

Pantheon Report

Generated at 2018-08-09 16:47:29 (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.

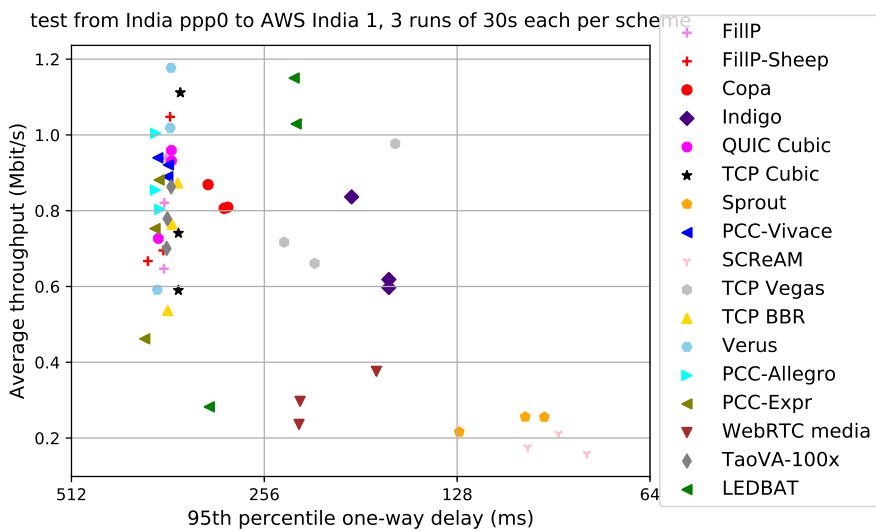
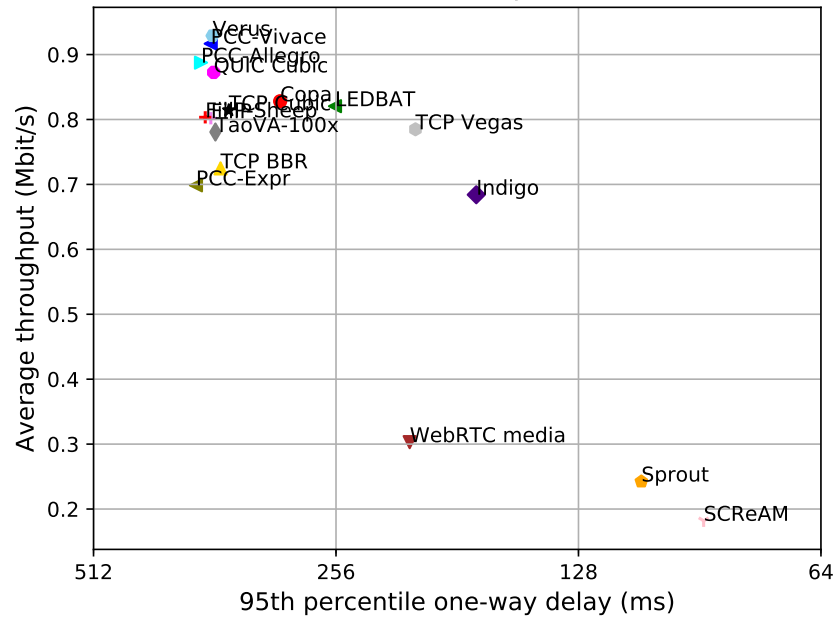
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

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

Git summary:

```
branch: master @ 7772df3413f4b07ba0096dfdd8e9d4c6dca623e3
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
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)



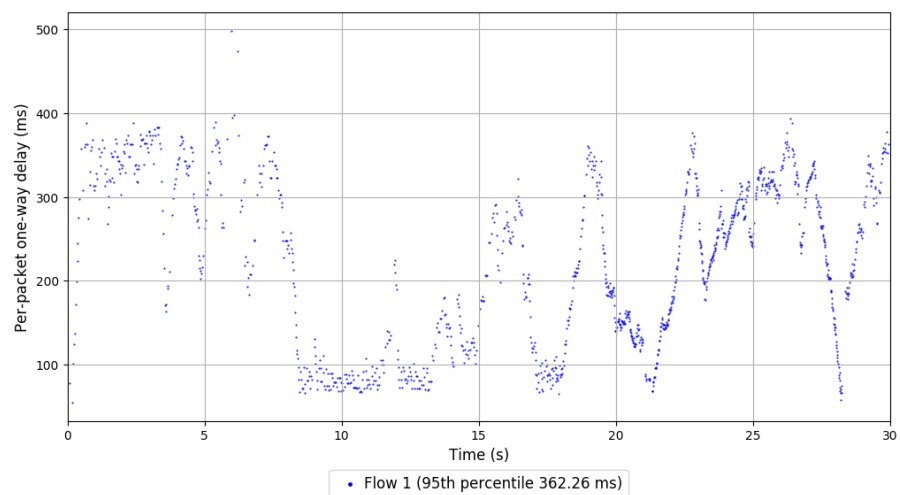
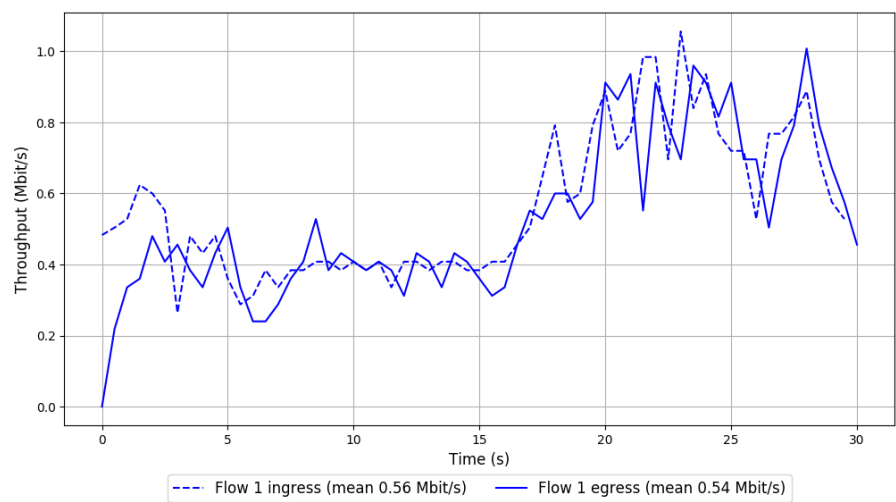
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	0.72	356.12	4.83
Copa	3	0.83	300.32	1.04
TCP Cubic	3	0.81	347.79	3.59
FillP	3	0.80	366.15	49.72
FillP-Sheep	3	0.81	372.04	32.99
Indigo	3	0.69	171.43	0.92
LEDBAT	3	0.82	256.76	1.09
PCC-Allegro	3	0.88	376.58	71.50
PCC-Expr	3	0.70	382.07	90.34
QUIC Cubic	3	0.87	363.15	7.93
SCReAM	3	0.18	89.50	0.28
Sprout	3	0.25	106.94	0.36
TaoVA-100x	3	0.78	361.38	25.65
TCP Vegas	3	0.79	203.99	1.15
Verus	3	0.93	364.40	20.99
PCC-Vivace	3	0.92	366.29	24.70
WebRTC media	3	0.31	207.39	2.89

Run 1: Statistics of TCP BBR

Start at: 2018-08-09 16:00:48
End at: 2018-08-09 16:01:18
Local clock offset: 4.238 ms
Remote clock offset: -13.249 ms

Below is generated by plot.py at 2018-08-09 16:46:58
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 362.262 ms
Loss rate: 5.05%
-- Flow 1:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 362.262 ms
Loss rate: 5.05%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-08-09 16:19:05

End at: 2018-08-09 16:19:35

Local clock offset: 1.368 ms

Remote clock offset: -8.045 ms

Below is generated by plot.py at 2018-08-09 16:46:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.87 Mbit/s

95th percentile per-packet one-way delay: 349.496 ms

Loss rate: 4.45%

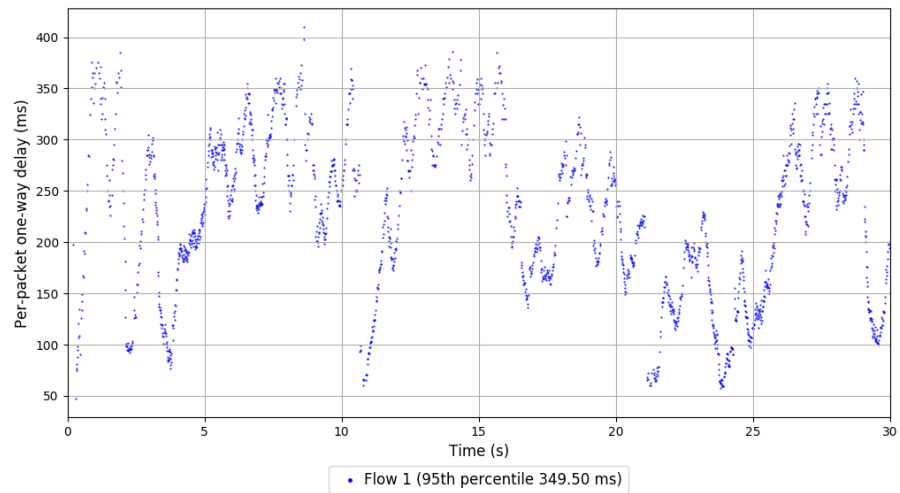
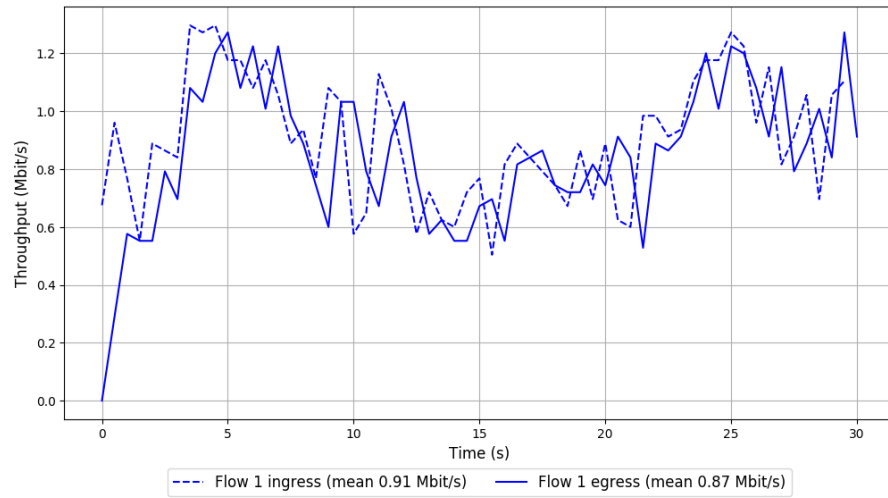
-- Flow 1:

Average throughput: 0.87 Mbit/s

95th percentile per-packet one-way delay: 349.496 ms

Loss rate: 4.45%

Run 2: Report of TCP BBR — Data Link

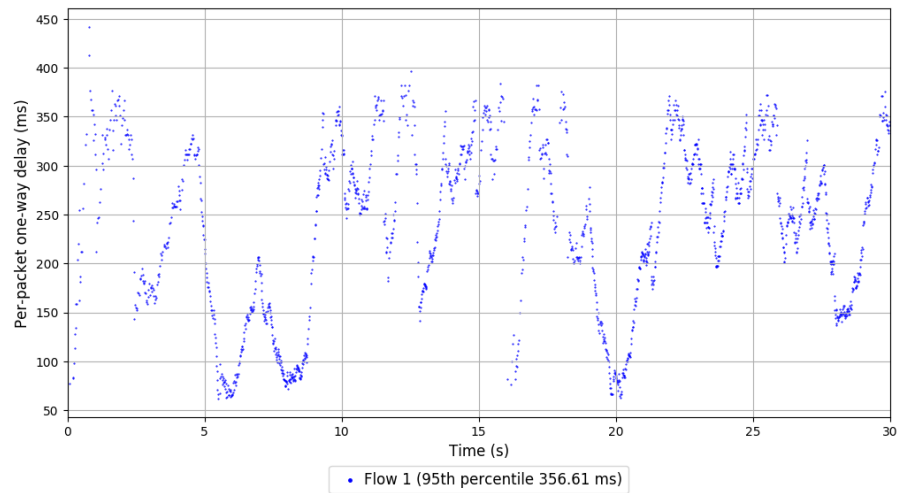
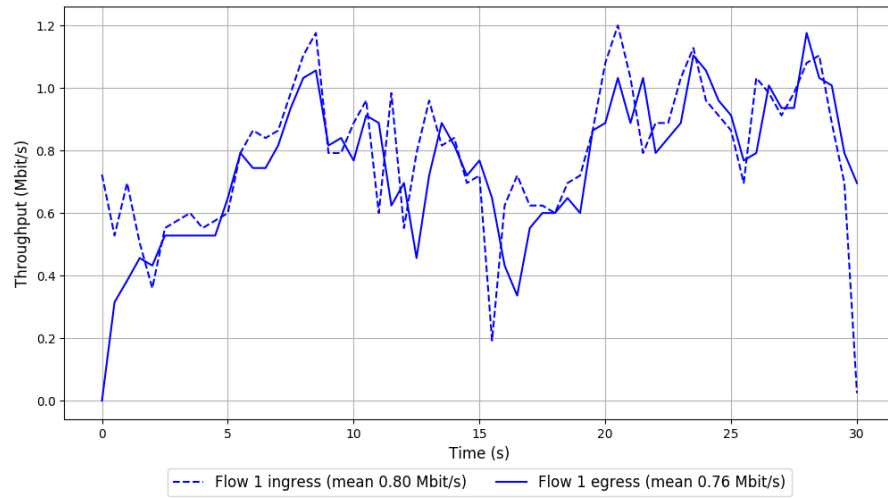


Run 3: Statistics of TCP BBR

Start at: 2018-08-09 16:37:46
End at: 2018-08-09 16:38:16
Local clock offset: -1.648 ms
Remote clock offset: -5.219 ms

Below is generated by plot.py at 2018-08-09 16:46:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.76 Mbit/s
95th percentile per-packet one-way delay: 356.613 ms
Loss rate: 4.99%
-- Flow 1:
Average throughput: 0.76 Mbit/s
95th percentile per-packet one-way delay: 356.613 ms
Loss rate: 4.99%

Run 3: Report of TCP BBR — Data Link

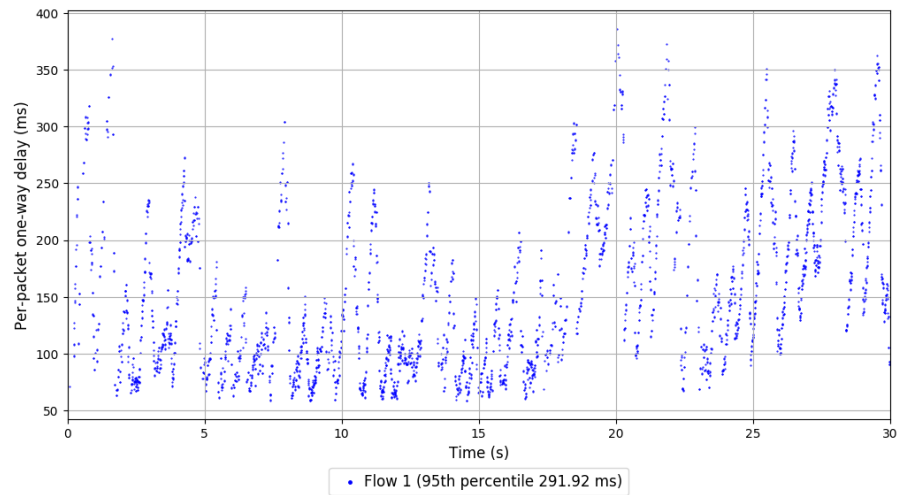
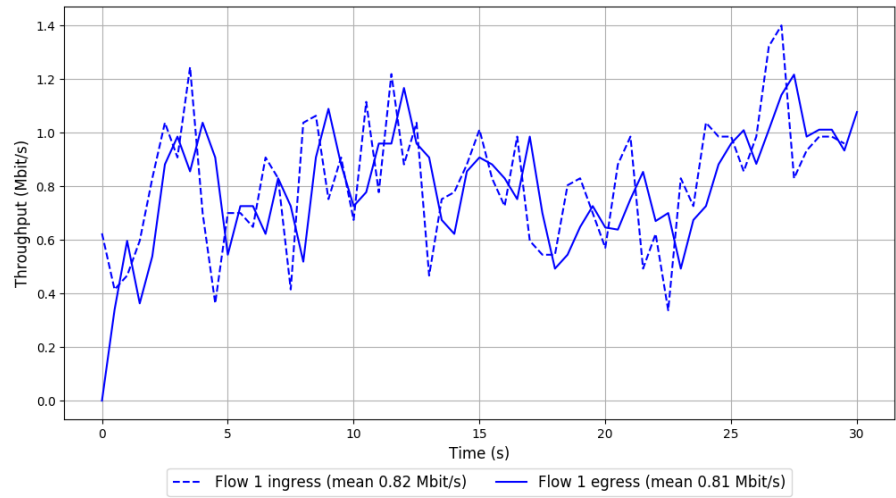


Run 1: Statistics of Copa

Start at: 2018-08-09 16:07:15
End at: 2018-08-09 16:07:45
Local clock offset: 3.454 ms
Remote clock offset: -12.857 ms

Below is generated by plot.py at 2018-08-09 16:47:01
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.81 Mbit/s
95th percentile per-packet one-way delay: 291.922 ms
Loss rate: 1.19%
-- Flow 1:
Average throughput: 0.81 Mbit/s
95th percentile per-packet one-way delay: 291.922 ms
Loss rate: 1.19%

Run 1: Report of Copa — Data Link

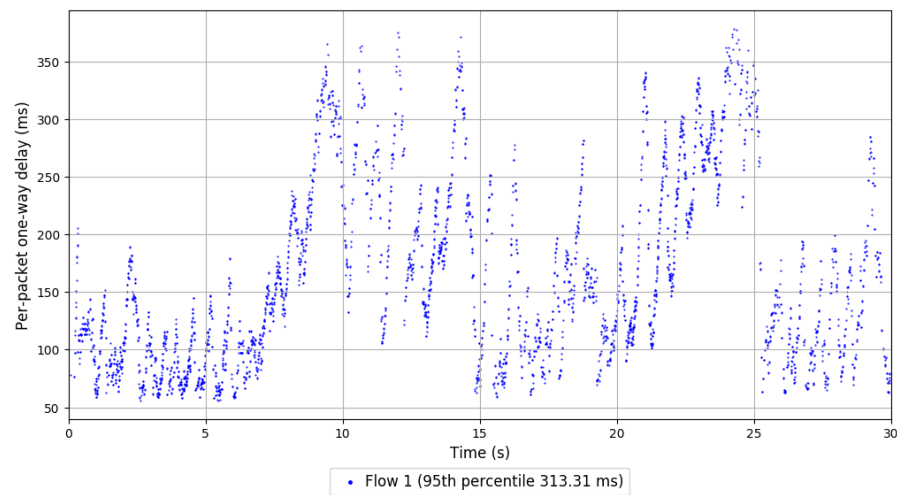
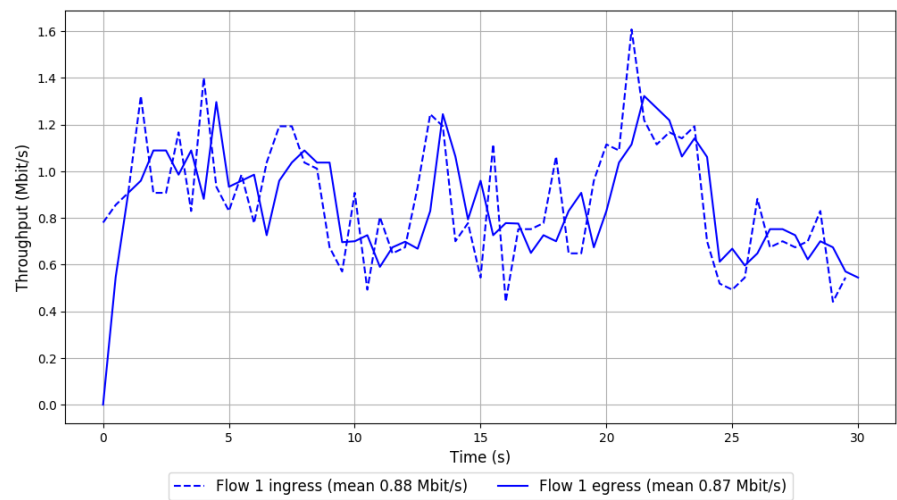


Run 2: Statistics of Copa

Start at: 2018-08-09 16:25:39
End at: 2018-08-09 16:26:09
Local clock offset: 1.104 ms
Remote clock offset: -6.421 ms

Below is generated by plot.py at 2018-08-09 16:47:01
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.87 Mbit/s
95th percentile per-packet one-way delay: 313.314 ms
Loss rate: 1.51%
-- Flow 1:
Average throughput: 0.87 Mbit/s
95th percentile per-packet one-way delay: 313.314 ms
Loss rate: 1.51%

Run 2: Report of Copa — Data Link

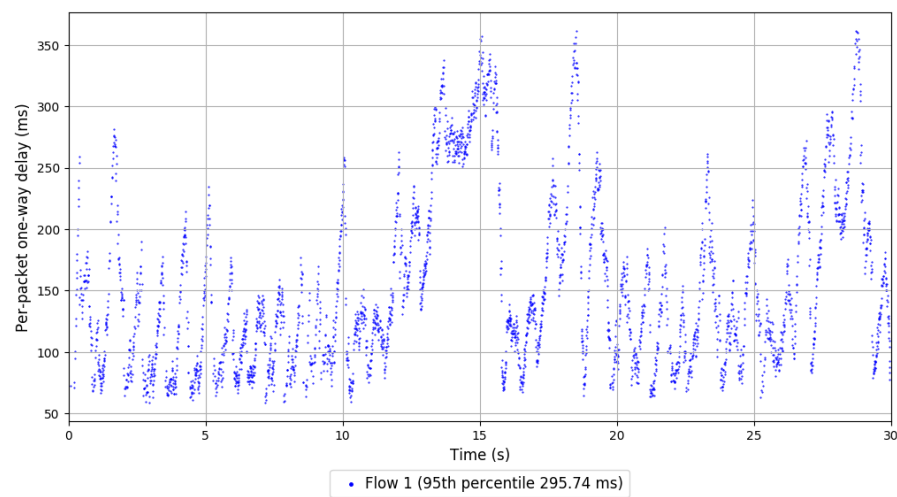
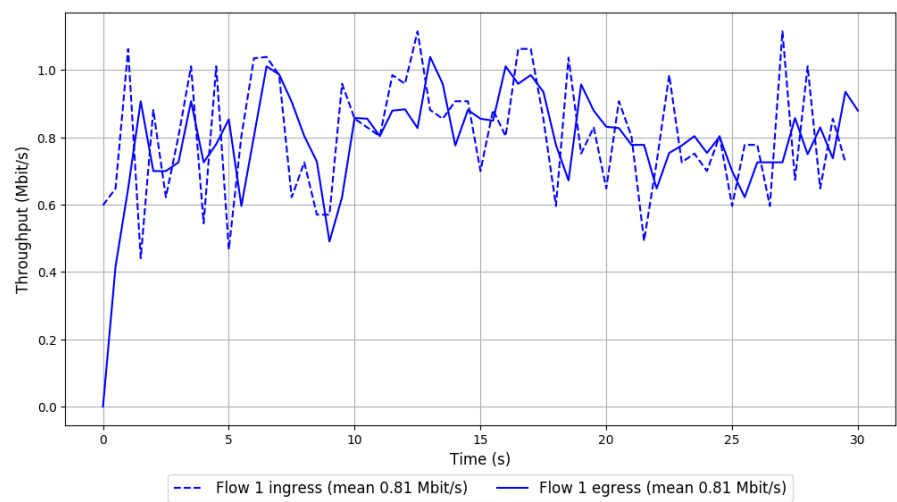


Run 3: Statistics of Copa

Start at: 2018-08-09 16:44:13
End at: 2018-08-09 16:44:43
Local clock offset: 2.231 ms
Remote clock offset: -5.233 ms

Below is generated by plot.py at 2018-08-09 16:47:01
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.81 Mbit/s
95th percentile per-packet one-way delay: 295.736 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 0.81 Mbit/s
95th percentile per-packet one-way delay: 295.736 ms
Loss rate: 0.42%

Run 3: Report of Copa — Data Link

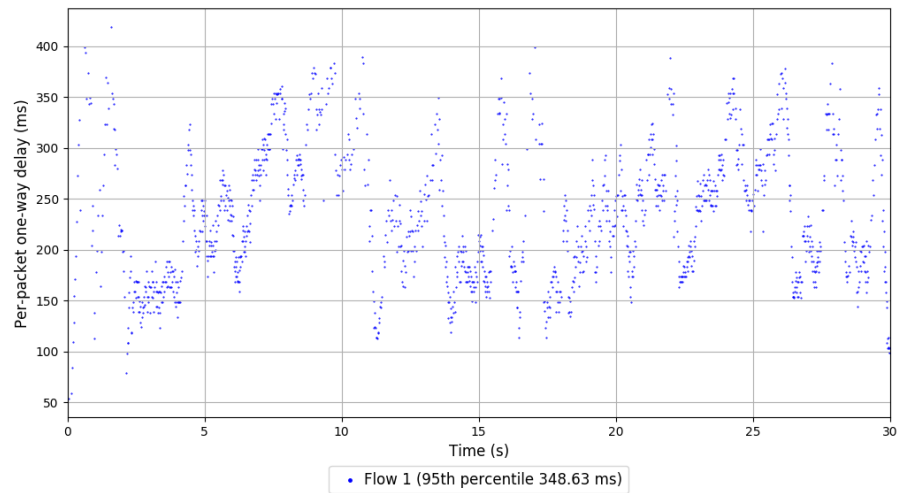
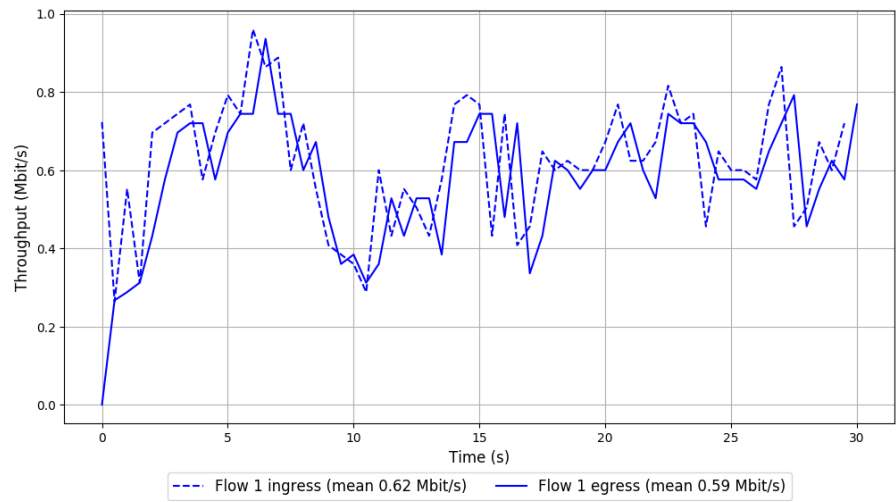


Run 1: Statistics of TCP Cubic

Start at: 2018-08-09 15:58:39
End at: 2018-08-09 15:59:09
Local clock offset: 0.558 ms
Remote clock offset: -12.912 ms

Below is generated by plot.py at 2018-08-09 16:47:01
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 348.633 ms
Loss rate: 5.15%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 348.633 ms
Loss rate: 5.15%

Run 1: Report of TCP Cubic — Data Link

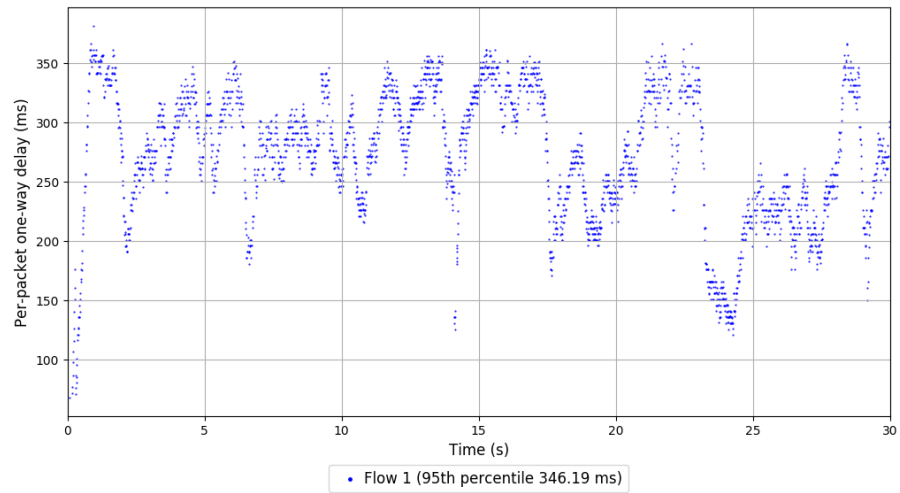
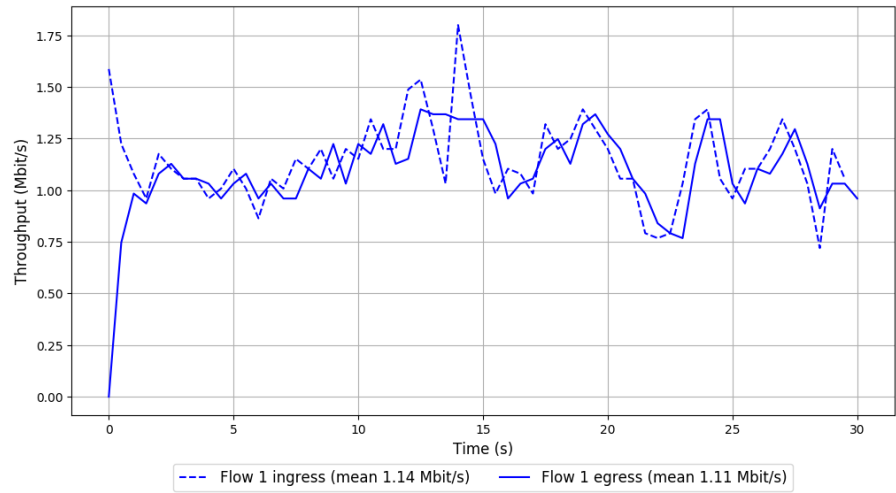


Run 2: Statistics of TCP Cubic

Start at: 2018-08-09 16:16:56
End at: 2018-08-09 16:17:26
Local clock offset: 3.286 ms
Remote clock offset: -8.781 ms

Below is generated by plot.py at 2018-08-09 16:47:01
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.11 Mbit/s
95th percentile per-packet one-way delay: 346.185 ms
Loss rate: 3.08%
-- Flow 1:
Average throughput: 1.11 Mbit/s
95th percentile per-packet one-way delay: 346.185 ms
Loss rate: 3.08%

Run 2: Report of TCP Cubic — Data Link

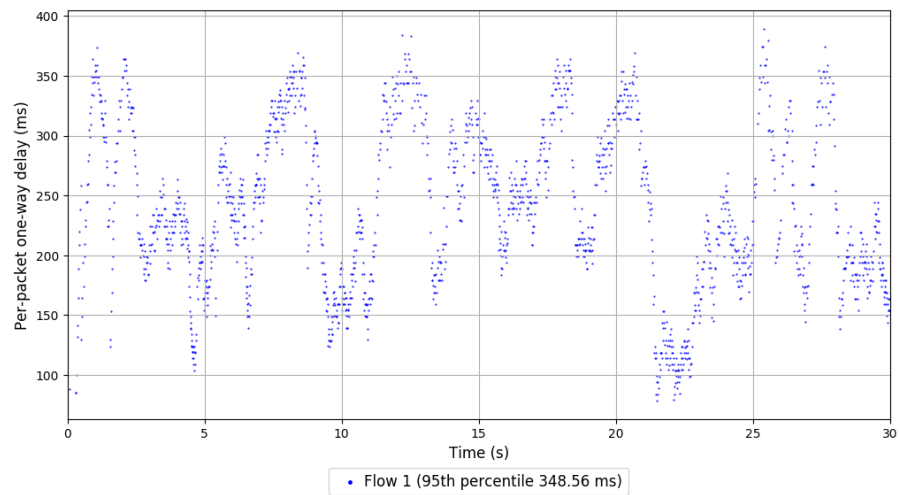
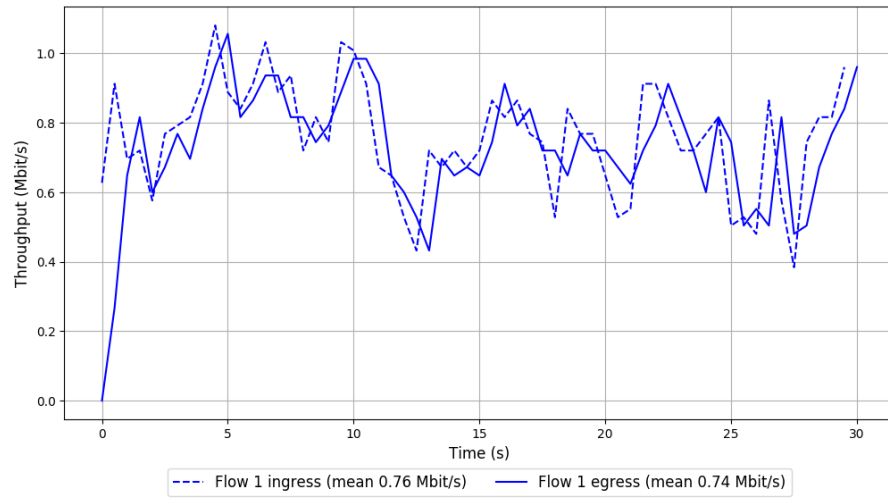


Run 3: Statistics of TCP Cubic

Start at: 2018-08-09 16:35:38
End at: 2018-08-09 16:36:08
Local clock offset: 1.558 ms
Remote clock offset: -5.443 ms

Below is generated by plot.py at 2018-08-09 16:47:02
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.74 Mbit/s
95th percentile per-packet one-way delay: 348.562 ms
Loss rate: 2.54%
-- Flow 1:
Average throughput: 0.74 Mbit/s
95th percentile per-packet one-way delay: 348.562 ms
Loss rate: 2.54%

Run 3: Report of TCP Cubic — Data Link

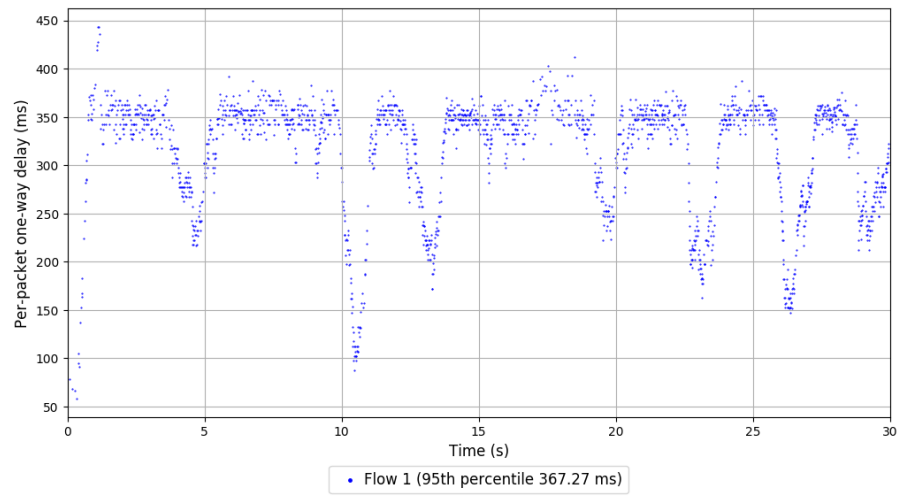
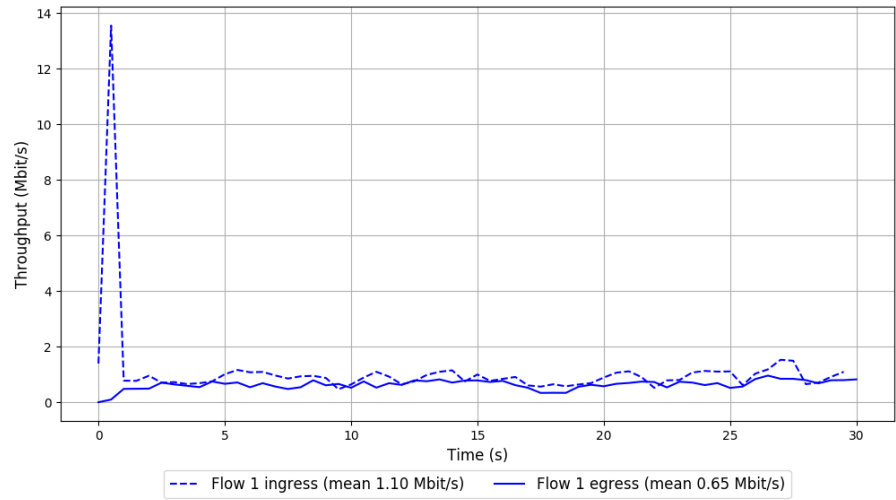


Run 1: Statistics of FillP

Start at: 2018-08-09 15:53:17
End at: 2018-08-09 15:53:47
Local clock offset: 1.26 ms
Remote clock offset: -12.759 ms

Below is generated by plot.py at 2018-08-09 16:47:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 367.270 ms
Loss rate: 41.50%
-- Flow 1:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 367.270 ms
Loss rate: 41.50%

Run 1: Report of FillP — Data Link

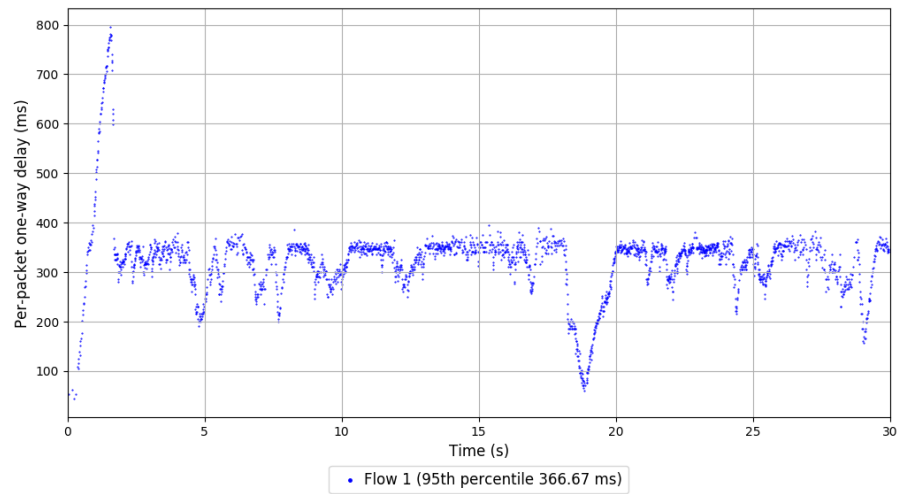
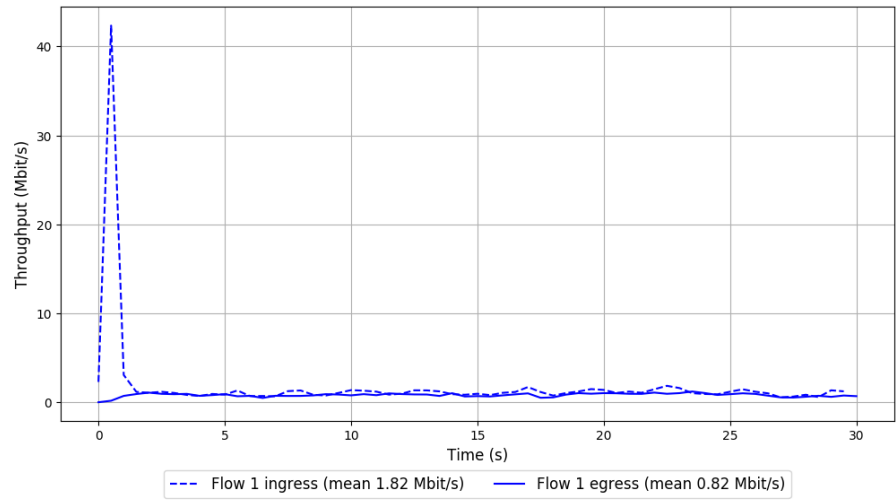


Run 2: Statistics of FillP

Start at: 2018-08-09 16:11:33
End at: 2018-08-09 16:12:03
Local clock offset: -0.654 ms
Remote clock offset: -11.202 ms

Below is generated by plot.py at 2018-08-09 16:47:05
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.82 Mbit/s
95th percentile per-packet one-way delay: 366.670 ms
Loss rate: 54.96%
-- Flow 1:
Average throughput: 0.82 Mbit/s
95th percentile per-packet one-way delay: 366.670 ms
Loss rate: 54.96%

Run 2: Report of FillP — Data Link

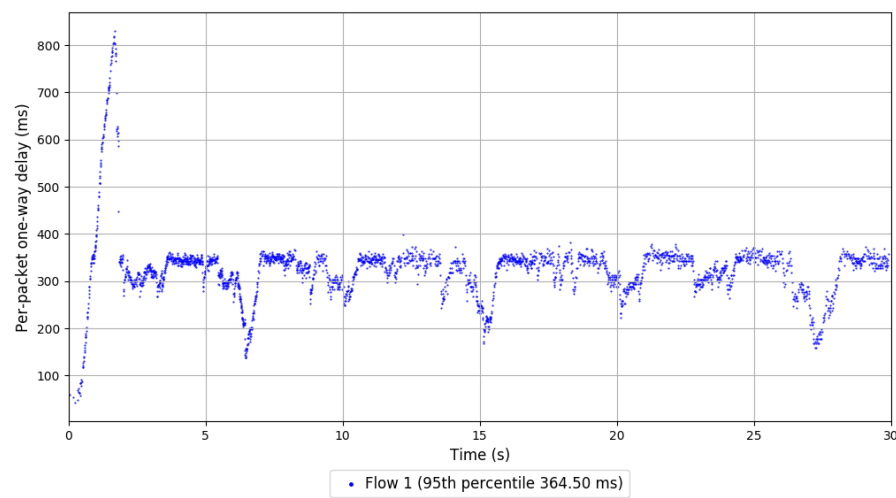
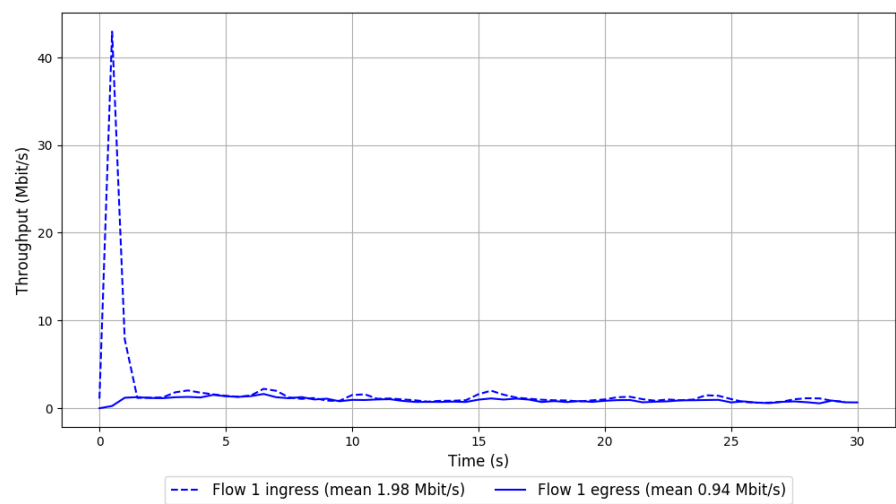


Run 3: Statistics of FillP

Start at: 2018-08-09 16:30:05
End at: 2018-08-09 16:30:35
Local clock offset: -1.08 ms
Remote clock offset: -6.014 ms

Below is generated by plot.py at 2018-08-09 16:47:06
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 364.501 ms
Loss rate: 52.70%
-- Flow 1:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 364.501 ms
Loss rate: 52.70%

Run 3: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2018-08-09 16:01:53

End at: 2018-08-09 16:02:23

Local clock offset: 1.525 ms

Remote clock offset: -13.173 ms

Below is generated by plot.py at 2018-08-09 16:47:06

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.70 Mbit/s

95th percentile per-packet one-way delay: 367.981 ms

Loss rate: 39.20%

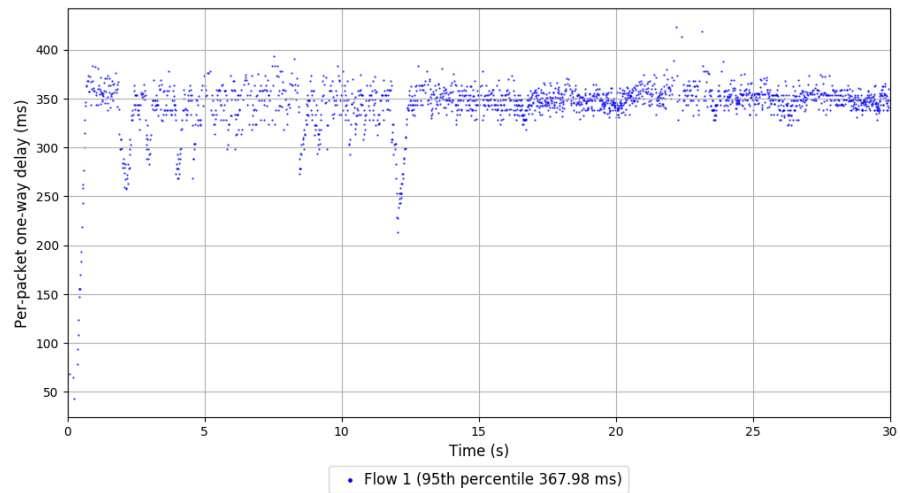
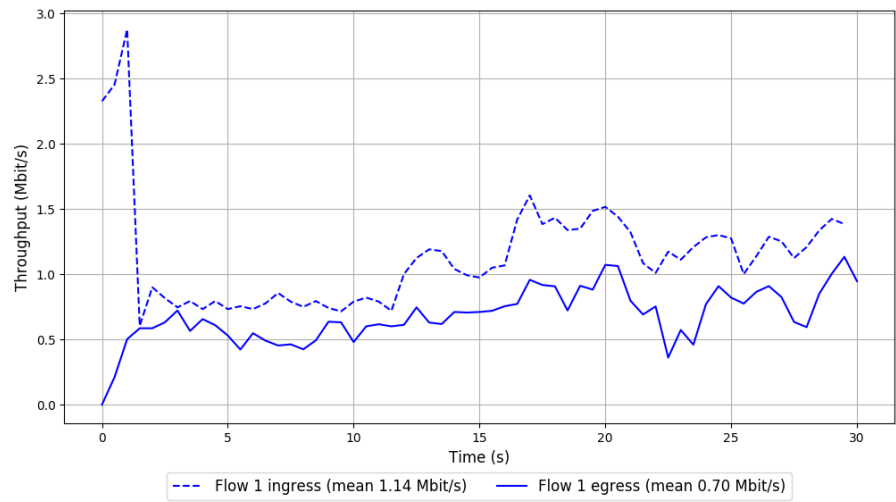
-- Flow 1:

Average throughput: 0.70 Mbit/s

95th percentile per-packet one-way delay: 367.981 ms

Loss rate: 39.20%

Run 1: Report of FillP-Sheep — Data Link

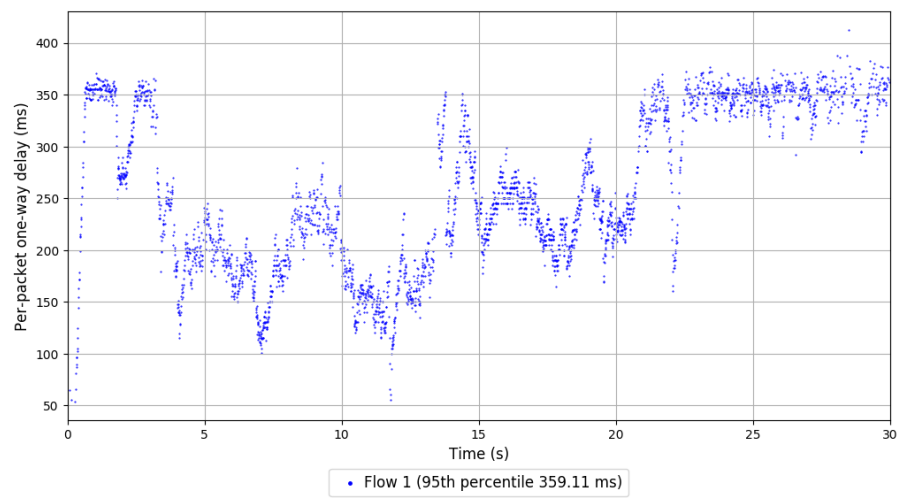
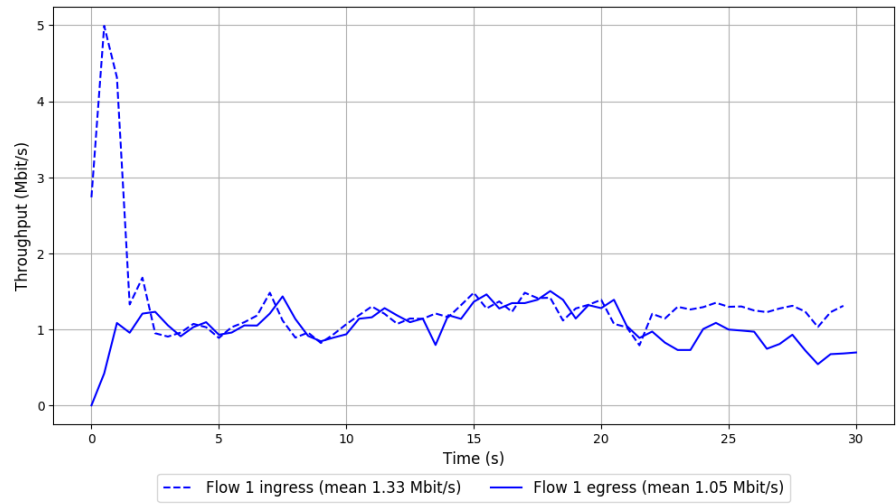


Run 2: Statistics of FillP-Sheep

Start at: 2018-08-09 16:20:09
End at: 2018-08-09 16:20:39
Local clock offset: 3.416 ms
Remote clock offset: -7.778 ms

Below is generated by plot.py at 2018-08-09 16:47:07
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.05 Mbit/s
95th percentile per-packet one-way delay: 359.109 ms
Loss rate: 21.48%
-- Flow 1:
Average throughput: 1.05 Mbit/s
95th percentile per-packet one-way delay: 359.109 ms
Loss rate: 21.48%

Run 2: Report of FillP-Sheep — Data Link

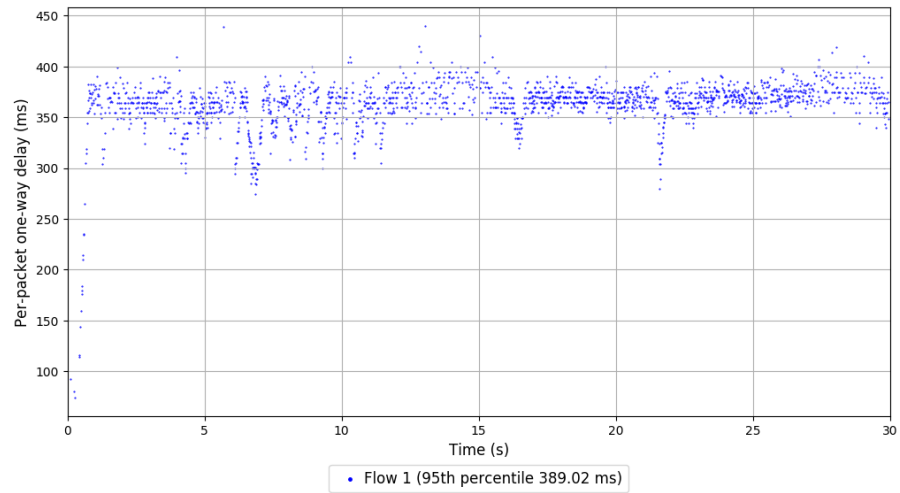
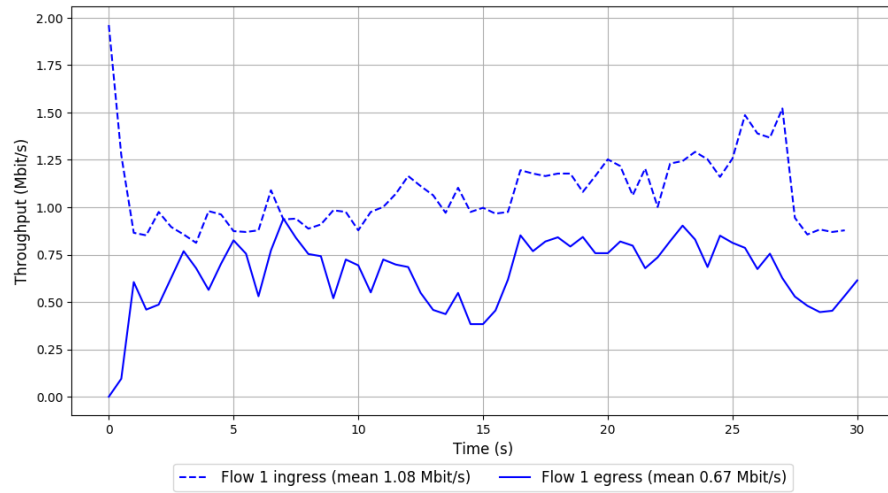


Run 3: Statistics of FillP-Sheep

Start at: 2018-08-09 16:38:51
End at: 2018-08-09 16:39:21
Local clock offset: 0.662 ms
Remote clock offset: -5.271 ms

Below is generated by plot.py at 2018-08-09 16:47:07
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 389.022 ms
Loss rate: 38.29%
-- Flow 1:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 389.022 ms
Loss rate: 38.29%

Run 3: Report of FillP-Sheep — Data Link

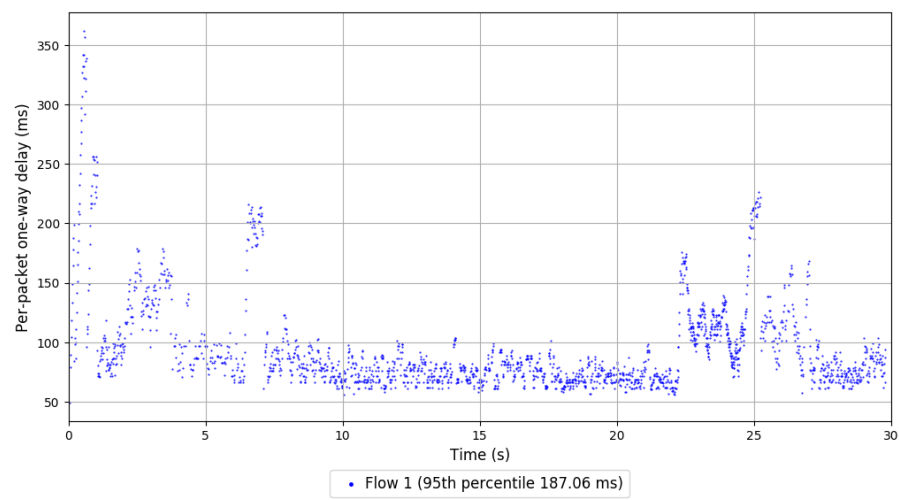
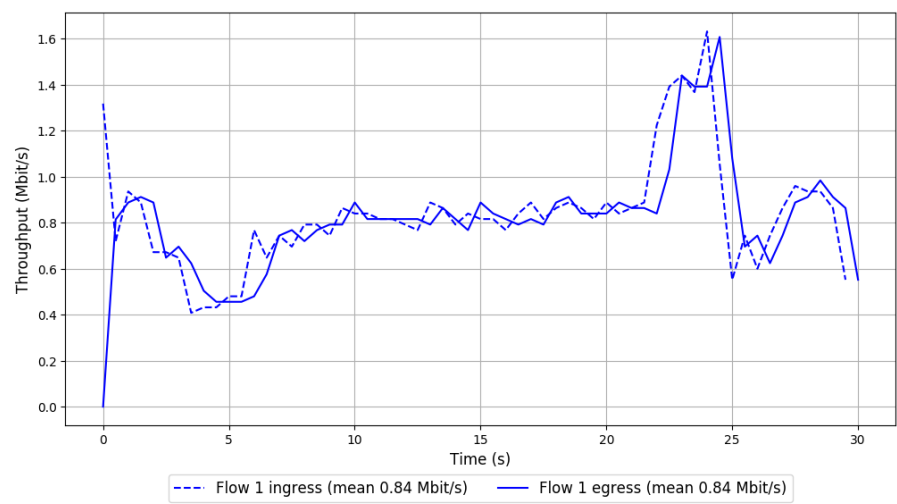


Run 1: Statistics of Indigo

Start at: 2018-08-09 16:09:24
End at: 2018-08-09 16:09:54
Local clock offset: 2.51 ms
Remote clock offset: -11.853 ms

Below is generated by plot.py at 2018-08-09 16:47:07
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.84 Mbit/s
95th percentile per-packet one-way delay: 187.057 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 0.84 Mbit/s
95th percentile per-packet one-way delay: 187.057 ms
Loss rate: 0.67%

Run 1: Report of Indigo — Data Link

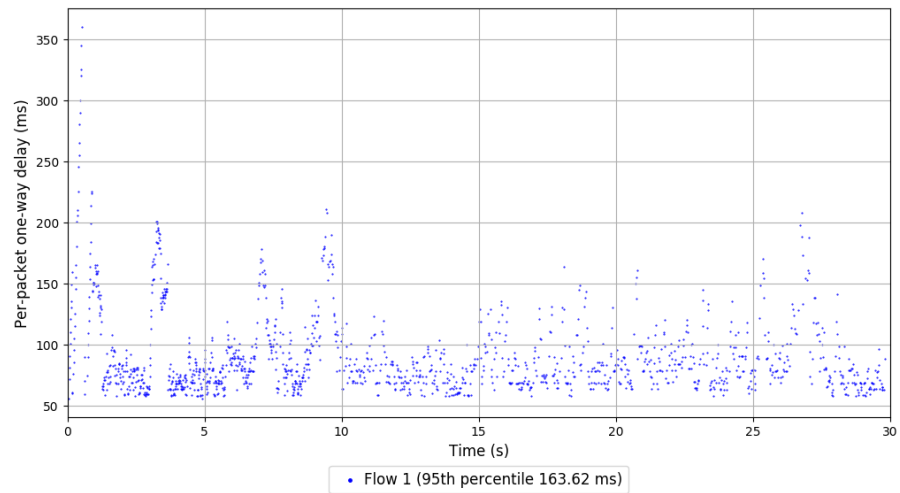
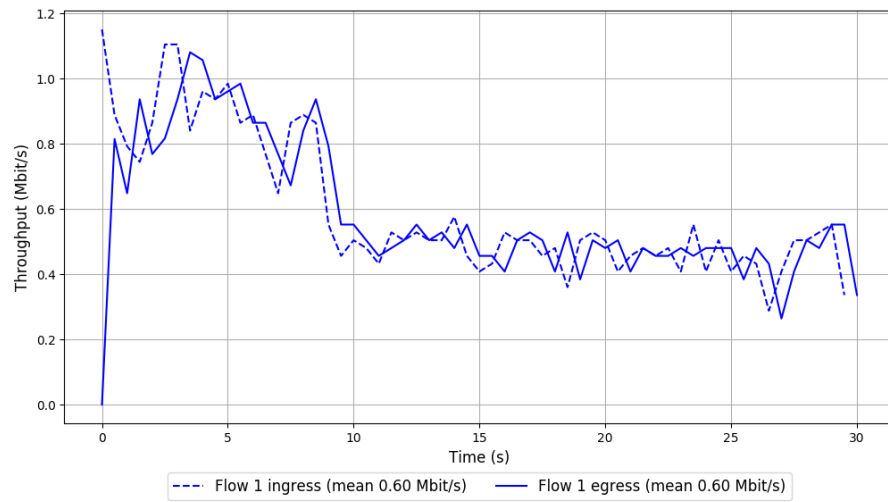


Run 2: Statistics of Indigo

Start at: 2018-08-09 16:27:53
End at: 2018-08-09 16:28:23
Local clock offset: 1.529 ms
Remote clock offset: -5.598 ms

Below is generated by plot.py at 2018-08-09 16:47:07
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 163.618 ms
Loss rate: 1.07%
-- Flow 1:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 163.618 ms
Loss rate: 1.07%

Run 2: Report of Indigo — Data Link

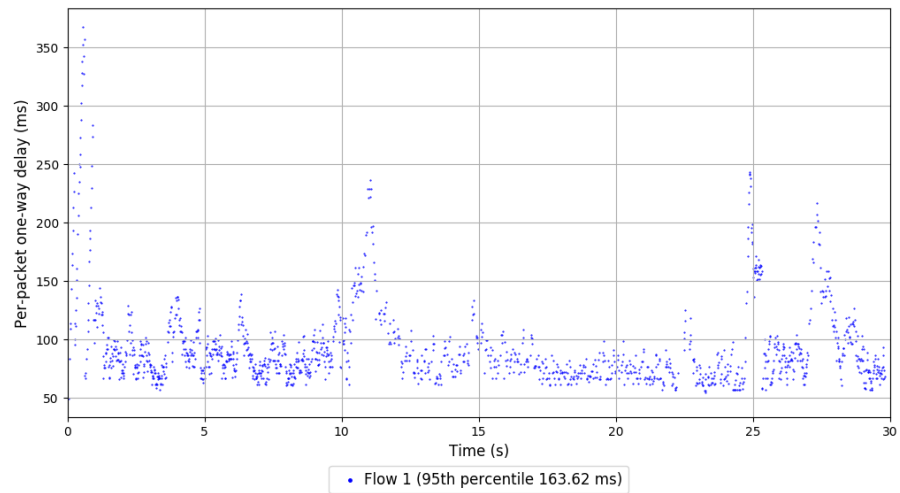
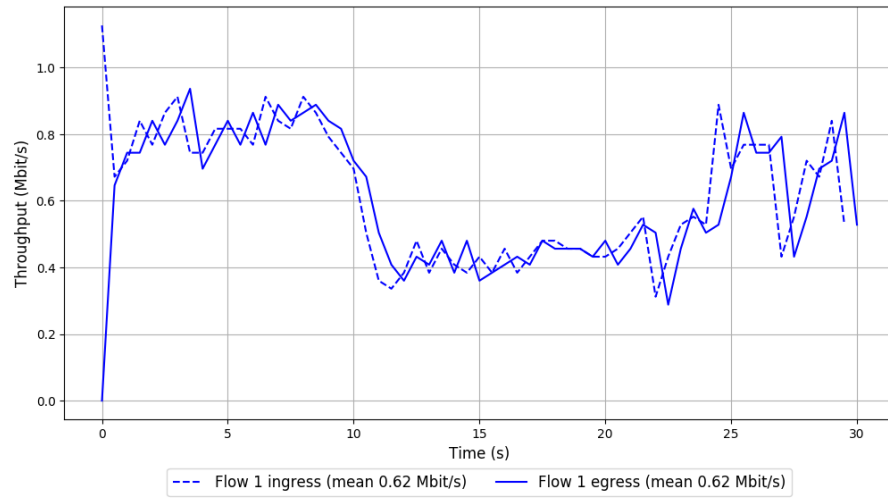


Run 3: Statistics of Indigo

Start at: 2018-08-09 16:46:22
End at: 2018-08-09 16:46:52
Local clock offset: -1.816 ms
Remote clock offset: -4.923 ms

Below is generated by plot.py at 2018-08-09 16:47:07
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 163.624 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 163.624 ms
Loss rate: 1.03%

Run 3: Report of Indigo — Data Link

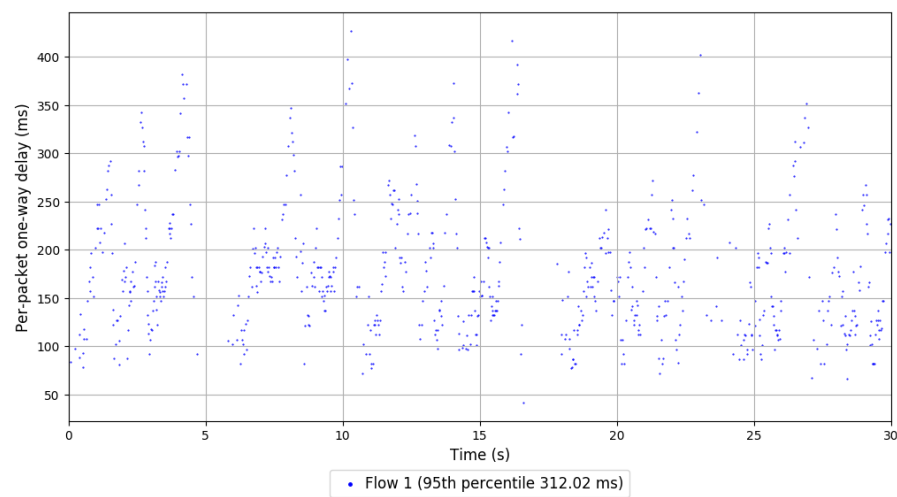
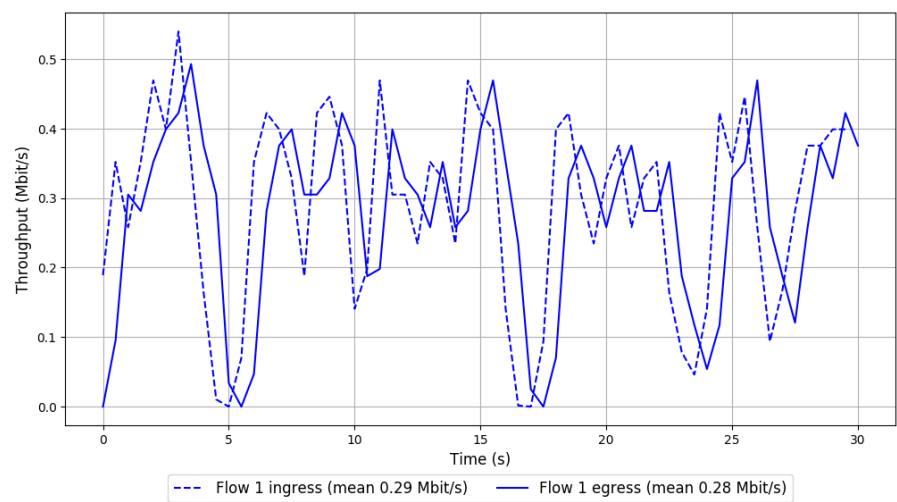


```
Run 1: Statistics of LEDBAT

Start at: 2018-08-09 15:52:12
End at: 2018-08-09 15:52:42
Local clock offset: 1.637 ms
Remote clock offset: -11.674 ms

# Below is generated by plot.py at 2018-08-09 16:47:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 312.017 ms
Loss rate: 1.77%
-- Flow 1:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 312.017 ms
Loss rate: 1.77%
```

Run 1: Report of LEDBAT — Data Link

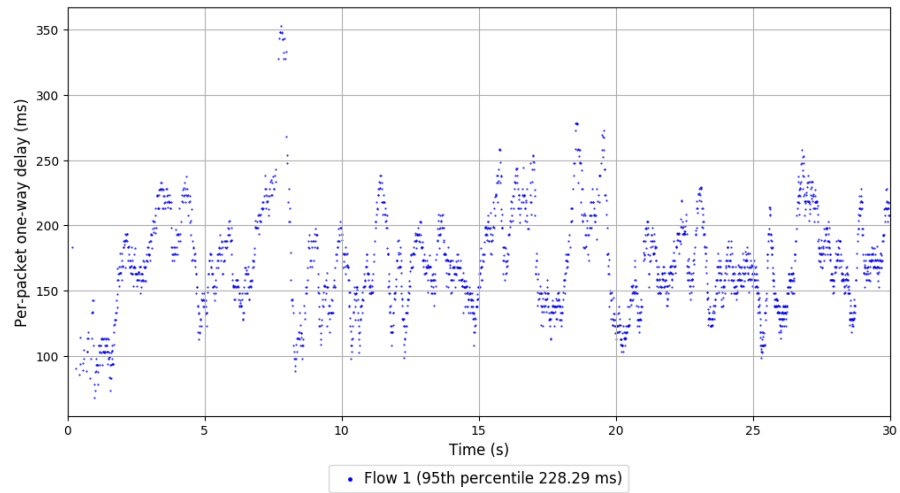
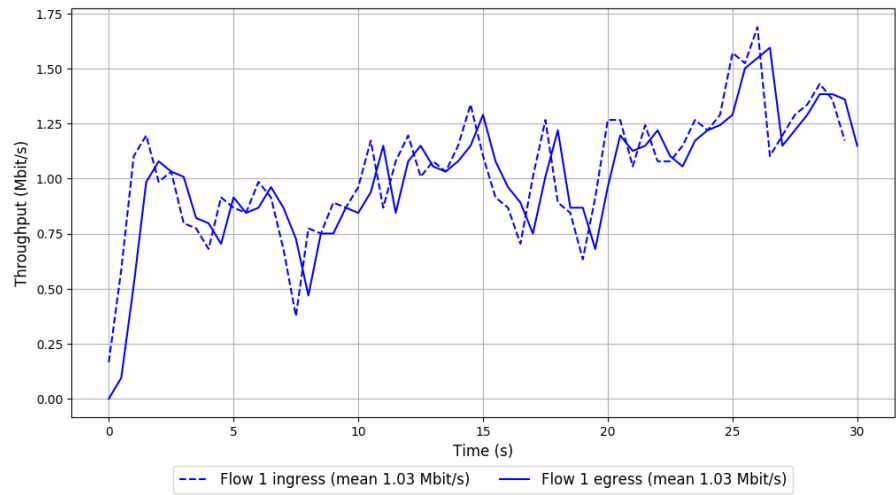


Run 2: Statistics of LEDBAT

Start at: 2018-08-09 16:10:28
End at: 2018-08-09 16:10:58
Local clock offset: 2.999 ms
Remote clock offset: -12.232 ms

Below is generated by plot.py at 2018-08-09 16:47:09
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.03 Mbit/s
95th percentile per-packet one-way delay: 228.293 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 1.03 Mbit/s
95th percentile per-packet one-way delay: 228.293 ms
Loss rate: 0.80%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-08-09 16:28:59

End at: 2018-08-09 16:29:29

Local clock offset: 3.686 ms

Remote clock offset: -6.34 ms

Below is generated by plot.py at 2018-08-09 16:47:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.15 Mbit/s

95th percentile per-packet one-way delay: 229.959 ms

Loss rate: 0.71%

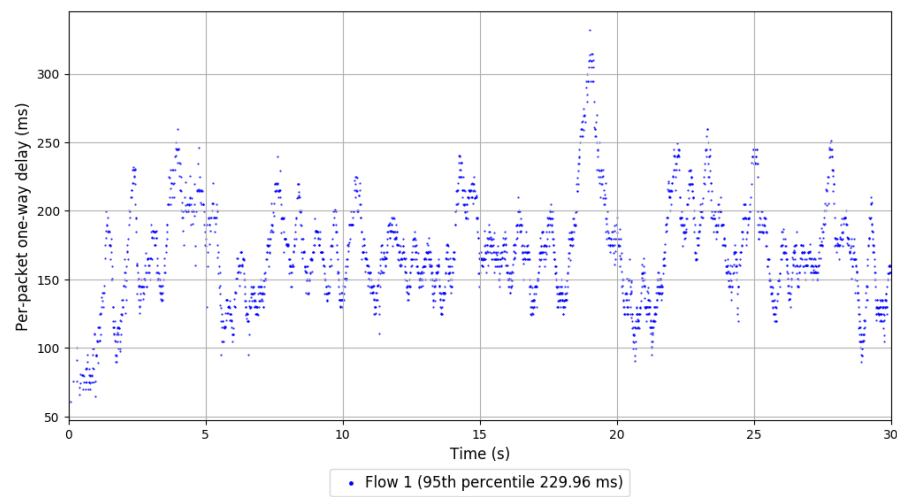
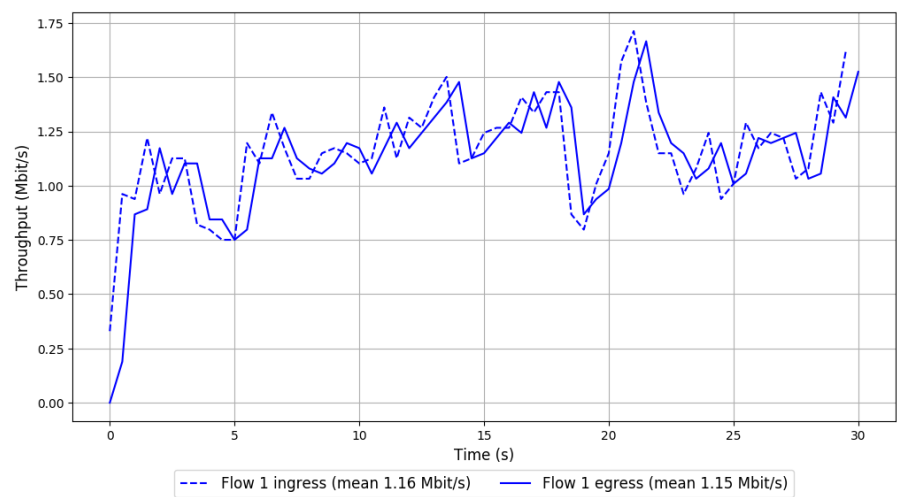
-- Flow 1:

Average throughput: 1.15 Mbit/s

95th percentile per-packet one-way delay: 229.959 ms

Loss rate: 0.71%

Run 3: Report of LEDBAT — Data Link

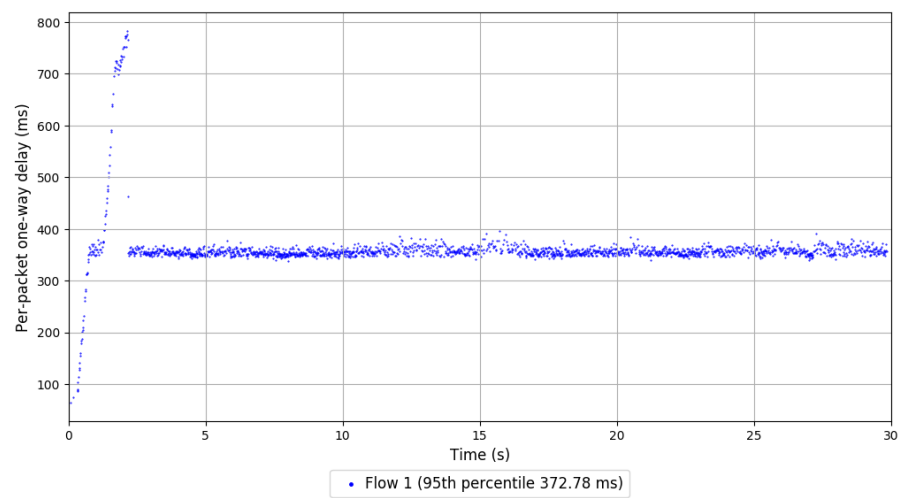
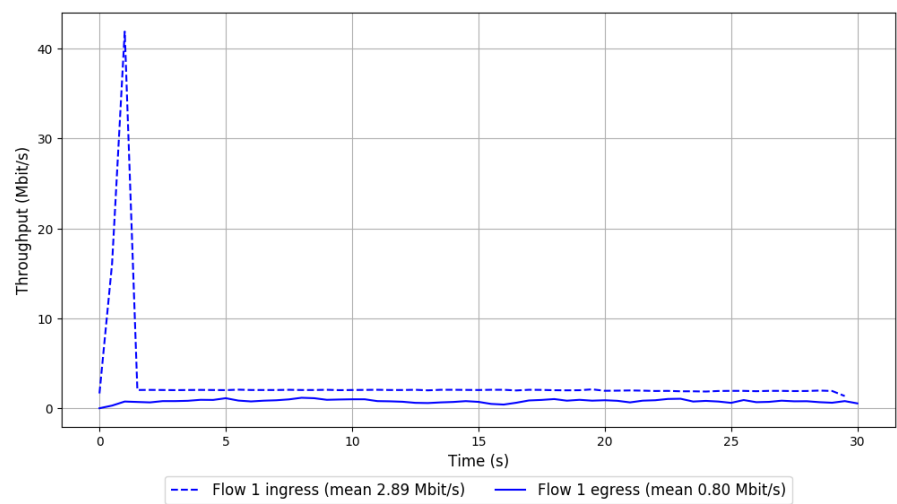


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-08-09 16:08:20
End at: 2018-08-09 16:08:50
Local clock offset: -0.287 ms
Remote clock offset: -12.021 ms

# Below is generated by plot.py at 2018-08-09 16:47:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.80 Mbit/s
95th percentile per-packet one-way delay: 372.783 ms
Loss rate: 72.30%
-- Flow 1:
Average throughput: 0.80 Mbit/s
95th percentile per-packet one-way delay: 372.783 ms
Loss rate: 72.30%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-08-09 16:26:46

End at: 2018-08-09 16:27:16

Local clock offset: 4.058 ms

Remote clock offset: -5.843 ms

Below is generated by plot.py at 2018-08-09 16:47:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.00 Mbit/s

95th percentile per-packet one-way delay: 378.215 ms

Loss rate: 68.09%

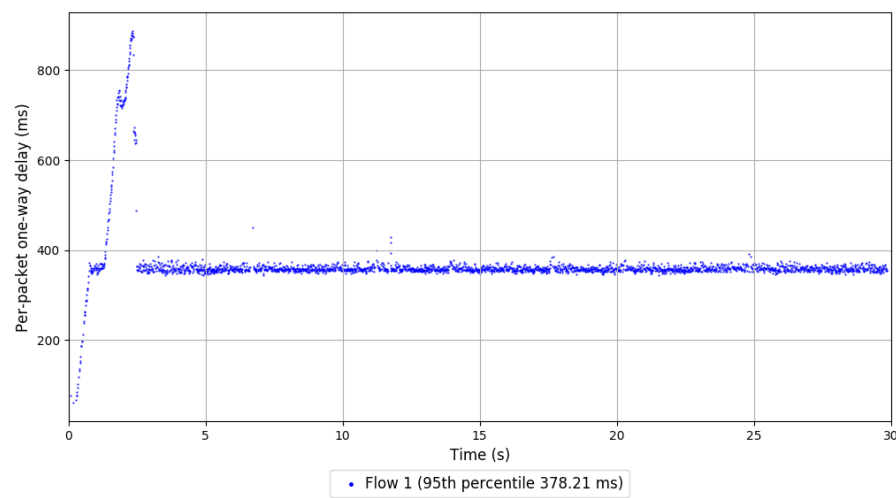
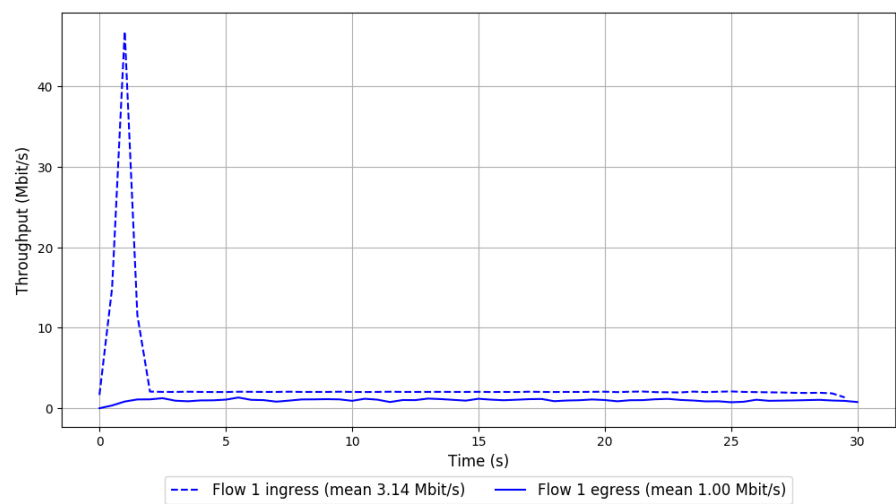
-- Flow 1:

Average throughput: 1.00 Mbit/s

95th percentile per-packet one-way delay: 378.215 ms

Loss rate: 68.09%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-08-09 16:45:17

End at: 2018-08-09 16:45:47

Local clock offset: 1.24 ms

Remote clock offset: -4.339 ms

Below is generated by plot.py at 2018-08-09 16:47:11

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.85 Mbit/s

95th percentile per-packet one-way delay: 378.730 ms

Loss rate: 74.11%

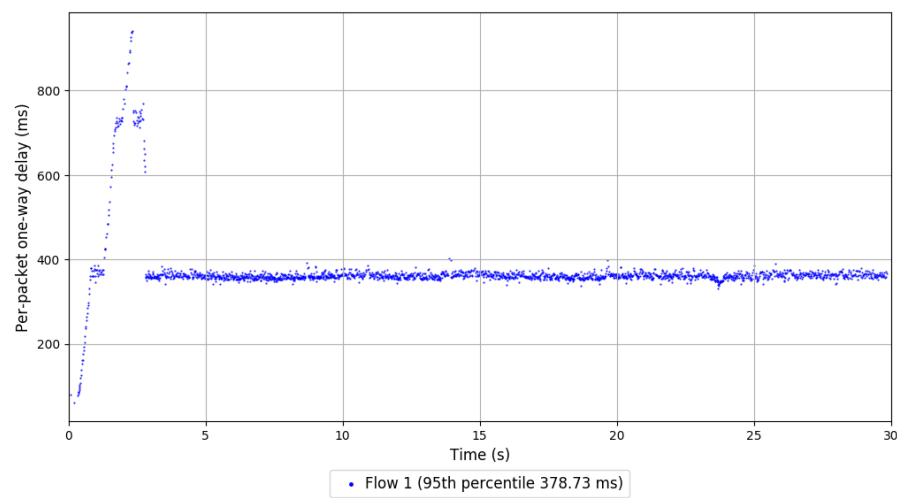
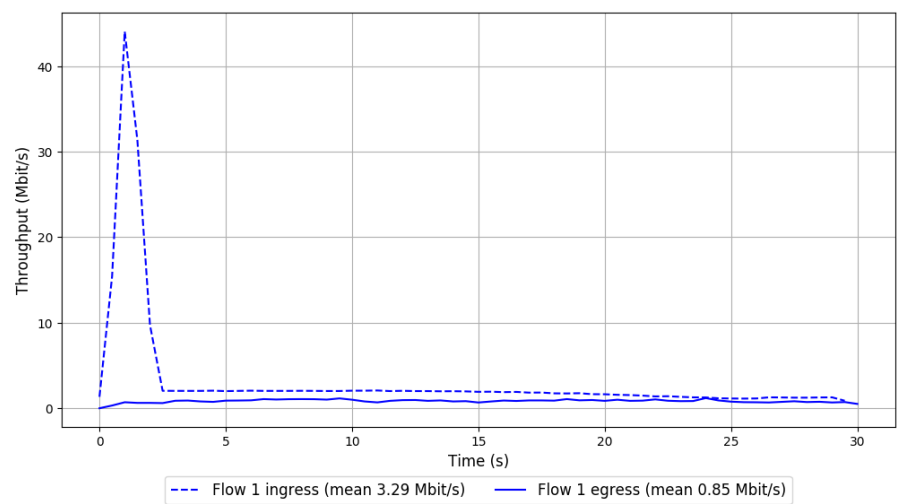
-- Flow 1:

Average throughput: 0.85 Mbit/s

95th percentile per-packet one-way delay: 378.730 ms

Loss rate: 74.11%

Run 3: Report of PCC-Allegro — Data Link

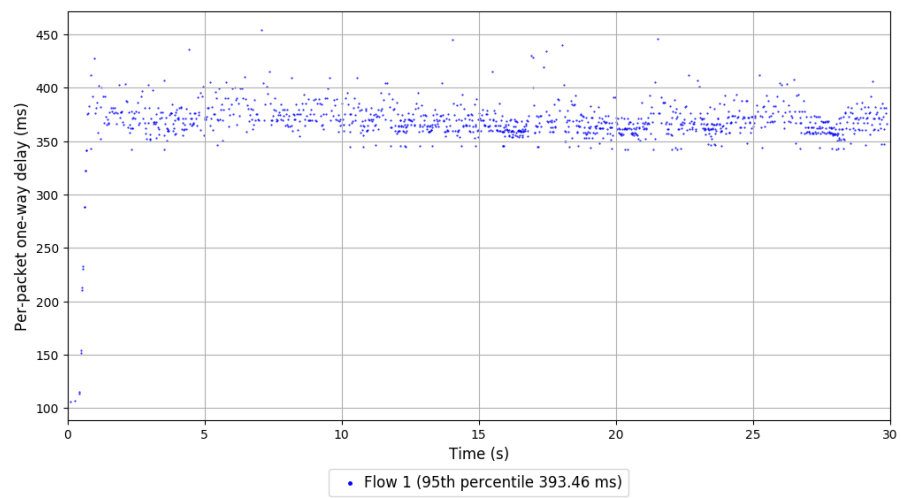
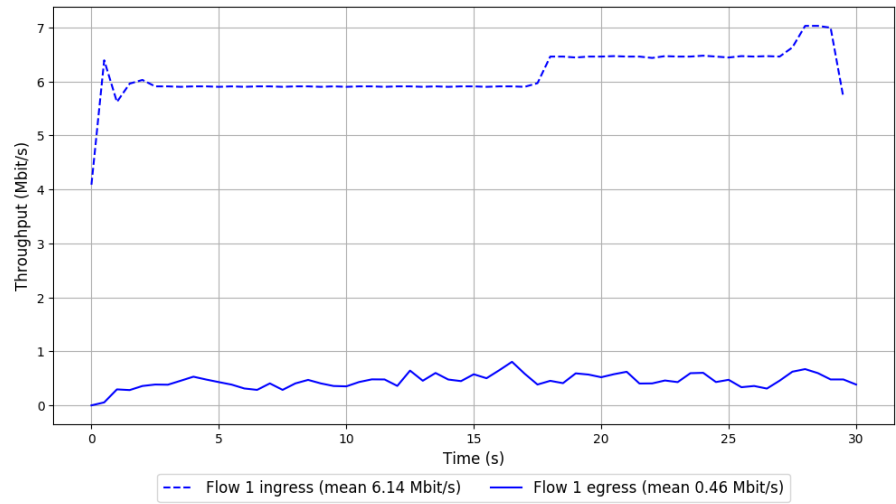


Run 1: Statistics of PCC-Expr

Start at: 2018-08-09 15:57:34
End at: 2018-08-09 15:58:04
Local clock offset: 3.227 ms
Remote clock offset: -12.743 ms

Below is generated by plot.py at 2018-08-09 16:47:18
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 393.461 ms
Loss rate: 92.52%
-- Flow 1:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 393.461 ms
Loss rate: 92.52%

Run 1: Report of PCC-Expr — Data Link

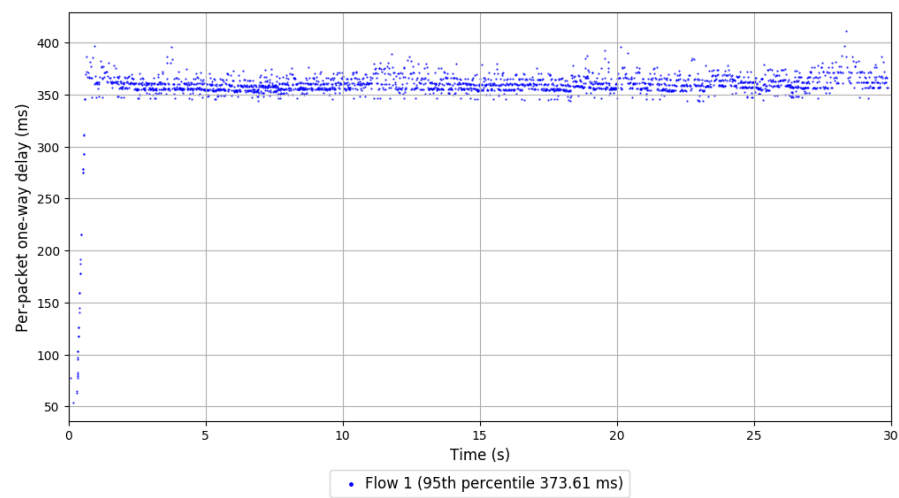
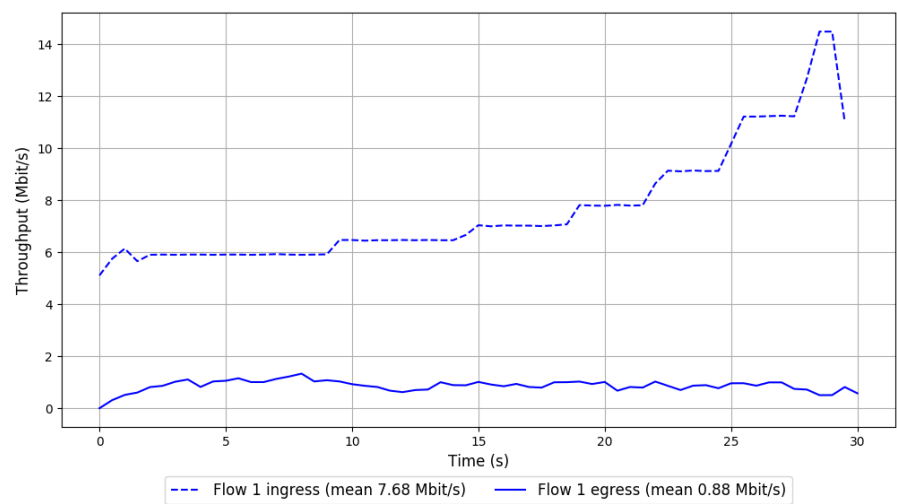


Run 2: Statistics of PCC-Expr

Start at: 2018-08-09 16:15:51
End at: 2018-08-09 16:16:21
Local clock offset: 2.712 ms
Remote clock offset: -9.072 ms

Below is generated by plot.py at 2018-08-09 16:47:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.88 Mbit/s
95th percentile per-packet one-way delay: 373.607 ms
Loss rate: 88.56%
-- Flow 1:
Average throughput: 0.88 Mbit/s
95th percentile per-packet one-way delay: 373.607 ms
Loss rate: 88.56%

Run 2: Report of PCC-Expr — Data Link

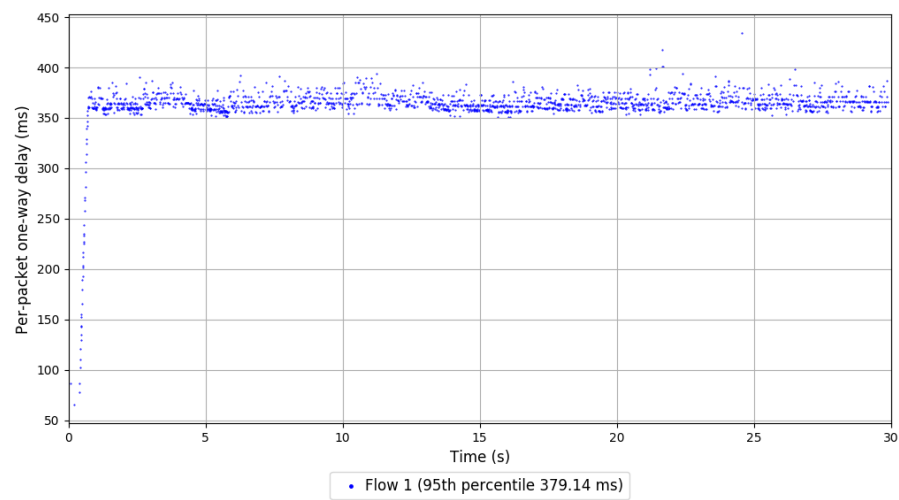
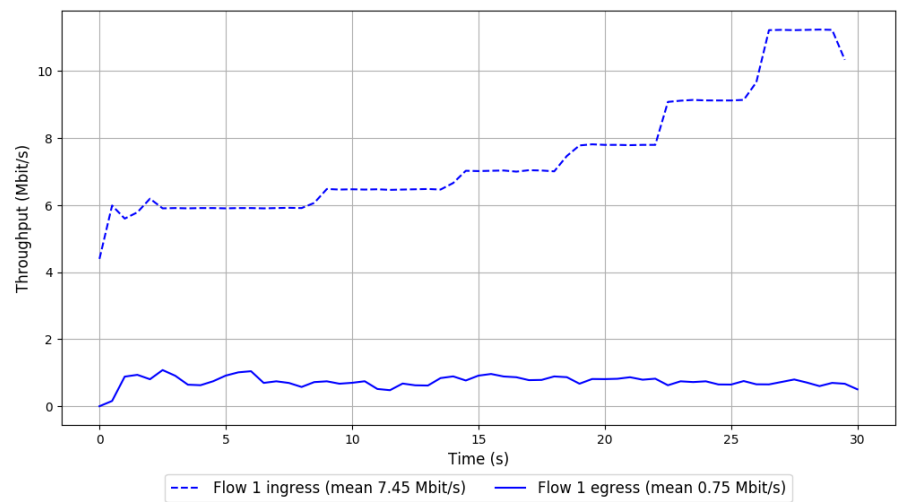


Run 3: Statistics of PCC-Expr

Start at: 2018-08-09 16:34:32
End at: 2018-08-09 16:35:02
Local clock offset: -0.195 ms
Remote clock offset: -5.254 ms

Below is generated by plot.py at 2018-08-09 16:47:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.75 Mbit/s
95th percentile per-packet one-way delay: 379.141 ms
Loss rate: 89.93%
-- Flow 1:
Average throughput: 0.75 Mbit/s
95th percentile per-packet one-way delay: 379.141 ms
Loss rate: 89.93%

Run 3: Report of PCC-Expr — Data Link

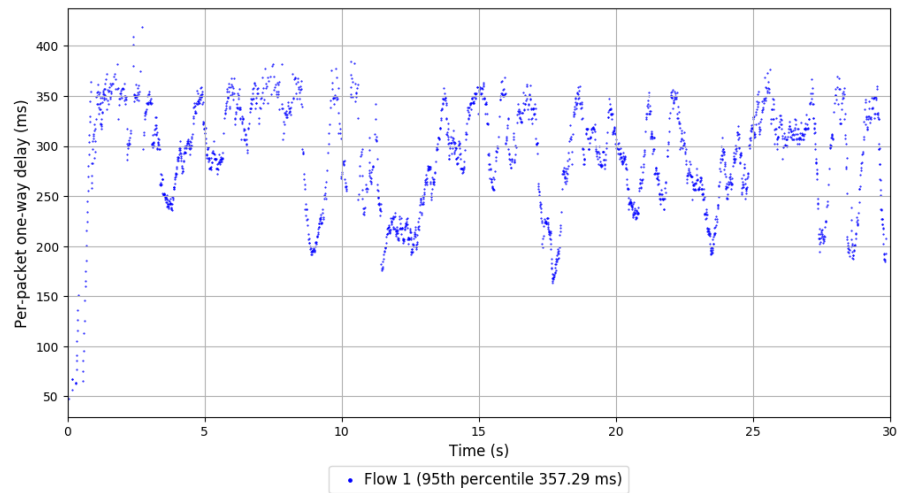
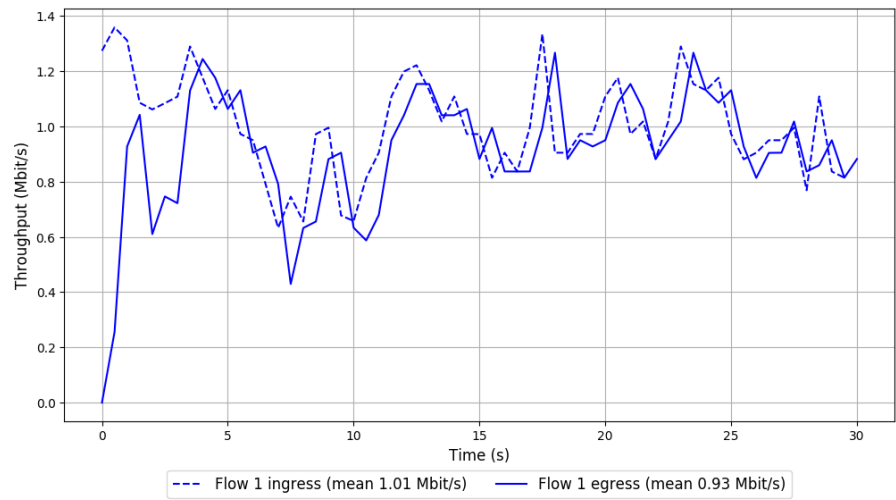


Run 1: Statistics of QUIC Cubic

Start at: 2018-08-09 16:05:06
End at: 2018-08-09 16:05:36
Local clock offset: 2.29 ms
Remote clock offset: -13.047 ms

Below is generated by plot.py at 2018-08-09 16:47:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.93 Mbit/s
95th percentile per-packet one-way delay: 357.290 ms
Loss rate: 7.70%
-- Flow 1:
Average throughput: 0.93 Mbit/s
95th percentile per-packet one-way delay: 357.290 ms
Loss rate: 7.70%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-08-09 16:23:27

End at: 2018-08-09 16:23:57

Local clock offset: 3.25 ms

Remote clock offset: -6.541 ms

Below is generated by plot.py at 2018-08-09 16:47:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.96 Mbit/s

95th percentile per-packet one-way delay: 357.502 ms

Loss rate: 7.75%

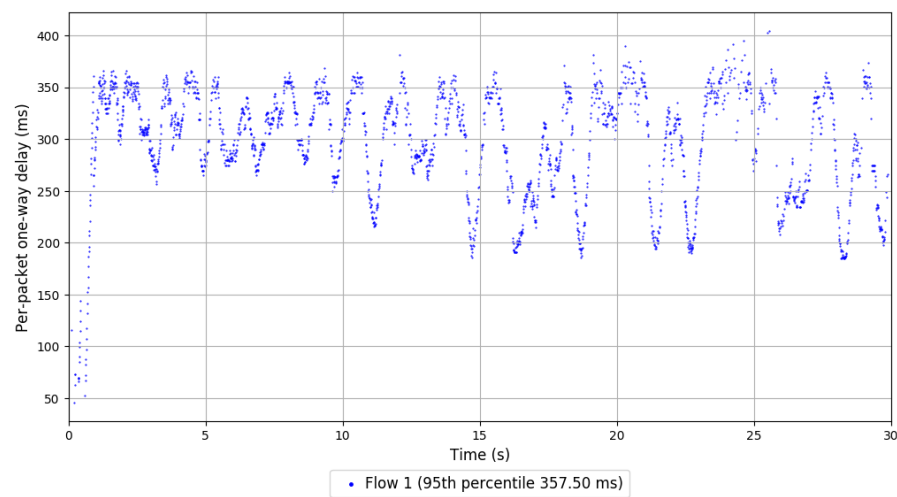
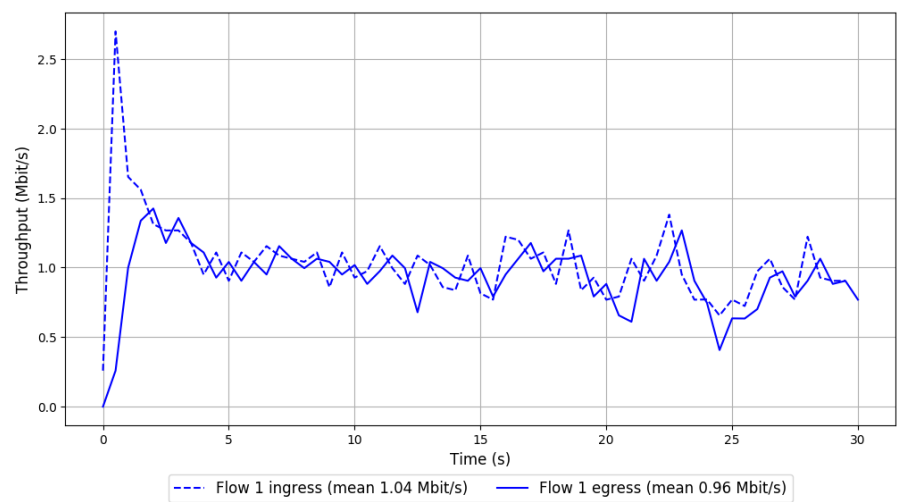
-- Flow 1:

Average throughput: 0.96 Mbit/s

95th percentile per-packet one-way delay: 357.502 ms

Loss rate: 7.75%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-08-09 16:42:04

End at: 2018-08-09 16:42:34

Local clock offset: 0.576 ms

Remote clock offset: -4.991 ms

Below is generated by plot.py at 2018-08-09 16:47:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.73 Mbit/s

95th percentile per-packet one-way delay: 374.661 ms

Loss rate: 8.34%

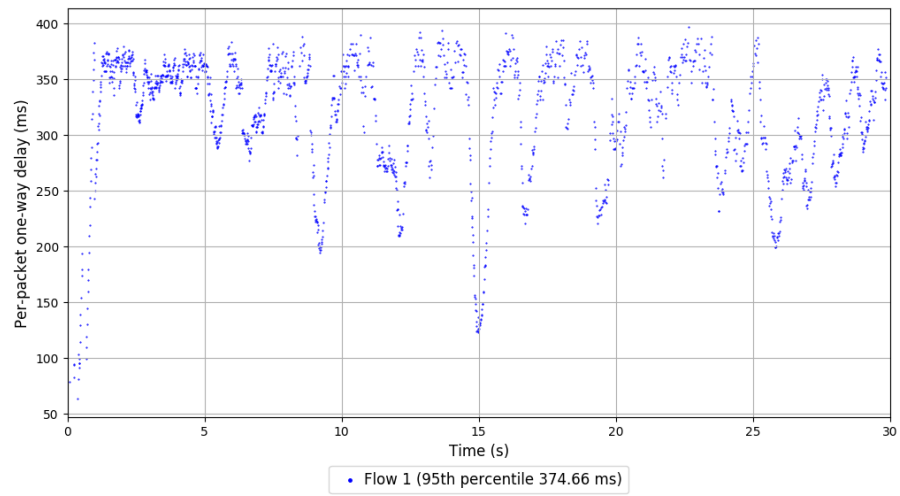
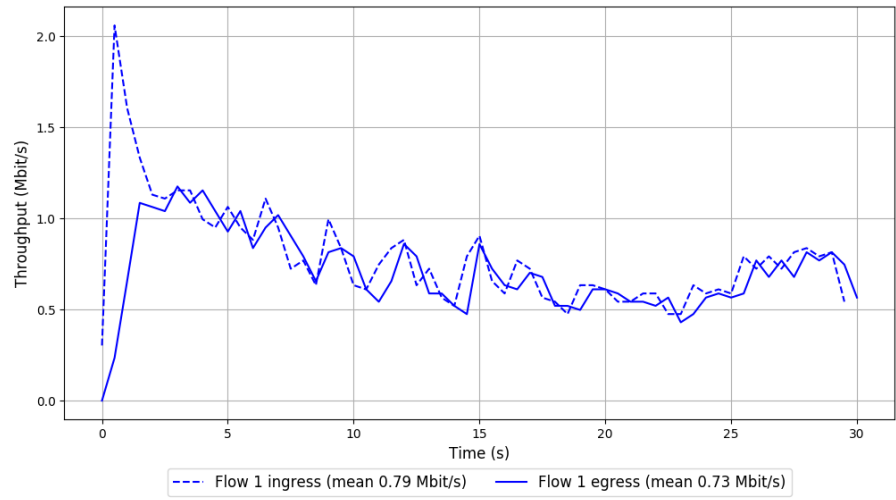
-- Flow 1:

Average throughput: 0.73 Mbit/s

95th percentile per-packet one-way delay: 374.661 ms

Loss rate: 8.34%

Run 3: Report of QUIC Cubic — Data Link

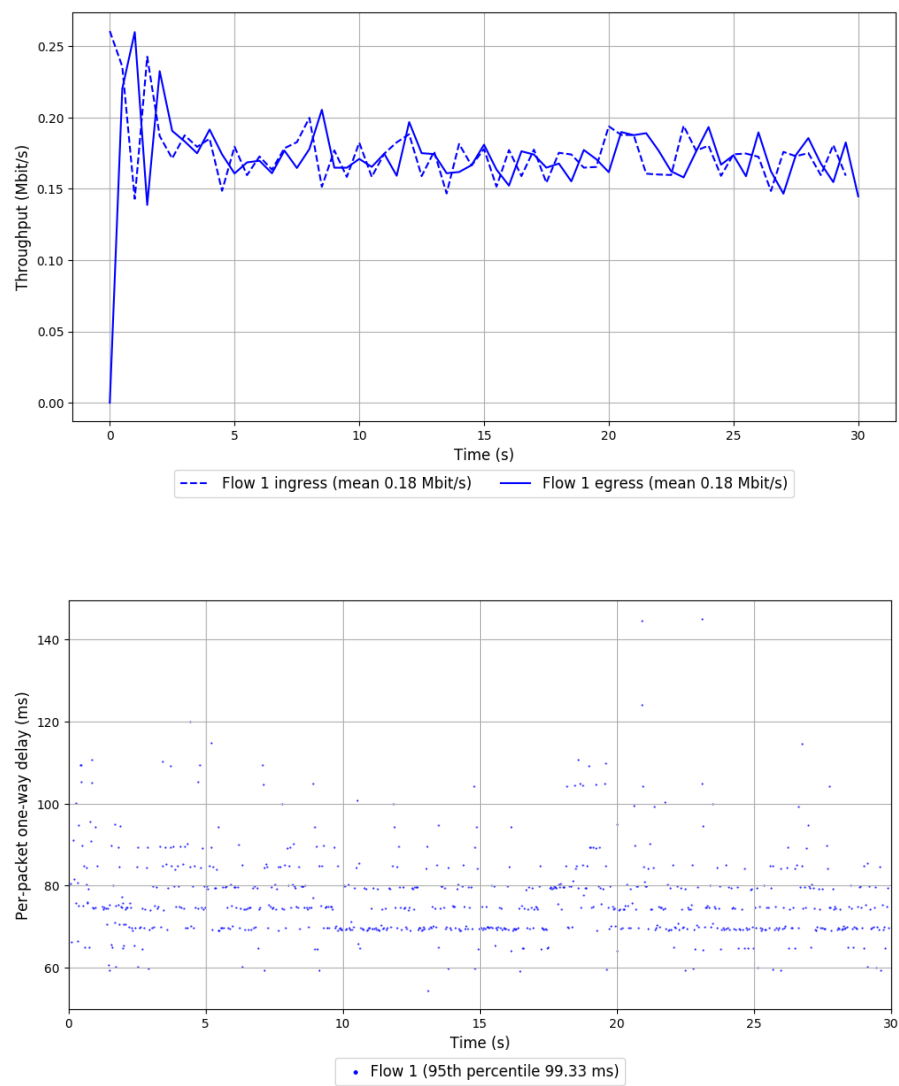


```
Run 1: Statistics of SCReAM

Start at: 2018-08-09 15:56:30
End at: 2018-08-09 15:57:00
Local clock offset: 0.737 ms
Remote clock offset: -12.829 ms

# Below is generated by plot.py at 2018-08-09 16:47:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 99.325 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 99.325 ms
Loss rate: 0.38%
```

Run 1: Report of SReAM — Data Link

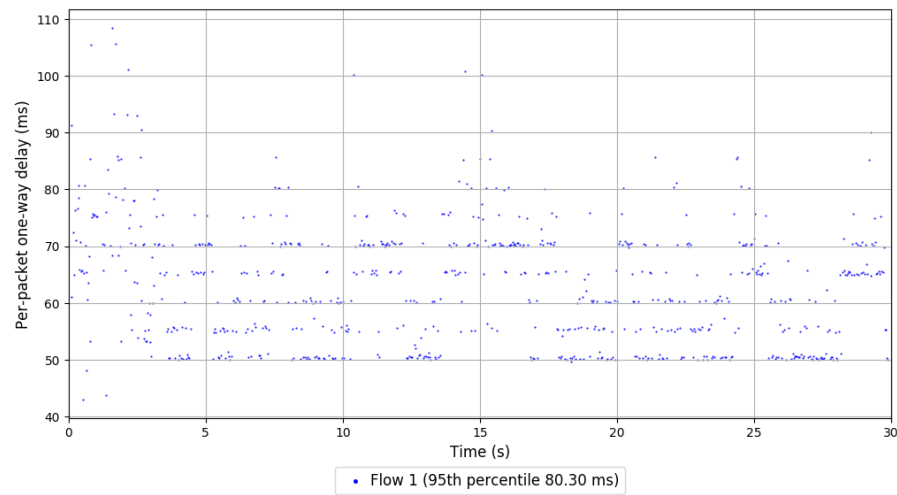
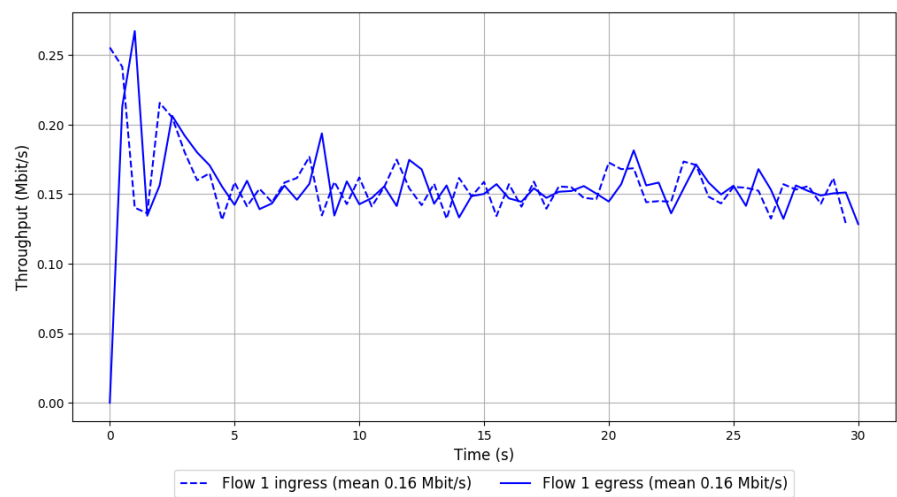


Run 2: Statistics of SCReAM

Start at: 2018-08-09 16:14:46
End at: 2018-08-09 16:15:16
Local clock offset: 0.302 ms
Remote clock offset: -9.551 ms

Below is generated by plot.py at 2018-08-09 16:47:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 80.299 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 80.299 ms
Loss rate: 0.25%

Run 2: Report of SReAM — Data Link

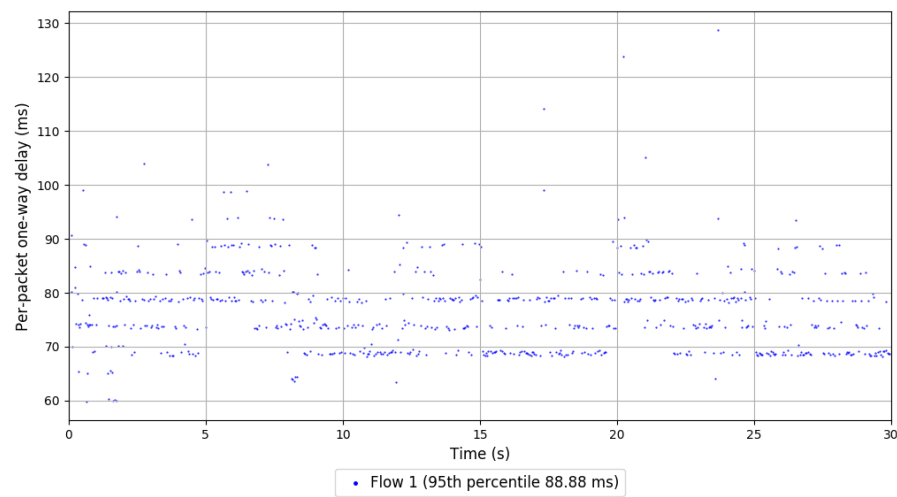
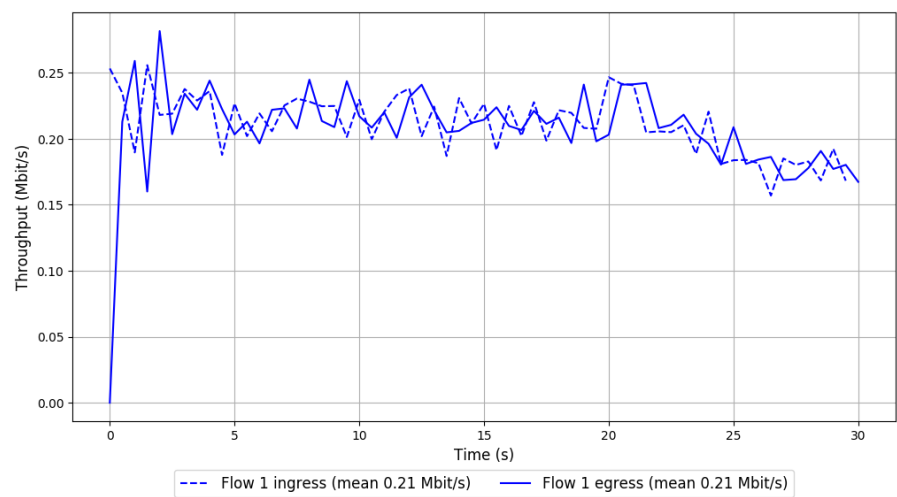


Run 3: Statistics of SCReAM

Start at: 2018-08-09 16:33:28
End at: 2018-08-09 16:33:58
Local clock offset: 1.664 ms
Remote clock offset: -5.719 ms

Below is generated by plot.py at 2018-08-09 16:47:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 88.879 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 88.879 ms
Loss rate: 0.22%

Run 3: Report of SReAM — Data Link

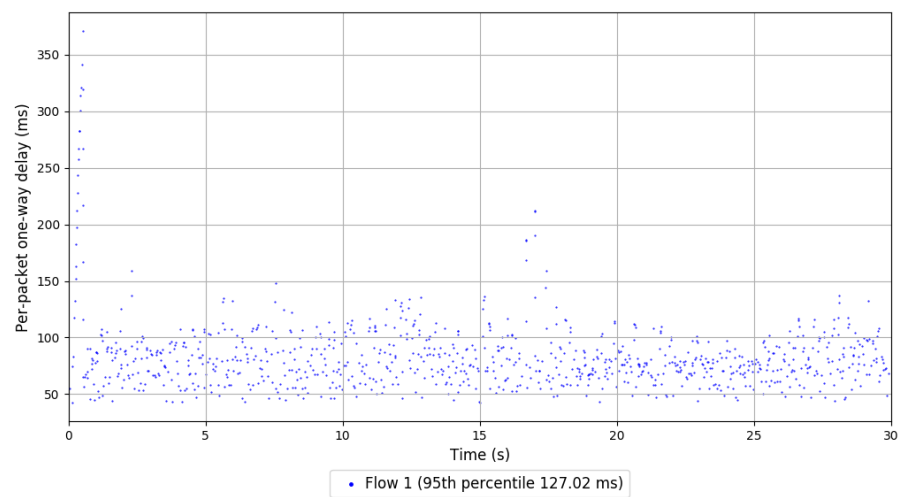
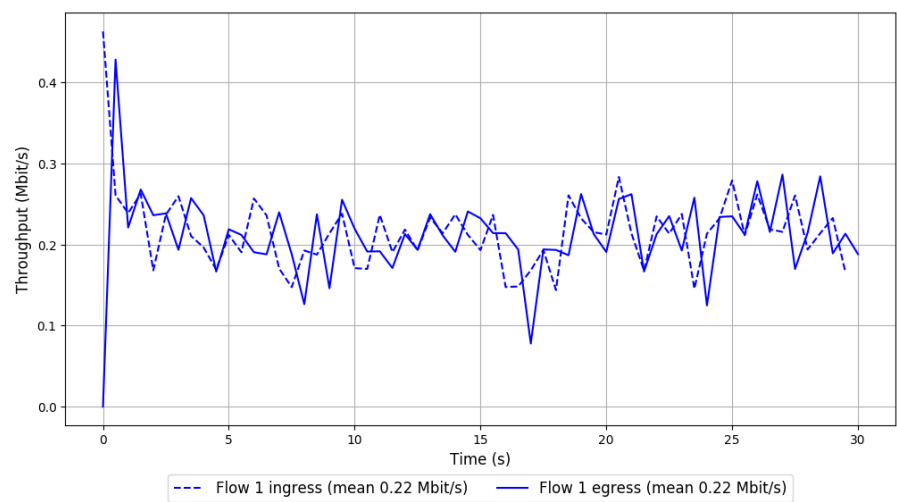


Run 1: Statistics of Sprout

Start at: 2018-08-09 15:54:21
End at: 2018-08-09 15:54:51
Local clock offset: 2.036 ms
Remote clock offset: -12.575 ms

Below is generated by plot.py at 2018-08-09 16:47:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 127.022 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 127.022 ms
Loss rate: 0.19%

Run 1: Report of Sprout — Data Link

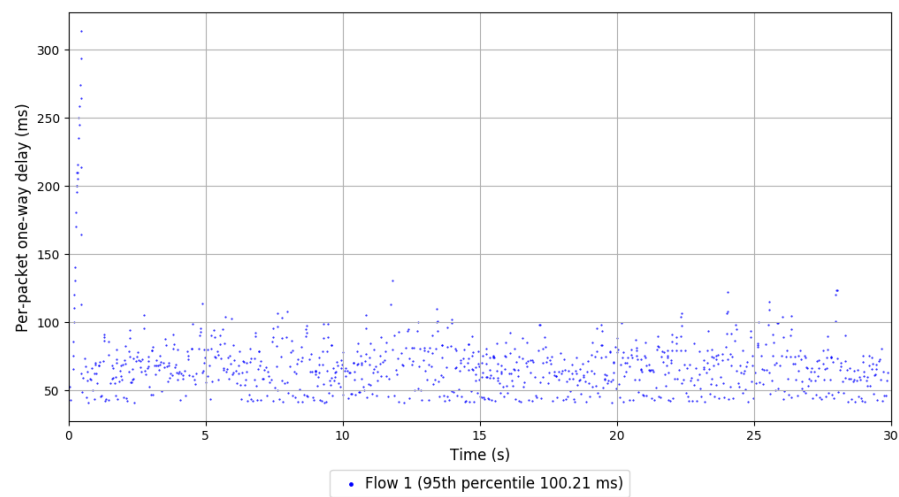
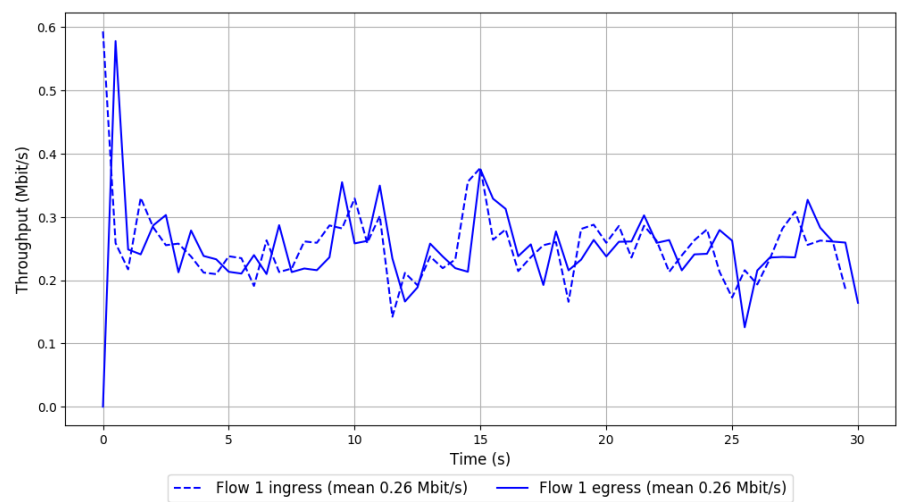


Run 2: Statistics of Sprout

Start at: 2018-08-09 16:12:37
End at: 2018-08-09 16:13:07
Local clock offset: 2.468 ms
Remote clock offset: -9.517 ms

Below is generated by plot.py at 2018-08-09 16:47:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 100.208 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 100.208 ms
Loss rate: 0.31%

Run 2: Report of Sprout — Data Link

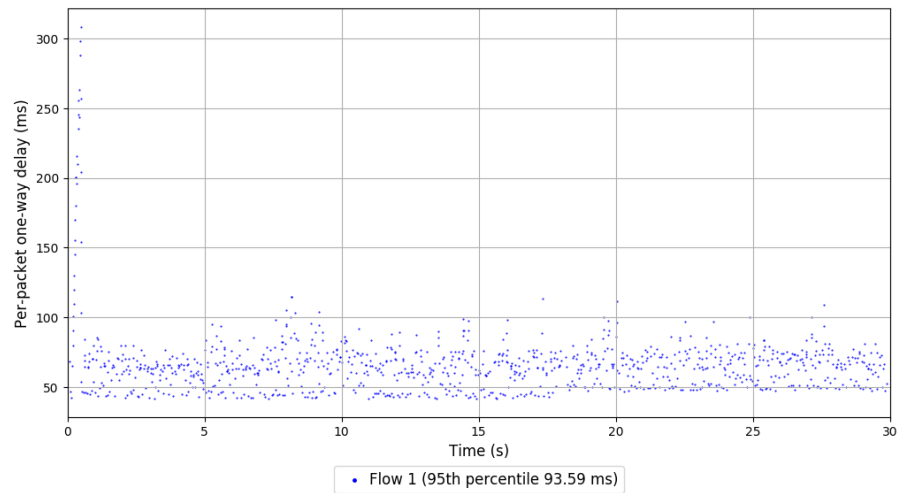
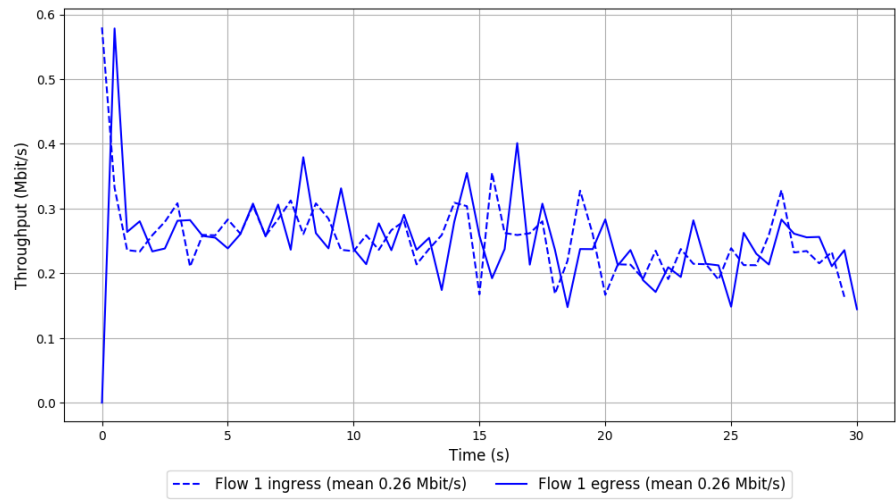


Run 3: Statistics of Sprout

Start at: 2018-08-09 16:31:13
End at: 2018-08-09 16:31:43
Local clock offset: 2.795 ms
Remote clock offset: -5.164 ms

Below is generated by plot.py at 2018-08-09 16:47:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 93.586 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 93.586 ms
Loss rate: 0.59%

Run 3: Report of Sprout — Data Link

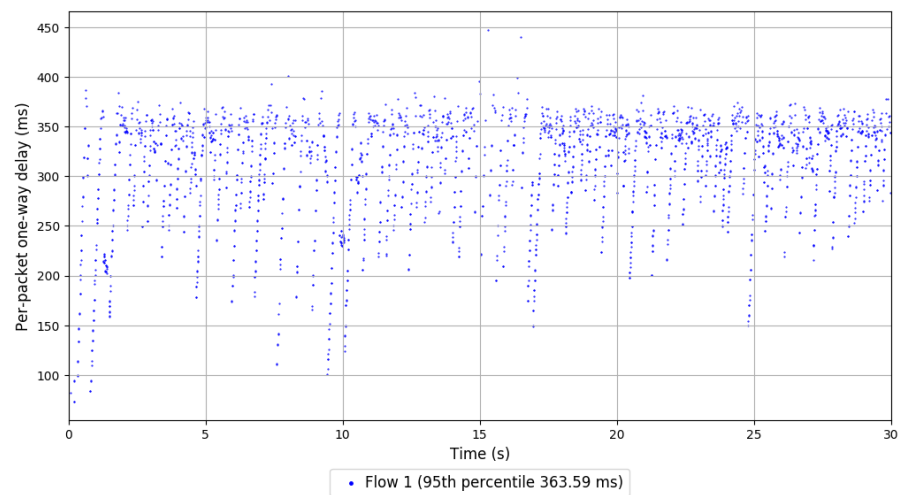
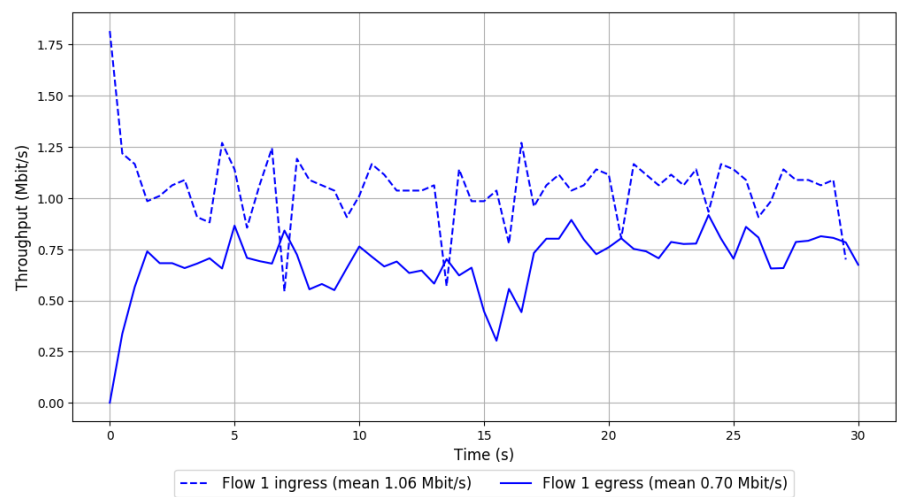


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-08-09 15:55:25
End at: 2018-08-09 15:55:56
Local clock offset: 2.007 ms
Remote clock offset: -13.117 ms

# Below is generated by plot.py at 2018-08-09 16:47:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.70 Mbit/s
95th percentile per-packet one-way delay: 363.590 ms
Loss rate: 33.61%
-- Flow 1:
Average throughput: 0.70 Mbit/s
95th percentile per-packet one-way delay: 363.590 ms
Loss rate: 33.61%
```

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

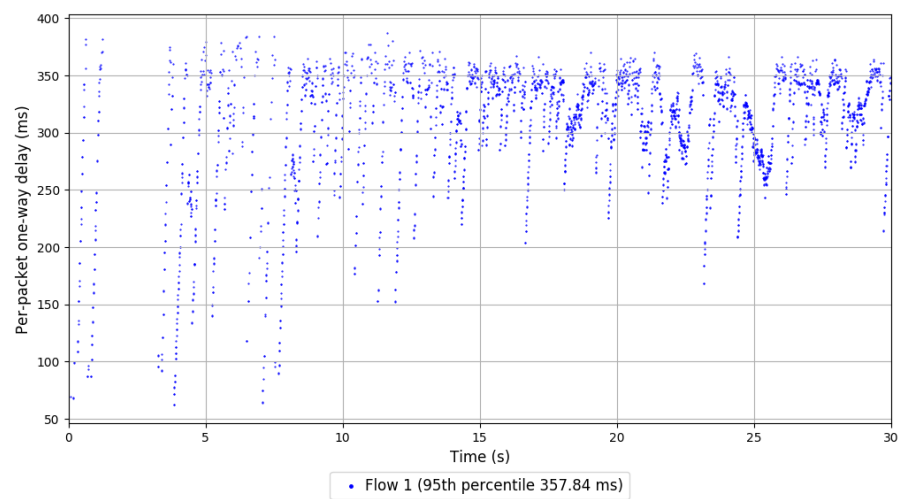
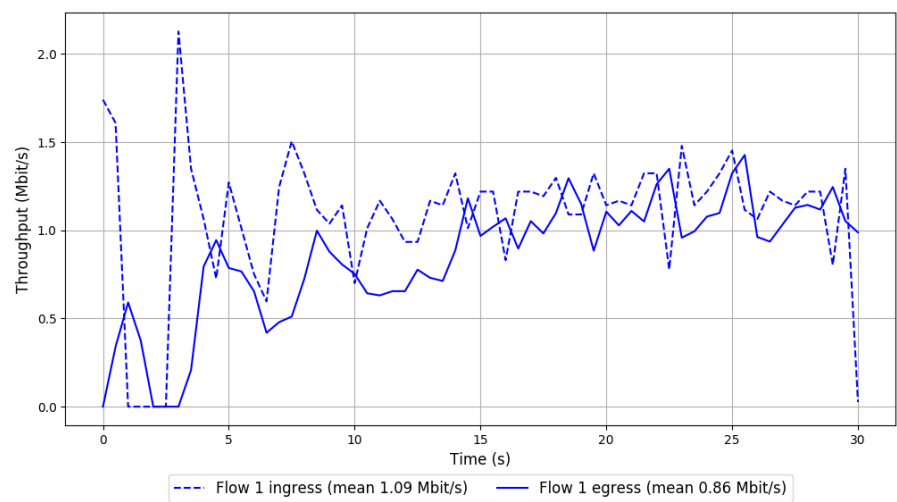


Run 2: Statistics of TaoVA-100x

Start at: 2018-08-09 16:13:42
End at: 2018-08-09 16:14:12
Local clock offset: 1.371 ms
Remote clock offset: -10.338 ms

Below is generated by plot.py at 2018-08-09 16:47:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 357.838 ms
Loss rate: 21.18%
-- Flow 1:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 357.838 ms
Loss rate: 21.18%

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

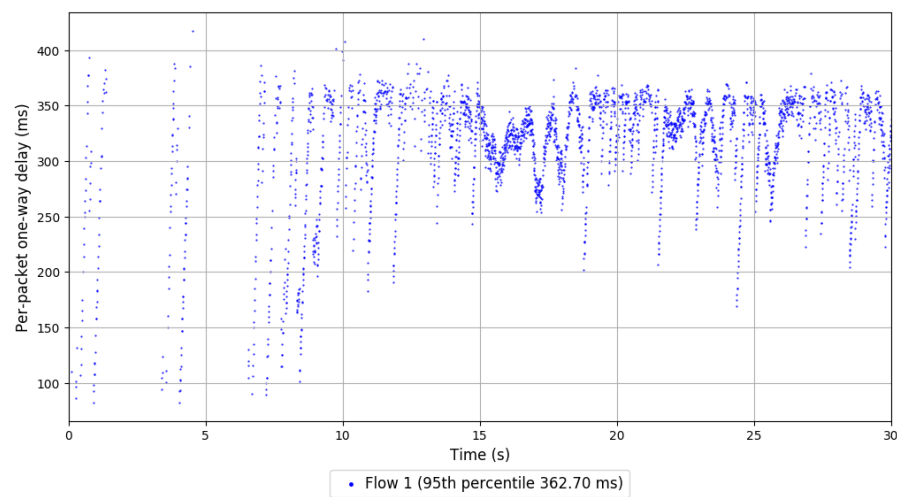
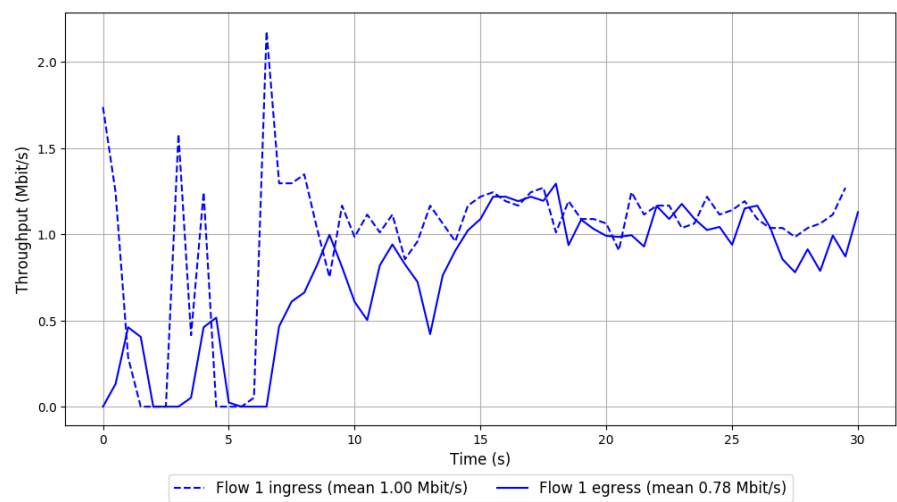


Run 3: Statistics of TaoVA-100x

Start at: 2018-08-09 16:32:19
End at: 2018-08-09 16:32:49
Local clock offset: 2.025 ms
Remote clock offset: -5.928 ms

Below is generated by plot.py at 2018-08-09 16:47:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.78 Mbit/s
95th percentile per-packet one-way delay: 362.703 ms
Loss rate: 22.17%
-- Flow 1:
Average throughput: 0.78 Mbit/s
95th percentile per-packet one-way delay: 362.703 ms
Loss rate: 22.17%

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

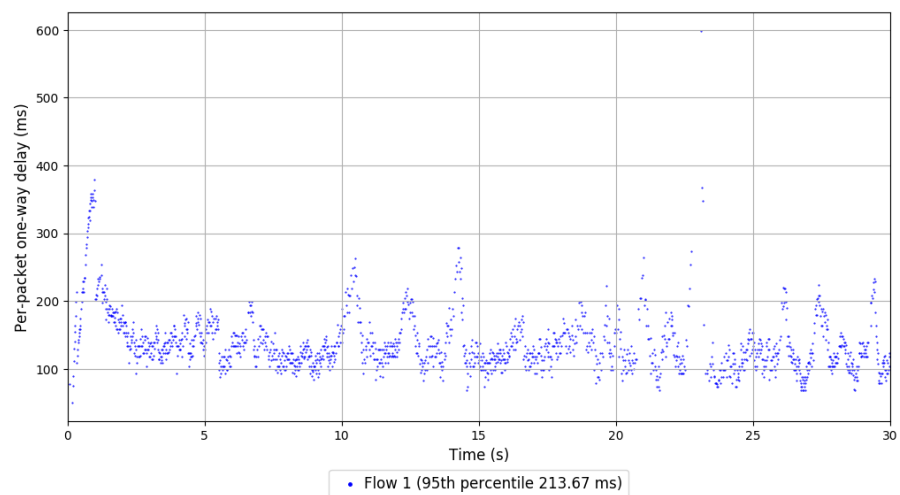
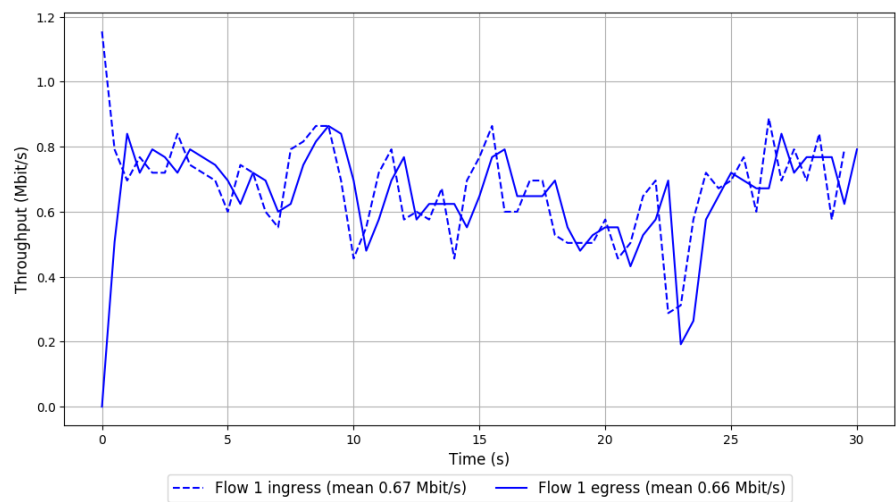


Run 1: Statistics of TCP Vegas

Start at: 2018-08-09 15:59:44
End at: 2018-08-09 16:00:14
Local clock offset: 1.429 ms
Remote clock offset: -12.529 ms

Below is generated by plot.py at 2018-08-09 16:47:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 213.669 ms
Loss rate: 1.73%
-- Flow 1:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 213.669 ms
Loss rate: 1.73%

Run 1: Report of TCP Vegas — Data Link

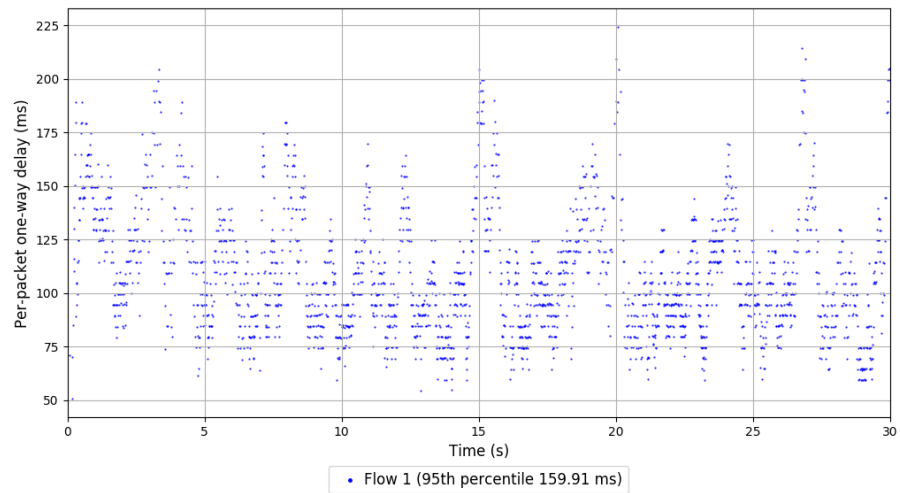
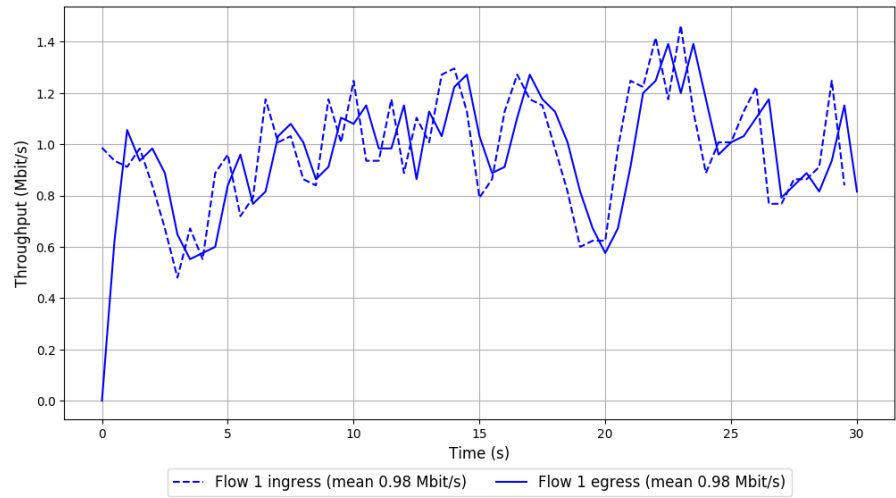


Run 2: Statistics of TCP Vegas

Start at: 2018-08-09 16:18:00
End at: 2018-08-09 16:18:30
Local clock offset: 0.926 ms
Remote clock offset: -7.835 ms

Below is generated by plot.py at 2018-08-09 16:47:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 159.914 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 159.914 ms
Loss rate: 0.45%

Run 2: Report of TCP Vegas — Data Link

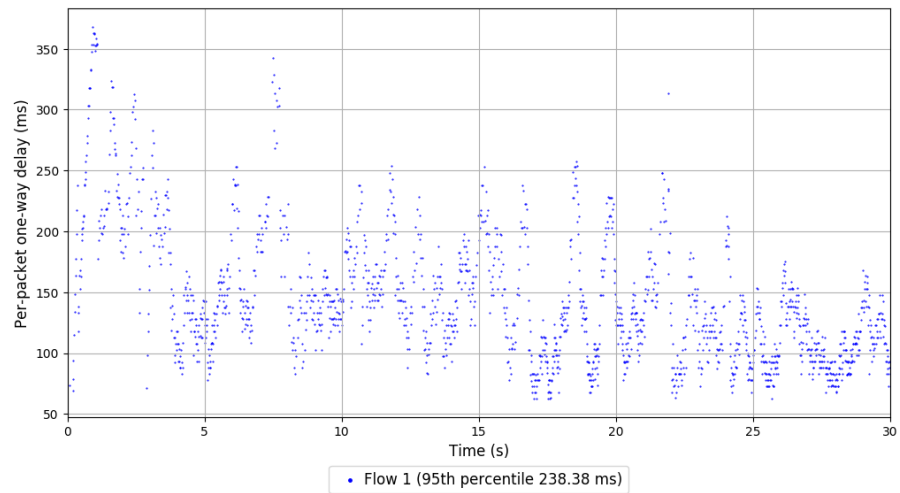
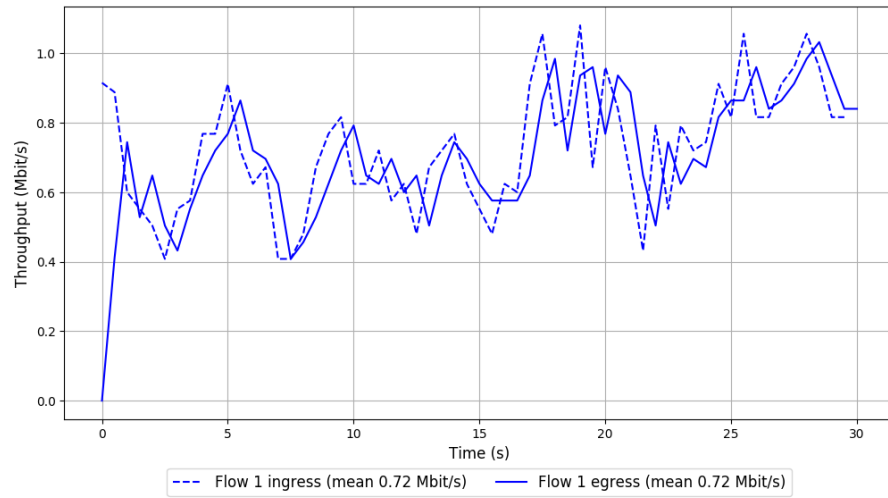


Run 3: Statistics of TCP Vegas

Start at: 2018-08-09 16:36:42
End at: 2018-08-09 16:37:12
Local clock offset: 1.322 ms
Remote clock offset: -4.943 ms

Below is generated by plot.py at 2018-08-09 16:47:23
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.72 Mbit/s
95th percentile per-packet one-way delay: 238.377 ms
Loss rate: 1.27%
-- Flow 1:
Average throughput: 0.72 Mbit/s
95th percentile per-packet one-way delay: 238.377 ms
Loss rate: 1.27%

Run 3: Report of TCP Vegas — Data Link

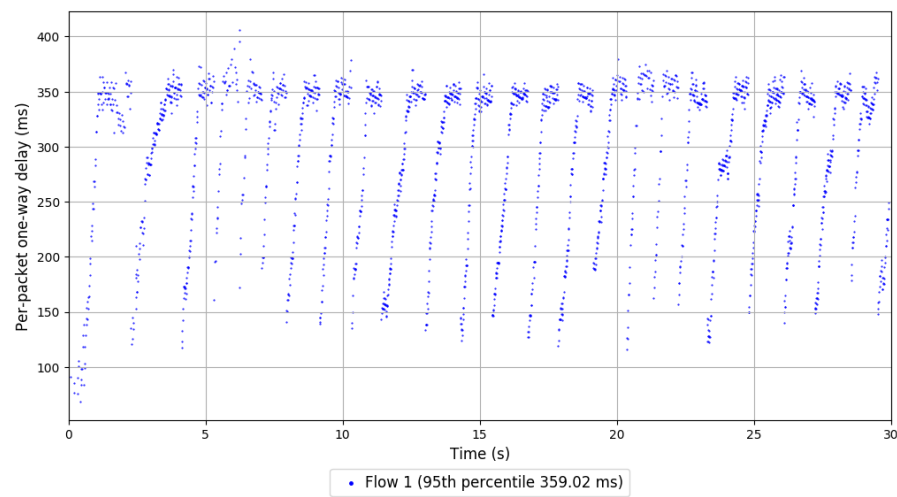
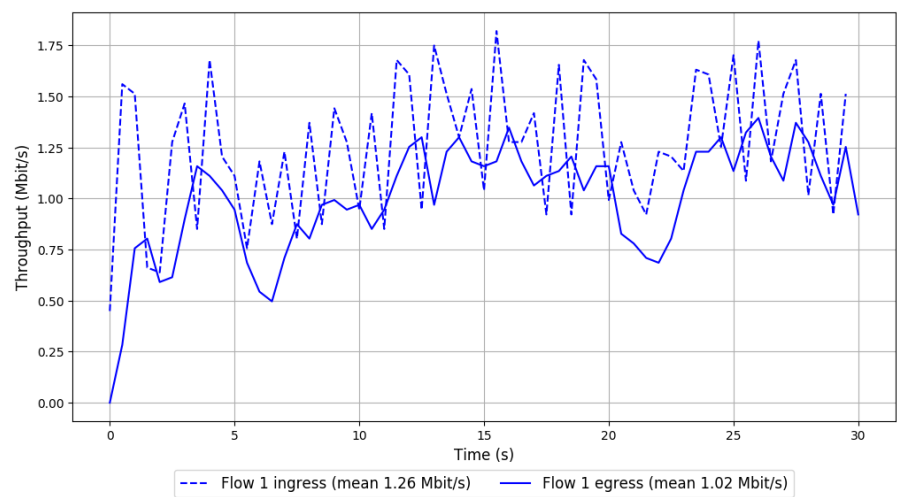


Run 1: Statistics of Verus

Start at: 2018-08-09 16:02:57
End at: 2018-08-09 16:03:27
Local clock offset: 1.643 ms
Remote clock offset: -12.956 ms

Below is generated by plot.py at 2018-08-09 16:47:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.02 Mbit/s
95th percentile per-packet one-way delay: 359.018 ms
Loss rate: 19.62%
-- Flow 1:
Average throughput: 1.02 Mbit/s
95th percentile per-packet one-way delay: 359.018 ms
Loss rate: 19.62%

Run 1: Report of Verus — Data Link

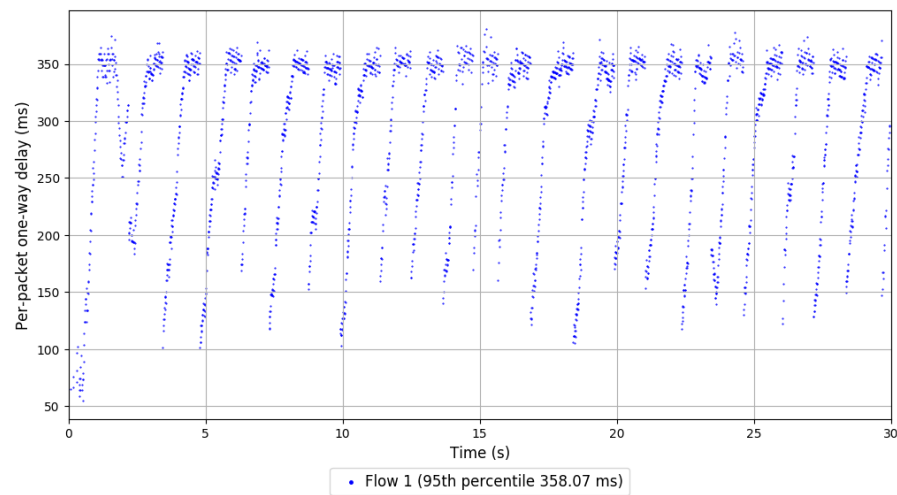
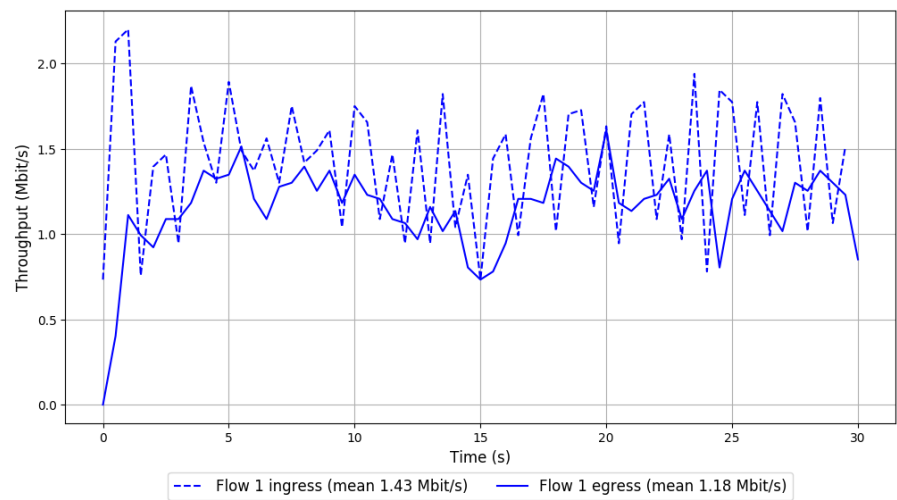


Run 2: Statistics of Verus

Start at: 2018-08-09 16:21:19
End at: 2018-08-09 16:21:49
Local clock offset: 1.943 ms
Remote clock offset: -7.605 ms

Below is generated by plot.py at 2018-08-09 16:47:26
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 358.072 ms
Loss rate: 17.63%
-- Flow 1:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 358.072 ms
Loss rate: 17.63%

Run 2: Report of Verus — Data Link

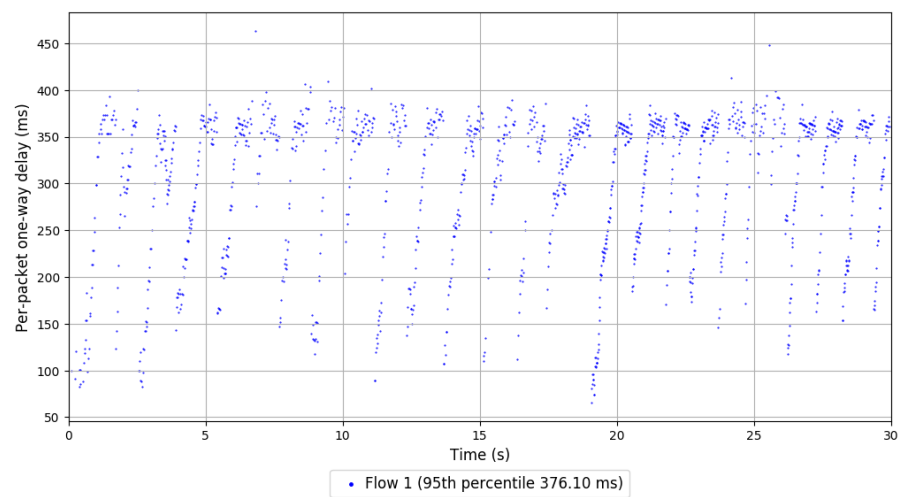
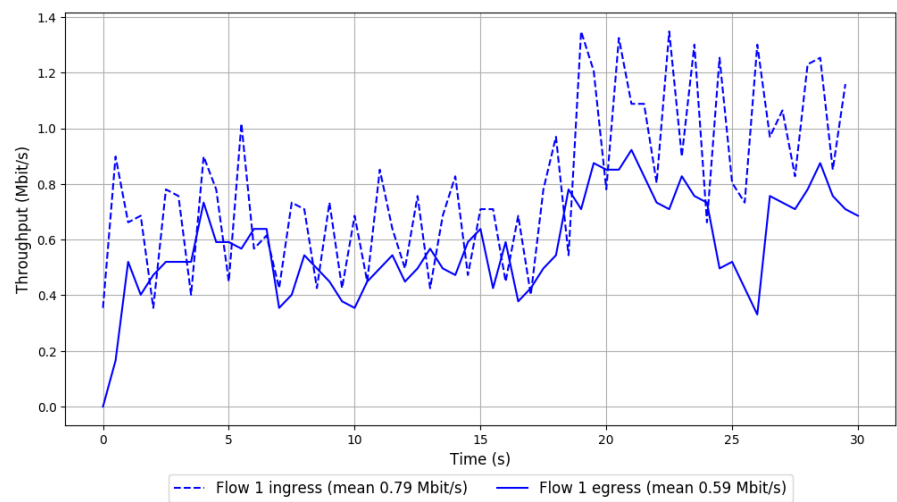


Run 3: Statistics of Verus

Start at: 2018-08-09 16:39:55
End at: 2018-08-09 16:40:25
Local clock offset: 0.244 ms
Remote clock offset: -5.031 ms

Below is generated by plot.py at 2018-08-09 16:47:26
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 376.097 ms
Loss rate: 25.73%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 376.097 ms
Loss rate: 25.73%

Run 3: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-08-09 16:04:02

End at: 2018-08-09 16:04:32

Local clock offset: 3.547 ms

Remote clock offset: -13.34 ms

Below is generated by plot.py at 2018-08-09 16:47:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.89 Mbit/s

95th percentile per-packet one-way delay: 362.197 ms

Loss rate: 23.32%

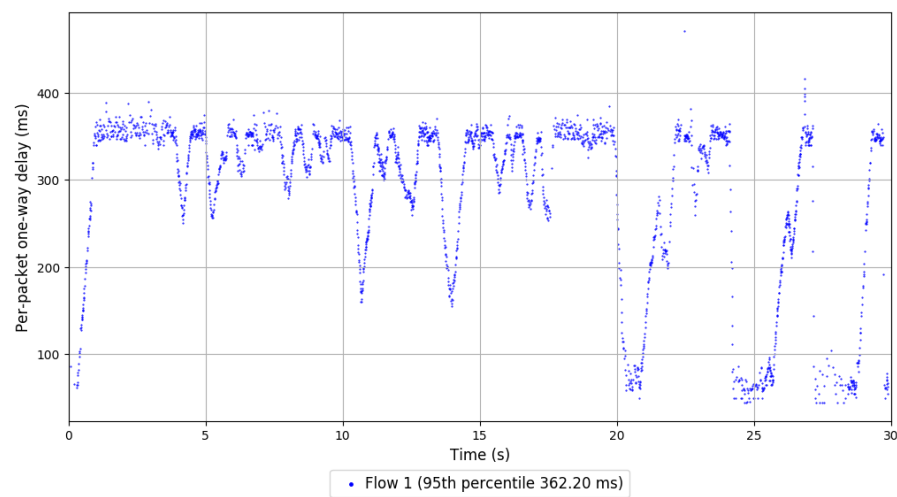
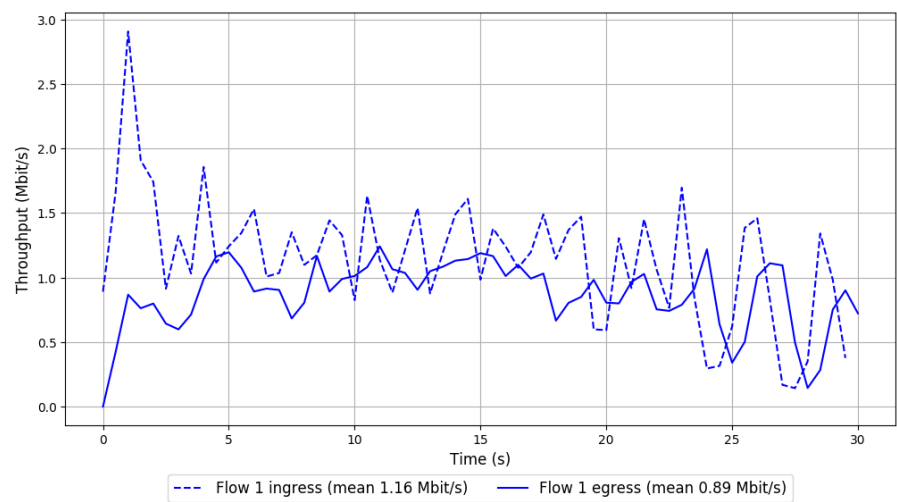
-- Flow 1:

Average throughput: 0.89 Mbit/s

95th percentile per-packet one-way delay: 362.197 ms

Loss rate: 23.32%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-08-09 16:22:23

End at: 2018-08-09 16:22:53

Local clock offset: 0.563 ms

Remote clock offset: -7.423 ms

Below is generated by plot.py at 2018-08-09 16:47:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.92 Mbit/s

95th percentile per-packet one-way delay: 361.345 ms

Loss rate: 27.56%

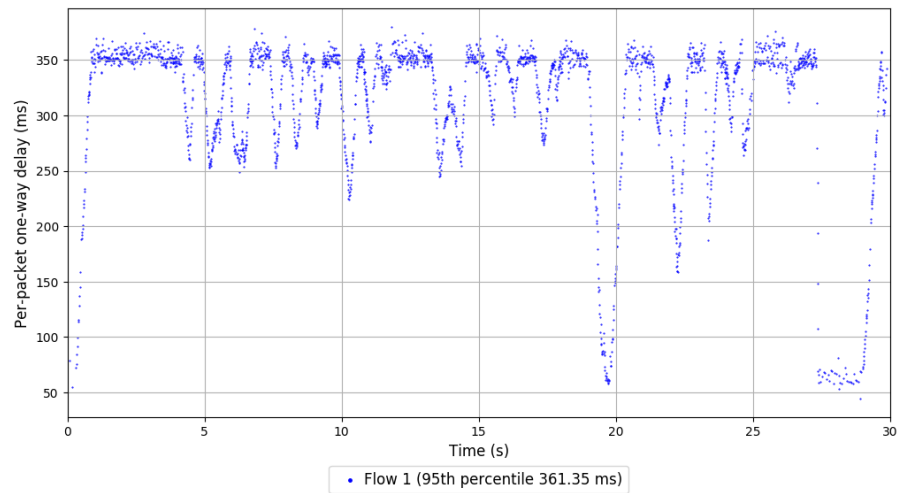
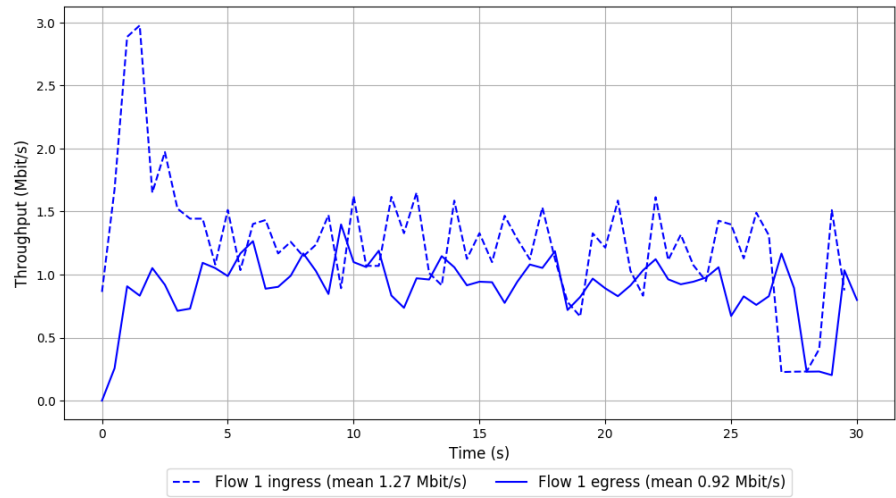
-- Flow 1:

Average throughput: 0.92 Mbit/s

95th percentile per-packet one-way delay: 361.345 ms

Loss rate: 27.56%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-08-09 16:41:00

End at: 2018-08-09 16:41:30

Local clock offset: -0.225 ms

Remote clock offset: -3.56 ms

Below is generated by plot.py at 2018-08-09 16:47:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.94 Mbit/s

95th percentile per-packet one-way delay: 375.341 ms

Loss rate: 23.22%

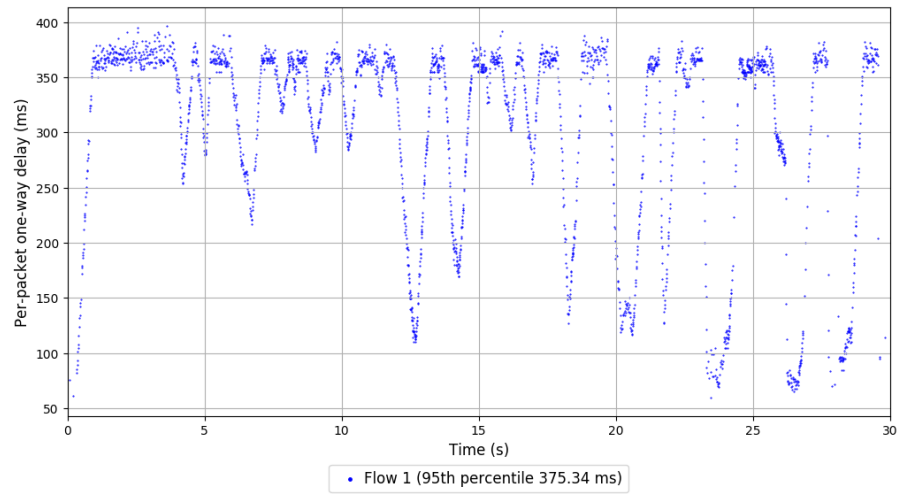
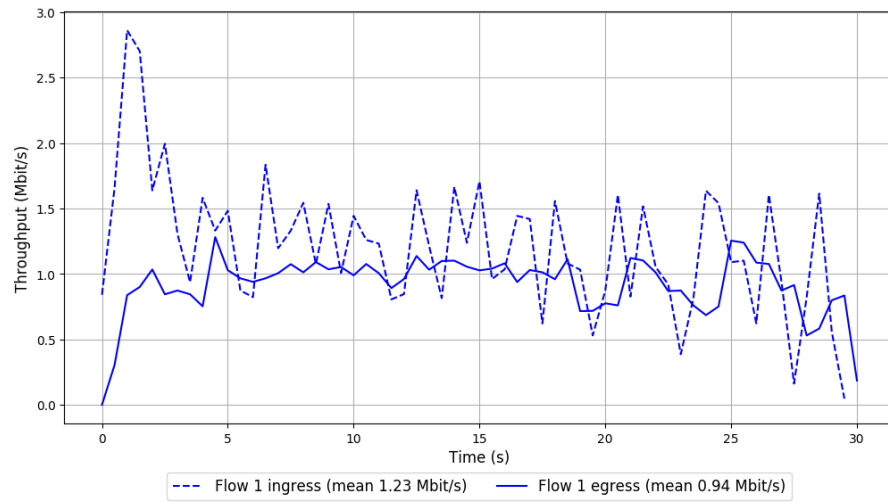
-- Flow 1:

Average throughput: 0.94 Mbit/s

95th percentile per-packet one-way delay: 375.341 ms

Loss rate: 23.22%

Run 3: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-08-09 16:06:11

End at: 2018-08-09 16:06:41

Local clock offset: 2.017 ms

Remote clock offset: -13.9 ms

Below is generated by plot.py at 2018-08-09 16:47:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.38 Mbit/s

95th percentile per-packet one-way delay: 171.083 ms

Loss rate: 1.22%

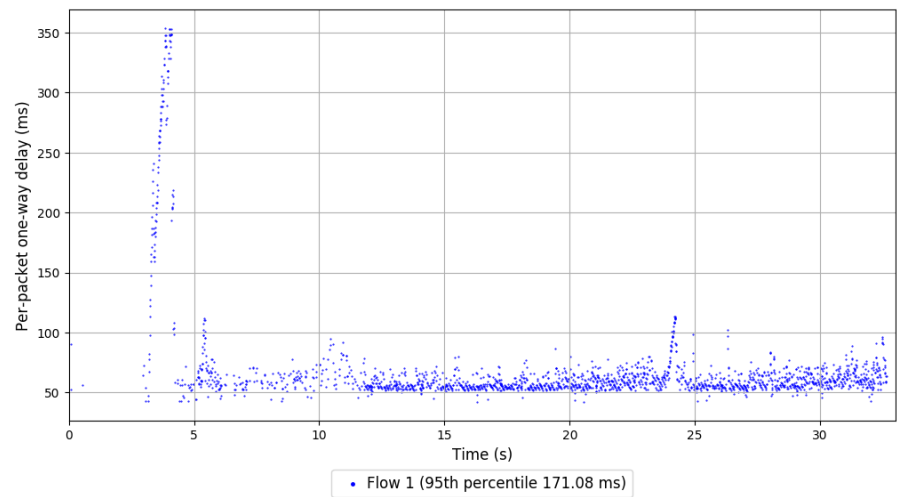
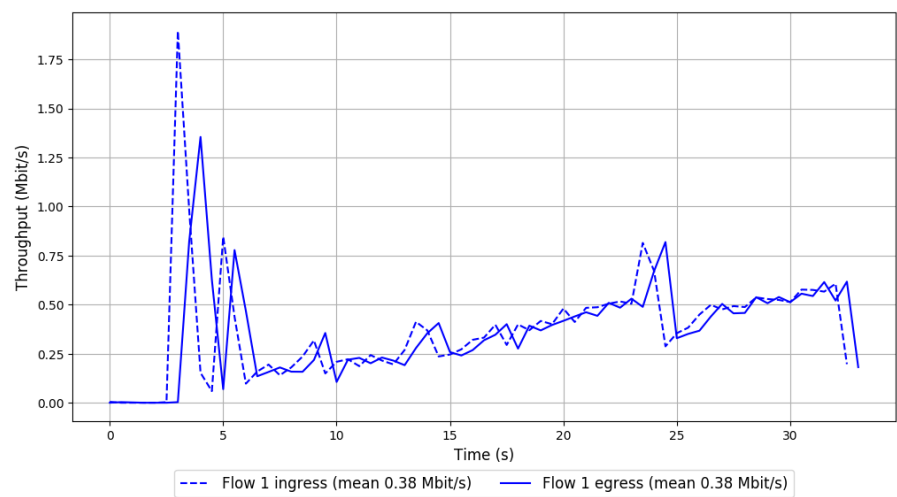
-- Flow 1:

Average throughput: 0.38 Mbit/s

95th percentile per-packet one-way delay: 171.083 ms

Loss rate: 1.22%

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-08-09 16:24:33

End at: 2018-08-09 16:25:03

Local clock offset: 3.675 ms

Remote clock offset: -6.24 ms

Below is generated by plot.py at 2018-08-09 16:47:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.30 Mbit/s

95th percentile per-packet one-way delay: 225.115 ms

Loss rate: 1.93%

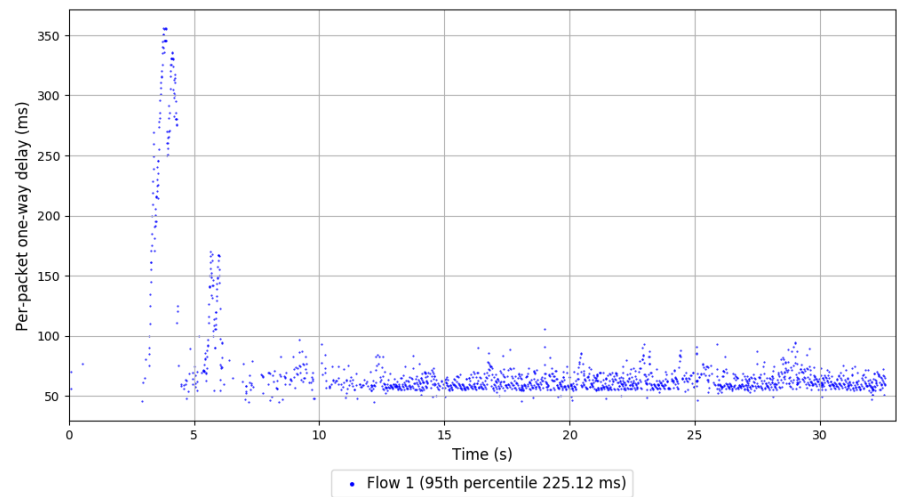
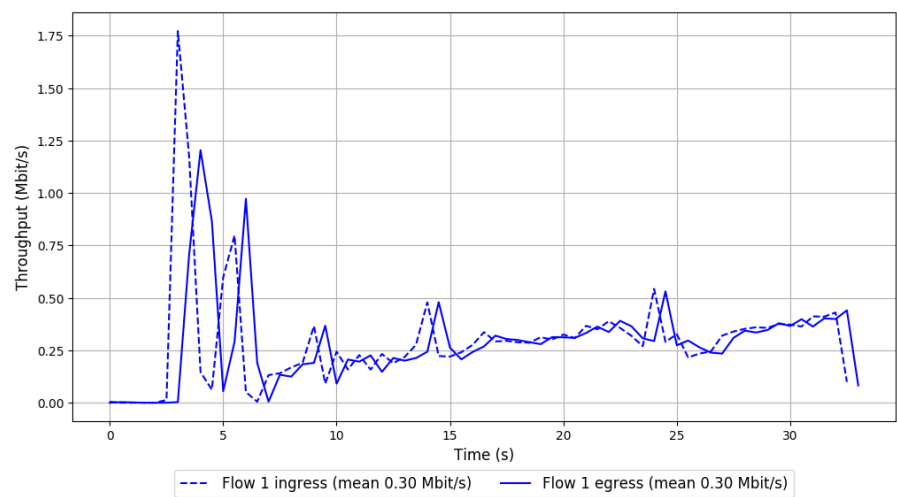
-- Flow 1:

Average throughput: 0.30 Mbit/s

95th percentile per-packet one-way delay: 225.115 ms

Loss rate: 1.93%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-08-09 16:43:08
End at: 2018-08-09 16:43:38
Local clock offset: -0.521 ms
Remote clock offset: -4.584 ms

Below is generated by plot.py at 2018-08-09 16:47:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 225.971 ms
Loss rate: 5.52%
-- Flow 1:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 225.971 ms
Loss rate: 5.52%

Run 3: Report of WebRTC media — Data Link

