

Pantheon Report

Generated at 2018-01-02 20:24:53 (UTC).

Data path: Stanford ppp0 (*remote*) → AWS California 1 Ethernet (*local*).

Repeated the test of 14 congestion control schemes 3 times.

Each test lasted for 30 seconds running 1 flow.

Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

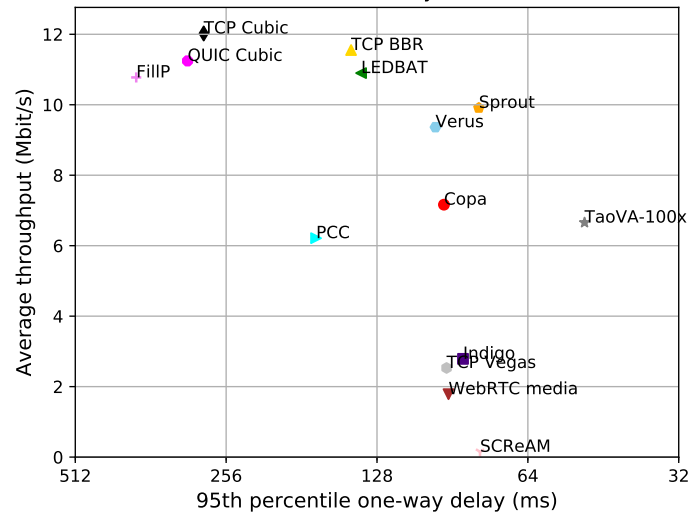
Tested BBR with qdisc of Fair Queuing (**fq**), and other schemes with the default Linux qdisc (**pfifo_fast**).

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

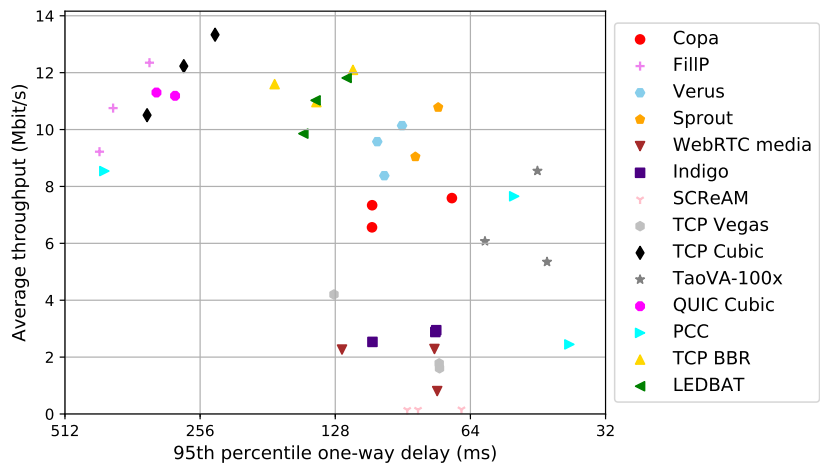
Git summary:

```
branch: master @ 904a5750834816b1e46a2c86405d707788d27c16
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
  M datagrump/sender.cc
third_party/fixlcp @ dcaef6b00654e660f73f7ed679d2eab61ce08639
third_party/genericCC @ 80b516c448f795fd6e9675f7177b69c622f07da8
third_party/indigo @ b19f3730105f9aa95452552af924e3719b03cc55
third_party/indigo-no-calib @ 7224f2202e8a044d8306fa0b983ad84360c53d89
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
  M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ fb1053193c2861da659ba9013db26744ccfcf993
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
  M receiver/src/buffer.h
  M receiver/src/core.cpp
  M sender/src/buffer.h
  M sender/src/core.cpp
third_party/proto-quick @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream @ c3370fd7bd17265a79aeb34e4016ad23f5965885
third_party/sourdough @ f1a14bffe749737437f61b1eaeab30b267cde681
third_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce
  M src/examples/cellsim.cc
  M src/examples/sproutbt2.cc
  M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
  M src/verus.hpp
  M tools/plot.py
third_party/webRTC @ a488197ddd041ace68a42849b2540ad834825f42
```

test from Stanford ppp0 to AWS California 1 Ethernet, 3 runs of 30s each per scheme
(mean of all runs by scheme)



test from Stanford ppp0 to AWS California 1 Ethernet, 3 runs of 30s each per scheme



scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	11.56	144.20	0.32
TCP Cubic	3	12.02	283.82	1.04
LEDBAT	3	10.90	137.72	0.43
PCC	3	6.21	169.33	2.67
QUIC Cubic	2	11.25	305.65	1.44
SCReAM	3	0.15	79.74	0.12
WebRTC media	3	1.78	92.16	0.53
Sprout	2	9.91	80.18	1.52
TaoVA-100x	3	6.66	49.33	0.73
TCP Vegas	3	2.53	92.98	0.10
Verus	3	9.36	97.87	10.41
Copa	3	7.16	94.11	0.30
FillP	3	10.77	386.94	51.05
Indigo	3	2.79	86.22	0.11

Run 1: Statistics of TCP BBR

Start at: 2018-01-02 18:42:53

End at: 2018-01-02 18:43:23

Local clock offset: -0.275 ms

Remote clock offset: -3.723 ms

Below is generated by plot.py at 2018-01-02 20:24:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 10.97 Mbit/s

95th percentile per-packet one-way delay: 141.005 ms

Loss rate: 0.41%

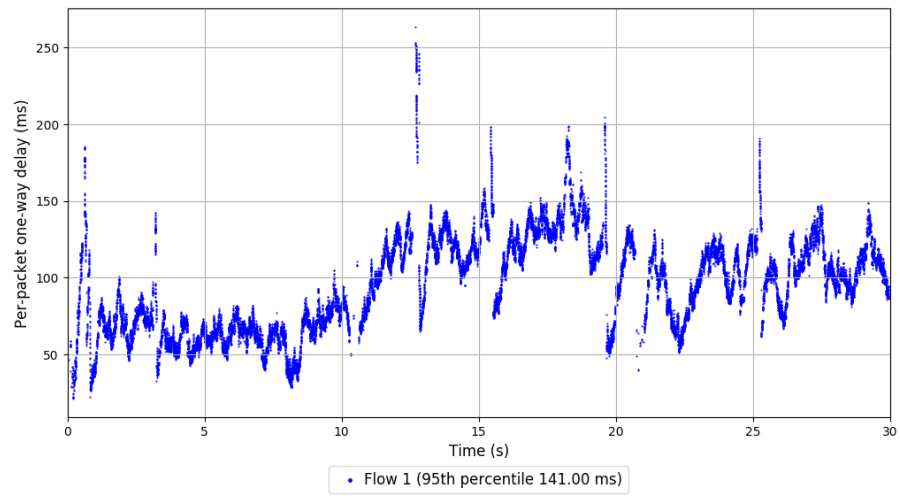
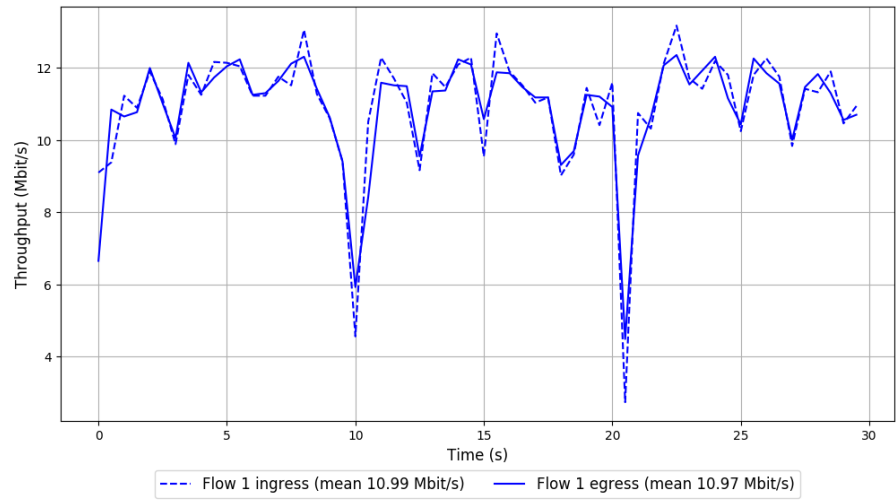
-- Flow 1:

Average throughput: 10.97 Mbit/s

95th percentile per-packet one-way delay: 141.005 ms

Loss rate: 0.41%

Run 1: Report of TCP BBR — Data Link

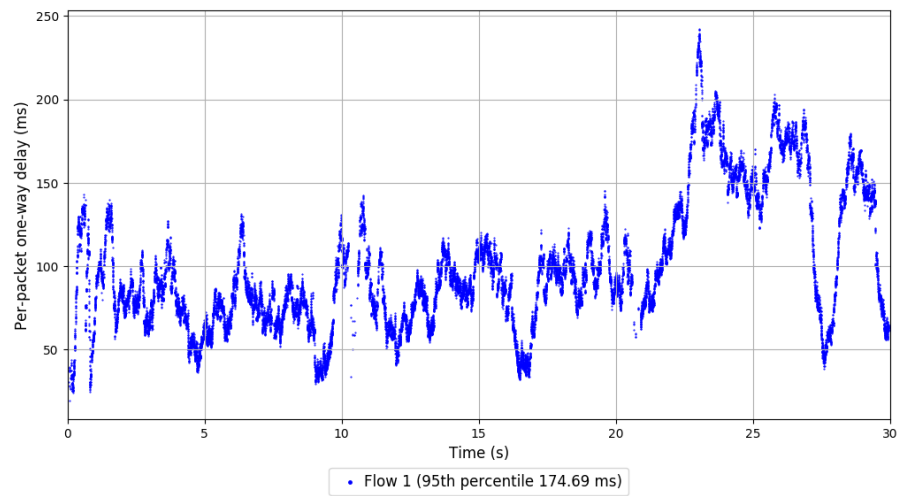
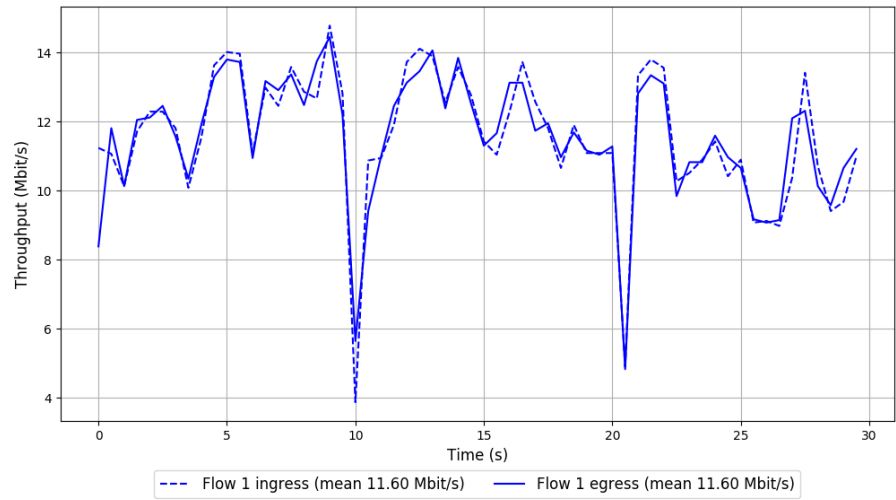


Run 2: Statistics of TCP BBR

Start at: 2018-01-02 19:00:32
End at: 2018-01-02 19:01:02
Local clock offset: -0.146 ms
Remote clock offset: -3.511 ms

Below is generated by plot.py at 2018-01-02 20:24:05
Datalink statistics
-- Total of 1 flow:
Average throughput: 11.60 Mbit/s
95th percentile per-packet one-way delay: 174.689 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 11.60 Mbit/s
95th percentile per-packet one-way delay: 174.689 ms
Loss rate: 0.24%

Run 2: Report of TCP BBR — Data Link

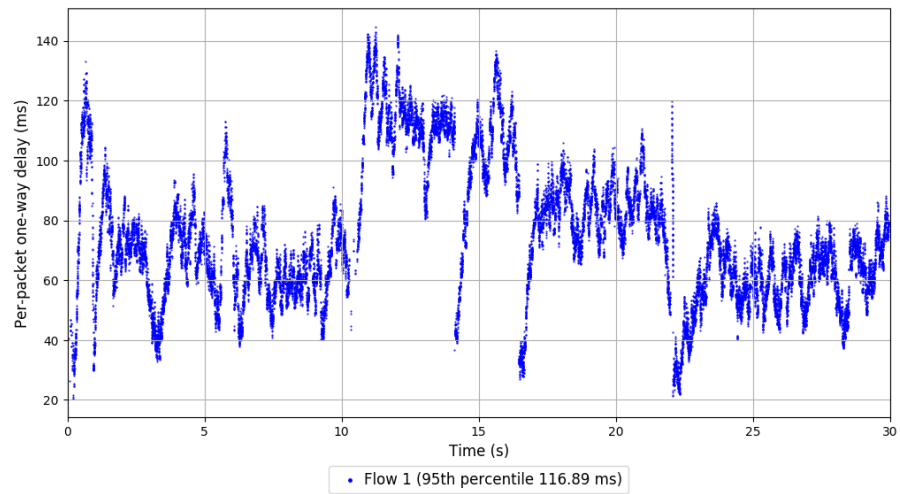
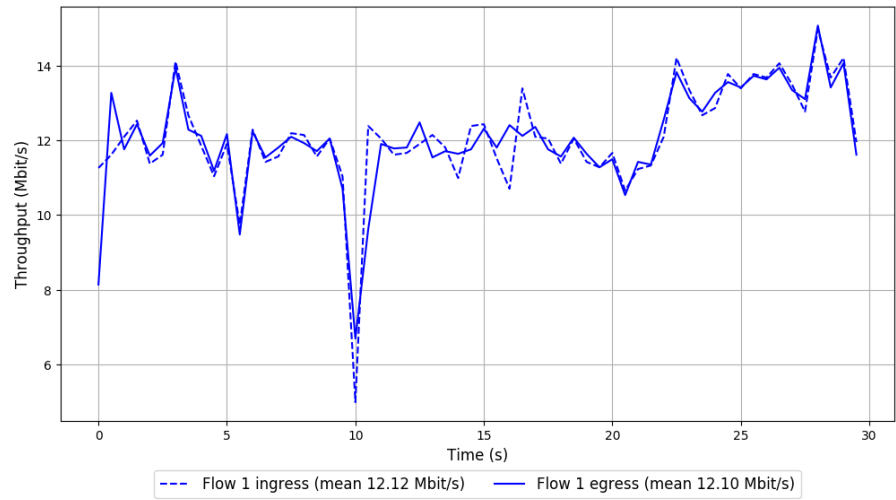


Run 3: Statistics of TCP BBR

Start at: 2018-01-02 19:18:12
End at: 2018-01-02 19:18:42
Local clock offset: 0.16 ms
Remote clock offset: -3.177 ms

Below is generated by plot.py at 2018-01-02 20:24:05
Datalink statistics
-- Total of 1 flow:
Average throughput: 12.10 Mbit/s
95th percentile per-packet one-way delay: 116.895 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 12.10 Mbit/s
95th percentile per-packet one-way delay: 116.895 ms
Loss rate: 0.31%

Run 3: Report of TCP BBR — Data Link

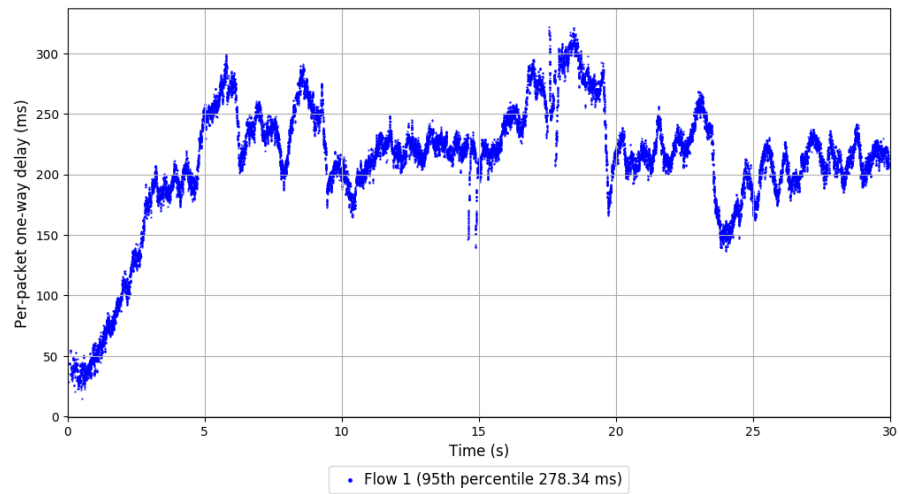
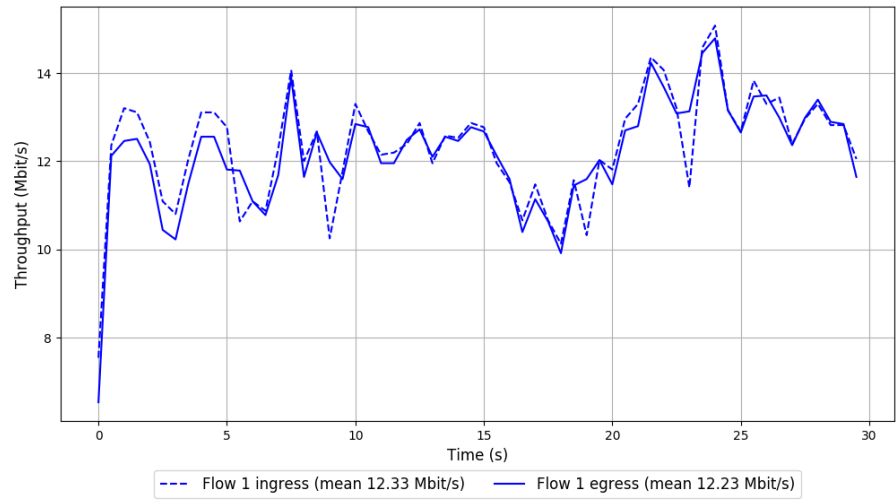


Run 1: Statistics of TCP Cubic

Start at: 2018-01-02 18:53:29
End at: 2018-01-02 18:53:59
Local clock offset: -0.123 ms
Remote clock offset: -3.622 ms

Below is generated by plot.py at 2018-01-02 20:24:06
Datalink statistics
-- Total of 1 flow:
Average throughput: 12.23 Mbit/s
95th percentile per-packet one-way delay: 278.342 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 12.23 Mbit/s
95th percentile per-packet one-way delay: 278.342 ms
Loss rate: 0.97%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-01-02 19:11:08

End at: 2018-01-02 19:11:38

Local clock offset: -0.024 ms

Remote clock offset: -3.32 ms

Below is generated by plot.py at 2018-01-02 20:24:07

Datalink statistics

-- Total of 1 flow:

Average throughput: 13.33 Mbit/s

95th percentile per-packet one-way delay: 237.088 ms

Loss rate: 0.99%

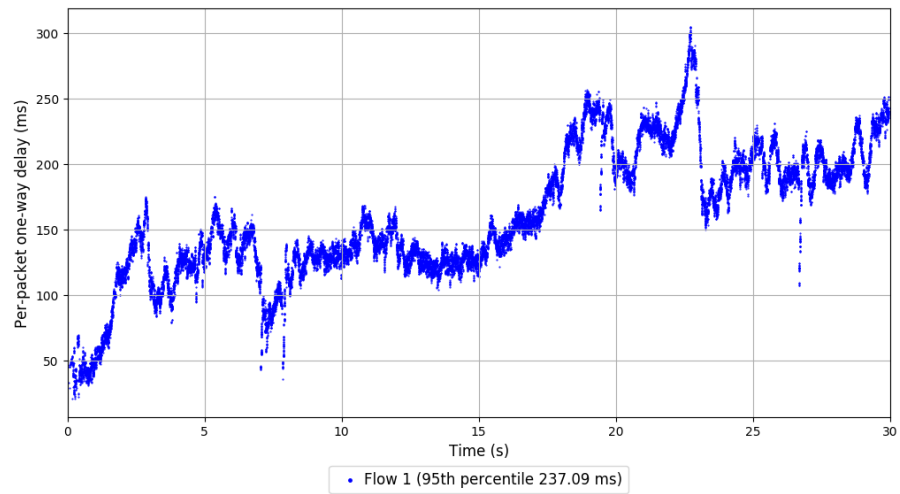
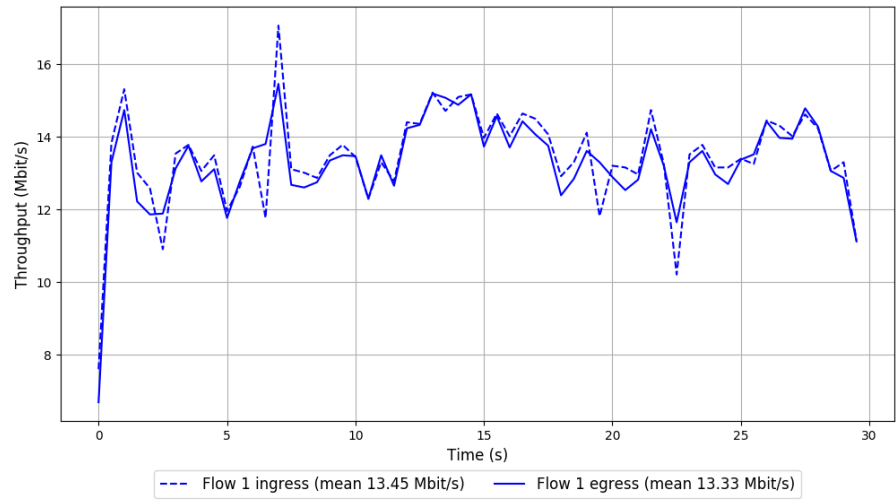
-- Flow 1:

Average throughput: 13.33 Mbit/s

95th percentile per-packet one-way delay: 237.088 ms

Loss rate: 0.99%

Run 2: Report of TCP Cubic — Data Link

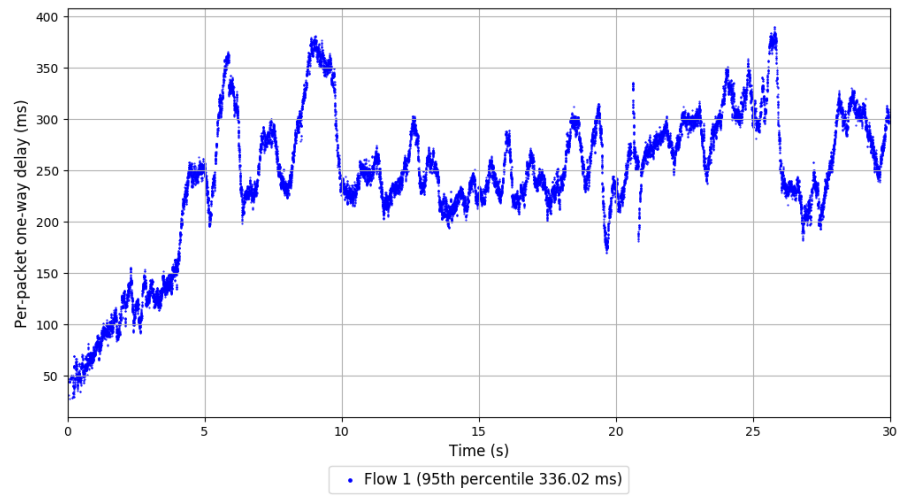
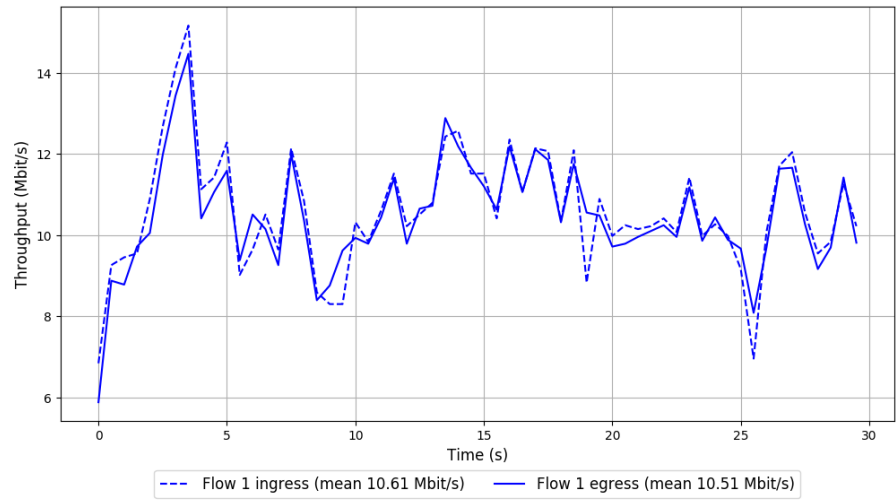


Run 3: Statistics of TCP Cubic

Start at: 2018-01-02 19:28:47
End at: 2018-01-02 19:29:17
Local clock offset: 0.064 ms
Remote clock offset: -2.992 ms

Below is generated by plot.py at 2018-01-02 20:24:07
Datalink statistics
-- Total of 1 flow:
Average throughput: 10.51 Mbit/s
95th percentile per-packet one-way delay: 336.021 ms
Loss rate: 1.16%
-- Flow 1:
Average throughput: 10.51 Mbit/s
95th percentile per-packet one-way delay: 336.021 ms
Loss rate: 1.16%

Run 3: Report of TCP Cubic — Data Link

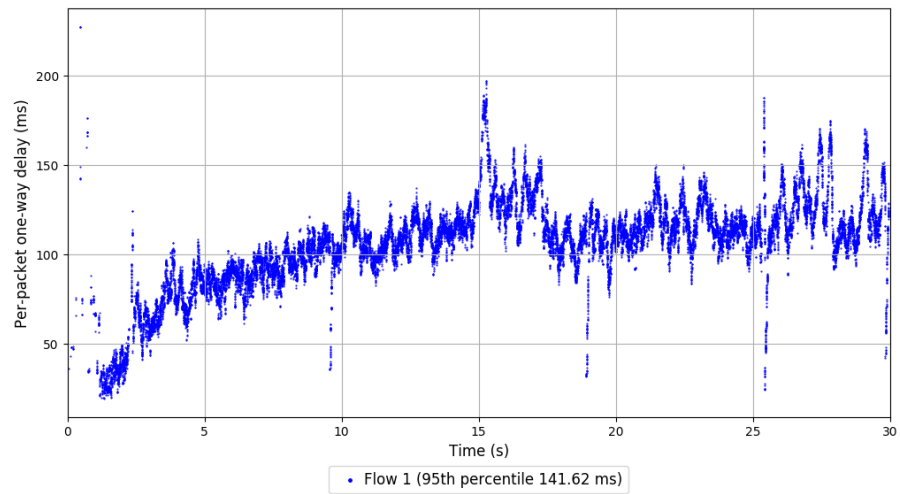
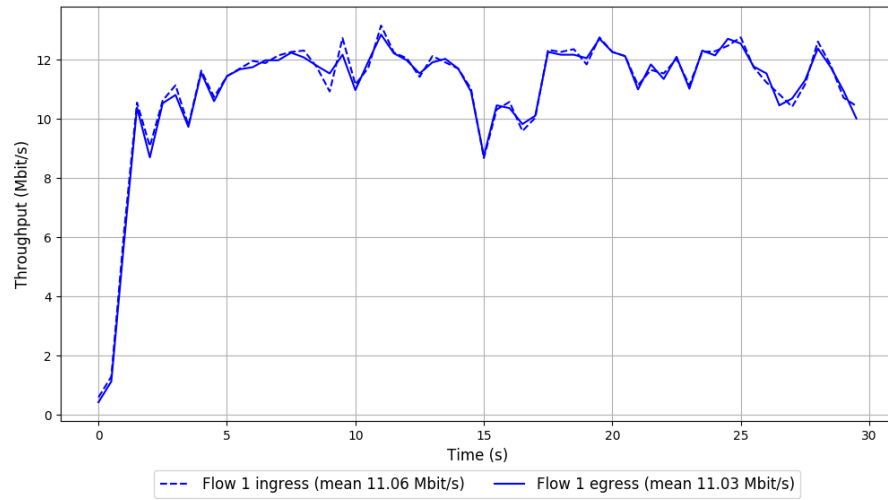


Run 1: Statistics of LEDBAT

Start at: 2018-01-02 18:39:21
End at: 2018-01-02 18:39:51
Local clock offset: -0.342 ms
Remote clock offset: -3.849 ms

Below is generated by plot.py at 2018-01-02 20:24:07
Datalink statistics
-- Total of 1 flow:
Average throughput: 11.03 Mbit/s
95th percentile per-packet one-way delay: 141.624 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 11.03 Mbit/s
95th percentile per-packet one-way delay: 141.624 ms
Loss rate: 0.46%

Run 1: Report of LEDBAT — Data Link

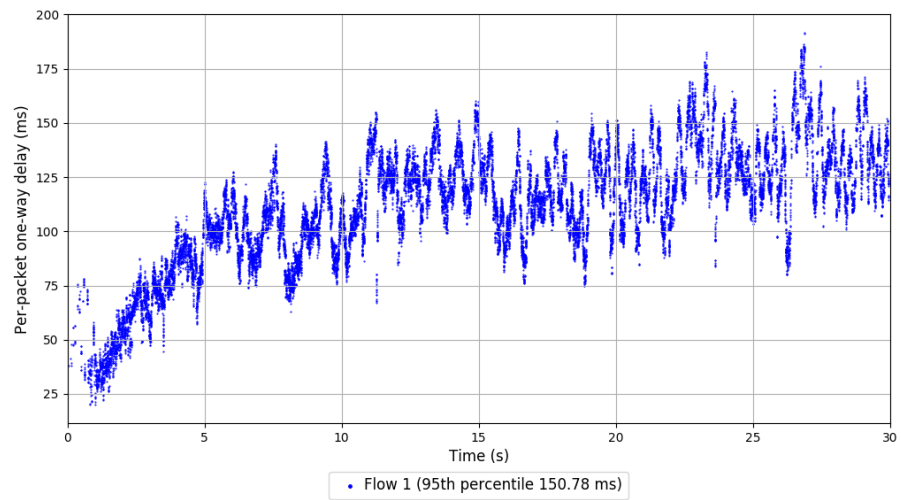
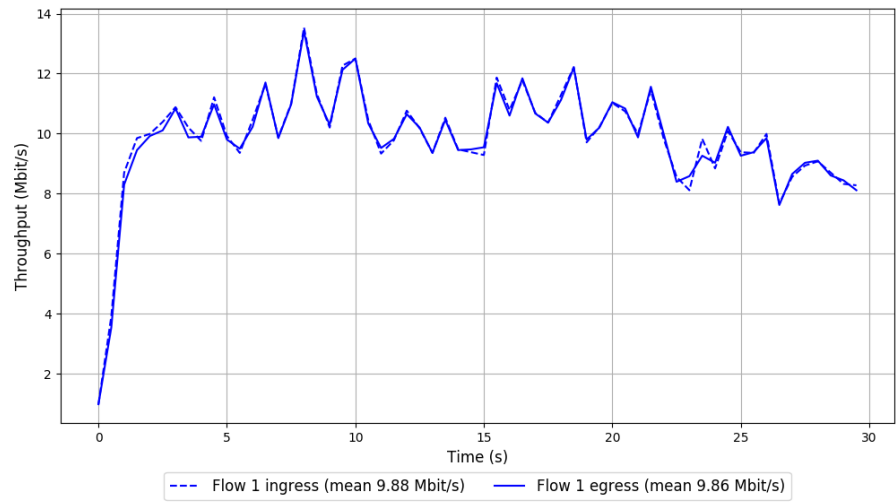


Run 2: Statistics of LEDBAT

Start at: 2018-01-02 18:57:01
End at: 2018-01-02 18:57:31
Local clock offset: -0.082 ms
Remote clock offset: -3.554 ms

Below is generated by plot.py at 2018-01-02 20:24:07
Datalink statistics
-- Total of 1 flow:
Average throughput: 9.86 Mbit/s
95th percentile per-packet one-way delay: 150.777 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 9.86 Mbit/s
95th percentile per-packet one-way delay: 150.777 ms
Loss rate: 0.42%

Run 2: Report of LEDBAT — Data Link

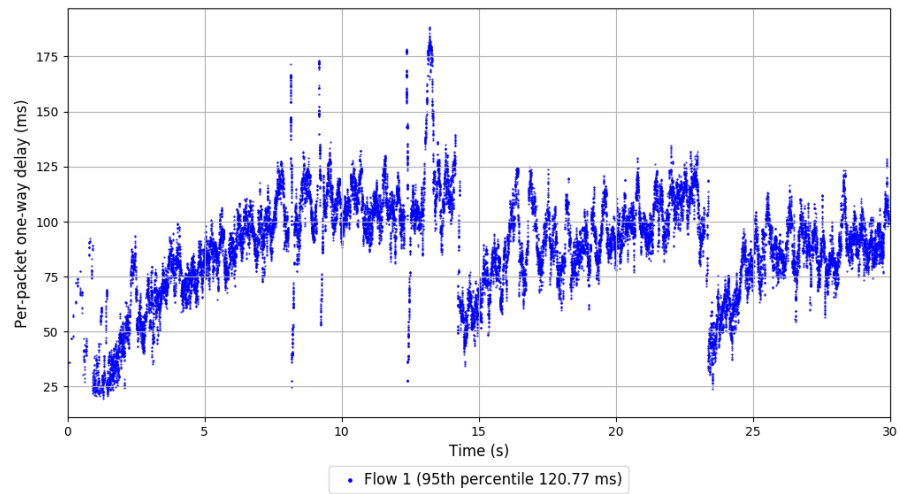
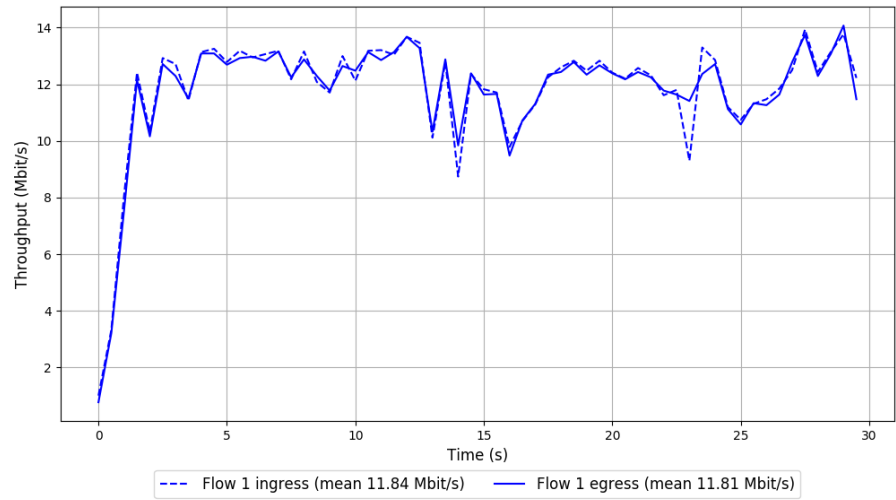


Run 3: Statistics of LEDBAT

Start at: 2018-01-02 19:14:41
End at: 2018-01-02 19:15:11
Local clock offset: 0.026 ms
Remote clock offset: -3.181 ms

Below is generated by plot.py at 2018-01-02 20:24:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 11.81 Mbit/s
95th percentile per-packet one-way delay: 120.771 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 11.81 Mbit/s
95th percentile per-packet one-way delay: 120.771 ms
Loss rate: 0.42%

Run 3: Report of LEDBAT — Data Link



Run 1: Statistics of PCC

Start at: 2018-01-02 18:45:15

End at: 2018-01-02 18:45:45

Local clock offset: -0.335 ms

Remote clock offset: -3.8 ms

Below is generated by plot.py at 2018-01-02 20:24:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.65 Mbit/s

95th percentile per-packet one-way delay: 51.125 ms

Loss rate: 0.43%

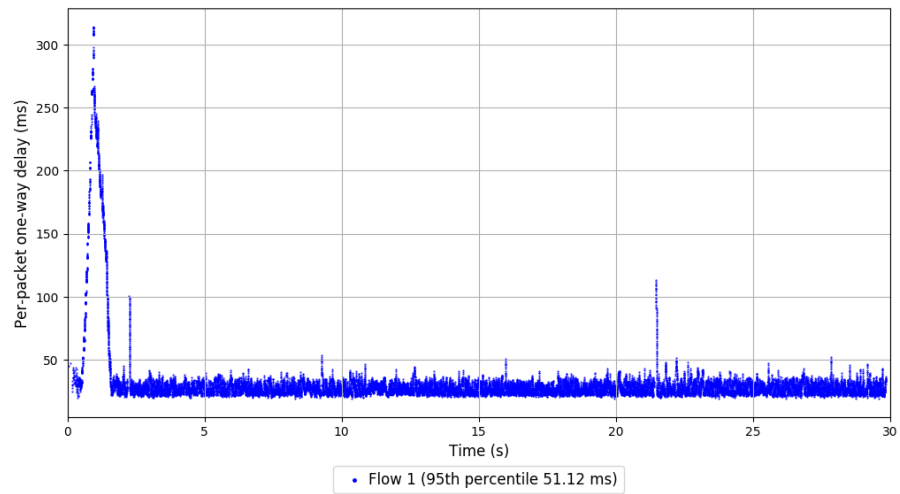
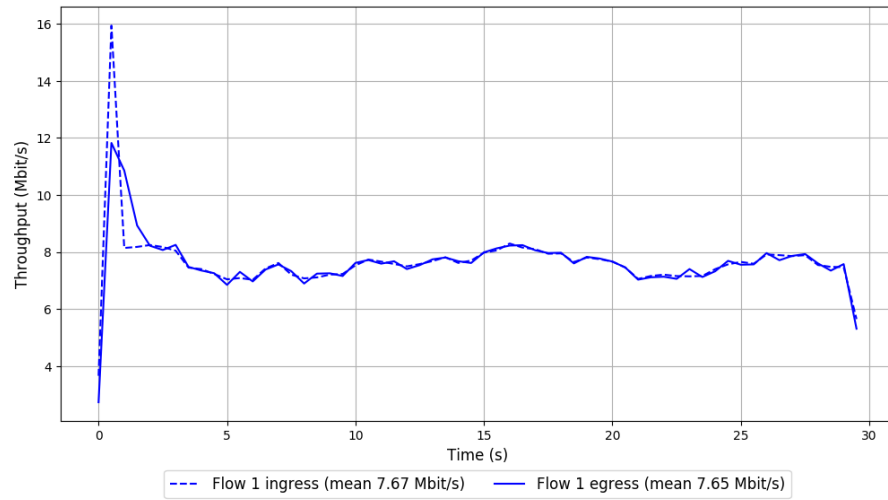
-- Flow 1:

Average throughput: 7.65 Mbit/s

95th percentile per-packet one-way delay: 51.125 ms

Loss rate: 0.43%

Run 1: Report of PCC — Data Link

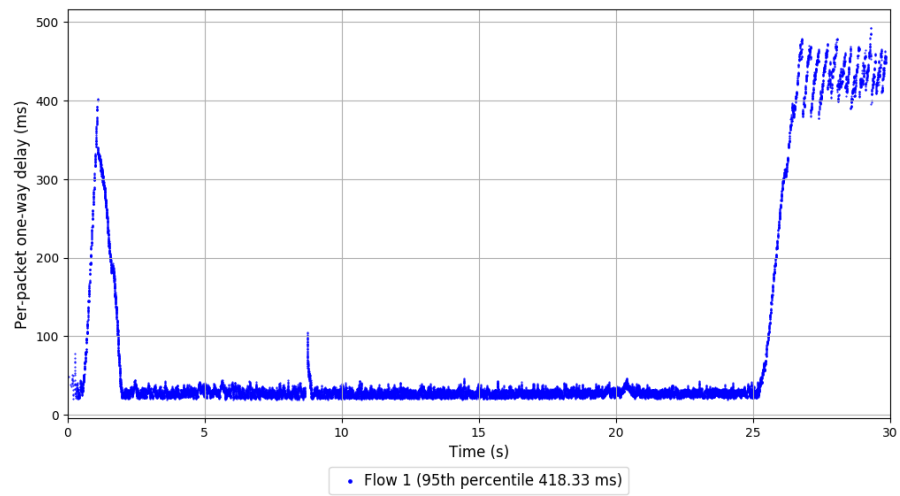
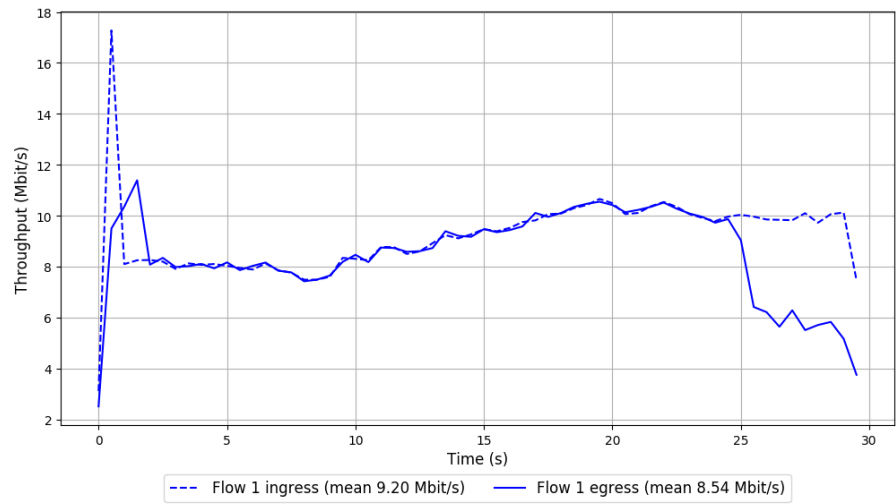


Run 2: Statistics of PCC

Start at: 2018-01-02 19:02:54
End at: 2018-01-02 19:03:24
Local clock offset: -0.132 ms
Remote clock offset: -3.386 ms

Below is generated by plot.py at 2018-01-02 20:24:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 8.54 Mbit/s
95th percentile per-packet one-way delay: 418.330 ms
Loss rate: 7.40%
-- Flow 1:
Average throughput: 8.54 Mbit/s
95th percentile per-packet one-way delay: 418.330 ms
Loss rate: 7.40%

Run 2: Report of PCC — Data Link

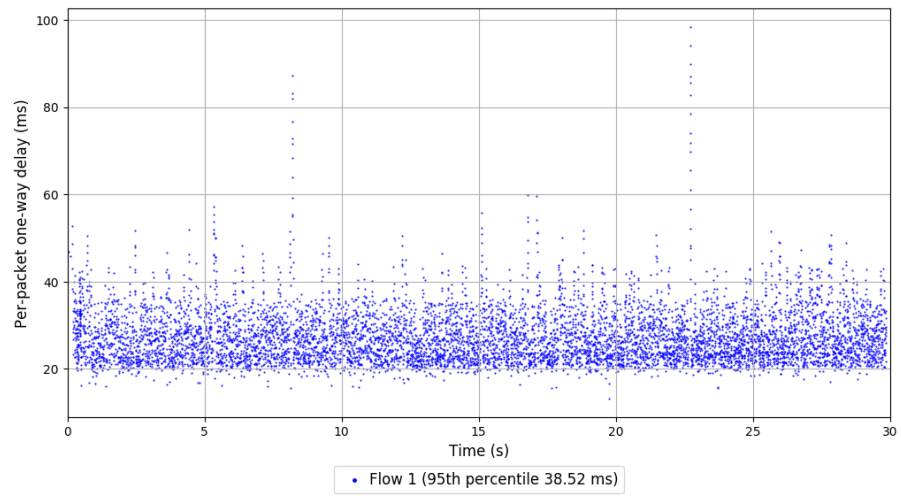
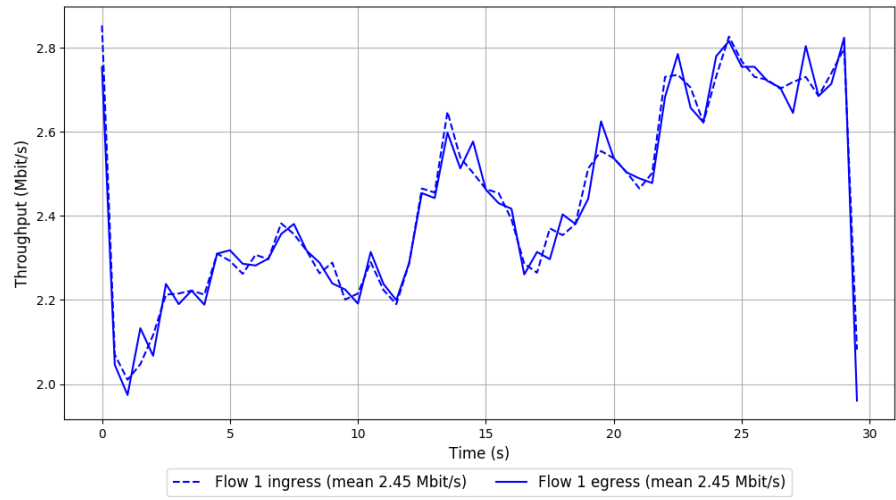


Run 3: Statistics of PCC

Start at: 2018-01-02 19:20:34
End at: 2018-01-02 19:21:04
Local clock offset: 0.064 ms
Remote clock offset: -3.184 ms

Below is generated by plot.py at 2018-01-02 20:24:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.45 Mbit/s
95th percentile per-packet one-way delay: 38.522 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 2.45 Mbit/s
95th percentile per-packet one-way delay: 38.522 ms
Loss rate: 0.17%

Run 3: Report of PCC — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-01-02 18:47:36

End at: 2018-01-02 18:48:06

Local clock offset: -0.194 ms

Remote clock offset: -3.649 ms

Below is generated by plot.py at 2018-01-02 20:24:22

Datalink statistics

-- Total of 1 flow:

Average throughput: 11.19 Mbit/s

95th percentile per-packet one-way delay: 291.085 ms

Loss rate: 1.32%

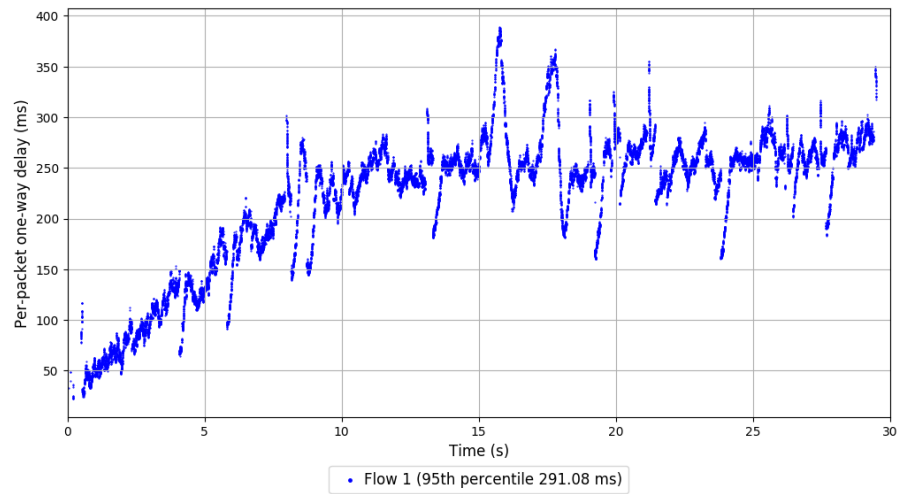
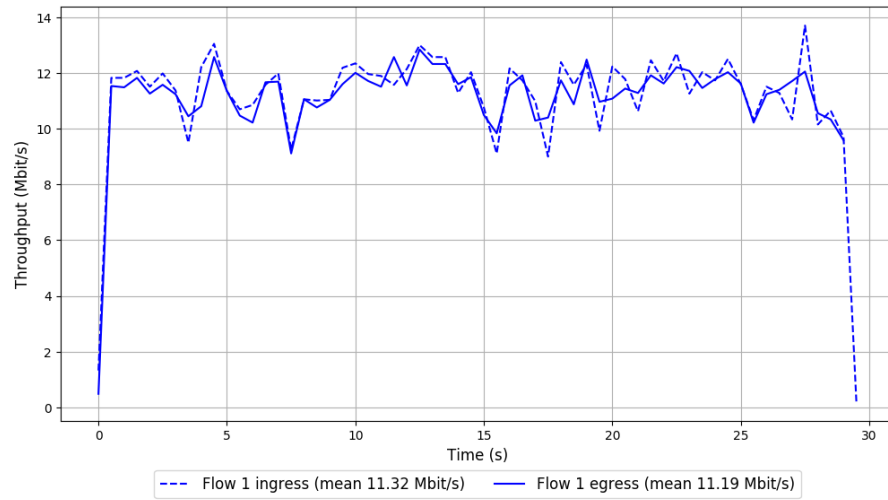
-- Flow 1:

Average throughput: 11.19 Mbit/s

95th percentile per-packet one-way delay: 291.085 ms

Loss rate: 1.32%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-01-02 19:05:15

End at: 2018-01-02 19:05:45

Local clock offset: 0.006 ms

Remote clock offset: -3.425 ms

Run 2: Report of QUIC Cubic — Data Link

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Figure is missing

Run 3: Statistics of QUIC Cubic

Start at: 2018-01-02 19:22:55

End at: 2018-01-02 19:23:25

Local clock offset: 0.08 ms

Remote clock offset: -3.161 ms

Below is generated by plot.py at 2018-01-02 20:24:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 11.30 Mbit/s

95th percentile per-packet one-way delay: 320.225 ms

Loss rate: 1.55%

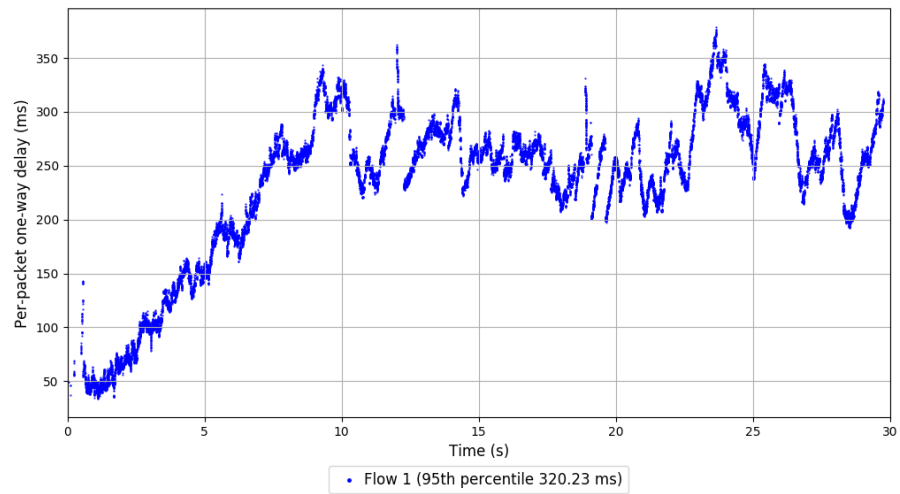
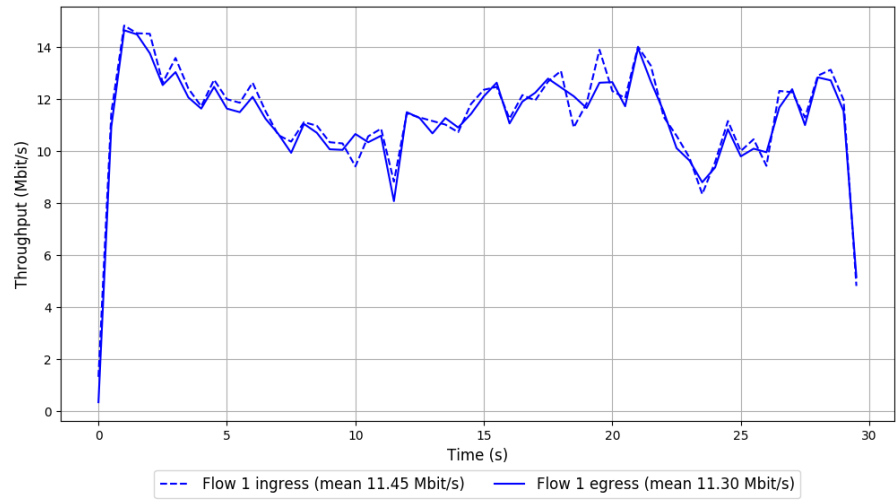
-- Flow 1:

Average throughput: 11.30 Mbit/s

95th percentile per-packet one-way delay: 320.225 ms

Loss rate: 1.55%

Run 3: Report of QUIC Cubic — Data Link

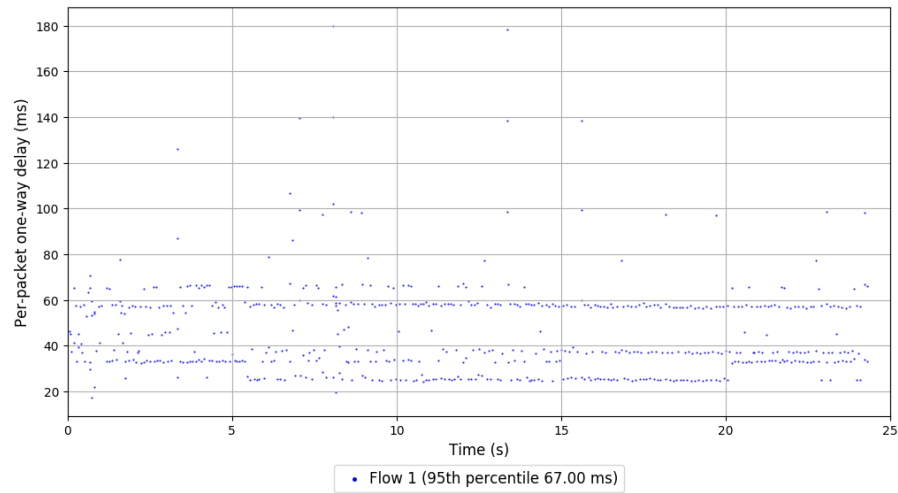
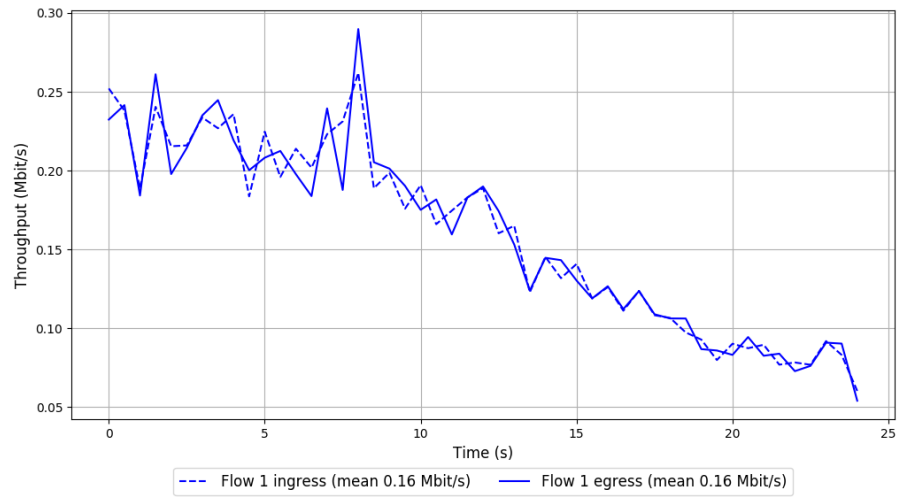


```
Run 1: Statistics of SCReAM

Start at: 2018-01-02 18:46:26
End at: 2018-01-02 18:46:56
Local clock offset: -0.294 ms
Remote clock offset: -3.681 ms

# Below is generated by plot.py at 2018-01-02 20:24:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 67.005 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 67.005 ms
Loss rate: 0.08%
```

Run 1: Report of SReAM — Data Link

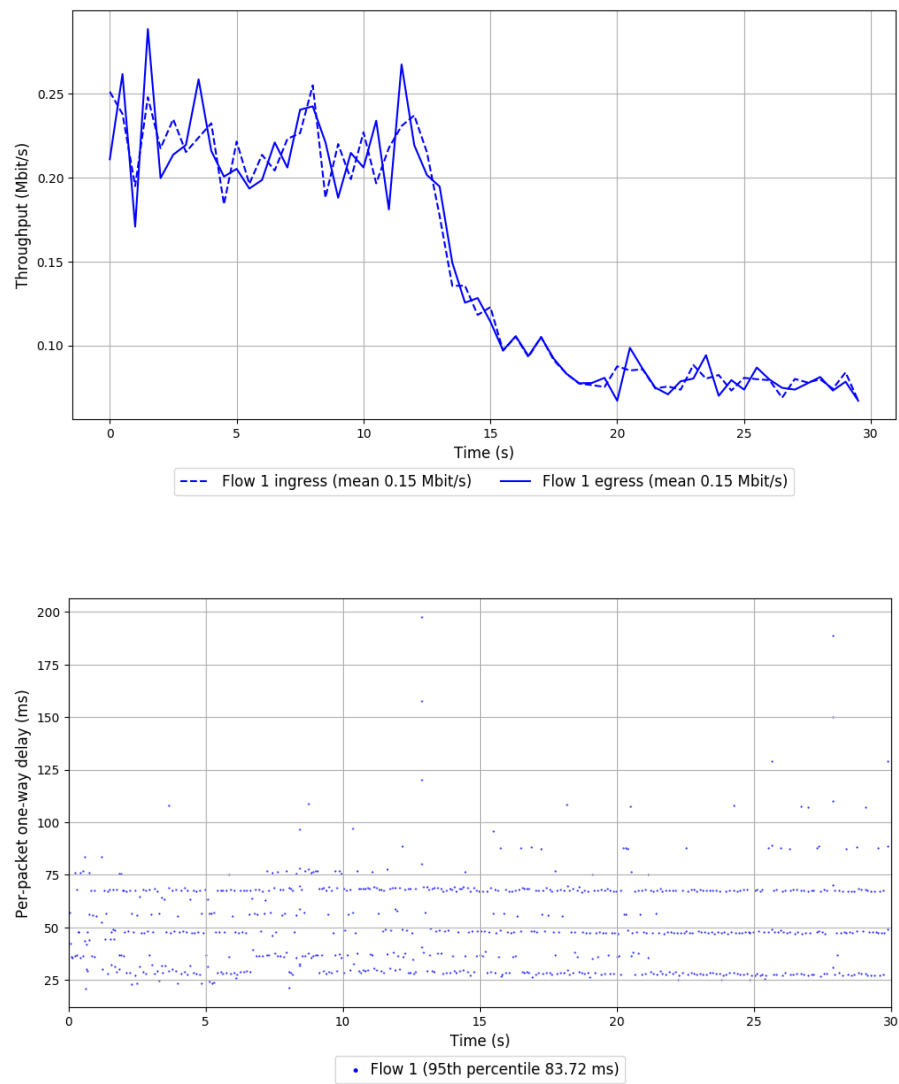


Run 2: Statistics of SCReAM

Start at: 2018-01-02 19:04:05
End at: 2018-01-02 19:04:35
Local clock offset: -0.003 ms
Remote clock offset: -3.438 ms

Below is generated by plot.py at 2018-01-02 20:24:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 83.724 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 83.724 ms
Loss rate: 0.14%

Run 2: Report of SReAM — Data Link

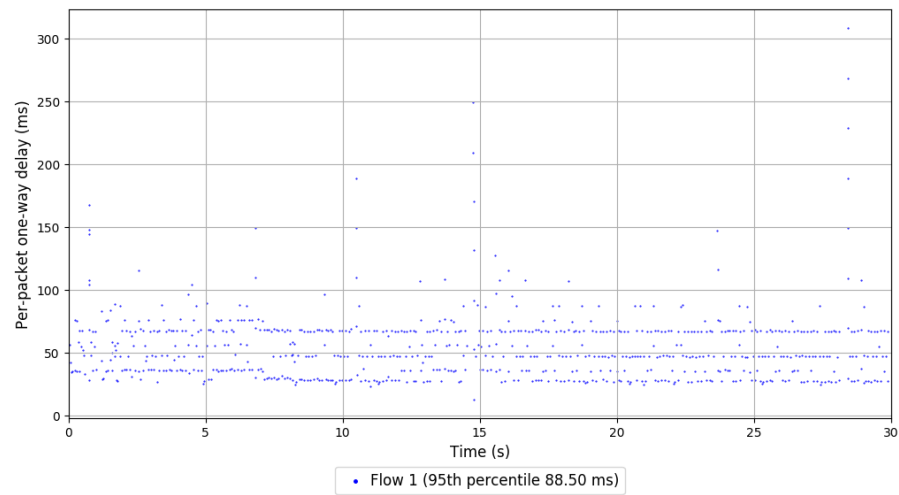
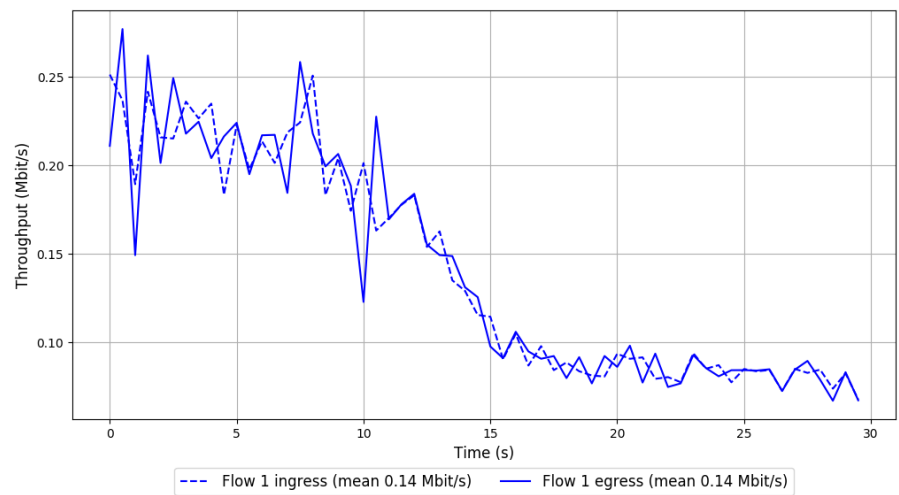


Run 3: Statistics of SCReAM

Start at: 2018-01-02 19:21:44
End at: 2018-01-02 19:22:14
Local clock offset: 0.074 ms
Remote clock offset: -3.066 ms

Below is generated by plot.py at 2018-01-02 20:24:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 88.497 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 88.497 ms
Loss rate: 0.15%

Run 3: Report of SReAM — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-01-02 18:48:47

End at: 2018-01-02 18:49:17

Local clock offset: -0.174 ms

Remote clock offset: -3.74 ms

Below is generated by plot.py at 2018-01-02 20:24:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.28 Mbit/s

95th percentile per-packet one-way delay: 76.960 ms

Loss rate: 0.37%

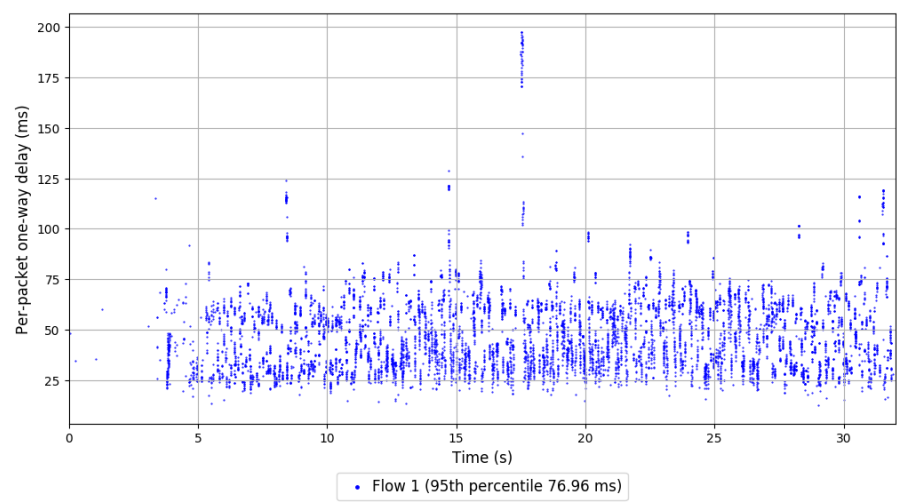
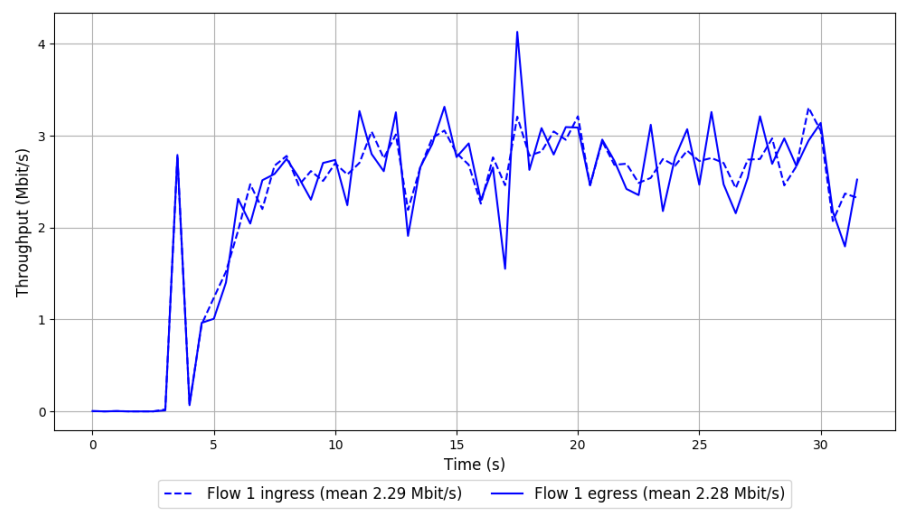
-- Flow 1:

Average throughput: 2.28 Mbit/s

95th percentile per-packet one-way delay: 76.960 ms

Loss rate: 0.37%

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-01-02 19:06:25

End at: 2018-01-02 19:06:55

Local clock offset: -0.001 ms

Remote clock offset: -3.41 ms

Below is generated by plot.py at 2018-01-02 20:24:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.26 Mbit/s

95th percentile per-packet one-way delay: 123.648 ms

Loss rate: 0.69%

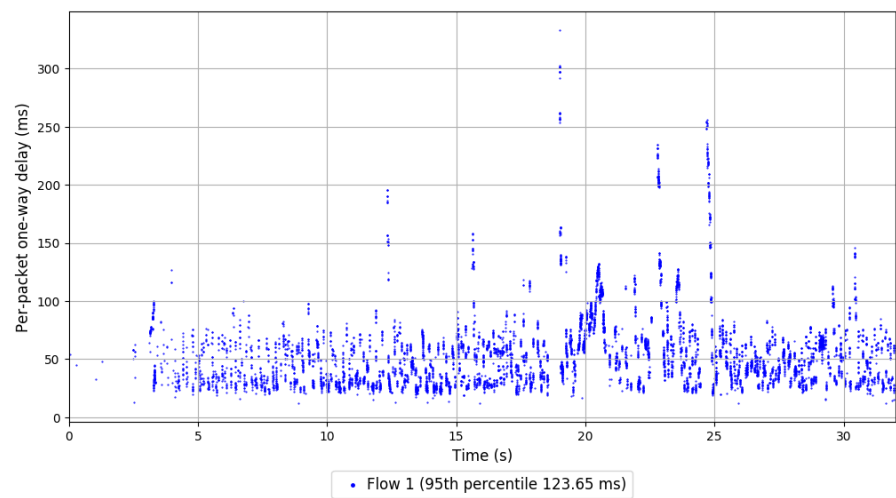
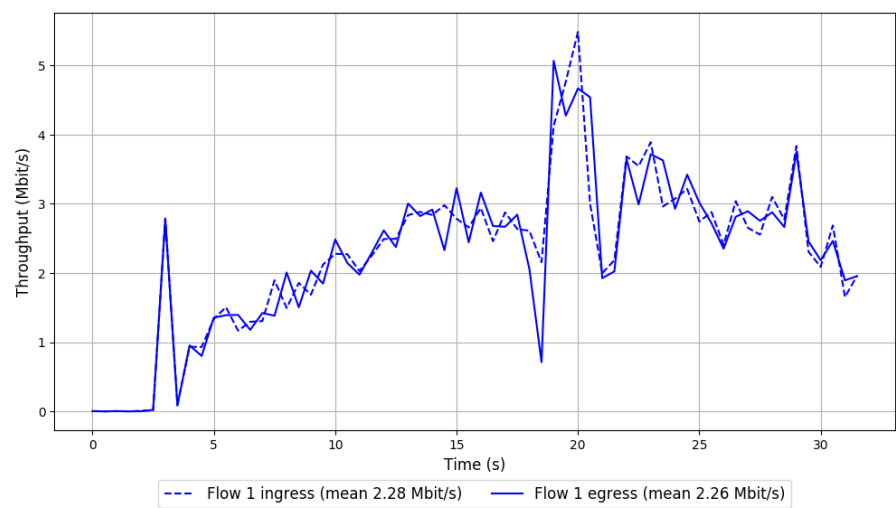
-- Flow 1:

Average throughput: 2.26 Mbit/s

95th percentile per-packet one-way delay: 123.648 ms

Loss rate: 0.69%

Run 2: Report of WebRTC media — Data Link

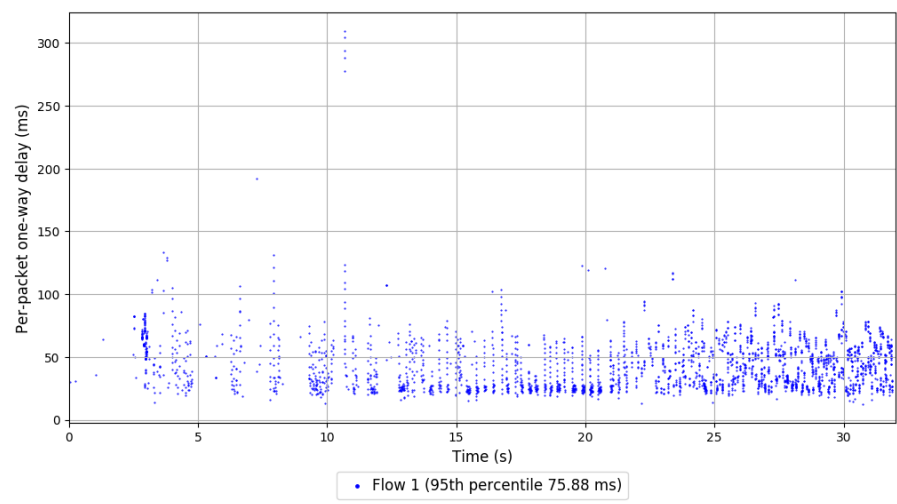
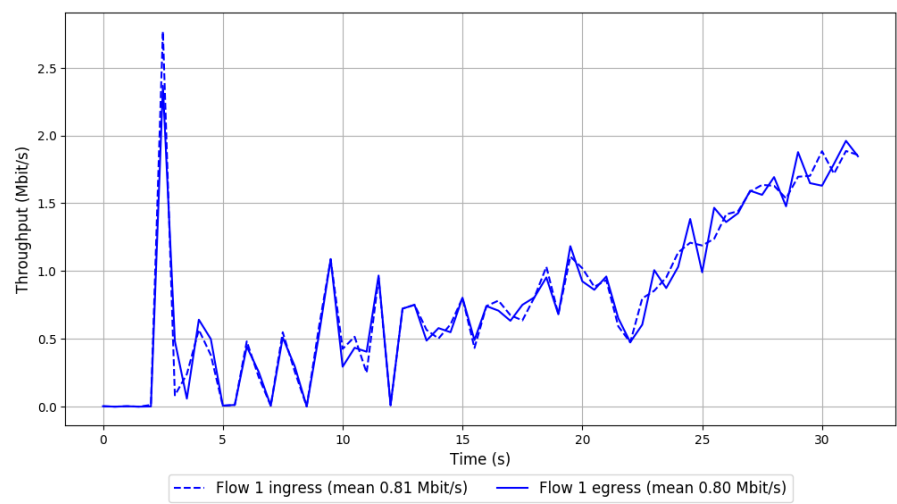


Run 3: Statistics of WebRTC media

Start at: 2018-01-02 19:24:05
End at: 2018-01-02 19:24:35
Local clock offset: 0.053 ms
Remote clock offset: -3.158 ms

Below is generated by plot.py at 2018-01-02 20:24:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.80 Mbit/s
95th percentile per-packet one-way delay: 75.878 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 0.80 Mbit/s
95th percentile per-packet one-way delay: 75.878 ms
Loss rate: 0.52%

Run 3: Report of WebRTC media — Data Link

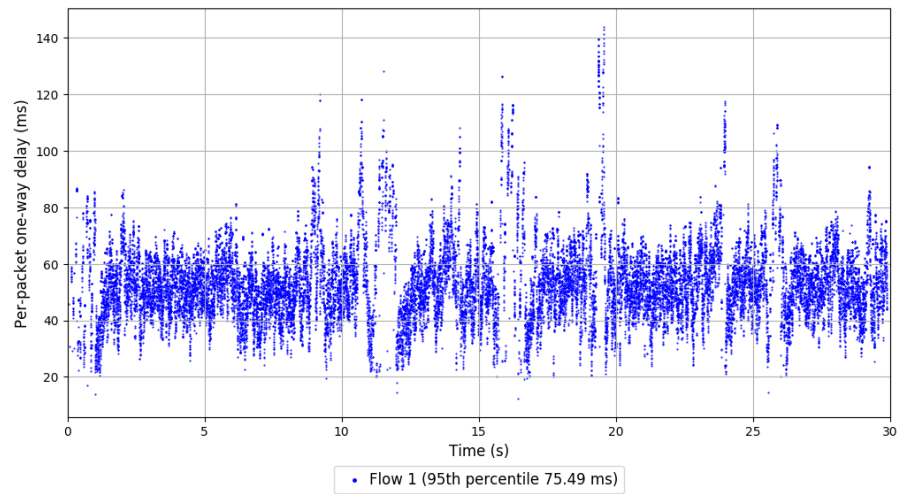
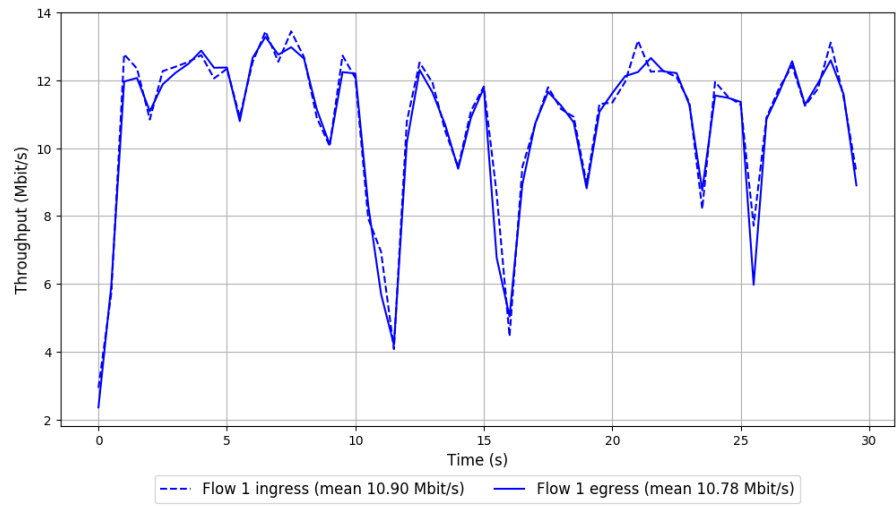


Run 1: Statistics of Sprout

Start at: 2018-01-02 18:40:32
End at: 2018-01-02 18:41:02
Local clock offset: -0.31 ms
Remote clock offset: -3.735 ms

Below is generated by plot.py at 2018-01-02 20:24:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 10.78 Mbit/s
95th percentile per-packet one-way delay: 75.494 ms
Loss rate: 1.29%
-- Flow 1:
Average throughput: 10.78 Mbit/s
95th percentile per-packet one-way delay: 75.494 ms
Loss rate: 1.29%

Run 1: Report of Sprout — Data Link

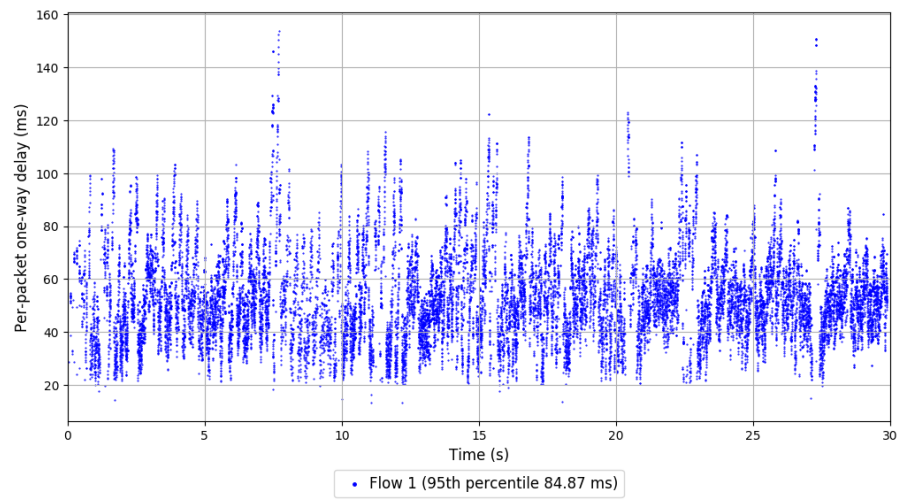
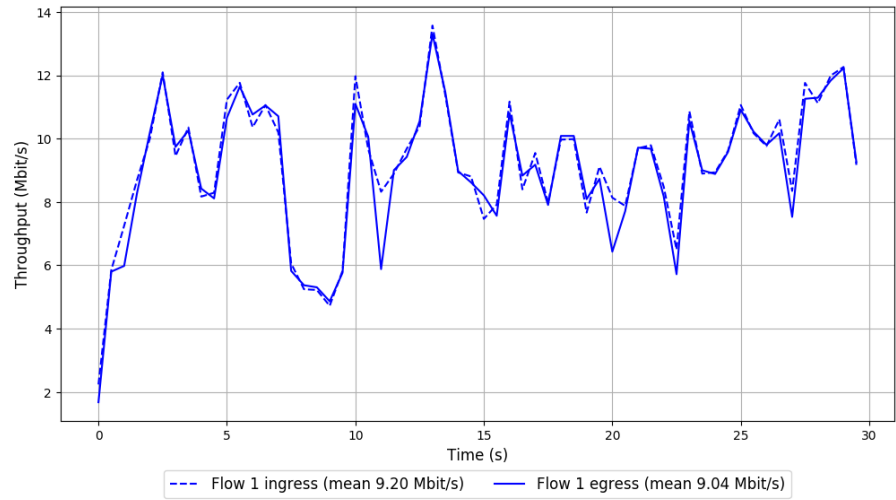


Run 2: Statistics of Sprout

Start at: 2018-01-02 18:58:12
End at: 2018-01-02 18:58:42
Local clock offset: -0.067 ms
Remote clock offset: -3.412 ms

Below is generated by plot.py at 2018-01-02 20:24:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 9.04 Mbit/s
95th percentile per-packet one-way delay: 84.870 ms
Loss rate: 1.76%
-- Flow 1:
Average throughput: 9.04 Mbit/s
95th percentile per-packet one-way delay: 84.870 ms
Loss rate: 1.76%

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

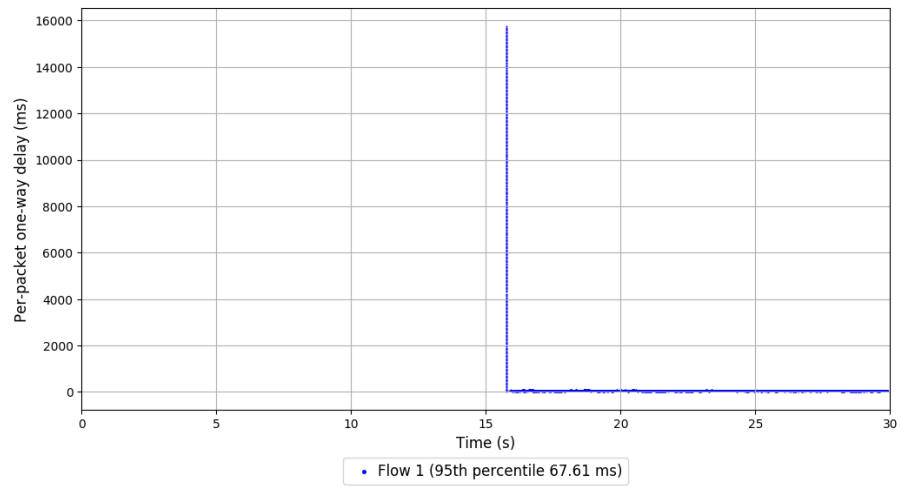
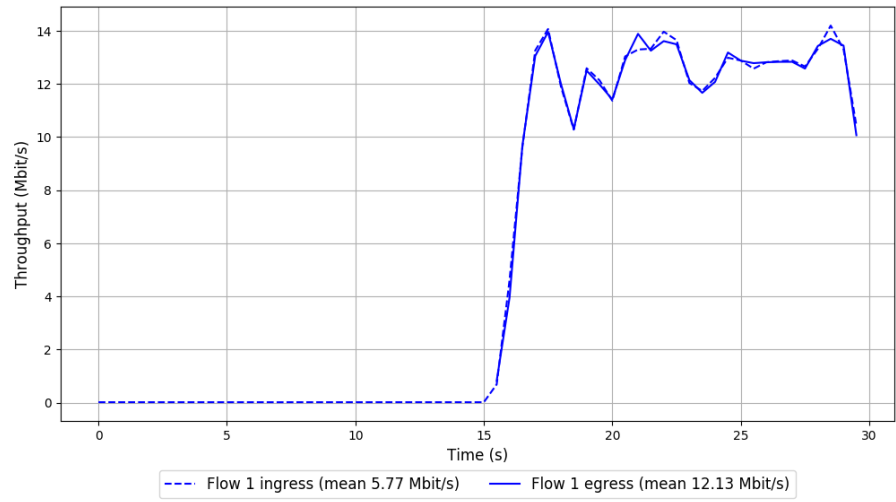
Start at: 2018-01-02 19:15:51

End at: 2018-01-02 19:16:21

Local clock offset: 0.141 ms

Remote clock offset: -3.191 ms

Run 3: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2018-01-02 18:38:10

End at: 2018-01-02 18:38:41

Local clock offset: -0.333 ms

Remote clock offset: -3.84 ms

Below is generated by plot.py at 2018-01-02 20:24:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 5.35 Mbit/s

95th percentile per-packet one-way delay: 43.204 ms

Loss rate: 0.81%

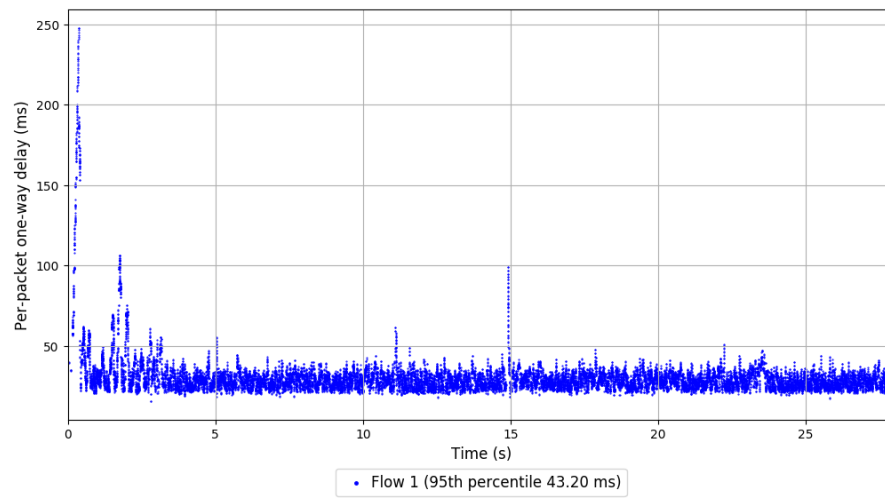
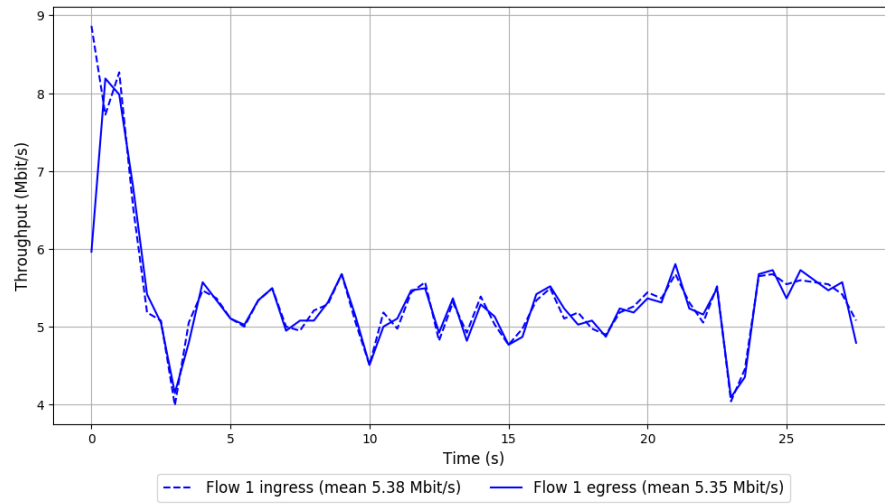
-- Flow 1:

Average throughput: 5.35 Mbit/s

95th percentile per-packet one-way delay: 43.204 ms

Loss rate: 0.81%

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

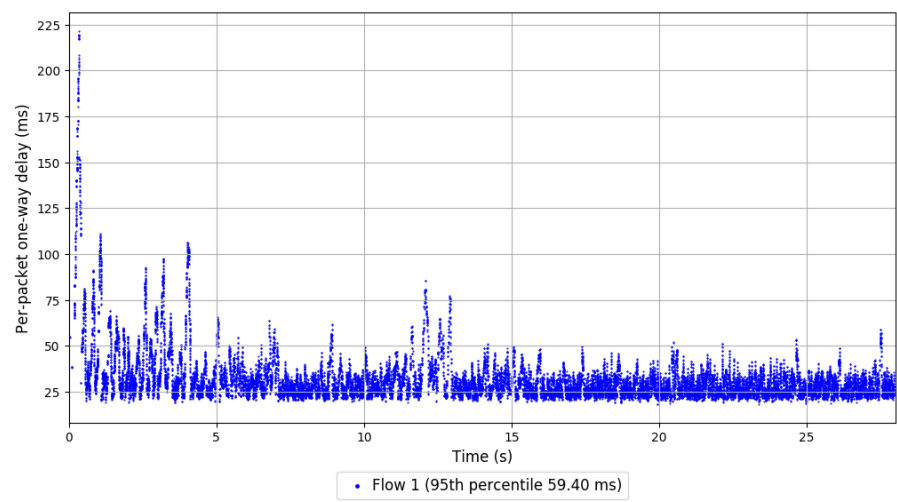
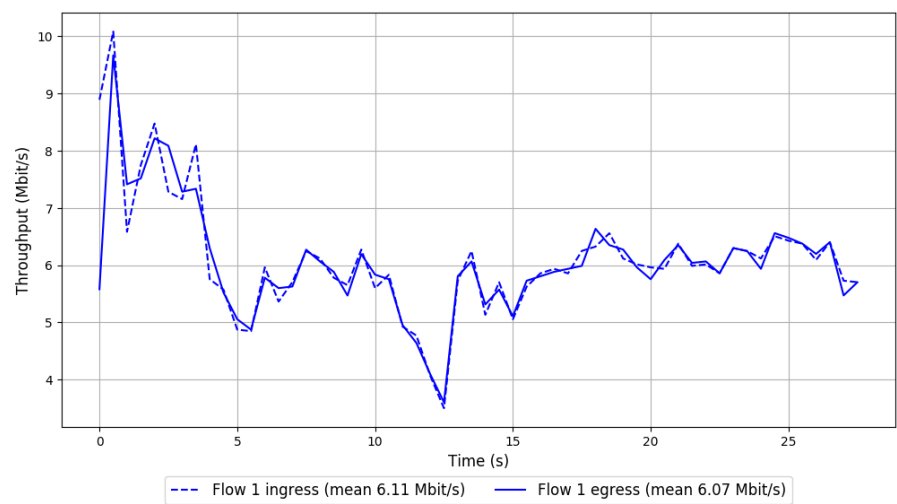


Run 2: Statistics of TaoVA-100x

Start at: 2018-01-02 18:55:50
End at: 2018-01-02 18:56:20
Local clock offset: -0.177 ms
Remote clock offset: -3.472 ms

Below is generated by plot.py at 2018-01-02 20:24:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 6.07 Mbit/s
95th percentile per-packet one-way delay: 59.397 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 6.07 Mbit/s
95th percentile per-packet one-way delay: 59.397 ms
Loss rate: 0.80%

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

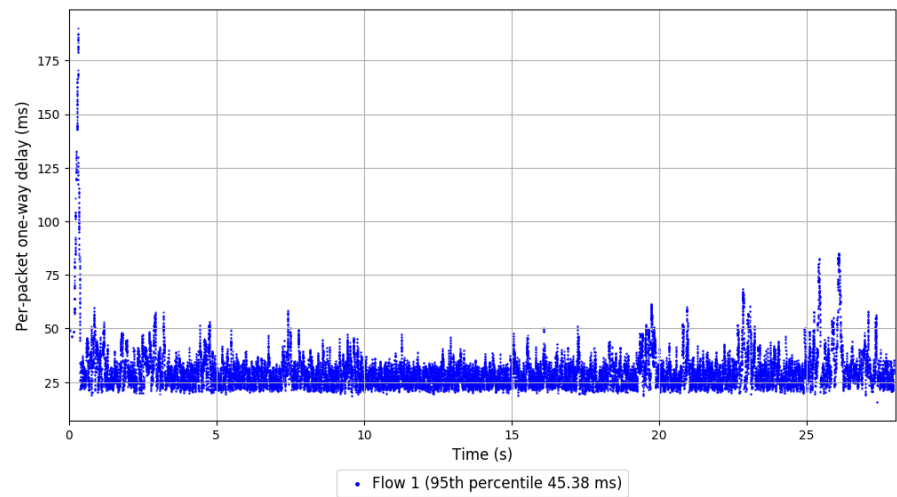
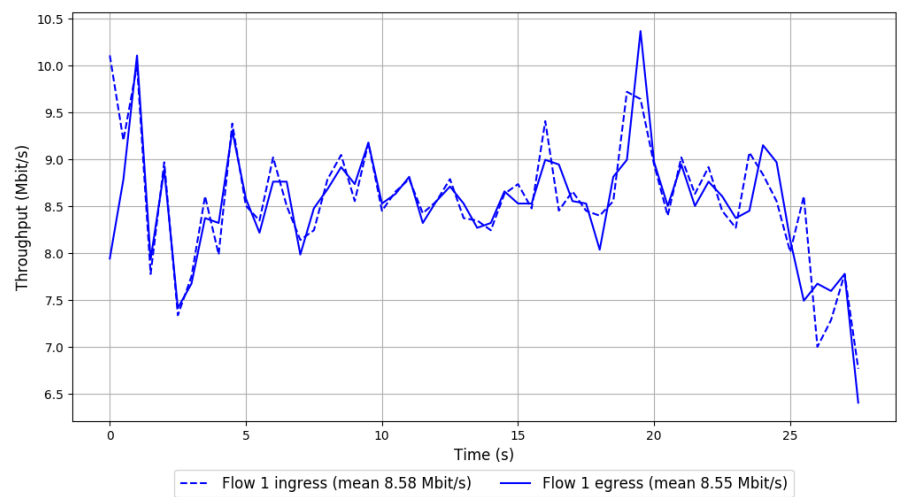


Run 3: Statistics of TaoVA-100x

Start at: 2018-01-02 19:13:30
End at: 2018-01-02 19:14:00
Local clock offset: 0.023 ms
Remote clock offset: -3.167 ms

Below is generated by plot.py at 2018-01-02 20:24:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 8.55 Mbit/s
95th percentile per-packet one-way delay: 45.379 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 8.55 Mbit/s
95th percentile per-packet one-way delay: 45.379 ms
Loss rate: 0.58%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-01-02 18:54:40

End at: 2018-01-02 18:55:10

Local clock offset: -0.196 ms

Remote clock offset: -3.58 ms

Below is generated by plot.py at 2018-01-02 20:24:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.61 Mbit/s

95th percentile per-packet one-way delay: 74.992 ms

Loss rate: 0.10%

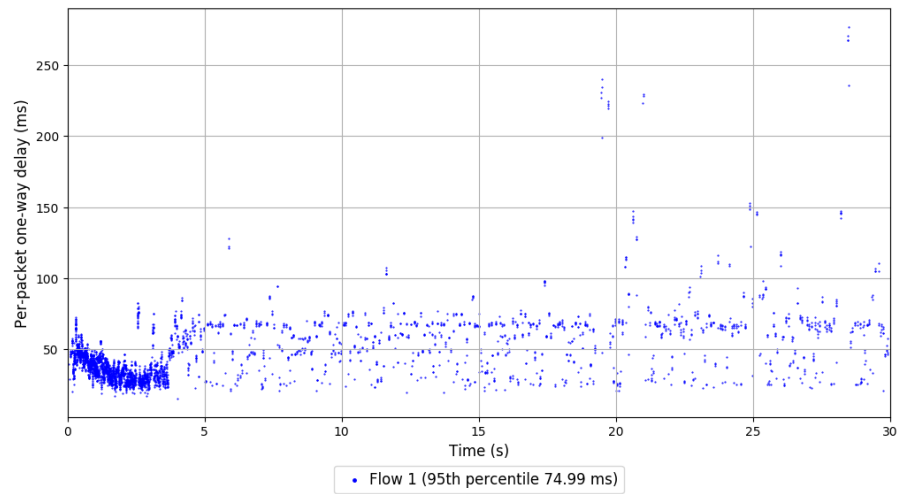
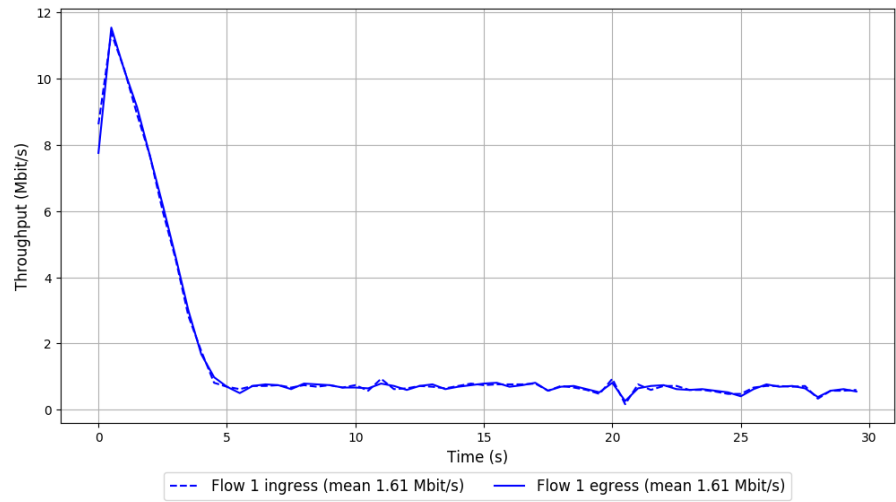
-- Flow 1:

Average throughput: 1.61 Mbit/s

95th percentile per-packet one-way delay: 74.992 ms

Loss rate: 0.10%

Run 1: Report of TCP Vegas — Data Link

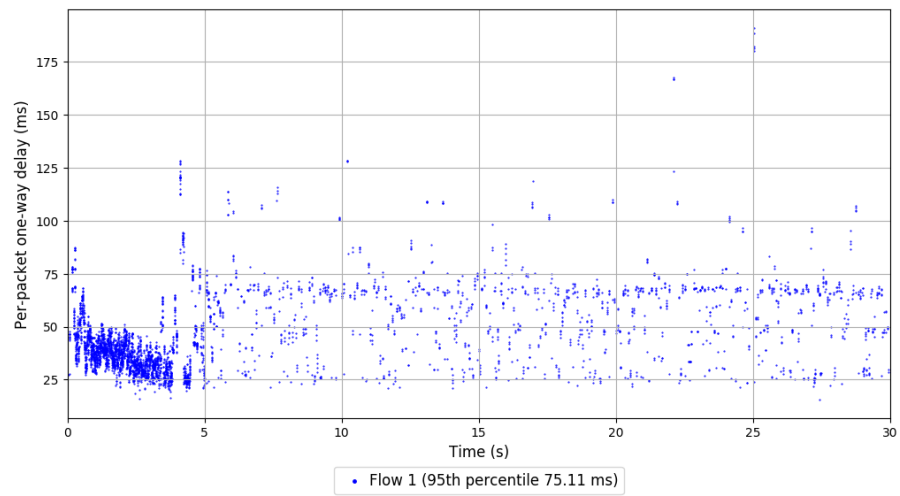
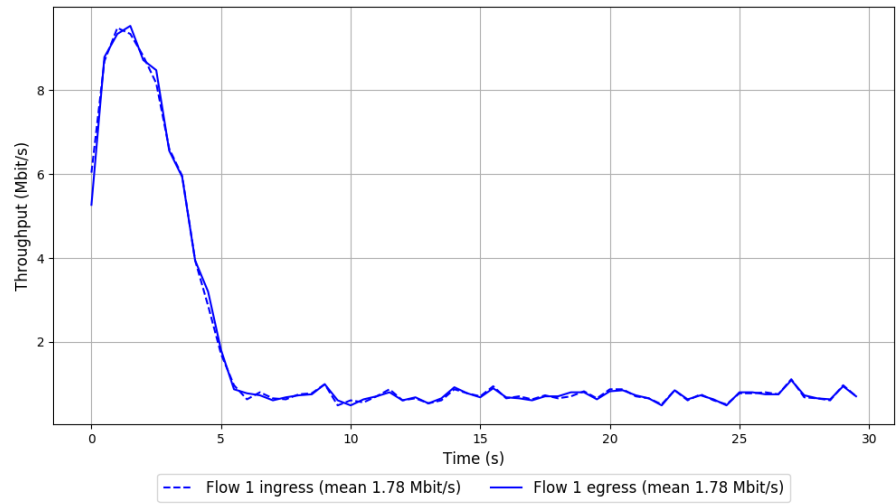


Run 2: Statistics of TCP Vegas

Start at: 2018-01-02 19:12:19
End at: 2018-01-02 19:12:49
Local clock offset: 0.013 ms
Remote clock offset: -3.225 ms

Below is generated by plot.py at 2018-01-02 20:24:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.78 Mbit/s
95th percentile per-packet one-way delay: 75.113 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 1.78 Mbit/s
95th percentile per-packet one-way delay: 75.113 ms
Loss rate: 0.09%

Run 2: Report of TCP Vegas — Data Link

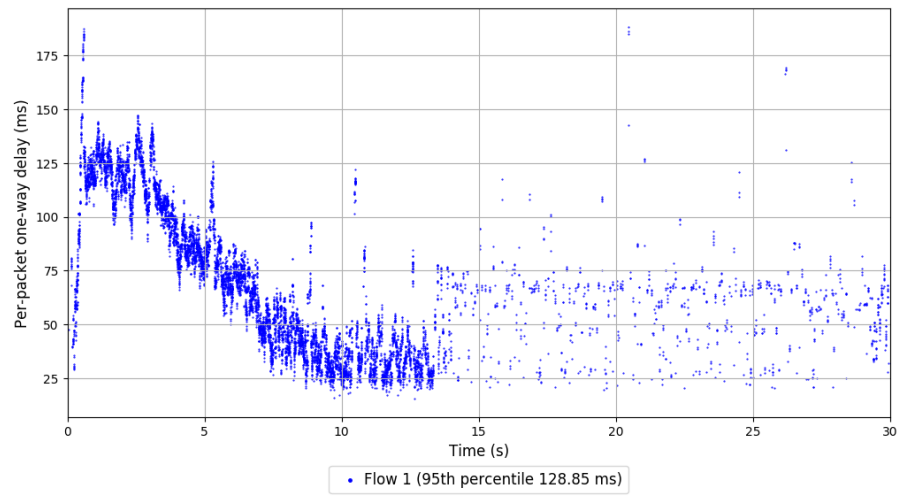
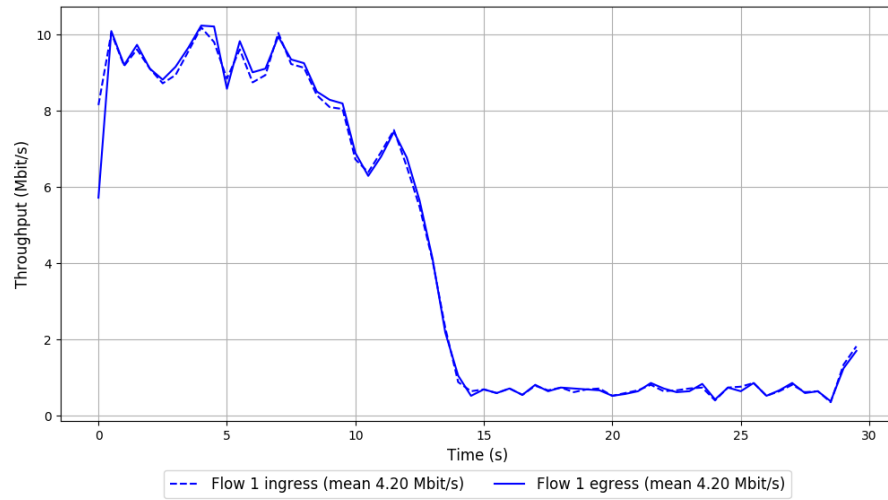


Run 3: Statistics of TCP Vegas

Start at: 2018-01-02 19:29:58
End at: 2018-01-02 19:30:28
Local clock offset: 0.058 ms
Remote clock offset: -3.029 ms

Below is generated by plot.py at 2018-01-02 20:24:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 4.20 Mbit/s
95th percentile per-packet one-way delay: 128.847 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 4.20 Mbit/s
95th percentile per-packet one-way delay: 128.847 ms
Loss rate: 0.11%

Run 3: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-01-02 18:51:08

End at: 2018-01-02 18:51:38

Local clock offset: -0.217 ms

Remote clock offset: -3.71 ms

Below is generated by plot.py at 2018-01-02 20:24:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 9.57 Mbit/s

95th percentile per-packet one-way delay: 103.196 ms

Loss rate: 1.92%

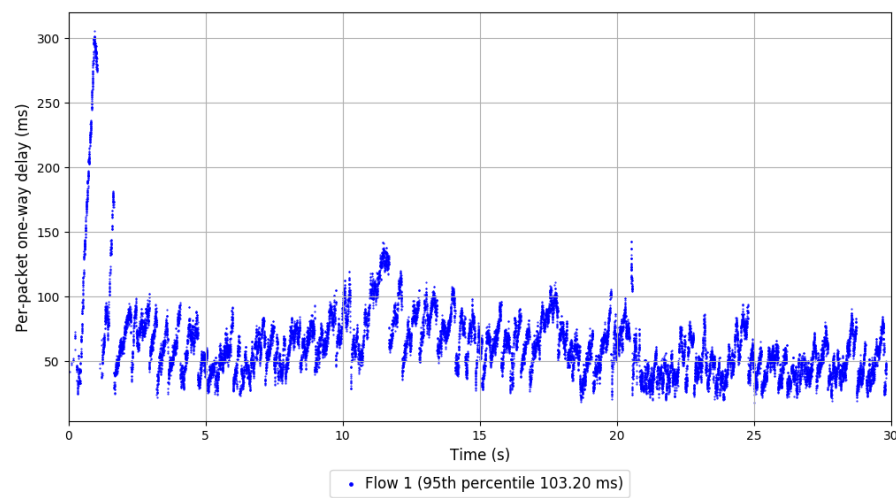
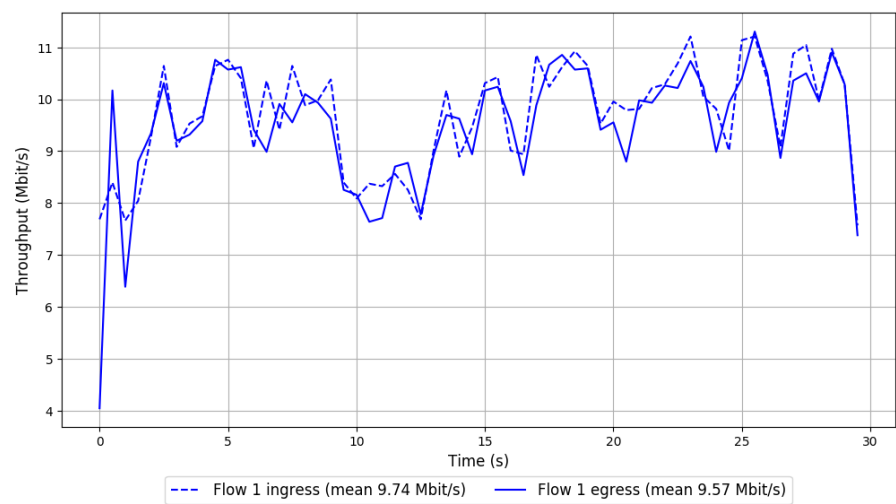
-- Flow 1:

Average throughput: 9.57 Mbit/s

95th percentile per-packet one-way delay: 103.196 ms

Loss rate: 1.92%

Run 1: Report of Verus — Data Link

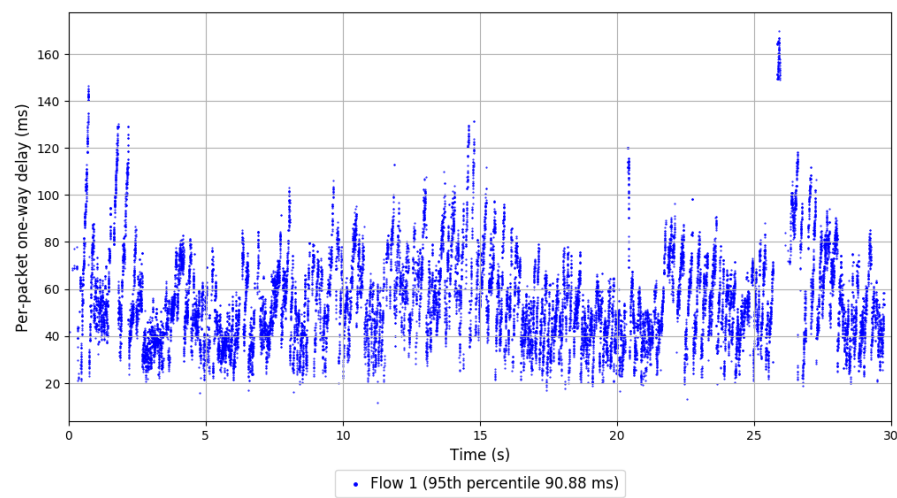
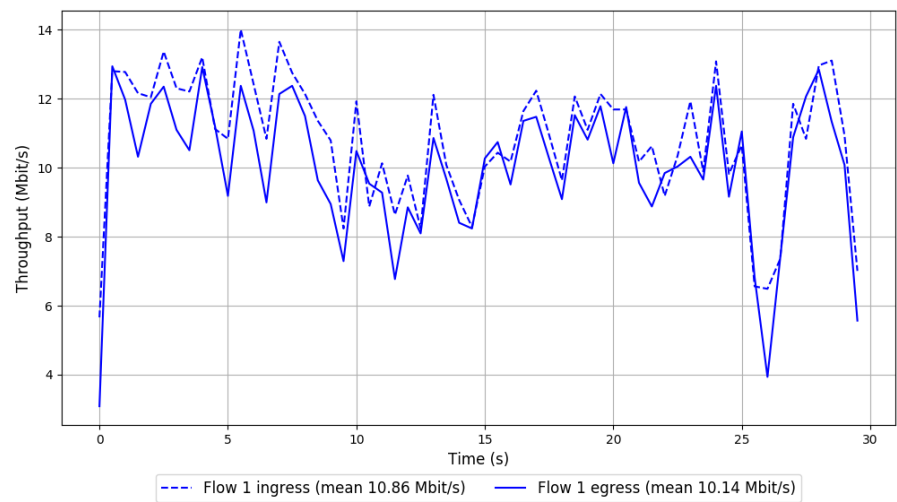


Run 2: Statistics of Verus

Start at: 2018-01-02 19:08:47
End at: 2018-01-02 19:09:17
Local clock offset: -0.031 ms
Remote clock offset: -3.249 ms

Below is generated by plot.py at 2018-01-02 20:24:41
Datalink statistics
-- Total of 1 flow:
Average throughput: 10.14 Mbit/s
95th percentile per-packet one-way delay: 90.876 ms
Loss rate: 7.09%
-- Flow 1:
Average throughput: 10.14 Mbit/s
95th percentile per-packet one-way delay: 90.876 ms
Loss rate: 7.09%

Run 2: Report of Verus — Data Link

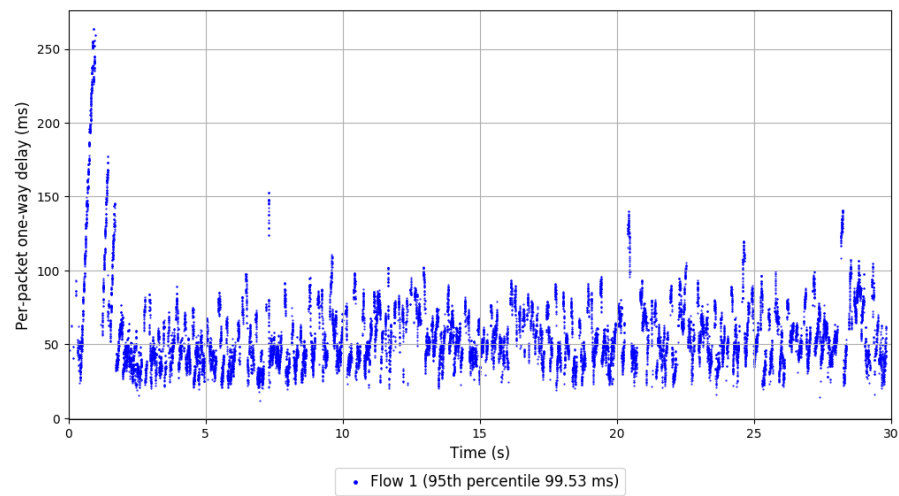
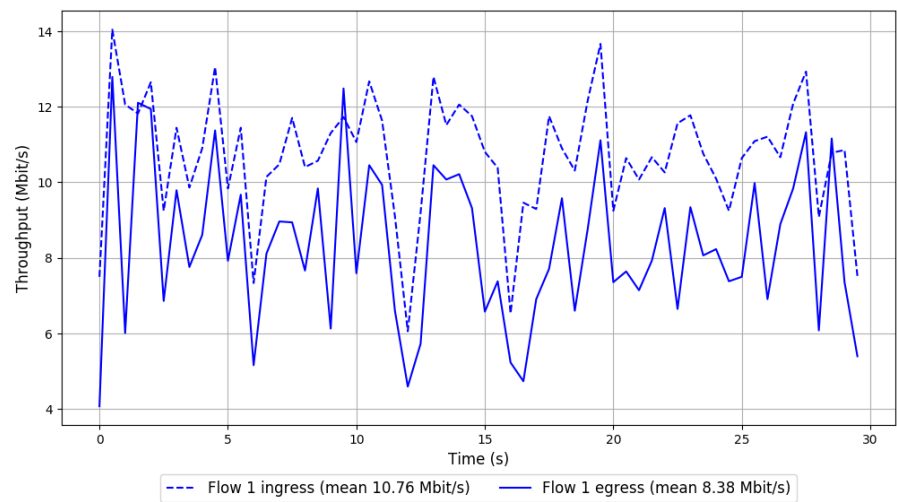


Run 3: Statistics of Verus

Start at: 2018-01-02 19:26:26
End at: 2018-01-02 19:26:56
Local clock offset: 0.055 ms
Remote clock offset: -3.123 ms

Below is generated by plot.py at 2018-01-02 20:24:41
Datalink statistics
-- Total of 1 flow:
Average throughput: 8.38 Mbit/s
95th percentile per-packet one-way delay: 99.525 ms
Loss rate: 22.23%
-- Flow 1:
Average throughput: 8.38 Mbit/s
95th percentile per-packet one-way delay: 99.525 ms
Loss rate: 22.23%

Run 3: Report of Verus — Data Link

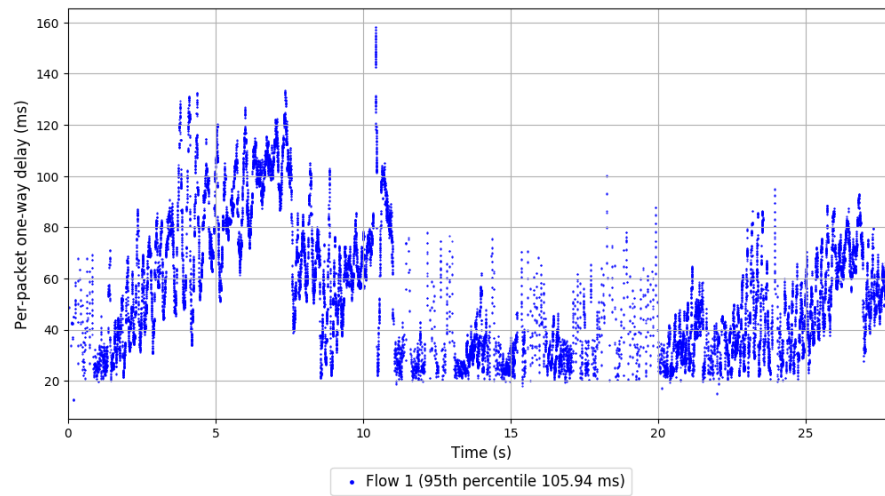
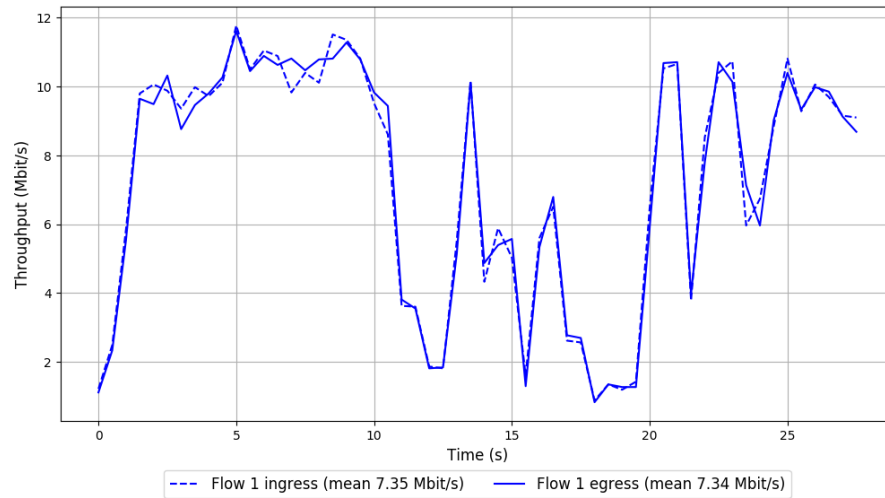


Run 1: Statistics of Copa

Start at: 2018-01-02 18:52:18
End at: 2018-01-02 18:52:48
Local clock offset: -0.151 ms
Remote clock offset: -3.575 ms

Below is generated by plot.py at 2018-01-02 20:24:46
Datalink statistics
-- Total of 1 flow:
Average throughput: 7.34 Mbit/s
95th percentile per-packet one-way delay: 105.942 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 7.34 Mbit/s
95th percentile per-packet one-way delay: 105.942 ms
Loss rate: 0.37%

Run 1: Report of Copa — Data Link

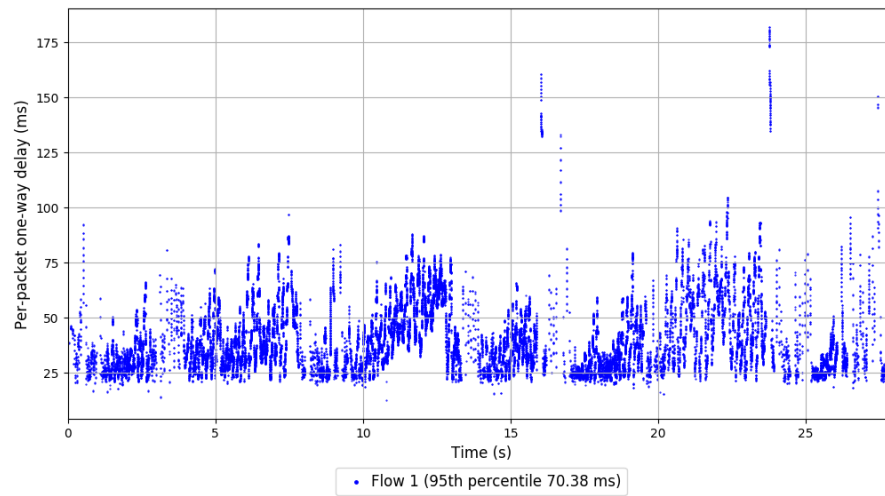
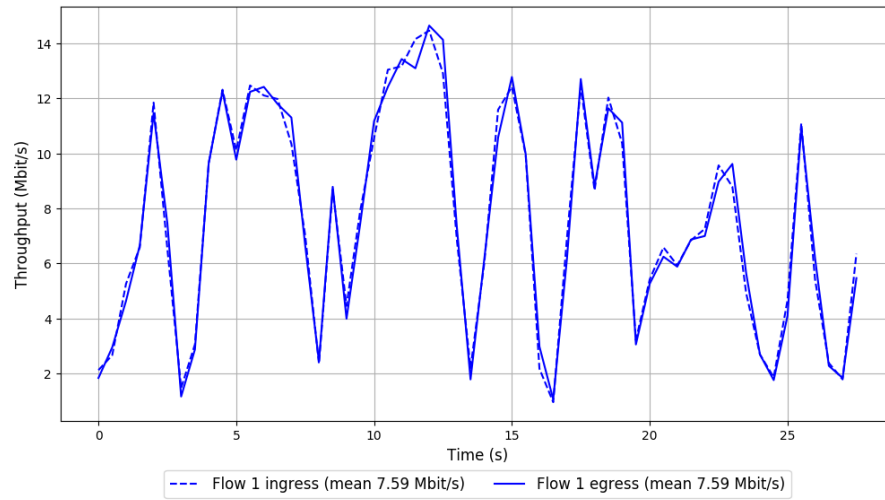


Run 2: Statistics of Copa

Start at: 2018-01-02 19:09:57
End at: 2018-01-02 19:10:27
Local clock offset: -0.026 ms
Remote clock offset: -3.262 ms

Below is generated by plot.py at 2018-01-02 20:24:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 7.59 Mbit/s
95th percentile per-packet one-way delay: 70.376 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 7.59 Mbit/s
95th percentile per-packet one-way delay: 70.376 ms
Loss rate: 0.23%

Run 2: Report of Copa — Data Link

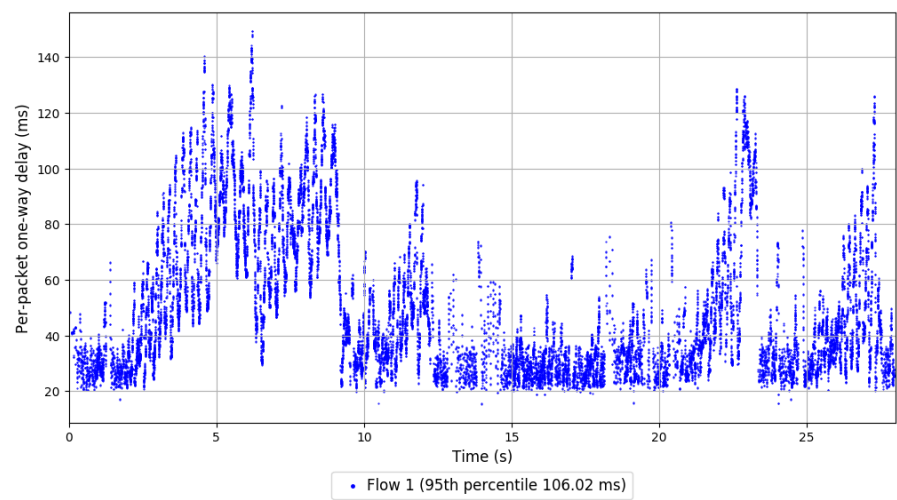
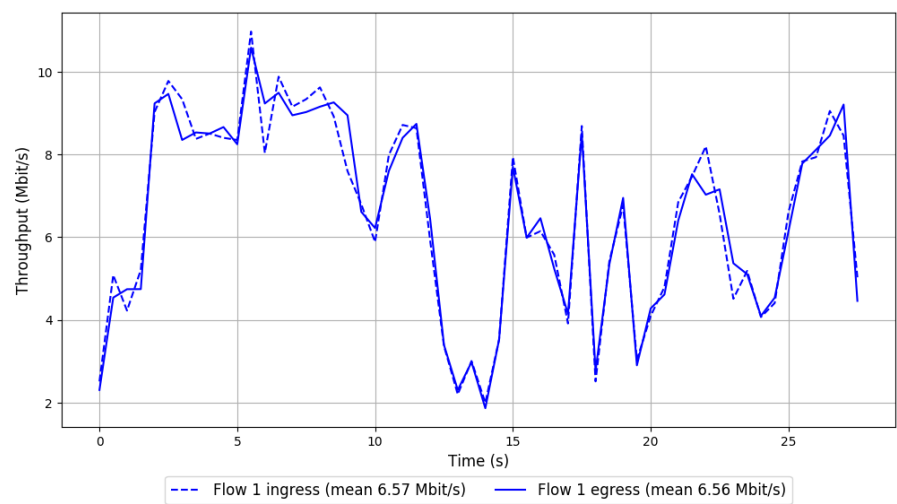


Run 3: Statistics of Copa

Start at: 2018-01-02 19:27:36
End at: 2018-01-02 19:28:06
Local clock offset: 0.155 ms
Remote clock offset: -3.075 ms

Below is generated by plot.py at 2018-01-02 20:24:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 6.56 Mbit/s
95th percentile per-packet one-way delay: 106.015 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 6.56 Mbit/s
95th percentile per-packet one-way delay: 106.015 ms
Loss rate: 0.29%

Run 3: Report of Copa — Data Link

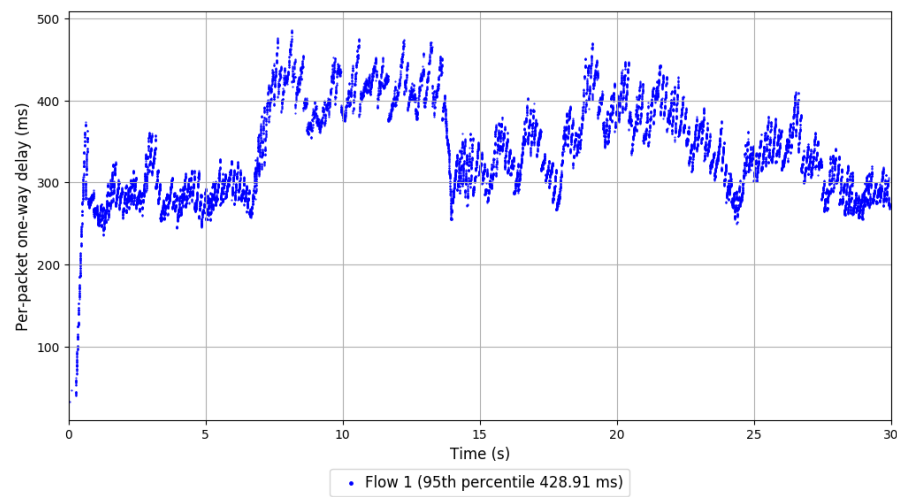
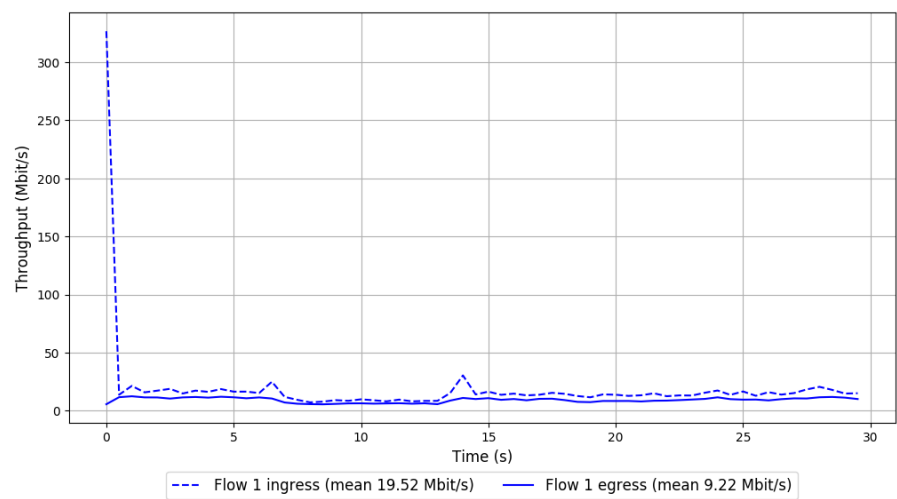


Run 1: Statistics of FillP

Start at: 2018-01-02 18:44:04
End at: 2018-01-02 18:44:34
Local clock offset: -0.347 ms
Remote clock offset: -3.804 ms

Below is generated by plot.py at 2018-01-02 20:24:49
Datalink statistics
-- Total of 1 flow:
Average throughput: 9.22 Mbit/s
95th percentile per-packet one-way delay: 428.910 ms
Loss rate: 52.83%
-- Flow 1:
Average throughput: 9.22 Mbit/s
95th percentile per-packet one-way delay: 428.910 ms
Loss rate: 52.83%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-01-02 19:01:43

End at: 2018-01-02 19:02:13

Local clock offset: -0.032 ms

Remote clock offset: -3.48 ms

Below is generated by plot.py at 2018-01-02 20:24:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 10.75 Mbit/s

95th percentile per-packet one-way delay: 399.979 ms

Loss rate: 52.15%

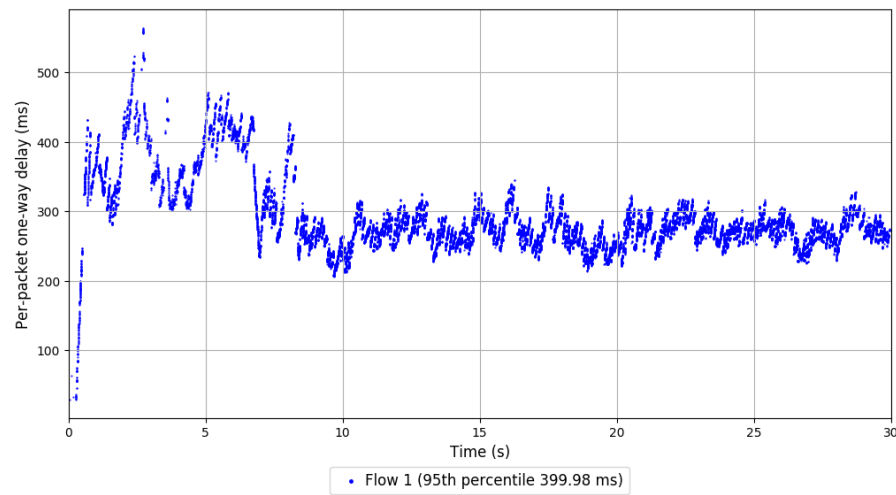
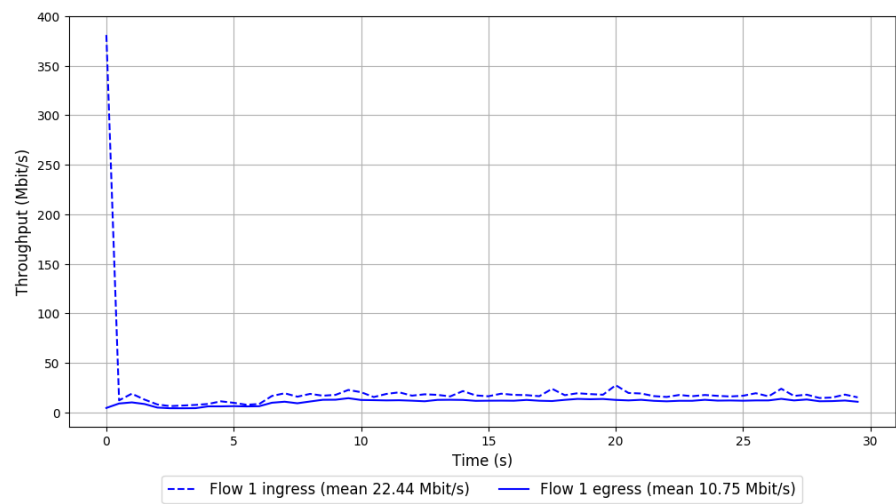
-- Flow 1:

Average throughput: 10.75 Mbit/s

95th percentile per-packet one-way delay: 399.979 ms

Loss rate: 52.15%

Run 2: Report of FillP — Data Link

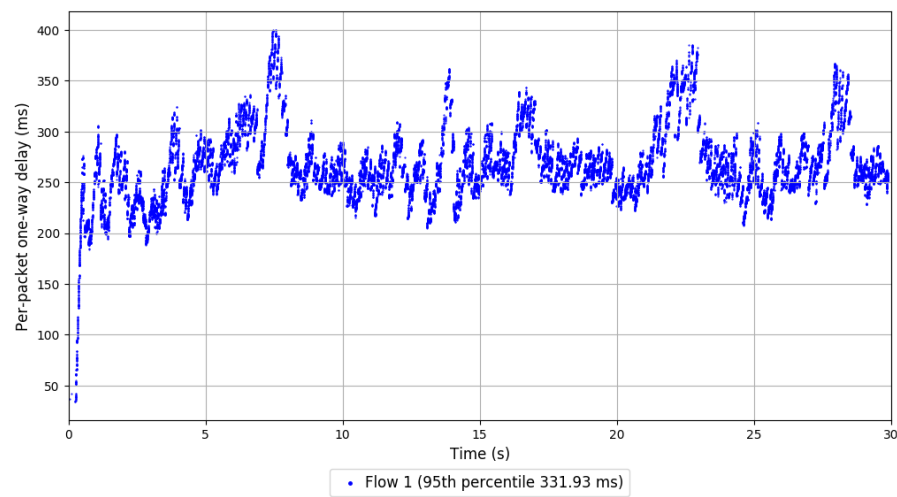
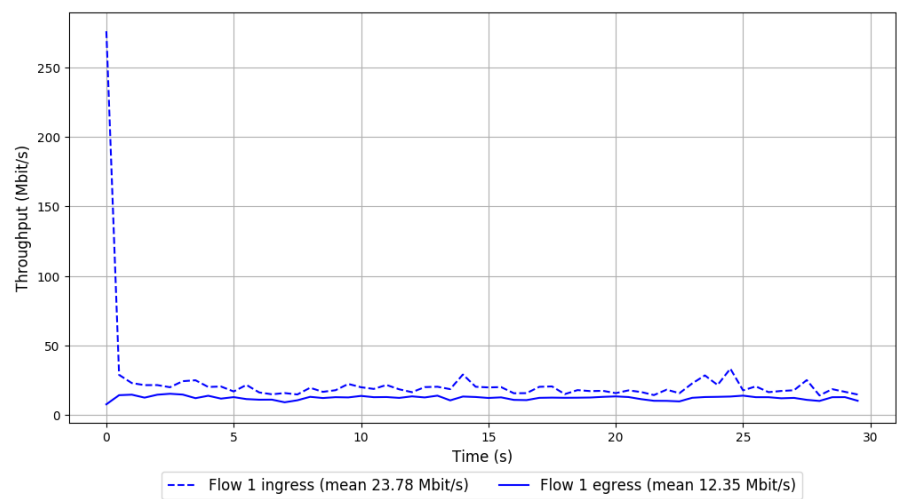


Run 3: Statistics of FillP

Start at: 2018-01-02 19:19:23
End at: 2018-01-02 19:19:53
Local clock offset: 0.156 ms
Remote clock offset: -3.179 ms

Below is generated by plot.py at 2018-01-02 20:24:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 12.35 Mbit/s
95th percentile per-packet one-way delay: 331.927 ms
Loss rate: 48.17%
-- Flow 1:
Average throughput: 12.35 Mbit/s
95th percentile per-packet one-way delay: 331.927 ms
Loss rate: 48.17%

Run 3: Report of FillP — Data Link

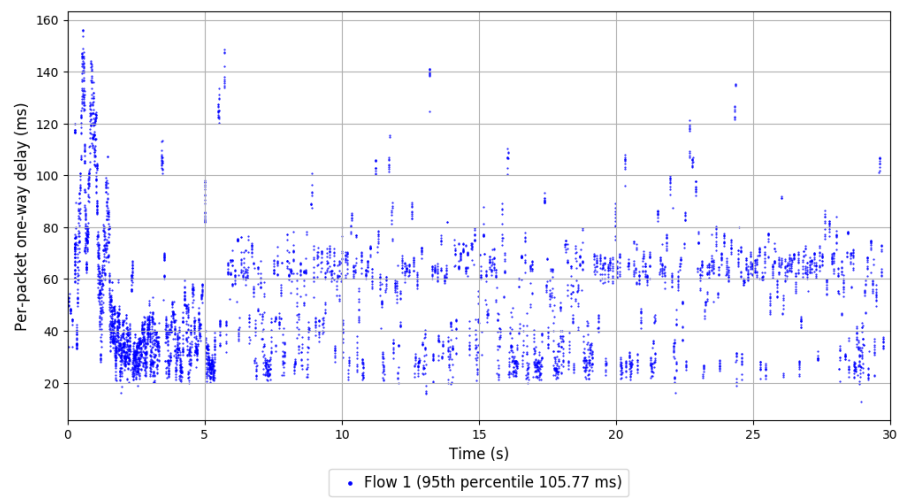
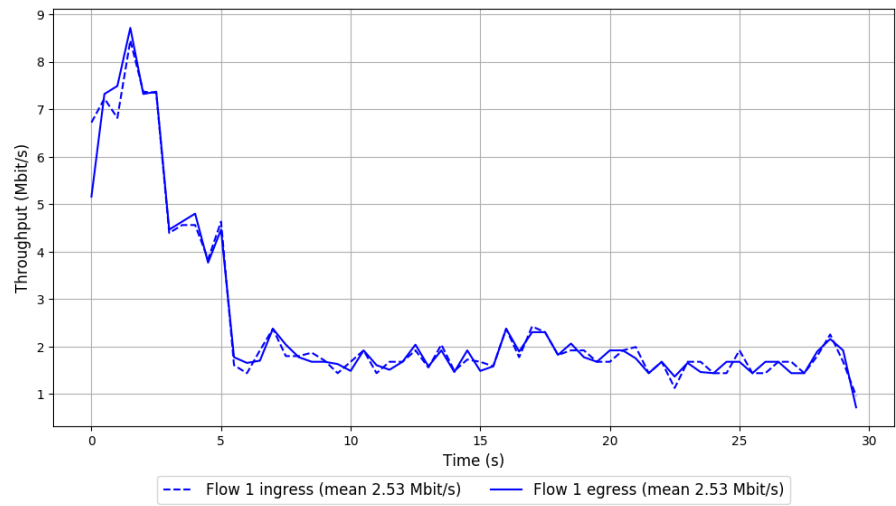


```
Run 1: Statistics of Indigo

Start at: 2018-01-02 18:49:57
End at: 2018-01-02 18:50:27
Local clock offset: -0.19 ms
Remote clock offset: -3.646 ms

# Below is generated by plot.py at 2018-01-02 20:24:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.53 Mbit/s
95th percentile per-packet one-way delay: 105.771 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 2.53 Mbit/s
95th percentile per-packet one-way delay: 105.771 ms
Loss rate: 0.16%
```

Run 1: Report of Indigo — Data Link

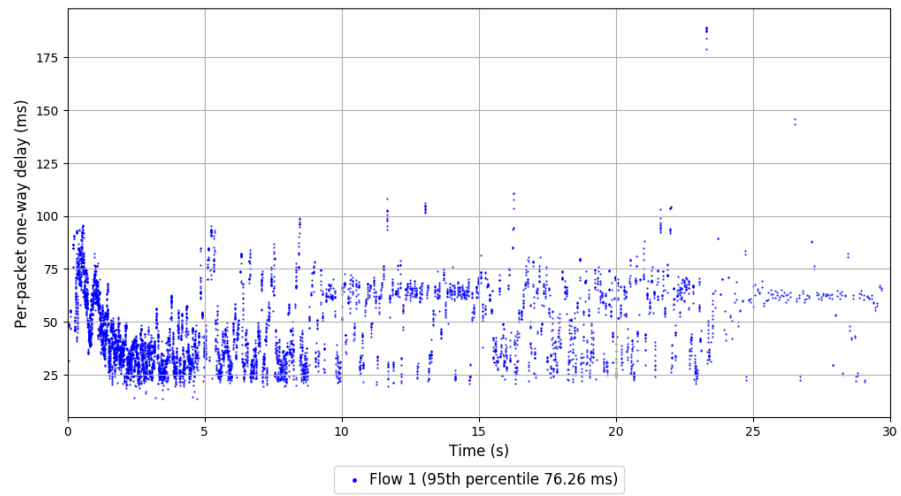
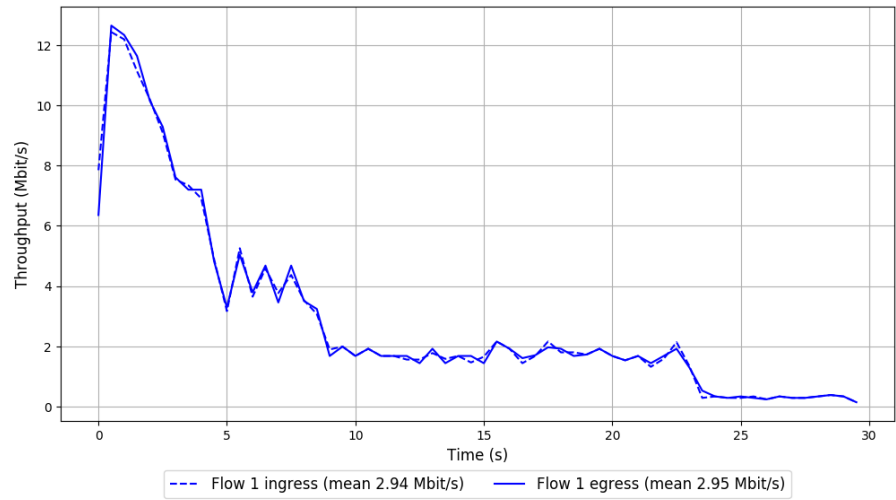


Run 2: Statistics of Indigo

Start at: 2018-01-02 19:07:36
End at: 2018-01-02 19:08:06
Local clock offset: -0.002 ms
Remote clock offset: -3.388 ms

Below is generated by plot.py at 2018-01-02 20:24:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.95 Mbit/s
95th percentile per-packet one-way delay: 76.261 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 2.95 Mbit/s
95th percentile per-packet one-way delay: 76.261 ms
Loss rate: 0.04%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-01-02 19:25:15
End at: 2018-01-02 19:25:45
Local clock offset: 0.041 ms
Remote clock offset: -3.141 ms

Below is generated by plot.py at 2018-01-02 20:24:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.88 Mbit/s
95th percentile per-packet one-way delay: 76.616 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 2.88 Mbit/s
95th percentile per-packet one-way delay: 76.616 ms
Loss rate: 0.14%

Run 3: Report of Indigo — Data Link

