

Pantheon Report

Generated at 2018-05-30 08:10:58 (UTC).

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

Repeated the test of 16 congestion control schemes 3 times.

Each test lasted for 30 seconds running 1 flow.

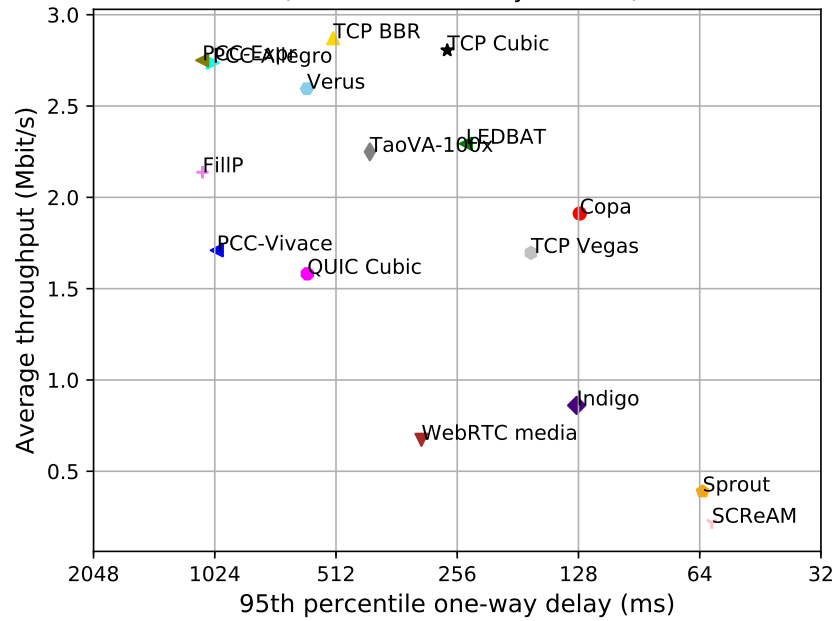
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

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

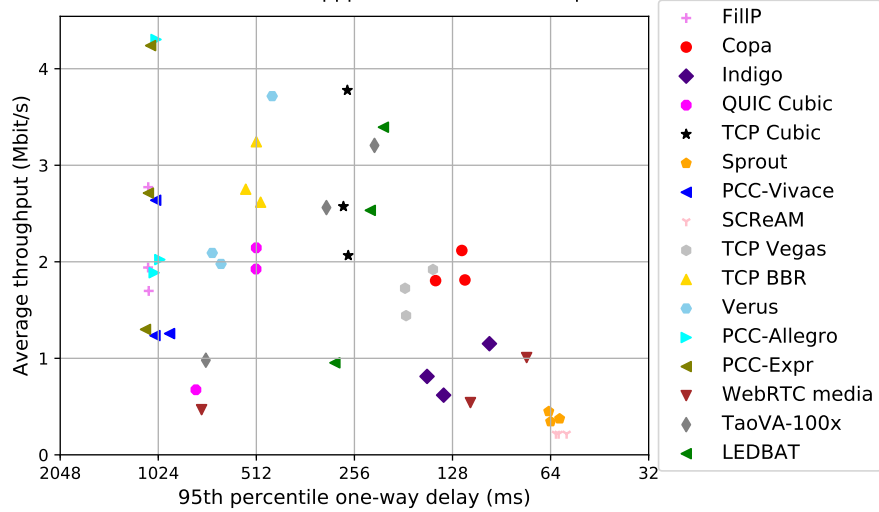
Git summary:

```
branch: master @ 227fdf9a3757f17b88537cceed5743a33037a3d2
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/genericCC @ c7966e494a929986eaa5a9c169a7f381fe1bbbe5
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ 6f038ed31259d366f9840f65b82cbe8f464b1b39
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quirk @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ c838669682f0c19f6baf92afc9a596a406d48c1f
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webRTC @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

test from AWS India 1 to India ppp0, 3 runs of 30s each per scheme
(mean of all runs by scheme)



test from AWS India 1 to India ppp0, 3 runs of 30s each per scheme



scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	2.87	520.24	1.06
Copa	3	1.91	127.10	0.18
TCP Cubic	3	2.81	271.05	0.46
FillP	3	2.14	1098.35	49.28
Indigo	3	0.86	129.37	0.12
LEDBAT	3	2.29	243.82	0.54
PCC-Allegro	3	2.74	1035.64	6.47
PCC-Expr	3	2.75	1100.09	50.41
QUIC Cubic	3	1.58	603.40	1.91
SCReAM	3	0.22	59.73	0.13
Sprout	3	0.39	62.95	0.10
TaoVA-100x	3	2.25	421.92	2.24
TCP Vegas	3	1.70	167.89	0.23
Verus	3	2.60	604.75	1.89
PCC-Vivace	3	1.71	1012.29	6.90
WebRTC media	3	0.67	314.15	0.50

Run 1: Statistics of TCP BBR

Start at: 2018-05-30 07:29:45

End at: 2018-05-30 07:30:15

Local clock offset: -2.636 ms

Remote clock offset: -1.868 ms

Below is generated by plot.py at 2018-05-30 08:10:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.75 Mbit/s

95th percentile per-packet one-way delay: 551.893 ms

Loss rate: 0.96%

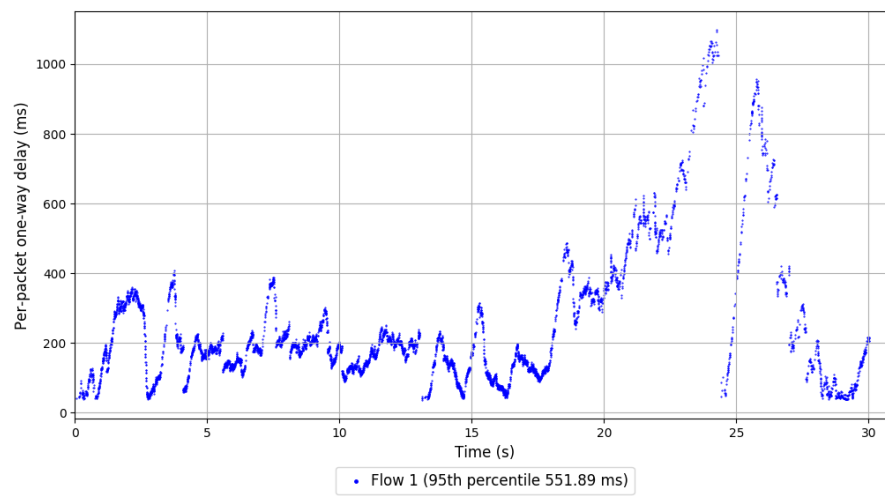
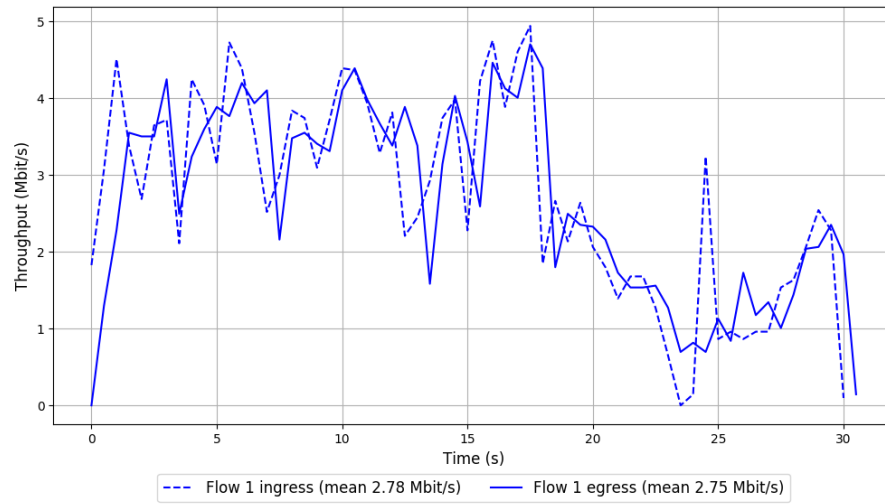
-- Flow 1:

Average throughput: 2.75 Mbit/s

95th percentile per-packet one-way delay: 551.893 ms

Loss rate: 0.96%

Run 1: Report of TCP BBR — Data Link

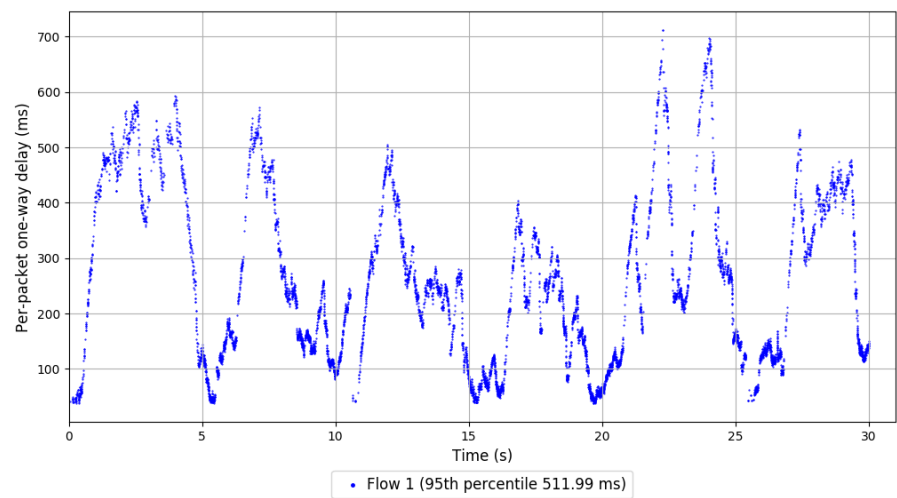
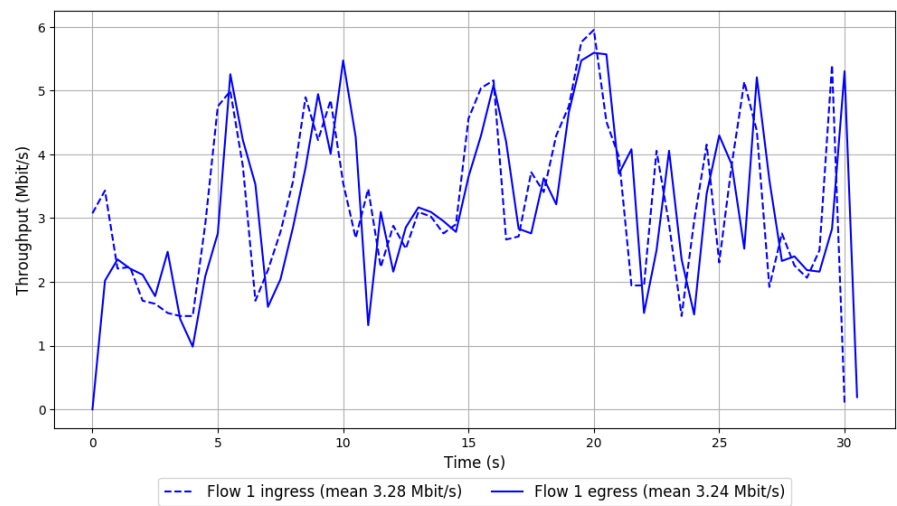


Run 2: Statistics of TCP BBR

Start at: 2018-05-30 07:46:58
End at: 2018-05-30 07:47:28
Local clock offset: -2.013 ms
Remote clock offset: -1.848 ms

Below is generated by plot.py at 2018-05-30 08:10:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.24 Mbit/s
95th percentile per-packet one-way delay: 511.993 ms
Loss rate: 1.32%
-- Flow 1:
Average throughput: 3.24 Mbit/s
95th percentile per-packet one-way delay: 511.993 ms
Loss rate: 1.32%

Run 2: Report of TCP BBR — Data Link

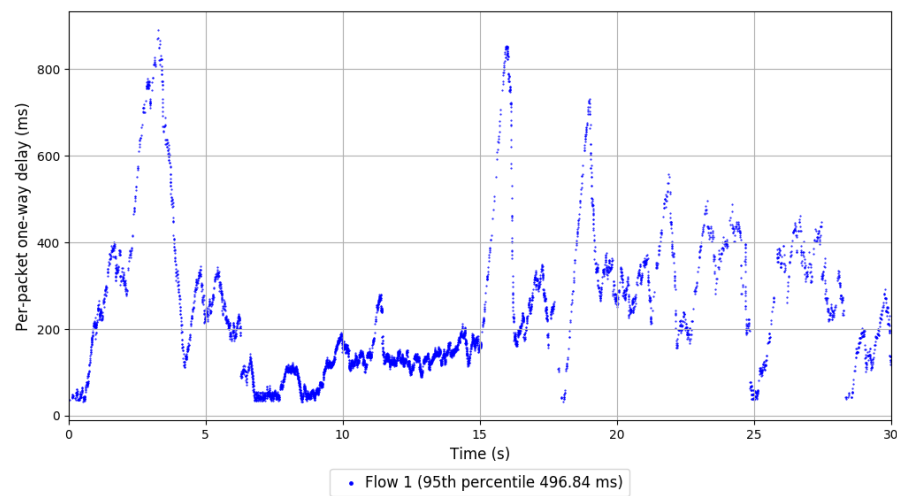
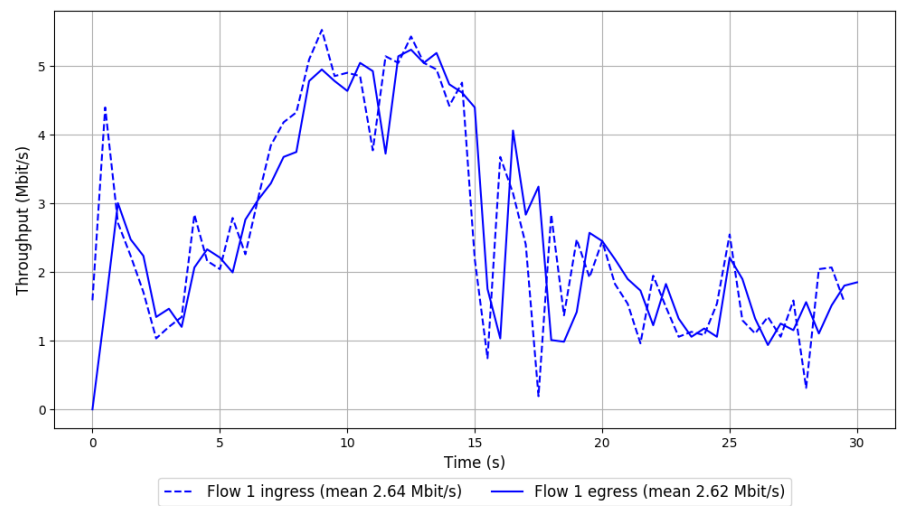


Run 3: Statistics of TCP BBR

Start at: 2018-05-30 08:04:13
End at: 2018-05-30 08:04:43
Local clock offset: 0.124 ms
Remote clock offset: -5.674 ms

Below is generated by plot.py at 2018-05-30 08:10:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.62 Mbit/s
95th percentile per-packet one-way delay: 496.841 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 2.62 Mbit/s
95th percentile per-packet one-way delay: 496.841 ms
Loss rate: 0.91%

Run 3: Report of TCP BBR — Data Link

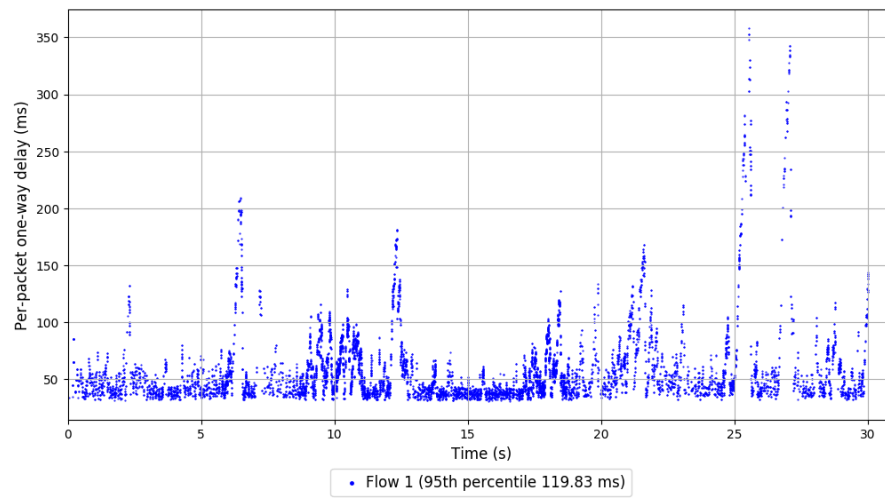
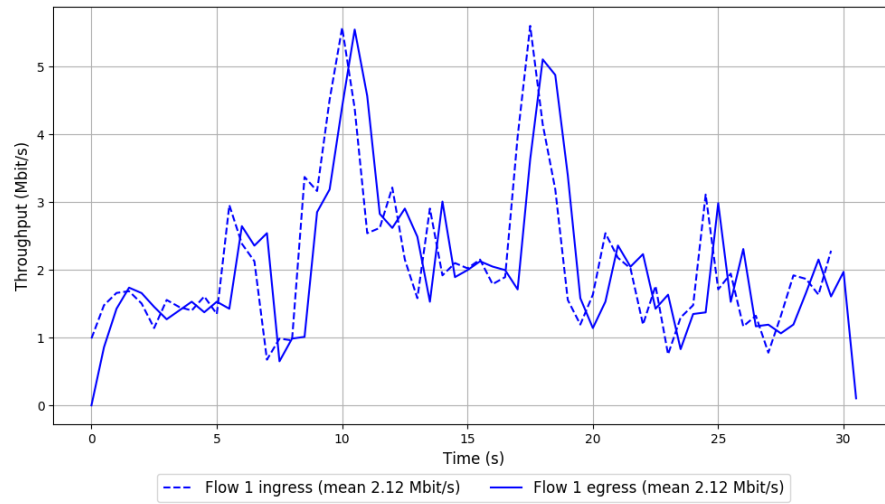


Run 1: Statistics of Copa

Start at: 2018-05-30 07:24:22
End at: 2018-05-30 07:24:52
Local clock offset: -0.492 ms
Remote clock offset: -3.783 ms

Below is generated by plot.py at 2018-05-30 08:10:27
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.12 Mbit/s
95th percentile per-packet one-way delay: 119.829 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 2.12 Mbit/s
95th percentile per-packet one-way delay: 119.829 ms
Loss rate: 0.29%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2018-05-30 07:41:35

End at: 2018-05-30 07:42:05

Local clock offset: -2.79 ms

Remote clock offset: 0.09 ms

Below is generated by plot.py at 2018-05-30 08:10:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.80 Mbit/s

95th percentile per-packet one-way delay: 144.245 ms

Loss rate: 0.14%

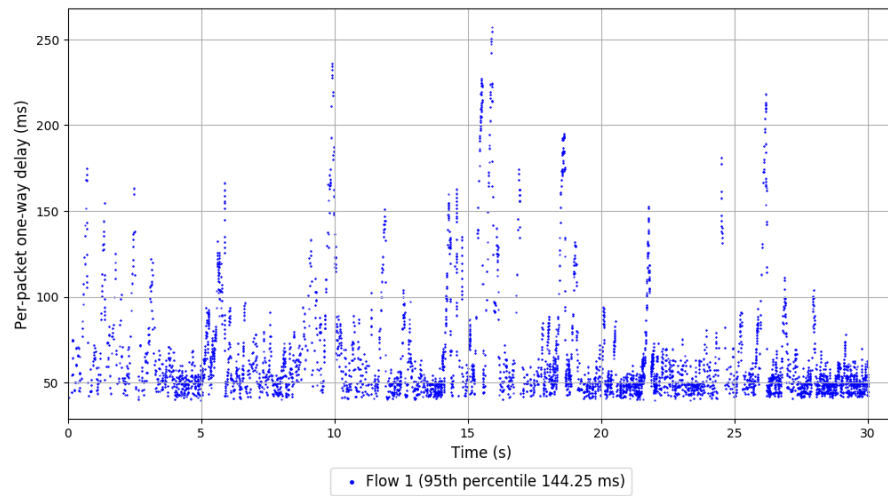
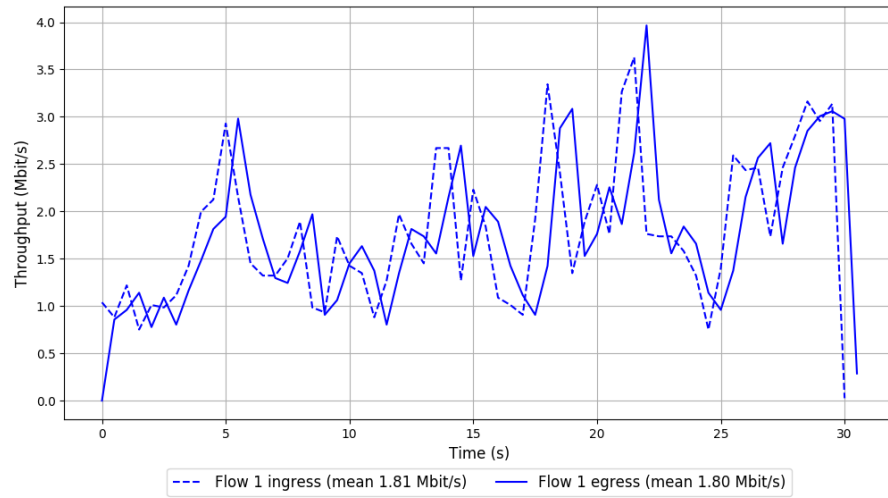
-- Flow 1:

Average throughput: 1.80 Mbit/s

95th percentile per-packet one-way delay: 144.245 ms

Loss rate: 0.14%

Run 2: Report of Copa — Data Link

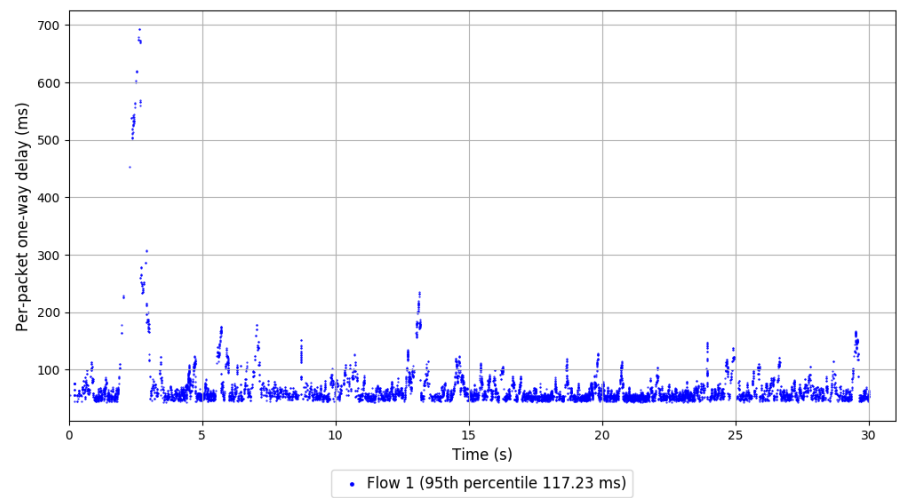
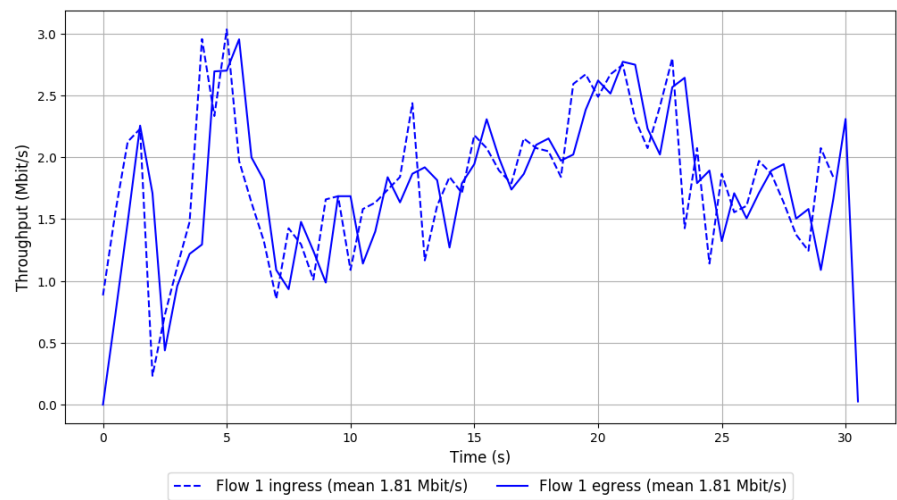


Run 3: Statistics of Copa

Start at: 2018-05-30 07:58:49
End at: 2018-05-30 07:59:19
Local clock offset: -2.335 ms
Remote clock offset: -5.903 ms

Below is generated by plot.py at 2018-05-30 08:10:27
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.81 Mbit/s
95th percentile per-packet one-way delay: 117.233 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 1.81 Mbit/s
95th percentile per-packet one-way delay: 117.233 ms
Loss rate: 0.10%

Run 3: Report of Copa — Data Link

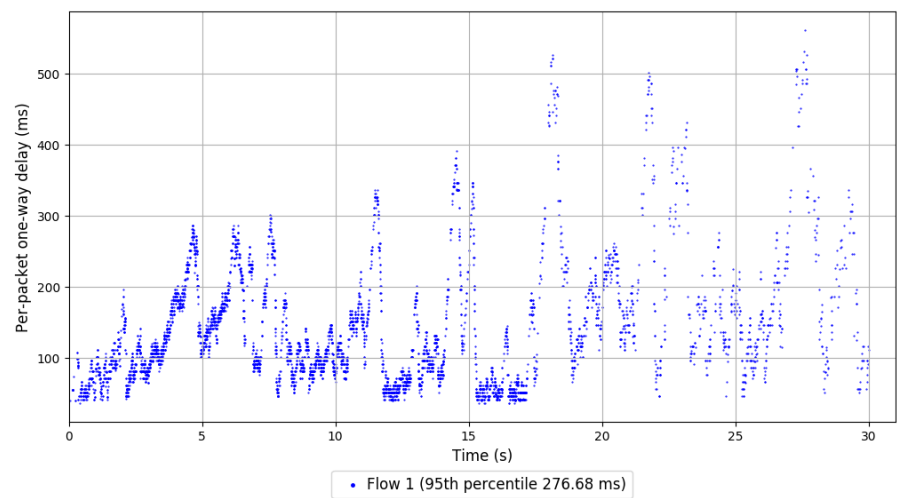
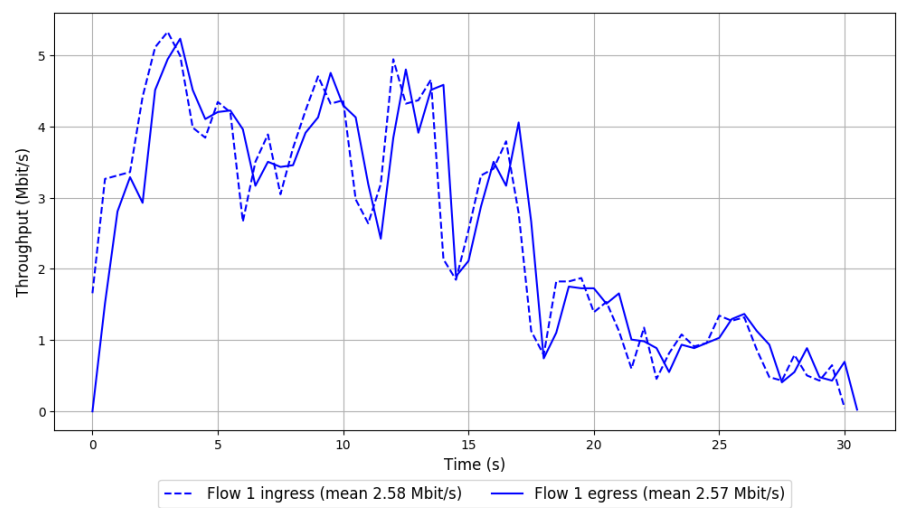


Run 1: Statistics of TCP Cubic

Start at: 2018-05-30 07:23:17
End at: 2018-05-30 07:23:47
Local clock offset: -2.922 ms
Remote clock offset: -2.154 ms

Below is generated by plot.py at 2018-05-30 08:10:27
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.57 Mbit/s
95th percentile per-packet one-way delay: 276.681 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 2.57 Mbit/s
95th percentile per-packet one-way delay: 276.681 ms
Loss rate: 0.36%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

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

End at: 2018-05-30 07:41:01

Local clock offset: -0.737 ms

Remote clock offset: -0.04 ms

Below is generated by plot.py at 2018-05-30 08:10:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.78 Mbit/s

95th percentile per-packet one-way delay: 269.049 ms

Loss rate: 0.59%

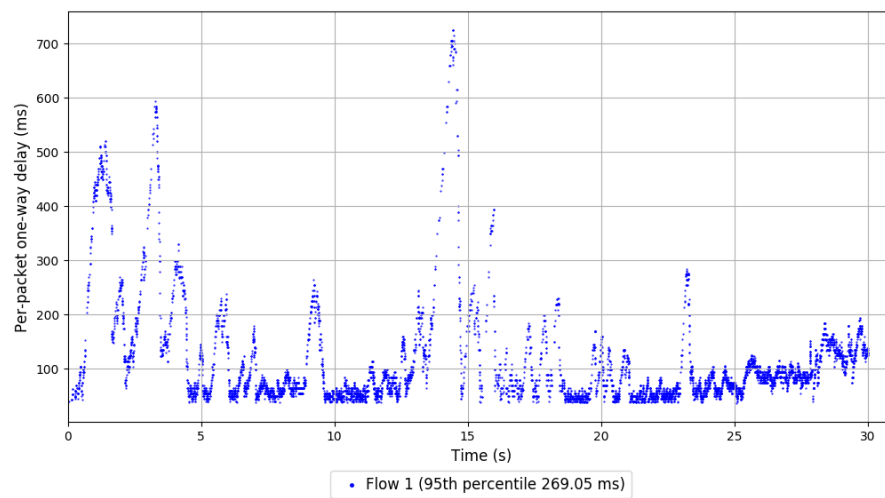
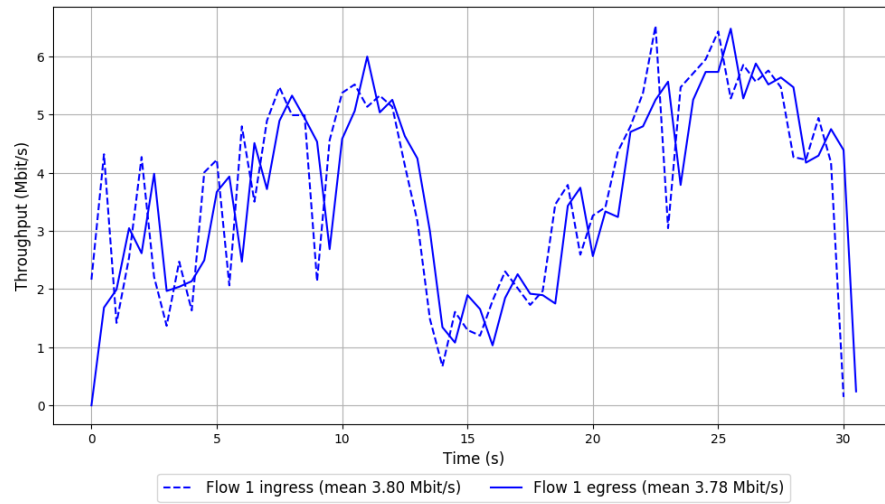
-- Flow 1:

Average throughput: 3.78 Mbit/s

95th percentile per-packet one-way delay: 269.049 ms

Loss rate: 0.59%

Run 2: Report of TCP Cubic — Data Link

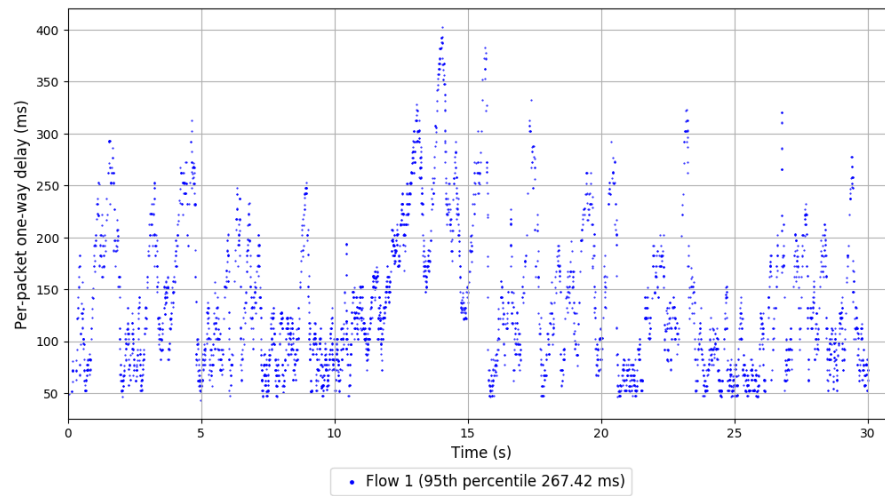
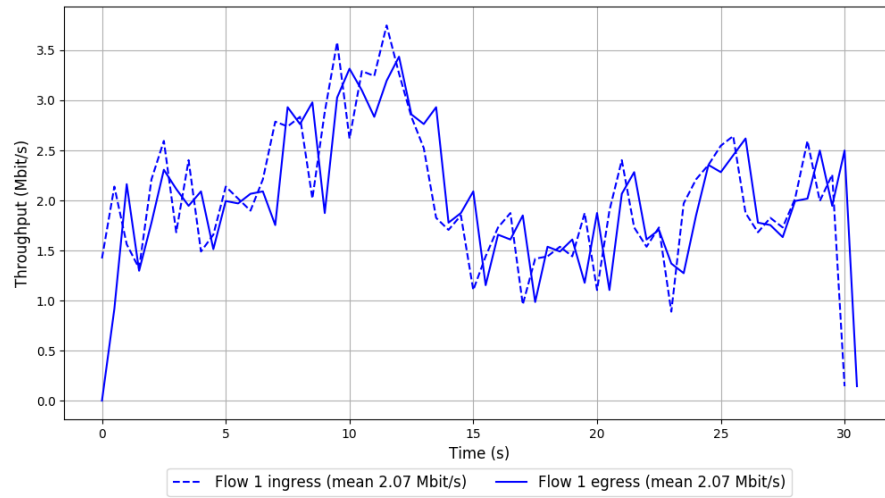


Run 3: Statistics of TCP Cubic

Start at: 2018-05-30 07:57:44
End at: 2018-05-30 07:58:14
Local clock offset: -1.141 ms
Remote clock offset: -4.245 ms

Below is generated by plot.py at 2018-05-30 08:10:30
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.07 Mbit/s
95th percentile per-packet one-way delay: 267.418 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 2.07 Mbit/s
95th percentile per-packet one-way delay: 267.418 ms
Loss rate: 0.42%

Run 3: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-05-30 07:26:31

End at: 2018-05-30 07:27:01

Local clock offset: -3.681 ms

Remote clock offset: 2.836 ms

Below is generated by plot.py at 2018-05-30 08:10:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.77 Mbit/s

95th percentile per-packet one-way delay: 1099.315 ms

Loss rate: 50.68%

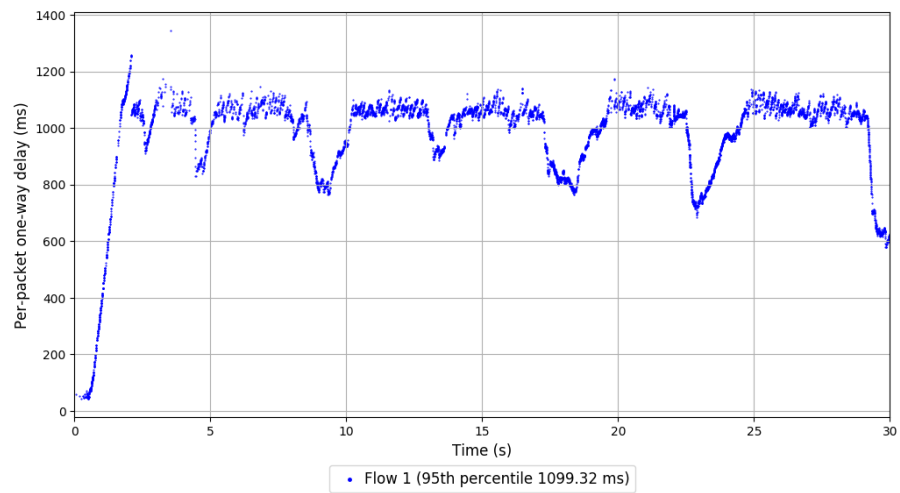
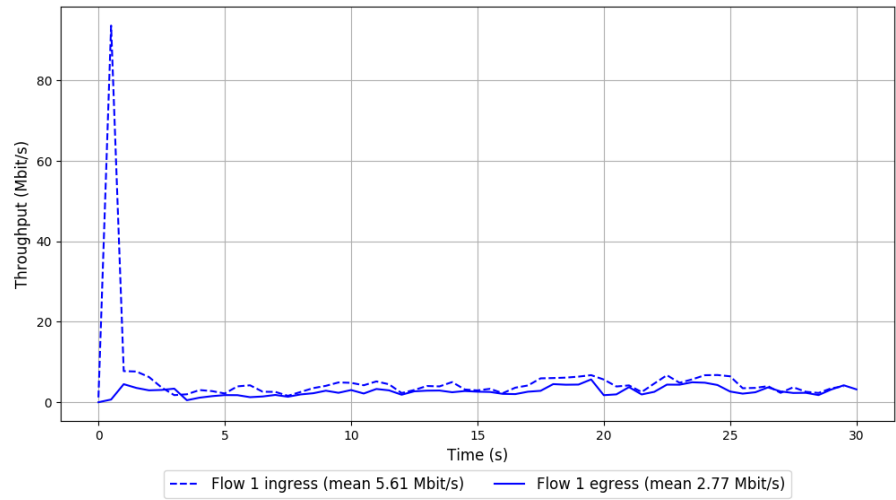
-- Flow 1:

Average throughput: 2.77 Mbit/s

95th percentile per-packet one-way delay: 1099.315 ms

Loss rate: 50.68%

Run 1: Report of FillP — Data Link

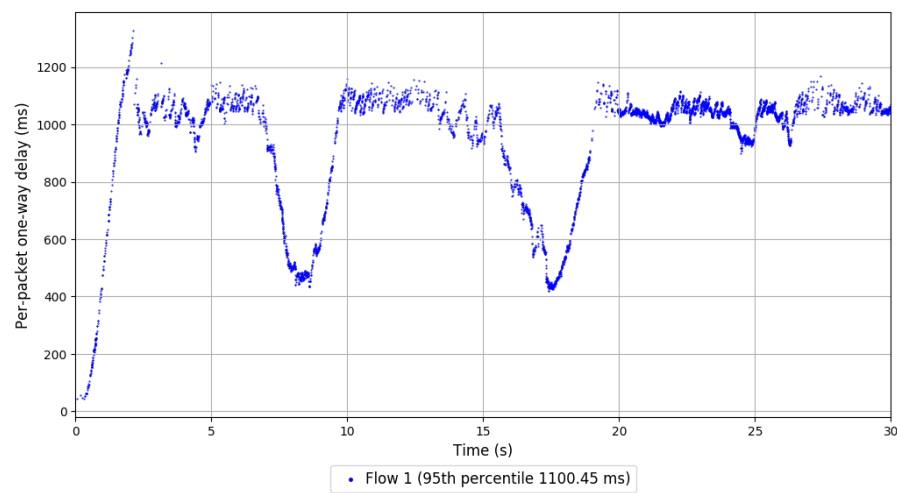
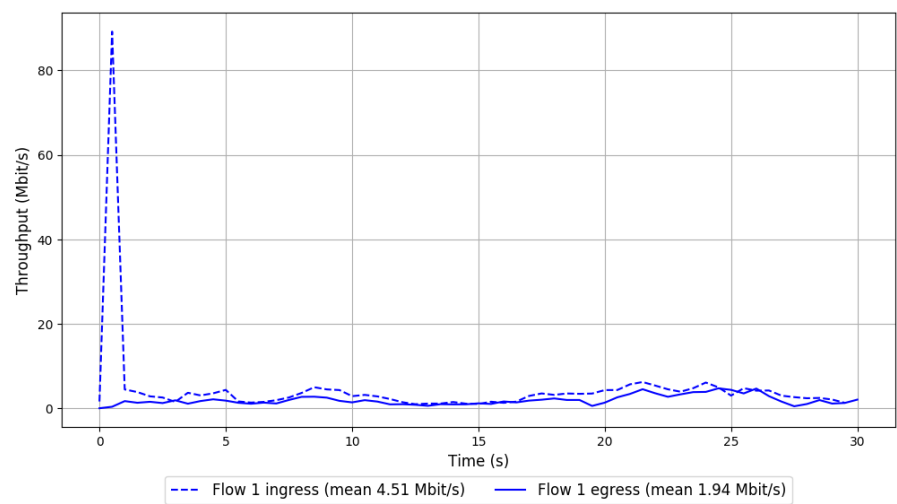


Run 2: Statistics of FillP

Start at: 2018-05-30 07:43:44
End at: 2018-05-30 07:44:14
Local clock offset: -2.373 ms
Remote clock offset: -1.398 ms

Below is generated by plot.py at 2018-05-30 08:10:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 1100.454 ms
Loss rate: 56.96%
-- Flow 1:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 1100.454 ms
Loss rate: 56.96%

Run 2: Report of FillP — Data Link

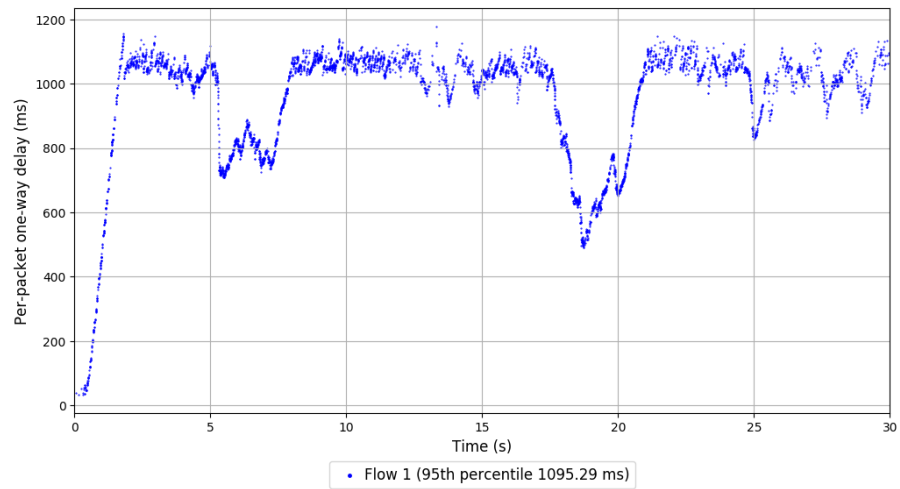
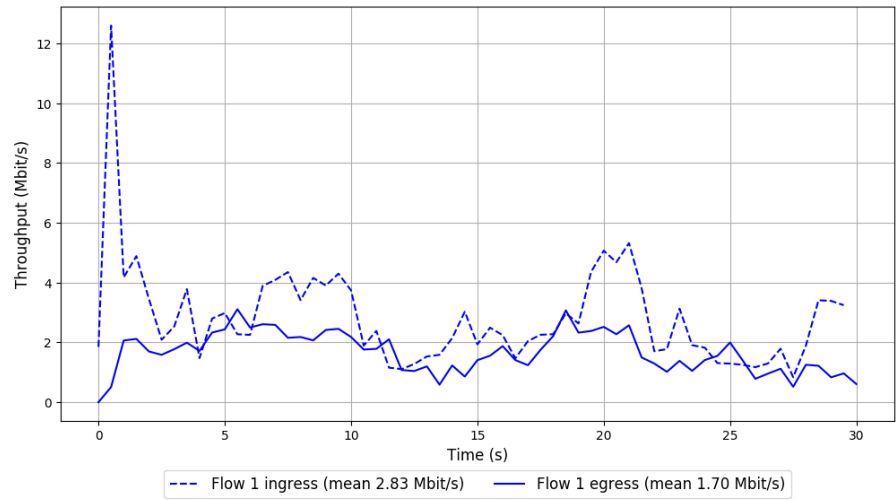


Run 3: Statistics of FillP

Start at: 2018-05-30 08:00:59
End at: 2018-05-30 08:01:29
Local clock offset: -0.976 ms
Remote clock offset: -5.876 ms

Below is generated by plot.py at 2018-05-30 08:10:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 1095.288 ms
Loss rate: 40.21%
-- Flow 1:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 1095.288 ms
Loss rate: 40.21%

Run 3: Report of FillP — Data Link

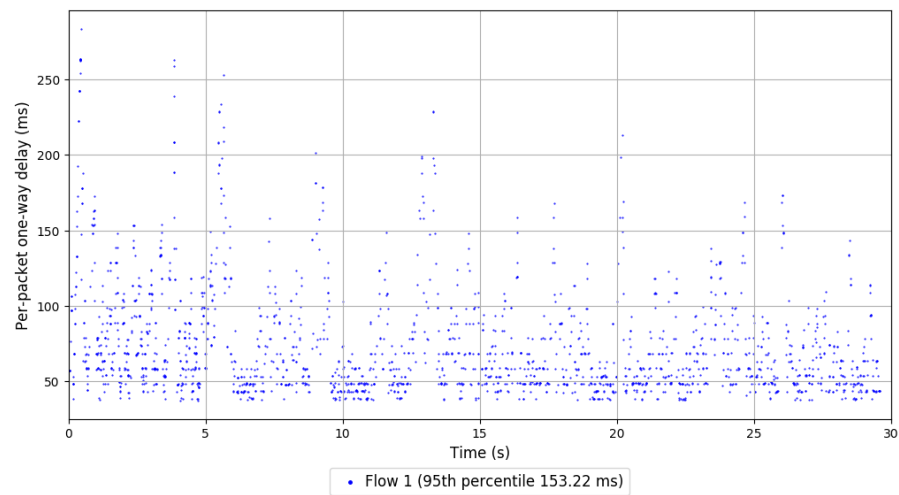
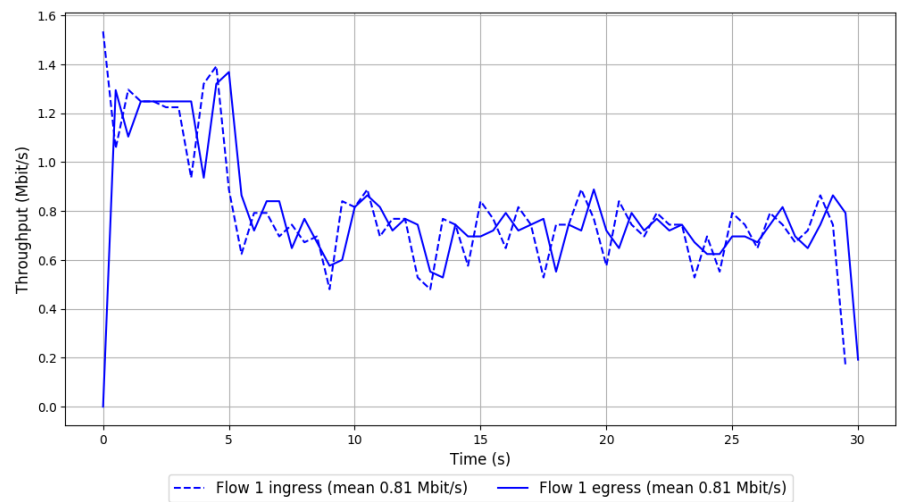


Run 1: Statistics of Indigo

Start at: 2018-05-30 07:28:40
End at: 2018-05-30 07:29:10
Local clock offset: -1.091 ms
Remote clock offset: -0.557 ms

Below is generated by plot.py at 2018-05-30 08:10:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.81 Mbit/s
95th percentile per-packet one-way delay: 153.218 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 0.81 Mbit/s
95th percentile per-packet one-way delay: 153.218 ms
Loss rate: 0.10%

Run 1: Report of Indigo — Data Link

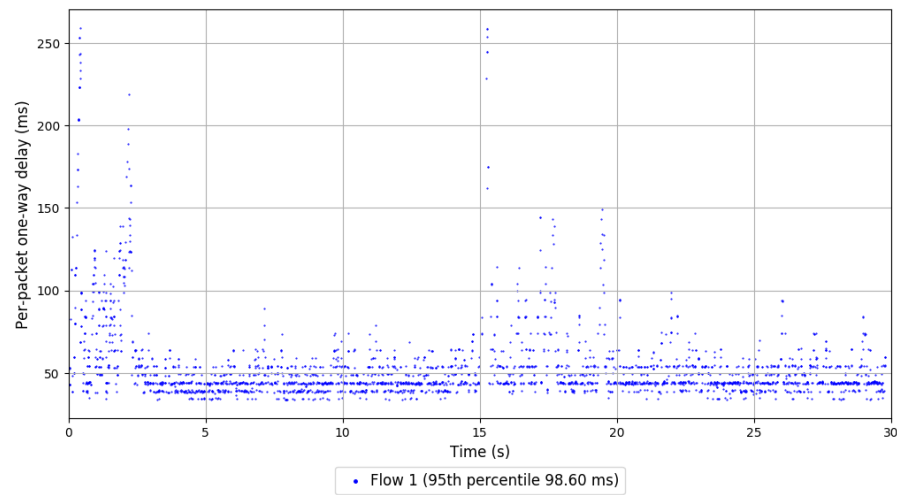
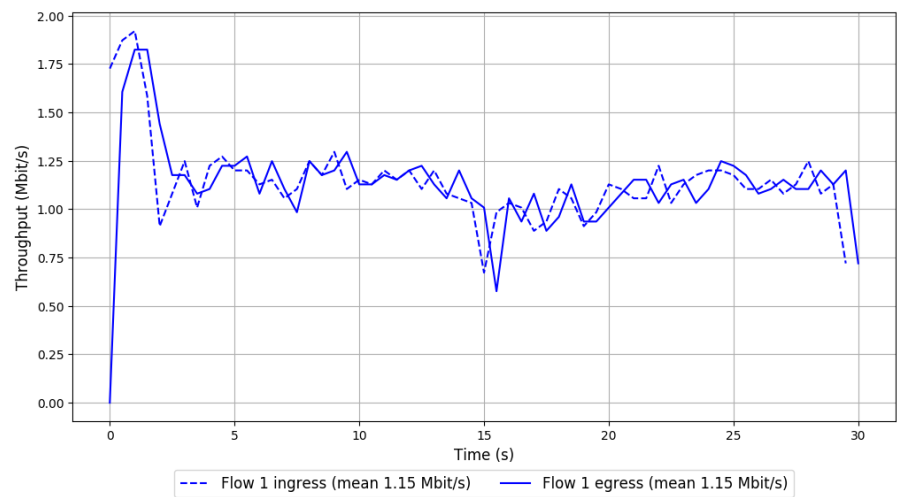


Run 2: Statistics of Indigo

Start at: 2018-05-30 07:45:53
End at: 2018-05-30 07:46:23
Local clock offset: -1.315 ms
Remote clock offset: -3.226 ms

Below is generated by plot.py at 2018-05-30 08:10:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.15 Mbit/s
95th percentile per-packet one-way delay: 98.599 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 1.15 Mbit/s
95th percentile per-packet one-way delay: 98.599 ms
Loss rate: 0.14%

Run 2: Report of Indigo — Data Link

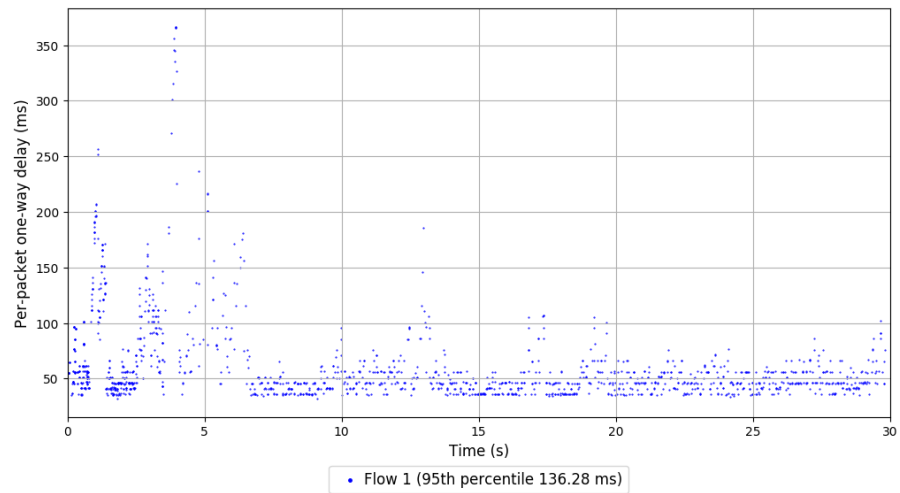
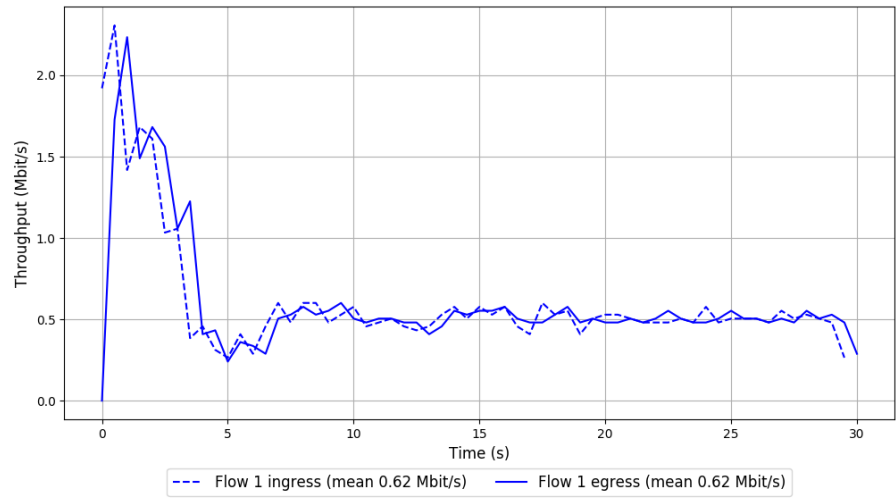


Run 3: Statistics of Indigo

Start at: 2018-05-30 08:03:08
End at: 2018-05-30 08:03:38
Local clock offset: -0.241 ms
Remote clock offset: -5.683 ms

Below is generated by plot.py at 2018-05-30 08:10:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 136.280 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 136.280 ms
Loss rate: 0.13%

Run 3: Report of Indigo — Data Link

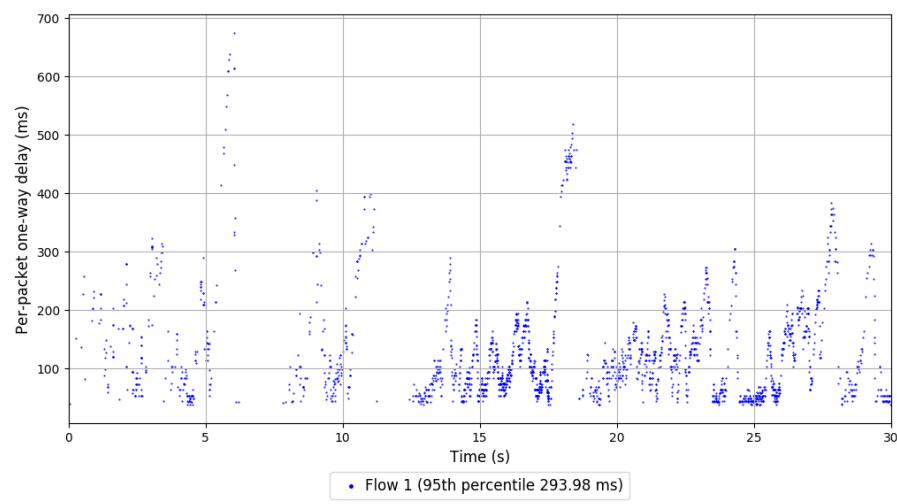
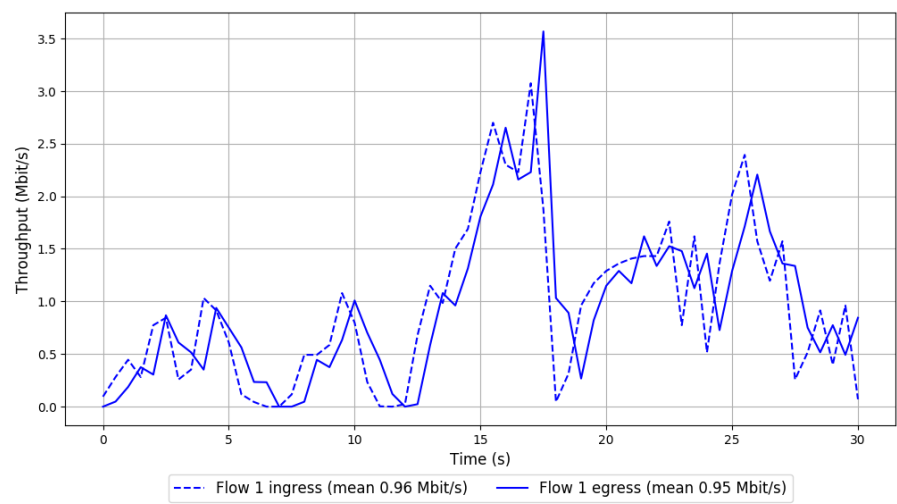


Run 1: Statistics of LEDBAT

Start at: 2018-05-30 07:20:03
End at: 2018-05-30 07:20:34
Local clock offset: -2.909 ms
Remote clock offset: -3.824 ms

Below is generated by plot.py at 2018-05-30 08:10:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.95 Mbit/s
95th percentile per-packet one-way delay: 293.975 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 0.95 Mbit/s
95th percentile per-packet one-way delay: 293.975 ms
Loss rate: 0.90%

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-05-30 07:37:17

End at: 2018-05-30 07:37:47

Local clock offset: -2.06 ms

Remote clock offset: 2.111 ms

Below is generated by plot.py at 2018-05-30 08:10:35

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.53 Mbit/s

95th percentile per-packet one-way delay: 228.891 ms

Loss rate: 0.53%

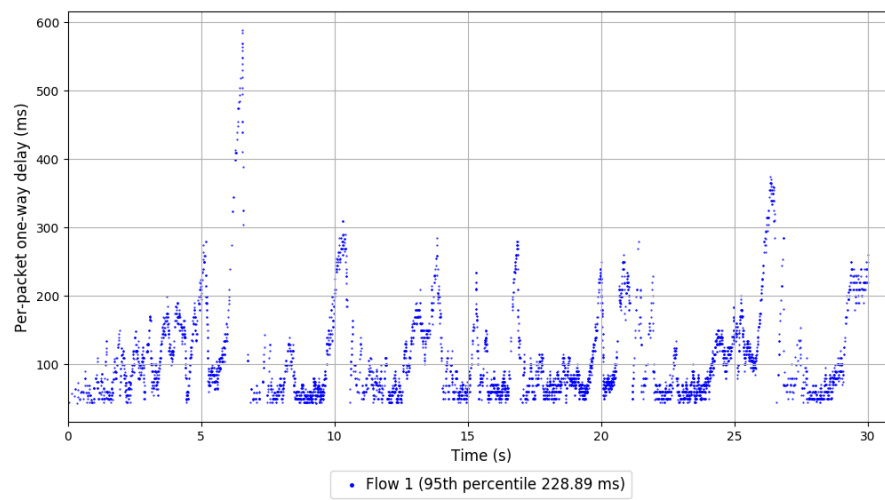
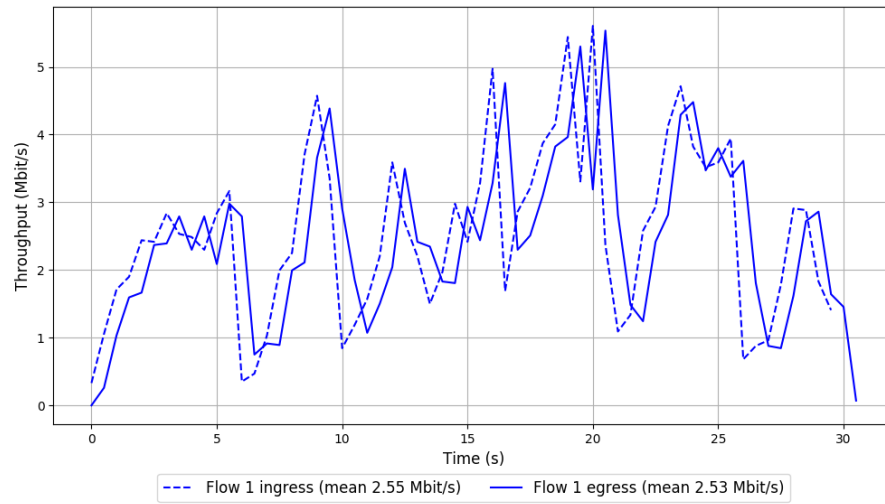
-- Flow 1:

Average throughput: 2.53 Mbit/s

95th percentile per-packet one-way delay: 228.891 ms

Loss rate: 0.53%

Run 2: Report of LEDBAT — Data Link

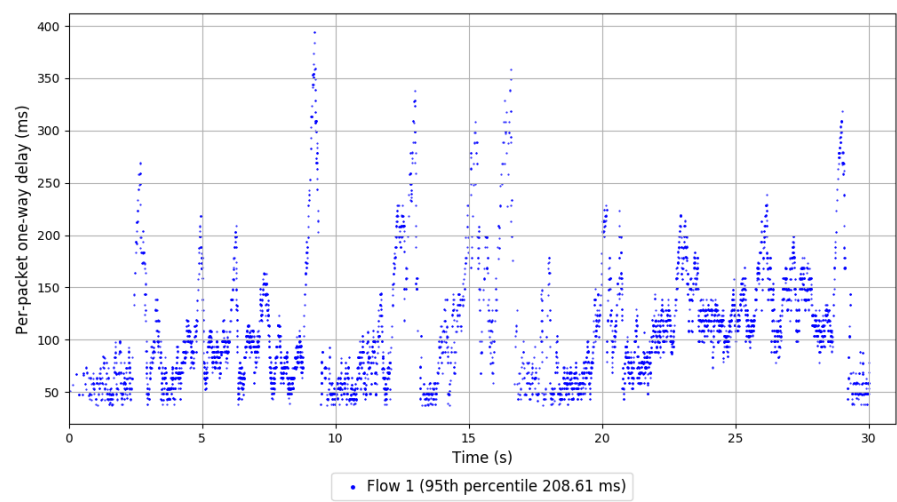
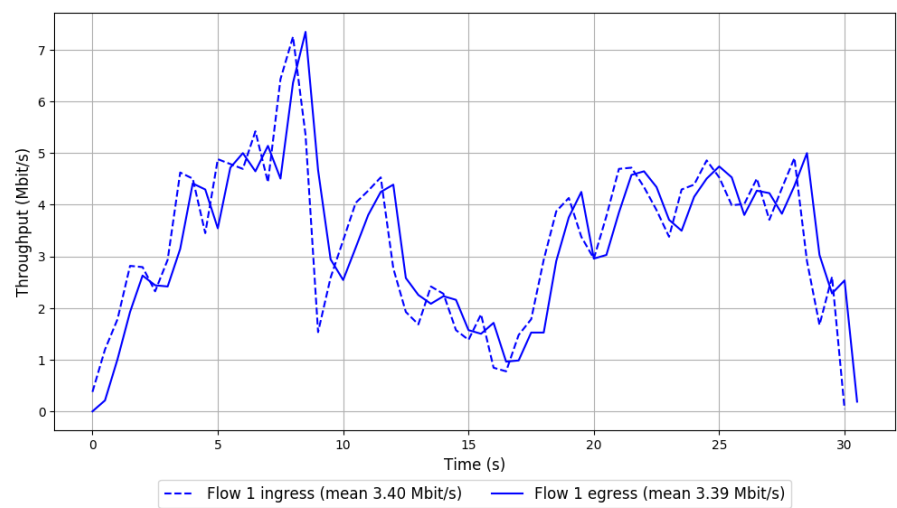


Run 3: Statistics of LEDBAT

Start at: 2018-05-30 07:54:30
End at: 2018-05-30 07:55:00
Local clock offset: -3.549 ms
Remote clock offset: -4.509 ms

Below is generated by plot.py at 2018-05-30 08:10:37
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.39 Mbit/s
95th percentile per-packet one-way delay: 208.607 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 3.39 Mbit/s
95th percentile per-packet one-way delay: 208.607 ms
Loss rate: 0.18%

Run 3: Report of LEDBAT — Data Link



Run 1: Statistics of PCC-Allegro

Start at: 2018-05-30 07:31:54

End at: 2018-05-30 07:32:24

Local clock offset: -3.767 ms

Remote clock offset: -0.653 ms

Below is generated by plot.py at 2018-05-30 08:10:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 4.30 Mbit/s

95th percentile per-packet one-way delay: 1040.198 ms

Loss rate: 5.83%

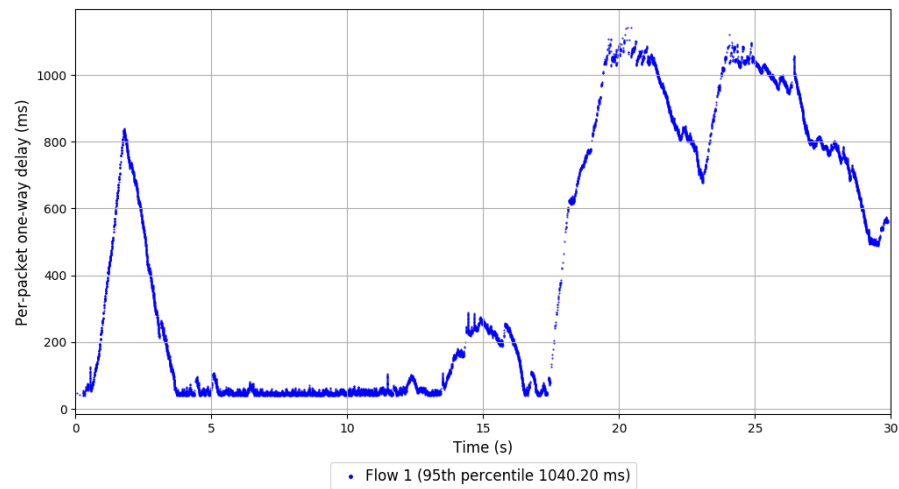
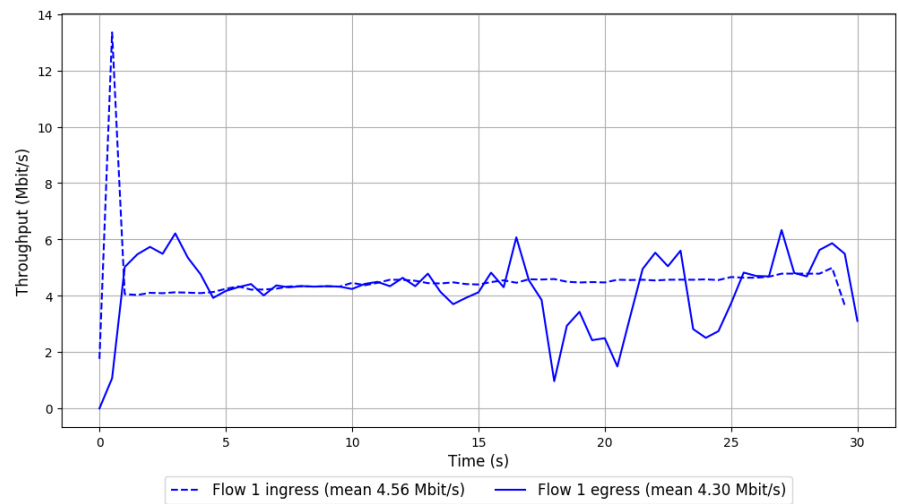
-- Flow 1:

Average throughput: 4.30 Mbit/s

95th percentile per-packet one-way delay: 1040.198 ms

Loss rate: 5.83%

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

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

End at: 2018-05-30 07:49:37

Local clock offset: -1.829 ms

Remote clock offset: -4.913 ms

Below is generated by plot.py at 2018-05-30 08:10:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.02 Mbit/s

95th percentile per-packet one-way delay: 1012.657 ms

Loss rate: 5.57%

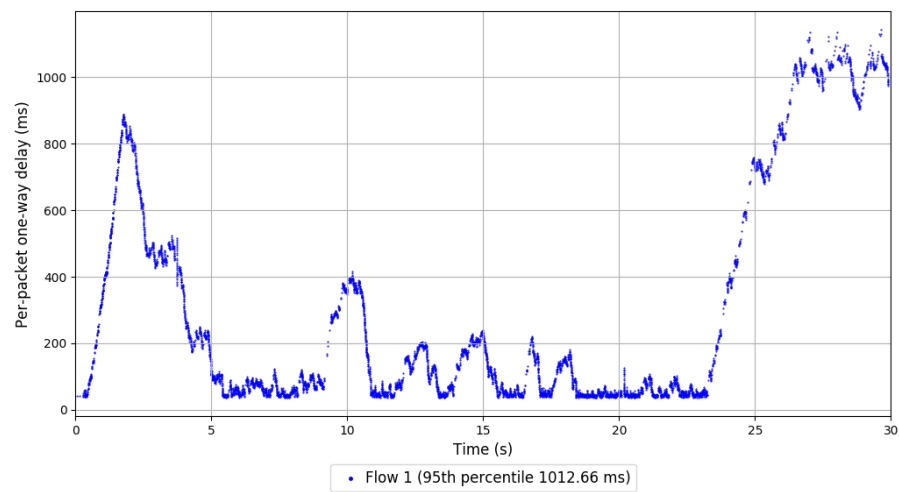
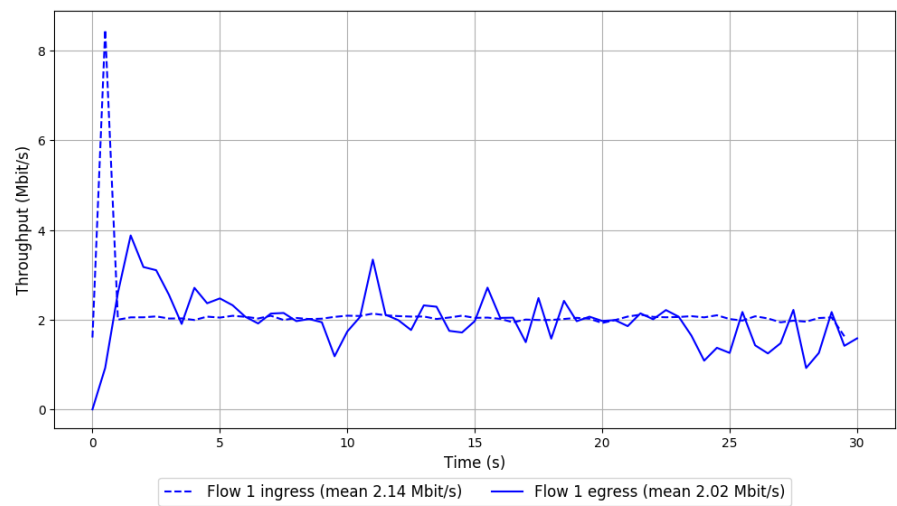
-- Flow 1:

Average throughput: 2.02 Mbit/s

95th percentile per-packet one-way delay: 1012.657 ms

Loss rate: 5.57%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-05-30 08:06:22

End at: 2018-05-30 08:06:52

Local clock offset: -2.056 ms

Remote clock offset: -5.744 ms

Below is generated by plot.py at 2018-05-30 08:10:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.89 Mbit/s

95th percentile per-packet one-way delay: 1054.060 ms

Loss rate: 8.02%

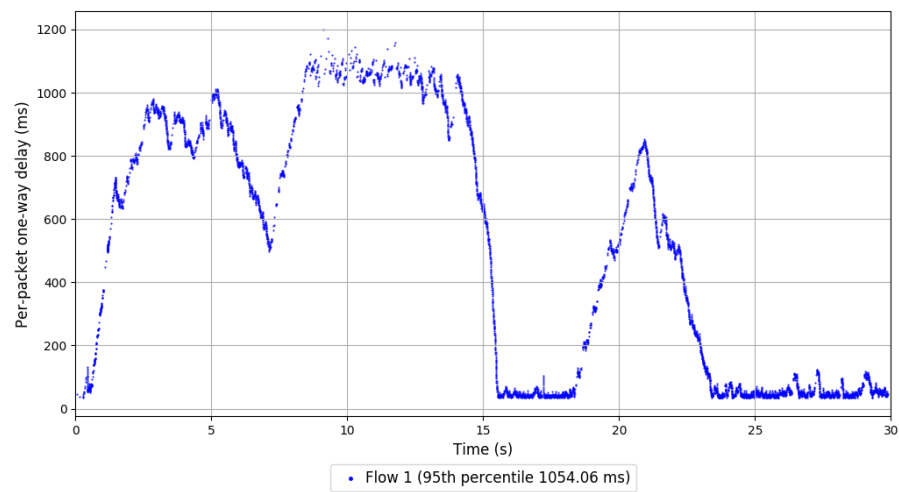
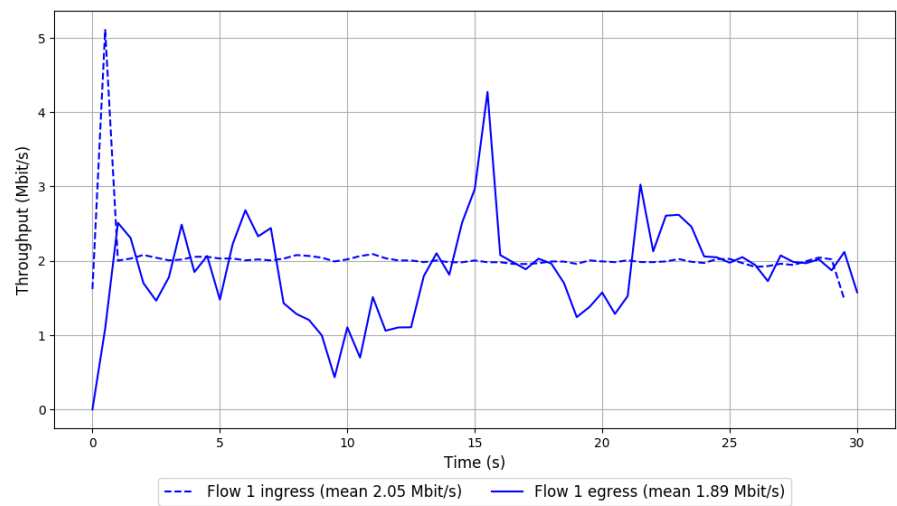
-- Flow 1:

Average throughput: 1.89 Mbit/s

95th percentile per-packet one-way delay: 1054.060 ms

Loss rate: 8.02%

Run 3: Report of PCC-Allegro — Data Link

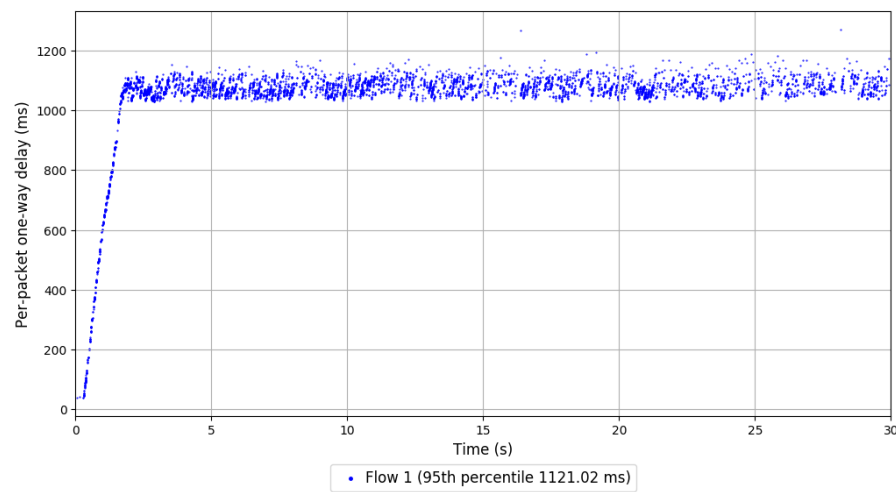
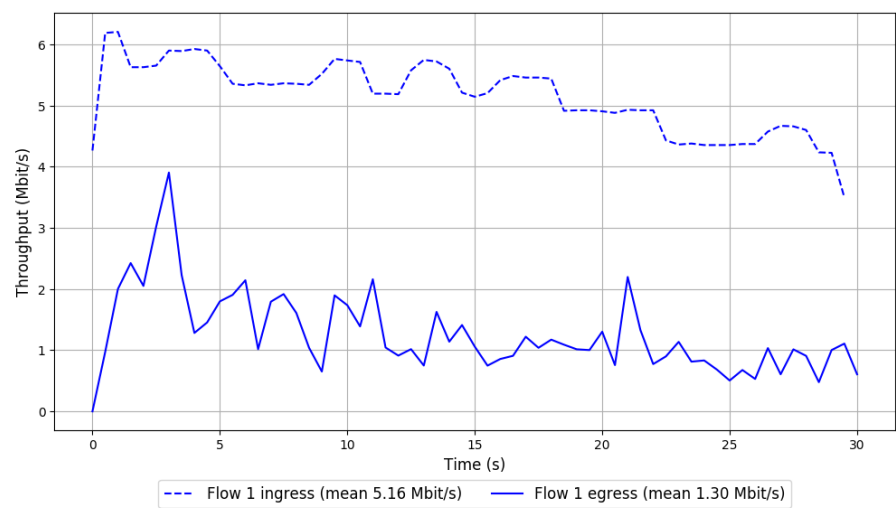


```
Run 1: Statistics of PCC-Expr

Start at: 2018-05-30 07:32:58
End at: 2018-05-30 07:33:28
Local clock offset: -0.519 ms
Remote clock offset: -0.583 ms

# Below is generated by plot.py at 2018-05-30 08:10:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.30 Mbit/s
95th percentile per-packet one-way delay: 1121.019 ms
Loss rate: 74.87%
-- Flow 1:
Average throughput: 1.30 Mbit/s
95th percentile per-packet one-way delay: 1121.019 ms
Loss rate: 74.87%
```

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2018-05-30 07:50:12

End at: 2018-05-30 07:50:42

Local clock offset: -0.872 ms

Remote clock offset: -5.6 ms

Below is generated by plot.py at 2018-05-30 08:10:46

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.71 Mbit/s

95th percentile per-packet one-way delay: 1098.213 ms

Loss rate: 48.14%

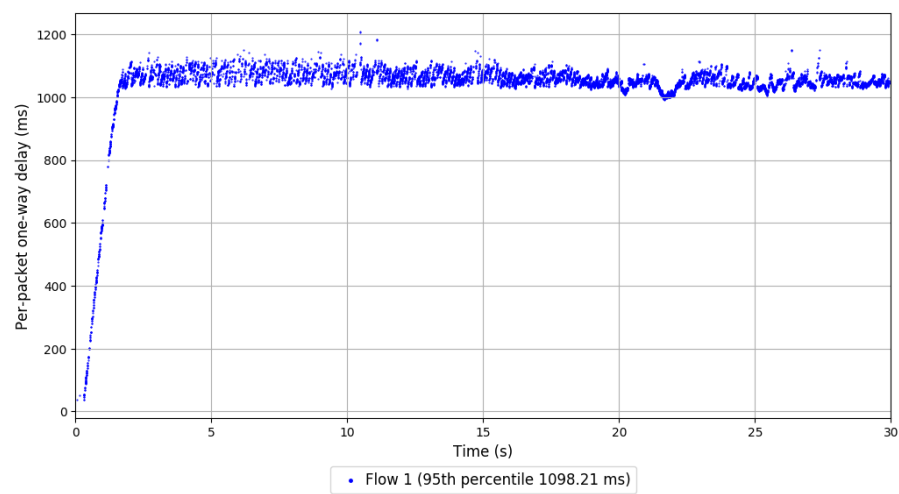
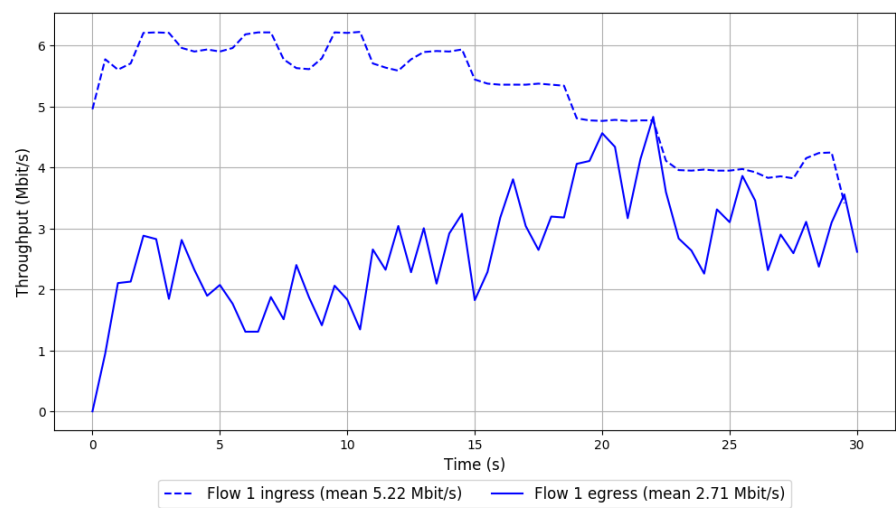
-- Flow 1:

Average throughput: 2.71 Mbit/s

95th percentile per-packet one-way delay: 1098.213 ms

Loss rate: 48.14%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-05-30 08:07:26

End at: 2018-05-30 08:07:56

Local clock offset: -2.693 ms

Remote clock offset: -3.78 ms

Below is generated by plot.py at 2018-05-30 08:10:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 4.24 Mbit/s

95th percentile per-packet one-way delay: 1081.046 ms

Loss rate: 28.22%

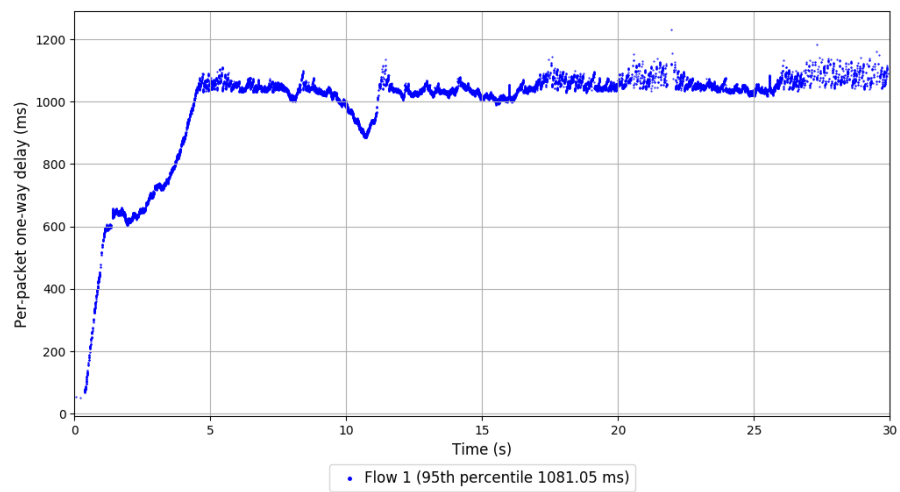
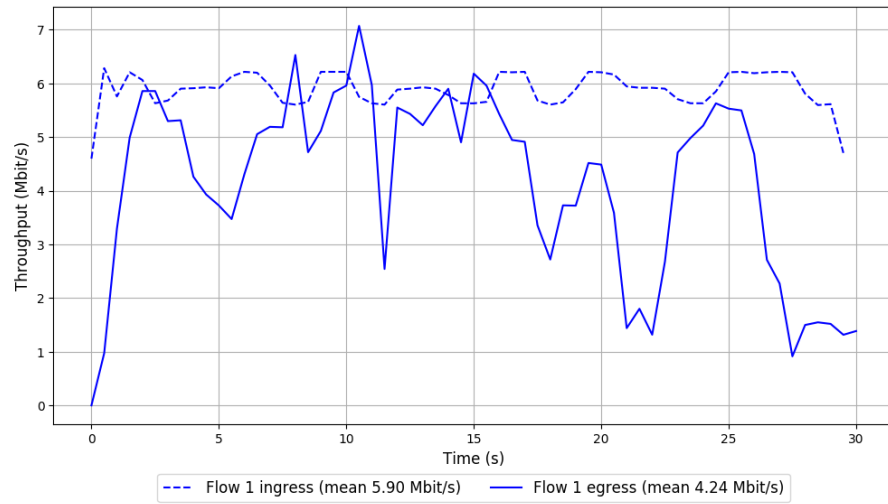
-- Flow 1:

Average throughput: 4.24 Mbit/s

95th percentile per-packet one-way delay: 1081.046 ms

Loss rate: 28.22%

Run 3: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-05-30 07:18:59

End at: 2018-05-30 07:19:29

Local clock offset: -1.604 ms

Remote clock offset: -4.094 ms

Below is generated by plot.py at 2018-05-30 08:10:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.67 Mbit/s

95th percentile per-packet one-way delay: 784.802 ms

Loss rate: 3.48%

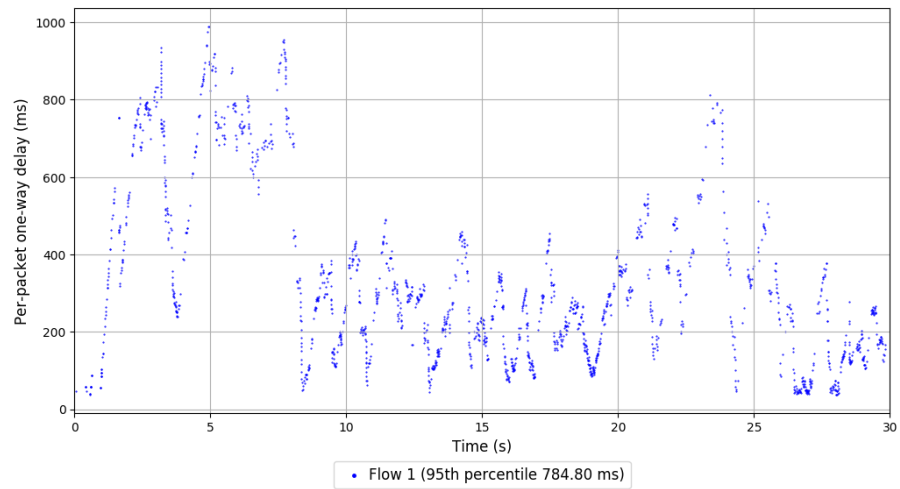
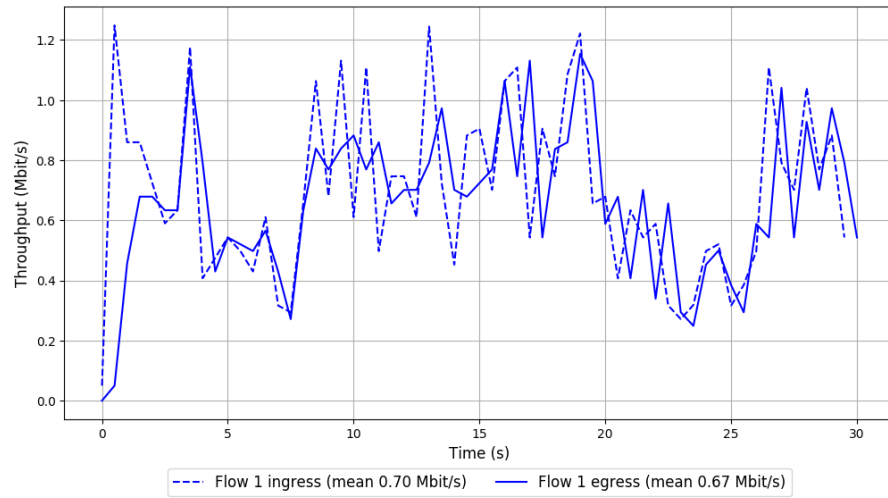
-- Flow 1:

Average throughput: 0.67 Mbit/s

95th percentile per-packet one-way delay: 784.802 ms

Loss rate: 3.48%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-05-30 07:36:12

End at: 2018-05-30 07:36:42

Local clock offset: -2.359 ms

Remote clock offset: 0.656 ms

Below is generated by plot.py at 2018-05-30 08:10:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.14 Mbit/s

95th percentile per-packet one-way delay: 512.305 ms

Loss rate: 1.07%

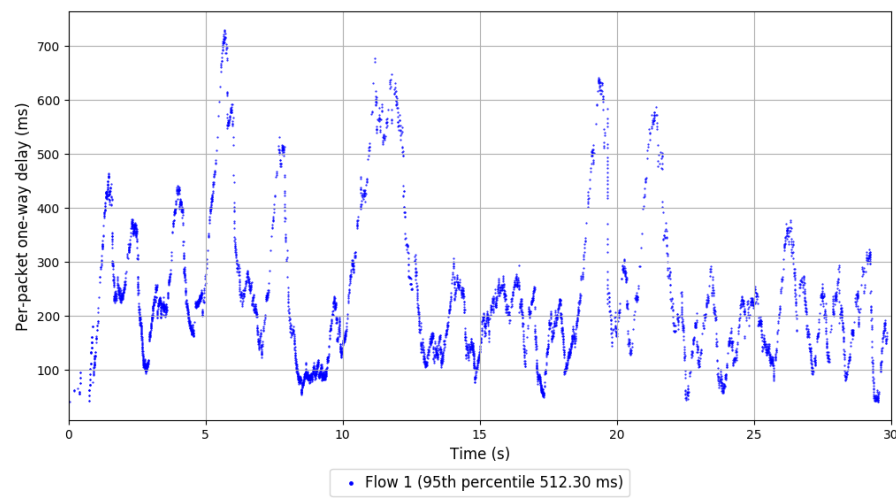
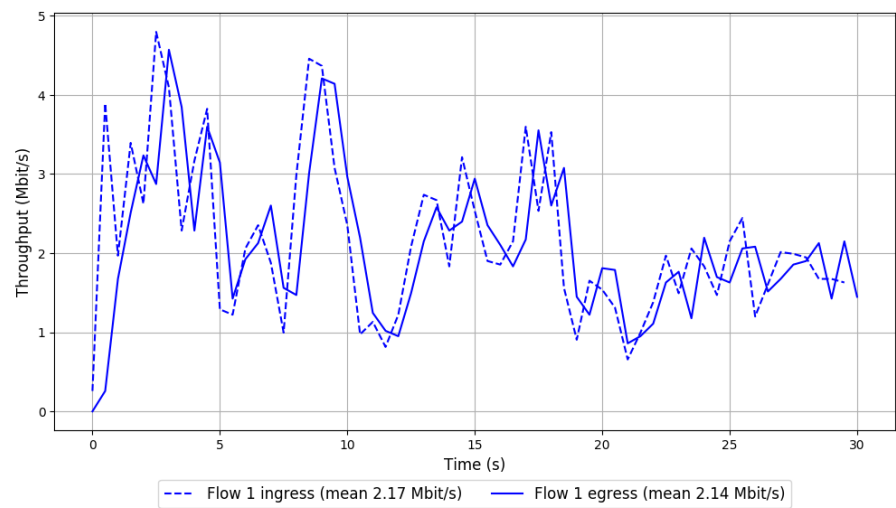
-- Flow 1:

Average throughput: 2.14 Mbit/s

95th percentile per-packet one-way delay: 512.305 ms

Loss rate: 1.07%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-05-30 07:53:26

End at: 2018-05-30 07:53:56

Local clock offset: -3.788 ms

Remote clock offset: -4.66 ms

Below is generated by plot.py at 2018-05-30 08:10:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.92 Mbit/s

95th percentile per-packet one-way delay: 513.079 ms

Loss rate: 1.17%

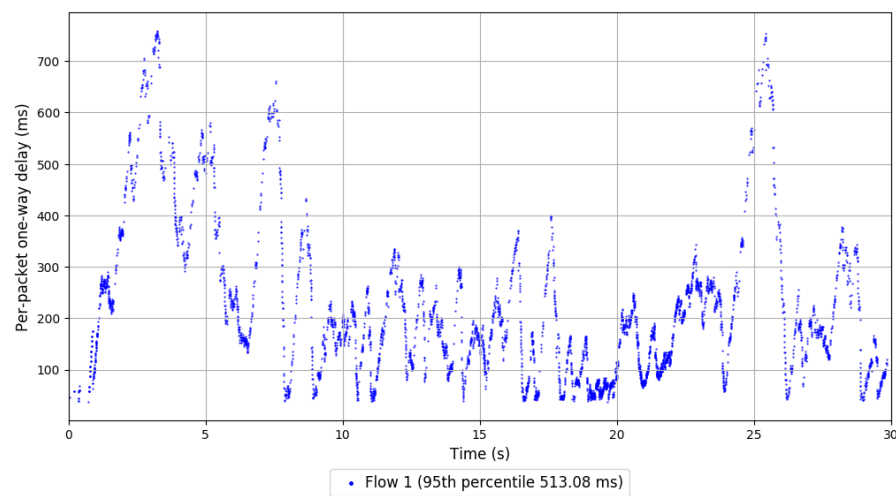
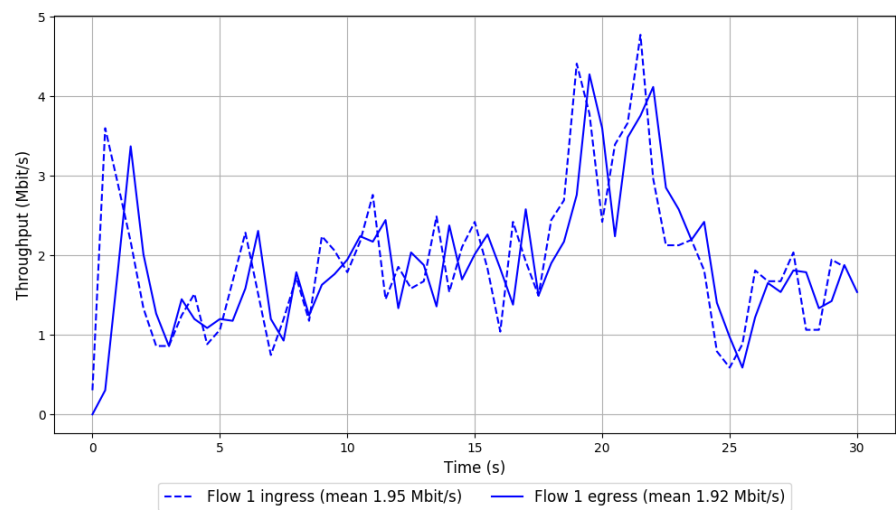
-- Flow 1:

Average throughput: 1.92 Mbit/s

95th percentile per-packet one-way delay: 513.079 ms

Loss rate: 1.17%

Run 3: Report of QUIC Cubic — Data Link



Run 1: Statistics of SCReAM

Start at: 2018-05-30 07:27:36

End at: 2018-05-30 07:28:06

Local clock offset: -2.81 ms

Remote clock offset: -0.01 ms

Below is generated by plot.py at 2018-05-30 08:10:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 61.605 ms

Loss rate: 0.13%

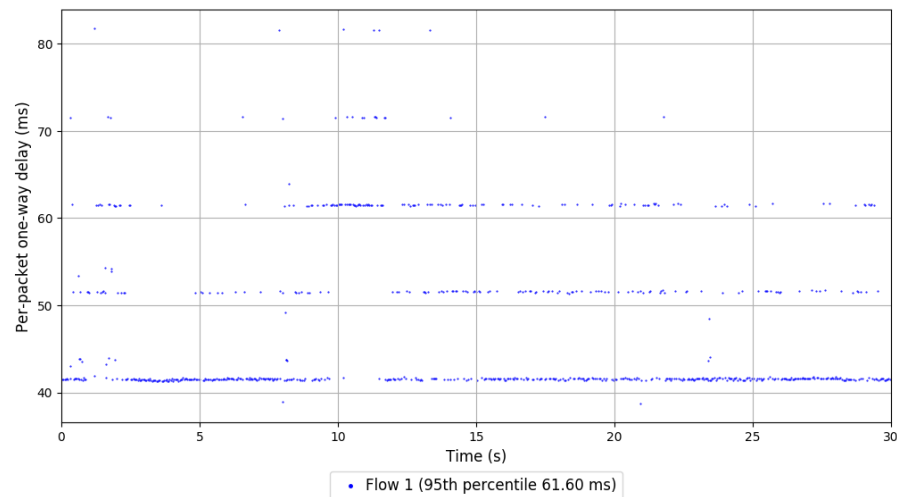
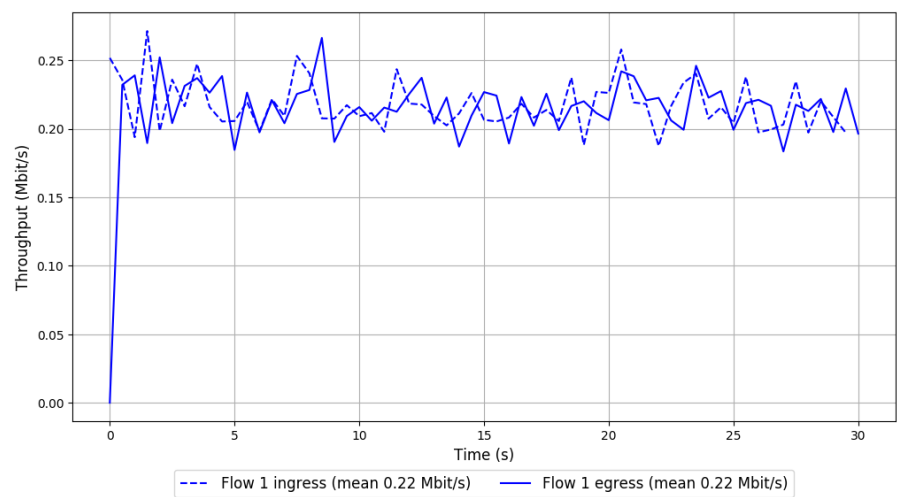
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 61.605 ms

Loss rate: 0.13%

Run 1: Report of SReAM — Data Link

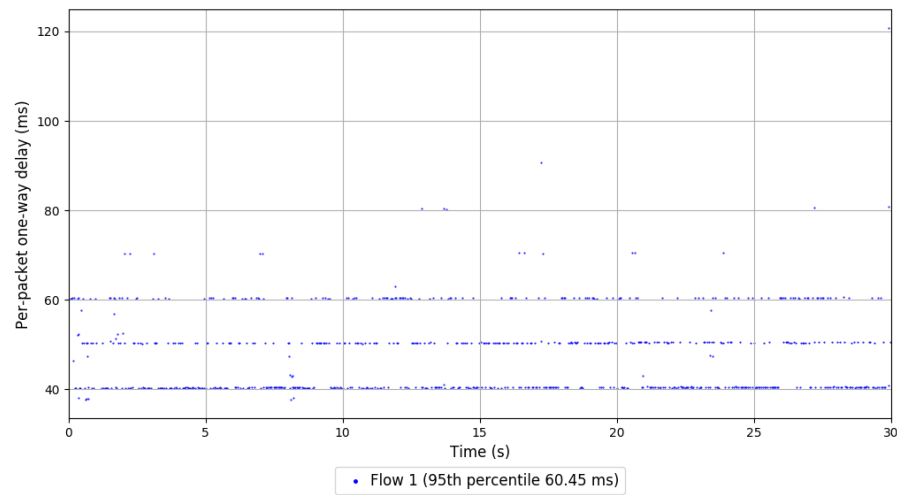
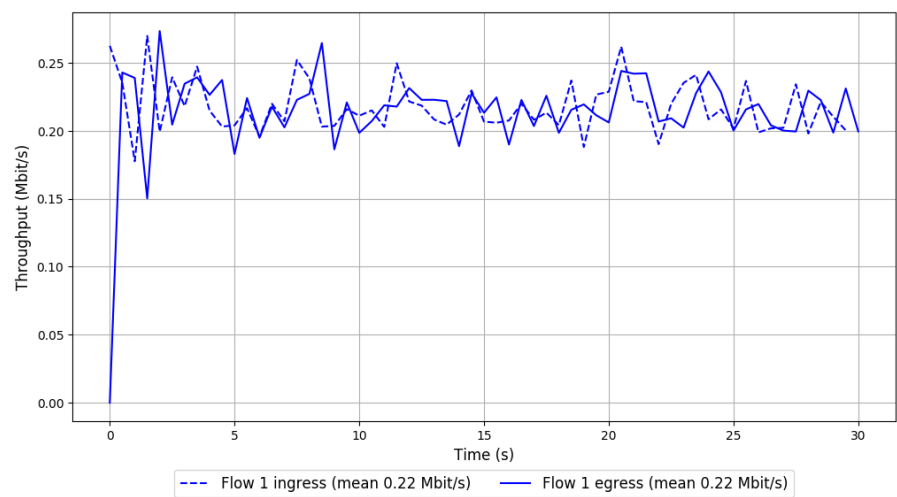


Run 2: Statistics of SCReAM

Start at: 2018-05-30 07:44:49
End at: 2018-05-30 07:45:19
Local clock offset: -2.902 ms
Remote clock offset: -3.803 ms

Below is generated by plot.py at 2018-05-30 08:10:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.445 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.445 ms
Loss rate: 0.13%

Run 2: Report of SReAM — Data Link

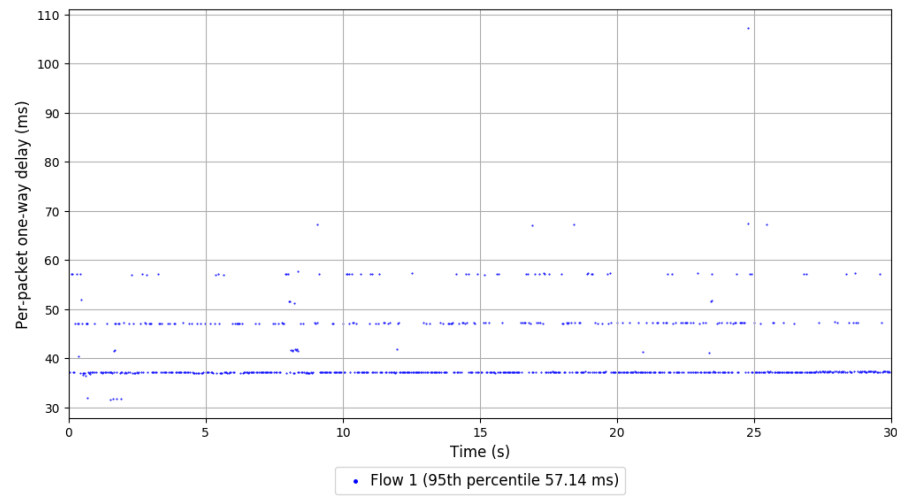
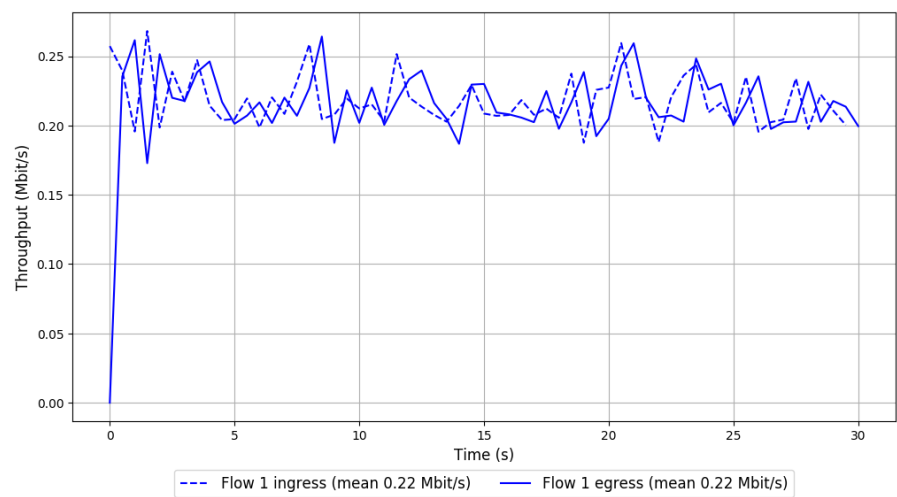


Run 3: Statistics of SCReAM

Start at: 2018-05-30 08:02:03
End at: 2018-05-30 08:02:33
Local clock offset: -1.162 ms
Remote clock offset: -5.951 ms

Below is generated by plot.py at 2018-05-30 08:10:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.136 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.136 ms
Loss rate: 0.13%

Run 3: Report of SReAM — Data Link



Run 1: Statistics of Sprout

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

End at: 2018-05-30 07:31:19

Local clock offset: -2.194 ms

Remote clock offset: 1.516 ms

Below is generated by plot.py at 2018-05-30 08:10:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.45 Mbit/s

95th percentile per-packet one-way delay: 64.827 ms

Loss rate: 0.09%

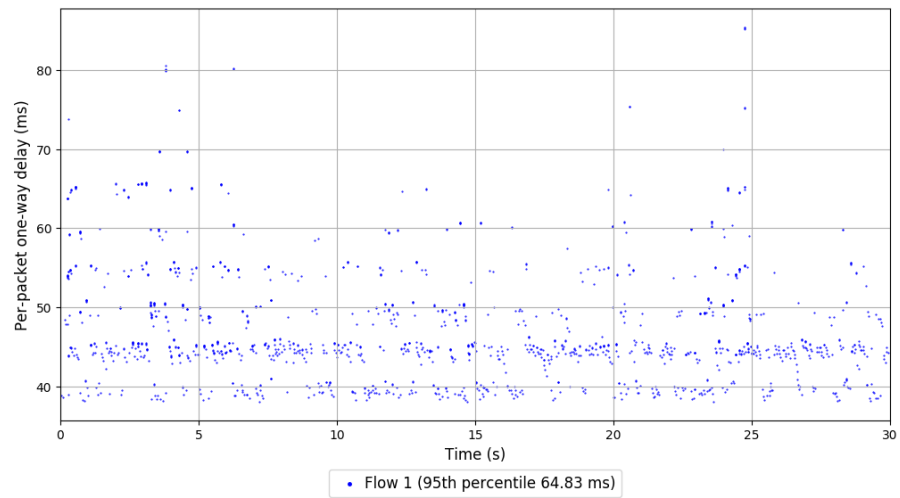
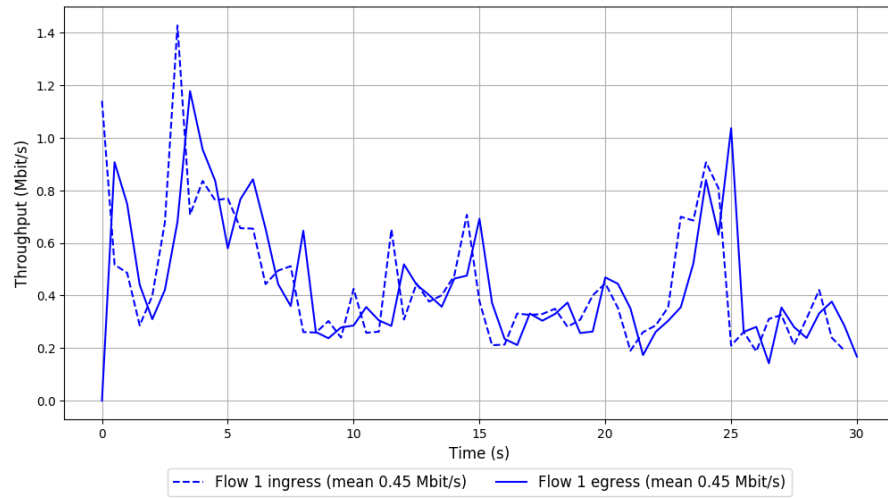
-- Flow 1:

Average throughput: 0.45 Mbit/s

95th percentile per-packet one-way delay: 64.827 ms

Loss rate: 0.09%

Run 1: Report of Sprout — Data Link

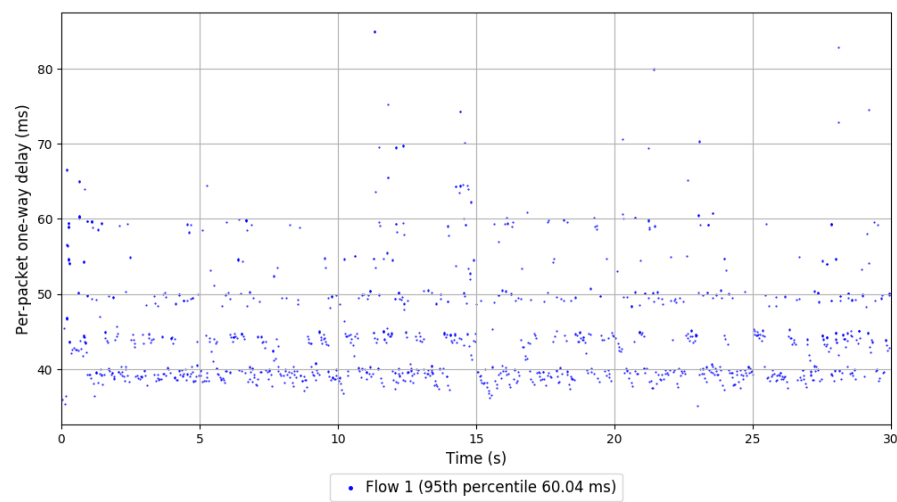
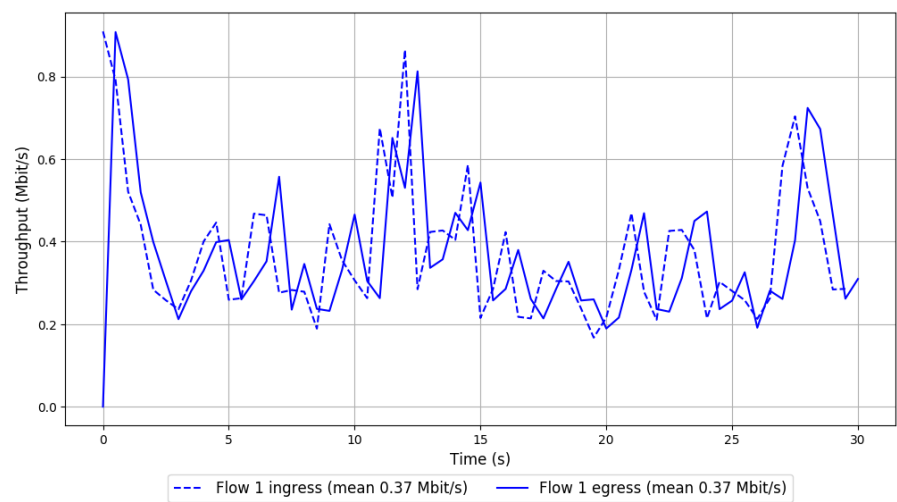


Run 2: Statistics of Sprout

Start at: 2018-05-30 07:48:02
End at: 2018-05-30 07:48:32
Local clock offset: -3.529 ms
Remote clock offset: -5.219 ms

Below is generated by plot.py at 2018-05-30 08:10:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 60.042 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 60.042 ms
Loss rate: 0.00%

Run 2: Report of Sprout — Data Link

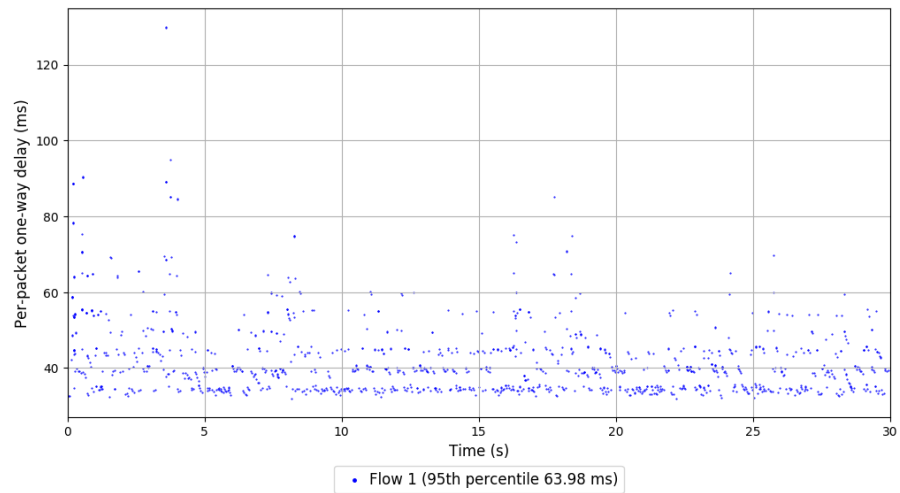
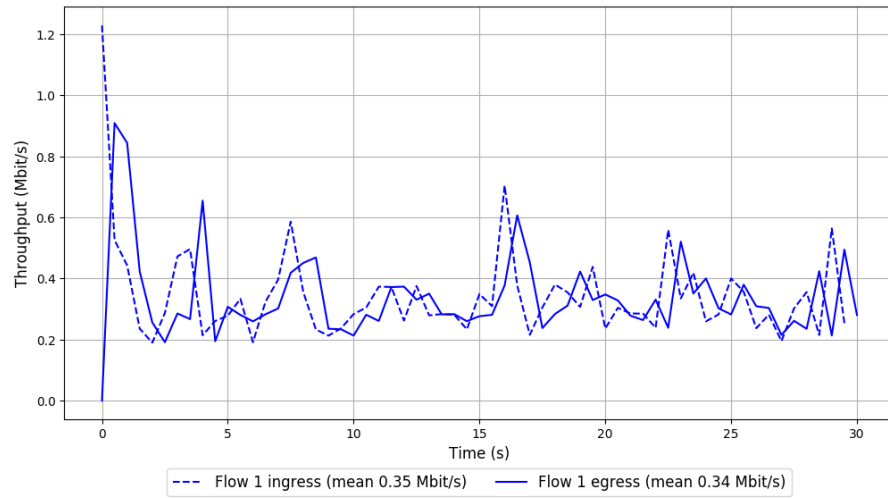


Run 3: Statistics of Sprout

Start at: 2018-05-30 08:05:17
End at: 2018-05-30 08:05:47
Local clock offset: 0.297 ms
Remote clock offset: -4.819 ms

Below is generated by plot.py at 2018-05-30 08:10:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 63.977 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 63.977 ms
Loss rate: 0.22%

Run 3: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2018-05-30 07:25:26

End at: 2018-05-30 07:25:57

Local clock offset: -0.118 ms

Remote clock offset: -1.99 ms

Below is generated by plot.py at 2018-05-30 08:10:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.21 Mbit/s

95th percentile per-packet one-way delay: 222.145 ms

Loss rate: 0.33%

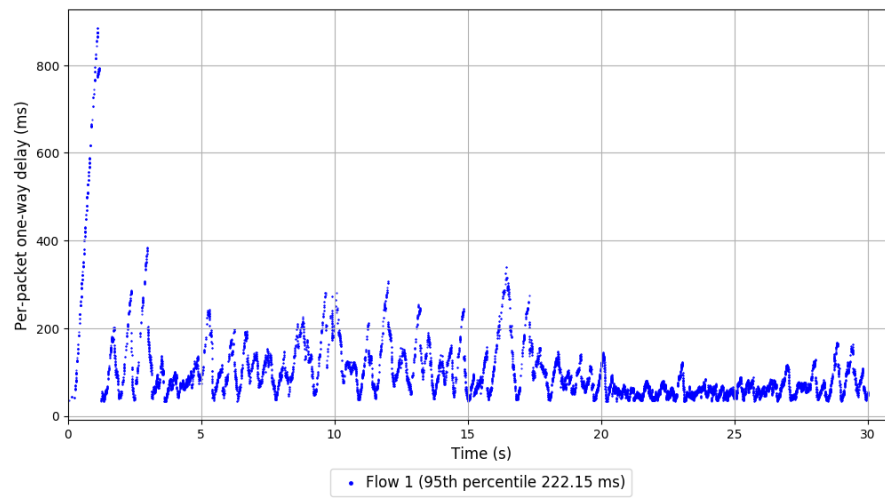
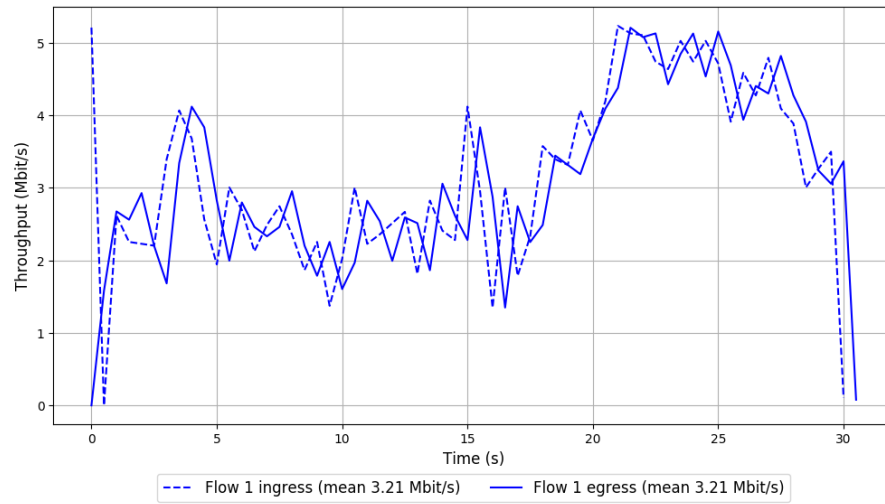
-- Flow 1:

Average throughput: 3.21 Mbit/s

95th percentile per-packet one-way delay: 222.145 ms

Loss rate: 0.33%

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



Run 2: Statistics of TaoVA-100x

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

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

Local clock offset: -1.574 ms

Remote clock offset: -1.34 ms

Below is generated by plot.py at 2018-05-30 08:10:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.98 Mbit/s

95th percentile per-packet one-way delay: 731.616 ms

Loss rate: 5.80%

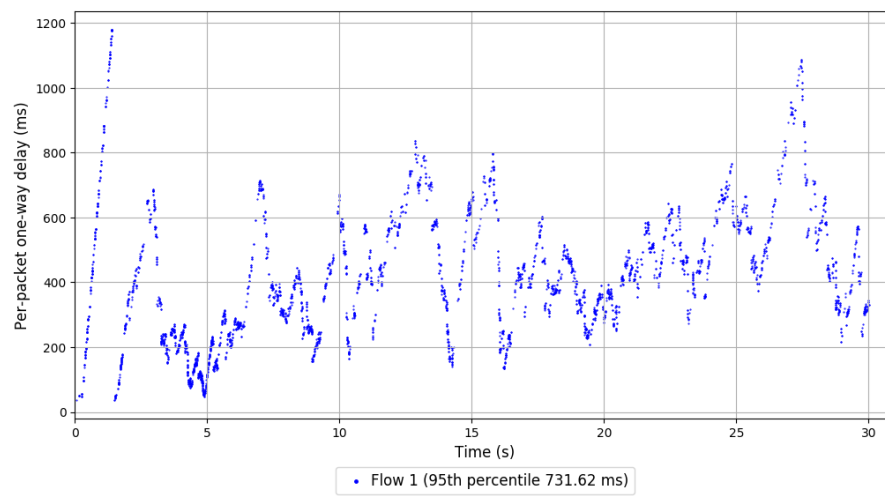
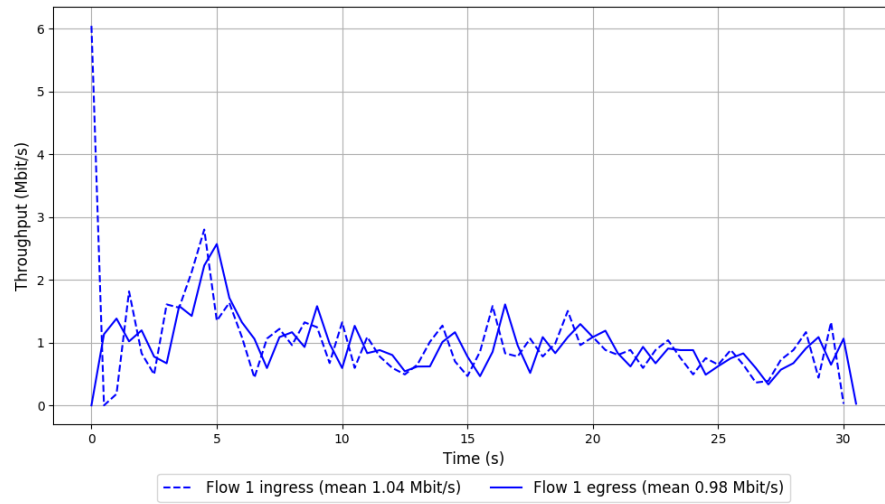
-- Flow 1:

Average throughput: 0.98 Mbit/s

95th percentile per-packet one-way delay: 731.616 ms

Loss rate: 5.80%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-05-30 07:59:53

End at: 2018-05-30 08:00:23

Local clock offset: -3.814 ms

Remote clock offset: -5.965 ms

Below is generated by plot.py at 2018-05-30 08:10:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.56 Mbit/s

95th percentile per-packet one-way delay: 311.995 ms

Loss rate: 0.59%

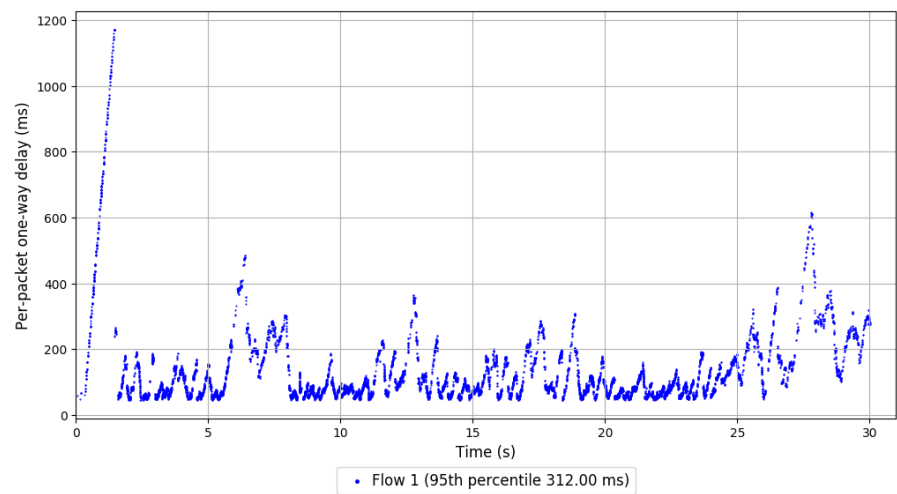
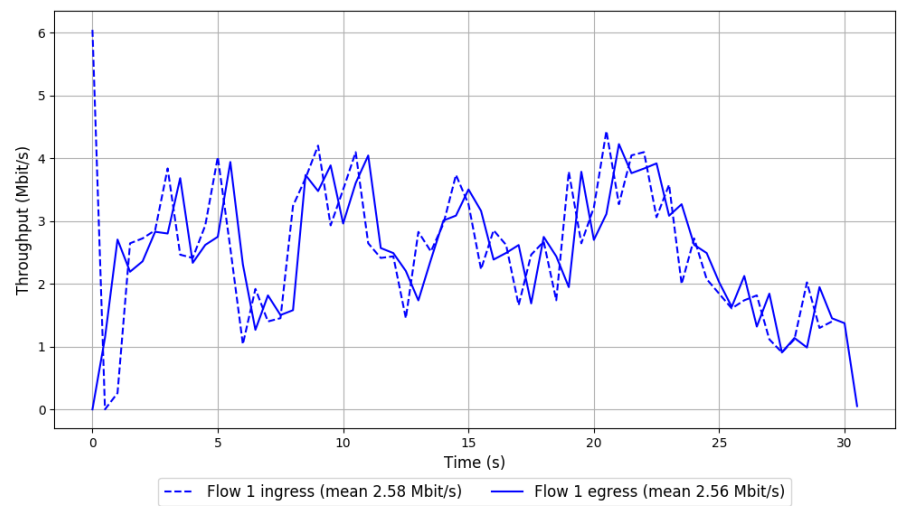
-- Flow 1:

Average throughput: 2.56 Mbit/s

95th percentile per-packet one-way delay: 311.995 ms

Loss rate: 0.59%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-05-30 07:35:08

End at: 2018-05-30 07:35:38

Local clock offset: -0.853 ms

Remote clock offset: 2.695 ms

Below is generated by plot.py at 2018-05-30 08:10:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.73 Mbit/s

95th percentile per-packet one-way delay: 179.012 ms

Loss rate: 0.32%

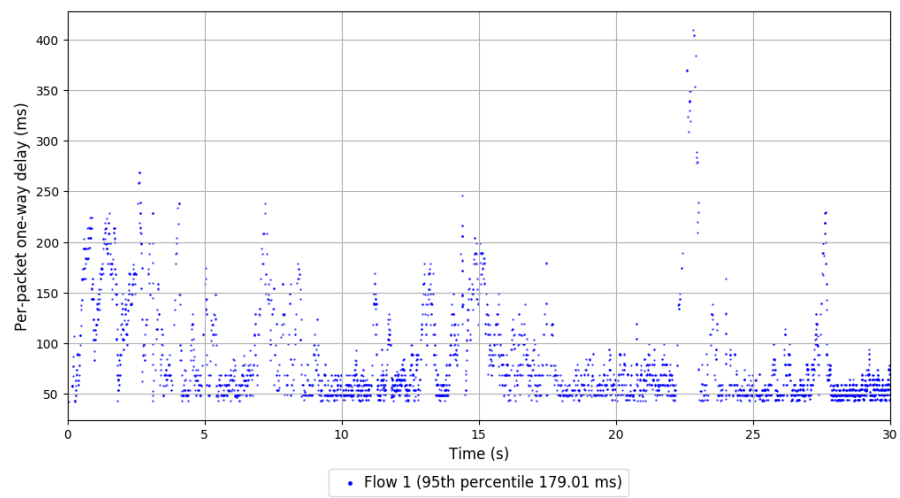
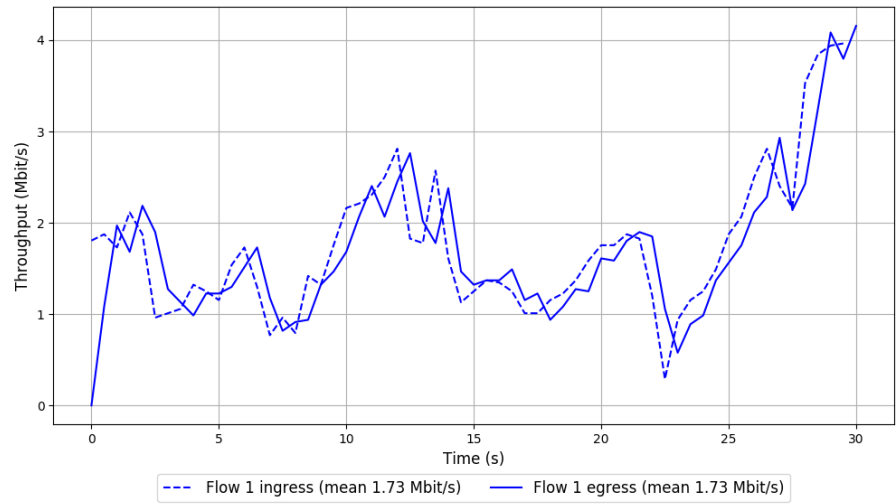
-- Flow 1:

Average throughput: 1.73 Mbit/s

95th percentile per-packet one-way delay: 179.012 ms

Loss rate: 0.32%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-05-30 07:52:21

End at: 2018-05-30 07:52:51

Local clock offset: -1.175 ms

Remote clock offset: -4.74 ms

Below is generated by plot.py at 2018-05-30 08:10:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.44 Mbit/s

95th percentile per-packet one-way delay: 177.691 ms

Loss rate: 0.19%

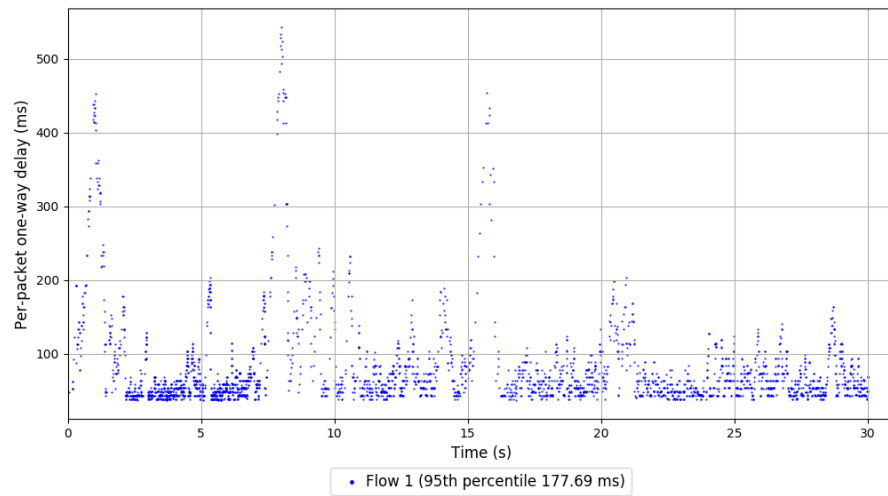
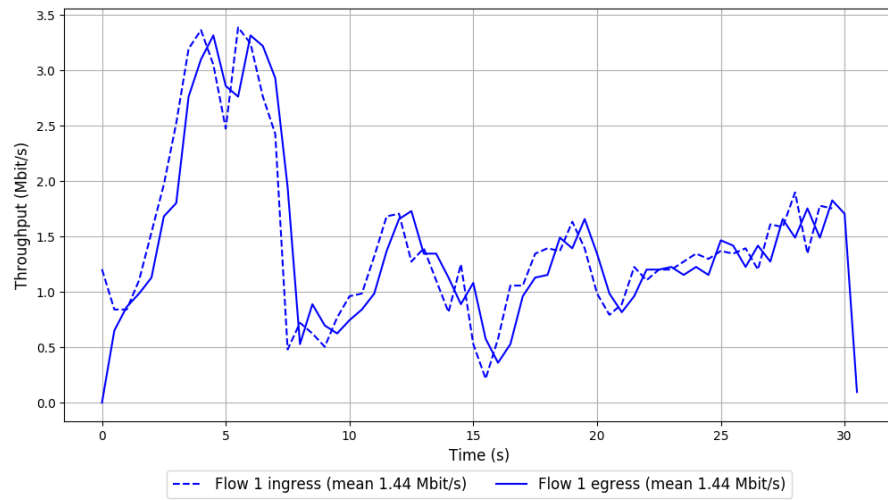
-- Flow 1:

Average throughput: 1.44 Mbit/s

95th percentile per-packet one-way delay: 177.691 ms

Loss rate: 0.19%

Run 2: Report of TCP Vegas — Data Link

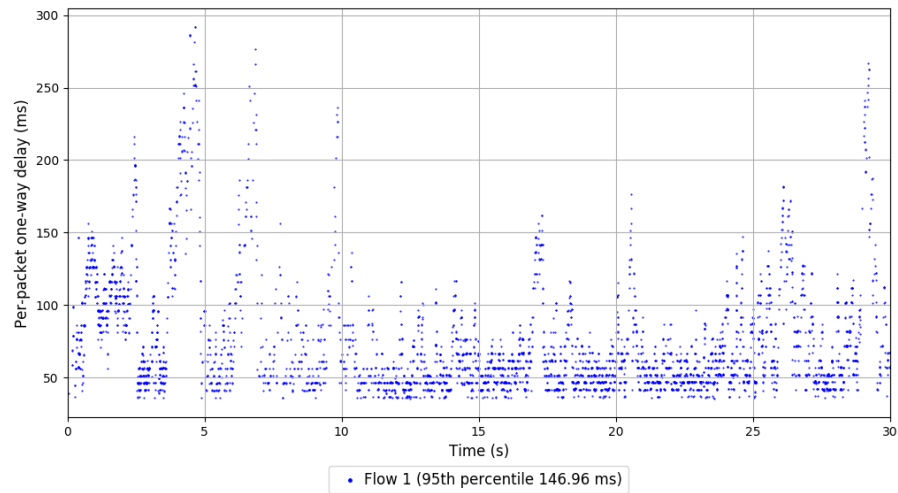
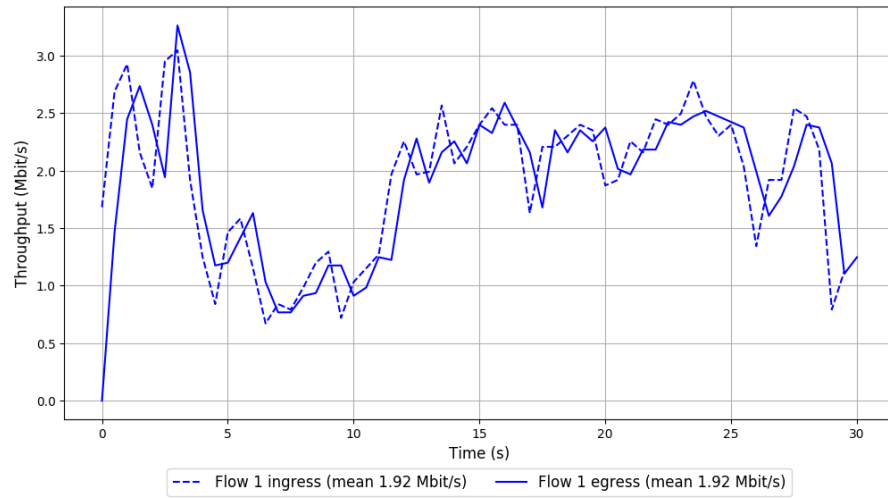


Run 3: Statistics of TCP Vegas

Start at: 2018-05-30 08:09:36
End at: 2018-05-30 08:10:06
Local clock offset: -0.028 ms
Remote clock offset: -5.493 ms

Below is generated by plot.py at 2018-05-30 08:10:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: 146.958 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: 146.958 ms
Loss rate: 0.19%

Run 3: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-05-30 07:34:03

End at: 2018-05-30 07:34:33

Local clock offset: -2.228 ms

Remote clock offset: 0.011 ms

Below is generated by plot.py at 2018-05-30 08:10:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.09 Mbit/s

95th percentile per-packet one-way delay: 699.293 ms

Loss rate: 1.12%

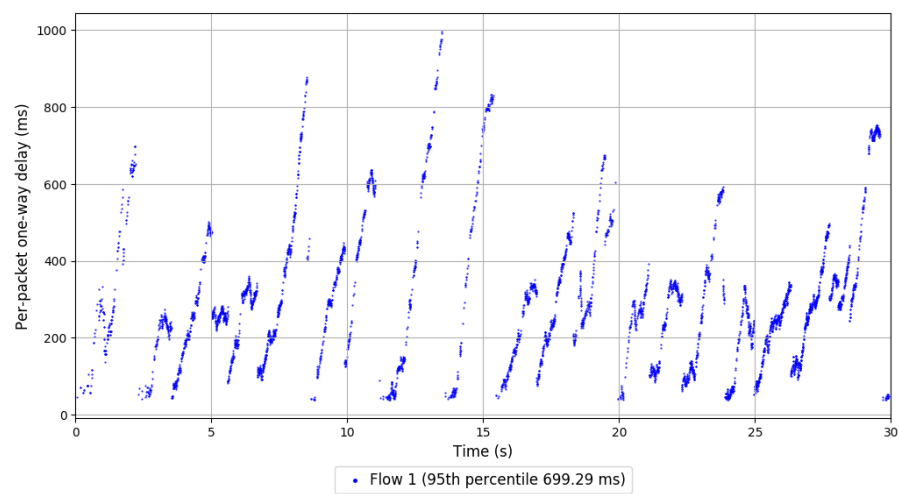
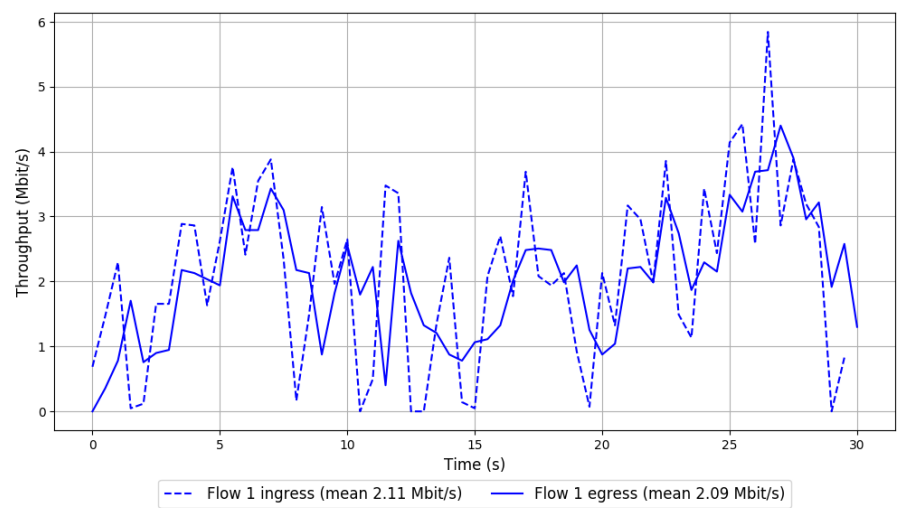
-- Flow 1:

Average throughput: 2.09 Mbit/s

95th percentile per-packet one-way delay: 699.293 ms

Loss rate: 1.12%

Run 1: Report of Verus — Data Link

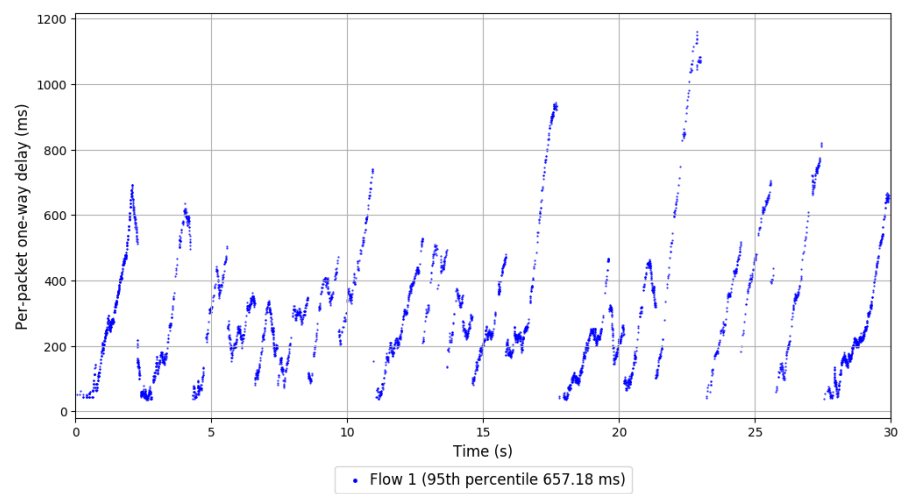
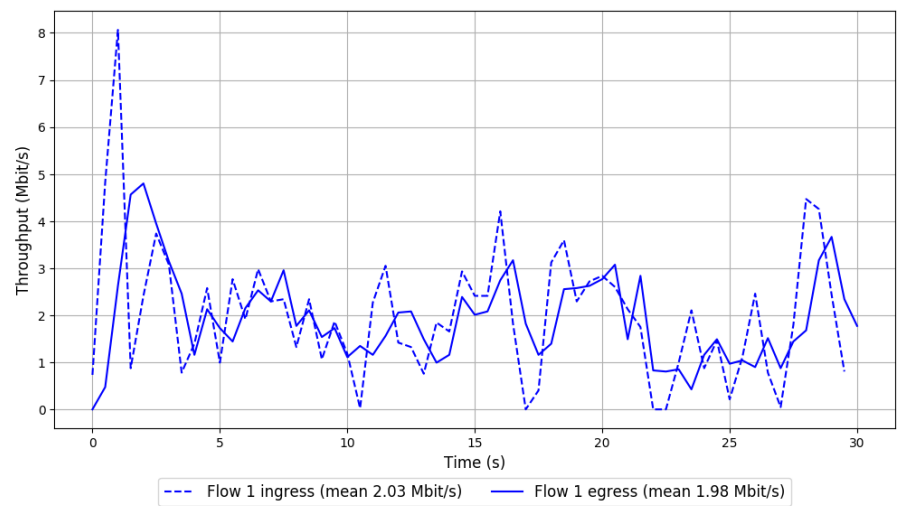


Run 2: Statistics of Verus

Start at: 2018-05-30 07:51:17
End at: 2018-05-30 07:51:47
Local clock offset: -3.416 ms
Remote clock offset: -5.449 ms

Below is generated by plot.py at 2018-05-30 08:10:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 657.177 ms
Loss rate: 2.33%
-- Flow 1:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 657.177 ms
Loss rate: 2.33%

Run 2: Report of Verus — Data Link

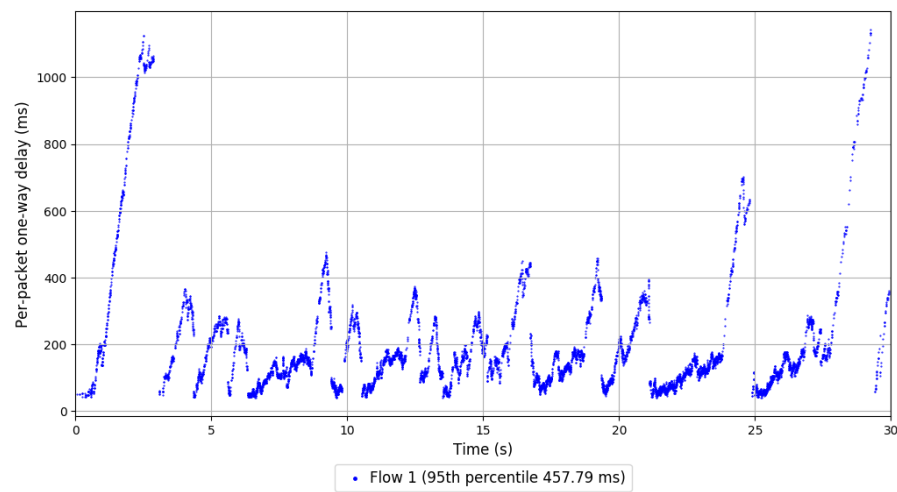
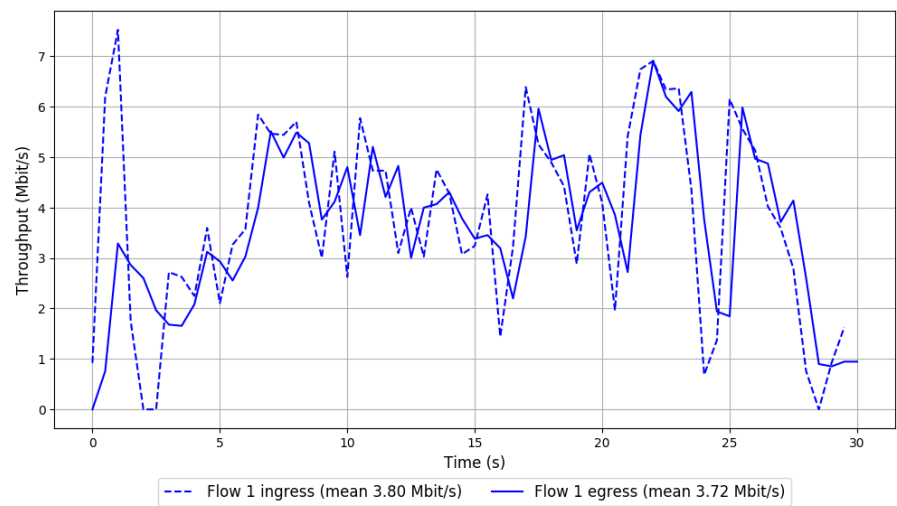


Run 3: Statistics of Verus

Start at: 2018-05-30 08:08:32
End at: 2018-05-30 08:09:02
Local clock offset: -0.27 ms
Remote clock offset: -0.961 ms

Below is generated by plot.py at 2018-05-30 08:10:55
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.72 Mbit/s
95th percentile per-packet one-way delay: 457.791 ms
Loss rate: 2.23%
-- Flow 1:
Average throughput: 3.72 Mbit/s
95th percentile per-packet one-way delay: 457.791 ms
Loss rate: 2.23%

Run 3: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-05-30 07:22:12

End at: 2018-05-30 07:22:42

Local clock offset: -1.669 ms

Remote clock offset: -2.812 ms

Below is generated by plot.py at 2018-05-30 08:10:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.26 Mbit/s

95th percentile per-packet one-way delay: 945.410 ms

Loss rate: 7.84%

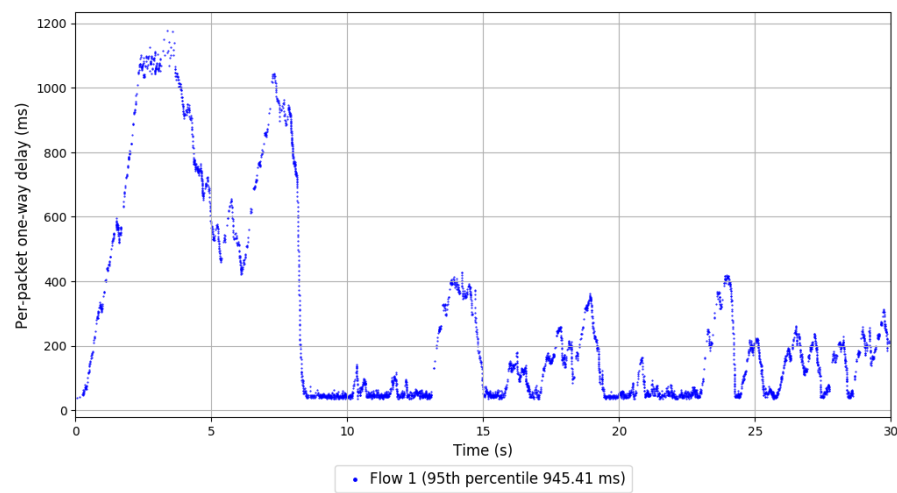
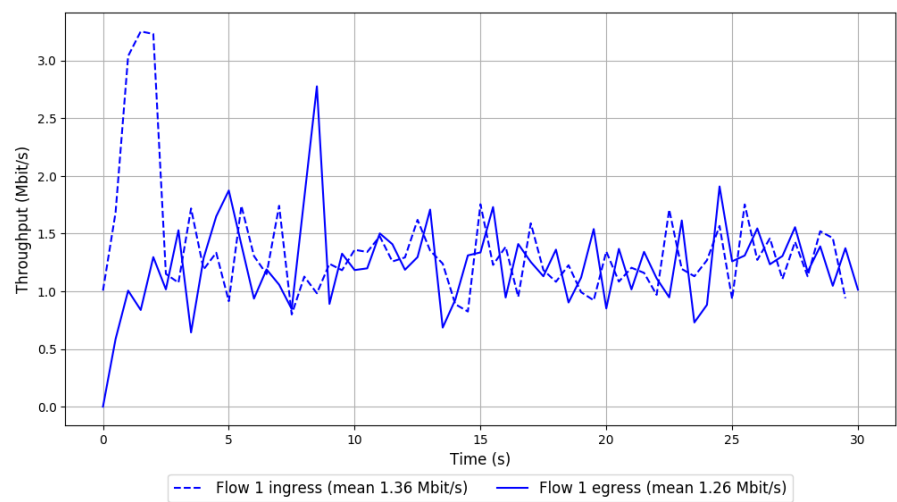
-- Flow 1:

Average throughput: 1.26 Mbit/s

95th percentile per-packet one-way delay: 945.410 ms

Loss rate: 7.84%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-05-30 07:39:26

End at: 2018-05-30 07:39:56

Local clock offset: -1.062 ms

Remote clock offset: 2.087 ms

Below is generated by plot.py at 2018-05-30 08:10:55

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.24 Mbit/s

95th percentile per-packet one-way delay: 1048.381 ms

Loss rate: 9.36%

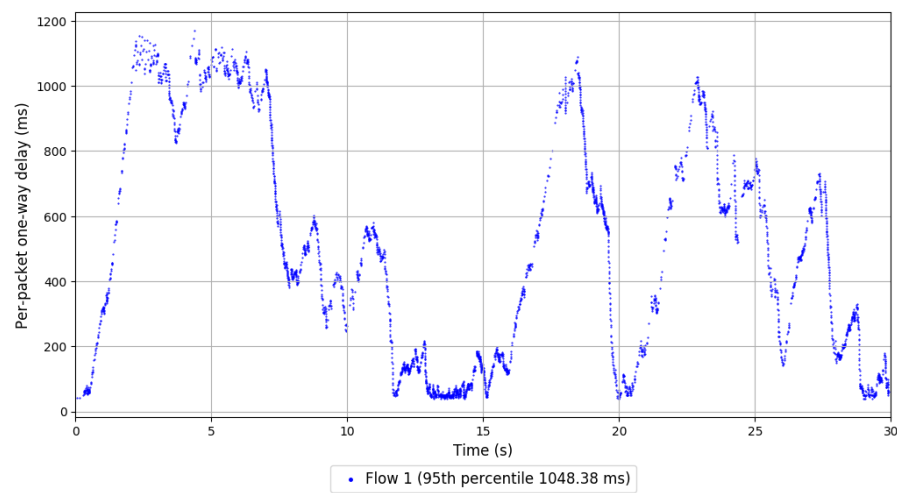
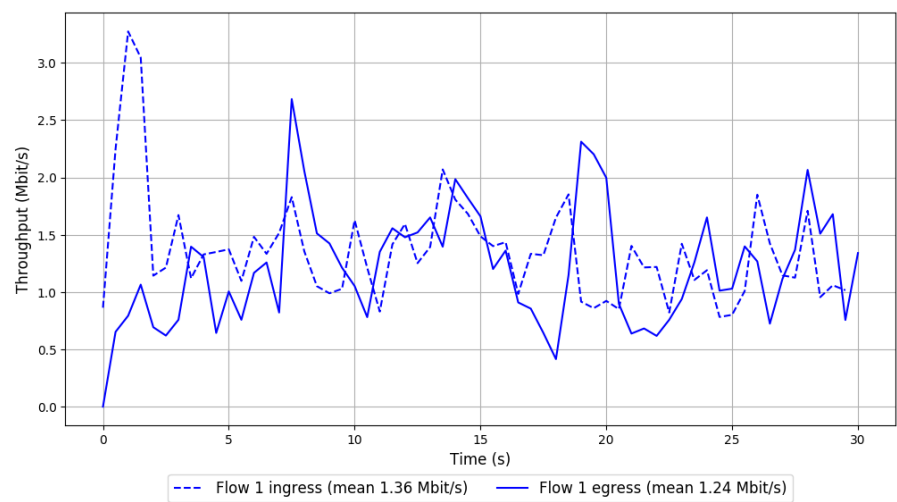
-- Flow 1:

Average throughput: 1.24 Mbit/s

95th percentile per-packet one-way delay: 1048.381 ms

Loss rate: 9.36%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-05-30 07:56:39

End at: 2018-05-30 07:57:09

Local clock offset: -1.306 ms

Remote clock offset: -4.76 ms

Below is generated by plot.py at 2018-05-30 08:10:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.64 Mbit/s

95th percentile per-packet one-way delay: 1043.068 ms

Loss rate: 3.51%

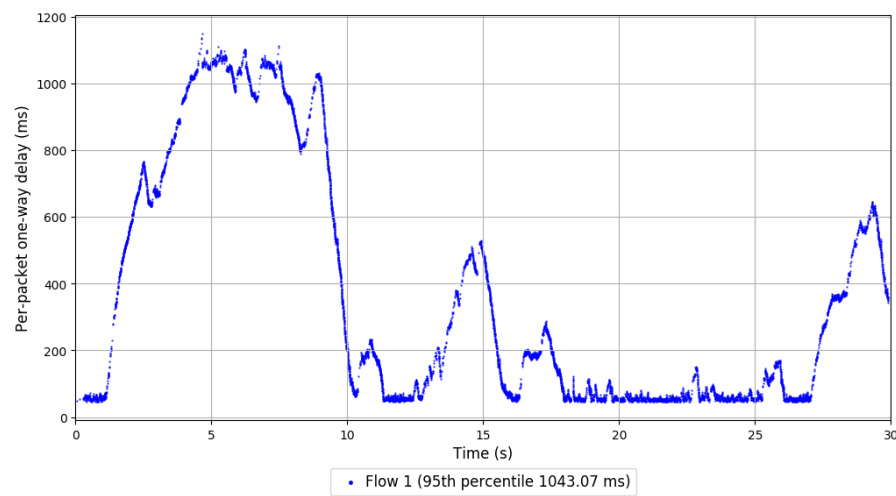
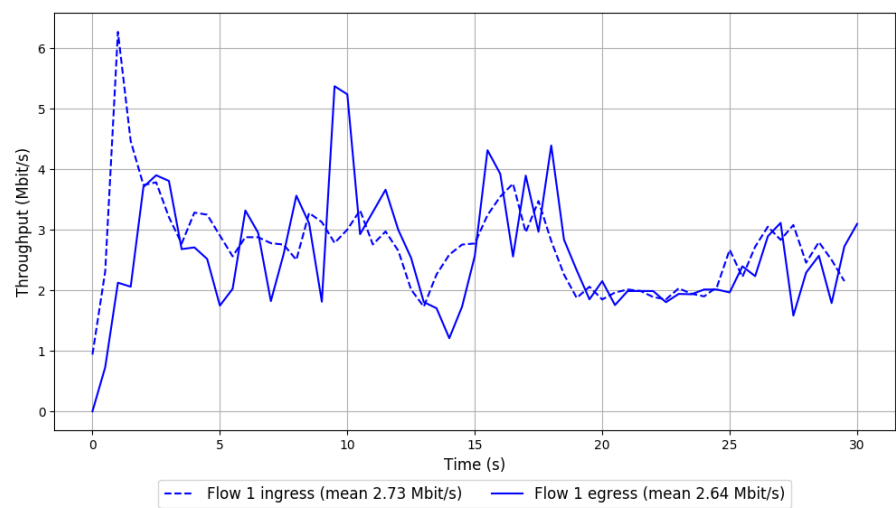
-- Flow 1:

Average throughput: 2.64 Mbit/s

95th percentile per-packet one-way delay: 1043.068 ms

Loss rate: 3.51%

Run 3: Report of PCC-Vivace — Data Link

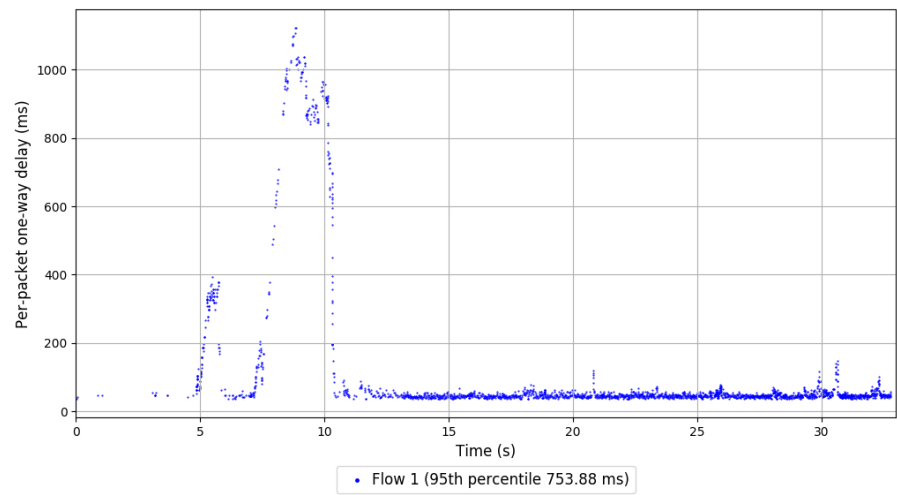
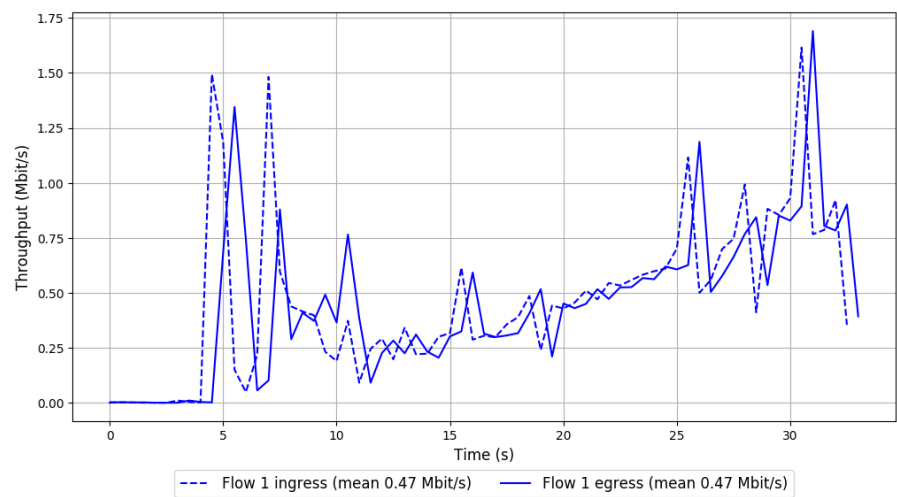


```
Run 1: Statistics of WebRTC media

Start at: 2018-05-30 07:21:08
End at: 2018-05-30 07:21:38
Local clock offset: -3.173 ms
Remote clock offset: -2.997 ms

# Below is generated by plot.py at 2018-05-30 08:10:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 753.885 ms
Loss rate: 1.19%
-- Flow 1:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 753.885 ms
Loss rate: 1.19%
```

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-05-30 07:38:21

End at: 2018-05-30 07:38:51

Local clock offset: -0.653 ms

Remote clock offset: 1.584 ms

Below is generated by plot.py at 2018-05-30 08:10:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.54 Mbit/s

95th percentile per-packet one-way delay: 112.759 ms

Loss rate: 0.10%

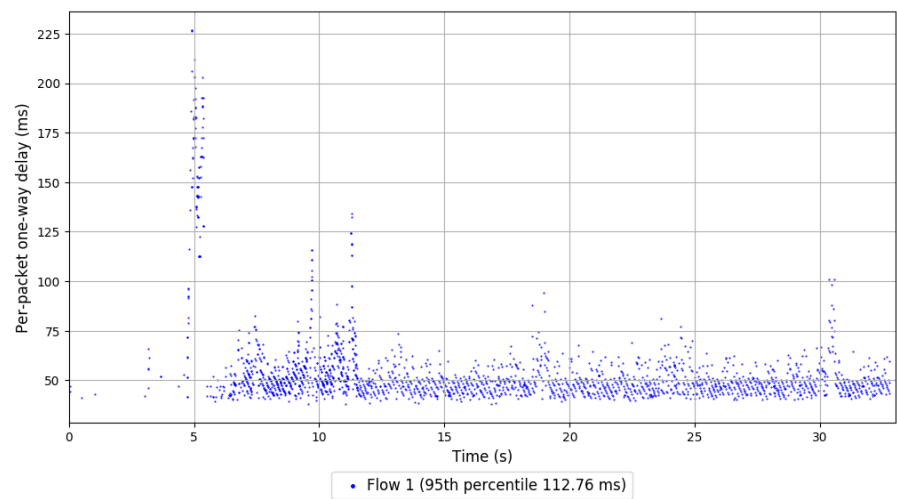
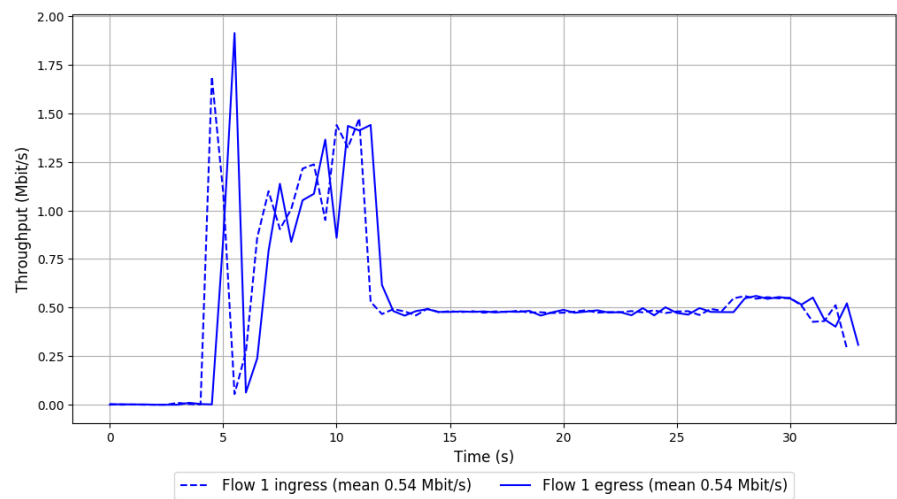
-- Flow 1:

Average throughput: 0.54 Mbit/s

95th percentile per-packet one-way delay: 112.759 ms

Loss rate: 0.10%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-05-30 07:55:35

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

Local clock offset: -1.741 ms

Remote clock offset: -4.53 ms

Below is generated by plot.py at 2018-05-30 08:10:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.01 Mbit/s

95th percentile per-packet one-way delay: 75.794 ms

Loss rate: 0.22%

-- Flow 1:

Average throughput: 1.01 Mbit/s

95th percentile per-packet one-way delay: 75.794 ms

Loss rate: 0.22%

Run 3: Report of WebRTC media — Data Link

