

Pantheon Report

Generated at 2018-08-27 20:37:43 (UTC).

Data path: AWS California 1 ens5 (*local*) → Stanford ppp0 ppp0 (*remote*).

Repeated the test of 17 congestion control schemes 3 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.

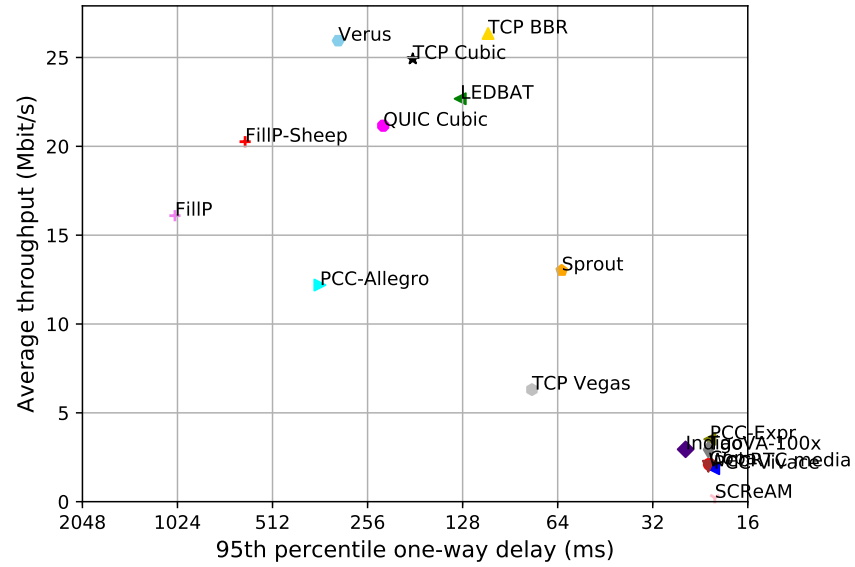
System info:

```
Linux 4.15.0-1019-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
```

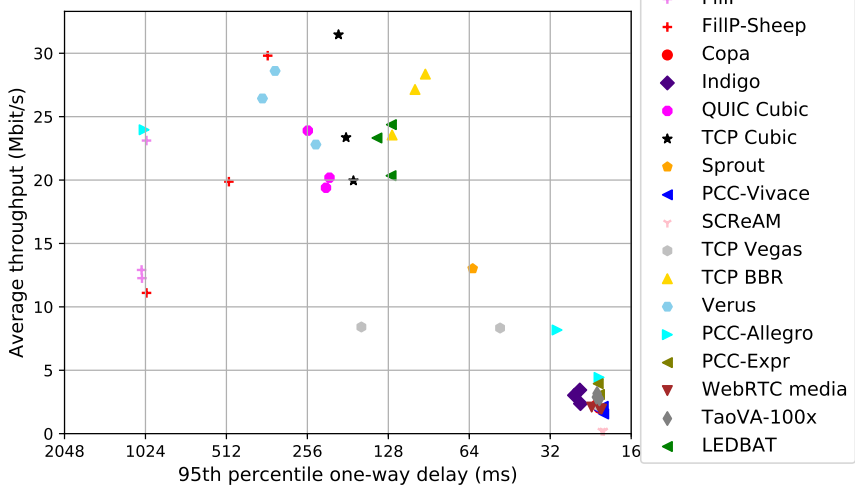
Git summary:

```
branch: master @ 8f31687904b612ba36b45467ab20eda73108da68
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfef58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ 5386469677b75a7fdc5fe25d8daccce7950d8a69
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
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

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



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



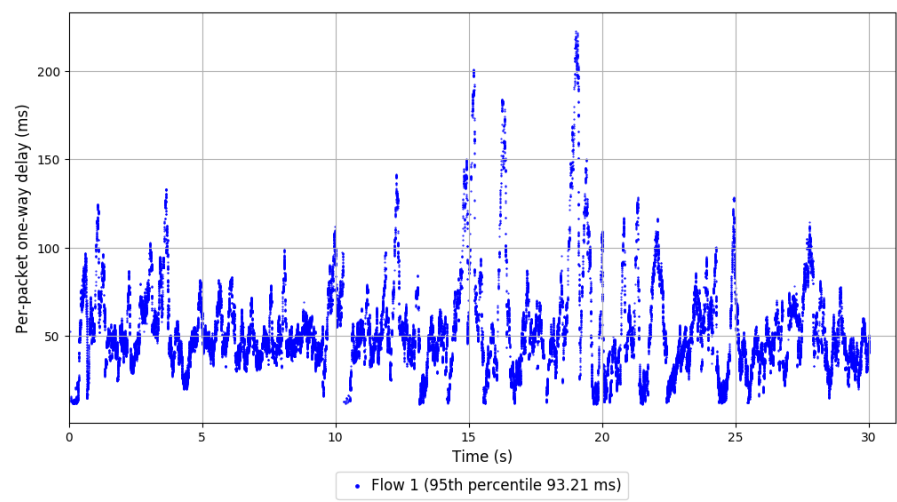
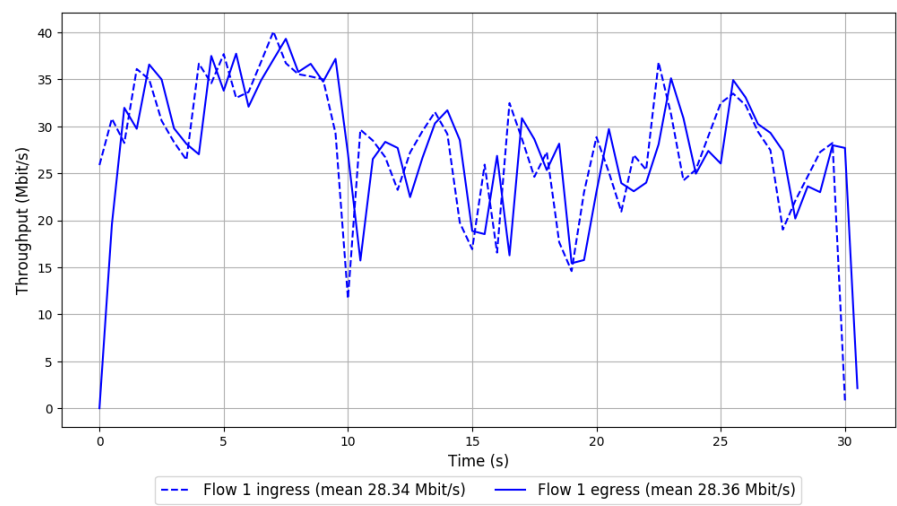
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	26.35	106.32	0.13
Copa	3	2.11	21.17	24.90
TCP Cubic	3	24.92	184.15	0.17
FillP	3	16.10	1042.87	50.71
FillP-Sheep	3	20.26	625.19	7.48
Indigo	3	2.95	25.18	0.00
LEDBAT	3	22.68	130.30	0.23
PCC-Allegro	3	12.20	362.37	6.55
PCC-Expr	2	3.51	21.11	48.66
QUIC Cubic	3	21.16	228.39	0.37
SCReAM	3	0.22	20.35	0.00
Sprout	1	13.02	62.16	0.24
TaoVA-100x	3	2.93	21.32	30.91
TCP Vegas	3	6.31	77.20	0.00
Verus	3	25.95	317.22	0.81
PCC-Vivace	3	1.86	20.51	0.00
WebRTC media	3	1.99	21.33	0.00

Run 1: Statistics of TCP BBR

Start at: 2018-08-27 19:44:55
End at: 2018-08-27 19:45:25
Local clock offset: -4.091 ms
Remote clock offset: -0.259 ms

Below is generated by plot.py at 2018-08-27 20:36:44
Datalink statistics
-- Total of 1 flow:
Average throughput: 28.36 Mbit/s
95th percentile per-packet one-way delay: 93.209 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 28.36 Mbit/s
95th percentile per-packet one-way delay: 93.209 ms
Loss rate: 0.08%

Run 1: Report of TCP BBR — Data Link

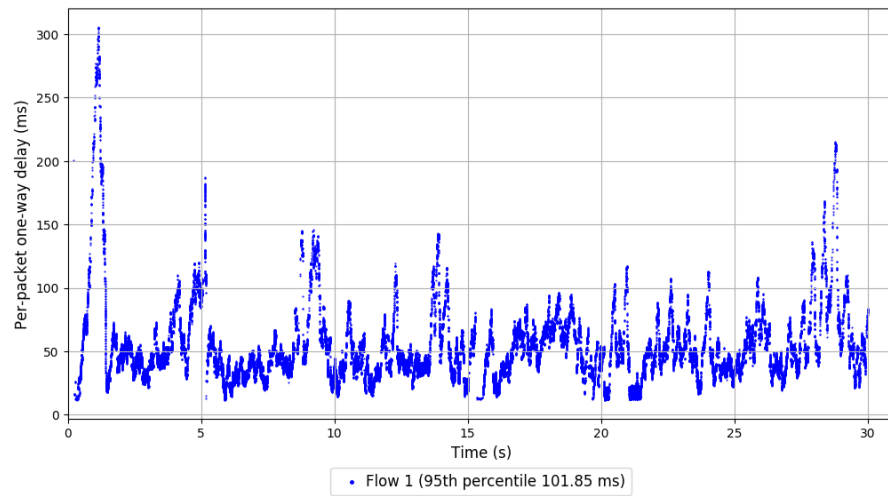
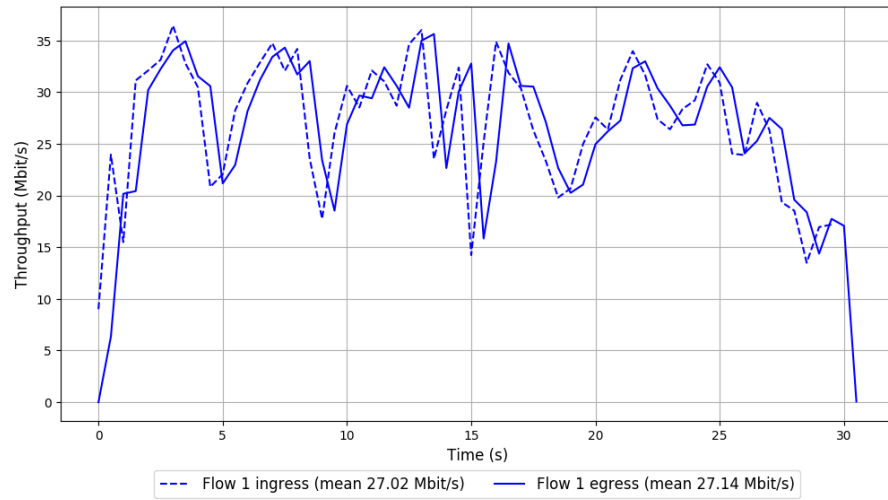


Run 2: Statistics of TCP BBR

Start at: 2018-08-27 20:06:57
End at: 2018-08-27 20:07:27
Local clock offset: -3.352 ms
Remote clock offset: -0.526 ms

Below is generated by plot.py at 2018-08-27 20:36:44
Datalink statistics
-- Total of 1 flow:
Average throughput: 27.14 Mbit/s
95th percentile per-packet one-way delay: 101.847 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 27.14 Mbit/s
95th percentile per-packet one-way delay: 101.847 ms
Loss rate: 0.08%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-08-27 20:29:08

End at: 2018-08-27 20:29:38

Local clock offset: -2.681 ms

Remote clock offset: 3.151 ms

Below is generated by plot.py at 2018-08-27 20:36:44

Datalink statistics

-- Total of 1 flow:

Average throughput: 23.56 Mbit/s

95th percentile per-packet one-way delay: 123.906 ms

Loss rate: 0.23%

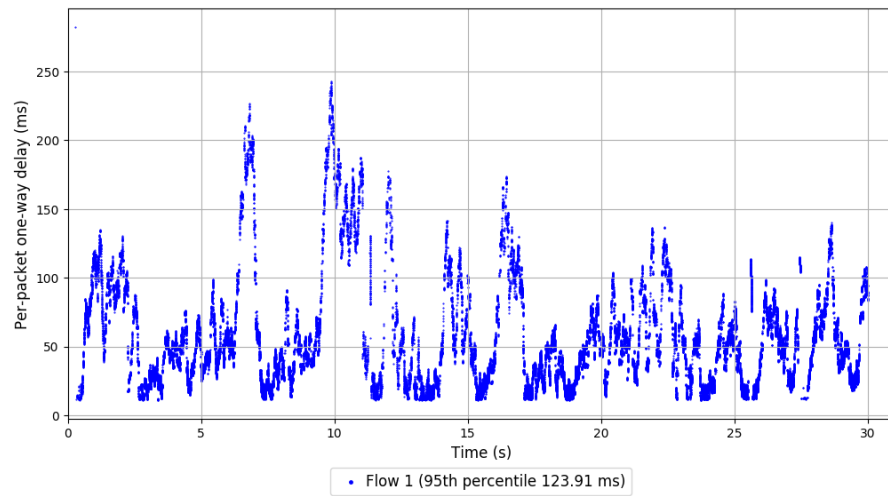
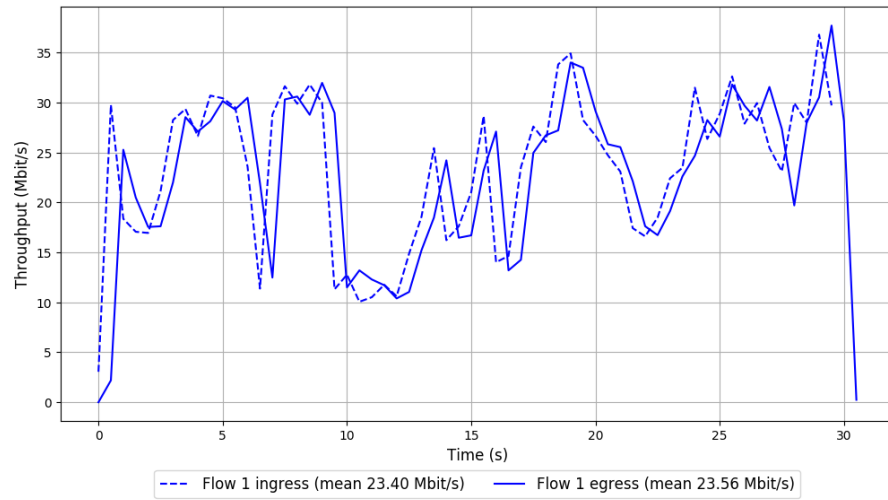
-- Flow 1:

Average throughput: 23.56 Mbit/s

95th percentile per-packet one-way delay: 123.906 ms

Loss rate: 0.23%

Run 3: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-08-27 19:39:37

End at: 2018-08-27 19:40:07

Local clock offset: -5.061 ms

Remote clock offset: 0.513 ms

Below is generated by plot.py at 2018-08-27 20:36:44

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.28 Mbit/s

95th percentile per-packet one-way delay: 21.512 ms

Loss rate: 23.52%

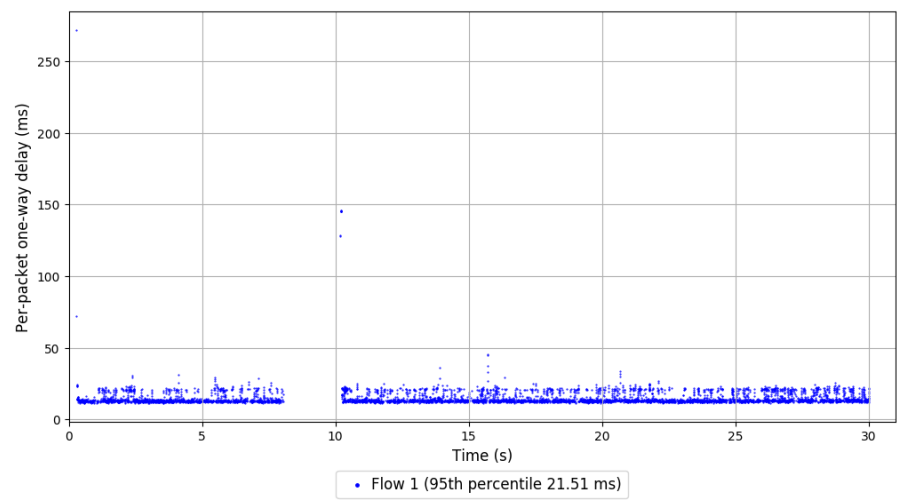
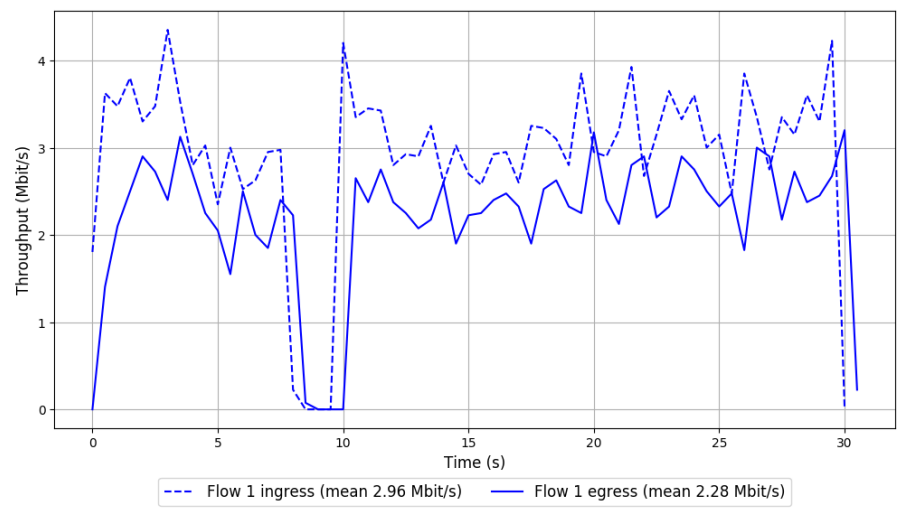
-- Flow 1:

Average throughput: 2.28 Mbit/s

95th percentile per-packet one-way delay: 21.512 ms

Loss rate: 23.52%

Run 1: Report of Copa — Data Link

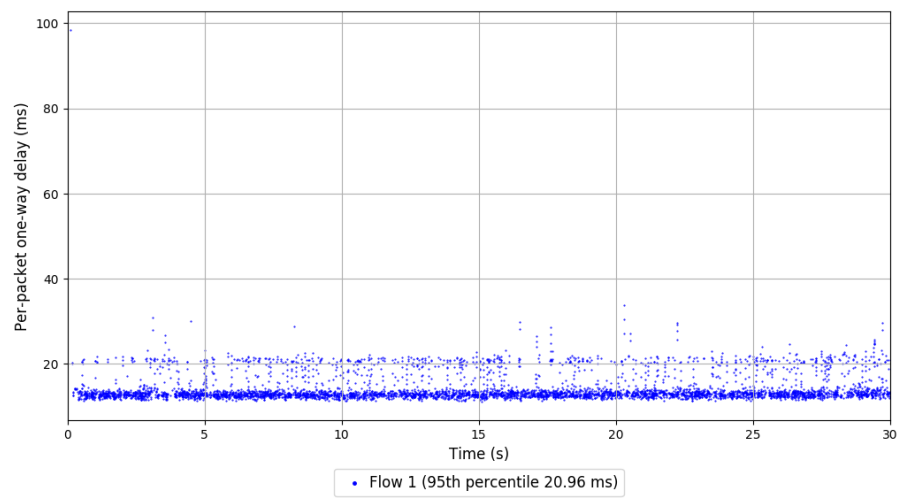
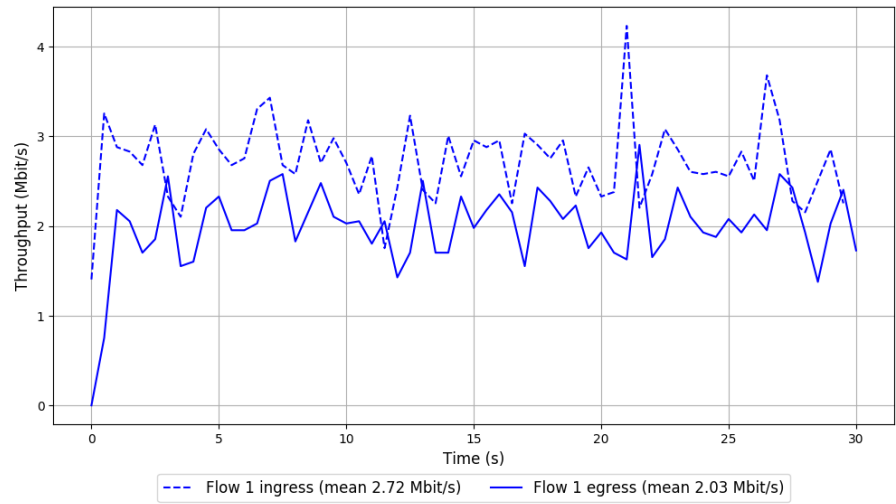


Run 2: Statistics of Copa

Start at: 2018-08-27 20:01:45
End at: 2018-08-27 20:02:15
Local clock offset: -4.843 ms
Remote clock offset: -1.351 ms

Below is generated by plot.py at 2018-08-27 20:36:44
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.03 Mbit/s
95th percentile per-packet one-way delay: 20.963 ms
Loss rate: 25.64%
-- Flow 1:
Average throughput: 2.03 Mbit/s
95th percentile per-packet one-way delay: 20.963 ms
Loss rate: 25.64%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-08-27 20:23:55

End at: 2018-08-27 20:24:25

Local clock offset: -2.394 ms

Remote clock offset: 2.814 ms

Below is generated by plot.py at 2018-08-27 20:36:44

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.01 Mbit/s

95th percentile per-packet one-way delay: 21.044 ms

Loss rate: 25.54%

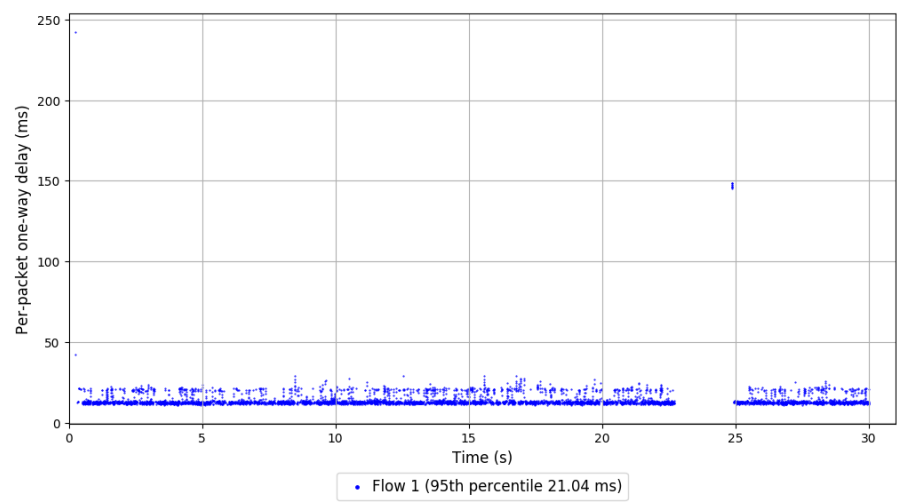
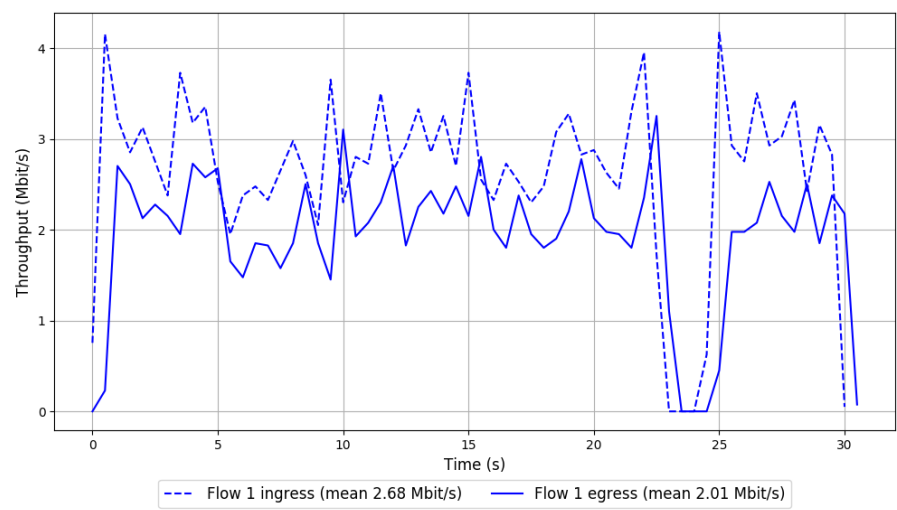
-- Flow 1:

Average throughput: 2.01 Mbit/s

95th percentile per-packet one-way delay: 21.044 ms

Loss rate: 25.54%

Run 3: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-08-27 19:42:12

End at: 2018-08-27 19:42:42

Local clock offset: -4.411 ms

Remote clock offset: 0.111 ms

Below is generated by plot.py at 2018-08-27 20:36:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 31.46 Mbit/s

95th percentile per-packet one-way delay: 196.099 ms

Loss rate: 0.26%

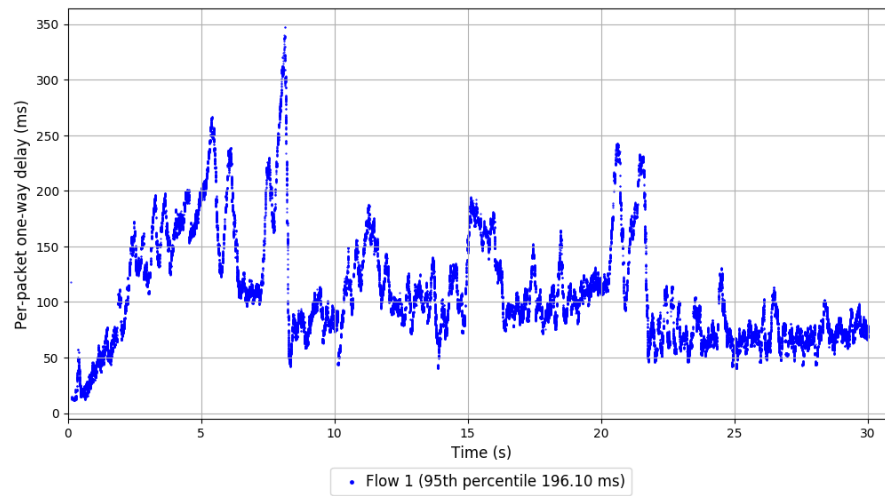
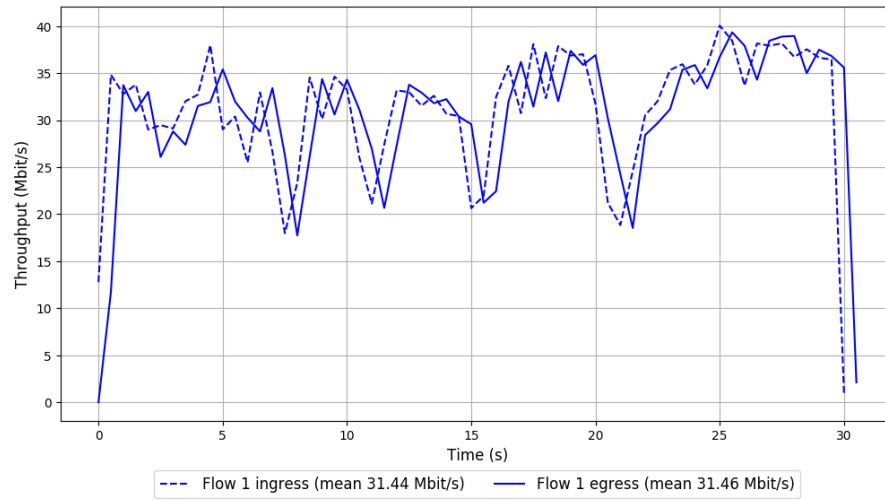
-- Flow 1:

Average throughput: 31.46 Mbit/s

95th percentile per-packet one-way delay: 196.099 ms

Loss rate: 0.26%

Run 1: Report of TCP Cubic — Data Link

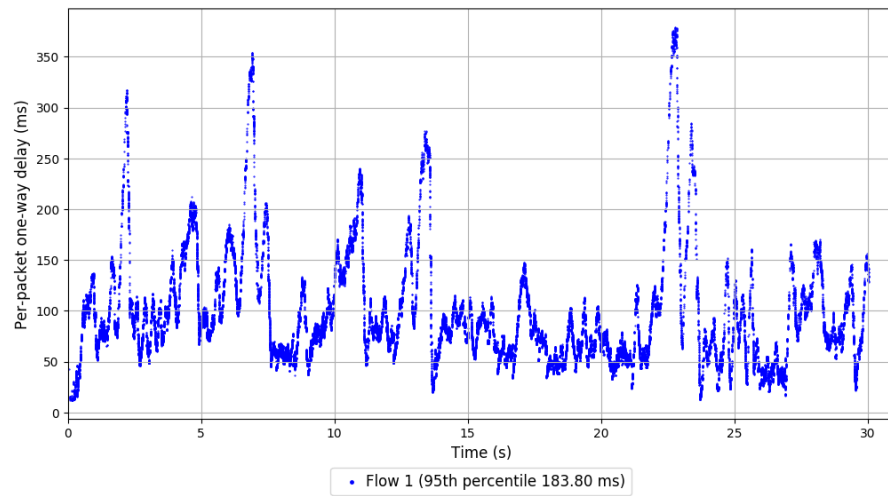
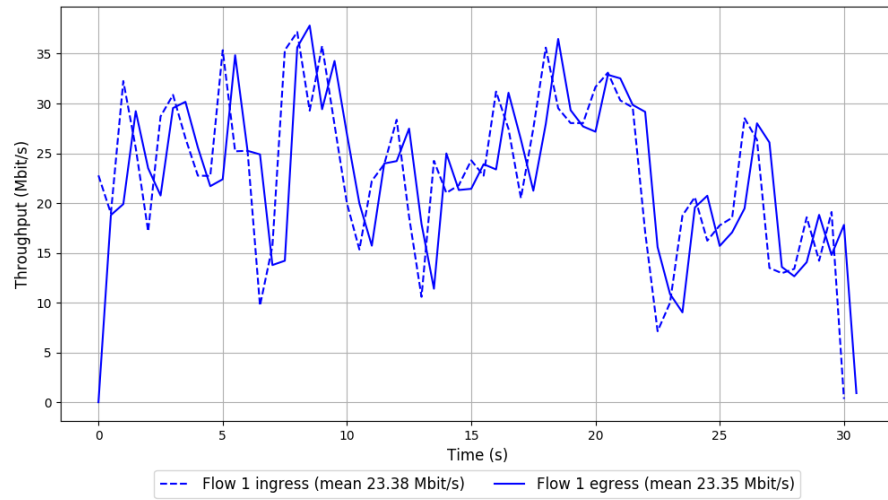


Run 2: Statistics of TCP Cubic

Start at: 2018-08-27 20:04:20
End at: 2018-08-27 20:04:50
Local clock offset: -4.067 ms
Remote clock offset: -1.419 ms

Below is generated by plot.py at 2018-08-27 20:36:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 23.35 Mbit/s
95th percentile per-packet one-way delay: 183.796 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 23.35 Mbit/s
95th percentile per-packet one-way delay: 183.796 ms
Loss rate: 0.20%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2018-08-27 20:26:31

End at: 2018-08-27 20:27:01

Local clock offset: -2.518 ms

Remote clock offset: 3.061 ms

Below is generated by plot.py at 2018-08-27 20:36:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 19.95 Mbit/s

95th percentile per-packet one-way delay: 172.563 ms

Loss rate: 0.05%

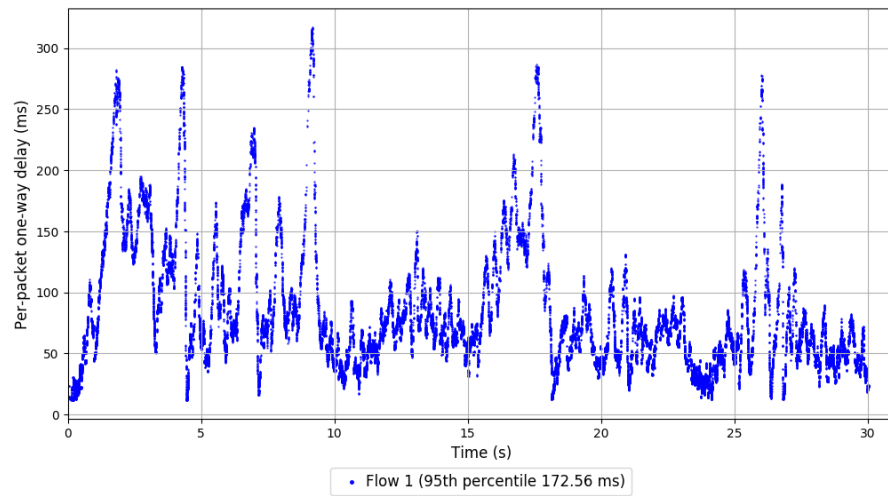
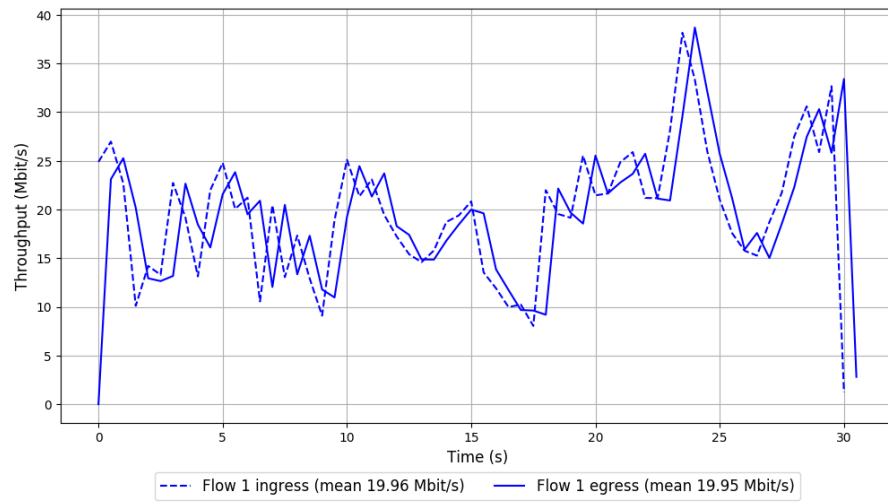
-- Flow 1:

Average throughput: 19.95 Mbit/s

95th percentile per-packet one-way delay: 172.563 ms

Loss rate: 0.05%

Run 3: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-08-27 19:34:25

End at: 2018-08-27 19:34:55

Local clock offset: -7.861 ms

Remote clock offset: 1.597 ms

Below is generated by plot.py at 2018-08-27 20:36:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 12.26 Mbit/s

95th percentile per-packet one-way delay: 1054.958 ms

Loss rate: 44.41%

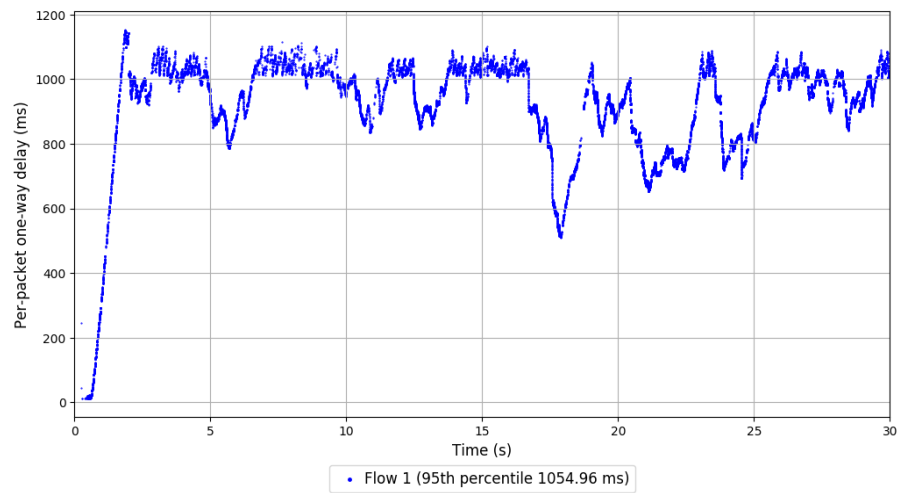
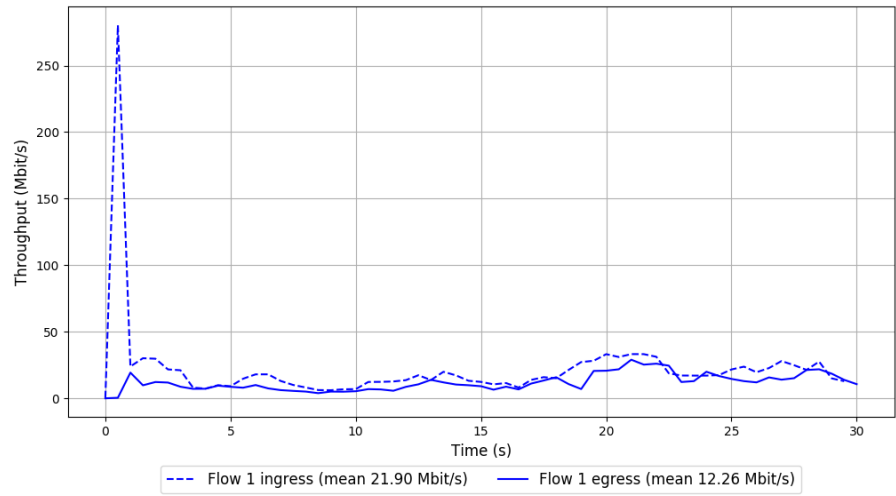
-- Flow 1:

Average throughput: 12.26 Mbit/s

95th percentile per-packet one-way delay: 1054.958 ms

Loss rate: 44.41%

Run 1: Report of FillP — Data Link

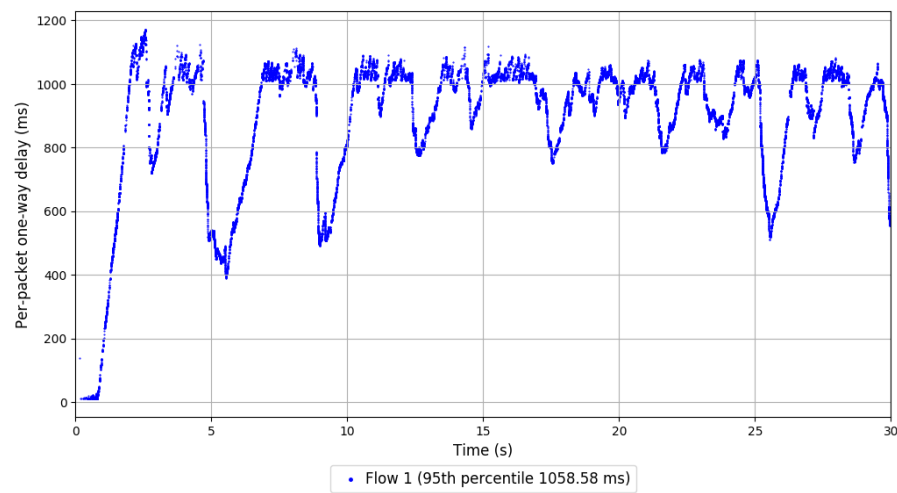
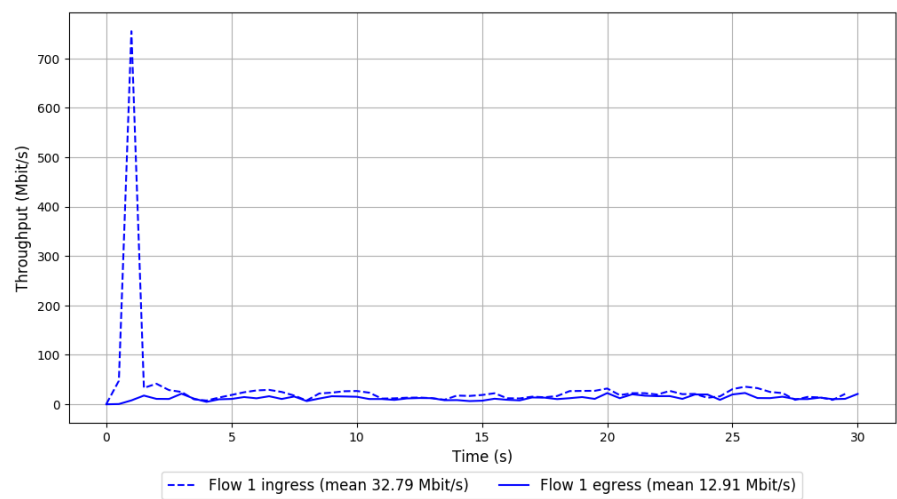


Run 2: Statistics of FillP

Start at: 2018-08-27 19:56:35
End at: 2018-08-27 19:57:05
Local clock offset: -4.335 ms
Remote clock offset: -1.059 ms

Below is generated by plot.py at 2018-08-27 20:36:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 12.91 Mbit/s
95th percentile per-packet one-way delay: 1058.577 ms
Loss rate: 60.80%
-- Flow 1:
Average throughput: 12.91 Mbit/s
95th percentile per-packet one-way delay: 1058.577 ms
Loss rate: 60.80%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-08-27 20:18:44

End at: 2018-08-27 20:19:14

Local clock offset: -2.254 ms

Remote clock offset: 2.214 ms

Below is generated by plot.py at 2018-08-27 20:37:13

Datalink statistics

-- Total of 1 flow:

Average throughput: 23.12 Mbit/s

95th percentile per-packet one-way delay: 1015.067 ms

Loss rate: 46.93%

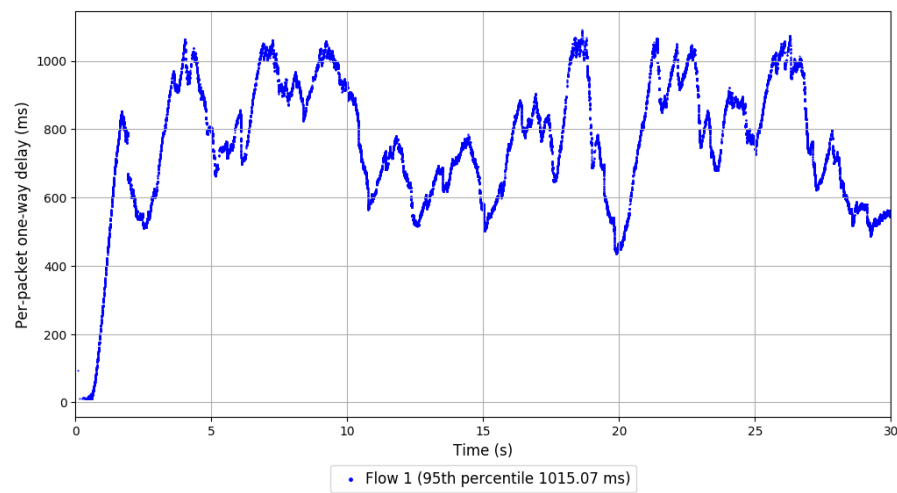
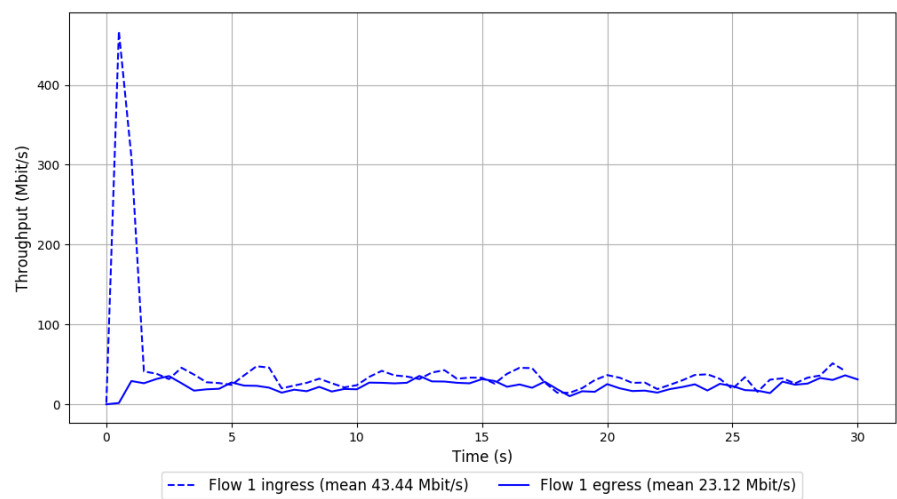
-- Flow 1:

Average throughput: 23.12 Mbit/s

95th percentile per-packet one-way delay: 1015.067 ms

Loss rate: 46.93%

Run 3: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2018-08-27 19:30:30

End at: 2018-08-27 19:31:00

Local clock offset: -8.997 ms

Remote clock offset: 2.746 ms

Below is generated by plot.py at 2018-08-27 20:37:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 29.81 Mbit/s

95th percentile per-packet one-way delay: 359.506 ms

Loss rate: 2.65%

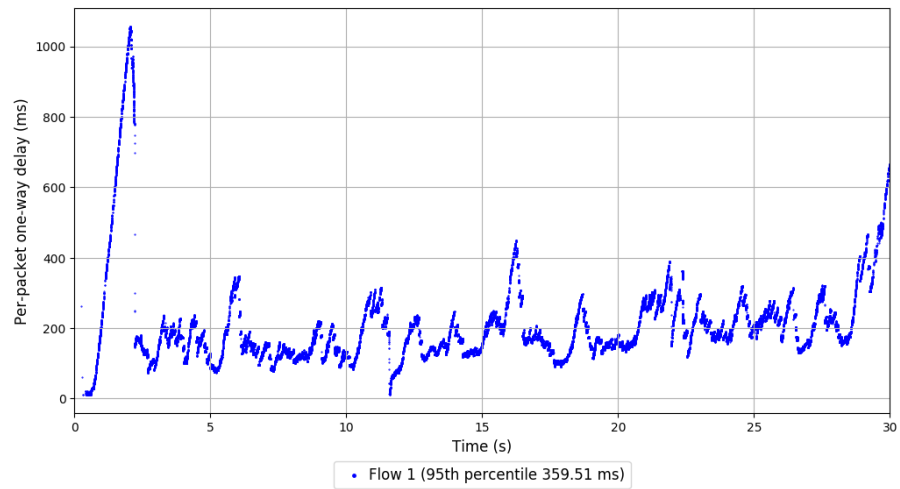
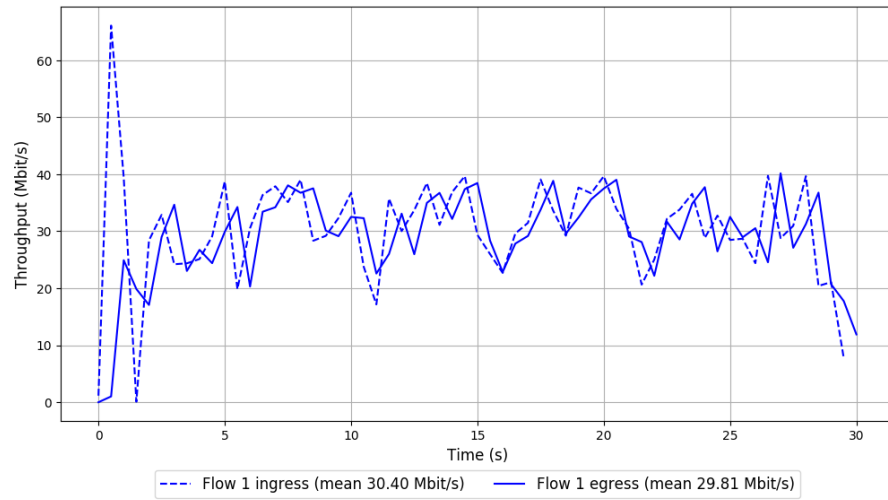
-- Flow 1:

Average throughput: 29.81 Mbit/s

95th percentile per-packet one-way delay: 359.506 ms

Loss rate: 2.65%

Run 1: Report of FillP-Sheep — Data Link

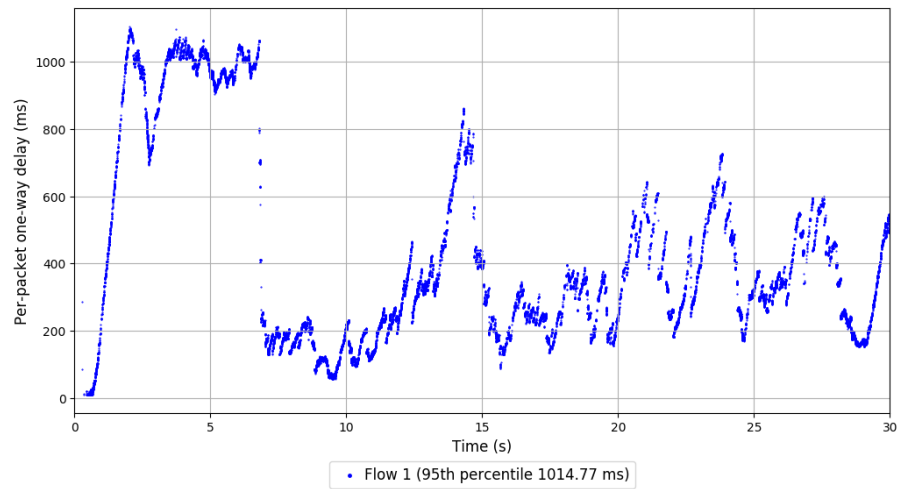
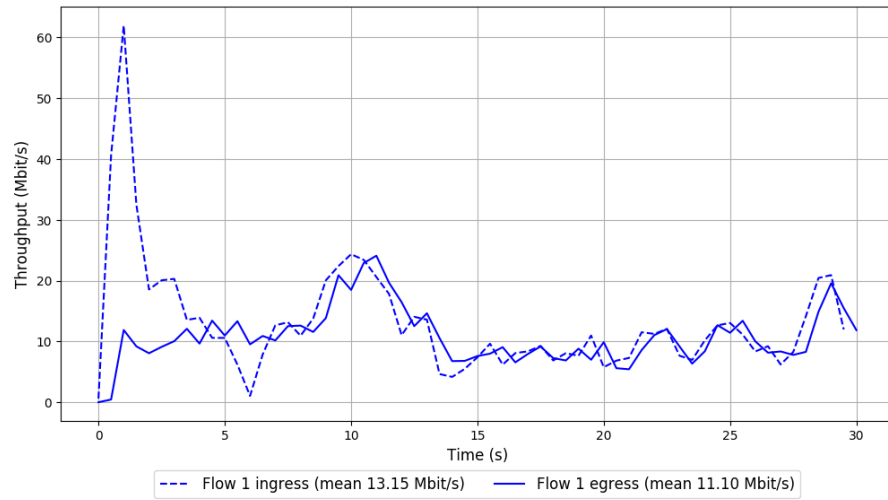


Run 2: Statistics of FillP-Sheep

Start at: 2018-08-27 19:52:42
End at: 2018-08-27 19:53:12
Local clock offset: -3.928 ms
Remote clock offset: -0.869 ms

Below is generated by plot.py at 2018-08-27 20:37:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 11.10 Mbit/s
95th percentile per-packet one-way delay: 1014.766 ms
Loss rate: 16.37%
-- Flow 1:
Average throughput: 11.10 Mbit/s
95th percentile per-packet one-way delay: 1014.766 ms
Loss rate: 16.37%

Run 2: Report of FillP-Sheep — Data Link



Run 3: Statistics of FillP-Sheep

Start at: 2018-08-27 20:14:50

End at: 2018-08-27 20:15:20

Local clock offset: -2.31 ms

Remote clock offset: 1.736 ms

Below is generated by plot.py at 2018-08-27 20:37:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 19.87 Mbit/s

95th percentile per-packet one-way delay: 501.310 ms

Loss rate: 3.43%

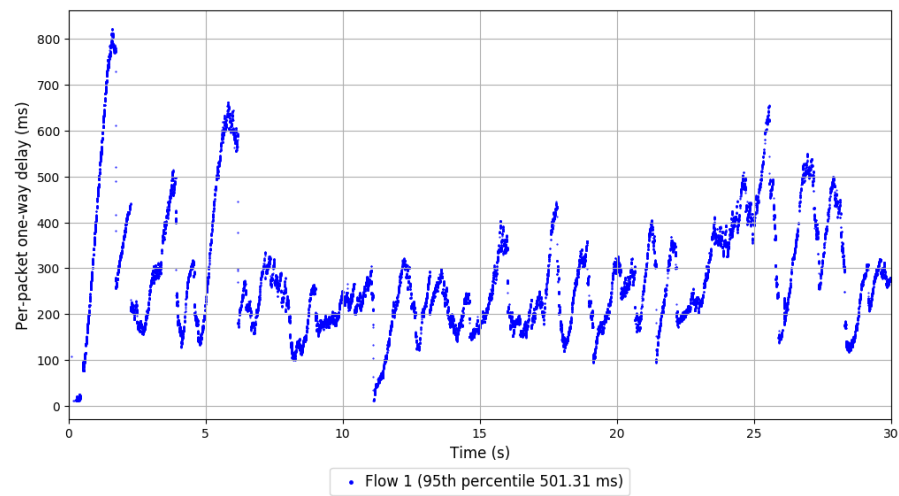
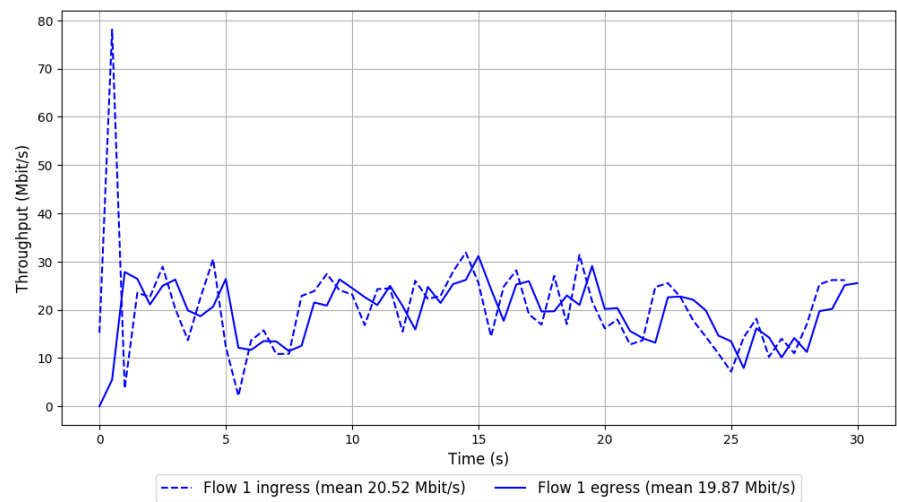
-- Flow 1:

Average throughput: 19.87 Mbit/s

95th percentile per-packet one-way delay: 501.310 ms

Loss rate: 3.43%

Run 3: Report of FillP-Sheep — Data Link

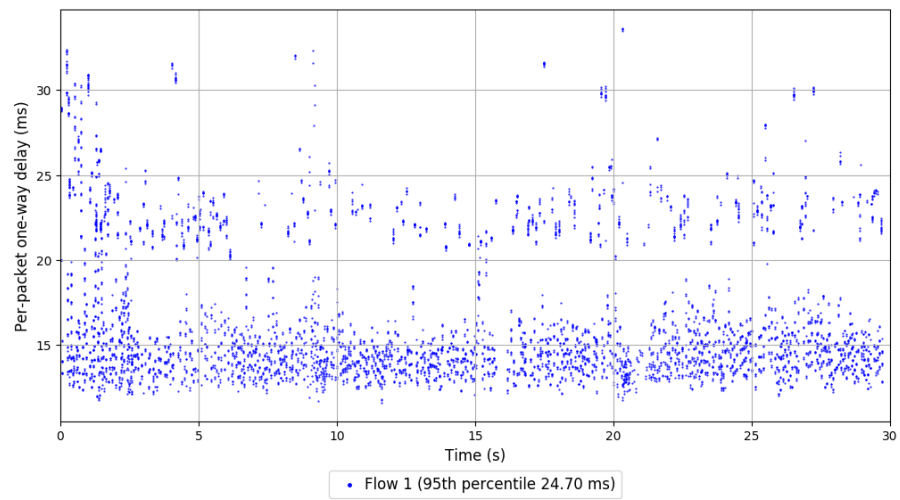
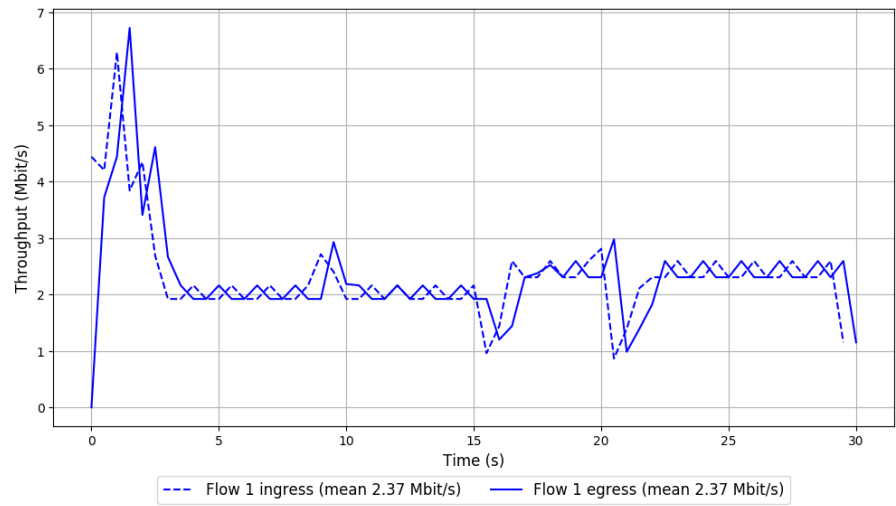


```
Run 1: Statistics of Indigo

Start at: 2018-08-27 19:37:01
End at: 2018-08-27 19:37:31
Local clock offset: -6.161 ms
Remote clock offset: 1.023 ms

# Below is generated by plot.py at 2018-08-27 20:37:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.37 Mbit/s
95th percentile per-packet one-way delay: 24.704 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.37 Mbit/s
95th percentile per-packet one-way delay: 24.704 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo — Data Link

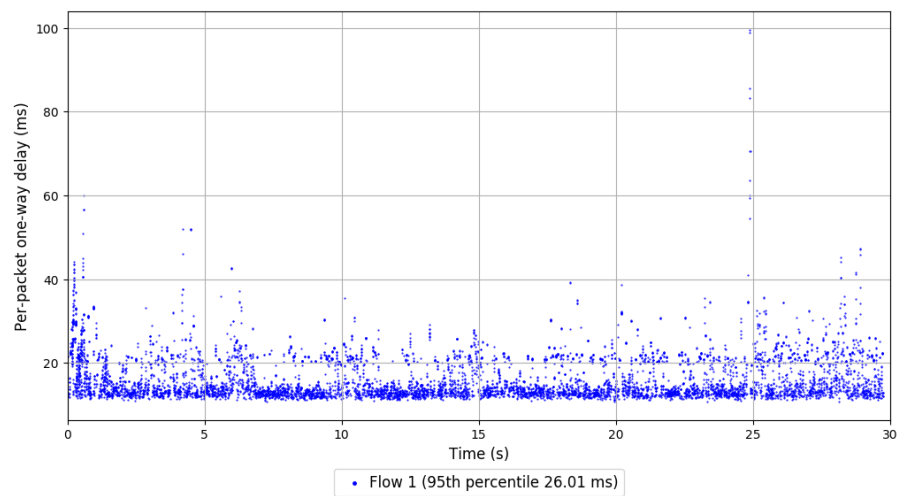
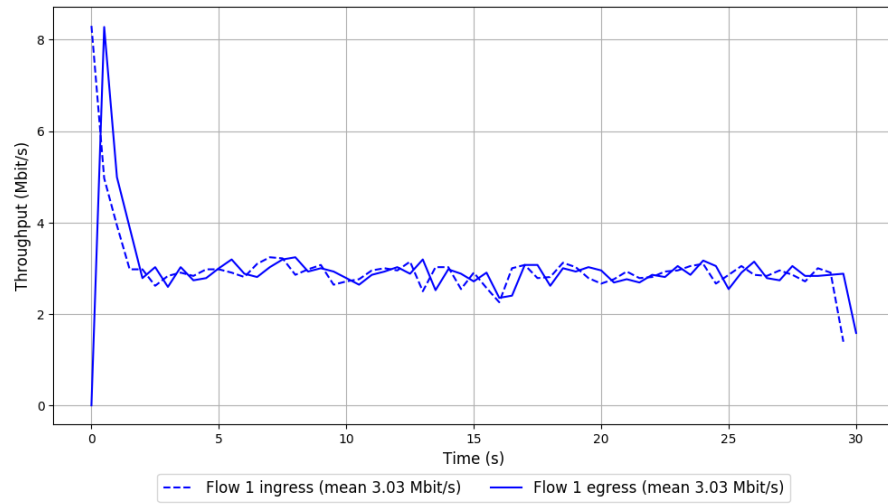


Run 2: Statistics of Indigo

Start at: 2018-08-27 19:59:10
End at: 2018-08-27 19:59:40
Local clock offset: -4.531 ms
Remote clock offset: -1.218 ms

Below is generated by plot.py at 2018-08-27 20:37:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.03 Mbit/s
95th percentile per-packet one-way delay: 26.006 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 3.03 Mbit/s
95th percentile per-packet one-way delay: 26.006 ms
Loss rate: 0.00%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-08-27 20:21:20

End at: 2018-08-27 20:21:50

Local clock offset: -2.293 ms

Remote clock offset: 2.534 ms

Below is generated by plot.py at 2018-08-27 20:37:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.44 Mbit/s

95th percentile per-packet one-way delay: 24.843 ms

Loss rate: 0.00%

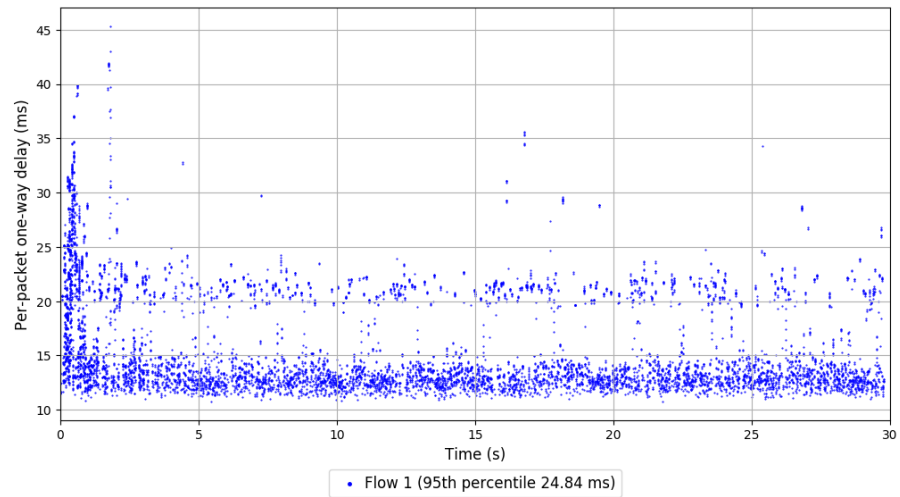
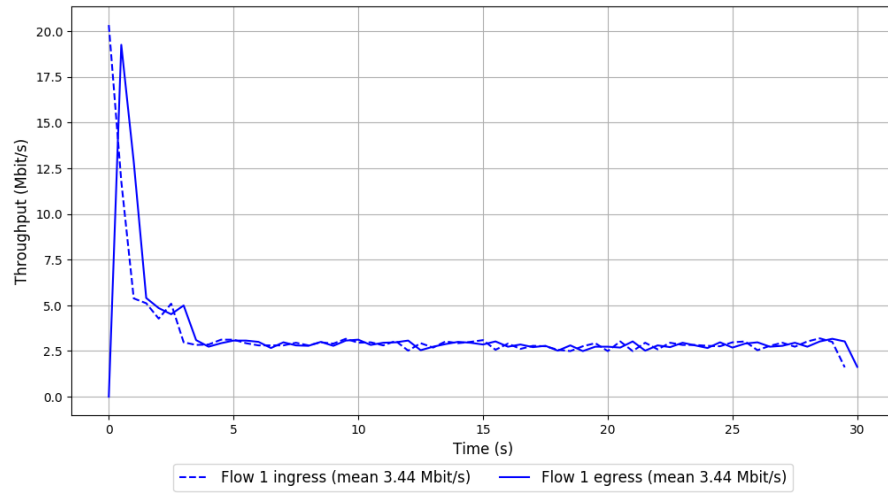
-- Flow 1:

Average throughput: 3.44 Mbit/s

95th percentile per-packet one-way delay: 24.843 ms

Loss rate: 0.00%

Run 3: Report of Indigo — Data Link

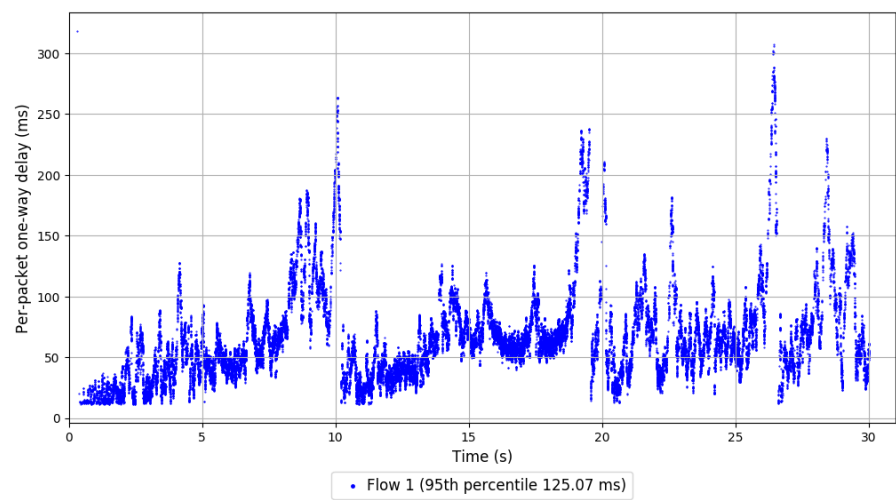
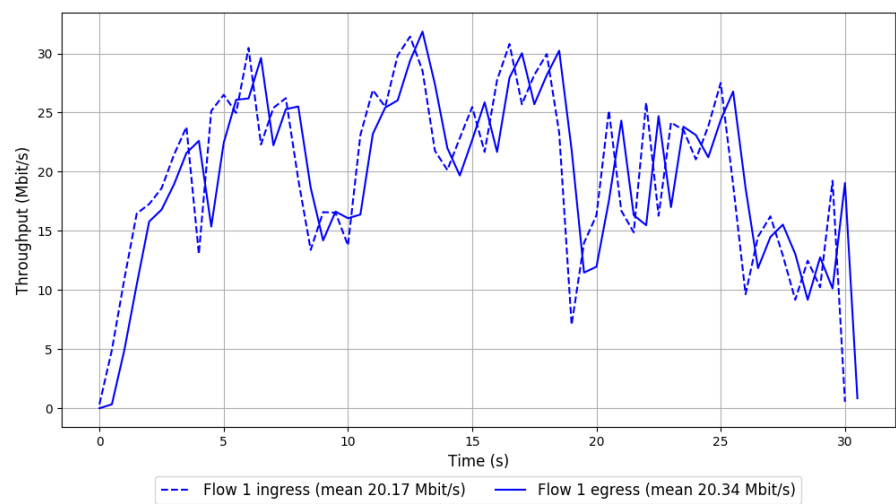


Run 1: Statistics of LEDBAT

Start at: 2018-08-27 19:50:06
End at: 2018-08-27 19:50:36
Local clock offset: -3.833 ms
Remote clock offset: -0.641 ms

Below is generated by plot.py at 2018-08-27 20:37:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 20.34 Mbit/s
95th percentile per-packet one-way delay: 125.071 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 20.34 Mbit/s
95th percentile per-packet one-way delay: 125.071 ms
Loss rate: 0.14%

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-08-27 20:12:14

End at: 2018-08-27 20:12:44

Local clock offset: -2.555 ms

Remote clock offset: 1.201 ms

Below is generated by plot.py at 2018-08-27 20:37:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 23.32 Mbit/s

95th percentile per-packet one-way delay: 141.116 ms

Loss rate: 0.28%

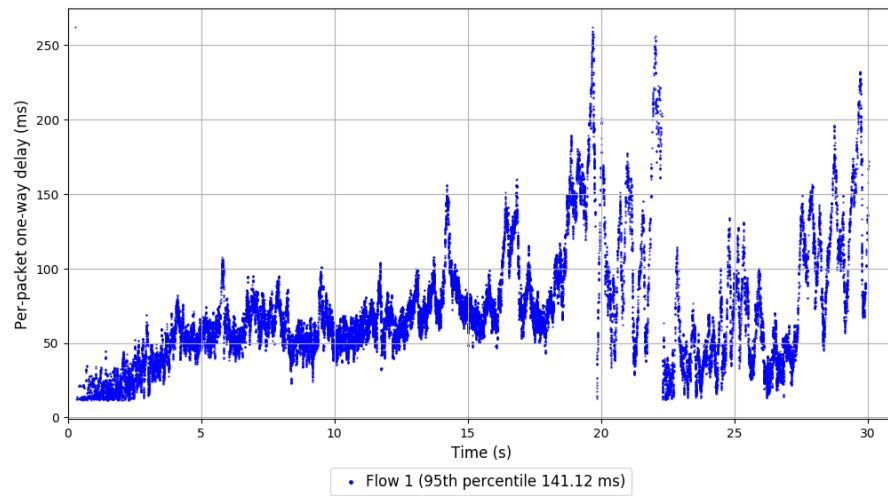
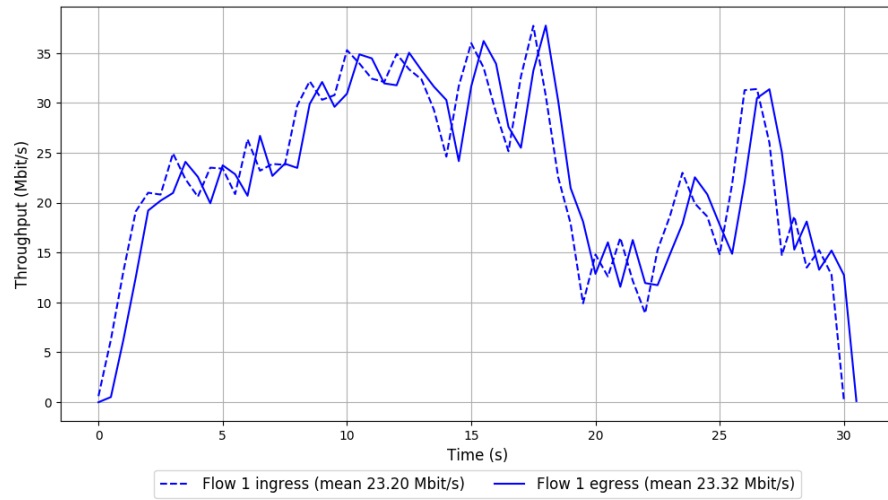
-- Flow 1:

Average throughput: 23.32 Mbit/s

95th percentile per-packet one-way delay: 141.116 ms

Loss rate: 0.28%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-08-27 20:34:20

End at: 2018-08-27 20:34:50

Local clock offset: -2.955 ms

Remote clock offset: 3.464 ms

Below is generated by plot.py at 2018-08-27 20:37:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 24.37 Mbit/s

95th percentile per-packet one-way delay: 124.716 ms

Loss rate: 0.26%

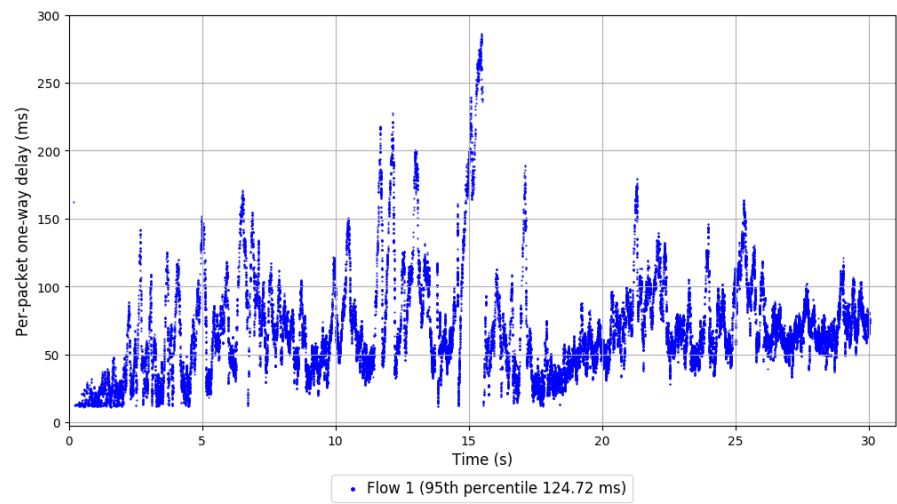
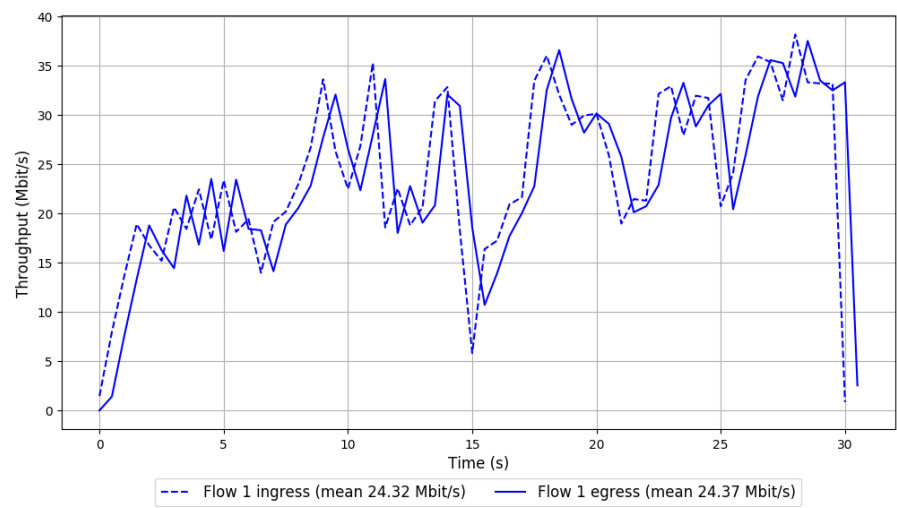
-- Flow 1:

Average throughput: 24.37 Mbit/s

95th percentile per-packet one-way delay: 124.716 ms

Loss rate: 0.26%

Run 3: Report of LEDBAT — Data Link



Run 1: Statistics of PCC-Allegro

Start at: 2018-08-27 19:51:24

End at: 2018-08-27 19:51:55

Local clock offset: -3.886 ms

Remote clock offset: -0.674 ms

Below is generated by plot.py at 2018-08-27 20:37:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 4.44 Mbit/s

95th percentile per-packet one-way delay: 21.066 ms

Loss rate: 0.00%

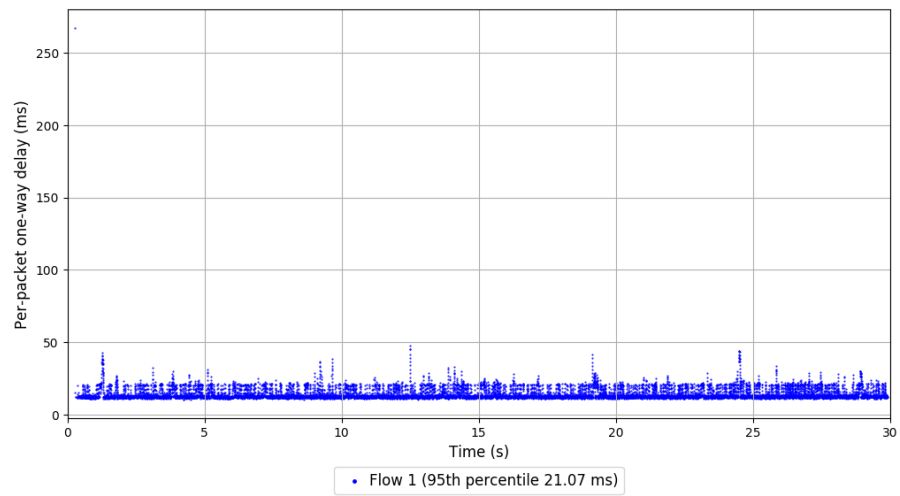
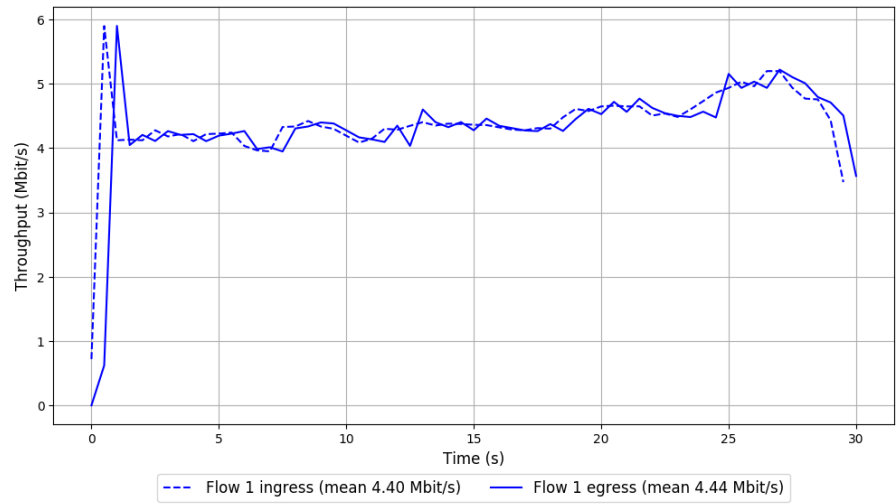
-- Flow 1:

Average throughput: 4.44 Mbit/s

95th percentile per-packet one-way delay: 21.066 ms

Loss rate: 0.00%

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-08-27 20:13:33

End at: 2018-08-27 20:14:03

Local clock offset: -2.375 ms

Remote clock offset: 1.346 ms

Below is generated by plot.py at 2018-08-27 20:37:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 8.18 Mbit/s

95th percentile per-packet one-way delay: 30.180 ms

Loss rate: 0.00%

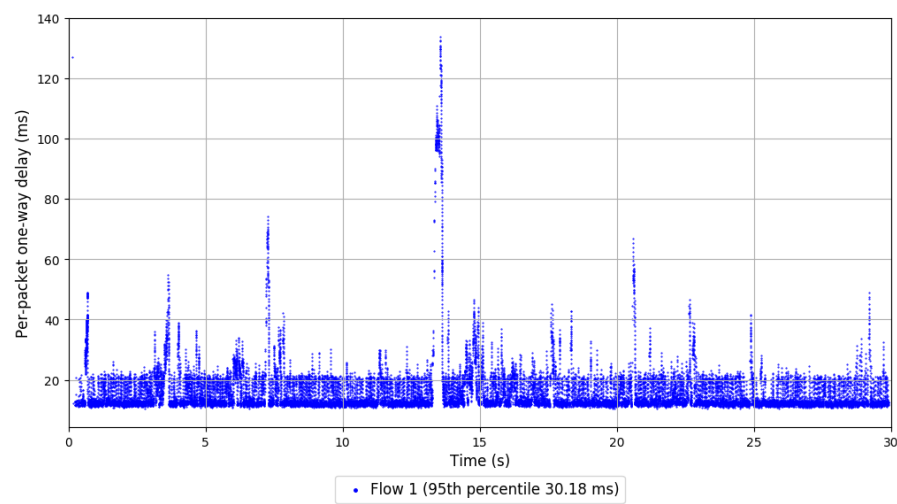
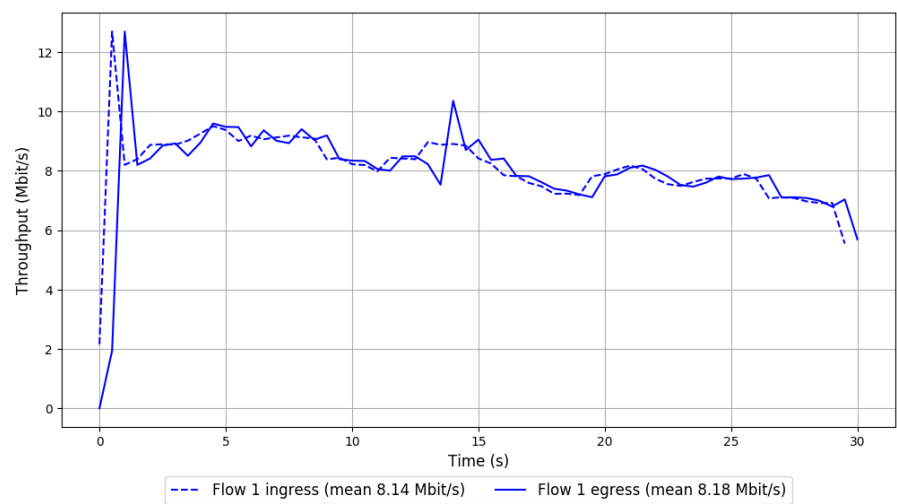
-- Flow 1:

Average throughput: 8.18 Mbit/s

95th percentile per-packet one-way delay: 30.180 ms

Loss rate: 0.00%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-08-27 20:35:39

End at: 2018-08-27 20:36:09

Local clock offset: -3.111 ms

Remote clock offset: 3.436 ms

Below is generated by plot.py at 2018-08-27 20:37:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 23.97 Mbit/s

95th percentile per-packet one-way delay: 1035.861 ms

Loss rate: 19.65%

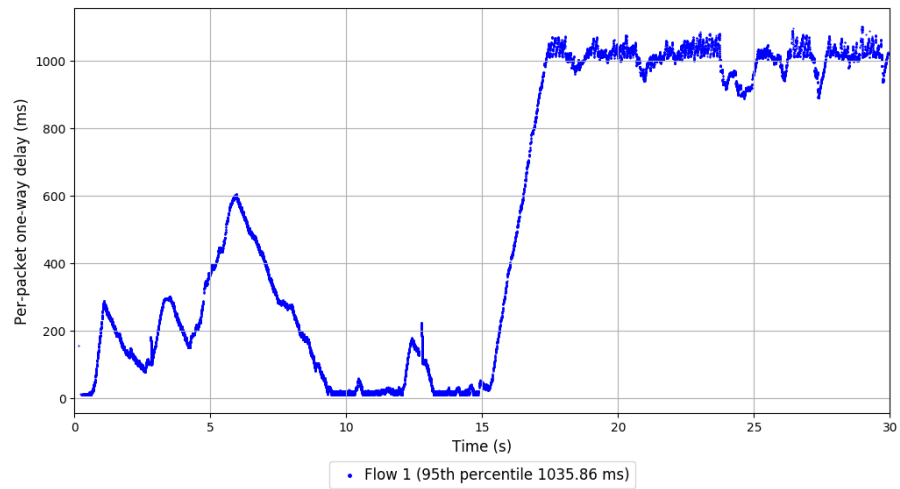
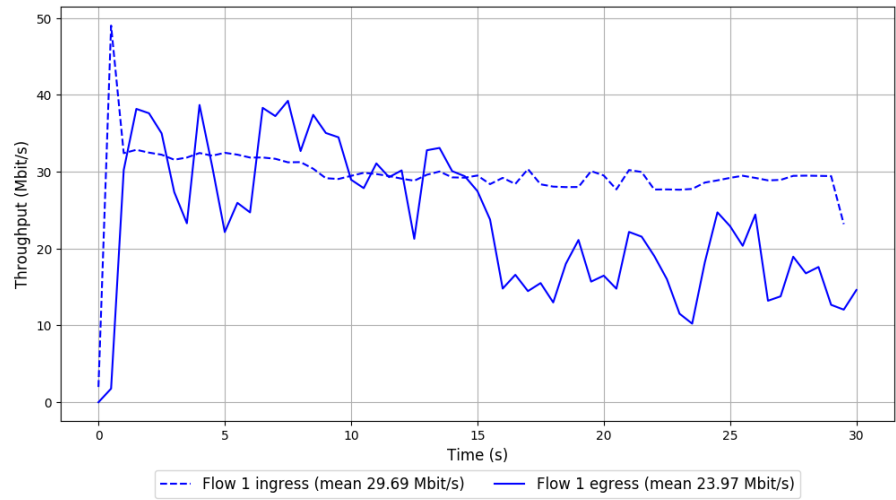
-- Flow 1:

Average throughput: 23.97 Mbit/s

95th percentile per-packet one-way delay: 1035.861 ms

Loss rate: 19.65%

Run 3: Report of PCC-Allegro — Data Link



Run 1: Statistics of PCC-Expr

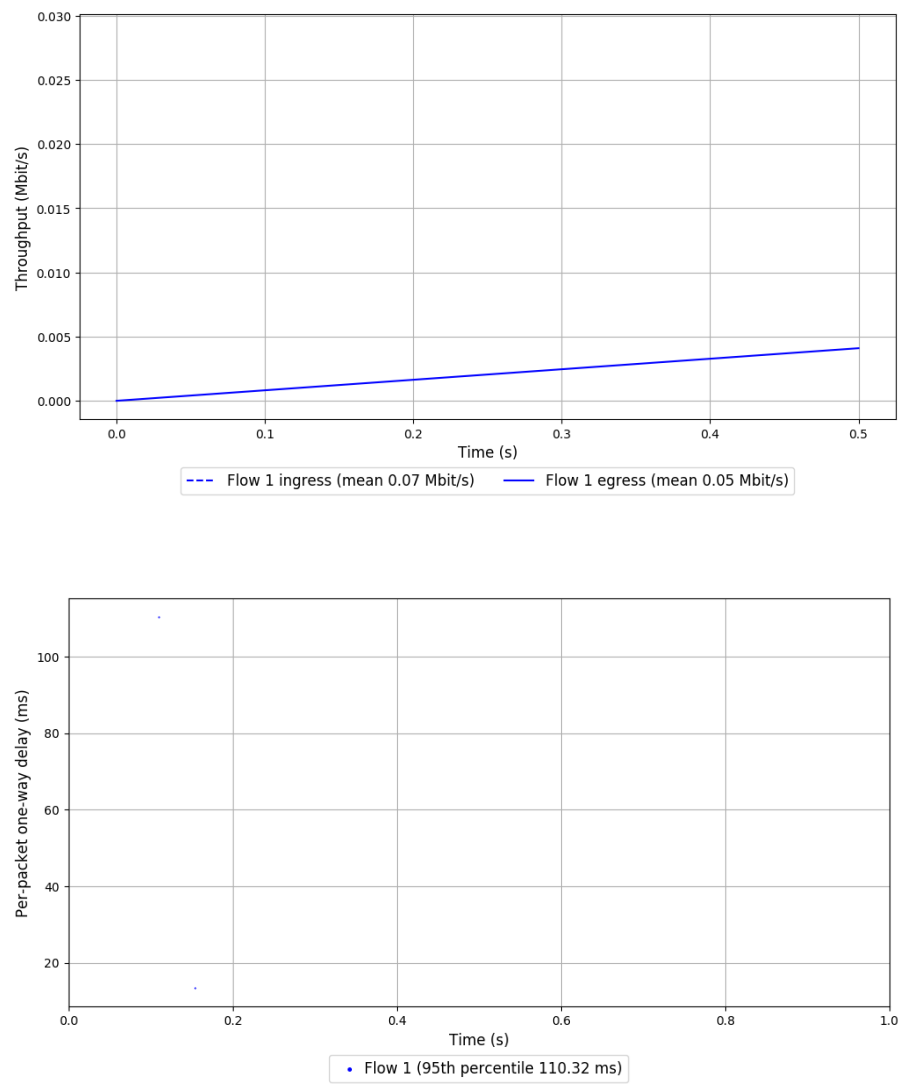
Start at: 2018-08-27 19:38:19

End at: 2018-08-27 19:38:49

Local clock offset: -5.551 ms

Remote clock offset: 0.869 ms

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2018-08-27 20:00:28

End at: 2018-08-27 20:00:58

Local clock offset: -4.66 ms

Remote clock offset: -1.309 ms

Below is generated by plot.py at 2018-08-27 20:37:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.09 Mbit/s

95th percentile per-packet one-way delay: 20.997 ms

Loss rate: 41.98%

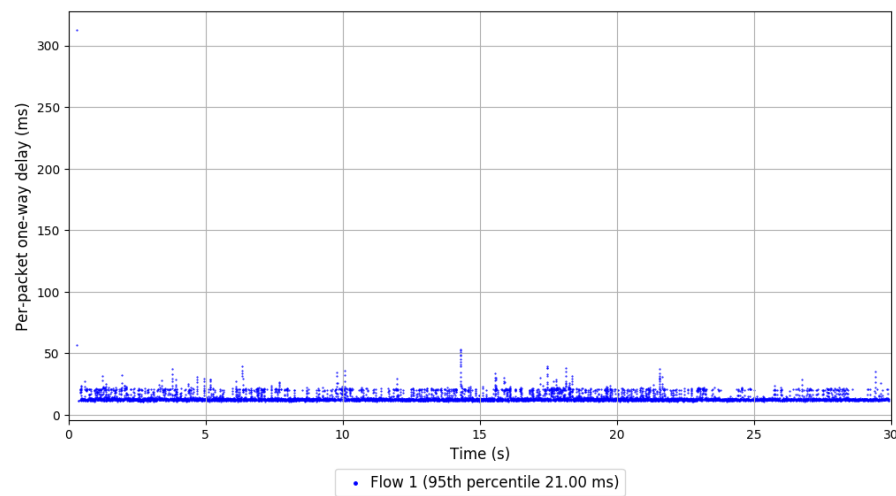
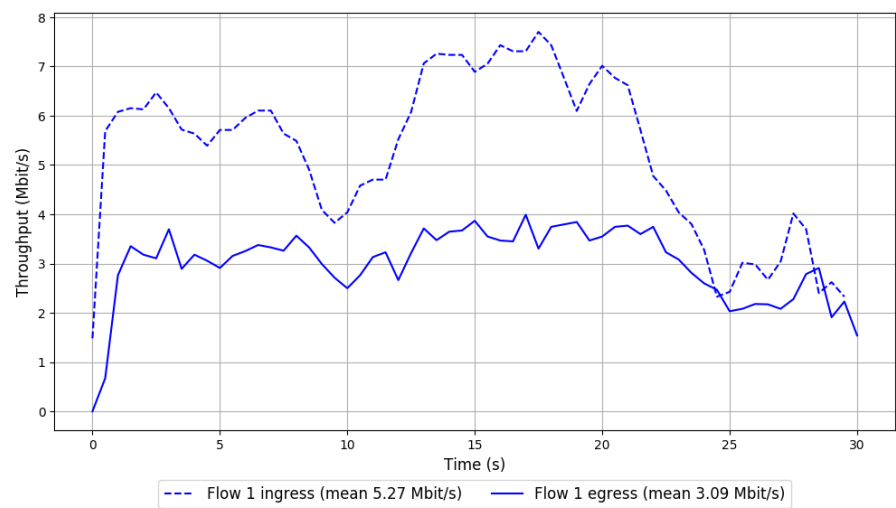
-- Flow 1:

Average throughput: 3.09 Mbit/s

95th percentile per-packet one-way delay: 20.997 ms

Loss rate: 41.98%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-08-27 20:22:38

End at: 2018-08-27 20:23:08

Local clock offset: -2.353 ms

Remote clock offset: 2.682 ms

Below is generated by plot.py at 2018-08-27 20:37:20

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.94 Mbit/s

95th percentile per-packet one-way delay: 21.225 ms

Loss rate: 55.33%

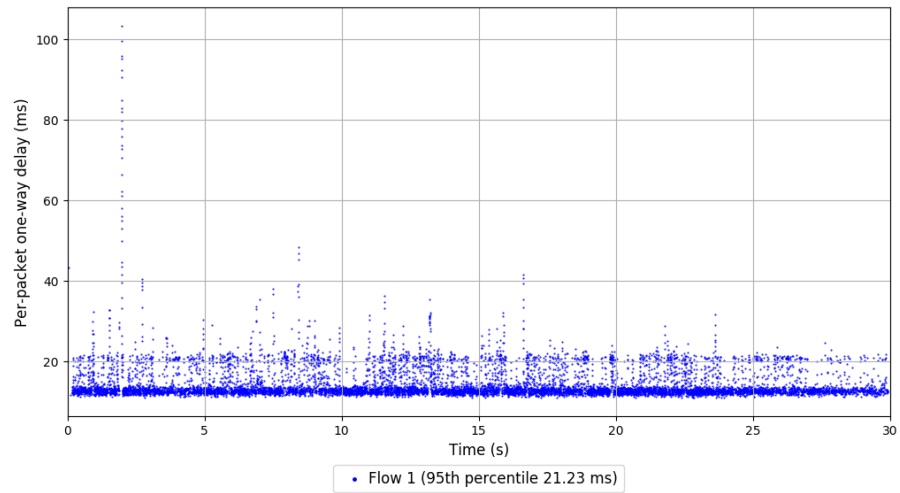
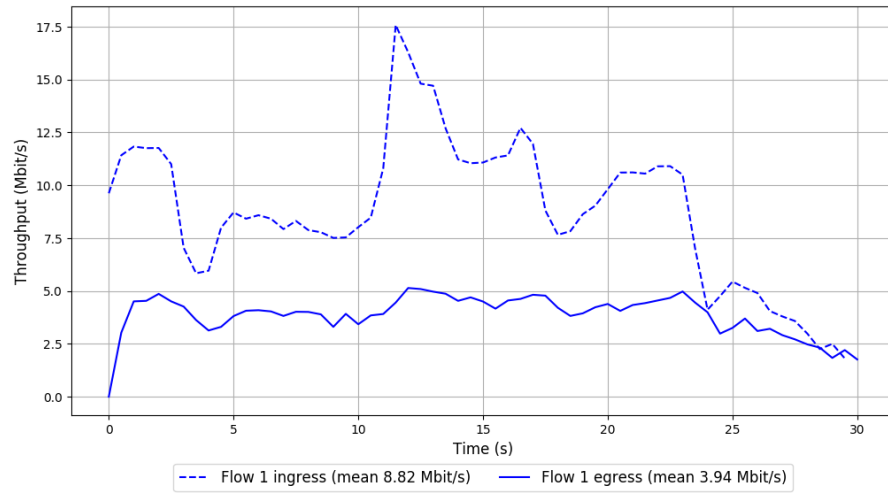
-- Flow 1:

Average throughput: 3.94 Mbit/s

95th percentile per-packet one-way delay: 21.225 ms

Loss rate: 55.33%

Run 3: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-08-27 19:43:31

End at: 2018-08-27 19:44:01

Local clock offset: -4.234 ms

Remote clock offset: 0.0 ms

Below is generated by plot.py at 2018-08-27 20:37:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 19.39 Mbit/s

95th percentile per-packet one-way delay: 218.277 ms

Loss rate: 0.55%

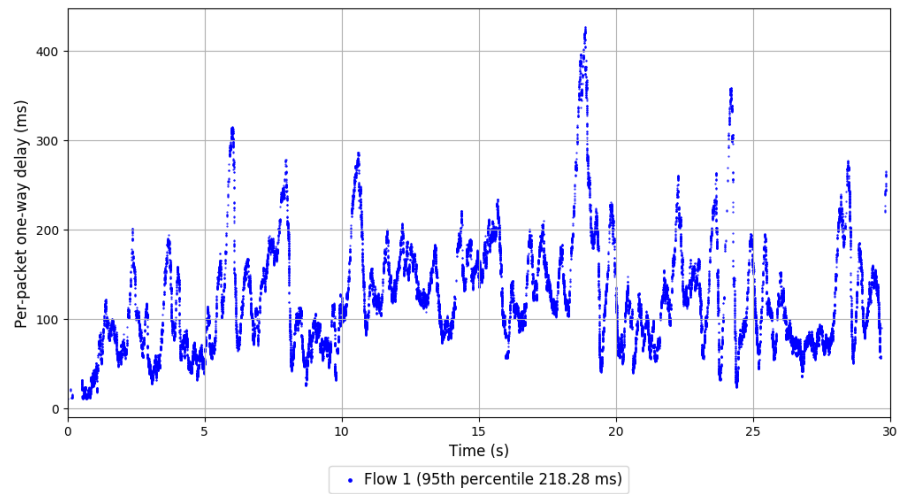
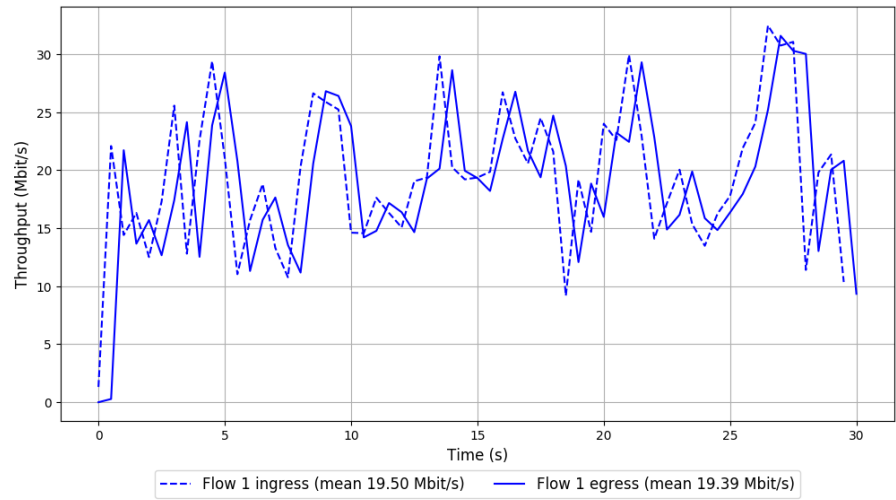
-- Flow 1:

Average throughput: 19.39 Mbit/s

95th percentile per-packet one-way delay: 218.277 ms

Loss rate: 0.55%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-08-27 20:05:38

End at: 2018-08-27 20:06:08

Local clock offset: -3.602 ms

Remote clock offset: -1.29 ms

Below is generated by plot.py at 2018-08-27 20:37:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 20.19 Mbit/s

95th percentile per-packet one-way delay: 211.828 ms

Loss rate: 0.40%

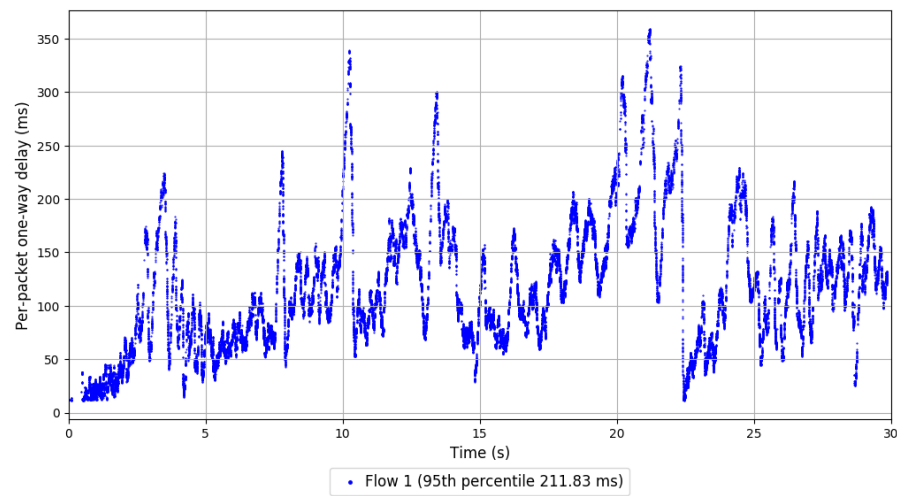
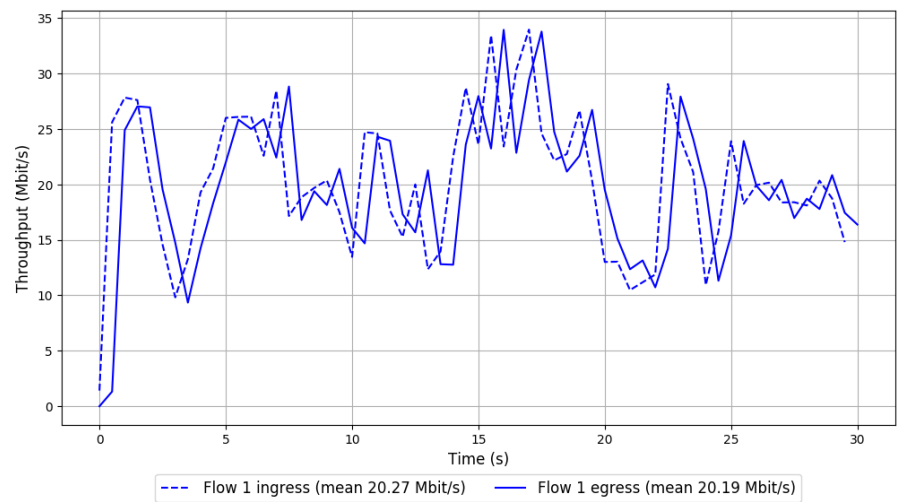
-- Flow 1:

Average throughput: 20.19 Mbit/s

95th percentile per-packet one-way delay: 211.828 ms

Loss rate: 0.40%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-08-27 20:27:49

End at: 2018-08-27 20:28:19

Local clock offset: -2.605 ms

Remote clock offset: 3.126 ms

Below is generated by plot.py at 2018-08-27 20:37:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 23.90 Mbit/s

95th percentile per-packet one-way delay: 255.063 ms

Loss rate: 0.17%

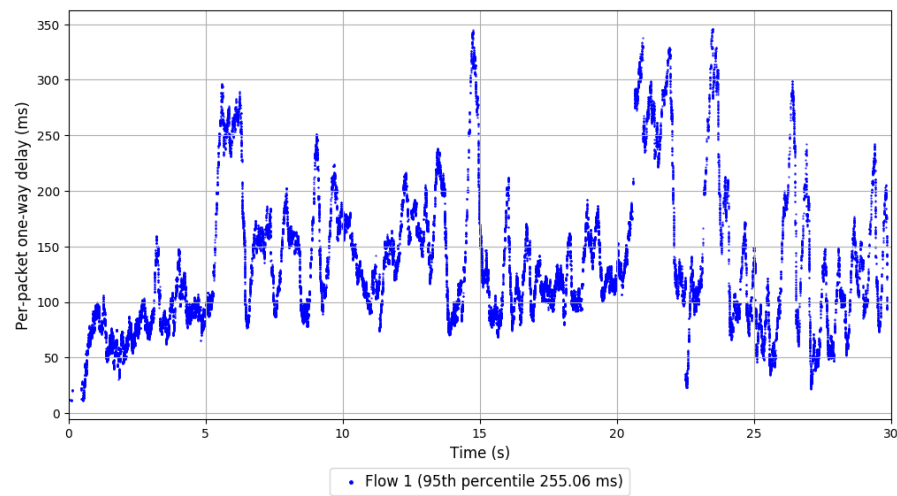
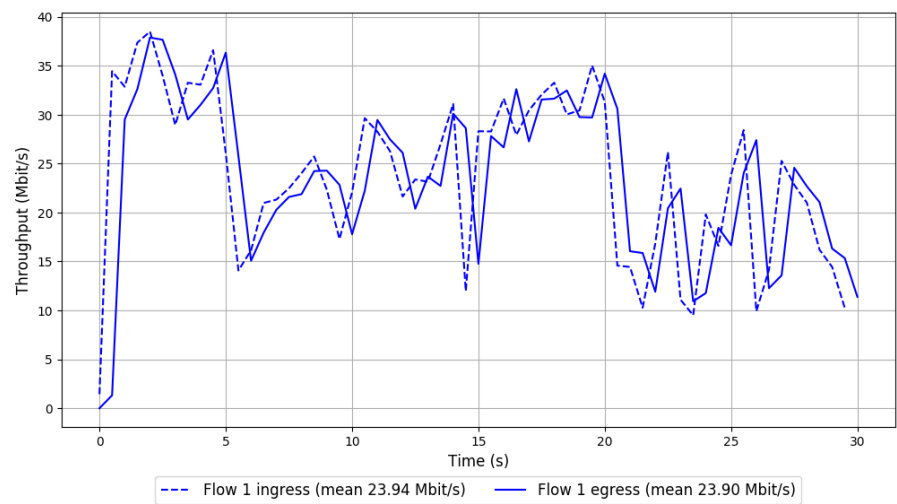
-- Flow 1:

Average throughput: 23.90 Mbit/s

95th percentile per-packet one-way delay: 255.063 ms

Loss rate: 0.17%

Run 3: Report of QUIC Cubic — Data Link

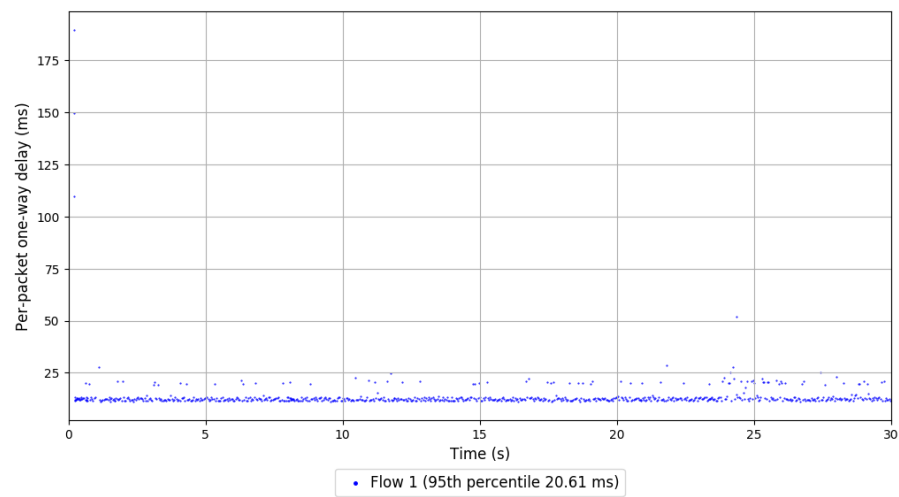
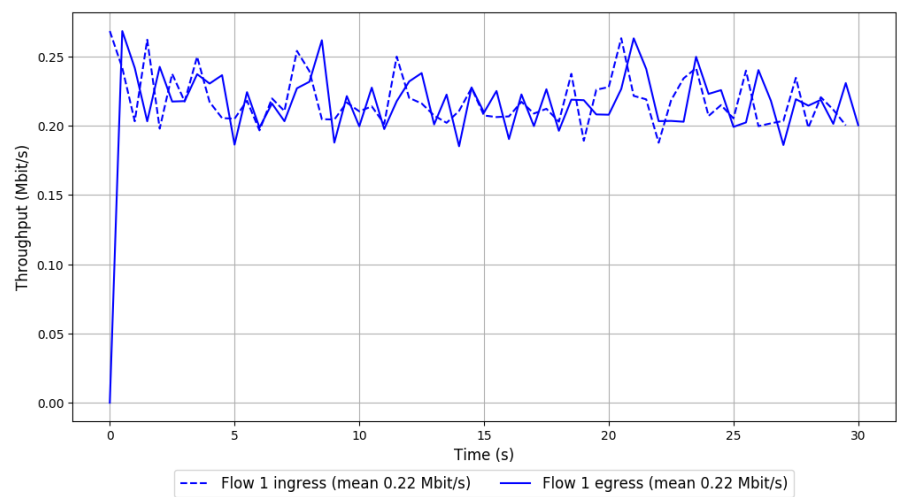


Run 1: Statistics of SCReAM

Start at: 2018-08-27 19:48:49
End at: 2018-08-27 19:49:19
Local clock offset: -3.813 ms
Remote clock offset: -0.475 ms

Below is generated by plot.py at 2018-08-27 20:37:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 20.609 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 20.609 ms
Loss rate: 0.00%

Run 1: Report of SReAM — Data Link



Run 2: Statistics of SCReAM

Start at: 2018-08-27 20:10:56

End at: 2018-08-27 20:11:26

Local clock offset: -2.615 ms

Remote clock offset: 0.759 ms

Below is generated by plot.py at 2018-08-27 20:37:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 20.231 ms

Loss rate: 0.00%

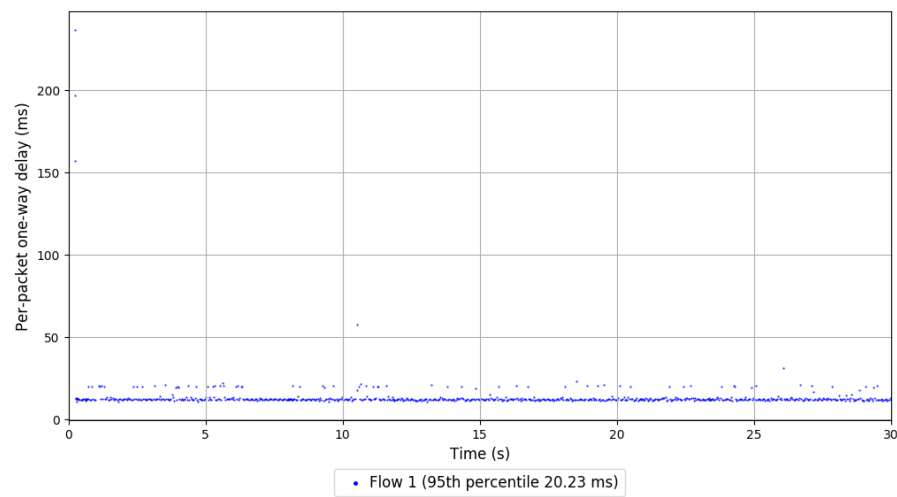
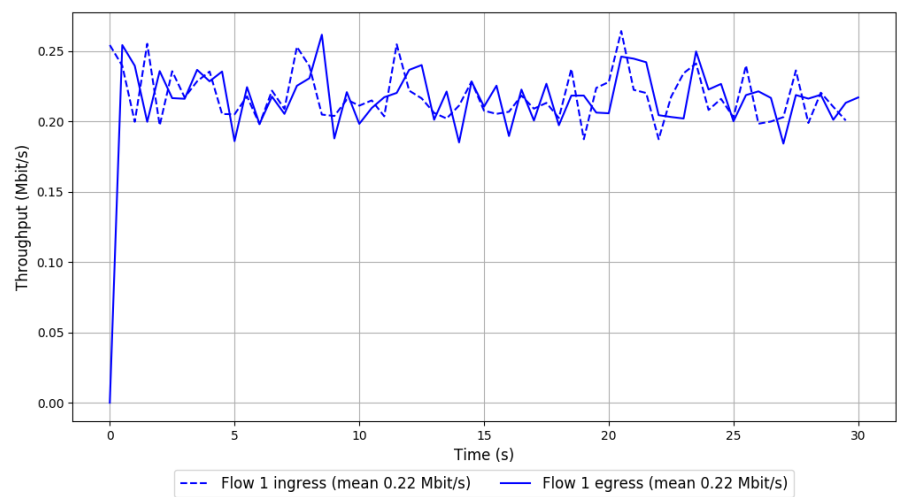
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 20.231 ms

Loss rate: 0.00%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2018-08-27 20:33:03

End at: 2018-08-27 20:33:33

Local clock offset: -3.022 ms

Remote clock offset: 3.301 ms

Below is generated by plot.py at 2018-08-27 20:37:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 20.219 ms

Loss rate: 0.00%

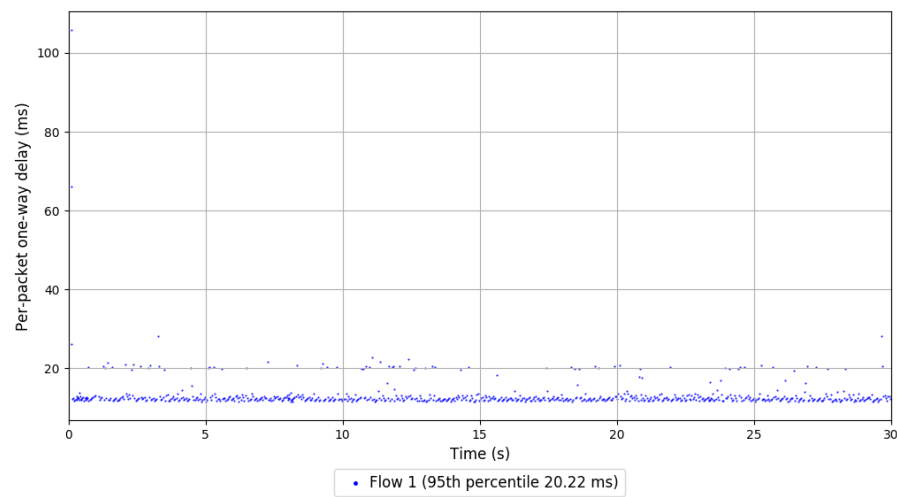
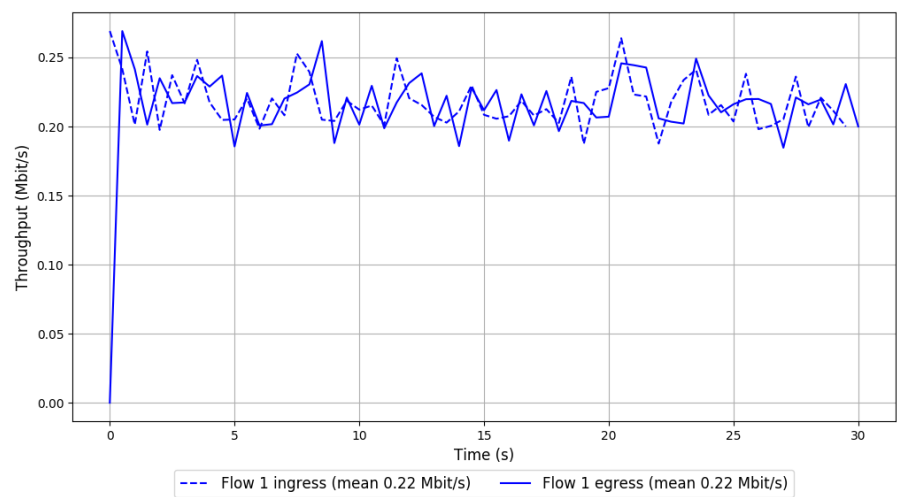
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 20.219 ms

Loss rate: 0.00%

Run 3: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-08-27 19:31:49

End at: 2018-08-27 19:32:19

Local clock offset: -9.316 ms

Remote clock offset: 2.48 ms

Below is generated by plot.py at 2018-08-27 20:37:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 13.02 Mbit/s

95th percentile per-packet one-way delay: 62.161 ms

Loss rate: 0.24%

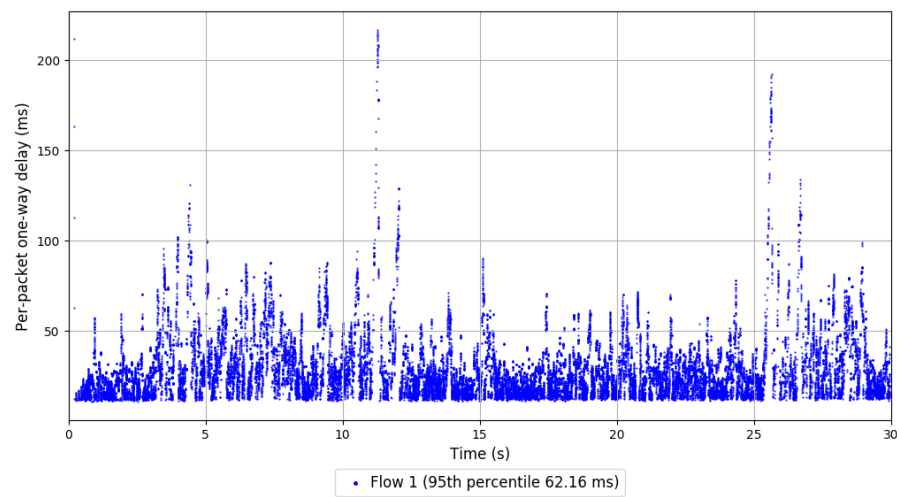
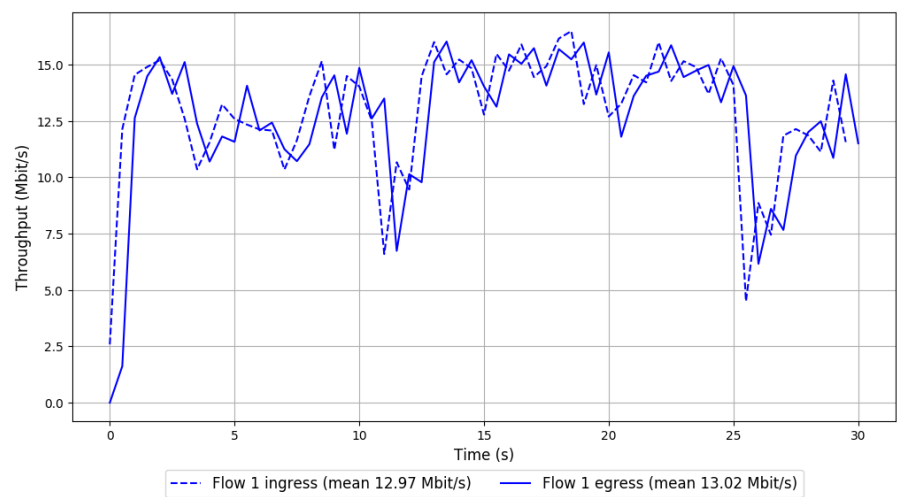
-- Flow 1:

Average throughput: 13.02 Mbit/s

95th percentile per-packet one-way delay: 62.161 ms

Loss rate: 0.24%

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

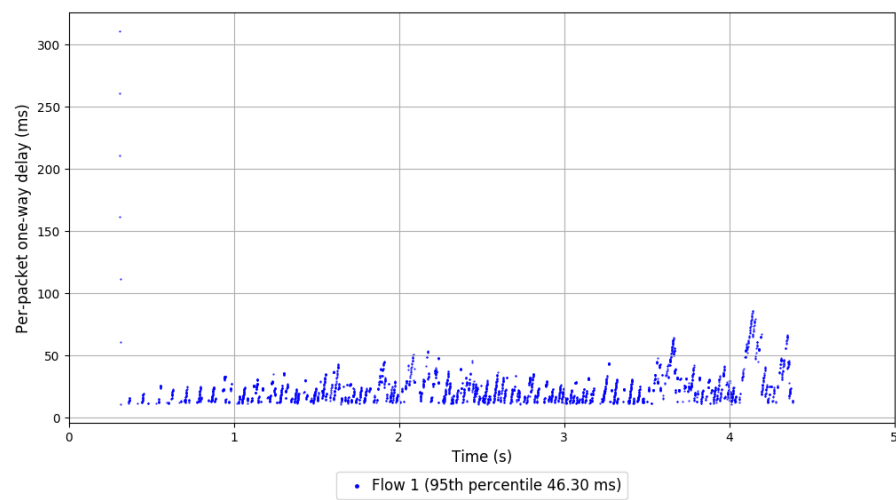
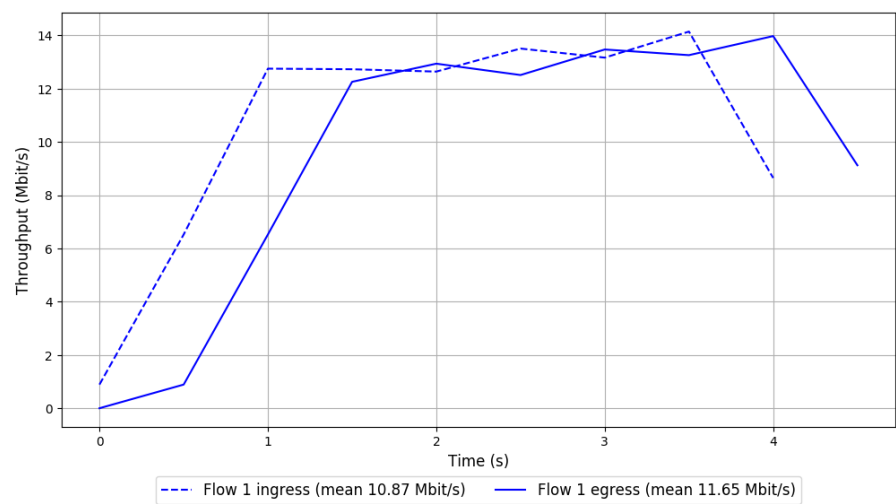
Start at: 2018-08-27 19:54:00

End at: 2018-08-27 19:54:30

Local clock offset: -4.1 ms

Remote clock offset: -0.932 ms

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

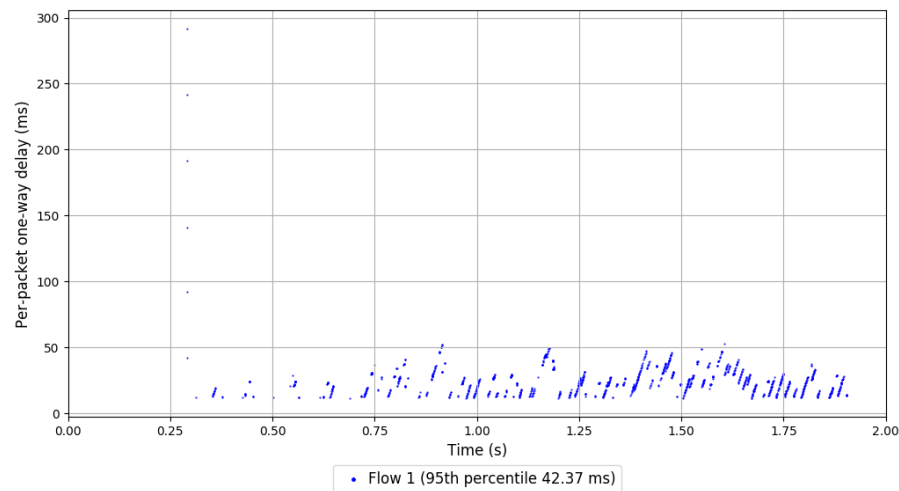
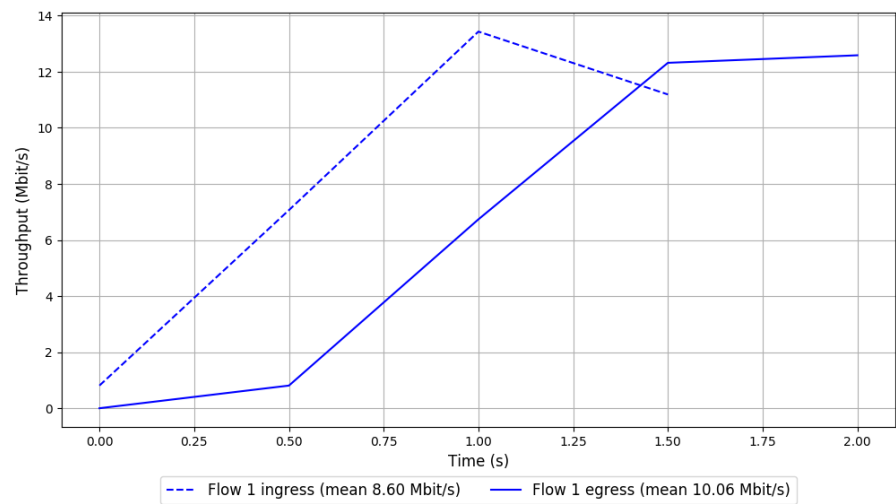
Start at: 2018-08-27 20:16:09

End at: 2018-08-27 20:16:39

Local clock offset: -2.267 ms

Remote clock offset: 1.878 ms

Run 3: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2018-08-27 19:40:55

End at: 2018-08-27 19:41:25

Local clock offset: -4.694 ms

Remote clock offset: 0.284 ms

Below is generated by plot.py at 2018-08-27 20:37:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.17 Mbit/s

95th percentile per-packet one-way delay: 21.421 ms

Loss rate: 22.43%

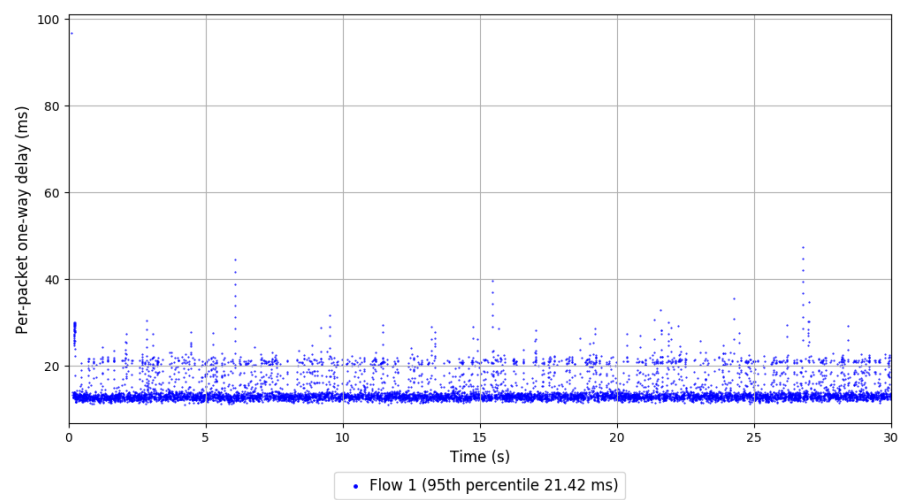
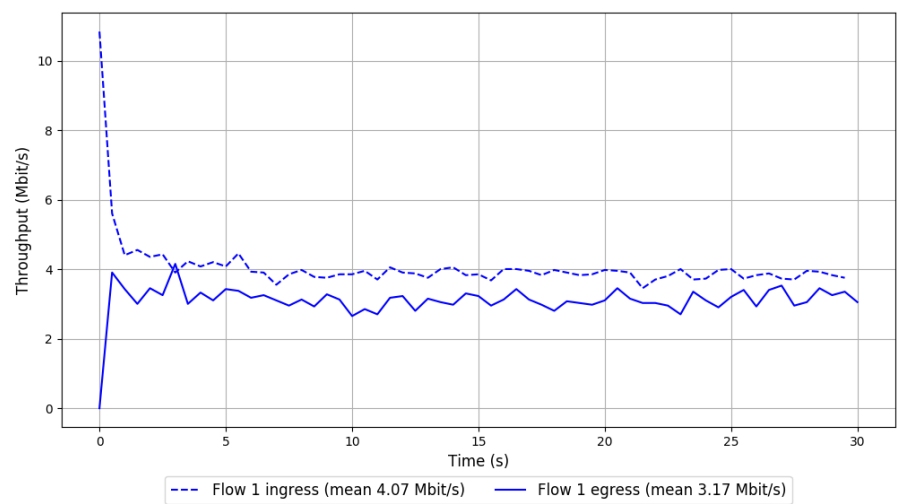
-- Flow 1:

Average throughput: 3.17 Mbit/s

95th percentile per-packet one-way delay: 21.421 ms

Loss rate: 22.43%

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-08-27 20:03:03

End at: 2018-08-27 20:03:33

Local clock offset: -4.601 ms

Remote clock offset: -1.375 ms

Below is generated by plot.py at 2018-08-27 20:37:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.88 Mbit/s

95th percentile per-packet one-way delay: 21.551 ms

Loss rate: 34.60%

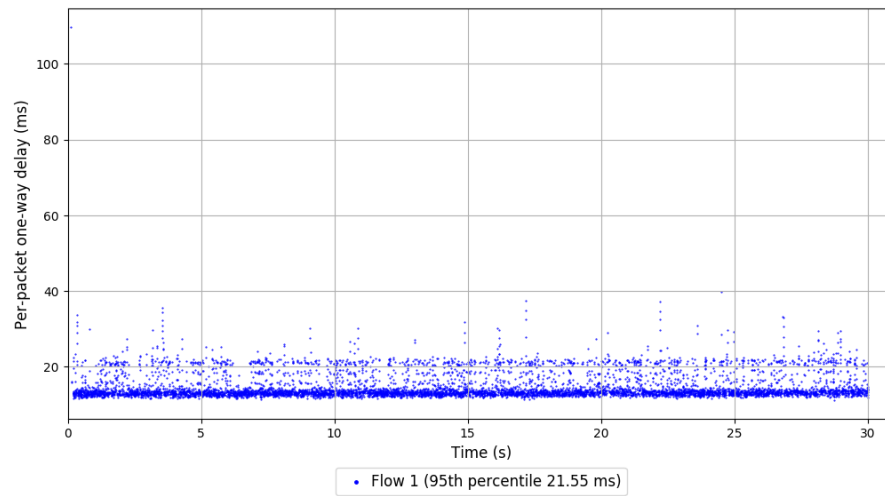
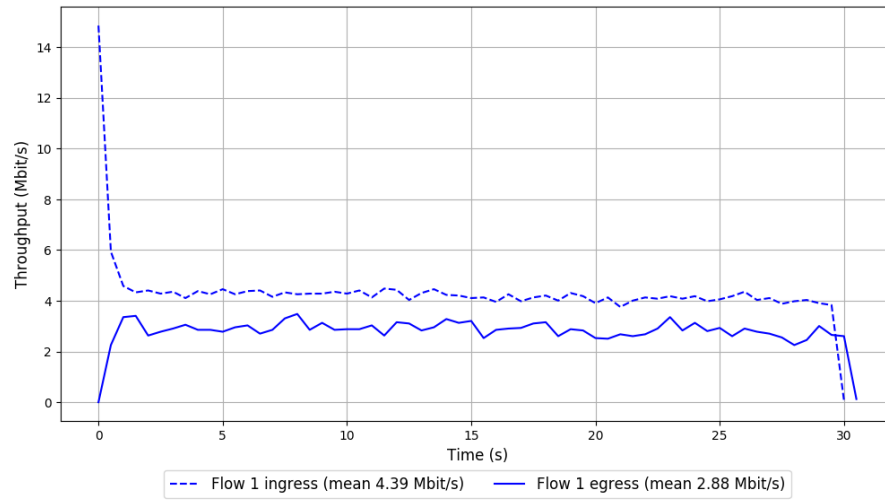
-- Flow 1:

Average throughput: 2.88 Mbit/s

95th percentile per-packet one-way delay: 21.551 ms

Loss rate: 34.60%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-08-27 20:25:13

End at: 2018-08-27 20:25:43

Local clock offset: -2.448 ms

Remote clock offset: 2.984 ms

Below is generated by plot.py at 2018-08-27 20:37:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.75 Mbit/s

95th percentile per-packet one-way delay: 21.001 ms

Loss rate: 35.70%

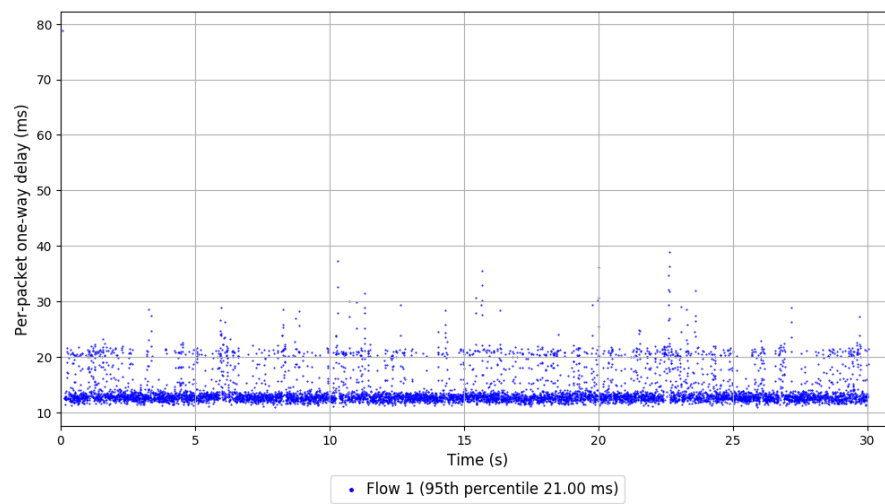
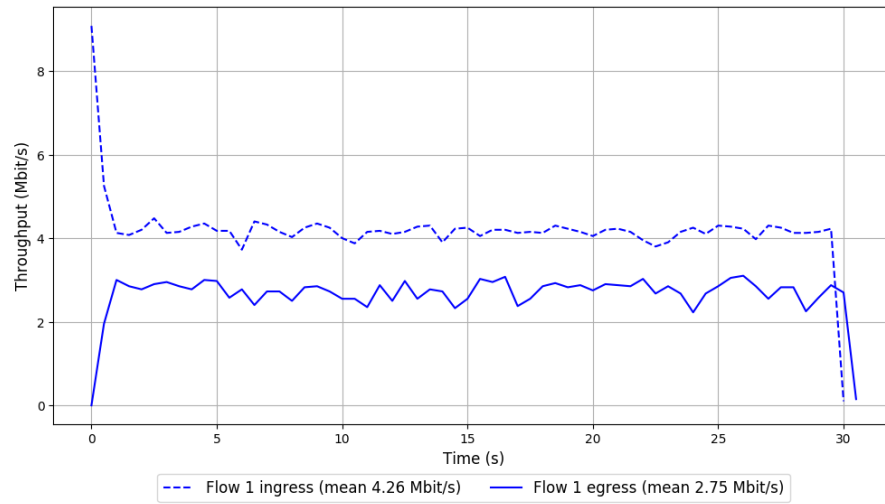
-- Flow 1:

Average throughput: 2.75 Mbit/s

95th percentile per-packet one-way delay: 21.001 ms

Loss rate: 35.70%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-08-27 19:47:31

End at: 2018-08-27 19:48:01

Local clock offset: -3.841 ms

Remote clock offset: -0.43 ms

Below is generated by plot.py at 2018-08-27 20:37:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.18 Mbit/s

95th percentile per-packet one-way delay: 21.217 ms

Loss rate: 0.00%

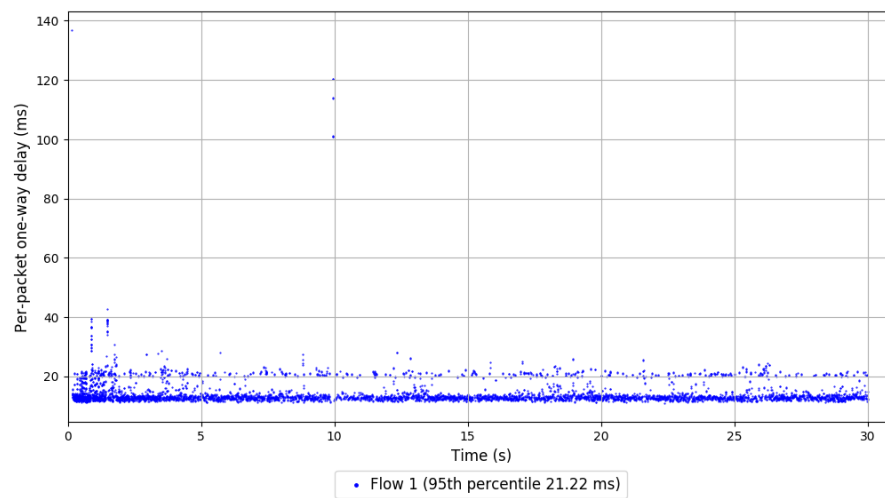
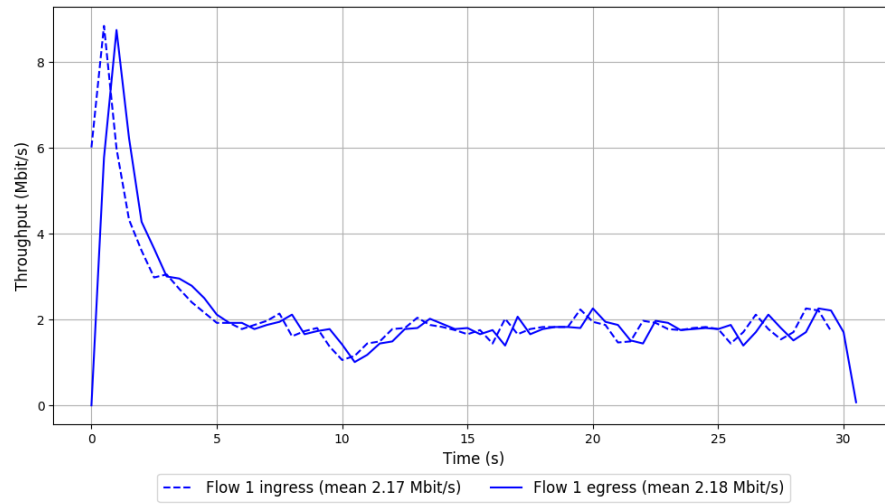
-- Flow 1:

Average throughput: 2.18 Mbit/s

95th percentile per-packet one-way delay: 21.217 ms

Loss rate: 0.00%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-08-27 20:09:39

End at: 2018-08-27 20:10:09

Local clock offset: -2.762 ms

Remote clock offset: 0.395 ms

Below is generated by plot.py at 2018-08-27 20:37:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 8.33 Mbit/s

95th percentile per-packet one-way delay: 49.165 ms

Loss rate: 0.00%

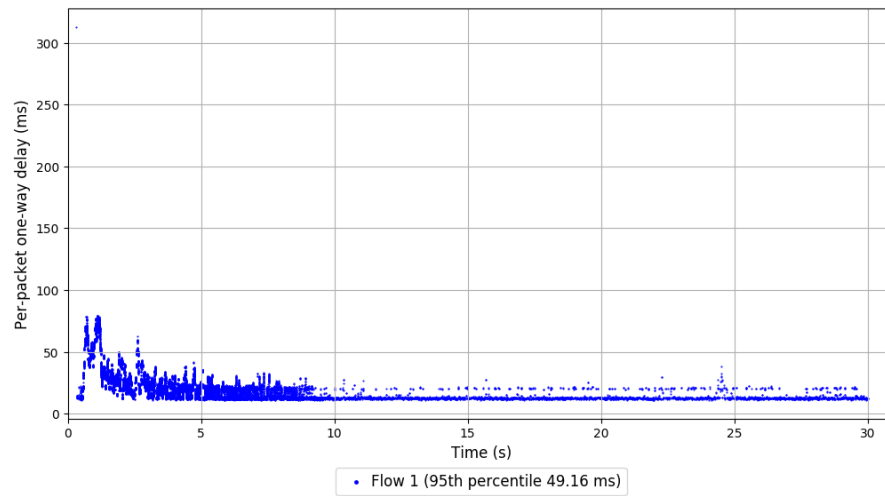
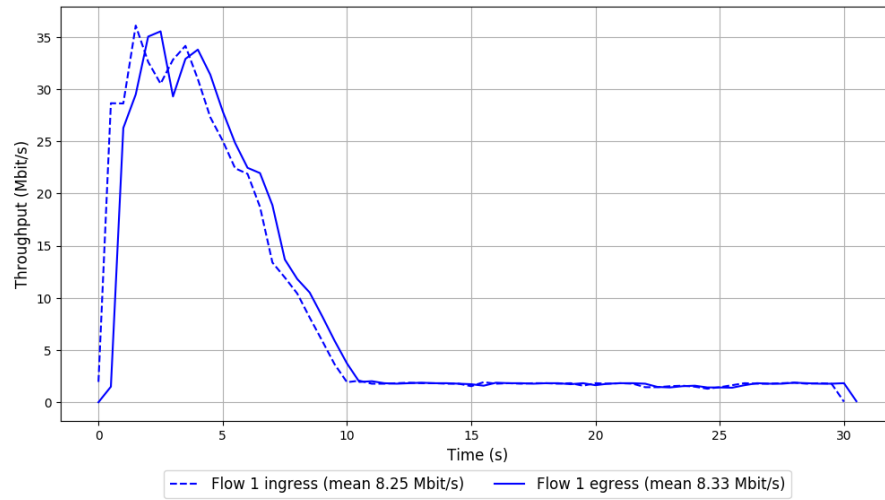
-- Flow 1:

Average throughput: 8.33 Mbit/s

95th percentile per-packet one-way delay: 49.165 ms

Loss rate: 0.00%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2018-08-27 20:31:45

End at: 2018-08-27 20:32:15

Local clock offset: -2.872 ms

Remote clock offset: 3.291 ms

Below is generated by plot.py at 2018-08-27 20:37:36

Datalink statistics

-- Total of 1 flow:

Average throughput: 8.41 Mbit/s

95th percentile per-packet one-way delay: 161.218 ms

Loss rate: 0.00%

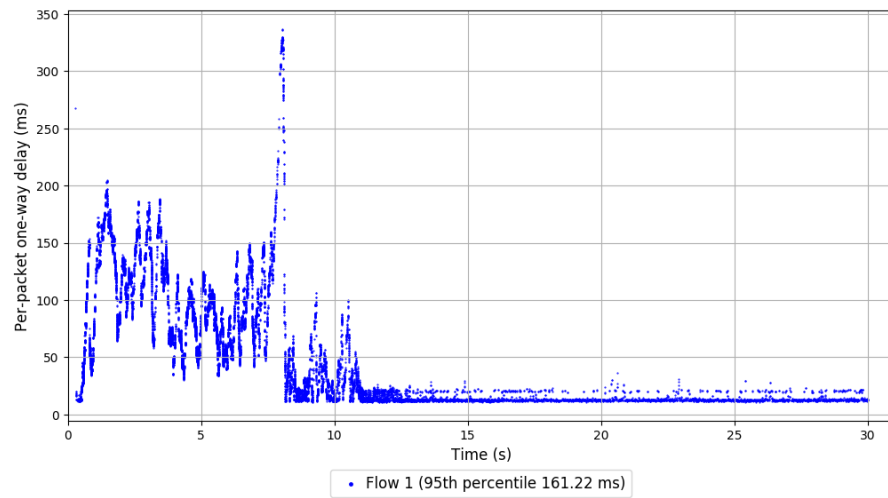
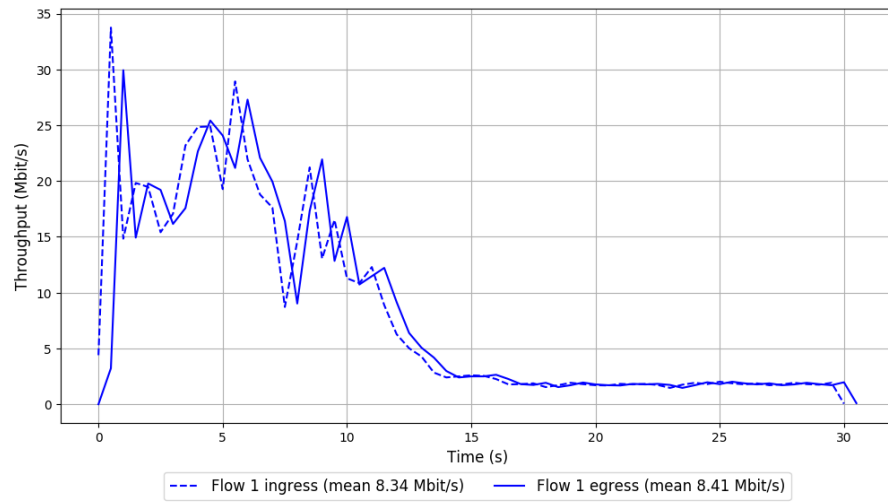
-- Flow 1:

Average throughput: 8.41 Mbit/s

95th percentile per-packet one-way delay: 161.218 ms

Loss rate: 0.00%

Run 3: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-08-27 19:46:13

End at: 2018-08-27 19:46:43

Local clock offset: -3.911 ms

Remote clock offset: -0.27 ms

Below is generated by plot.py at 2018-08-27 20:37:38

Datalink statistics

-- Total of 1 flow:

Average throughput: 22.80 Mbit/s

95th percentile per-packet one-way delay: 238.039 ms

Loss rate: 0.95%

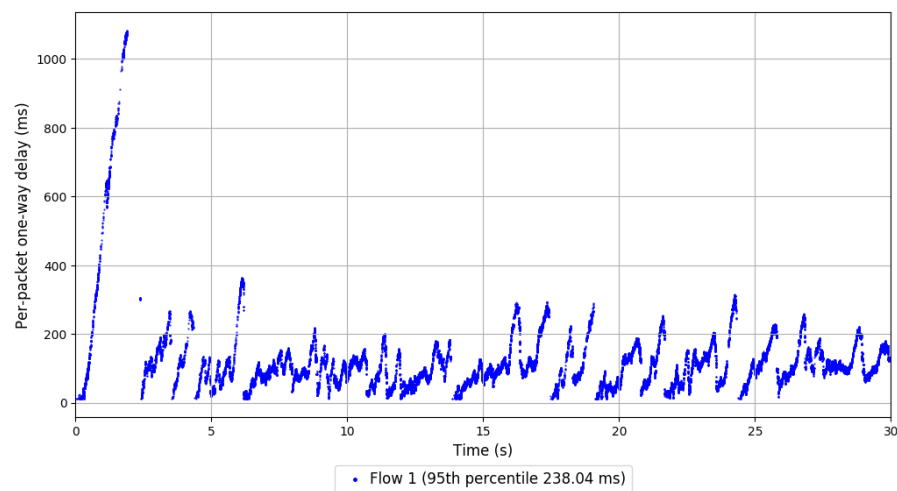
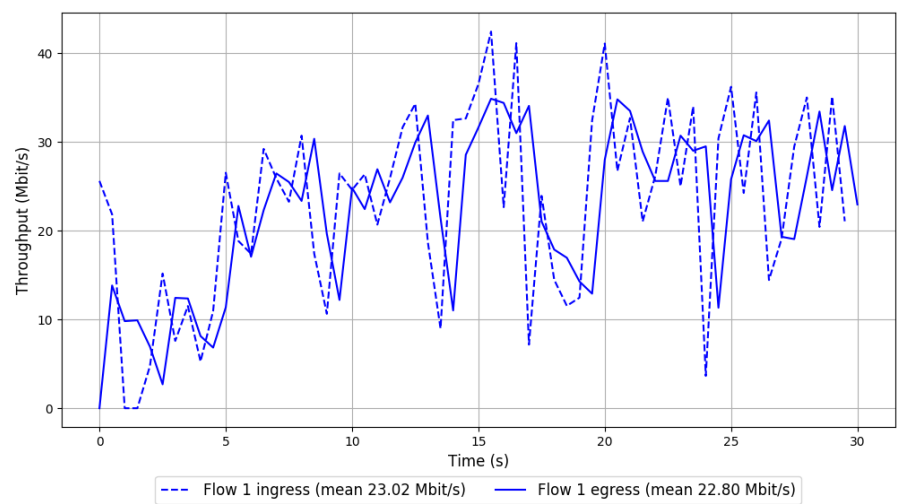
-- Flow 1:

Average throughput: 22.80 Mbit/s

95th percentile per-packet one-way delay: 238.039 ms

Loss rate: 0.95%

Run 1: Report of Verus — Data Link

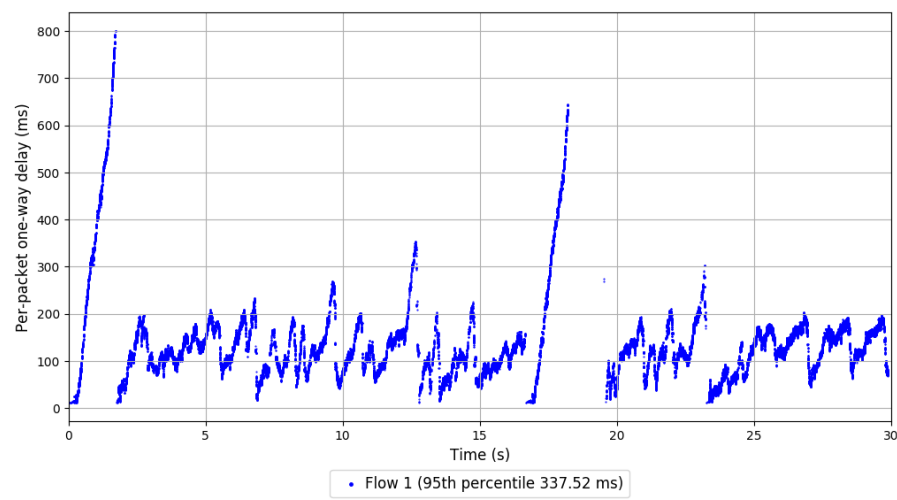
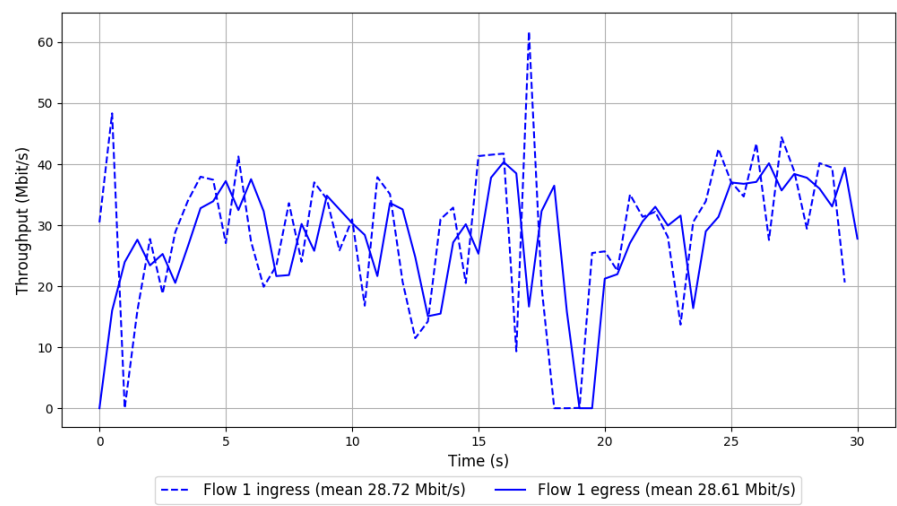


Run 2: Statistics of Verus

Start at: 2018-08-27 20:08:15
End at: 2018-08-27 20:08:45
Local clock offset: -3.078 ms
Remote clock offset: -0.008 ms

Below is generated by plot.py at 2018-08-27 20:37:41
Datalink statistics
-- Total of 1 flow:
Average throughput: 28.61 Mbit/s
95th percentile per-packet one-way delay: 337.521 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 28.61 Mbit/s
95th percentile per-packet one-way delay: 337.521 ms
Loss rate: 0.38%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2018-08-27 20:30:26

End at: 2018-08-27 20:30:56

Local clock offset: -2.777 ms

Remote clock offset: 3.21 ms

Below is generated by plot.py at 2018-08-27 20:37:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 26.43 Mbit/s

95th percentile per-packet one-way delay: 376.104 ms

Loss rate: 1.10%

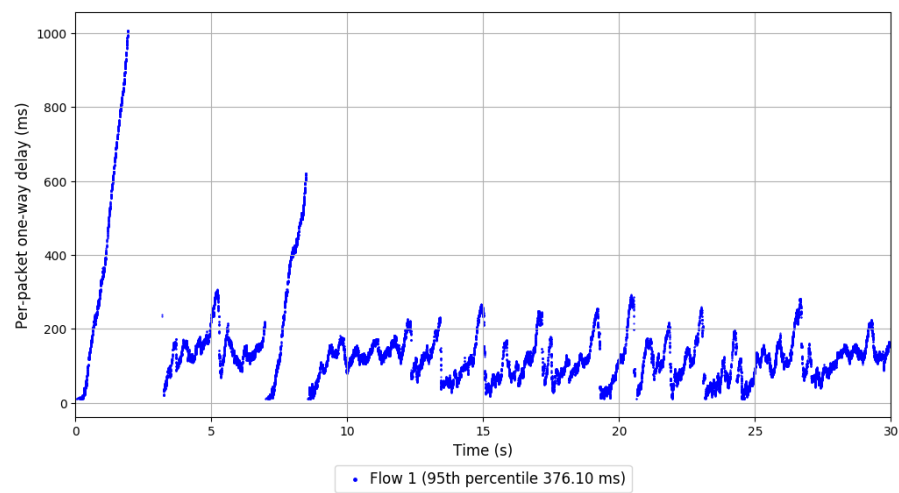
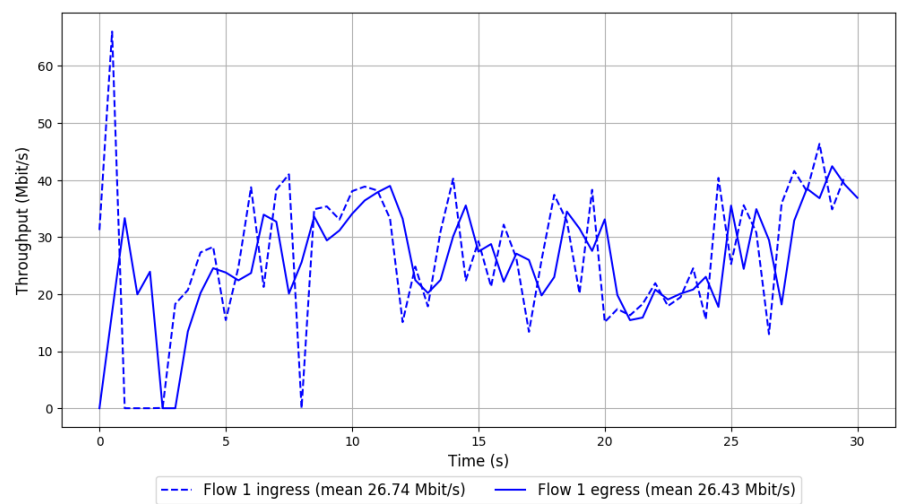
-- Flow 1:

Average throughput: 26.43 Mbit/s

95th percentile per-packet one-way delay: 376.104 ms

Loss rate: 1.10%

Run 3: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-08-27 19:35:43

End at: 2018-08-27 19:36:13

Local clock offset: -6.798 ms

Remote clock offset: 1.308 ms

Below is generated by plot.py at 2018-08-27 20:37:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.86 Mbit/s

95th percentile per-packet one-way delay: 20.968 ms

Loss rate: 0.00%

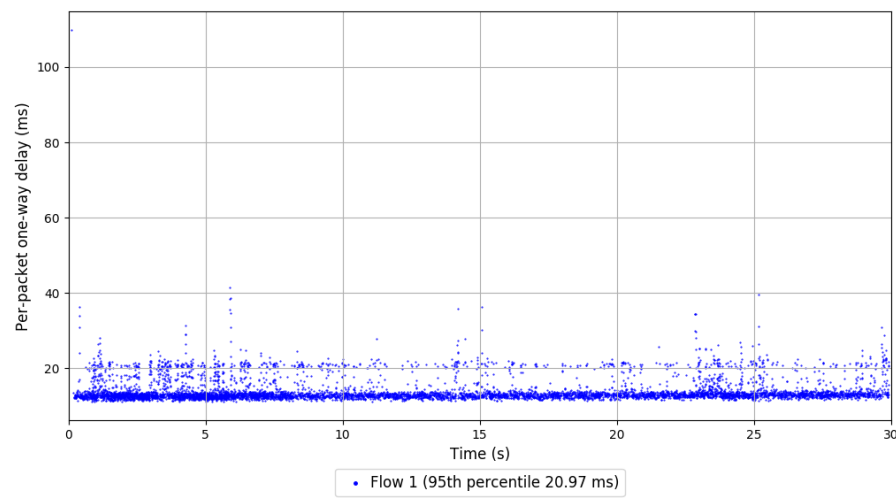
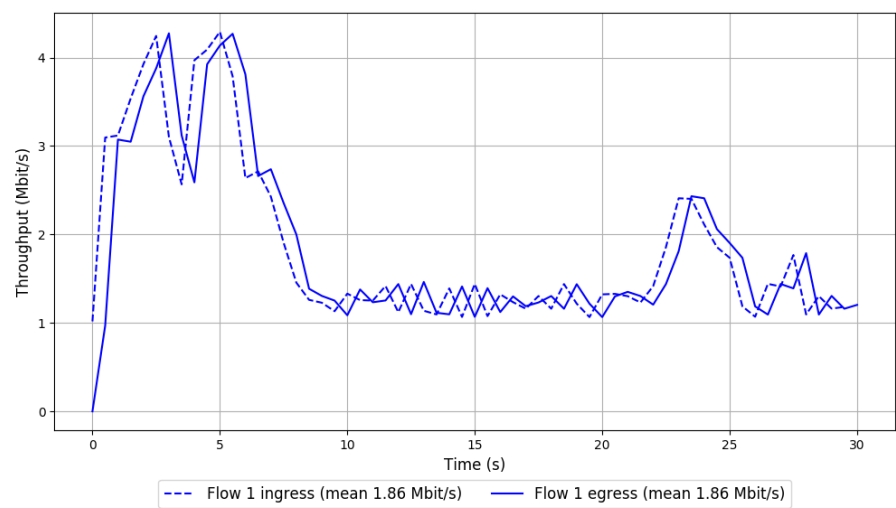
-- Flow 1:

Average throughput: 1.86 Mbit/s

95th percentile per-packet one-way delay: 20.968 ms

Loss rate: 0.00%

Run 1: Report of PCC-Vivace — Data Link

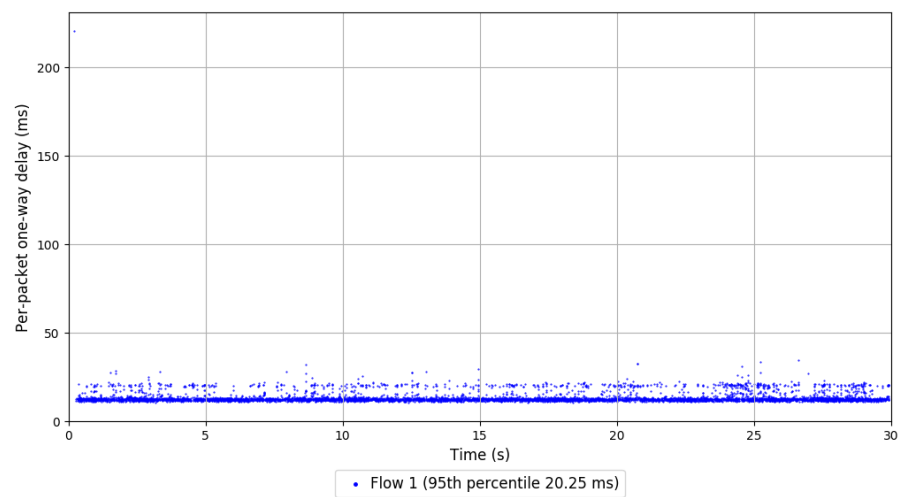
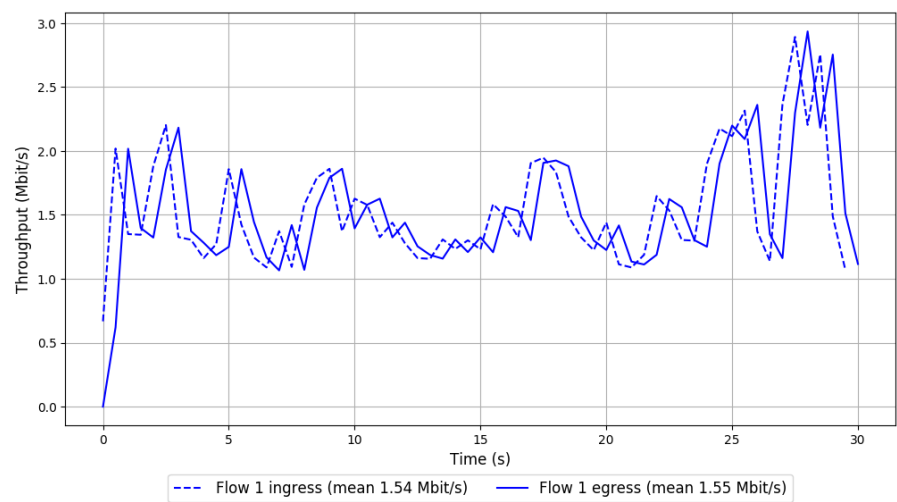


Run 2: Statistics of PCC-Vivace

Start at: 2018-08-27 19:57:53
End at: 2018-08-27 19:58:23
Local clock offset: -4.384 ms
Remote clock offset: -1.136 ms

Below is generated by plot.py at 2018-08-27 20:37:41
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.55 Mbit/s
95th percentile per-packet one-way delay: 20.247 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.55 Mbit/s
95th percentile per-packet one-way delay: 20.247 ms
Loss rate: 0.00%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-08-27 20:20:02

End at: 2018-08-27 20:20:32

Local clock offset: -2.271 ms

Remote clock offset: 2.4 ms

Below is generated by plot.py at 2018-08-27 20:37:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.16 Mbit/s

95th percentile per-packet one-way delay: 20.328 ms

Loss rate: 0.00%

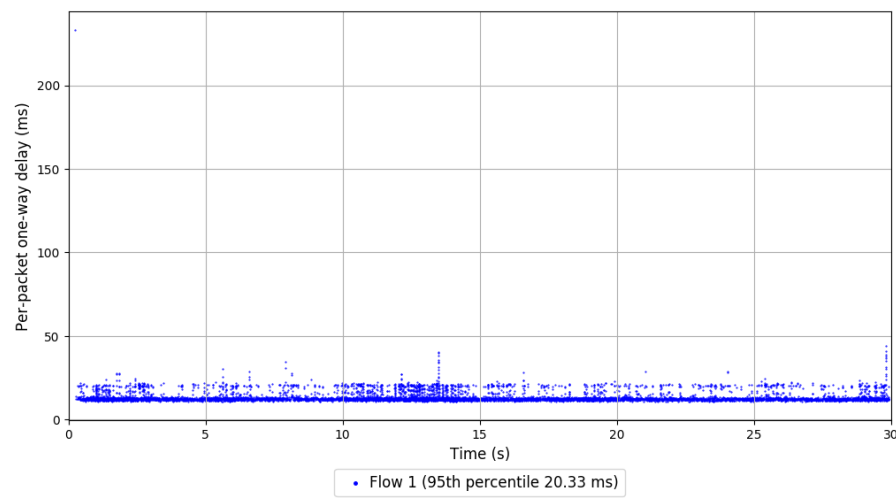
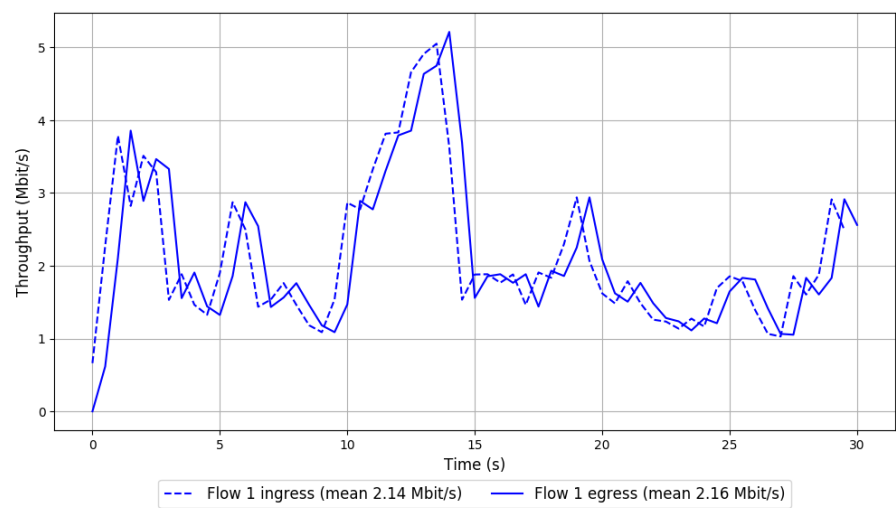
-- Flow 1:

Average throughput: 2.16 Mbit/s

95th percentile per-packet one-way delay: 20.328 ms

Loss rate: 0.00%

Run 3: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-08-27 19:33:07

End at: 2018-08-27 19:33:37

Local clock offset: -8.841 ms

Remote clock offset: 1.992 ms

Below is generated by plot.py at 2018-08-27 20:37:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.09 Mbit/s

95th percentile per-packet one-way delay: 22.447 ms

Loss rate: 0.00%

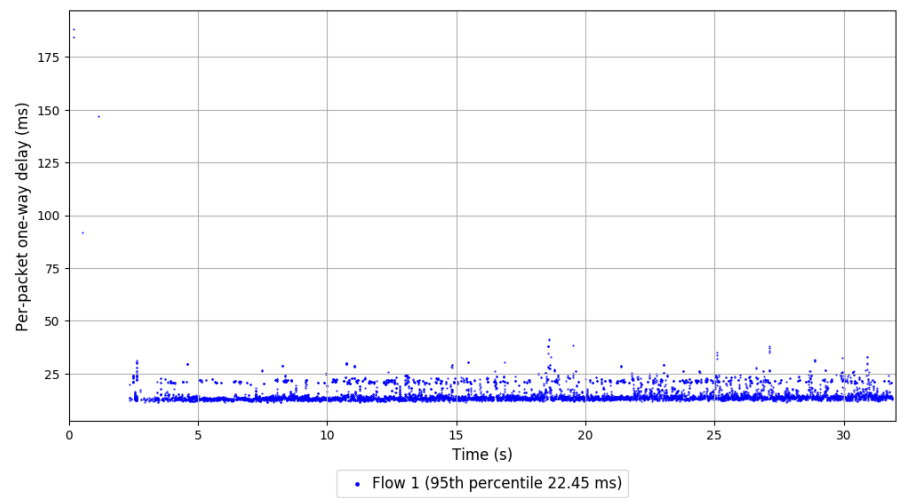
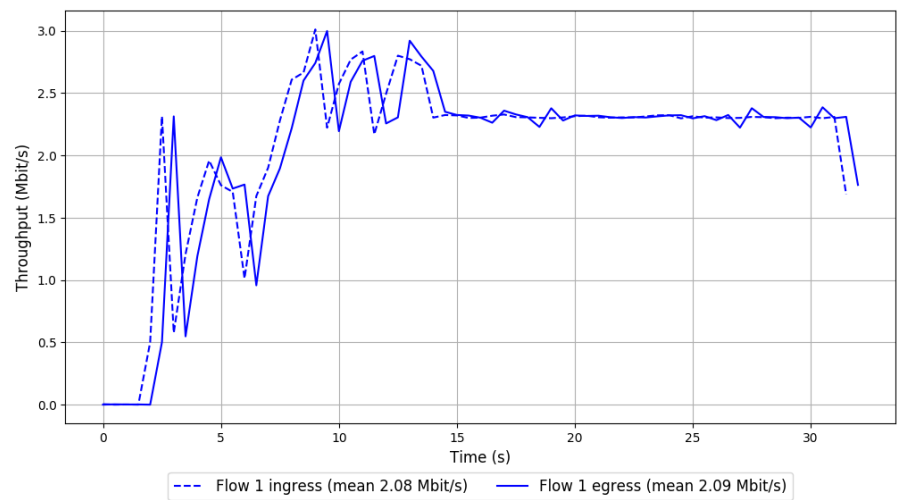
-- Flow 1:

Average throughput: 2.09 Mbit/s

95th percentile per-packet one-way delay: 22.447 ms

Loss rate: 0.00%

Run 1: Report of WebRTC media — Data Link

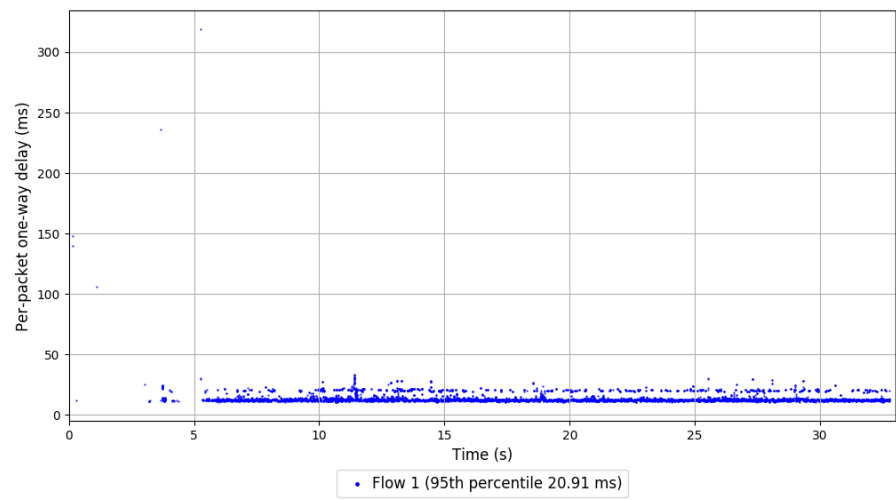
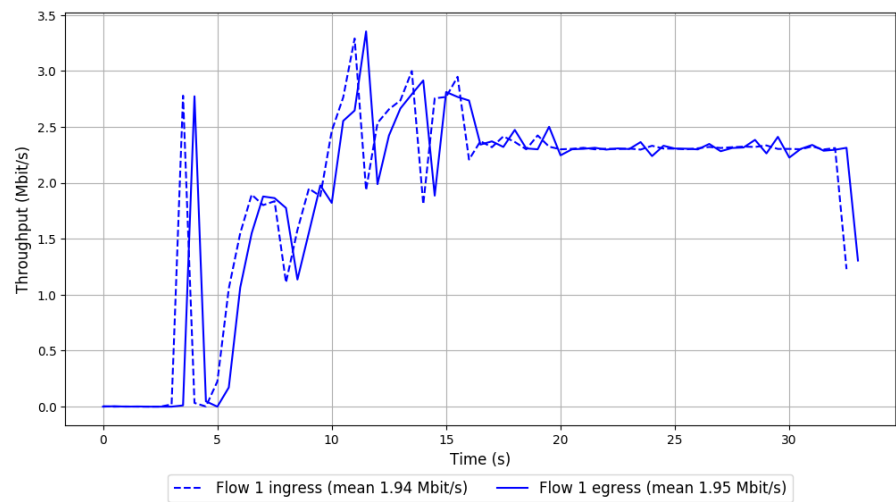


Run 2: Statistics of WebRTC media

Start at: 2018-08-27 19:55:17
End at: 2018-08-27 19:55:47
Local clock offset: -4.14 ms
Remote clock offset: -1.016 ms

Below is generated by plot.py at 2018-08-27 20:37:41
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.95 Mbit/s
95th percentile per-packet one-way delay: 20.910 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.95 Mbit/s
95th percentile per-packet one-way delay: 20.910 ms
Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-08-27 20:17:26

End at: 2018-08-27 20:17:56

Local clock offset: -2.248 ms

Remote clock offset: 2.147 ms

Below is generated by plot.py at 2018-08-27 20:37:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.93 Mbit/s

95th percentile per-packet one-way delay: 20.621 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 1.93 Mbit/s

95th percentile per-packet one-way delay: 20.621 ms

Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link

