

Pantheon Report

Generated at 2018-06-29 12:39:52 (UTC).

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

Repeated the test of 17 congestion control schemes 3 times.

Each test lasted for 30 seconds running 1 flow.

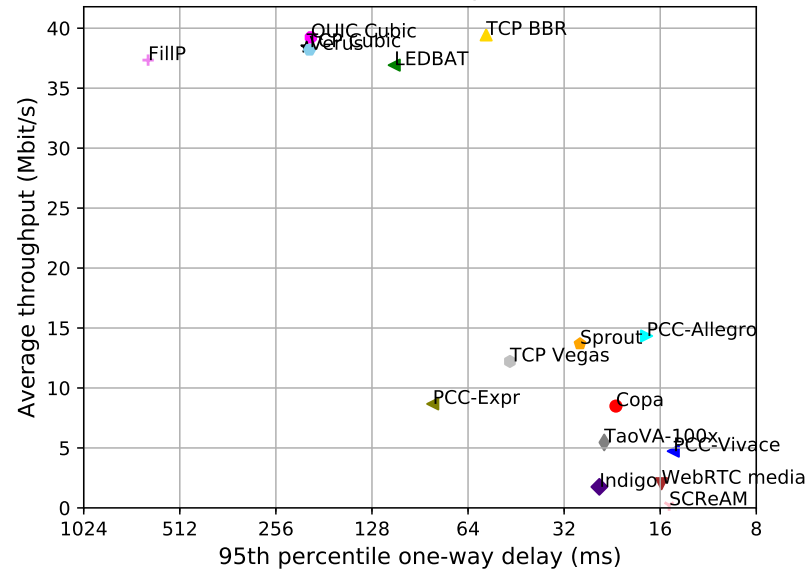
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

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

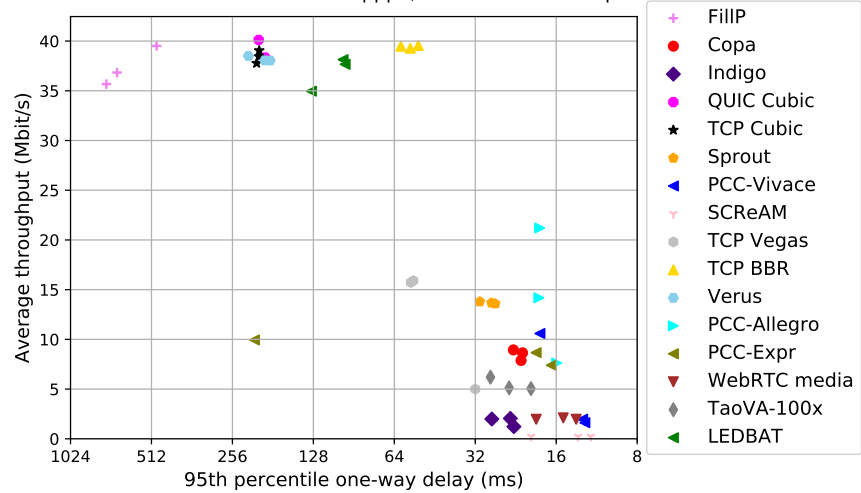
Git summary:

```
branch: master @ 715dc5f09d172e419699f6f17f1cb4c45064f212
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ 30060ab034deb3424347f5cc3db86198eac35d2a
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ 6f038ed31259d366f9840f65b82cbe8f464b1b39
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quick @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
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	39.44	56.15	0.05
Copa	3	8.49	22.02	0.02
TCP Cubic	3	38.42	205.07	0.33
FillP	3	37.34	643.52	25.74
FillP-Sheep	0	N/A	N/A	N/A
Indigo	3	1.76	24.82	0.00
LEDBAT	3	36.92	109.02	0.26
PCC-Allegro	3	14.34	17.65	0.00
PCC-Expr	3	8.67	82.57	0.00
QUIC Cubic	2	39.23	198.91	0.60
SCReAM	3	0.22	15.00	0.00
Sprout	3	13.69	28.54	0.00
TaoVA-100x	3	5.46	23.97	0.00
TCP Vegas	3	12.21	47.32	0.00
Verus	3	38.20	200.83	1.23
PCC-Vivace	3	4.73	14.56	0.00
WebRTC media	3	2.02	15.85	0.00

Run 1: Statistics of TCP BBR

Start at: 2018-06-29 11:44:53

End at: 2018-06-29 11:45:23

Local clock offset: 1.649 ms

Remote clock offset: 3.289 ms

Below is generated by plot.py at 2018-06-29 12:38:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.48 Mbit/s

95th percentile per-packet one-way delay: 60.518 ms

Loss rate: 0.09%

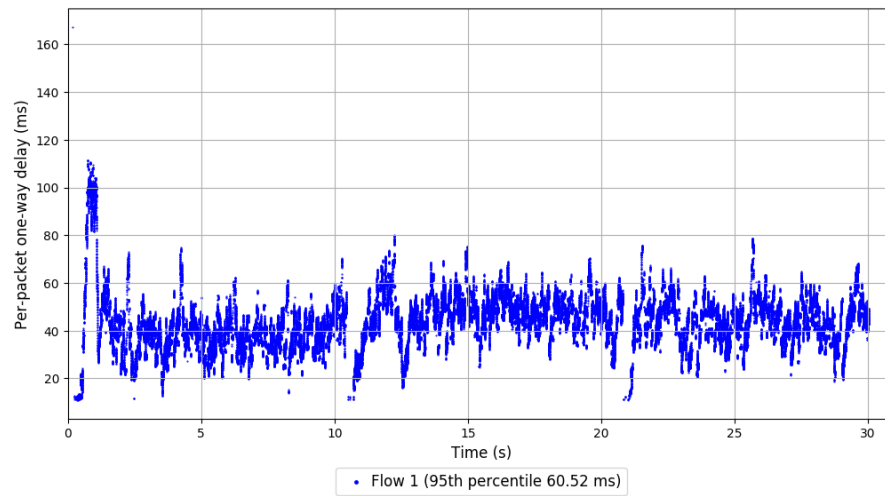
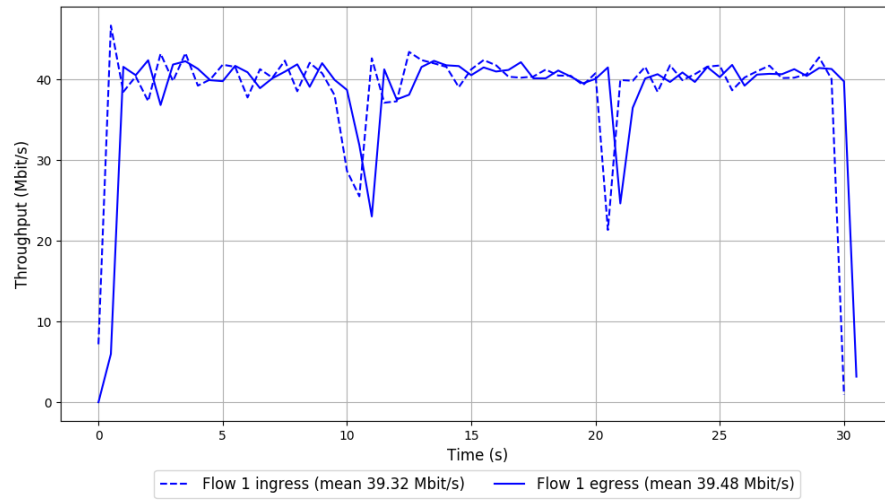
-- Flow 1:

Average throughput: 39.48 Mbit/s

95th percentile per-packet one-way delay: 60.518 ms

Loss rate: 0.09%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-06-29 12:07:02

End at: 2018-06-29 12:07:32

Local clock offset: 2.446 ms

Remote clock offset: 5.269 ms

Below is generated by plot.py at 2018-06-29 12:38:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.56 Mbit/s

95th percentile per-packet one-way delay: 52.140 ms

Loss rate: 0.02%

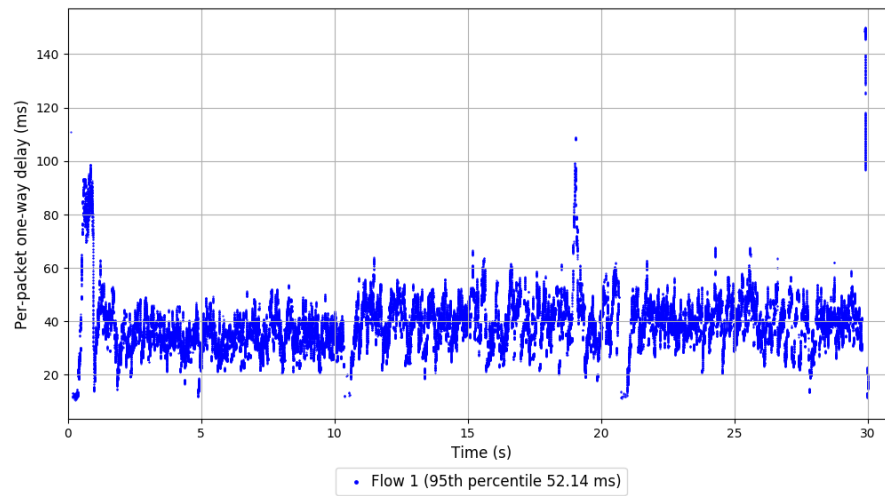
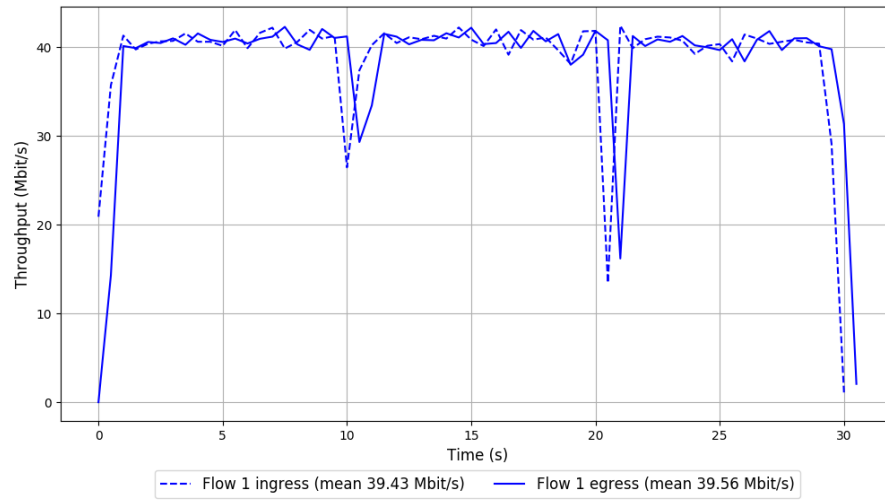
-- Flow 1:

Average throughput: 39.56 Mbit/s

95th percentile per-packet one-way delay: 52.140 ms

Loss rate: 0.02%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-06-29 12:29:18

End at: 2018-06-29 12:29:48

Local clock offset: 1.686 ms

Remote clock offset: -0.005 ms

Below is generated by plot.py at 2018-06-29 12:38:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.28 Mbit/s

95th percentile per-packet one-way delay: 55.802 ms

Loss rate: 0.04%

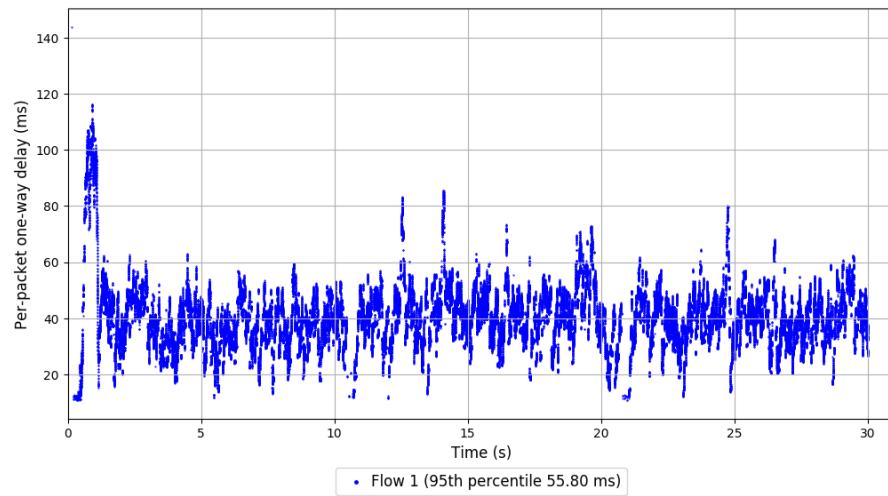
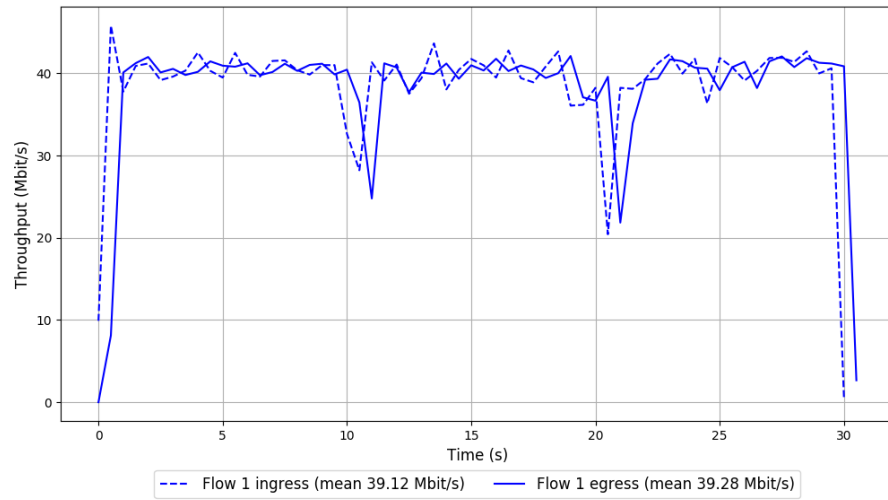
-- Flow 1:

Average throughput: 39.28 Mbit/s

95th percentile per-packet one-way delay: 55.802 ms

Loss rate: 0.04%

Run 3: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-06-29 11:51:23

End at: 2018-06-29 11:51:53

Local clock offset: 1.608 ms

Remote clock offset: 3.948 ms

Below is generated by plot.py at 2018-06-29 12:38:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 8.94 Mbit/s

95th percentile per-packet one-way delay: 23.091 ms

Loss rate: 0.07%

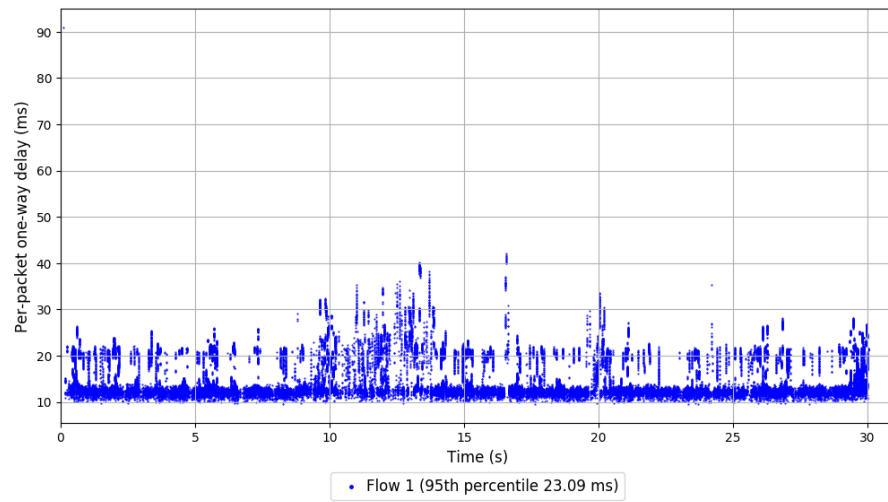
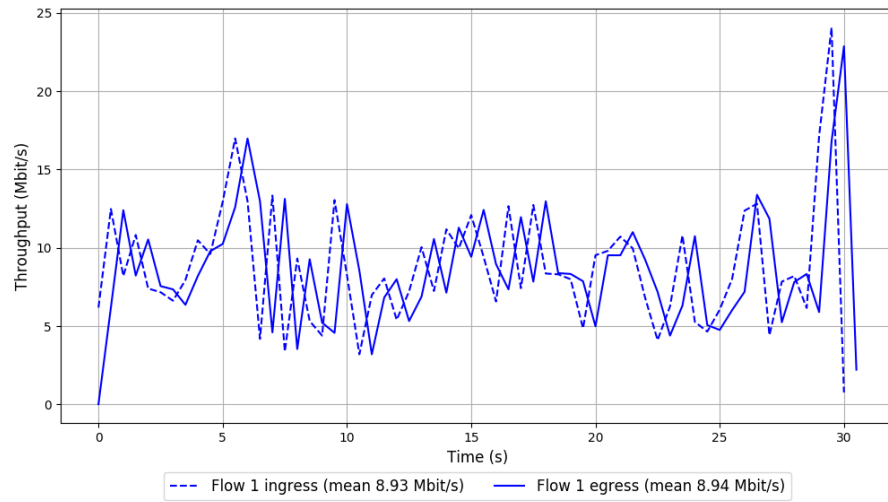
-- Flow 1:

Average throughput: 8.94 Mbit/s

95th percentile per-packet one-way delay: 23.091 ms

Loss rate: 0.07%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2018-06-29 12:13:34

End at: 2018-06-29 12:14:04

Local clock offset: 3.054 ms

Remote clock offset: 3.643 ms

Below is generated by plot.py at 2018-06-29 12:38:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.88 Mbit/s

95th percentile per-packet one-way delay: 21.623 ms

Loss rate: 0.00%

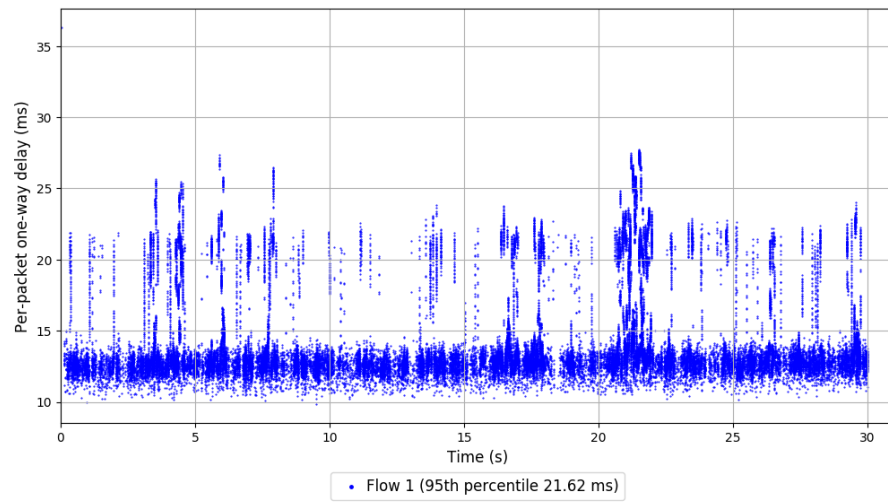
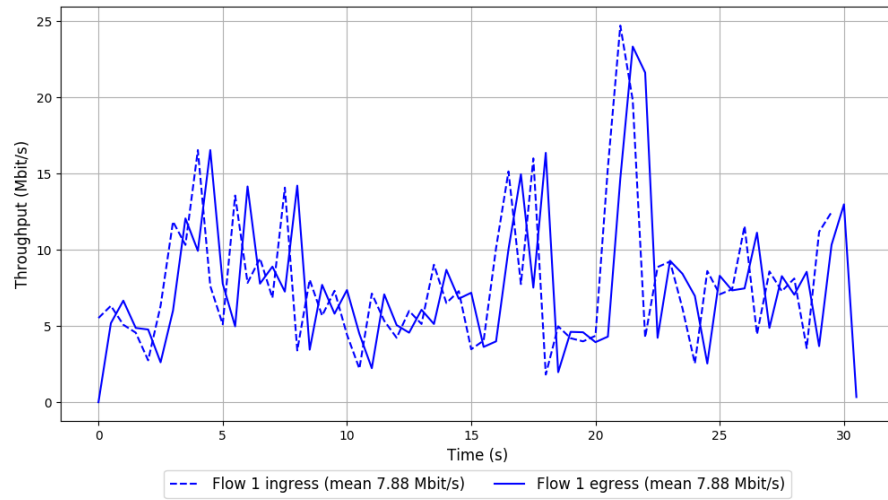
-- Flow 1:

Average throughput: 7.88 Mbit/s

95th percentile per-packet one-way delay: 21.623 ms

Loss rate: 0.00%

Run 2: Report of Copa — Data Link

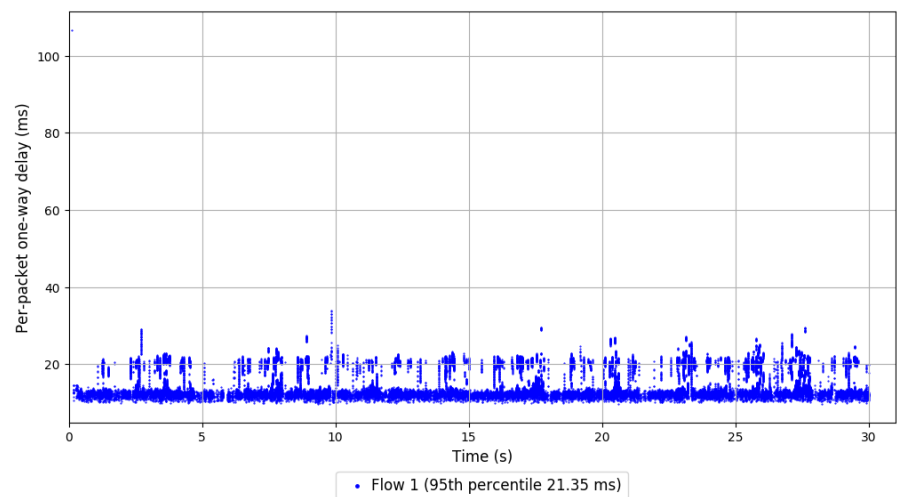
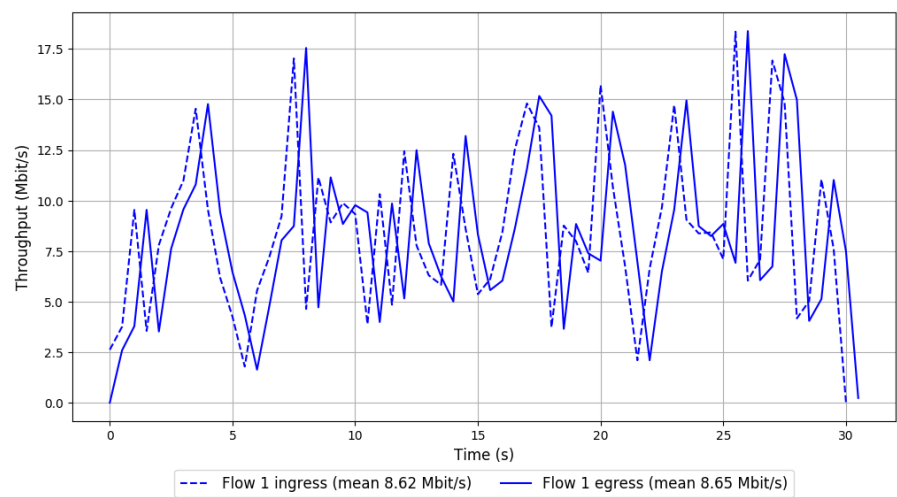


Run 3: Statistics of Copa

Start at: 2018-06-29 12:35:51
End at: 2018-06-29 12:36:21
Local clock offset: 1.7 ms
Remote clock offset: -0.503 ms

Below is generated by plot.py at 2018-06-29 12:38:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 8.65 Mbit/s
95th percentile per-packet one-way delay: 21.352 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 8.65 Mbit/s
95th percentile per-packet one-way delay: 21.352 ms
Loss rate: 0.00%

Run 3: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-06-29 11:39:40

End at: 2018-06-29 11:40:10

Local clock offset: 1.16 ms

Remote clock offset: 2.793 ms

Below is generated by plot.py at 2018-06-29 12:38:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.05 Mbit/s

95th percentile per-packet one-way delay: 203.482 ms

Loss rate: 0.40%

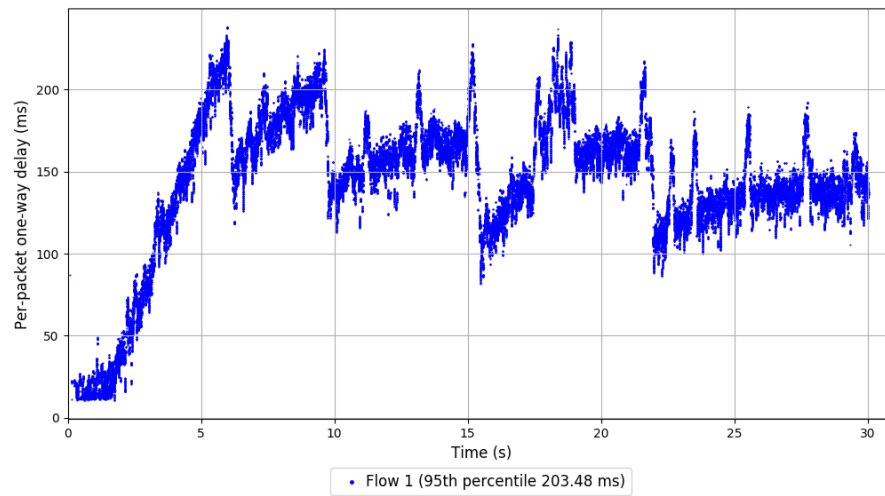
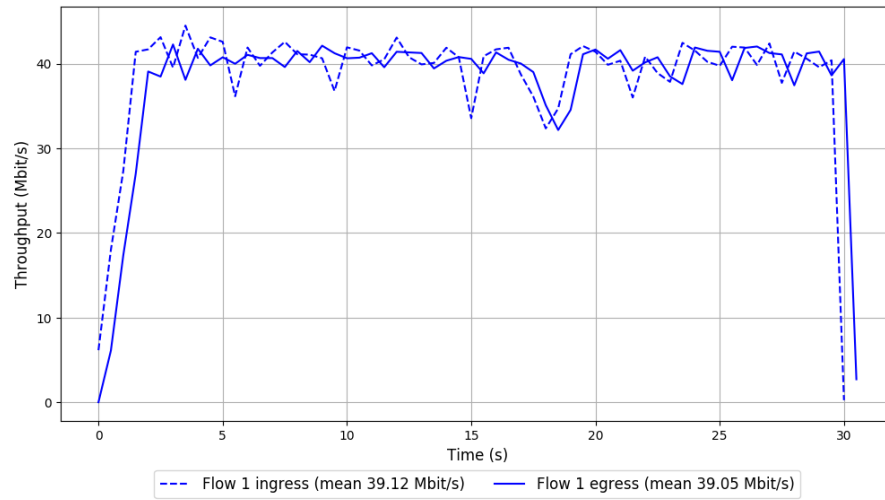
-- Flow 1:

Average throughput: 39.05 Mbit/s

95th percentile per-packet one-way delay: 203.482 ms

Loss rate: 0.40%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-06-29 12:01:48

End at: 2018-06-29 12:02:18

Local clock offset: 2.097 ms

Remote clock offset: 4.817 ms

Below is generated by plot.py at 2018-06-29 12:38:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 38.44 Mbit/s

95th percentile per-packet one-way delay: 203.702 ms

Loss rate: 0.49%

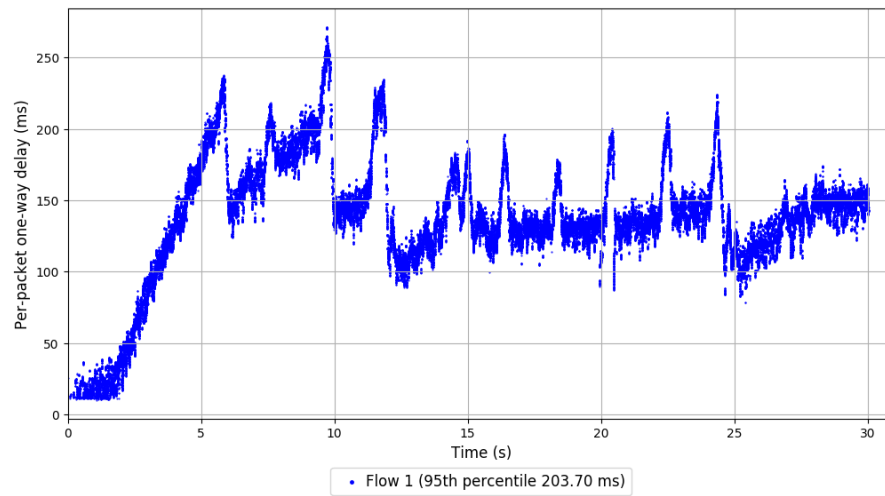
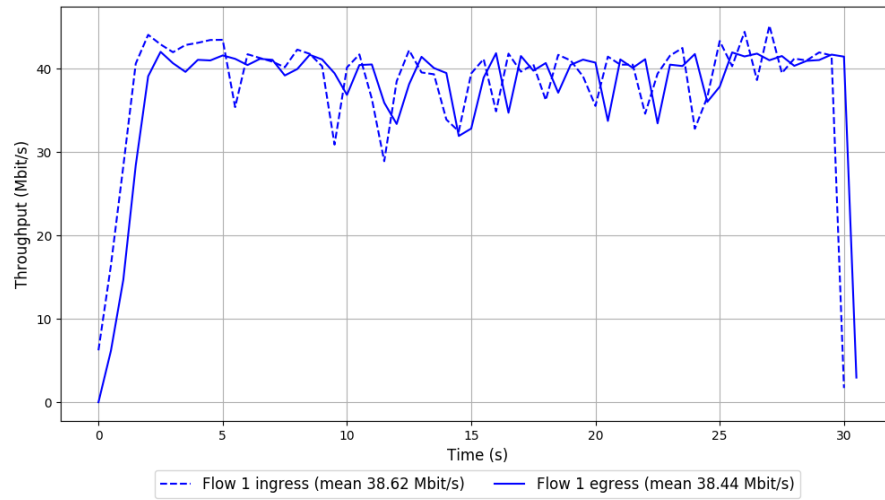
-- Flow 1:

Average throughput: 38.44 Mbit/s

95th percentile per-packet one-way delay: 203.702 ms

Loss rate: 0.49%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2018-06-29 12:24:00

End at: 2018-06-29 12:24:30

Local clock offset: 1.865 ms

Remote clock offset: 0.585 ms

Below is generated by plot.py at 2018-06-29 12:38:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 37.78 Mbit/s

95th percentile per-packet one-way delay: 208.040 ms

Loss rate: 0.09%

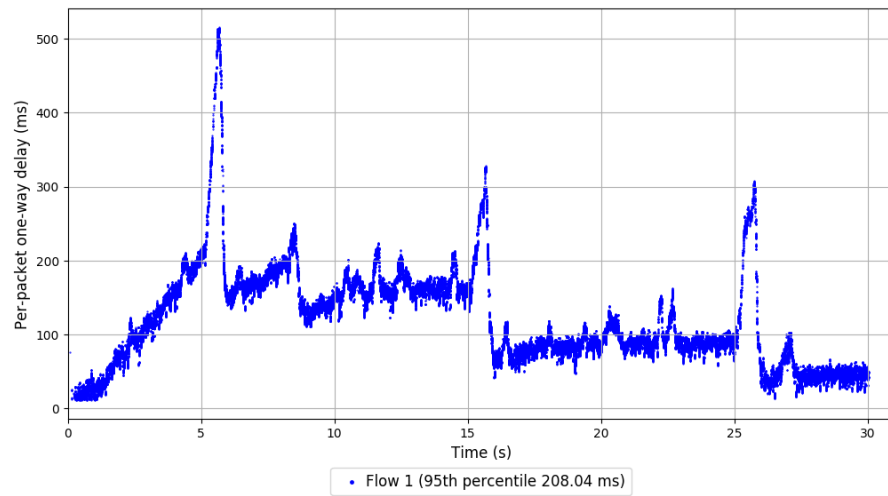
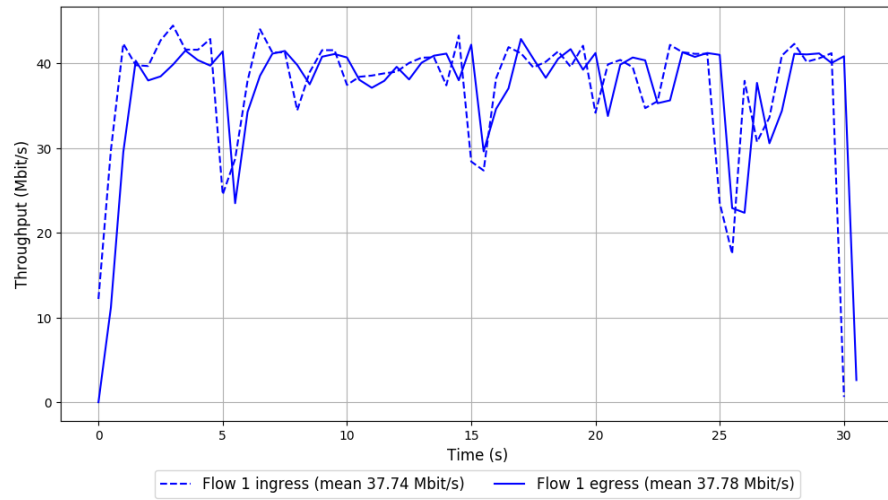
-- Flow 1:

Average throughput: 37.78 Mbit/s

95th percentile per-packet one-way delay: 208.040 ms

Loss rate: 0.09%

Run 3: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-06-29 11:40:59

End at: 2018-06-29 11:41:29

Local clock offset: 1.321 ms

Remote clock offset: 2.93 ms

Below is generated by plot.py at 2018-06-29 12:38:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.51 Mbit/s

95th percentile per-packet one-way delay: 490.006 ms

Loss rate: 16.48%

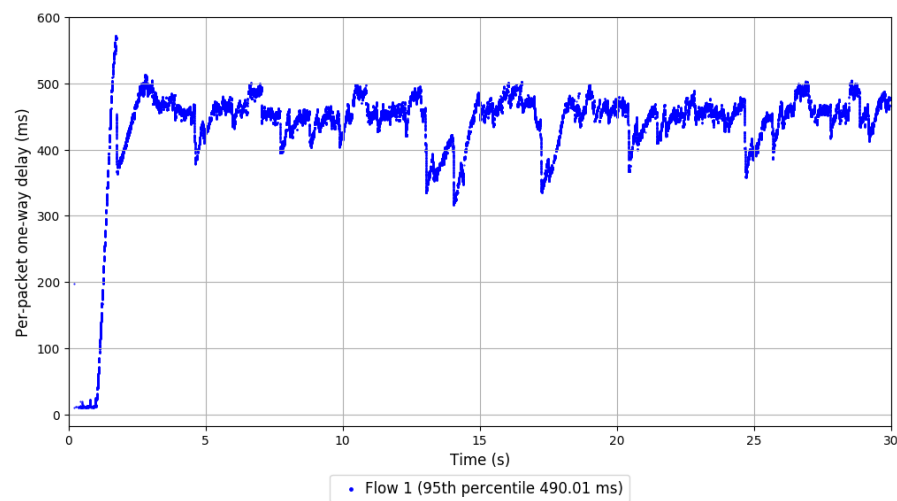
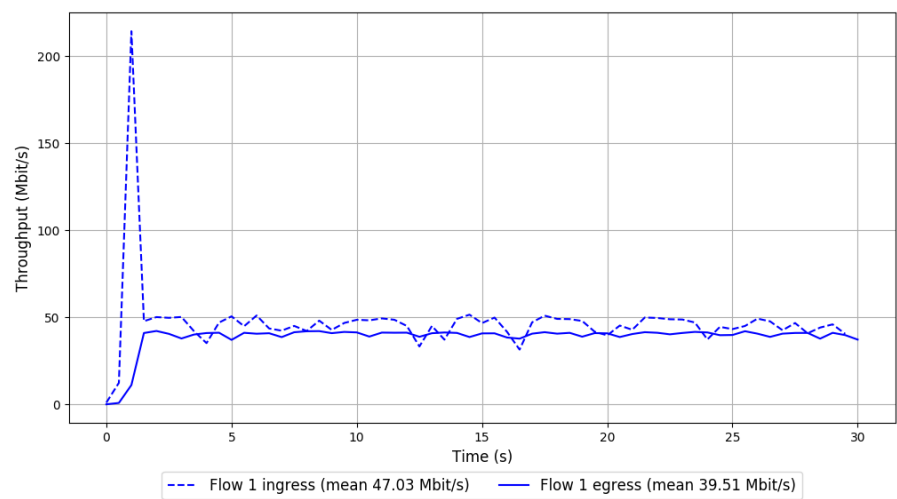
-- Flow 1:

Average throughput: 39.51 Mbit/s

95th percentile per-packet one-way delay: 490.006 ms

Loss rate: 16.48%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-06-29 12:03:07

End at: 2018-06-29 12:03:37

Local clock offset: 2.199 ms

Remote clock offset: 5.02 ms

Below is generated by plot.py at 2018-06-29 12:38:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 36.84 Mbit/s

95th percentile per-packet one-way delay: 687.437 ms

Loss rate: 30.88%

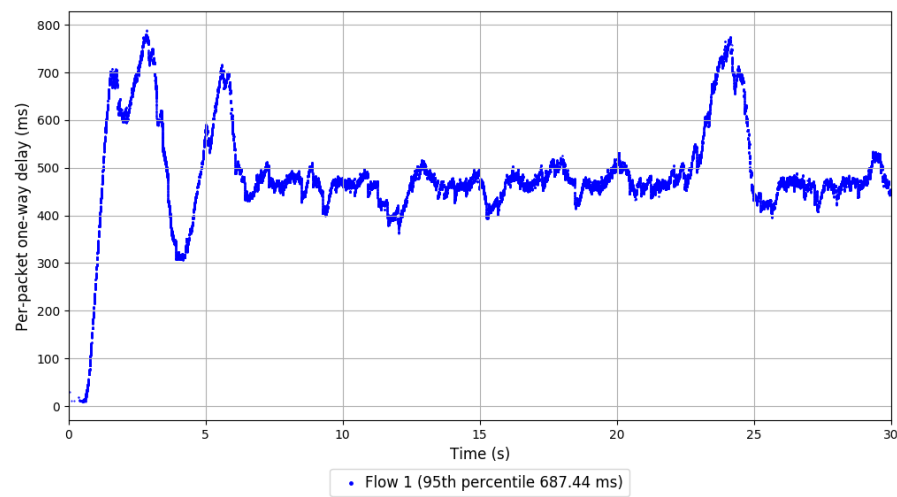
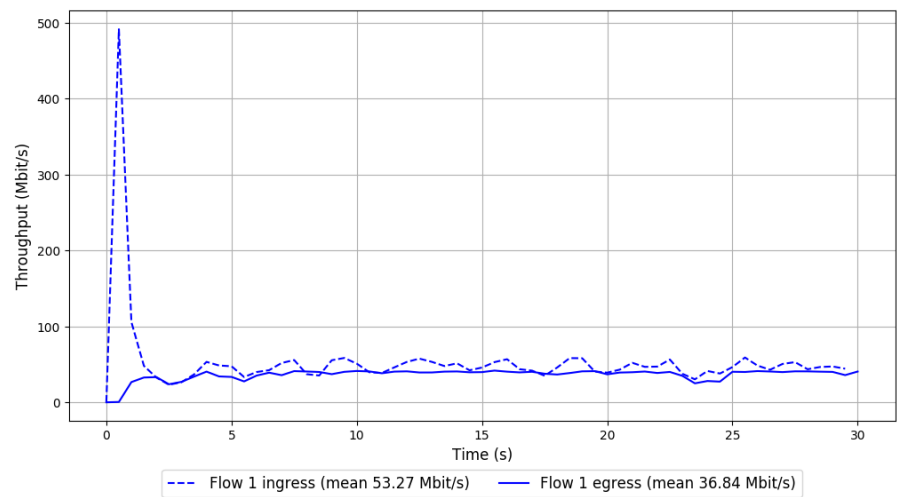
-- Flow 1:

Average throughput: 36.84 Mbit/s

95th percentile per-packet one-way delay: 687.437 ms

Loss rate: 30.88%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-06-29 12:25:19

End at: 2018-06-29 12:25:49

Local clock offset: 1.836 ms

Remote clock offset: 0.383 ms

Below is generated by plot.py at 2018-06-29 12:39:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 35.67 Mbit/s

95th percentile per-packet one-way delay: 753.129 ms

Loss rate: 29.85%

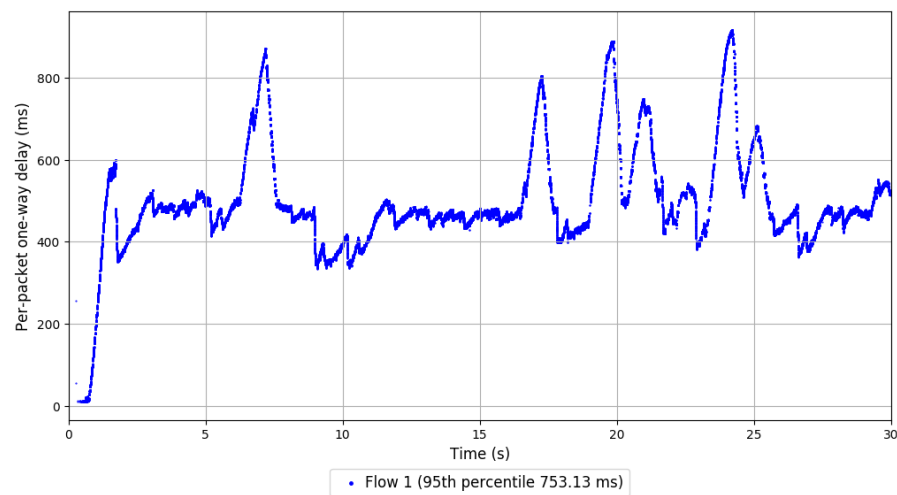
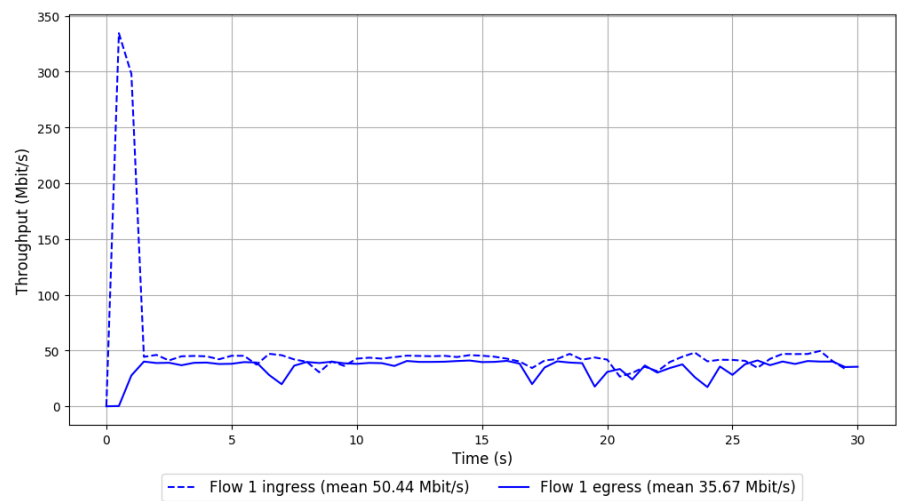
-- Flow 1:

Average throughput: 35.67 Mbit/s

95th percentile per-packet one-way delay: 753.129 ms

Loss rate: 29.85%

Run 3: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

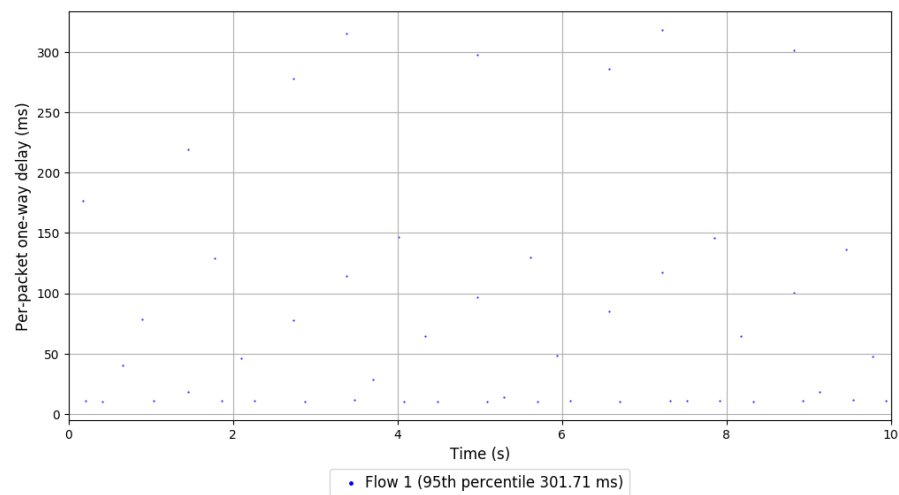
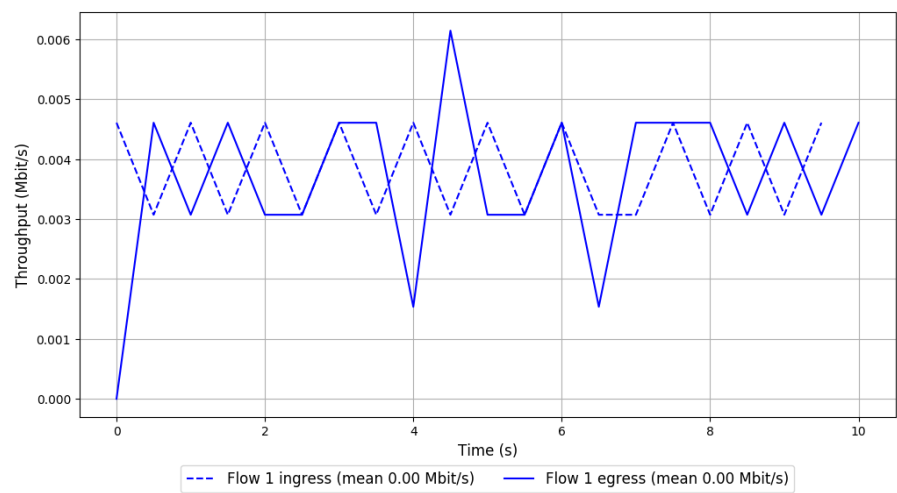
Start at: 2018-06-29 11:33:11

End at: 2018-06-29 11:33:41

Local clock offset: 1.61 ms

Remote clock offset: 2.066 ms

Run 1: Report of FillP-Sheep — Data Link



Run 2: Statistics of FillP-Sheep

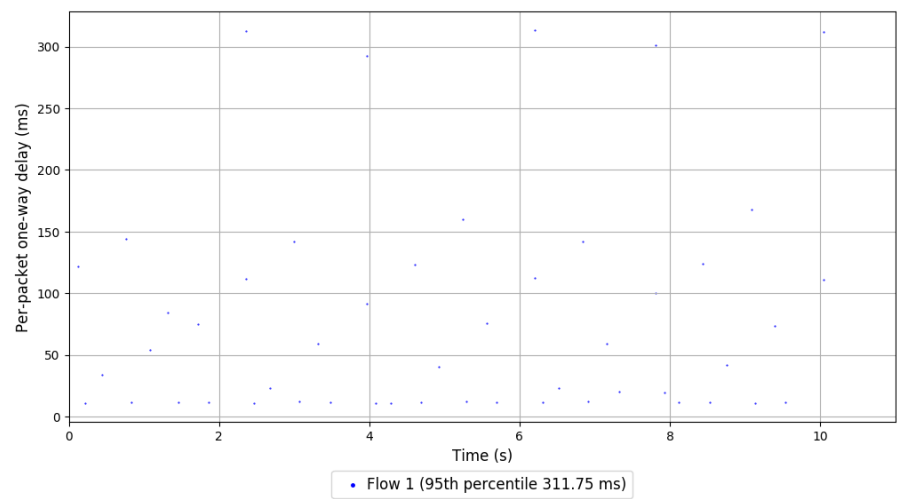
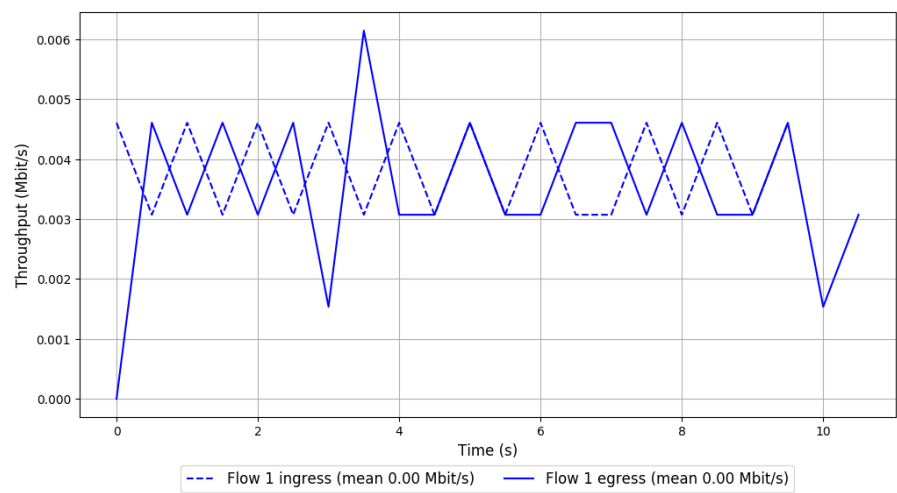
Start at: 2018-06-29 11:55:18

End at: 2018-06-29 11:55:48

Local clock offset: 1.693 ms

Remote clock offset: 4.301 ms

Run 2: Report of FillP-Sheep — Data Link



Run 3: Statistics of FillP-Sheep

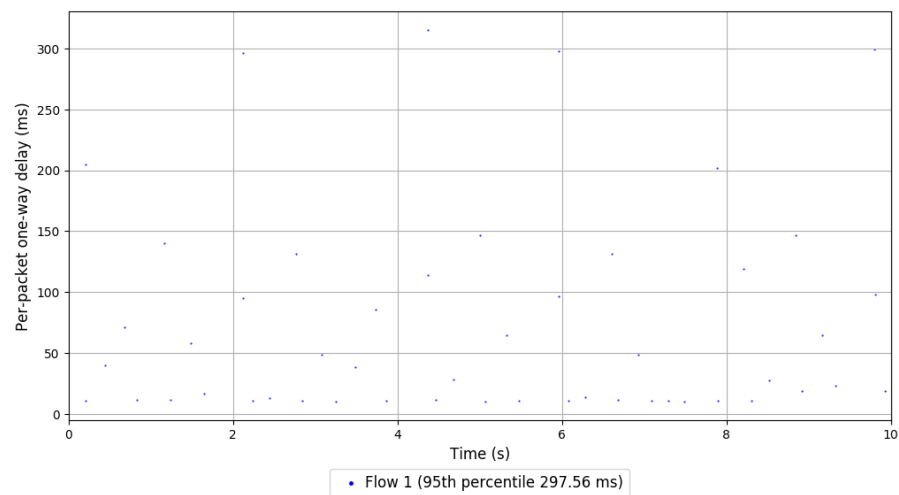
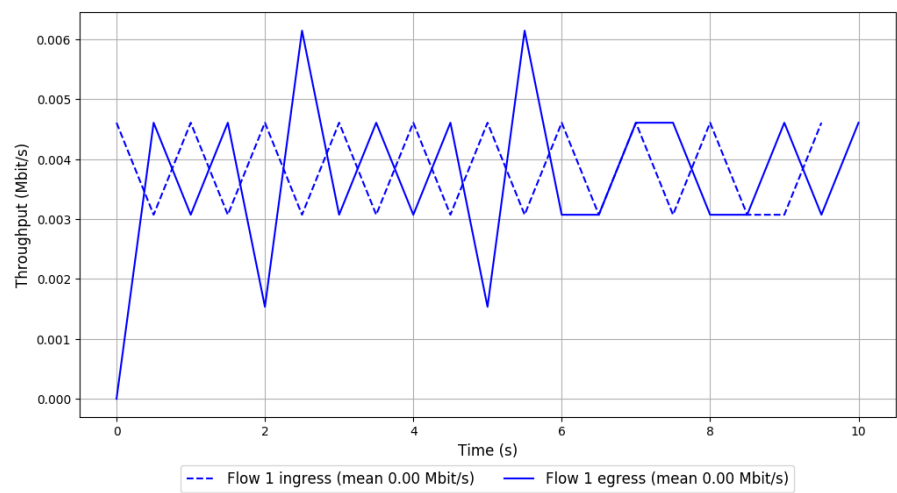
Start at: 2018-06-29 12:17:30

End at: 2018-06-29 12:18:00

Local clock offset: 2.961 ms

Remote clock offset: 2.049 ms

Run 3: Report of FillP-Sheep — Data Link

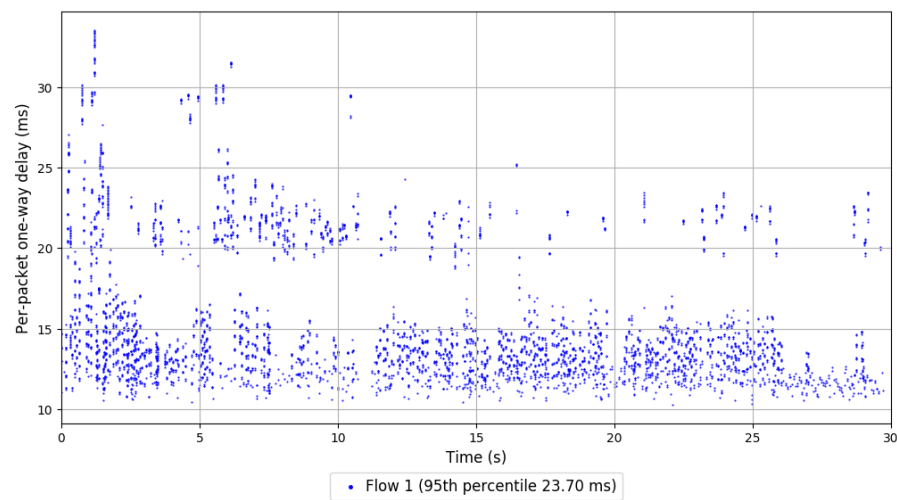
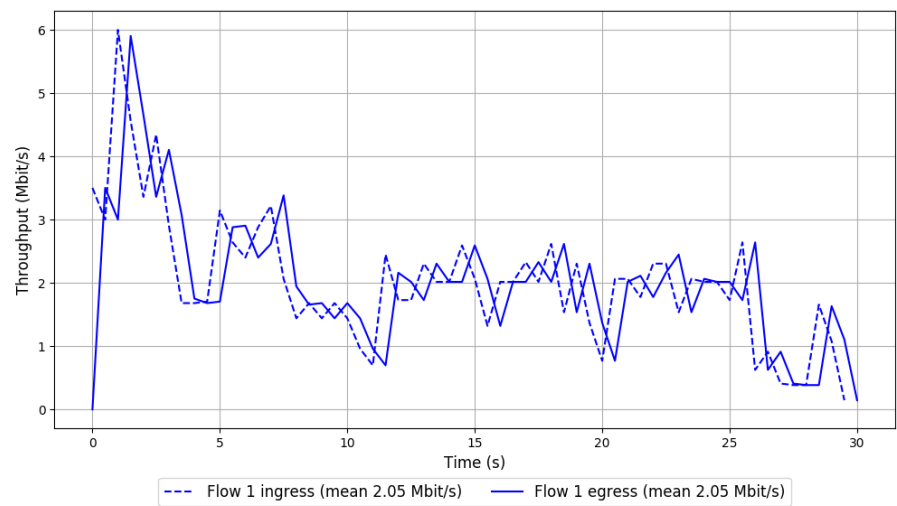


```
Run 1: Statistics of Indigo

Start at: 2018-06-29 11:43:35
End at: 2018-06-29 11:44:06
Local clock offset: 1.456 ms
Remote clock offset: 3.156 ms

# Below is generated by plot.py at 2018-06-29 12:39:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 23.698 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 23.698 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-06-29 12:05:44

End at: 2018-06-29 12:06:14

Local clock offset: 2.413 ms

Remote clock offset: 5.164 ms

Below is generated by plot.py at 2018-06-29 12:39:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.23 Mbit/s

95th percentile per-packet one-way delay: 22.994 ms

Loss rate: 0.00%

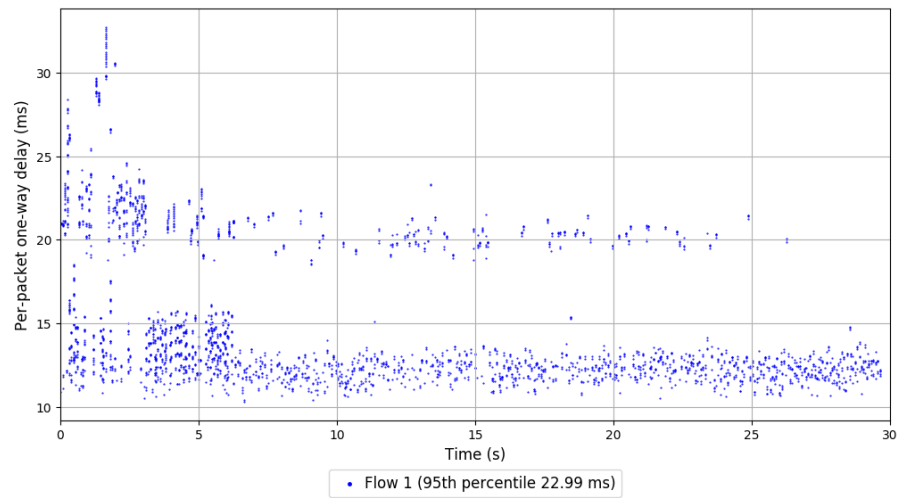
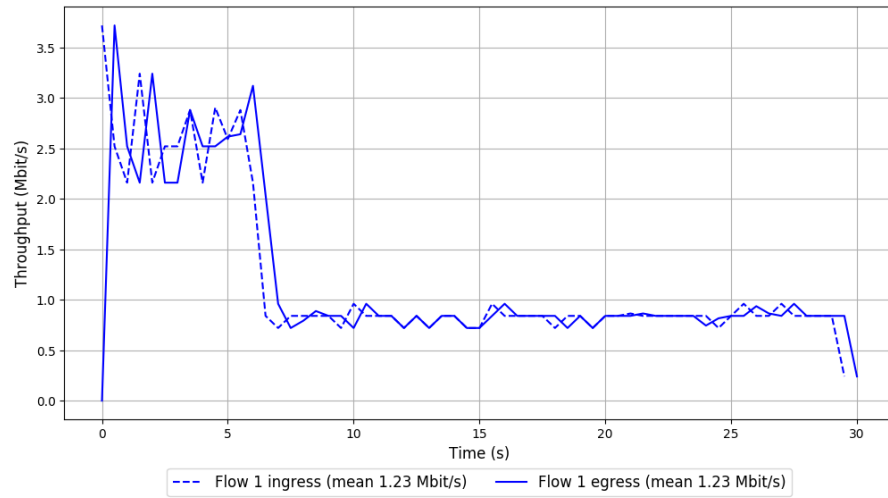
-- Flow 1:

Average throughput: 1.23 Mbit/s

95th percentile per-packet one-way delay: 22.994 ms

Loss rate: 0.00%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-06-29 12:27:56

End at: 2018-06-29 12:28:26

Local clock offset: 1.626 ms

Remote clock offset: 0.073 ms

Below is generated by plot.py at 2018-06-29 12:39:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.99 Mbit/s

95th percentile per-packet one-way delay: 27.772 ms

Loss rate: 0.00%

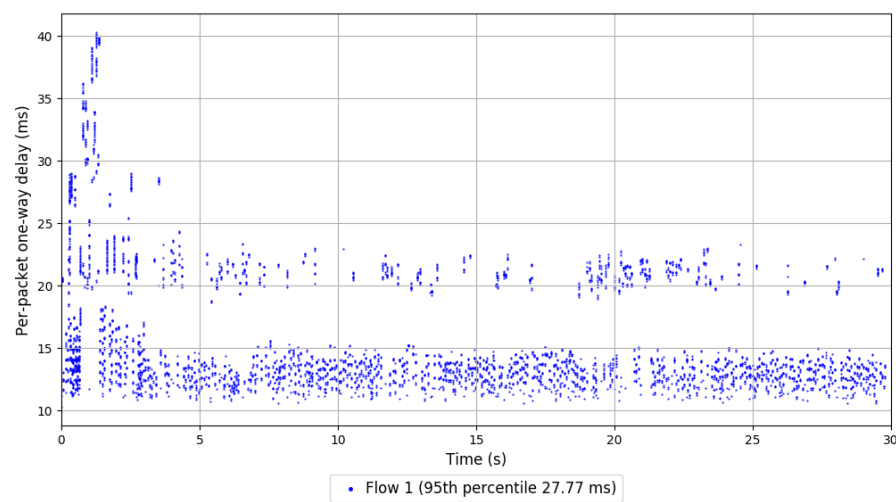
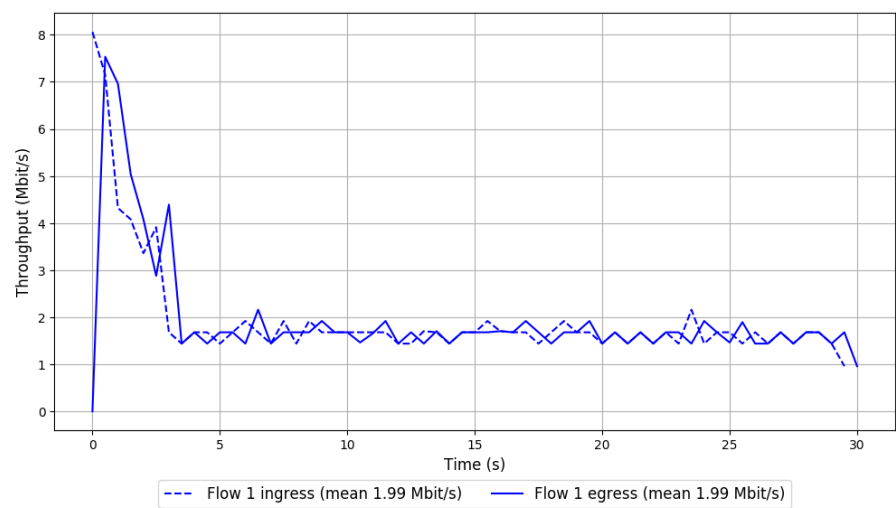
-- Flow 1:

Average throughput: 1.99 Mbit/s

95th percentile per-packet one-way delay: 27.772 ms

Loss rate: 0.00%

Run 3: Report of Indigo — Data Link

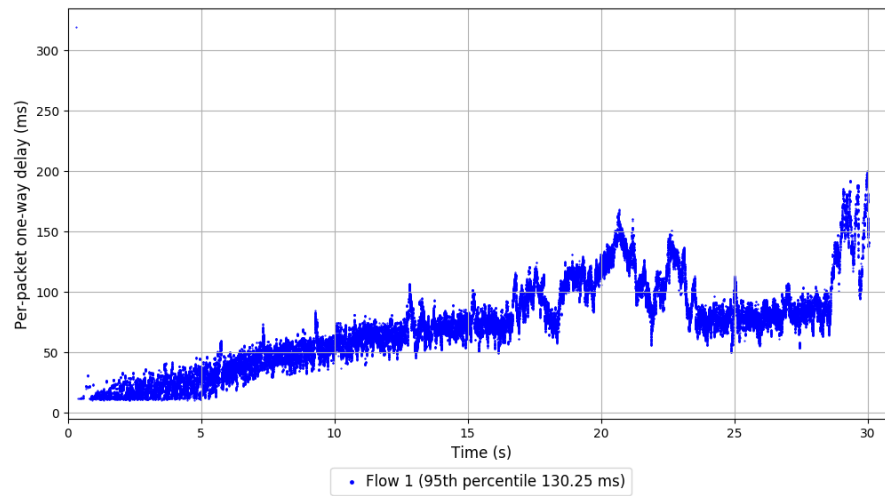
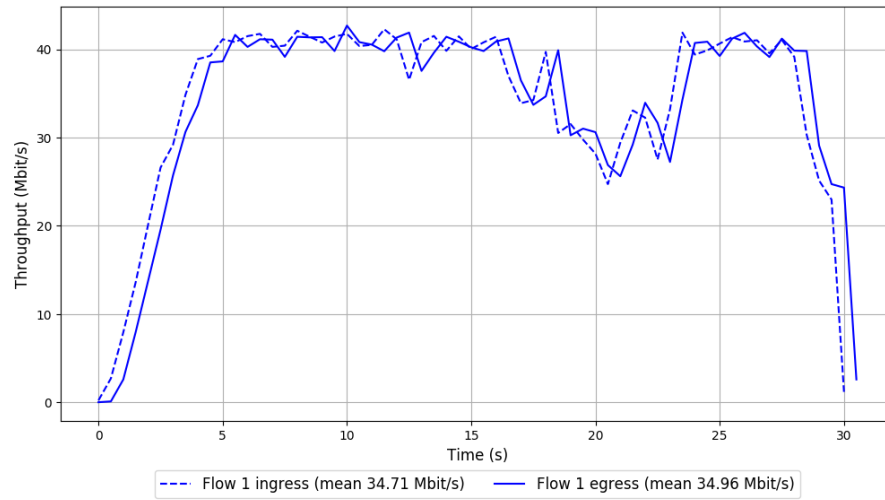


```
Run 1: Statistics of LEDBAT

Start at: 2018-06-29 11:31:52
End at: 2018-06-29 11:32:22
Local clock offset: 1.31 ms
Remote clock offset: 1.963 ms

# Below is generated by plot.py at 2018-06-29 12:39:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 34.96 Mbit/s
95th percentile per-packet one-way delay: 130.247 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 34.96 Mbit/s
95th percentile per-packet one-way delay: 130.247 ms
Loss rate: 0.26%
```


Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-06-29 11:53:59

End at: 2018-06-29 11:54:29

Local clock offset: 1.655 ms

Remote clock offset: 4.125 ms

Below is generated by plot.py at 2018-06-29 12:39:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 38.13 Mbit/s

95th percentile per-packet one-way delay: 99.258 ms

Loss rate: 0.25%

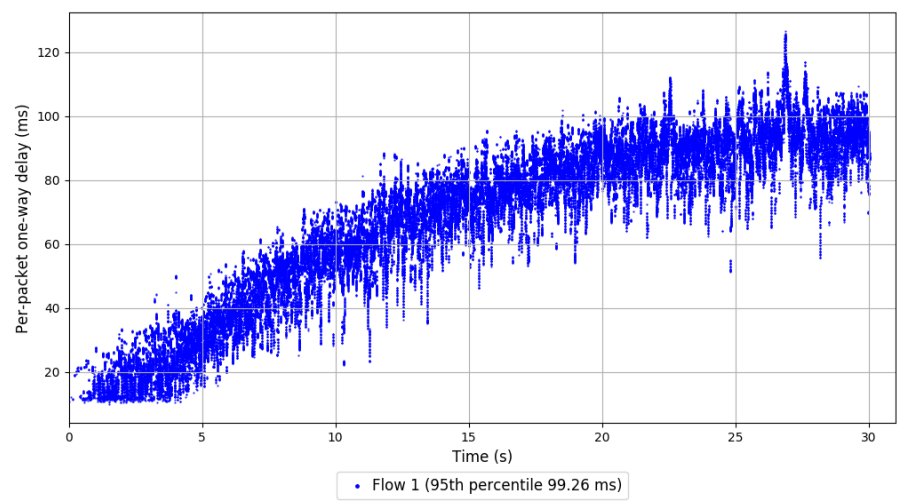
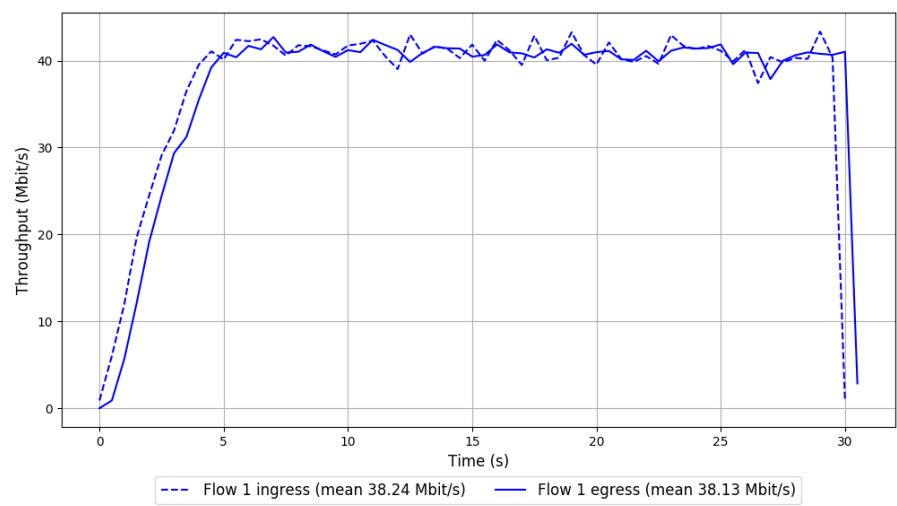
-- Flow 1:

Average throughput: 38.13 Mbit/s

95th percentile per-packet one-way delay: 99.258 ms

Loss rate: 0.25%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-06-29 12:16:10

End at: 2018-06-29 12:16:40

Local clock offset: 3.247 ms

Remote clock offset: 2.386 ms

Below is generated by plot.py at 2018-06-29 12:39:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 37.66 Mbit/s

95th percentile per-packet one-way delay: 97.543 ms

Loss rate: 0.26%

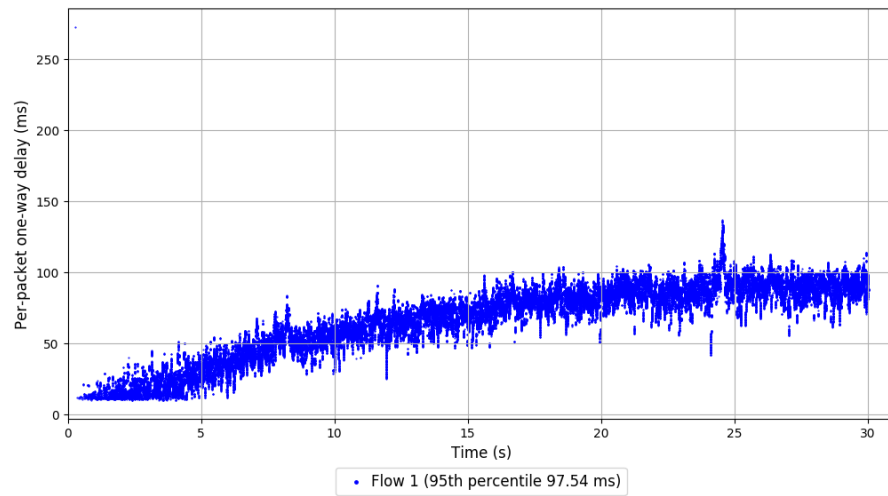
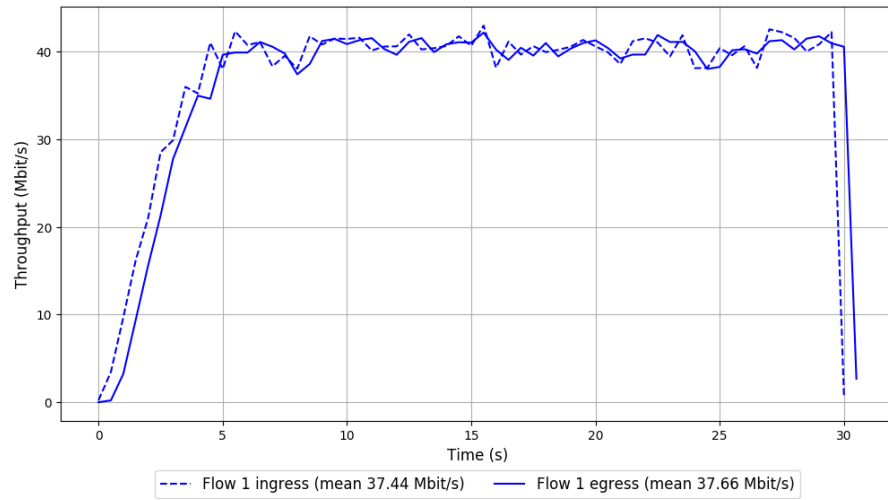
-- Flow 1:

Average throughput: 37.66 Mbit/s

95th percentile per-packet one-way delay: 97.543 ms

Loss rate: 0.26%

Run 3: Report of LEDBAT — Data Link

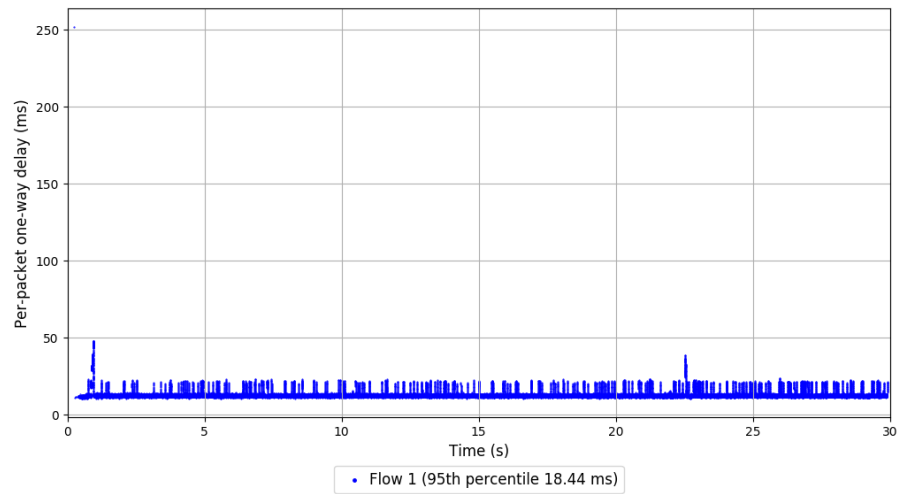
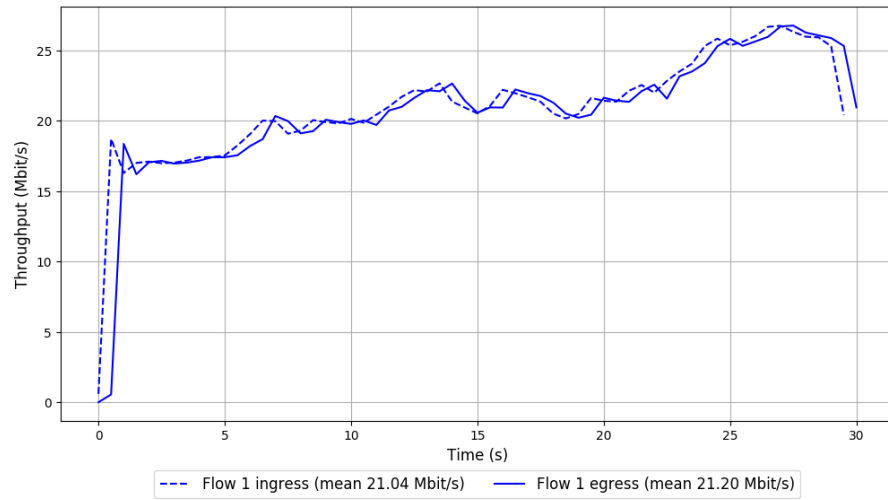


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-06-29 11:47:30
End at: 2018-06-29 11:48:00
Local clock offset: 1.578 ms
Remote clock offset: 3.608 ms

# Below is generated by plot.py at 2018-06-29 12:39:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 21.20 Mbit/s
95th percentile per-packet one-way delay: 18.439 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 21.20 Mbit/s
95th percentile per-packet one-way delay: 18.439 ms
Loss rate: 0.01%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-06-29 12:09:39

End at: 2018-06-29 12:10:09

Local clock offset: 2.751 ms

Remote clock offset: 5.483 ms

Below is generated by plot.py at 2018-06-29 12:39:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 14.18 Mbit/s

95th percentile per-packet one-way delay: 18.568 ms

Loss rate: 0.00%

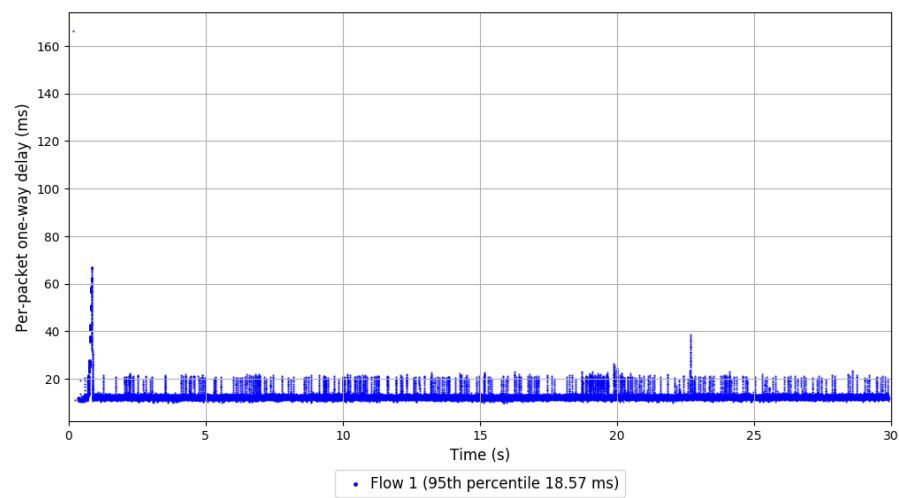
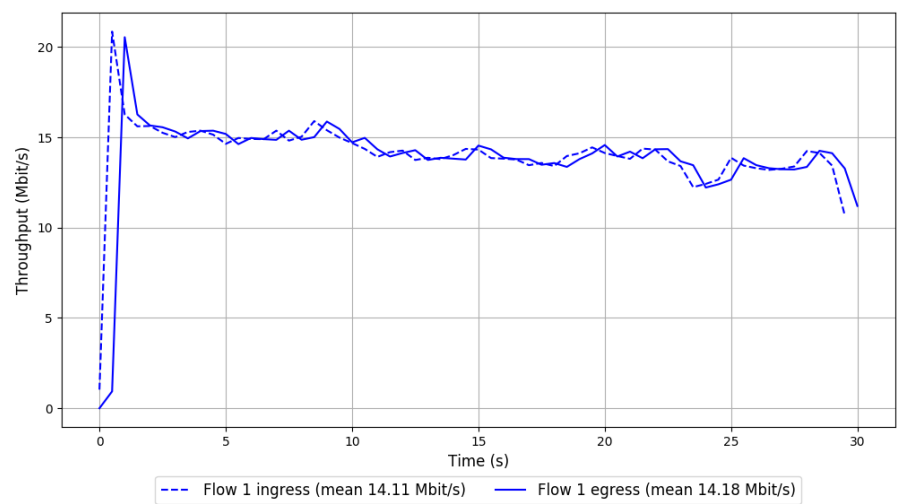
-- Flow 1:

Average throughput: 14.18 Mbit/s

95th percentile per-packet one-way delay: 18.568 ms

Loss rate: 0.00%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-06-29 12:31:56

End at: 2018-06-29 12:32:26

Local clock offset: 1.654 ms

Remote clock offset: -0.214 ms

Below is generated by plot.py at 2018-06-29 12:39:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.63 Mbit/s

95th percentile per-packet one-way delay: 15.937 ms

Loss rate: 0.00%

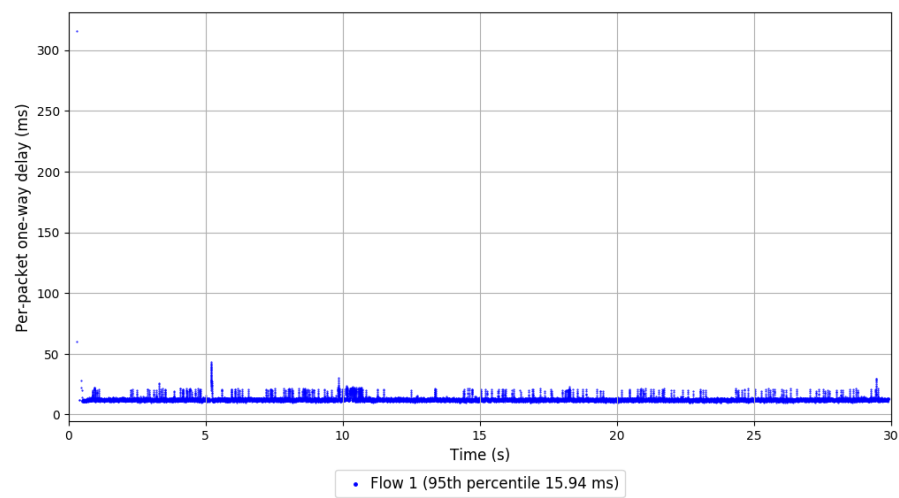
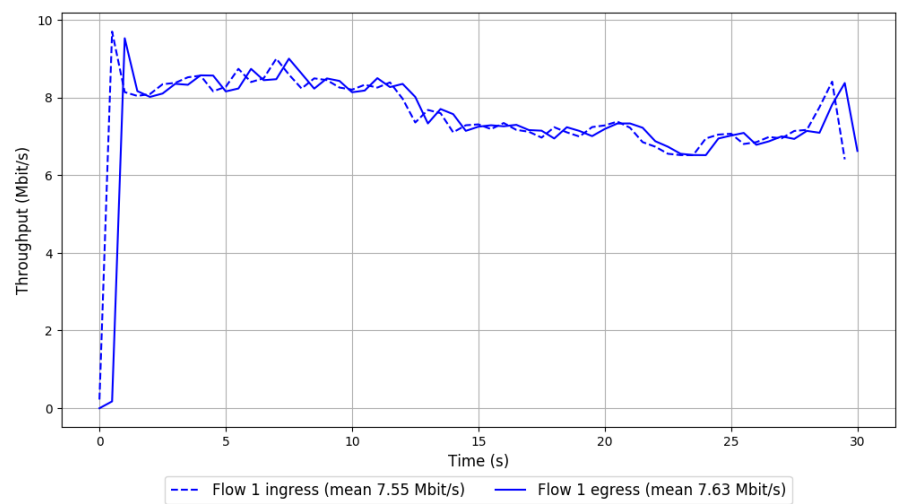
-- Flow 1:

Average throughput: 7.63 Mbit/s

95th percentile per-packet one-way delay: 15.937 ms

Loss rate: 0.00%

Run 3: Report of PCC-Allegro — Data Link

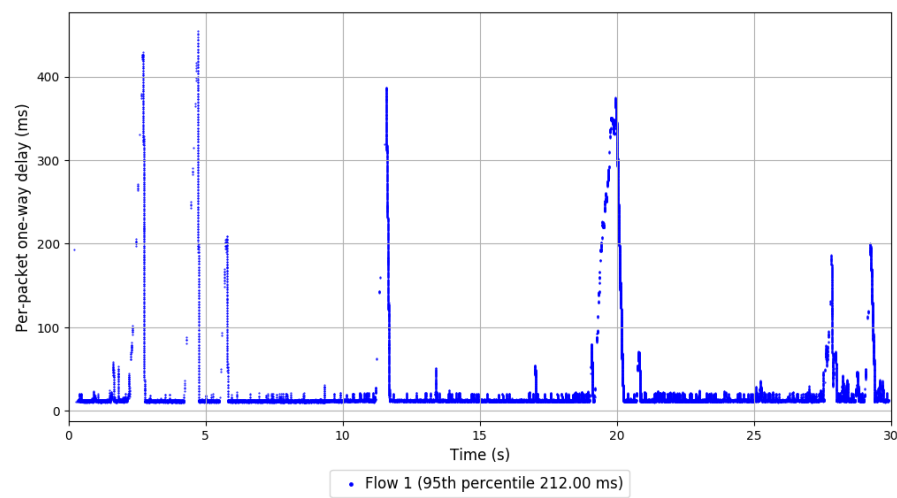
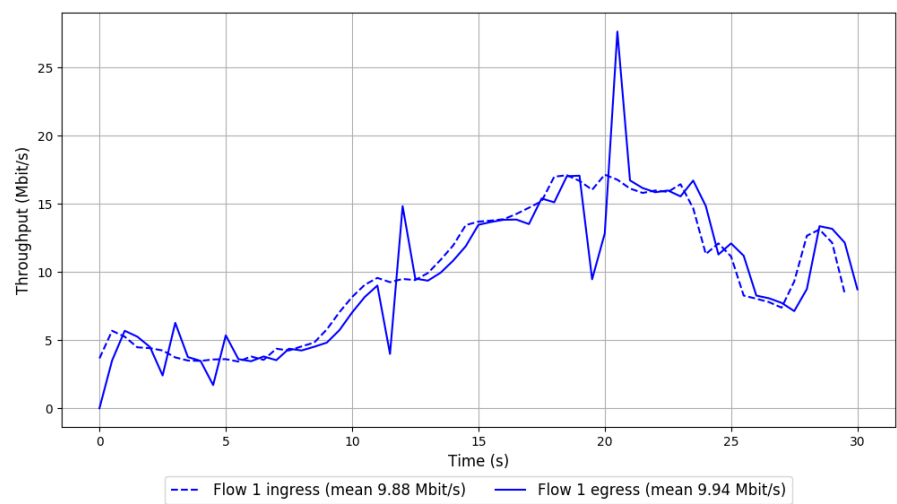


```
Run 1: Statistics of PCC-Expr

Start at: 2018-06-29 11:42:17
End at: 2018-06-29 11:42:47
Local clock offset: 1.413 ms
Remote clock offset: 3.09 ms

# Below is generated by plot.py at 2018-06-29 12:39:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 9.94 Mbit/s
95th percentile per-packet one-way delay: 212.004 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 9.94 Mbit/s
95th percentile per-packet one-way delay: 212.004 ms
Loss rate: 0.00%
```

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2018-06-29 12:04:26

End at: 2018-06-29 12:04:56

Local clock offset: 2.267 ms

Remote clock offset: 5.058 ms

Below is generated by plot.py at 2018-06-29 12:39:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.40 Mbit/s

95th percentile per-packet one-way delay: 16.693 ms

Loss rate: 0.00%

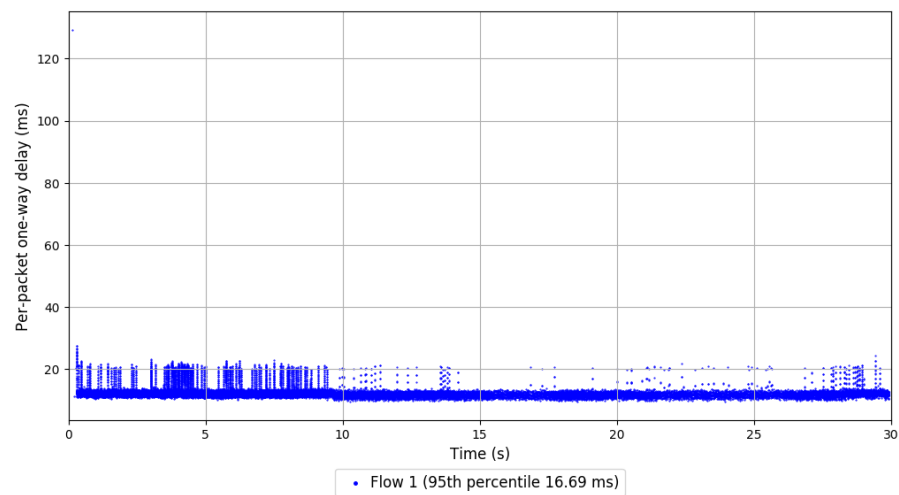
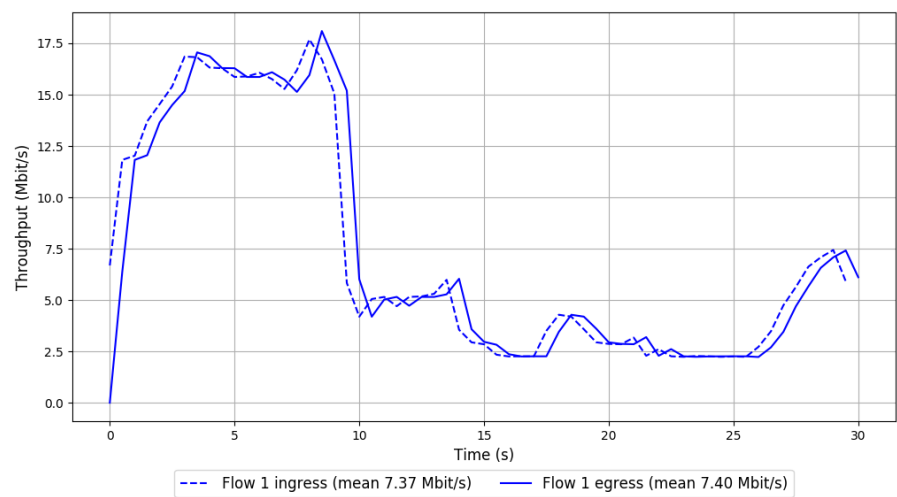
-- Flow 1:

Average throughput: 7.40 Mbit/s

95th percentile per-packet one-way delay: 16.693 ms

Loss rate: 0.00%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-06-29 12:26:37

End at: 2018-06-29 12:27:07

Local clock offset: 1.758 ms

Remote clock offset: 0.172 ms

Below is generated by plot.py at 2018-06-29 12:39:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 8.67 Mbit/s

95th percentile per-packet one-way delay: 19.009 ms

Loss rate: 0.00%

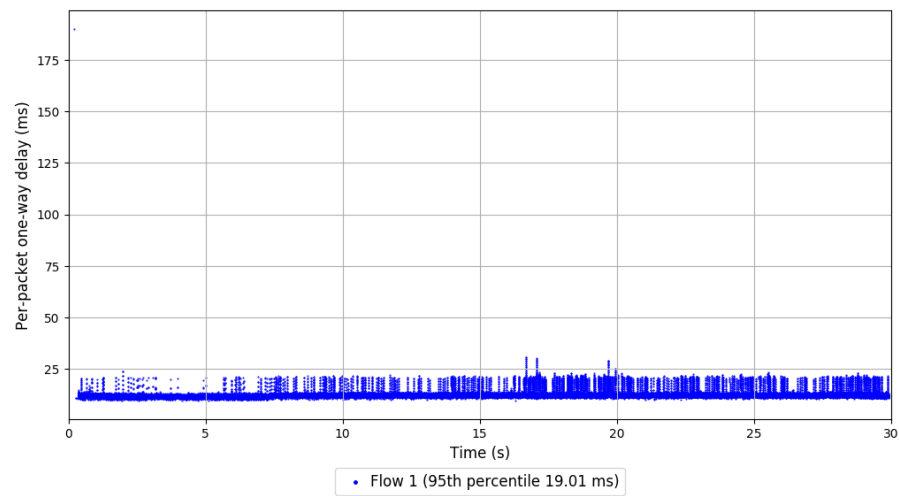
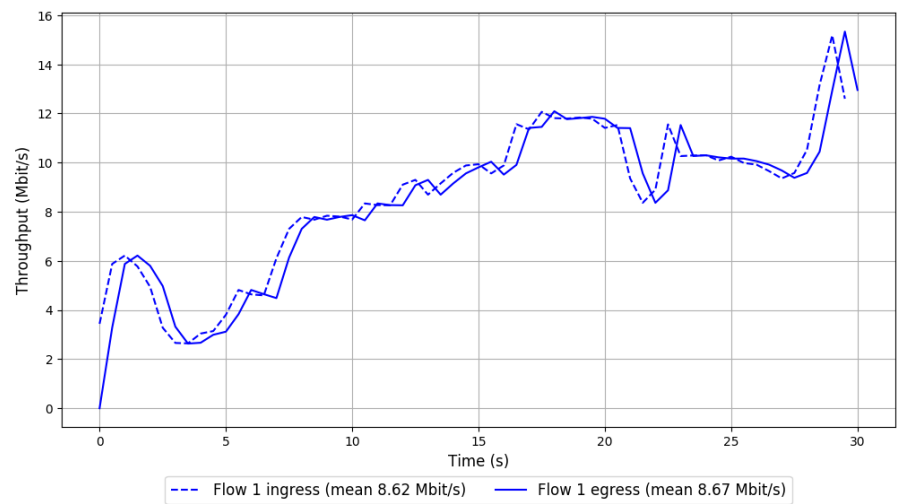
-- Flow 1:

Average throughput: 8.67 Mbit/s

95th percentile per-packet one-way delay: 19.009 ms

Loss rate: 0.00%

Run 3: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

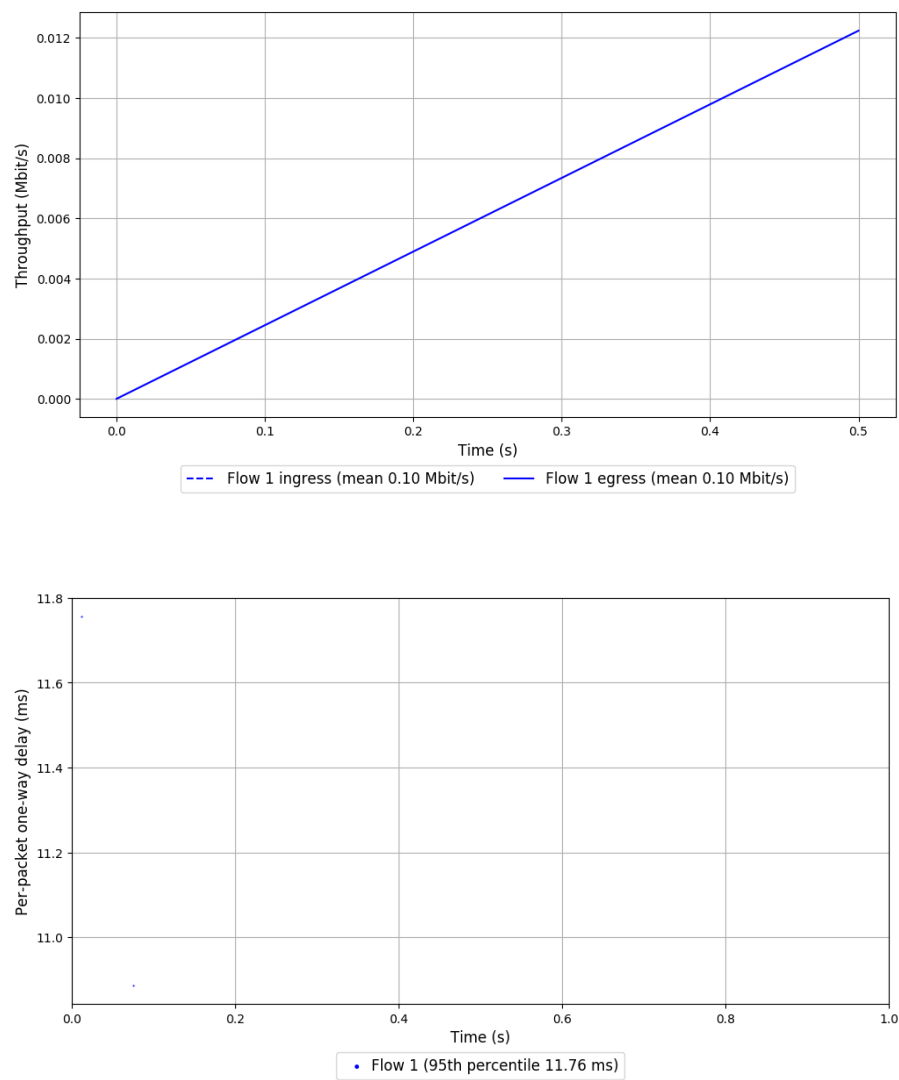
Start at: 2018-06-29 11:48:48

End at: 2018-06-29 11:49:18

Local clock offset: 1.634 ms

Remote clock offset: 3.637 ms

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-06-29 12:10:57

End at: 2018-06-29 12:11:27

Local clock offset: 2.896 ms

Remote clock offset: 4.952 ms

Below is generated by plot.py at 2018-06-29 12:39:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 40.12 Mbit/s

95th percentile per-packet one-way delay: 204.474 ms

Loss rate: 0.58%

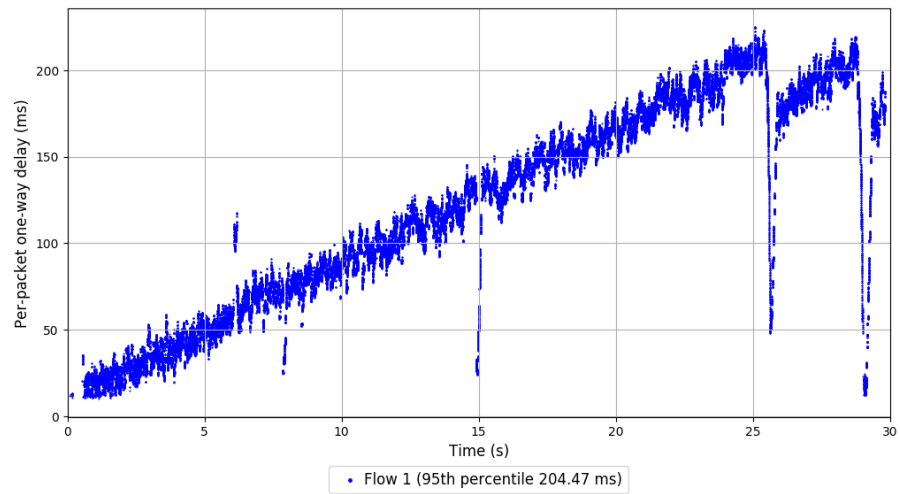
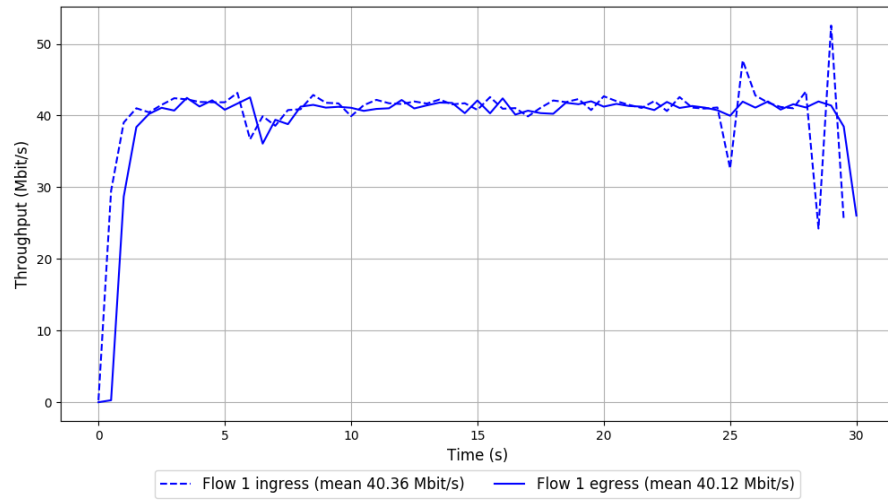
-- Flow 1:

Average throughput: 40.12 Mbit/s

95th percentile per-packet one-way delay: 204.474 ms

Loss rate: 0.58%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-06-29 12:33:14

End at: 2018-06-29 12:33:44

Local clock offset: 1.653 ms

Remote clock offset: -0.275 ms

Below is generated by plot.py at 2018-06-29 12:39:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 38.35 Mbit/s

95th percentile per-packet one-way delay: 193.348 ms

Loss rate: 0.63%

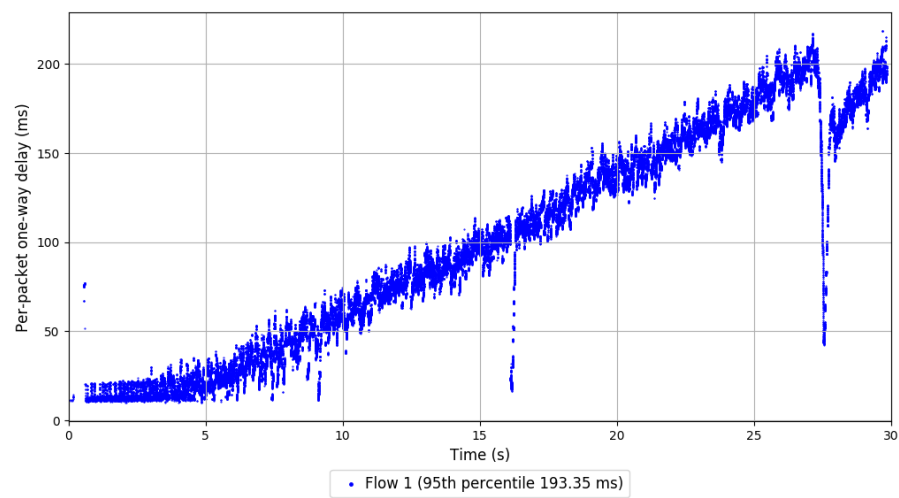
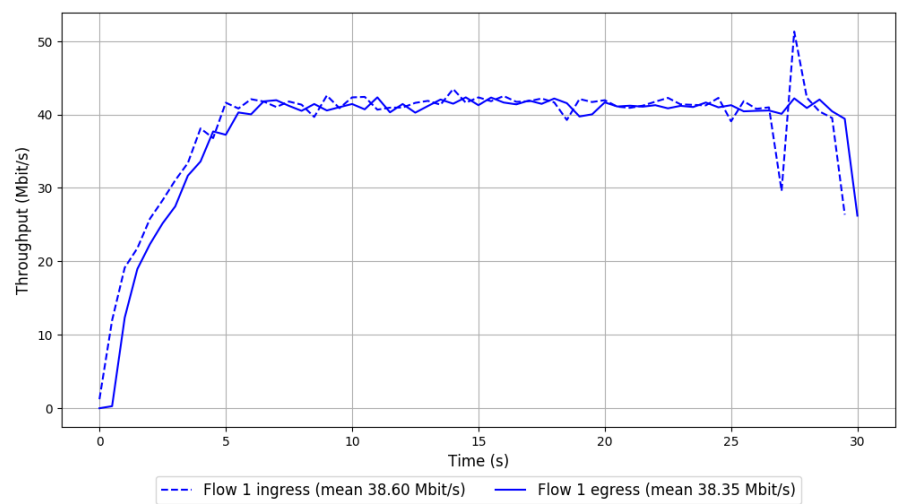
-- Flow 1:

Average throughput: 38.35 Mbit/s

95th percentile per-packet one-way delay: 193.348 ms

Loss rate: 0.63%

Run 3: Report of QUIC Cubic — Data Link

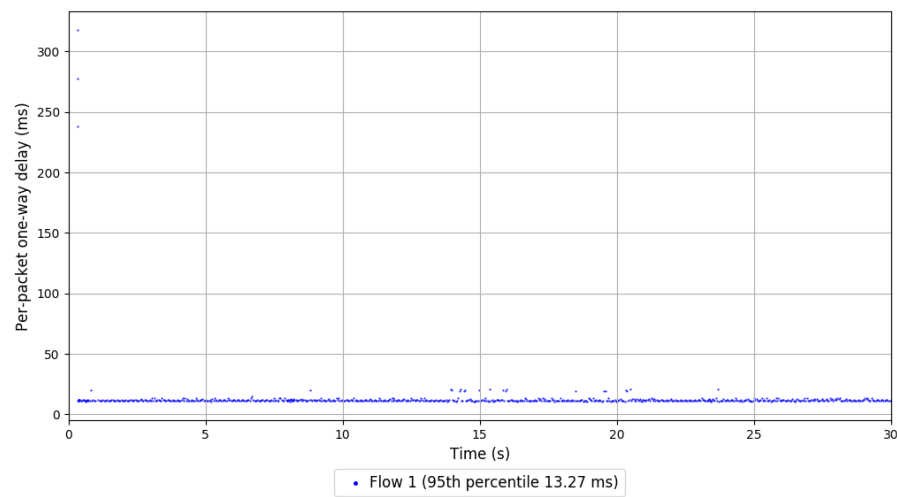
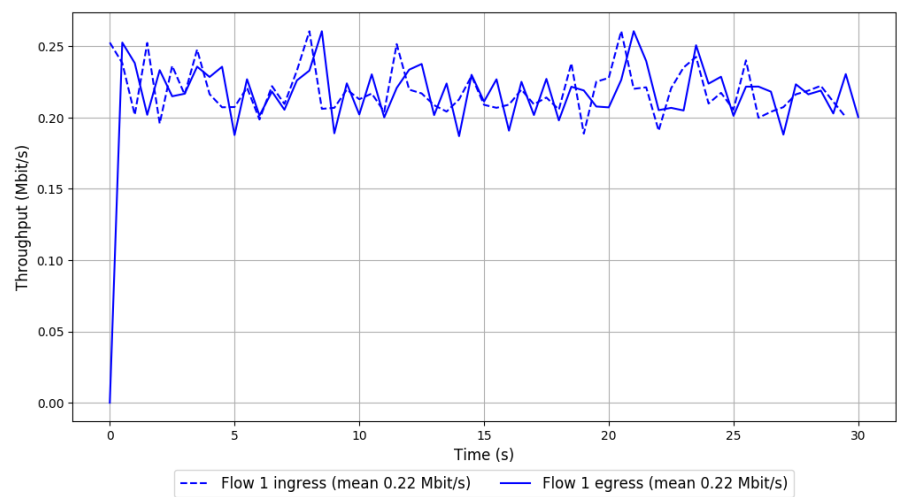


```
Run 1: Statistics of SCReAM

Start at: 2018-06-29 11:37:05
End at: 2018-06-29 11:37:35
Local clock offset: 1.105 ms
Remote clock offset: 2.51 ms

# Below is generated by plot.py at 2018-06-29 12:39:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 13.273 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 13.273 ms
Loss rate: 0.00%
```


Run 1: Report of SReAM — Data Link



Run 2: Statistics of SCReAM

Start at: 2018-06-29 11:59:12

End at: 2018-06-29 11:59:42

Local clock offset: 1.895 ms

Remote clock offset: 4.588 ms

Below is generated by plot.py at 2018-06-29 12:39:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 11.904 ms

Loss rate: 0.00%

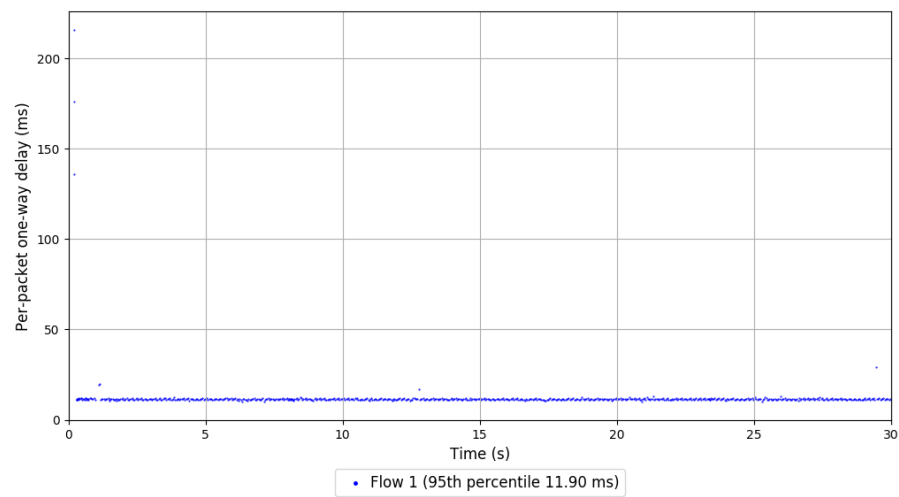
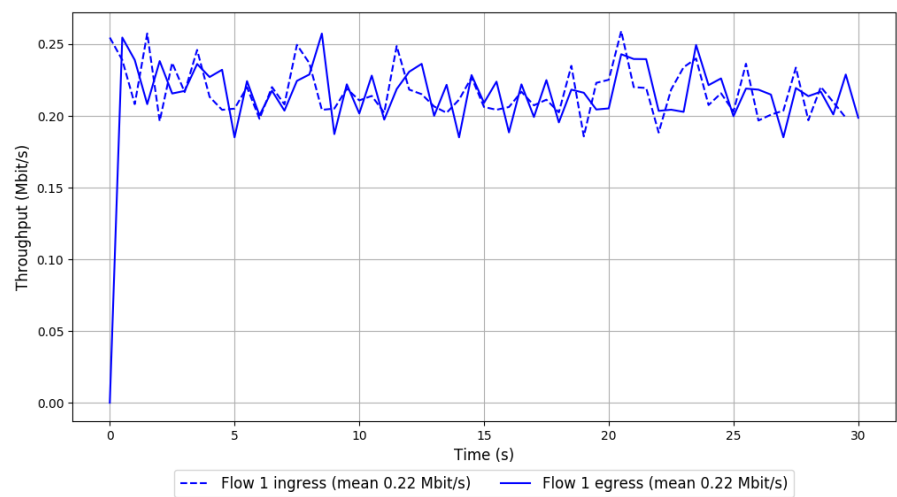
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 11.904 ms

Loss rate: 0.00%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2018-06-29 12:21:24

End at: 2018-06-29 12:21:54

Local clock offset: 2.132 ms

Remote clock offset: 1.019 ms

Below is generated by plot.py at 2018-06-29 12:39:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 19.834 ms

Loss rate: 0.00%

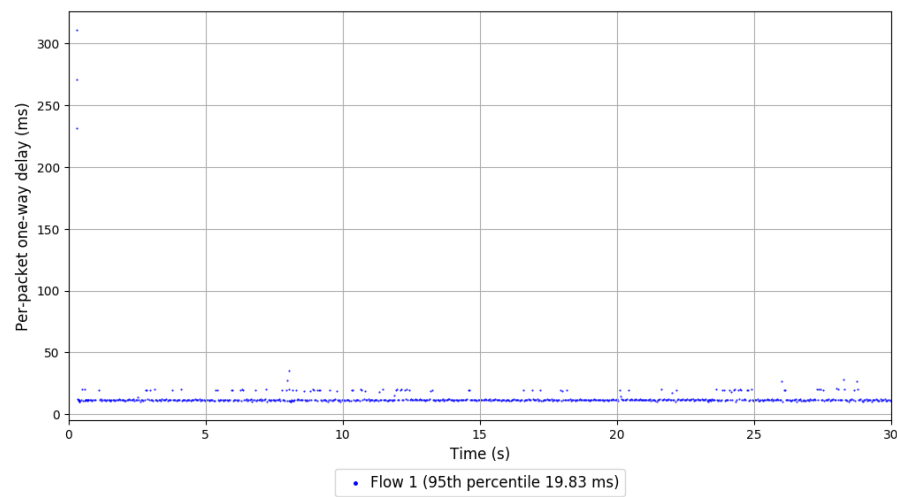
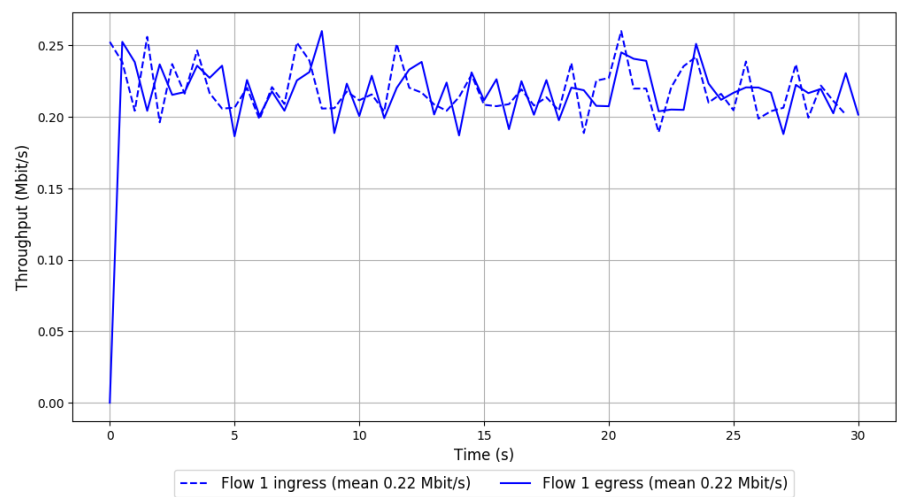
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 19.834 ms

Loss rate: 0.00%

Run 3: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-06-29 11:52:41

End at: 2018-06-29 11:53:11

Local clock offset: 1.531 ms

Remote clock offset: 3.99 ms

Below is generated by plot.py at 2018-06-29 12:39:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 13.67 Mbit/s

95th percentile per-packet one-way delay: 27.861 ms

Loss rate: 0.00%

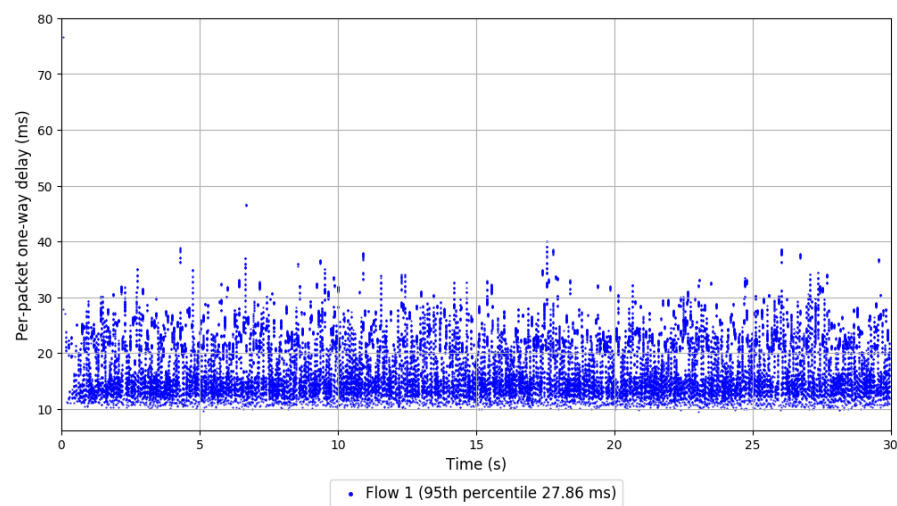
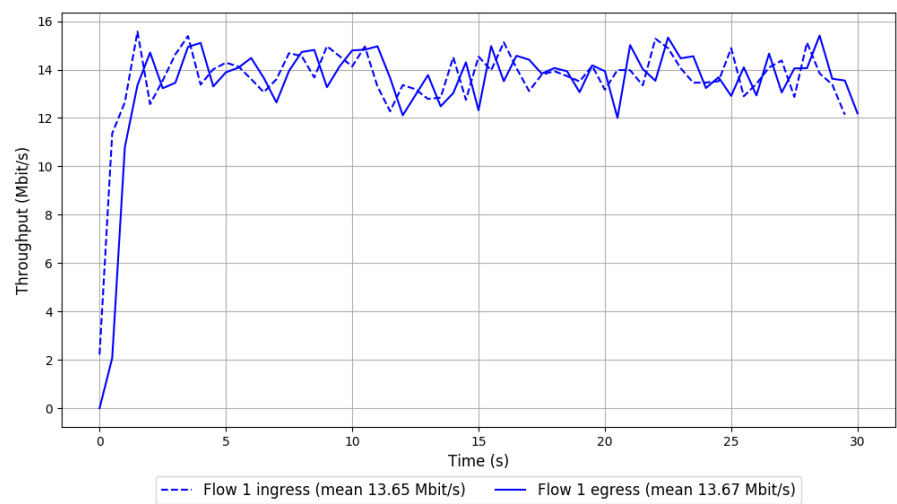
-- Flow 1:

Average throughput: 13.67 Mbit/s

95th percentile per-packet one-way delay: 27.861 ms

Loss rate: 0.00%

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

Start at: 2018-06-29 12:14:52

End at: 2018-06-29 12:15:22

Local clock offset: 3.25 ms

Remote clock offset: 2.967 ms

Below is generated by plot.py at 2018-06-29 12:39:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 13.80 Mbit/s

95th percentile per-packet one-way delay: 30.786 ms

Loss rate: 0.00%

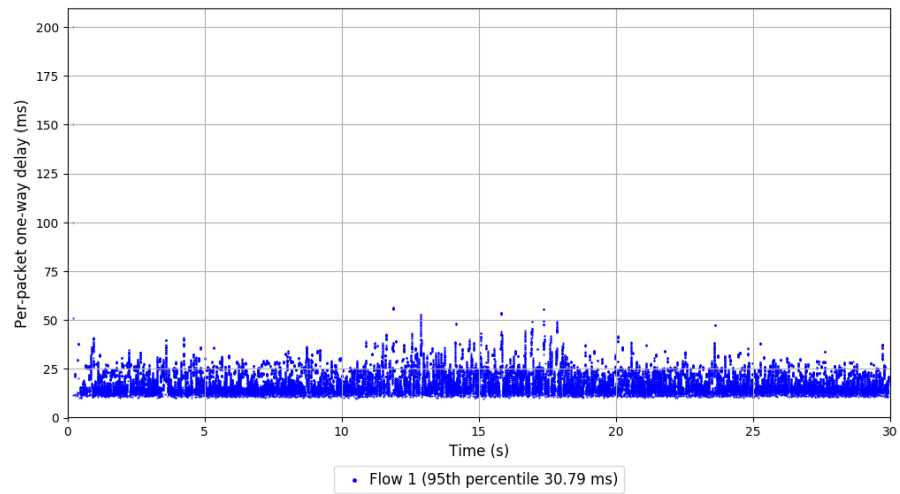
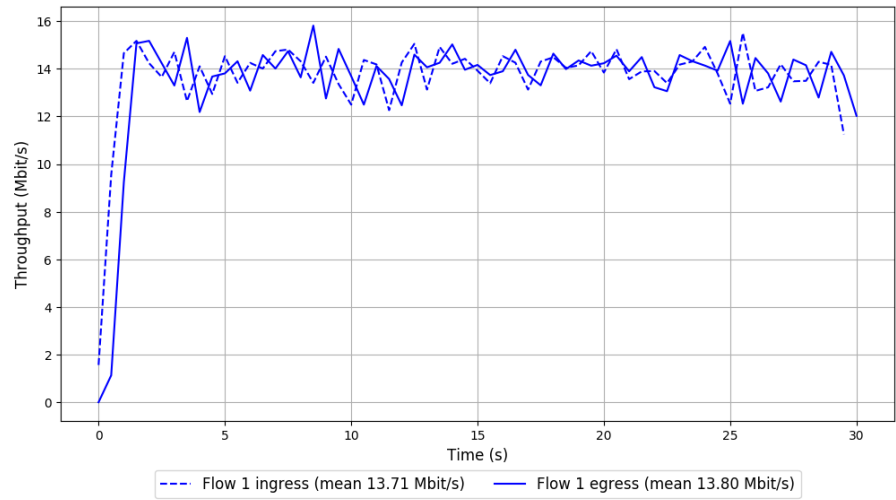
-- Flow 1:

Average throughput: 13.80 Mbit/s

95th percentile per-packet one-way delay: 30.786 ms

Loss rate: 0.00%

Run 2: Report of Sprout — Data Link

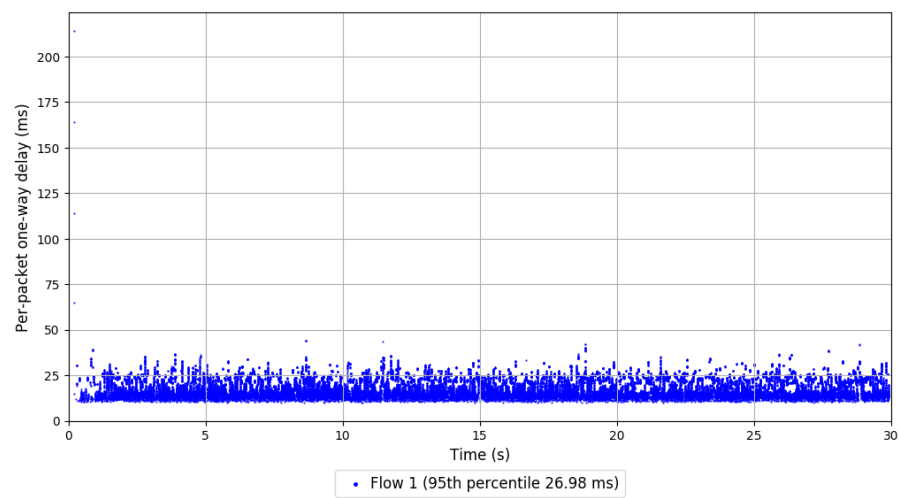
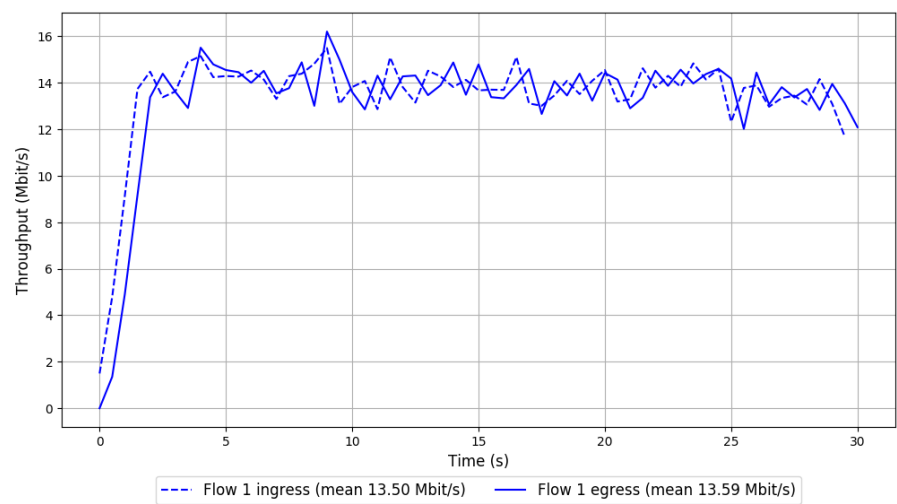


Run 3: Statistics of Sprout

Start at: 2018-06-29 12:37:10
End at: 2018-06-29 12:37:40
Local clock offset: 1.741 ms
Remote clock offset: -0.449 ms

Below is generated by plot.py at 2018-06-29 12:39:41
Datalink statistics
-- Total of 1 flow:
Average throughput: 13.59 Mbit/s
95th percentile per-packet one-way delay: 26.979 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 13.59 Mbit/s
95th percentile per-packet one-way delay: 26.979 ms
Loss rate: 0.00%

Run 3: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2018-06-29 11:50:05

End at: 2018-06-29 11:50:35

Local clock offset: 1.611 ms

Remote clock offset: 3.797 ms

Below is generated by plot.py at 2018-06-29 12:39:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 5.05 Mbit/s

95th percentile per-packet one-way delay: 19.863 ms

Loss rate: 0.00%

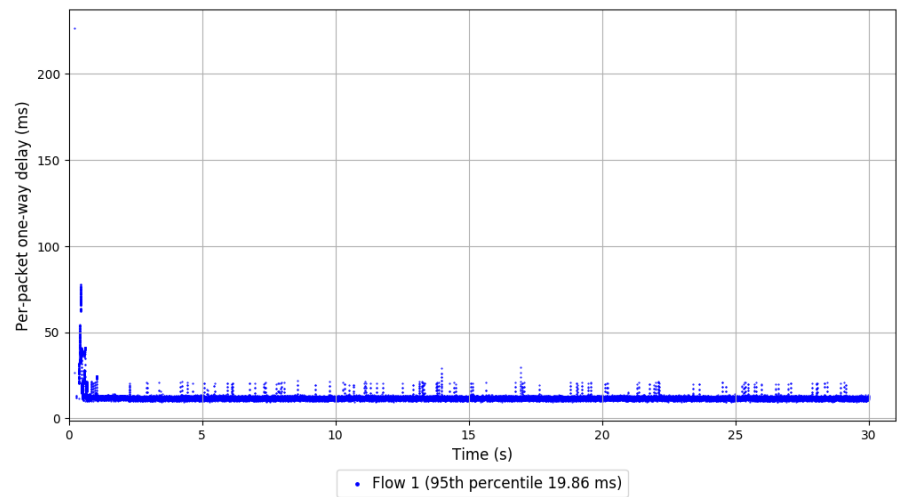
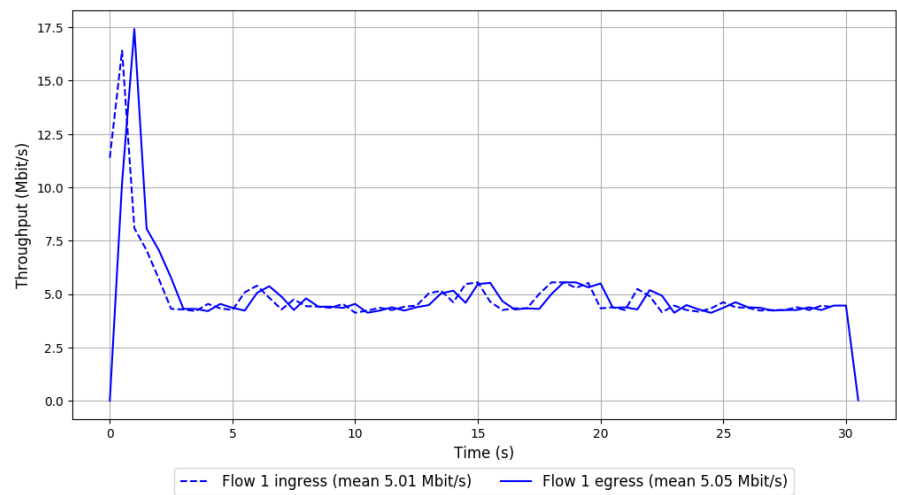
-- Flow 1:

Average throughput: 5.05 Mbit/s

95th percentile per-packet one-way delay: 19.863 ms

Loss rate: 0.00%

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-06-29 12:12:16

End at: 2018-06-29 12:12:46

Local clock offset: 3.005 ms

Remote clock offset: 4.138 ms

Below is generated by plot.py at 2018-06-29 12:39:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 6.20 Mbit/s

95th percentile per-packet one-way delay: 28.095 ms

Loss rate: 0.00%

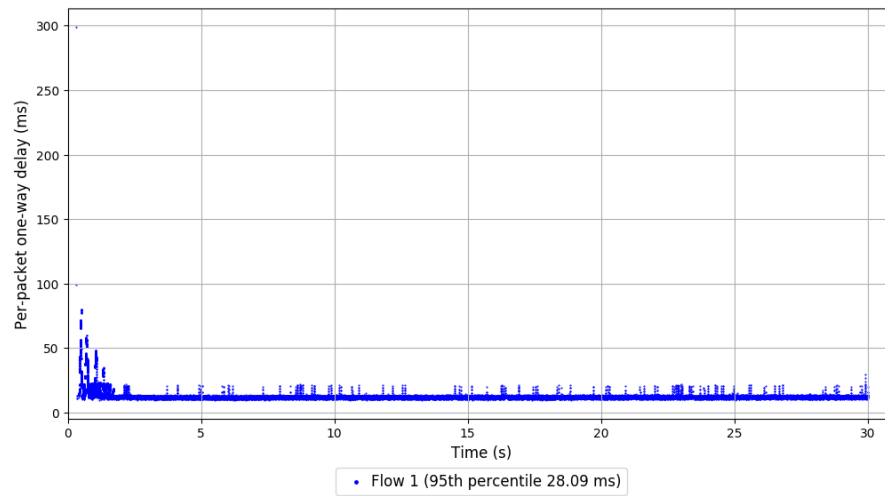
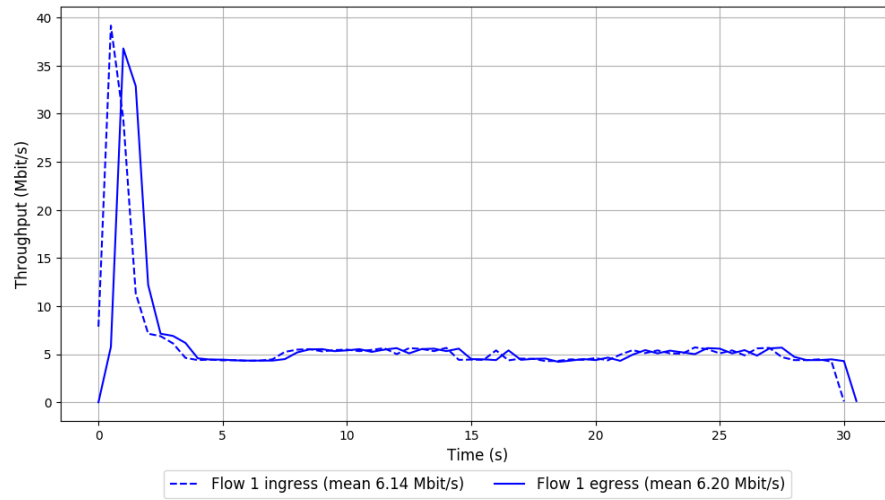
-- Flow 1:

Average throughput: 6.20 Mbit/s

95th percentile per-packet one-way delay: 28.095 ms

Loss rate: 0.00%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-06-29 12:34:33

End at: 2018-06-29 12:35:03

Local clock offset: 1.594 ms

Remote clock offset: -0.372 ms

Below is generated by plot.py at 2018-06-29 12:39:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 5.13 Mbit/s

95th percentile per-packet one-way delay: 23.939 ms

Loss rate: 0.00%

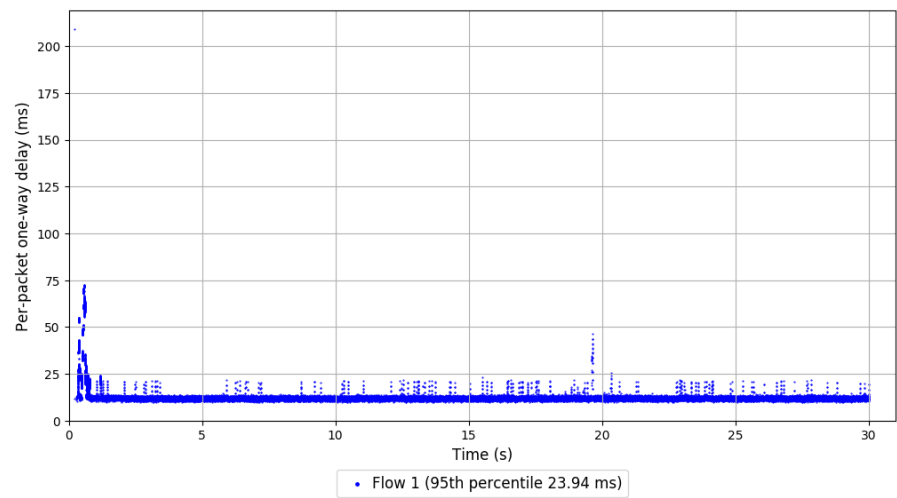
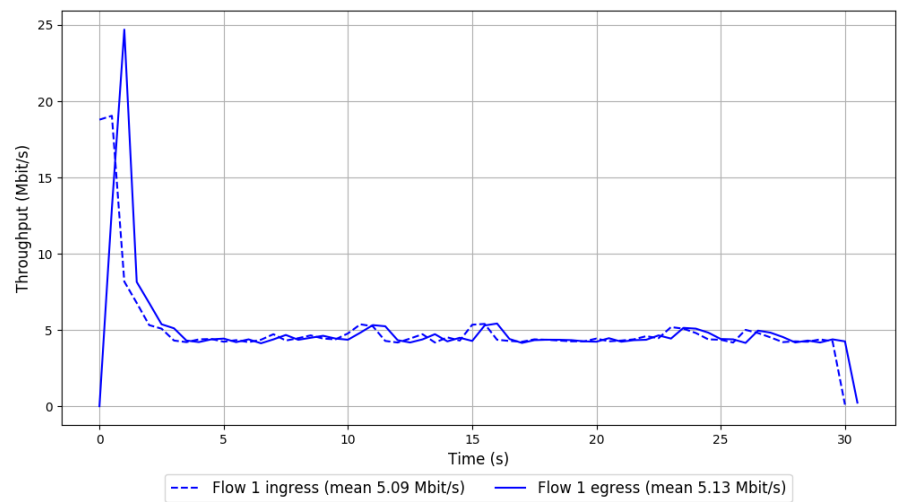
-- Flow 1:

Average throughput: 5.13 Mbit/s

95th percentile per-packet one-way delay: 23.939 ms

Loss rate: 0.00%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-06-29 11:46:12

End at: 2018-06-29 11:46:42

Local clock offset: 1.673 ms

Remote clock offset: 3.524 ms

Below is generated by plot.py at 2018-06-29 12:39:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 15.91 Mbit/s

95th percentile per-packet one-way delay: 54.388 ms

Loss rate: 0.00%

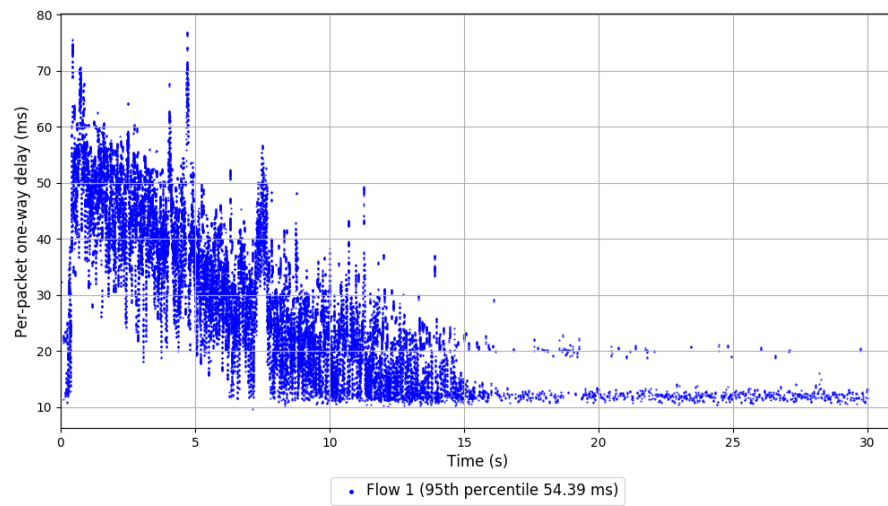
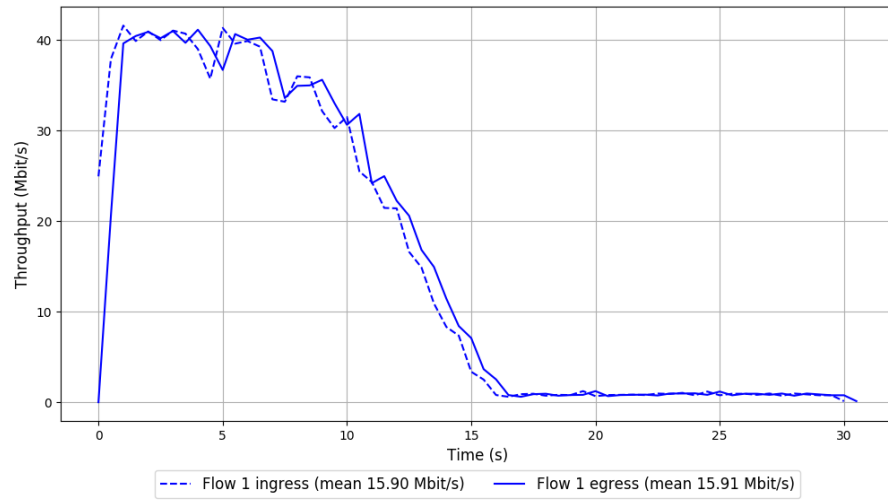
-- Flow 1:

Average throughput: 15.91 Mbit/s

95th percentile per-packet one-way delay: 54.388 ms

Loss rate: 0.00%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-06-29 12:08:21

End at: 2018-06-29 12:08:51

Local clock offset: 2.646 ms

Remote clock offset: 5.406 ms

Below is generated by plot.py at 2018-06-29 12:39:41

Datalink statistics

-- Total of 1 flow:

Average throughput: 5.00 Mbit/s

95th percentile per-packet one-way delay: 32.000 ms

Loss rate: 0.00%

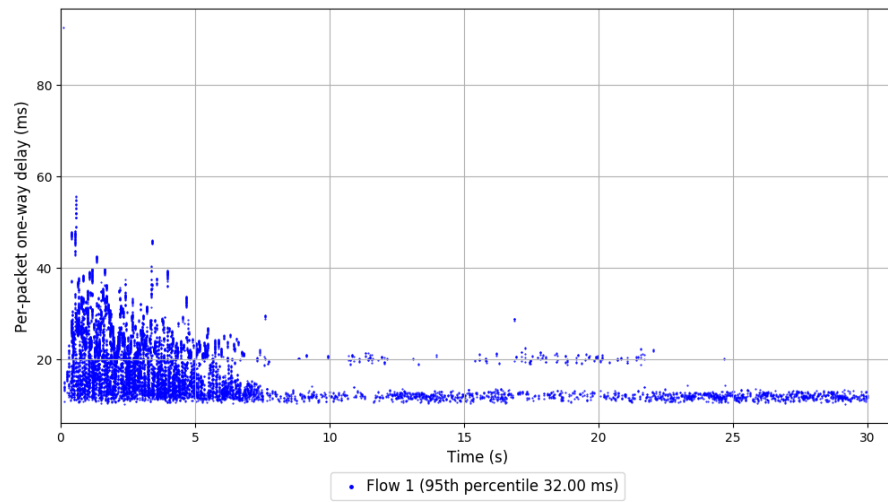
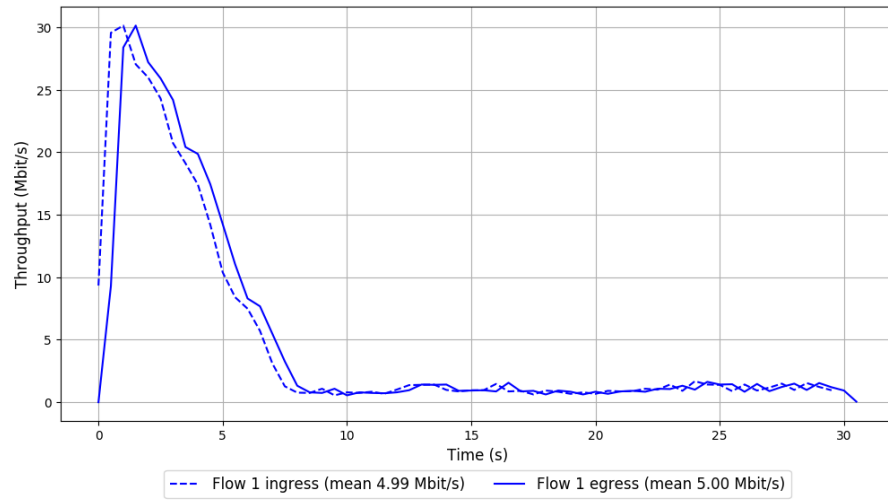
-- Flow 1:

Average throughput: 5.00 Mbit/s

95th percentile per-packet one-way delay: 32.000 ms

Loss rate: 0.00%

Run 2: Report of TCP Vegas — Data Link

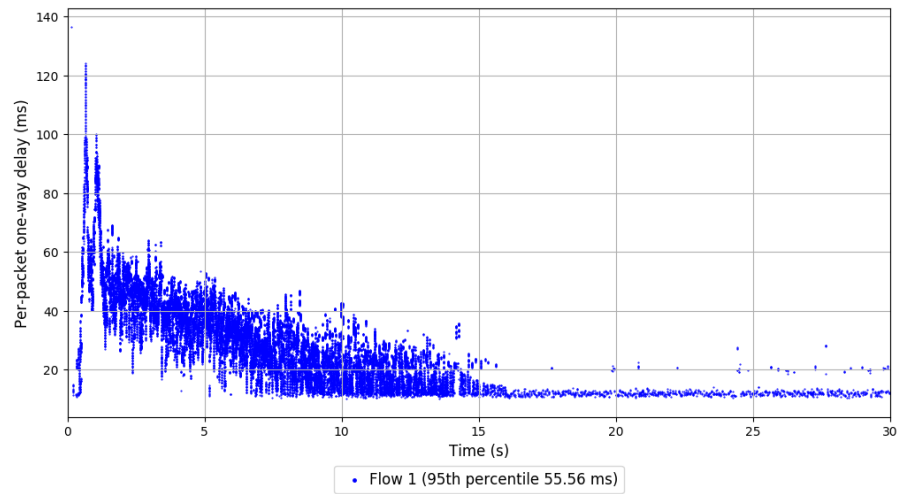
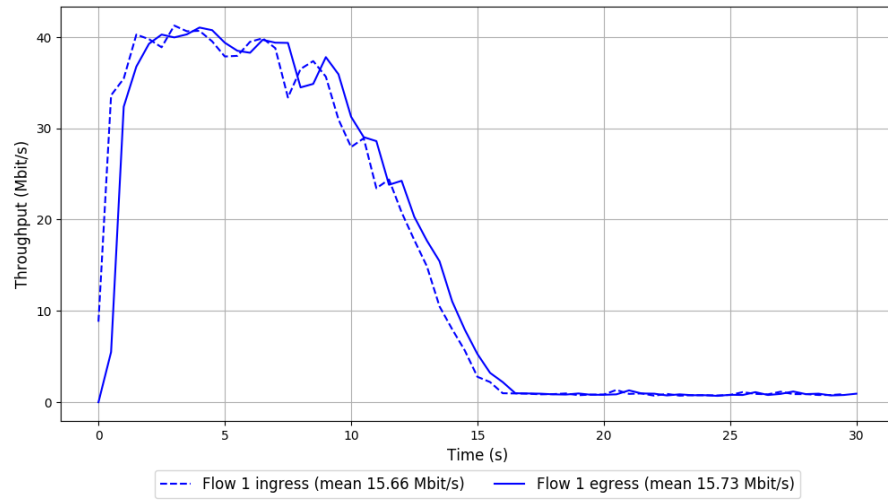


Run 3: Statistics of TCP Vegas

Start at: 2018-06-29 12:30:37
End at: 2018-06-29 12:31:07
Local clock offset: 1.673 ms
Remote clock offset: -0.099 ms

Below is generated by plot.py at 2018-06-29 12:39:41
Datalink statistics
-- Total of 1 flow:
Average throughput: 15.73 Mbit/s
95th percentile per-packet one-way delay: 55.564 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 15.73 Mbit/s
95th percentile per-packet one-way delay: 55.564 ms
Loss rate: 0.00%

Run 3: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-06-29 11:34:28

End at: 2018-06-29 11:34:58

Local clock offset: 1.359 ms

Remote clock offset: 2.256 ms

Below is generated by plot.py at 2018-06-29 12:39:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 38.04 Mbit/s

95th percentile per-packet one-way delay: 185.305 ms

Loss rate: 0.96%

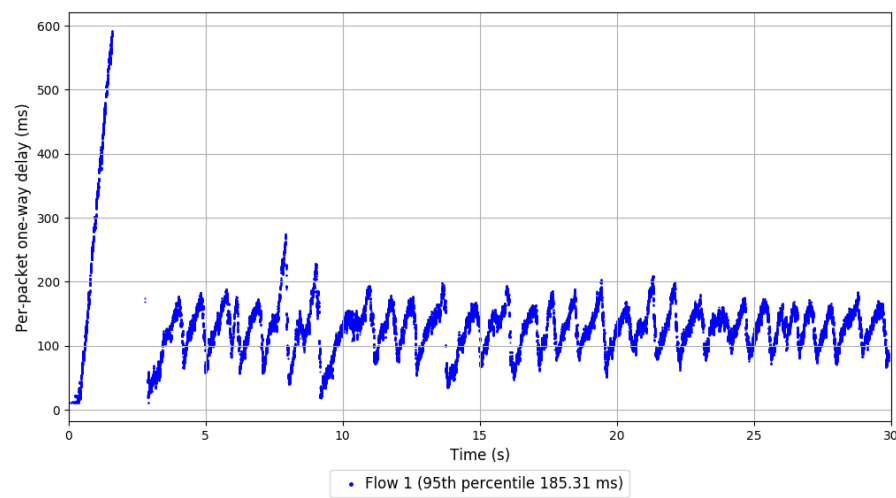
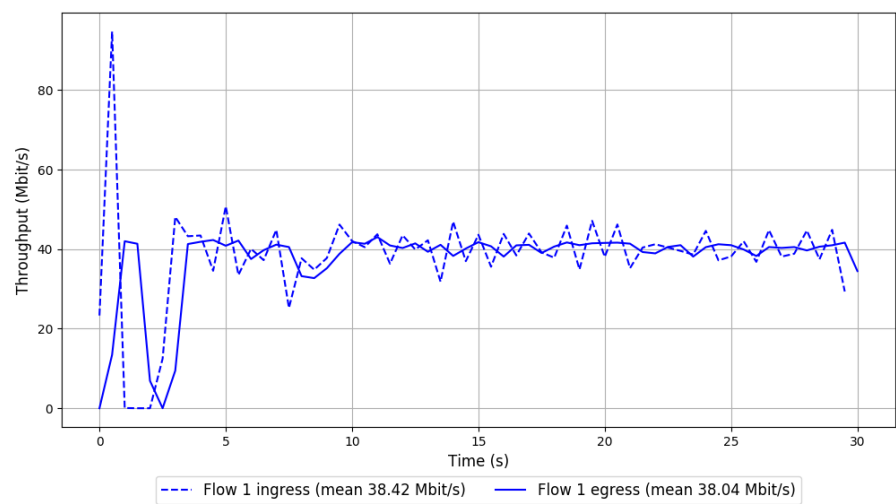
-- Flow 1:

Average throughput: 38.04 Mbit/s

95th percentile per-packet one-way delay: 185.305 ms

Loss rate: 0.96%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2018-06-29 11:56:36

End at: 2018-06-29 11:57:06

Local clock offset: 1.751 ms

Remote clock offset: 4.345 ms

Below is generated by plot.py at 2018-06-29 12:39:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 38.06 Mbit/s

95th percentile per-packet one-way delay: 194.093 ms

Loss rate: 1.30%

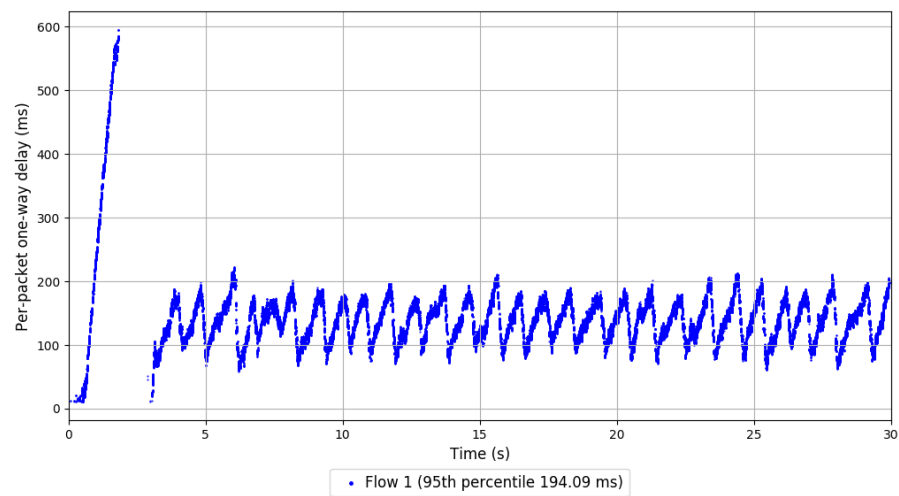
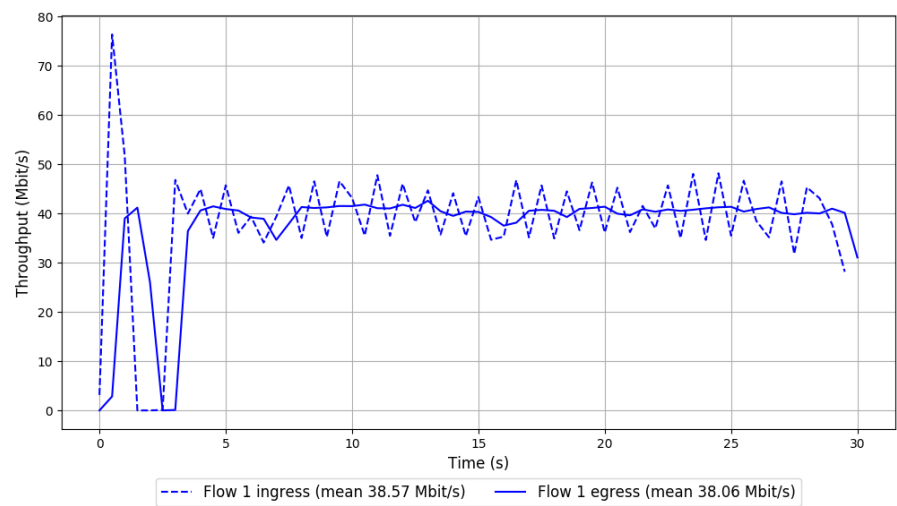
-- Flow 1:

Average throughput: 38.06 Mbit/s

95th percentile per-packet one-way delay: 194.093 ms

Loss rate: 1.30%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2018-06-29 12:18:47

End at: 2018-06-29 12:19:17

Local clock offset: 2.652 ms

Remote clock offset: 1.674 ms

Below is generated by plot.py at 2018-06-29 12:39:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 38.50 Mbit/s

95th percentile per-packet one-way delay: 223.080 ms

Loss rate: 1.43%

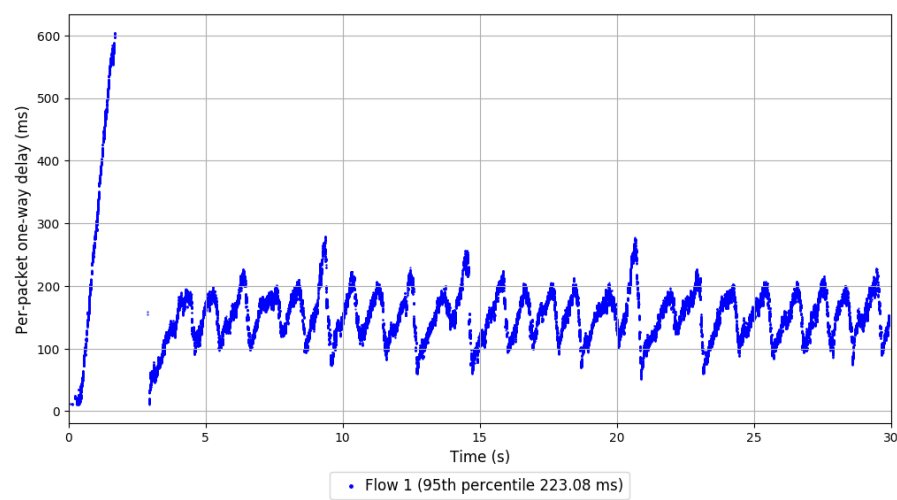
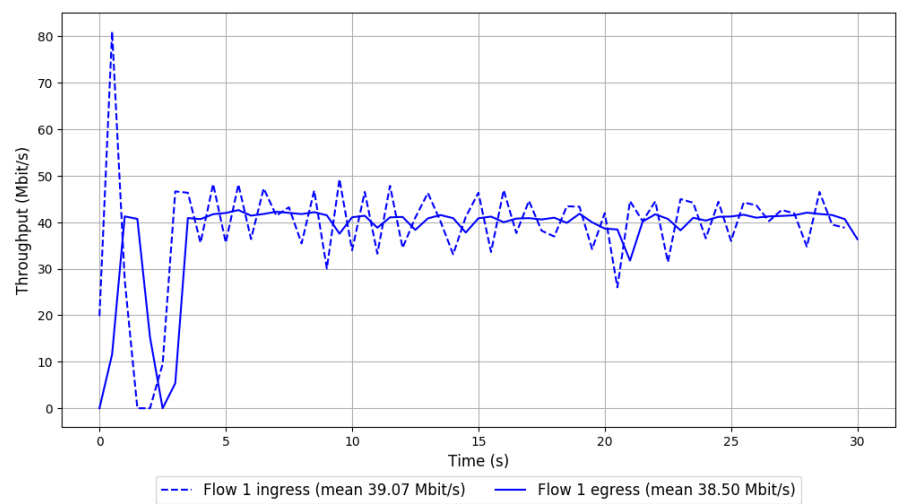
-- Flow 1:

Average throughput: 38.50 Mbit/s

95th percentile per-packet one-way delay: 223.080 ms

Loss rate: 1.43%

Run 3: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-06-29 11:38:22

End at: 2018-06-29 11:38:52

Local clock offset: 1.199 ms

Remote clock offset: 2.676 ms

Below is generated by plot.py at 2018-06-29 12:39:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.62 Mbit/s

95th percentile per-packet one-way delay: 12.524 ms

Loss rate: 0.00%

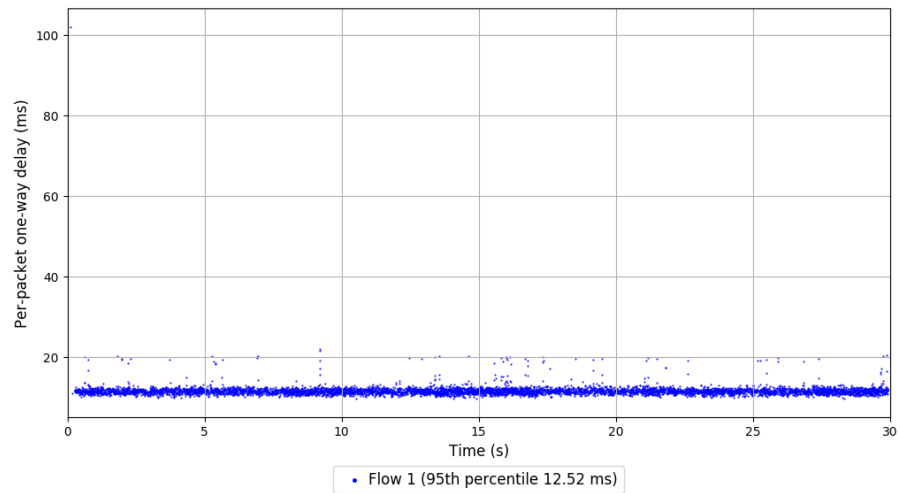
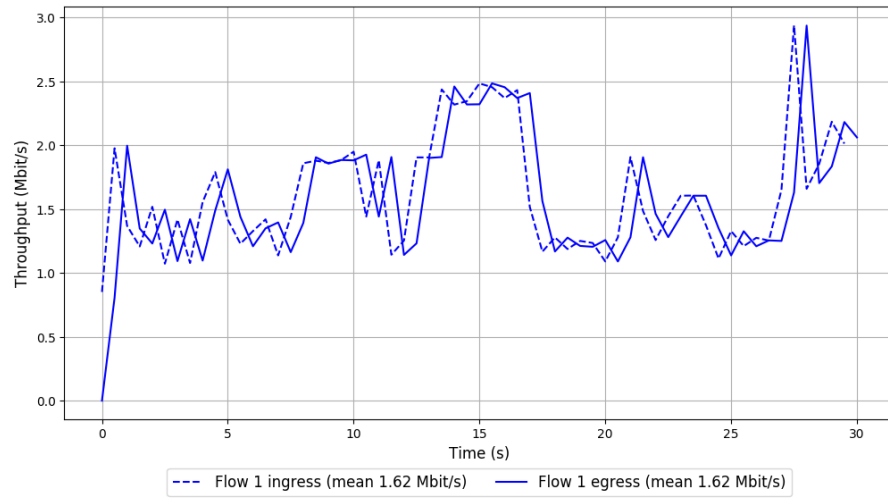
-- Flow 1:

Average throughput: 1.62 Mbit/s

95th percentile per-packet one-way delay: 12.524 ms

Loss rate: 0.00%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-06-29 12:00:30

End at: 2018-06-29 12:01:00

Local clock offset: 1.999 ms

Remote clock offset: 4.761 ms

Below is generated by plot.py at 2018-06-29 12:39:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 10.59 Mbit/s

95th percentile per-packet one-way delay: 18.404 ms

Loss rate: 0.00%

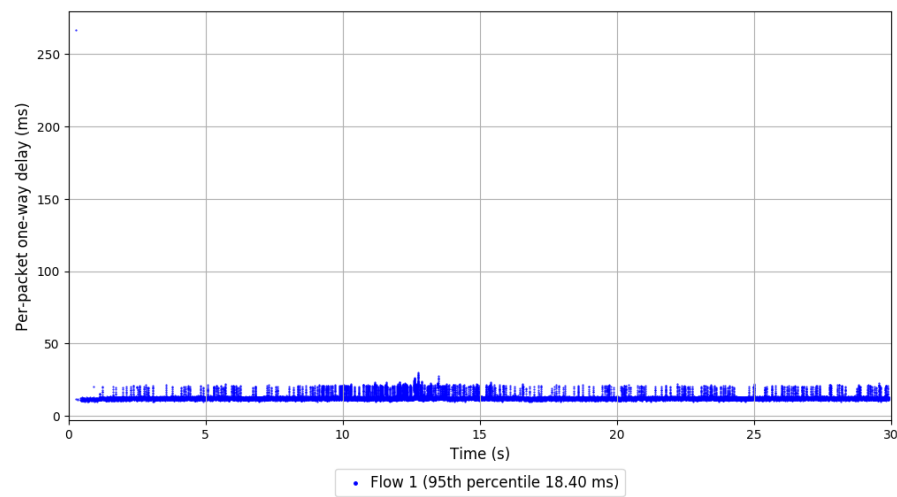
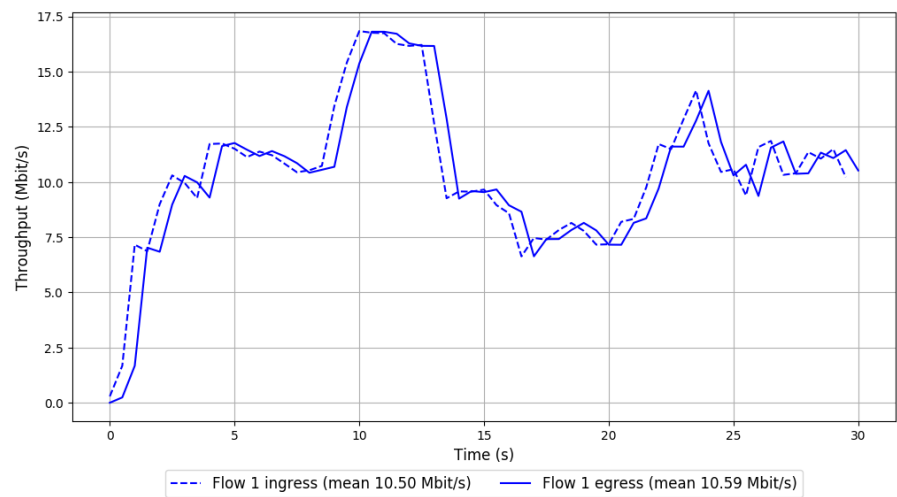
-- Flow 1:

Average throughput: 10.59 Mbit/s

95th percentile per-packet one-way delay: 18.404 ms

Loss rate: 0.00%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-06-29 12:22:42

End at: 2018-06-29 12:23:12

Local clock offset: 2.064 ms

Remote clock offset: 0.812 ms

Below is generated by plot.py at 2018-06-29 12:39:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.98 Mbit/s

95th percentile per-packet one-way delay: 12.760 ms

Loss rate: 0.00%

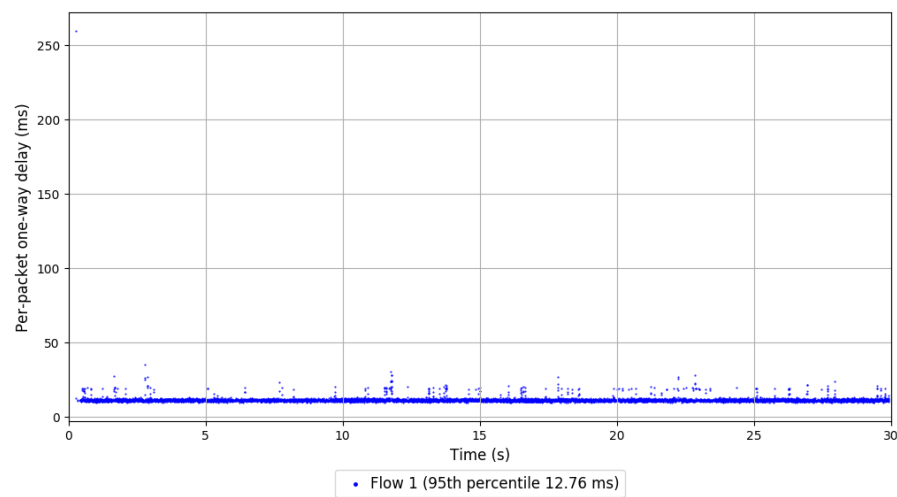
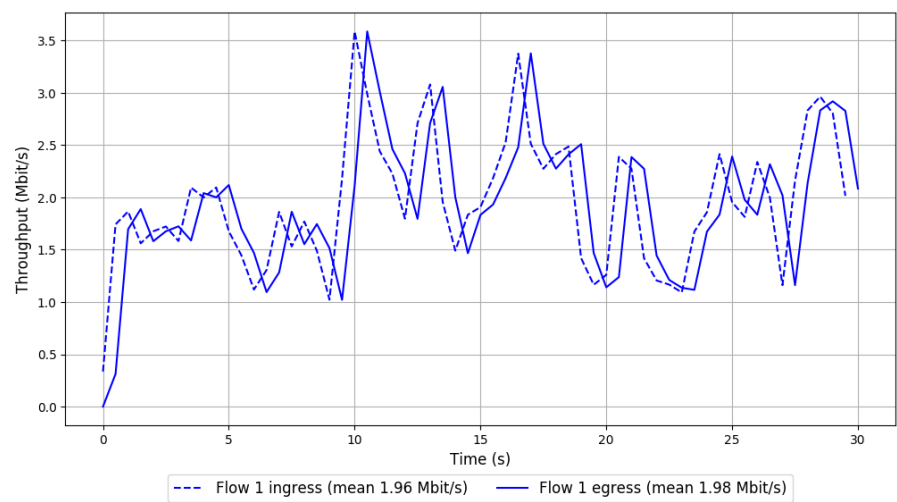
-- Flow 1:

Average throughput: 1.98 Mbit/s

95th percentile per-packet one-way delay: 12.760 ms

Loss rate: 0.00%

Run 3: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-06-29 11:35:47

End at: 2018-06-29 11:36:17

Local clock offset: 1.252 ms

Remote clock offset: 2.32 ms

Below is generated by plot.py at 2018-06-29 12:39:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.11 Mbit/s

95th percentile per-packet one-way delay: 15.065 ms

Loss rate: 0.00%

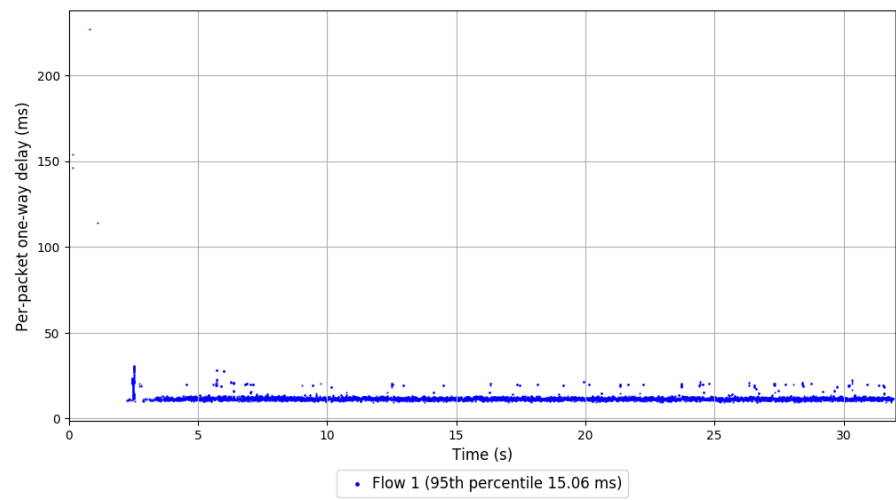
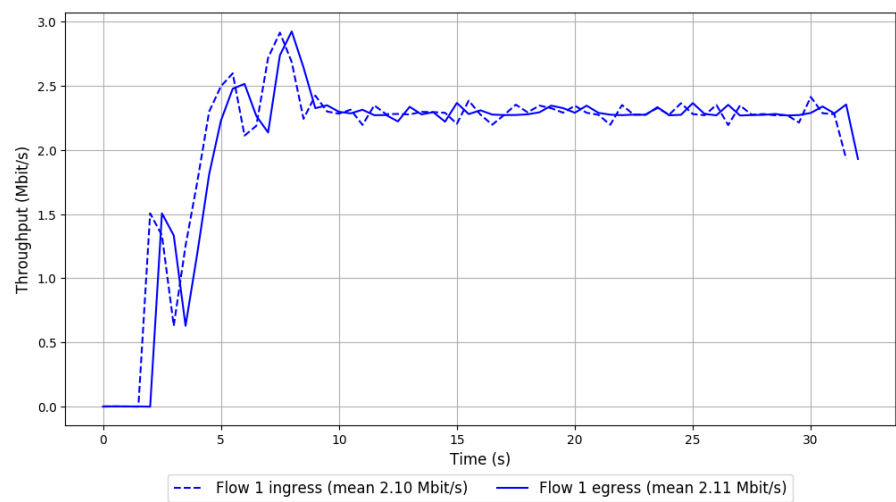
-- Flow 1:

Average throughput: 2.11 Mbit/s

95th percentile per-packet one-way delay: 15.065 ms

Loss rate: 0.00%

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-06-29 11:57:55

End at: 2018-06-29 11:58:25

Local clock offset: 1.813 ms

Remote clock offset: 4.567 ms

Below is generated by plot.py at 2018-06-29 12:39:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.97 Mbit/s

95th percentile per-packet one-way delay: 13.489 ms

Loss rate: 0.00%

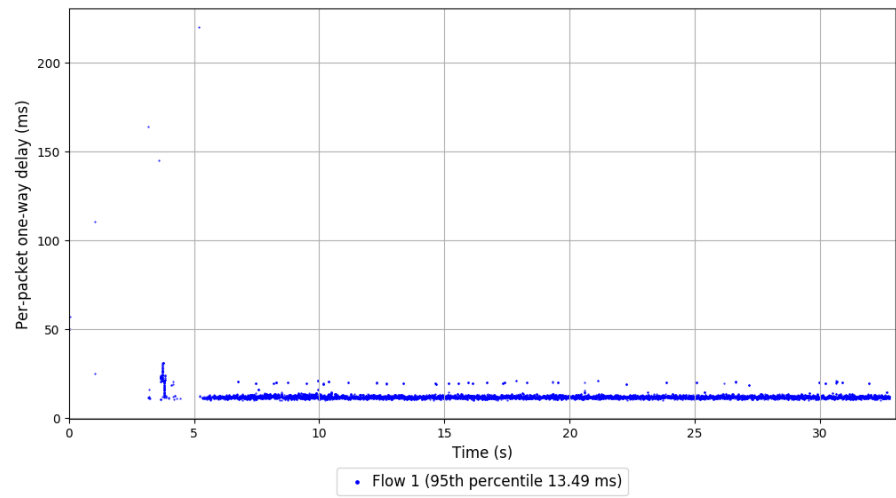
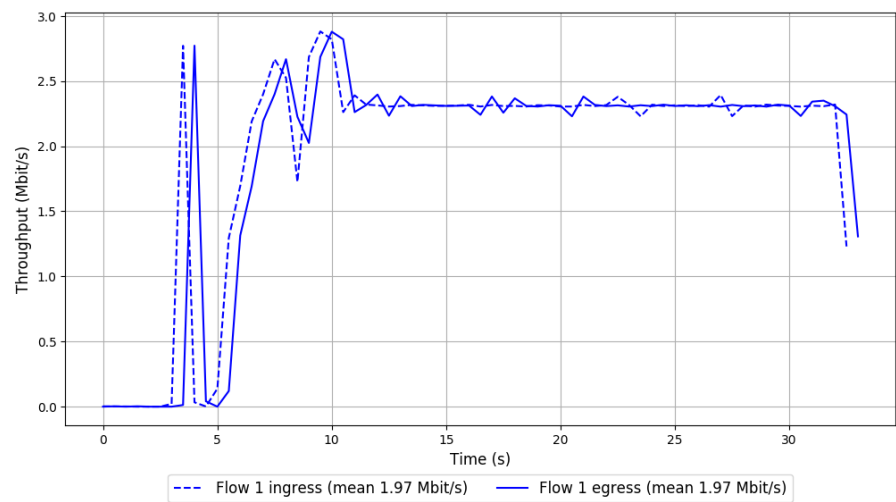
-- Flow 1:

Average throughput: 1.97 Mbit/s

95th percentile per-packet one-way delay: 13.489 ms

Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-06-29 12:20:07

End at: 2018-06-29 12:20:37

Local clock offset: 2.345 ms

Remote clock offset: 1.304 ms

Below is generated by plot.py at 2018-06-29 12:39:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.97 Mbit/s

95th percentile per-packet one-way delay: 18.993 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 1.97 Mbit/s

95th percentile per-packet one-way delay: 18.993 ms

Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link

