

## Pantheon Report

Generated at 2017-11-30 06:54:52 (UTC).

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

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).

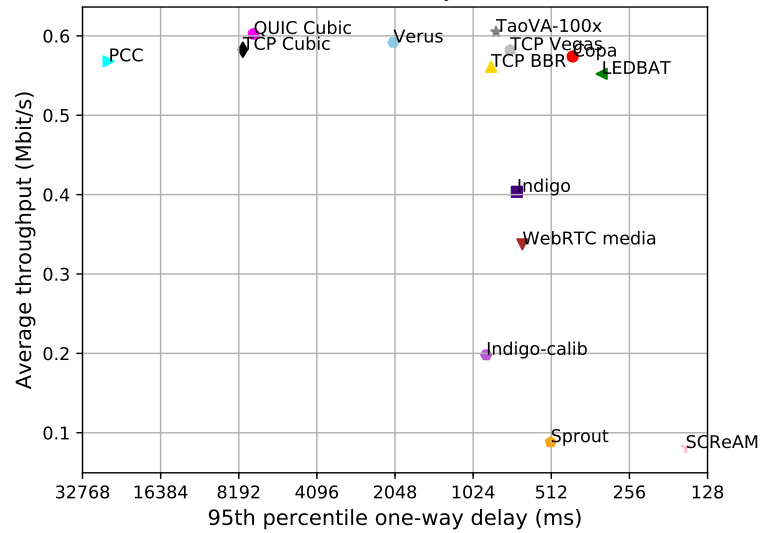
Tested BBR with qdisc of Fair Queuing (**fq**), and other schemes with the default Linux qdisc (**pfifo\_fast**).

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

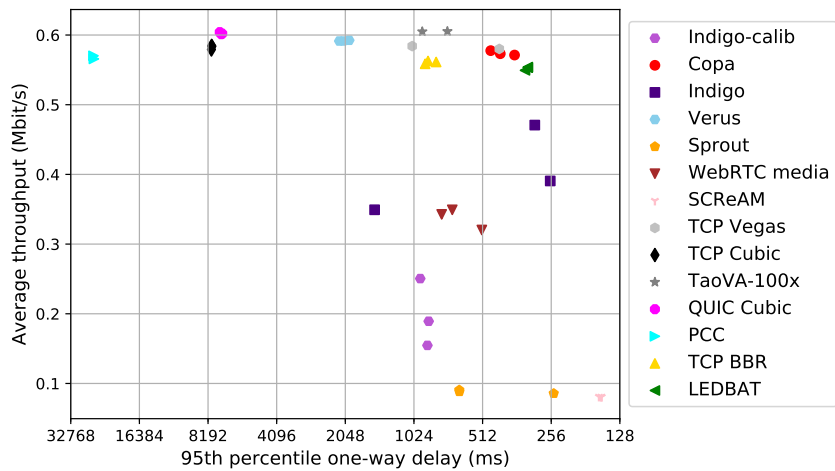
Git summary:

```
branch: indigos @ e3a57ad5ac5cfcaca0e3f983c8dd4cc3509e0262
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
  M datagrump/sender.cc
third_party/genericCC @ b5b7c38e8391001927dc41c6cfa2627d03dde737
third_party/indigo @ b19f3730105f9aa95452552af924e3719b03cc55
third_party/indigo-cellular @ aee99e8eb842cb053f8c9a80e28cd256a930bbc2
third_party/indigo-no-calib @ 7224f2202e8a044d8306fa0b983ad84360c53d89
third_party/indigo-no-cwnd @ 3e58442c04028a11d7b02456e137604633ba2d6c
third_party/indigo-no-delivery-rate @ 57caa40858b964906edff4876d5a7e5bfff666c5
third_party/indigo-no-queuing-delay @ 03455460fd1a8ffbdad86fab936fdca204b80db
third_party/indigo-no-send-rate @ b39dfa6b2c5f19cb7cd89626cb4f5bb81f9fecda
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
  M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ baf443516dea3eeddeccaf9b916cc313273ca4f4
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/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	0.56	873.62	2.40
TCP Cubic	3	0.58	7900.47	30.97
LEDBAT	3	0.55	327.45	1.35
PCC	2	0.57	25989.90	98.59
QUIC Cubic	3	0.60	7182.46	29.27
SCReAM	3	0.08	155.51	0.79
WebRTC media	3	0.34	661.74	2.06
Sprout	3	0.09	514.79	0.98
TaoVA-100x	2	0.60	835.81	6.22
TCP Vegas	2	0.58	737.36	1.78
Verus	3	0.59	2077.85	4.70
Copa	3	0.57	423.54	1.25
Indigo	3	0.40	694.72	7.87
Indigo-calib	3	0.20	912.30	5.31

Run 1: Statistics of TCP BBR

Start at: 2017-11-30 05:16:26

End at: 2017-11-30 05:16:56

Local clock offset: -4.84 ms

Remote clock offset: -0.688 ms

# Below is generated by plot.py at 2017-11-30 06:54:26

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.56 Mbit/s

95th percentile per-packet one-way delay: 914.528 ms

Loss rate: 2.62%

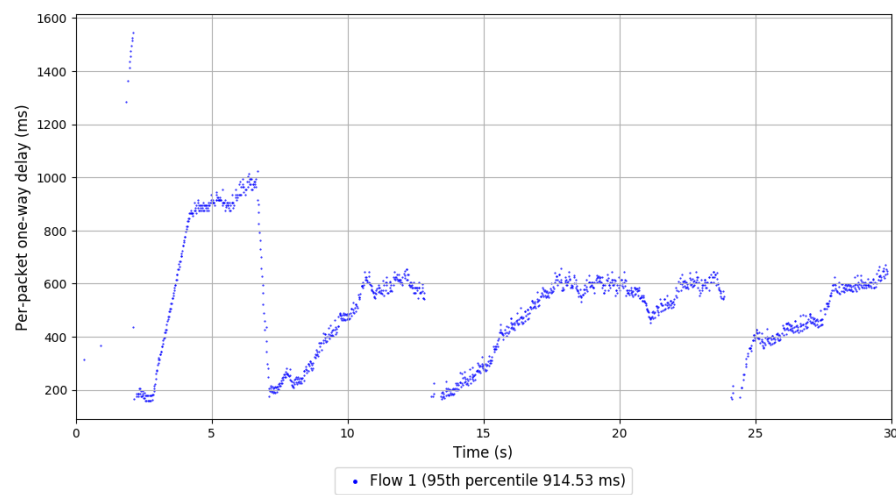
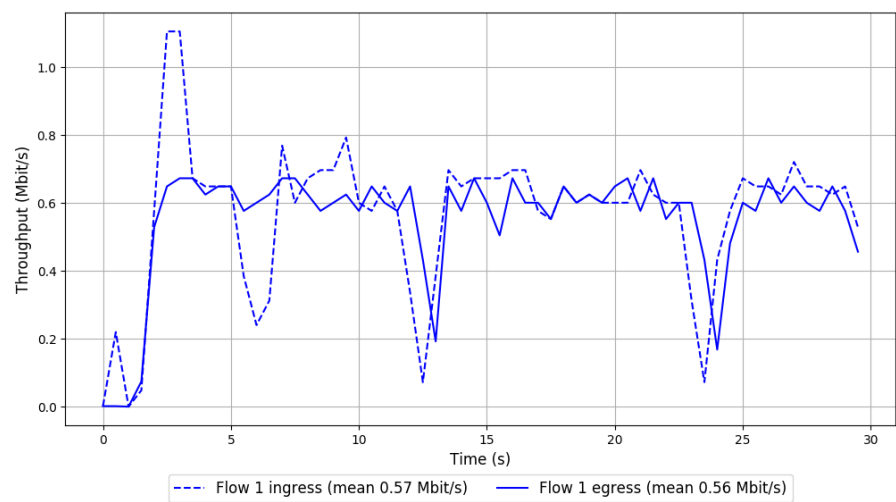
-- Flow 1:

Average throughput: 0.56 Mbit/s

95th percentile per-packet one-way delay: 914.528 ms

Loss rate: 2.62%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2017-11-30 05:32:48

End at: 2017-11-30 05:33:18

Local clock offset: 3.672 ms

Remote clock offset: -6.258 ms

# Below is generated by plot.py at 2017-11-30 06:54:26

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.56 Mbit/s

95th percentile per-packet one-way delay: 818.184 ms

Loss rate: 2.33%

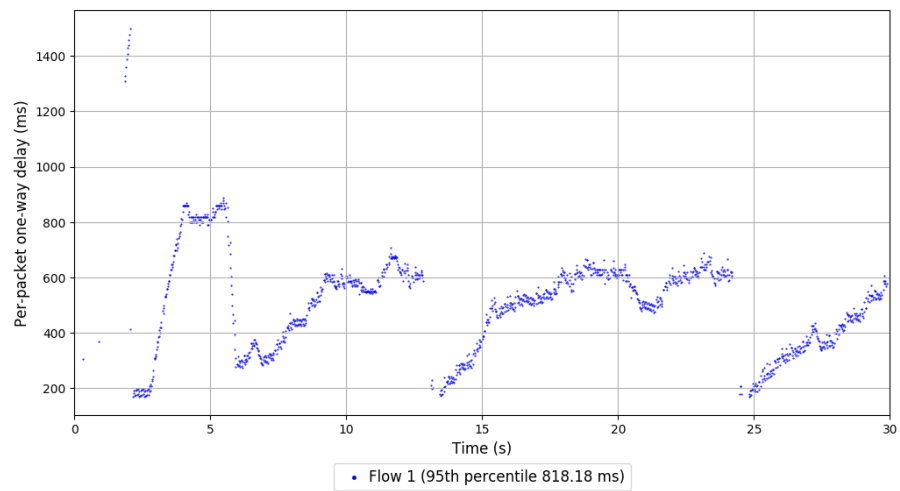
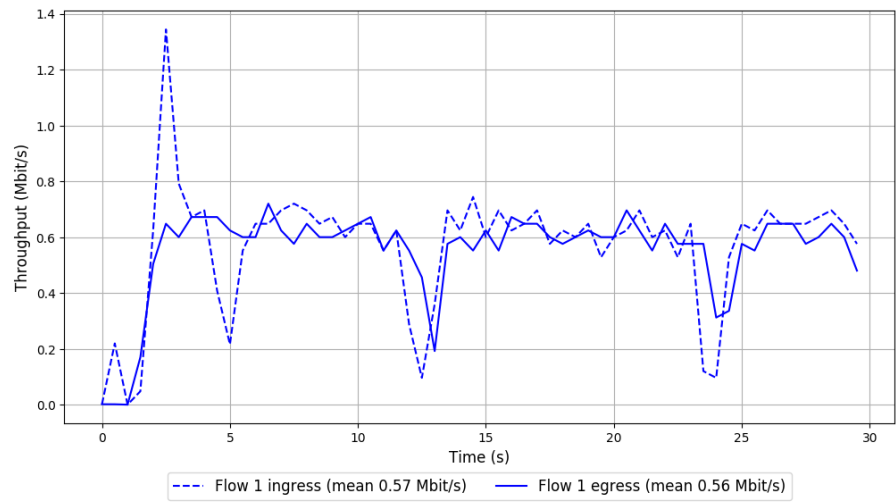
-- Flow 1:

Average throughput: 0.56 Mbit/s

95th percentile per-packet one-way delay: 818.184 ms

Loss rate: 2.33%

## Run 2: Report of TCP BBR — Data Link



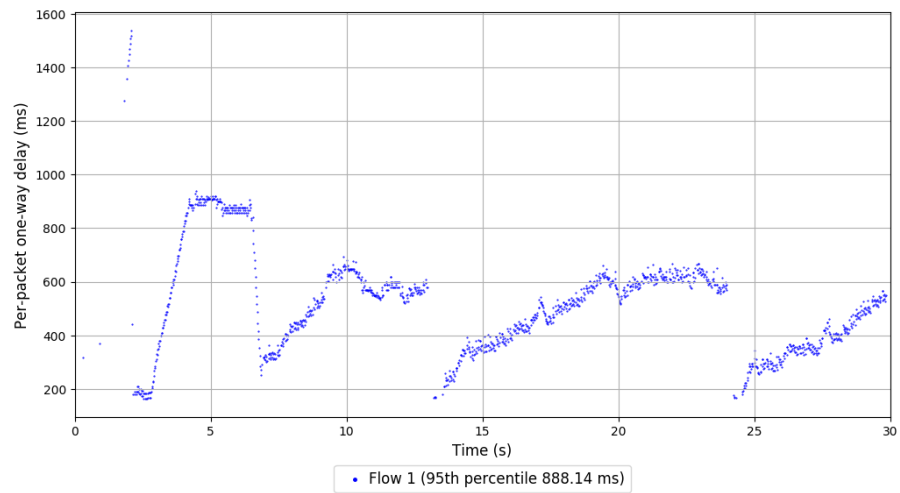
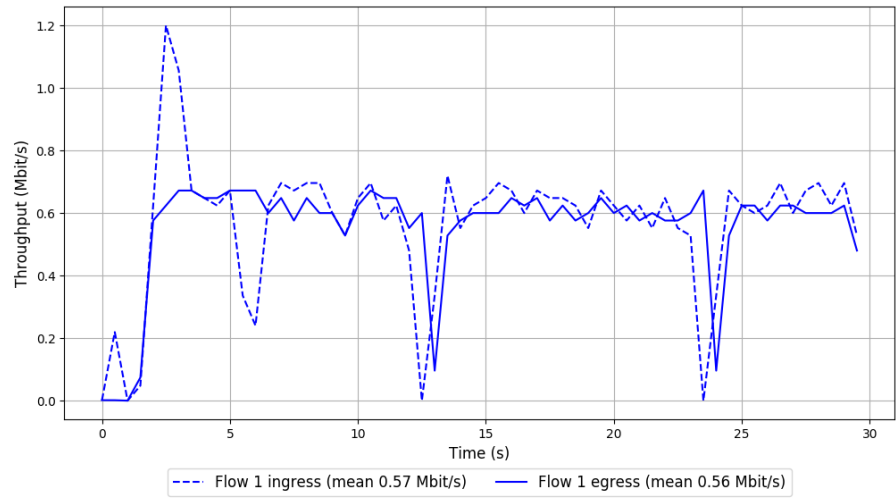
Run 3: Statistics of TCP BBR

Start at: 2017-11-30 05:49:12  
End at: 2017-11-30 05:49:42  
Local clock offset: 0.542 ms  
Remote clock offset: -2.194 ms

# Below is generated by plot.py at 2017-11-30 06:54:27  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.56 Mbit/s  
95th percentile per-packet one-way delay: 888.139 ms  
Loss rate: 2.26%  
-- Flow 1:  
Average throughput: 0.56 Mbit/s  
95th percentile per-packet one-way delay: 888.139 ms  
Loss rate: 2.26%



### Run 3: Report of TCP BBR — Data Link

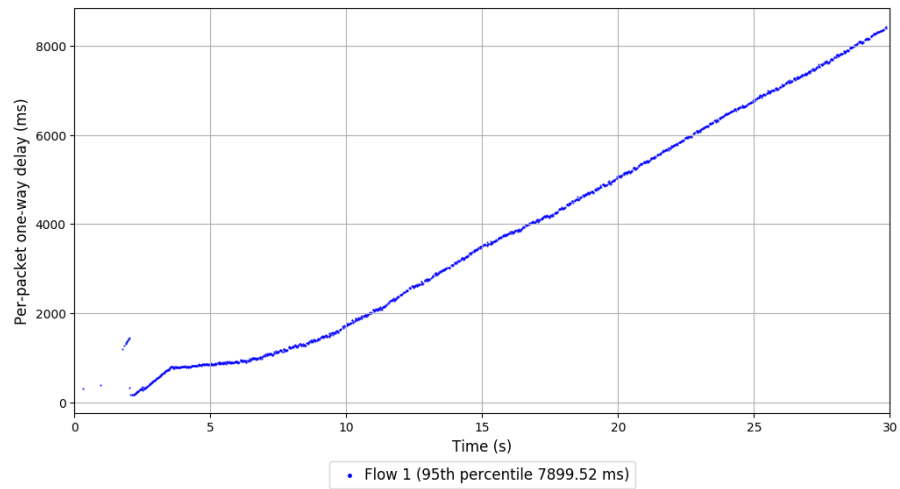
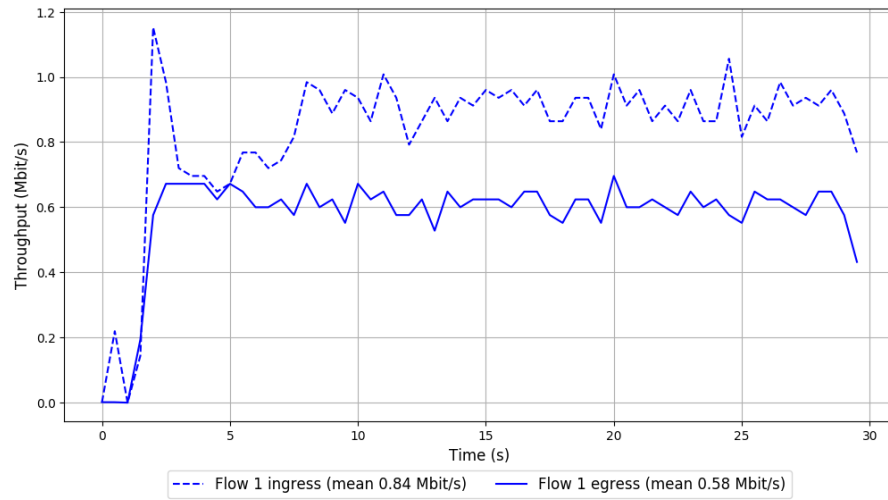


Run 1: Statistics of TCP Cubic

Start at: 2017-11-30 05:26:56  
End at: 2017-11-30 05:27:26  
Local clock offset: 4.067 ms  
Remote clock offset: -5.288 ms

# Below is generated by plot.py at 2017-11-30 06:54:27  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.58 Mbit/s  
95th percentile per-packet one-way delay: 7899.516 ms  
Loss rate: 30.93%  
-- Flow 1:  
Average throughput: 0.58 Mbit/s  
95th percentile per-packet one-way delay: 7899.516 ms  
Loss rate: 30.93%

### Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2017-11-30 05:43:19

End at: 2017-11-30 05:43:49

Local clock offset: 0.711 ms

Remote clock offset: -1.22 ms

# Below is generated by plot.py at 2017-11-30 06:54:27

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.58 Mbit/s

95th percentile per-packet one-way delay: 7917.137 ms

Loss rate: 30.99%

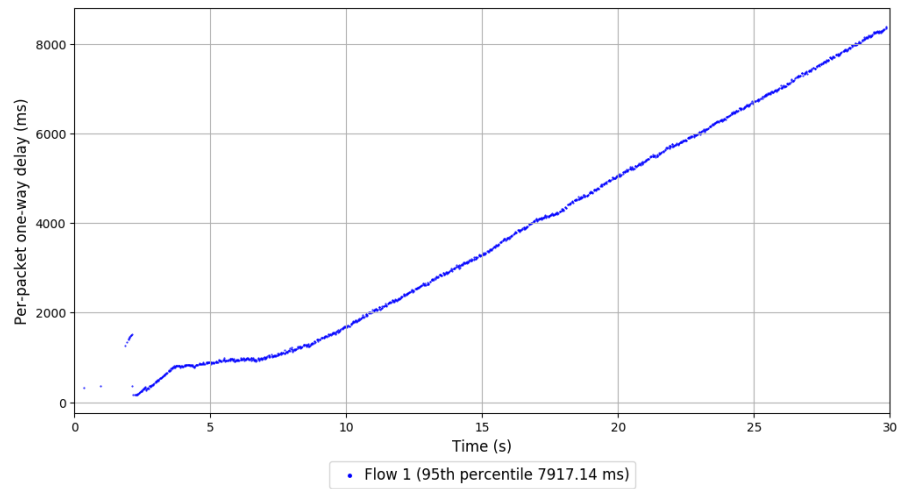
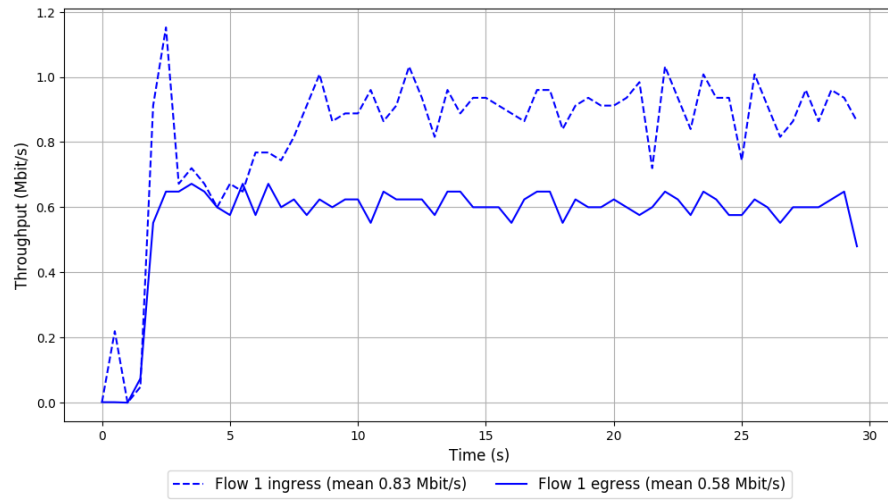
-- Flow 1:

Average throughput: 0.58 Mbit/s

95th percentile per-packet one-way delay: 7917.137 ms

Loss rate: 30.99%

## Run 2: Report of TCP Cubic — Data Link

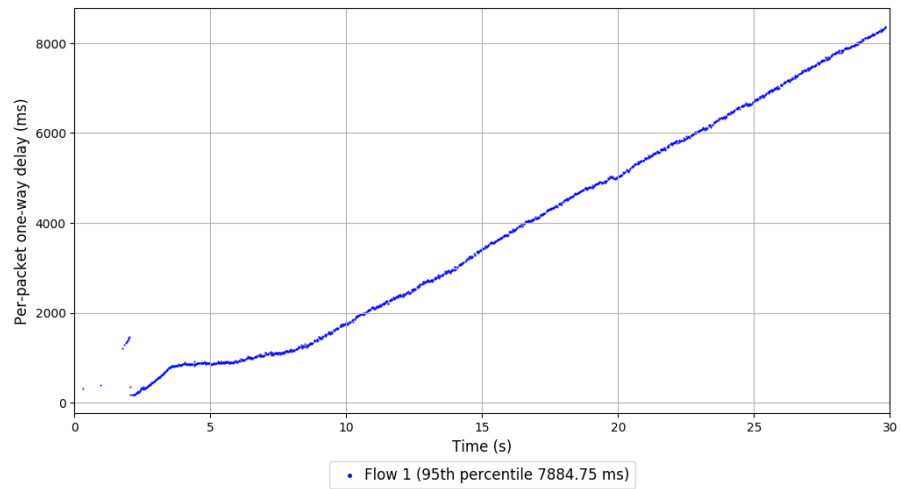
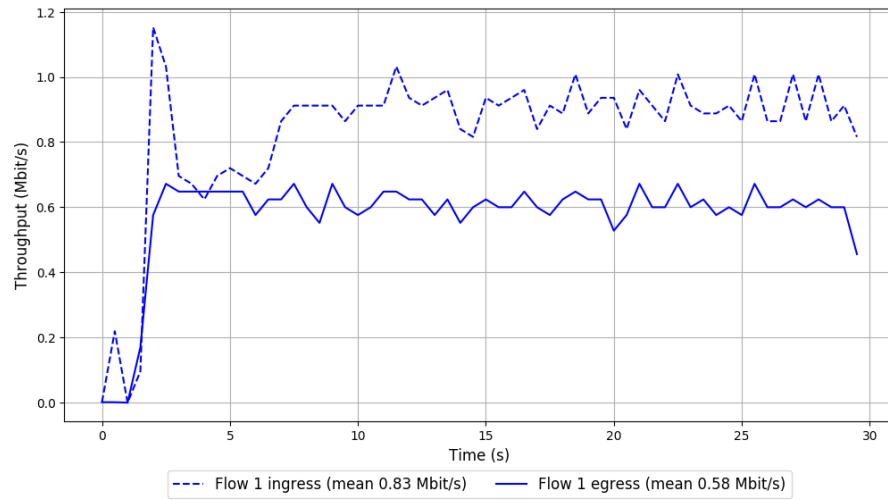


Run 3: Statistics of TCP Cubic

Start at: 2017-11-30 05:59:44  
End at: 2017-11-30 06:00:14  
Local clock offset: 1.175 ms  
Remote clock offset: -7.182 ms

# Below is generated by plot.py at 2017-11-30 06:54:27  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.58 Mbit/s  
95th percentile per-packet one-way delay: 7884.746 ms  
Loss rate: 30.99%  
-- Flow 1:  
Average throughput: 0.58 Mbit/s  
95th percentile per-packet one-way delay: 7884.746 ms  
Loss rate: 30.99%

### Run 3: Report of TCP Cubic — Data Link



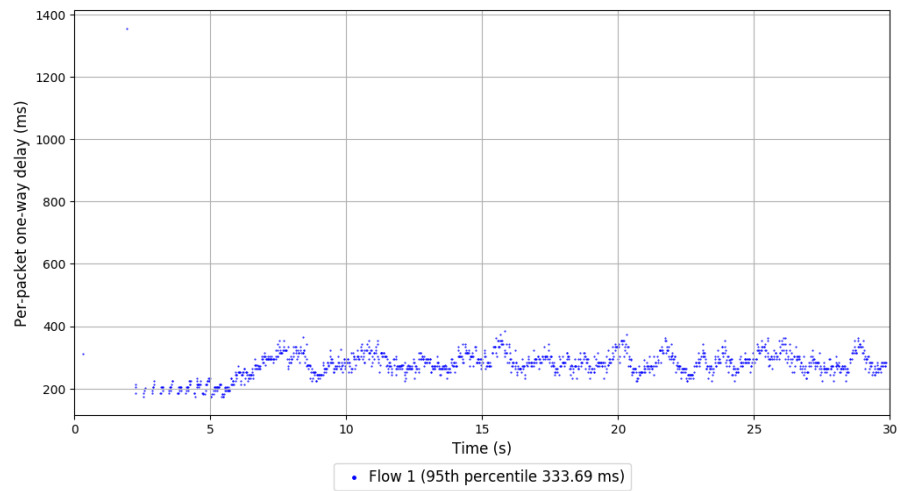
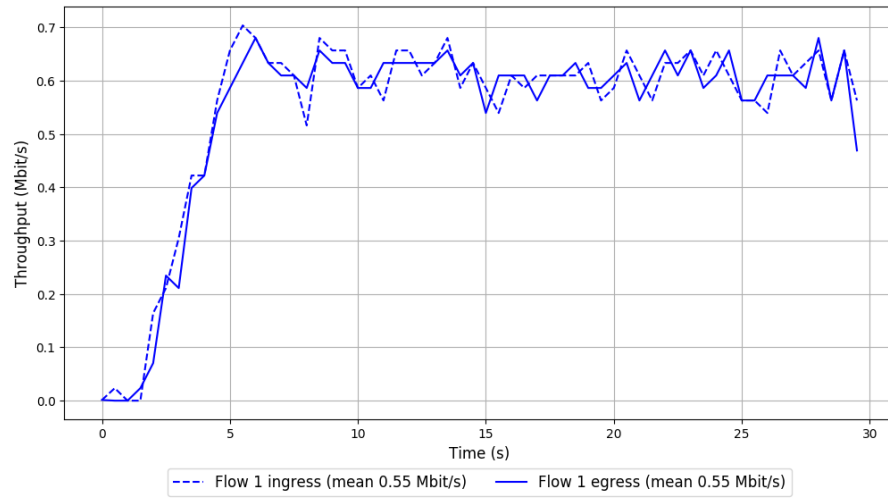
Run 1: Statistics of LEDBAT

Start at: 2017-11-30 05:23:26  
End at: 2017-11-30 05:23:56  
Local clock offset: 3.335 ms  
Remote clock offset: -5.277 ms

# Below is generated by plot.py at 2017-11-30 06:54:27  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.55 Mbit/s  
95th percentile per-packet one-way delay: 333.685 ms  
Loss rate: 1.42%  
-- Flow 1:  
Average throughput: 0.55 Mbit/s  
95th percentile per-packet one-way delay: 333.685 ms  
Loss rate: 1.42%



### Run 1: Report of LEDBAT — Data Link

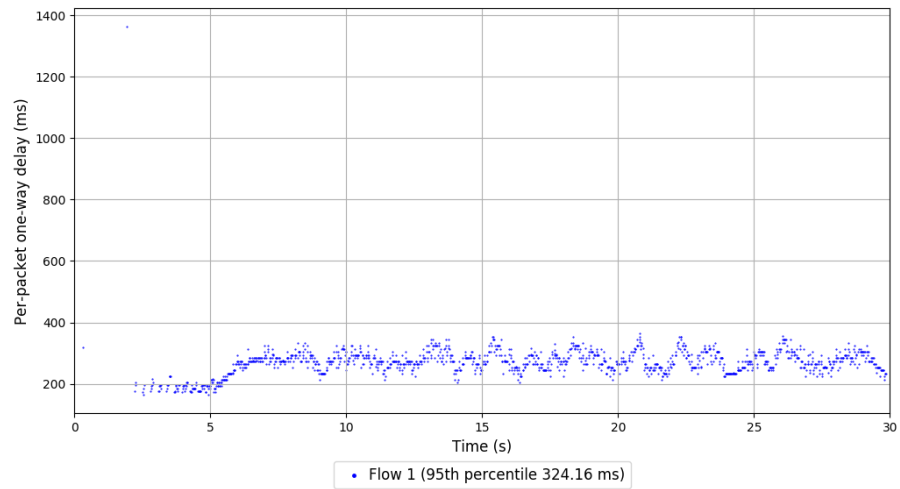
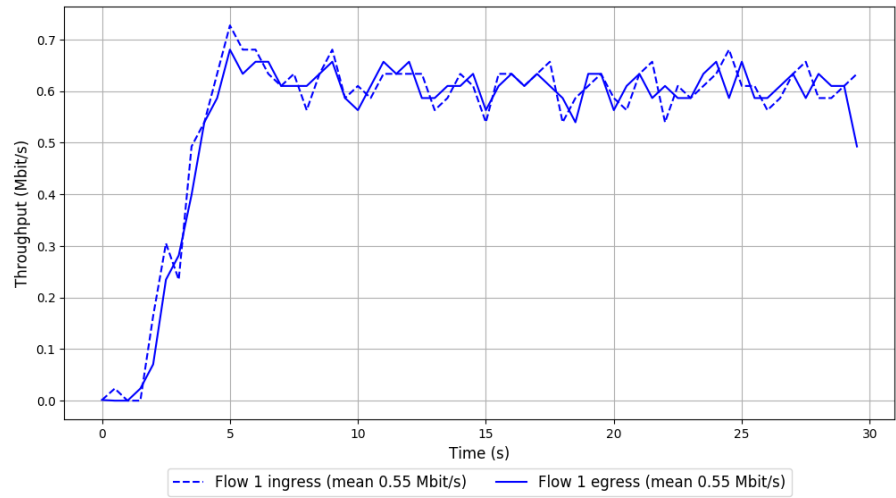


Run 2: Statistics of LEDBAT

Start at: 2017-11-30 05:39:48  
End at: 2017-11-30 05:40:18  
Local clock offset: 1.735 ms  
Remote clock offset: -6.924 ms

# Below is generated by plot.py at 2017-11-30 06:54:27  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.55 Mbit/s  
95th percentile per-packet one-way delay: 324.157 ms  
Loss rate: 1.41%  
-- Flow 1:  
Average throughput: 0.55 Mbit/s  
95th percentile per-packet one-way delay: 324.157 ms  
Loss rate: 1.41%

## Run 2: Report of LEDBAT — Data Link

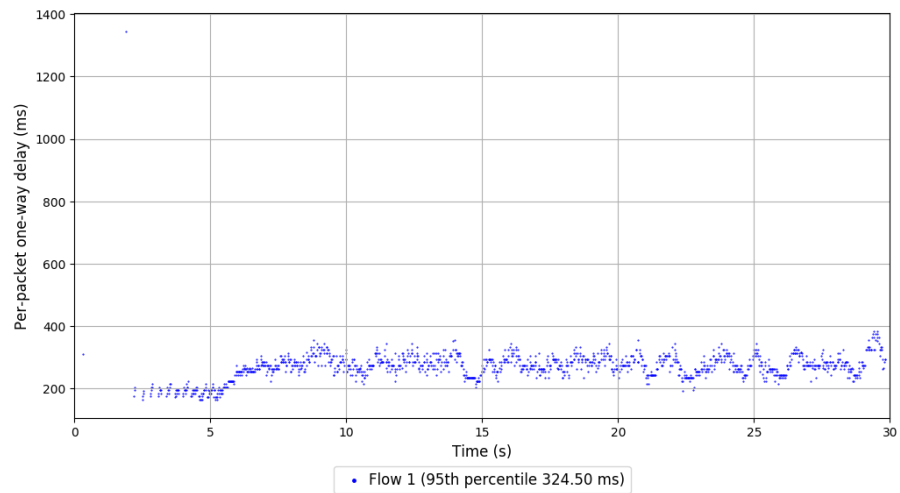
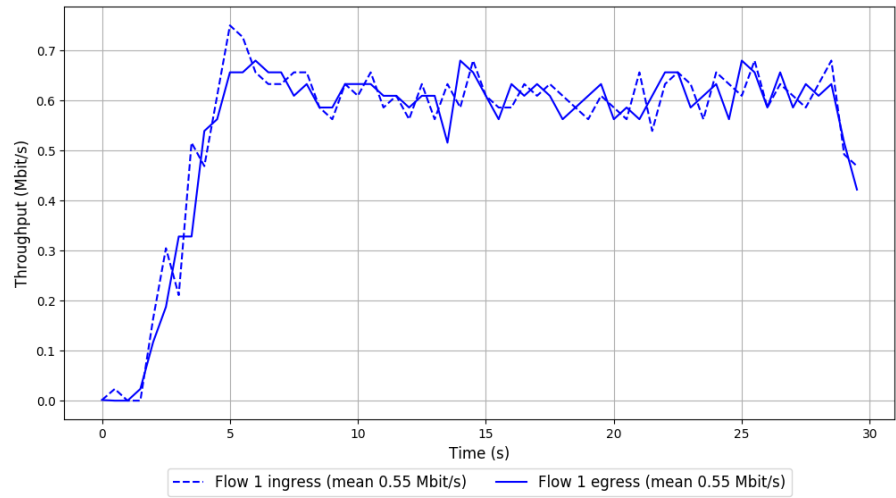


Run 3: Statistics of LEDBAT

Start at: 2017-11-30 05:56:13  
End at: 2017-11-30 05:56:43  
Local clock offset: 1.186 ms  
Remote clock offset: -6.063 ms

# Below is generated by plot.py at 2017-11-30 06:54:30  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.55 Mbit/s  
95th percentile per-packet one-way delay: 324.496 ms  
Loss rate: 1.21%  
-- Flow 1:  
Average throughput: 0.55 Mbit/s  
95th percentile per-packet one-way delay: 324.496 ms  
Loss rate: 1.21%

### Run 3: Report of LEDBAT — Data Link



Run 1: Statistics of PCC

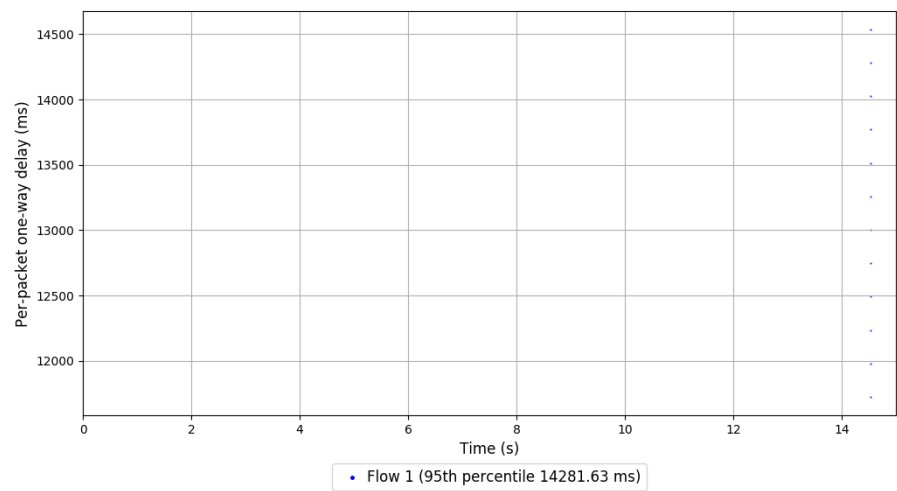
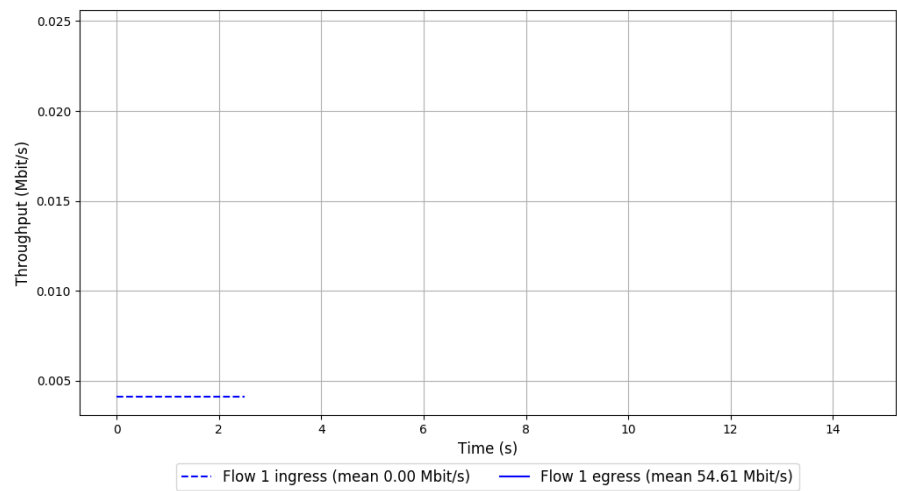
Start at: 2017-11-30 05:31:37

End at: 2017-11-30 05:32:07

Local clock offset: 4.153 ms

Remote clock offset: -5.4 ms

Run 1: Report of PCC — Data Link



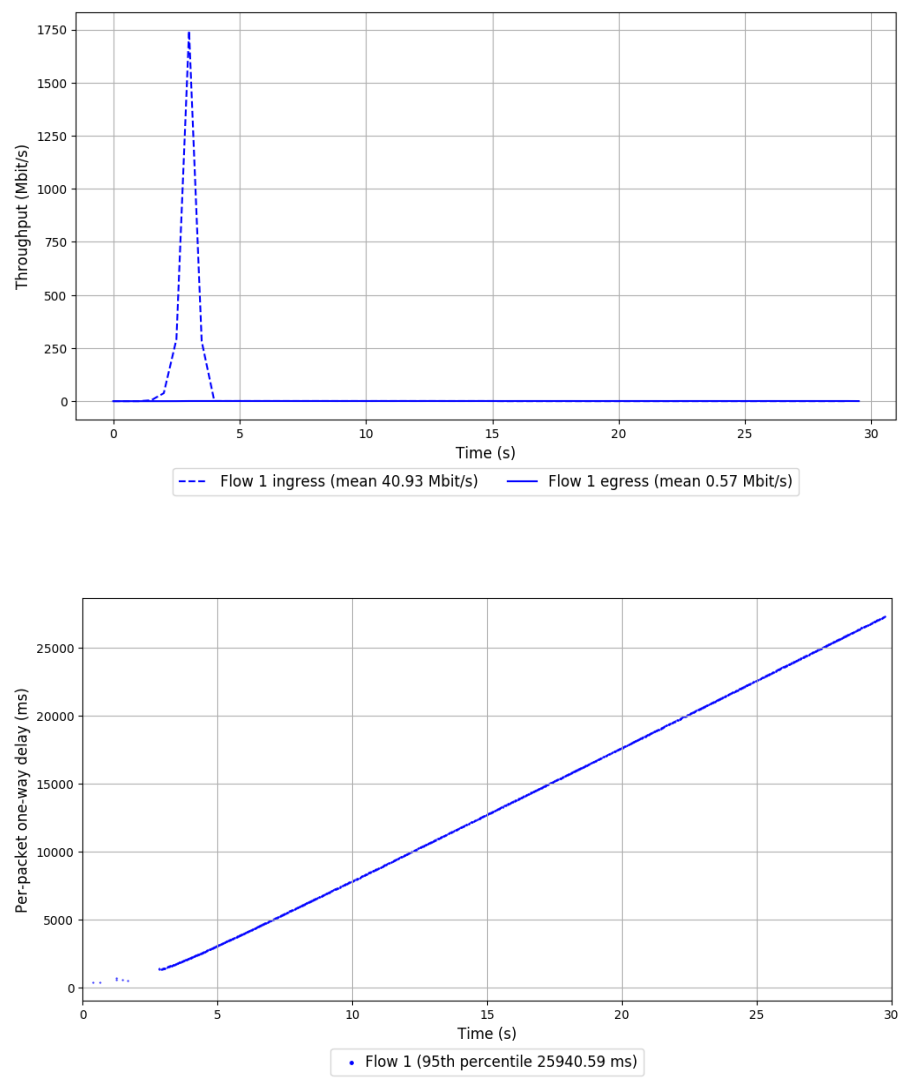
Run 2: Statistics of PCC

Start at: 2017-11-30 05:48:00  
End at: 2017-11-30 05:48:30  
Local clock offset: 0.562 ms  
Remote clock offset: -6.193 ms

# Below is generated by plot.py at 2017-11-30 06:54:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.57 Mbit/s  
95th percentile per-packet one-way delay: 25940.588 ms  
Loss rate: 98.60%  
-- Flow 1:  
Average throughput: 0.57 Mbit/s  
95th percentile per-packet one-way delay: 25940.588 ms  
Loss rate: 98.60%



Run 2: Report of PCC — Data Link

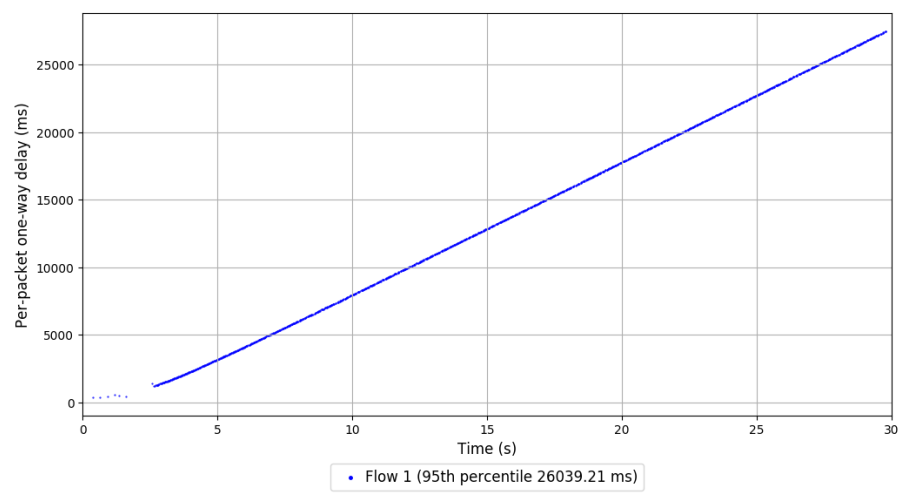
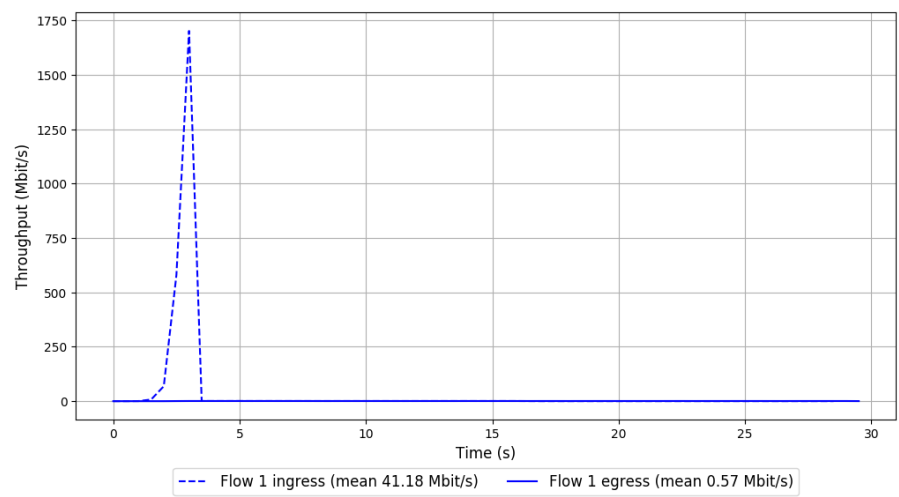


Run 3: Statistics of PCC

Start at: 2017-11-30 06:04:25  
End at: 2017-11-30 06:04:55  
Local clock offset: 1.238 ms  
Remote clock offset: -6.591 ms

# Below is generated by plot.py at 2017-11-30 06:54:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.57 Mbit/s  
95th percentile per-packet one-way delay: 26039.209 ms  
Loss rate: 98.59%  
-- Flow 1:  
Average throughput: 0.57 Mbit/s  
95th percentile per-packet one-way delay: 26039.209 ms  
Loss rate: 98.59%

Run 3: Report of PCC — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2017-11-30 05:28:06

End at: 2017-11-30 05:28:36

Local clock offset: 4.435 ms

Remote clock offset: -0.472 ms

# Below is generated by plot.py at 2017-11-30 06:54:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.60 Mbit/s

95th percentile per-packet one-way delay: 7099.438 ms

Loss rate: 29.15%

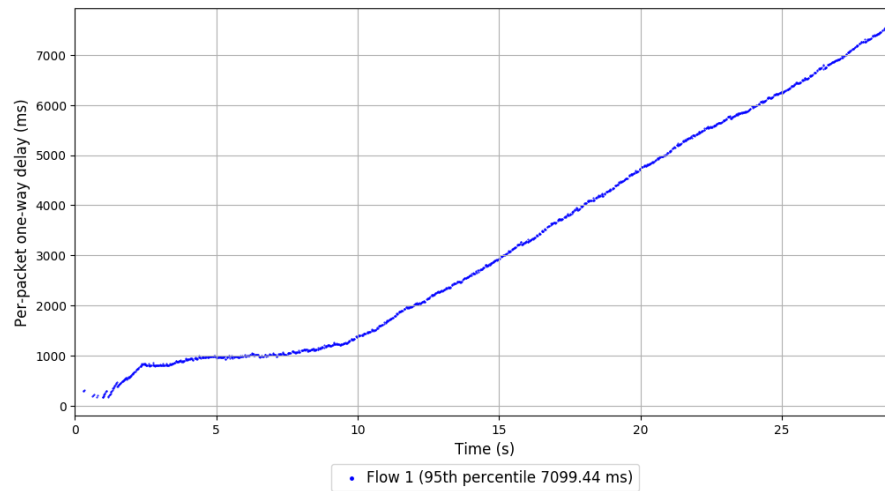
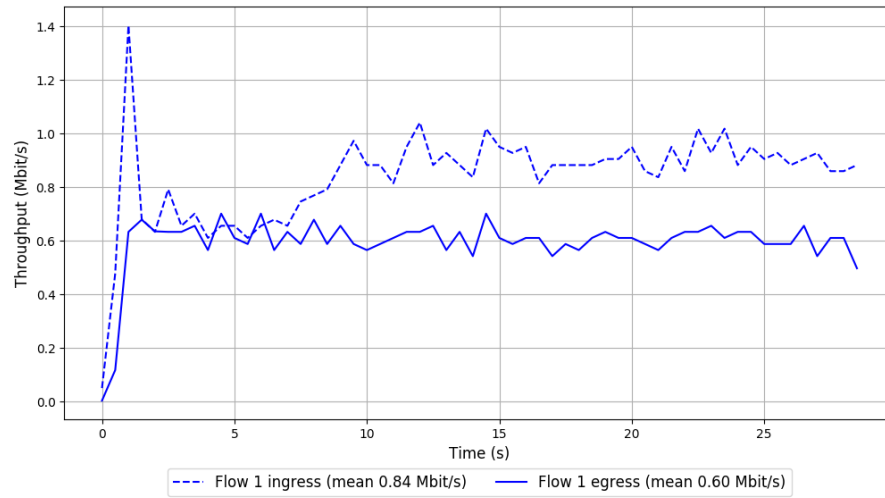
-- Flow 1:

Average throughput: 0.60 Mbit/s

95th percentile per-packet one-way delay: 7099.438 ms

Loss rate: 29.15%

### Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2017-11-30 05:44:29

End at: 2017-11-30 05:44:59

Local clock offset: 0.638 ms

Remote clock offset: -6.978 ms

# Below is generated by plot.py at 2017-11-30 06:54:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.60 Mbit/s

95th percentile per-packet one-way delay: 7276.448 ms

Loss rate: 29.17%

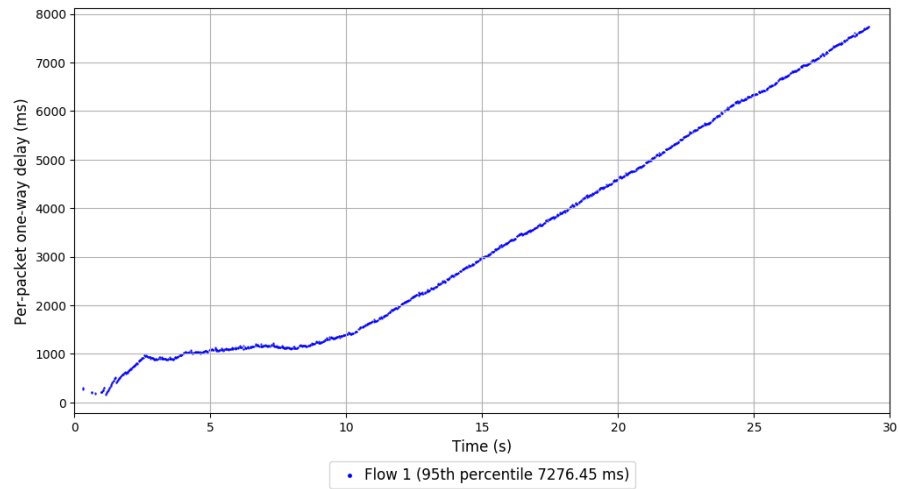
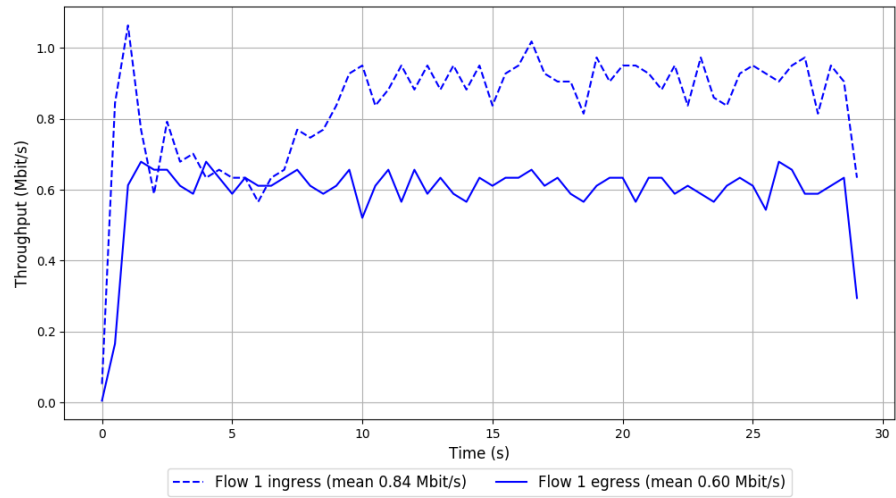
-- Flow 1:

Average throughput: 0.60 Mbit/s

95th percentile per-packet one-way delay: 7276.448 ms

Loss rate: 29.17%

## Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2017-11-30 06:00:54

End at: 2017-11-30 06:01:24

Local clock offset: 1.128 ms

Remote clock offset: -1.518 ms

# Below is generated by plot.py at 2017-11-30 06:54:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.60 Mbit/s

95th percentile per-packet one-way delay: 7171.497 ms

Loss rate: 29.50%

-- Flow 1:

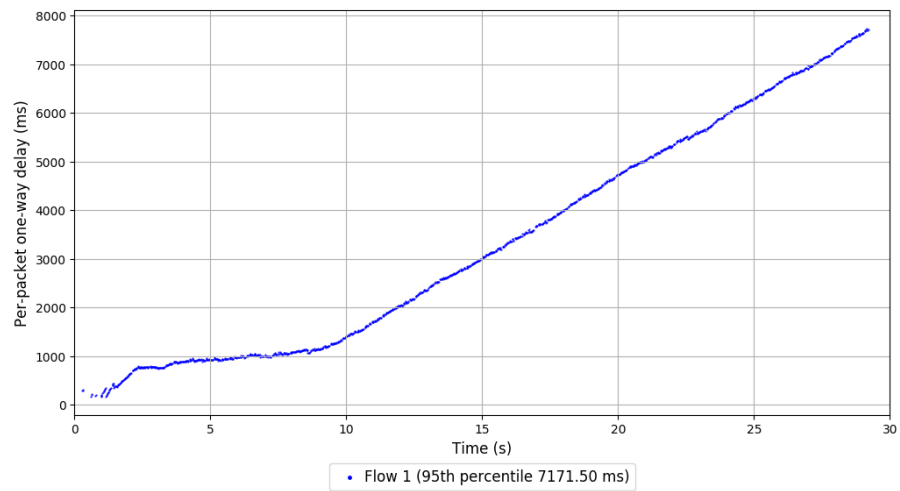
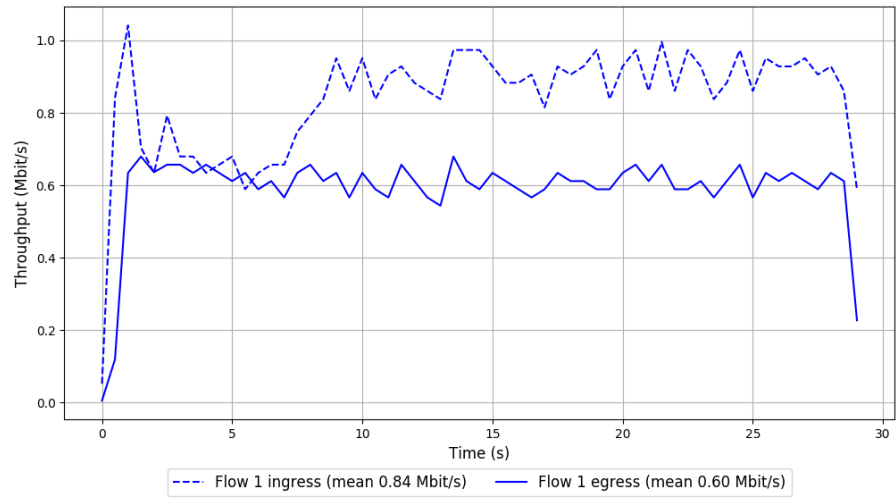
Average throughput: 0.60 Mbit/s

95th percentile per-packet one-way delay: 7171.497 ms

Loss rate: 29.50%



### Run 3: Report of QUIC Cubic — Data Link

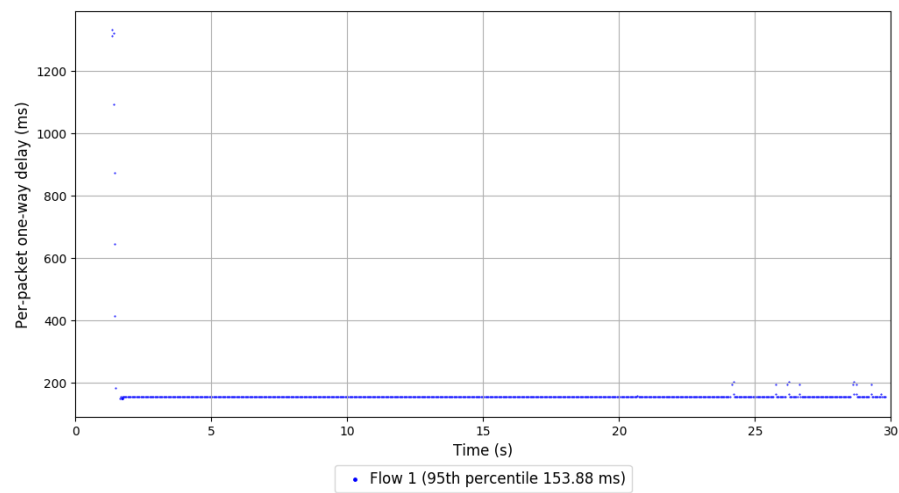
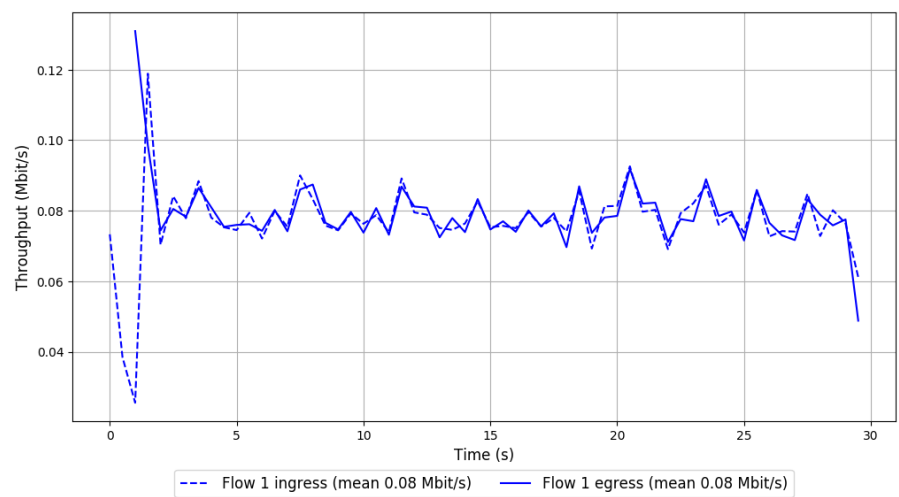


Run 1: Statistics of SCReAM

Start at: 2017-11-30 05:22:16  
End at: 2017-11-30 05:22:46  
Local clock offset: 3.043 ms  
Remote clock offset: -0.007 ms

# Below is generated by plot.py at 2017-11-30 06:54:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.08 Mbit/s  
95th percentile per-packet one-way delay: 153.877 ms  
Loss rate: 0.80%  
-- Flow 1:  
Average throughput: 0.08 Mbit/s  
95th percentile per-packet one-way delay: 153.877 ms  
Loss rate: 0.80%

Run 1: Report of SReAM — Data Link

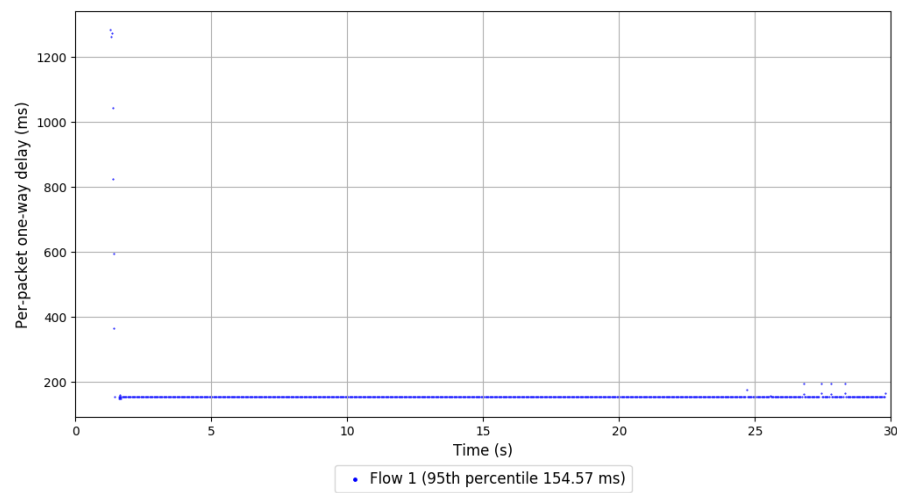
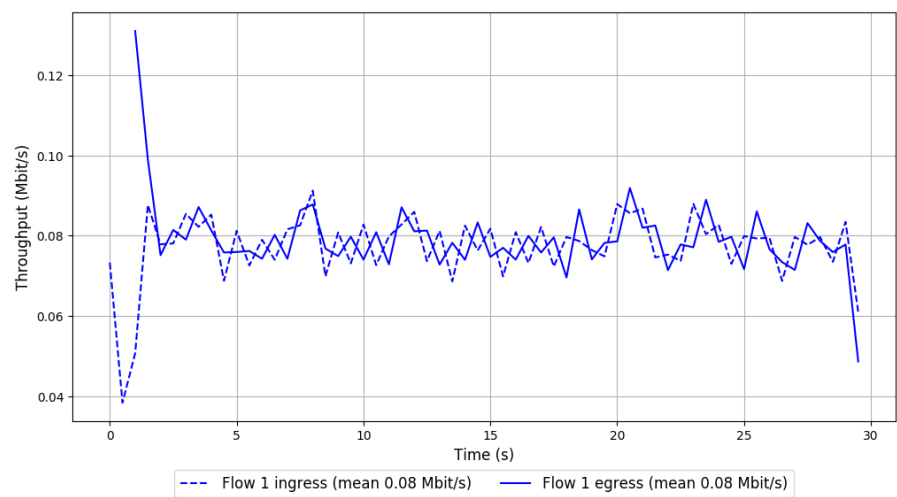


Run 2: Statistics of SCReAM

Start at: 2017-11-30 05:38:38  
End at: 2017-11-30 05:39:08  
Local clock offset: 2.113 ms  
Remote clock offset: -1.557 ms

# Below is generated by plot.py at 2017-11-30 06:54:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.08 Mbit/s  
95th percentile per-packet one-way delay: 154.570 ms  
Loss rate: 0.79%  
-- Flow 1:  
Average throughput: 0.08 Mbit/s  
95th percentile per-packet one-way delay: 154.570 ms  
Loss rate: 0.79%

Run 2: Report of SReAM — Data Link

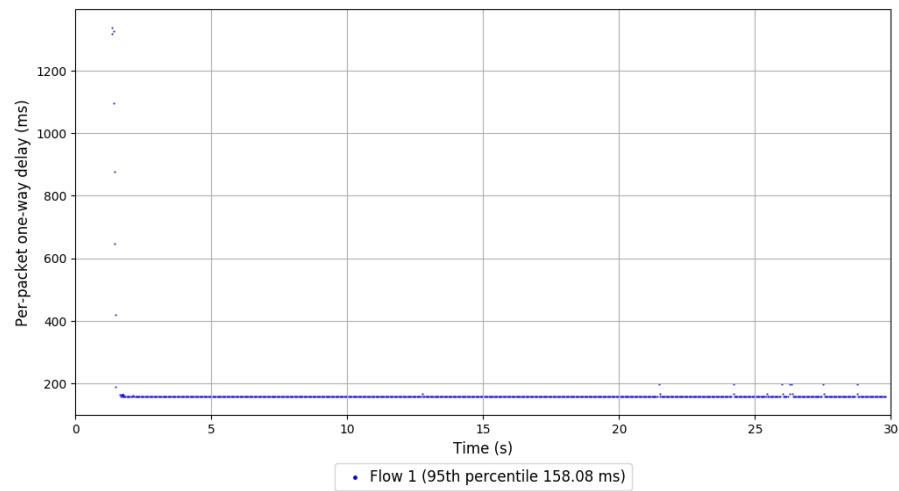
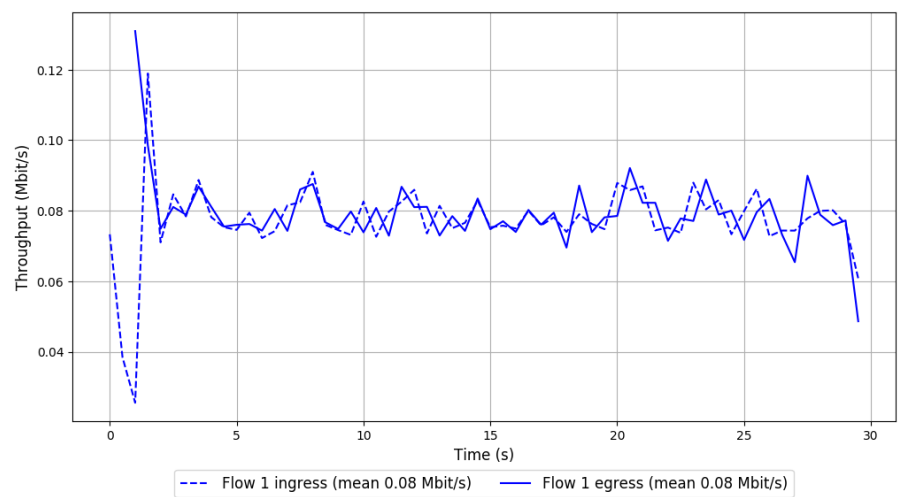


Run 3: Statistics of SCReAM

Start at: 2017-11-30 05:55:02  
End at: 2017-11-30 05:55:32  
Local clock offset: 0.981 ms  
Remote clock offset: -6.008 ms

# Below is generated by plot.py at 2017-11-30 06:54:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.08 Mbit/s  
95th percentile per-packet one-way delay: 158.078 ms  
Loss rate: 0.79%  
-- Flow 1:  
Average throughput: 0.08 Mbit/s  
95th percentile per-packet one-way delay: 158.078 ms  
Loss rate: 0.79%

Run 3: Report of SReAM — Data Link



Run 1: Statistics of WebRTC media

Start at: 2017-11-30 05:18:46

End at: 2017-11-30 05:19:16

Local clock offset: -0.402 ms

Remote clock offset: -0.22 ms

# Below is generated by plot.py at 2017-11-30 06:54:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.35 Mbit/s

95th percentile per-packet one-way delay: 695.370 ms

Loss rate: 1.30%

-- Flow 1:

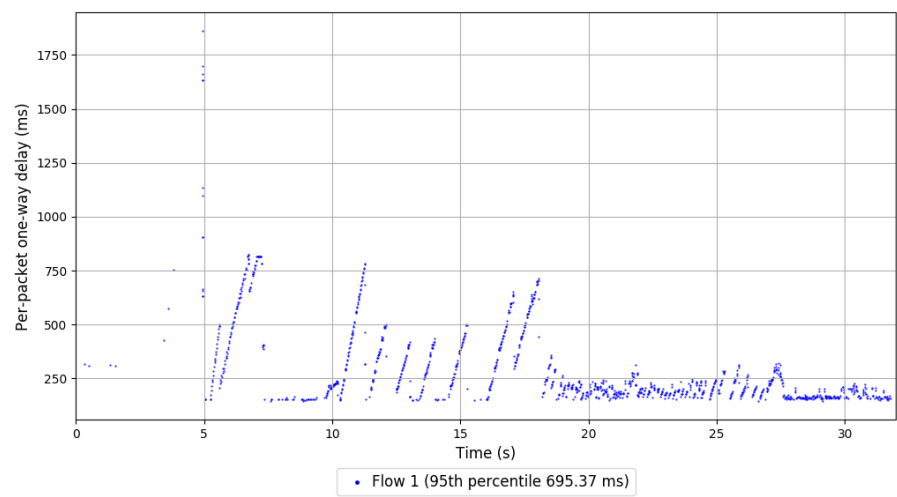
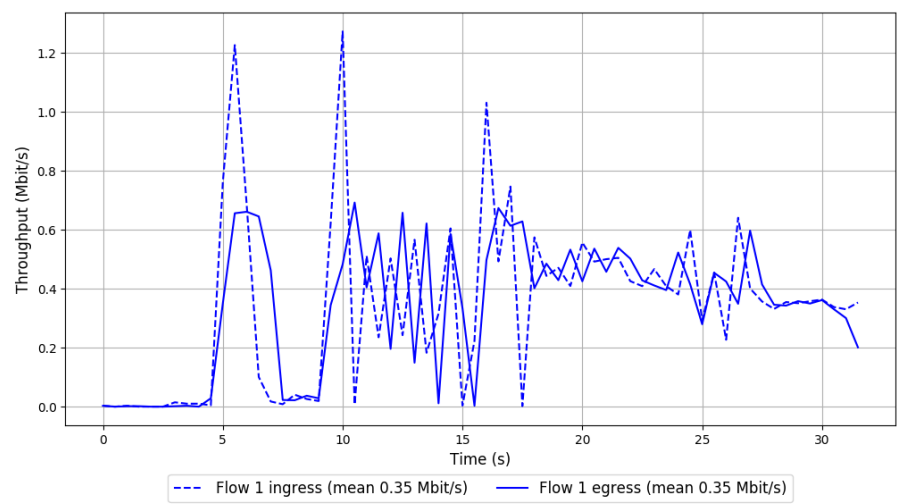
Average throughput: 0.35 Mbit/s

95th percentile per-packet one-way delay: 695.370 ms

Loss rate: 1.30%



Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2017-11-30 05:35:08

End at: 2017-11-30 05:35:38

Local clock offset: 3.231 ms

Remote clock offset: -5.978 ms

# Below is generated by plot.py at 2017-11-30 06:54:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.34 Mbit/s

95th percentile per-packet one-way delay: 773.955 ms

Loss rate: 2.42%

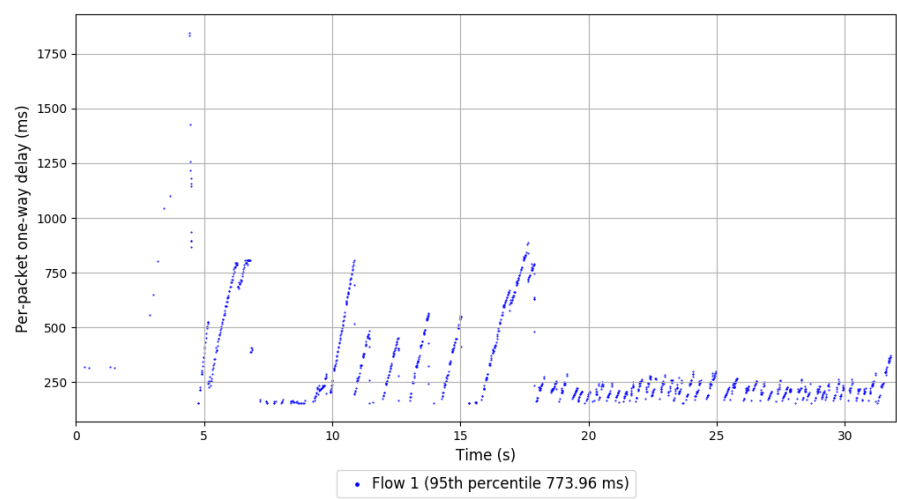
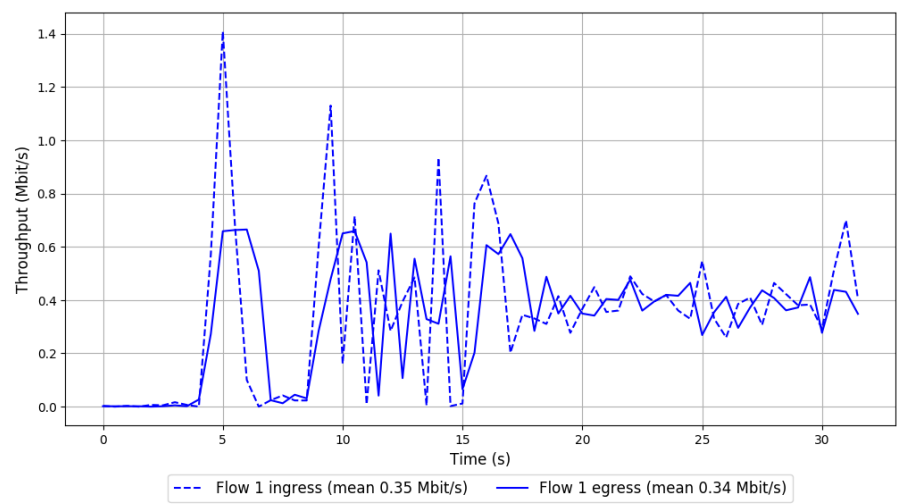
-- Flow 1:

Average throughput: 0.34 Mbit/s

95th percentile per-packet one-way delay: 773.955 ms

Loss rate: 2.42%

Run 2: Report of WebRTC media — Data Link

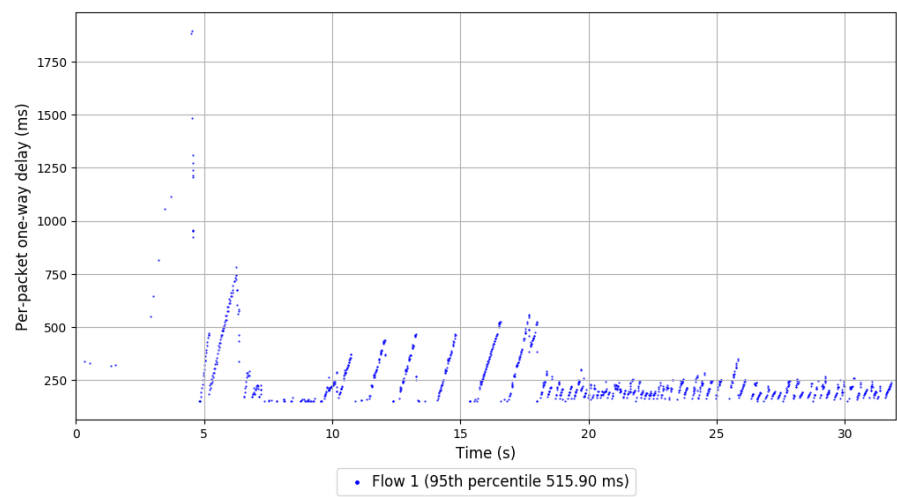
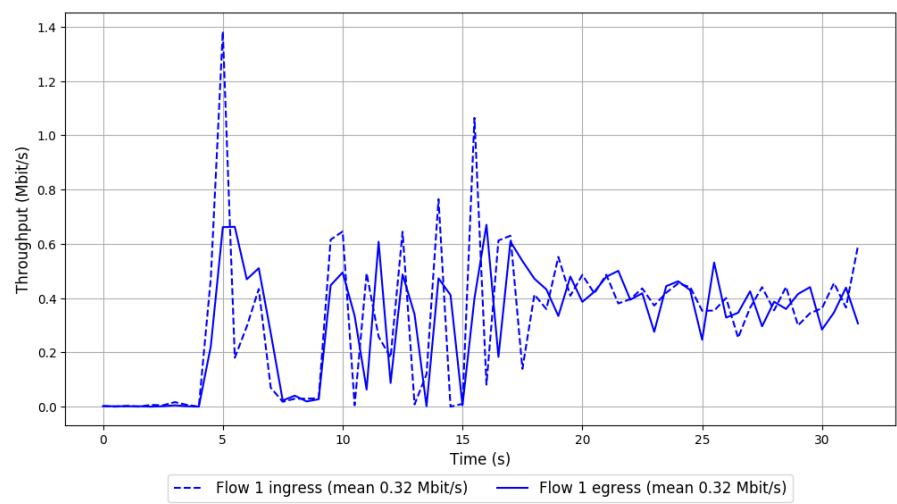


Run 3: Statistics of WebRTC media

Start at: 2017-11-30 05:51:32  
End at: 2017-11-30 05:52:02  
Local clock offset: 0.743 ms  
Remote clock offset: -6.755 ms

# Below is generated by plot.py at 2017-11-30 06:54:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.32 Mbit/s  
95th percentile per-packet one-way delay: 515.896 ms  
Loss rate: 2.45%  
-- Flow 1:  
Average throughput: 0.32 Mbit/s  
95th percentile per-packet one-way delay: 515.896 ms  
Loss rate: 2.45%

Run 3: Report of WebRTC media — Data Link

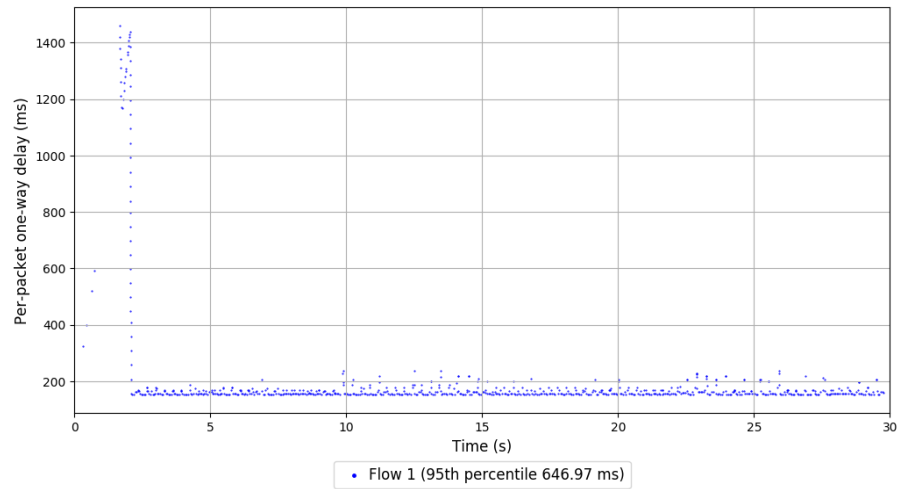
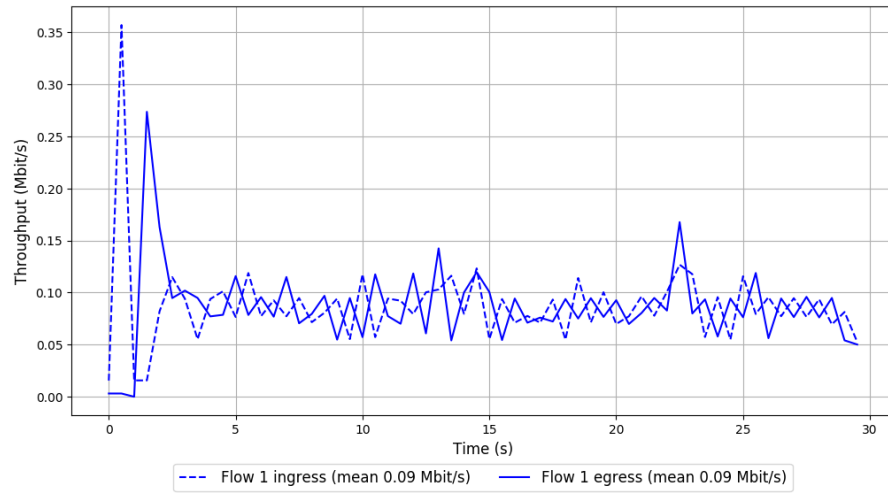


Run 1: Statistics of Sprout

Start at: 2017-11-30 05:30:27  
End at: 2017-11-30 05:30:57  
Local clock offset: 4.746 ms  
Remote clock offset: -5.852 ms

# Below is generated by plot.py at 2017-11-30 06:54:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.09 Mbit/s  
95th percentile per-packet one-way delay: 646.970 ms  
Loss rate: 1.12%  
-- Flow 1:  
Average throughput: 0.09 Mbit/s  
95th percentile per-packet one-way delay: 646.970 ms  
Loss rate: 1.12%

## Run 1: Report of Sprout — Data Link



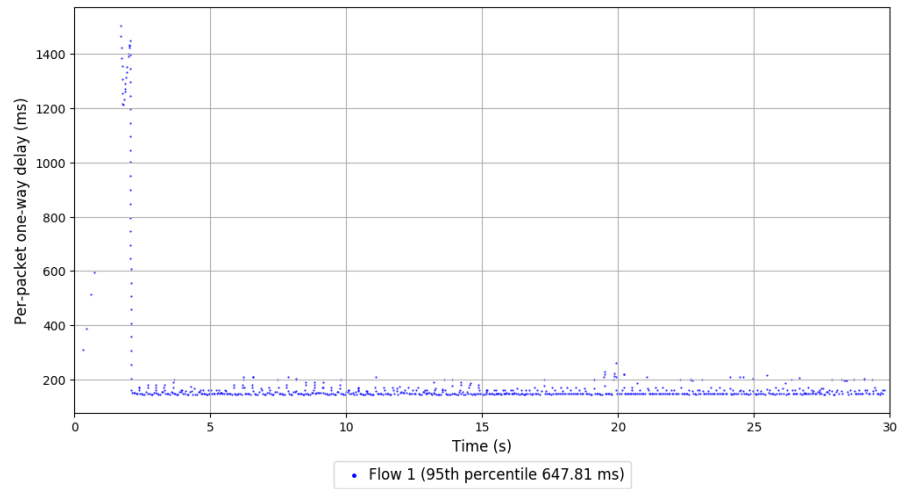
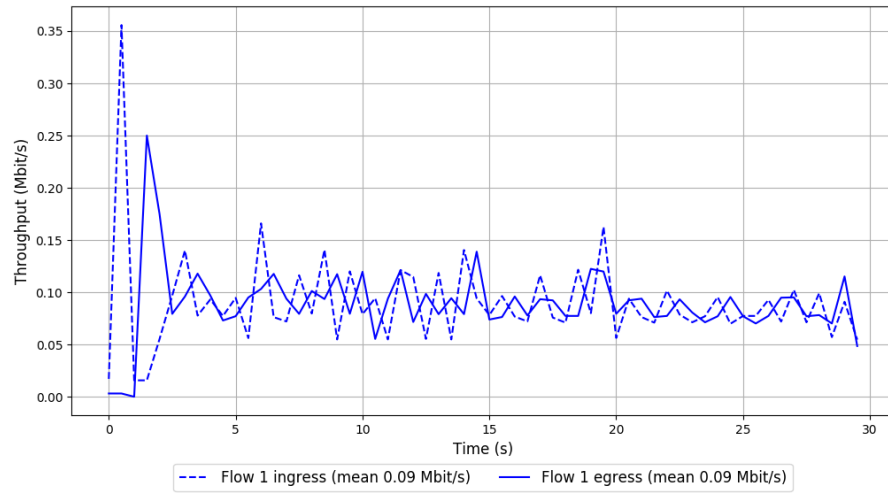
Run 2: Statistics of Sprout

Start at: 2017-11-30 05:46:49  
End at: 2017-11-30 05:47:19  
Local clock offset: 0.544 ms  
Remote clock offset: -0.912 ms

# Below is generated by plot.py at 2017-11-30 06:54:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.09 Mbit/s  
95th percentile per-packet one-way delay: 647.809 ms  
Loss rate: 0.64%  
-- Flow 1:  
Average throughput: 0.09 Mbit/s  
95th percentile per-packet one-way delay: 647.809 ms  
Loss rate: 0.64%



## Run 2: Report of Sprout — Data Link

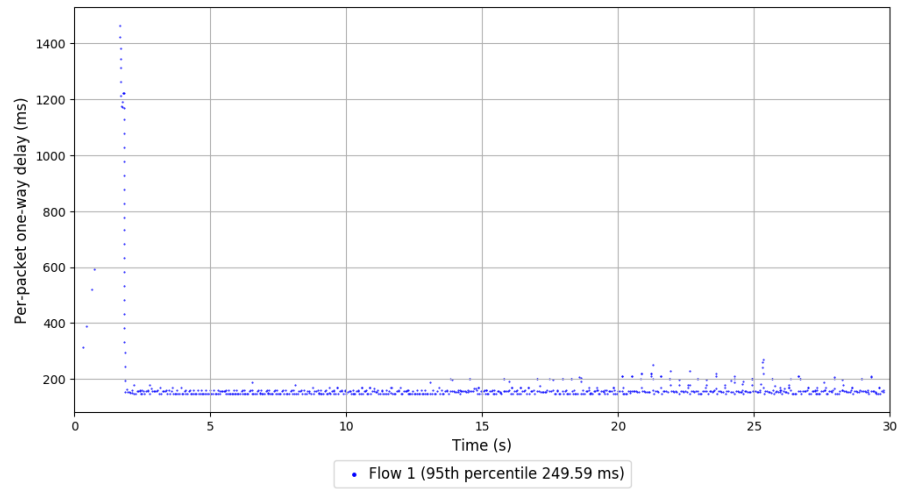
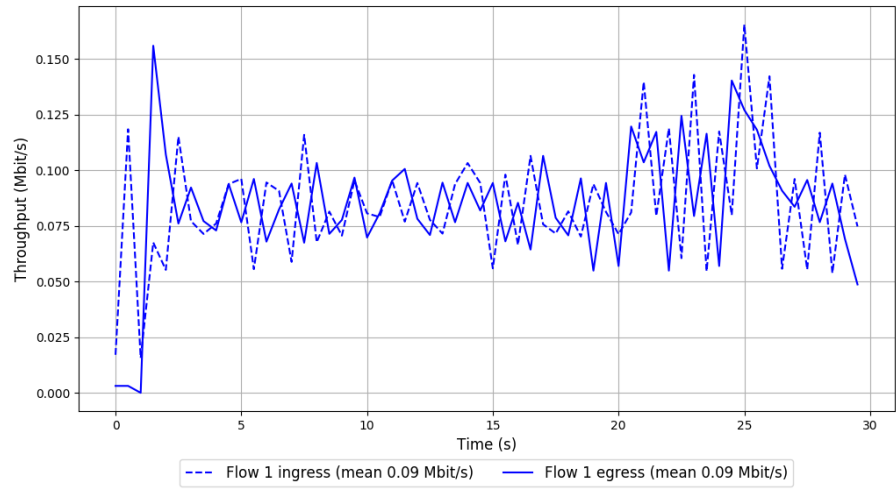


Run 3: Statistics of Sprout

Start at: 2017-11-30 06:03:15  
End at: 2017-11-30 06:03:45  
Local clock offset: 1.285 ms  
Remote clock offset: -1.063 ms

# Below is generated by plot.py at 2017-11-30 06:54:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.09 Mbit/s  
95th percentile per-packet one-way delay: 249.592 ms  
Loss rate: 1.17%  
-- Flow 1:  
Average throughput: 0.09 Mbit/s  
95th percentile per-packet one-way delay: 249.592 ms  
Loss rate: 1.17%

### Run 3: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2017-11-30 05:24:36

End at: 2017-11-30 05:25:06

Local clock offset: 3.561 ms

Remote clock offset: -0.385 ms

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

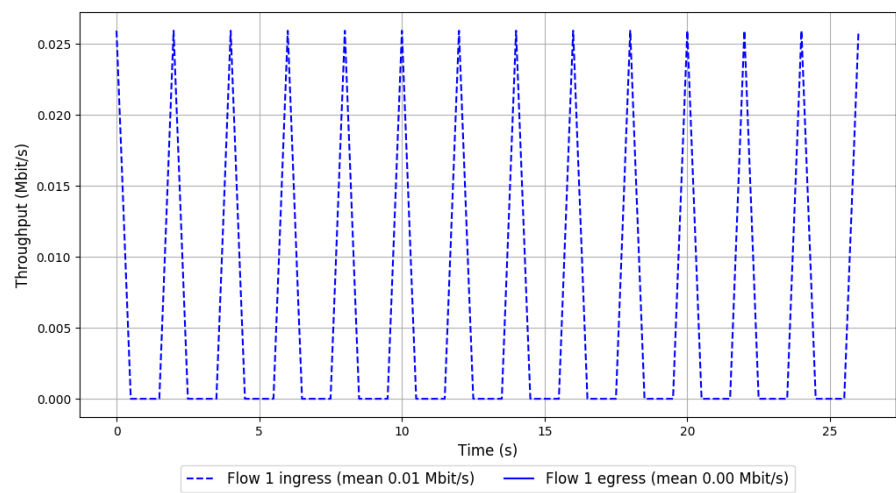


Figure is missing

Run 2: Statistics of TaoVA-100x

Start at: 2017-11-30 05:40:58

End at: 2017-11-30 05:41:28

Local clock offset: 1.257 ms

Remote clock offset: -1.216 ms

# Below is generated by plot.py at 2017-11-30 06:54:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.61 Mbit/s

95th percentile per-packet one-way delay: 730.390 ms

Loss rate: 9.73%

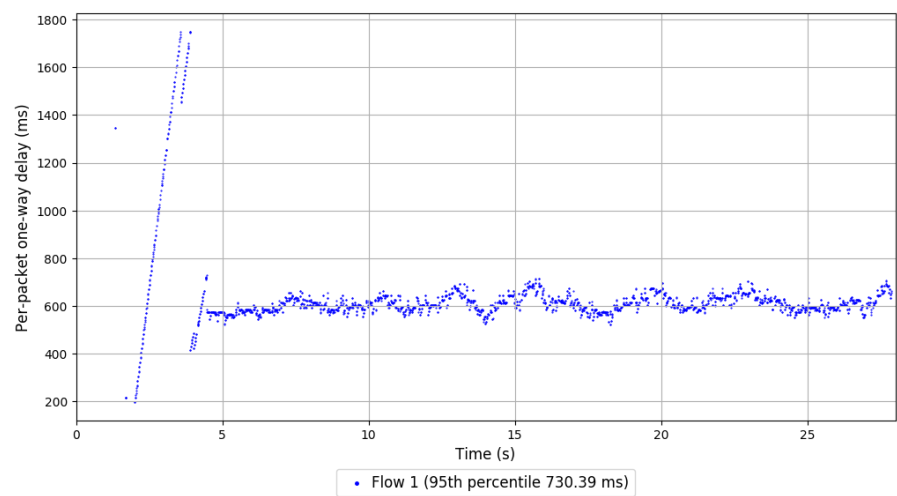
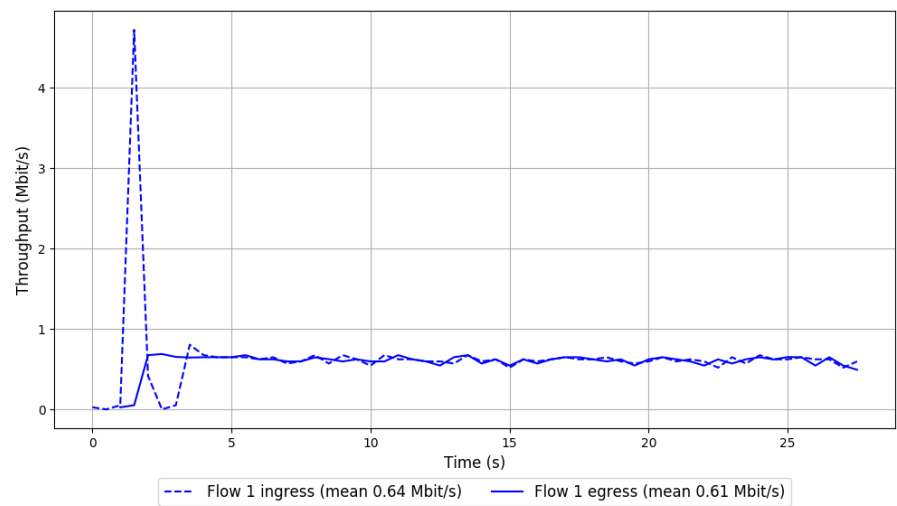
-- Flow 1:

Average throughput: 0.61 Mbit/s

95th percentile per-packet one-way delay: 730.390 ms

Loss rate: 9.73%

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



Run 3: Statistics of TaoVA-100x

Start at: 2017-11-30 05:57:23

End at: 2017-11-30 05:57:53

Local clock offset: 1.2 ms

Remote clock offset: -6.038 ms

# Below is generated by plot.py at 2017-11-30 06:54:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.60 Mbit/s

95th percentile per-packet one-way delay: 941.229 ms

Loss rate: 2.71%

-- Flow 1:

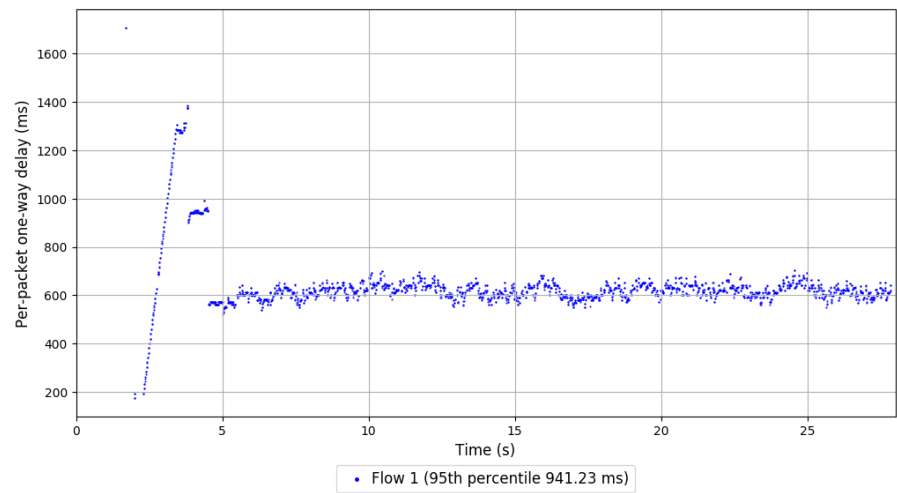
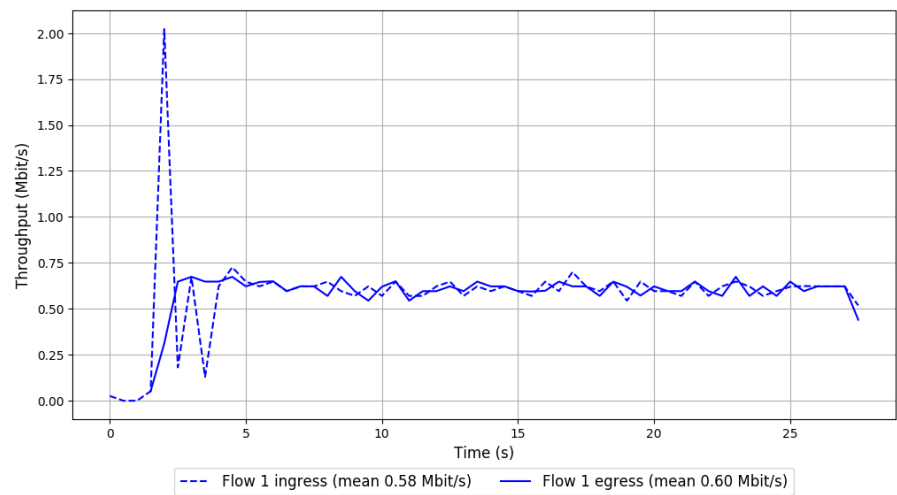
Average throughput: 0.60 Mbit/s

95th percentile per-packet one-way delay: 941.229 ms

Loss rate: 2.71%



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



Run 1: Statistics of TCP Vegas

Start at: 2017-11-30 05:25:46

End at: 2017-11-30 05:26:16

Local clock offset: 3.838 ms

Remote clock offset: -0.519 ms

Run 1: Report of TCP Vegas — Data Link

Figure is missing

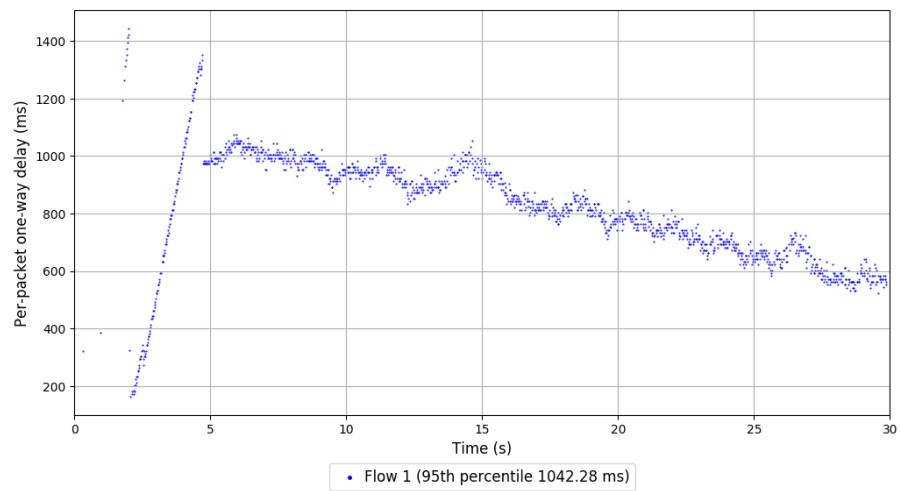
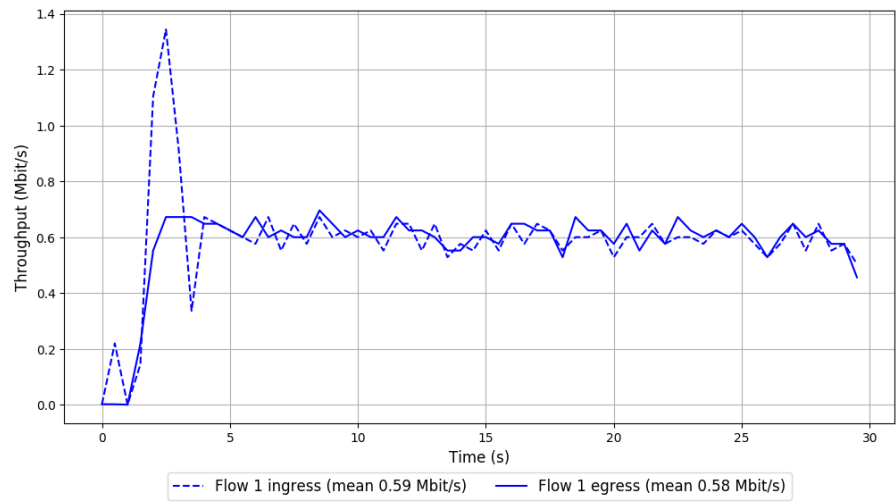
Figure is missing

Run 2: Statistics of TCP Vegas

Start at: 2017-11-30 05:42:09  
End at: 2017-11-30 05:42:39  
Local clock offset: 0.945 ms  
Remote clock offset: -5.646 ms

# Below is generated by plot.py at 2017-11-30 06:54:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.58 Mbit/s  
95th percentile per-packet one-way delay: 1042.283 ms  
Loss rate: 2.04%  
-- Flow 1:  
Average throughput: 0.58 Mbit/s  
95th percentile per-packet one-way delay: 1042.283 ms  
Loss rate: 2.04%

## Run 2: Report of TCP Vegas — Data Link

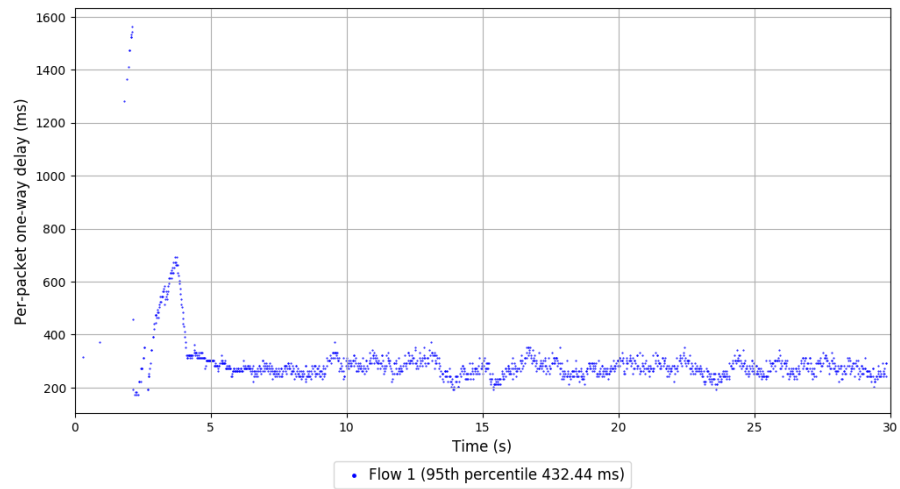
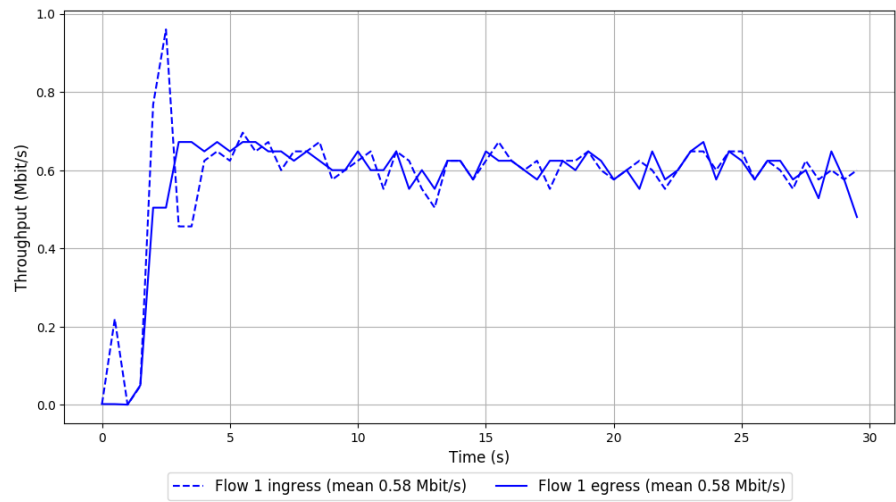


Run 3: Statistics of TCP Vegas

Start at: 2017-11-30 05:58:33  
End at: 2017-11-30 05:59:04  
Local clock offset: 1.118 ms  
Remote clock offset: -0.779 ms

# Below is generated by plot.py at 2017-11-30 06:54:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.58 Mbit/s  
95th percentile per-packet one-way delay: 432.438 ms  
Loss rate: 1.52%  
-- Flow 1:  
Average throughput: 0.58 Mbit/s  
95th percentile per-packet one-way delay: 432.438 ms  
Loss rate: 1.52%

### Run 3: Report of TCP Vegas — Data Link



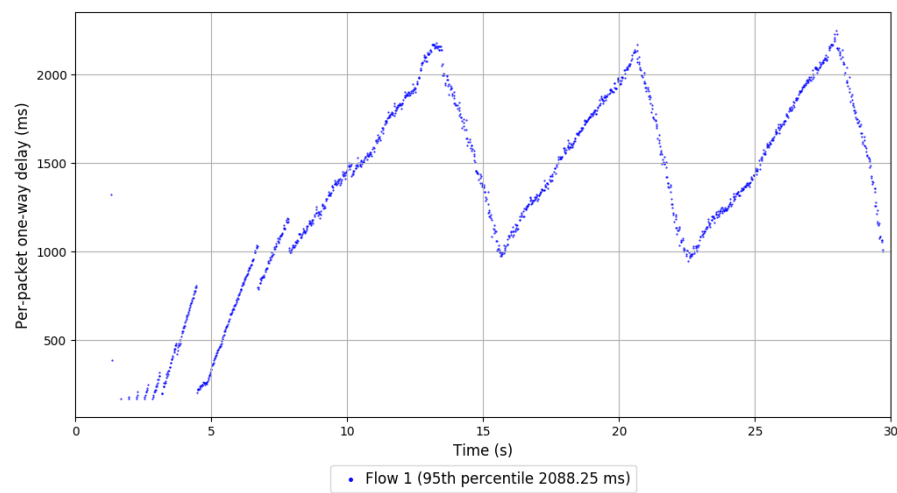
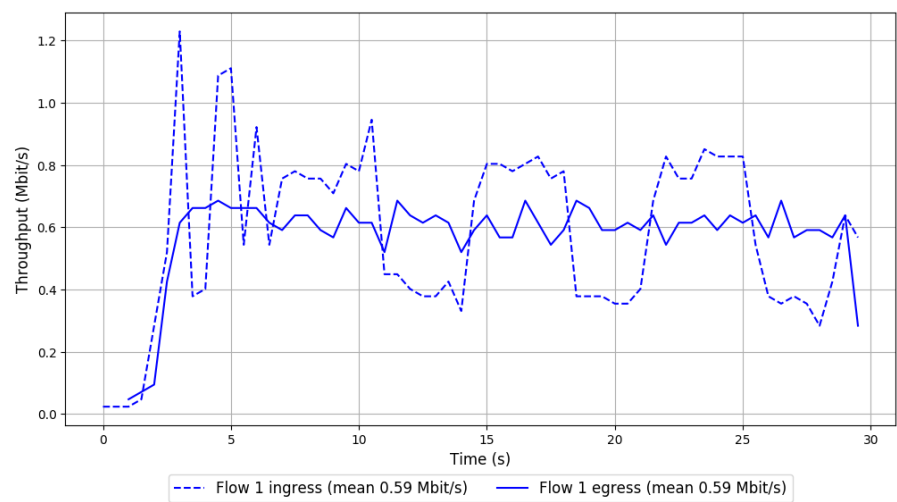
Run 1: Statistics of Verus

Start at: 2017-11-30 05:21:06  
End at: 2017-11-30 05:21:36  
Local clock offset: 2.702 ms  
Remote clock offset: -0.294 ms

# Below is generated by plot.py at 2017-11-30 06:54:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.59 Mbit/s  
95th percentile per-packet one-way delay: 2088.251 ms  
Loss rate: 4.12%  
-- Flow 1:  
Average throughput: 0.59 Mbit/s  
95th percentile per-packet one-way delay: 2088.251 ms  
Loss rate: 4.12%



Run 1: Report of Verus — Data Link

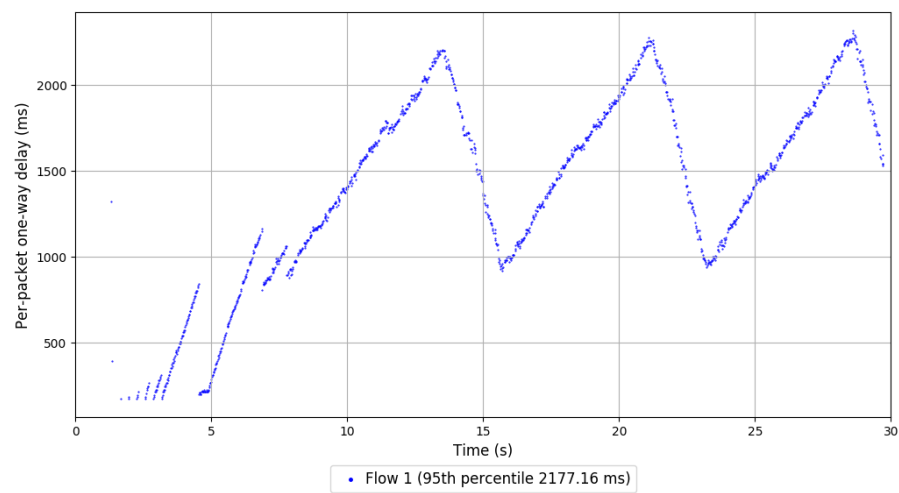
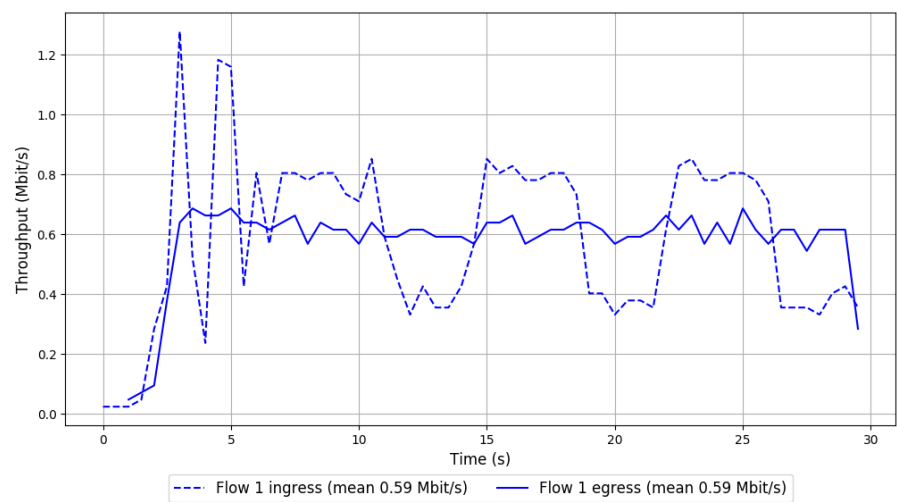


Run 2: Statistics of Verus

Start at: 2017-11-30 05:37:28  
End at: 2017-11-30 05:37:58  
Local clock offset: 2.921 ms  
Remote clock offset: -1.156 ms

# Below is generated by plot.py at 2017-11-30 06:54:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.59 Mbit/s  
95th percentile per-packet one-way delay: 2177.157 ms  
Loss rate: 3.92%  
-- Flow 1:  
Average throughput: 0.59 Mbit/s  
95th percentile per-packet one-way delay: 2177.157 ms  
Loss rate: 3.92%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2017-11-30 05:53:52

End at: 2017-11-30 05:54:22

Local clock offset: 0.919 ms

Remote clock offset: -1.58 ms

# Below is generated by plot.py at 2017-11-30 06:54:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.59 Mbit/s

95th percentile per-packet one-way delay: 1968.156 ms

Loss rate: 6.07%

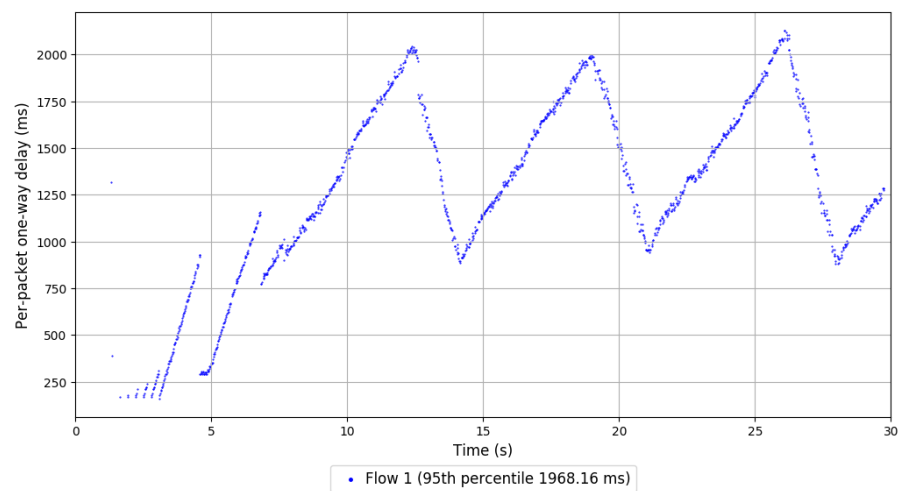
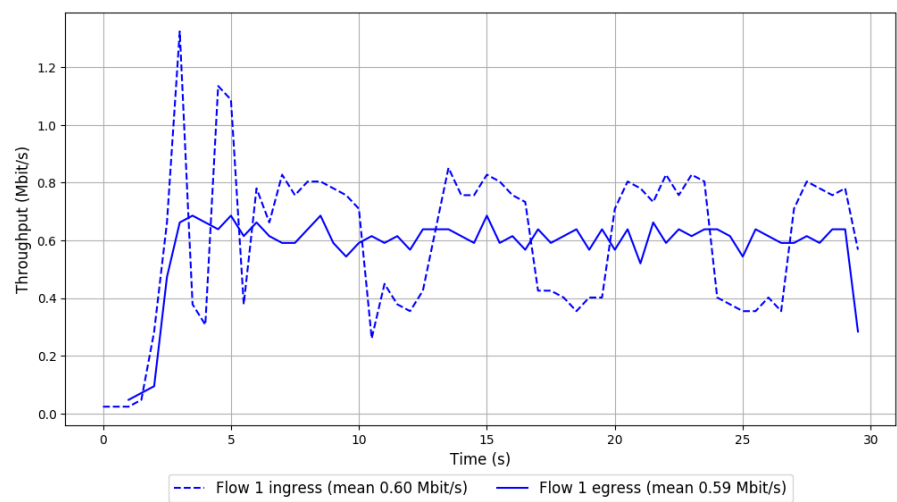
-- Flow 1:

Average throughput: 0.59 Mbit/s

95th percentile per-packet one-way delay: 1968.156 ms

Loss rate: 6.07%

Run 3: Report of Verus — Data Link



Run 1: Statistics of Copa

Start at: 2017-11-30 05:29:17

End at: 2017-11-30 05:29:47

Local clock offset: 4.716 ms

Remote clock offset: 0.29 ms

# Below is generated by plot.py at 2017-11-30 06:54:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.57 Mbit/s

95th percentile per-packet one-way delay: 370.750 ms

Loss rate: 1.11%

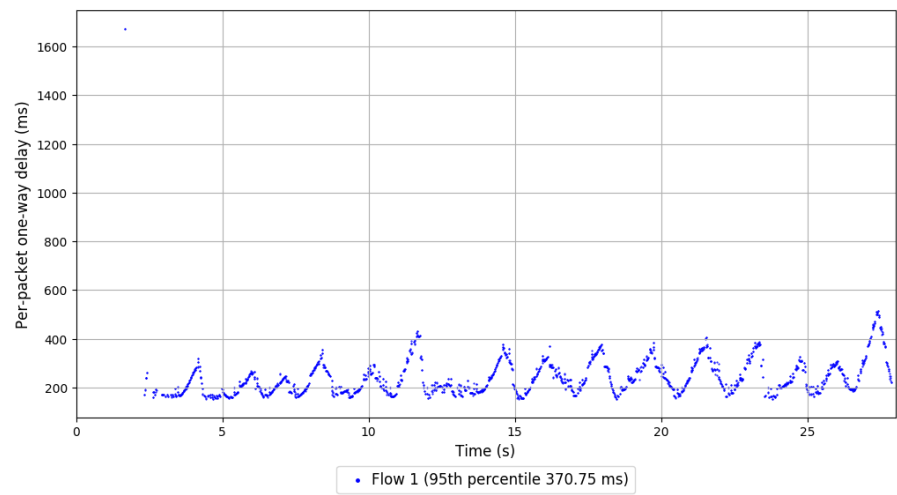
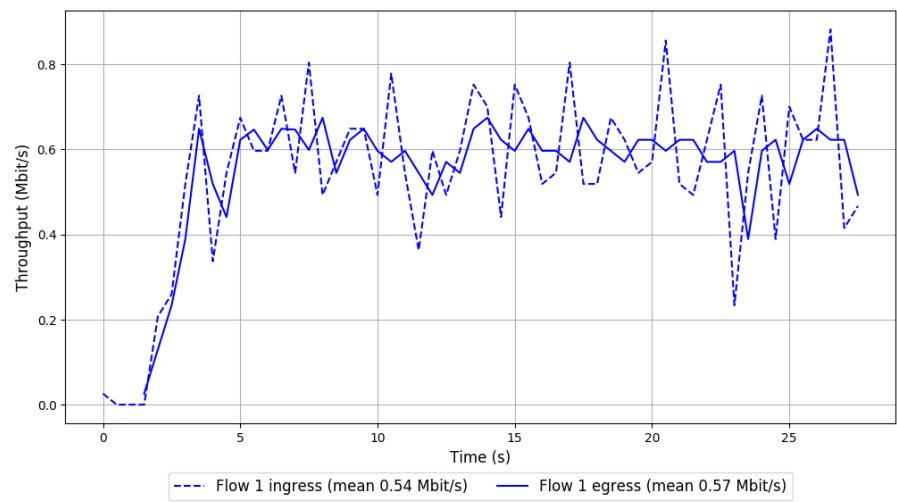
-- Flow 1:

Average throughput: 0.57 Mbit/s

95th percentile per-packet one-way delay: 370.750 ms

Loss rate: 1.11%

Run 1: Report of Copa — Data Link



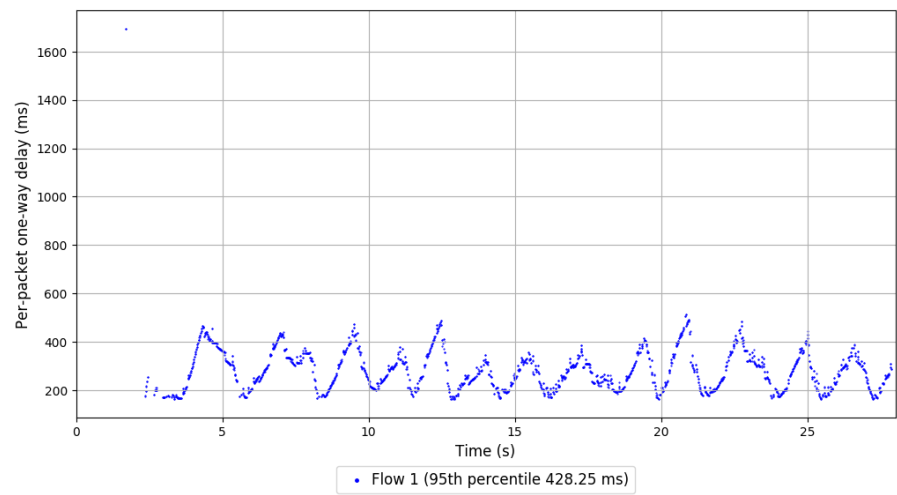
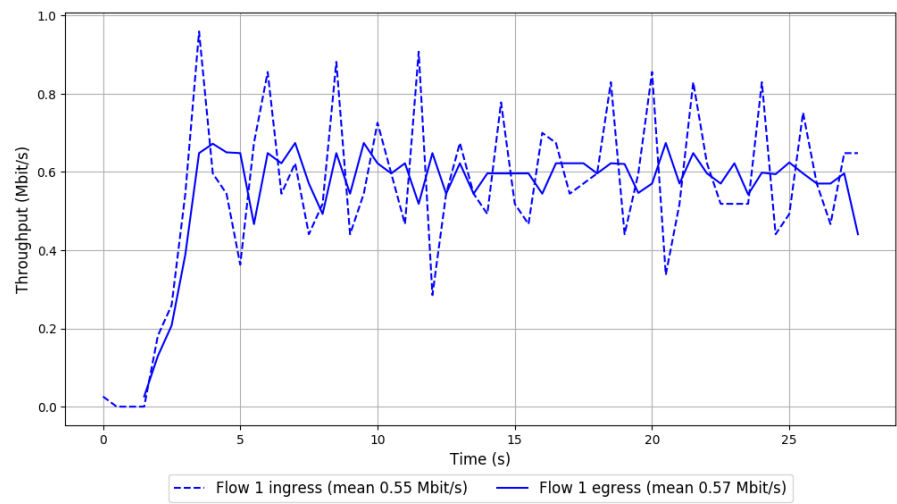
Run 2: Statistics of Copa

Start at: 2017-11-30 05:45:39  
End at: 2017-11-30 05:46:09  
Local clock offset: 0.548 ms  
Remote clock offset: -5.846 ms

# Below is generated by plot.py at 2017-11-30 06:54:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.57 Mbit/s  
95th percentile per-packet one-way delay: 428.255 ms  
Loss rate: 1.70%  
-- Flow 1:  
Average throughput: 0.57 Mbit/s  
95th percentile per-packet one-way delay: 428.255 ms  
Loss rate: 1.70%



Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2017-11-30 06:02:04

End at: 2017-11-30 06:02:34

Local clock offset: 1.239 ms

Remote clock offset: -1.441 ms

# Below is generated by plot.py at 2017-11-30 06:54:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.58 Mbit/s

95th percentile per-packet one-way delay: 471.603 ms

Loss rate: 0.94%

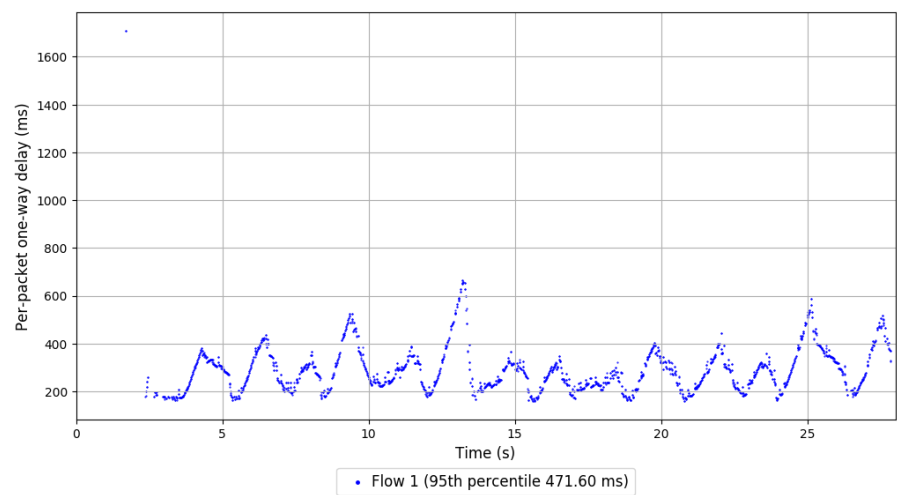
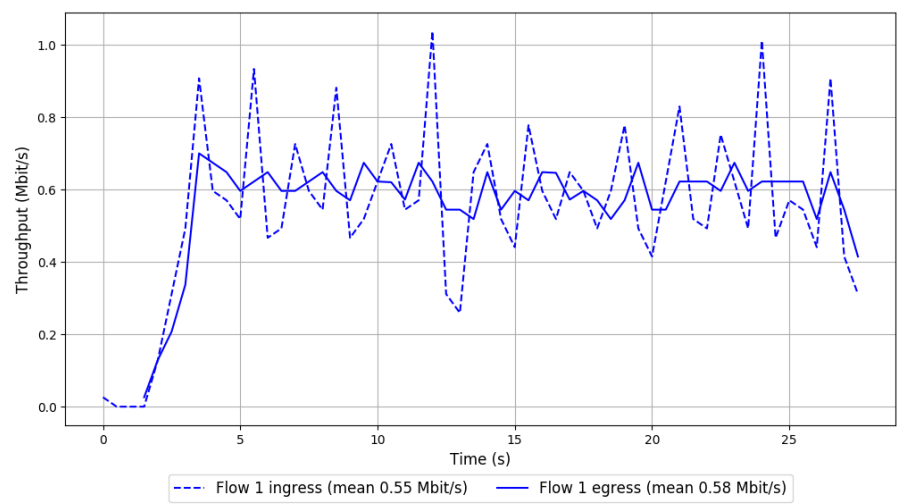
-- Flow 1:

Average throughput: 0.58 Mbit/s

95th percentile per-packet one-way delay: 471.603 ms

Loss rate: 0.94%

Run 3: Report of Copa — Data Link

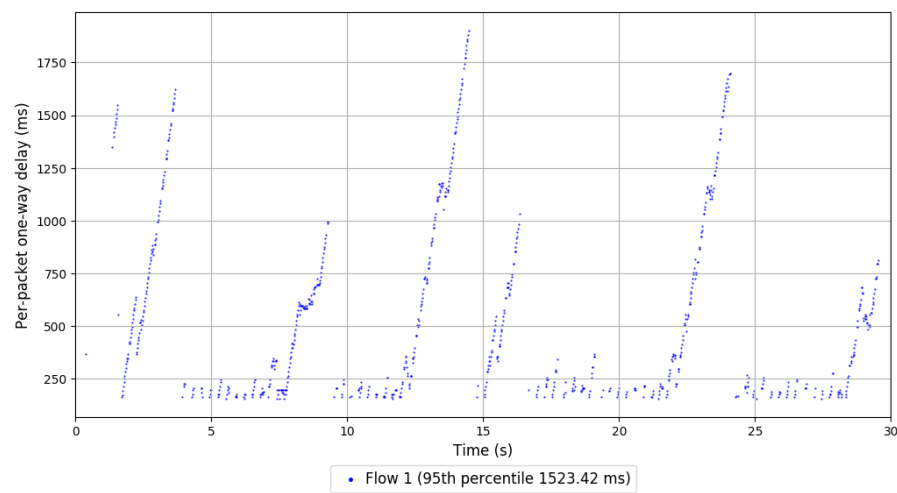
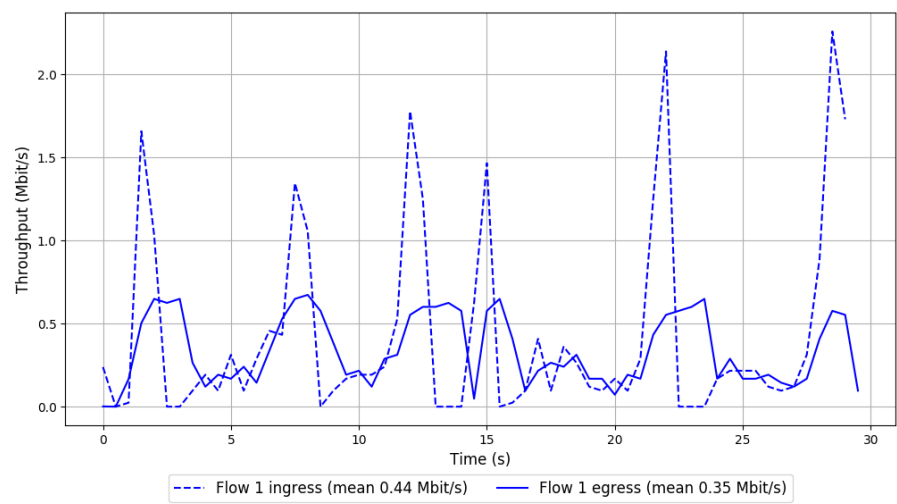


```
Run 1: Statistics of Indigo

Start at: 2017-11-30 05:19:56
End at: 2017-11-30 05:20:26
Local clock offset: 1.301 ms
Remote clock offset: 0.486 ms

# Below is generated by plot.py at 2017-11-30 06:54:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 1523.419 ms
Loss rate: 20.36%
-- Flow 1:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 1523.419 ms
Loss rate: 20.36%
```

Run 1: Report of Indigo — Data Link

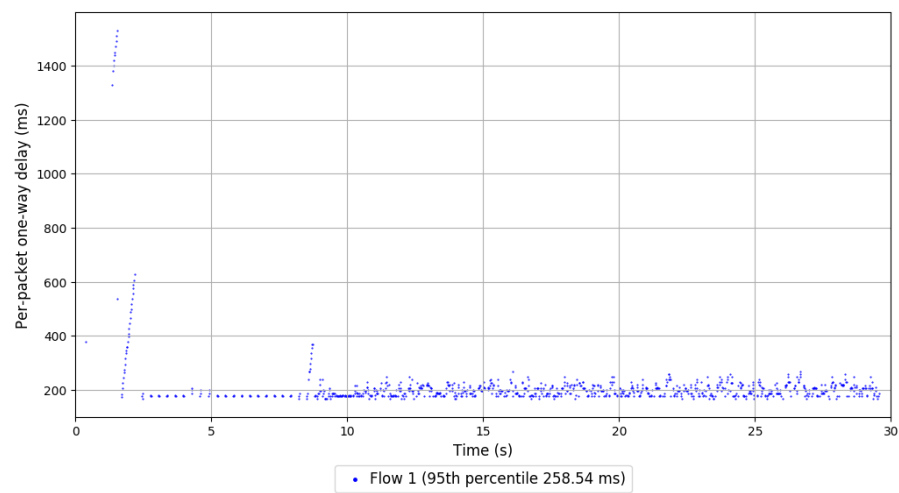
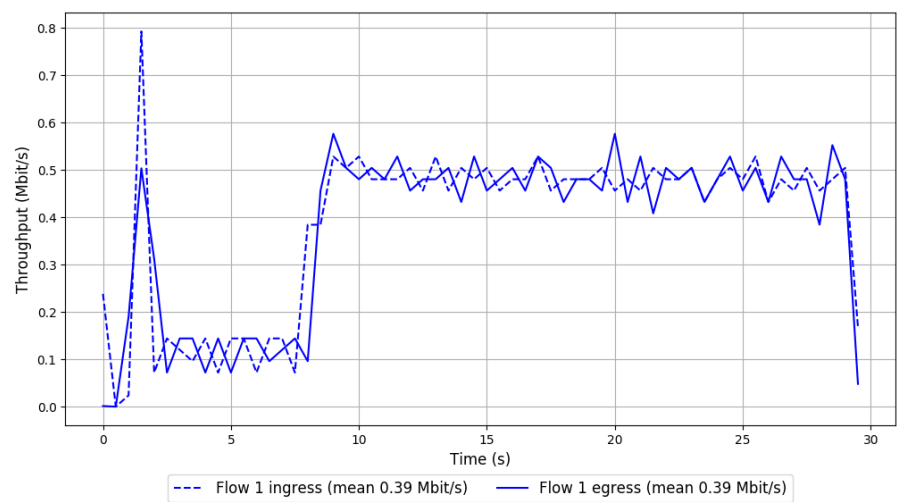


Run 2: Statistics of Indigo

Start at: 2017-11-30 05:36:18  
End at: 2017-11-30 05:36:48  
Local clock offset: 3.19 ms  
Remote clock offset: -5.616 ms

# Below is generated by plot.py at 2017-11-30 06:54:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.39 Mbit/s  
95th percentile per-packet one-way delay: 258.543 ms  
Loss rate: 1.86%  
-- Flow 1:  
Average throughput: 0.39 Mbit/s  
95th percentile per-packet one-way delay: 258.543 ms  
Loss rate: 1.86%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2017-11-30 05:52:42

End at: 2017-11-30 05:53:12

Local clock offset: 0.829 ms

Remote clock offset: -6.244 ms

# Below is generated by plot.py at 2017-11-30 06:54:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.47 Mbit/s

95th percentile per-packet one-way delay: 302.205 ms

Loss rate: 1.38%

-- Flow 1:

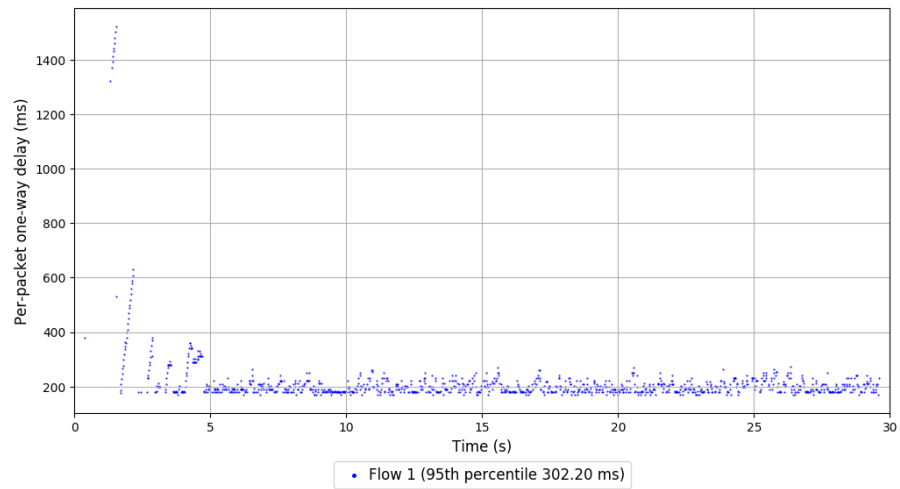
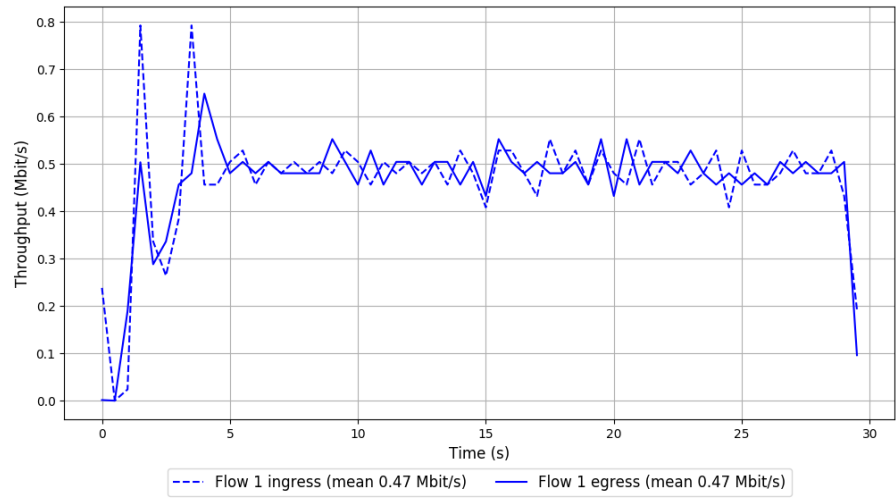
Average throughput: 0.47 Mbit/s

95th percentile per-packet one-way delay: 302.205 ms

Loss rate: 1.38%



### Run 3: Report of Indigo — Data Link

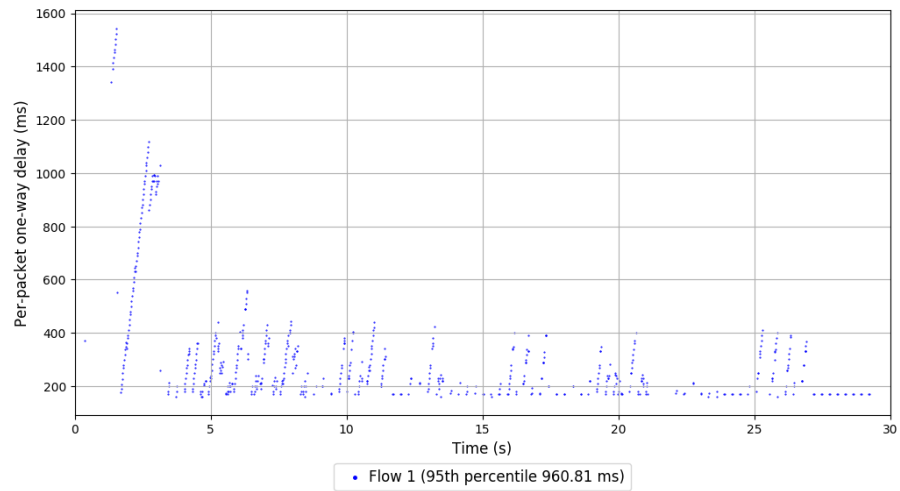
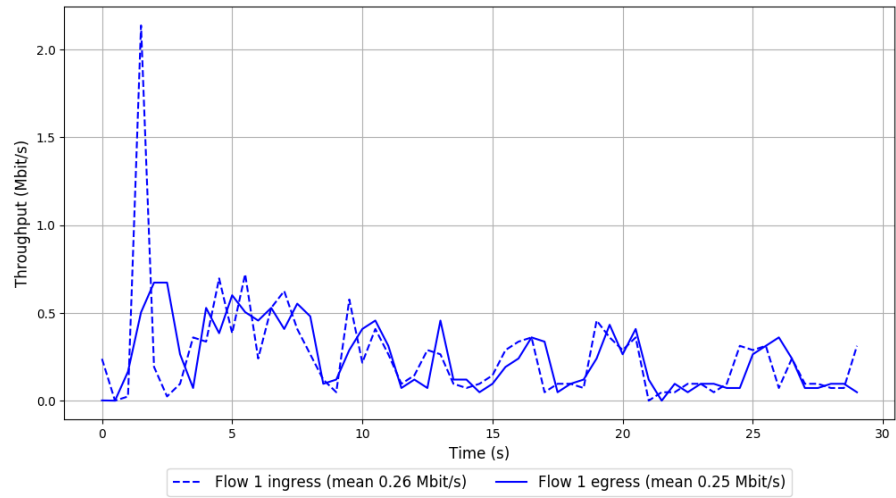


```
Run 1: Statistics of Indigo-calib

Start at: 2017-11-30 05:17:36
End at: 2017-11-30 05:18:06
Local clock offset: -2.08 ms
Remote clock offset: -5.922 ms

# Below is generated by plot.py at 2017-11-30 06:54:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 960.810 ms
Loss rate: 4.59%
-- Flow 1:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 960.810 ms
Loss rate: 4.59%
```

### Run 1: Report of Indigo-calib — Data Link



Run 2: Statistics of Indigo-calib

Start at: 2017-11-30 05:33:58

End at: 2017-11-30 05:34:28

Local clock offset: 3.419 ms

Remote clock offset: -5.514 ms

# Below is generated by plot.py at 2017-11-30 06:54:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.19 Mbit/s

95th percentile per-packet one-way delay: 882.420 ms

Loss rate: 5.35%

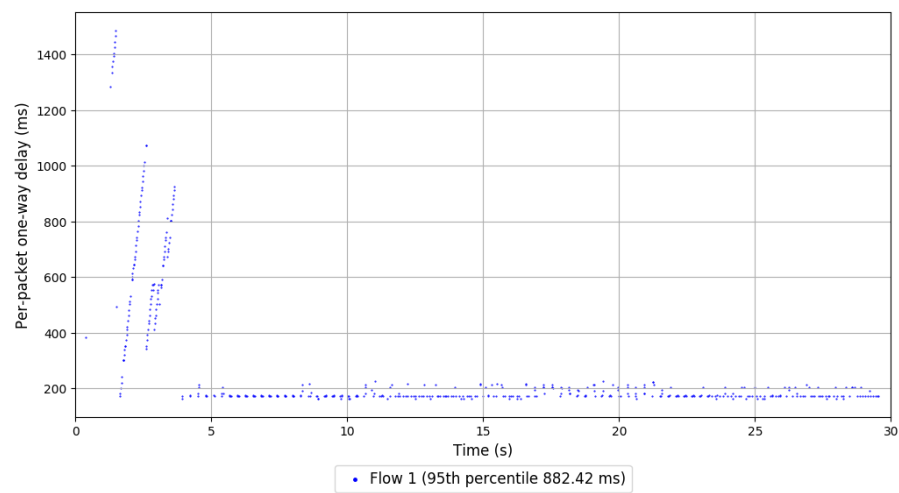
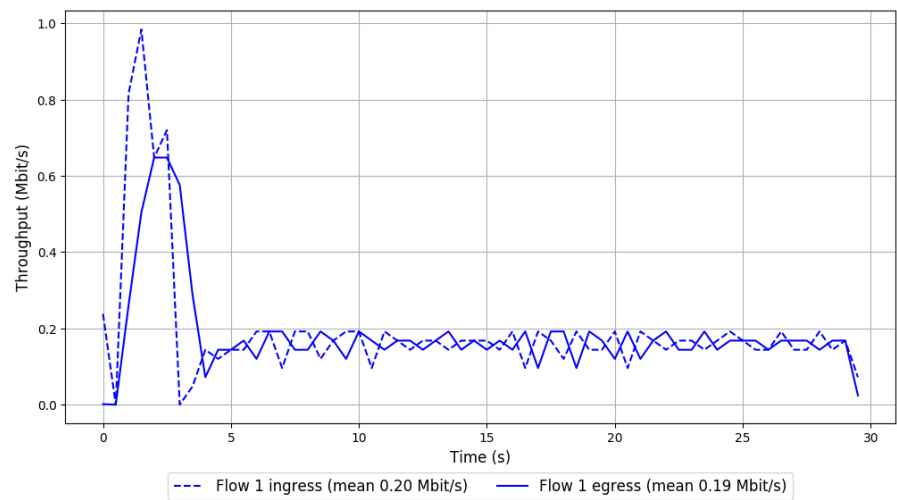
-- Flow 1:

Average throughput: 0.19 Mbit/s

95th percentile per-packet one-way delay: 882.420 ms

Loss rate: 5.35%

Run 2: Report of Indigo-calib — Data Link



Run 3: Statistics of Indigo-calib

Start at: 2017-11-30 05:50:22

End at: 2017-11-30 05:50:52

Local clock offset: 0.65 ms

Remote clock offset: -1.421 ms

# Below is generated by plot.py at 2017-11-30 06:54:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.15 Mbit/s

95th percentile per-packet one-way delay: 893.683 ms

Loss rate: 6.00%

-- Flow 1:

Average throughput: 0.15 Mbit/s

95th percentile per-packet one-way delay: 893.683 ms

Loss rate: 6.00%

Run 3: Report of Indigo-calib — Data Link

