

Pantheon Report

Generated at 2018-05-30 08:23:26 (UTC).

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

Repeated the test of 16 congestion control schemes 3 times.

Each test lasted for 30 seconds running 1 flow.

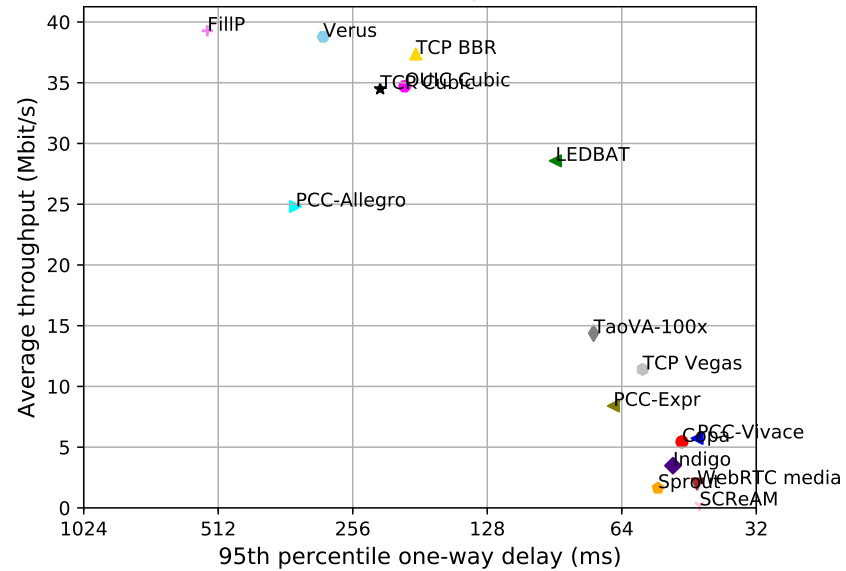
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

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

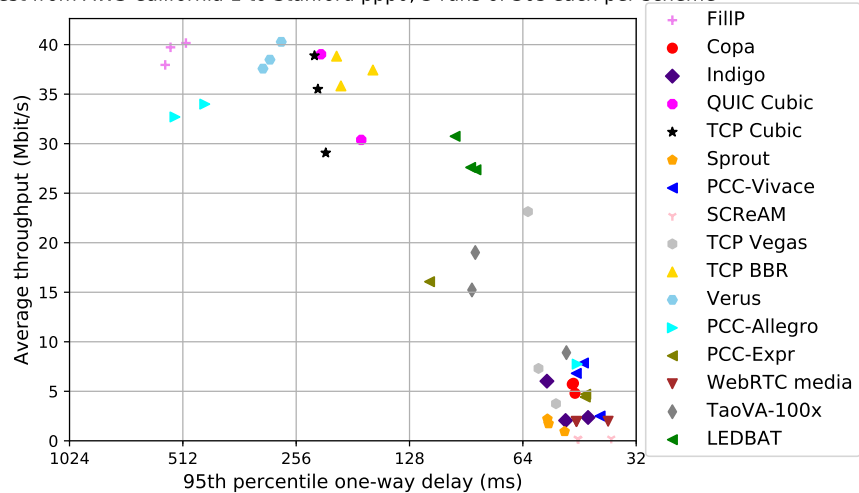
Git summary:

```
branch: master @ 227fdf9a3757f17b88537cceed5743a33037a3d2
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/genericCC @ c7966e494a929986eaa5a9c169a7f381fe1bbbe5
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-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ c838669682f0c19f6baf92afc9a596a406d48c1f
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

test from AWS California 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	37.37	184.93	0.31
Copa	3	5.44	46.93	0.06
TCP Cubic	3	34.49	222.23	0.56
FillP	3	39.28	541.64	28.94
Indigo	3	3.48	49.16	0.03
LEDBAT	3	28.57	90.07	0.31
PCC-Allegro	3	24.81	343.64	0.81
PCC-Expr	3	8.40	66.83	0.06
QUIC Cubic	2	34.70	195.94	0.15
SCReAM	3	0.20	42.88	0.09
Sprout	3	1.63	53.11	0.00
TaoVA-100x	3	14.38	74.01	0.12
TCP Vegas	3	11.40	57.48	0.04
Verus	3	38.78	298.23	1.96
PCC-Vivace	3	5.72	43.42	0.12
WebRTC media	3	1.96	43.41	0.04

Run 1: Statistics of TCP BBR

Start at: 2018-05-30 07:19:07

End at: 2018-05-30 07:19:37

Local clock offset: 0.613 ms

Remote clock offset: -0.021 ms

Below is generated by plot.py at 2018-05-30 08:21:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 37.44 Mbit/s

95th percentile per-packet one-way delay: 160.122 ms

Loss rate: 0.12%

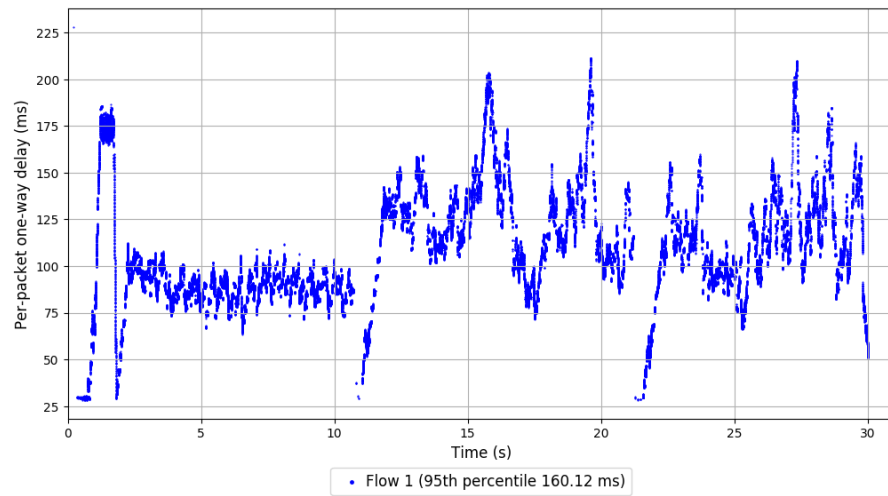
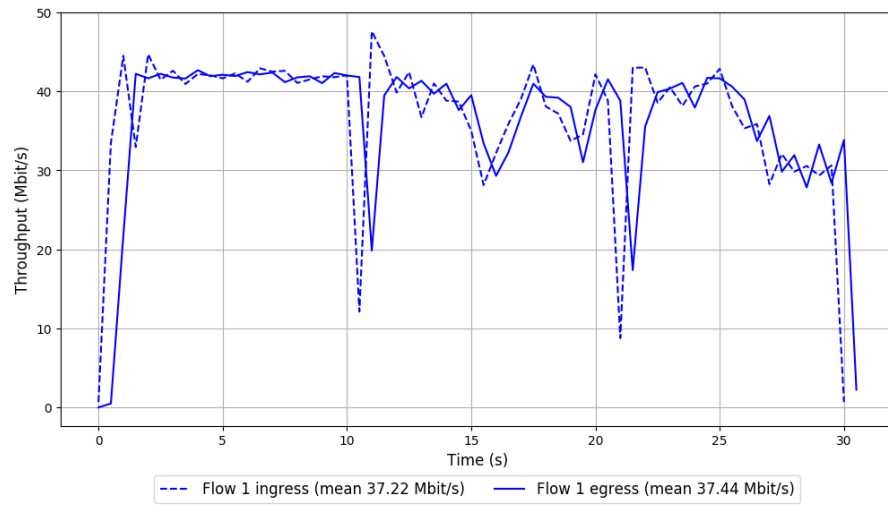
-- Flow 1:

Average throughput: 37.44 Mbit/s

95th percentile per-packet one-way delay: 160.122 ms

Loss rate: 0.12%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-05-30 07:40:03

End at: 2018-05-30 07:40:33

Local clock offset: 0.195 ms

Remote clock offset: 0.04 ms

Below is generated by plot.py at 2018-05-30 08:21:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 38.84 Mbit/s

95th percentile per-packet one-way delay: 199.948 ms

Loss rate: 0.39%

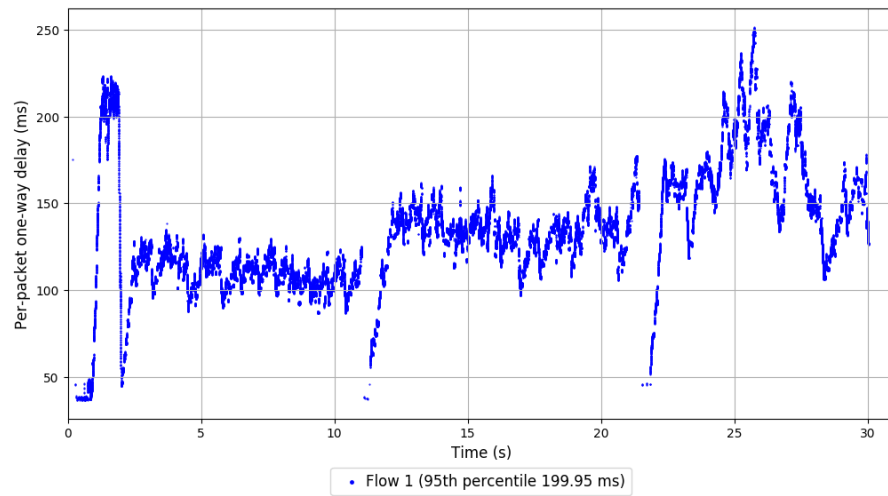
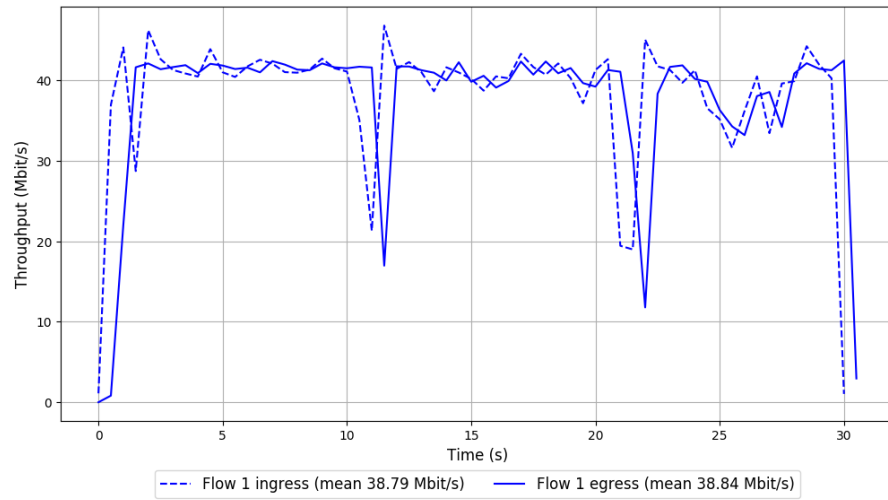
-- Flow 1:

Average throughput: 38.84 Mbit/s

95th percentile per-packet one-way delay: 199.948 ms

Loss rate: 0.39%

Run 2: Report of TCP BBR — Data Link

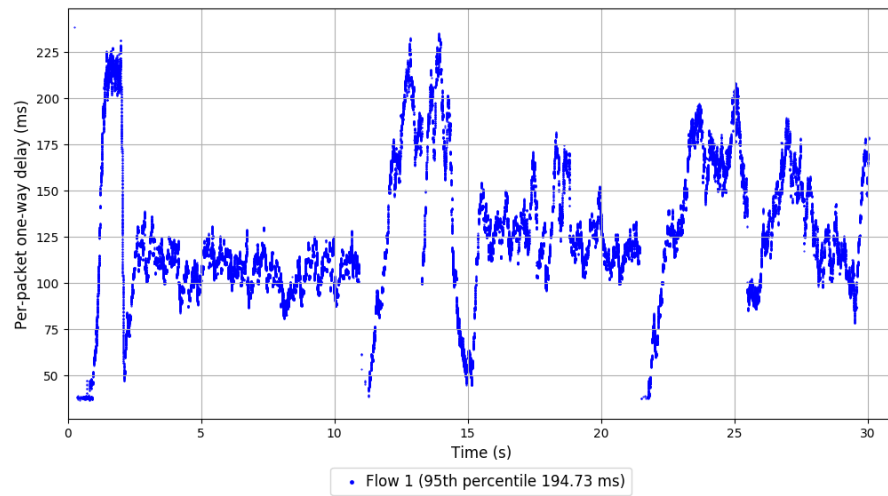
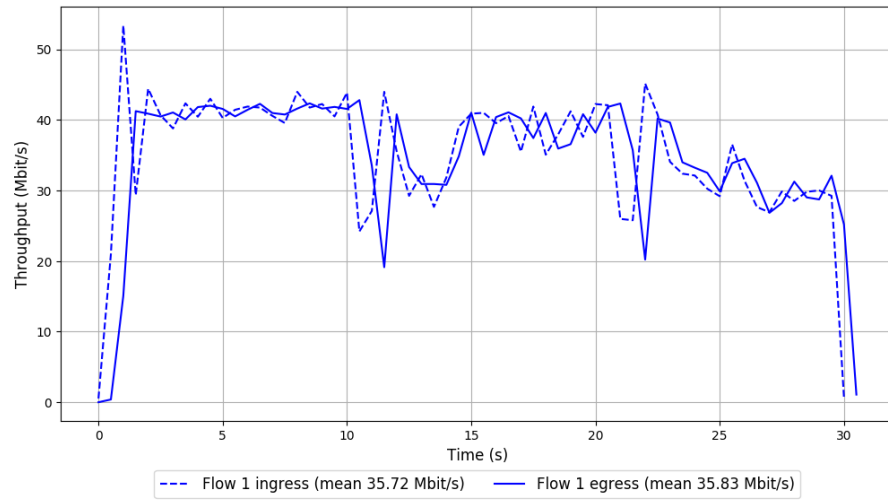


Run 3: Statistics of TCP BBR

Start at: 2018-05-30 08:01:00
End at: 2018-05-30 08:01:30
Local clock offset: 0.023 ms
Remote clock offset: -0.142 ms

Below is generated by plot.py at 2018-05-30 08:21:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 35.83 Mbit/s
95th percentile per-packet one-way delay: 194.729 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 35.83 Mbit/s
95th percentile per-packet one-way delay: 194.729 ms
Loss rate: 0.41%

Run 3: Report of TCP BBR — Data Link

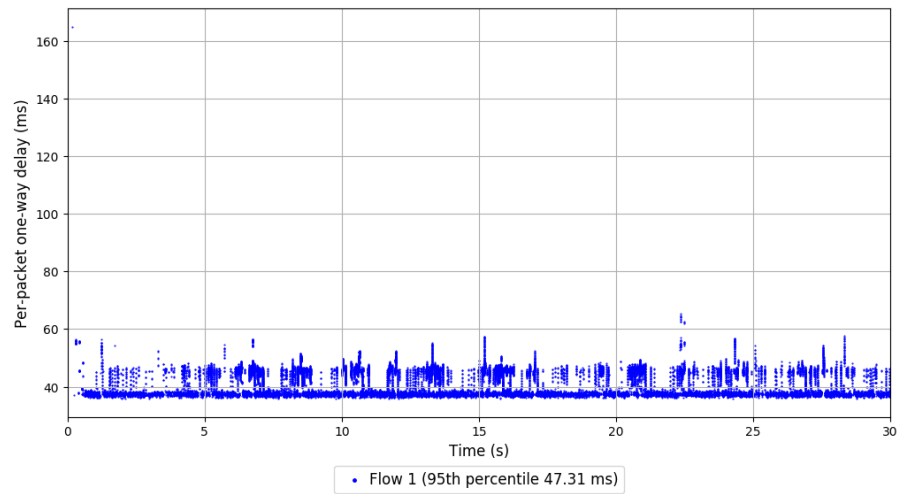
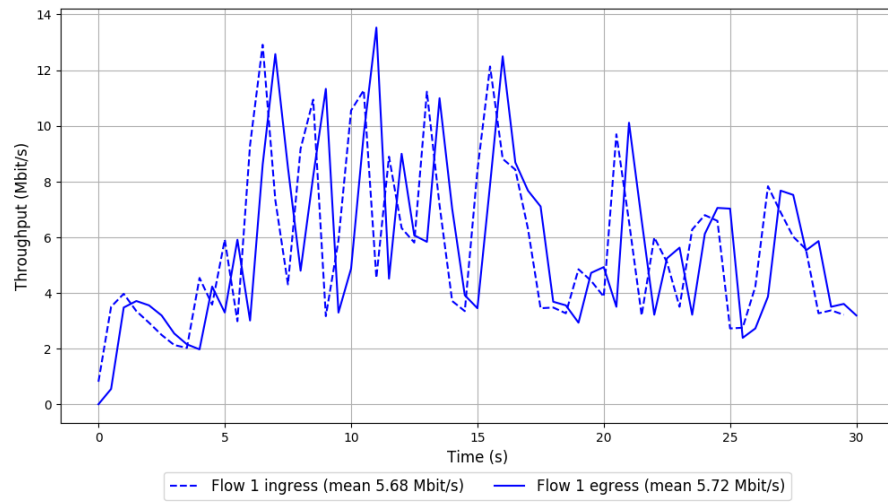


Run 1: Statistics of Copa

Start at: 2018-05-30 07:32:13
End at: 2018-05-30 07:32:43
Local clock offset: 0.22 ms
Remote clock offset: -0.061 ms

Below is generated by plot.py at 2018-05-30 08:21:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 5.72 Mbit/s
95th percentile per-packet one-way delay: 47.312 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 5.72 Mbit/s
95th percentile per-packet one-way delay: 47.312 ms
Loss rate: 0.02%

Run 1: Report of Copa — Data Link

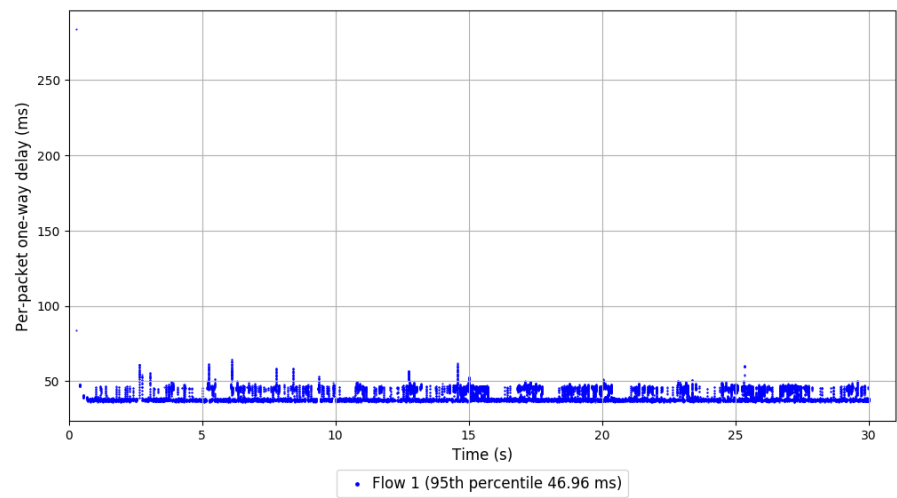
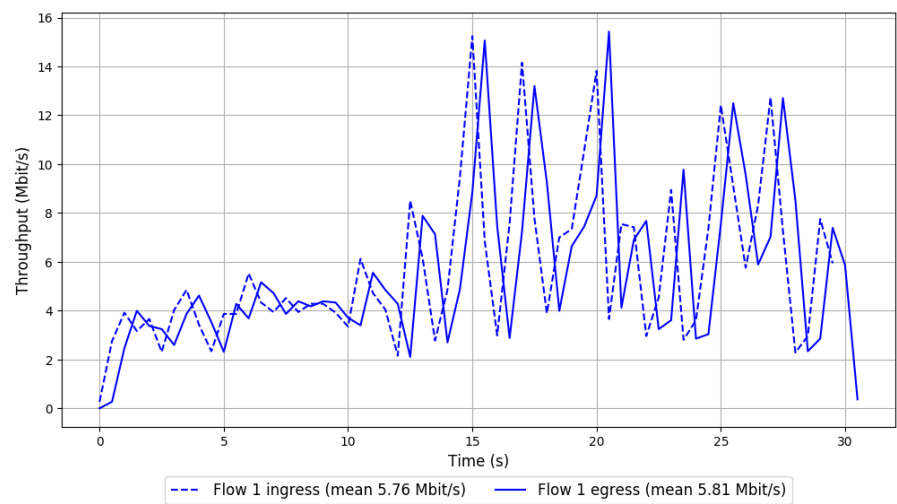


Run 2: Statistics of Copa

Start at: 2018-05-30 07:53:07
End at: 2018-05-30 07:53:37
Local clock offset: 0.121 ms
Remote clock offset: -0.032 ms

Below is generated by plot.py at 2018-05-30 08:21:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 5.81 Mbit/s
95th percentile per-packet one-way delay: 46.961 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 5.81 Mbit/s
95th percentile per-packet one-way delay: 46.961 ms
Loss rate: 0.05%

Run 2: Report of Copa — Data Link

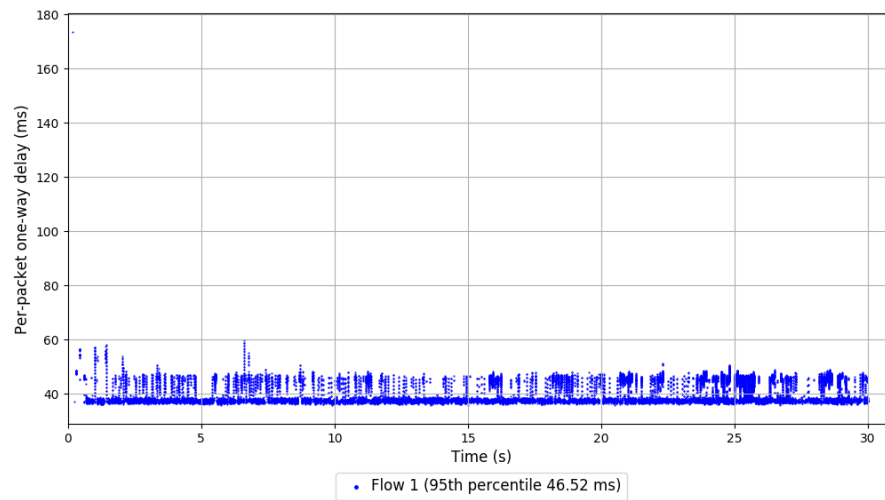
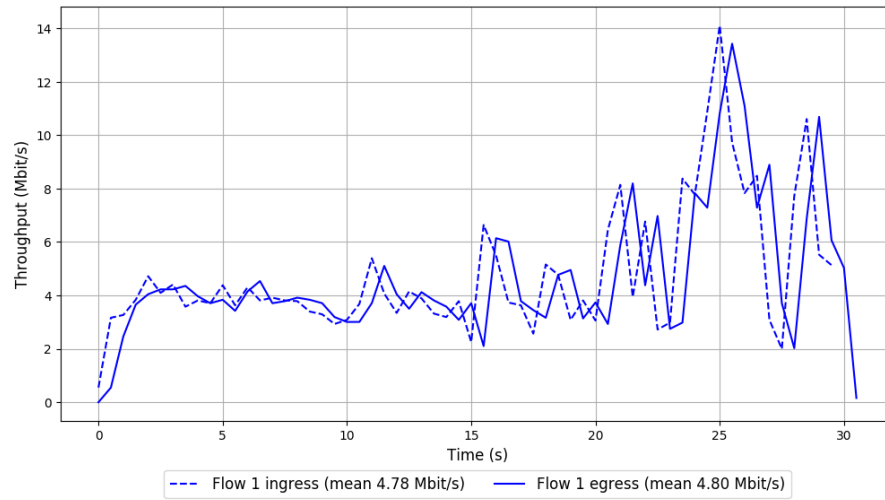


Run 3: Statistics of Copa

Start at: 2018-05-30 08:14:06
End at: 2018-05-30 08:14:36
Local clock offset: 0.077 ms
Remote clock offset: -0.2 ms

Below is generated by plot.py at 2018-05-30 08:21:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 4.80 Mbit/s
95th percentile per-packet one-way delay: 46.521 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 4.80 Mbit/s
95th percentile per-packet one-way delay: 46.521 ms
Loss rate: 0.10%

Run 3: Report of Copa — Data Link

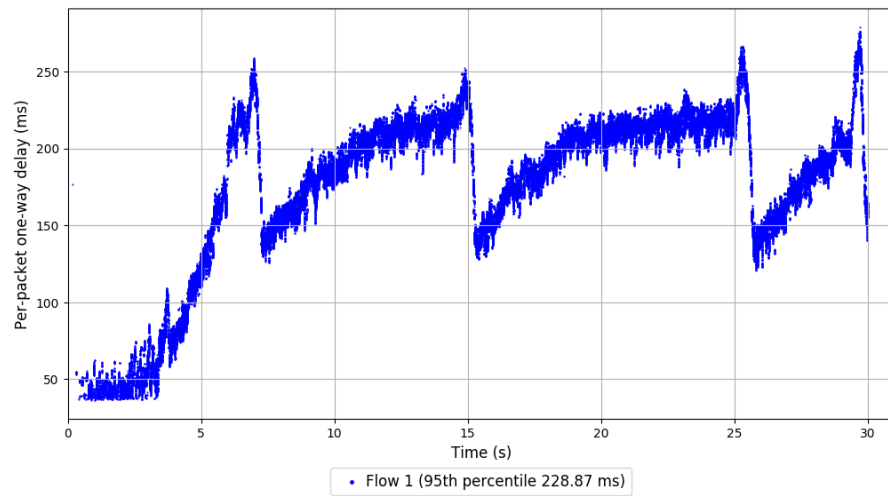
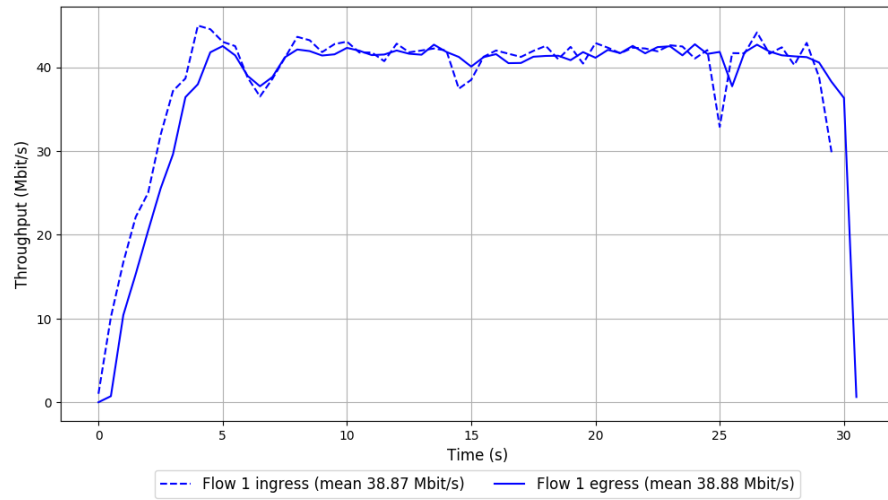


Run 1: Statistics of TCP Cubic

Start at: 2018-05-30 07:36:07
End at: 2018-05-30 07:36:37
Local clock offset: 0.249 ms
Remote clock offset: -0.052 ms

Below is generated by plot.py at 2018-05-30 08:22:00
Datalink statistics
-- Total of 1 flow:
Average throughput: 38.88 Mbit/s
95th percentile per-packet one-way delay: 228.866 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 38.88 Mbit/s
95th percentile per-packet one-way delay: 228.866 ms
Loss rate: 0.46%

Run 1: Report of TCP Cubic — Data Link

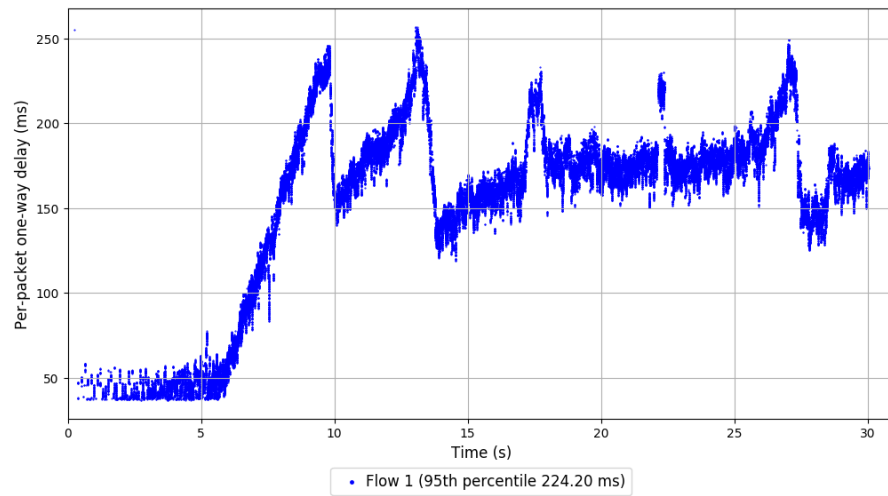
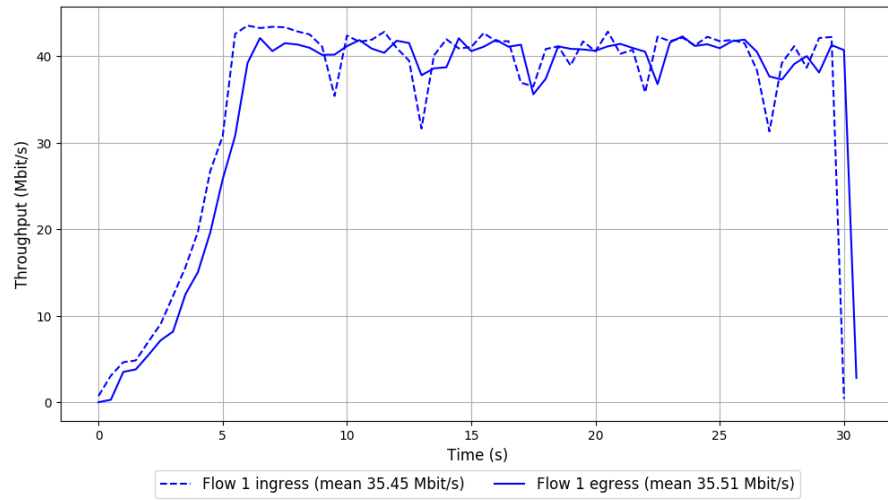


Run 2: Statistics of TCP Cubic

Start at: 2018-05-30 07:57:02
End at: 2018-05-30 07:57:32
Local clock offset: 0.025 ms
Remote clock offset: -0.149 ms

Below is generated by plot.py at 2018-05-30 08:22:00
Datalink statistics
-- Total of 1 flow:
Average throughput: 35.51 Mbit/s
95th percentile per-packet one-way delay: 224.196 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 35.51 Mbit/s
95th percentile per-packet one-way delay: 224.196 ms
Loss rate: 0.62%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2018-05-30 08:18:01

End at: 2018-05-30 08:18:31

Local clock offset: 0.053 ms

Remote clock offset: -0.12 ms

Below is generated by plot.py at 2018-05-30 08:22:00

Datalink statistics

-- Total of 1 flow:

Average throughput: 29.07 Mbit/s

95th percentile per-packet one-way delay: 213.642 ms

Loss rate: 0.59%

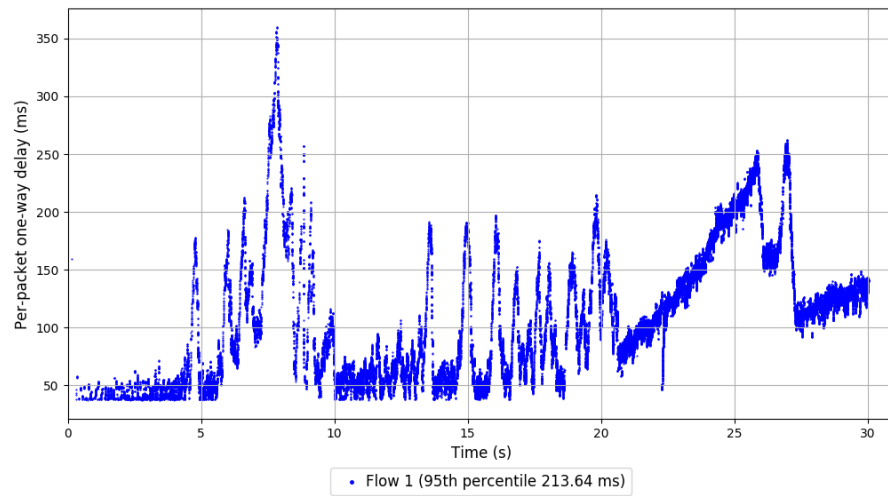
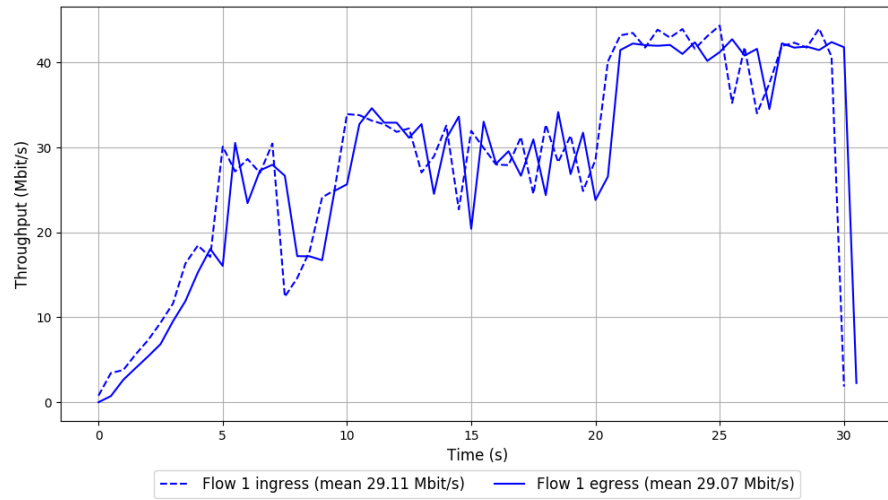
-- Flow 1:

Average throughput: 29.07 Mbit/s

95th percentile per-packet one-way delay: 213.642 ms

Loss rate: 0.59%

Run 3: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-05-30 07:21:44

End at: 2018-05-30 07:22:14

Local clock offset: 0.644 ms

Remote clock offset: 0.024 ms

Below is generated by plot.py at 2018-05-30 08:22:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 37.95 Mbit/s

95th percentile per-packet one-way delay: 570.346 ms

Loss rate: 29.61%

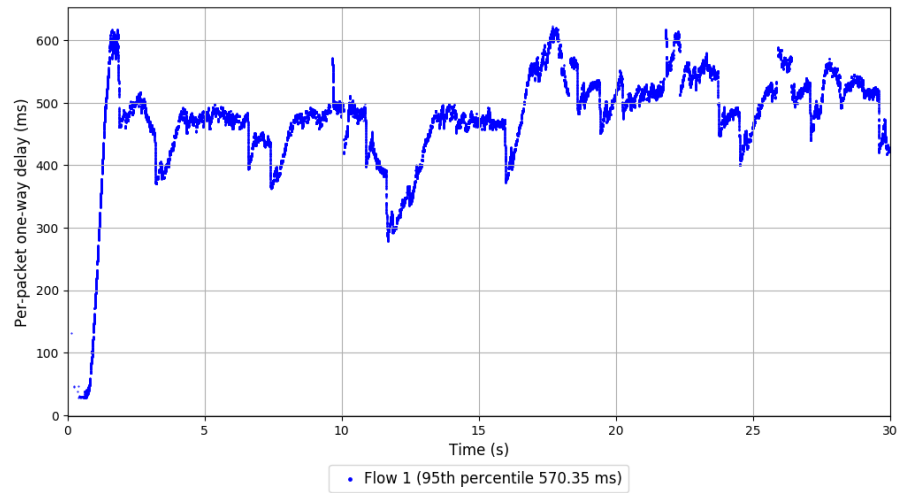
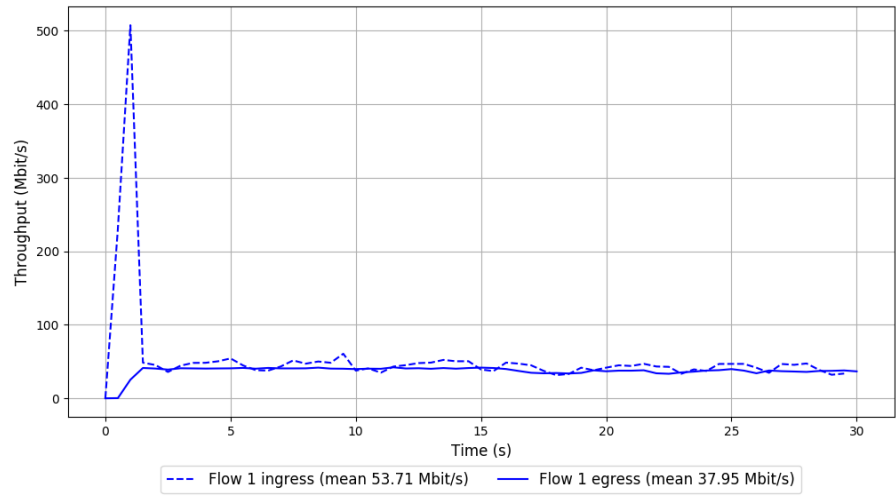
-- Flow 1:

Average throughput: 37.95 Mbit/s

95th percentile per-packet one-way delay: 570.346 ms

Loss rate: 29.61%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-05-30 07:42:40

End at: 2018-05-30 07:43:10

Local clock offset: 0.179 ms

Remote clock offset: 0.05 ms

Below is generated by plot.py at 2018-05-30 08:22:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.73 Mbit/s

95th percentile per-packet one-way delay: 552.083 ms

Loss rate: 22.15%

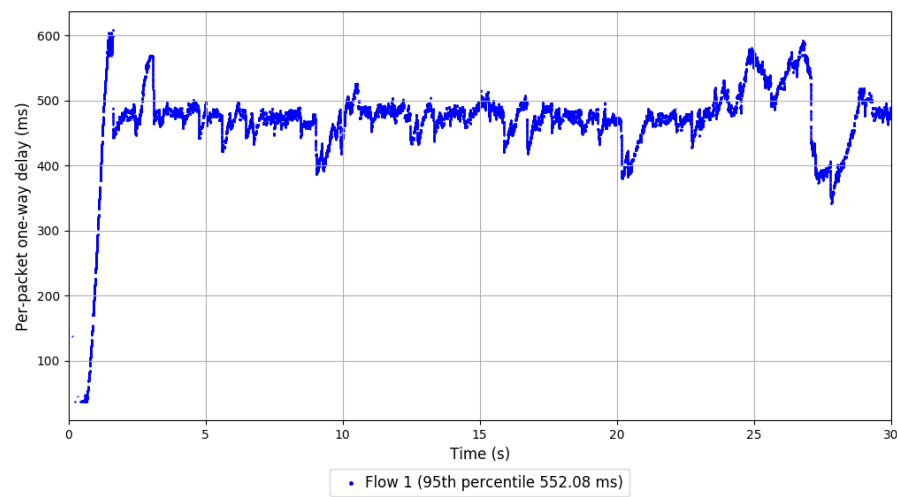
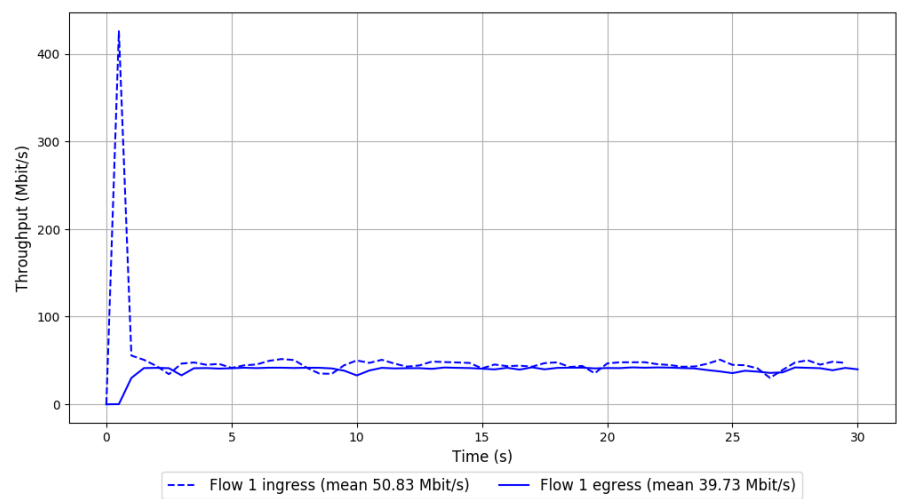
-- Flow 1:

Average throughput: 39.73 Mbit/s

95th percentile per-packet one-way delay: 552.083 ms

Loss rate: 22.15%

Run 2: Report of FillP — Data Link

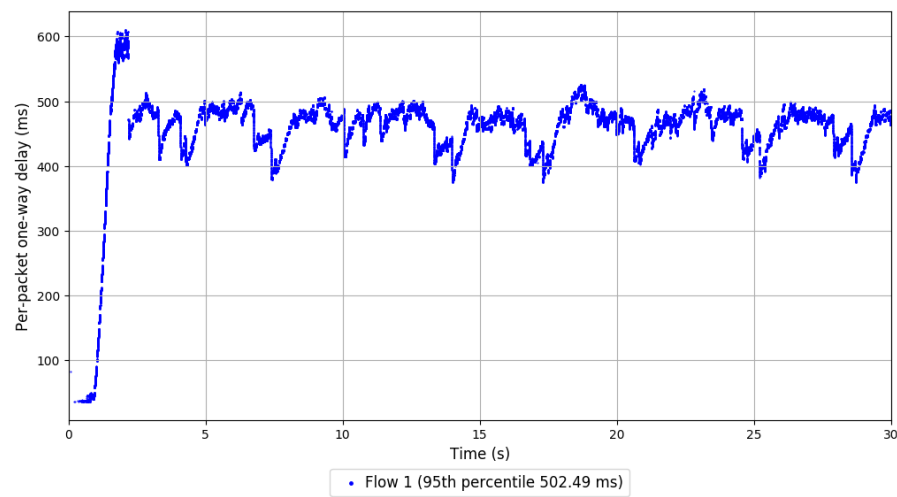
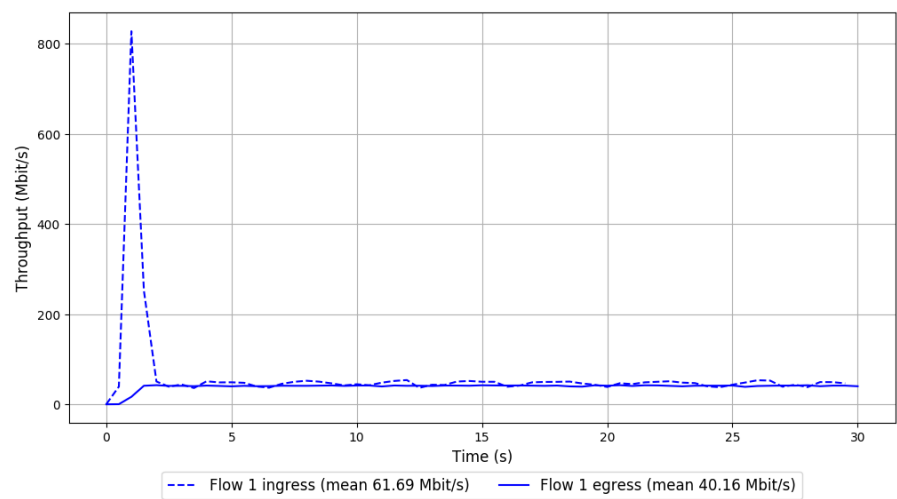


Run 3: Statistics of FillP

Start at: 2018-05-30 08:03:37
End at: 2018-05-30 08:04:07
Local clock offset: 0.114 ms
Remote clock offset: -0.164 ms

Below is generated by plot.py at 2018-05-30 08:22:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 40.16 Mbit/s
95th percentile per-packet one-way delay: 502.487 ms
Loss rate: 35.05%
-- Flow 1:
Average throughput: 40.16 Mbit/s
95th percentile per-packet one-way delay: 502.487 ms
Loss rate: 35.05%

Run 3: Report of FillP — Data Link



Run 1: Statistics of Indigo

Start at: 2018-05-30 07:20:26

End at: 2018-05-30 07:20:56

Local clock offset: 0.62 ms

Remote clock offset: -0.046 ms

Below is generated by plot.py at 2018-05-30 08:22:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.36 Mbit/s

95th percentile per-packet one-way delay: 42.954 ms

Loss rate: 0.00%

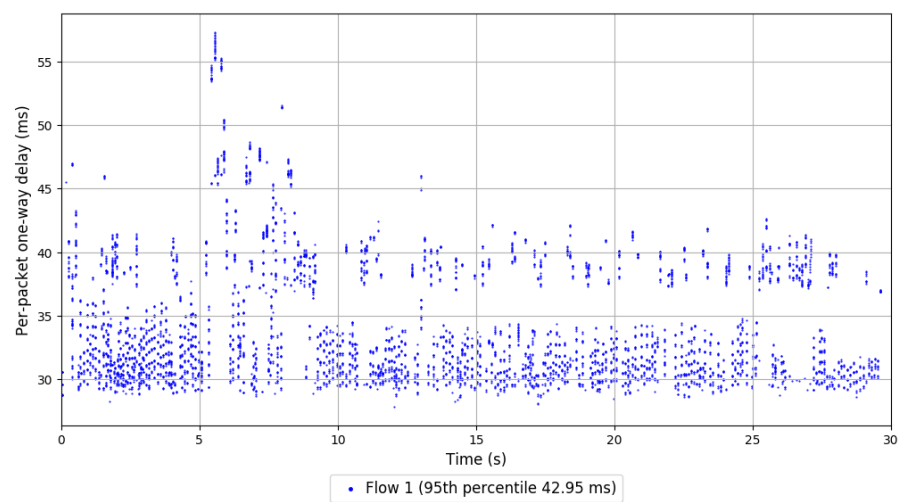
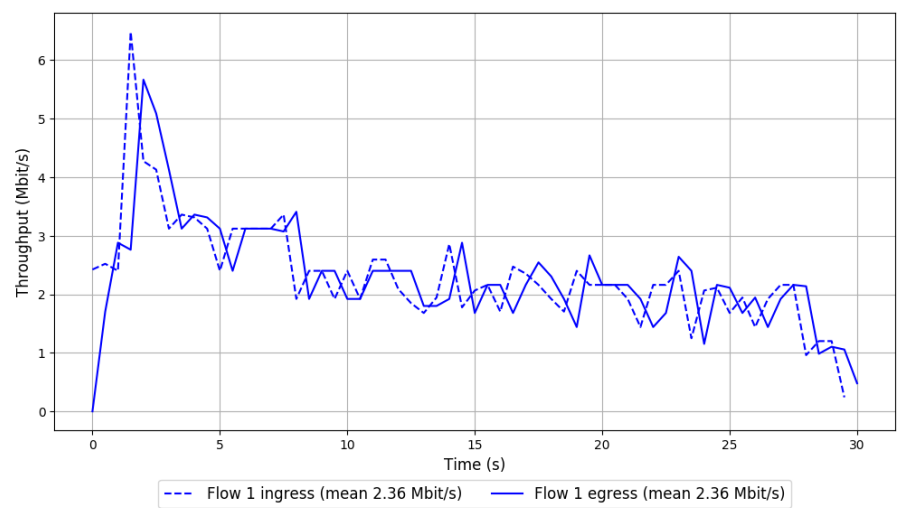
-- Flow 1:

Average throughput: 2.36 Mbit/s

95th percentile per-packet one-way delay: 42.954 ms

Loss rate: 0.00%

Run 1: Report of Indigo — Data Link

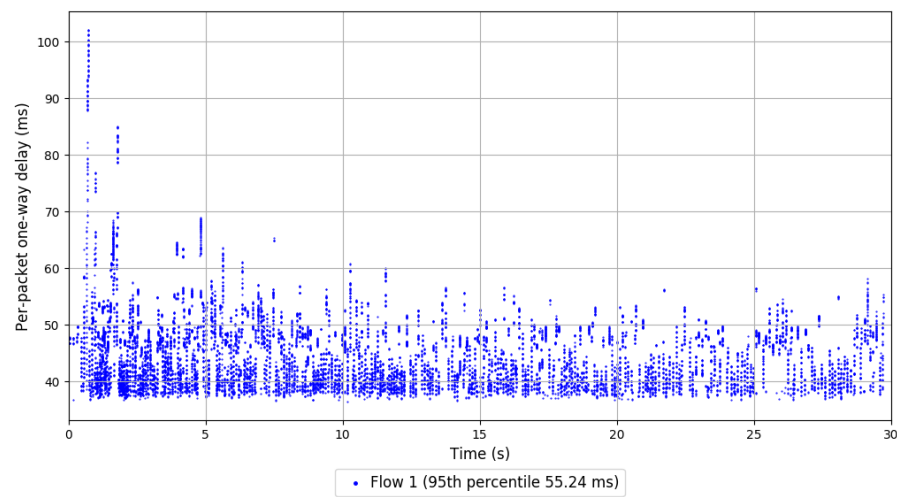
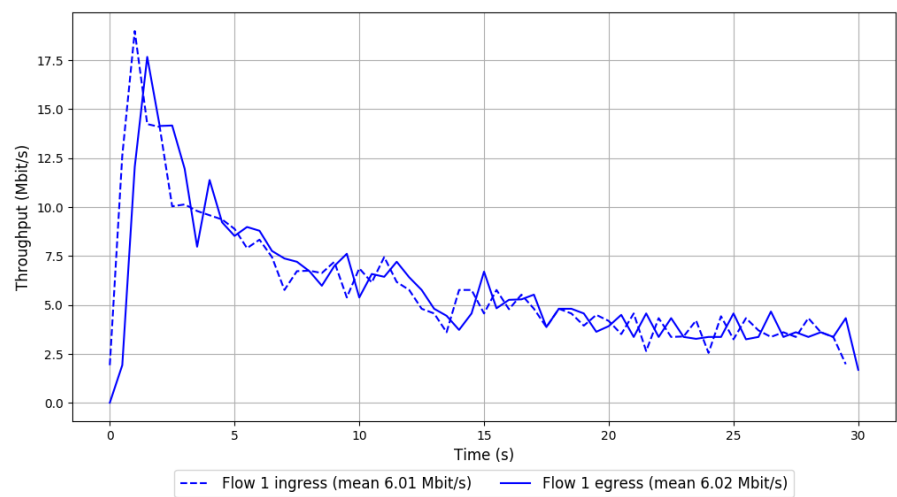


Run 2: Statistics of Indigo

Start at: 2018-05-30 07:41:22
End at: 2018-05-30 07:41:52
Local clock offset: 0.094 ms
Remote clock offset: -0.012 ms

Below is generated by plot.py at 2018-05-30 08:22:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 6.02 Mbit/s
95th percentile per-packet one-way delay: 55.240 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 6.02 Mbit/s
95th percentile per-packet one-way delay: 55.240 ms
Loss rate: 0.08%

Run 2: Report of Indigo — Data Link

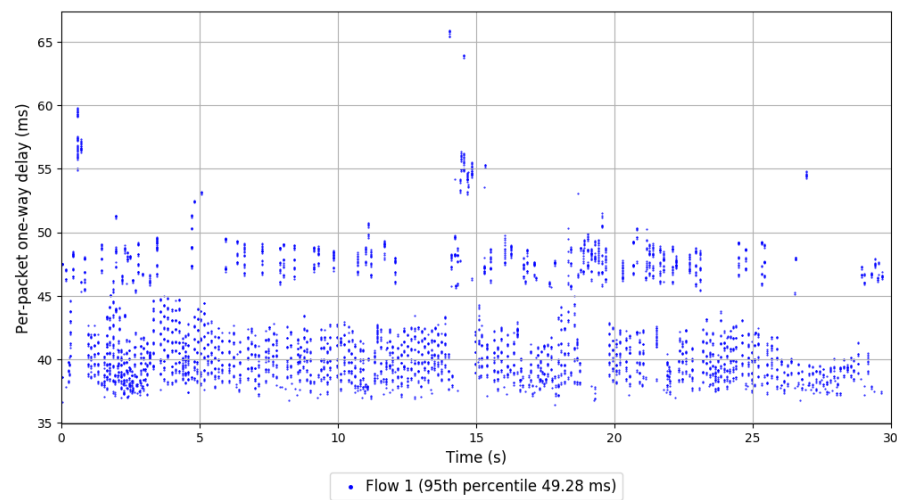
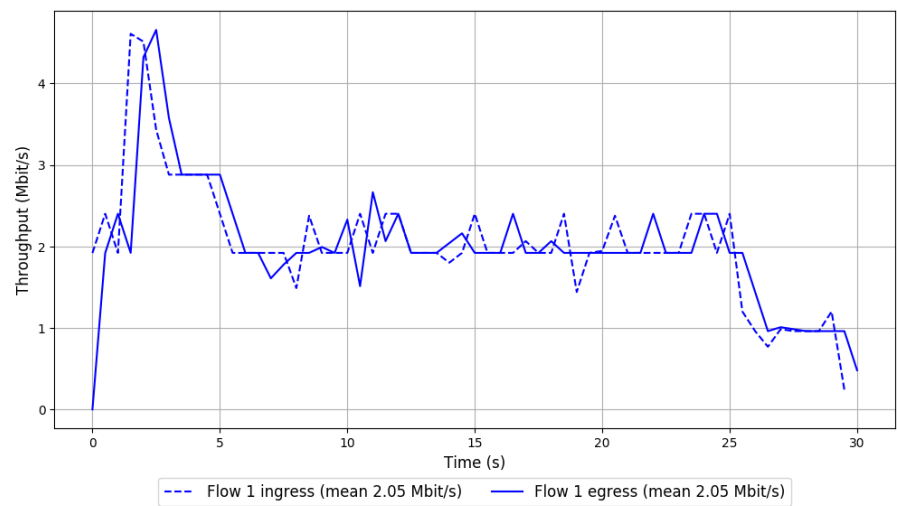


Run 3: Statistics of Indigo

Start at: 2018-05-30 08:02:19
End at: 2018-05-30 08:02:49
Local clock offset: 0.005 ms
Remote clock offset: -0.195 ms

Below is generated by plot.py at 2018-05-30 08:22:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 49.281 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 49.281 ms
Loss rate: 0.00%

Run 3: Report of Indigo — Data Link



Run 1: Statistics of LEDBAT

Start at: 2018-05-30 07:24:22

End at: 2018-05-30 07:24:52

Local clock offset: 0.562 ms

Remote clock offset: -0.059 ms

Below is generated by plot.py at 2018-05-30 08:22:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 30.74 Mbit/s

95th percentile per-packet one-way delay: 96.867 ms

Loss rate: 0.29%

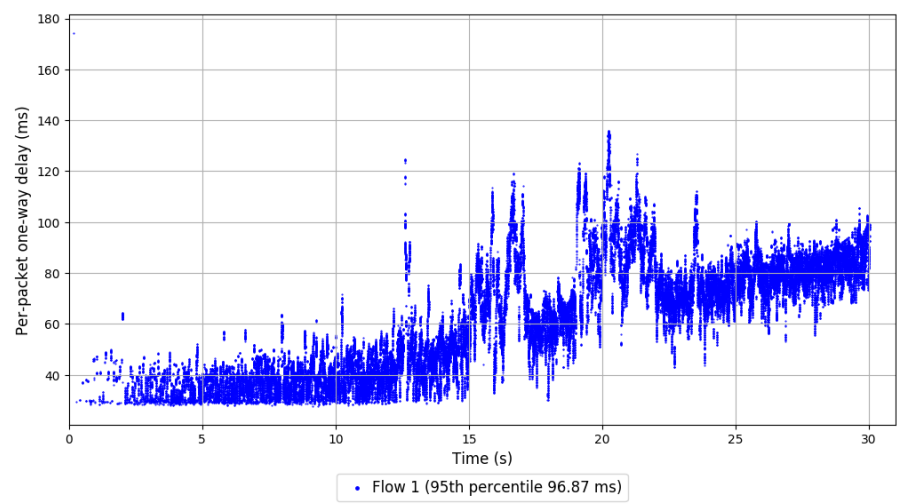
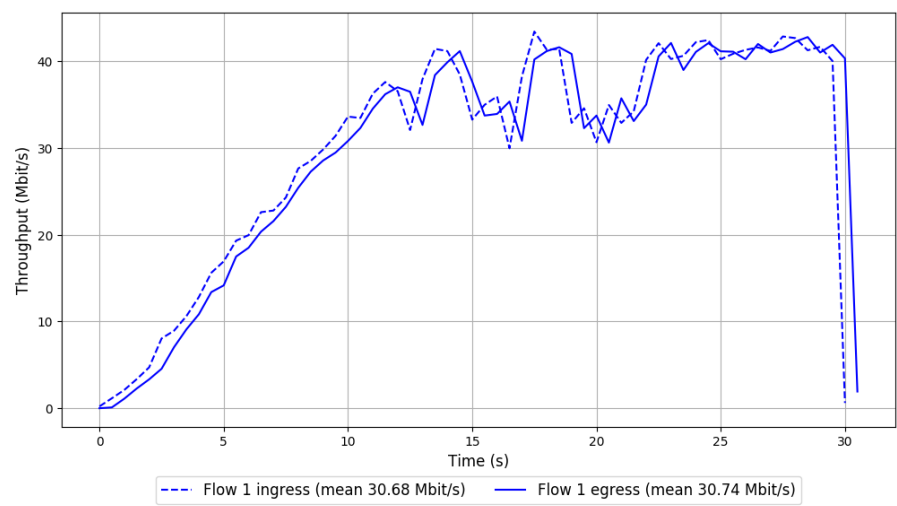
-- Flow 1:

Average throughput: 30.74 Mbit/s

95th percentile per-packet one-way delay: 96.867 ms

Loss rate: 0.29%

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-05-30 07:45:17

End at: 2018-05-30 07:45:47

Local clock offset: 0.076 ms

Remote clock offset: -0.0 ms

Below is generated by plot.py at 2018-05-30 08:22:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 27.60 Mbit/s

95th percentile per-packet one-way delay: 88.082 ms

Loss rate: 0.34%

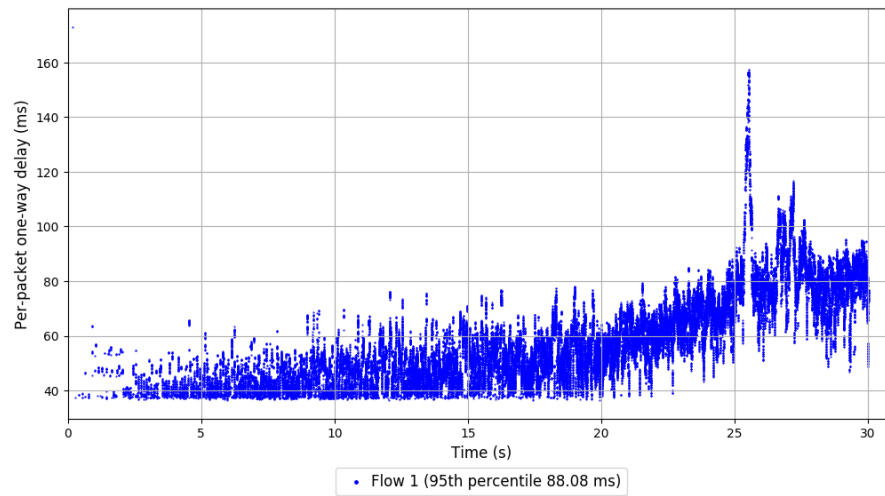
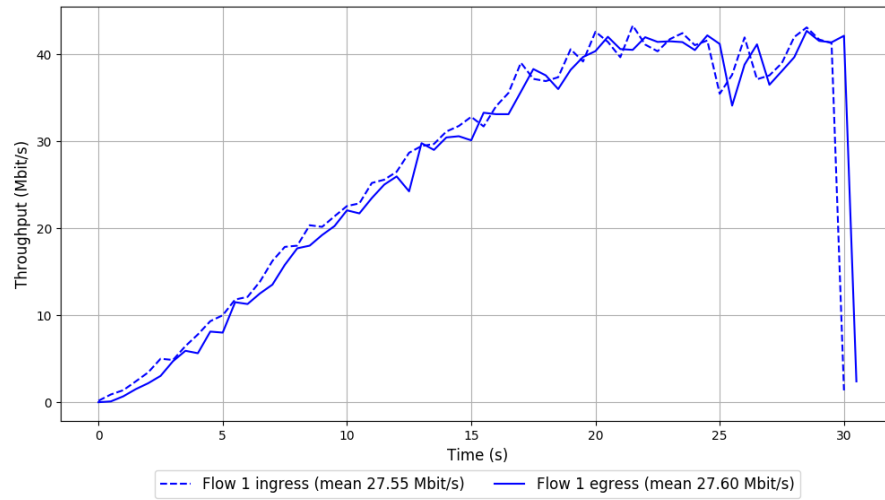
-- Flow 1:

Average throughput: 27.60 Mbit/s

95th percentile per-packet one-way delay: 88.082 ms

Loss rate: 0.34%

Run 2: Report of LEDBAT — Data Link

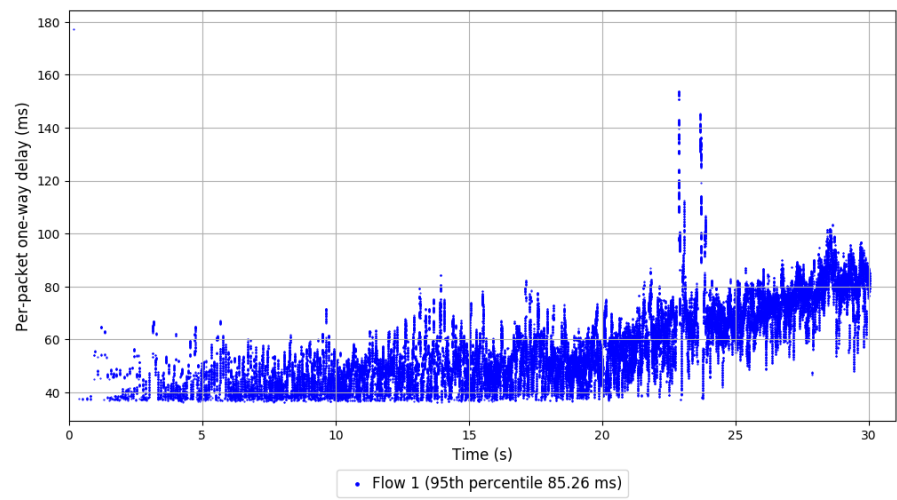
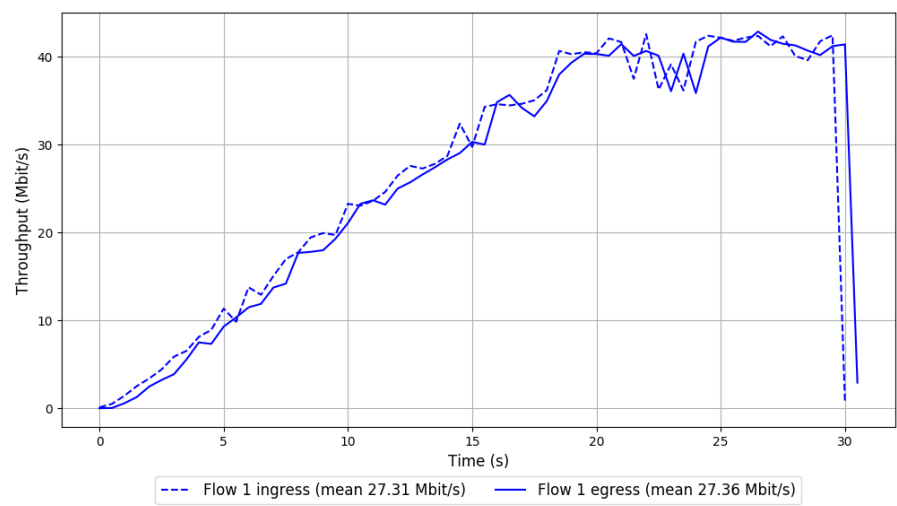


Run 3: Statistics of LEDBAT

Start at: 2018-05-30 08:06:15
End at: 2018-05-30 08:06:45
Local clock offset: 0.101 ms
Remote clock offset: -0.167 ms

Below is generated by plot.py at 2018-05-30 08:22:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 27.36 Mbit/s
95th percentile per-packet one-way delay: 85.258 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 27.36 Mbit/s
95th percentile per-packet one-way delay: 85.258 ms
Loss rate: 0.31%

Run 3: Report of LEDBAT — Data Link



Run 1: Statistics of PCC-Allegro

Start at: 2018-05-30 07:28:18

End at: 2018-05-30 07:28:48

Local clock offset: 0.403 ms

Remote clock offset: -0.026 ms

Below is generated by plot.py at 2018-05-30 08:22:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 33.99 Mbit/s

95th percentile per-packet one-way delay: 447.744 ms

Loss rate: 0.05%

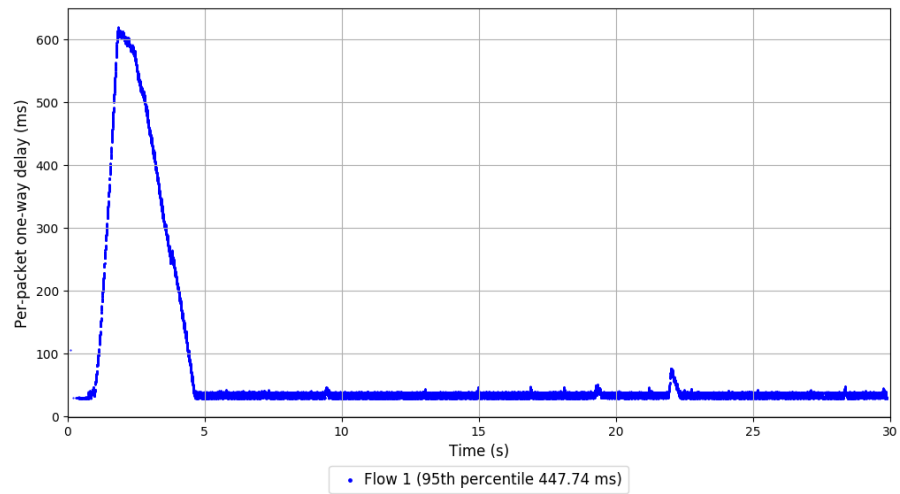
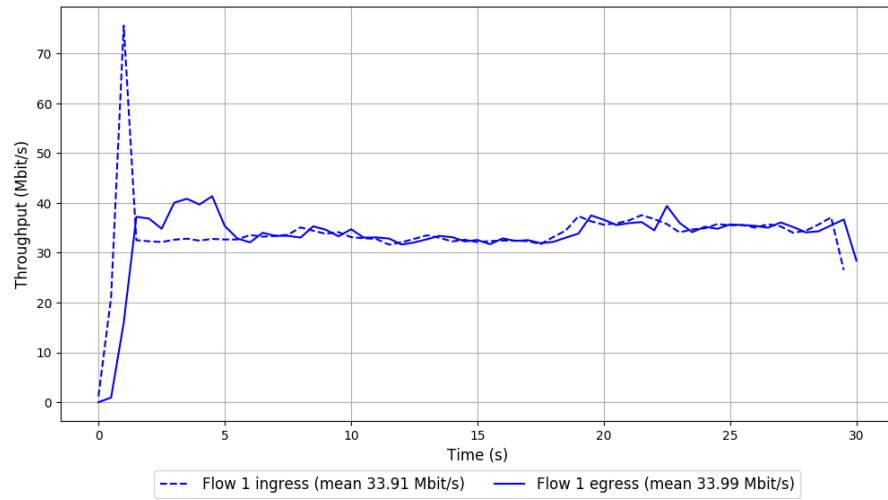
-- Flow 1:

Average throughput: 33.99 Mbit/s

95th percentile per-packet one-way delay: 447.744 ms

Loss rate: 0.05%

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-05-30 07:49:13

End at: 2018-05-30 07:49:43

Local clock offset: 0.05 ms

Remote clock offset: 0.013 ms

Below is generated by plot.py at 2018-05-30 08:22:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 32.70 Mbit/s

95th percentile per-packet one-way delay: 537.283 ms

Loss rate: 2.32%

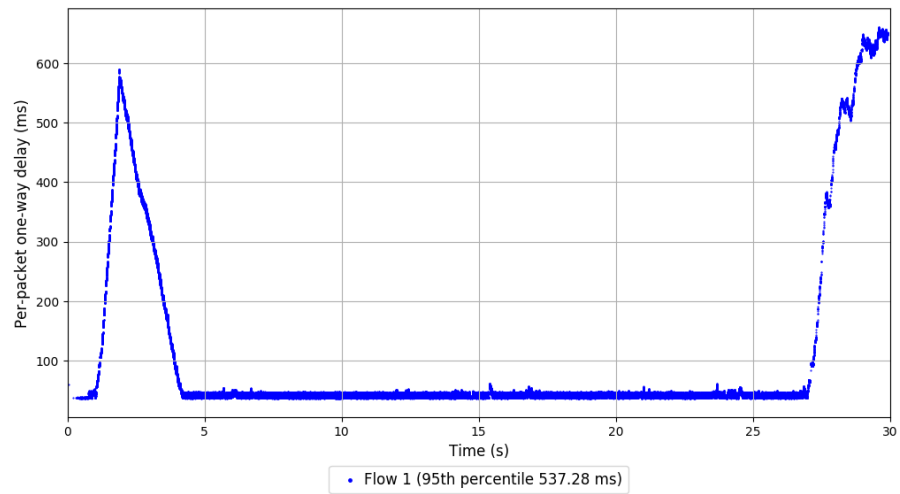
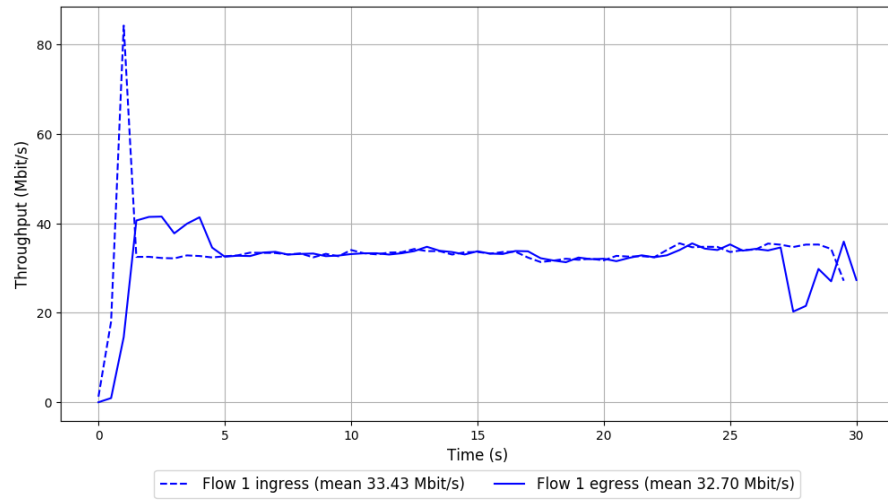
-- Flow 1:

Average throughput: 32.70 Mbit/s

95th percentile per-packet one-way delay: 537.283 ms

Loss rate: 2.32%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-05-30 08:10:12

End at: 2018-05-30 08:10:42

Local clock offset: 0.097 ms

Remote clock offset: -0.154 ms

Below is generated by plot.py at 2018-05-30 08:22:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.74 Mbit/s

95th percentile per-packet one-way delay: 45.901 ms

Loss rate: 0.06%

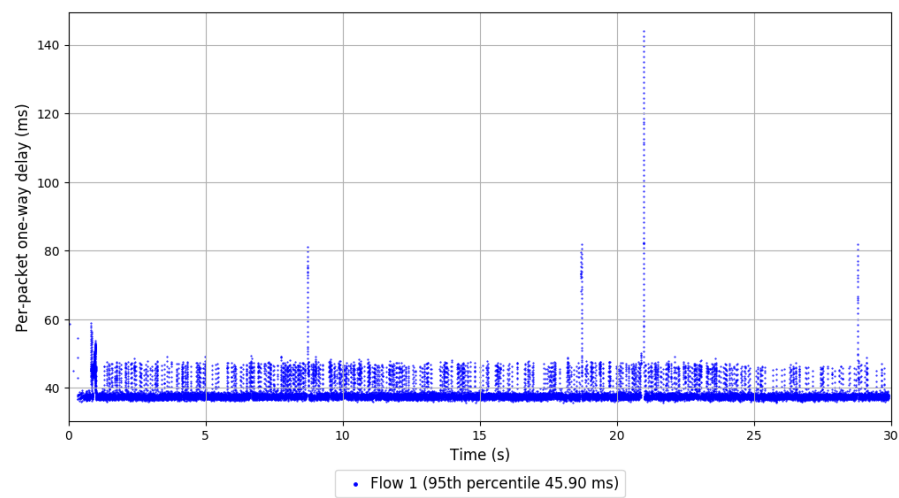
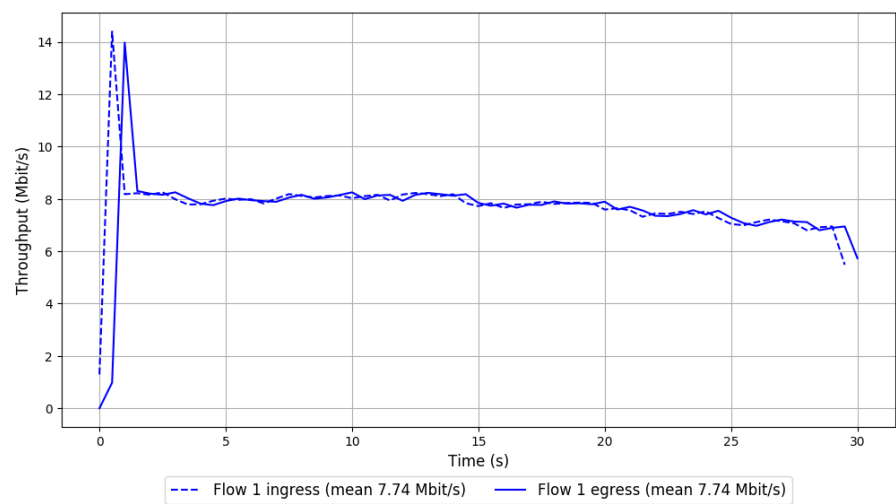
-- Flow 1:

Average throughput: 7.74 Mbit/s

95th percentile per-packet one-way delay: 45.901 ms

Loss rate: 0.06%

Run 3: Report of PCC-Allegro — Data Link

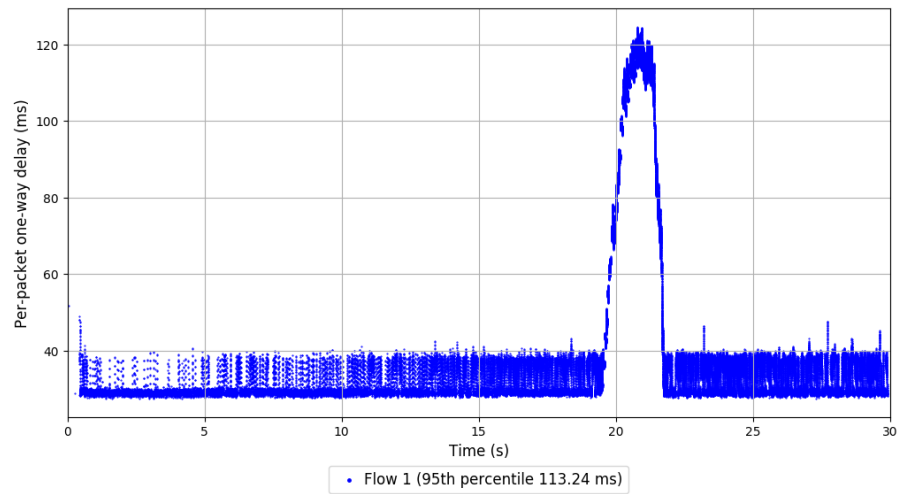
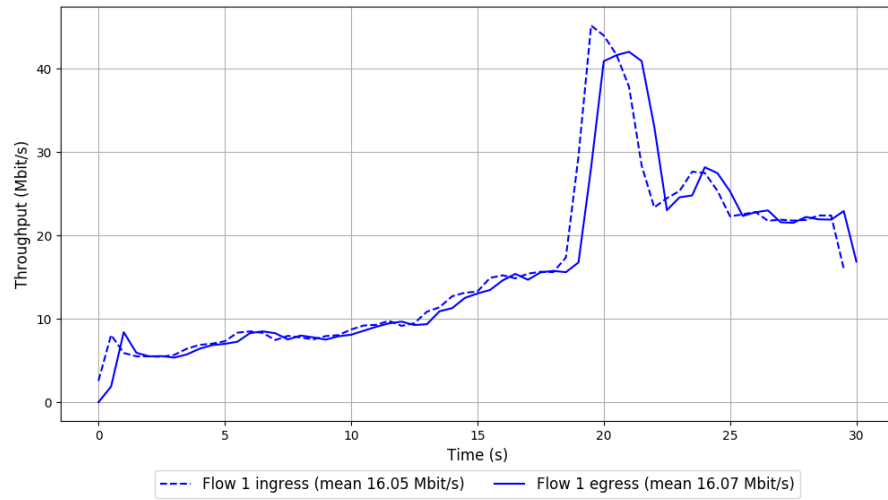


```
Run 1: Statistics of PCC-Expr

Start at: 2018-05-30 07:23:03
End at: 2018-05-30 07:23:33
Local clock offset: 0.616 ms
Remote clock offset: -0.011 ms

# Below is generated by plot.py at 2018-05-30 08:22:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 16.07 Mbit/s
95th percentile per-packet one-way delay: 113.242 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 16.07 Mbit/s
95th percentile per-packet one-way delay: 113.242 ms
Loss rate: 0.04%
```

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2018-05-30 07:43:59

End at: 2018-05-30 07:44:29

Local clock offset: 0.079 ms

Remote clock offset: 0.106 ms

Below is generated by plot.py at 2018-05-30 08:22:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 4.42 Mbit/s

95th percentile per-packet one-way delay: 43.694 ms

Loss rate: 0.10%

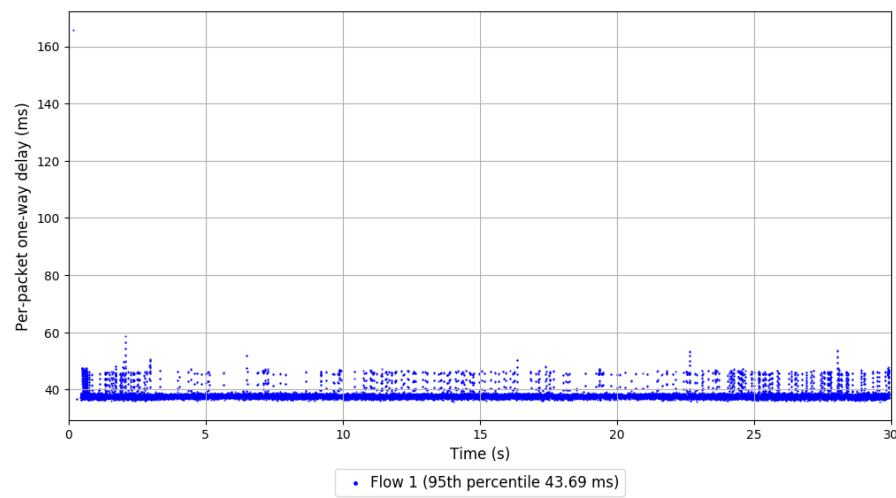
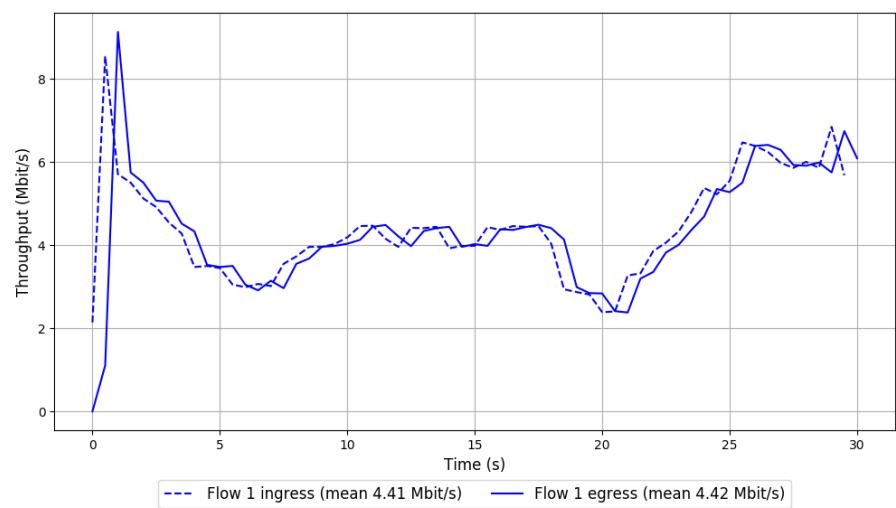
-- Flow 1:

Average throughput: 4.42 Mbit/s

95th percentile per-packet one-way delay: 43.694 ms

Loss rate: 0.10%

Run 2: Report of PCC-Expr — Data Link

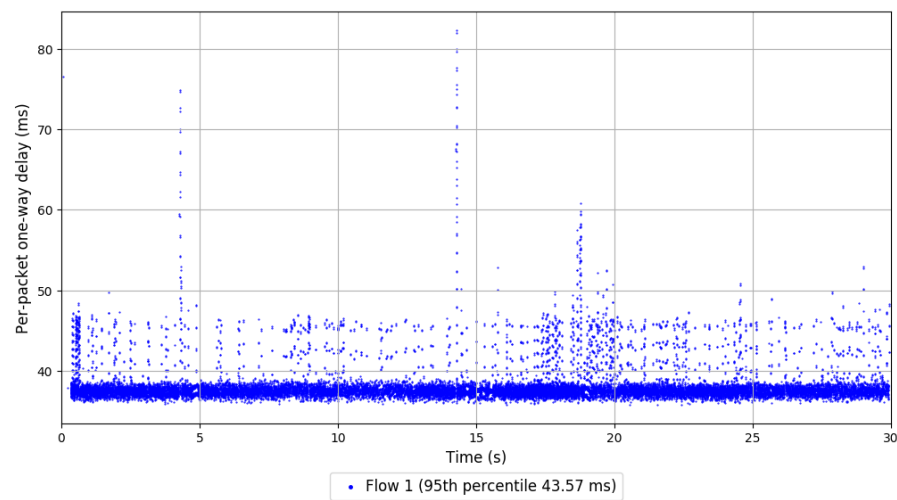
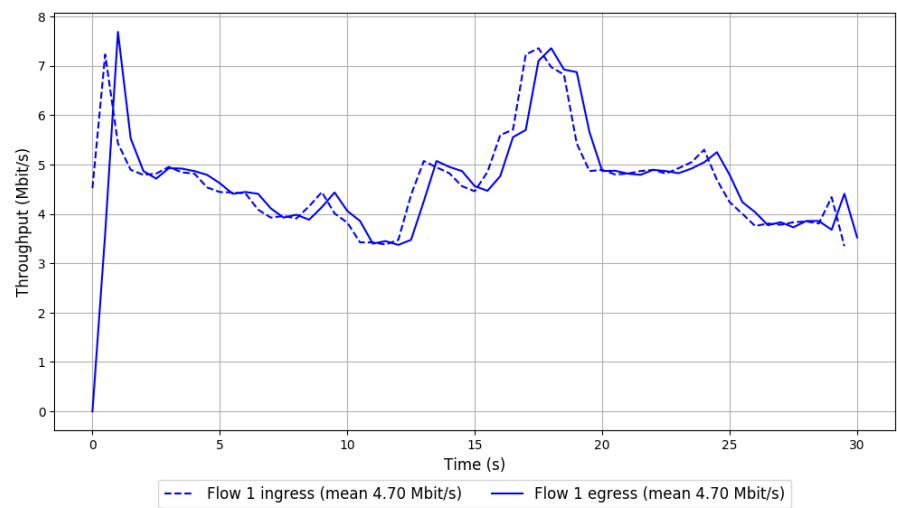


Run 3: Statistics of PCC-Expr

Start at: 2018-05-30 08:04:56
End at: 2018-05-30 08:05:26
Local clock offset: 0.102 ms
Remote clock offset: -0.094 ms

Below is generated by plot.py at 2018-05-30 08:22:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 4.70 Mbit/s
95th percentile per-packet one-way delay: 43.568 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 4.70 Mbit/s
95th percentile per-packet one-way delay: 43.568 ms
Loss rate: 0.05%

Run 3: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

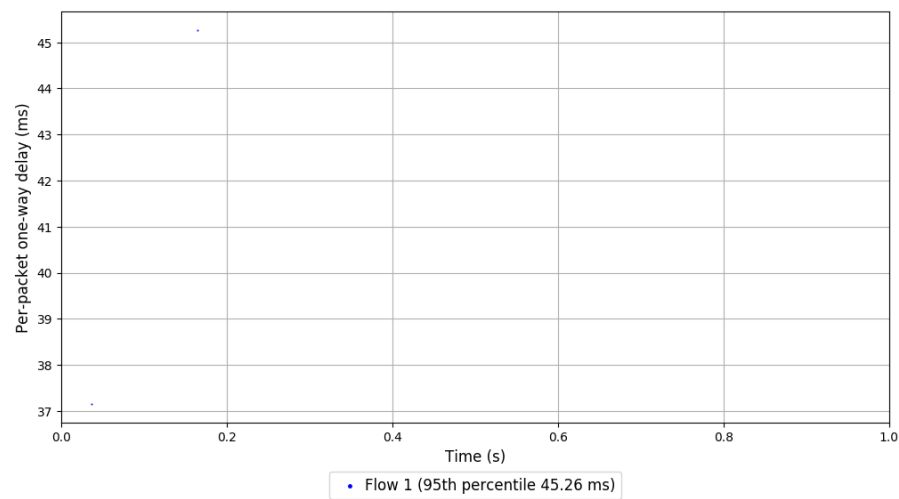
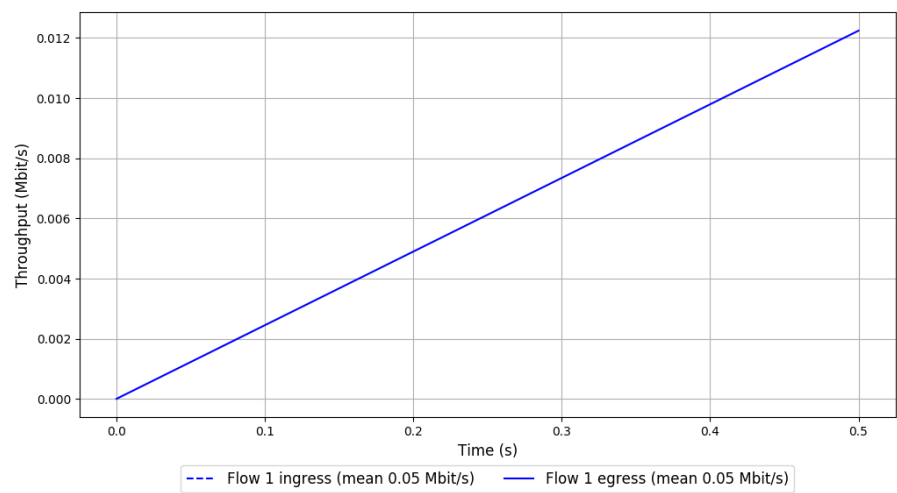
Start at: 2018-05-30 07:37:26

End at: 2018-05-30 07:37:56

Local clock offset: 0.233 ms

Remote clock offset: 0.054 ms

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-05-30 07:58:21

End at: 2018-05-30 07:58:51

Local clock offset: 0.005 ms

Remote clock offset: -0.075 ms

Below is generated by plot.py at 2018-05-30 08:23:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 39.03 Mbit/s

95th percentile per-packet one-way delay: 219.921 ms

Loss rate: 0.03%

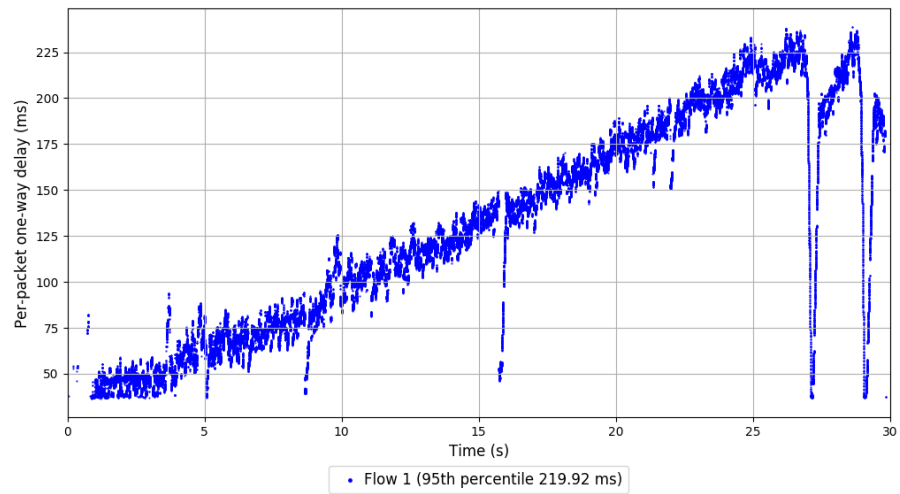
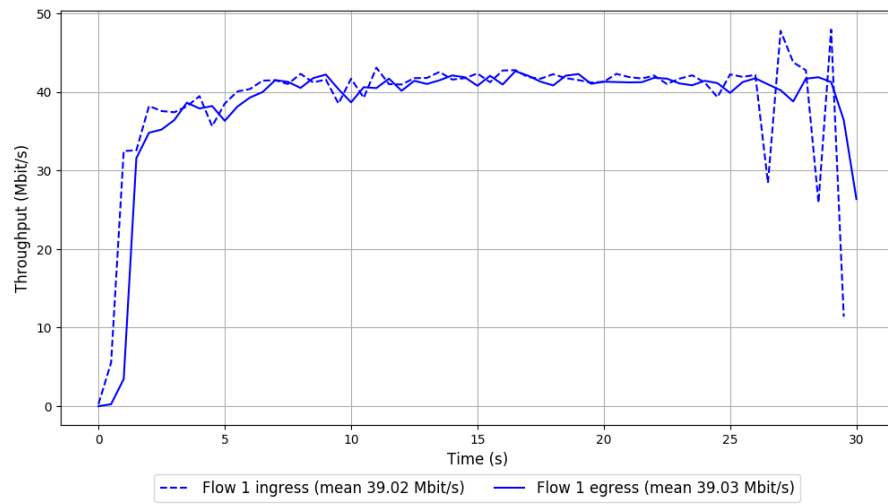
-- Flow 1:

Average throughput: 39.03 Mbit/s

95th percentile per-packet one-way delay: 219.921 ms

Loss rate: 0.03%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-05-30 08:19:20

End at: 2018-05-30 08:19:50

Local clock offset: 0.06 ms

Remote clock offset: -0.178 ms

Below is generated by plot.py at 2018-05-30 08:23:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 30.38 Mbit/s

95th percentile per-packet one-way delay: 171.960 ms

Loss rate: 0.27%

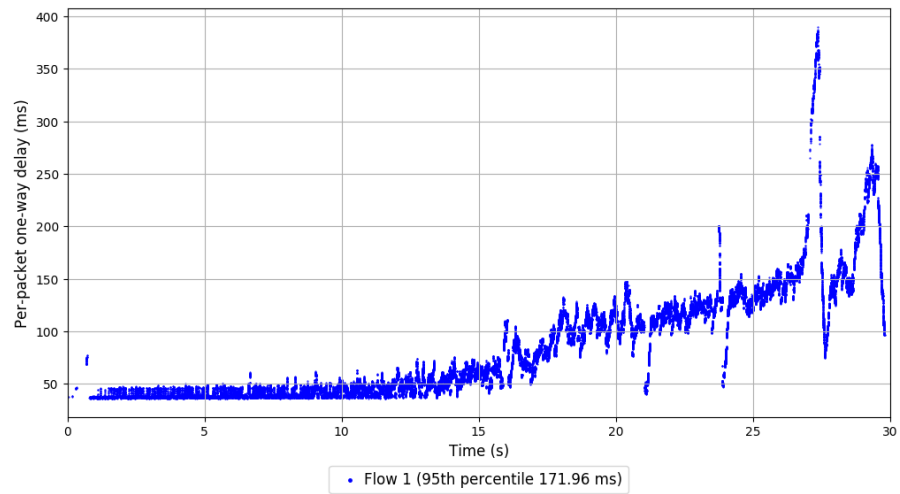
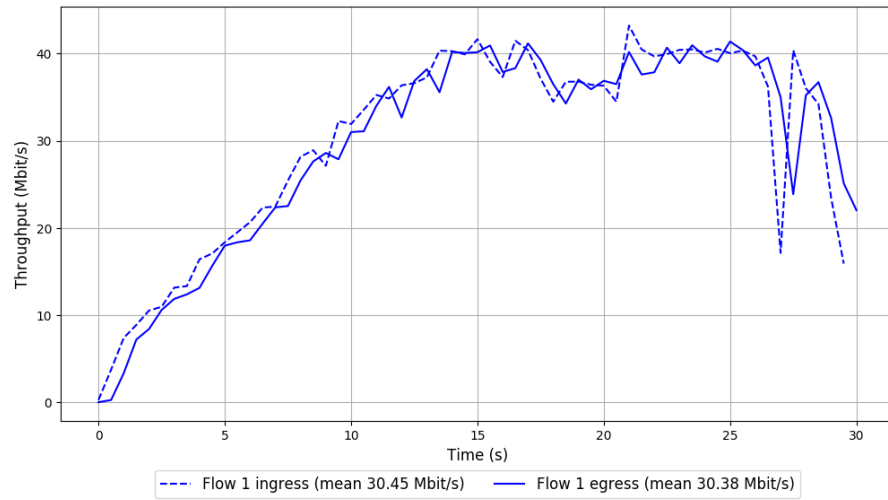
-- Flow 1:

Average throughput: 30.38 Mbit/s

95th percentile per-packet one-way delay: 171.960 ms

Loss rate: 0.27%

Run 3: Report of QUIC Cubic — Data Link

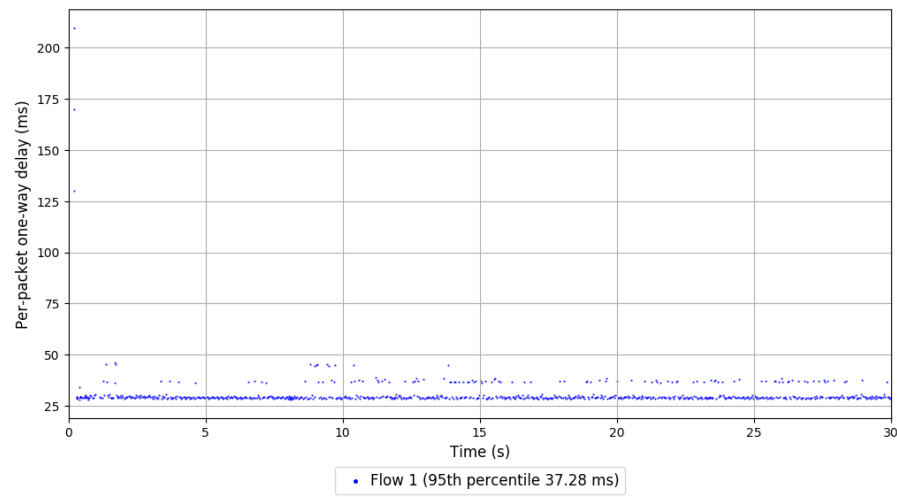
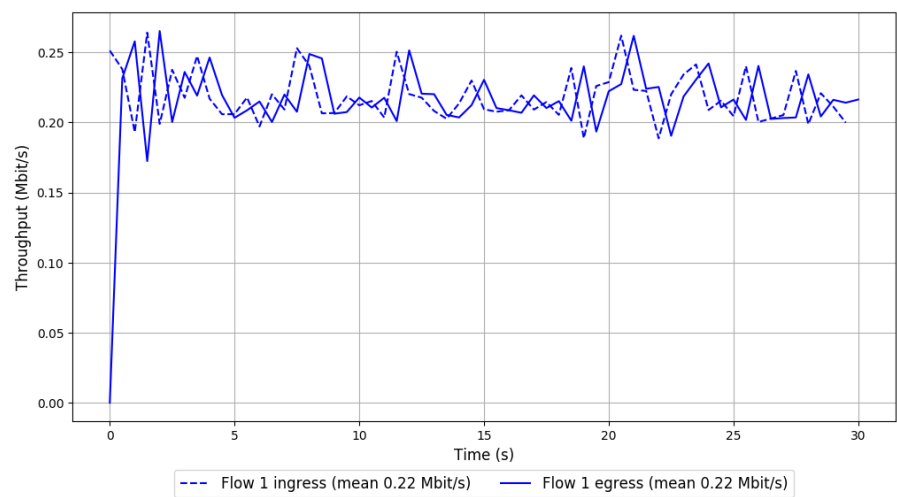


Run 1: Statistics of SCReAM

Start at: 2018-05-30 07:25:41
End at: 2018-05-30 07:26:11
Local clock offset: 0.405 ms
Remote clock offset: -0.032 ms

Below is generated by plot.py at 2018-05-30 08:23:09
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 37.279 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 37.279 ms
Loss rate: 0.00%

Run 1: Report of SReAM — Data Link

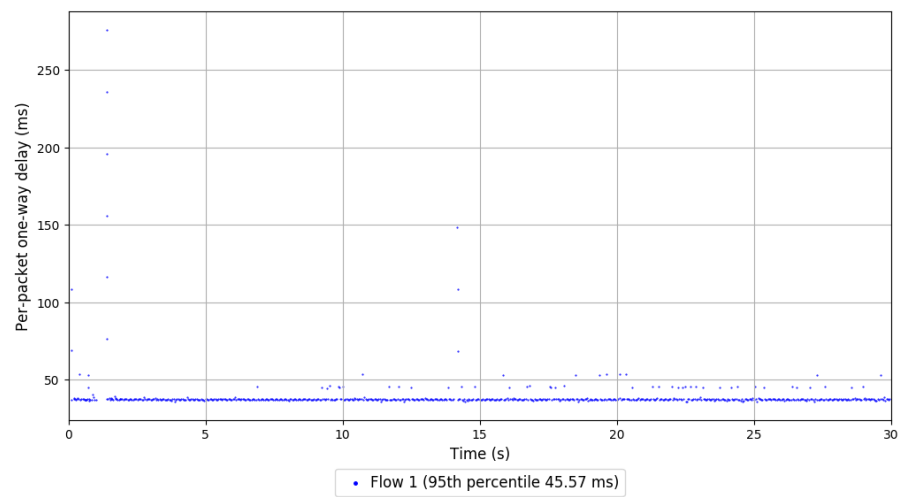
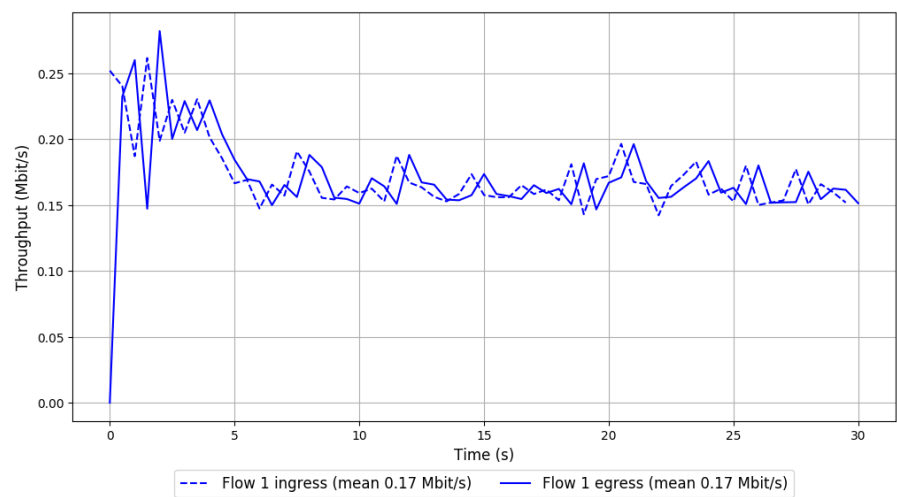


Run 2: Statistics of SCReAM

Start at: 2018-05-30 07:46:36
End at: 2018-05-30 07:47:06
Local clock offset: 0.143 ms
Remote clock offset: -0.035 ms

Below is generated by plot.py at 2018-05-30 08:23:09
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 45.574 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 45.574 ms
Loss rate: 0.13%

Run 2: Report of SReAM — Data Link

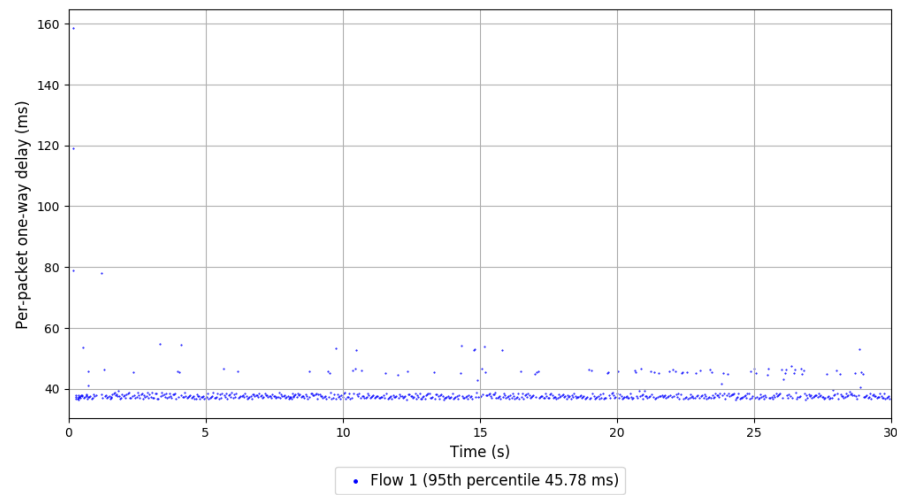
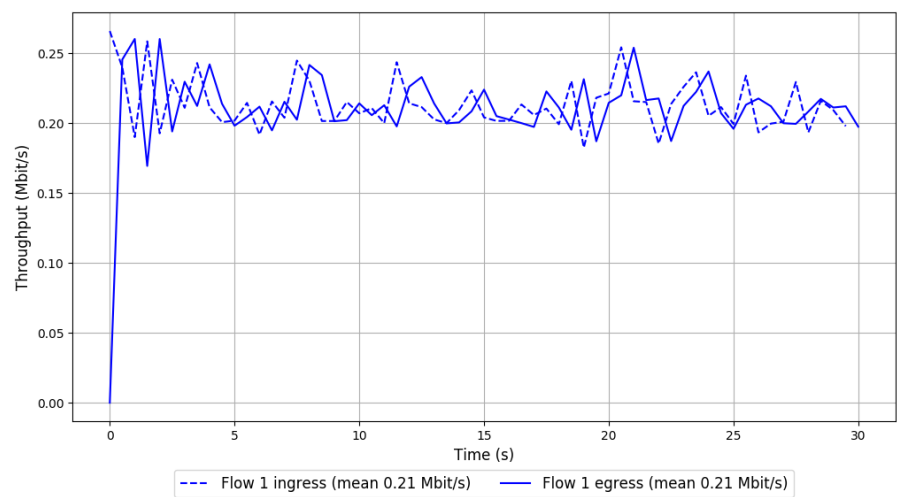


Run 3: Statistics of SCReAM

Start at: 2018-05-30 08:07:34
End at: 2018-05-30 08:08:04
Local clock offset: 0.104 ms
Remote clock offset: -0.146 ms

Below is generated by plot.py at 2018-05-30 08:23:09
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 45.778 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 45.778 ms
Loss rate: 0.13%

Run 3: Report of SReAM — Data Link

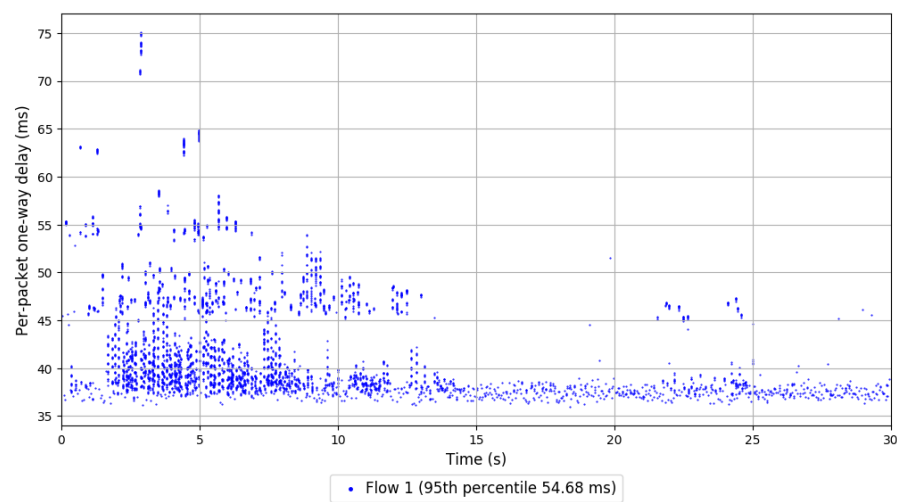
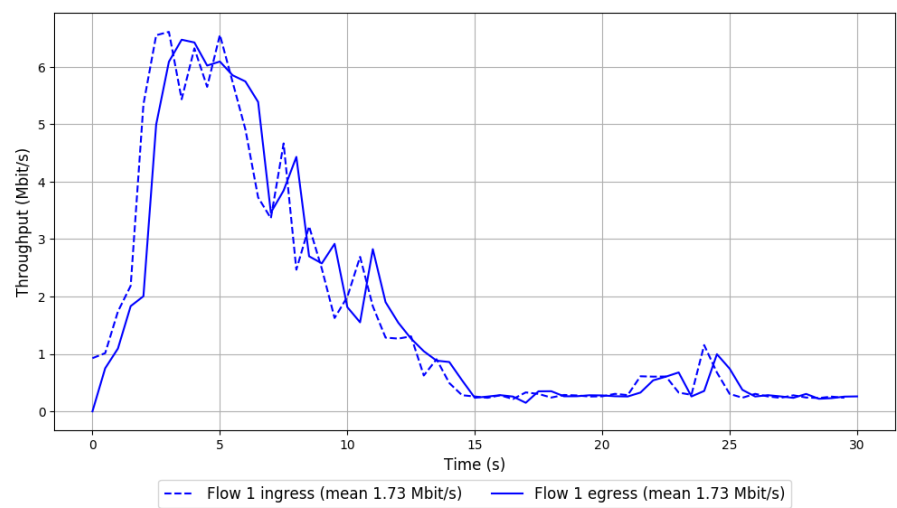


Run 1: Statistics of Sprout

Start at: 2018-05-30 07:34:49
End at: 2018-05-30 07:35:19
Local clock offset: 0.185 ms
Remote clock offset: -0.046 ms

Below is generated by plot.py at 2018-05-30 08:23:09
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.73 Mbit/s
95th percentile per-packet one-way delay: 54.677 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.73 Mbit/s
95th percentile per-packet one-way delay: 54.677 ms
Loss rate: 0.00%

Run 1: Report of Sprout — Data Link

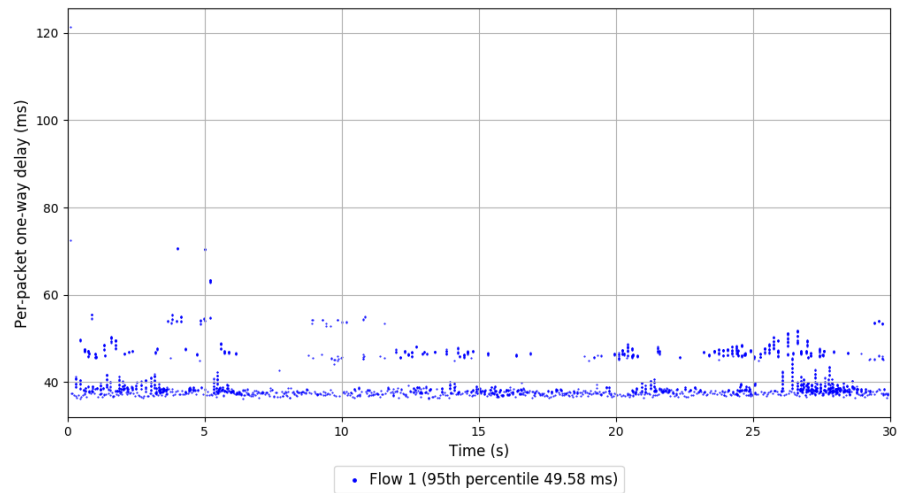
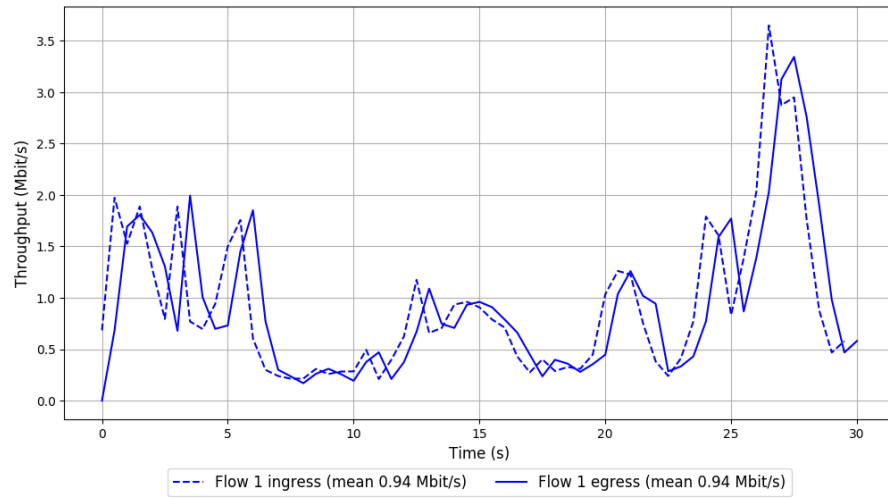


Run 2: Statistics of Sprout

Start at: 2018-05-30 07:55:44
End at: 2018-05-30 07:56:14
Local clock offset: 0.106 ms
Remote clock offset: -0.042 ms

Below is generated by plot.py at 2018-05-30 08:23:09
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 49.578 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 49.578 ms
Loss rate: 0.00%

Run 2: Report of Sprout — Data Link

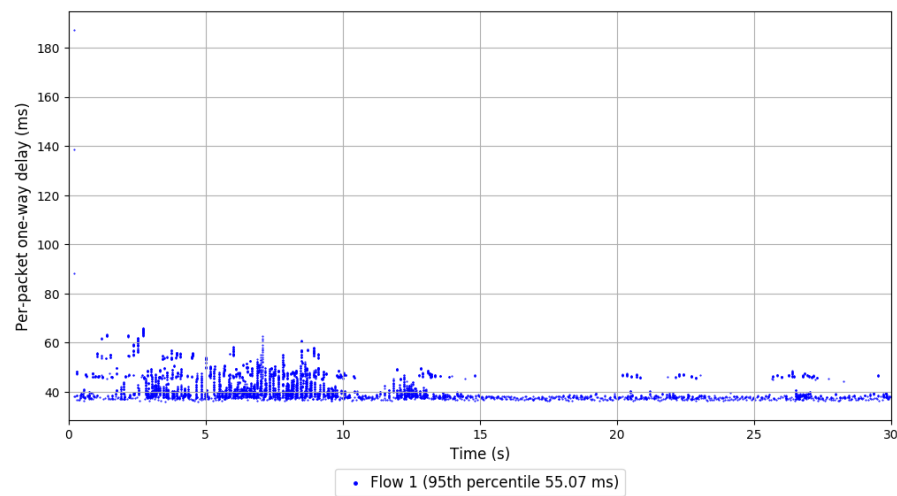
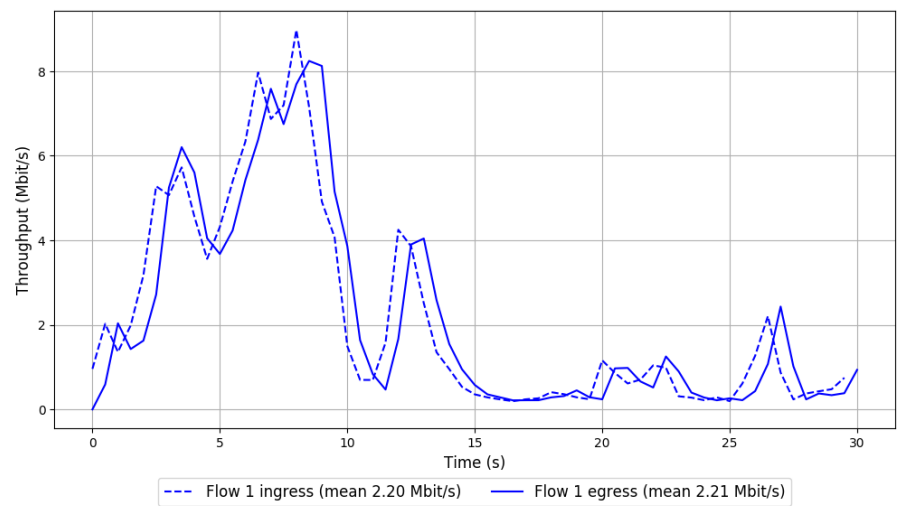


Run 3: Statistics of Sprout

Start at: 2018-05-30 08:16:43
End at: 2018-05-30 08:17:13
Local clock offset: 0.042 ms
Remote clock offset: -0.172 ms

Below is generated by plot.py at 2018-05-30 08:23:09
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.21 Mbit/s
95th percentile per-packet one-way delay: 55.073 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.21 Mbit/s
95th percentile per-packet one-way delay: 55.073 ms
Loss rate: 0.00%

Run 3: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2018-05-30 07:38:44

End at: 2018-05-30 07:39:14

Local clock offset: 0.219 ms

Remote clock offset: -0.011 ms

Below is generated by plot.py at 2018-05-30 08:23:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 19.01 Mbit/s

95th percentile per-packet one-way delay: 85.607 ms

Loss rate: 0.23%

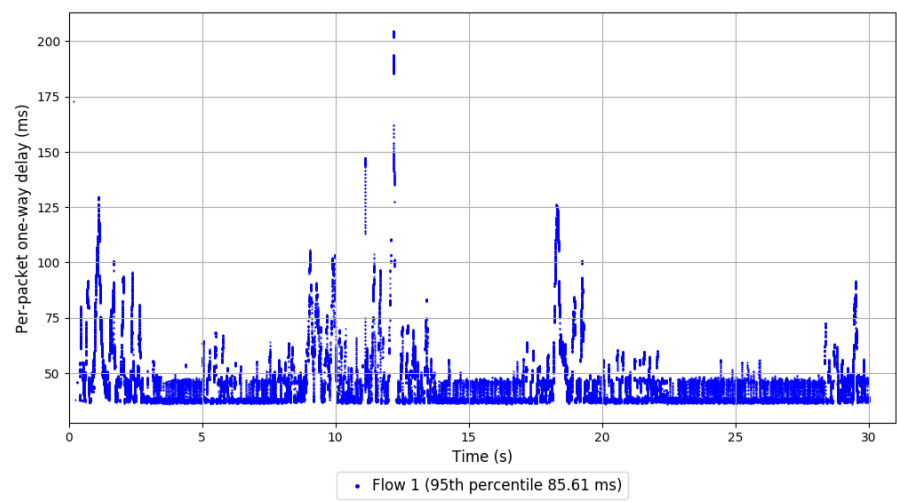
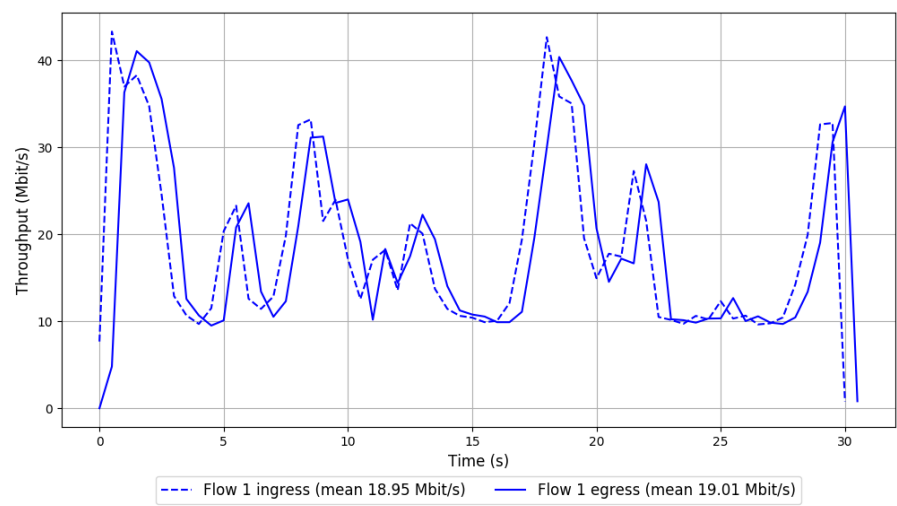
-- Flow 1:

Average throughput: 19.01 Mbit/s

95th percentile per-packet one-way delay: 85.607 ms

Loss rate: 0.23%

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-05-30 07:59:41

End at: 2018-05-30 08:00:11

Local clock offset: 0.113 ms

Remote clock offset: -0.067 ms

Below is generated by plot.py at 2018-05-30 08:23:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 15.23 Mbit/s

95th percentile per-packet one-way delay: 87.381 ms

Loss rate: 0.05%

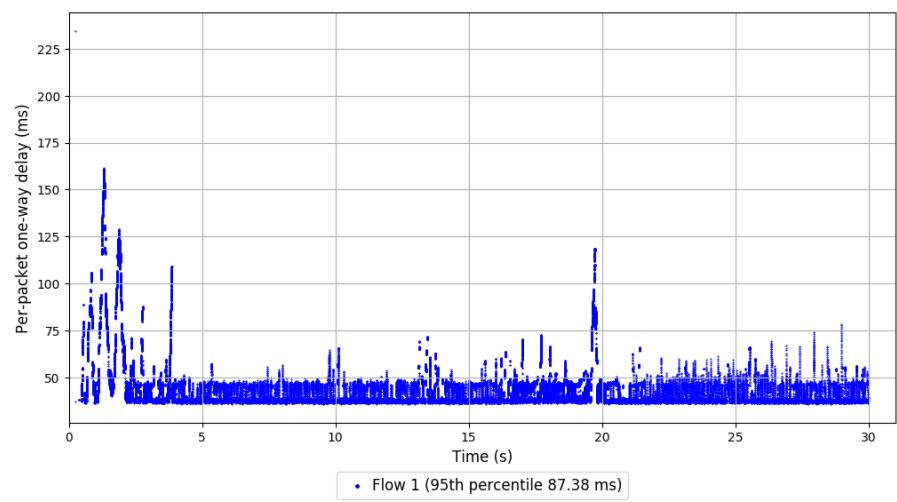
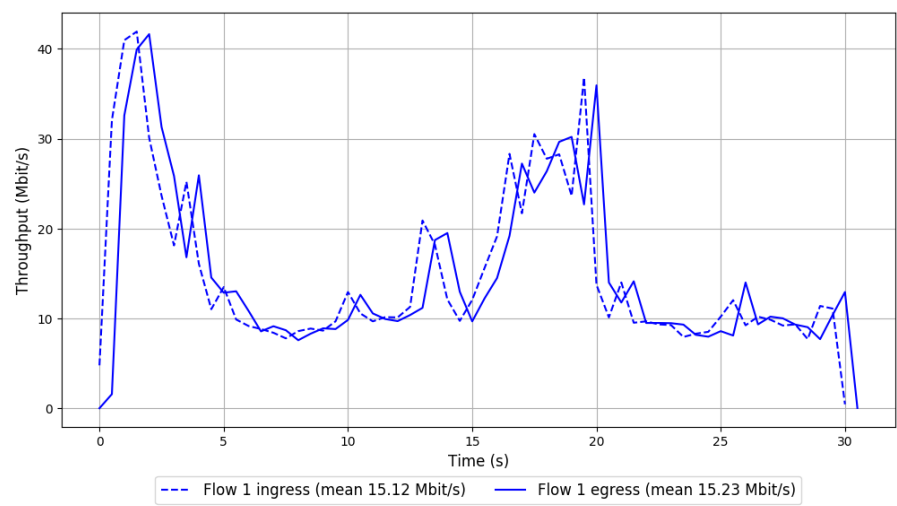
-- Flow 1:

Average throughput: 15.23 Mbit/s

95th percentile per-packet one-way delay: 87.381 ms

Loss rate: 0.05%

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

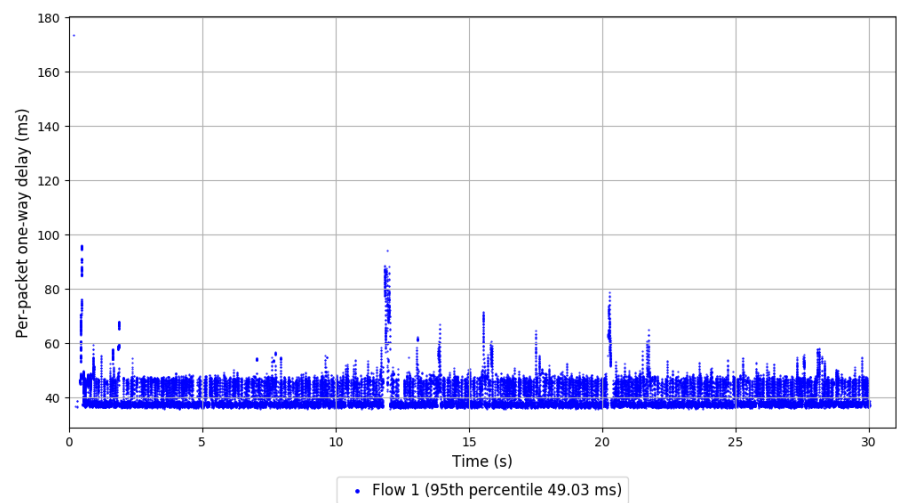
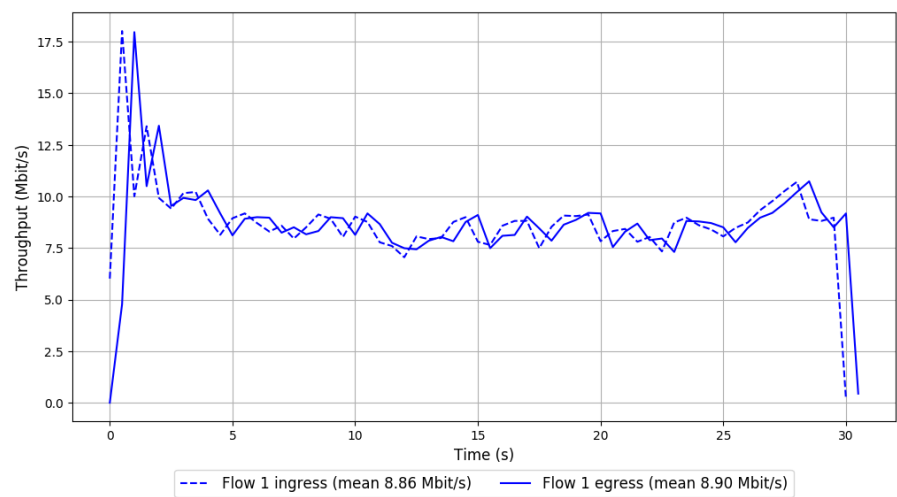


Run 3: Statistics of TaoVA-100x

Start at: 2018-05-30 08:20:39
End at: 2018-05-30 08:21:09
Local clock offset: -0.035 ms
Remote clock offset: -0.152 ms

Below is generated by plot.py at 2018-05-30 08:23:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 8.90 Mbit/s
95th percentile per-packet one-way delay: 49.032 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 8.90 Mbit/s
95th percentile per-packet one-way delay: 49.032 ms
Loss rate: 0.07%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-05-30 07:33:31

End at: 2018-05-30 07:34:01

Local clock offset: 0.188 ms

Remote clock offset: 0.055 ms

Below is generated by plot.py at 2018-05-30 08:23:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.31 Mbit/s

95th percentile per-packet one-way delay: 58.162 ms

Loss rate: 0.00%

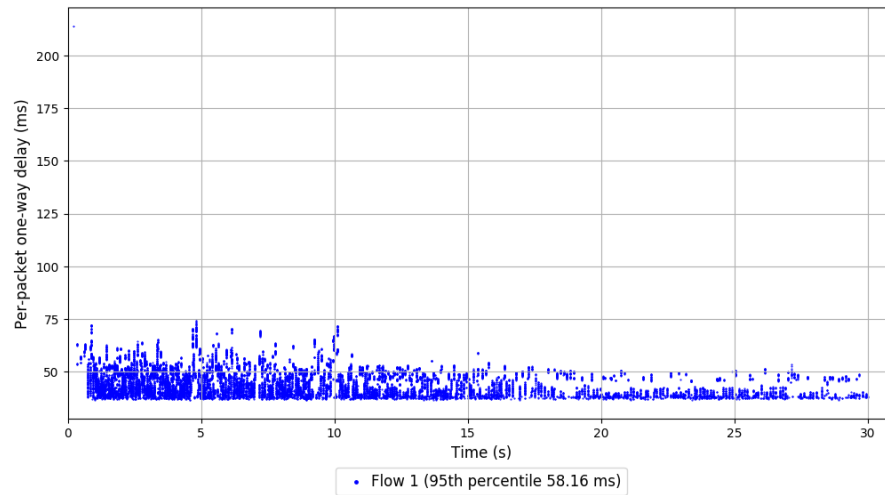
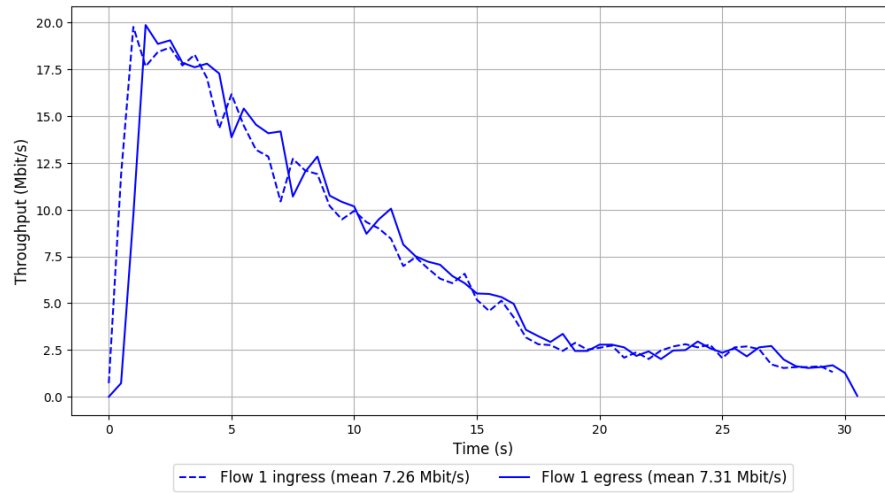
-- Flow 1:

Average throughput: 7.31 Mbit/s

95th percentile per-packet one-way delay: 58.162 ms

Loss rate: 0.00%

Run 1: Report of TCP Vegas — Data Link

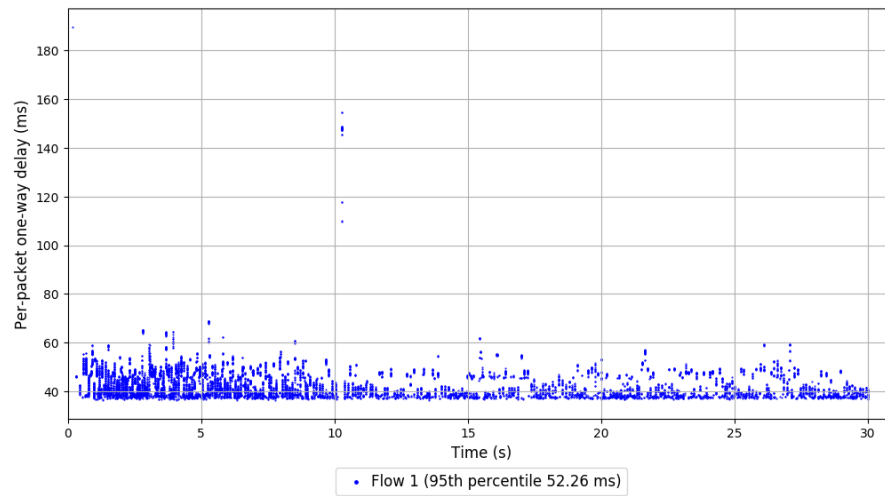
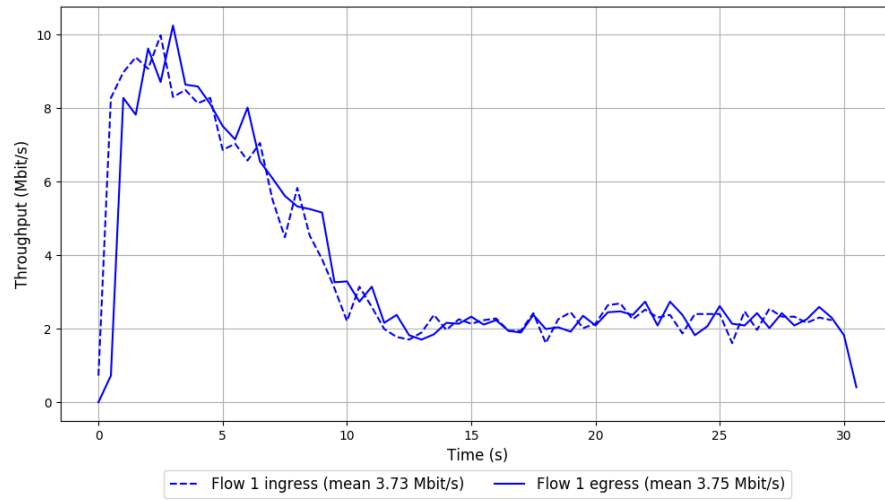


Run 2: Statistics of TCP Vegas

Start at: 2018-05-30 07:54:26
End at: 2018-05-30 07:54:56
Local clock offset: 0.124 ms
Remote clock offset: -0.138 ms

Below is generated by plot.py at 2018-05-30 08:23:11
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.75 Mbit/s
95th percentile per-packet one-way delay: 52.260 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 3.75 Mbit/s
95th percentile per-packet one-way delay: 52.260 ms
Loss rate: 0.00%

Run 2: Report of TCP Vegas — Data Link

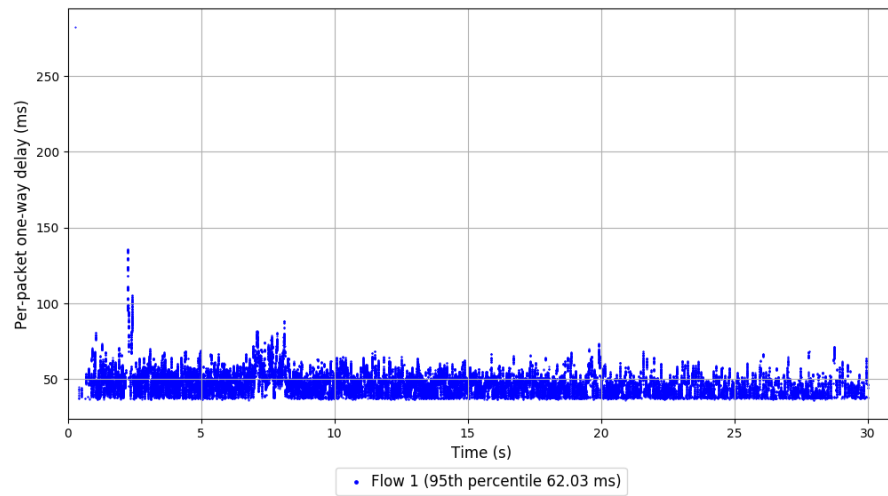
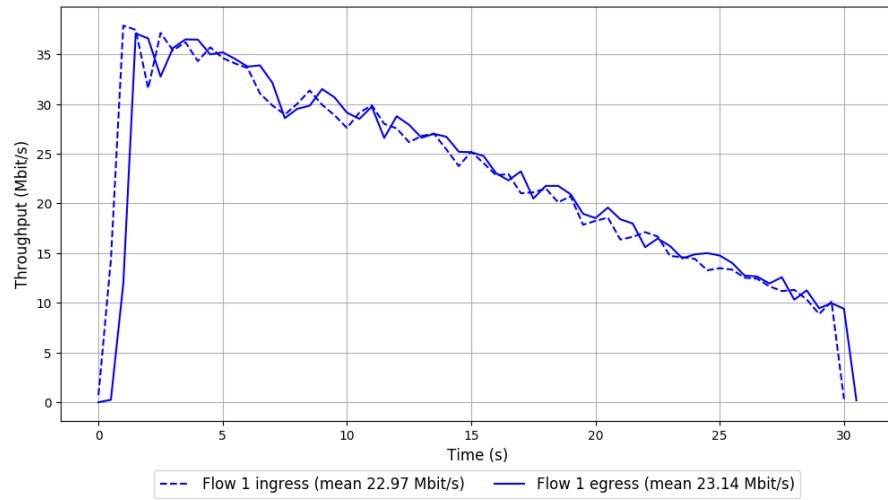


Run 3: Statistics of TCP Vegas

Start at: 2018-05-30 08:15:24
End at: 2018-05-30 08:15:54
Local clock offset: 0.074 ms
Remote clock offset: -0.188 ms

Below is generated by plot.py at 2018-05-30 08:23:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 23.14 Mbit/s
95th percentile per-packet one-way delay: 62.033 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 23.14 Mbit/s
95th percentile per-packet one-way delay: 62.033 ms
Loss rate: 0.12%

Run 3: Report of TCP Vegas — Data Link

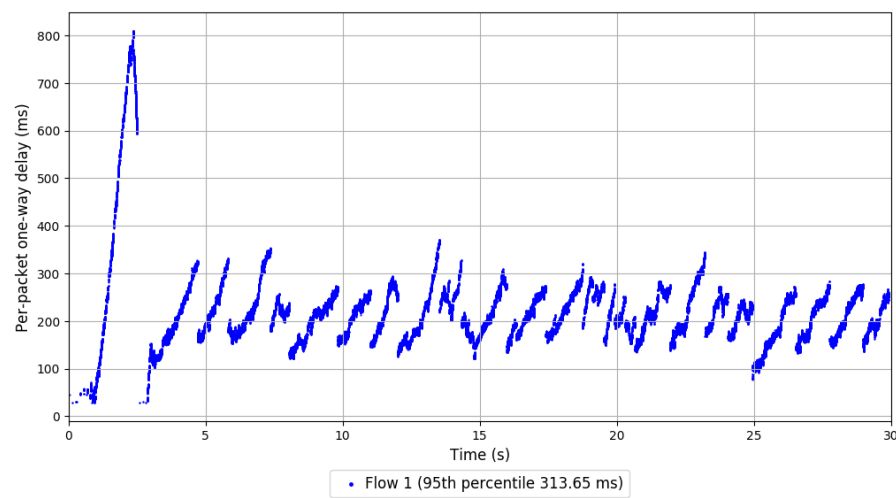
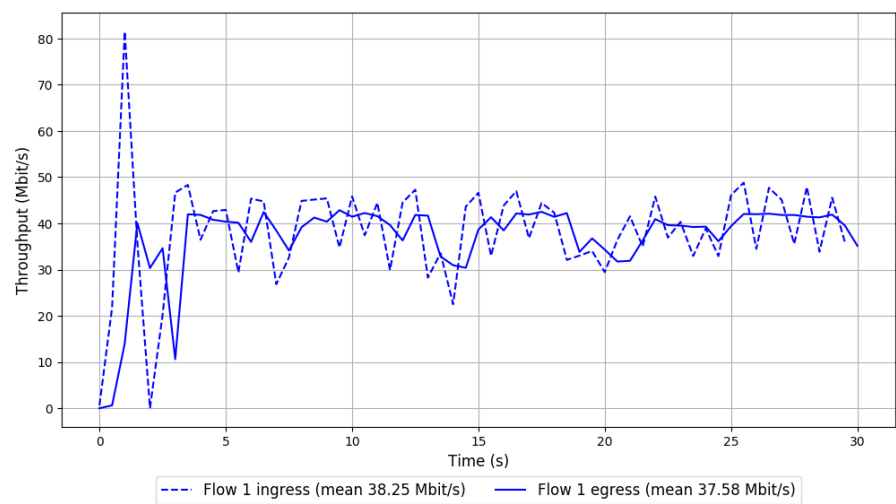


Run 1: Statistics of Verus

Start at: 2018-05-30 07:26:59
End at: 2018-05-30 07:27:29
Local clock offset: 0.354 ms
Remote clock offset: -0.075 ms

Below is generated by plot.py at 2018-05-30 08:23:24
Datalink statistics
-- Total of 1 flow:
Average throughput: 37.58 Mbit/s
95th percentile per-packet one-way delay: 313.653 ms
Loss rate: 1.85%
-- Flow 1:
Average throughput: 37.58 Mbit/s
95th percentile per-packet one-way delay: 313.653 ms
Loss rate: 1.85%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2018-05-30 07:47:54

End at: 2018-05-30 07:48:24

Local clock offset: 0.057 ms

Remote clock offset: 0.058 ms

Below is generated by plot.py at 2018-05-30 08:23:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 38.48 Mbit/s

95th percentile per-packet one-way delay: 300.586 ms

Loss rate: 2.07%

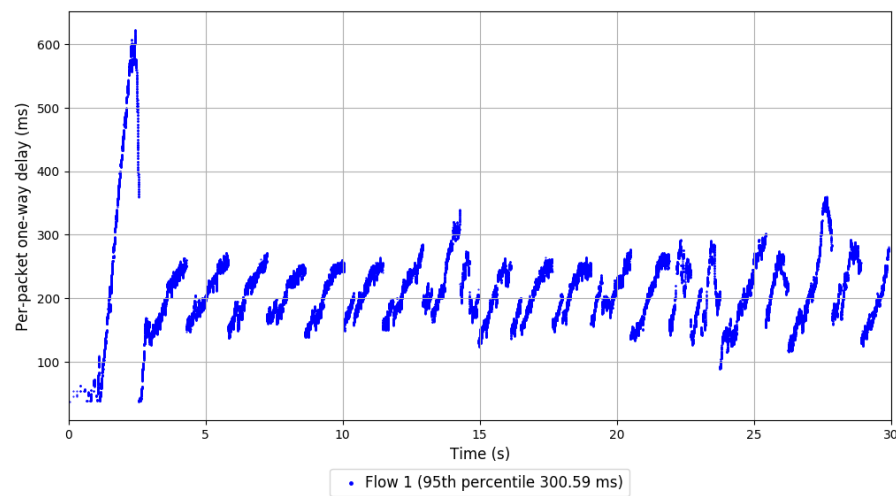
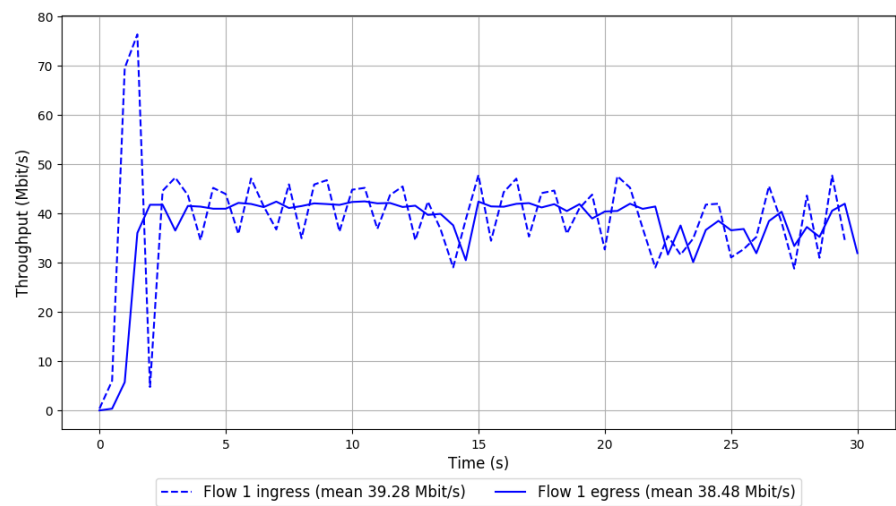
-- Flow 1:

Average throughput: 38.48 Mbit/s

95th percentile per-packet one-way delay: 300.586 ms

Loss rate: 2.07%

Run 2: Report of Verus — Data Link

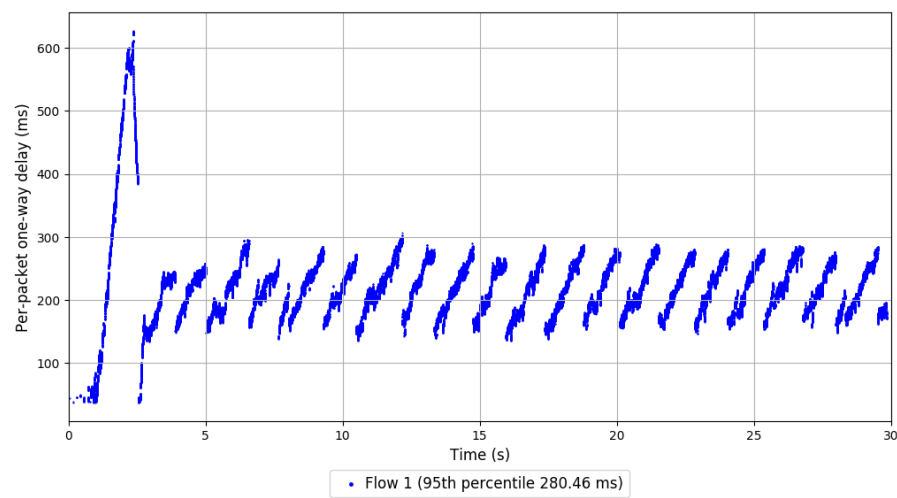
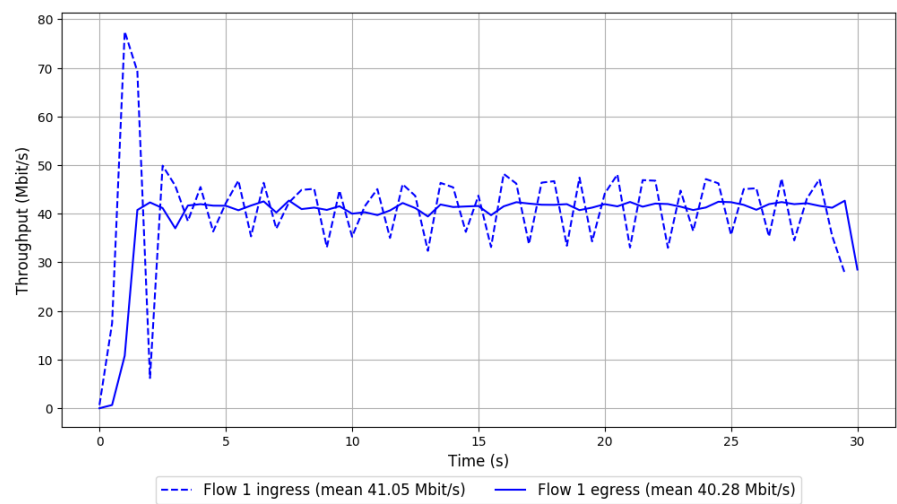


Run 3: Statistics of Verus

Start at: 2018-05-30 08:08:52
End at: 2018-05-30 08:09:22
Local clock offset: 0.111 ms
Remote clock offset: -0.169 ms

Below is generated by plot.py at 2018-05-30 08:23:24
Datalink statistics
-- Total of 1 flow:
Average throughput: 40.28 Mbit/s
95th percentile per-packet one-way delay: 280.460 ms
Loss rate: 1.96%
-- Flow 1:
Average throughput: 40.28 Mbit/s
95th percentile per-packet one-way delay: 280.460 ms
Loss rate: 1.96%

Run 3: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-05-30 07:29:37

End at: 2018-05-30 07:30:07

Local clock offset: 0.357 ms

Remote clock offset: -0.047 ms

Below is generated by plot.py at 2018-05-30 08:23:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 7.86 Mbit/s

95th percentile per-packet one-way delay: 44.178 ms

Loss rate: 0.18%

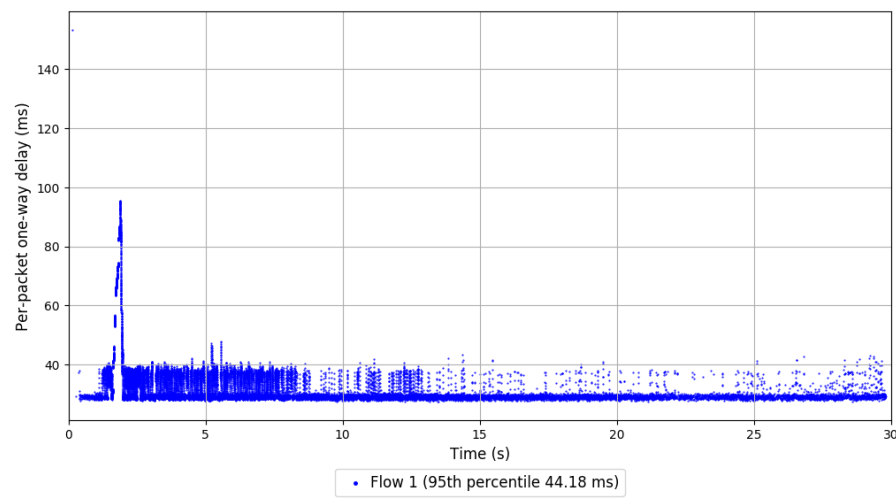
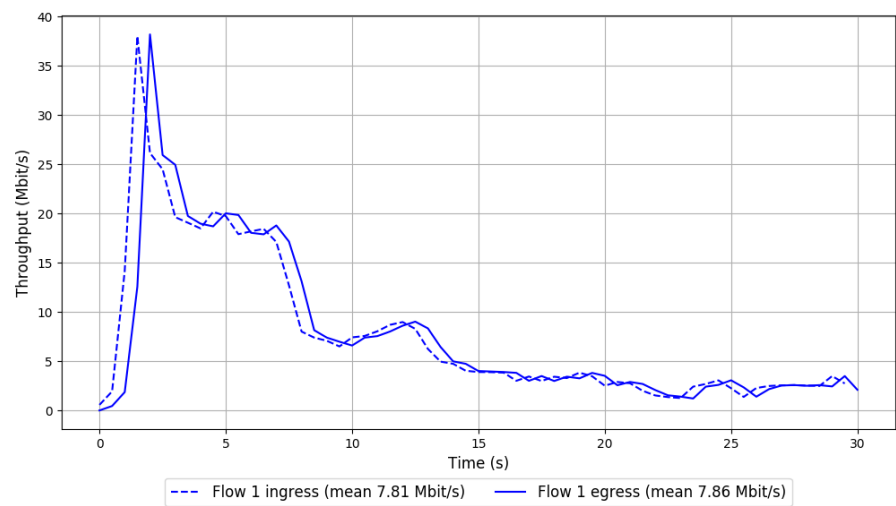
-- Flow 1:

Average throughput: 7.86 Mbit/s

95th percentile per-packet one-way delay: 44.178 ms

Loss rate: 0.18%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-05-30 07:50:32

End at: 2018-05-30 07:51:02

Local clock offset: 0.124 ms

Remote clock offset: 0.033 ms

Below is generated by plot.py at 2018-05-30 08:23:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 6.81 Mbit/s

95th percentile per-packet one-way delay: 46.167 ms

Loss rate: 0.13%

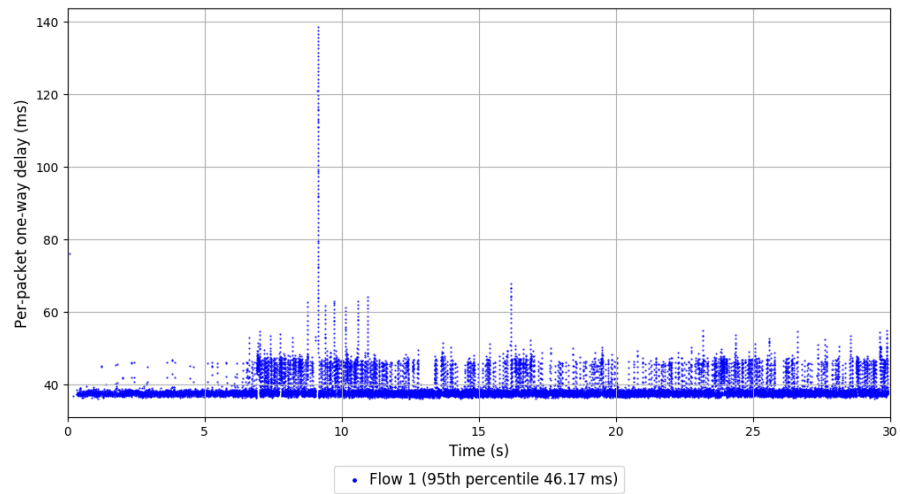
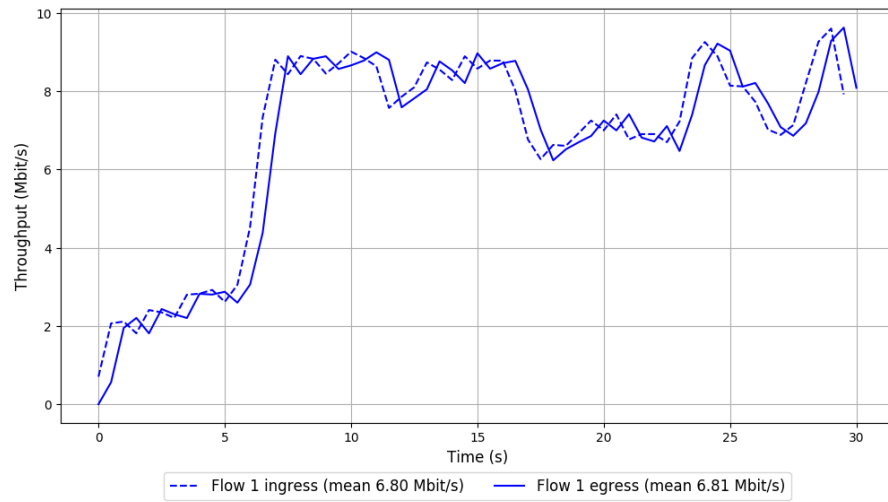
-- Flow 1:

Average throughput: 6.81 Mbit/s

95th percentile per-packet one-way delay: 46.167 ms

Loss rate: 0.13%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-05-30 08:11:30

End at: 2018-05-30 08:12:00

Local clock offset: 0.088 ms

Remote clock offset: -0.1 ms

Below is generated by plot.py at 2018-05-30 08:23:24

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.50 Mbit/s

95th percentile per-packet one-way delay: 39.907 ms

Loss rate: 0.05%

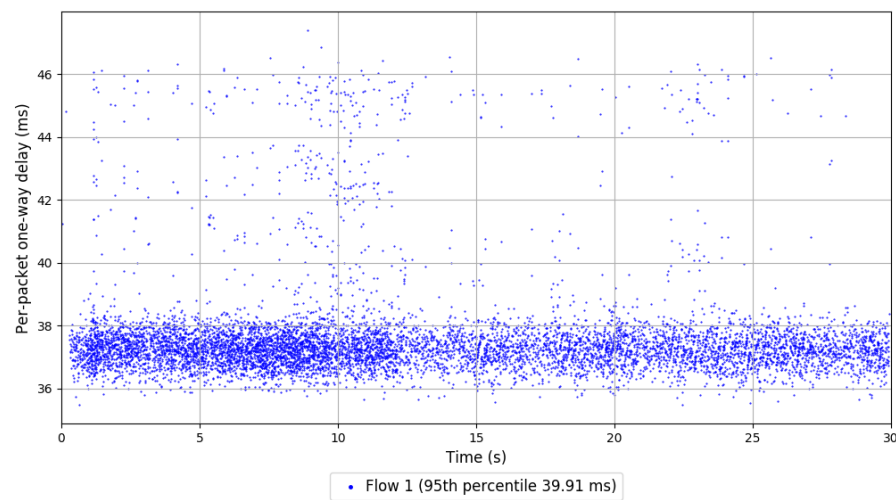
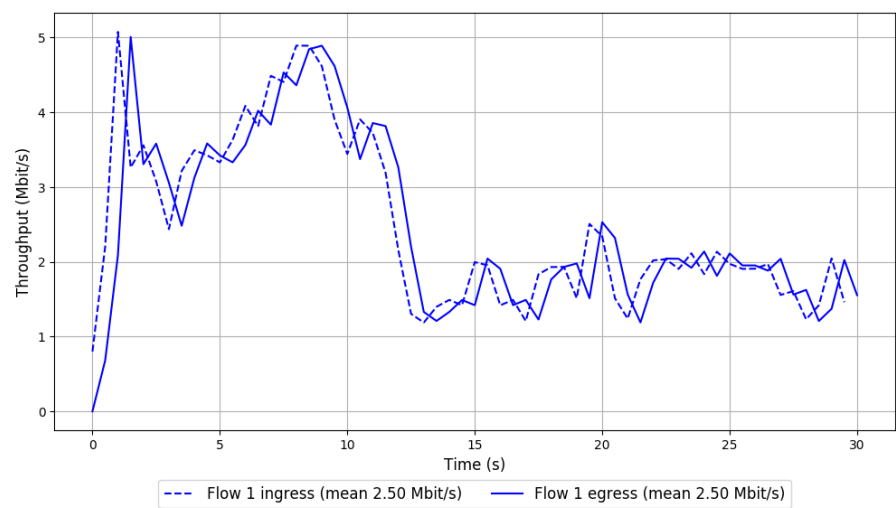
-- Flow 1:

Average throughput: 2.50 Mbit/s

95th percentile per-packet one-way delay: 39.907 ms

Loss rate: 0.05%

Run 3: Report of PCC-Vivace — Data Link

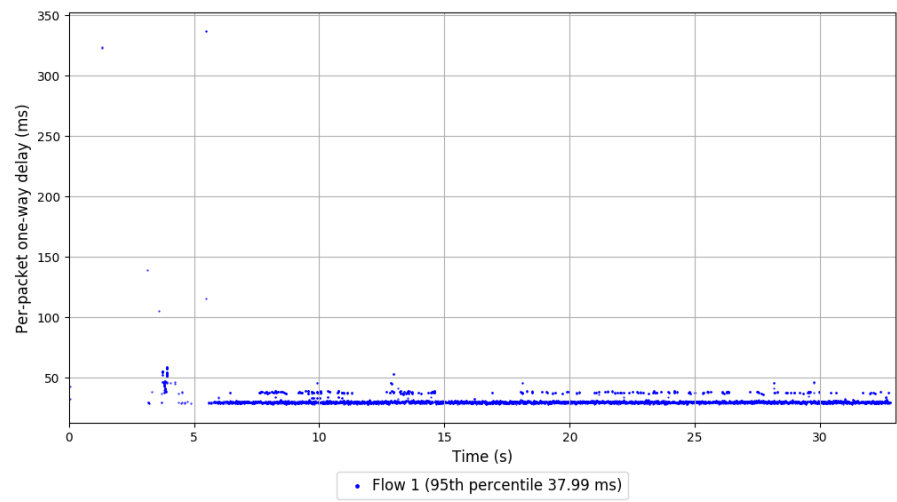
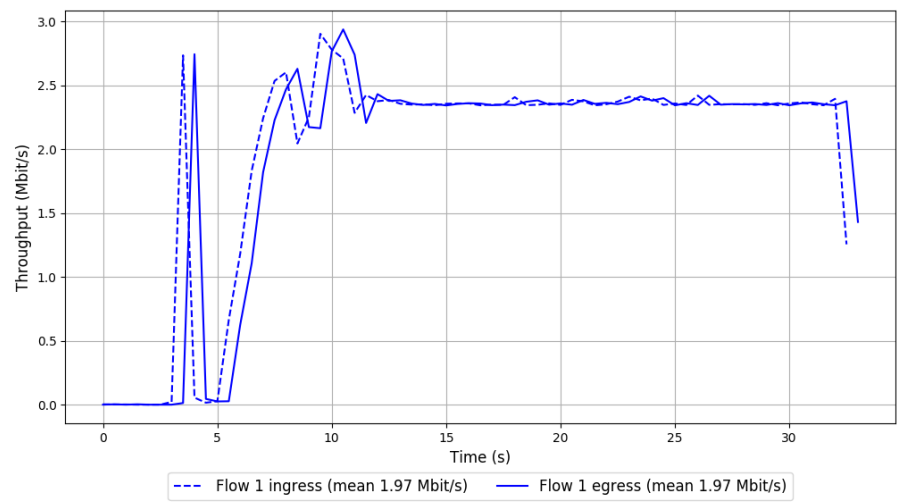


Run 1: Statistics of WebRTC media

Start at: 2018-05-30 07:30:55
End at: 2018-05-30 07:31:25
Local clock offset: 0.244 ms
Remote clock offset: -0.021 ms

Below is generated by plot.py at 2018-05-30 08:23:24
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.97 Mbit/s
95th percentile per-packet one-way delay: 37.991 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.97 Mbit/s
95th percentile per-packet one-way delay: 37.991 ms
Loss rate: 0.00%

Run 1: Report of WebRTC media — Data Link

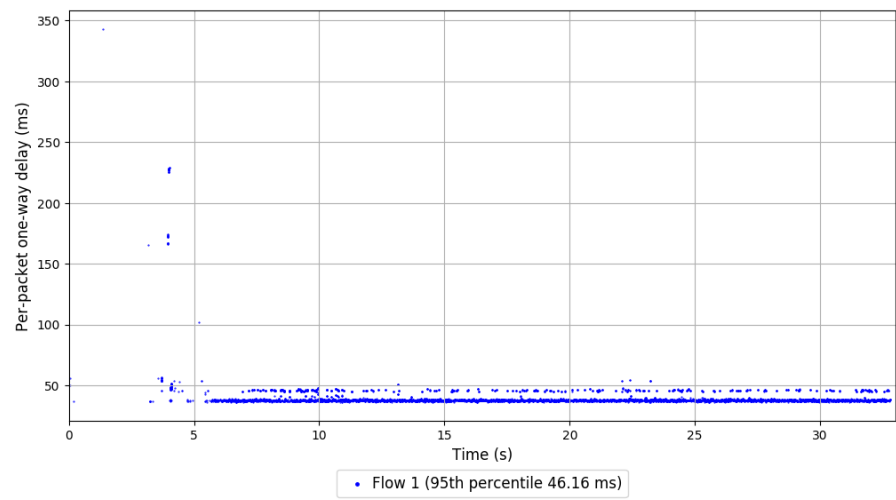
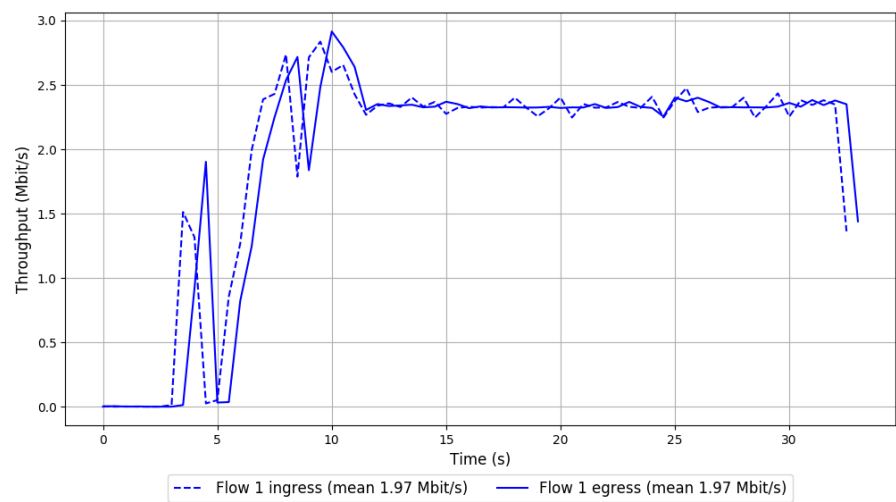


Run 2: Statistics of WebRTC media

Start at: 2018-05-30 07:51:50
End at: 2018-05-30 07:52:20
Local clock offset: 0.131 ms
Remote clock offset: -0.049 ms

Below is generated by plot.py at 2018-05-30 08:23:24
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.97 Mbit/s
95th percentile per-packet one-way delay: 46.163 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 1.97 Mbit/s
95th percentile per-packet one-way delay: 46.163 ms
Loss rate: 0.06%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-05-30 08:12:48
End at: 2018-05-30 08:13:18
Local clock offset: 0.095 ms
Remote clock offset: -0.128 ms

Below is generated by plot.py at 2018-05-30 08:23:24
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 46.078 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 46.078 ms
Loss rate: 0.06%

Run 3: Report of WebRTC media — Data Link

