

Pantheon Report

Generated at 2018-01-16 00:21:20 (UTC).

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

Repeated the test of 14 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).

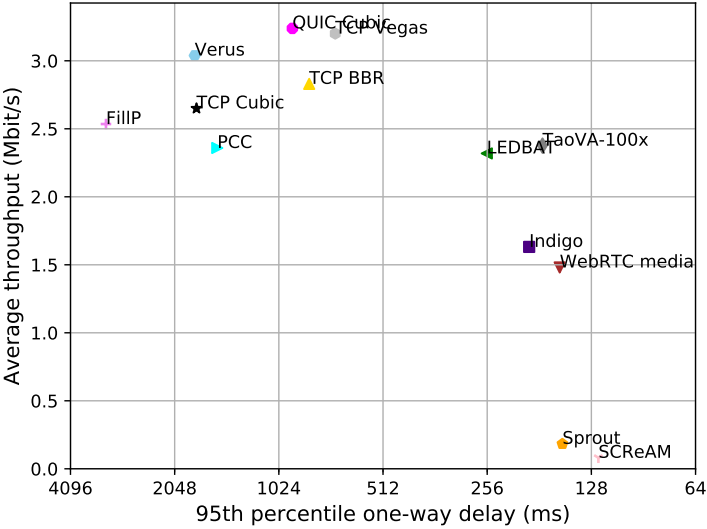
Tested BBR with qdisc of Fair Queuing (**fq**), and other schemes with the default Linux qdisc (**pfifo_fast**).

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

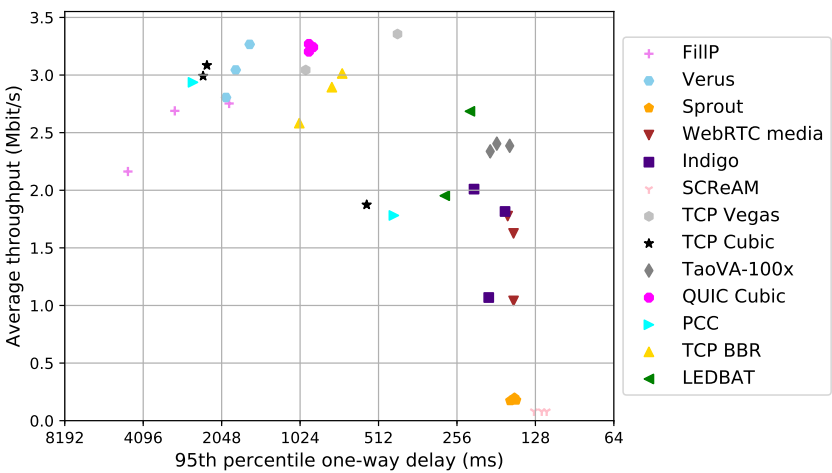
Git summary:

```
branch: master @ af8abdfba95588b0c5f2aeca9e856a1656b0c598
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
  M datagrump/sender.cc
third_party/fillp @ ec9585325218d5048c4d4152fa42240af54c6e67
third_party/genericCC @ 80b516c448f795fd6e9675f7177b69c622f07da8
third_party/indigo @ b19f3730105f9aa95452552af924e3719b03cc55
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 @ f1a14bffe749737437f61b1eaaeb30b267cde681
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 @ 423cbca3e8ea1d599e7b5cf725835e8a2b6bfac6
third_party/webrtc @ a488197ddd041ace68a42849b2540ad834825f42
```

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



test from AWS Brazil 2 Ethernet to Colombia 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	2.83	836.76	1.51
TCP Cubic	3	2.65	1771.18	8.37
LEDBAT	2	2.32	256.74	0.58
PCC	2	2.36	1542.31	15.96
QUIC Cubic	3	3.24	935.83	3.22
SCReAM	3	0.08	122.18	0.09
WebRTC media	3	1.48	158.04	0.22
Sprout	3	0.18	155.22	0.09
TaoVA-100x	3	2.38	177.17	0.22
TCP Vegas	2	3.20	703.62	1.30
Verus	3	3.04	1792.49	3.15
Copa	0	N/A	N/A	N/A
FillP	3	2.53	3234.50	93.38
Indigo	3	1.63	193.63	0.92

Run 1: Statistics of TCP BBR

Start at: 2018-01-15 23:36:52

End at: 2018-01-15 23:37:22

Local clock offset: 1.481 ms

Remote clock offset: 0.645 ms

Below is generated by plot.py at 2018-01-16 00:20:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.01 Mbit/s

95th percentile per-packet one-way delay: 705.819 ms

Loss rate: 1.43%

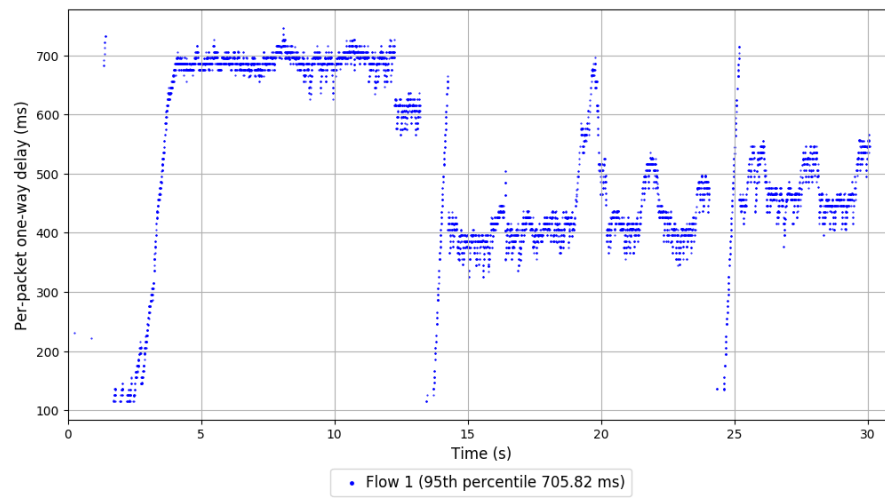
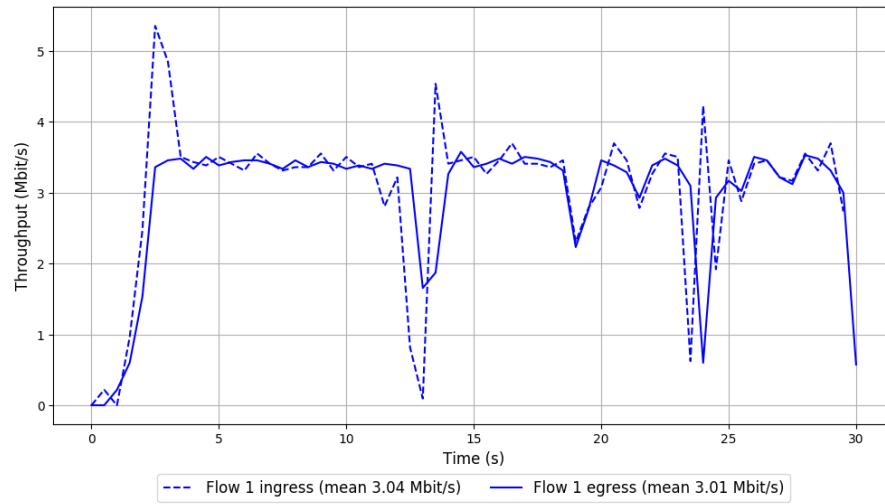
-- Flow 1:

Average throughput: 3.01 Mbit/s

95th percentile per-packet one-way delay: 705.819 ms

Loss rate: 1.43%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-01-15 23:54:36

End at: 2018-01-15 23:55:06

Local clock offset: 2.244 ms

Remote clock offset: -3.414 ms

Below is generated by plot.py at 2018-01-16 00:20:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.89 Mbit/s

95th percentile per-packet one-way delay: 773.363 ms

Loss rate: 1.56%

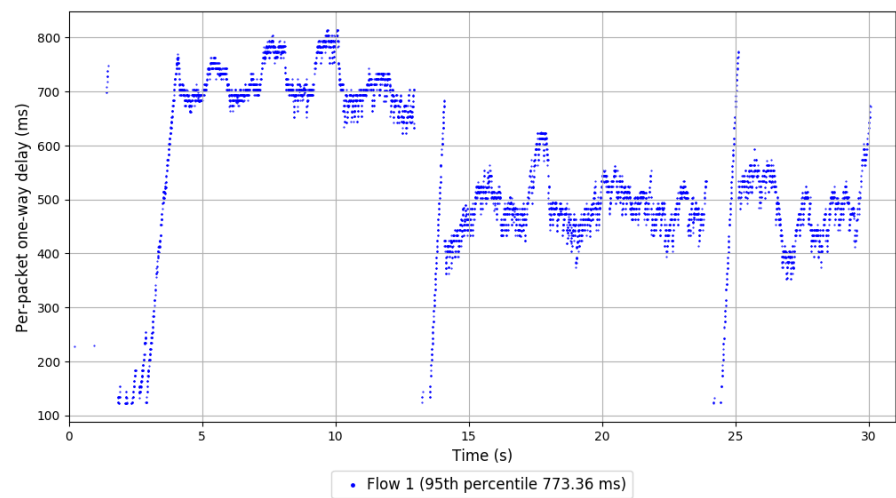
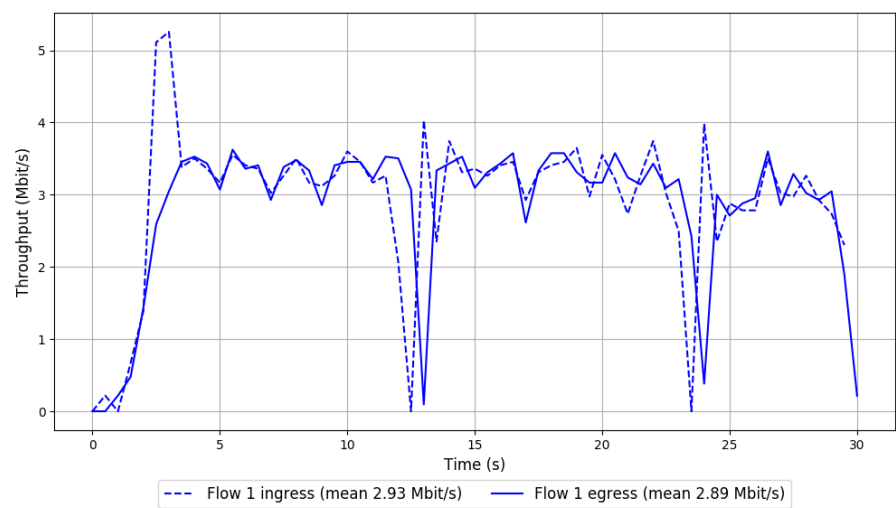
-- Flow 1:

Average throughput: 2.89 Mbit/s

95th percentile per-packet one-way delay: 773.363 ms

Loss rate: 1.56%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-01-16 00:12:17

End at: 2018-01-16 00:12:47

Local clock offset: 1.931 ms

Remote clock offset: -3.49 ms

Below is generated by plot.py at 2018-01-16 00:20:47

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.58 Mbit/s

95th percentile per-packet one-way delay: 1031.094 ms

Loss rate: 1.55%

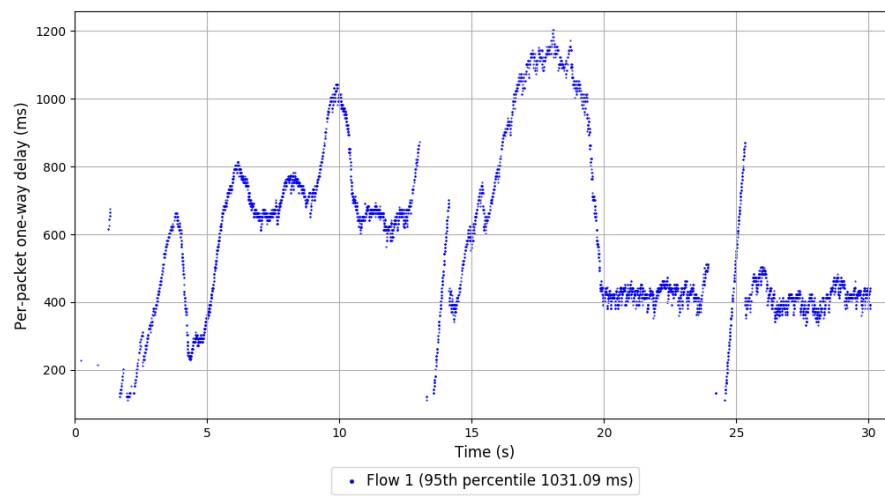
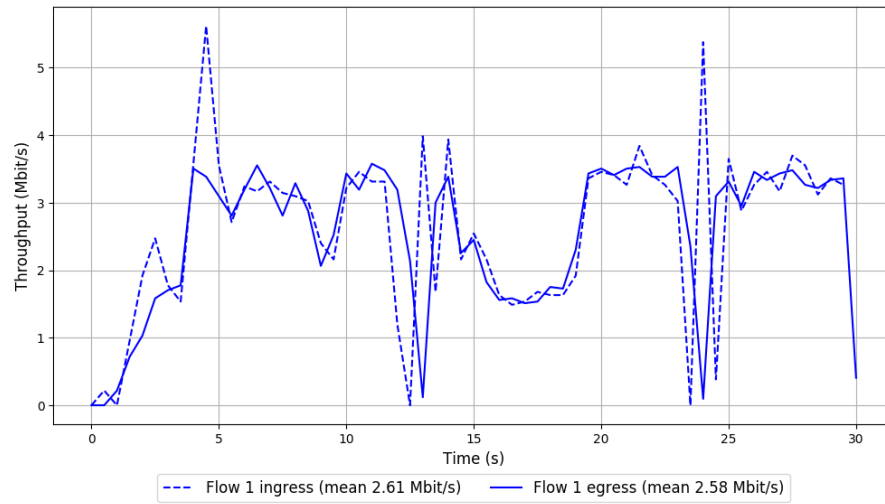
-- Flow 1:

Average throughput: 2.58 Mbit/s

95th percentile per-packet one-way delay: 1031.094 ms

Loss rate: 1.55%

Run 3: Report of TCP BBR — Data Link

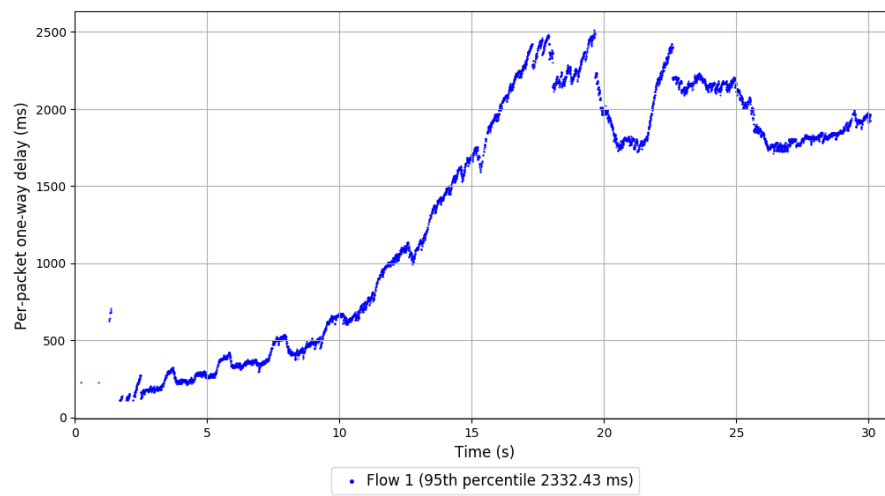
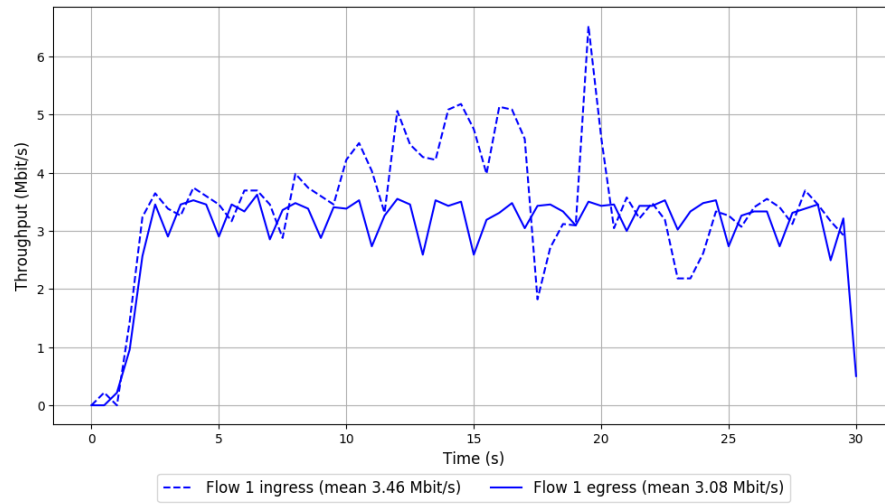


Run 1: Statistics of TCP Cubic

Start at: 2018-01-15 23:40:24
End at: 2018-01-15 23:40:54
Local clock offset: 1.645 ms
Remote clock offset: -4.194 ms

Below is generated by plot.py at 2018-01-16 00:20:48
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.08 Mbit/s
95th percentile per-packet one-way delay: 2332.429 ms
Loss rate: 11.25%
-- Flow 1:
Average throughput: 3.08 Mbit/s
95th percentile per-packet one-way delay: 2332.429 ms
Loss rate: 11.25%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-01-15 23:58:08

End at: 2018-01-15 23:58:38

Local clock offset: 2.19 ms

Remote clock offset: -3.55 ms

Below is generated by plot.py at 2018-01-16 00:20:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.99 Mbit/s

95th percentile per-packet one-way delay: 2412.564 ms

Loss rate: 10.46%

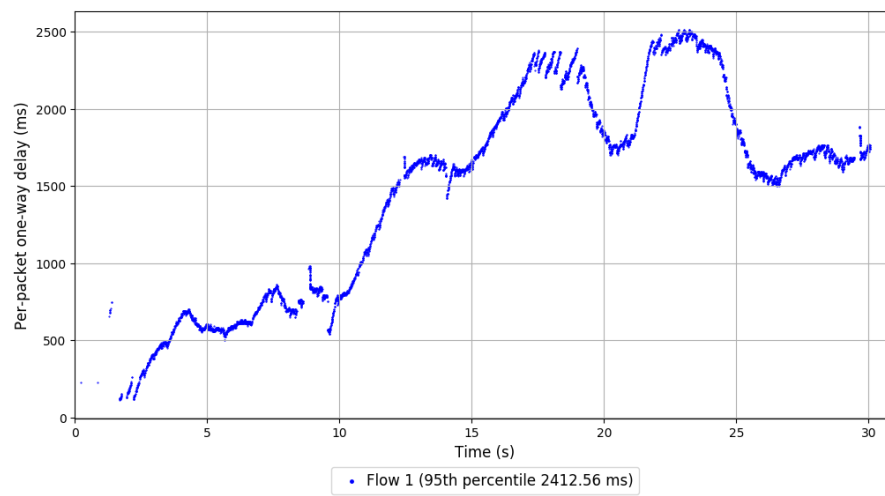
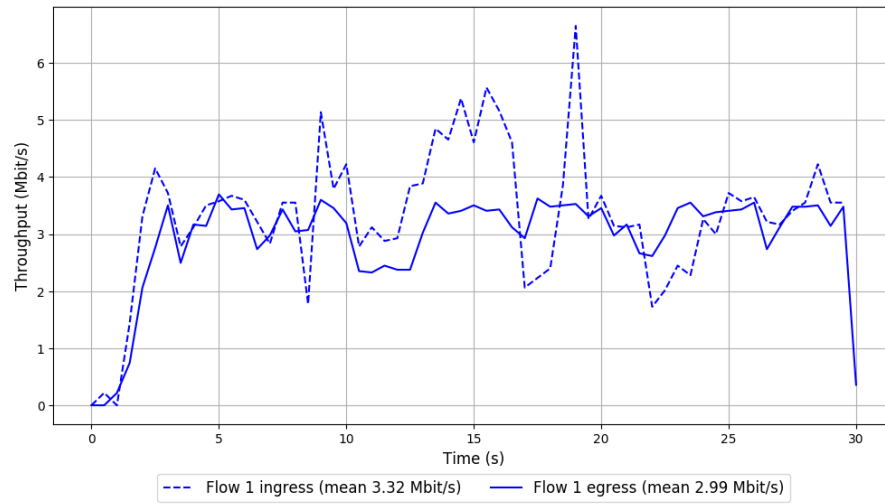
-- Flow 1:

Average throughput: 2.99 Mbit/s

95th percentile per-packet one-way delay: 2412.564 ms

Loss rate: 10.46%

Run 2: Report of TCP Cubic — Data Link

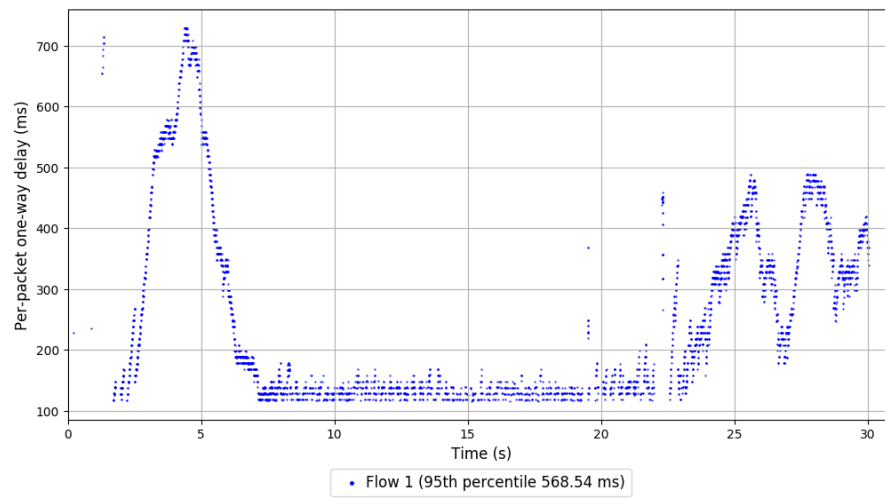
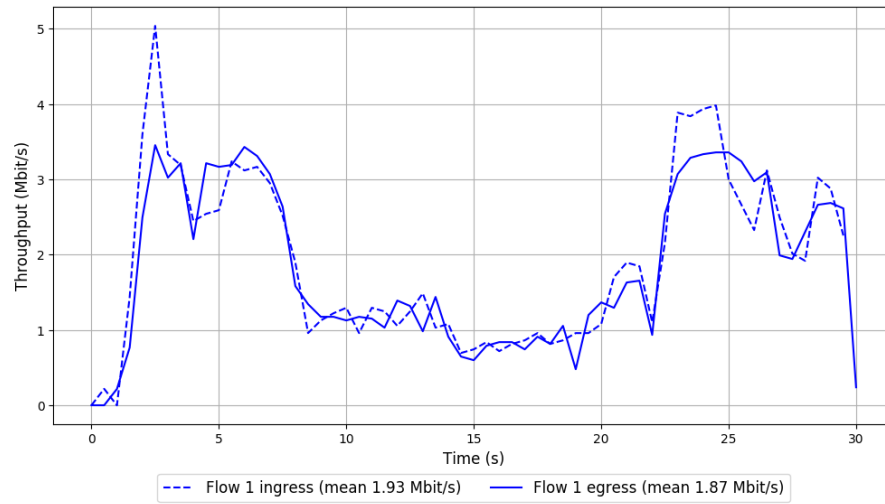


Run 3: Statistics of TCP Cubic

Start at: 2018-01-16 00:15:49
End at: 2018-01-16 00:16:19
Local clock offset: 1.902 ms
Remote clock offset: -3.408 ms

Below is generated by plot.py at 2018-01-16 00:20:48
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 568.537 ms
Loss rate: 3.40%
-- Flow 1:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 568.537 ms
Loss rate: 3.40%

Run 3: Report of TCP Cubic — Data Link

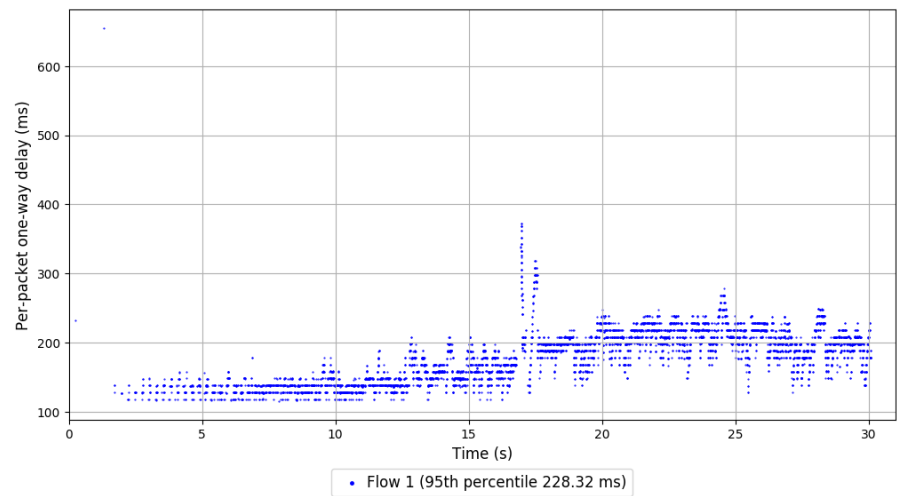
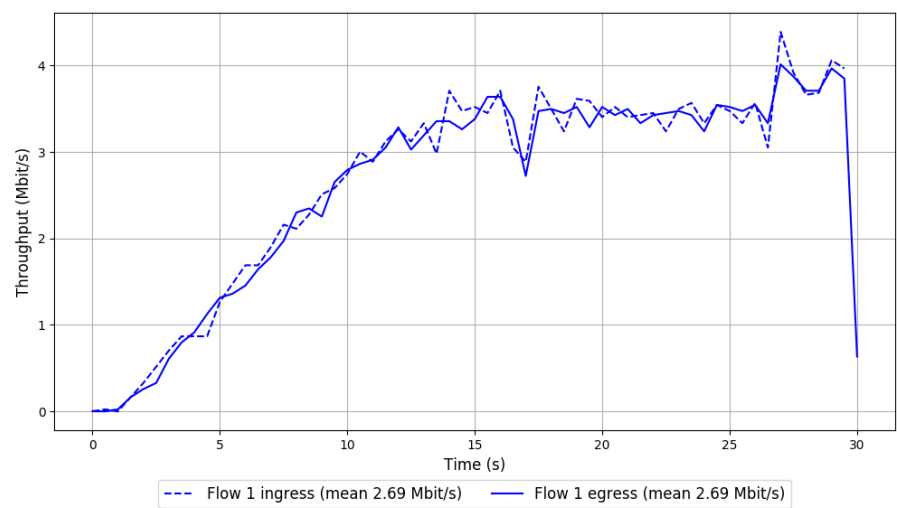


```
Run 1: Statistics of LEDBAT

Start at: 2018-01-15 23:32:10
End at: 2018-01-15 23:32:40
Local clock offset: 1.286 ms
Remote clock offset: 1.329 ms

# Below is generated by plot.py at 2018-01-16 00:20:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.69 Mbit/s
95th percentile per-packet one-way delay: 228.317 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 2.69 Mbit/s
95th percentile per-packet one-way delay: 228.317 ms
Loss rate: 0.68%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-01-15 23:49:54

End at: 2018-01-15 23:50:24

Local clock offset: 2.18 ms

Remote clock offset: -4.21 ms

Below is generated by plot.py at 2018-01-16 00:20:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.95 Mbit/s

95th percentile per-packet one-way delay: 285.172 ms

Loss rate: 0.48%

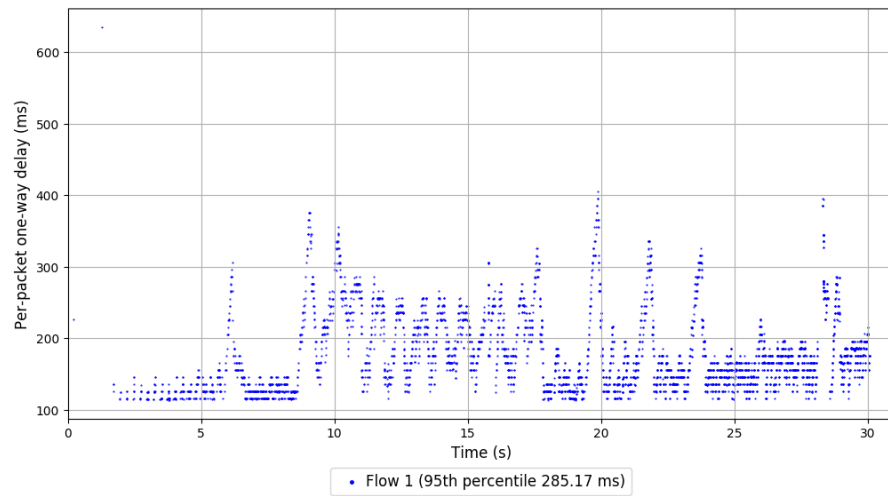
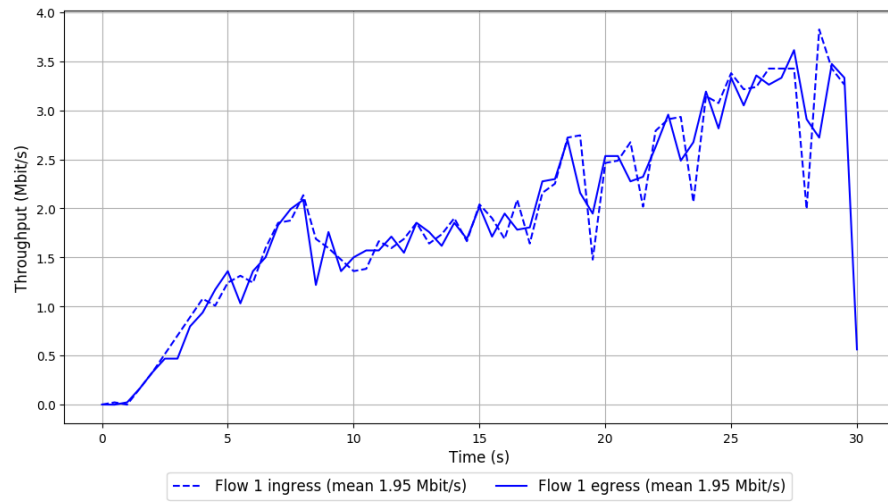
-- Flow 1:

Average throughput: 1.95 Mbit/s

95th percentile per-packet one-way delay: 285.172 ms

Loss rate: 0.48%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2018-01-16 00:07:33

End at: 2018-01-16 00:08:03

Local clock offset: 2.071 ms

Remote clock offset: -4.505 ms

Run 3: Report of LEDBAT — Data Link

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Figure is missing

Run 1: Statistics of PCC

Start at: 2018-01-15 23:39:14

End at: 2018-01-15 23:39:44

Local clock offset: 1.587 ms

Remote clock offset: 1.547 ms

Below is generated by plot.py at 2018-01-16 00:20:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.78 Mbit/s

95th percentile per-packet one-way delay: 447.014 ms

Loss rate: 0.14%

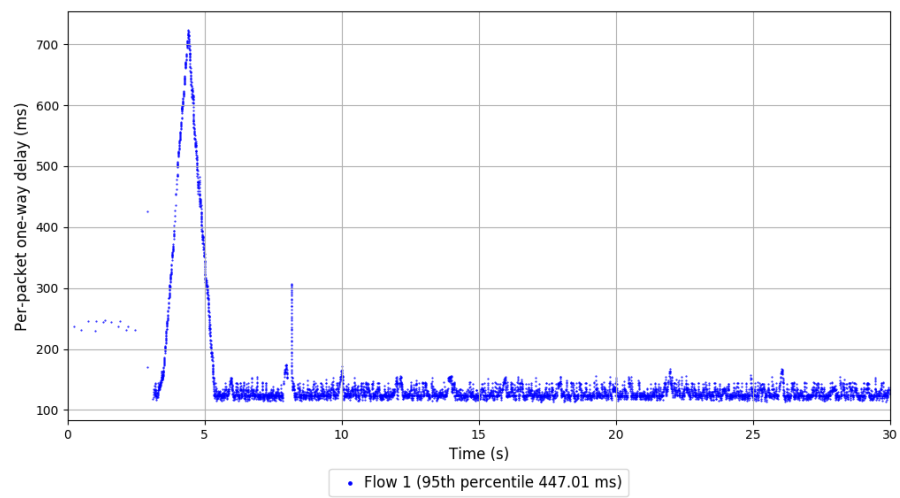
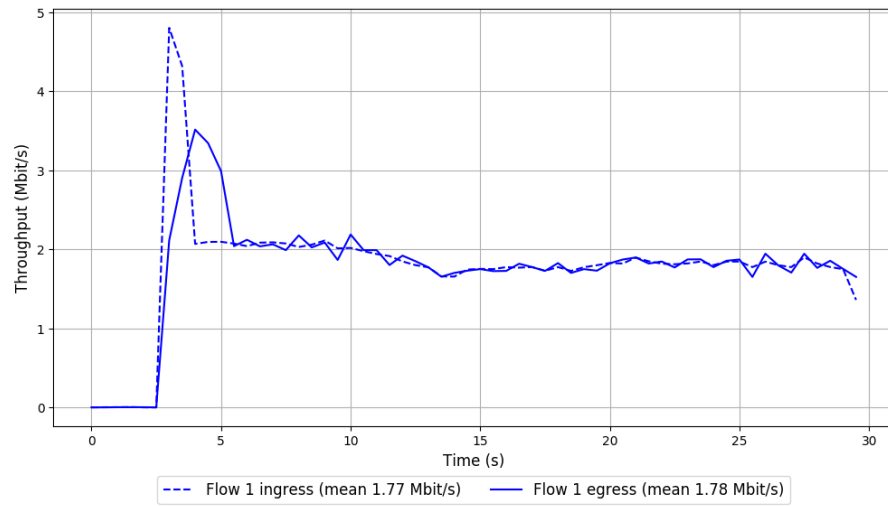
-- Flow 1:

Average throughput: 1.78 Mbit/s

95th percentile per-packet one-way delay: 447.014 ms

Loss rate: 0.14%

Run 1: Report of PCC — Data Link

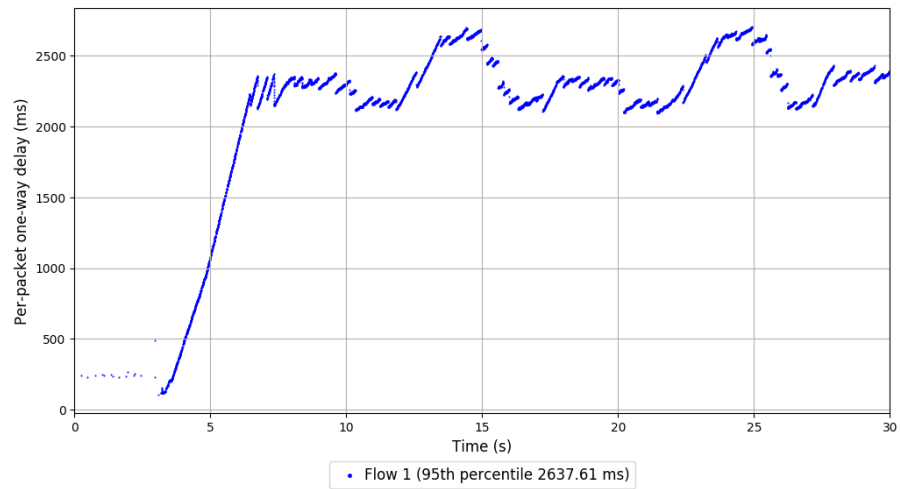
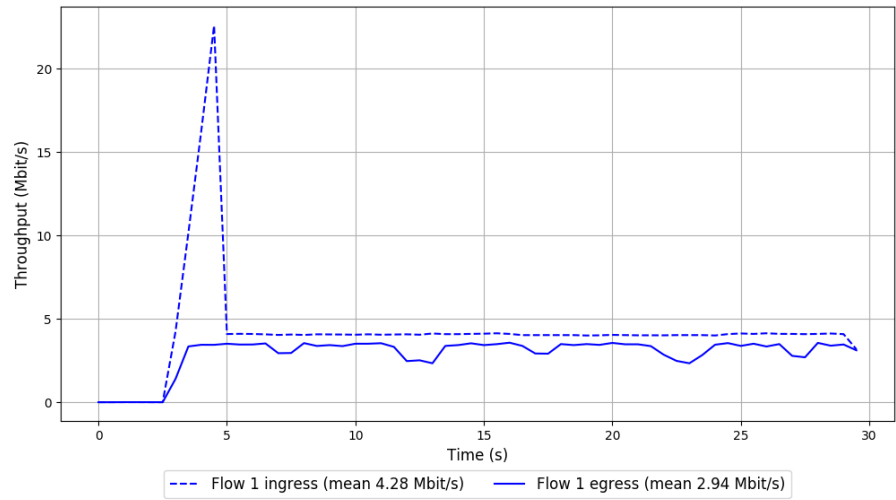


Run 2: Statistics of PCC

Start at: 2018-01-15 23:56:57
End at: 2018-01-15 23:57:27
Local clock offset: 2.21 ms
Remote clock offset: -4.324 ms

Below is generated by plot.py at 2018-01-16 00:20:56
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.94 Mbit/s
95th percentile per-packet one-way delay: 2637.614 ms
Loss rate: 31.77%
-- Flow 1:
Average throughput: 2.94 Mbit/s
95th percentile per-packet one-way delay: 2637.614 ms
Loss rate: 31.77%

Run 2: Report of PCC — Data Link



Run 3: Statistics of PCC

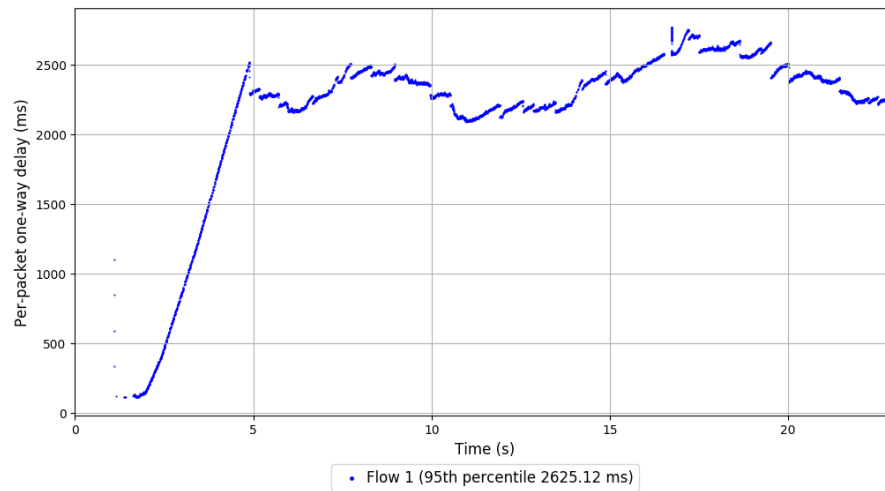
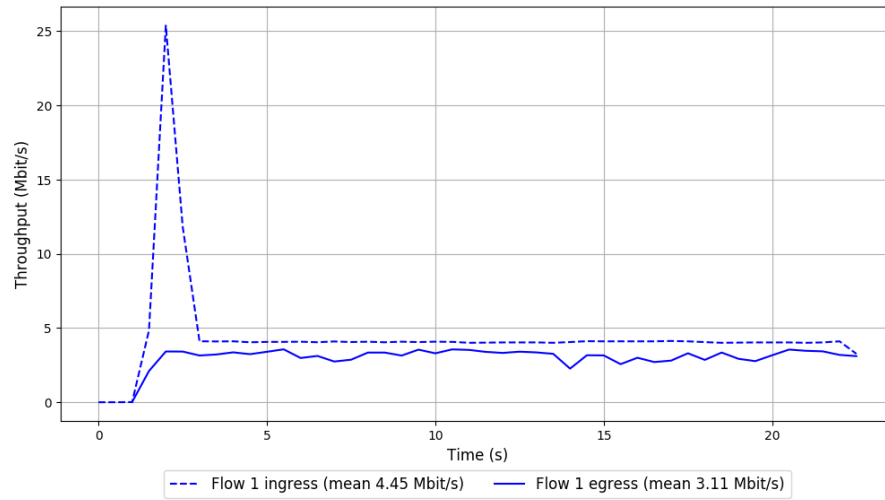
Start at: 2018-01-16 00:14:38

End at: 2018-01-16 00:15:08

Local clock offset: 1.883 ms

Remote clock offset: 2.217 ms

Run 3: Report of PCC — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-01-15 23:35:41

End at: 2018-01-15 23:36:11

Local clock offset: 1.456 ms

Remote clock offset: -4.31 ms

Below is generated by plot.py at 2018-01-16 00:20:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.20 Mbit/s

95th percentile per-packet one-way delay: 947.628 ms

Loss rate: 3.16%

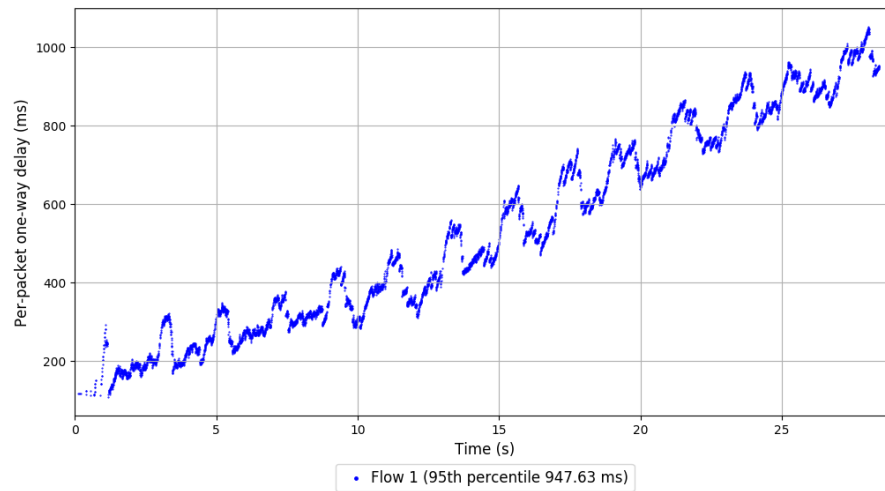
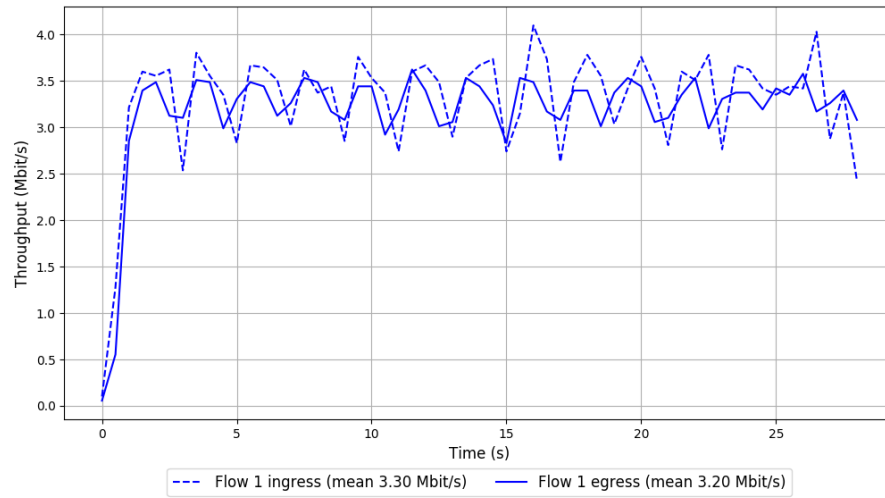
-- Flow 1:

Average throughput: 3.20 Mbit/s

95th percentile per-packet one-way delay: 947.628 ms

Loss rate: 3.16%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-01-15 23:53:25

End at: 2018-01-15 23:53:55

Local clock offset: 2.264 ms

Remote clock offset: 1.419 ms

Below is generated by plot.py at 2018-01-16 00:20:57

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.24 Mbit/s

95th percentile per-packet one-way delay: 912.729 ms

Loss rate: 3.28%

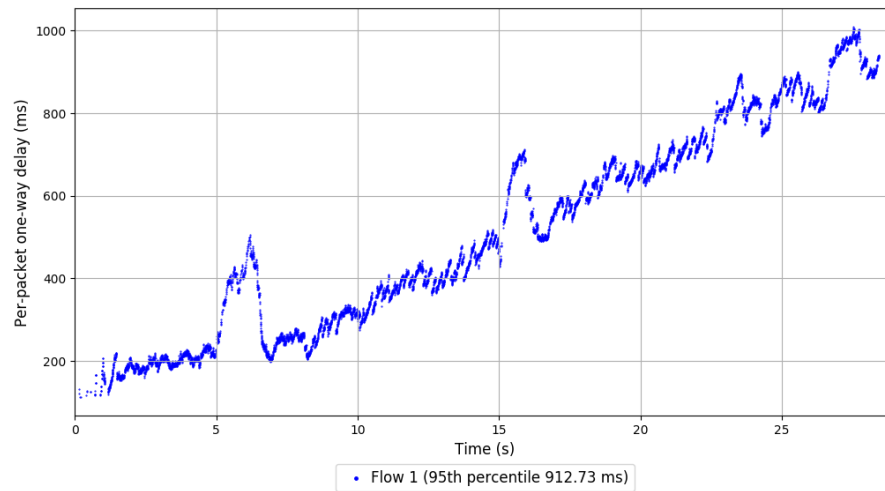
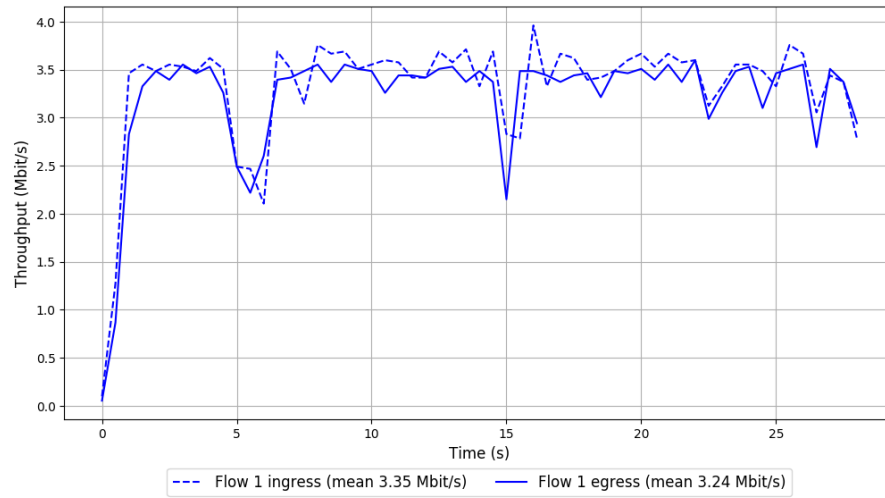
-- Flow 1:

Average throughput: 3.24 Mbit/s

95th percentile per-packet one-way delay: 912.729 ms

Loss rate: 3.28%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-01-16 00:11:06

End at: 2018-01-16 00:11:36

Local clock offset: 1.943 ms

Remote clock offset: 0.467 ms

Below is generated by plot.py at 2018-01-16 00:20:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.27 Mbit/s

95th percentile per-packet one-way delay: 947.121 ms

Loss rate: 3.21%

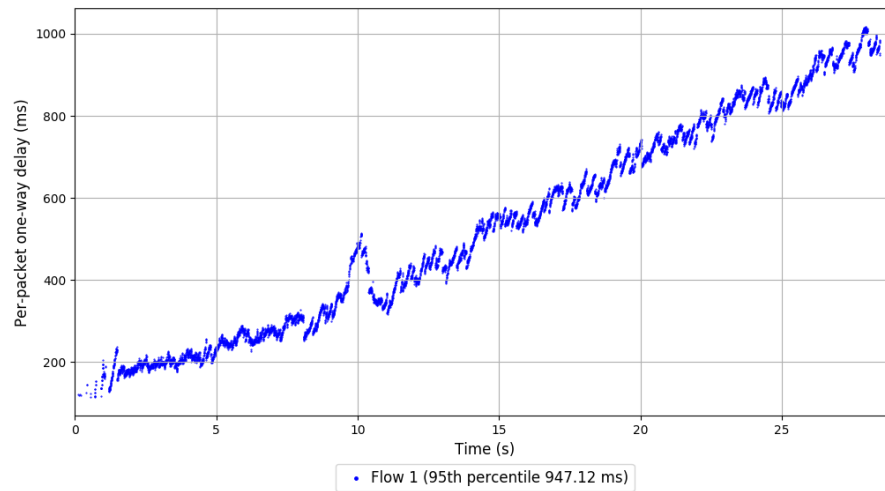
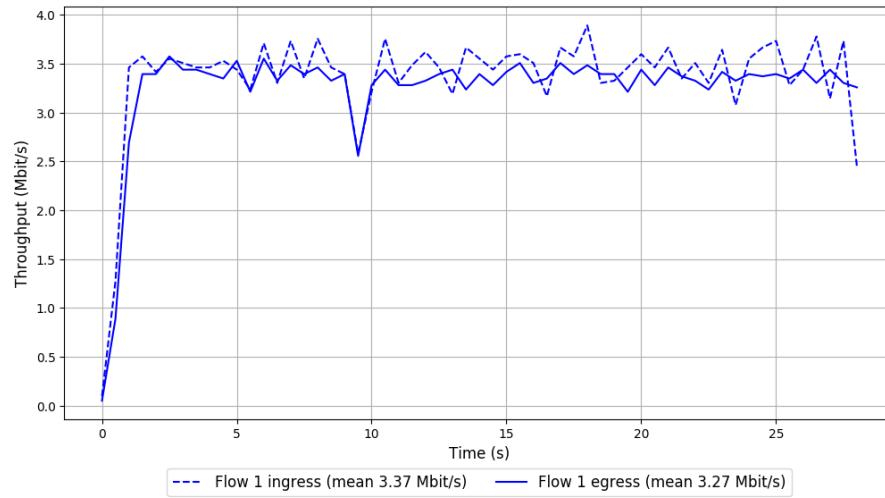
-- Flow 1:

Average throughput: 3.27 Mbit/s

95th percentile per-packet one-way delay: 947.121 ms

Loss rate: 3.21%

Run 3: Report of QUIC Cubic — Data Link

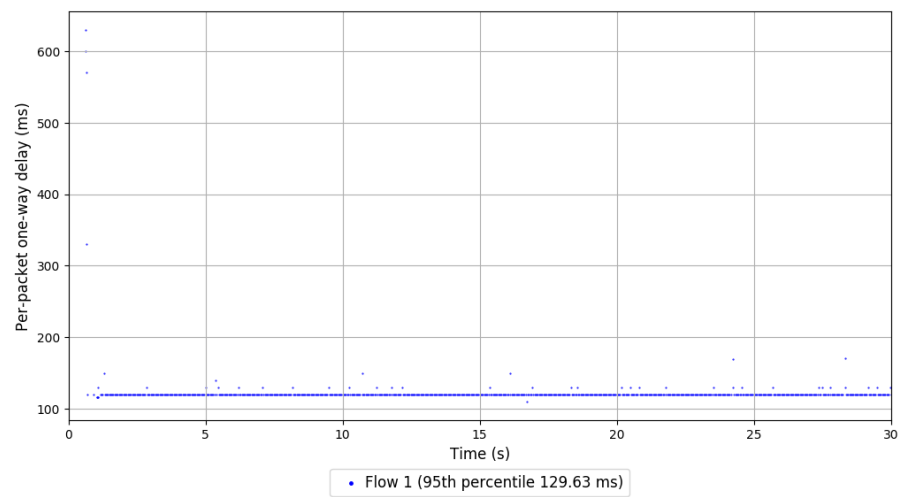
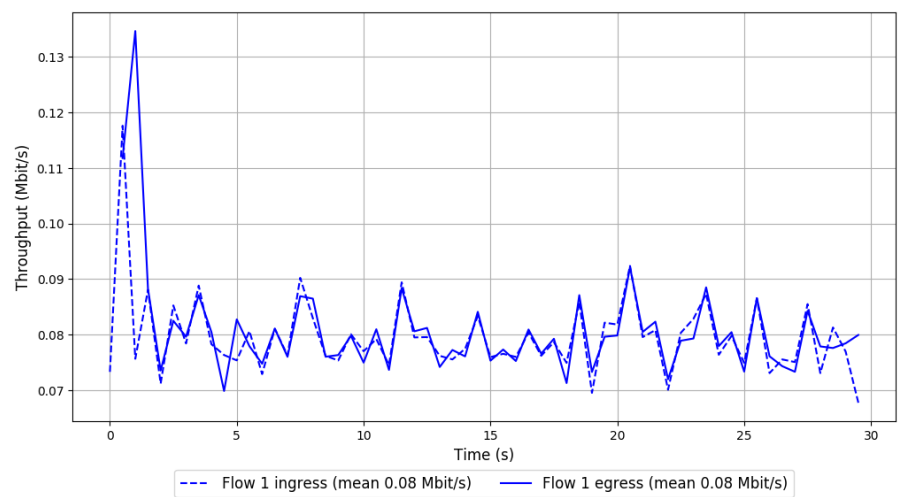


```
Run 1: Statistics of SCReAM

Start at: 2018-01-15 23:33:21
End at: 2018-01-15 23:33:51
Local clock offset: 1.378 ms
Remote clock offset: 1.384 ms

# Below is generated by plot.py at 2018-01-16 00:20:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 129.629 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 129.629 ms
Loss rate: 0.13%
```

Run 1: Report of SReAM — Data Link

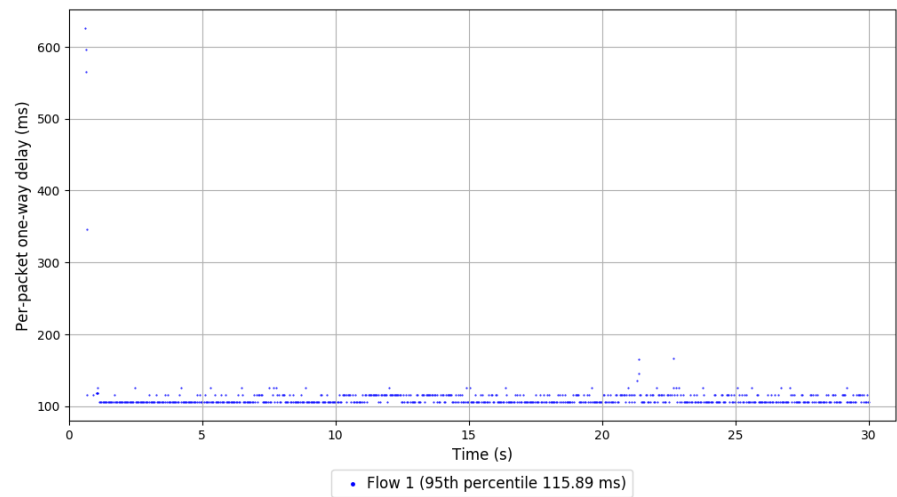
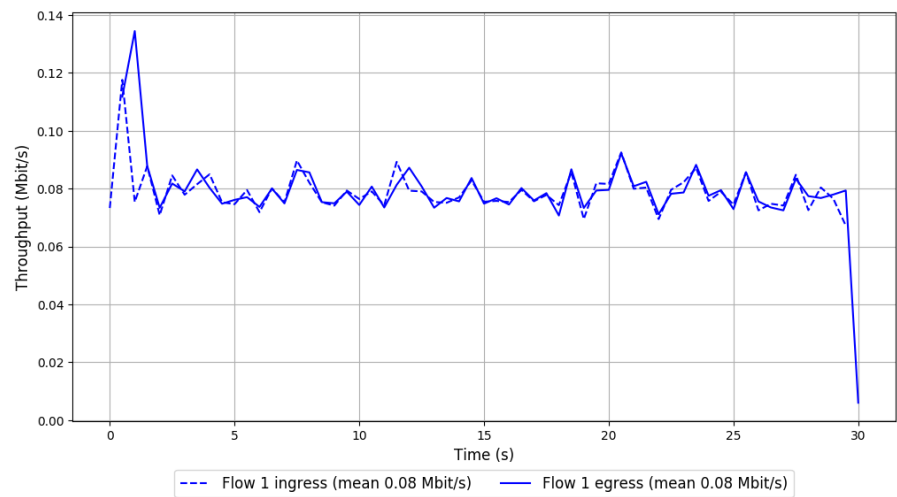


Run 2: Statistics of SCReAM

Start at: 2018-01-15 23:51:05
End at: 2018-01-15 23:51:35
Local clock offset: 2.267 ms
Remote clock offset: -4.275 ms

Below is generated by plot.py at 2018-01-16 00:20:58
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 115.889 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 115.889 ms
Loss rate: 0.00%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2018-01-16 00:08:45

End at: 2018-01-16 00:09:16

Local clock offset: 2.032 ms

Remote clock offset: 0.461 ms

Below is generated by plot.py at 2018-01-16 00:20:58

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.08 Mbit/s

95th percentile per-packet one-way delay: 121.014 ms

Loss rate: 0.13%

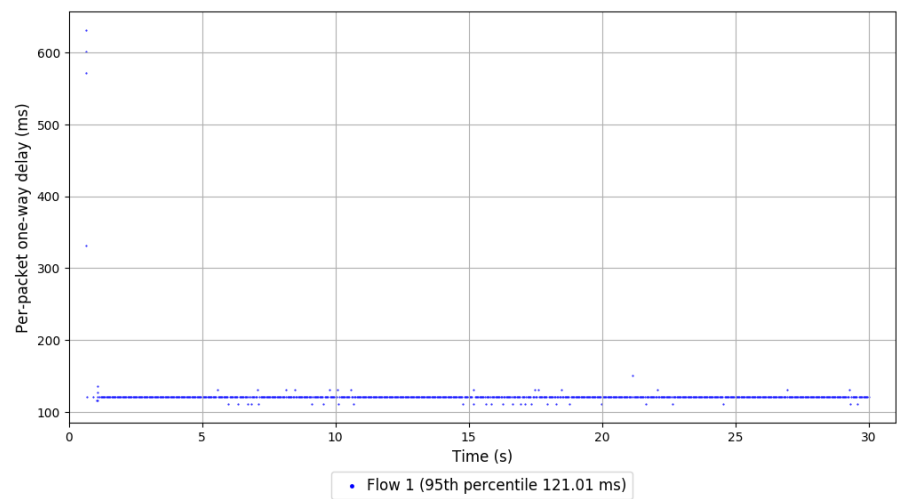
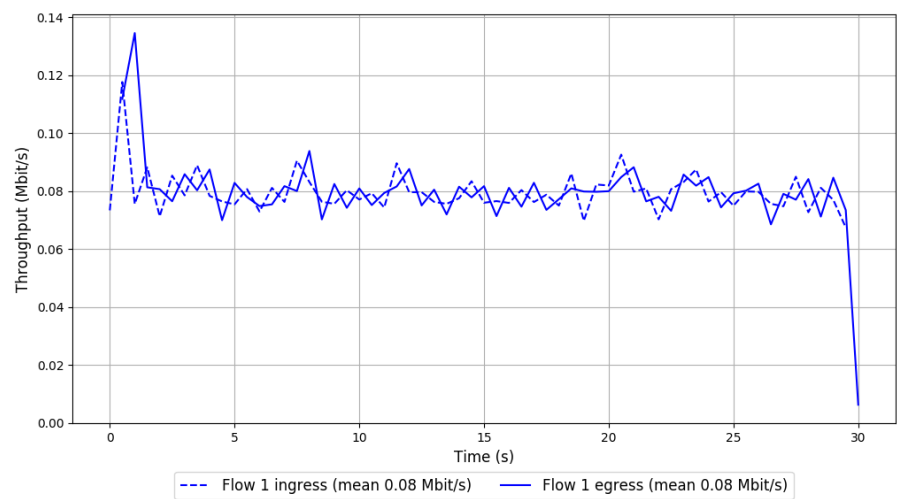
-- Flow 1:

Average throughput: 0.08 Mbit/s

95th percentile per-packet one-way delay: 121.014 ms

Loss rate: 0.13%

Run 3: Report of SReAM — Data Link

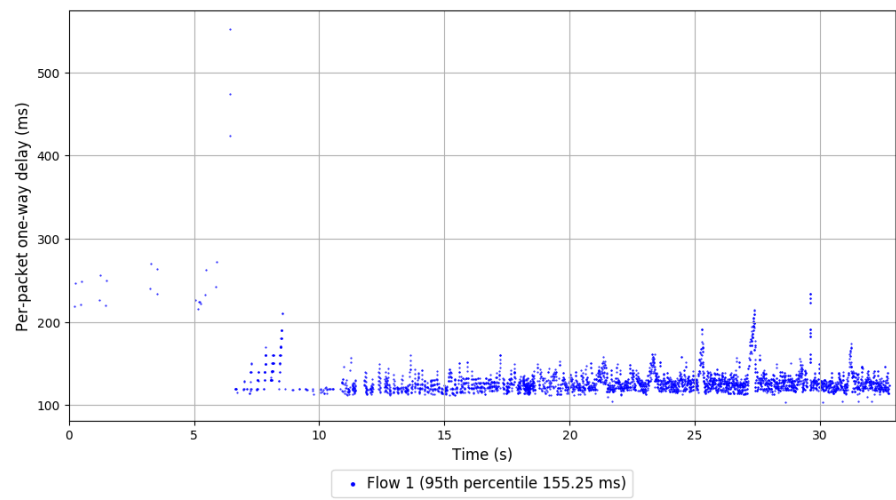
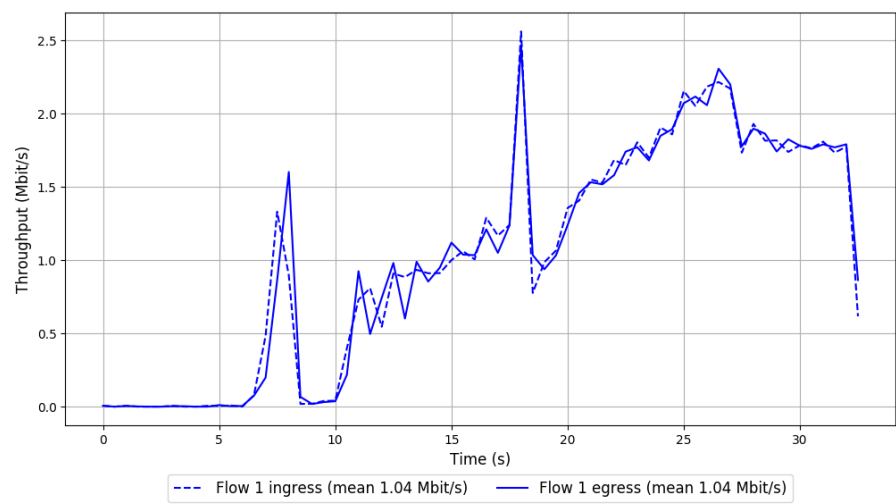


```
Run 1: Statistics of WebRTC media

Start at: 2018-01-15 23:44:01
End at: 2018-01-15 23:44:31
Local clock offset: 1.83 ms
Remote clock offset: -3.331 ms

# Below is generated by plot.py at 2018-01-16 00:20:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 155.249 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 155.249 ms
Loss rate: 0.22%
```

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-01-16 00:01:39

End at: 2018-01-16 00:02:09

Local clock offset: 2.175 ms

Remote clock offset: 2.165 ms

Below is generated by plot.py at 2018-01-16 00:21:00

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.78 Mbit/s

95th percentile per-packet one-way delay: 163.565 ms

Loss rate: 0.20%

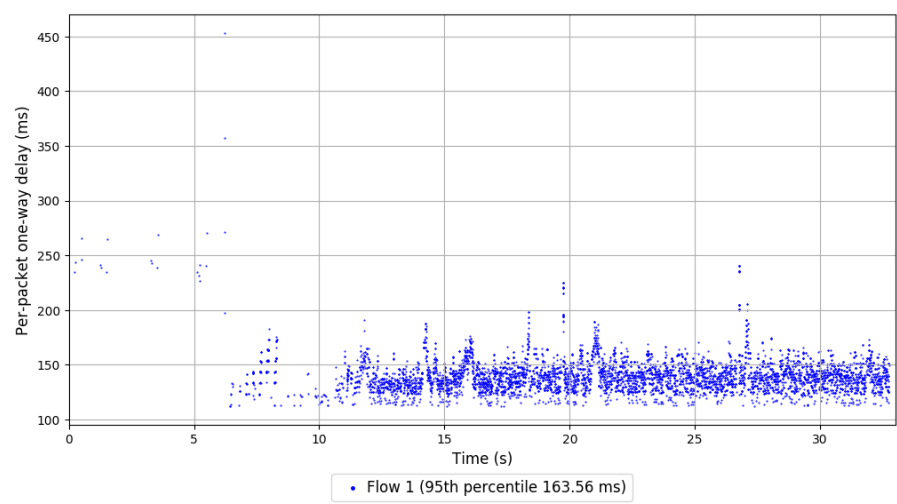
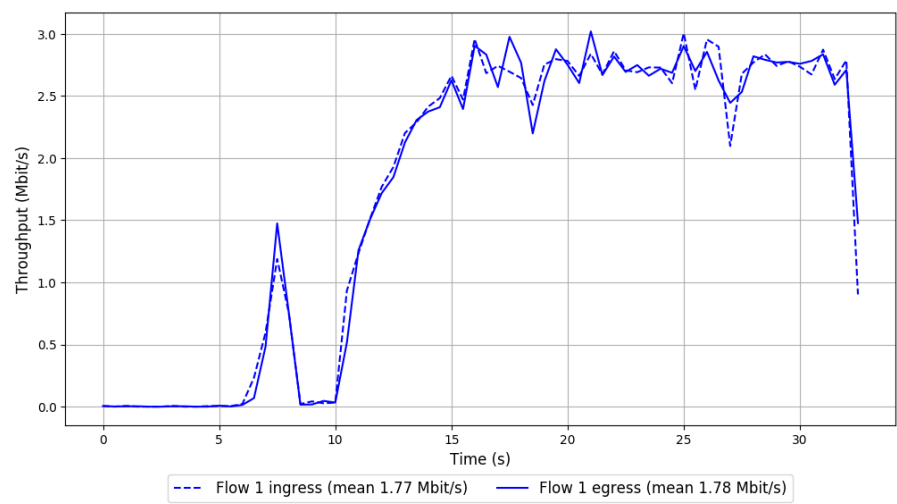
-- Flow 1:

Average throughput: 1.78 Mbit/s

95th percentile per-packet one-way delay: 163.565 ms

Loss rate: 0.20%

Run 2: Report of WebRTC media — Data Link

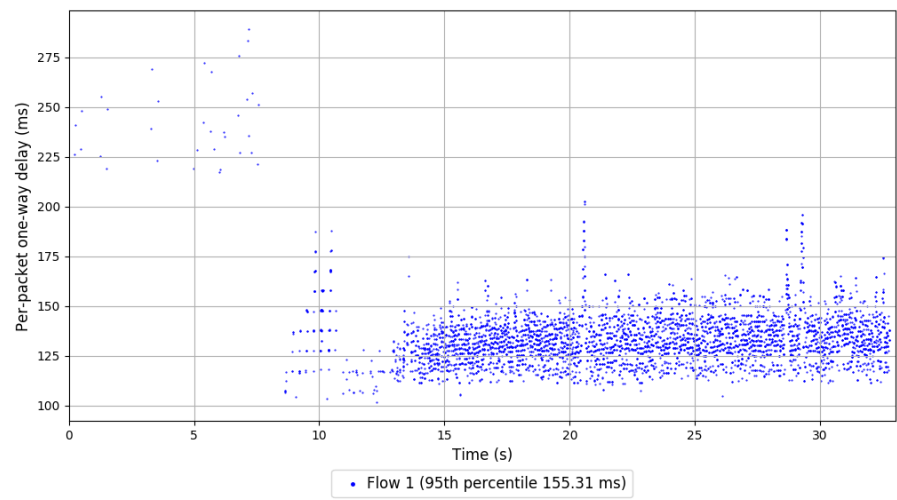
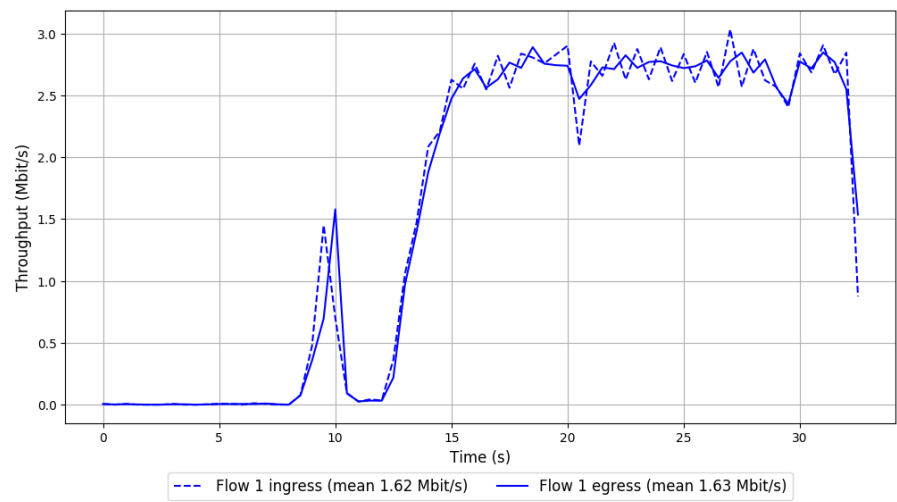


Run 3: Statistics of WebRTC media

Start at: 2018-01-16 00:19:20
End at: 2018-01-16 00:19:50
Local clock offset: 1.88 ms
Remote clock offset: -3.375 ms

Below is generated by plot.py at 2018-01-16 00:21:01
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.63 Mbit/s
95th percentile per-packet one-way delay: 155.314 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 1.63 Mbit/s
95th percentile per-packet one-way delay: 155.314 ms
Loss rate: 0.25%

Run 3: Report of WebRTC media — Data Link

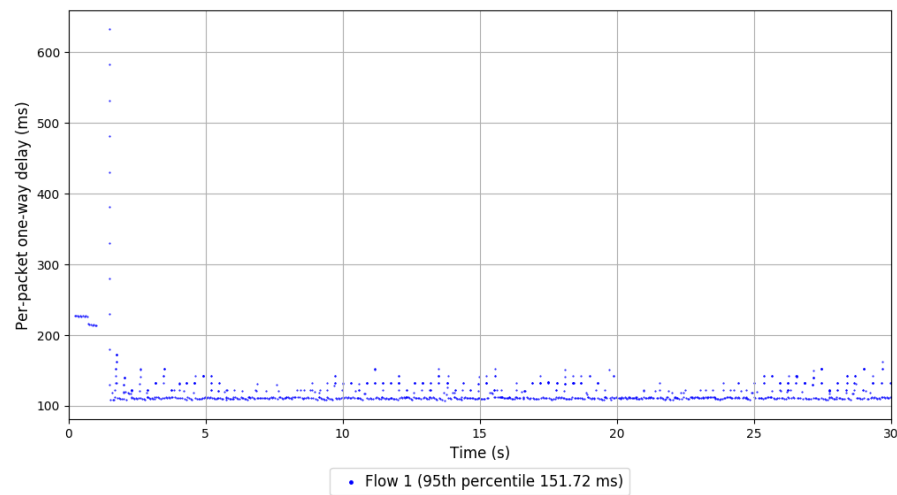
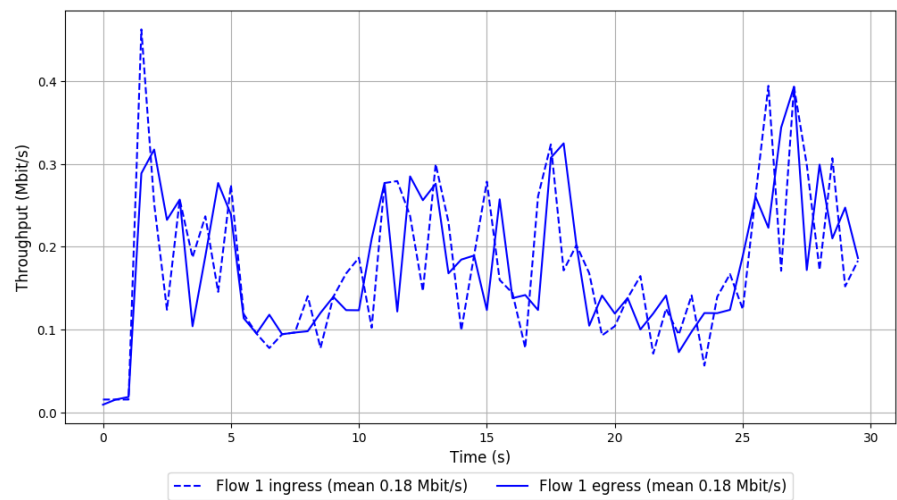


Run 1: Statistics of Sprout

Start at: 2018-01-15 23:34:31
End at: 2018-01-15 23:35:01
Local clock offset: 1.39 ms
Remote clock offset: -3.475 ms

Below is generated by plot.py at 2018-01-16 00:21:01
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 151.725 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 151.725 ms
Loss rate: 0.02%

Run 1: Report of Sprout — Data Link

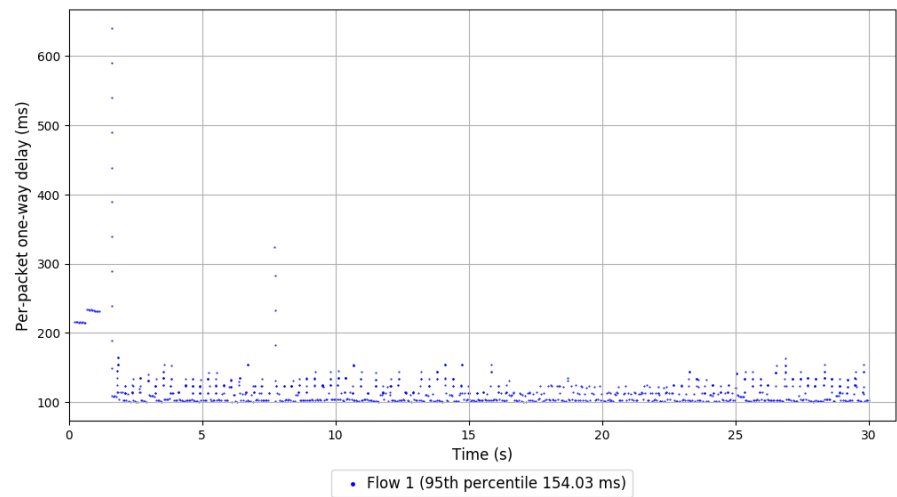
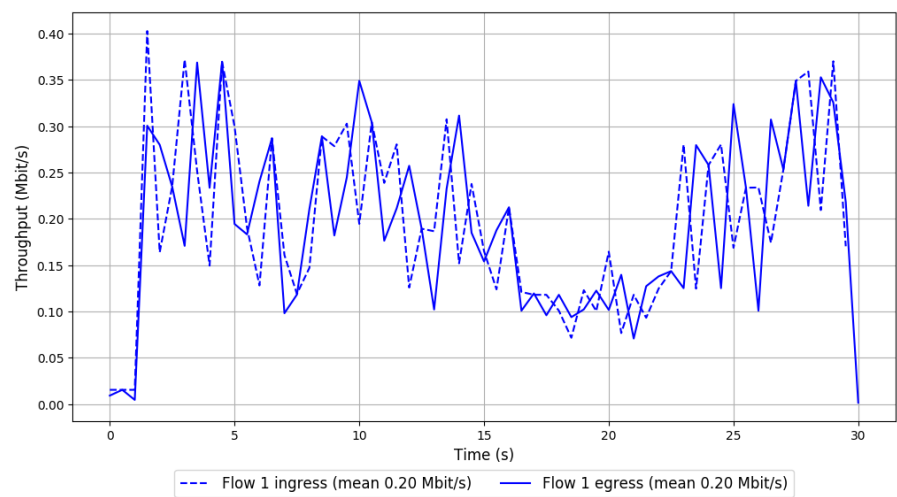


Run 2: Statistics of Sprout

Start at: 2018-01-15 23:52:15
End at: 2018-01-15 23:52:45
Local clock offset: 2.314 ms
Remote clock offset: -4.223 ms

Below is generated by plot.py at 2018-01-16 00:21:01
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 154.025 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 154.025 ms
Loss rate: 0.00%

Run 2: Report of Sprout — Data Link

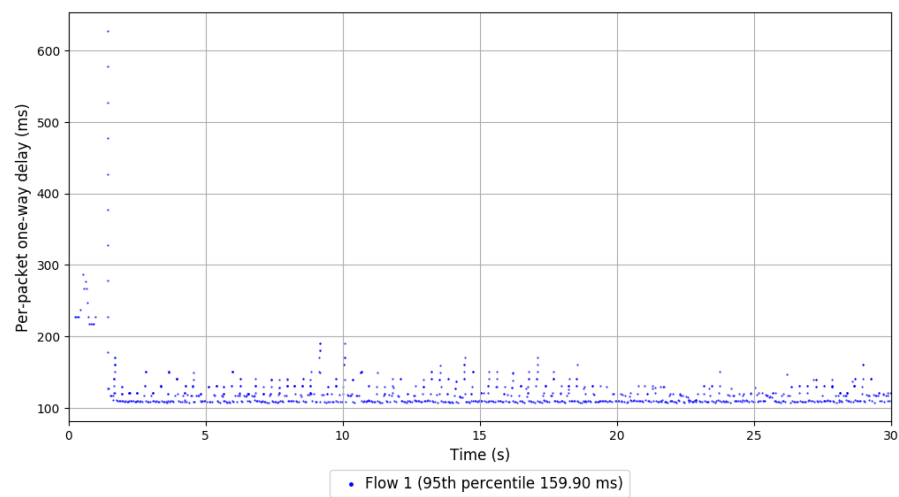
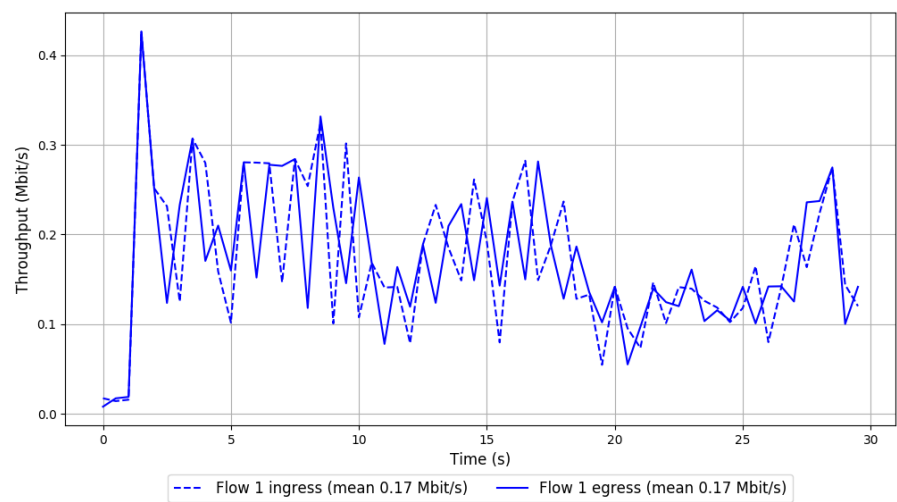


Run 3: Statistics of Sprout

Start at: 2018-01-16 00:09:56
End at: 2018-01-16 00:10:26
Local clock offset: 1.998 ms
Remote clock offset: -3.542 ms

Below is generated by plot.py at 2018-01-16 00:21:01
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 159.896 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 159.896 ms
Loss rate: 0.24%

Run 3: Report of Sprout — Data Link

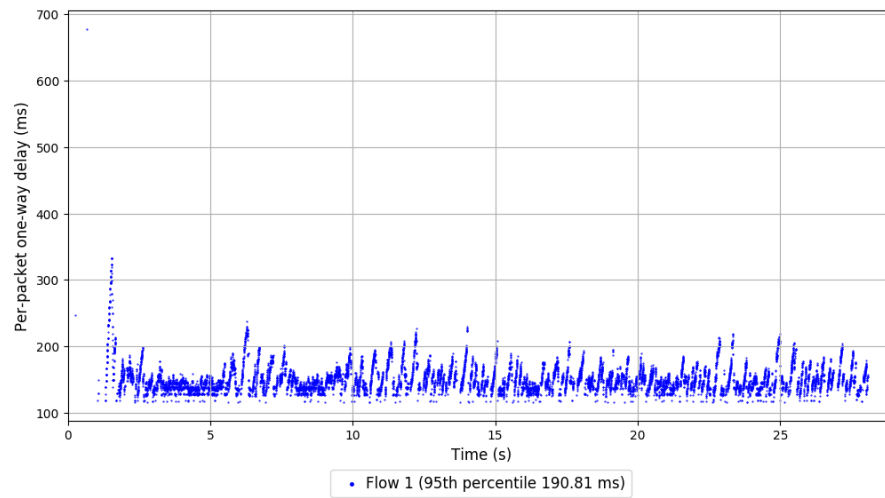
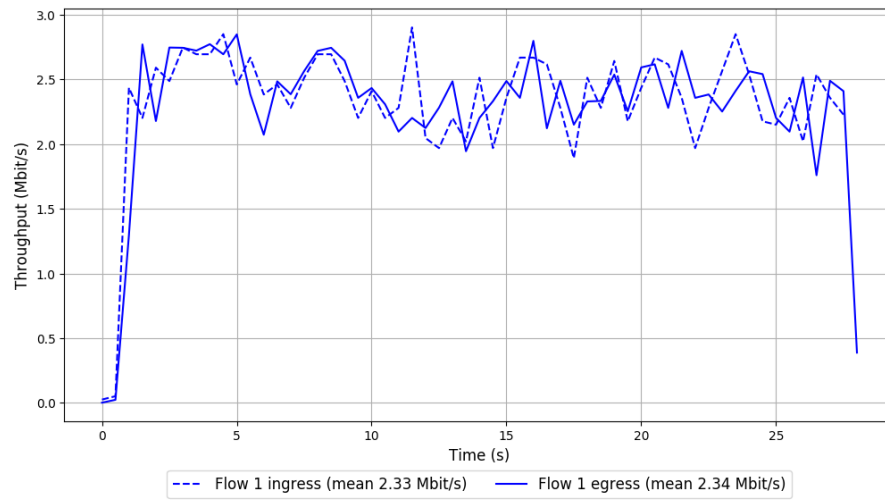


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-01-15 23:31:00
End at: 2018-01-15 23:31:30
Local clock offset: 1.35 ms
Remote clock offset: 2.193 ms

# Below is generated by plot.py at 2018-01-16 00:21:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.34 Mbit/s
95th percentile per-packet one-way delay: 190.805 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 2.34 Mbit/s
95th percentile per-packet one-way delay: 190.805 ms
Loss rate: 0.26%
```

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-01-15 23:48:43

End at: 2018-01-15 23:49:13

Local clock offset: 2.052 ms

Remote clock offset: 0.536 ms

Below is generated by plot.py at 2018-01-16 00:21:07

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.40 Mbit/s

95th percentile per-packet one-way delay: 180.051 ms

Loss rate: 0.36%

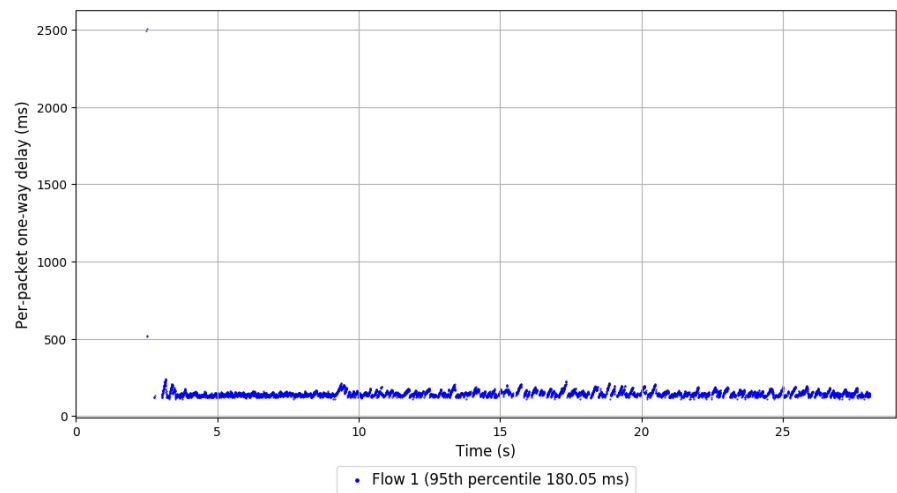
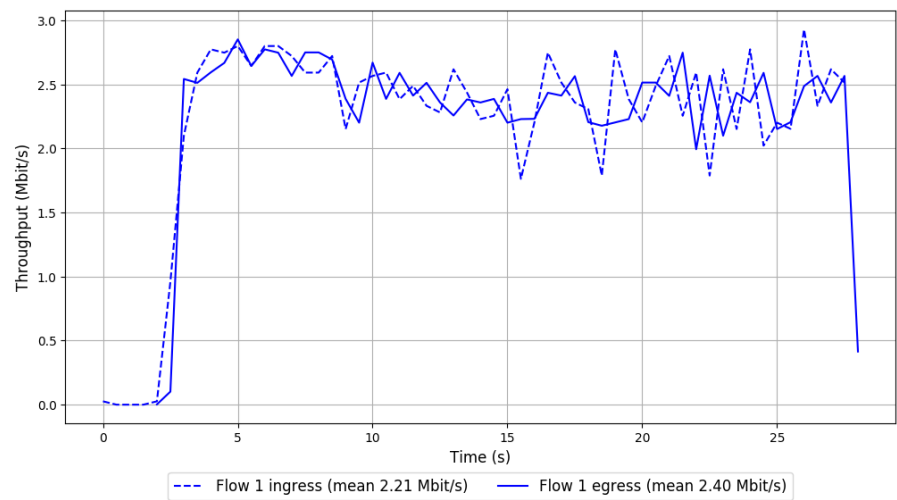
-- Flow 1:

Average throughput: 2.40 Mbit/s

95th percentile per-packet one-way delay: 180.051 ms

Loss rate: 0.36%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-01-16 00:06:22

End at: 2018-01-16 00:06:52

Local clock offset: 2.111 ms

Remote clock offset: -3.562 ms

Below is generated by plot.py at 2018-01-16 00:21:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.39 Mbit/s

95th percentile per-packet one-way delay: 160.664 ms

Loss rate: 0.04%

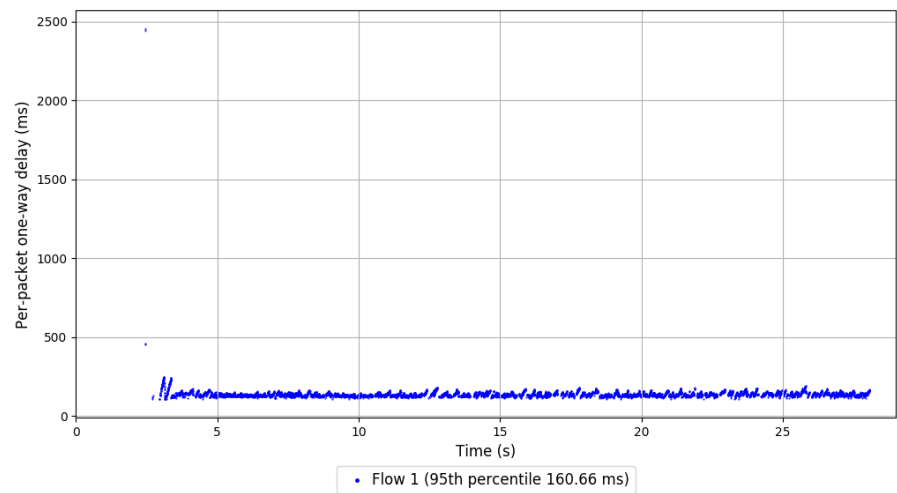
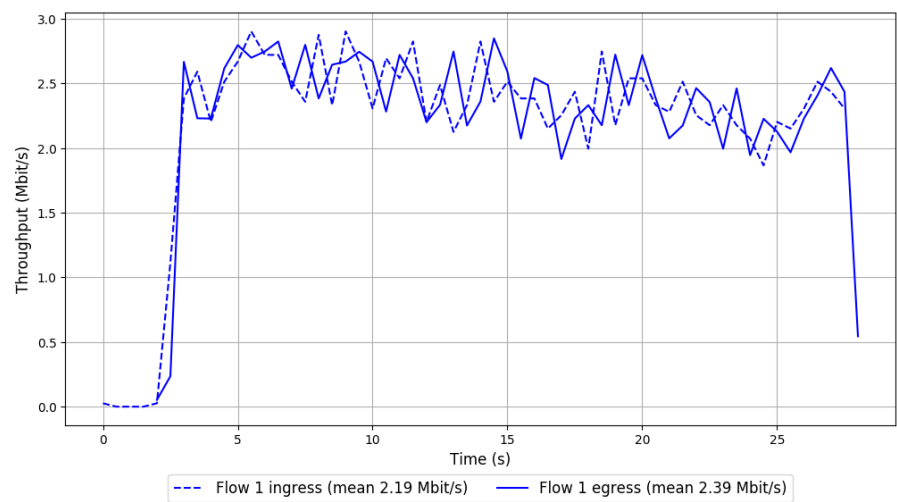
-- Flow 1:

Average throughput: 2.39 Mbit/s

95th percentile per-packet one-way delay: 160.664 ms

Loss rate: 0.04%

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

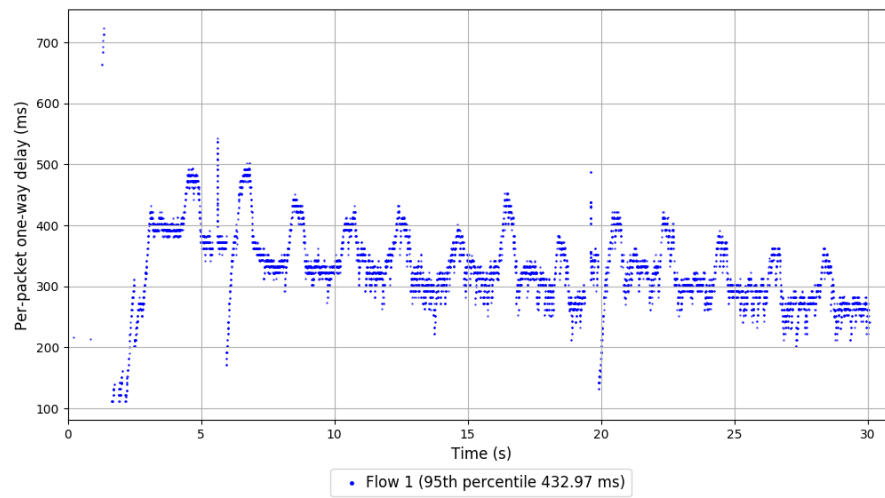
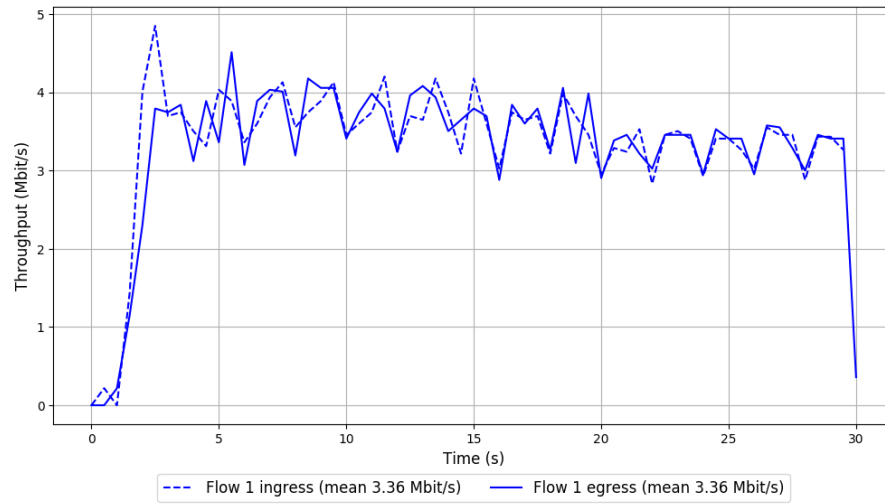


Run 1: Statistics of TCP Vegas

Start at: 2018-01-15 23:42:45
End at: 2018-01-15 23:43:15
Local clock offset: 1.694 ms
Remote clock offset: -4.213 ms

Below is generated by plot.py at 2018-01-16 00:21:09
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.36 Mbit/s
95th percentile per-packet one-way delay: 432.971 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 3.36 Mbit/s
95th percentile per-packet one-way delay: 432.971 ms
Loss rate: 0.67%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-01-16 00:00:29

End at: 2018-01-16 00:00:59

Local clock offset: 2.139 ms

Remote clock offset: 1.221 ms

Below is generated by plot.py at 2018-01-16 00:21:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.04 Mbit/s

95th percentile per-packet one-way delay: 974.259 ms

Loss rate: 1.93%

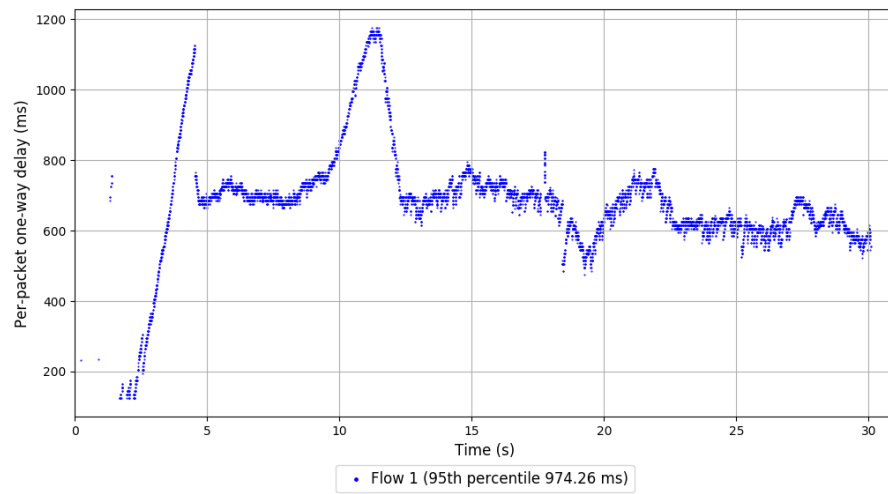
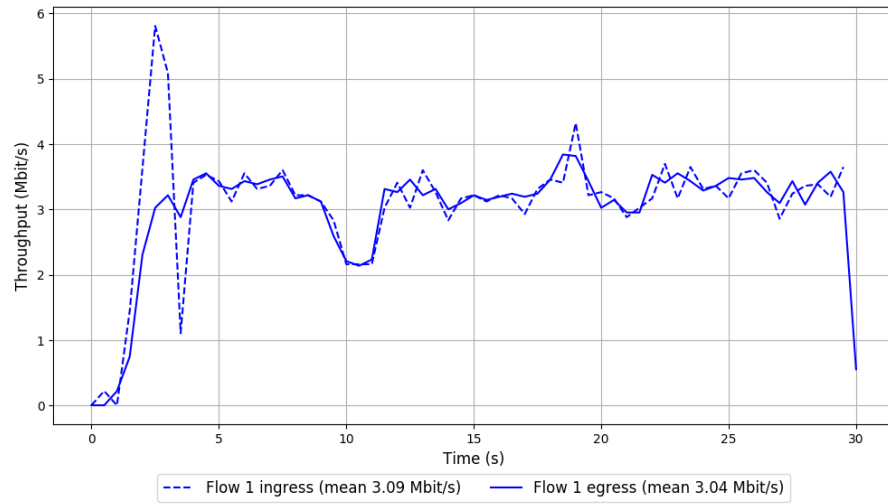
-- Flow 1:

Average throughput: 3.04 Mbit/s

95th percentile per-packet one-way delay: 974.259 ms

Loss rate: 1.93%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

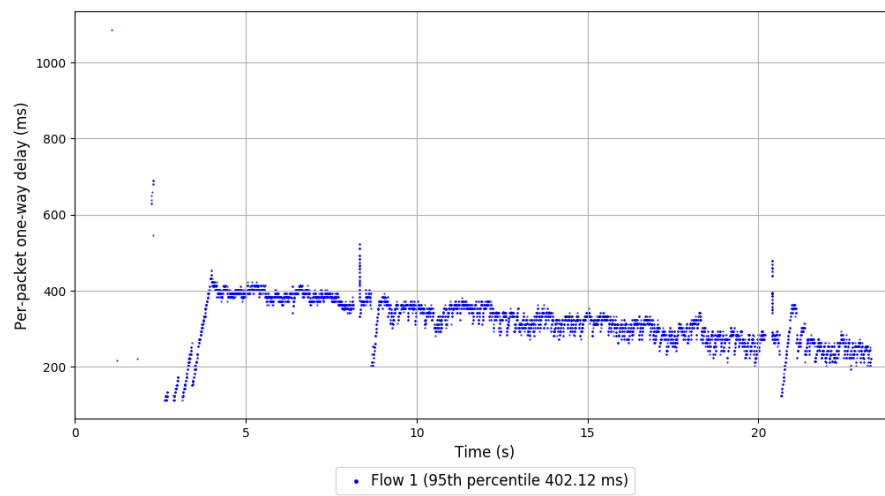
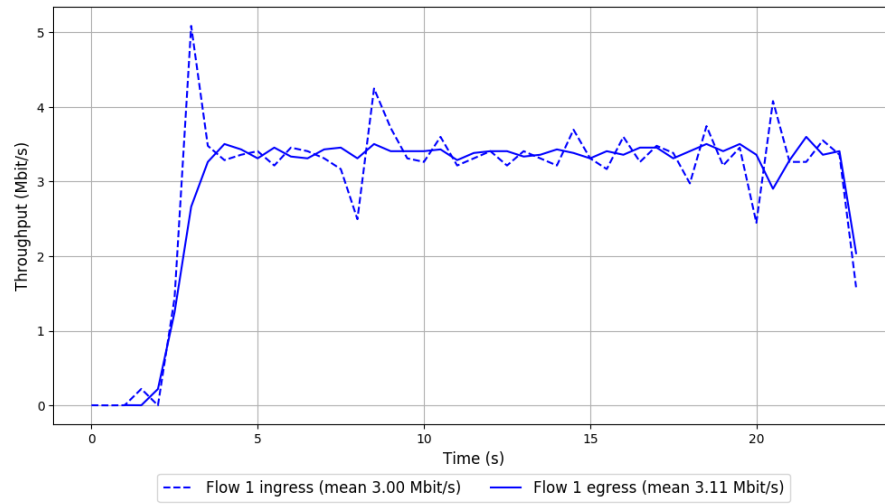
Start at: 2018-01-16 00:18:09

End at: 2018-01-16 00:18:39

Local clock offset: 1.899 ms

Remote clock offset: -4.248 ms

Run 3: Report of TCP Vegas — Data Link

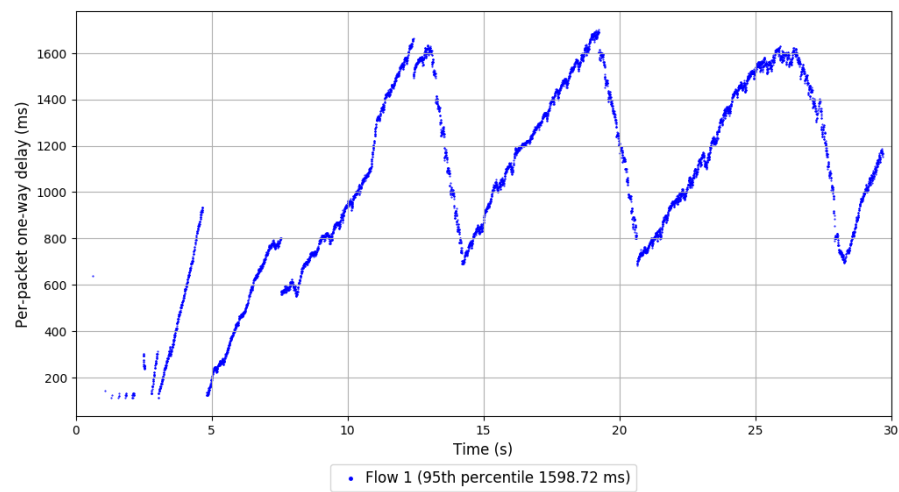
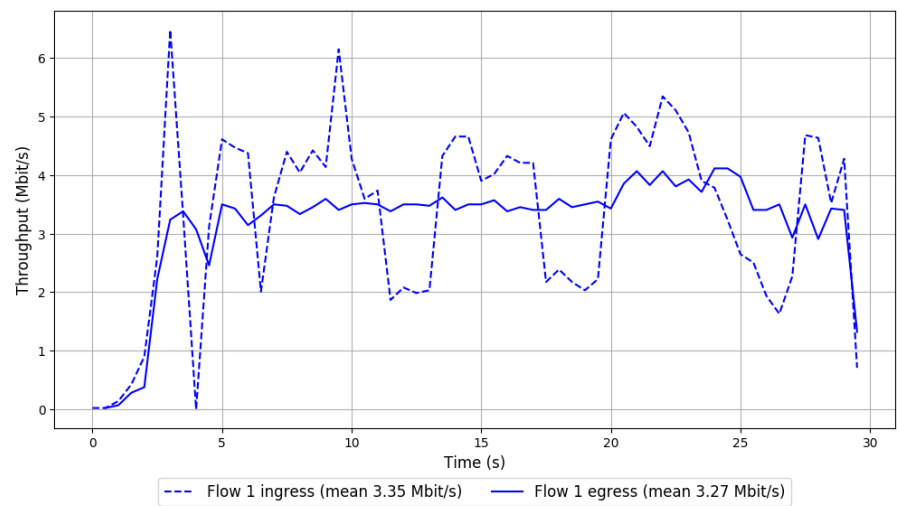


Run 1: Statistics of Verus

Start at: 2018-01-15 23:38:03
End at: 2018-01-15 23:38:33
Local clock offset: 1.532 ms
Remote clock offset: -4.209 ms

Below is generated by plot.py at 2018-01-16 00:21:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.27 Mbit/s
95th percentile per-packet one-way delay: 1598.716 ms
Loss rate: 4.23%
-- Flow 1:
Average throughput: 3.27 Mbit/s
95th percentile per-packet one-way delay: 1598.716 ms
Loss rate: 4.23%

Run 1: Report of Verus — Data Link

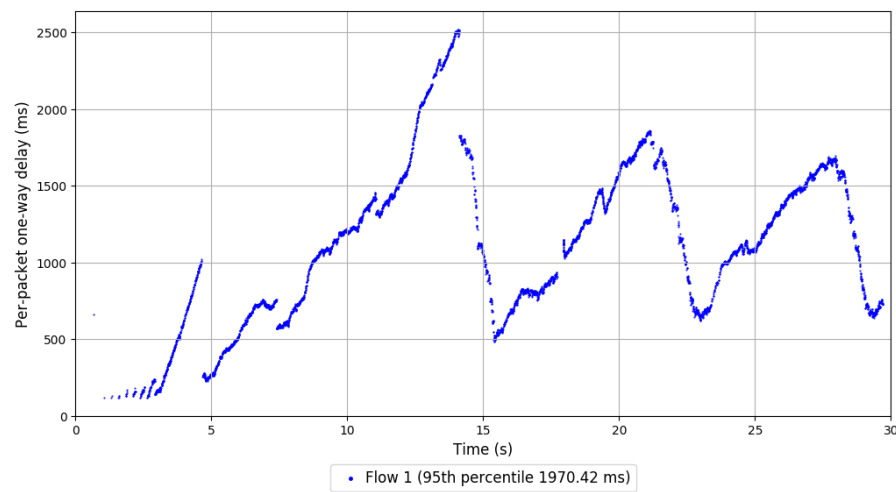
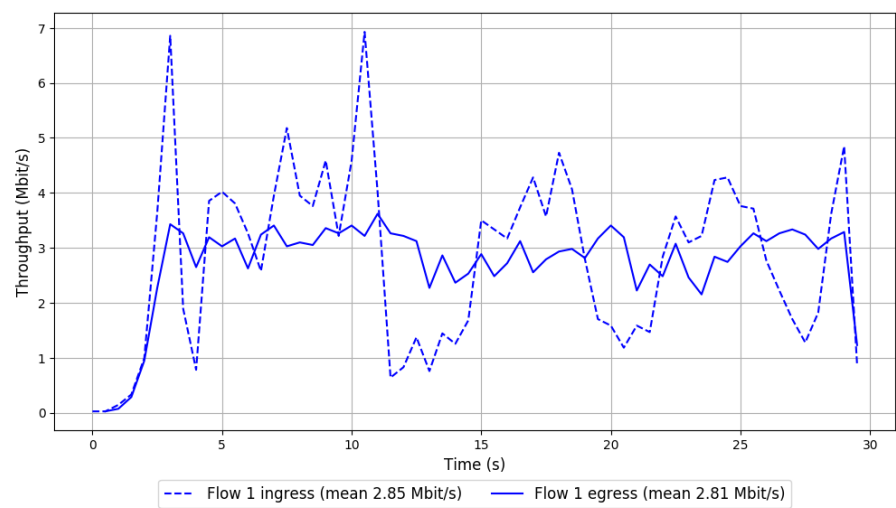


Run 2: Statistics of Verus

Start at: 2018-01-15 23:55:46
End at: 2018-01-15 23:56:16
Local clock offset: 2.223 ms
Remote clock offset: -3.476 ms

Below is generated by plot.py at 2018-01-16 00:21:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.81 Mbit/s
95th percentile per-packet one-way delay: 1970.420 ms
Loss rate: 3.56%
-- Flow 1:
Average throughput: 2.81 Mbit/s
95th percentile per-packet one-way delay: 1970.420 ms
Loss rate: 3.56%

Run 2: Report of Verus — Data Link

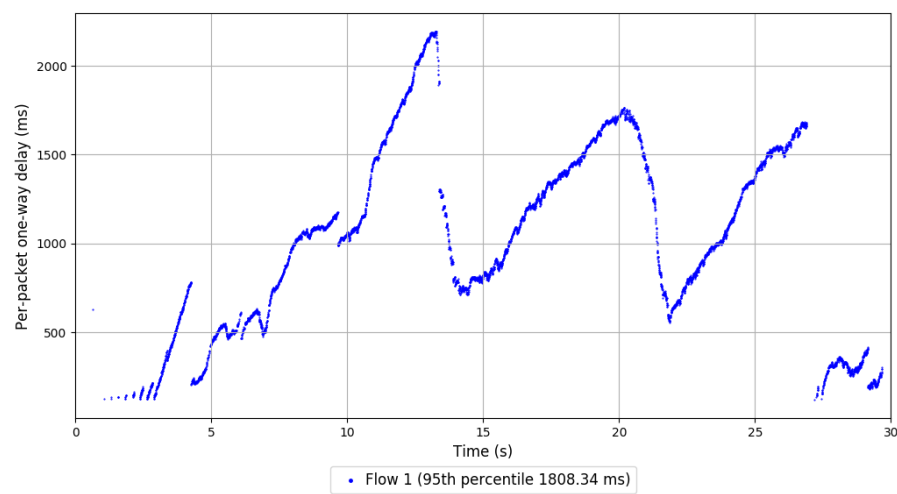
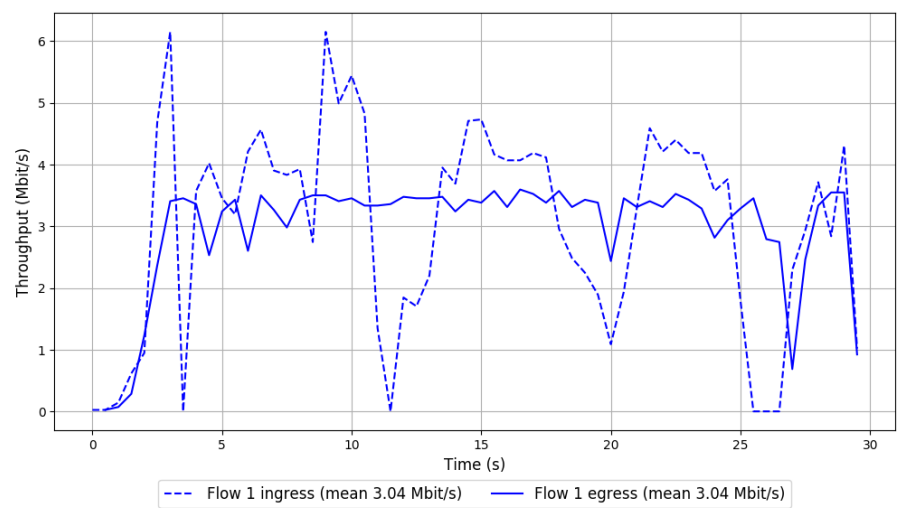


Run 3: Statistics of Verus

Start at: 2018-01-16 00:13:27
End at: 2018-01-16 00:13:57
Local clock offset: 1.912 ms
Remote clock offset: -3.497 ms

Below is generated by plot.py at 2018-01-16 00:21:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.04 Mbit/s
95th percentile per-packet one-way delay: 1808.335 ms
Loss rate: 1.66%
-- Flow 1:
Average throughput: 3.04 Mbit/s
95th percentile per-packet one-way delay: 1808.335 ms
Loss rate: 1.66%

Run 3: Report of Verus — Data Link



Run 1: Statistics of Copa

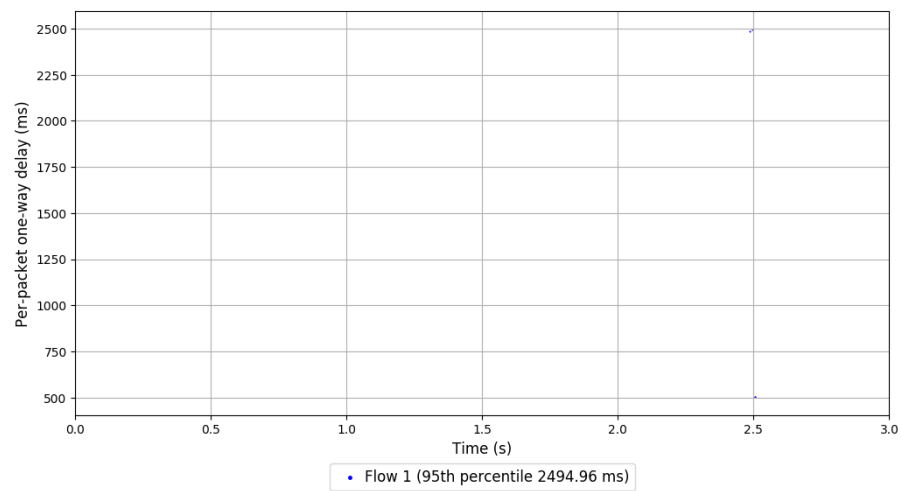
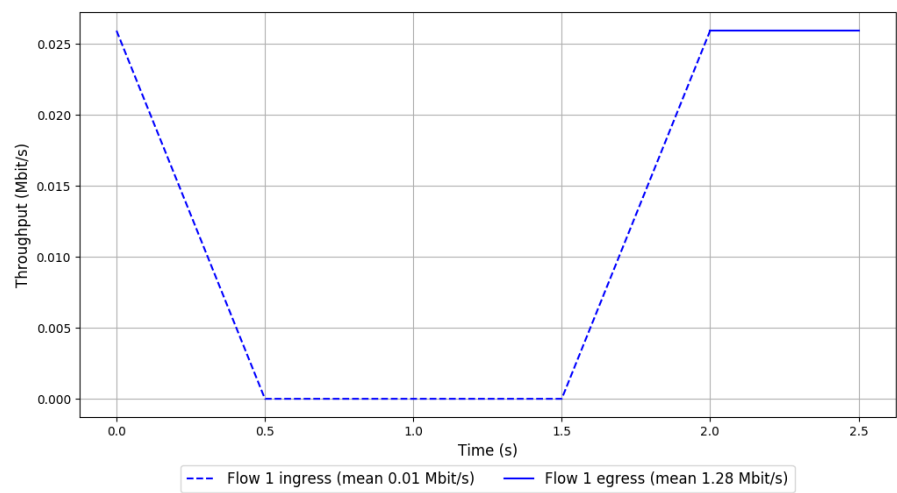
Start at: 2018-01-15 23:29:47

End at: 2018-01-15 23:30:18

Local clock offset: 1.342 ms

Remote clock offset: 1.426 ms

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

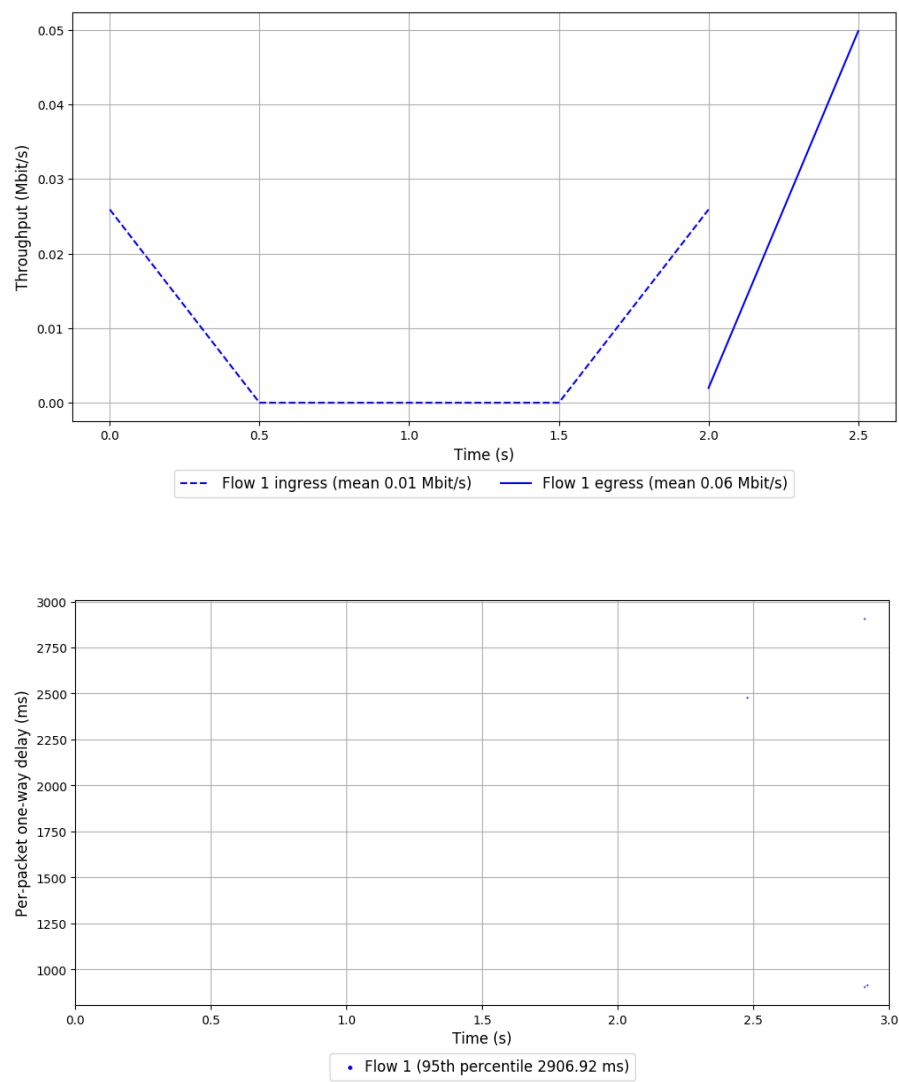
Start at: 2018-01-15 23:47:33

End at: 2018-01-15 23:48:03

Local clock offset: 2.051 ms

Remote clock offset: 0.63 ms

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

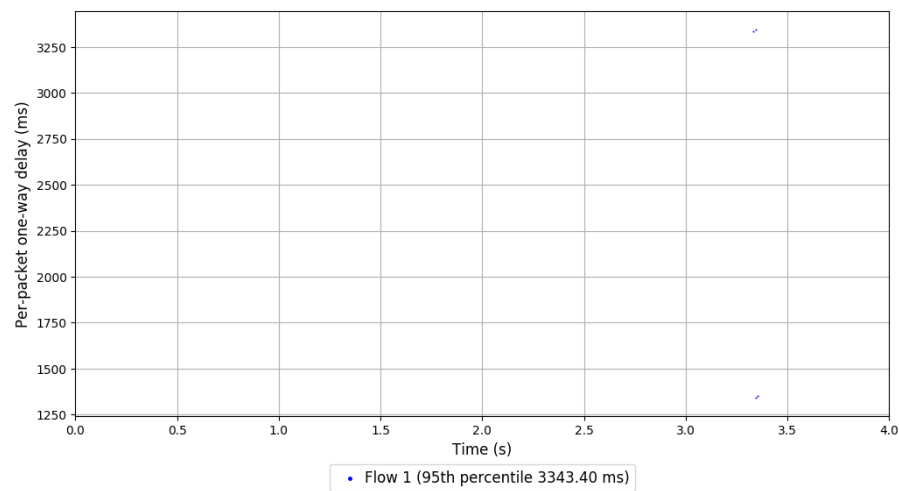
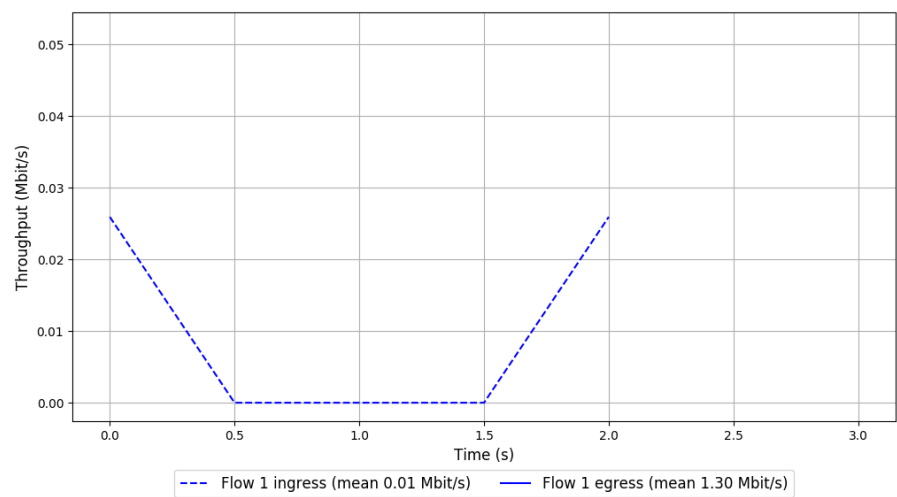
Start at: 2018-01-16 00:05:12

End at: 2018-01-16 00:05:42

Local clock offset: 2.206 ms

Remote clock offset: -3.566 ms

Run 3: Report of Copa — Data Link



Run 1: Statistics of FillP

Start at: 2018-01-15 23:27:26

End at: 2018-01-15 23:27:56

Local clock offset: 1.367 ms

Remote clock offset: -4.304 ms

Below is generated by plot.py at 2018-01-16 00:21:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.16 Mbit/s

95th percentile per-packet one-way delay: 4688.216 ms

Loss rate: 94.04%

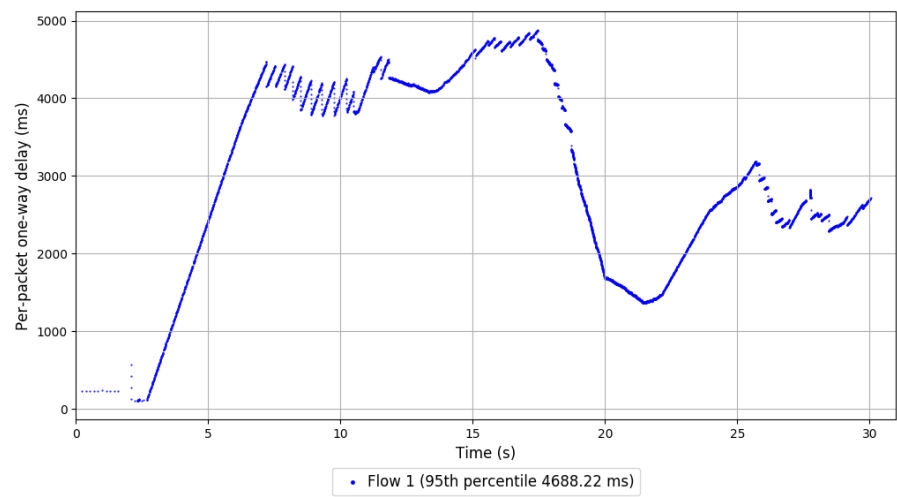
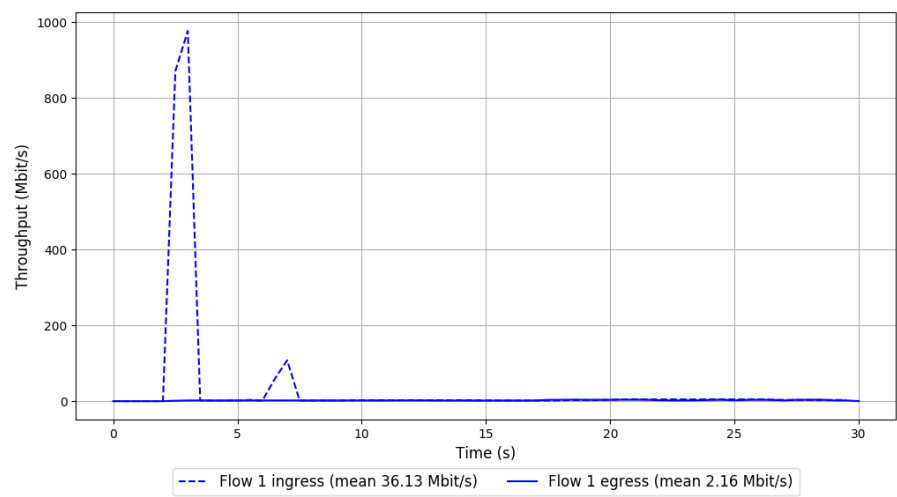
-- Flow 1:

Average throughput: 2.16 Mbit/s

95th percentile per-packet one-way delay: 4688.216 ms

Loss rate: 94.04%

Run 1: Report of FillP — Data Link

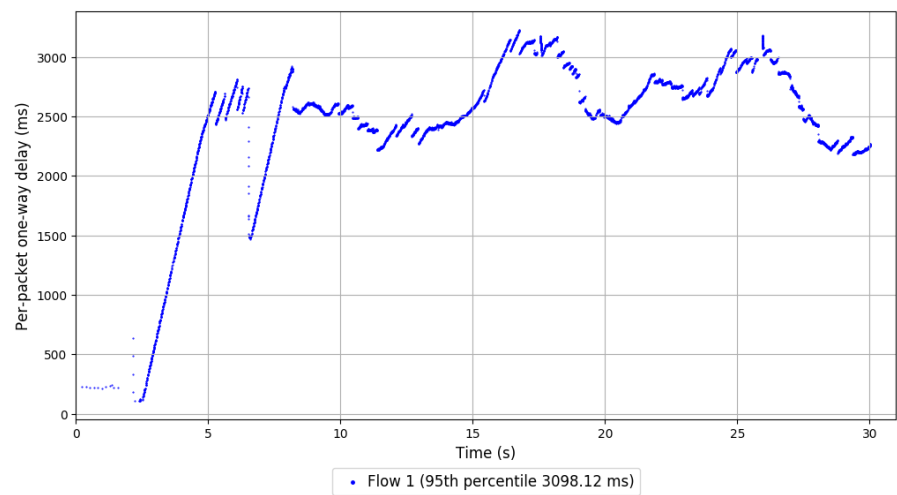
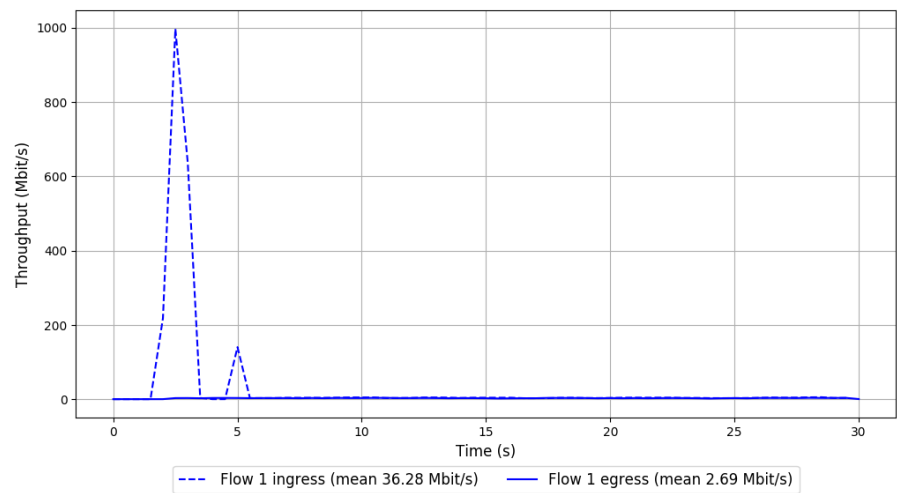


Run 2: Statistics of FillP

Start at: 2018-01-15 23:45:11
End at: 2018-01-15 23:45:41
Local clock offset: 1.907 ms
Remote clock offset: -3.299 ms

Below is generated by plot.py at 2018-01-16 00:21:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.69 Mbit/s
95th percentile per-packet one-way delay: 3098.118 ms
Loss rate: 92.62%
-- Flow 1:
Average throughput: 2.69 Mbit/s
95th percentile per-packet one-way delay: 3098.118 ms
Loss rate: 92.62%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-01-16 00:02:50

End at: 2018-01-16 00:03:20

Local clock offset: 2.198 ms

Remote clock offset: 0.459 ms

Below is generated by plot.py at 2018-01-16 00:21:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.75 Mbit/s

95th percentile per-packet one-way delay: 1917.152 ms

Loss rate: 93.48%

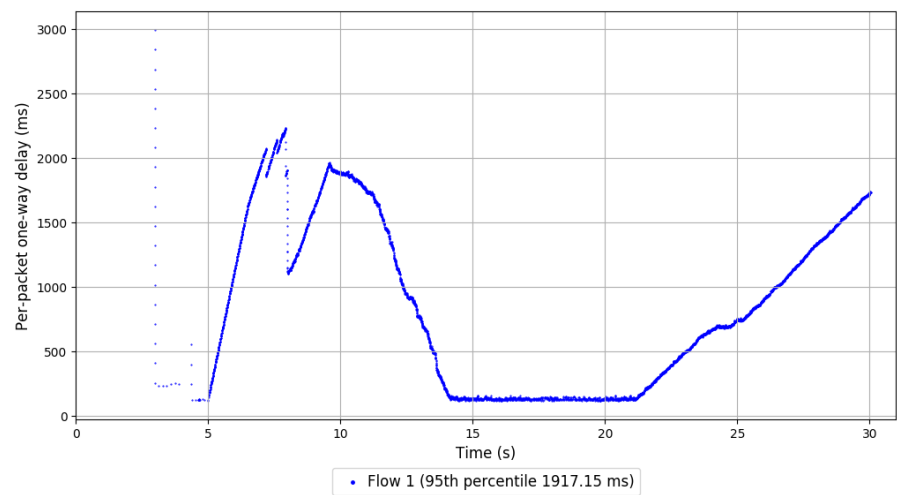
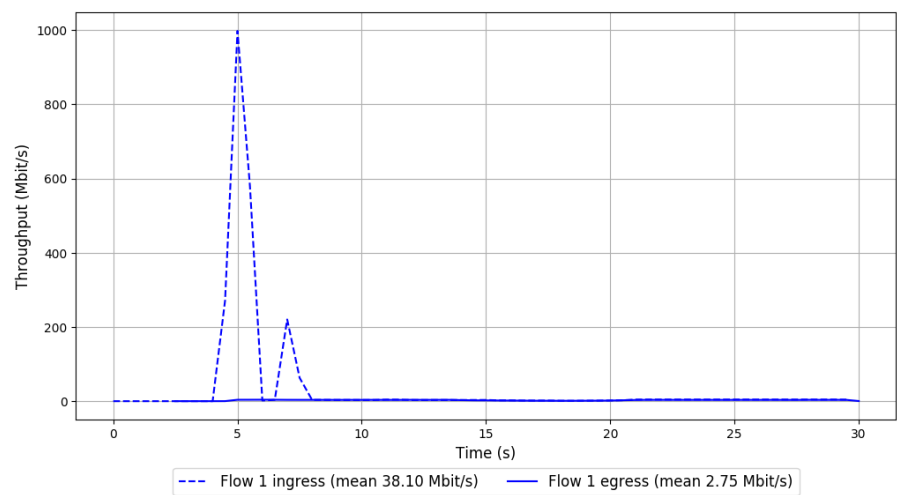
-- Flow 1:

Average throughput: 2.75 Mbit/s

95th percentile per-packet one-way delay: 1917.152 ms

Loss rate: 93.48%

Run 3: Report of FillP — Data Link

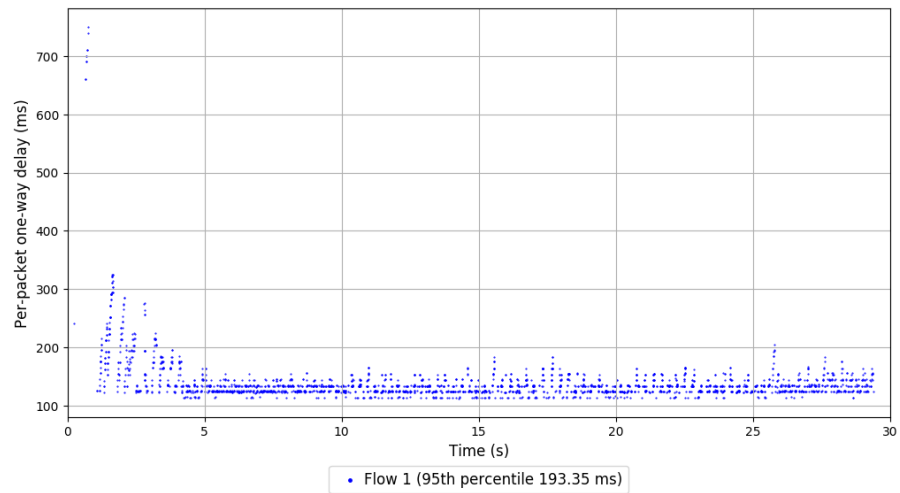
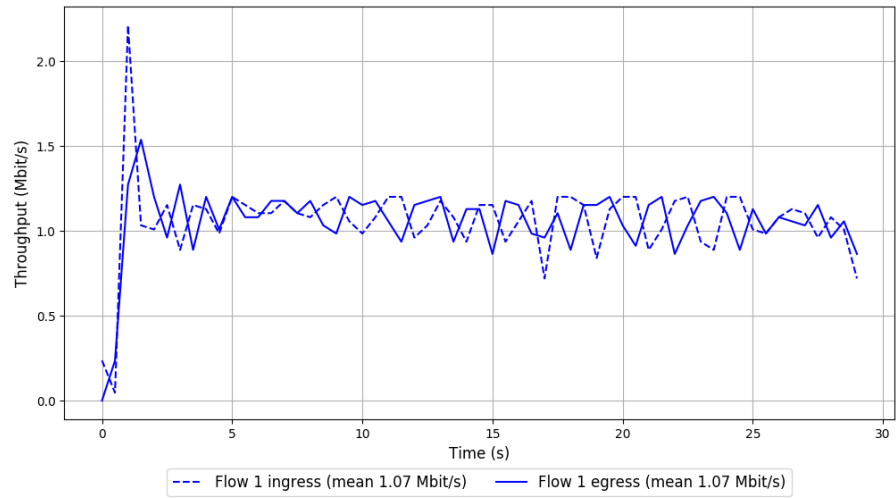


```
Run 1: Statistics of Indigo

Start at: 2018-01-15 23:28:37
End at: 2018-01-15 23:29:07
Local clock offset: 1.352 ms
Remote clock offset: 2.222 ms

# Below is generated by plot.py at 2018-01-16 00:21:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.07 Mbit/s
95th percentile per-packet one-way delay: 193.348 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 1.07 Mbit/s
95th percentile per-packet one-way delay: 193.348 ms
Loss rate: 0.27%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-01-15 23:46:23

End at: 2018-01-15 23:46:53

Local clock offset: 1.919 ms

Remote clock offset: -4.217 ms

Below is generated by plot.py at 2018-01-16 00:21:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.01 Mbit/s

95th percentile per-packet one-way delay: 220.155 ms

Loss rate: 0.00%

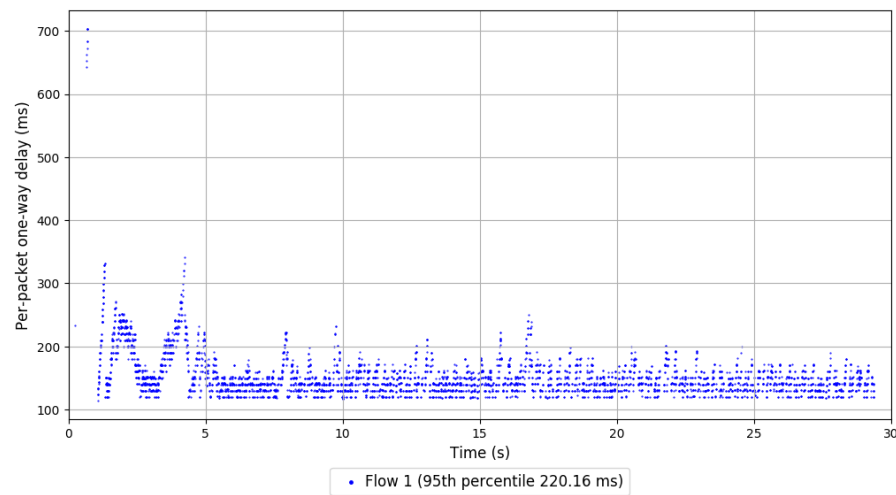
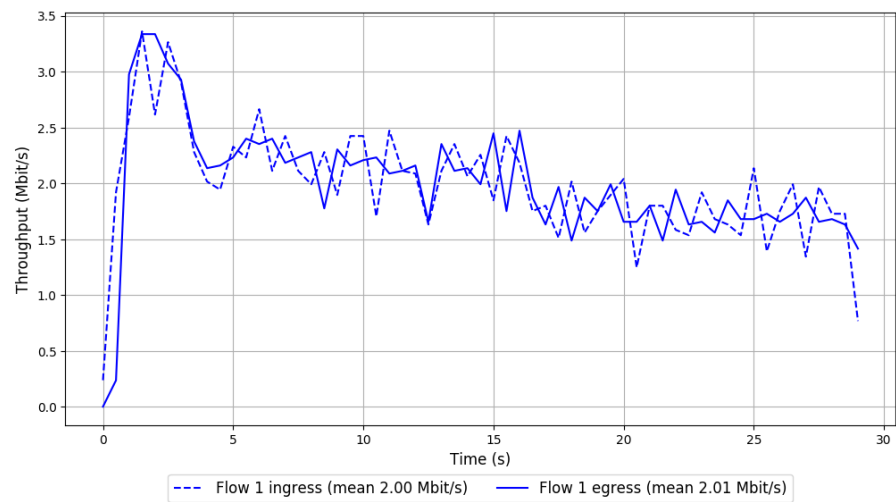
-- Flow 1:

Average throughput: 2.01 Mbit/s

95th percentile per-packet one-way delay: 220.155 ms

Loss rate: 0.00%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-01-16 00:04:01
End at: 2018-01-16 00:04:32
Local clock offset: 2.206 ms
Remote clock offset: -4.354 ms

Below is generated by plot.py at 2018-01-16 00:21:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 167.390 ms
Loss rate: 2.50%
-- Flow 1:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 167.390 ms
Loss rate: 2.50%

Run 3: Report of Indigo — Data Link

