

Pantheon Report

Generated at 2019-01-21 23:15:37 (UTC).

Data path: China on `eno1` (*remote*) → AWS Korea on `ens5` (*local*).

Repeated the test of 21 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

NTP offsets were measured against `ntp.nict.jp` and have been applied to correct the timestamps in logs.

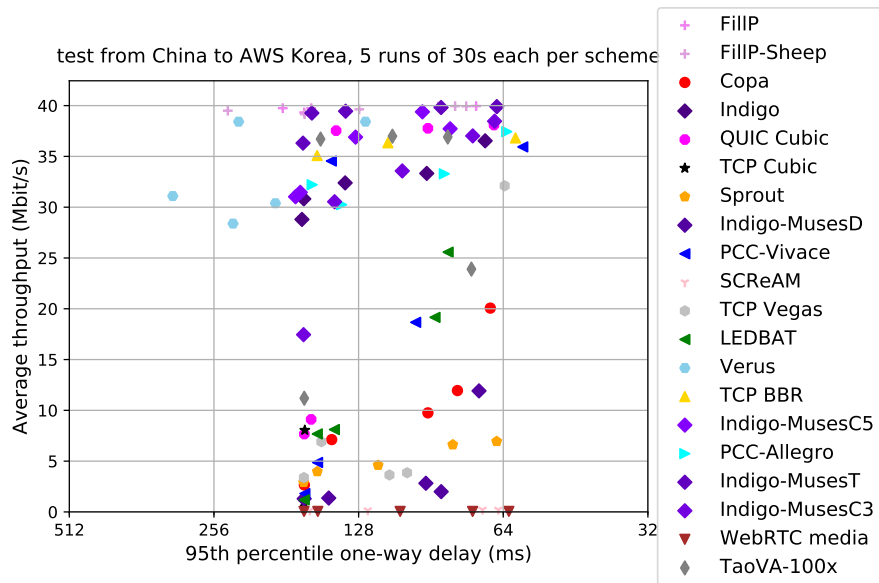
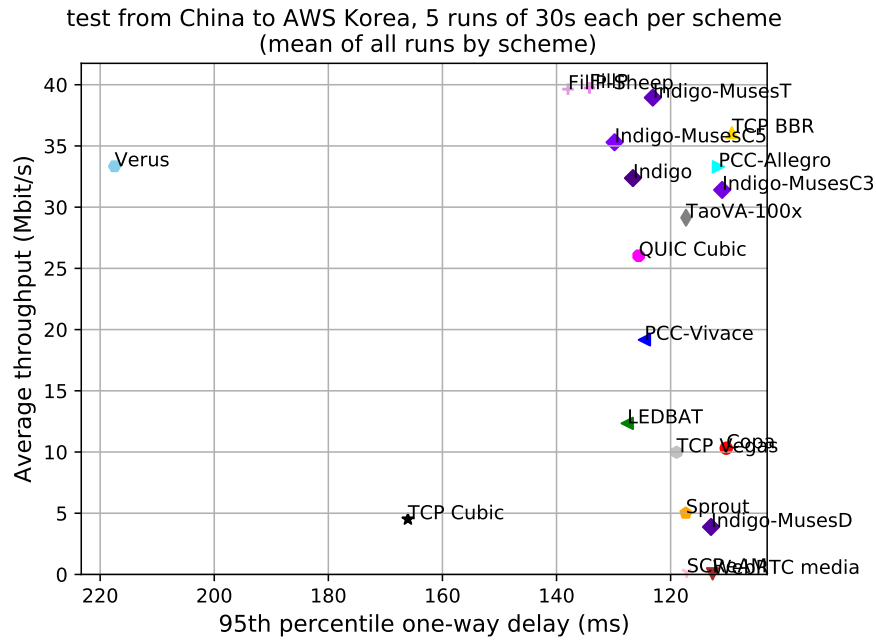
System info:

```
Linux 4.15.0-1031-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

```
branch: muses @ 89d24e57783e7fbfec537a619071de937b639e38
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 1ddcff131048c6962f123bcd22b4d166a422adde
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quick @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
```

third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851



scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	36.08	109.26	13.53
Copa	5	10.31	110.25	1.16
TCP Cubic	2	4.51	166.06	1.86
FillP	5	39.74	134.22	19.36
FillP-Sheep	5	39.64	137.99	13.80
Indigo	5	32.37	126.60	22.00
Indigo-MusesC3	5	31.41	110.97	8.27
Indigo-MusesC5	5	35.30	129.83	11.21
Indigo-MusesD	5	3.88	112.92	1.74
Indigo-MusesT	5	38.95	123.13	10.88
LEDBAT	5	12.34	127.61	1.13
PCC-Allegro	4	33.29	111.62	2.97
PCC-Expr	0	N/A	N/A	N/A
QUIC Cubic	5	26.03	125.60	1.65
SCReAM	5	0.17	117.18	0.42
Sprout	5	5.01	117.34	0.58
TaoVA-100x	5	29.14	117.30	13.43
TCP Vegas	5	9.98	118.96	0.65
Verus	5	33.34	217.48	18.74
PCC-Vivace	5	19.16	124.60	2.88
WebRTC media	5	0.05	112.64	0.17

Run 1: Statistics of TCP BBR

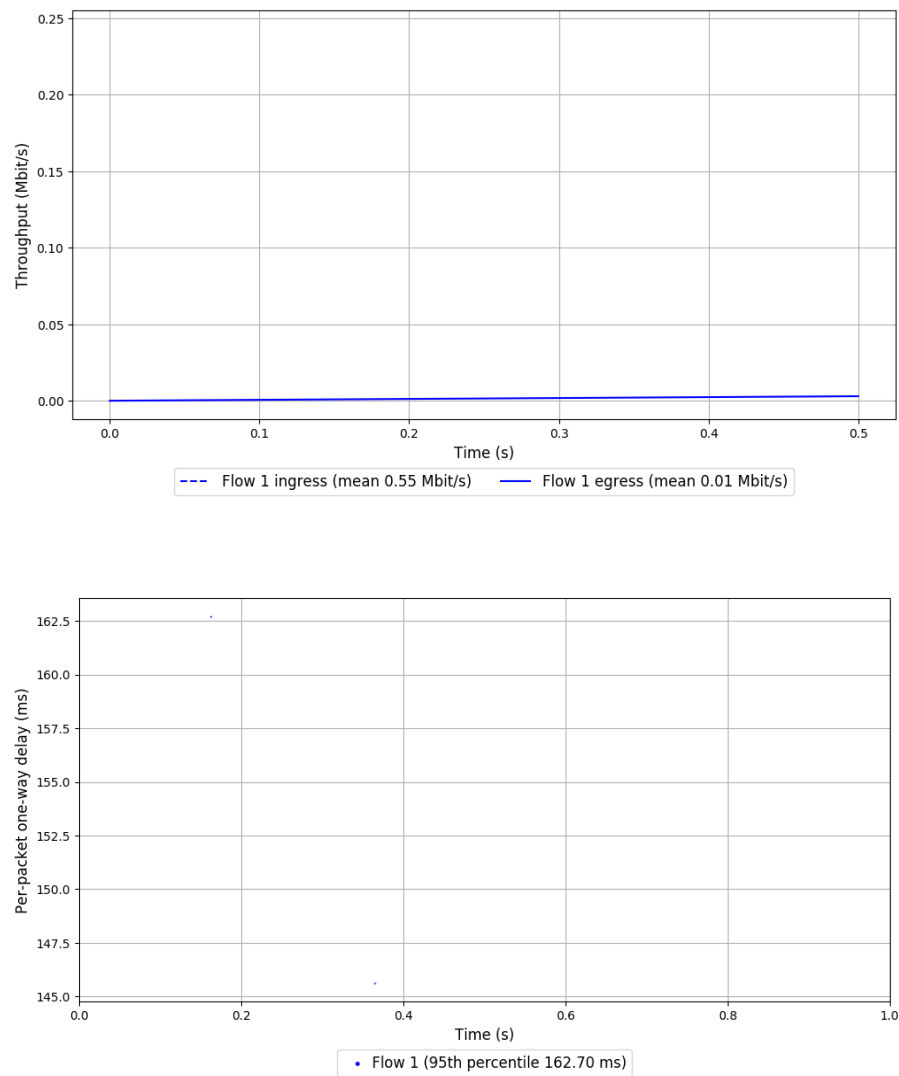
Start at: 2019-01-21 21:02:42

End at: 2019-01-21 21:03:12

Local clock offset: 1.446 ms

Remote clock offset: 7.643 ms

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

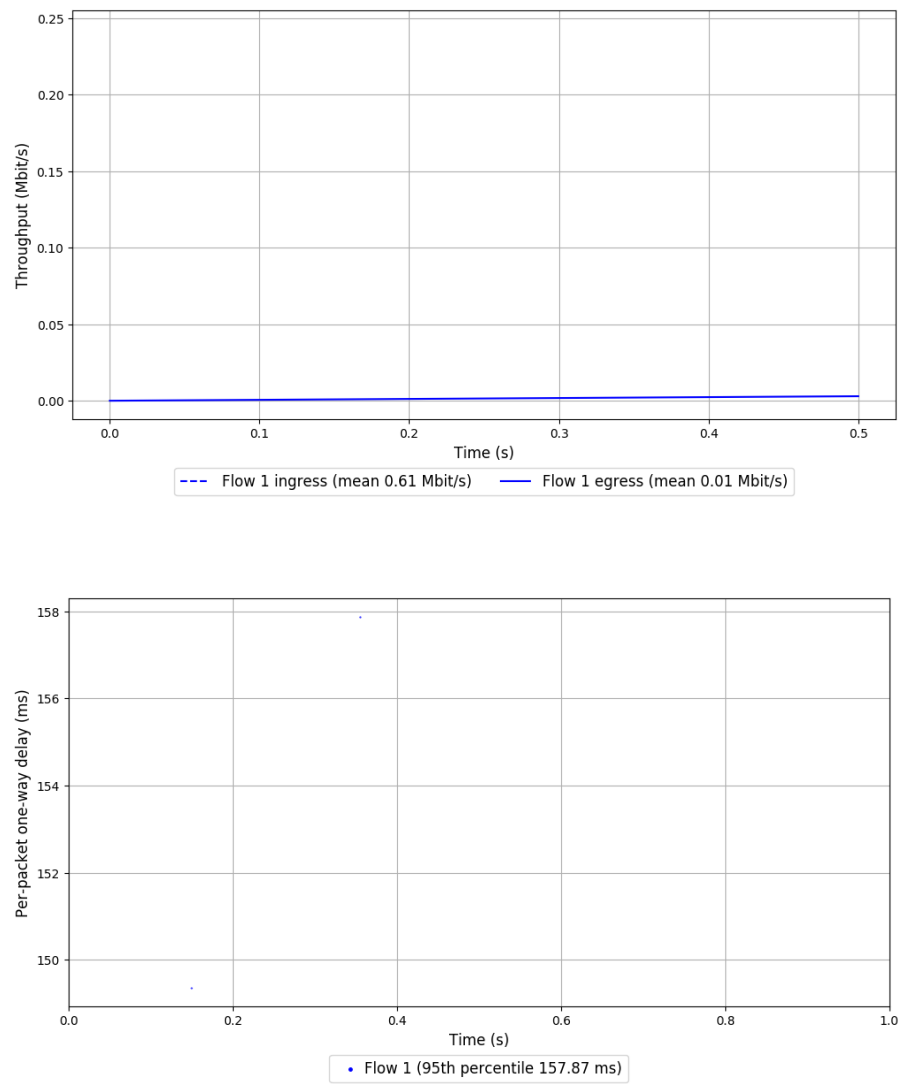
Start at: 2019-01-21 21:31:37

End at: 2019-01-21 21:32:07

Local clock offset: 0.857 ms

Remote clock offset: 7.124 ms

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2019-01-21 21:57:12

End at: 2019-01-21 21:57:42

Local clock offset: 1.745 ms

Remote clock offset: 7.573 ms

Below is generated by plot.py at 2019-01-21 23:11:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 35.09 Mbit/s

95th percentile per-packet one-way delay: 156.160 ms

Loss rate: 10.31%

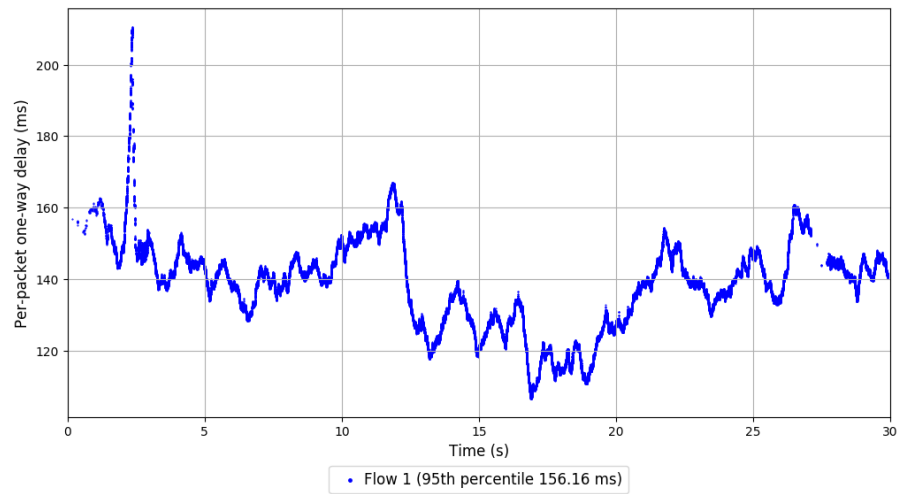
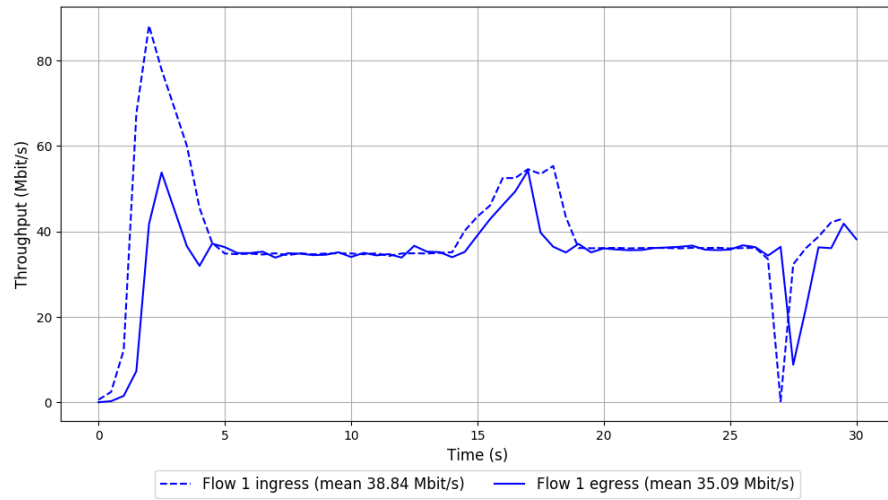
-- Flow 1:

Average throughput: 35.09 Mbit/s

95th percentile per-packet one-way delay: 156.160 ms

Loss rate: 10.31%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2019-01-21 22:22:14

End at: 2019-01-21 22:22:44

Local clock offset: 8.424 ms

Remote clock offset: 7.545 ms

Below is generated by plot.py at 2019-01-21 23:11:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 36.34 Mbit/s

95th percentile per-packet one-way delay: 111.259 ms

Loss rate: 15.16%

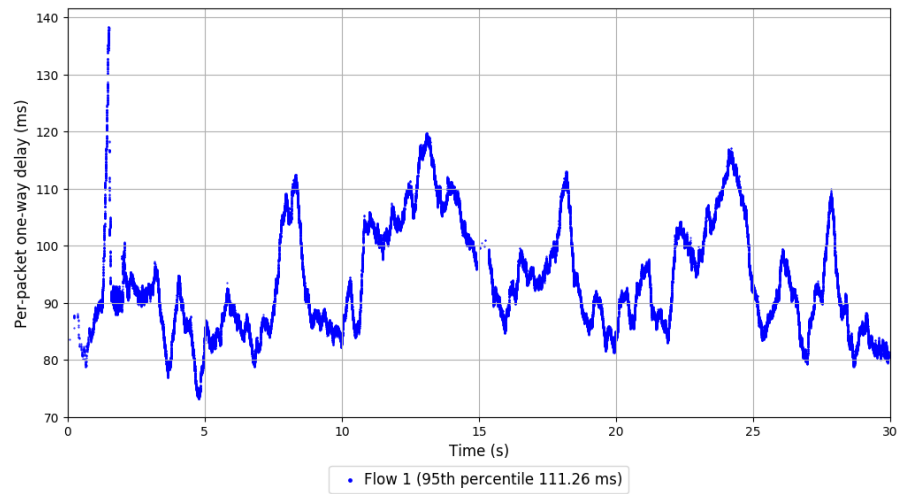
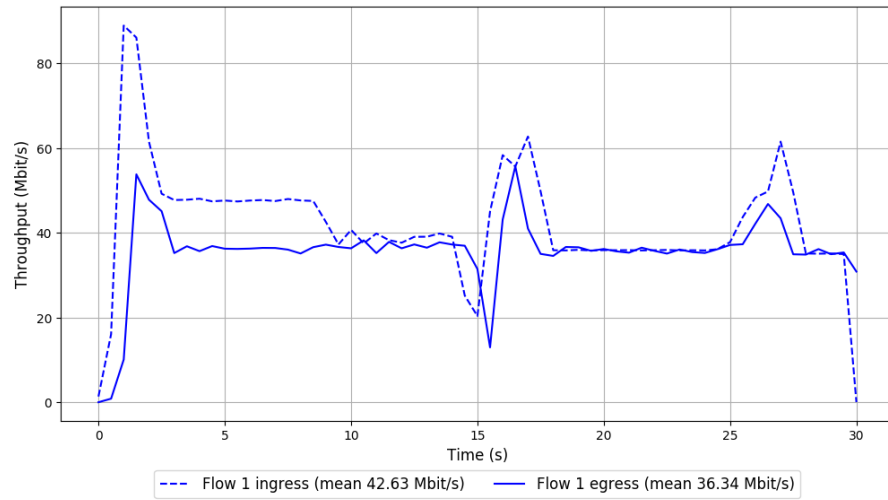
-- Flow 1:

Average throughput: 36.34 Mbit/s

95th percentile per-packet one-way delay: 111.259 ms

Loss rate: 15.16%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2019-01-21 22:46:51

End at: 2019-01-21 22:47:21

Local clock offset: 15.824 ms

Remote clock offset: 7.752 ms

Below is generated by plot.py at 2019-01-21 23:11:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 36.82 Mbit/s

95th percentile per-packet one-way delay: 60.355 ms

Loss rate: 15.12%

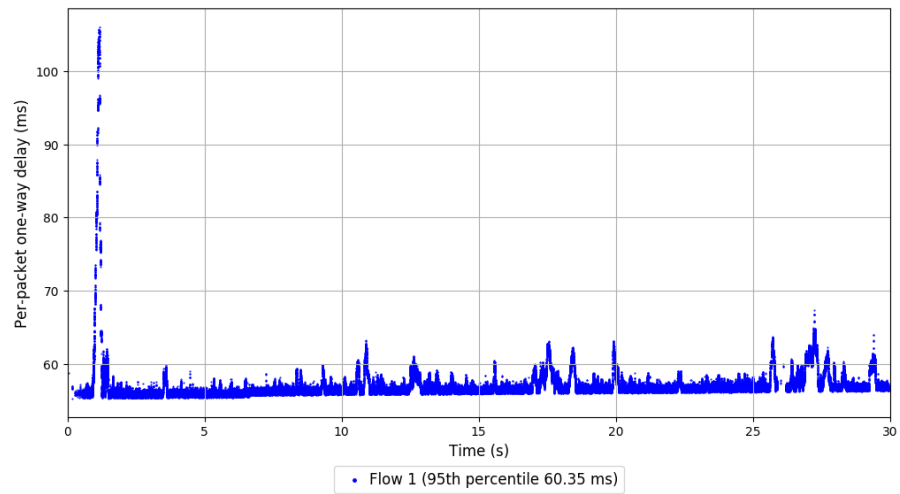
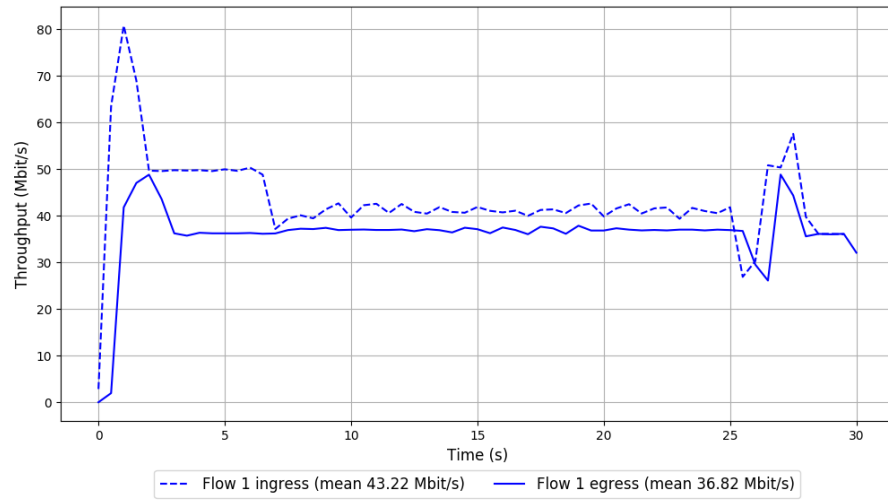
-- Flow 1:

Average throughput: 36.82 Mbit/s

95th percentile per-packet one-way delay: 60.355 ms

Loss rate: 15.12%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2019-01-21 21:26:46

End at: 2019-01-21 21:27:16

Local clock offset: 1.045 ms

Remote clock offset: 7.278 ms

Below is generated by plot.py at 2019-01-21 23:11:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.66 Mbit/s

95th percentile per-packet one-way delay: 166.001 ms

Loss rate: 0.64%

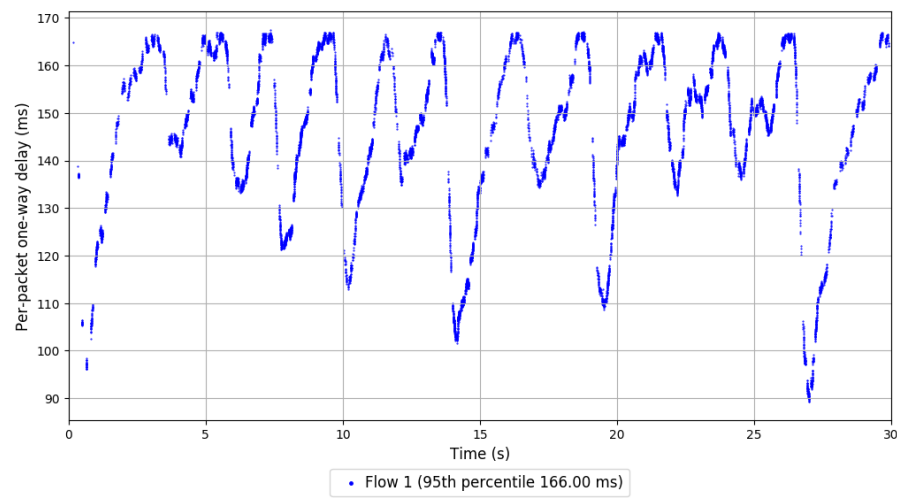
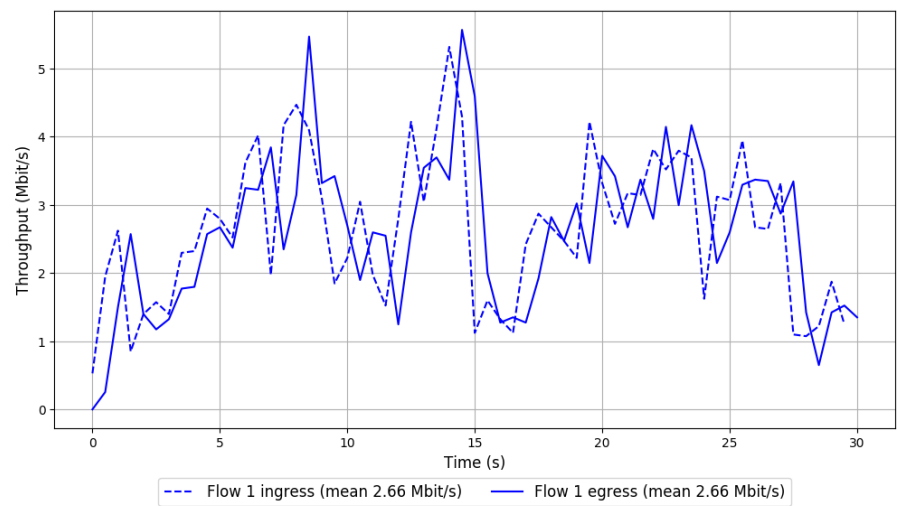
-- Flow 1:

Average throughput: 2.66 Mbit/s

95th percentile per-packet one-way delay: 166.001 ms

Loss rate: 0.64%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2019-01-21 21:52:29

End at: 2019-01-21 21:52:59

Local clock offset: 1.249 ms

Remote clock offset: 7.365 ms

Below is generated by plot.py at 2019-01-21 23:11:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.12 Mbit/s

95th percentile per-packet one-way delay: 145.605 ms

Loss rate: 0.22%

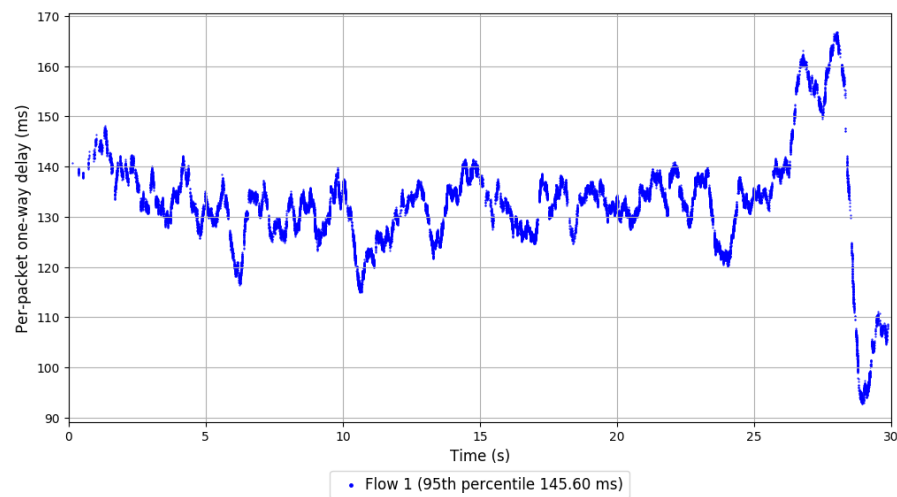
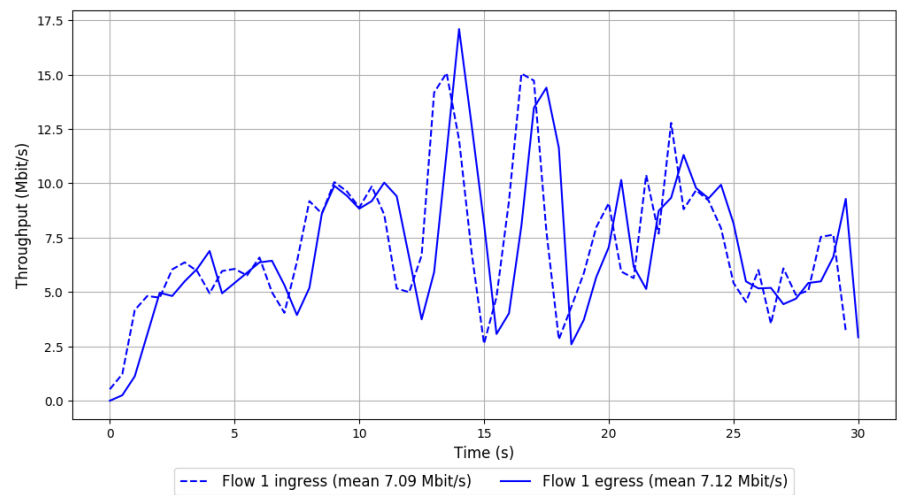
-- Flow 1:

Average throughput: 7.12 Mbit/s

95th percentile per-packet one-way delay: 145.605 ms

Loss rate: 0.22%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2019-01-21 22:17:35

End at: 2019-01-21 22:18:05

Local clock offset: 3.833 ms

Remote clock offset: 7.754 ms

Below is generated by plot.py at 2019-01-21 23:11:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 9.75 Mbit/s

95th percentile per-packet one-way delay: 91.826 ms

Loss rate: 0.47%

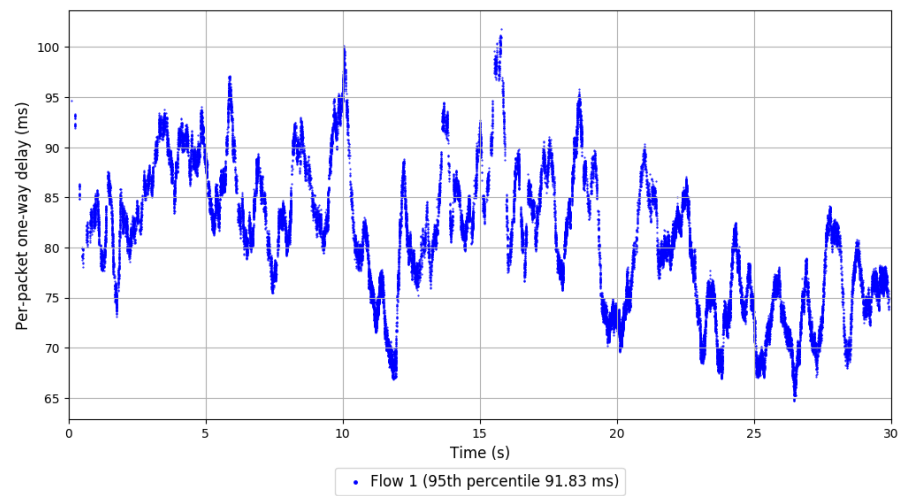
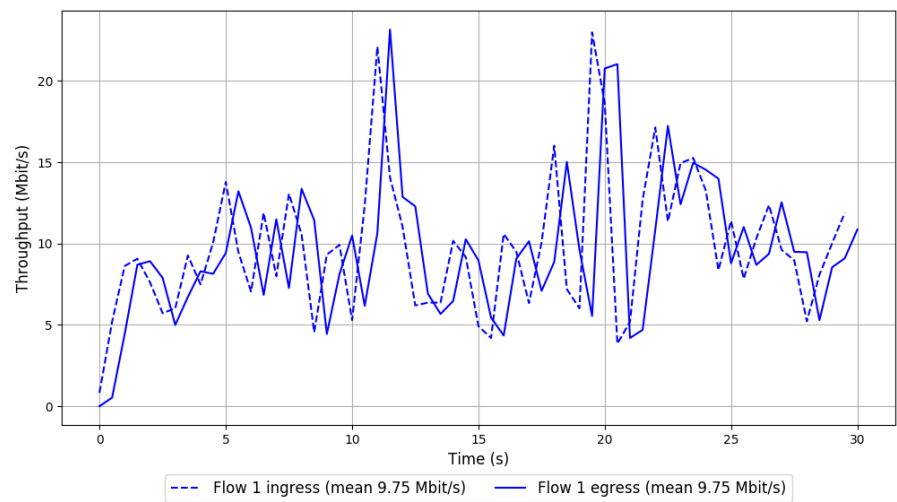
-- Flow 1:

Average throughput: 9.75 Mbit/s

95th percentile per-packet one-way delay: 91.826 ms

Loss rate: 0.47%

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2019-01-21 22:42:14

End at: 2019-01-21 22:42:44

Local clock offset: 16.141 ms

Remote clock offset: 8.226 ms

Below is generated by plot.py at 2019-01-21 23:11:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 11.95 Mbit/s

95th percentile per-packet one-way delay: 79.703 ms

Loss rate: 0.40%

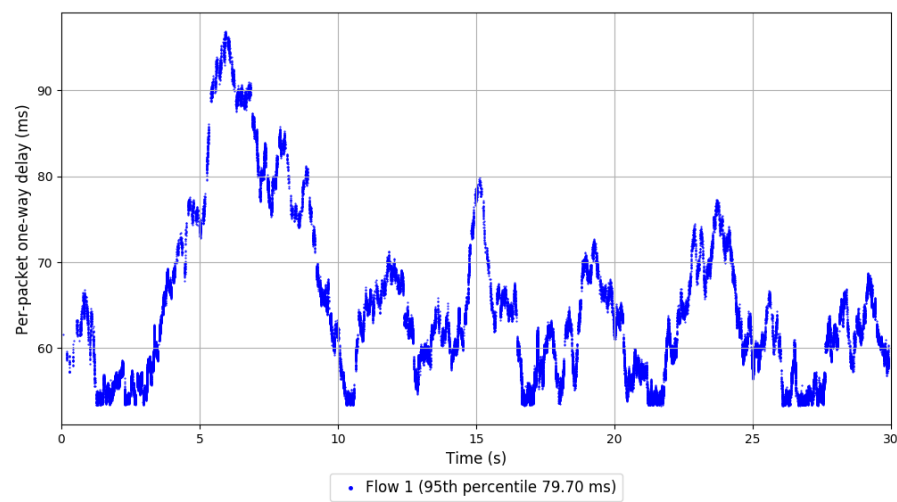
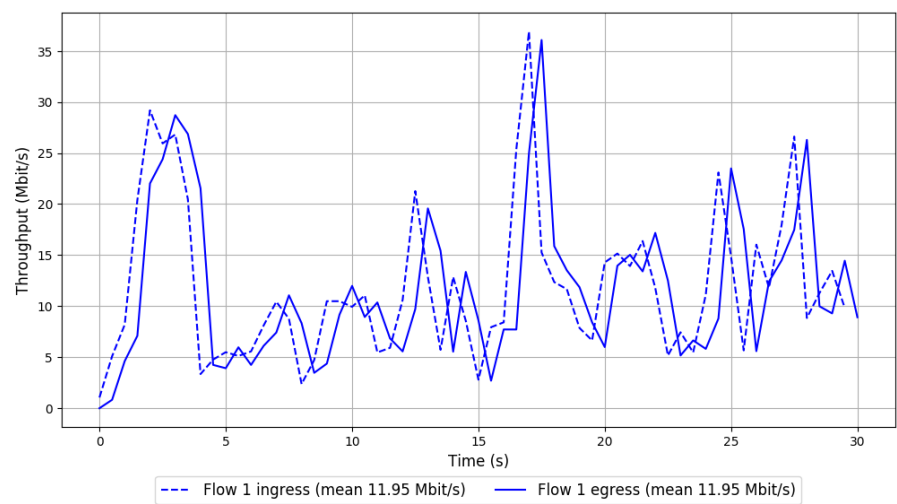
-- Flow 1:

Average throughput: 11.95 Mbit/s

95th percentile per-packet one-way delay: 79.703 ms

Loss rate: 0.40%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2019-01-21 23:06:46

End at: 2019-01-21 23:07:16

Local clock offset: 1.937 ms

Remote clock offset: 7.323 ms

Below is generated by plot.py at 2019-01-21 23:11:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 20.06 Mbit/s

95th percentile per-packet one-way delay: 68.090 ms

Loss rate: 4.09%

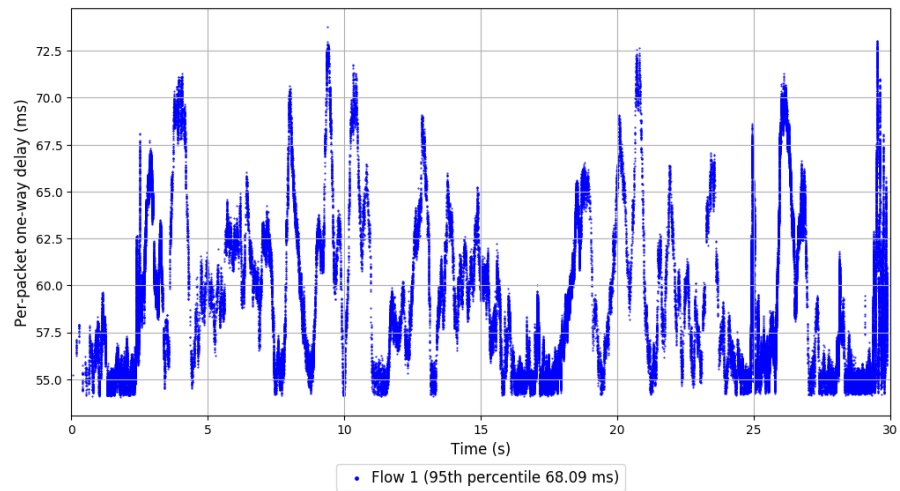
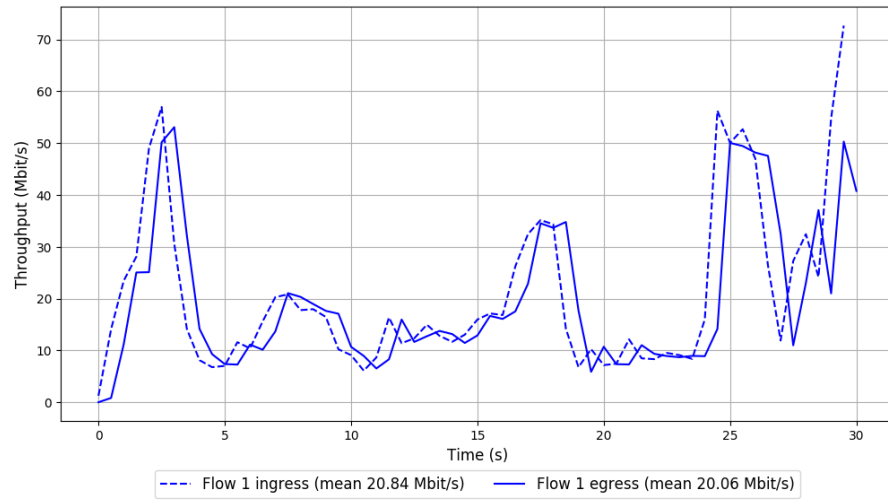
-- Flow 1:

Average throughput: 20.06 Mbit/s

95th percentile per-packet one-way delay: 68.090 ms

Loss rate: 4.09%

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2019-01-21 21:03:52

End at: 2019-01-21 21:04:22

Local clock offset: 1.351 ms

Remote clock offset: 8.035 ms

Below is generated by plot.py at 2019-01-21 23:11:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.97 Mbit/s

95th percentile per-packet one-way delay: 166.467 ms

Loss rate: 2.71%

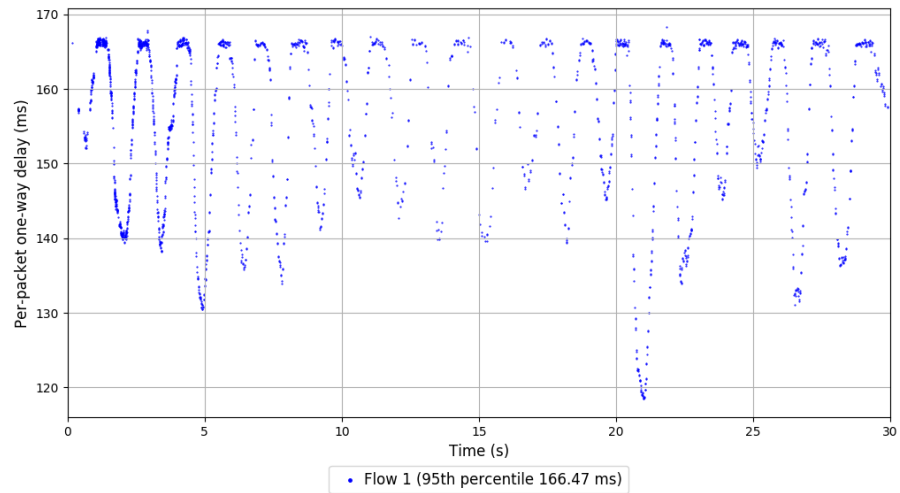
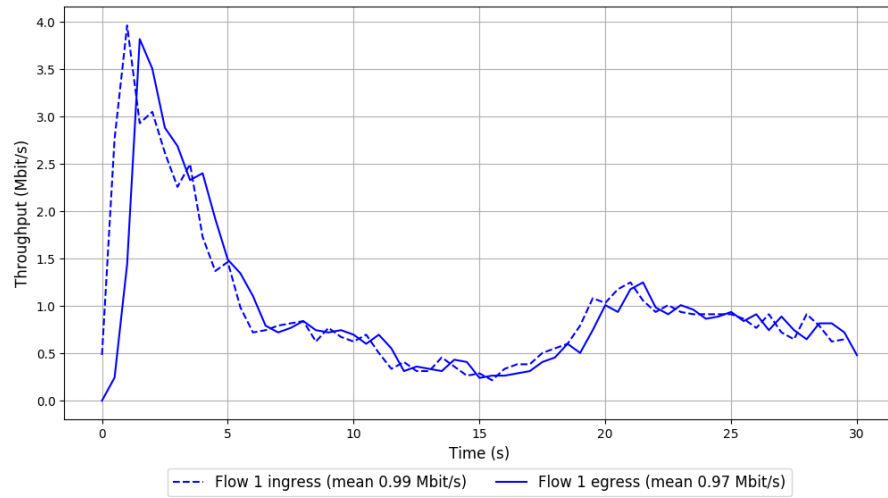
-- Flow 1:

Average throughput: 0.97 Mbit/s

95th percentile per-packet one-way delay: 166.467 ms

Loss rate: 2.71%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2019-01-21 21:32:47

End at: 2019-01-21 21:33:17

Local clock offset: 0.811 ms

Remote clock offset: 7.133 ms

Below is generated by plot.py at 2019-01-21 23:11:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 8.05 Mbit/s

95th percentile per-packet one-way delay: 165.653 ms

Loss rate: 1.02%

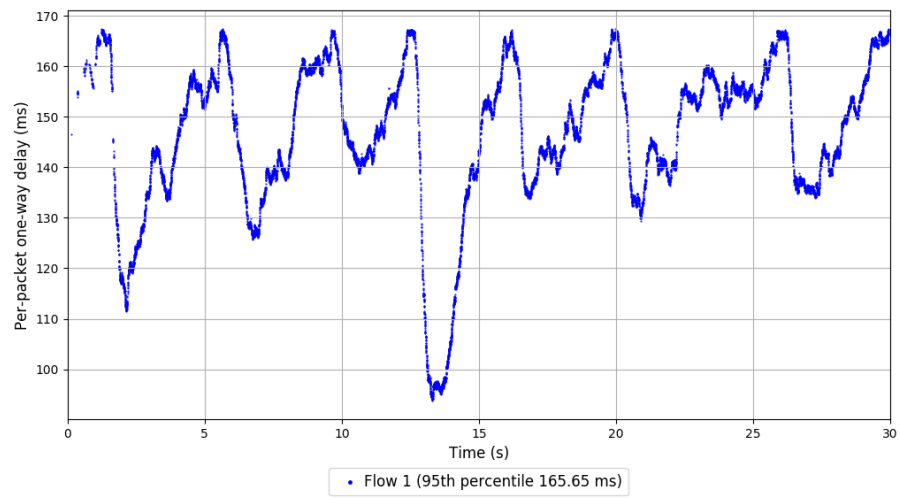
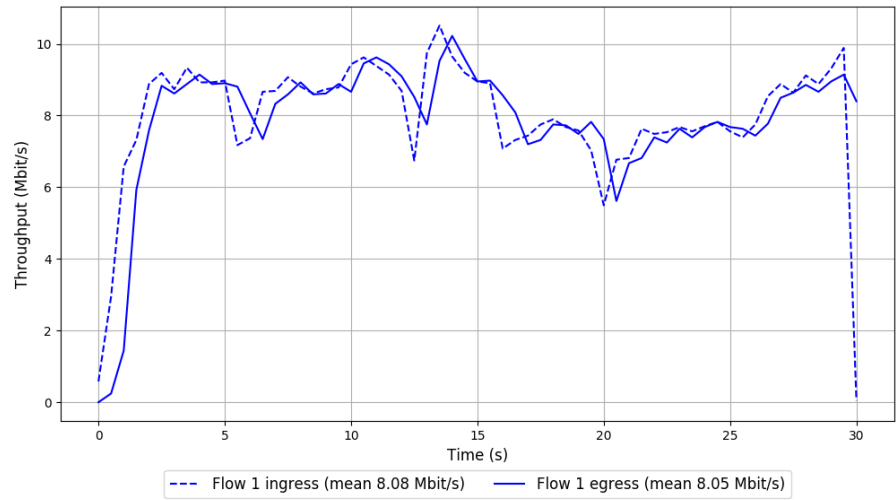
-- Flow 1:

Average throughput: 8.05 Mbit/s

95th percentile per-packet one-way delay: 165.653 ms

Loss rate: 1.02%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

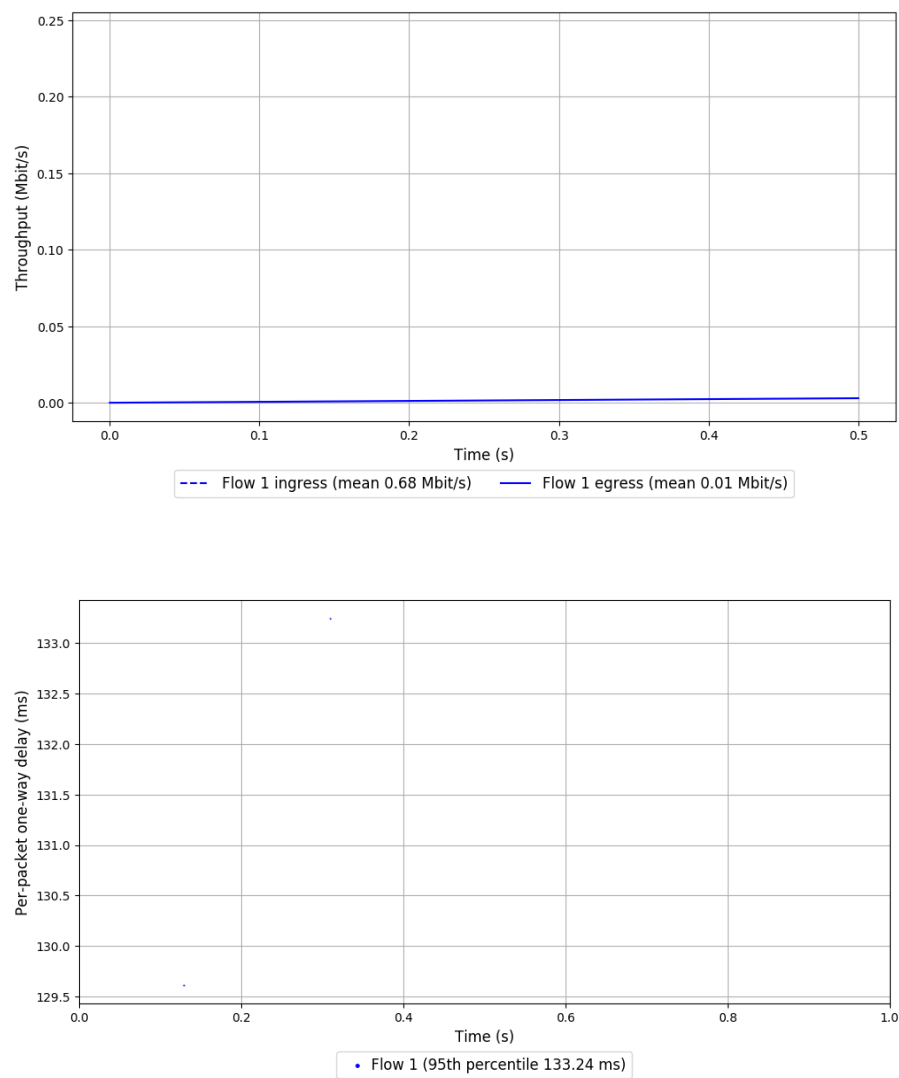
Start at: 2019-01-21 21:58:25

End at: 2019-01-21 21:58:55

Local clock offset: 1.781 ms

Remote clock offset: 7.504 ms

Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

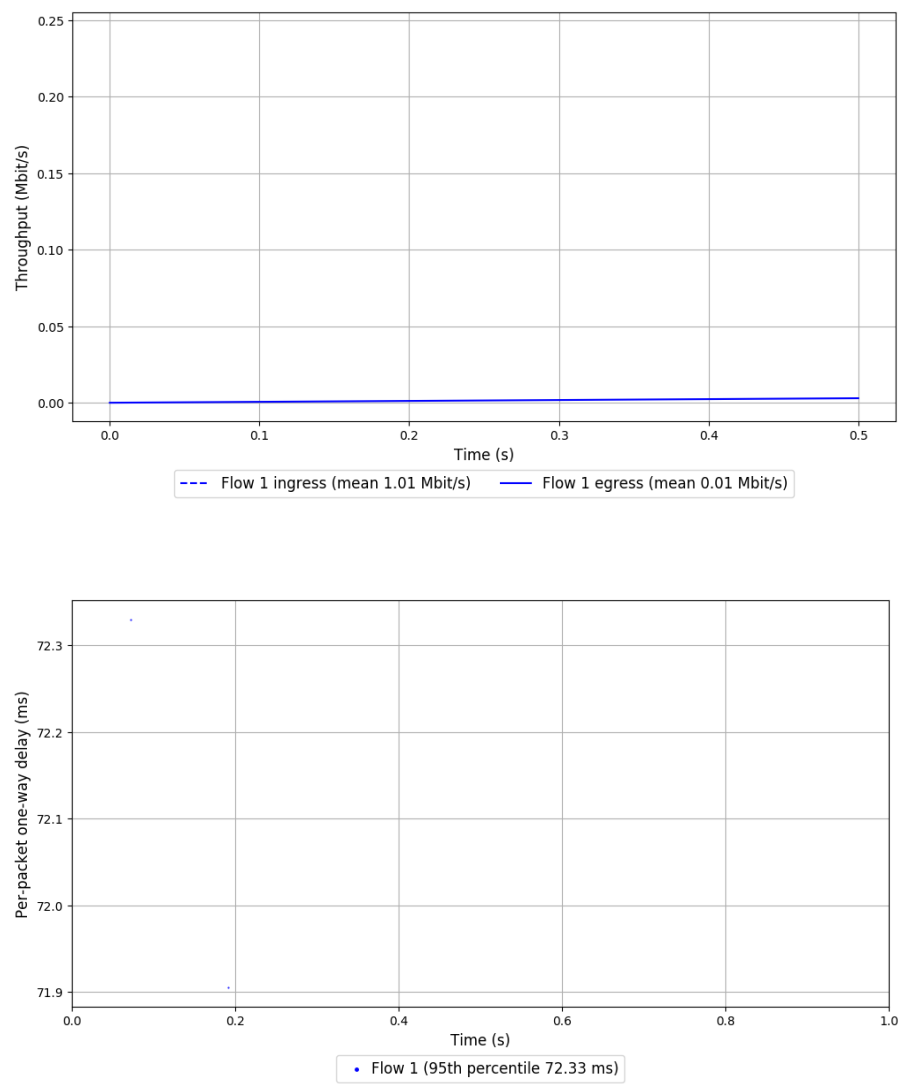
Start at: 2019-01-21 22:23:26

End at: 2019-01-21 22:23:56

Local clock offset: 9.41 ms

Remote clock offset: 7.687 ms

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

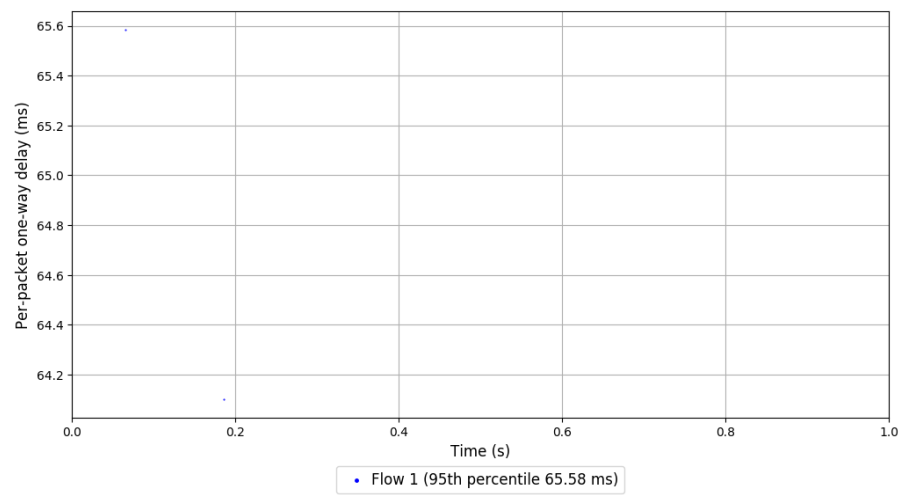
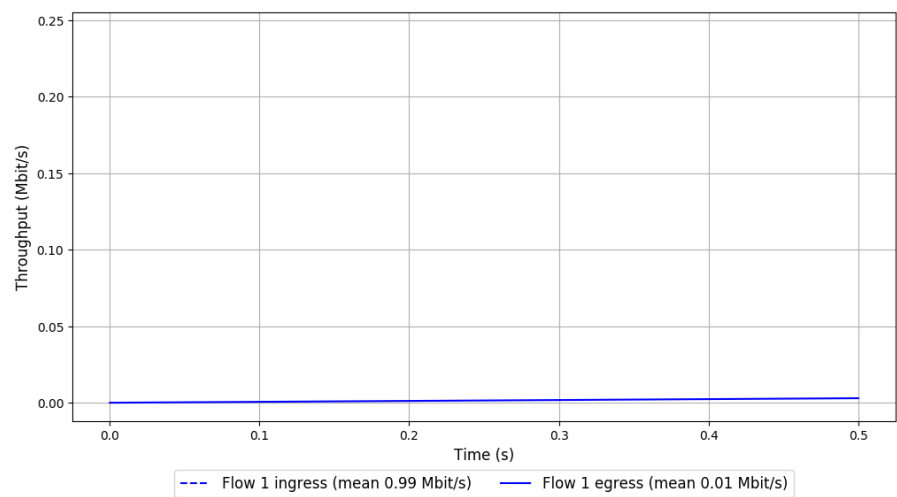
Start at: 2019-01-21 22:48:02

End at: 2019-01-21 22:48:32

Local clock offset: 13.768 ms

Remote clock offset: 7.948 ms

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2019-01-21 21:19:58

End at: 2019-01-21 21:20:28

Local clock offset: 0.992 ms

Remote clock offset: 7.527 ms

Below is generated by plot.py at 2019-01-21 23:12:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.33 Mbit/s

95th percentile per-packet one-way delay: 166.147 ms

Loss rate: 20.46%

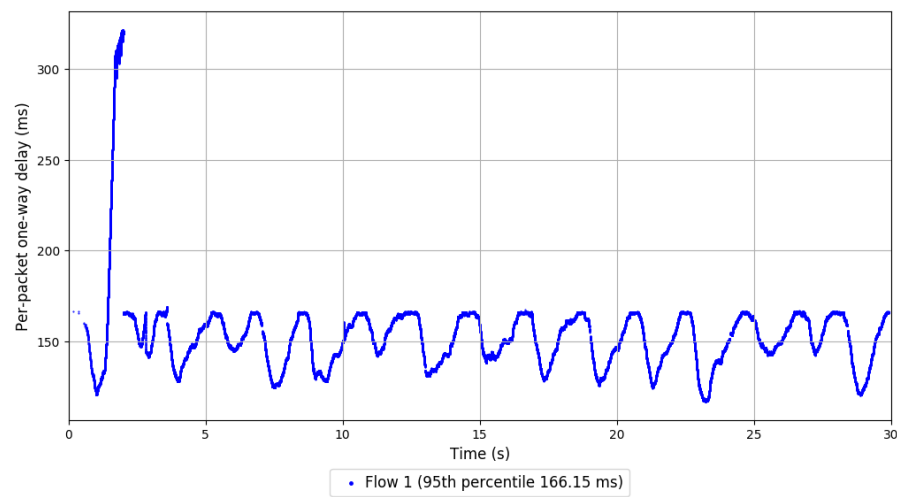
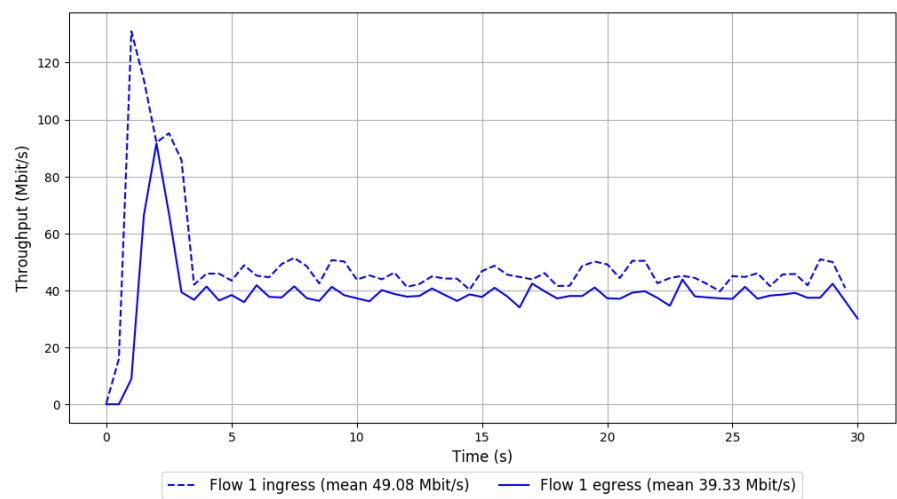
-- Flow 1:

Average throughput: 39.33 Mbit/s

95th percentile per-packet one-way delay: 166.147 ms

Loss rate: 20.46%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2019-01-21 21:46:22

End at: 2019-01-21 21:46:52

Local clock offset: 0.454 ms

Remote clock offset: 7.204 ms

Below is generated by plot.py at 2019-01-21 23:12:14

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.74 Mbit/s

95th percentile per-packet one-way delay: 160.619 ms

Loss rate: 19.92%

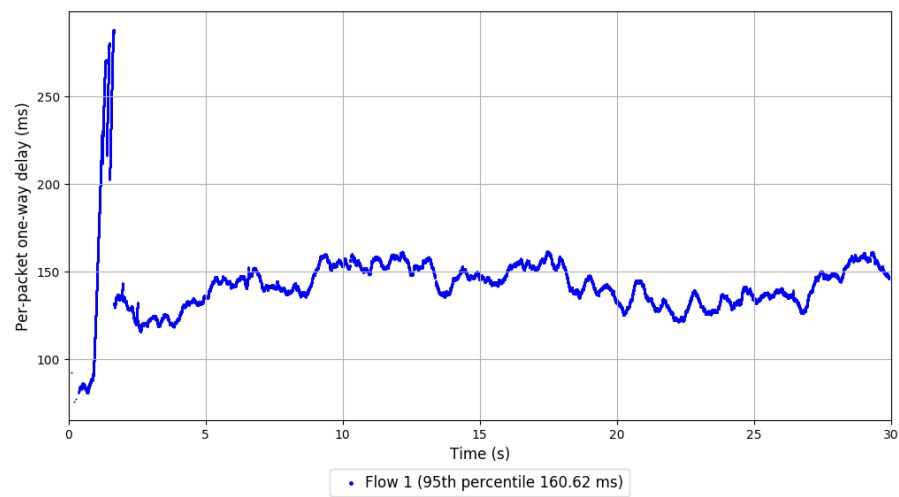
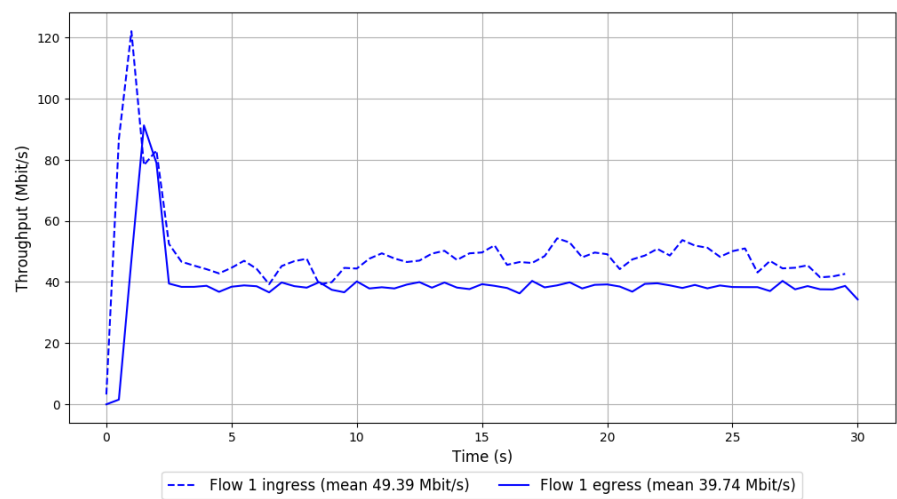
-- Flow 1:

Average throughput: 39.74 Mbit/s

95th percentile per-packet one-way delay: 160.619 ms

Loss rate: 19.92%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2019-01-21 22:11:38

End at: 2019-01-21 22:12:08

Local clock offset: 2.141 ms

Remote clock offset: 7.582 ms

Below is generated by plot.py at 2019-01-21 23:12:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.75 Mbit/s

95th percentile per-packet one-way delay: 184.102 ms

Loss rate: 21.16%

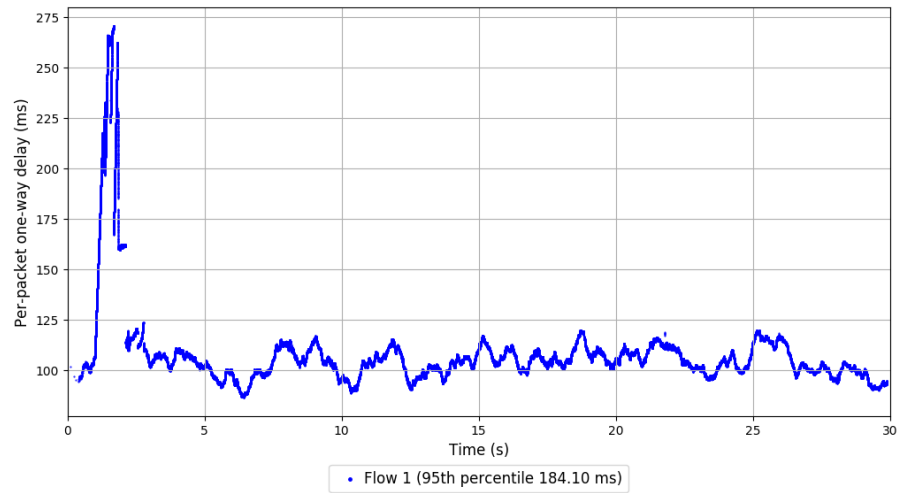
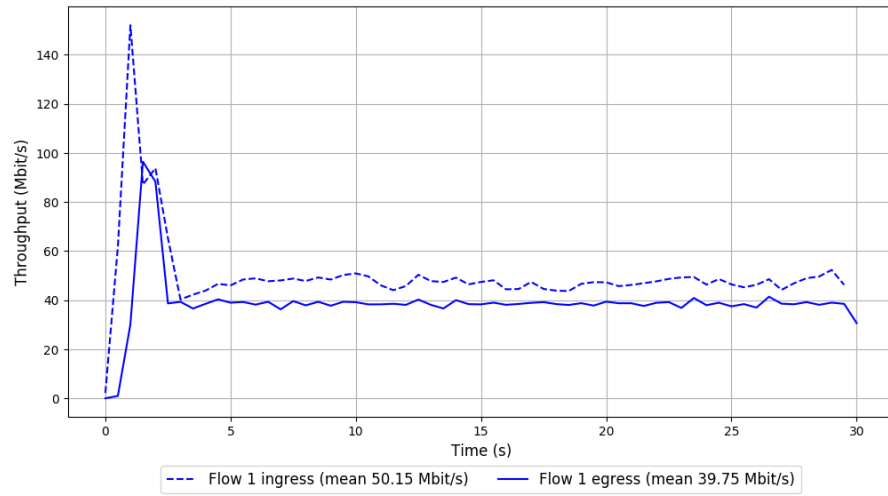
-- Flow 1:

Average throughput: 39.75 Mbit/s

95th percentile per-packet one-way delay: 184.102 ms

Loss rate: 21.16%

Run 3: Report of FillP — Data Link



Run 4: Statistics of FillP

Start at: 2019-01-21 22:36:22

End at: 2019-01-21 22:36:52

Local clock offset: 14.895 ms

Remote clock offset: 7.496 ms

Below is generated by plot.py at 2019-01-21 23:12:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.96 Mbit/s

95th percentile per-packet one-way delay: 72.879 ms

Loss rate: 17.69%

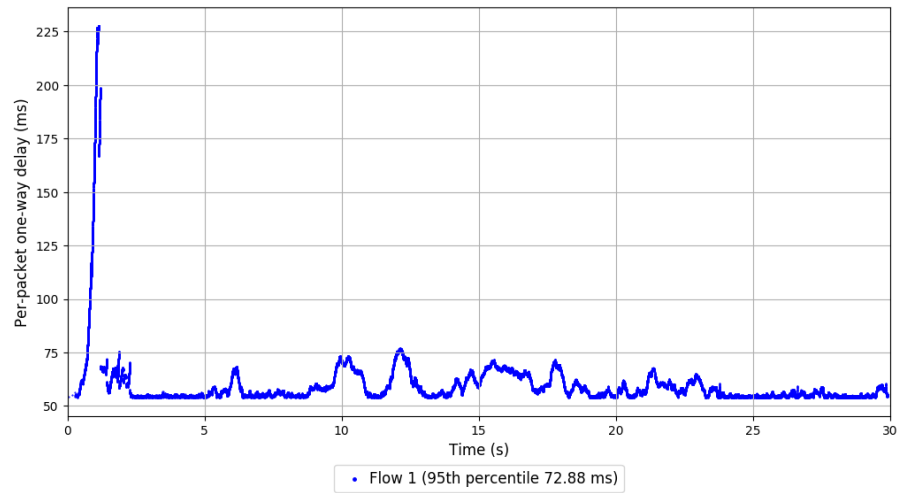
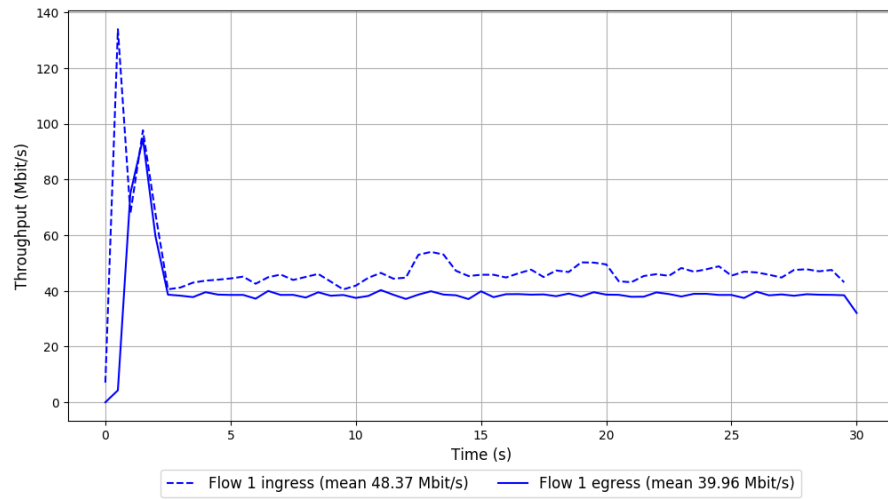
-- Flow 1:

Average throughput: 39.96 Mbit/s

95th percentile per-packet one-way delay: 72.879 ms

Loss rate: 17.69%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2019-01-21 23:00:56

End at: 2019-01-21 23:01:26

Local clock offset: 3.73 ms

Remote clock offset: 7.55 ms

Below is generated by plot.py at 2019-01-21 23:12:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.90 Mbit/s

95th percentile per-packet one-way delay: 87.377 ms

Loss rate: 17.55%

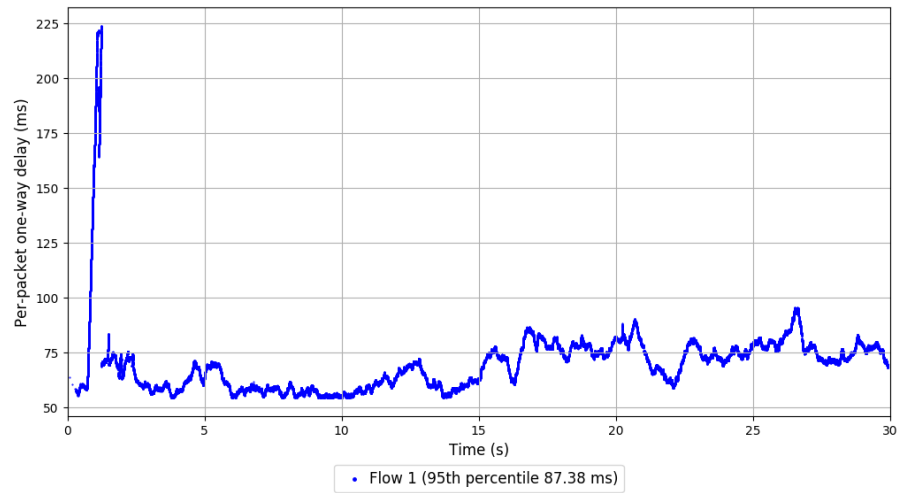
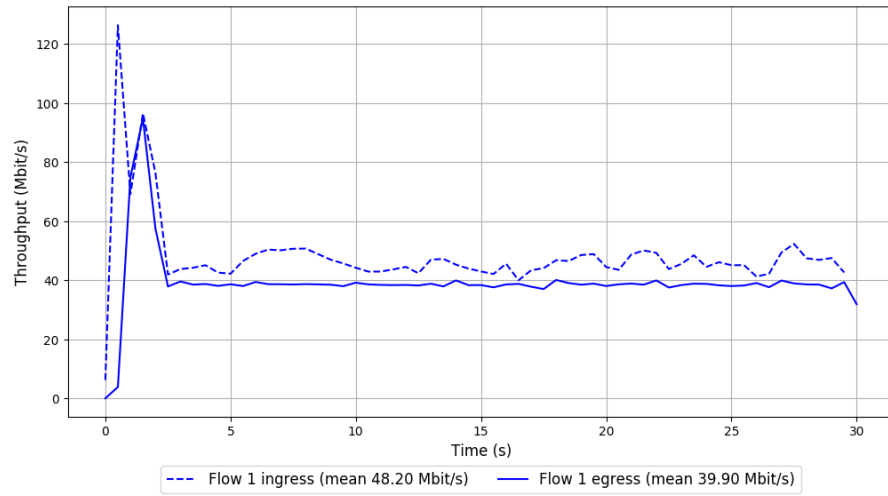
-- Flow 1:

Average throughput: 39.90 Mbit/s

95th percentile per-packet one-way delay: 87.377 ms

Loss rate: 17.55%

Run 5: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2019-01-21 21:15:41

End at: 2019-01-21 21:16:12

Local clock offset: 0.931 ms

Remote clock offset: 7.819 ms

Below is generated by plot.py at 2019-01-21 23:12:30

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.16 Mbit/s

95th percentile per-packet one-way delay: 165.773 ms

Loss rate: 14.00%

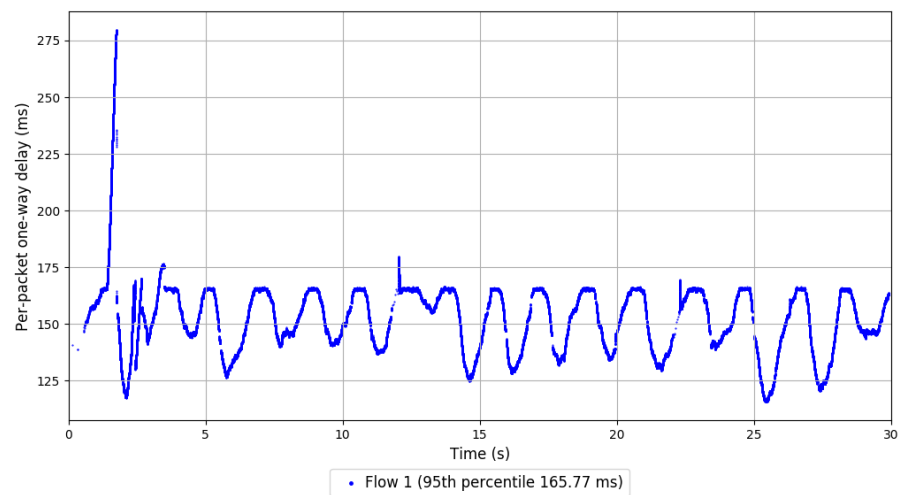
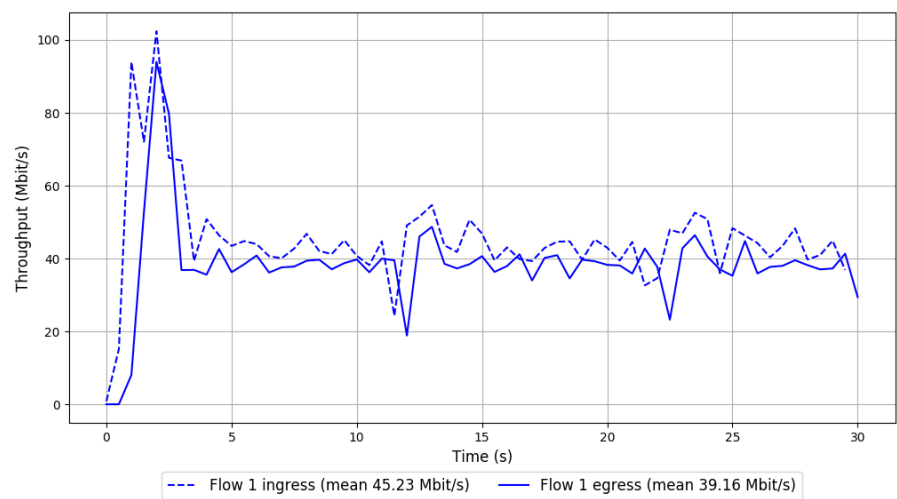
-- Flow 1:

Average throughput: 39.16 Mbit/s

95th percentile per-packet one-way delay: 165.773 ms

Loss rate: 14.00%

Run 1: Report of FillP-Sheep — Data Link

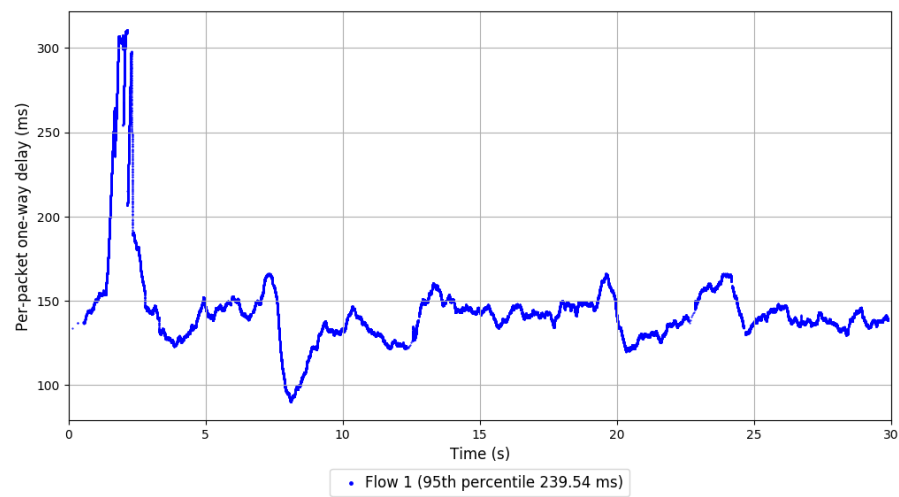
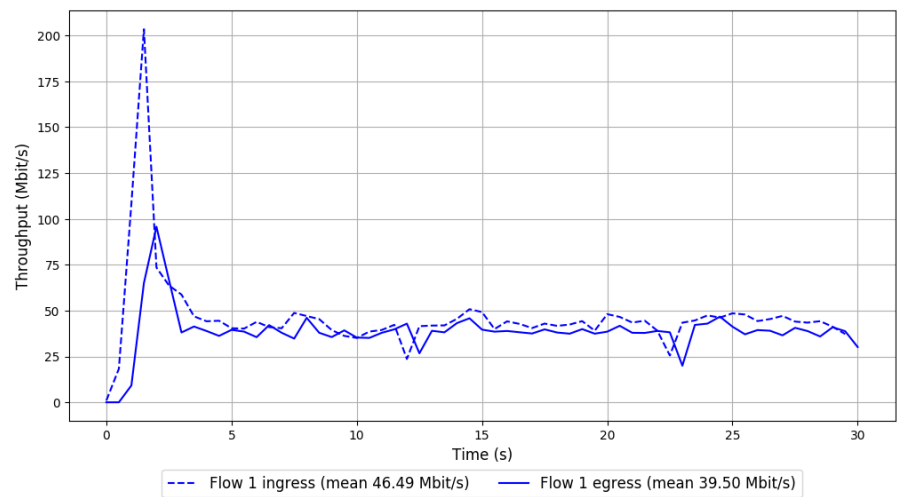


Run 2: Statistics of FillP-Sheep

Start at: 2019-01-21 21:42:41
End at: 2019-01-21 21:43:11
Local clock offset: 0.441 ms
Remote clock offset: 7.237 ms

Below is generated by plot.py at 2019-01-21 23:12:31
Datalink statistics
-- Total of 1 flow:
Average throughput: 39.50 Mbit/s
95th percentile per-packet one-way delay: 239.541 ms
Loss rate: 15.58%
-- Flow 1:
Average throughput: 39.50 Mbit/s
95th percentile per-packet one-way delay: 239.541 ms
Loss rate: 15.58%

Run 2: Report of FillP-Sheep — Data Link



Run 3: Statistics of FillP-Sheep

Start at: 2019-01-21 22:08:04

End at: 2019-01-21 22:08:34

Local clock offset: 1.965 ms

Remote clock offset: 7.4 ms

Below is generated by plot.py at 2019-01-21 23:12:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.63 Mbit/s

95th percentile per-packet one-way delay: 127.601 ms

Loss rate: 14.21%

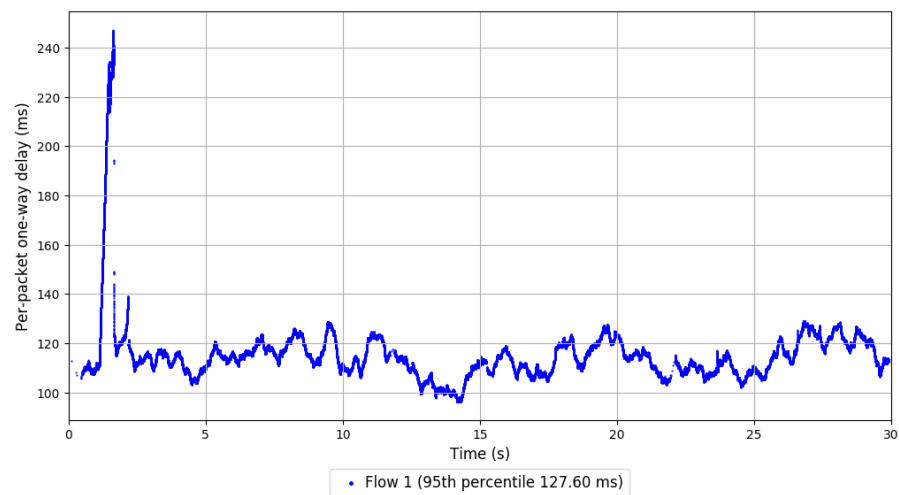
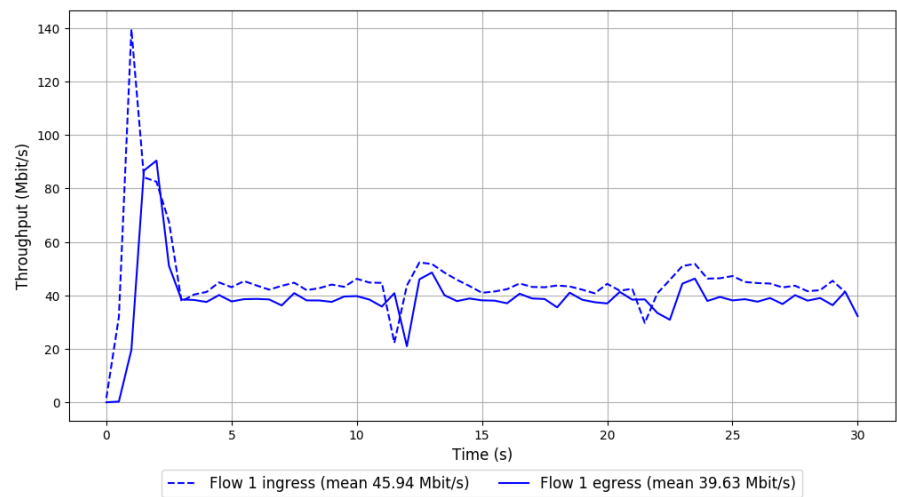
-- Flow 1:

Average throughput: 39.63 Mbit/s

95th percentile per-packet one-way delay: 127.601 ms

Loss rate: 14.21%

Run 3: Report of FillP-Sheep — Data Link



Run 4: Statistics of FillP-Sheep

Start at: 2019-01-21 22:32:52

End at: 2019-01-21 22:33:22

Local clock offset: 13.682 ms

Remote clock offset: 7.628 ms

Below is generated by plot.py at 2019-01-21 23:12:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.94 Mbit/s

95th percentile per-packet one-way delay: 76.424 ms

Loss rate: 11.51%

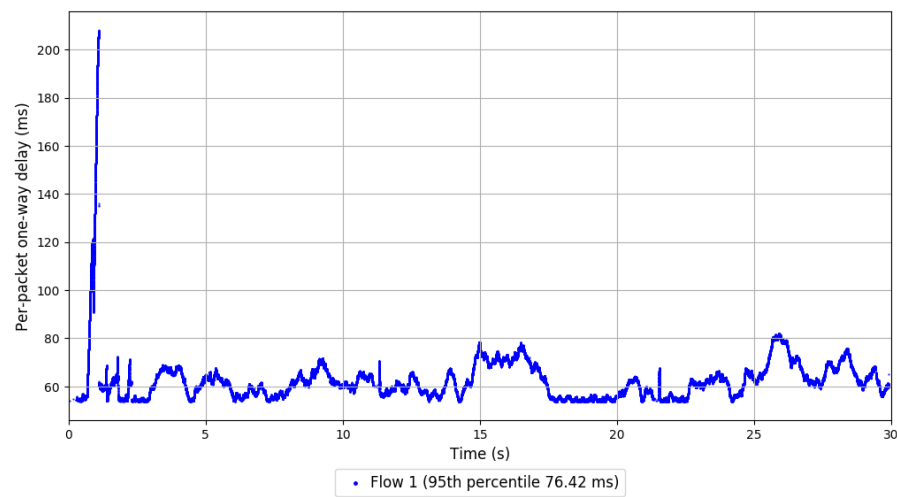
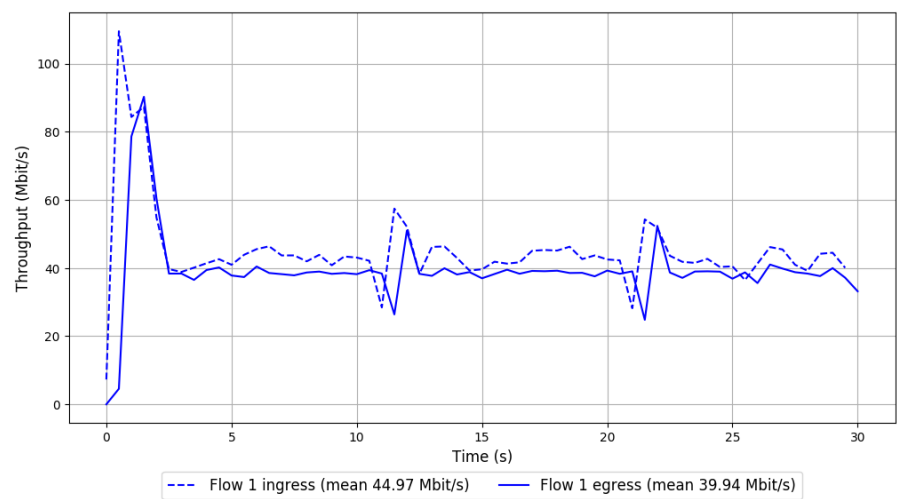
-- Flow 1:

Average throughput: 39.94 Mbit/s

95th percentile per-packet one-way delay: 76.424 ms

Loss rate: 11.51%

Run 4: Report of FillP-Sheep — Data Link



Run 5: Statistics of FillP-Sheep

Start at: 2019-01-21 22:57:26

End at: 2019-01-21 22:57:56

Local clock offset: 5.406 ms

Remote clock offset: 8.377 ms

Below is generated by plot.py at 2019-01-21 23:12:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.95 Mbit/s

95th percentile per-packet one-way delay: 80.606 ms

Loss rate: 13.72%

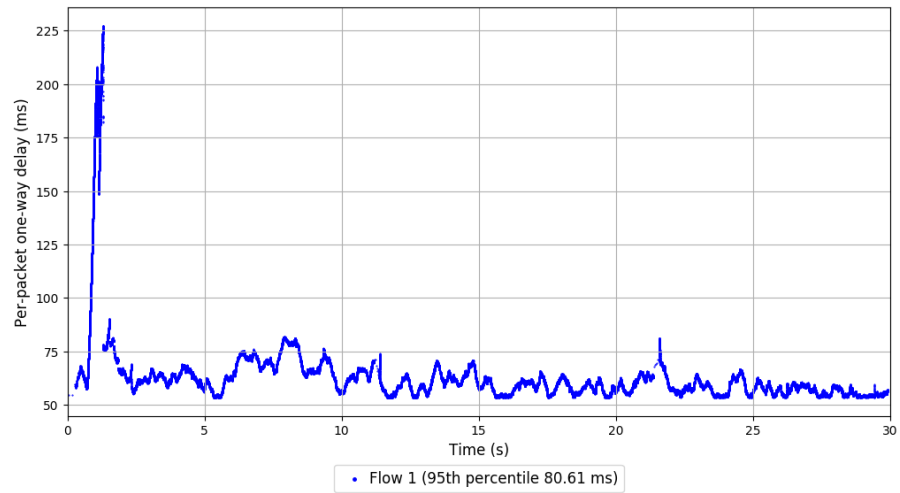
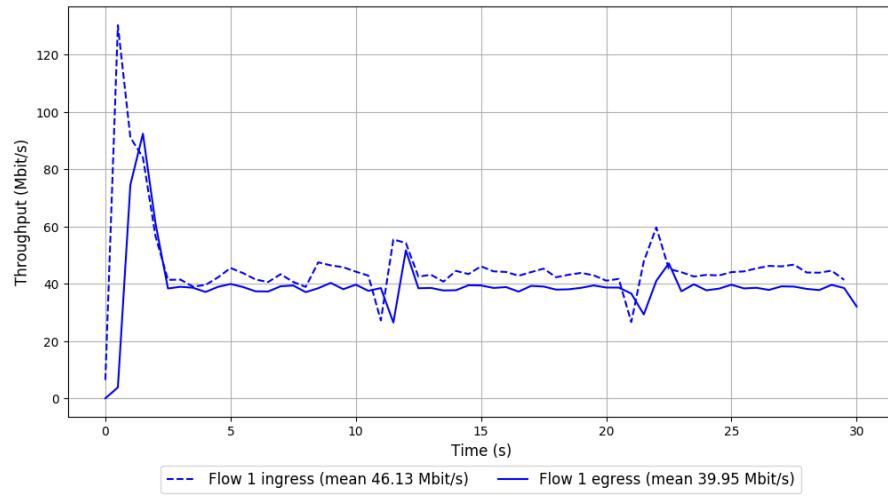
-- Flow 1:

Average throughput: 39.95 Mbit/s

95th percentile per-packet one-way delay: 80.606 ms

Loss rate: 13.72%

Run 5: Report of FillP-Sheep — Data Link

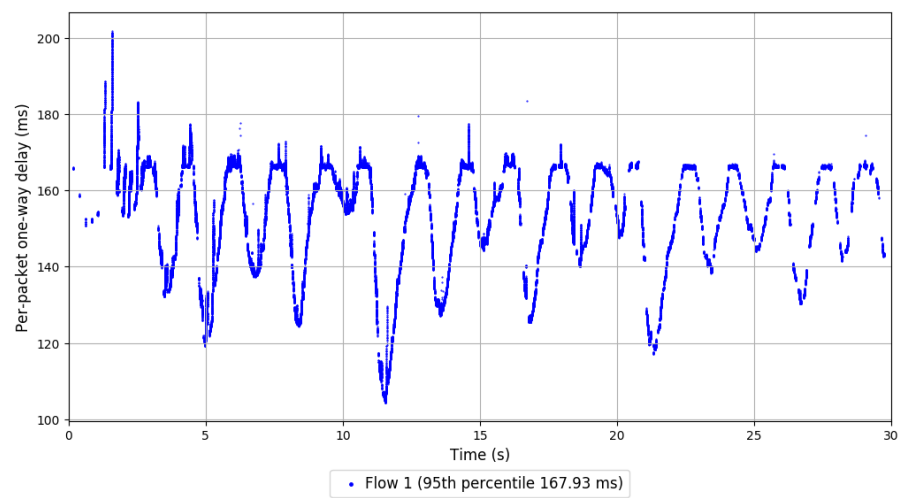
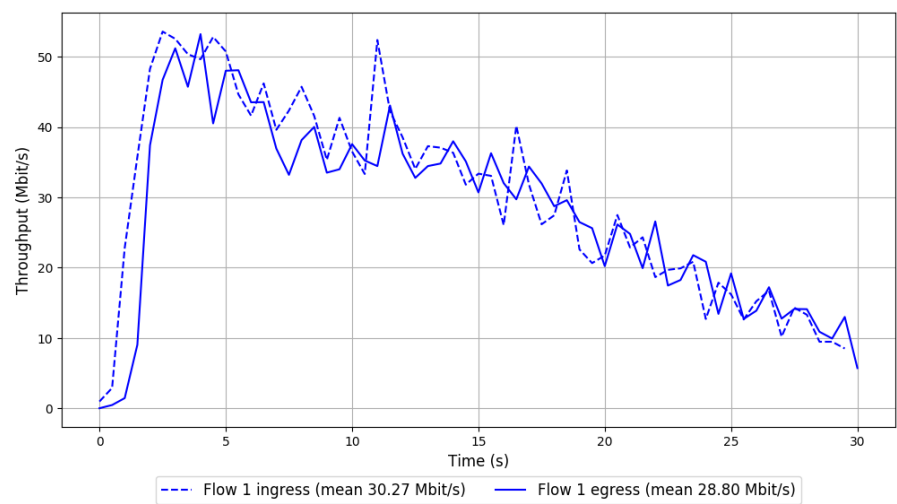


```
Run 1: Statistics of Indigo

Start at: 2019-01-21 21:12:32
End at: 2019-01-21 21:13:02
Local clock offset: 1.268 ms
Remote clock offset: 8.025 ms

# Below is generated by plot.py at 2019-01-21 23:12:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 28.80 Mbit/s
95th percentile per-packet one-way delay: 167.926 ms
Loss rate: 5.58%
-- Flow 1:
Average throughput: 28.80 Mbit/s
95th percentile per-packet one-way delay: 167.926 ms
Loss rate: 5.58%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2019-01-21 21:40:11

End at: 2019-01-21 21:40:41

Local clock offset: 0.693 ms

Remote clock offset: 7.231 ms

Below is generated by plot.py at 2019-01-21 23:12:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 30.82 Mbit/s

95th percentile per-packet one-way delay: 166.447 ms

Loss rate: 58.15%

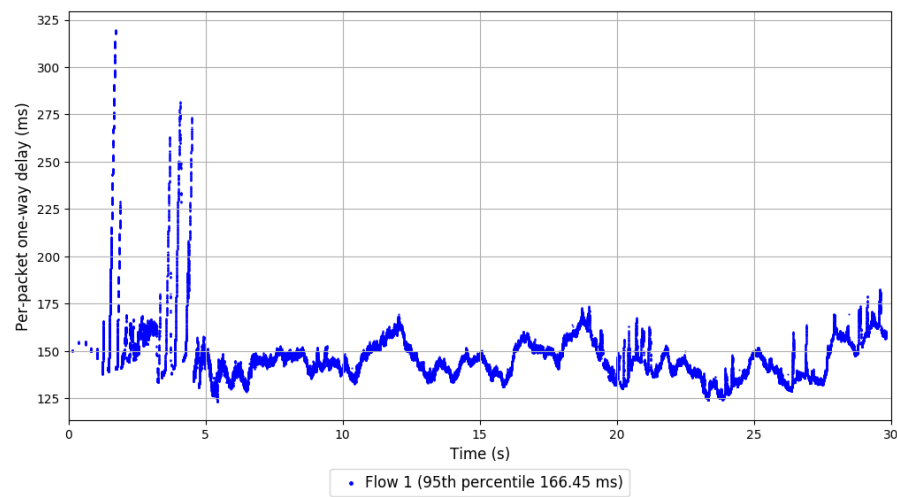
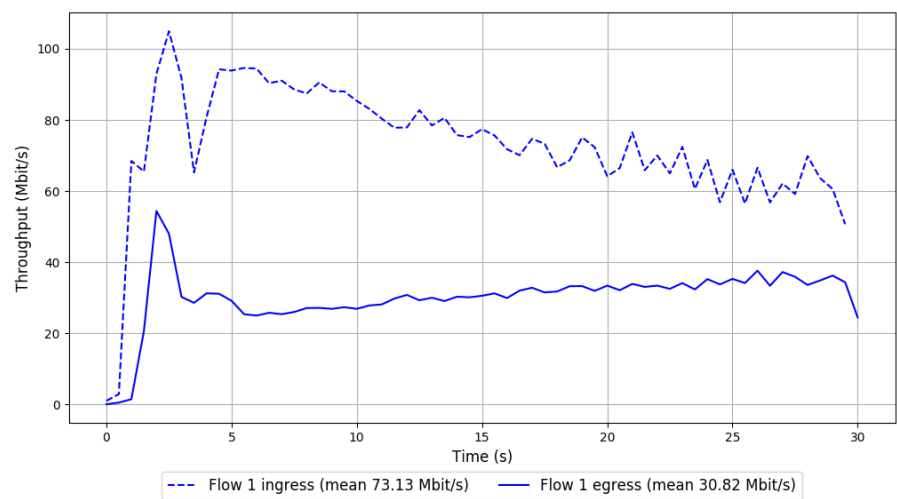
-- Flow 1:

Average throughput: 30.82 Mbit/s

95th percentile per-packet one-way delay: 166.447 ms

Loss rate: 58.15%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2019-01-21 22:05:39

End at: 2019-01-21 22:06:09

Local clock offset: 1.909 ms

Remote clock offset: 7.404 ms

Below is generated by plot.py at 2019-01-21 23:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 32.39 Mbit/s

95th percentile per-packet one-way delay: 136.519 ms

Loss rate: 0.37%

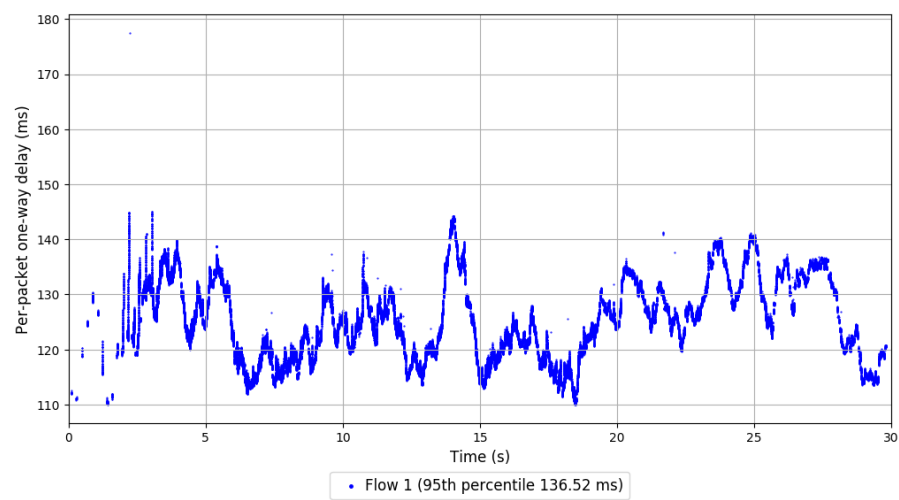
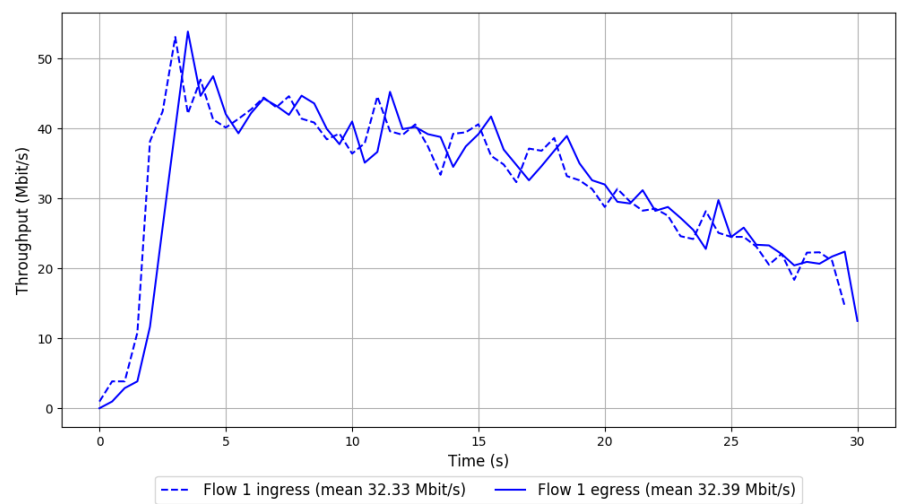
-- Flow 1:

Average throughput: 32.39 Mbit/s

95th percentile per-packet one-way delay: 136.519 ms

Loss rate: 0.37%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2019-01-21 22:30:31

End at: 2019-01-21 22:31:01

Local clock offset: 12.868 ms

Remote clock offset: 7.468 ms

Below is generated by plot.py at 2019-01-21 23:12:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 33.33 Mbit/s

95th percentile per-packet one-way delay: 92.342 ms

Loss rate: 23.69%

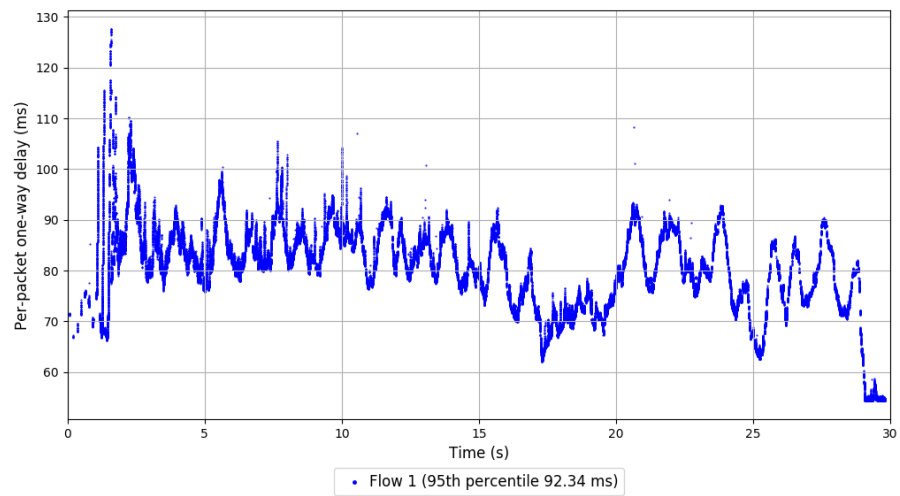
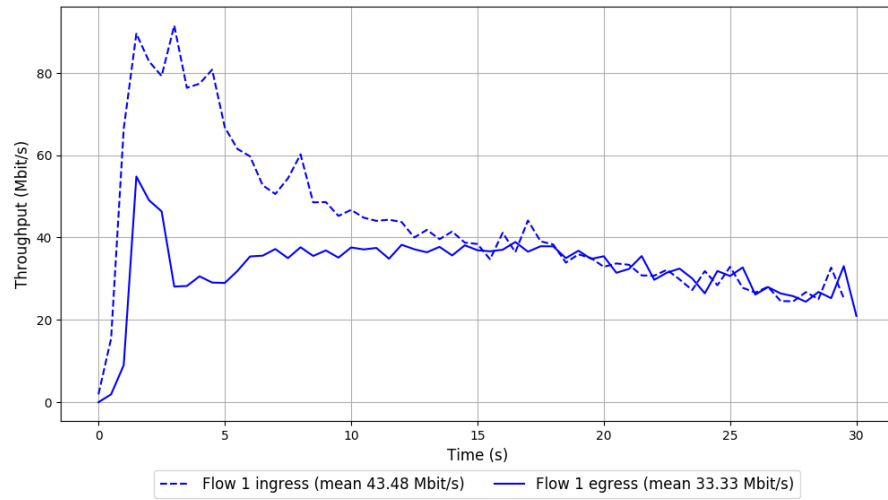
-- Flow 1:

Average throughput: 33.33 Mbit/s

95th percentile per-packet one-way delay: 92.342 ms

Loss rate: 23.69%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2019-01-21 22:55:04

End at: 2019-01-21 22:55:34

Local clock offset: 6.856 ms

Remote clock offset: 7.796 ms

Below is generated by plot.py at 2019-01-21 23:13:00

Datalink statistics

-- Total of 1 flow:

Average throughput: 36.53 Mbit/s

95th percentile per-packet one-way delay: 69.790 ms

Loss rate: 22.19%

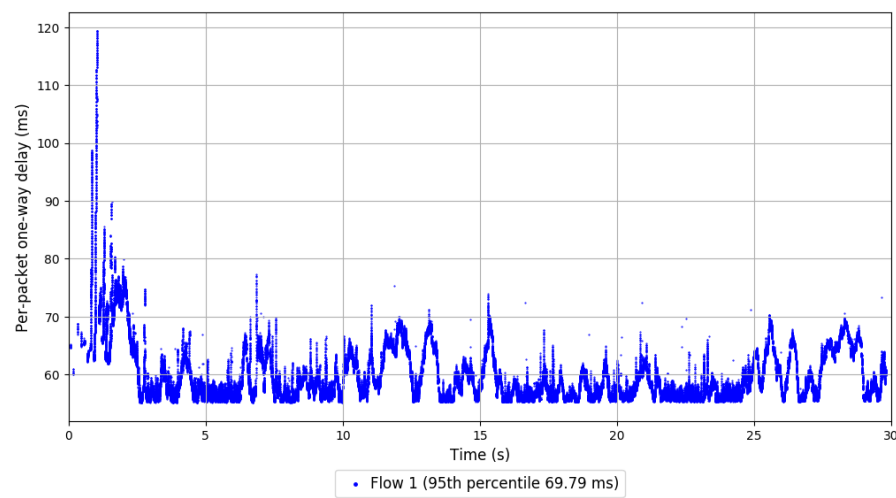
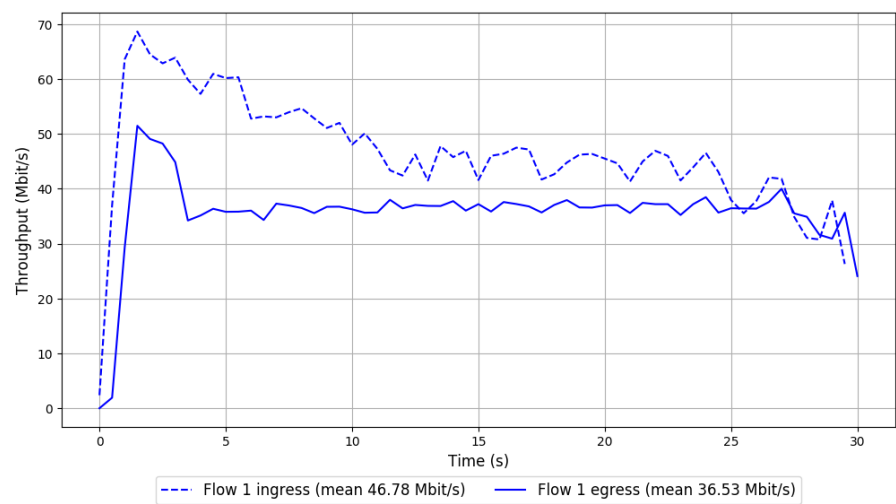
-- Flow 1:

Average throughput: 36.53 Mbit/s

95th percentile per-packet one-way delay: 69.790 ms

Loss rate: 22.19%

Run 5: Report of Indigo — Data Link



Run 1: Statistics of Indigo-MusesC3

Start at: 2019-01-21 21:25:15

End at: 2019-01-21 21:25:45

Local clock offset: 1.134 ms

Remote clock offset: 7.092 ms

Below is generated by plot.py at 2019-01-21 23:13:00

Datalink statistics

-- Total of 1 flow:

Average throughput: 17.45 Mbit/s

95th percentile per-packet one-way delay: 166.621 ms

Loss rate: 6.55%

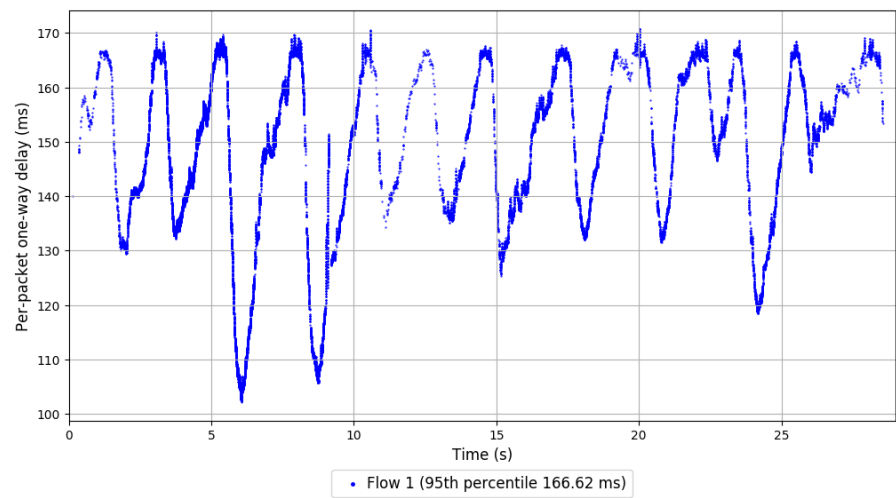
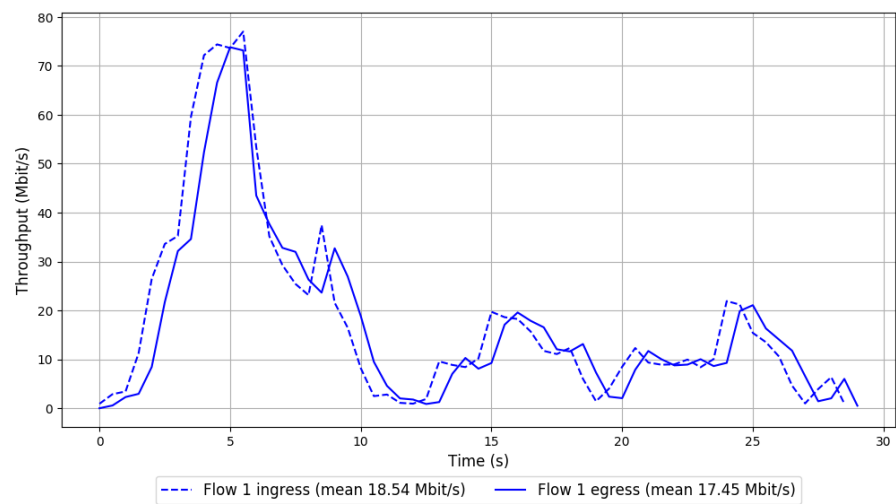
-- Flow 1:

Average throughput: 17.45 Mbit/s

95th percentile per-packet one-way delay: 166.621 ms

Loss rate: 6.55%

Run 1: Report of Indigo-MusesC3 — Data Link



Run 2: Statistics of Indigo-MusesC3

Start at: 2019-01-21 21:51:16

End at: 2019-01-21 21:51:46

Local clock offset: 1.406 ms

Remote clock offset: 7.279 ms

Below is generated by plot.py at 2019-01-21 23:13:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 30.54 Mbit/s

95th percentile per-packet one-way delay: 143.594 ms

Loss rate: 7.82%

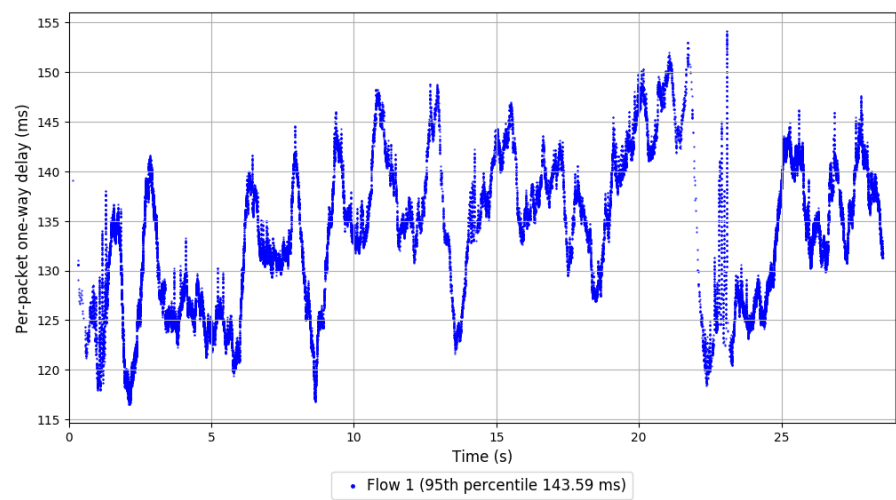
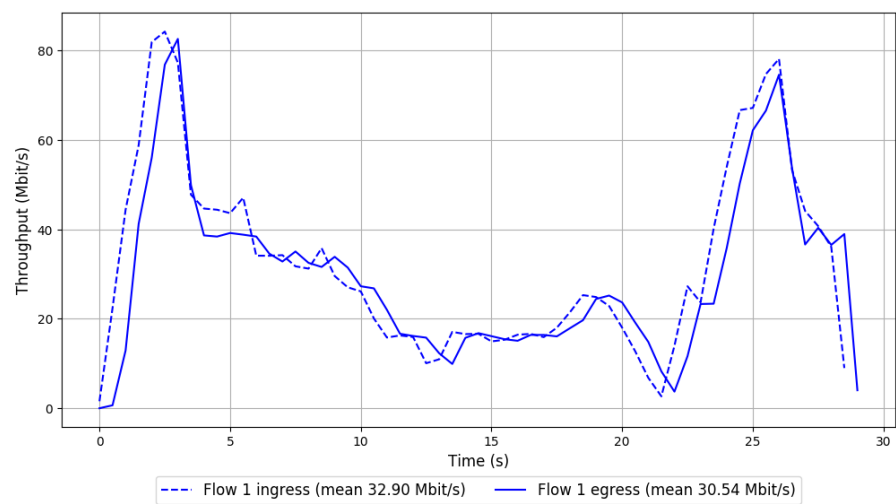
-- Flow 1:

Average throughput: 30.54 Mbit/s

95th percentile per-packet one-way delay: 143.594 ms

Loss rate: 7.82%

Run 2: Report of Indigo-MusesC3 — Data Link



Run 3: Statistics of Indigo-MusesC3

Start at: 2019-01-21 22:16:23

End at: 2019-01-21 22:16:53

Local clock offset: 2.288 ms

Remote clock offset: 7.453 ms

Below is generated by plot.py at 2019-01-21 23:13:10

Datalink statistics

-- Total of 1 flow:

Average throughput: 33.57 Mbit/s

95th percentile per-packet one-way delay: 103.827 ms

Loss rate: 5.58%

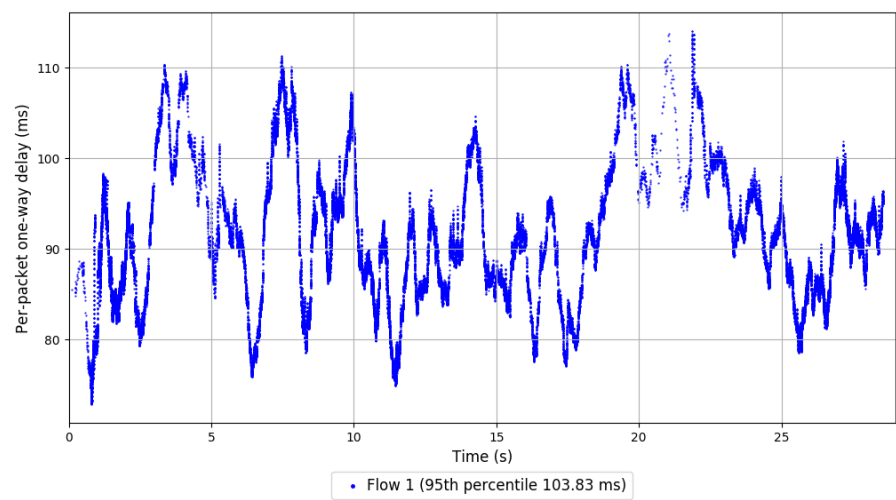
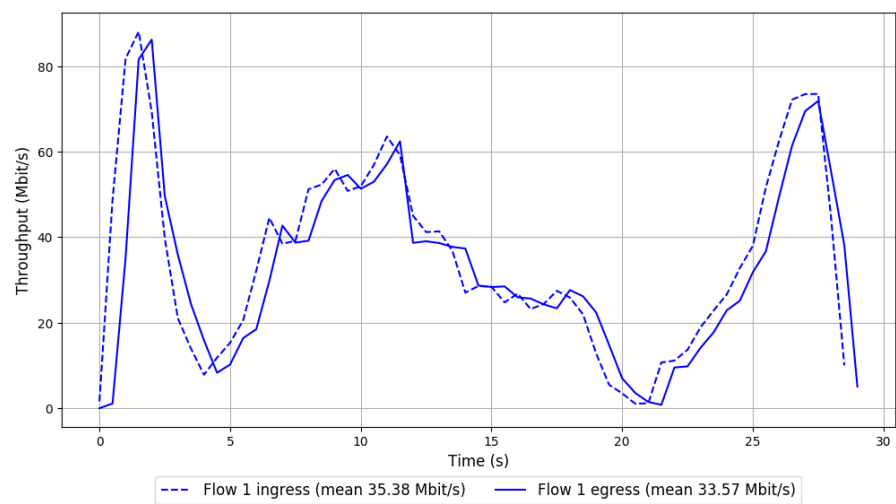
-- Flow 1:

Average throughput: 33.57 Mbit/s

95th percentile per-packet one-way delay: 103.827 ms

Loss rate: 5.58%

Run 3: Report of Indigo-MusesC3 — Data Link



Run 4: Statistics of Indigo-MusesC3

Start at: 2019-01-21 22:41:03

End at: 2019-01-21 22:41:33

Local clock offset: 15.901 ms

Remote clock offset: 7.677 ms

Below is generated by plot.py at 2019-01-21 23:13:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 37.02 Mbit/s

95th percentile per-packet one-way delay: 74.085 ms

Loss rate: 9.99%

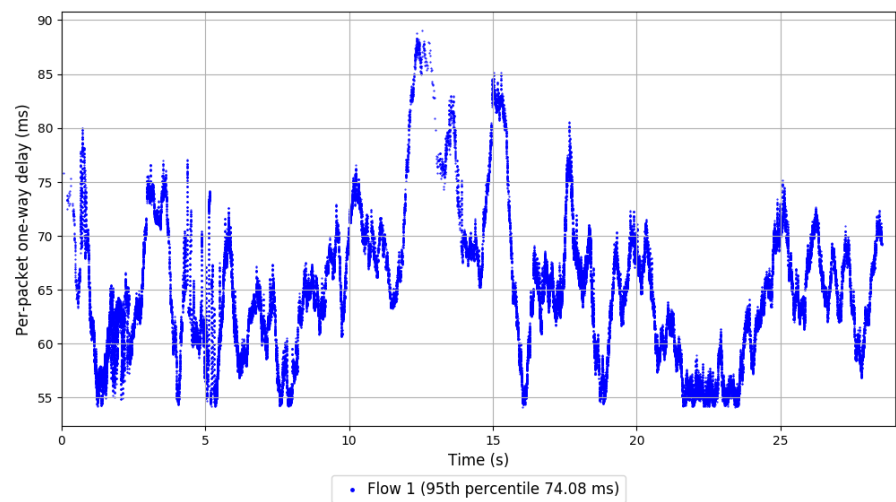
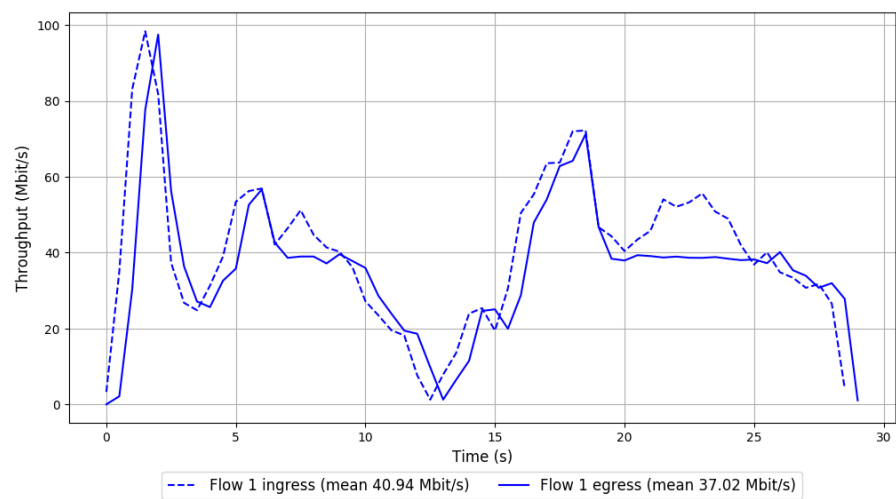
-- Flow 1:

Average throughput: 37.02 Mbit/s

95th percentile per-packet one-way delay: 74.085 ms

Loss rate: 9.99%

Run 4: Report of Indigo-MusesC3 — Data Link



Run 5: Statistics of Indigo-MusesC3

Start at: 2019-01-21 23:05:35

End at: 2019-01-21 23:06:05

Local clock offset: 2.445 ms

Remote clock offset: 7.158 ms

Below is generated by plot.py at 2019-01-21 23:13:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 38.46 Mbit/s

95th percentile per-packet one-way delay: 66.720 ms

Loss rate: 11.43%

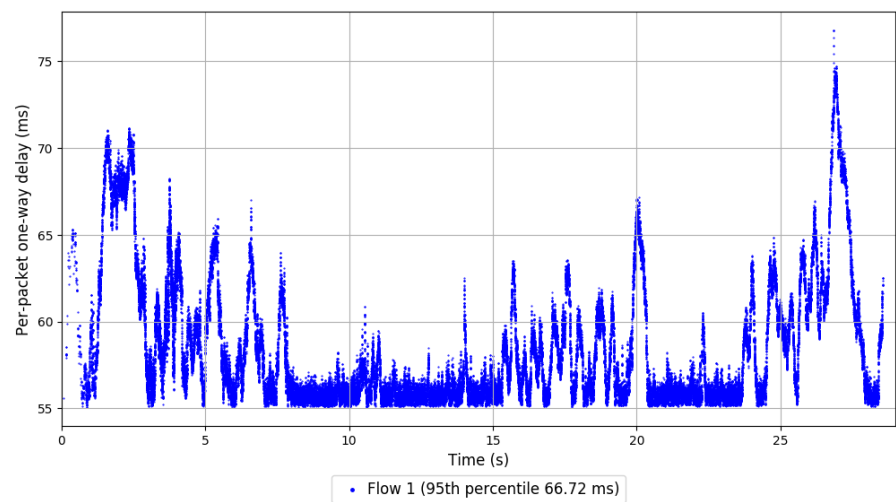
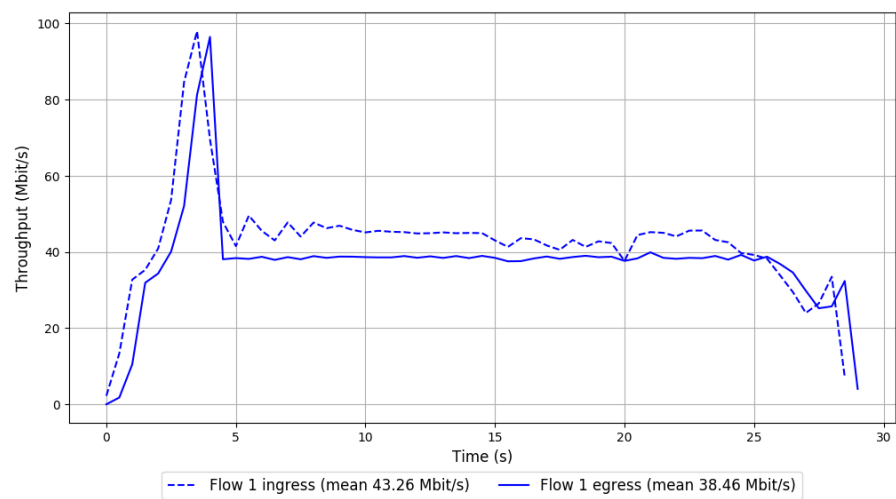
-- Flow 1:

Average throughput: 38.46 Mbit/s

95th percentile per-packet one-way delay: 66.720 ms

Loss rate: 11.43%

Run 5: Report of Indigo-MusesC3 — Data Link



Run 1: Statistics of Indigo-MusesC5

Start at: 2019-01-21 21:18:32

End at: 2019-01-21 21:19:02

Local clock offset: 1.064 ms

Remote clock offset: 7.53 ms

Below is generated by plot.py at 2019-01-21 23:13:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 31.03 Mbit/s

95th percentile per-packet one-way delay: 173.150 ms

Loss rate: 11.19%

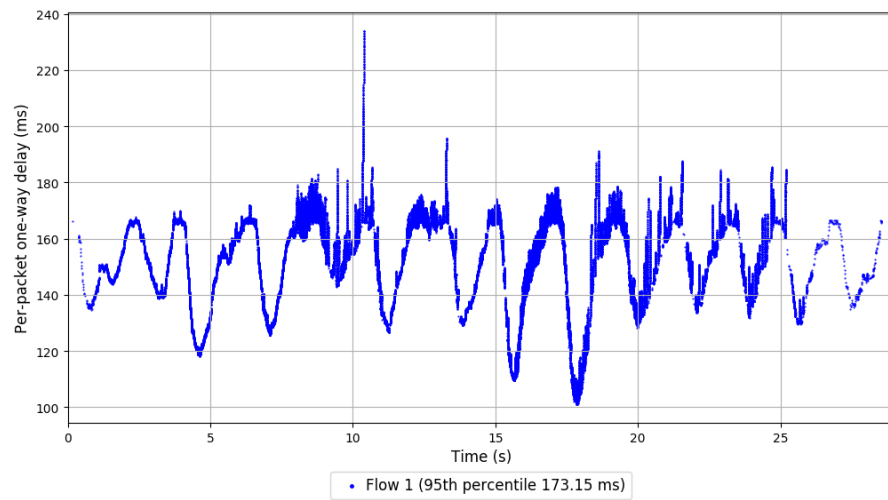
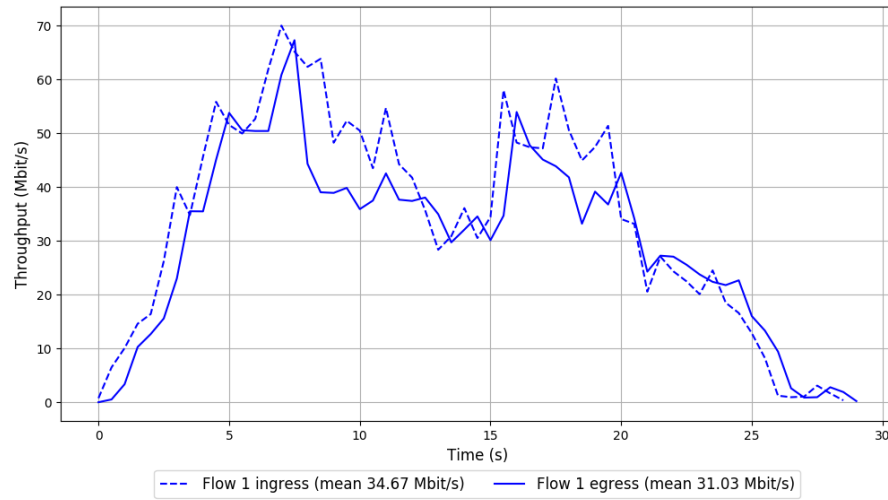
-- Flow 1:

Average throughput: 31.03 Mbit/s

95th percentile per-packet one-way delay: 173.150 ms

Loss rate: 11.19%

Run 1: Report of Indigo-MusesC5 — Data Link



Run 2: Statistics of Indigo-MusesC5

Start at: 2019-01-21 21:45:04

End at: 2019-01-21 21:45:34

Local clock offset: 0.622 ms

Remote clock offset: 7.55 ms

Below is generated by plot.py at 2019-01-21 23:13:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 31.46 Mbit/s

95th percentile per-packet one-way delay: 169.279 ms

Loss rate: 5.89%

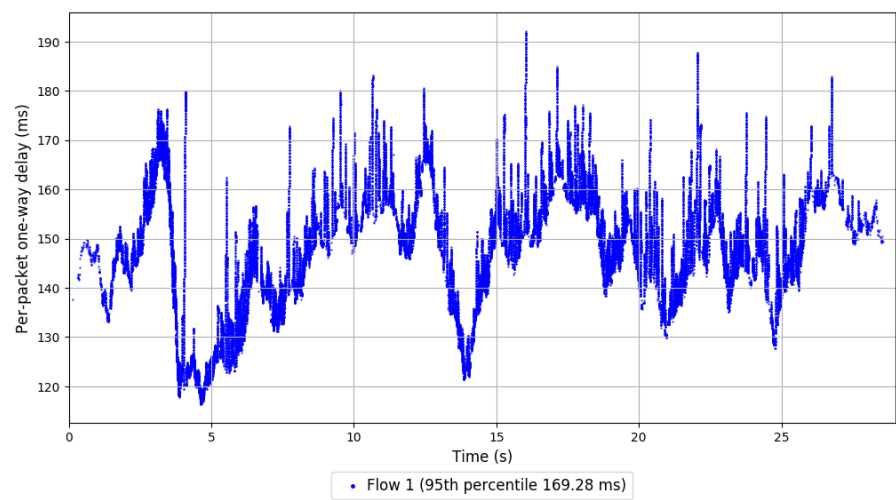
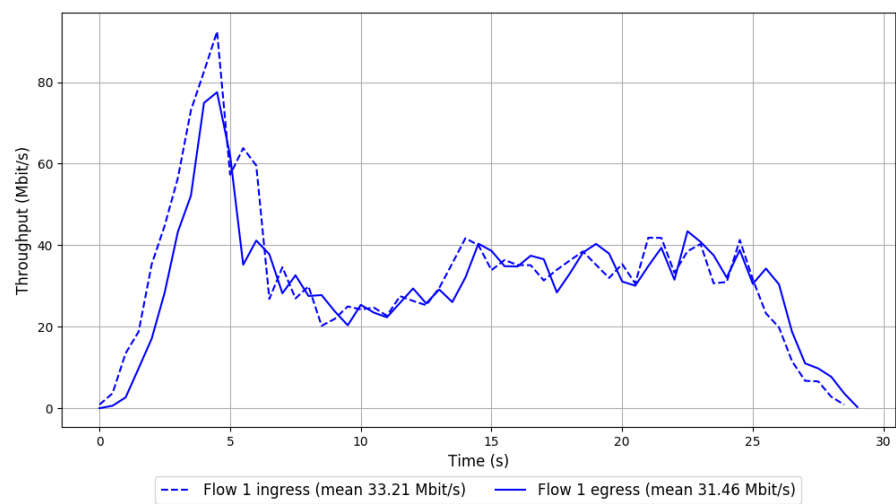
-- Flow 1:

Average throughput: 31.46 Mbit/s

95th percentile per-packet one-way delay: 169.279 ms

Loss rate: 5.89%

Run 2: Report of Indigo-MusesC5 — Data Link



Run 3: Statistics of Indigo-MusesC5

Start at: 2019-01-21 22:10:27

End at: 2019-01-21 22:10:57

Local clock offset: 1.912 ms

Remote clock offset: 7.582 ms

Below is generated by plot.py at 2019-01-21 23:13:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 36.90 Mbit/s

95th percentile per-packet one-way delay: 129.877 ms

Loss rate: 11.03%

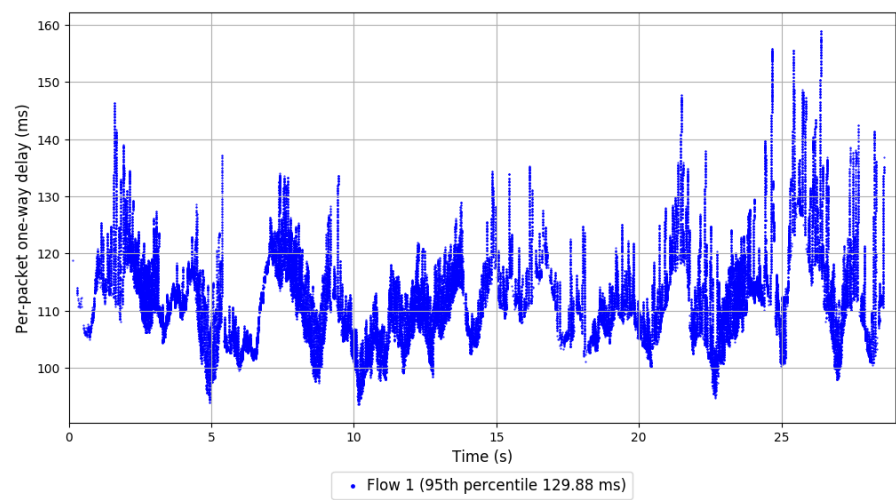
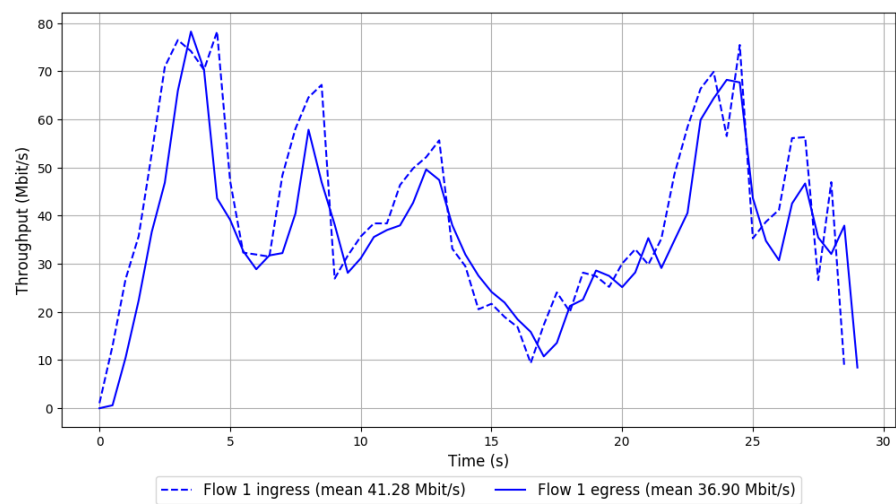
-- Flow 1:

Average throughput: 36.90 Mbit/s

95th percentile per-packet one-way delay: 129.877 ms

Loss rate: 11.03%

Run 3: Report of Indigo-MusesC5 — Data Link



Run 4: Statistics of Indigo-MusesC5

Start at: 2019-01-21 22:35:11

End at: 2019-01-21 22:35:41

Local clock offset: 14.604 ms

Remote clock offset: 7.399 ms

Below is generated by plot.py at 2019-01-21 23:13:32

Datalink statistics

-- Total of 1 flow:

Average throughput: 37.72 Mbit/s

95th percentile per-packet one-way delay: 82.551 ms

Loss rate: 13.65%

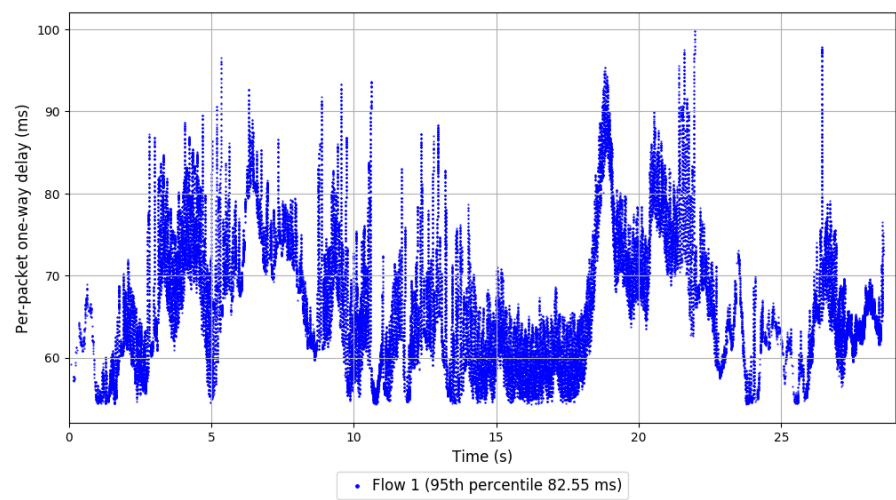
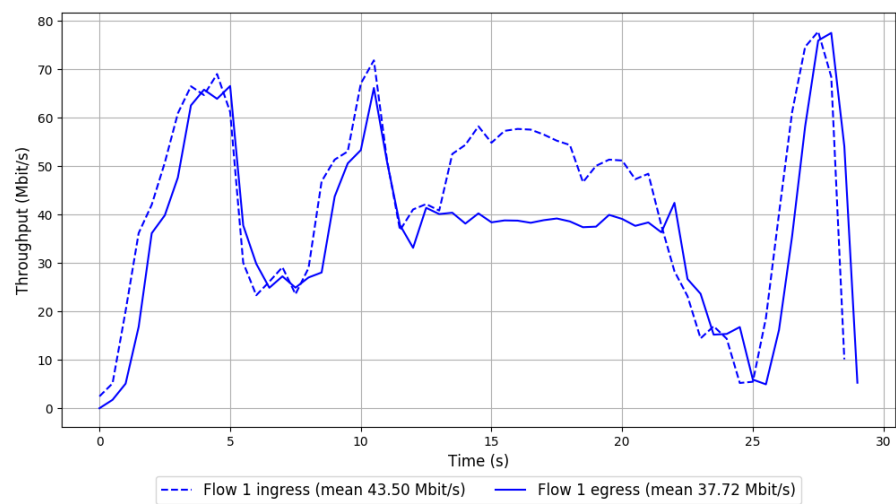
-- Flow 1:

Average throughput: 37.72 Mbit/s

95th percentile per-packet one-way delay: 82.551 ms

Loss rate: 13.65%

Run 4: Report of Indigo-MusesC5 — Data Link



Run 5: Statistics of Indigo-MusesC5

Start at: 2019-01-21 22:59:45

End at: 2019-01-21 23:00:15

Local clock offset: 4.301 ms

Remote clock offset: 7.449 ms

Below is generated by plot.py at 2019-01-21 23:13:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.39 Mbit/s

95th percentile per-packet one-way delay: 94.274 ms

Loss rate: 14.31%

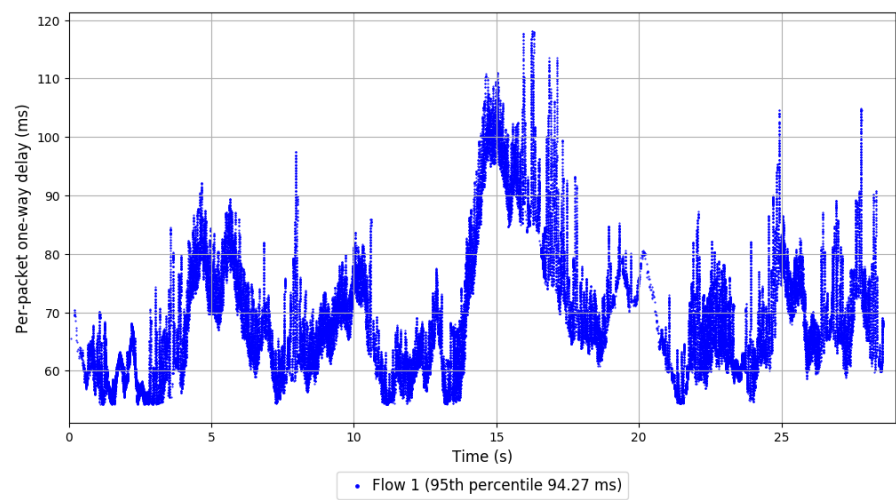
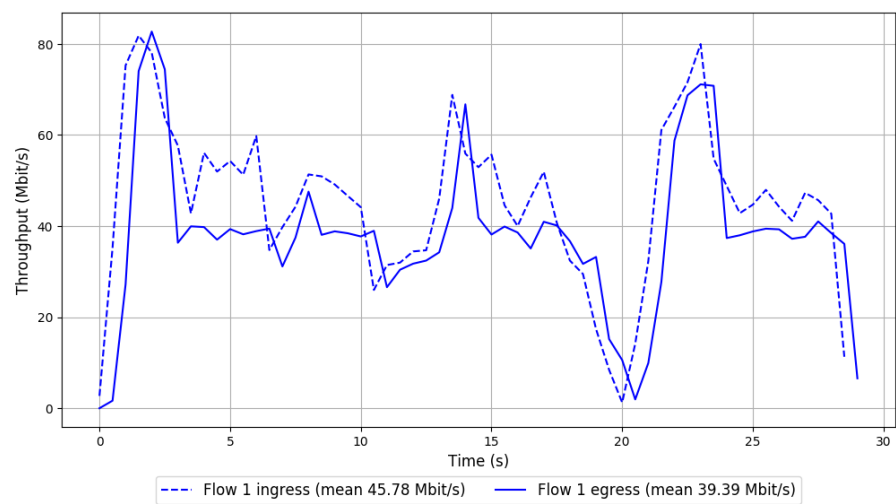
-- Flow 1:

Average throughput: 39.39 Mbit/s

95th percentile per-packet one-way delay: 94.274 ms

Loss rate: 14.31%

Run 5: Report of Indigo-MusesC5 — Data Link

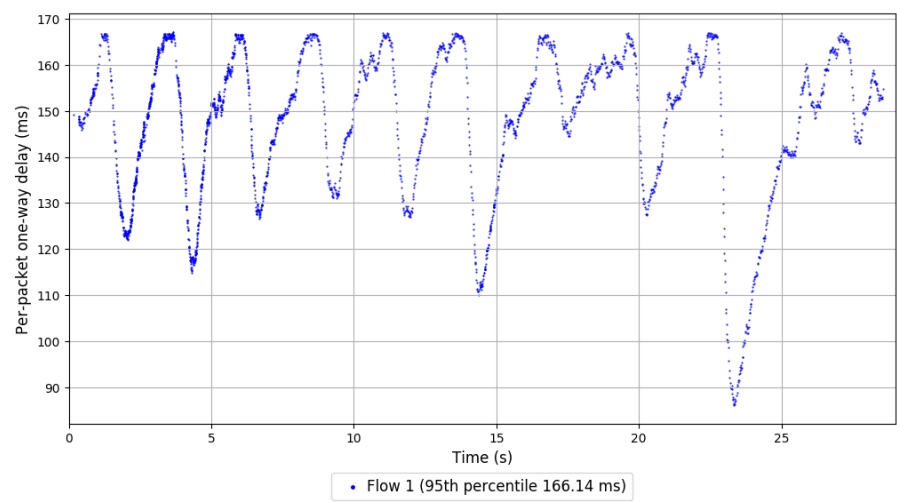
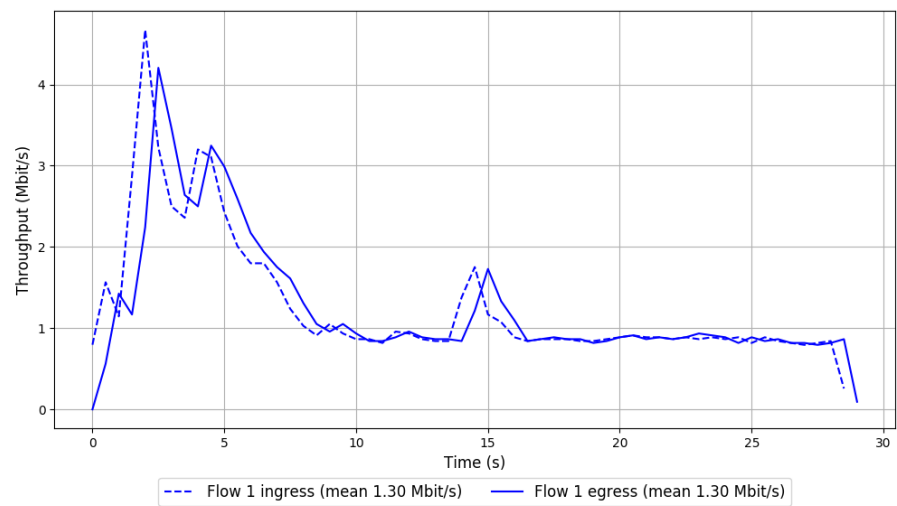



```
Run 1: Statistics of Indigo-MusesD

Start at: 2019-01-21 21:28:04
End at: 2019-01-21 21:28:34
Local clock offset: 0.957 ms
Remote clock offset: 7.22 ms

# Below is generated by plot.py at 2019-01-21 23:13:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.30 Mbit/s
95th percentile per-packet one-way delay: 166.140 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 1.30 Mbit/s
95th percentile per-packet one-way delay: 166.140 ms
Loss rate: 0.72%
```

Run 1: Report of Indigo-MusesD — Data Link



Run 2: Statistics of Indigo-MusesD

Start at: 2019-01-21 21:53:41

End at: 2019-01-21 21:54:11

Local clock offset: 1.499 ms

Remote clock offset: 8.108 ms

Below is generated by plot.py at 2019-01-21 23:13:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.36 Mbit/s

95th percentile per-packet one-way delay: 147.696 ms

Loss rate: 0.78%

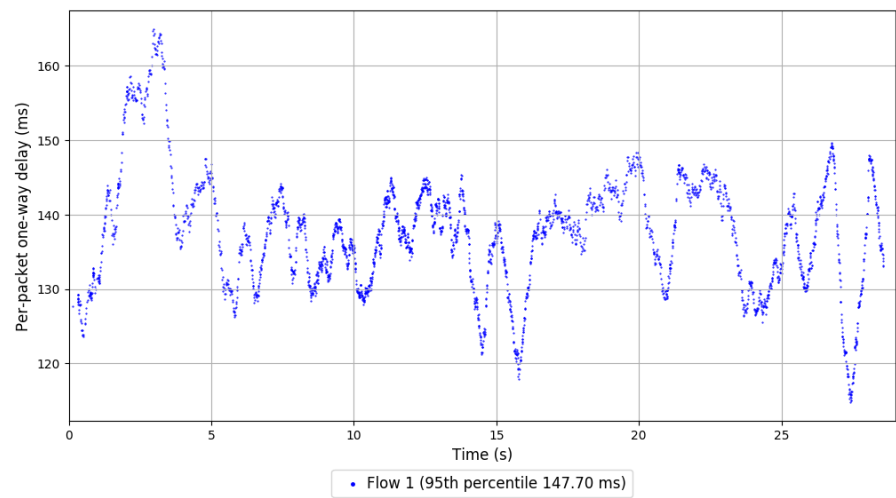
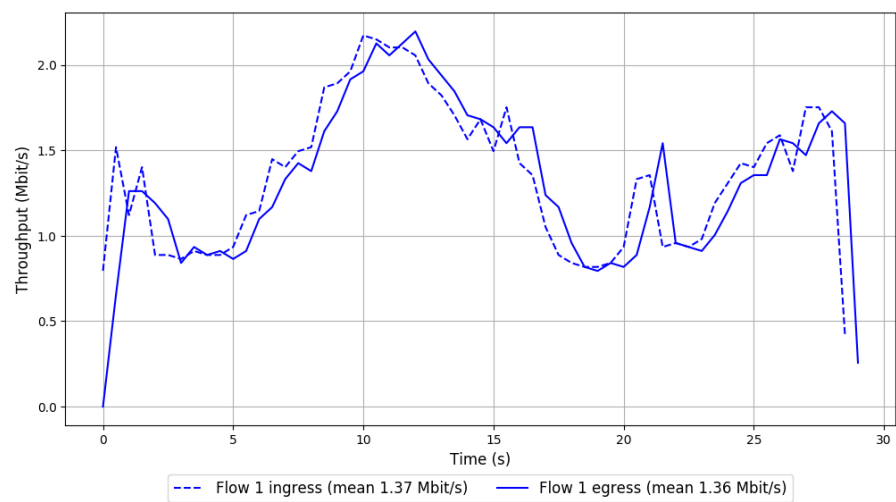
-- Flow 1:

Average throughput: 1.36 Mbit/s

95th percentile per-packet one-way delay: 147.696 ms

Loss rate: 0.78%

Run 2: Report of Indigo-MusesD — Data Link



Run 3: Statistics of Indigo-MusesD

Start at: 2019-01-21 22:18:45

End at: 2019-01-21 22:19:15

Local clock offset: 5.127 ms

Remote clock offset: 7.727 ms

Below is generated by plot.py at 2019-01-21 23:13:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.82 Mbit/s

95th percentile per-packet one-way delay: 92.725 ms

Loss rate: 0.13%

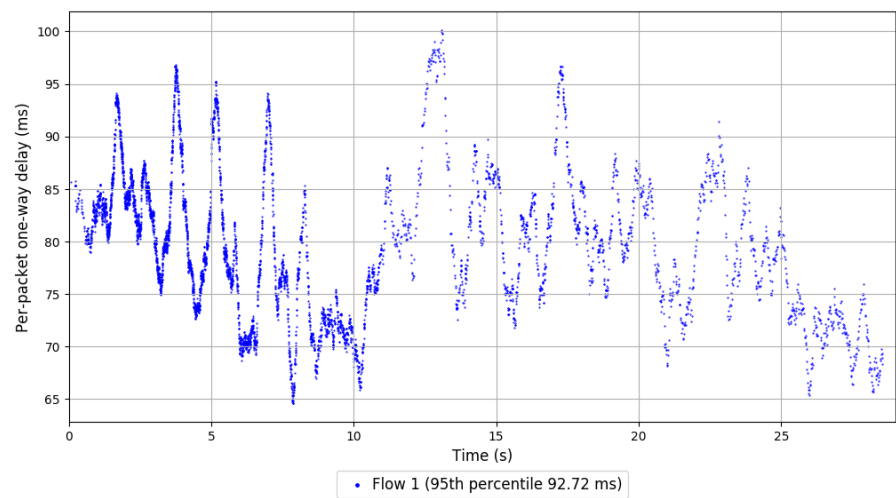
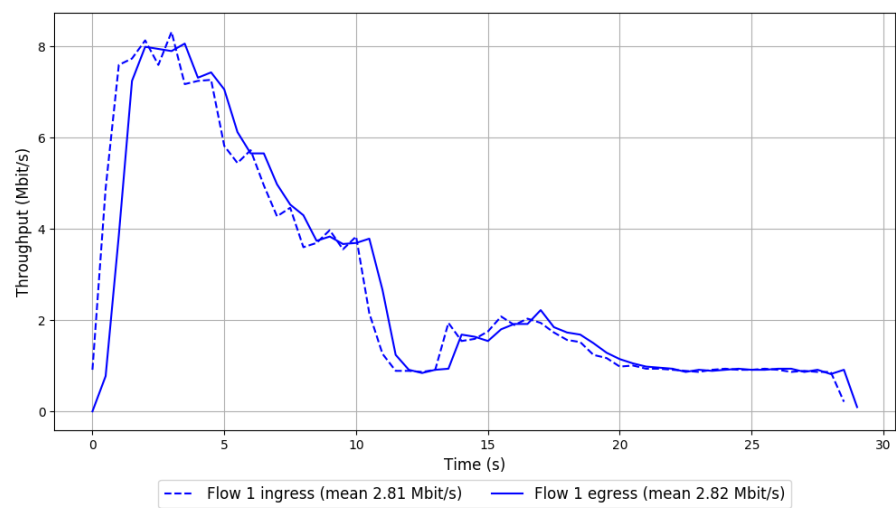
-- Flow 1:

Average throughput: 2.82 Mbit/s

95th percentile per-packet one-way delay: 92.725 ms

Loss rate: 0.13%

Run 3: Report of Indigo-MusesD — Data Link



Run 4: Statistics of Indigo-MusesD

Start at: 2019-01-21 22:43:24

End at: 2019-01-21 22:43:54

Local clock offset: 16.573 ms

Remote clock offset: 7.494 ms

Below is generated by plot.py at 2019-01-21 23:13:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.00 Mbit/s

95th percentile per-packet one-way delay: 86.164 ms

Loss rate: 0.27%

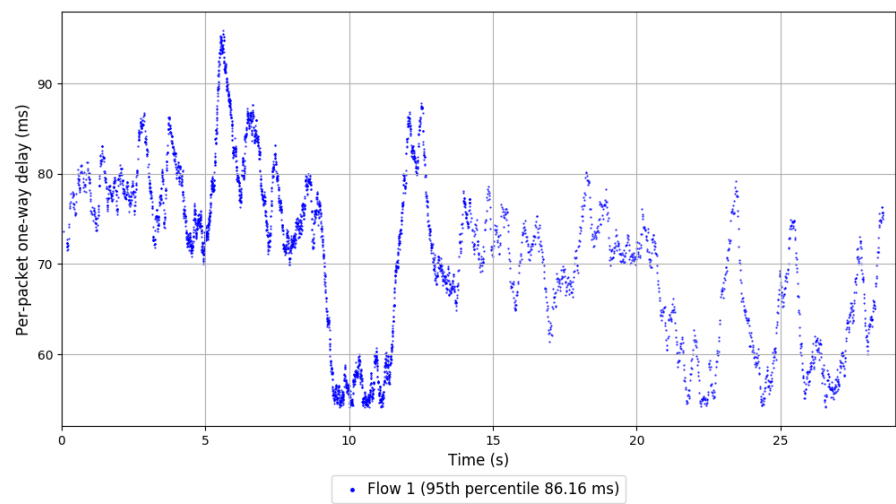
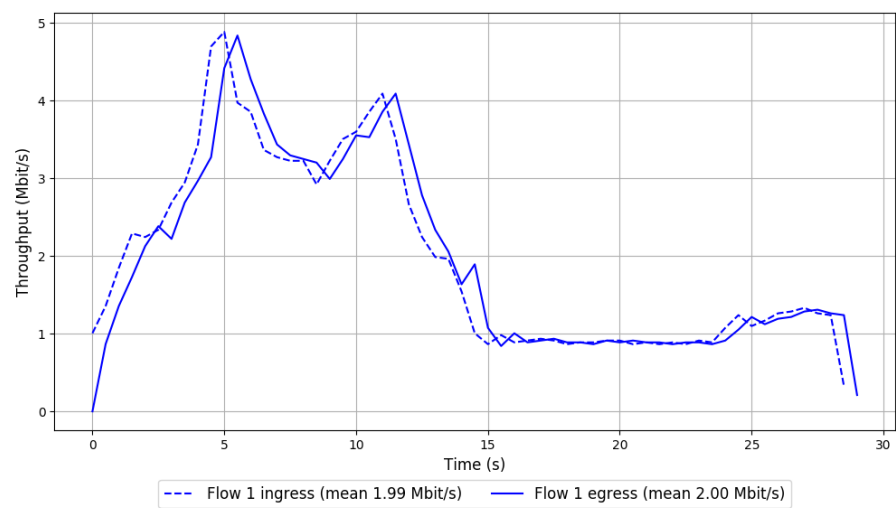
-- Flow 1:

Average throughput: 2.00 Mbit/s

95th percentile per-packet one-way delay: 86.164 ms

Loss rate: 0.27%

Run 4: Report of Indigo-MusesD — Data Link



Run 5: Statistics of Indigo-MusesD

Start at: 2019-01-21 23:07:57

End at: 2019-01-21 23:08:27

Local clock offset: 1.707 ms

Remote clock offset: 7.243 ms

Below is generated by plot.py at 2019-01-21 23:13:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 11.92 Mbit/s

95th percentile per-packet one-way delay: 71.880 ms

Loss rate: 6.80%

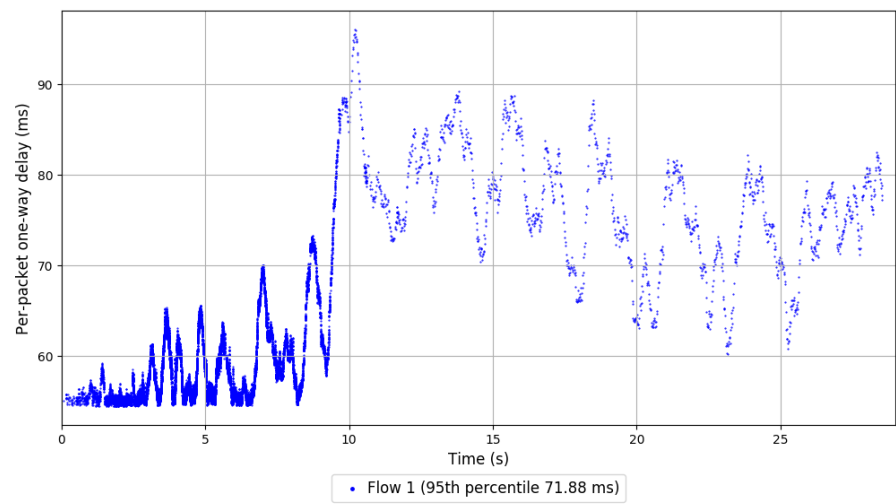
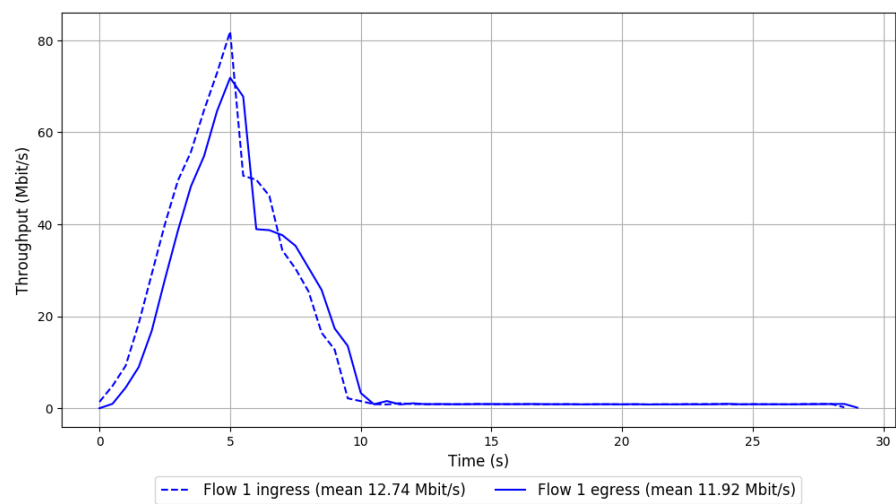
-- Flow 1:

Average throughput: 11.92 Mbit/s

95th percentile per-packet one-way delay: 71.880 ms

Loss rate: 6.80%

Run 5: Report of Indigo-MusesD — Data Link

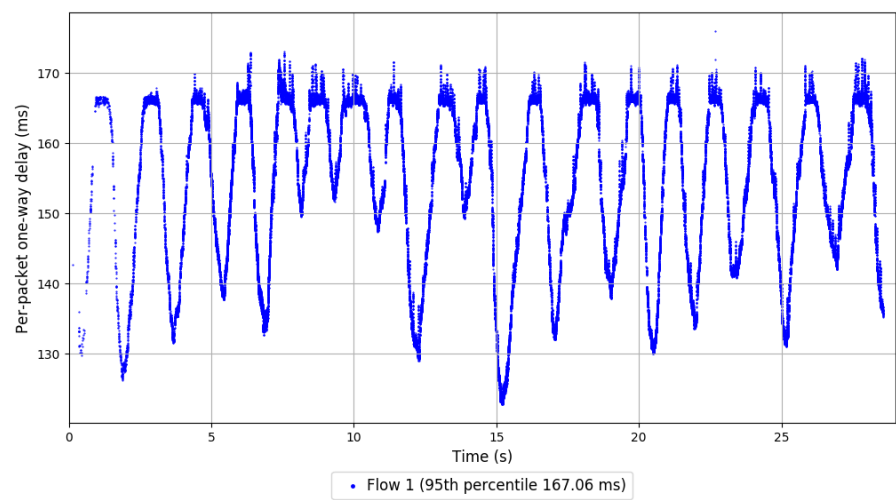
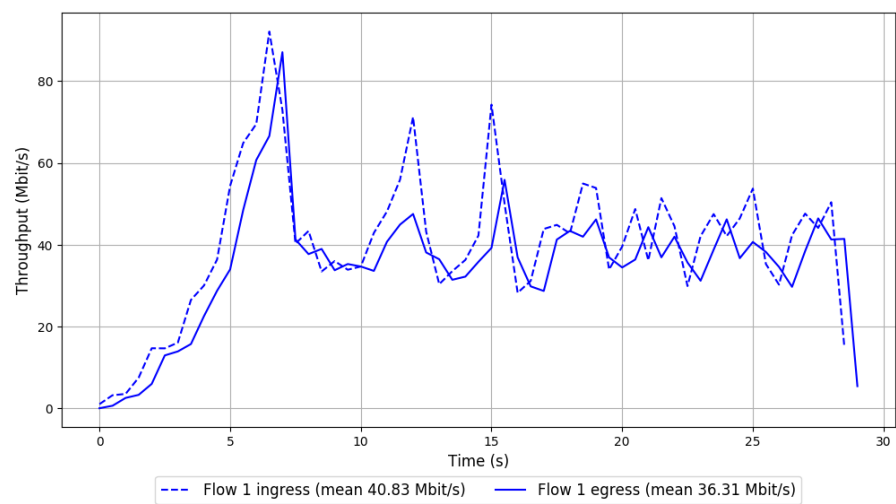


```
Run 1: Statistics of Indigo-MusesT

Start at: 2019-01-21 21:10:44
End at: 2019-01-21 21:11:14
Local clock offset: 1.058 ms
Remote clock offset: 8.055 ms

# Below is generated by plot.py at 2019-01-21 23:13:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 36.31 Mbit/s
95th percentile per-packet one-way delay: 167.062 ms
Loss rate: 11.70%
-- Flow 1:
Average throughput: 36.31 Mbit/s
95th percentile per-packet one-way delay: 167.062 ms
Loss rate: 11.70%
```

Run 1: Report of Indigo-MusesT — Data Link



Run 2: Statistics of Indigo-MusesT

Start at: 2019-01-21 21:38:56

End at: 2019-01-21 21:39:26

Local clock offset: 0.535 ms

Remote clock offset: 7.157 ms

Below is generated by plot.py at 2019-01-21 23:13:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.27 Mbit/s

95th percentile per-packet one-way delay: 160.138 ms

Loss rate: 9.45%

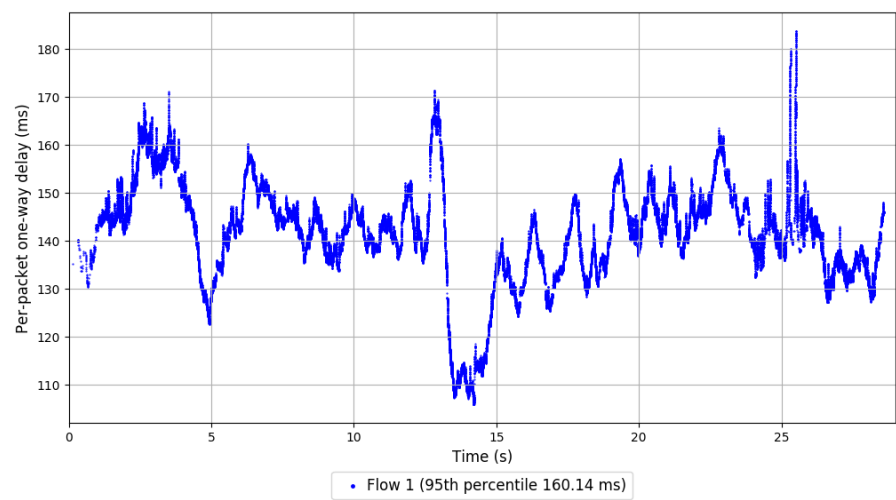
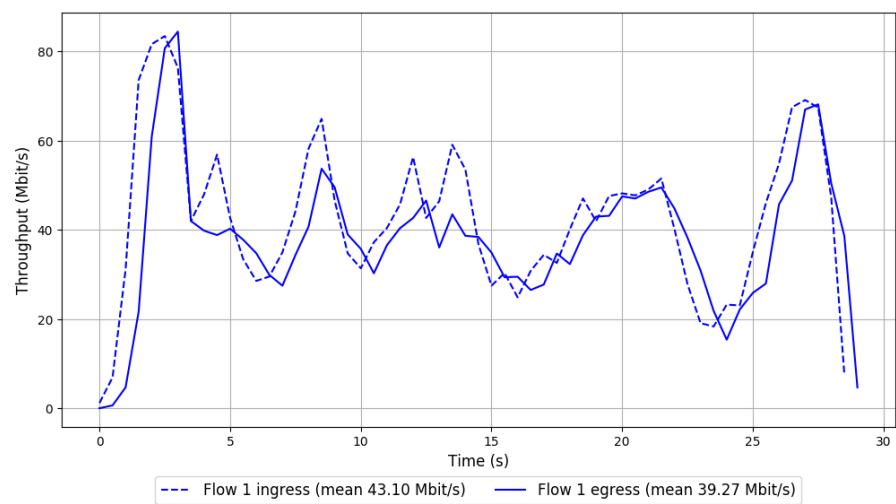
-- Flow 1:

Average throughput: 39.27 Mbit/s

95th percentile per-packet one-way delay: 160.138 ms

Loss rate: 9.45%

Run 2: Report of Indigo-MusesT — Data Link



Run 3: Statistics of Indigo-MusesT

Start at: 2019-01-21 22:04:26

End at: 2019-01-21 22:04:56

Local clock offset: 2.075 ms

Remote clock offset: 7.276 ms

Below is generated by plot.py at 2019-01-21 23:13:54

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.45 Mbit/s

95th percentile per-packet one-way delay: 136.217 ms

Loss rate: 10.45%

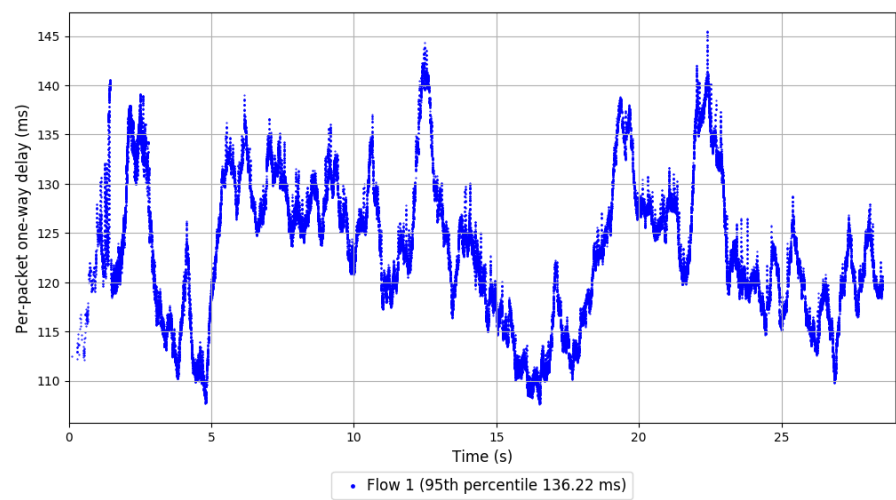
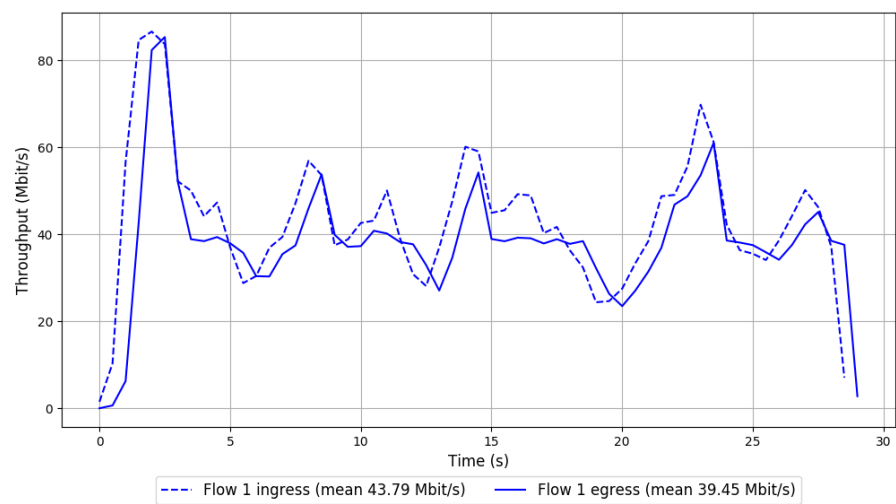
-- Flow 1:

Average throughput: 39.45 Mbit/s

95th percentile per-packet one-way delay: 136.217 ms

Loss rate: 10.45%

Run 3: Report of Indigo-MusesT — Data Link



Run 4: Statistics of Indigo-MusesT

Start at: 2019-01-21 22:29:20

End at: 2019-01-21 22:29:50

Local clock offset: 12.438 ms

Remote clock offset: 7.596 ms

Below is generated by plot.py at 2019-01-21 23:13:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.82 Mbit/s

95th percentile per-packet one-way delay: 86.208 ms

Loss rate: 10.28%

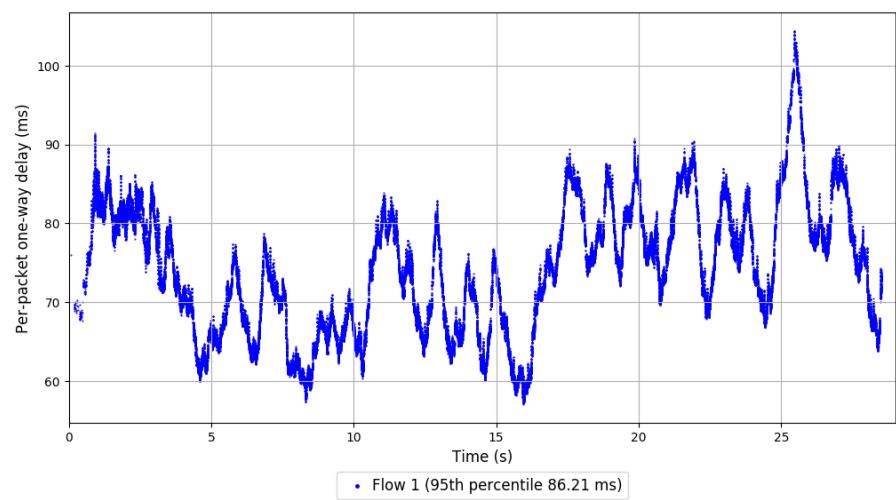
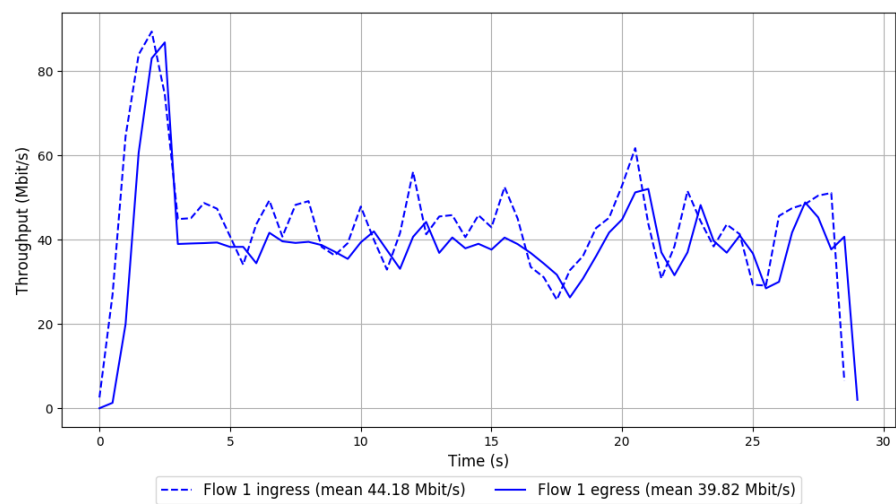
-- Flow 1:

Average throughput: 39.82 Mbit/s

95th percentile per-packet one-way delay: 86.208 ms

Loss rate: 10.28%

Run 4: Report of Indigo-MusesT — Data Link



Run 5: Statistics of Indigo-MusesT

Start at: 2019-01-21 22:53:54

End at: 2019-01-21 22:54:24

Local clock offset: 7.618 ms

Remote clock offset: 7.931 ms

Below is generated by plot.py at 2019-01-21 23:14:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.90 Mbit/s

95th percentile per-packet one-way delay: 66.004 ms

Loss rate: 12.50%

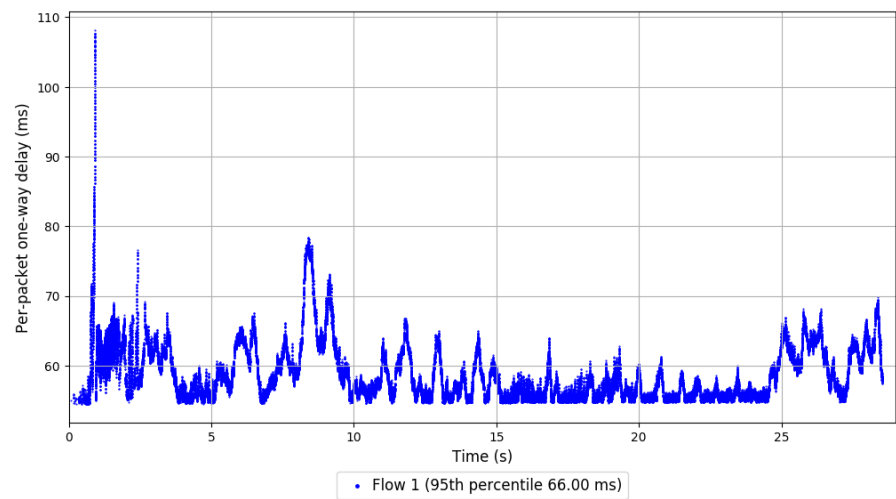
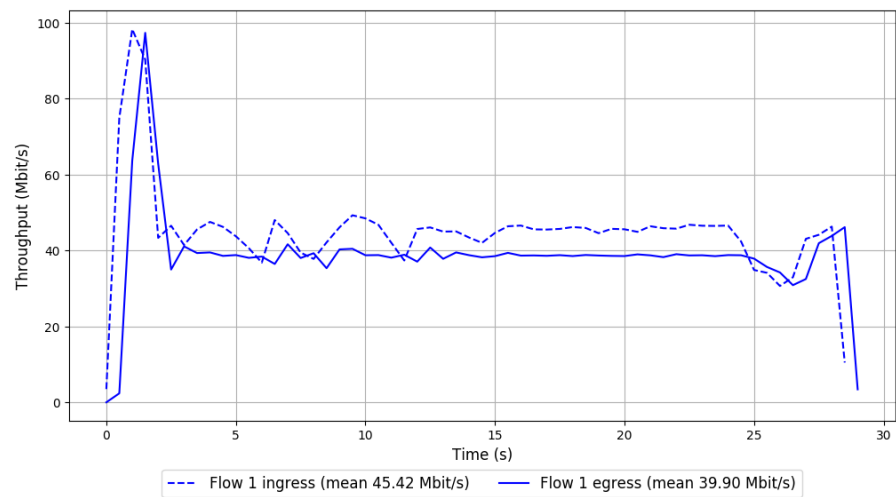
-- Flow 1:

Average throughput: 39.90 Mbit/s

95th percentile per-packet one-way delay: 66.004 ms

Loss rate: 12.50%

Run 5: Report of Indigo-MusesT — Data Link

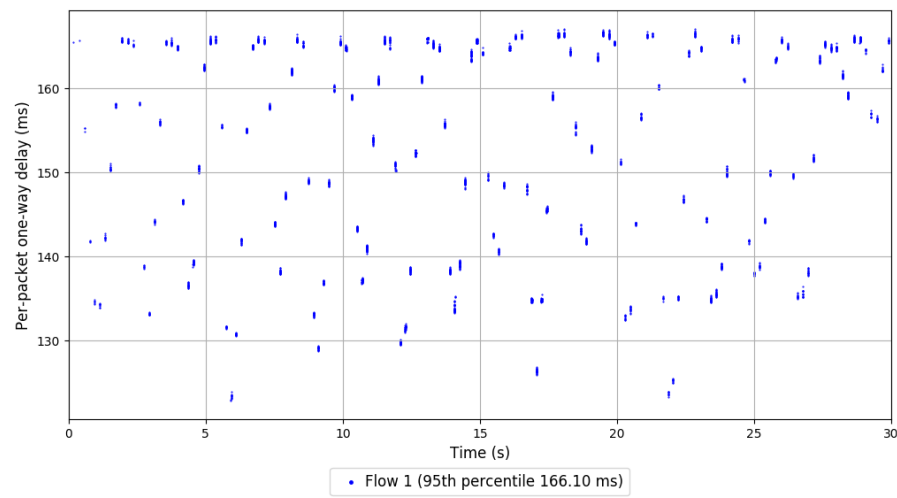
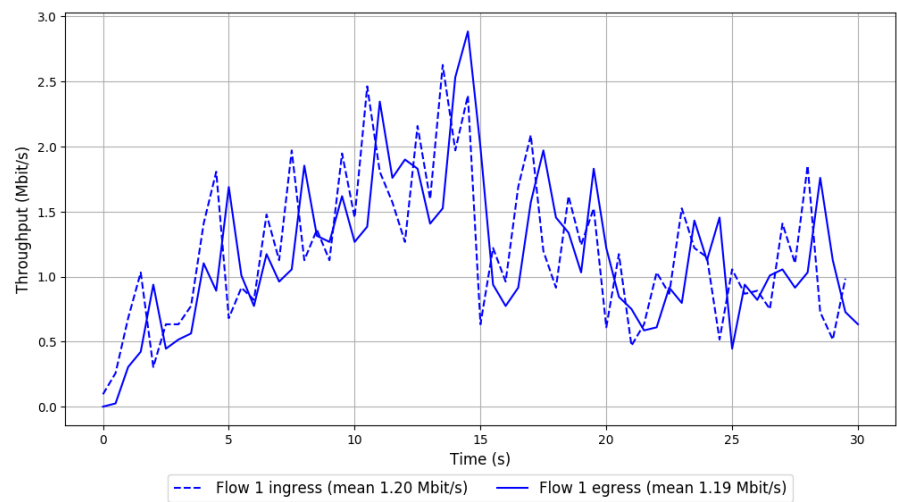


```
Run 1: Statistics of LEDBAT

Start at: 2019-01-21 21:09:31
End at: 2019-01-21 21:10:01
Local clock offset: 1.083 ms
Remote clock offset: 7.713 ms

# Below is generated by plot.py at 2019-01-21 23:14:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 166.105 ms
Loss rate: 1.60%
-- Flow 1:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 166.105 ms
Loss rate: 1.60%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2019-01-21 21:37:43

End at: 2019-01-21 21:38:13

Local clock offset: 0.631 ms

Remote clock offset: 7.188 ms

Below is generated by plot.py at 2019-01-21 23:14:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.68 Mbit/s

95th percentile per-packet one-way delay: 156.058 ms

Loss rate: 1.31%

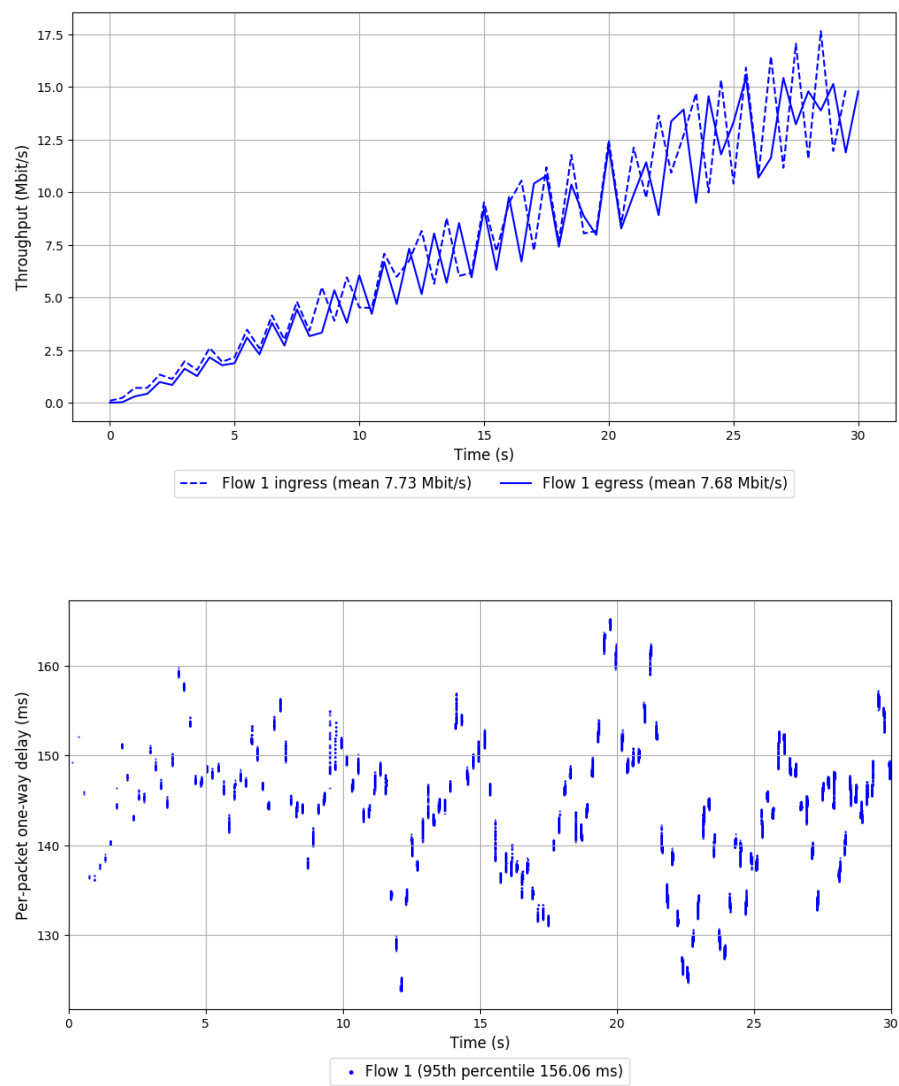
-- Flow 1:

Average throughput: 7.68 Mbit/s

95th percentile per-packet one-way delay: 156.058 ms

Loss rate: 1.31%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2019-01-21 22:03:15

End at: 2019-01-21 22:03:45

Local clock offset: 1.857 ms

Remote clock offset: 8.055 ms

Below is generated by plot.py at 2019-01-21 23:14:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 8.11 Mbit/s

95th percentile per-packet one-way delay: 143.776 ms

Loss rate: 1.19%

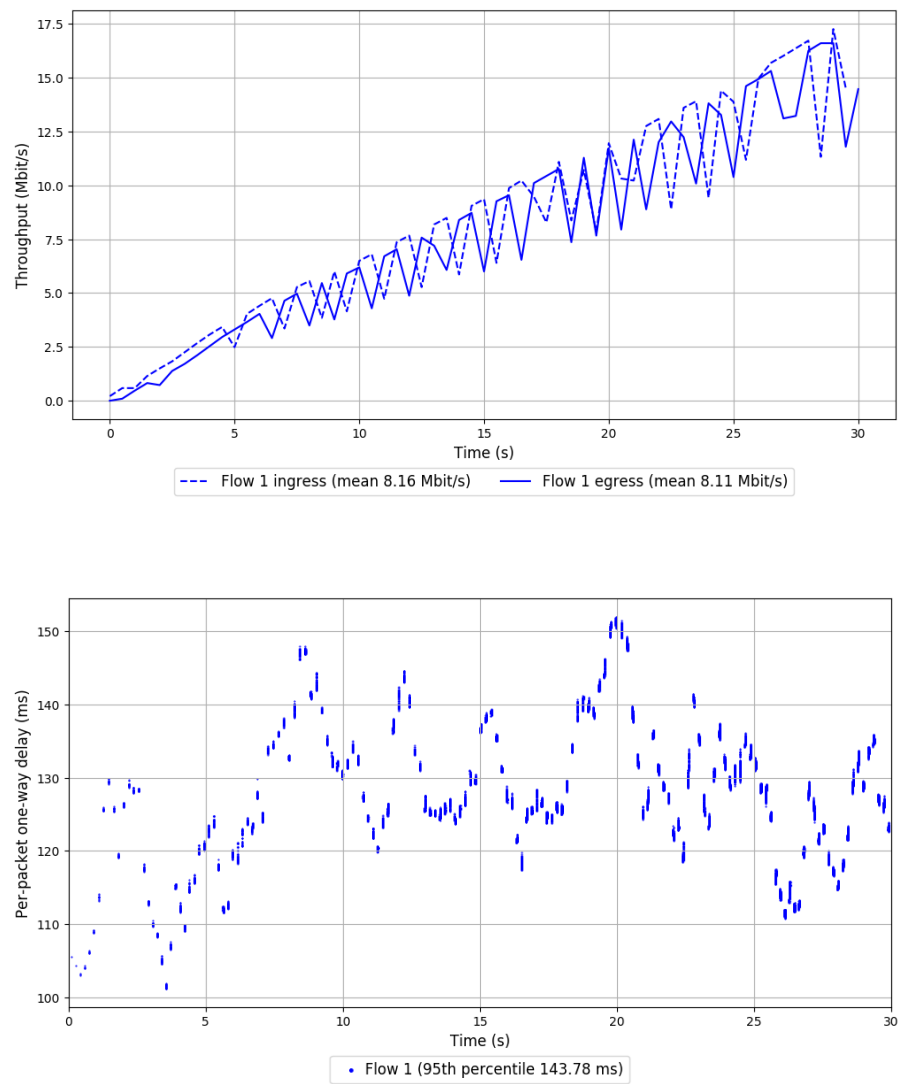
-- Flow 1:

Average throughput: 8.11 Mbit/s

95th percentile per-packet one-way delay: 143.776 ms

Loss rate: 1.19%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2019-01-21 22:28:09

End at: 2019-01-21 22:28:39

Local clock offset: 12.175 ms

Remote clock offset: 8.392 ms

Below is generated by plot.py at 2019-01-21 23:14:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 19.15 Mbit/s

95th percentile per-packet one-way delay: 88.768 ms

Loss rate: 0.84%

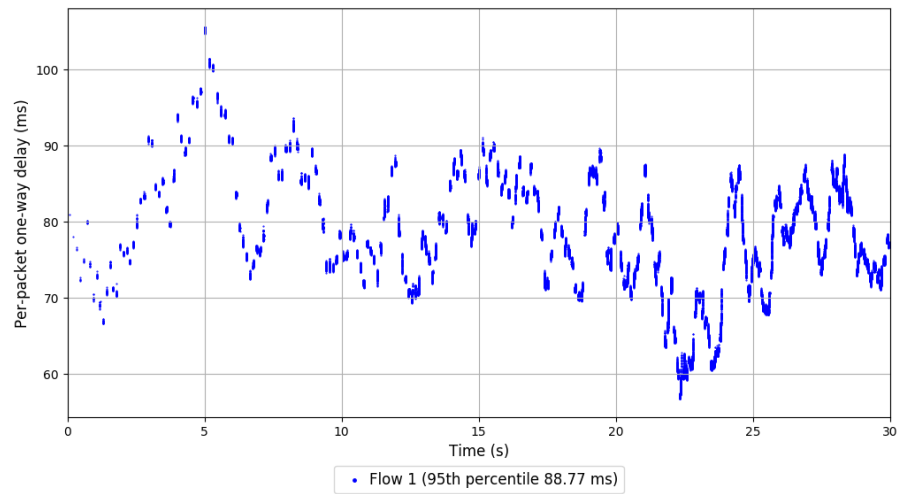
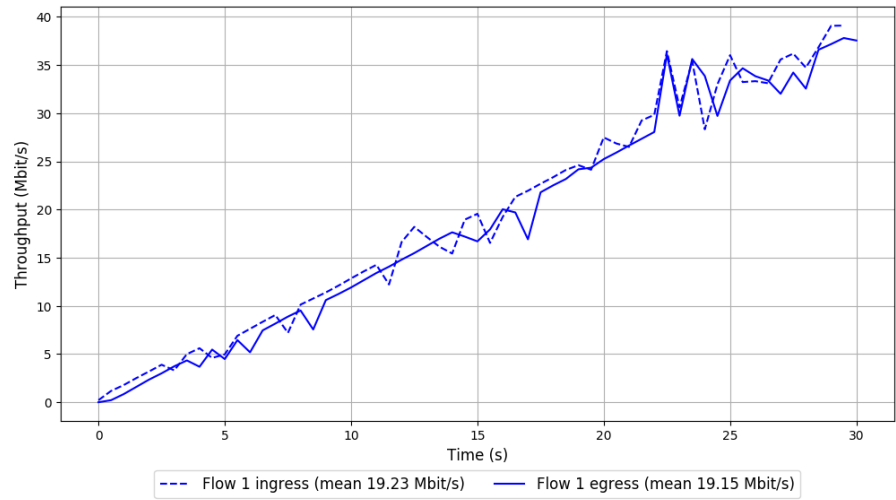
-- Flow 1:

Average throughput: 19.15 Mbit/s

95th percentile per-packet one-way delay: 88.768 ms

Loss rate: 0.84%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2019-01-21 22:52:43

End at: 2019-01-21 22:53:13

Local clock offset: 8.684 ms

Remote clock offset: 7.828 ms

Below is generated by plot.py at 2019-01-21 23:14:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 25.57 Mbit/s

95th percentile per-packet one-way delay: 83.356 ms

Loss rate: 0.73%

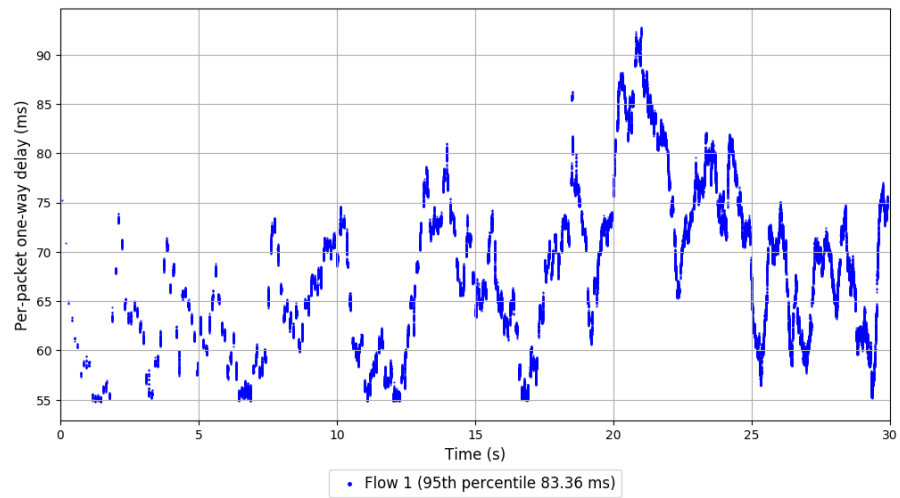
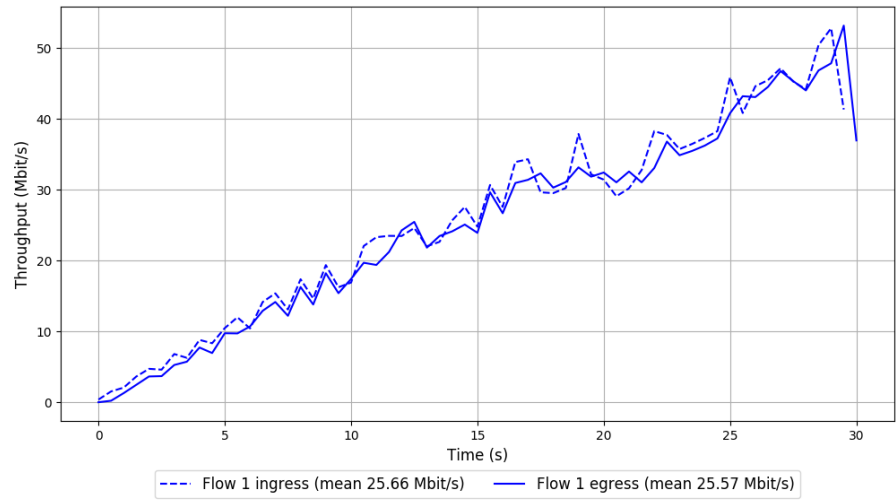
-- Flow 1:

Average throughput: 25.57 Mbit/s

95th percentile per-packet one-way delay: 83.356 ms

Loss rate: 0.73%

Run 5: Report of LEDBAT — Data Link



Run 1: Statistics of PCC-Allegro

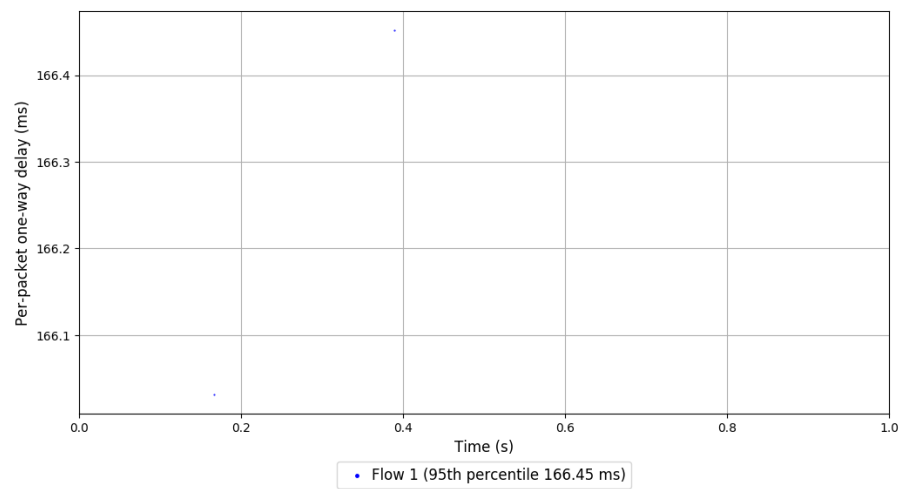
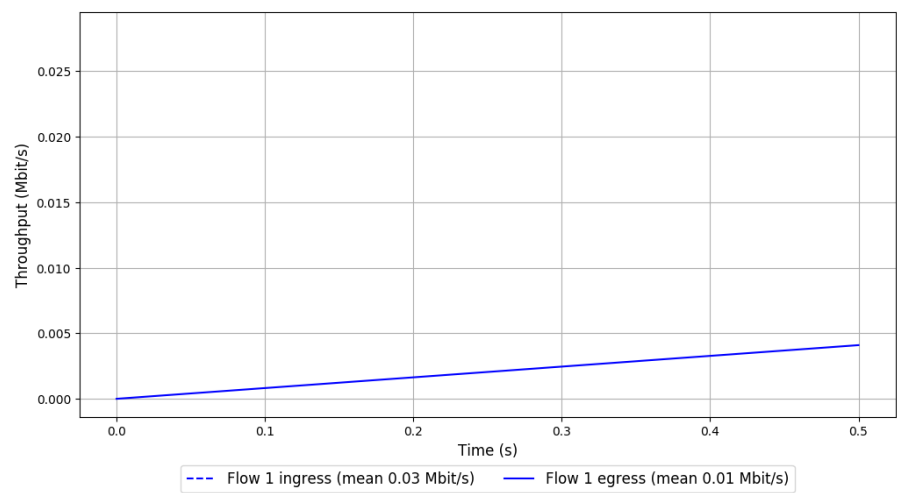
Start at: 2019-01-21 21:14:32

End at: 2019-01-21 21:15:02

Local clock offset: 1.074 ms

Remote clock offset: 7.748 ms

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2019-01-21 21:41:28

End at: 2019-01-21 21:41:58

Local clock offset: 0.72 ms

Remote clock offset: 7.338 ms

Below is generated by plot.py at 2019-01-21 23:14:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 32.21 Mbit/s

95th percentile per-packet one-way delay: 159.892 ms

Loss rate: 2.47%

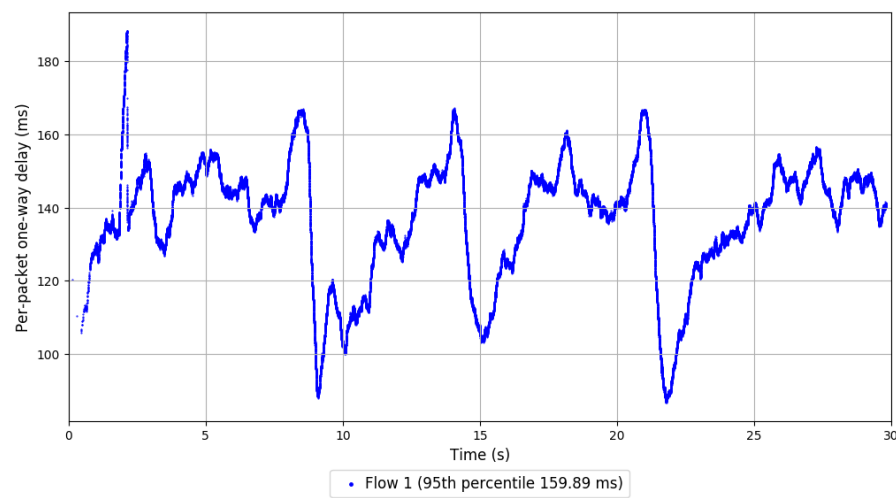
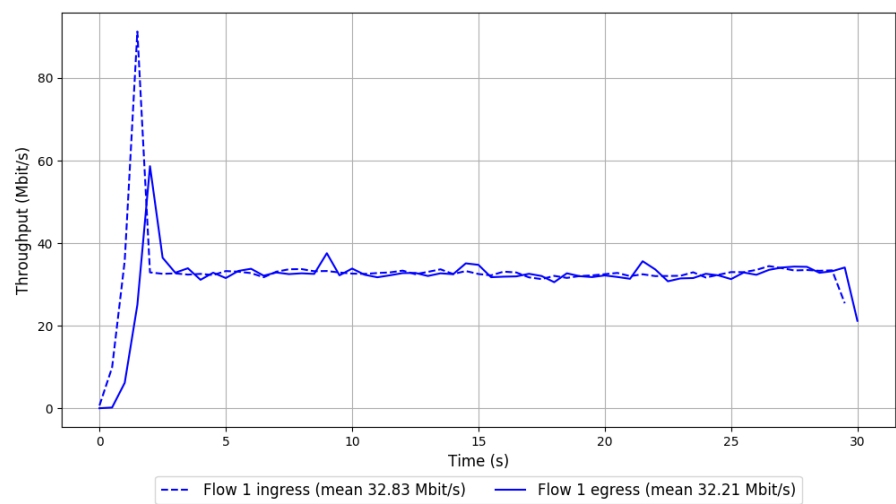
-- Flow 1:

Average throughput: 32.21 Mbit/s

95th percentile per-packet one-way delay: 159.892 ms

Loss rate: 2.47%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2019-01-21 22:06:52

End at: 2019-01-21 22:07:22

Local clock offset: 1.923 ms

Remote clock offset: 7.303 ms

Below is generated by plot.py at 2019-01-21 23:14:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 30.25 Mbit/s

95th percentile per-packet one-way delay: 138.788 ms

Loss rate: 2.38%

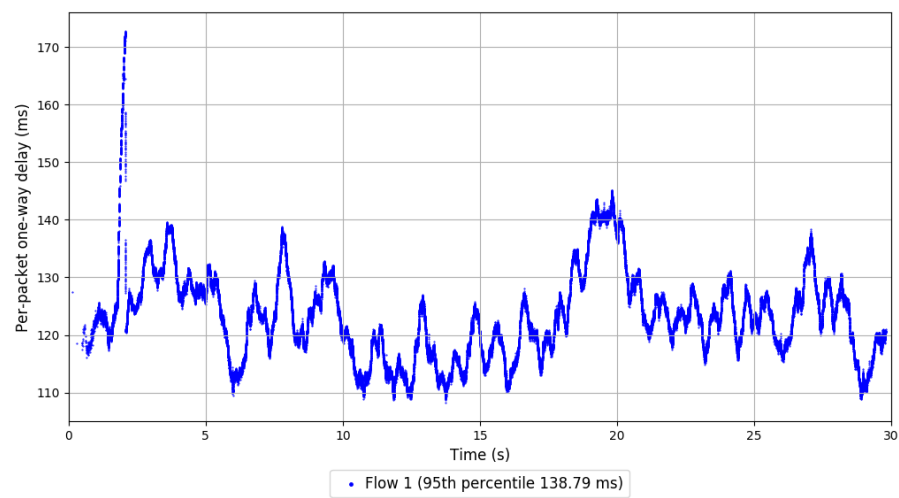
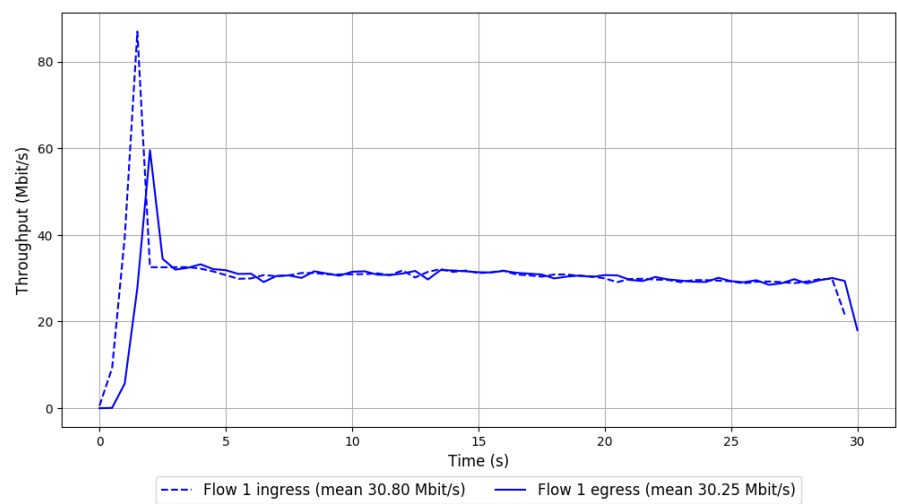
-- Flow 1:

Average throughput: 30.25 Mbit/s

95th percentile per-packet one-way delay: 138.788 ms

Loss rate: 2.38%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2019-01-21 22:31:42

End at: 2019-01-21 22:32:12

Local clock offset: 13.402 ms

Remote clock offset: 7.565 ms

Below is generated by plot.py at 2019-01-21 23:14:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 37.43 Mbit/s

95th percentile per-packet one-way delay: 62.919 ms

Loss rate: 5.91%

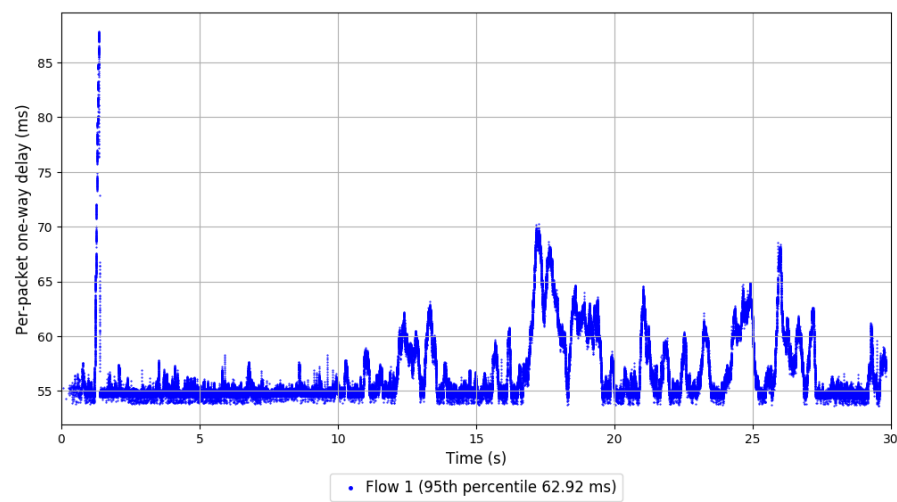
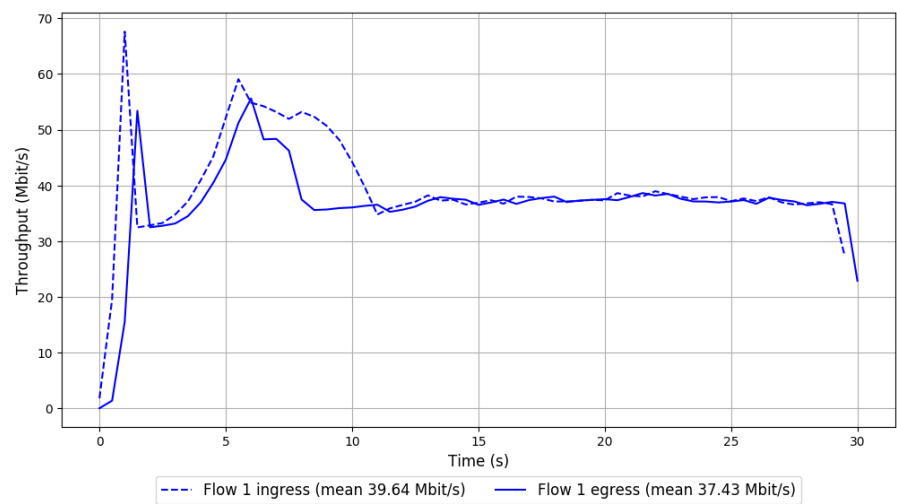
-- Flow 1:

Average throughput: 37.43 Mbit/s

95th percentile per-packet one-way delay: 62.919 ms

Loss rate: 5.91%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2019-01-21 22:56:16

End at: 2019-01-21 22:56:46

Local clock offset: 6.21 ms

Remote clock offset: 7.651 ms

Below is generated by plot.py at 2019-01-21 23:14:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 33.28 Mbit/s

95th percentile per-packet one-way delay: 84.865 ms

Loss rate: 1.11%

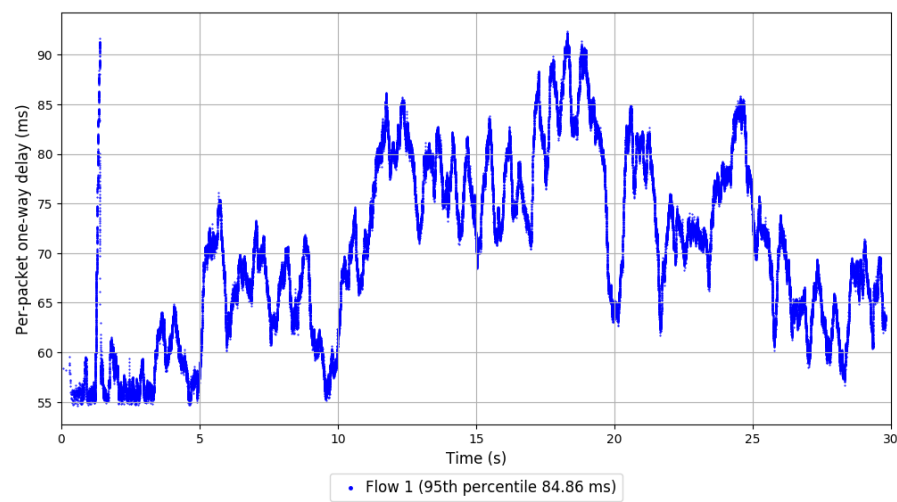
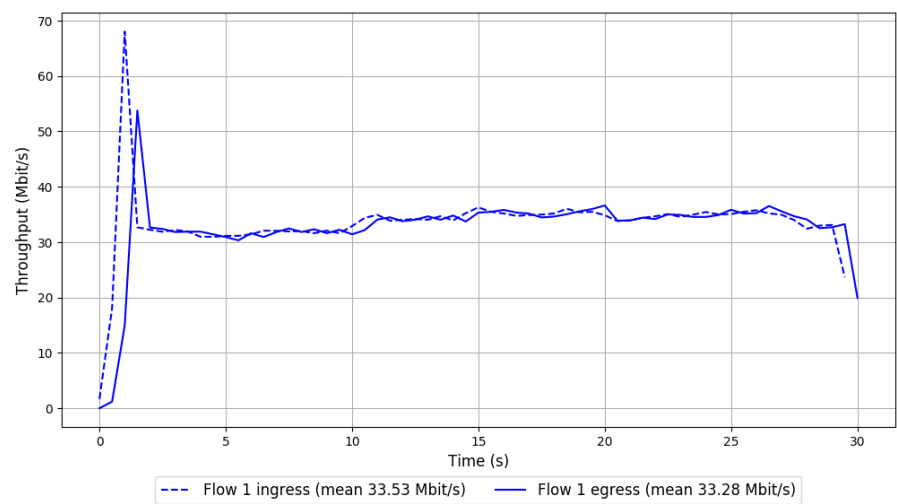
-- Flow 1:

Average throughput: 33.28 Mbit/s

95th percentile per-packet one-way delay: 84.865 ms

Loss rate: 1.11%

Run 5: Report of PCC-Allegro — Data Link



Run 1: Statistics of PCC-Expr

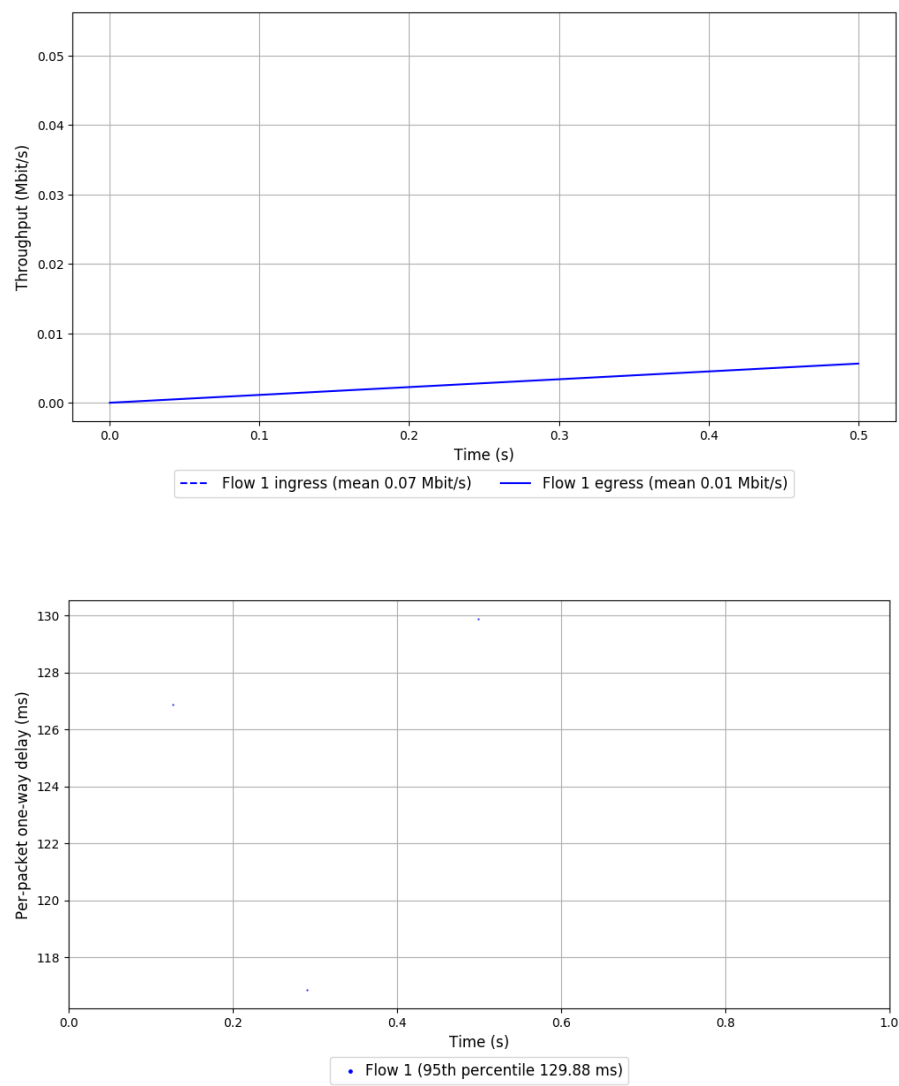
Start at: 2019-01-21 21:21:26

End at: 2019-01-21 21:21:56

Local clock offset: 1.243 ms

Remote clock offset: 7.366 ms

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

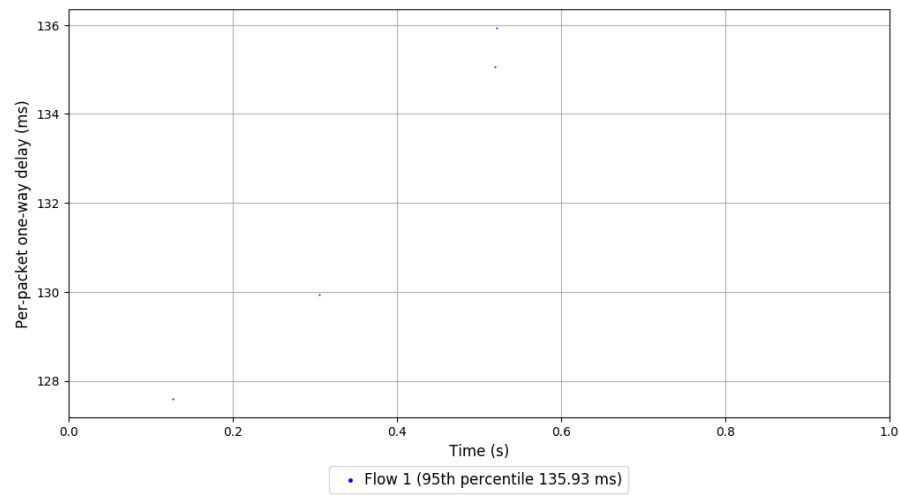
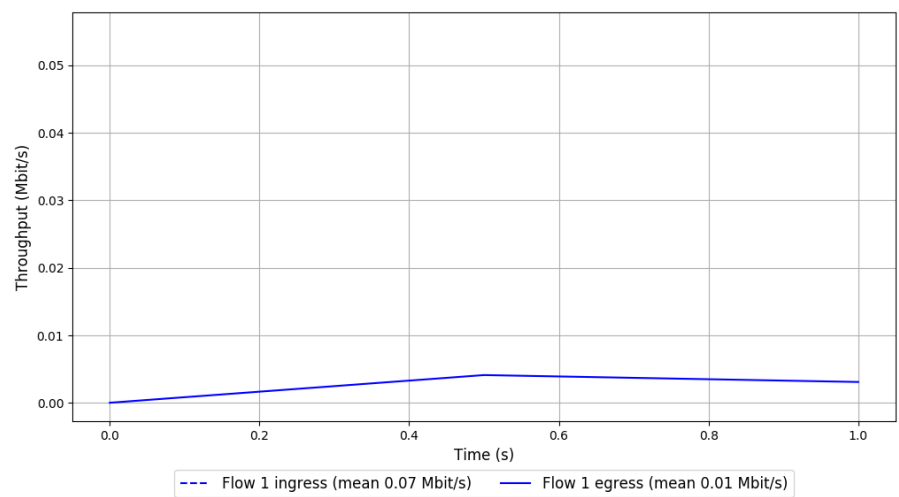
Start at: 2019-01-21 21:47:39

End at: 2019-01-21 21:48:09

Local clock offset: 0.466 ms

Remote clock offset: 7.602 ms

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

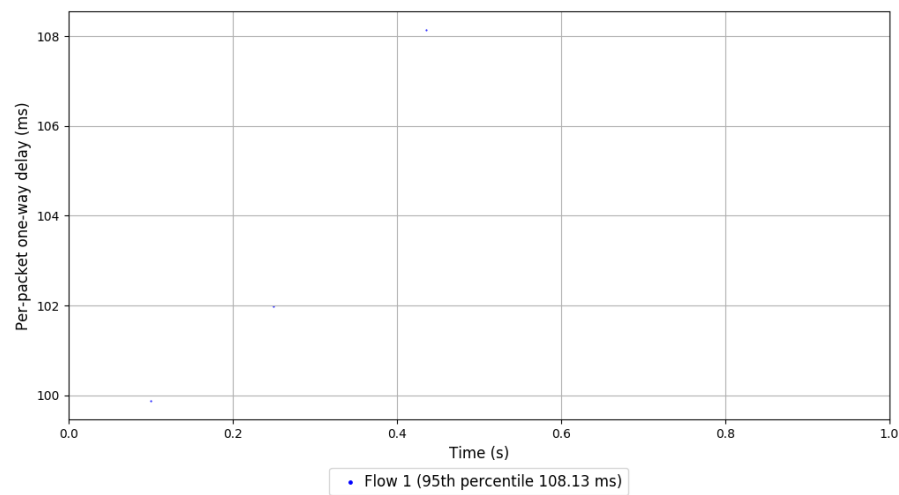
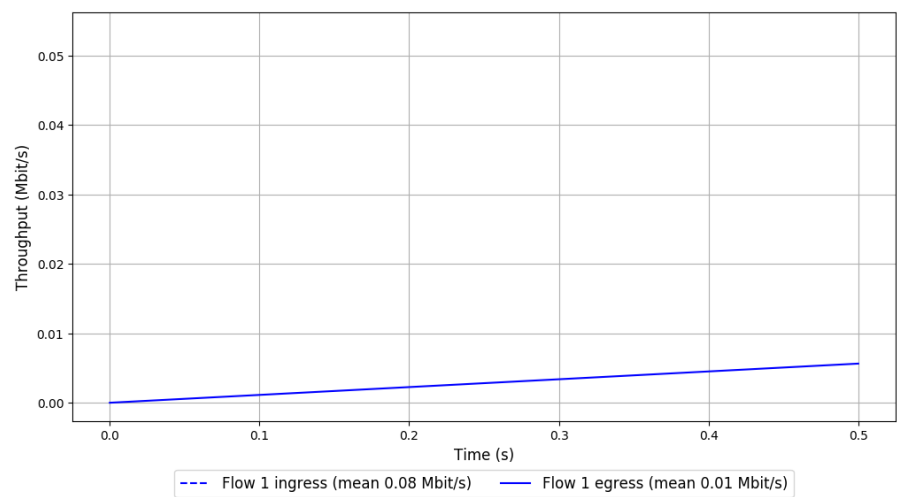
Start at: 2019-01-21 22:12:50

End at: 2019-01-21 22:13:20

Local clock offset: 2.034 ms

Remote clock offset: 8.061 ms

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

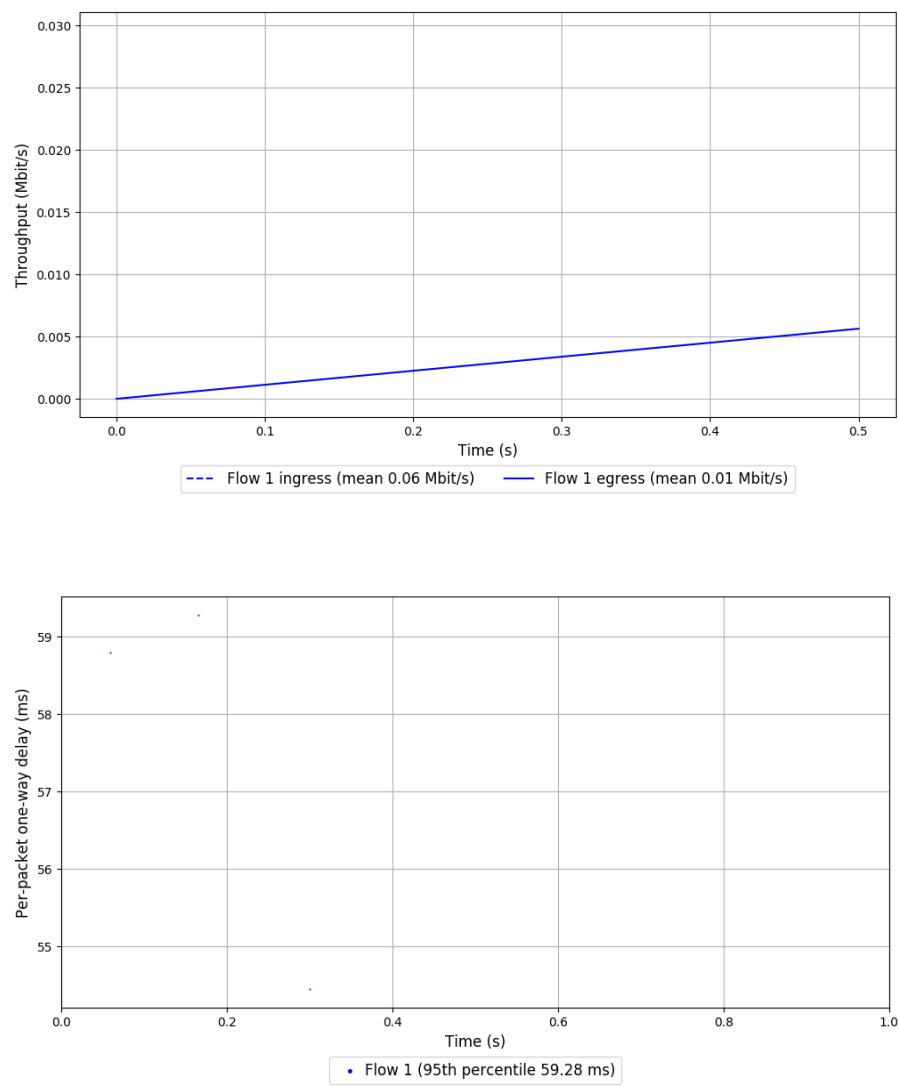
Start at: 2019-01-21 22:37:33

End at: 2019-01-21 22:38:03

Local clock offset: 15.239 ms

Remote clock offset: 7.767 ms

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

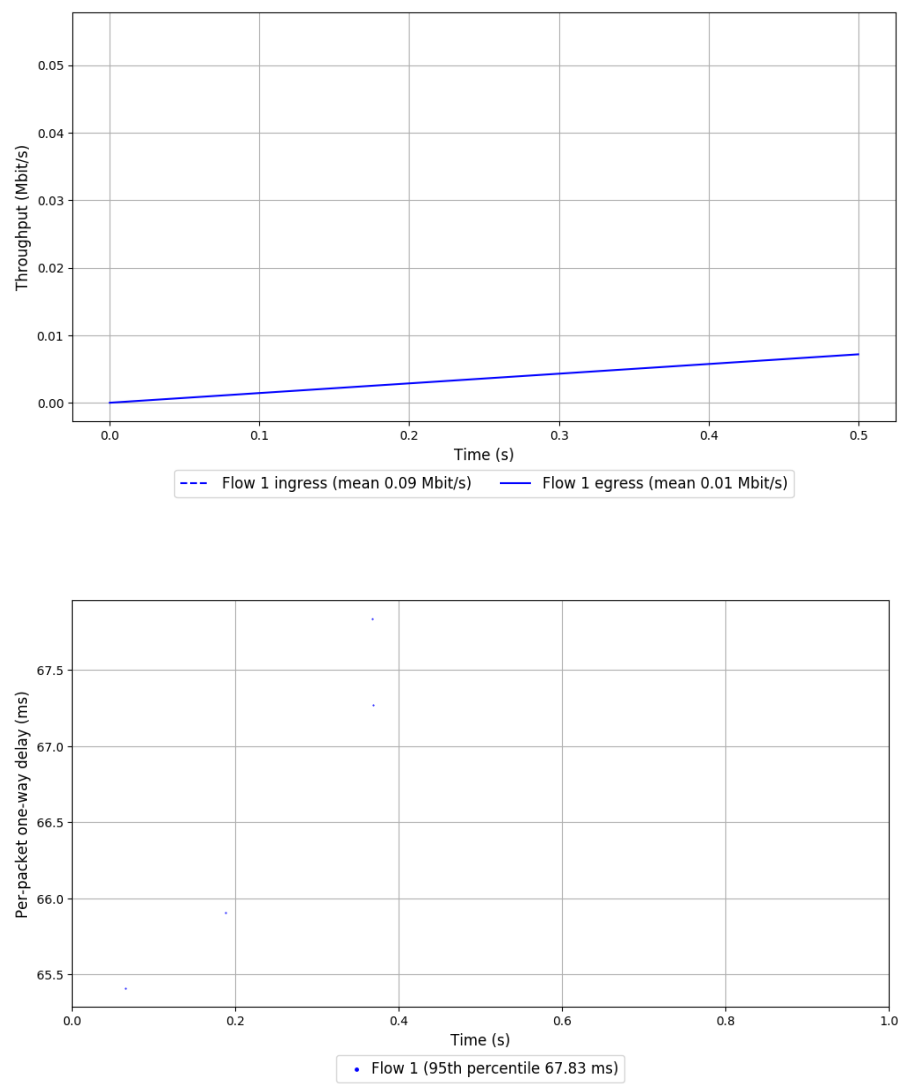
Start at: 2019-01-21 23:02:07

End at: 2019-01-21 23:02:37

Local clock offset: 3.509 ms

Remote clock offset: 7.445 ms

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2019-01-21 21:06:45

End at: 2019-01-21 21:07:15

Local clock offset: 1.23 ms

Remote clock offset: 7.596 ms

Below is generated by plot.py at 2019-01-21 23:14:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.67 Mbit/s

95th percentile per-packet one-way delay: 166.000 ms

Loss rate: 1.28%

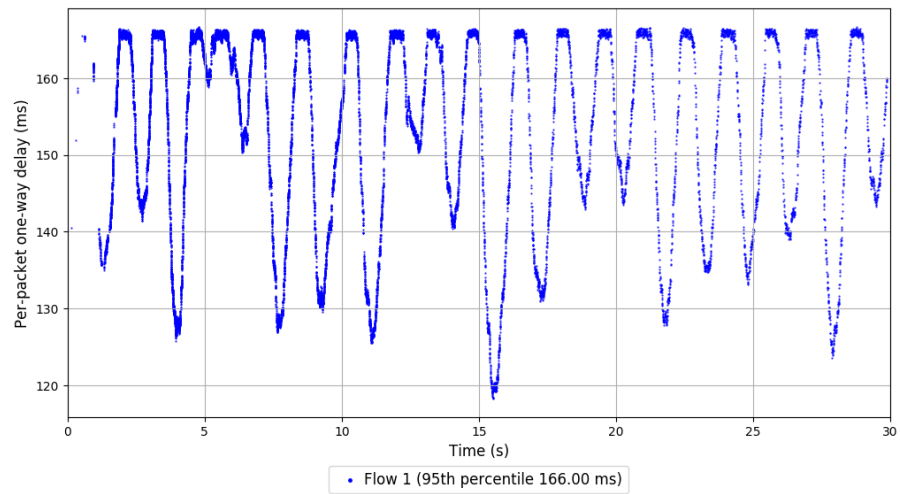
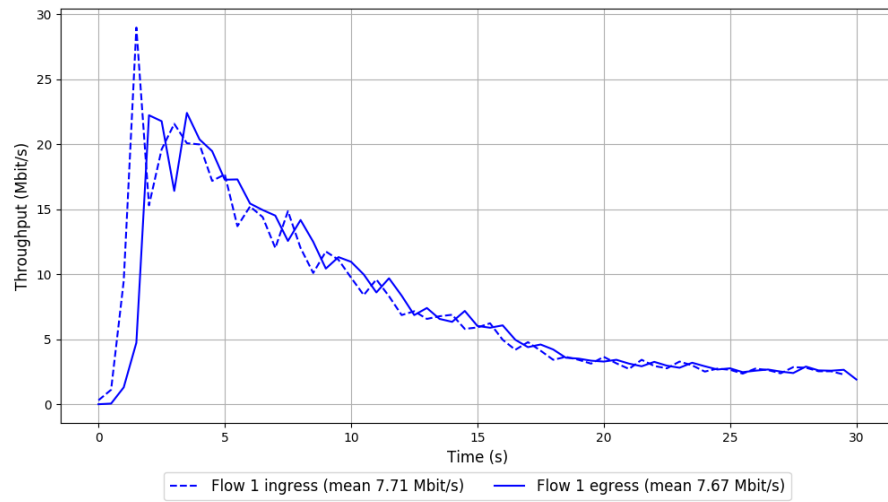
-- Flow 1:

Average throughput: 7.67 Mbit/s

95th percentile per-packet one-way delay: 166.000 ms

Loss rate: 1.28%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2019-01-21 21:35:19

End at: 2019-01-21 21:35:49

Local clock offset: 0.594 ms

Remote clock offset: 7.024 ms

Below is generated by plot.py at 2019-01-21 23:14:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 9.11 Mbit/s

95th percentile per-packet one-way delay: 160.693 ms

Loss rate: 1.02%

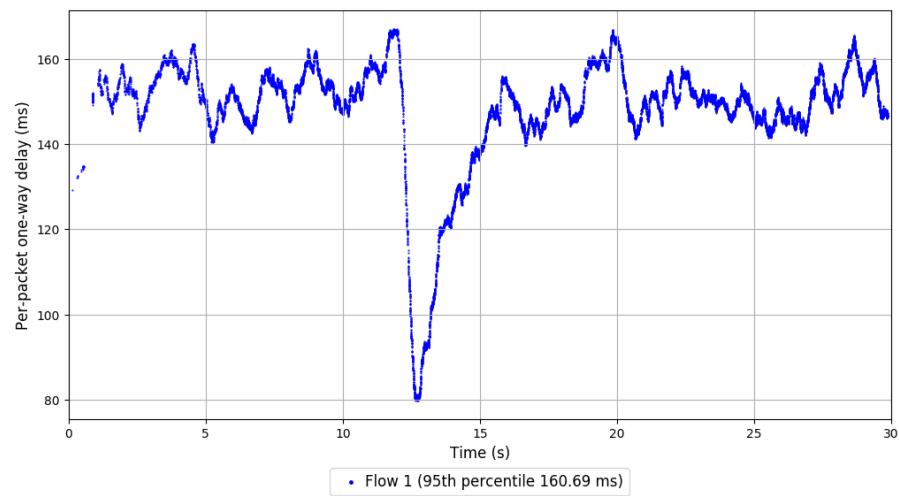
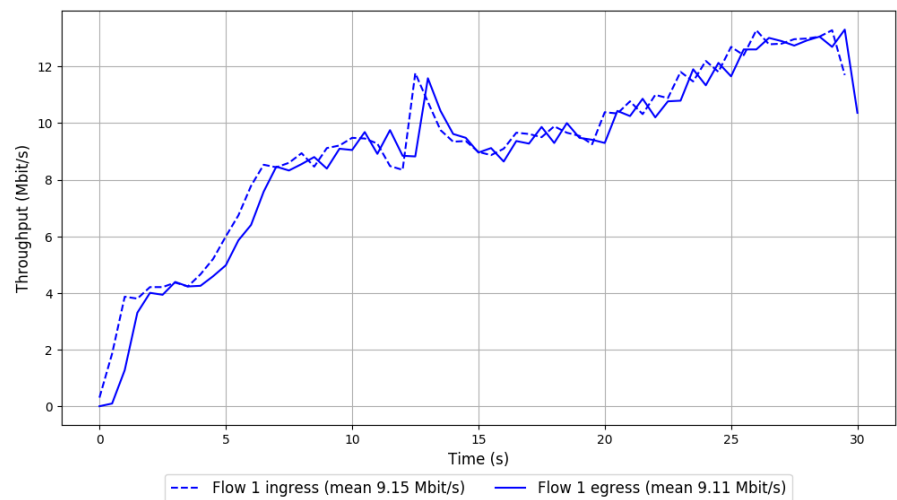
-- Flow 1:

Average throughput: 9.11 Mbit/s

95th percentile per-packet one-way delay: 160.693 ms

Loss rate: 1.02%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2019-01-21 22:00:47

End at: 2019-01-21 22:01:17

Local clock offset: 1.913 ms

Remote clock offset: 7.299 ms

Below is generated by plot.py at 2019-01-21 23:14:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 37.54 Mbit/s

95th percentile per-packet one-way delay: 142.570 ms

Loss rate: 1.11%

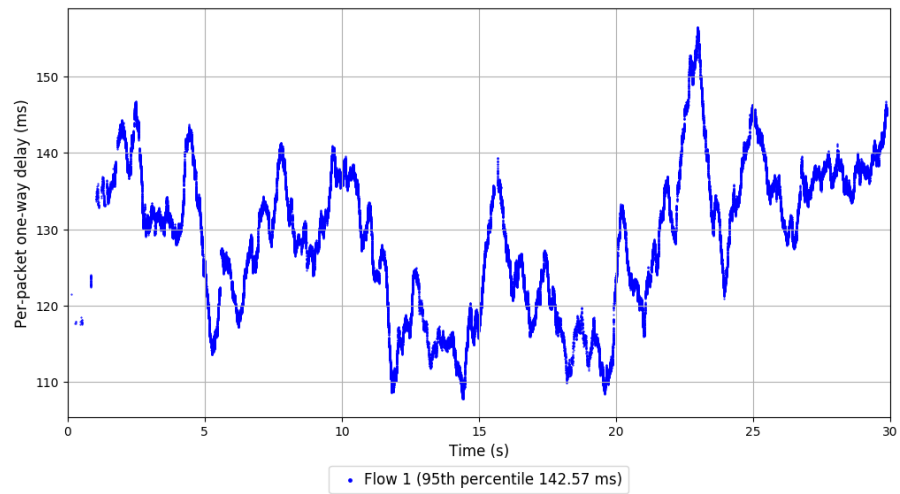
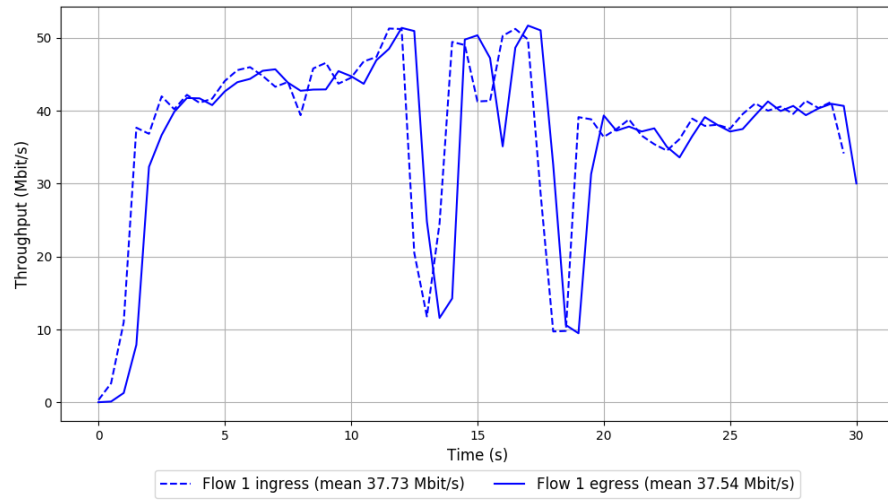
-- Flow 1:

Average throughput: 37.54 Mbit/s

95th percentile per-packet one-way delay: 142.570 ms

Loss rate: 1.11%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2019-01-21 22:25:47

End at: 2019-01-21 22:26:17

Local clock offset: 10.768 ms

Remote clock offset: 7.391 ms

Below is generated by plot.py at 2019-01-21 23:14:38

Datalink statistics

-- Total of 1 flow:

Average throughput: 37.76 Mbit/s

95th percentile per-packet one-way delay: 91.823 ms

Loss rate: 2.42%

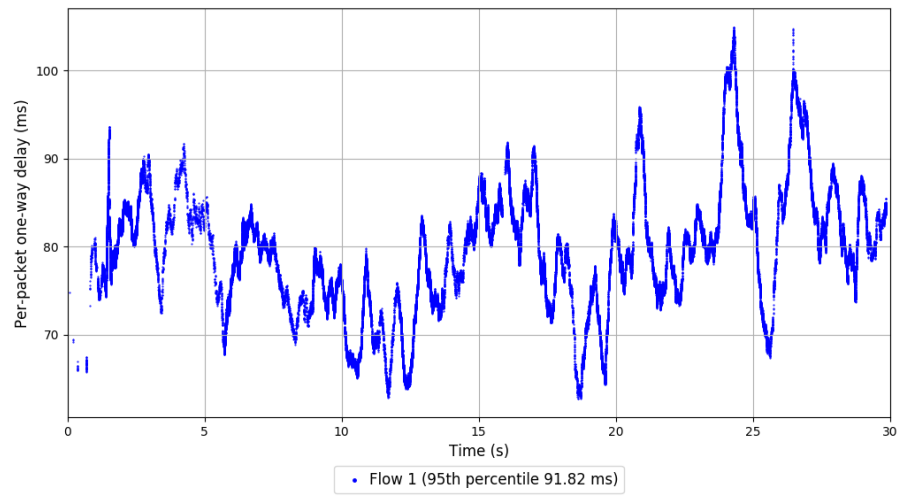
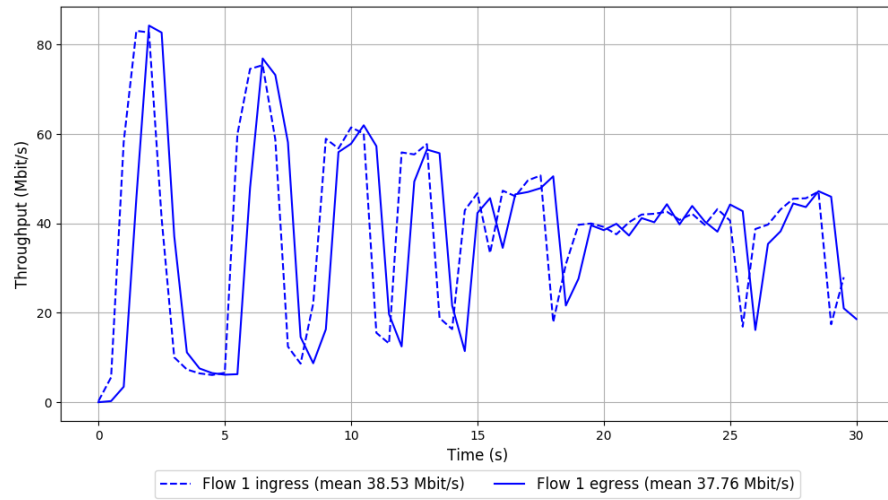
-- Flow 1:

Average throughput: 37.76 Mbit/s

95th percentile per-packet one-way delay: 91.823 ms

Loss rate: 2.42%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2019-01-21 22:50:21

End at: 2019-01-21 22:50:51

Local clock offset: 10.841 ms

Remote clock offset: 7.635 ms

Below is generated by plot.py at 2019-01-21 23:14:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 38.09 Mbit/s

95th percentile per-packet one-way delay: 66.906 ms

Loss rate: 2.43%

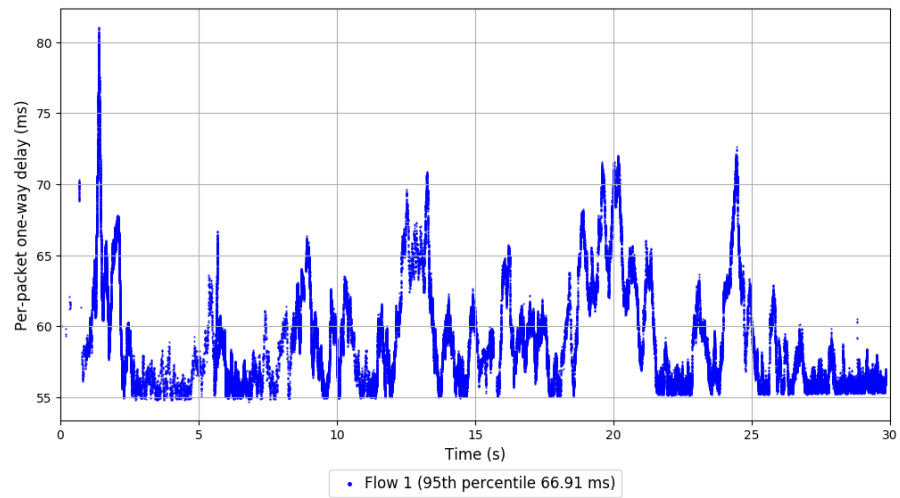
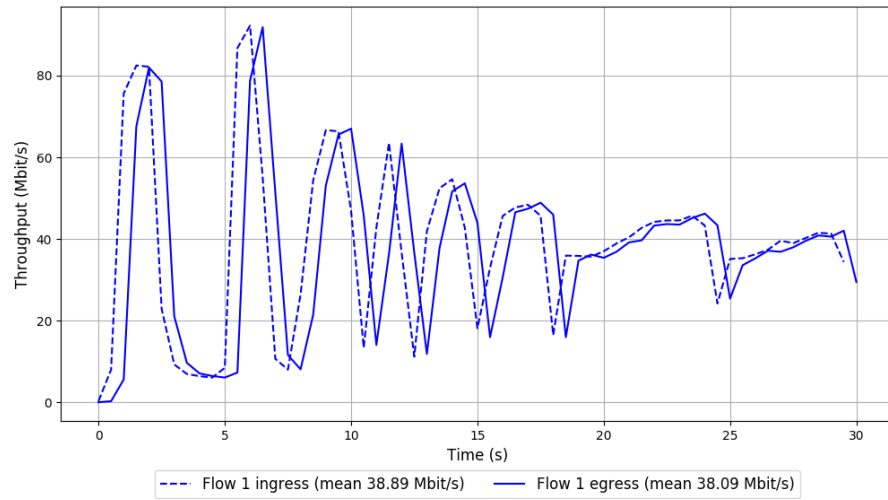
-- Flow 1:

Average throughput: 38.09 Mbit/s

95th percentile per-packet one-way delay: 66.906 ms

Loss rate: 2.43%

Run 5: Report of QUIC Cubic — Data Link



Run 1: Statistics of SCReAM

Start at: 2019-01-21 21:17:22

End at: 2019-01-21 21:17:52

Local clock offset: 0.932 ms

Remote clock offset: 8.211 ms

Below is generated by plot.py at 2019-01-21 23:14:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.13 Mbit/s

95th percentile per-packet one-way delay: 165.478 ms

Loss rate: 0.49%

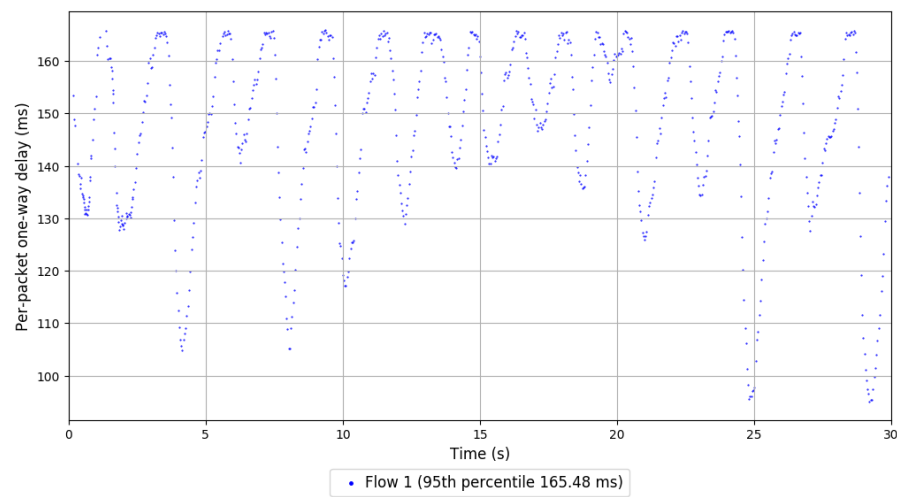
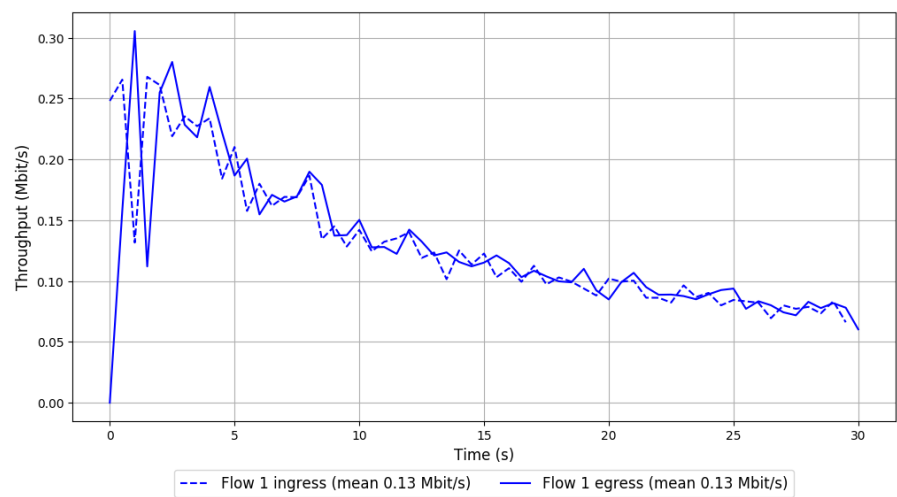
-- Flow 1:

Average throughput: 0.13 Mbit/s

95th percentile per-packet one-way delay: 165.478 ms

Loss rate: 0.49%

Run 1: Report of SReAM — Data Link



Run 2: Statistics of SCReAM

Start at: 2019-01-21 21:43:54

End at: 2019-01-21 21:44:24

Local clock offset: 0.474 ms

Remote clock offset: 7.453 ms

Below is generated by plot.py at 2019-01-21 23:14:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.15 Mbit/s

95th percentile per-packet one-way delay: 161.699 ms

Loss rate: 0.54%

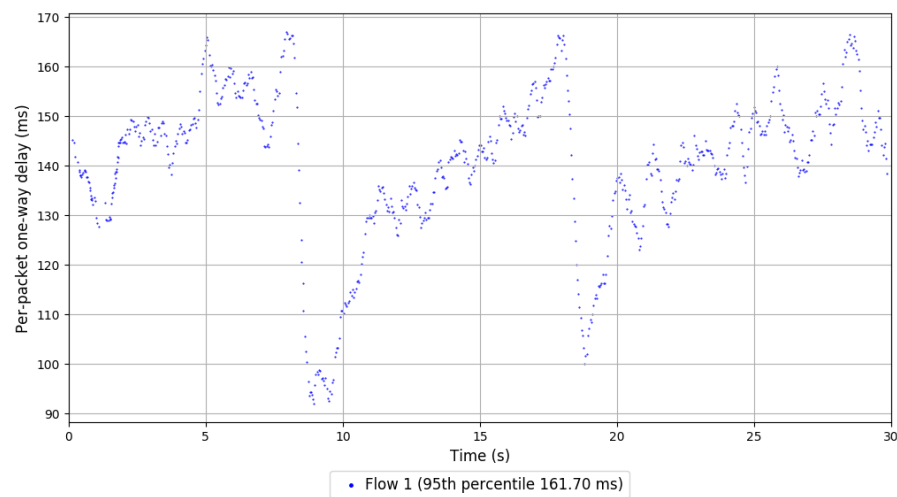
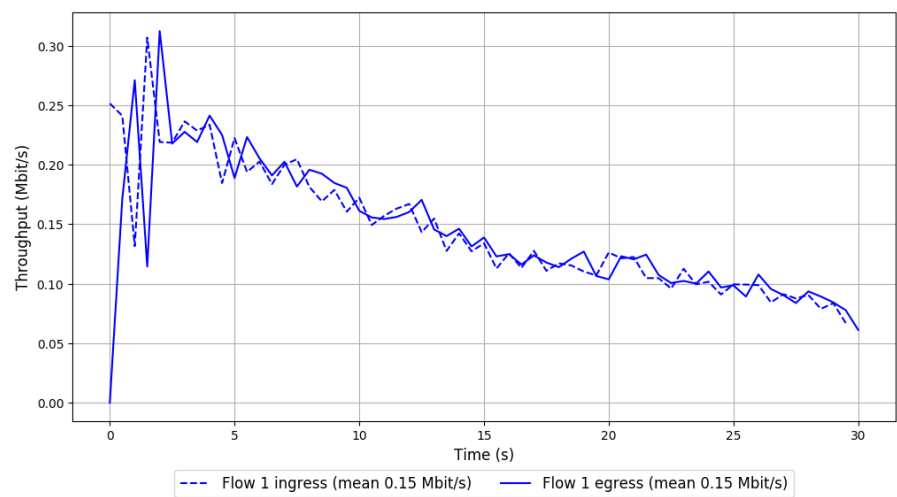
-- Flow 1:

Average throughput: 0.15 Mbit/s

95th percentile per-packet one-way delay: 161.699 ms

Loss rate: 0.54%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2019-01-21 22:09:17

End at: 2019-01-21 22:09:47

Local clock offset: 2.006 ms

Remote clock offset: 7.622 ms

Below is generated by plot.py at 2019-01-21 23:14:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.15 Mbit/s

95th percentile per-packet one-way delay: 122.498 ms

Loss rate: 0.29%

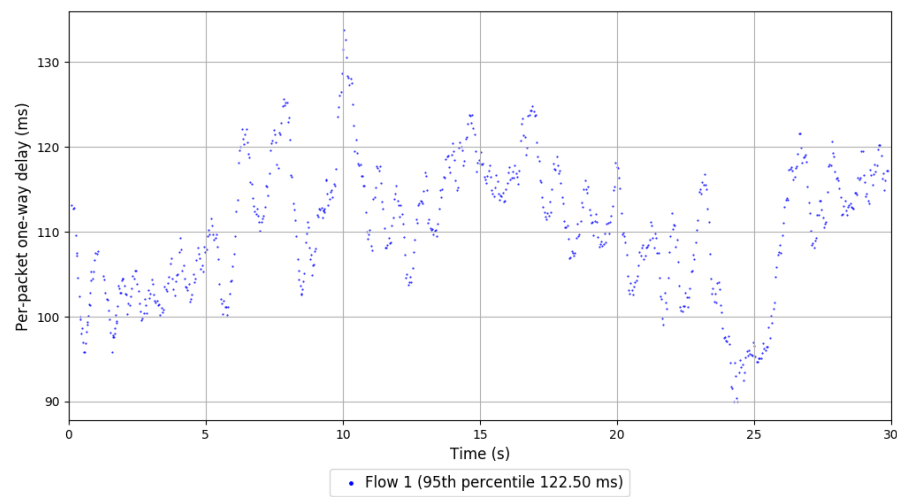
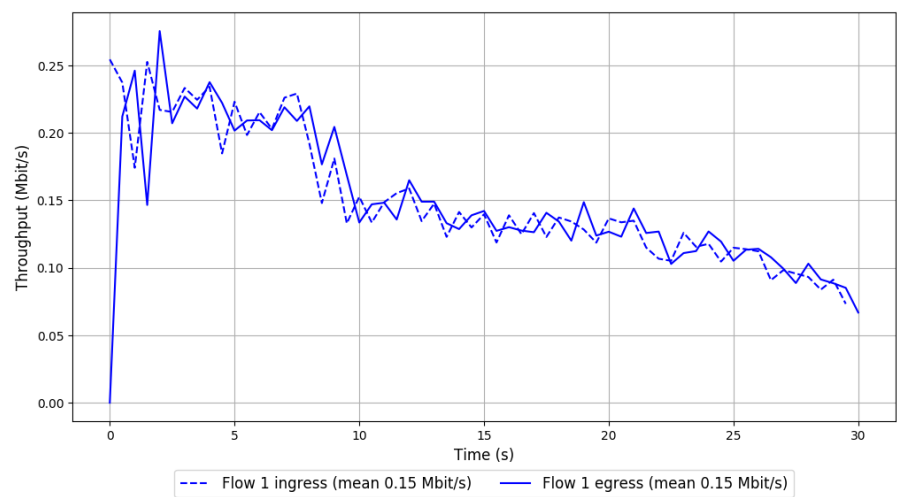
-- Flow 1:

Average throughput: 0.15 Mbit/s

95th percentile per-packet one-way delay: 122.498 ms

Loss rate: 0.29%

Run 3: Report of SReAM — Data Link



Run 4: Statistics of SCReAM

Start at: 2019-01-21 22:34:03

End at: 2019-01-21 22:34:33

Local clock offset: 14.354 ms

Remote clock offset: 7.566 ms

Below is generated by plot.py at 2019-01-21 23:14:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 70.674 ms

Loss rate: 0.39%

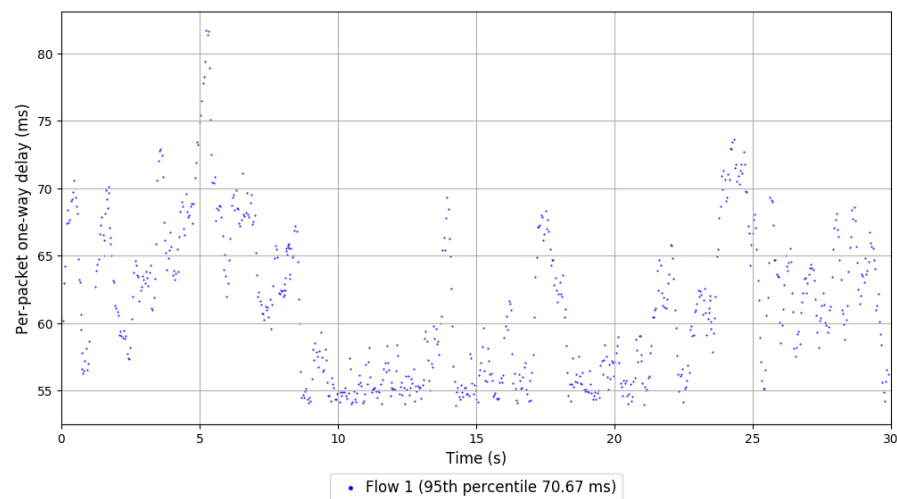
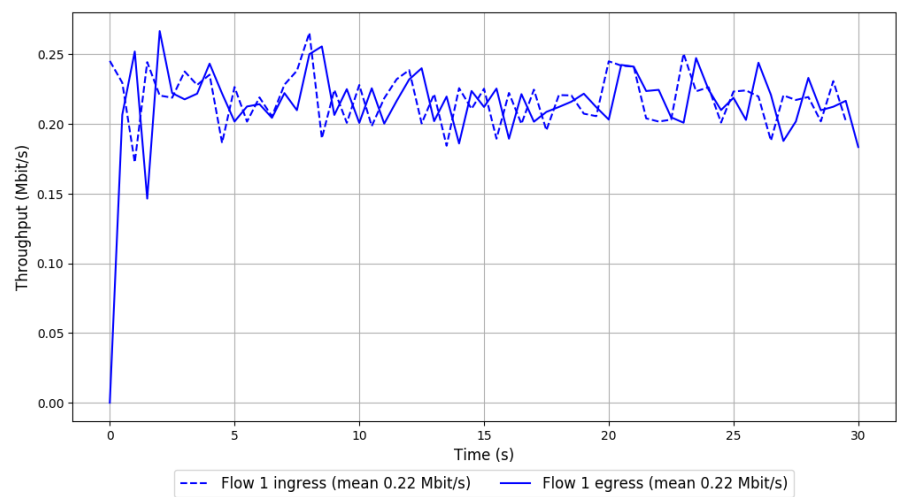
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 70.674 ms

Loss rate: 0.39%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2019-01-21 22:58:37

End at: 2019-01-21 22:59:07

Local clock offset: 4.814 ms

Remote clock offset: 7.664 ms

Below is generated by plot.py at 2019-01-21 23:14:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 65.543 ms

Loss rate: 0.38%

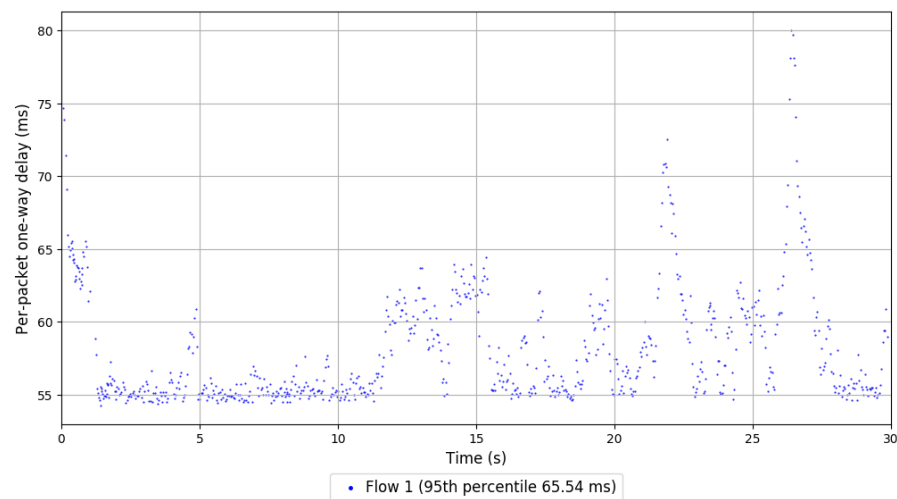
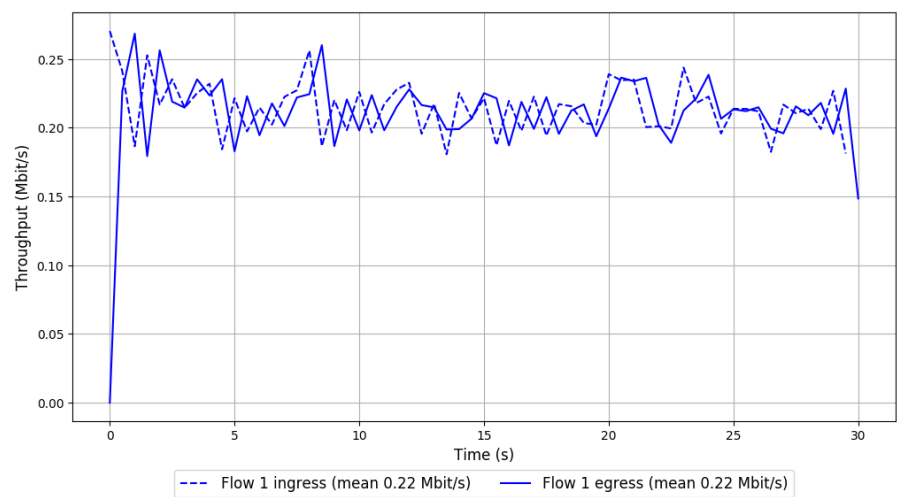
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 65.543 ms

Loss rate: 0.38%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2019-01-21 21:22:35

End at: 2019-01-21 21:23:06

Local clock offset: 1.221 ms

Remote clock offset: 8.211 ms

Below is generated by plot.py at 2019-01-21 23:14:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.91 Mbit/s

95th percentile per-packet one-way delay: 166.557 ms

Loss rate: 1.08%

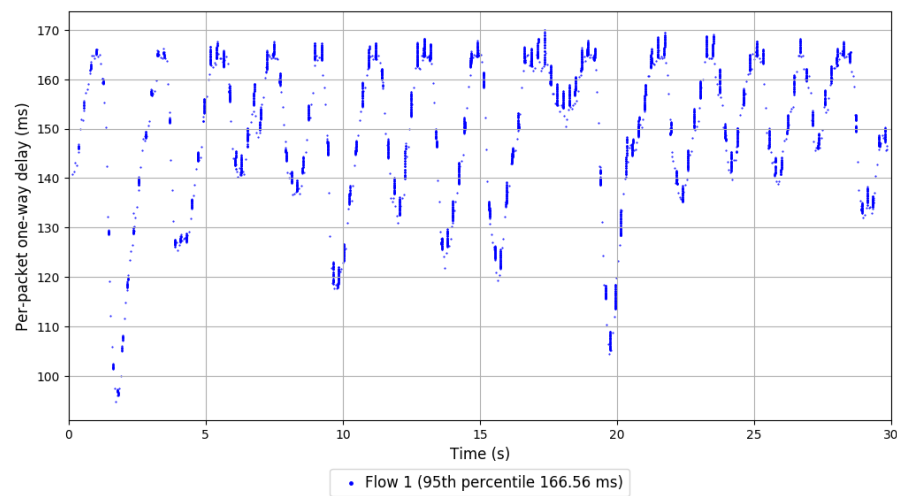
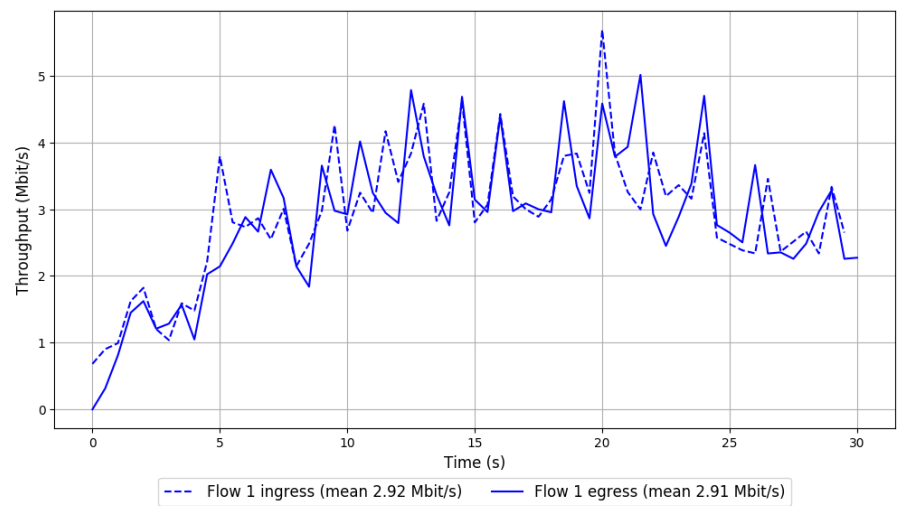
-- Flow 1:

Average throughput: 2.91 Mbit/s

95th percentile per-packet one-way delay: 166.557 ms

Loss rate: 1.08%

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

Start at: 2019-01-21 21:48:48

End at: 2019-01-21 21:49:18

Local clock offset: 0.802 ms

Remote clock offset: 7.554 ms

Below is generated by plot.py at 2019-01-21 23:14:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.98 Mbit/s

95th percentile per-packet one-way delay: 156.003 ms

Loss rate: 0.70%

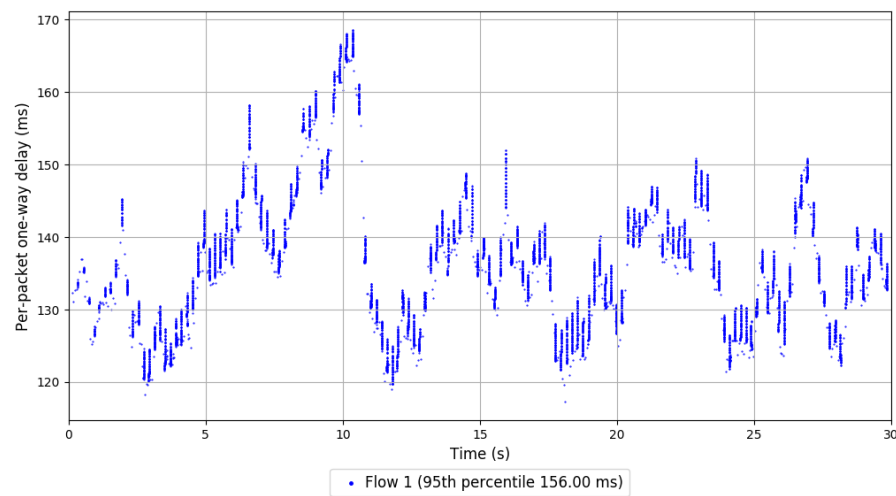
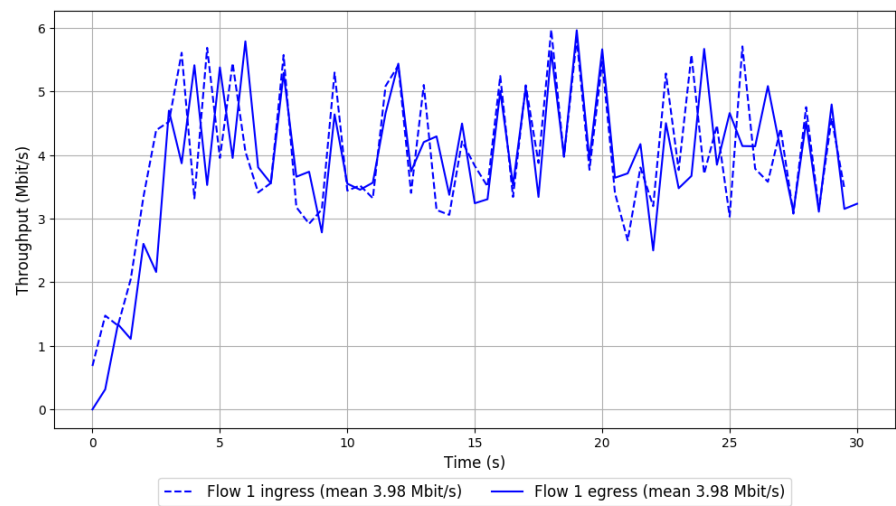
-- Flow 1:

Average throughput: 3.98 Mbit/s

95th percentile per-packet one-way delay: 156.003 ms

Loss rate: 0.70%

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

Start at: 2019-01-21 22:13:59

End at: 2019-01-21 22:14:29

Local clock offset: 1.978 ms

Remote clock offset: 7.501 ms

Below is generated by plot.py at 2019-01-21 23:14:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 4.60 Mbit/s

95th percentile per-packet one-way delay: 116.571 ms

Loss rate: 0.70%

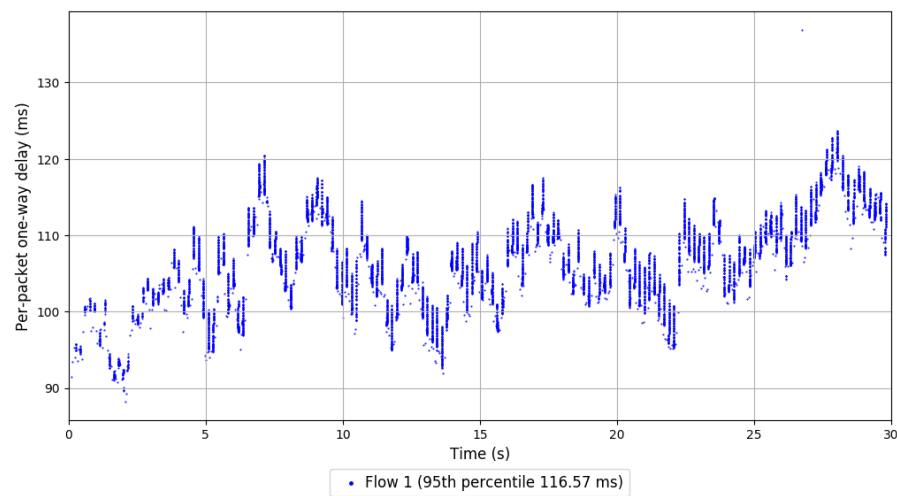
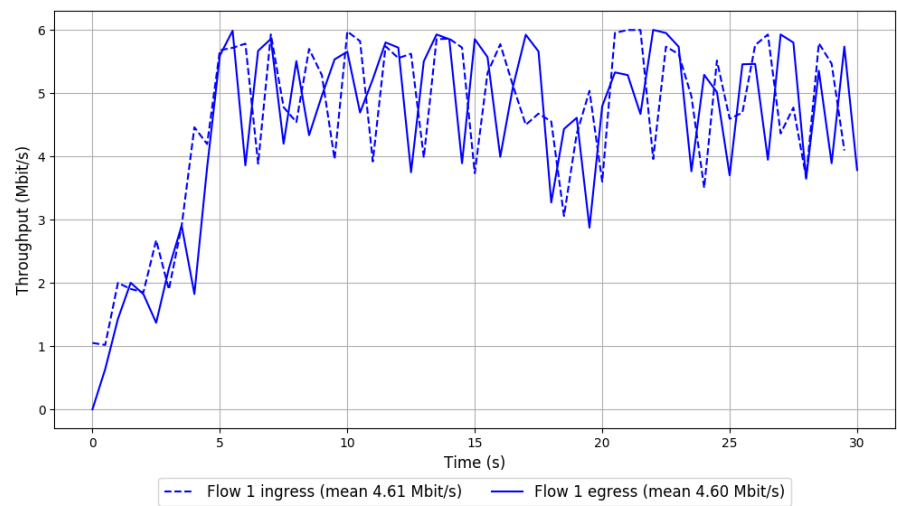
-- Flow 1:

Average throughput: 4.60 Mbit/s

95th percentile per-packet one-way delay: 116.571 ms

Loss rate: 0.70%

Run 3: Report of Sprout — Data Link



Run 4: Statistics of Sprout

Start at: 2019-01-21 22:38:41

End at: 2019-01-21 22:39:11

Local clock offset: 15.57 ms

Remote clock offset: 7.513 ms

Below is generated by plot.py at 2019-01-21 23:14:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 6.95 Mbit/s

95th percentile per-packet one-way delay: 66.047 ms

Loss rate: 0.23%

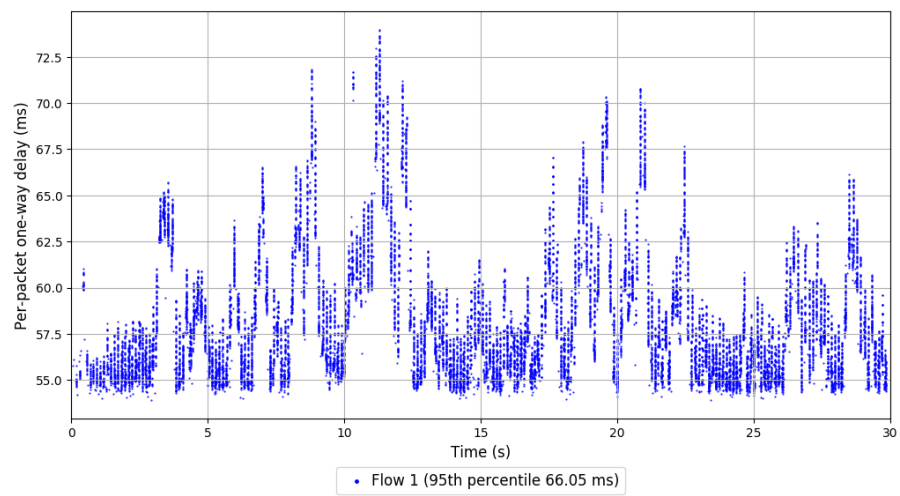
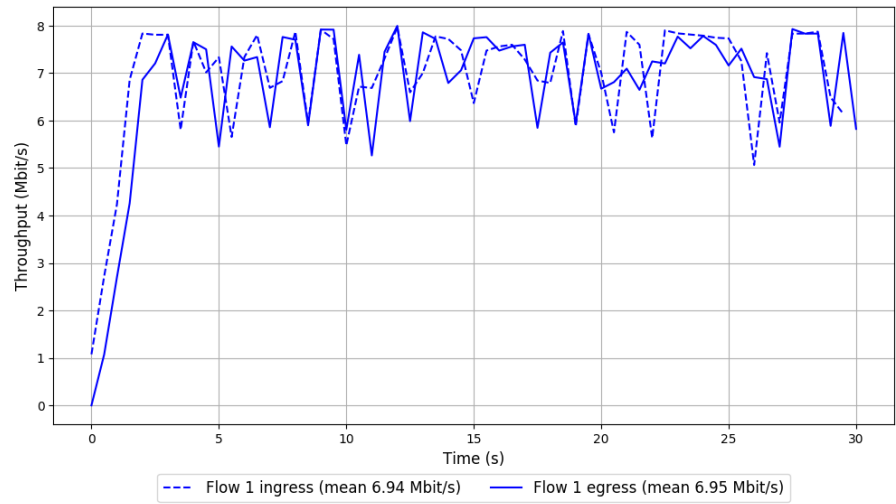
-- Flow 1:

Average throughput: 6.95 Mbit/s

95th percentile per-packet one-way delay: 66.047 ms

Loss rate: 0.23%

Run 4: Report of Sprout — Data Link



Run 5: Statistics of Sprout

Start at: 2019-01-21 23:03:15

End at: 2019-01-21 23:03:45

Local clock offset: 3.065 ms

Remote clock offset: 7.613 ms

Below is generated by plot.py at 2019-01-21 23:14:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 6.62 Mbit/s

95th percentile per-packet one-way delay: 81.516 ms

Loss rate: 0.19%

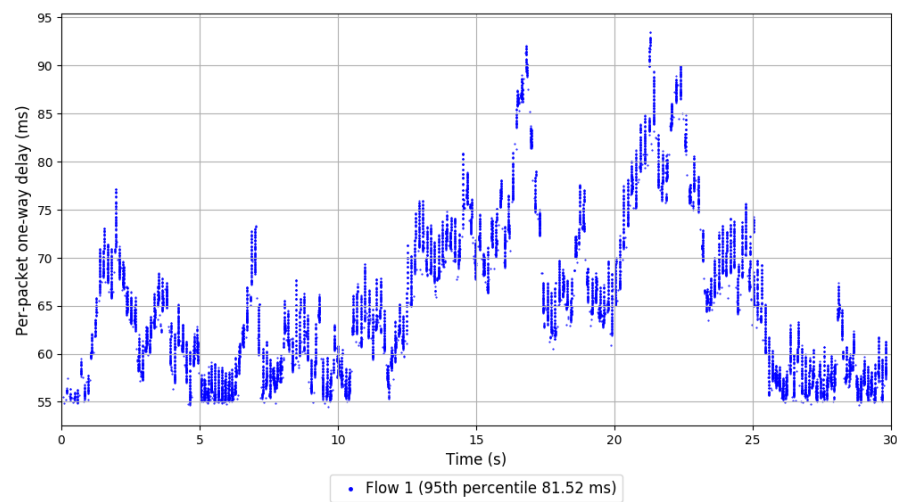
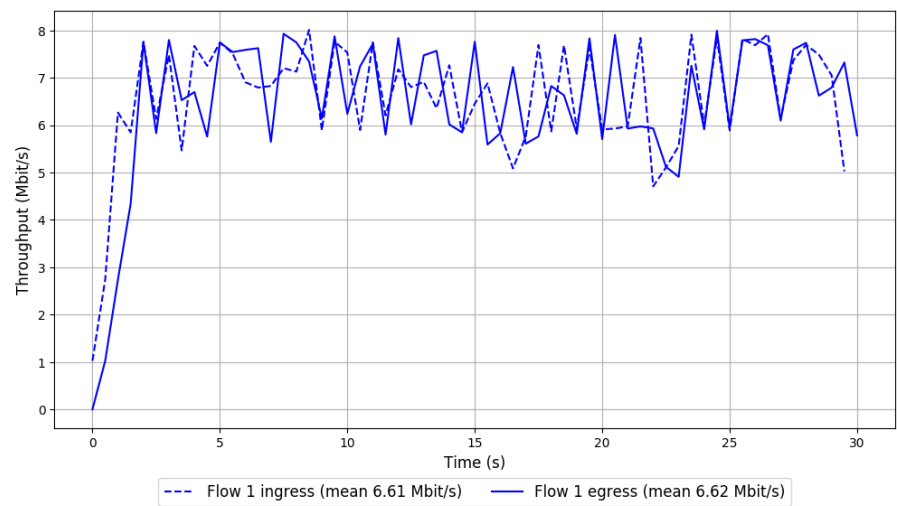
-- Flow 1:

Average throughput: 6.62 Mbit/s

95th percentile per-packet one-way delay: 81.516 ms

Loss rate: 0.19%

Run 5: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2019-01-21 21:23:48

End at: 2019-01-21 21:24:18

Local clock offset: 1.171 ms

Remote clock offset: 7.304 ms

Below is generated by plot.py at 2019-01-21 23:14:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 11.19 Mbit/s

95th percentile per-packet one-way delay: 166.062 ms

Loss rate: 4.06%

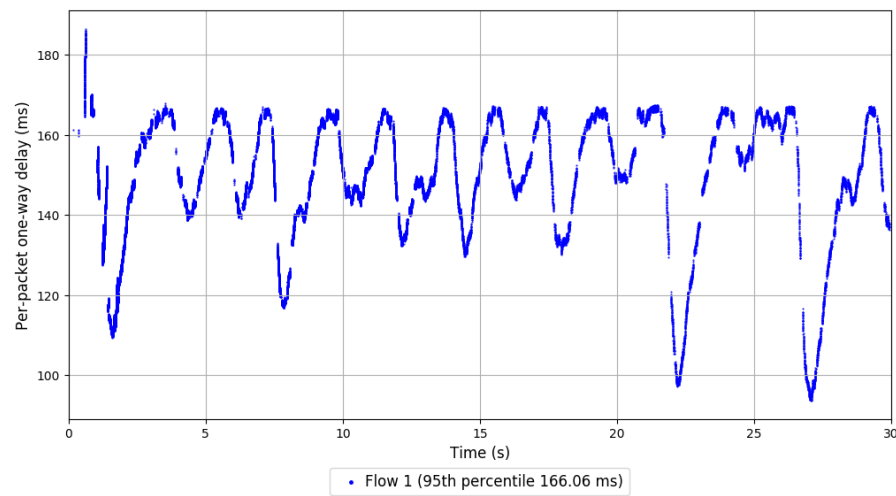
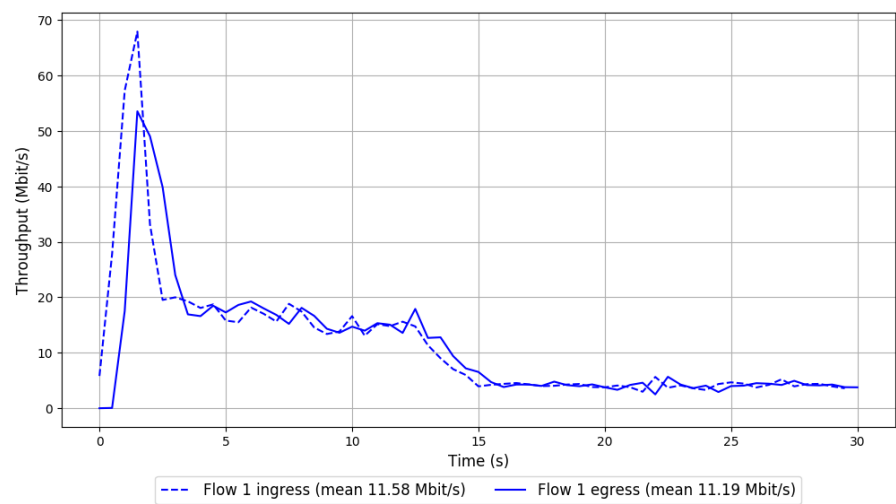
-- Flow 1:

Average throughput: 11.19 Mbit/s

95th percentile per-packet one-way delay: 166.062 ms

Loss rate: 4.06%

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



Run 2: Statistics of TaoVA-100x

Start at: 2019-01-21 21:50:00

End at: 2019-01-21 21:50:30

Local clock offset: 0.968 ms

Remote clock offset: 7.329 ms

Below is generated by plot.py at 2019-01-21 23:15:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 36.70 Mbit/s

95th percentile per-packet one-way delay: 153.577 ms

Loss rate: 8.95%

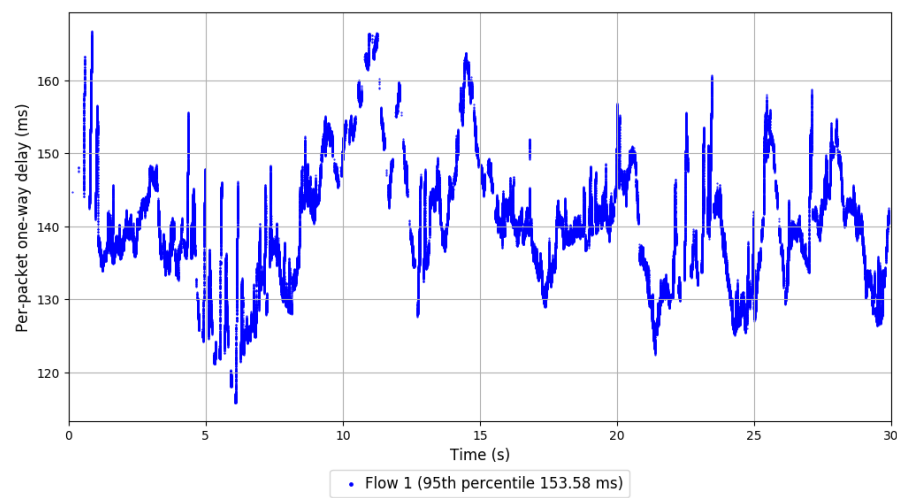
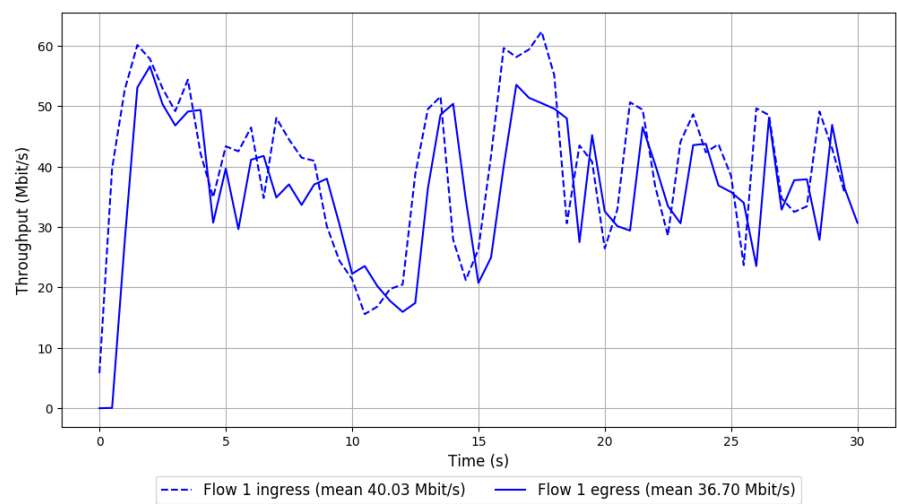
-- Flow 1:

Average throughput: 36.70 Mbit/s

95th percentile per-packet one-way delay: 153.577 ms

Loss rate: 8.95%

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



Run 3: Statistics of TaoVA-100x

Start at: 2019-01-21 22:15:10

End at: 2019-01-21 22:15:40

Local clock offset: 1.769 ms

Remote clock offset: 7.895 ms

Below is generated by plot.py at 2019-01-21 23:15:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 36.99 Mbit/s

95th percentile per-packet one-way delay: 108.839 ms

Loss rate: 17.86%

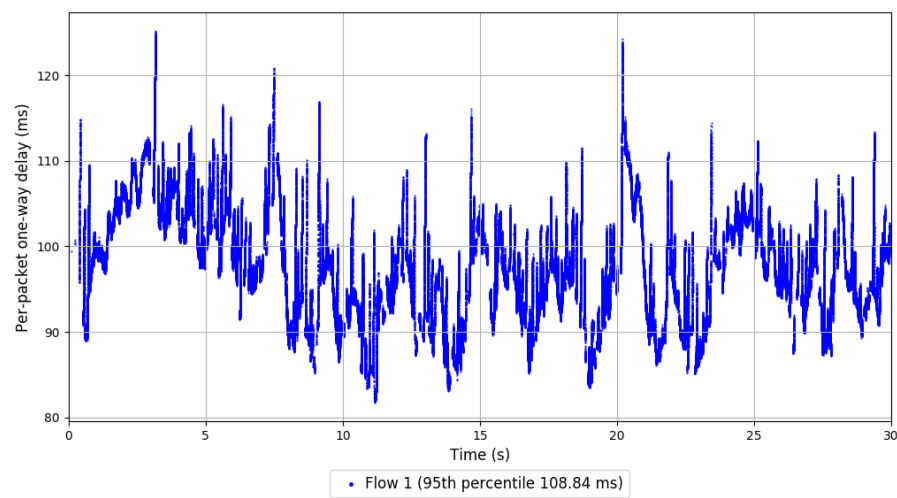
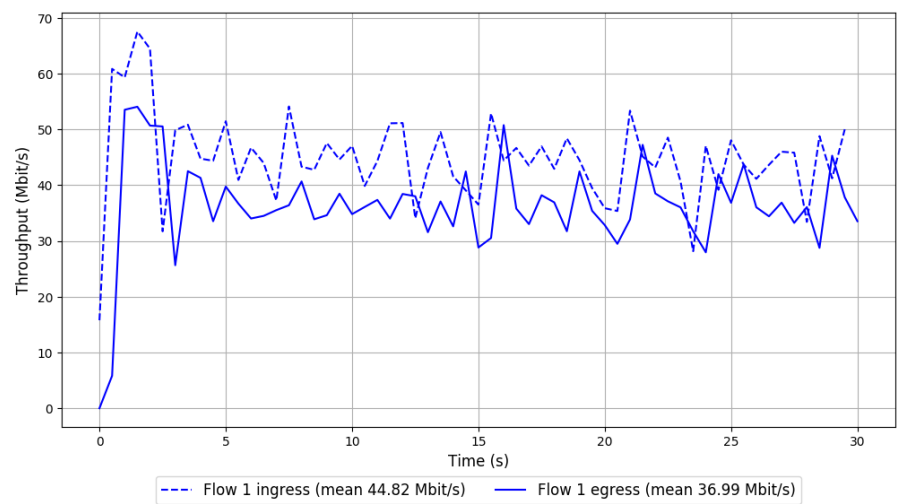
-- Flow 1:

Average throughput: 36.99 Mbit/s

95th percentile per-packet one-way delay: 108.839 ms

Loss rate: 17.86%

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



Run 4: Statistics of TaoVA-100x

Start at: 2019-01-21 22:39:50

End at: 2019-01-21 22:40:20

Local clock offset: 15.593 ms

Remote clock offset: 8.577 ms

Below is generated by plot.py at 2019-01-21 23:15:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 36.91 Mbit/s

95th percentile per-packet one-way delay: 83.500 ms

Loss rate: 19.18%

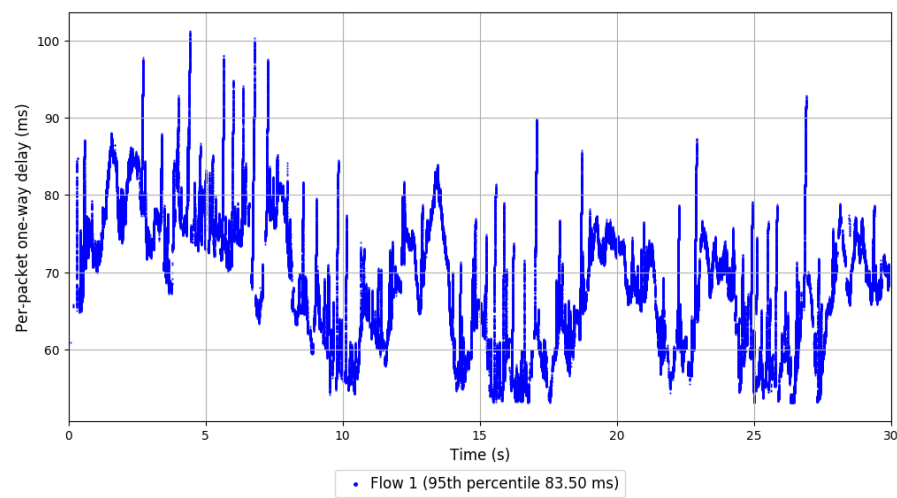
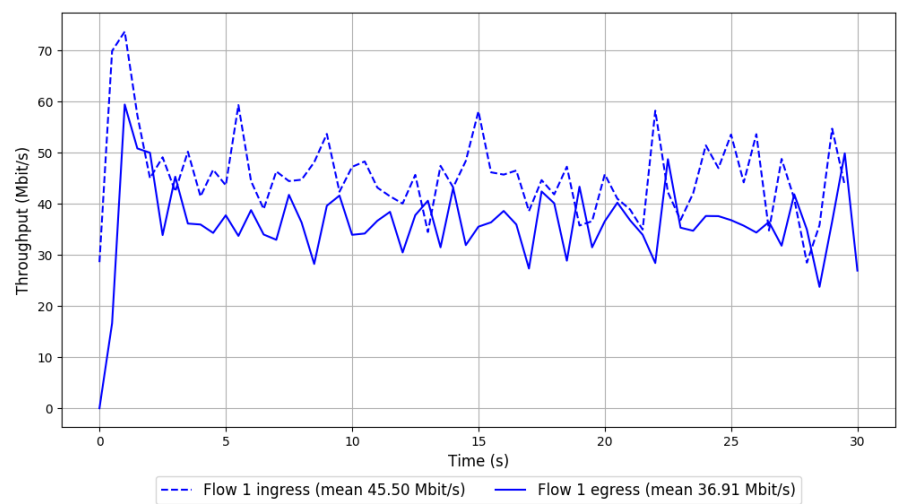
-- Flow 1:

Average throughput: 36.91 Mbit/s

95th percentile per-packet one-way delay: 83.500 ms

Loss rate: 19.18%

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



Run 5: Statistics of TaoVA-100x

Start at: 2019-01-21 23:04:24

End at: 2019-01-21 23:04:54

Local clock offset: 2.71 ms

Remote clock offset: 7.18 ms

Below is generated by plot.py at 2019-01-21 23:15:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 23.90 Mbit/s

95th percentile per-packet one-way delay: 74.542 ms

Loss rate: 17.09%

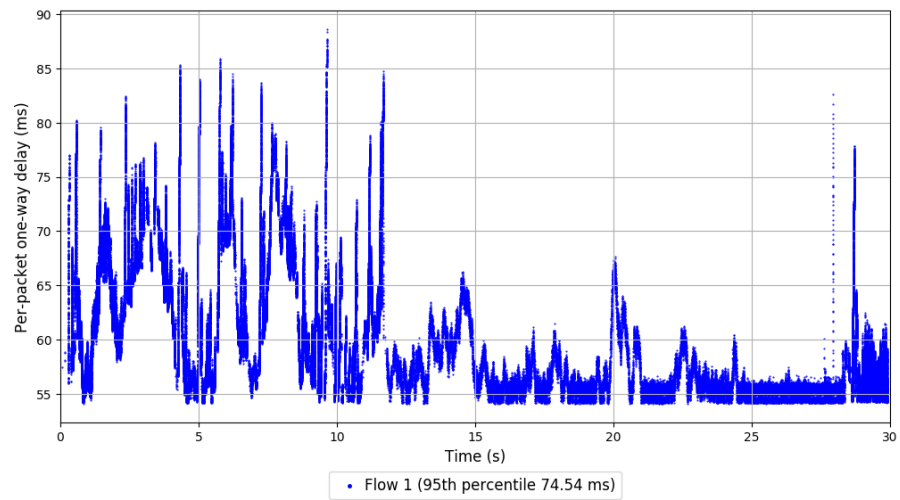
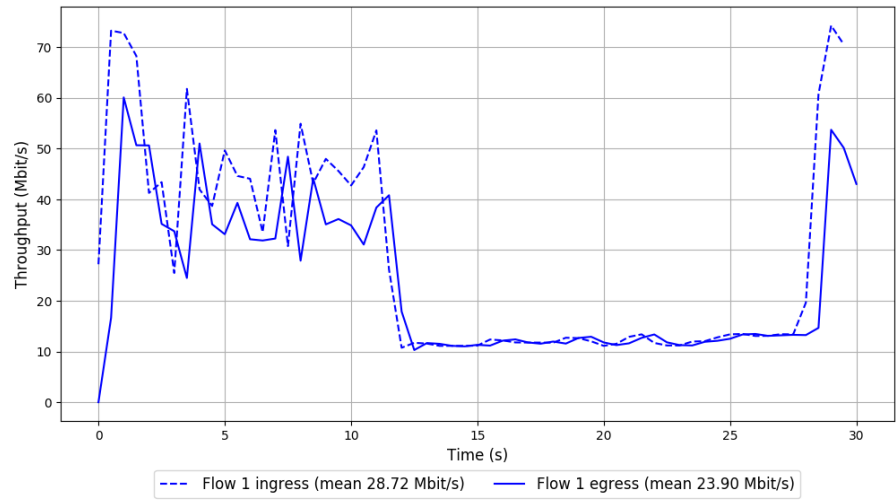
-- Flow 1:

Average throughput: 23.90 Mbit/s

95th percentile per-packet one-way delay: 74.542 ms

Loss rate: 17.09%

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



Run 1: Statistics of TCP Vegas

Start at: 2019-01-21 21:30:25

End at: 2019-01-21 21:30:55

Local clock offset: 1.019 ms

Remote clock offset: 7.124 ms

Below is generated by plot.py at 2019-01-21 23:15:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.38 Mbit/s

95th percentile per-packet one-way delay: 166.365 ms

Loss rate: 0.37%

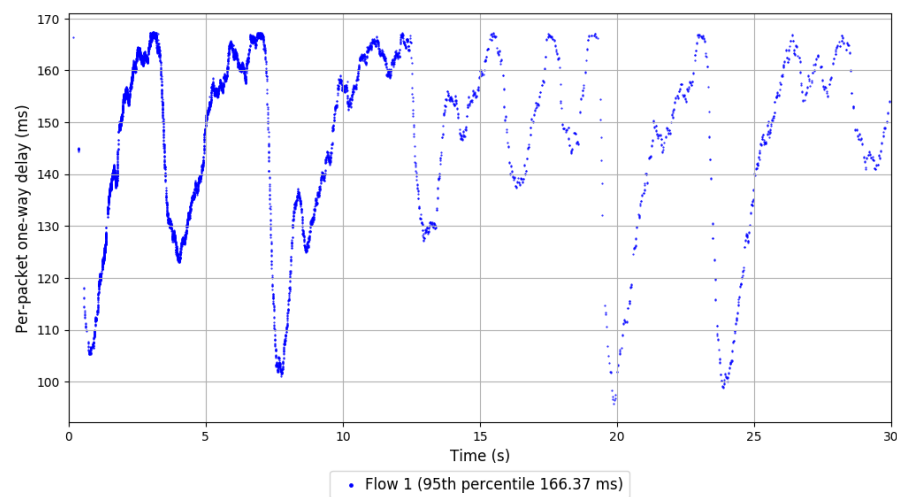
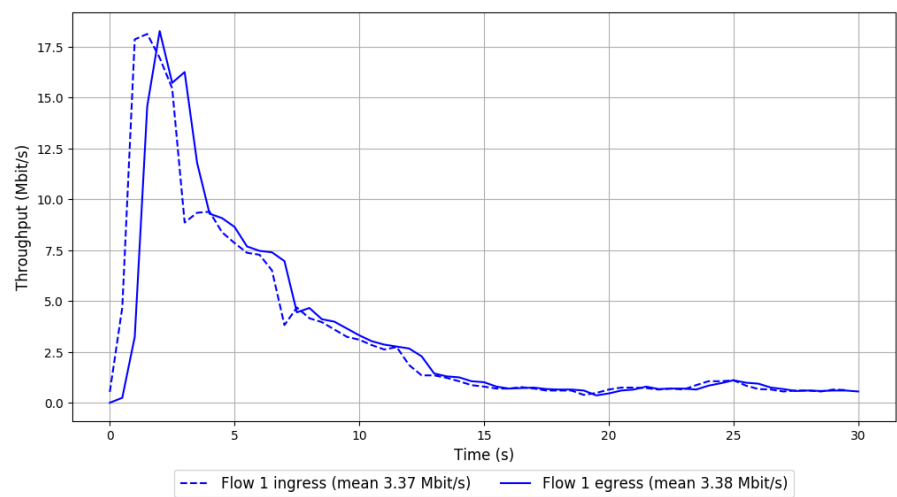
-- Flow 1:

Average throughput: 3.38 Mbit/s

95th percentile per-packet one-way delay: 166.365 ms

Loss rate: 0.37%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2019-01-21 21:56:01

End at: 2019-01-21 21:56:31

Local clock offset: 1.625 ms

Remote clock offset: 7.339 ms

Below is generated by plot.py at 2019-01-21 23:15:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 6.91 Mbit/s

95th percentile per-packet one-way delay: 152.991 ms

Loss rate: 0.36%

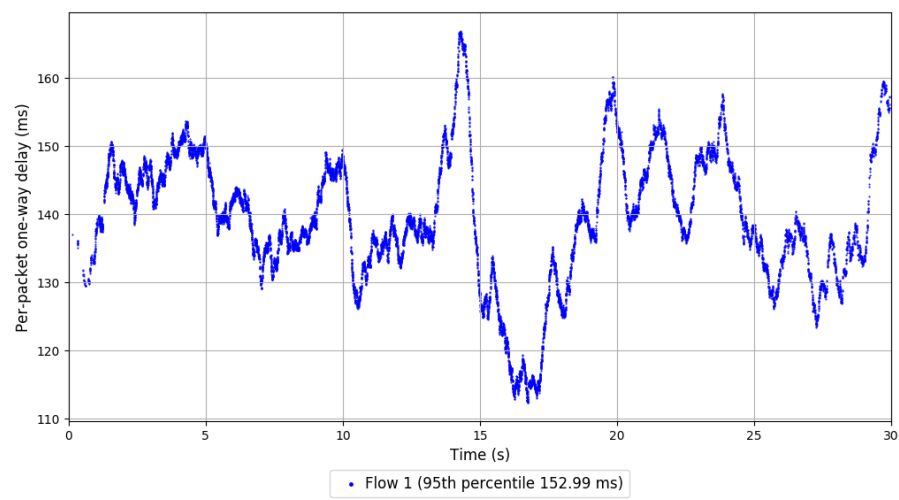
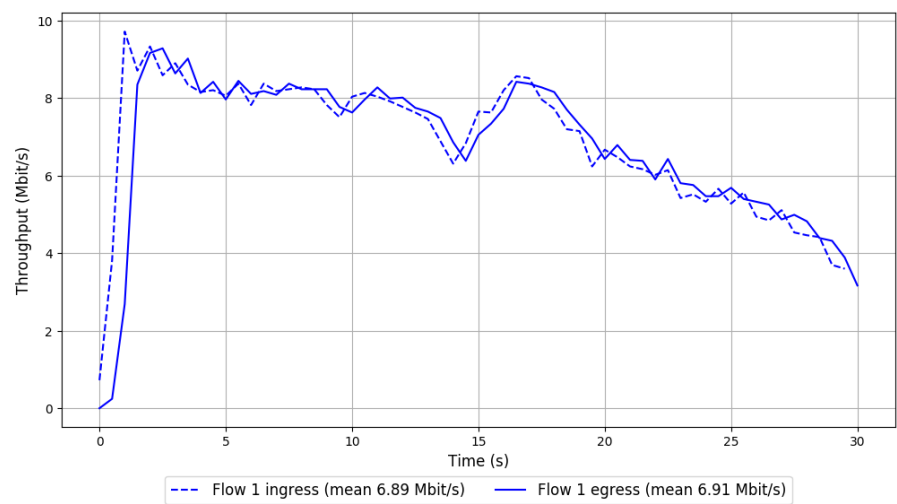
-- Flow 1:

Average throughput: 6.91 Mbit/s

95th percentile per-packet one-way delay: 152.991 ms

Loss rate: 0.36%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2019-01-21 22:21:04

End at: 2019-01-21 22:21:34

Local clock offset: 7.442 ms

Remote clock offset: 8.771 ms

Below is generated by plot.py at 2019-01-21 23:15:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.86 Mbit/s

95th percentile per-packet one-way delay: 101.462 ms

Loss rate: 0.22%

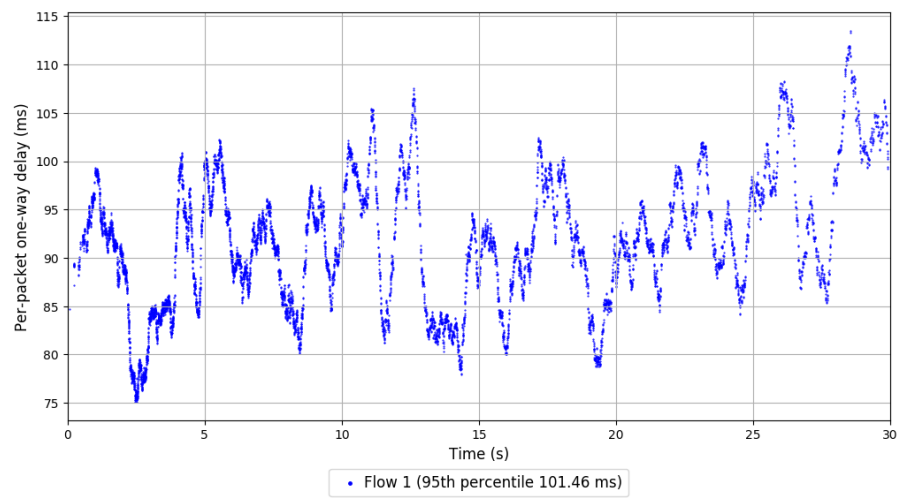
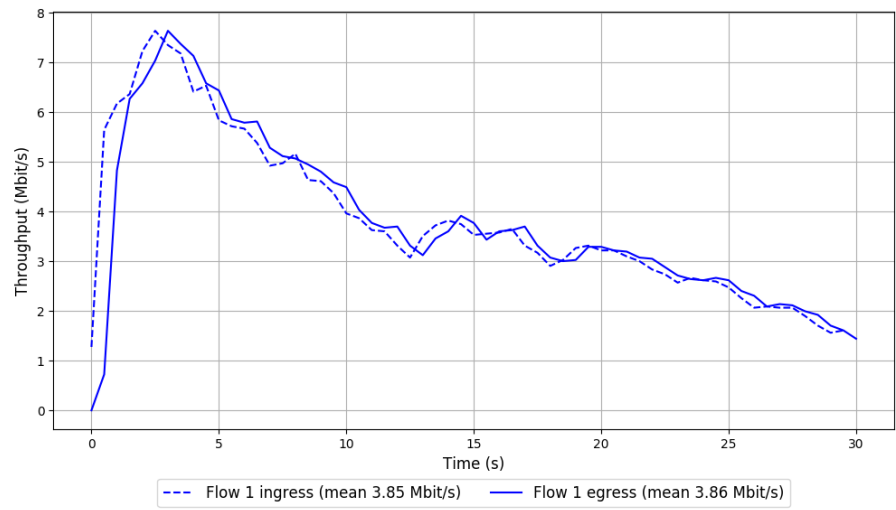
-- Flow 1:

Average throughput: 3.86 Mbit/s

95th percentile per-packet one-way delay: 101.462 ms

Loss rate: 0.22%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2019-01-21 22:45:41

End at: 2019-01-21 22:46:11

Local clock offset: 16.951 ms

Remote clock offset: 7.784 ms

Below is generated by plot.py at 2019-01-21 23:15:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 32.11 Mbit/s

95th percentile per-packet one-way delay: 63.565 ms

Loss rate: 1.85%

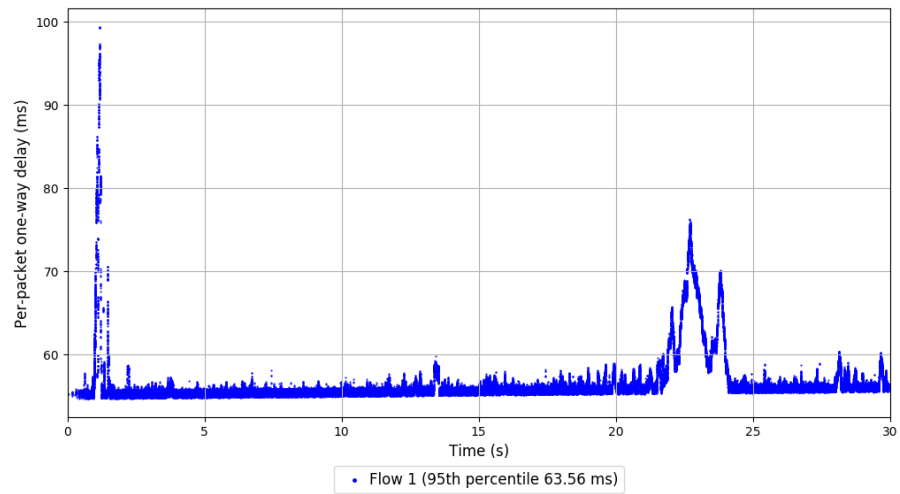
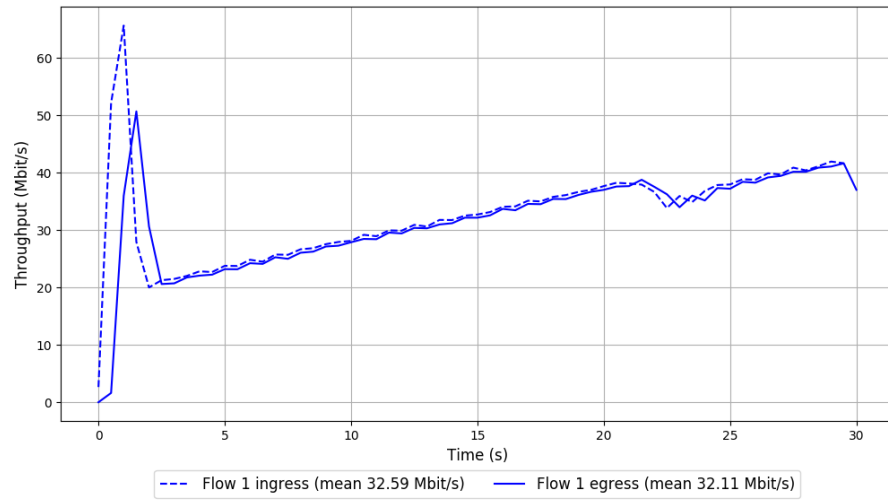
-- Flow 1:

Average throughput: 32.11 Mbit/s

95th percentile per-packet one-way delay: 63.565 ms

Loss rate: 1.85%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2019-01-21 23:10:15

End at: 2019-01-21 23:10:45

Local clock offset: 1.354 ms

Remote clock offset: 7.245 ms

Below is generated by plot.py at 2019-01-21 23:15:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.64 Mbit/s

95th percentile per-packet one-way delay: 110.410 ms

Loss rate: 0.46%

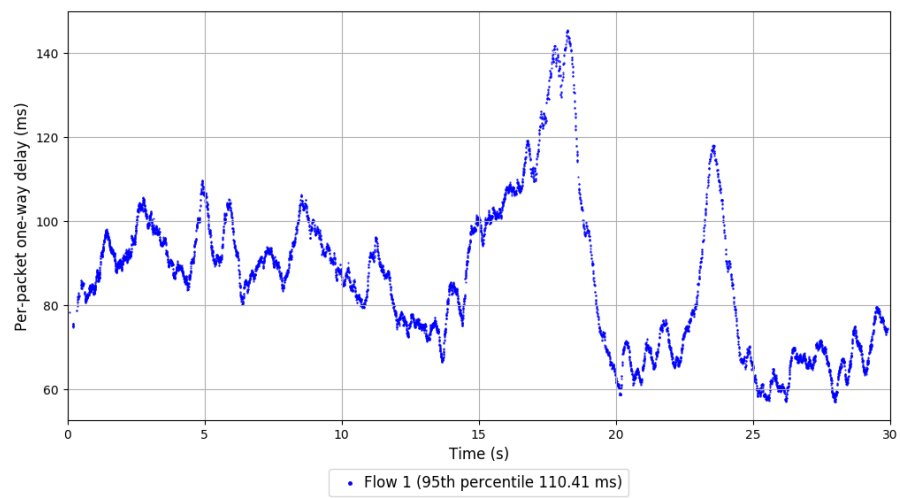
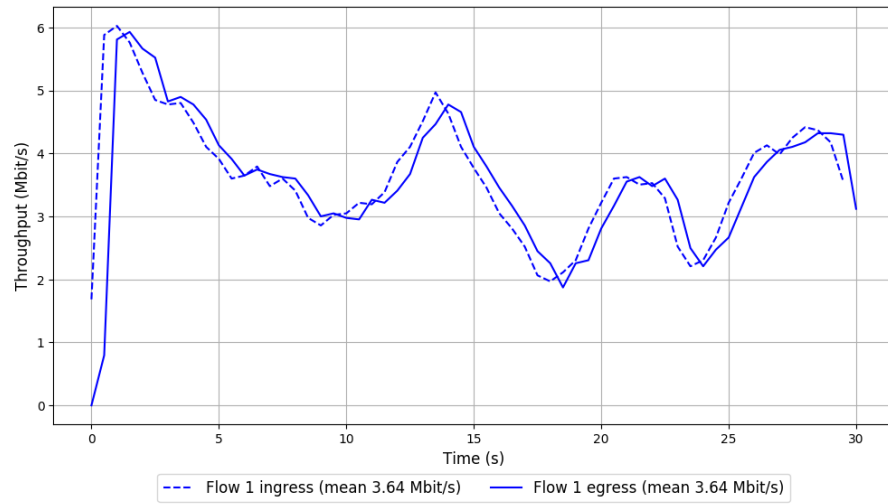
-- Flow 1:

Average throughput: 3.64 Mbit/s

95th percentile per-packet one-way delay: 110.410 ms

Loss rate: 0.46%

Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2019-01-21 21:05:05

End at: 2019-01-21 21:05:35

Local clock offset: 1.333 ms

Remote clock offset: 7.702 ms

Below is generated by plot.py at 2019-01-21 23:15:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 28.38 Mbit/s

95th percentile per-packet one-way delay: 233.649 ms

Loss rate: 10.17%

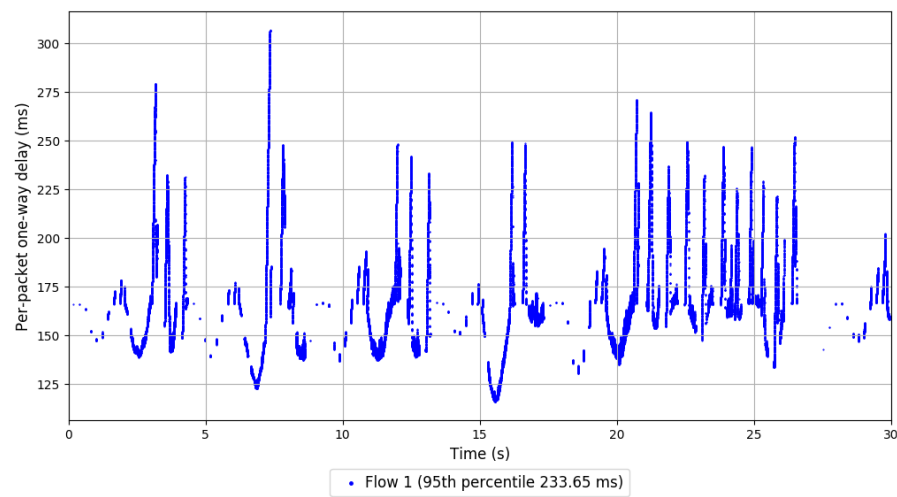
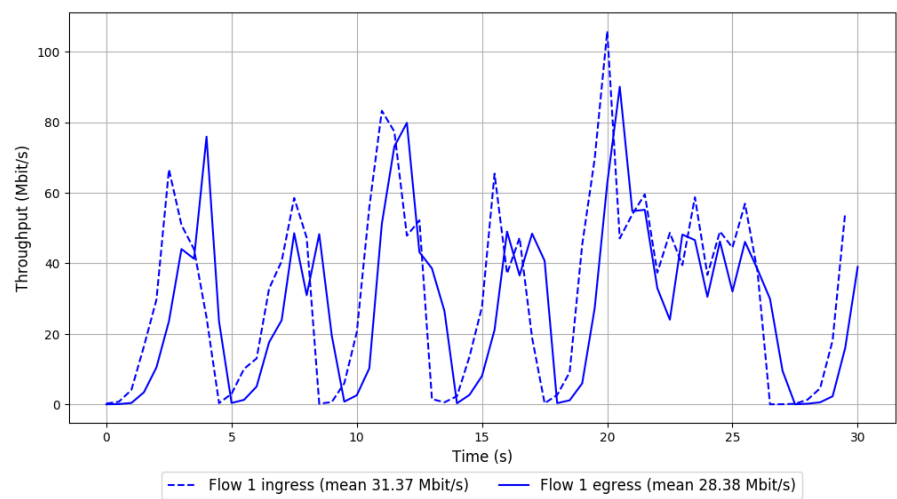
-- Flow 1:

Average throughput: 28.38 Mbit/s

95th percentile per-packet one-way delay: 233.649 ms

Loss rate: 10.17%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2019-01-21 21:34:01

End at: 2019-01-21 21:34:31

Local clock offset: 0.642 ms

Remote clock offset: 7.294 ms

Below is generated by plot.py at 2019-01-21 23:15:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 31.10 Mbit/s

95th percentile per-packet one-way delay: 311.810 ms

Loss rate: 10.99%

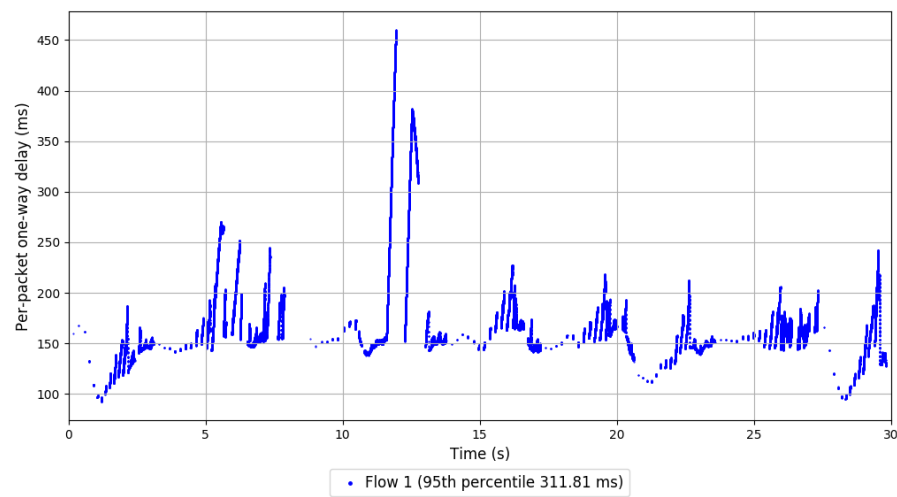
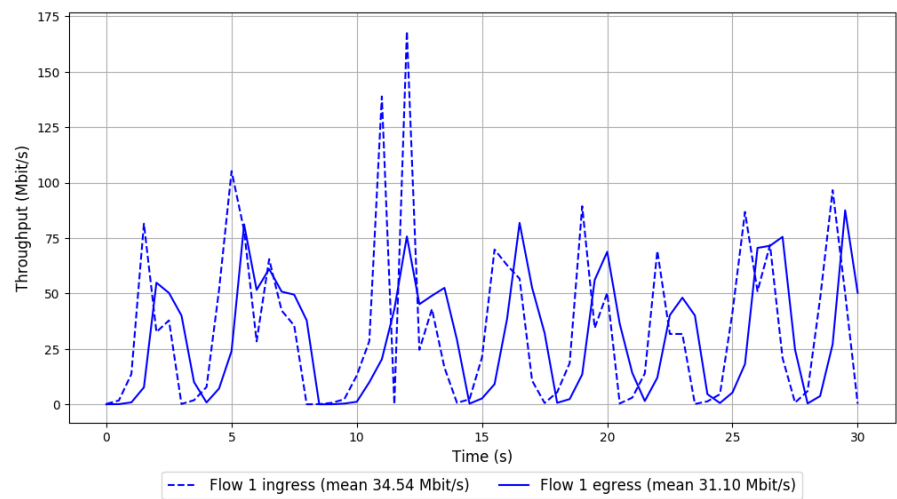
-- Flow 1:

Average throughput: 31.10 Mbit/s

95th percentile per-packet one-way delay: 311.810 ms

Loss rate: 10.99%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2019-01-21 21:59:34

End at: 2019-01-21 22:00:04

Local clock offset: 1.98 ms

Remote clock offset: 7.64 ms

Below is generated by plot.py at 2019-01-21 23:15:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 30.39 Mbit/s

95th percentile per-packet one-way delay: 190.647 ms

Loss rate: 3.49%

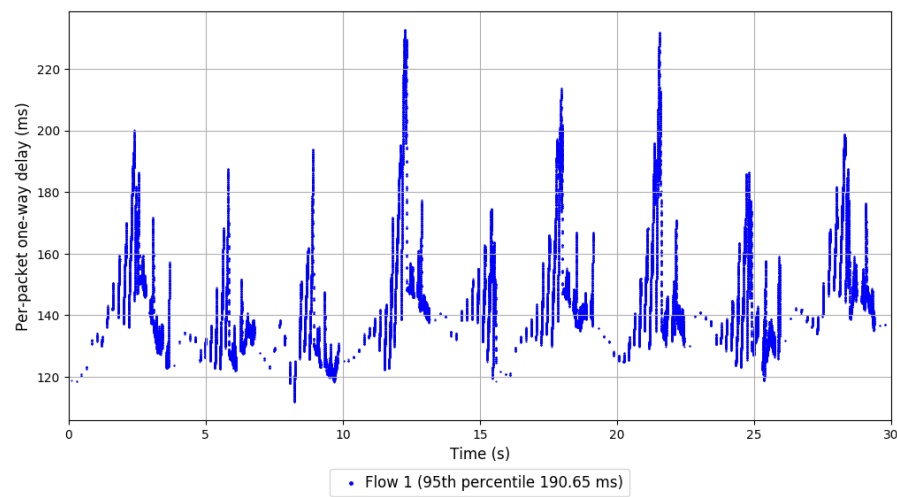
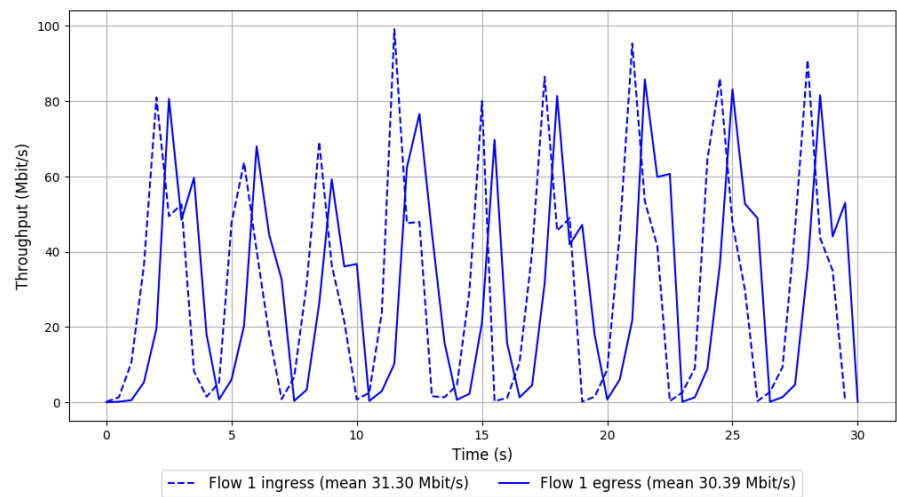
-- Flow 1:

Average throughput: 30.39 Mbit/s

95th percentile per-packet one-way delay: 190.647 ms

Loss rate: 3.49%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2019-01-21 22:24:34

End at: 2019-01-21 22:25:04

Local clock offset: 10.142 ms

Remote clock offset: 7.739 ms

Below is generated by plot.py at 2019-01-21 23:15:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 38.41 Mbit/s

95th percentile per-packet one-way delay: 227.430 ms

Loss rate: 47.28%

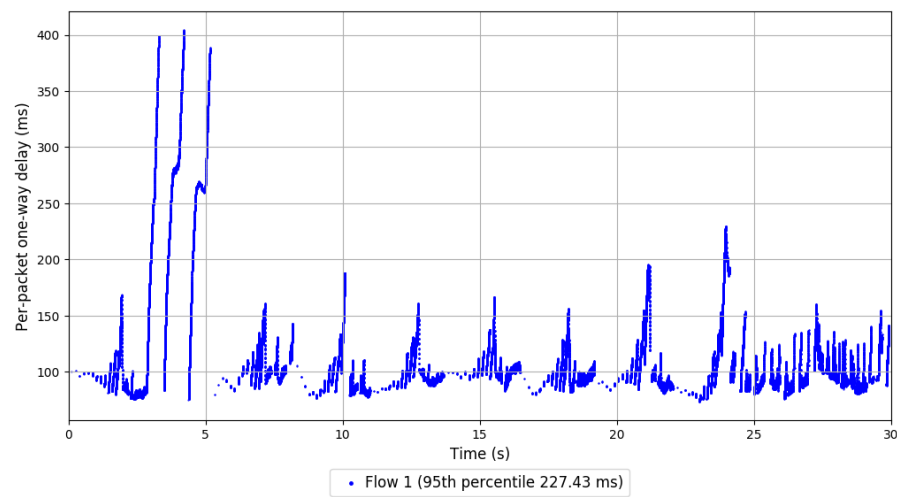
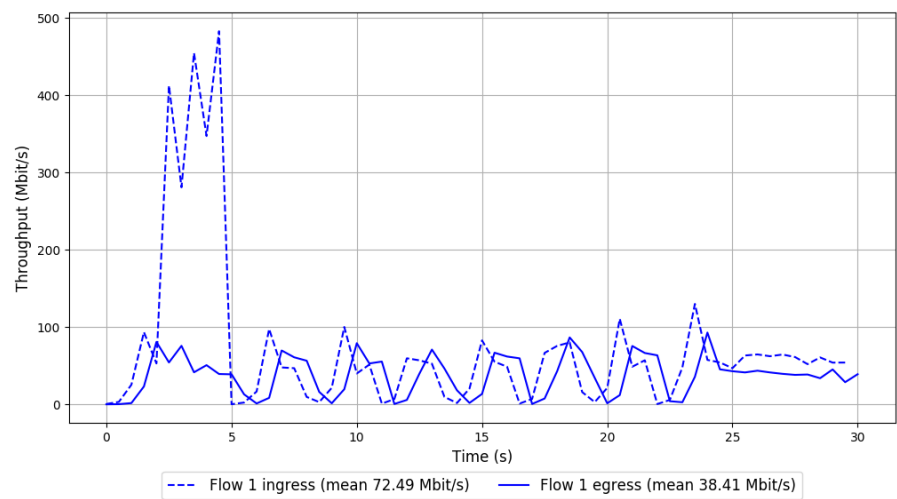
-- Flow 1:

Average throughput: 38.41 Mbit/s

95th percentile per-packet one-way delay: 227.430 ms

Loss rate: 47.28%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2019-01-21 22:49:10

End at: 2019-01-21 22:49:40

Local clock offset: 12.174 ms

Remote clock offset: 7.721 ms

Below is generated by plot.py at 2019-01-21 23:15:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 38.42 Mbit/s

95th percentile per-packet one-way delay: 123.848 ms

Loss rate: 21.77%

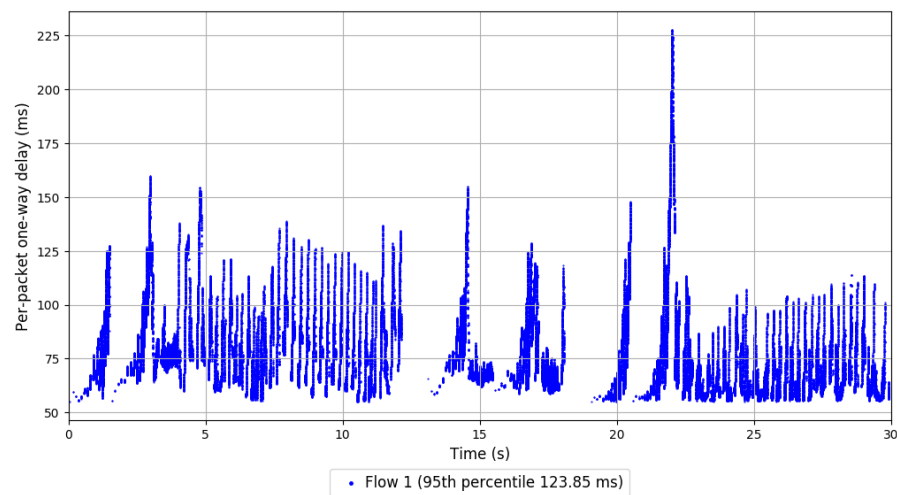
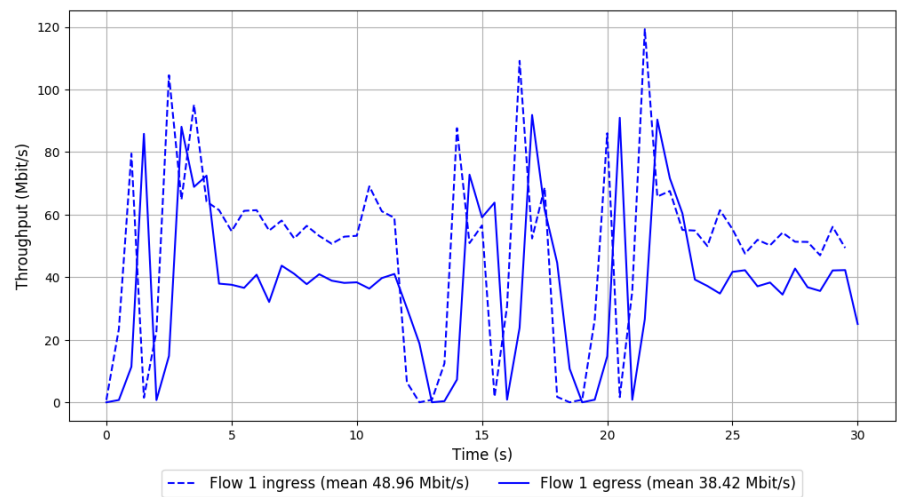
-- Flow 1:

Average throughput: 38.42 Mbit/s

95th percentile per-packet one-way delay: 123.848 ms

Loss rate: 21.77%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2019-01-21 21:08:10

End at: 2019-01-21 21:08:40

Local clock offset: 1.286 ms

Remote clock offset: 8.696 ms

Below is generated by plot.py at 2019-01-21 23:15:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.81 Mbit/s

95th percentile per-packet one-way delay: 165.618 ms

Loss rate: 1.29%

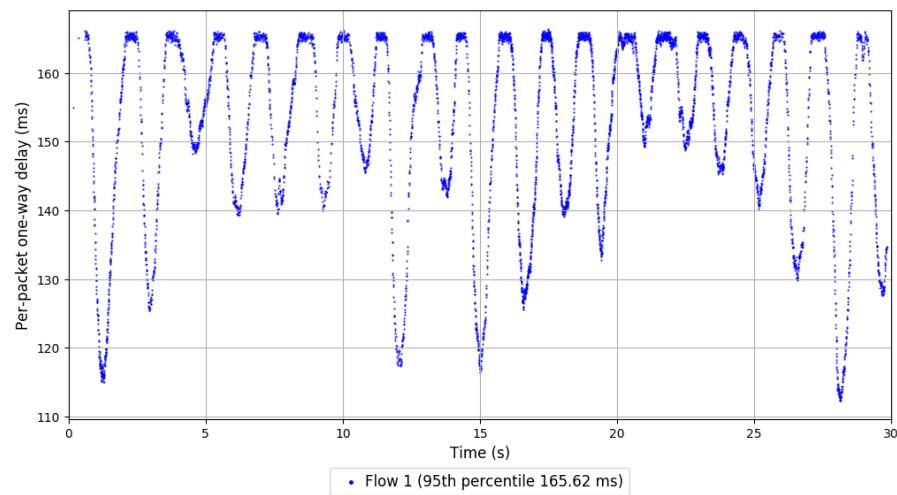
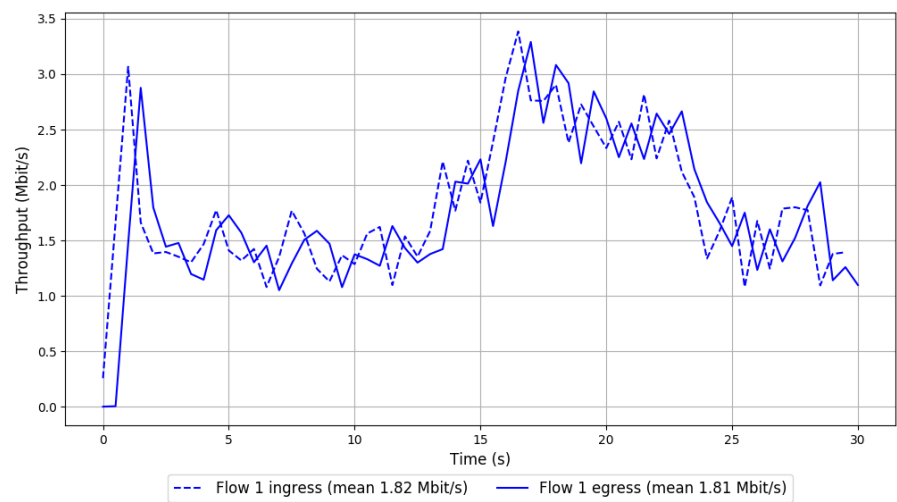
-- Flow 1:

Average throughput: 1.81 Mbit/s

95th percentile per-packet one-way delay: 165.618 ms

Loss rate: 1.29%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2019-01-21 21:36:32

End at: 2019-01-21 21:37:02

Local clock offset: 0.813 ms

Remote clock offset: 7.307 ms

Below is generated by plot.py at 2019-01-21 23:15:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 4.87 Mbit/s

95th percentile per-packet one-way delay: 155.820 ms

Loss rate: 0.95%

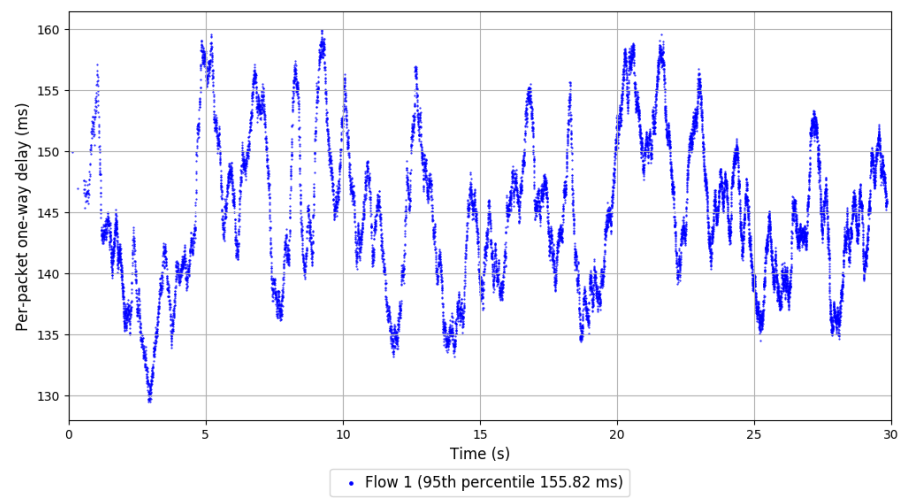
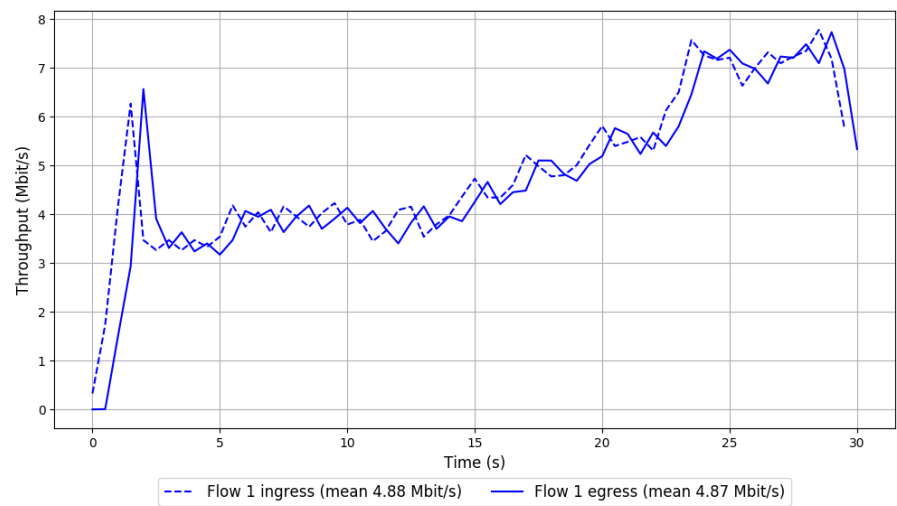
-- Flow 1:

Average throughput: 4.87 Mbit/s

95th percentile per-packet one-way delay: 155.820 ms

Loss rate: 0.95%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2019-01-21 22:02:01

End at: 2019-01-21 22:02:31

Local clock offset: 1.969 ms

Remote clock offset: 7.496 ms

Below is generated by plot.py at 2019-01-21 23:15:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 34.54 Mbit/s

95th percentile per-packet one-way delay: 145.871 ms

Loss rate: 5.61%

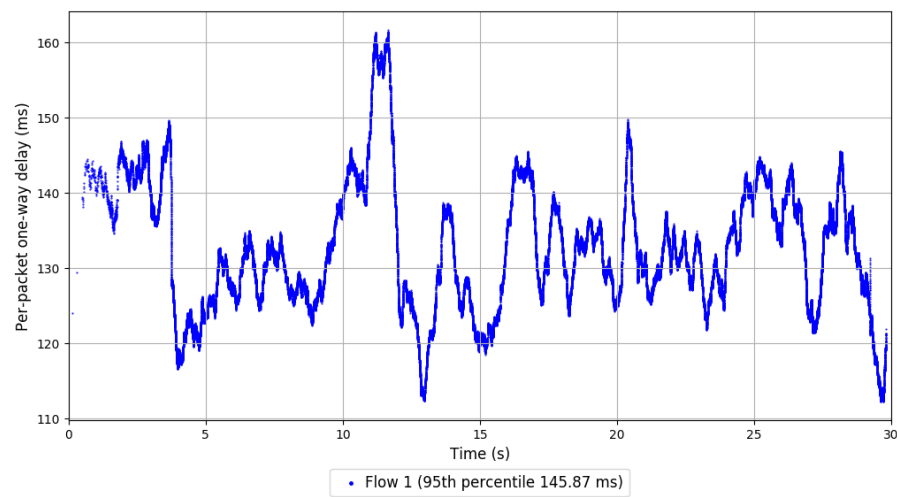
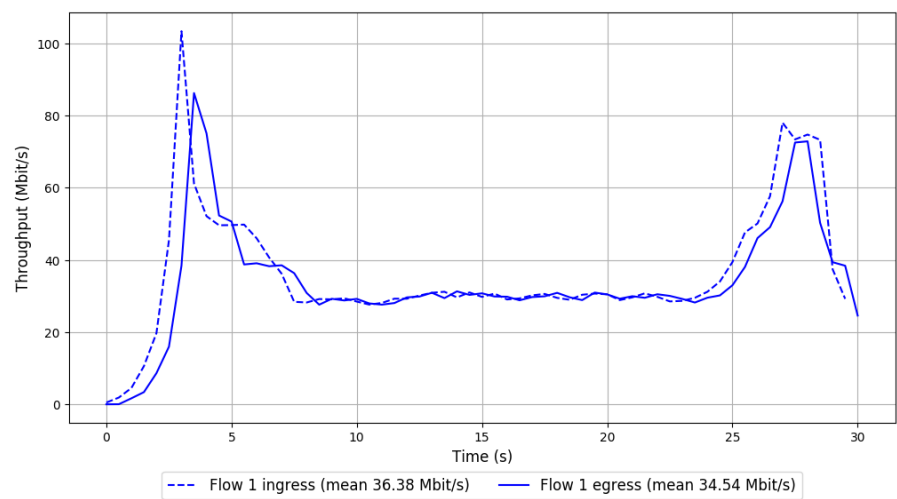
-- Flow 1:

Average throughput: 34.54 Mbit/s

95th percentile per-packet one-way delay: 145.871 ms

Loss rate: 5.61%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2019-01-21 22:26:58

End at: 2019-01-21 22:27:28

Local clock offset: 11.548 ms

Remote clock offset: 7.728 ms

Below is generated by plot.py at 2019-01-21 23:15:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 18.66 Mbit/s

95th percentile per-packet one-way delay: 97.383 ms

Loss rate: 0.71%

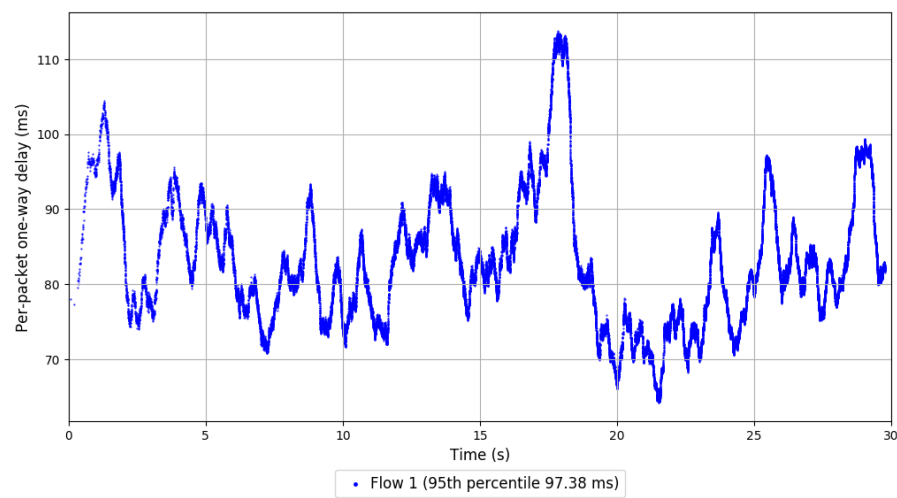
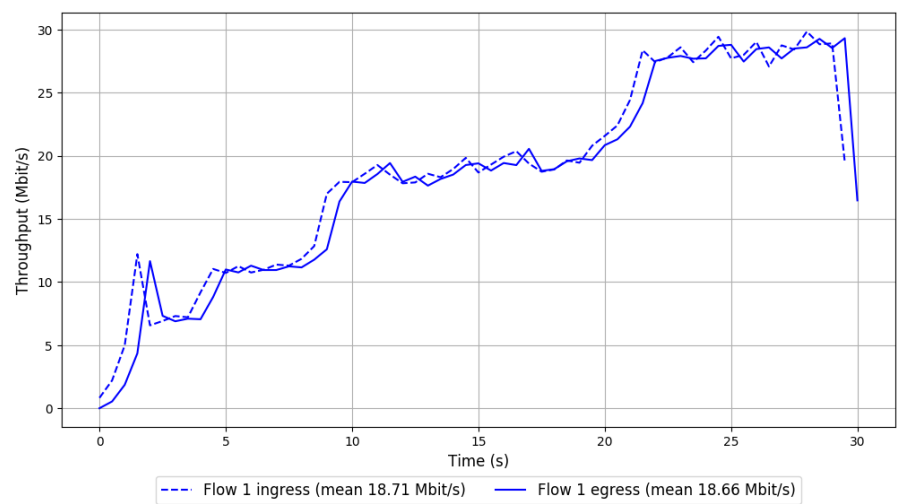
-- Flow 1:

Average throughput: 18.66 Mbit/s

95th percentile per-packet one-way delay: 97.383 ms

Loss rate: 0.71%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2019-01-21 22:51:32

End at: 2019-01-21 22:52:02

Local clock offset: 9.632 ms

Remote clock offset: 8.235 ms

Below is generated by plot.py at 2019-01-21 23:15:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 35.93 Mbit/s

95th percentile per-packet one-way delay: 58.289 ms

Loss rate: 5.85%

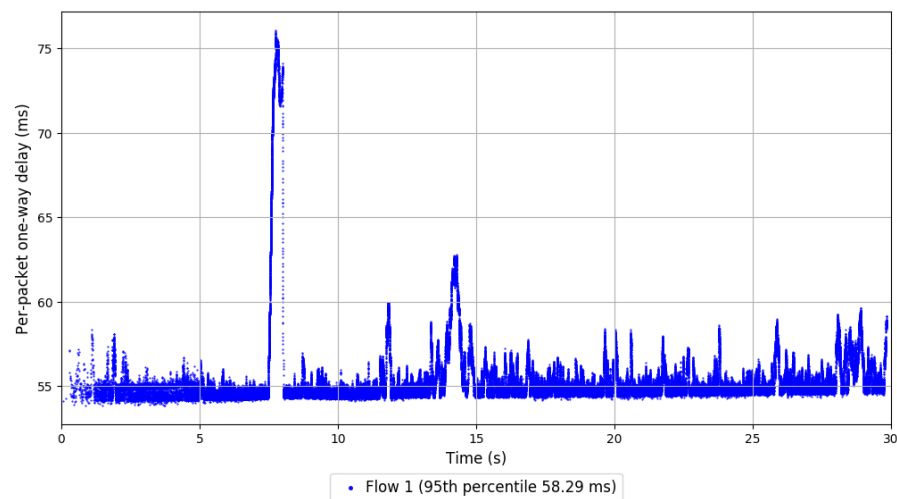
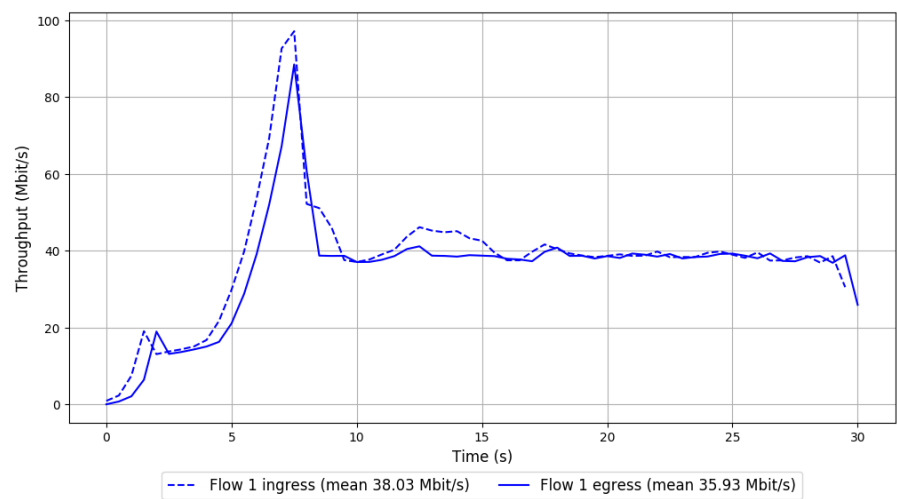
-- Flow 1:

Average throughput: 35.93 Mbit/s

95th percentile per-packet one-way delay: 58.289 ms

Loss rate: 5.85%

Run 5: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2019-01-21 21:29:15

End at: 2019-01-21 21:29:45

Local clock offset: 0.88 ms

Remote clock offset: 7.277 ms

Below is generated by plot.py at 2019-01-21 23:15:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 166.261 ms

Loss rate: 0.84%

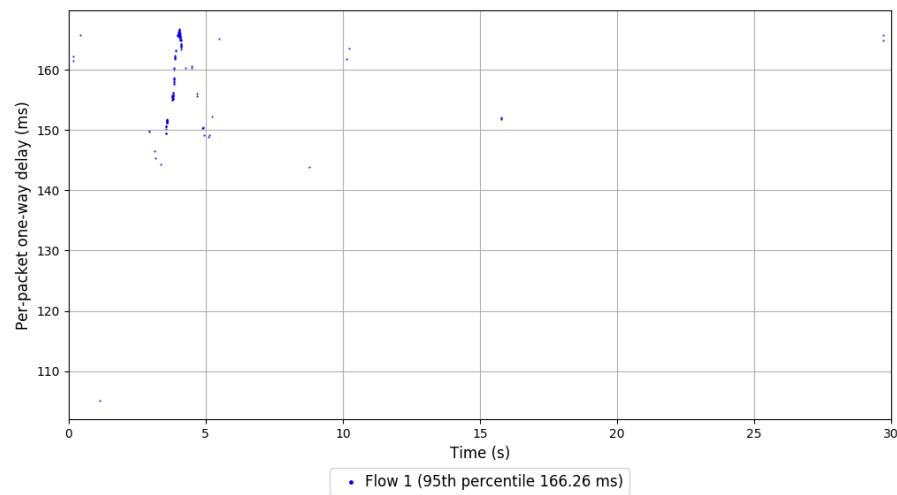
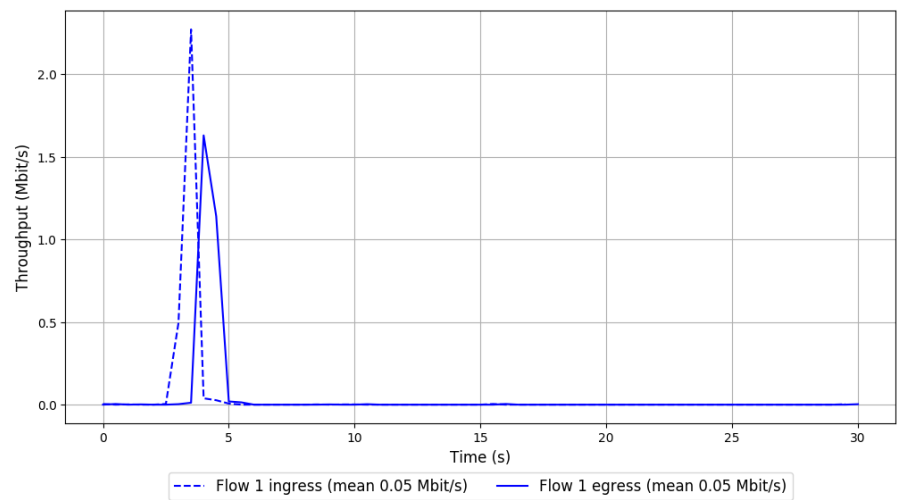
-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 166.261 ms

Loss rate: 0.84%

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2019-01-21 21:54:51

End at: 2019-01-21 21:55:21

Local clock offset: 1.623 ms

Remote clock offset: 7.556 ms

Below is generated by plot.py at 2019-01-21 23:15:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 155.609 ms

Loss rate: 0.00%

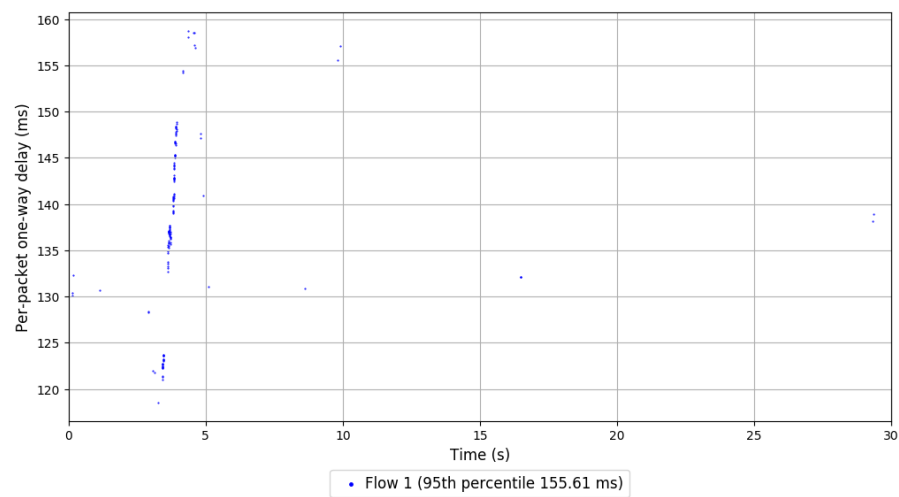
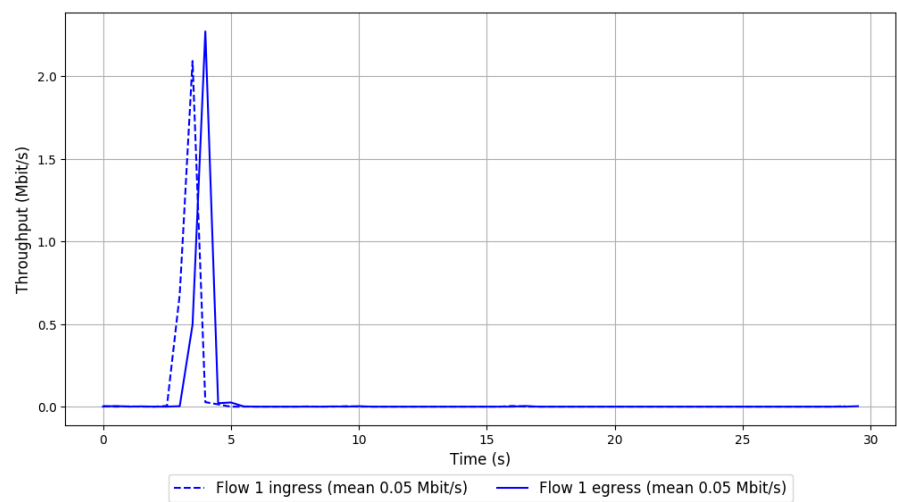
-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 155.609 ms

Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2019-01-21 22:19:55

End at: 2019-01-21 22:20:25

Local clock offset: 6.595 ms

Remote clock offset: 8.651 ms

Below is generated by plot.py at 2019-01-21 23:15:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 104.892 ms

Loss rate: 0.00%

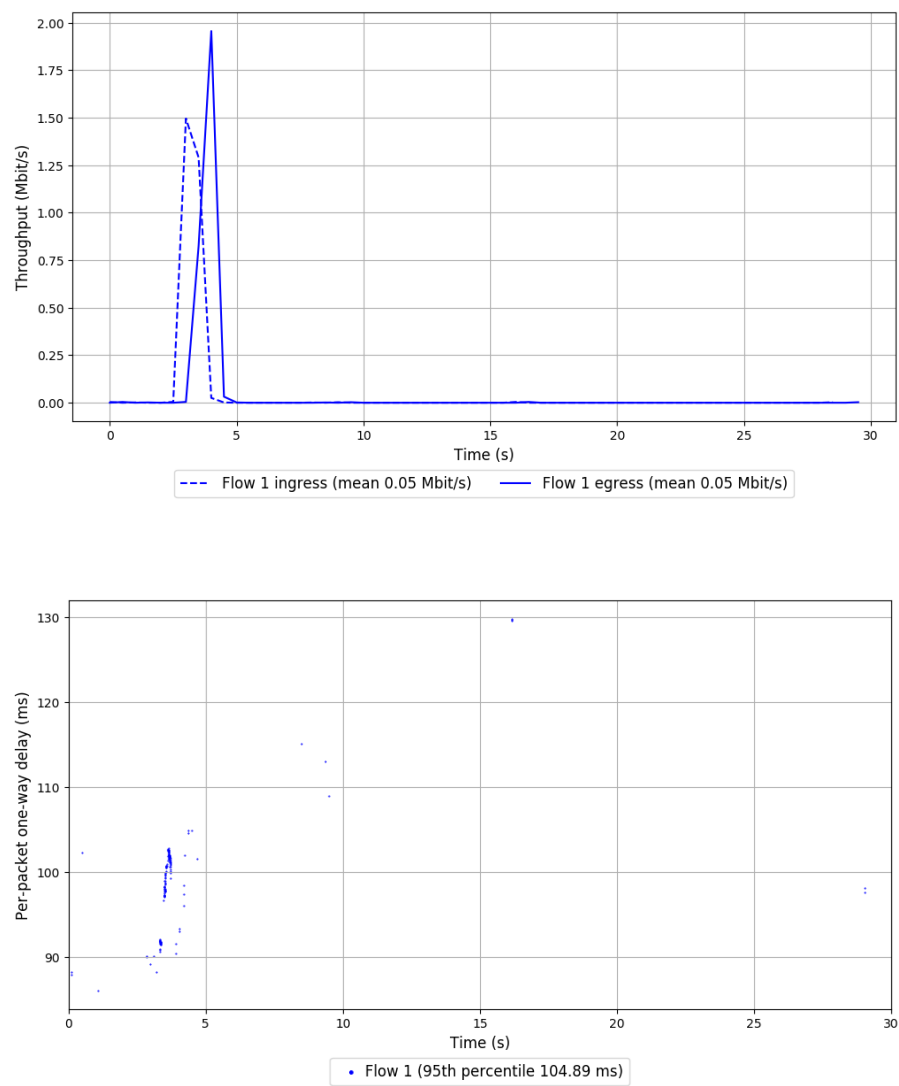
-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 104.892 ms

Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2019-01-21 22:44:33

End at: 2019-01-21 22:45:03

Local clock offset: 16.537 ms

Remote clock offset: 7.494 ms

Below is generated by plot.py at 2019-01-21 23:15:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 62.298 ms

Loss rate: 0.00%

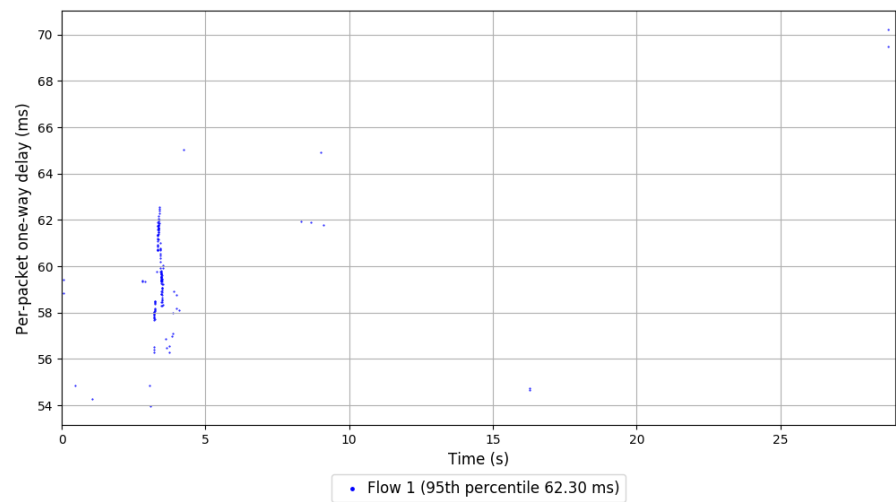
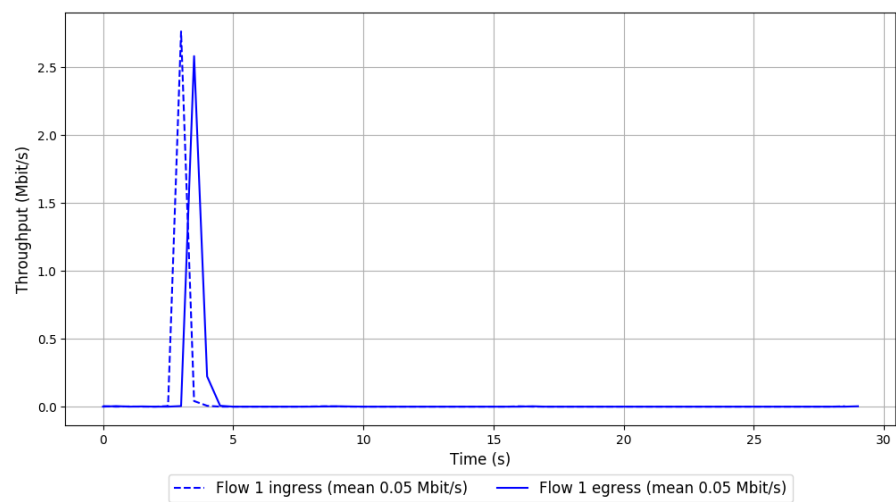
-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 62.298 ms

Loss rate: 0.00%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2019-01-21 23:09:06

End at: 2019-01-21 23:09:36

Local clock offset: 1.733 ms

Remote clock offset: 7.397 ms

Below is generated by plot.py at 2019-01-21 23:15:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 74.125 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 74.125 ms

Loss rate: 0.00%

Run 5: Report of WebRTC media — Data Link

