

Pantheon Report

Generated at 2018-02-27 08:15:47 (UTC).

Data path: Colombia ppp0 (*remote*) → AWS Brazil 2 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).

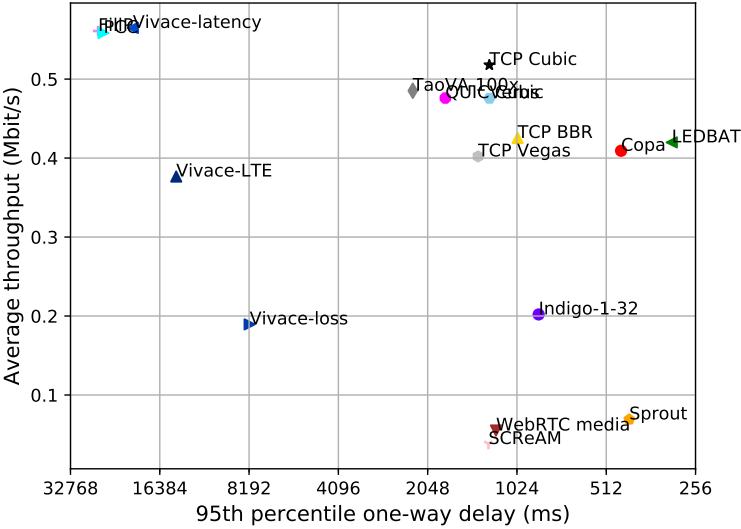
Tested BBR with qdisc of Fair Queuing (**fq**), and other schemes with the default Linux qdisc (**pfifo_fast**).

NTP offsets were measured against **gps.ntp.br** and have been applied to correct the timestamps in logs.

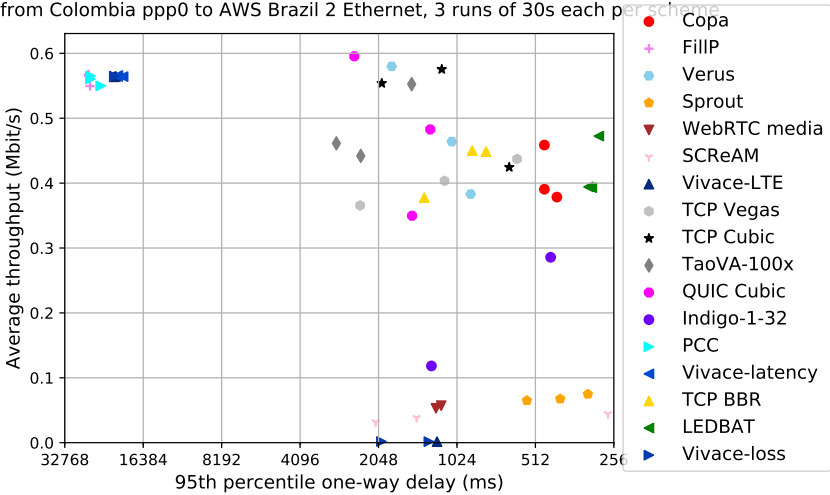
Git summary:

```
branch: master @ f12c42a2c63fdd9a862eefa0468859bf379b6623
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
  M datagrump/sender.cc
third_party/fillp @ 828bbf95fd4941149b5cec90f281d1c69ae1a5c6
third_party/genericCC @ 9249eea3238475c4d8cca1443d28df70bff6c4a2
third_party/indigo @ a9b2060d39e4da2e8987e893e3eca2a6c7cd0ab9
third_party/indigo-1-layer-128-unit @ 3ae9e4ef4230db7484501f82ce8b377695f2f66d
third_party/indigo-1-layer-32-unit @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-1-layer-32-unit-no-calib @ 1f3a7f75b41135ed5b540c0fd3505939528e2a5f
third_party/indigo-no-calib @ 7224f2202e8a044d8306fa0b983ad84360c53d89
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
  M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ fb1053193c2861da659ba9013db26744ccfcf993
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/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream @ c3370fd7bd17265a79aeb34e4016ad23f5965885
third_party/sourdough @ f1a14bffe749737437f61b1eae30b267cde681
third_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce
  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 @ 7a4ba531e75b4a6f66f5c4580192120401784ce3
third_party/webrtc @ a488197ddd041ace68a42849b2540ad834825f42
```

test from Colombia ppp0 to AWS Brazil 2 Ethernet, 3 runs of 30s each per scheme
(mean of all runs by scheme)



test from Colombia ppp0 to AWS Brazil 2 Ethernet, 3 runs of 30s each per scheme



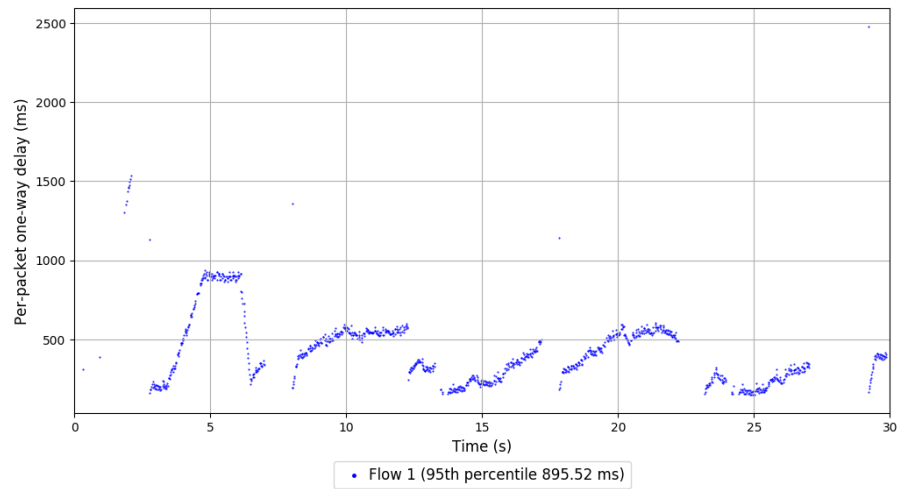
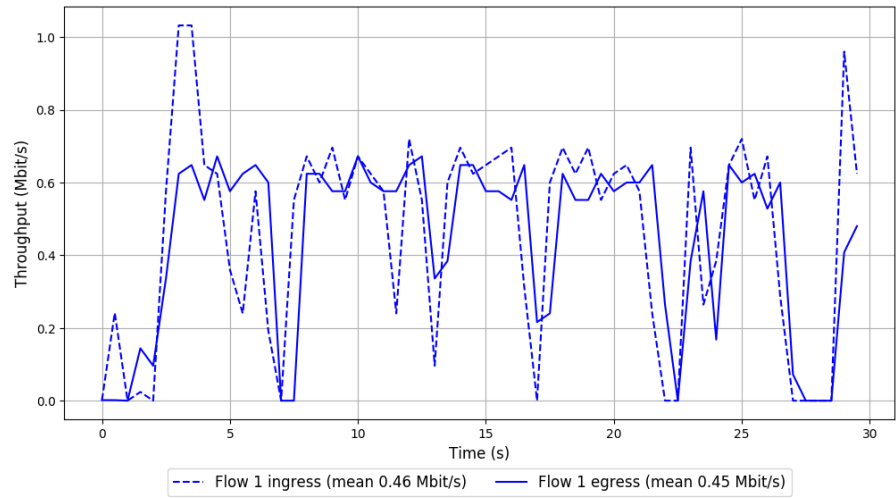
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	0.43	1018.60	1.94
TCP Cubic	3	0.52	1269.05	13.95
LEDBAT	3	0.42	308.01	5.65
PCC	3	0.56	25352.49	89.18
QUIC Cubic	3	0.48	1785.54	7.26
SCReAM	3	0.04	1277.59	4.38
WebRTC media	2	0.06	1205.16	0.25
Sprout	3	0.07	428.36	3.94
TaoVA-100x	3	0.48	2298.77	1.48
TCP Vegas	3	0.40	1385.13	4.66
Verus	3	0.47	1267.38	9.82
Copa	3	0.41	456.40	10.14
FillP	3	0.56	26439.69	98.53
Indigo-1-32	2	0.20	865.40	1.40
Vivace-latency	3	0.56	20199.38	70.29
Vivace-loss	3	0.19	8154.19	30.24
Vivace-LTE	3	0.37	14422.52	47.28

Run 1: Statistics of TCP BBR

Start at: 2018-02-27 06:19:05
End at: 2018-02-27 06:19:35
Local clock offset: -3.864 ms
Remote clock offset: -5.503 ms

Below is generated by plot.py at 2018-02-27 08:15:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 895.522 ms
Loss rate: 2.89%
-- Flow 1:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 895.522 ms
Loss rate: 2.89%

Run 1: Report of TCP BBR — Data Link

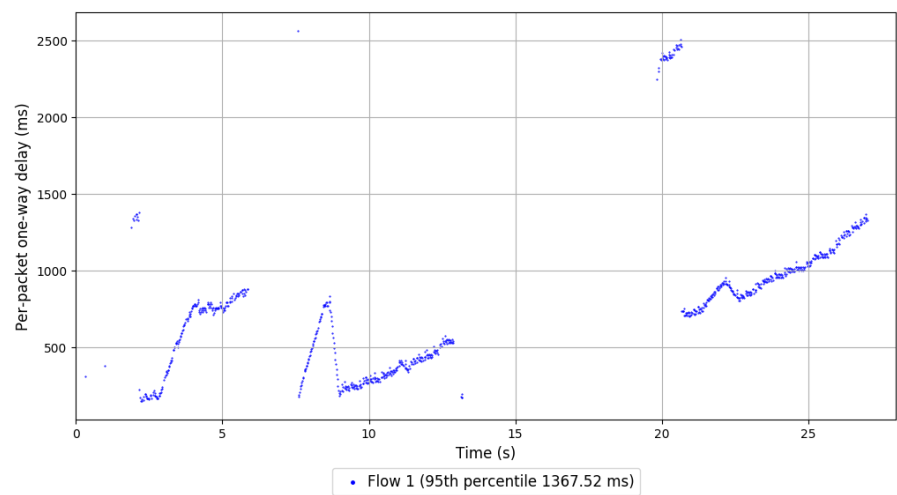
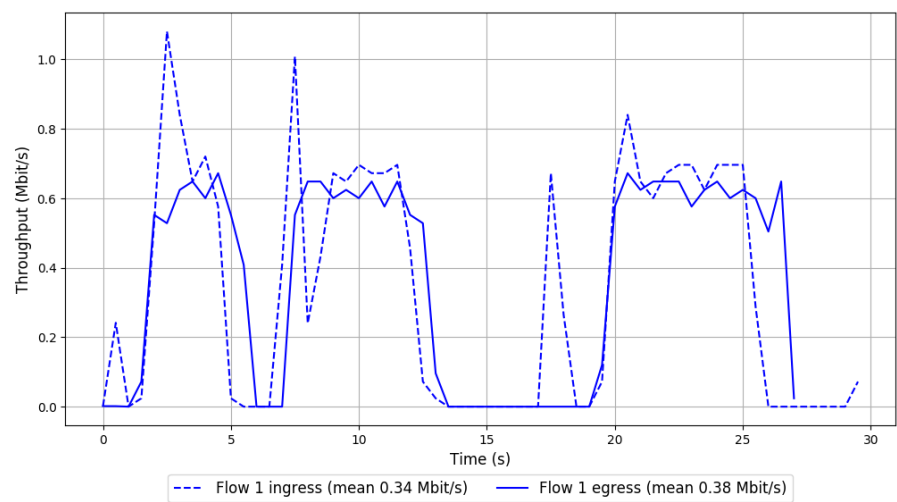


Run 2: Statistics of TCP BBR

Start at: 2018-02-27 06:40:26
End at: 2018-02-27 06:40:56
Local clock offset: -5.953 ms
Remote clock offset: -4.796 ms

Below is generated by plot.py at 2018-02-27 08:15:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 1367.522 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 1367.522 ms
Loss rate: 0.47%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-02-27 07:01:45

End at: 2018-02-27 07:02:15

Local clock offset: -6.221 ms

Remote clock offset: 0.335 ms

Below is generated by plot.py at 2018-02-27 08:15:13

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.45 Mbit/s

95th percentile per-packet one-way delay: 792.742 ms

Loss rate: 2.47%

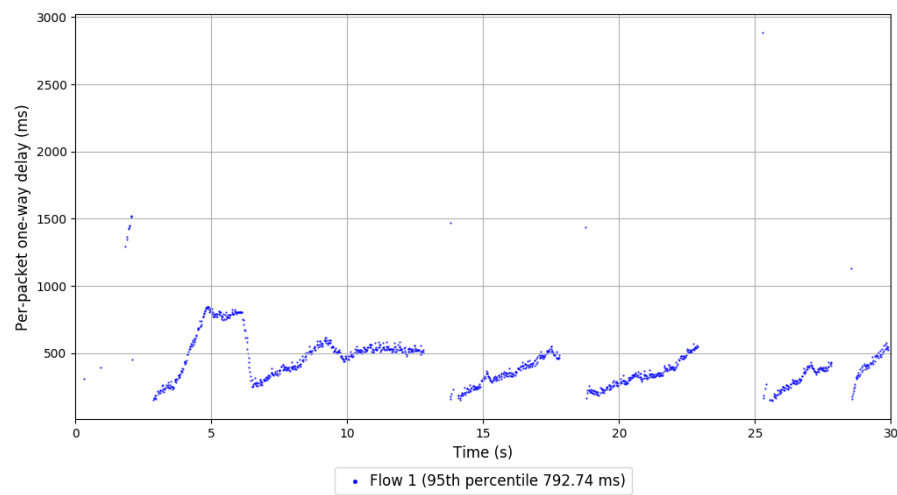
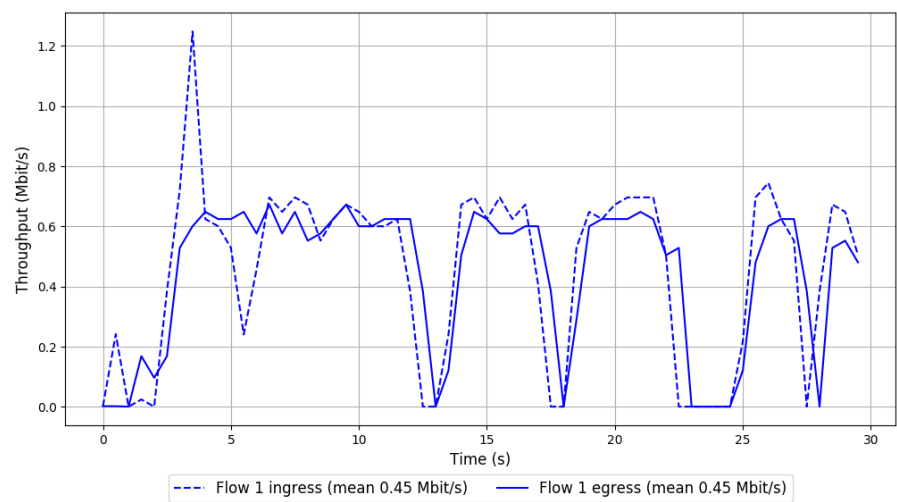
-- Flow 1:

Average throughput: 0.45 Mbit/s

95th percentile per-packet one-way delay: 792.742 ms

Loss rate: 2.47%

Run 3: Report of TCP BBR — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-02-27 06:21:24

End at: 2018-02-27 06:21:54

Local clock offset: -3.86 ms

Remote clock offset: -0.212 ms

Below is generated by plot.py at 2018-02-27 08:15:13

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.58 Mbit/s

95th percentile per-packet one-way delay: 1171.436 ms

Loss rate: 10.91%

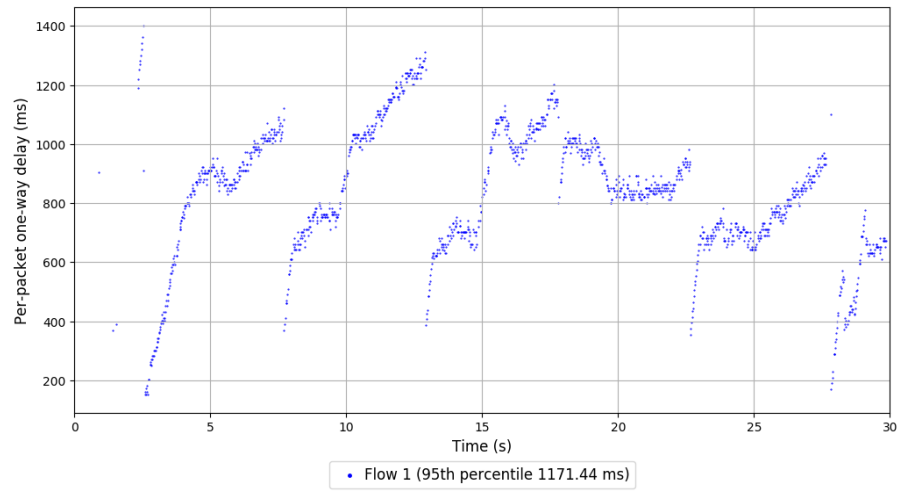
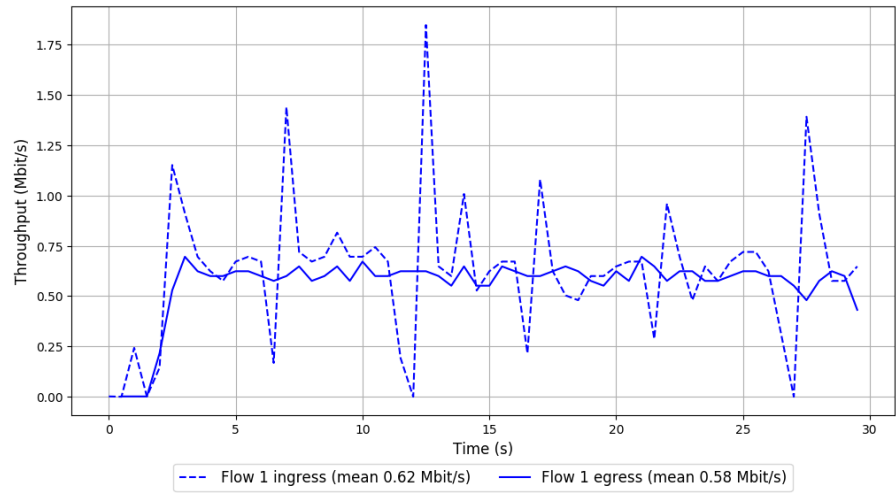
-- Flow 1:

Average throughput: 0.58 Mbit/s

95th percentile per-packet one-way delay: 1171.436 ms

Loss rate: 10.91%

Run 1: Report of TCP Cubic — Data Link

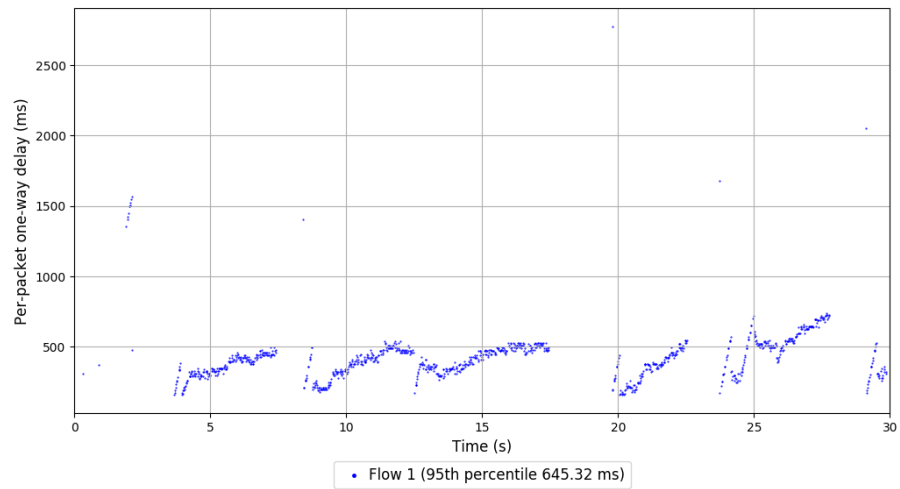
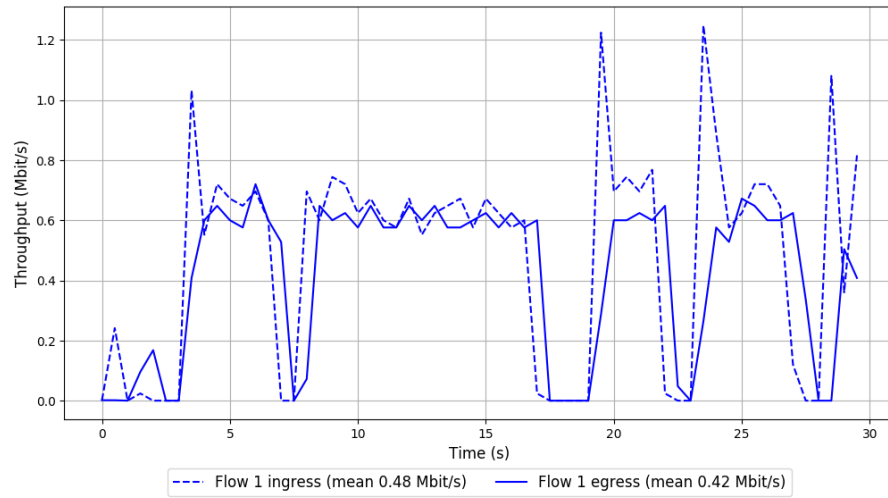


Run 2: Statistics of TCP Cubic

Start at: 2018-02-27 06:42:46
End at: 2018-02-27 06:43:16
Local clock offset: -6.117 ms
Remote clock offset: -5.579 ms

Below is generated by plot.py at 2018-02-27 08:15:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 645.323 ms
Loss rate: 12.33%
-- Flow 1:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 645.323 ms
Loss rate: 12.33%

Run 2: Report of TCP Cubic — Data Link

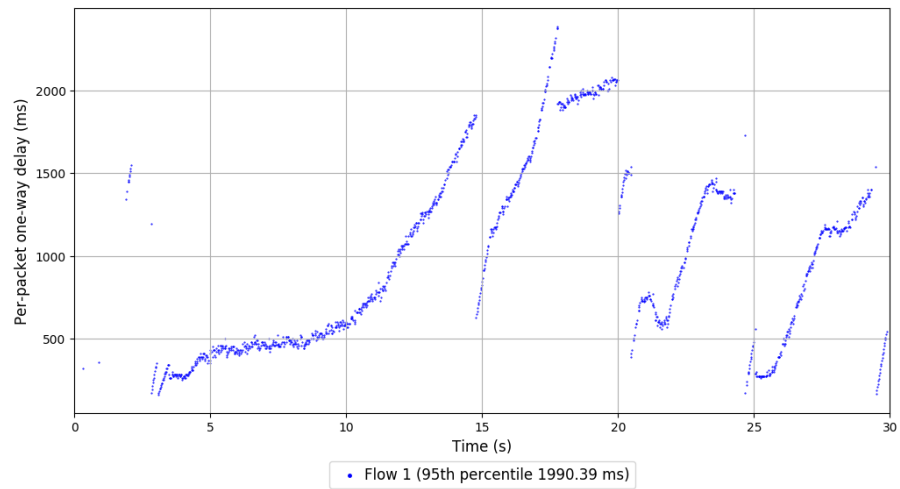
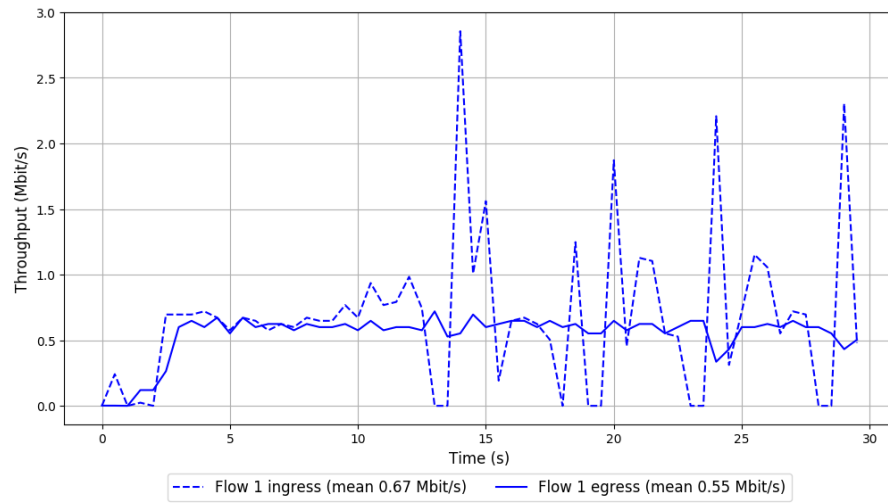


Run 3: Statistics of TCP Cubic

Start at: 2018-02-27 07:04:06
End at: 2018-02-27 07:04:36
Local clock offset: -6.276 ms
Remote clock offset: -4.849 ms

Below is generated by plot.py at 2018-02-27 08:15:14
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 1990.389 ms
Loss rate: 18.61%
-- Flow 1:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 1990.389 ms
Loss rate: 18.61%

Run 3: Report of TCP Cubic — Data Link

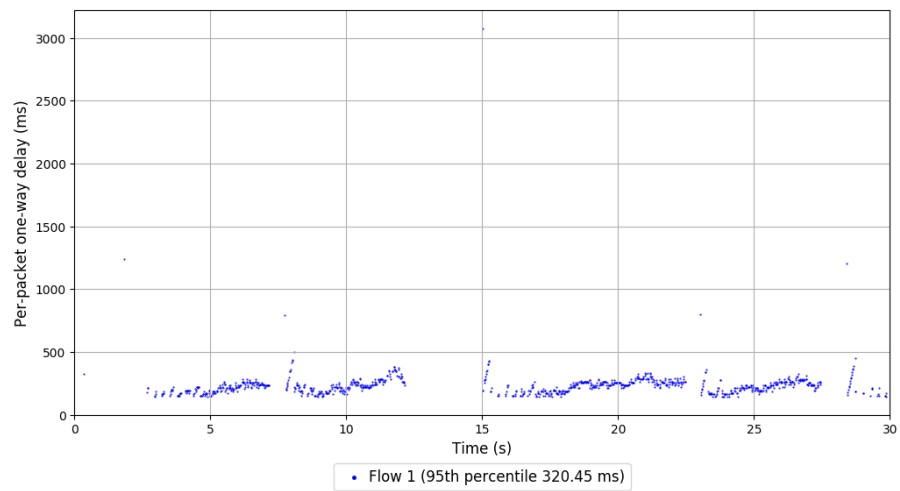
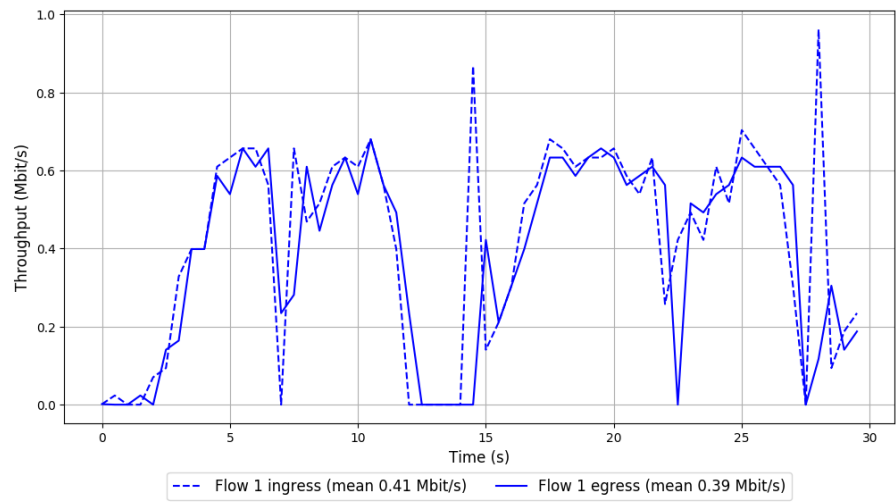


Run 1: Statistics of LEDBAT

Start at: 2018-02-27 06:09:36
End at: 2018-02-27 06:10:06
Local clock offset: -4.047 ms
Remote clock offset: -0.293 ms

Below is generated by plot.py at 2018-02-27 08:15:14
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 320.451 ms
Loss rate: 6.23%
-- Flow 1:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 320.451 ms
Loss rate: 6.23%

Run 1: Report of LEDBAT — Data Link

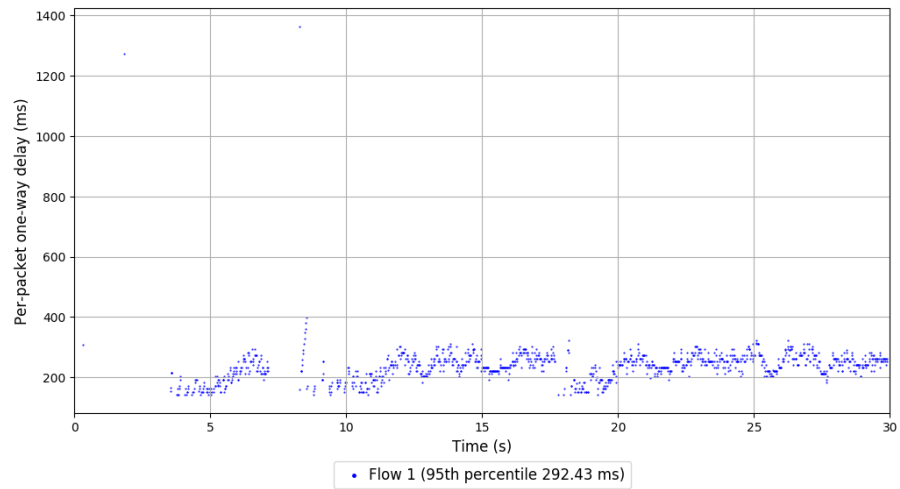
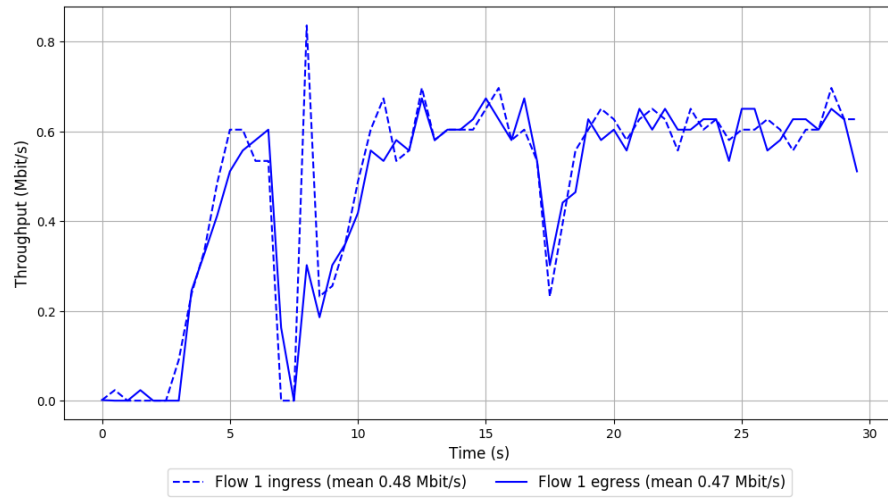


Run 2: Statistics of LEDBAT

Start at: 2018-02-27 06:30:52
End at: 2018-02-27 06:31:22
Local clock offset: -4.779 ms
Remote clock offset: -1.036 ms

Below is generated by plot.py at 2018-02-27 08:15:14
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 292.428 ms
Loss rate: 3.14%
-- Flow 1:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 292.428 ms
Loss rate: 3.14%

Run 2: Report of LEDBAT — Data Link

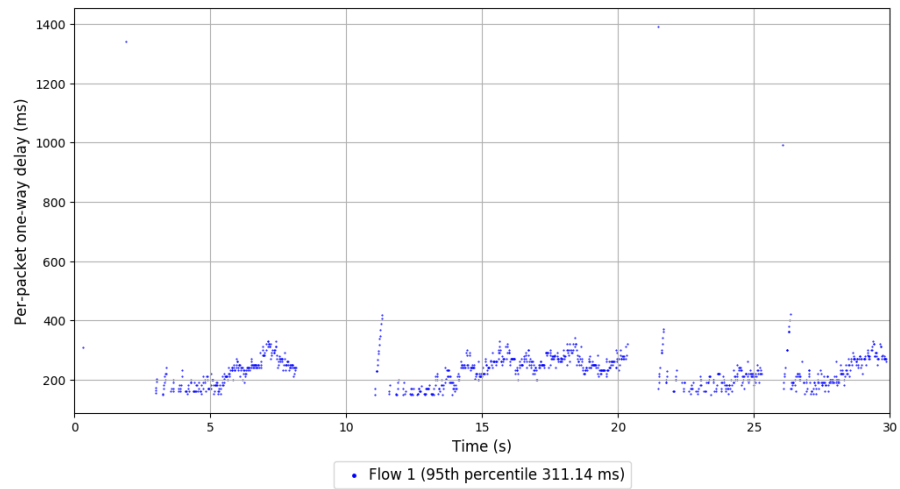
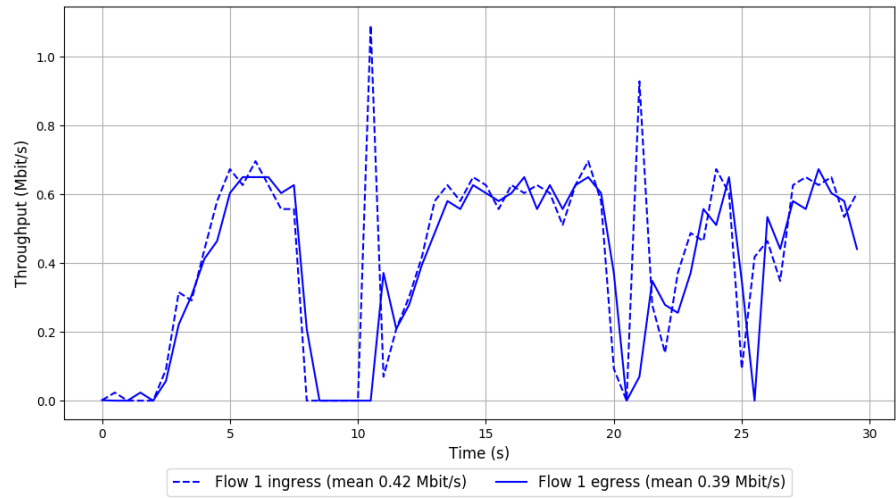


Run 3: Statistics of LEDBAT

Start at: 2018-02-27 06:52:10
End at: 2018-02-27 06:52:40
Local clock offset: -6.52 ms
Remote clock offset: -4.849 ms

Below is generated by plot.py at 2018-02-27 08:15:16
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 311.138 ms
Loss rate: 7.58%
-- Flow 1:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 311.138 ms
Loss rate: 7.58%

Run 3: Report of LEDBAT — Data Link

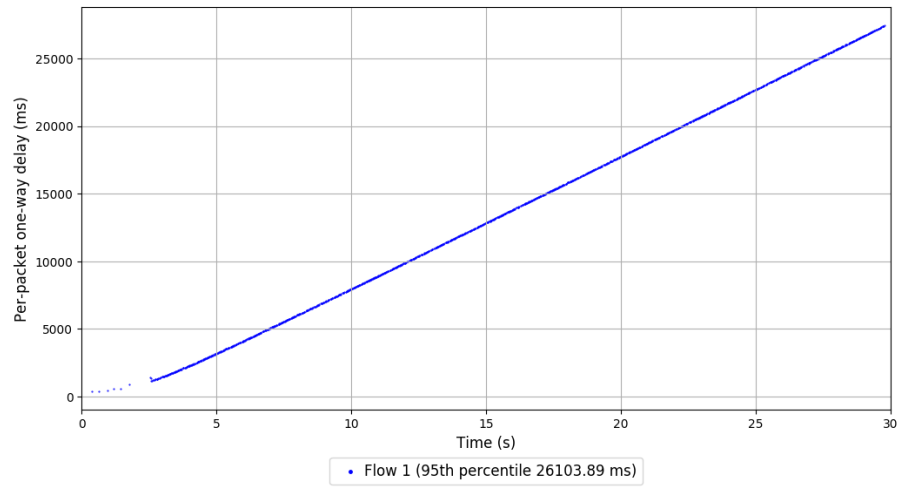
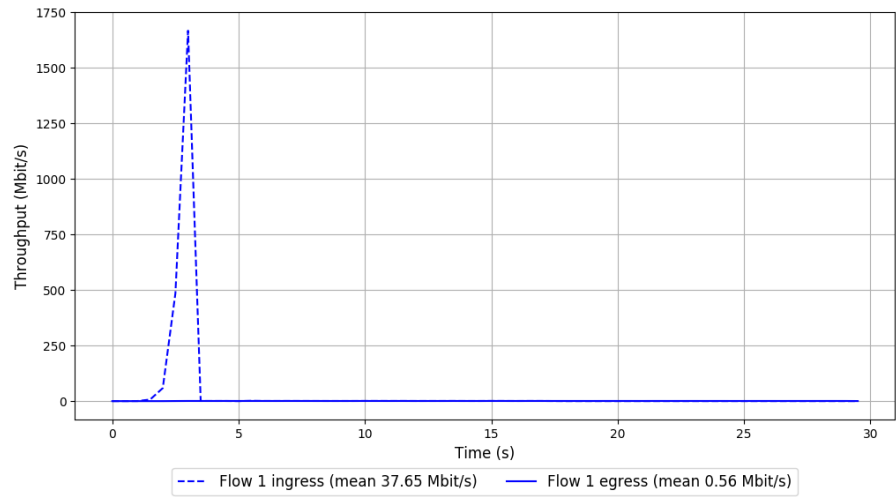


Run 1: Statistics of PCC

Start at: 2018-02-27 06:24:58
End at: 2018-02-27 06:25:28
Local clock offset: -3.805 ms
Remote clock offset: -1.175 ms

Below is generated by plot.py at 2018-02-27 08:15:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 26103.890 ms
Loss rate: 98.51%
-- Flow 1:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 26103.890 ms
Loss rate: 98.51%

Run 1: Report of PCC — Data Link

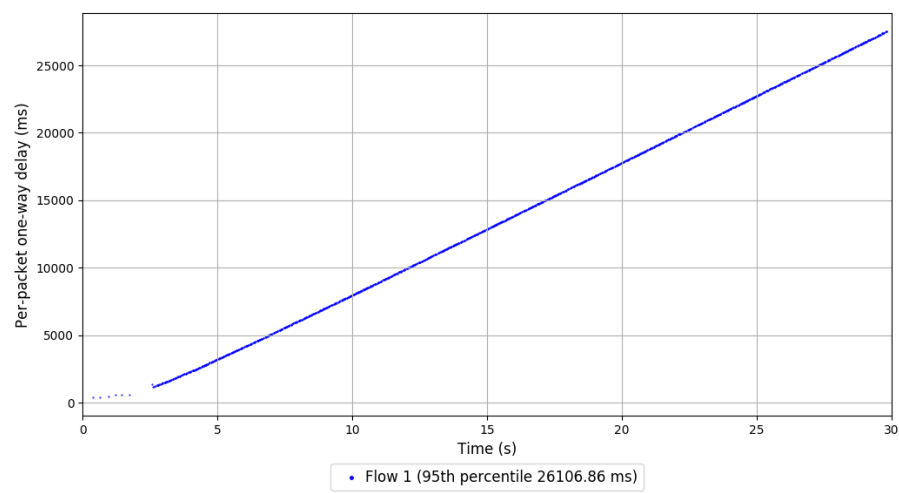
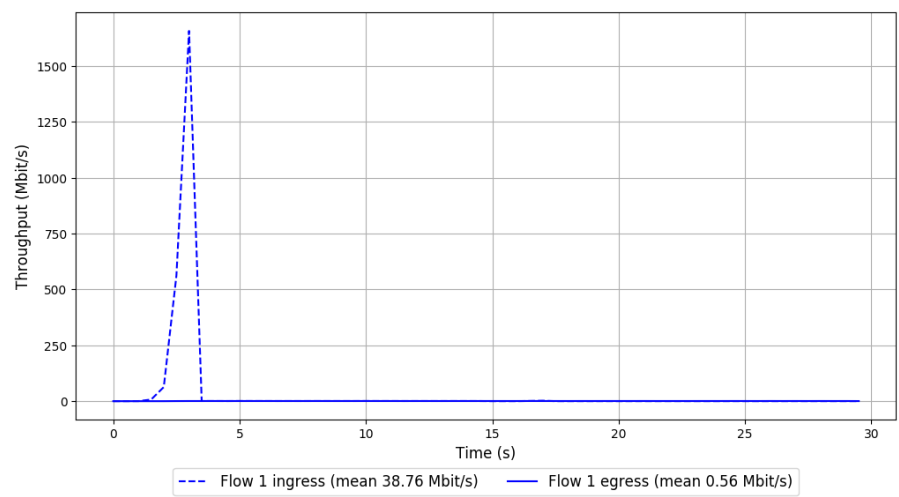


Run 2: Statistics of PCC

Start at: 2018-02-27 06:46:17
End at: 2018-02-27 06:46:47
Local clock offset: -6.348 ms
Remote clock offset: -5.709 ms

Below is generated by plot.py at 2018-02-27 08:15:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 26106.864 ms
Loss rate: 98.57%
-- Flow 1:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 26106.864 ms
Loss rate: 98.57%

Run 2: Report of PCC — Data Link

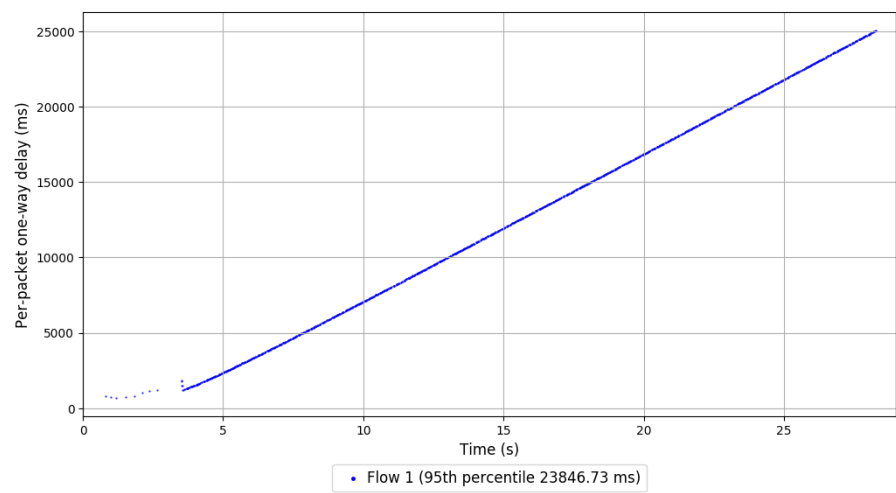
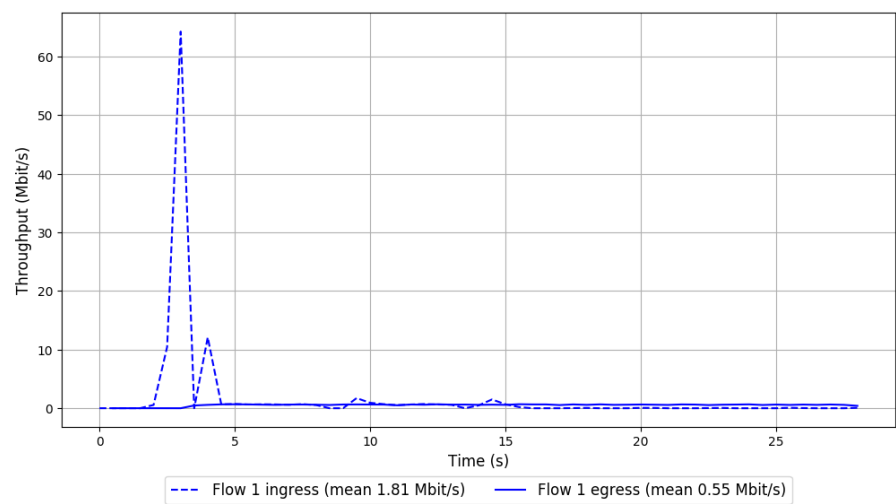


Run 3: Statistics of PCC

Start at: 2018-02-27 07:07:40
End at: 2018-02-27 07:08:10
Local clock offset: -5.827 ms
Remote clock offset: -0.513 ms

Below is generated by plot.py at 2018-02-27 08:15:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 23846.726 ms
Loss rate: 70.46%
-- Flow 1:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 23846.726 ms
Loss rate: 70.46%

Run 3: Report of PCC — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-02-27 06:15:30

End at: 2018-02-27 06:16:00

Local clock offset: -4.014 ms

Remote clock offset: 0.518 ms

Below is generated by plot.py at 2018-02-27 08:15:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.48 Mbit/s

95th percentile per-packet one-way delay: 1296.641 ms

Loss rate: 6.30%

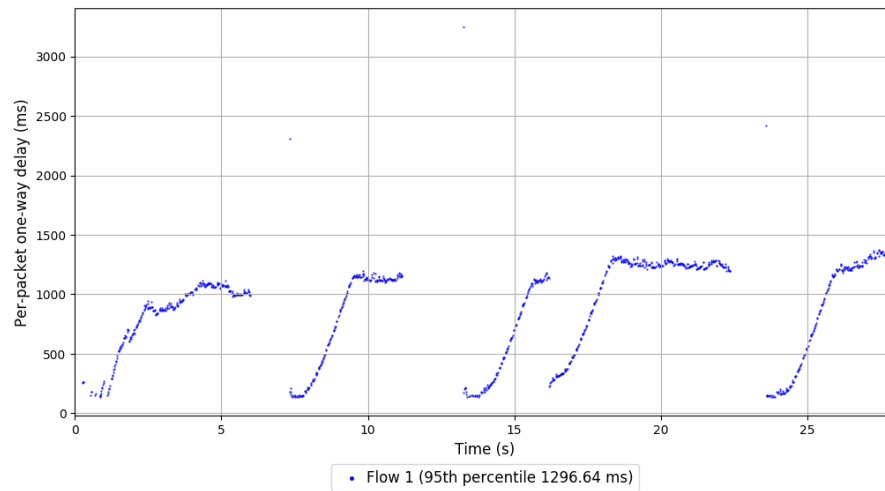
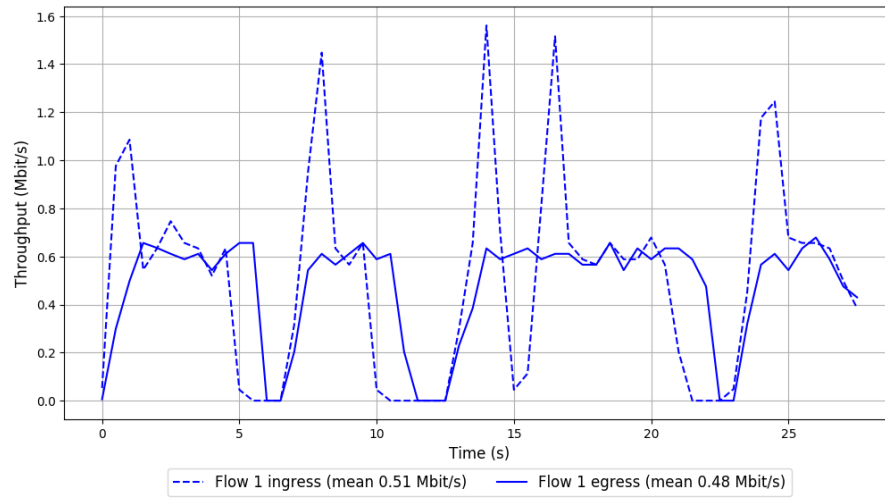
-- Flow 1:

Average throughput: 0.48 Mbit/s

95th percentile per-packet one-way delay: 1296.641 ms

Loss rate: 6.30%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-02-27 06:36:52

End at: 2018-02-27 06:37:22

Local clock offset: -5.658 ms

Remote clock offset: -5.539 ms

Below is generated by plot.py at 2018-02-27 08:15:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.35 Mbit/s

95th percentile per-packet one-way delay: 1522.453 ms

Loss rate: 5.61%

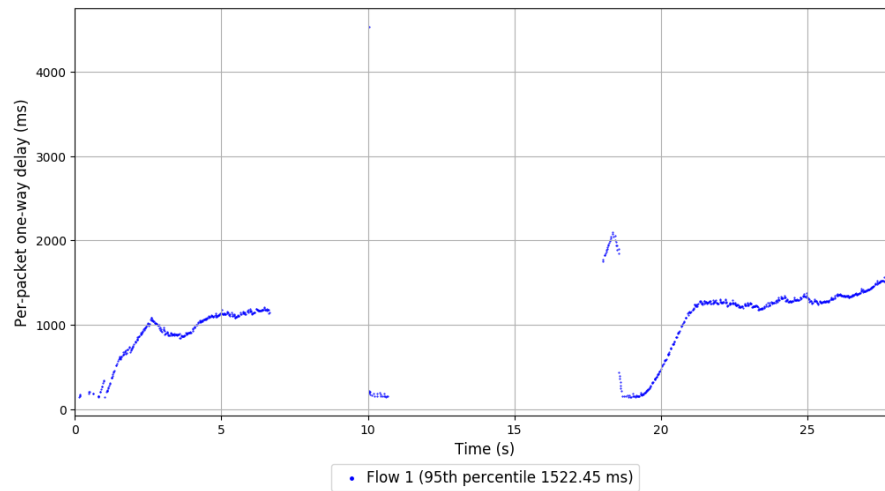
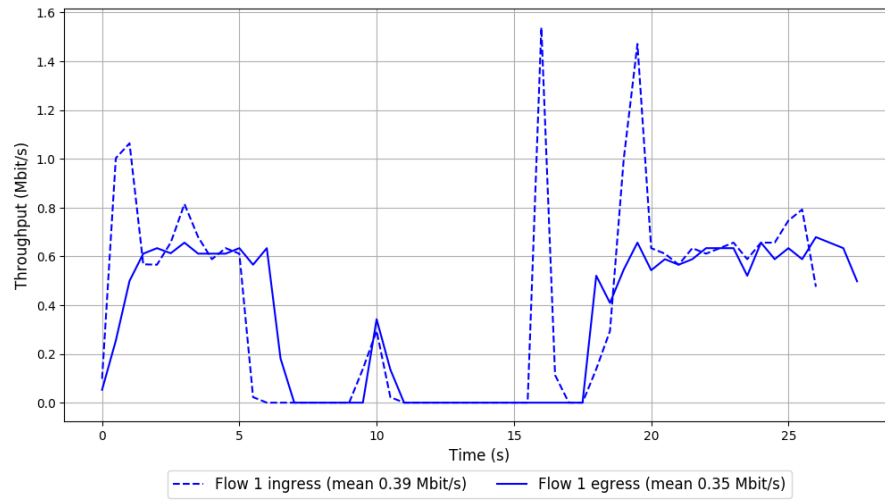
-- Flow 1:

Average throughput: 0.35 Mbit/s

95th percentile per-packet one-way delay: 1522.453 ms

Loss rate: 5.61%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-02-27 06:58:13

End at: 2018-02-27 06:58:43

Local clock offset: -6.774 ms

Remote clock offset: 0.255 ms

Below is generated by plot.py at 2018-02-27 08:15:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.60 Mbit/s

95th percentile per-packet one-way delay: 2537.534 ms

Loss rate: 9.88%

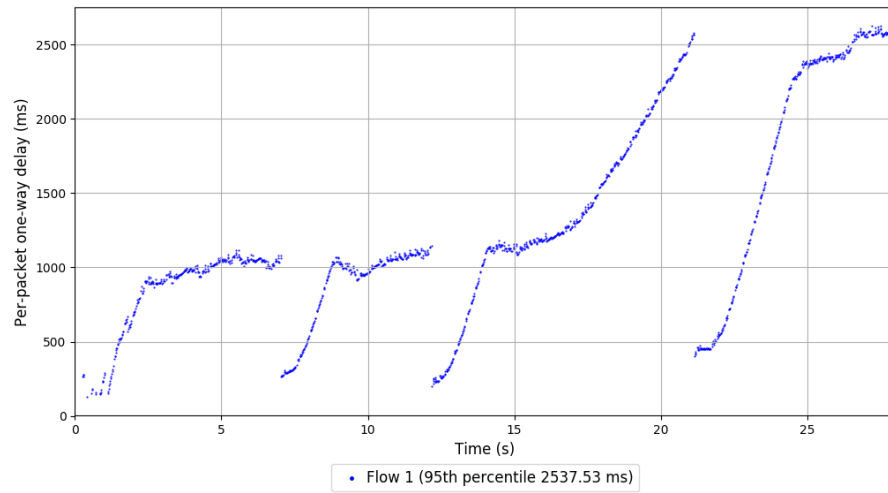
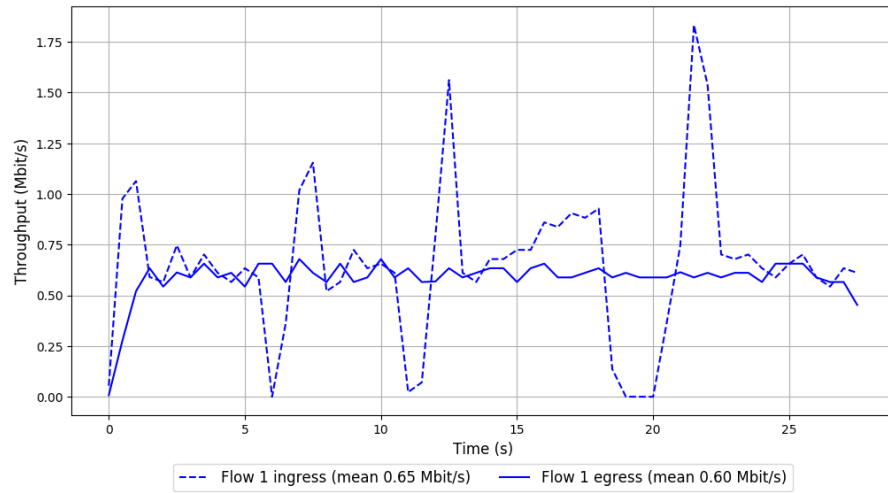
-- Flow 1:

Average throughput: 0.60 Mbit/s

95th percentile per-packet one-way delay: 2537.534 ms

Loss rate: 9.88%

Run 3: Report of QUIC Cubic — Data Link

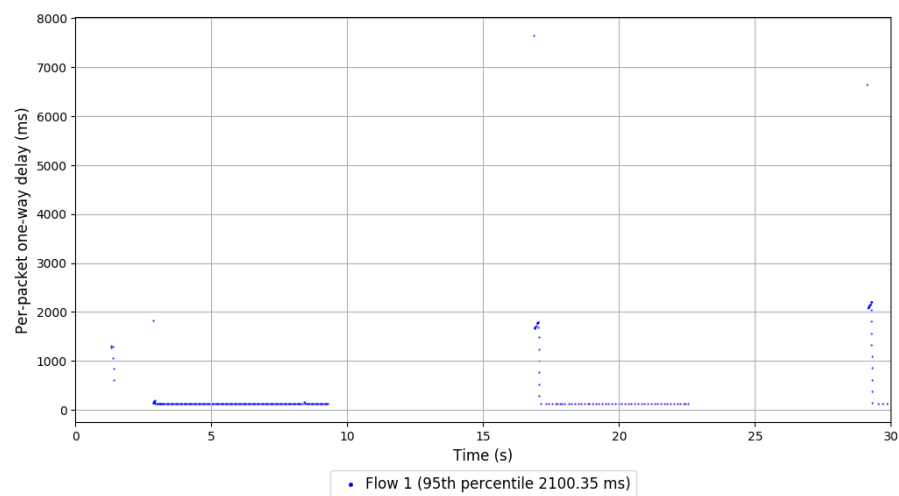
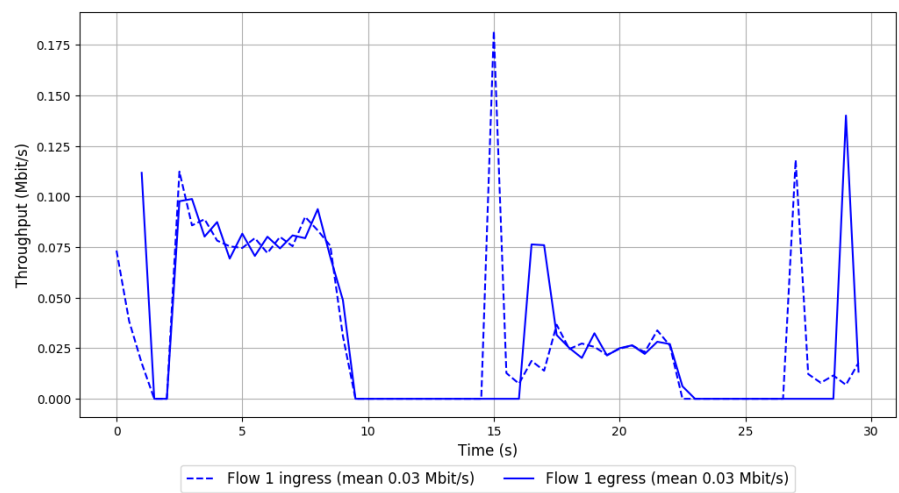


```
Run 1: Statistics of SCReAM

Start at: 2018-02-27 06:08:23
End at: 2018-02-27 06:08:53
Local clock offset: -4.146 ms
Remote clock offset: 0.51 ms

# Below is generated by plot.py at 2018-02-27 08:15:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 2100.353 ms
Loss rate: 6.00%
-- Flow 1:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 2100.353 ms
Loss rate: 6.00%
```

Run 1: Report of SReAM — Data Link

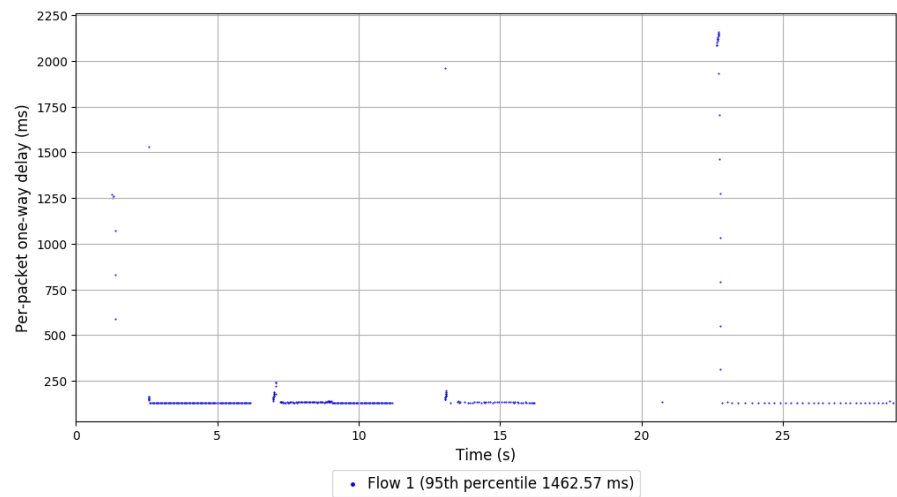
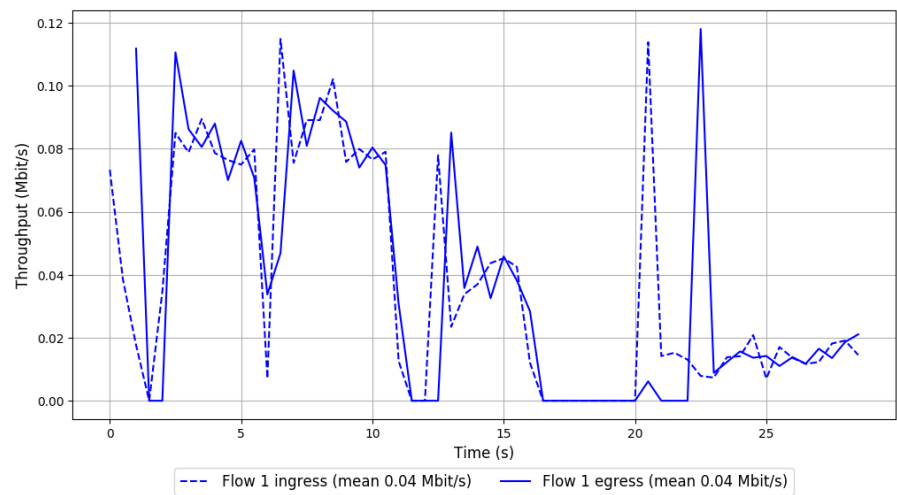


Run 2: Statistics of SCReAM

Start at: 2018-02-27 06:29:41
End at: 2018-02-27 06:30:11
Local clock offset: -4.658 ms
Remote clock offset: -4.591 ms

Below is generated by plot.py at 2018-02-27 08:15:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 1462.568 ms
Loss rate: 2.96%
-- Flow 1:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 1462.568 ms
Loss rate: 2.96%

Run 2: Report of SReAM — Data Link

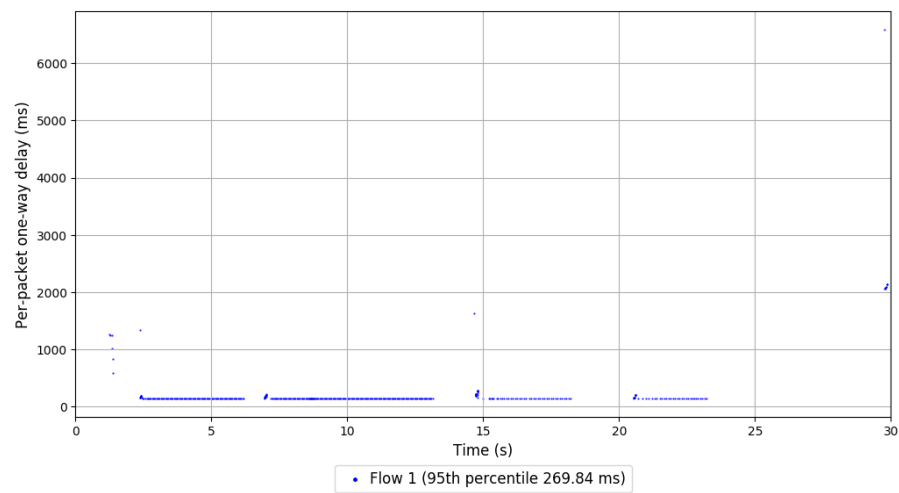
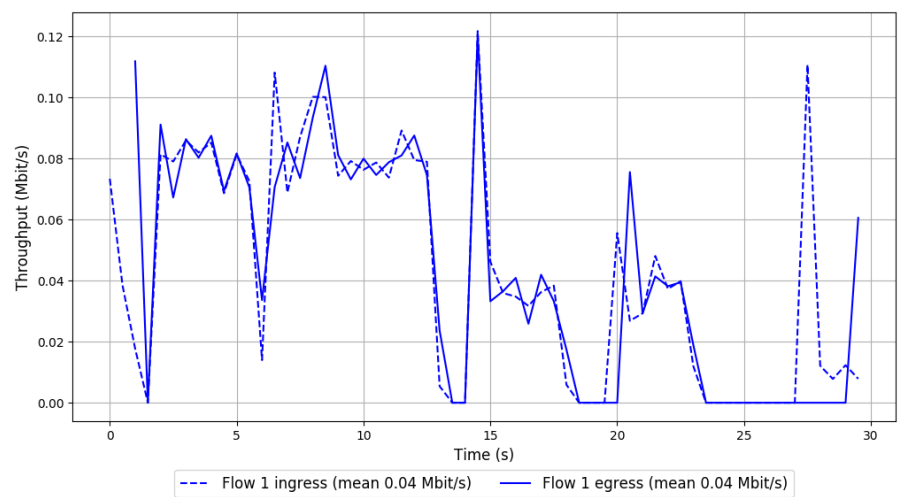


Run 3: Statistics of SCReAM

Start at: 2018-02-27 06:51:01
End at: 2018-02-27 06:51:31
Local clock offset: -6.476 ms
Remote clock offset: -4.845 ms

Below is generated by plot.py at 2018-02-27 08:15:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 269.838 ms
Loss rate: 4.17%
-- Flow 1:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 269.838 ms
Loss rate: 4.17%

Run 3: Report of SReAM — Data Link



Run 1: Statistics of WebRTC media

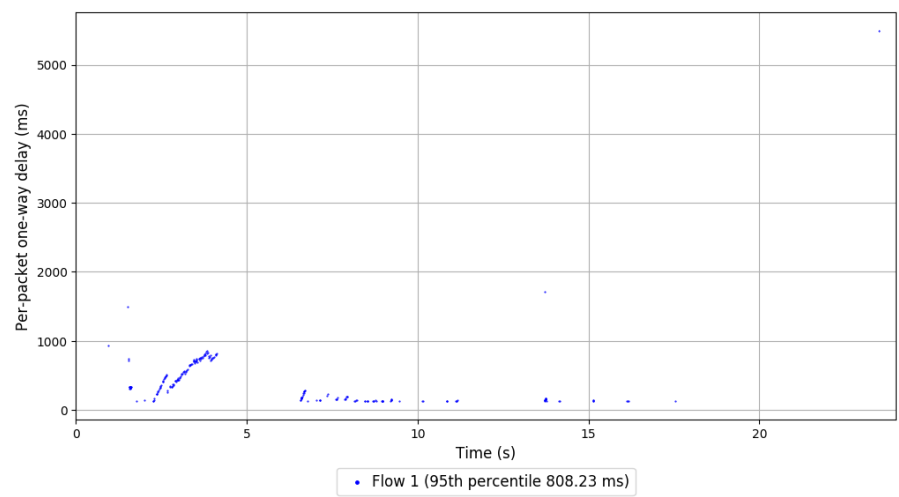
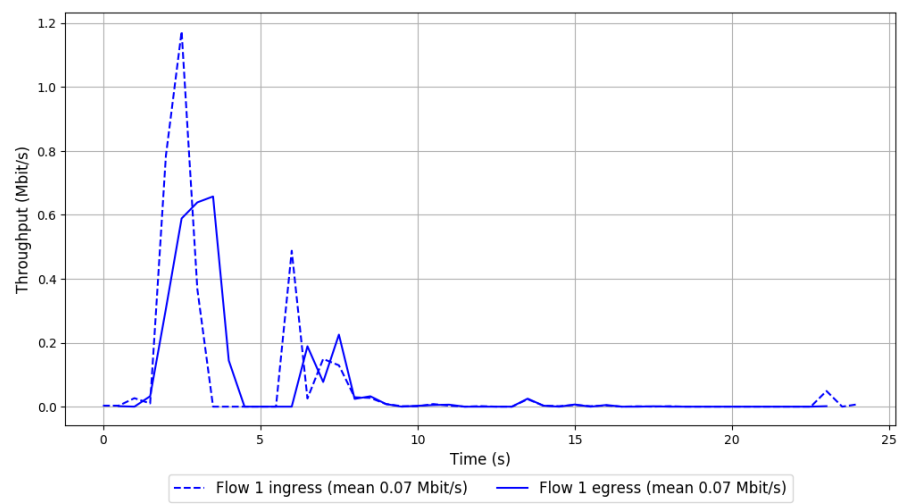
Start at: 2018-02-27 06:13:10

End at: 2018-02-27 06:13:40

Local clock offset: -3.965 ms

Remote clock offset: -0.421 ms

Run 1: Report of WebRTC media — Data Link

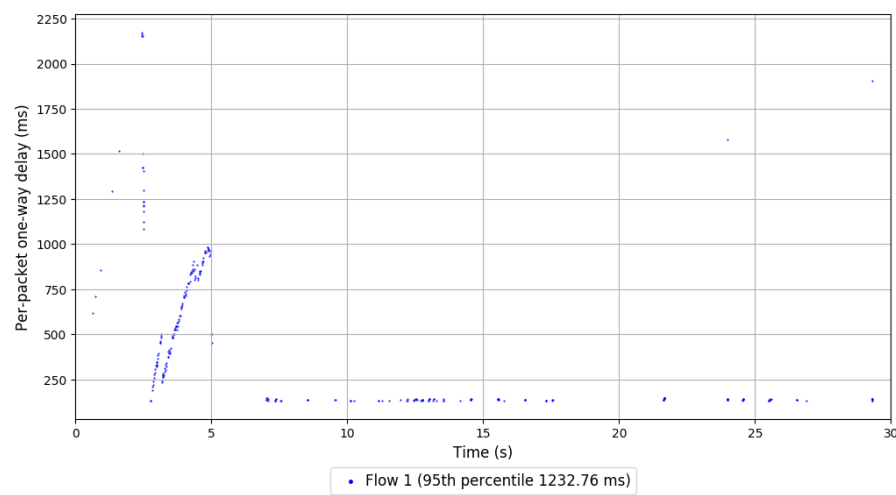
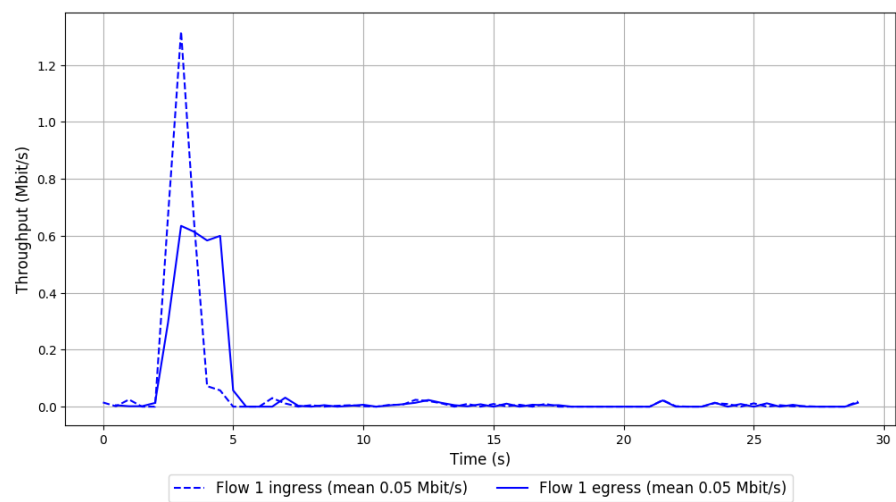


Run 2: Statistics of WebRTC media

Start at: 2018-02-27 06:34:30
End at: 2018-02-27 06:35:00
Local clock offset: -5.374 ms
Remote clock offset: -4.587 ms

Below is generated by plot.py at 2018-02-27 08:15:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1232.763 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1232.763 ms
Loss rate: 0.46%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-02-27 06:55:53

End at: 2018-02-27 06:56:23

Local clock offset: -6.628 ms

Remote clock offset: -0.48 ms

Below is generated by plot.py at 2018-02-27 08:15:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.06 Mbit/s

95th percentile per-packet one-way delay: 1177.554 ms

Loss rate: 0.04%

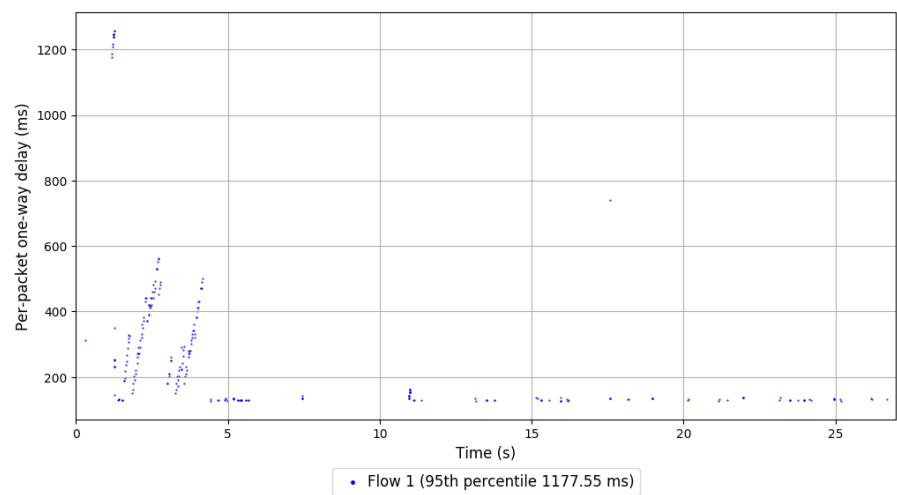
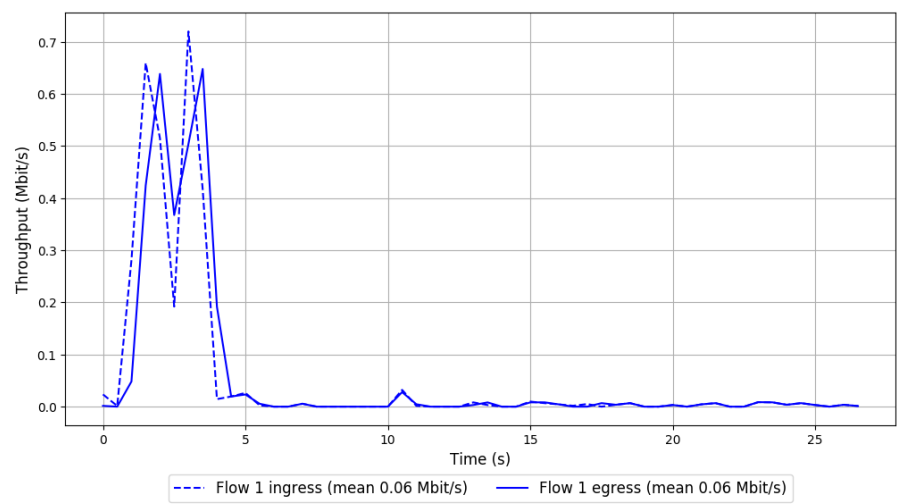
-- Flow 1:

Average throughput: 0.06 Mbit/s

95th percentile per-packet one-way delay: 1177.554 ms

Loss rate: 0.04%

Run 3: Report of WebRTC media — Data Link

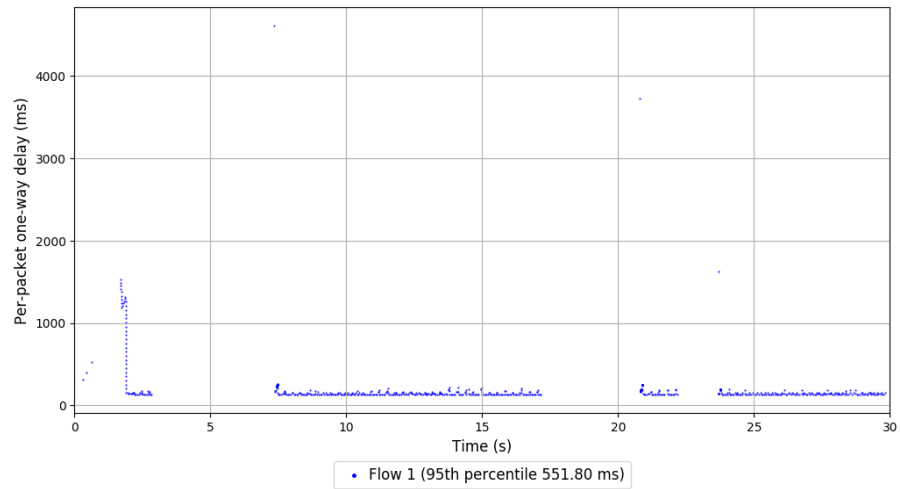
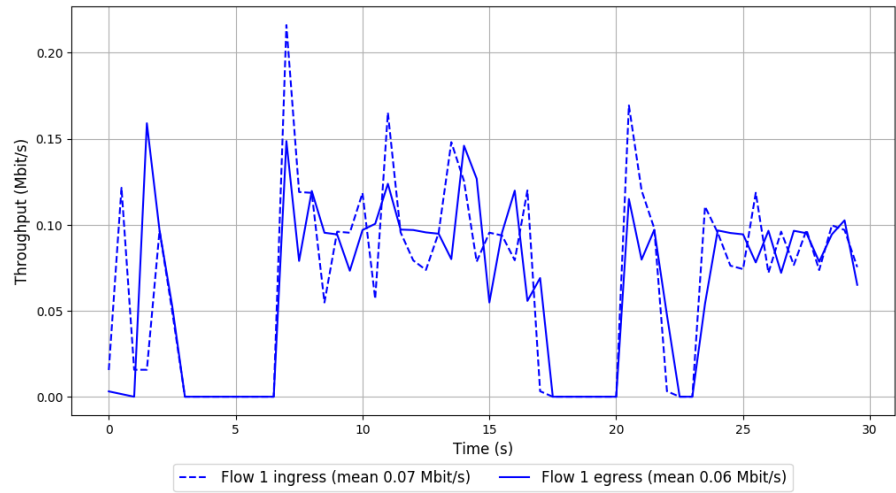


Run 1: Statistics of Sprout

Start at: 2018-02-27 06:28:31
End at: 2018-02-27 06:29:01
Local clock offset: -4.342 ms
Remote clock offset: -5.516 ms

Below is generated by plot.py at 2018-02-27 08:15:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 551.800 ms
Loss rate: 4.01%
-- Flow 1:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 551.800 ms
Loss rate: 4.01%

Run 1: Report of Sprout — Data Link

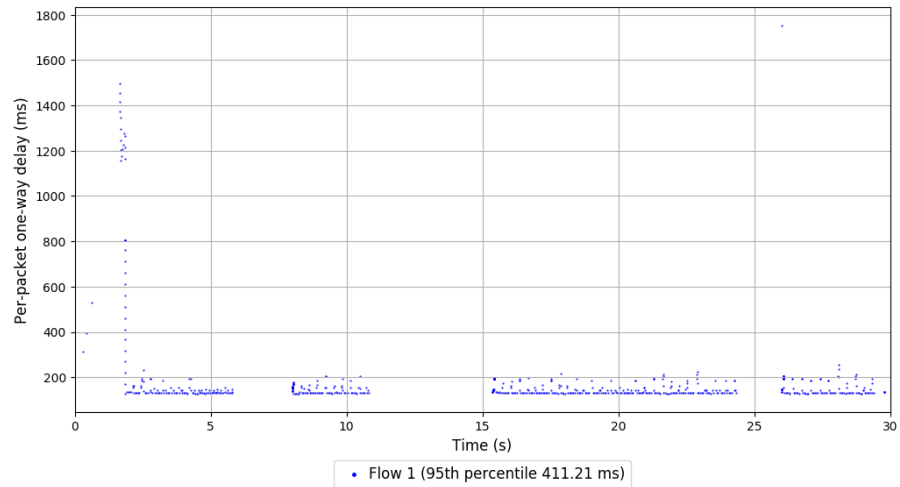
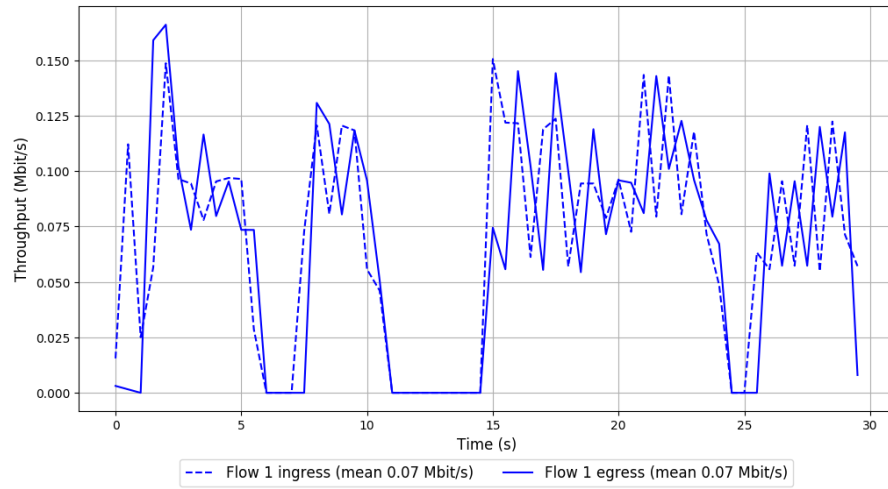


Run 2: Statistics of Sprout

Start at: 2018-02-27 06:49:50
End at: 2018-02-27 06:50:20
Local clock offset: -6.449 ms
Remote clock offset: -0.518 ms

Below is generated by plot.py at 2018-02-27 08:15:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 411.209 ms
Loss rate: 3.78%
-- Flow 1:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 411.209 ms
Loss rate: 3.78%

Run 2: Report of Sprout — Data Link

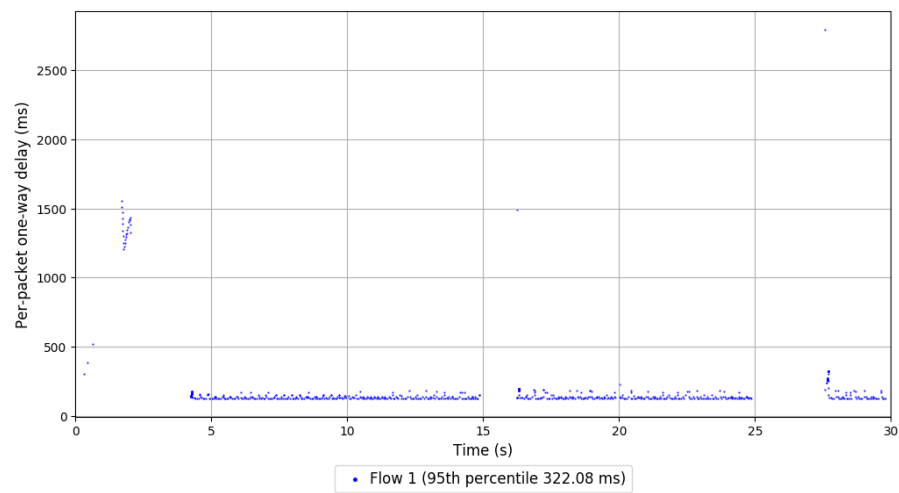
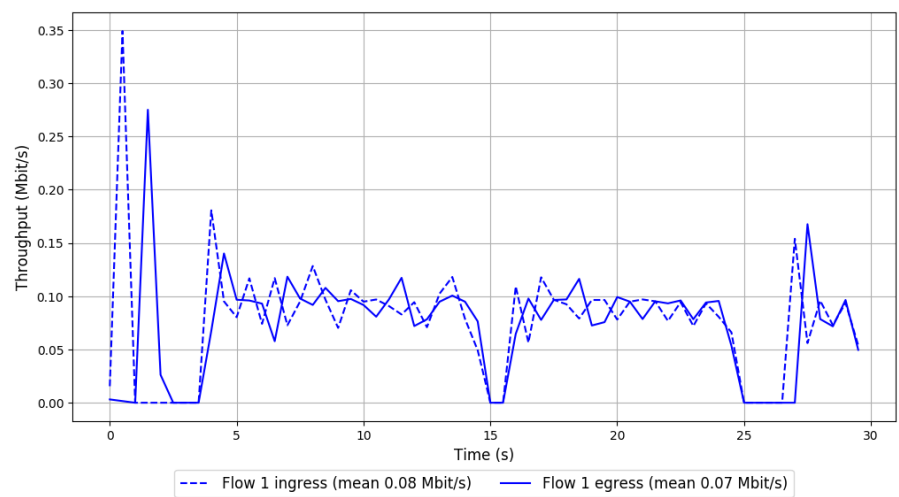


Run 3: Statistics of Sprout

Start at: 2018-02-27 07:11:10
End at: 2018-02-27 07:11:40
Local clock offset: -5.549 ms
Remote clock offset: -1.439 ms

Below is generated by plot.py at 2018-02-27 08:15:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 322.082 ms
Loss rate: 4.04%
-- Flow 1:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 322.082 ms
Loss rate: 4.04%

Run 3: Report of Sprout — Data Link

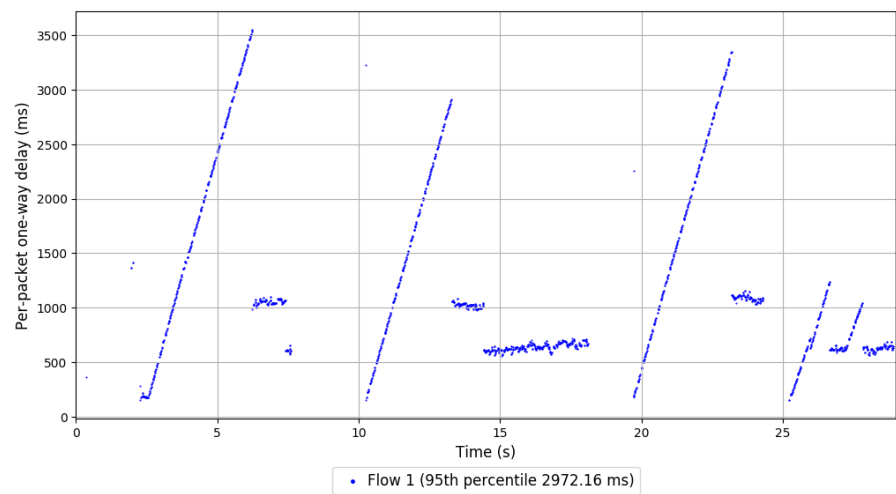
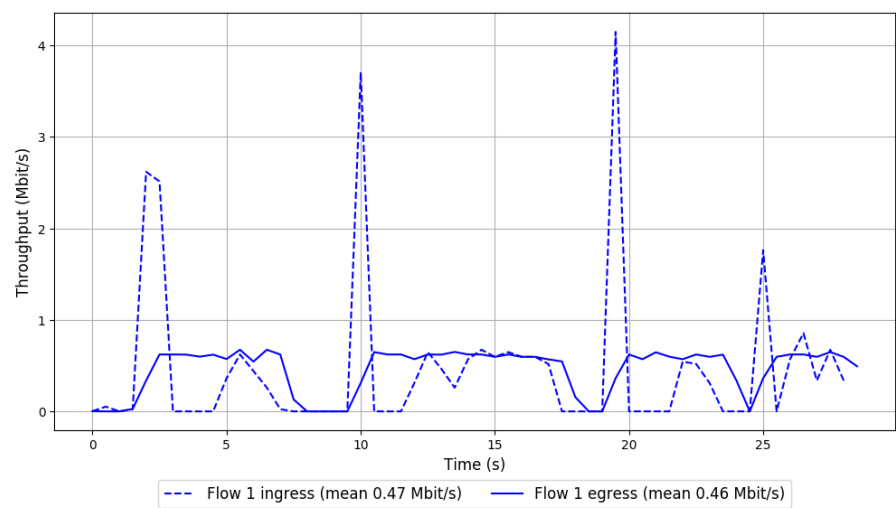


Run 1: Statistics of TaoVA-100x

Start at: 2018-02-27 06:10:46
End at: 2018-02-27 06:11:17
Local clock offset: -4.029 ms
Remote clock offset: -5.487 ms

Below is generated by plot.py at 2018-02-27 08:15:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 2972.158 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 2972.158 ms
Loss rate: 0.88%

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-02-27 06:32:03

End at: 2018-02-27 06:32:33

Local clock offset: -5.033 ms

Remote clock offset: -4.607 ms

Below is generated by plot.py at 2018-02-27 08:15:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.44 Mbit/s

95th percentile per-packet one-way delay: 2396.046 ms

Loss rate: 0.81%

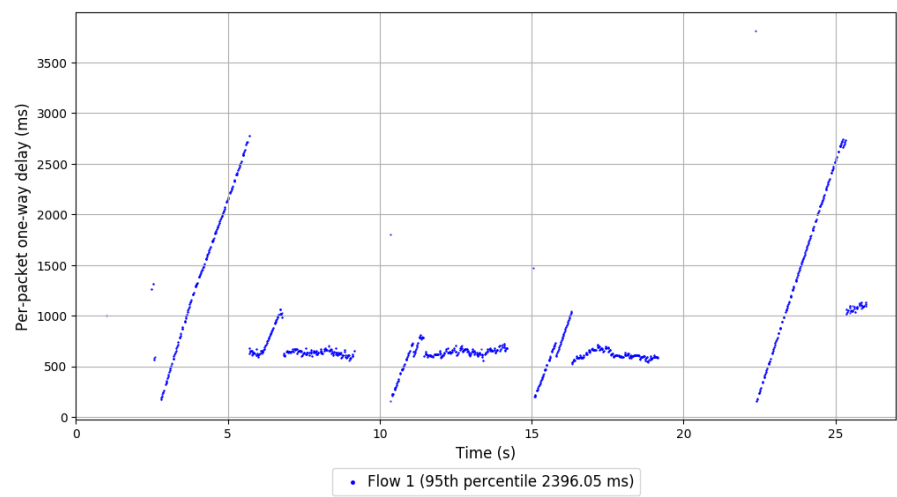
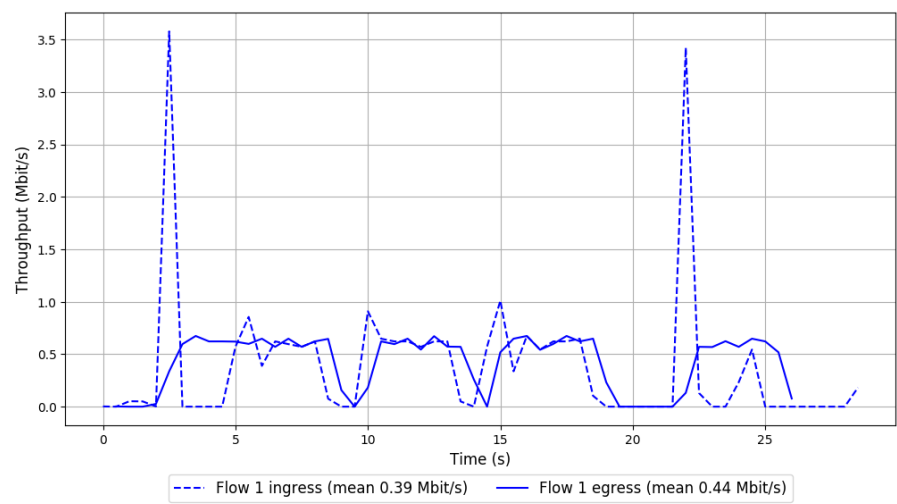
-- Flow 1:

Average throughput: 0.44 Mbit/s

95th percentile per-packet one-way delay: 2396.046 ms

Loss rate: 0.81%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-02-27 06:53:26

End at: 2018-02-27 06:53:56

Local clock offset: -6.622 ms

Remote clock offset: 0.368 ms

Below is generated by plot.py at 2018-02-27 08:15:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.55 Mbit/s

95th percentile per-packet one-way delay: 1528.117 ms

Loss rate: 2.74%

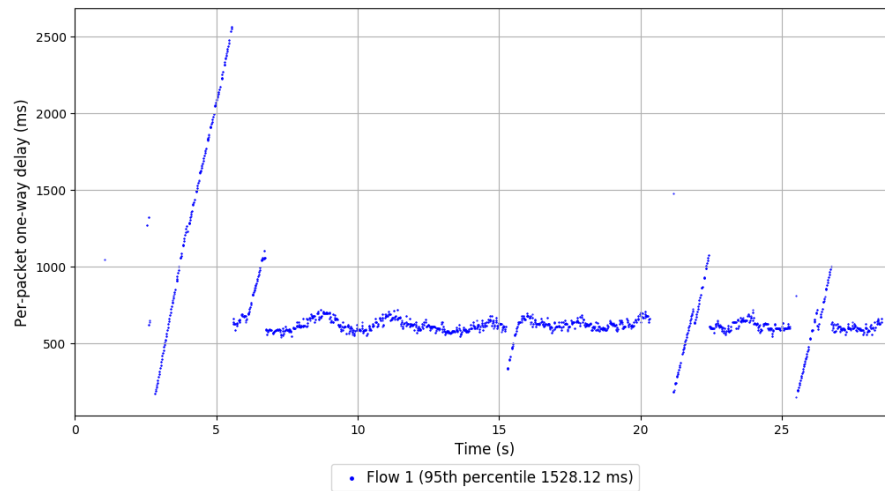
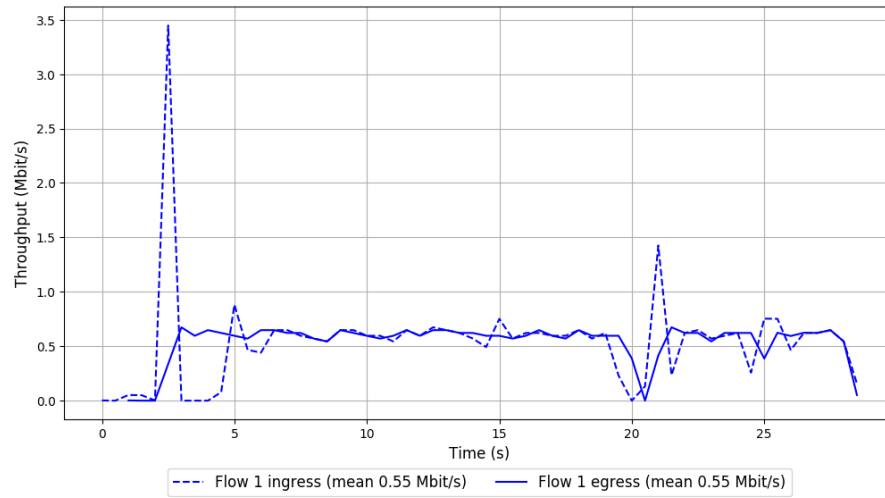
-- Flow 1:

Average throughput: 0.55 Mbit/s

95th percentile per-packet one-way delay: 1528.117 ms

Loss rate: 2.74%

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

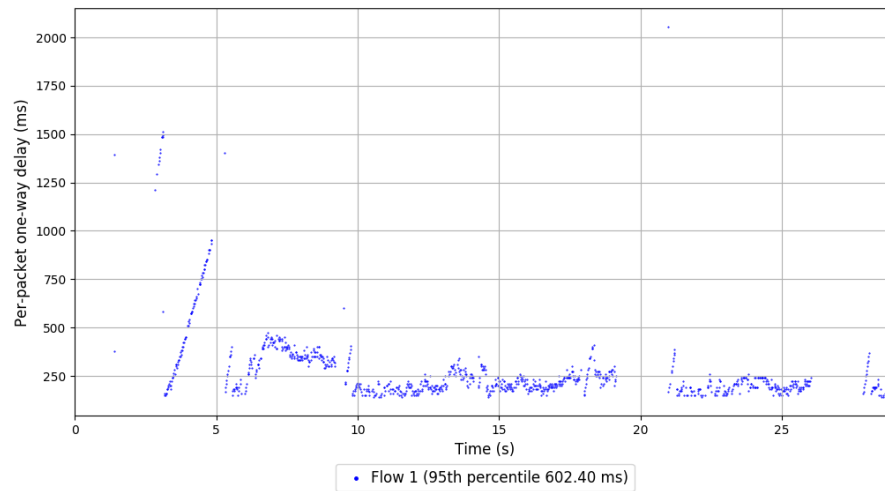
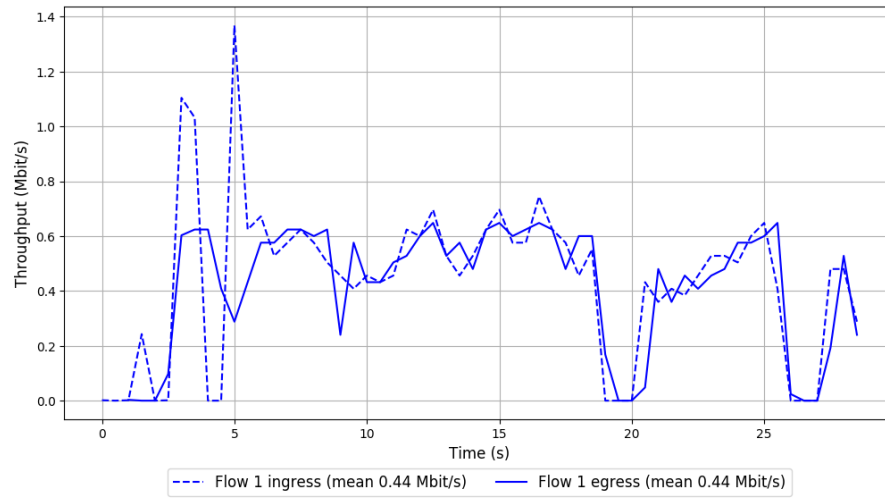


Run 1: Statistics of TCP Vegas

Start at: 2018-02-27 06:23:48
End at: 2018-02-27 06:24:18
Local clock offset: -3.829 ms
Remote clock offset: -5.556 ms

Below is generated by plot.py at 2018-02-27 08:15:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 602.396 ms
Loss rate: 5.85%
-- Flow 1:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 602.396 ms
Loss rate: 5.85%

Run 1: Report of TCP Vegas — Data Link

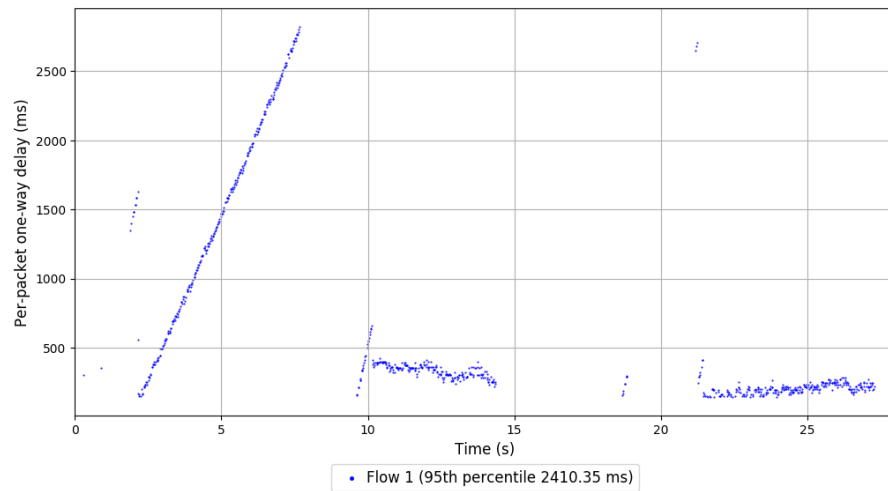
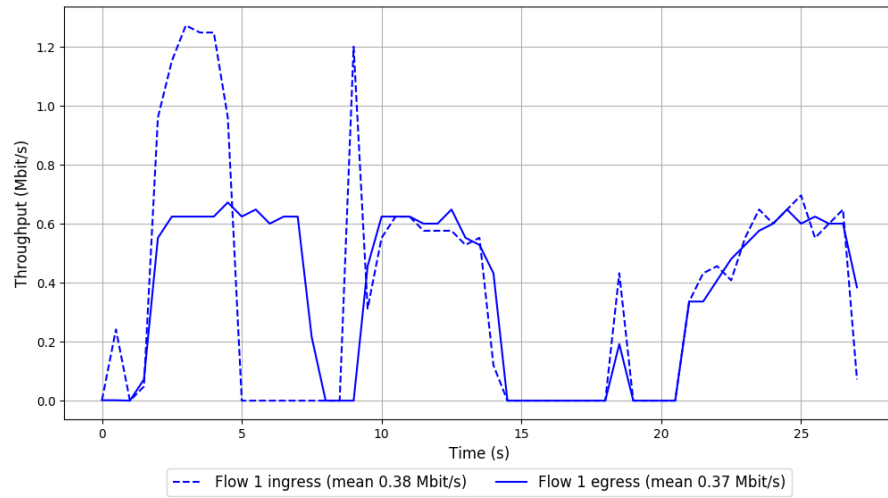


Run 2: Statistics of TCP Vegas

Start at: 2018-02-27 06:45:07
End at: 2018-02-27 06:45:37
Local clock offset: -5.95 ms
Remote clock offset: -0.449 ms

Below is generated by plot.py at 2018-02-27 08:15:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 2410.353 ms
Loss rate: 3.52%
-- Flow 1:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 2410.353 ms
Loss rate: 3.52%

Run 2: Report of TCP Vegas — Data Link

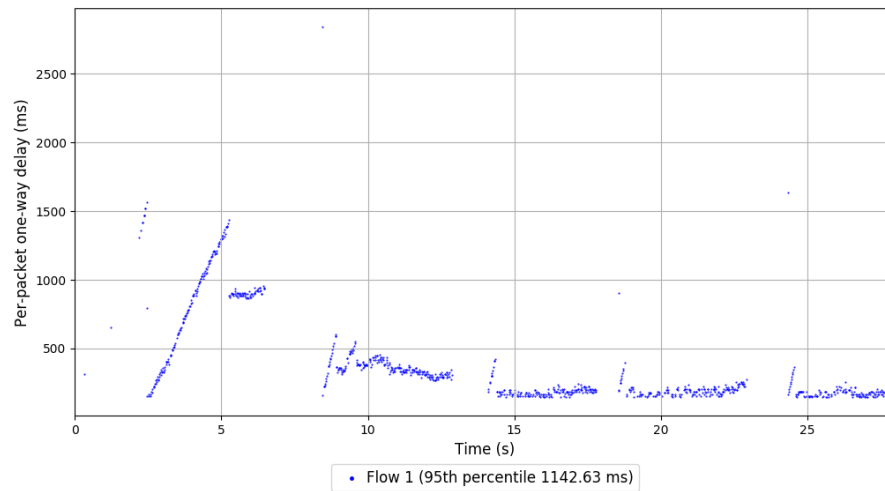
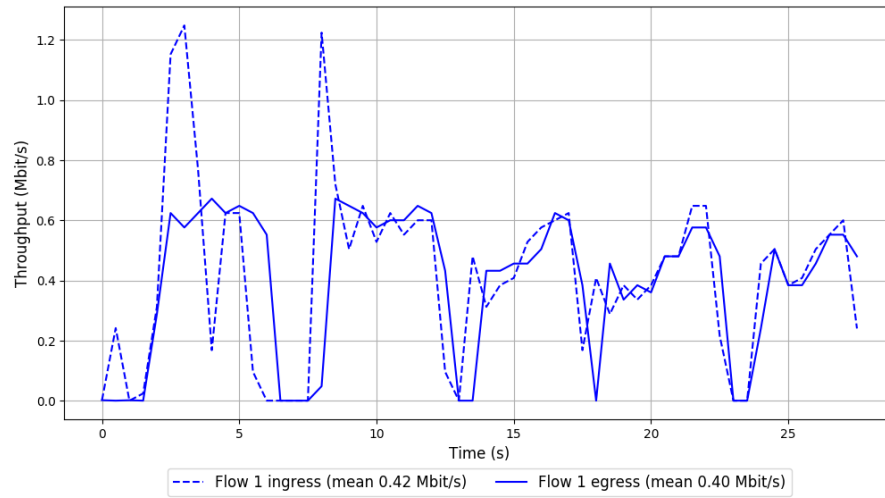


Run 3: Statistics of TCP Vegas

Start at: 2018-02-27 07:06:26
End at: 2018-02-27 07:06:56
Local clock offset: -5.957 ms
Remote clock offset: -0.589 ms

Below is generated by plot.py at 2018-02-27 08:15:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 1142.634 ms
Loss rate: 4.62%
-- Flow 1:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 1142.634 ms
Loss rate: 4.62%

Run 3: Report of TCP Vegas — Data Link

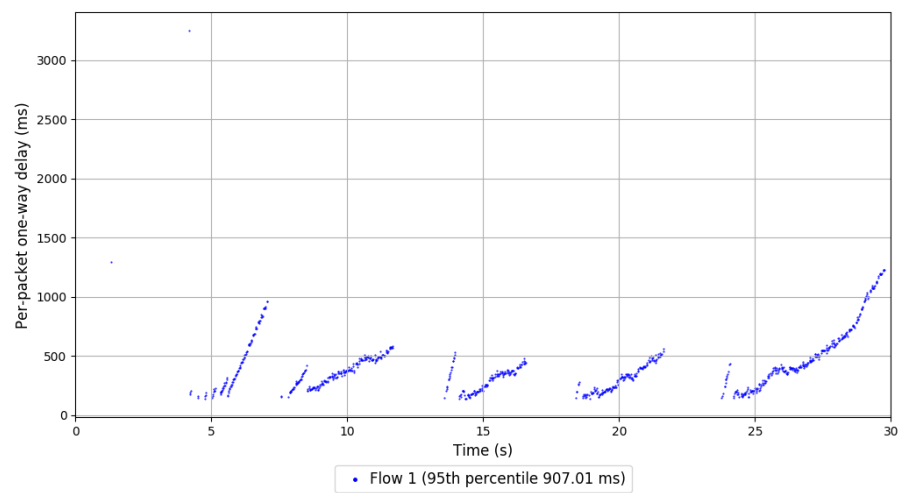
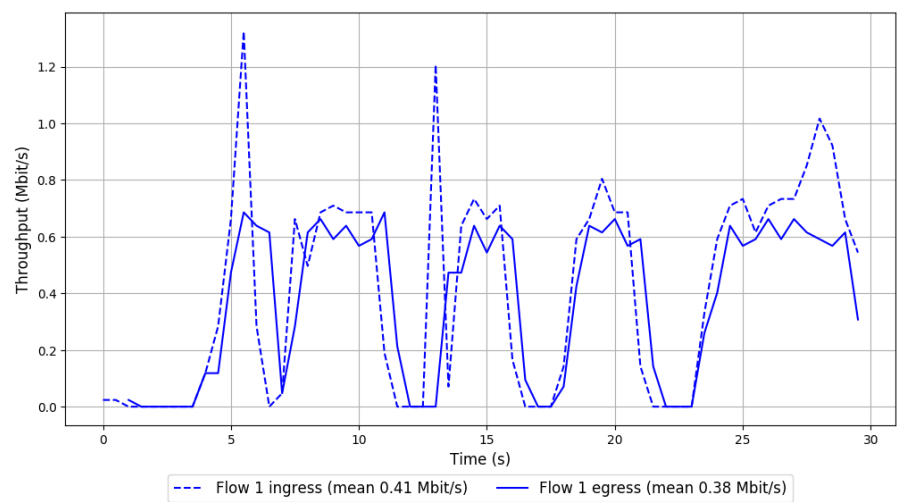


Run 1: Statistics of Verus

Start at: 2018-02-27 06:27:21
End at: 2018-02-27 06:27:51
Local clock offset: -4.084 ms
Remote clock offset: -0.206 ms

Below is generated by plot.py at 2018-02-27 08:15:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 907.012 ms
Loss rate: 11.43%
-- Flow 1:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 907.012 ms
Loss rate: 11.43%

Run 1: Report of Verus — Data Link

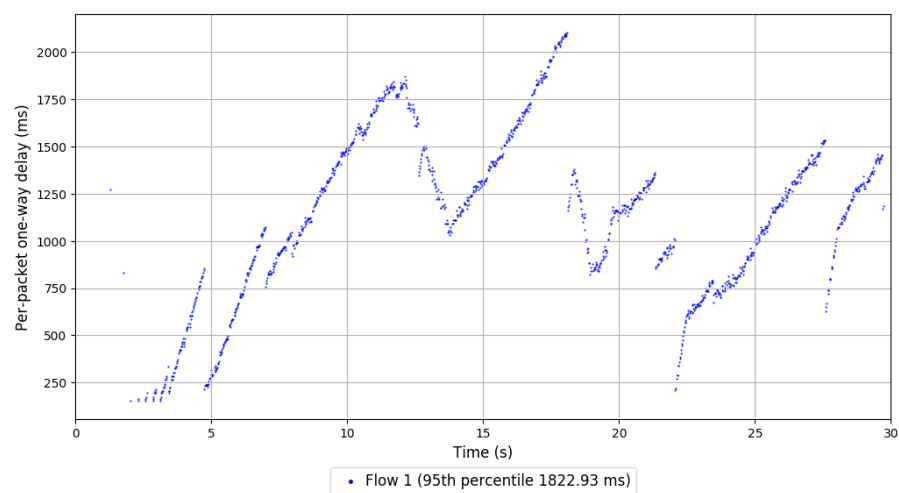
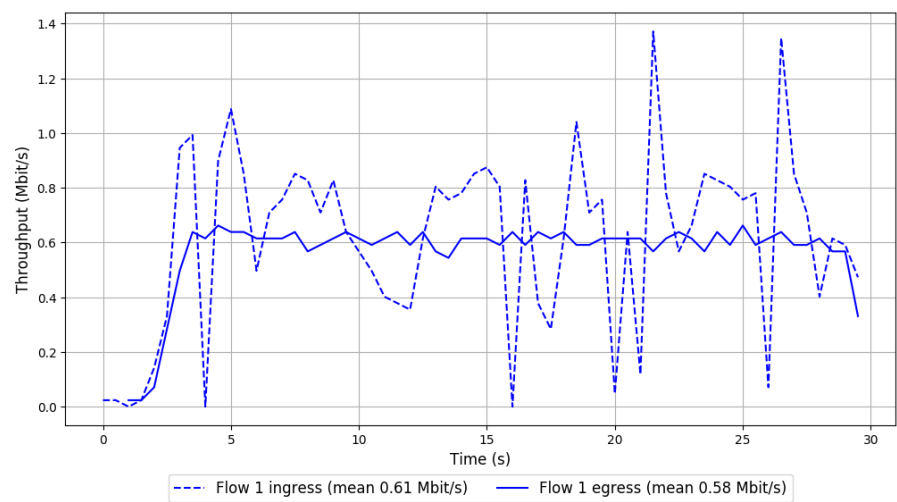


Run 2: Statistics of Verus

Start at: 2018-02-27 06:48:40
End at: 2018-02-27 06:49:10
Local clock offset: -6.388 ms
Remote clock offset: -0.569 ms

Below is generated by plot.py at 2018-02-27 08:15:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 1822.934 ms
Loss rate: 10.12%
-- Flow 1:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 1822.934 ms
Loss rate: 10.12%

Run 2: Report of Verus — Data Link

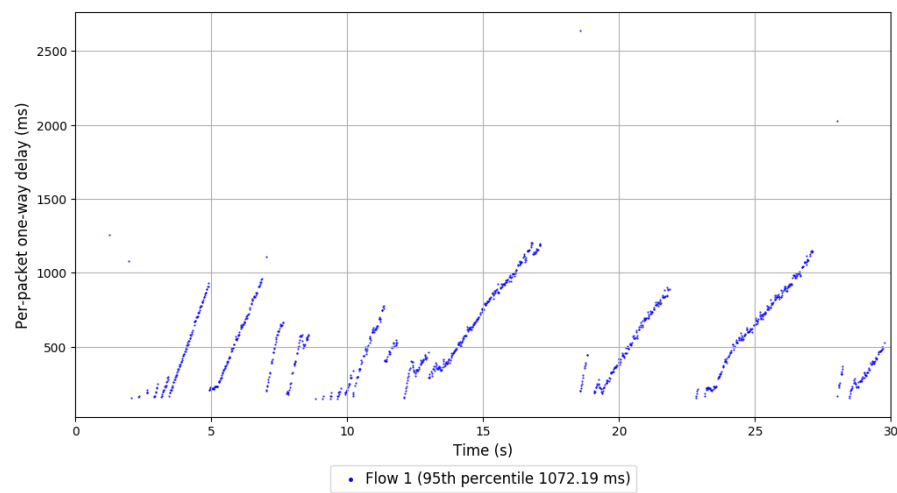
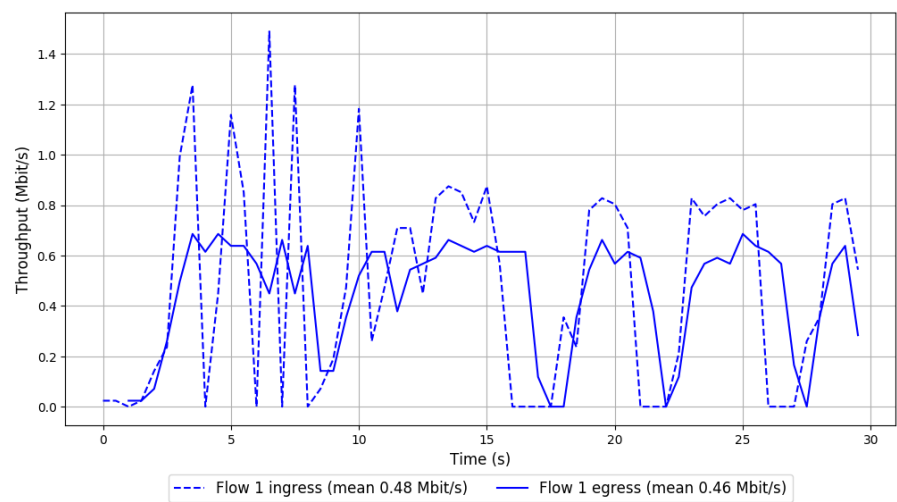


Run 3: Statistics of Verus

Start at: 2018-02-27 07:10:00
End at: 2018-02-27 07:10:30
Local clock offset: -5.637 ms
Remote clock offset: -4.928 ms

Below is generated by plot.py at 2018-02-27 08:15:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 1072.192 ms
Loss rate: 7.91%
-- Flow 1:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 1072.192 ms
Loss rate: 7.91%

Run 3: Report of Verus — Data Link



Run 1: Statistics of Copa

Start at: 2018-02-27 06:26:10

End at: 2018-02-27 06:26:40

Local clock offset: -3.785 ms

Remote clock offset: 0.502 ms

Below is generated by plot.py at 2018-02-27 08:15:40

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.39 Mbit/s

95th percentile per-packet one-way delay: 472.835 ms

Loss rate: 12.38%

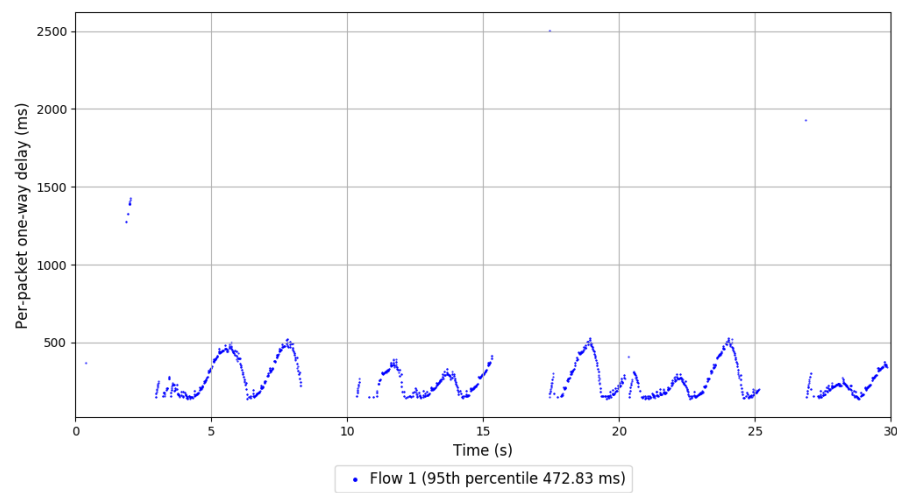
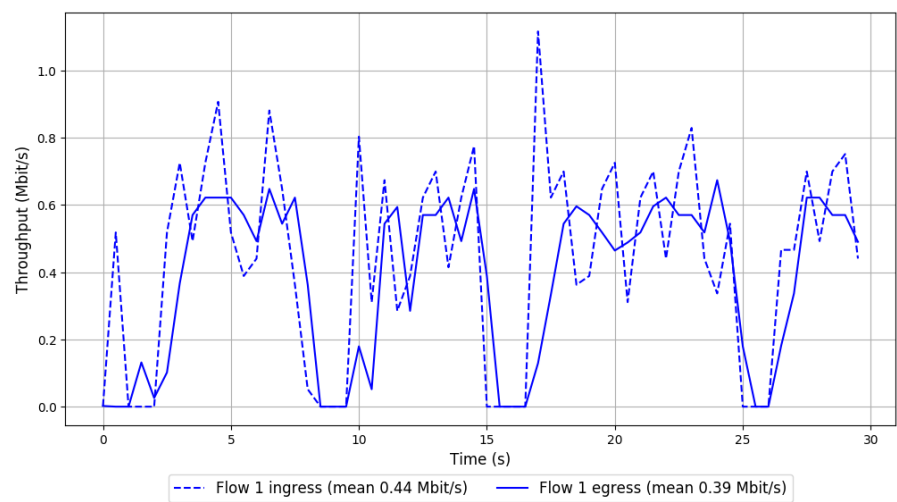
-- Flow 1:

Average throughput: 0.39 Mbit/s

95th percentile per-packet one-way delay: 472.835 ms

Loss rate: 12.38%

Run 1: Report of Copa — Data Link

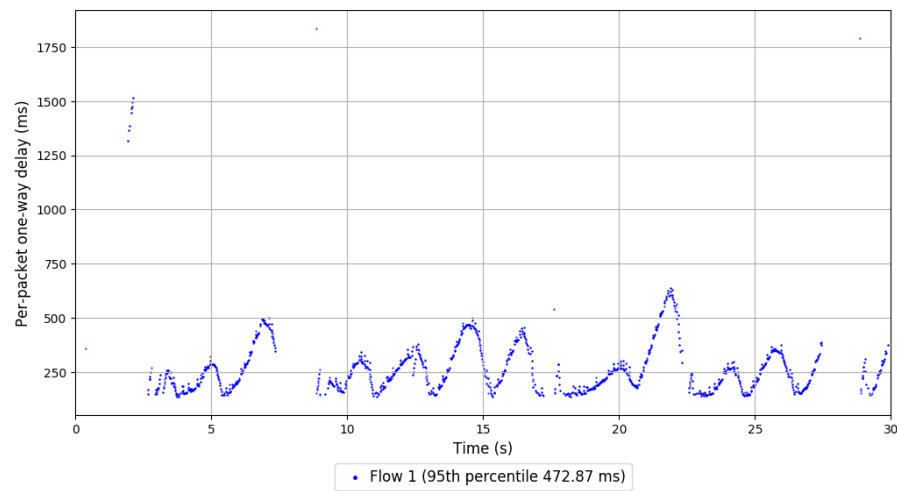
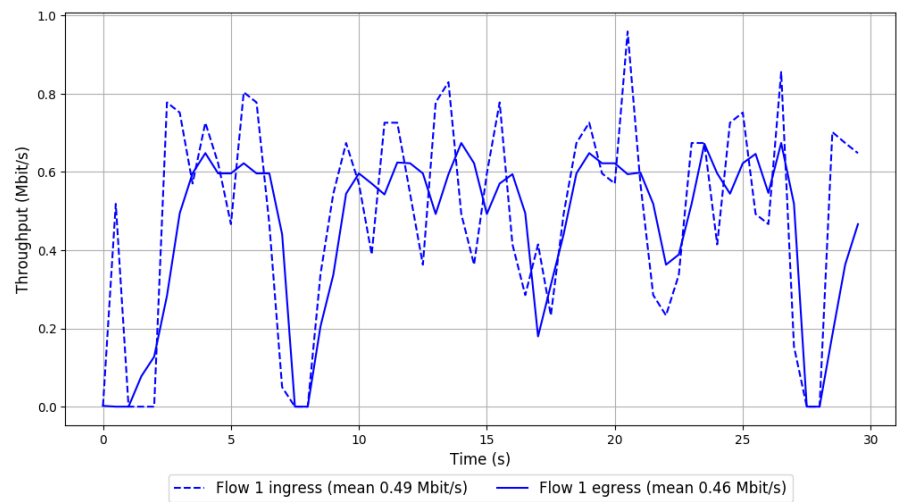


Run 2: Statistics of Copa

Start at: 2018-02-27 06:47:30
End at: 2018-02-27 06:48:00
Local clock offset: -6.434 ms
Remote clock offset: -0.492 ms

Below is generated by plot.py at 2018-02-27 08:15:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 472.865 ms
Loss rate: 7.47%
-- Flow 1:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 472.865 ms
Loss rate: 7.47%

Run 2: Report of Copa — Data Link

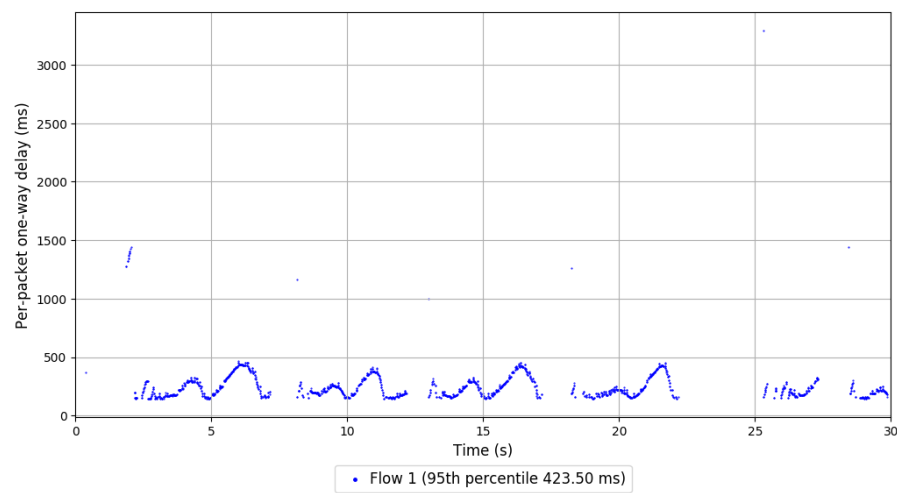
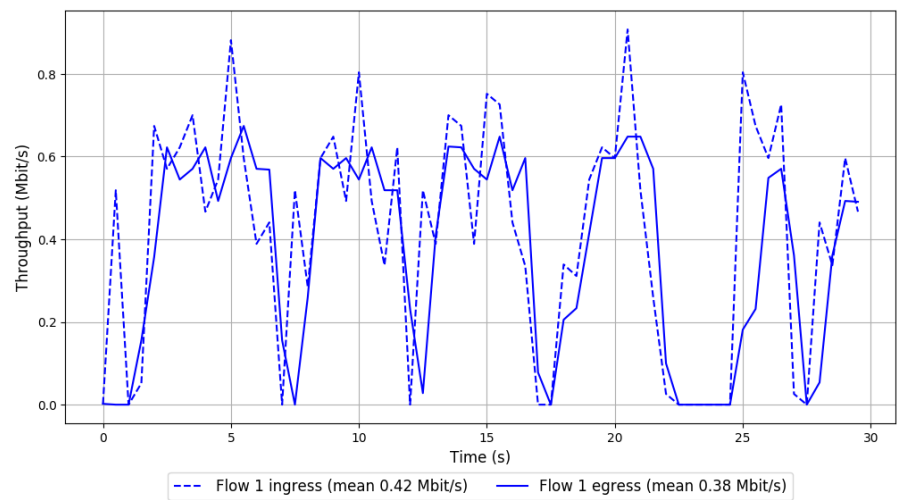


Run 3: Statistics of Copa

Start at: 2018-02-27 07:08:50
End at: 2018-02-27 07:09:20
Local clock offset: -5.362 ms
Remote clock offset: -5.835 ms

Below is generated by plot.py at 2018-02-27 08:15:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 423.505 ms
Loss rate: 10.57%
-- Flow 1:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 423.505 ms
Loss rate: 10.57%

Run 3: Report of Copa — Data Link



Run 1: Statistics of FillP

Start at: 2018-02-27 06:11:57

End at: 2018-02-27 06:12:27

Local clock offset: -4.062 ms

Remote clock offset: 0.425 ms

Below is generated by plot.py at 2018-02-27 08:15:44

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.57 Mbit/s

95th percentile per-packet one-way delay: 26582.917 ms

Loss rate: 98.29%

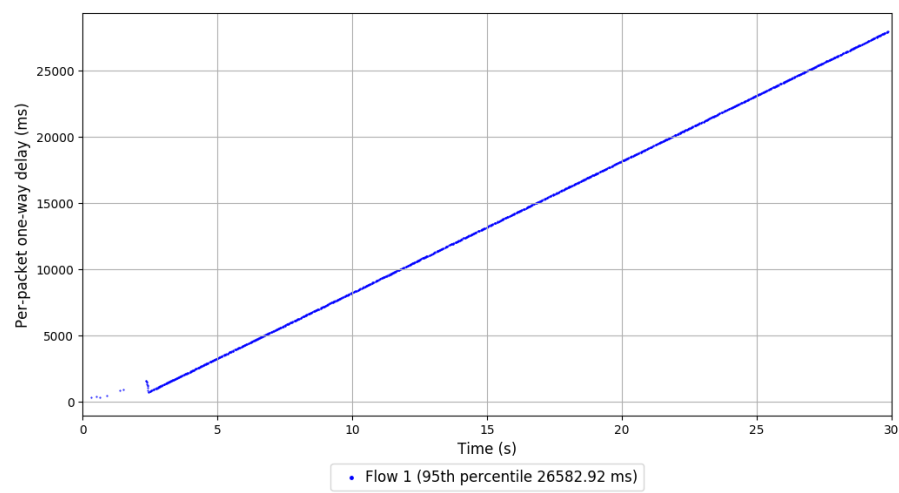
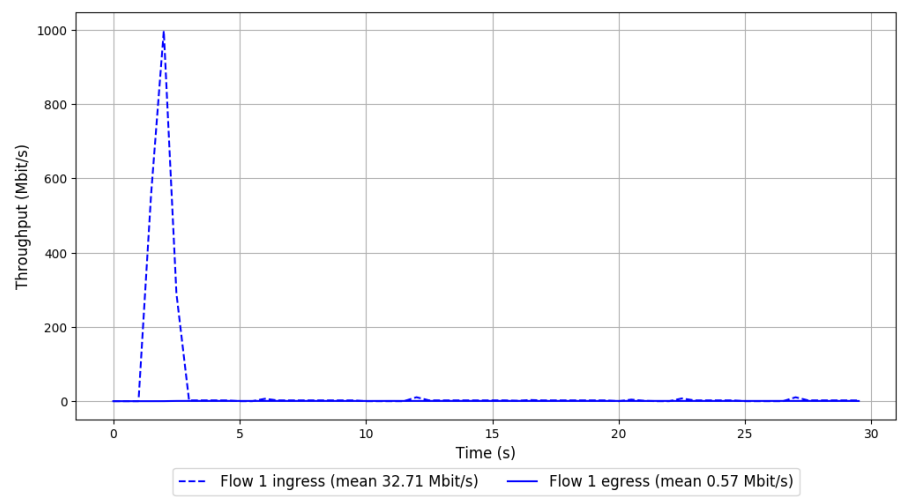
-- Flow 1:

Average throughput: 0.57 Mbit/s

95th percentile per-packet one-way delay: 26582.917 ms

Loss rate: 98.29%

Run 1: Report of FillP — Data Link

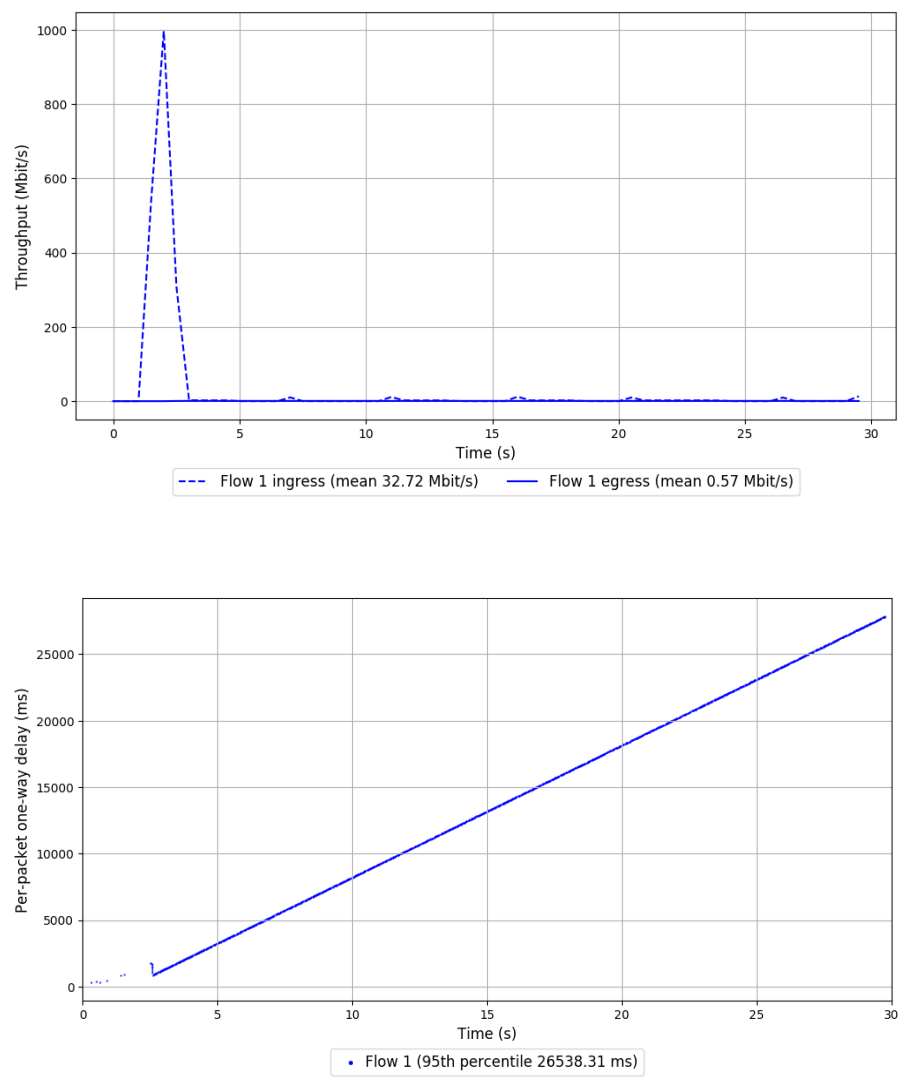


Run 2: Statistics of FillP

Start at: 2018-02-27 06:33:16
End at: 2018-02-27 06:33:46
Local clock offset: -5.277 ms
Remote clock offset: -1.092 ms

Below is generated by plot.py at 2018-02-27 08:15:44
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 26538.315 ms
Loss rate: 98.29%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 26538.315 ms
Loss rate: 98.29%

Run 2: Report of FillP — Data Link

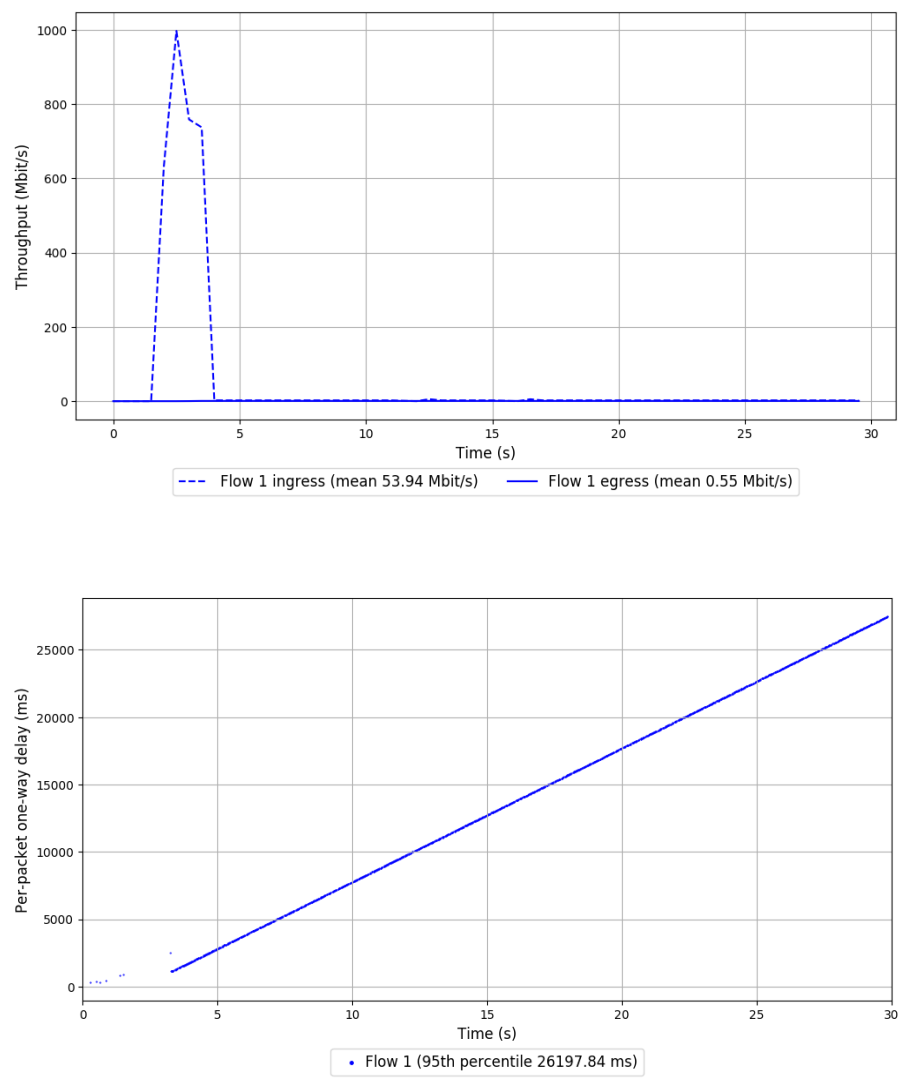


Run 3: Statistics of FillP

Start at: 2018-02-27 06:54:38
End at: 2018-02-27 06:55:08
Local clock offset: -6.606 ms
Remote clock offset: -0.476 ms

Below is generated by plot.py at 2018-02-27 08:15:45
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 26197.840 ms
Loss rate: 99.00%
-- Flow 1:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 26197.840 ms
Loss rate: 99.00%

Run 3: Report of FillP — Data Link



Run 1: Statistics of Indigo-1-32

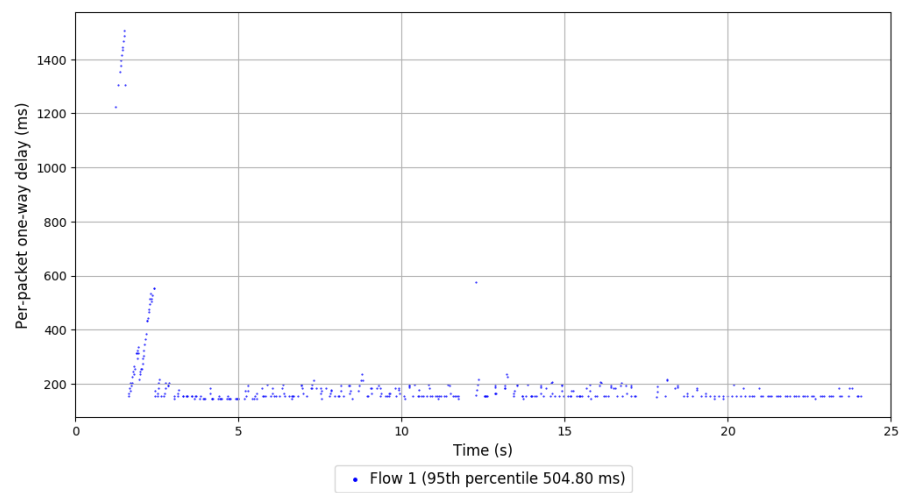
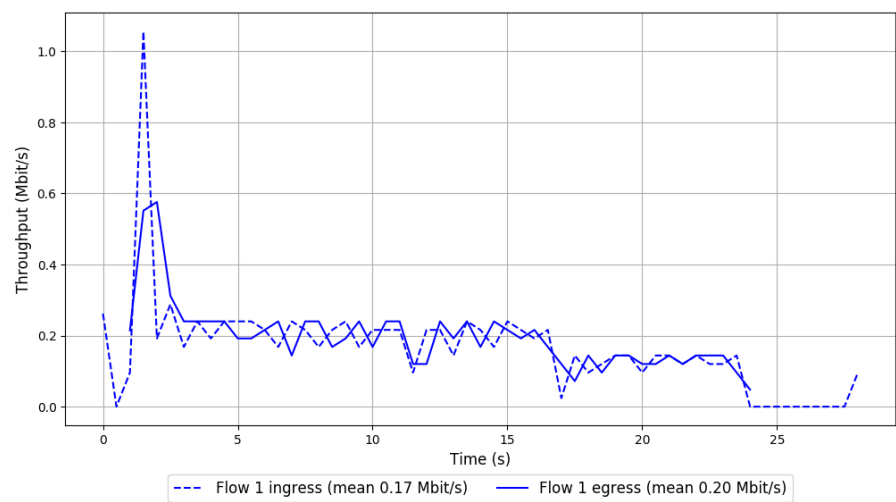
Start at: 2018-02-27 06:17:50

End at: 2018-02-27 06:18:20

Local clock offset: -3.916 ms

Remote clock offset: 0.537 ms

Run 1: Report of Indigo-1-32 — Data Link



Run 2: Statistics of Indigo-1-32

Start at: 2018-02-27 06:39:13

End at: 2018-02-27 06:39:43

Local clock offset: -5.484 ms

Remote clock offset: -5.534 ms

Below is generated by plot.py at 2018-02-27 08:15:45

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.12 Mbit/s

95th percentile per-packet one-way delay: 1283.258 ms

Loss rate: 2.80%

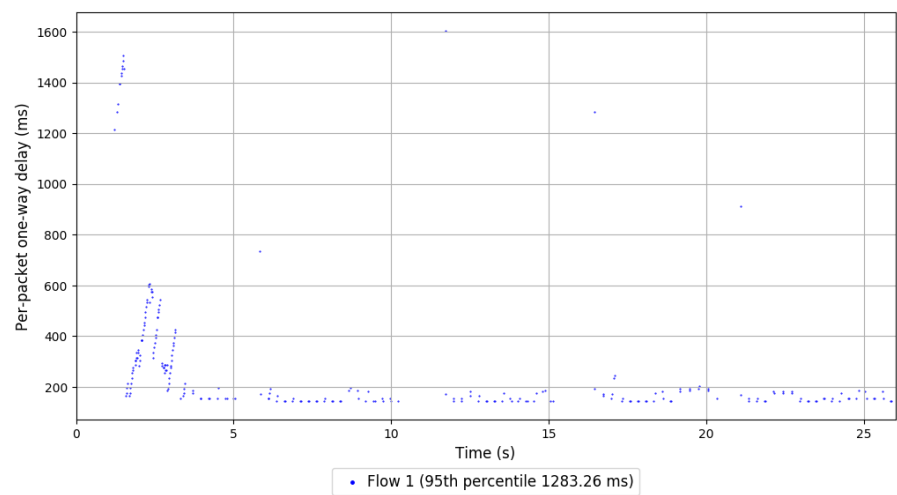
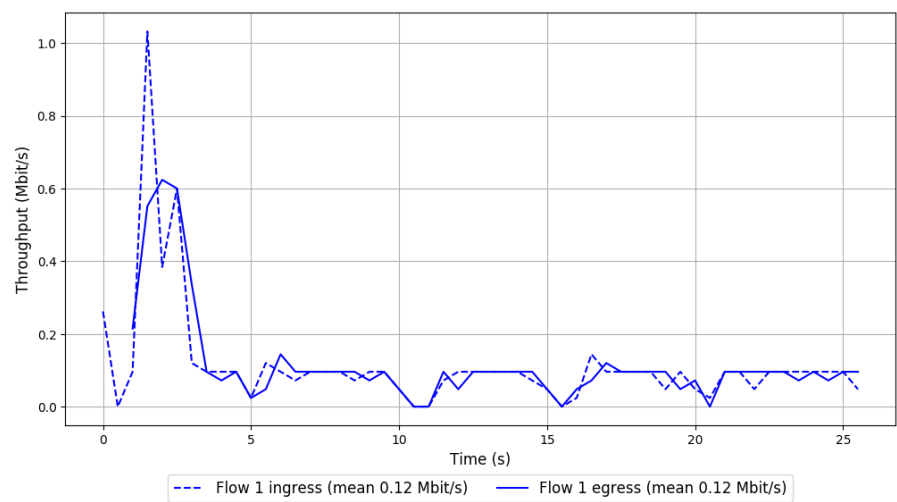
-- Flow 1:

Average throughput: 0.12 Mbit/s

95th percentile per-packet one-way delay: 1283.258 ms

Loss rate: 2.80%

Run 2: Report of Indigo-1-32 — Data Link

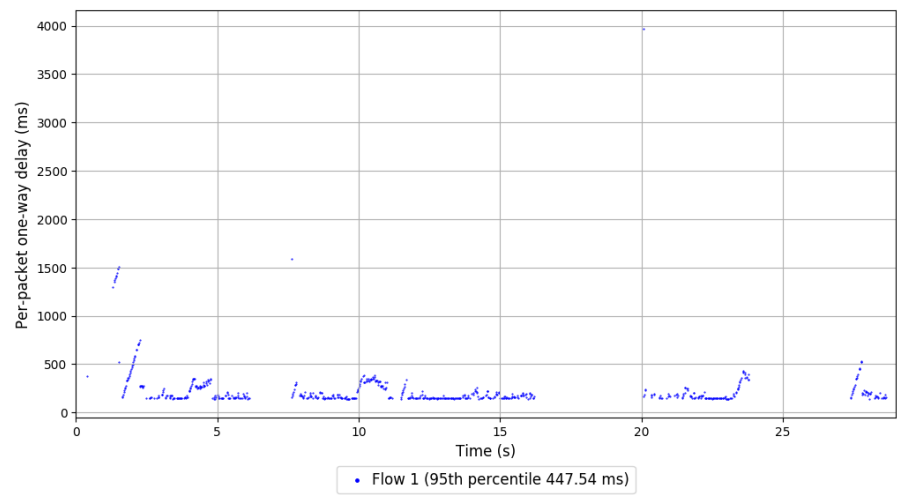
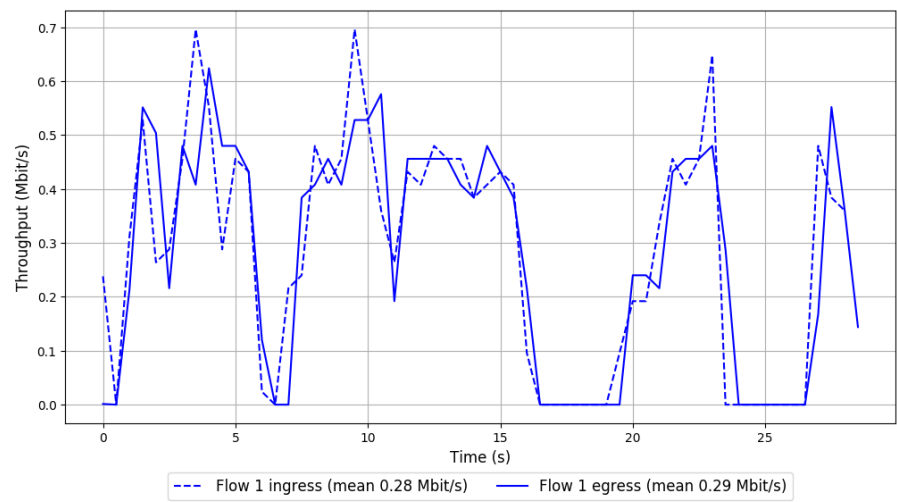


Run 3: Statistics of Indigo-1-32

Start at: 2018-02-27 07:00:35
End at: 2018-02-27 07:01:05
Local clock offset: -6.417 ms
Remote clock offset: -0.562 ms

Below is generated by plot.py at 2018-02-27 08:15:45
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 447.535 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 447.535 ms
Loss rate: 0.00%

Run 3: Report of Indigo-1-32 — Data Link

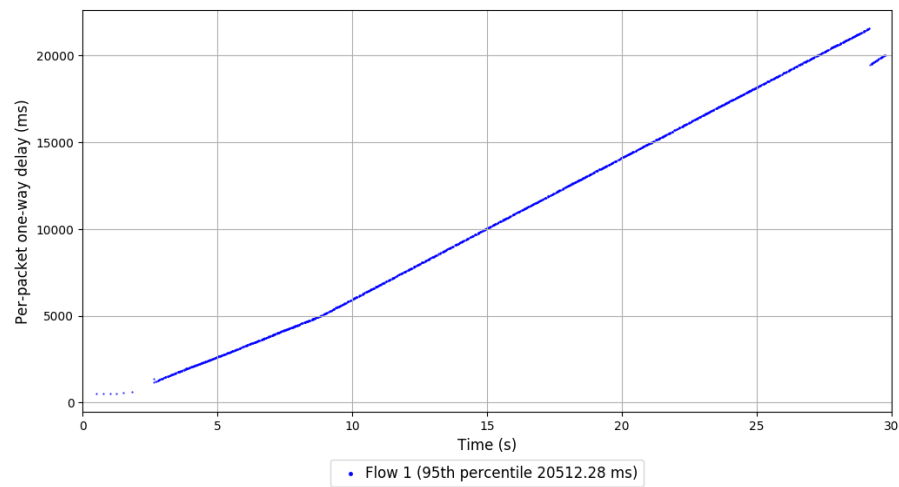
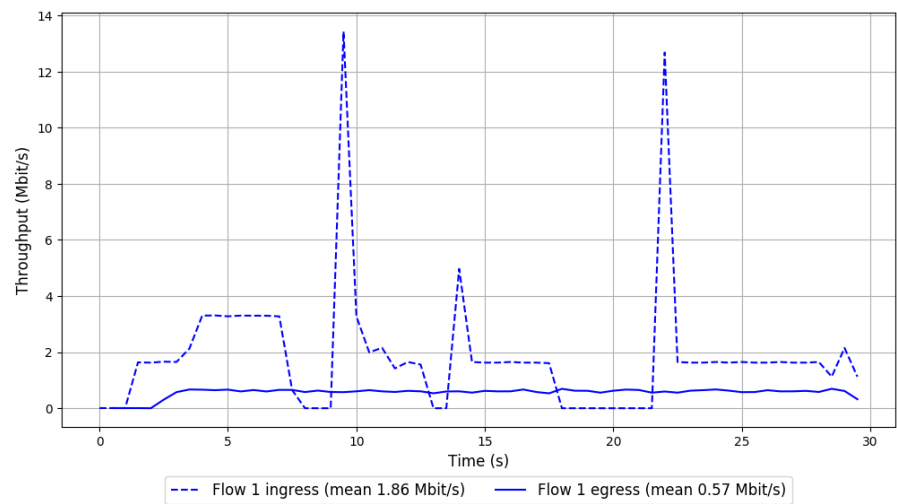


Run 1: Statistics of Vivace-latency

Start at: 2018-02-27 06:14:20
End at: 2018-02-27 06:14:50
Local clock offset: -3.573 ms
Remote clock offset: -4.685 ms

Below is generated by plot.py at 2018-02-27 08:15:45
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 20512.285 ms
Loss rate: 70.17%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 20512.285 ms
Loss rate: 70.17%

Run 1: Report of Vivace-latency — Data Link



Run 2: Statistics of Vivace-latency

Start at: 2018-02-27 06:35:40

End at: 2018-02-27 06:36:10

Local clock offset: -5.579 ms

Remote clock offset: -5.42 ms

Below is generated by plot.py at 2018-02-27 08:15:45

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.56 Mbit/s

95th percentile per-packet one-way delay: 19571.857 ms

Loss rate: 69.29%

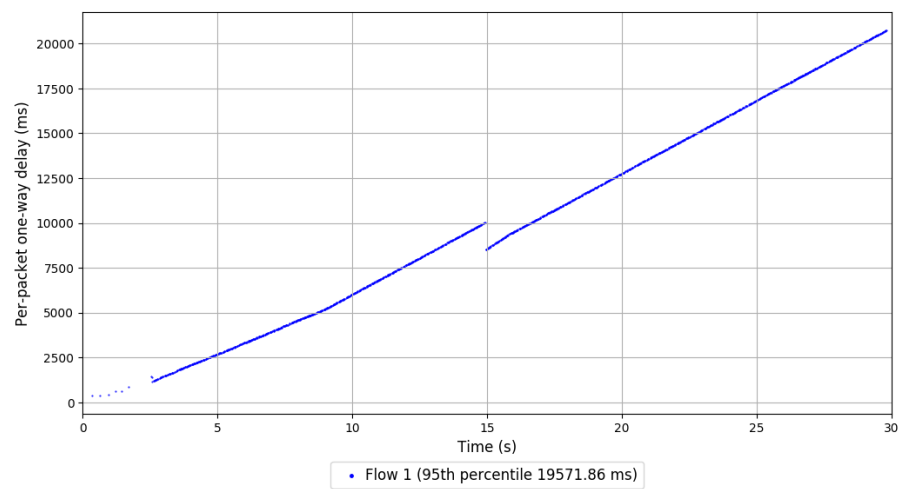
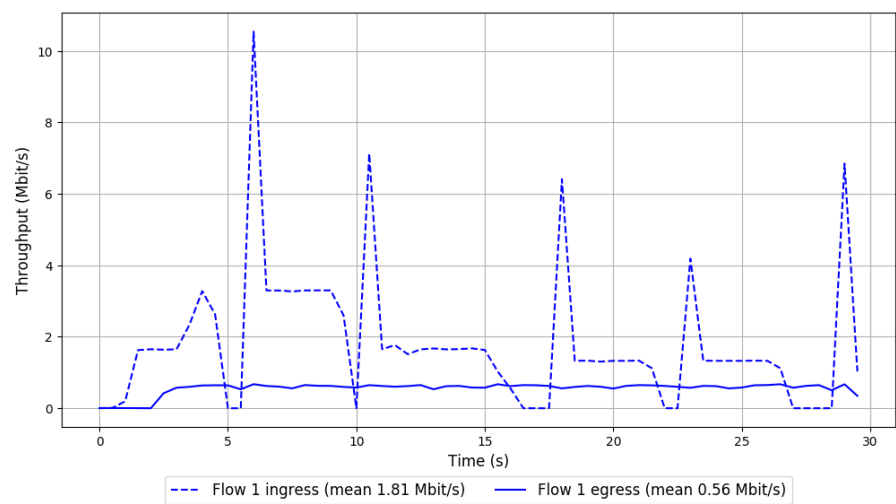
-- Flow 1:

Average throughput: 0.56 Mbit/s

95th percentile per-packet one-way delay: 19571.857 ms

Loss rate: 69.29%

Run 2: Report of Vivace-latency — Data Link

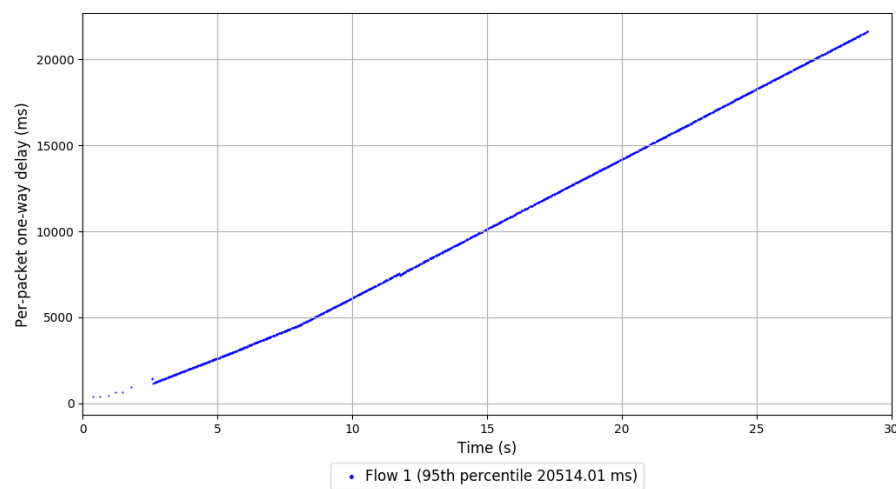
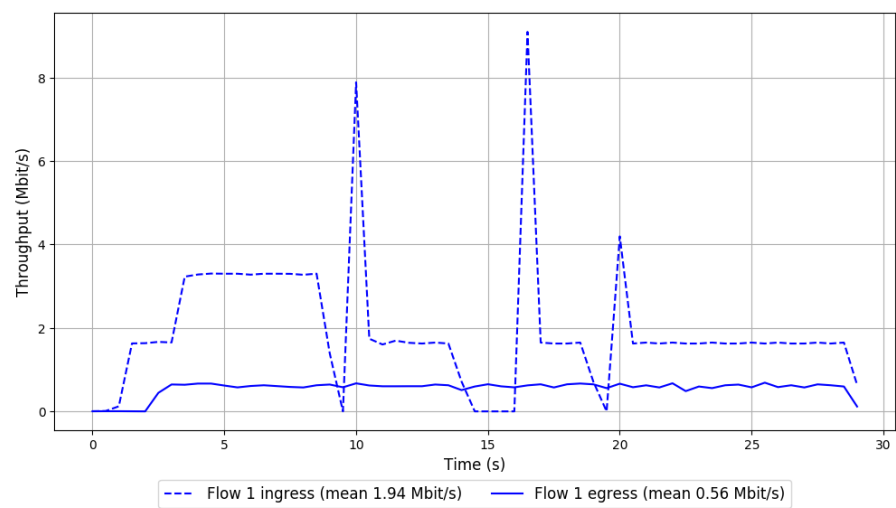


Run 3: Statistics of Vivace-latency

Start at: 2018-02-27 06:57:03
End at: 2018-02-27 06:57:33
Local clock offset: -6.68 ms
Remote clock offset: -0.494 ms

Below is generated by plot.py at 2018-02-27 08:15:45
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 20514.007 ms
Loss rate: 71.41%
-- Flow 1:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 20514.007 ms
Loss rate: 71.41%

Run 3: Report of Vivace-latency — Data Link



Run 1: Statistics of Vivace-loss

Start at: 2018-02-27 06:20:14

End at: 2018-02-27 06:20:45

Local clock offset: -3.497 ms

Remote clock offset: -0.219 ms

Below is generated by plot.py at 2018-02-27 08:15:45

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.56 Mbit/s

95th percentile per-packet one-way delay: 21153.404 ms

Loss rate: 88.49%

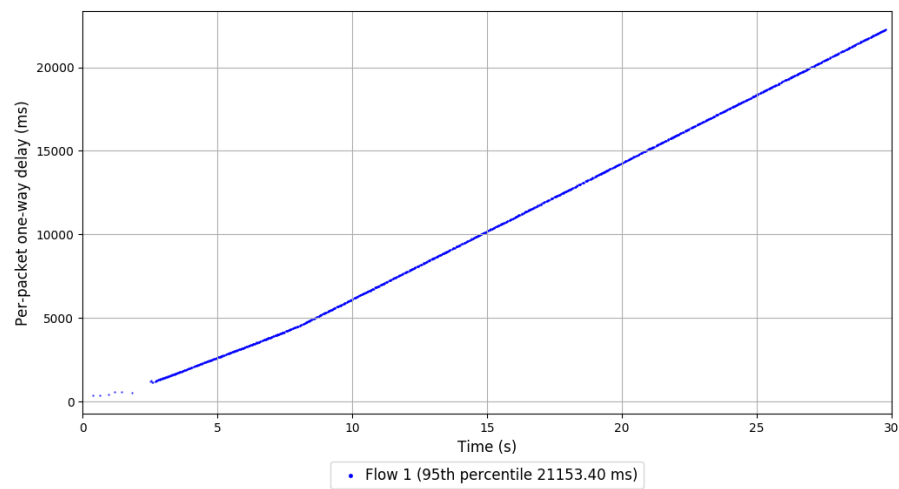
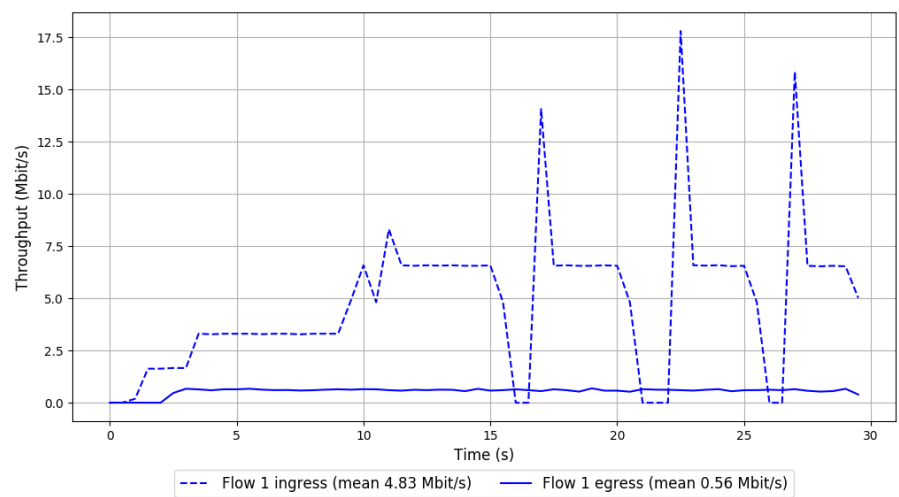
-- Flow 1:

Average throughput: 0.56 Mbit/s

95th percentile per-packet one-way delay: 21153.404 ms

Loss rate: 88.49%

Run 1: Report of Vivace-loss — Data Link



Run 2: Statistics of Vivace-loss

Start at: 2018-02-27 06:41:36

End at: 2018-02-27 06:42:06

Local clock offset: -6.101 ms

Remote clock offset: -0.365 ms

Below is generated by plot.py at 2018-02-27 08:15:45

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 1312.615 ms

Loss rate: 2.24%

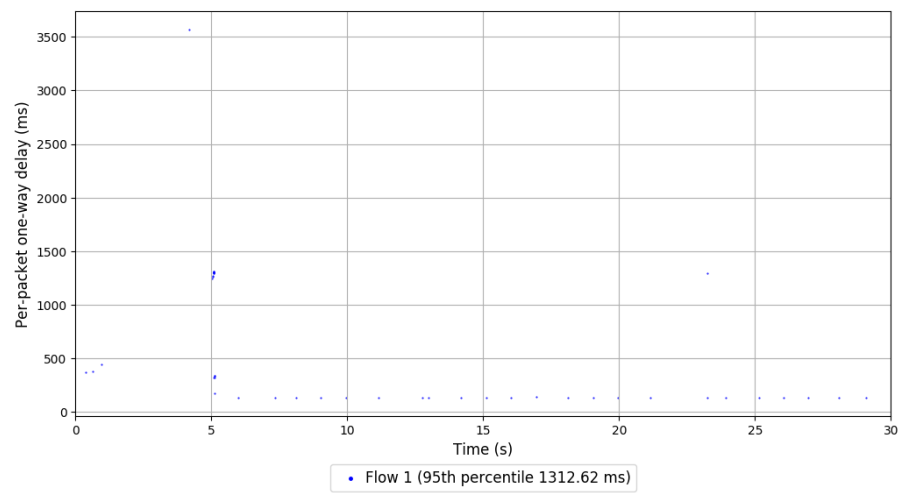
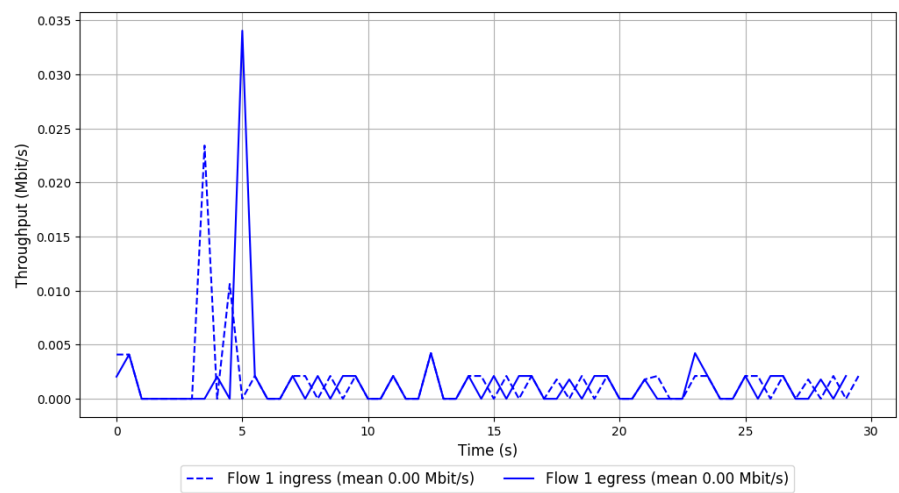
-- Flow 1:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 1312.615 ms

Loss rate: 2.24%

Run 2: Report of Vivace-loss — Data Link



Run 3: Statistics of Vivace-loss

Start at: 2018-02-27 07:02:56

End at: 2018-02-27 07:03:26

Local clock offset: -6.373 ms

Remote clock offset: -4.987 ms

Below is generated by plot.py at 2018-02-27 08:15:45

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 1996.558 ms

Loss rate: 0.00%

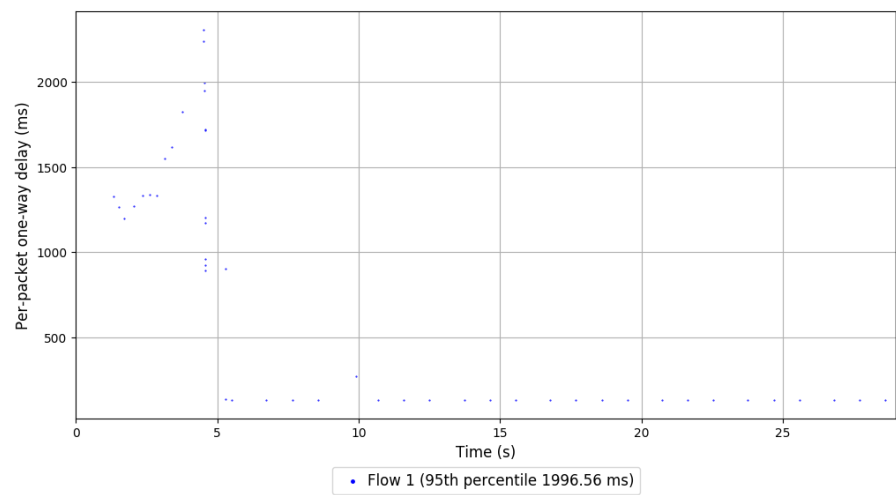
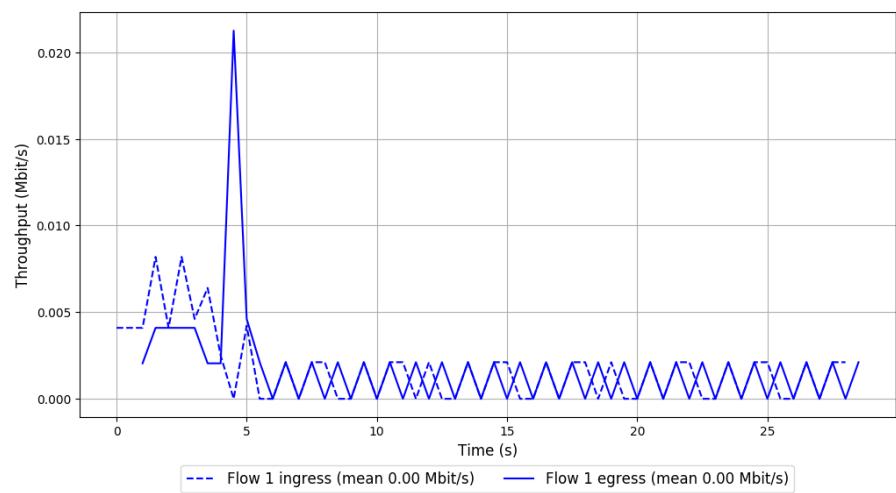
-- Flow 1:

Average throughput: 0.00 Mbit/s

95th percentile per-packet one-way delay: 1996.558 ms

Loss rate: 0.00%

Run 3: Report of Vivace-loss — Data Link

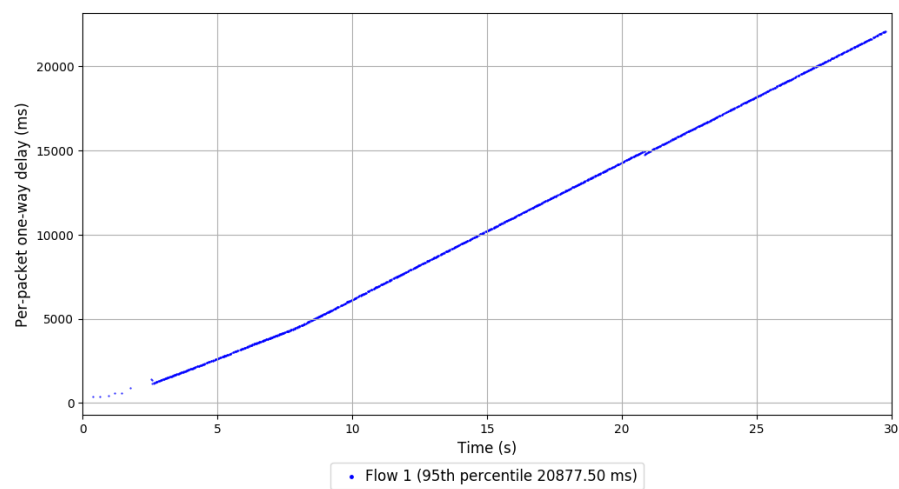
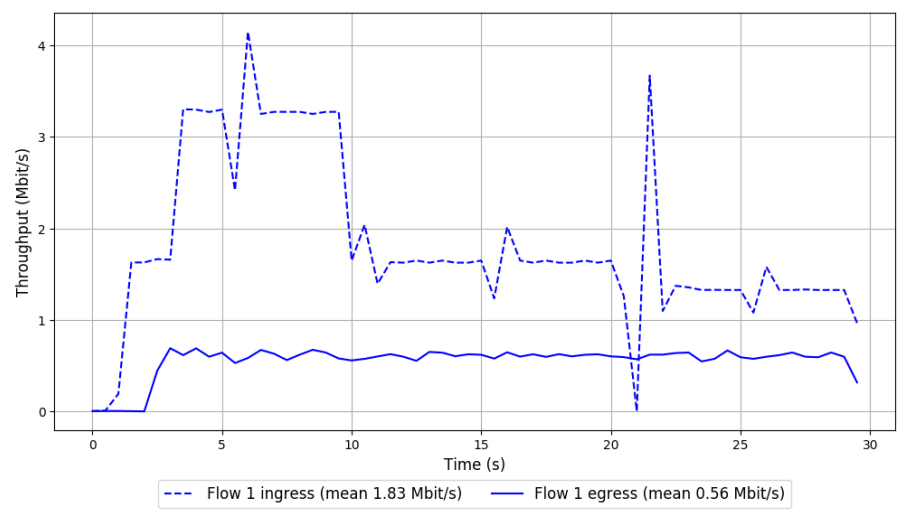


Run 1: Statistics of Vivace-LTE

Start at: 2018-02-27 06:16:40
End at: 2018-02-27 06:17:10
Local clock offset: -3.911 ms
Remote clock offset: -4.776 ms

Below is generated by plot.py at 2018-02-27 08:15:45
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 20877.497 ms
Loss rate: 69.72%
-- Flow 1:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 20877.497 ms
Loss rate: 69.72%

Run 1: Report of Vivace-LTE — Data Link



Run 2: Statistics of Vivace-LTE

Start at: 2018-02-27 06:38:03

End at: 2018-02-27 06:38:33

Local clock offset: -5.757 ms

Remote clock offset: -5.52 ms

Below is generated by plot.py at 2018-02-27 08:15:45

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.56 Mbit/s

95th percentile per-packet one-way delay: 21168.893 ms

Loss rate: 72.13%

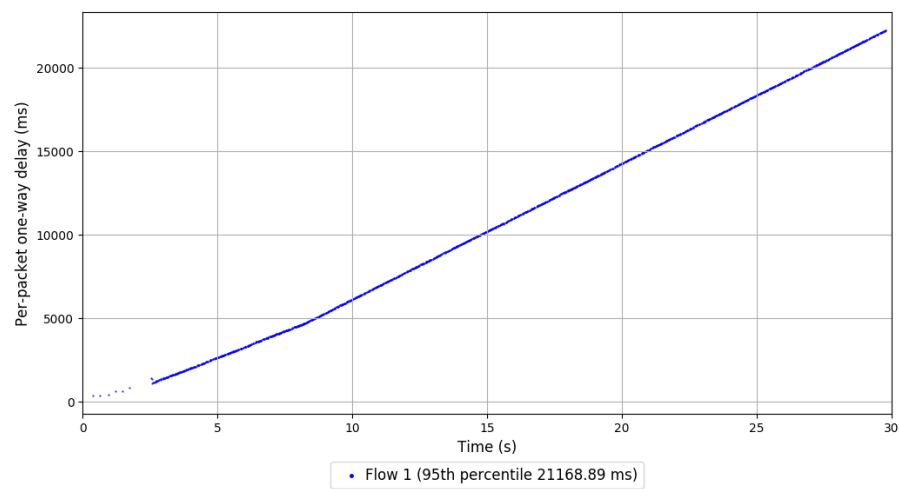
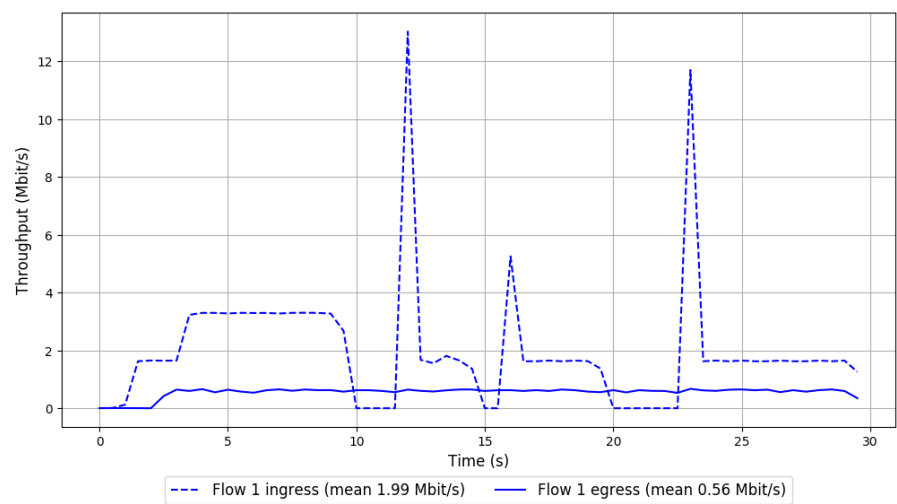
-- Flow 1:

Average throughput: 0.56 Mbit/s

95th percentile per-packet one-way delay: 21168.893 ms

Loss rate: 72.13%

Run 2: Report of Vivace-LTE — Data Link



Run 3: Statistics of Vivace-LTE

Start at: 2018-02-27 06:59:23
End at: 2018-02-27 06:59:53
Local clock offset: -6.729 ms
Remote clock offset: -4.944 ms

Below is generated by plot.py at 2018-02-27 08:15:45
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1221.168 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1221.168 ms
Loss rate: 0.00%

Run 3: Report of Vivace-LTE — Data Link

