

Pantheon Report

Generated at 2018-09-11 07:08:57 (UTC).

Data path: India cellular on `ppp0` (*remote*) → AWS India 1 on `ens5` (*local*).

Repeated the test of 18 congestion control schemes 3 times.

Each test lasted for 30 seconds running 1 flow.

NTP offsets were measured against `nets.org.sg` and have been applied to correct the timestamps in logs.

System info:

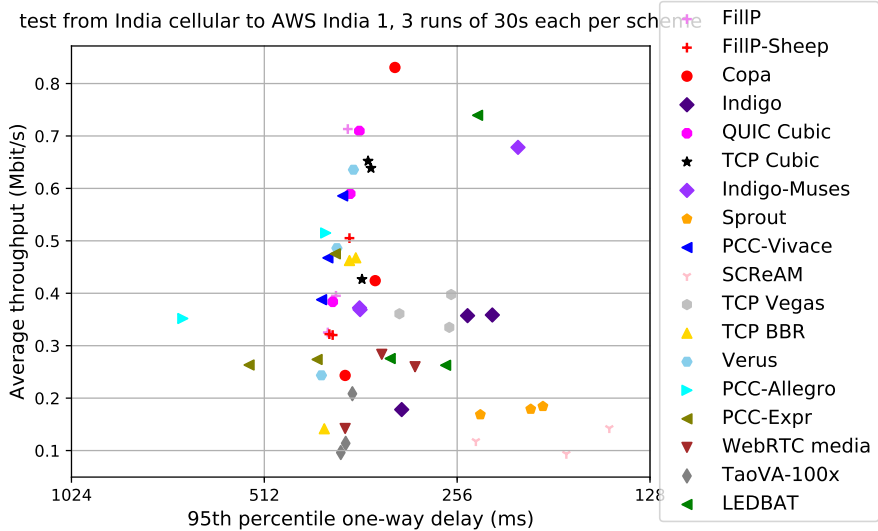
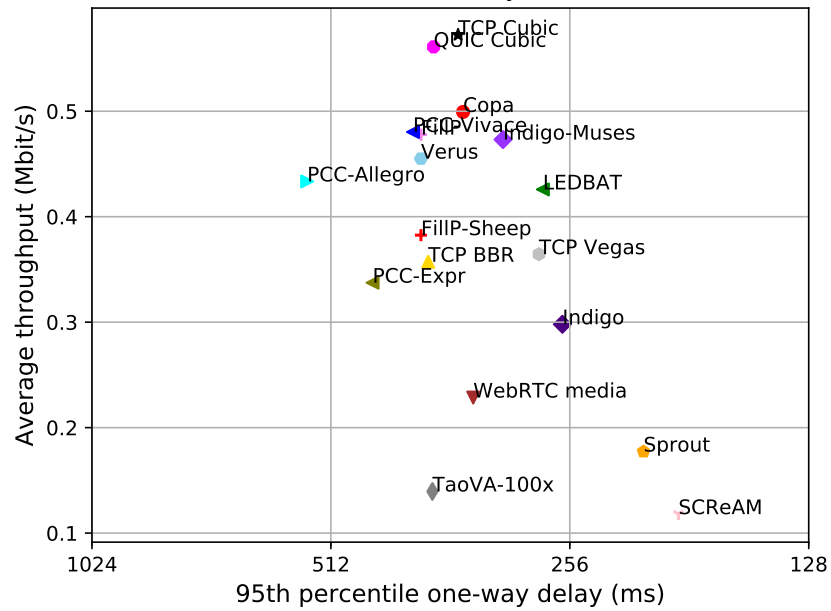
```
Linux 4.15.0-1020-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
net.ipv4.tcp_mem = 184101 245469 368202
```

Git summary:

```
branch: muses @ f30bceca2aec2ef14a3cf71e25642f4a30905a03
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ cbfce6db5ff5740dafa1771f813cd646339e1952
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
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 India cellular to AWS India 1, 3 runs of 30s each per scheme
(mean of all runs by scheme)



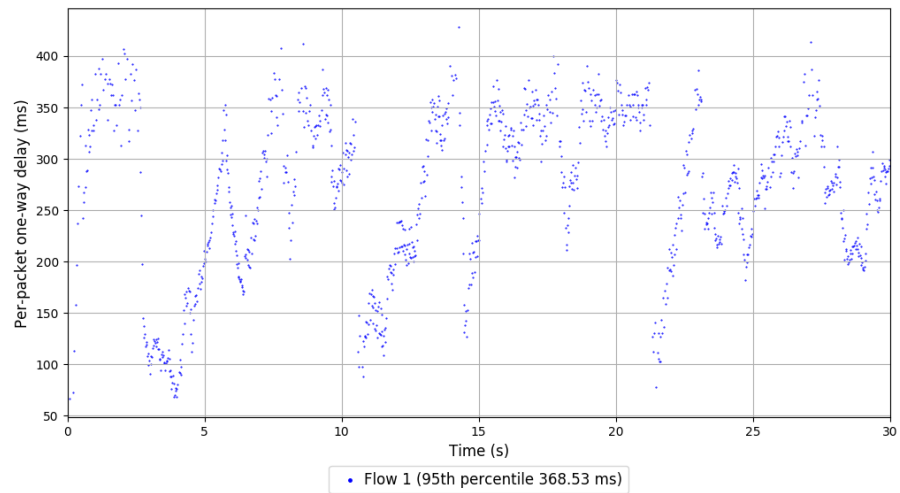
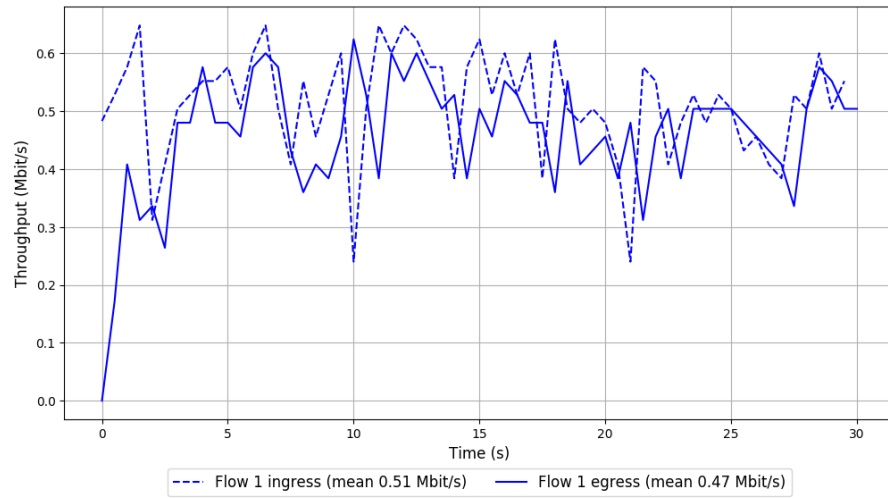
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	0.36	386.07	9.13
Copa	3	0.50	348.91	6.14
TCP Cubic	3	0.57	353.99	5.84
FillP	3	0.48	394.18	70.70
FillP-Sheep	3	0.38	394.25	50.53
Indigo	3	0.30	261.56	4.14
LEDBAT	3	0.43	276.80	1.39
Indigo-Muses	3	0.47	310.74	10.71
PCC-Allegro	2	0.43	548.44	95.65
PCC-Expr	3	0.34	453.68	94.83
QUIC Cubic	3	0.56	380.06	14.81
SCReAM	3	0.12	186.80	0.14
Sprout	3	0.18	206.71	1.08
TaoVA-100x	3	0.14	381.38	76.94
TCP Vegas	3	0.36	279.98	1.49
Verus	3	0.46	394.32	41.50
PCC-Vivace	3	0.48	403.50	65.56
WebRTC media	3	0.23	338.78	12.82

Run 1: Statistics of TCP BBR

Start at: 2018-09-11 06:23:20
End at: 2018-09-11 06:23:50
Local clock offset: -1.643 ms
Remote clock offset: -1.774 ms

Below is generated by plot.py at 2018-09-11 07:08:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 368.533 ms
Loss rate: 9.05%
-- Flow 1:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 368.533 ms
Loss rate: 9.05%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-09-11 06:43:04

End at: 2018-09-11 06:43:34

Local clock offset: -2.185 ms

Remote clock offset: -1.59 ms

Below is generated by plot.py at 2018-09-11 07:08:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.14 Mbit/s

95th percentile per-packet one-way delay: 412.692 ms

Loss rate: 10.20%

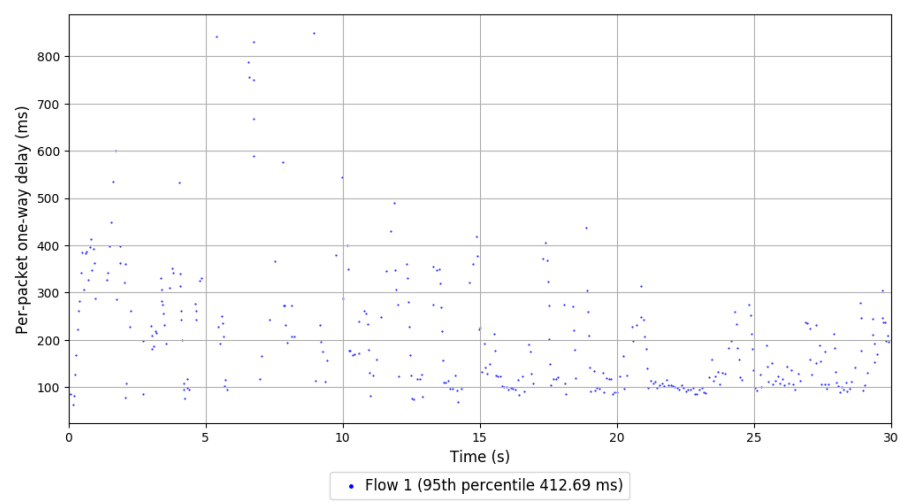
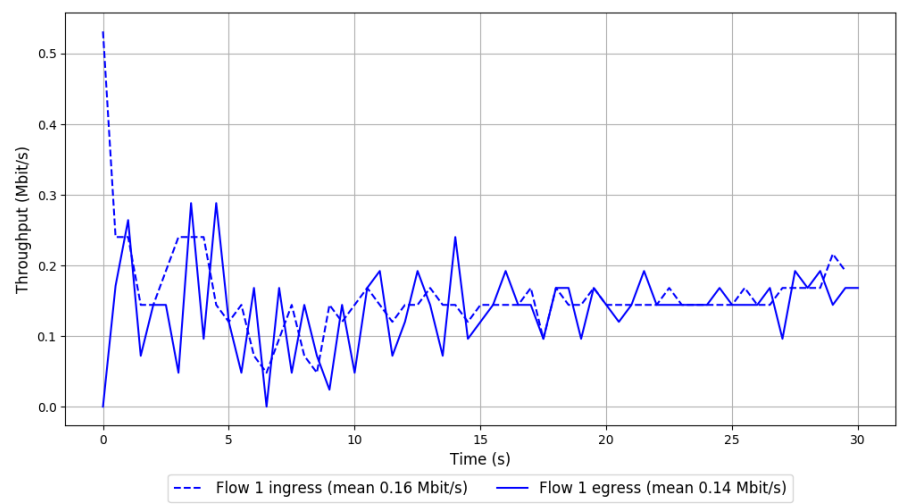
-- Flow 1:

Average throughput: 0.14 Mbit/s

95th percentile per-packet one-way delay: 412.692 ms

Loss rate: 10.20%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-09-11 07:03:27

End at: 2018-09-11 07:03:57

Local clock offset: 0.239 ms

Remote clock offset: -5.185 ms

Below is generated by plot.py at 2018-09-11 07:08:28

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.46 Mbit/s

95th percentile per-packet one-way delay: 376.979 ms

Loss rate: 8.13%

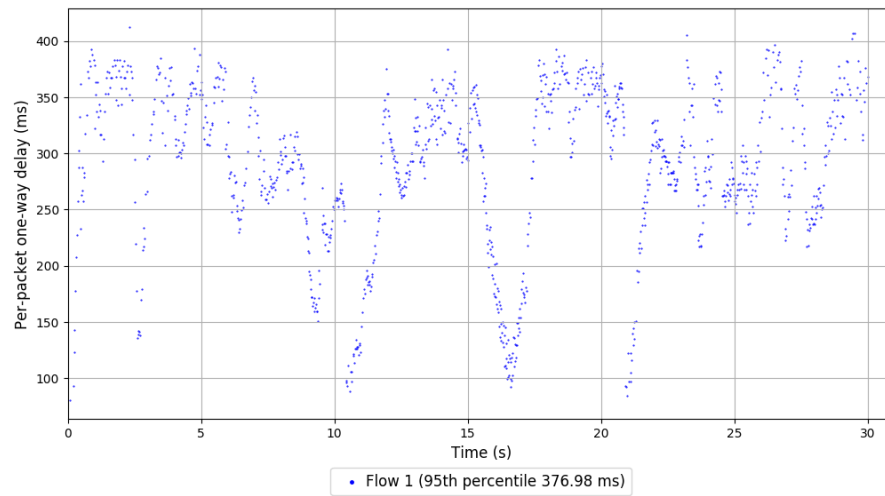
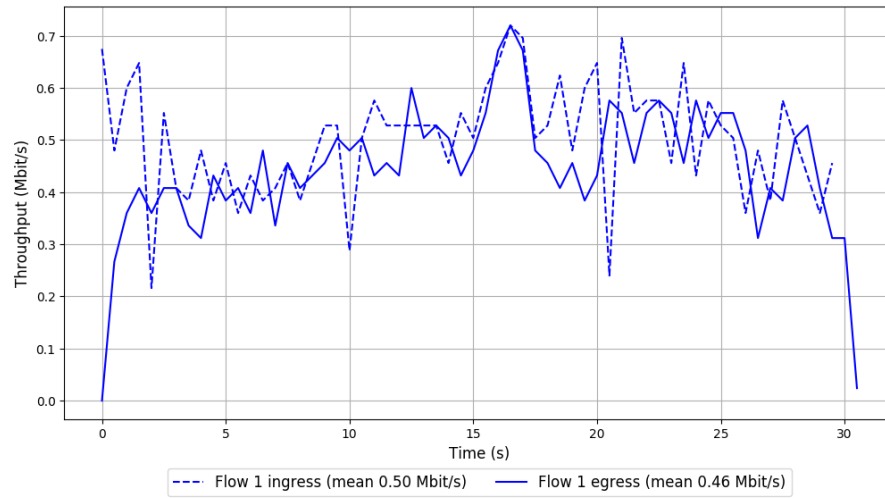
-- Flow 1:

Average throughput: 0.46 Mbit/s

95th percentile per-packet one-way delay: 376.979 ms

Loss rate: 8.13%

Run 3: Report of TCP BBR — Data Link

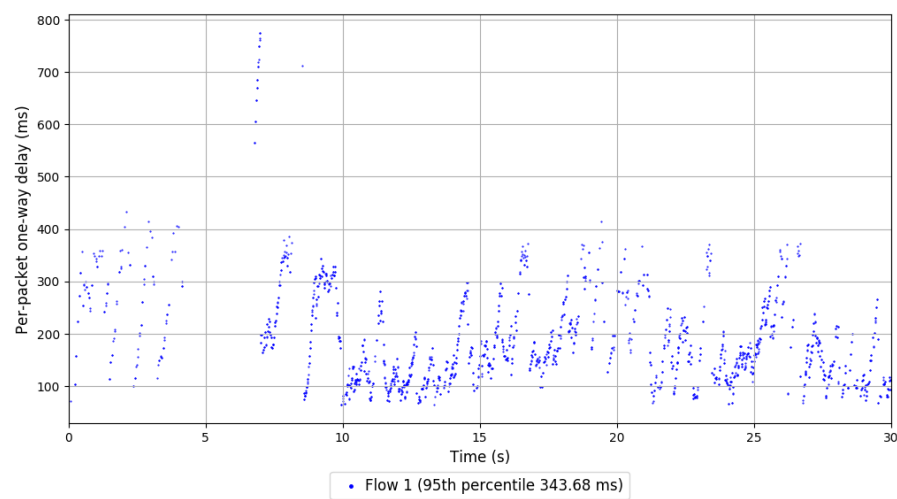
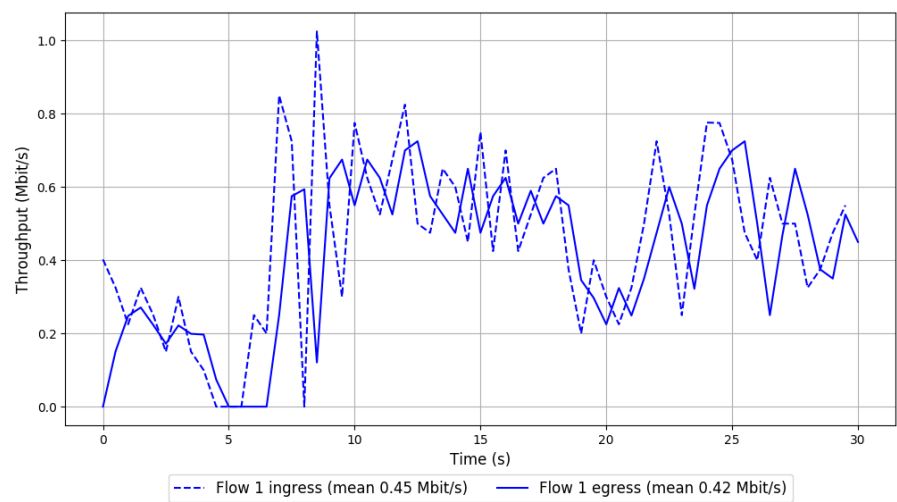


Run 1: Statistics of Copa

Start at: 2018-09-11 06:18:59
End at: 2018-09-11 06:19:29
Local clock offset: -2.042 ms
Remote clock offset: -1.976 ms

Below is generated by plot.py at 2018-09-11 07:08:29
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 343.680 ms
Loss rate: 6.31%
-- Flow 1:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 343.680 ms
Loss rate: 6.31%

Run 1: Report of Copa — Data Link

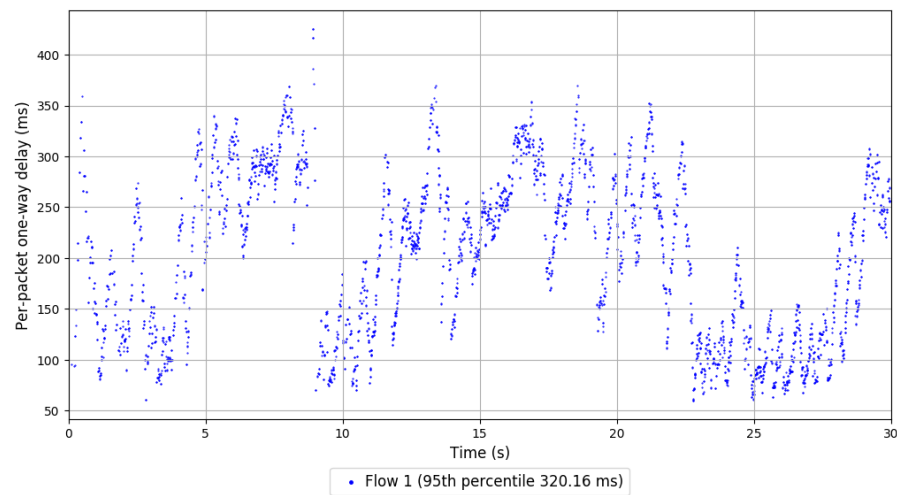
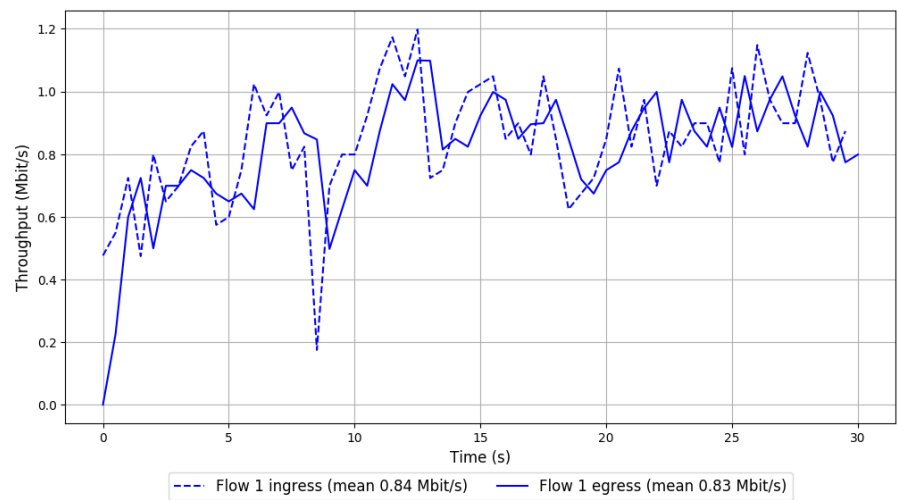


Run 2: Statistics of Copa

Start at: 2018-09-11 06:38:41
End at: 2018-09-11 06:39:11
Local clock offset: -1.303 ms
Remote clock offset: -2.199 ms

Below is generated by plot.py at 2018-09-11 07:08:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 320.160 ms
Loss rate: 1.79%
-- Flow 1:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 320.160 ms
Loss rate: 1.79%

Run 2: Report of Copa — Data Link

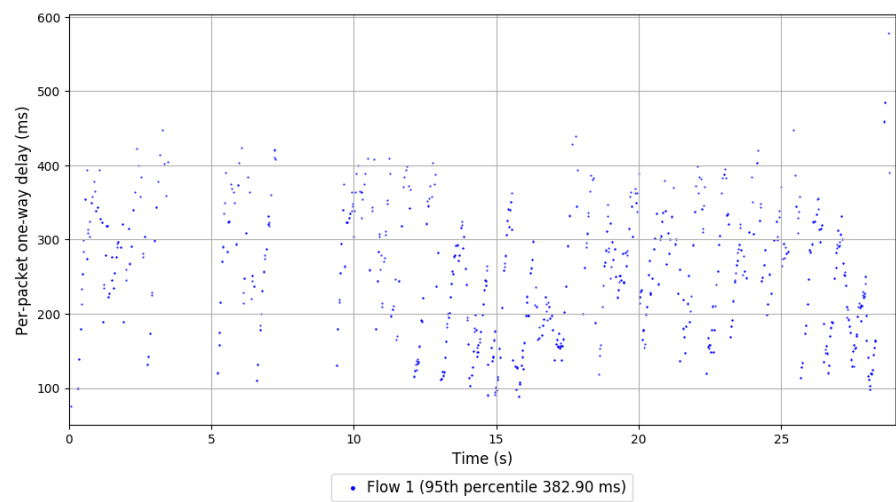
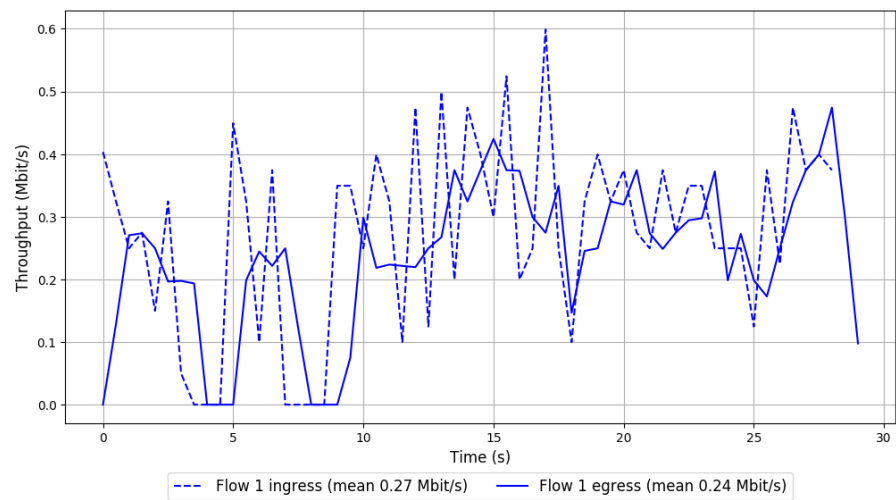


Run 3: Statistics of Copa

Start at: 2018-09-11 06:59:06
End at: 2018-09-11 06:59:36
Local clock offset: 0.257 ms
Remote clock offset: -4.756 ms

Below is generated by plot.py at 2018-09-11 07:08:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 382.899 ms
Loss rate: 10.33%
-- Flow 1:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 382.899 ms
Loss rate: 10.33%

Run 3: Report of Copa — Data Link

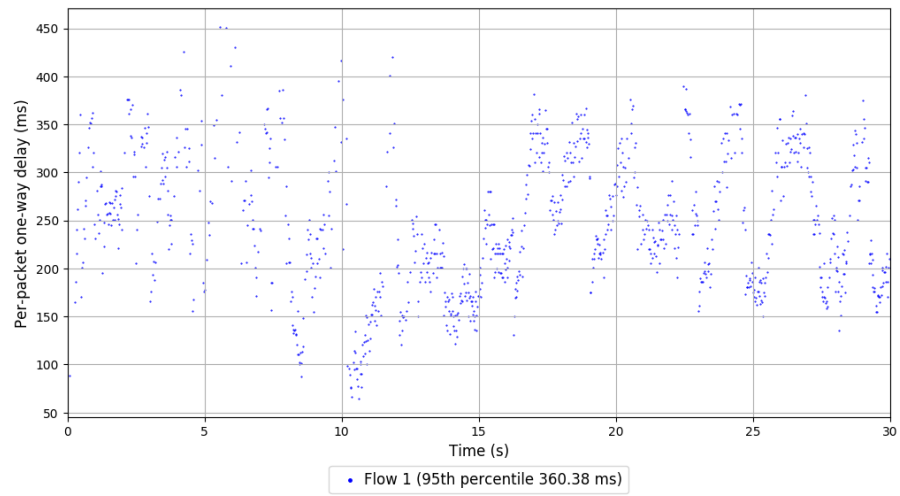
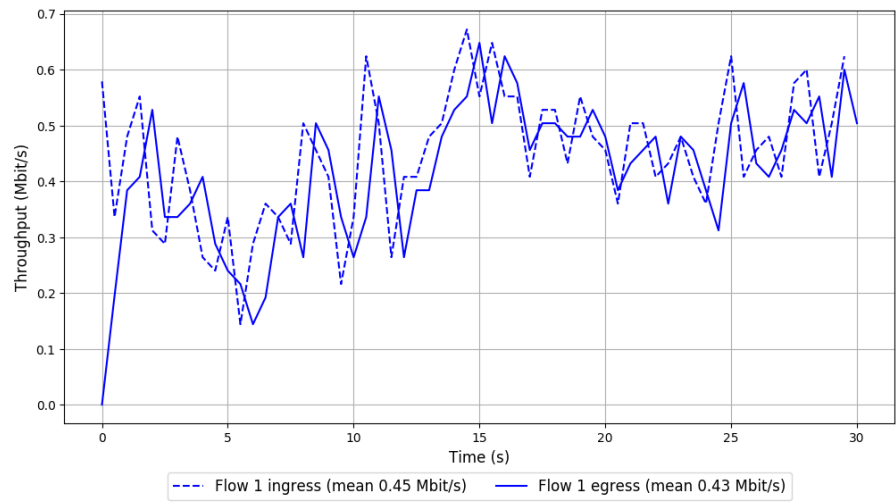


Run 1: Statistics of TCP Cubic

Start at: 2018-09-11 06:14:37
End at: 2018-09-11 06:15:07
Local clock offset: -1.251 ms
Remote clock offset: -0.322 ms

Below is generated by plot.py at 2018-09-11 07:08:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 360.382 ms
Loss rate: 4.84%
-- Flow 1:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 360.382 ms
Loss rate: 4.84%

Run 1: Report of TCP Cubic — Data Link

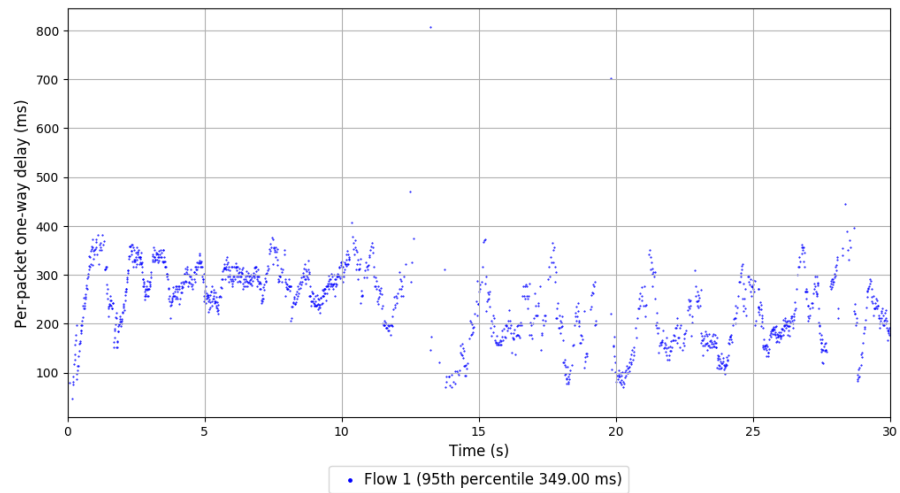
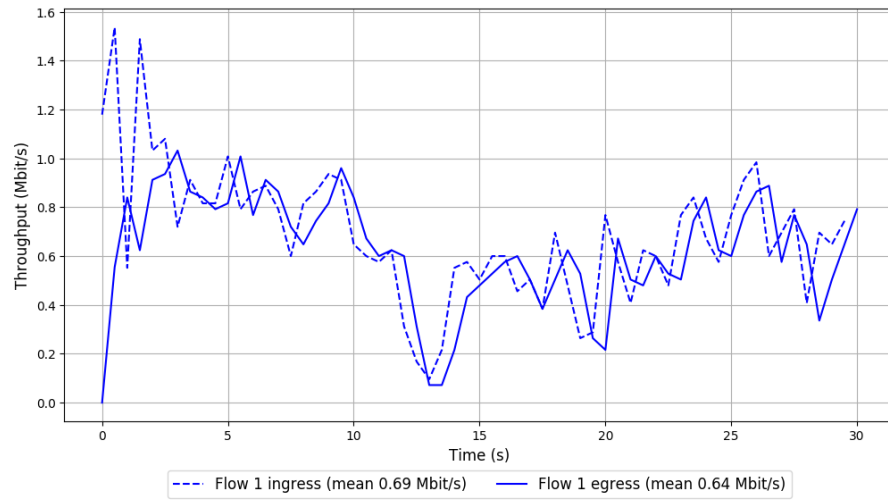


Run 2: Statistics of TCP Cubic

Start at: 2018-09-11 06:34:15
End at: 2018-09-11 06:34:45
Local clock offset: -1.279 ms
Remote clock offset: -1.719 ms

Below is generated by plot.py at 2018-09-11 07:08:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 348.997 ms
Loss rate: 7.55%
-- Flow 1:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 348.997 ms
Loss rate: 7.55%

Run 2: Report of TCP Cubic — Data Link

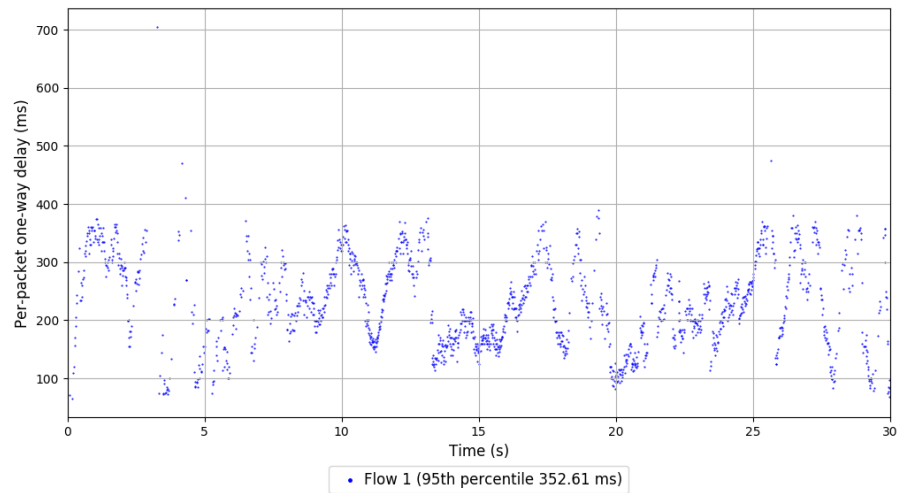
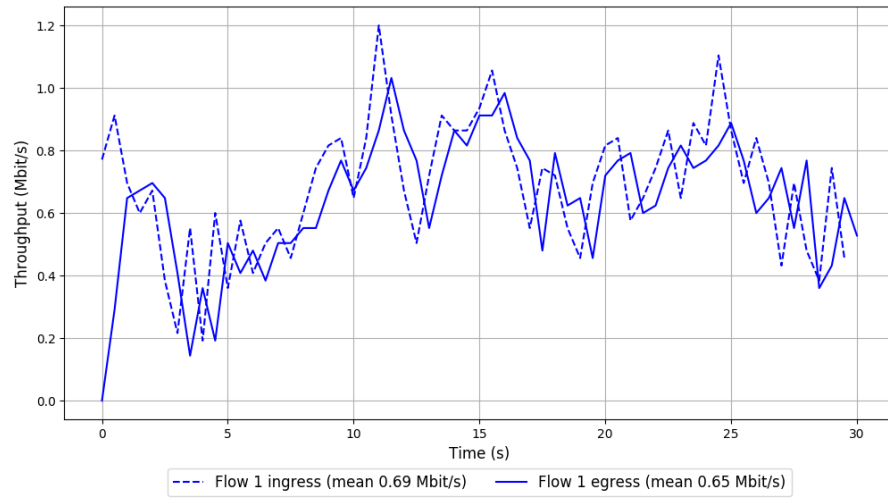


Run 3: Statistics of TCP Cubic

Start at: 2018-09-11 06:54:44
End at: 2018-09-11 06:55:14
Local clock offset: -2.029 ms
Remote clock offset: -3.558 ms

Below is generated by plot.py at 2018-09-11 07:08:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 352.605 ms
Loss rate: 5.13%
-- Flow 1:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 352.605 ms
Loss rate: 5.13%

Run 3: Report of TCP Cubic — Data Link

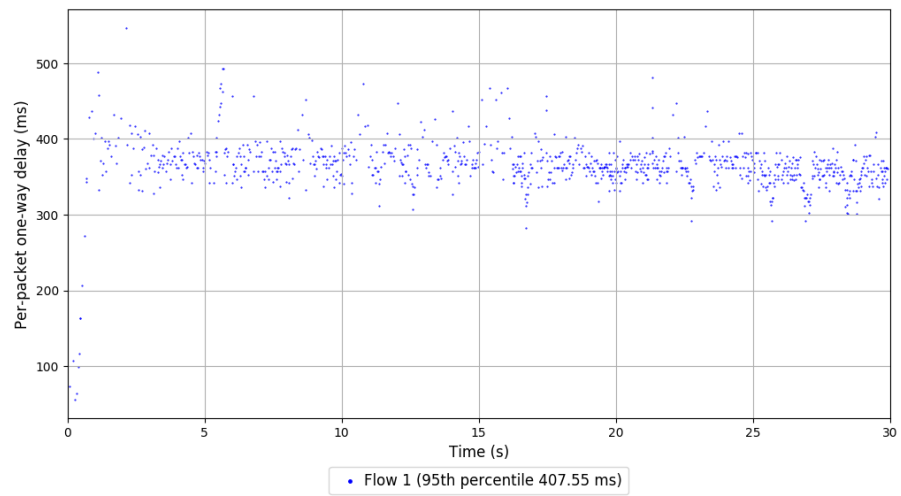
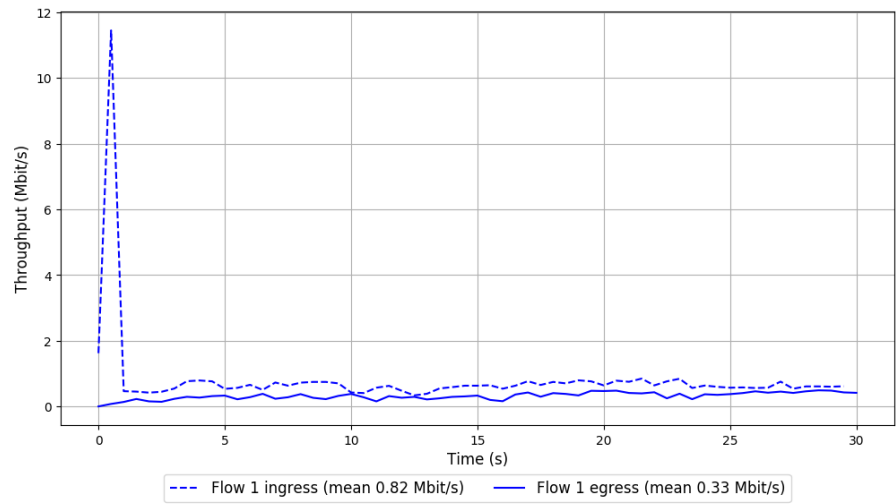


Run 1: Statistics of FillP

Start at: 2018-09-11 06:21:09
End at: 2018-09-11 06:21:39
Local clock offset: 1.174 ms
Remote clock offset: -1.249 ms

Below is generated by plot.py at 2018-09-11 07:08:31
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 407.553 ms
Loss rate: 60.55%
-- Flow 1:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 407.553 ms
Loss rate: 60.55%

Run 1: Report of FillP — Data Link

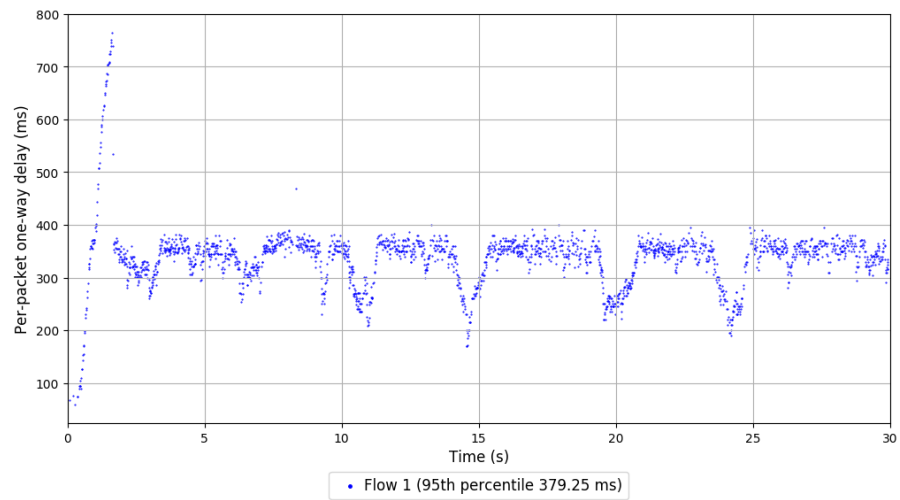
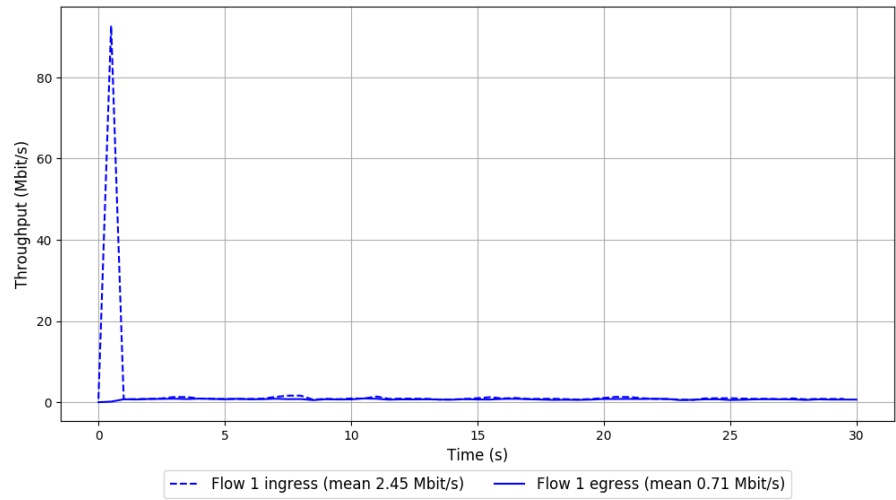


Run 2: Statistics of FillP

Start at: 2018-09-11 06:40:52
End at: 2018-09-11 06:41:22
Local clock offset: -2.682 ms
Remote clock offset: -1.697 ms

Below is generated by plot.py at 2018-09-11 07:08:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.71 Mbit/s
95th percentile per-packet one-way delay: 379.249 ms
Loss rate: 71.02%
-- Flow 1:
Average throughput: 0.71 Mbit/s
95th percentile per-packet one-way delay: 379.249 ms
Loss rate: 71.02%

Run 2: Report of FillP — Data Link

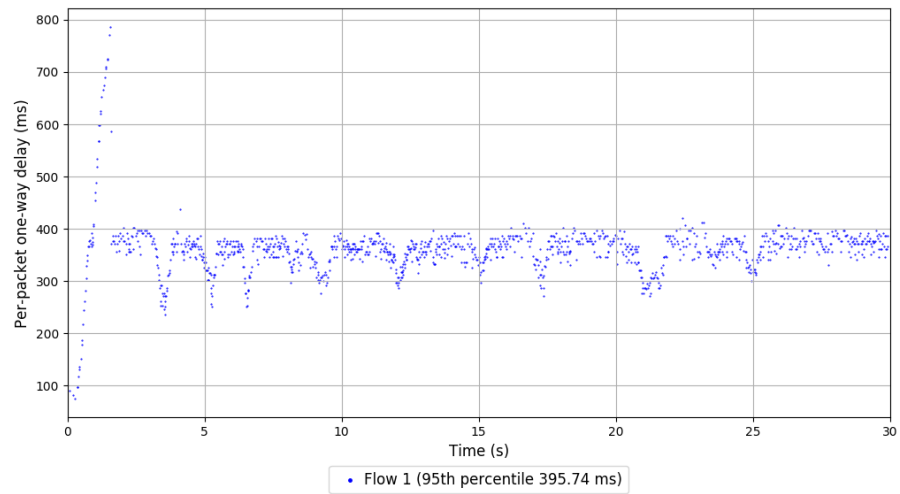
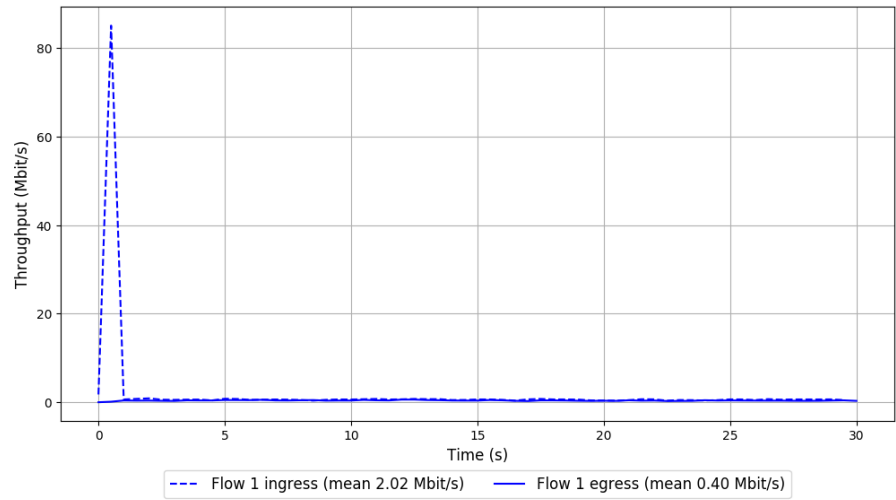


Run 3: Statistics of FillP

Start at: 2018-09-11 07:01:17
End at: 2018-09-11 07:01:47
Local clock offset: 0.466 ms
Remote clock offset: -3.666 ms

Below is generated by plot.py at 2018-09-11 07:08:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 395.743 ms
Loss rate: 80.52%
-- Flow 1:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 395.743 ms
Loss rate: 80.52%

Run 3: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2018-09-11 06:27:44

End at: 2018-09-11 06:28:14

Local clock offset: -1.475 ms

Remote clock offset: -1.501 ms

Below is generated by plot.py at 2018-09-11 07:08:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.51 Mbit/s

95th percentile per-packet one-way delay: 377.008 ms

Loss rate: 43.45%

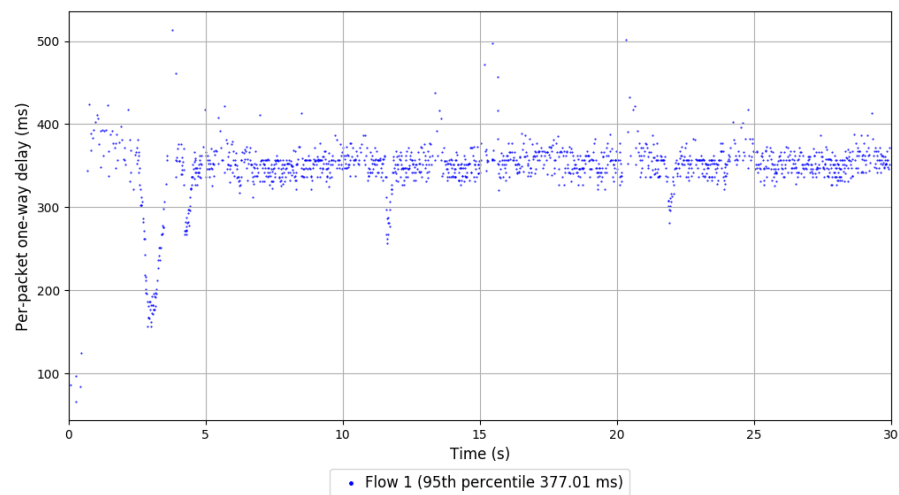
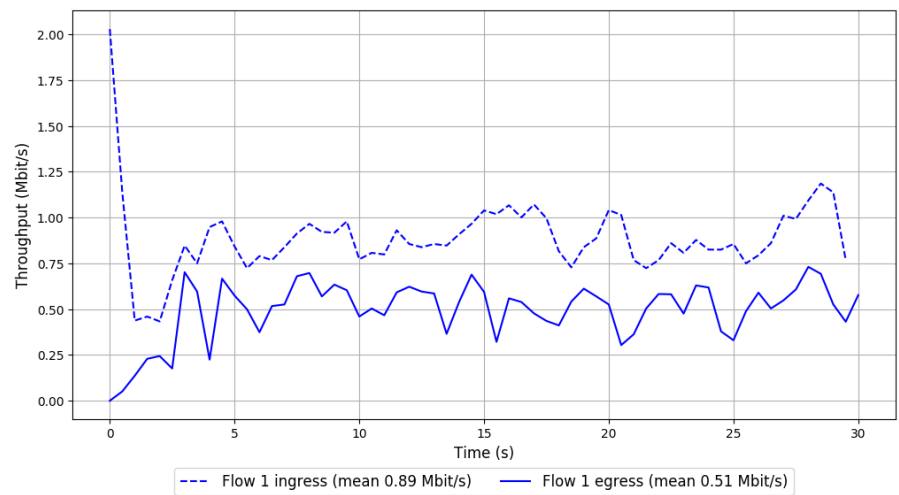
-- Flow 1:

Average throughput: 0.51 Mbit/s

95th percentile per-packet one-way delay: 377.008 ms

Loss rate: 43.45%

Run 1: Report of FillP-Sheep — Data Link

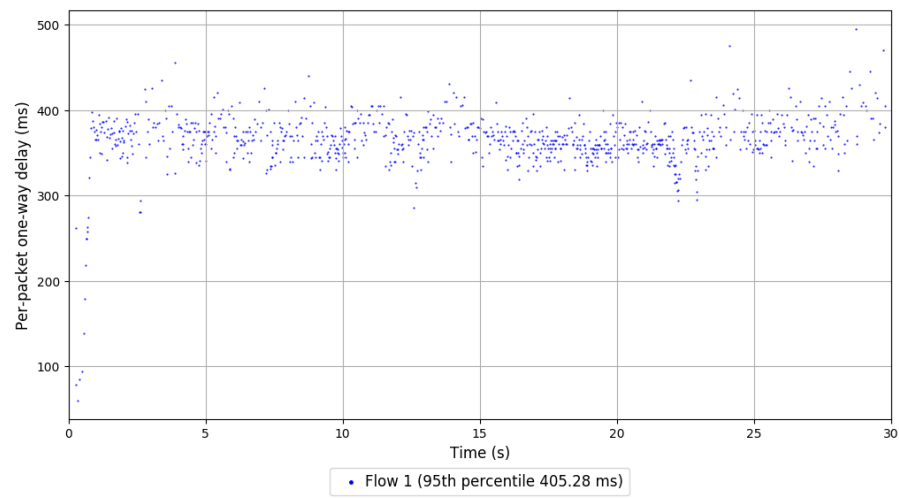
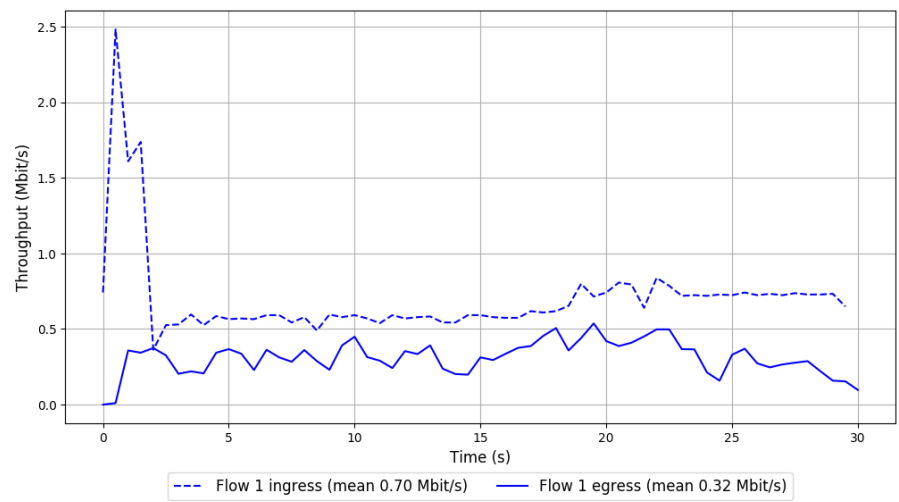


Run 2: Statistics of FillP-Sheep

Start at: 2018-09-11 06:47:52
End at: 2018-09-11 06:48:22
Local clock offset: -2.144 ms
Remote clock offset: -1.924 ms

Below is generated by plot.py at 2018-09-11 07:08:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 405.280 ms
Loss rate: 54.84%
-- Flow 1:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 405.280 ms
Loss rate: 54.84%

Run 2: Report of FillP-Sheep — Data Link

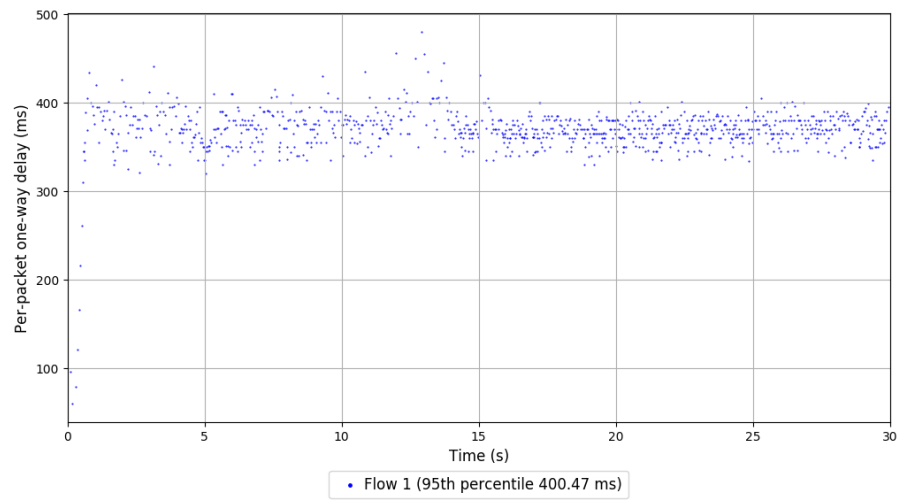
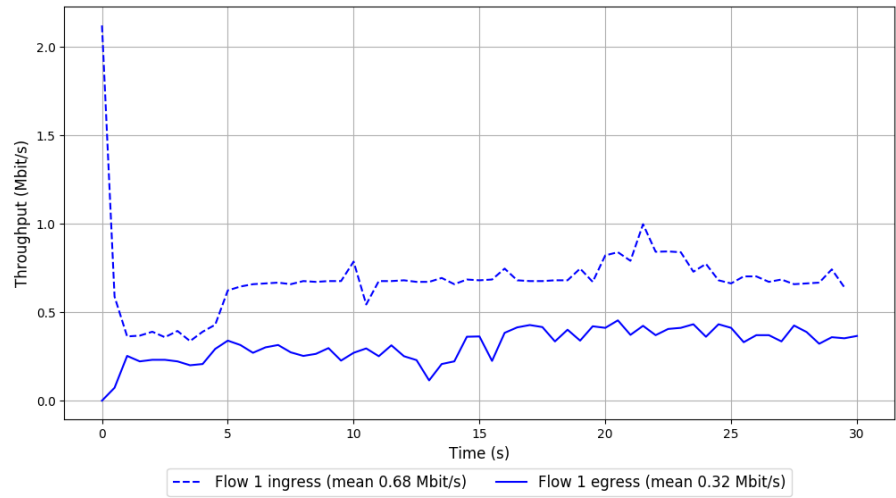


Run 3: Statistics of FillP-Sheep

Start at: 2018-09-11 07:07:50
End at: 2018-09-11 07:08:20
Local clock offset: 1.462 ms
Remote clock offset: -4.167 ms

Below is generated by plot.py at 2018-09-11 07:08:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 400.466 ms
Loss rate: 53.31%
-- Flow 1:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 400.466 ms
Loss rate: 53.31%

Run 3: Report of FillP-Sheep — Data Link



Run 1: Statistics of Indigo

Start at: 2018-09-11 06:12:26

End at: 2018-09-11 06:12:56

Local clock offset: 0.875 ms

Remote clock offset: -1.195 ms

Below is generated by plot.py at 2018-09-11 07:08:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.18 Mbit/s

95th percentile per-packet one-way delay: 312.469 ms

Loss rate: 6.94%

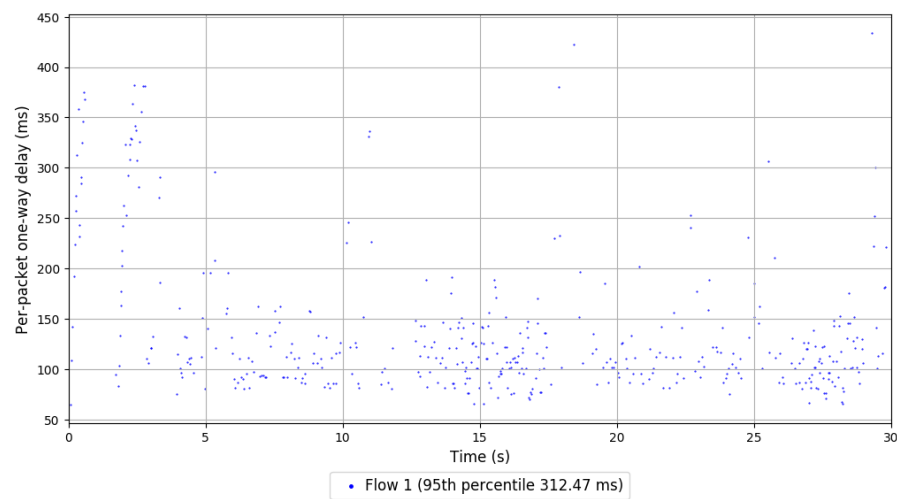
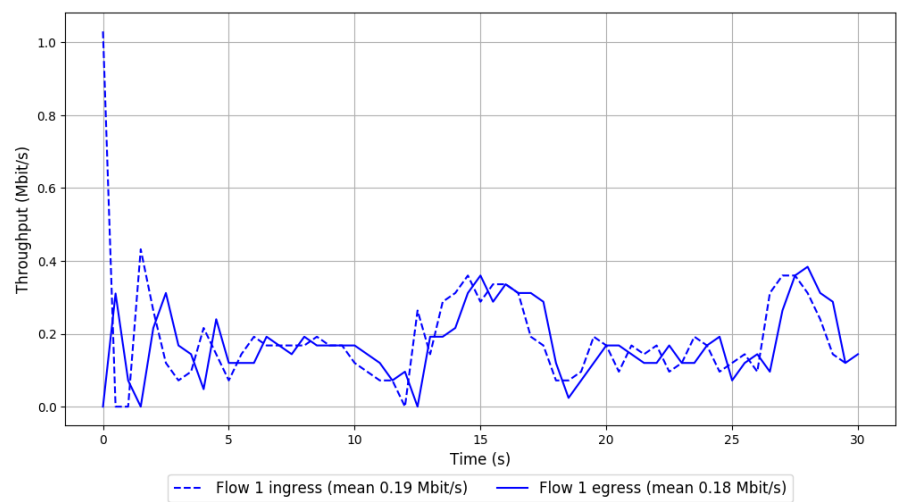
-- Flow 1:

Average throughput: 0.18 Mbit/s

95th percentile per-packet one-way delay: 312.469 ms

Loss rate: 6.94%

Run 1: Report of Indigo — Data Link

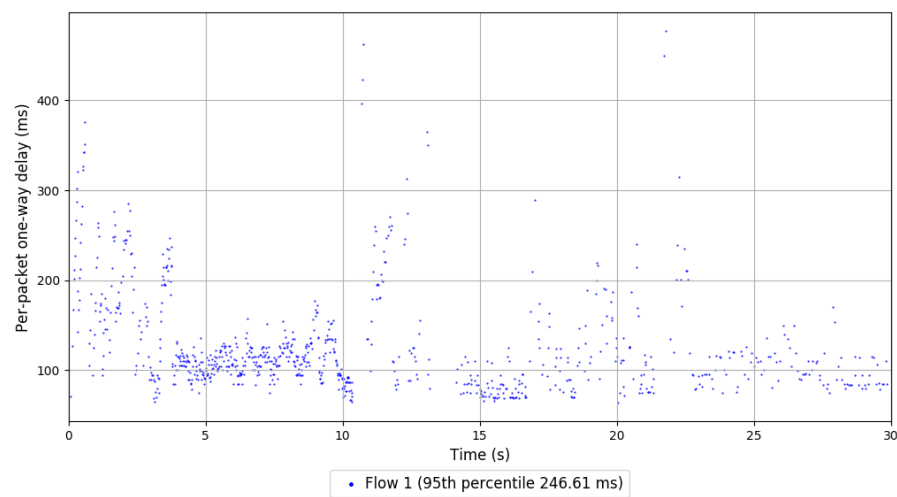
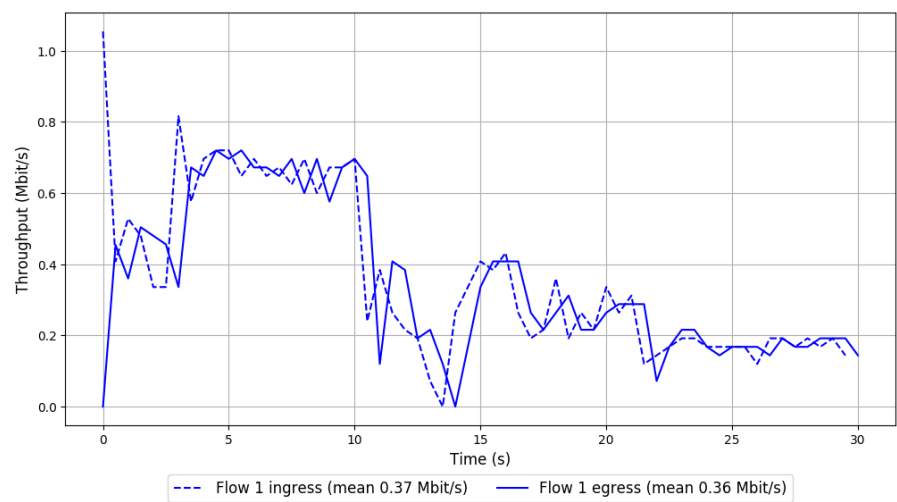


Run 2: Statistics of Indigo

Start at: 2018-09-11 06:32:05
End at: 2018-09-11 06:32:35
Local clock offset: -2.914 ms
Remote clock offset: -1.041 ms

Below is generated by plot.py at 2018-09-11 07:08:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 246.610 ms
Loss rate: 3.06%
-- Flow 1:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 246.610 ms
Loss rate: 3.06%

Run 2: Report of Indigo — Data Link

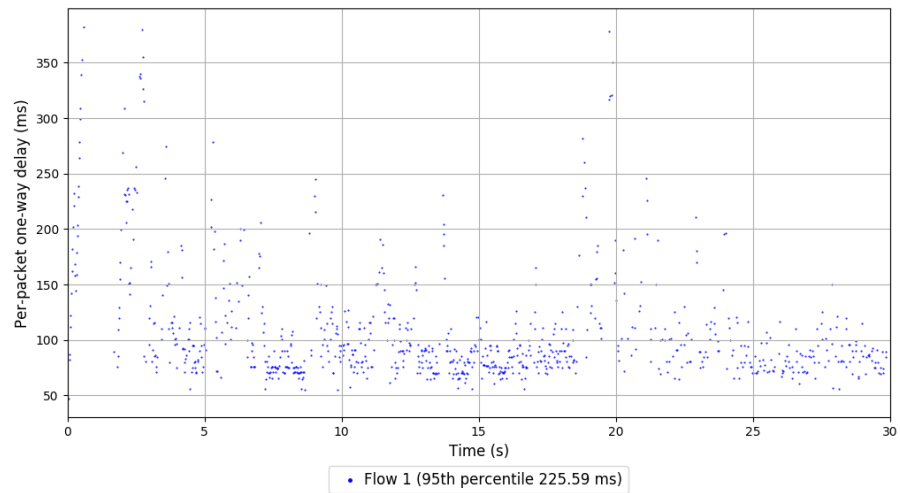
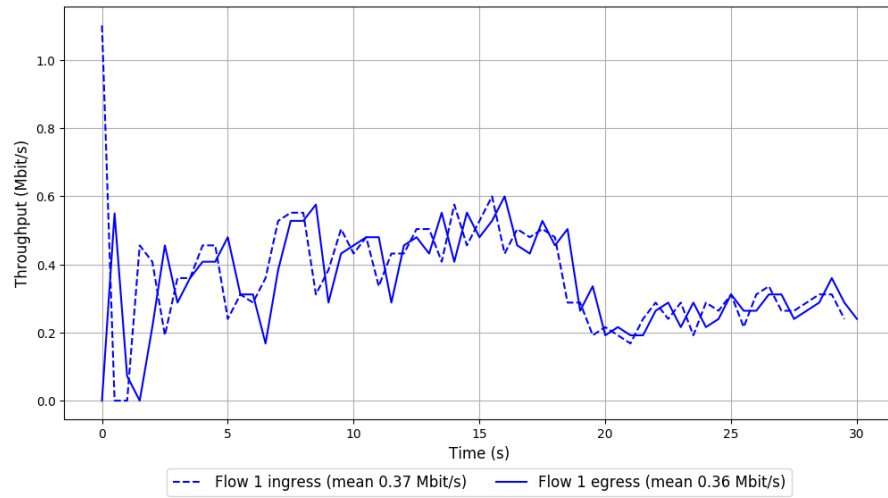


Run 3: Statistics of Indigo

Start at: 2018-09-11 06:52:34
End at: 2018-09-11 06:53:04
Local clock offset: -1.911 ms
Remote clock offset: -0.762 ms

Below is generated by plot.py at 2018-09-11 07:08:35
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 225.591 ms
Loss rate: 2.41%
-- Flow 1:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 225.591 ms
Loss rate: 2.41%

Run 3: Report of Indigo — Data Link

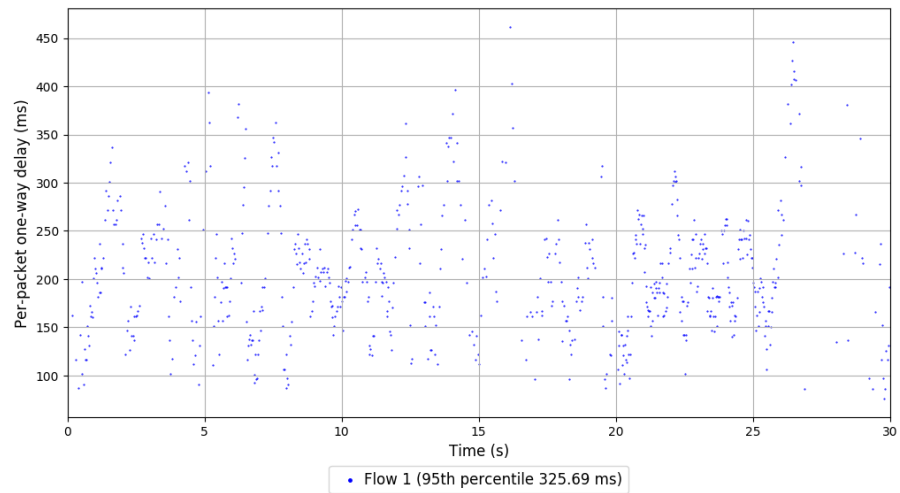
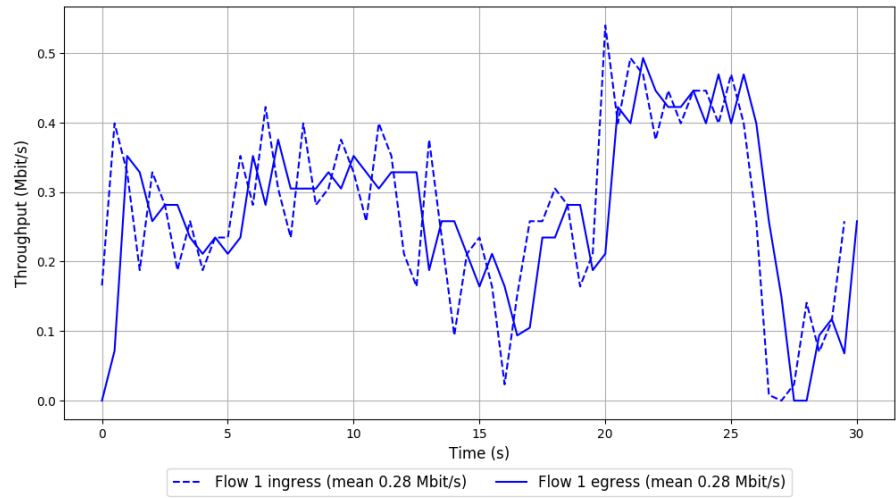


```
Run 1: Statistics of LEDBAT

Start at: 2018-09-11 06:11:21
End at: 2018-09-11 06:11:51
Local clock offset: 0.8 ms
Remote clock offset: -0.219 ms

# Below is generated by plot.py at 2018-09-11 07:08:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 325.689 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 325.689 ms
Loss rate: 0.85%
```

Run 1: Report of LEDBAT — Data Link

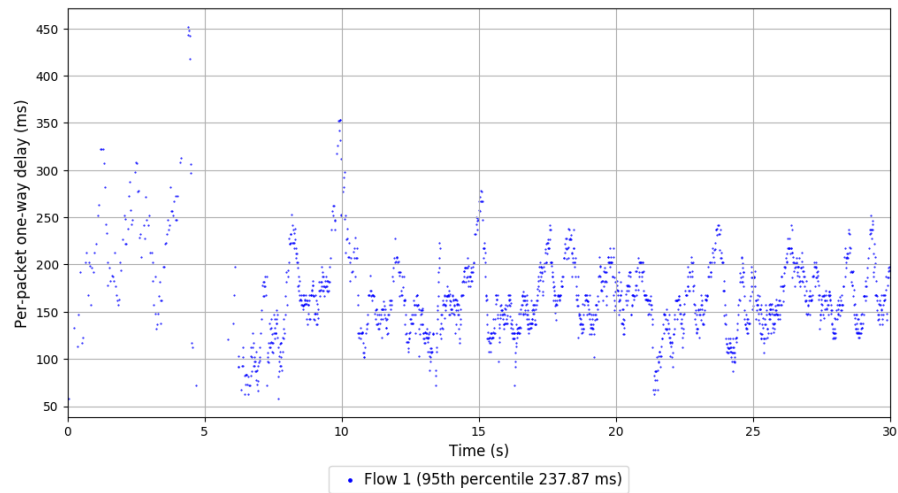
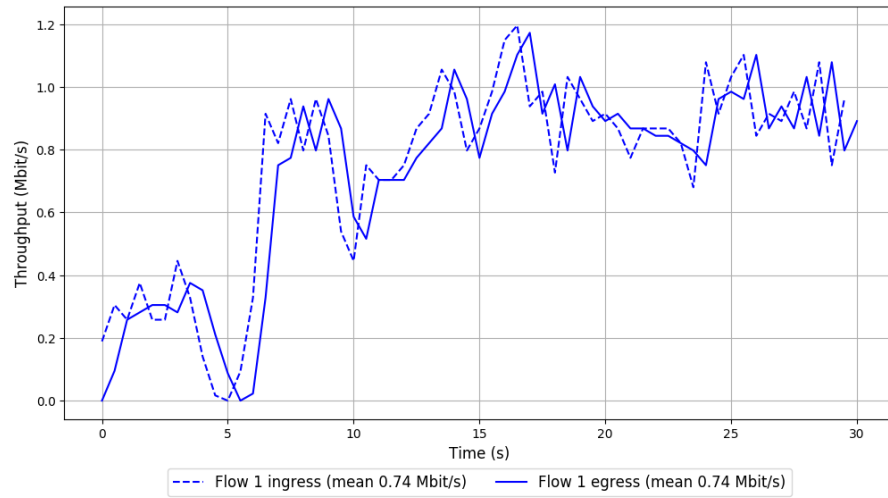


Run 2: Statistics of LEDBAT

Start at: 2018-09-11 06:31:00
End at: 2018-09-11 06:31:30
Local clock offset: -1.944 ms
Remote clock offset: -2.343 ms

Below is generated by plot.py at 2018-09-11 07:08:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.74 Mbit/s
95th percentile per-packet one-way delay: 237.872 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 0.74 Mbit/s
95th percentile per-packet one-way delay: 237.872 ms
Loss rate: 0.84%

Run 2: Report of LEDBAT — Data Link

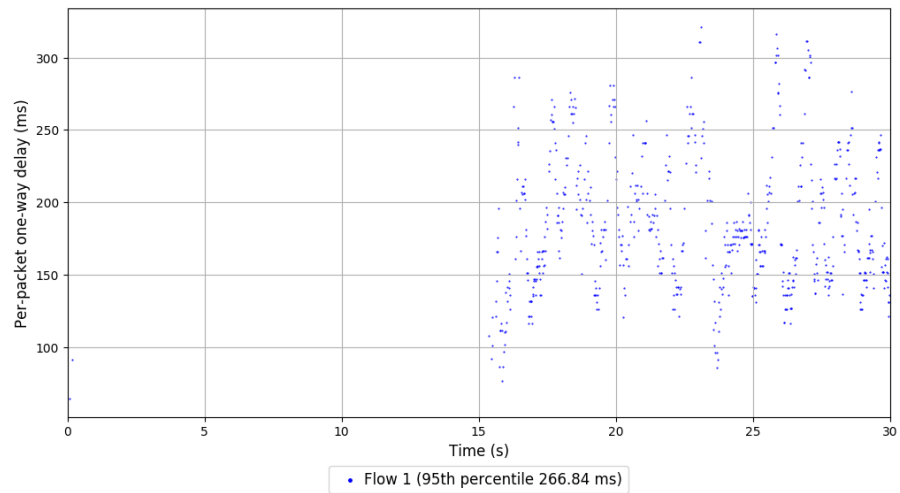
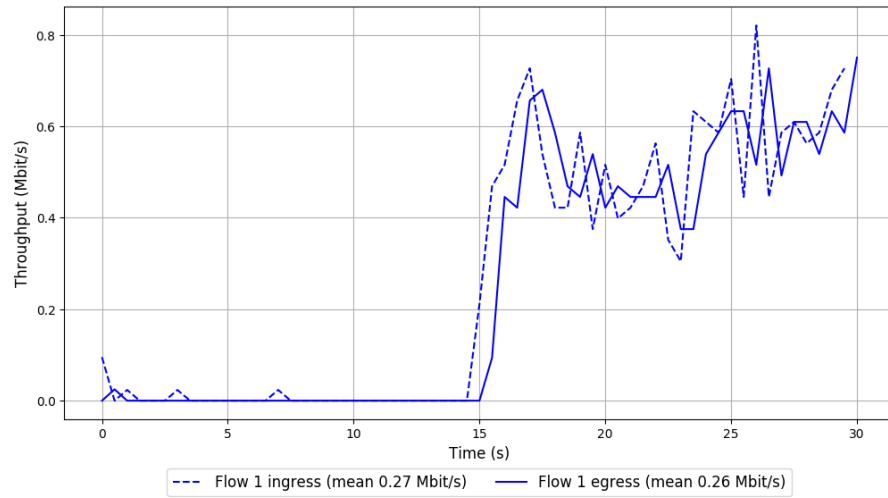


Run 3: Statistics of LEDBAT

Start at: 2018-09-11 06:51:28
End at: 2018-09-11 06:51:58
Local clock offset: 0.182 ms
Remote clock offset: -1.912 ms

Below is generated by plot.py at 2018-09-11 07:08:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 266.837 ms
Loss rate: 2.47%
-- Flow 1:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 266.837 ms
Loss rate: 2.47%

Run 3: Report of LEDBAT — Data Link



Run 1: Statistics of Indigo-Muses

Start at: 2018-09-11 06:15:43

End at: 2018-09-11 06:16:13

Local clock offset: 0.16 ms

Remote clock offset: -0.211 ms

Below is generated by plot.py at 2018-09-11 07:08:38

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.37 Mbit/s

95th percentile per-packet one-way delay: 363.644 ms

Loss rate: 15.21%

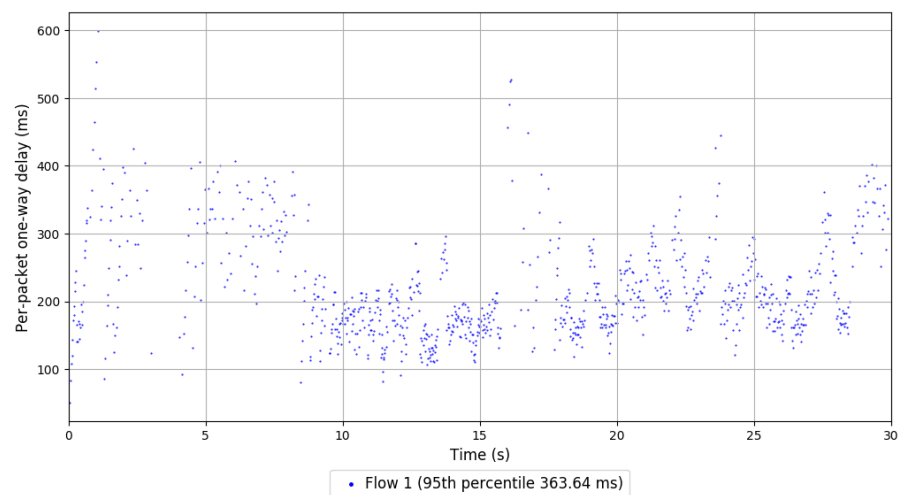
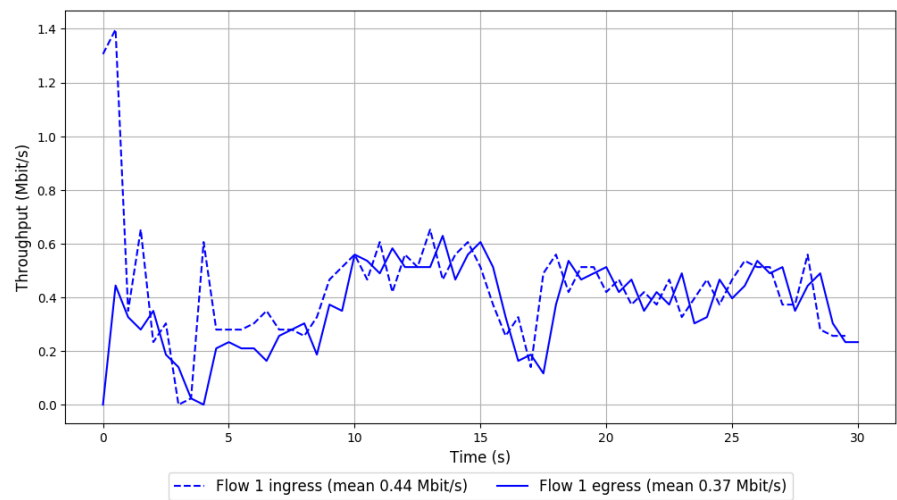
-- Flow 1:

Average throughput: 0.37 Mbit/s

95th percentile per-packet one-way delay: 363.644 ms

Loss rate: 15.21%

Run 1: Report of Indigo-Muses — Data Link

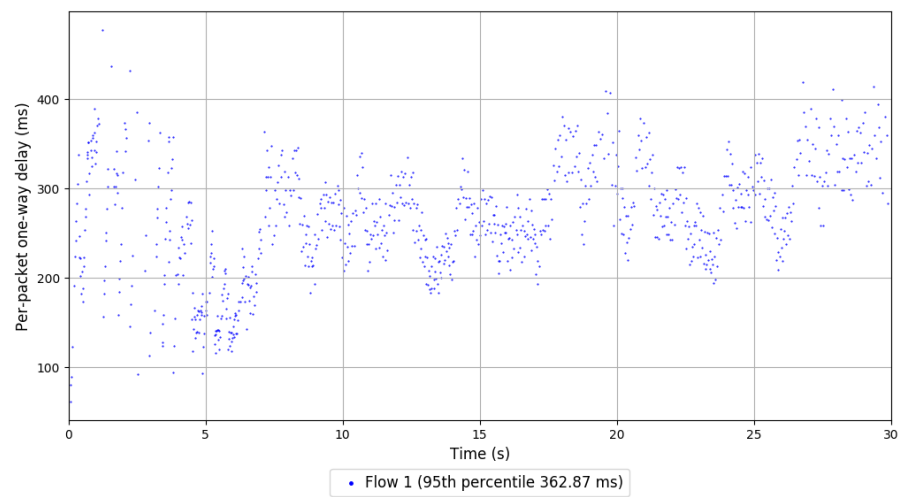
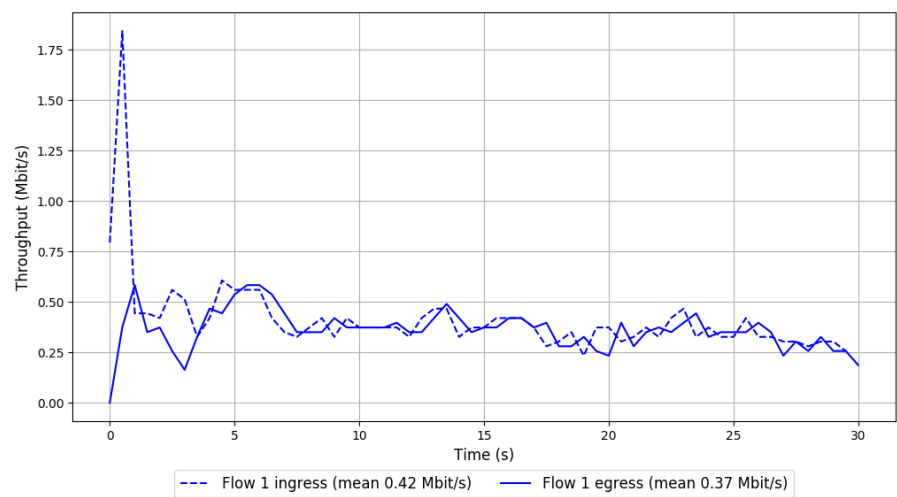


Run 2: Statistics of Indigo-Muses

Start at: 2018-09-11 06:35:25
End at: 2018-09-11 06:35:55
Local clock offset: 0.106 ms
Remote clock offset: -2.021 ms

Below is generated by plot.py at 2018-09-11 07:08:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 362.871 ms
Loss rate: 11.44%
-- Flow 1:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 362.871 ms
Loss rate: 11.44%

Run 2: Report of Indigo-Muses — Data Link

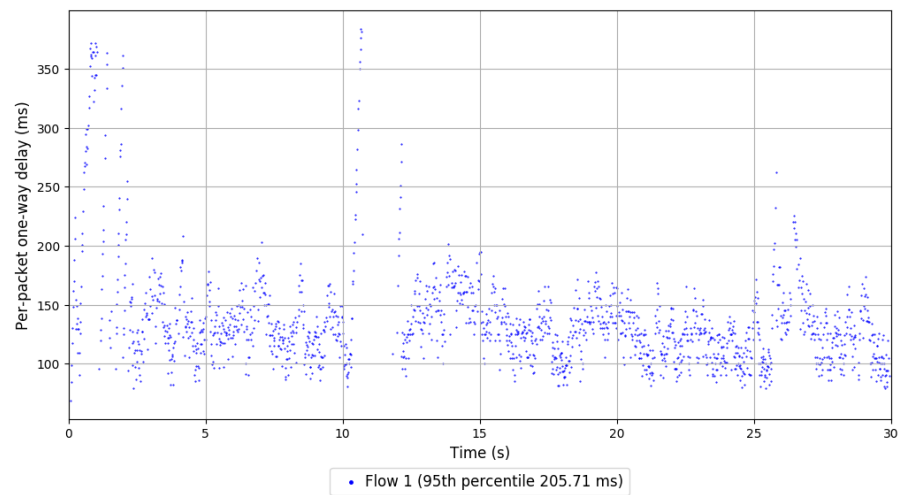
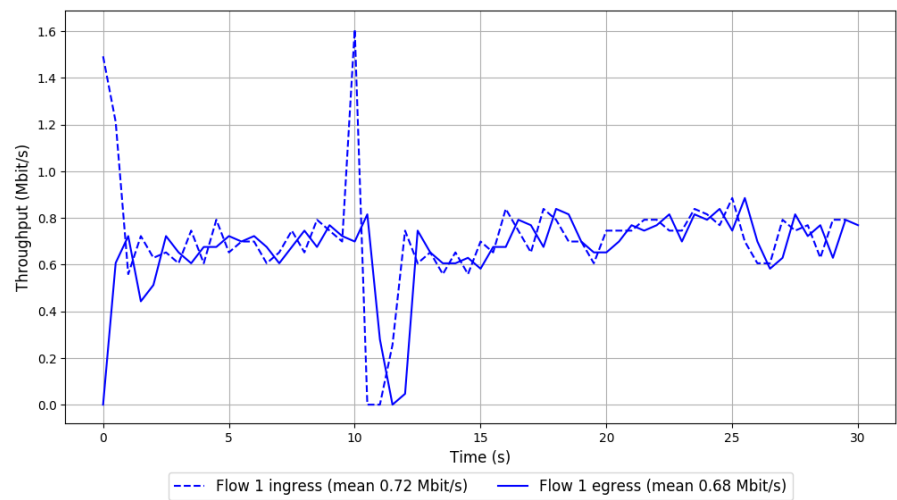


Run 3: Statistics of Indigo-Muses

Start at: 2018-09-11 06:55:49
End at: 2018-09-11 06:56:19
Local clock offset: -4.685 ms
Remote clock offset: -11.011 ms

Below is generated by plot.py at 2018-09-11 07:08:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.68 Mbit/s
95th percentile per-packet one-way delay: 205.712 ms
Loss rate: 5.49%
-- Flow 1:
Average throughput: 0.68 Mbit/s
95th percentile per-packet one-way delay: 205.712 ms
Loss rate: 5.49%

Run 3: Report of Indigo-Muses — Data Link



Run 1: Statistics of PCC-Allegro

Start at: 2018-09-11 06:24:26

End at: 2018-09-11 06:24:56

Local clock offset: -1.791 ms

Remote clock offset: -1.987 ms

Below is generated by plot.py at 2018-09-11 07:08:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.35 Mbit/s

95th percentile per-packet one-way delay: 686.215 ms

Loss rate: 97.88%

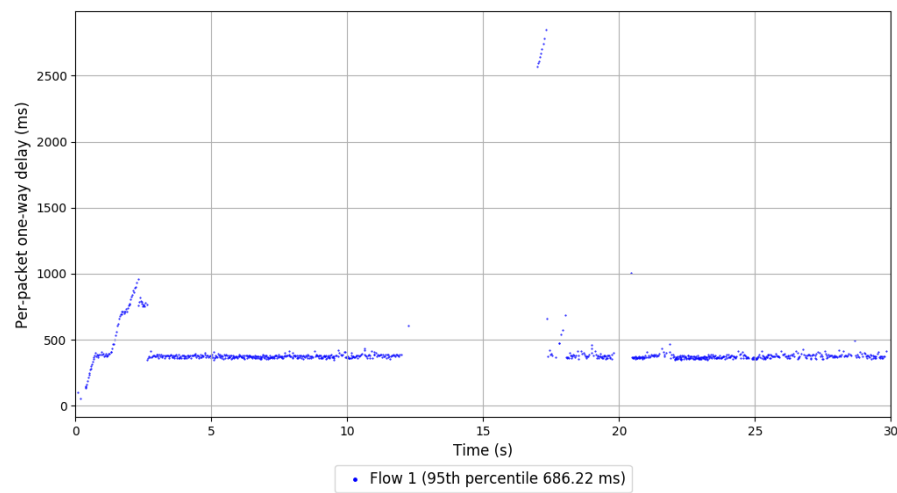
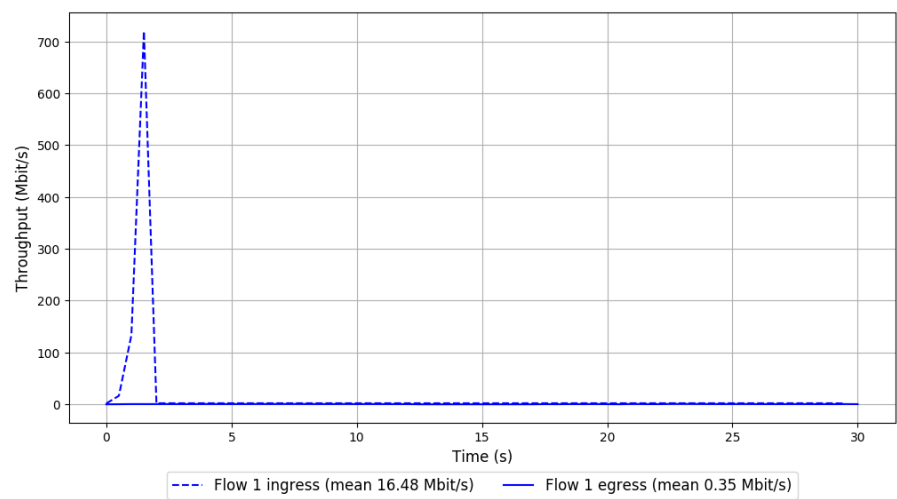
-- Flow 1:

Average throughput: 0.35 Mbit/s

95th percentile per-packet one-way delay: 686.215 ms

Loss rate: 97.88%

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

/home/ubuntu/pantheon/data/2018-09-11T06-08-India-cellular-to-AWS-India-1-3-runs/pcc_stats_1

Run 2: Report of PCC-Allegro — Data Link

Figure is missing

Figure is missing

Run 3: Statistics of PCC-Allegro

Start at: 2018-09-11 07:04:33

End at: 2018-09-11 07:05:03

Local clock offset: -1.41 ms

Remote clock offset: -3.436 ms

Below is generated by plot.py at 2018-09-11 07:08:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.51 Mbit/s

95th percentile per-packet one-way delay: 410.667 ms

Loss rate: 93.42%

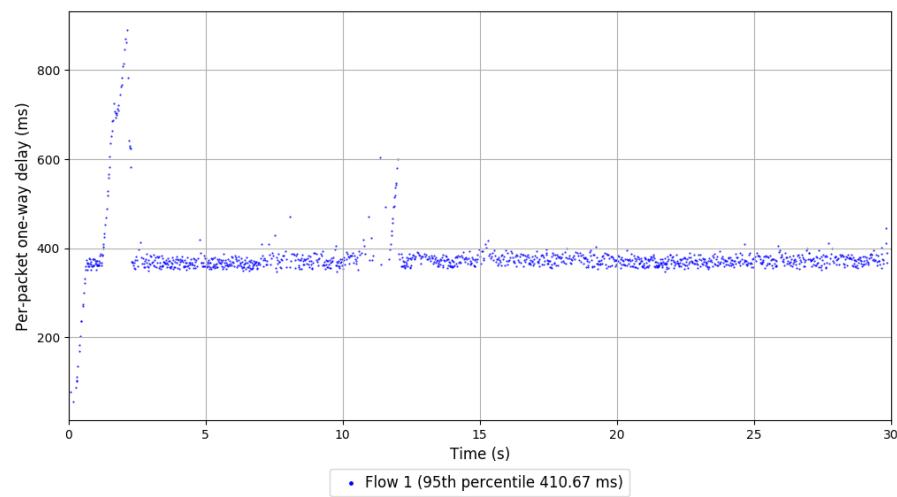
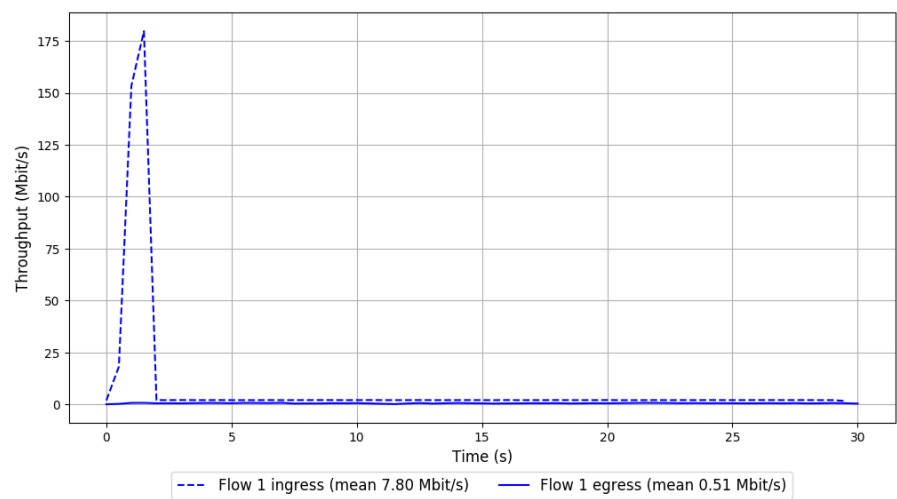
-- Flow 1:

Average throughput: 0.51 Mbit/s

95th percentile per-packet one-way delay: 410.667 ms

Loss rate: 93.42%

Run 3: Report of PCC-Allegro — Data Link

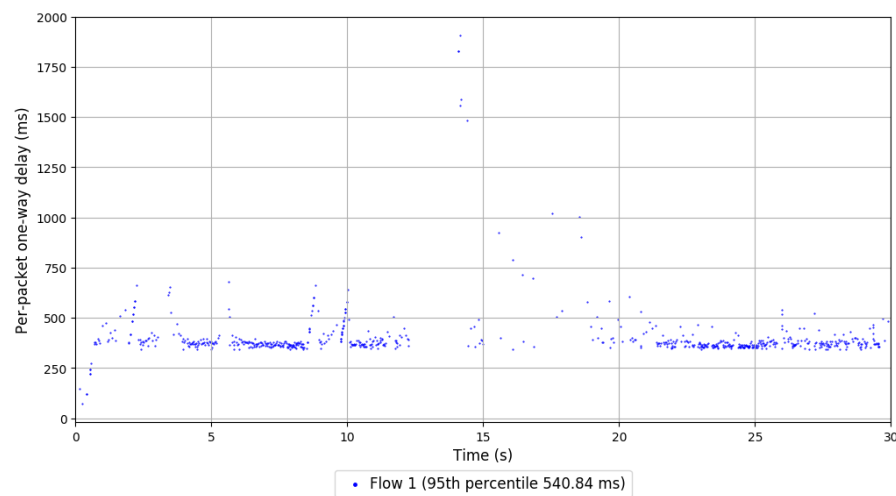
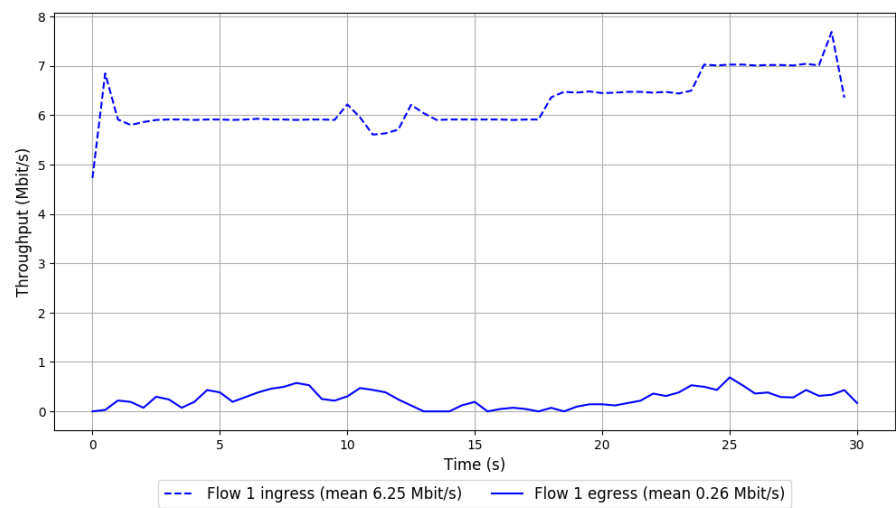


```
Run 1: Statistics of PCC-Expr

Start at: 2018-09-11 06:25:32
End at: 2018-09-11 06:26:02
Local clock offset: -1.271 ms
Remote clock offset: -1.774 ms

# Below is generated by plot.py at 2018-09-11 07:08:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 540.842 ms
Loss rate: 95.81%
-- Flow 1:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 540.842 ms
Loss rate: 95.81%
```

Run 1: Report of PCC-Expr — Data Link

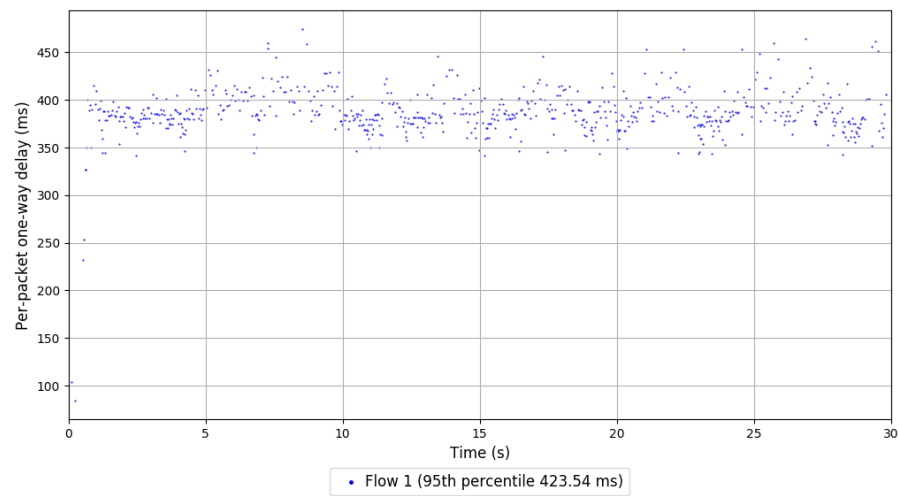
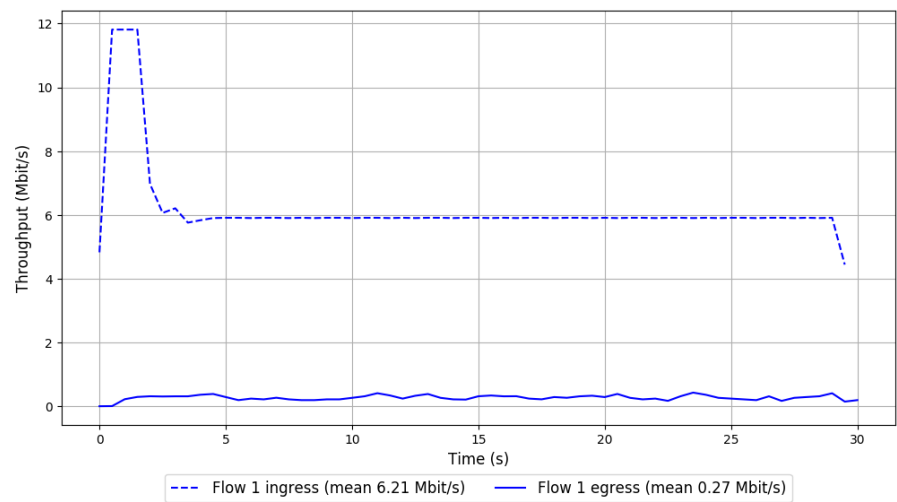


Run 2: Statistics of PCC-Expr

Start at: 2018-09-11 06:45:40
End at: 2018-09-11 06:46:10
Local clock offset: -2.088 ms
Remote clock offset: -1.859 ms

Below is generated by plot.py at 2018-09-11 07:08:48
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 423.539 ms
Loss rate: 95.61%
-- Flow 1:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 423.539 ms
Loss rate: 95.61%

Run 2: Report of PCC-Expr — Data Link

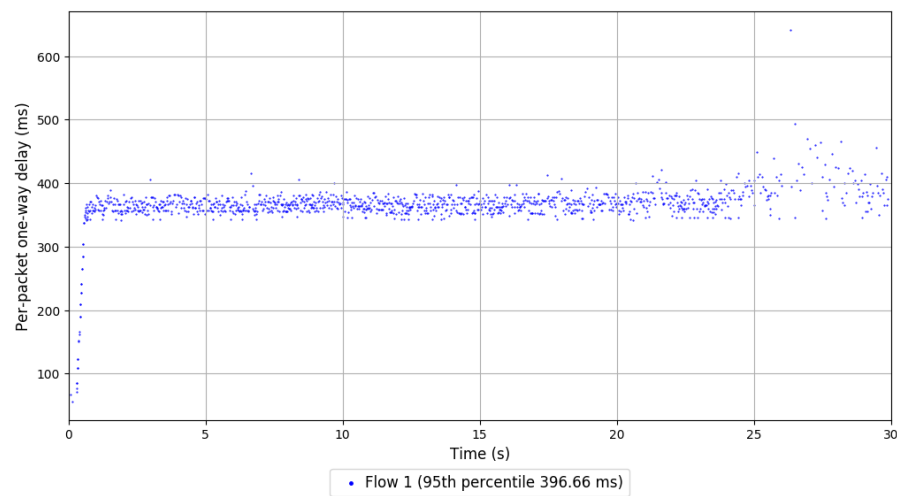
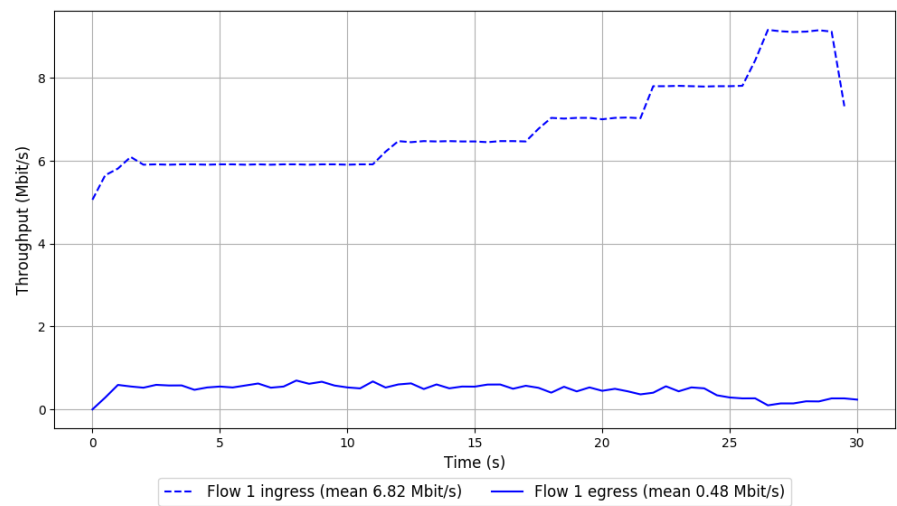


Run 3: Statistics of PCC-Expr

Start at: 2018-09-11 07:05:39
End at: 2018-09-11 07:06:09
Local clock offset: -2.056 ms
Remote clock offset: -3.366 ms

Below is generated by plot.py at 2018-09-11 07:08:49
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 396.664 ms
Loss rate: 93.06%
-- Flow 1:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 396.664 ms
Loss rate: 93.06%

Run 3: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-09-11 06:17:53

End at: 2018-09-11 06:18:24

Local clock offset: -1.024 ms

Remote clock offset: -3.001 ms

Below is generated by plot.py at 2018-09-11 07:08:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.38 Mbit/s

95th percentile per-packet one-way delay: 400.366 ms

Loss rate: 22.41%

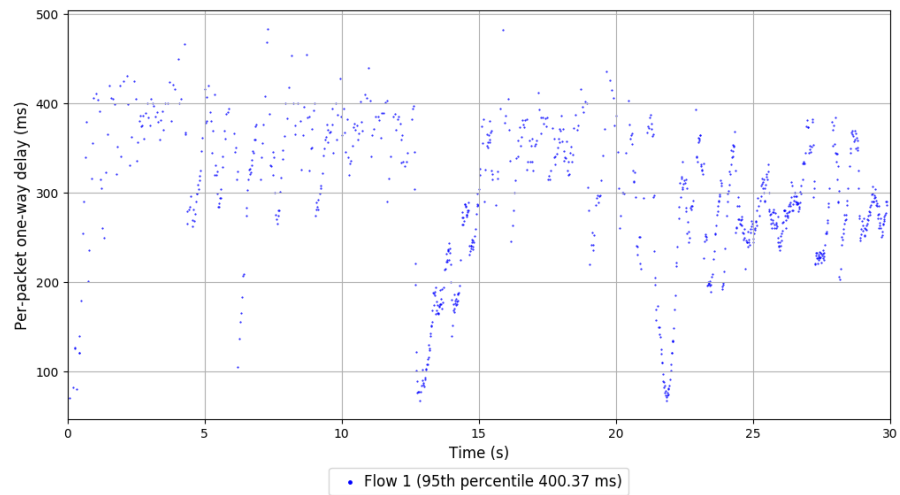
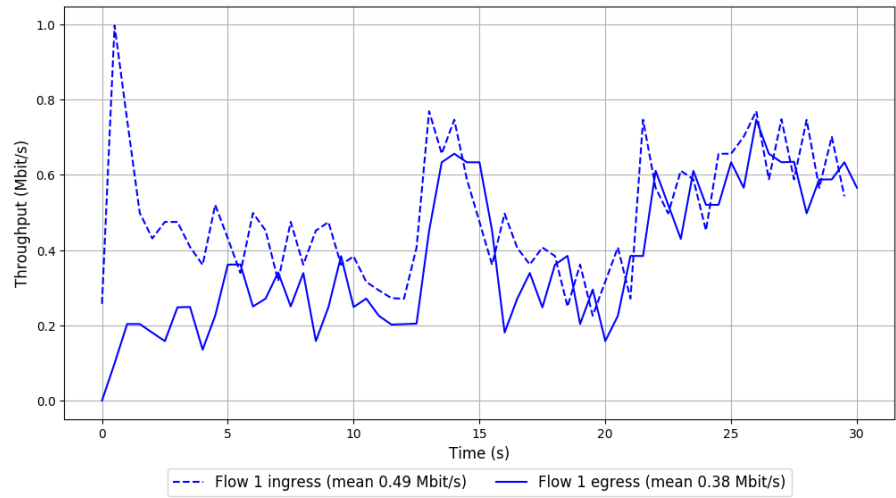
-- Flow 1:

Average throughput: 0.38 Mbit/s

95th percentile per-packet one-way delay: 400.366 ms

Loss rate: 22.41%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-09-11 06:37:36

End at: 2018-09-11 06:38:06

Local clock offset: -2.398 ms

Remote clock offset: -2.2 ms

Below is generated by plot.py at 2018-09-11 07:08:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.71 Mbit/s

95th percentile per-packet one-way delay: 363.835 ms

Loss rate: 9.54%

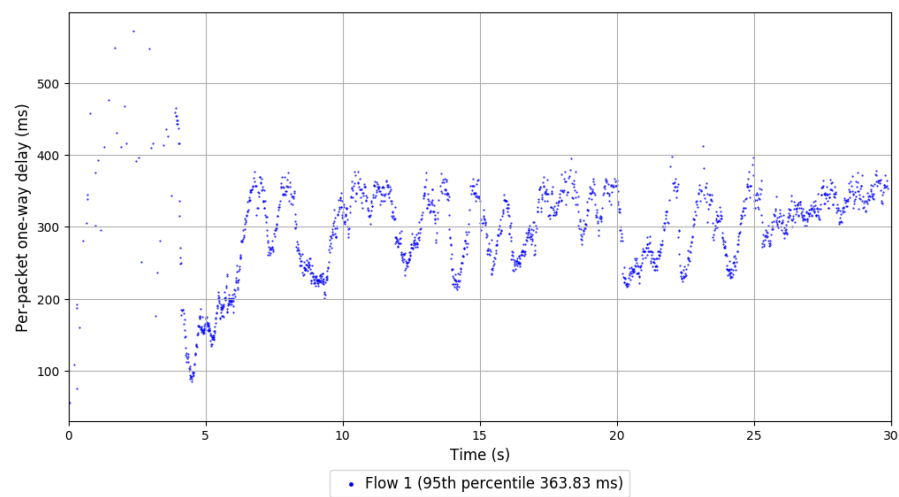
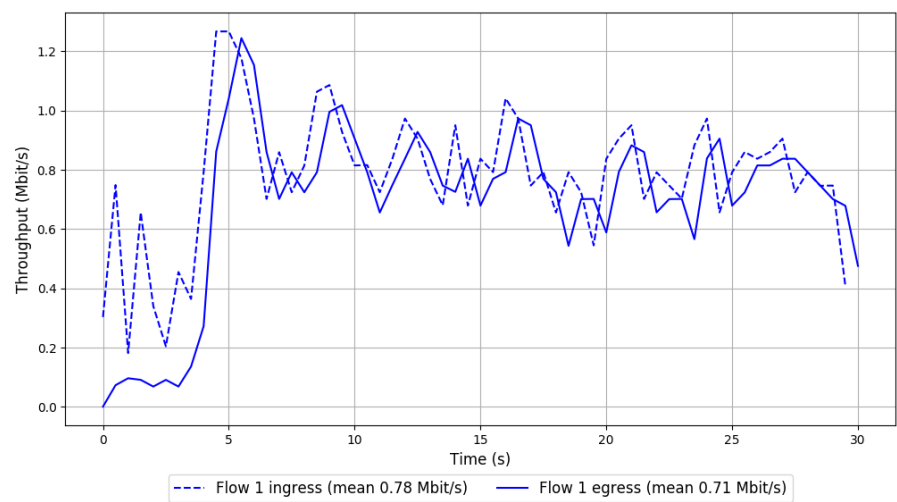
-- Flow 1:

Average throughput: 0.71 Mbit/s

95th percentile per-packet one-way delay: 363.835 ms

Loss rate: 9.54%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-09-11 06:58:00

End at: 2018-09-11 06:58:30

Local clock offset: -0.845 ms

Remote clock offset: -4.222 ms

Below is generated by plot.py at 2018-09-11 07:08:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.59 Mbit/s

95th percentile per-packet one-way delay: 375.983 ms

Loss rate: 12.49%

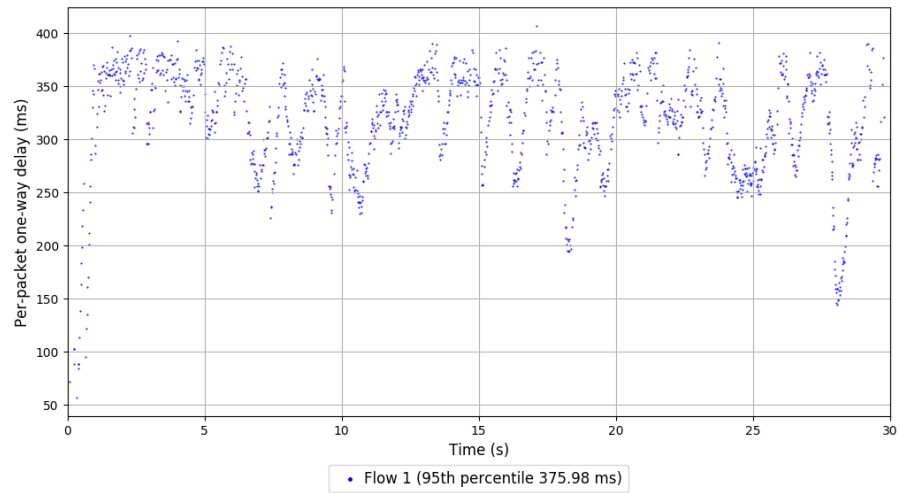
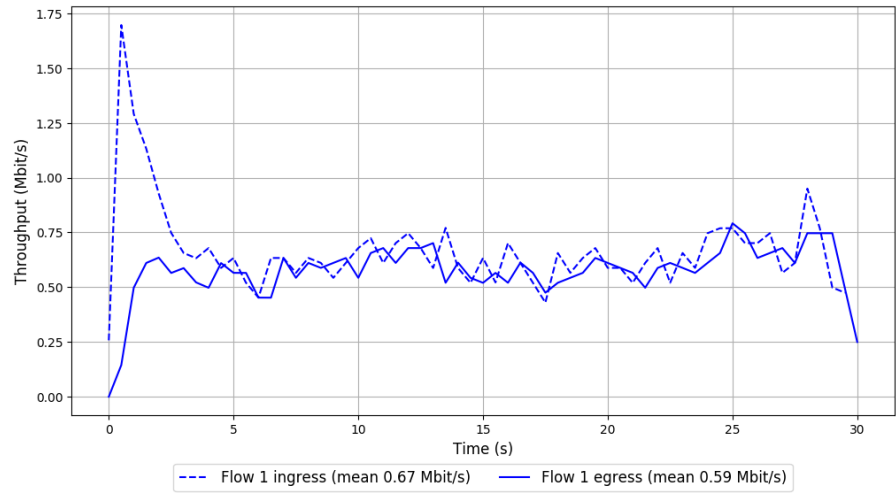
-- Flow 1:

Average throughput: 0.59 Mbit/s

95th percentile per-packet one-way delay: 375.983 ms

Loss rate: 12.49%

Run 3: Report of QUIC Cubic — Data Link

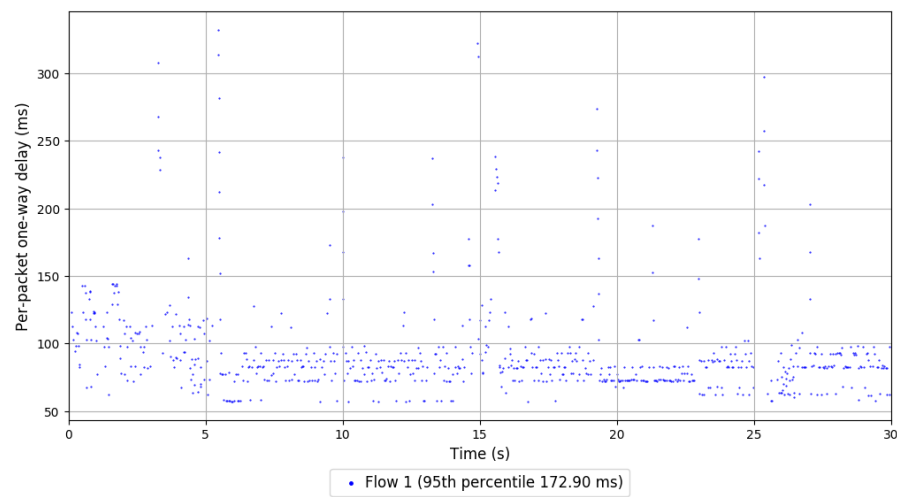
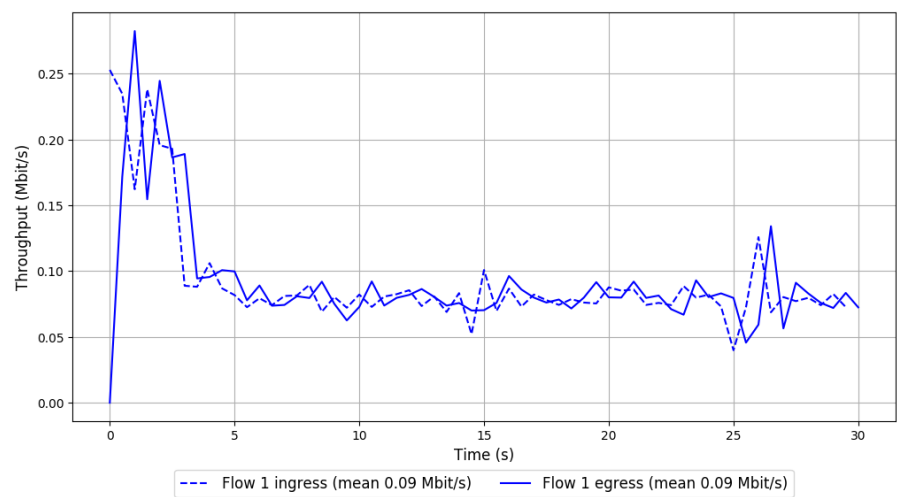


Run 1: Statistics of SCReAM

Start at: 2018-09-11 06:16:48
End at: 2018-09-11 06:17:18
Local clock offset: 0.499 ms
Remote clock offset: -2.579 ms

Below is generated by plot.py at 2018-09-11 07:08:49
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 172.899 ms
Loss rate: -0.21%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 172.899 ms
Loss rate: -0.21%

Run 1: Report of SReAM — Data Link

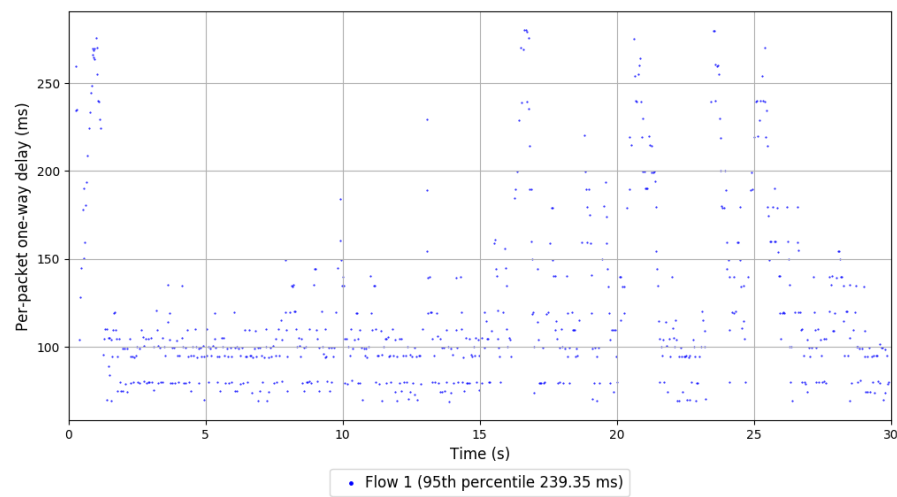
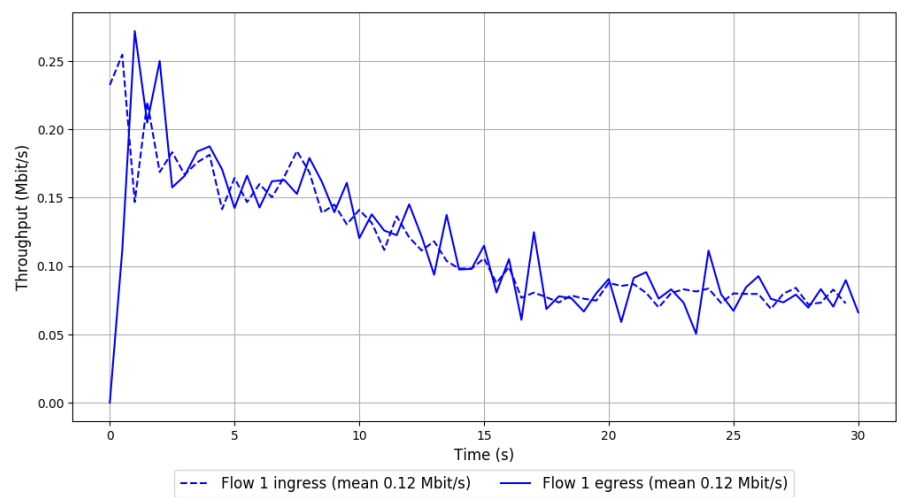


Run 2: Statistics of SCReAM

Start at: 2018-09-11 06:36:31
End at: 2018-09-11 06:37:01
Local clock offset: -1.376 ms
Remote clock offset: -1.573 ms

Below is generated by plot.py at 2018-09-11 07:08:49
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 239.347 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 239.347 ms
Loss rate: 0.26%

Run 2: Report of SReAM — Data Link

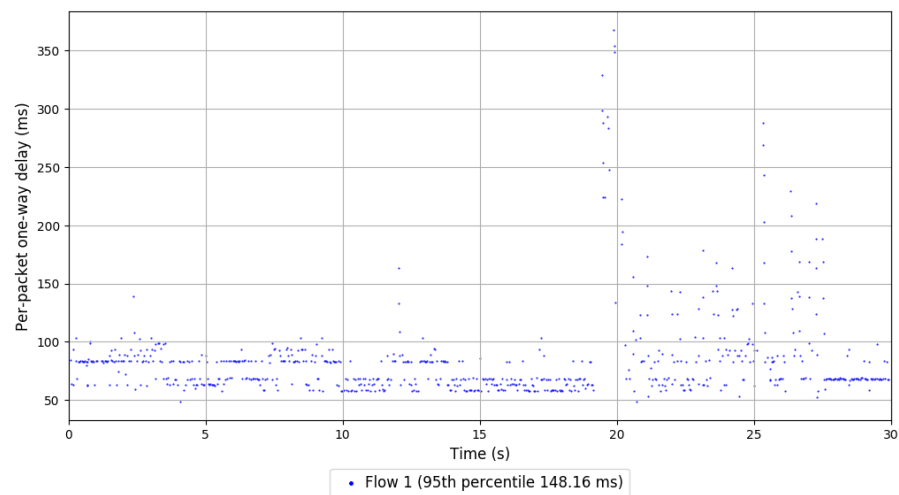
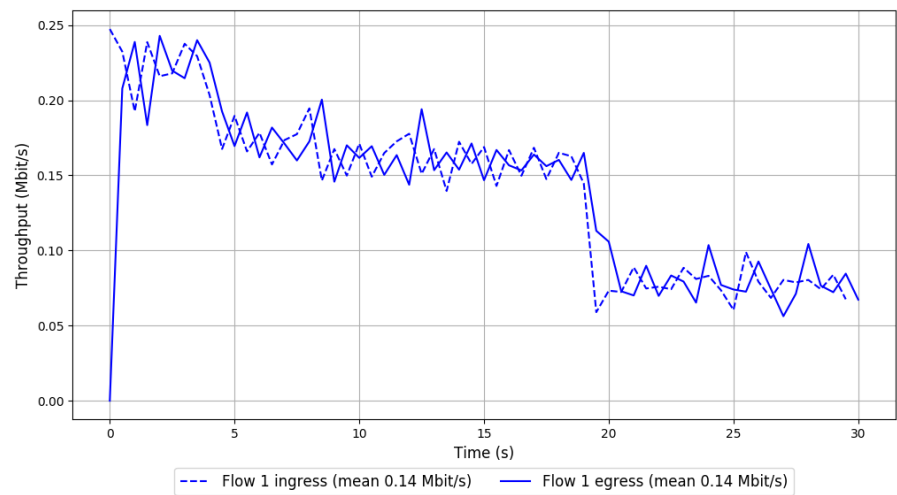


Run 3: Statistics of SCReAM

Start at: 2018-09-11 06:56:55
End at: 2018-09-11 06:57:25
Local clock offset: -2.094 ms
Remote clock offset: -3.077 ms

Below is generated by plot.py at 2018-09-11 07:08:49
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 148.158 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 148.158 ms
Loss rate: 0.37%

Run 3: Report of SReAM — Data Link

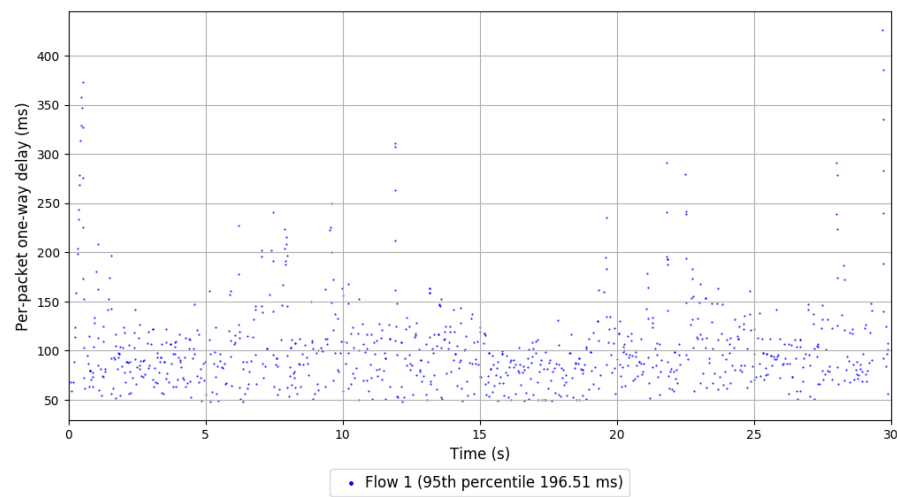
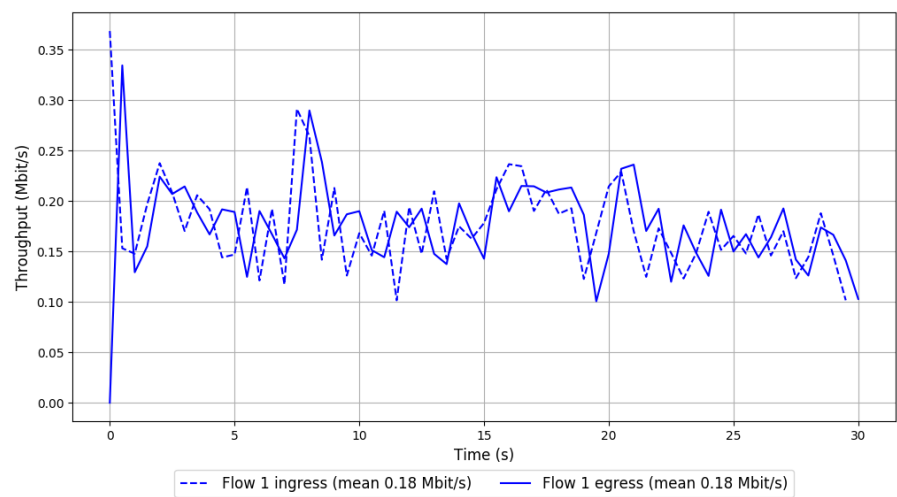


Run 1: Statistics of Sprout

Start at: 2018-09-11 06:09:10
End at: 2018-09-11 06:09:40
Local clock offset: 0.729 ms
Remote clock offset: -1.468 ms

Below is generated by plot.py at 2018-09-11 07:08:49
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 196.510 ms
Loss rate: -0.69%
-- Flow 1:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 196.510 ms
Loss rate: -0.69%

Run 1: Report of Sprout — Data Link

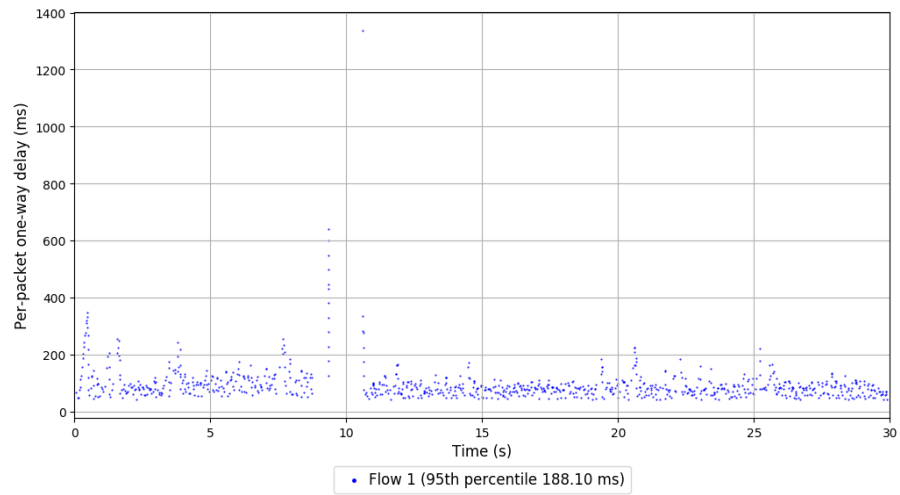
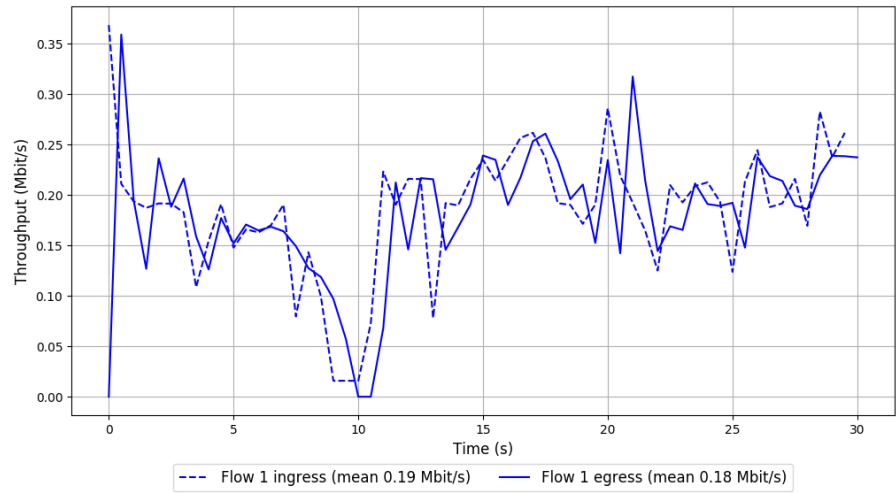


Run 2: Statistics of Sprout

Start at: 2018-09-11 06:28:49
End at: 2018-09-11 06:29:19
Local clock offset: -2.081 ms
Remote clock offset: -2.144 ms

Below is generated by plot.py at 2018-09-11 07:08:49
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 188.096 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 188.096 ms
Loss rate: 0.85%

Run 2: Report of Sprout — Data Link

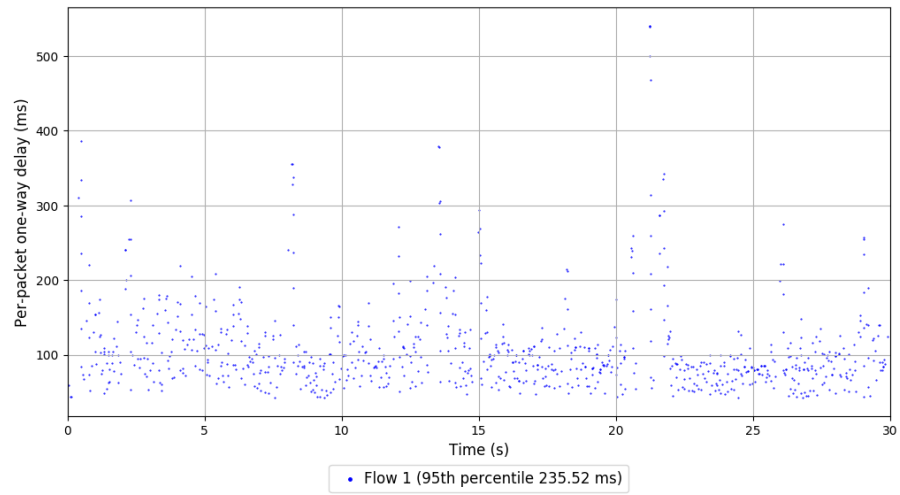
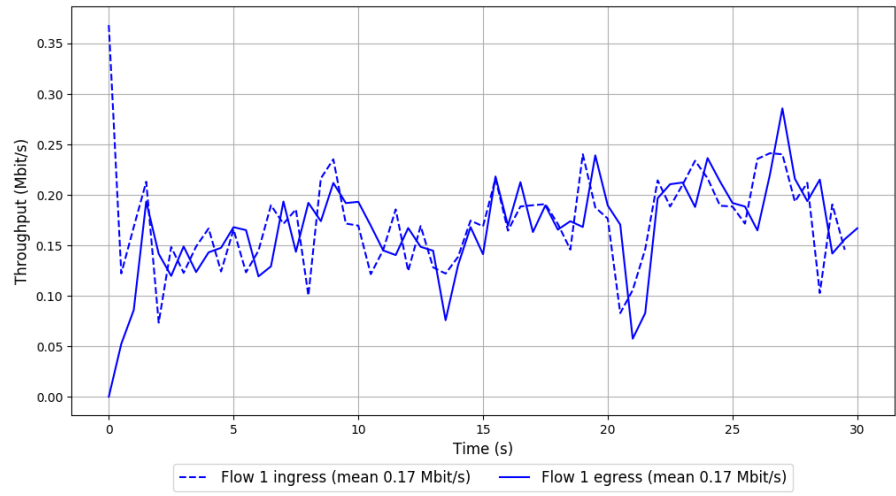


Run 3: Statistics of Sprout

Start at: 2018-09-11 06:48:57
End at: 2018-09-11 06:49:27
Local clock offset: 0.099 ms
Remote clock offset: -1.337 ms

Below is generated by plot.py at 2018-09-11 07:08:49
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 235.524 ms
Loss rate: 3.09%
-- Flow 1:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 235.524 ms
Loss rate: 3.09%

Run 3: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2018-09-11 06:22:15

End at: 2018-09-11 06:22:45

Local clock offset: -1.917 ms

Remote clock offset: -2.873 ms

Below is generated by plot.py at 2018-09-11 07:08:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 373.063 ms

Loss rate: 69.55%

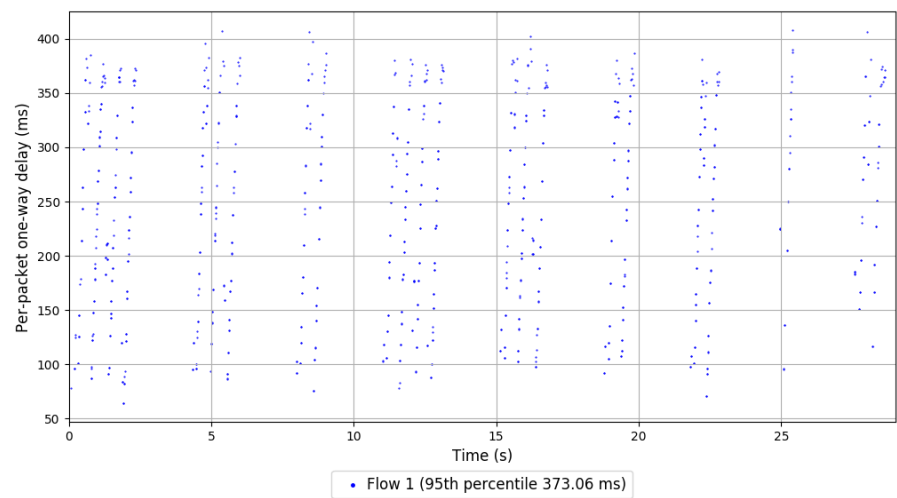
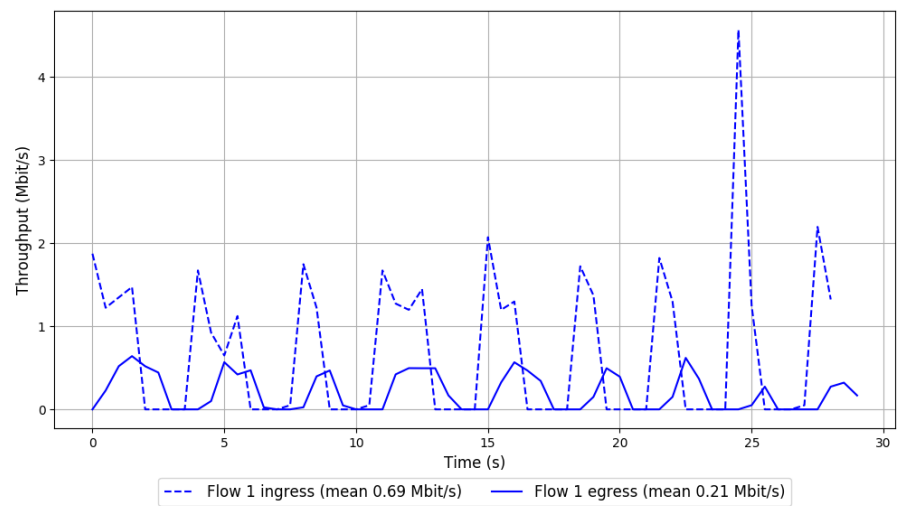
-- Flow 1:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 373.063 ms

Loss rate: 69.55%

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

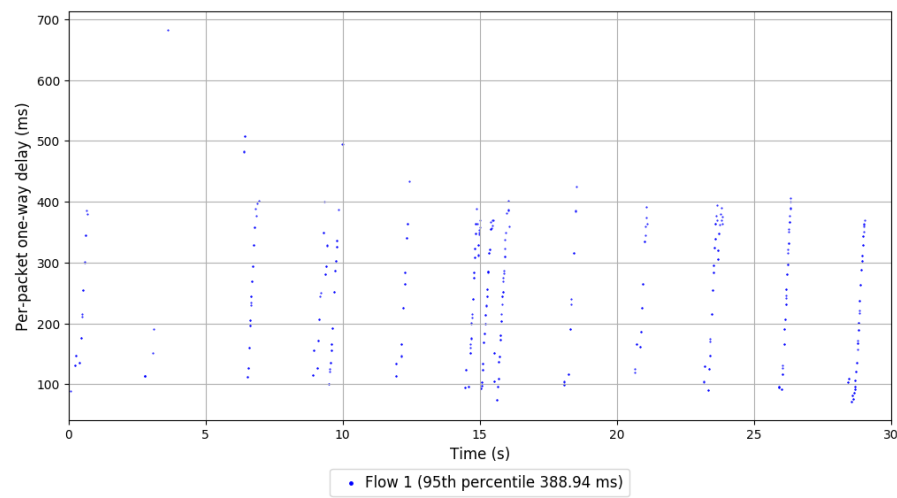
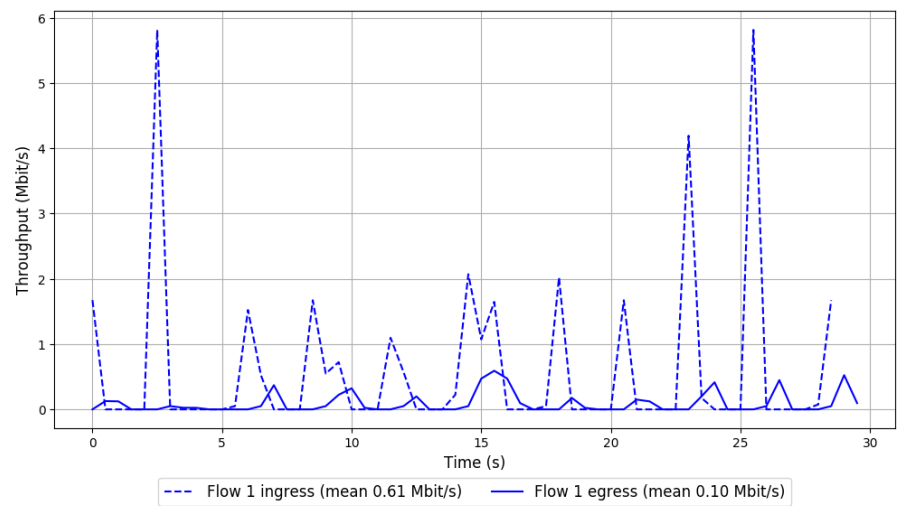


Run 2: Statistics of TaoVA-100x

Start at: 2018-09-11 06:41:59
End at: 2018-09-11 06:42:29
Local clock offset: -1.455 ms
Remote clock offset: -1.061 ms

Below is generated by plot.py at 2018-09-11 07:08:49
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 388.937 ms
Loss rate: 84.03%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 388.937 ms
Loss rate: 84.03%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-09-11 07:02:22

End at: 2018-09-11 07:02:52

Local clock offset: -1.744 ms

Remote clock offset: -4.815 ms

Below is generated by plot.py at 2018-09-11 07:08:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.11 Mbit/s

95th percentile per-packet one-way delay: 382.148 ms

Loss rate: 77.23%

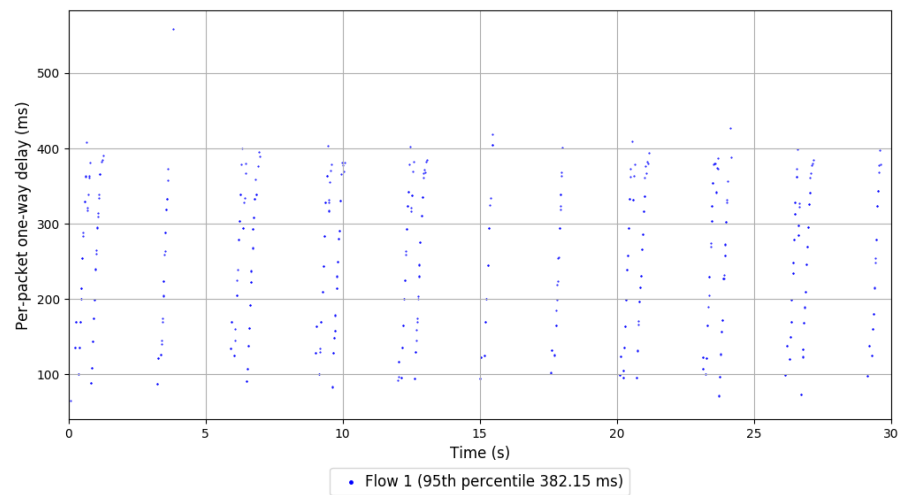
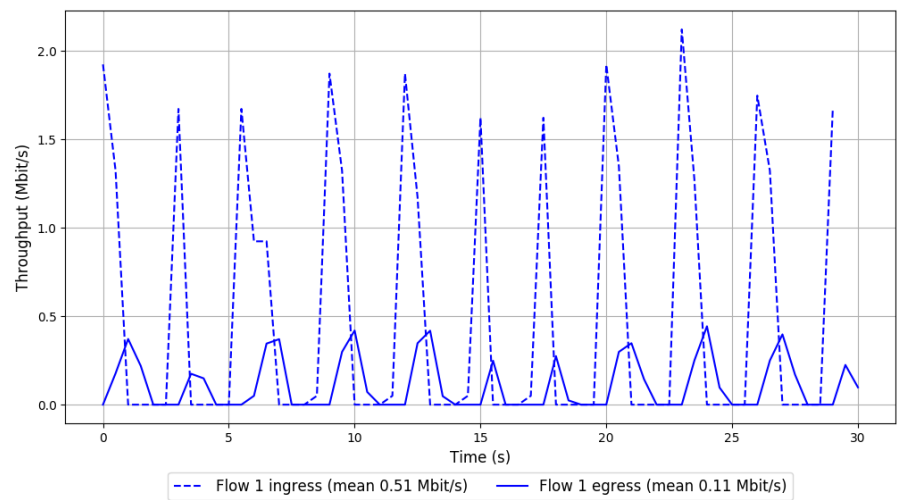
-- Flow 1:

Average throughput: 0.11 Mbit/s

95th percentile per-packet one-way delay: 382.148 ms

Loss rate: 77.23%

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

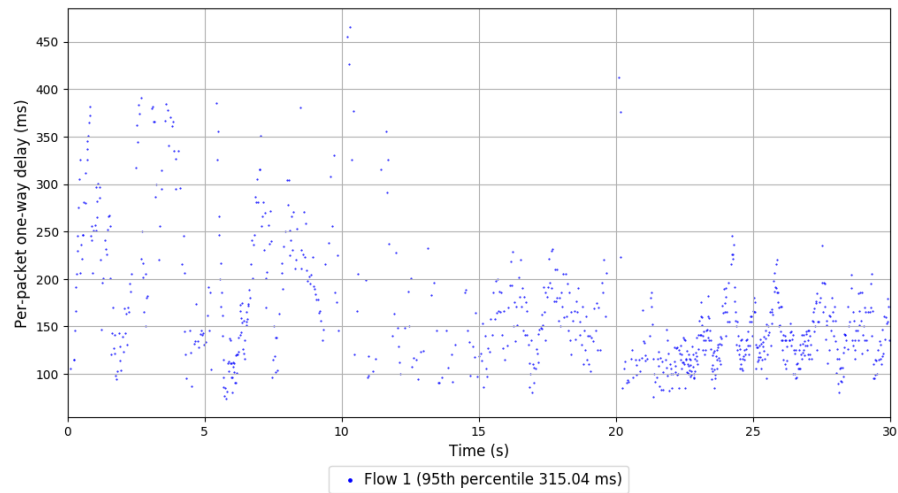
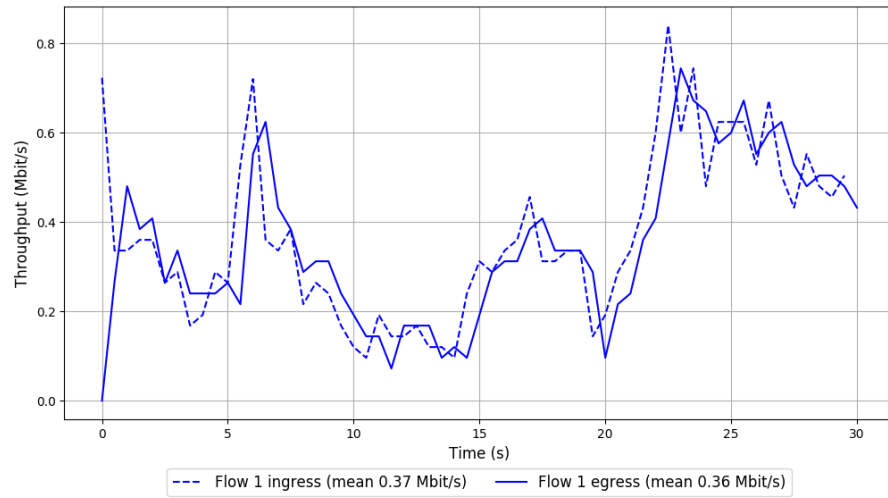


Run 1: Statistics of TCP Vegas

Start at: 2018-09-11 06:26:38
End at: 2018-09-11 06:27:08
Local clock offset: 2.128 ms
Remote clock offset: -2.024 ms

Below is generated by plot.py at 2018-09-11 07:08:51
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 315.043 ms
Loss rate: 1.75%
-- Flow 1:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 315.043 ms
Loss rate: 1.75%

Run 1: Report of TCP Vegas — Data Link

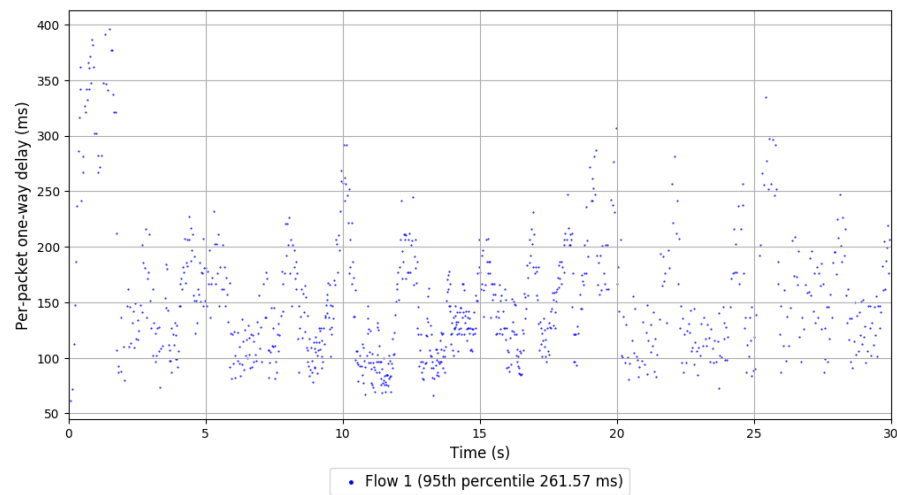
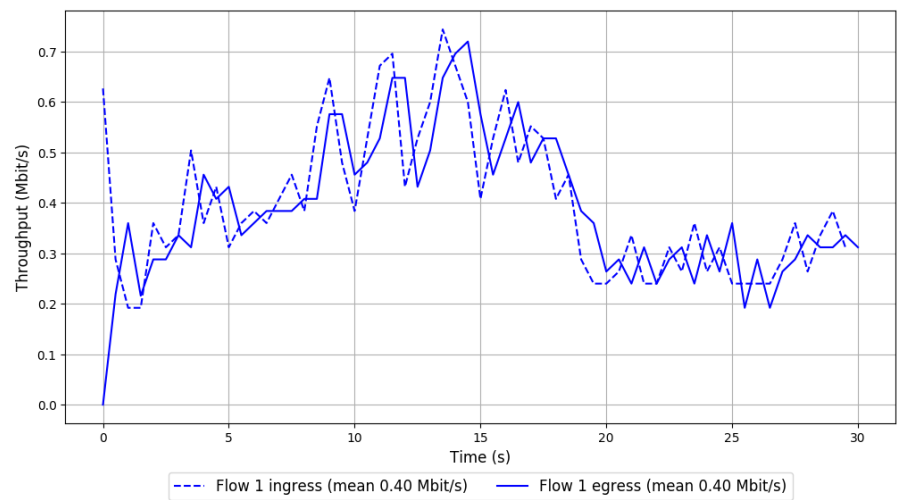


Run 2: Statistics of TCP Vegas

Start at: 2018-09-11 06:46:47
End at: 2018-09-11 06:47:17
Local clock offset: -1.933 ms
Remote clock offset: -3.199 ms

Below is generated by plot.py at 2018-09-11 07:08:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 261.570 ms
Loss rate: 1.20%
-- Flow 1:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 261.570 ms
Loss rate: 1.20%

Run 2: Report of TCP Vegas — Data Link

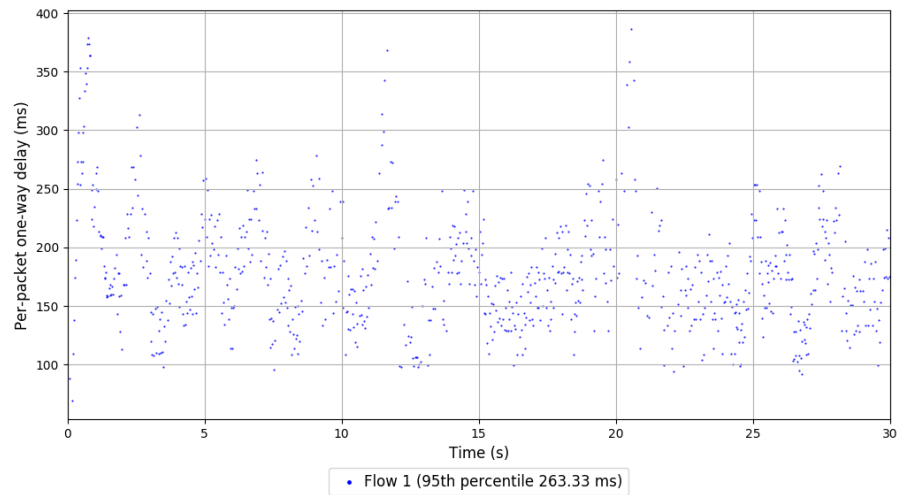
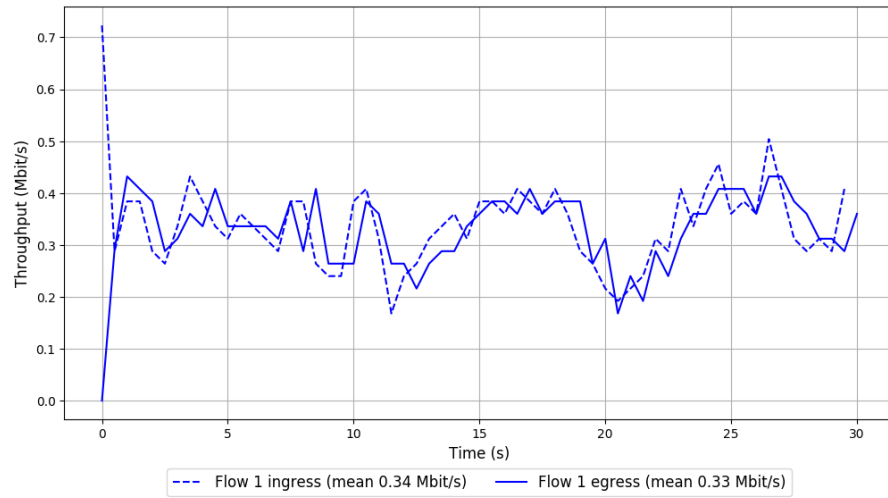


Run 3: Statistics of TCP Vegas

Start at: 2018-09-11 07:06:44
End at: 2018-09-11 07:07:14
Local clock offset: 3.613 ms
Remote clock offset: -4.662 ms

Below is generated by plot.py at 2018-09-11 07:08:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 263.333 ms
Loss rate: 1.53%
-- Flow 1:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 263.333 ms
Loss rate: 1.53%

Run 3: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-09-11 06:10:15

End at: 2018-09-11 06:10:45

Local clock offset: 2.604 ms

Remote clock offset: -0.8 ms

Below is generated by plot.py at 2018-09-11 07:08:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.49 Mbit/s

95th percentile per-packet one-way delay: 394.373 ms

Loss rate: 33.08%

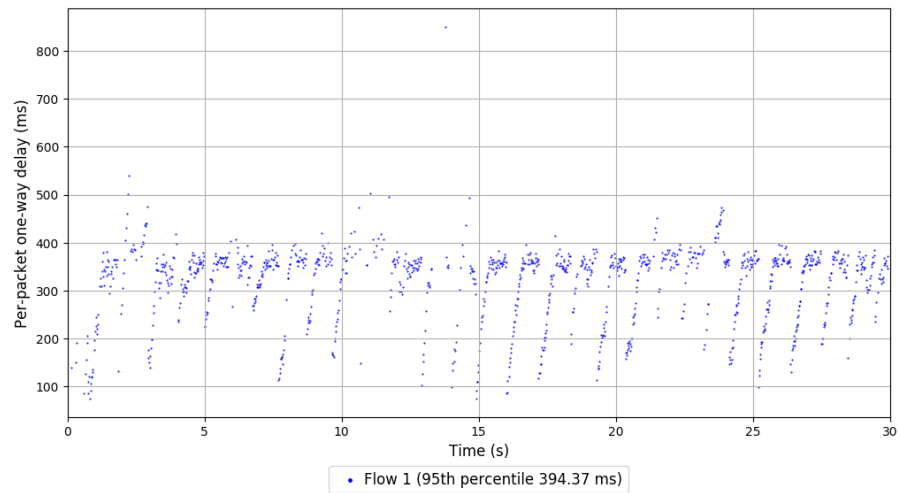
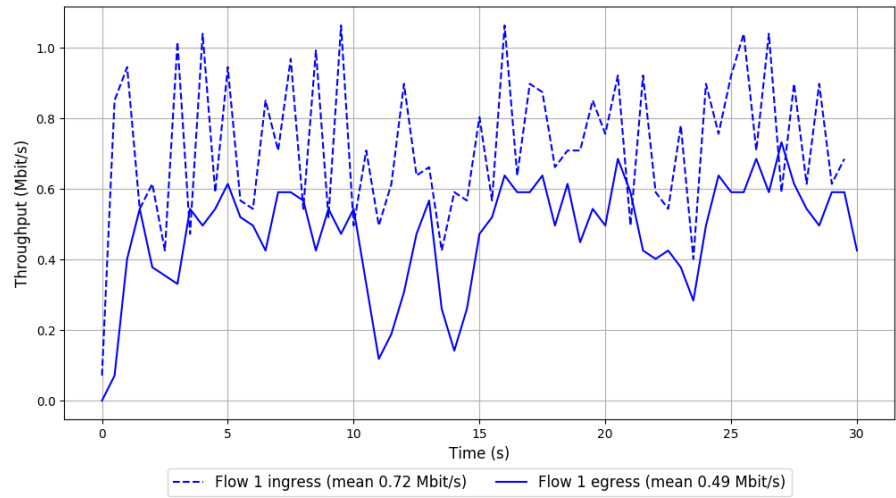
-- Flow 1:

Average throughput: 0.49 Mbit/s

95th percentile per-packet one-way delay: 394.373 ms

Loss rate: 33.08%

Run 1: Report of Verus — Data Link

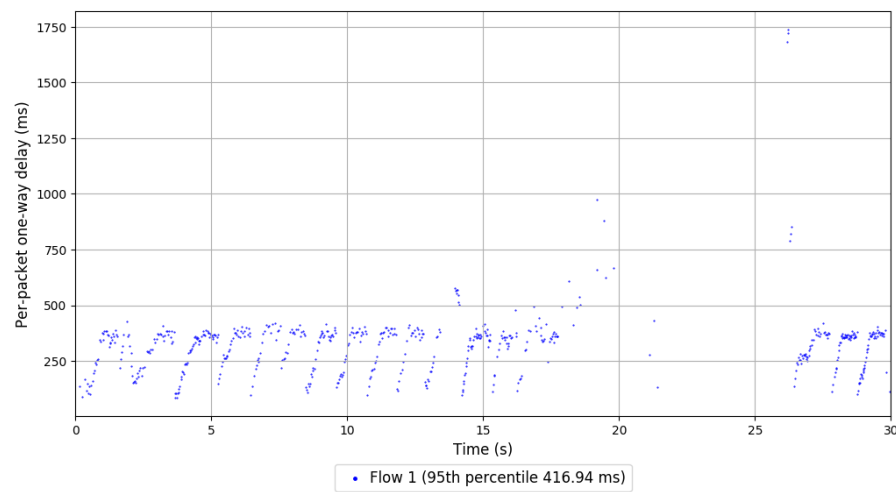
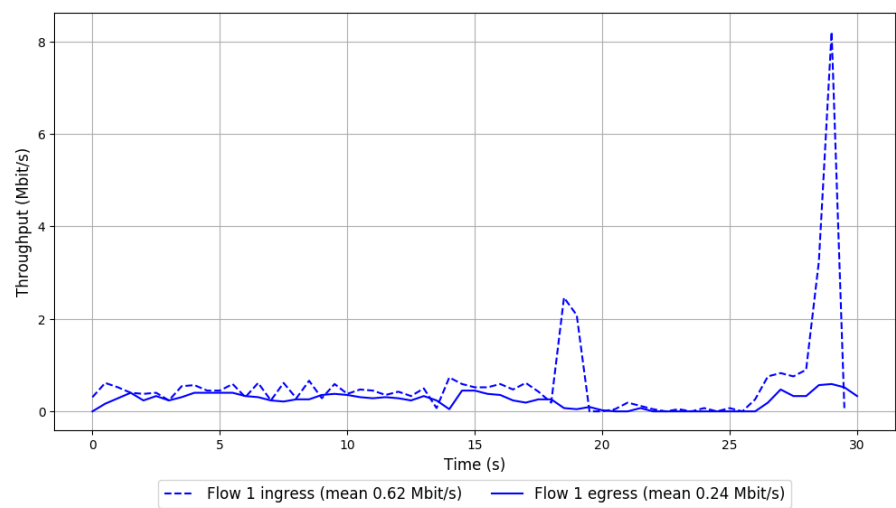


Run 2: Statistics of Verus

Start at: 2018-09-11 06:29:54
End at: 2018-09-11 06:30:24
Local clock offset: -2.245 ms
Remote clock offset: -1.648 ms

Below is generated by plot.py at 2018-09-11 07:08:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 416.942 ms
Loss rate: 60.59%
-- Flow 1:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 416.942 ms
Loss rate: 60.59%

Run 2: Report of Verus — Data Link

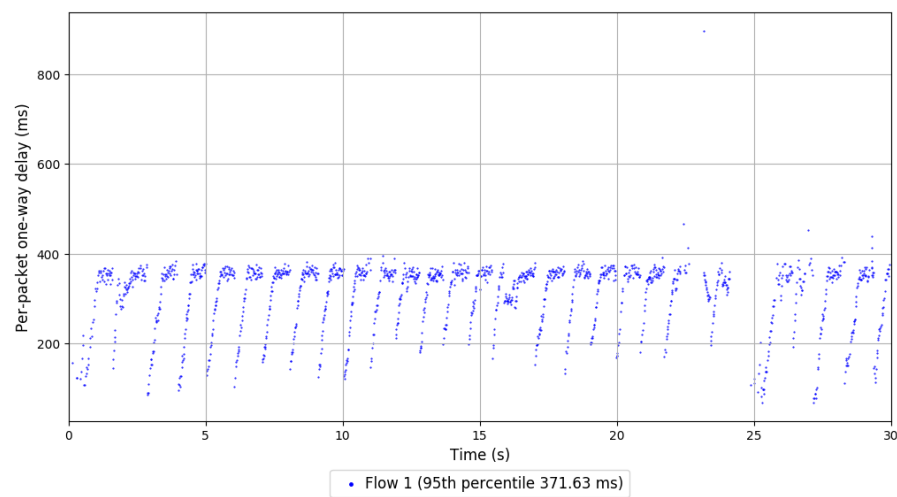
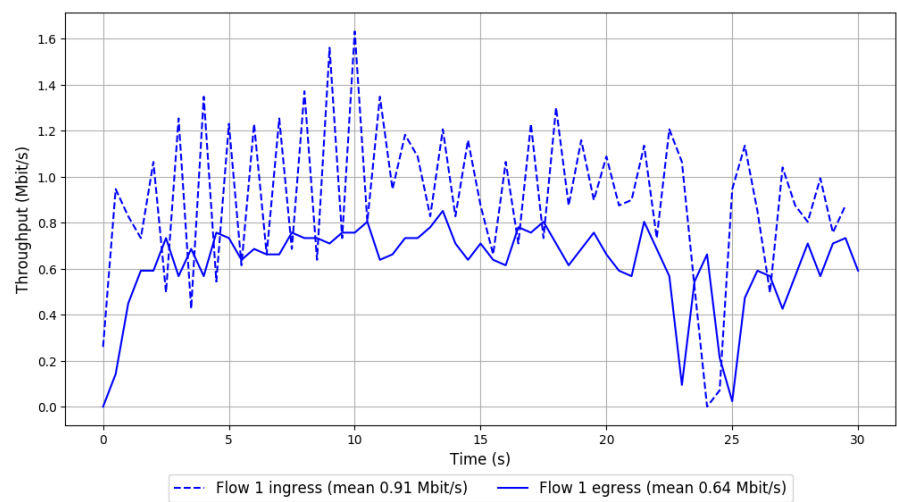


Run 3: Statistics of Verus

Start at: 2018-09-11 06:50:23
End at: 2018-09-11 06:50:53
Local clock offset: -0.718 ms
Remote clock offset: -1.246 ms

Below is generated by plot.py at 2018-09-11 07:08:54
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 371.630 ms
Loss rate: 30.83%
-- Flow 1:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 371.630 ms
Loss rate: 30.83%

Run 3: Report of Verus — Data Link

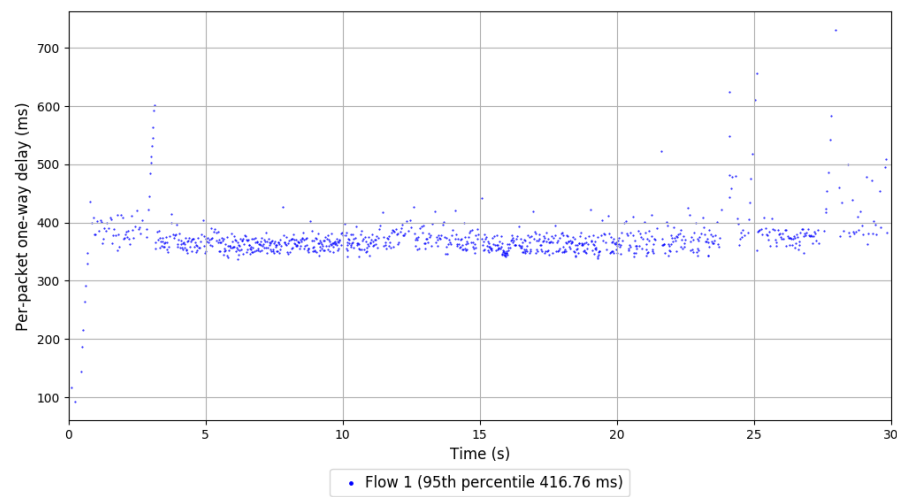
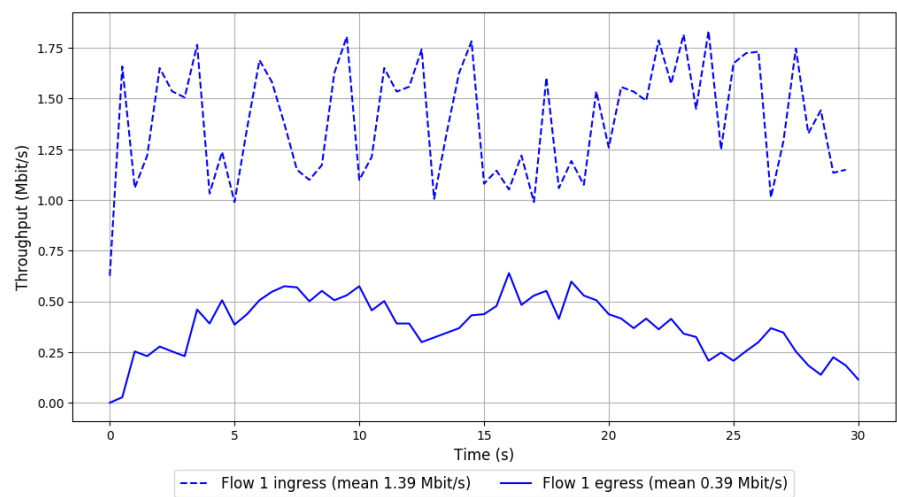


Run 1: Statistics of PCC-Vivace

Start at: 2018-09-11 06:13:31
End at: 2018-09-11 06:14:01
Local clock offset: 0.167 ms
Remote clock offset: -0.301 ms

Below is generated by plot.py at 2018-09-11 07:08:54
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 416.760 ms
Loss rate: 72.34%
-- Flow 1:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 416.760 ms
Loss rate: 72.34%

Run 1: Report of PCC-Vivace — Data Link

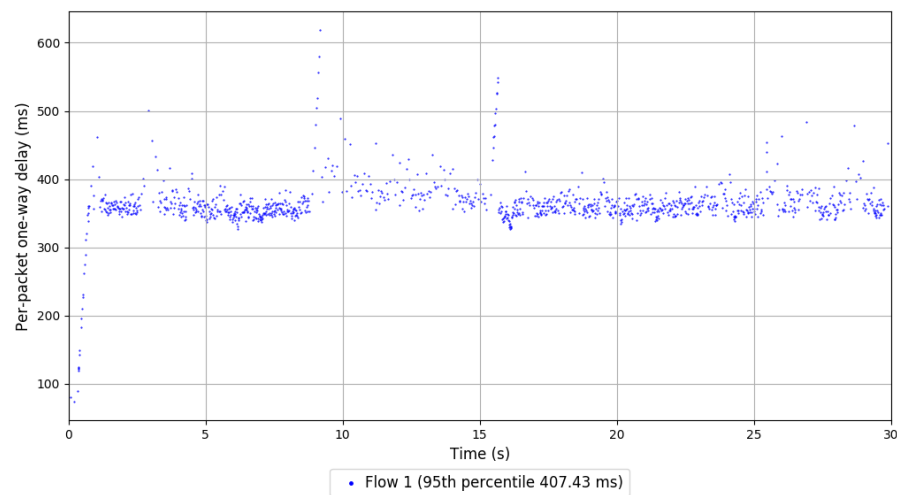
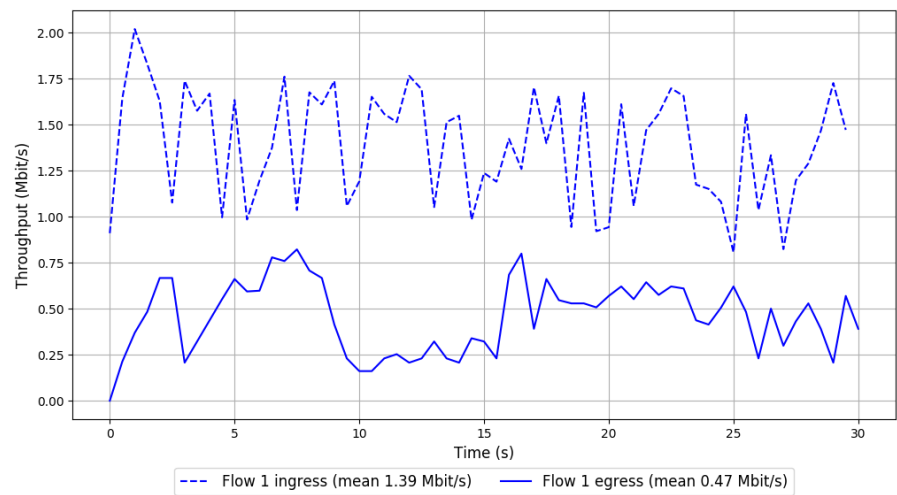


Run 2: Statistics of PCC-Vivace

Start at: 2018-09-11 06:33:10
End at: 2018-09-11 06:33:40
Local clock offset: -2.174 ms
Remote clock offset: -1.397 ms

Below is generated by plot.py at 2018-09-11 07:08:54
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 407.431 ms
Loss rate: 66.46%
-- Flow 1:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 407.431 ms
Loss rate: 66.46%

Run 2: Report of PCC-Vivace — Data Link

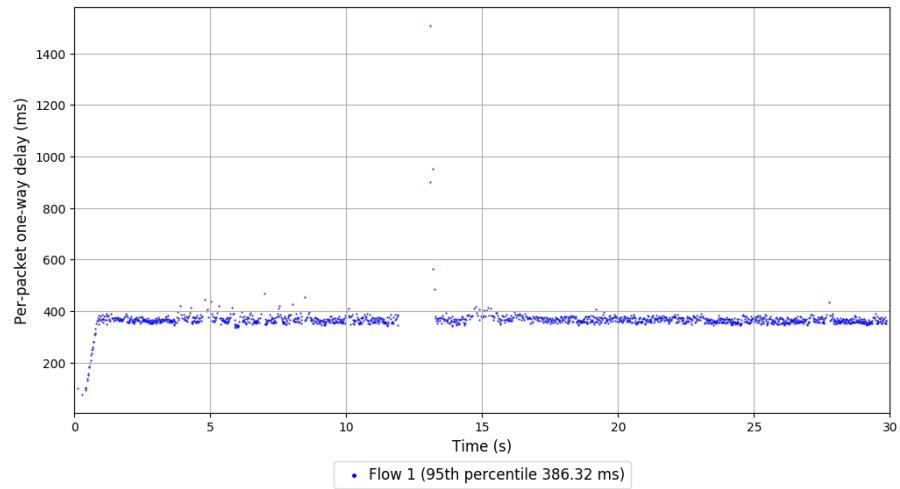
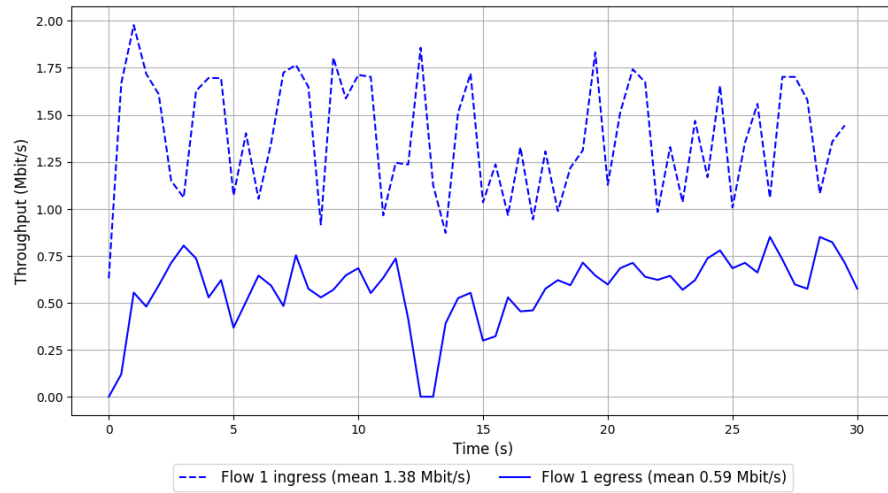


Run 3: Statistics of PCC-Vivace

Start at: 2018-09-11 06:53:39
End at: 2018-09-11 06:54:09
Local clock offset: -1.865 ms
Remote clock offset: -4.582 ms

Below is generated by plot.py at 2018-09-11 07:08:55
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 386.319 ms
Loss rate: 57.88%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 386.319 ms
Loss rate: 57.88%

Run 3: Report of PCC-Vivace — Data Link

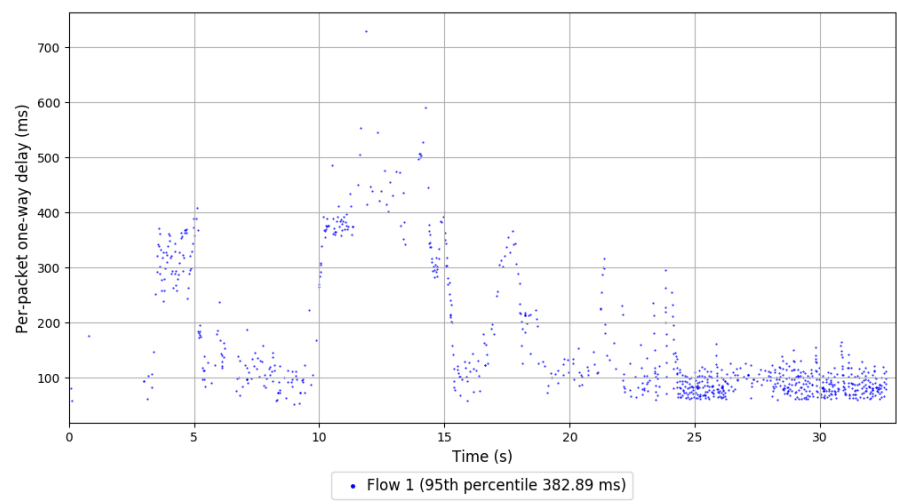
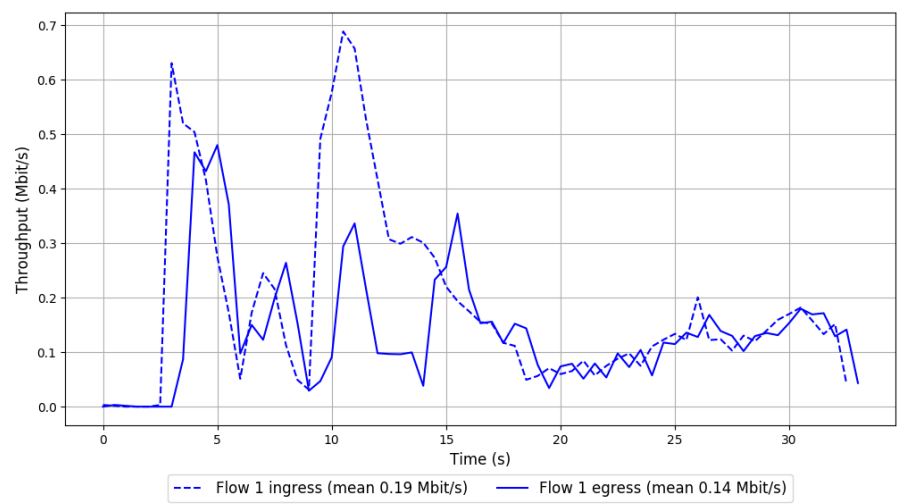


```
Run 1: Statistics of WebRTC media

Start at: 2018-09-11 06:20:04
End at: 2018-09-11 06:20:34
Local clock offset: -1.304 ms
Remote clock offset: -2.326 ms

# Below is generated by plot.py at 2018-09-11 07:08:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 382.889 ms
Loss rate: 26.48%
-- Flow 1:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 382.889 ms
Loss rate: 26.48%
```

Run 1: Report of WebRTC media — Data Link

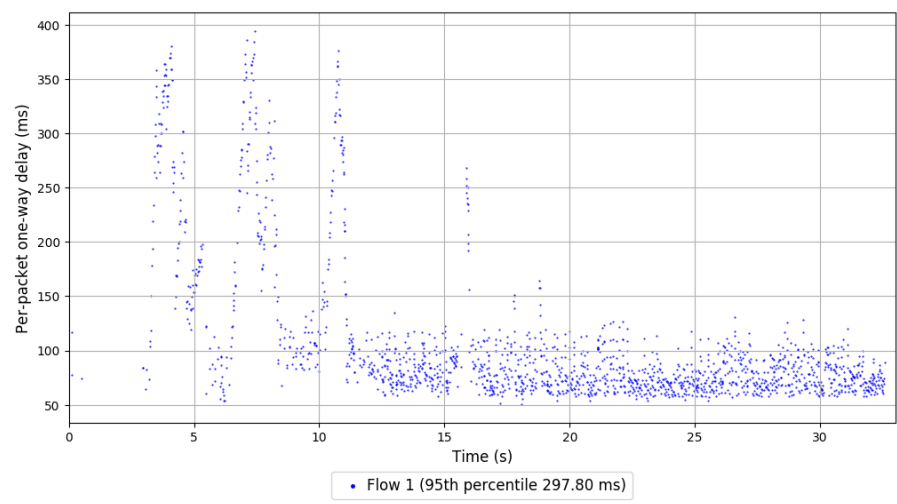
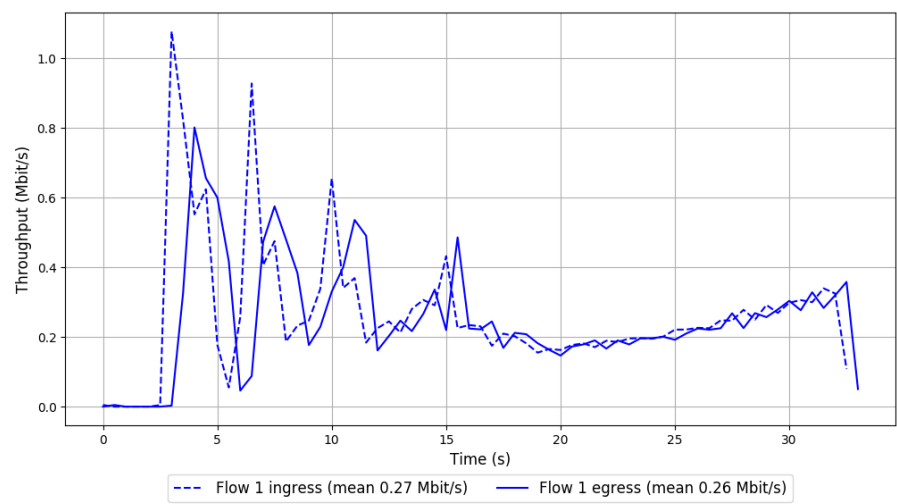


Run 2: Statistics of WebRTC media

Start at: 2018-09-11 06:39:47
End at: 2018-09-11 06:40:17
Local clock offset: -1.017 ms
Remote clock offset: -1.699 ms

Below is generated by plot.py at 2018-09-11 07:08:55
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 297.799 ms
Loss rate: 4.72%
-- Flow 1:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 297.799 ms
Loss rate: 4.72%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-09-11 07:00:11
End at: 2018-09-11 07:00:41
Local clock offset: -2.583 ms
Remote clock offset: -5.053 ms

Below is generated by plot.py at 2018-09-11 07:08:55
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 335.666 ms
Loss rate: 7.27%
-- Flow 1:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 335.666 ms
Loss rate: 7.27%

Run 3: Report of WebRTC media — Data Link

