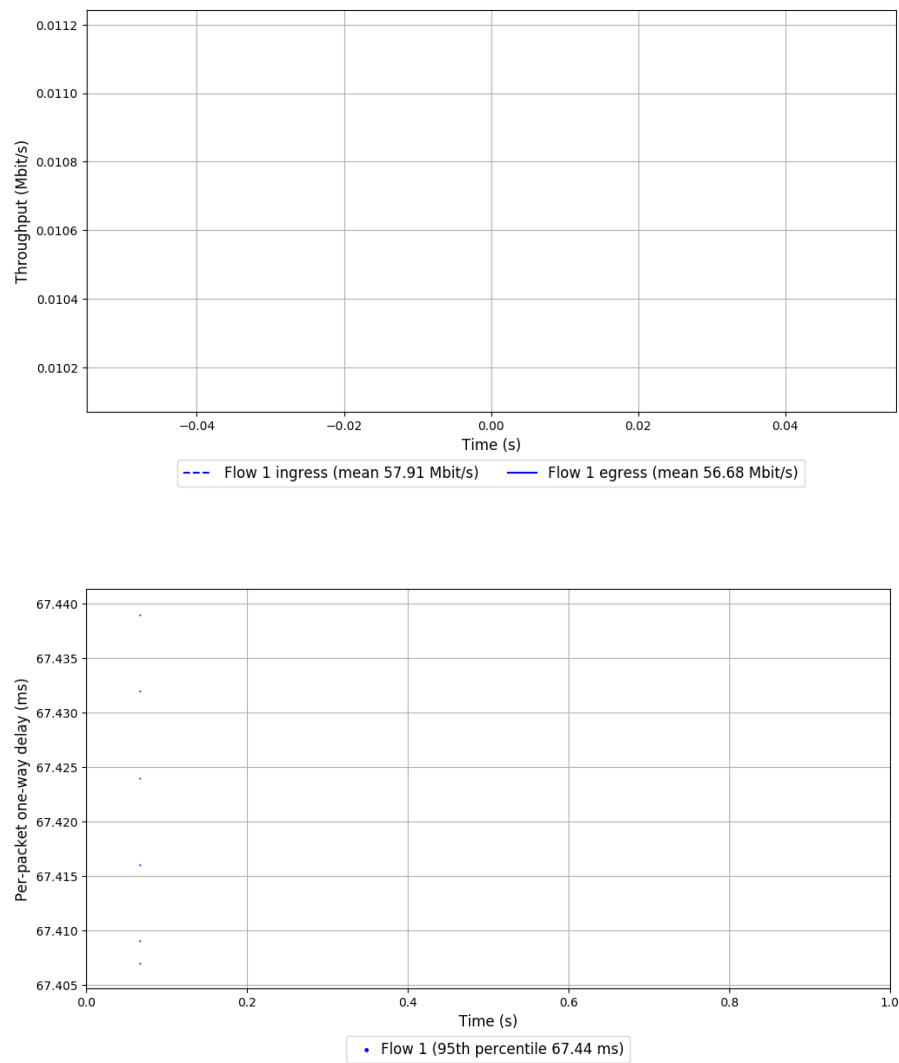# Run 1: Report of Indigo-calib — Data Link

Flow 1 ingress (mean 59.20 Mbit/s)   Flow 1 egress (mean 30.98 Mbit/s)

• Flow 1 (95th percentile 67.17 ms)

Run 2: Statistics of Indigo-calib

Start at: 2017-12-05 16:35:02
End at: 2017-12-05 16:35:32

Run 2: Report of Indigo-calib — Data Link

Flow 1 ingress (mean 57.91 Mbit/s) --- Flow 1 egress (mean 56.68 Mbit/s)
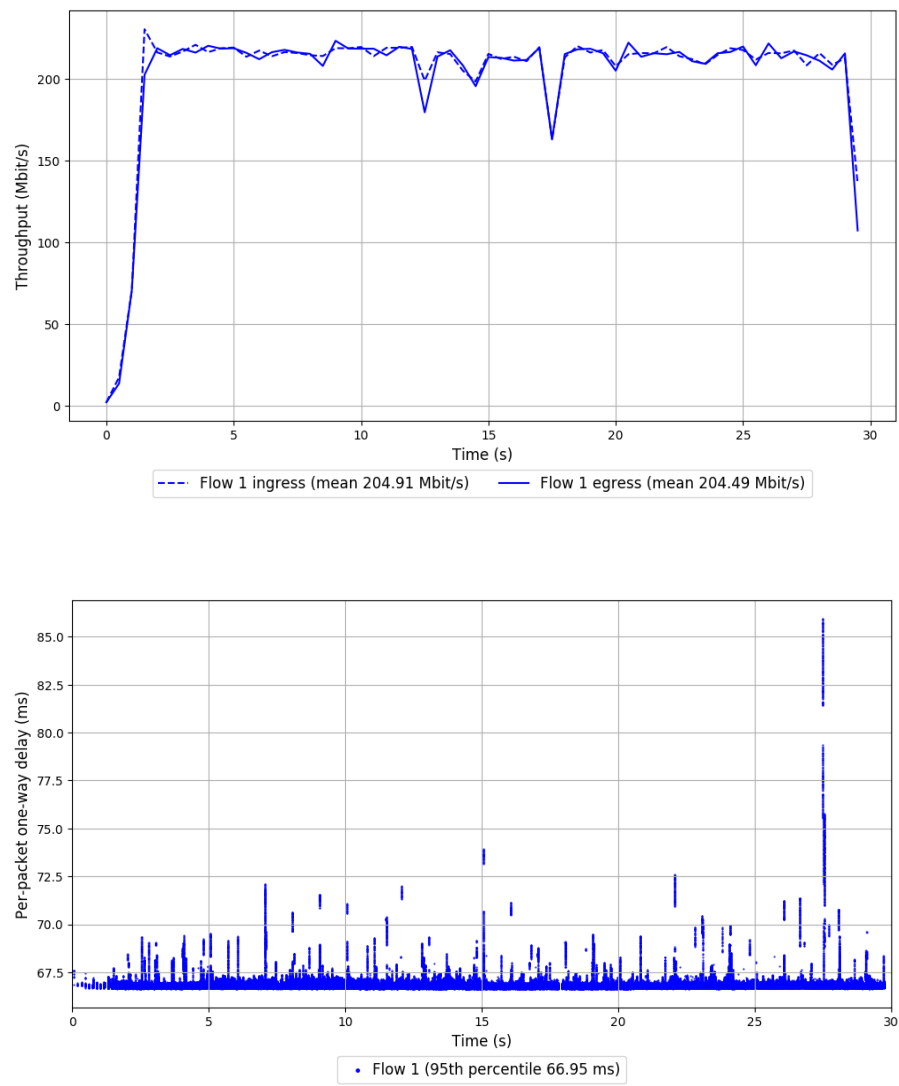

Flow 1 (95th percentile 67.44 ms)

```
Run 3: Statistics of Indigo-calib

Start at: 2017-12-05 16:45:16
End at: 2017-12-05 16:45:46

# Below is generated by plot.py at 2017-12-05 20:28:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 204.49 Mbit/s
95th percentile per-packet one-way delay: 66.952 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 204.49 Mbit/s
95th percentile per-packet one-way delay: 66.952 ms
Loss rate: 0.65%
```

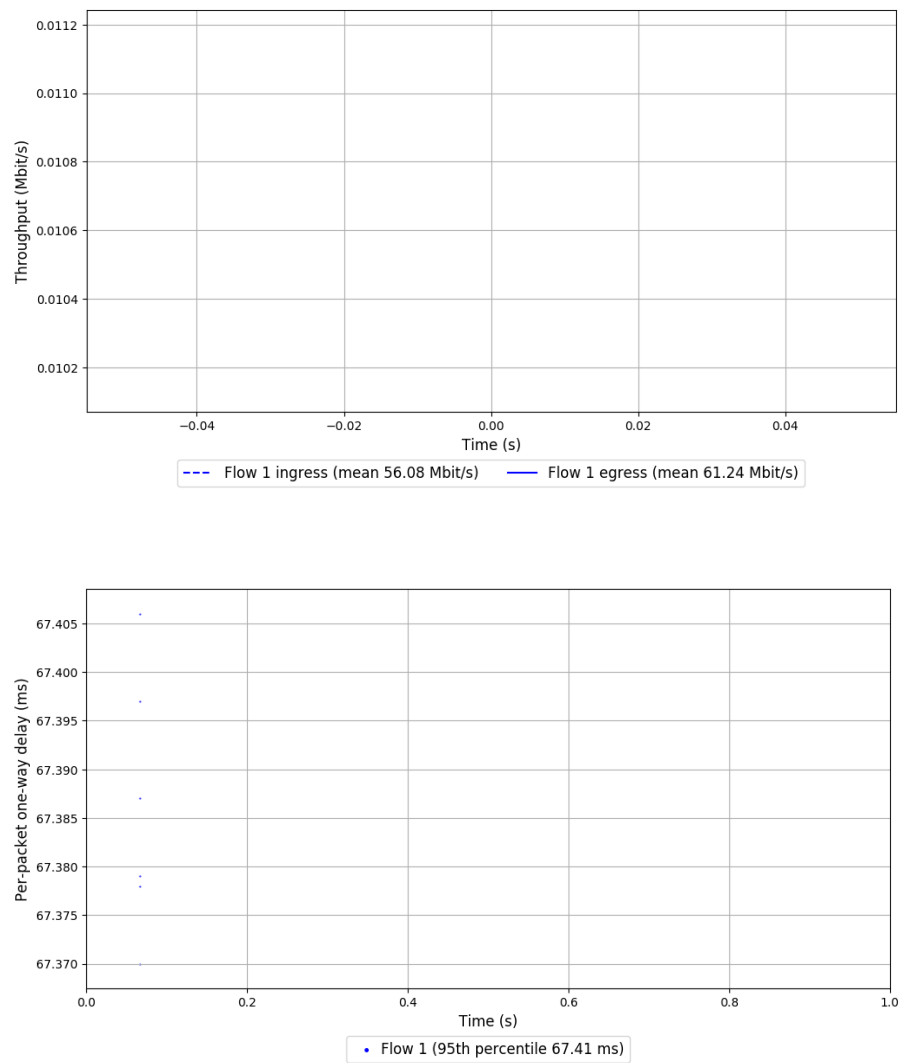# Run 3: Report of Indigo-calib — Data Link

Run 4: Statistics of Indigo-calib

Start at: 2017-12-05 16:55:47
End at: 2017-12-05 16:56:17

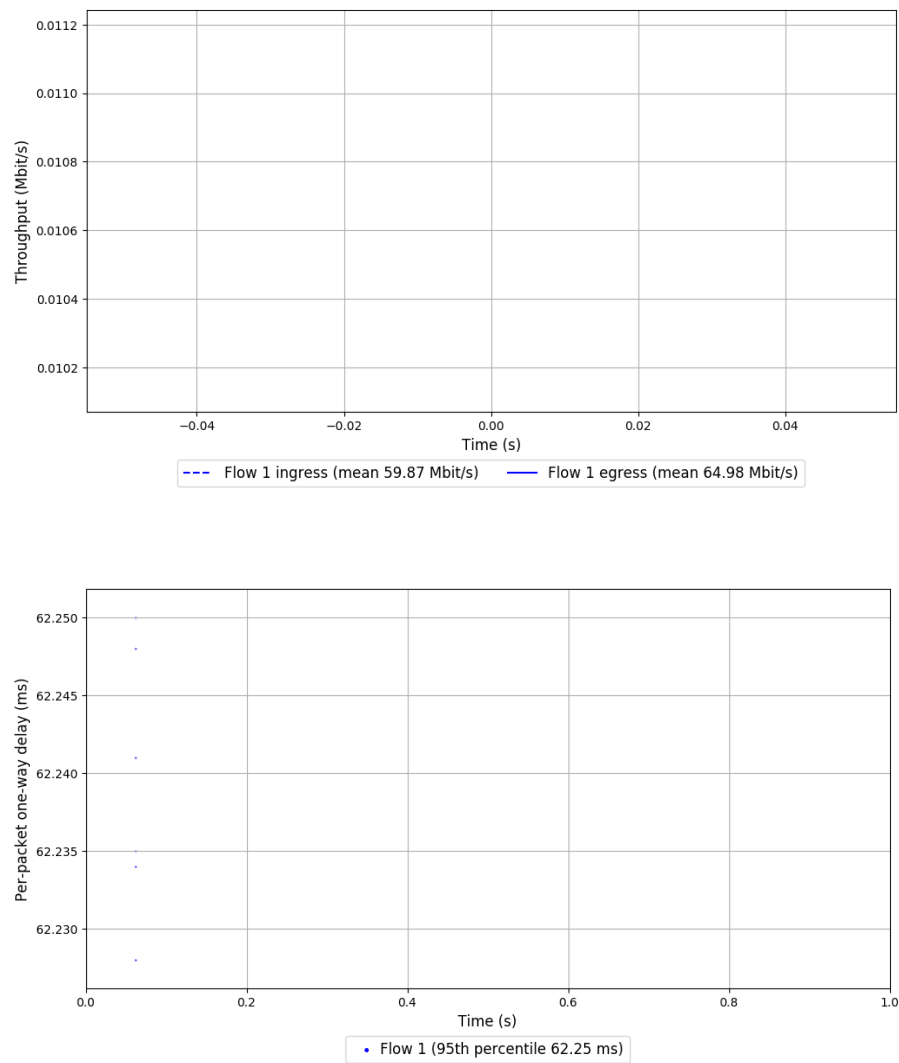Run 4: Report of Indigo-calib — Data Link

Run 5: Statistics of Indigo-calib

Start at: 2017-12-05 17:06:06
End at: 2017-12-05 17:06:36

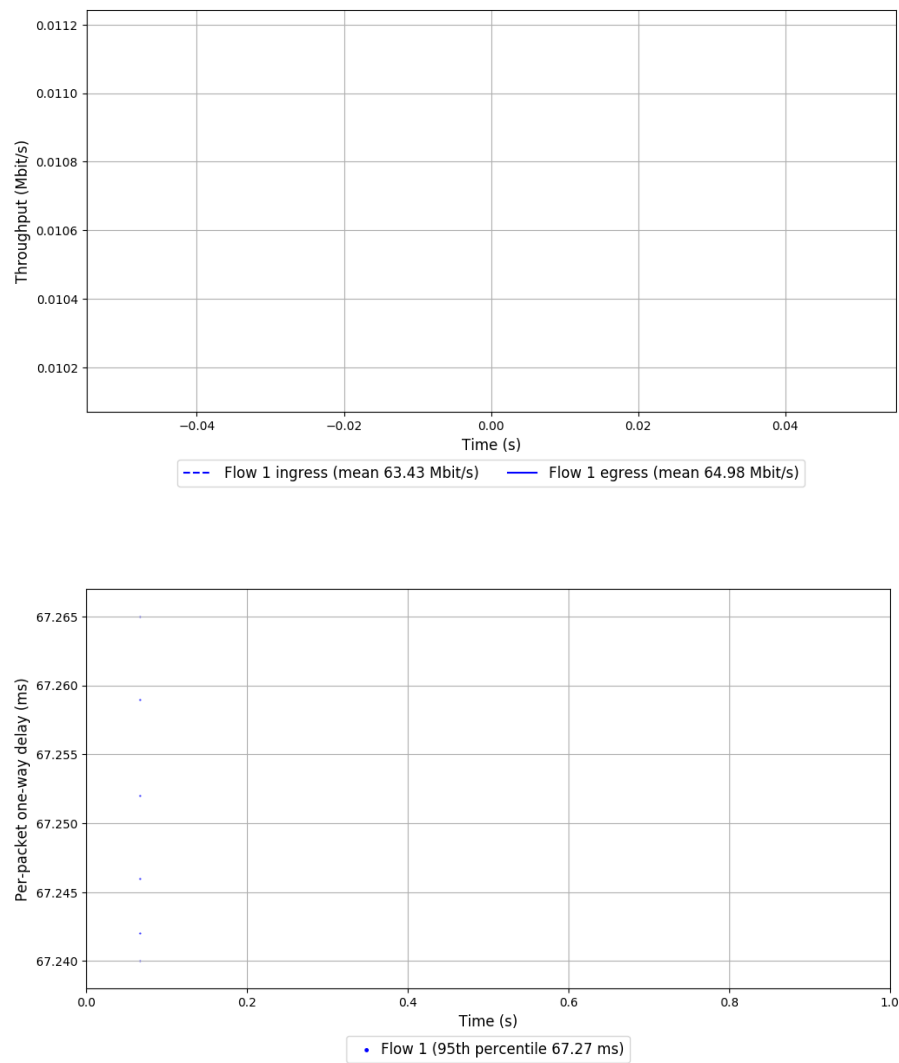# Run 5: Report of Indigo-calib — Data Link

--- Flow 1 ingress (mean 59.87 Mbit/s)   —— Flow 1 egress (mean 64.98 Mbit/s)

• Flow 1 (95th percentile 62.25 ms)

Run 6: Statistics of Indigo-calib

Start at: 2017-12-05 17:16:33
End at: 2017-12-05 17:17:03

Run 6: Report of Indigo-calib — Data Link

Flow 1 ingress (mean 63.43 Mbit/s)   Flow 1 egress (mean 64.98 Mbit/s)
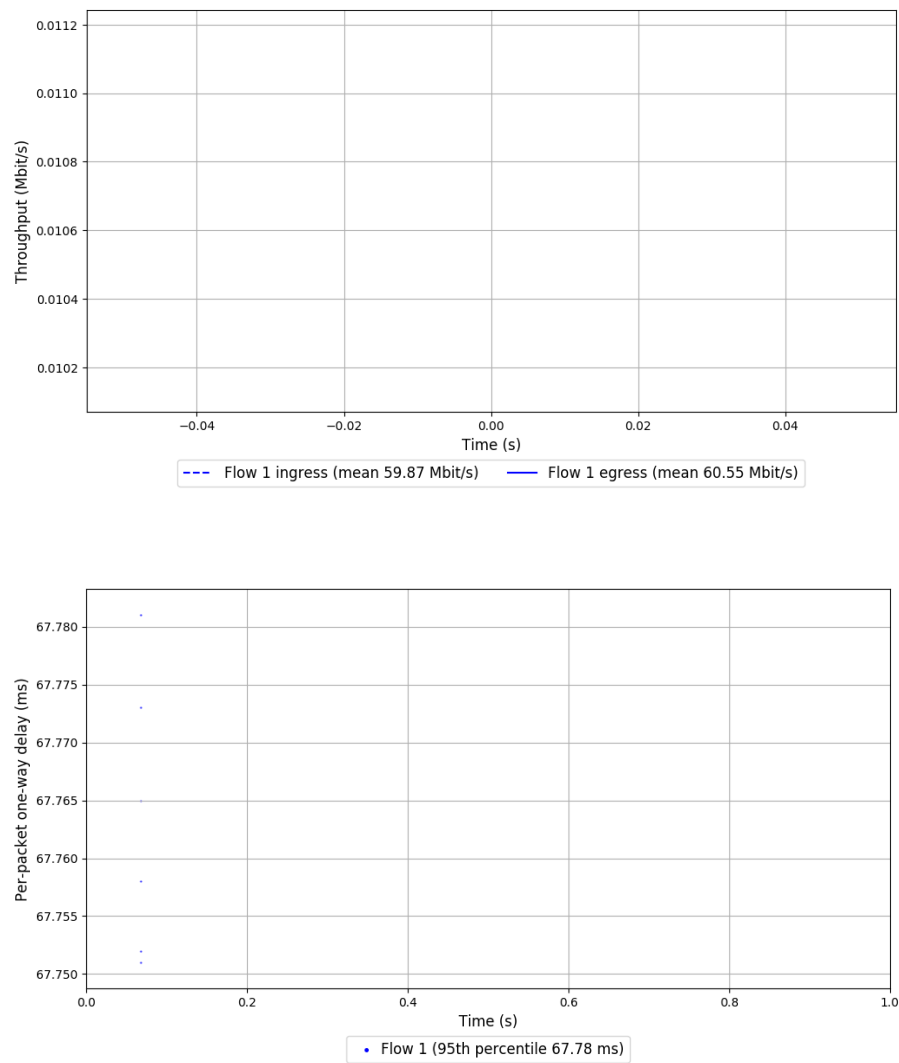

Flow 1 (95th percentile 67.27 ms)

Run 7: Statistics of Indigo-calib

Start at: 2017-12-05 17:26:48
End at: 2017-12-05 17:27:18

Run 7: Report of Indigo-calib — Data Link

Flow 1 ingress (mean 59.87 Mbit/s)   Flow 1 egress (mean 60.55 Mbit/s)
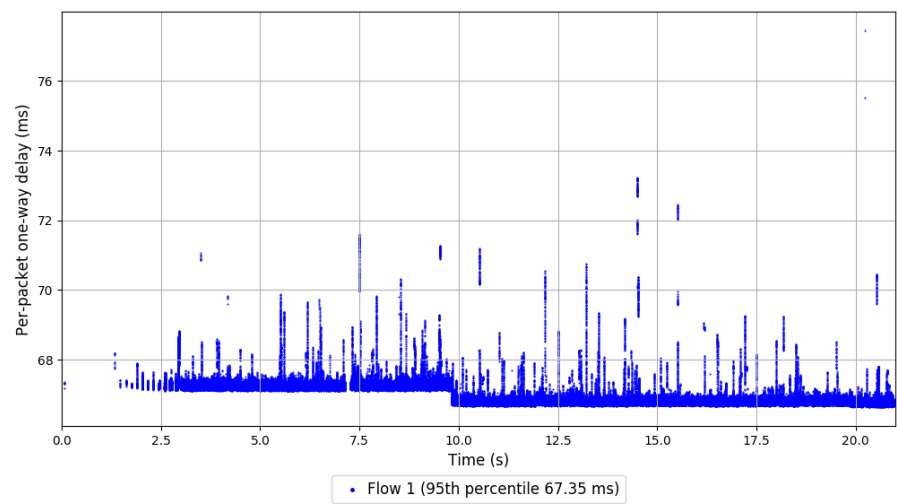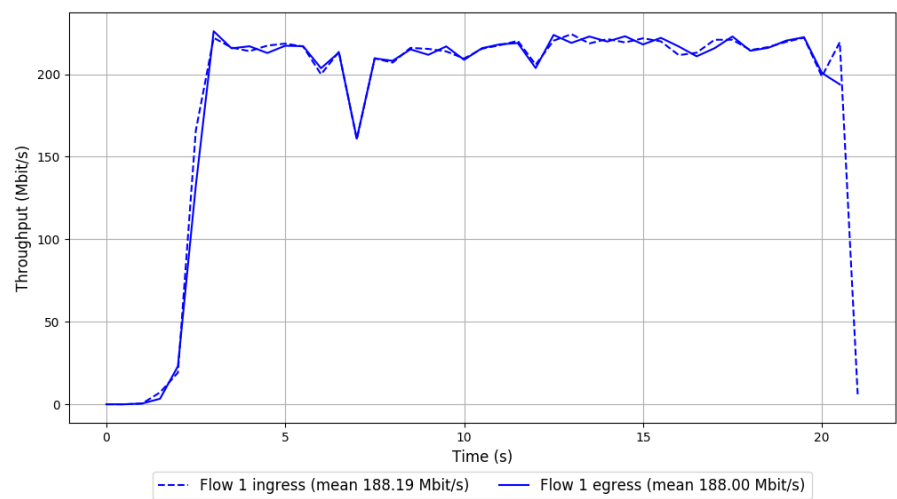

Flow 1 (95th percentile 67.78 ms)

Run 8: Statistics of Indigo-calib

Start at: 2017-12-05 17:37:18
End at: 2017-12-05 17:37:48
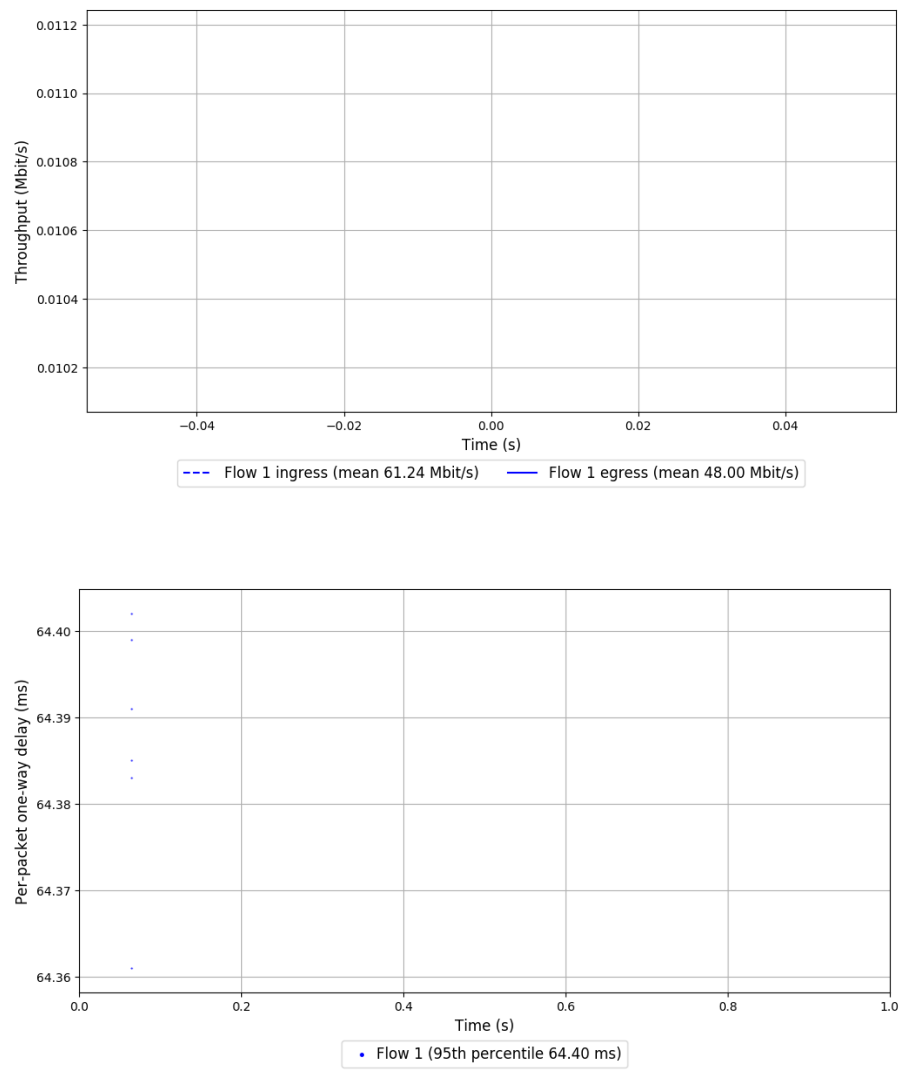
Run 8: Report of Indigo-calib — Data Link

```
Run 9: Statistics of Indigo-calib

Start at: 2017-12-05 17:48:13
End at: 2017-12-05 17:48:43
```

Run 9: Report of Indigo-calib — Data Link

Flow 1 ingress (mean 61.24 Mbit/s) --- Flow 1 egress (mean 48.00 Mbit/s)

Flow 1 (95th percentile 64.40 ms)

```
Run 10: Statistics of Indigo-calib

Start at: 2017-12-05 17:58:23
End at: 2017-12-05 17:58:54
```

Run 10: Report of Indigo-calib — Data Link