

Pantheon Report

Generated at 2018-06-30 05:59:27 (UTC).

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

Repeated the test of 17 congestion control schemes 3 times.

Each test lasted for 30 seconds running 1 flow.

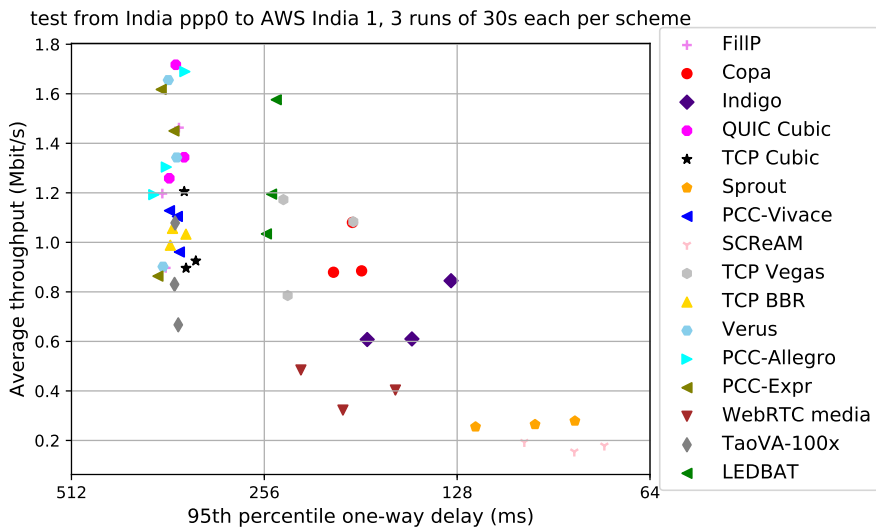
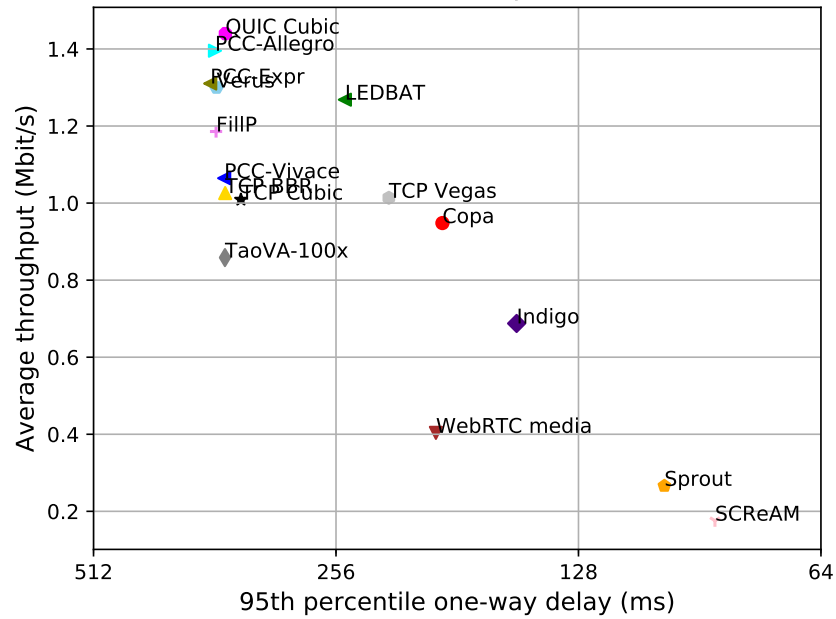
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

NTP offsets were measured against **nets.org.sg** 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 @ d0153f8e594aa89e93b032143cedbdf5e58e562f4
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-quirk @ 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 India ppp0 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	1.03	351.41	6.80
Copa	3	0.95	188.86	0.49
TCP Cubic	3	1.01	335.99	3.71
FillP	3	1.19	360.70	41.56
FillP-Sheep	0	N/A	N/A	N/A
Indigo	3	0.69	152.76	1.31
LEDBAT	3	1.27	249.59	0.88
PCC-Allegro	3	1.39	361.83	50.65
PCC-Expr	3	1.31	366.79	78.05
QUIC Cubic	3	1.44	351.23	6.98
SCReAM	3	0.17	86.66	0.21
Sprout	3	0.27	100.13	0.75
TaoVA-100x	3	0.86	351.65	23.74
TCP Vegas	3	1.01	220.12	0.96
Verus	3	1.30	360.24	26.93
PCC-Vivace	3	1.06	352.45	14.06
WebRTC media	3	0.40	192.41	2.14

Run 1: Statistics of TCP BBR

Start at: 2018-06-30 05:20:18

End at: 2018-06-30 05:20:48

Local clock offset: 1.31 ms

Remote clock offset: 0.175 ms

Below is generated by plot.py at 2018-06-30 05:58:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.99 Mbit/s

95th percentile per-packet one-way delay: 358.868 ms

Loss rate: 8.94%

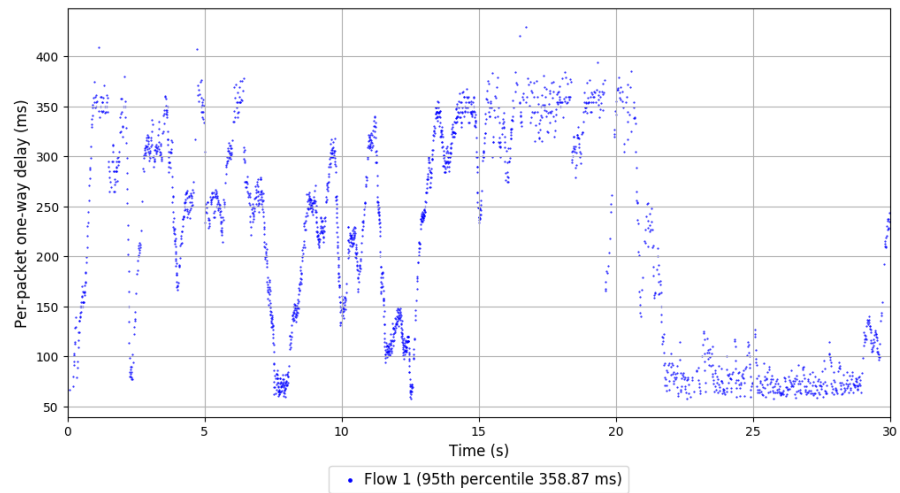
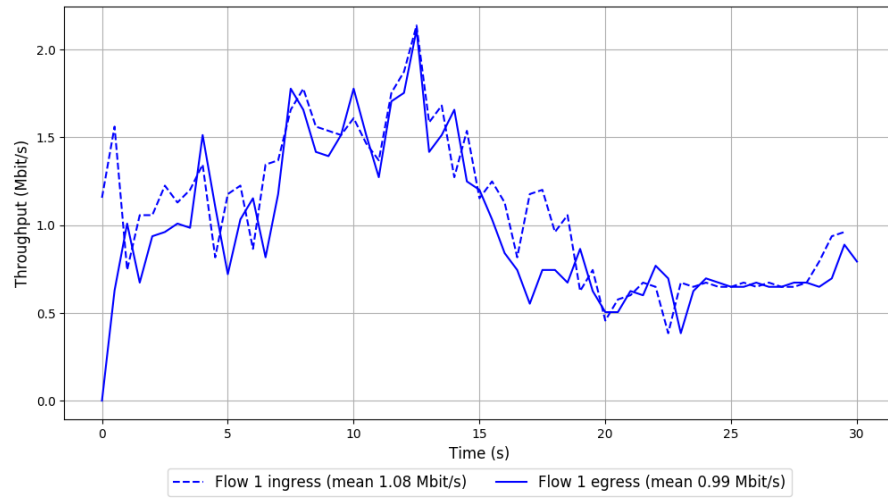
-- Flow 1:

Average throughput: 0.99 Mbit/s

95th percentile per-packet one-way delay: 358.868 ms

Loss rate: 8.94%

Run 1: Report of TCP BBR — Data Link

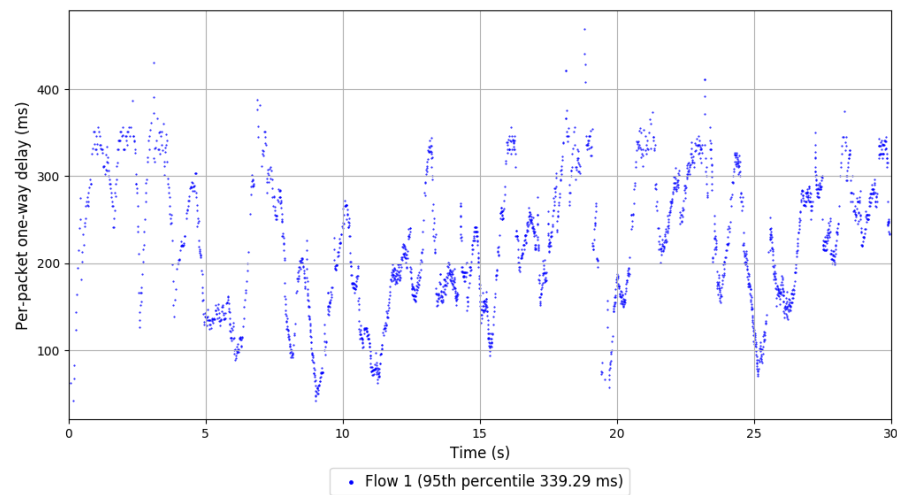
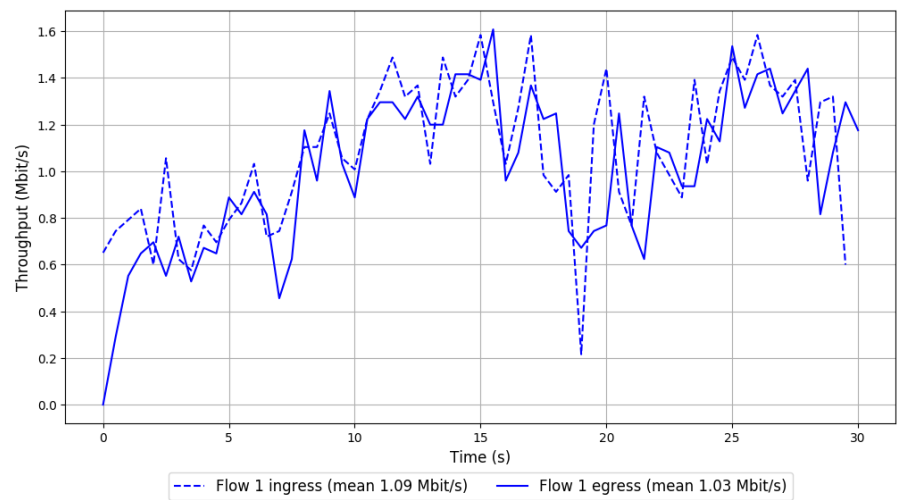


Run 2: Statistics of TCP BBR

Start at: 2018-06-30 05:38:49
End at: 2018-06-30 05:39:19
Local clock offset: -1.817 ms
Remote clock offset: -9.589 ms

Below is generated by plot.py at 2018-06-30 05:58:56
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.03 Mbit/s
95th percentile per-packet one-way delay: 339.287 ms
Loss rate: 4.81%
-- Flow 1:
Average throughput: 1.03 Mbit/s
95th percentile per-packet one-way delay: 339.287 ms
Loss rate: 4.81%

Run 2: Report of TCP BBR — Data Link

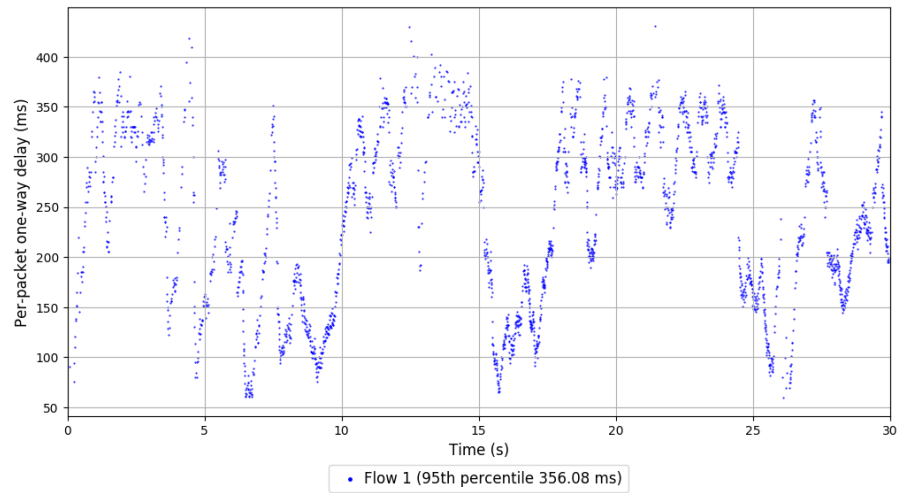
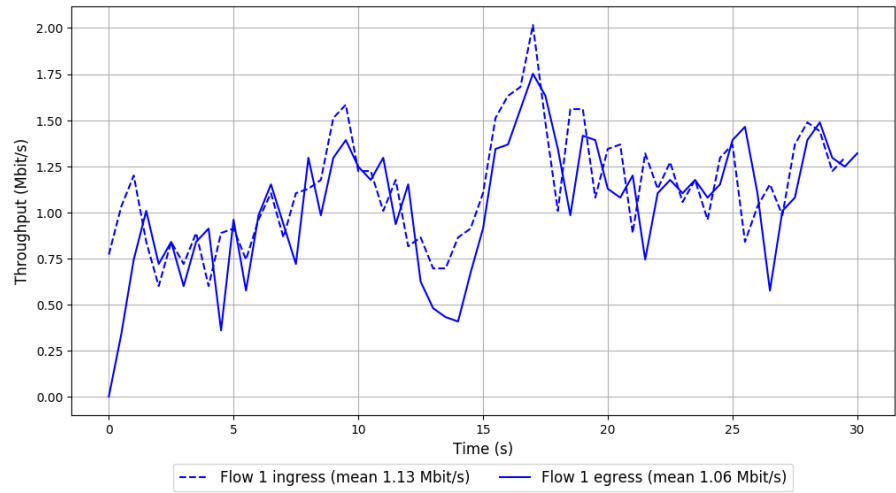


Run 3: Statistics of TCP BBR

Start at: 2018-06-30 05:57:12
End at: 2018-06-30 05:57:42
Local clock offset: -0.124 ms
Remote clock offset: -34.442 ms

Below is generated by plot.py at 2018-06-30 05:58:56
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.06 Mbit/s
95th percentile per-packet one-way delay: 356.080 ms
Loss rate: 6.64%
-- Flow 1:
Average throughput: 1.06 Mbit/s
95th percentile per-packet one-way delay: 356.080 ms
Loss rate: 6.64%

Run 3: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-06-30 05:18:07

End at: 2018-06-30 05:18:37

Local clock offset: 1.702 ms

Remote clock offset: 7.329 ms

Below is generated by plot.py at 2018-06-30 05:58:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.08 Mbit/s

95th percentile per-packet one-way delay: 186.507 ms

Loss rate: 0.80%

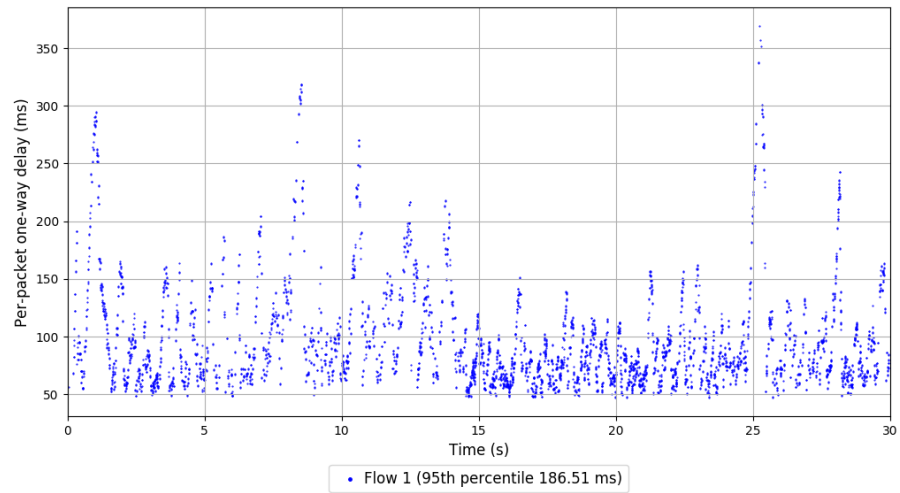
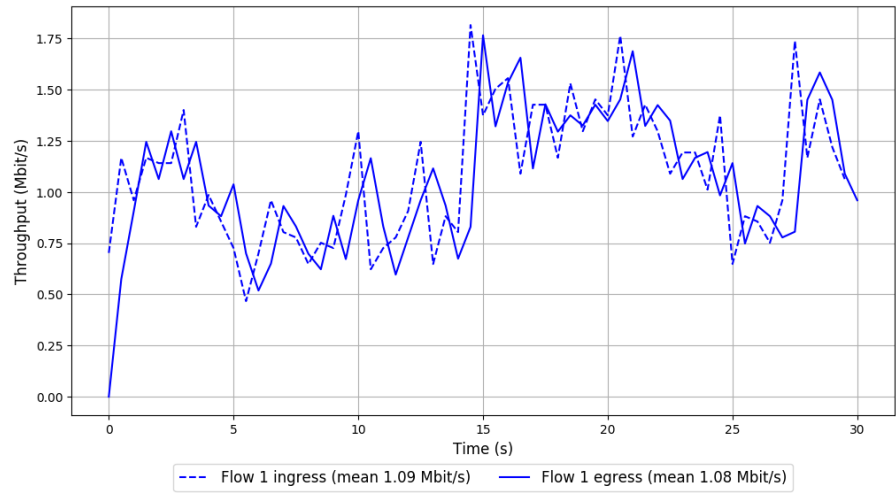
-- Flow 1:

Average throughput: 1.08 Mbit/s

95th percentile per-packet one-way delay: 186.507 ms

Loss rate: 0.80%

Run 1: Report of Copa — Data Link

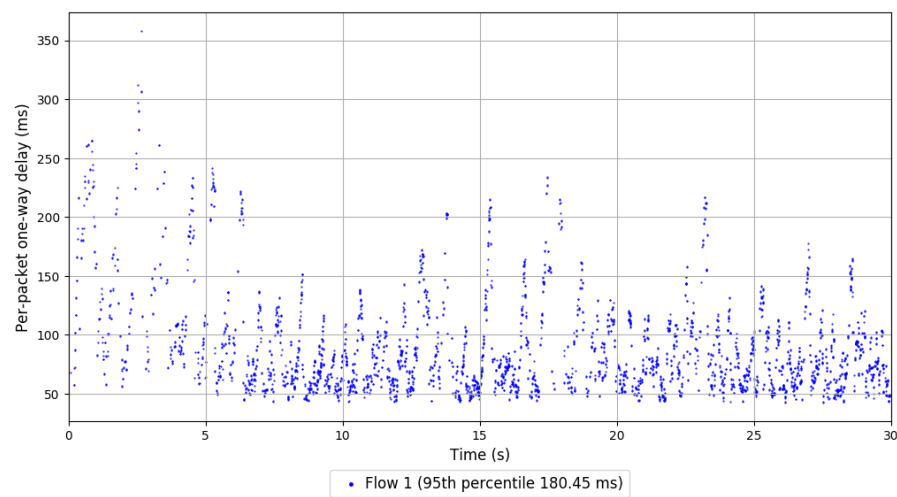
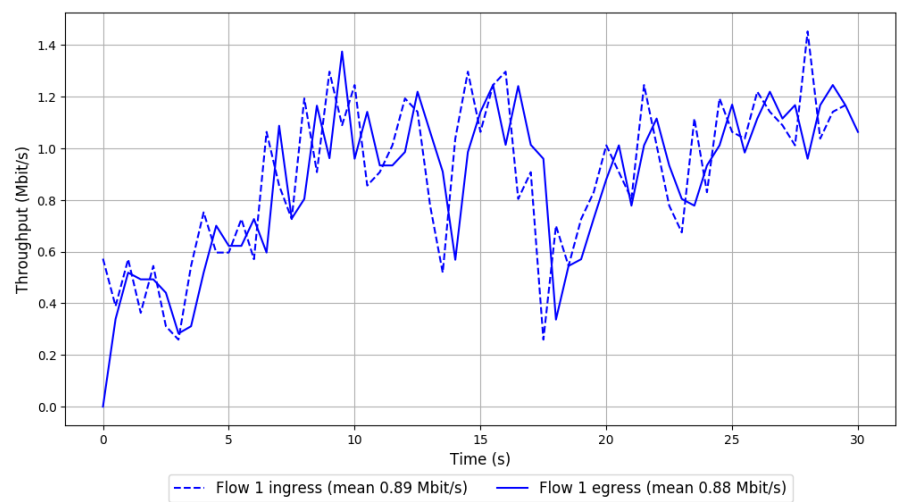


Run 2: Statistics of Copa

Start at: 2018-06-30 05:36:39
End at: 2018-06-30 05:37:09
Local clock offset: 1.033 ms
Remote clock offset: -8.642 ms

Below is generated by plot.py at 2018-06-30 05:58:57
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.88 Mbit/s
95th percentile per-packet one-way delay: 180.449 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 0.88 Mbit/s
95th percentile per-packet one-way delay: 180.449 ms
Loss rate: 0.59%

Run 2: Report of Copa — Data Link

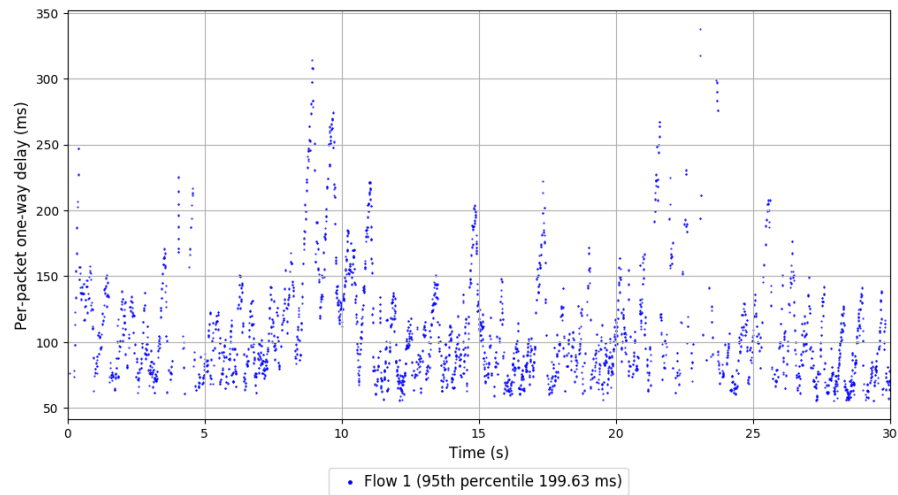
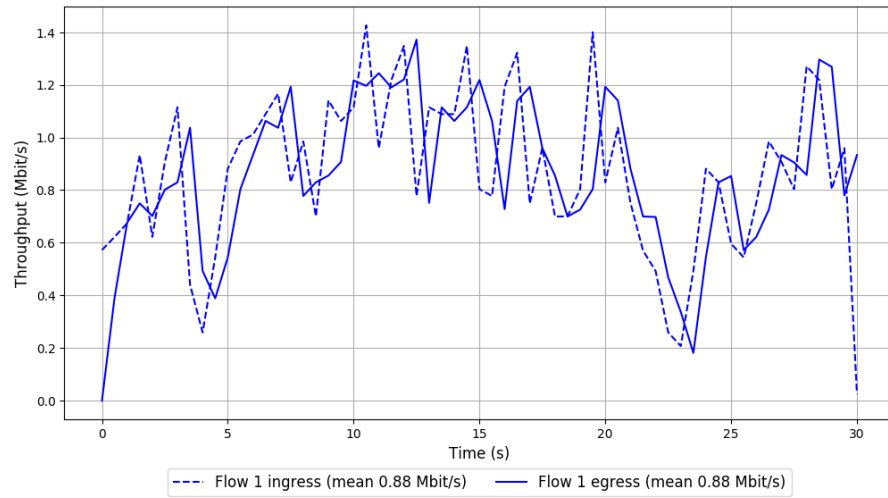


Run 3: Statistics of Copa

Start at: 2018-06-30 05:55:03
End at: 2018-06-30 05:55:33
Local clock offset: -2.249 ms
Remote clock offset: -31.64 ms

Below is generated by plot.py at 2018-06-30 05:58:57
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.88 Mbit/s
95th percentile per-packet one-way delay: 199.628 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 0.88 Mbit/s
95th percentile per-packet one-way delay: 199.628 ms
Loss rate: 0.09%

Run 3: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-06-30 05:13:27

End at: 2018-06-30 05:13:57

Local clock offset: 1.256 ms

Remote clock offset: 9.697 ms

Below is generated by plot.py at 2018-06-30 05:58:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.93 Mbit/s

95th percentile per-packet one-way delay: 327.468 ms

Loss rate: 4.48%

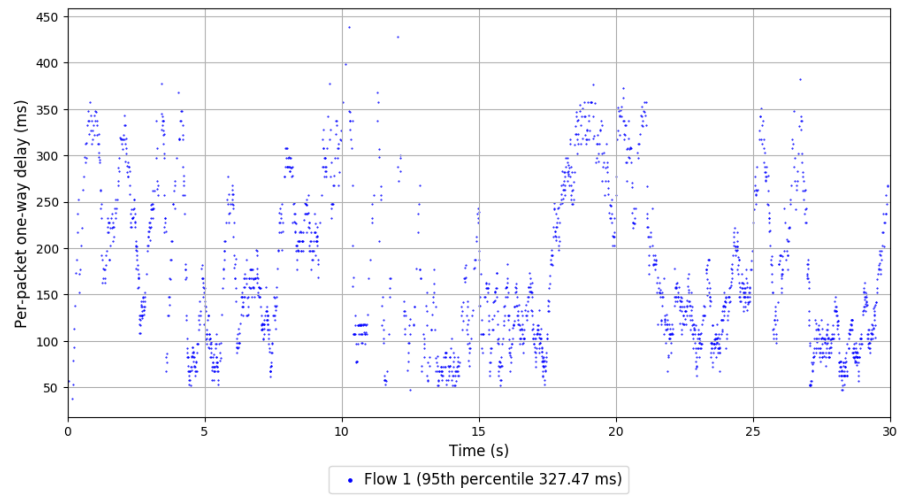
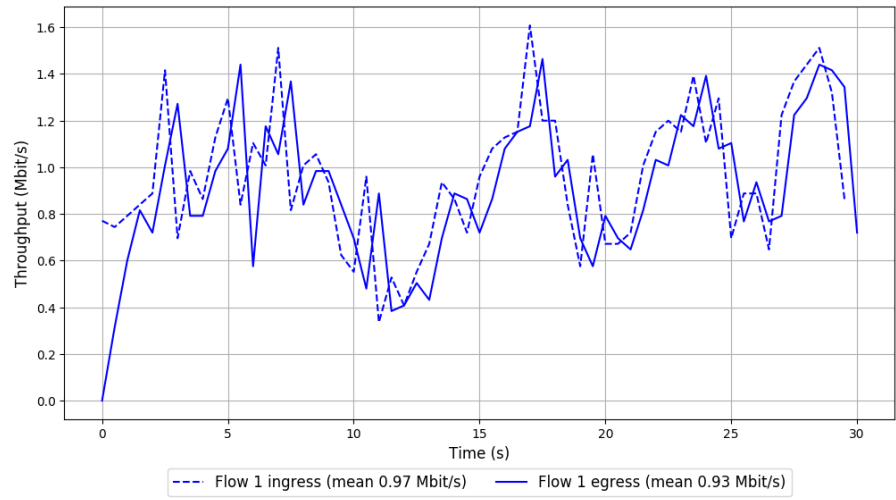
-- Flow 1:

Average throughput: 0.93 Mbit/s

95th percentile per-packet one-way delay: 327.468 ms

Loss rate: 4.48%

Run 1: Report of TCP Cubic — Data Link

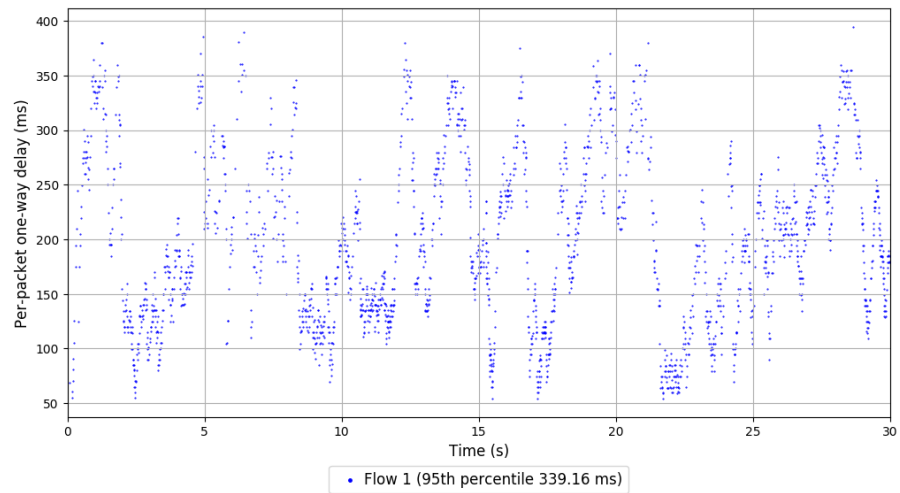
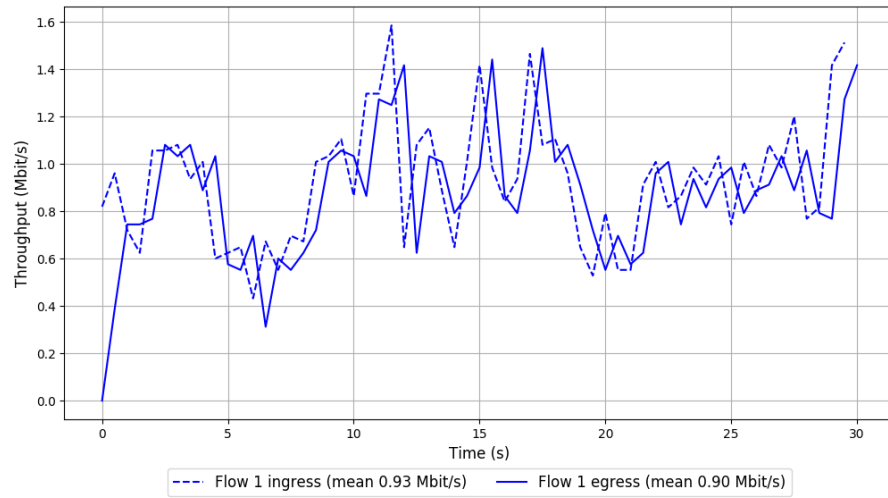


Run 2: Statistics of TCP Cubic

Start at: 2018-06-30 05:32:18
End at: 2018-06-30 05:32:48
Local clock offset: -1.467 ms
Remote clock offset: -15.842 ms

Below is generated by plot.py at 2018-06-30 05:58:57
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.90 Mbit/s
95th percentile per-packet one-way delay: 339.158 ms
Loss rate: 3.50%
-- Flow 1:
Average throughput: 0.90 Mbit/s
95th percentile per-packet one-way delay: 339.158 ms
Loss rate: 3.50%

Run 2: Report of TCP Cubic — Data Link

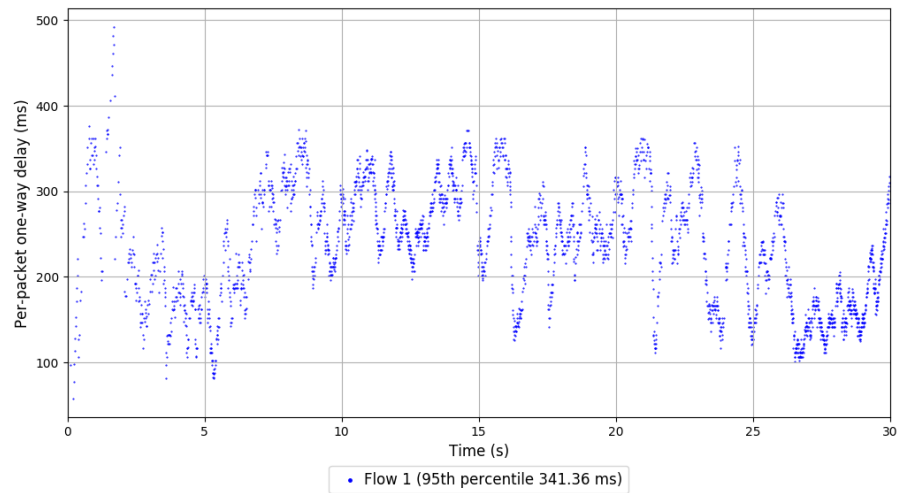
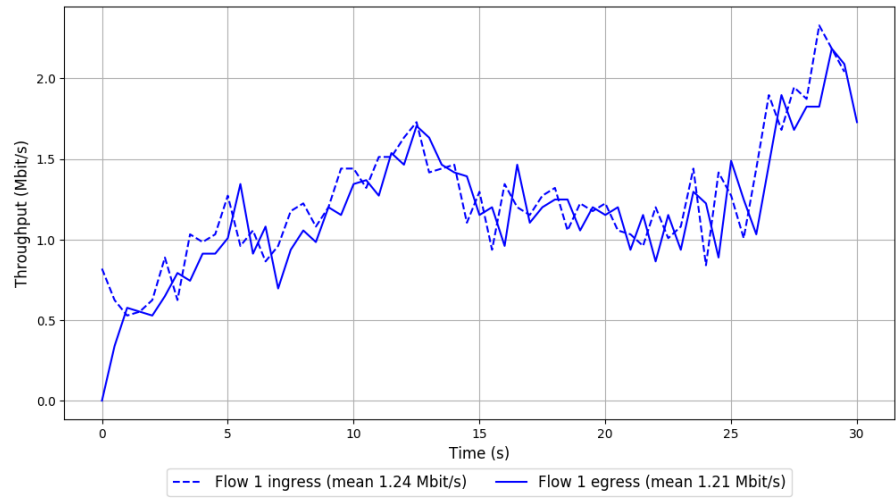


Run 3: Statistics of TCP Cubic

Start at: 2018-06-30 05:50:42
End at: 2018-06-30 05:51:12
Local clock offset: -1.633 ms
Remote clock offset: -31.143 ms

Below is generated by plot.py at 2018-06-30 05:59:01
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.21 Mbit/s
95th percentile per-packet one-way delay: 341.358 ms
Loss rate: 3.16%
-- Flow 1:
Average throughput: 1.21 Mbit/s
95th percentile per-packet one-way delay: 341.358 ms
Loss rate: 3.16%

Run 3: Report of TCP Cubic — Data Link

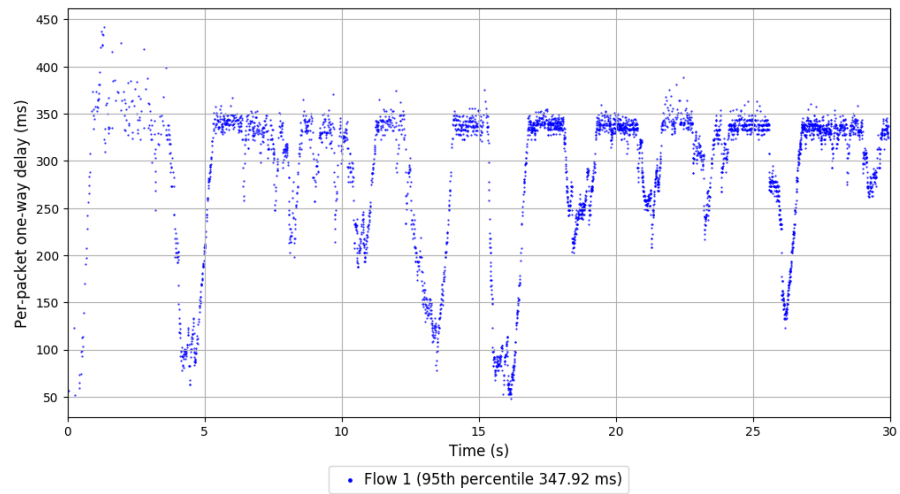
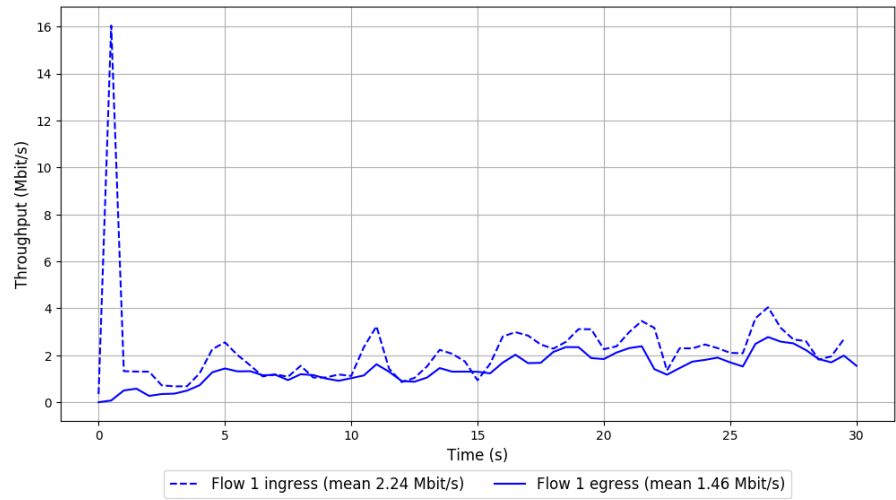


```
Run 1: Statistics of FillP

Start at: 2018-06-30 05:10:10
End at: 2018-06-30 05:10:40
Local clock offset: 1.52 ms
Remote clock offset: 9.578 ms

# Below is generated by plot.py at 2018-06-30 05:59:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.46 Mbit/s
95th percentile per-packet one-way delay: 347.916 ms
Loss rate: 34.81%
-- Flow 1:
Average throughput: 1.46 Mbit/s
95th percentile per-packet one-way delay: 347.916 ms
Loss rate: 34.81%
```

Run 1: Report of FillP — Data Link

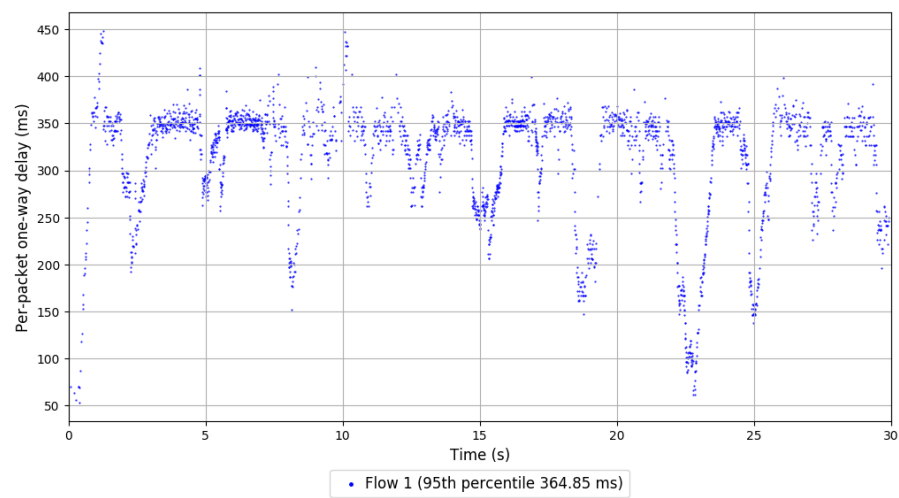
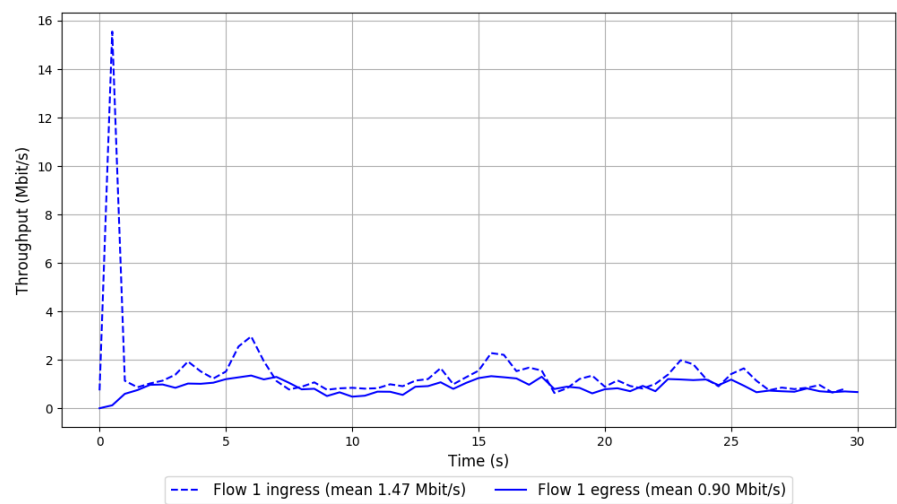


Run 2: Statistics of FillP

Start at: 2018-06-30 05:29:02
End at: 2018-06-30 05:29:32
Local clock offset: -1.37 ms
Remote clock offset: -13.675 ms

Below is generated by plot.py at 2018-06-30 05:59:02
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.90 Mbit/s
95th percentile per-packet one-way delay: 364.849 ms
Loss rate: 39.27%
-- Flow 1:
Average throughput: 0.90 Mbit/s
95th percentile per-packet one-way delay: 364.849 ms
Loss rate: 39.27%

Run 2: Report of FillP — Data Link

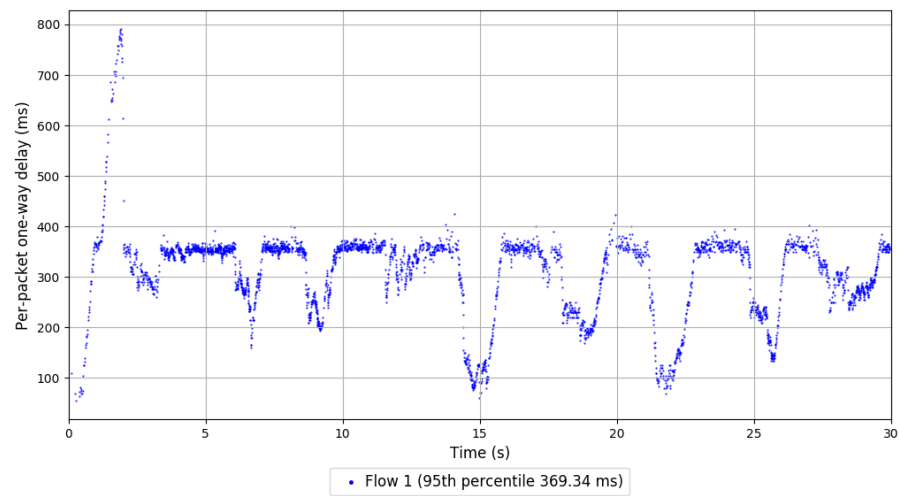
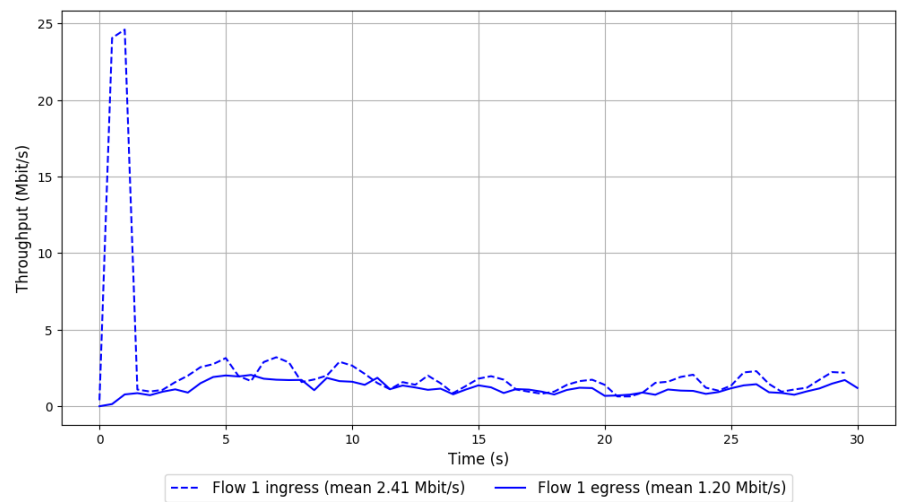


Run 3: Statistics of FillP

Start at: 2018-06-30 05:47:27
End at: 2018-06-30 05:47:57
Local clock offset: 0.956 ms
Remote clock offset: -29.488 ms

Below is generated by plot.py at 2018-06-30 05:59:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 369.341 ms
Loss rate: 50.61%
-- Flow 1:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 369.341 ms
Loss rate: 50.61%

Run 3: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

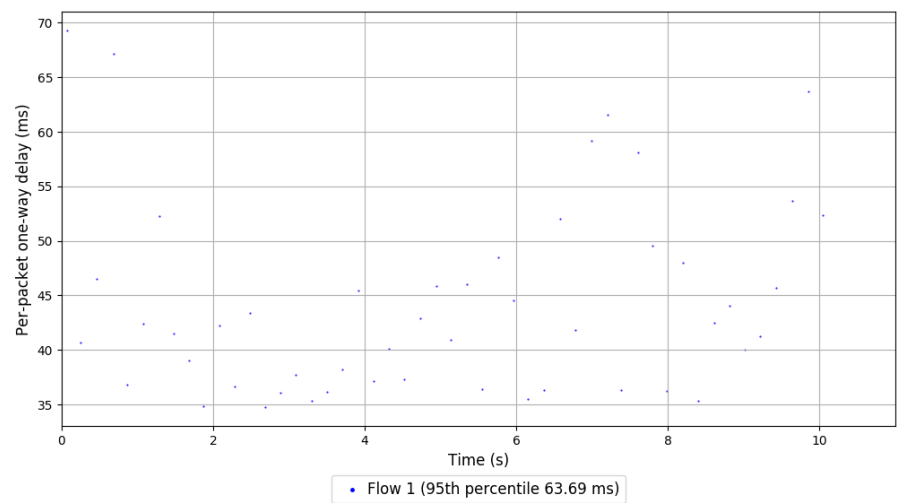
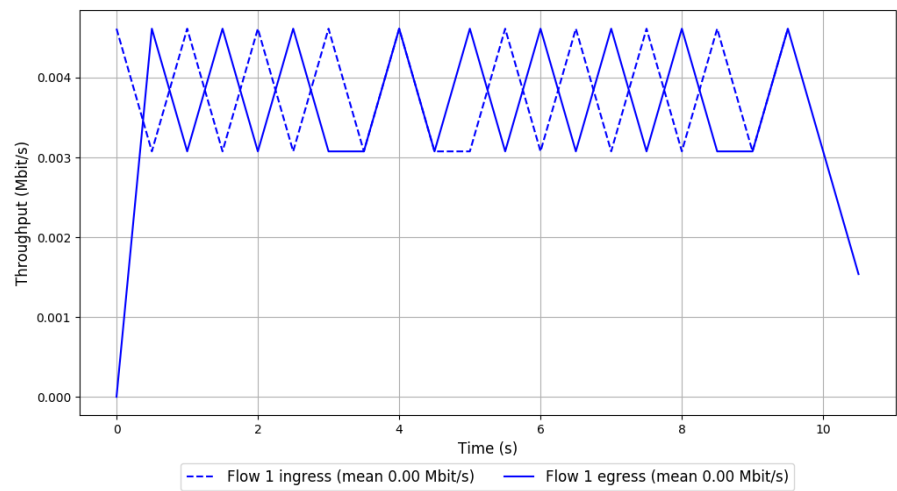
Start at: 2018-06-30 05:14:32

End at: 2018-06-30 05:15:02

Local clock offset: 0.463 ms

Remote clock offset: 8.276 ms

Run 1: Report of FillP-Sheep — Data Link



Run 2: Statistics of FillP-Sheep

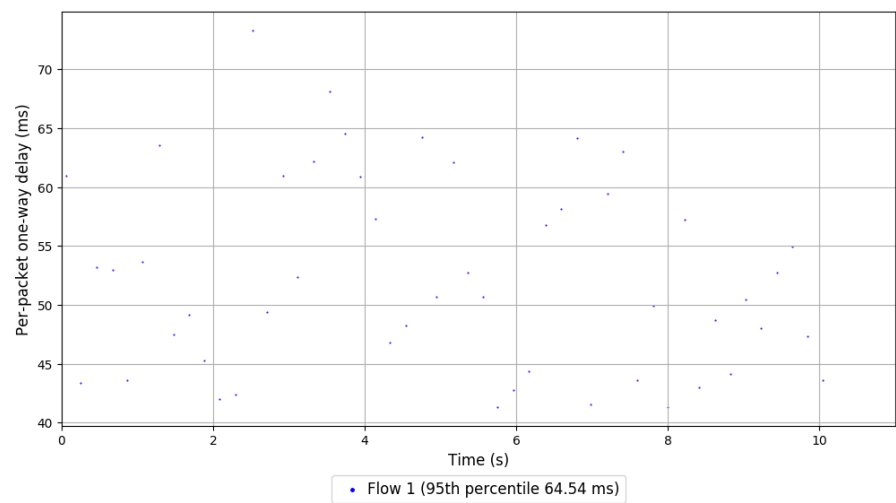
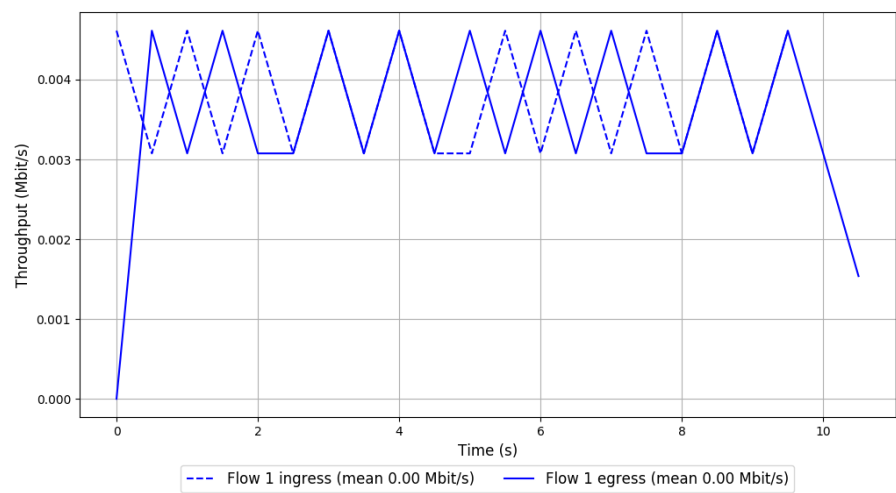
Start at: 2018-06-30 05:33:23

End at: 2018-06-30 05:33:53

Local clock offset: -2.313 ms

Remote clock offset: -18.558 ms

Run 2: Report of FillP-Sheep — Data Link



Run 3: Statistics of FillP-Sheep

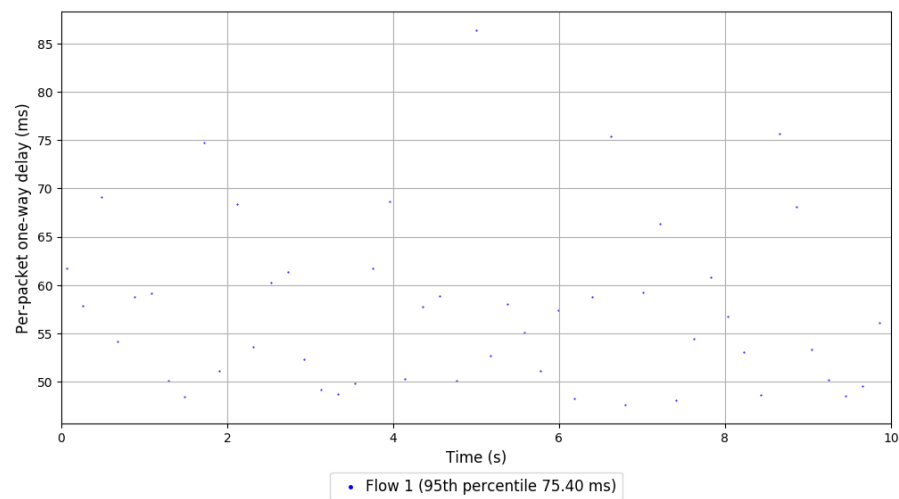
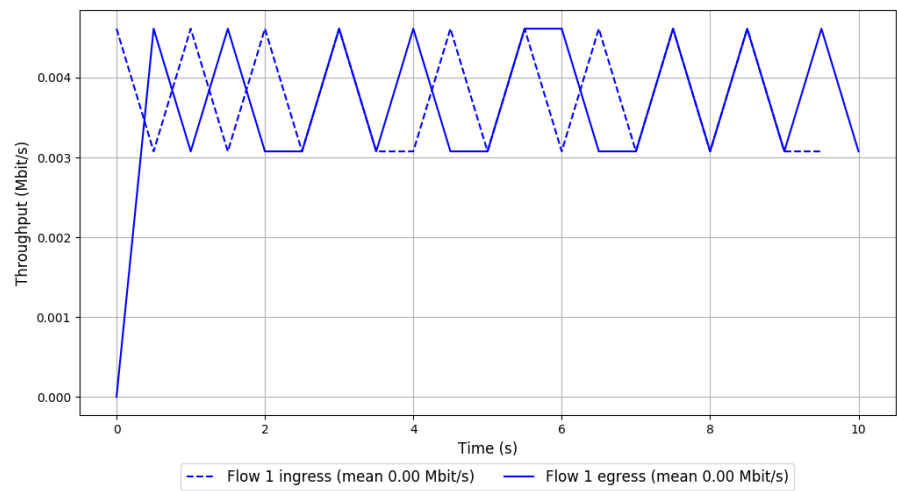
Start at: 2018-06-30 05:51:46

End at: 2018-06-30 05:52:16

Local clock offset: -0.542 ms

Remote clock offset: -30.983 ms

Run 3: Report of FillP-Sheep — Data Link

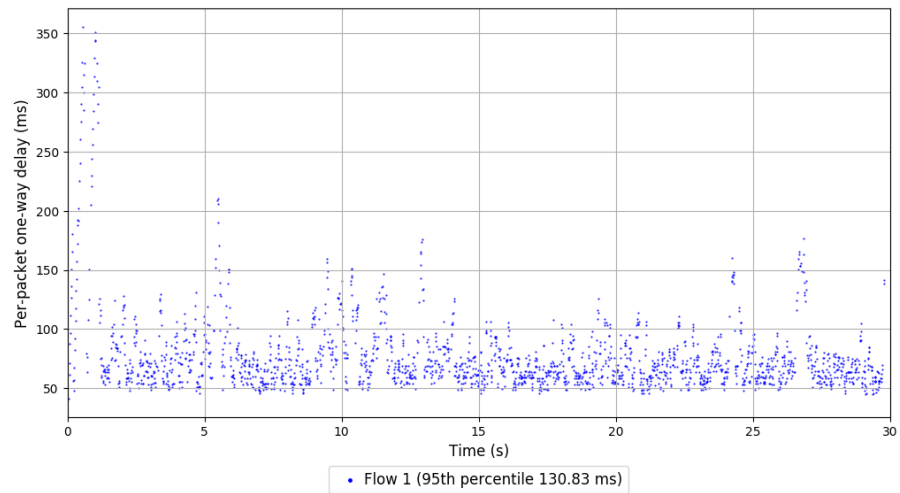
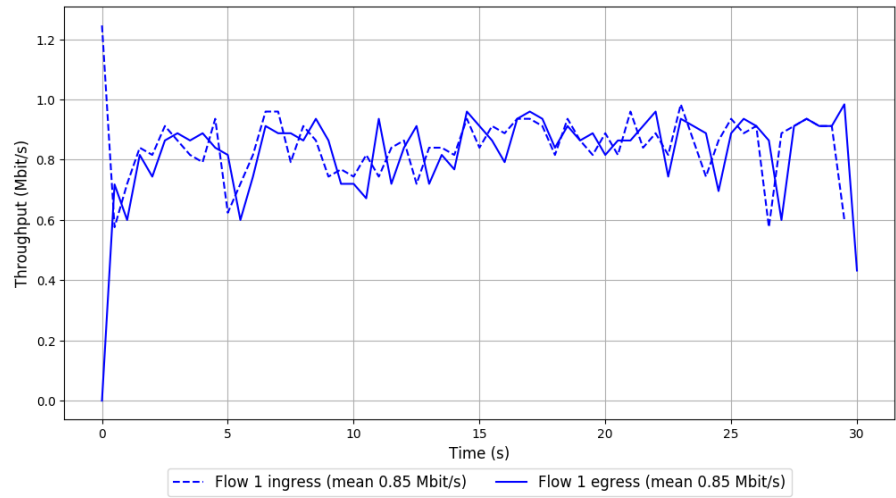


```
Run 1: Statistics of Indigo

Start at: 2018-06-30 05:07:59
End at: 2018-06-30 05:08:29
Local clock offset: 1.388 ms
Remote clock offset: 7.286 ms

# Below is generated by plot.py at 2018-06-30 05:59:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.85 Mbit/s
95th percentile per-packet one-way delay: 130.831 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 0.85 Mbit/s
95th percentile per-packet one-way delay: 130.831 ms
Loss rate: 1.04%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-06-30 05:26:52

End at: 2018-06-30 05:27:22

Local clock offset: 1.027 ms

Remote clock offset: 2.006 ms

Below is generated by plot.py at 2018-06-30 05:59:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.61 Mbit/s

95th percentile per-packet one-way delay: 150.602 ms

Loss rate: 1.31%

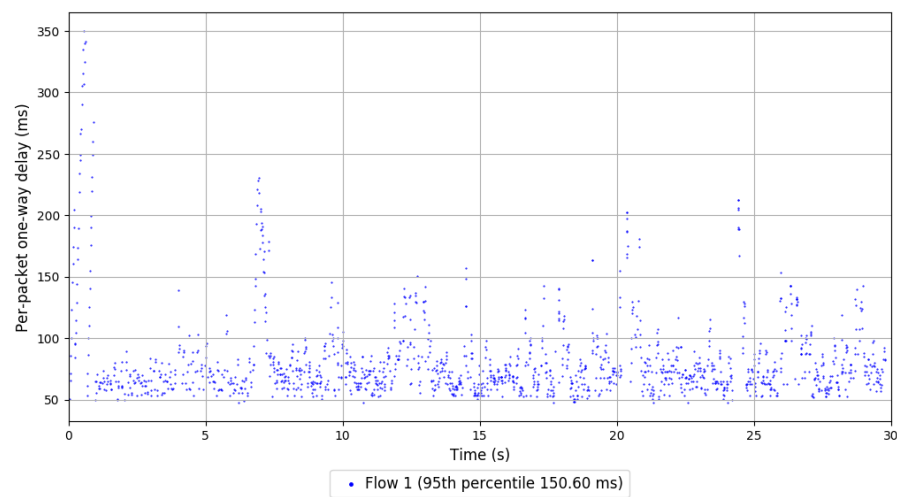
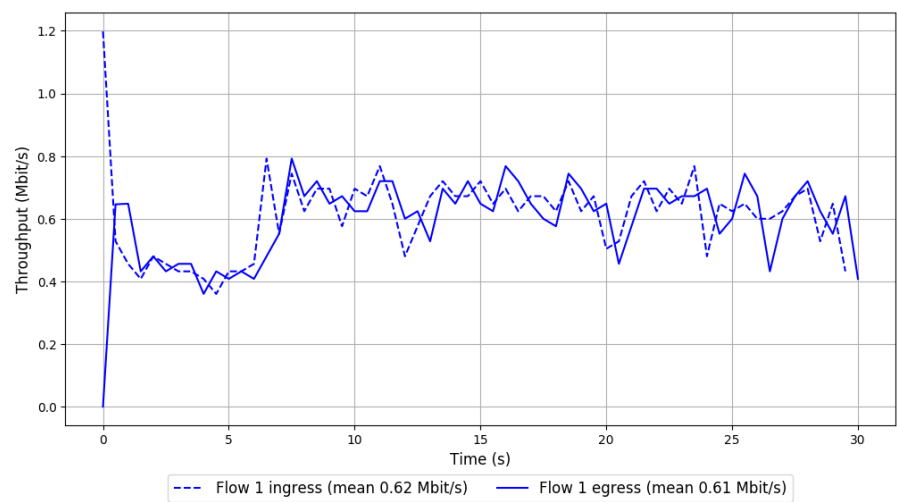
-- Flow 1:

Average throughput: 0.61 Mbit/s

95th percentile per-packet one-way delay: 150.602 ms

Loss rate: 1.31%

Run 2: Report of Indigo — Data Link

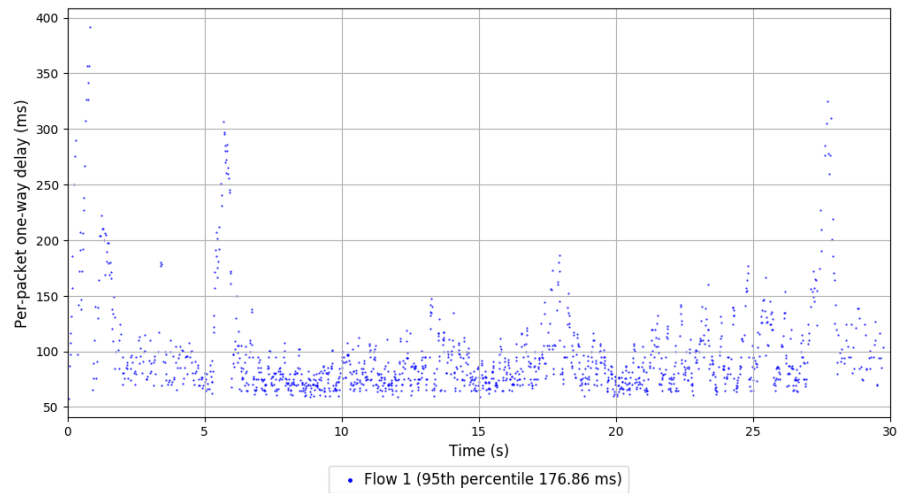
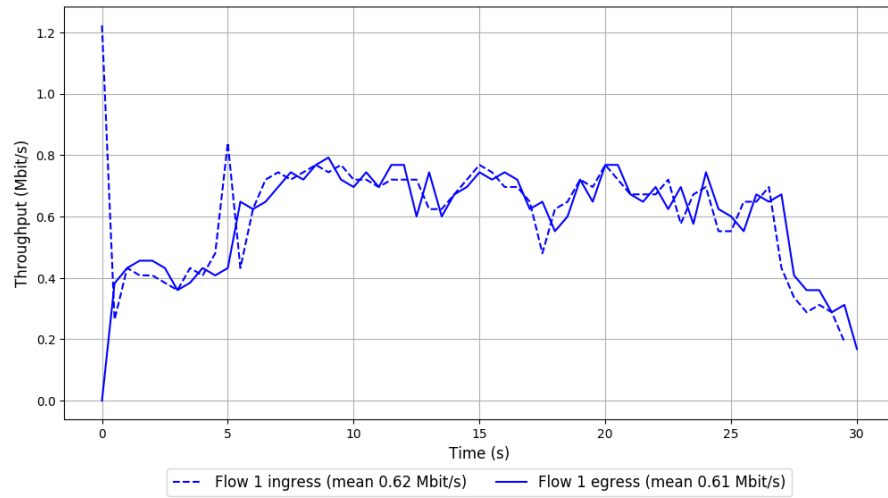


Run 3: Statistics of Indigo

Start at: 2018-06-30 05:45:18
End at: 2018-06-30 05:45:48
Local clock offset: 1.248 ms
Remote clock offset: -28.715 ms

Below is generated by plot.py at 2018-06-30 05:59:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 176.862 ms
Loss rate: 1.57%
-- Flow 1:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 176.862 ms
Loss rate: 1.57%

Run 3: Report of Indigo — Data Link

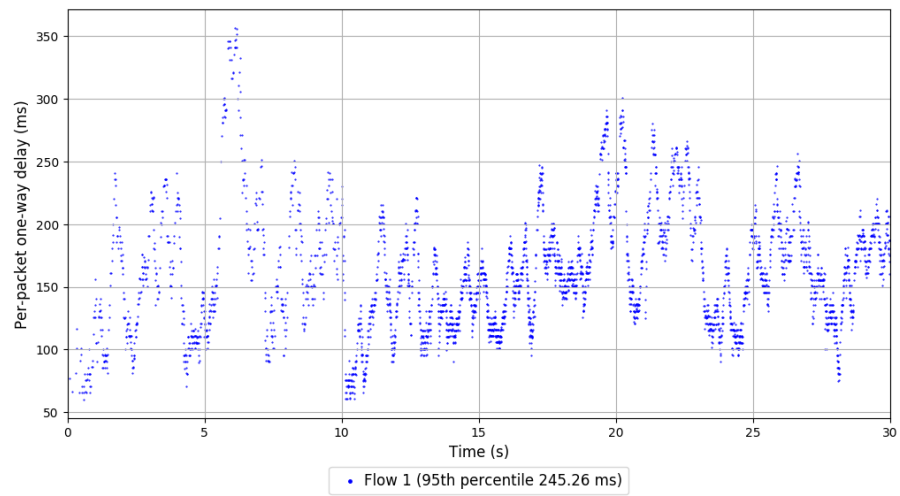
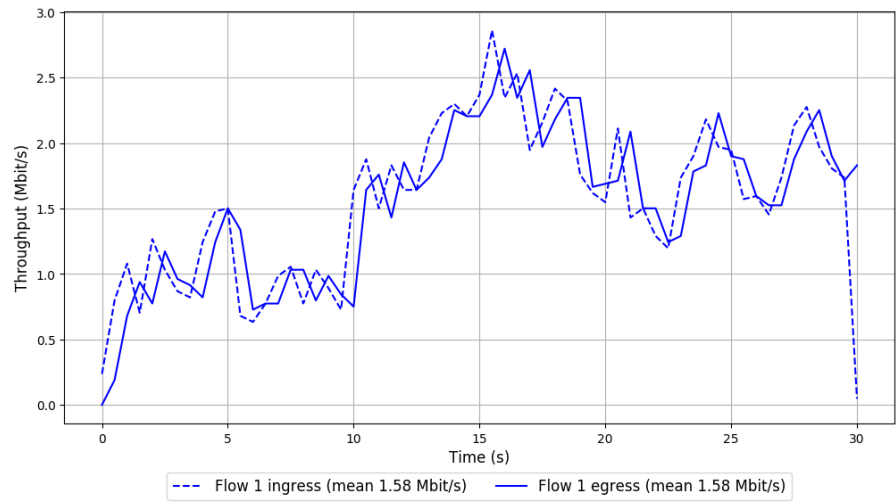


```
Run 1: Statistics of LEDBAT

Start at: 2018-06-30 05:03:39
End at: 2018-06-30 05:04:09
Local clock offset: 1.217 ms
Remote clock offset: -7.266 ms

# Below is generated by plot.py at 2018-06-30 05:59:05
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.58 Mbit/s
95th percentile per-packet one-way delay: 245.261 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 1.58 Mbit/s
95th percentile per-packet one-way delay: 245.261 ms
Loss rate: 0.69%
```

Run 1: Report of LEDBAT — Data Link

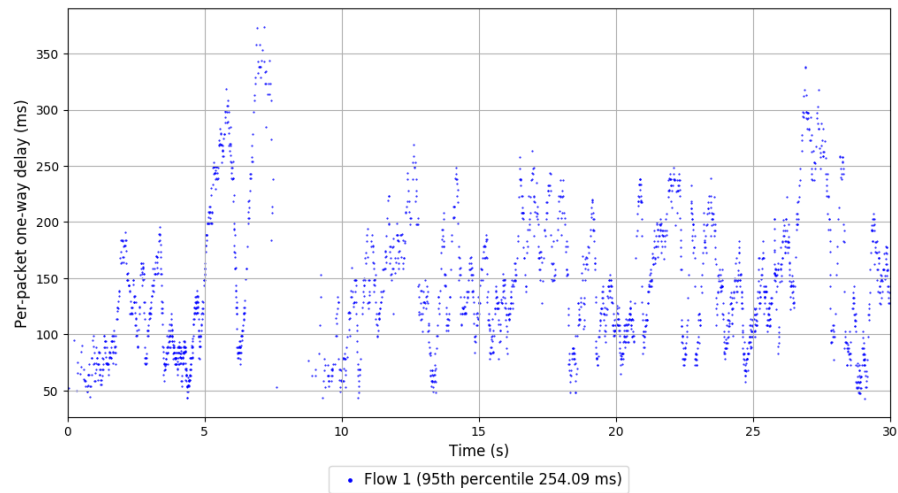
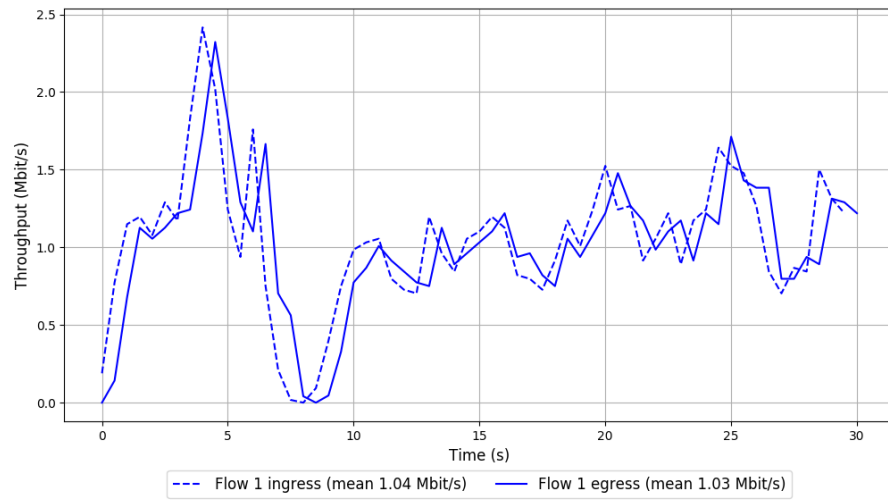


Run 2: Statistics of LEDBAT

Start at: 2018-06-30 05:22:30
End at: 2018-06-30 05:23:00
Local clock offset: 1.877 ms
Remote clock offset: 11.725 ms

Below is generated by plot.py at 2018-06-30 05:59:05
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.03 Mbit/s
95th percentile per-packet one-way delay: 254.091 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 1.03 Mbit/s
95th percentile per-packet one-way delay: 254.091 ms
Loss rate: 0.98%

Run 2: Report of LEDBAT — Data Link

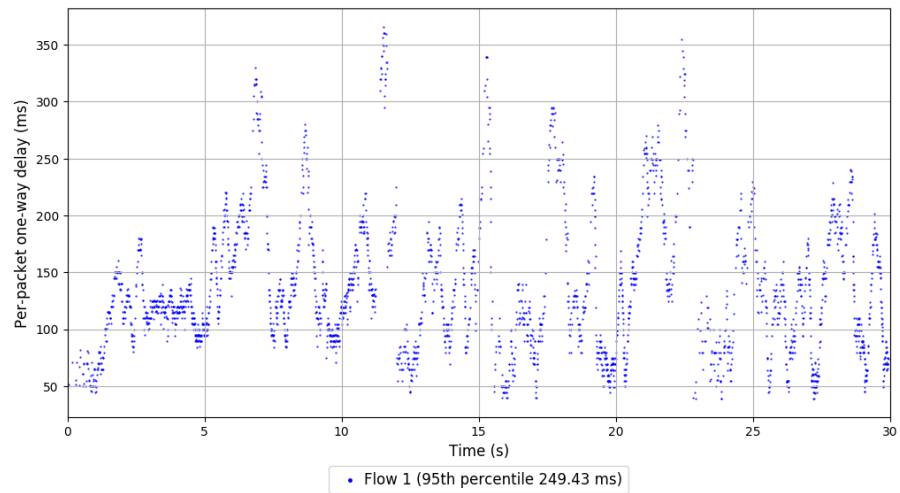
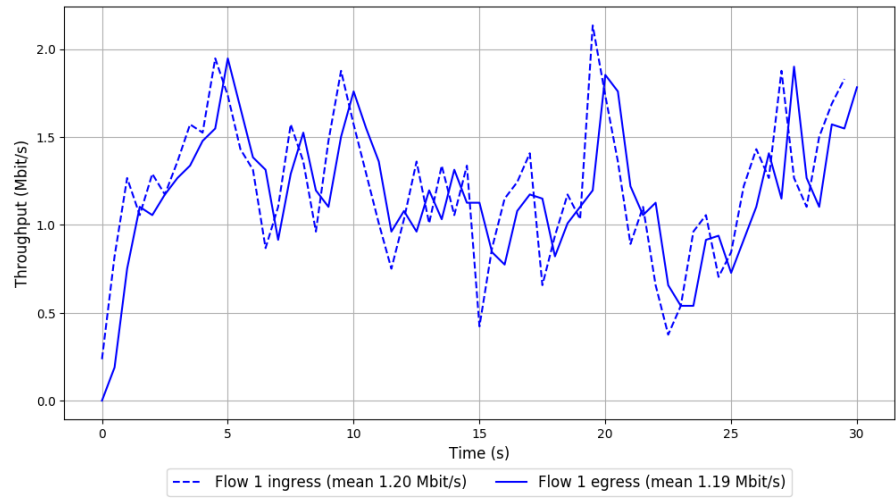


Run 3: Statistics of LEDBAT

Start at: 2018-06-30 05:40:59
End at: 2018-06-30 05:41:29
Local clock offset: -2.252 ms
Remote clock offset: -11.209 ms

Below is generated by plot.py at 2018-06-30 05:59:05
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 249.428 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 249.428 ms
Loss rate: 0.98%

Run 3: Report of LEDBAT — Data Link

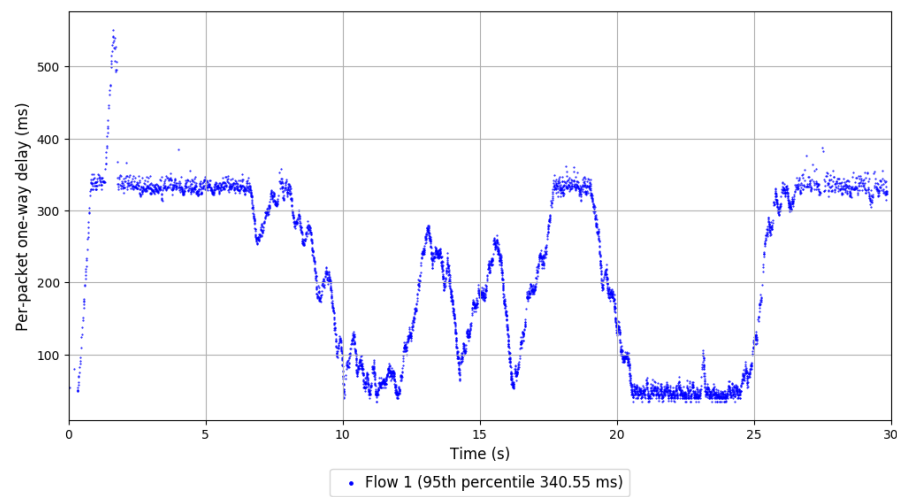
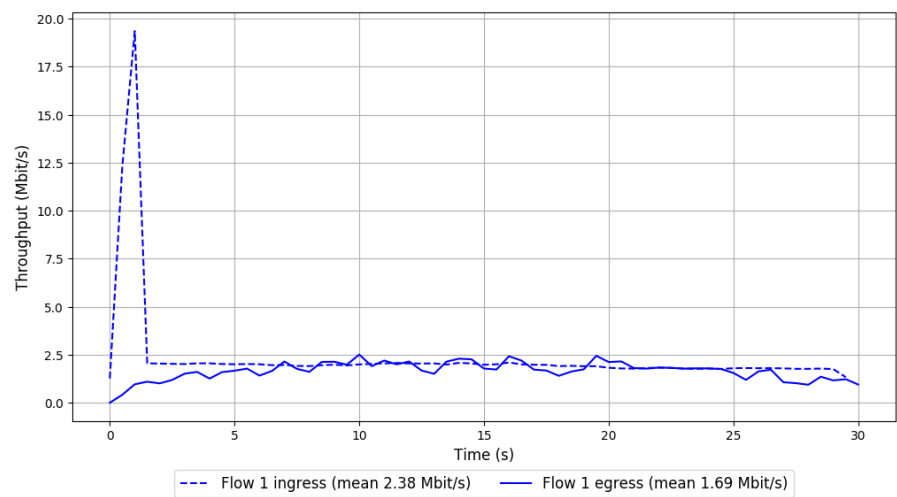


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-06-30 05:09:04
End at: 2018-06-30 05:09:34
Local clock offset: -1.1 ms
Remote clock offset: 10.682 ms

# Below is generated by plot.py at 2018-06-30 05:59:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.69 Mbit/s
95th percentile per-packet one-way delay: 340.554 ms
Loss rate: 29.17%
-- Flow 1:
Average throughput: 1.69 Mbit/s
95th percentile per-packet one-way delay: 340.554 ms
Loss rate: 29.17%
```

Run 1: Report of PCC-Allegro — Data Link

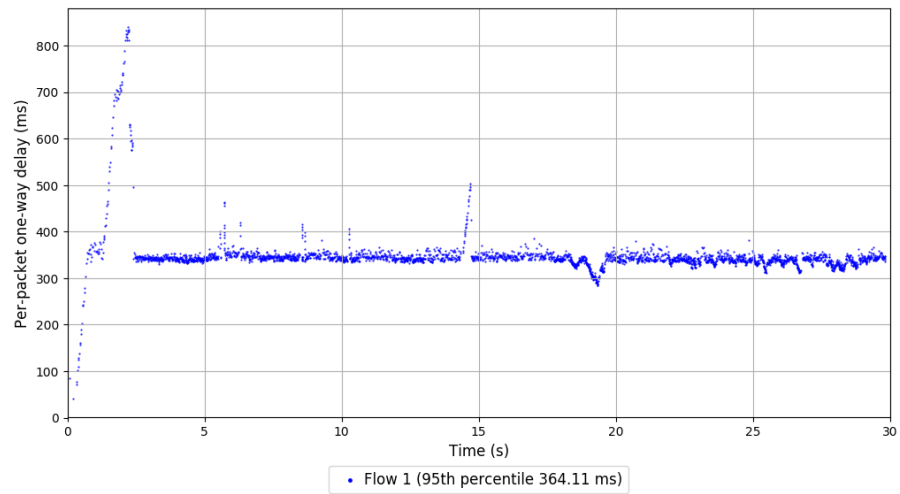
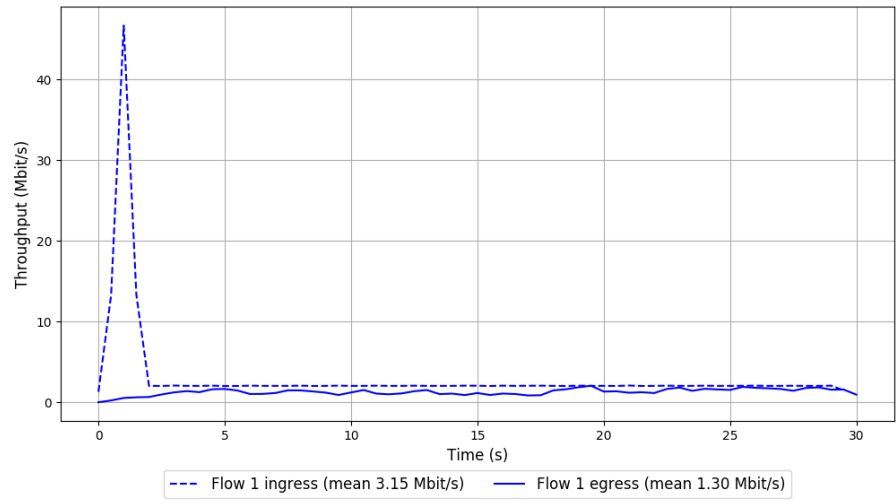


Run 2: Statistics of PCC-Allegro

Start at: 2018-06-30 05:27:57
End at: 2018-06-30 05:28:27
Local clock offset: -0.314 ms
Remote clock offset: -1.252 ms

Below is generated by plot.py at 2018-06-30 05:59:07
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.30 Mbit/s
95th percentile per-packet one-way delay: 364.105 ms
Loss rate: 58.71%
-- Flow 1:
Average throughput: 1.30 Mbit/s
95th percentile per-packet one-way delay: 364.105 ms
Loss rate: 58.71%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-06-30 05:46:22

End at: 2018-06-30 05:46:52

Local clock offset: -0.808 ms

Remote clock offset: -29.521 ms

Below is generated by plot.py at 2018-06-30 05:59:07

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.19 Mbit/s

95th percentile per-packet one-way delay: 380.836 ms

Loss rate: 64.08%

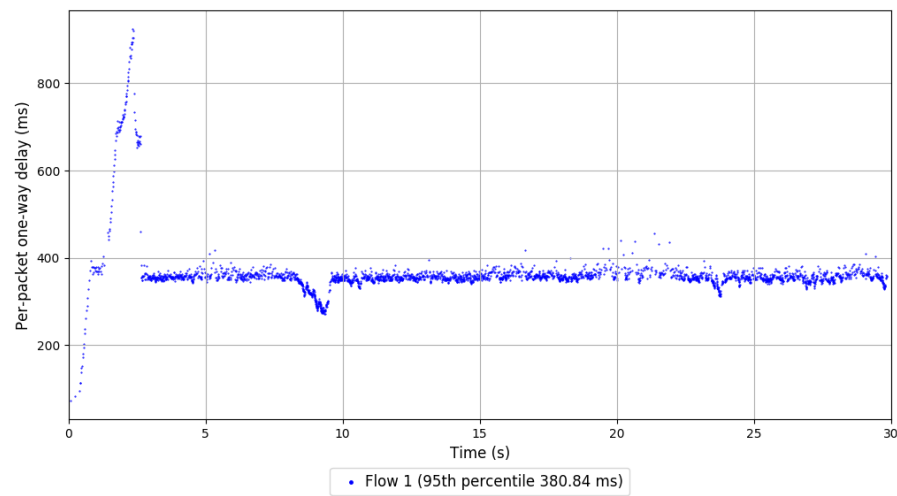
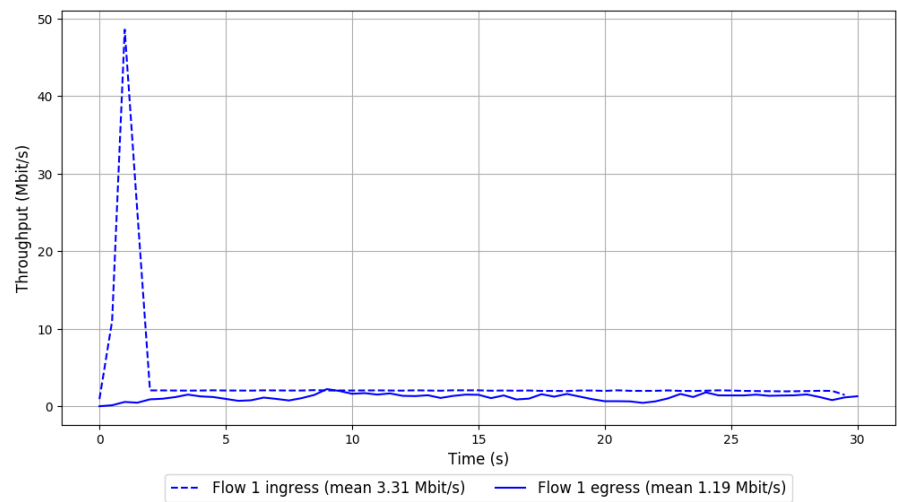
-- Flow 1:

Average throughput: 1.19 Mbit/s

95th percentile per-packet one-way delay: 380.836 ms

Loss rate: 64.08%

Run 3: Report of PCC-Allegro — Data Link

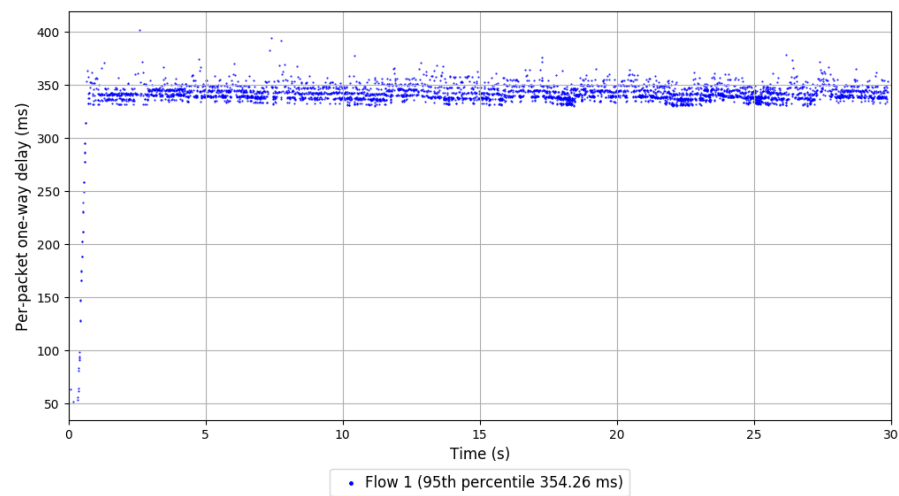
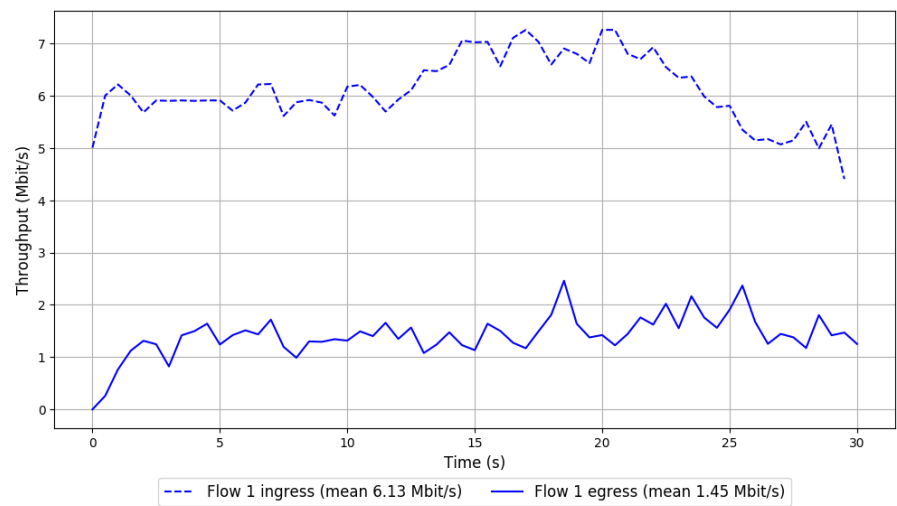


```
Run 1: Statistics of PCC-Expr

Start at: 2018-06-30 05:12:20
End at: 2018-06-30 05:12:50
Local clock offset: 1.207 ms
Remote clock offset: 10.853 ms

# Below is generated by plot.py at 2018-06-30 05:59:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.45 Mbit/s
95th percentile per-packet one-way delay: 354.263 ms
Loss rate: 76.43%
-- Flow 1:
Average throughput: 1.45 Mbit/s
95th percentile per-packet one-way delay: 354.263 ms
Loss rate: 76.43%
```

Run 1: Report of PCC-Expr — Data Link

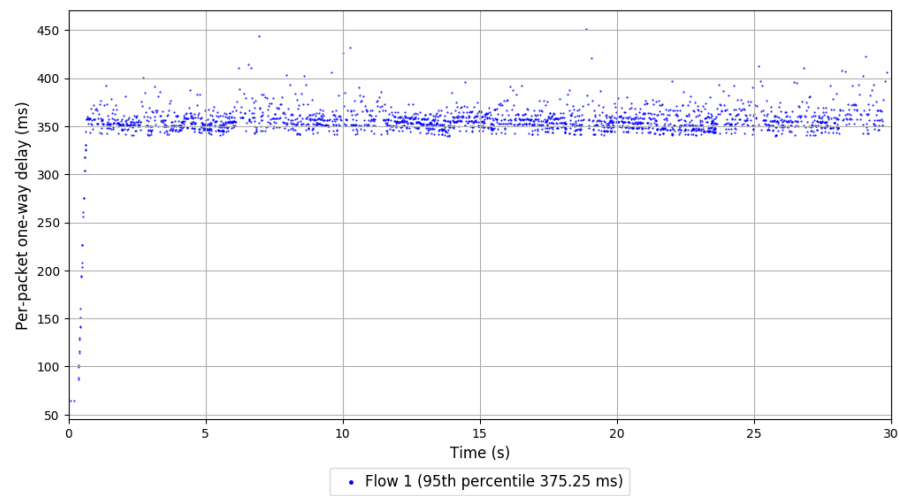
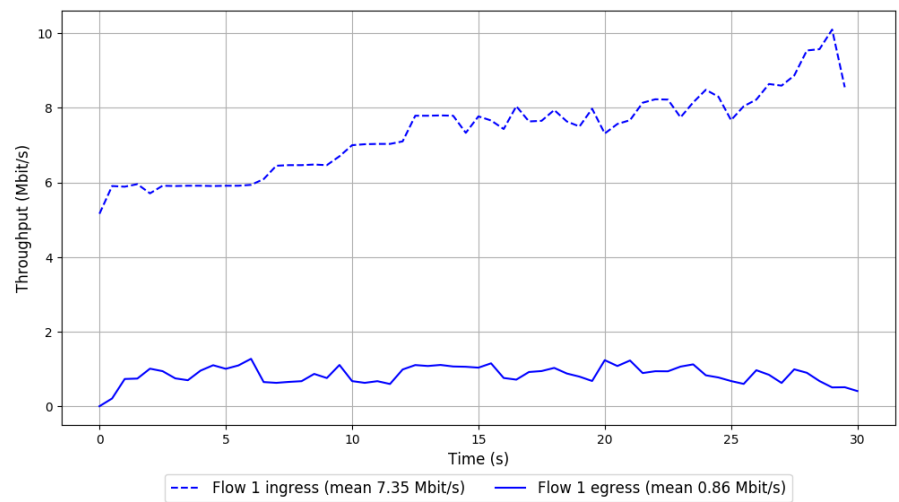


Run 2: Statistics of PCC-Expr

Start at: 2018-06-30 05:31:12
End at: 2018-06-30 05:31:42
Local clock offset: -0.777 ms
Remote clock offset: -14.243 ms

Below is generated by plot.py at 2018-06-30 05:59:16
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 375.249 ms
Loss rate: 88.29%
-- Flow 1:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 375.249 ms
Loss rate: 88.29%

Run 2: Report of PCC-Expr — Data Link

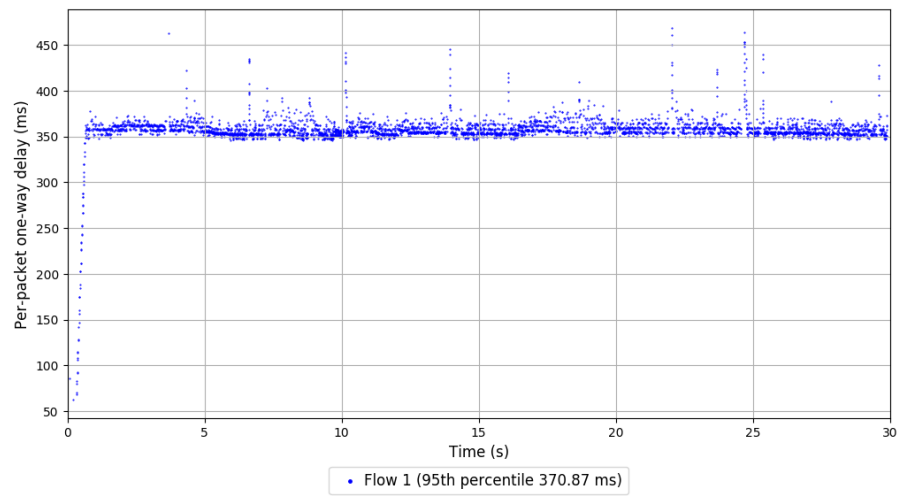
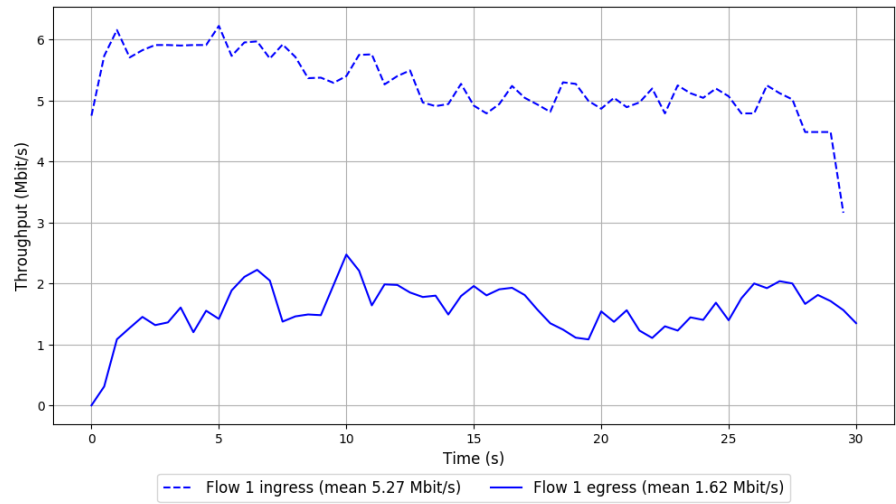


Run 3: Statistics of PCC-Expr

Start at: 2018-06-30 05:49:37
End at: 2018-06-30 05:50:07
Local clock offset: 1.879 ms
Remote clock offset: -31.448 ms

Below is generated by plot.py at 2018-06-30 05:59:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.62 Mbit/s
95th percentile per-packet one-way delay: 370.869 ms
Loss rate: 69.42%
-- Flow 1:
Average throughput: 1.62 Mbit/s
95th percentile per-packet one-way delay: 370.869 ms
Loss rate: 69.42%

Run 3: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-06-30 05:04:44

End at: 2018-06-30 05:05:14

Local clock offset: -0.57 ms

Remote clock offset: -6.629 ms

Below is generated by plot.py at 2018-06-30 05:59:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.72 Mbit/s

95th percentile per-packet one-way delay: 351.879 ms

Loss rate: 5.81%

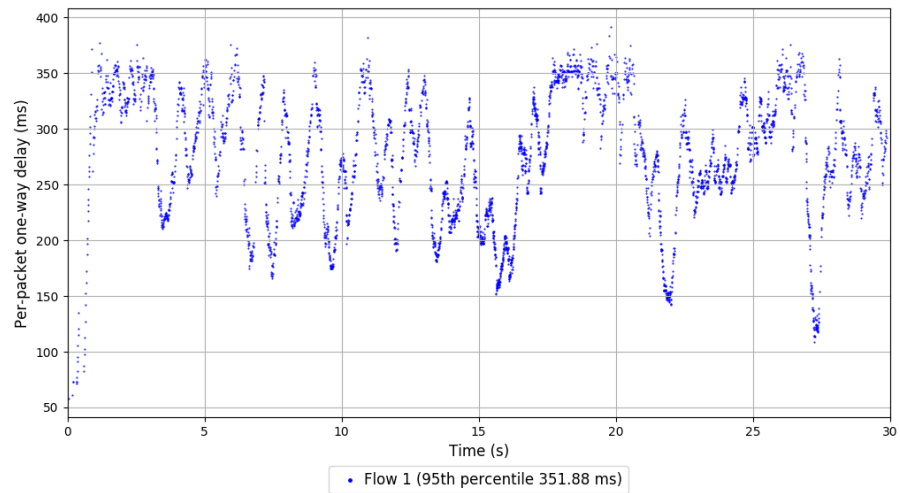
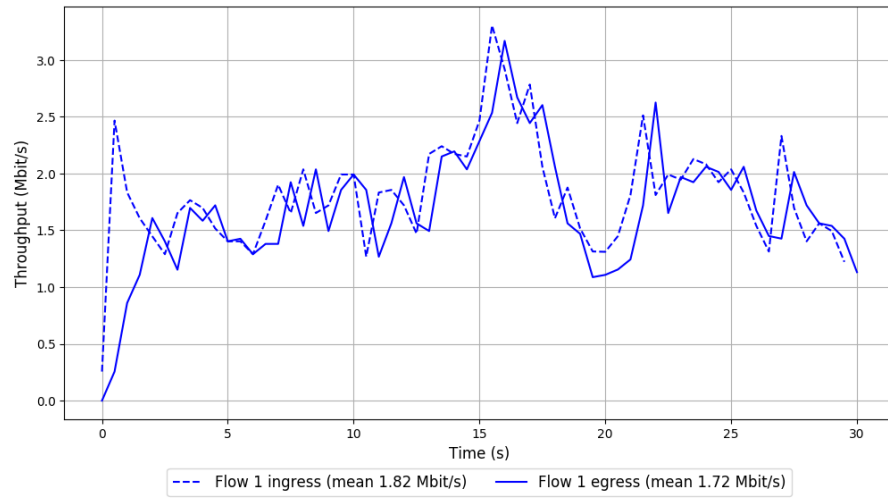
-- Flow 1:

Average throughput: 1.72 Mbit/s

95th percentile per-packet one-way delay: 351.879 ms

Loss rate: 5.81%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-06-30 05:23:35

End at: 2018-06-30 05:24:05

Local clock offset: -0.755 ms

Remote clock offset: 9.705 ms

Below is generated by plot.py at 2018-06-30 05:59:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.34 Mbit/s

95th percentile per-packet one-way delay: 341.557 ms

Loss rate: 8.52%

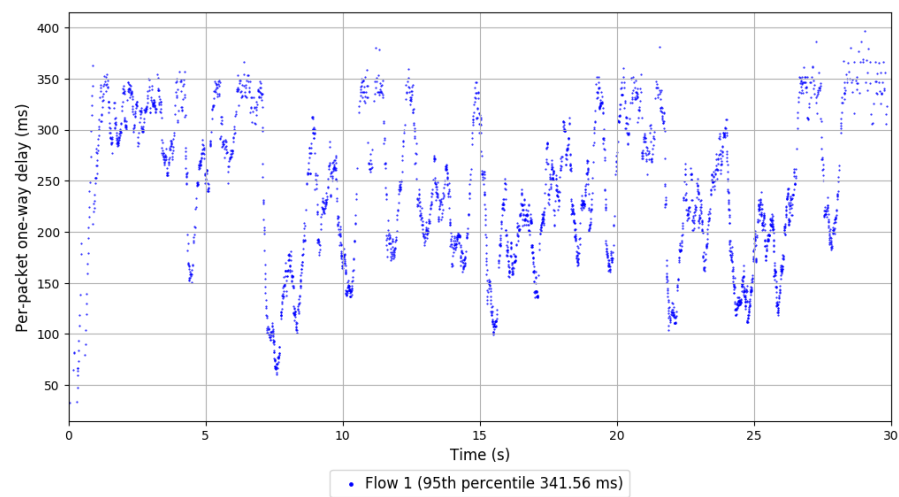
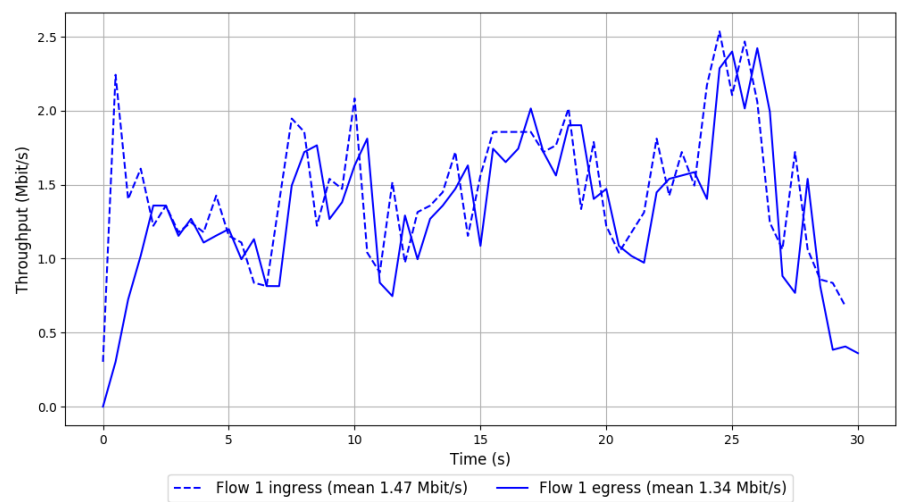
-- Flow 1:

Average throughput: 1.34 Mbit/s

95th percentile per-packet one-way delay: 341.557 ms

Loss rate: 8.52%

Run 2: Report of QUIC Cubic — Data Link

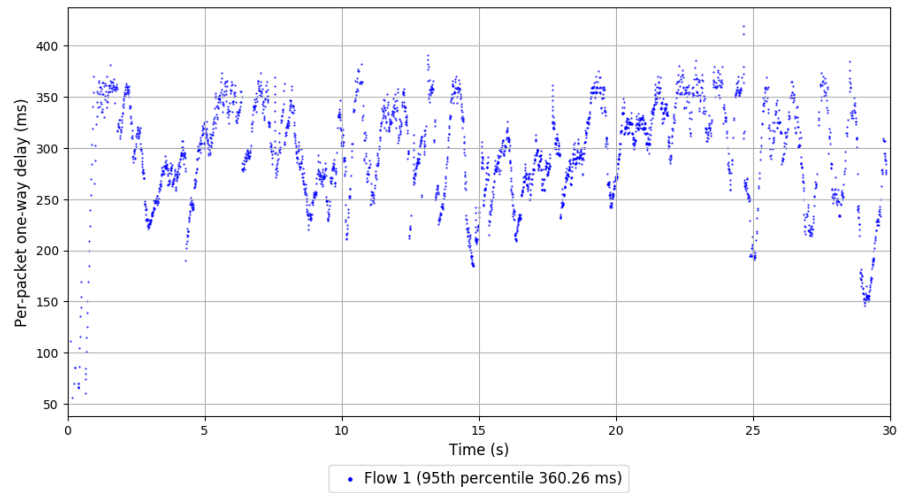
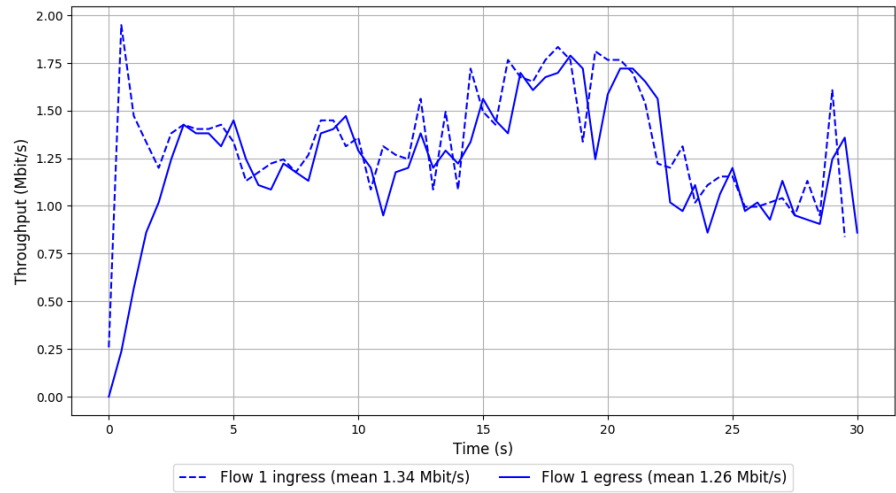


Run 3: Statistics of QUIC Cubic

Start at: 2018-06-30 05:42:04
End at: 2018-06-30 05:42:34
Local clock offset: 2.429 ms
Remote clock offset: -28.109 ms

Below is generated by plot.py at 2018-06-30 05:59:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.26 Mbit/s
95th percentile per-packet one-way delay: 360.259 ms
Loss rate: 6.60%
-- Flow 1:
Average throughput: 1.26 Mbit/s
95th percentile per-packet one-way delay: 360.259 ms
Loss rate: 6.60%

Run 3: Report of QUIC Cubic — Data Link

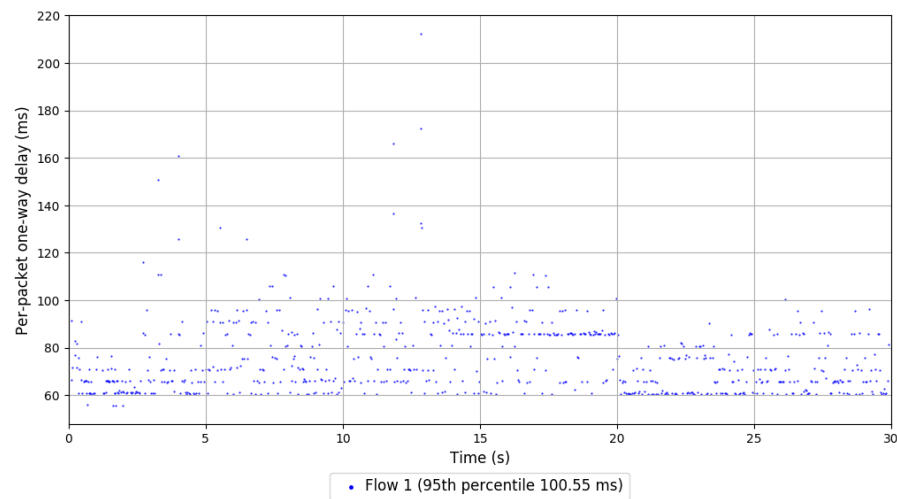
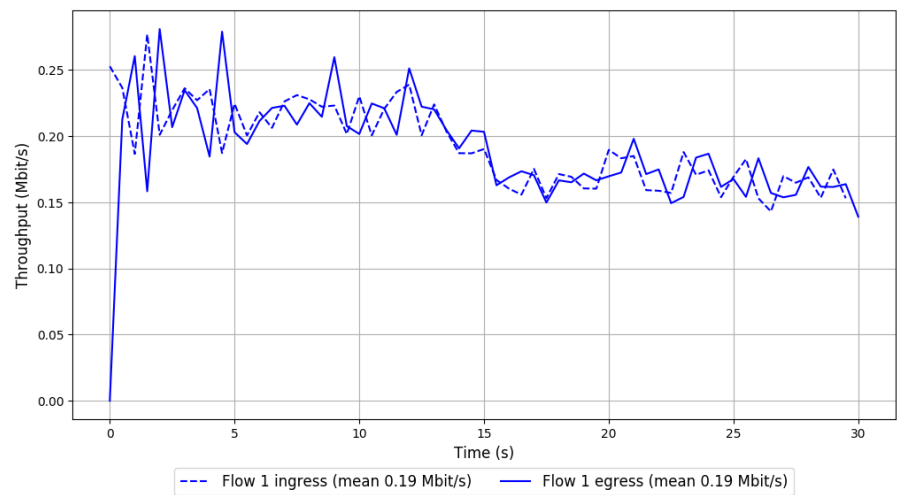


Run 1: Statistics of SCReAM

Start at: 2018-06-30 05:19:13
End at: 2018-06-30 05:19:43
Local clock offset: 2.121 ms
Remote clock offset: -3.625 ms

Below is generated by plot.py at 2018-06-30 05:59:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 100.548 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 100.548 ms
Loss rate: 0.33%

Run 1: Report of SReAM — Data Link

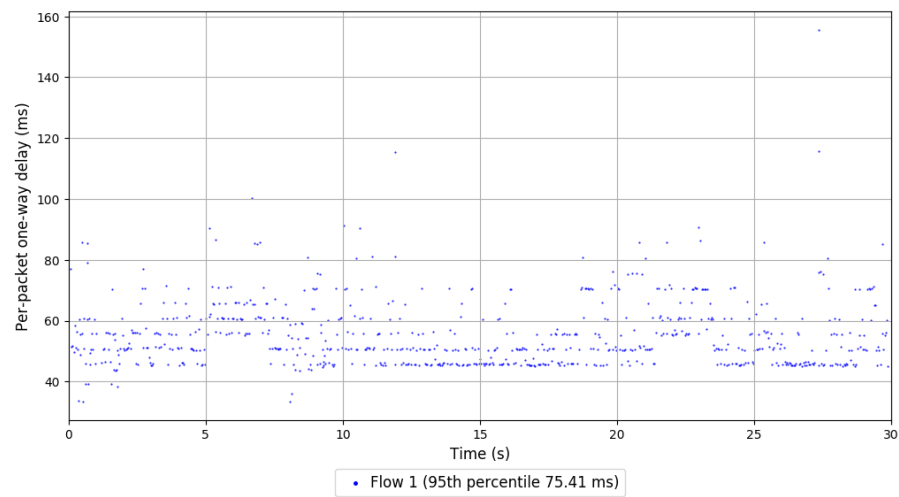
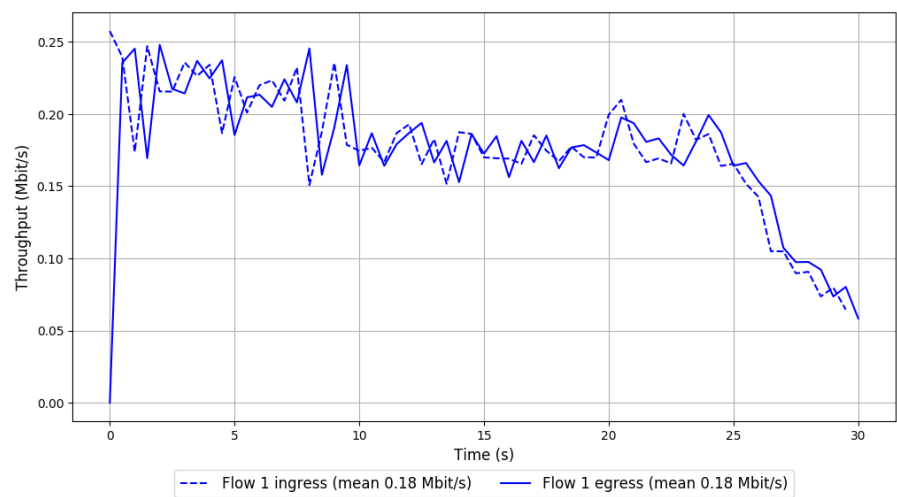


Run 2: Statistics of SCReAM

Start at: 2018-06-30 05:37:44
End at: 2018-06-30 05:38:14
Local clock offset: 0.921 ms
Remote clock offset: -9.349 ms

Below is generated by plot.py at 2018-06-30 05:59:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 75.411 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 75.411 ms
Loss rate: 0.11%

Run 2: Report of SReAM — Data Link

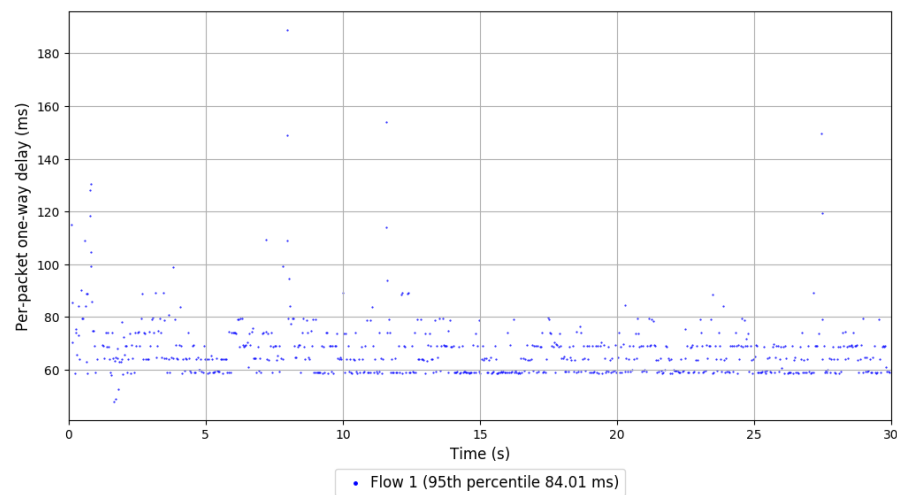
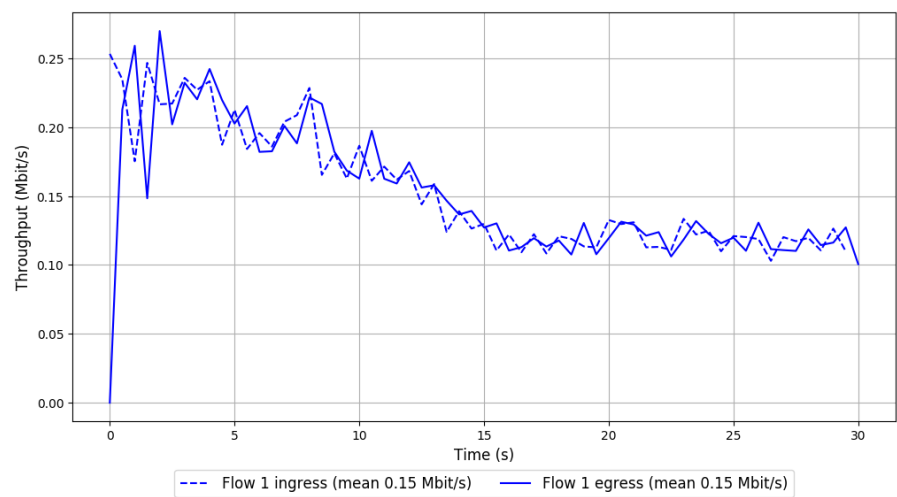


Run 3: Statistics of SCReAM

Start at: 2018-06-30 05:56:08
End at: 2018-06-30 05:56:38
Local clock offset: -1.295 ms
Remote clock offset: -33.309 ms

Below is generated by plot.py at 2018-06-30 05:59:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 84.014 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 84.014 ms
Loss rate: 0.20%

Run 3: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-06-30 05:11:15

End at: 2018-06-30 05:11:45

Local clock offset: -0.844 ms

Remote clock offset: 8.641 ms

Below is generated by plot.py at 2018-06-30 05:59:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.28 Mbit/s

95th percentile per-packet one-way delay: 83.837 ms

Loss rate: 0.01%

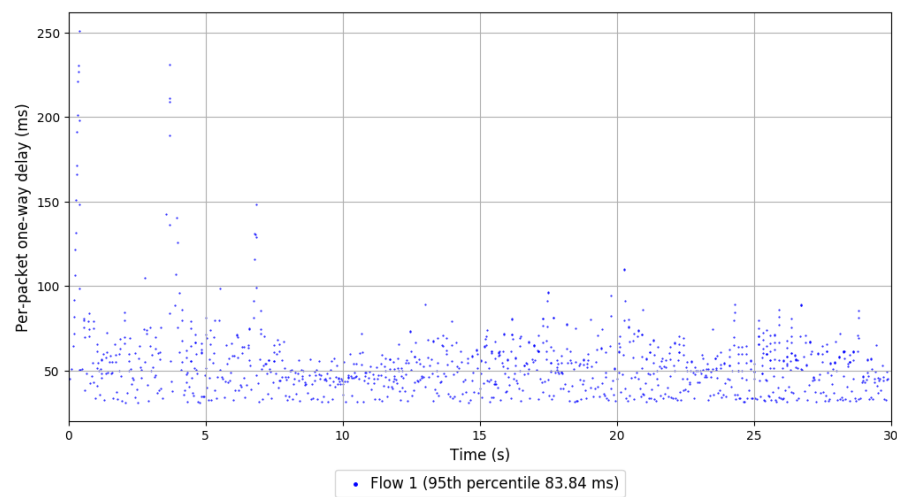
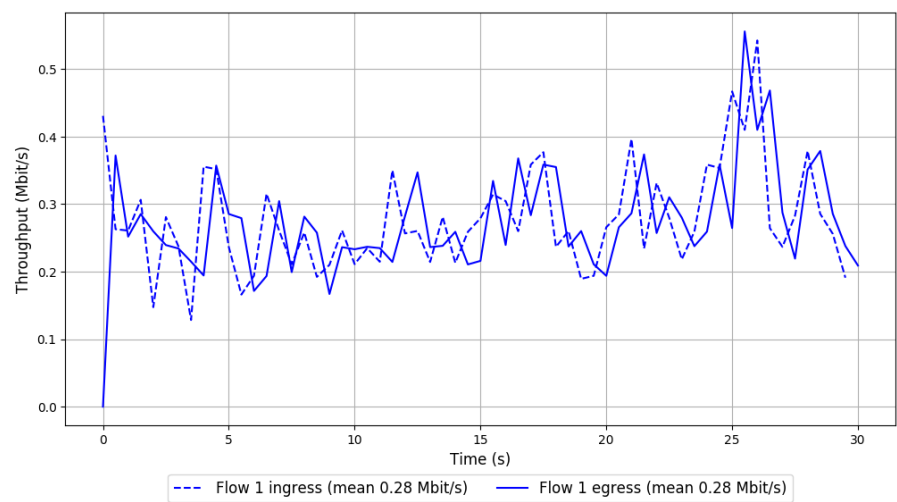
-- Flow 1:

Average throughput: 0.28 Mbit/s

95th percentile per-packet one-way delay: 83.837 ms

Loss rate: 0.01%

Run 1: Report of Sprout — Data Link

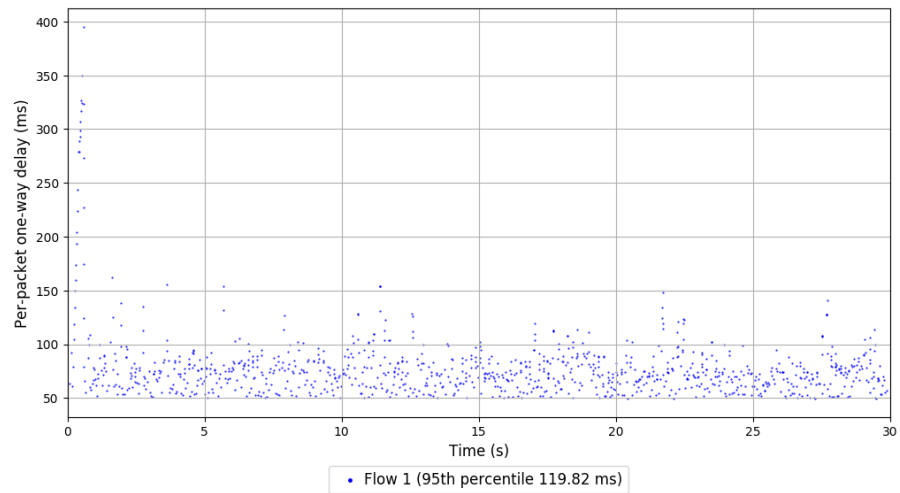
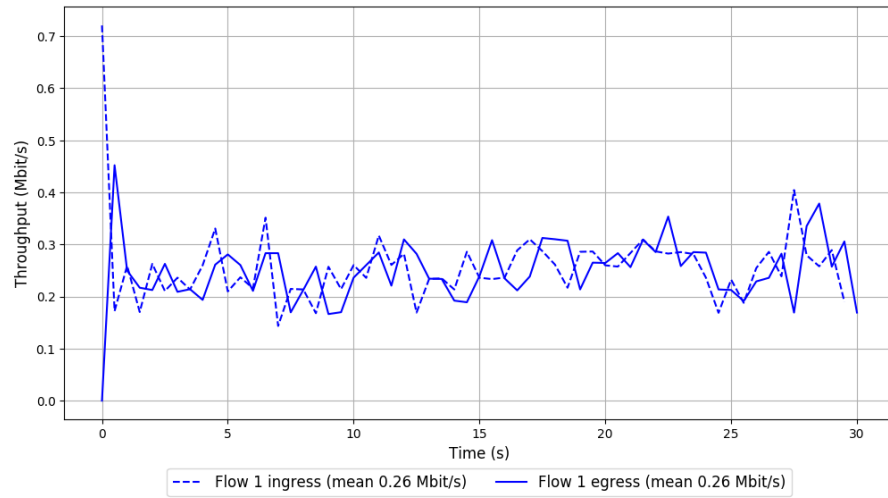


Run 2: Statistics of Sprout

Start at: 2018-06-30 05:30:07
End at: 2018-06-30 05:30:37
Local clock offset: 2.392 ms
Remote clock offset: -18.843 ms

Below is generated by plot.py at 2018-06-30 05:59:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 119.816 ms
Loss rate: 1.66%
-- Flow 1:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 119.816 ms
Loss rate: 1.66%

Run 2: Report of Sprout — Data Link

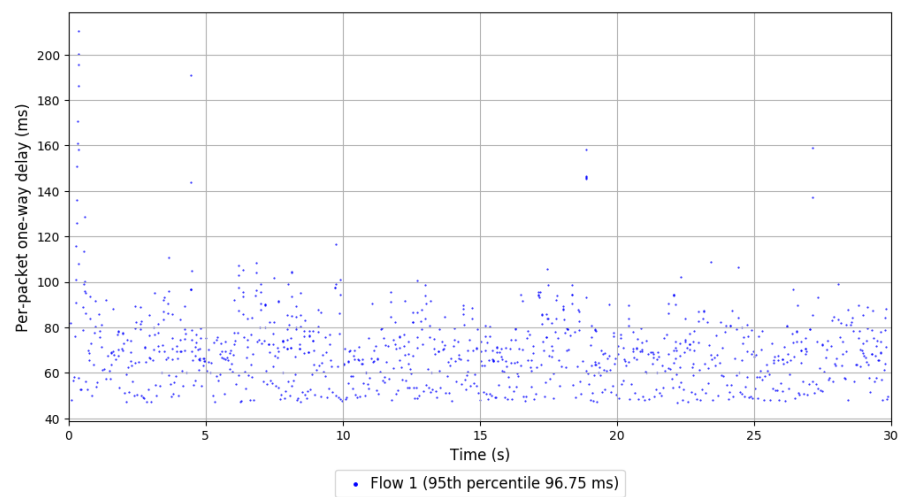
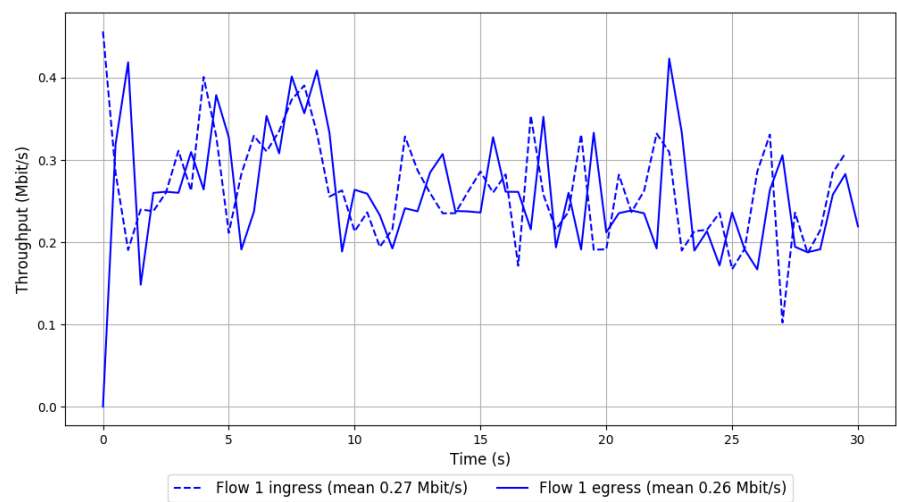


Run 3: Statistics of Sprout

Start at: 2018-06-30 05:48:32
End at: 2018-06-30 05:49:02
Local clock offset: -2.378 ms
Remote clock offset: -30.582 ms

Below is generated by plot.py at 2018-06-30 05:59:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 96.746 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 96.746 ms
Loss rate: 0.58%

Run 3: Report of Sprout — Data Link

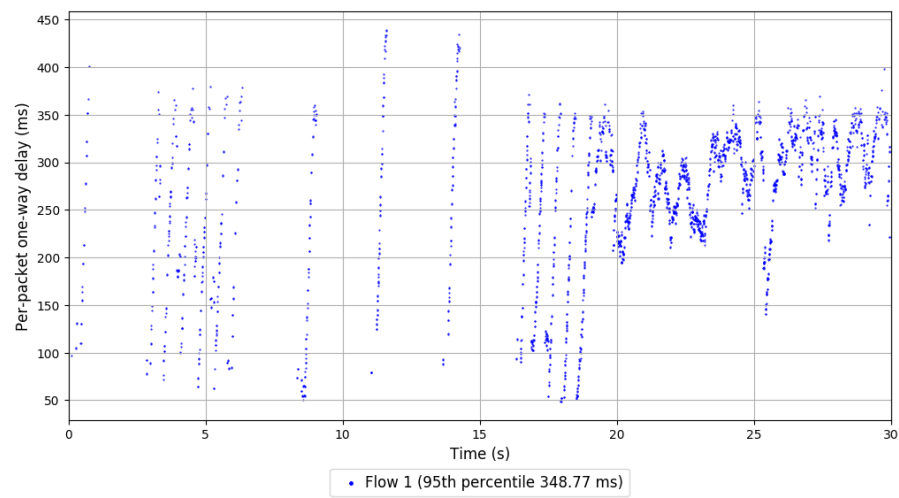
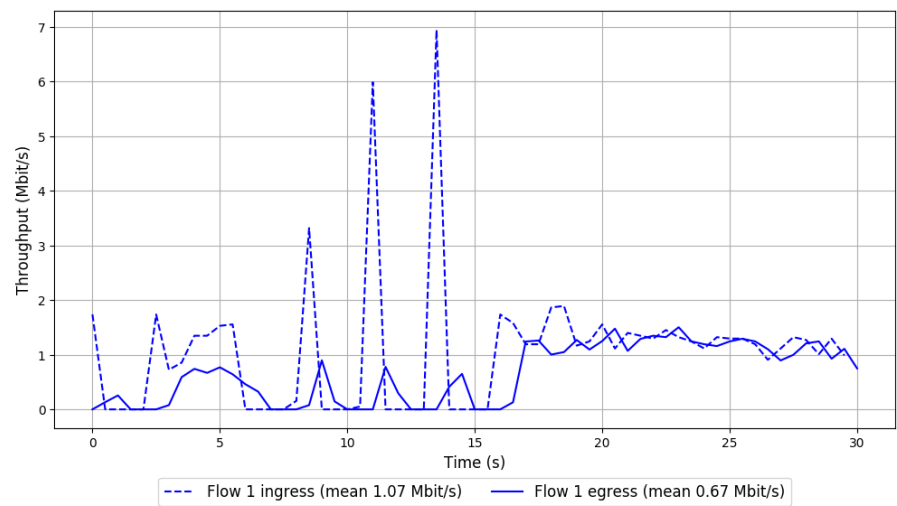


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-06-30 05:17:01
End at: 2018-06-30 05:17:31
Local clock offset: 0.06 ms
Remote clock offset: 5.707 ms

# Below is generated by plot.py at 2018-06-30 05:59:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 348.766 ms
Loss rate: 37.78%
-- Flow 1:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 348.766 ms
Loss rate: 37.78%
```

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

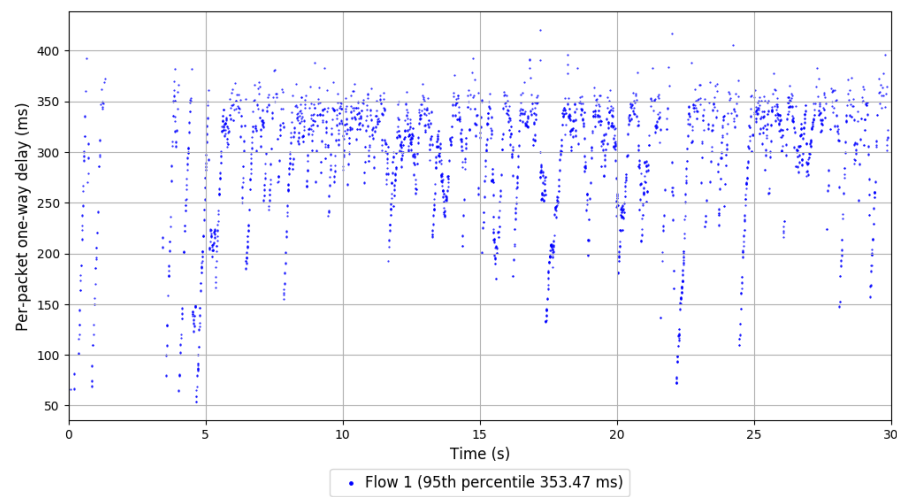
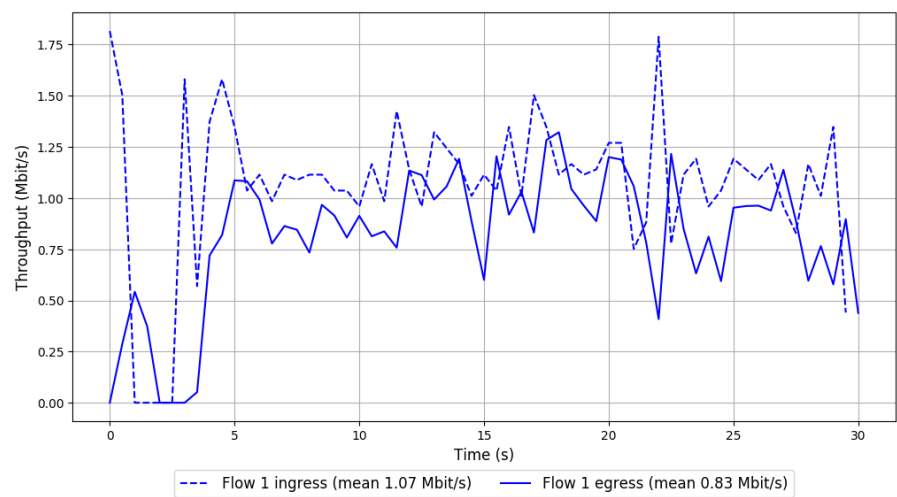


Run 2: Statistics of TaoVA-100x

Start at: 2018-06-30 05:35:33
End at: 2018-06-30 05:36:03
Local clock offset: -7.789 ms
Remote clock offset: -21.215 ms

Below is generated by plot.py at 2018-06-30 05:59:19
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 353.468 ms
Loss rate: 22.72%
-- Flow 1:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 353.468 ms
Loss rate: 22.72%

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

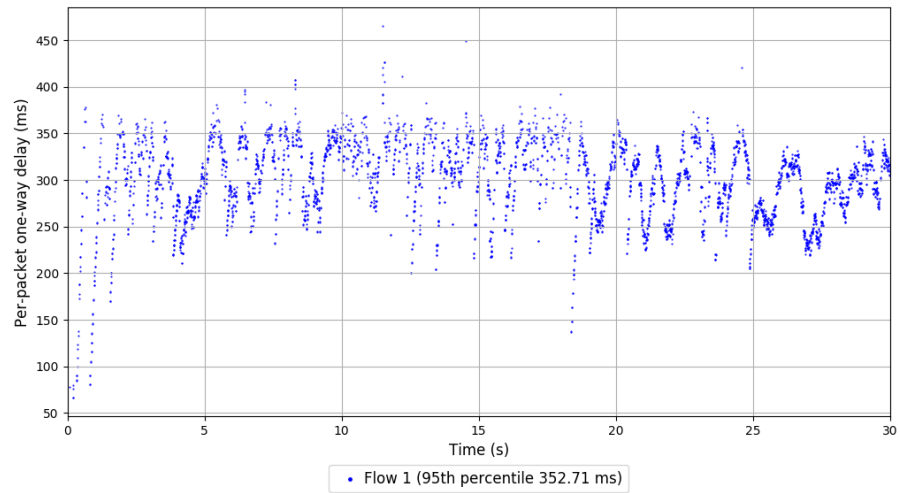
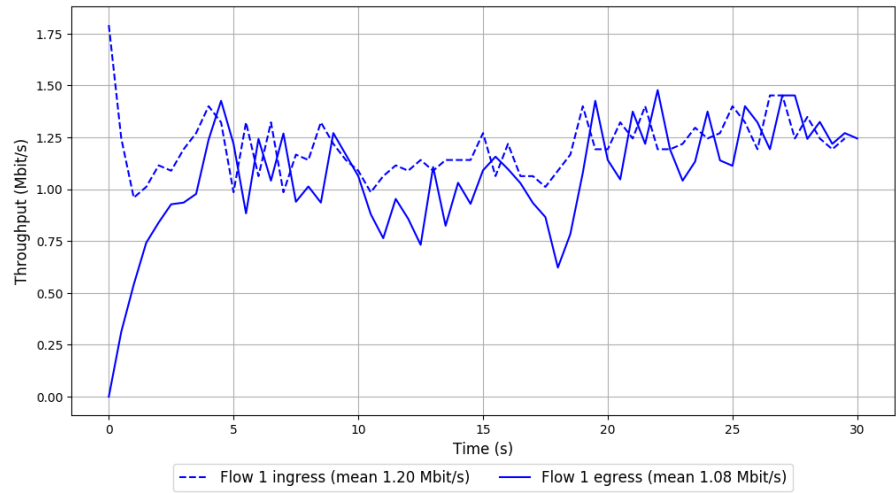


Run 3: Statistics of TaoVA-100x

Start at: 2018-06-30 05:53:58
End at: 2018-06-30 05:54:28
Local clock offset: -1.902 ms
Remote clock offset: -31.969 ms

Below is generated by plot.py at 2018-06-30 05:59:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.08 Mbit/s
95th percentile per-packet one-way delay: 352.707 ms
Loss rate: 10.72%
-- Flow 1:
Average throughput: 1.08 Mbit/s
95th percentile per-packet one-way delay: 352.707 ms
Loss rate: 10.72%

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

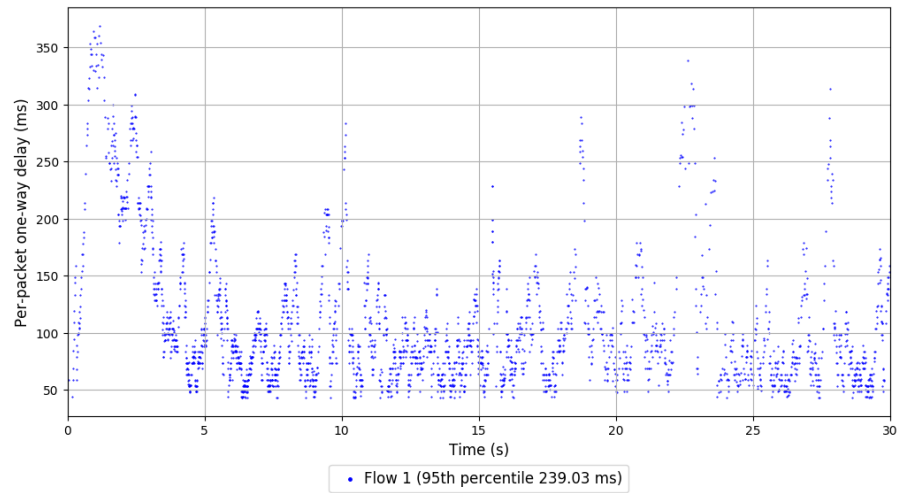
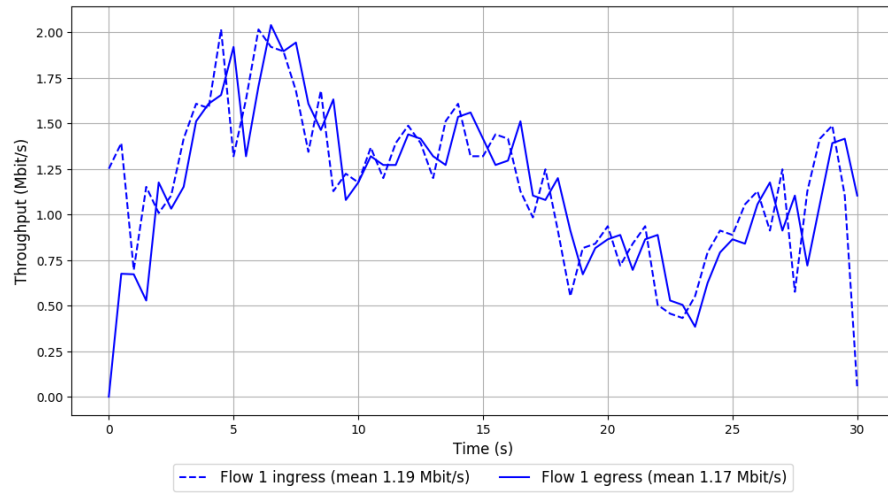


Run 1: Statistics of TCP Vegas

Start at: 2018-06-30 05:15:42
End at: 2018-06-30 05:16:12
Local clock offset: -0.136 ms
Remote clock offset: 11.731 ms

Below is generated by plot.py at 2018-06-30 05:59:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.17 Mbit/s
95th percentile per-packet one-way delay: 239.028 ms
Loss rate: 1.81%
-- Flow 1:
Average throughput: 1.17 Mbit/s
95th percentile per-packet one-way delay: 239.028 ms
Loss rate: 1.81%

Run 1: Report of TCP Vegas — Data Link

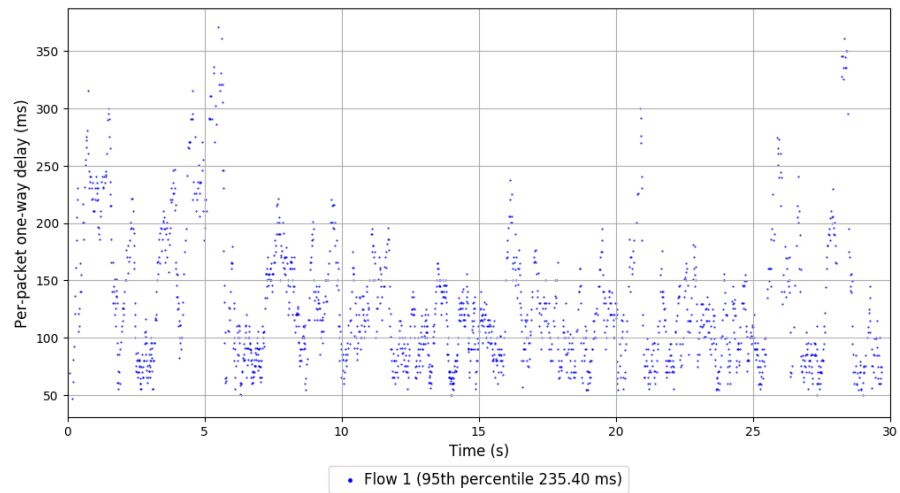
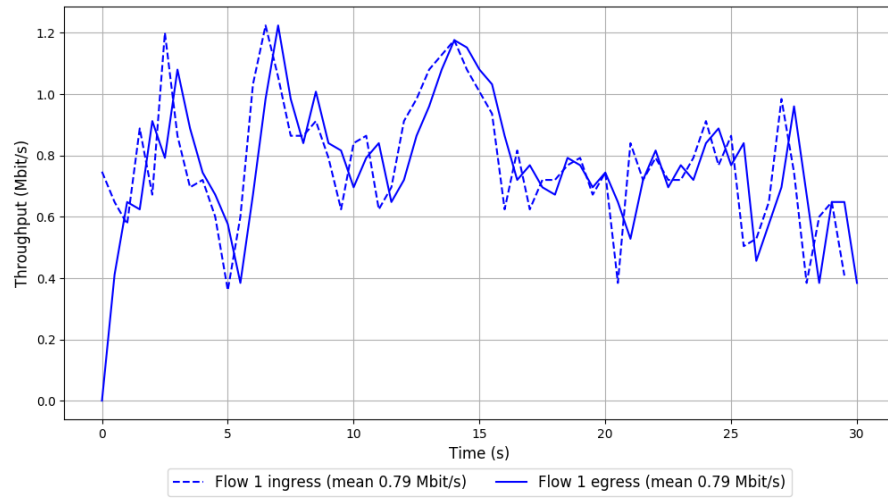


Run 2: Statistics of TCP Vegas

Start at: 2018-06-30 05:34:28
End at: 2018-06-30 05:34:58
Local clock offset: -0.365 ms
Remote clock offset: -13.512 ms

Below is generated by plot.py at 2018-06-30 05:59:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.79 Mbit/s
95th percentile per-packet one-way delay: 235.397 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 0.79 Mbit/s
95th percentile per-packet one-way delay: 235.397 ms
Loss rate: 0.41%

Run 2: Report of TCP Vegas — Data Link

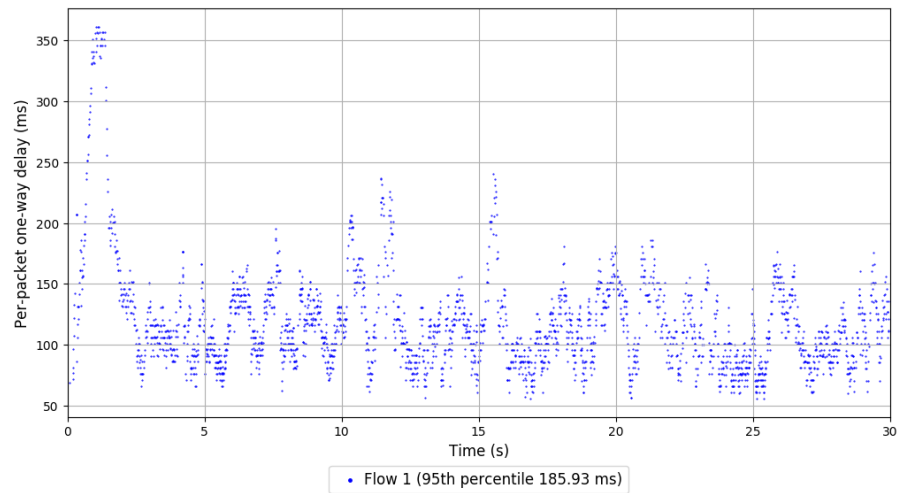
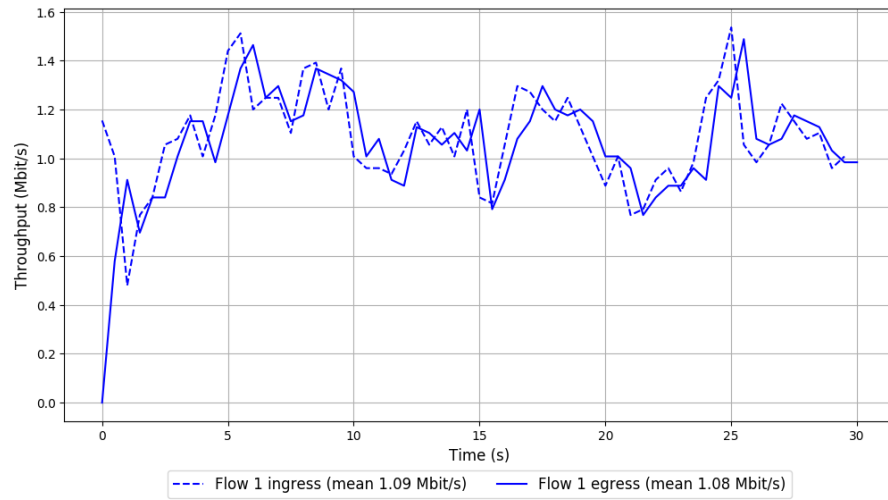


Run 3: Statistics of TCP Vegas

Start at: 2018-06-30 05:52:53
End at: 2018-06-30 05:53:23
Local clock offset: -0.552 ms
Remote clock offset: -31.585 ms

Below is generated by plot.py at 2018-06-30 05:59:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.08 Mbit/s
95th percentile per-packet one-way delay: 185.931 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 1.08 Mbit/s
95th percentile per-packet one-way delay: 185.931 ms
Loss rate: 0.66%

Run 3: Report of TCP Vegas — Data Link

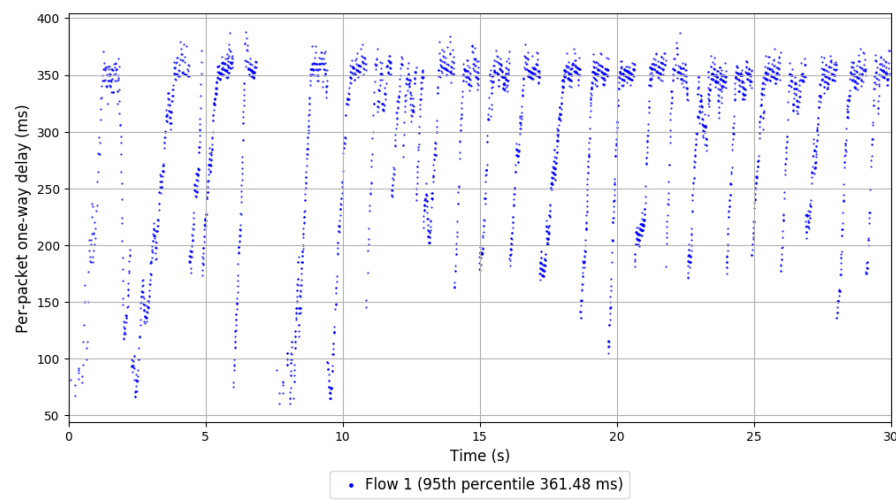
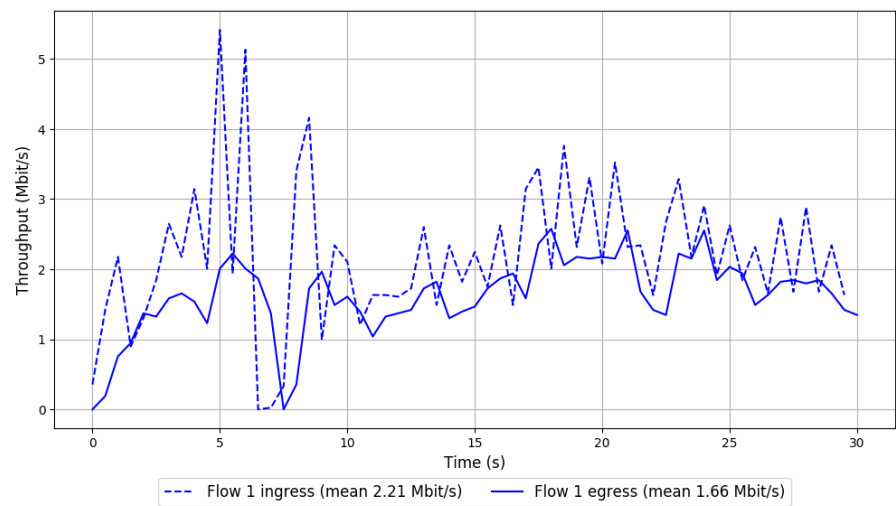


Run 1: Statistics of Verus

Start at: 2018-06-30 05:05:48
End at: 2018-06-30 05:06:18
Local clock offset: 2.157 ms
Remote clock offset: -5.641 ms

Below is generated by plot.py at 2018-06-30 05:59:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.66 Mbit/s
95th percentile per-packet one-way delay: 361.481 ms
Loss rate: 25.25%
-- Flow 1:
Average throughput: 1.66 Mbit/s
95th percentile per-packet one-way delay: 361.481 ms
Loss rate: 25.25%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2018-06-30 05:24:41

End at: 2018-06-30 05:25:11

Local clock offset: -0.383 ms

Remote clock offset: 5.676 ms

Below is generated by plot.py at 2018-06-30 05:59:23

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.34 Mbit/s

95th percentile per-packet one-way delay: 350.816 ms

Loss rate: 27.71%

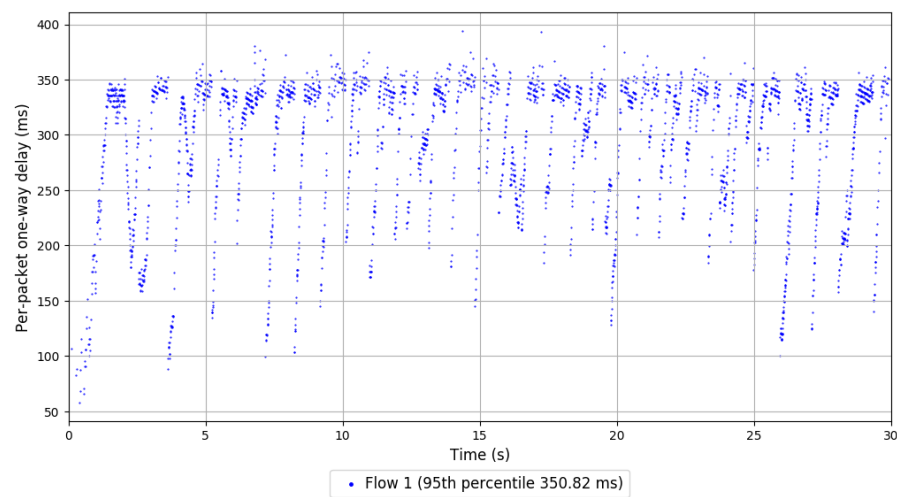
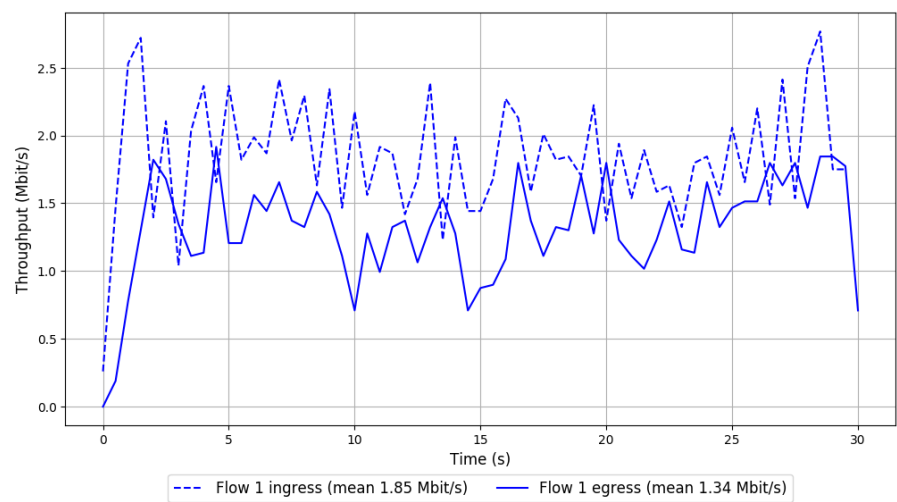
-- Flow 1:

Average throughput: 1.34 Mbit/s

95th percentile per-packet one-way delay: 350.816 ms

Loss rate: 27.71%

Run 2: Report of Verus — Data Link

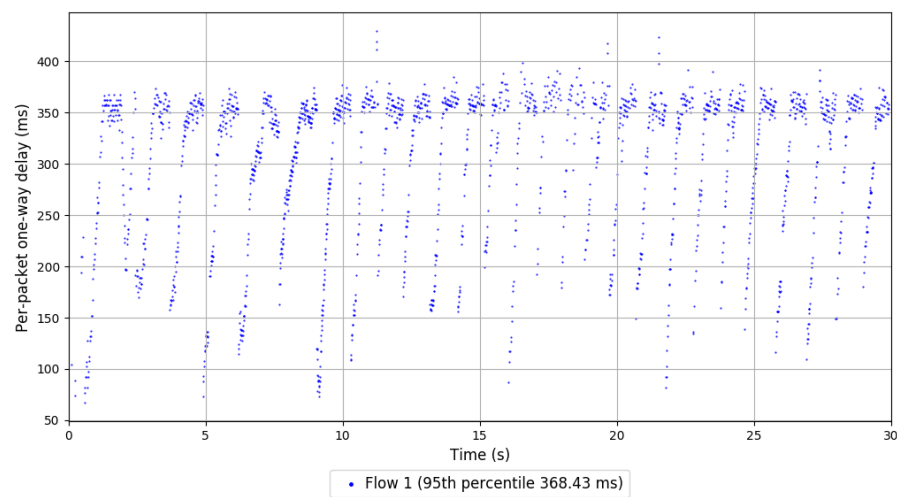
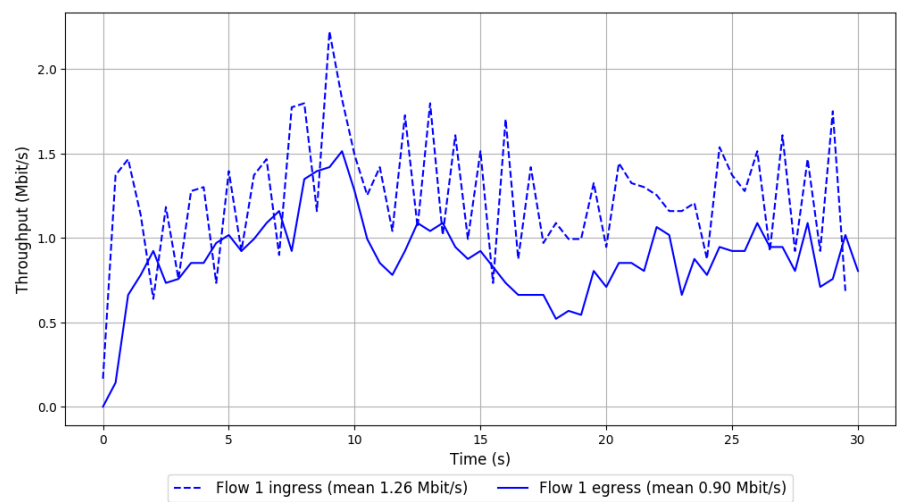


Run 3: Statistics of Verus

Start at: 2018-06-30 05:43:08
End at: 2018-06-30 05:43:38
Local clock offset: -1.125 ms
Remote clock offset: -28.02 ms

Below is generated by plot.py at 2018-06-30 05:59:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.90 Mbit/s
95th percentile per-packet one-way delay: 368.426 ms
Loss rate: 27.83%
-- Flow 1:
Average throughput: 0.90 Mbit/s
95th percentile per-packet one-way delay: 368.426 ms
Loss rate: 27.83%

Run 3: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-06-30 05:21:23

End at: 2018-06-30 05:21:53

Local clock offset: -1.853 ms

Remote clock offset: 5.216 ms

Below is generated by plot.py at 2018-06-30 05:59:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.10 Mbit/s

95th percentile per-packet one-way delay: 349.945 ms

Loss rate: 11.58%

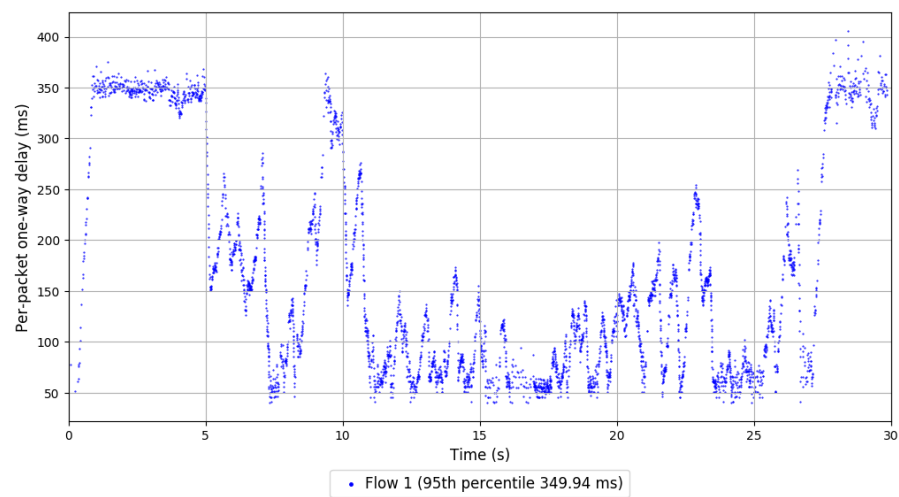
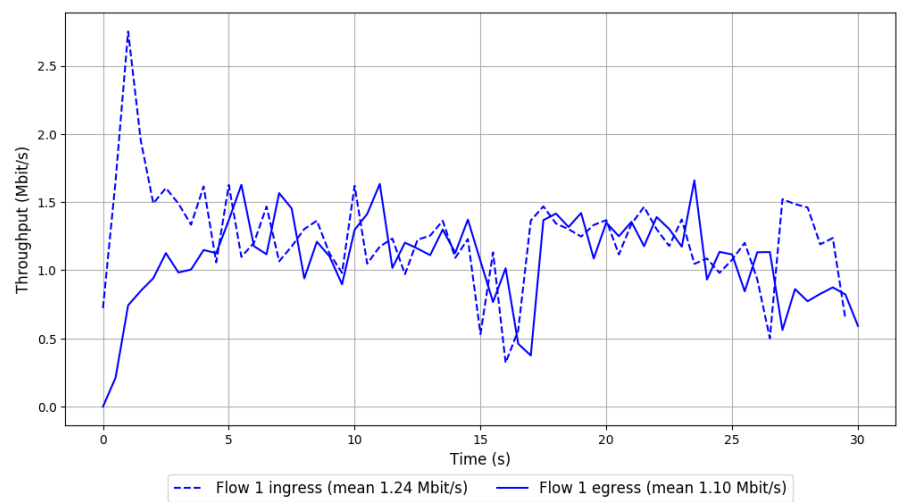
-- Flow 1:

Average throughput: 1.10 Mbit/s

95th percentile per-packet one-way delay: 349.945 ms

Loss rate: 11.58%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-06-30 05:39:54

End at: 2018-06-30 05:40:24

Local clock offset: 0.961 ms

Remote clock offset: -9.904 ms

Below is generated by plot.py at 2018-06-30 05:59:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.96 Mbit/s

95th percentile per-packet one-way delay: 347.401 ms

Loss rate: 15.61%

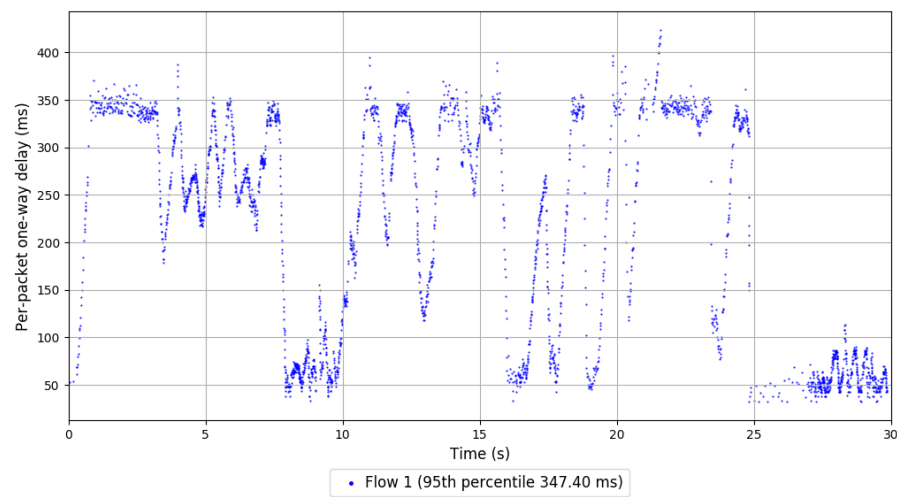
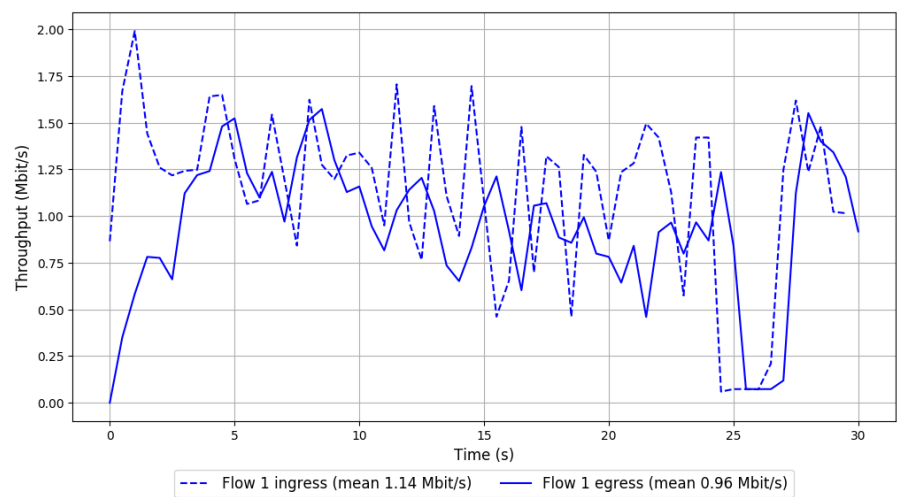
-- Flow 1:

Average throughput: 0.96 Mbit/s

95th percentile per-packet one-way delay: 347.401 ms

Loss rate: 15.61%

Run 2: Report of PCC-Vivace — Data Link

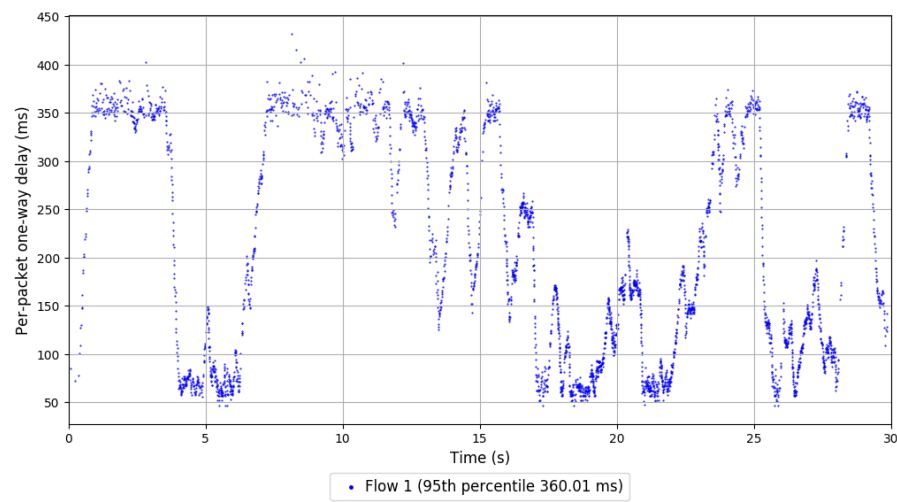
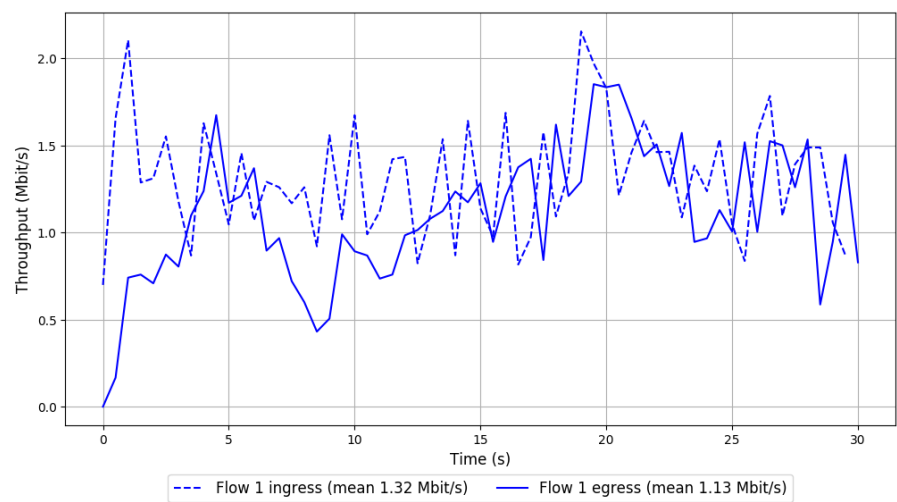


Run 3: Statistics of PCC-Vivace

Start at: 2018-06-30 05:58:17
End at: 2018-06-30 05:58:47
Local clock offset: -2.13 ms
Remote clock offset: -34.129 ms

Below is generated by plot.py at 2018-06-30 05:59:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 360.006 ms
Loss rate: 15.00%
-- Flow 1:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 360.006 ms
Loss rate: 15.00%

Run 3: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-06-30 05:06:54

End at: 2018-06-30 05:07:24

Local clock offset: 0.728 ms

Remote clock offset: -7.339 ms

Below is generated by plot.py at 2018-06-30 05:59:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.40 Mbit/s

95th percentile per-packet one-way delay: 159.810 ms

Loss rate: 2.10%

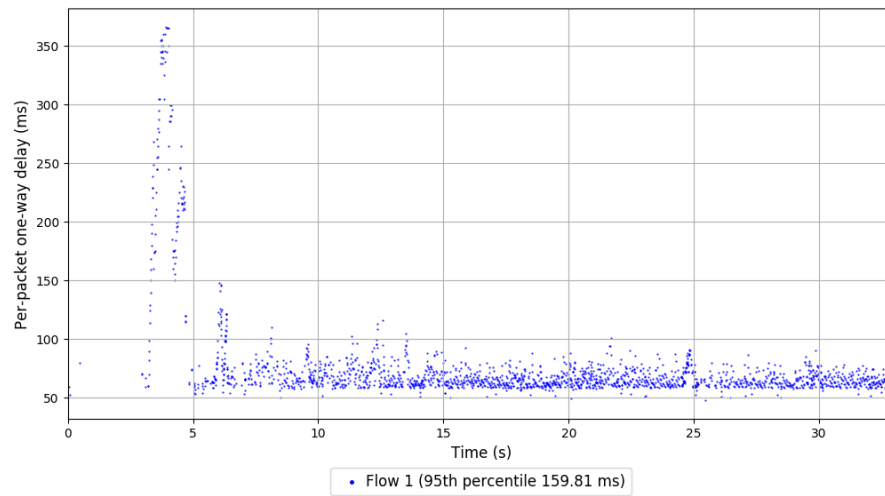
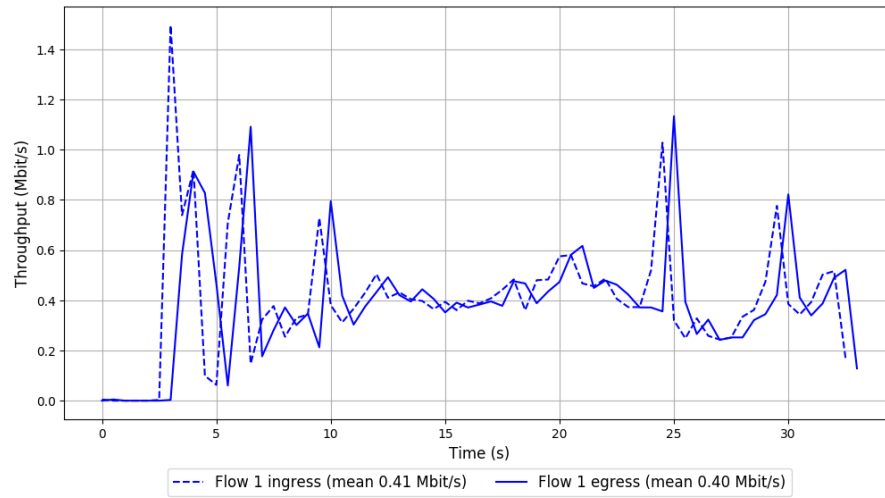
-- Flow 1:

Average throughput: 0.40 Mbit/s

95th percentile per-packet one-way delay: 159.810 ms

Loss rate: 2.10%

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-06-30 05:25:47

End at: 2018-06-30 05:26:17

Local clock offset: -0.66 ms

Remote clock offset: 5.123 ms

Below is generated by plot.py at 2018-06-30 05:59:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.32 Mbit/s

95th percentile per-packet one-way delay: 192.976 ms

Loss rate: 2.19%

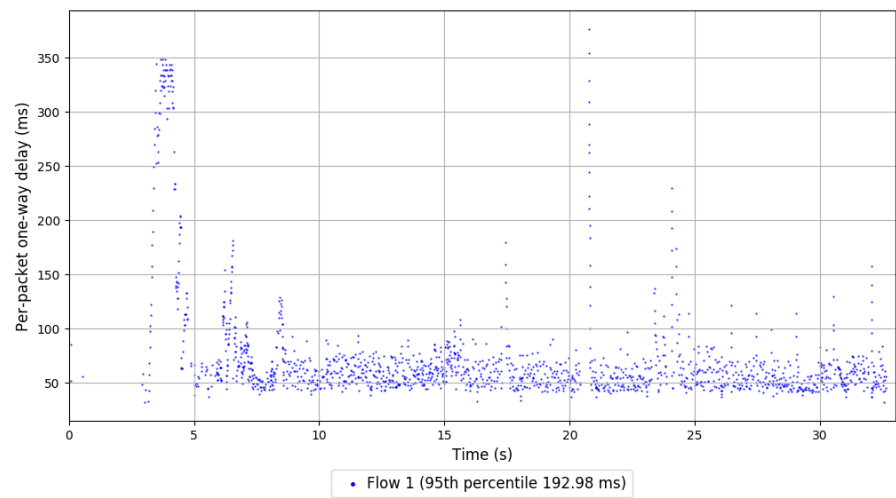
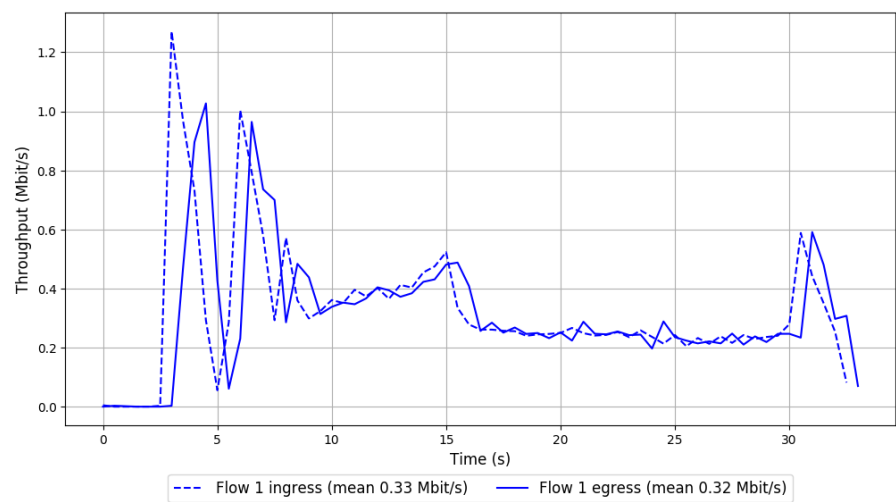
-- Flow 1:

Average throughput: 0.32 Mbit/s

95th percentile per-packet one-way delay: 192.976 ms

Loss rate: 2.19%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-06-30 05:44:13
End at: 2018-06-30 05:44:43
Local clock offset: 1.459 ms
Remote clock offset: -28.722 ms

Below is generated by plot.py at 2018-06-30 05:59:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 224.440 ms
Loss rate: 2.12%
-- Flow 1:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 224.440 ms
Loss rate: 2.12%

Run 3: Report of WebRTC media — Data Link

