Pantheon Report
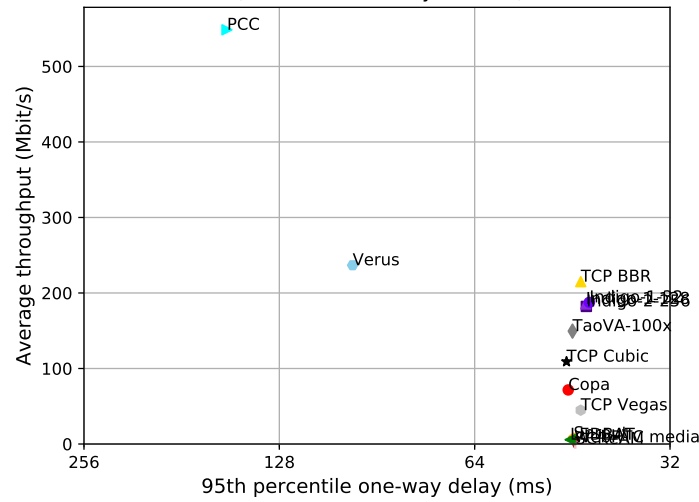
Generated at 2018-01-26 02:46:06 (UTC).

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

Repeated the test of 15 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).

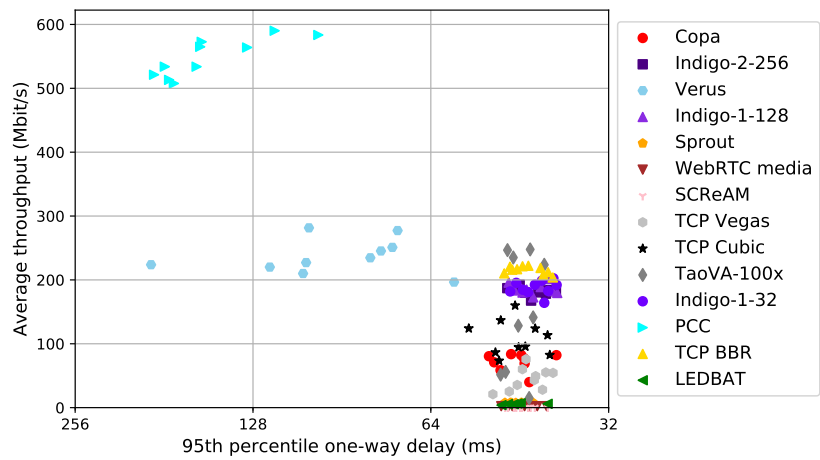Tested BBR with qdisc of Fair Queuing (`fq`), and other schemes with the default Linux qdisc (`pfifo_fast`).

```
Git summary:
branch: master @ f23294ec38436c9f802847d477a41b7343ec76e6
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
 M datagrump/sender.cc
third_party/fillp @ ec9585325218d5048c4d4152fa42240af54c6e67
third_party/genericCC @ 80b516c448f795fd6e9675f7177b69c622f07da8
third_party/indigo @ a9b2060d39e4da2e8987e893e3eca2a6c7cd0ab9
third_party/indigo-1-layer-128-unit @ 3ae9e4ef4230db7484501f82ce8b377695f2f66d
third_party/indigo-1-layer-32-unit @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-1-layer-32-unit-no-calib @ 1f3a7f75b41135ed5b540c0fd3505939528e2a5f
third_party/indigo-no-calib @ 7224f2202e8a044d8306fa0b983ad84360c53d89
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
 M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ fb1053193c2861da659ba9013db26744ccfcf993
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/vivace @ 423cbca3e8ea1d599e7b5cf725835e8a2b6bfac6
third_party/webrtc @ a488197ddd041ace68a42849b2540ad834825f42
```

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

test from GCE Tokyo Ethernet to GCE Sydney Ethernet, 10 runs of 30s each per scheme

2

scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	10	215.00	43.92	0.49
TCP Cubic	10	109.07	46.20	0.61
LEDBAT	6	5.68	45.62	2.04
PCC	10	548.52	154.12	1.84
QUIC Cubic	0	N/A	N/A	N/A
SCReAM	10	0.21	44.79	0.37
WebRTC media	10	2.28	44.96	0.40
Sprout	10	7.65	45.06	0.98
TaoVA-100x	9	149.49	45.23	0.41
TCP Vegas	10	44.77	43.94	1.22
Verus	10	236.73	98.70	1.44
Copa	9	71.62	45.92	0.43
Indigo-2-256	10	182.21	43.06	0.39
Indigo-1-32	10	187.56	42.60	0.41
Indigo-1-128	10	185.53	43.14	0.38

3

```
Run 1: Statistics of TCP BBR

Start at: 2018-01-25 22:10:43
End at: 2018-01-25 22:11:13

# Below is generated by plot.py at 2018-01-26 02:05:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 203.84 Mbit/s
95th percentile per-packet one-way delay: 39.776 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 203.84 Mbit/s
95th percentile per-packet one-way delay: 39.776 ms
Loss rate: 0.88%
```
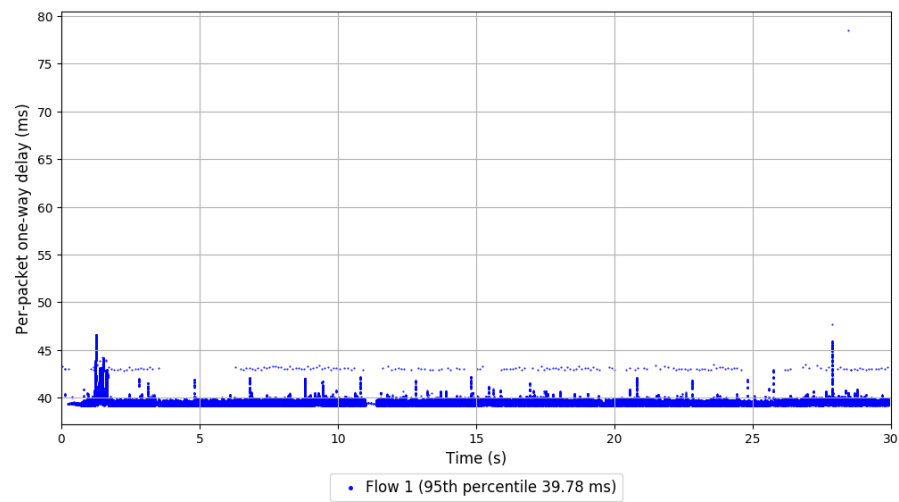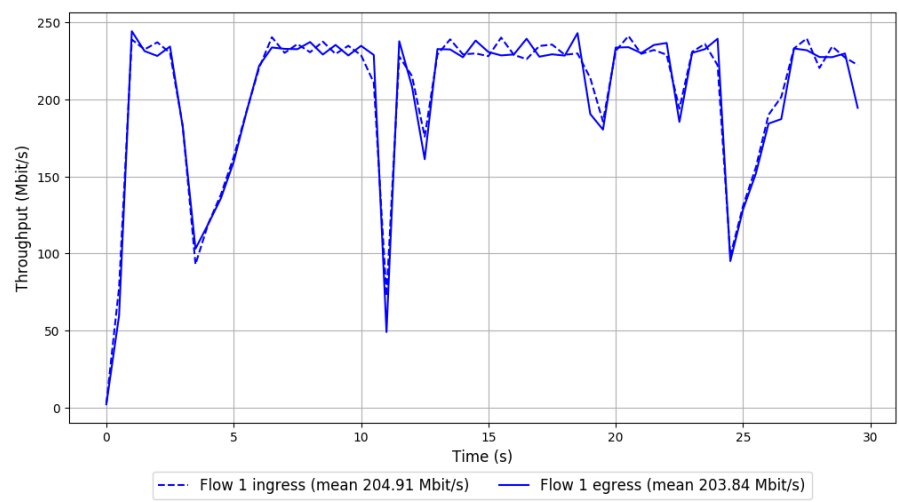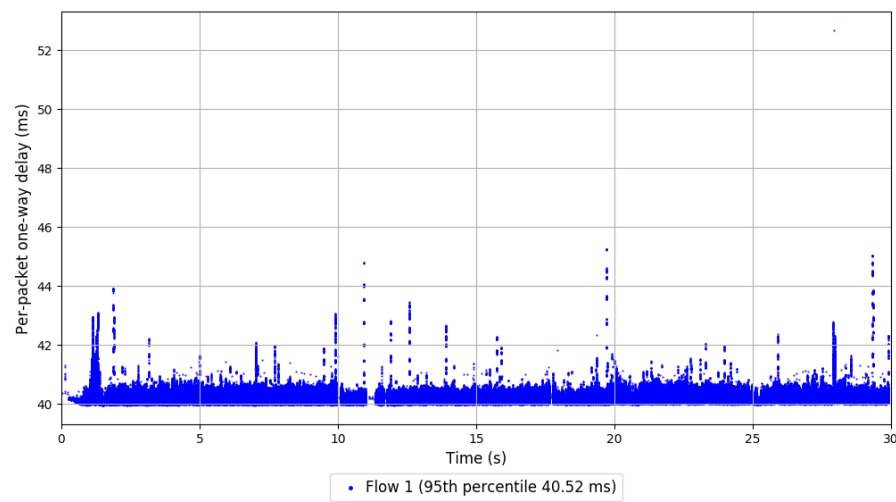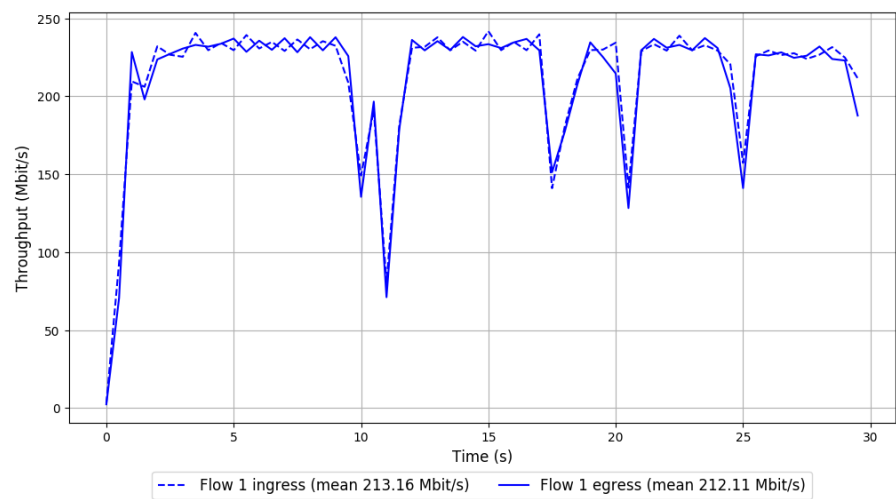
Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2018-01-25 22:22:36
End at: 2018-01-25 22:23:06

# Below is generated by plot.py at 2018-01-26 02:06:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 212.11 Mbit/s
95th percentile per-packet one-way delay: 40.518 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 212.11 Mbit/s
95th percentile per-packet one-way delay: 40.518 ms
Loss rate: 0.84%
```
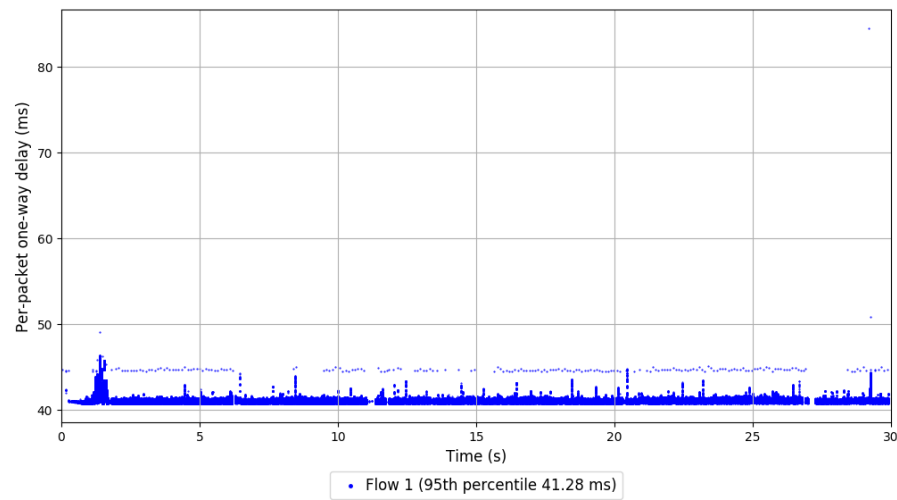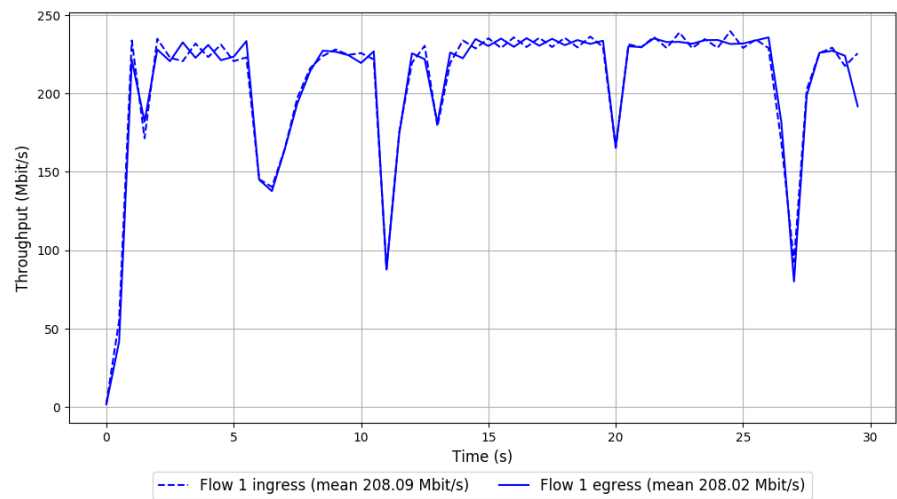
Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2018-01-25 22:34:38
End at: 2018-01-25 22:35:08


# Below is generated by plot.py at 2018-01-26 02:06:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 208.02 Mbit/s
95th percentile per-packet one-way delay: 41.277 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 208.02 Mbit/s
95th percentile per-packet one-way delay: 41.277 ms
Loss rate: 0.38%
```
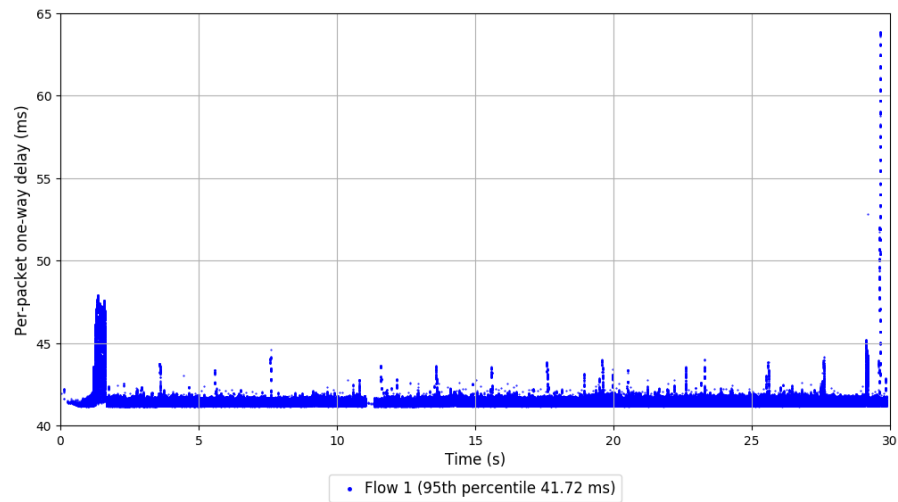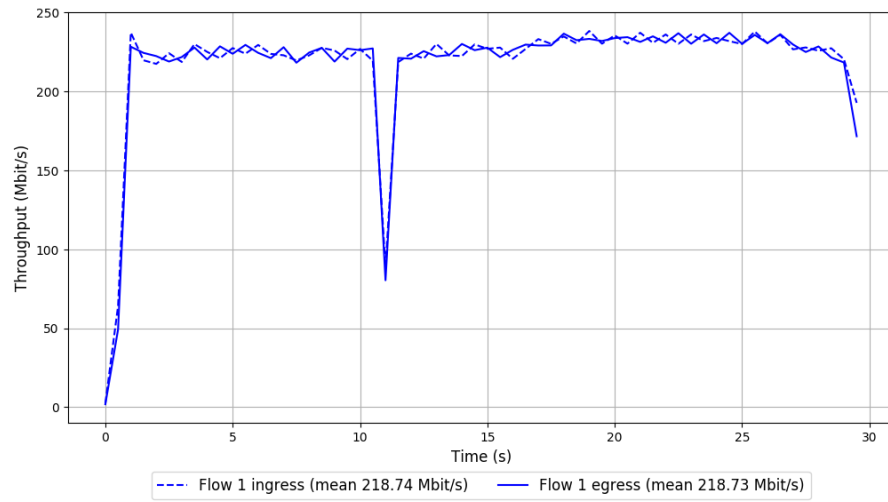
Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 208.09 Mbit/s)   Flow 1 egress (mean 208.02 Mbit/s)

Flow 1 (95th percentile 41.28 ms)

```
Run 4: Statistics of TCP BBR

Start at: 2018-01-25 22:46:14
End at: 2018-01-25 22:46:44

# Below is generated by plot.py at 2018-01-26 02:06:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 218.73 Mbit/s
95th percentile per-packet one-way delay: 41.724 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 218.73 Mbit/s
95th percentile per-packet one-way delay: 41.724 ms
Loss rate: 0.34%
```
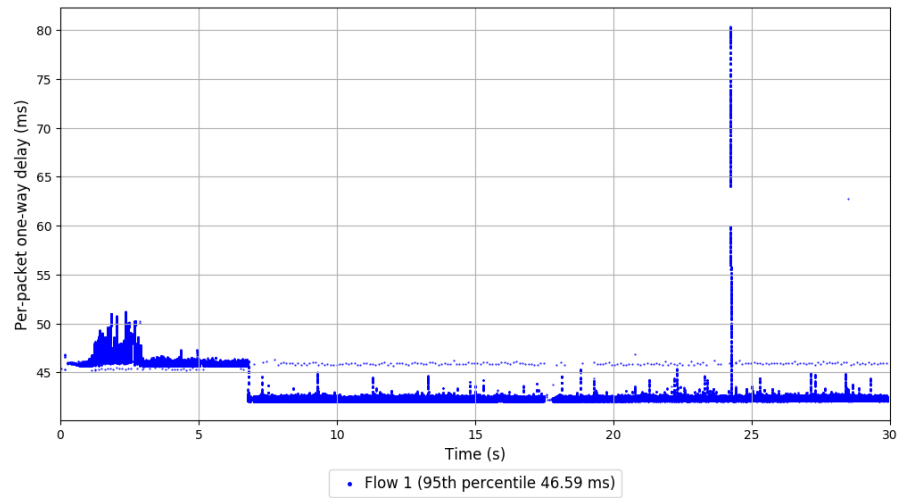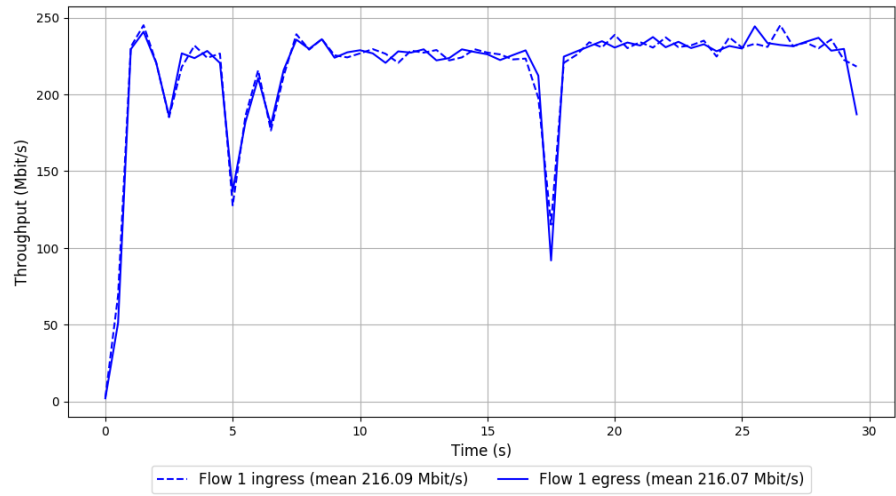
Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 218.74 Mbit/s)   Flow 1 egress (mean 218.73 Mbit/s)

Flow 1 (95th percentile 41.72 ms)

```
Run 5: Statistics of TCP BBR

Start at: 2018-01-25 22:58:13
End at: 2018-01-25 22:58:43

# Below is generated by plot.py at 2018-01-26 02:06:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 216.07 Mbit/s
95th percentile per-packet one-way delay: 46.591 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 216.07 Mbit/s
95th percentile per-packet one-way delay: 46.591 ms
Loss rate: 0.38%
```
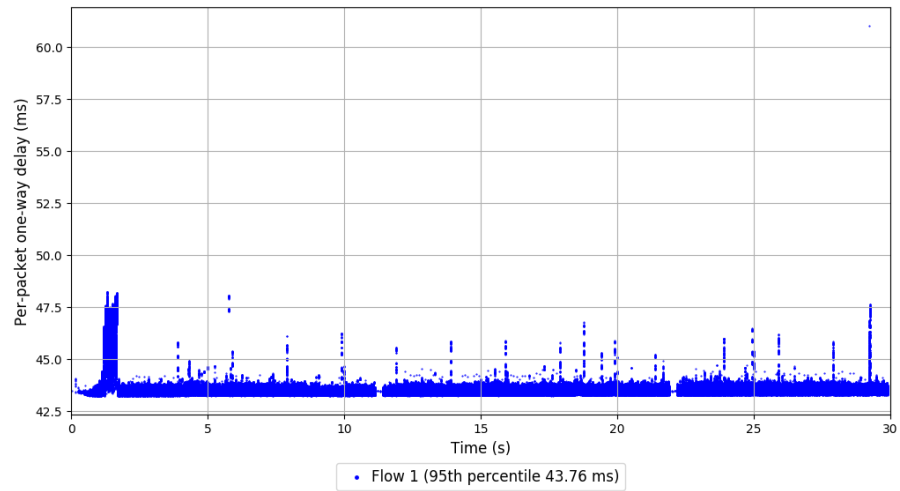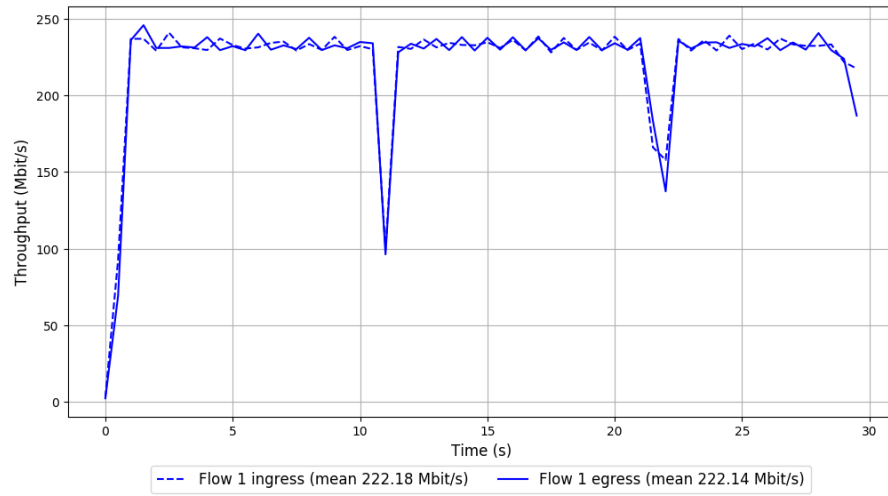
Run 5: Report of TCP BBR — Data Link

```
Run 6: Statistics of TCP BBR

Start at: 2018-01-25 23:10:24
End at: 2018-01-25 23:10:54

# Below is generated by plot.py at 2018-01-26 02:06:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 222.14 Mbit/s
95th percentile per-packet one-way delay: 43.760 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 222.14 Mbit/s
95th percentile per-packet one-way delay: 43.760 ms
Loss rate: 0.36%
```
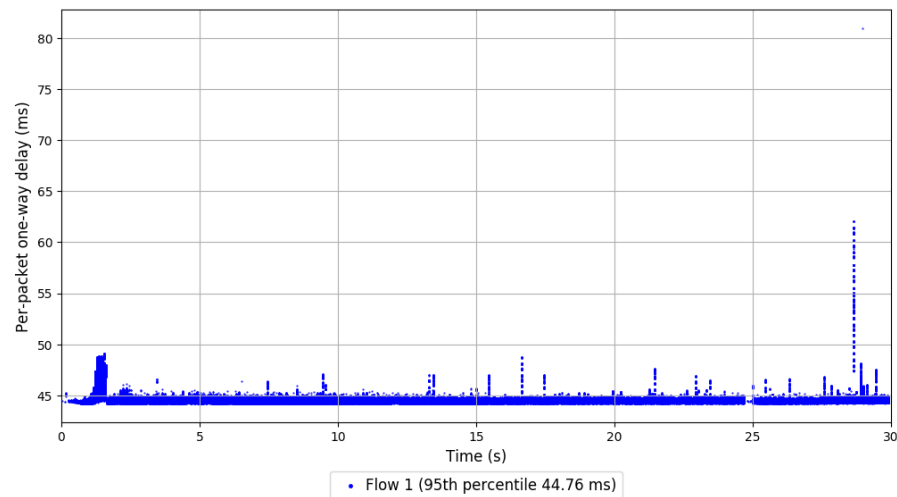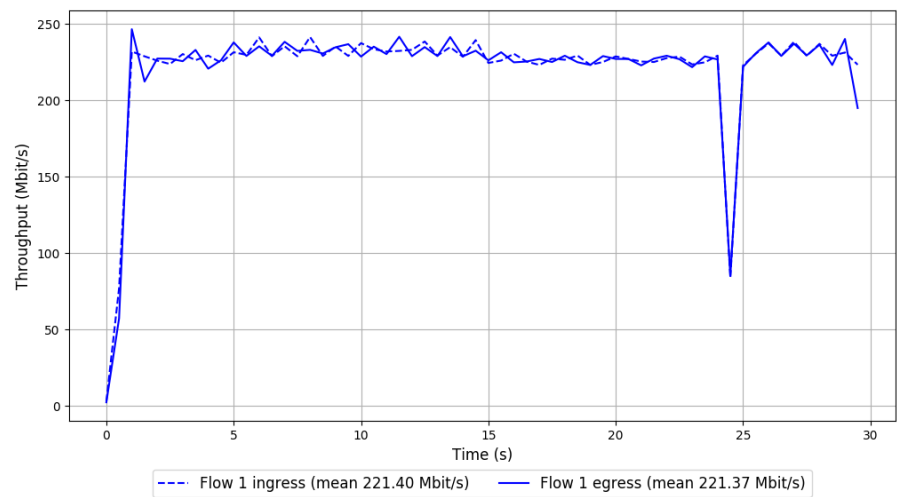
Run 6: Report of TCP BBR — Data Link

```
Run 7: Statistics of TCP BBR

Start at: 2018-01-25 23:22:17
End at: 2018-01-25 23:22:47

# Below is generated by plot.py at 2018-01-26 02:06:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 221.37 Mbit/s
95th percentile per-packet one-way delay: 44.764 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 221.37 Mbit/s
95th percentile per-packet one-way delay: 44.764 ms
Loss rate: 0.35%
```
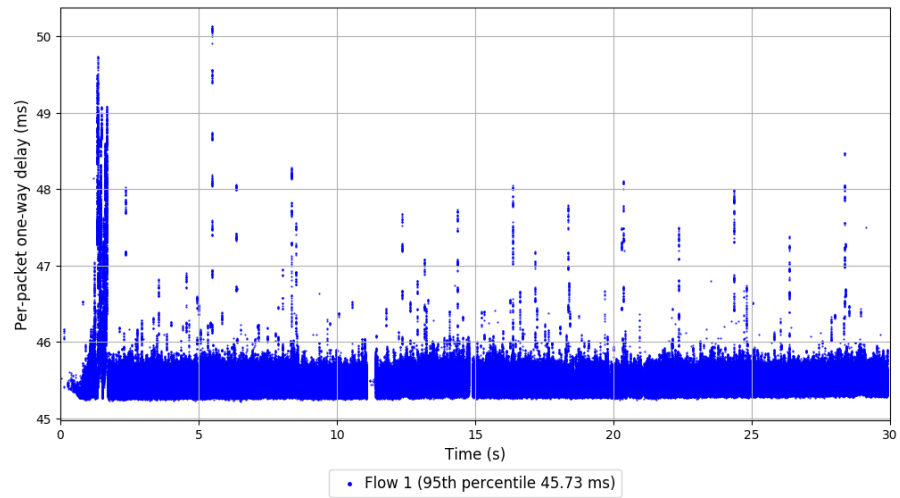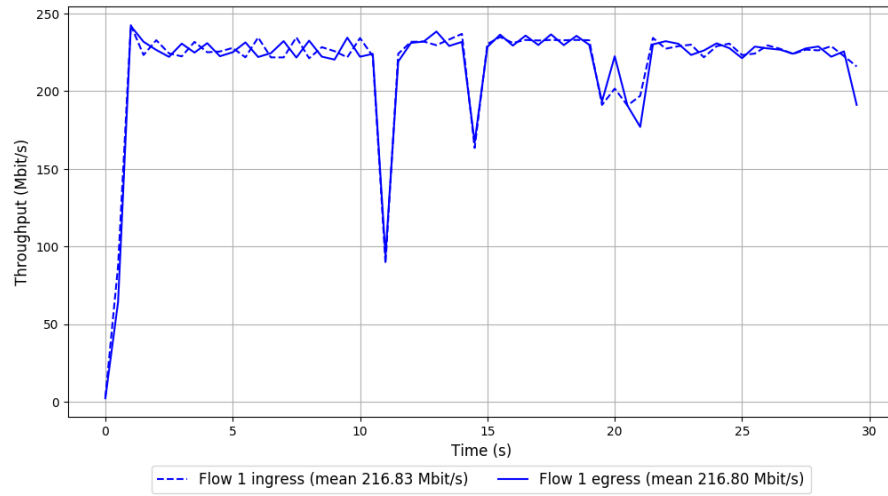
Run 7: Report of TCP BBR — Data Link

Flow 1 ingress (mean 221.40 Mbit/s)   Flow 1 egress (mean 221.37 Mbit/s)

• Flow 1 (95th percentile 44.76 ms)

```
Run 8: Statistics of TCP BBR

Start at: 2018-01-25 23:34:00
End at: 2018-01-25 23:34:30

# Below is generated by plot.py at 2018-01-26 02:06:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 216.80 Mbit/s
95th percentile per-packet one-way delay: 45.729 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 216.80 Mbit/s
95th percentile per-packet one-way delay: 45.729 ms
Loss rate: 0.36%
```
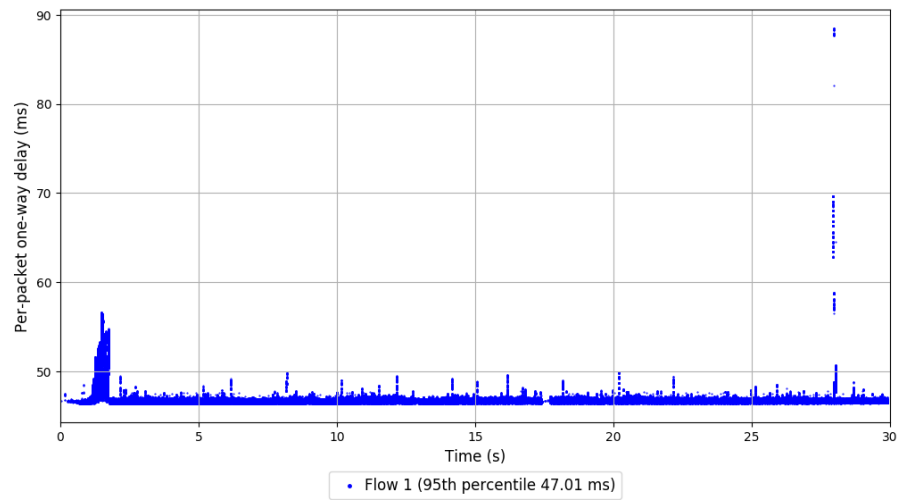
Run 8: Report of TCP BBR — Data Link

Flow 1 ingress (mean 216.83 Mbit/s) --- Flow 1 egress (mean 216.80 Mbit/s)

• Flow 1 (95th percentile 45.73 ms)

```
Run 9: Statistics of TCP BBR

Start at: 2018-01-25 23:46:00
End at: 2018-01-25 23:46:30

# Below is generated by plot.py at 2018-01-26 02:09:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 220.69 Mbit/s
95th percentile per-packet one-way delay: 47.012 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 220.69 Mbit/s
95th percentile per-packet one-way delay: 47.012 ms
Loss rate: 0.37%
```
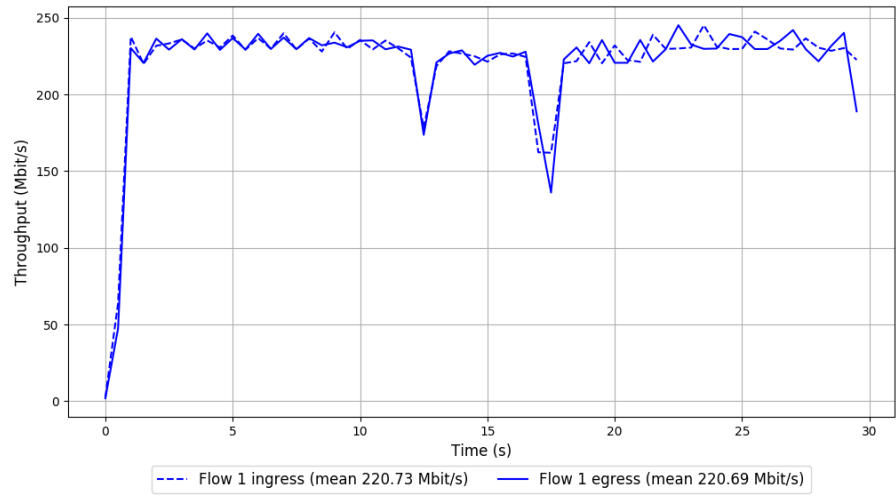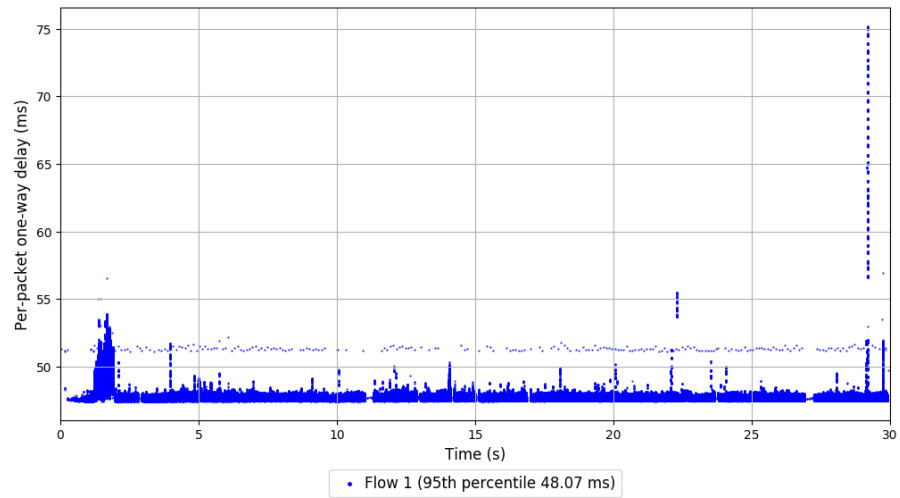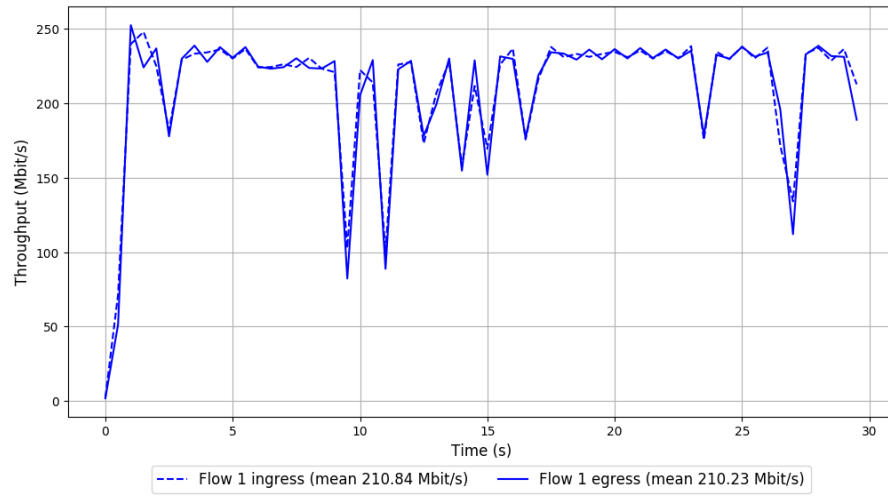
Run 9: Report of TCP BBR — Data Link

Flow 1 ingress (mean 220.73 Mbit/s) Flow 1 egress (mean 220.69 Mbit/s)

Flow 1 (95th percentile 47.01 ms)

```
Run 10: Statistics of TCP BBR

Start at: 2018-01-25 23:58:06
End at: 2018-01-25 23:58:36

# Below is generated by plot.py at 2018-01-26 02:09:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 210.23 Mbit/s
95th percentile per-packet one-way delay: 48.068 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 210.23 Mbit/s
95th percentile per-packet one-way delay: 48.068 ms
Loss rate: 0.64%
```
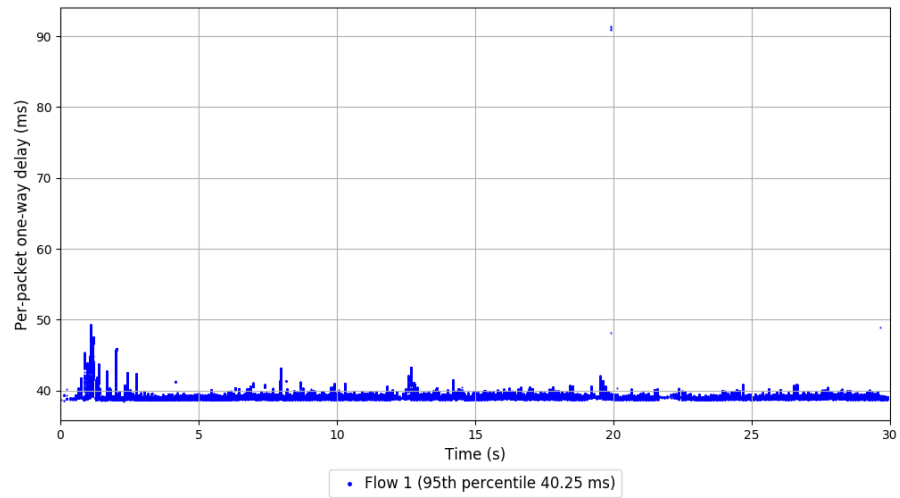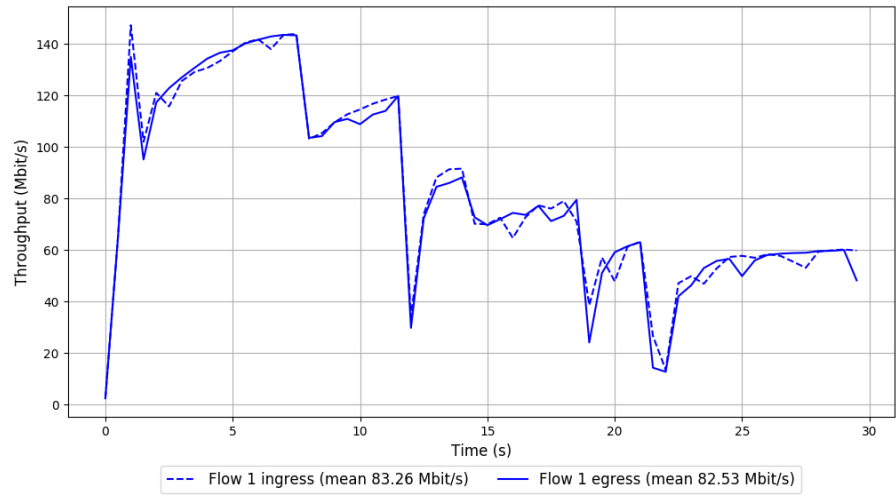
Run 10: Report of TCP BBR — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2018-01-25 21:59:36
End at: 2018-01-25 22:00:06

# Below is generated by plot.py at 2018-01-26 02:09:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 82.53 Mbit/s
95th percentile per-packet one-way delay: 40.254 ms
Loss rate: 1.21%
-- Flow 1:
Average throughput: 82.53 Mbit/s
95th percentile per-packet one-way delay: 40.254 ms
Loss rate: 1.21%
```
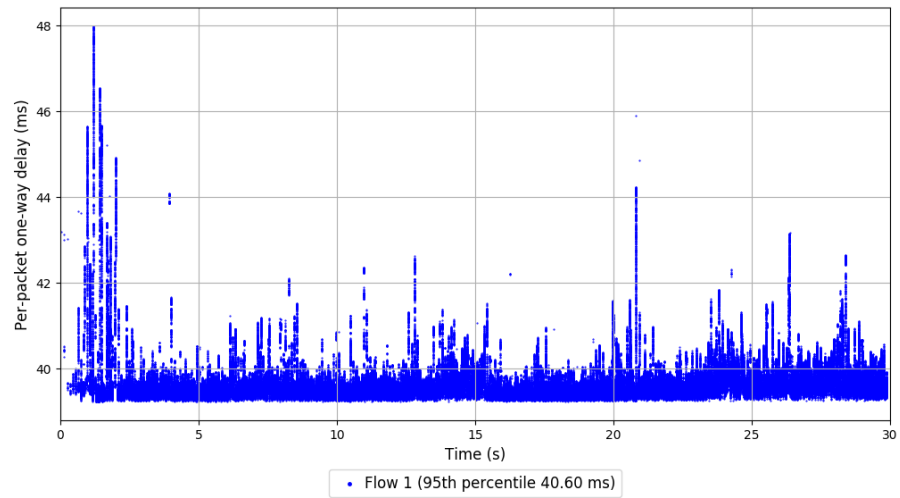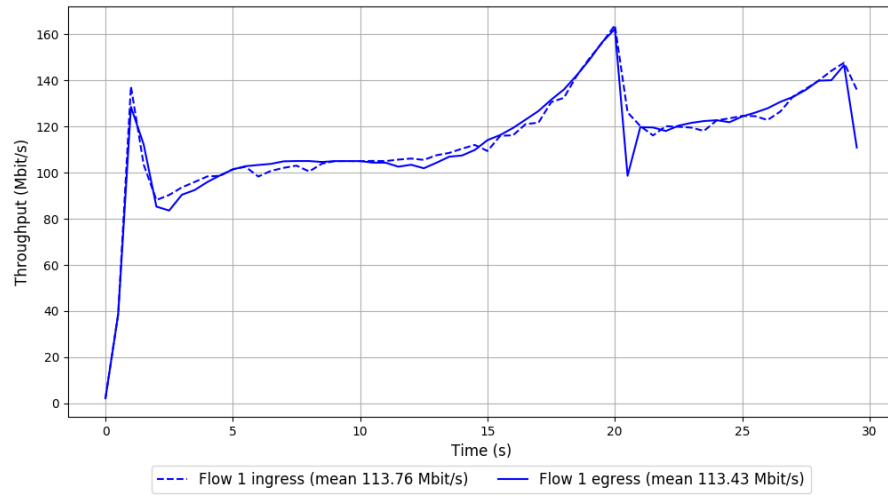
Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-01-25 22:11:32
End at: 2018-01-25 22:12:02

# Below is generated by plot.py at 2018-01-26 02:09:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 113.43 Mbit/s
95th percentile per-packet one-way delay: 40.602 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 113.43 Mbit/s
95th percentile per-packet one-way delay: 40.602 ms
Loss rate: 0.66%
```
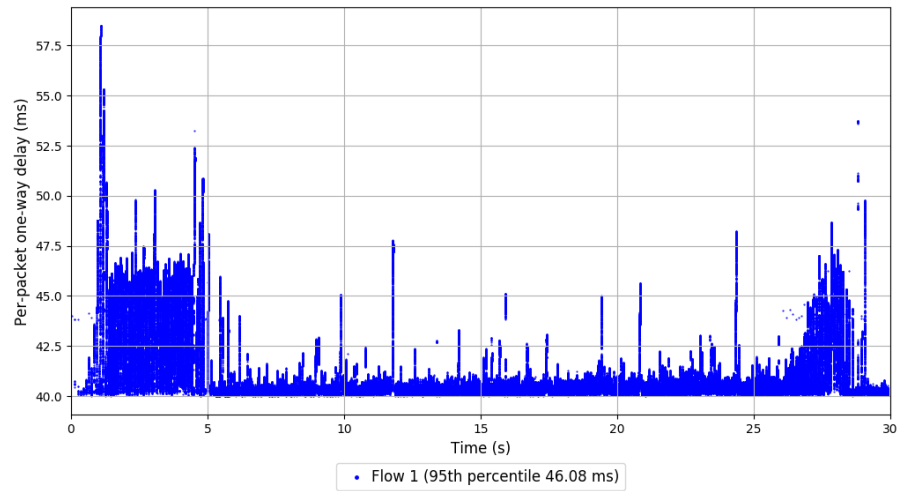
Run 2: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 113.76 Mbit/s)   Flow 1 egress (mean 113.43 Mbit/s)

Flow 1 (95th percentile 40.60 ms)

```
Run 3: Statistics of TCP Cubic

Start at: 2018-01-25 22:23:25
End at: 2018-01-25 22:23:55

# Below is generated by plot.py at 2018-01-26 02:09:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 159.90 Mbit/s
95th percentile per-packet one-way delay: 46.075 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 159.90 Mbit/s
95th percentile per-packet one-way delay: 46.075 ms
Loss rate: 0.21%
```
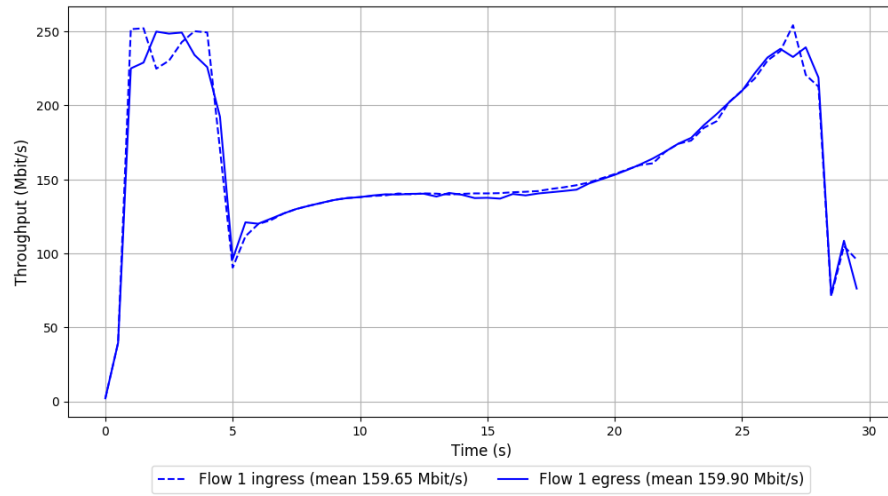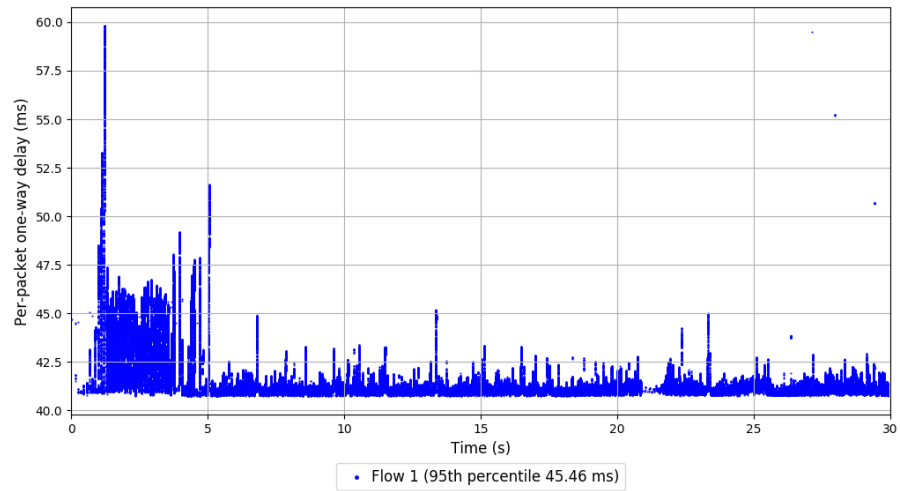
Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 159.65 Mbit/s)   Flow 1 egress (mean 159.90 Mbit/s)

Flow 1 (95th percentile 46.08 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2018-01-25 22:35:26
End at: 2018-01-25 22:35:56

# Below is generated by plot.py at 2018-01-26 02:09:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.61 Mbit/s
95th percentile per-packet one-way delay: 45.456 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 94.61 Mbit/s
95th percentile per-packet one-way delay: 45.456 ms
Loss rate: 0.61%
```
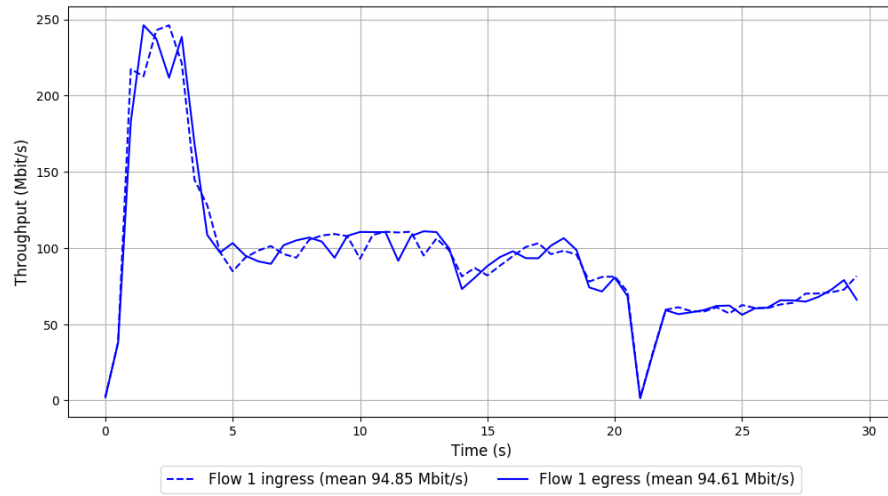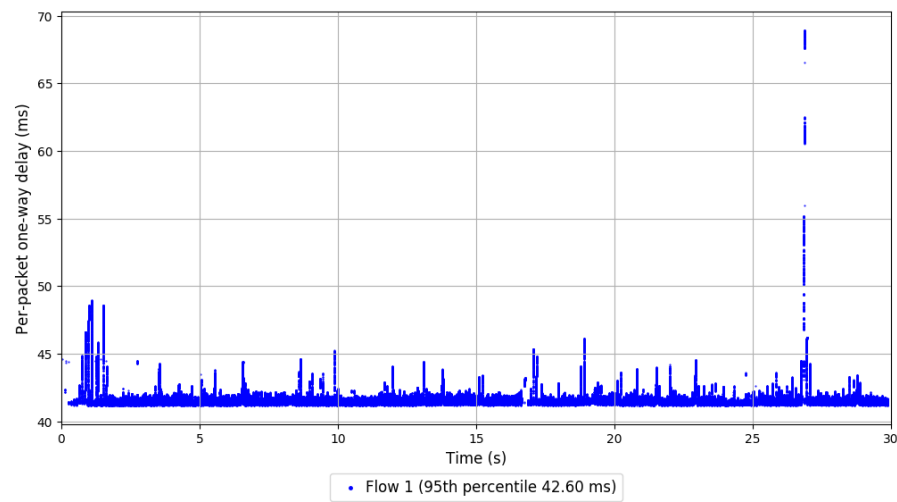
Run 4: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 94.85 Mbit/s) — Flow 1 egress (mean 94.61 Mbit/s)

Flow 1 (95th percentile 45.46 ms)

```
Run 5: Statistics of TCP Cubic

Start at: 2018-01-25 22:47:03
End at: 2018-01-25 22:47:33

# Below is generated by plot.py at 2018-01-26 02:09:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 123.84 Mbit/s
95th percentile per-packet one-way delay: 42.603 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 123.84 Mbit/s
95th percentile per-packet one-way delay: 42.603 ms
Loss rate: 0.70%
```
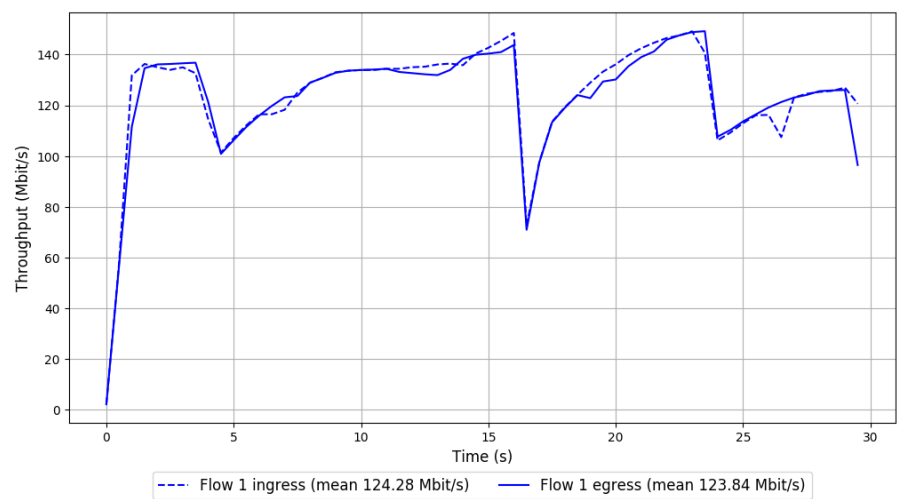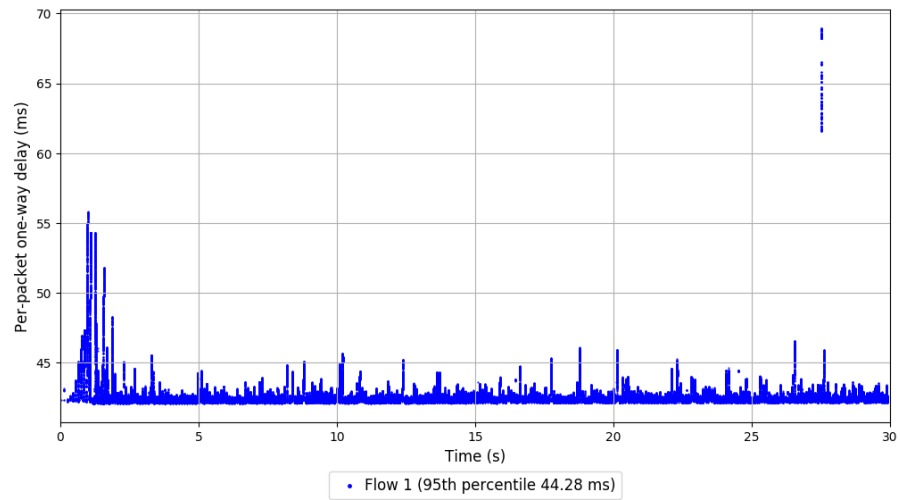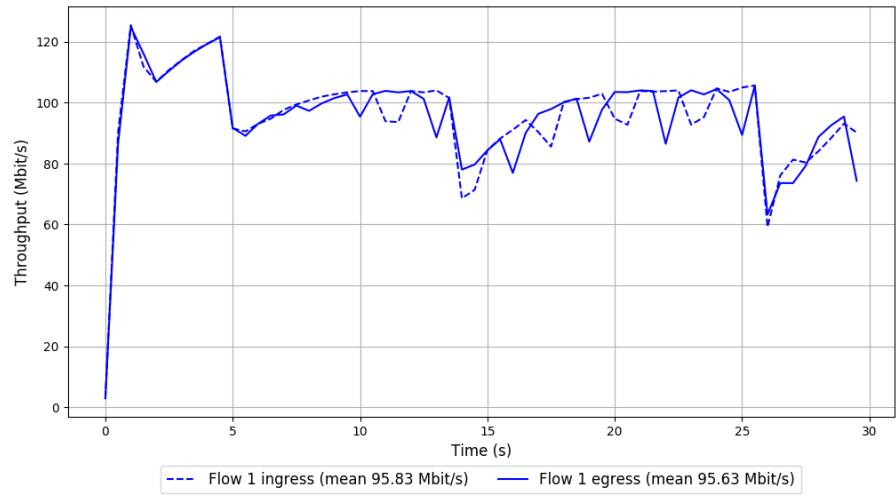
Run 5: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 124.28 Mbit/s)   Flow 1 egress (mean 123.84 Mbit/s)

Flow 1 (95th percentile 42.60 ms)

```
Run 6: Statistics of TCP Cubic

Start at: 2018-01-25 22:59:01
End at: 2018-01-25 22:59:31


# Below is generated by plot.py at 2018-01-26 02:09:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.63 Mbit/s
95th percentile per-packet one-way delay: 44.277 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 95.63 Mbit/s
95th percentile per-packet one-way delay: 44.277 ms
Loss rate: 0.55%
```
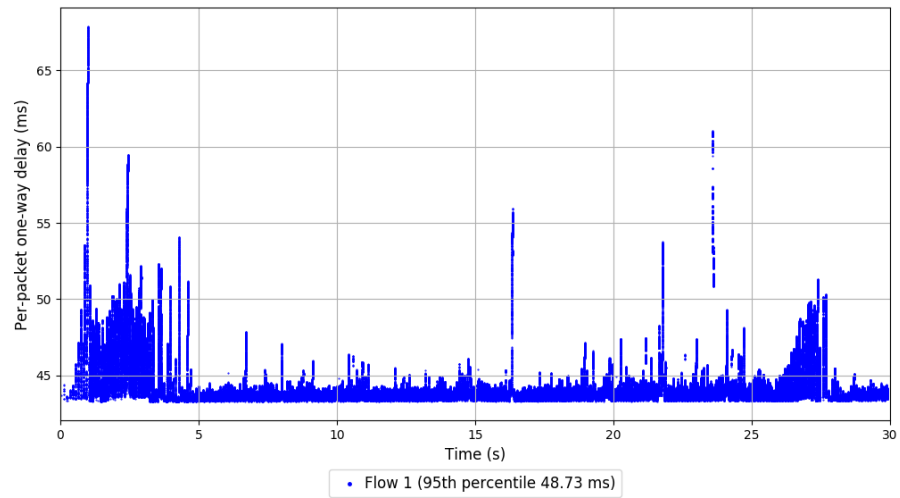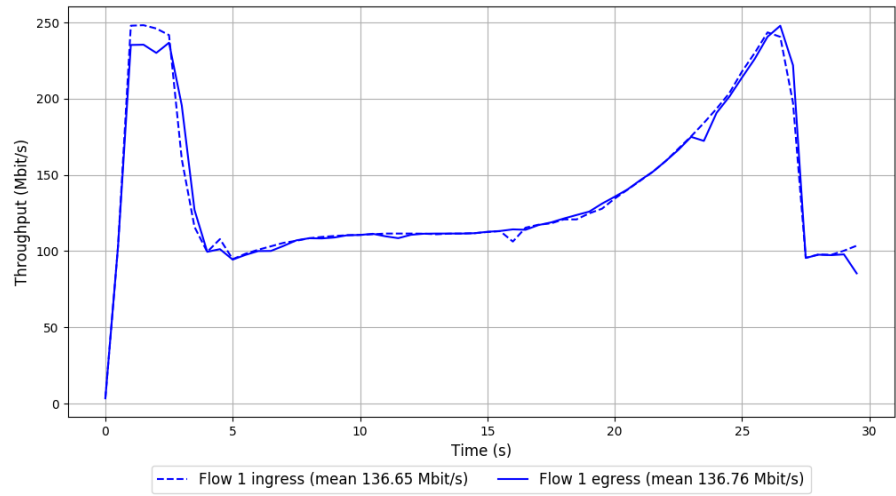
Run 6: Report of TCP Cubic — Data Link

```
Run 7: Statistics of TCP Cubic

Start at: 2018-01-25 23:11:13
End at: 2018-01-25 23:11:43

# Below is generated by plot.py at 2018-01-26 02:09:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 136.76 Mbit/s
95th percentile per-packet one-way delay: 48.732 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 136.76 Mbit/s
95th percentile per-packet one-way delay: 48.732 ms
Loss rate: 0.26%
```
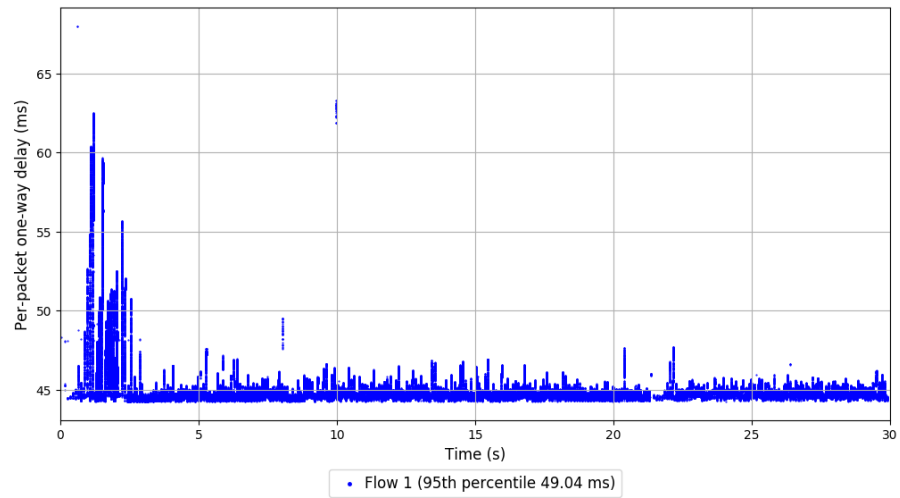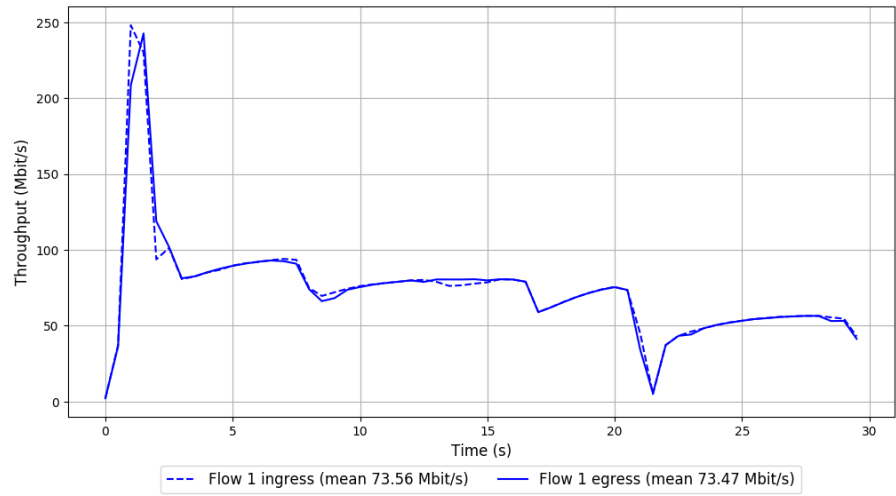
Run 7: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 136.65 Mbit/s) Flow 1 egress (mean 136.76 Mbit/s)

Flow 1 (95th percentile 48.73 ms)

```
Run 8: Statistics of TCP Cubic

Start at: 2018-01-25 23:23:06
End at: 2018-01-25 23:23:36

# Below is generated by plot.py at 2018-01-26 02:09:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 73.47 Mbit/s
95th percentile per-packet one-way delay: 49.043 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 73.47 Mbit/s
95th percentile per-packet one-way delay: 49.043 ms
Loss rate: 0.47%
```
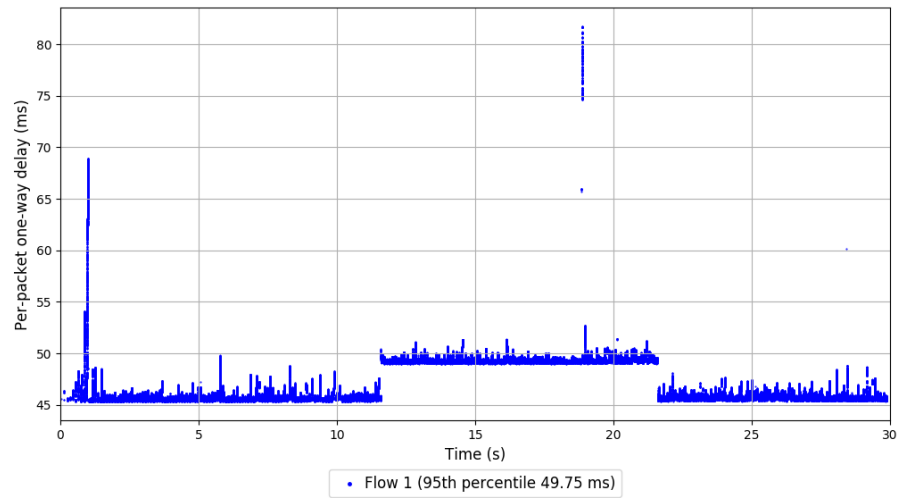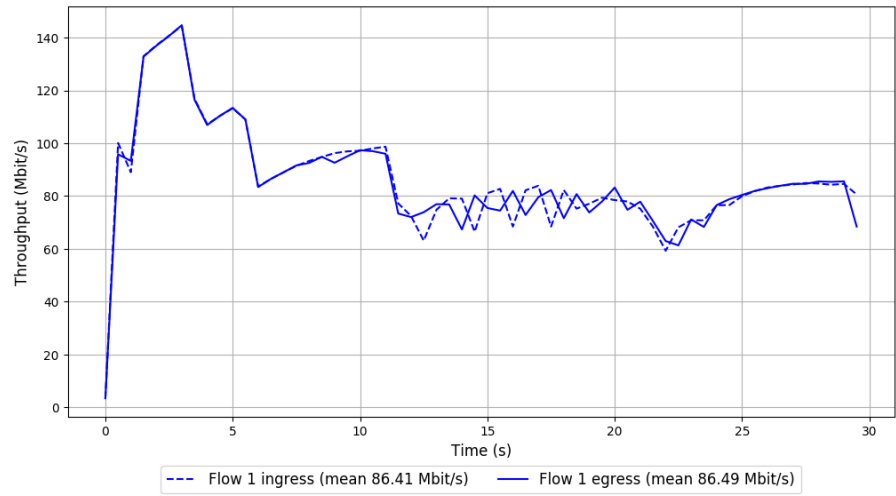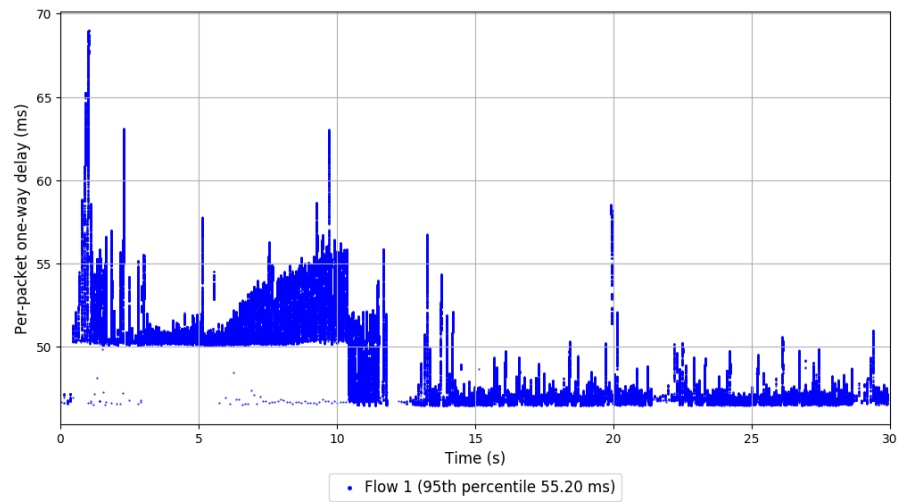
Run 8: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 73.56 Mbit/s) ----- Flow 1 egress (mean 73.47 Mbit/s) ——

Flow 1 (95th percentile 49.04 ms)

```
Run 9: Statistics of TCP Cubic

Start at: 2018-01-25 23:34:48
End at: 2018-01-25 23:35:18


# Below is generated by plot.py at 2018-01-26 02:09:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.49 Mbit/s
95th percentile per-packet one-way delay: 49.750 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 86.49 Mbit/s
95th percentile per-packet one-way delay: 49.750 ms
Loss rate: 0.34%
```
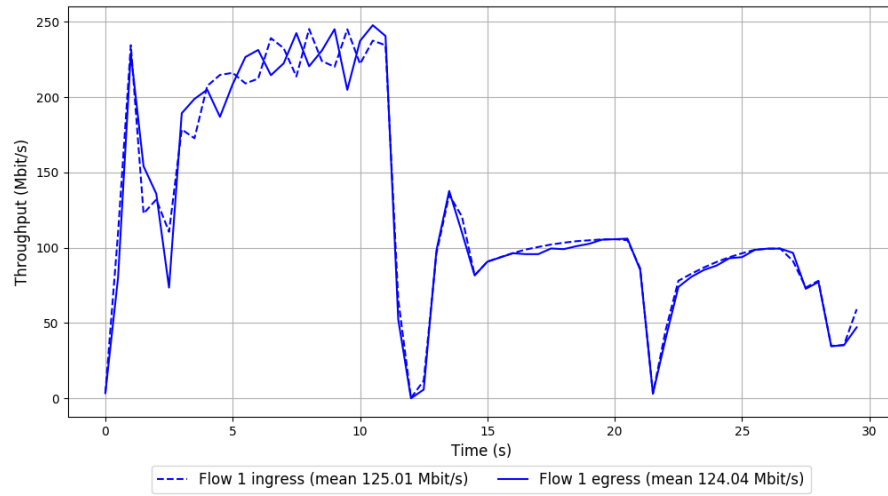
Run 9: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 86.41 Mbit/s)   Flow 1 egress (mean 86.49 Mbit/s)

Flow 1 (95th percentile 49.75 ms)

```
Run 10: Statistics of TCP Cubic

Start at: 2018-01-25 23:46:49
End at: 2018-01-25 23:47:19


# Below is generated by plot.py at 2018-01-26 02:10:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 124.04 Mbit/s
95th percentile per-packet one-way delay: 55.200 ms
Loss rate: 1.10%
-- Flow 1:
Average throughput: 124.04 Mbit/s
95th percentile per-packet one-way delay: 55.200 ms
Loss rate: 1.10%
```

Run 10: Report of TCP Cubic — Data Link

Run 1: Statistics of LEDBAT

Start at: 2018-01-25 22:09:18
End at: 2018-01-25 22:09:48
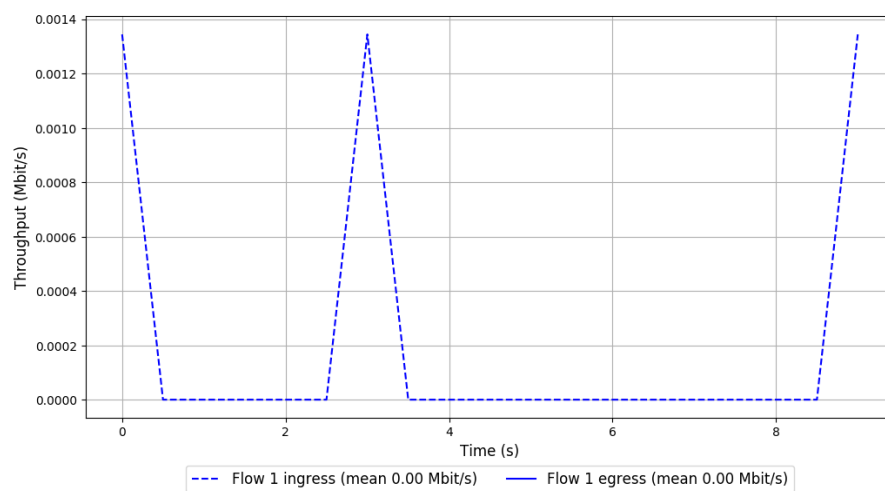
Run 1: Report of LEDBAT — Data Link

Figure is missing

```
Run 2: Statistics of LEDBAT

Start at: 2018-01-25 22:21:09
End at: 2018-01-25 22:21:39

# Below is generated by plot.py at 2018-01-26 02:10:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.02 Mbit/s
95th percentile per-packet one-way delay: 40.597 ms
Loss rate: 2.01%
-- Flow 1:
Average throughput: 6.02 Mbit/s
95th percentile per-packet one-way delay: 40.597 ms
Loss rate: 2.01%
```
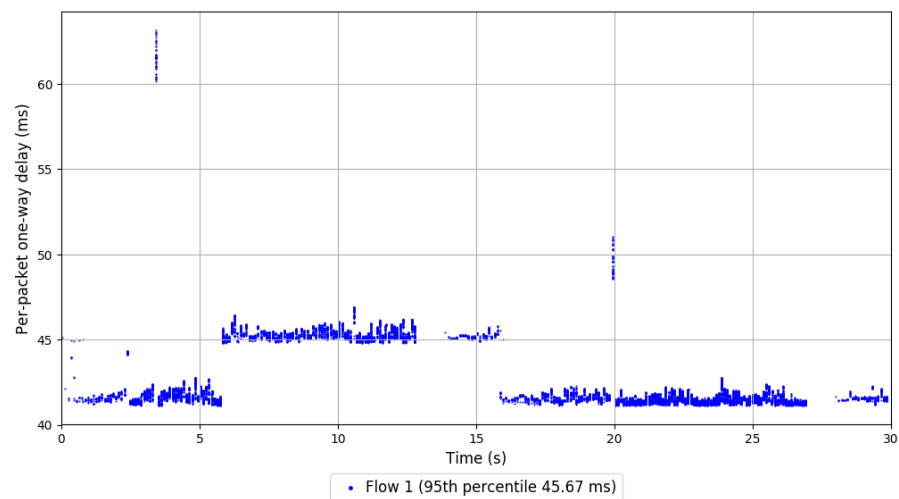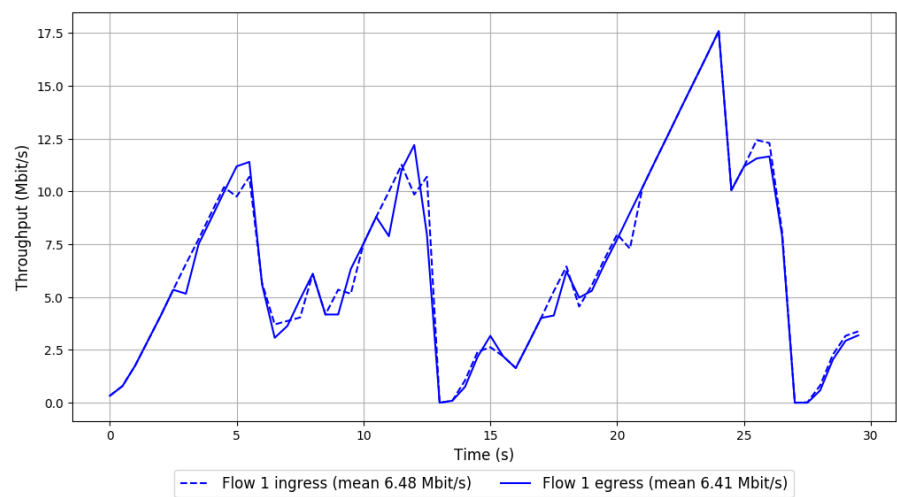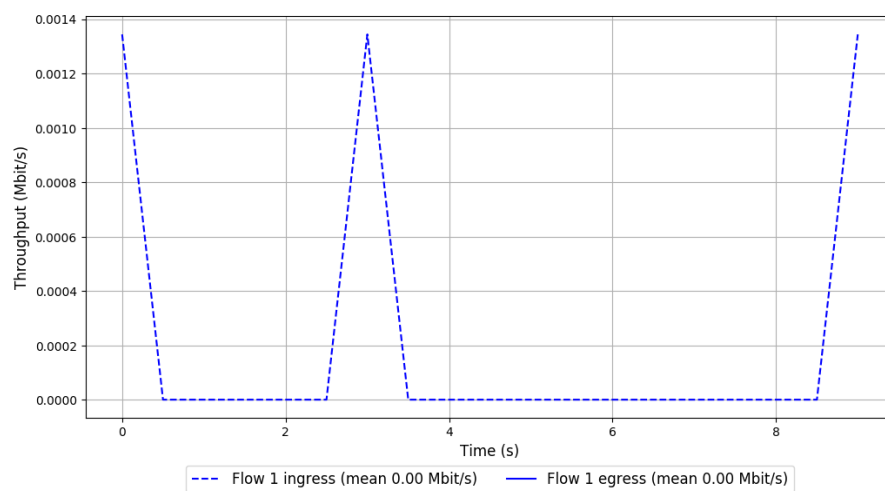
Run 2: Report of LEDBAT — Data Link

Flow 1 ingress (mean 6.12 Mbit/s)   Flow 1 egress (mean 6.02 Mbit/s)

• Flow 1 (95th percentile 40.60 ms)

Run 3: Statistics of LEDBAT

Start at: 2018-01-25 22:33:14
End at: 2018-01-25 22:33:44

Run 3: Report of LEDBAT — Data Link

Figure is missing

```
Run 4: Statistics of LEDBAT

Start at: 2018-01-25 22:44:54
End at: 2018-01-25 22:45:24

# Below is generated by plot.py at 2018-01-26 02:10:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.41 Mbit/s
95th percentile per-packet one-way delay: 45.672 ms
Loss rate: 1.41%
-- Flow 1:
Average throughput: 6.41 Mbit/s
95th percentile per-packet one-way delay: 45.672 ms
Loss rate: 1.41%
```
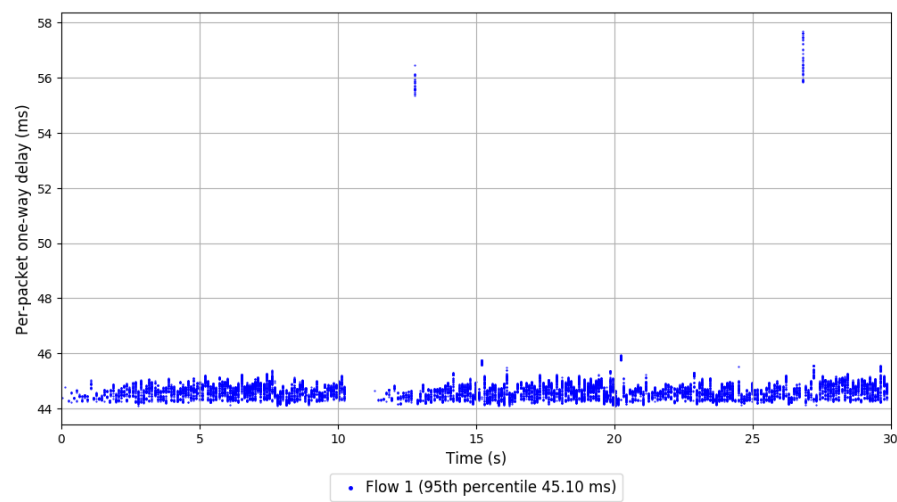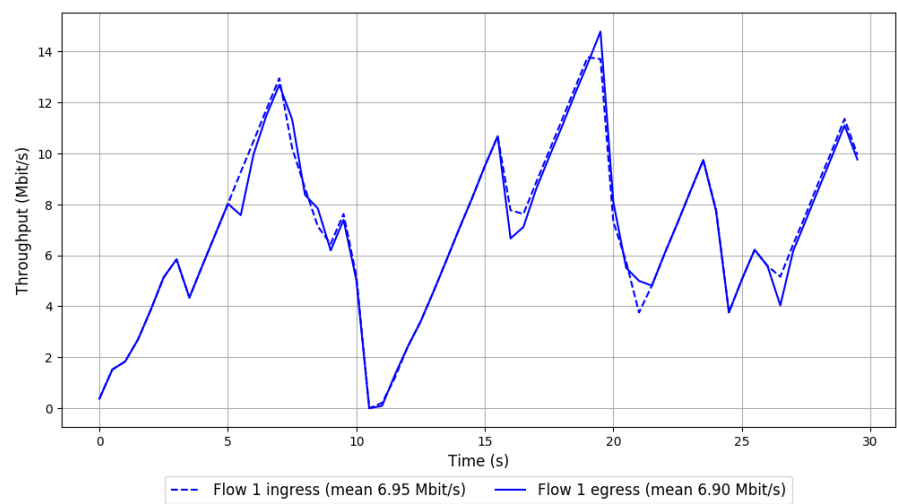
Run 4: Report of LEDBAT — Data Link

Flow 1 ingress (mean 6.48 Mbit/s) — — — Flow 1 egress (mean 6.41 Mbit/s) ———

• Flow 1 (95th percentile 45.67 ms)

Run 5: Statistics of LEDBAT

Start at: 2018-01-25 22:56:49
End at: 2018-01-25 22:57:19

Run 5: Report of LEDBAT — Data Link

Figure is missing

Run 6: Statistics of LEDBAT

Start at: 2018-01-25 23:08:59
End at: 2018-01-25 23:09:29

Run 6: Report of LEDBAT — Data Link

```
Run 7: Statistics of LEDBAT

Start at: 2018-01-25 23:20:50
End at: 2018-01-25 23:21:20

# Below is generated by plot.py at 2018-01-26 02:10:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 6.90 Mbit/s
95th percentile per-packet one-way delay: 45.100 ms
Loss rate: 1.06%
-- Flow 1:
Average throughput: 6.90 Mbit/s
95th percentile per-packet one-way delay: 45.100 ms
Loss rate: 1.06%
```
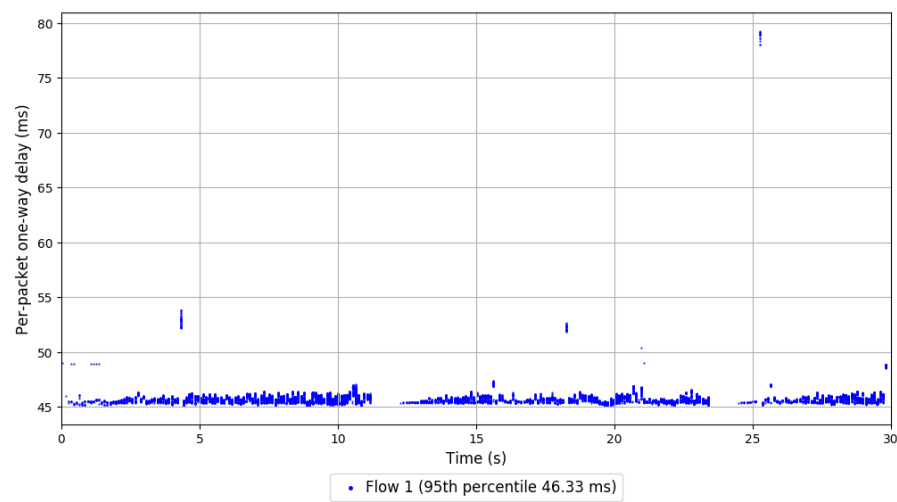
Run 7: Report of LEDBAT — Data Link

Flow 1 ingress (mean 6.95 Mbit/s) --- Flow 1 egress (mean 6.90 Mbit/s)

• Flow 1 (95th percentile 45.10 ms)

```
Run 8: Statistics of LEDBAT

Start at: 2018-01-25 23:32:38
End at: 2018-01-25 23:33:08

# Below is generated by plot.py at 2018-01-26 02:10:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.27 Mbit/s
95th percentile per-packet one-way delay: 46.334 ms
Loss rate: 1.90%
-- Flow 1:
Average throughput: 5.27 Mbit/s
95th percentile per-packet one-way delay: 46.334 ms
Loss rate: 1.90%
```
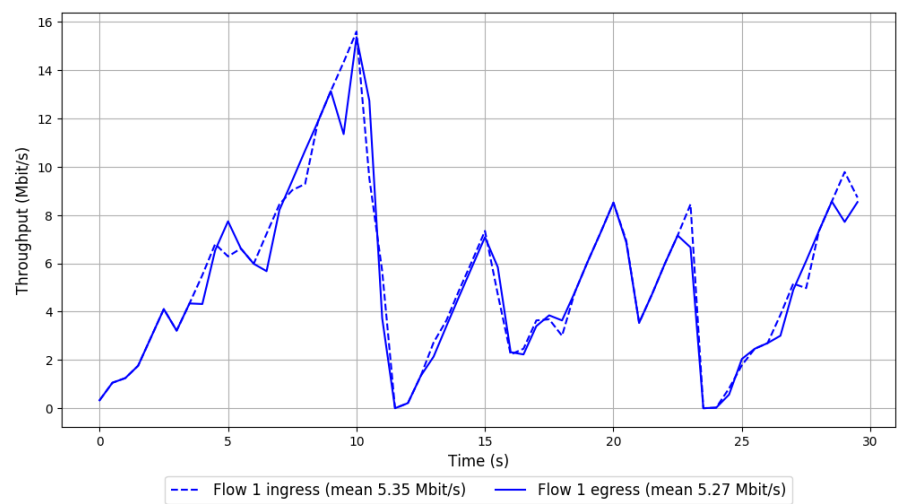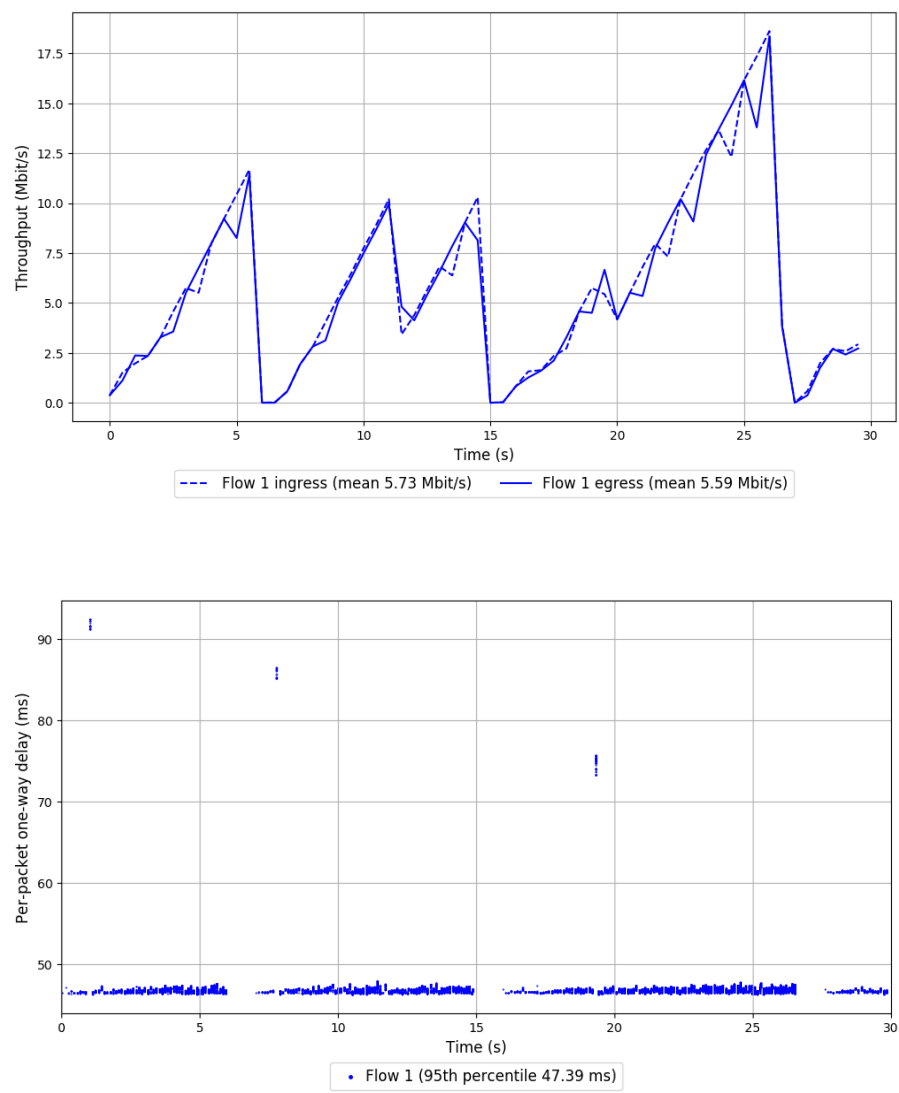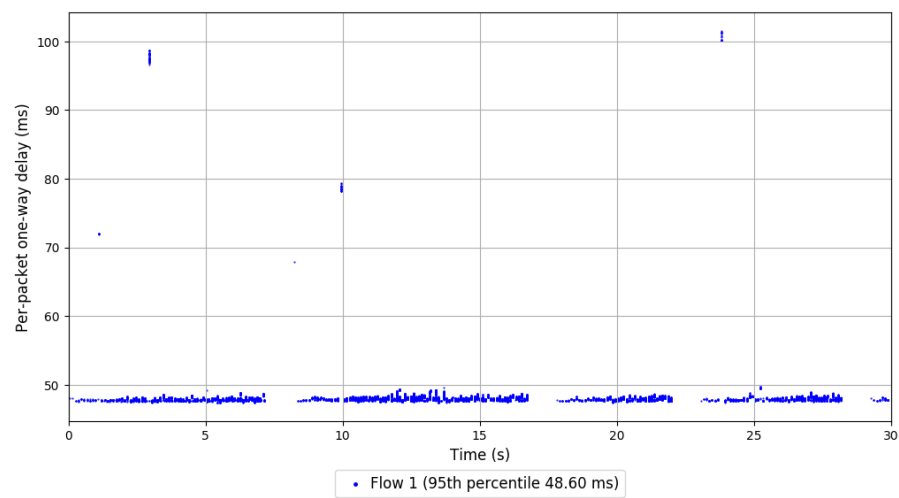
Run 8: Report of LEDBAT — Data Link

Flow 1 ingress (mean 5.35 Mbit/s) — — — Flow 1 egress (mean 5.27 Mbit/s)

• Flow 1 (95th percentile 46.33 ms)

```
Run 9: Statistics of LEDBAT

Start at: 2018-01-25 23:44:36
End at: 2018-01-25 23:45:06

# Below is generated by plot.py at 2018-01-26 02:10:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.59 Mbit/s
95th percentile per-packet one-way delay: 47.393 ms
Loss rate: 2.73%
-- Flow 1:
Average throughput: 5.59 Mbit/s
95th percentile per-packet one-way delay: 47.393 ms
Loss rate: 2.73%
```
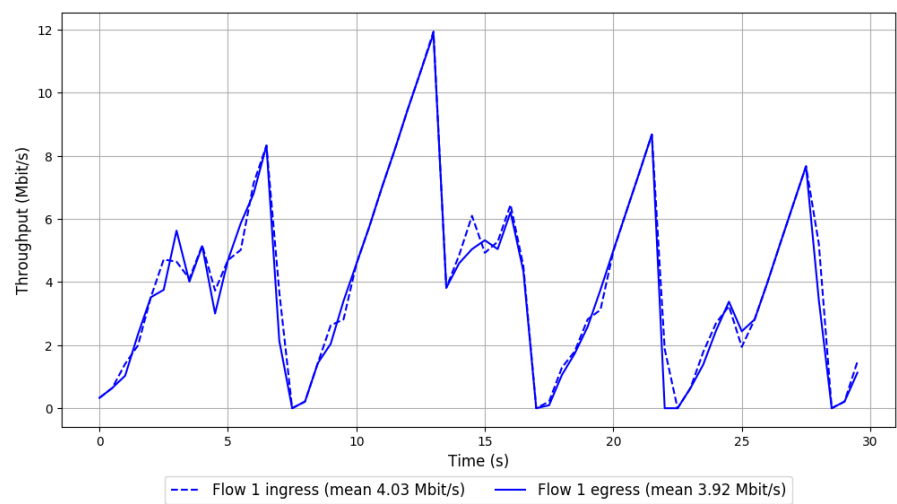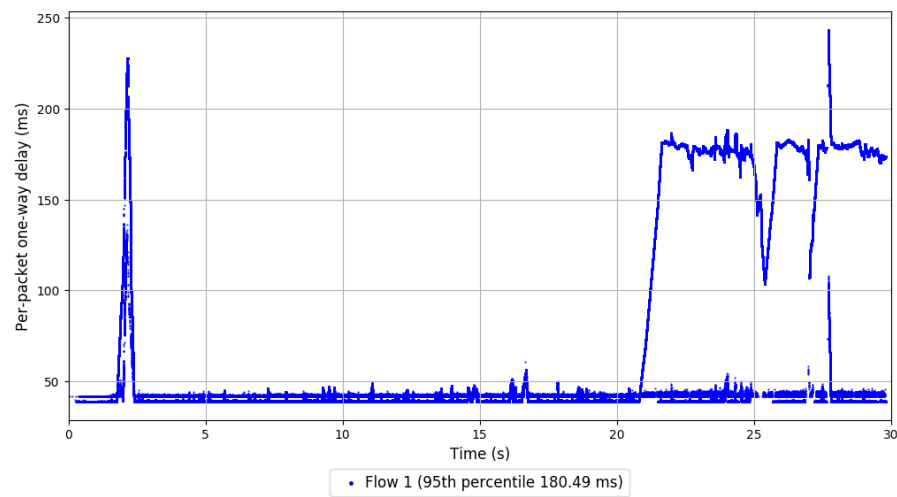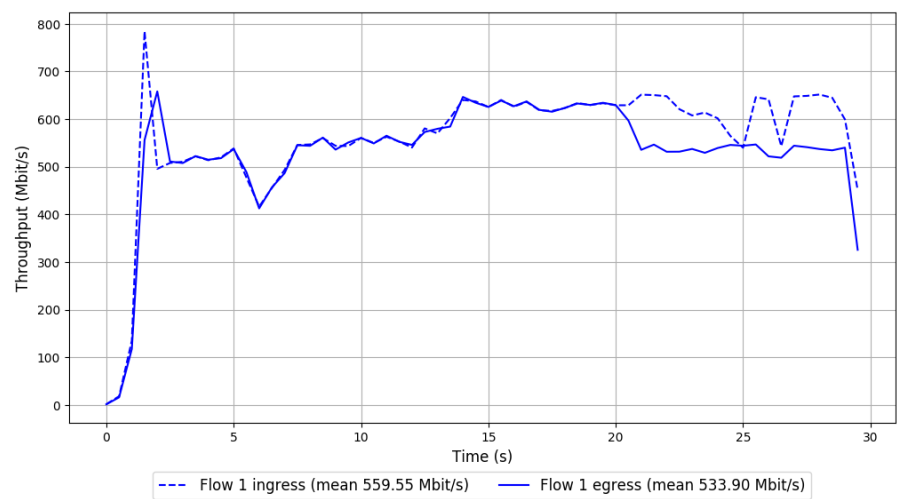
Run 9: Report of LEDBAT — Data Link

```
Run 10: Statistics of LEDBAT

Start at: 2018-01-25 23:56:42
End at: 2018-01-25 23:57:12

# Below is generated by plot.py at 2018-01-26 02:10:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.92 Mbit/s
95th percentile per-packet one-way delay: 48.600 ms
Loss rate: 3.11%
-- Flow 1:
Average throughput: 3.92 Mbit/s
95th percentile per-packet one-way delay: 48.600 ms
Loss rate: 3.11%
```
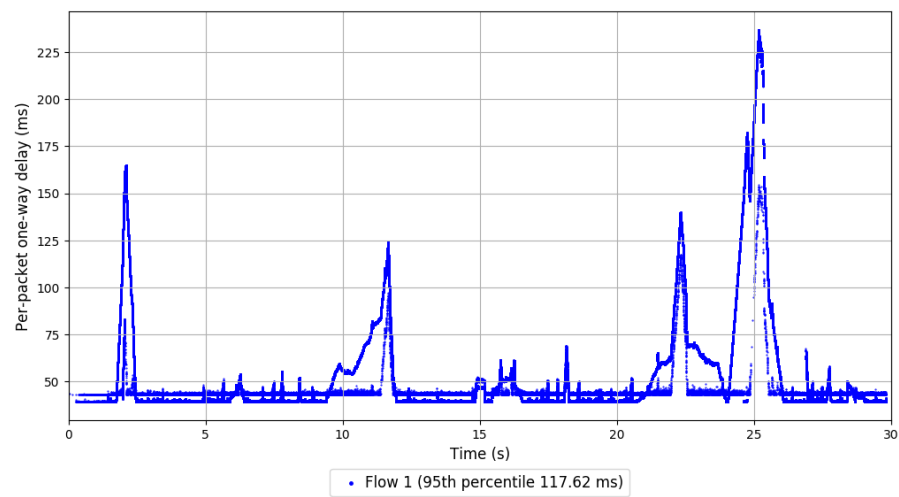
Run 10: Report of LEDBAT — Data Link

Flow 1 ingress (mean 4.03 Mbit/s)   —— Flow 1 egress (mean 3.92 Mbit/s)

• Flow 1 (95th percentile 48.60 ms)

```
Run 1: Statistics of PCC

Start at: 2018-01-25 22:00:55
End at: 2018-01-25 22:01:25

# Below is generated by plot.py at 2018-01-26 02:18:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 533.90 Mbit/s
95th percentile per-packet one-way delay: 180.489 ms
Loss rate: 4.93%
-- Flow 1:
Average throughput: 533.90 Mbit/s
95th percentile per-packet one-way delay: 180.489 ms
Loss rate: 4.93%
```
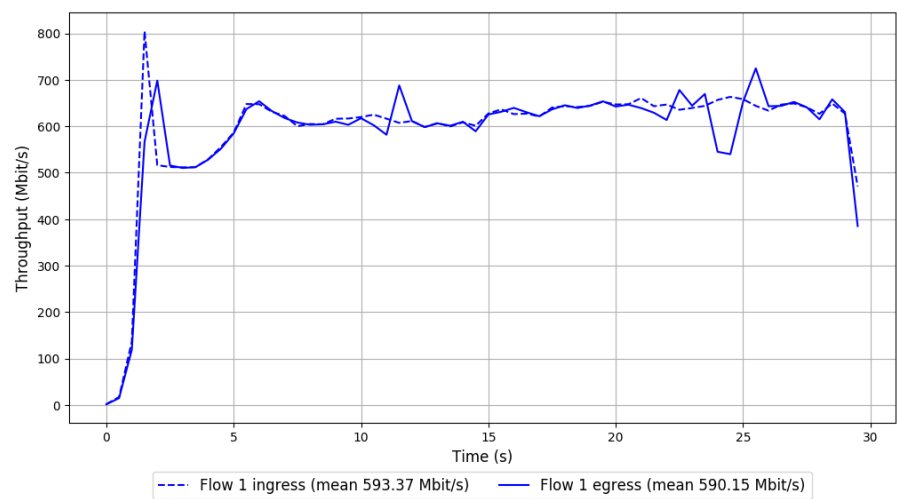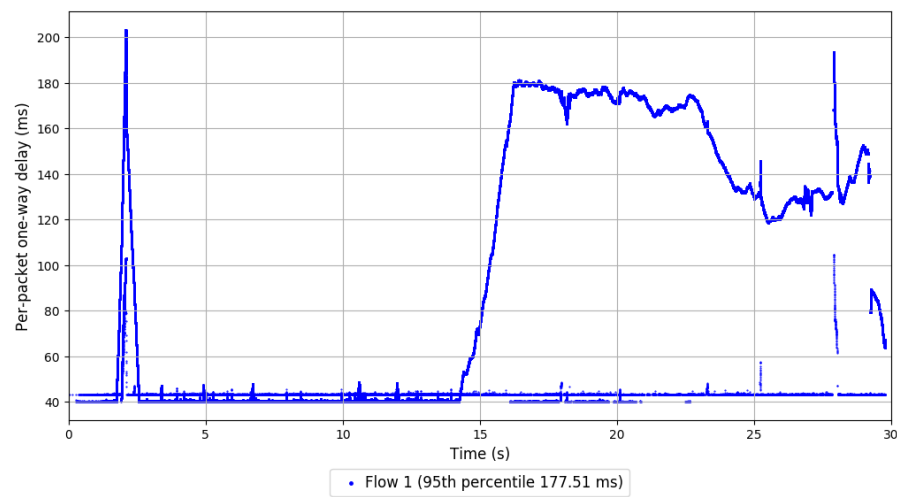
Run 1: Report of PCC — Data Link

Flow 1 ingress (mean 559.55 Mbit/s) —— Flow 1 egress (mean 533.90 Mbit/s)

· Flow 1 (95th percentile 180.49 ms)

```
Run 2: Statistics of PCC

Start at: 2018-01-25 22:12:52
End at: 2018-01-25 22:13:22

# Below is generated by plot.py at 2018-01-26 02:19:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 590.15 Mbit/s
95th percentile per-packet one-way delay: 117.616 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 590.15 Mbit/s
95th percentile per-packet one-way delay: 117.616 ms
Loss rate: 0.90%
```
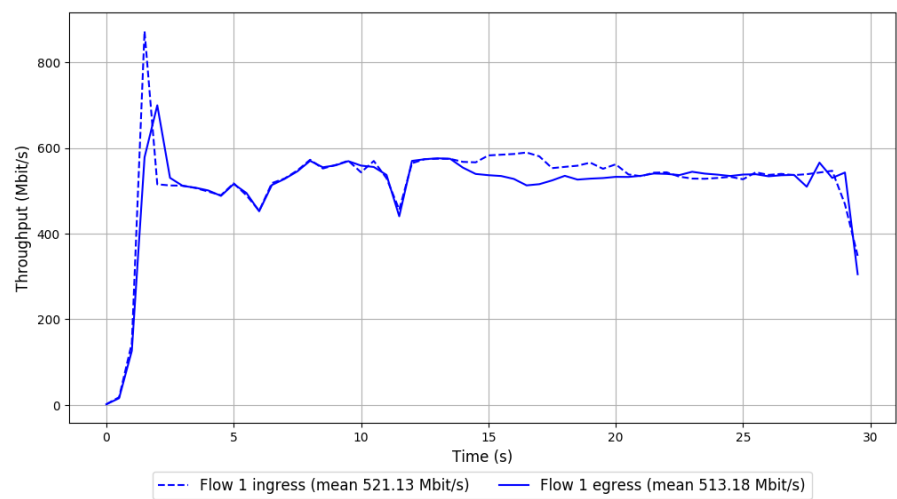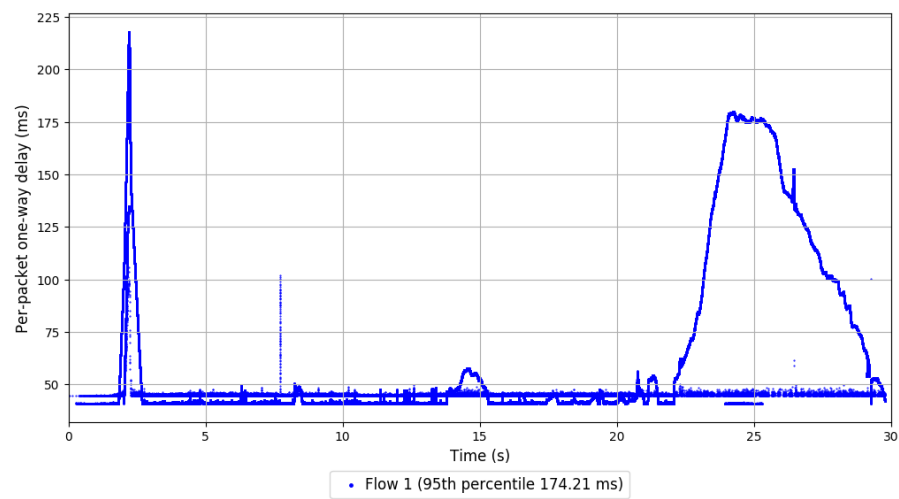
Run 2: Report of PCC — Data Link

```
Run 3: Statistics of PCC

Start at: 2018-01-25 22:24:48
End at: 2018-01-25 22:25:18

# Below is generated by plot.py at 2018-01-26 02:19:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 513.18 Mbit/s
95th percentile per-packet one-way delay: 177.506 ms
Loss rate: 1.88%
-- Flow 1:
Average throughput: 513.18 Mbit/s
95th percentile per-packet one-way delay: 177.506 ms
Loss rate: 1.88%
```
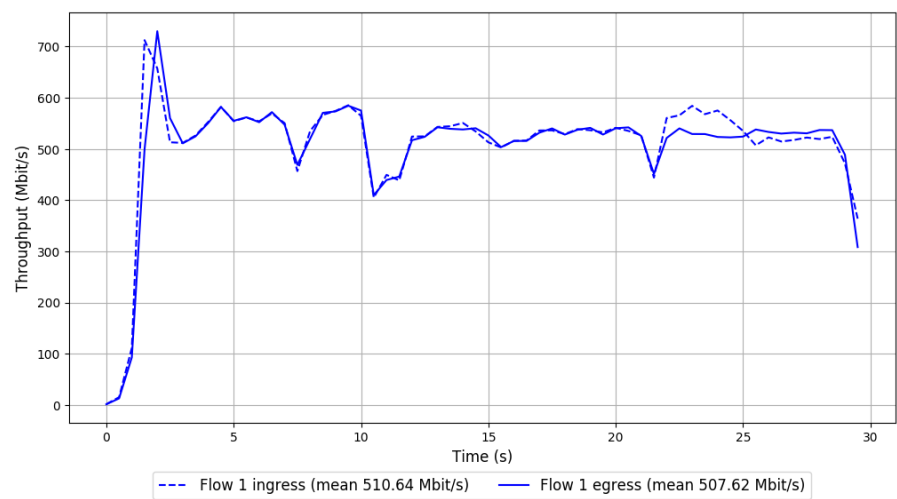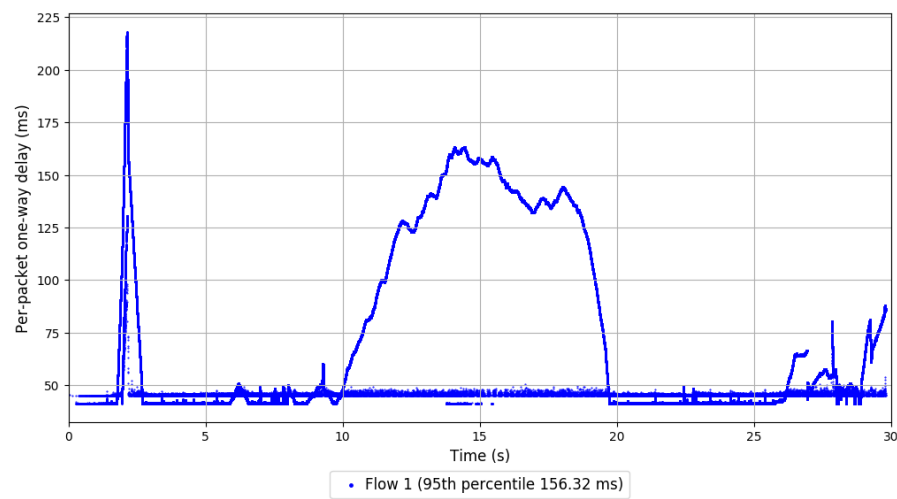
Run 3: Report of PCC — Data Link

Flow 1 ingress (mean 521.13 Mbit/s)   Flow 1 egress (mean 513.18 Mbit/s)

Flow 1 (95th percentile 177.51 ms)

```
Run 4: Statistics of PCC

Start at: 2018-01-25 22:36:45
End at: 2018-01-25 22:37:15

# Below is generated by plot.py at 2018-01-26 02:19:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 507.62 Mbit/s
95th percentile per-packet one-way delay: 174.208 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 507.62 Mbit/s
95th percentile per-packet one-way delay: 174.208 ms
Loss rate: 0.95%
```
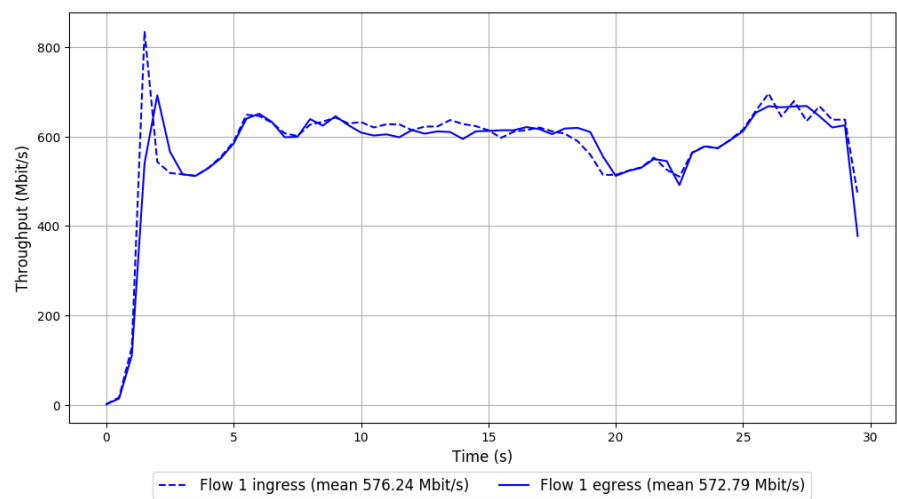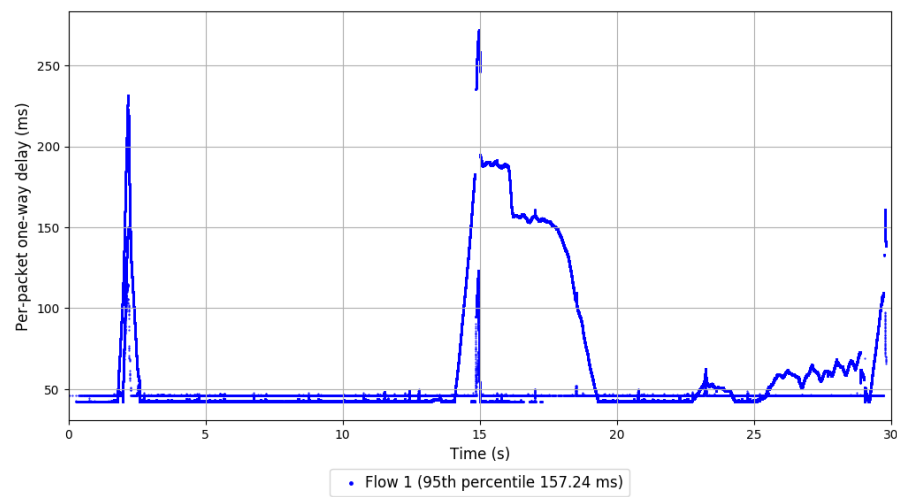
Run 4: Report of PCC — Data Link

```
Run 5: Statistics of PCC

Start at: 2018-01-25 22:48:24
End at: 2018-01-25 22:48:55


# Below is generated by plot.py at 2018-01-26 02:19:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 572.79 Mbit/s
95th percentile per-packet one-way delay: 156.317 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 572.79 Mbit/s
95th percentile per-packet one-way delay: 156.317 ms
Loss rate: 0.96%
```
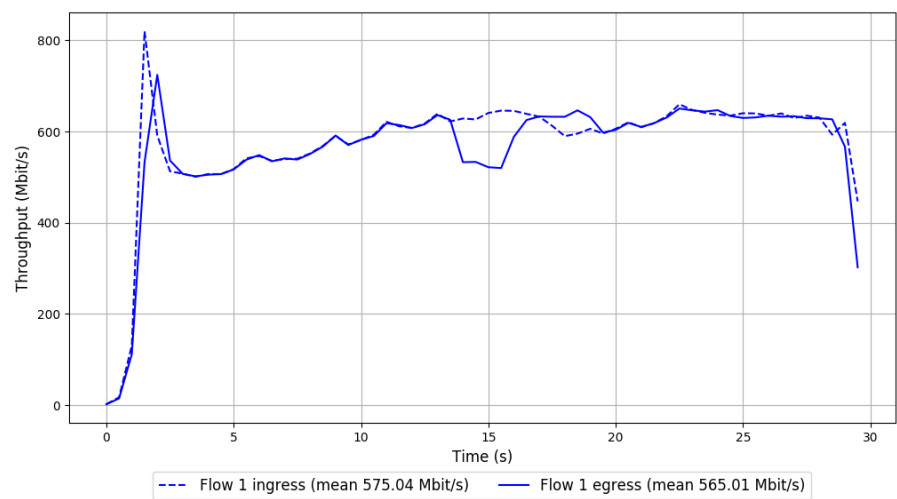
Run 5: Report of PCC — Data Link

Flow 1 ingress (mean 576.24 Mbit/s)   Flow 1 egress (mean 572.79 Mbit/s)

Flow 1 (95th percentile 156.32 ms)

```
Run 6: Statistics of PCC

Start at: 2018-01-25 23:00:21
End at: 2018-01-25 23:00:51


# Below is generated by plot.py at 2018-01-26 02:19:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 565.01 Mbit/s
95th percentile per-packet one-way delay: 157.240 ms
Loss rate: 2.10%
-- Flow 1:
Average throughput: 565.01 Mbit/s
95th percentile per-packet one-way delay: 157.240 ms
Loss rate: 2.10%
```
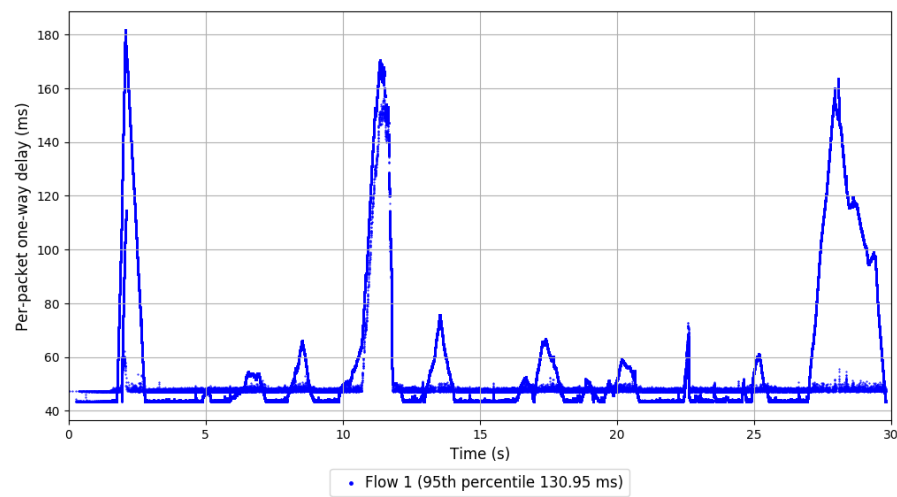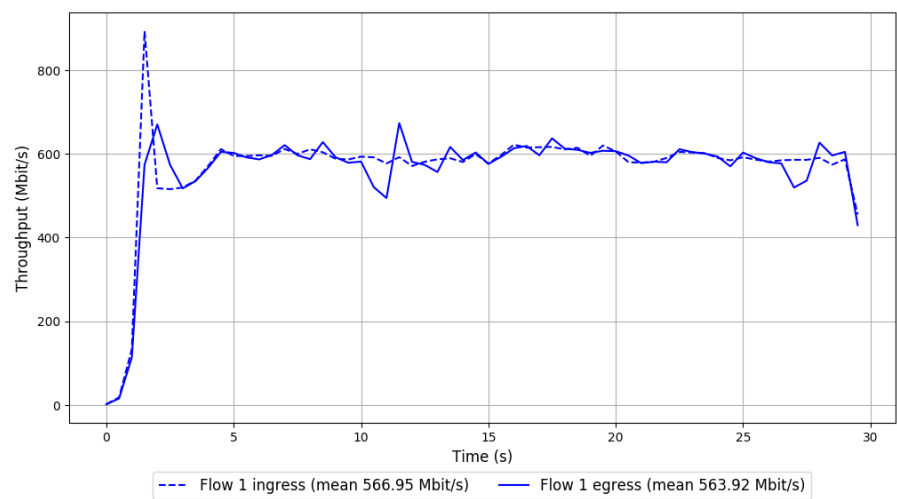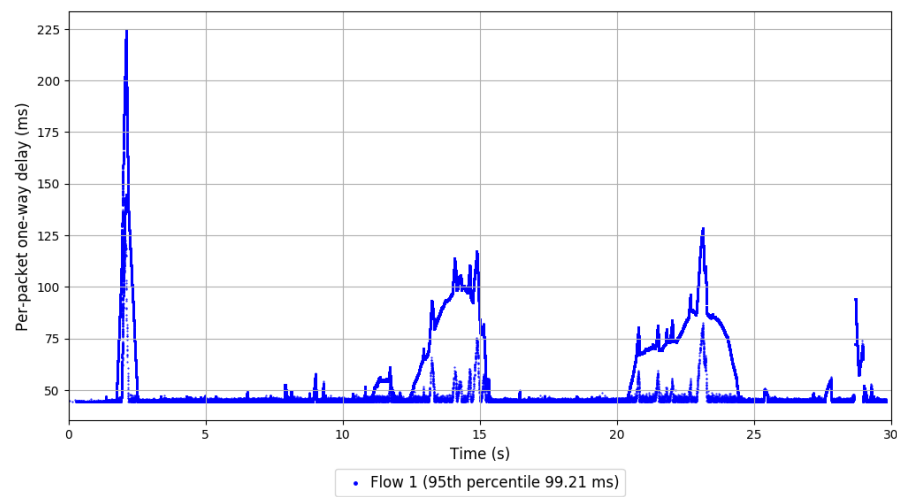
Run 6: Report of PCC — Data Link

Flow 1 ingress (mean 575.04 Mbit/s)   Flow 1 egress (mean 565.01 Mbit/s)

Flow 1 (95th percentile 157.24 ms)

```
Run 7: Statistics of PCC

Start at: 2018-01-25 23:12:35
End at: 2018-01-25 23:13:05

# Below is generated by plot.py at 2018-01-26 02:19:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 563.92 Mbit/s
95th percentile per-packet one-way delay: 130.950 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 563.92 Mbit/s
95th percentile per-packet one-way delay: 130.950 ms
Loss rate: 0.88%
```
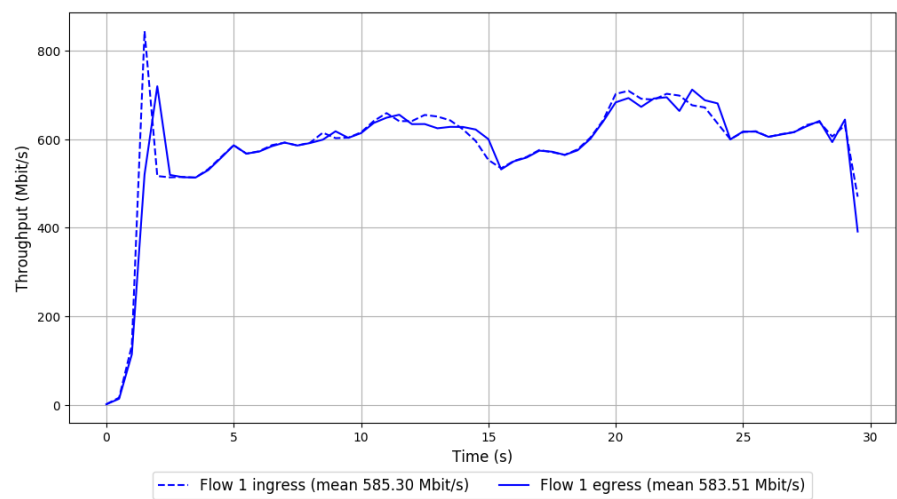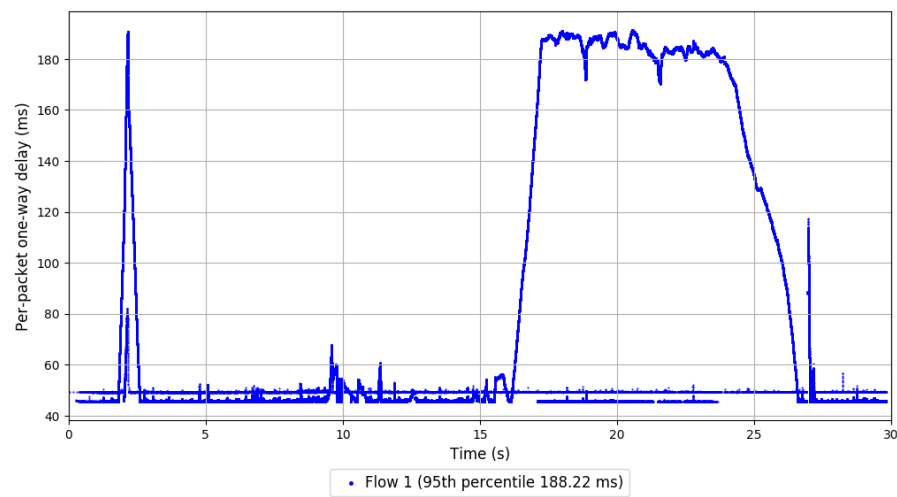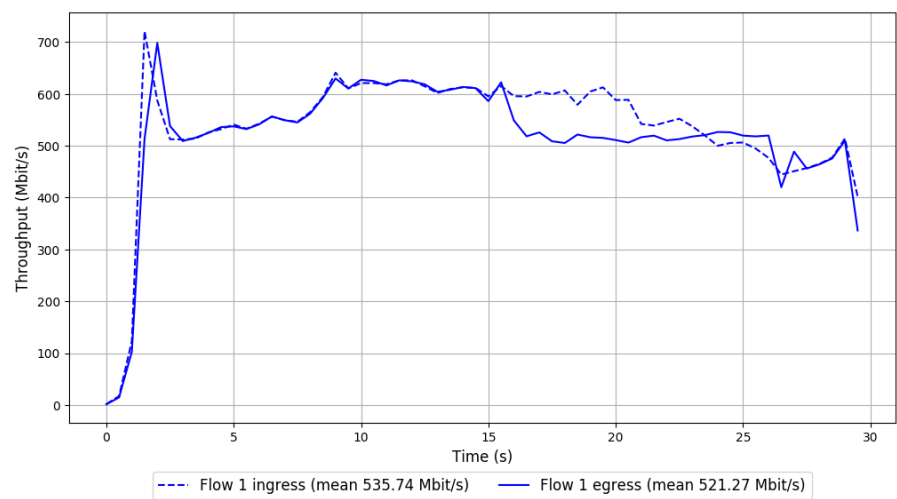
Run 7: Report of PCC — Data Link

Flow 1 ingress (mean 566.95 Mbit/s)   Flow 1 egress (mean 563.92 Mbit/s)

• Flow 1 (95th percentile 130.95 ms)

```
Run 8: Statistics of PCC

Start at: 2018-01-25 23:24:25
End at: 2018-01-25 23:24:55

# Below is generated by plot.py at 2018-01-26 02:20:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 583.51 Mbit/s
95th percentile per-packet one-way delay: 99.212 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 583.51 Mbit/s
95th percentile per-packet one-way delay: 99.212 ms
Loss rate: 0.65%
```
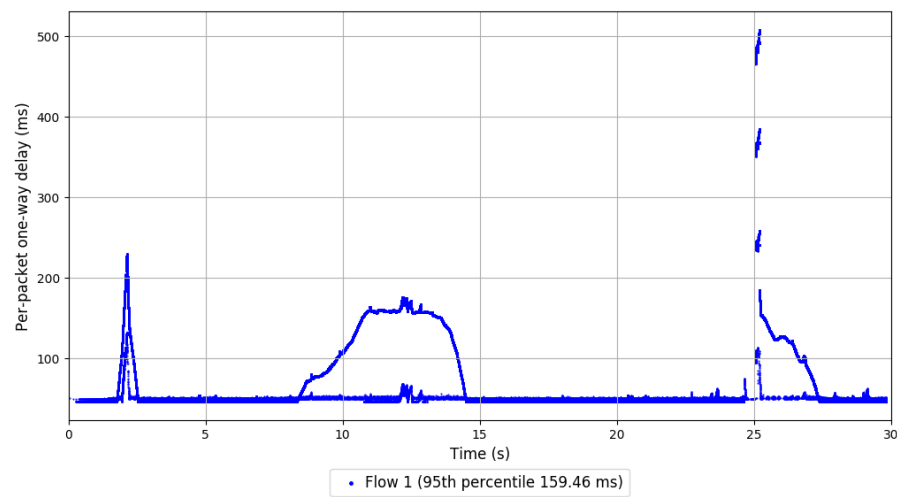
Run 8: Report of PCC — Data Link

```
Run 9: Statistics of PCC

Start at: 2018-01-25 23:36:07
End at: 2018-01-25 23:36:37

# Below is generated by plot.py at 2018-01-26 02:26:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 521.27 Mbit/s
95th percentile per-packet one-way delay: 188.217 ms
Loss rate: 3.04%
-- Flow 1:
Average throughput: 521.27 Mbit/s
95th percentile per-packet one-way delay: 188.217 ms
Loss rate: 3.04%
```
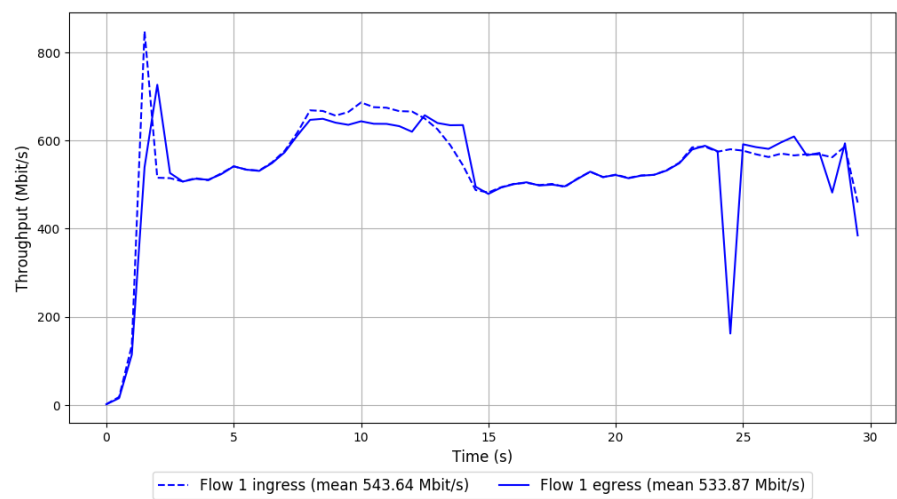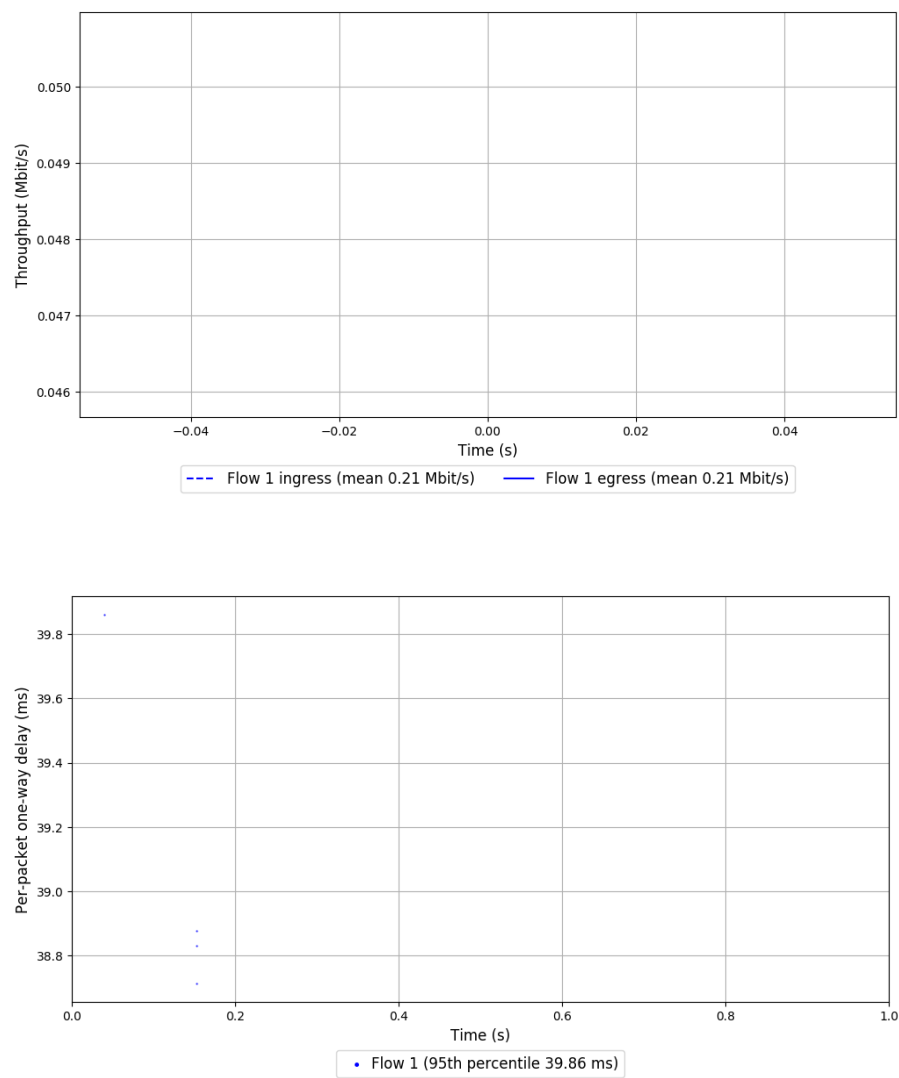
Run 9: Report of PCC — Data Link

Flow 1 ingress (mean 535.74 Mbit/s)   Flow 1 egress (mean 521.27 Mbit/s)

Flow 1 (95th percentile 188.22 ms)

81

```
Run 10: Statistics of PCC

Start at: 2018-01-25 23:48:11
End at: 2018-01-25 23:48:41


# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 533.87 Mbit/s
95th percentile per-packet one-way delay: 159.458 ms
Loss rate: 2.15%
-- Flow 1:
Average throughput: 533.87 Mbit/s
95th percentile per-packet one-way delay: 159.458 ms
Loss rate: 2.15%
```

Run 10: Report of PCC — Data Link

Run 1: Statistics of QUIC Cubic

Start at: 2018-01-25 22:03:20
End at: 2018-01-25 22:03:50

Run 1: Report of QUIC Cubic — Data Link

Run 2: Statistics of QUIC Cubic

Start at: 2018-01-25 22:15:19
End at: 2018-01-25 22:15:49

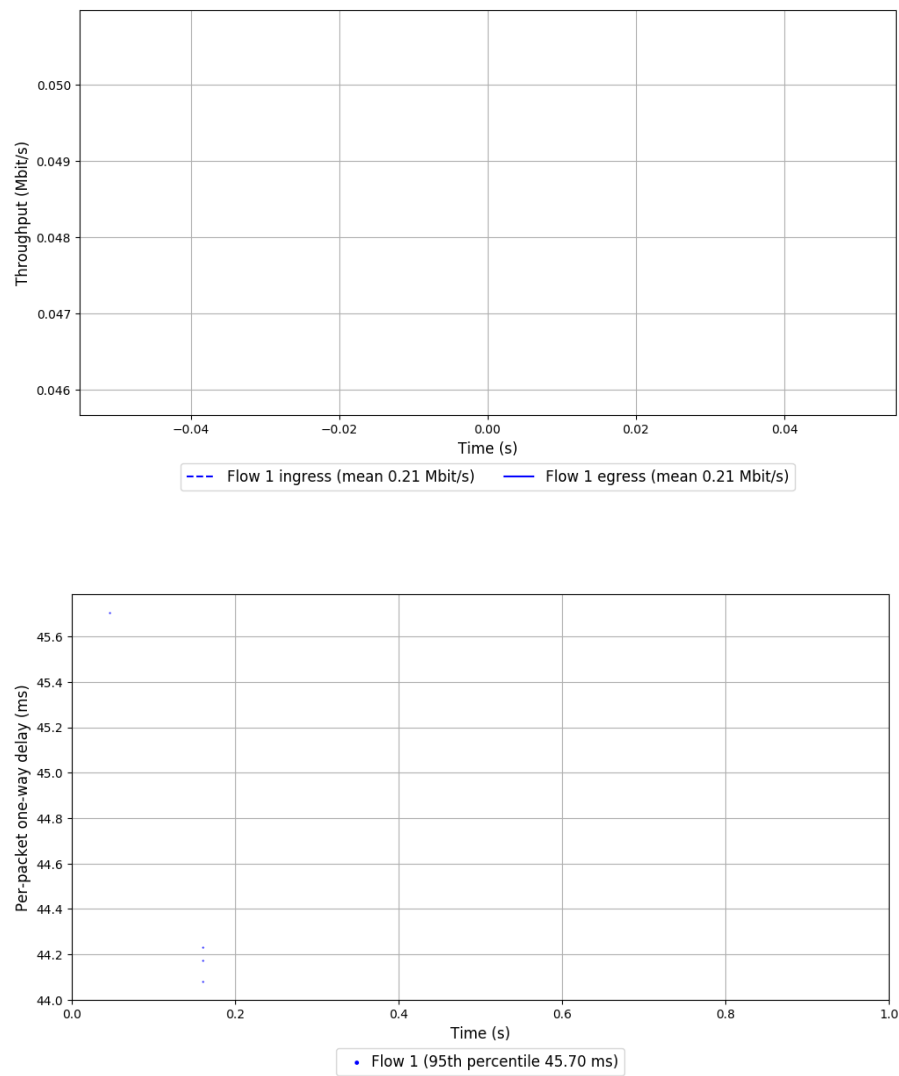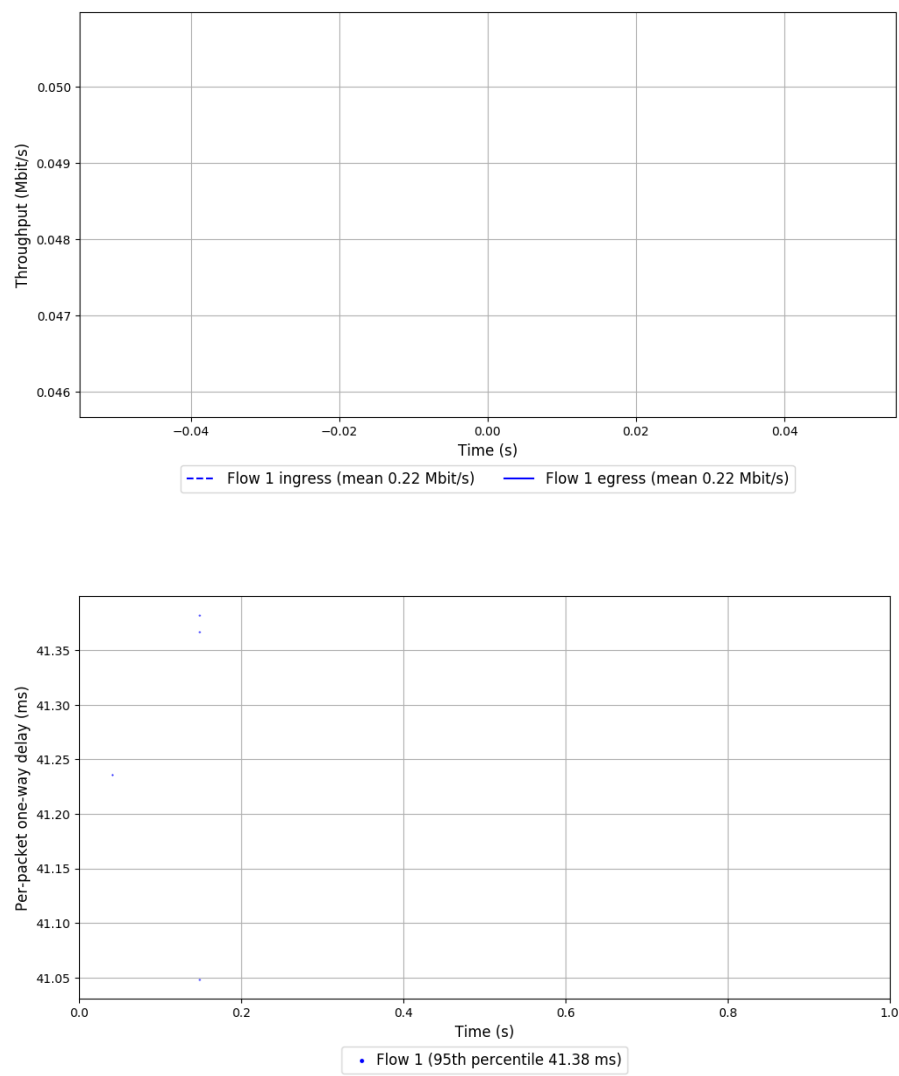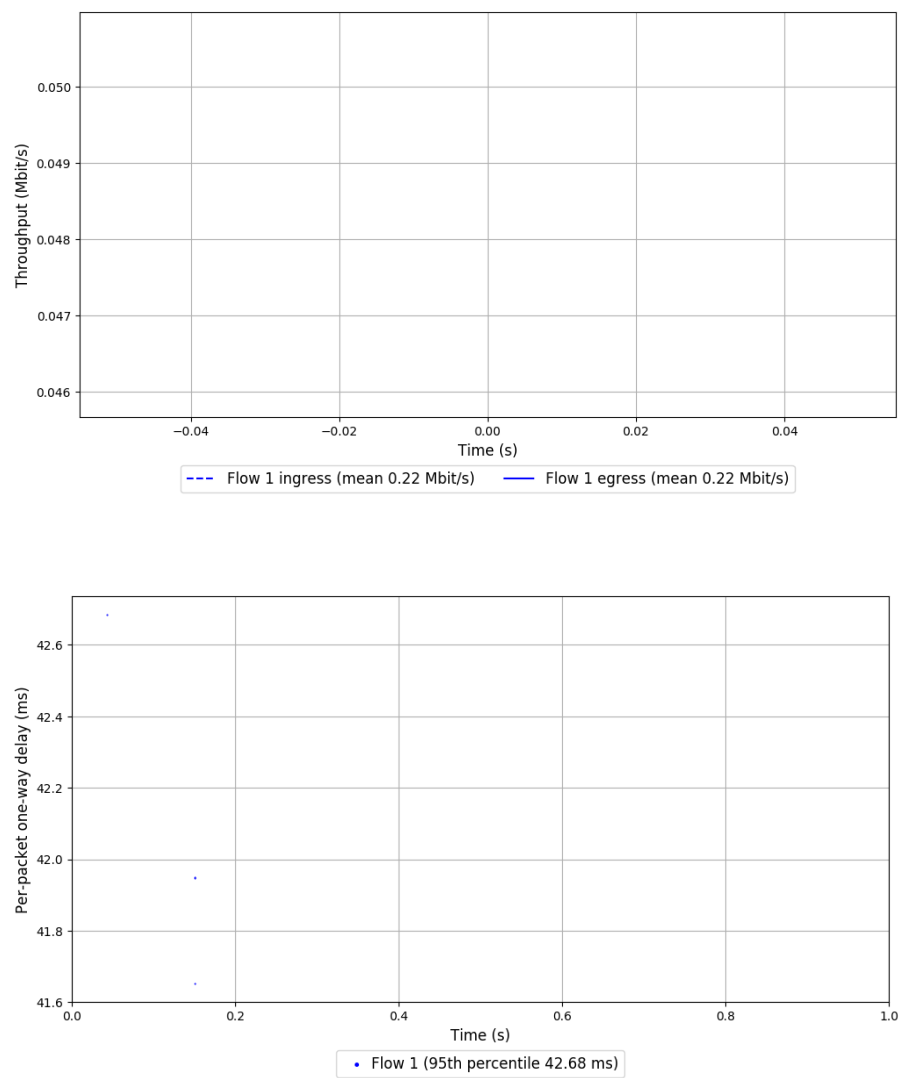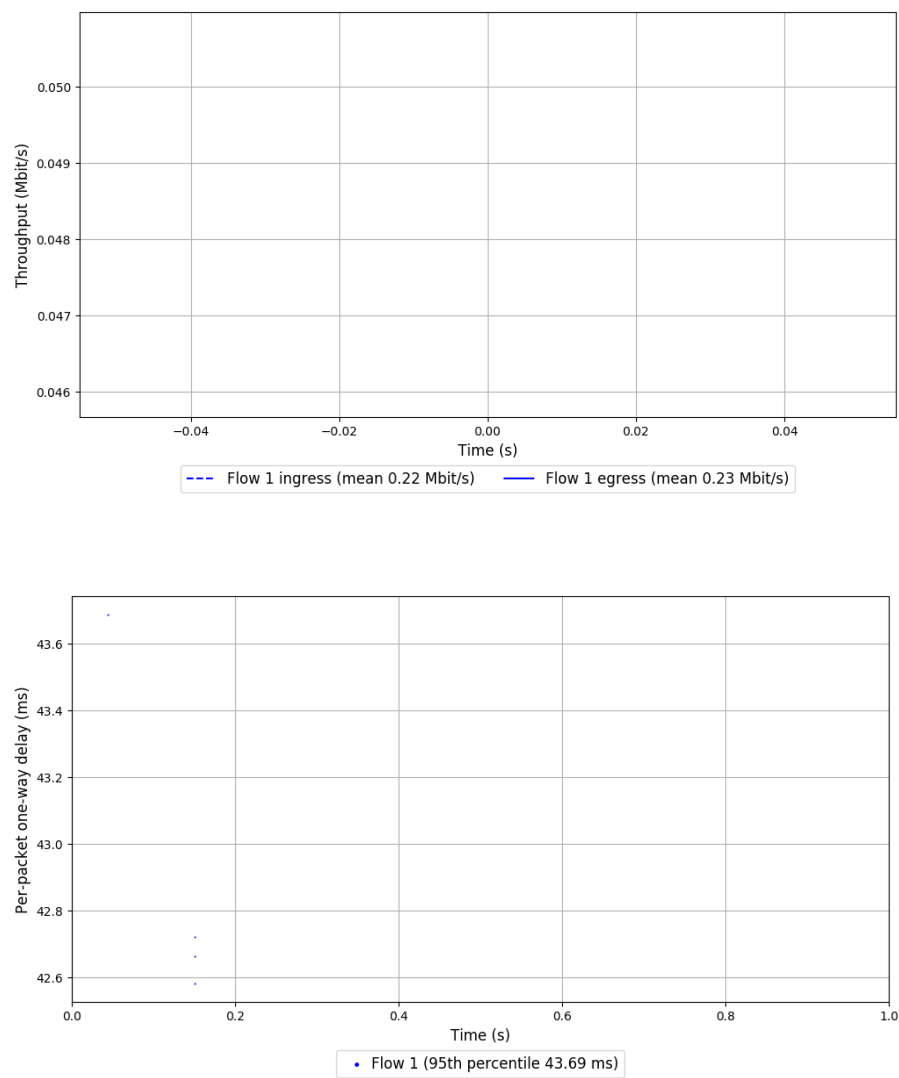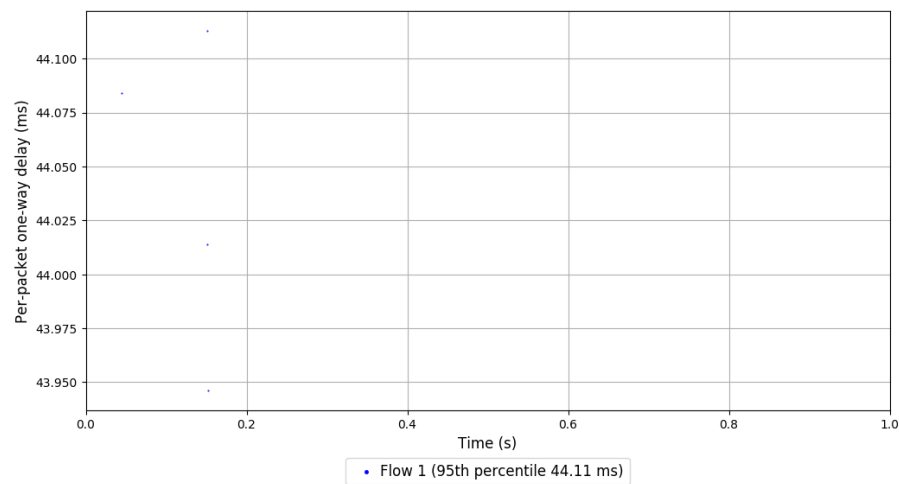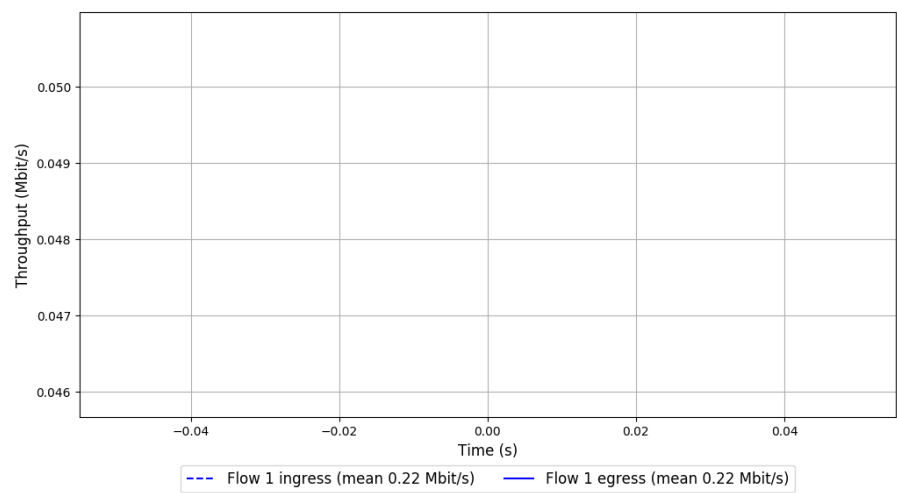Run 2: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 0.23 Mbit/s) ——— Flow 1 egress (mean 0.23 Mbit/s)

• Flow 1 (95th percentile 39.75 ms)

Run 3: Statistics of QUIC Cubic

Start at: 2018-01-25 22:27:10
End at: 2018-01-25 22:27:40

Run 3: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 0.21 Mbit/s)   ——— Flow 1 egress (mean 0.21 Mbit/s)

• Flow 1 (95th percentile 45.70 ms)

Run 4: Statistics of QUIC Cubic

Start at: 2018-01-25 22:39:07
End at: 2018-01-25 22:39:37

Run 4: Report of QUIC Cubic — Data Link

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

Flow 1 (95th percentile 41.38 ms)

Run 5: Statistics of QUIC Cubic

Start at: 2018-01-25 22:50:50
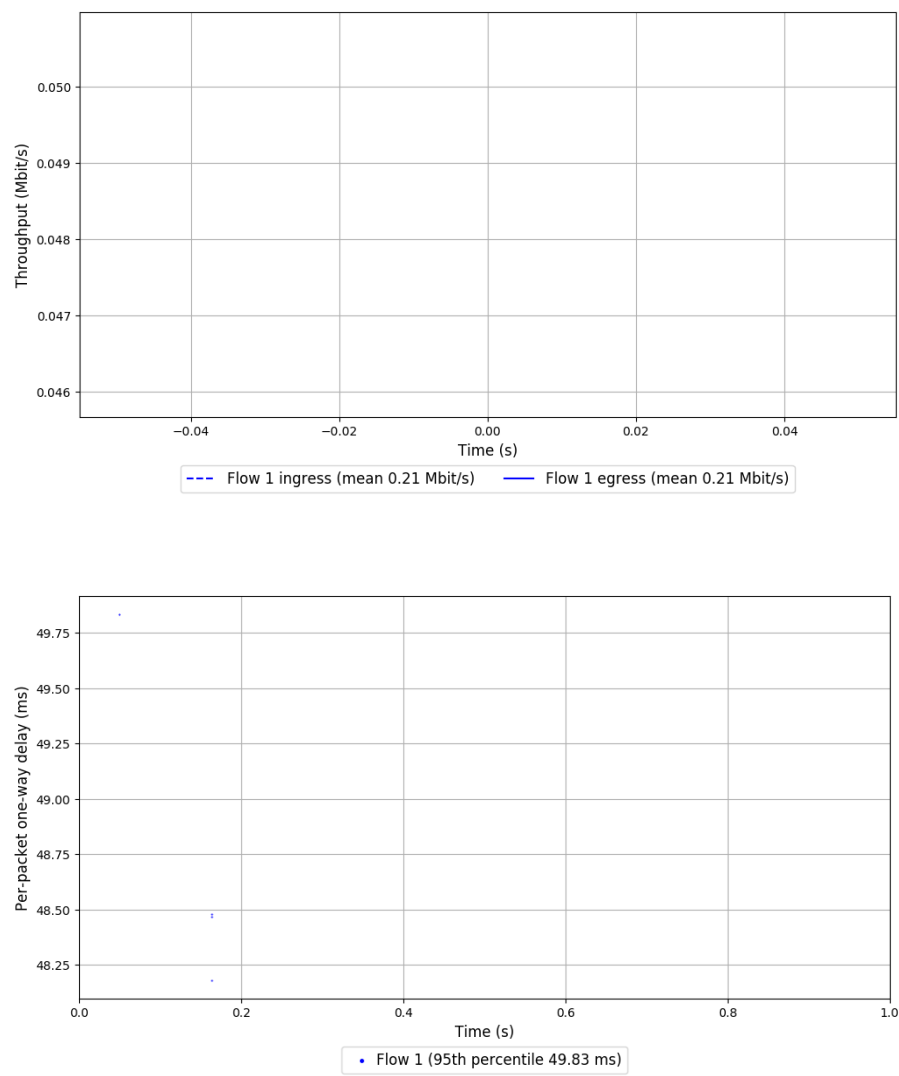End at: 2018-01-25 22:51:20

Run 5: Report of QUIC Cubic — Data Link

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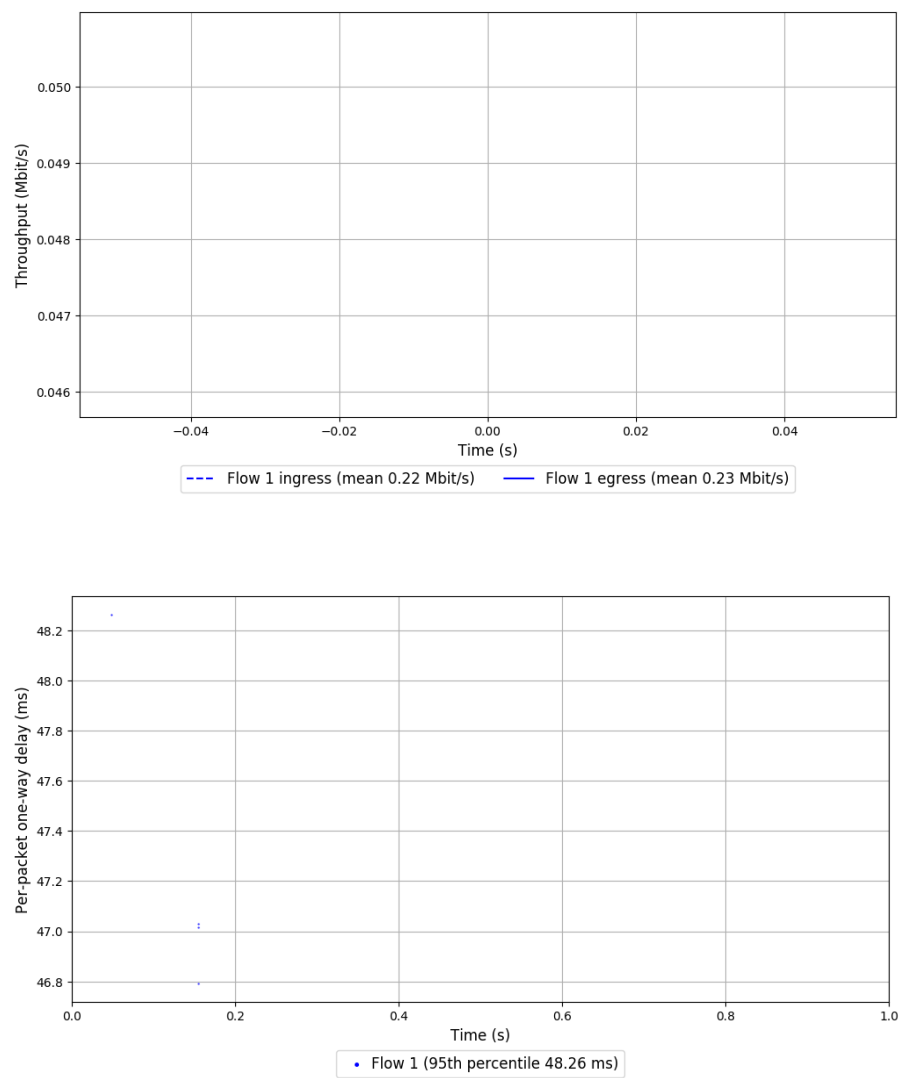

· Flow 1 (95th percentile 42.68 ms)

93

Run 6: Statistics of QUIC Cubic

Start at: 2018-01-25 23:02:46
End at: 2018-01-25 23:03:16

Run 6: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 0.22 Mbit/s)   Flow 1 egress (mean 0.23 Mbit/s)

Flow 1 (95th percentile 43.69 ms)

Run 7: Statistics of QUIC Cubic

Start at: 2018-01-25 23:15:00
End at: 2018-01-25 23:15:30
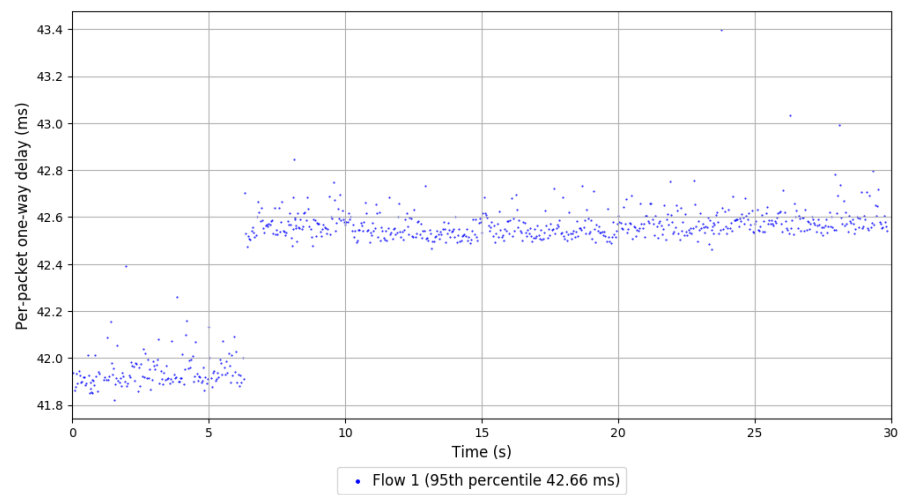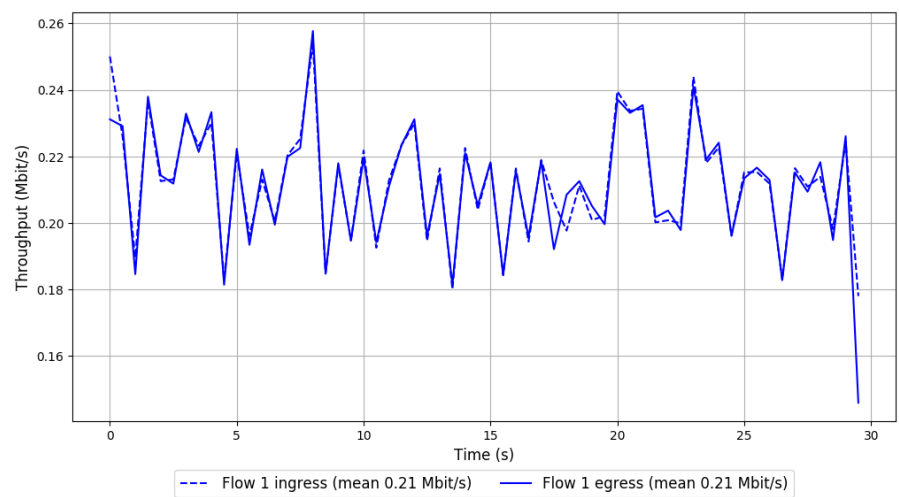
Run 7: Report of QUIC Cubic — Data Link

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

• Flow 1 (95th percentile 44.11 ms)

97

Run 8: Statistics of QUIC Cubic

Start at: 2018-01-25 23:26:49
End at: 2018-01-25 23:27:19

Run 8: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 0.21 Mbit/s)   Flow 1 egress (mean 0.21 Mbit/s)

Flow 1 (95th percentile 49.83 ms)

Run 9: Statistics of QUIC Cubic

Start at: 2018-01-25 23:38:31
End at: 2018-01-25 23:39:01

Run 9: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 0.21 Mbit/s) --- Flow 1 egress (mean 0.21 Mbit/s)

• Flow 1 (95th percentile 49.18 ms)

Run 10: Statistics of QUIC Cubic

Start at: 2018-01-25 23:50:34
End at: 2018-01-25 23:51:04

Run 10: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 0.22 Mbit/s) ——— Flow 1 egress (mean 0.23 Mbit/s)

· Flow 1 (95th percentile 48.26 ms)

```
Run 1: Statistics of SCReAM

Start at: 2018-01-25 22:01:53
End at: 2018-01-25 22:02:23

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 42.662 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 42.662 ms
Loss rate: 0.38%
```
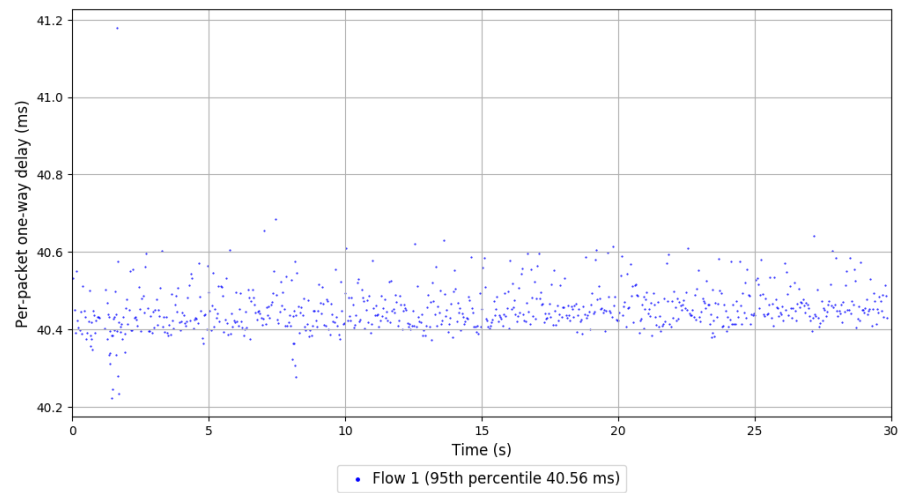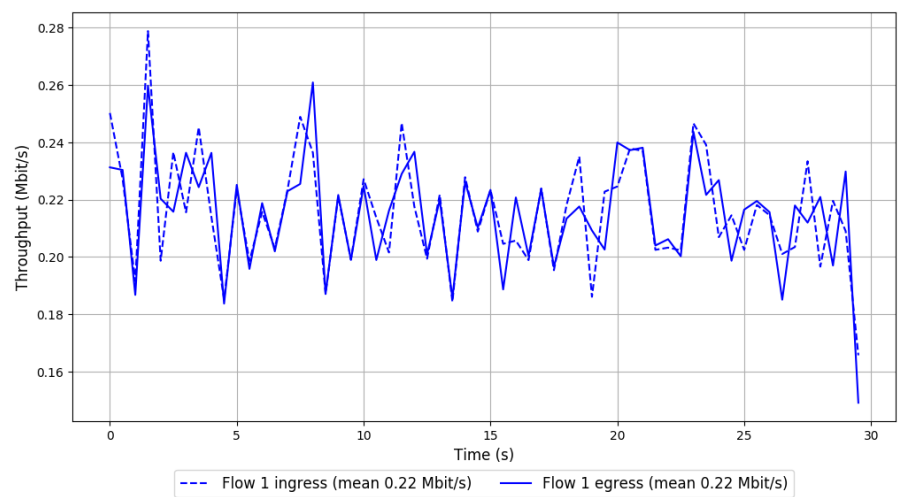
Run 1: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.21 Mbit/s) --- Flow 1 egress (mean 0.21 Mbit/s)

Flow 1 (95th percentile 42.66 ms)

```
Run 2: Statistics of SCReAM

Start at: 2018-01-25 22:13:52
End at: 2018-01-25 22:14:22

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 43.369 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 43.369 ms
Loss rate: 0.38%
```
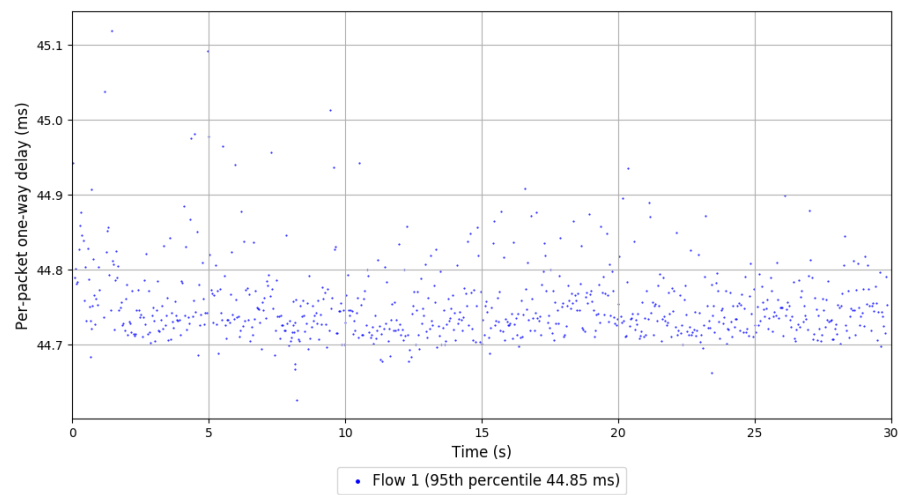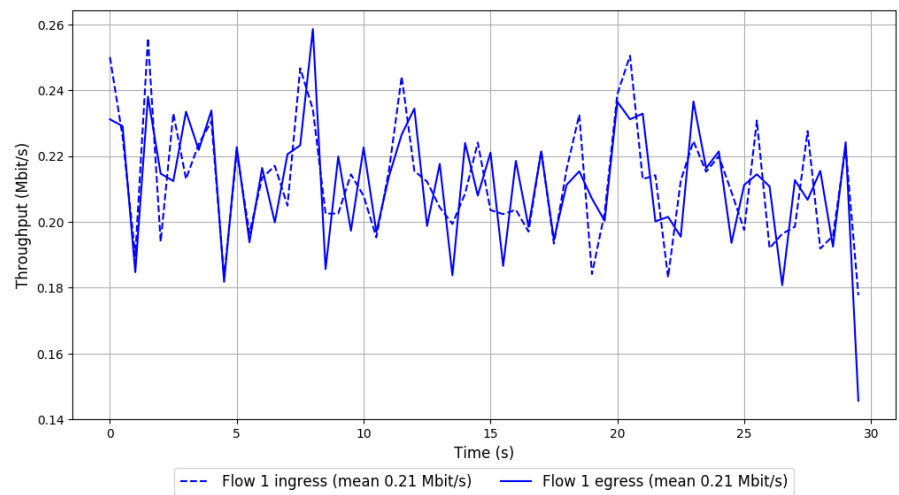
Run 2: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.21 Mbit/s)   Flow 1 egress (mean 0.21 Mbit/s)

Flow 1 (95th percentile 43.37 ms)

```
Run 3: Statistics of SCReAM

Start at: 2018-01-25 22:25:44
End at: 2018-01-25 22:26:14

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 40.565 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 40.565 ms
Loss rate: 0.25%
```
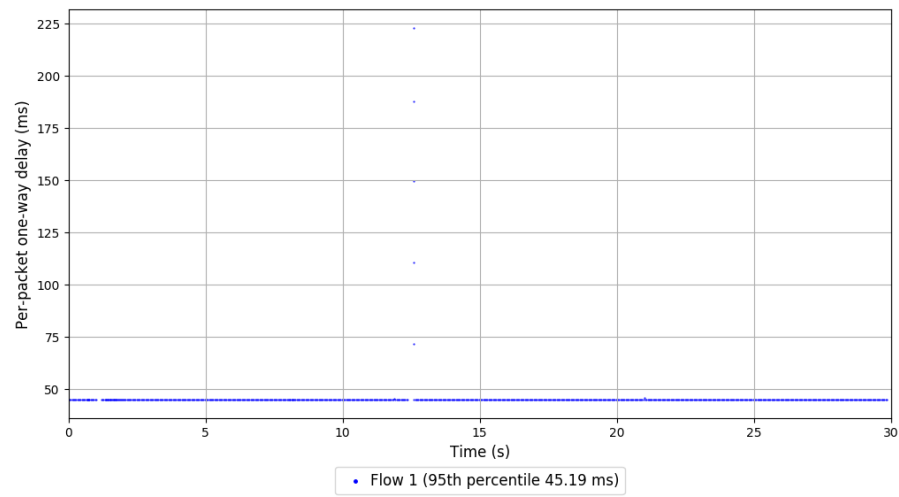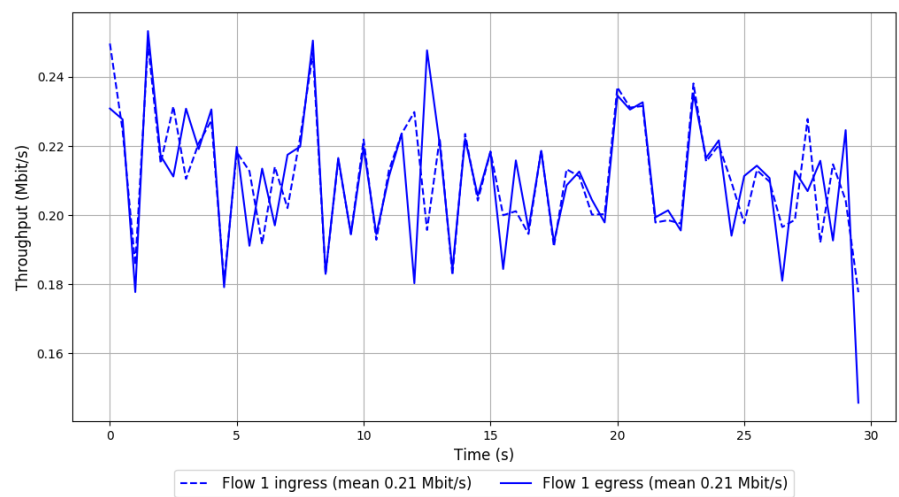
Run 3: Report of SCReAM — Data Link

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

Flow 1 (95th percentile 40.56 ms)

```
Run 4: Statistics of SCReAM

Start at: 2018-01-25 22:37:42
End at: 2018-01-25 22:38:12

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 44.850 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 44.850 ms
Loss rate: 0.38%
```
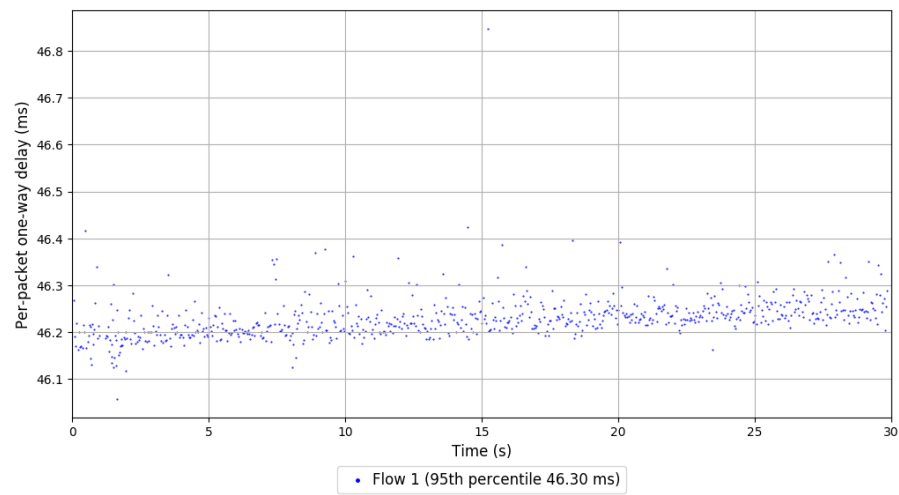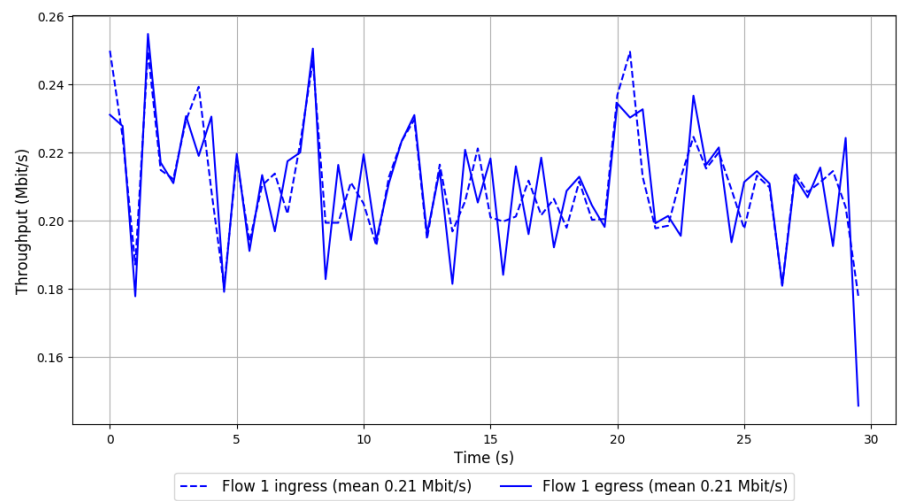
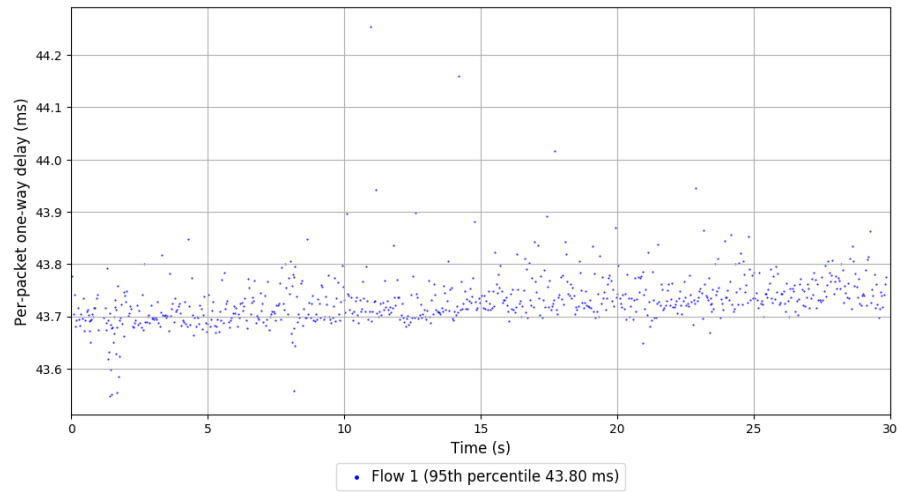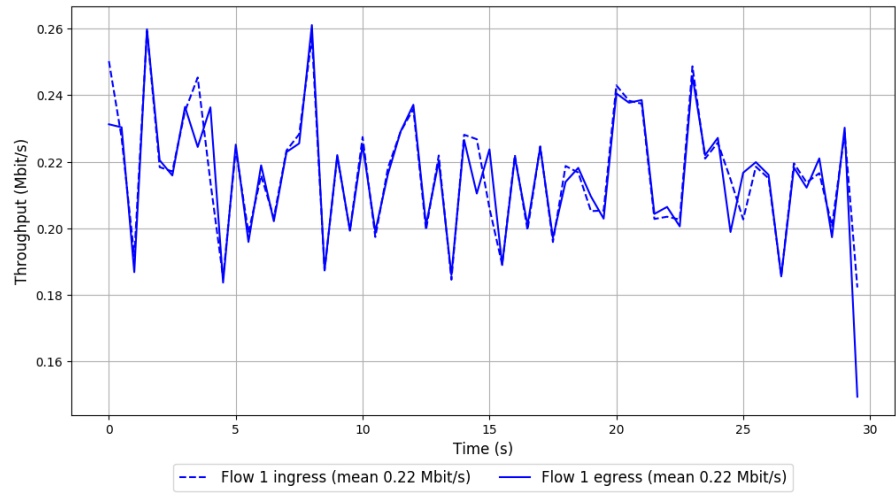# Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-01-25 22:49:23
End at: 2018-01-25 22:49:53

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 45.190 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 45.190 ms
Loss rate: 0.38%
```

Run 5: Report of SCReAM — Data Link

```
Run 6: Statistics of SCReAM

Start at: 2018-01-25 23:01:19
End at: 2018-01-25 23:01:49

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 46.297 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 46.297 ms
Loss rate: 0.38%
```
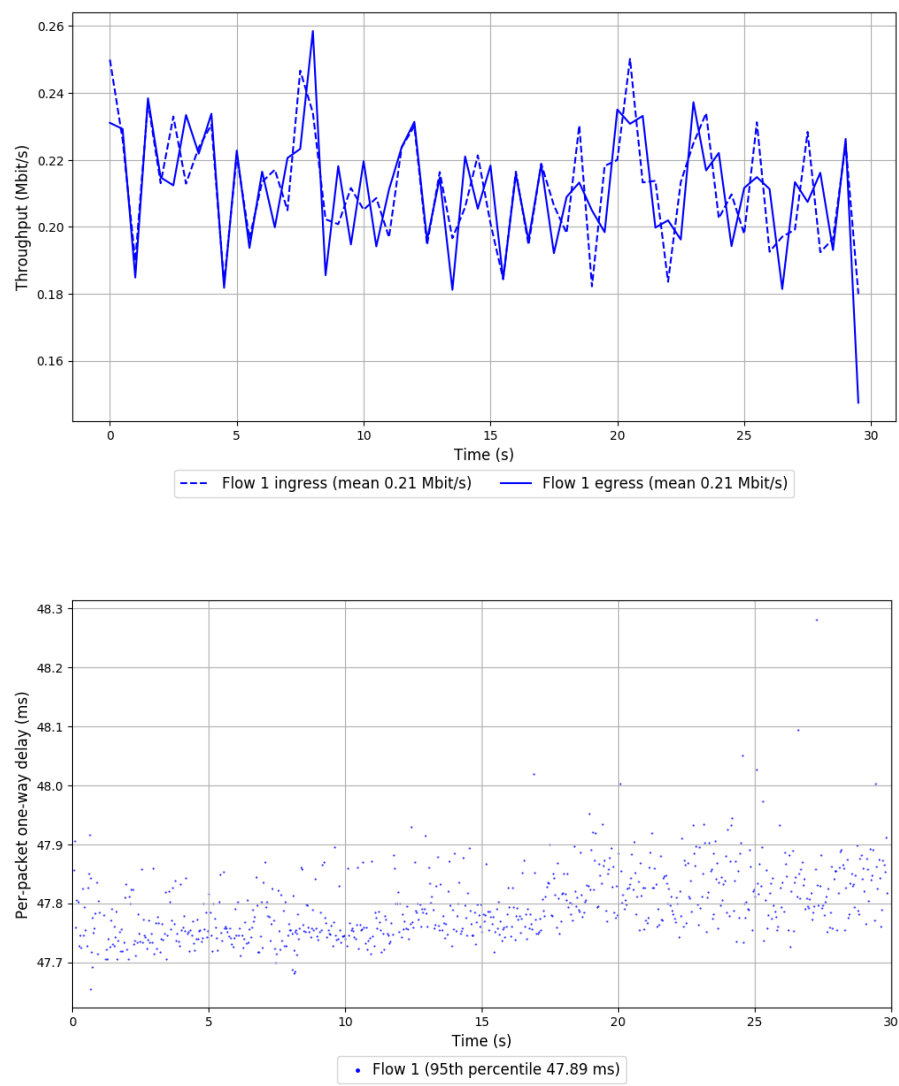
Run 6: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.21 Mbit/s) --- Flow 1 egress (mean 0.21 Mbit/s)

Flow 1 (95th percentile 46.30 ms)

```
Run 7: Statistics of SCReAM

Start at: 2018-01-25 23:13:34
End at: 2018-01-25 23:14:04

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 43.805 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 43.805 ms
Loss rate: 0.38%
```
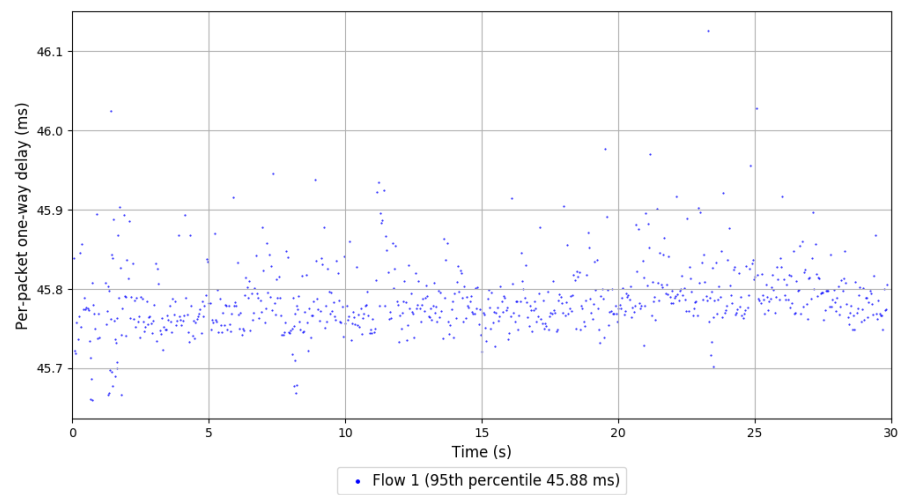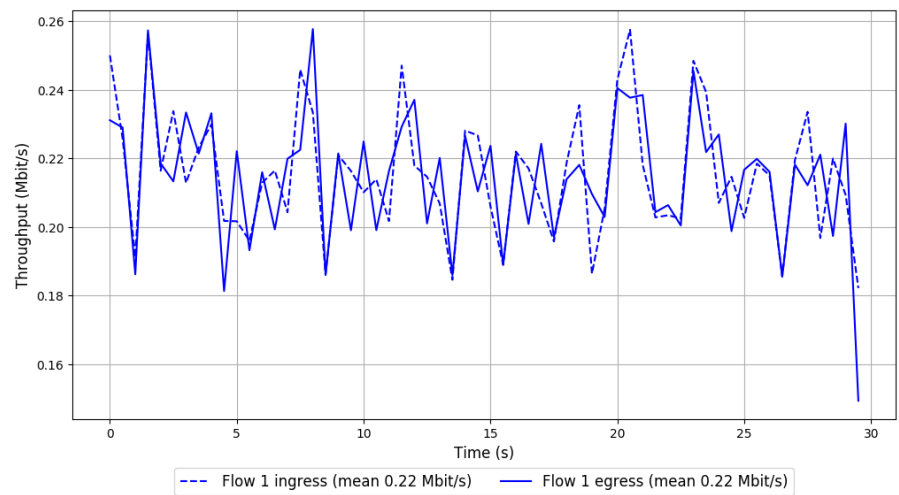
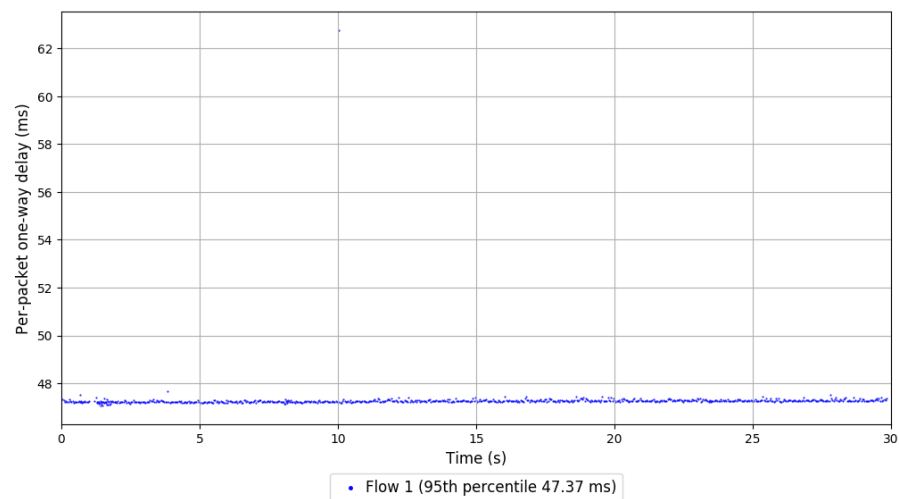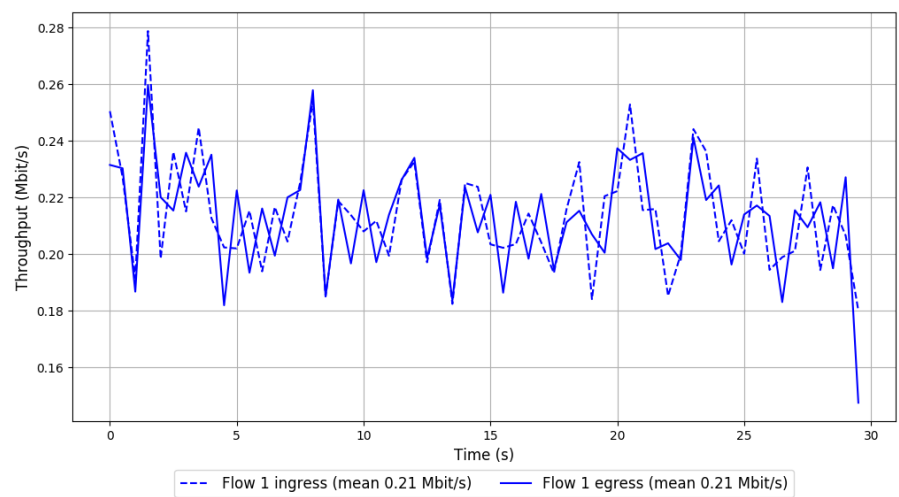Run 7: Report of SCReAM — Data Link

```
Run 8: Statistics of SCReAM

Start at: 2018-01-25 23:25:23
End at: 2018-01-25 23:25:53

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 47.894 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 47.894 ms
Loss rate: 0.38%
```
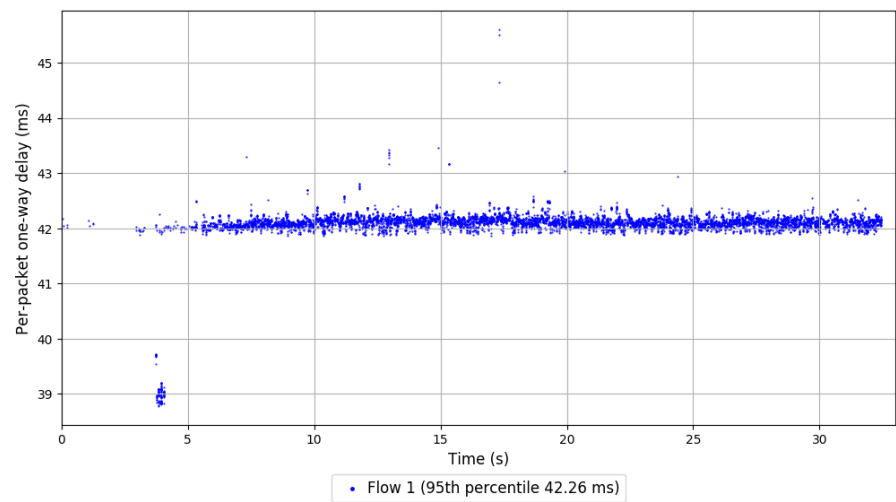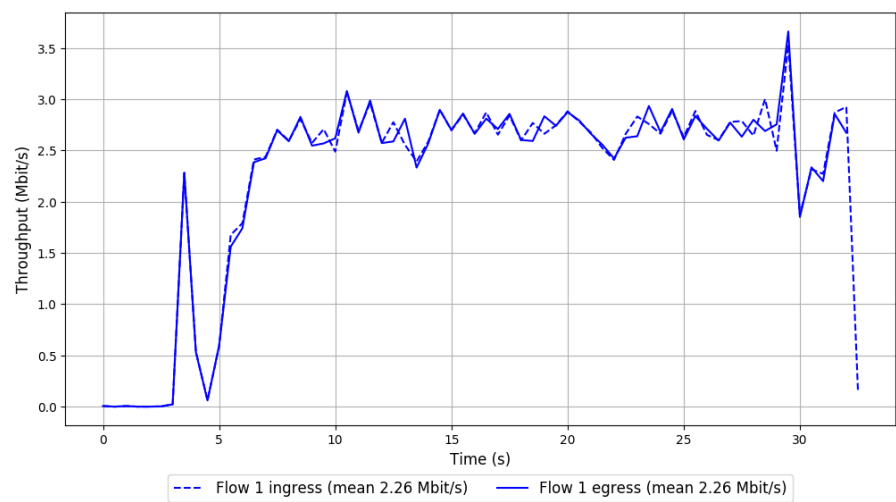
Run 8: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.21 Mbit/s) --- Flow 1 egress (mean 0.21 Mbit/s)

Flow 1 (95th percentile 47.89 ms)

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```
Run 9: Statistics of SCReAM

Start at: 2018-01-25 23:37:04
End at: 2018-01-25 23:37:34


# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 45.877 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 45.877 ms
Loss rate: 0.38%
```

Run 9: Report of SCReAM — Data Link

```
Run 10: Statistics of SCReAM

Start at: 2018-01-25 23:49:08
End at: 2018-01-25 23:49:38

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 47.367 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 47.367 ms
Loss rate: 0.38%
```
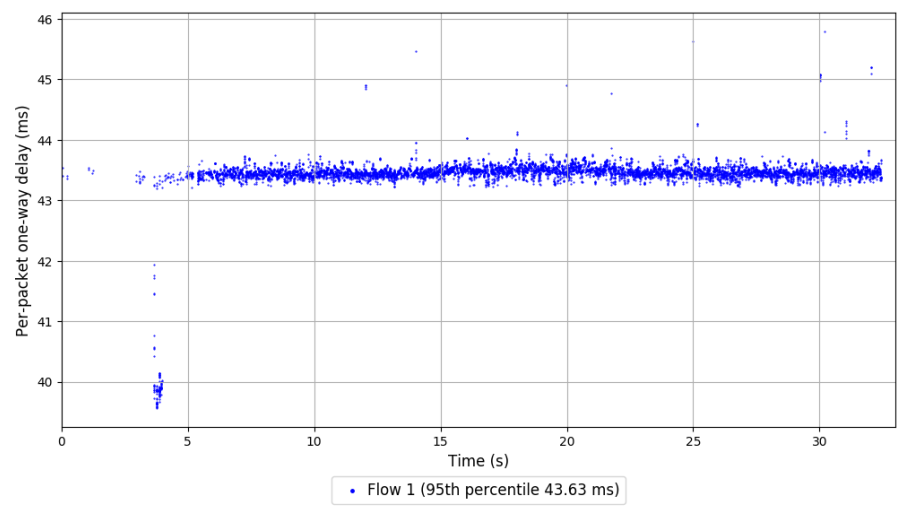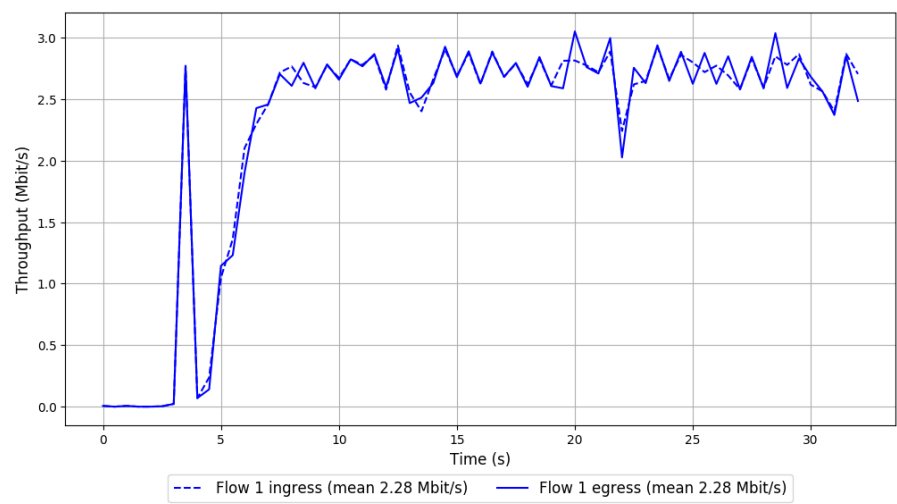
Run 10: Report of SCReAM — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2018-01-25 22:04:37
End at: 2018-01-25 22:05:07

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 42.260 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 42.260 ms
Loss rate: 0.44%
```
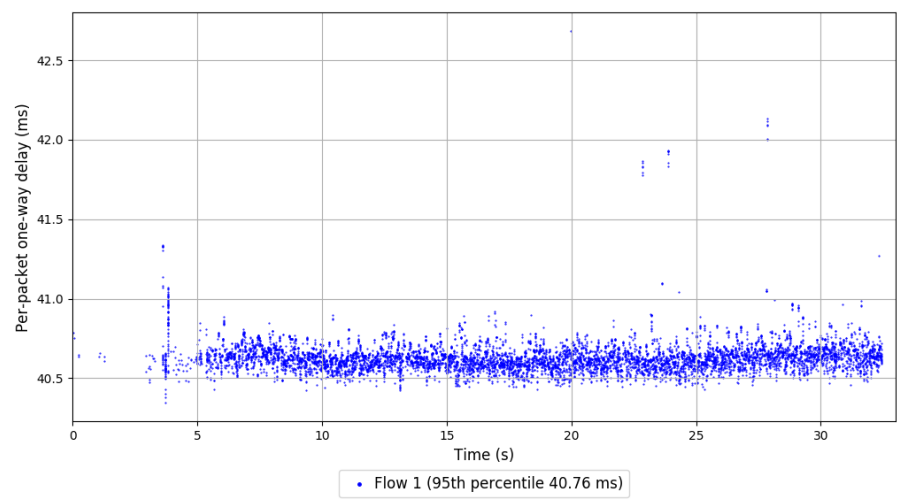
Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-01-25 22:16:37
End at: 2018-01-25 22:17:07

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 43.630 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 43.630 ms
Loss rate: 0.30%
```
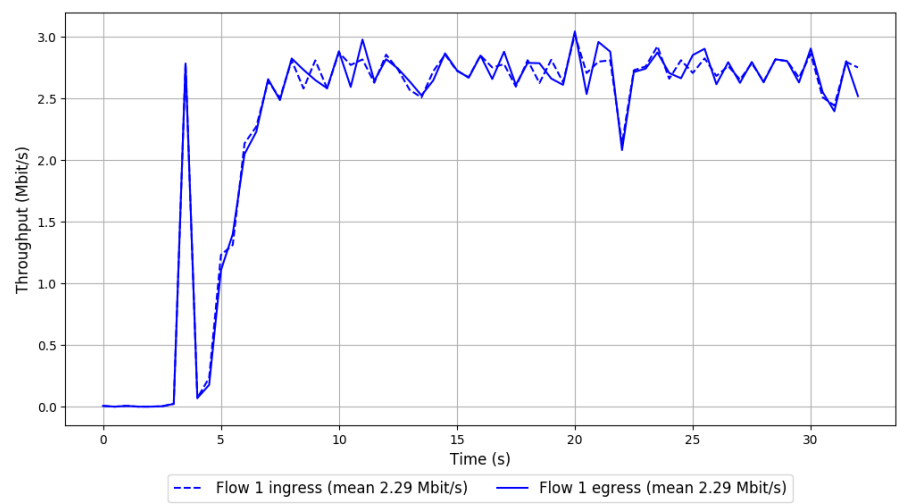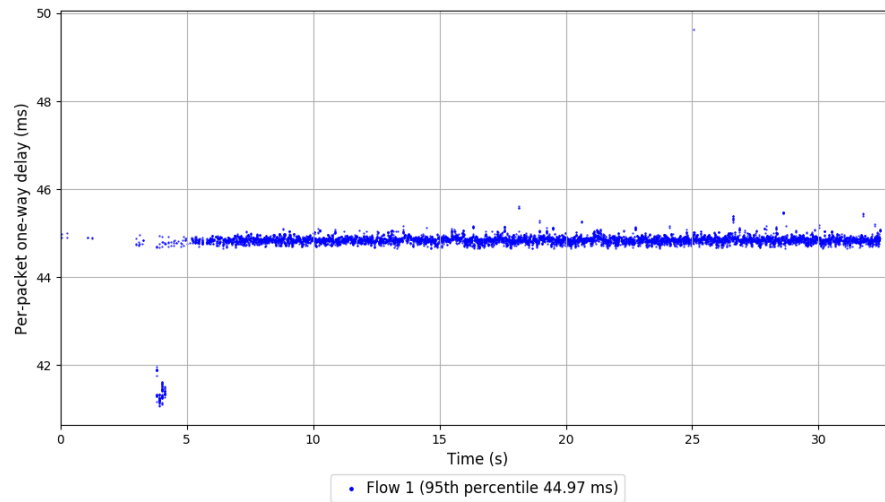
Run 2: Report of WebRTC media — Data Link

Flow 1 ingress (mean 2.28 Mbit/s)   Flow 1 egress (mean 2.28 Mbit/s)

Flow 1 (95th percentile 43.63 ms)

```
Run 3: Statistics of WebRTC media

Start at: 2018-01-25 22:28:26
End at: 2018-01-25 22:28:56


# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.29 Mbit/s
95th percentile per-packet one-way delay: 40.762 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 2.29 Mbit/s
95th percentile per-packet one-way delay: 40.762 ms
Loss rate: 0.29%
```
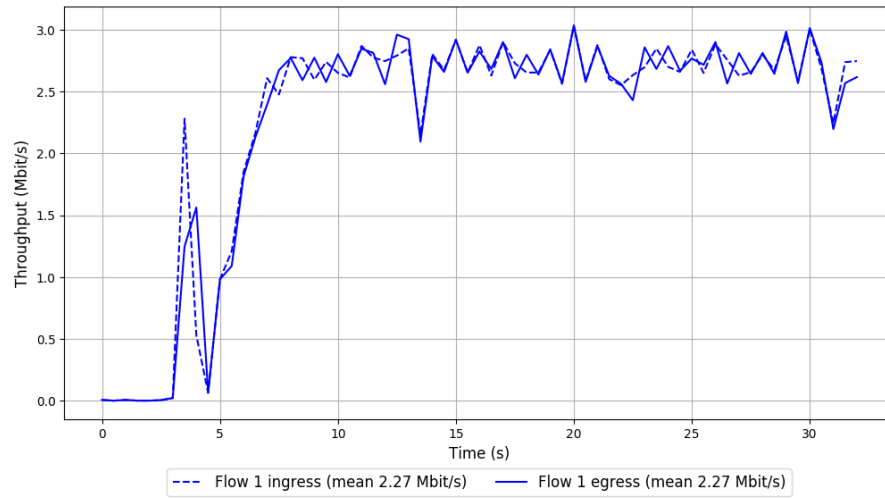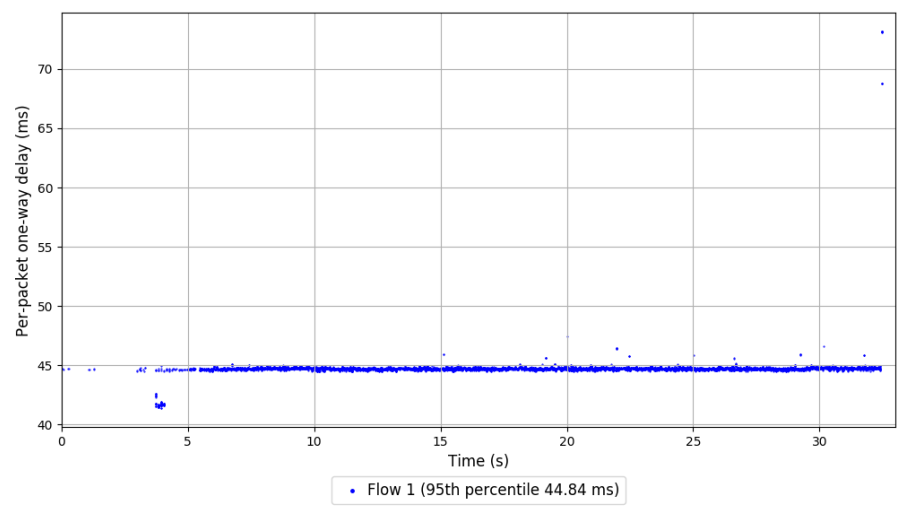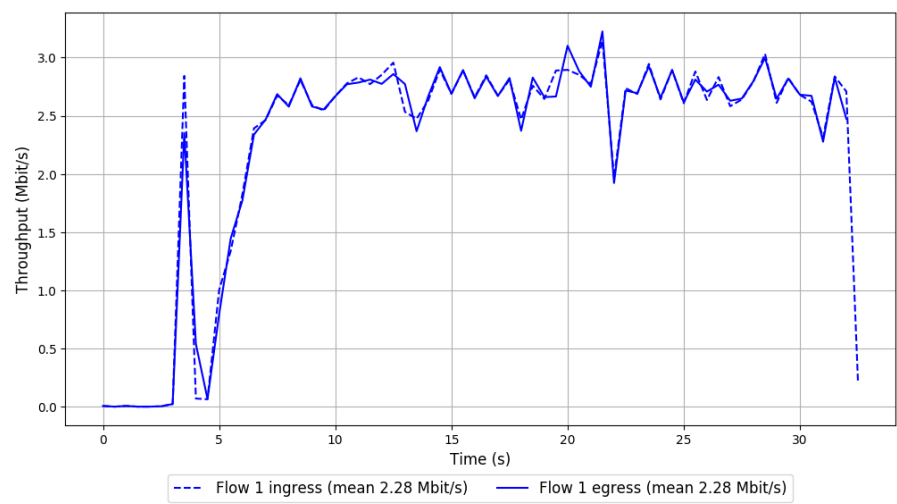
Run 3: Report of WebRTC media — Data Link

Flow 1 ingress (mean 2.29 Mbit/s) Flow 1 egress (mean 2.29 Mbit/s)

Flow 1 (95th percentile 40.76 ms)

```
Run 4: Statistics of WebRTC media

Start at: 2018-01-25 22:40:24
End at: 2018-01-25 22:40:54

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 44.974 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 44.974 ms
Loss rate: 0.35%
```
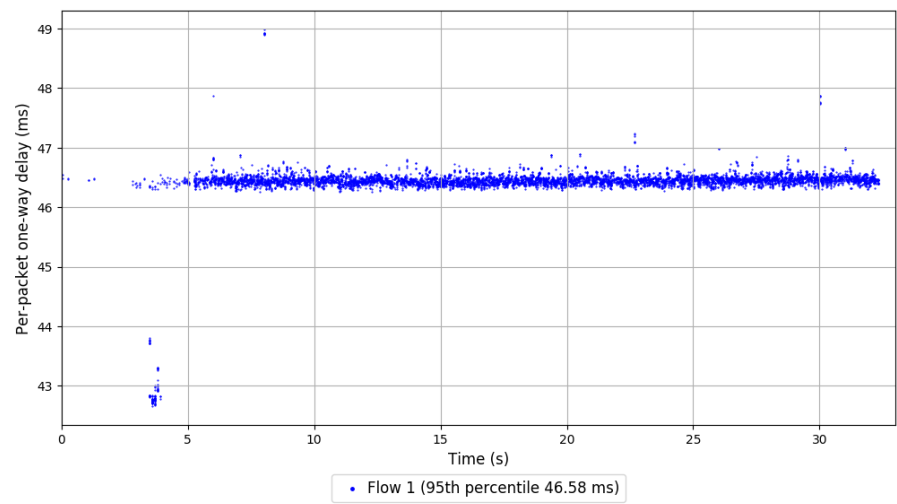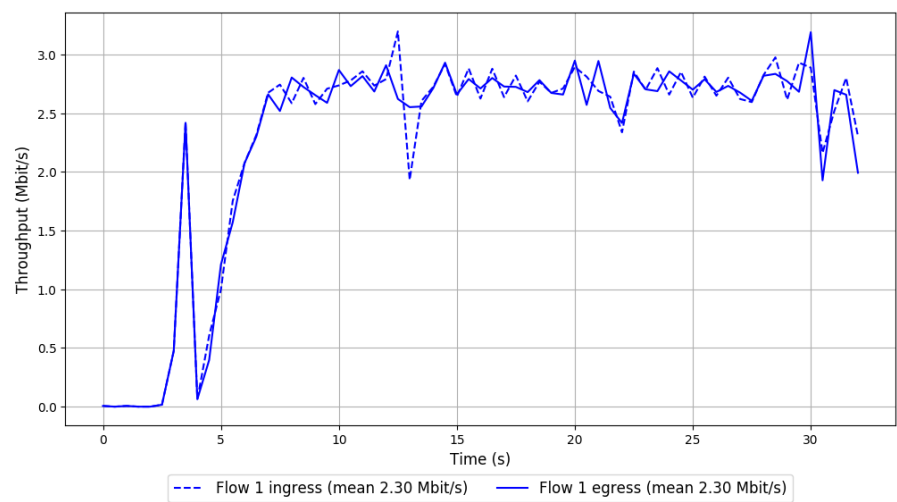
Run 4: Report of WebRTC media — Data Link

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

Flow 1 (95th percentile 44.97 ms)

```
Run 5: Statistics of WebRTC media

Start at: 2018-01-25 22:52:07
End at: 2018-01-25 22:52:37

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 44.843 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 44.843 ms
Loss rate: 0.45%
```
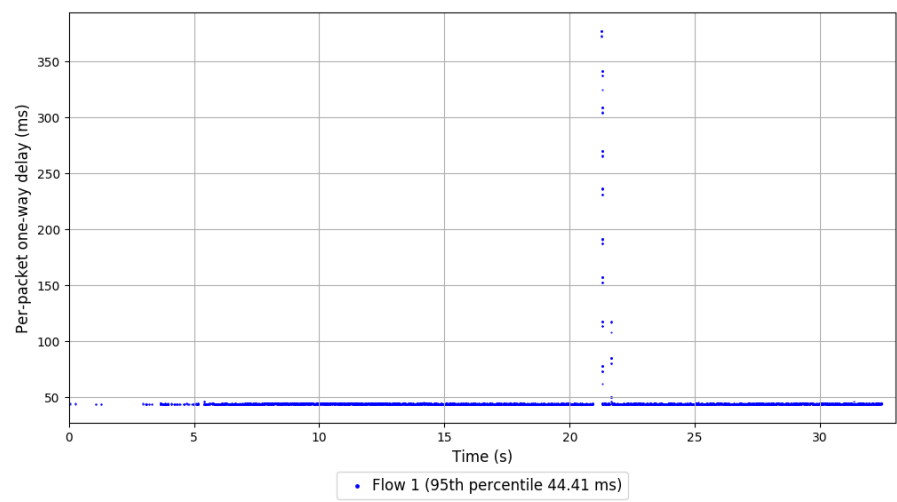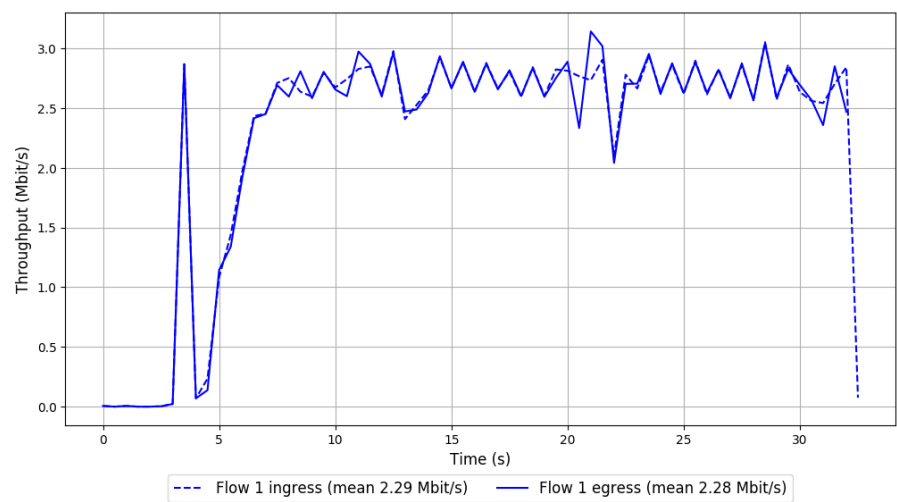
Run 5: Report of WebRTC media — Data Link

Flow 1 ingress (mean 2.28 Mbit/s) ---- Flow 1 egress (mean 2.28 Mbit/s) ——

Flow 1 (95th percentile 44.84 ms) •

```
Run 6: Statistics of WebRTC media

Start at: 2018-01-25 23:04:04
End at: 2018-01-25 23:04:34


# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.30 Mbit/s
95th percentile per-packet one-way delay: 46.583 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 2.30 Mbit/s
95th percentile per-packet one-way delay: 46.583 ms
Loss rate: 0.45%
```
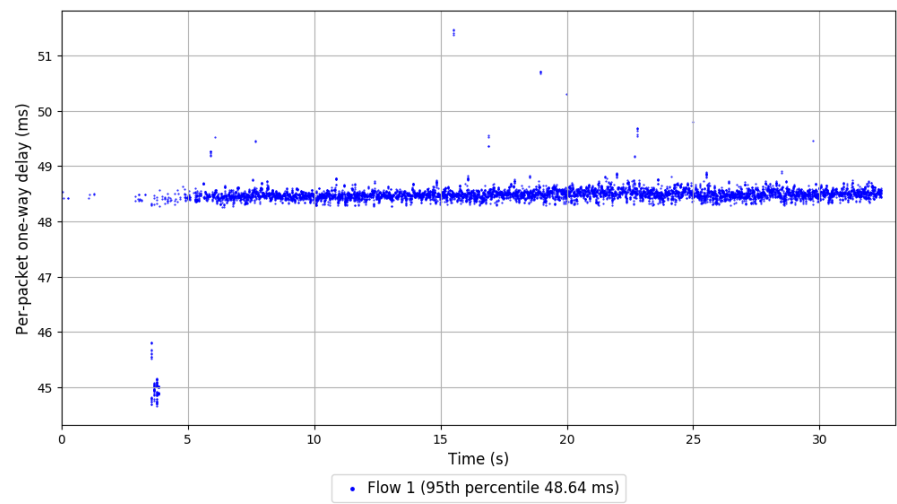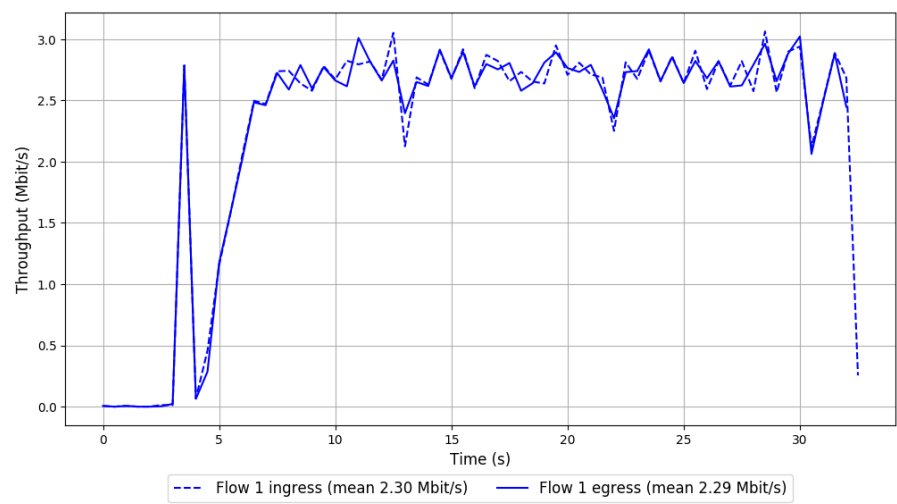
Run 6: Report of WebRTC media — Data Link

```
Run 7: Statistics of WebRTC media

Start at: 2018-01-25 23:16:17
End at: 2018-01-25 23:16:47


# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 44.413 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 44.413 ms
Loss rate: 0.45%
```
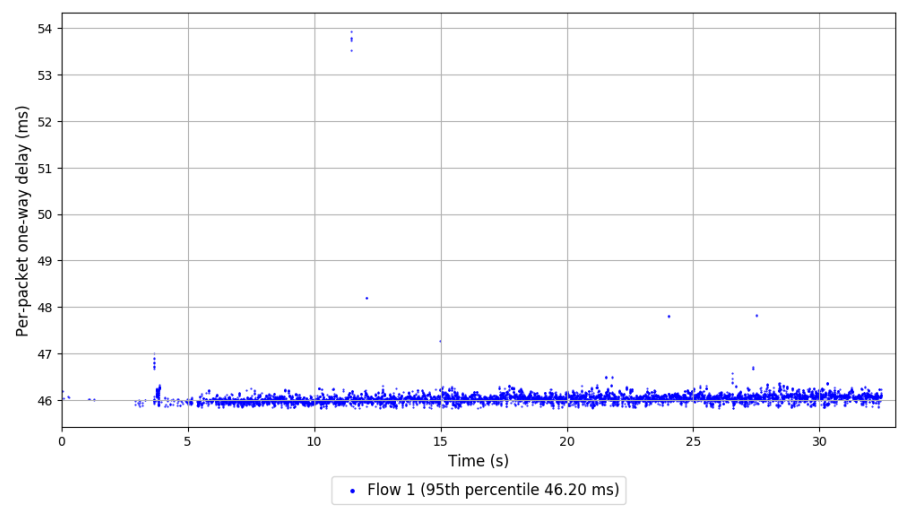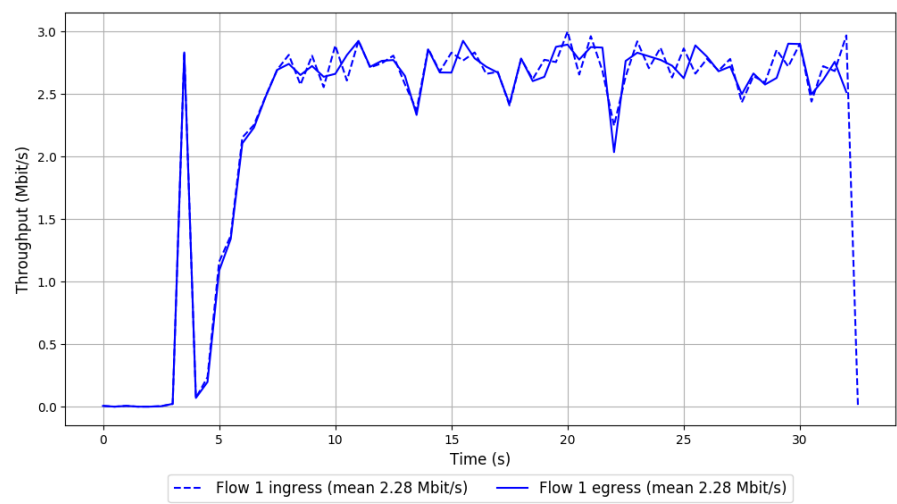
Run 7: Report of WebRTC media — Data Link

Flow 1 ingress (mean 2.29 Mbit/s)　　Flow 1 egress (mean 2.28 Mbit/s)

Flow 1 (95th percentile 44.41 ms)

```
Run 8: Statistics of WebRTC media

Start at: 2018-01-25 23:28:06
End at: 2018-01-25 23:28:36

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.29 Mbit/s
95th percentile per-packet one-way delay: 48.636 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 2.29 Mbit/s
95th percentile per-packet one-way delay: 48.636 ms
Loss rate: 0.48%
```
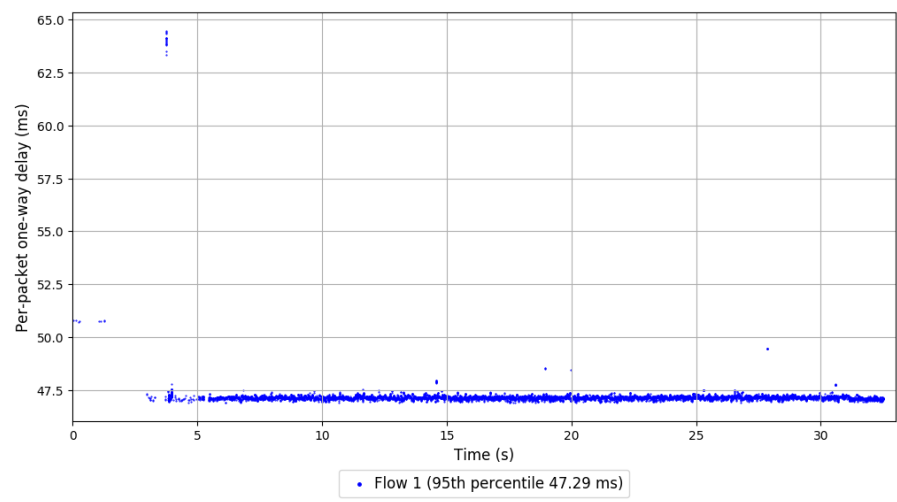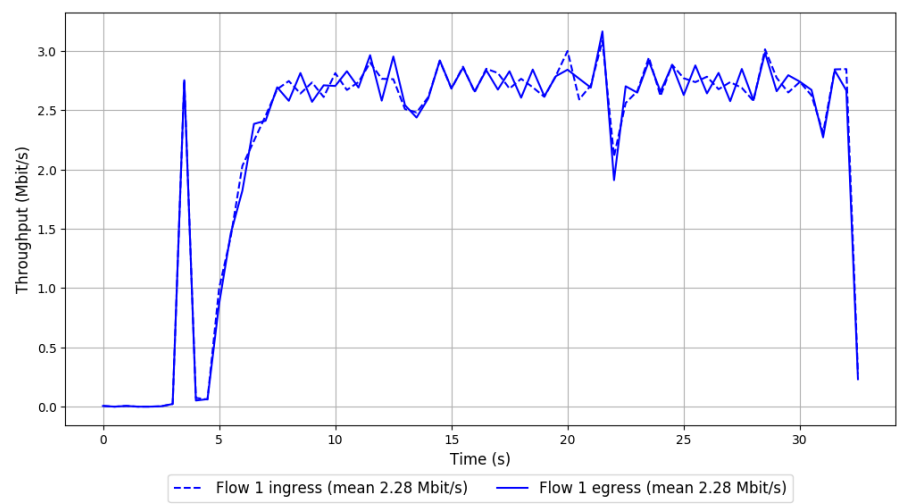
Run 8: Report of WebRTC media — Data Link

Flow 1 ingress (mean 2.30 Mbit/s) --- Flow 1 egress (mean 2.29 Mbit/s)

• Flow 1 (95th percentile 48.64 ms)

```
Run 9: Statistics of WebRTC media

Start at: 2018-01-25 23:39:46
End at: 2018-01-25 23:40:16

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 46.196 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 46.196 ms
Loss rate: 0.46%
```
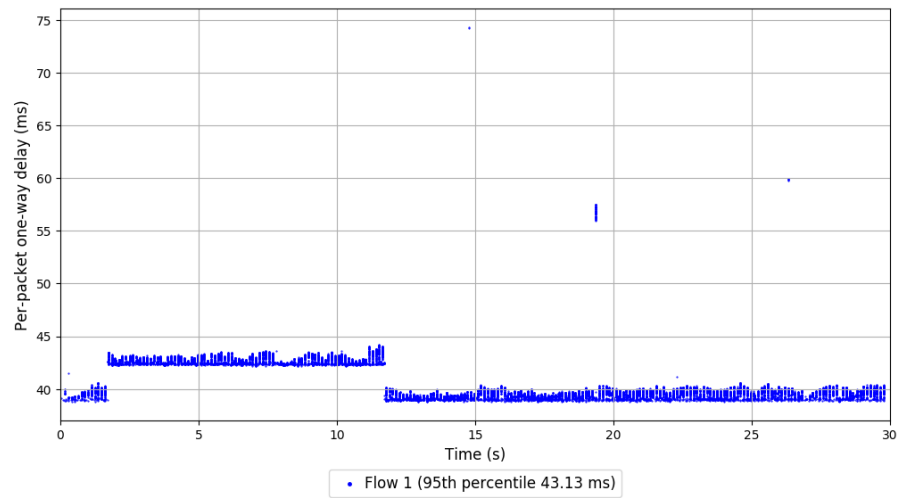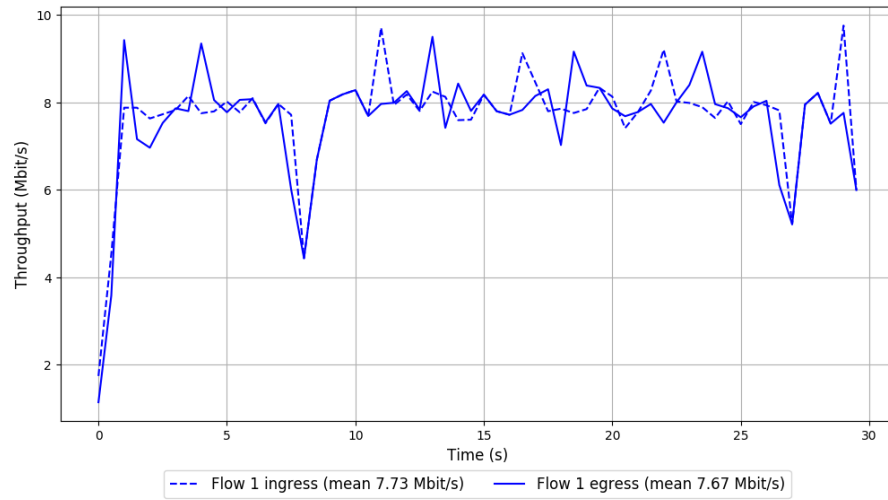
Run 9: Report of WebRTC media — Data Link

```
Run 10: Statistics of WebRTC media

Start at: 2018-01-25 23:51:50
End at: 2018-01-25 23:52:20

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 47.287 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 47.287 ms
Loss rate: 0.30%
```
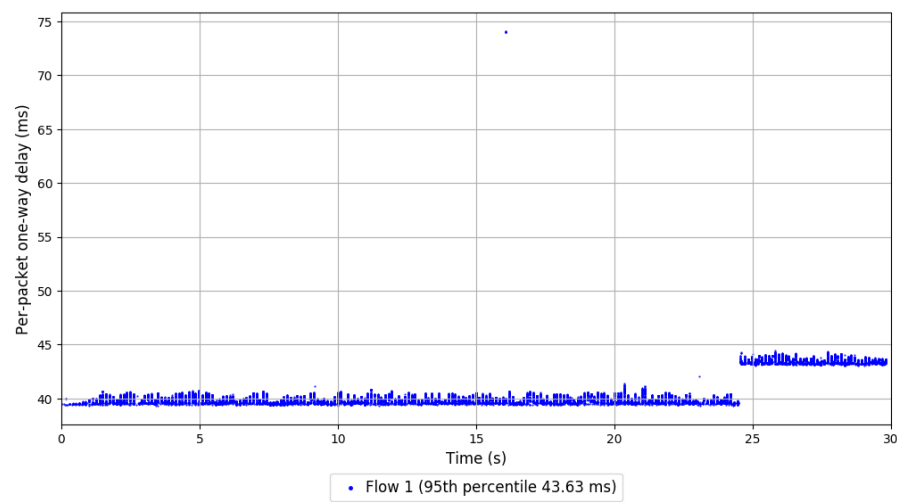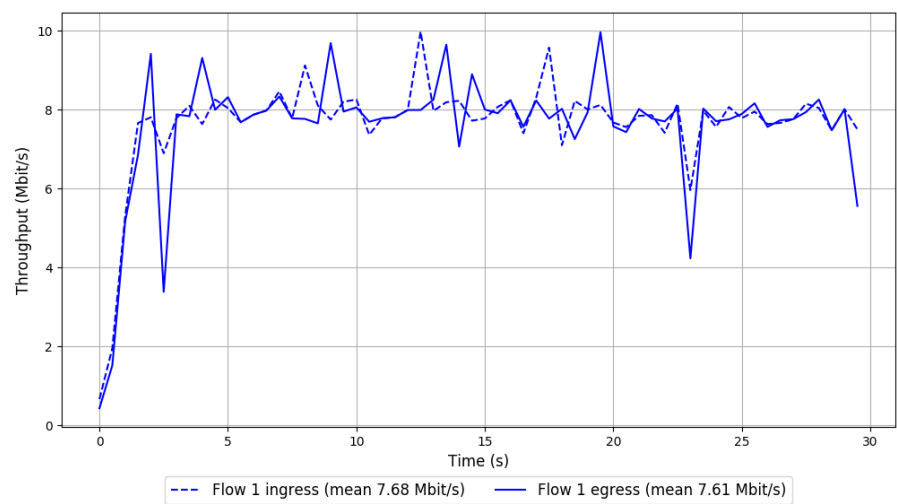
Run 10: Report of WebRTC media — Data Link

```
Run 1: Statistics of Sprout

Start at: 2018-01-25 22:00:18
End at: 2018-01-25 22:00:48

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.67 Mbit/s
95th percentile per-packet one-way delay: 43.133 ms
Loss rate: 1.17%
-- Flow 1:
Average throughput: 7.67 Mbit/s
95th percentile per-packet one-way delay: 43.133 ms
Loss rate: 1.17%
```
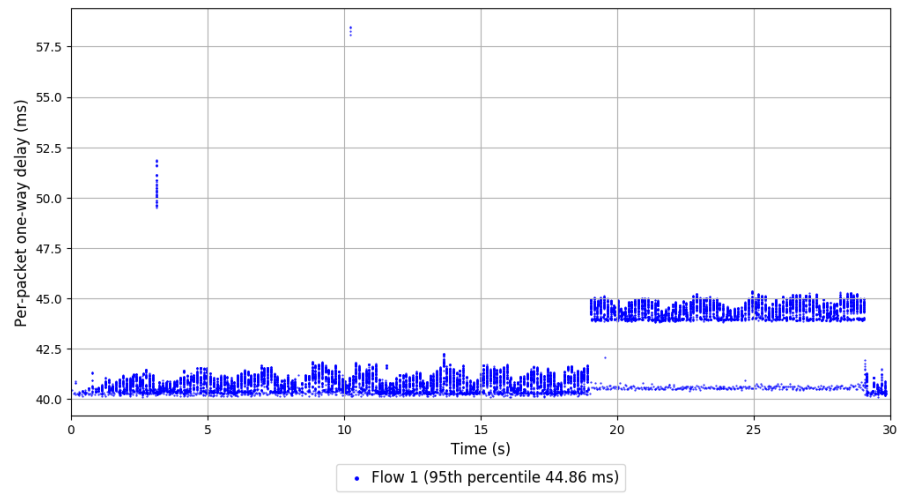
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-01-25 22:12:15
End at: 2018-01-25 22:12:45


# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.61 Mbit/s
95th percentile per-packet one-way delay: 43.632 ms
Loss rate: 1.24%
-- Flow 1:
Average throughput: 7.61 Mbit/s
95th percentile per-packet one-way delay: 43.632 ms
Loss rate: 1.24%
```
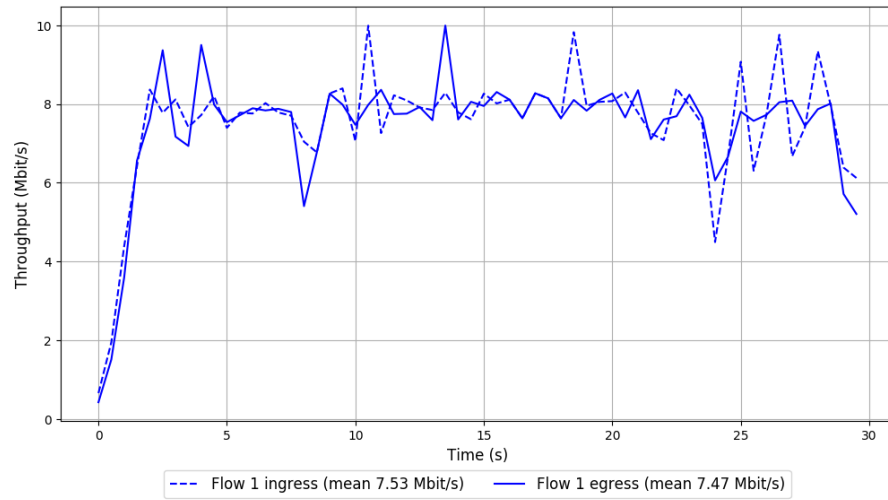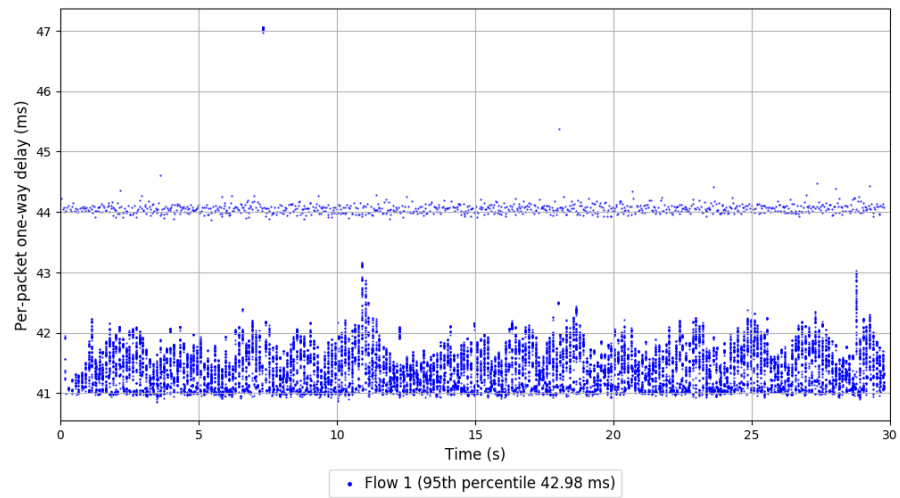
Run 2: Report of Sprout — Data Link

Flow 1 ingress (mean 7.68 Mbit/s) --- Flow 1 egress (mean 7.61 Mbit/s)

• Flow 1 (95th percentile 43.63 ms)

```
Run 3: Statistics of Sprout

Start at: 2018-01-25 22:24:10
End at: 2018-01-25 22:24:40

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.47 Mbit/s
95th percentile per-packet one-way delay: 44.860 ms
Loss rate: 1.12%
-- Flow 1:
Average throughput: 7.47 Mbit/s
95th percentile per-packet one-way delay: 44.860 ms
Loss rate: 1.12%
```
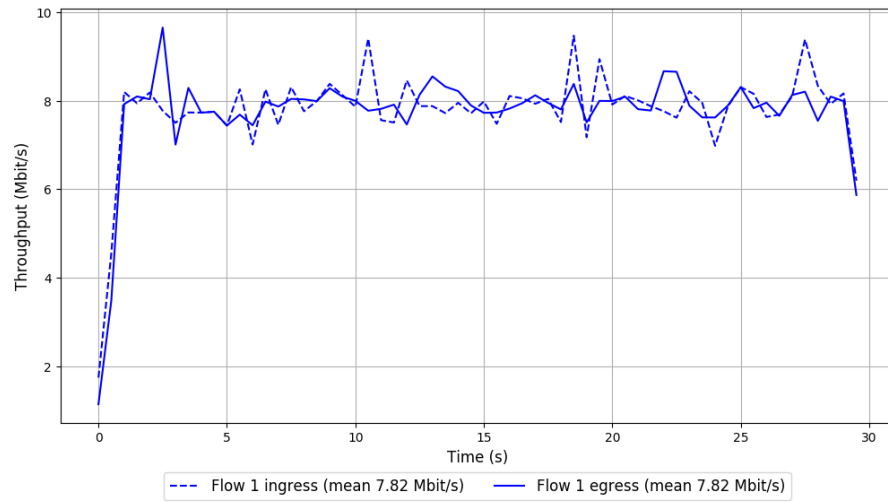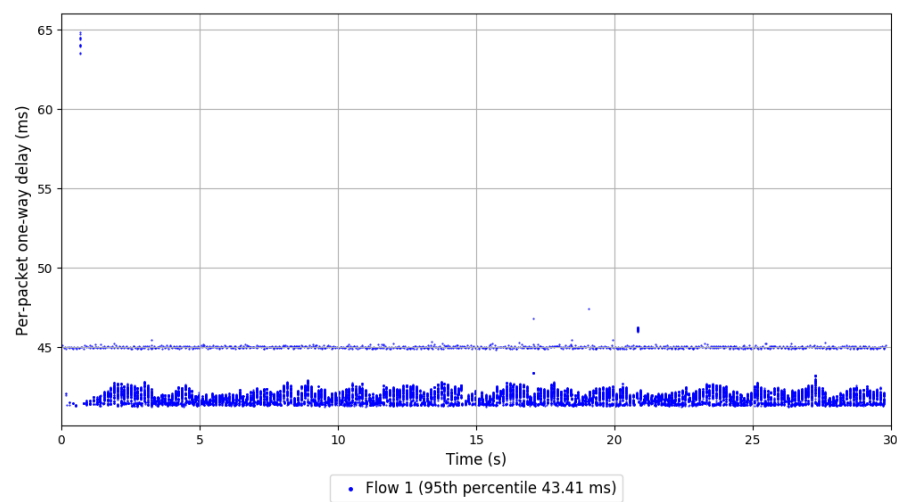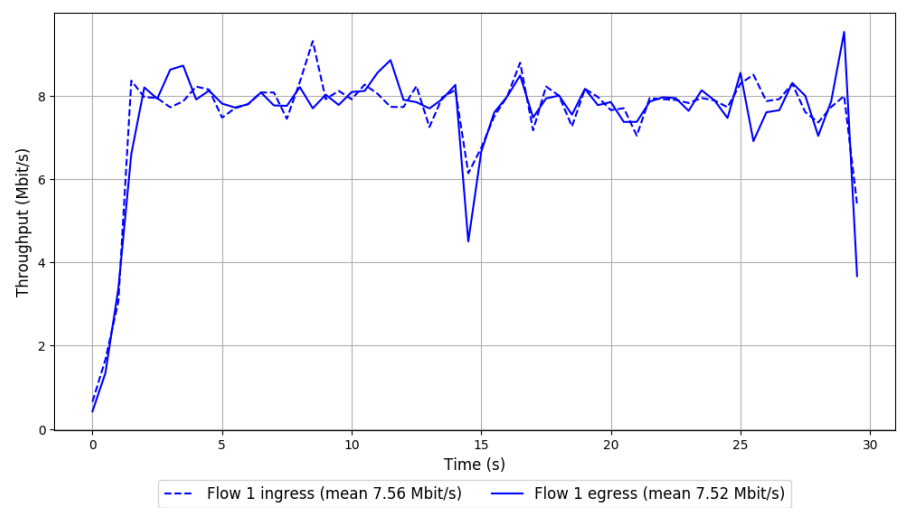
Run 3: Report of Sprout — Data Link

Flow 1 ingress (mean 7.53 Mbit/s) — — —   Flow 1 egress (mean 7.47 Mbit/s) ———

Flow 1 (95th percentile 44.86 ms)

```
Run 4: Statistics of Sprout

Start at: 2018-01-25 22:36:08
End at: 2018-01-25 22:36:38

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.82 Mbit/s
95th percentile per-packet one-way delay: 42.980 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 7.82 Mbit/s
95th percentile per-packet one-way delay: 42.980 ms
Loss rate: 0.49%
```
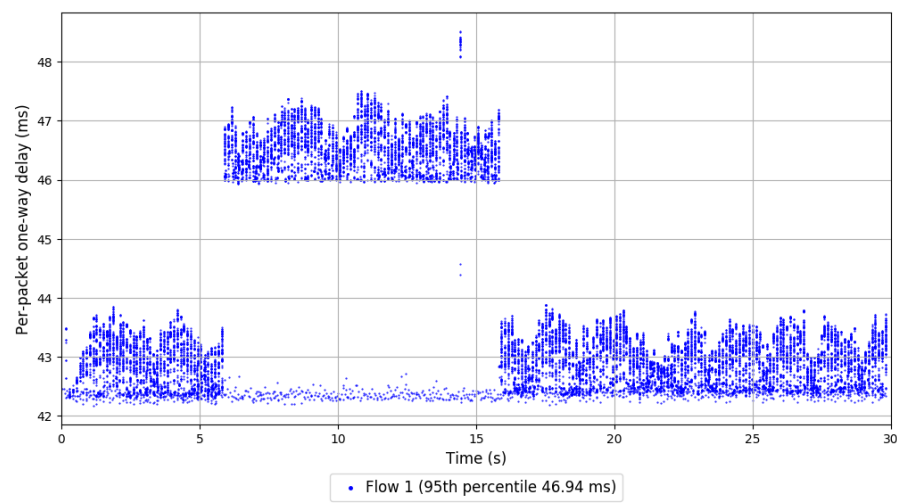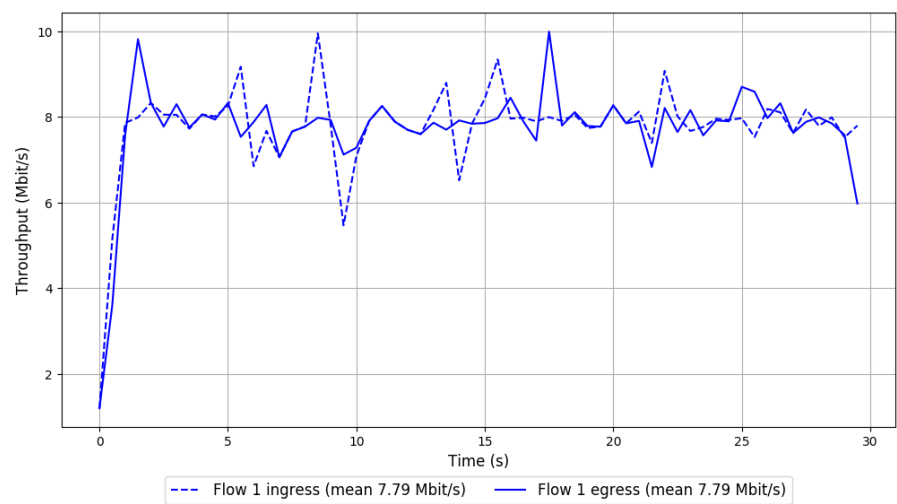
Run 4: Report of Sprout — Data Link

Flow 1 ingress (mean 7.82 Mbit/s)　　Flow 1 egress (mean 7.82 Mbit/s)

Flow 1 (95th percentile 42.98 ms)

```
Run 5: Statistics of Sprout

Start at: 2018-01-25 22:47:47
End at: 2018-01-25 22:48:17

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.52 Mbit/s
95th percentile per-packet one-way delay: 43.410 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 7.52 Mbit/s
95th percentile per-packet one-way delay: 43.410 ms
Loss rate: 0.82%
```
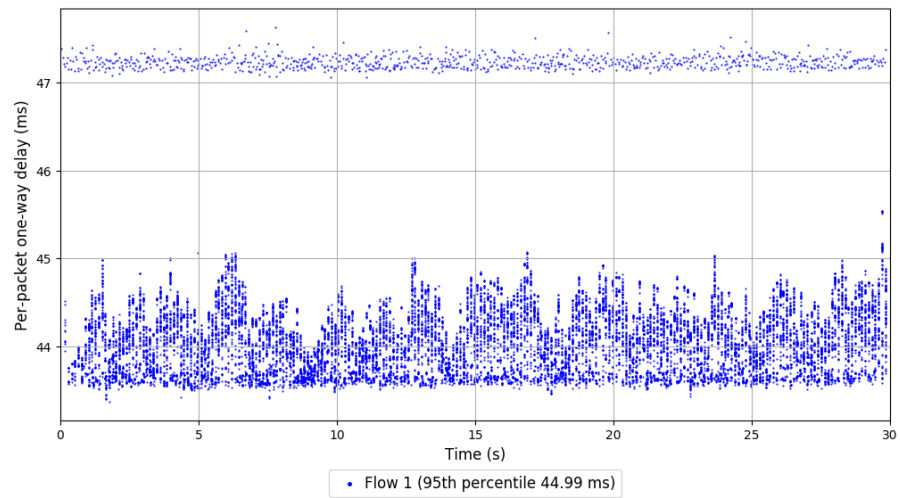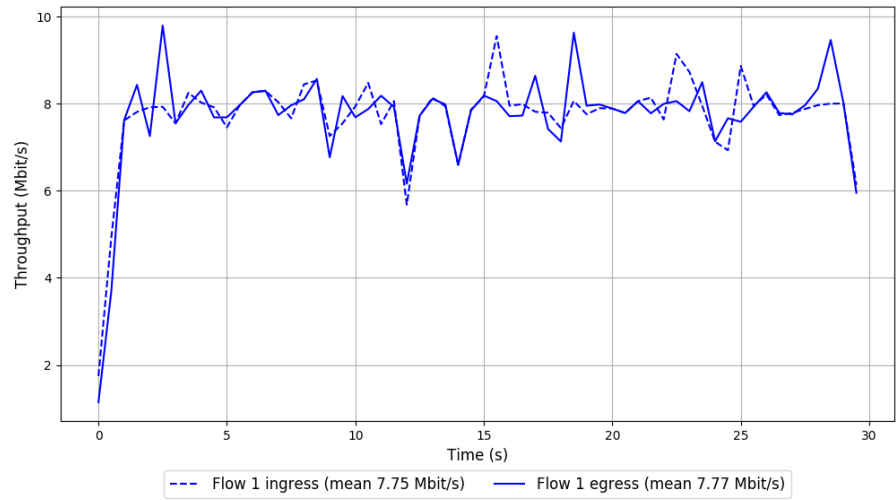
Run 5: Report of Sprout — Data Link

Flow 1 ingress (mean 7.56 Mbit/s)   Flow 1 egress (mean 7.52 Mbit/s)

• Flow 1 (95th percentile 43.41 ms)

```
Run 6: Statistics of Sprout

Start at: 2018-01-25 22:59:43
End at: 2018-01-25 23:00:14

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.79 Mbit/s
95th percentile per-packet one-way delay: 46.938 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 7.79 Mbit/s
95th percentile per-packet one-way delay: 46.938 ms
Loss rate: 0.43%
```
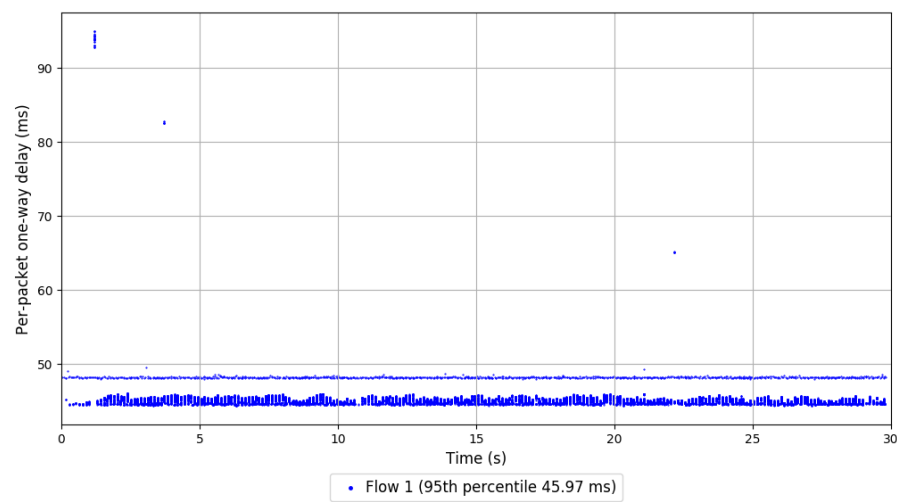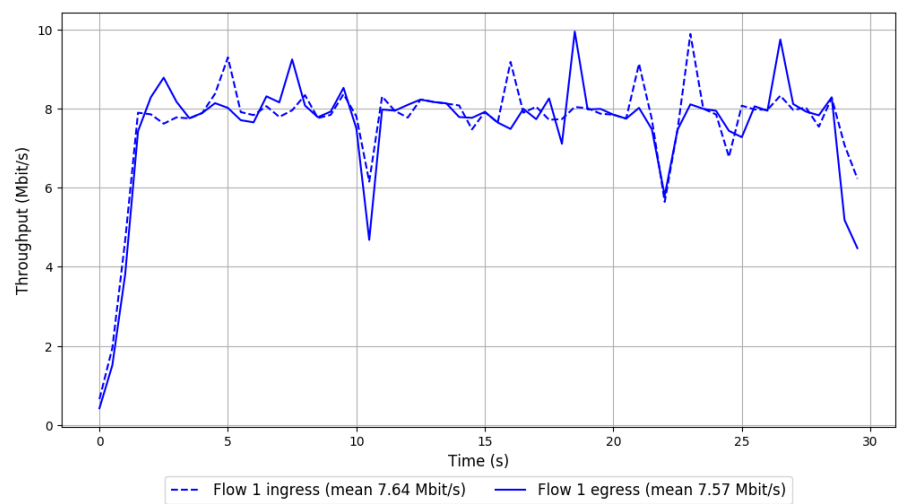
Run 6: Report of Sprout — Data Link

```
Run 7: Statistics of Sprout

Start at: 2018-01-25 23:11:58
End at: 2018-01-25 23:12:28

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.77 Mbit/s
95th percentile per-packet one-way delay: 44.993 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 7.77 Mbit/s
95th percentile per-packet one-way delay: 44.993 ms
Loss rate: 0.04%
```
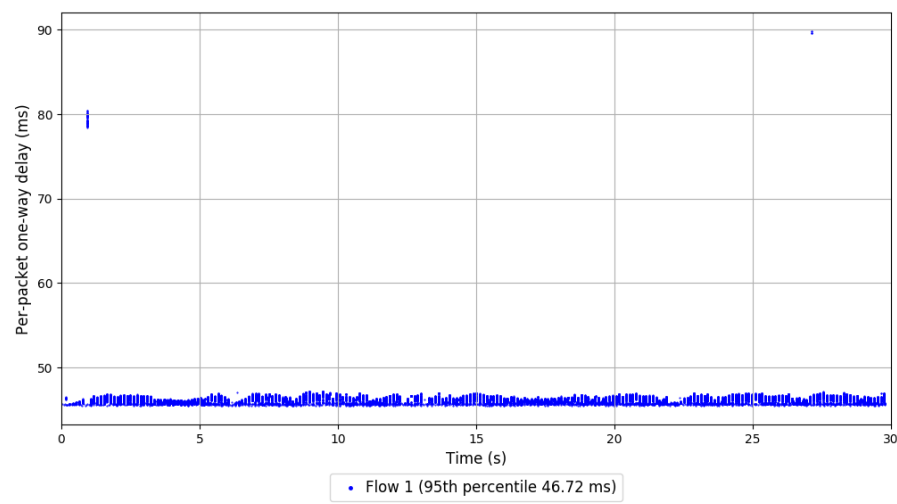
Run 7: Report of Sprout — Data Link

```
Run 8: Statistics of Sprout

Start at: 2018-01-25 23:23:47
End at: 2018-01-25 23:24:17

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.57 Mbit/s
95th percentile per-packet one-way delay: 45.967 ms
Loss rate: 1.45%
-- Flow 1:
Average throughput: 7.57 Mbit/s
95th percentile per-packet one-way delay: 45.967 ms
Loss rate: 1.45%
```
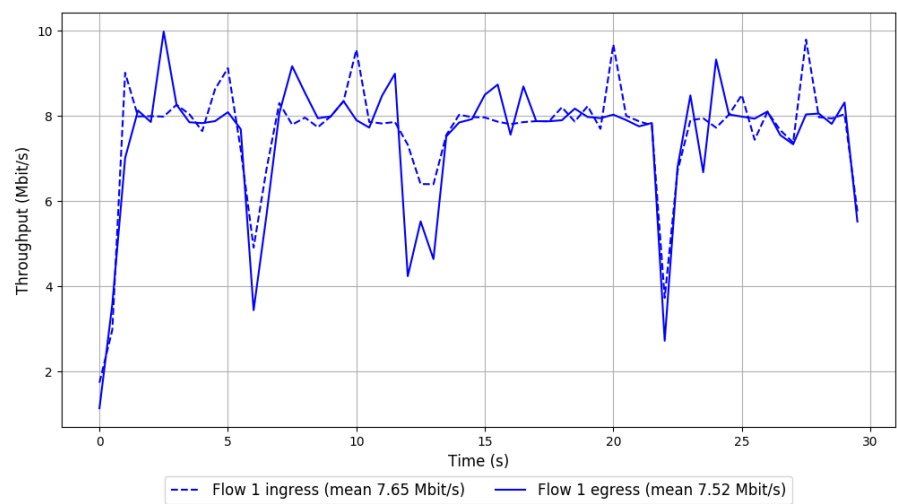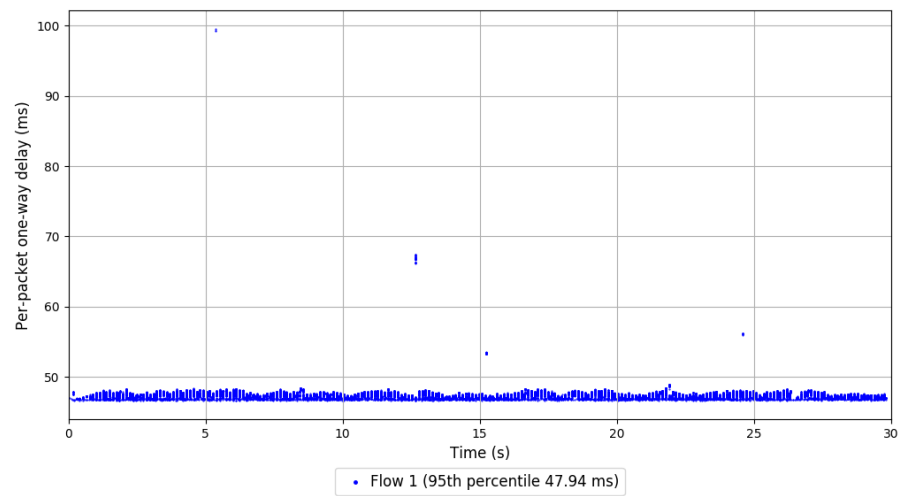
Run 8: Report of Sprout — Data Link

Flow 1 ingress (mean 7.64 Mbit/s)   Flow 1 egress (mean 7.57 Mbit/s)

Flow 1 (95th percentile 45.97 ms)

```
Run 9: Statistics of Sprout

Start at: 2018-01-25 23:35:30
End at: 2018-01-25 23:36:00

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.52 Mbit/s
95th percentile per-packet one-way delay: 46.717 ms
Loss rate: 2.11%
-- Flow 1:
Average throughput: 7.52 Mbit/s
95th percentile per-packet one-way delay: 46.717 ms
Loss rate: 2.11%
```
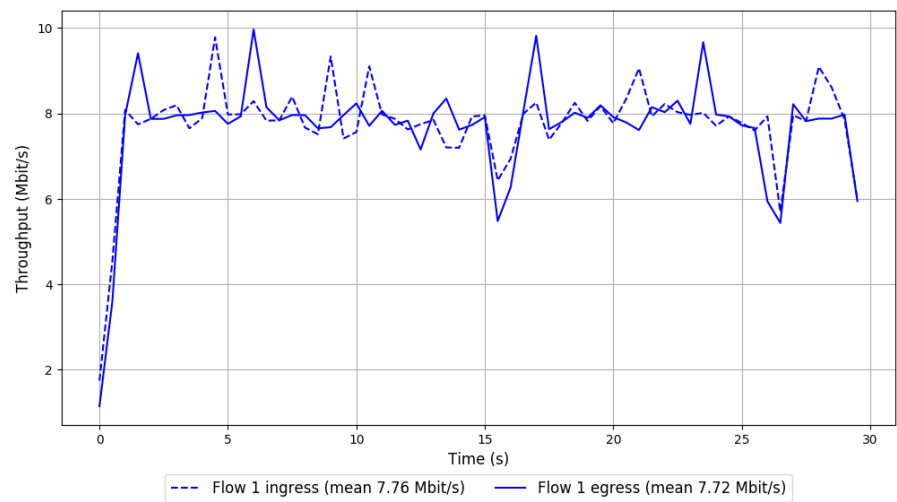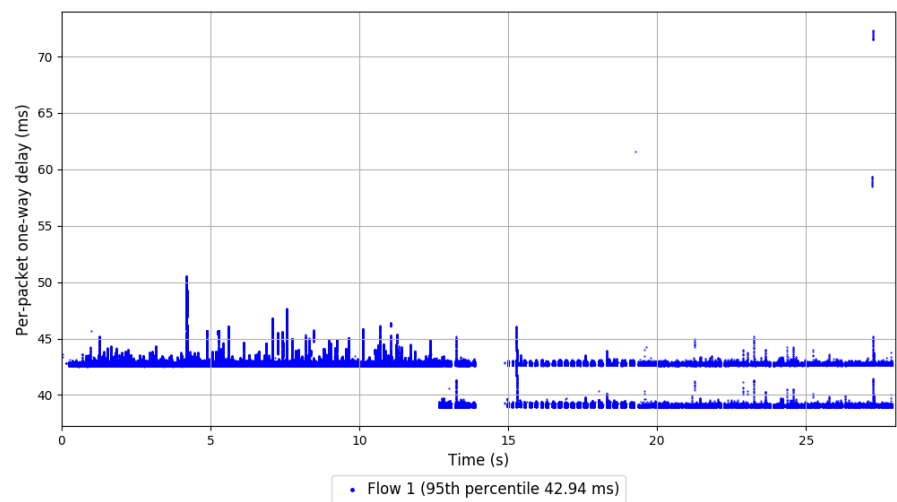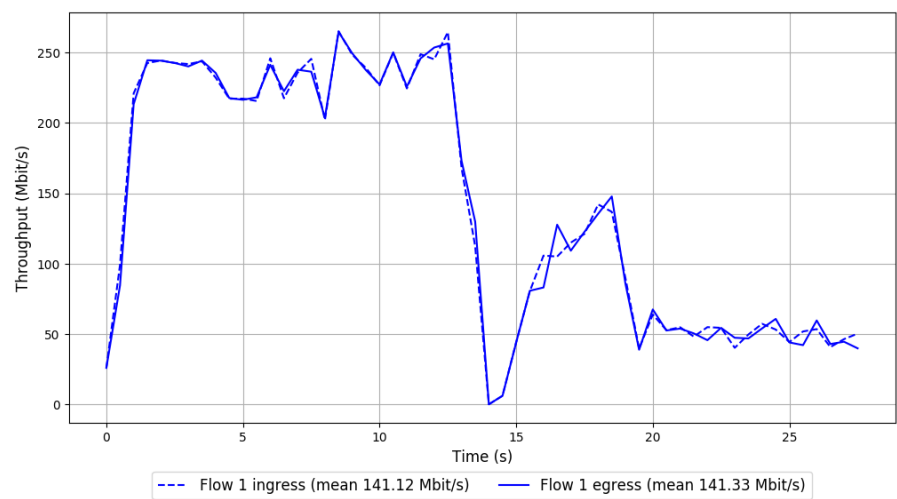
Run 9: Report of Sprout — Data Link

Flow 1 ingress (mean 7.65 Mbit/s) — Flow 1 egress (mean 7.52 Mbit/s)

• Flow 1 (95th percentile 46.72 ms)

```
Run 10: Statistics of Sprout

Start at: 2018-01-25 23:47:33
End at: 2018-01-25 23:48:03

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 7.72 Mbit/s
95th percentile per-packet one-way delay: 47.940 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 7.72 Mbit/s
95th percentile per-packet one-way delay: 47.940 ms
Loss rate: 0.95%
```

Run 10: Report of Sprout — Data Link

Flow 1 ingress (mean 7.76 Mbit/s)   Flow 1 egress (mean 7.72 Mbit/s)

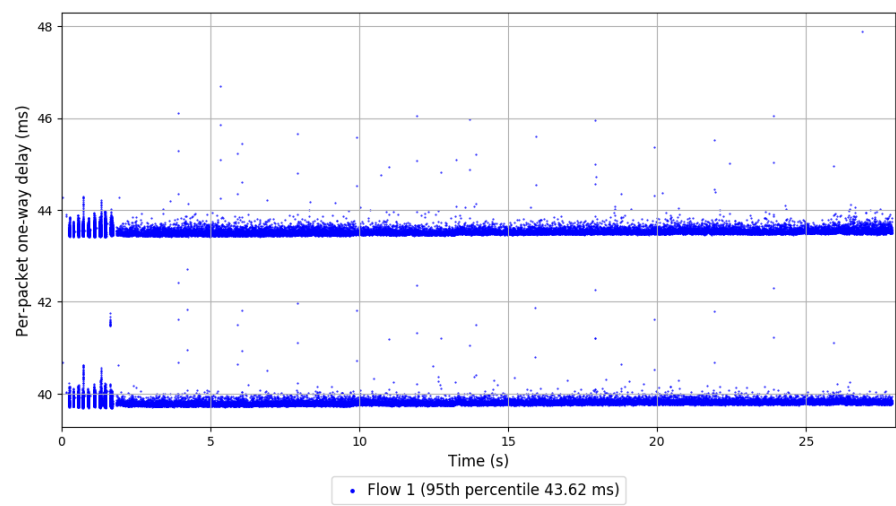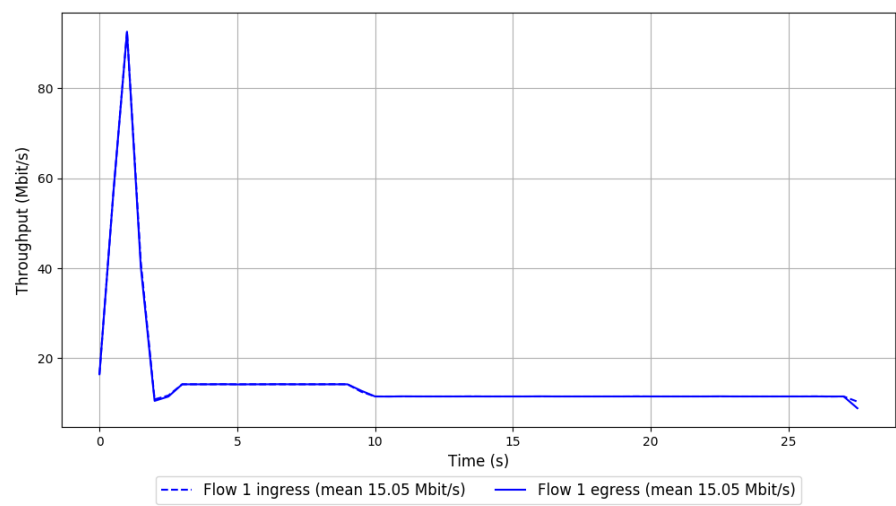Flow 1 (95th percentile 47.94 ms)

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

Start at: 2018-01-25 22:06:55
End at: 2018-01-25 22:07:25

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 141.33 Mbit/s
95th percentile per-packet one-way delay: 42.944 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 141.33 Mbit/s
95th percentile per-packet one-way delay: 42.944 ms
Loss rate: 0.19%
```
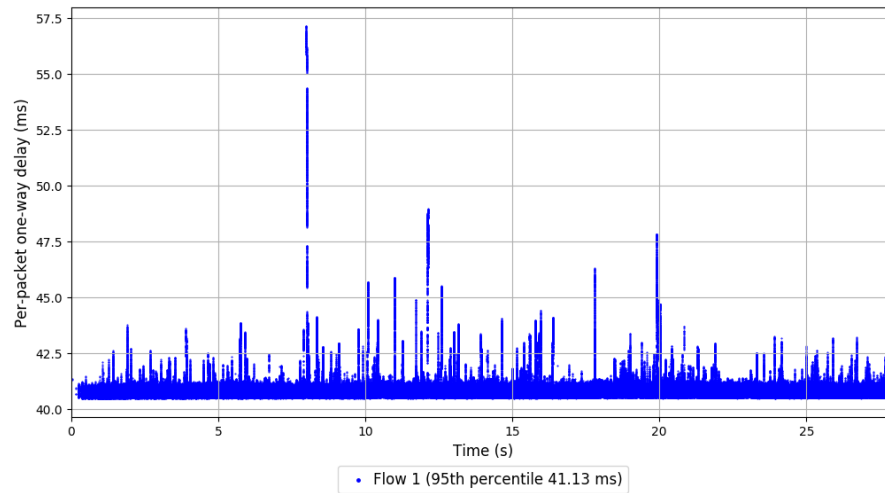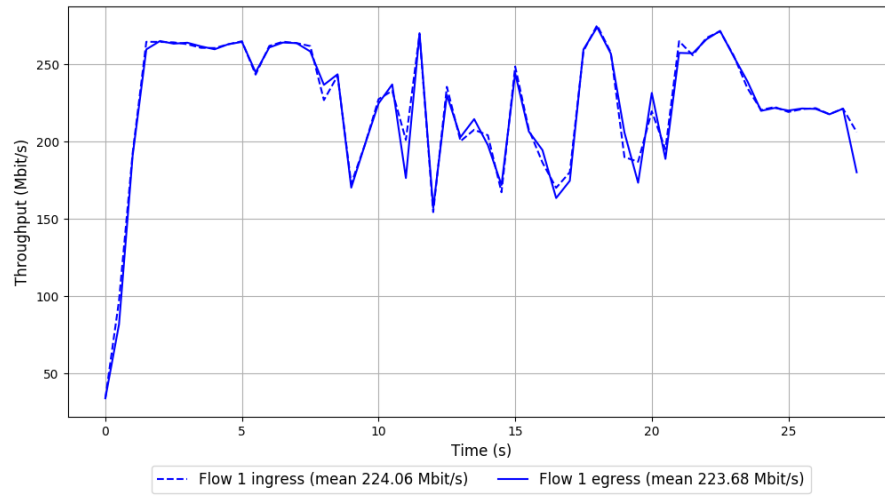
Run 1: Report of TaoVA-100x — Data Link

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

Start at: 2018-01-25 22:19:00
End at: 2018-01-25 22:19:30

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 15.05 Mbit/s
95th percentile per-packet one-way delay: 43.622 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 15.05 Mbit/s
95th percentile per-packet one-way delay: 43.622 ms
Loss rate: 0.36%
```
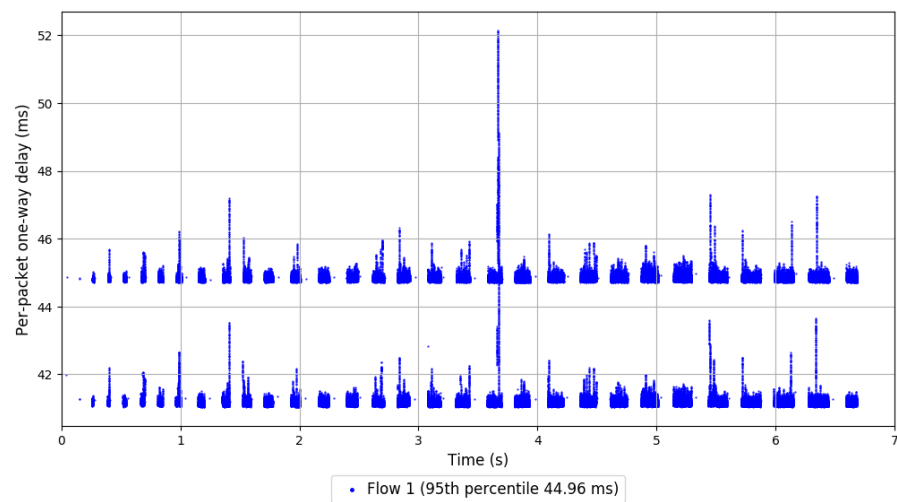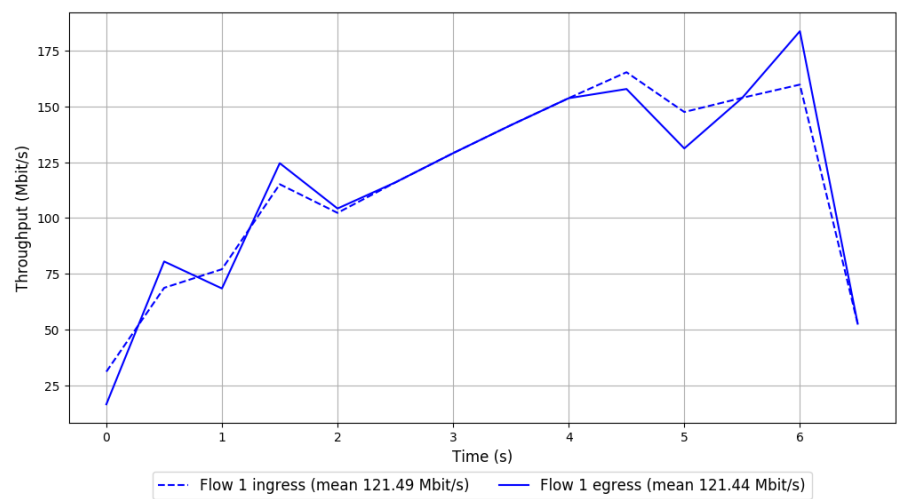
Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2018-01-25 22:30:46
End at: 2018-01-25 22:31:16

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 223.68 Mbit/s
95th percentile per-packet one-way delay: 41.126 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 223.68 Mbit/s
95th percentile per-packet one-way delay: 41.126 ms
Loss rate: 0.53%
```
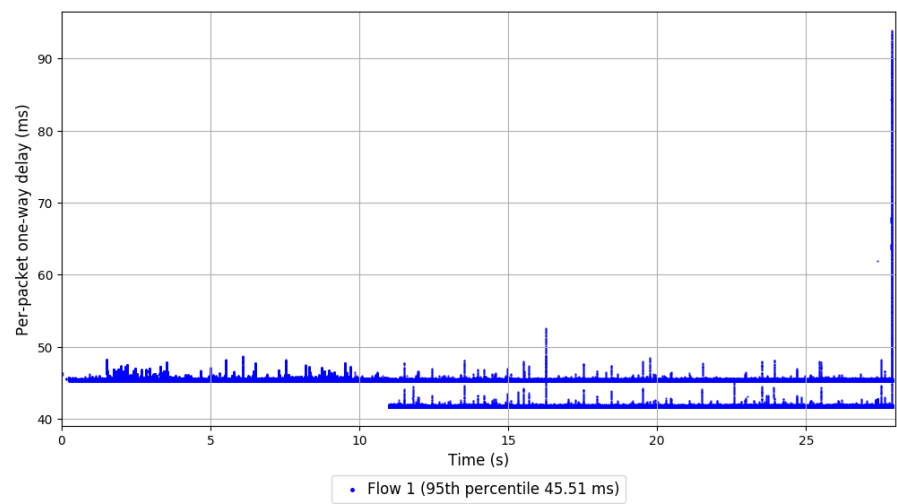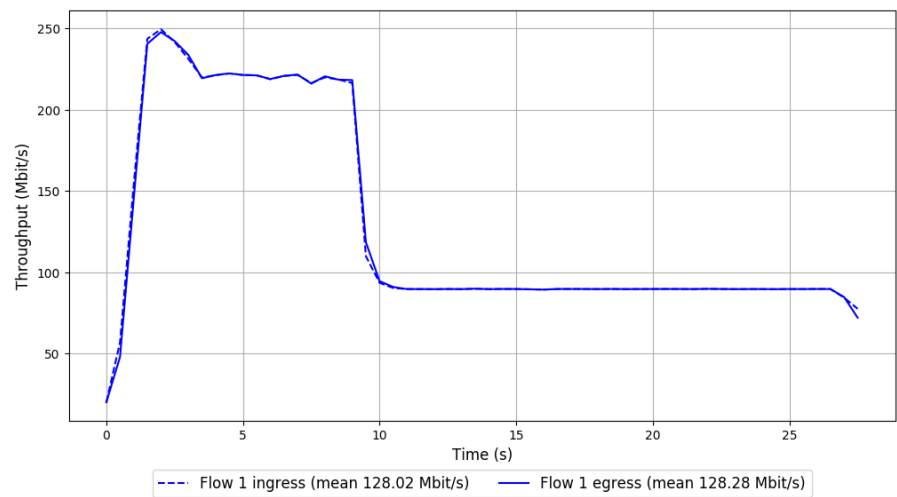
Run 3: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 224.06 Mbit/s) --- Flow 1 egress (mean 223.68 Mbit/s)

Flow 1 (95th percentile 41.13 ms)

Run 4: Statistics of TaoVA-100x

Start at: 2018-01-25 22:42:42
End at: 2018-01-25 22:43:12

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

Flow 1 ingress (mean 121.49 Mbit/s)   Flow 1 egress (mean 121.44 Mbit/s)

Flow 1 (95th percentile 44.96 ms)

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

Start at: 2018-01-25 22:54:26
End at: 2018-01-25 22:54:57

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 128.28 Mbit/s
95th percentile per-packet one-way delay: 45.507 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 128.28 Mbit/s
95th percentile per-packet one-way delay: 45.507 ms
Loss rate: 0.18%
```
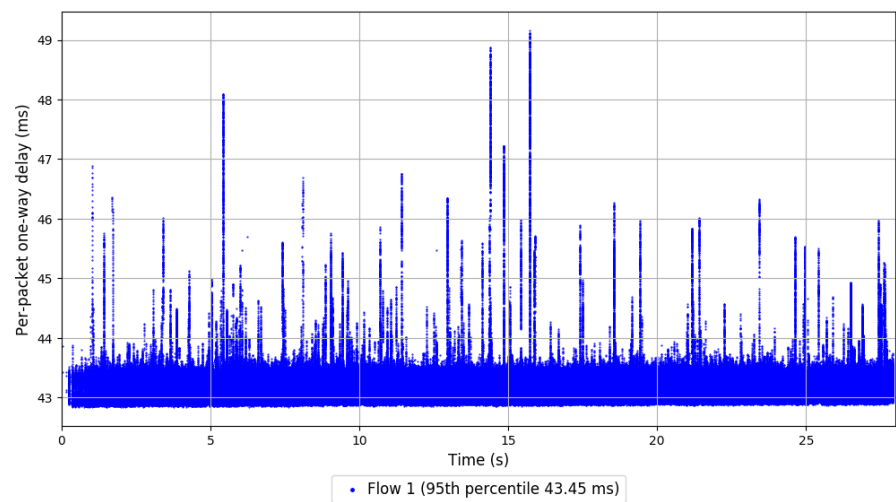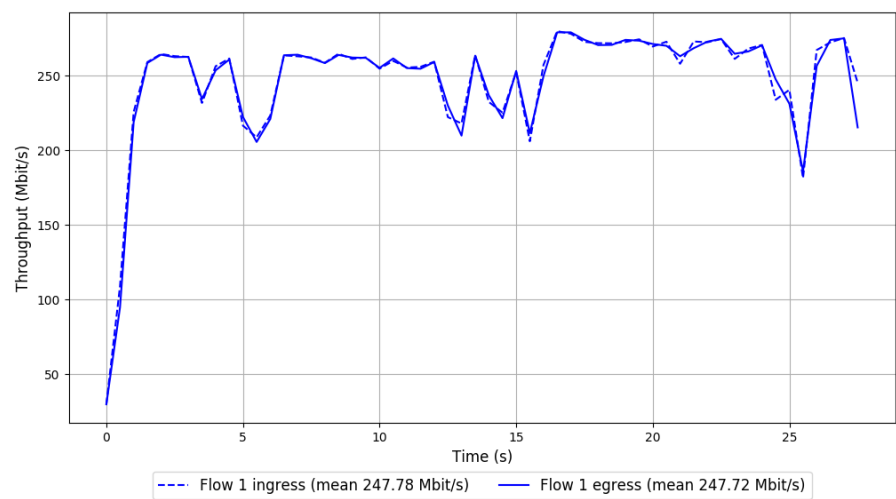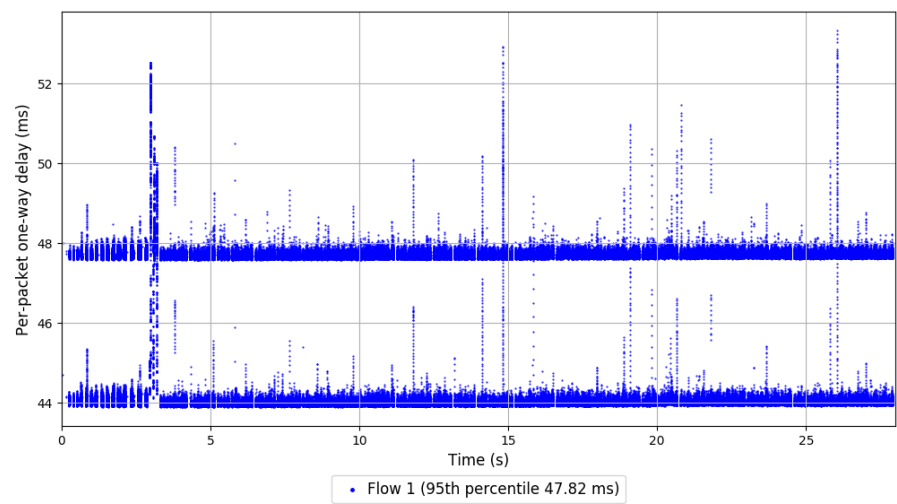
Run 5: Report of TaoVA-100x — Data Link

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

Start at: 2018-01-25 23:06:27
End at: 2018-01-25 23:06:57

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 247.72 Mbit/s
95th percentile per-packet one-way delay: 43.447 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 247.72 Mbit/s
95th percentile per-packet one-way delay: 43.447 ms
Loss rate: 0.38%
```
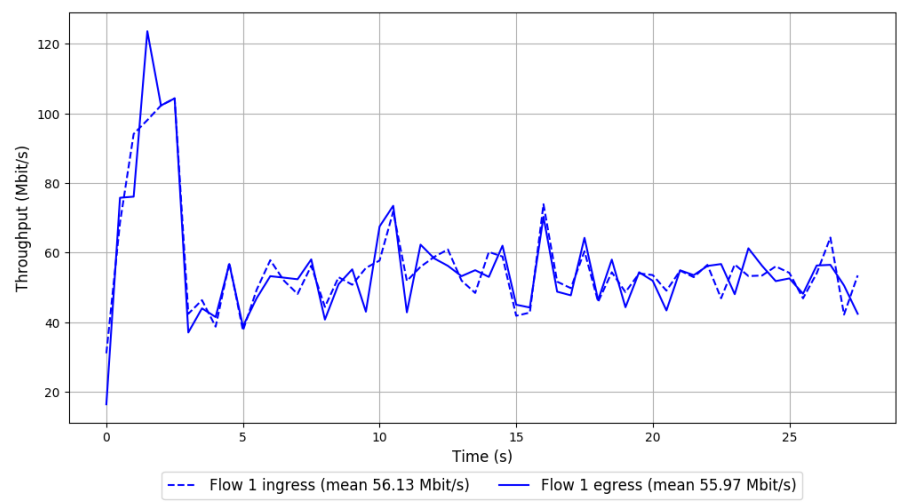
Run 6: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 247.78 Mbit/s) — Flow 1 egress (mean 247.72 Mbit/s)

• Flow 1 (95th percentile 43.45 ms)

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

Start at: 2018-01-25 23:18:36
End at: 2018-01-25 23:19:06

# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 55.97 Mbit/s
95th percentile per-packet one-way delay: 47.818 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 55.97 Mbit/s
95th percentile per-packet one-way delay: 47.818 ms
Loss rate: 0.58%
```
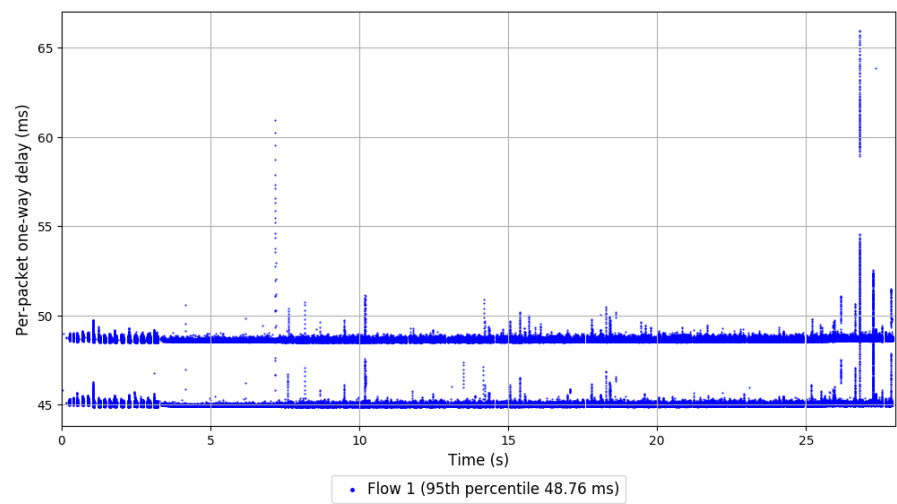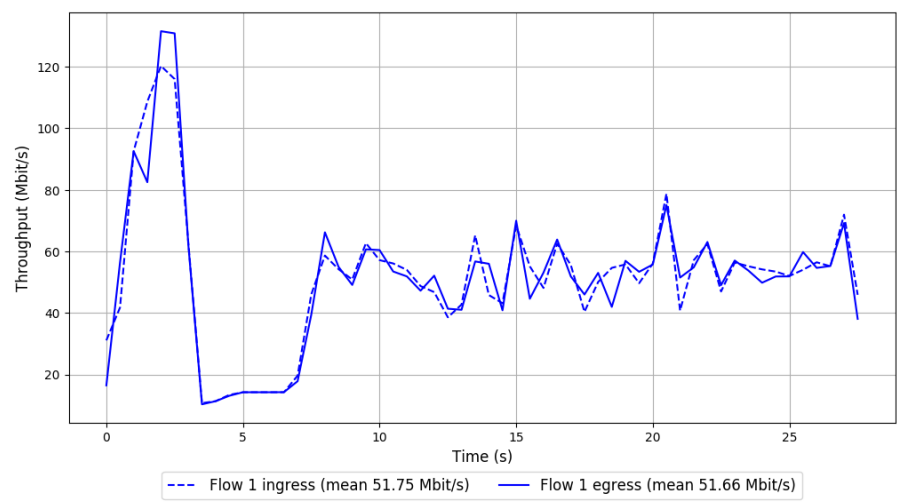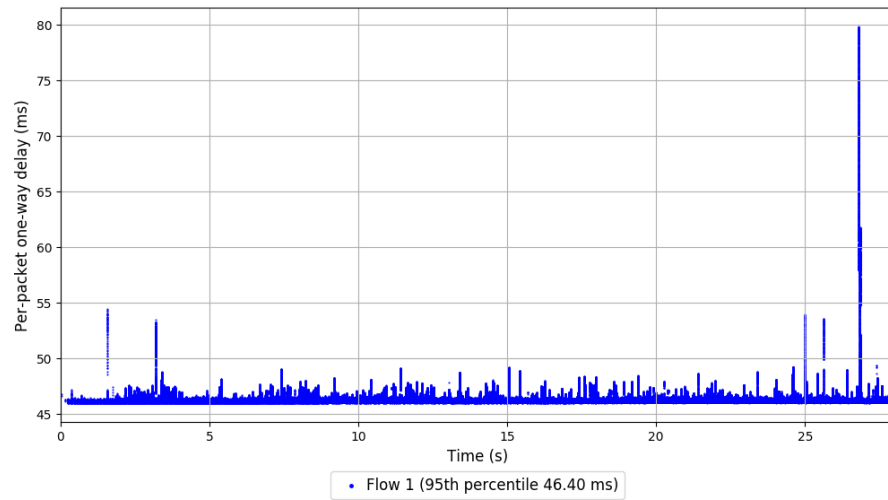
Run 7: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 56.13 Mbit/s)   Flow 1 egress (mean 55.97 Mbit/s)

Flow 1 (95th percentile 47.82 ms)

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

Start at: 2018-01-25 23:30:26
End at: 2018-01-25 23:30:56


# Below is generated by plot.py at 2018-01-26 02:27:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 51.66 Mbit/s
95th percentile per-packet one-way delay: 48.758 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 51.66 Mbit/s
95th percentile per-packet one-way delay: 48.758 ms
Loss rate: 0.48%
```
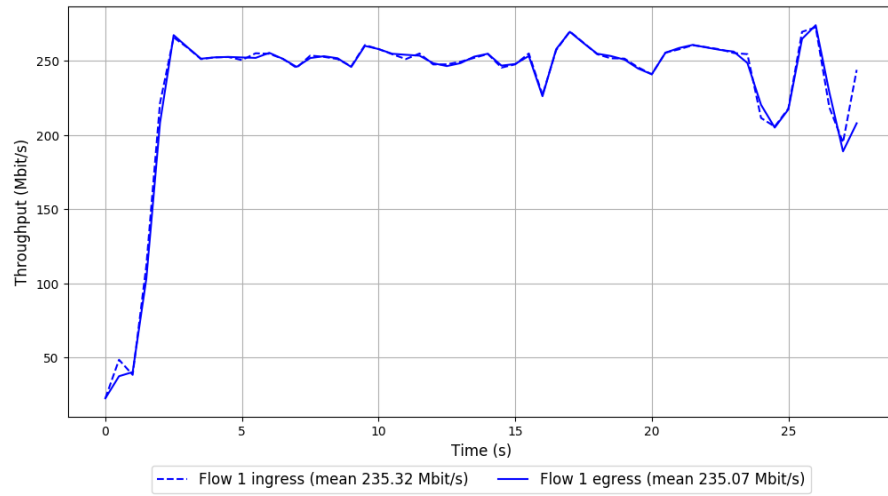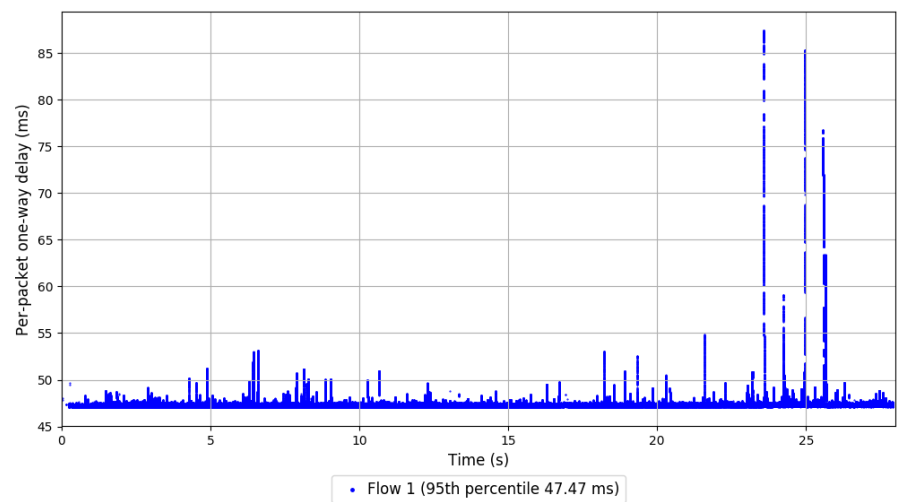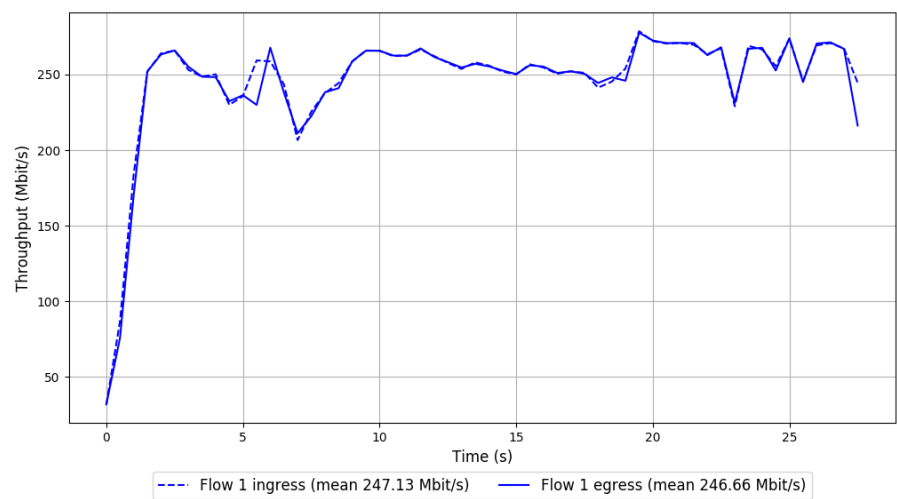
Run 8: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 51.75 Mbit/s) --- Flow 1 egress (mean 51.66 Mbit/s)

Flow 1 (95th percentile 48.76 ms)

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

Start at: 2018-01-25 23:42:07
End at: 2018-01-25 23:42:37

# Below is generated by plot.py at 2018-01-26 02:28:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 235.07 Mbit/s
95th percentile per-packet one-way delay: 46.400 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 235.07 Mbit/s
95th percentile per-packet one-way delay: 46.400 ms
Loss rate: 0.47%
```
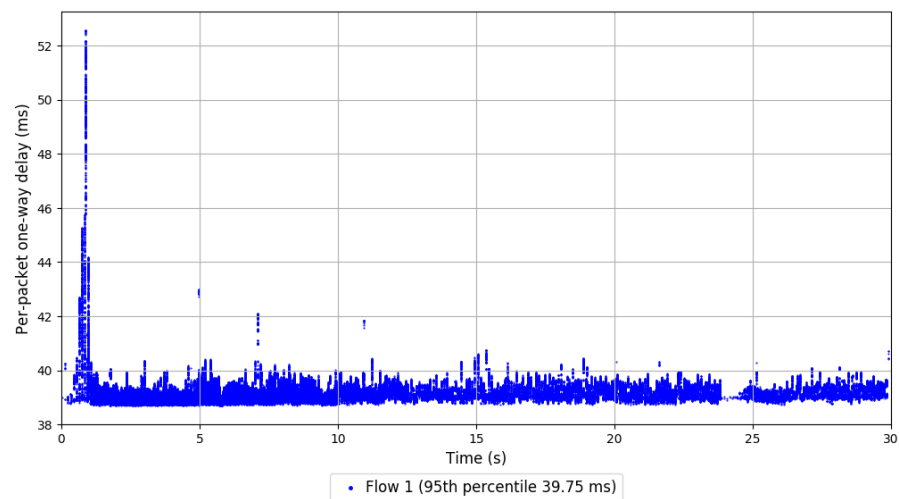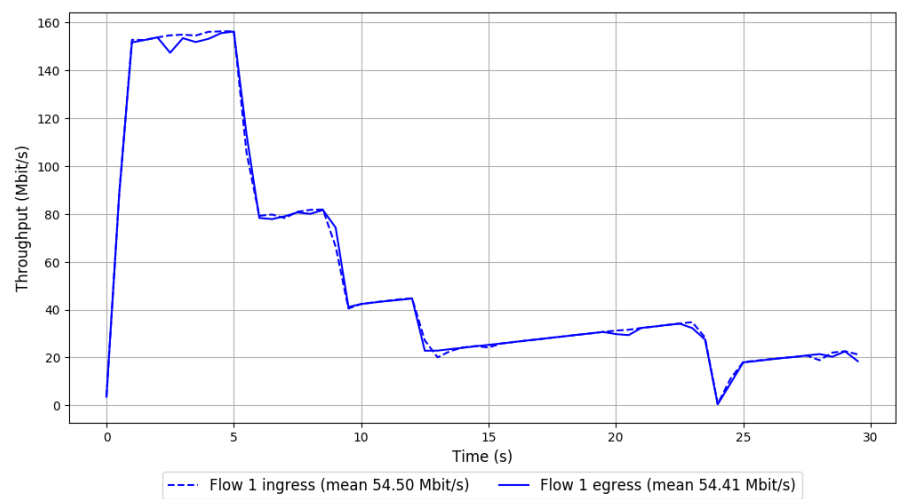
Run 9: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 235.32 Mbit/s) —— Flow 1 egress (mean 235.07 Mbit/s)

• Flow 1 (95th percentile 46.40 ms)

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

Start at: 2018-01-25 23:54:10
End at: 2018-01-25 23:54:40

# Below is generated by plot.py at 2018-01-26 02:29:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 246.66 Mbit/s
95th percentile per-packet one-way delay: 47.466 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 246.66 Mbit/s
95th percentile per-packet one-way delay: 47.466 ms
Loss rate: 0.56%
```
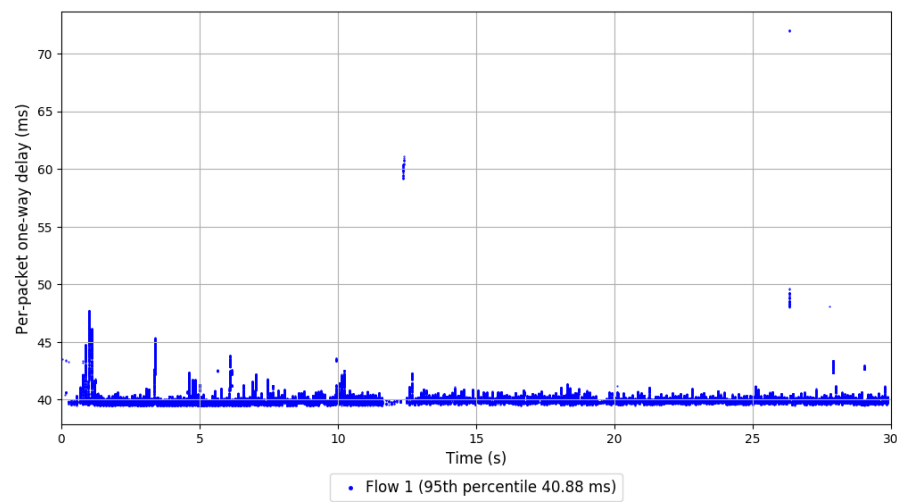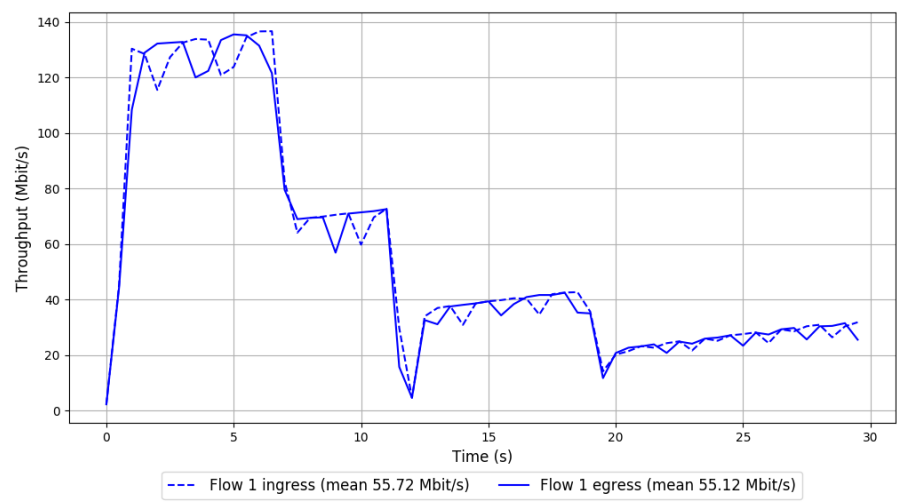
Run 10: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 247.13 Mbit/s) — Flow 1 egress (mean 246.66 Mbit/s)

Flow 1 (95th percentile 47.47 ms)

```
Run 1: Statistics of TCP Vegas

Start at: 2018-01-25 22:03:57
End at: 2018-01-25 22:04:27

# Below is generated by plot.py at 2018-01-26 02:29:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 54.41 Mbit/s
95th percentile per-packet one-way delay: 39.749 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 54.41 Mbit/s
95th percentile per-packet one-way delay: 39.749 ms
Loss rate: 0.50%
```
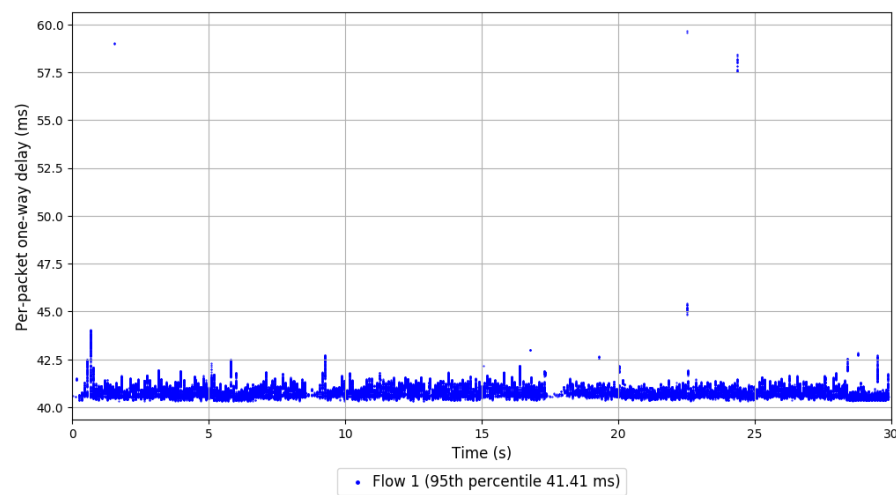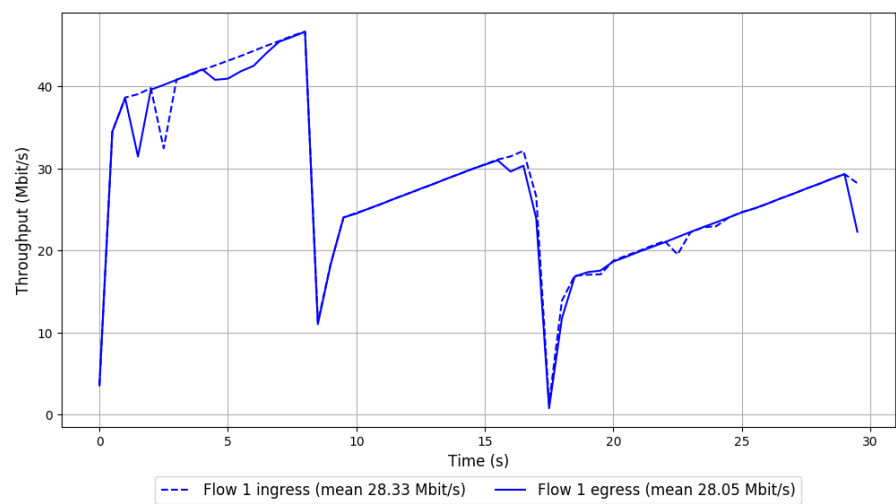
Run 1: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 54.50 Mbit/s) — Flow 1 egress (mean 54.41 Mbit/s)

• Flow 1 (95th percentile 39.75 ms)

```
Run 2: Statistics of TCP Vegas

Start at: 2018-01-25 22:15:56
End at: 2018-01-25 22:16:26

# Below is generated by plot.py at 2018-01-26 02:29:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 55.12 Mbit/s
95th percentile per-packet one-way delay: 40.879 ms
Loss rate: 1.42%
-- Flow 1:
Average throughput: 55.12 Mbit/s
95th percentile per-packet one-way delay: 40.879 ms
Loss rate: 1.42%
```
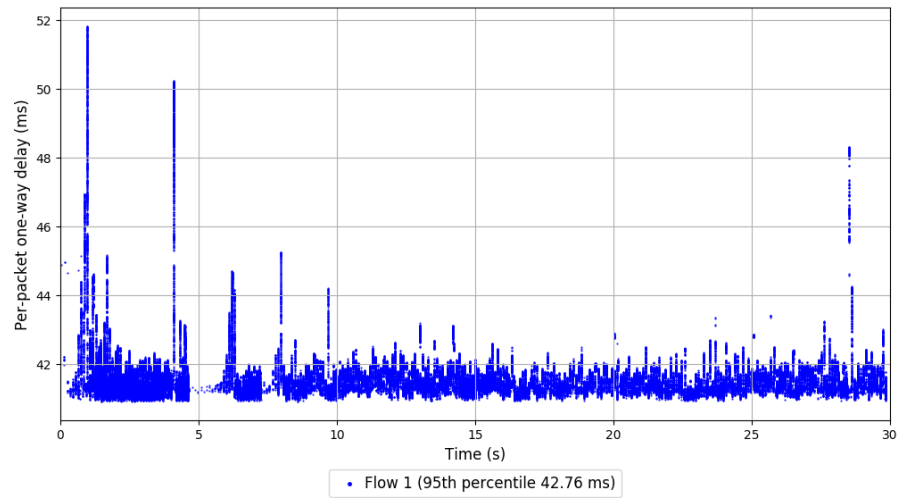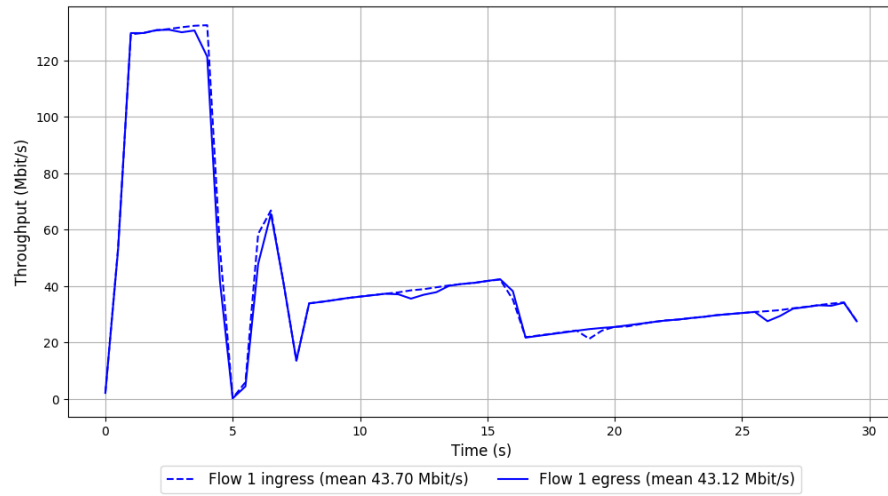
Run 2: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 55.72 Mbit/s)   Flow 1 egress (mean 55.12 Mbit/s)

• Flow 1 (95th percentile 40.88 ms)

```
Run 3: Statistics of TCP Vegas

Start at: 2018-01-25 22:27:47
End at: 2018-01-25 22:28:17

# Below is generated by plot.py at 2018-01-26 02:29:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 28.05 Mbit/s
95th percentile per-packet one-way delay: 41.413 ms
Loss rate: 1.27%
-- Flow 1:
Average throughput: 28.05 Mbit/s
95th percentile per-packet one-way delay: 41.413 ms
Loss rate: 1.27%
```
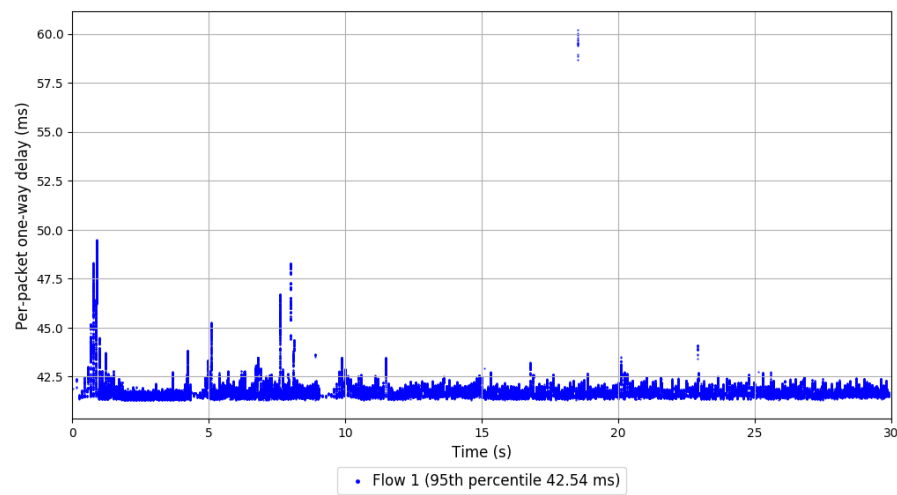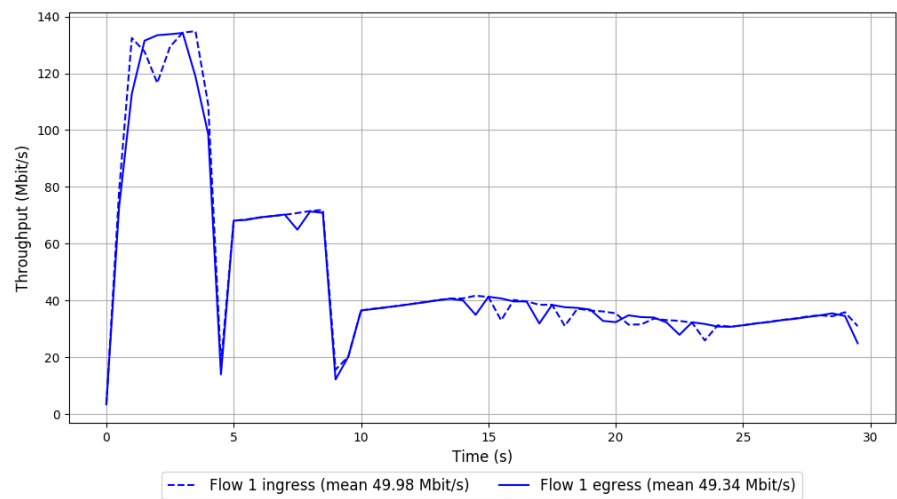
Run 3: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 28.33 Mbit/s) --- Flow 1 egress (mean 28.05 Mbit/s)

Flow 1 (95th percentile 41.41 ms)

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```
Run 4: Statistics of TCP Vegas

Start at: 2018-01-25 22:39:44
End at: 2018-01-25 22:40:14

# Below is generated by plot.py at 2018-01-26 02:29:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 43.12 Mbit/s
95th percentile per-packet one-way delay: 42.758 ms
Loss rate: 1.80%
-- Flow 1:
Average throughput: 43.12 Mbit/s
95th percentile per-packet one-way delay: 42.758 ms
Loss rate: 1.80%
```
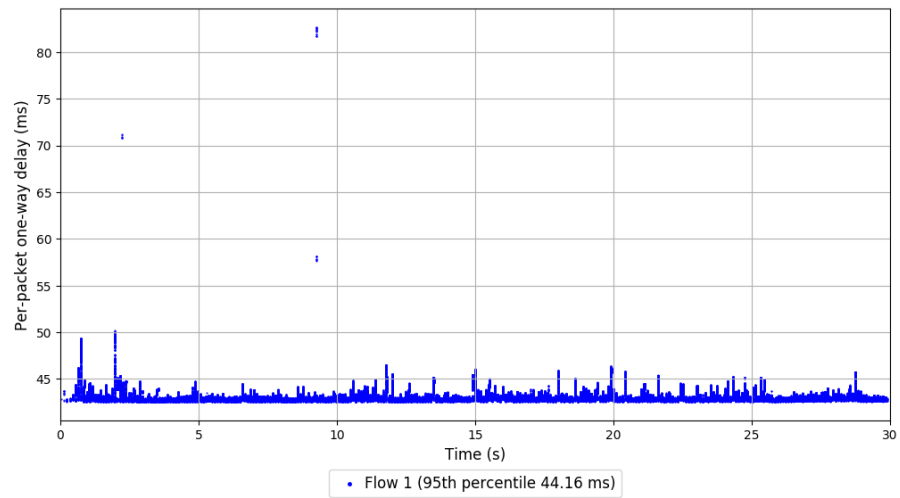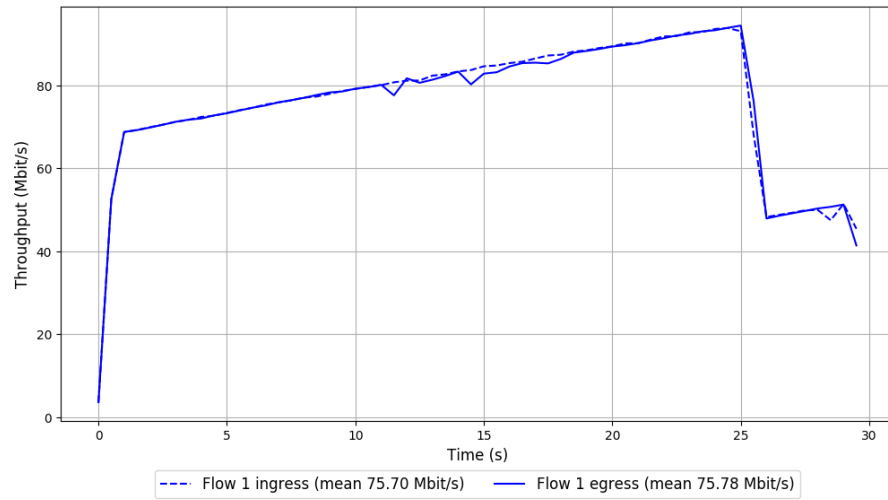
Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2018-01-25 22:51:27
End at: 2018-01-25 22:51:57

# Below is generated by plot.py at 2018-01-26 02:29:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 49.34 Mbit/s
95th percentile per-packet one-way delay: 42.538 ms
Loss rate: 1.61%
-- Flow 1:
Average throughput: 49.34 Mbit/s
95th percentile per-packet one-way delay: 42.538 ms
Loss rate: 1.61%
```
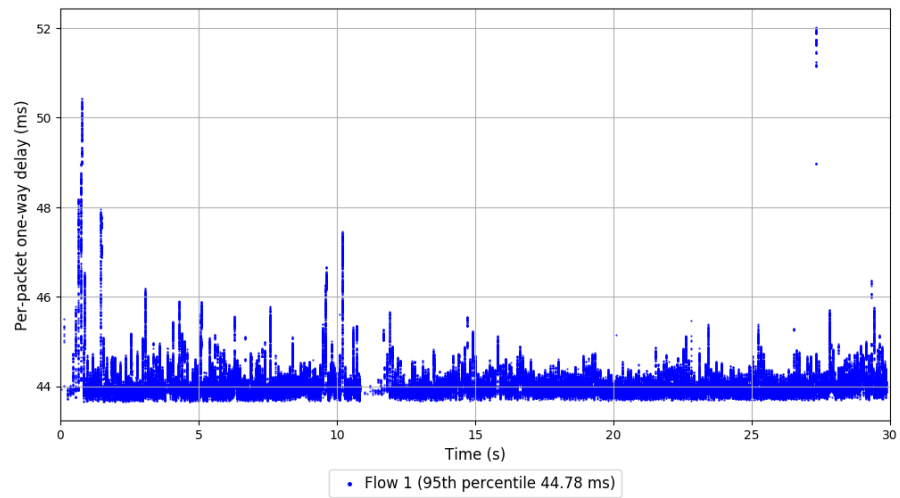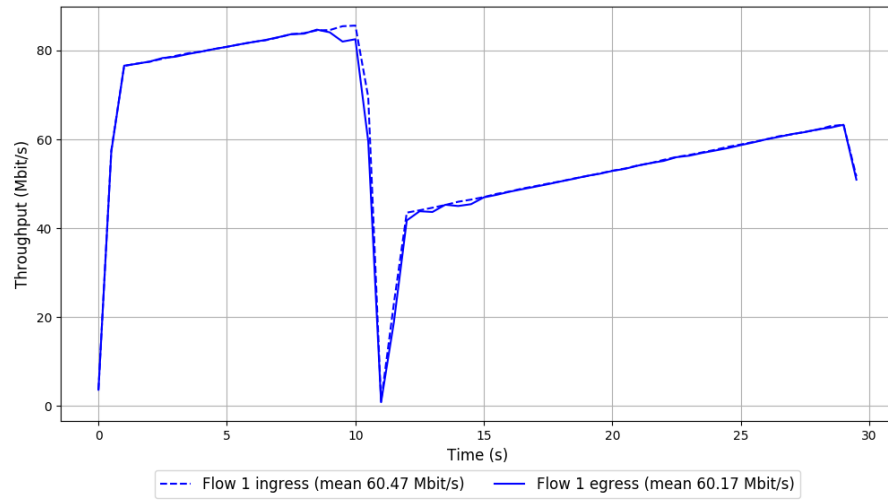
Run 5: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 49.98 Mbit/s)   Flow 1 egress (mean 49.34 Mbit/s)

Flow 1 (95th percentile 42.54 ms)

```
Run 6: Statistics of TCP Vegas

Start at: 2018-01-25 23:03:23
End at: 2018-01-25 23:03:53

# Below is generated by plot.py at 2018-01-26 02:29:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 75.78 Mbit/s
95th percentile per-packet one-way delay: 44.160 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 75.78 Mbit/s
95th percentile per-packet one-way delay: 44.160 ms
Loss rate: 0.23%
```
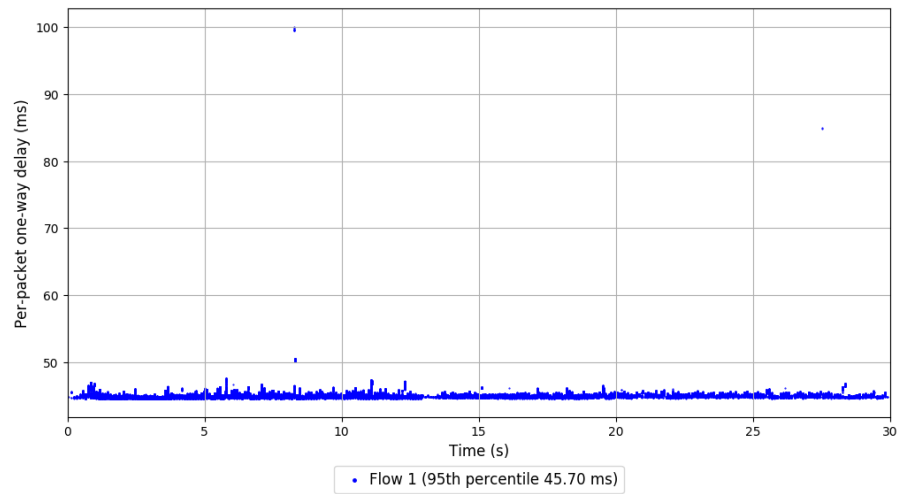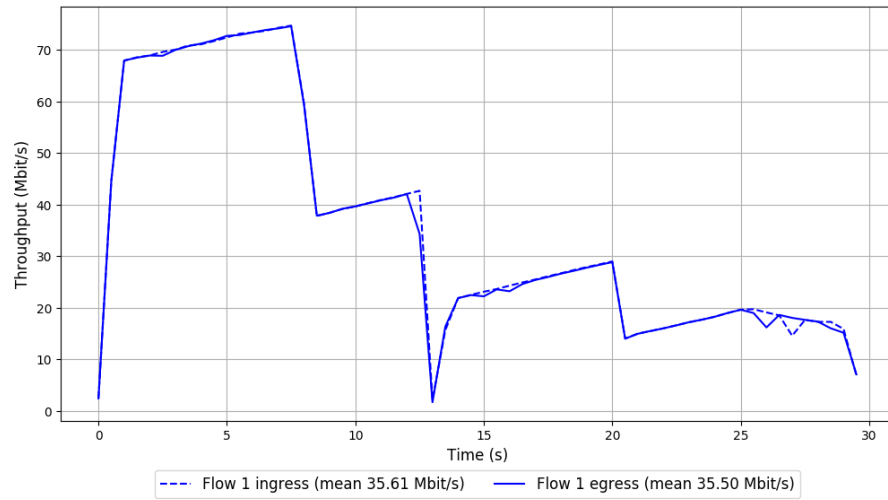
Run 6: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 75.70 Mbit/s)   Flow 1 egress (mean 75.78 Mbit/s)

Flow 1 (95th percentile 44.16 ms)

```
Run 7: Statistics of TCP Vegas

Start at: 2018-01-25 23:15:37
End at: 2018-01-25 23:16:07

# Below is generated by plot.py at 2018-01-26 02:29:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 60.17 Mbit/s
95th percentile per-packet one-way delay: 44.783 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 60.17 Mbit/s
95th percentile per-packet one-way delay: 44.783 ms
Loss rate: 0.83%
```
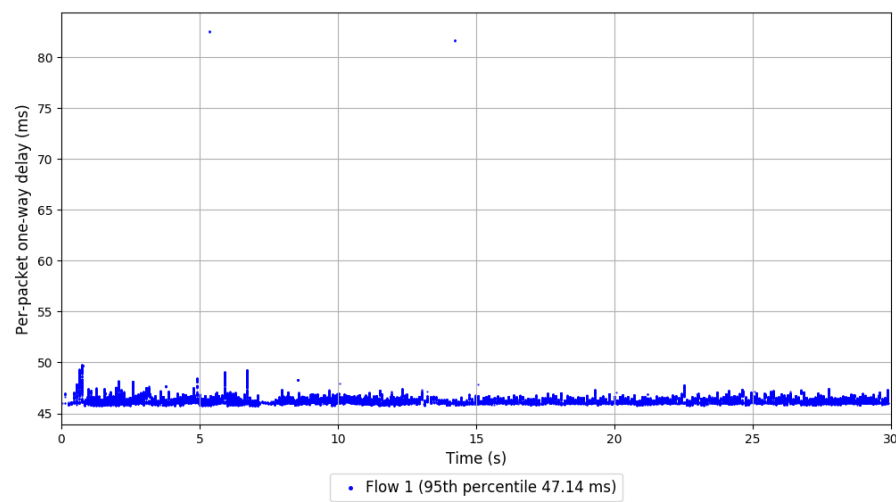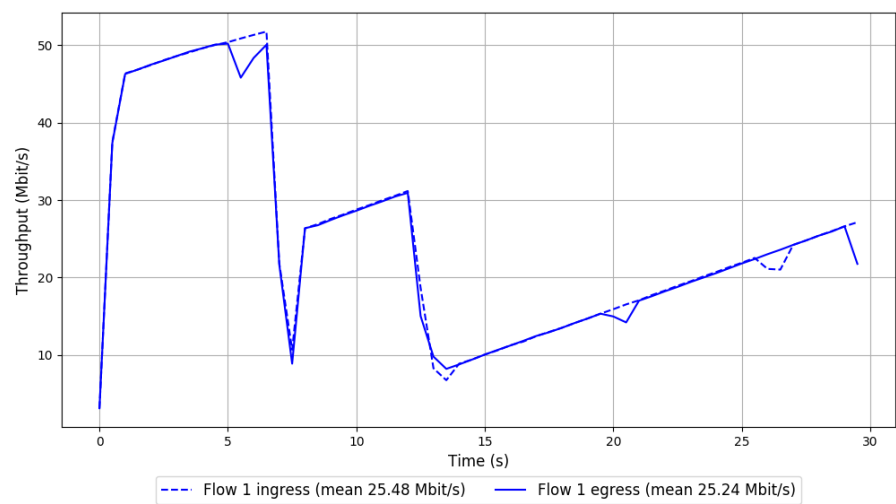
Run 7: Report of TCP Vegas — Data Link

```
Run 8: Statistics of TCP Vegas

Start at: 2018-01-25 23:27:26
End at: 2018-01-25 23:27:56

# Below is generated by plot.py at 2018-01-26 02:29:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 35.50 Mbit/s
95th percentile per-packet one-way delay: 45.697 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 35.50 Mbit/s
95th percentile per-packet one-way delay: 45.697 ms
Loss rate: 0.67%
```
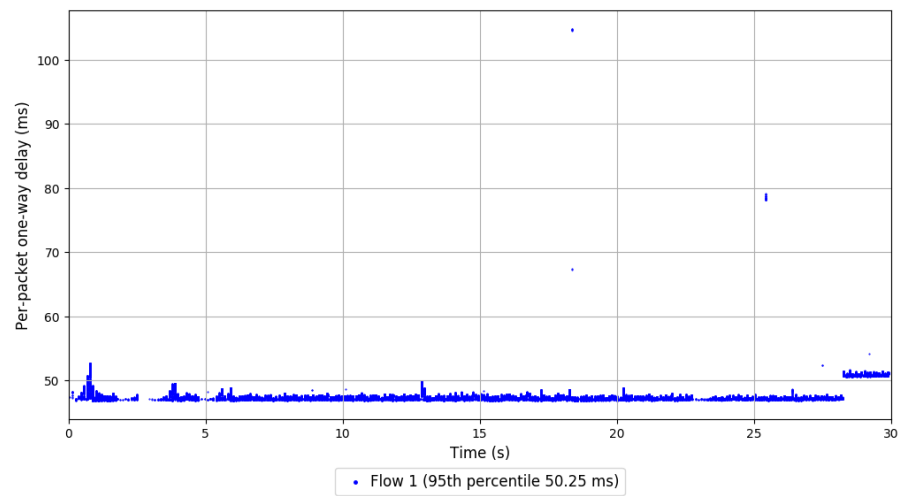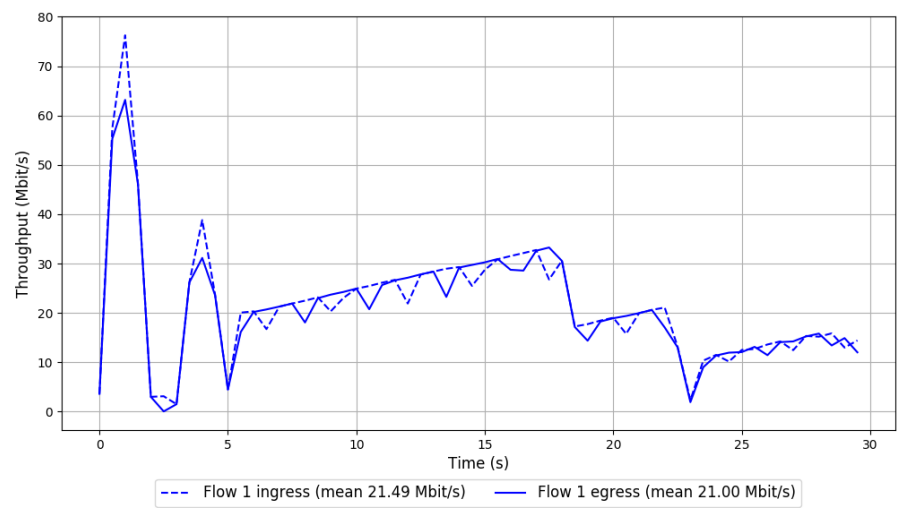
Run 8: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 35.61 Mbit/s)   Flow 1 egress (mean 35.50 Mbit/s)

Flow 1 (95th percentile 45.70 ms)

```
Run 9: Statistics of TCP Vegas

Start at: 2018-01-25 23:39:07
End at: 2018-01-25 23:39:37

# Below is generated by plot.py at 2018-01-26 02:29:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 25.24 Mbit/s
95th percentile per-packet one-way delay: 47.138 ms
Loss rate: 1.25%
-- Flow 1:
Average throughput: 25.24 Mbit/s
95th percentile per-packet one-way delay: 47.138 ms
Loss rate: 1.25%
```
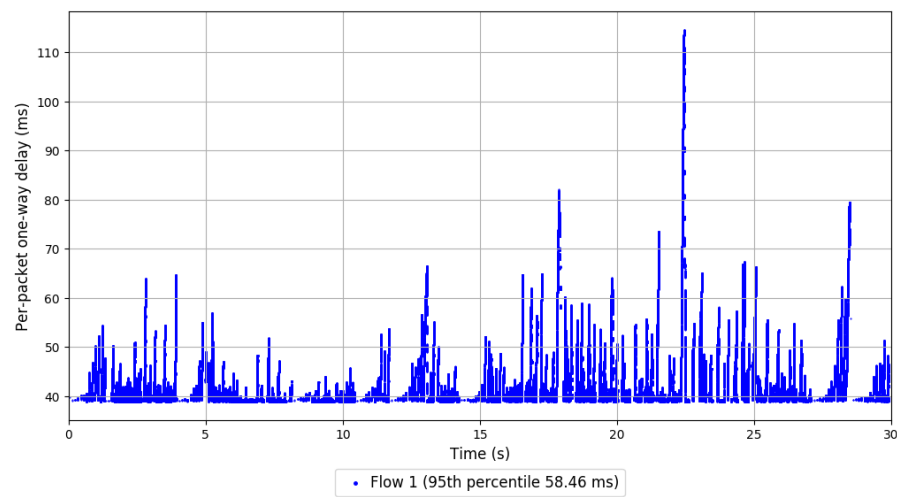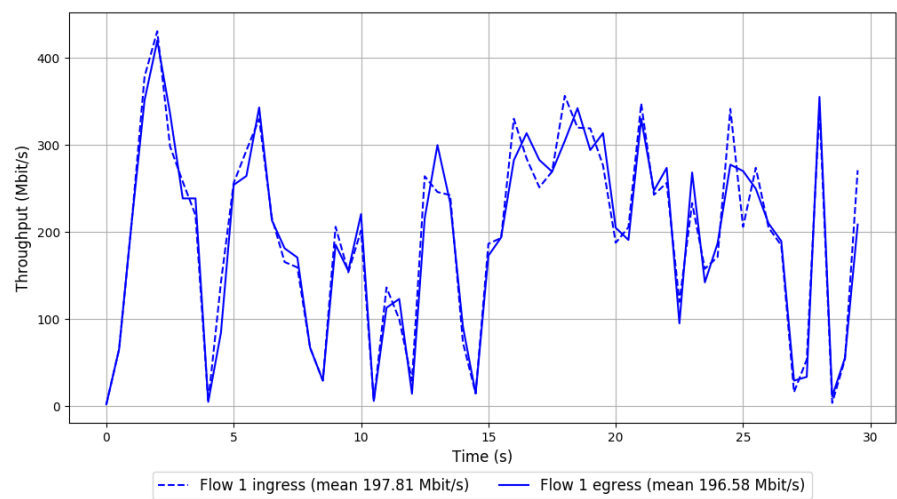
Run 9: Report of TCP Vegas — Data Link

```
Run 10: Statistics of TCP Vegas

Start at: 2018-01-25 23:51:11
End at: 2018-01-25 23:51:41

# Below is generated by plot.py at 2018-01-26 02:29:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 21.00 Mbit/s
95th percentile per-packet one-way delay: 50.248 ms
Loss rate: 2.61%
-- Flow 1:
Average throughput: 21.00 Mbit/s
95th percentile per-packet one-way delay: 50.248 ms
Loss rate: 2.61%
```
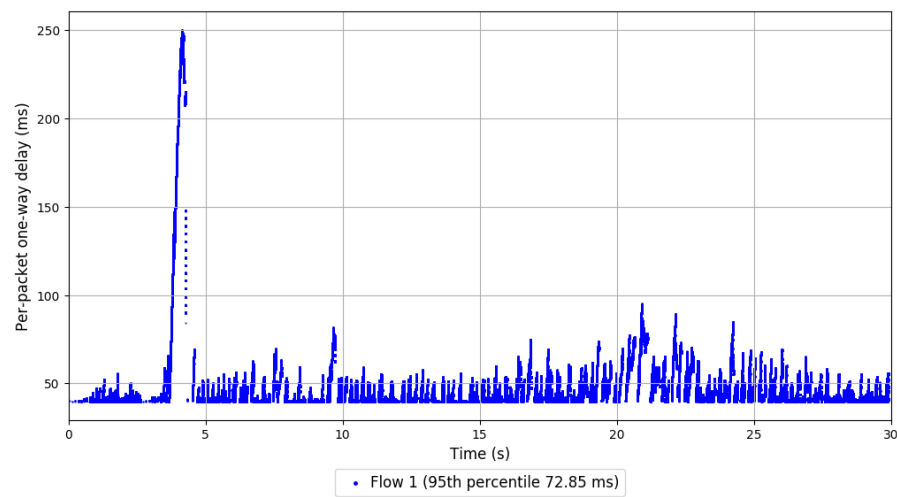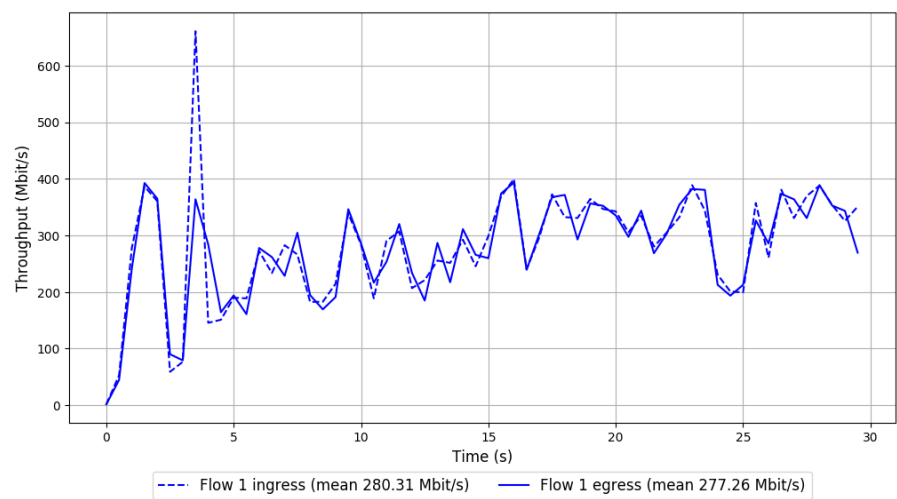
Run 10: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 21.49 Mbit/s) --- Flow 1 egress (mean 21.00 Mbit/s)

Flow 1 (95th percentile 50.25 ms)

```
Run 1: Statistics of Verus

Start at: 2018-01-25 22:06:04
End at: 2018-01-25 22:06:34

# Below is generated by plot.py at 2018-01-26 02:29:33
# Datalink statistics
-- Total of 1 flow:
Average throughput: 196.58 Mbit/s
95th percentile per-packet one-way delay: 58.457 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 196.58 Mbit/s
95th percentile per-packet one-way delay: 58.457 ms
Loss rate: 0.97%
```
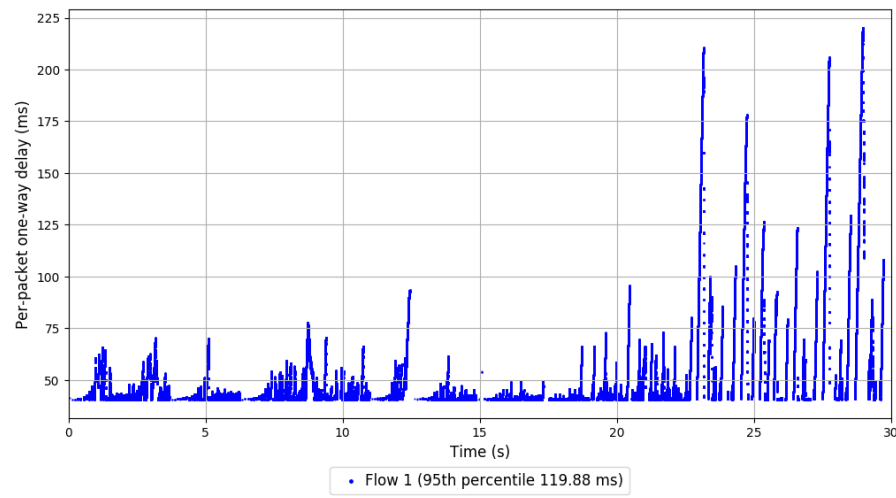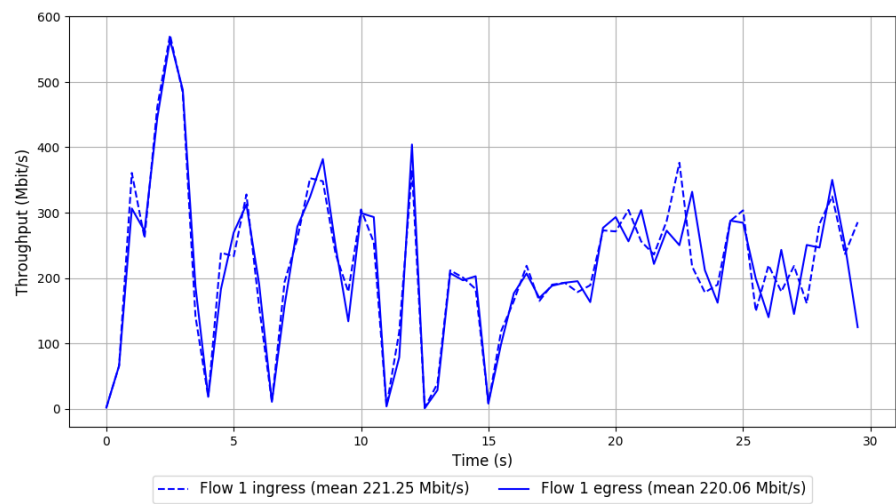
Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-01-25 22:18:03
End at: 2018-01-25 22:18:33


# Below is generated by plot.py at 2018-01-26 02:31:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 277.26 Mbit/s
95th percentile per-packet one-way delay: 72.849 ms
Loss rate: 1.43%
-- Flow 1:
Average throughput: 277.26 Mbit/s
95th percentile per-packet one-way delay: 72.849 ms
Loss rate: 1.43%
```
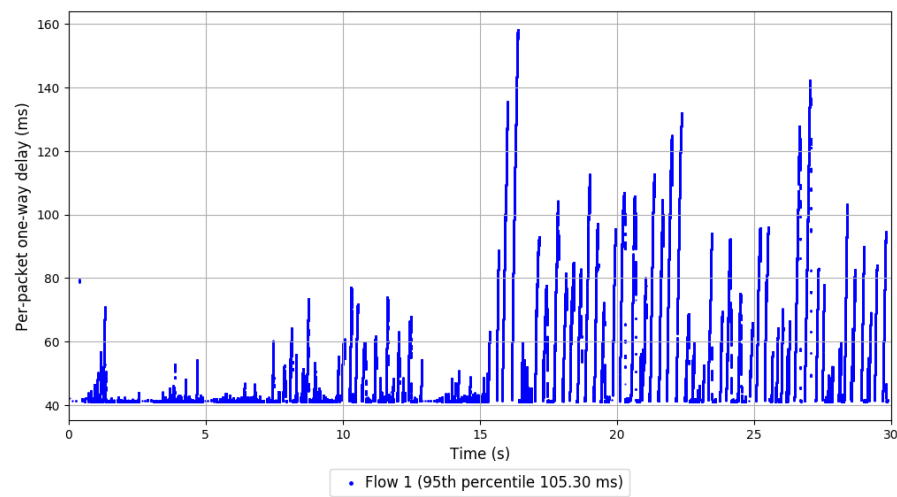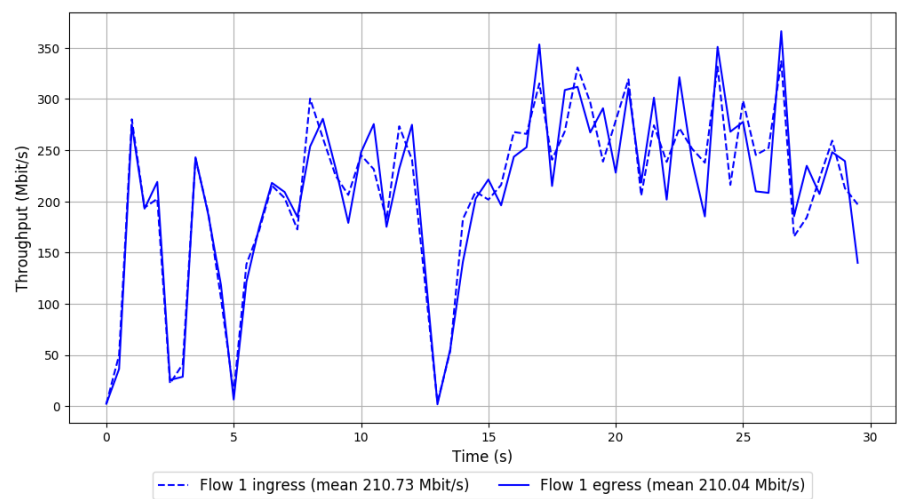
Run 2: Report of Verus — Data Link

Flow 1 ingress (mean 280.31 Mbit/s)   Flow 1 egress (mean 277.26 Mbit/s)

Flow 1 (95th percentile 72.85 ms)

```
Run 3: Statistics of Verus

Start at: 2018-01-25 22:29:54
End at: 2018-01-25 22:30:24

# Below is generated by plot.py at 2018-01-26 02:31:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 220.06 Mbit/s
95th percentile per-packet one-way delay: 119.875 ms
Loss rate: 1.44%
-- Flow 1:
Average throughput: 220.06 Mbit/s
95th percentile per-packet one-way delay: 119.875 ms
Loss rate: 1.44%
```
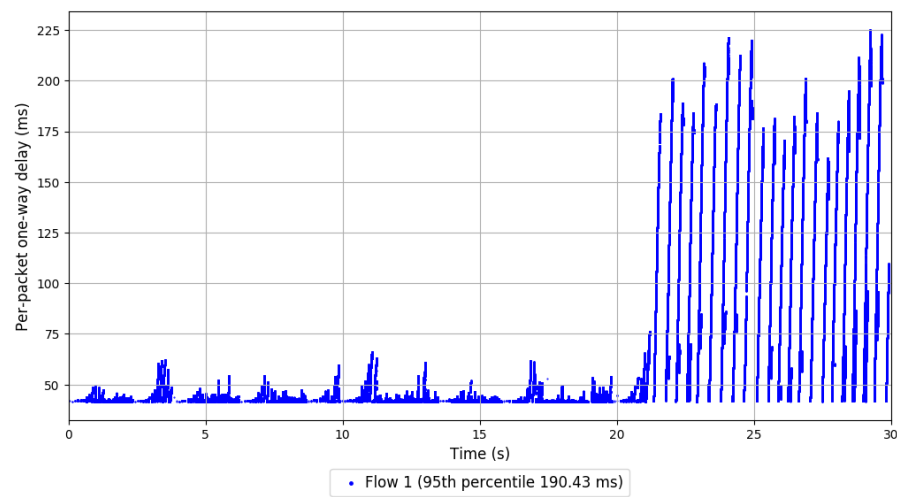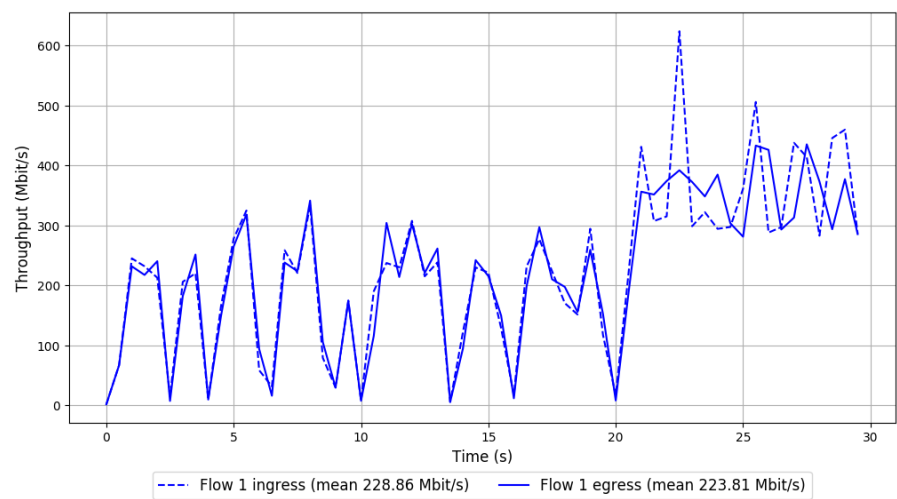
Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2018-01-25 22:41:50
End at: 2018-01-25 22:42:20

# Below is generated by plot.py at 2018-01-26 02:31:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 210.04 Mbit/s
95th percentile per-packet one-way delay: 105.301 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 210.04 Mbit/s
95th percentile per-packet one-way delay: 105.301 ms
Loss rate: 0.69%
```
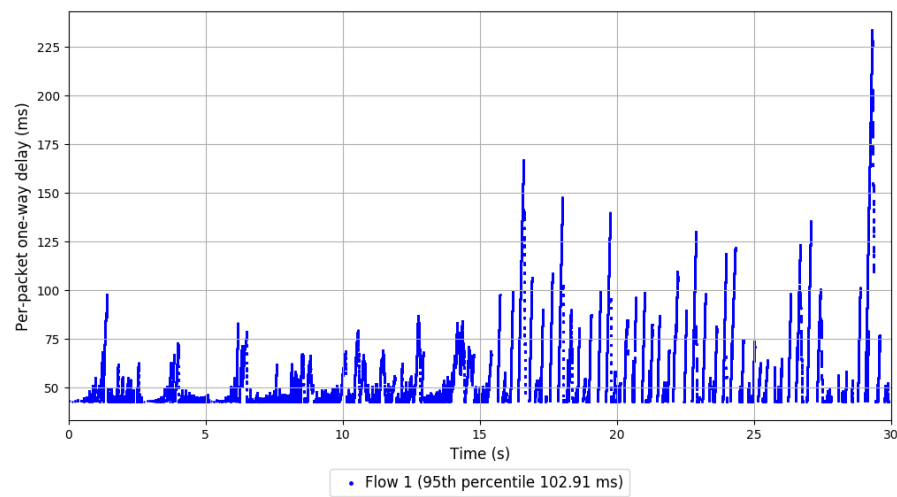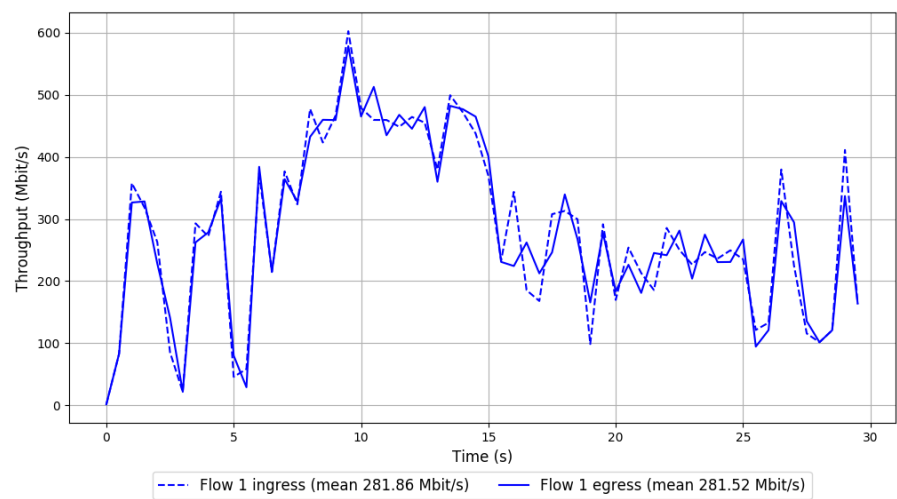
Run 4: Report of Verus — Data Link

Flow 1 ingress (mean 210.73 Mbit/s) ----- Flow 1 egress (mean 210.04 Mbit/s)

• Flow 1 (95th percentile 105.30 ms)

```
Run 5: Statistics of Verus

Start at: 2018-01-25 22:53:34
End at: 2018-01-25 22:54:04

# Below is generated by plot.py at 2018-01-26 02:31:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 223.81 Mbit/s
95th percentile per-packet one-way delay: 190.431 ms
Loss rate: 2.30%
-- Flow 1:
Average throughput: 223.81 Mbit/s
95th percentile per-packet one-way delay: 190.431 ms
Loss rate: 2.30%
```
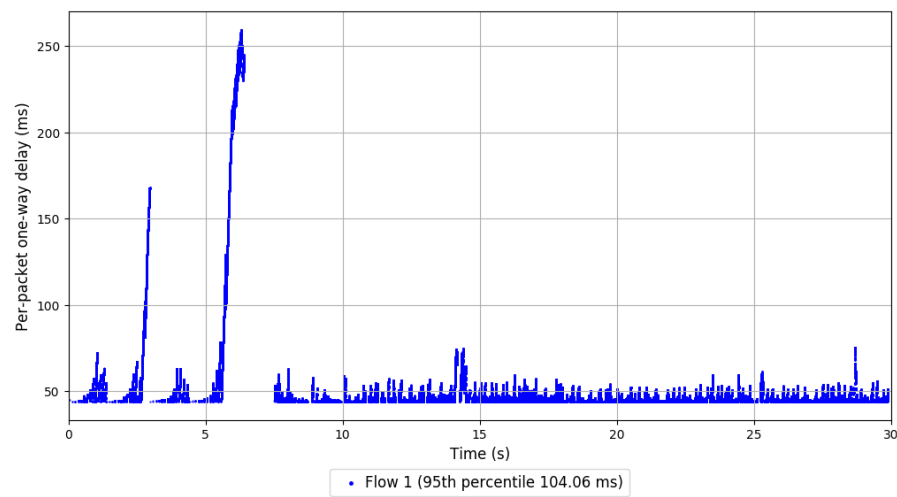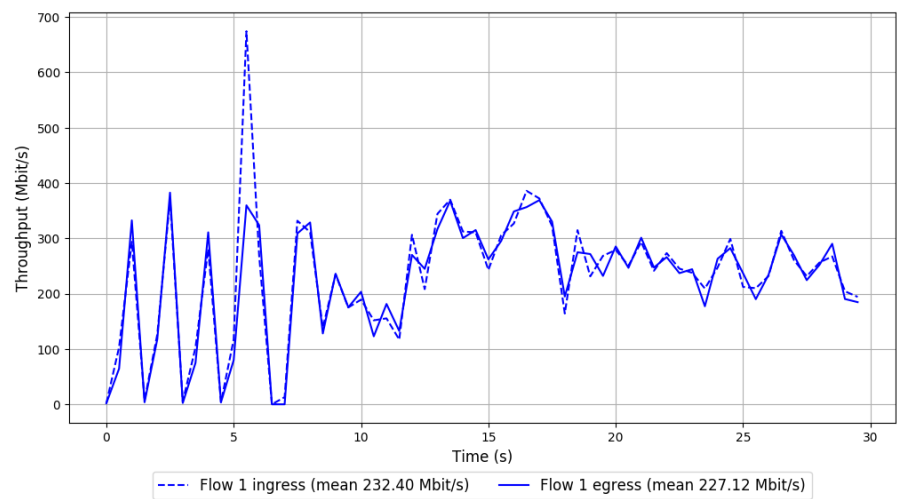
Run 5: Report of Verus — Data Link

```
Run 6: Statistics of Verus

Start at: 2018-01-25 23:05:30
End at: 2018-01-25 23:06:00

# Below is generated by plot.py at 2018-01-26 02:31:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 281.52 Mbit/s
95th percentile per-packet one-way delay: 102.911 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 281.52 Mbit/s
95th percentile per-packet one-way delay: 102.911 ms
Loss rate: 0.43%
```
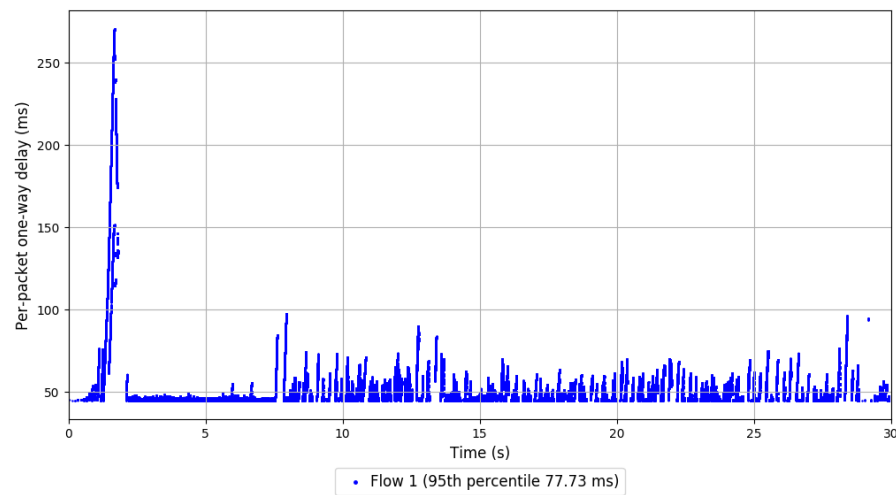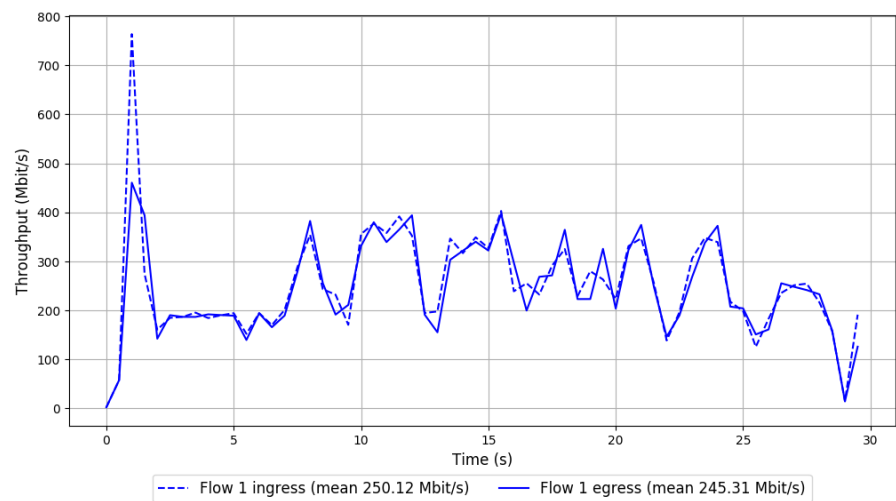
Run 6: Report of Verus — Data Link

Flow 1 ingress (mean 281.86 Mbit/s) --- Flow 1 egress (mean 281.52 Mbit/s)

• Flow 1 (95th percentile 102.91 ms)

```
Run 7: Statistics of Verus

Start at: 2018-01-25 23:17:44
End at: 2018-01-25 23:18:14


# Below is generated by plot.py at 2018-01-26 02:32:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 227.12 Mbit/s
95th percentile per-packet one-way delay: 104.058 ms
Loss rate: 2.60%
-- Flow 1:
Average throughput: 227.12 Mbit/s
95th percentile per-packet one-way delay: 104.058 ms
Loss rate: 2.60%
```
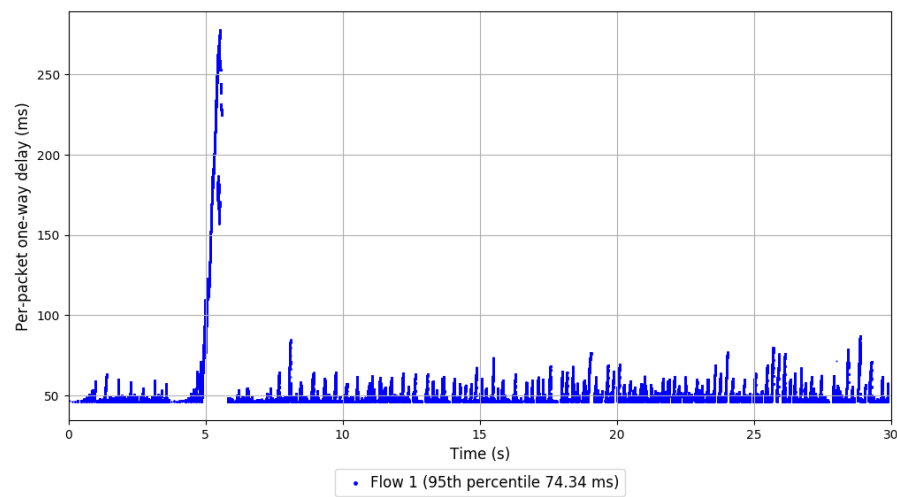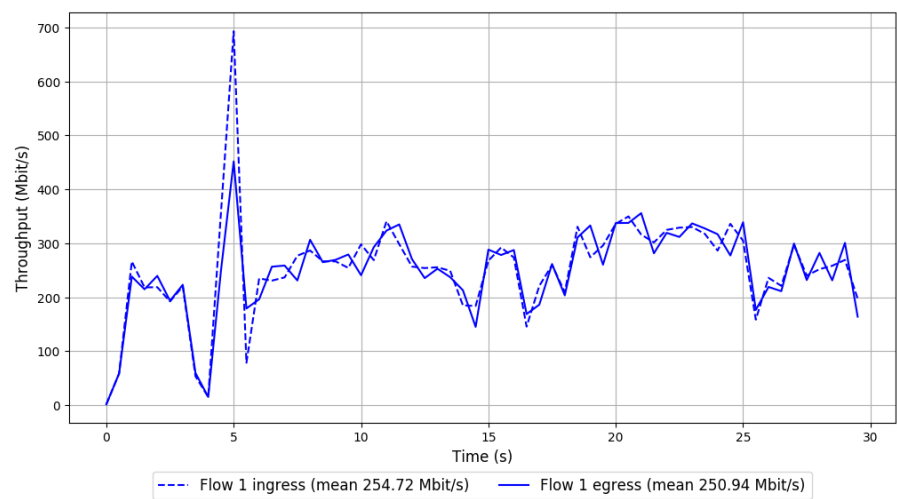
Run 7: Report of Verus — Data Link

```
Run 8: Statistics of Verus

Start at: 2018-01-25 23:29:32
End at: 2018-01-25 23:30:02

# Below is generated by plot.py at 2018-01-26 02:33:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 245.31 Mbit/s
95th percentile per-packet one-way delay: 77.727 ms
Loss rate: 2.25%
-- Flow 1:
Average throughput: 245.31 Mbit/s
95th percentile per-packet one-way delay: 77.727 ms
Loss rate: 2.25%
```
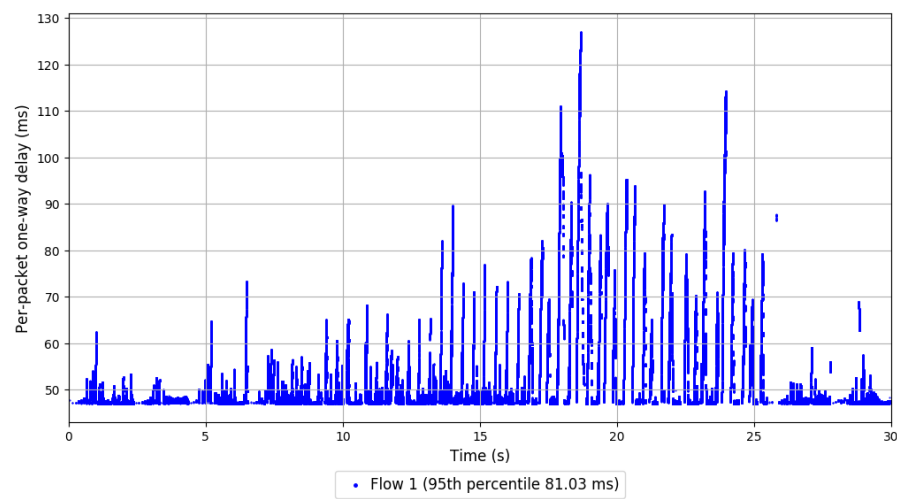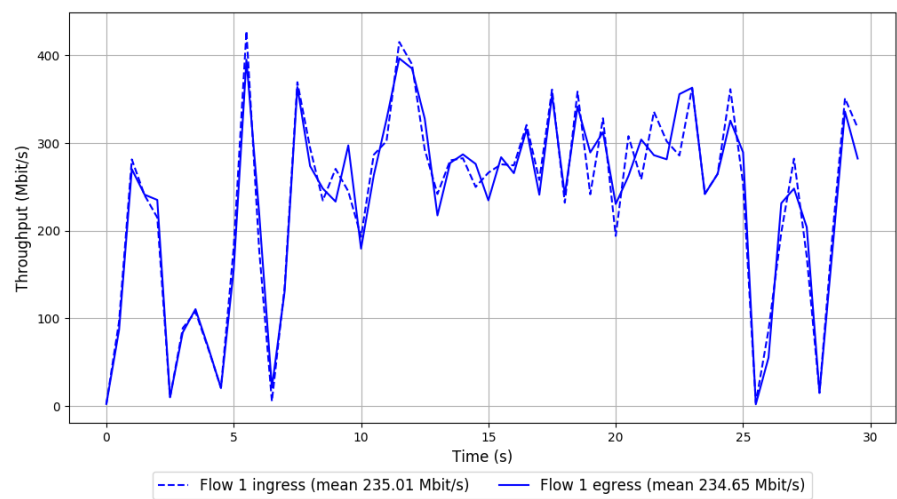
Run 8: Report of Verus — Data Link

```
Run 9: Statistics of Verus

Start at: 2018-01-25 23:41:13
End at: 2018-01-25 23:41:43

# Below is generated by plot.py at 2018-01-26 02:33:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 250.94 Mbit/s
95th percentile per-packet one-way delay: 74.343 ms
Loss rate: 1.82%
-- Flow 1:
Average throughput: 250.94 Mbit/s
95th percentile per-packet one-way delay: 74.343 ms
Loss rate: 1.82%
```
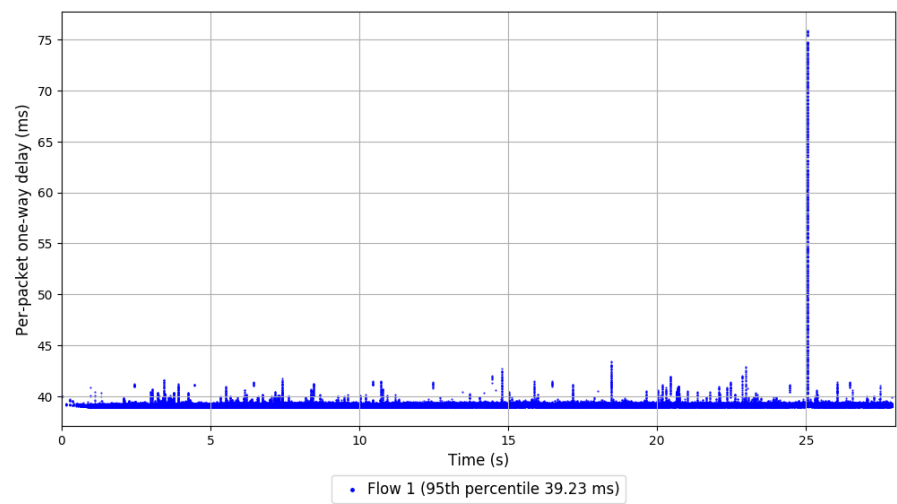
Run 9: Report of Verus — Data Link

```
Run 10: Statistics of Verus

Start at: 2018-01-25 23:53:17
End at: 2018-01-25 23:53:47

# Below is generated by plot.py at 2018-01-26 02:34:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 234.65 Mbit/s
95th percentile per-packet one-way delay: 81.027 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 234.65 Mbit/s
95th percentile per-packet one-way delay: 81.027 ms
Loss rate: 0.48%
```
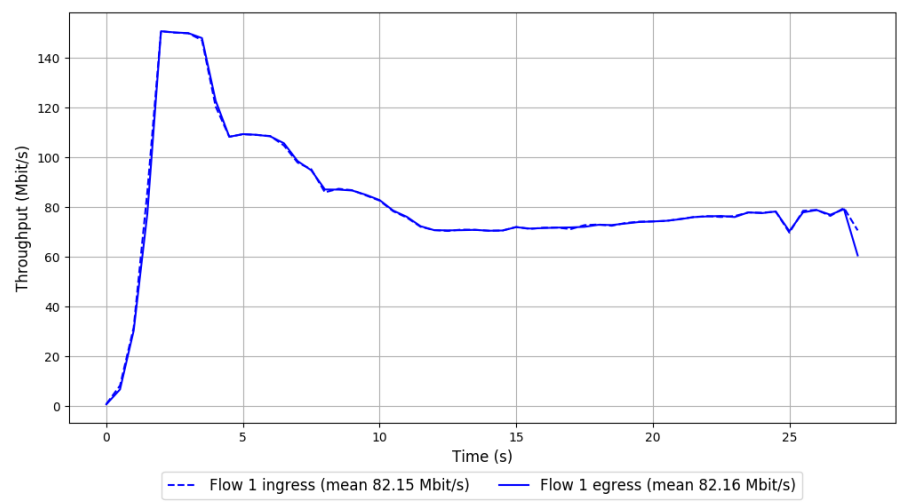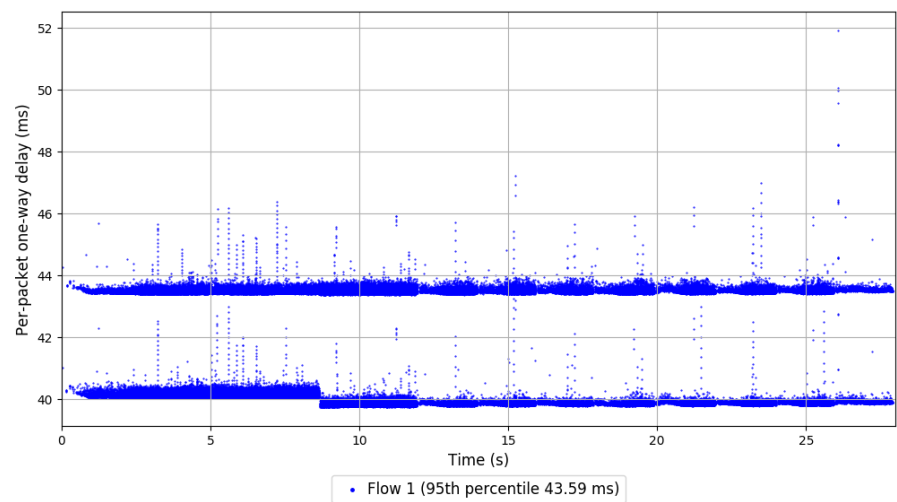
Run 10: Report of Verus — Data Link

Flow 1 ingress (mean 235.01 Mbit/s) — Flow 1 egress (mean 234.65 Mbit/s)

Flow 1 (95th percentile 81.03 ms)

```
Run 1: Statistics of Copa

Start at: 2018-01-25 22:07:44
End at: 2018-01-25 22:08:14

# Below is generated by plot.py at 2018-01-26 02:34:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 82.16 Mbit/s
95th percentile per-packet one-way delay: 39.232 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 82.16 Mbit/s
95th percentile per-packet one-way delay: 39.232 ms
Loss rate: 0.36%
```
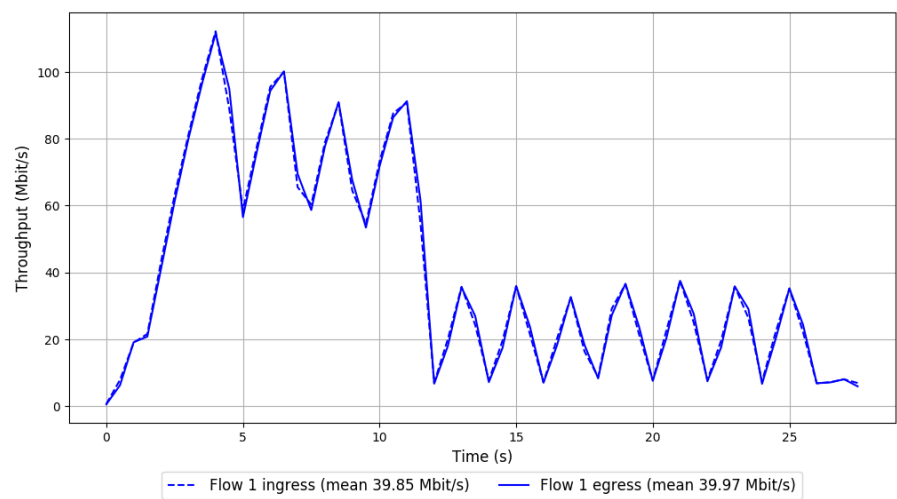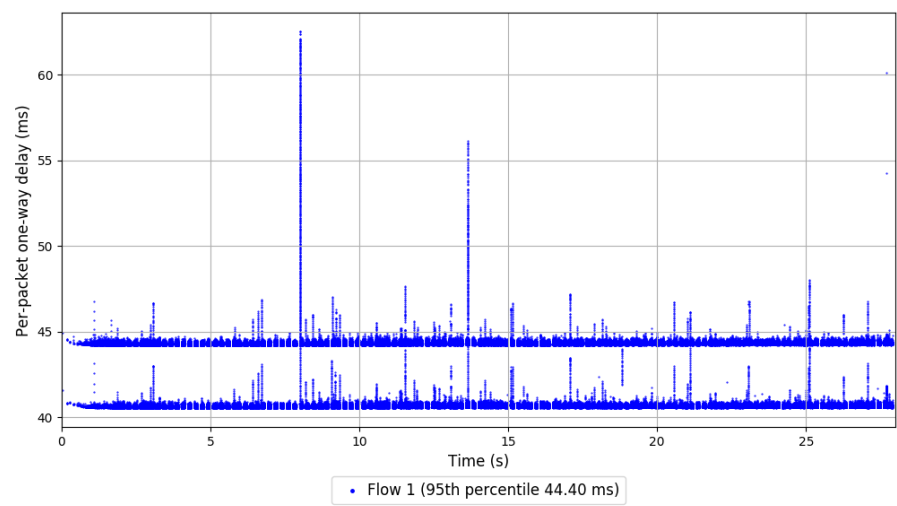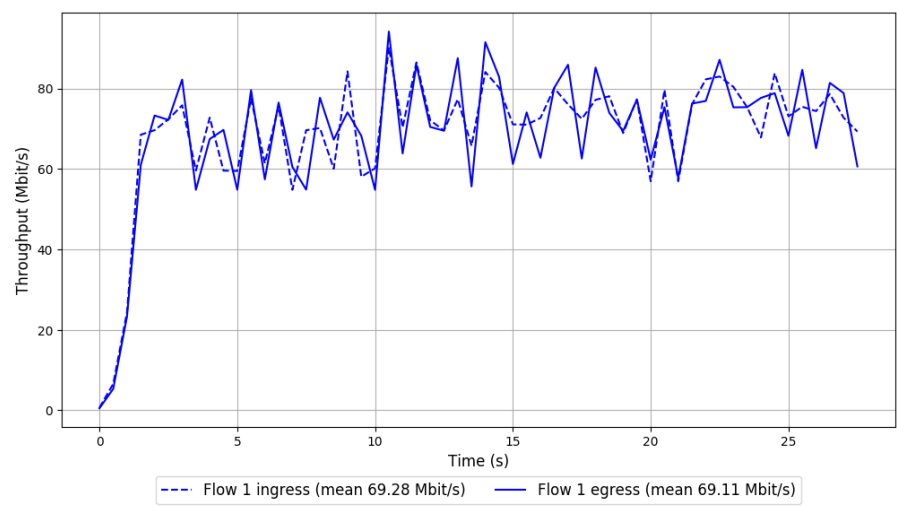
Run 1: Report of Copa — Data Link

Flow 1 ingress (mean 82.15 Mbit/s)   Flow 1 egress (mean 82.16 Mbit/s)

Flow 1 (95th percentile 39.23 ms)

```
Run 2: Statistics of Copa

Start at: 2018-01-25 22:19:39
End at: 2018-01-25 22:20:09

# Below is generated by plot.py at 2018-01-26 02:34:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 39.97 Mbit/s
95th percentile per-packet one-way delay: 43.594 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 39.97 Mbit/s
95th percentile per-packet one-way delay: 43.594 ms
Loss rate: 0.07%
```
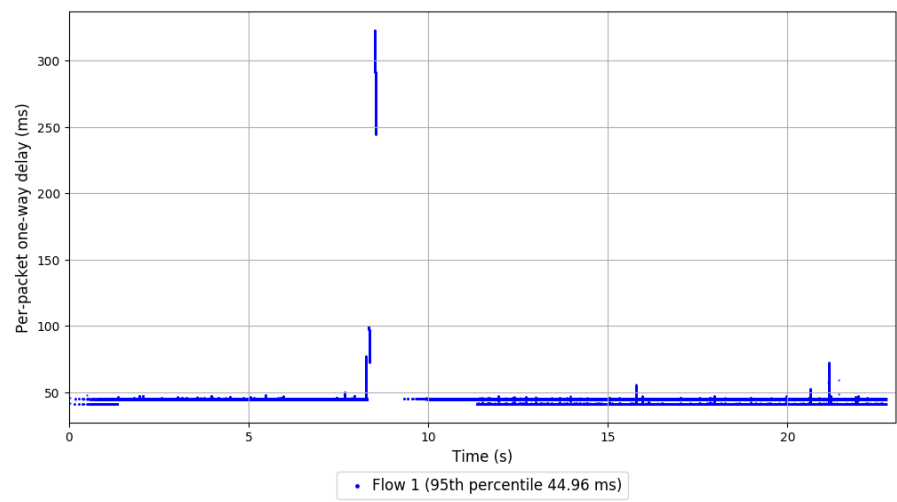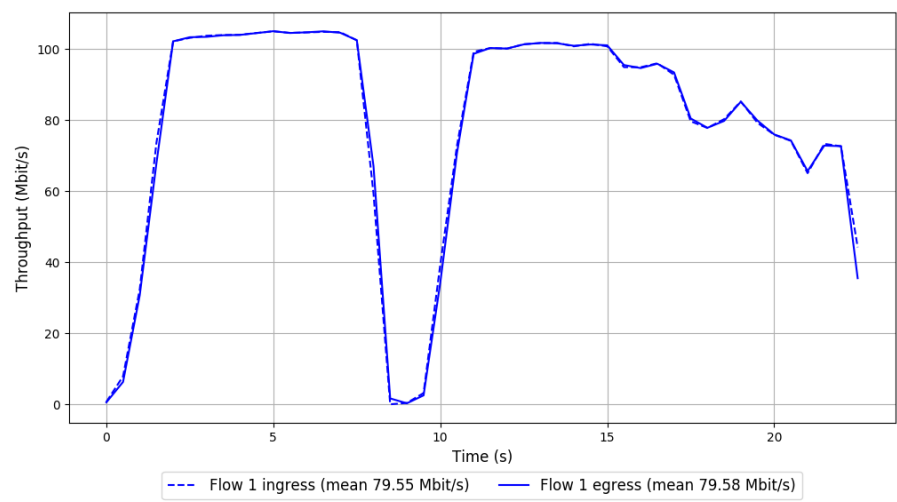
Run 2: Report of Copa — Data Link

Flow 1 ingress (mean 39.85 Mbit/s) ----   Flow 1 egress (mean 39.97 Mbit/s) ——

• Flow 1 (95th percentile 43.59 ms)

```
Run 3: Statistics of Copa

Start at: 2018-01-25 22:31:43
End at: 2018-01-25 22:32:13

# Below is generated by plot.py at 2018-01-26 02:34:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 69.11 Mbit/s
95th percentile per-packet one-way delay: 44.404 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 69.11 Mbit/s
95th percentile per-packet one-way delay: 44.404 ms
Loss rate: 0.42%
```
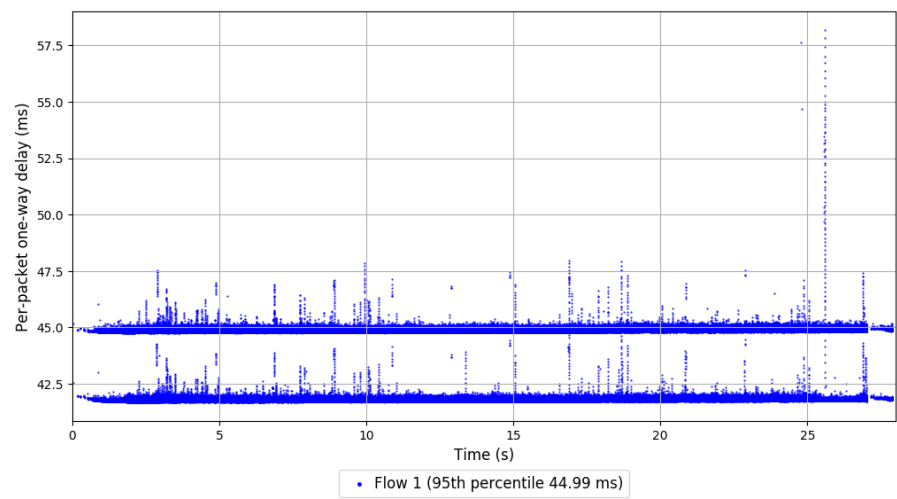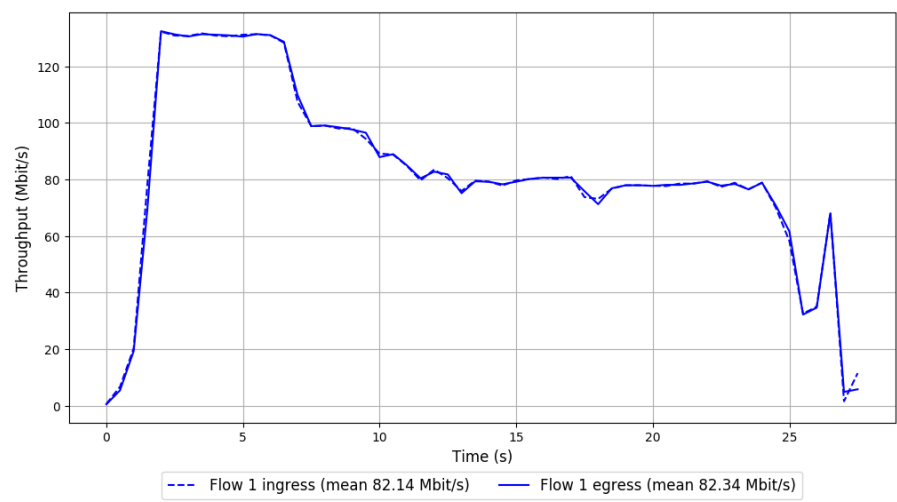
Run 3: Report of Copa — Data Link

Run 4: Statistics of Copa

Start at: 2018-01-25 22:43:21
End at: 2018-01-25 22:43:51

Run 4: Report of Copa — Data Link

Flow 1 ingress (mean 79.55 Mbit/s) --- Flow 1 egress (mean 79.58 Mbit/s)

Flow 1 (95th percentile 44.96 ms)

```
Run 5: Statistics of Copa

Start at: 2018-01-25 22:55:15
End at: 2018-01-25 22:55:45

# Below is generated by plot.py at 2018-01-26 02:34:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 82.34 Mbit/s
95th percentile per-packet one-way delay: 44.990 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 82.34 Mbit/s
95th percentile per-packet one-way delay: 44.990 ms
Loss rate: 0.13%
```
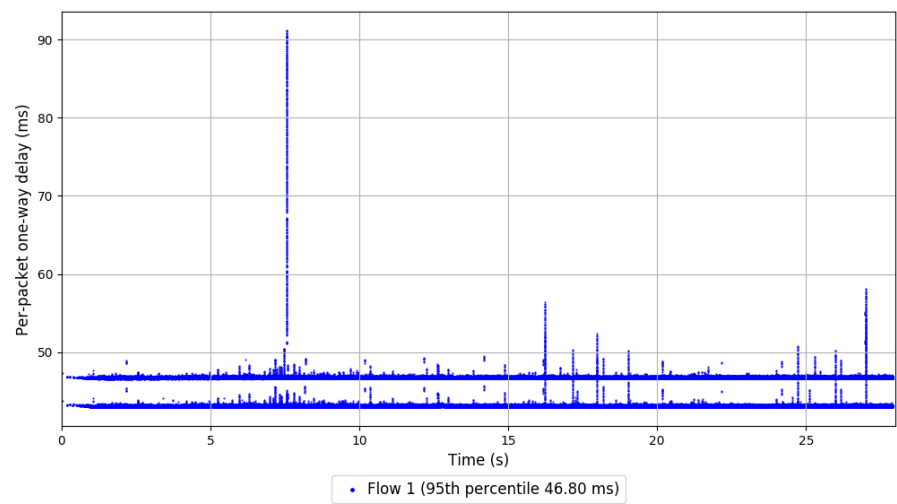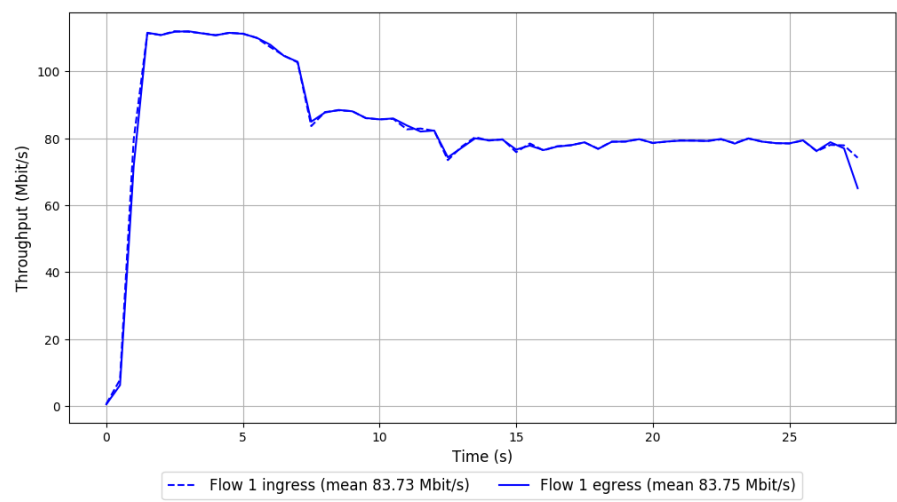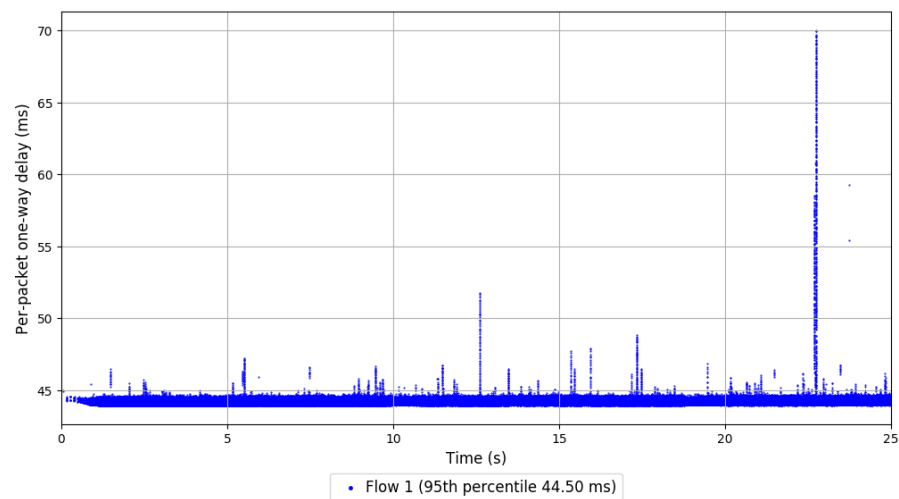
Run 5: Report of Copa — Data Link

Flow 1 ingress (mean 82.14 Mbit/s) — — — Flow 1 egress (mean 82.34 Mbit/s) ———

Flow 1 (95th percentile 44.99 ms)

```
Run 6: Statistics of Copa

Start at: 2018-01-25 23:07:26
End at: 2018-01-25 23:07:56

# Below is generated by plot.py at 2018-01-26 02:34:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 83.75 Mbit/s
95th percentile per-packet one-way delay: 46.802 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 83.75 Mbit/s
95th percentile per-packet one-way delay: 46.802 ms
Loss rate: 0.34%
```
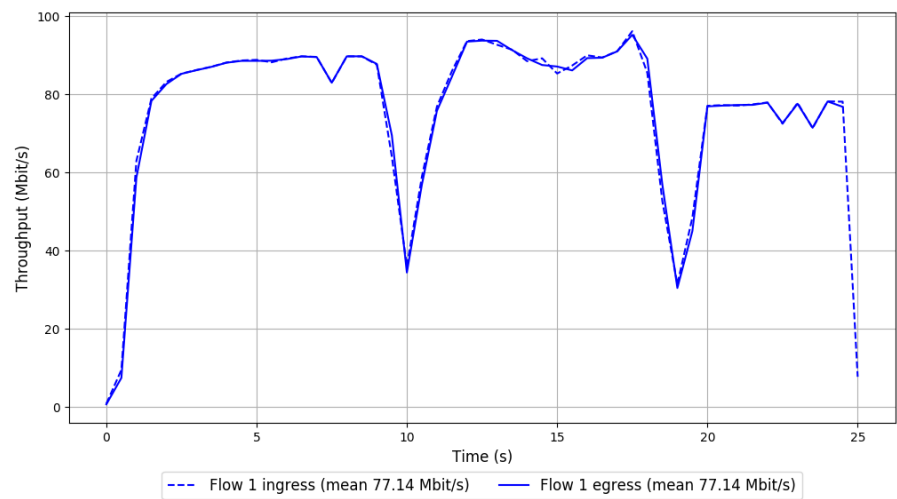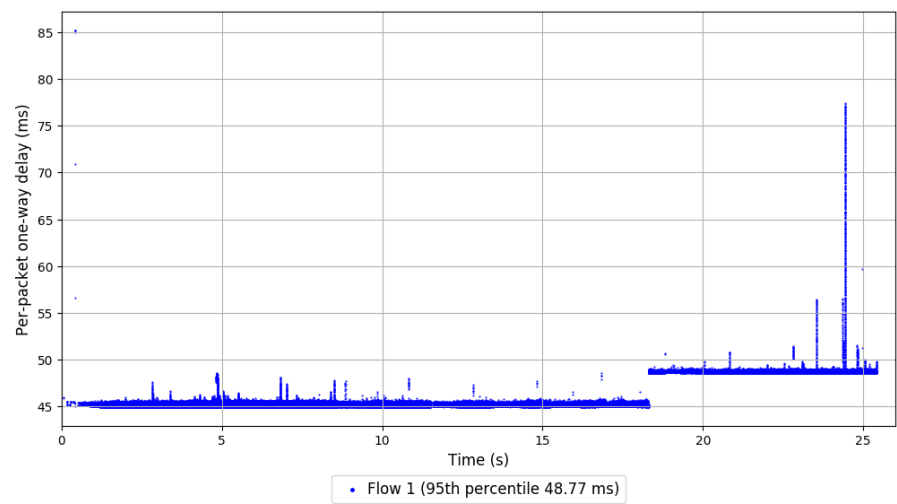
Run 6: Report of Copa — Data Link

```
Run 7: Statistics of Copa

Start at: 2018-01-25 23:19:18
End at: 2018-01-25 23:19:48

# Below is generated by plot.py at 2018-01-26 02:34:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.14 Mbit/s
95th percentile per-packet one-way delay: 44.499 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 77.14 Mbit/s
95th percentile per-packet one-way delay: 44.499 ms
Loss rate: 0.41%
```
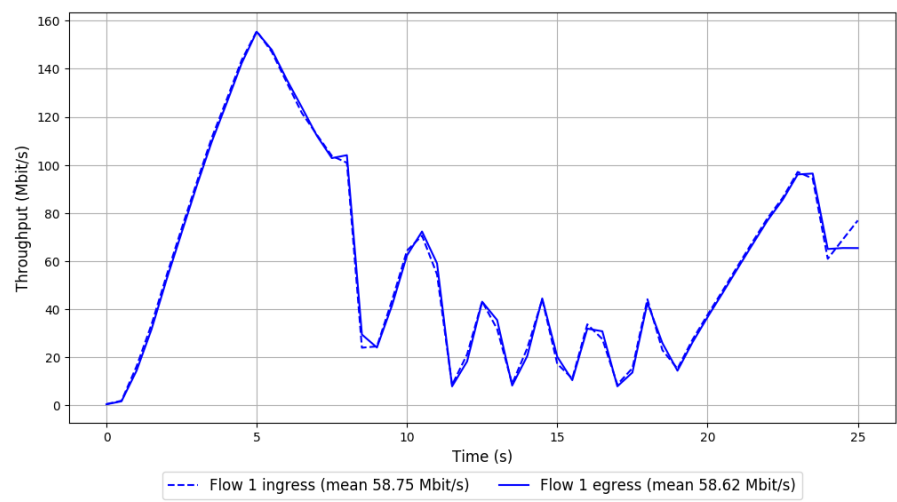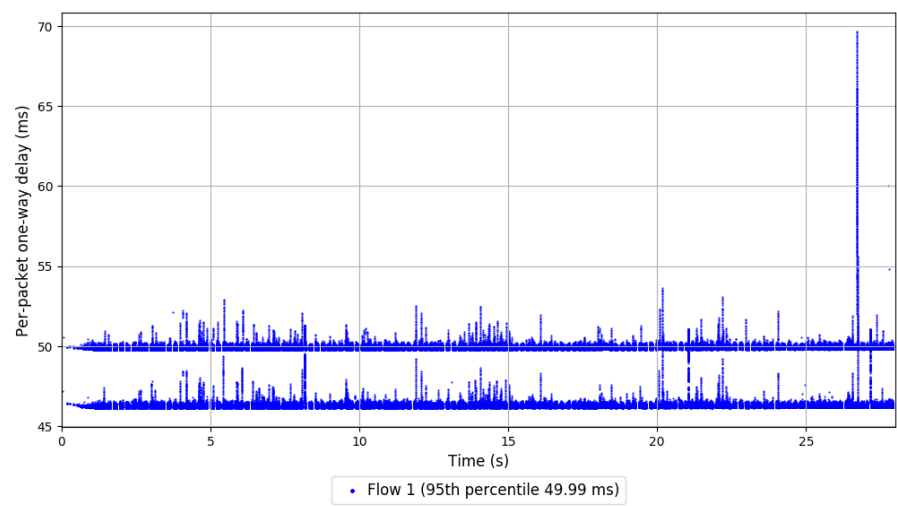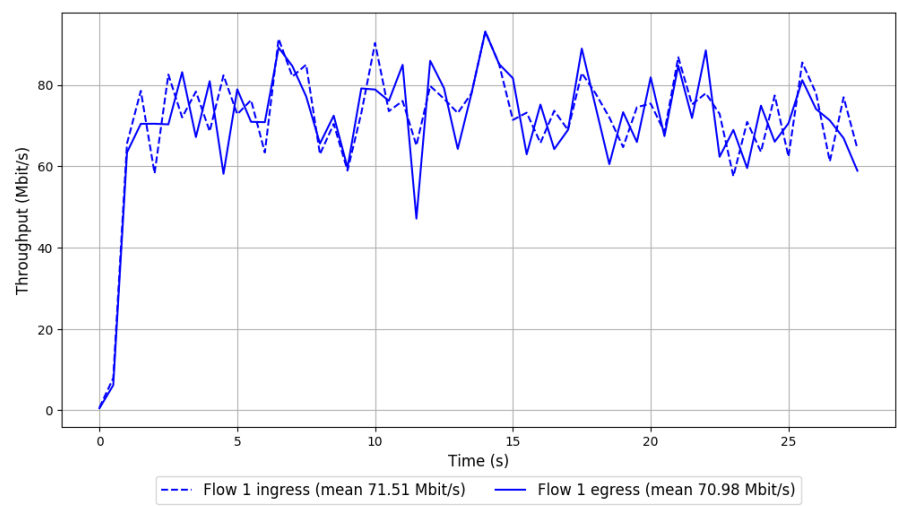
Run 7: Report of Copa — Data Link

Flow 1 ingress (mean 77.14 Mbit/s)   —— Flow 1 egress (mean 77.14 Mbit/s)

• Flow 1 (95th percentile 44.50 ms)

```
Run 8: Statistics of Copa

Start at: 2018-01-25 23:31:07
End at: 2018-01-25 23:31:37

# Below is generated by plot.py at 2018-01-26 02:34:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 58.62 Mbit/s
95th percentile per-packet one-way delay: 48.769 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 58.62 Mbit/s
95th percentile per-packet one-way delay: 48.769 ms
Loss rate: 0.63%
```
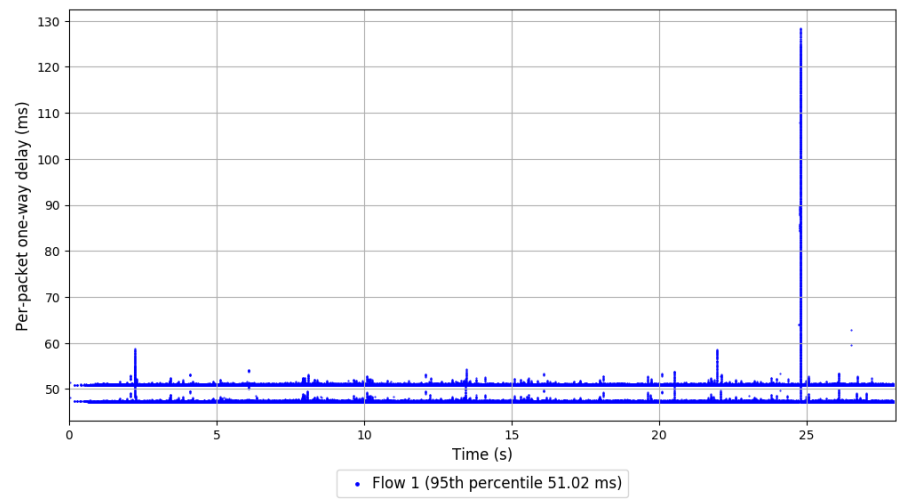
Run 8: Report of Copa — Data Link

Flow 1 ingress (mean 58.75 Mbit/s)   Flow 1 egress (mean 58.62 Mbit/s)

Flow 1 (95th percentile 48.77 ms)

```
Run 9: Statistics of Copa

Start at: 2018-01-25 23:43:04
End at: 2018-01-25 23:43:34

# Below is generated by plot.py at 2018-01-26 02:35:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 70.98 Mbit/s
95th percentile per-packet one-way delay: 49.993 ms
Loss rate: 1.10%
-- Flow 1:
Average throughput: 70.98 Mbit/s
95th percentile per-packet one-way delay: 49.993 ms
Loss rate: 1.10%
```
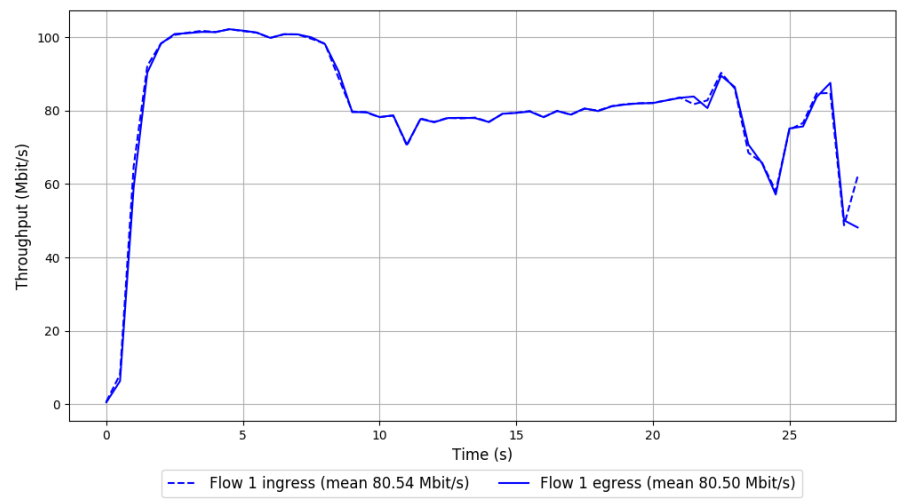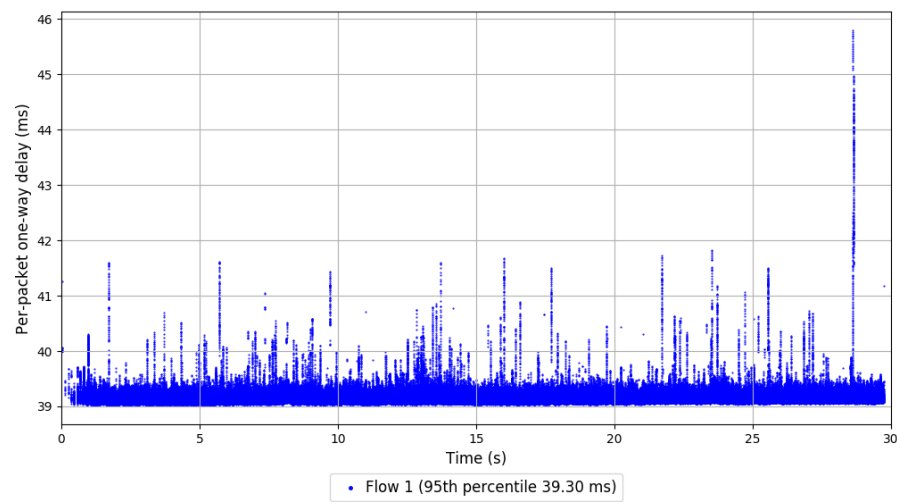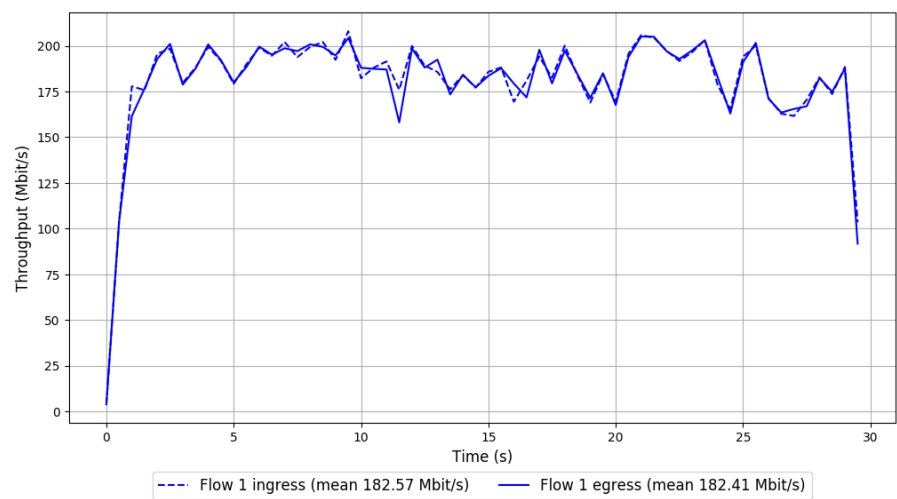
Run 9: Report of Copa — Data Link

```
Run 10: Statistics of Copa

Start at: 2018-01-25 23:55:08
End at: 2018-01-25 23:55:38

# Below is generated by plot.py at 2018-01-26 02:35:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 80.50 Mbit/s
95th percentile per-packet one-way delay: 51.021 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 80.50 Mbit/s
95th percentile per-packet one-way delay: 51.021 ms
Loss rate: 0.42%
```

Run 10: Report of Copa — Data Link

Flow 1 ingress (mean 80.54 Mbit/s) — — — Flow 1 egress (mean 80.50 Mbit/s)

Flow 1 (95th percentile 51.02 ms)

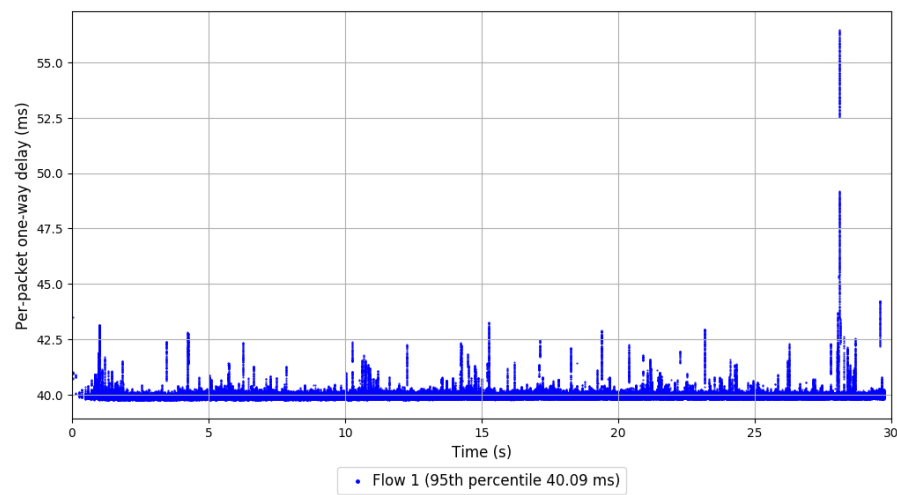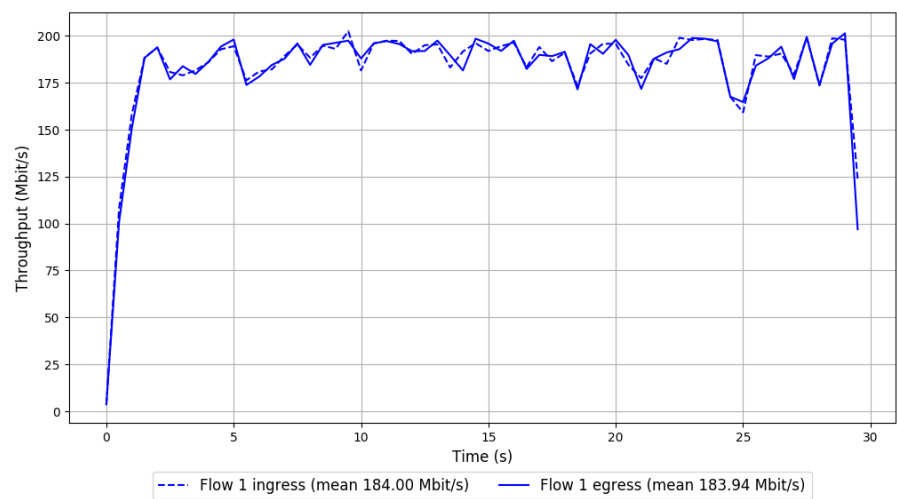```
Run 1: Statistics of Indigo-2-256

Start at: 2018-01-25 22:08:28
End at: 2018-01-25 22:08:58

Below is generated by plot.py at 2018-01-26 02:36:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 182.41 Mbit/s
95th percentile per-packet one-way delay: 39.302 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 182.41 Mbit/s
95th percentile per-packet one-way delay: 39.302 ms
Loss rate: 0.43%
```
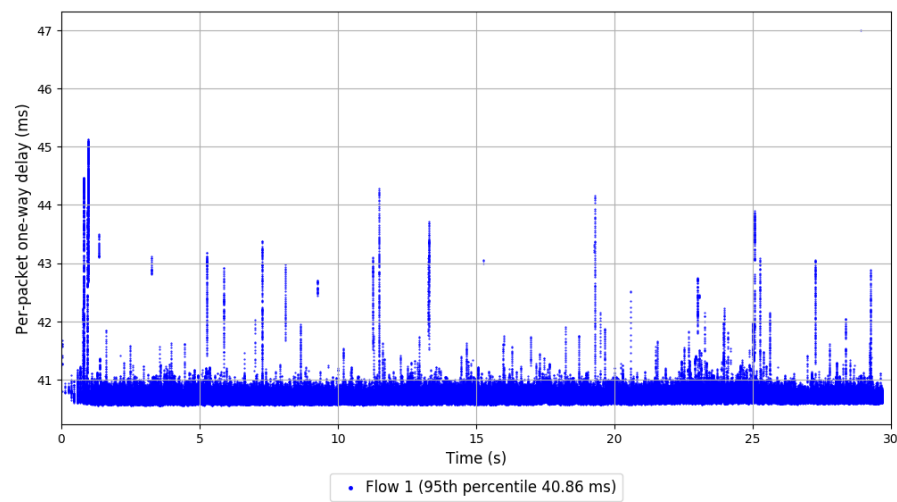
# Run 1: Report of Indigo-2-256 — Data Link



Flow 1 ingress (mean 182.57 Mbit/s)　　Flow 1 egress (mean 182.41 Mbit/s)



• Flow 1 (95th percentile 39.30 ms)

```
Run 2: Statistics of Indigo-2-256

Start at: 2018-01-25 22:20:20
End at: 2018-01-25 22:20:50

Below is generated by plot.py at 2018-01-26 02:37:14
Datalink statistics
-- Total of 1 flow:
Average throughput: 183.94 Mbit/s
95th percentile per-packet one-way delay: 40.086 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 183.94 Mbit/s
95th percentile per-packet one-way delay: 40.086 ms
Loss rate: 0.37%
```
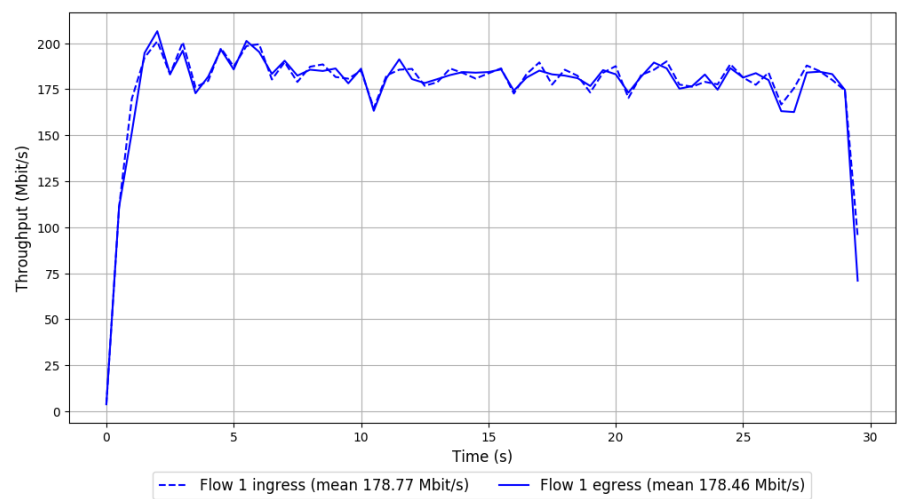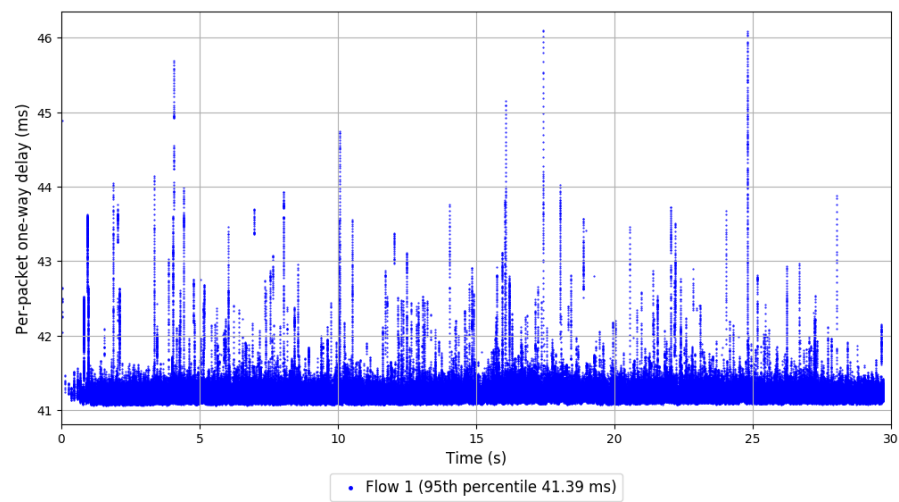
Run 2: Report of Indigo-2-256 — Data Link

```
Run 3: Statistics of Indigo-2-256

Start at: 2018-01-25 22:32:25
End at: 2018-01-25 22:32:55

Below is generated by plot.py at 2018-01-26 02:37:14
Datalink statistics
-- Total of 1 flow:
Average throughput: 178.46 Mbit/s
95th percentile per-packet one-way delay: 40.860 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 178.46 Mbit/s
95th percentile per-packet one-way delay: 40.860 ms
Loss rate: 0.53%
```
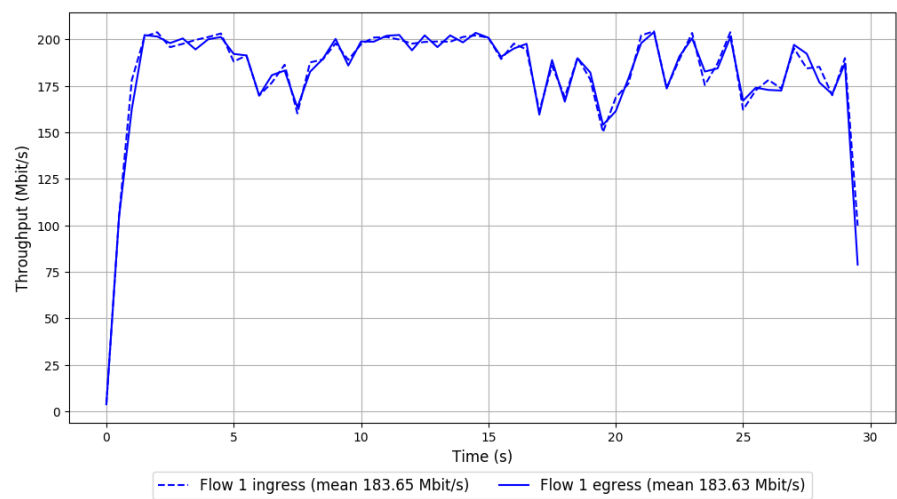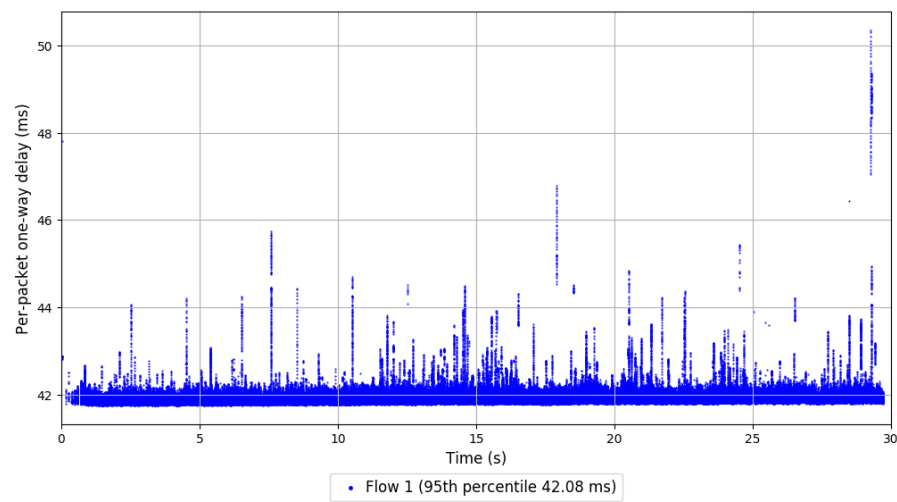
Run 3: Report of Indigo-2-256 — Data Link

```
Run 4: Statistics of Indigo-2-256

Start at: 2018-01-25 22:44:04
End at: 2018-01-25 22:44:34

Below is generated by plot.py at 2018-01-26 02:37:29
Datalink statistics
-- Total of 1 flow:
Average throughput: 183.63 Mbit/s
95th percentile per-packet one-way delay: 41.394 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 183.63 Mbit/s
95th percentile per-packet one-way delay: 41.394 ms
Loss rate: 0.36%
```
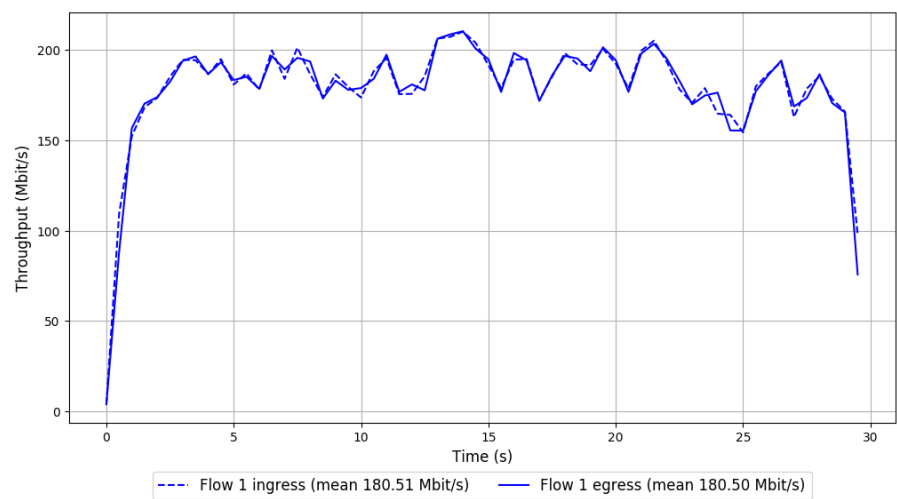
# Run 4: Report of Indigo-2-256 — Data Link

```
Run 5: Statistics of Indigo-2-256

Start at: 2018-01-25 22:55:59
End at: 2018-01-25 22:56:29

Below is generated by plot.py at 2018-01-26 02:37:46
Datalink statistics
-- Total of 1 flow:
Average throughput: 180.50 Mbit/s
95th percentile per-packet one-way delay: 42.084 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 180.50 Mbit/s
95th percentile per-packet one-way delay: 42.084 ms
Loss rate: 0.36%
```
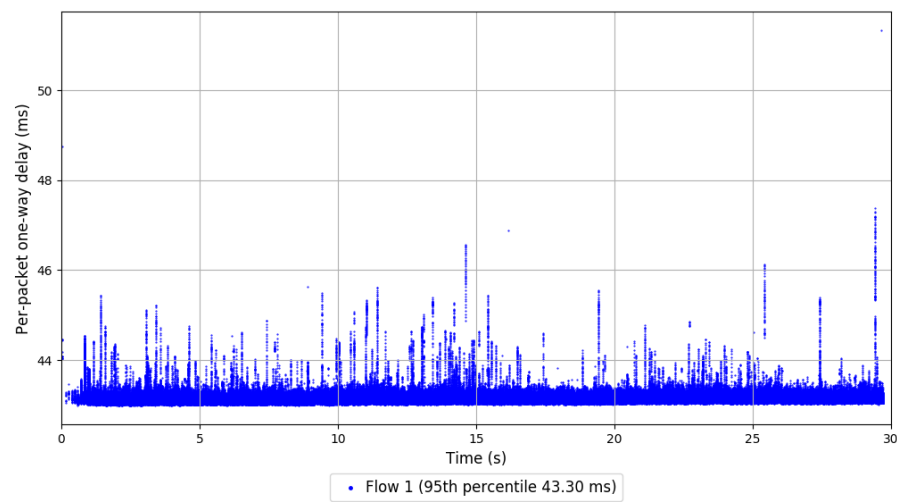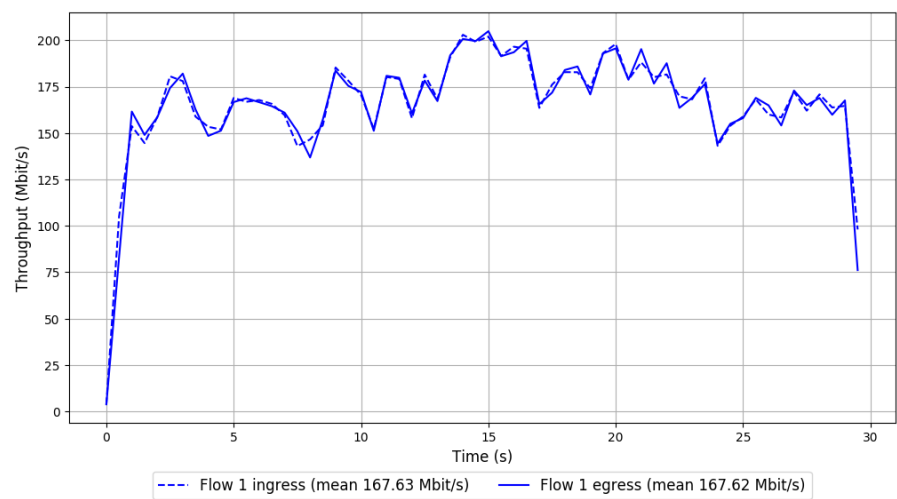
Run 5: Report of Indigo-2-256 — Data Link



Flow 1 ingress (mean 180.51 Mbit/s) — — — Flow 1 egress (mean 180.50 Mbit/s)



• Flow 1 (95th percentile 42.08 ms)

```
Run 6: Statistics of Indigo-2-256

Start at: 2018-01-25 23:08:10
End at: 2018-01-25 23:08:40

Below is generated by plot.py at 2018-01-26 02:37:46
Datalink statistics
-- Total of 1 flow:
Average throughput: 167.62 Mbit/s
95th percentile per-packet one-way delay: 43.296 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 167.62 Mbit/s
95th percentile per-packet one-way delay: 43.296 ms
Loss rate: 0.36%
```
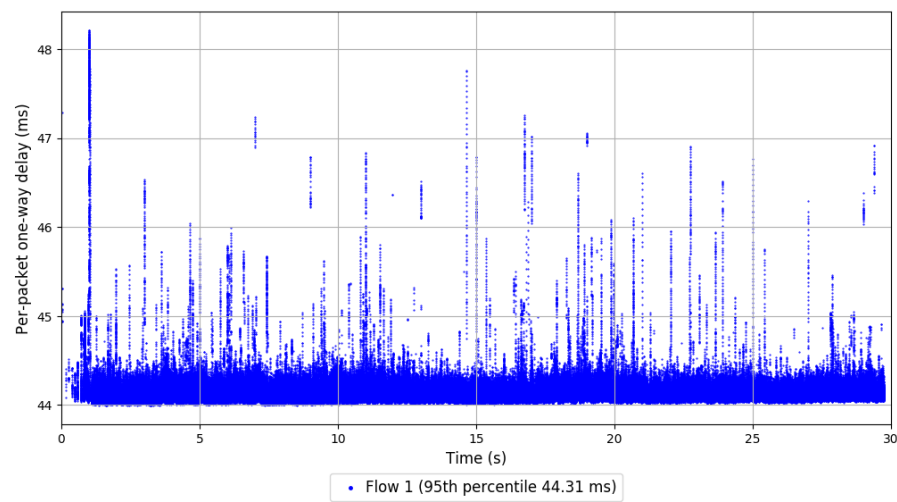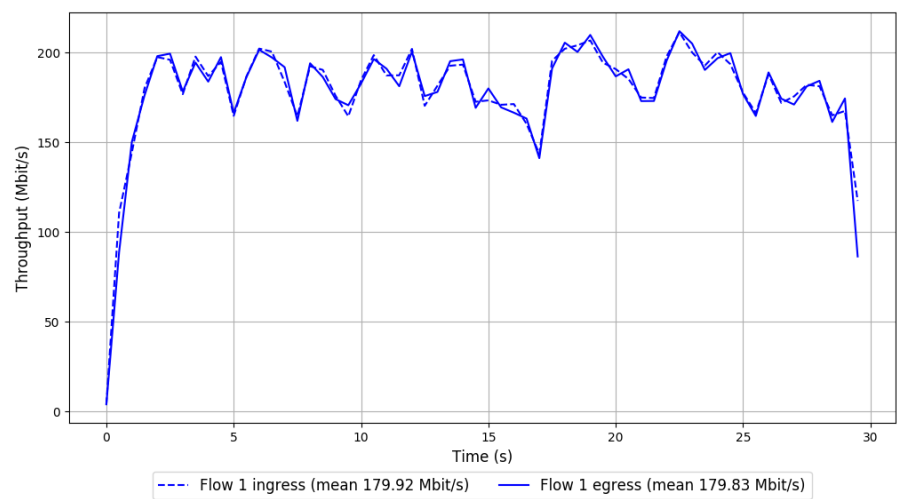
# Run 6: Report of Indigo-2-256 — Data Link

```
Run 7: Statistics of Indigo-2-256

Start at: 2018-01-25 23:20:01
End at: 2018-01-25 23:20:31

Below is generated by plot.py at 2018-01-26 02:38:27
Datalink statistics
-- Total of 1 flow:
Average throughput: 179.83 Mbit/s
95th percentile per-packet one-way delay: 44.310 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 179.83 Mbit/s
95th percentile per-packet one-way delay: 44.310 ms
Loss rate: 0.40%
```
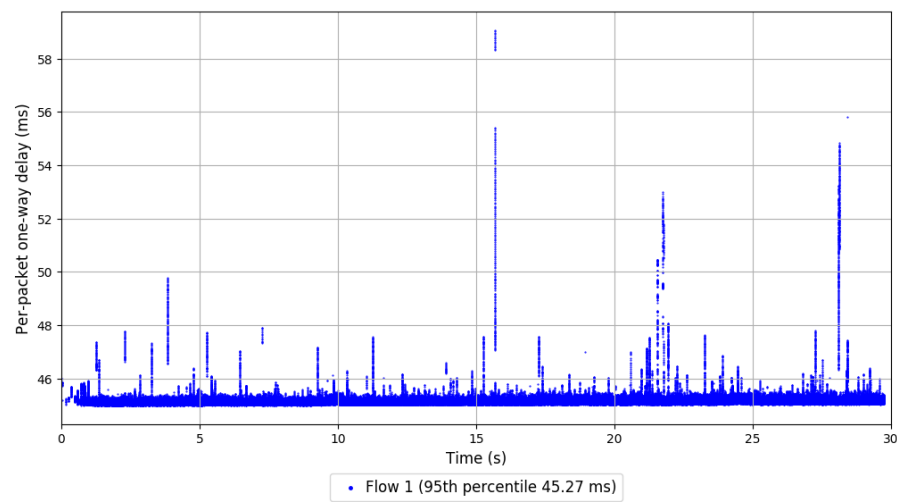
Run 7: Report of Indigo-2-256 — Data Link

```
Run 8: Statistics of Indigo-2-256

Start at: 2018-01-25 23:31:49
End at: 2018-01-25 23:32:19

Below is generated by plot.py at 2018-01-26 02:39:08
Datalink statistics
-- Total of 1 flow:
Average throughput: 192.41 Mbit/s
95th percentile per-packet one-way delay: 45.269 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 192.41 Mbit/s
95th percentile per-packet one-way delay: 45.269 ms
Loss rate: 0.35%
```
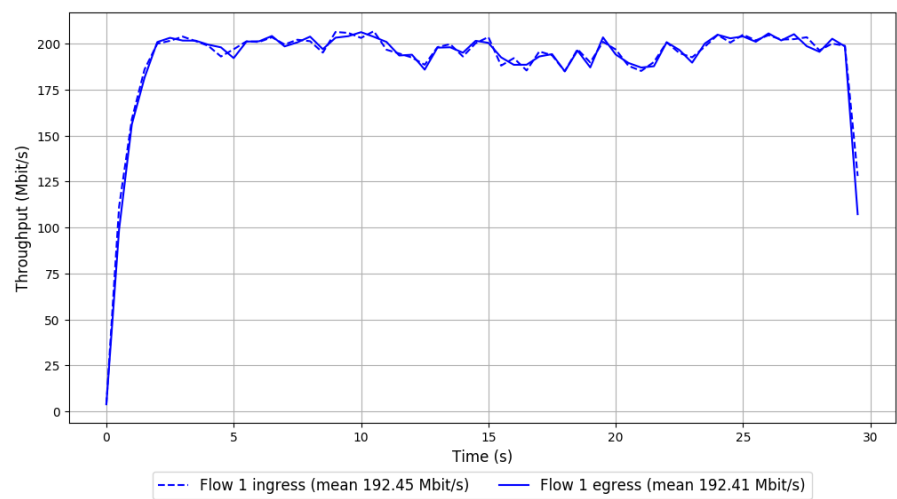
# Run 8: Report of Indigo-2-256 — Data Link





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```
Run 9: Statistics of Indigo-2-256

Start at: 2018-01-25 23:43:46
End at: 2018-01-25 23:44:16

Below is generated by plot.py at 2018-01-26 02:40:02
Datalink statistics
-- Total of 1 flow:
Average throughput: 186.21 Mbit/s
95th percentile per-packet one-way delay: 46.505 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 186.21 Mbit/s
95th percentile per-packet one-way delay: 46.505 ms
Loss rate: 0.38%
```
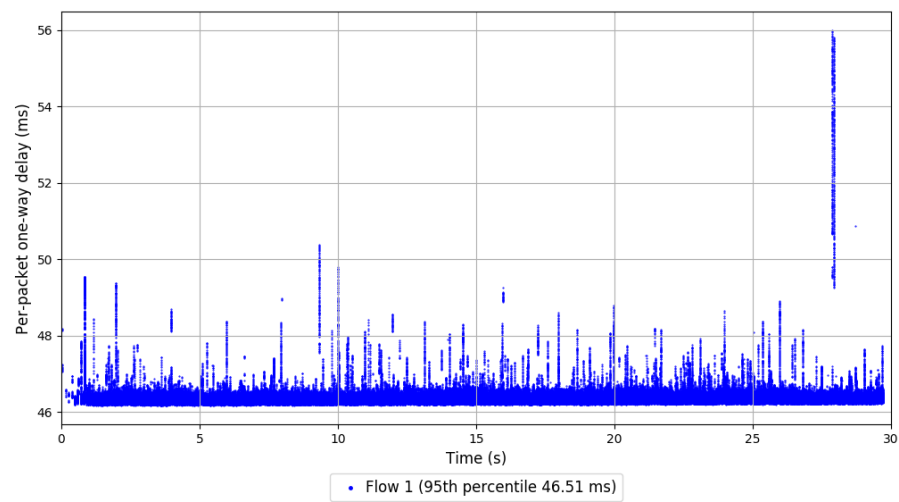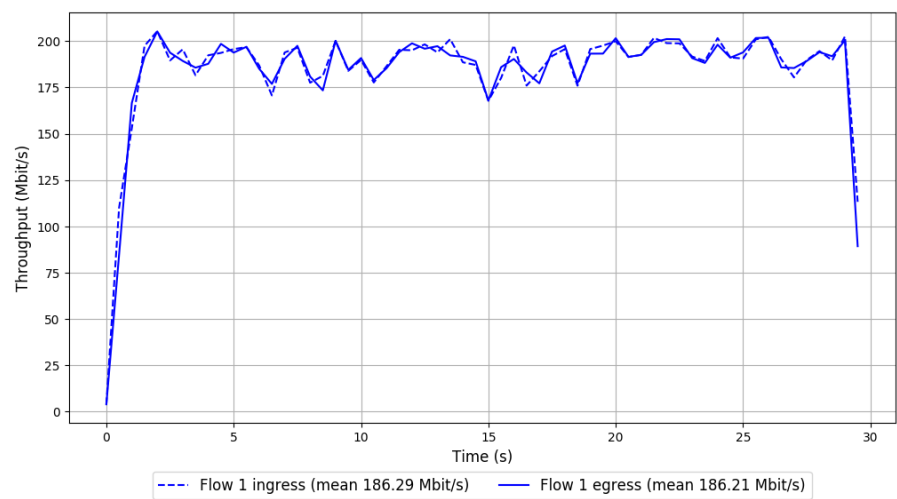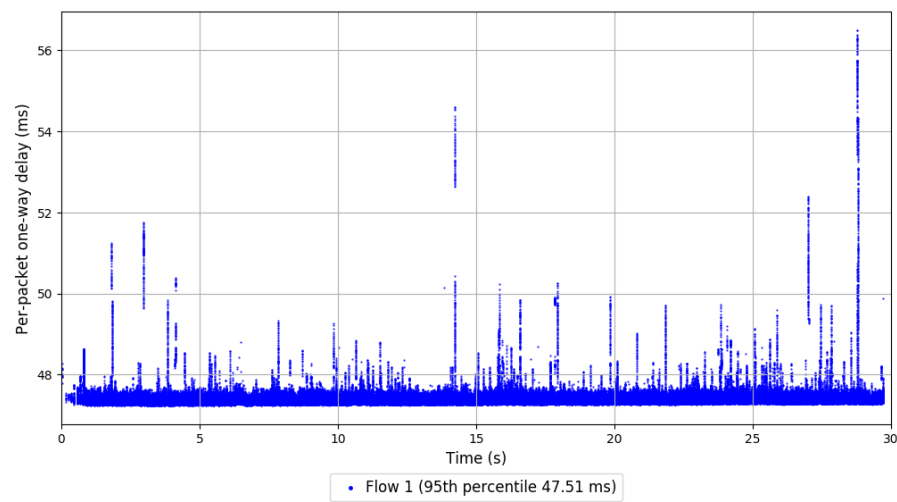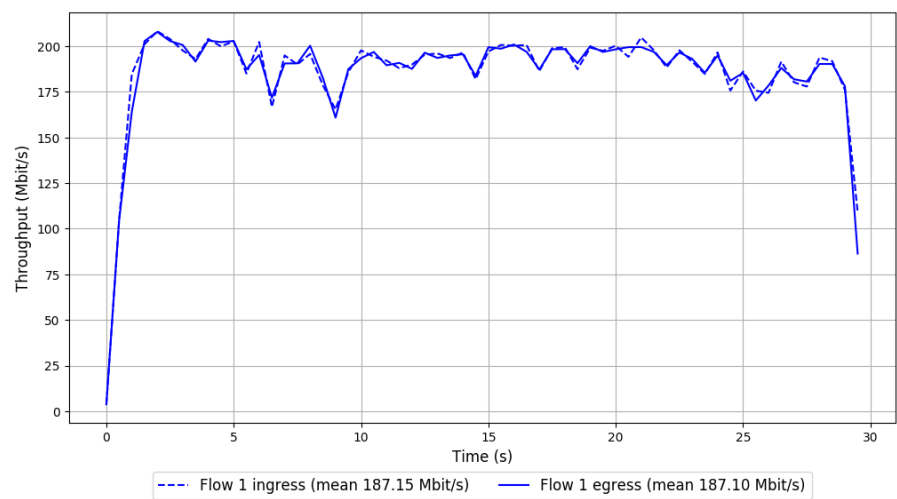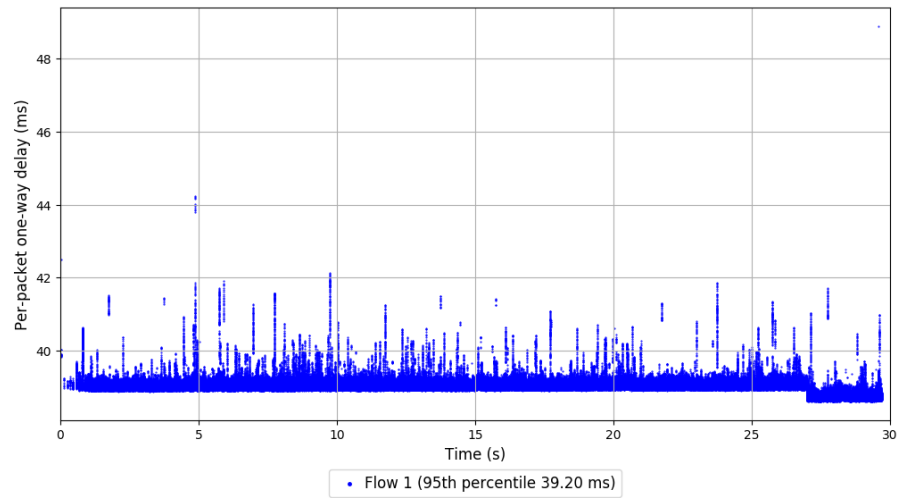
# Run 9: Report of Indigo-2-256 — Data Link

```
Run 10: Statistics of Indigo-2-256

Start at: 2018-01-25 23:55:52
End at: 2018-01-25 23:56:22

# Below is generated by plot.py at 2018-01-26 02:40:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 187.10 Mbit/s
95th percentile per-packet one-way delay: 47.507 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 187.10 Mbit/s
95th percentile per-packet one-way delay: 47.507 ms
Loss rate: 0.37%
```

Run 10: Report of Indigo-2-256 — Data Link

Flow 1 ingress (mean 187.15 Mbit/s)   Flow 1 egress (mean 187.10 Mbit/s)
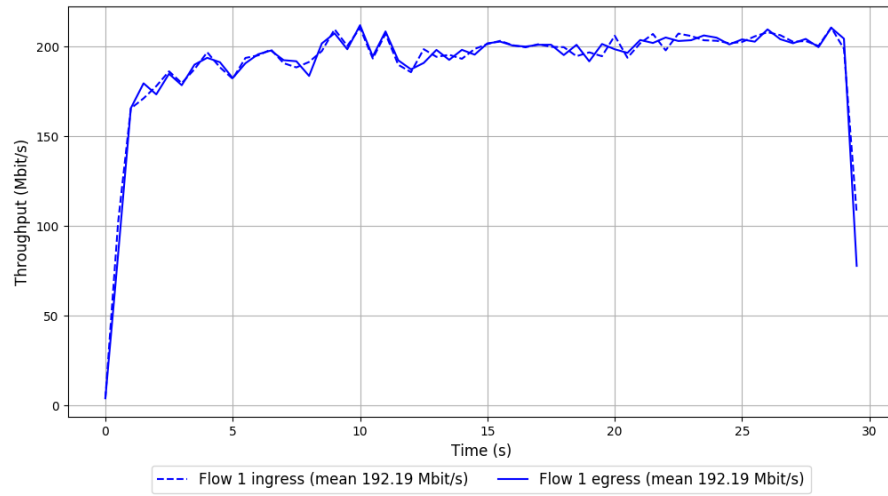

• Flow 1 (95th percentile 47.51 ms)

```
Run 1: Statistics of Indigo-1-32

Start at: 2018-01-25 22:02:30
End at: 2018-01-25 22:03:00

# Below is generated by plot.py at 2018-01-26 02:40:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 192.19 Mbit/s
95th percentile per-packet one-way delay: 39.196 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 192.19 Mbit/s
95th percentile per-packet one-way delay: 39.196 ms
Loss rate: 0.36%
```

Run 1: Report of Indigo-1-32 — Data Link

```
Run 2: Statistics of Indigo-1-32

Start at: 2018-01-25 22:14:29
End at: 2018-01-25 22:14:59

# Below is generated by plot.py at 2018-01-26 02:40:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 202.45 Mbit/s
95th percentile per-packet one-way delay: 39.688 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 202.45 Mbit/s
95th percentile per-packet one-way delay: 39.688 ms
Loss rate: 0.55%
```
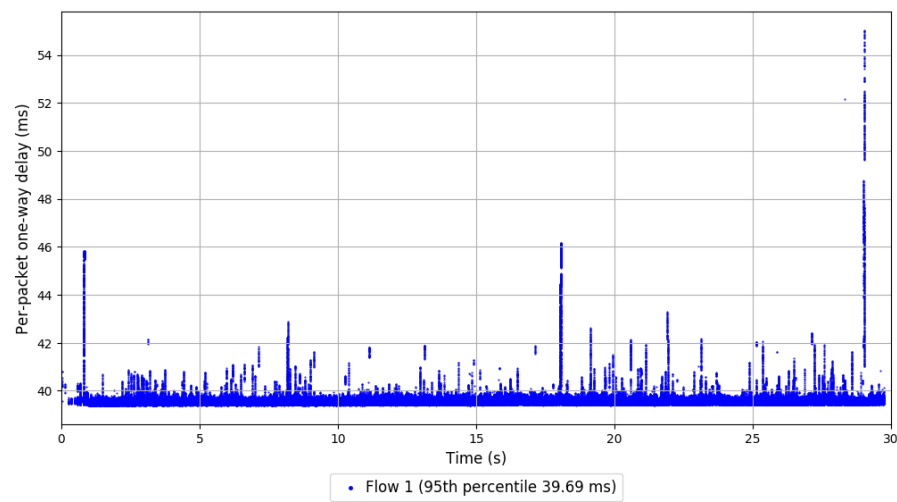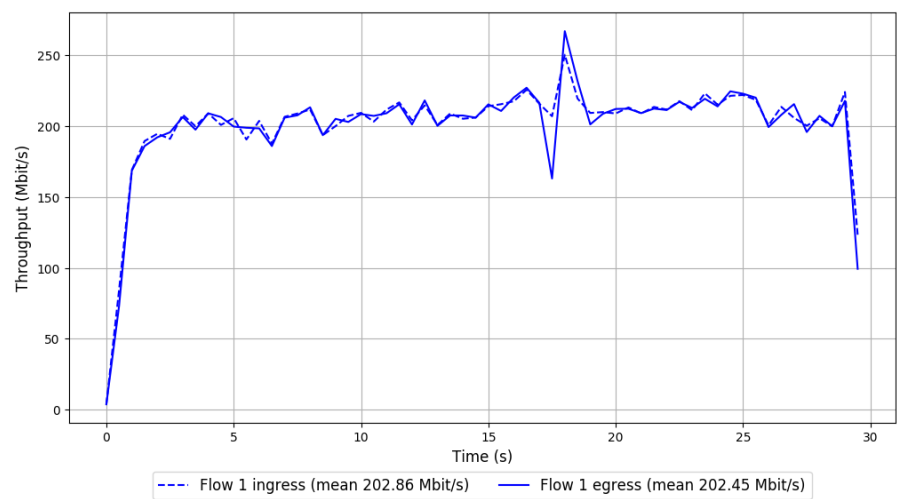
Run 2: Report of Indigo-1-32 — Data Link

```
Run 3: Statistics of Indigo-1-32

Start at: 2018-01-25 22:26:21
End at: 2018-01-25 22:26:51

# Below is generated by plot.py at 2018-01-26 02:40:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 182.74 Mbit/s
95th percentile per-packet one-way delay: 40.496 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 182.74 Mbit/s
95th percentile per-packet one-way delay: 40.496 ms
Loss rate: 0.35%
```
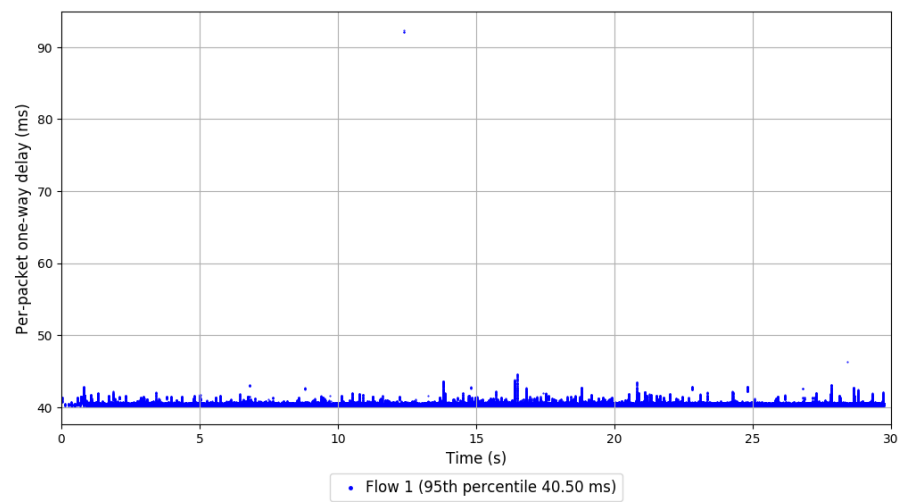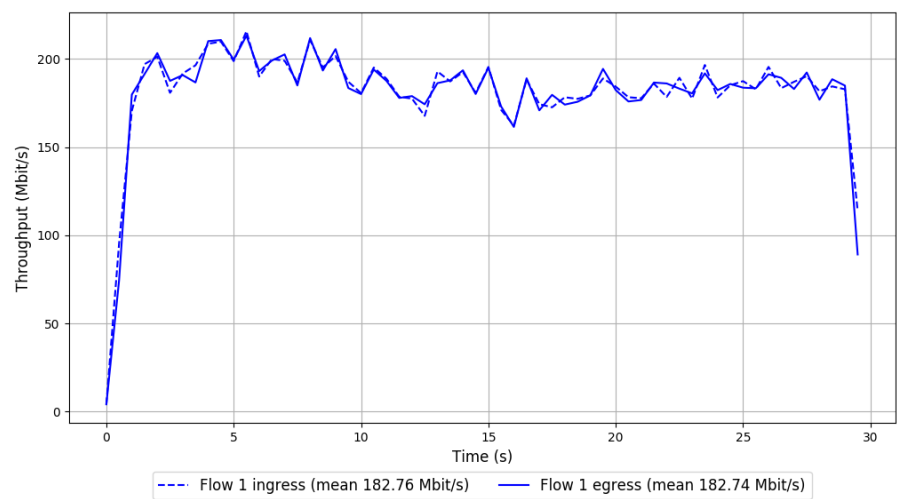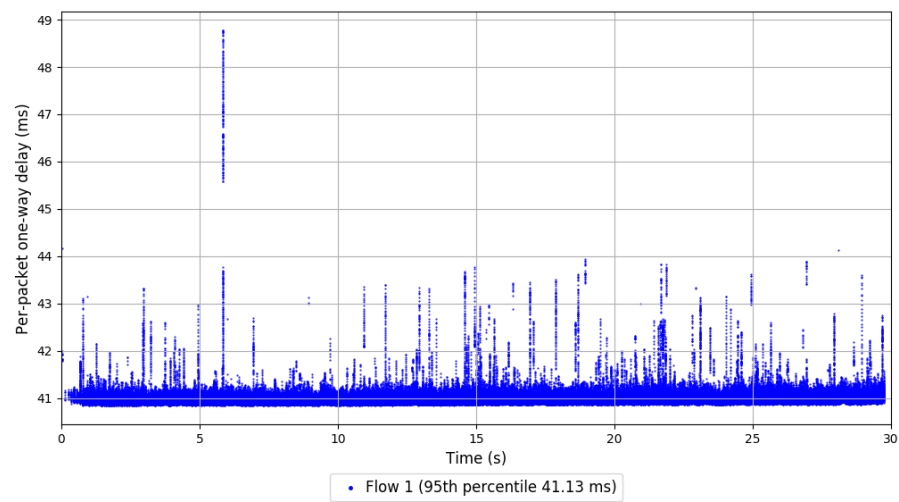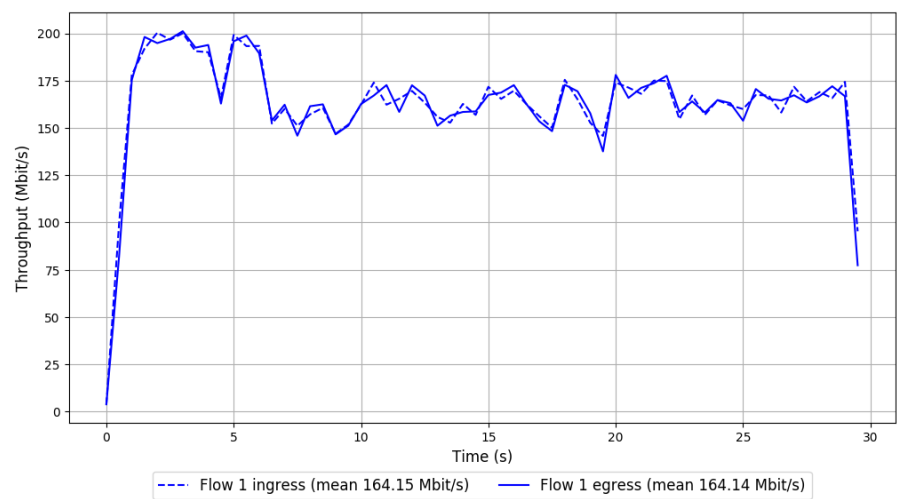
Run 3: Report of Indigo-1-32 — Data Link

```
Run 4: Statistics of Indigo-1-32

Start at: 2018-01-25 22:38:19
End at: 2018-01-25 22:38:49

# Below is generated by plot.py at 2018-01-26 02:40:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 164.14 Mbit/s
95th percentile per-packet one-way delay: 41.129 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 164.14 Mbit/s
95th percentile per-packet one-way delay: 41.129 ms
Loss rate: 0.36%
```
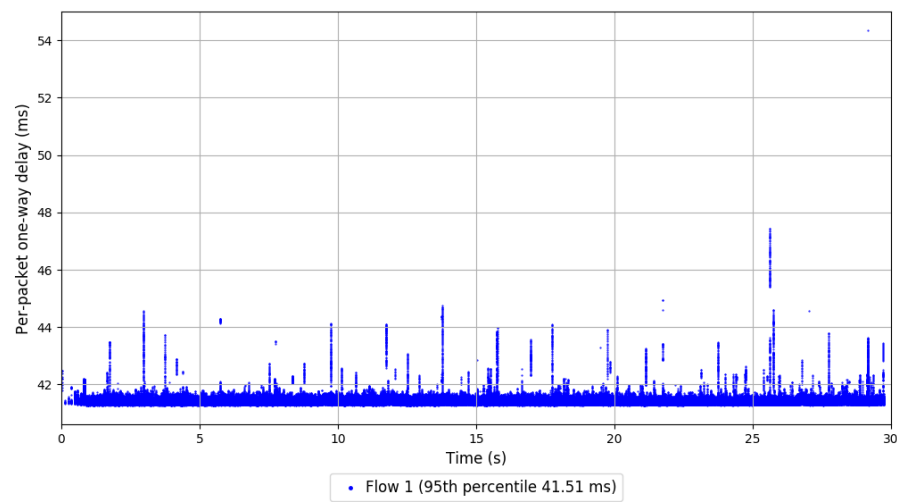
Run 4: Report of Indigo-1-32 — Data Link

Flow 1 ingress (mean 164.15 Mbit/s) ——— Flow 1 egress (mean 164.14 Mbit/s)

• Flow 1 (95th percentile 41.13 ms)

```
Run 5: Statistics of Indigo-1-32

Start at: 2018-01-25 22:50:00
End at: 2018-01-25 22:50:30

# Below is generated by plot.py at 2018-01-26 02:41:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 198.83 Mbit/s
95th percentile per-packet one-way delay: 41.509 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 198.83 Mbit/s
95th percentile per-packet one-way delay: 41.509 ms
Loss rate: 0.39%
```
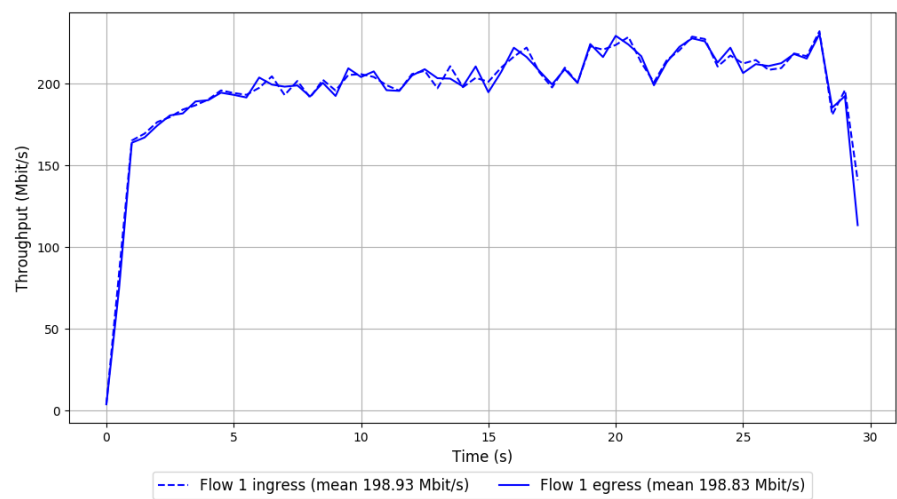
Run 5: Report of Indigo-1-32 — Data Link

```
Run 6: Statistics of Indigo-1-32

Start at: 2018-01-25 23:01:56
End at: 2018-01-25 23:02:26

# Below is generated by plot.py at 2018-01-26 02:42:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 192.47 Mbit/s
95th percentile per-packet one-way delay: 42.659 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 192.47 Mbit/s
95th percentile per-packet one-way delay: 42.659 ms
Loss rate: 0.39%
```
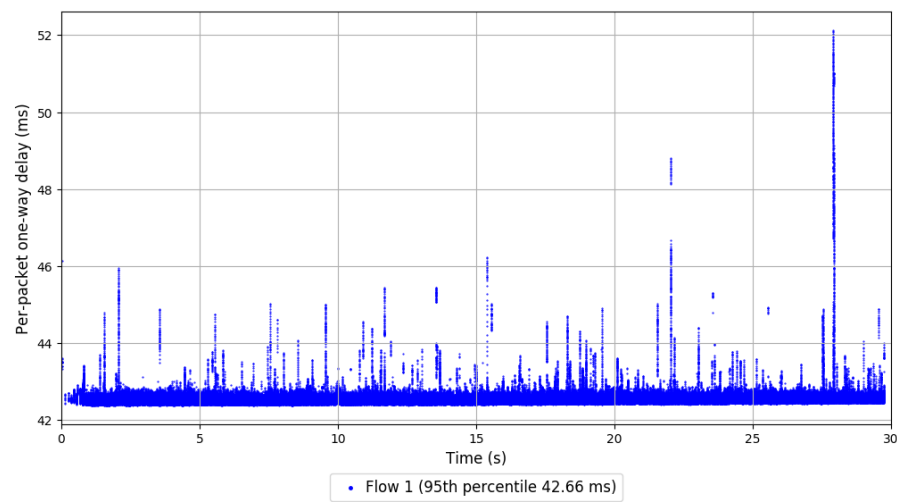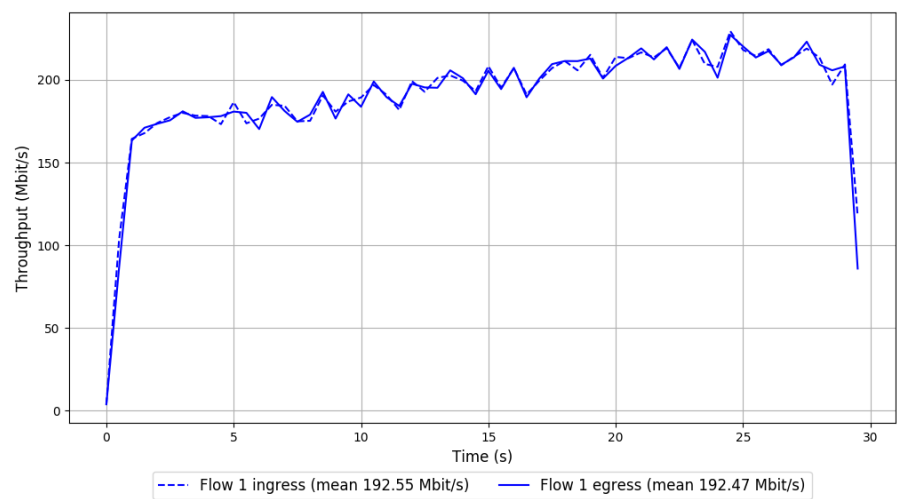
Run 6: Report of Indigo-1-32 — Data Link

```
Run 7: Statistics of Indigo-1-32

Start at: 2018-01-25 23:14:11
End at: 2018-01-25 23:14:41

# Below is generated by plot.py at 2018-01-26 02:42:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 180.88 Mbit/s
95th percentile per-packet one-way delay: 43.787 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 180.88 Mbit/s
95th percentile per-packet one-way delay: 43.787 ms
Loss rate: 0.48%
```
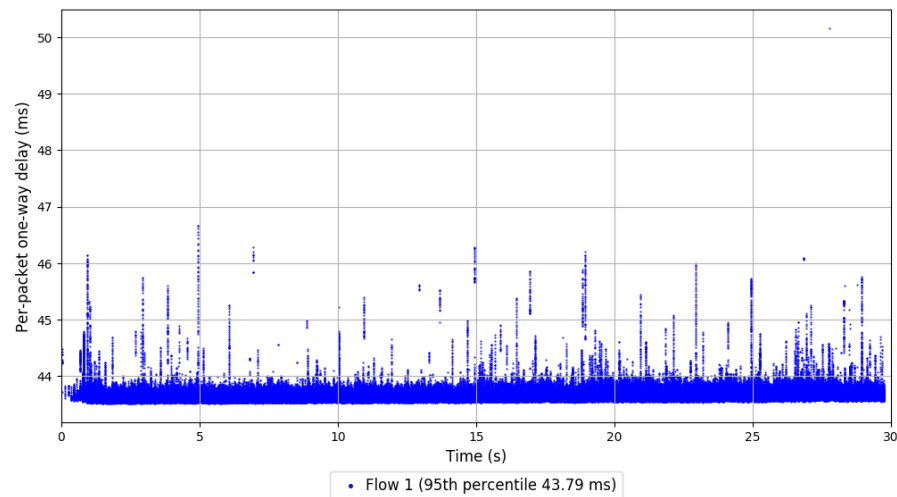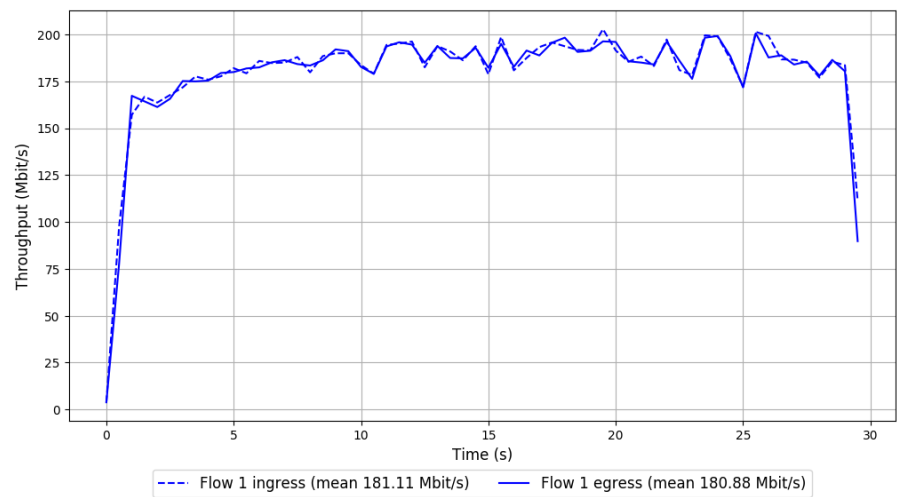
Run 7: Report of Indigo-1-32 — Data Link

```
Run 8: Statistics of Indigo-1-32

Start at: 2018-01-25 23:26:00
End at: 2018-01-25 23:26:30

# Below is generated by plot.py at 2018-01-26 02:43:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 184.61 Mbit/s
95th percentile per-packet one-way delay: 44.715 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 184.61 Mbit/s
95th percentile per-packet one-way delay: 44.715 ms
Loss rate: 0.53%
```
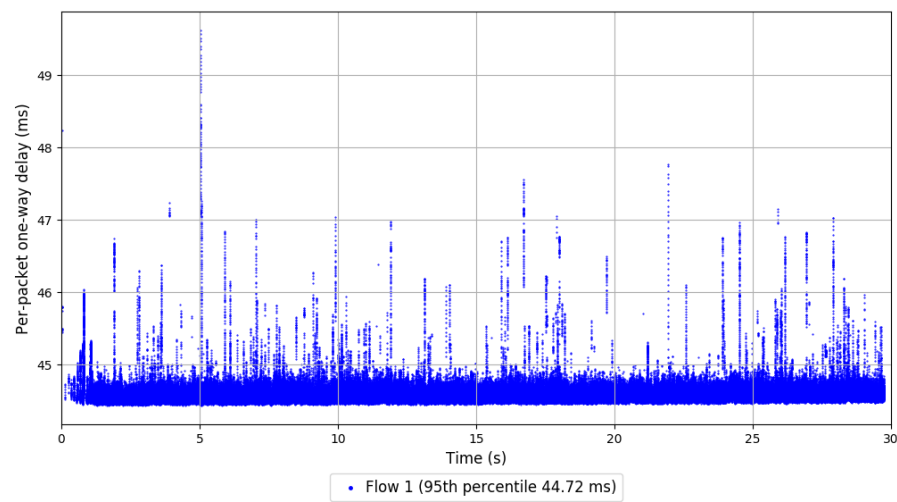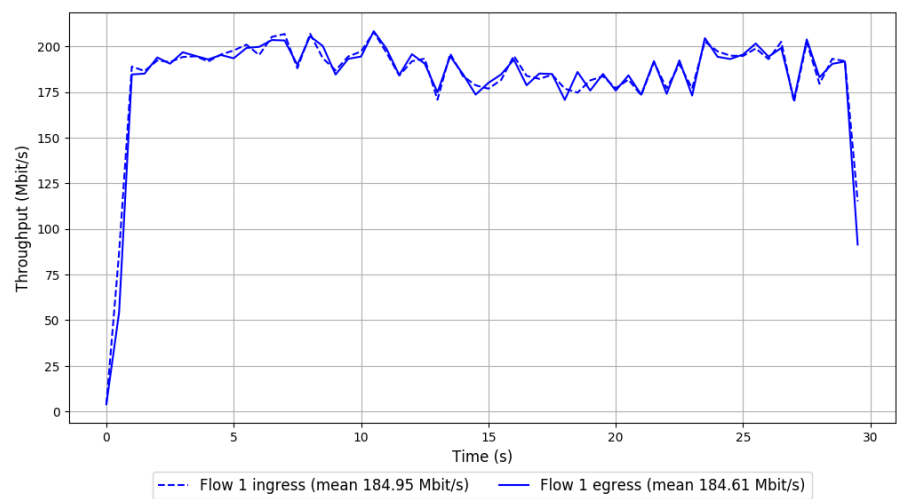
Run 8: Report of Indigo-1-32 — Data Link

```
Run 9: Statistics of Indigo-1-32

Start at: 2018-01-25 23:37:41
End at: 2018-01-25 23:38:11

# Below is generated by plot.py at 2018-01-26 02:43:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 195.39 Mbit/s
95th percentile per-packet one-way delay: 45.869 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 195.39 Mbit/s
95th percentile per-packet one-way delay: 45.869 ms
Loss rate: 0.38%
```
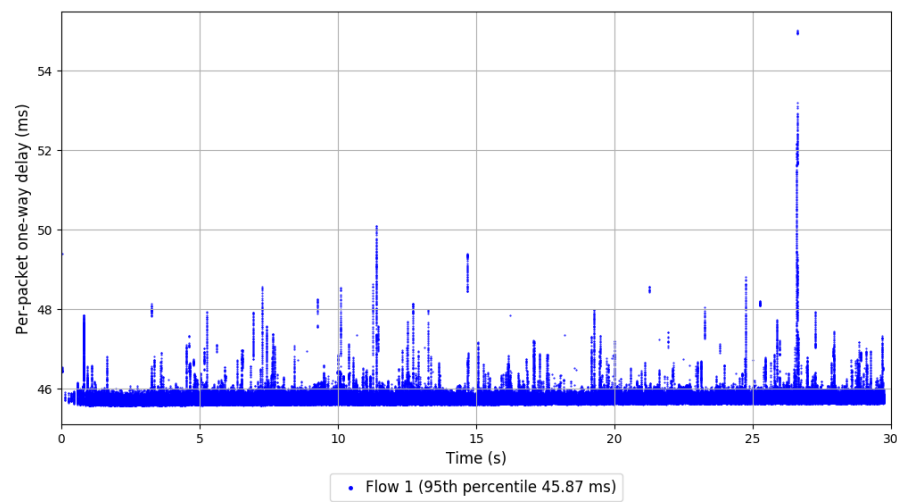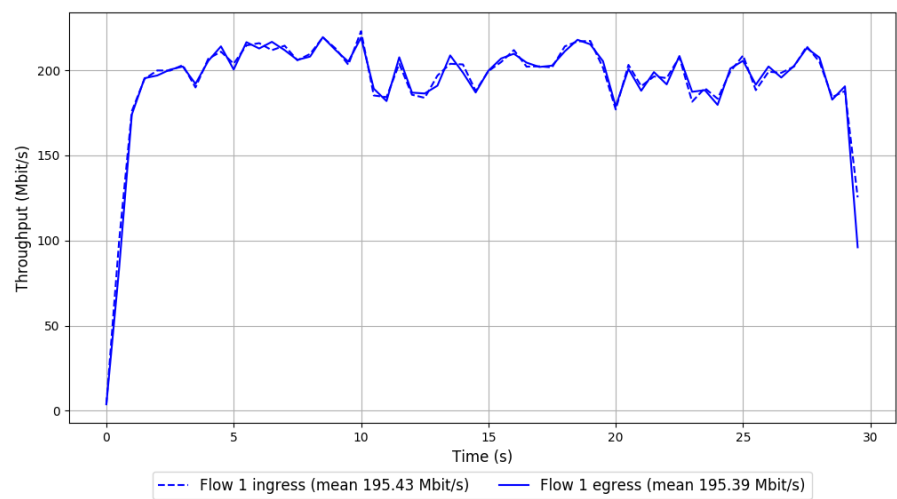
Run 9: Report of Indigo-1-32 — Data Link

```
Run 10: Statistics of Indigo-1-32

Start at: 2018-01-25 23:49:45
End at: 2018-01-25 23:50:15

# Below is generated by plot.py at 2018-01-26 02:43:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 181.94 Mbit/s
95th percentile per-packet one-way delay: 46.971 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 181.94 Mbit/s
95th percentile per-packet one-way delay: 46.971 ms
Loss rate: 0.35%
```
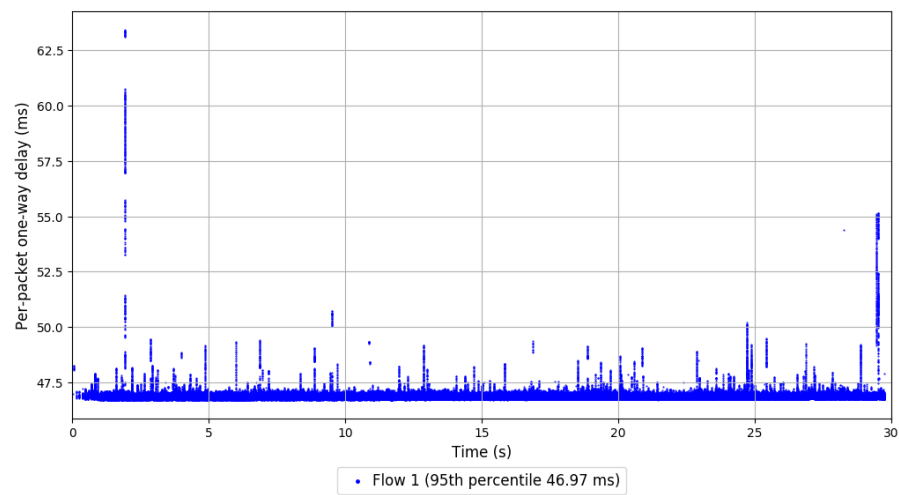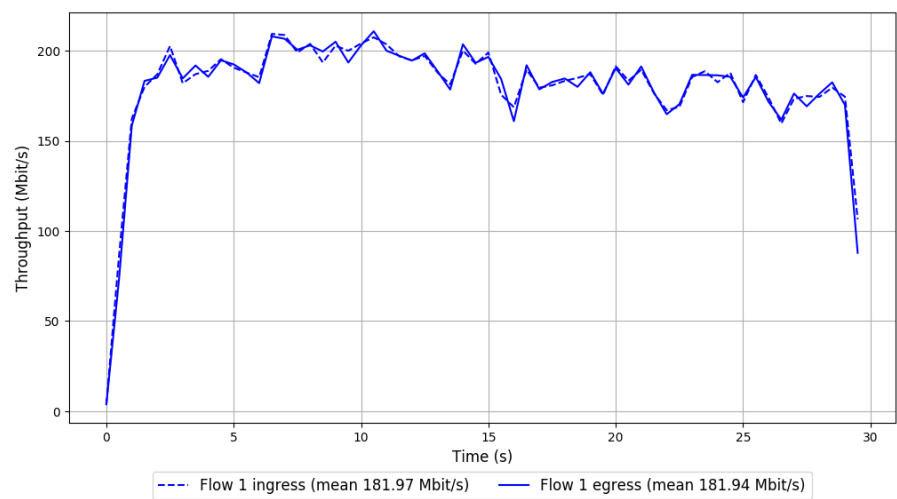
Run 10: Report of Indigo-1-32 — Data Link

Flow 1 ingress (mean 181.97 Mbit/s) ----- Flow 1 egress (mean 181.94 Mbit/s)
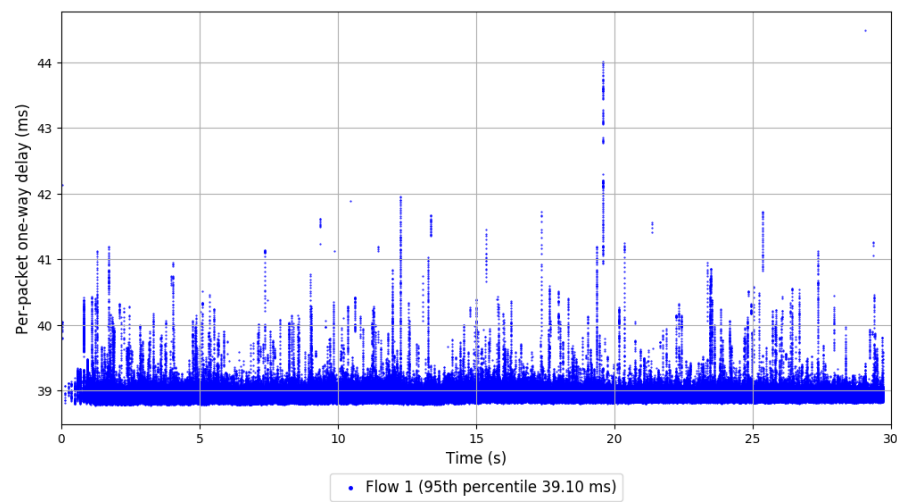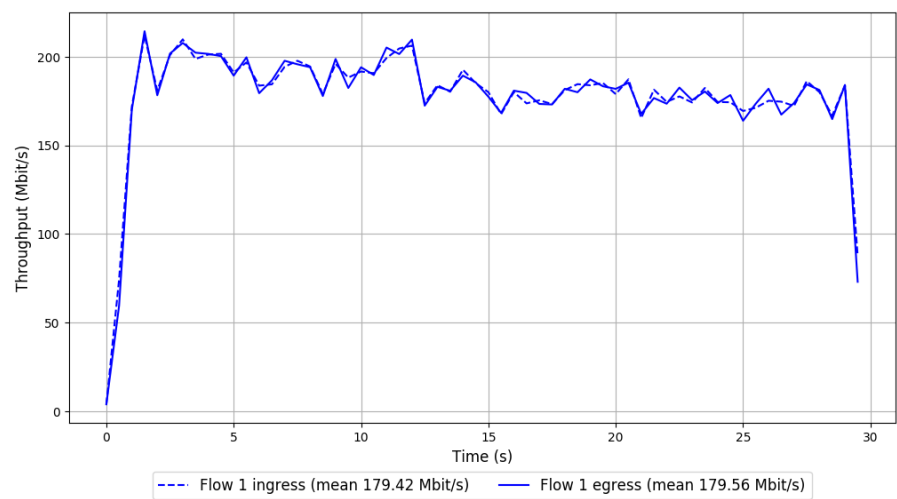

Flow 1 (95th percentile 46.97 ms)

```
Run 1: Statistics of Indigo-1-128

Start at: 2018-01-25 22:05:14
End at: 2018-01-25 22:05:44

# Below is generated by plot.py at 2018-01-26 02:43:32
# Datalink statistics
-- Total of 1 flow:
Average throughput: 179.56 Mbit/s
95th percentile per-packet one-way delay: 39.100 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 179.56 Mbit/s
95th percentile per-packet one-way delay: 39.100 ms
Loss rate: 0.28%
```

Run 1: Report of Indigo-1-128 — Data Link

```
Run 2: Statistics of Indigo-1-128

Start at: 2018-01-25 22:17:14
End at: 2018-01-25 22:17:44

# Below is generated by plot.py at 2018-01-26 02:43:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 182.41 Mbit/s
95th percentile per-packet one-way delay: 39.830 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 182.41 Mbit/s
95th percentile per-packet one-way delay: 39.830 ms
Loss rate: 0.29%
```
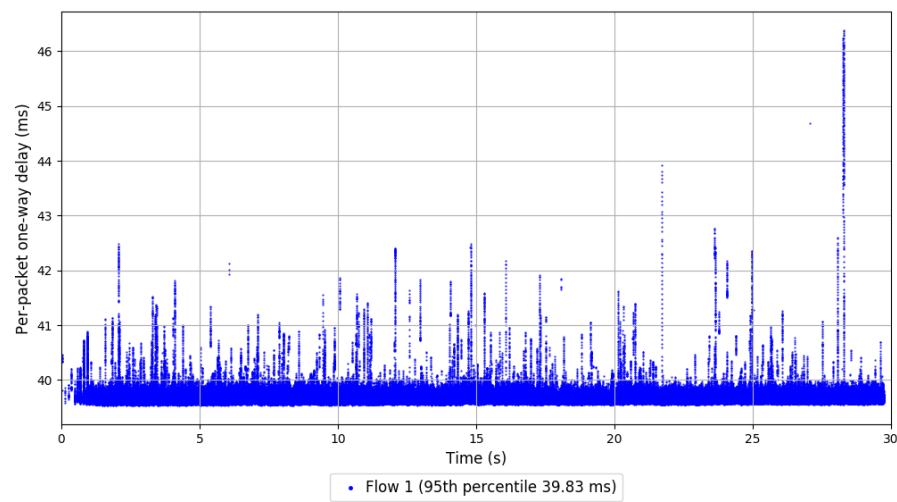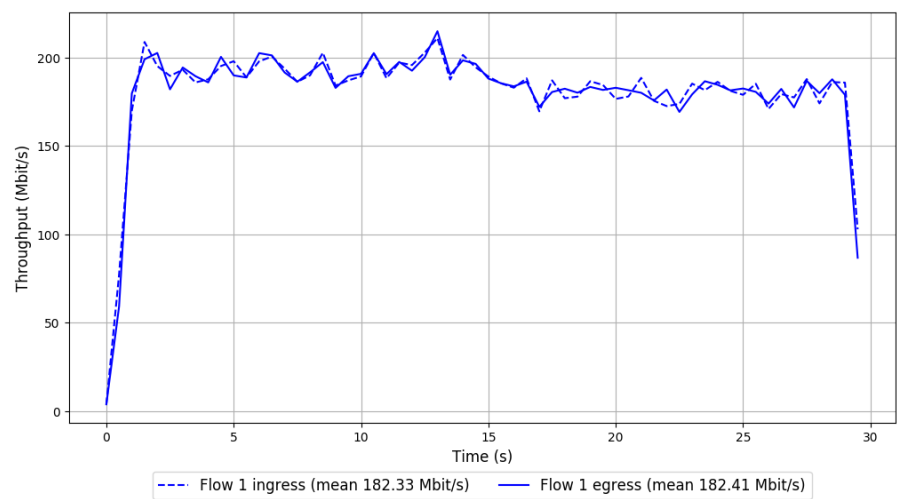
Run 2: Report of Indigo-1-128 — Data Link

```
Run 3: Statistics of Indigo-1-128

Start at: 2018-01-25 22:29:03
End at: 2018-01-25 22:29:33

# Below is generated by plot.py at 2018-01-26 02:45:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 201.33 Mbit/s
95th percentile per-packet one-way delay: 40.639 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 201.33 Mbit/s
95th percentile per-packet one-way delay: 40.639 ms
Loss rate: 0.37%
```
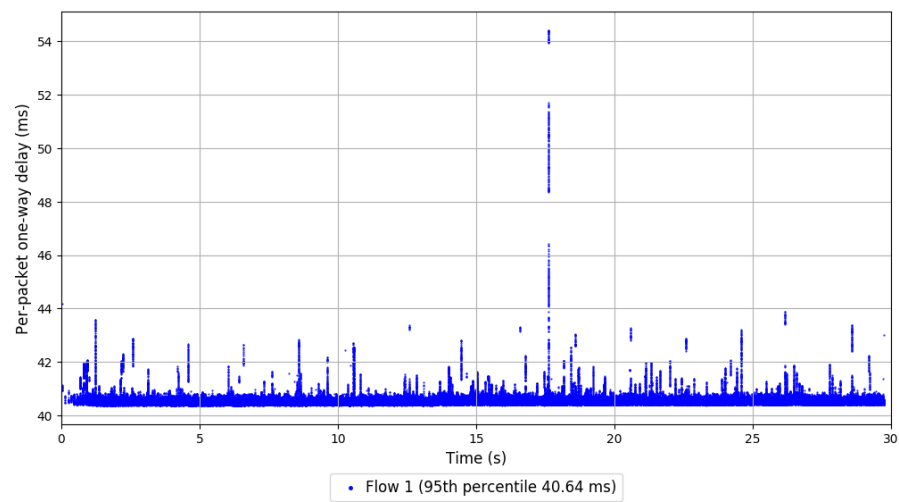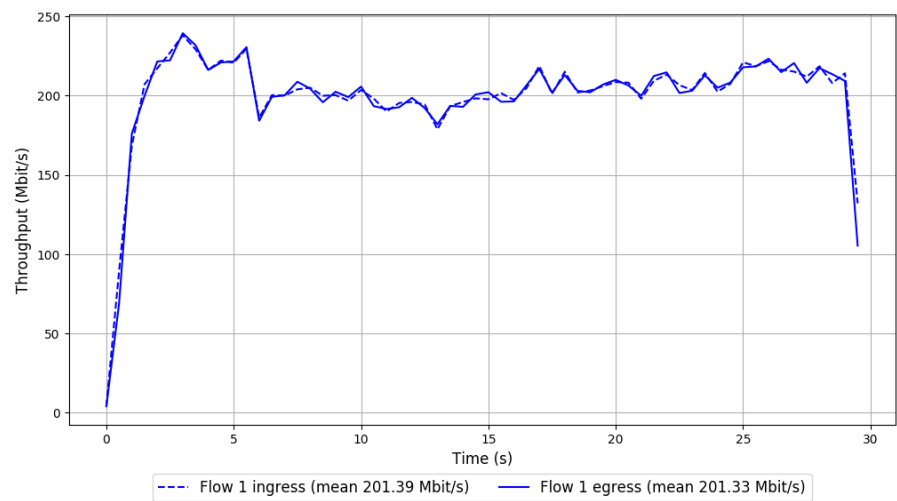
Run 3: Report of Indigo-1-128 — Data Link

```
Run 4: Statistics of Indigo-1-128

Start at: 2018-01-25 22:41:01
End at: 2018-01-25 22:41:31

# Below is generated by plot.py at 2018-01-26 02:45:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 180.26 Mbit/s
95th percentile per-packet one-way delay: 44.776 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 180.26 Mbit/s
95th percentile per-packet one-way delay: 44.776 ms
Loss rate: 0.46%
```
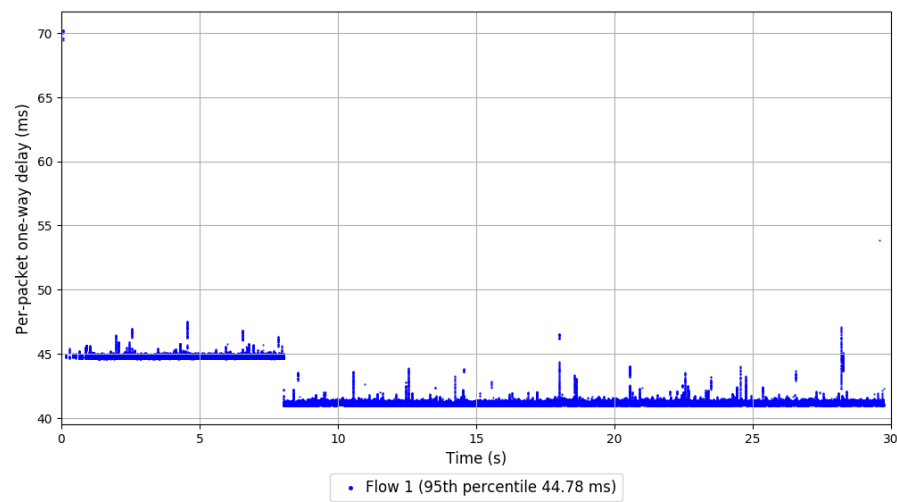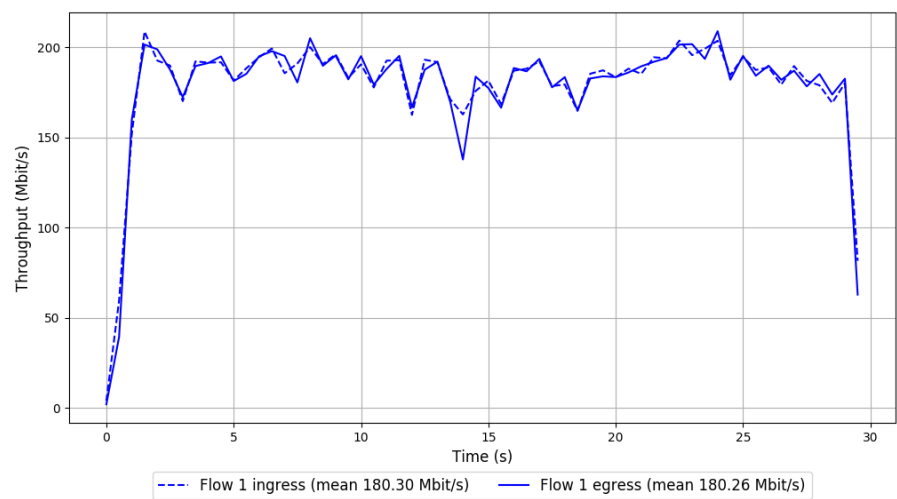
Run 4: Report of Indigo-1-128 — Data Link

```
Run 5: Statistics of Indigo-1-128

Start at: 2018-01-25 22:52:44
End at: 2018-01-25 22:53:14

# Below is generated by plot.py at 2018-01-26 02:45:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 188.81 Mbit/s
95th percentile per-packet one-way delay: 41.698 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 188.81 Mbit/s
95th percentile per-packet one-way delay: 41.698 ms
Loss rate: 0.34%
```
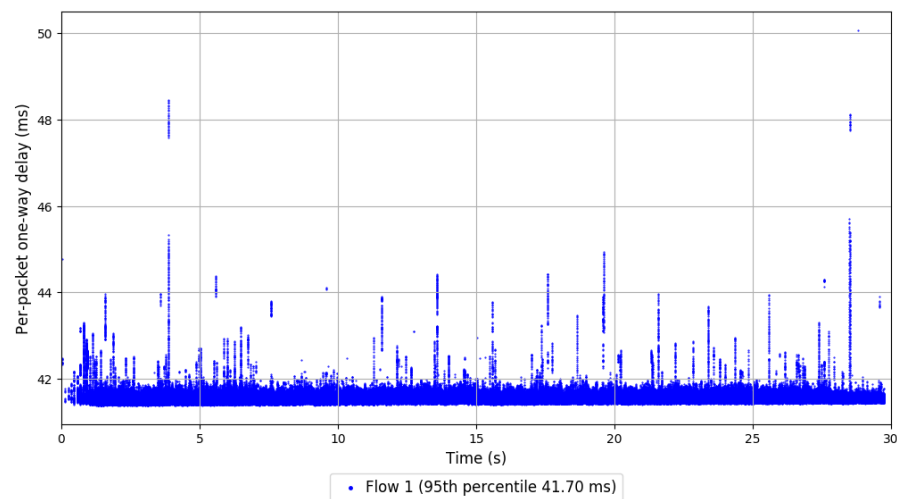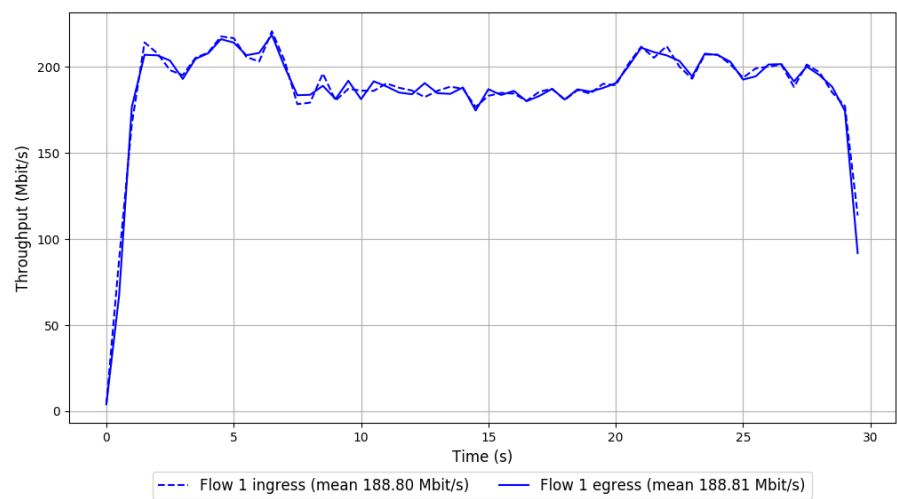
Run 5: Report of Indigo-1-128 — Data Link

```
Run 6: Statistics of Indigo-1-128

Start at: 2018-01-25 23:04:42
End at: 2018-01-25 23:05:12

# Below is generated by plot.py at 2018-01-26 02:45:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 172.71 Mbit/s
95th percentile per-packet one-way delay: 42.940 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 172.71 Mbit/s
95th percentile per-packet one-way delay: 42.940 ms
Loss rate: 0.62%
```
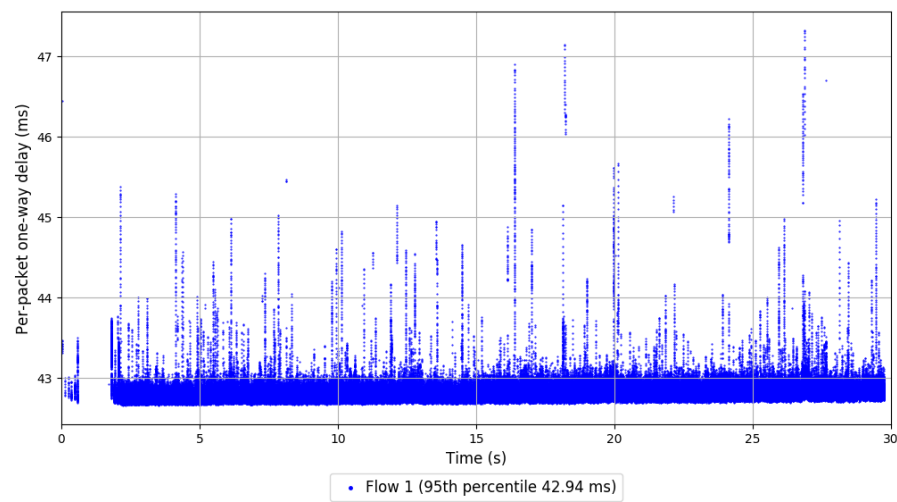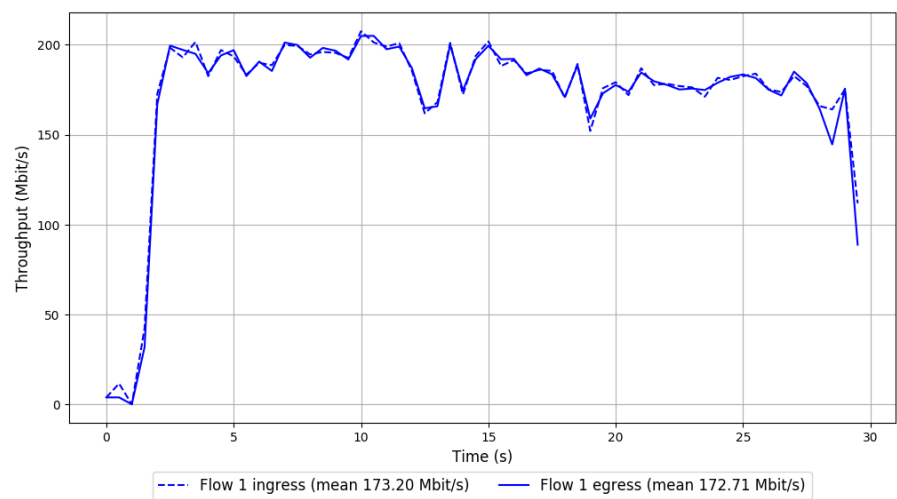
Run 6: Report of Indigo-1-128 — Data Link

Flow 1 ingress (mean 173.20 Mbit/s) — Flow 1 egress (mean 172.71 Mbit/s)

Flow 1 (95th percentile 42.94 ms)

```
Run 7: Statistics of Indigo-1-128

Start at: 2018-01-25 23:16:54
End at: 2018-01-25 23:17:24

# Below is generated by plot.py at 2018-01-26 02:45:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 184.81 Mbit/s
95th percentile per-packet one-way delay: 44.058 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 184.81 Mbit/s
95th percentile per-packet one-way delay: 44.058 ms
Loss rate: 0.34%
```
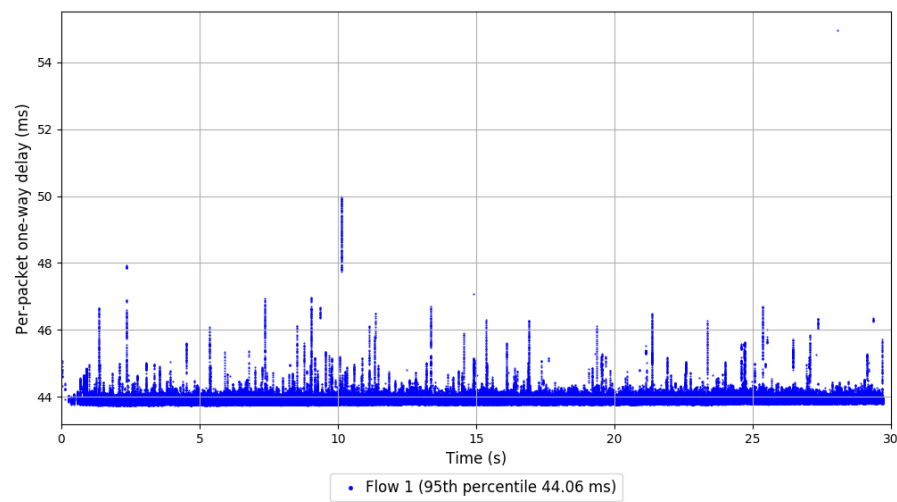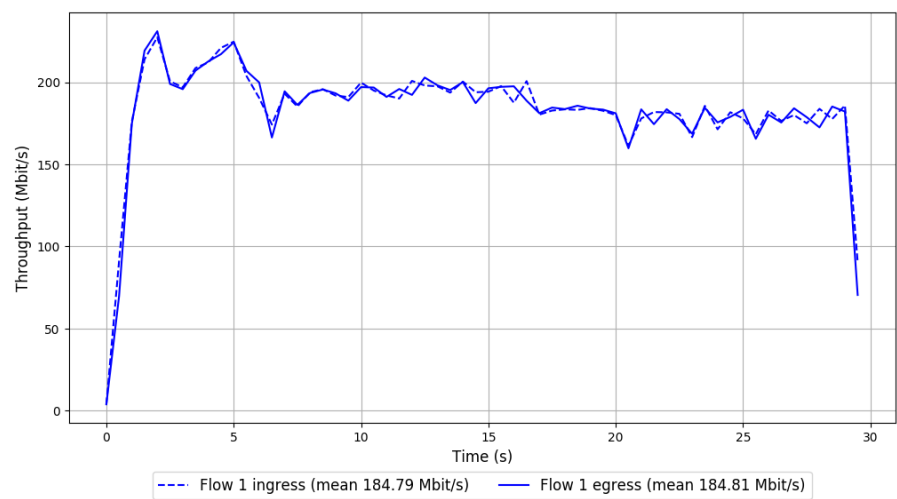
Run 7: Report of Indigo-1-128 — Data Link

```
Run 8: Statistics of Indigo-1-128

Start at: 2018-01-25 23:28:43
End at: 2018-01-25 23:29:13

# Below is generated by plot.py at 2018-01-26 02:46:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 186.10 Mbit/s
95th percentile per-packet one-way delay: 44.962 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 186.10 Mbit/s
95th percentile per-packet one-way delay: 44.962 ms
Loss rate: 0.35%
```
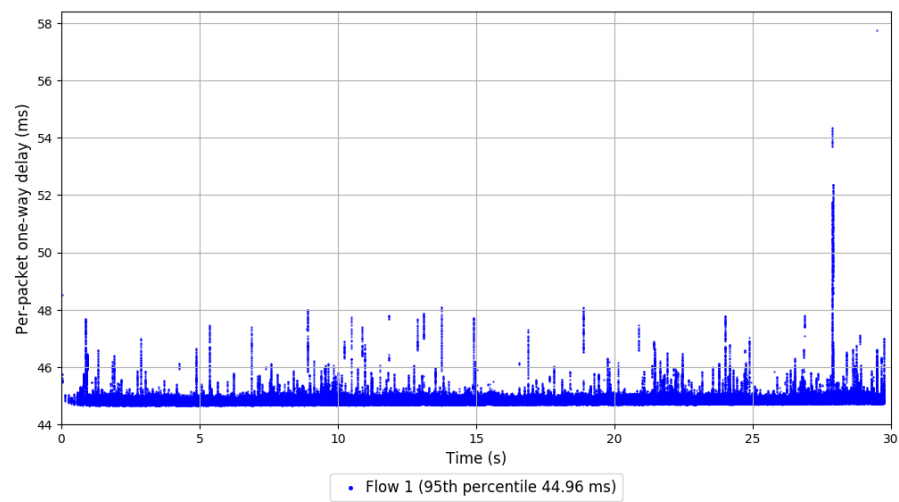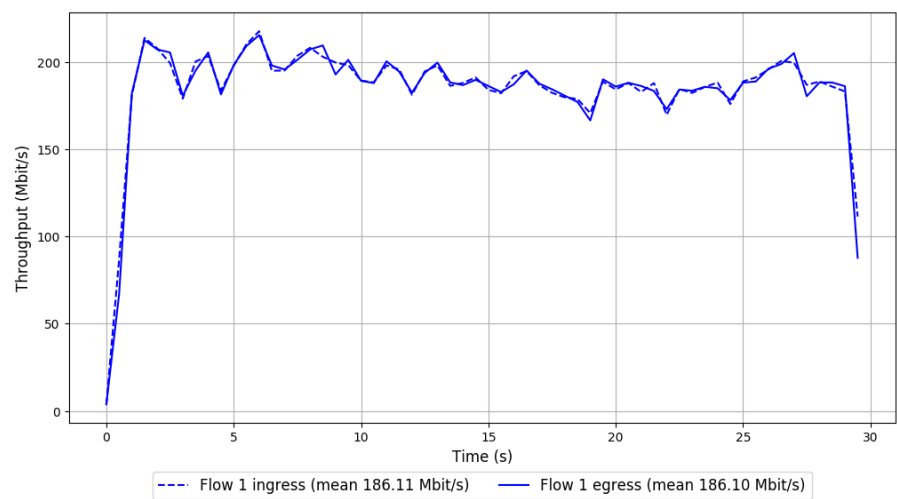
Run 8: Report of Indigo-1-128 — Data Link

```
Run 9: Statistics of Indigo-1-128

Start at: 2018-01-25 23:40:23
End at: 2018-01-25 23:40:53

# Below is generated by plot.py at 2018-01-26 02:46:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 183.50 Mbit/s
95th percentile per-packet one-way delay: 46.175 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 183.50 Mbit/s
95th percentile per-packet one-way delay: 46.175 ms
Loss rate: 0.36%
```
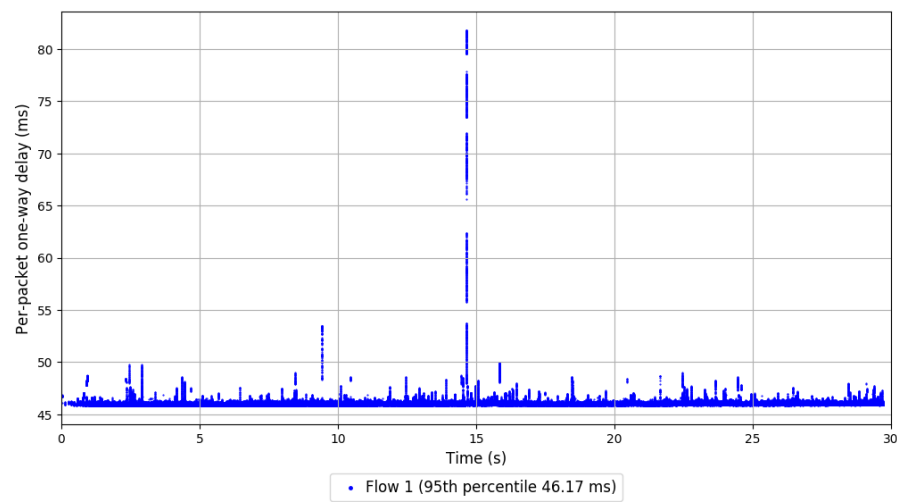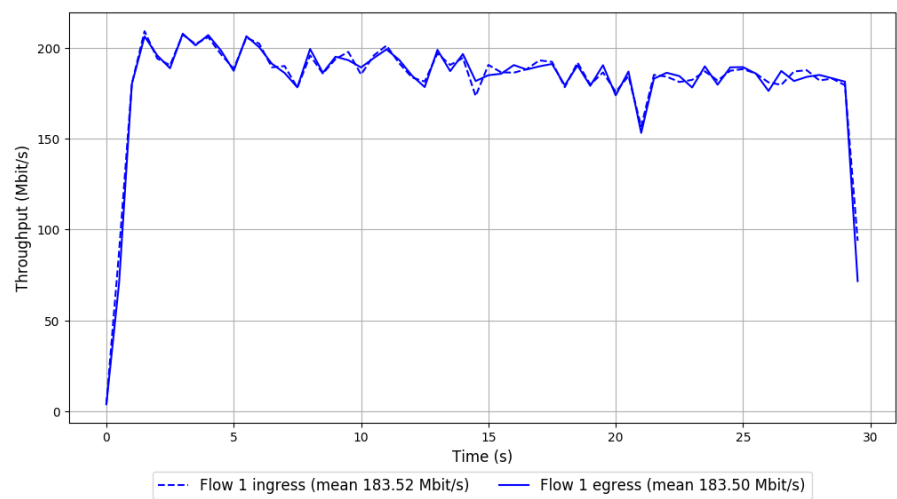
Run 9: Report of Indigo-1-128 — Data Link

Flow 1 ingress (mean 183.52 Mbit/s) --- Flow 1 egress (mean 183.50 Mbit/s)

Flow 1 (95th percentile 46.17 ms)

```
Run 10: Statistics of Indigo-1-128

Start at: 2018-01-25 23:52:27
End at: 2018-01-25 23:52:57

# Below is generated by plot.py at 2018-01-26 02:46:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 195.76 Mbit/s
95th percentile per-packet one-way delay: 47.247 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 195.76 Mbit/s
95th percentile per-packet one-way delay: 47.247 ms
Loss rate: 0.36%
```

Run 10: Report of Indigo-1-128 — Data Link