

Pantheon Report

Generated at 2019-03-26 22:12:55 (UTC).

Data path: AWS California 2 on **ens5** (*local*) → Mexico on **em1** (*remote*).

Repeated the test of 21 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

NTP offsets were measured against **time.stanford.edu** and have been applied to correct the timestamps in logs.

System info:

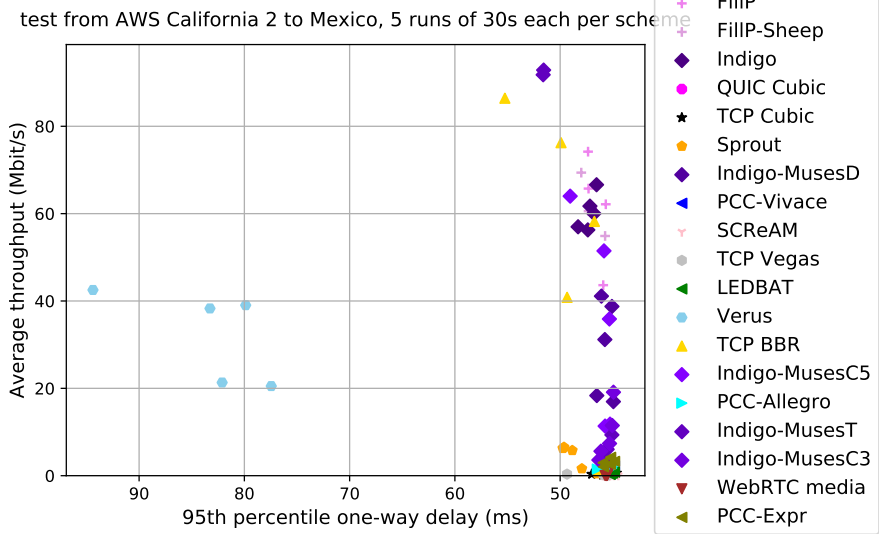
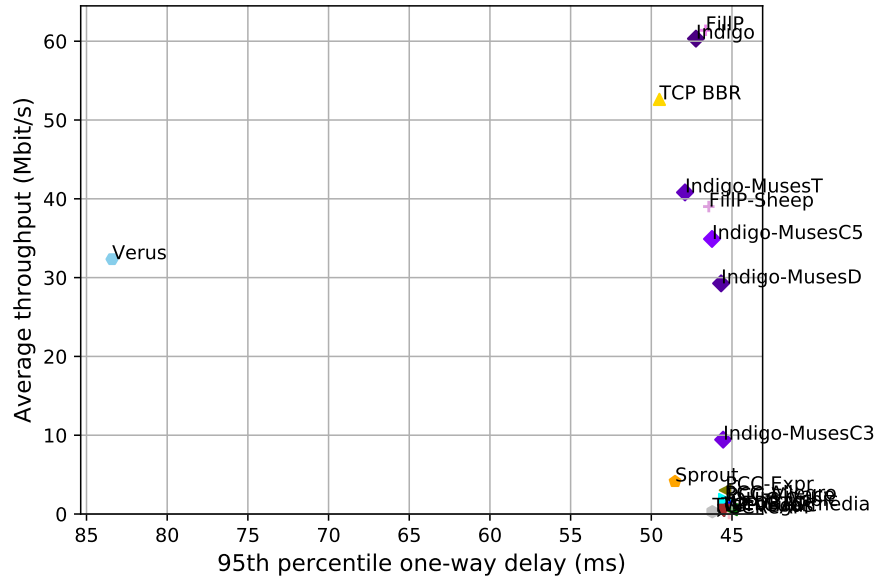
```
Linux 4.15.0-1034-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

```
branch: muses @ 7a686f7c2ed0a333082c0bab1fa5c921ab47e6ee
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf5e58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 5ce721187ad823da20955337730c746486ca4966
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
  M receiver/src/buffer.h
  M receiver/src/core.cpp
  M sender/src/buffer.h
  M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
  M src/ScreamClient
  M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
  M src/examples/cellsim.cc
  M src/examples/sproutbt2.cc
  M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
  M src/verus.hpp
  M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
```

third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

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



scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	52.62	49.50	16.43
Copa	0	N/A	N/A	N/A
TCP Cubic	5	0.35	45.67	13.08
FillP	5	61.38	46.64	15.97
FillP-Sheep	5	39.01	46.44	13.33
Indigo	5	60.33	47.23	13.68
Indigo-MusesC3	5	9.43	45.55	13.17
Indigo-MusesC5	5	34.90	46.24	14.48
Indigo-MusesD	5	29.27	45.67	14.72
Indigo-MusesT	5	40.81	47.91	13.07
LEDBAT	3	0.56	45.04	10.25
PCC-Allegro	5	1.85	45.45	14.18
PCC-Expr	5	3.02	45.41	25.03
QUIC Cubic	5	1.03	45.08	12.62
SCReAM	5	0.07	45.18	14.54
Sprout	5	4.13	48.53	15.26
TaoVA-100x	0	N/A	N/A	N/A
TCP Vegas	5	0.29	46.22	15.69
Verus	5	32.34	83.42	45.32
PCC-Vivace	5	1.63	45.35	13.78
WebRTC media	5	0.47	45.51	13.39

Run 1: Statistics of TCP BBR

Start at: 2019-03-26 20:28:22

End at: 2019-03-26 20:28:52

Local clock offset: 1.205 ms

Remote clock offset: 0.444 ms

Below is generated by plot.py at 2019-03-26 22:10:05

Datalink statistics

-- Total of 1 flow:

Average throughput: 86.43 Mbit/s

95th percentile per-packet one-way delay: 55.252 ms

Loss rate: 9.07%

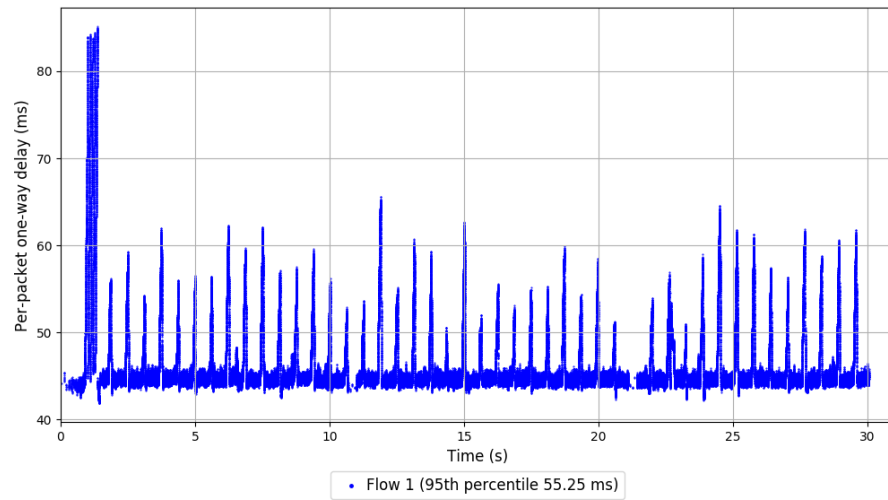
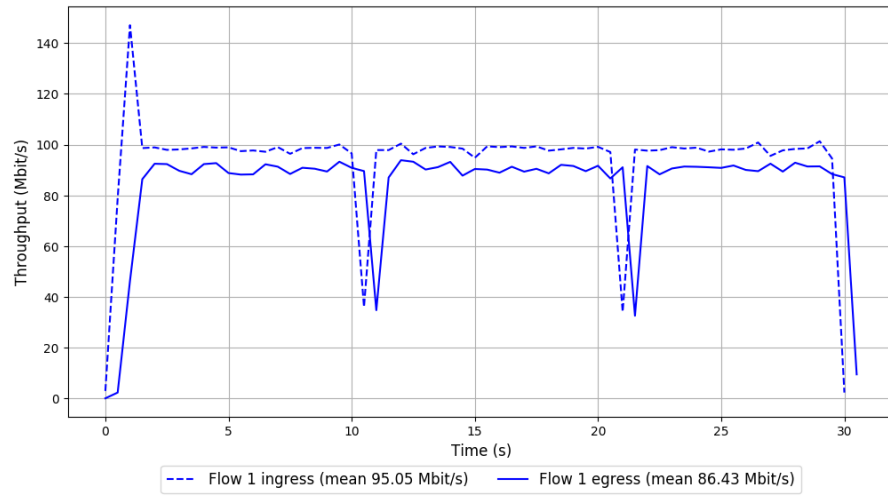
-- Flow 1:

Average throughput: 86.43 Mbit/s

95th percentile per-packet one-way delay: 55.252 ms

Loss rate: 9.07%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2019-03-26 20:52:50

End at: 2019-03-26 20:53:20

Local clock offset: 0.361 ms

Remote clock offset: 0.823 ms

Below is generated by plot.py at 2019-03-26 22:10:05

Datalink statistics

-- Total of 1 flow:

Average throughput: 76.24 Mbit/s

95th percentile per-packet one-way delay: 49.917 ms

Loss rate: 15.34%

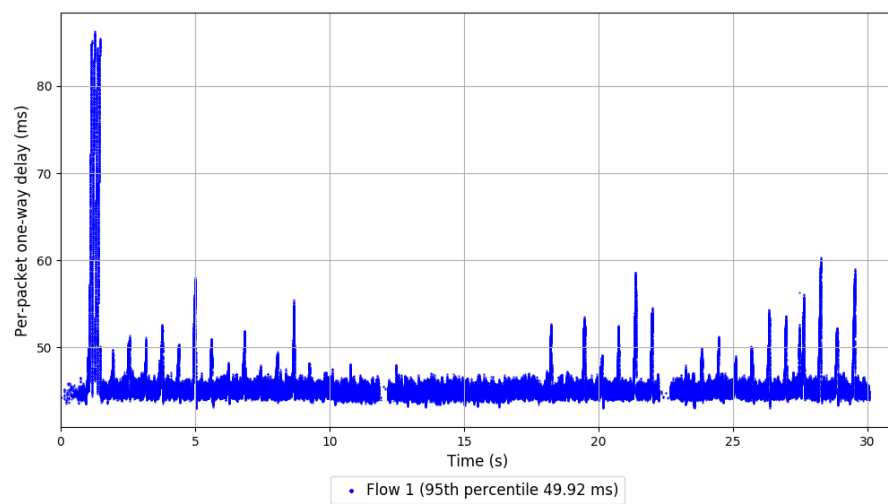
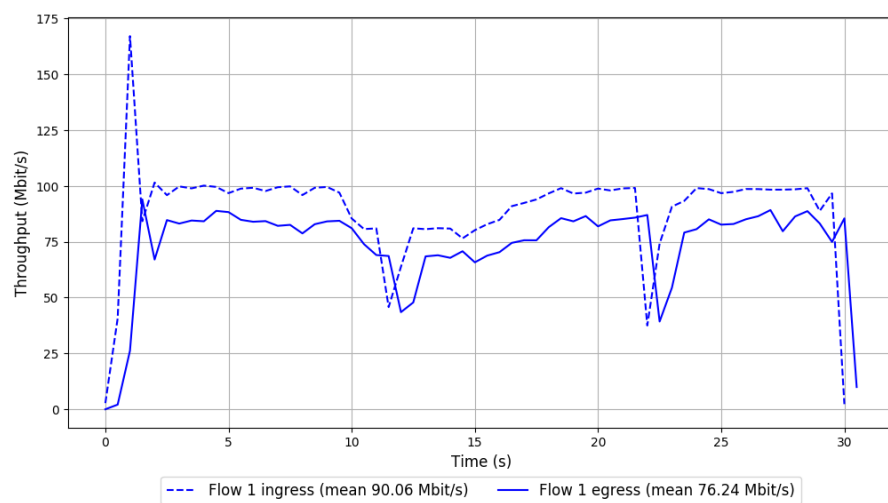
-- Flow 1:

Average throughput: 76.24 Mbit/s

95th percentile per-packet one-way delay: 49.917 ms

Loss rate: 15.34%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2019-03-26 21:17:13

End at: 2019-03-26 21:17:43

Local clock offset: -0.324 ms

Remote clock offset: 0.682 ms

Below is generated by plot.py at 2019-03-26 22:10:05

Datalink statistics

-- Total of 1 flow:

Average throughput: 40.84 Mbit/s

95th percentile per-packet one-way delay: 49.339 ms

Loss rate: 19.51%

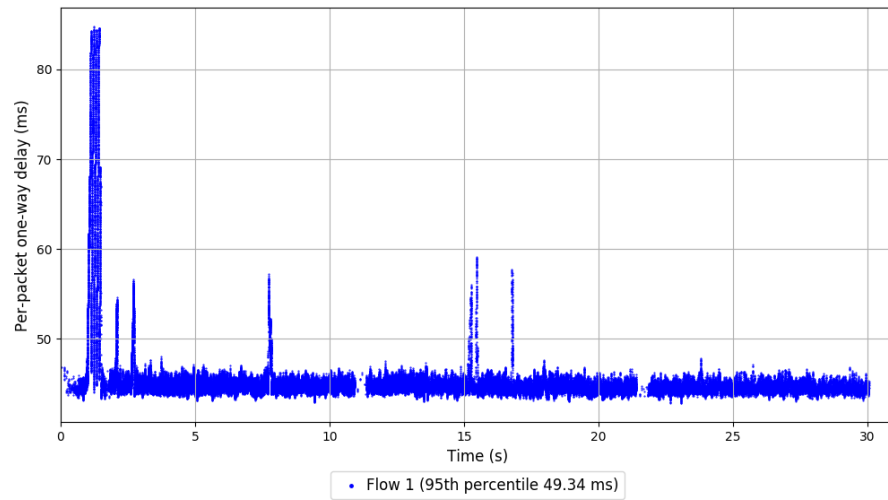
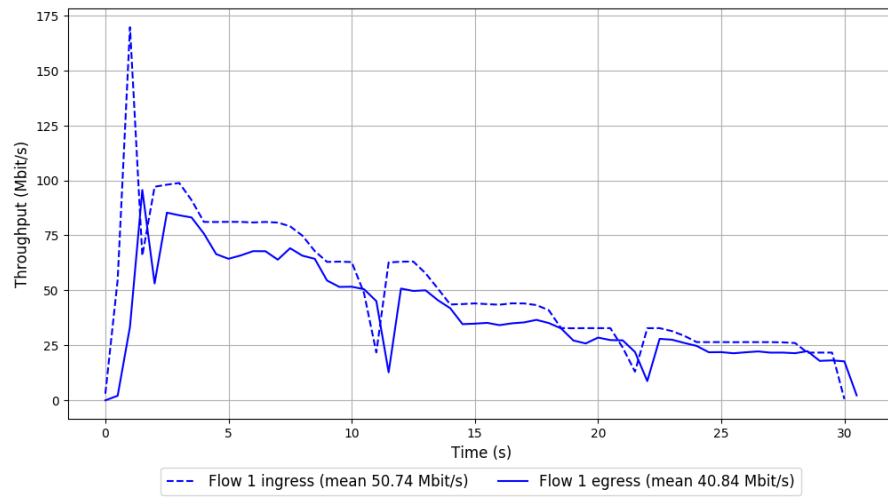
-- Flow 1:

Average throughput: 40.84 Mbit/s

95th percentile per-packet one-way delay: 49.339 ms

Loss rate: 19.51%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2019-03-26 21:41:50

End at: 2019-03-26 21:42:20

Local clock offset: 0.041 ms

Remote clock offset: 0.811 ms

Below is generated by plot.py at 2019-03-26 22:10:05

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.35 Mbit/s

95th percentile per-packet one-way delay: 46.234 ms

Loss rate: 21.07%

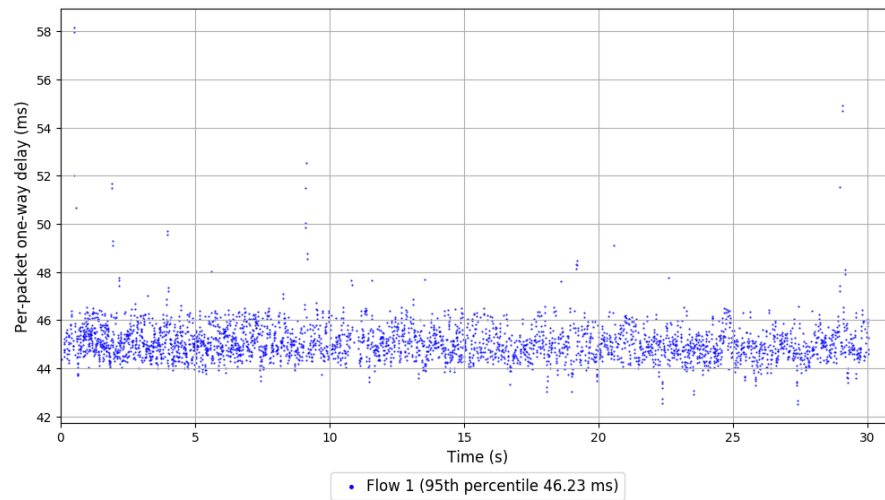
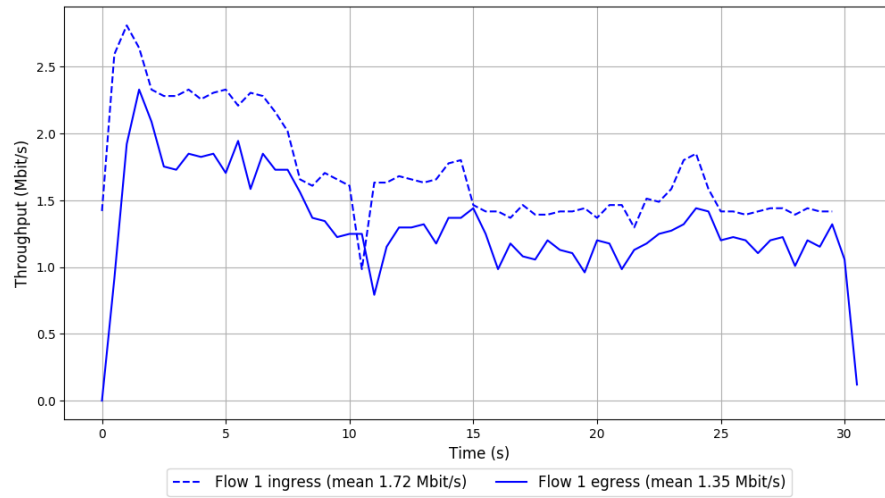
-- Flow 1:

Average throughput: 1.35 Mbit/s

95th percentile per-packet one-way delay: 46.234 ms

Loss rate: 21.07%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2019-03-26 22:06:30

End at: 2019-03-26 22:07:00

Local clock offset: 0.332 ms

Remote clock offset: 0.573 ms

Below is generated by plot.py at 2019-03-26 22:10:05

Datalink statistics

-- Total of 1 flow:

Average throughput: 58.22 Mbit/s

95th percentile per-packet one-way delay: 46.748 ms

Loss rate: 17.15%

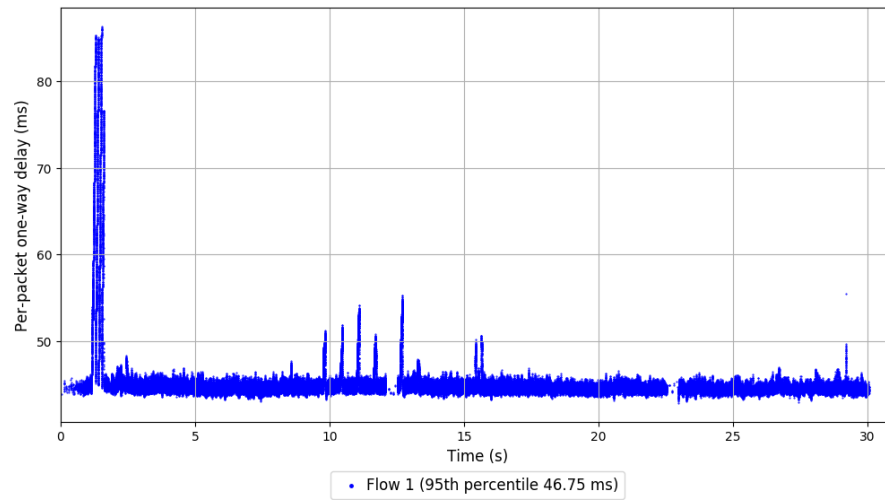
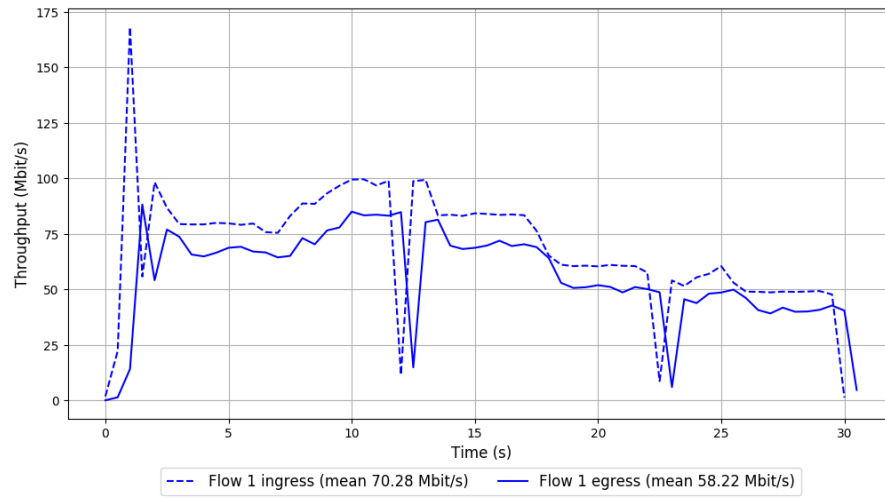
-- Flow 1:

Average throughput: 58.22 Mbit/s

95th percentile per-packet one-way delay: 46.748 ms

Loss rate: 17.15%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

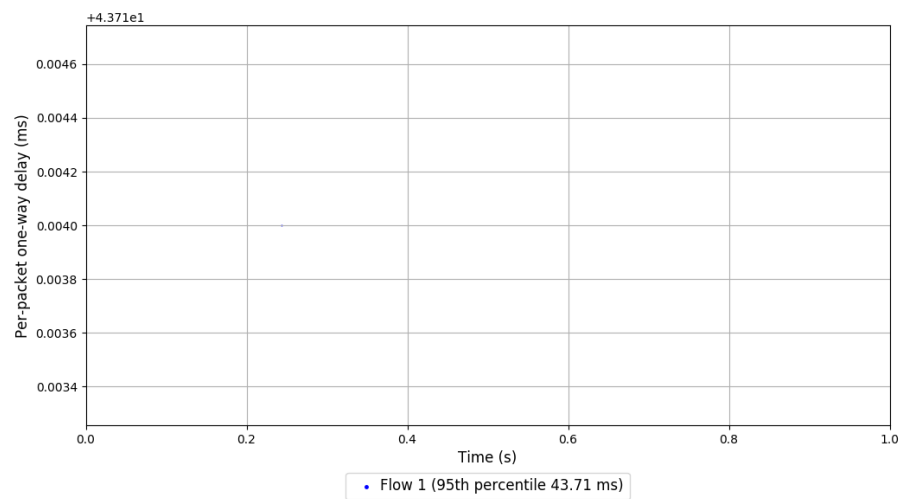
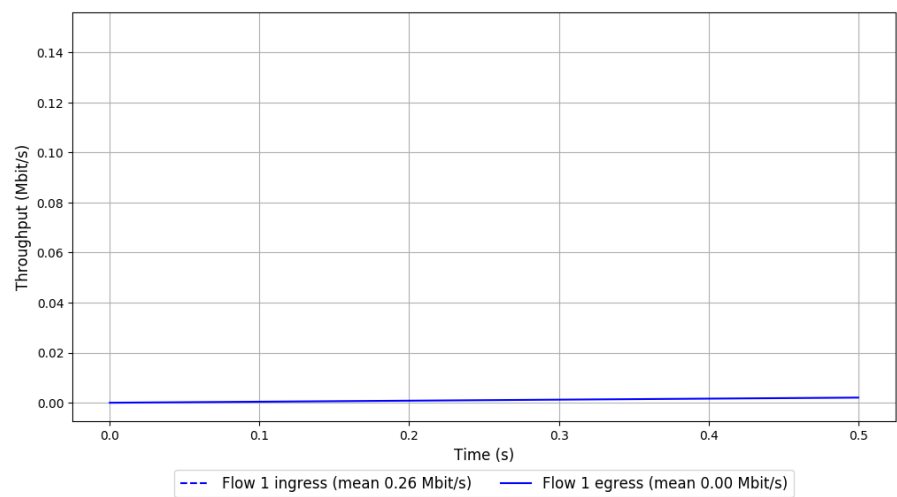
Start at: 2019-03-26 20:25:00

End at: 2019-03-26 20:25:30

Local clock offset: 1.347 ms

Remote clock offset: 0.321 ms

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

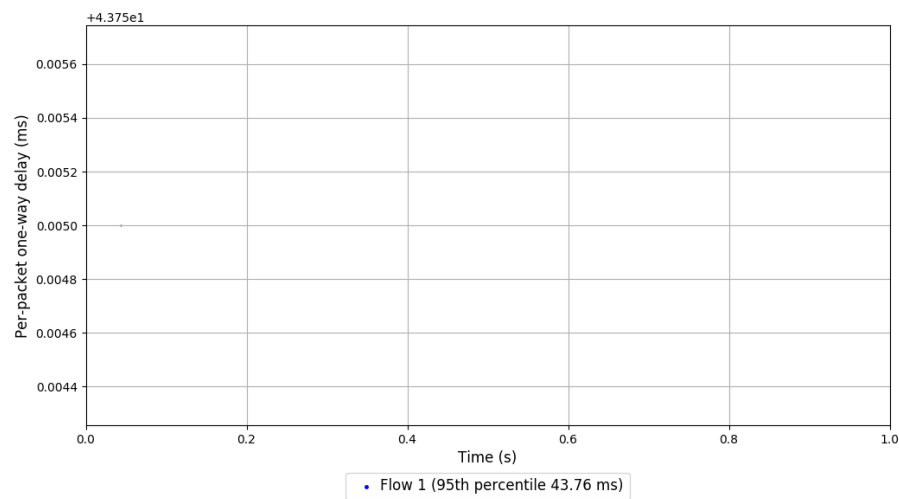
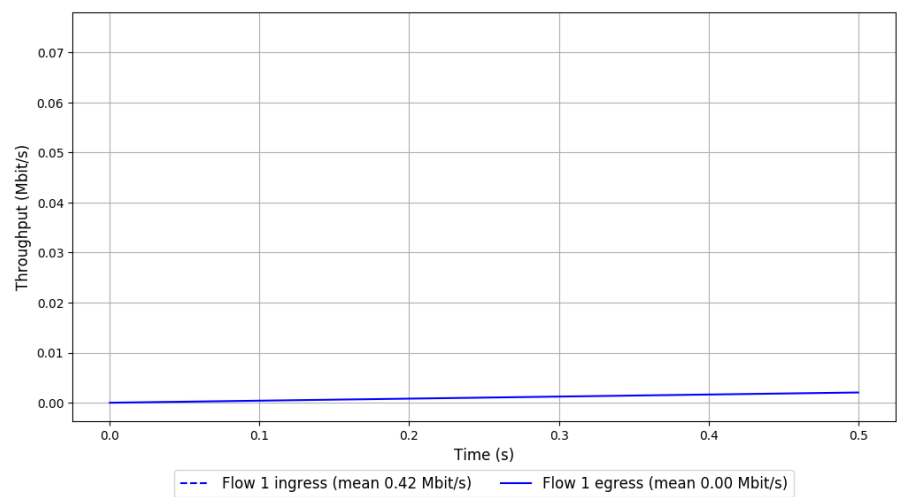
Start at: 2019-03-26 20:49:20

End at: 2019-03-26 20:49:50

Local clock offset: 0.491 ms

Remote clock offset: 0.806 ms

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

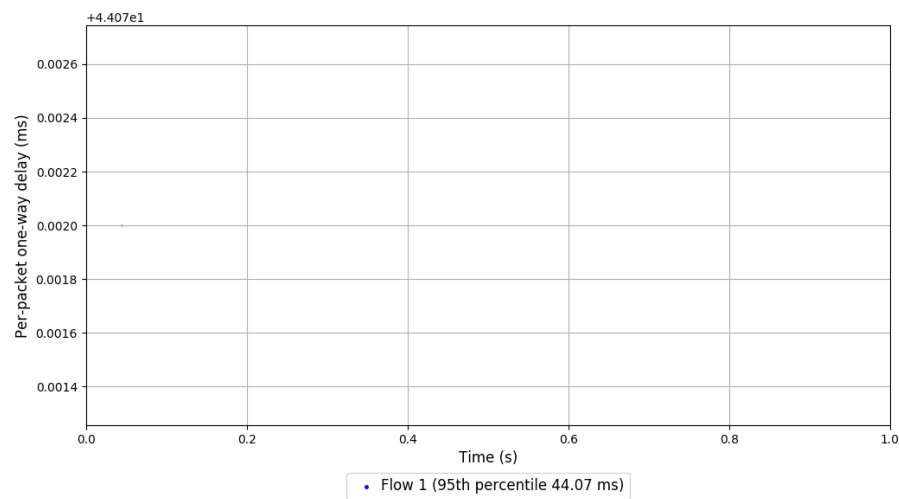
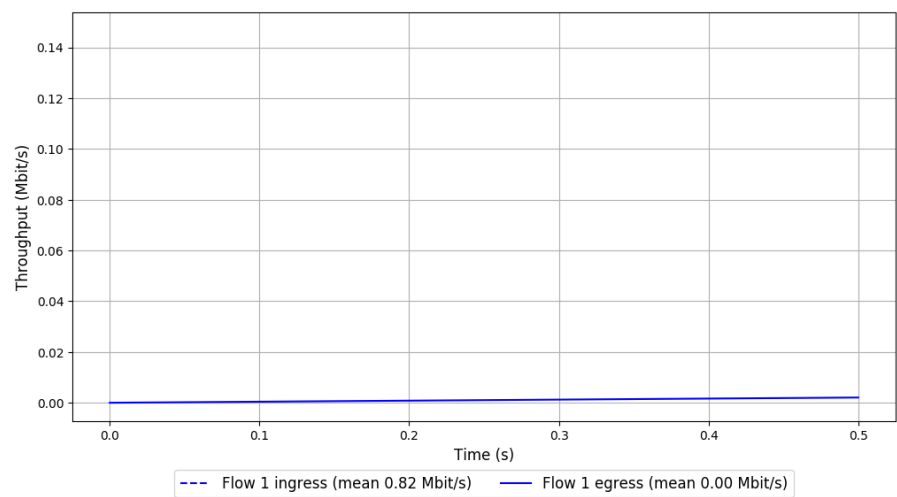
Start at: 2019-03-26 21:13:45

End at: 2019-03-26 21:14:15

Local clock offset: -0.339 ms

Remote clock offset: 0.816 ms

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

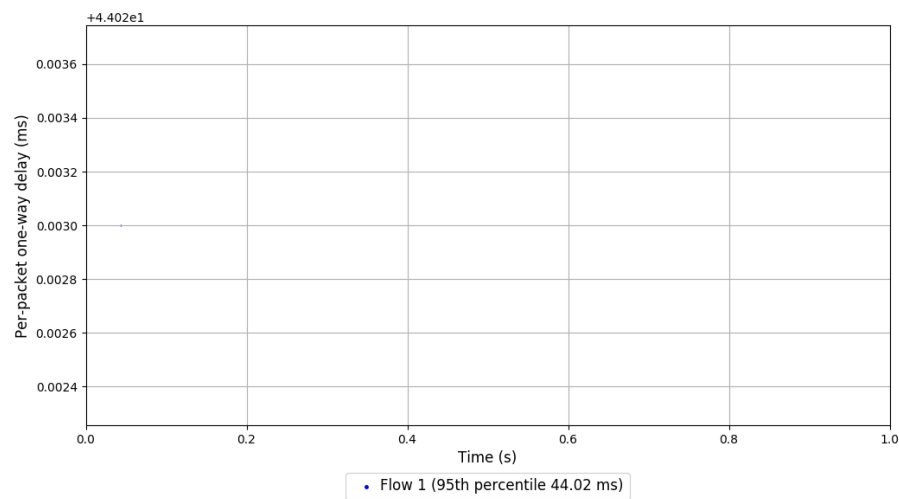
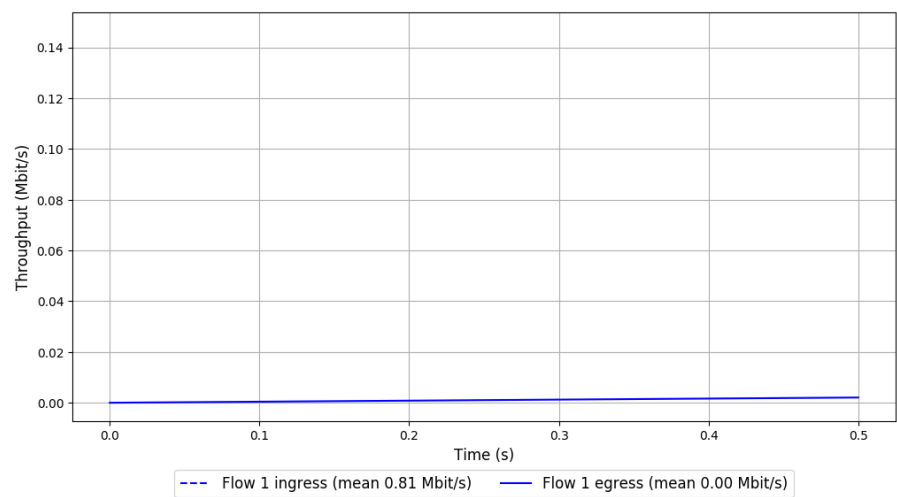
Start at: 2019-03-26 21:38:13

End at: 2019-03-26 21:38:43

Local clock offset: 0.068 ms

Remote clock offset: 0.672 ms

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

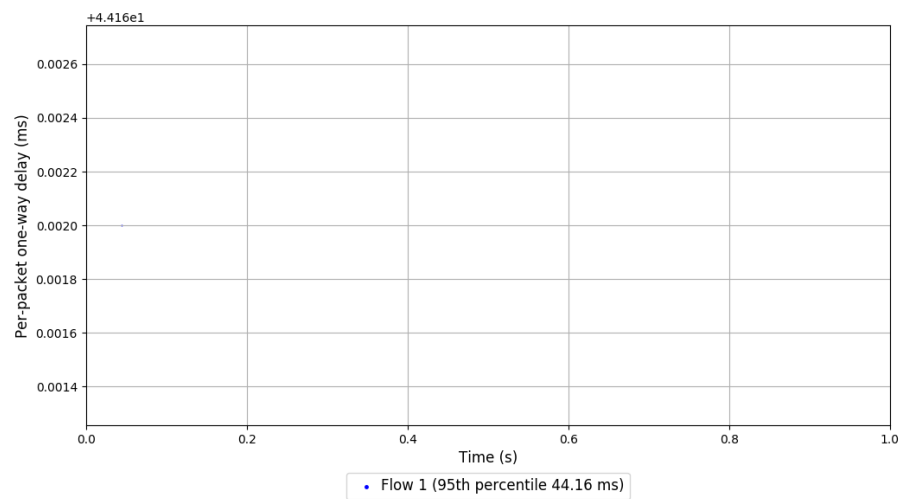
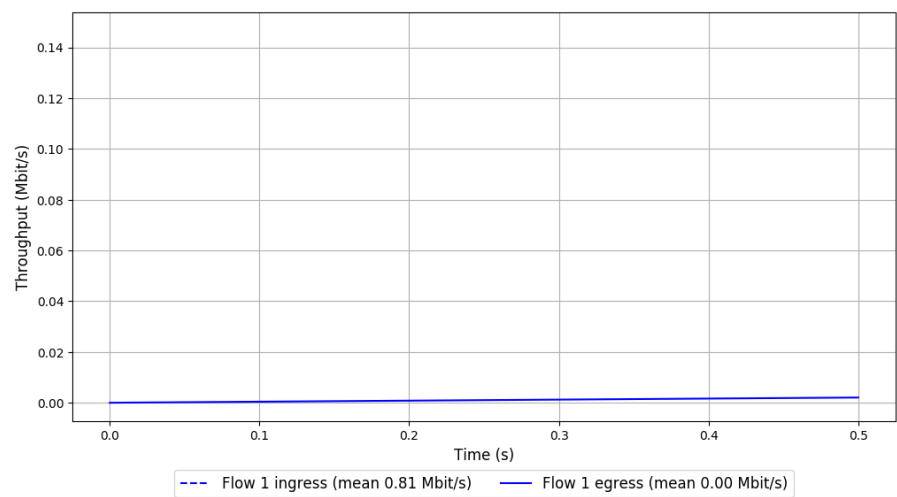
Start at: 2019-03-26 22:03:03

End at: 2019-03-26 22:03:33

Local clock offset: 0.286 ms

Remote clock offset: 0.585 ms

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2019-03-26 20:11:18

End at: 2019-03-26 20:11:48

Local clock offset: 2.09 ms

Remote clock offset: 0.362 ms

Below is generated by plot.py at 2019-03-26 22:10:05

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.60 Mbit/s

95th percentile per-packet one-way delay: 44.637 ms

Loss rate: 5.08%

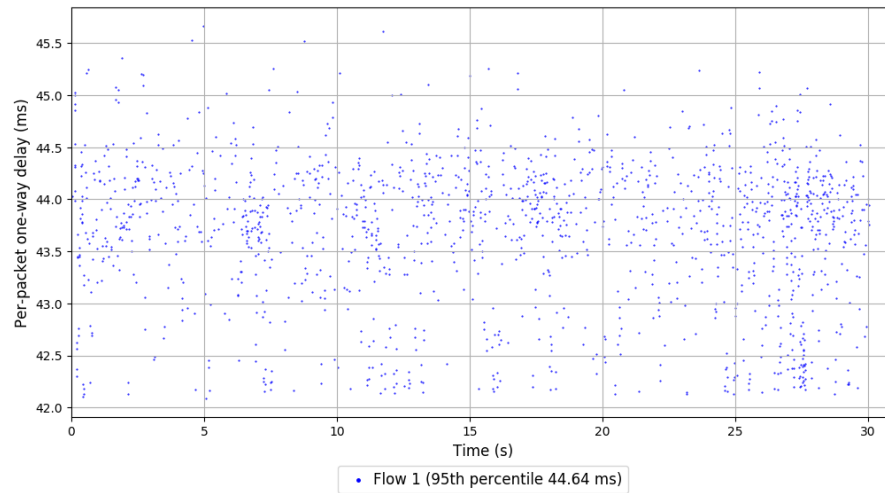
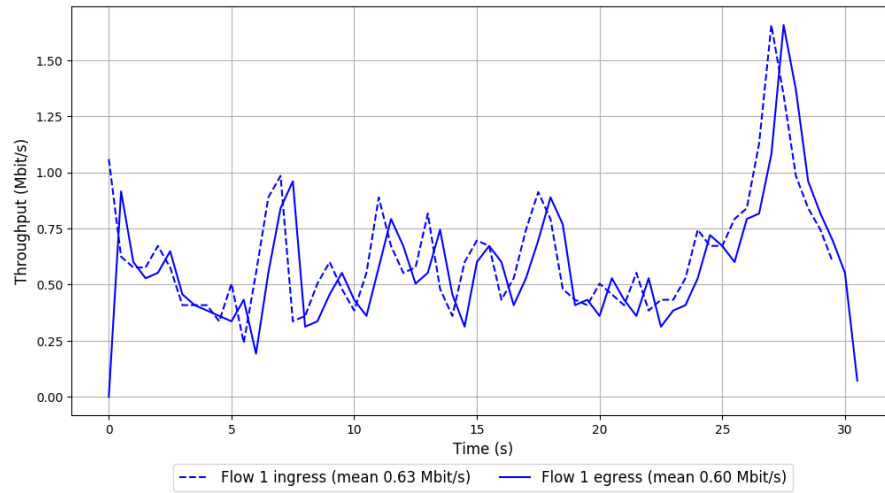
-- Flow 1:

Average throughput: 0.60 Mbit/s

95th percentile per-packet one-way delay: 44.637 ms

Loss rate: 5.08%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2019-03-26 20:35:37

End at: 2019-03-26 20:36:07

Local clock offset: 0.99 ms

Remote clock offset: 0.59 ms

Below is generated by plot.py at 2019-03-26 22:10:05

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.40 Mbit/s

95th percentile per-packet one-way delay: 44.956 ms

Loss rate: 9.58%

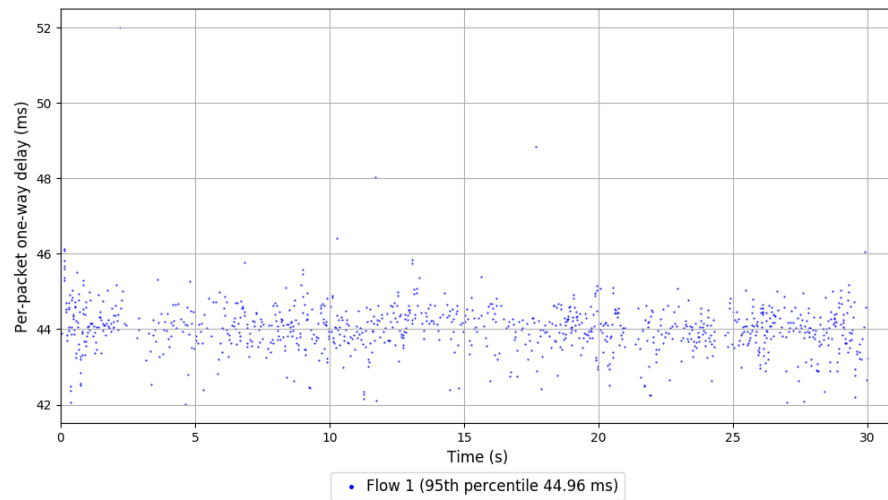
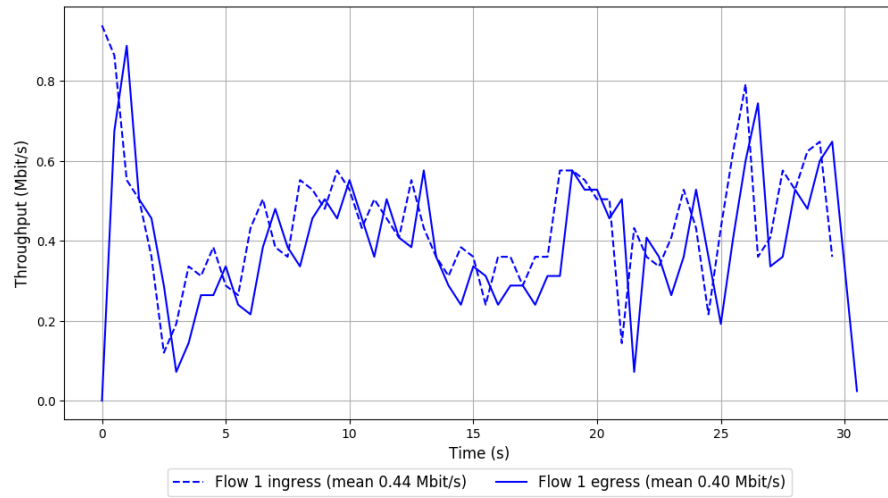
-- Flow 1:

Average throughput: 0.40 Mbit/s

95th percentile per-packet one-way delay: 44.956 ms

Loss rate: 9.58%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2019-03-26 20:59:58

End at: 2019-03-26 21:00:28

Local clock offset: 0.1 ms

Remote clock offset: 0.607 ms

Below is generated by plot.py at 2019-03-26 22:10:05

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.36 Mbit/s

95th percentile per-packet one-way delay: 47.000 ms

Loss rate: 11.07%

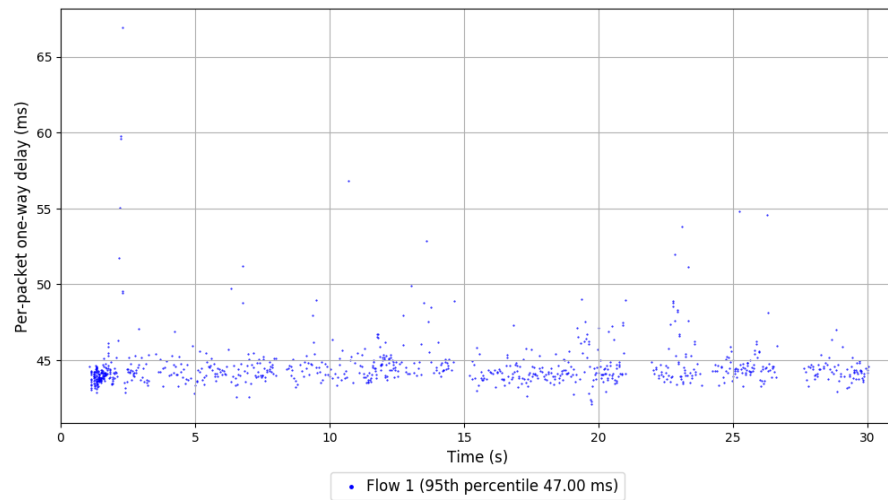
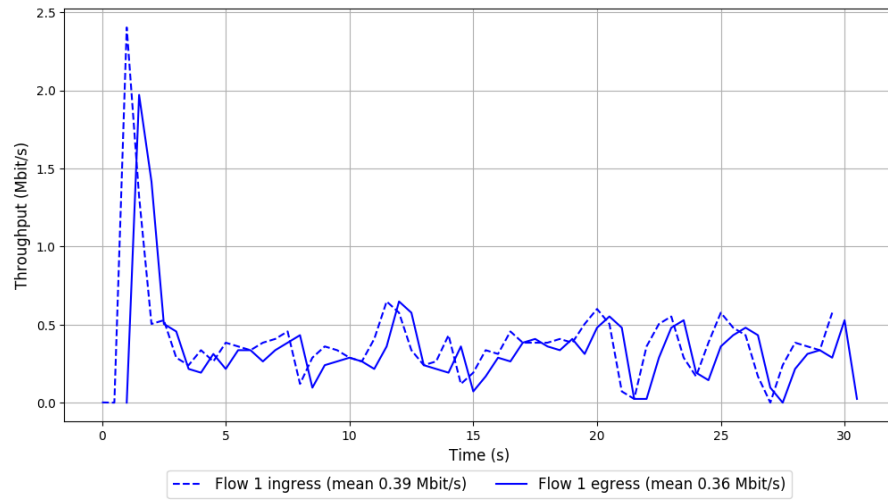
-- Flow 1:

Average throughput: 0.36 Mbit/s

95th percentile per-packet one-way delay: 47.000 ms

Loss rate: 11.07%

Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

Start at: 2019-03-26 21:24:26

End at: 2019-03-26 21:24:56

Local clock offset: -0.05 ms

Remote clock offset: 0.905 ms

Below is generated by plot.py at 2019-03-26 22:10:05

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.23 Mbit/s

95th percentile per-packet one-way delay: 45.778 ms

Loss rate: 17.89%

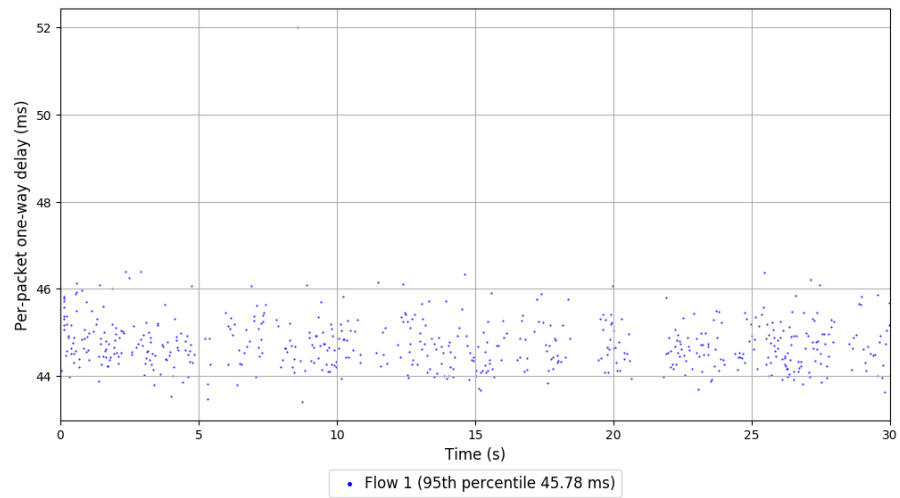
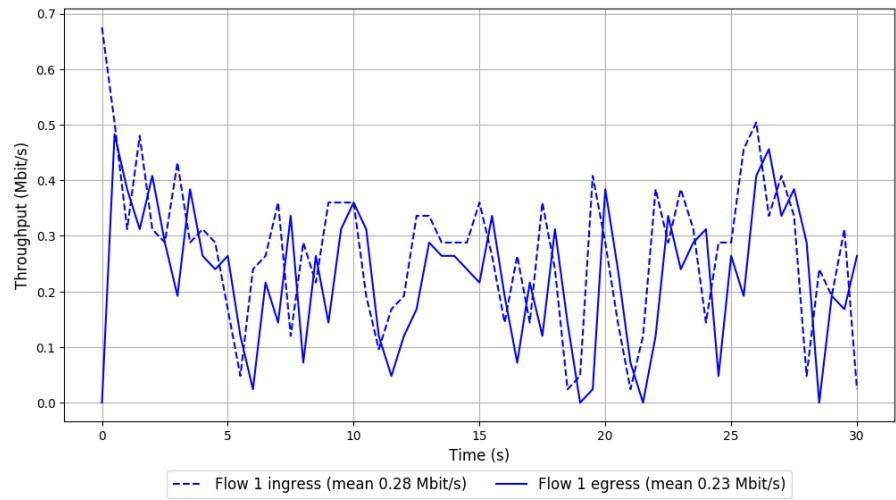
-- Flow 1:

Average throughput: 0.23 Mbit/s

95th percentile per-packet one-way delay: 45.778 ms

Loss rate: 17.89%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2019-03-26 21:49:03

End at: 2019-03-26 21:49:34

Local clock offset: 0.148 ms

Remote clock offset: 0.753 ms

Below is generated by plot.py at 2019-03-26 22:10:05

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.17 Mbit/s

95th percentile per-packet one-way delay: 45.969 ms

Loss rate: 21.77%

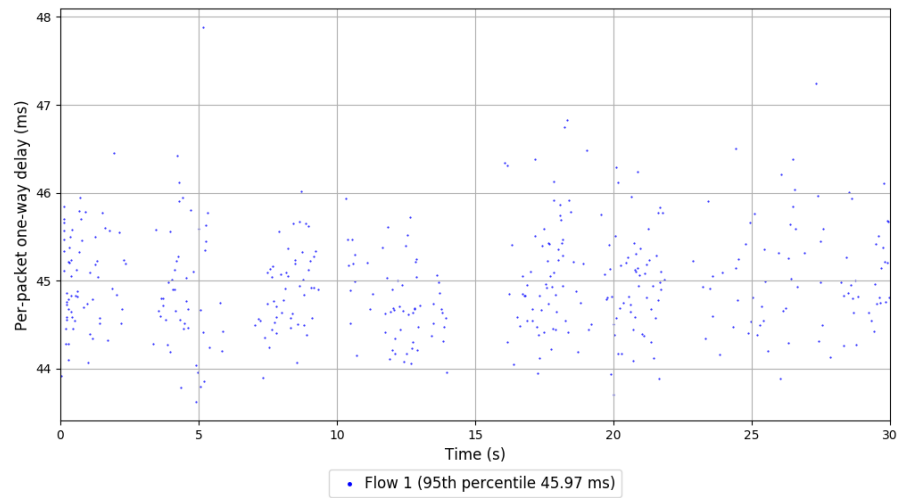
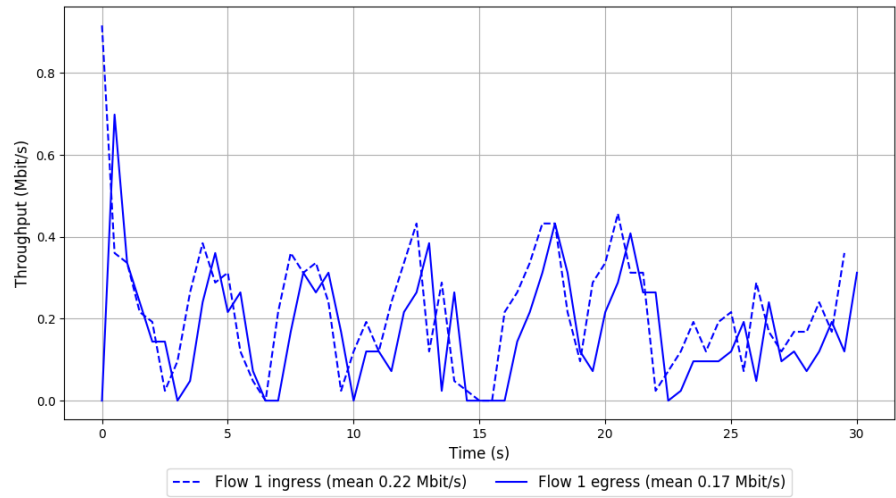
-- Flow 1:

Average throughput: 0.17 Mbit/s

95th percentile per-packet one-way delay: 45.969 ms

Loss rate: 21.77%

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2019-03-26 20:29:37

End at: 2019-03-26 20:30:07

Local clock offset: 1.146 ms

Remote clock offset: 0.35 ms

Below is generated by plot.py at 2019-03-26 22:10:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 74.19 Mbit/s

95th percentile per-packet one-way delay: 47.349 ms

Loss rate: 10.93%

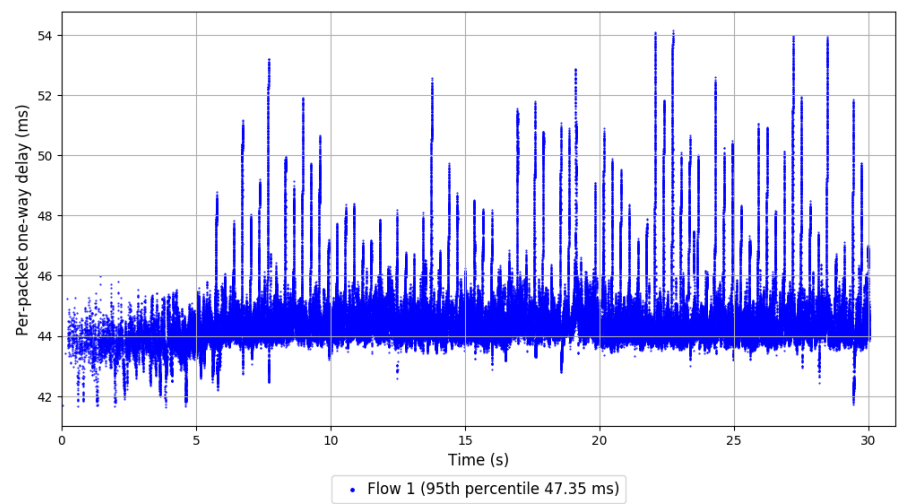
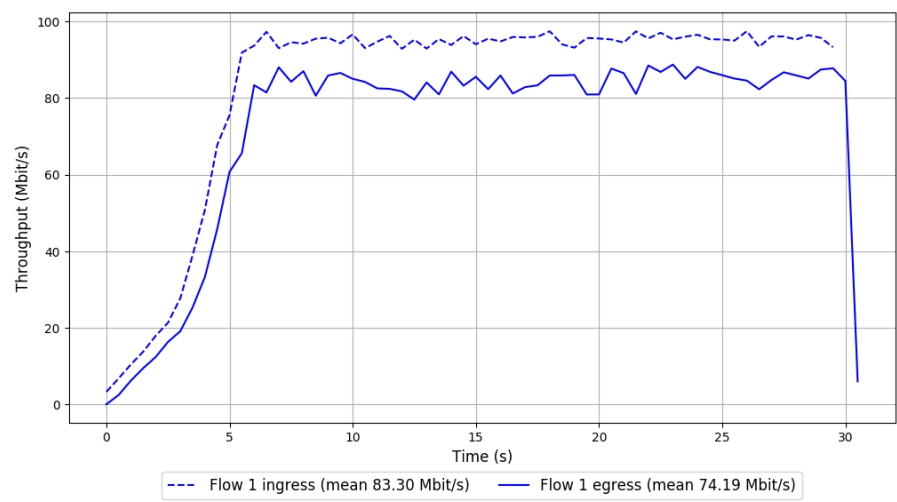
-- Flow 1:

Average throughput: 74.19 Mbit/s

95th percentile per-packet one-way delay: 47.349 ms

Loss rate: 10.93%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2019-03-26 20:54:03

End at: 2019-03-26 20:54:33

Local clock offset: 0.313 ms

Remote clock offset: 0.764 ms

Below is generated by plot.py at 2019-03-26 22:10:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 65.73 Mbit/s

95th percentile per-packet one-way delay: 47.303 ms

Loss rate: 13.37%

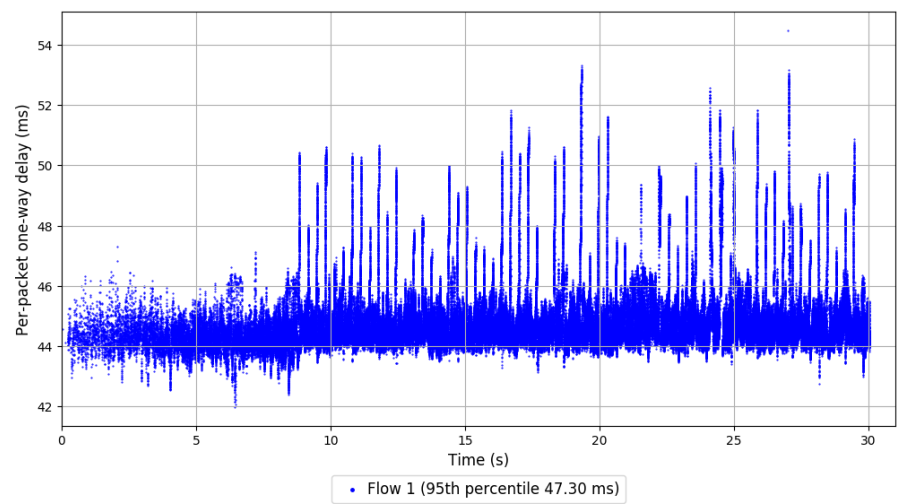
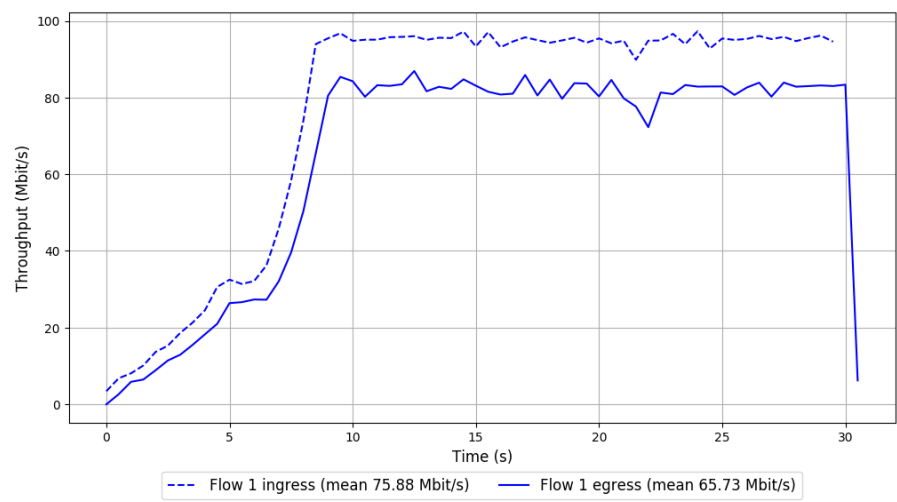
-- Flow 1:

Average throughput: 65.73 Mbit/s

95th percentile per-packet one-way delay: 47.303 ms

Loss rate: 13.37%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2019-03-26 21:18:34

End at: 2019-03-26 21:19:04

Local clock offset: -0.243 ms

Remote clock offset: 0.862 ms

Below is generated by plot.py at 2019-03-26 22:10:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 61.22 Mbit/s

95th percentile per-packet one-way delay: 46.957 ms

Loss rate: 16.52%

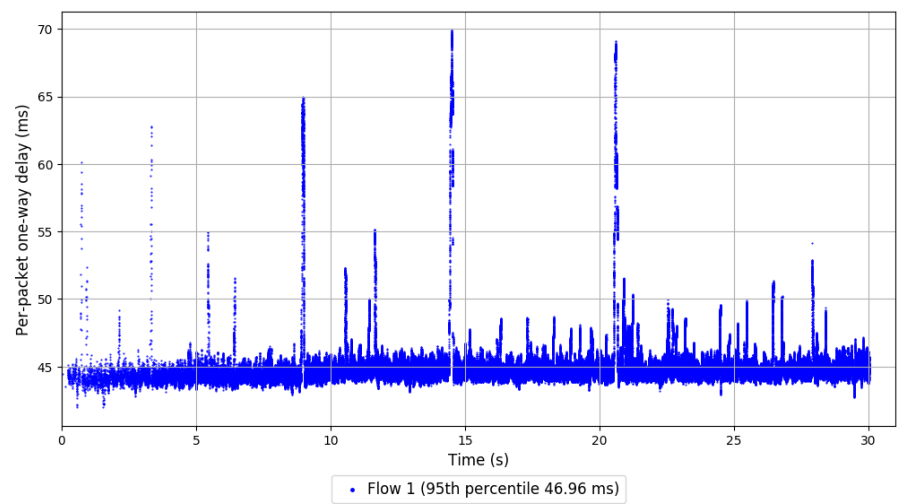
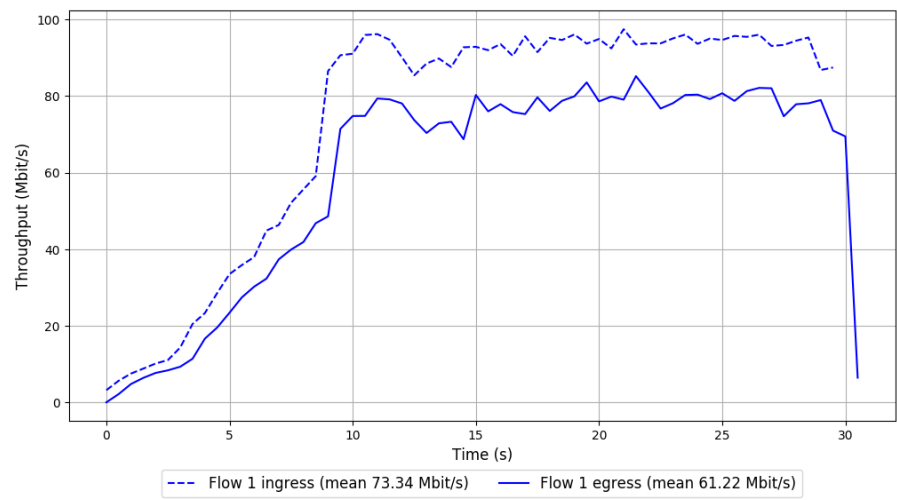
-- Flow 1:

Average throughput: 61.22 Mbit/s

95th percentile per-packet one-way delay: 46.957 ms

Loss rate: 16.52%

Run 3: Report of FillP — Data Link



Run 4: Statistics of FillP

Start at: 2019-03-26 21:43:00

End at: 2019-03-26 21:43:30

Local clock offset: 0.072 ms

Remote clock offset: 0.831 ms

Below is generated by plot.py at 2019-03-26 22:10:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 43.62 Mbit/s

95th percentile per-packet one-way delay: 45.908 ms

Loss rate: 20.48%

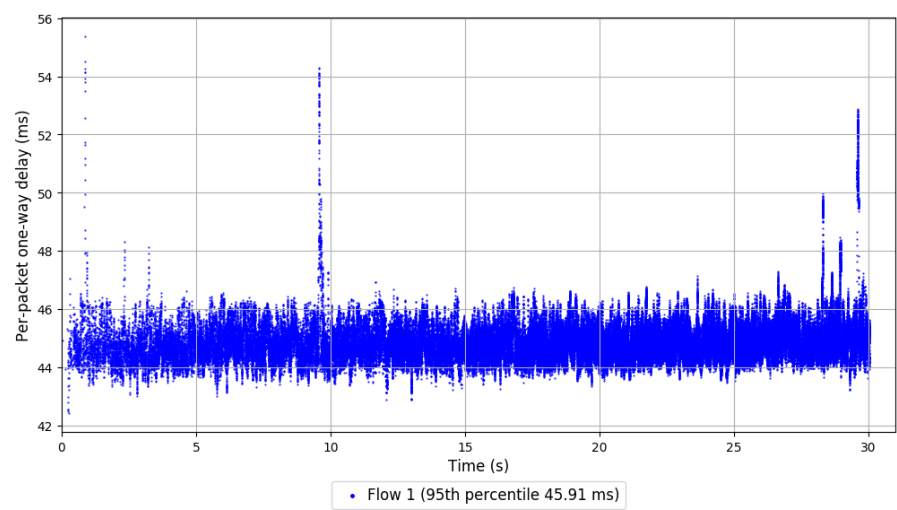
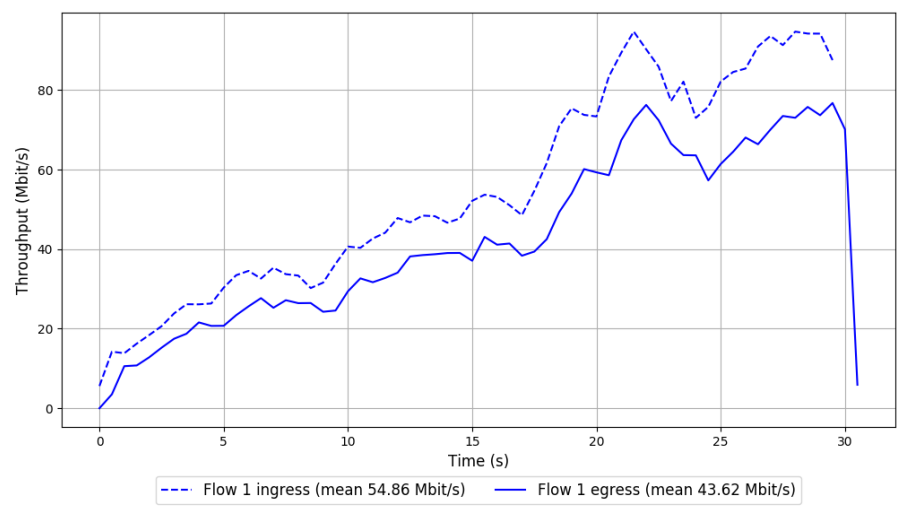
-- Flow 1:

Average throughput: 43.62 Mbit/s

95th percentile per-packet one-way delay: 45.908 ms

Loss rate: 20.48%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2019-03-26 22:07:49

End at: 2019-03-26 22:08:19

Local clock offset: 0.325 ms

Remote clock offset: 0.367 ms

Below is generated by plot.py at 2019-03-26 22:10:33

Datalink statistics

-- Total of 1 flow:

Average throughput: 62.15 Mbit/s

95th percentile per-packet one-way delay: 45.664 ms

Loss rate: 18.55%

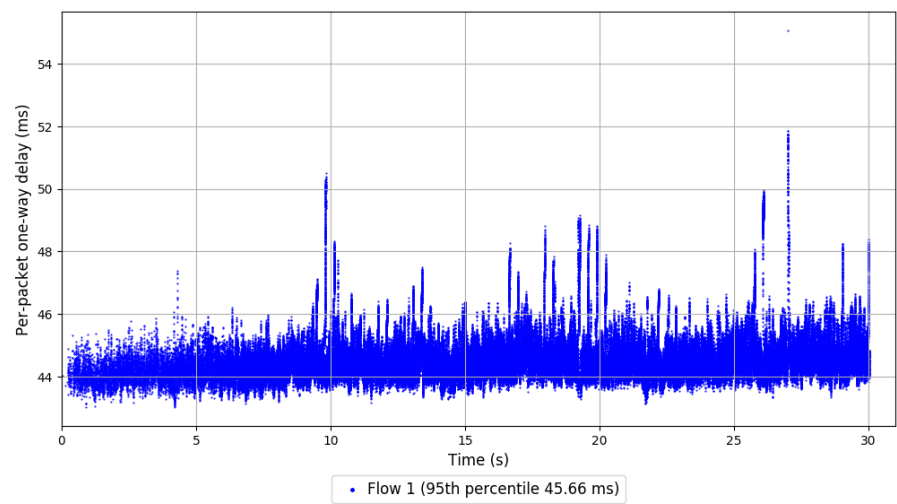
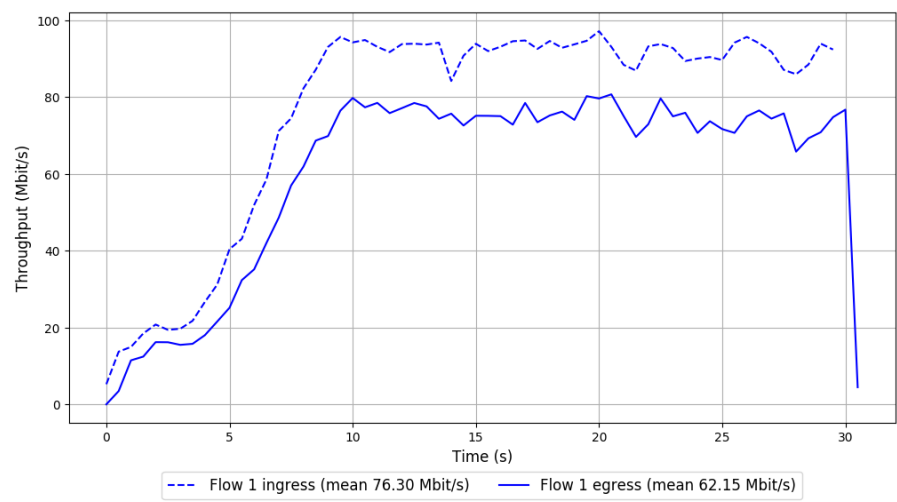
-- Flow 1:

Average throughput: 62.15 Mbit/s

95th percentile per-packet one-way delay: 45.664 ms

Loss rate: 18.55%

Run 5: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2019-03-26 20:08:49

End at: 2019-03-26 20:09:19

Local clock offset: 1.96 ms

Remote clock offset: 0.318 ms

Below is generated by plot.py at 2019-03-26 22:10:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 69.39 Mbit/s

95th percentile per-packet one-way delay: 47.995 ms

Loss rate: 8.56%

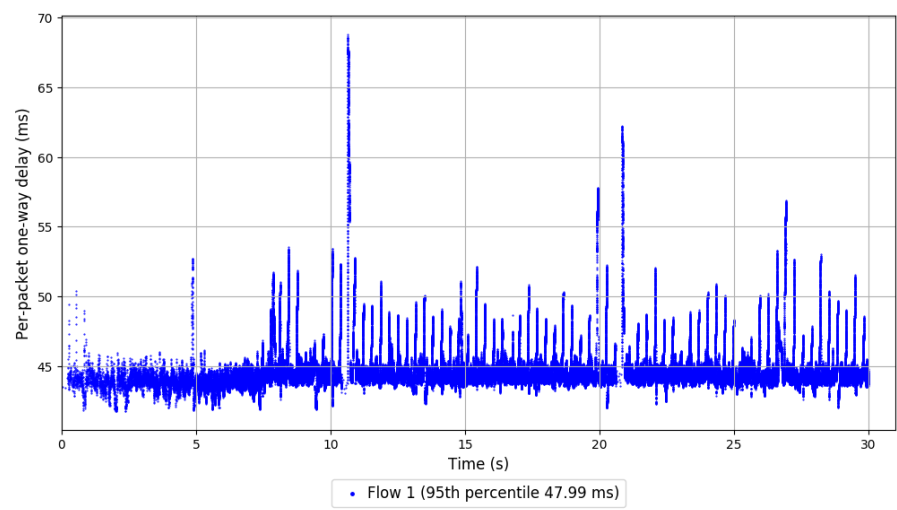
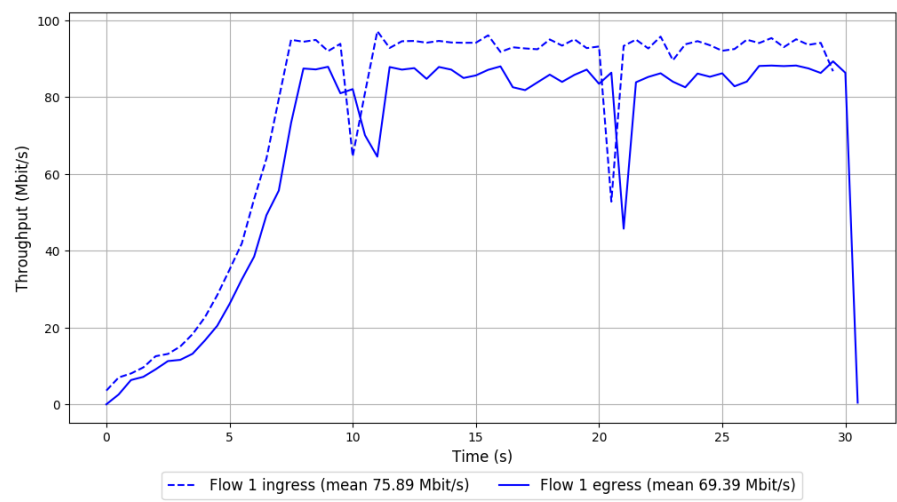
-- Flow 1:

Average throughput: 69.39 Mbit/s

95th percentile per-packet one-way delay: 47.995 ms

Loss rate: 8.56%

Run 1: Report of FillP-Sheep — Data Link



Run 2: Statistics of FillP-Sheep

Start at: 2019-03-26 20:33:08

End at: 2019-03-26 20:33:38

Local clock offset: 1.043 ms

Remote clock offset: 0.597 ms

Below is generated by plot.py at 2019-03-26 22:10:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 60.57 Mbit/s

95th percentile per-packet one-way delay: 47.300 ms

Loss rate: 10.53%

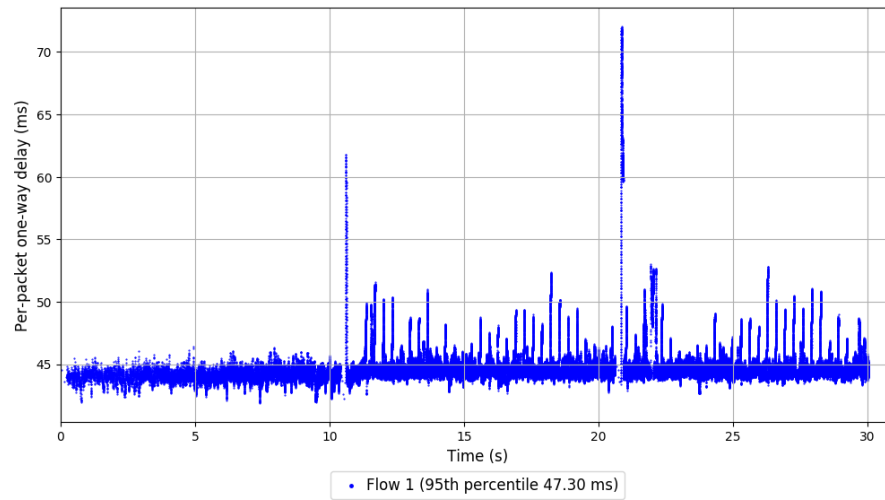
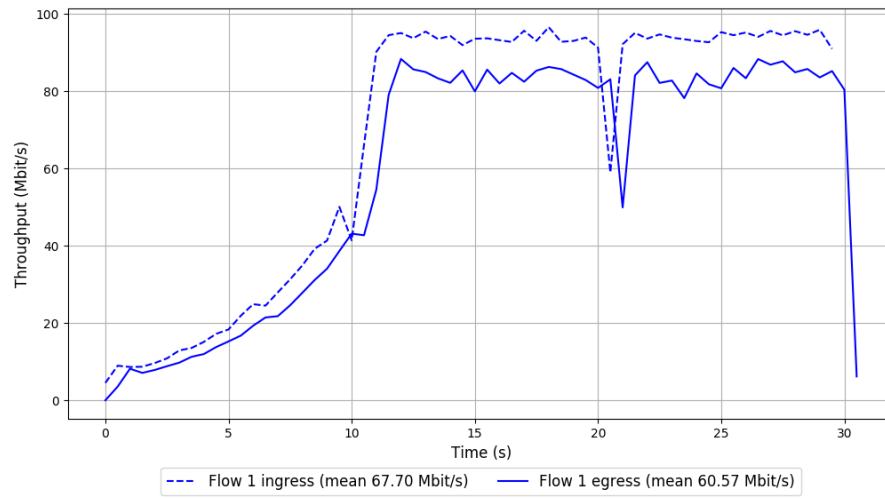
-- Flow 1:

Average throughput: 60.57 Mbit/s

95th percentile per-packet one-way delay: 47.300 ms

Loss rate: 10.53%

Run 2: Report of FillP-Sheep — Data Link



Run 3: Statistics of FillP-Sheep

Start at: 2019-03-26 20:57:32

End at: 2019-03-26 20:58:02

Local clock offset: 0.175 ms

Remote clock offset: 0.787 ms

Below is generated by plot.py at 2019-03-26 22:10:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 54.89 Mbit/s

95th percentile per-packet one-way delay: 45.730 ms

Loss rate: 13.30%

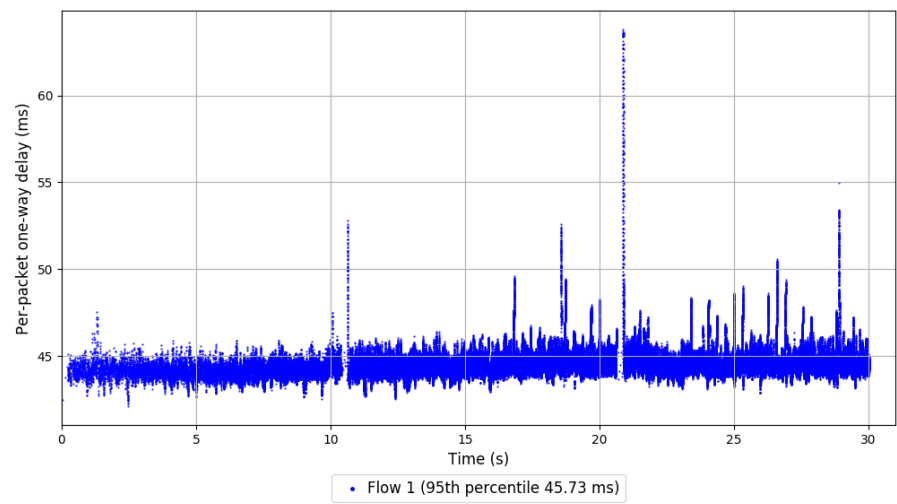
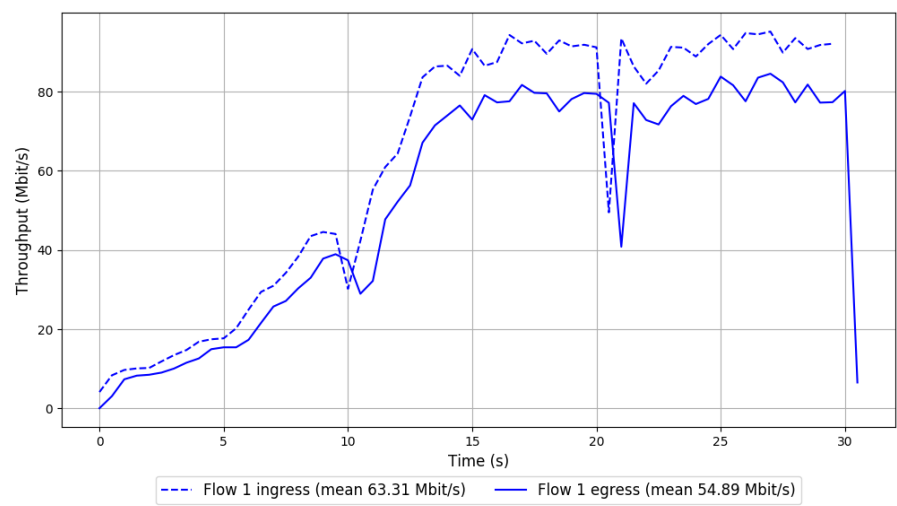
-- Flow 1:

Average throughput: 54.89 Mbit/s

95th percentile per-packet one-way delay: 45.730 ms

Loss rate: 13.30%

Run 3: Report of FillP-Sheep — Data Link



Run 4: Statistics of FillP-Sheep

Start at: 2019-03-26 21:22:06

End at: 2019-03-26 21:22:36

Local clock offset: -0.105 ms

Remote clock offset: 0.85 ms

Below is generated by plot.py at 2019-03-26 22:10:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.42 Mbit/s

95th percentile per-packet one-way delay: 45.291 ms

Loss rate: 15.86%

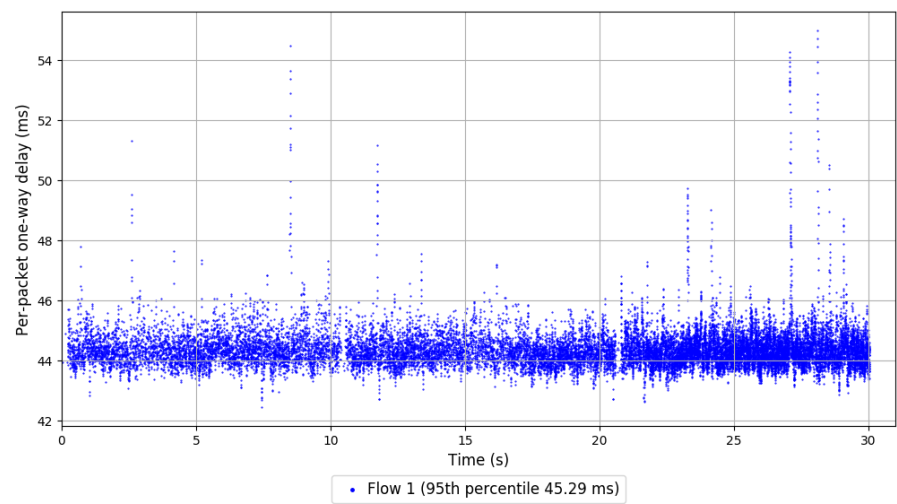
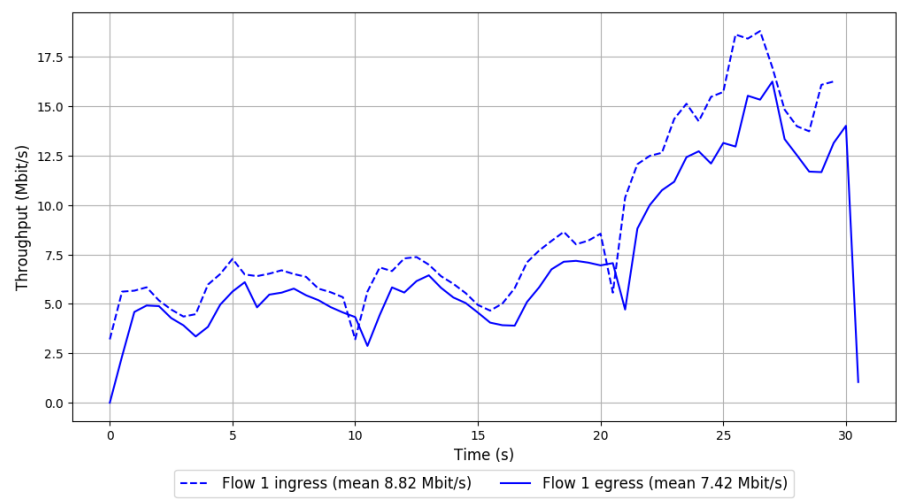
-- Flow 1:

Average throughput: 7.42 Mbit/s

95th percentile per-packet one-way delay: 45.291 ms

Loss rate: 15.86%

Run 4: Report of FillP-Sheep — Data Link



Run 5: Statistics of FillP-Sheep

Start at: 2019-03-26 21:46:33

End at: 2019-03-26 21:47:03

Local clock offset: 0.058 ms

Remote clock offset: 0.795 ms

Below is generated by plot.py at 2019-03-26 22:10:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.79 Mbit/s

95th percentile per-packet one-way delay: 45.869 ms

Loss rate: 18.42%

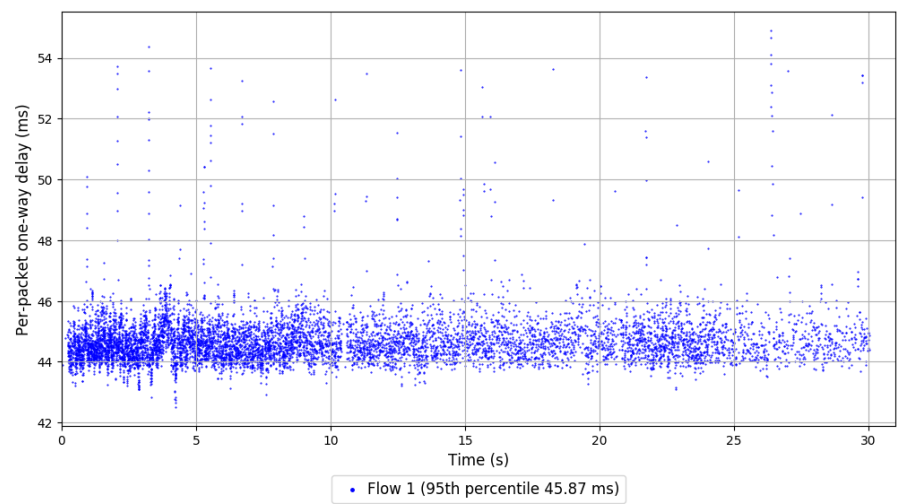
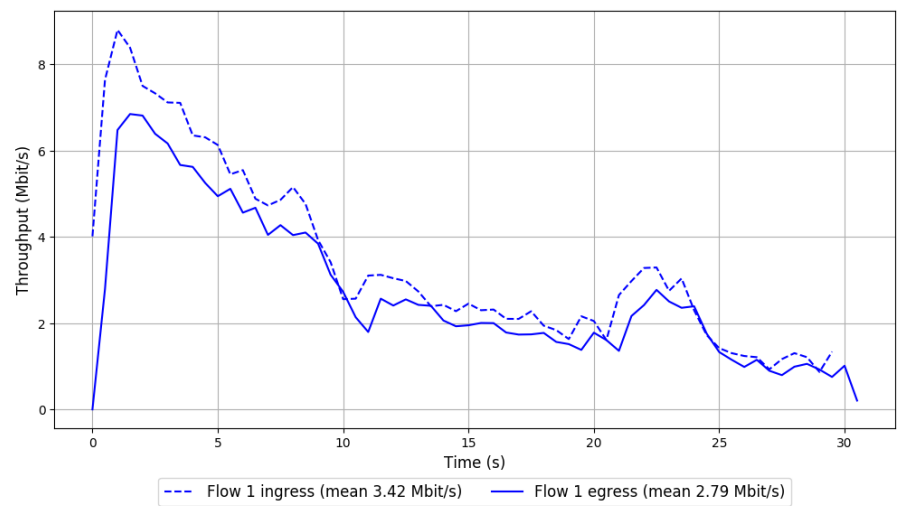
-- Flow 1:

Average throughput: 2.79 Mbit/s

95th percentile per-packet one-way delay: 45.869 ms

Loss rate: 18.42%

Run 5: Report of FillP-Sheep — Data Link

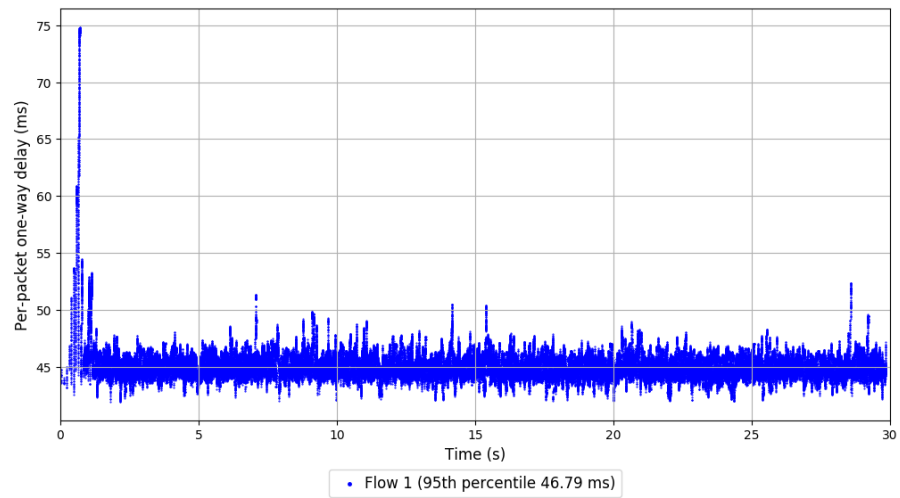
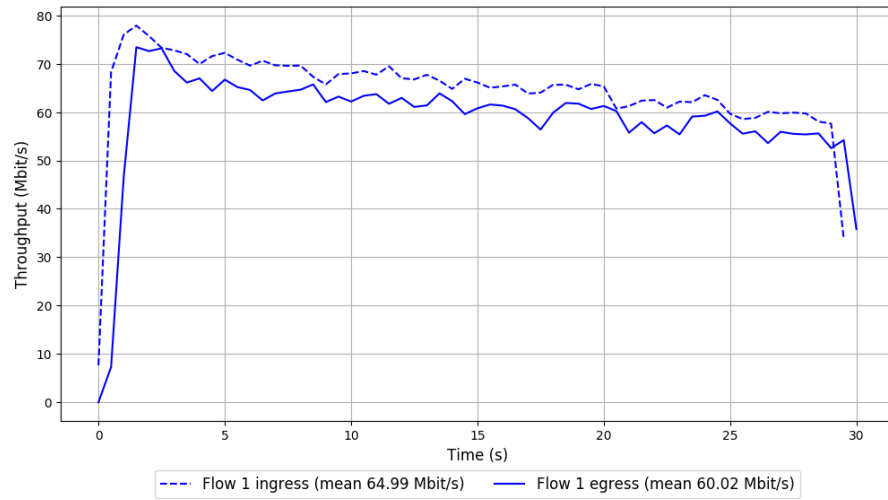


```
Run 1: Statistics of Indigo

Start at: 2019-03-26 20:09:59
End at: 2019-03-26 20:10:29
Local clock offset: 2.012 ms
Remote clock offset: 0.335 ms

# Below is generated by plot.py at 2019-03-26 22:10:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 60.02 Mbit/s
95th percentile per-packet one-way delay: 46.792 ms
Loss rate: 7.63%
-- Flow 1:
Average throughput: 60.02 Mbit/s
95th percentile per-packet one-way delay: 46.792 ms
Loss rate: 7.63%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2019-03-26 20:34:25

End at: 2019-03-26 20:34:55

Local clock offset: 1.032 ms

Remote clock offset: 0.577 ms

Below is generated by plot.py at 2019-03-26 22:11:02

Datalink statistics

-- Total of 1 flow:

Average throughput: 66.62 Mbit/s

95th percentile per-packet one-way delay: 46.542 ms

Loss rate: 9.47%

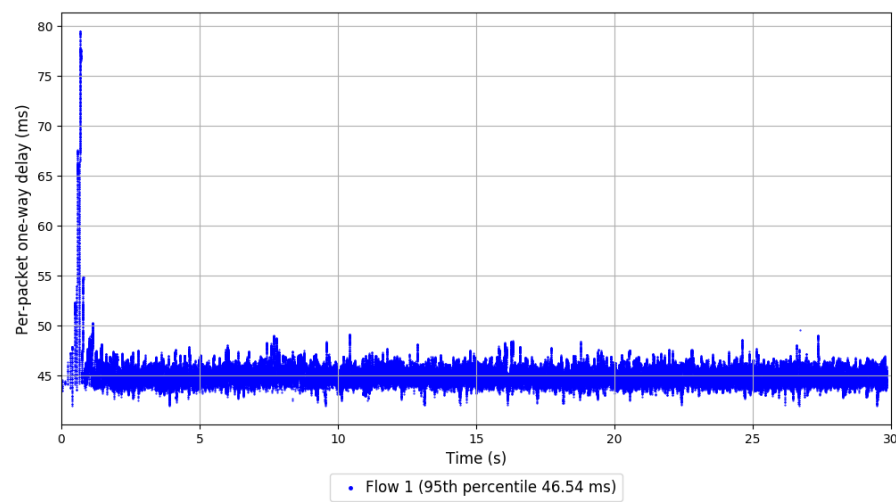
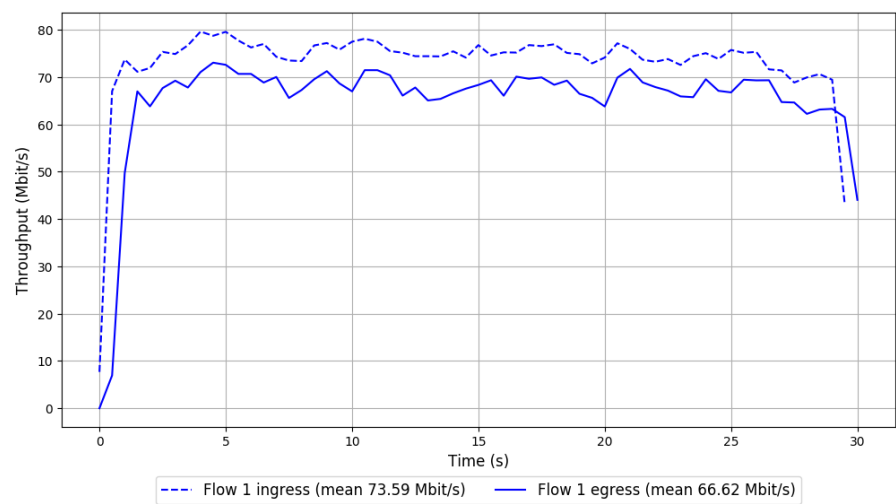
-- Flow 1:

Average throughput: 66.62 Mbit/s

95th percentile per-packet one-way delay: 46.542 ms

Loss rate: 9.47%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2019-03-26 20:58:42

End at: 2019-03-26 20:59:12

Local clock offset: 0.142 ms

Remote clock offset: 0.778 ms

Below is generated by plot.py at 2019-03-26 22:11:02

Datalink statistics

-- Total of 1 flow:

Average throughput: 61.72 Mbit/s

95th percentile per-packet one-way delay: 47.170 ms

Loss rate: 13.98%

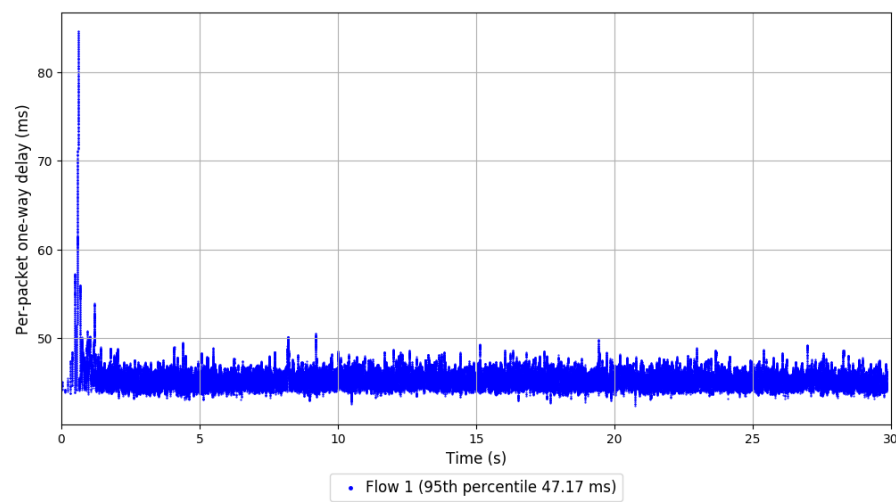
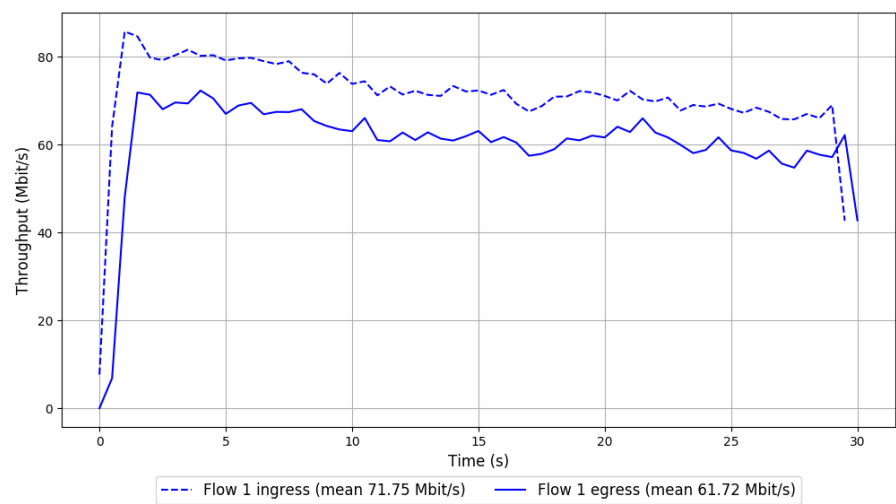
-- Flow 1:

Average throughput: 61.72 Mbit/s

95th percentile per-packet one-way delay: 47.170 ms

Loss rate: 13.98%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2019-03-26 21:23:14

End at: 2019-03-26 21:23:44

Local clock offset: -0.081 ms

Remote clock offset: 0.866 ms

Below is generated by plot.py at 2019-03-26 22:11:02

Datalink statistics

-- Total of 1 flow:

Average throughput: 56.28 Mbit/s

95th percentile per-packet one-way delay: 47.372 ms

Loss rate: 16.84%

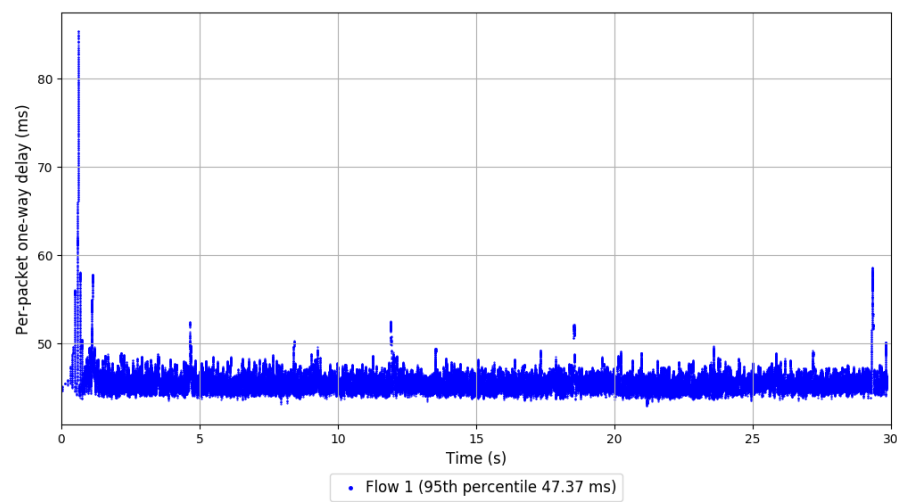
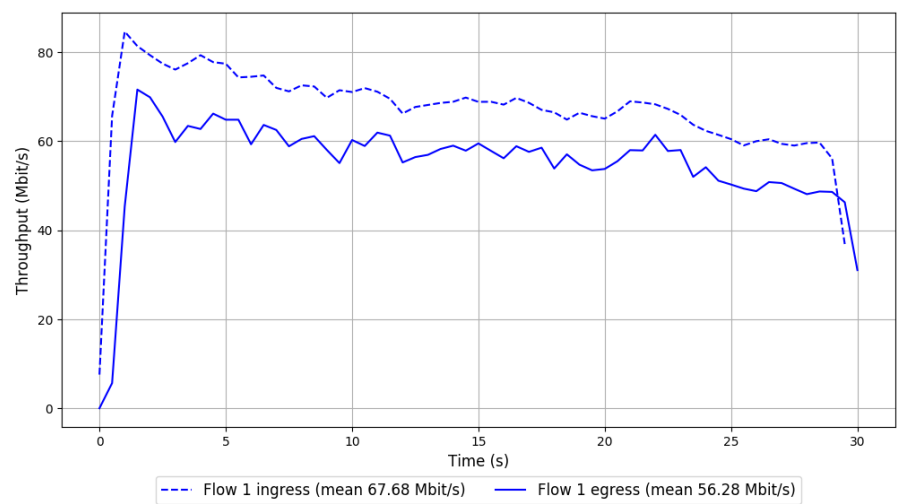
-- Flow 1:

Average throughput: 56.28 Mbit/s

95th percentile per-packet one-way delay: 47.372 ms

Loss rate: 16.84%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2019-03-26 21:47:42

End at: 2019-03-26 21:48:12

Local clock offset: 0.101 ms

Remote clock offset: 0.755 ms

Below is generated by plot.py at 2019-03-26 22:11:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 56.99 Mbit/s

95th percentile per-packet one-way delay: 48.296 ms

Loss rate: 20.47%

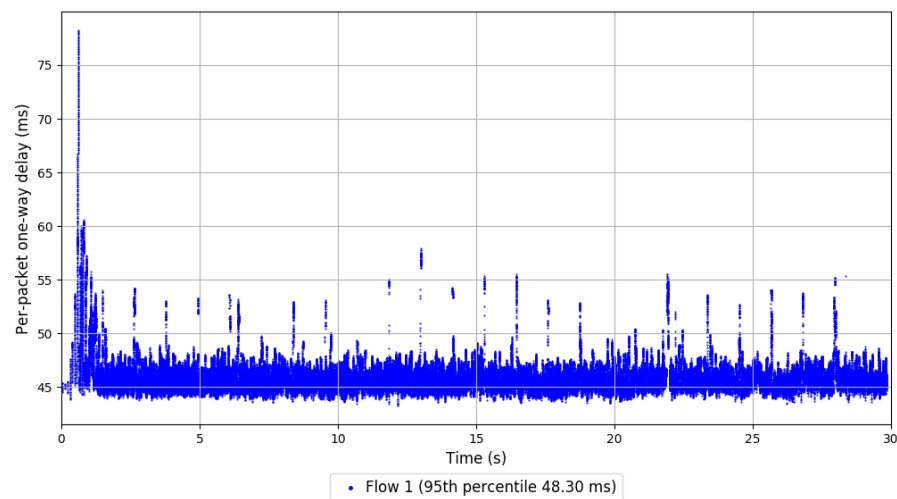
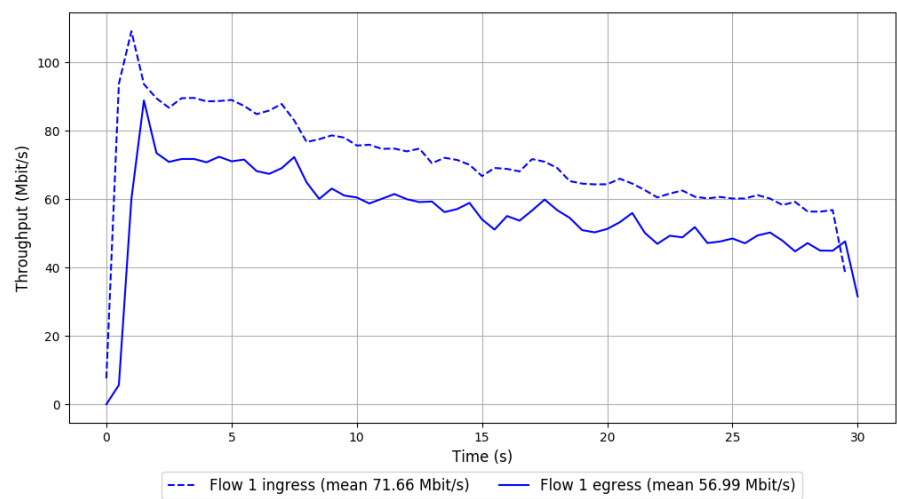
-- Flow 1:

Average throughput: 56.99 Mbit/s

95th percentile per-packet one-way delay: 48.296 ms

Loss rate: 20.47%

Run 5: Report of Indigo — Data Link



Run 1: Statistics of Indigo-MusesC3

Start at: 2019-03-26 20:06:35

End at: 2019-03-26 20:07:05

Local clock offset: 1.849 ms

Remote clock offset: 0.358 ms

Below is generated by plot.py at 2019-03-26 22:11:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 11.49 Mbit/s

95th percentile per-packet one-way delay: 45.048 ms

Loss rate: 8.72%

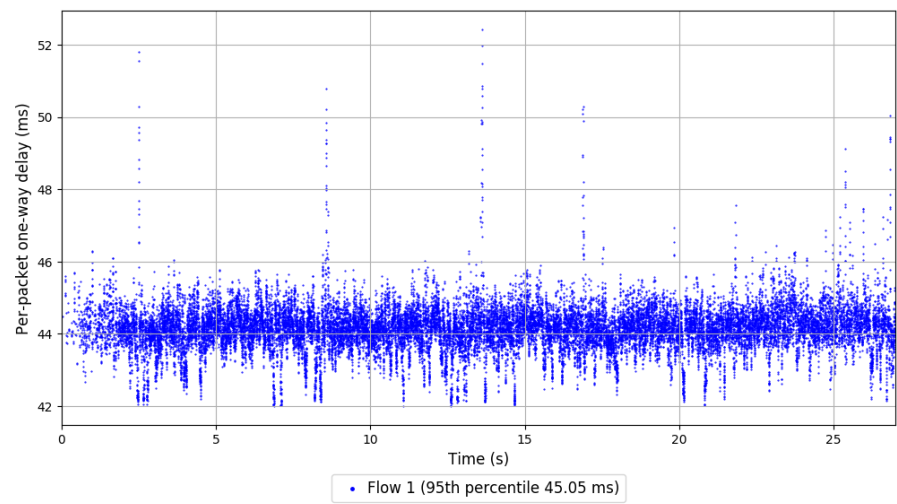
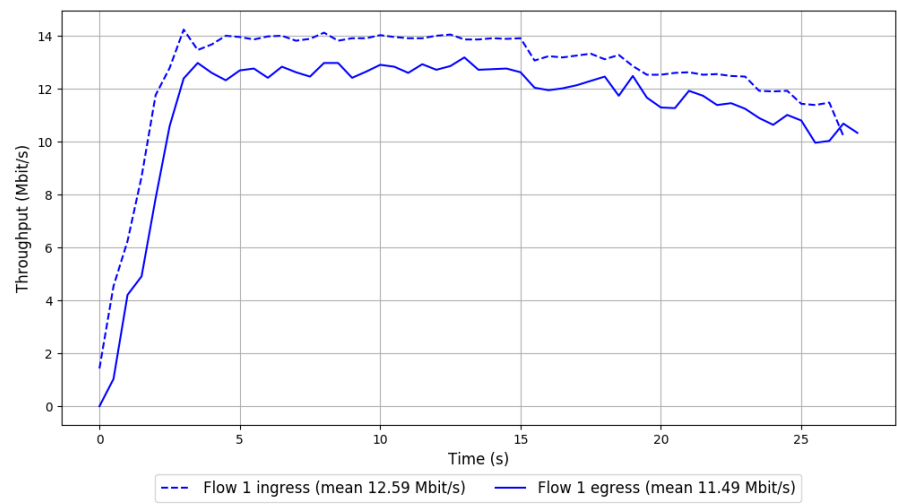
-- Flow 1:

Average throughput: 11.49 Mbit/s

95th percentile per-packet one-way delay: 45.048 ms

Loss rate: 8.72%

Run 1: Report of Indigo-MusesC3 — Data Link



Run 2: Statistics of Indigo-MusesC3

Start at: 2019-03-26 20:30:50

End at: 2019-03-26 20:31:20

Local clock offset: 1.124 ms

Remote clock offset: 0.536 ms

Below is generated by plot.py at 2019-03-26 22:11:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 19.12 Mbit/s

95th percentile per-packet one-way delay: 44.936 ms

Loss rate: 8.76%

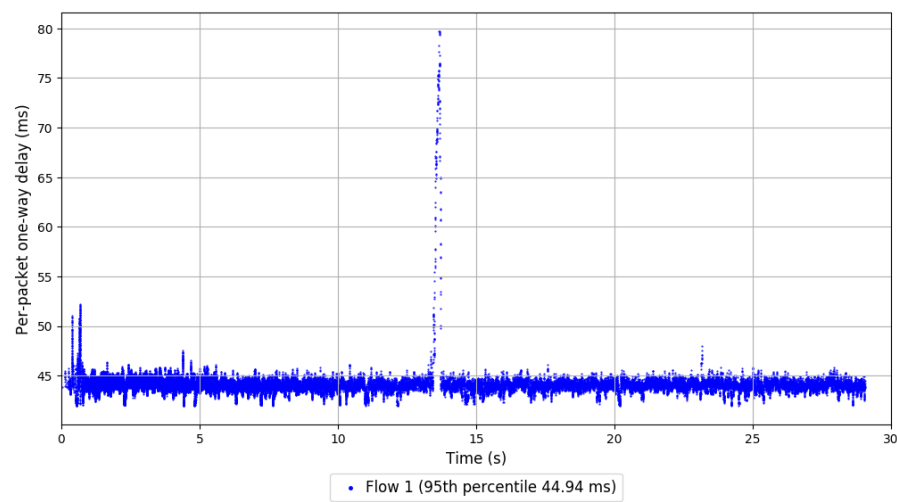
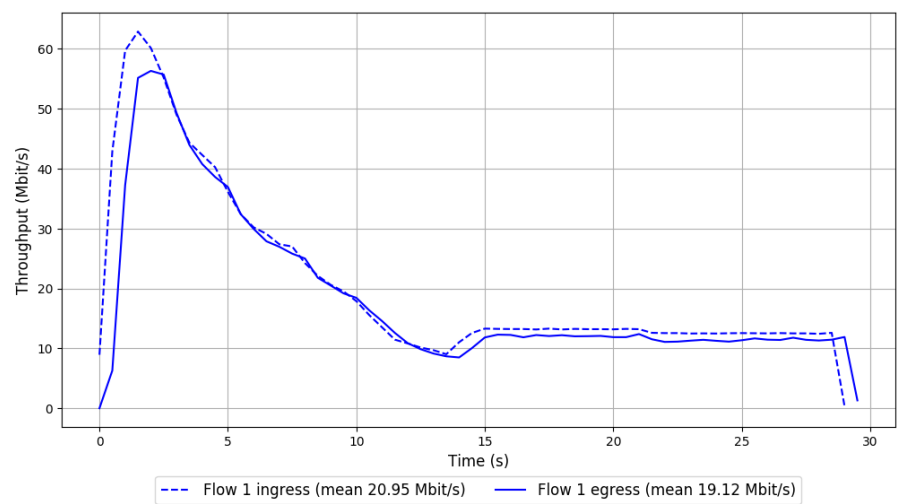
-- Flow 1:

Average throughput: 19.12 Mbit/s

95th percentile per-packet one-way delay: 44.936 ms

Loss rate: 8.76%

Run 2: Report of Indigo-MusesC3 — Data Link



Run 3: Statistics of Indigo-MusesC3

Start at: 2019-03-26 20:55:15

End at: 2019-03-26 20:55:45

Local clock offset: 0.256 ms

Remote clock offset: 0.764 ms

Below is generated by plot.py at 2019-03-26 22:11:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.37 Mbit/s

95th percentile per-packet one-way delay: 45.306 ms

Loss rate: 12.17%

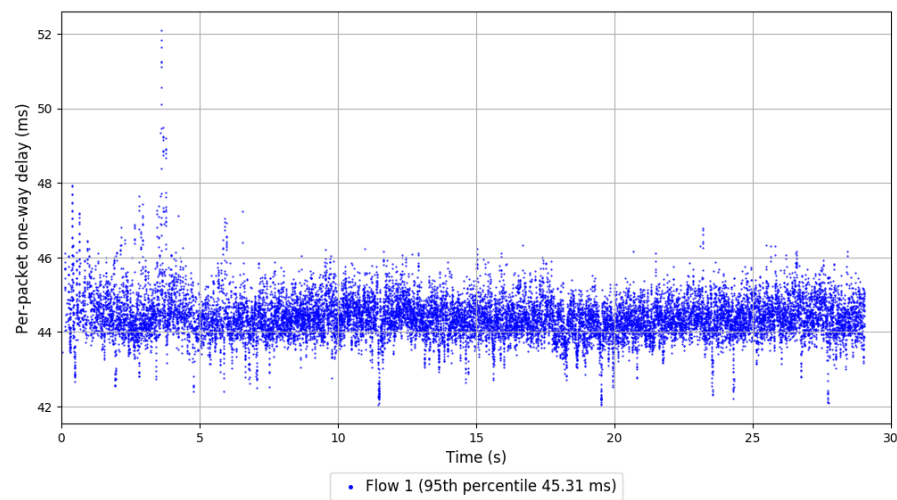
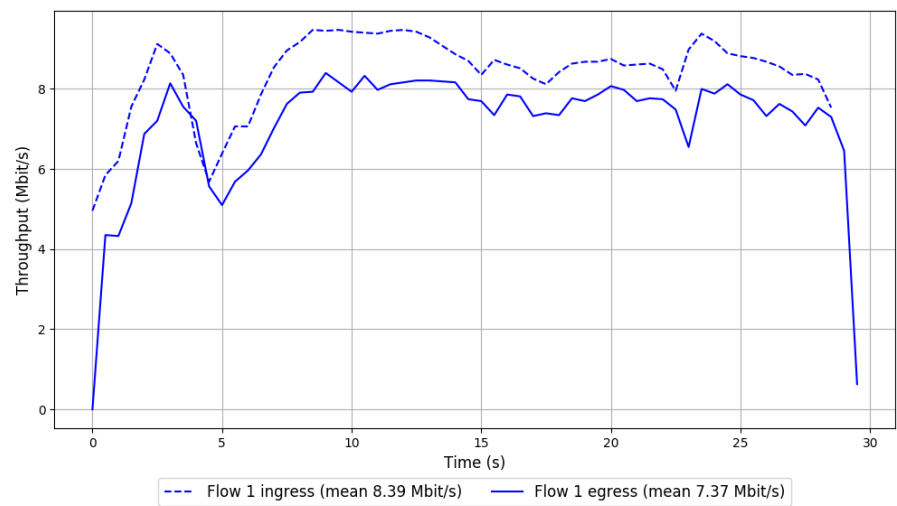
-- Flow 1:

Average throughput: 7.37 Mbit/s

95th percentile per-packet one-way delay: 45.306 ms

Loss rate: 12.17%

Run 3: Report of Indigo-MusesC3 — Data Link



Run 4: Statistics of Indigo-MusesC3

Start at: 2019-03-26 21:19:51

End at: 2019-03-26 21:20:21

Local clock offset: -0.192 ms

Remote clock offset: 0.797 ms

Below is generated by plot.py at 2019-03-26 22:11:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 5.60 Mbit/s

95th percentile per-packet one-way delay: 46.124 ms

Loss rate: 16.71%

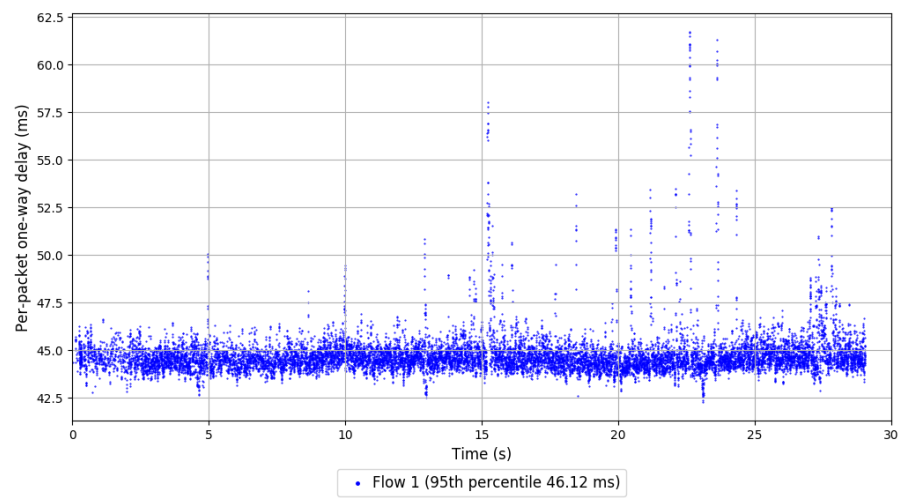
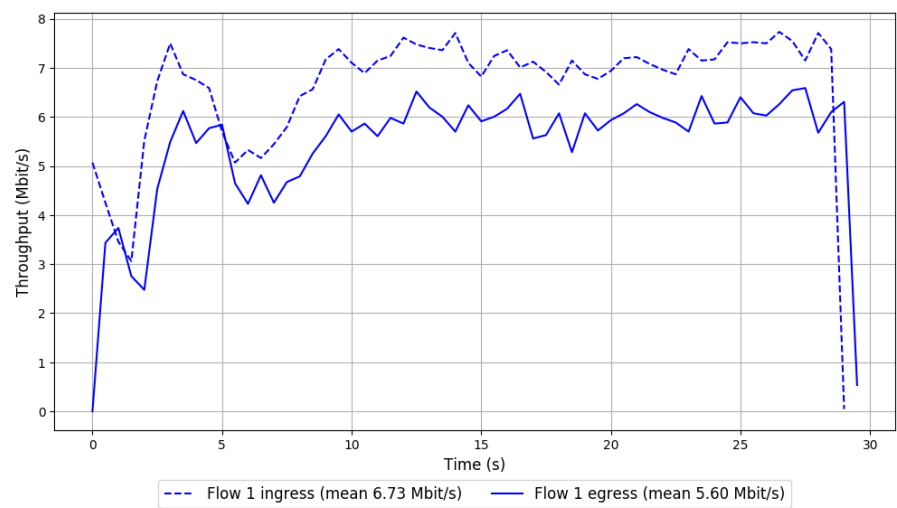
-- Flow 1:

Average throughput: 5.60 Mbit/s

95th percentile per-packet one-way delay: 46.124 ms

Loss rate: 16.71%

Run 4: Report of Indigo-MusesC3 — Data Link



Run 5: Statistics of Indigo-MusesC3

Start at: 2019-03-26 21:44:17

End at: 2019-03-26 21:44:47

Local clock offset: 0.046 ms

Remote clock offset: 0.849 ms

Below is generated by plot.py at 2019-03-26 22:11:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.59 Mbit/s

95th percentile per-packet one-way delay: 46.323 ms

Loss rate: 19.47%

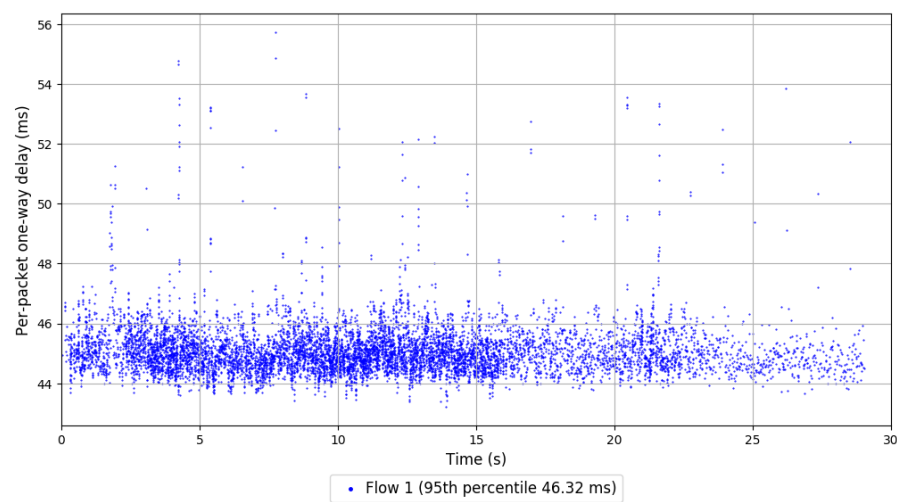
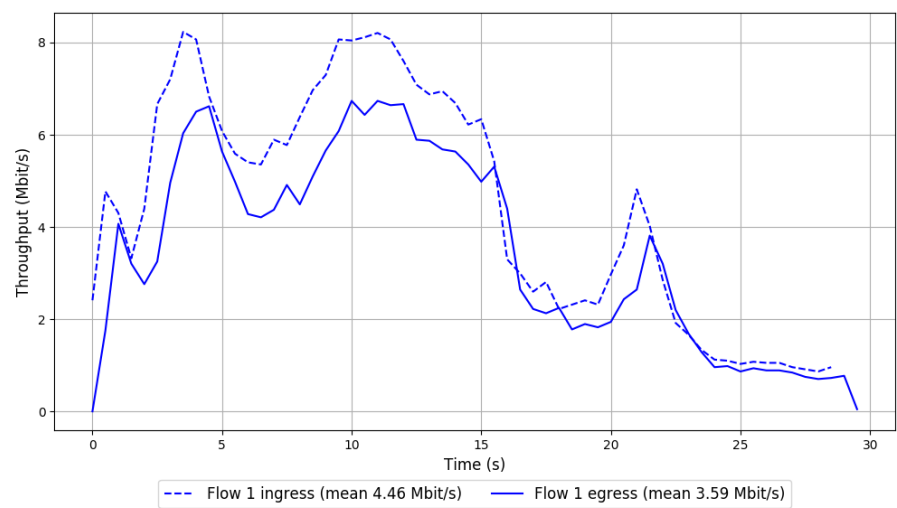
-- Flow 1:

Average throughput: 3.59 Mbit/s

95th percentile per-packet one-way delay: 46.323 ms

Loss rate: 19.47%

Run 5: Report of Indigo-MusesC3 — Data Link



Run 1: Statistics of Indigo-MusesC5

Start at: 2019-03-26 20:27:13

End at: 2019-03-26 20:27:43

Local clock offset: 1.247 ms

Remote clock offset: 0.48 ms

Below is generated by plot.py at 2019-03-26 22:11:26

Datalink statistics

-- Total of 1 flow:

Average throughput: 35.88 Mbit/s

95th percentile per-packet one-way delay: 45.322 ms

Loss rate: 9.13%

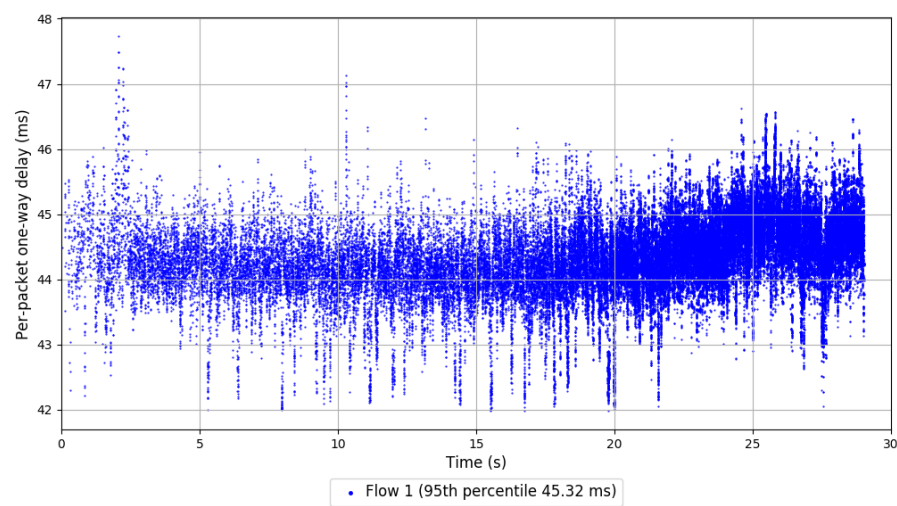
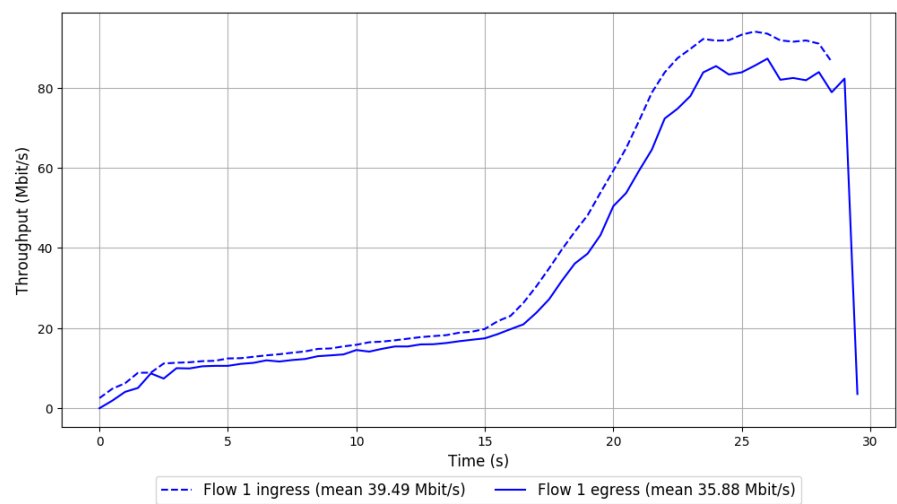
-- Flow 1:

Average throughput: 35.88 Mbit/s

95th percentile per-packet one-way delay: 45.322 ms

Loss rate: 9.13%

Run 1: Report of Indigo-MusesC5 — Data Link



Run 2: Statistics of Indigo-MusesC5

Start at: 2019-03-26 20:51:34

End at: 2019-03-26 20:52:04

Local clock offset: 0.423 ms

Remote clock offset: 0.752 ms

Below is generated by plot.py at 2019-03-26 22:11:44

Datalink statistics

-- Total of 1 flow:

Average throughput: 51.47 Mbit/s

95th percentile per-packet one-way delay: 45.836 ms

Loss rate: 13.07%

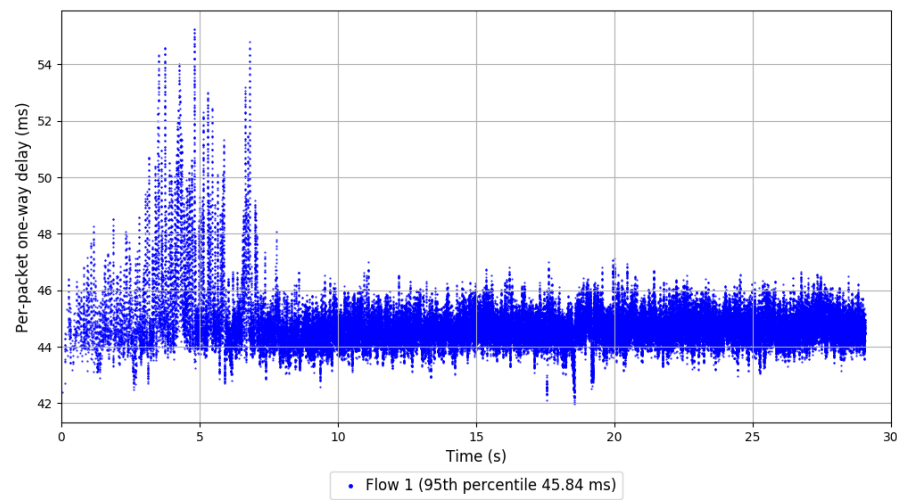
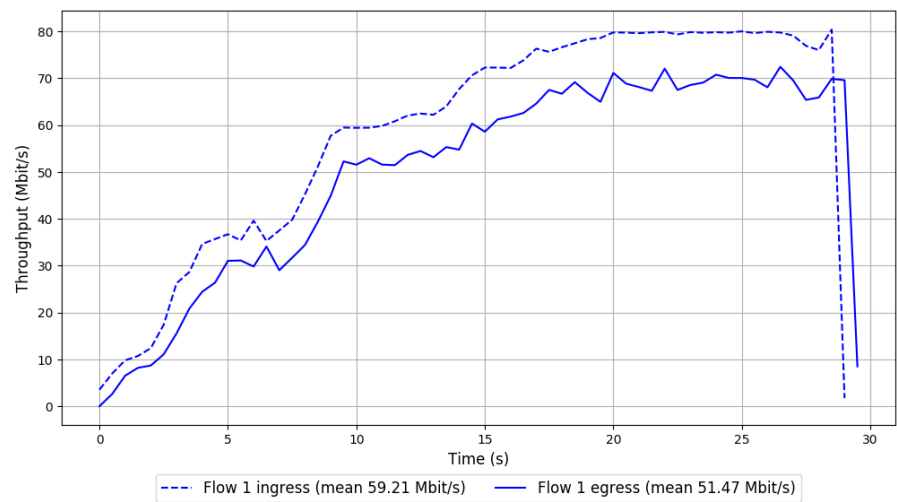
-- Flow 1:

Average throughput: 51.47 Mbit/s

95th percentile per-packet one-way delay: 45.836 ms

Loss rate: 13.07%

Run 2: Report of Indigo-MusesC5 — Data Link

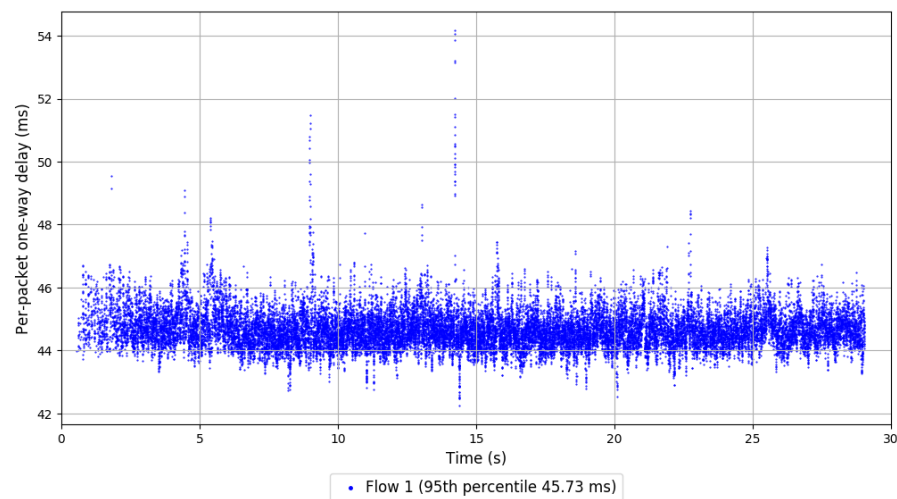
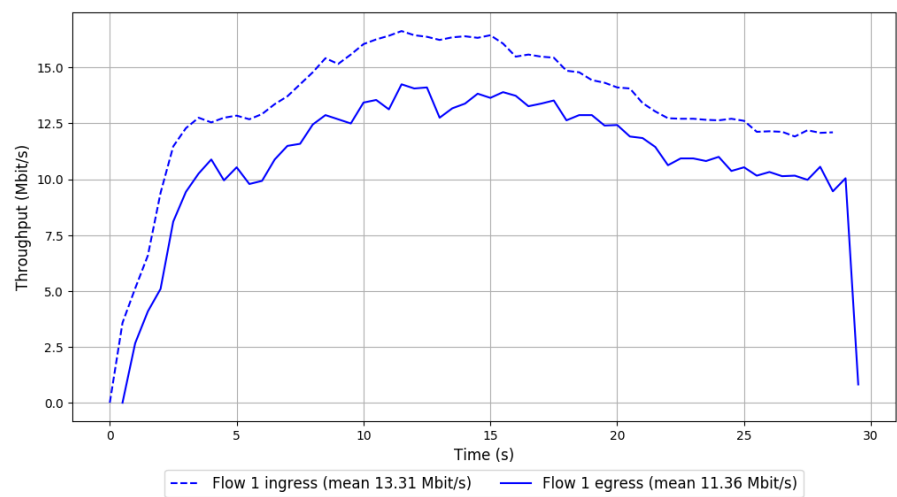


Run 3: Statistics of Indigo-MusesC5

Start at: 2019-03-26 21:16:00
End at: 2019-03-26 21:16:30
Local clock offset: -0.391 ms
Remote clock offset: 0.844 ms

Below is generated by plot.py at 2019-03-26 22:11:44
Datalink statistics
-- Total of 1 flow:
Average throughput: 11.36 Mbit/s
95th percentile per-packet one-way delay: 45.729 ms
Loss rate: 16.08%
-- Flow 1:
Average throughput: 11.36 Mbit/s
95th percentile per-packet one-way delay: 45.729 ms
Loss rate: 16.08%

Run 3: Report of Indigo-MusesC5 — Data Link



Run 4: Statistics of Indigo-MusesC5

Start at: 2019-03-26 21:40:28

End at: 2019-03-26 21:40:58

Local clock offset: 0.052 ms

Remote clock offset: 0.635 ms

Below is generated by plot.py at 2019-03-26 22:12:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 64.00 Mbit/s

95th percentile per-packet one-way delay: 49.047 ms

Loss rate: 17.81%

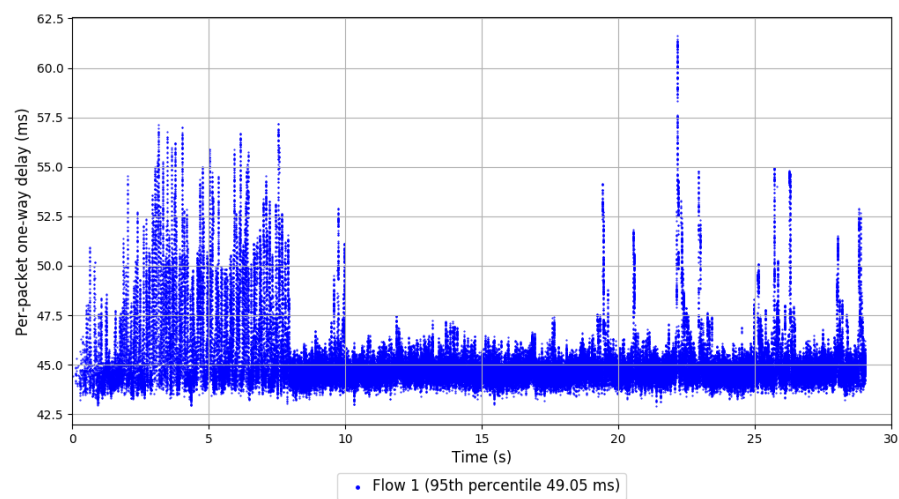
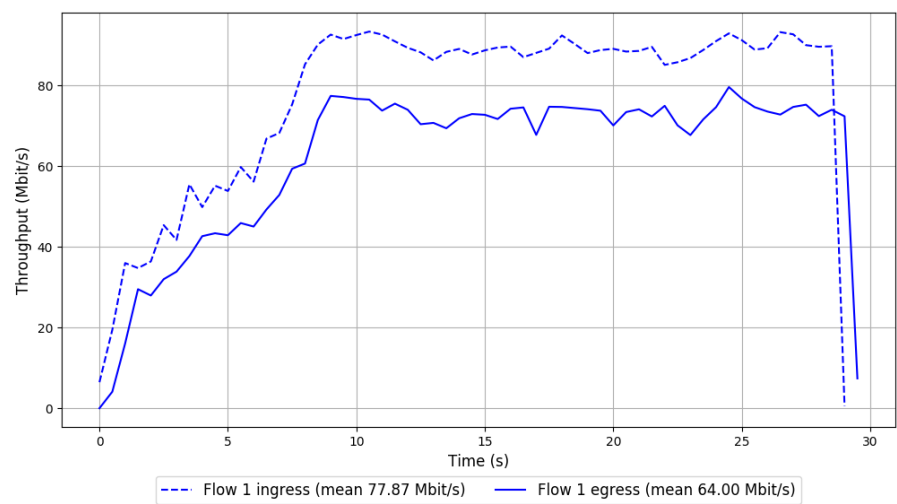
-- Flow 1:

Average throughput: 64.00 Mbit/s

95th percentile per-packet one-way delay: 49.047 ms

Loss rate: 17.81%

Run 4: Report of Indigo-MusesC5 — Data Link



Run 5: Statistics of Indigo-MusesC5

Start at: 2019-03-26 22:05:19

End at: 2019-03-26 22:05:49

Local clock offset: 0.334 ms

Remote clock offset: 0.61 ms

Below is generated by plot.py at 2019-03-26 22:12:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 11.81 Mbit/s

95th percentile per-packet one-way delay: 45.260 ms

Loss rate: 16.29%

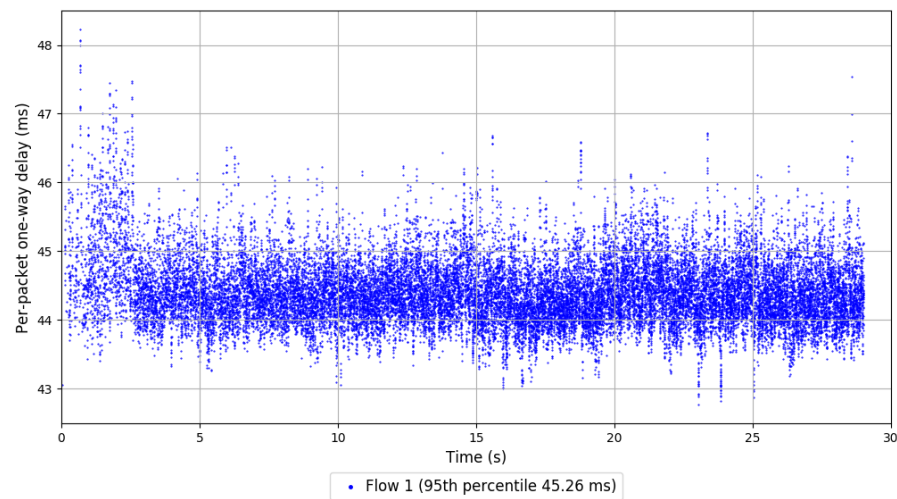
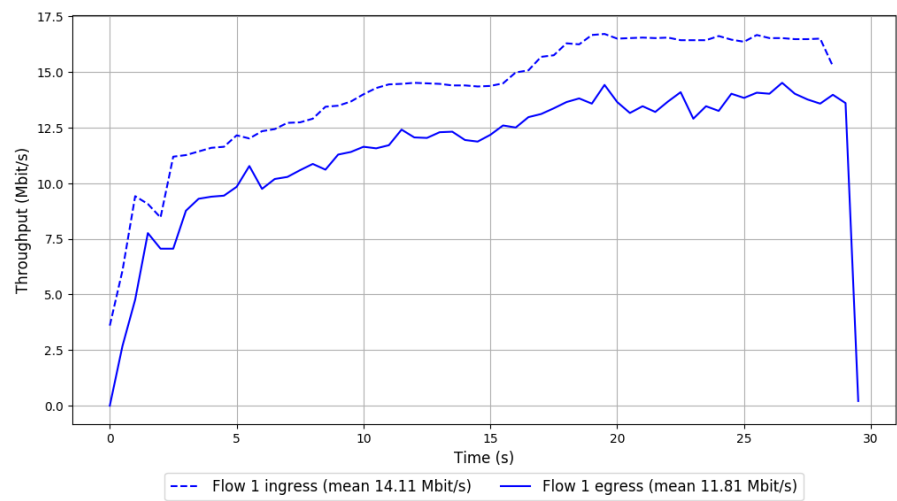
-- Flow 1:

Average throughput: 11.81 Mbit/s

95th percentile per-packet one-way delay: 45.260 ms

Loss rate: 16.29%

Run 5: Report of Indigo-MusesC5 — Data Link

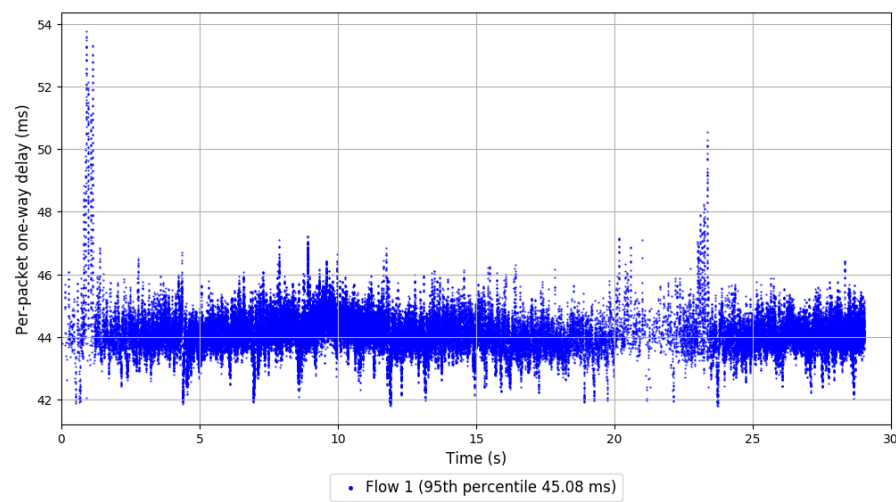
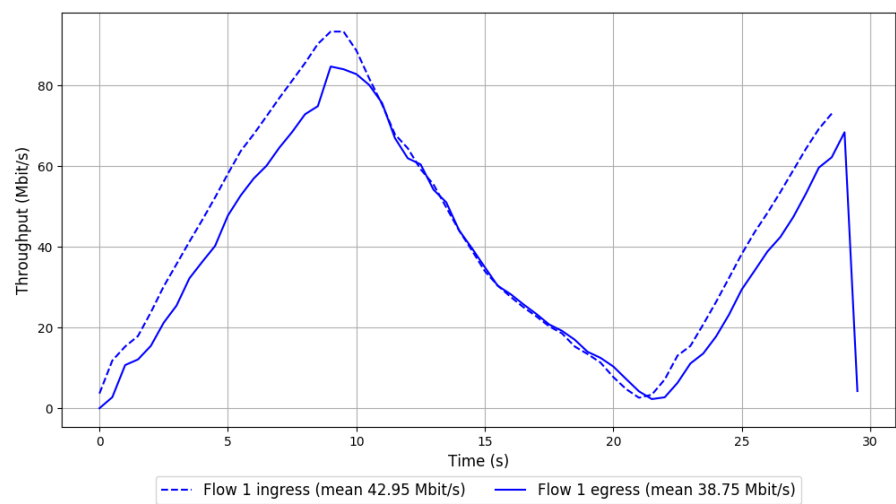



```
Run 1: Statistics of Indigo-MusesD

Start at: 2019-03-26 20:22:41
End at: 2019-03-26 20:23:11
Local clock offset: 1.505 ms
Remote clock offset: 0.313 ms

# Below is generated by plot.py at 2019-03-26 22:12:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 38.75 Mbit/s
95th percentile per-packet one-way delay: 45.080 ms
Loss rate: 9.79%
-- Flow 1:
Average throughput: 38.75 Mbit/s
95th percentile per-packet one-way delay: 45.080 ms
Loss rate: 9.79%
```

Run 1: Report of Indigo-MusesD — Data Link



Run 2: Statistics of Indigo-MusesD

Start at: 2019-03-26 20:47:04

End at: 2019-03-26 20:47:34

Local clock offset: 0.609 ms

Remote clock offset: 0.797 ms

Below is generated by plot.py at 2019-03-26 22:12:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 16.96 Mbit/s

95th percentile per-packet one-way delay: 44.943 ms

Loss rate: 10.35%

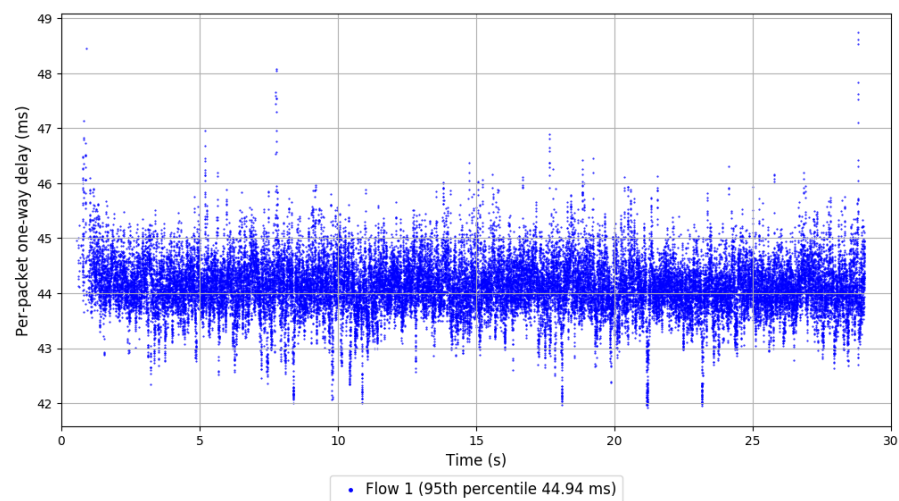
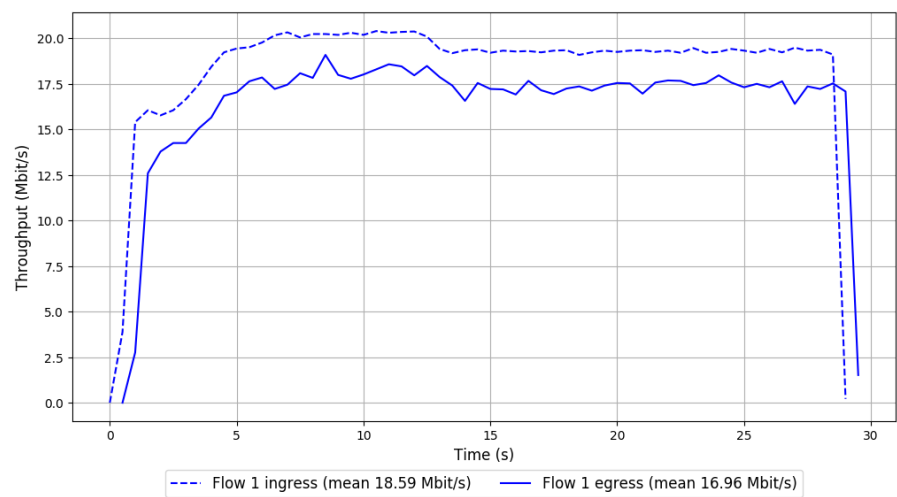
-- Flow 1:

Average throughput: 16.96 Mbit/s

95th percentile per-packet one-way delay: 44.943 ms

Loss rate: 10.35%

Run 2: Report of Indigo-MusesD — Data Link



Run 3: Statistics of Indigo-MusesD

Start at: 2019-03-26 21:11:24

End at: 2019-03-26 21:11:54

Local clock offset: -0.249 ms

Remote clock offset: 0.864 ms

Below is generated by plot.py at 2019-03-26 22:12:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 41.11 Mbit/s

95th percentile per-packet one-way delay: 46.080 ms

Loss rate: 15.44%

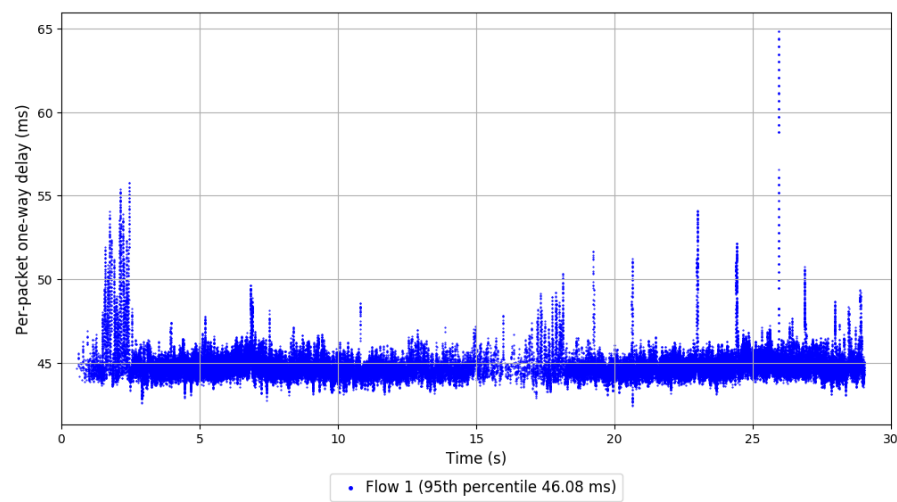
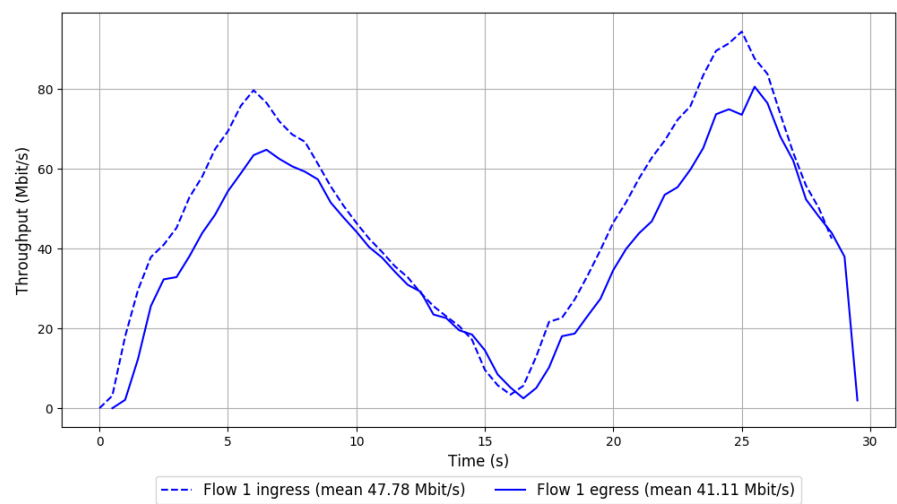
-- Flow 1:

Average throughput: 41.11 Mbit/s

95th percentile per-packet one-way delay: 46.080 ms

Loss rate: 15.44%

Run 3: Report of Indigo-MusesD — Data Link



Run 4: Statistics of Indigo-MusesD

Start at: 2019-03-26 21:35:55

End at: 2019-03-26 21:36:25

Local clock offset: 0.076 ms

Remote clock offset: 0.856 ms

Below is generated by plot.py at 2019-03-26 22:12:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 31.17 Mbit/s

95th percentile per-packet one-way delay: 45.753 ms

Loss rate: 18.79%

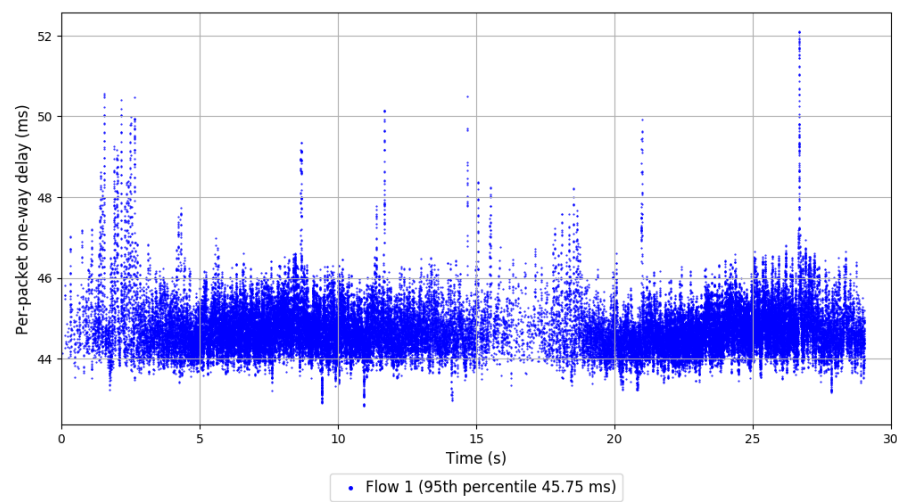
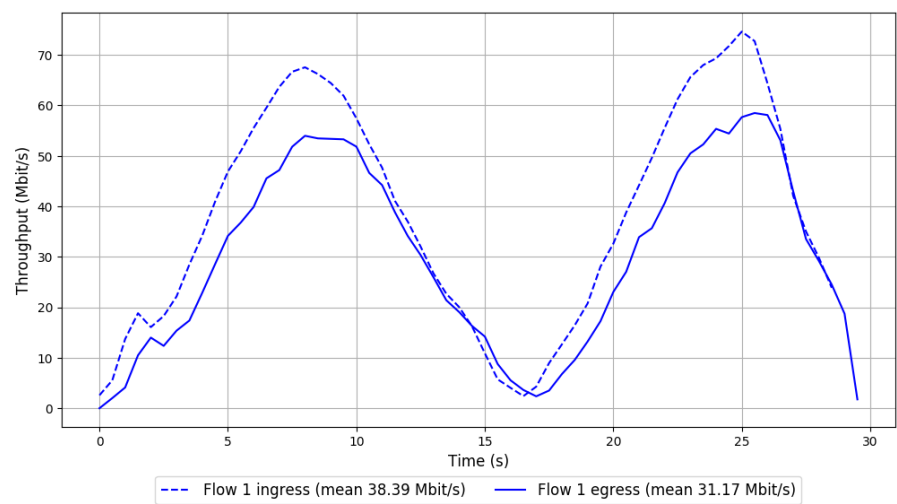
-- Flow 1:

Average throughput: 31.17 Mbit/s

95th percentile per-packet one-way delay: 45.753 ms

Loss rate: 18.79%

Run 4: Report of Indigo-MusesD — Data Link



Run 5: Statistics of Indigo-MusesD

Start at: 2019-03-26 22:00:43

End at: 2019-03-26 22:01:13

Local clock offset: 0.295 ms

Remote clock offset: 0.483 ms

Below is generated by plot.py at 2019-03-26 22:12:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 18.35 Mbit/s

95th percentile per-packet one-way delay: 46.518 ms

Loss rate: 19.23%

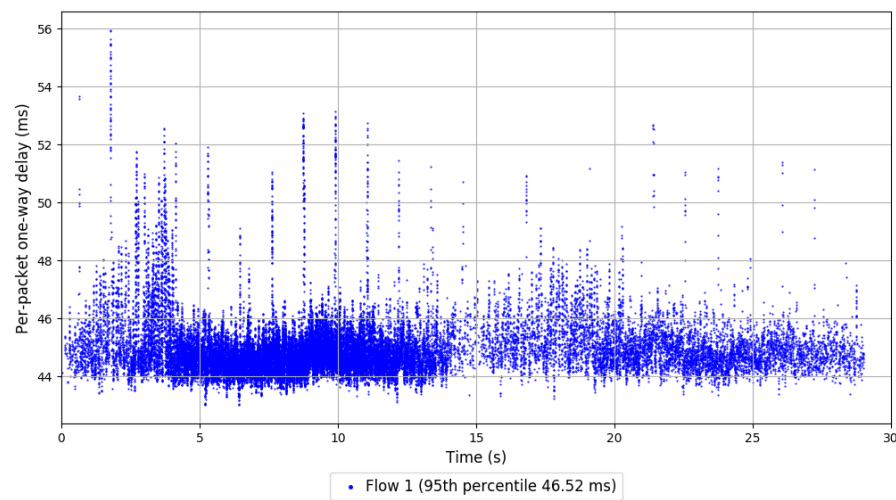
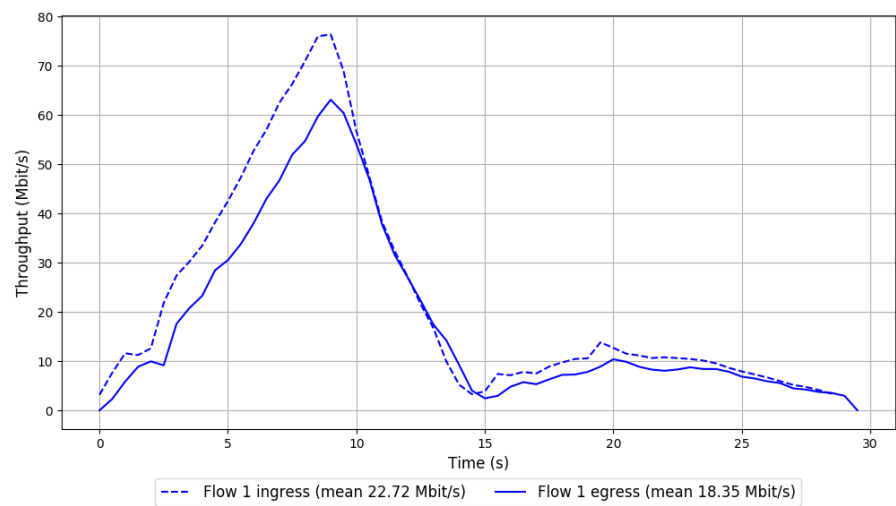
-- Flow 1:

Average throughput: 18.35 Mbit/s

95th percentile per-packet one-way delay: 46.518 ms

Loss rate: 19.23%

Run 5: Report of Indigo-MusesD — Data Link



Run 1: Statistics of Indigo-MusesT

Start at: 2019-03-26 20:14:40

End at: 2019-03-26 20:15:10

Local clock offset: 2.282 ms

Remote clock offset: 0.331 ms

Below is generated by plot.py at 2019-03-26 22:12:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 92.87 Mbit/s

95th percentile per-packet one-way delay: 51.570 ms

Loss rate: 7.64%

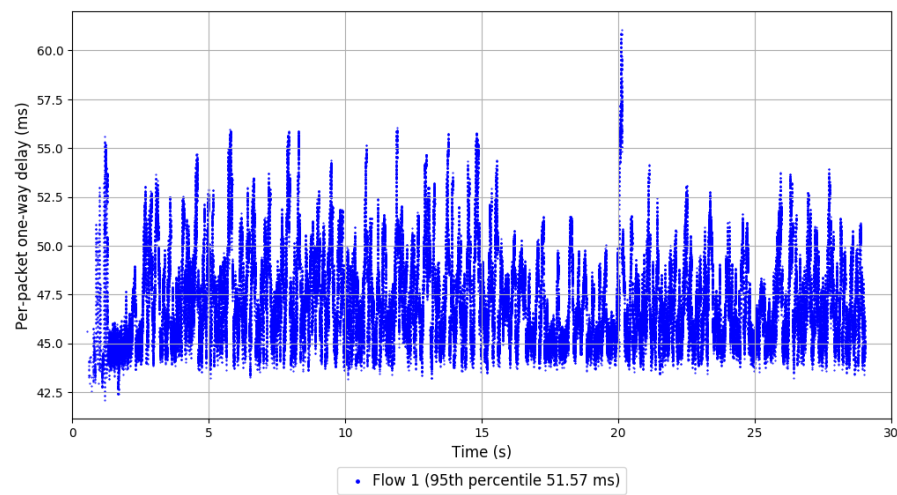
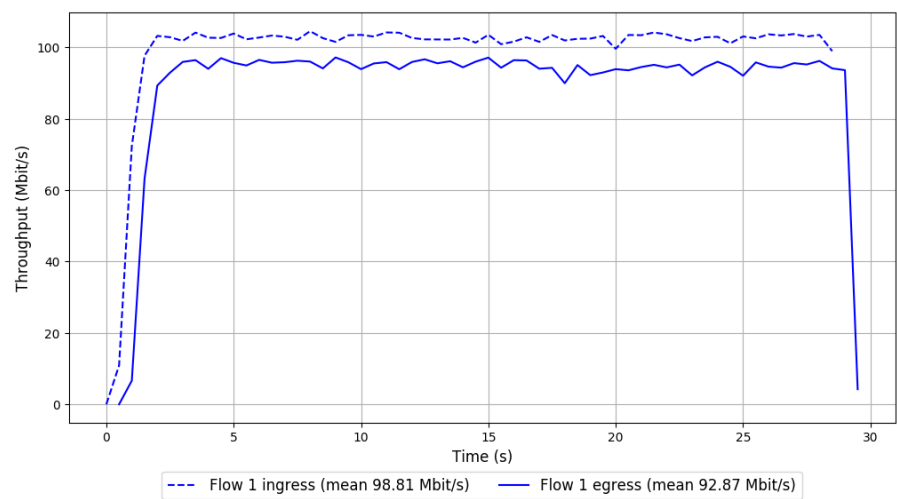
-- Flow 1:

Average throughput: 92.87 Mbit/s

95th percentile per-packet one-way delay: 51.570 ms

Loss rate: 7.64%

Run 1: Report of Indigo-MusesT — Data Link



Run 2: Statistics of Indigo-MusesT

Start at: 2019-03-26 20:38:59

End at: 2019-03-26 20:39:29

Local clock offset: 0.866 ms

Remote clock offset: 0.649 ms

Below is generated by plot.py at 2019-03-26 22:12:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 9.34 Mbit/s

95th percentile per-packet one-way delay: 45.084 ms

Loss rate: 9.86%

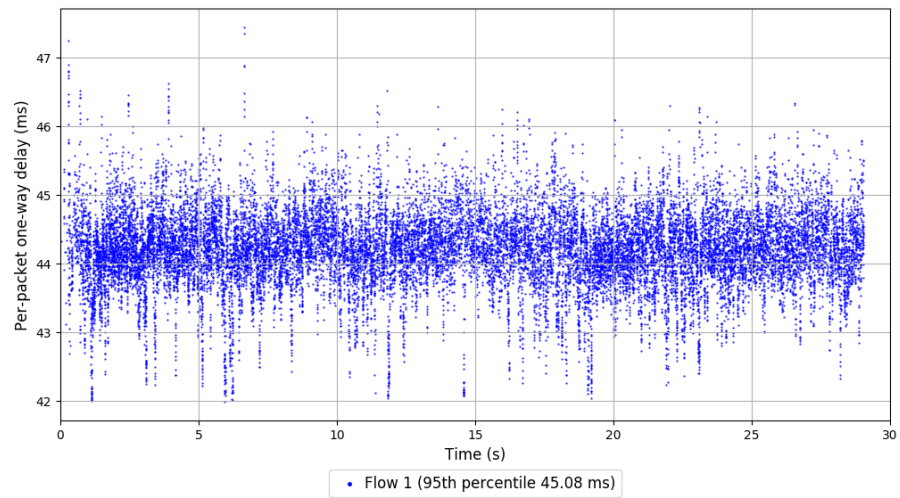
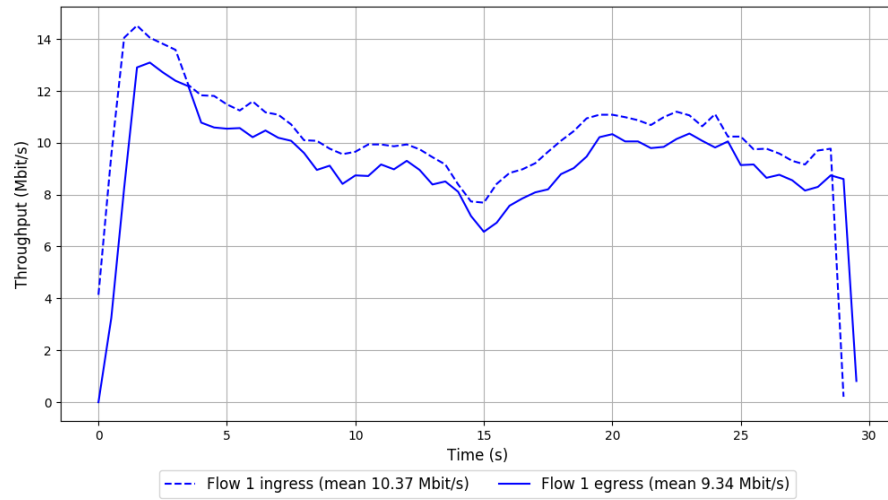
-- Flow 1:

Average throughput: 9.34 Mbit/s

95th percentile per-packet one-way delay: 45.084 ms

Loss rate: 9.86%

Run 2: Report of Indigo-MusesT — Data Link



Run 3: Statistics of Indigo-MusesT

Start at: 2019-03-26 21:03:22

End at: 2019-03-26 21:03:52

Local clock offset: -0.002 ms

Remote clock offset: 0.818 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 91.80 Mbit/s

95th percentile per-packet one-way delay: 51.613 ms

Loss rate: 13.86%

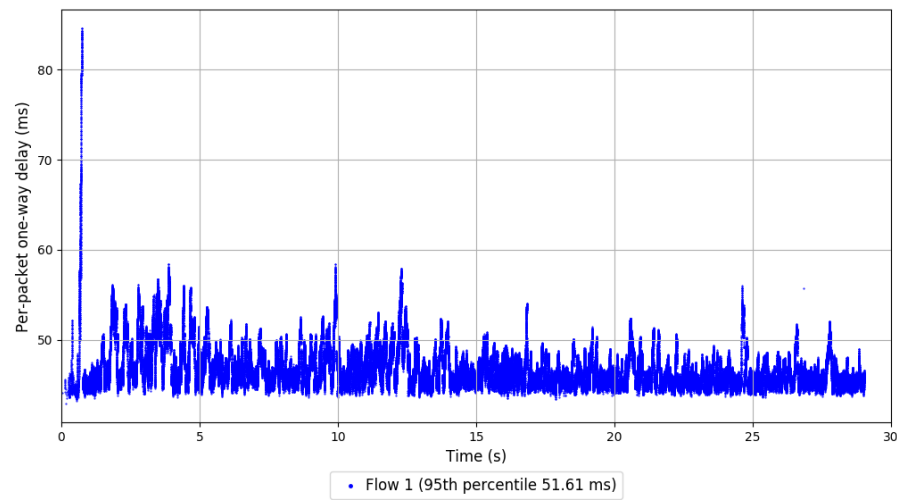
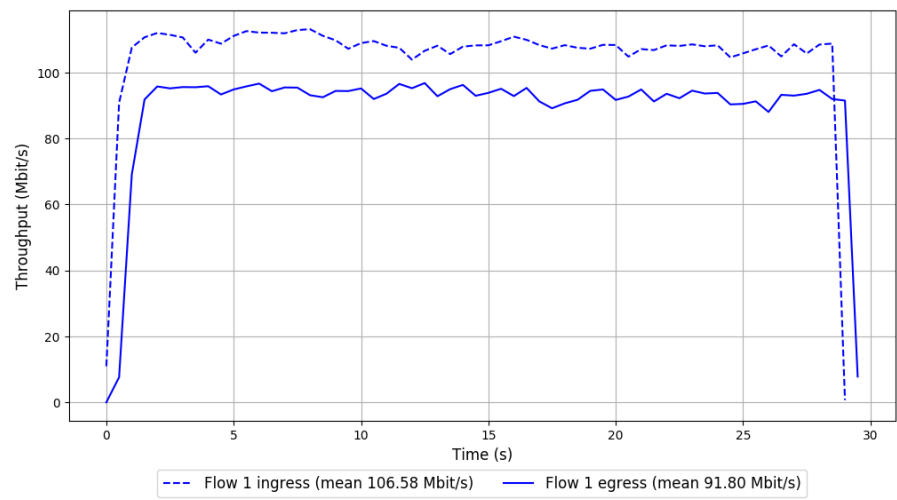
-- Flow 1:

Average throughput: 91.80 Mbit/s

95th percentile per-packet one-way delay: 51.613 ms

Loss rate: 13.86%

Run 3: Report of Indigo-MusesT — Data Link



Run 4: Statistics of Indigo-MusesT

Start at: 2019-03-26 21:27:51

End at: 2019-03-26 21:28:21

Local clock offset: 0.012 ms

Remote clock offset: 0.927 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 4.00 Mbit/s

95th percentile per-packet one-way delay: 45.756 ms

Loss rate: 16.94%

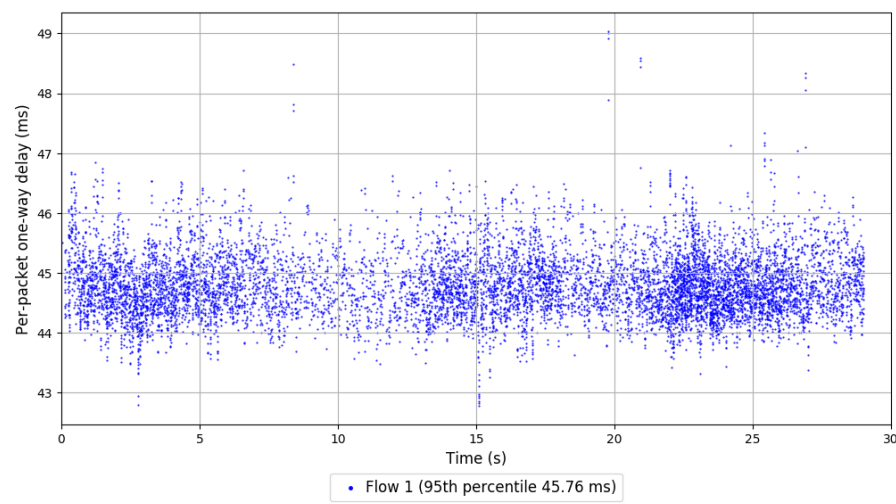
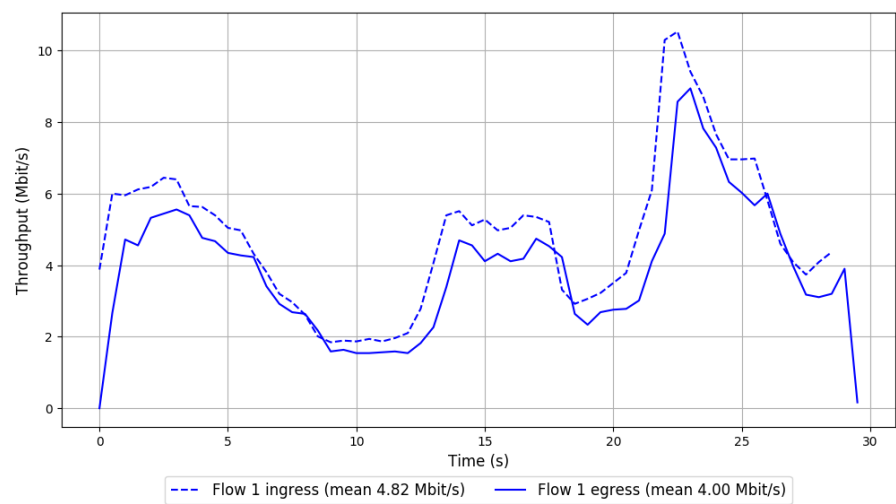
-- Flow 1:

Average throughput: 4.00 Mbit/s

95th percentile per-packet one-way delay: 45.756 ms

Loss rate: 16.94%

Run 4: Report of Indigo-MusesT — Data Link



Run 5: Statistics of Indigo-MusesT

Start at: 2019-03-26 21:52:29

End at: 2019-03-26 21:52:59

Local clock offset: 0.209 ms

Remote clock offset: 0.679 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 6.04 Mbit/s

95th percentile per-packet one-way delay: 45.535 ms

Loss rate: 17.04%

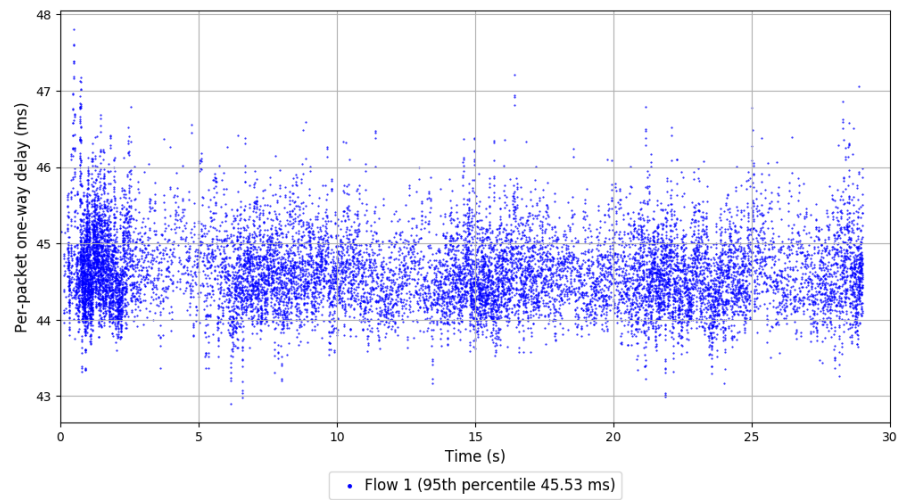
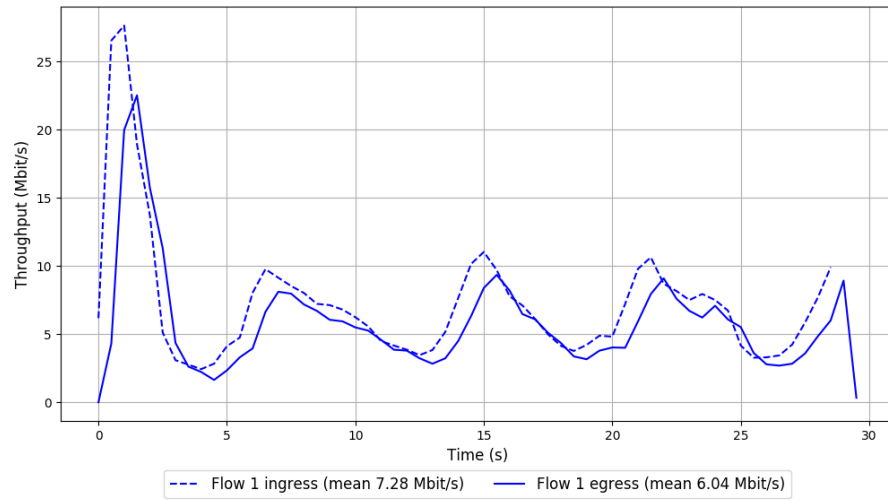
-- Flow 1:

Average throughput: 6.04 Mbit/s

95th percentile per-packet one-way delay: 45.535 ms

Loss rate: 17.04%

Run 5: Report of Indigo-MusesT — Data Link

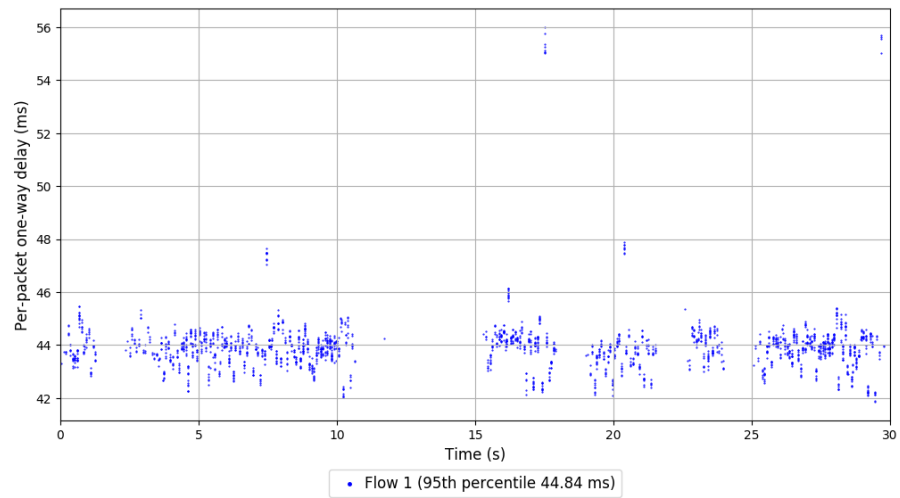
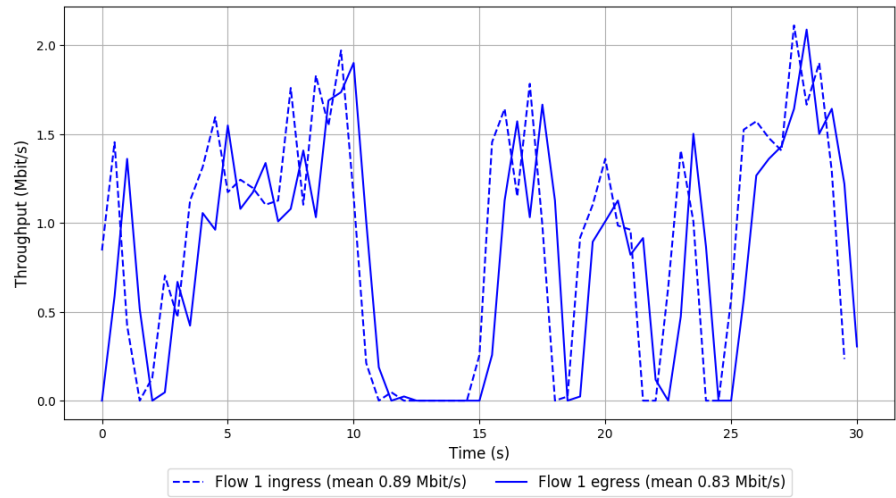


```
Run 1: Statistics of LEDBAT

Start at: 2019-03-26 20:07:43
End at: 2019-03-26 20:08:13
Local clock offset: 1.899 ms
Remote clock offset: 0.132 ms

# Below is generated by plot.py at 2019-03-26 22:12:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 44.842 ms
Loss rate: 6.73%
-- Flow 1:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 44.842 ms
Loss rate: 6.73%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2019-03-26 20:32:00

End at: 2019-03-26 20:32:30

Local clock offset: 1.072 ms

Remote clock offset: 0.503 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.57 Mbit/s

95th percentile per-packet one-way delay: 45.053 ms

Loss rate: 9.54%

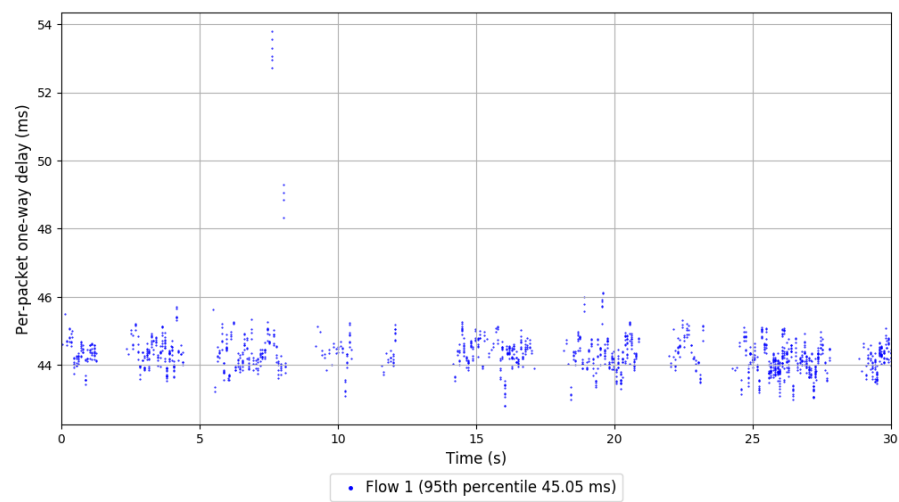
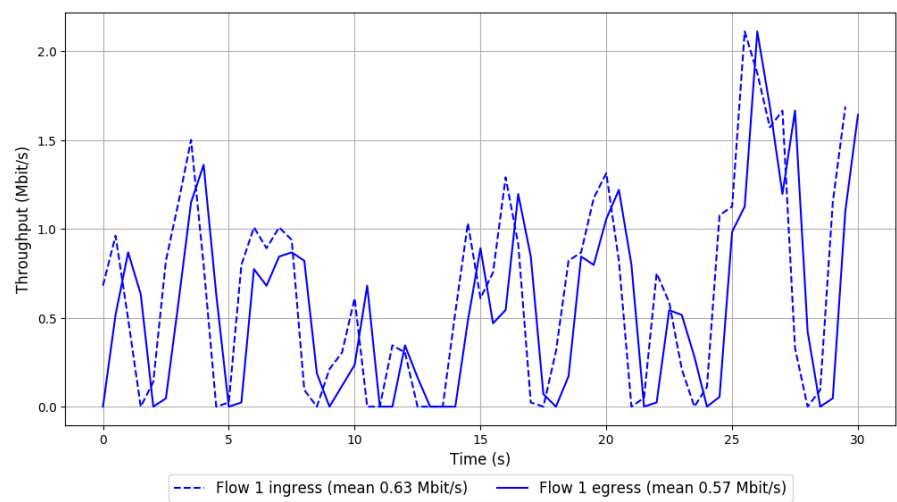
-- Flow 1:

Average throughput: 0.57 Mbit/s

95th percentile per-packet one-way delay: 45.053 ms

Loss rate: 9.54%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2019-03-26 20:56:24

End at: 2019-03-26 20:56:54

Local clock offset: 0.225 ms

Remote clock offset: 0.785 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.28 Mbit/s

95th percentile per-packet one-way delay: 45.239 ms

Loss rate: 14.49%

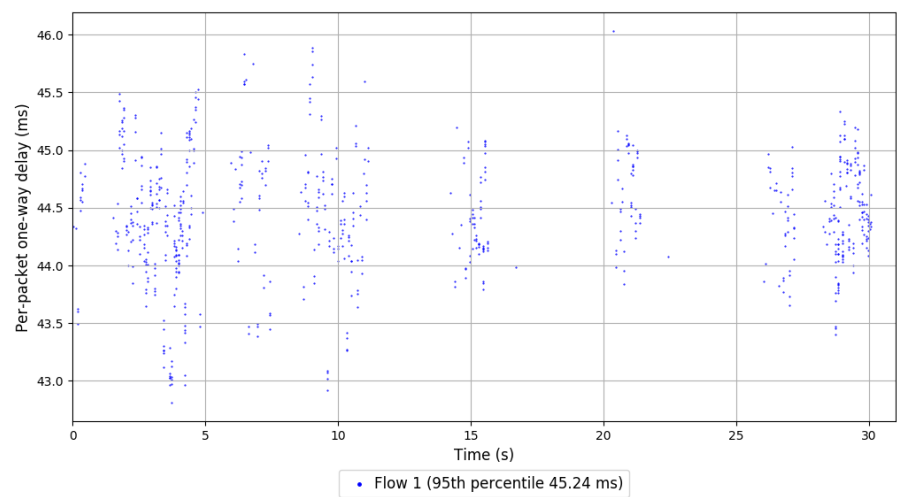
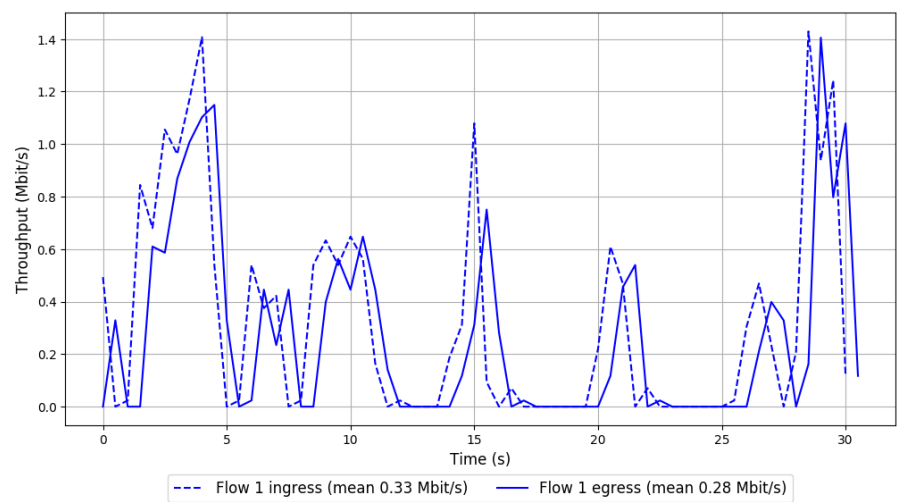
-- Flow 1:

Average throughput: 0.28 Mbit/s

95th percentile per-packet one-way delay: 45.239 ms

Loss rate: 14.49%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

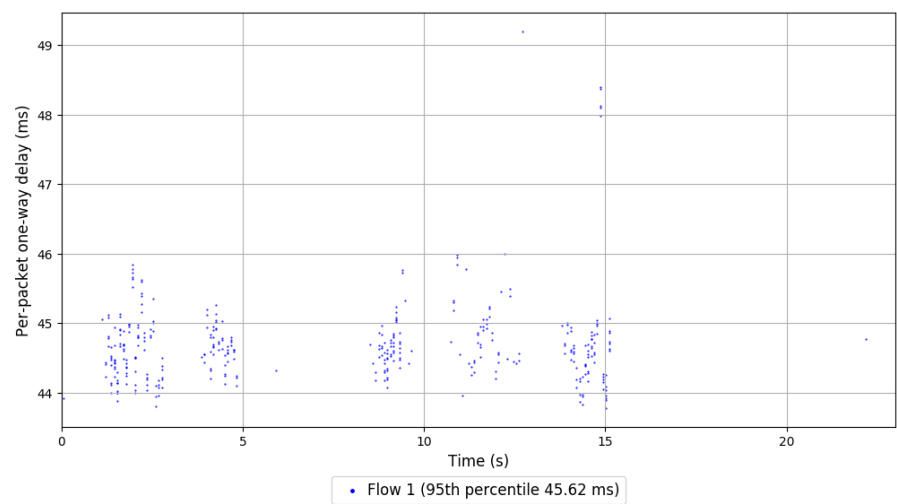
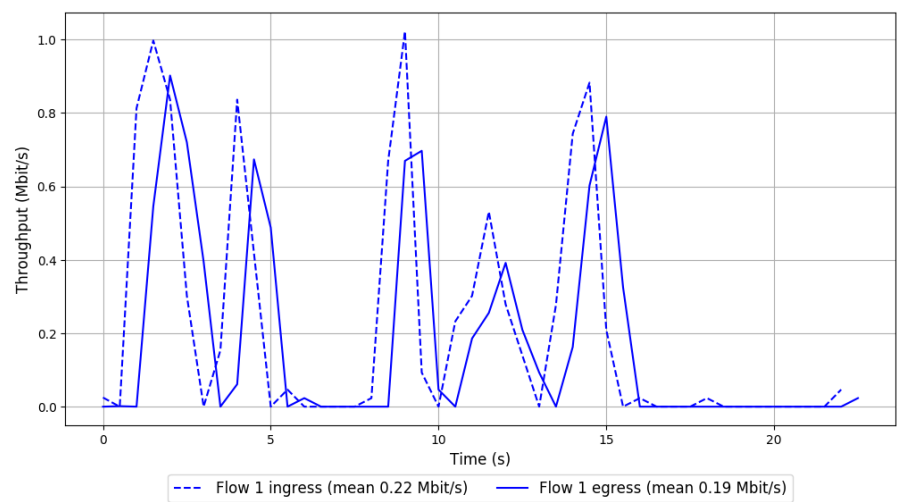
Start at: 2019-03-26 21:21:00

End at: 2019-03-26 21:21:30

Local clock offset: -0.135 ms

Remote clock offset: 0.877 ms

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

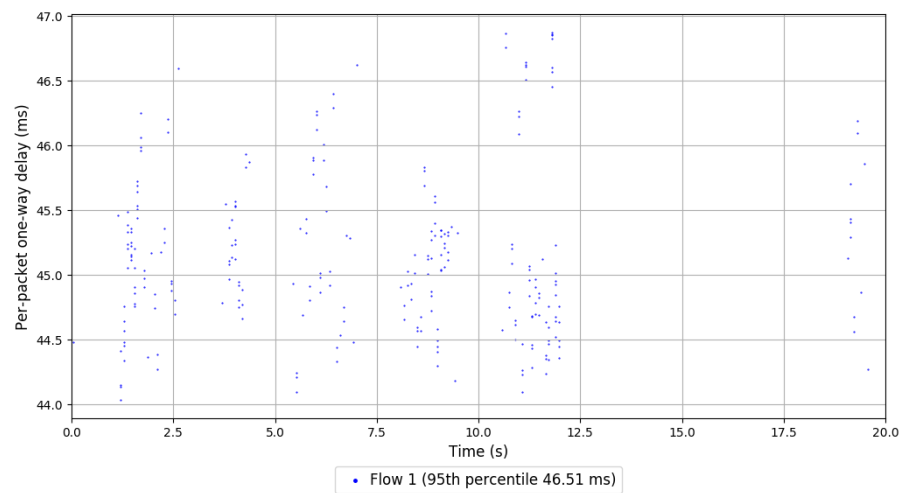
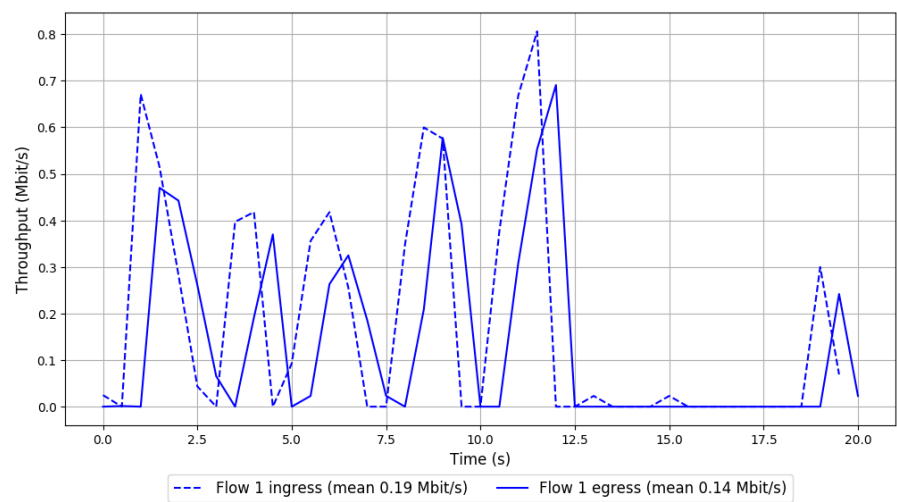
Start at: 2019-03-26 21:45:25

End at: 2019-03-26 21:45:55

Local clock offset: 0.045 ms

Remote clock offset: 0.87 ms

Run 5: Report of LEDBAT — Data Link



Run 1: Statistics of PCC-Allegro

Start at: 2019-03-26 20:19:14

End at: 2019-03-26 20:19:44

Local clock offset: 1.846 ms

Remote clock offset: 0.447 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.24 Mbit/s

95th percentile per-packet one-way delay: 44.947 ms

Loss rate: 8.43%

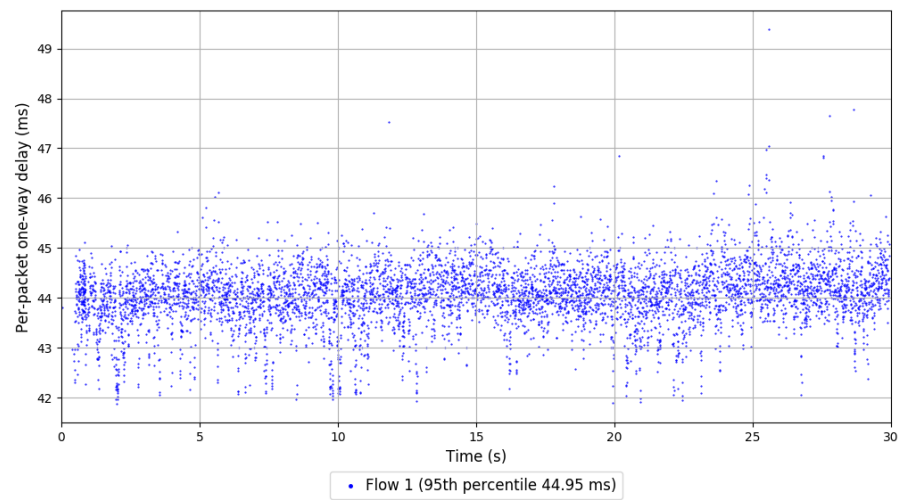
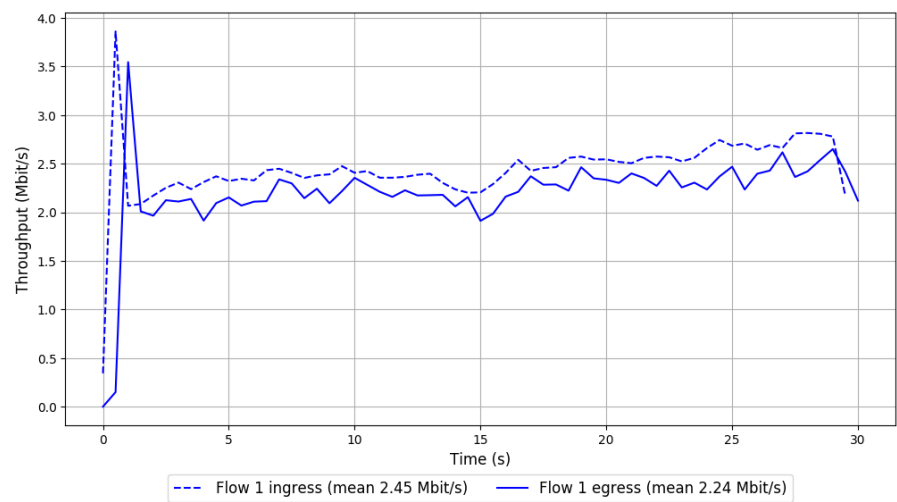
-- Flow 1:

Average throughput: 2.24 Mbit/s

95th percentile per-packet one-way delay: 44.947 ms

Loss rate: 8.43%

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2019-03-26 20:43:30

End at: 2019-03-26 20:44:00

Local clock offset: 0.731 ms

Remote clock offset: 0.764 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.08 Mbit/s

95th percentile per-packet one-way delay: 45.185 ms

Loss rate: 11.80%

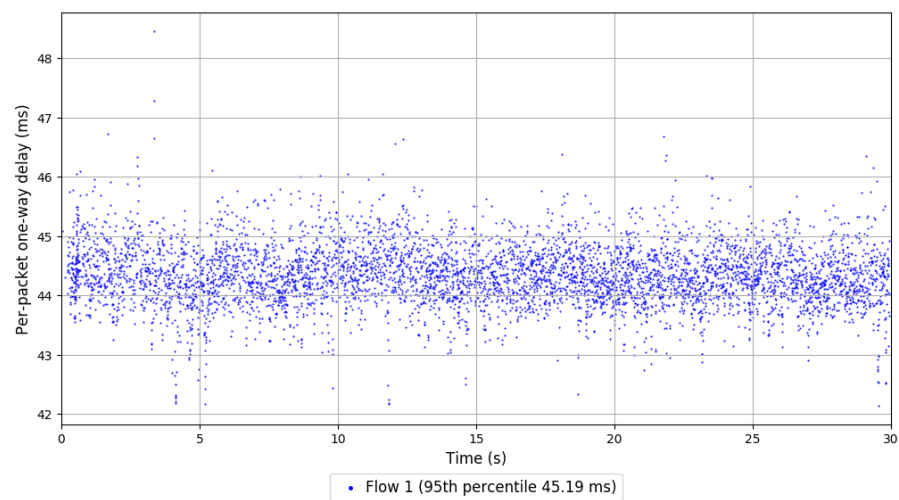
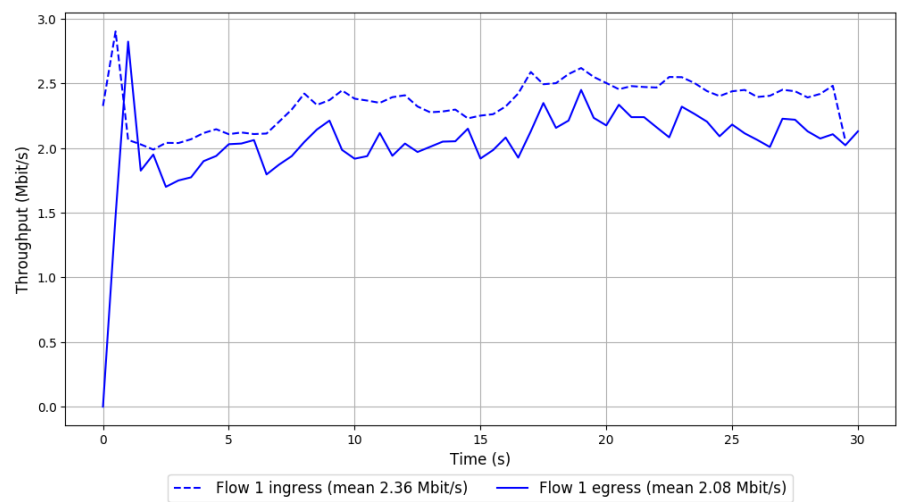
-- Flow 1:

Average throughput: 2.08 Mbit/s

95th percentile per-packet one-way delay: 45.185 ms

Loss rate: 11.80%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2019-03-26 21:07:58

End at: 2019-03-26 21:08:28

Local clock offset: -0.147 ms

Remote clock offset: 0.815 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.74 Mbit/s

95th percentile per-packet one-way delay: 45.104 ms

Loss rate: 12.00%

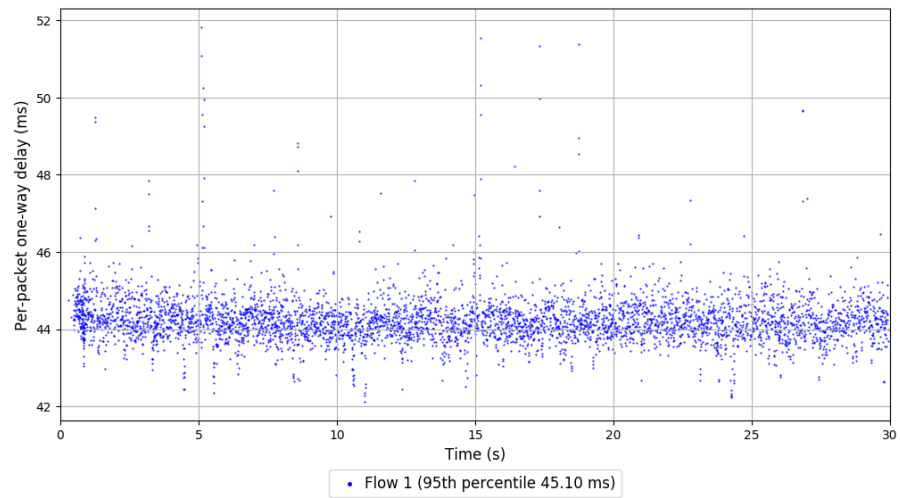
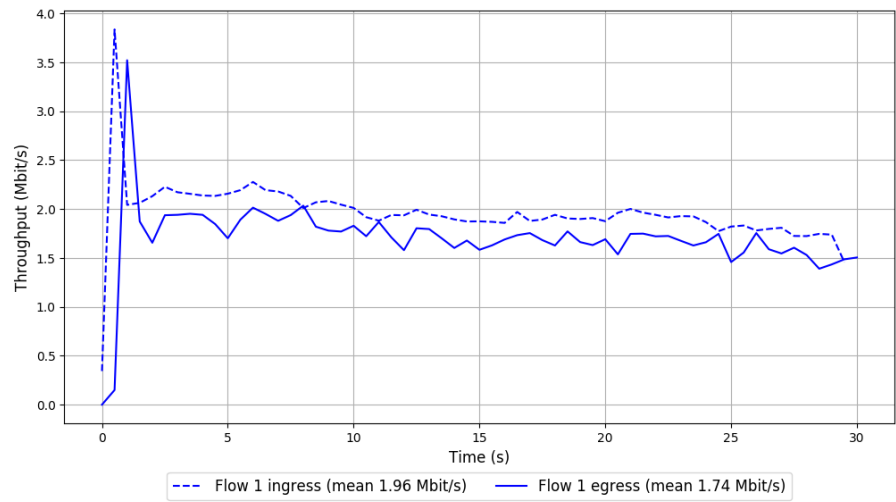
-- Flow 1:

Average throughput: 1.74 Mbit/s

95th percentile per-packet one-way delay: 45.104 ms

Loss rate: 12.00%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2019-03-26 21:32:23

End at: 2019-03-26 21:32:53

Local clock offset: 0.046 ms

Remote clock offset: 0.952 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.67 Mbit/s

95th percentile per-packet one-way delay: 45.568 ms

Loss rate: 16.86%

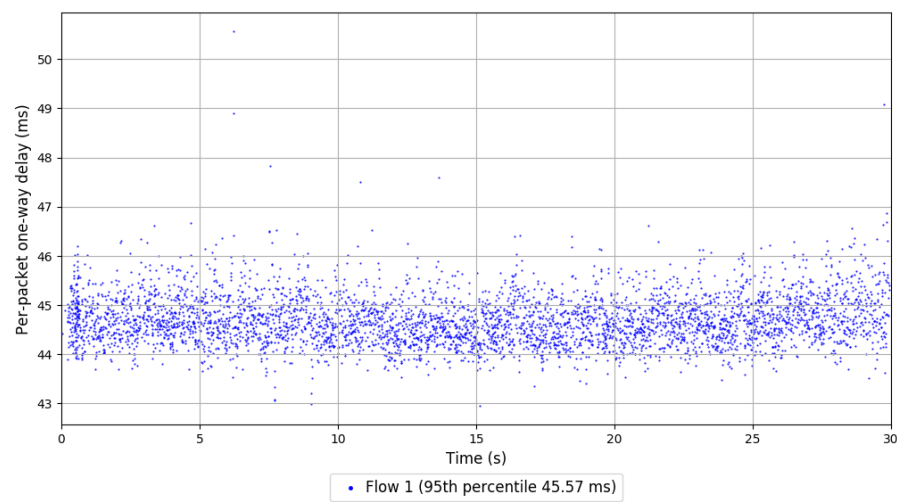
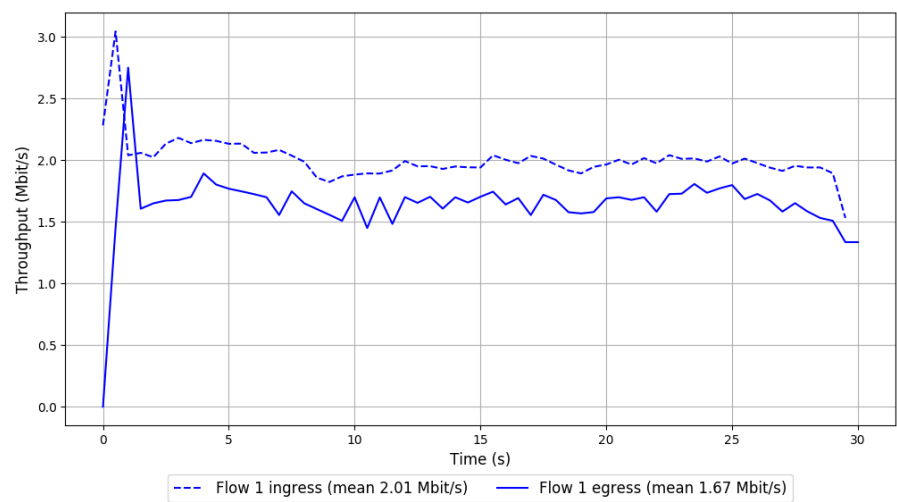
-- Flow 1:

Average throughput: 1.67 Mbit/s

95th percentile per-packet one-way delay: 45.568 ms

Loss rate: 16.86%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2019-03-26 21:57:06

End at: 2019-03-26 21:57:36

Local clock offset: 0.283 ms

Remote clock offset: 0.717 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.52 Mbit/s

95th percentile per-packet one-way delay: 46.468 ms

Loss rate: 21.79%

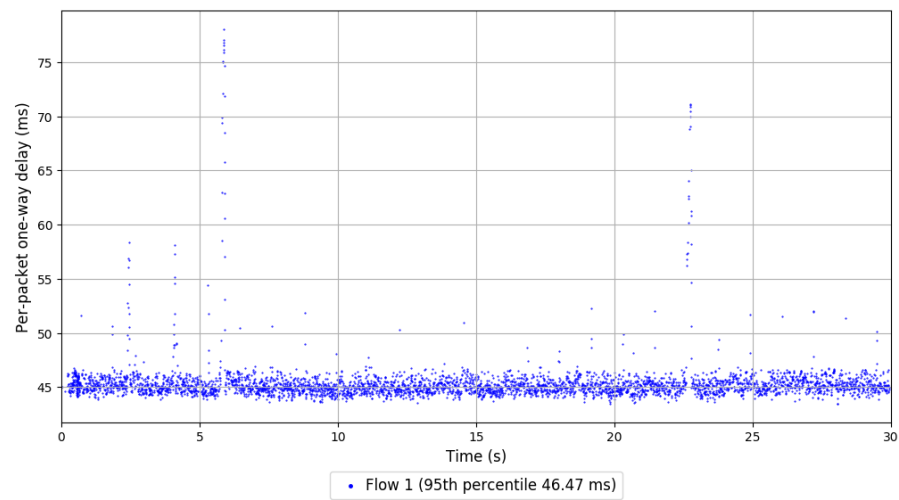
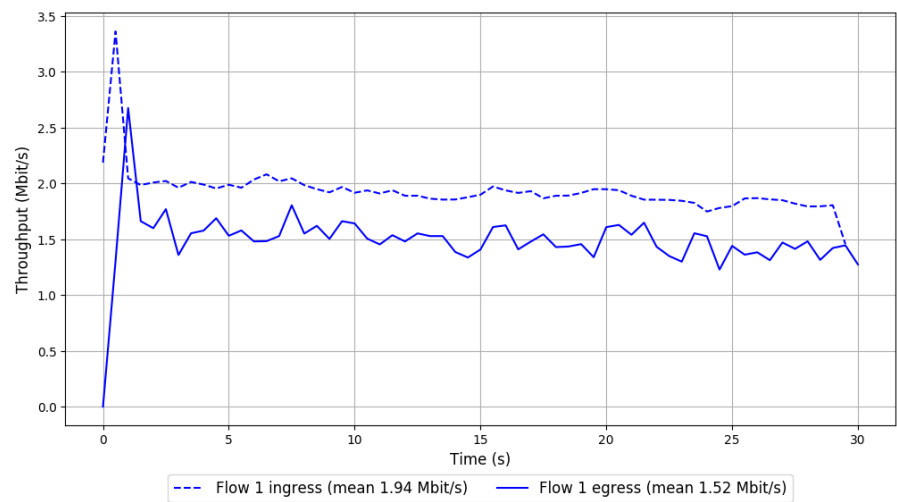
-- Flow 1:

Average throughput: 1.52 Mbit/s

95th percentile per-packet one-way delay: 46.468 ms

Loss rate: 21.79%

Run 5: Report of PCC-Allegro — Data Link



Run 1: Statistics of PCC-Expr

Start at: 2019-03-26 20:20:21

End at: 2019-03-26 20:20:51

Local clock offset: 1.724 ms

Remote clock offset: 0.427 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.28 Mbit/s

95th percentile per-packet one-way delay: 44.828 ms

Loss rate: 15.05%

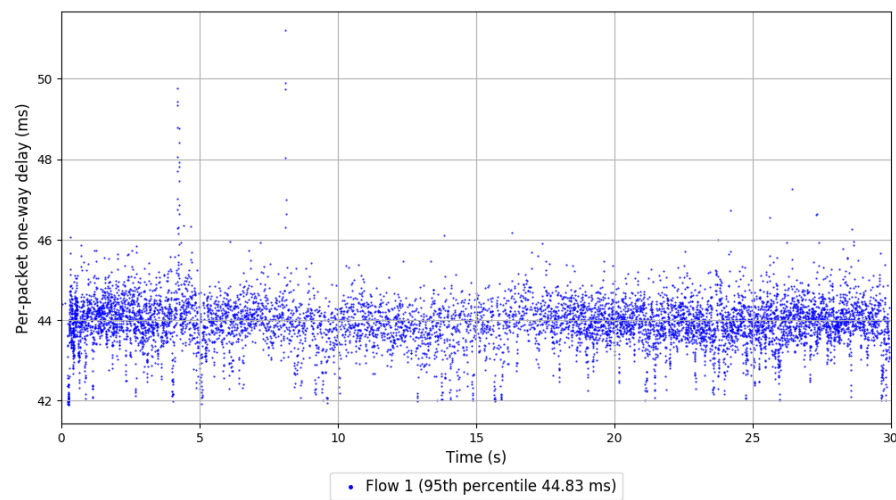
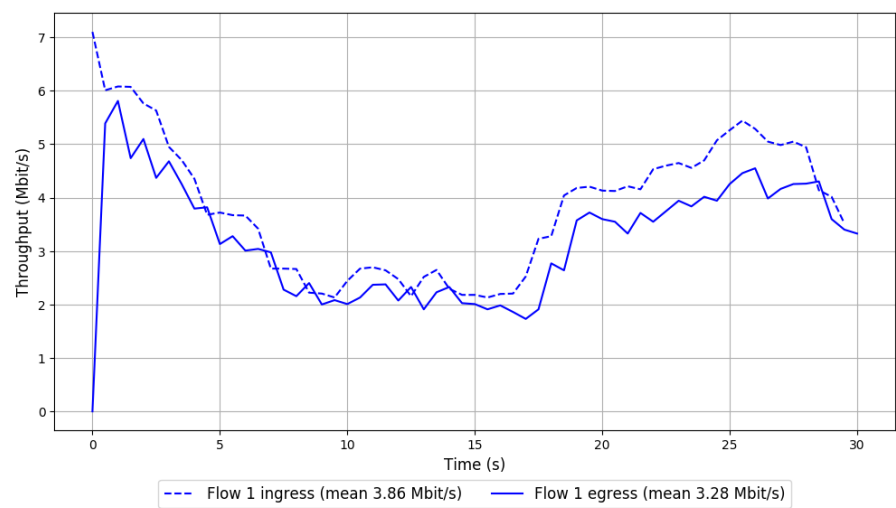
-- Flow 1:

Average throughput: 3.28 Mbit/s

95th percentile per-packet one-way delay: 44.828 ms

Loss rate: 15.05%

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2019-03-26 20:44:38

End at: 2019-03-26 20:45:08

Local clock offset: 0.719 ms

Remote clock offset: 0.752 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.59 Mbit/s

95th percentile per-packet one-way delay: 45.212 ms

Loss rate: 21.18%

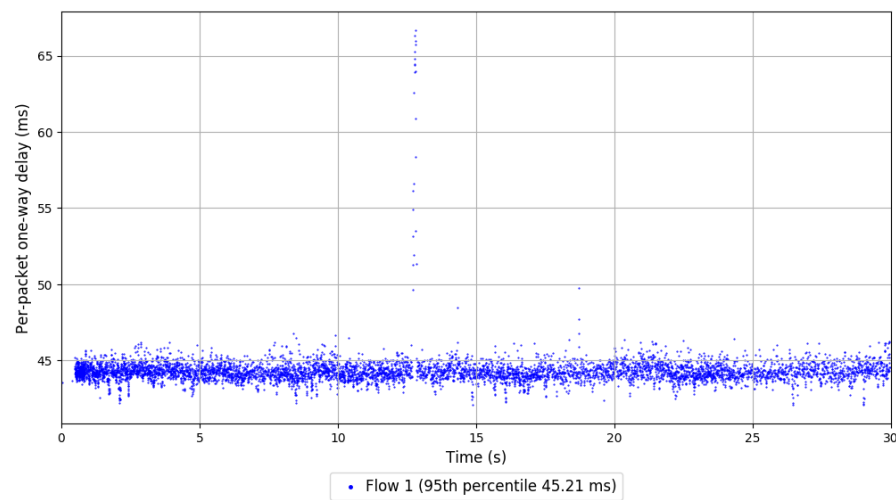
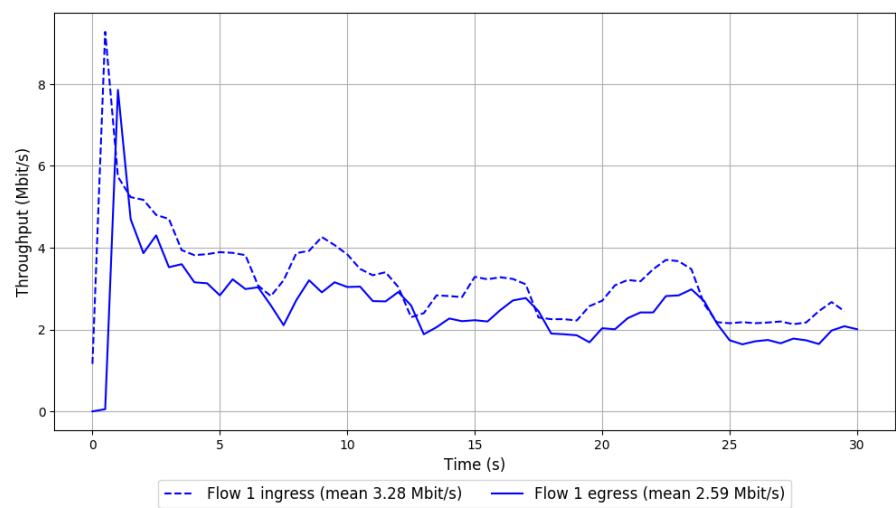
-- Flow 1:

Average throughput: 2.59 Mbit/s

95th percentile per-packet one-way delay: 45.212 ms

Loss rate: 21.18%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2019-03-26 21:09:06

End at: 2019-03-26 21:09:36

Local clock offset: -0.182 ms

Remote clock offset: 0.878 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 4.21 Mbit/s

95th percentile per-packet one-way delay: 45.202 ms

Loss rate: 21.68%

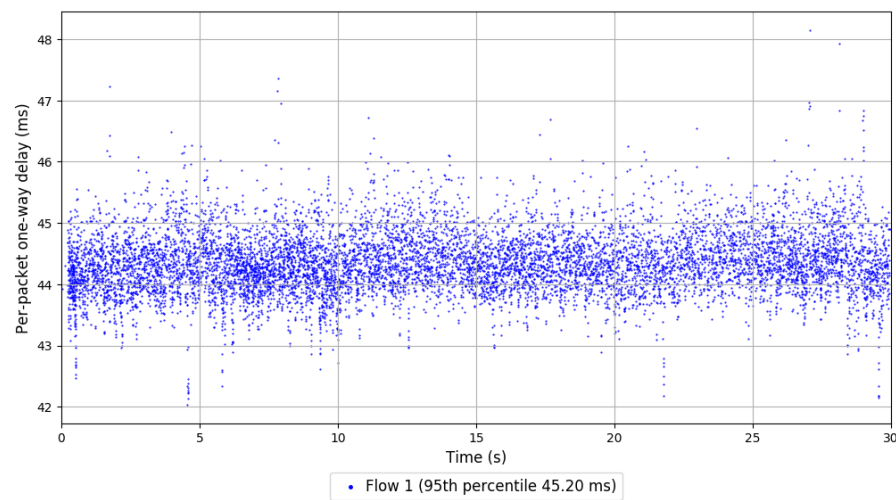
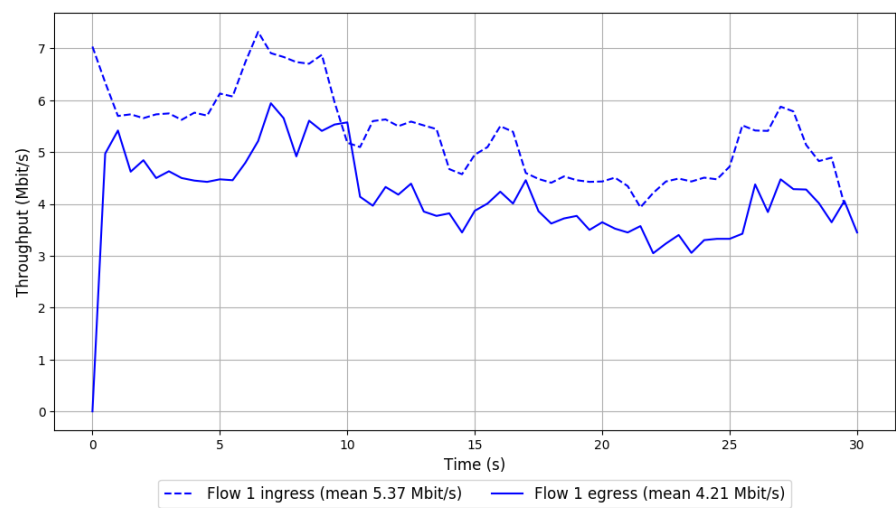
-- Flow 1:

Average throughput: 4.21 Mbit/s

95th percentile per-packet one-way delay: 45.202 ms

Loss rate: 21.68%

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

Start at: 2019-03-26 21:33:31

End at: 2019-03-26 21:34:01

Local clock offset: 0.038 ms

Remote clock offset: 0.937 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.03 Mbit/s

95th percentile per-packet one-way delay: 45.886 ms

Loss rate: 32.73%

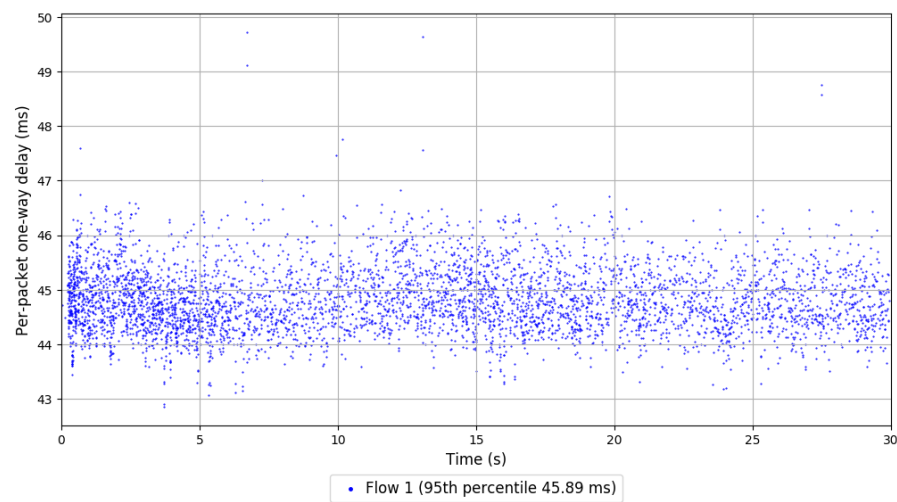
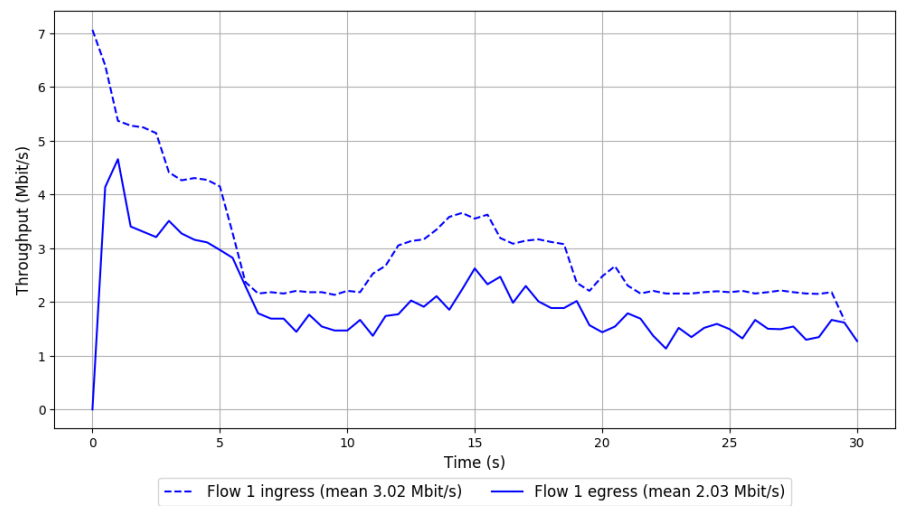
-- Flow 1:

Average throughput: 2.03 Mbit/s

95th percentile per-packet one-way delay: 45.886 ms

Loss rate: 32.73%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2019-03-26 21:58:13

End at: 2019-03-26 21:58:43

Local clock offset: 0.284 ms

Remote clock offset: 0.639 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.97 Mbit/s

95th percentile per-packet one-way delay: 45.929 ms

Loss rate: 34.51%

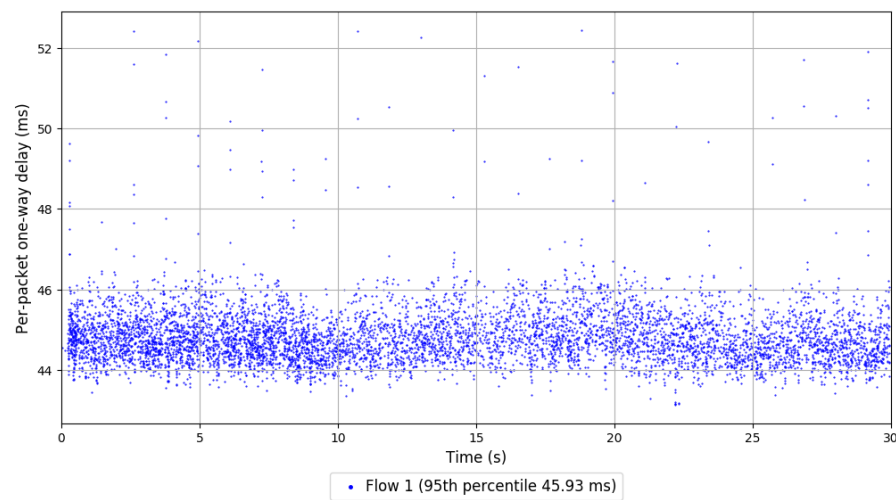
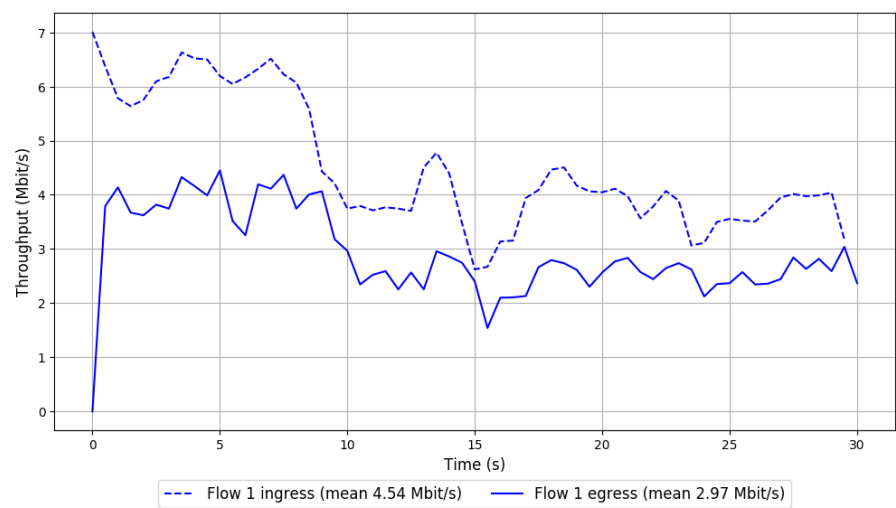
-- Flow 1:

Average throughput: 2.97 Mbit/s

95th percentile per-packet one-way delay: 45.929 ms

Loss rate: 34.51%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2019-03-26 20:13:32

End at: 2019-03-26 20:14:02

Local clock offset: 2.201 ms

Remote clock offset: 0.368 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.22 Mbit/s

95th percentile per-packet one-way delay: 44.925 ms

Loss rate: 8.09%

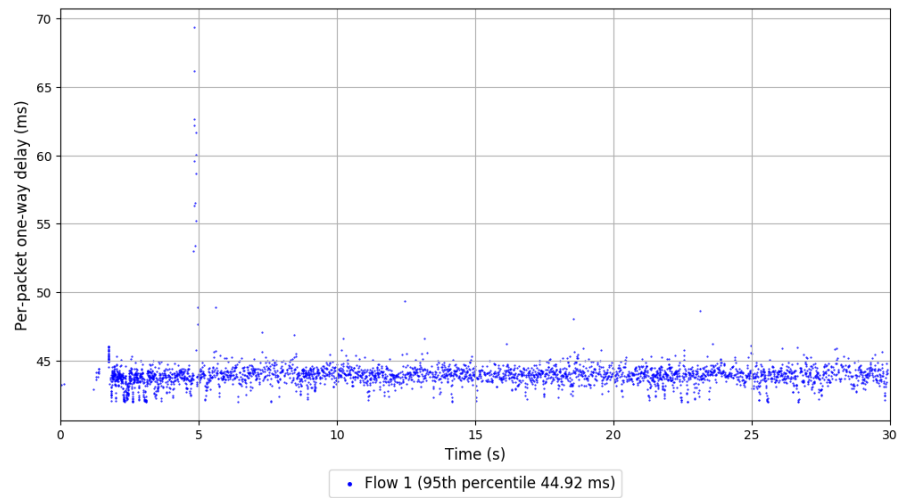
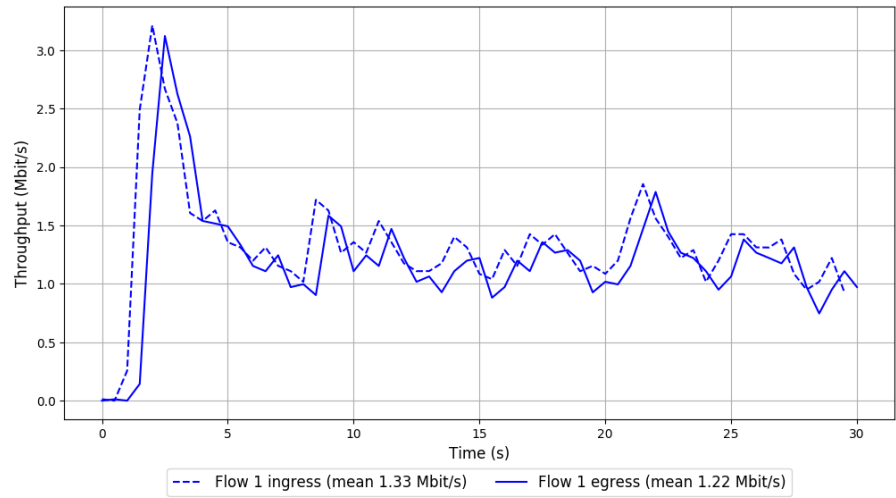
-- Flow 1:

Average throughput: 1.22 Mbit/s

95th percentile per-packet one-way delay: 44.925 ms

Loss rate: 8.09%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2019-03-26 20:37:52

End at: 2019-03-26 20:38:22

Local clock offset: 0.926 ms

Remote clock offset: 0.589 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.19 Mbit/s

95th percentile per-packet one-way delay: 44.815 ms

Loss rate: 9.26%

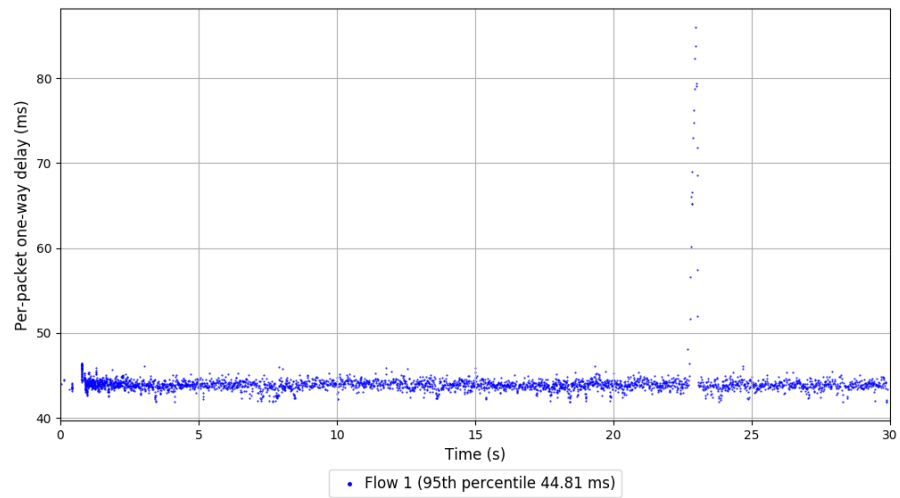
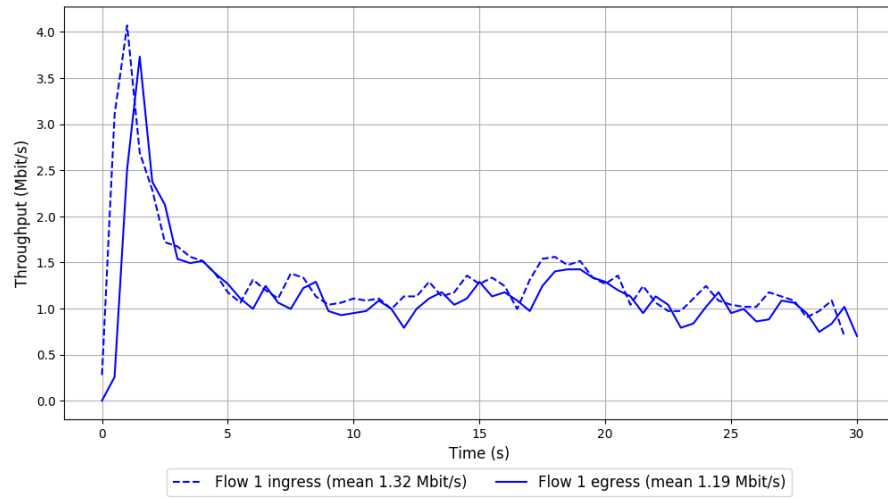
-- Flow 1:

Average throughput: 1.19 Mbit/s

95th percentile per-packet one-way delay: 44.815 ms

Loss rate: 9.26%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2019-03-26 21:02:15

End at: 2019-03-26 21:02:45

Local clock offset: 0.021 ms

Remote clock offset: 0.749 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.06 Mbit/s

95th percentile per-packet one-way delay: 44.880 ms

Loss rate: 11.91%

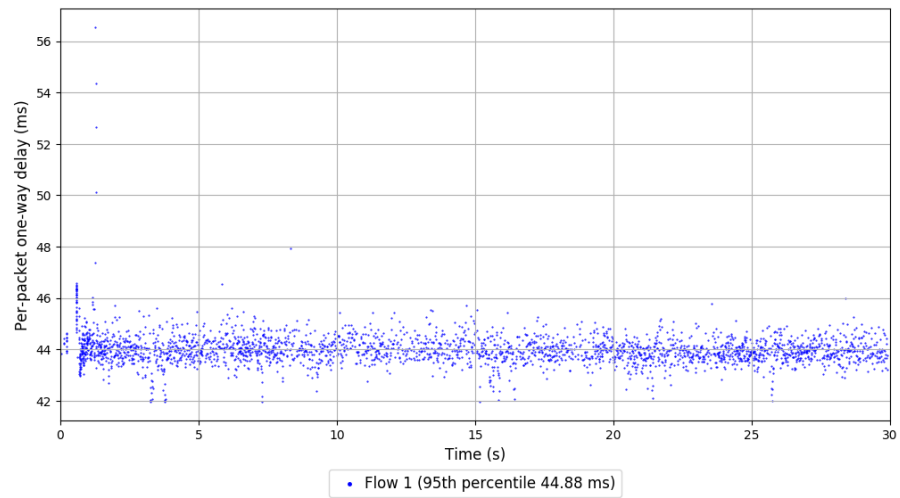
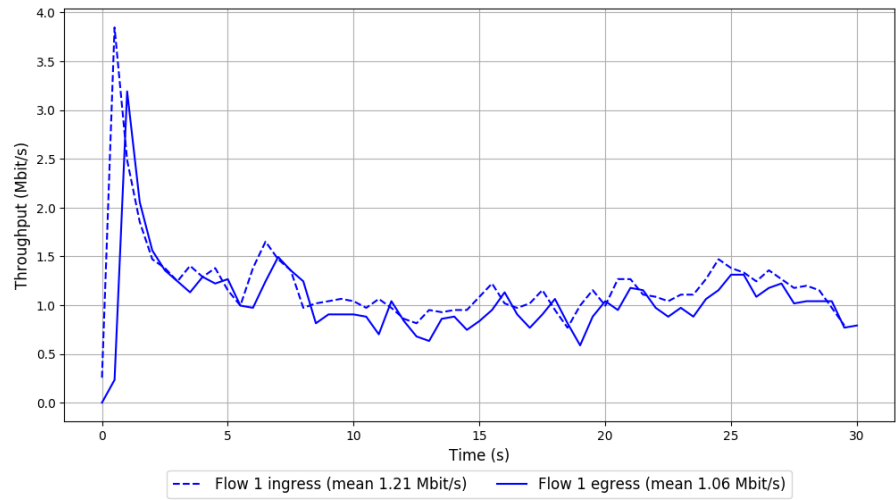
-- Flow 1:

Average throughput: 1.06 Mbit/s

95th percentile per-packet one-way delay: 44.880 ms

Loss rate: 11.91%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2019-03-26 21:26:43

End at: 2019-03-26 21:27:13

Local clock offset: 0.002 ms

Remote clock offset: 0.946 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.86 Mbit/s

95th percentile per-packet one-way delay: 45.368 ms

Loss rate: 16.66%

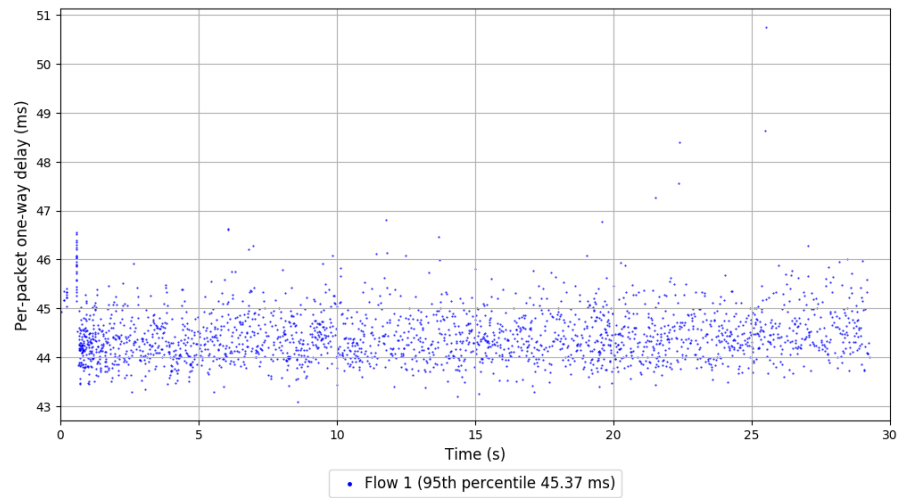
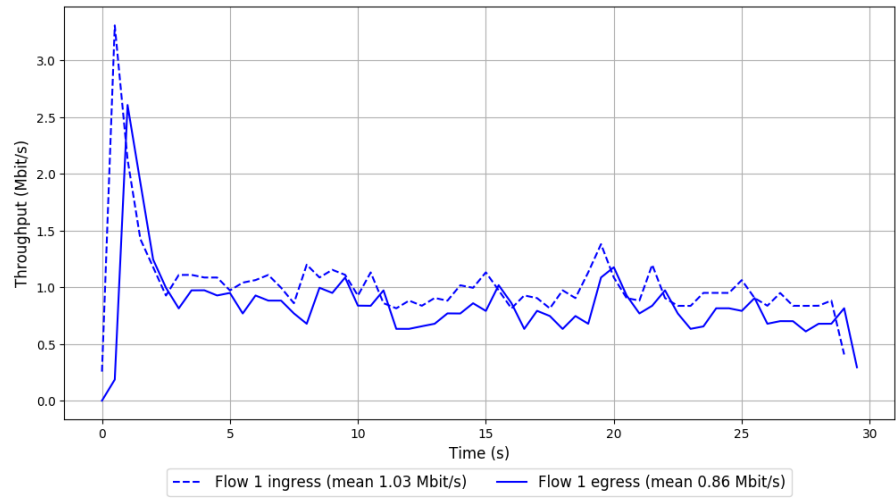
-- Flow 1:

Average throughput: 0.86 Mbit/s

95th percentile per-packet one-way delay: 45.368 ms

Loss rate: 16.66%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2019-03-26 21:51:20

End at: 2019-03-26 21:51:50

Local clock offset: 0.194 ms

Remote clock offset: 0.744 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.82 Mbit/s

95th percentile per-packet one-way delay: 45.393 ms

Loss rate: 17.16%

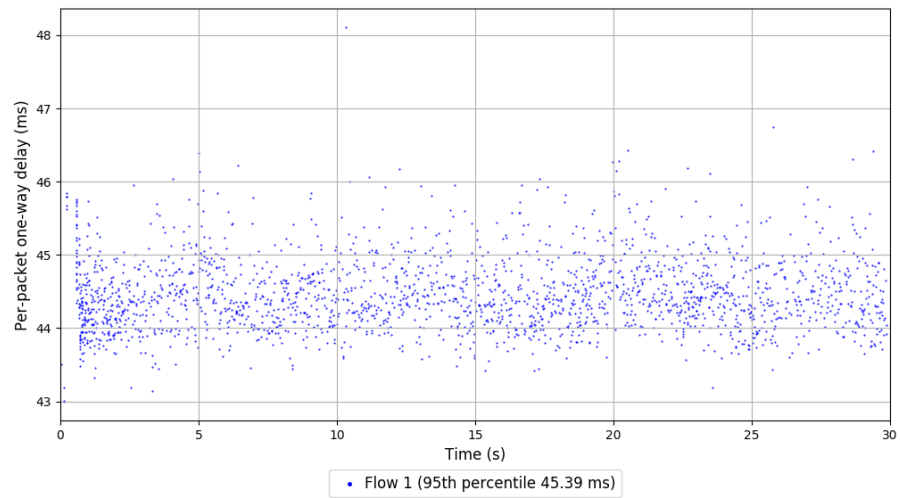
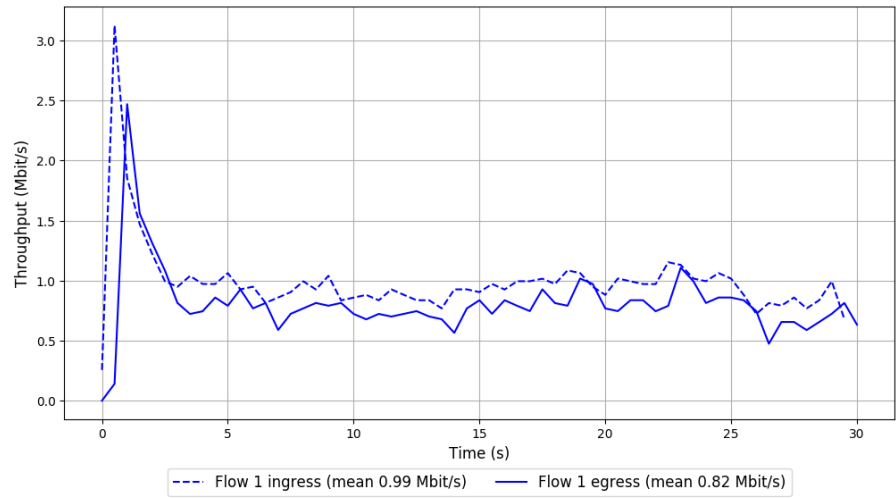
-- Flow 1:

Average throughput: 0.82 Mbit/s

95th percentile per-packet one-way delay: 45.393 ms

Loss rate: 17.16%

Run 5: Report of QUIC Cubic — Data Link

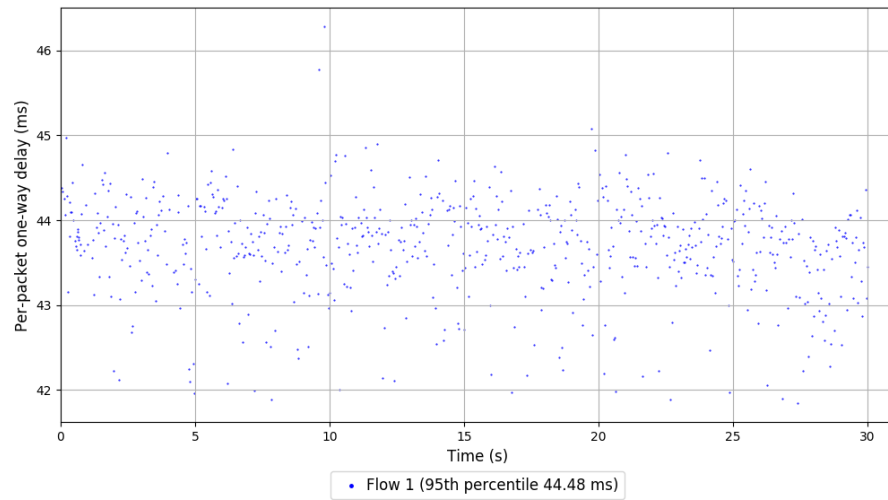
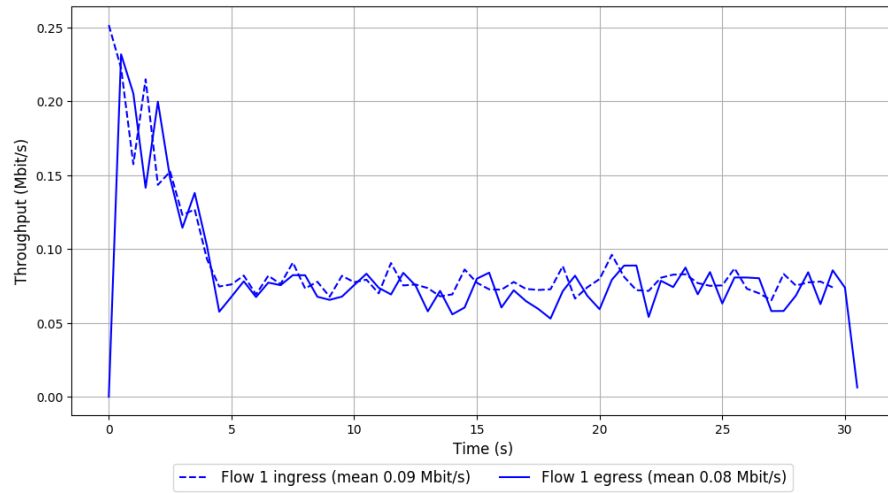


```
Run 1: Statistics of SCReAM

Start at: 2019-03-26 20:26:06
End at: 2019-03-26 20:26:36
Local clock offset: 1.302 ms
Remote clock offset: 0.462 ms

# Below is generated by plot.py at 2019-03-26 22:12:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 44.475 ms
Loss rate: 6.83%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 44.475 ms
Loss rate: 6.83%
```

Run 1: Report of SReAM — Data Link



Run 2: Statistics of SReAM

Start at: 2019-03-26 20:50:27

End at: 2019-03-26 20:50:57

Local clock offset: 0.45 ms

Remote clock offset: 0.679 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.08 Mbit/s

95th percentile per-packet one-way delay: 44.888 ms

Loss rate: 10.11%

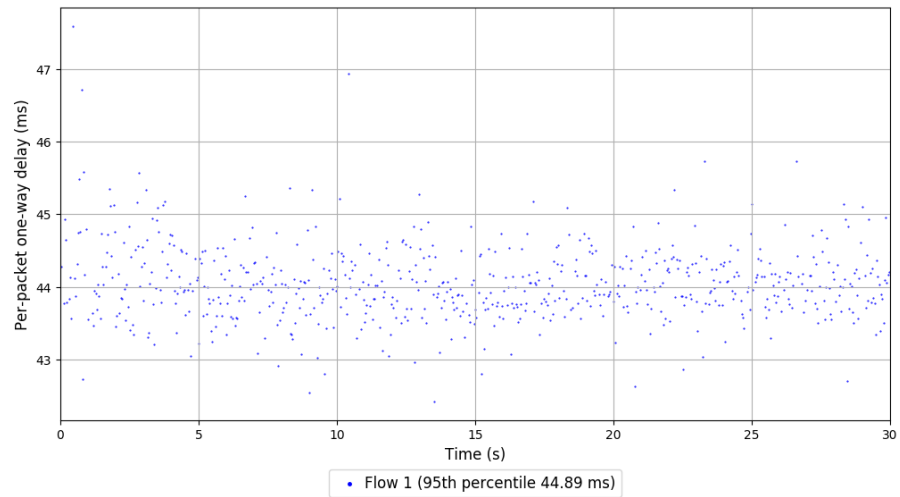
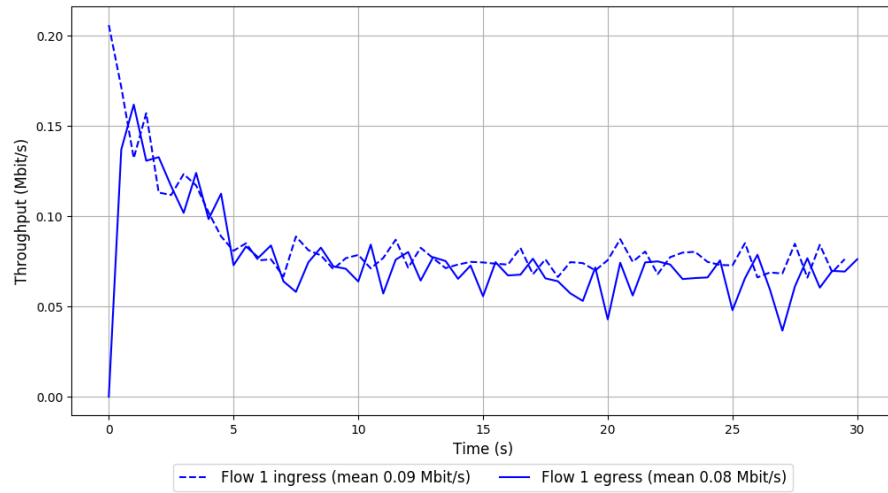
-- Flow 1:

Average throughput: 0.08 Mbit/s

95th percentile per-packet one-way delay: 44.888 ms

Loss rate: 10.11%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2019-03-26 21:14:53

End at: 2019-03-26 21:15:23

Local clock offset: -0.331 ms

Remote clock offset: 0.842 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.07 Mbit/s

95th percentile per-packet one-way delay: 45.312 ms

Loss rate: 15.17%

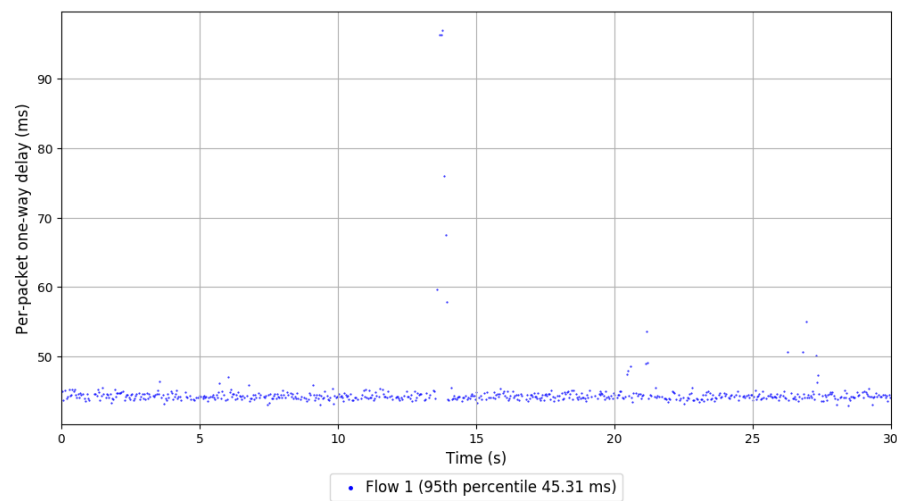
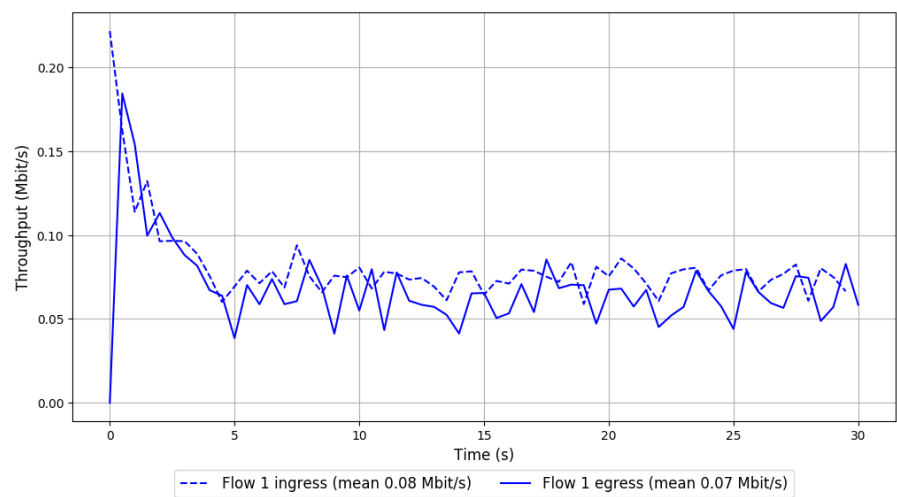
-- Flow 1:

Average throughput: 0.07 Mbit/s

95th percentile per-packet one-way delay: 45.312 ms

Loss rate: 15.17%

Run 3: Report of SReAM — Data Link



Run 4: Statistics of SCReAM

Start at: 2019-03-26 21:39:20

End at: 2019-03-26 21:39:50

Local clock offset: 0.06 ms

Remote clock offset: 0.831 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.06 Mbit/s

95th percentile per-packet one-way delay: 45.960 ms

Loss rate: 21.98%

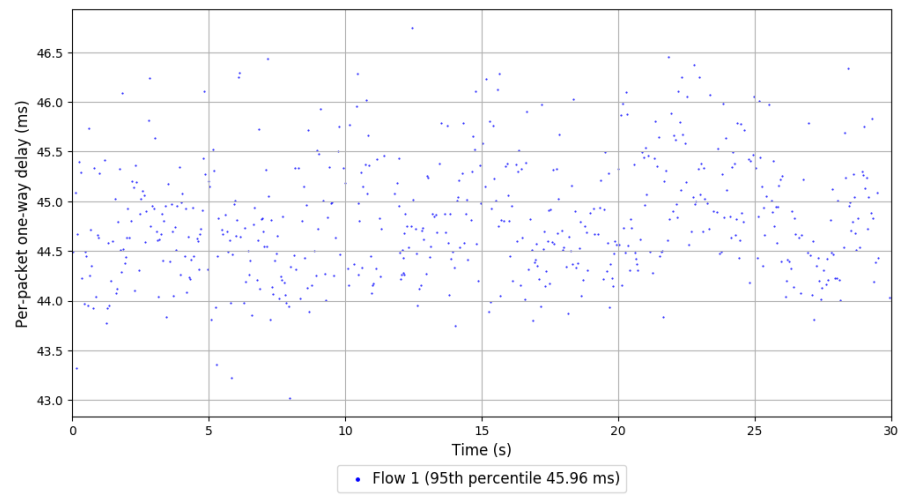
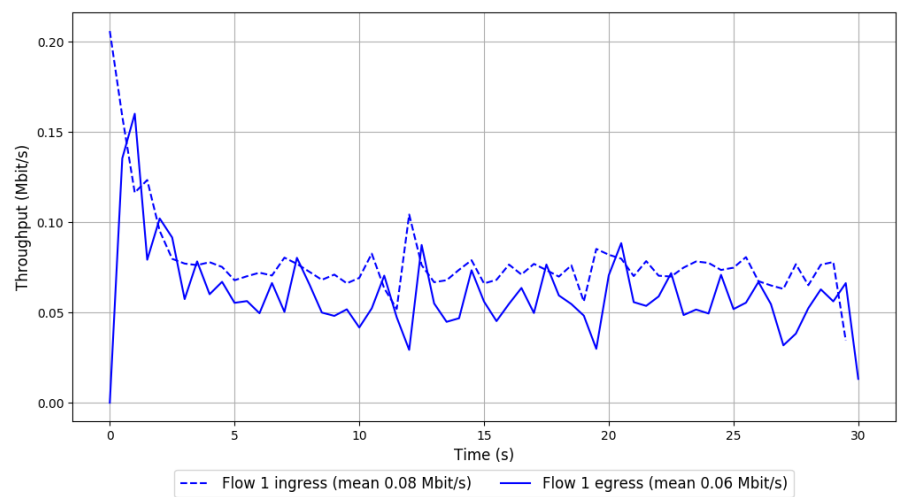
-- Flow 1:

Average throughput: 0.06 Mbit/s

95th percentile per-packet one-way delay: 45.960 ms

Loss rate: 21.98%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2019-03-26 22:04:11

End at: 2019-03-26 22:04:41

Local clock offset: 0.324 ms

Remote clock offset: 0.55 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.07 Mbit/s

95th percentile per-packet one-way delay: 45.253 ms

Loss rate: 18.60%

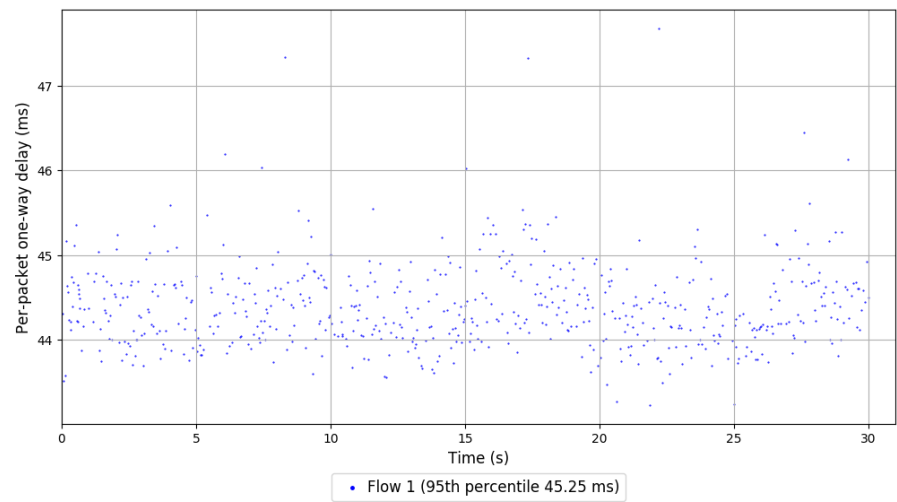
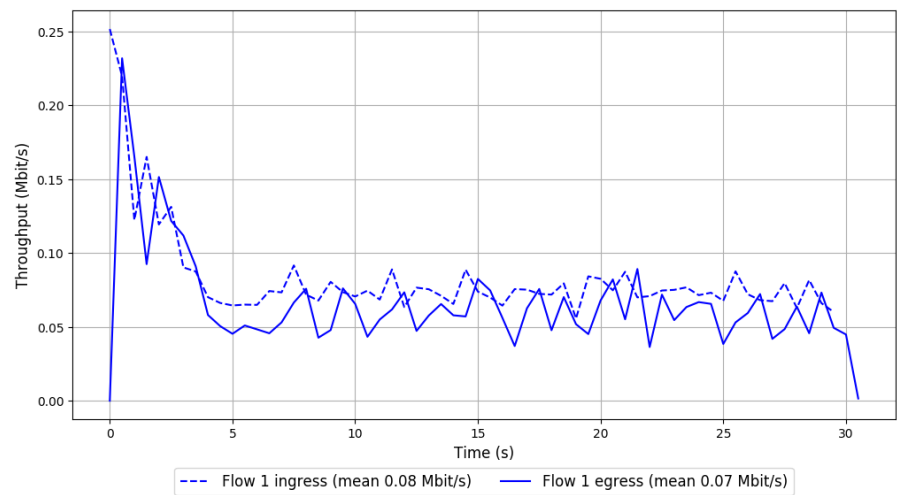
-- Flow 1:

Average throughput: 0.07 Mbit/s

95th percentile per-packet one-way delay: 45.253 ms

Loss rate: 18.60%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2019-03-26 20:18:06

End at: 2019-03-26 20:18:36

Local clock offset: 2.046 ms

Remote clock offset: 0.414 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 6.53 Mbit/s

95th percentile per-packet one-way delay: 49.635 ms

Loss rate: 12.07%

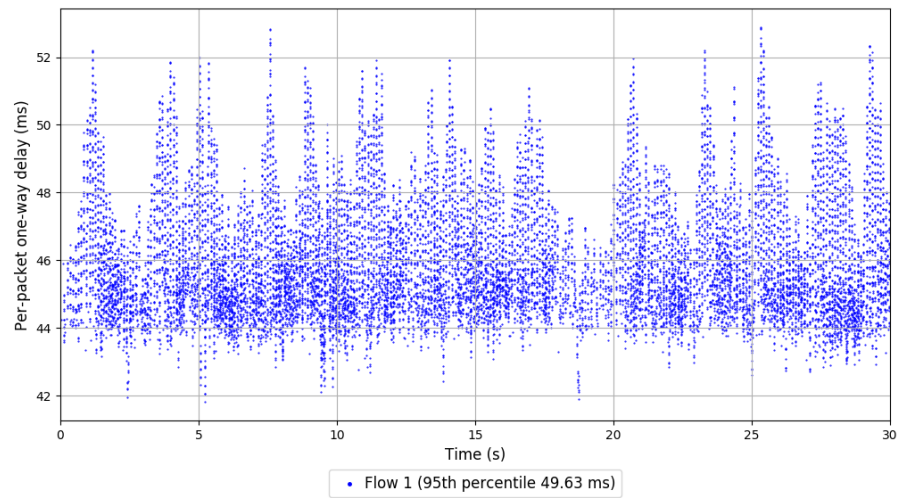
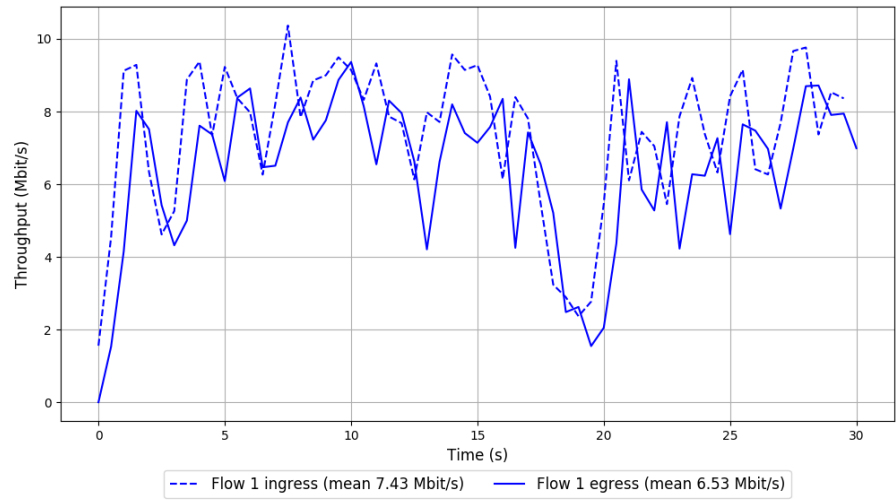
-- Flow 1:

Average throughput: 6.53 Mbit/s

95th percentile per-packet one-way delay: 49.635 ms

Loss rate: 12.07%

Run 1: Report of Sprout — Data Link

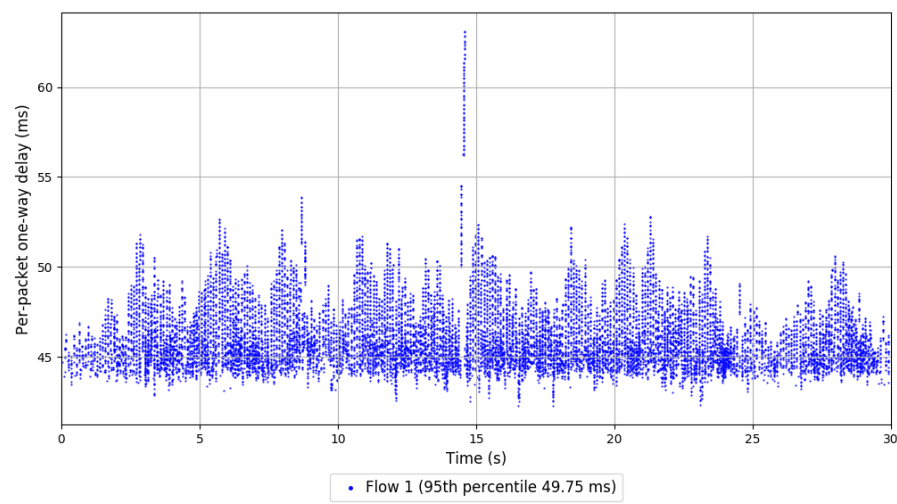
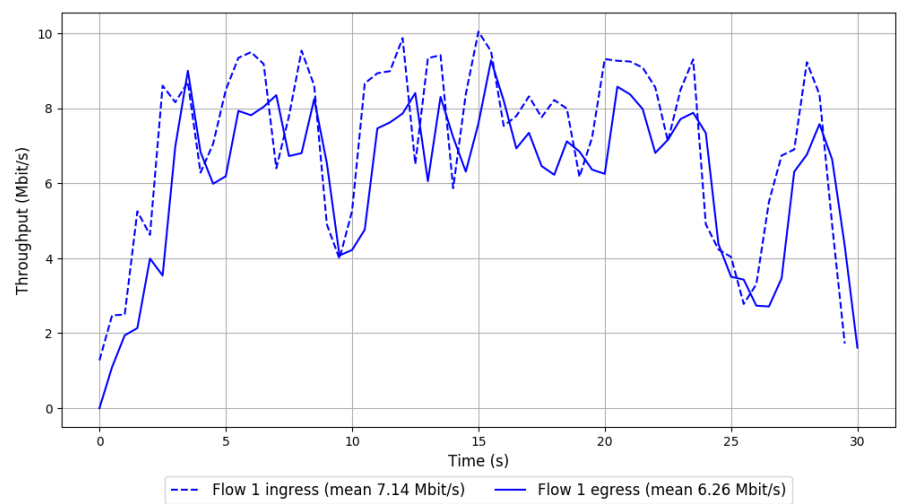


Run 2: Statistics of Sprout

Start at: 2019-03-26 20:42:22
End at: 2019-03-26 20:42:52
Local clock offset: 0.782 ms
Remote clock offset: 0.719 ms

Below is generated by plot.py at 2019-03-26 22:12:55
Datalink statistics
-- Total of 1 flow:
Average throughput: 6.26 Mbit/s
95th percentile per-packet one-way delay: 49.746 ms
Loss rate: 12.42%
-- Flow 1:
Average throughput: 6.26 Mbit/s
95th percentile per-packet one-way delay: 49.746 ms
Loss rate: 12.42%

Run 2: Report of Sprout — Data Link

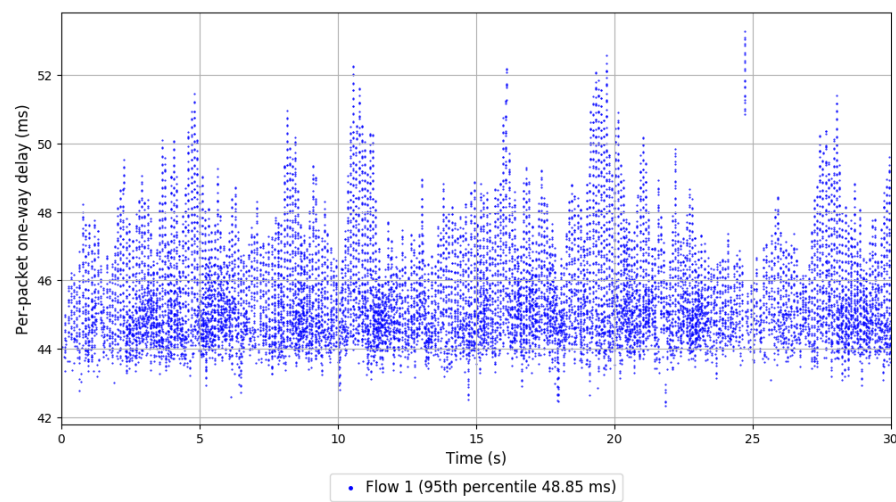
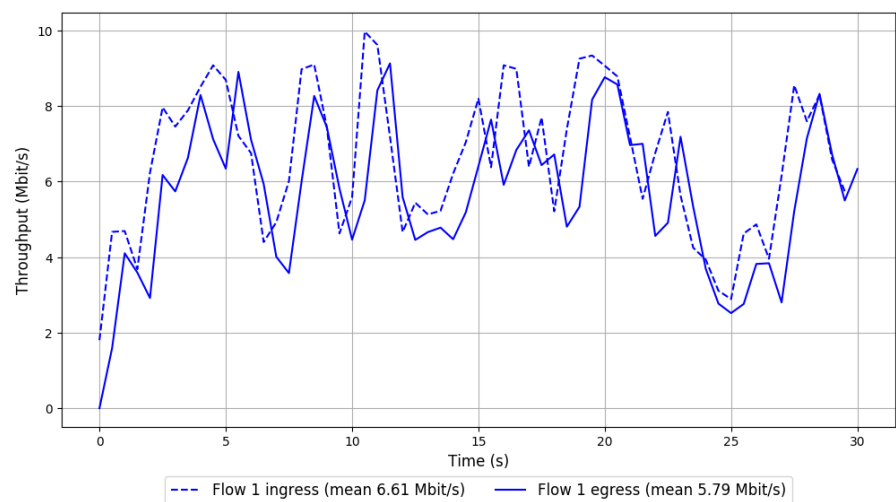


Run 3: Statistics of Sprout

Start at: 2019-03-26 21:06:50
End at: 2019-03-26 21:07:20
Local clock offset: -0.105 ms
Remote clock offset: 0.642 ms

Below is generated by plot.py at 2019-03-26 22:12:55
Datalink statistics
-- Total of 1 flow:
Average throughput: 5.79 Mbit/s
95th percentile per-packet one-way delay: 48.847 ms
Loss rate: 12.37%
-- Flow 1:
Average throughput: 5.79 Mbit/s
95th percentile per-packet one-way delay: 48.847 ms
Loss rate: 12.37%

Run 3: Report of Sprout — Data Link



Run 4: Statistics of Sprout

Start at: 2019-03-26 21:31:15

End at: 2019-03-26 21:31:45

Local clock offset: 0.041 ms

Remote clock offset: 0.94 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.47 Mbit/s

95th percentile per-packet one-way delay: 46.473 ms

Loss rate: 20.39%

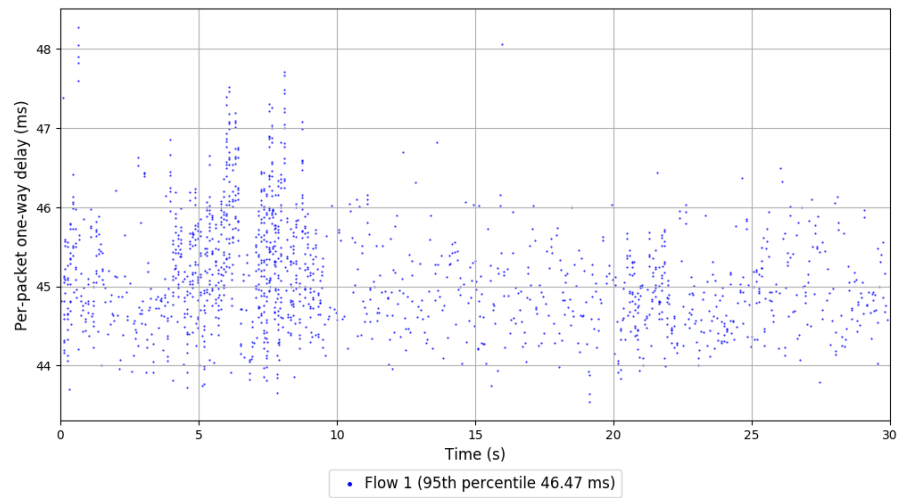
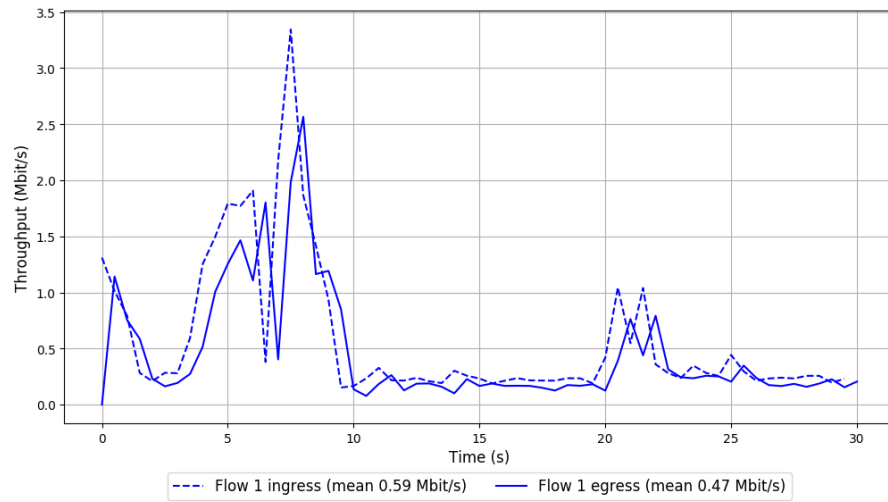
-- Flow 1:

Average throughput: 0.47 Mbit/s

95th percentile per-packet one-way delay: 46.473 ms

Loss rate: 20.39%

Run 4: Report of Sprout — Data Link



Run 5: Statistics of Sprout

Start at: 2019-03-26 21:55:56

End at: 2019-03-26 21:56:26

Local clock offset: 0.249 ms

Remote clock offset: 0.531 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.61 Mbit/s

95th percentile per-packet one-way delay: 47.938 ms

Loss rate: 19.04%

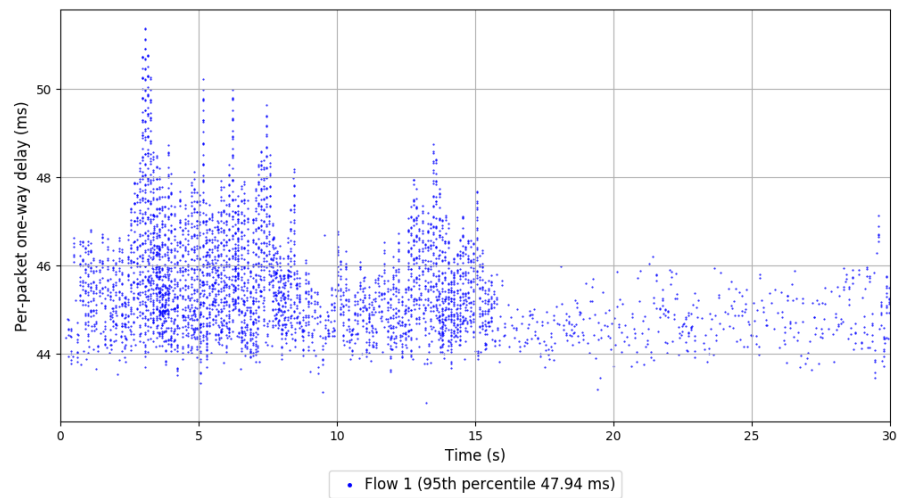
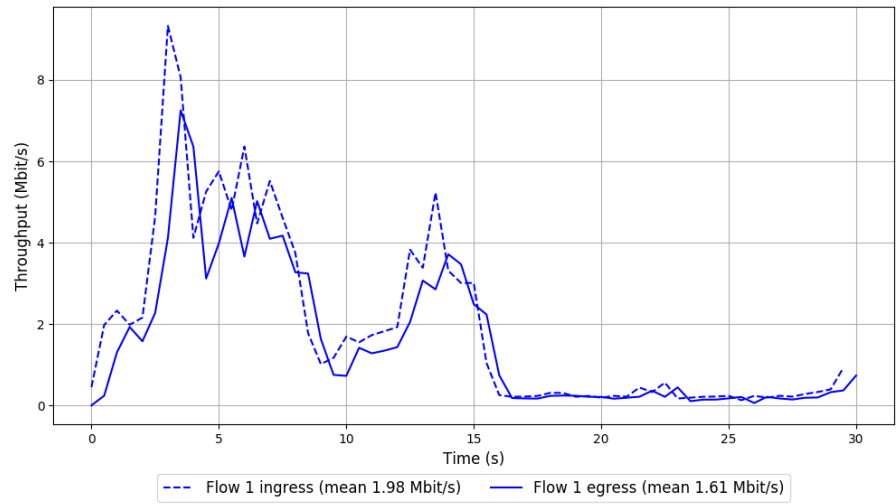
-- Flow 1:

Average throughput: 1.61 Mbit/s

95th percentile per-packet one-way delay: 47.938 ms

Loss rate: 19.04%

Run 5: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

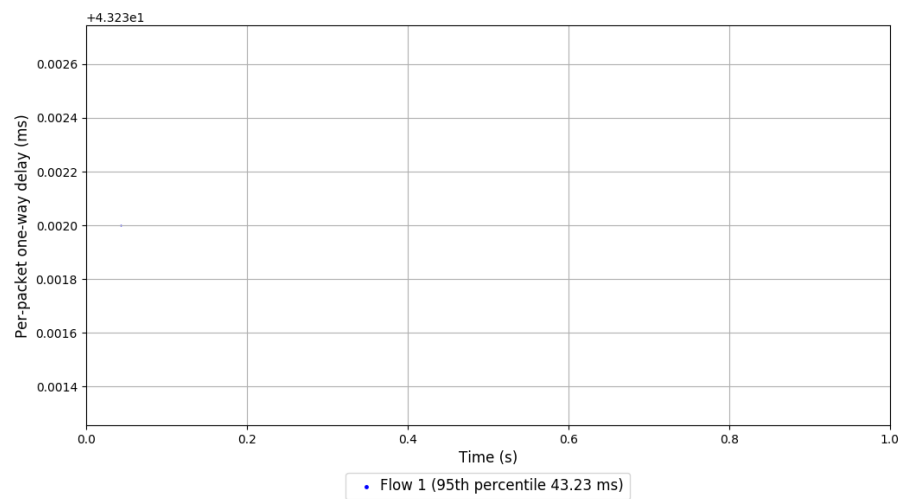
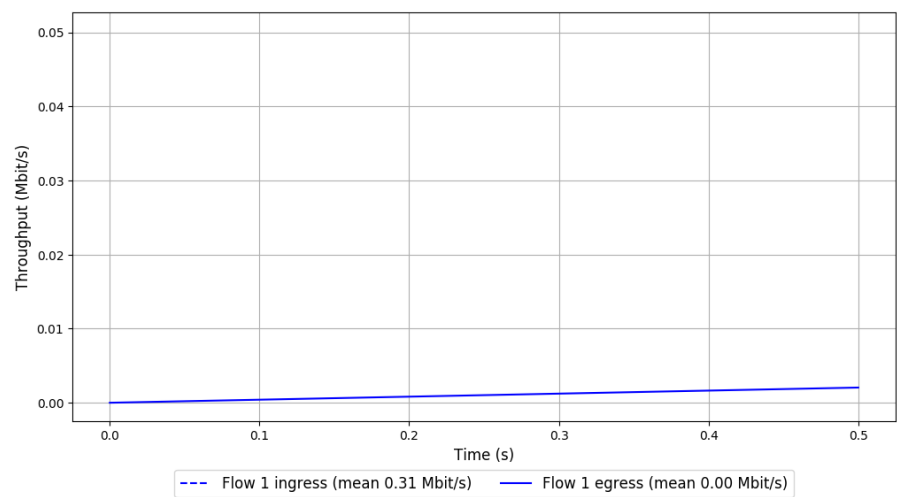
Start at: 2019-03-26 20:12:25

End at: 2019-03-26 20:12:55

Local clock offset: 2.148 ms

Remote clock offset: 0.351 ms

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



Run 2: Statistics of TaoVA-100x

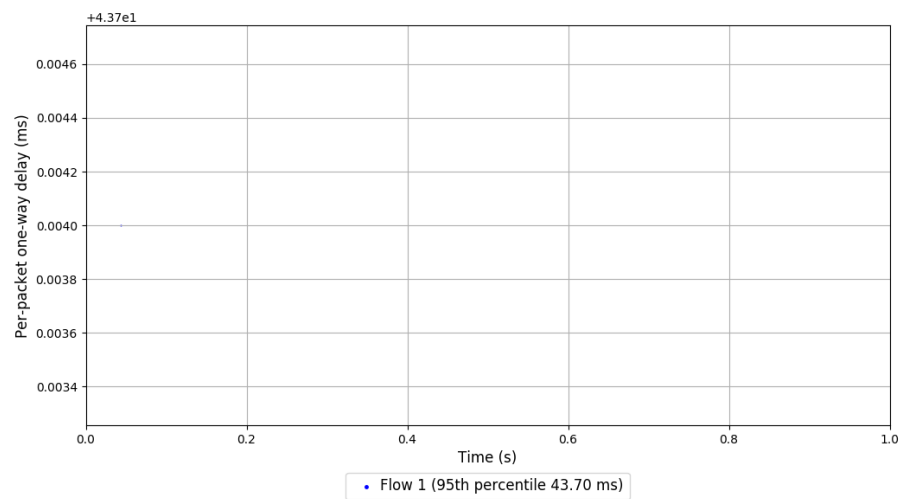
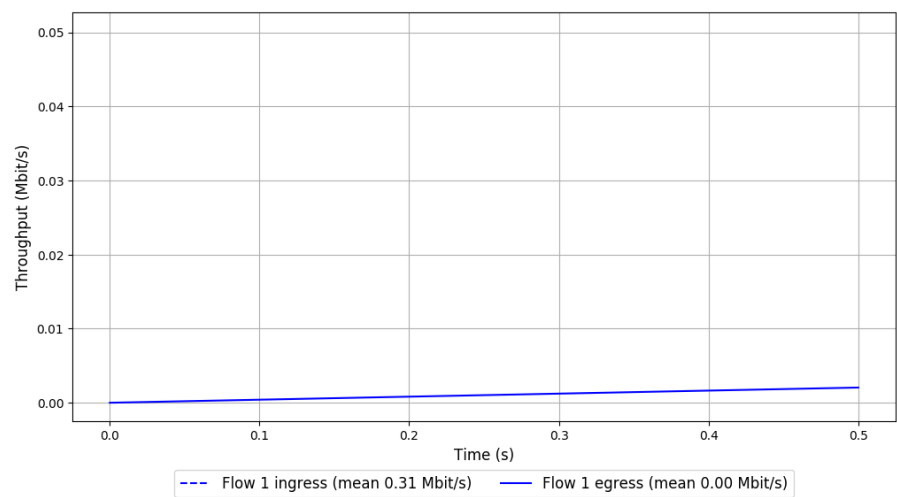
Start at: 2019-03-26 20:36:45

End at: 2019-03-26 20:37:15

Local clock offset: 0.949 ms

Remote clock offset: 0.418 ms

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



Run 3: Statistics of TaoVA-100x

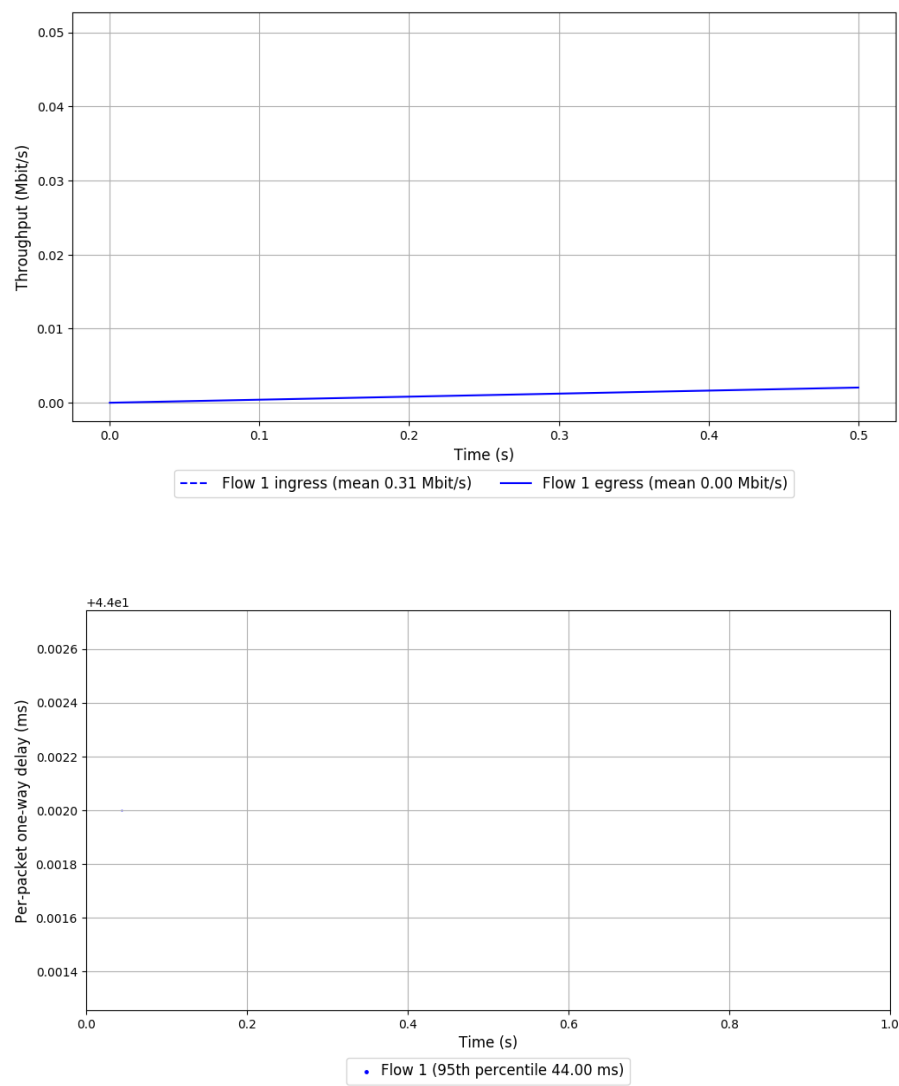
Start at: 2019-03-26 21:01:06

End at: 2019-03-26 21:01:36

Local clock offset: 0.054 ms

Remote clock offset: 0.825 ms

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



Run 4: Statistics of TaoVA-100x

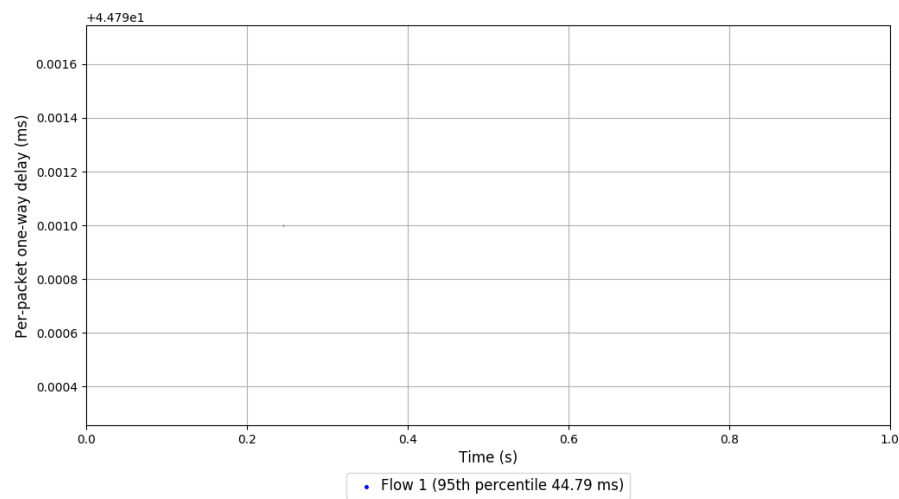
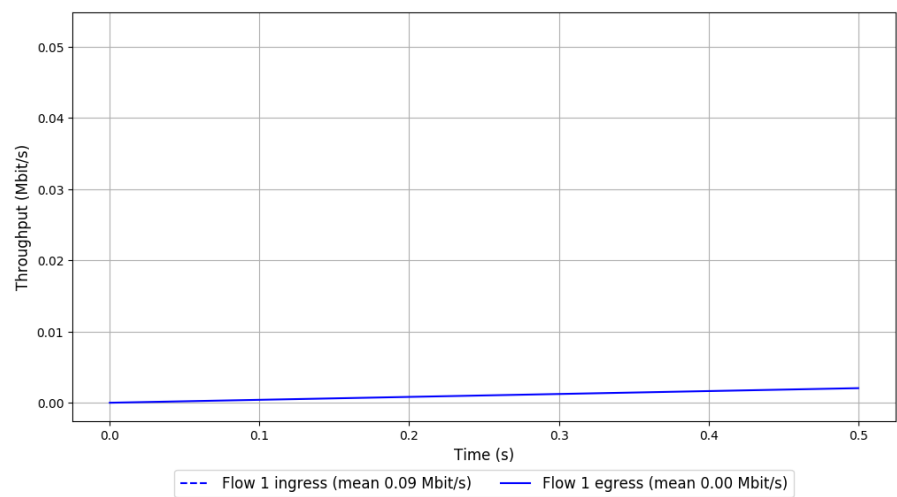
Start at: 2019-03-26 21:25:35

End at: 2019-03-26 21:26:06

Local clock offset: -0.015 ms

Remote clock offset: 0.901 ms

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



Run 5: Statistics of TaoVA-100x

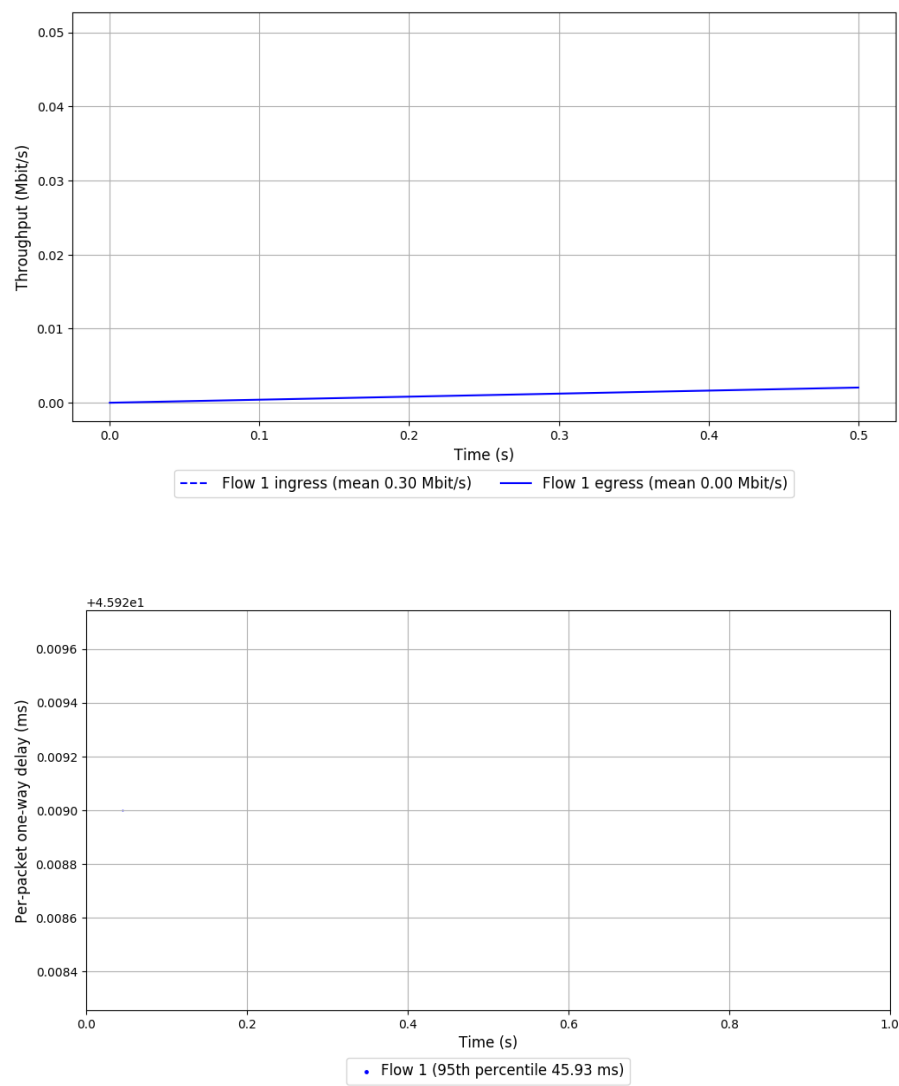
Start at: 2019-03-26 21:50:11

End at: 2019-03-26 21:50:41

Local clock offset: 0.159 ms

Remote clock offset: 0.742 ms

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



Run 1: Statistics of TCP Vegas

Start at: 2019-03-26 20:16:59

End at: 2019-03-26 20:17:29

Local clock offset: 2.229 ms

Remote clock offset: 4.778 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.36 Mbit/s

95th percentile per-packet one-way delay: 49.345 ms

Loss rate: 11.17%

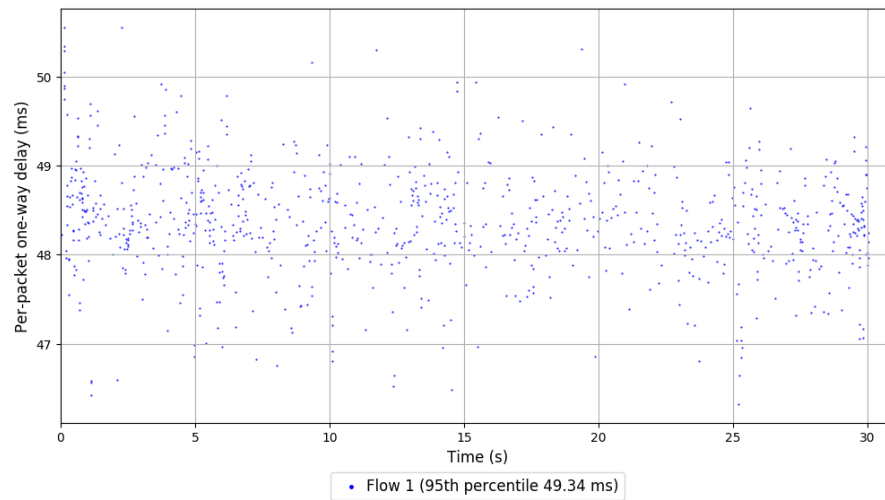
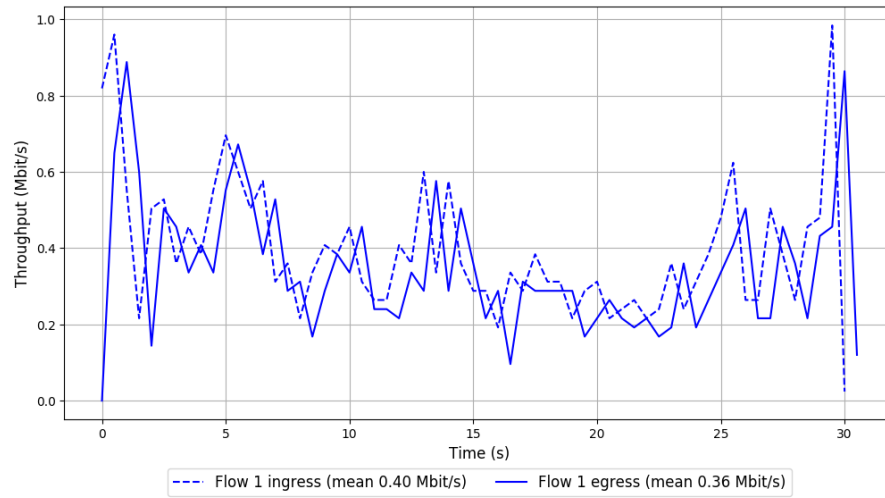
-- Flow 1:

Average throughput: 0.36 Mbit/s

95th percentile per-packet one-way delay: 49.345 ms

Loss rate: 11.17%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2019-03-26 20:41:16

End at: 2019-03-26 20:41:46

Local clock offset: 0.816 ms

Remote clock offset: 0.745 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.44 Mbit/s

95th percentile per-packet one-way delay: 44.999 ms

Loss rate: 8.96%

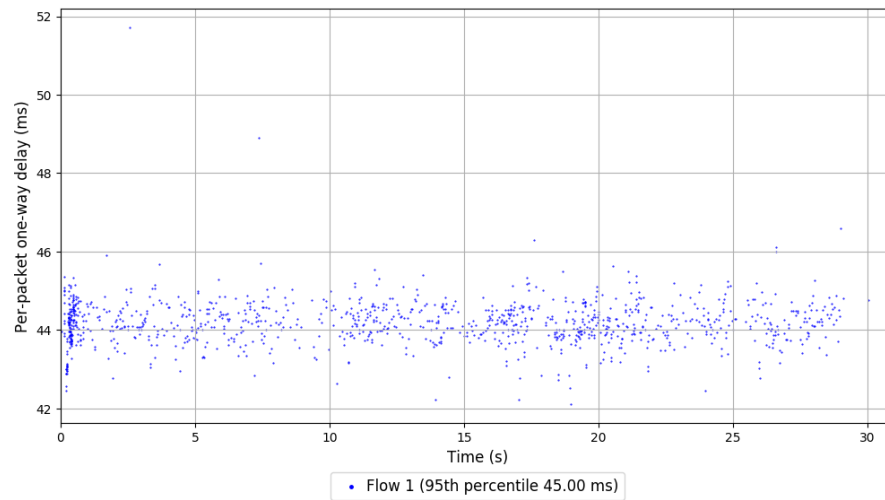
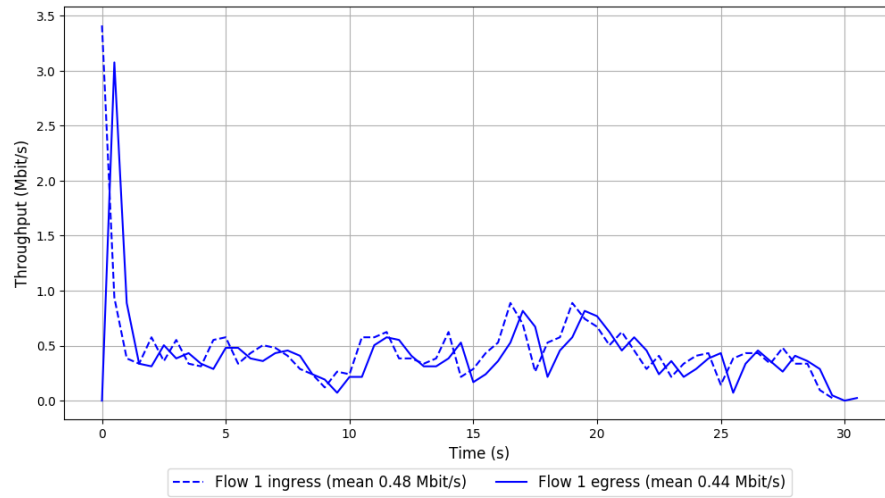
-- Flow 1:

Average throughput: 0.44 Mbit/s

95th percentile per-packet one-way delay: 44.999 ms

Loss rate: 8.96%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2019-03-26 21:05:41

End at: 2019-03-26 21:06:11

Local clock offset: -0.072 ms

Remote clock offset: 0.623 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.31 Mbit/s

95th percentile per-packet one-way delay: 45.482 ms

Loss rate: 13.07%

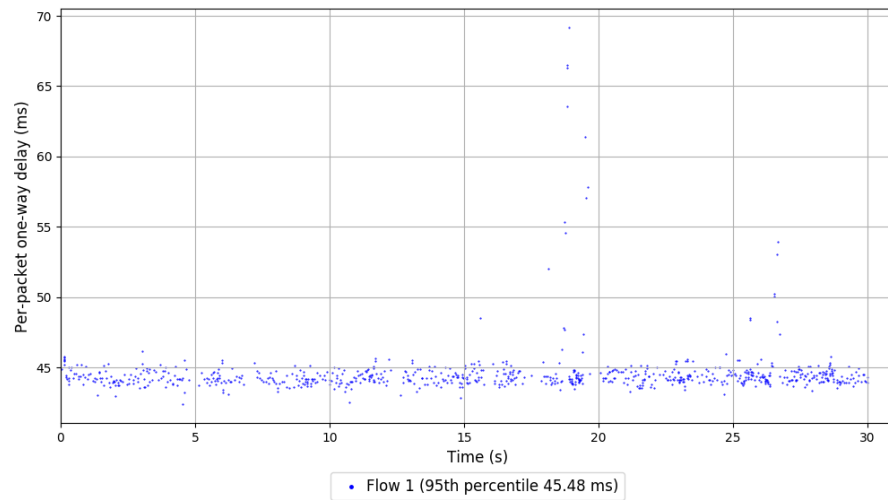
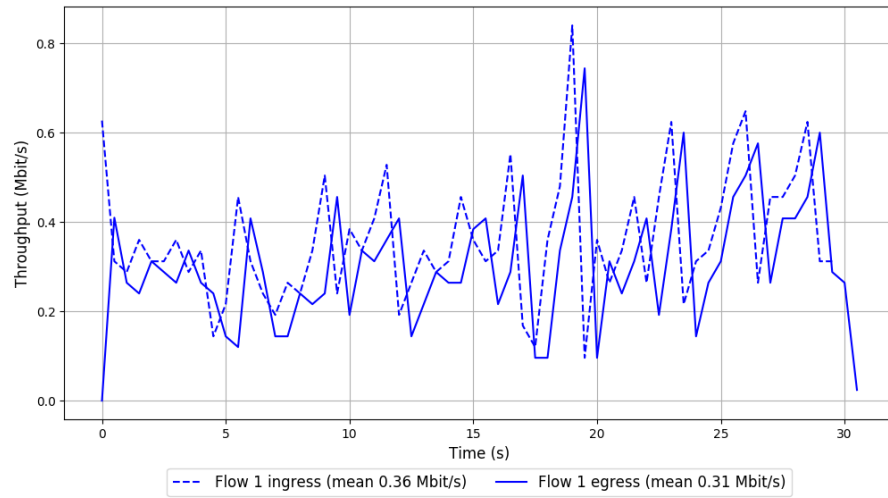
-- Flow 1:

Average throughput: 0.31 Mbit/s

95th percentile per-packet one-way delay: 45.482 ms

Loss rate: 13.07%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2019-03-26 21:30:08

End at: 2019-03-26 21:30:38

Local clock offset: 0.034 ms

Remote clock offset: 0.95 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 45.881 ms

Loss rate: 20.09%

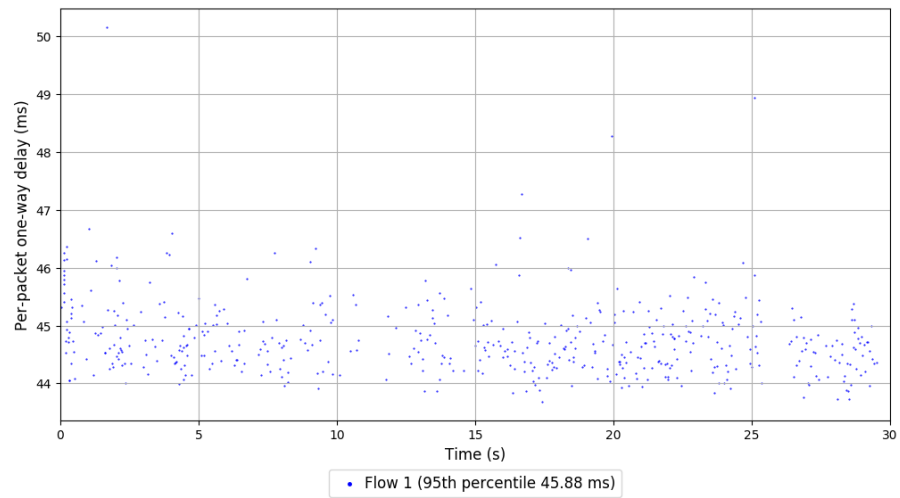
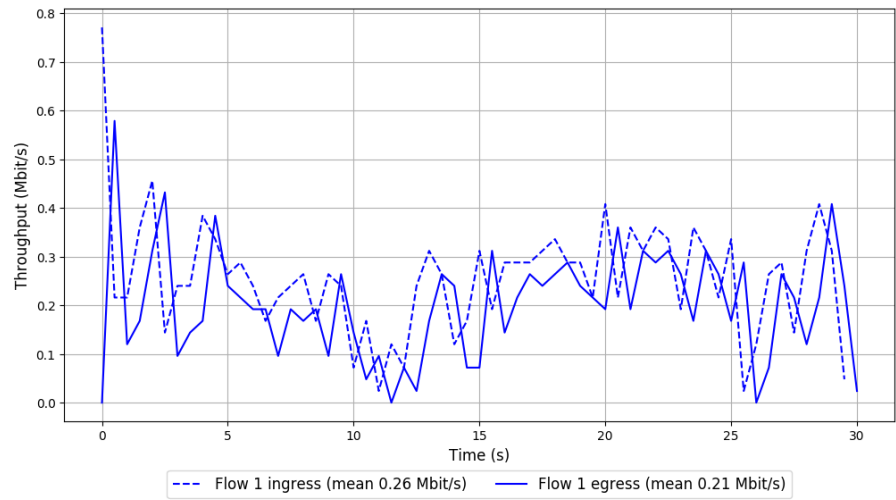
-- Flow 1:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 45.881 ms

Loss rate: 20.09%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2019-03-26 21:54:48

End at: 2019-03-26 21:55:18

Local clock offset: 0.227 ms

Remote clock offset: 0.538 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.14 Mbit/s

95th percentile per-packet one-way delay: 45.389 ms

Loss rate: 25.17%

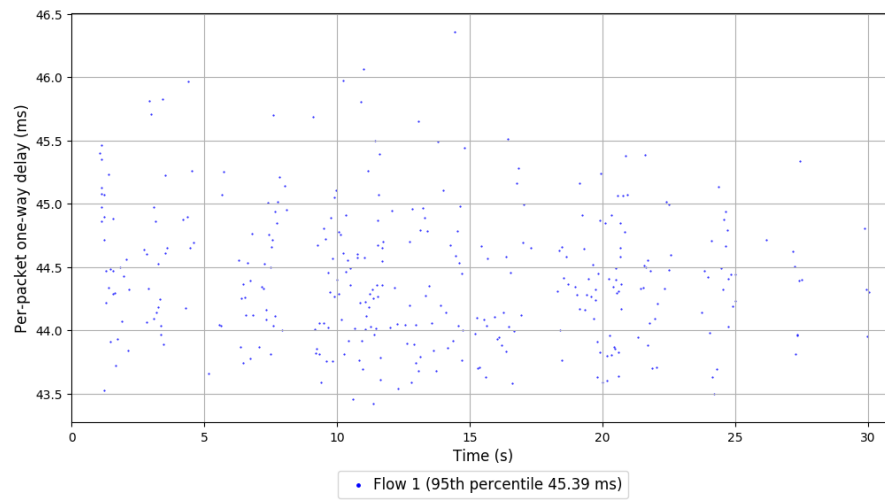
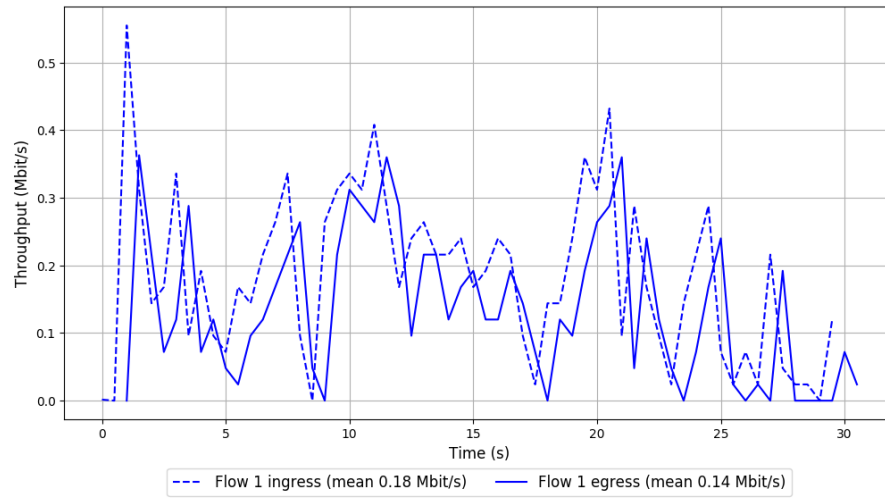
-- Flow 1:

Average throughput: 0.14 Mbit/s

95th percentile per-packet one-way delay: 45.389 ms

Loss rate: 25.17%

Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2019-03-26 20:21:29

End at: 2019-03-26 20:21:59

Local clock offset: 1.615 ms

Remote clock offset: 0.514 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 42.52 Mbit/s

95th percentile per-packet one-way delay: 94.382 ms

Loss rate: 60.30%

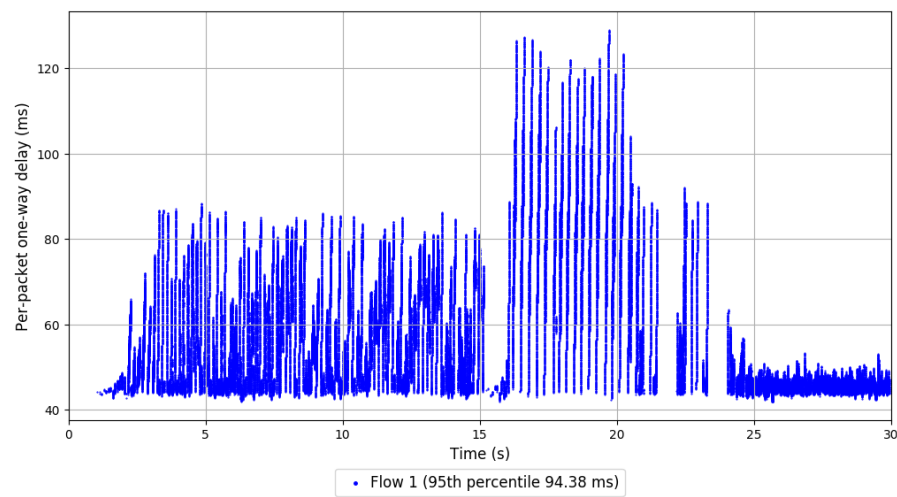
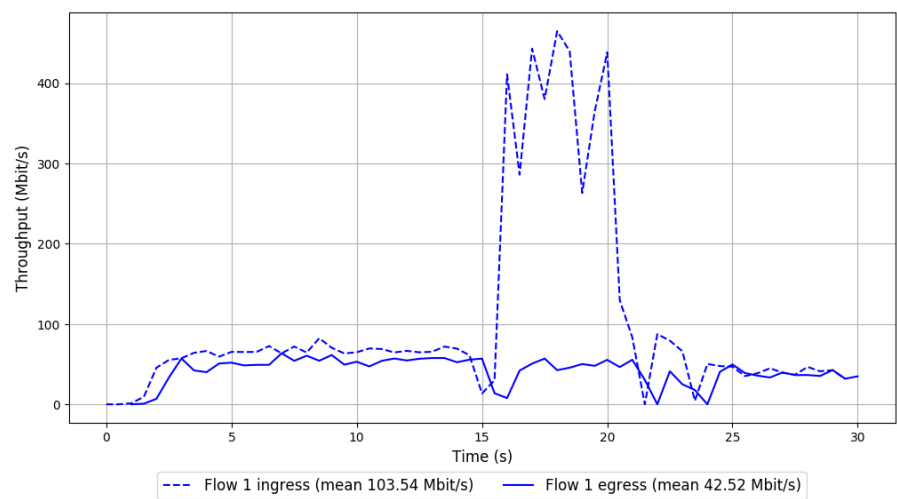
-- Flow 1:

Average throughput: 42.52 Mbit/s

95th percentile per-packet one-way delay: 94.382 ms

Loss rate: 60.30%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2019-03-26 20:45:47

End at: 2019-03-26 20:46:17

Local clock offset: 0.673 ms

Remote clock offset: 0.803 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.04 Mbit/s

95th percentile per-packet one-way delay: 79.874 ms

Loss rate: 29.21%

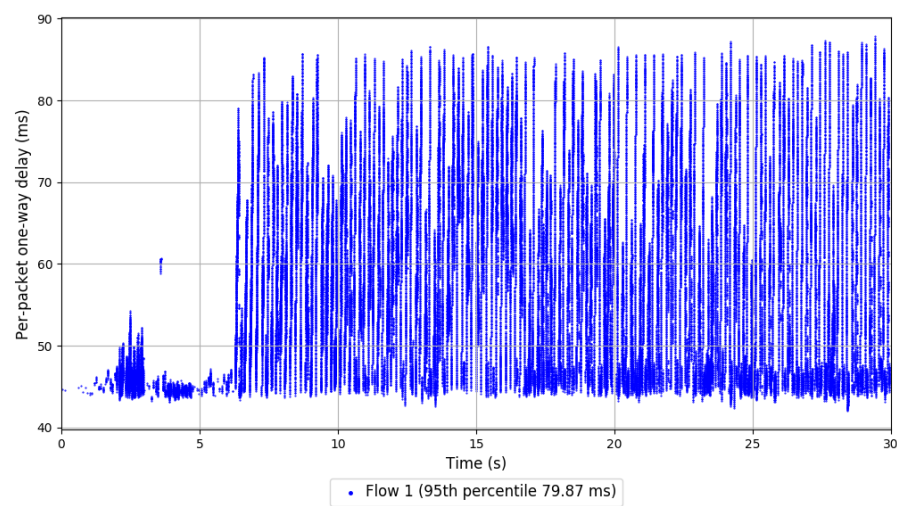
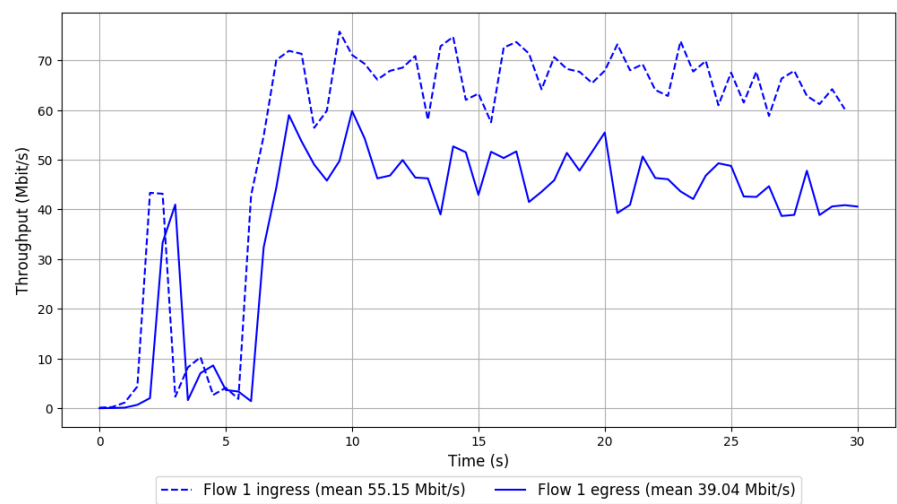
-- Flow 1:

Average throughput: 39.04 Mbit/s

95th percentile per-packet one-way delay: 79.874 ms

Loss rate: 29.21%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2019-03-26 21:10:14

End at: 2019-03-26 21:10:44

Local clock offset: -0.21 ms

Remote clock offset: 0.869 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 38.29 Mbit/s

95th percentile per-packet one-way delay: 83.267 ms

Loss rate: 34.78%

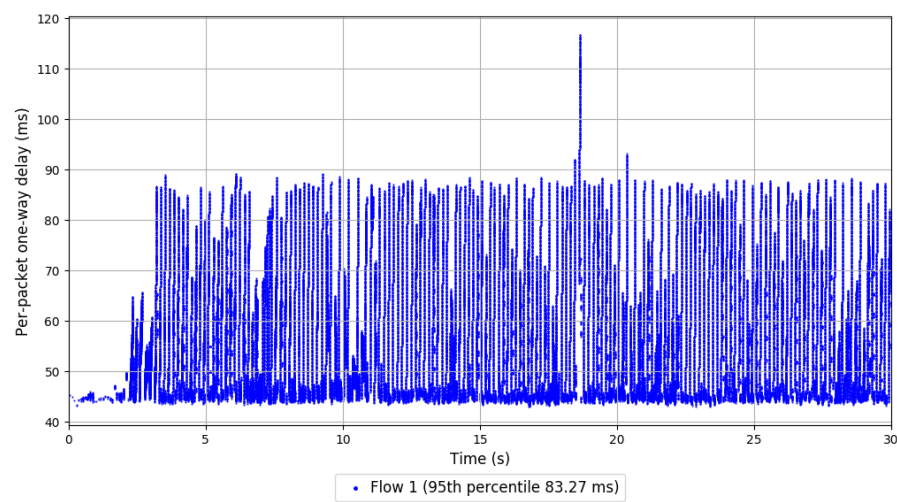
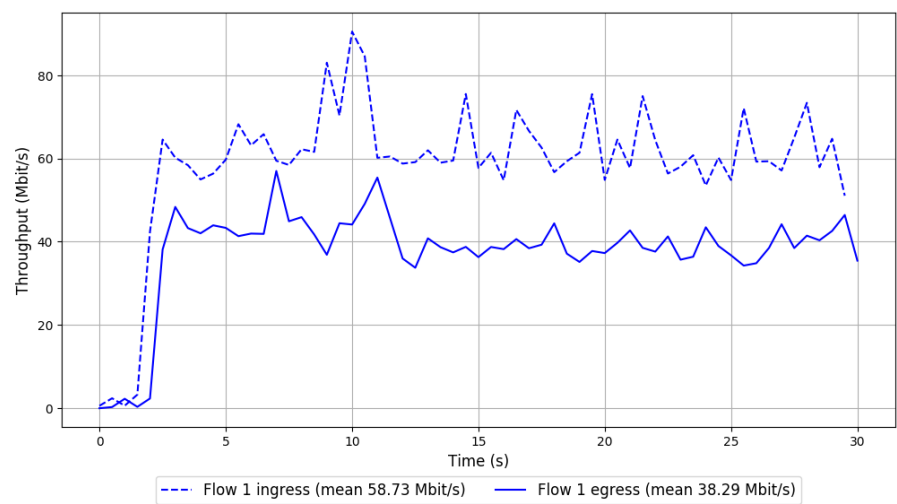
-- Flow 1:

Average throughput: 38.29 Mbit/s

95th percentile per-packet one-way delay: 83.267 ms

Loss rate: 34.78%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2019-03-26 21:34:43

End at: 2019-03-26 21:35:13

Local clock offset: 0.035 ms

Remote clock offset: 0.73 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 21.33 Mbit/s

95th percentile per-packet one-way delay: 82.110 ms

Loss rate: 54.75%

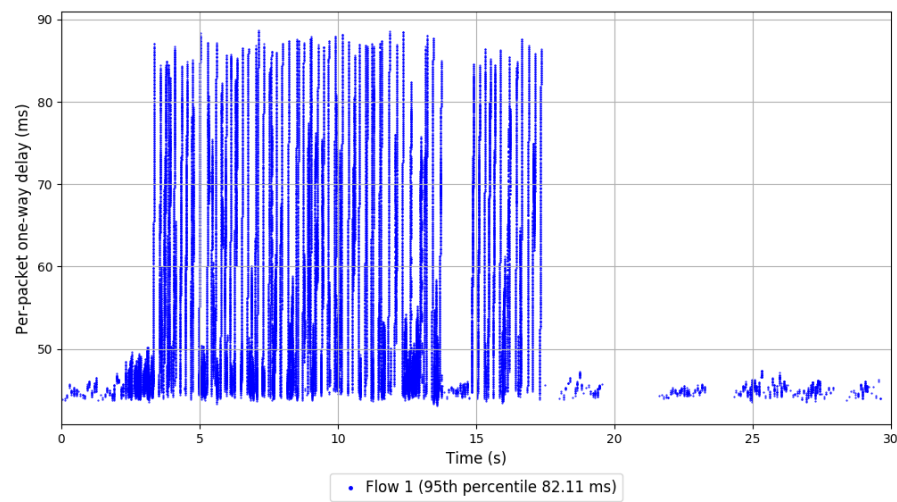
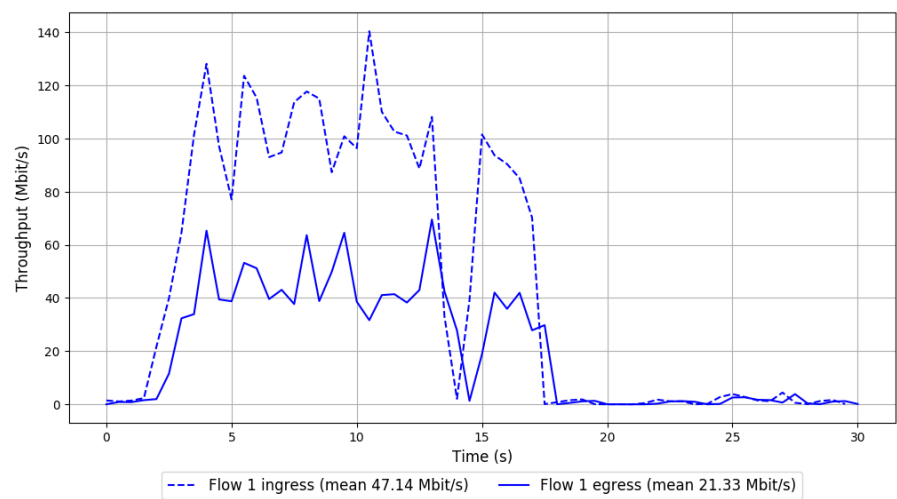
-- Flow 1:

Average throughput: 21.33 Mbit/s

95th percentile per-packet one-way delay: 82.110 ms

Loss rate: 54.75%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2019-03-26 21:59:24

End at: 2019-03-26 21:59:54

Local clock offset: 0.283 ms

Remote clock offset: 0.683 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 20.52 Mbit/s

95th percentile per-packet one-way delay: 77.444 ms

Loss rate: 47.55%

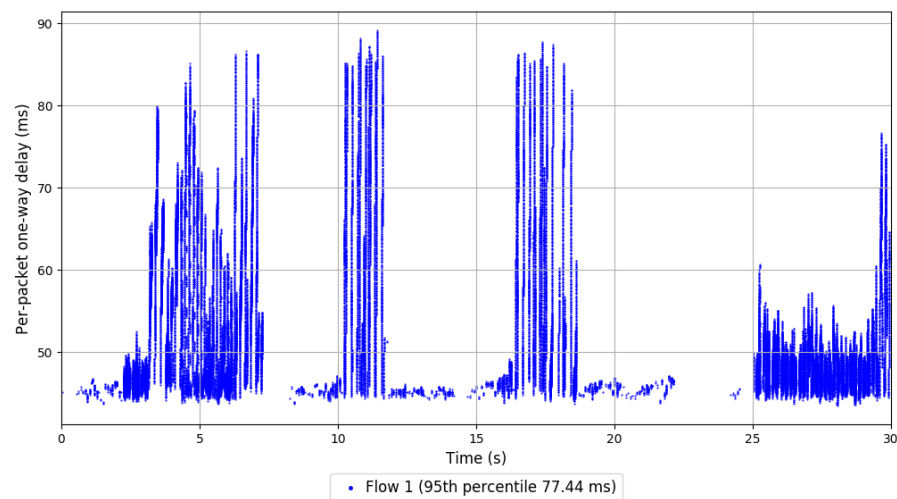
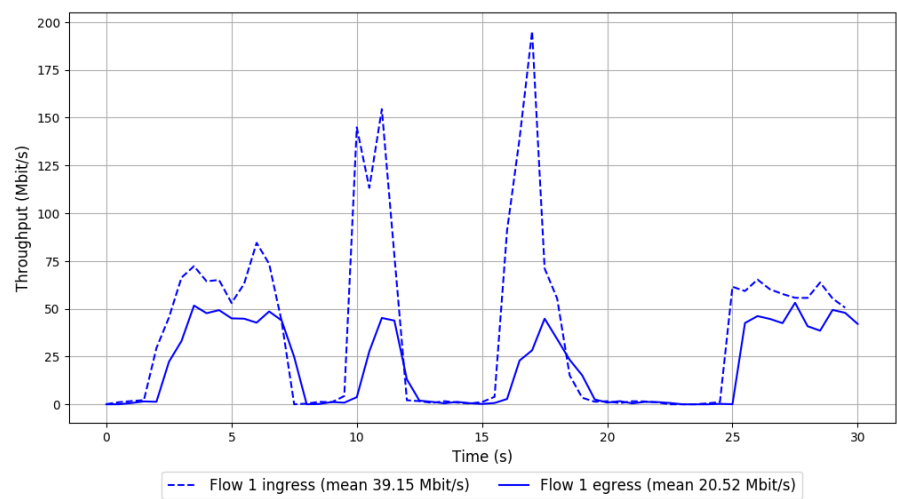
-- Flow 1:

Average throughput: 20.52 Mbit/s

95th percentile per-packet one-way delay: 77.444 ms

Loss rate: 47.55%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2019-03-26 20:23:51

End at: 2019-03-26 20:24:22

Local clock offset: 1.413 ms

Remote clock offset: 0.502 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.30 Mbit/s

95th percentile per-packet one-way delay: 44.841 ms

Loss rate: 8.58%

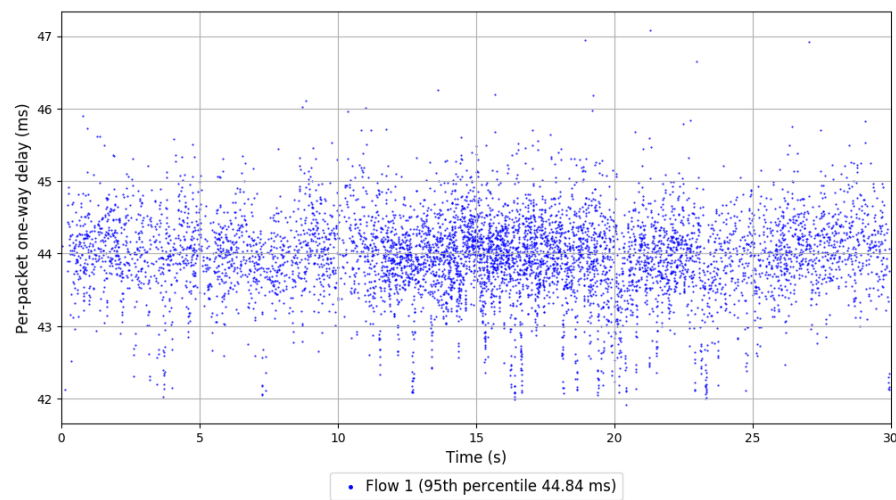
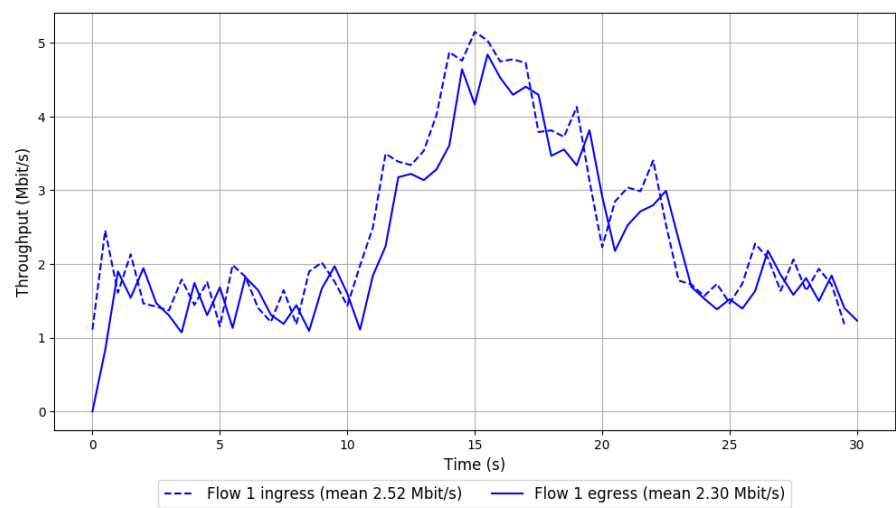
-- Flow 1:

Average throughput: 2.30 Mbit/s

95th percentile per-packet one-way delay: 44.841 ms

Loss rate: 8.58%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2019-03-26 20:48:12

End at: 2019-03-26 20:48:42

Local clock offset: 0.571 ms

Remote clock offset: 0.816 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.66 Mbit/s

95th percentile per-packet one-way delay: 45.008 ms

Loss rate: 9.56%

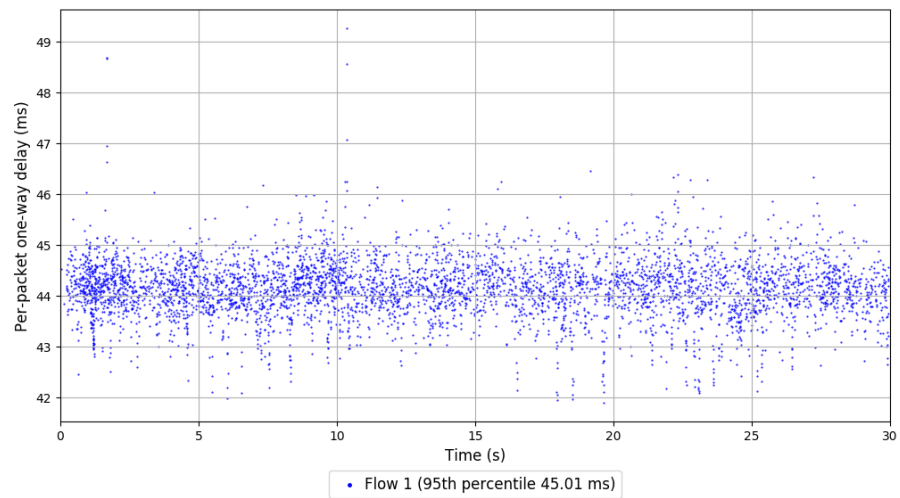
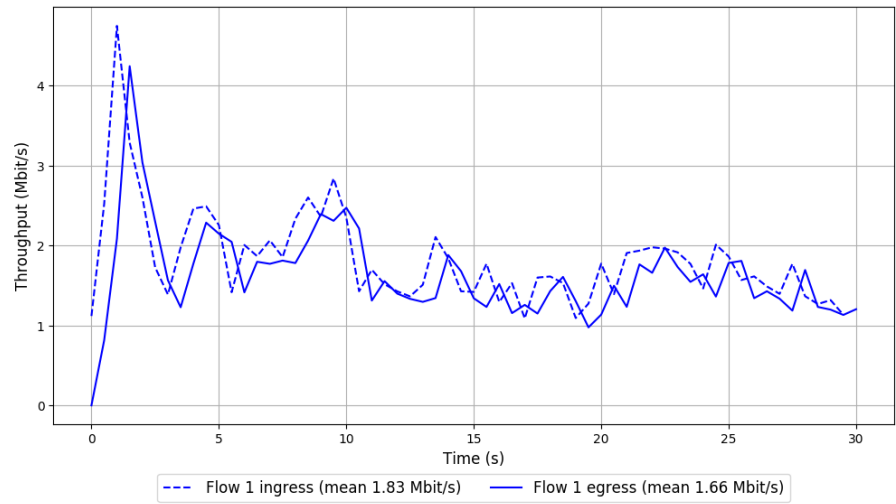
-- Flow 1:

Average throughput: 1.66 Mbit/s

95th percentile per-packet one-way delay: 45.008 ms

Loss rate: 9.56%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2019-03-26 21:12:37

End at: 2019-03-26 21:13:07

Local clock offset: -0.291 ms

Remote clock offset: 0.865 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.33 Mbit/s

95th percentile per-packet one-way delay: 45.595 ms

Loss rate: 15.86%

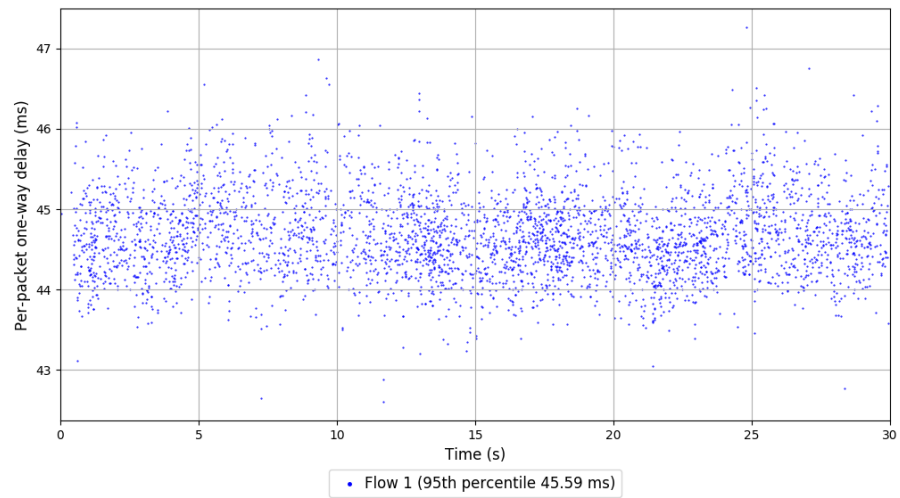
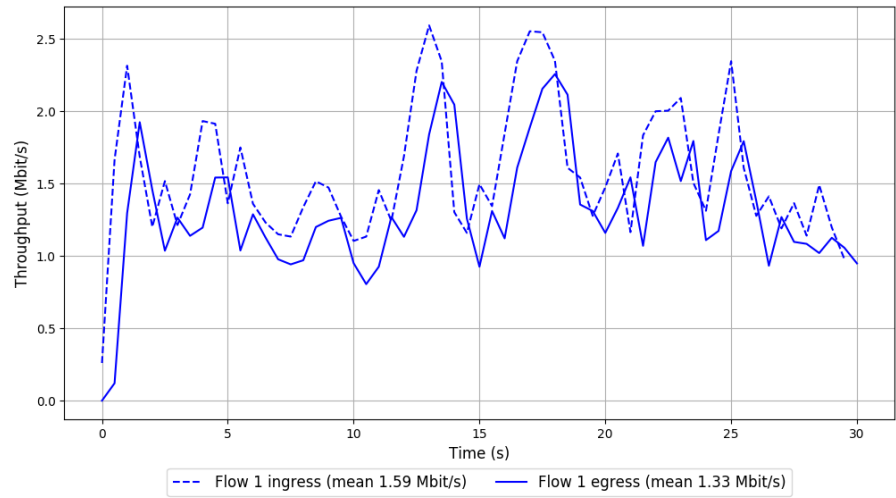
-- Flow 1:

Average throughput: 1.33 Mbit/s

95th percentile per-packet one-way delay: 45.595 ms

Loss rate: 15.86%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2019-03-26 21:37:05

End at: 2019-03-26 21:37:35

Local clock offset: 0.056 ms

Remote clock offset: 0.878 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.32 Mbit/s

95th percentile per-packet one-way delay: 45.916 ms

Loss rate: 18.90%

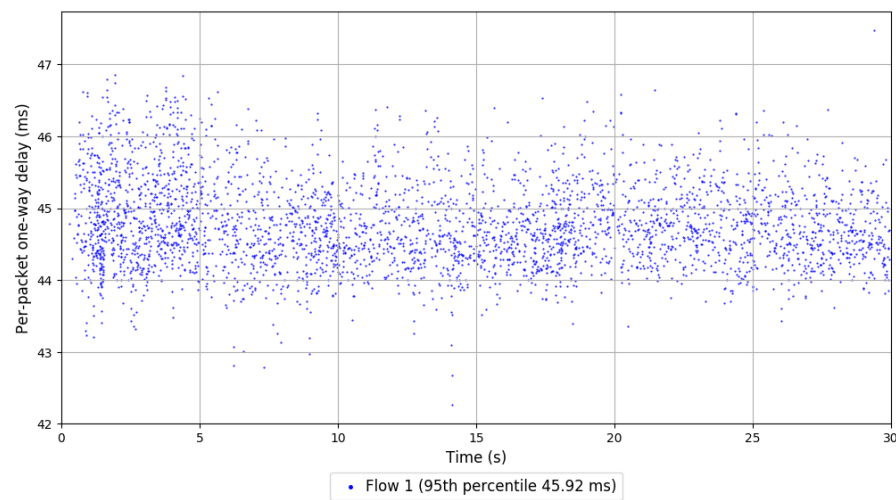
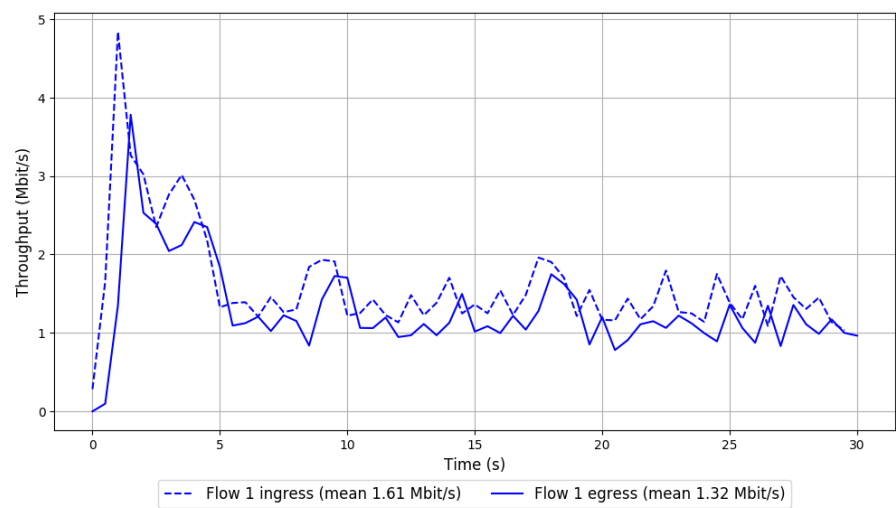
-- Flow 1:

Average throughput: 1.32 Mbit/s

95th percentile per-packet one-way delay: 45.916 ms

Loss rate: 18.90%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2019-03-26 22:01:54

End at: 2019-03-26 22:02:24

Local clock offset: 0.307 ms

Remote clock offset: 0.64 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.52 Mbit/s

95th percentile per-packet one-way delay: 45.369 ms

Loss rate: 16.01%

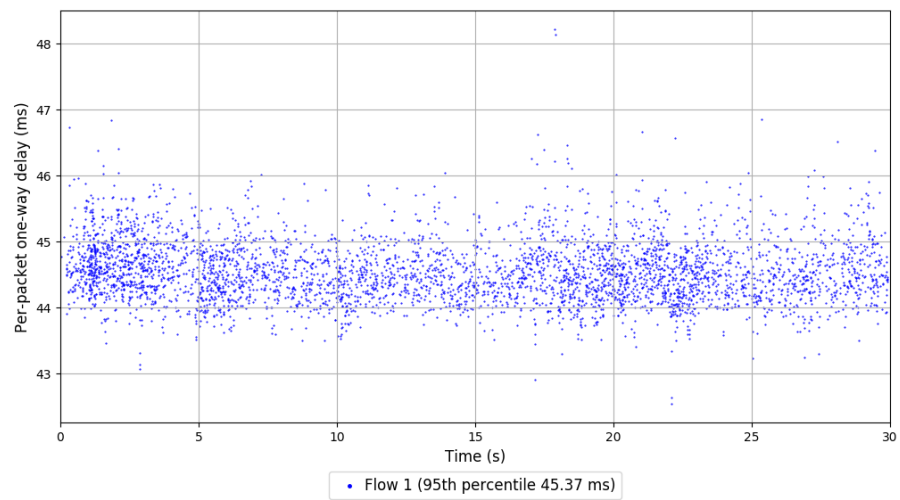
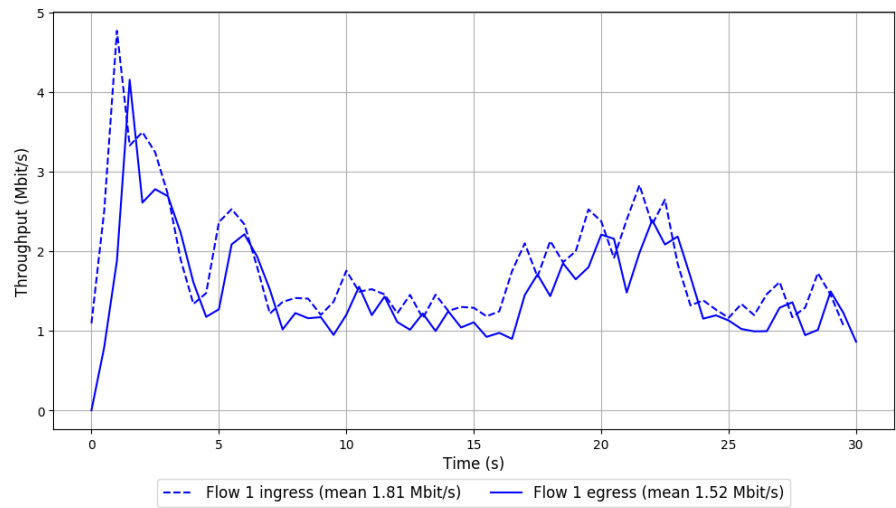
-- Flow 1:

Average throughput: 1.52 Mbit/s

95th percentile per-packet one-way delay: 45.369 ms

Loss rate: 16.01%

Run 5: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2019-03-26 20:15:52

End at: 2019-03-26 20:16:22

Local clock offset: 2.332 ms

Remote clock offset: 0.375 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.14 Mbit/s

95th percentile per-packet one-way delay: 45.087 ms

Loss rate: 9.56%

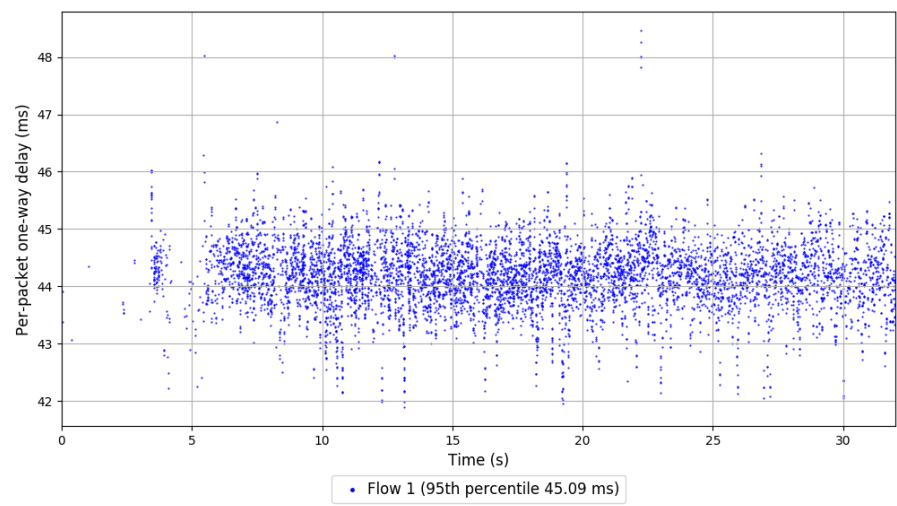
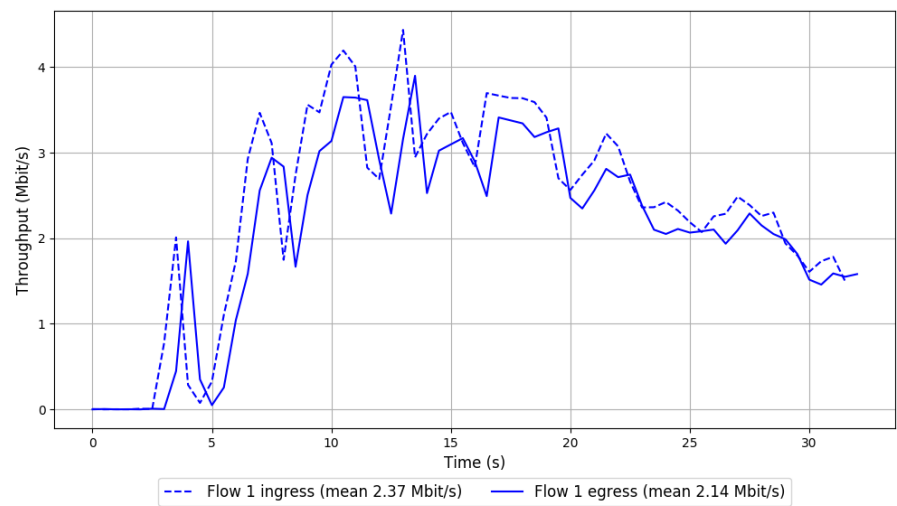
-- Flow 1:

Average throughput: 2.14 Mbit/s

95th percentile per-packet one-way delay: 45.087 ms

Loss rate: 9.56%

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2019-03-26 20:40:07

End at: 2019-03-26 20:40:37

Local clock offset: 0.849 ms

Remote clock offset: 0.689 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 45.636 ms

Loss rate: 13.60%

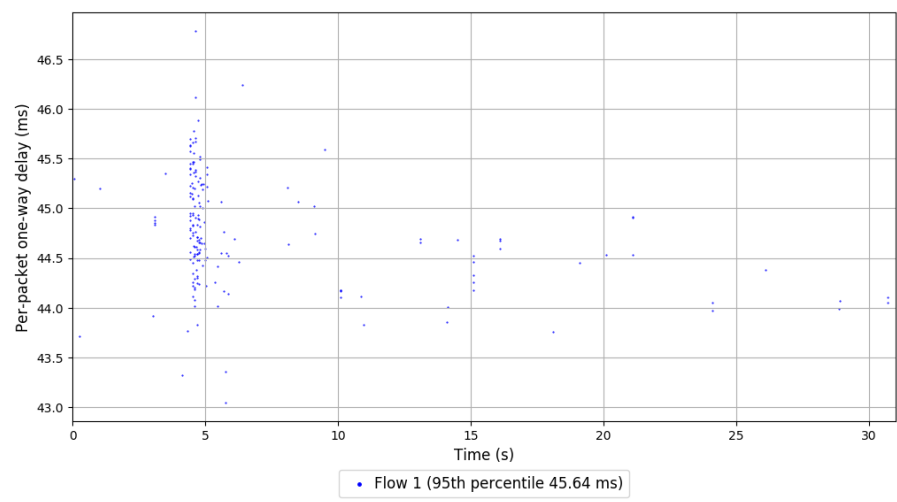
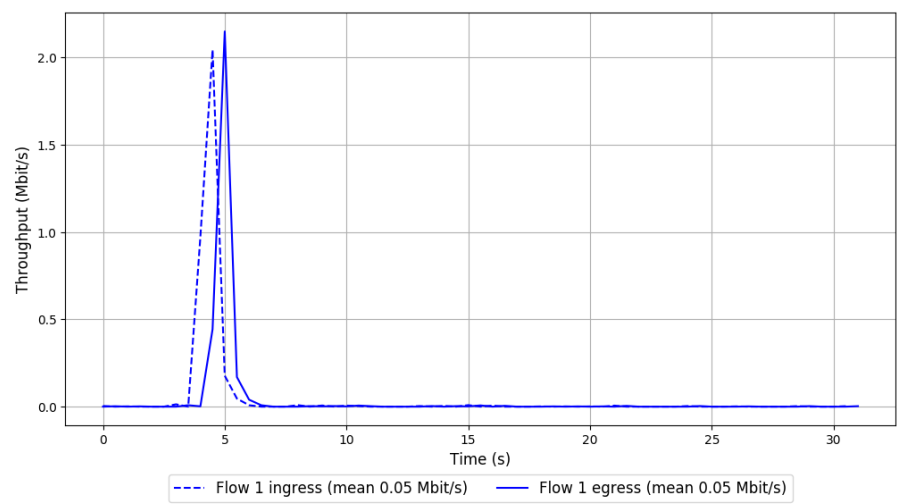
-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 45.636 ms

Loss rate: 13.60%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2019-03-26 21:04:34

End at: 2019-03-26 21:05:04

Local clock offset: -0.049 ms

Remote clock offset: 0.774 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 45.559 ms

Loss rate: 4.35%

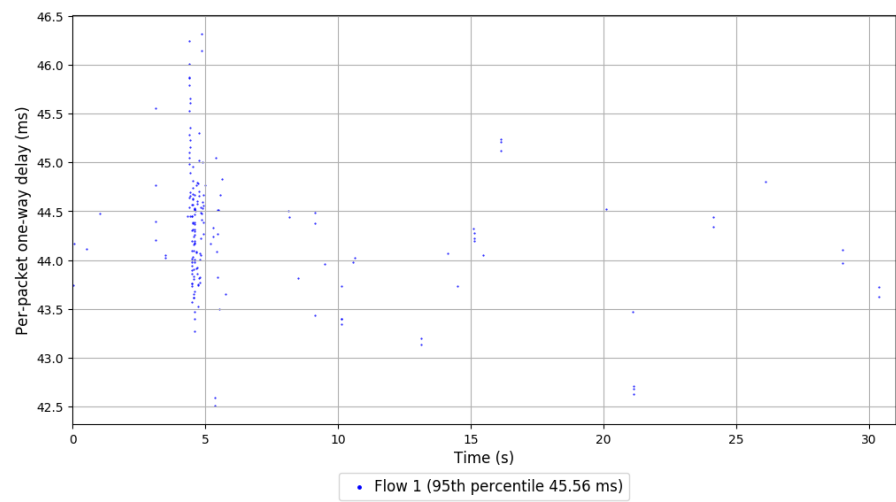
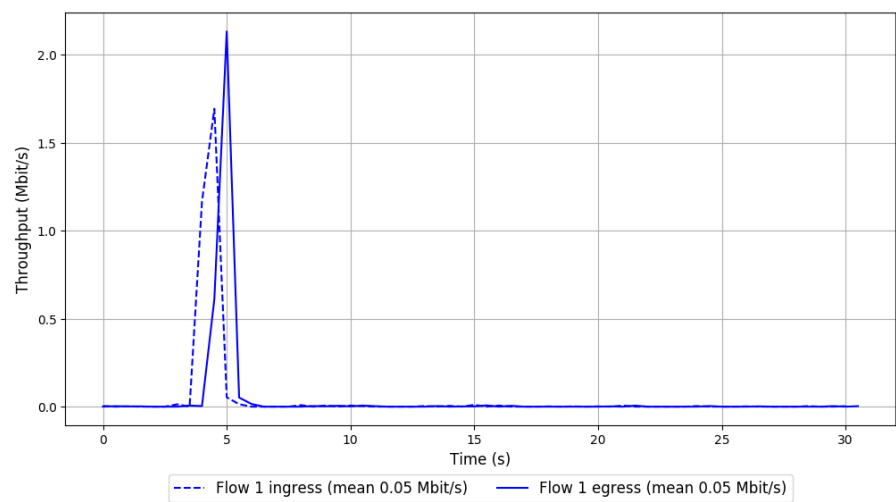
-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 45.559 ms

Loss rate: 4.35%

Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2019-03-26 21:29:01

End at: 2019-03-26 21:29:31

Local clock offset: 0.045 ms

Remote clock offset: 0.947 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 45.731 ms

Loss rate: 21.36%

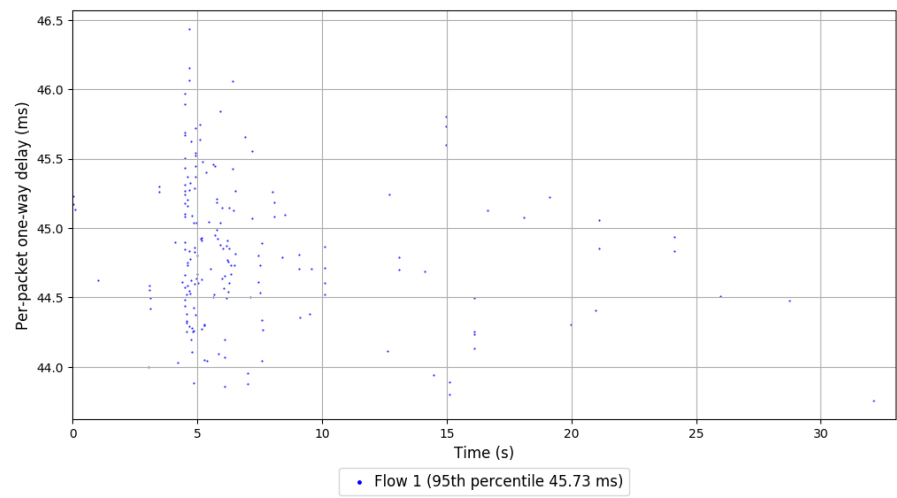
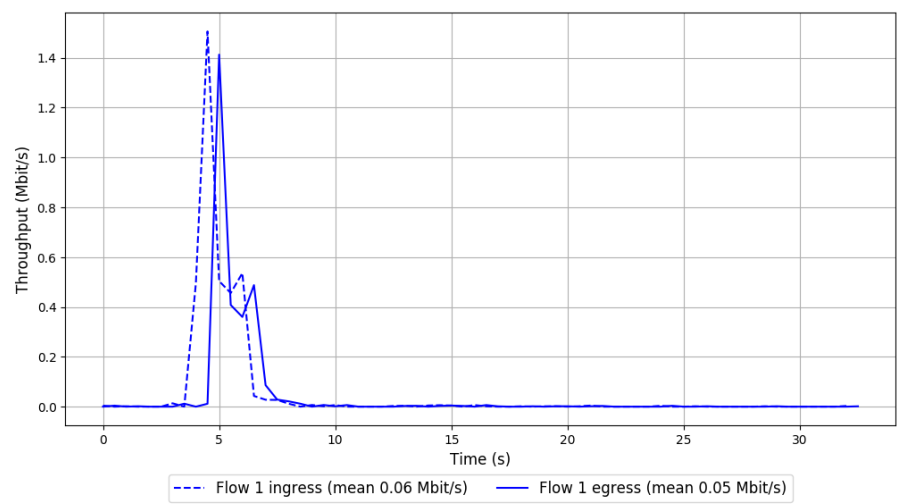
-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 45.731 ms

Loss rate: 21.36%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2019-03-26 21:53:40

End at: 2019-03-26 21:54:10

Local clock offset: 0.211 ms

Remote clock offset: 0.694 ms

Below is generated by plot.py at 2019-03-26 22:12:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 45.544 ms

Loss rate: 18.08%

-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 45.544 ms

Loss rate: 18.08%

Run 5: Report of WebRTC media — Data Link

