

Pantheon Report

Generated at 2017-11-16 03:49:53 (UTC).

Data path: Stanford Ethernet (*remote*) → AWS California 1 Ethernet (*local*).

Repeated the test of 14 congestion control schemes 10 times.

Each test lasted for 30 seconds running 1 flow.

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

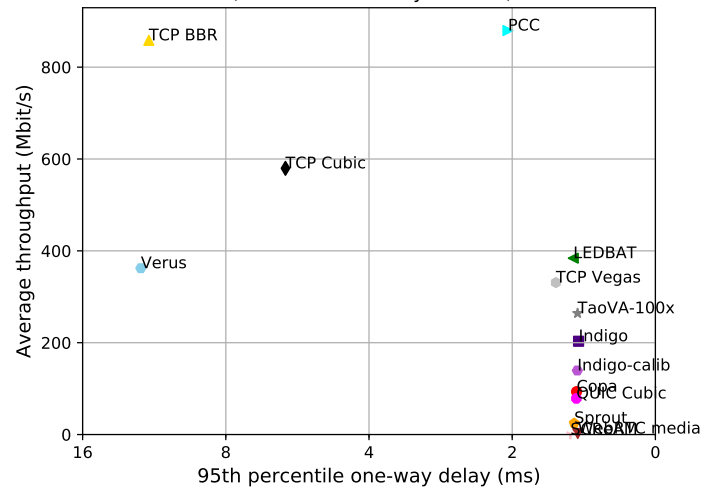
Tested BBR with qdisc of Fair Queuing (**fq**), and other schemes with the default Linux qdisc (**pfifo_fast**).

NTP offsets were measured against `time.stanford.edu` and have been applied to correct the timestamps in logs.

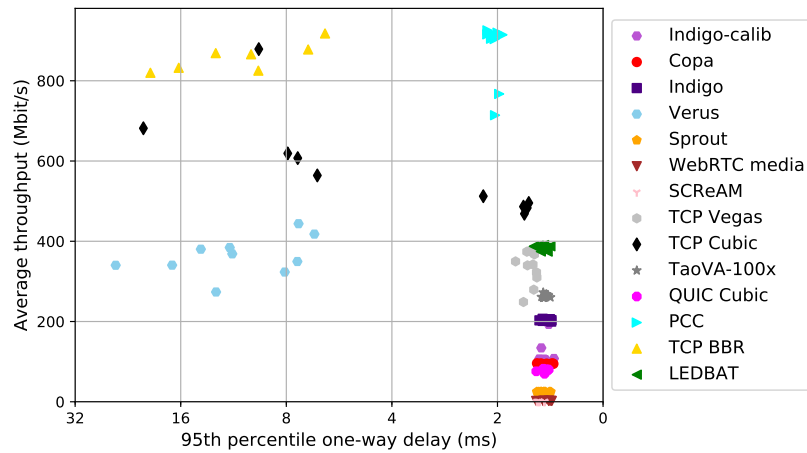
Git summary:

```
branch: indigos @ f54f2953f2a9765c9ffa988d13de5a9471790eb0
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
  M datagrump/sender.cc
third_party/genericCC @ f7ca42f251bf49b432bb71de6d13fa903515c366
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 @ 03455460fd1a8ffbdad86fabb936fdca204b80db
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 Stanford Ethernet to AWS California 1 Ethernet, 10 runs of 30s each per scheme
(mean of all runs by scheme)



test from Stanford Ethernet to AWS California 1 Ethernet, 10 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	7	858.37	11.61	0.08
TCP Cubic	10	579.66	5.99	0.07
LEDBAT	10	384.03	1.15	0.08
PCC	10	879.73	2.04	0.08
QUIC Cubic	8	78.58	1.10	0.07
SCReAM	9	0.22	1.19	0.12
WebRTC media	9	2.23	1.08	0.07
Sprout	10	24.84	1.13	0.05
TaoVA-100x	10	264.07	1.09	0.07
TCP Vegas	10	330.91	1.39	0.06
Verus	10	362.20	12.07	0.16
Copa	9	93.38	1.10	0.07
Indigo	10	203.16	1.07	0.07
Indigo-calib	9	139.50	1.09	0.07

Run 1: Statistics of TCP BBR

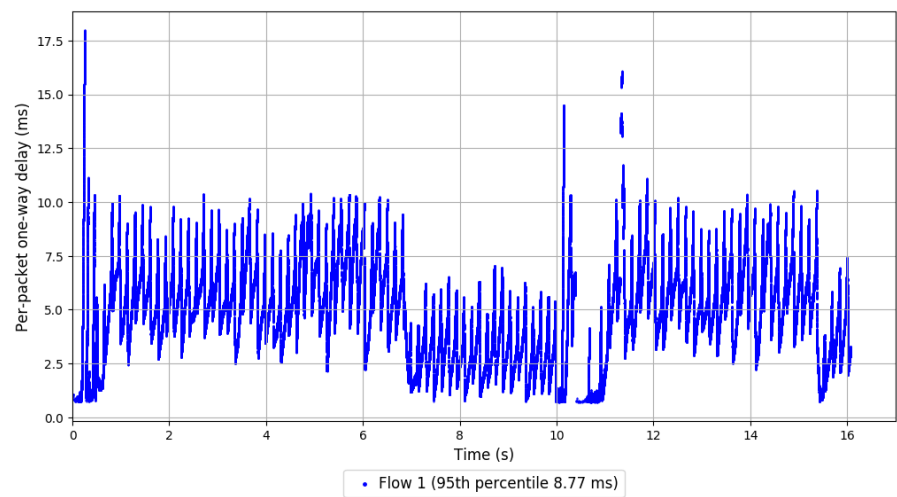
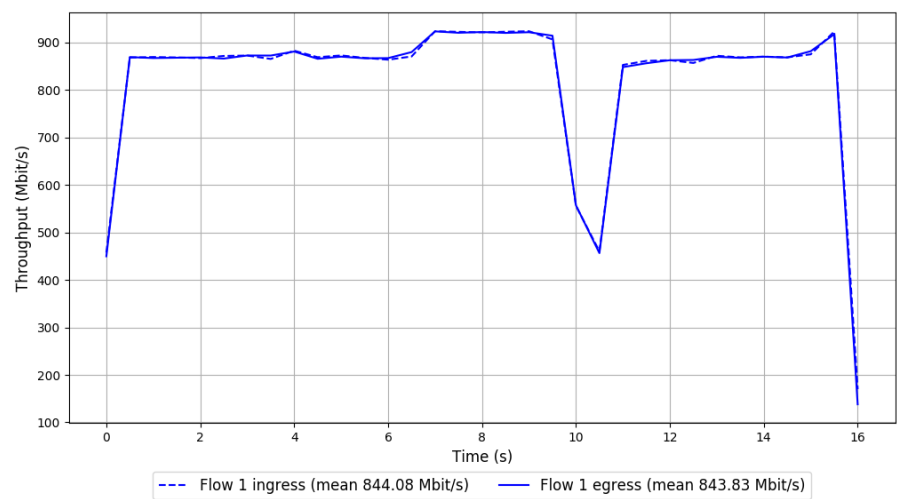
Start at: 2017-11-15 20:19:51

End at: 2017-11-15 20:20:21

Local clock offset: -1.027 ms

Remote clock offset: -2.427 ms

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

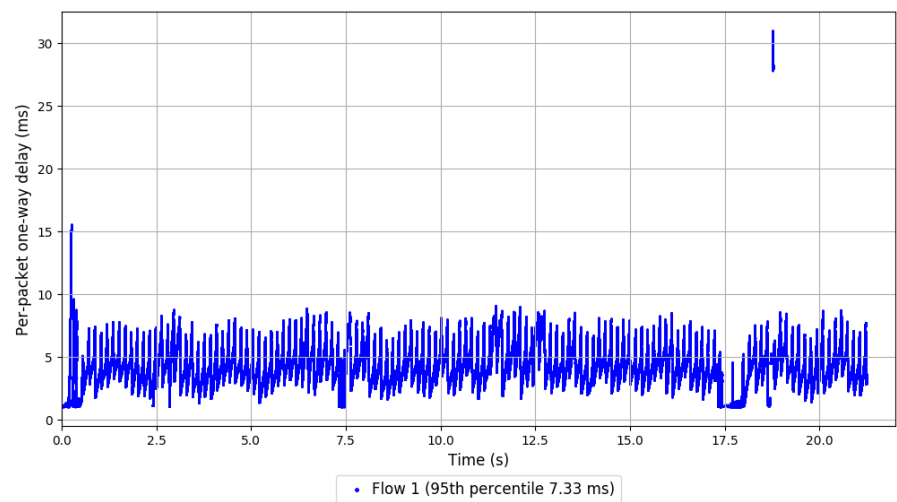
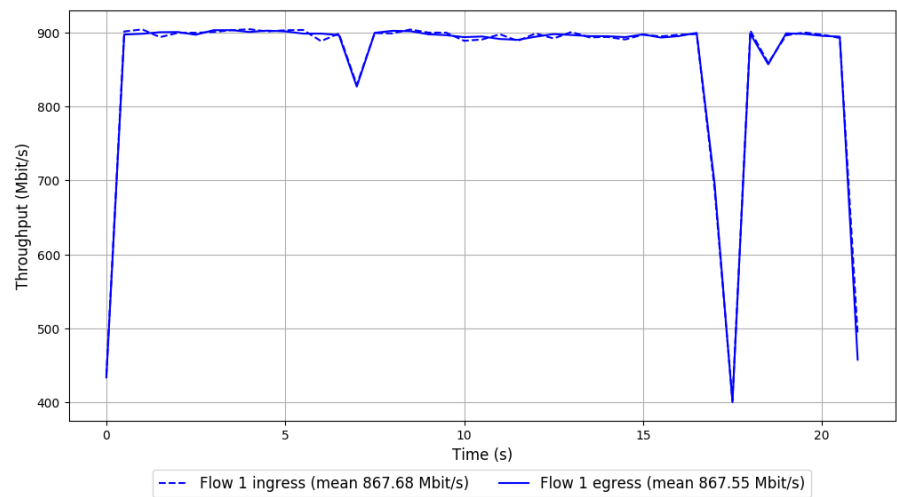
Start at: 2017-11-15 20:38:49

End at: 2017-11-15 20:39:19

Local clock offset: 1.26 ms

Remote clock offset: -2.095 ms

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2017-11-15 20:57:58

End at: 2017-11-15 20:58:28

Local clock offset: 2.096 ms

Remote clock offset: -1.753 ms

Below is generated by plot.py at 2017-11-16 02:43:33

Datalink statistics

-- Total of 1 flow:

Average throughput: 917.91 Mbit/s

95th percentile per-packet one-way delay: 6.204 ms

Loss rate: 0.07%

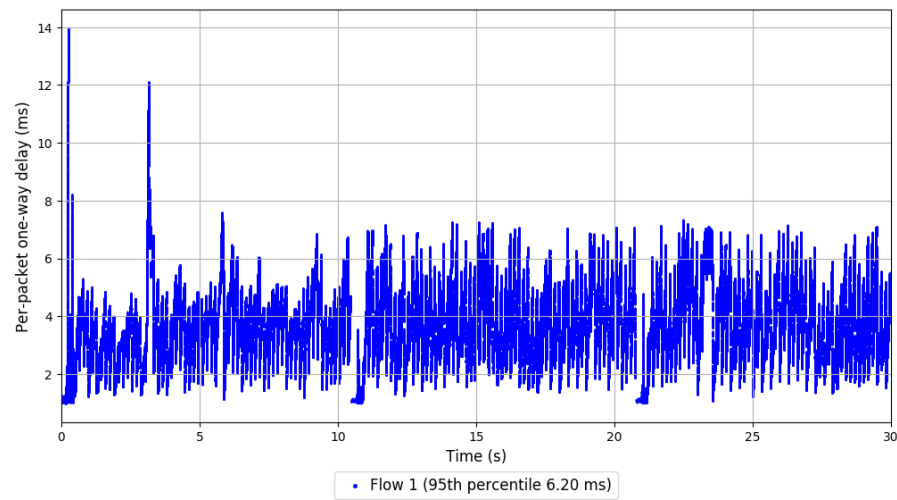
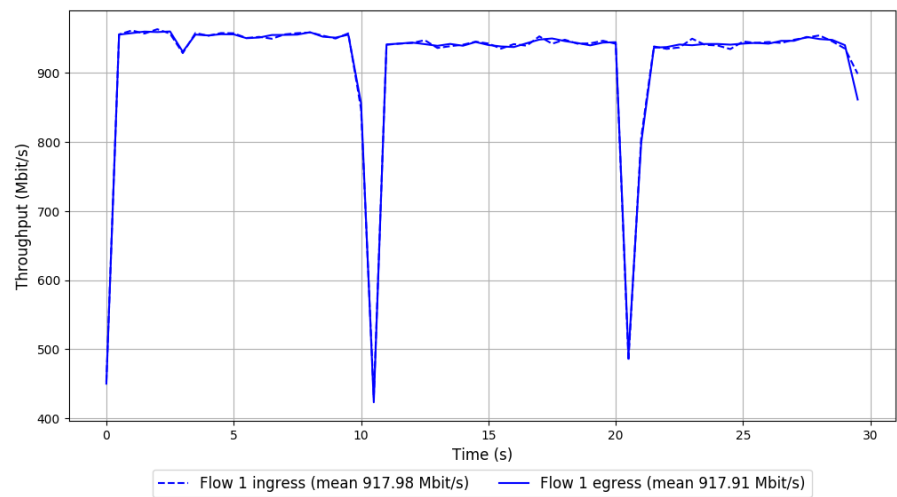
-- Flow 1:

Average throughput: 917.91 Mbit/s

95th percentile per-packet one-way delay: 6.204 ms

Loss rate: 0.07%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2017-11-15 21:17:26

End at: 2017-11-15 21:17:56

Local clock offset: 1.897 ms

Remote clock offset: -1.746 ms

Below is generated by plot.py at 2017-11-16 02:43:33

Datalink statistics

-- Total of 1 flow:

Average throughput: 825.27 Mbit/s

95th percentile per-packet one-way delay: 9.612 ms

Loss rate: 0.09%

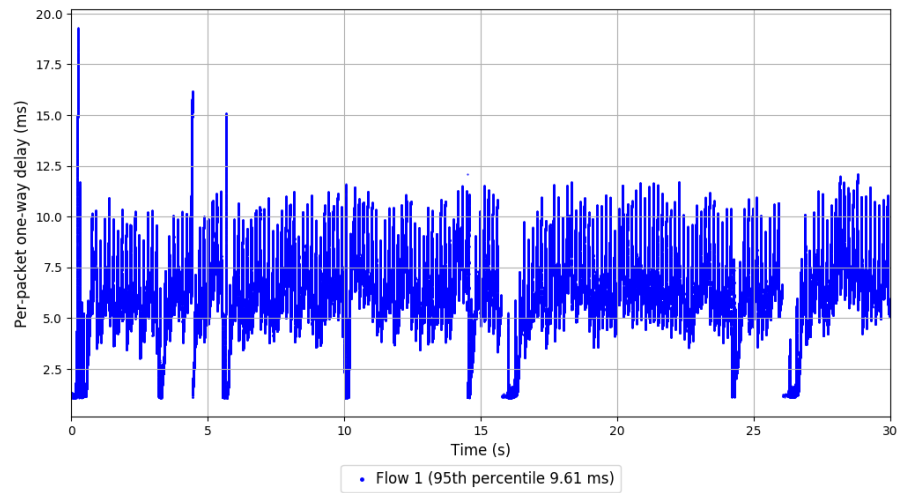
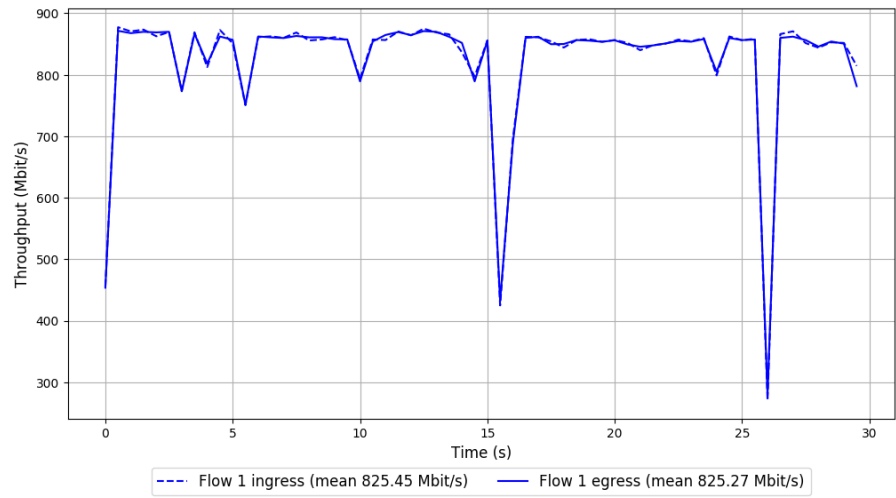
-- Flow 1:

Average throughput: 825.27 Mbit/s

95th percentile per-packet one-way delay: 9.612 ms

Loss rate: 0.09%

Run 4: Report of TCP BBR — Data Link

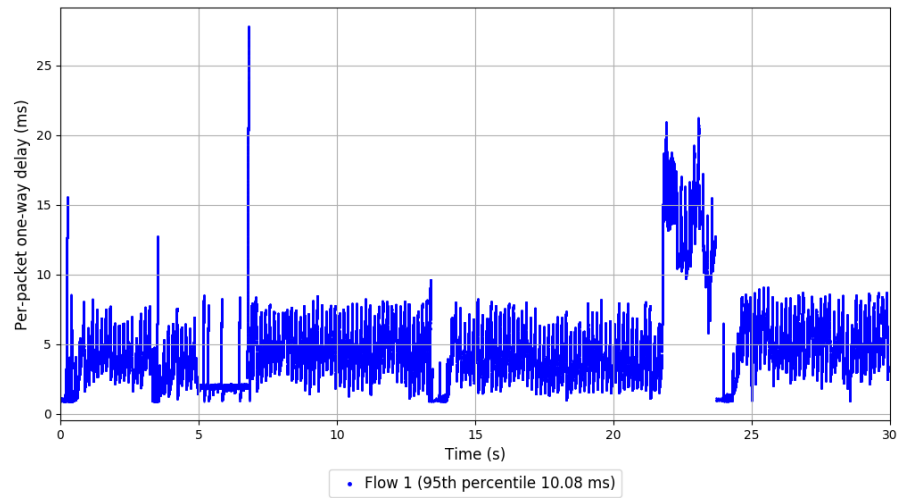
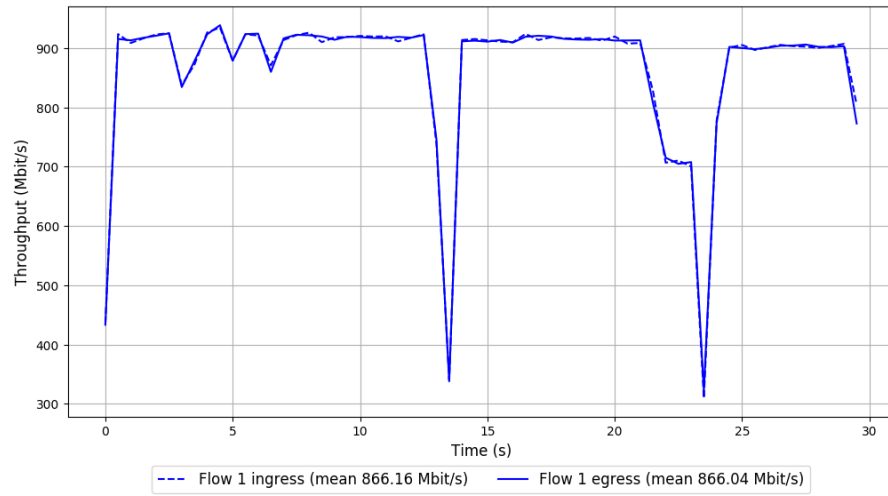


Run 5: Statistics of TCP BBR

Start at: 2017-11-15 21:36:46
End at: 2017-11-15 21:37:16
Local clock offset: 0.417 ms
Remote clock offset: -1.556 ms

Below is generated by plot.py at 2017-11-16 02:43:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 866.04 Mbit/s
95th percentile per-packet one-way delay: 10.082 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 866.04 Mbit/s
95th percentile per-packet one-way delay: 10.082 ms
Loss rate: 0.08%

Run 5: Report of TCP BBR — Data Link



Run 6: Statistics of TCP BBR

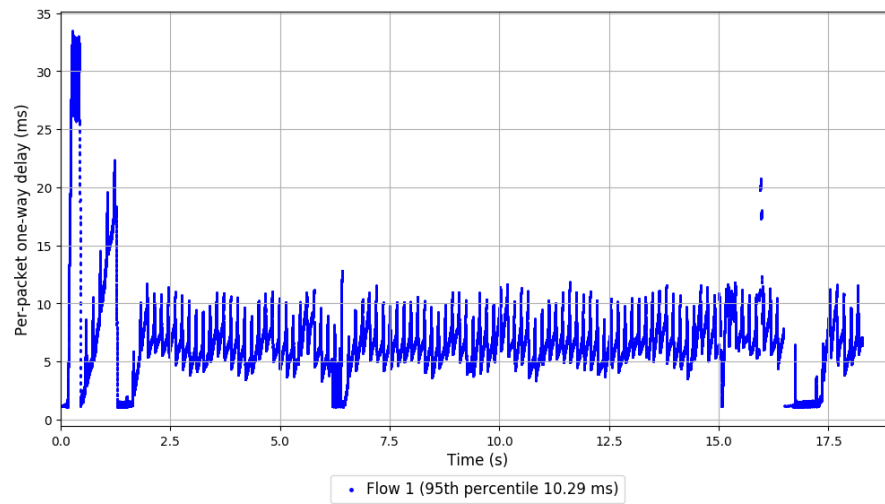
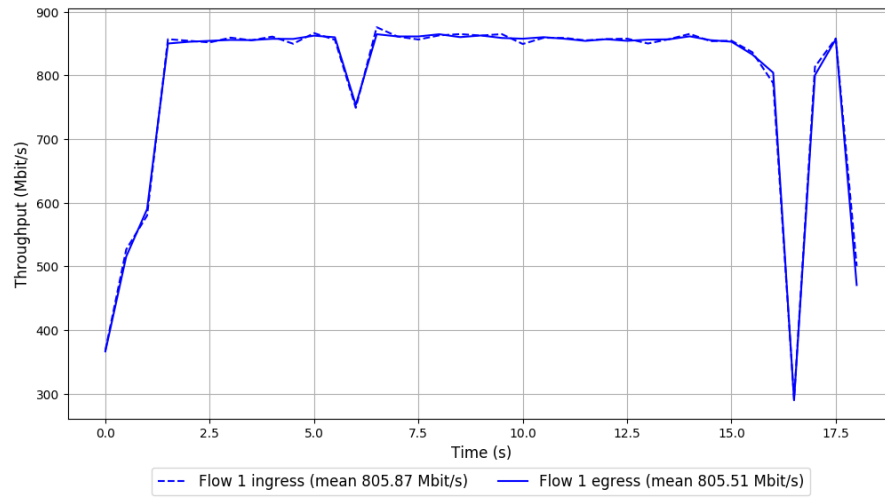
Start at: 2017-11-15 21:56:04

End at: 2017-11-15 21:56:34

Local clock offset: -0.501 ms

Remote clock offset: -1.4 ms

Run 6: Report of TCP BBR — Data Link

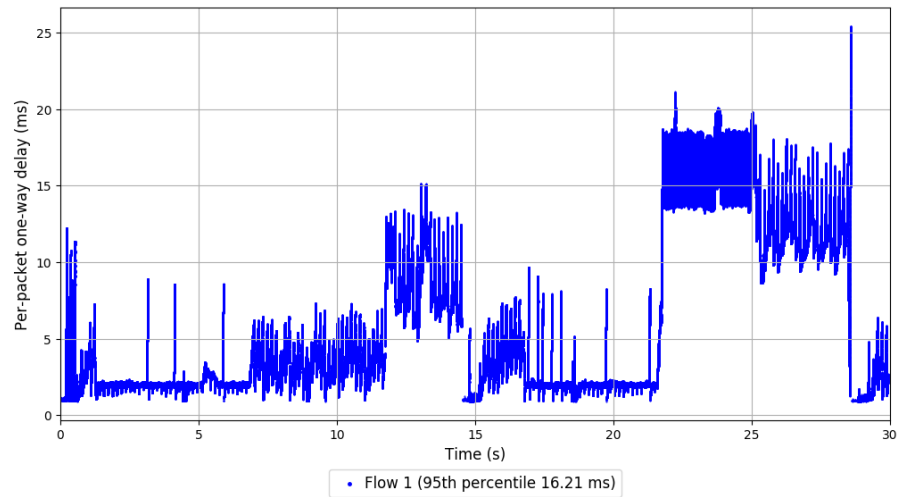
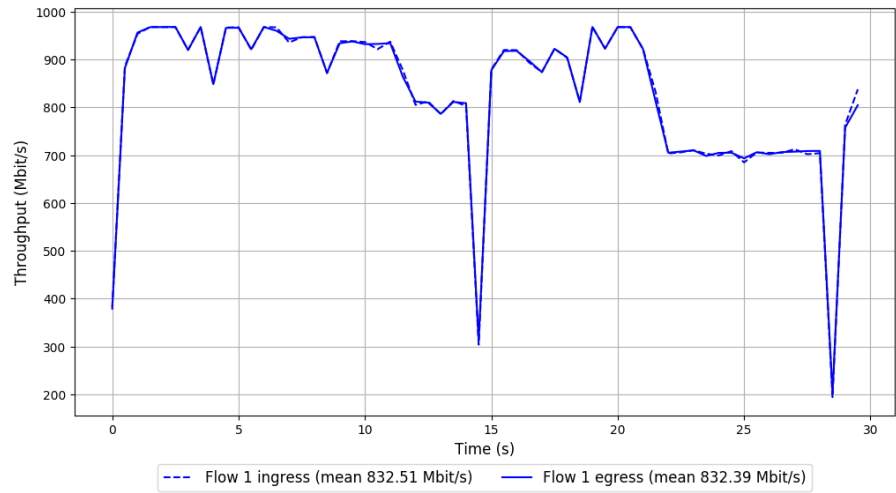


Run 7: Statistics of TCP BBR

Start at: 2017-11-15 22:15:16
End at: 2017-11-15 22:15:46
Local clock offset: -0.339 ms
Remote clock offset: -1.227 ms

Below is generated by plot.py at 2017-11-16 02:43:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 832.39 Mbit/s
95th percentile per-packet one-way delay: 16.212 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 832.39 Mbit/s
95th percentile per-packet one-way delay: 16.212 ms
Loss rate: 0.08%

Run 7: Report of TCP BBR — Data Link

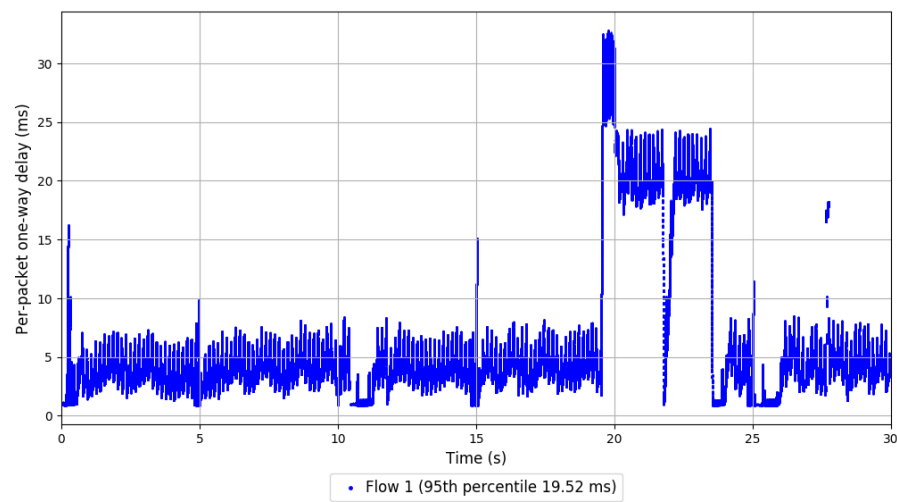
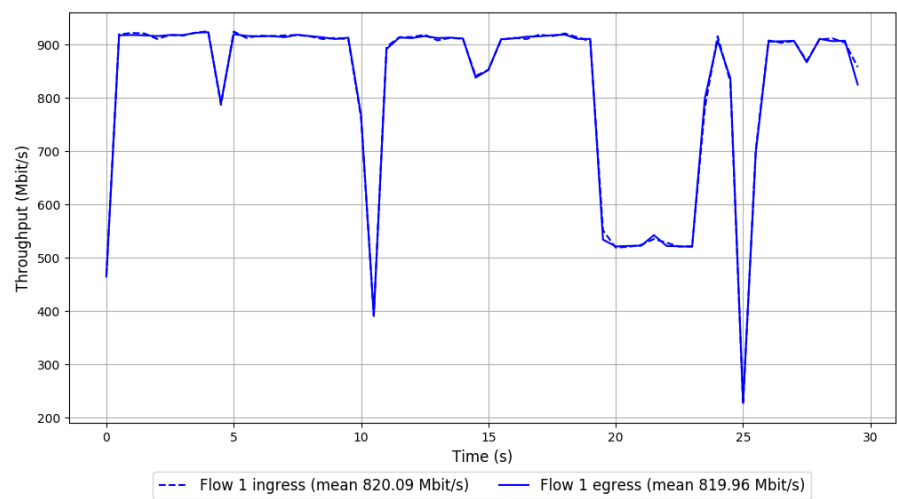


Run 8: Statistics of TCP BBR

Start at: 2017-11-15 22:34:30
End at: 2017-11-15 22:35:00
Local clock offset: 0.526 ms
Remote clock offset: -1.053 ms

Below is generated by plot.py at 2017-11-16 02:43:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 819.96 Mbit/s
95th percentile per-packet one-way delay: 19.525 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 819.96 Mbit/s
95th percentile per-packet one-way delay: 19.525 ms
Loss rate: 0.08%

Run 8: Report of TCP BBR — Data Link

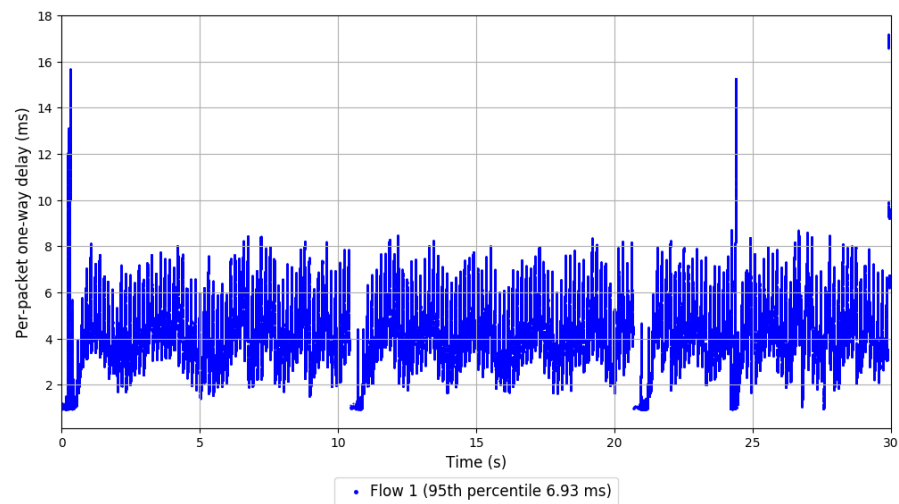
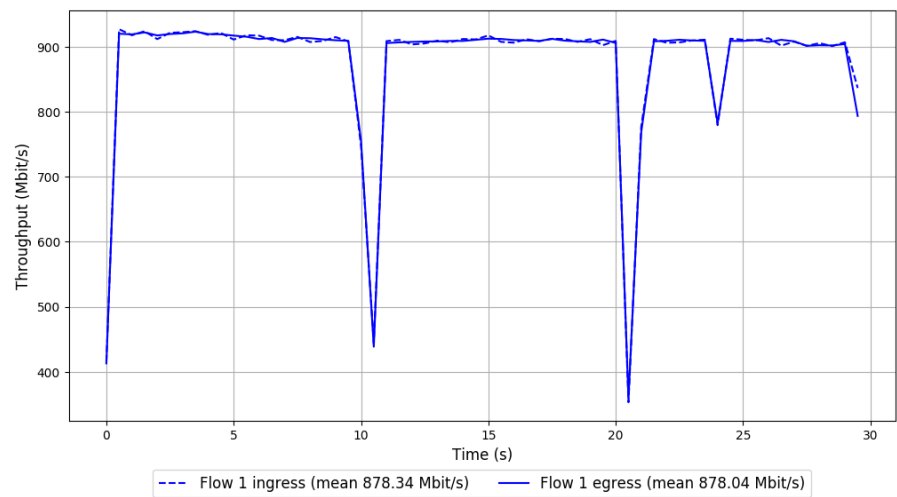


Run 9: Statistics of TCP BBR

Start at: 2017-11-15 22:53:43
End at: 2017-11-15 22:54:13
Local clock offset: 1.233 ms
Remote clock offset: -1.153 ms

Below is generated by plot.py at 2017-11-16 02:49:57
Datalink statistics
-- Total of 1 flow:
Average throughput: 878.04 Mbit/s
95th percentile per-packet one-way delay: 6.930 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 878.04 Mbit/s
95th percentile per-packet one-way delay: 6.930 ms
Loss rate: 0.10%

Run 9: Report of TCP BBR — Data Link



Run 10: Statistics of TCP BBR

Start at: 2017-11-15 23:13:04

End at: 2017-11-15 23:13:34

Local clock offset: 1.518 ms

Remote clock offset: -0.686 ms

Below is generated by plot.py at 2017-11-16 02:50:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 868.95 Mbit/s

95th percentile per-packet one-way delay: 12.714 ms

Loss rate: 0.05%

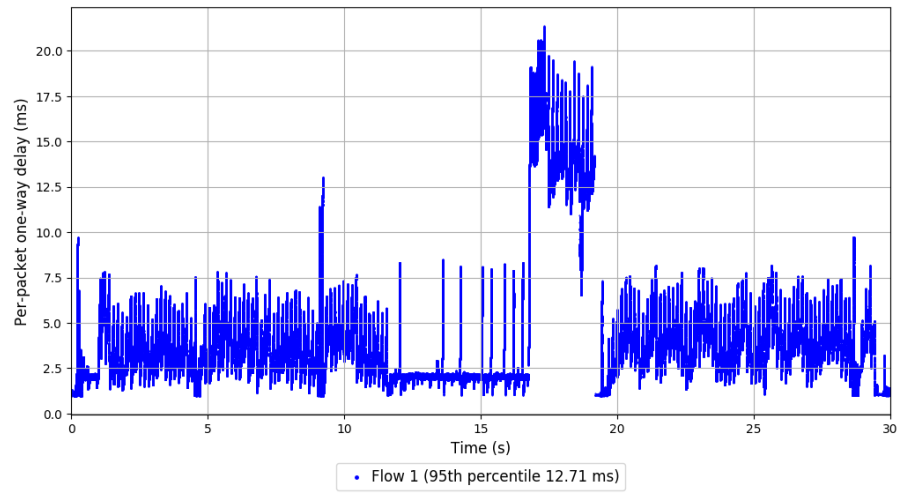
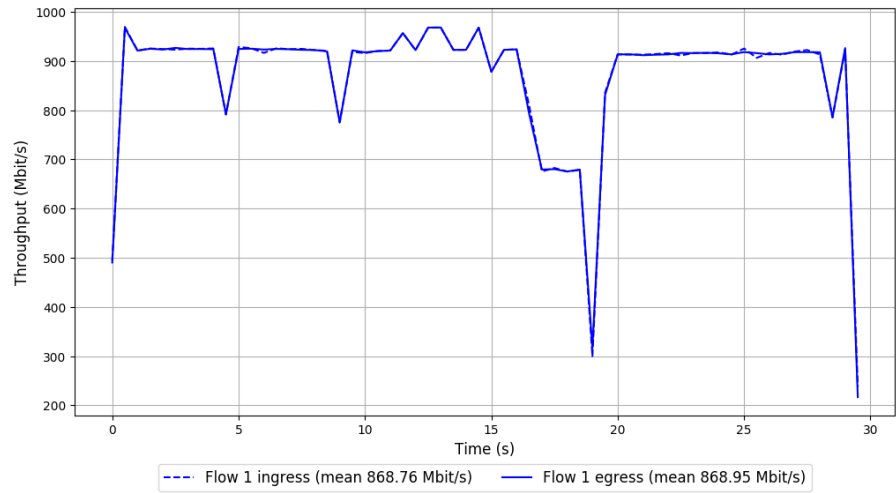
-- Flow 1:

Average throughput: 868.95 Mbit/s

95th percentile per-packet one-way delay: 12.714 ms

Loss rate: 0.05%

Run 10: Report of TCP BBR — Data Link

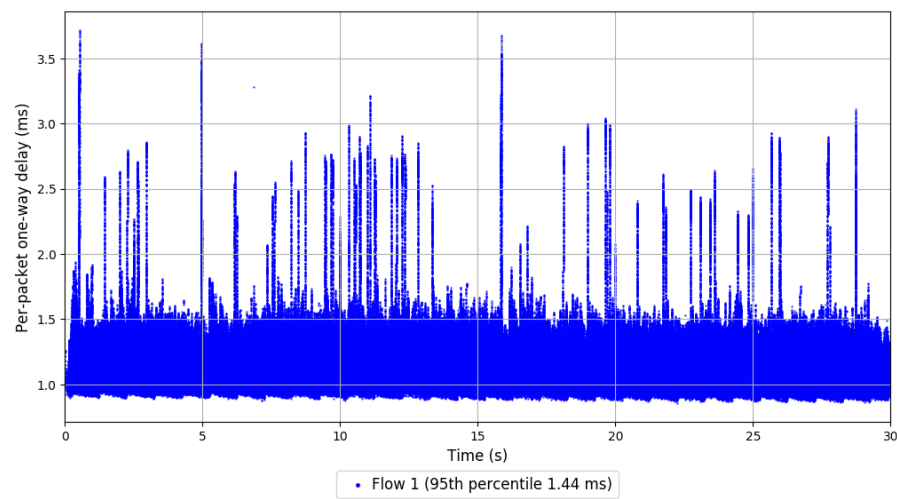
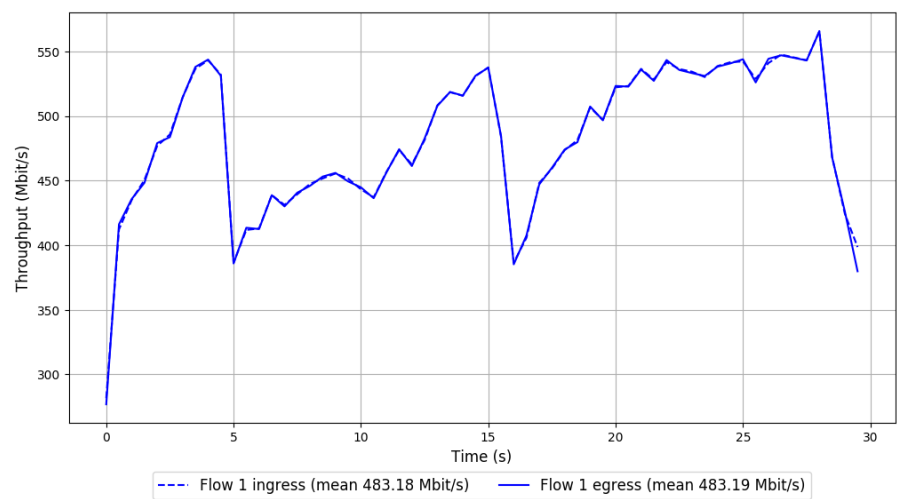


Run 1: Statistics of TCP Cubic

Start at: 2017-11-15 20:17:01
End at: 2017-11-15 20:17:31
Local clock offset: -1.327 ms
Remote clock offset: -2.577 ms

Below is generated by plot.py at 2017-11-16 02:50:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 483.19 Mbit/s
95th percentile per-packet one-way delay: 1.436 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 483.19 Mbit/s
95th percentile per-packet one-way delay: 1.436 ms
Loss rate: 0.06%

Run 1: Report of TCP Cubic — Data Link

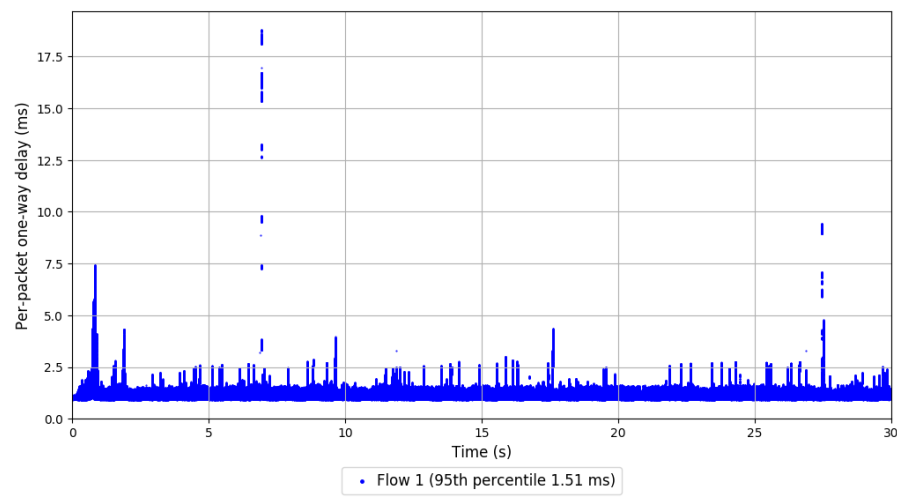
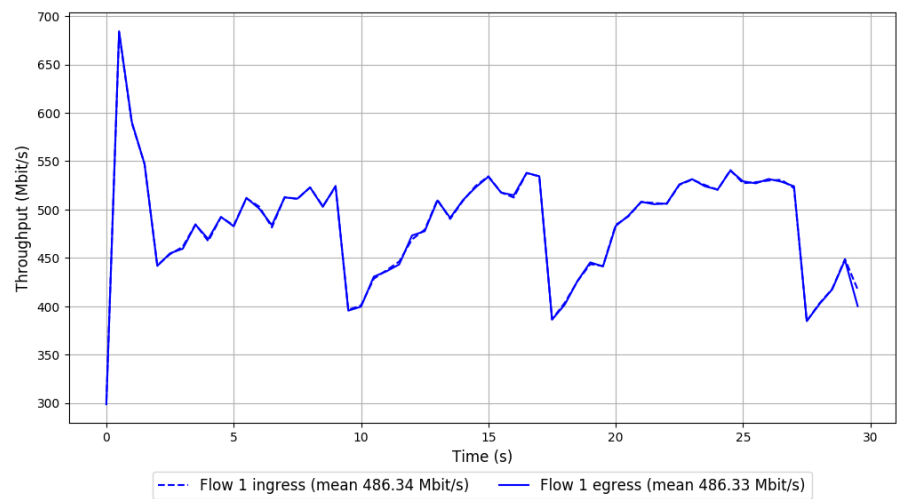


Run 2: Statistics of TCP Cubic

Start at: 2017-11-15 20:35:59
End at: 2017-11-15 20:36:29
Local clock offset: 1.154 ms
Remote clock offset: -2.075 ms

Below is generated by plot.py at 2017-11-16 02:50:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 486.33 Mbit/s
95th percentile per-packet one-way delay: 1.508 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 486.33 Mbit/s
95th percentile per-packet one-way delay: 1.508 ms
Loss rate: 0.07%

Run 2: Report of TCP Cubic — Data Link

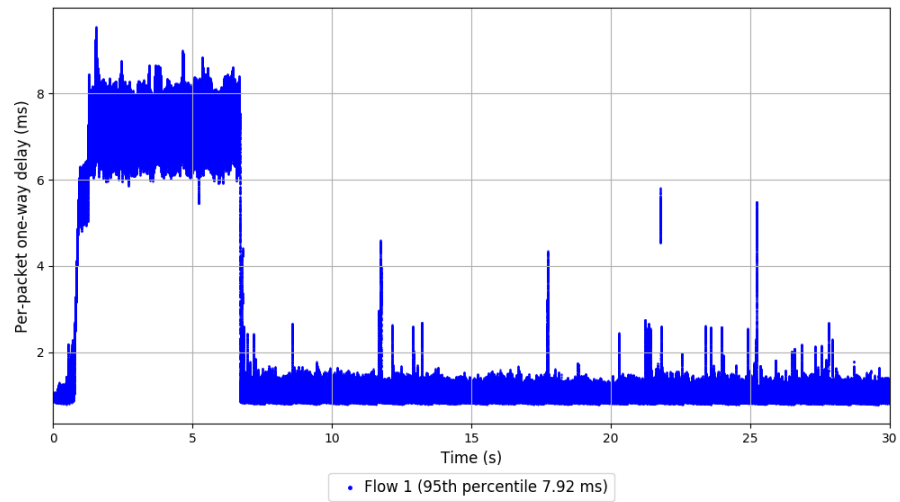
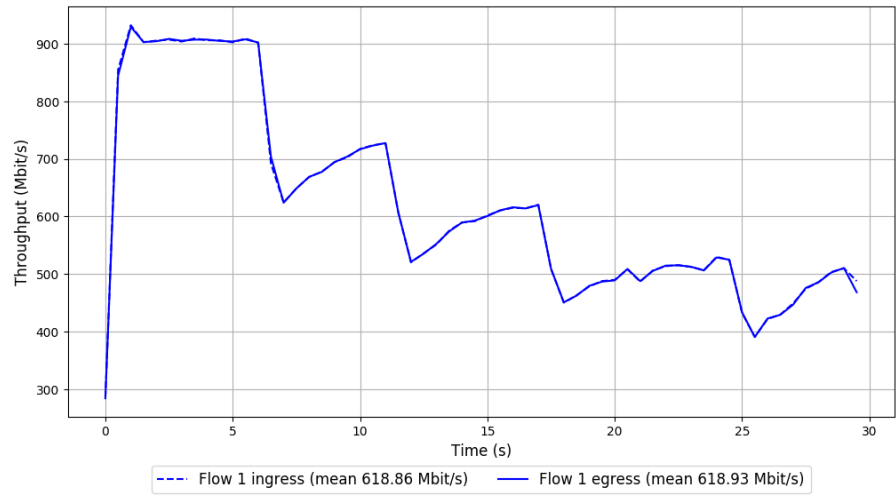


Run 3: Statistics of TCP Cubic

Start at: 2017-11-15 20:55:03
End at: 2017-11-15 20:55:33
Local clock offset: 1.876 ms
Remote clock offset: -1.651 ms

Below is generated by plot.py at 2017-11-16 02:51:29
Datalink statistics
-- Total of 1 flow:
Average throughput: 618.93 Mbit/s
95th percentile per-packet one-way delay: 7.925 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 618.93 Mbit/s
95th percentile per-packet one-way delay: 7.925 ms
Loss rate: 0.06%

Run 3: Report of TCP Cubic — Data Link

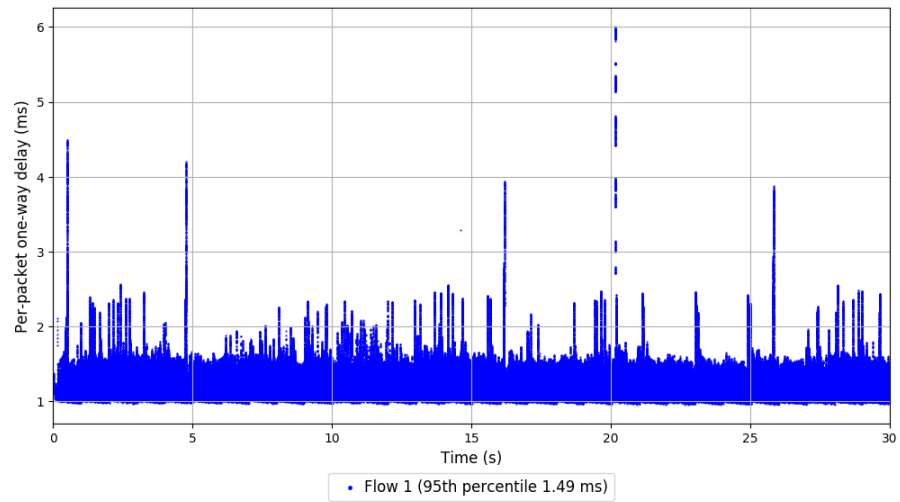
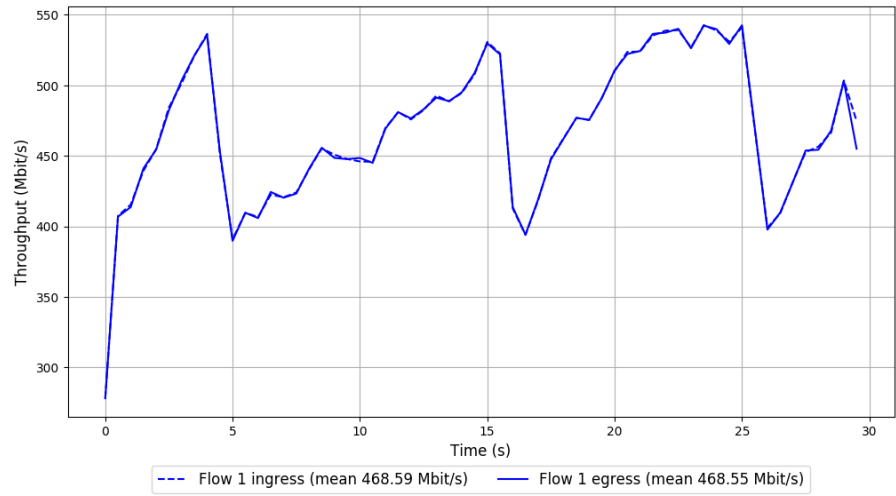


Run 4: Statistics of TCP Cubic

Start at: 2017-11-15 21:14:36
End at: 2017-11-15 21:15:06
Local clock offset: 1.904 ms
Remote clock offset: -1.729 ms

Below is generated by plot.py at 2017-11-16 02:51:29
Datalink statistics
-- Total of 1 flow:
Average throughput: 468.55 Mbit/s
95th percentile per-packet one-way delay: 1.490 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 468.55 Mbit/s
95th percentile per-packet one-way delay: 1.490 ms
Loss rate: 0.07%

Run 4: Report of TCP Cubic — Data Link

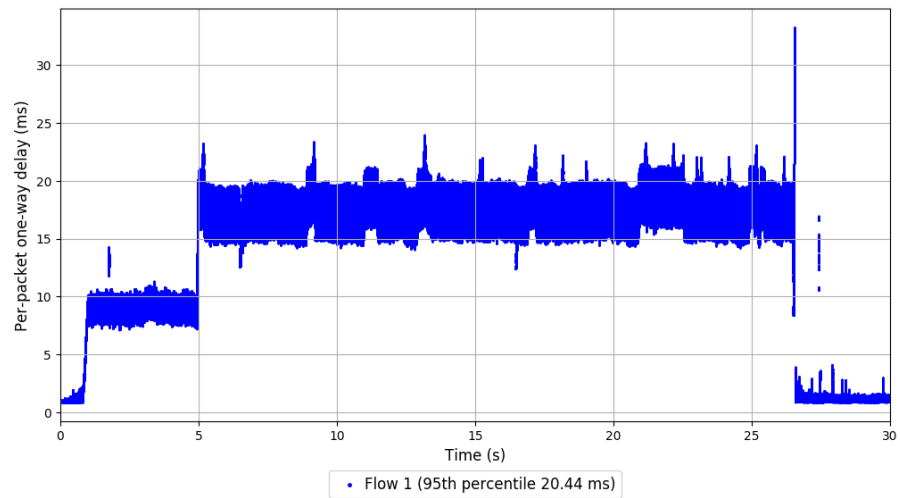
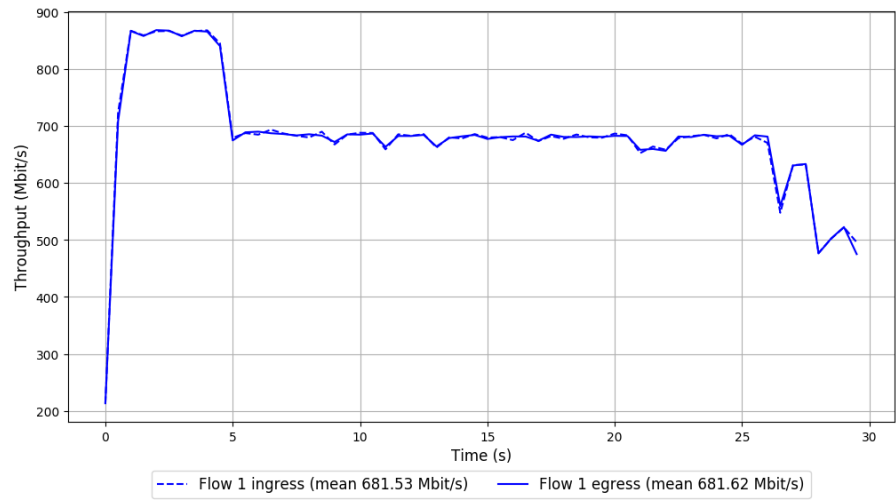


Run 5: Statistics of TCP Cubic

Start at: 2017-11-15 21:33:48
End at: 2017-11-15 21:34:18
Local clock offset: 0.604 ms
Remote clock offset: -1.502 ms

Below is generated by plot.py at 2017-11-16 02:52:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 681.62 Mbit/s
95th percentile per-packet one-way delay: 20.444 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 681.62 Mbit/s
95th percentile per-packet one-way delay: 20.444 ms
Loss rate: 0.05%

Run 5: Report of TCP Cubic — Data Link

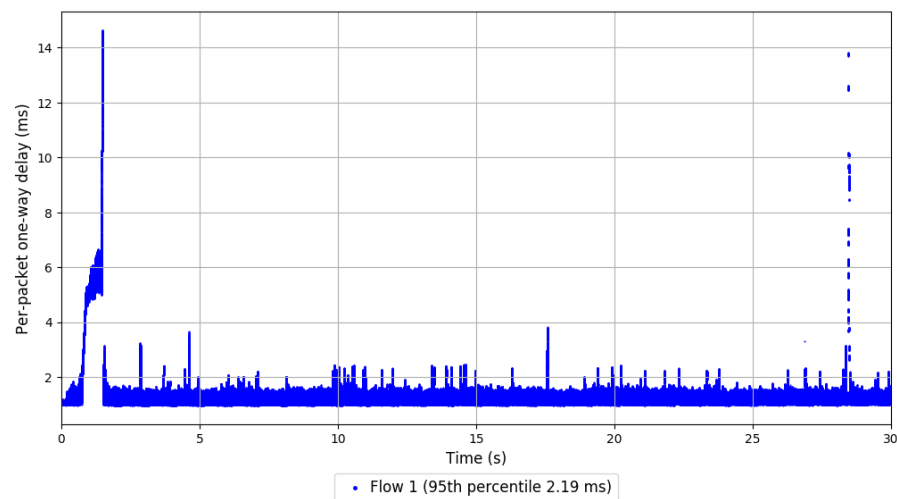
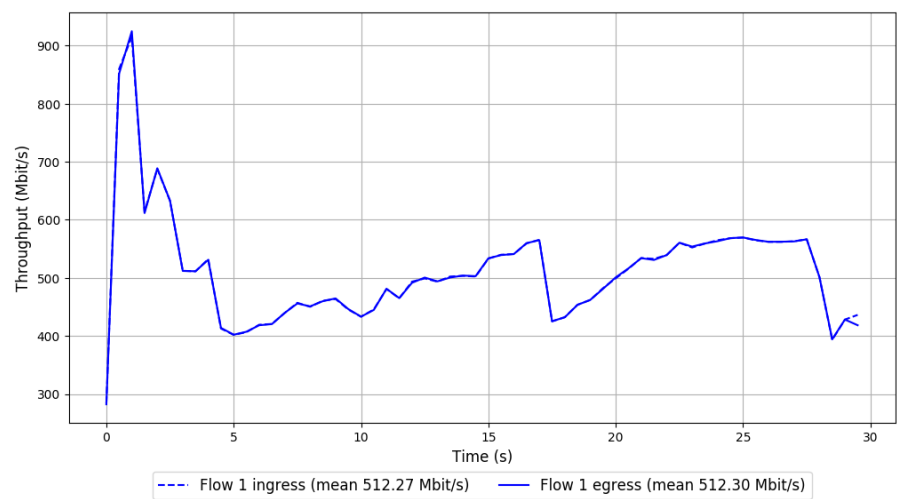


Run 6: Statistics of TCP Cubic

Start at: 2017-11-15 21:53:14
End at: 2017-11-15 21:53:44
Local clock offset: -0.485 ms
Remote clock offset: -1.404 ms

Below is generated by plot.py at 2017-11-16 02:52:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 512.30 Mbit/s
95th percentile per-packet one-way delay: 2.195 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 512.30 Mbit/s
95th percentile per-packet one-way delay: 2.195 ms
Loss rate: 0.06%

Run 6: Report of TCP Cubic — Data Link

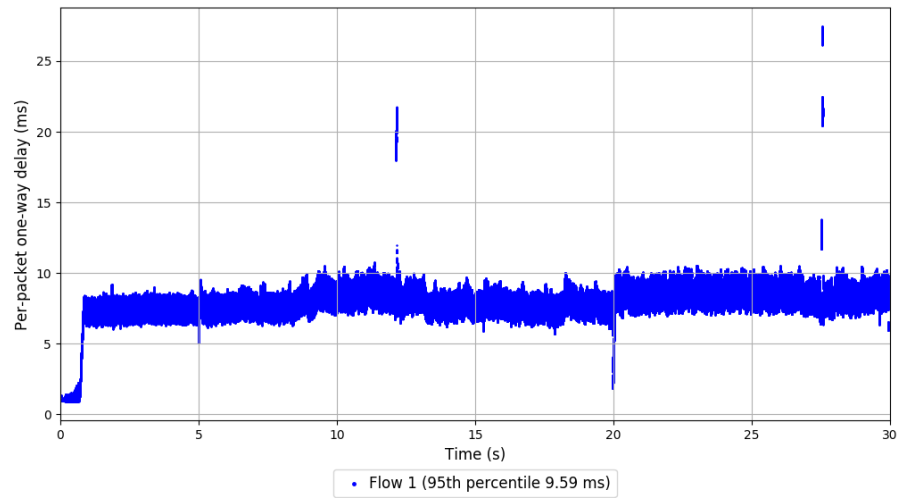
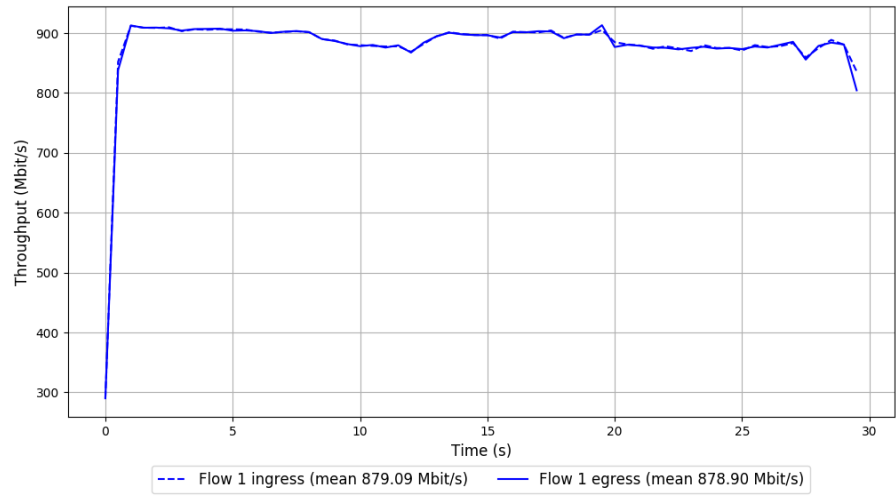


Run 7: Statistics of TCP Cubic

Start at: 2017-11-15 22:12:10
End at: 2017-11-15 22:12:40
Local clock offset: -0.476 ms
Remote clock offset: -1.254 ms

Below is generated by plot.py at 2017-11-16 02:59:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 878.90 Mbit/s
95th percentile per-packet one-way delay: 9.585 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 878.90 Mbit/s
95th percentile per-packet one-way delay: 9.585 ms
Loss rate: 0.09%

Run 7: Report of TCP Cubic — Data Link

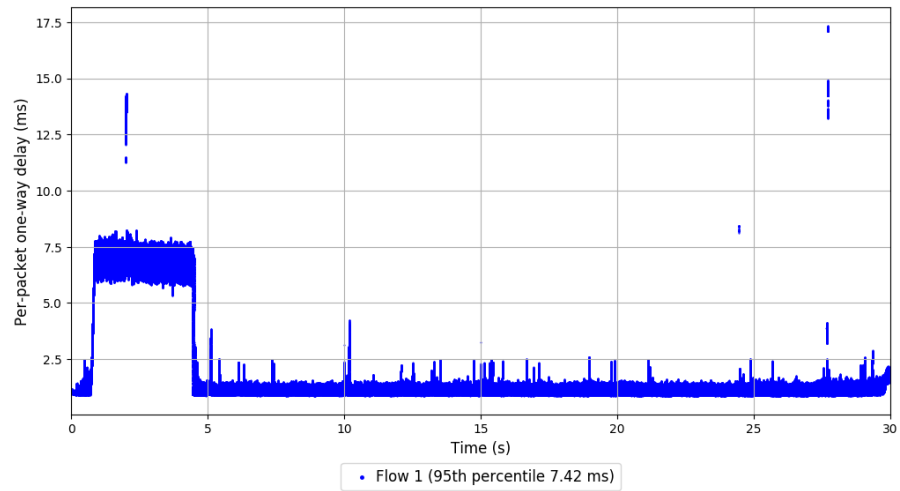
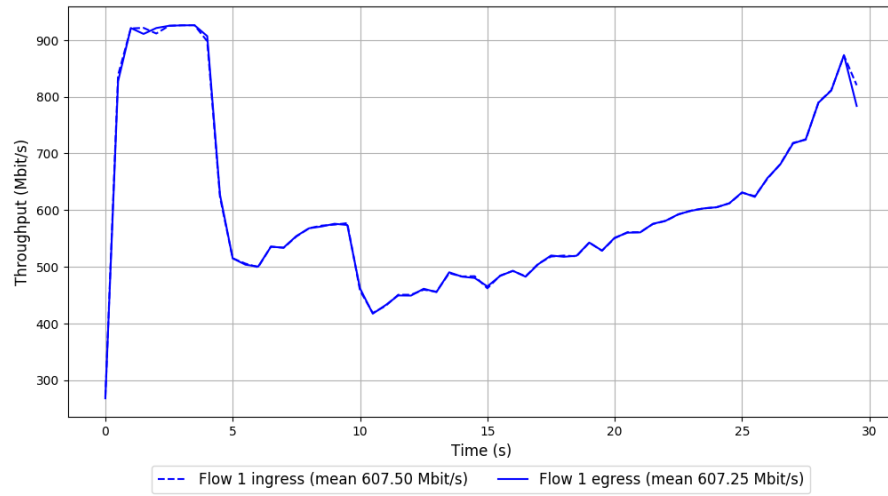


Run 8: Statistics of TCP Cubic

Start at: 2017-11-15 22:31:35
End at: 2017-11-15 22:32:05
Local clock offset: 0.363 ms
Remote clock offset: -1.085 ms

Below is generated by plot.py at 2017-11-16 02:59:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 607.25 Mbit/s
95th percentile per-packet one-way delay: 7.422 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 607.25 Mbit/s
95th percentile per-packet one-way delay: 7.422 ms
Loss rate: 0.11%

Run 8: Report of TCP Cubic — Data Link



Run 9: Statistics of TCP Cubic

Start at: 2017-11-15 22:50:50

End at: 2017-11-15 22:51:20

Local clock offset: 1.244 ms

Remote clock offset: -1.21 ms

Below is generated by plot.py at 2017-11-16 02:59:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 564.06 Mbit/s

95th percentile per-packet one-way delay: 6.526 ms

Loss rate: 0.07%

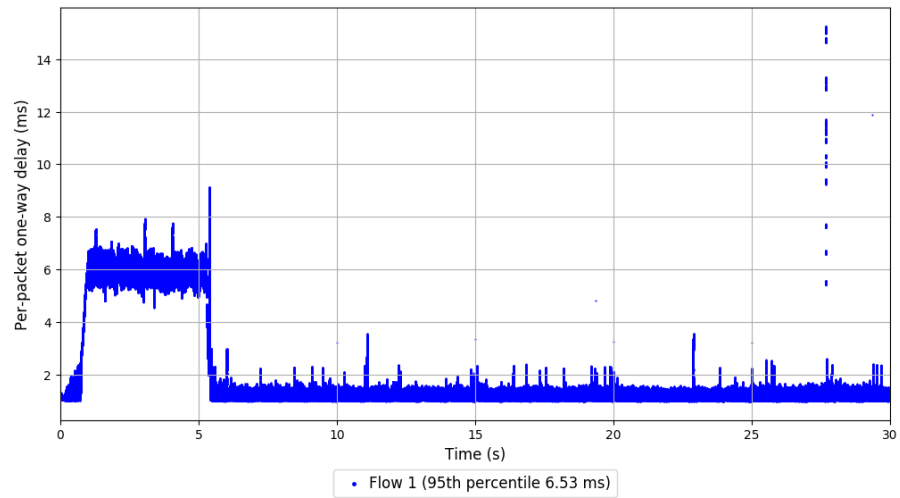
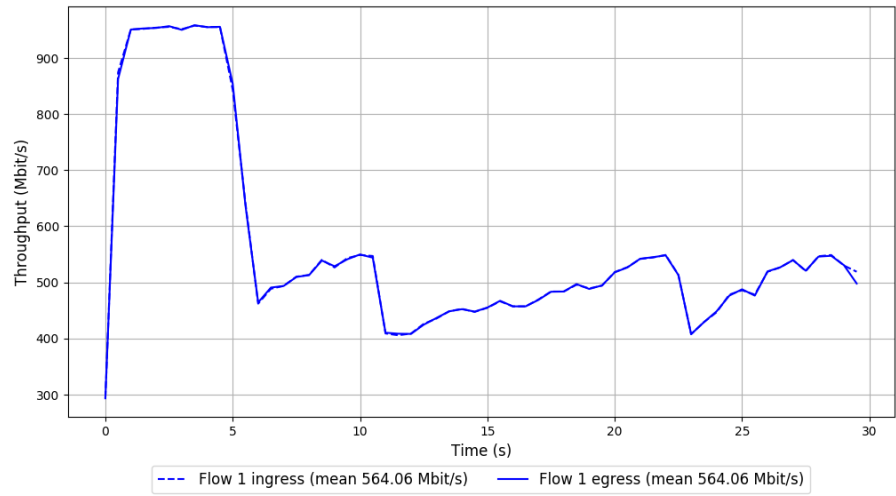
-- Flow 1:

Average throughput: 564.06 Mbit/s

95th percentile per-packet one-way delay: 6.526 ms

Loss rate: 0.07%

Run 9: Report of TCP Cubic — Data Link



Run 10: Statistics of TCP Cubic

Start at: 2017-11-15 23:10:13

End at: 2017-11-15 23:10:43

Local clock offset: 1.522 ms

Remote clock offset: -0.754 ms

Below is generated by plot.py at 2017-11-16 02:59:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 495.43 Mbit/s

95th percentile per-packet one-way delay: 1.407 ms

Loss rate: 0.07%

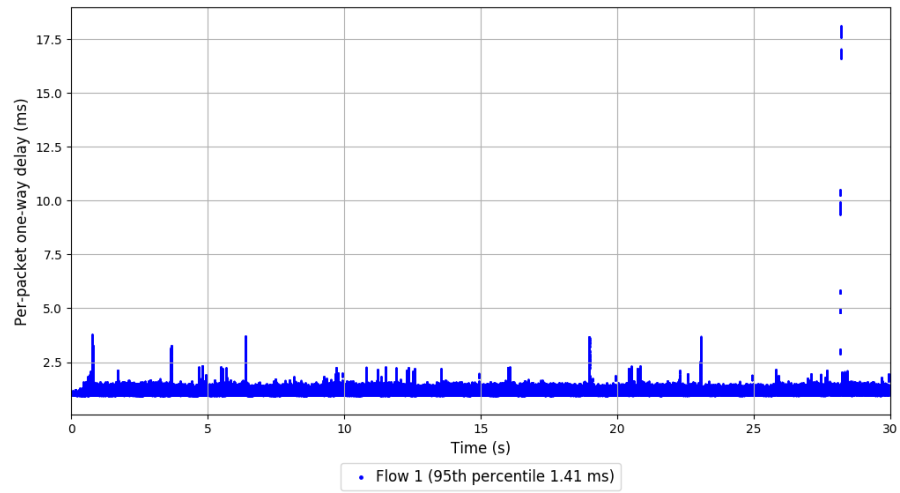
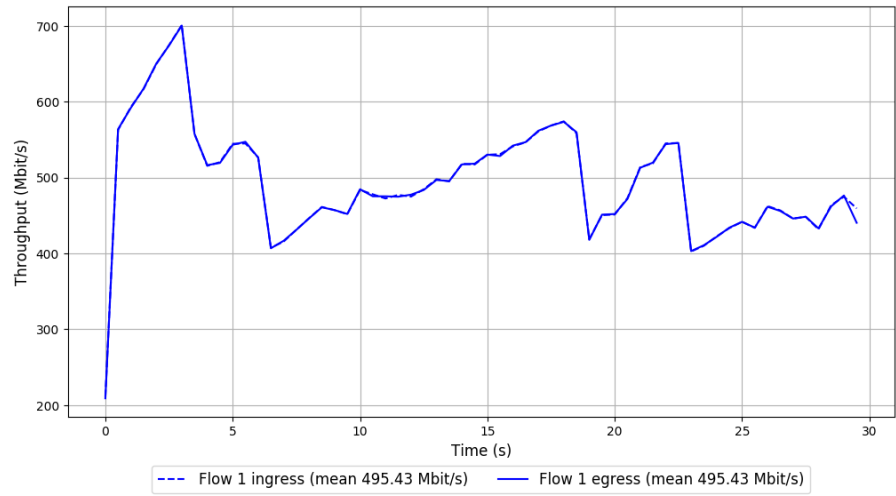
-- Flow 1:

Average throughput: 495.43 Mbit/s

95th percentile per-packet one-way delay: 1.407 ms

Loss rate: 0.07%

Run 10: Report of TCP Cubic — Data Link

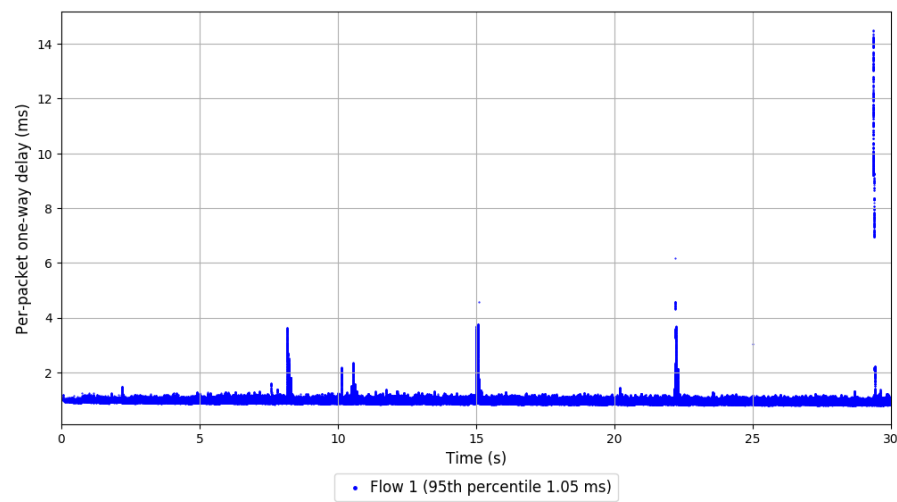
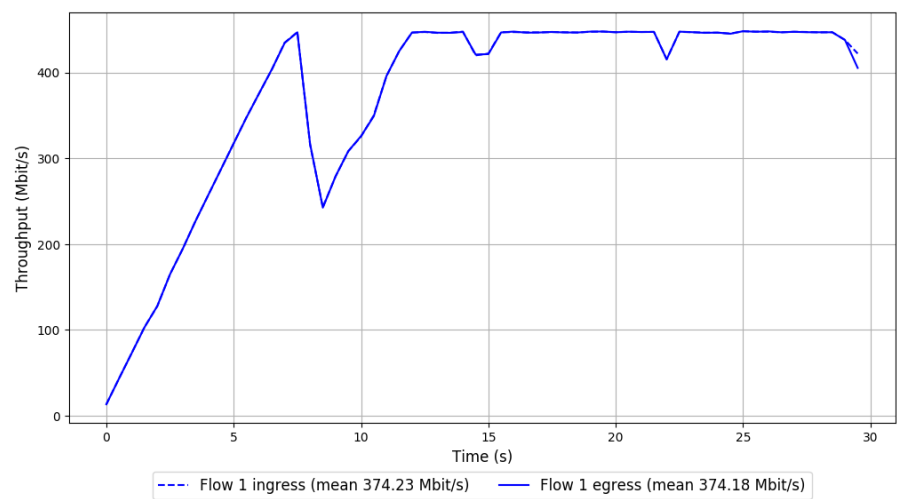


Run 1: Statistics of LEDBAT

Start at: 2017-11-15 20:23:48
End at: 2017-11-15 20:24:18
Local clock offset: -0.353 ms
Remote clock offset: -2.445 ms

Below is generated by plot.py at 2017-11-16 02:59:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 374.18 Mbit/s
95th percentile per-packet one-way delay: 1.050 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 374.18 Mbit/s
95th percentile per-packet one-way delay: 1.050 ms
Loss rate: 0.08%

Run 1: Report of LEDBAT — Data Link

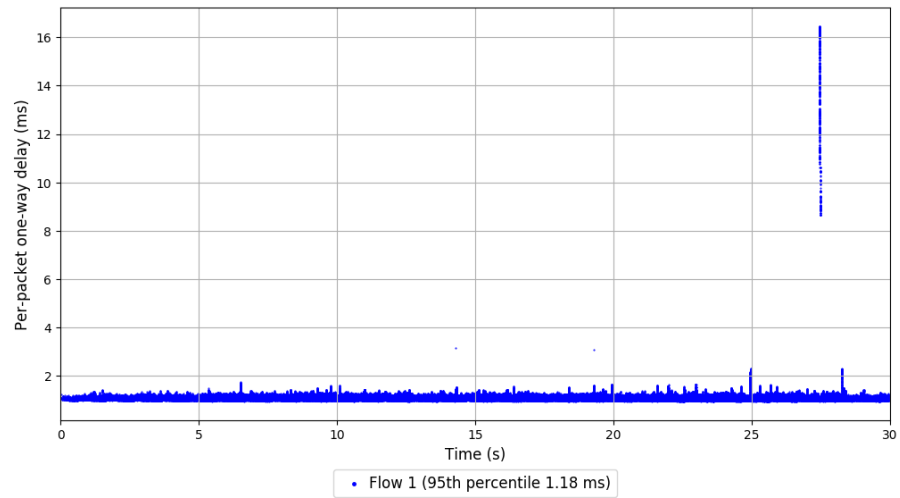
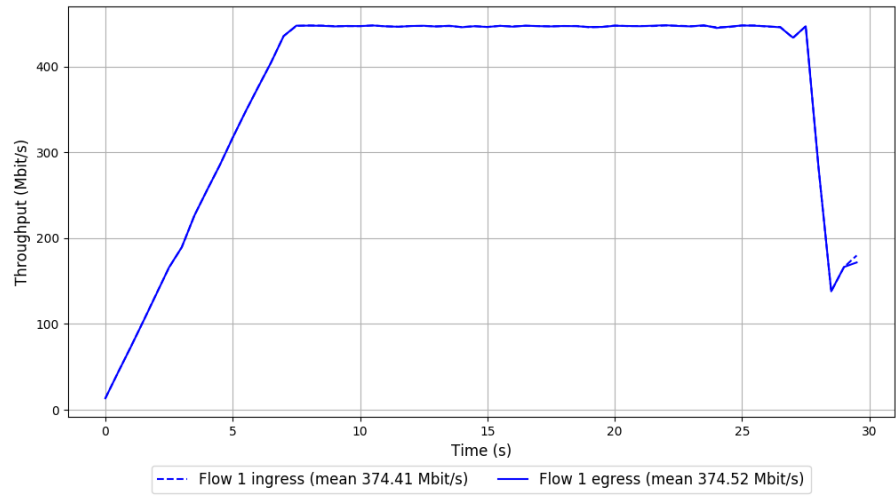


Run 2: Statistics of LEDBAT

Start at: 2017-11-15 20:42:53
End at: 2017-11-15 20:43:23
Local clock offset: 1.397 ms
Remote clock offset: -2.027 ms

Below is generated by plot.py at 2017-11-16 02:59:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 374.52 Mbit/s
95th percentile per-packet one-way delay: 1.179 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 374.52 Mbit/s
95th percentile per-packet one-way delay: 1.179 ms
Loss rate: 0.04%

Run 2: Report of LEDBAT — Data Link

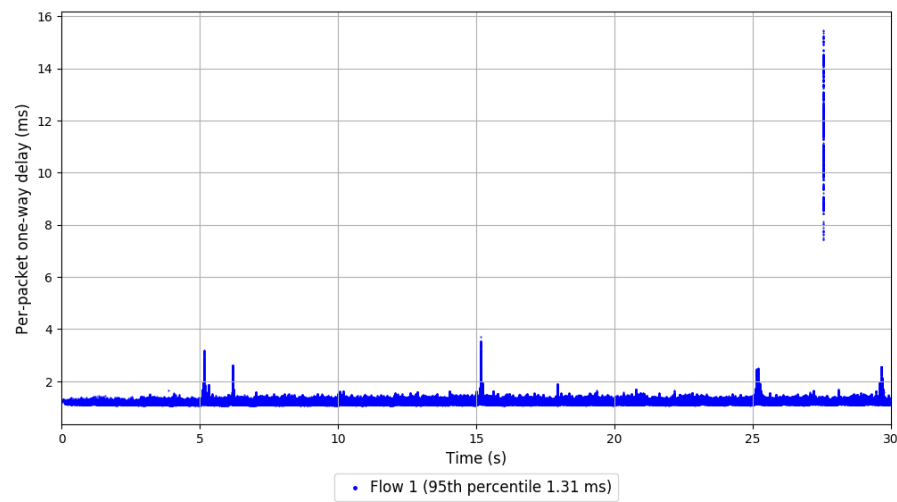
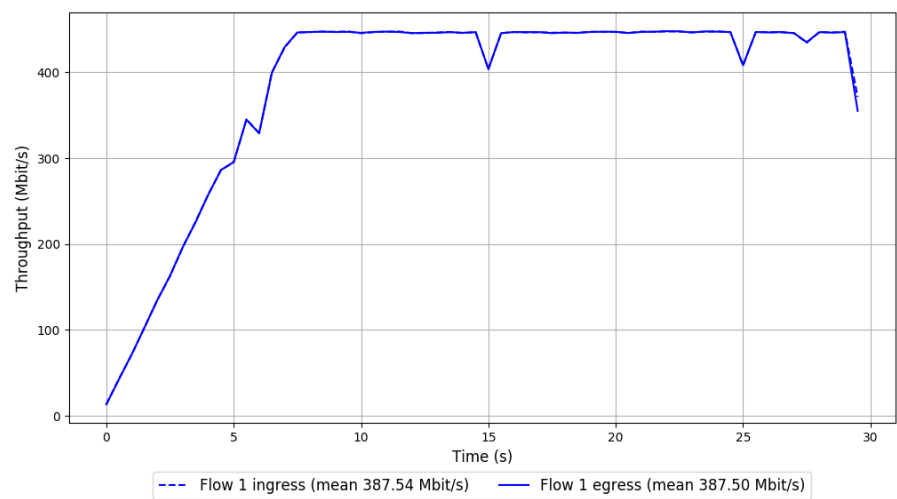


Run 3: Statistics of LEDBAT

Start at: 2017-11-15 21:02:20
End at: 2017-11-15 21:02:50
Local clock offset: 1.925 ms
Remote clock offset: -1.794 ms

Below is generated by plot.py at 2017-11-16 02:59:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 387.50 Mbit/s
95th percentile per-packet one-way delay: 1.311 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 387.50 Mbit/s
95th percentile per-packet one-way delay: 1.311 ms
Loss rate: 0.08%

Run 3: Report of LEDBAT — Data Link

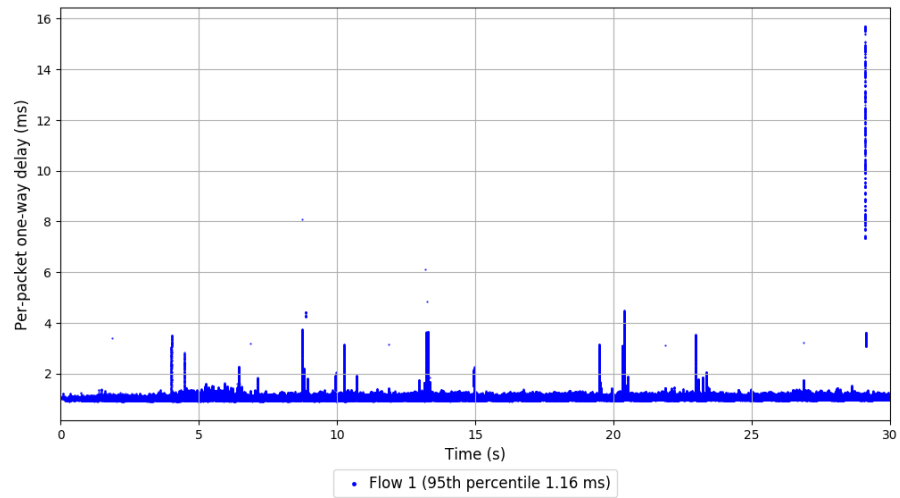
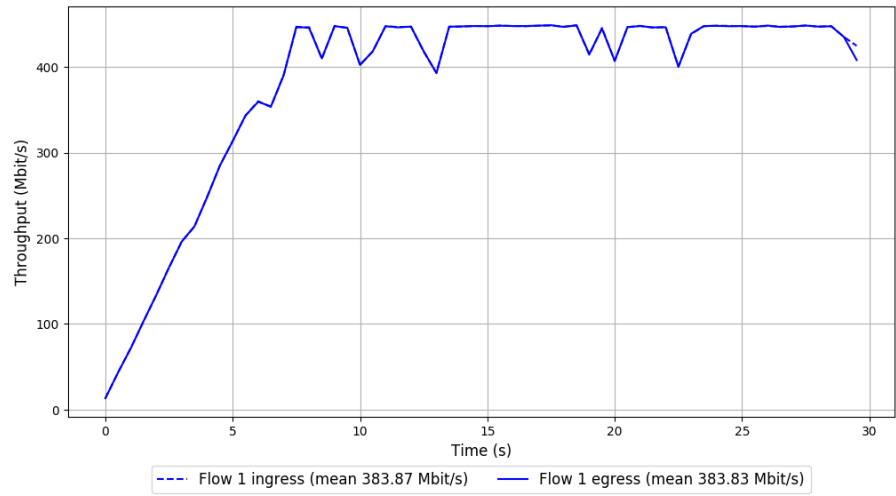


Run 4: Statistics of LEDBAT

Start at: 2017-11-15 21:21:34
End at: 2017-11-15 21:22:04
Local clock offset: 1.468 ms
Remote clock offset: -1.722 ms

Below is generated by plot.py at 2017-11-16 02:59:03
Datalink statistics
-- Total of 1 flow:
Average throughput: 383.83 Mbit/s
95th percentile per-packet one-way delay: 1.157 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 383.83 Mbit/s
95th percentile per-packet one-way delay: 1.157 ms
Loss rate: 0.08%

Run 4: Report of LEDBAT — Data Link

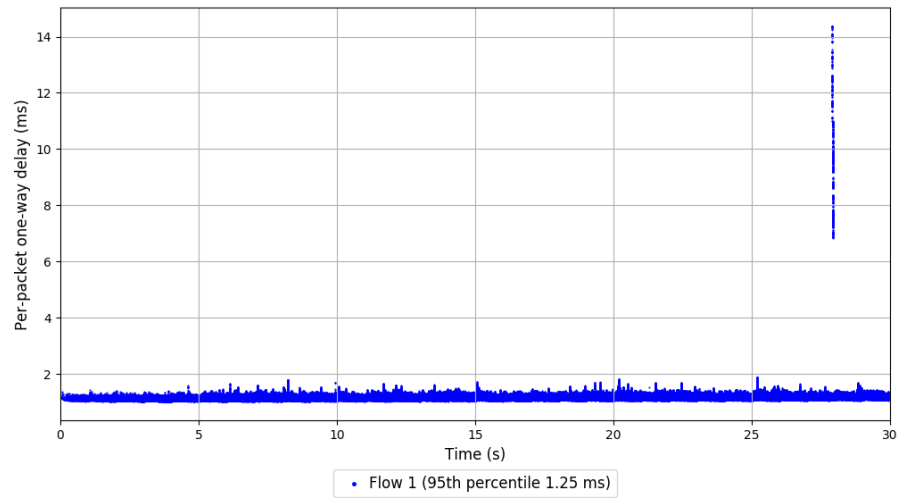
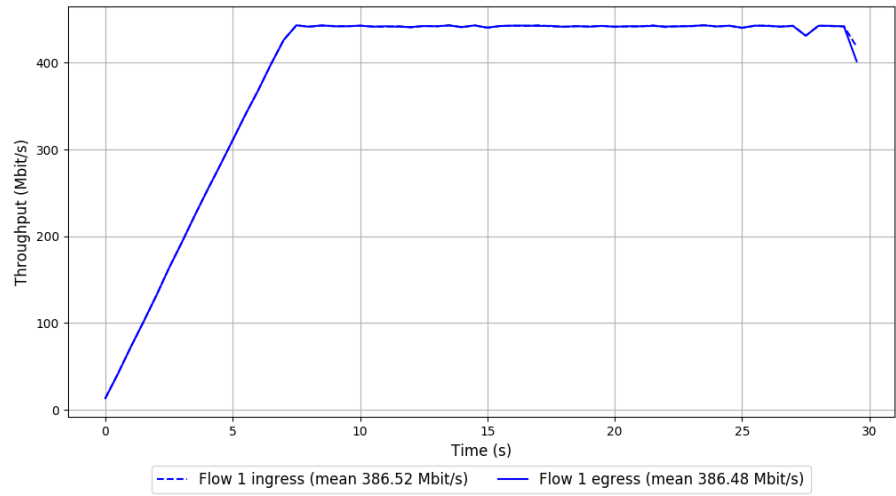


Run 5: Statistics of LEDBAT

Start at: 2017-11-15 21:41:00
End at: 2017-11-15 21:41:30
Local clock offset: 0.239 ms
Remote clock offset: -1.595 ms

Below is generated by plot.py at 2017-11-16 03:01:04
Datalink statistics
-- Total of 1 flow:
Average throughput: 386.48 Mbit/s
95th percentile per-packet one-way delay: 1.252 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 386.48 Mbit/s
95th percentile per-packet one-way delay: 1.252 ms
Loss rate: 0.08%

Run 5: Report of LEDBAT — Data Link

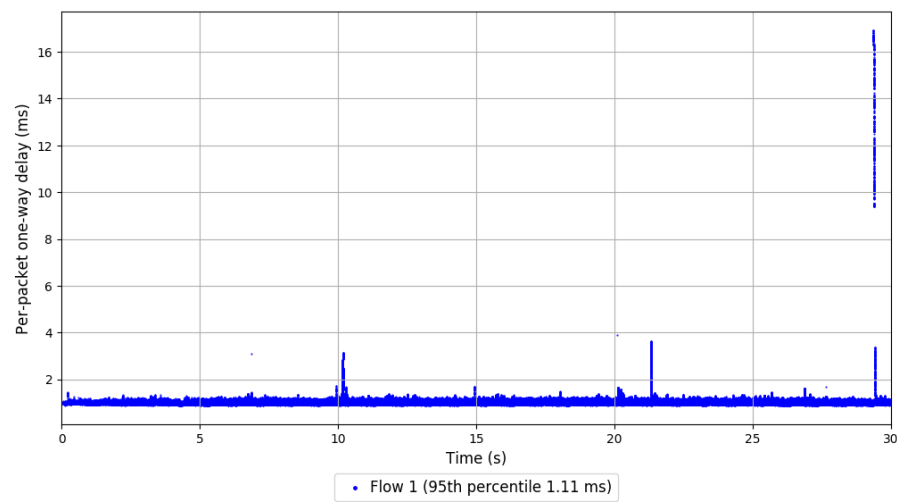
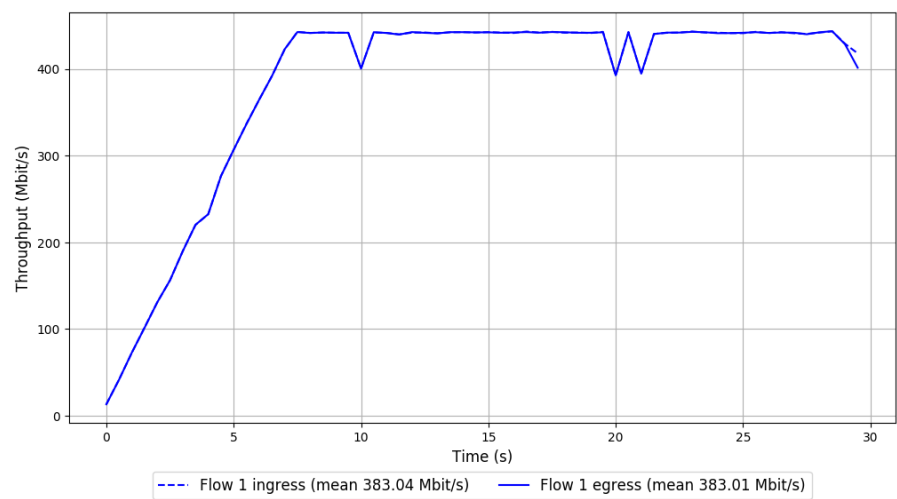


Run 6: Statistics of LEDBAT

Start at: 2017-11-15 22:00:00
End at: 2017-11-15 22:00:30
Local clock offset: -0.702 ms
Remote clock offset: -1.357 ms

Below is generated by plot.py at 2017-11-16 03:02:24
Datalink statistics
-- Total of 1 flow:
Average throughput: 383.01 Mbit/s
95th percentile per-packet one-way delay: 1.106 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 383.01 Mbit/s
95th percentile per-packet one-way delay: 1.106 ms
Loss rate: 0.08%

Run 6: Report of LEDBAT — Data Link

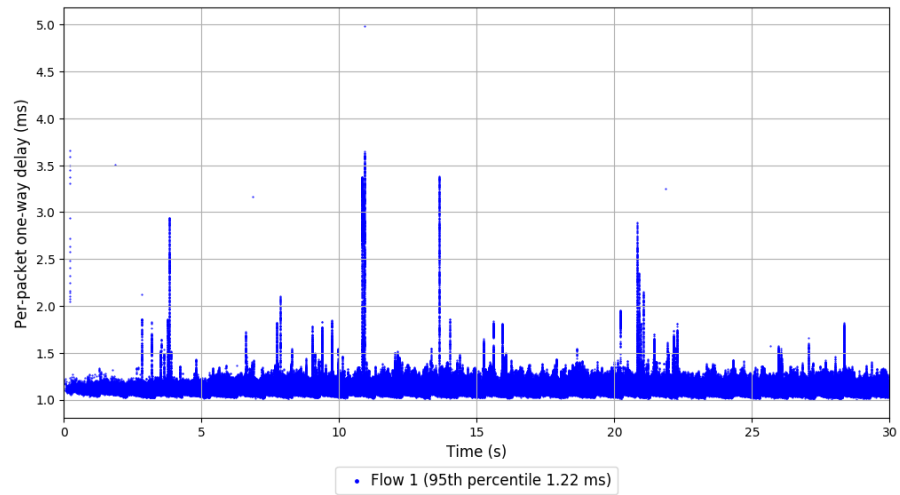
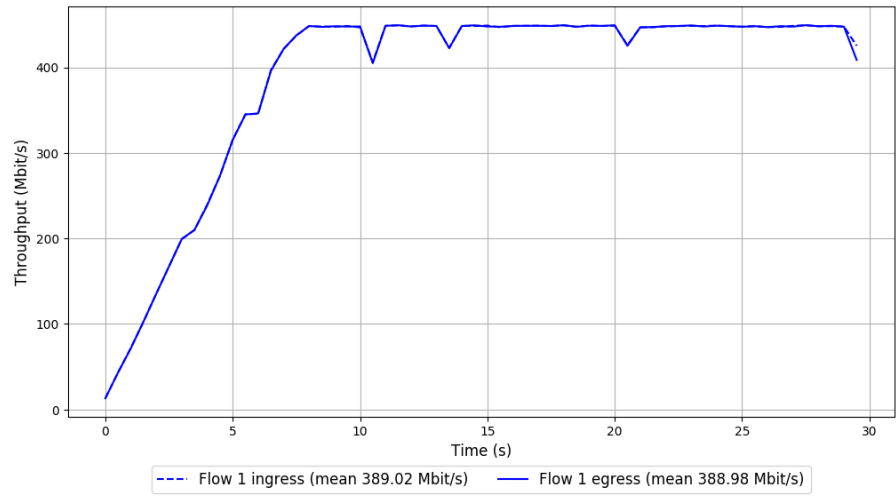


Run 7: Statistics of LEDBAT

Start at: 2017-11-15 22:19:29
End at: 2017-11-15 22:19:59
Local clock offset: -0.07 ms
Remote clock offset: -1.162 ms

Below is generated by plot.py at 2017-11-16 03:02:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 388.98 Mbit/s
95th percentile per-packet one-way delay: 1.220 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 388.98 Mbit/s
95th percentile per-packet one-way delay: 1.220 ms
Loss rate: 0.08%

Run 7: Report of LEDBAT — Data Link

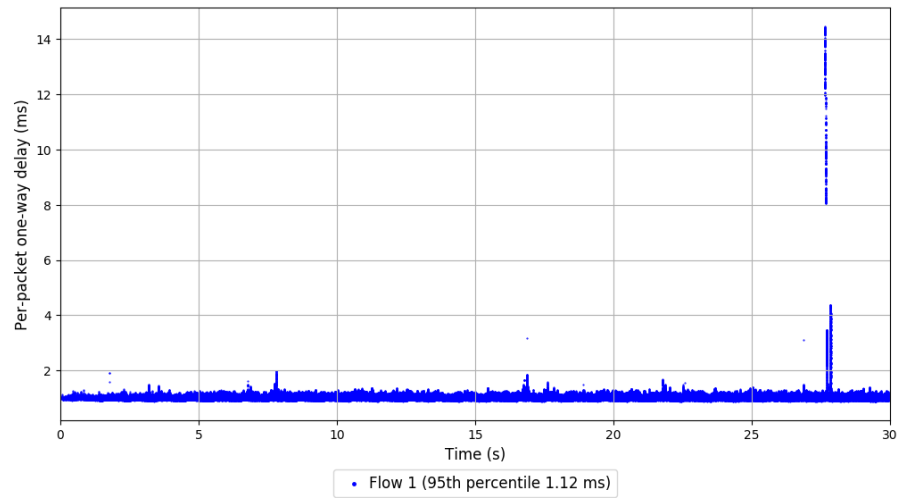
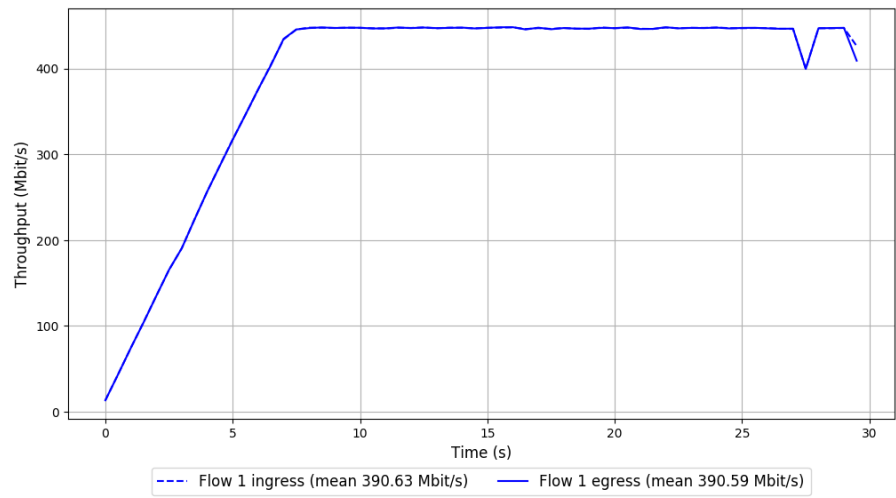


Run 8: Statistics of LEDBAT

Start at: 2017-11-15 22:38:42
End at: 2017-11-15 22:39:12
Local clock offset: 0.732 ms
Remote clock offset: -1.055 ms

Below is generated by plot.py at 2017-11-16 03:03:02
Datalink statistics
-- Total of 1 flow:
Average throughput: 390.59 Mbit/s
95th percentile per-packet one-way delay: 1.117 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 390.59 Mbit/s
95th percentile per-packet one-way delay: 1.117 ms
Loss rate: 0.08%

Run 8: Report of LEDBAT — Data Link

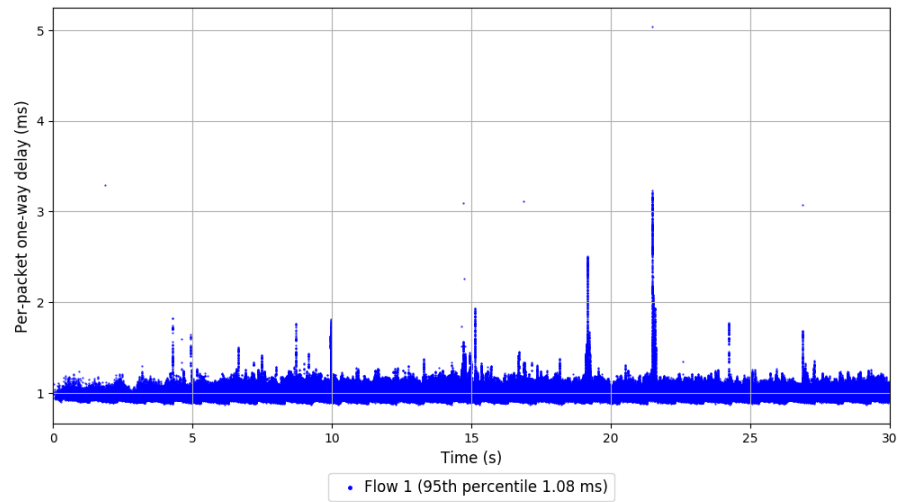
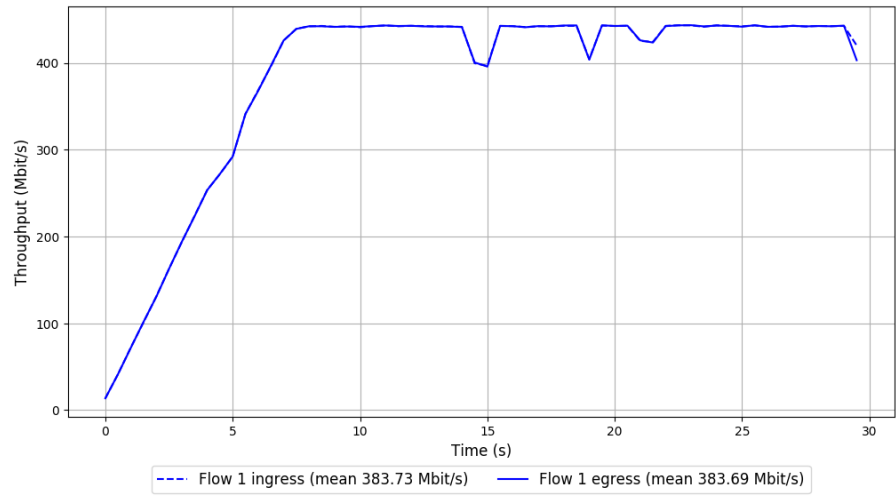


Run 9: Statistics of LEDBAT

Start at: 2017-11-15 22:58:00
End at: 2017-11-15 22:58:30
Local clock offset: 1.325 ms
Remote clock offset: -1.022 ms

Below is generated by plot.py at 2017-11-16 03:03:20
Datalink statistics
-- Total of 1 flow:
Average throughput: 383.69 Mbit/s
95th percentile per-packet one-way delay: 1.084 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 383.69 Mbit/s
95th percentile per-packet one-way delay: 1.084 ms
Loss rate: 0.08%

Run 9: Report of LEDBAT — Data Link



Run 10: Statistics of LEDBAT

Start at: 2017-11-15 23:17:20

End at: 2017-11-15 23:17:50

Local clock offset: 1.477 ms

Remote clock offset: -0.56 ms

Below is generated by plot.py at 2017-11-16 03:03:44

Datalink statistics

-- Total of 1 flow:

Average throughput: 387.50 Mbit/s

95th percentile per-packet one-way delay: 0.998 ms

Loss rate: 0.08%

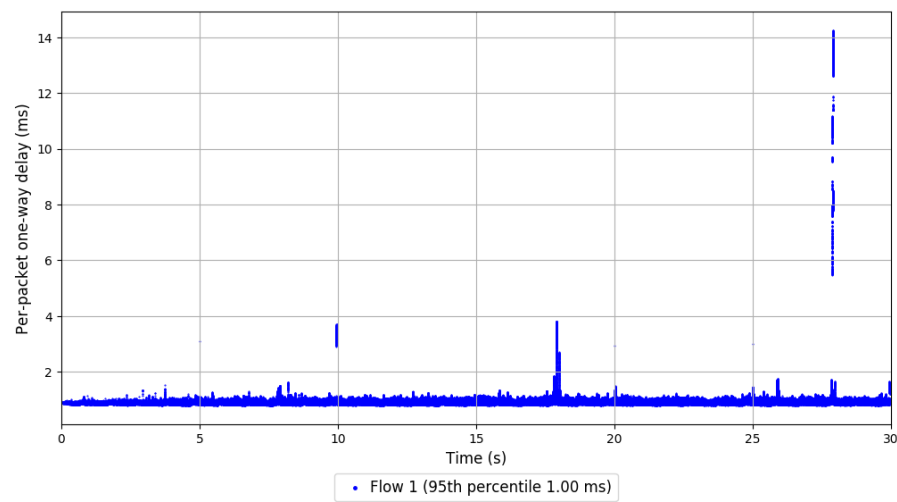
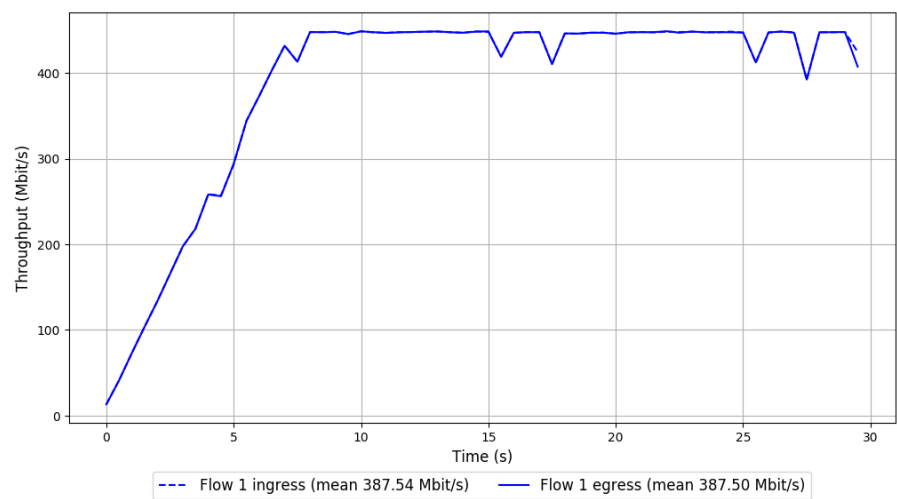
-- Flow 1:

Average throughput: 387.50 Mbit/s

95th percentile per-packet one-way delay: 0.998 ms

Loss rate: 0.08%

Run 10: Report of LEDBAT — Data Link

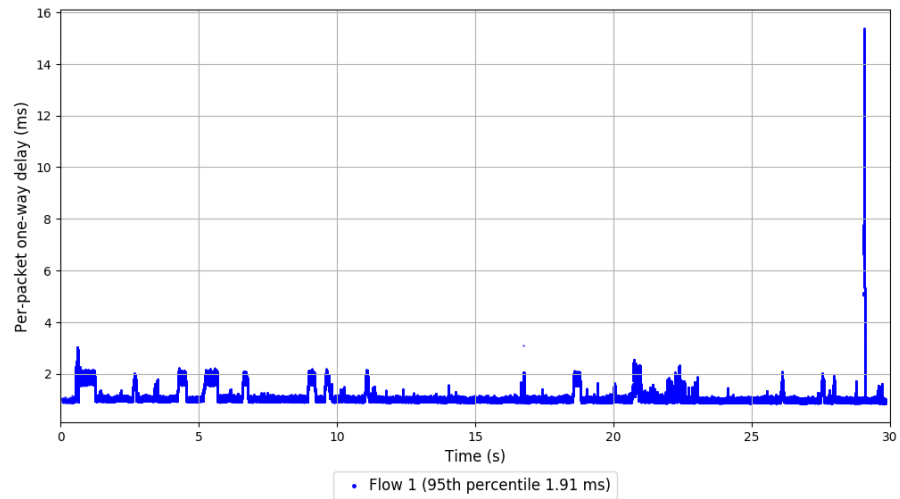
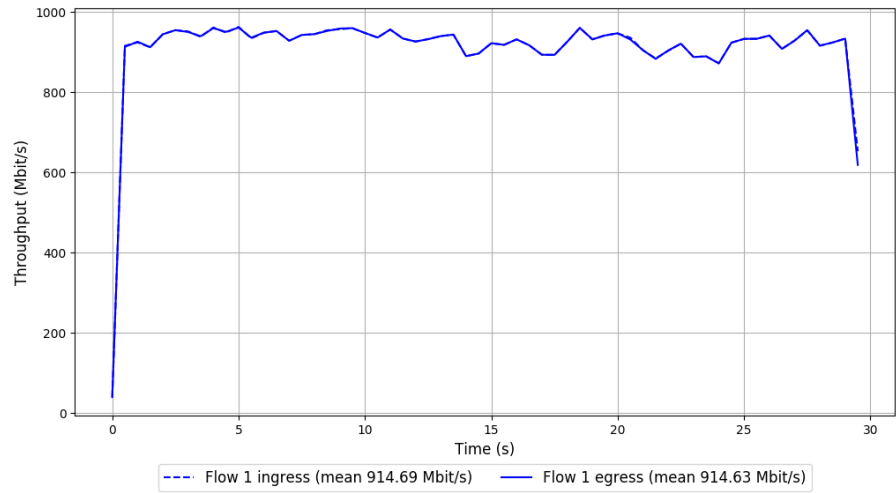


Run 1: Statistics of PCC

Start at: 2017-11-15 20:11:33
End at: 2017-11-15 20:12:03
Local clock offset: -1.942 ms
Remote clock offset: -2.718 ms

Below is generated by plot.py at 2017-11-16 03:10:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 914.63 Mbit/s
95th percentile per-packet one-way delay: 1.906 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 914.63 Mbit/s
95th percentile per-packet one-way delay: 1.906 ms
Loss rate: 0.07%

Run 1: Report of PCC — Data Link

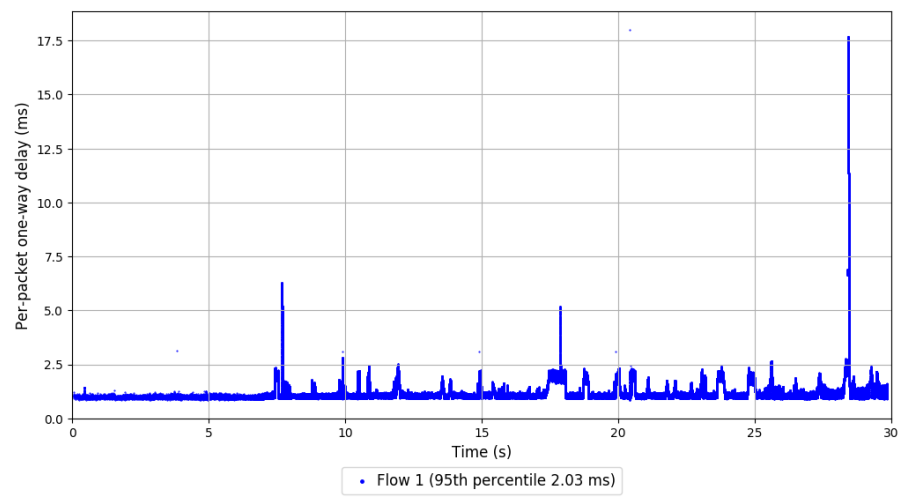
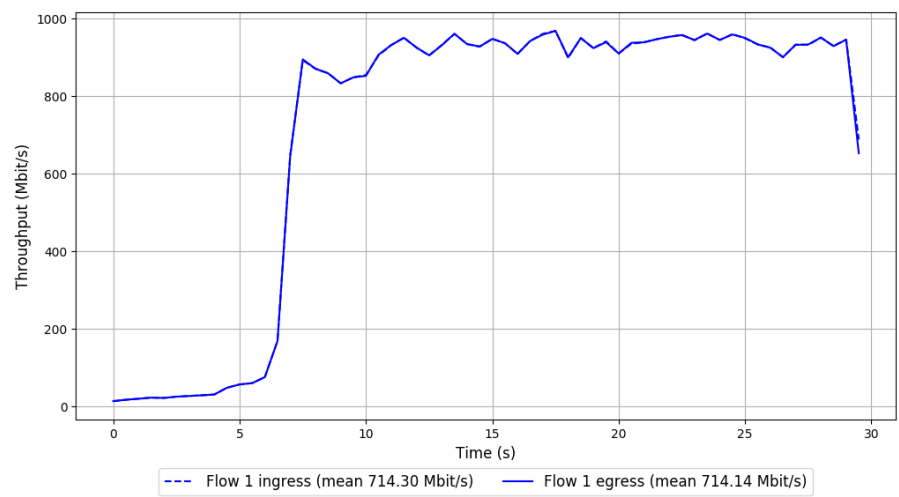


Run 2: Statistics of PCC

Start at: 2017-11-15 20:30:34
End at: 2017-11-15 20:31:04
Local clock offset: 0.684 ms
Remote clock offset: -2.345 ms

Below is generated by plot.py at 2017-11-16 03:10:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 714.14 Mbit/s
95th percentile per-packet one-way delay: 2.032 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 714.14 Mbit/s
95th percentile per-packet one-way delay: 2.032 ms
Loss rate: 0.09%

Run 2: Report of PCC — Data Link

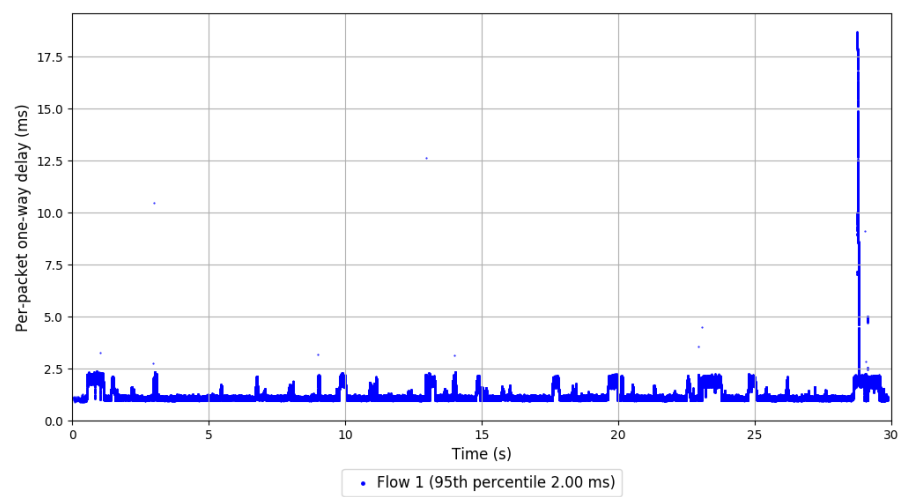
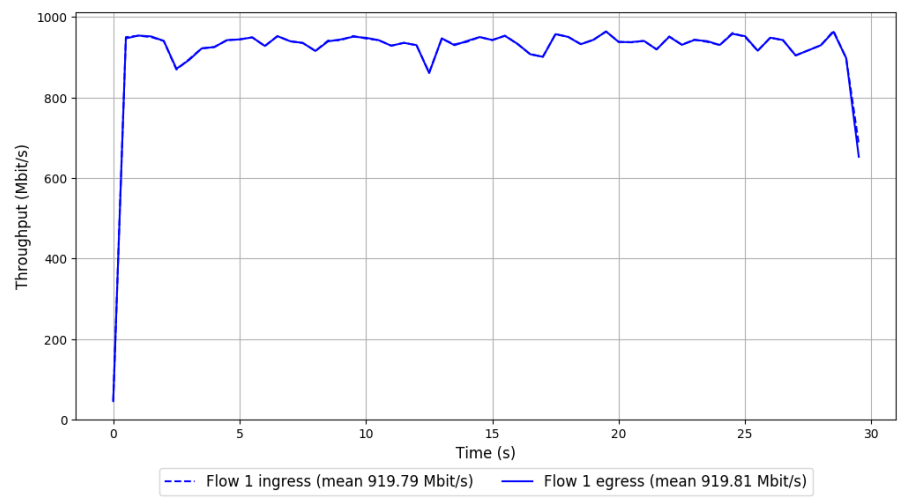


Run 3: Statistics of PCC

Start at: 2017-11-15 20:49:42
End at: 2017-11-15 20:50:12
Local clock offset: 1.625 ms
Remote clock offset: -1.897 ms

Below is generated by plot.py at 2017-11-16 03:15:02
Datalink statistics
-- Total of 1 flow:
Average throughput: 919.81 Mbit/s
95th percentile per-packet one-way delay: 1.999 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 919.81 Mbit/s
95th percentile per-packet one-way delay: 1.999 ms
Loss rate: 0.06%

Run 3: Report of PCC — Data Link



Run 4: Statistics of PCC

Start at: 2017-11-15 21:09:09

End at: 2017-11-15 21:09:39

Local clock offset: 1.757 ms

Remote clock offset: -1.74 ms

Below is generated by plot.py at 2017-11-16 03:15:51

Datalink statistics

-- Total of 1 flow:

Average throughput: 917.45 Mbit/s

95th percentile per-packet one-way delay: 2.081 ms

Loss rate: 0.07%

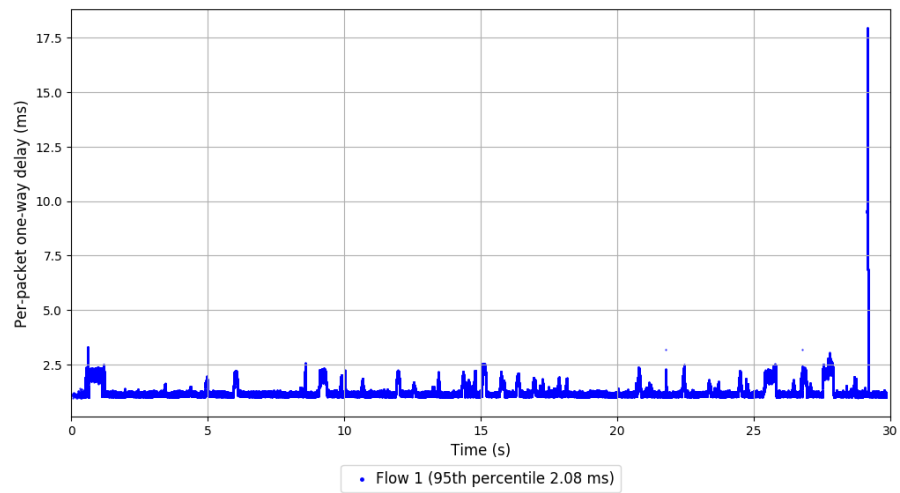
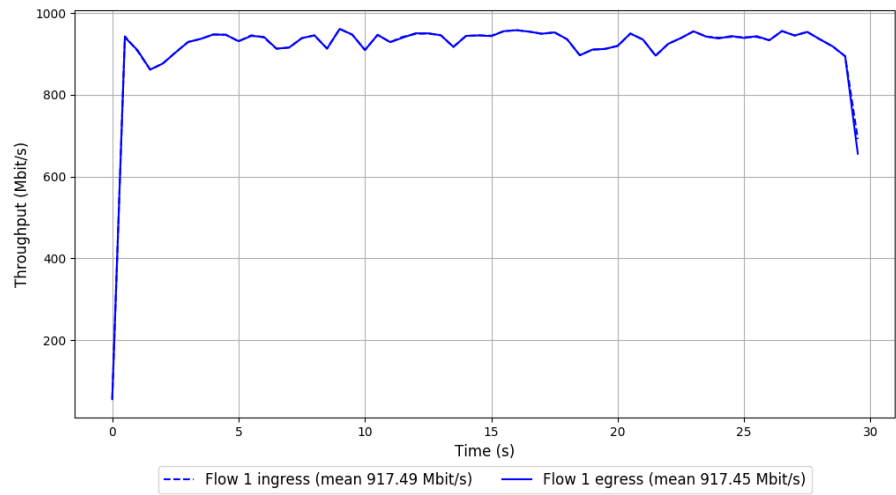
-- Flow 1:

Average throughput: 917.45 Mbit/s

95th percentile per-packet one-way delay: 2.081 ms

Loss rate: 0.07%

Run 4: Report of PCC — Data Link

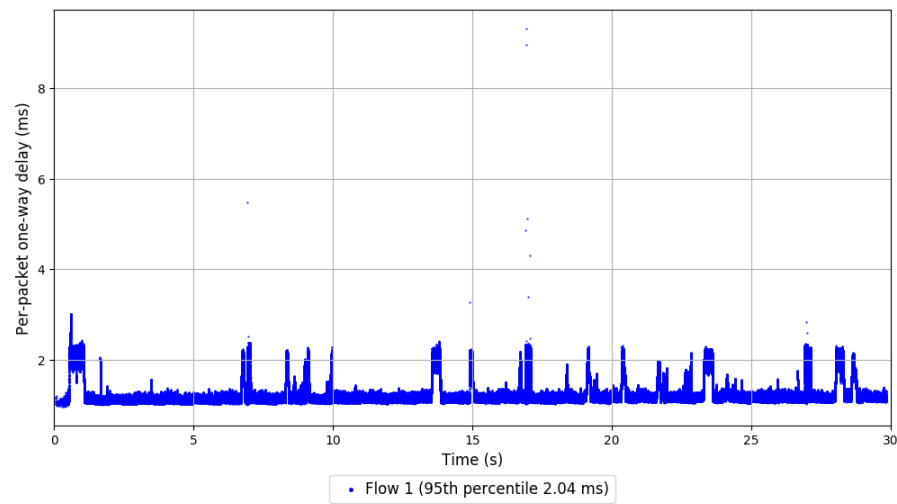
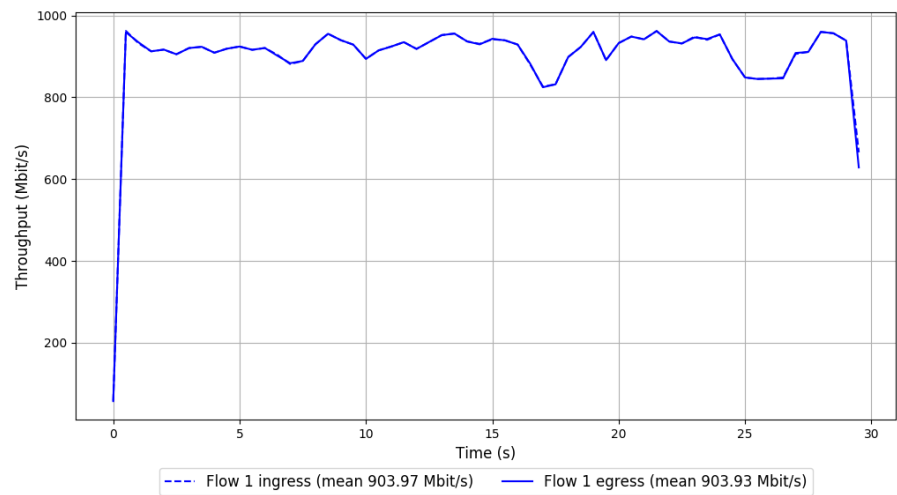


Run 5: Statistics of PCC

Start at: 2017-11-15 21:28:23
End at: 2017-11-15 21:28:53
Local clock offset: 1.018 ms
Remote clock offset: -1.646 ms

Below is generated by plot.py at 2017-11-16 03:16:04
Datalink statistics
-- Total of 1 flow:
Average throughput: 903.93 Mbit/s
95th percentile per-packet one-way delay: 2.038 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 903.93 Mbit/s
95th percentile per-packet one-way delay: 2.038 ms
Loss rate: 0.07%

Run 5: Report of PCC — Data Link

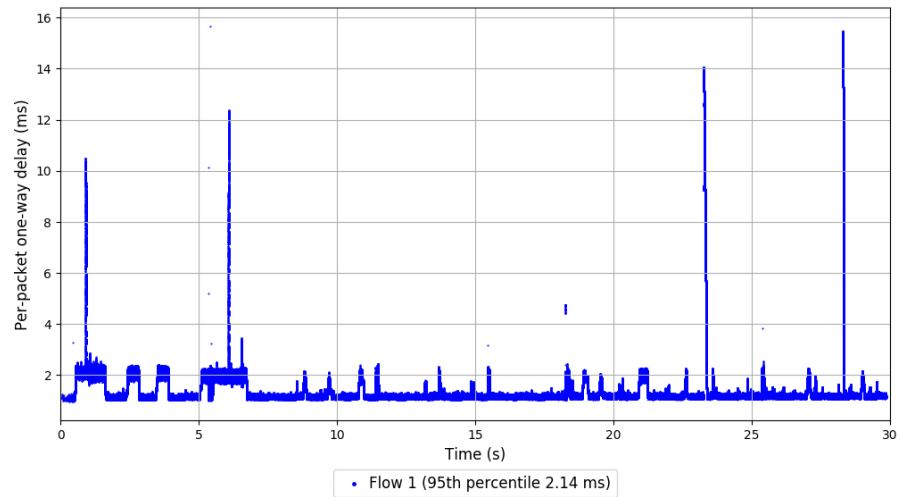
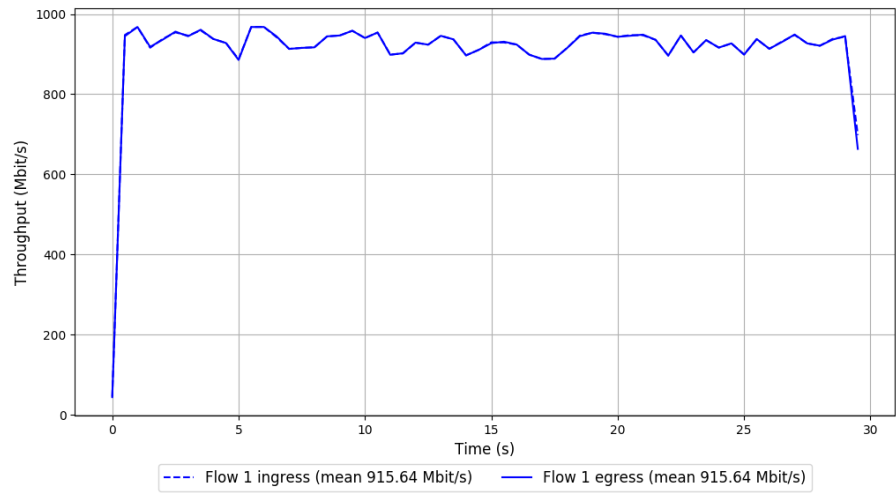


Run 6: Statistics of PCC

Start at: 2017-11-15 21:47:44
End at: 2017-11-15 21:48:14
Local clock offset: -0.121 ms
Remote clock offset: -1.327 ms

Below is generated by plot.py at 2017-11-16 03:16:19
Datalink statistics
-- Total of 1 flow:
Average throughput: 915.64 Mbit/s
95th percentile per-packet one-way delay: 2.138 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 915.64 Mbit/s
95th percentile per-packet one-way delay: 2.138 ms
Loss rate: 0.07%

Run 6: Report of PCC — Data Link

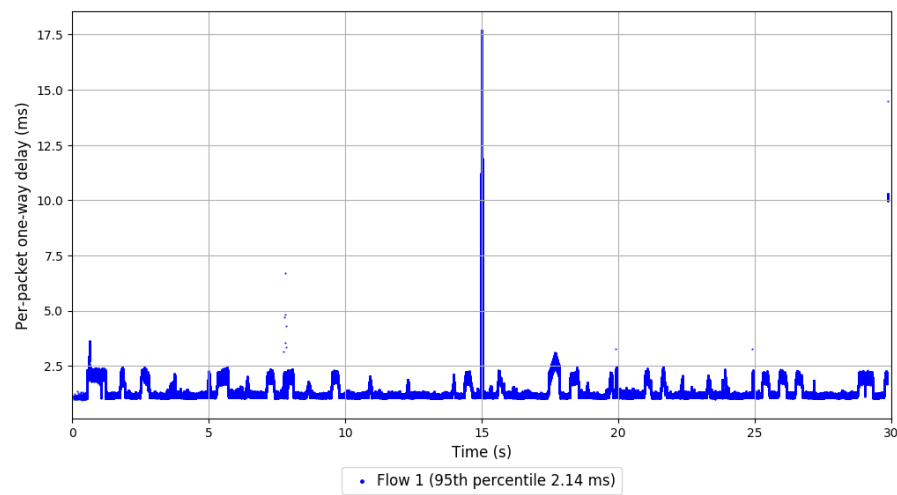
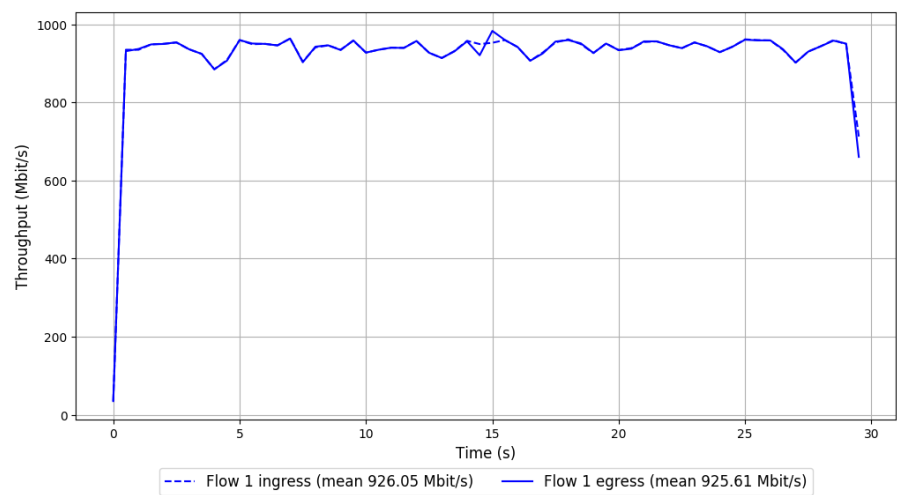


Run 7: Statistics of PCC

Start at: 2017-11-15 22:06:44
End at: 2017-11-15 22:07:15
Local clock offset: -0.544 ms
Remote clock offset: -1.344 ms

Below is generated by plot.py at 2017-11-16 03:16:50
Datalink statistics
-- Total of 1 flow:
Average throughput: 925.61 Mbit/s
95th percentile per-packet one-way delay: 2.136 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 925.61 Mbit/s
95th percentile per-packet one-way delay: 2.136 ms
Loss rate: 0.10%

Run 7: Report of PCC — Data Link

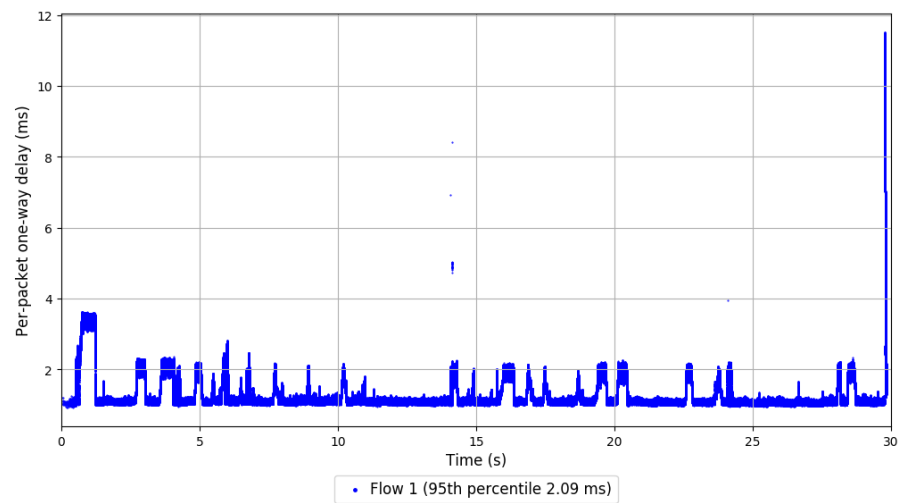
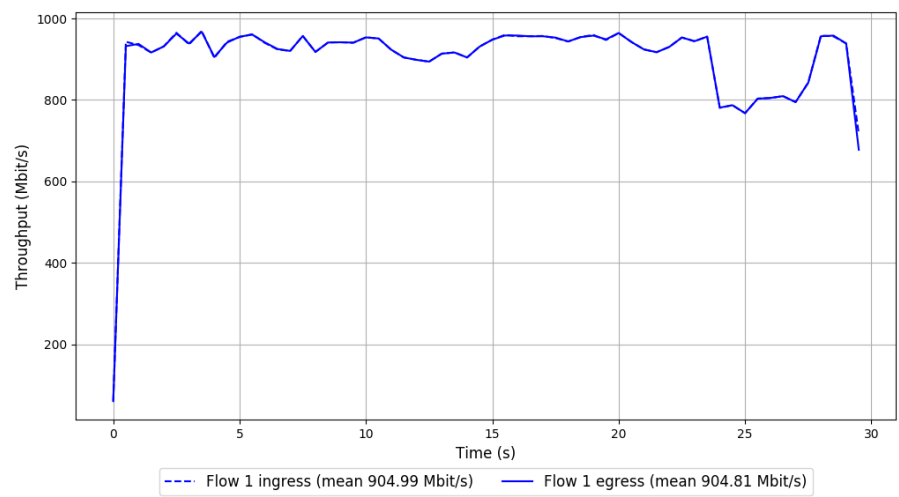


Run 8: Statistics of PCC

Start at: 2017-11-15 22:26:11
End at: 2017-11-15 22:26:41
Local clock offset: 0.183 ms
Remote clock offset: -1.133 ms

Below is generated by plot.py at 2017-11-16 03:17:07
Datalink statistics
-- Total of 1 flow:
Average throughput: 904.81 Mbit/s
95th percentile per-packet one-way delay: 2.086 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 904.81 Mbit/s
95th percentile per-packet one-way delay: 2.086 ms
Loss rate: 0.09%

Run 8: Report of PCC — Data Link

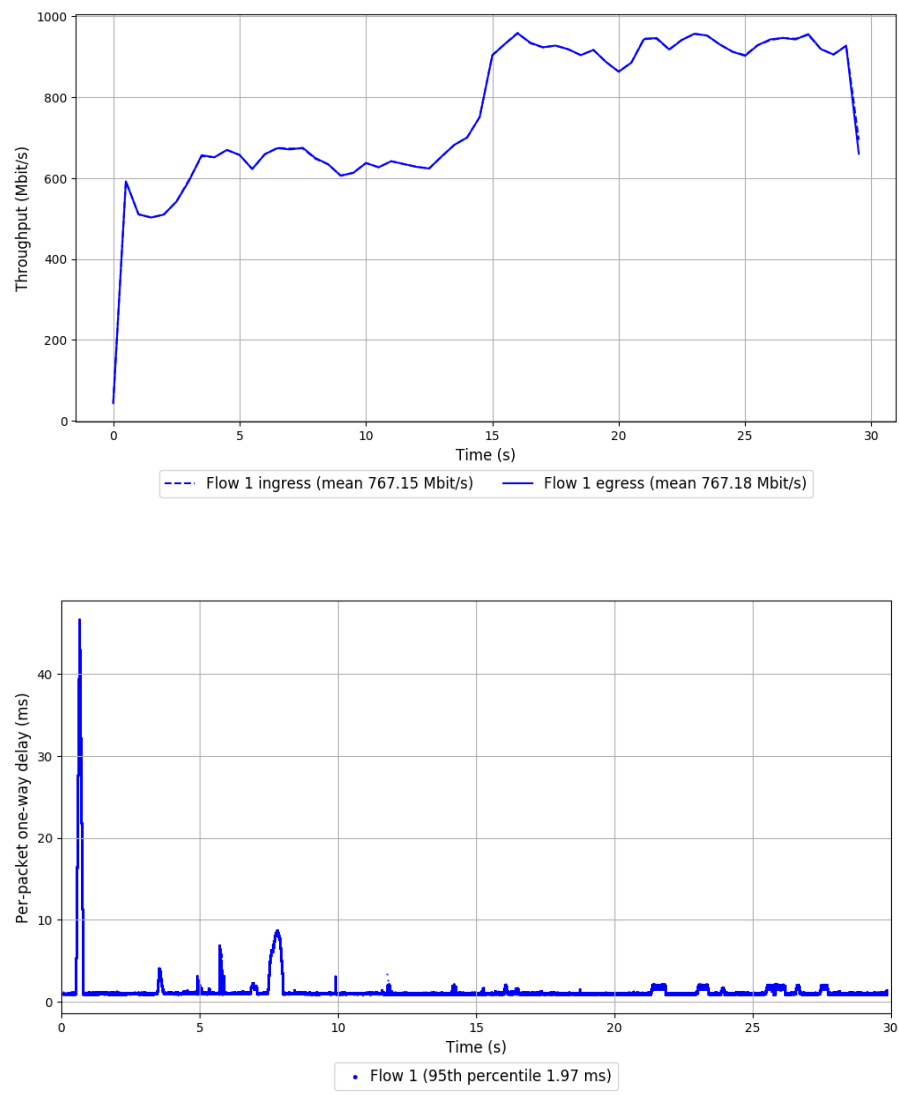


Run 9: Statistics of PCC

Start at: 2017-11-15 22:45:29
End at: 2017-11-15 22:45:59
Local clock offset: 0.979 ms
Remote clock offset: -1.167 ms

Below is generated by plot.py at 2017-11-16 03:20:42
Datalink statistics
-- Total of 1 flow:
Average throughput: 767.18 Mbit/s
95th percentile per-packet one-way delay: 1.968 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 767.18 Mbit/s
95th percentile per-packet one-way delay: 1.968 ms
Loss rate: 0.08%

Run 9: Report of PCC — Data Link

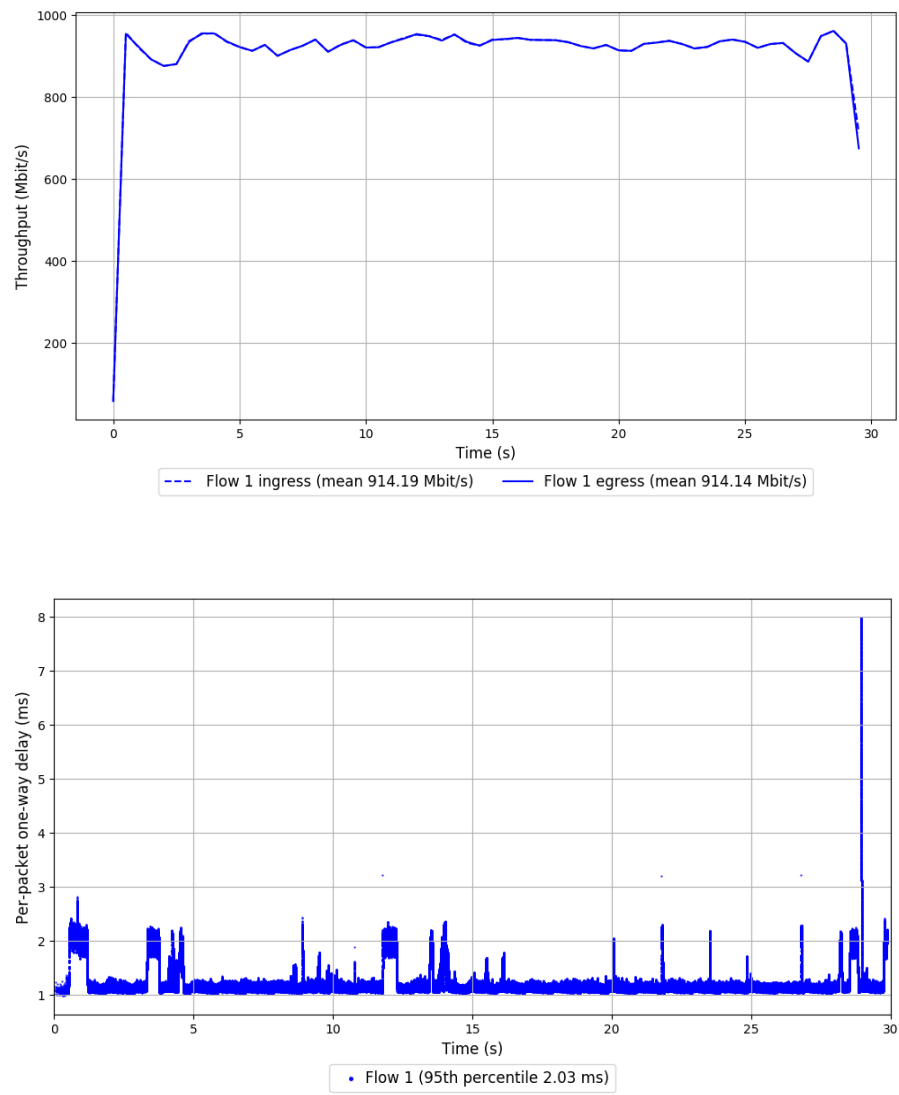


Run 10: Statistics of PCC

Start at: 2017-11-15 23:04:49
End at: 2017-11-15 23:05:19
Local clock offset: 1.577 ms
Remote clock offset: -0.879 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 914.14 Mbit/s
95th percentile per-packet one-way delay: 2.032 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 914.14 Mbit/s
95th percentile per-packet one-way delay: 2.032 ms
Loss rate: 0.07%

Run 10: Report of PCC — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2017-11-15 20:22:34

End at: 2017-11-15 20:23:04

Local clock offset: -0.531 ms

Remote clock offset: -2.501 ms

Below is generated by plot.py at 2017-11-16 03:25:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 80.84 Mbit/s

95th percentile per-packet one-way delay: 1.073 ms

Loss rate: 0.07%

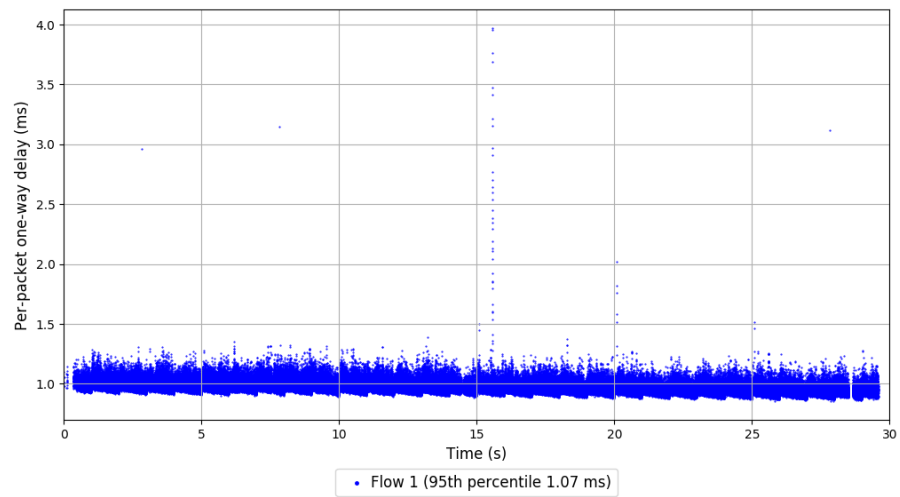
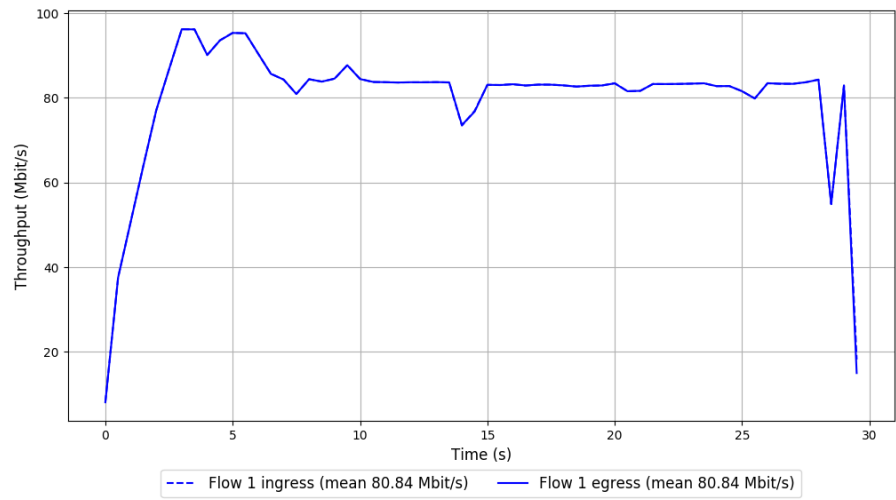
-- Flow 1:

Average throughput: 80.84 Mbit/s

95th percentile per-packet one-way delay: 1.073 ms

Loss rate: 0.07%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

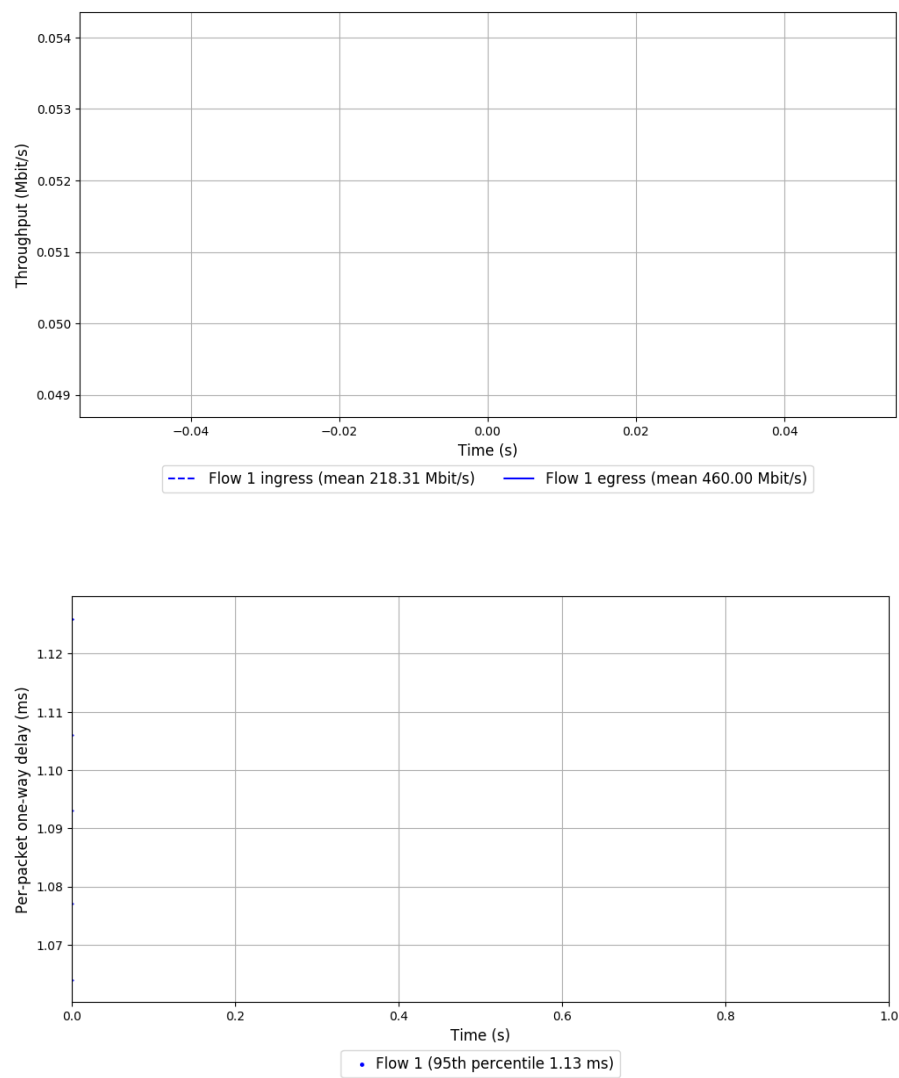
Start at: 2017-11-15 20:41:43

End at: 2017-11-15 20:42:13

Local clock offset: 1.365 ms

Remote clock offset: -1.98 ms

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2017-11-15 21:01:06

End at: 2017-11-15 21:01:36

Local clock offset: 1.9 ms

Remote clock offset: -1.72 ms

Below is generated by plot.py at 2017-11-16 03:25:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 69.69 Mbit/s

95th percentile per-packet one-way delay: 1.108 ms

Loss rate: 0.01%

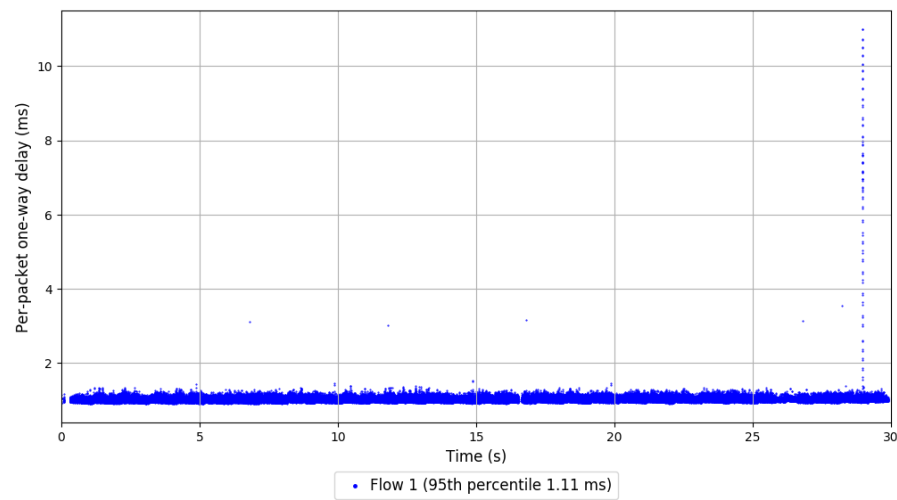
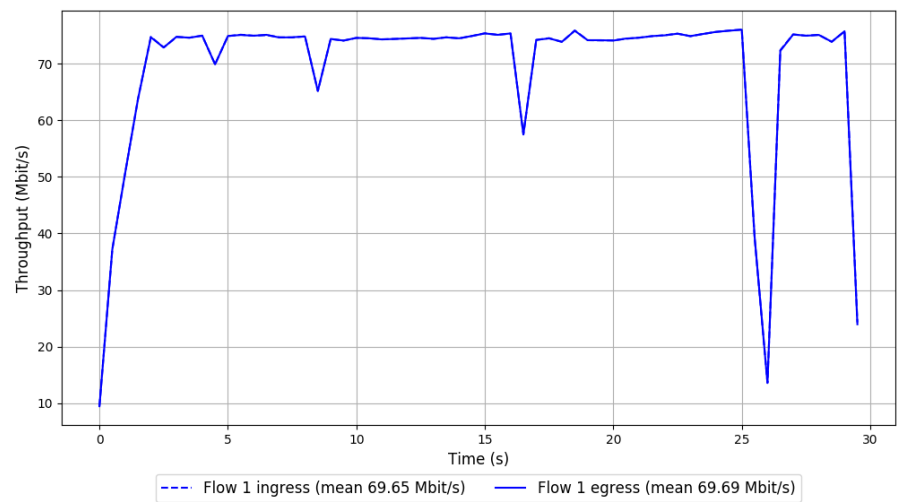
-- Flow 1:

Average throughput: 69.69 Mbit/s

95th percentile per-packet one-way delay: 1.108 ms

Loss rate: 0.01%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2017-11-15 21:20:21

End at: 2017-11-15 21:20:51

Local clock offset: 1.536 ms

Remote clock offset: -1.785 ms

Below is generated by plot.py at 2017-11-16 03:25:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 82.29 Mbit/s

95th percentile per-packet one-way delay: 1.130 ms

Loss rate: 0.08%

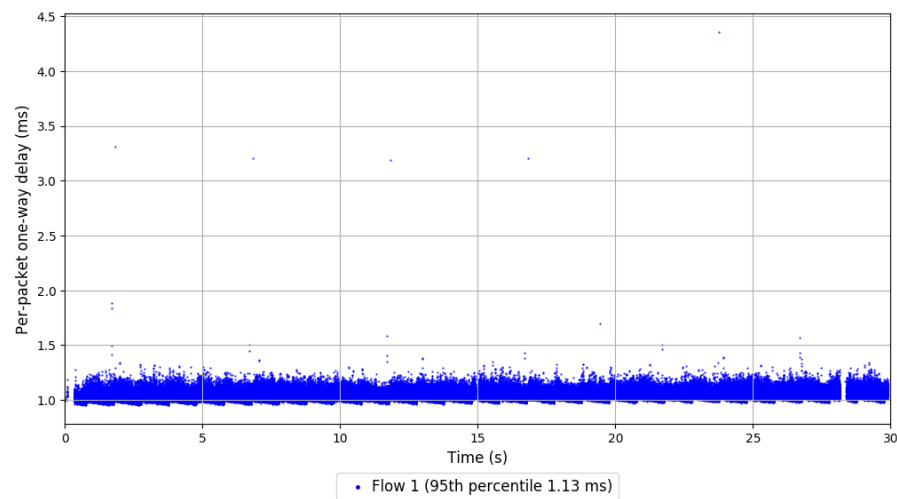
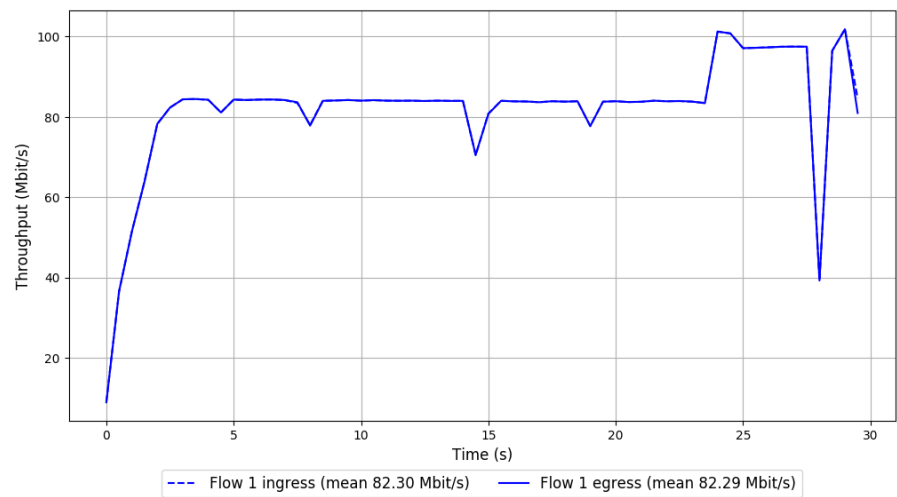
-- Flow 1:

Average throughput: 82.29 Mbit/s

95th percentile per-packet one-way delay: 1.130 ms

Loss rate: 0.08%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2017-11-15 21:39:47

End at: 2017-11-15 21:40:17

Local clock offset: 0.369 ms

Remote clock offset: -1.663 ms

Below is generated by plot.py at 2017-11-16 03:25:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 75.93 Mbit/s

95th percentile per-packet one-way delay: 1.265 ms

Loss rate: 0.11%

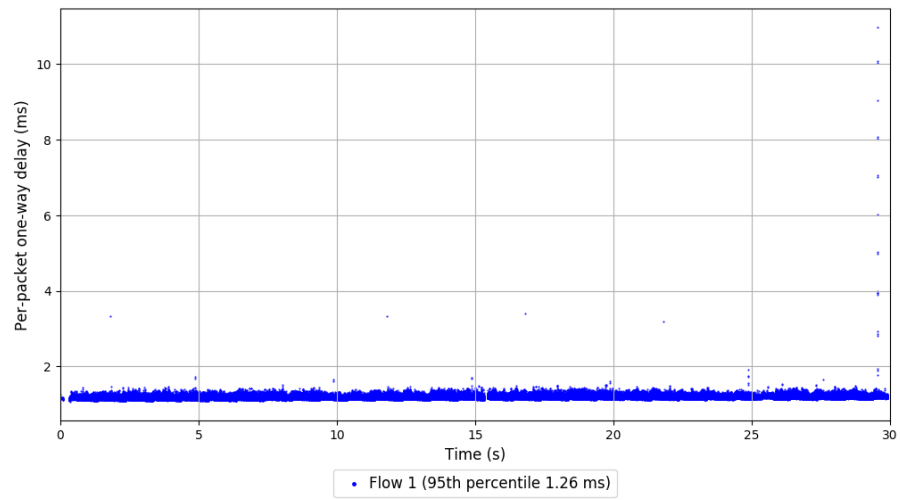
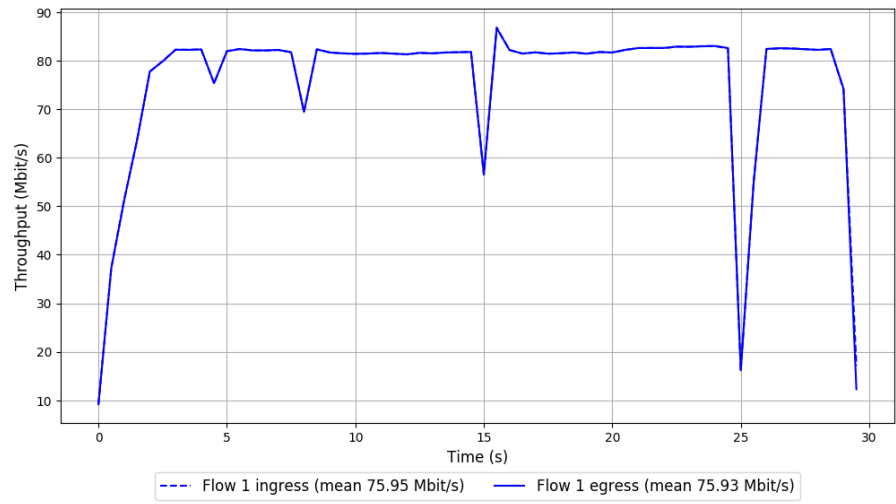
-- Flow 1:

Average throughput: 75.93 Mbit/s

95th percentile per-packet one-way delay: 1.265 ms

Loss rate: 0.11%

Run 5: Report of QUIC Cubic — Data Link



Run 6: Statistics of QUIC Cubic

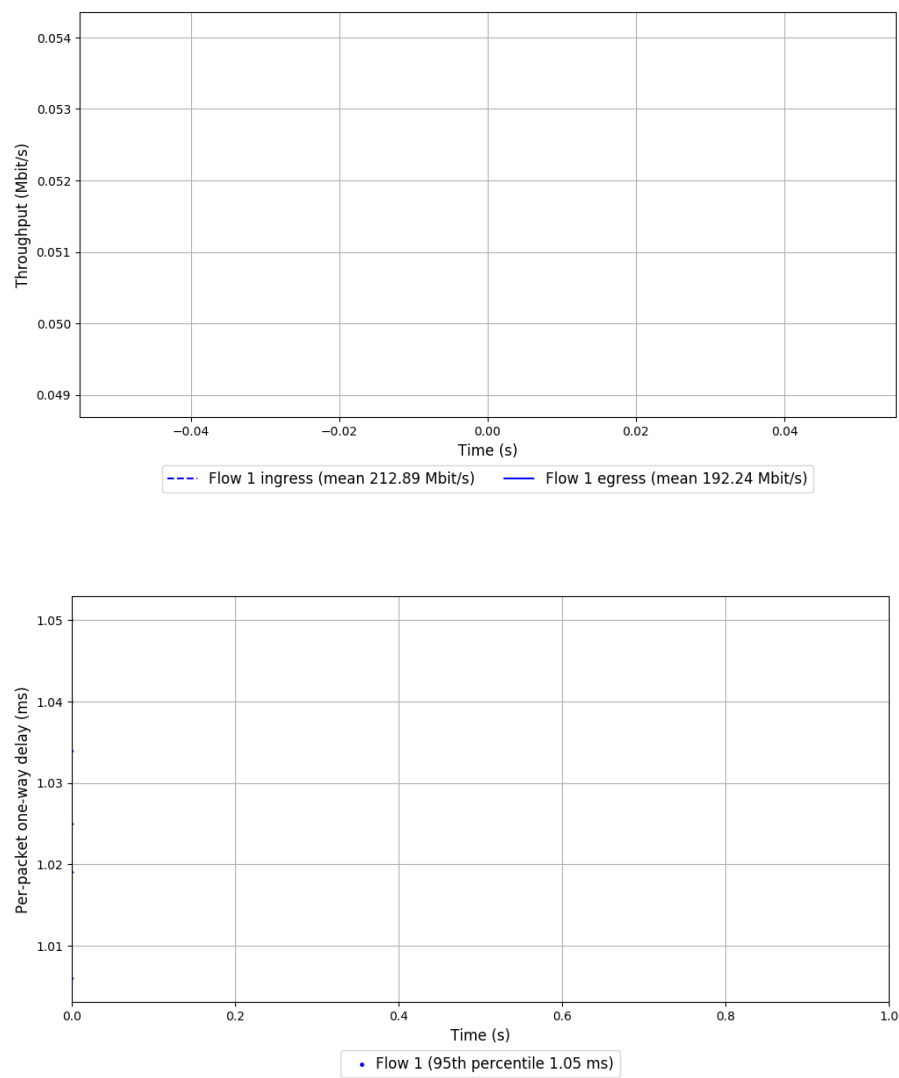
Start at: 2017-11-15 21:58:50

End at: 2017-11-15 21:59:20

Local clock offset: -0.699 ms

Remote clock offset: -1.326 ms

Run 6: Report of QUIC Cubic — Data Link

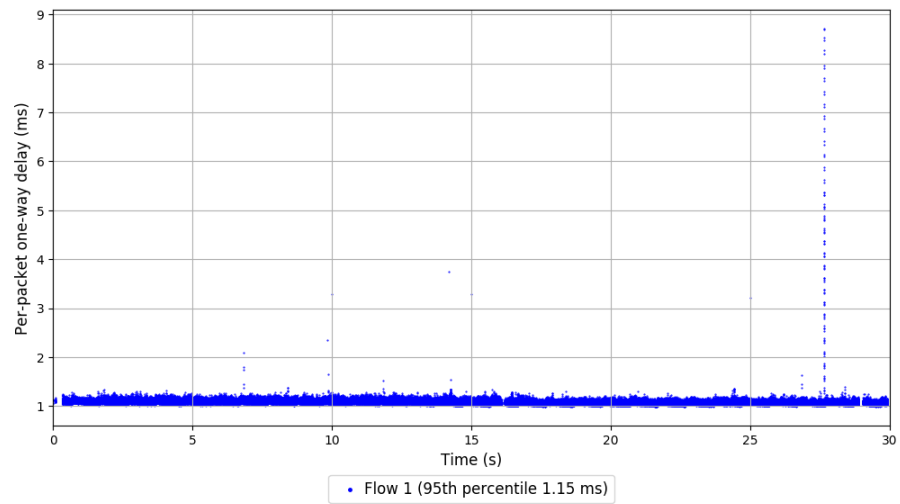
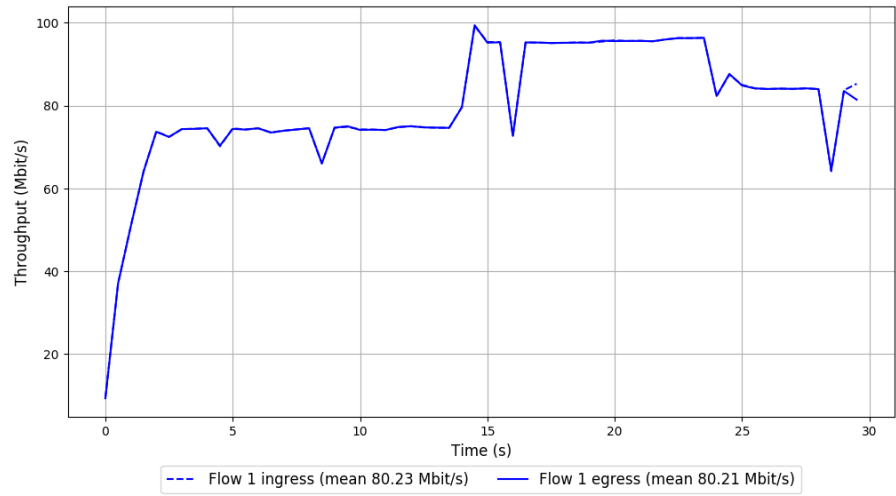


Run 7: Statistics of QUIC Cubic

Start at: 2017-11-15 22:18:15
End at: 2017-11-15 22:18:46
Local clock offset: -0.127 ms
Remote clock offset: -1.175 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 80.21 Mbit/s
95th percentile per-packet one-way delay: 1.145 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 80.21 Mbit/s
95th percentile per-packet one-way delay: 1.145 ms
Loss rate: 0.08%

Run 7: Report of QUIC Cubic — Data Link



Run 8: Statistics of QUIC Cubic

Start at: 2017-11-15 22:37:28

End at: 2017-11-15 22:37:58

Local clock offset: 0.675 ms

Remote clock offset: -1.066 ms

Below is generated by plot.py at 2017-11-16 03:25:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 80.23 Mbit/s

95th percentile per-packet one-way delay: 1.032 ms

Loss rate: 0.07%

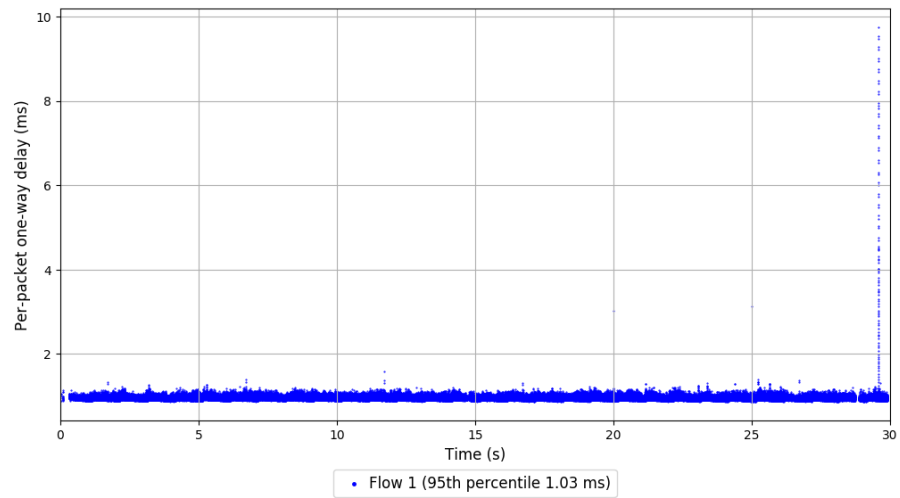
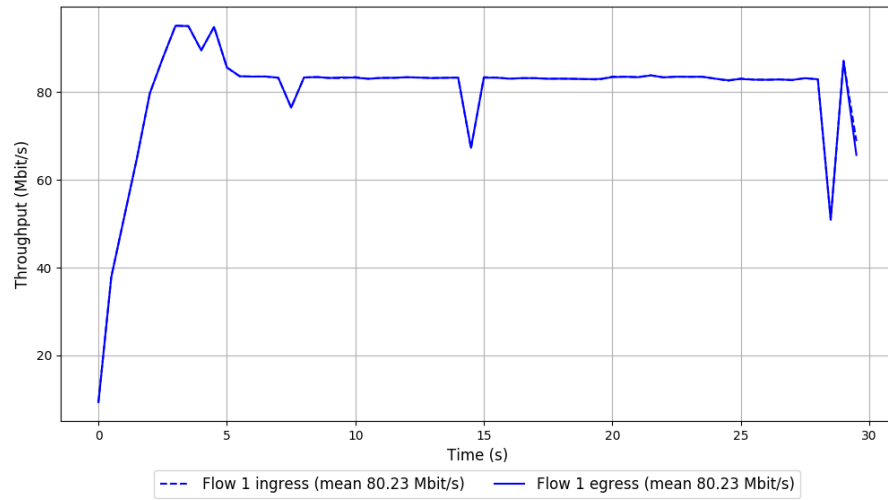
-- Flow 1:

Average throughput: 80.23 Mbit/s

95th percentile per-packet one-way delay: 1.032 ms

Loss rate: 0.07%

Run 8: Report of QUIC Cubic — Data Link



Run 9: Statistics of QUIC Cubic

Start at: 2017-11-15 22:56:47

End at: 2017-11-15 22:57:17

Local clock offset: 1.319 ms

Remote clock offset: -1.067 ms

Below is generated by plot.py at 2017-11-16 03:25:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 79.45 Mbit/s

95th percentile per-packet one-way delay: 1.045 ms

Loss rate: 0.08%

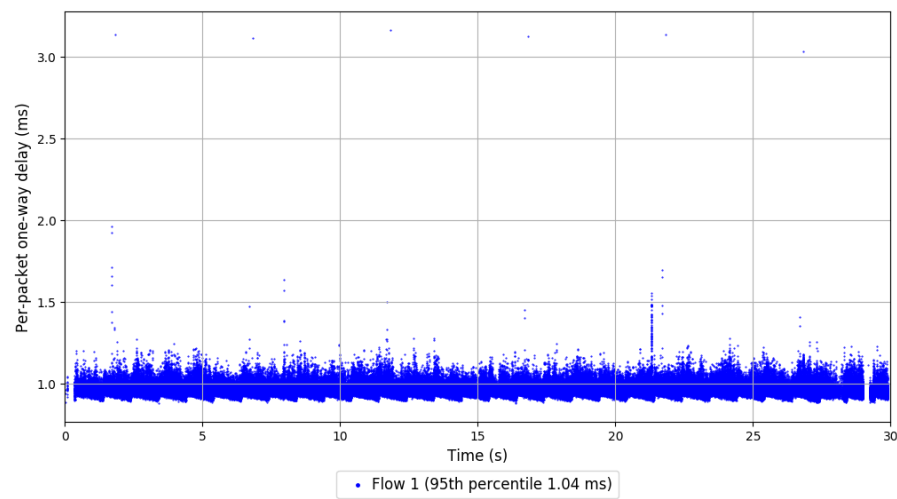
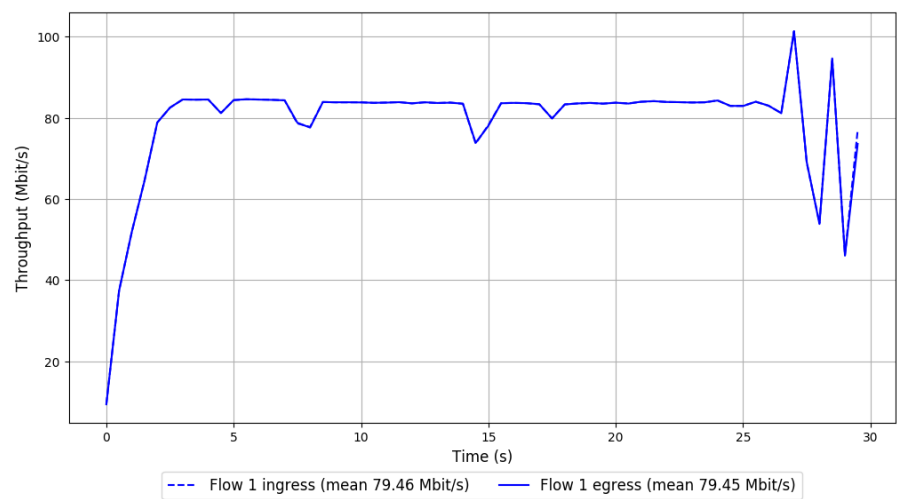
-- Flow 1:

Average throughput: 79.45 Mbit/s

95th percentile per-packet one-way delay: 1.045 ms

Loss rate: 0.08%

Run 9: Report of QUIC Cubic — Data Link



Run 10: Statistics of QUIC Cubic

Start at: 2017-11-15 23:16:06

End at: 2017-11-15 23:16:36

Local clock offset: 1.478 ms

Remote clock offset: -0.666 ms

Below is generated by plot.py at 2017-11-16 03:25:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 79.96 Mbit/s

95th percentile per-packet one-way delay: 1.035 ms

Loss rate: 0.07%

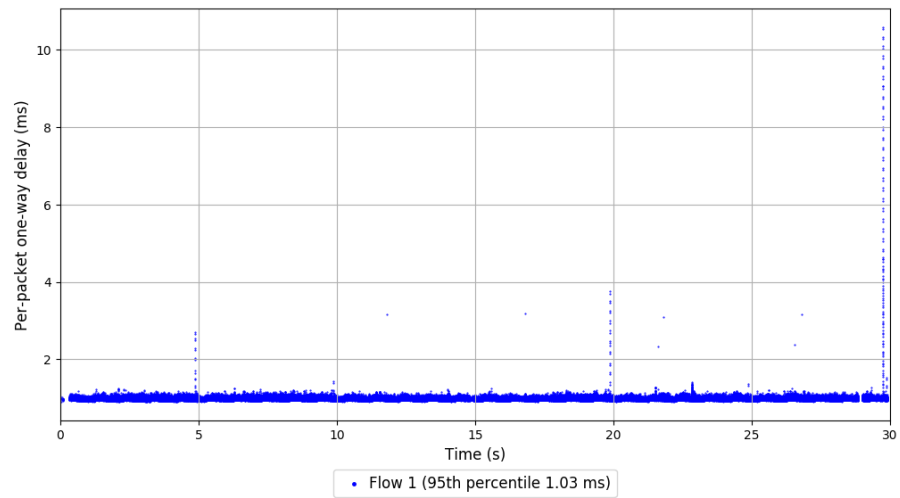
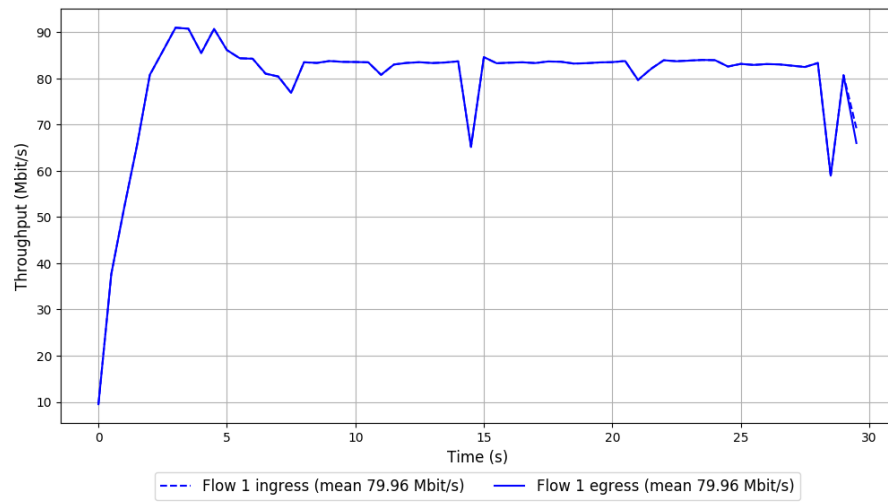
-- Flow 1:

Average throughput: 79.96 Mbit/s

95th percentile per-packet one-way delay: 1.035 ms

Loss rate: 0.07%

Run 10: Report of QUIC Cubic — Data Link

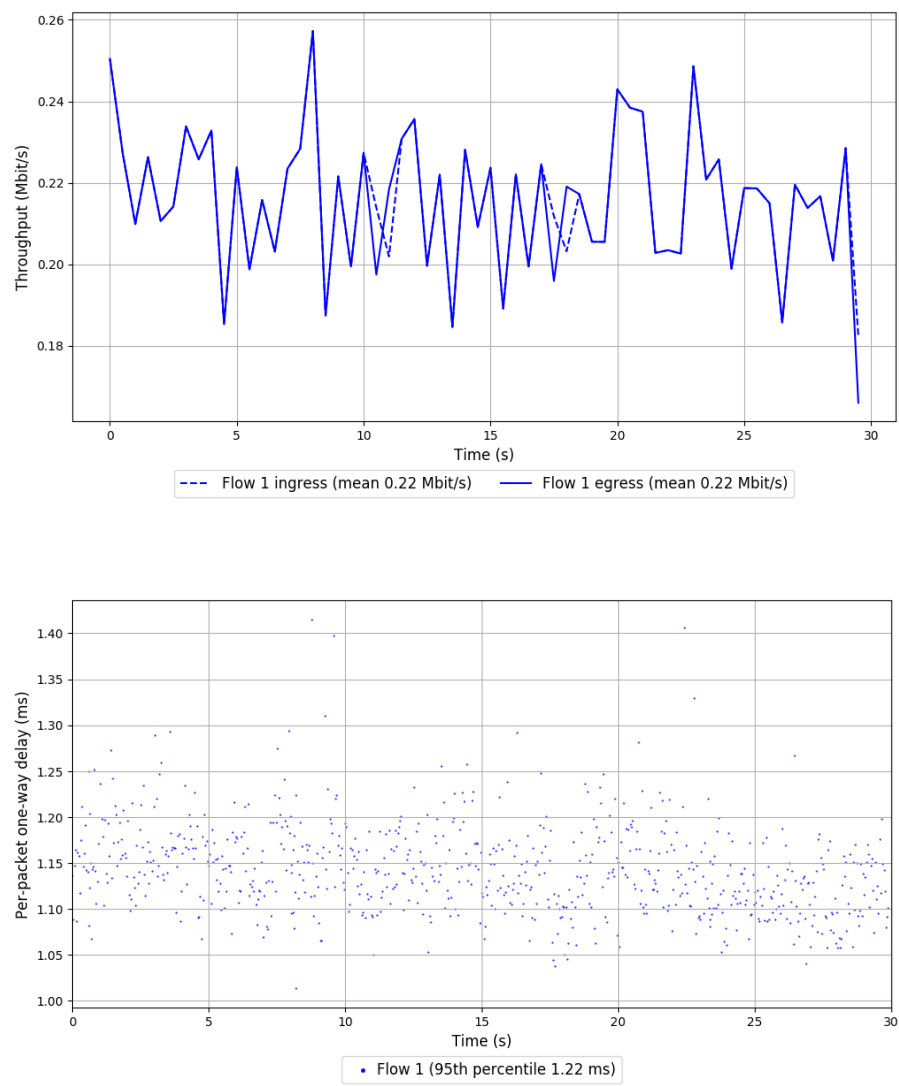


Run 1: Statistics of SCReAM

Start at: 2017-11-15 20:15:51
End at: 2017-11-15 20:16:21
Local clock offset: -1.36 ms
Remote clock offset: -2.612 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.224 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.224 ms
Loss rate: 0.13%

Run 1: Report of SReAM — Data Link

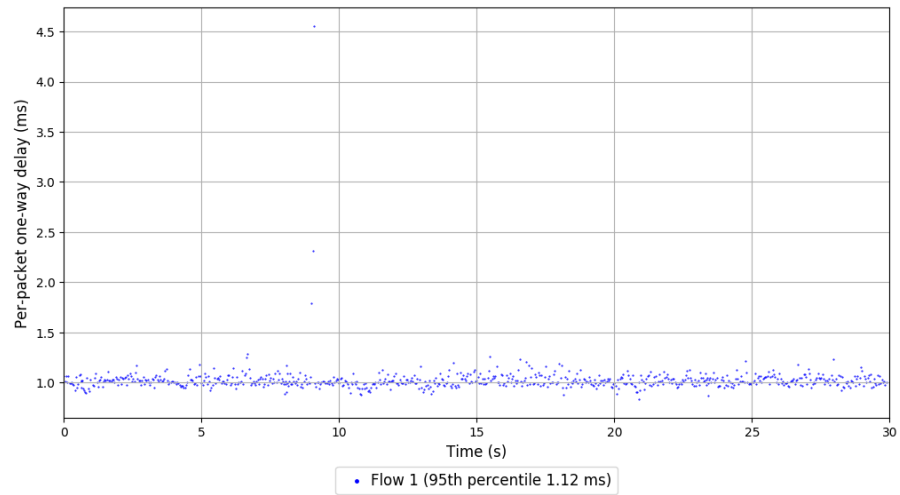
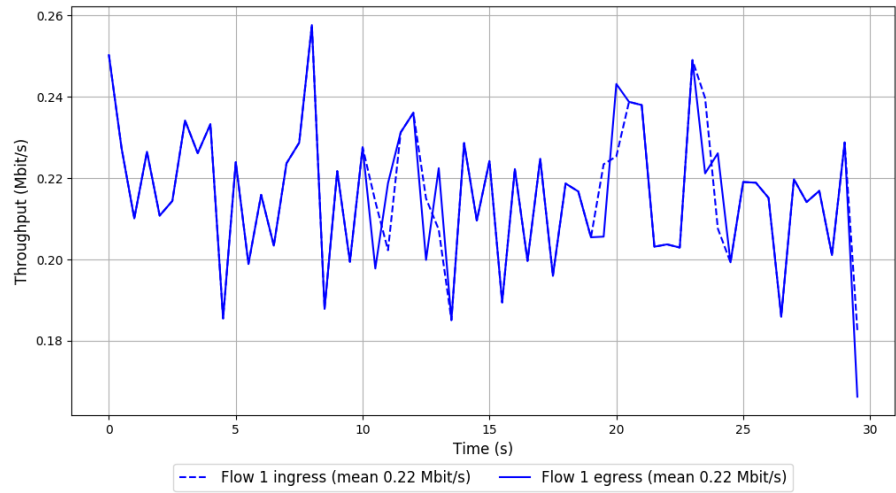


Run 2: Statistics of SCReAM

Start at: 2017-11-15 20:34:49
End at: 2017-11-15 20:35:19
Local clock offset: 0.984 ms
Remote clock offset: -2.168 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.117 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.117 ms
Loss rate: 0.13%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

Start at: 2017-11-15 20:53:53

End at: 2017-11-15 20:54:23

Local clock offset: 1.917 ms

Remote clock offset: -1.74 ms

Below is generated by plot.py at 2017-11-16 03:25:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 1.216 ms

Loss rate: 0.13%

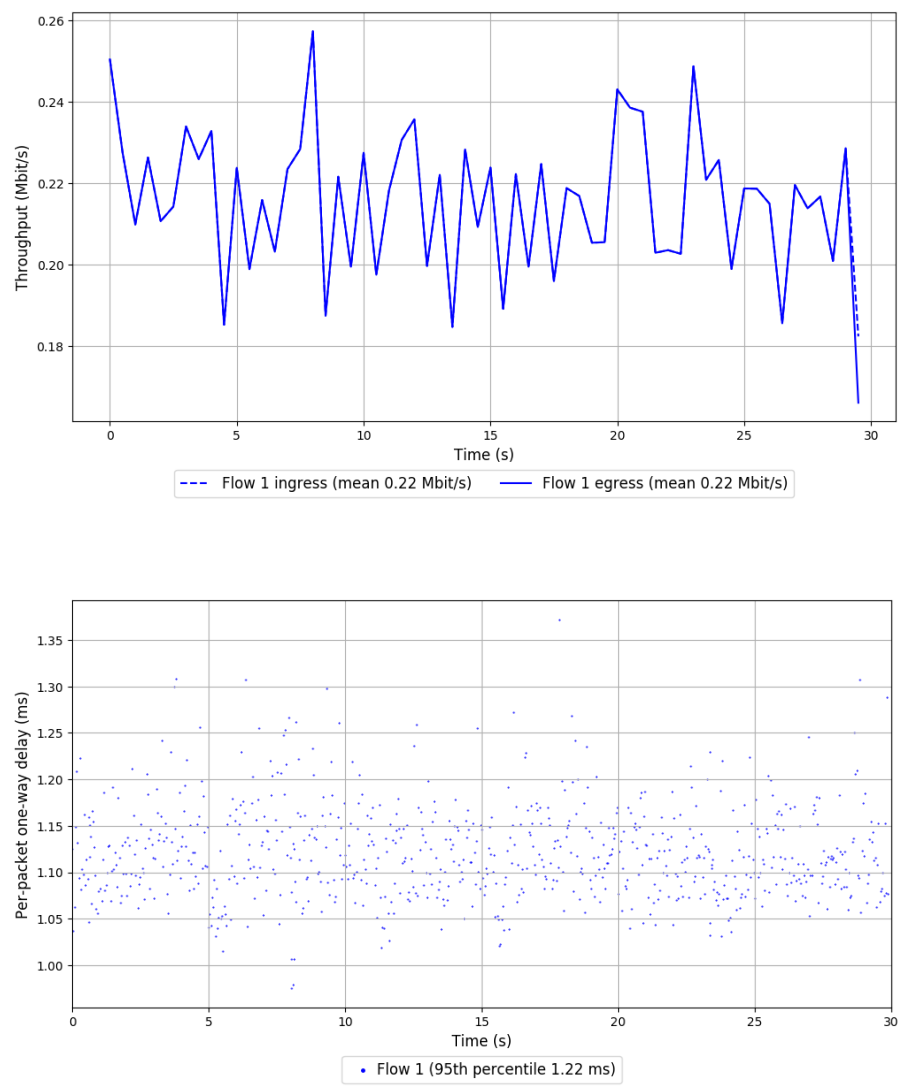
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 1.216 ms

Loss rate: 0.13%

Run 3: Report of SReAM — Data Link

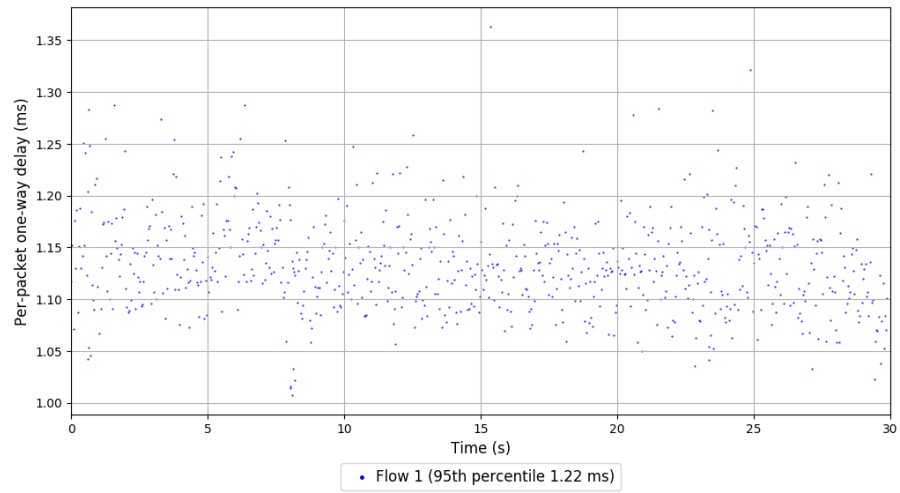
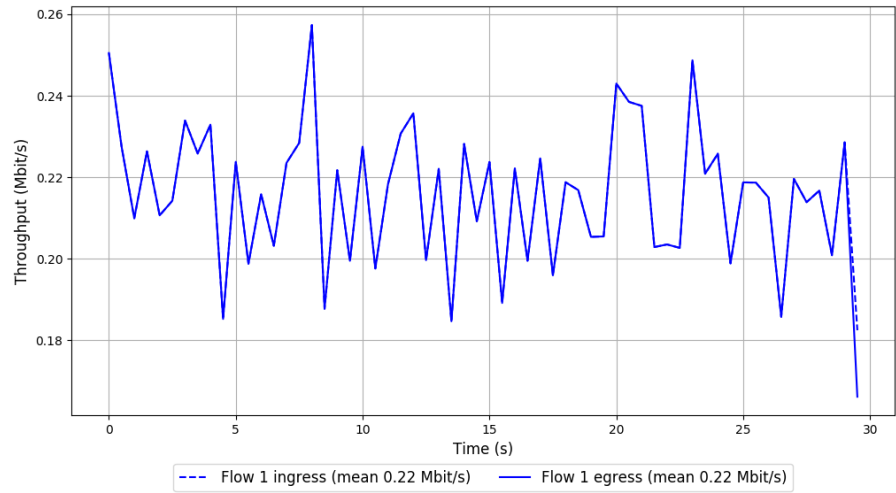


Run 4: Statistics of SCReAM

Start at: 2017-11-15 21:13:26
End at: 2017-11-15 21:13:56
Local clock offset: 1.877 ms
Remote clock offset: -1.705 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.216 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.216 ms
Loss rate: 0.13%

Run 4: Report of SReAM — Data Link

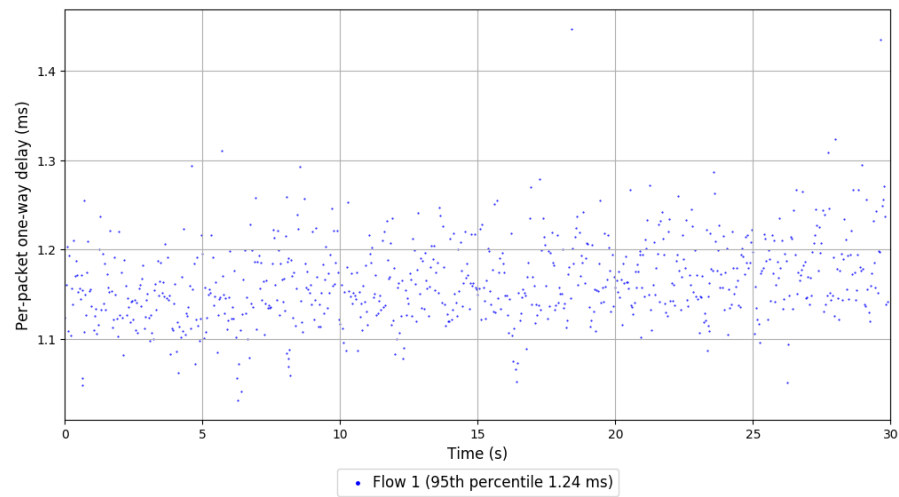
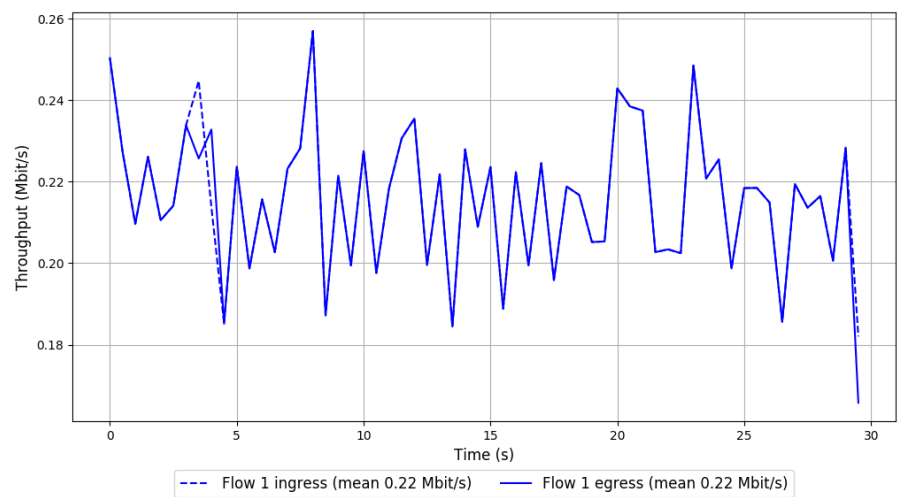


Run 5: Statistics of SCReAM

Start at: 2017-11-15 21:32:39
End at: 2017-11-15 21:33:09
Local clock offset: 0.78 ms
Remote clock offset: -1.505 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.243 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.243 ms
Loss rate: 0.13%

Run 5: Report of SReAM — Data Link



Run 6: Statistics of SCReAM

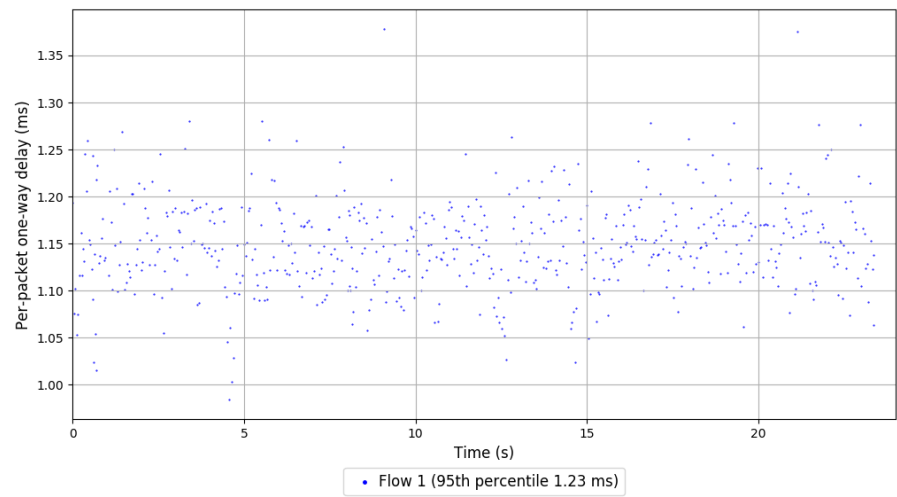
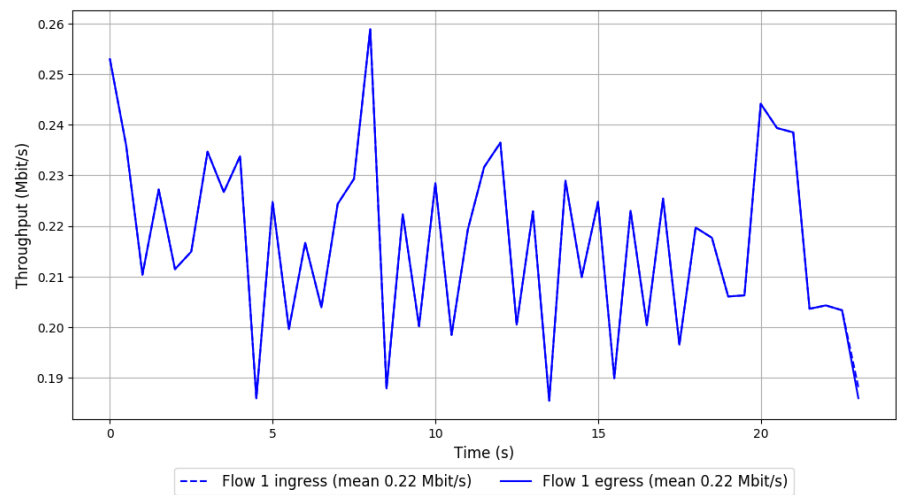
Start at: 2017-11-15 21:52:04

End at: 2017-11-15 21:52:34

Local clock offset: -0.435 ms

Remote clock offset: -1.402 ms

Run 6: Report of SReAM — Data Link

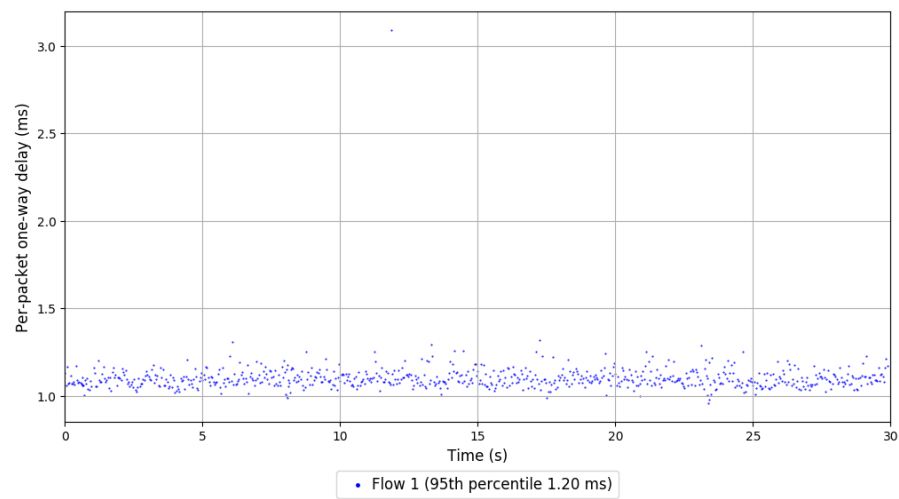
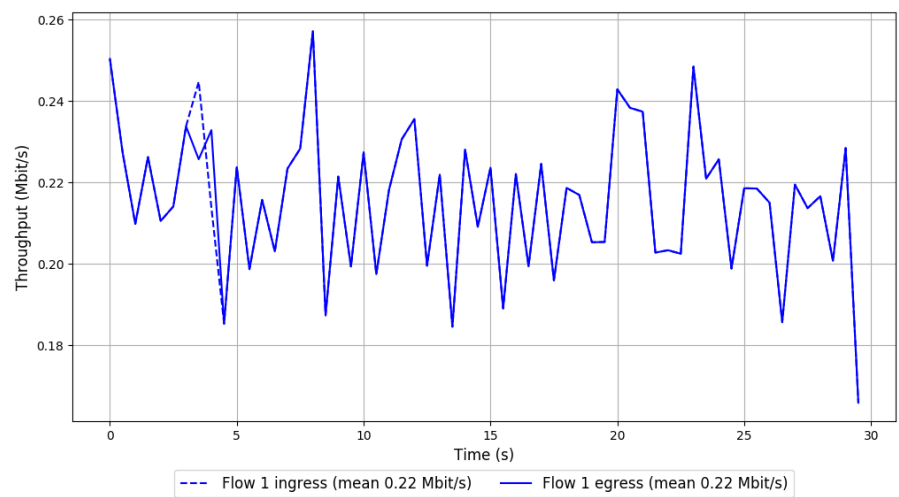


Run 7: Statistics of SCReAM

Start at: 2017-11-15 22:11:00
End at: 2017-11-15 22:11:30
Local clock offset: -0.424 ms
Remote clock offset: -1.222 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.196 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.196 ms
Loss rate: 0.00%

Run 7: Report of SReAM — Data Link

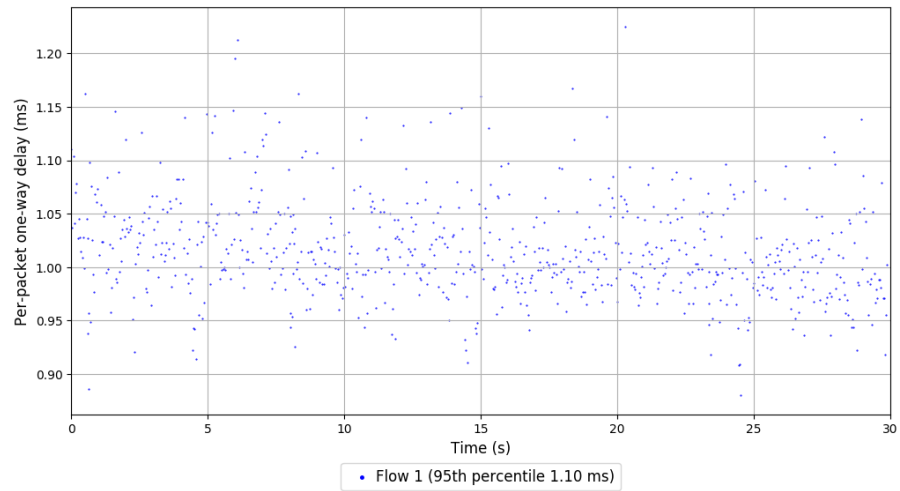
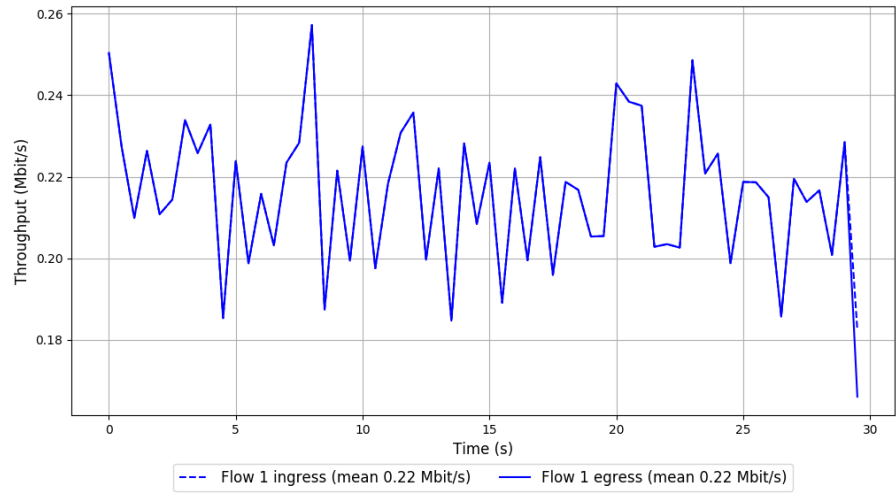


Run 8: Statistics of SCReAM

Start at: 2017-11-15 22:30:25
End at: 2017-11-15 22:30:55
Local clock offset: 0.307 ms
Remote clock offset: -1.077 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.103 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.103 ms
Loss rate: 0.13%

Run 8: Report of SReAM — Data Link

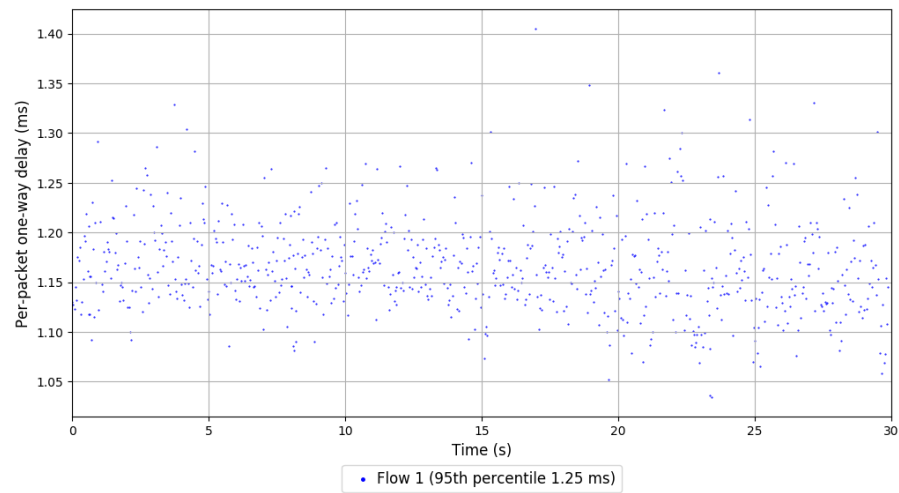
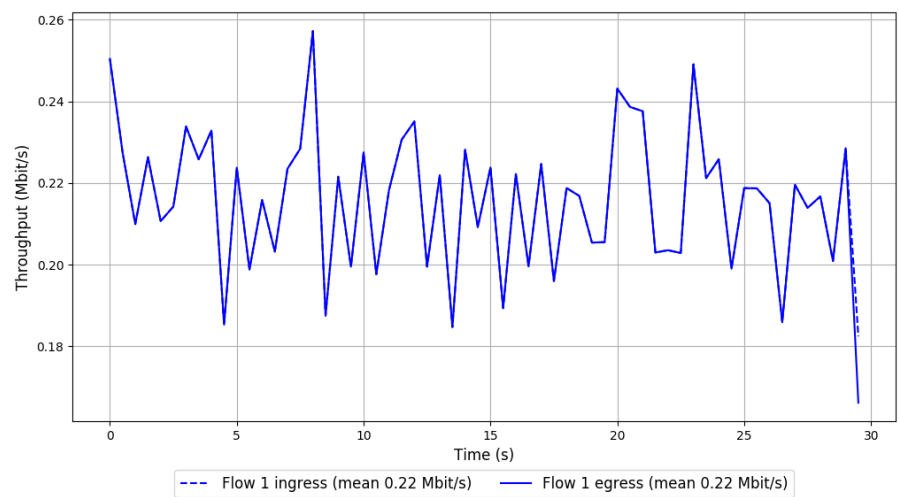


Run 9: Statistics of SCReAM

Start at: 2017-11-15 22:49:40
End at: 2017-11-15 22:50:10
Local clock offset: 1.218 ms
Remote clock offset: -1.217 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.255 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.255 ms
Loss rate: 0.13%

Run 9: Report of SReAM — Data Link



Run 10: Statistics of SReAM

Start at: 2017-11-15 23:09:03

End at: 2017-11-15 23:09:33

Local clock offset: 1.533 ms

Remote clock offset: -0.704 ms

Below is generated by plot.py at 2017-11-16 03:25:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 1.113 ms

Loss rate: 0.13%

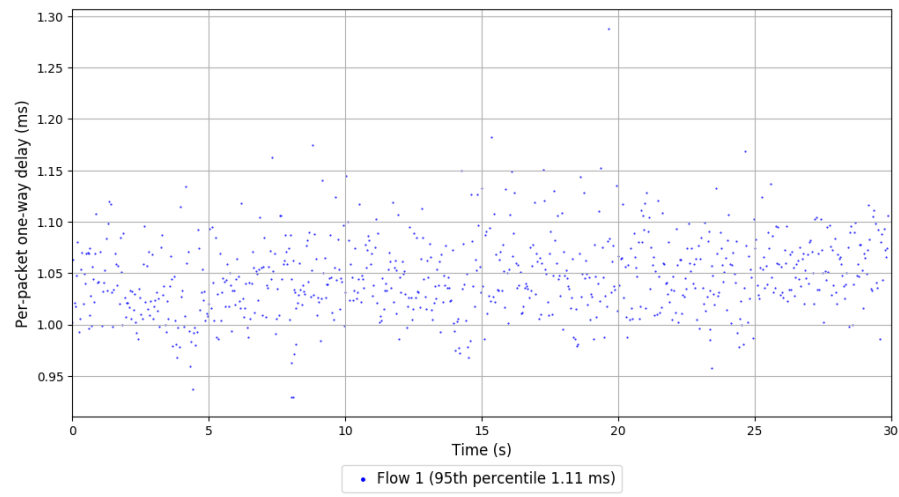
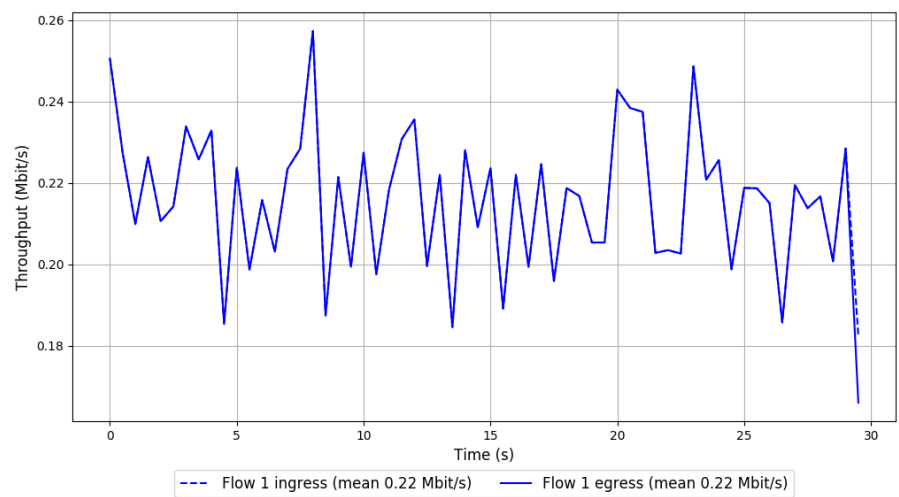
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 1.113 ms

Loss rate: 0.13%

Run 10: Report of SReAM — Data Link

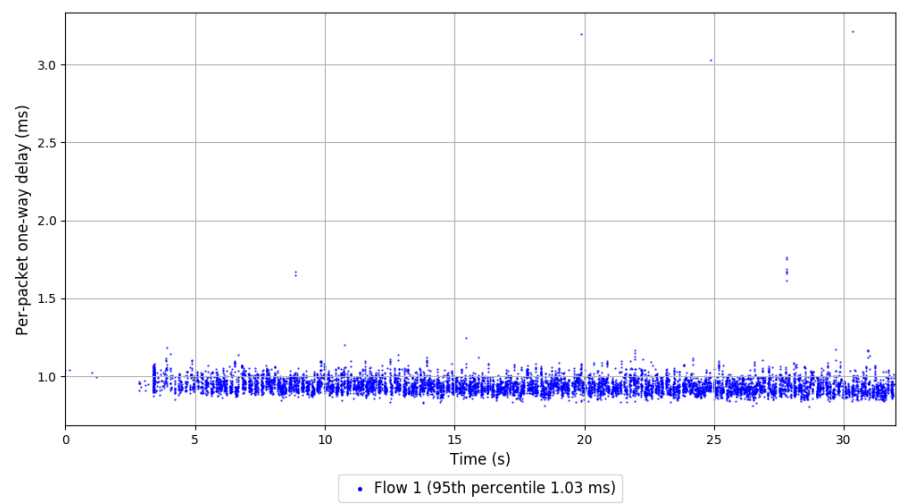
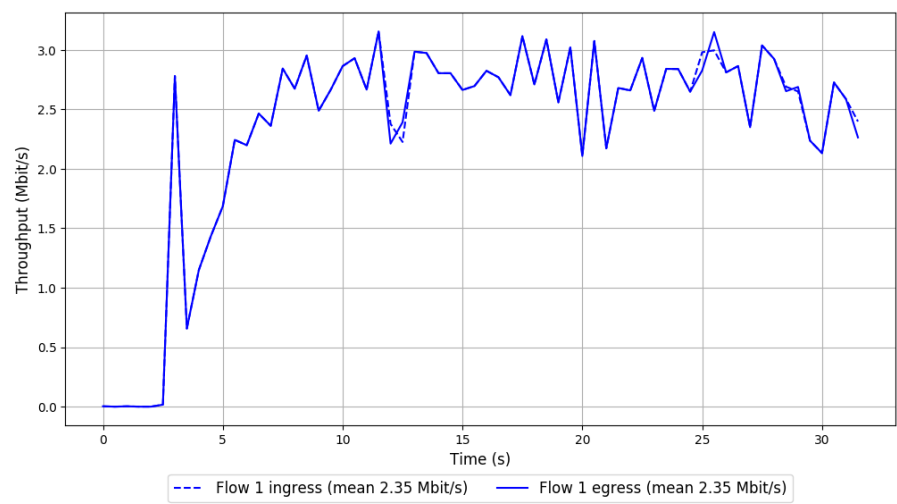


Run 1: Statistics of WebRTC media

Start at: 2017-11-15 20:13:11
End at: 2017-11-15 20:13:41
Local clock offset: -1.67 ms
Remote clock offset: -2.593 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.35 Mbit/s
95th percentile per-packet one-way delay: 1.028 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 2.35 Mbit/s
95th percentile per-packet one-way delay: 1.028 ms
Loss rate: 0.09%

Run 1: Report of WebRTC media — Data Link

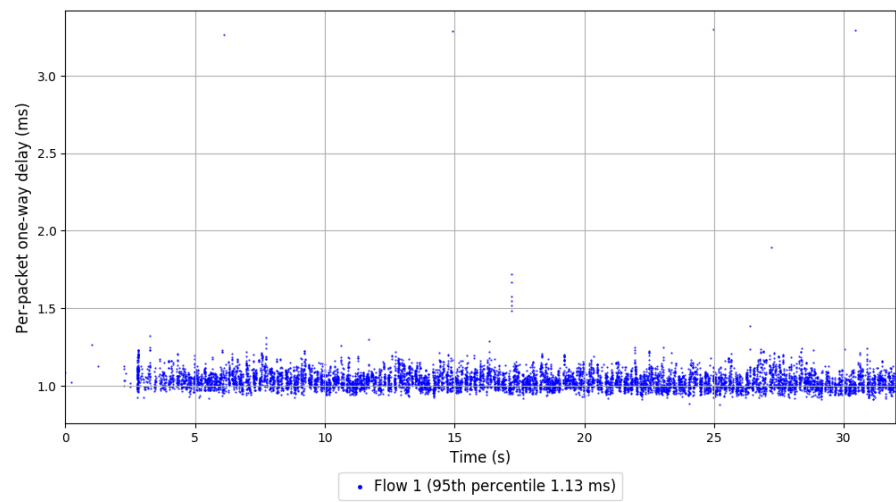
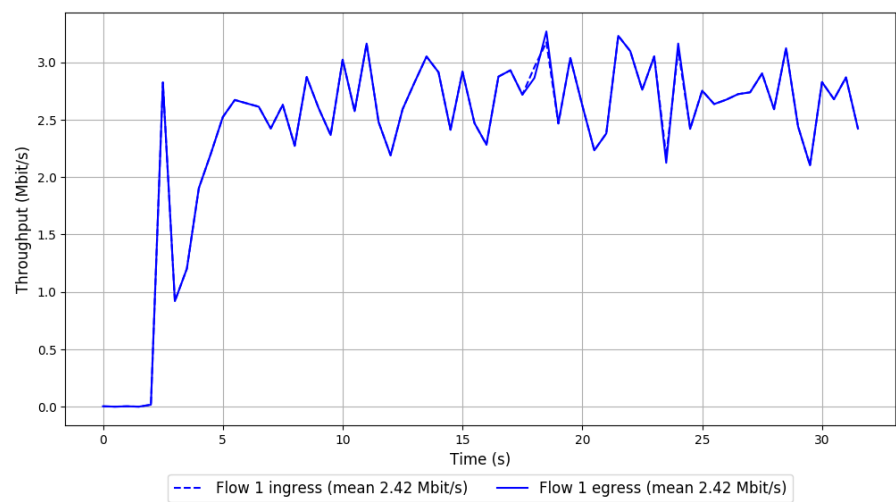


Run 2: Statistics of WebRTC media

Start at: 2017-11-15 20:32:05
End at: 2017-11-15 20:32:35
Local clock offset: 0.794 ms
Remote clock offset: -2.357 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.42 Mbit/s
95th percentile per-packet one-way delay: 1.134 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.42 Mbit/s
95th percentile per-packet one-way delay: 1.134 ms
Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link

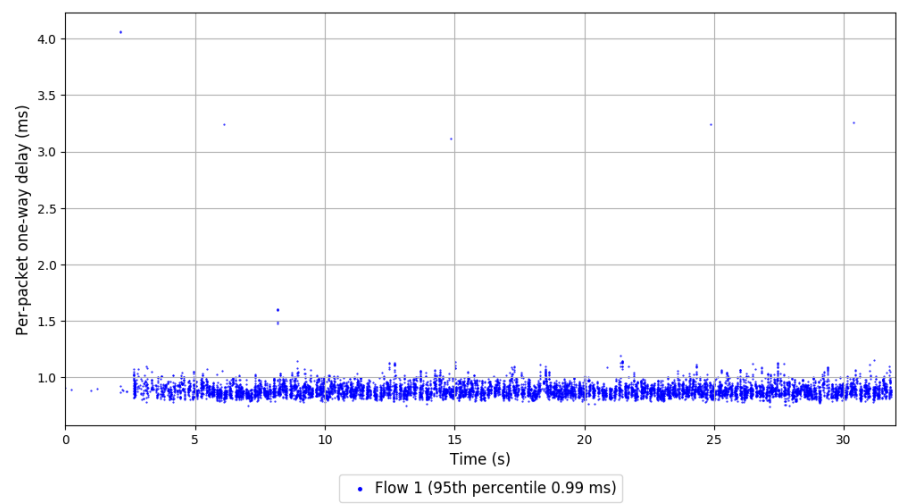
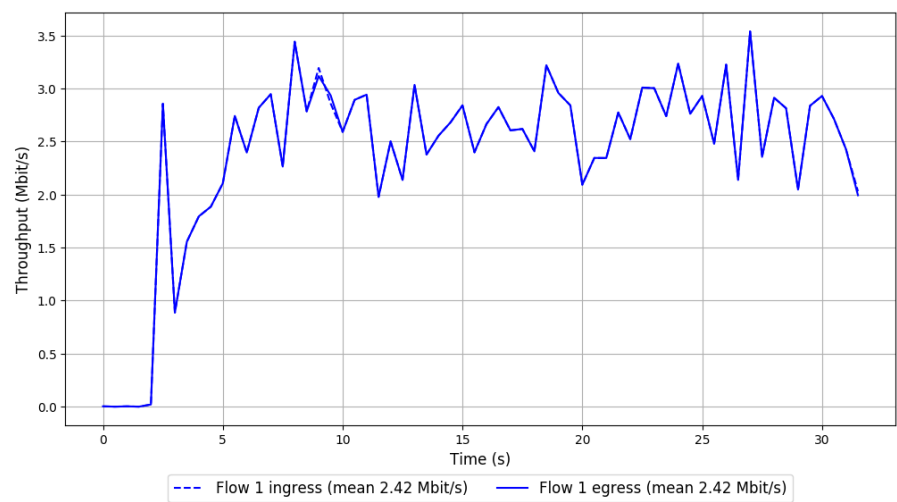


Run 3: Statistics of WebRTC media

Start at: 2017-11-15 20:51:18
End at: 2017-11-15 20:51:48
Local clock offset: 1.688 ms
Remote clock offset: -1.774 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.42 Mbit/s
95th percentile per-packet one-way delay: 0.990 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 2.42 Mbit/s
95th percentile per-packet one-way delay: 0.990 ms
Loss rate: 0.02%

Run 3: Report of WebRTC media — Data Link

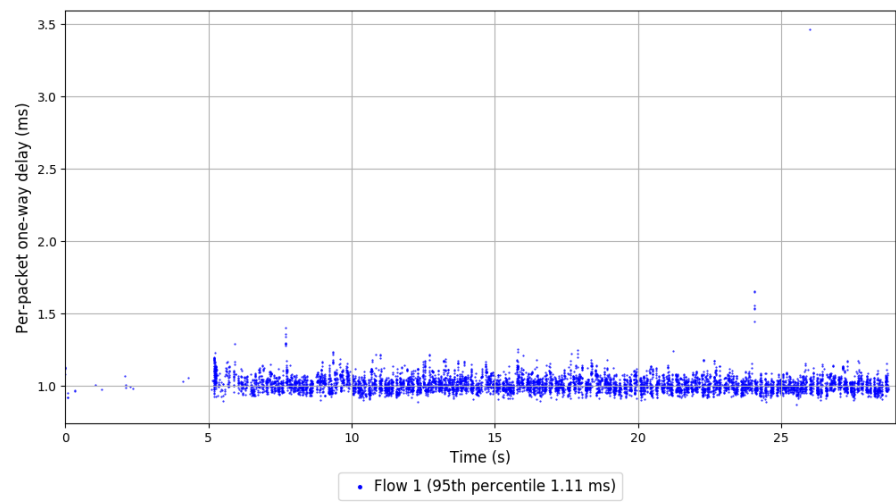
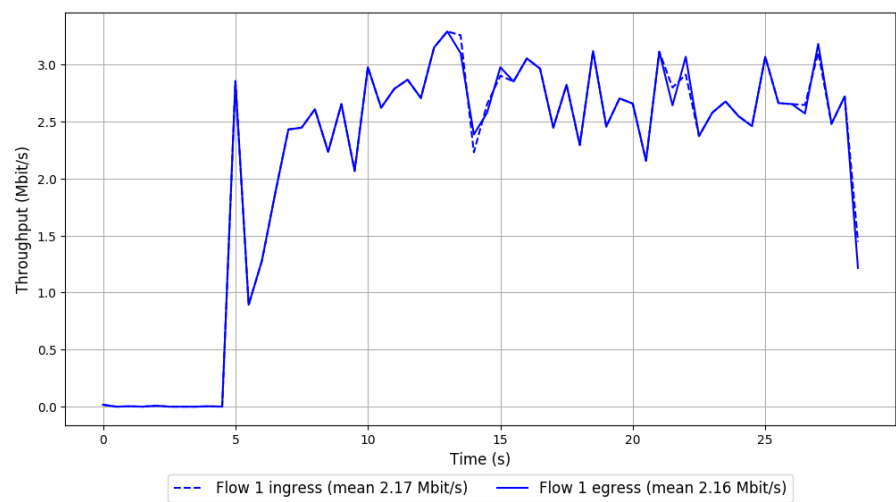


Run 4: Statistics of WebRTC media

Start at: 2017-11-15 21:10:45
End at: 2017-11-15 21:11:15
Local clock offset: 1.691 ms
Remote clock offset: -1.783 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.16 Mbit/s
95th percentile per-packet one-way delay: 1.106 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 2.16 Mbit/s
95th percentile per-packet one-way delay: 1.106 ms
Loss rate: 0.18%

Run 4: Report of WebRTC media — Data Link

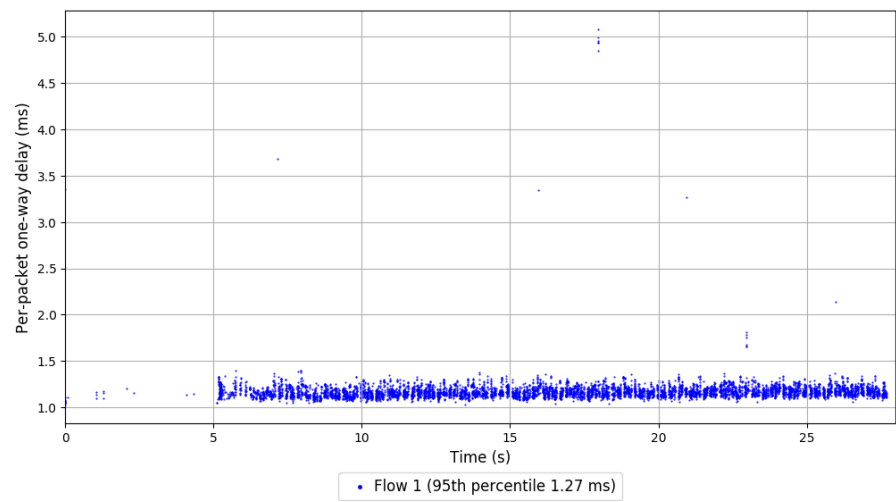
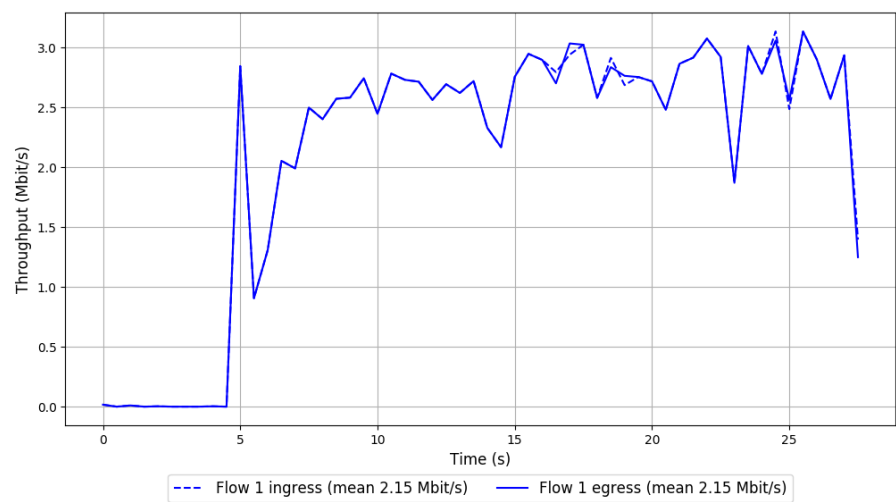


Run 5: Statistics of WebRTC media

Start at: 2017-11-15 21:29:59
End at: 2017-11-15 21:30:29
Local clock offset: 0.942 ms
Remote clock offset: -1.603 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.15 Mbit/s
95th percentile per-packet one-way delay: 1.267 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 2.15 Mbit/s
95th percentile per-packet one-way delay: 1.267 ms
Loss rate: 0.12%

Run 5: Report of WebRTC media — Data Link

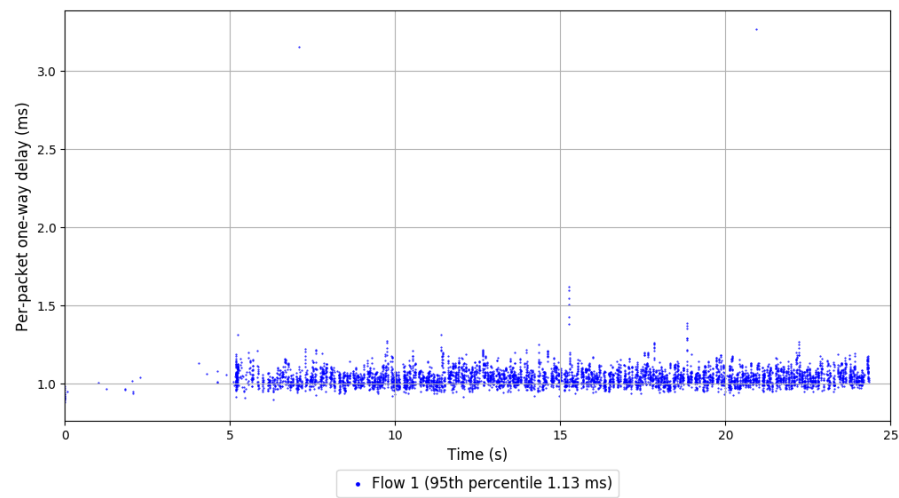
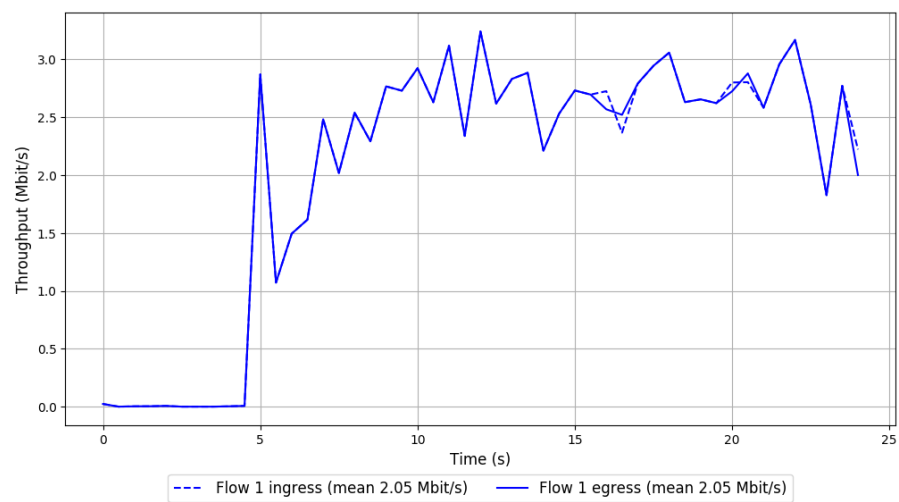


Run 6: Statistics of WebRTC media

Start at: 2017-11-15 21:49:21
End at: 2017-11-15 21:49:51
Local clock offset: -0.269 ms
Remote clock offset: -1.309 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 1.133 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 1.133 ms
Loss rate: 0.22%

Run 6: Report of WebRTC media — Data Link

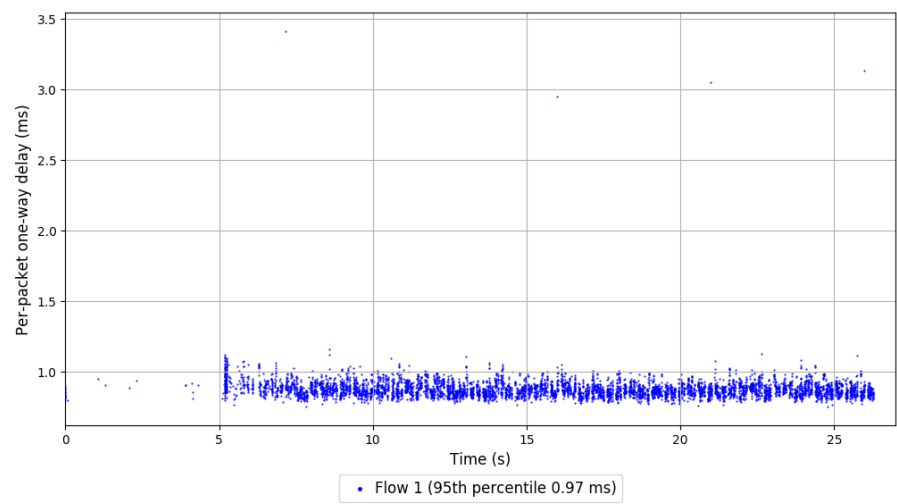
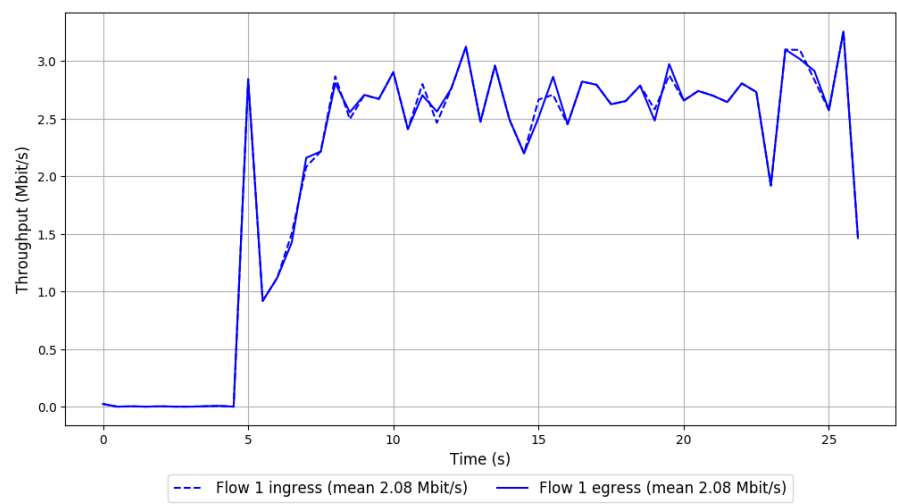


Run 7: Statistics of WebRTC media

Start at: 2017-11-15 22:08:22
End at: 2017-11-15 22:08:52
Local clock offset: -0.612 ms
Remote clock offset: -1.215 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.08 Mbit/s
95th percentile per-packet one-way delay: 0.971 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.08 Mbit/s
95th percentile per-packet one-way delay: 0.971 ms
Loss rate: 0.00%

Run 7: Report of WebRTC media — Data Link

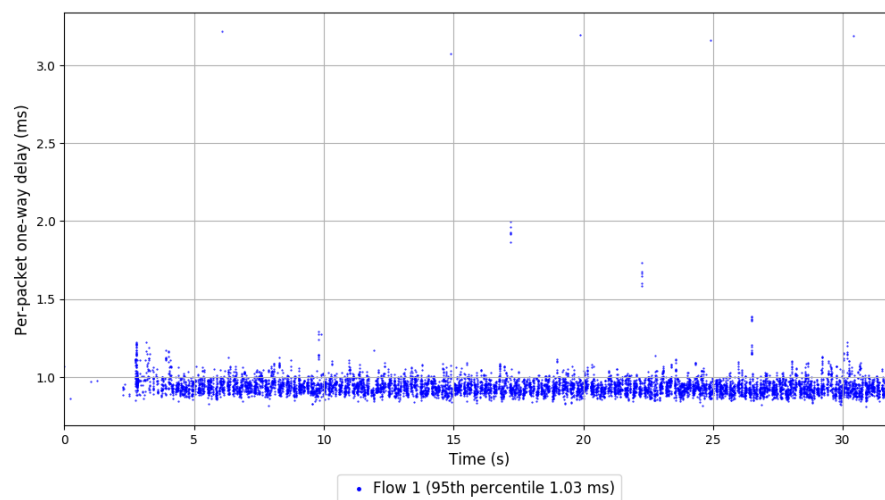
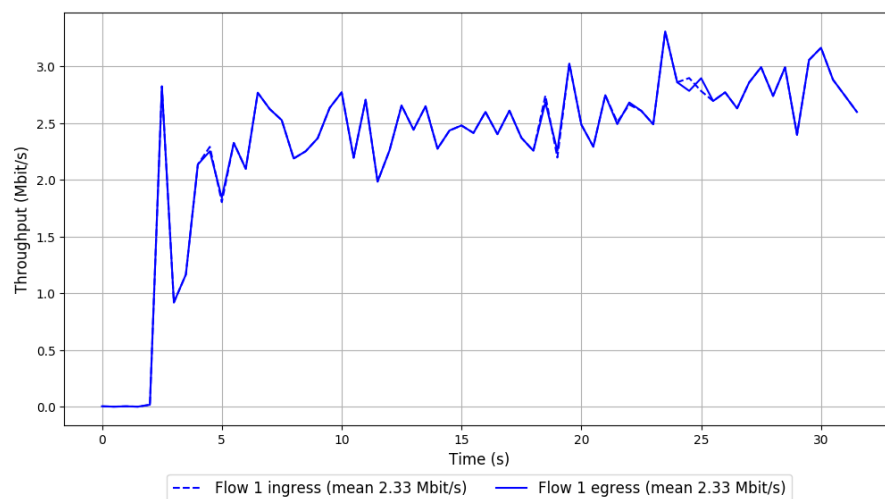


Run 8: Statistics of WebRTC media

Start at: 2017-11-15 22:27:47
End at: 2017-11-15 22:28:17
Local clock offset: 0.177 ms
Remote clock offset: -1.075 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.33 Mbit/s
95th percentile per-packet one-way delay: 1.027 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.33 Mbit/s
95th percentile per-packet one-way delay: 1.027 ms
Loss rate: 0.00%

Run 8: Report of WebRTC media — Data Link



Run 9: Statistics of WebRTC media

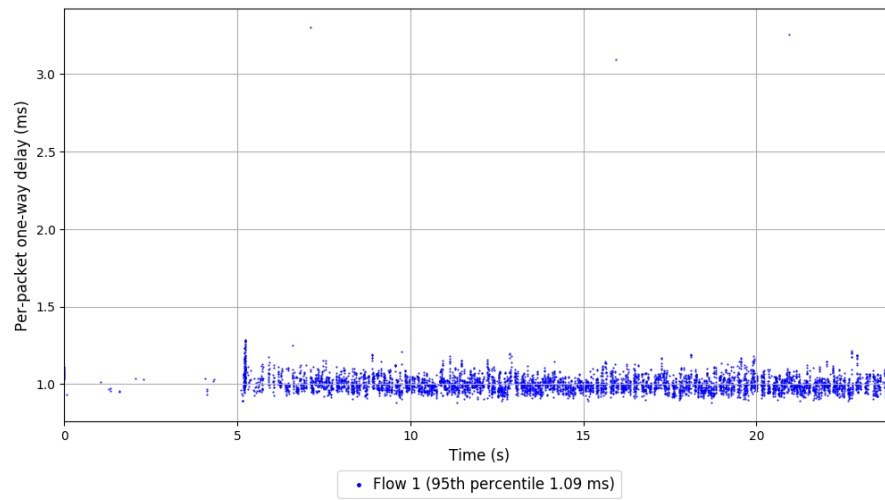
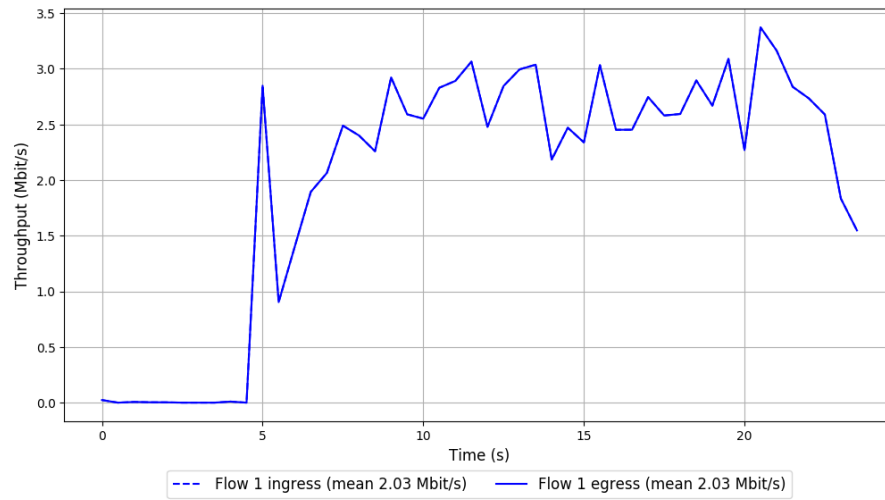
Start at: 2017-11-15 22:47:01

End at: 2017-11-15 22:47:31

Local clock offset: 1.119 ms

Remote clock offset: -1.129 ms

Run 9: Report of WebRTC media — Data Link



Run 10: Statistics of WebRTC media

Start at: 2017-11-15 23:06:25

End at: 2017-11-15 23:06:55

Local clock offset: 1.525 ms

Remote clock offset: -0.829 ms

Below is generated by plot.py at 2017-11-16 03:25:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.13 Mbit/s

95th percentile per-packet one-way delay: 1.105 ms

Loss rate: 0.00%

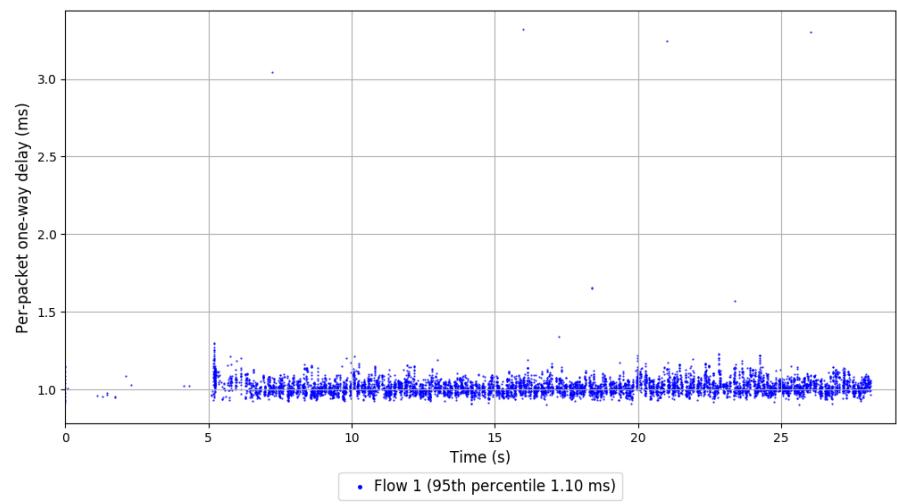
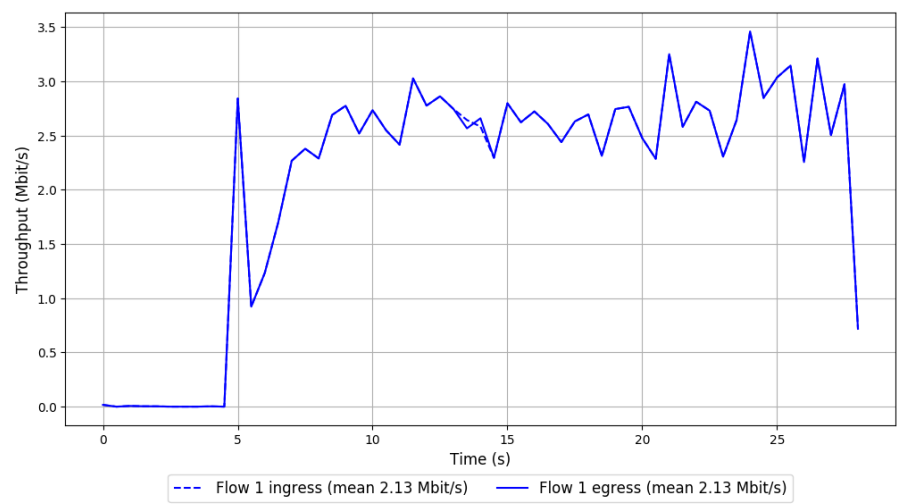
-- Flow 1:

Average throughput: 2.13 Mbit/s

95th percentile per-packet one-way delay: 1.105 ms

Loss rate: 0.00%

Run 10: Report of WebRTC media — Data Link



Run 1: Statistics of Sprout

Start at: 2017-11-15 20:25:16

End at: 2017-11-15 20:25:46

Local clock offset: -0.099 ms

Remote clock offset: -2.48 ms

Below is generated by plot.py at 2017-11-16 03:25:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 24.93 Mbit/s

95th percentile per-packet one-way delay: 1.092 ms

Loss rate: 0.00%

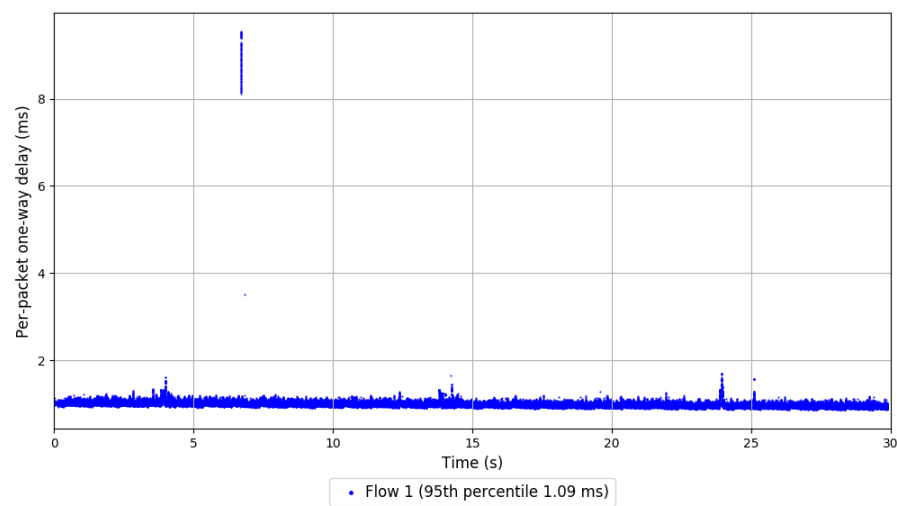
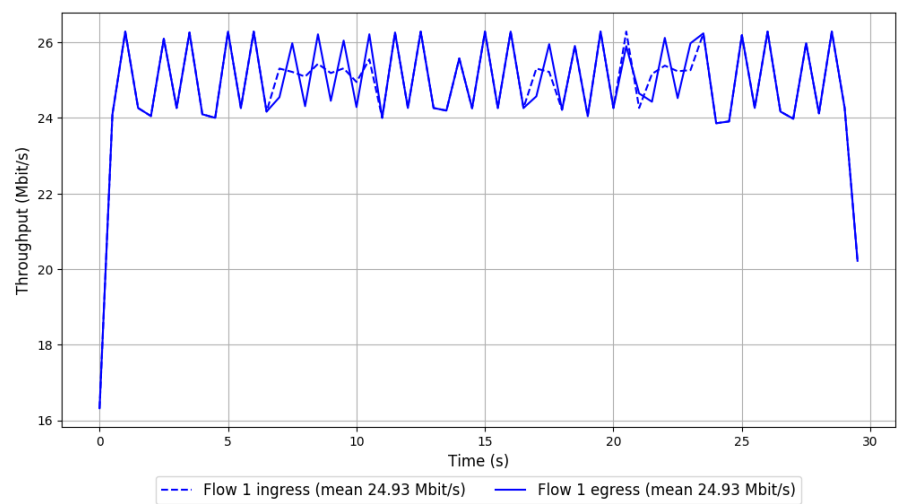
-- Flow 1:

Average throughput: 24.93 Mbit/s

95th percentile per-packet one-way delay: 1.092 ms

Loss rate: 0.00%

Run 1: Report of Sprout — Data Link

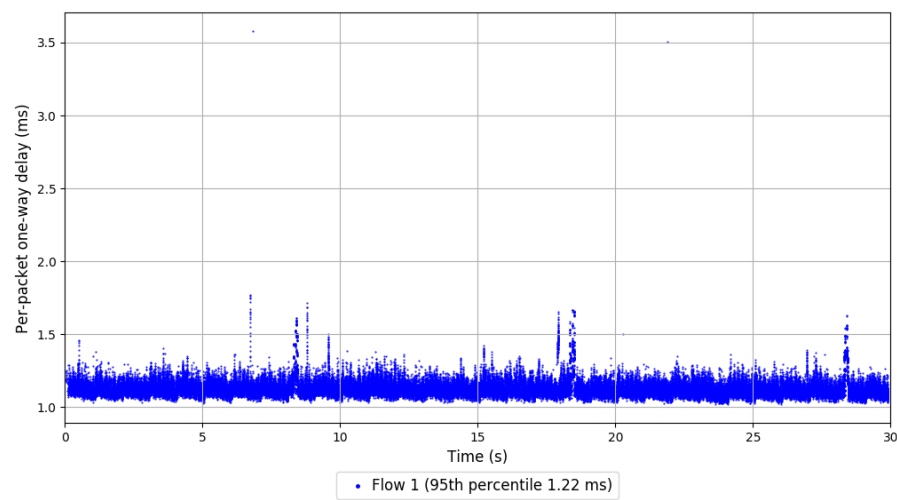
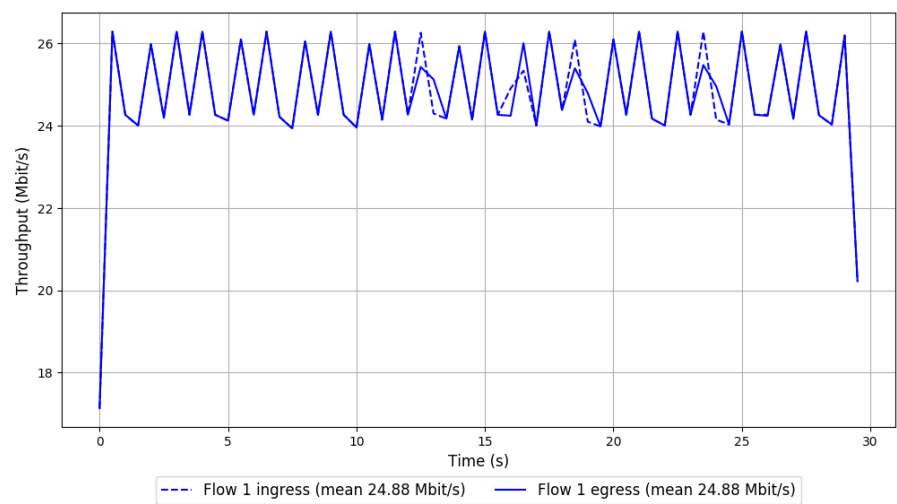


Run 2: Statistics of Sprout

Start at: 2017-11-15 20:44:21
End at: 2017-11-15 20:44:51
Local clock offset: 1.481 ms
Remote clock offset: -2.007 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 24.88 Mbit/s
95th percentile per-packet one-way delay: 1.218 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 24.88 Mbit/s
95th percentile per-packet one-way delay: 1.218 ms
Loss rate: 0.00%

Run 2: Report of Sprout — Data Link

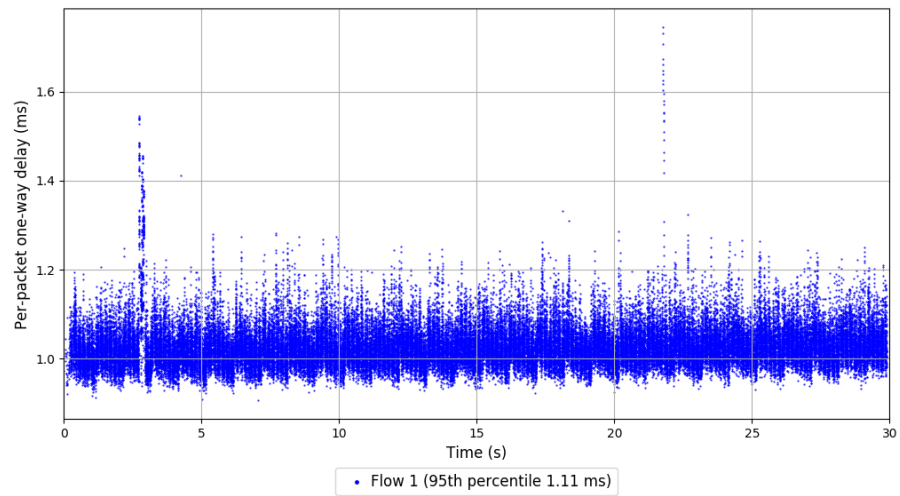
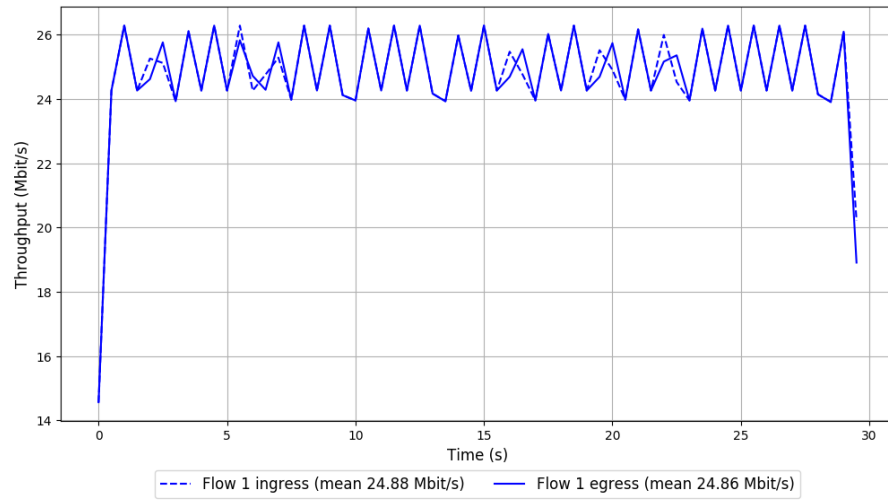


Run 3: Statistics of Sprout

Start at: 2017-11-15 21:03:49
End at: 2017-11-15 21:04:19
Local clock offset: 1.77 ms
Remote clock offset: -1.724 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 24.86 Mbit/s
95th percentile per-packet one-way delay: 1.115 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 24.86 Mbit/s
95th percentile per-packet one-way delay: 1.115 ms
Loss rate: 0.09%

Run 3: Report of Sprout — Data Link

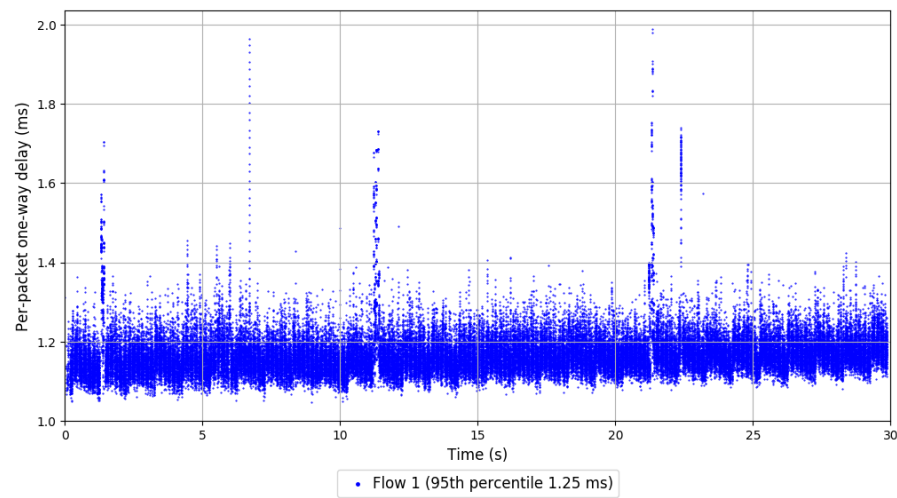
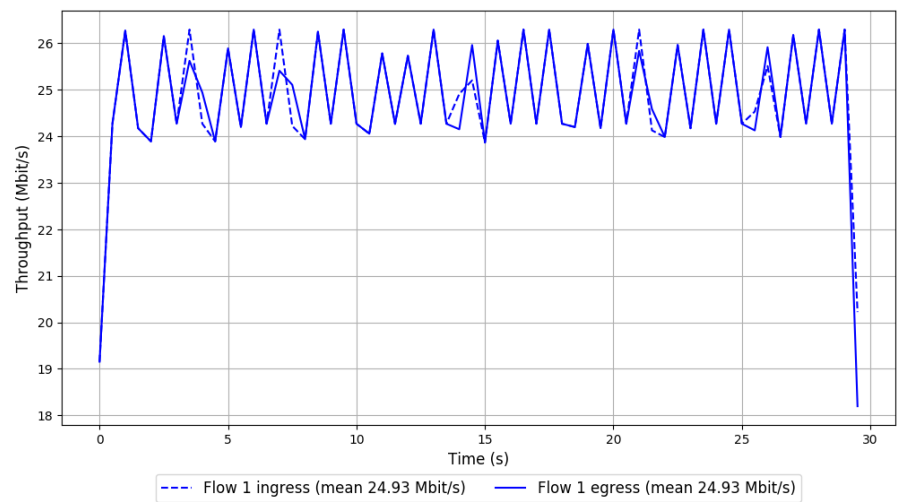


Run 4: Statistics of Sprout

Start at: 2017-11-15 21:23:03
End at: 2017-11-15 21:23:34
Local clock offset: 1.447 ms
Remote clock offset: -1.746 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 24.93 Mbit/s
95th percentile per-packet one-way delay: 1.255 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 24.93 Mbit/s
95th percentile per-packet one-way delay: 1.255 ms
Loss rate: 0.14%

Run 4: Report of Sprout — Data Link

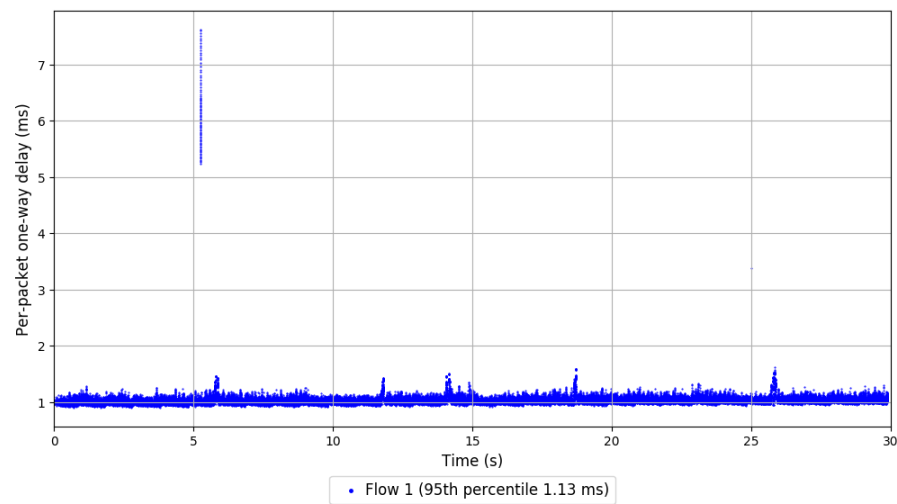
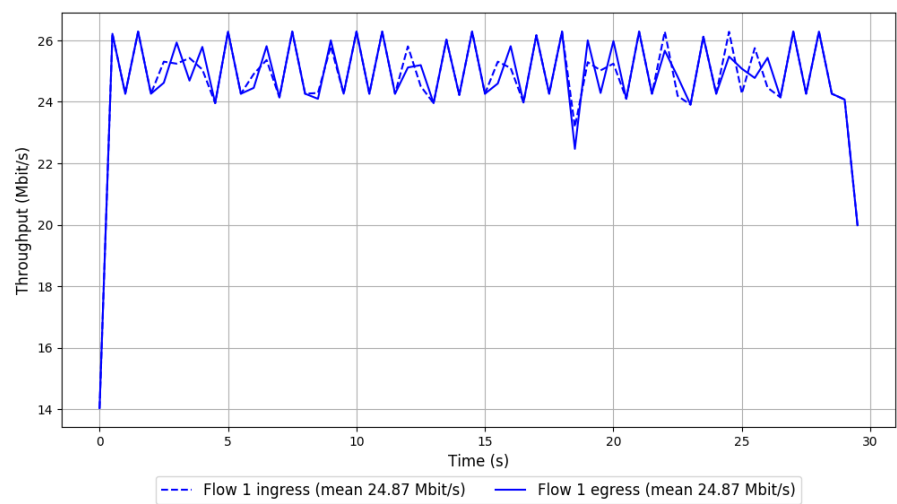


Run 5: Statistics of Sprout

Start at: 2017-11-15 21:42:29
End at: 2017-11-15 21:42:59
Local clock offset: 0.115 ms
Remote clock offset: -1.484 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 24.87 Mbit/s
95th percentile per-packet one-way delay: 1.126 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 24.87 Mbit/s
95th percentile per-packet one-way delay: 1.126 ms
Loss rate: 0.00%

Run 5: Report of Sprout — Data Link

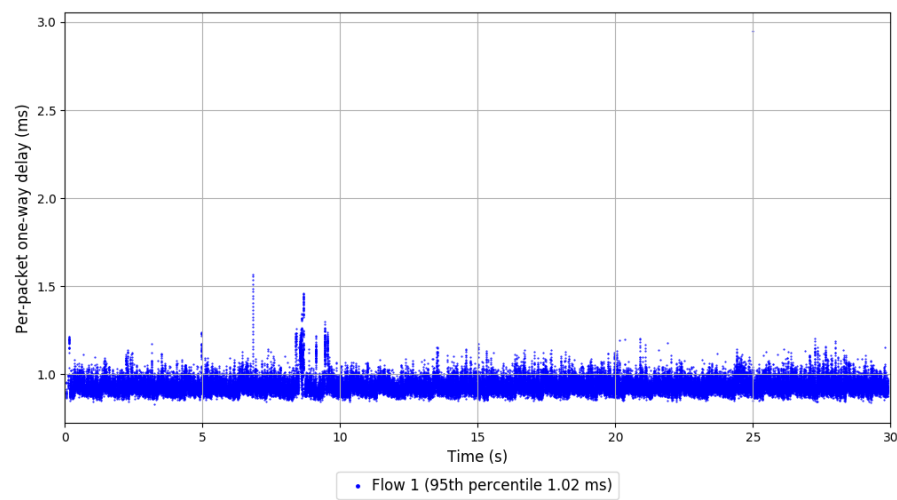
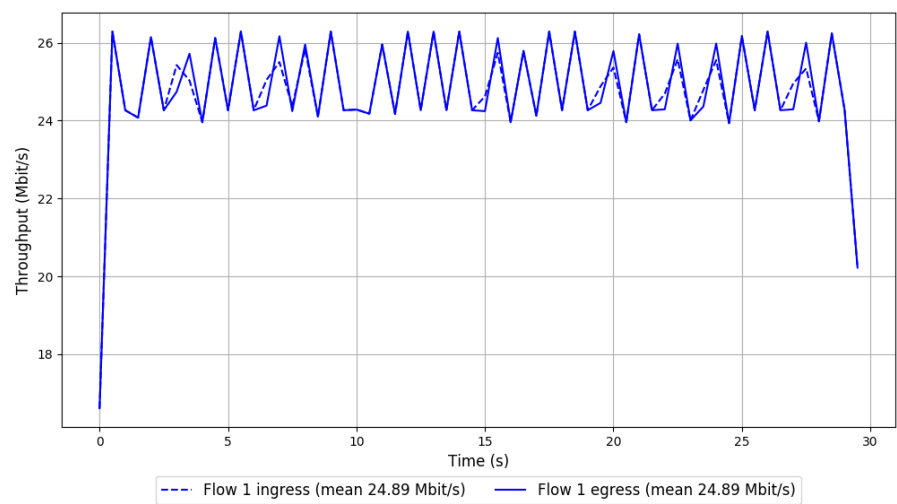


Run 6: Statistics of Sprout

Start at: 2017-11-15 22:01:29
End at: 2017-11-15 22:01:59
Local clock offset: -0.717 ms
Remote clock offset: -1.331 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 24.89 Mbit/s
95th percentile per-packet one-way delay: 1.016 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 24.89 Mbit/s
95th percentile per-packet one-way delay: 1.016 ms
Loss rate: 0.00%

Run 6: Report of Sprout — Data Link

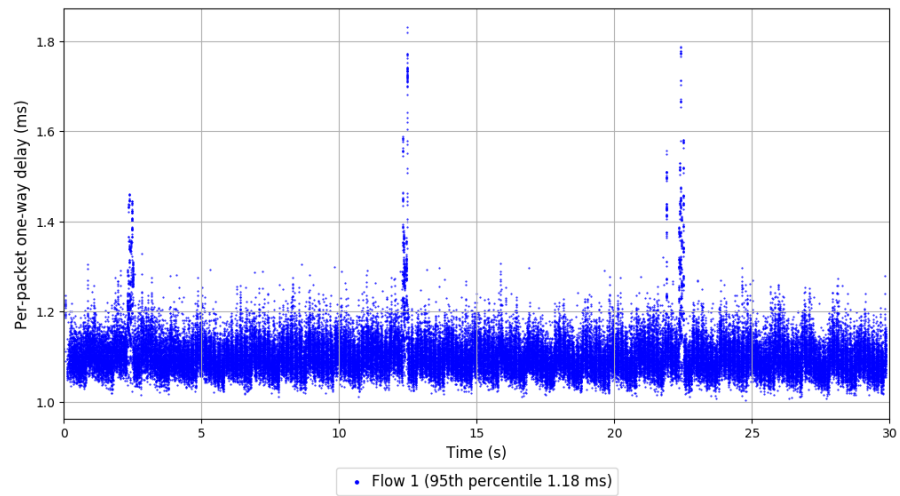
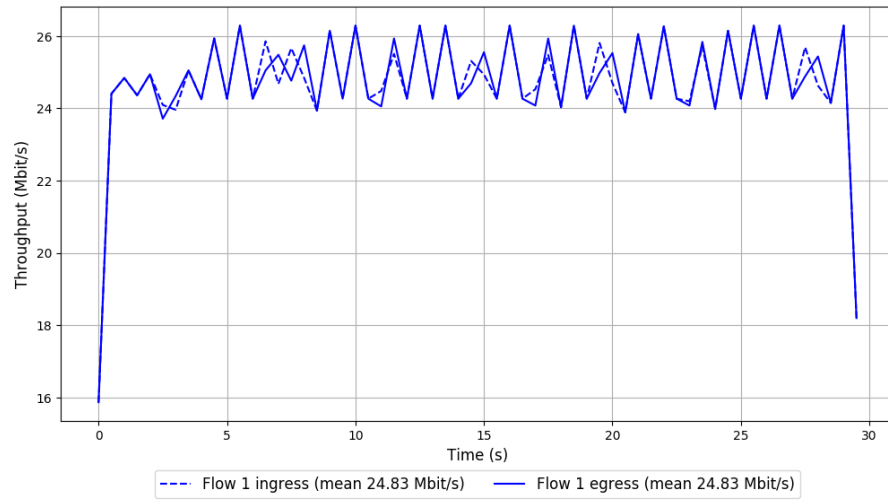


Run 7: Statistics of Sprout

Start at: 2017-11-15 22:20:57
End at: 2017-11-15 22:21:27
Local clock offset: -0.043 ms
Remote clock offset: -1.141 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 24.83 Mbit/s
95th percentile per-packet one-way delay: 1.176 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 24.83 Mbit/s
95th percentile per-packet one-way delay: 1.176 ms
Loss rate: 0.00%

Run 7: Report of Sprout — Data Link

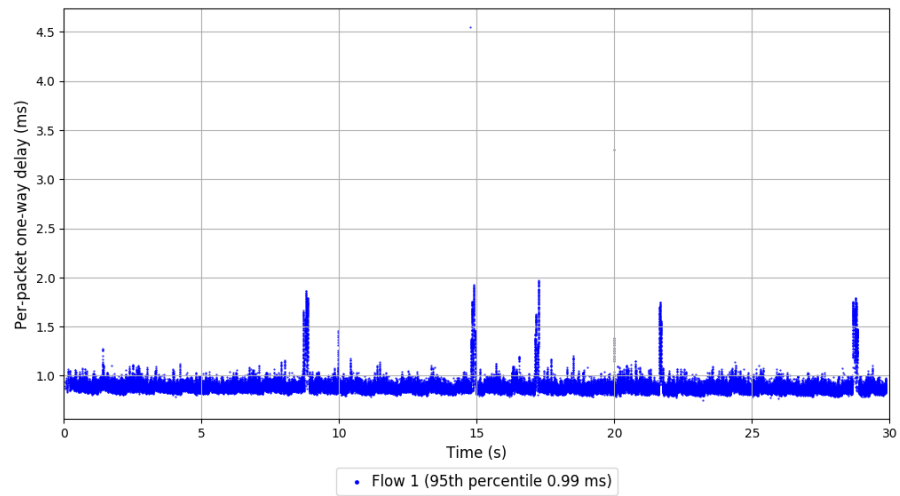
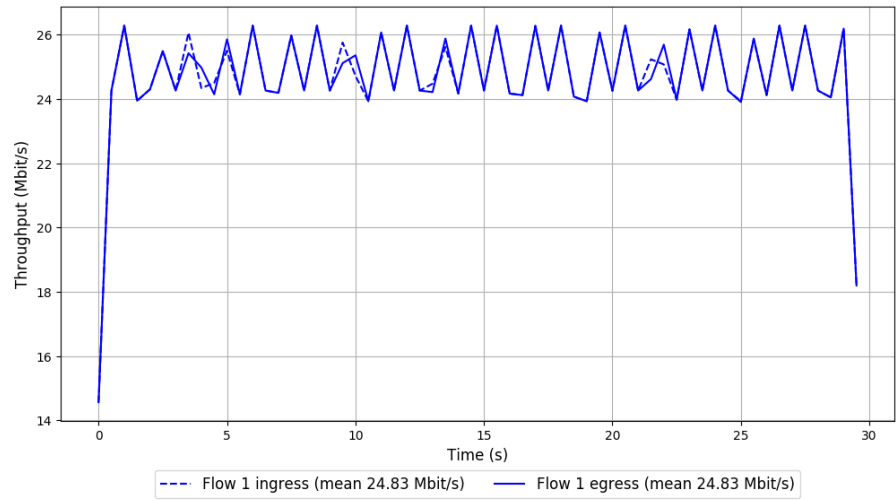


Run 8: Statistics of Sprout

Start at: 2017-11-15 22:40:11
End at: 2017-11-15 22:40:41
Local clock offset: 0.771 ms
Remote clock offset: -0.975 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 24.83 Mbit/s
95th percentile per-packet one-way delay: 0.991 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 24.83 Mbit/s
95th percentile per-packet one-way delay: 0.991 ms
Loss rate: 0.00%

Run 8: Report of Sprout — Data Link

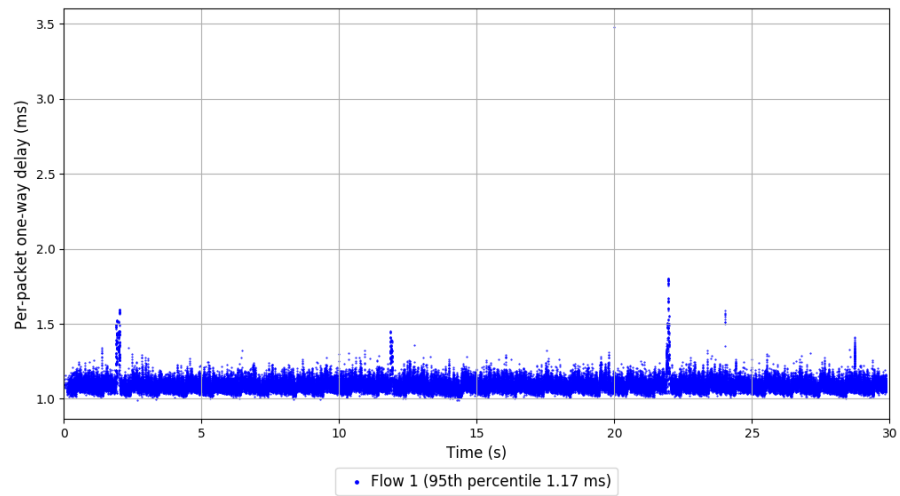
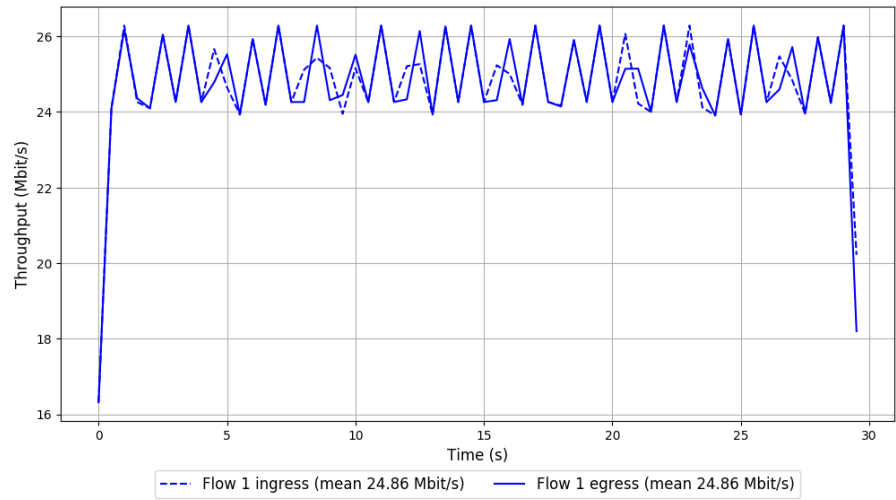


Run 9: Statistics of Sprout

Start at: 2017-11-15 22:59:28
End at: 2017-11-15 22:59:58
Local clock offset: 1.46 ms
Remote clock offset: -1.008 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 24.86 Mbit/s
95th percentile per-packet one-way delay: 1.168 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 24.86 Mbit/s
95th percentile per-packet one-way delay: 1.168 ms
Loss rate: 0.14%

Run 9: Report of Sprout — Data Link



Run 10: Statistics of Sprout

Start at: 2017-11-15 23:18:49

End at: 2017-11-15 23:19:19

Local clock offset: 1.549 ms

Remote clock offset: -0.681 ms

Below is generated by plot.py at 2017-11-16 03:25:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 24.49 Mbit/s

95th percentile per-packet one-way delay: 1.187 ms

Loss rate: 0.14%

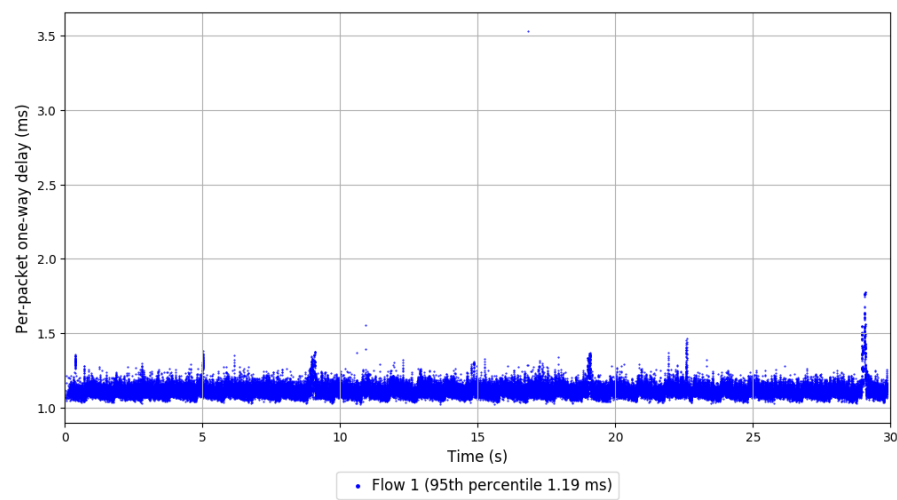
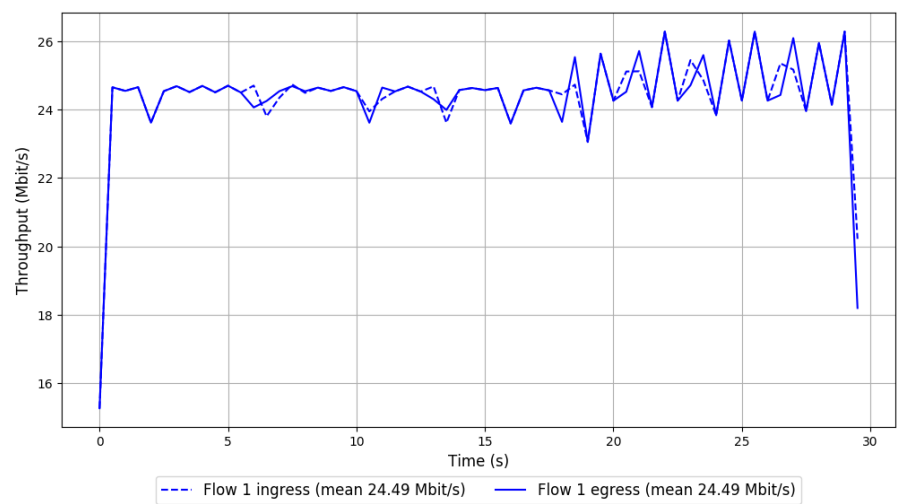
-- Flow 1:

Average throughput: 24.49 Mbit/s

95th percentile per-packet one-way delay: 1.187 ms

Loss rate: 0.14%

Run 10: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2017-11-15 20:27:43

End at: 2017-11-15 20:28:13

Local clock offset: 0.192 ms

Remote clock offset: -2.442 ms

Below is generated by plot.py at 2017-11-16 03:25:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 260.25 Mbit/s

95th percentile per-packet one-way delay: 0.998 ms

Loss rate: 0.07%

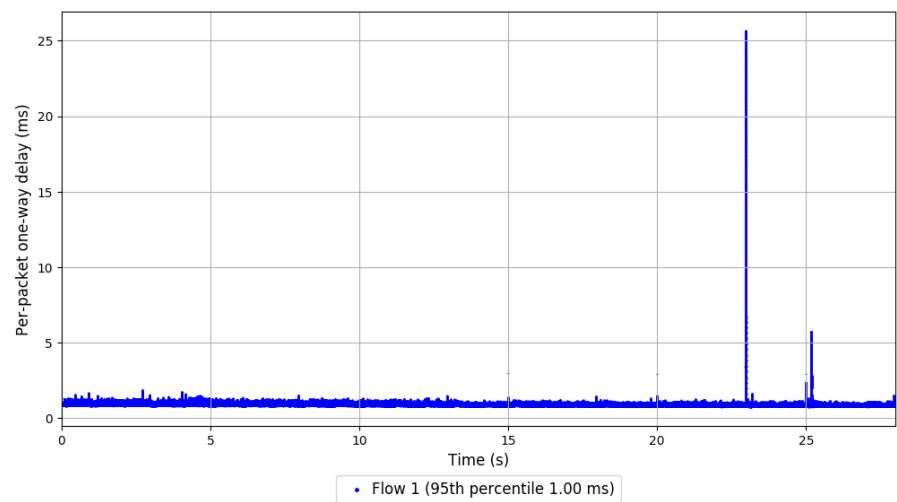
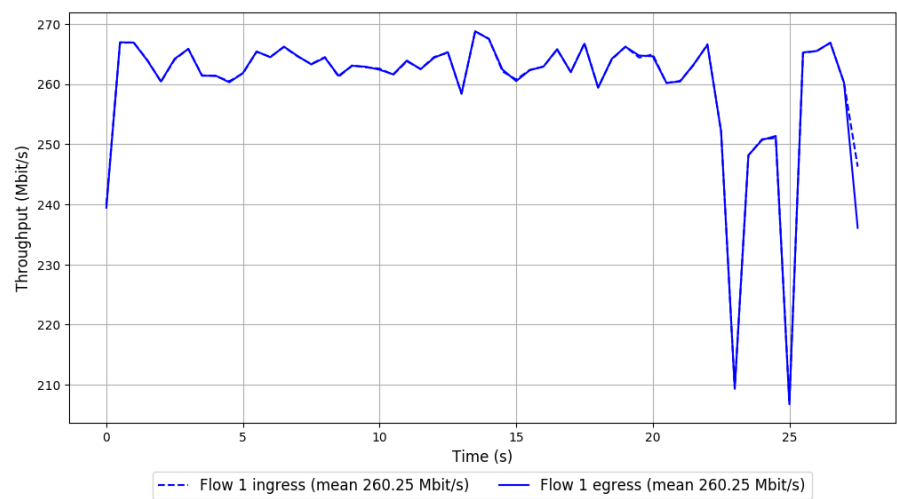
-- Flow 1:

Average throughput: 260.25 Mbit/s

95th percentile per-packet one-way delay: 0.998 ms

Loss rate: 0.07%

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



Run 2: Statistics of TaoVA-100x

Start at: 2017-11-15 20:46:49

End at: 2017-11-15 20:47:19

Local clock offset: 1.486 ms

Remote clock offset: -1.978 ms

Below is generated by plot.py at 2017-11-16 03:25:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 262.53 Mbit/s

95th percentile per-packet one-way delay: 1.102 ms

Loss rate: 0.07%

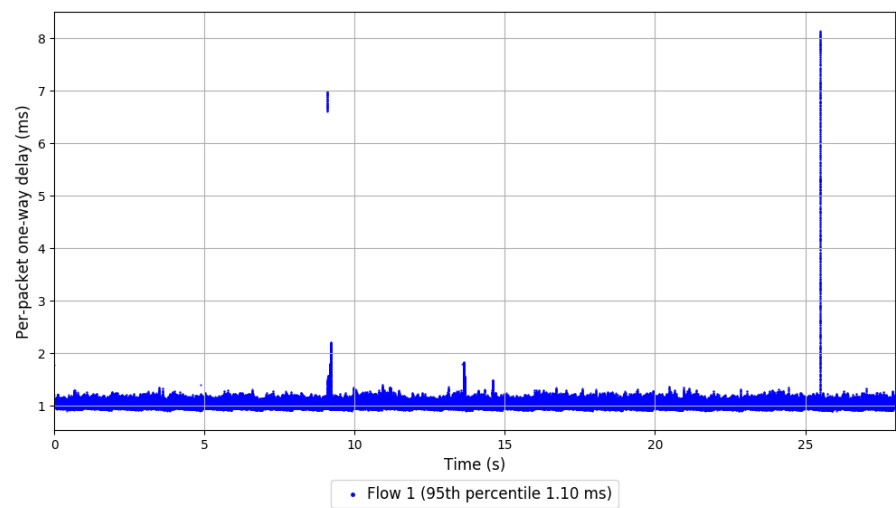
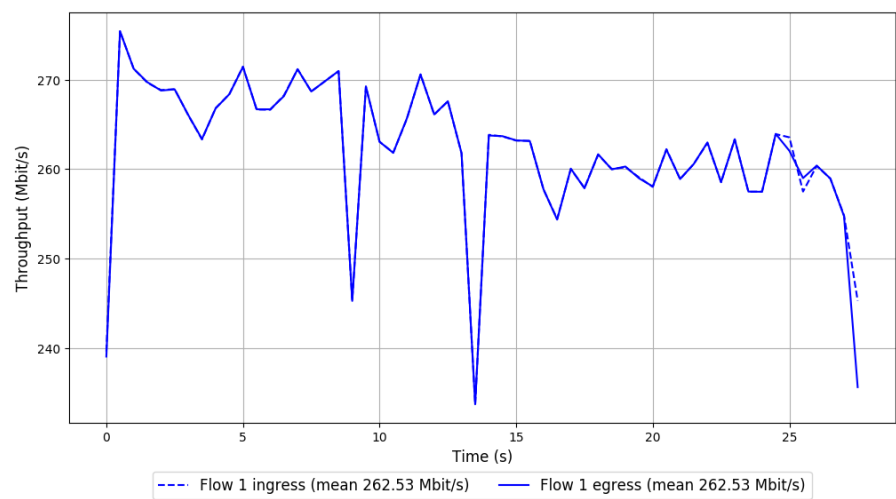
-- Flow 1:

Average throughput: 262.53 Mbit/s

95th percentile per-packet one-way delay: 1.102 ms

Loss rate: 0.07%

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

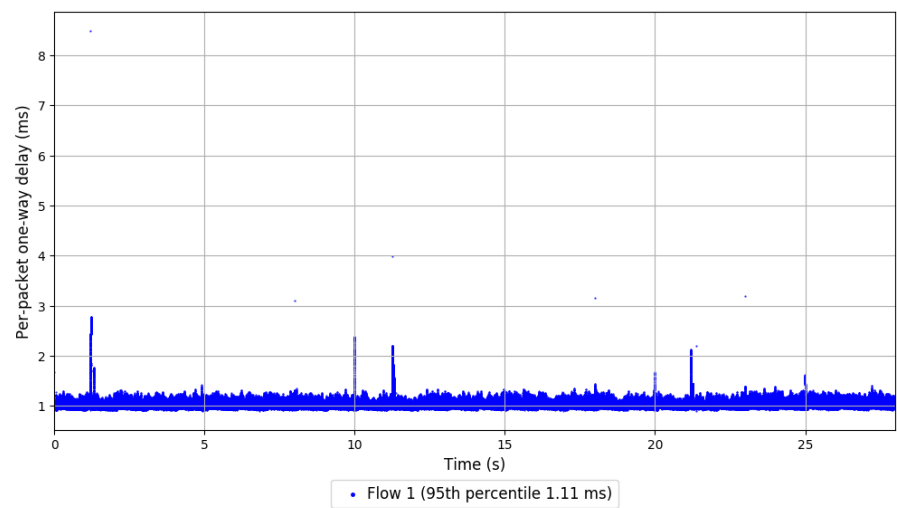
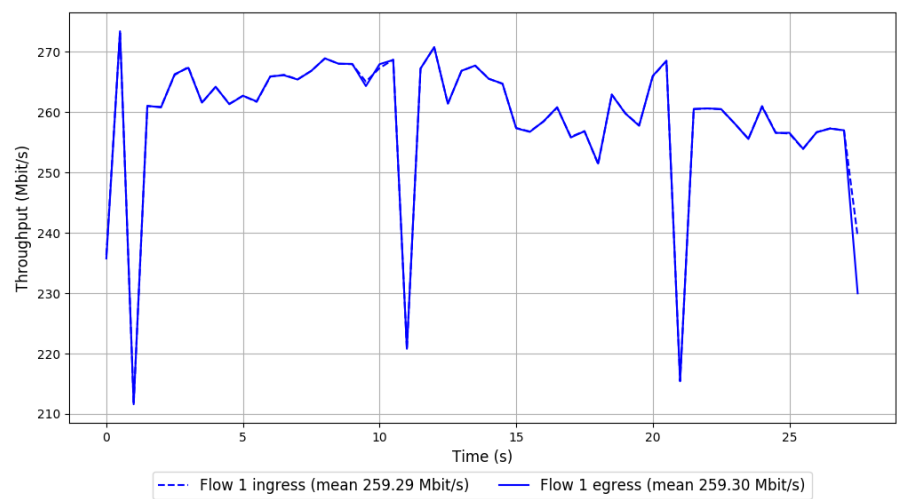


Run 3: Statistics of TaoVA-100x

Start at: 2017-11-15 21:06:17
End at: 2017-11-15 21:06:47
Local clock offset: 1.665 ms
Remote clock offset: -1.767 ms

Below is generated by plot.py at 2017-11-16 03:25:53
Datalink statistics
-- Total of 1 flow:
Average throughput: 259.30 Mbit/s
95th percentile per-packet one-way delay: 1.111 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 259.30 Mbit/s
95th percentile per-packet one-way delay: 1.111 ms
Loss rate: 0.07%

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



Run 4: Statistics of TaoVA-100x

Start at: 2017-11-15 21:25:31

End at: 2017-11-15 21:26:01

Local clock offset: 1.285 ms

Remote clock offset: -1.62 ms

Below is generated by plot.py at 2017-11-16 03:25:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 261.36 Mbit/s

95th percentile per-packet one-way delay: 1.166 ms

Loss rate: 0.07%

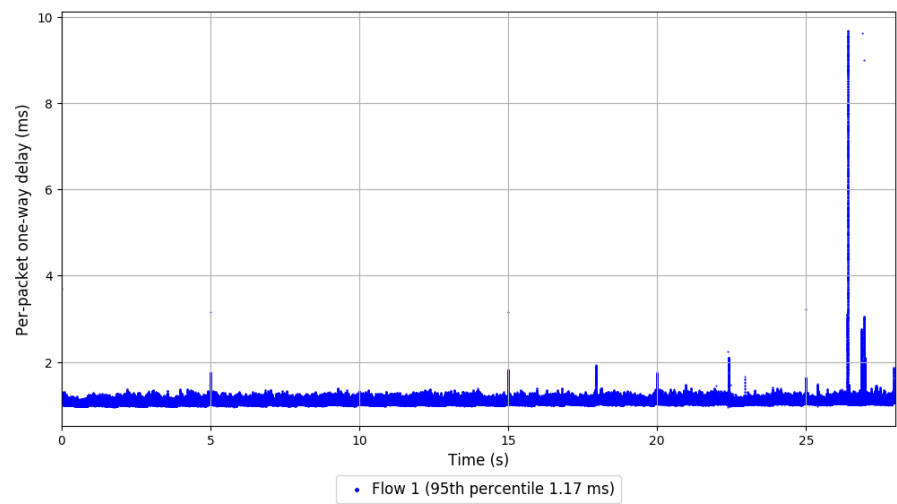
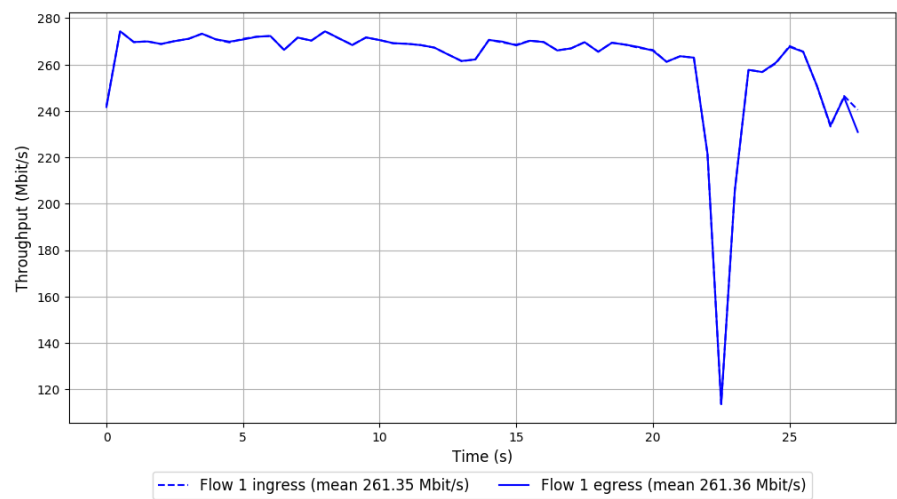
-- Flow 1:

Average throughput: 261.36 Mbit/s

95th percentile per-packet one-way delay: 1.166 ms

Loss rate: 0.07%

Run 4: Report of TaoVA-100x — Data Link



Run 5: Statistics of TaoVA-100x

Start at: 2017-11-15 21:44:56

End at: 2017-11-15 21:45:26

Local clock offset: -0.062 ms

Remote clock offset: -1.4 ms

Below is generated by plot.py at 2017-11-16 03:25:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 266.85 Mbit/s

95th percentile per-packet one-way delay: 1.068 ms

Loss rate: 0.07%

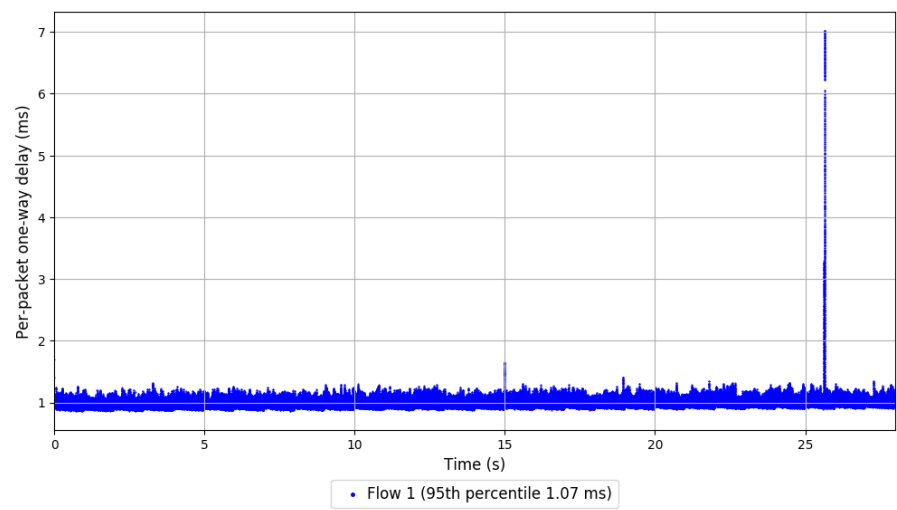
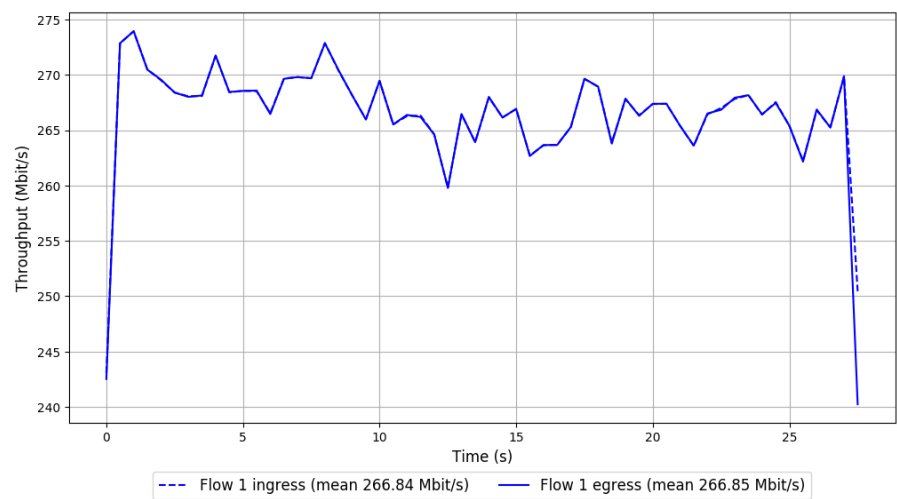
-- Flow 1:

Average throughput: 266.85 Mbit/s

95th percentile per-packet one-way delay: 1.068 ms

Loss rate: 0.07%

Run 5: Report of TaoVA-100x — Data Link



Run 6: Statistics of TaoVA-100x

Start at: 2017-11-15 22:03:55

End at: 2017-11-15 22:04:25

Local clock offset: -0.65 ms

Remote clock offset: -1.377 ms

Below is generated by plot.py at 2017-11-16 03:25:53

Datalink statistics

-- Total of 1 flow:

Average throughput: 259.03 Mbit/s

95th percentile per-packet one-way delay: 1.134 ms

Loss rate: 0.07%

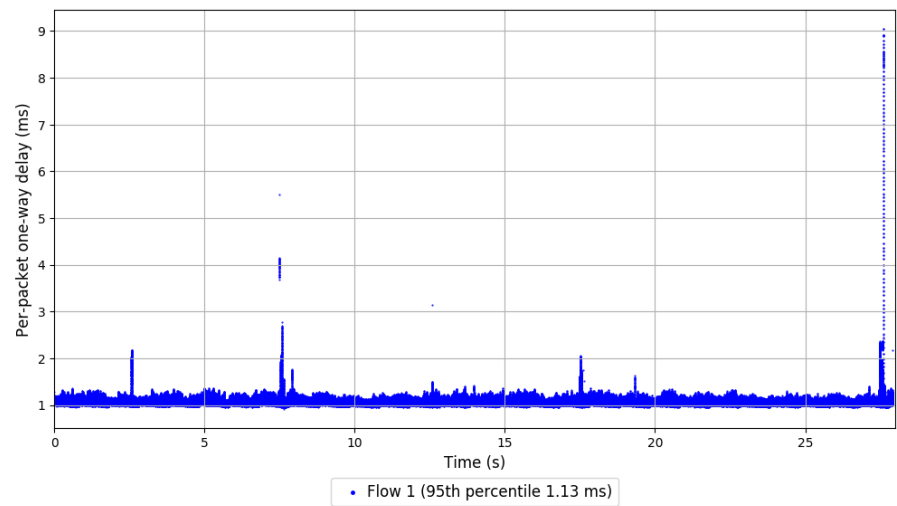
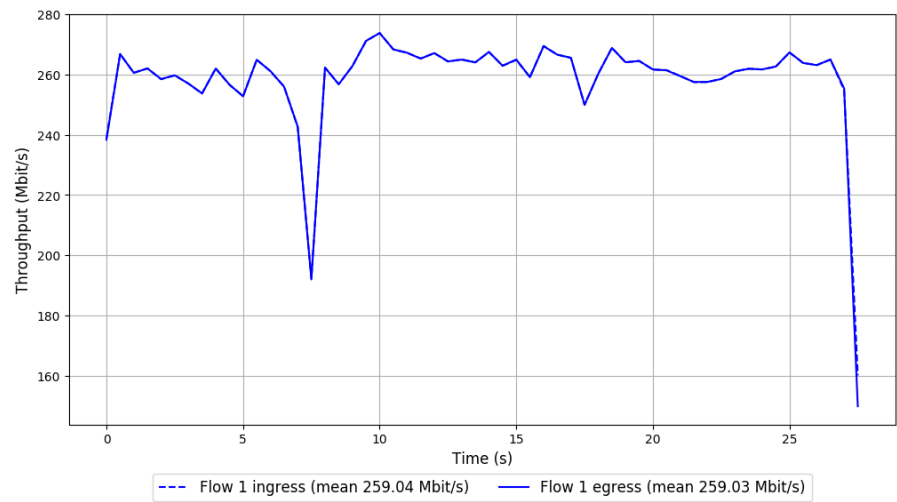
-- Flow 1:

Average throughput: 259.03 Mbit/s

95th percentile per-packet one-way delay: 1.134 ms

Loss rate: 0.07%

Run 6: Report of TaoVA-100x — Data Link



Run 7: Statistics of TaoVA-100x

Start at: 2017-11-15 22:23:18

End at: 2017-11-15 22:23:48

Local clock offset: 0.055 ms

Remote clock offset: -1.136 ms

Below is generated by plot.py at 2017-11-16 03:27:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 272.34 Mbit/s

95th percentile per-packet one-way delay: 1.133 ms

Loss rate: 0.07%

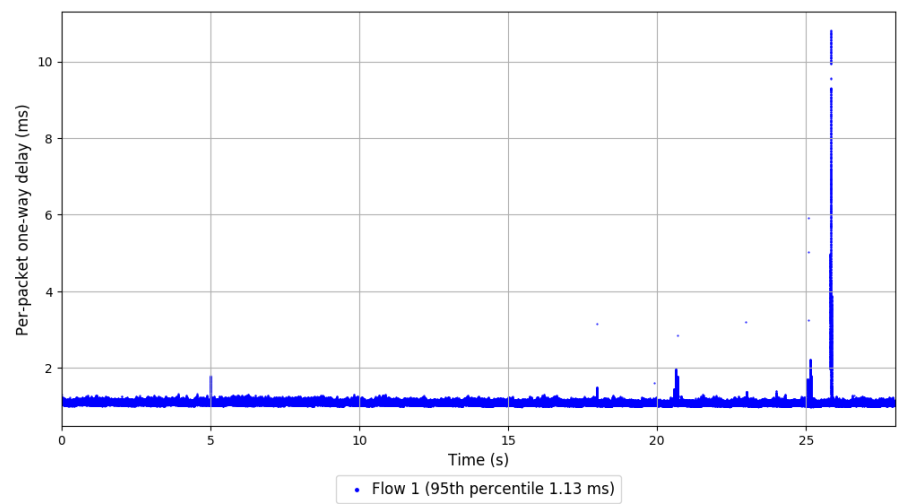
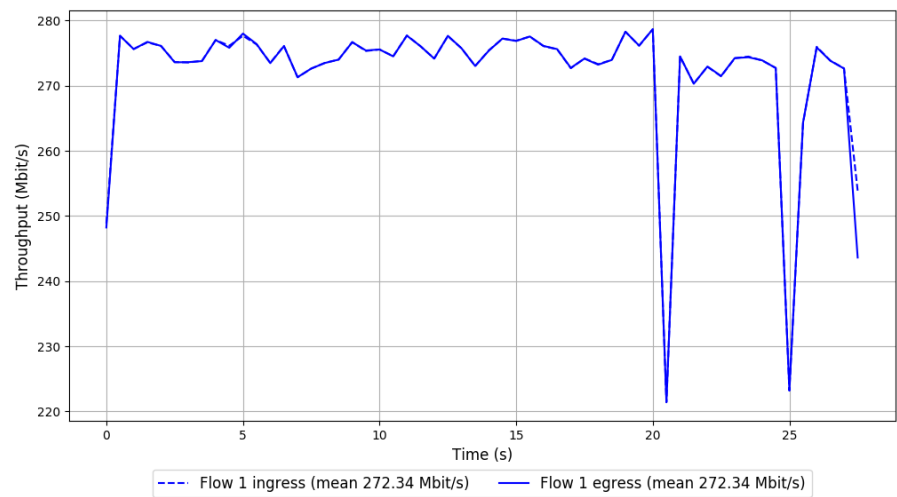
-- Flow 1:

Average throughput: 272.34 Mbit/s

95th percentile per-packet one-way delay: 1.133 ms

Loss rate: 0.07%

Run 7: Report of TaoVA-100x — Data Link



Run 8: Statistics of TaoVA-100x

Start at: 2017-11-15 22:42:38

End at: 2017-11-15 22:43:08

Local clock offset: 0.909 ms

Remote clock offset: -1.061 ms

Below is generated by plot.py at 2017-11-16 03:32:00

Datalink statistics

-- Total of 1 flow:

Average throughput: 264.66 Mbit/s

95th percentile per-packet one-way delay: 1.037 ms

Loss rate: 0.07%

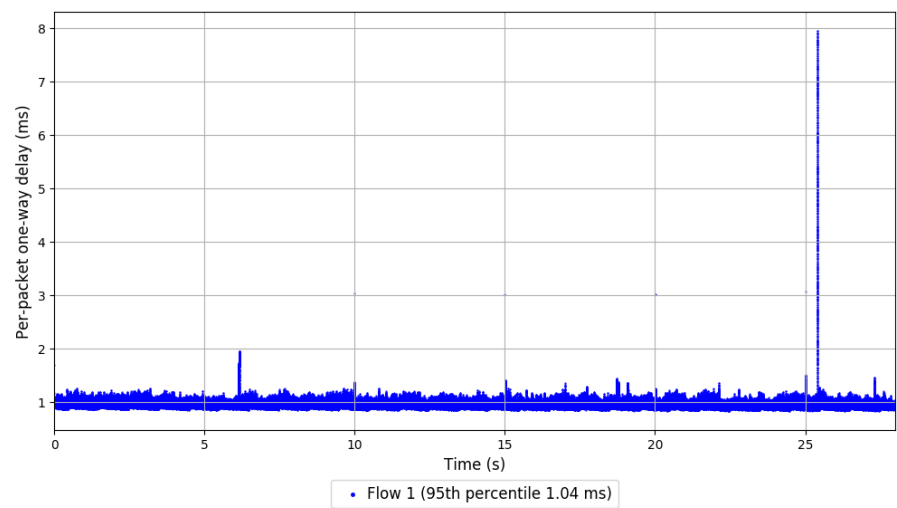
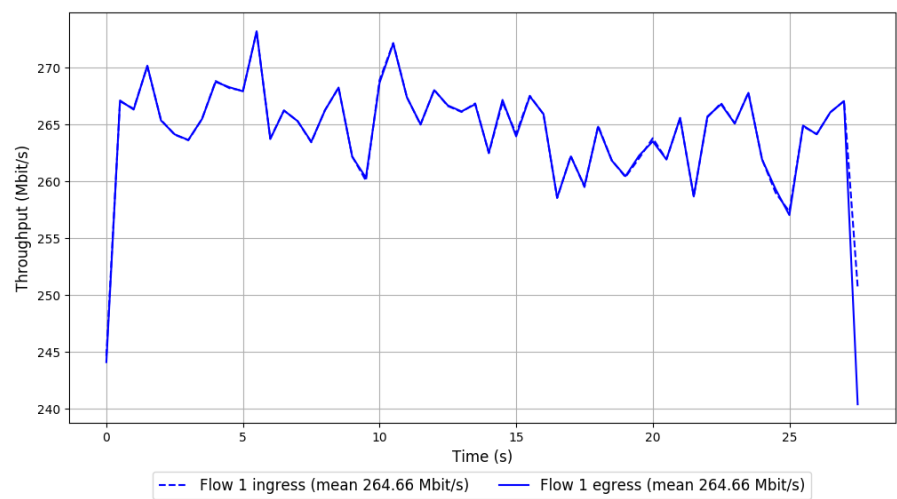
-- Flow 1:

Average throughput: 264.66 Mbit/s

95th percentile per-packet one-way delay: 1.037 ms

Loss rate: 0.07%

Run 8: Report of TaoVA-100x — Data Link



Run 9: Statistics of TaoVA-100x

Start at: 2017-11-15 23:01:56

End at: 2017-11-15 23:02:26

Local clock offset: 1.425 ms

Remote clock offset: -0.953 ms

Below is generated by plot.py at 2017-11-16 03:32:07

Datalink statistics

-- Total of 1 flow:

Average throughput: 268.00 Mbit/s

95th percentile per-packet one-way delay: 1.078 ms

Loss rate: 0.07%

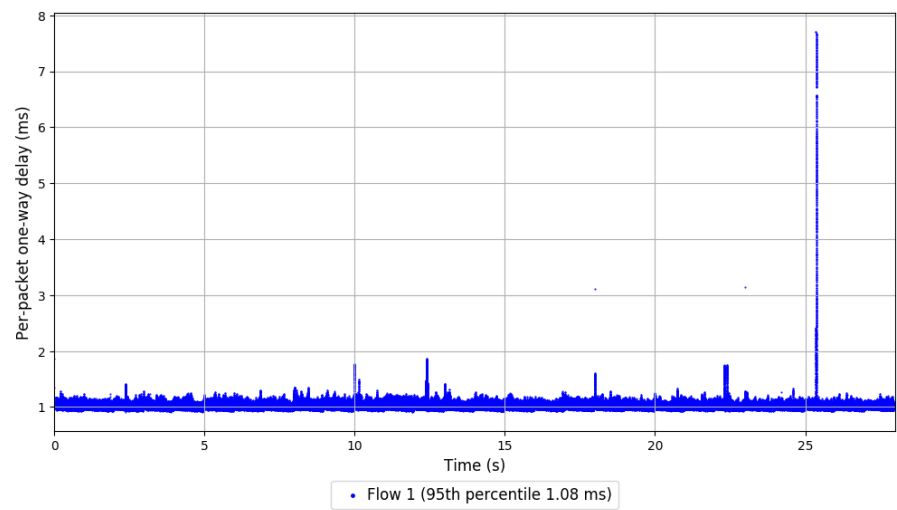
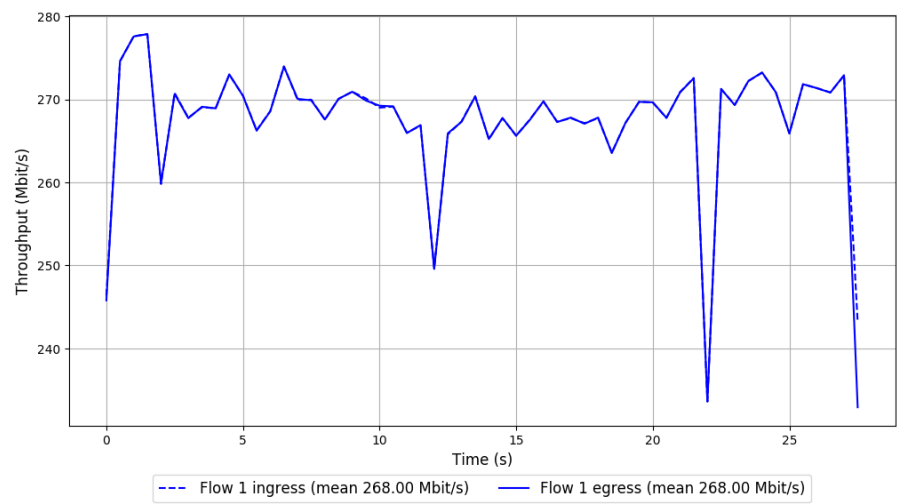
-- Flow 1:

Average throughput: 268.00 Mbit/s

95th percentile per-packet one-way delay: 1.078 ms

Loss rate: 0.07%

Run 9: Report of TaoVA-100x — Data Link



Run 10: Statistics of TaoVA-100x

Start at: 2017-11-15 23:21:16

End at: 2017-11-15 23:21:46

Local clock offset: 1.526 ms

Remote clock offset: -0.626 ms

Below is generated by plot.py at 2017-11-16 03:32:07

Datalink statistics

-- Total of 1 flow:

Average throughput: 266.34 Mbit/s

95th percentile per-packet one-way delay: 1.046 ms

Loss rate: 0.07%

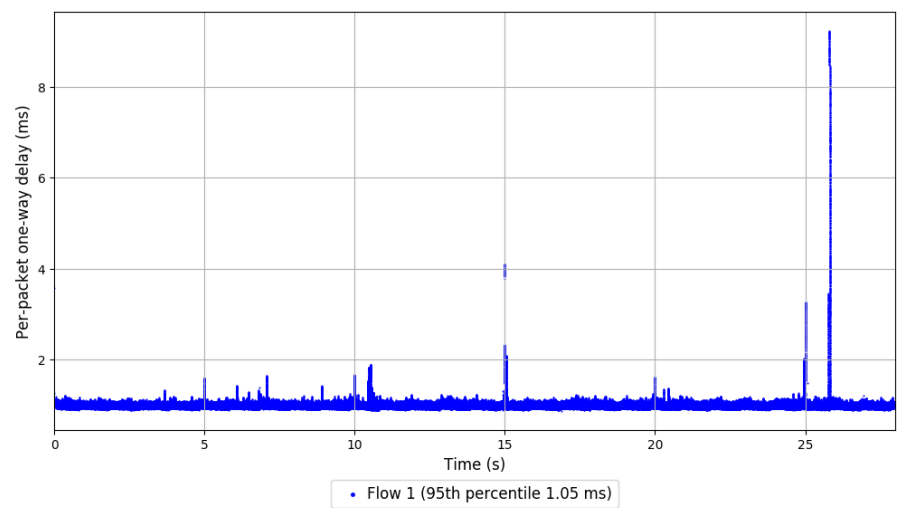
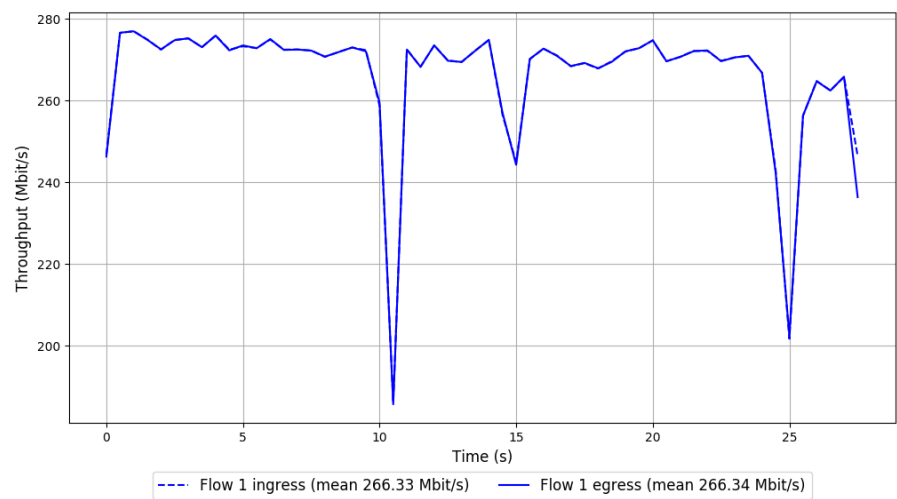
-- Flow 1:

Average throughput: 266.34 Mbit/s

95th percentile per-packet one-way delay: 1.046 ms

Loss rate: 0.07%

Run 10: Report of TaoVA-100x — Data Link



Run 1: Statistics of TCP Vegas

Start at: 2017-11-15 20:29:11

End at: 2017-11-15 20:29:41

Local clock offset: 0.401 ms

Remote clock offset: -2.43 ms

Below is generated by plot.py at 2017-11-16 03:32:07

Datalink statistics

-- Total of 1 flow:

Average throughput: 322.63 Mbit/s

95th percentile per-packet one-way delay: 1.261 ms

Loss rate: 0.06%

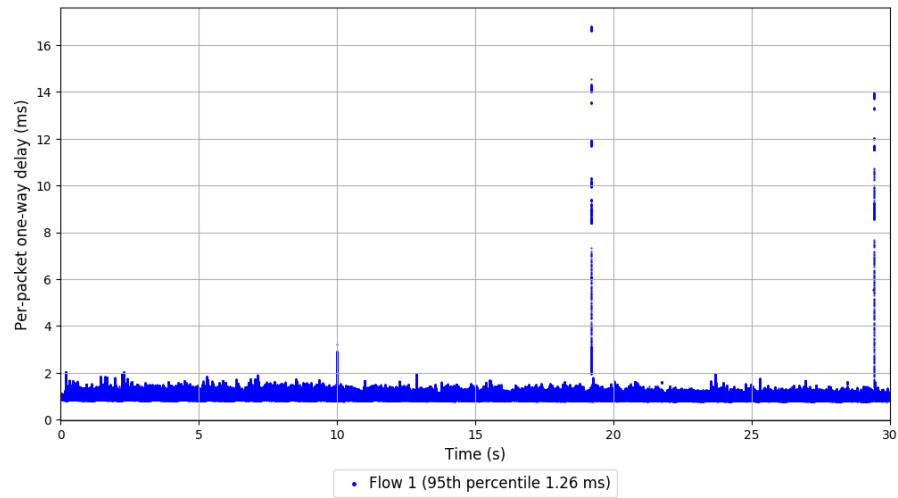
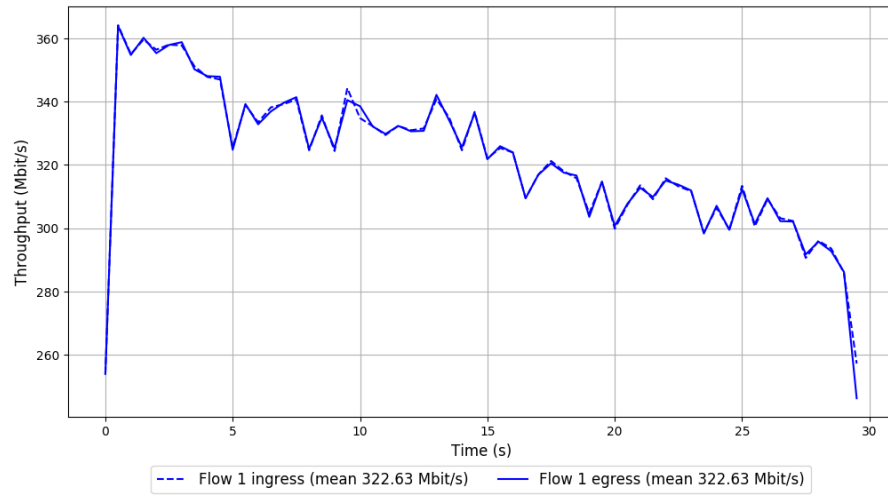
-- Flow 1:

Average throughput: 322.63 Mbit/s

95th percentile per-packet one-way delay: 1.261 ms

Loss rate: 0.06%

Run 1: Report of TCP Vegas — Data Link

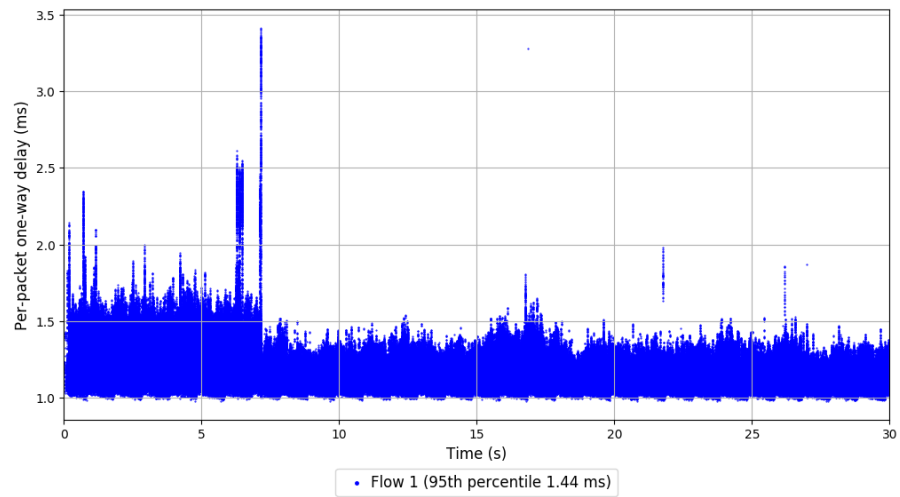
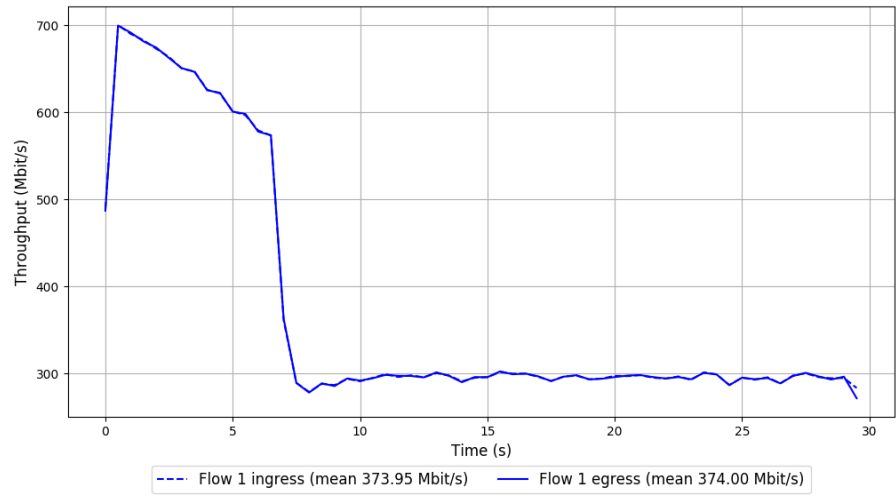


Run 2: Statistics of TCP Vegas

Start at: 2017-11-15 20:48:17
End at: 2017-11-15 20:48:47
Local clock offset: 1.65 ms
Remote clock offset: -1.939 ms

Below is generated by plot.py at 2017-11-16 03:32:07
Datalink statistics
-- Total of 1 flow:
Average throughput: 374.00 Mbit/s
95th percentile per-packet one-way delay: 1.444 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 374.00 Mbit/s
95th percentile per-packet one-way delay: 1.444 ms
Loss rate: 0.05%

Run 2: Report of TCP Vegas — Data Link

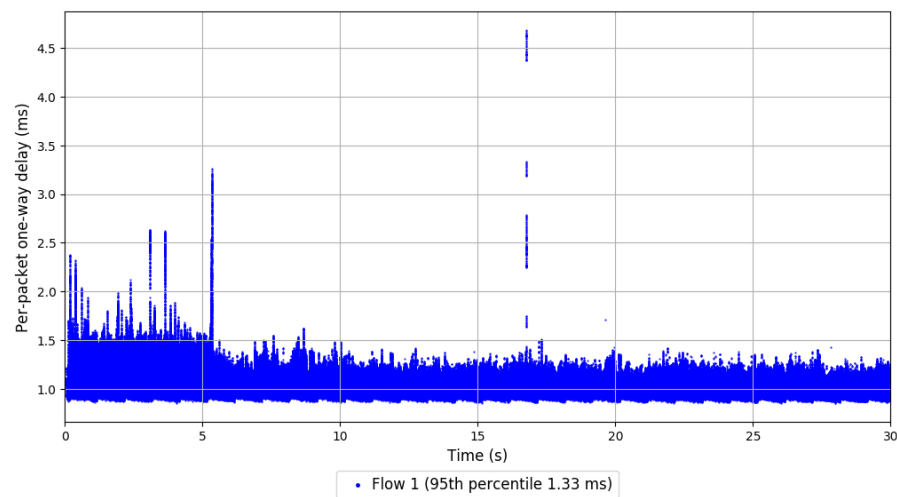
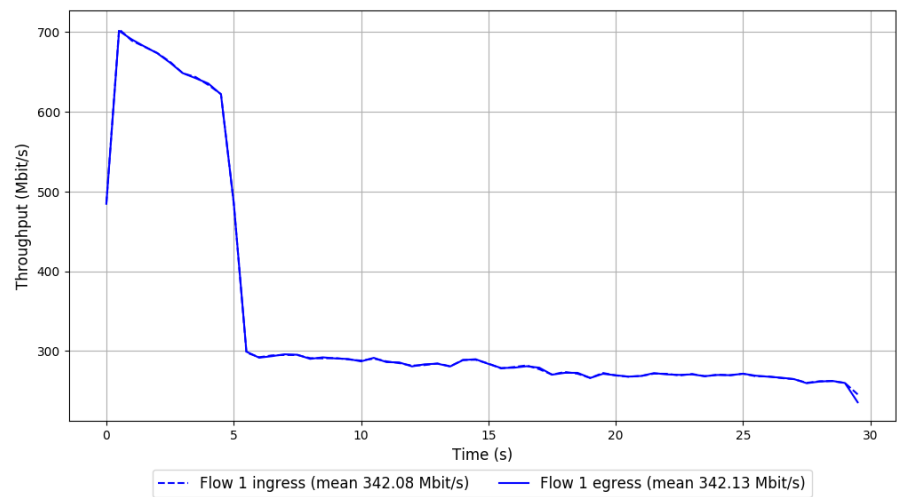


Run 3: Statistics of TCP Vegas

Start at: 2017-11-15 21:07:45
End at: 2017-11-15 21:08:15
Local clock offset: 1.633 ms
Remote clock offset: -1.739 ms

Below is generated by plot.py at 2017-11-16 03:32:07
Datalink statistics
-- Total of 1 flow:
Average throughput: 342.13 Mbit/s
95th percentile per-packet one-way delay: 1.328 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 342.13 Mbit/s
95th percentile per-packet one-way delay: 1.328 ms
Loss rate: 0.05%

Run 3: Report of TCP Vegas — Data Link

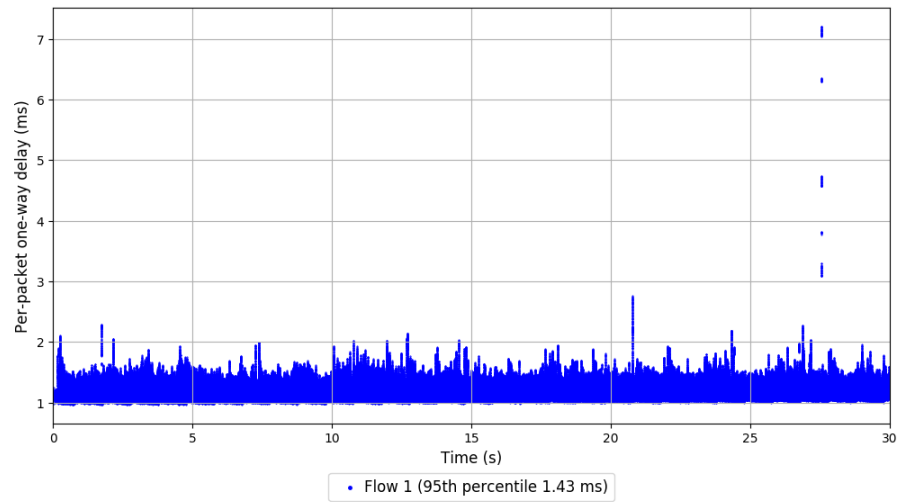
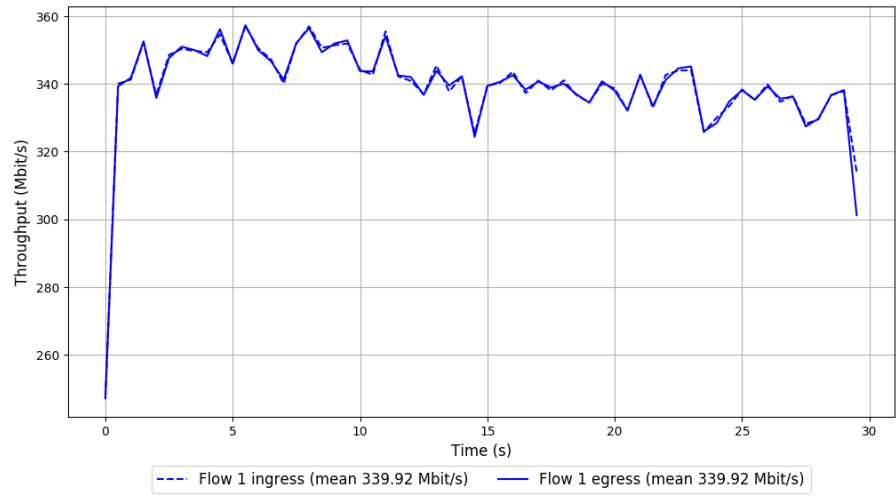


Run 4: Statistics of TCP Vegas

Start at: 2017-11-15 21:26:59
End at: 2017-11-15 21:27:29
Local clock offset: 1.171 ms
Remote clock offset: -1.608 ms

Below is generated by plot.py at 2017-11-16 03:32:07
Datalink statistics
-- Total of 1 flow:
Average throughput: 339.92 Mbit/s
95th percentile per-packet one-way delay: 1.432 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 339.92 Mbit/s
95th percentile per-packet one-way delay: 1.432 ms
Loss rate: 0.07%

Run 4: Report of TCP Vegas — Data Link

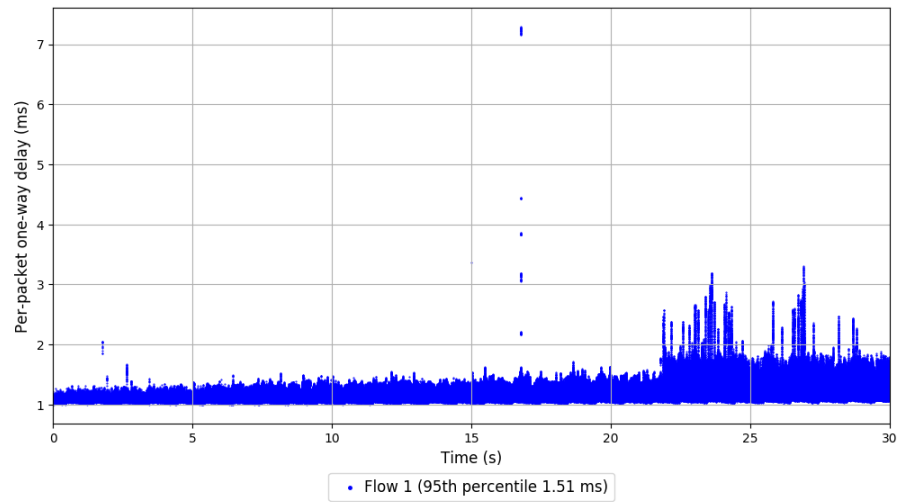
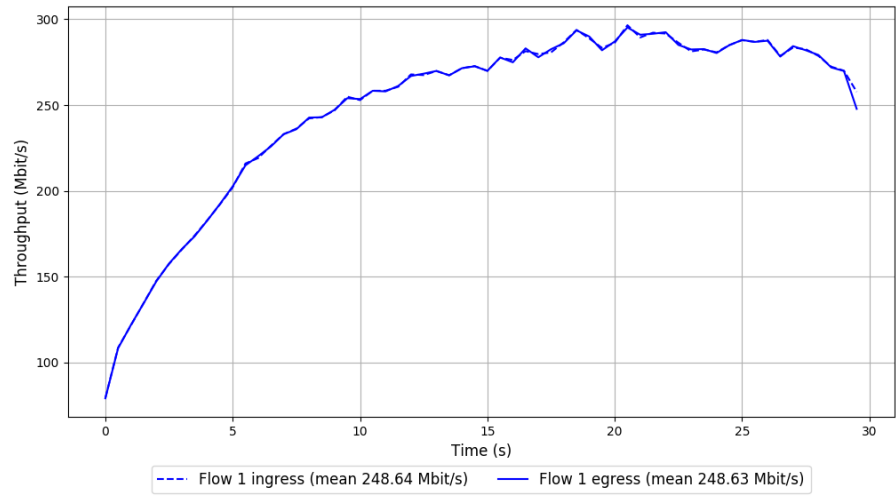


Run 5: Statistics of TCP Vegas

Start at: 2017-11-15 21:46:25
End at: 2017-11-15 21:46:55
Local clock offset: -0.114 ms
Remote clock offset: -1.431 ms

Below is generated by plot.py at 2017-11-16 03:32:07
Datalink statistics
-- Total of 1 flow:
Average throughput: 248.63 Mbit/s
95th percentile per-packet one-way delay: 1.508 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 248.63 Mbit/s
95th percentile per-packet one-way delay: 1.508 ms
Loss rate: 0.07%

Run 5: Report of TCP Vegas — Data Link

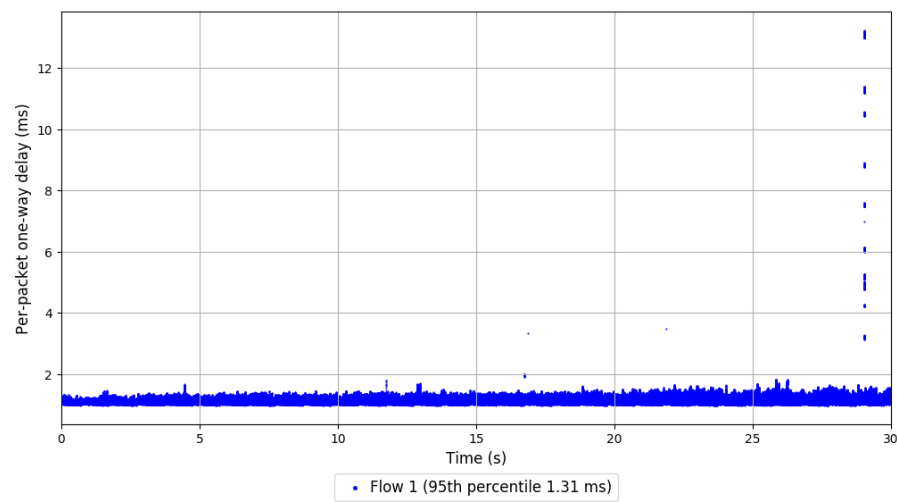
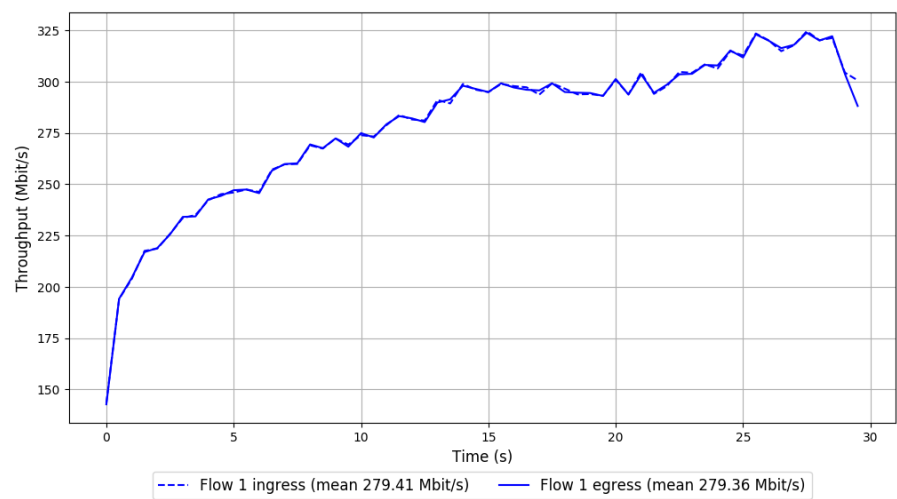


Run 6: Statistics of TCP Vegas

Start at: 2017-11-15 22:05:23
End at: 2017-11-15 22:05:53
Local clock offset: -0.574 ms
Remote clock offset: -1.328 ms

Below is generated by plot.py at 2017-11-16 03:33:56
Datalink statistics
-- Total of 1 flow:
Average throughput: 279.36 Mbit/s
95th percentile per-packet one-way delay: 1.313 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 279.36 Mbit/s
95th percentile per-packet one-way delay: 1.313 ms
Loss rate: 0.08%

Run 6: Report of TCP Vegas — Data Link

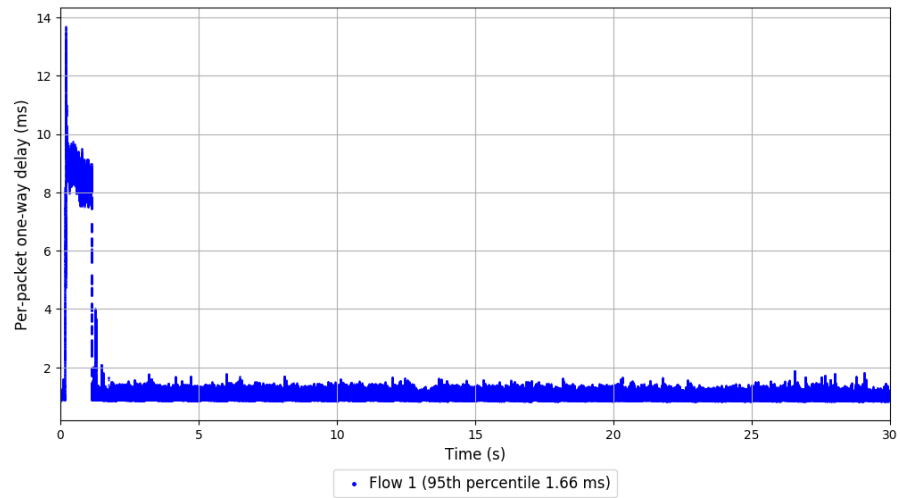
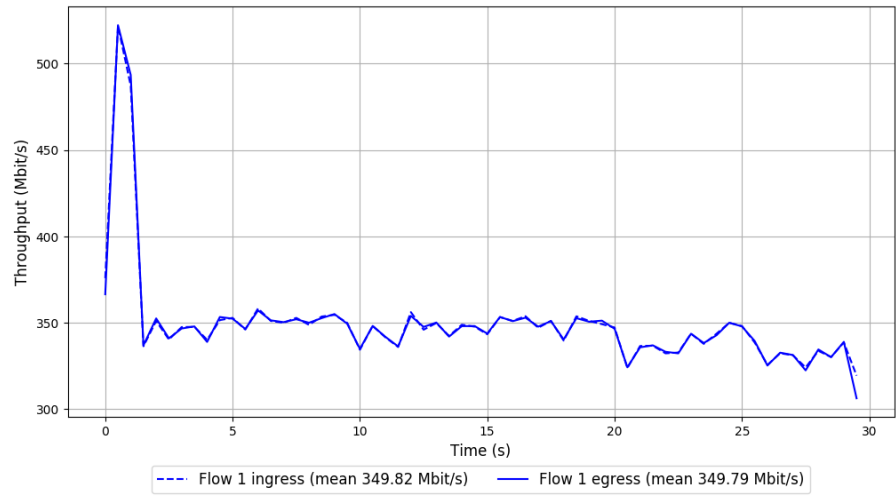


Run 7: Statistics of TCP Vegas

Start at: 2017-11-15 22:24:46
End at: 2017-11-15 22:25:16
Local clock offset: 0.021 ms
Remote clock offset: -1.115 ms

Below is generated by plot.py at 2017-11-16 03:35:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 349.79 Mbit/s
95th percentile per-packet one-way delay: 1.658 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 349.79 Mbit/s
95th percentile per-packet one-way delay: 1.658 ms
Loss rate: 0.07%

Run 7: Report of TCP Vegas — Data Link

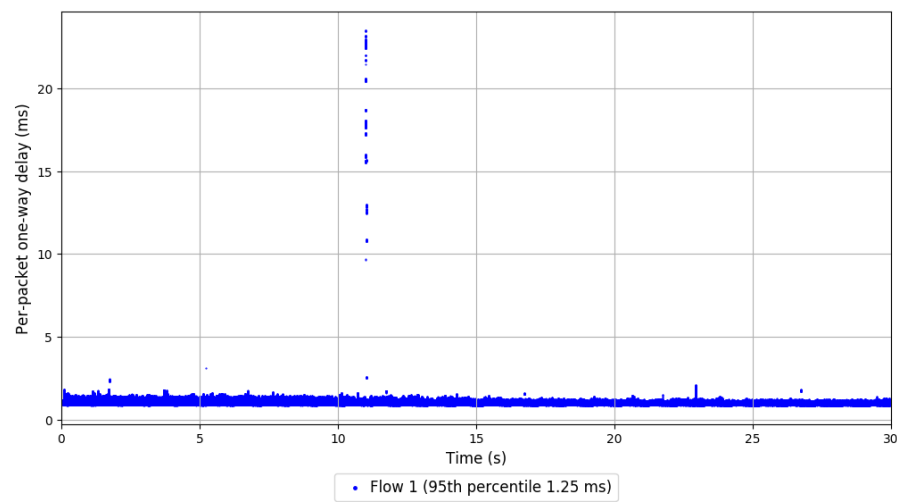
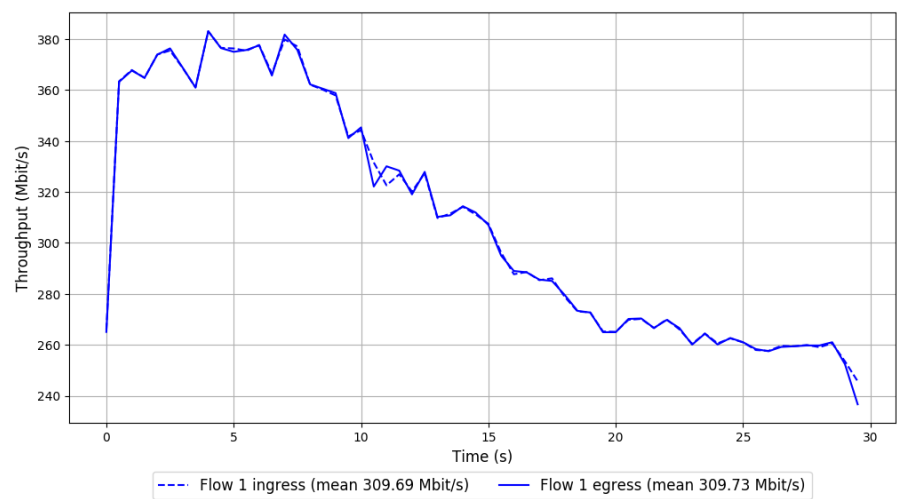


Run 8: Statistics of TCP Vegas

Start at: 2017-11-15 22:44:06
End at: 2017-11-15 22:44:36
Local clock offset: 0.945 ms
Remote clock offset: -1.093 ms

Below is generated by plot.py at 2017-11-16 03:35:47
Datalink statistics
-- Total of 1 flow:
Average throughput: 309.73 Mbit/s
95th percentile per-packet one-way delay: 1.254 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 309.73 Mbit/s
95th percentile per-packet one-way delay: 1.254 ms
Loss rate: 0.06%

Run 8: Report of TCP Vegas — Data Link



Run 9: Statistics of TCP Vegas

Start at: 2017-11-15 23:03:24

End at: 2017-11-15 23:03:54

Local clock offset: 1.464 ms

Remote clock offset: -0.86 ms

Below is generated by plot.py at 2017-11-16 03:36:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 367.35 Mbit/s

95th percentile per-packet one-way delay: 1.300 ms

Loss rate: 0.06%

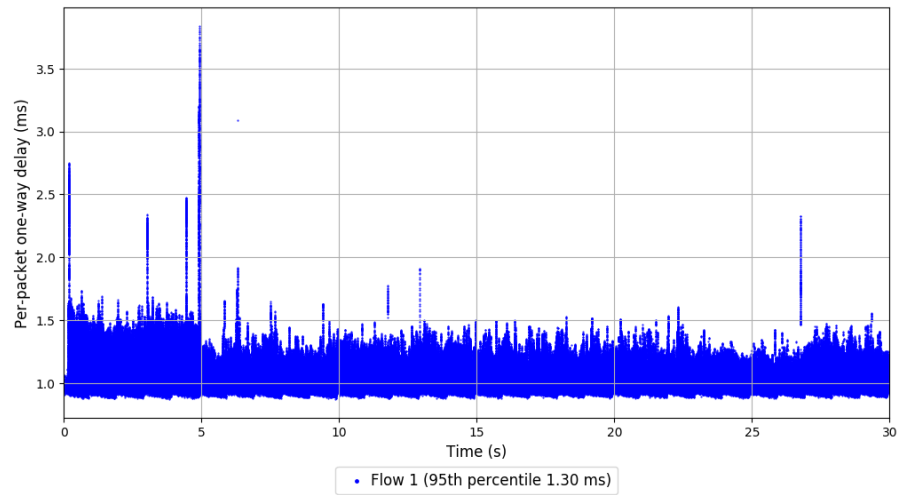
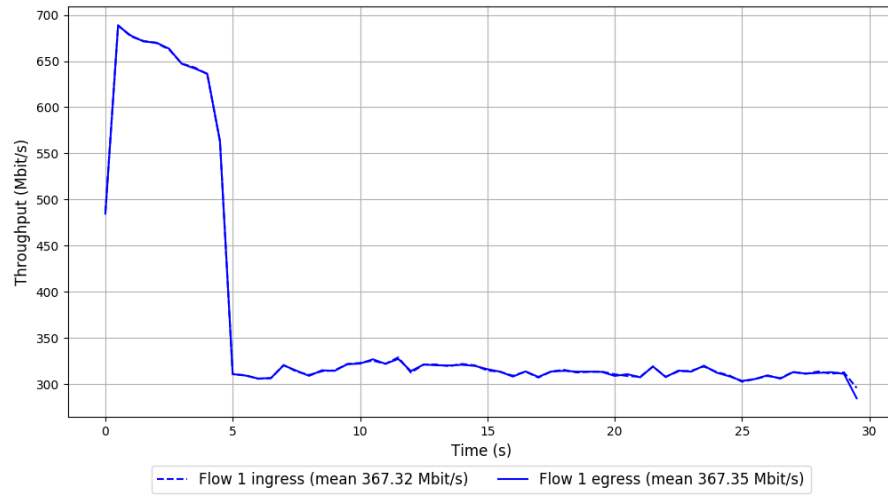
-- Flow 1:

Average throughput: 367.35 Mbit/s

95th percentile per-packet one-way delay: 1.300 ms

Loss rate: 0.06%

Run 9: Report of TCP Vegas — Data Link



Run 10: Statistics of TCP Vegas

Start at: 2017-11-15 23:22:45

End at: 2017-11-15 23:23:15

Local clock offset: 1.564 ms

Remote clock offset: -0.651 ms

Below is generated by plot.py at 2017-11-16 03:36:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 375.57 Mbit/s

95th percentile per-packet one-way delay: 1.400 ms

Loss rate: 0.06%

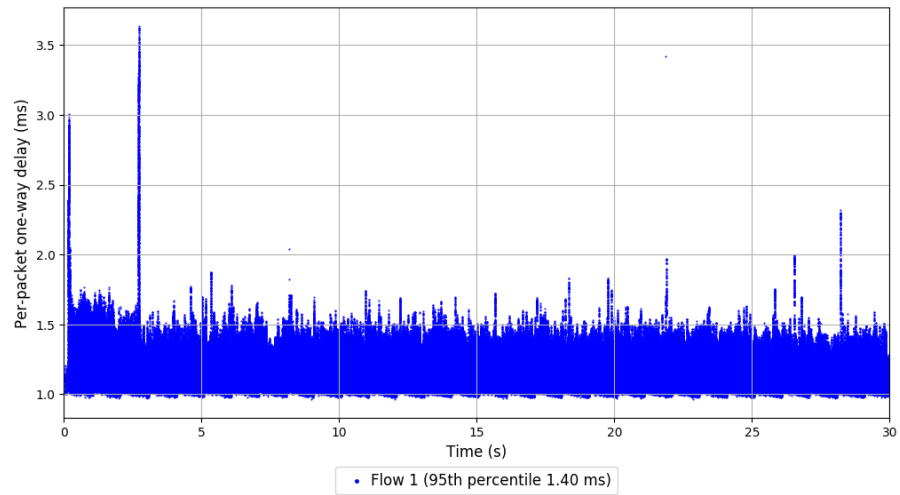
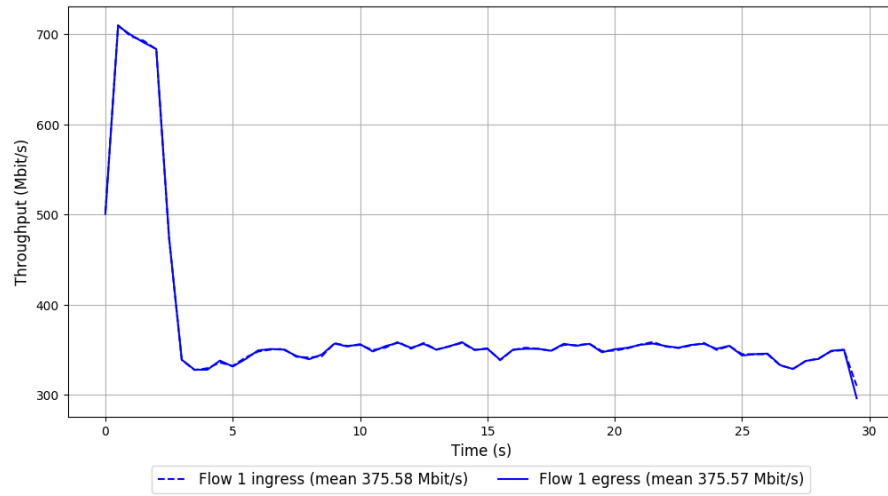
-- Flow 1:

Average throughput: 375.57 Mbit/s

95th percentile per-packet one-way delay: 1.400 ms

Loss rate: 0.06%

Run 10: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2017-11-15 20:14:21

End at: 2017-11-15 20:14:51

Local clock offset: -1.513 ms

Remote clock offset: -2.65 ms

Below is generated by plot.py at 2017-11-16 03:37:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 384.39 Mbit/s

95th percentile per-packet one-way delay: 11.598 ms

Loss rate: 0.09%

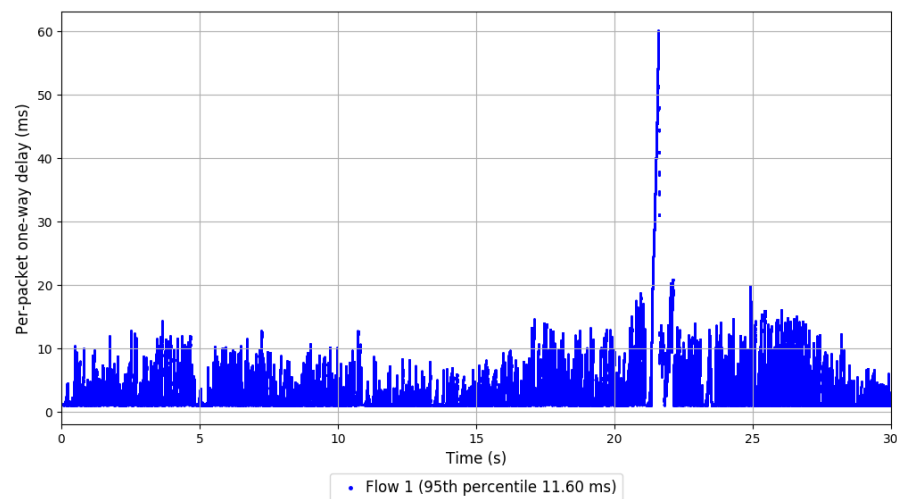
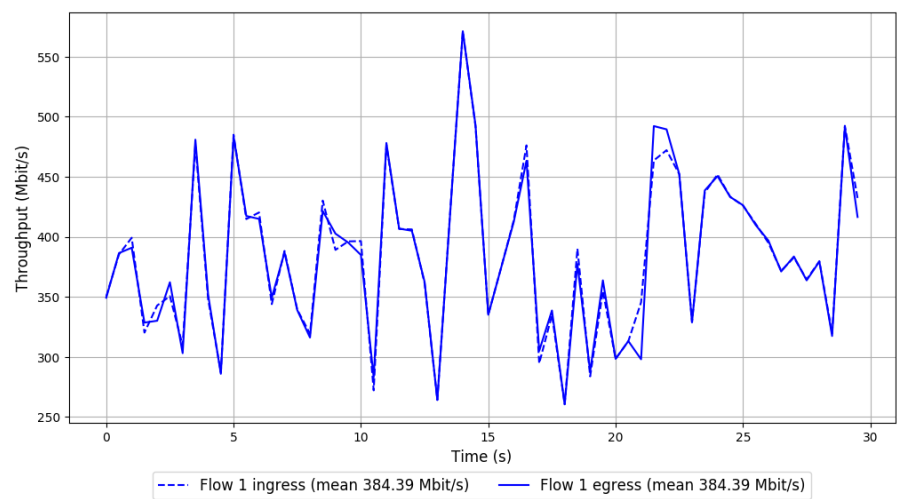
-- Flow 1:

Average throughput: 384.39 Mbit/s

95th percentile per-packet one-way delay: 11.598 ms

Loss rate: 0.09%

Run 1: Report of Verus — Data Link

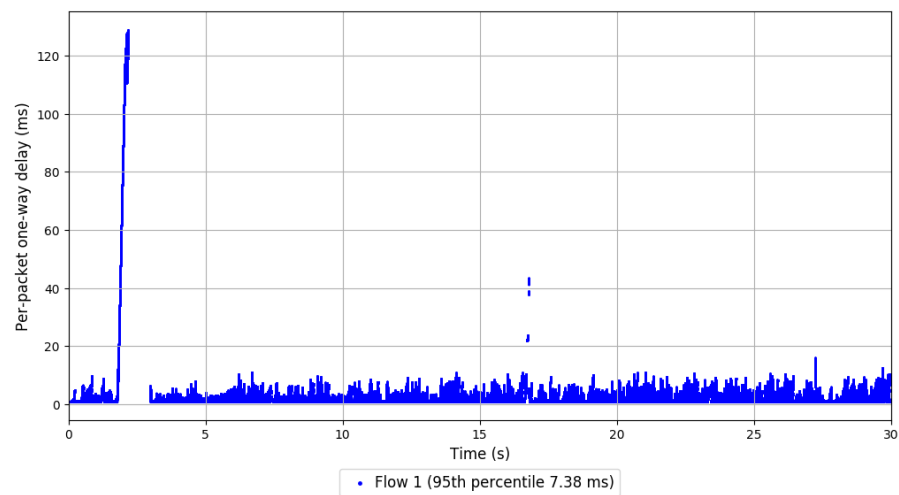
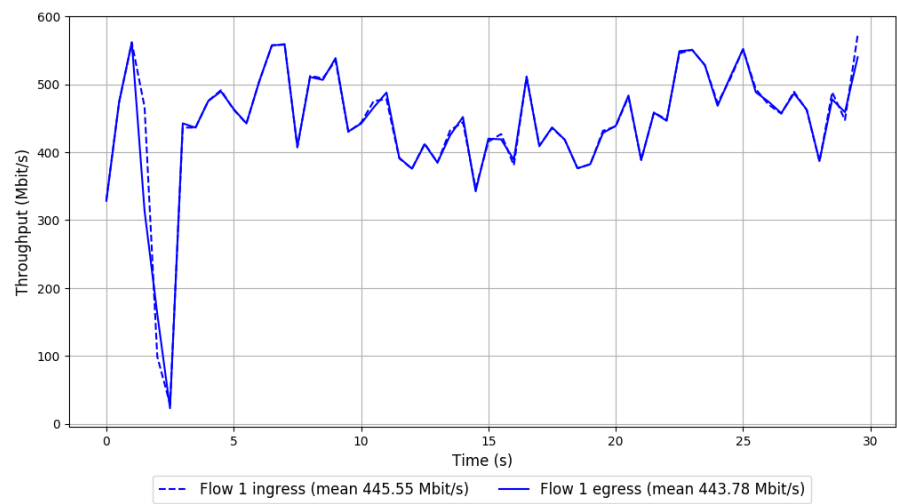


Run 2: Statistics of Verus

Start at: 2017-11-15 20:33:15
End at: 2017-11-15 20:33:45
Local clock offset: 0.833 ms
Remote clock offset: -2.308 ms

Below is generated by plot.py at 2017-11-16 03:38:24
Datalink statistics
-- Total of 1 flow:
Average throughput: 443.78 Mbit/s
95th percentile per-packet one-way delay: 7.382 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 443.78 Mbit/s
95th percentile per-packet one-way delay: 7.382 ms
Loss rate: 0.46%

Run 2: Report of Verus — Data Link

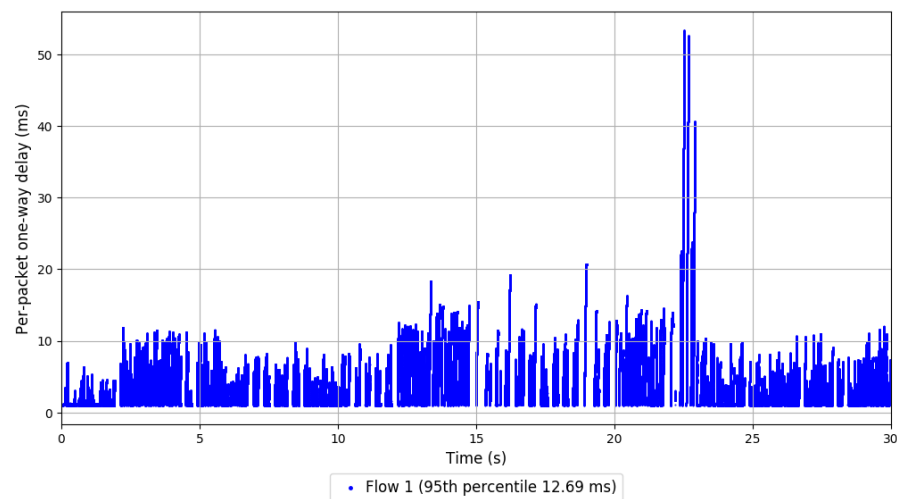
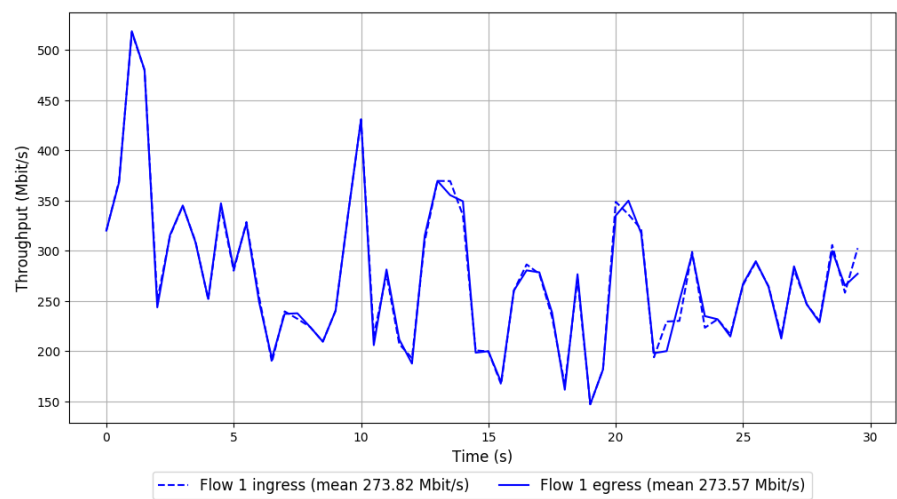


Run 3: Statistics of Verus

Start at: 2017-11-15 20:52:29
End at: 2017-11-15 20:52:59
Local clock offset: 1.869 ms
Remote clock offset: -1.775 ms

Below is generated by plot.py at 2017-11-16 03:38:24
Datalink statistics
-- Total of 1 flow:
Average throughput: 273.57 Mbit/s
95th percentile per-packet one-way delay: 12.687 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 273.57 Mbit/s
95th percentile per-packet one-way delay: 12.687 ms
Loss rate: 0.16%

Run 3: Report of Verus — Data Link

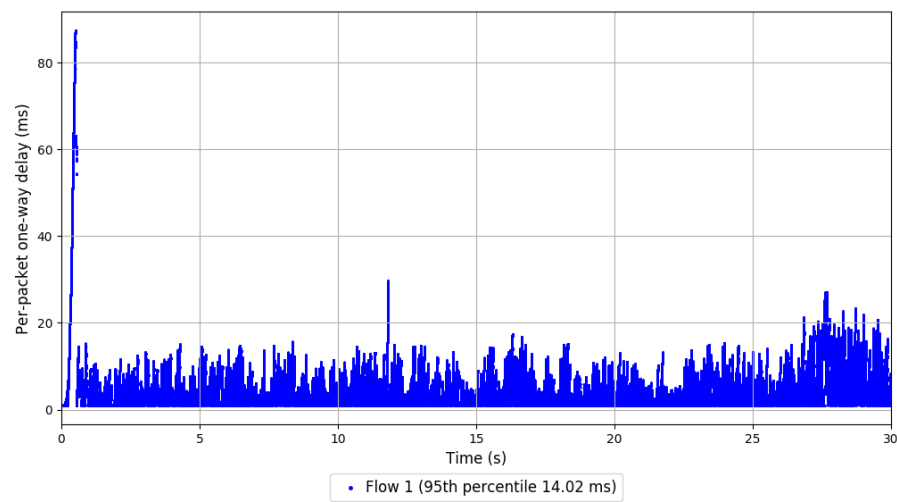
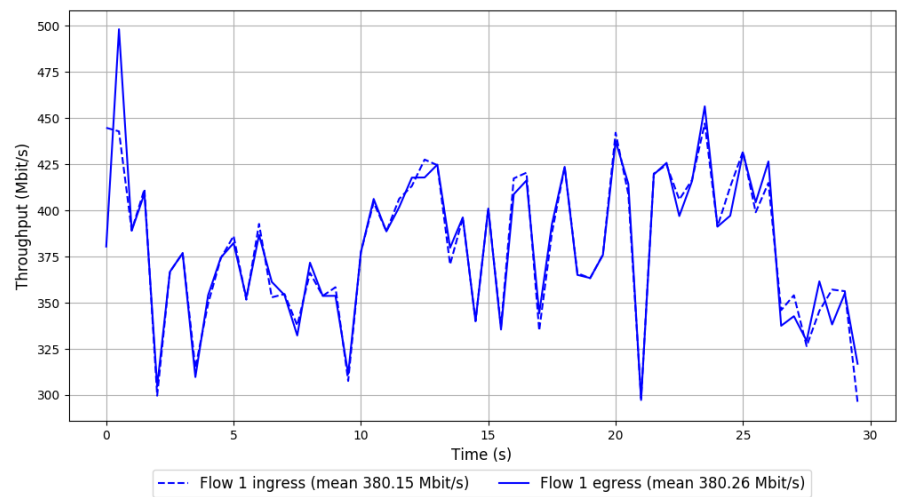


Run 4: Statistics of Verus

Start at: 2017-11-15 21:11:55
End at: 2017-11-15 21:12:25
Local clock offset: 1.706 ms
Remote clock offset: -1.799 ms

Below is generated by plot.py at 2017-11-16 03:39:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 380.26 Mbit/s
95th percentile per-packet one-way delay: 14.021 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 380.26 Mbit/s
95th percentile per-packet one-way delay: 14.021 ms
Loss rate: 0.03%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2017-11-15 21:31:09

End at: 2017-11-15 21:31:39

Local clock offset: 0.87 ms

Remote clock offset: -1.58 ms

Below is generated by plot.py at 2017-11-16 03:40:43

Datalink statistics

-- Total of 1 flow:

Average throughput: 368.64 Mbit/s

95th percentile per-packet one-way delay: 11.407 ms

Loss rate: 0.09%

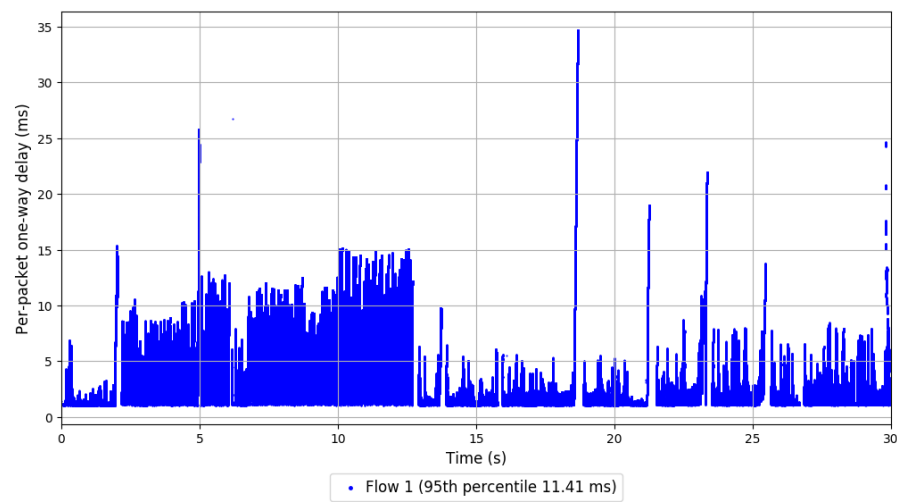
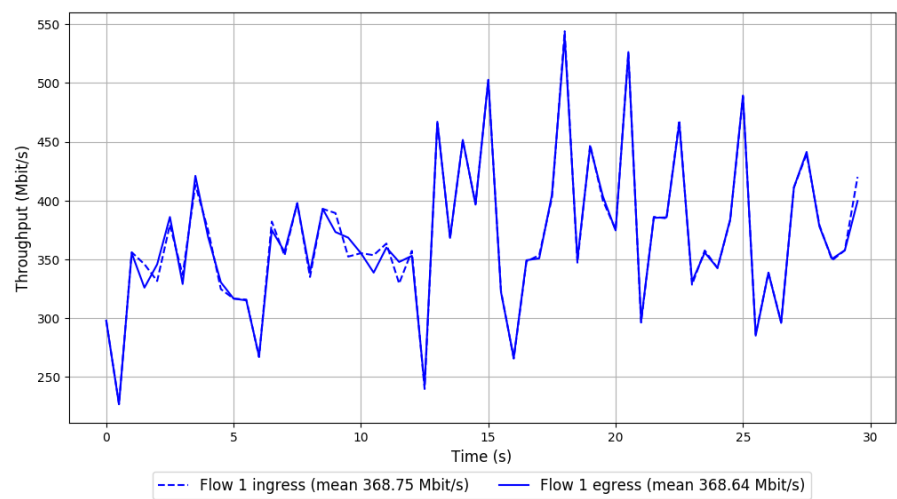
-- Flow 1:

Average throughput: 368.64 Mbit/s

95th percentile per-packet one-way delay: 11.407 ms

Loss rate: 0.09%

Run 5: Report of Verus — Data Link

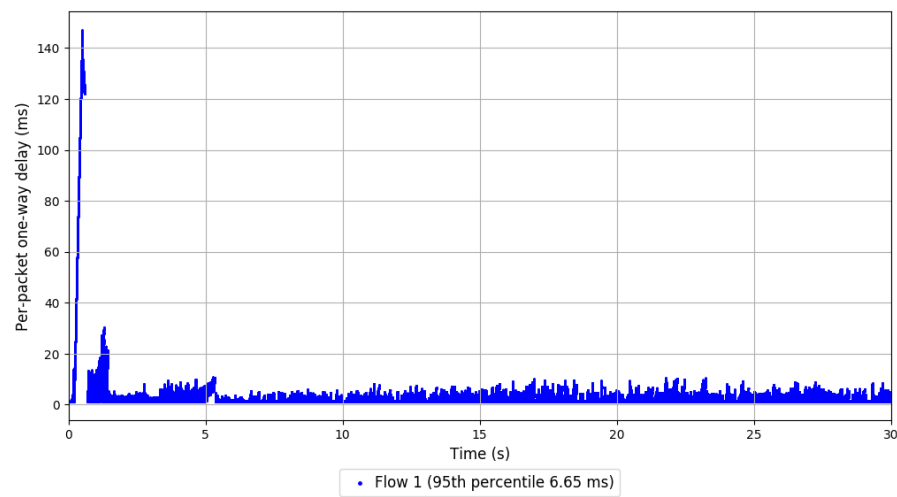
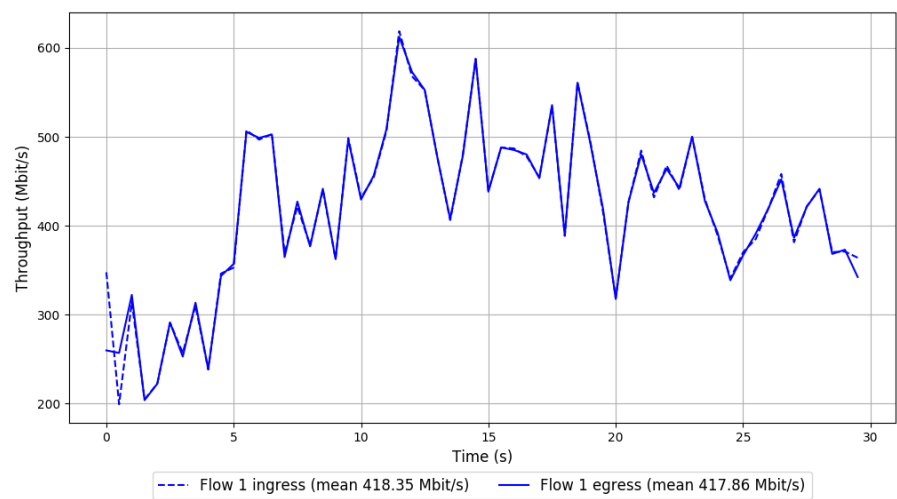


Run 6: Statistics of Verus

Start at: 2017-11-15 21:50:31
End at: 2017-11-15 21:51:01
Local clock offset: -0.25 ms
Remote clock offset: -1.379 ms

Below is generated by plot.py at 2017-11-16 03:42:09
Datalink statistics
-- Total of 1 flow:
Average throughput: 417.86 Mbit/s
95th percentile per-packet one-way delay: 6.653 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 417.86 Mbit/s
95th percentile per-packet one-way delay: 6.653 ms
Loss rate: 0.17%

Run 6: Report of Verus — Data Link

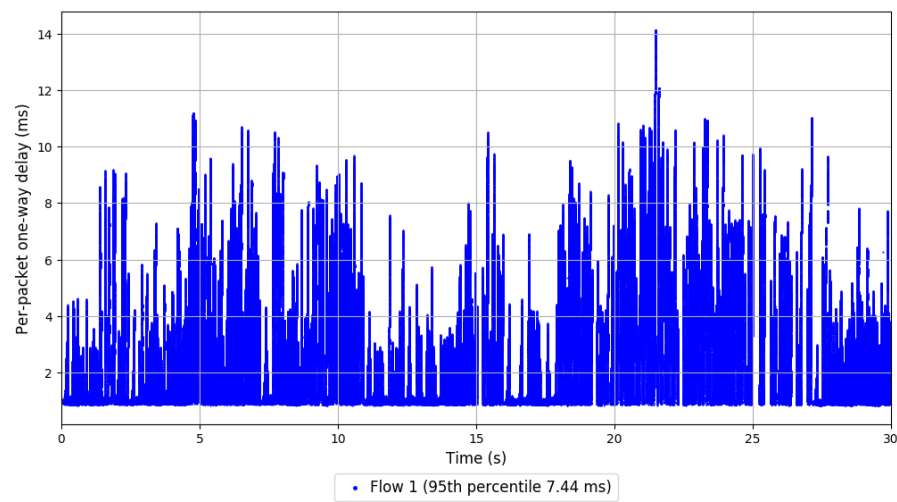
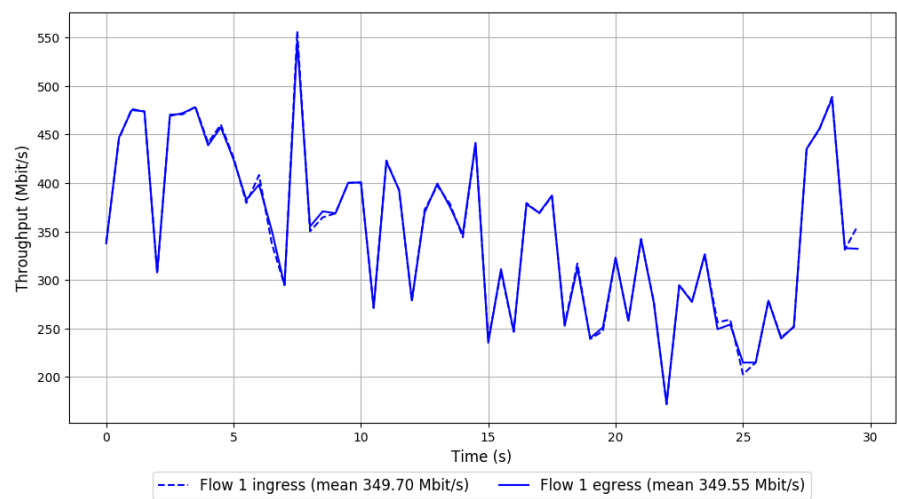


Run 7: Statistics of Verus

Start at: 2017-11-15 22:09:32
End at: 2017-11-15 22:10:02
Local clock offset: -0.546 ms
Remote clock offset: -1.243 ms

Below is generated by plot.py at 2017-11-16 03:42:09
Datalink statistics
-- Total of 1 flow:
Average throughput: 349.55 Mbit/s
95th percentile per-packet one-way delay: 7.440 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 349.55 Mbit/s
95th percentile per-packet one-way delay: 7.440 ms
Loss rate: 0.11%

Run 7: Report of Verus — Data Link

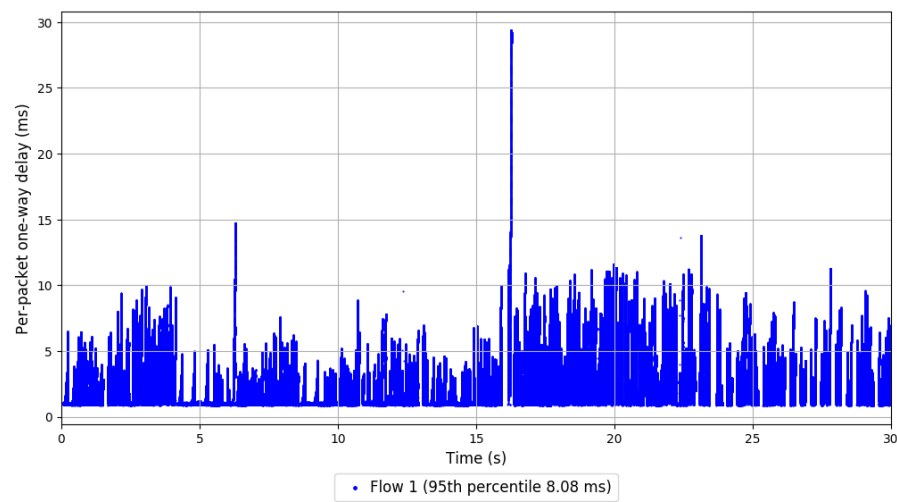
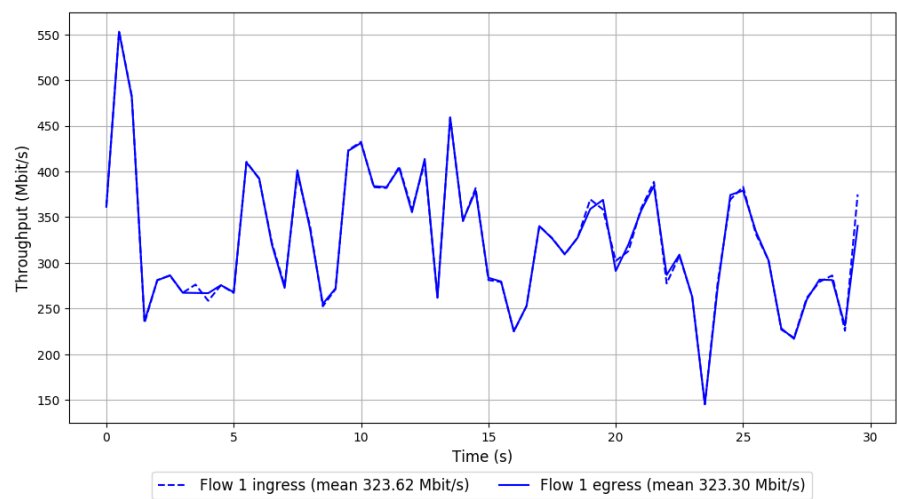


Run 8: Statistics of Verus

Start at: 2017-11-15 22:28:58
End at: 2017-11-15 22:29:28
Local clock offset: 0.244 ms
Remote clock offset: -1.071 ms

Below is generated by plot.py at 2017-11-16 03:42:09
Datalink statistics
-- Total of 1 flow:
Average throughput: 323.30 Mbit/s
95th percentile per-packet one-way delay: 8.082 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 323.30 Mbit/s
95th percentile per-packet one-way delay: 8.082 ms
Loss rate: 0.18%

Run 8: Report of Verus — Data Link

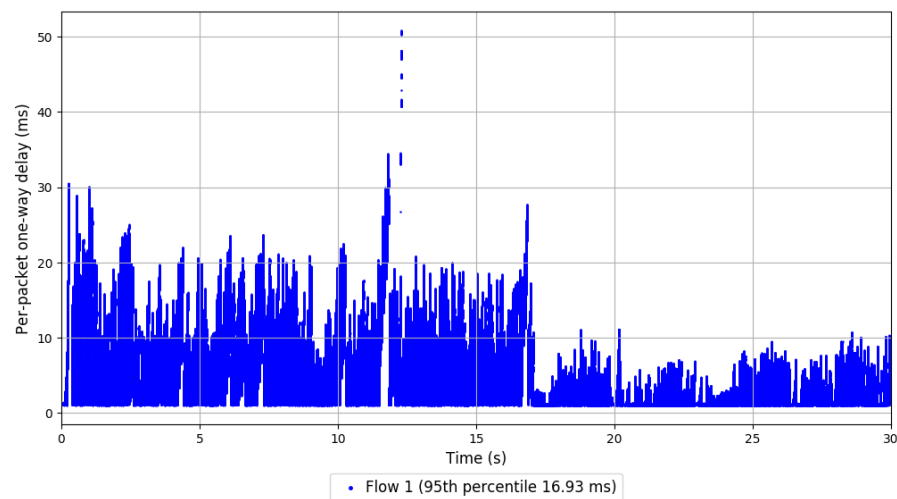
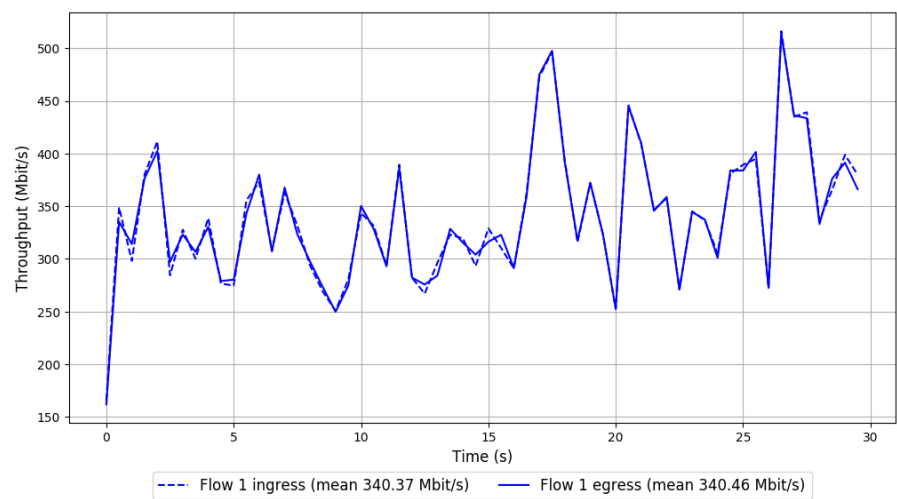


Run 9: Statistics of Verus

Start at: 2017-11-15 22:48:12
End at: 2017-11-15 22:48:42
Local clock offset: 1.165 ms
Remote clock offset: -1.204 ms

Below is generated by plot.py at 2017-11-16 03:42:09
Datalink statistics
-- Total of 1 flow:
Average throughput: 340.46 Mbit/s
95th percentile per-packet one-way delay: 16.928 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 340.46 Mbit/s
95th percentile per-packet one-way delay: 16.928 ms
Loss rate: 0.10%

Run 9: Report of Verus — Data Link

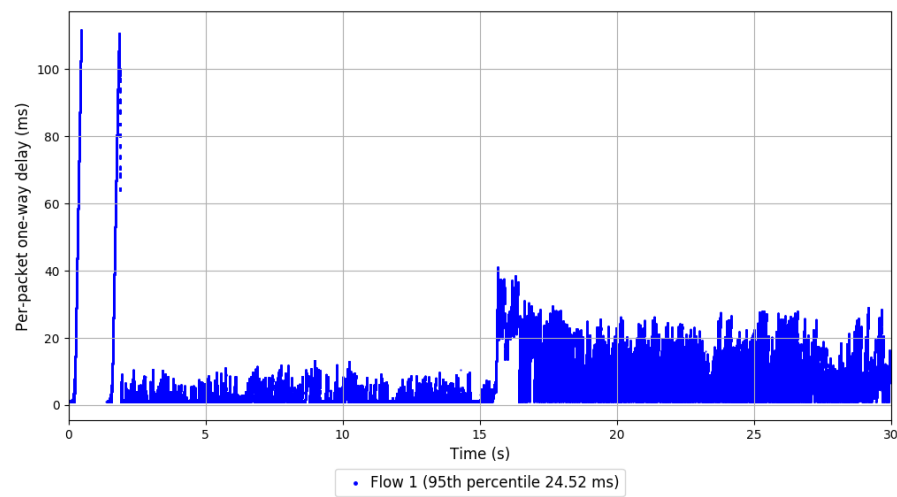
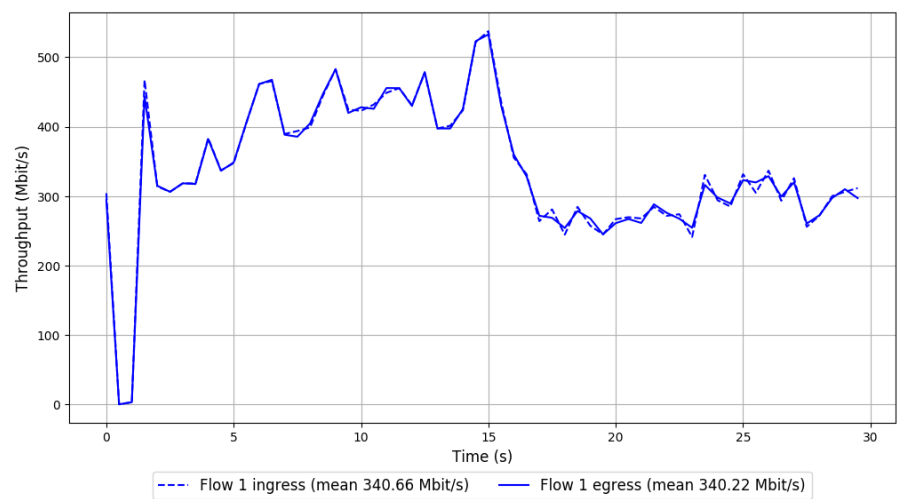


Run 10: Statistics of Verus

Start at: 2017-11-15 23:07:35
End at: 2017-11-15 23:08:05
Local clock offset: 1.535 ms
Remote clock offset: -0.797 ms

Below is generated by plot.py at 2017-11-16 03:42:41
Datalink statistics
-- Total of 1 flow:
Average throughput: 340.22 Mbit/s
95th percentile per-packet one-way delay: 24.521 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 340.22 Mbit/s
95th percentile per-packet one-way delay: 24.521 ms
Loss rate: 0.24%

Run 10: Report of Verus — Data Link

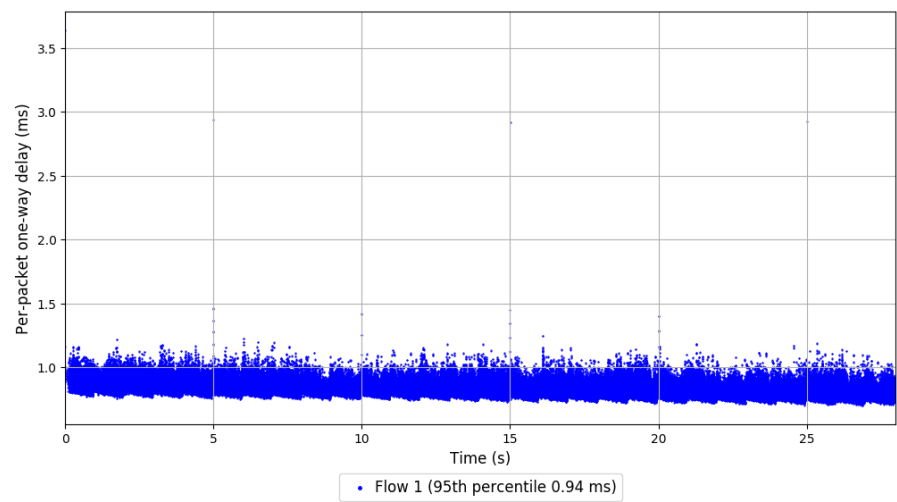
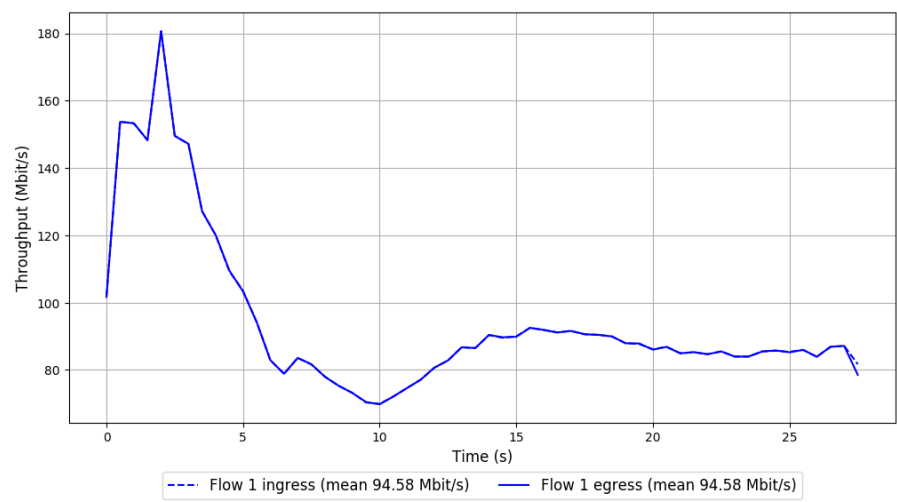


Run 1: Statistics of Copa

Start at: 2017-11-15 20:26:27
End at: 2017-11-15 20:26:57
Local clock offset: 0.009 ms
Remote clock offset: -2.419 ms

Below is generated by plot.py at 2017-11-16 03:42:41
Datalink statistics
-- Total of 1 flow:
Average throughput: 94.58 Mbit/s
95th percentile per-packet one-way delay: 0.941 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 94.58 Mbit/s
95th percentile per-packet one-way delay: 0.941 ms
Loss rate: 0.06%

Run 1: Report of Copa — Data Link

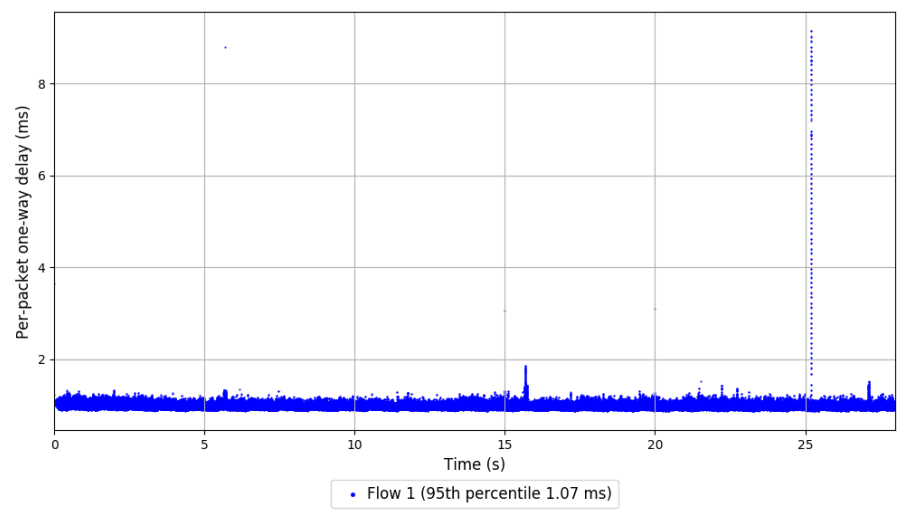
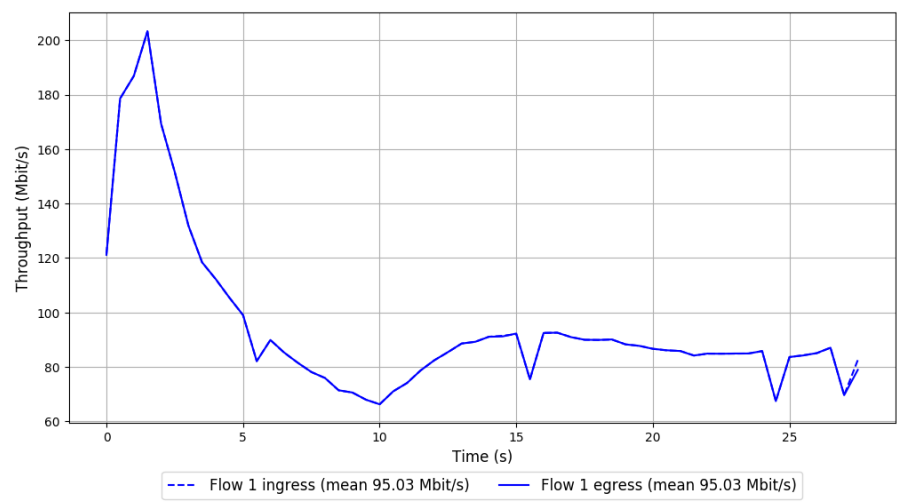


Run 2: Statistics of Copa

Start at: 2017-11-15 20:45:32
End at: 2017-11-15 20:46:02
Local clock offset: 1.522 ms
Remote clock offset: -1.903 ms

Below is generated by plot.py at 2017-11-16 03:42:41
Datalink statistics
-- Total of 1 flow:
Average throughput: 95.03 Mbit/s
95th percentile per-packet one-way delay: 1.068 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 95.03 Mbit/s
95th percentile per-packet one-way delay: 1.068 ms
Loss rate: 0.07%

Run 2: Report of Copa — Data Link

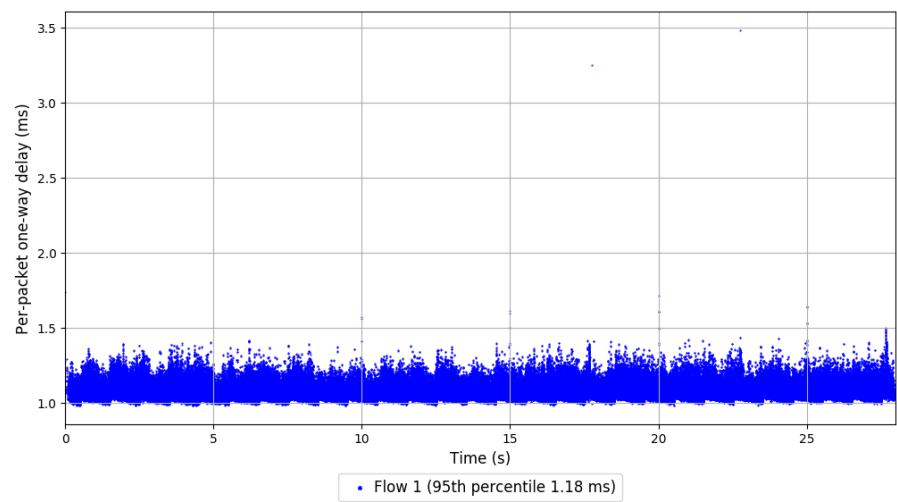
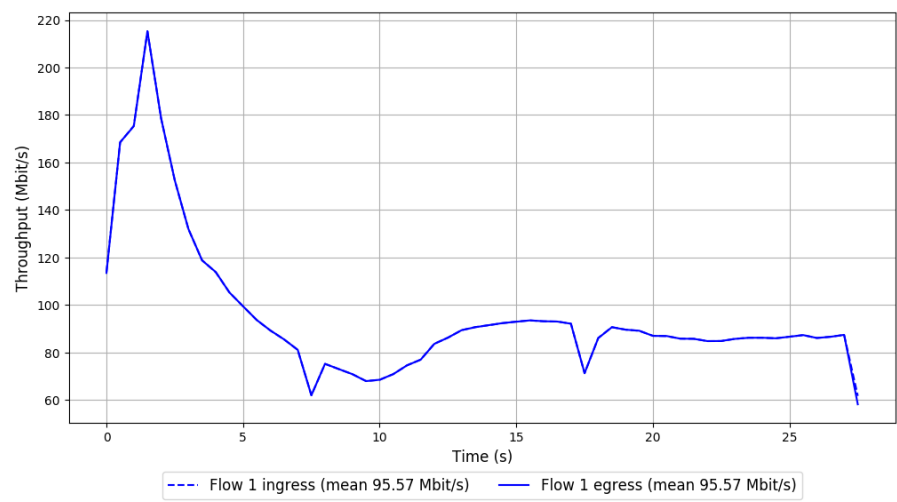


Run 3: Statistics of Copa

Start at: 2017-11-15 21:05:00
End at: 2017-11-15 21:05:30
Local clock offset: 1.804 ms
Remote clock offset: -1.721 ms

Below is generated by plot.py at 2017-11-16 03:43:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 95.57 Mbit/s
95th percentile per-packet one-way delay: 1.178 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 95.57 Mbit/s
95th percentile per-packet one-way delay: 1.178 ms
Loss rate: 0.07%

Run 3: Report of Copa — Data Link

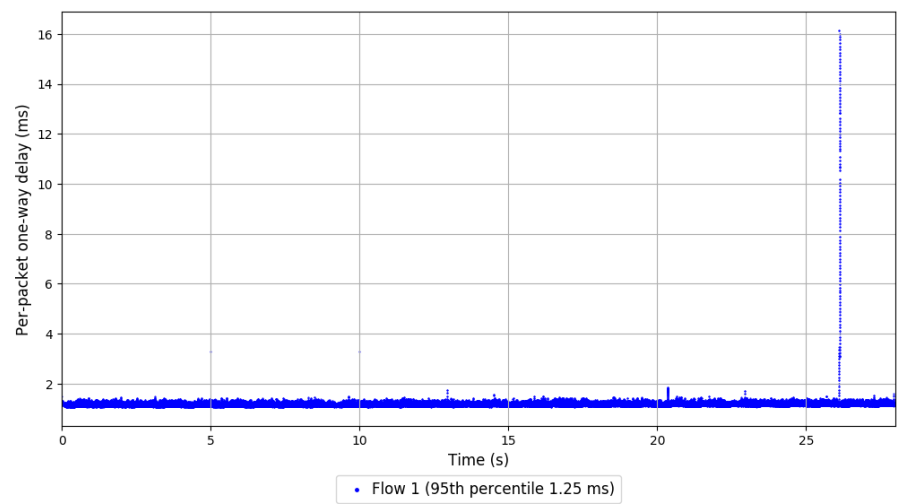
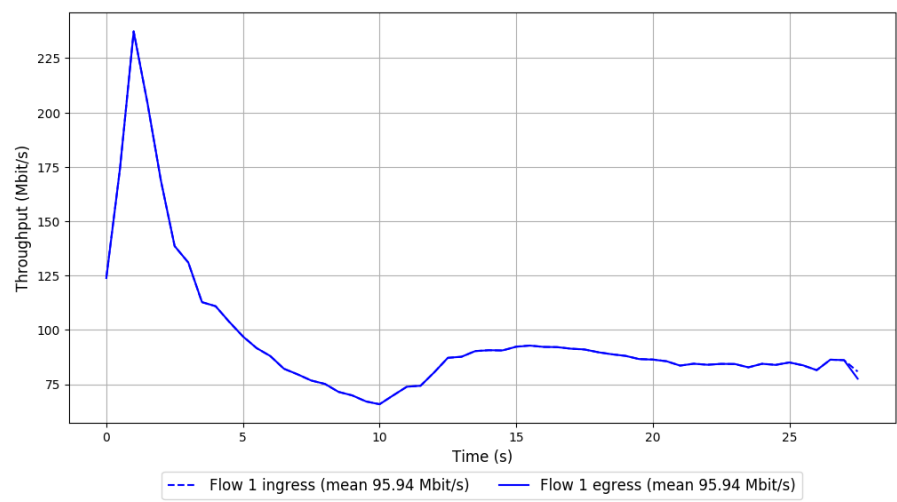


Run 4: Statistics of Copa

Start at: 2017-11-15 21:24:14
End at: 2017-11-15 21:24:44
Local clock offset: 1.386 ms
Remote clock offset: -1.743 ms

Below is generated by plot.py at 2017-11-16 03:43:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 95.94 Mbit/s
95th percentile per-packet one-way delay: 1.251 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 95.94 Mbit/s
95th percentile per-packet one-way delay: 1.251 ms
Loss rate: 0.07%

Run 4: Report of Copa — Data Link

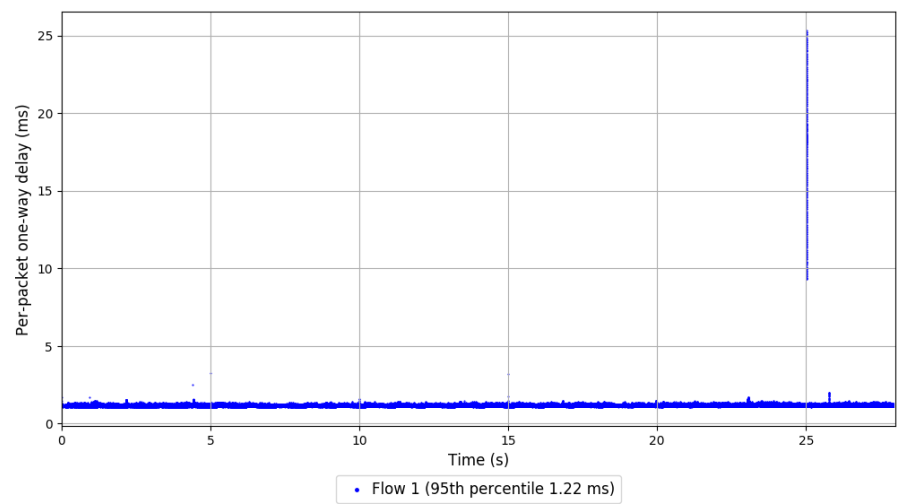
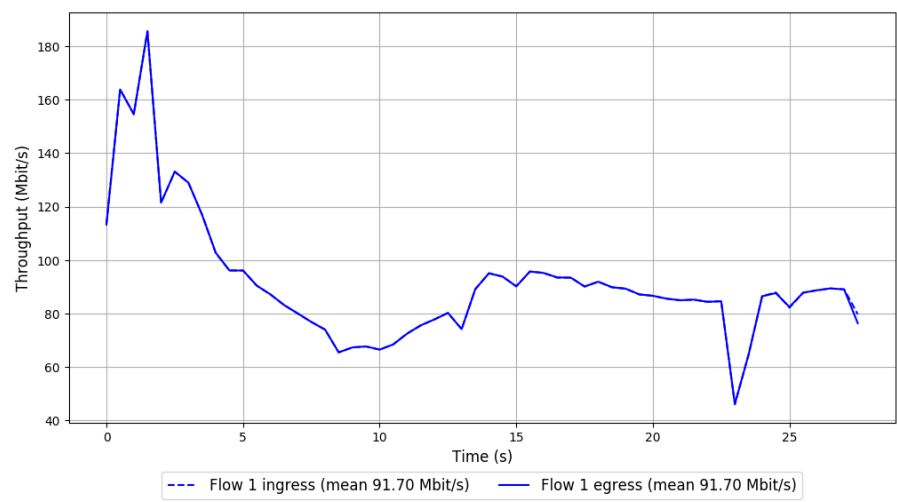


Run 5: Statistics of Copa

Start at: 2017-11-15 21:43:40
End at: 2017-11-15 21:44:10
Local clock offset: 0.136 ms
Remote clock offset: -1.515 ms

Below is generated by plot.py at 2017-11-16 03:43:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 91.70 Mbit/s
95th percentile per-packet one-way delay: 1.224 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 91.70 Mbit/s
95th percentile per-packet one-way delay: 1.224 ms
Loss rate: 0.07%

Run 5: Report of Copa — Data Link

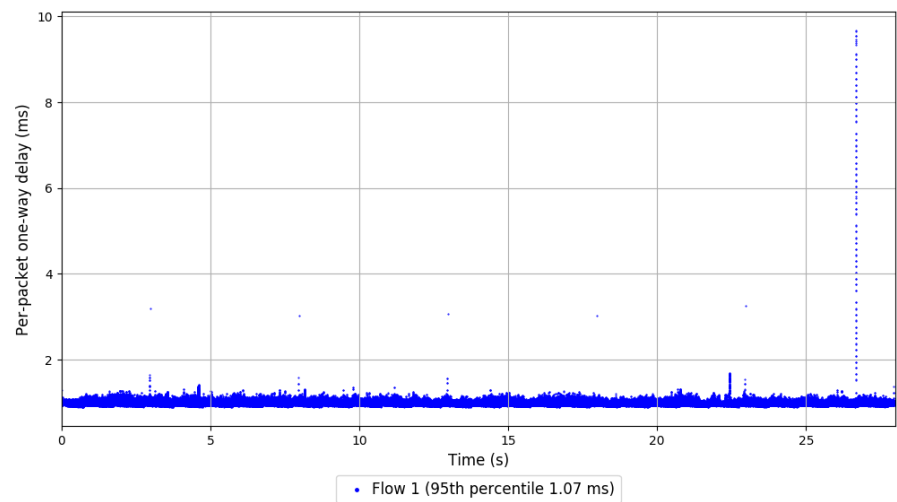
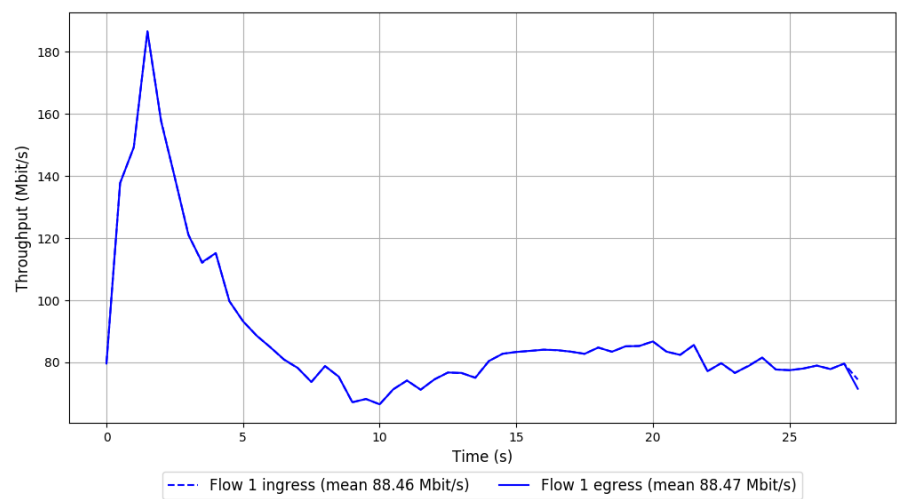


Run 6: Statistics of Copa

Start at: 2017-11-15 22:02:39
End at: 2017-11-15 22:03:09
Local clock offset: -0.679 ms
Remote clock offset: -1.379 ms

Below is generated by plot.py at 2017-11-16 03:43:36
Datalink statistics
-- Total of 1 flow:
Average throughput: 88.47 Mbit/s
95th percentile per-packet one-way delay: 1.066 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 88.47 Mbit/s
95th percentile per-packet one-way delay: 1.066 ms
Loss rate: 0.06%

Run 6: Report of Copa — Data Link



Run 7: Statistics of Copa

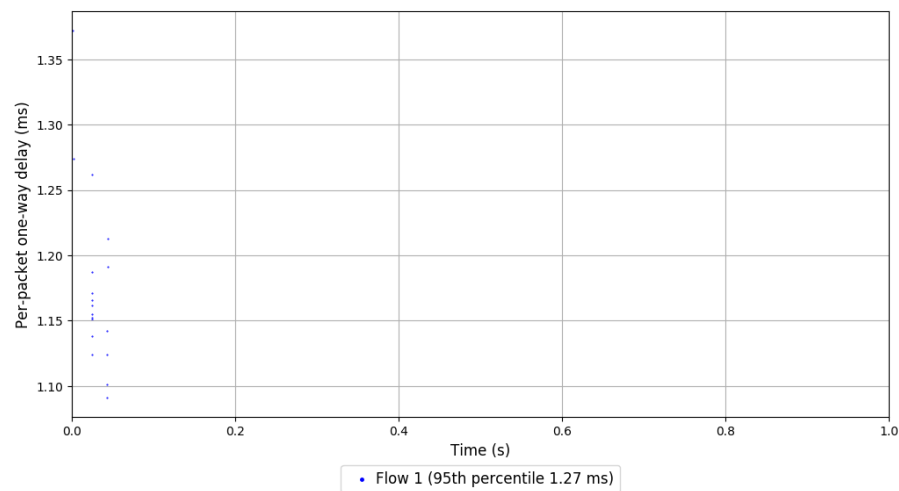
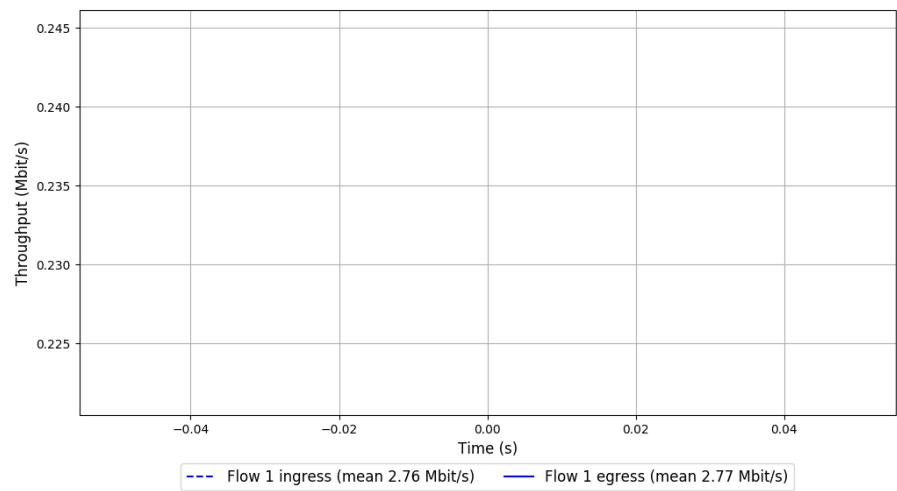
Start at: 2017-11-15 22:22:08

End at: 2017-11-15 22:22:38

Local clock offset: 0.025 ms

Remote clock offset: -1.125 ms

Run 7: Report of Copa — Data Link

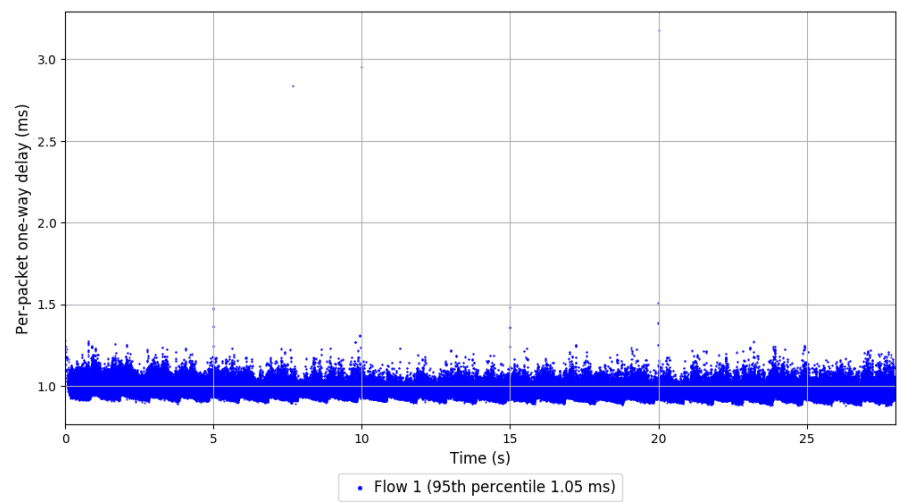
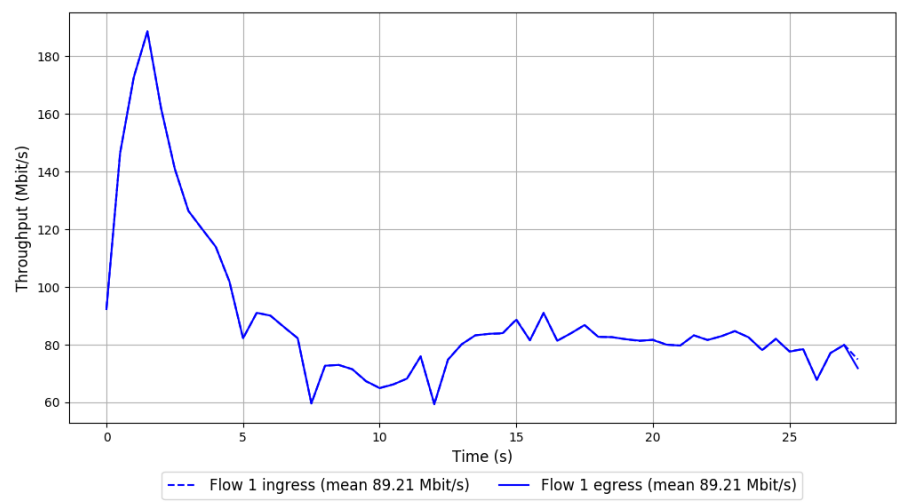


Run 8: Statistics of Copa

Start at: 2017-11-15 22:41:22
End at: 2017-11-15 22:41:52
Local clock offset: 0.85 ms
Remote clock offset: -1.092 ms

Below is generated by plot.py at 2017-11-16 03:44:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 89.21 Mbit/s
95th percentile per-packet one-way delay: 1.054 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 89.21 Mbit/s
95th percentile per-packet one-way delay: 1.054 ms
Loss rate: 0.06%

Run 8: Report of Copa — Data Link

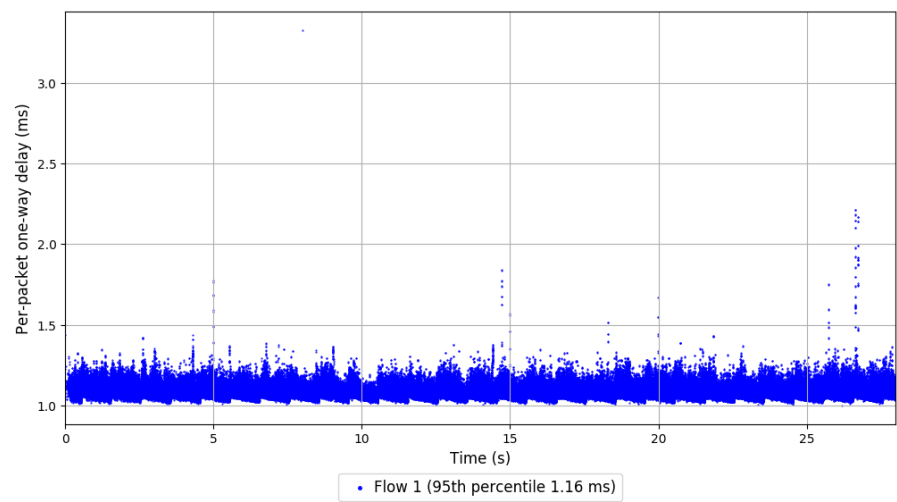
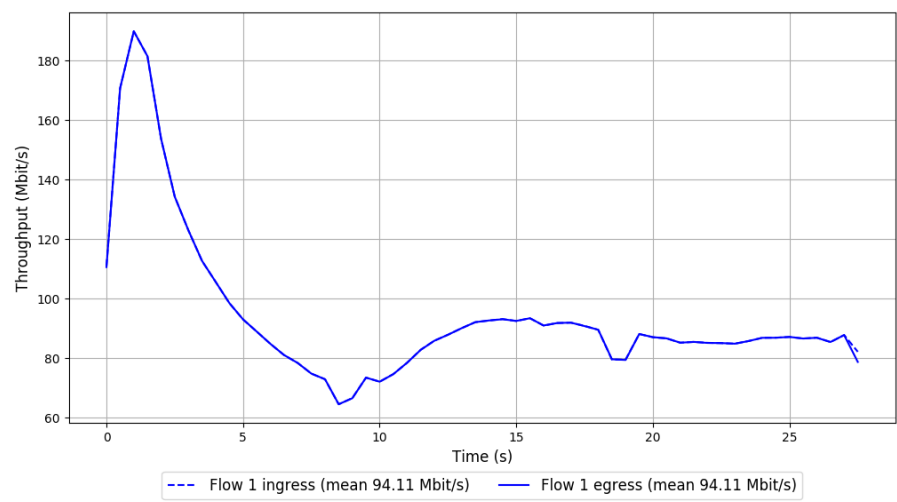


Run 9: Statistics of Copa

Start at: 2017-11-15 23:00:39
End at: 2017-11-15 23:01:09
Local clock offset: 1.497 ms
Remote clock offset: -0.982 ms

Below is generated by plot.py at 2017-11-16 03:44:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 94.11 Mbit/s
95th percentile per-packet one-way delay: 1.162 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 94.11 Mbit/s
95th percentile per-packet one-way delay: 1.162 ms
Loss rate: 0.07%

Run 9: Report of Copa — Data Link



Run 10: Statistics of Copa

Start at: 2017-11-15 23:19:59

End at: 2017-11-15 23:20:29

Local clock offset: 1.455 ms

Remote clock offset: -0.628 ms

Below is generated by plot.py at 2017-11-16 03:44:38

Datalink statistics

-- Total of 1 flow:

Average throughput: 95.83 Mbit/s

95th percentile per-packet one-way delay: 0.964 ms

Loss rate: 0.07%

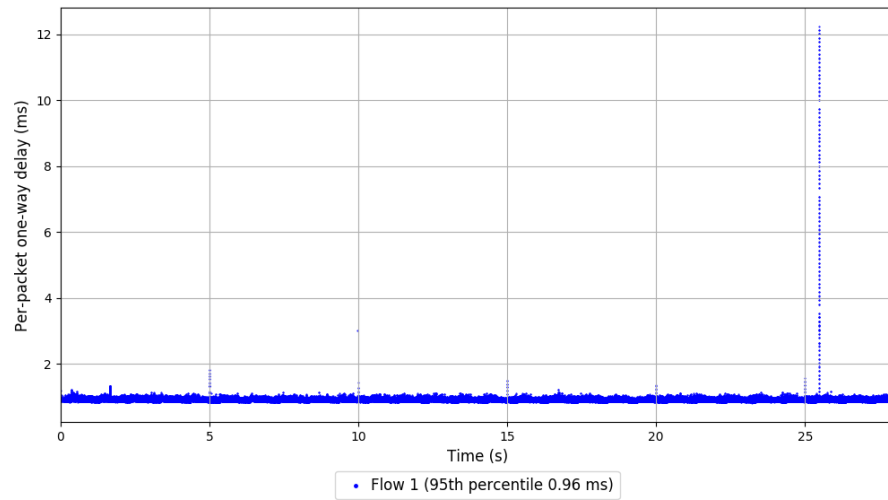
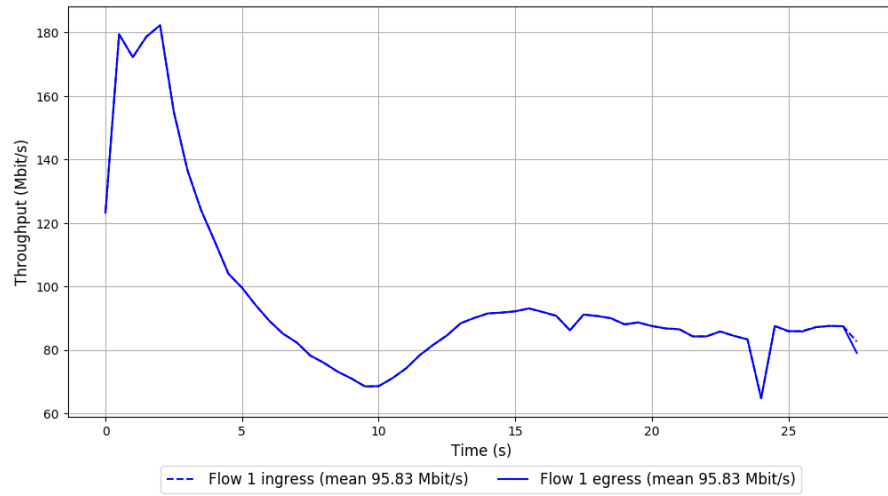
-- Flow 1:

Average throughput: 95.83 Mbit/s

95th percentile per-packet one-way delay: 0.964 ms

Loss rate: 0.07%

Run 10: Report of Copa — Data Link

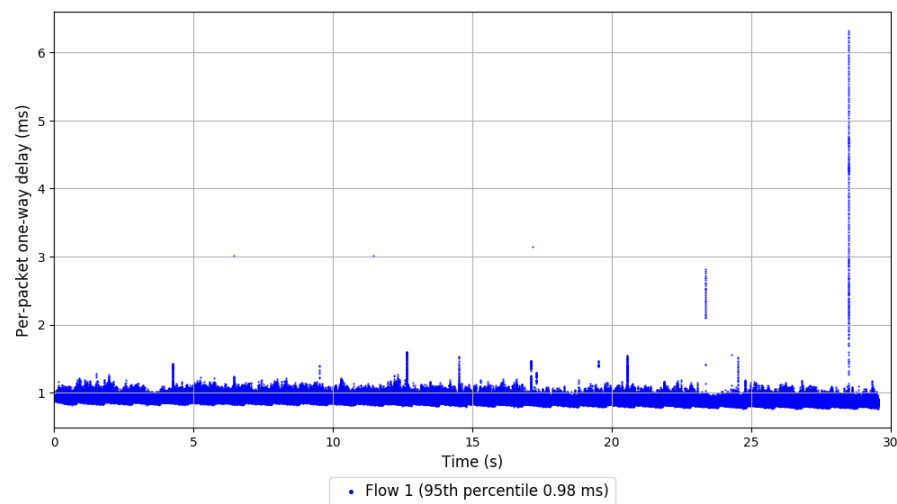
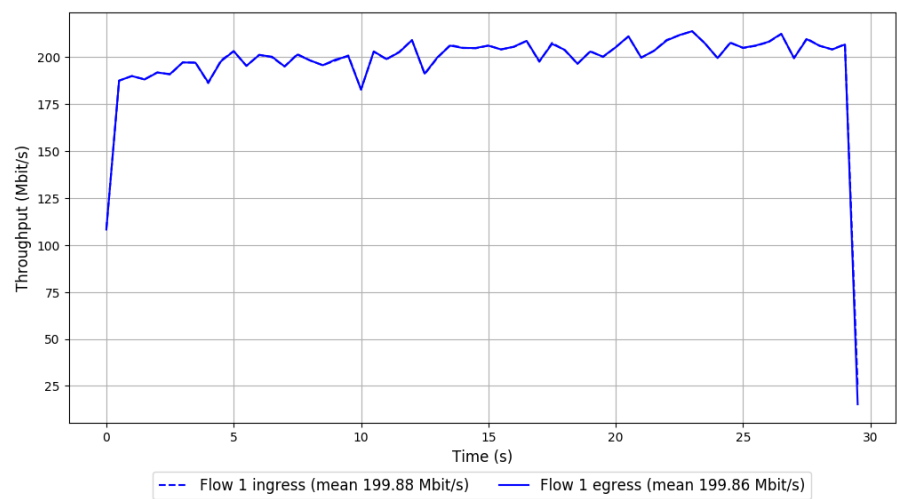


```
Run 1: Statistics of Indigo

Start at: 2017-11-15 20:18:30
End at: 2017-11-15 20:19:00
Local clock offset: -1.186 ms
Remote clock offset: -2.464 ms

# Below is generated by plot.py at 2017-11-16 03:45:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 199.86 Mbit/s
95th percentile per-packet one-way delay: 0.983 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 199.86 Mbit/s
95th percentile per-packet one-way delay: 0.983 ms
Loss rate: 0.08%
```


Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2017-11-15 20:37:28

End at: 2017-11-15 20:37:58

Local clock offset: 1.204 ms

Remote clock offset: -2.141 ms

Below is generated by plot.py at 2017-11-16 03:46:09

Datalink statistics

-- Total of 1 flow:

Average throughput: 202.89 Mbit/s

95th percentile per-packet one-way delay: 1.205 ms

Loss rate: 0.06%

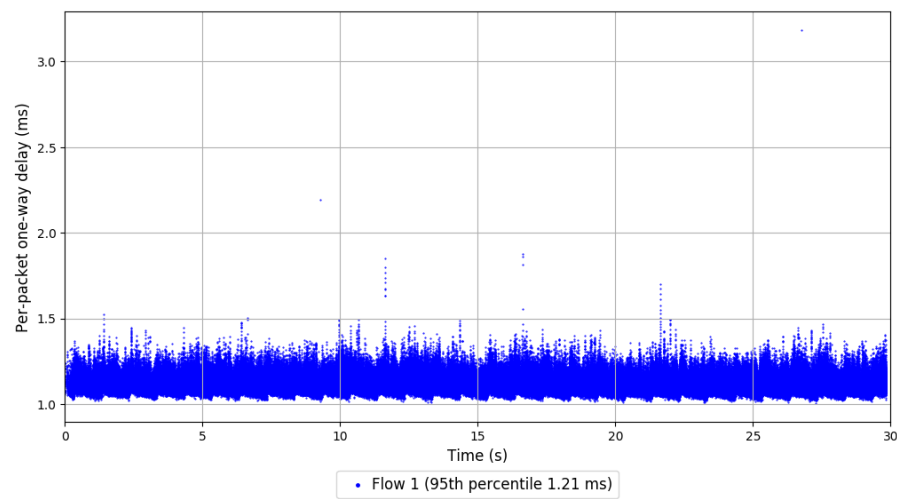
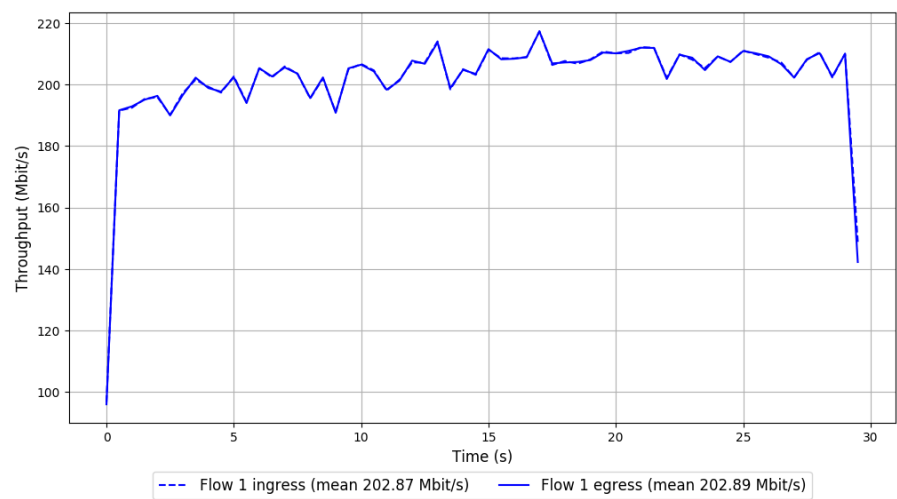
-- Flow 1:

Average throughput: 202.89 Mbit/s

95th percentile per-packet one-way delay: 1.205 ms

Loss rate: 0.06%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2017-11-15 20:56:38

End at: 2017-11-15 20:57:08

Local clock offset: 1.952 ms

Remote clock offset: -1.704 ms

Below is generated by plot.py at 2017-11-16 03:46:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 202.47 Mbit/s

95th percentile per-packet one-way delay: 1.029 ms

Loss rate: 0.07%

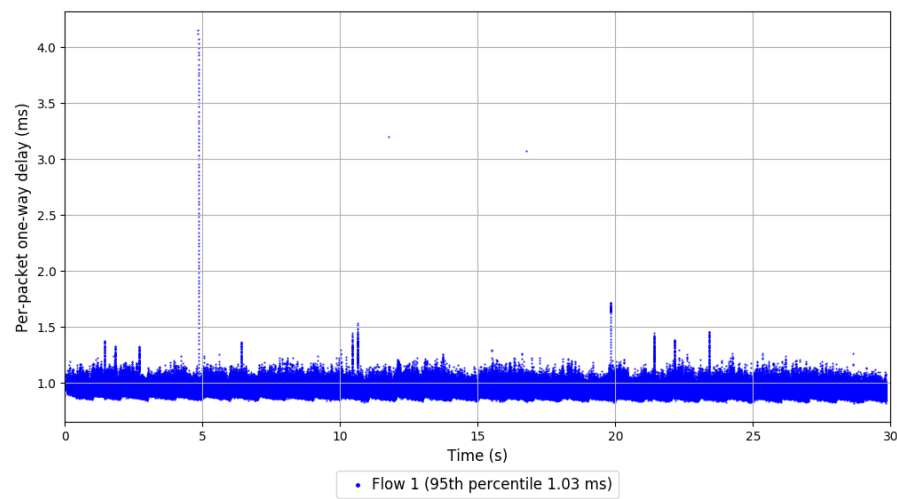
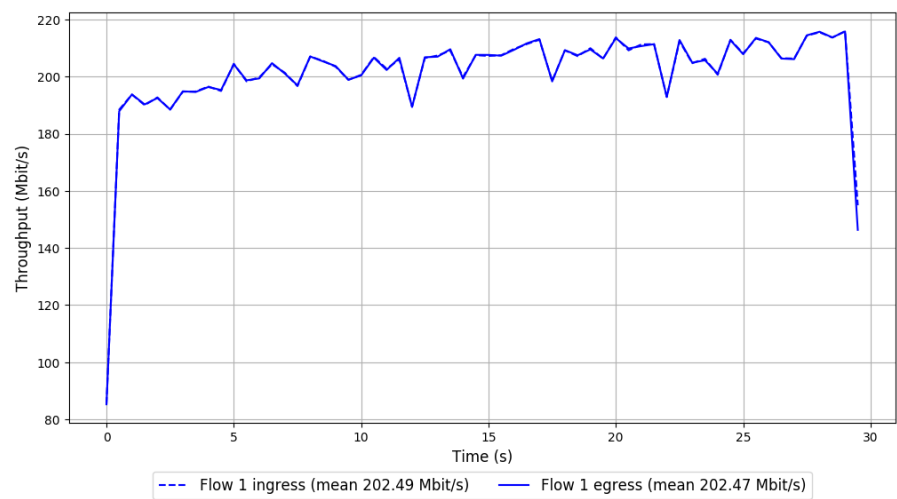
-- Flow 1:

Average throughput: 202.47 Mbit/s

95th percentile per-packet one-way delay: 1.029 ms

Loss rate: 0.07%

Run 3: Report of Indigo — Data Link

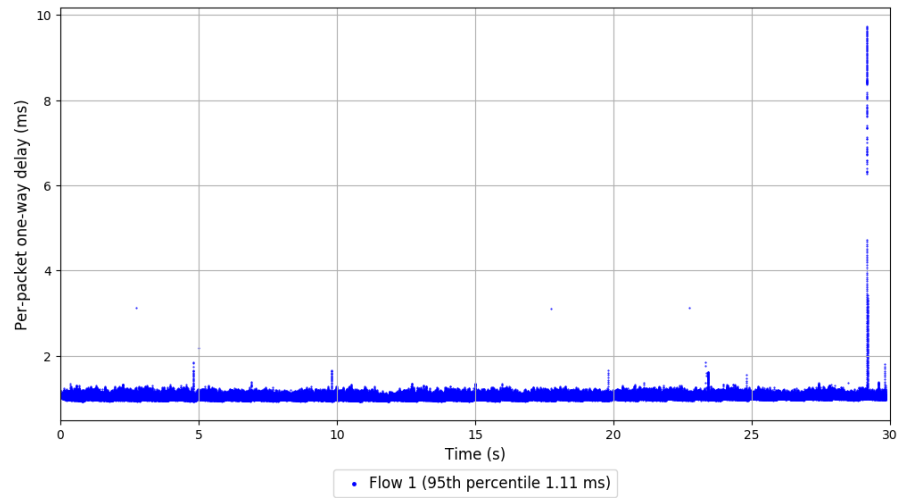
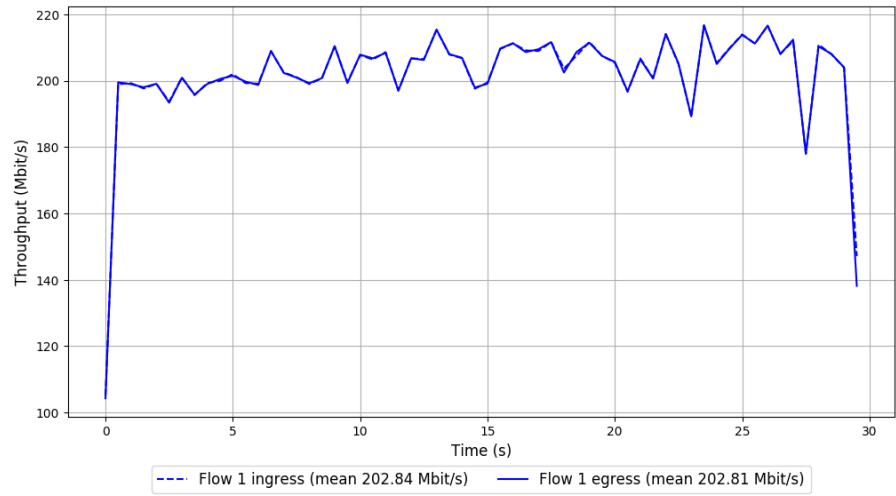


Run 4: Statistics of Indigo

Start at: 2017-11-15 21:16:05
End at: 2017-11-15 21:16:35
Local clock offset: 1.915 ms
Remote clock offset: -1.745 ms

Below is generated by plot.py at 2017-11-16 03:46:29
Datalink statistics
-- Total of 1 flow:
Average throughput: 202.81 Mbit/s
95th percentile per-packet one-way delay: 1.114 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 202.81 Mbit/s
95th percentile per-packet one-way delay: 1.114 ms
Loss rate: 0.08%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2017-11-15 21:35:26

End at: 2017-11-15 21:35:56

Local clock offset: 0.505 ms

Remote clock offset: -1.62 ms

Below is generated by plot.py at 2017-11-16 03:46:29

Datalink statistics

-- Total of 1 flow:

Average throughput: 201.56 Mbit/s

95th percentile per-packet one-way delay: 1.143 ms

Loss rate: 0.06%

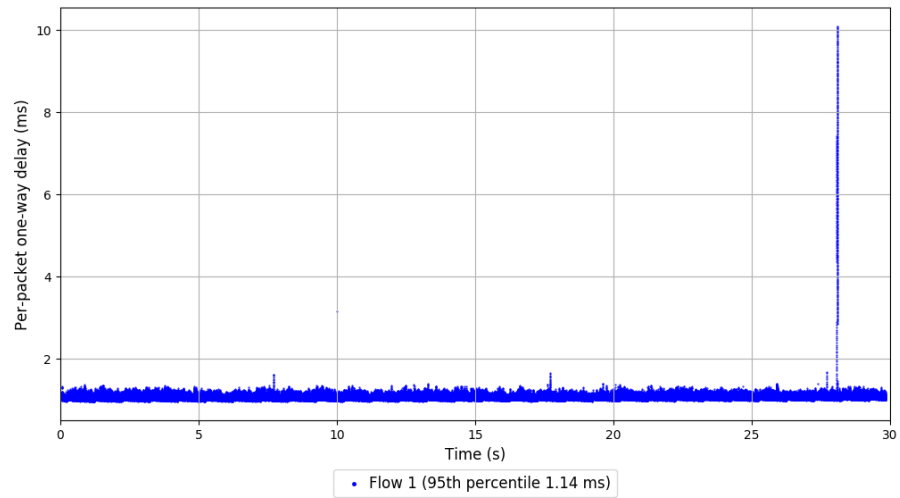
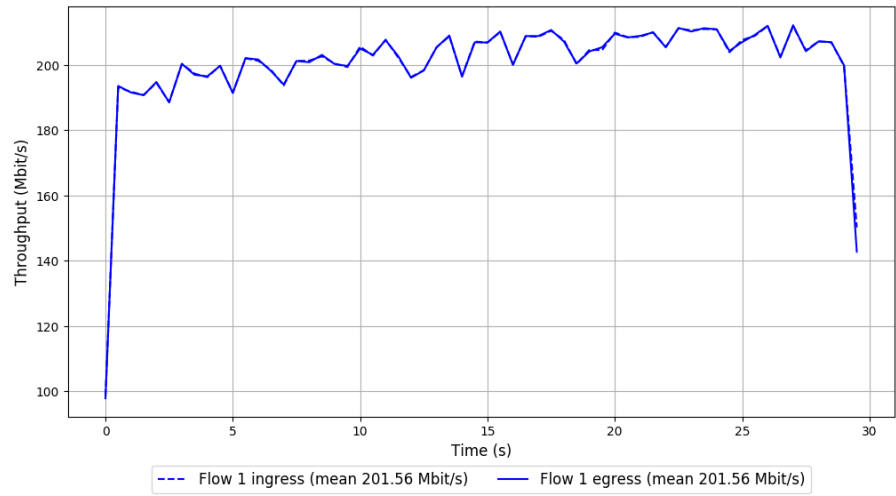
-- Flow 1:

Average throughput: 201.56 Mbit/s

95th percentile per-packet one-way delay: 1.143 ms

Loss rate: 0.06%

Run 5: Report of Indigo — Data Link

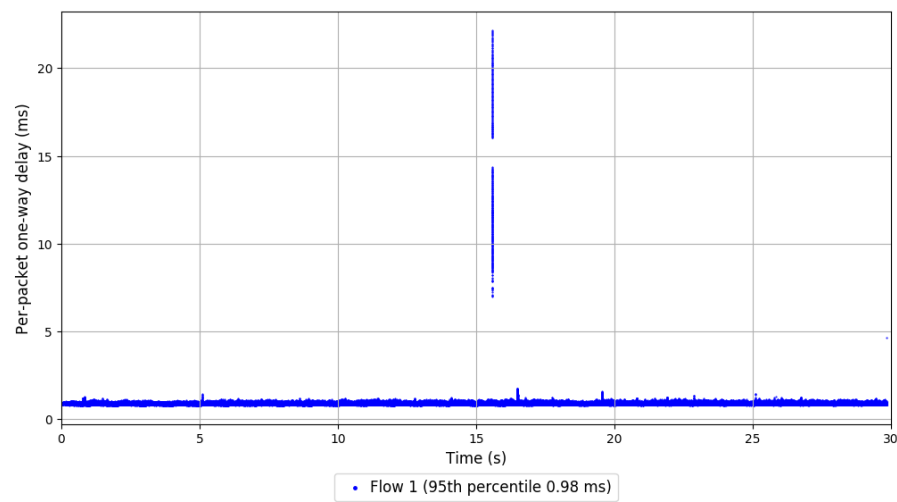
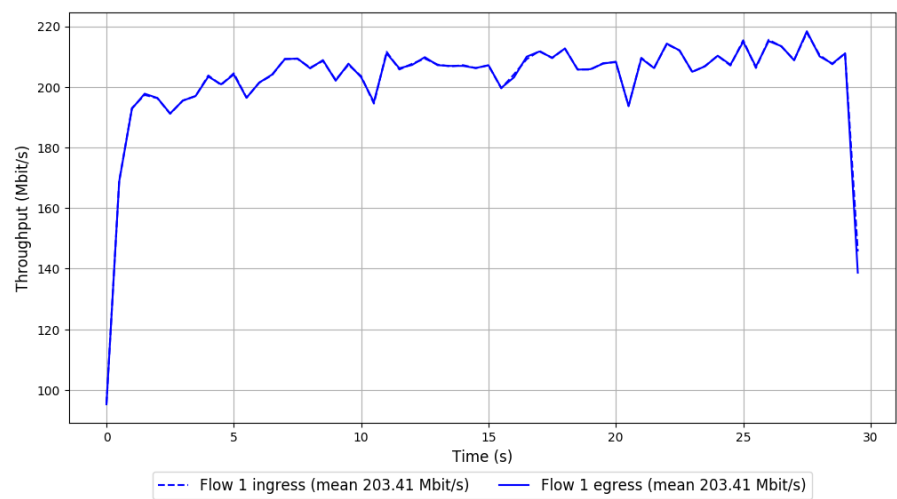


Run 6: Statistics of Indigo

Start at: 2017-11-15 21:54:44
End at: 2017-11-15 21:55:14
Local clock offset: -0.586 ms
Remote clock offset: -1.307 ms

Below is generated by plot.py at 2017-11-16 03:47:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 203.41 Mbit/s
95th percentile per-packet one-way delay: 0.977 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 203.41 Mbit/s
95th percentile per-packet one-way delay: 0.977 ms
Loss rate: 0.06%

Run 6: Report of Indigo — Data Link

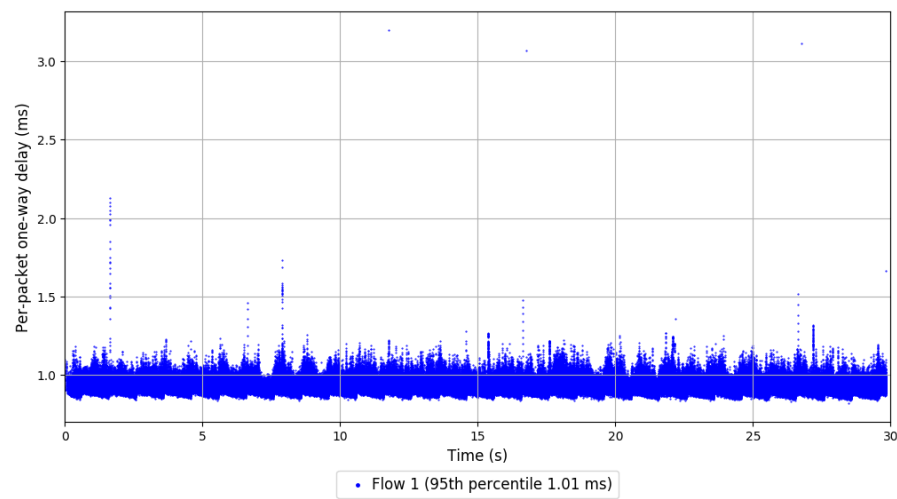
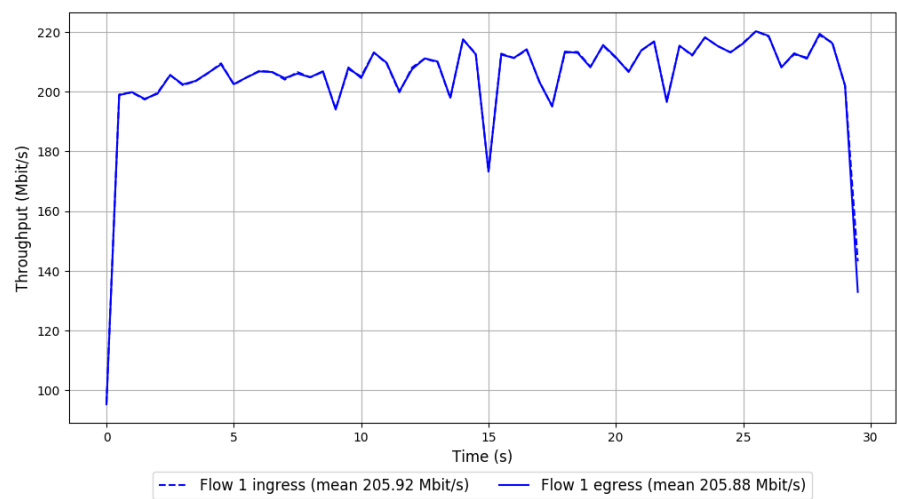


Run 7: Statistics of Indigo

Start at: 2017-11-15 22:13:55
End at: 2017-11-15 22:14:26
Local clock offset: -0.404 ms
Remote clock offset: -1.186 ms

Below is generated by plot.py at 2017-11-16 03:47:27
Datalink statistics
-- Total of 1 flow:
Average throughput: 205.88 Mbit/s
95th percentile per-packet one-way delay: 1.007 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 205.88 Mbit/s
95th percentile per-packet one-way delay: 1.007 ms
Loss rate: 0.09%

Run 7: Report of Indigo — Data Link



Run 8: Statistics of Indigo

Start at: 2017-11-15 22:33:09

End at: 2017-11-15 22:33:39

Local clock offset: 0.452 ms

Remote clock offset: -1.098 ms

Below is generated by plot.py at 2017-11-16 03:47:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 203.46 Mbit/s

95th percentile per-packet one-way delay: 1.042 ms

Loss rate: 0.08%

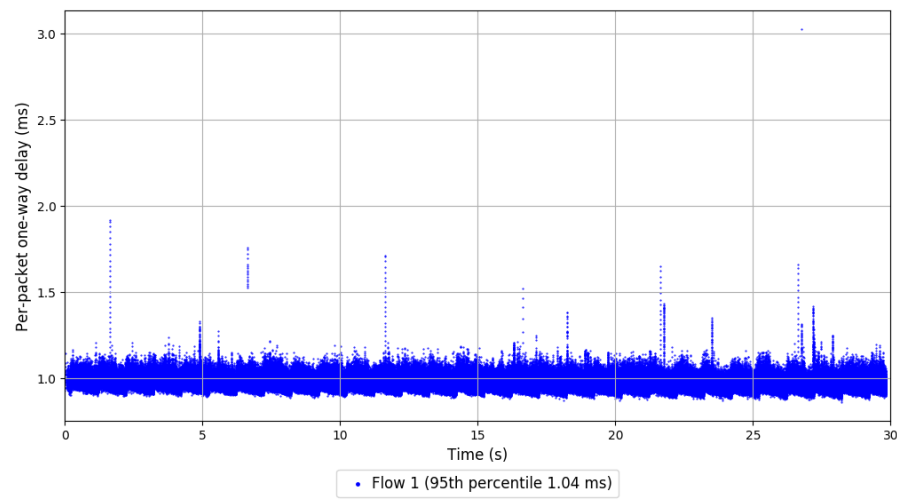
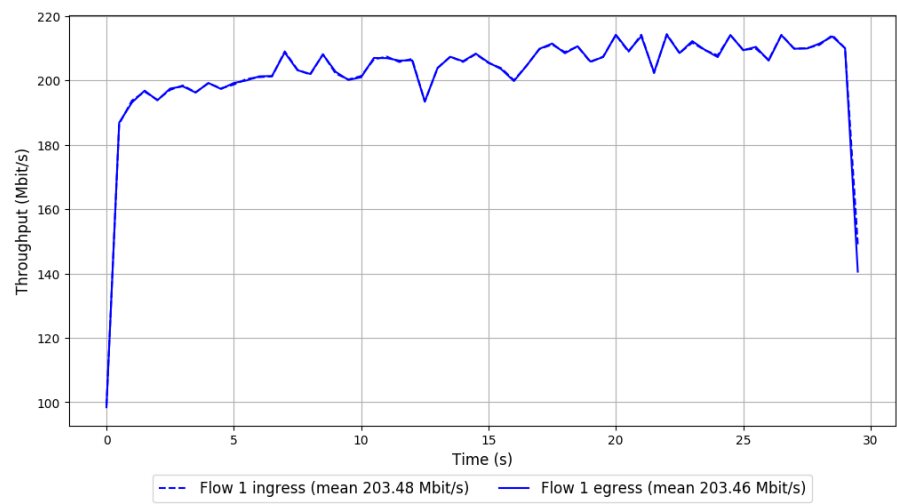
-- Flow 1:

Average throughput: 203.46 Mbit/s

95th percentile per-packet one-way delay: 1.042 ms

Loss rate: 0.08%

Run 8: Report of Indigo — Data Link

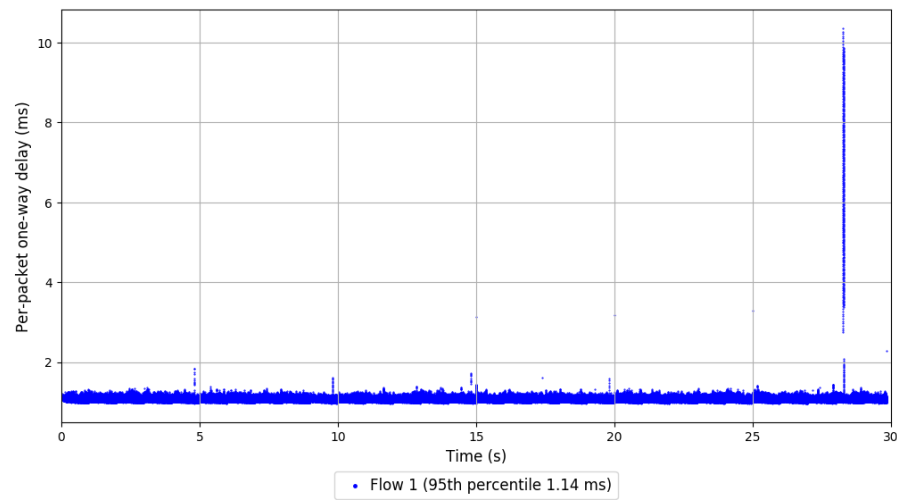
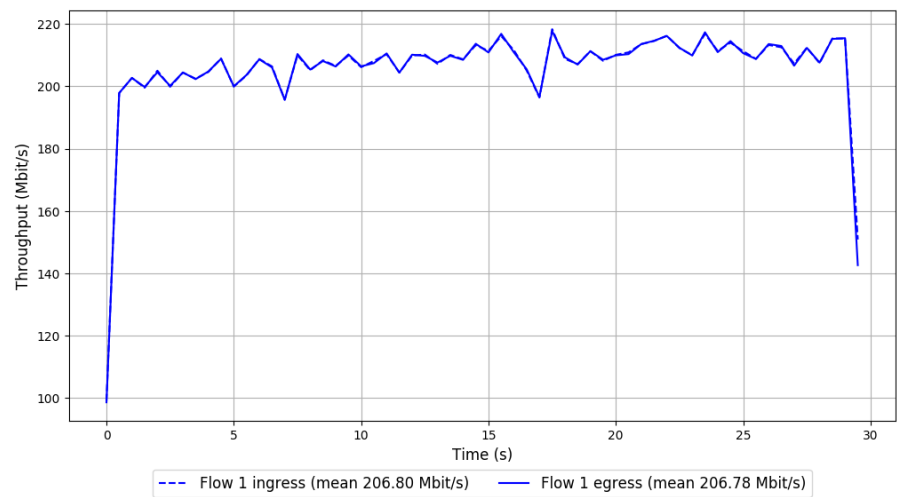


Run 9: Statistics of Indigo

Start at: 2017-11-15 22:52:22
End at: 2017-11-15 22:52:52
Local clock offset: 1.282 ms
Remote clock offset: -1.179 ms

Below is generated by plot.py at 2017-11-16 03:48:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 206.78 Mbit/s
95th percentile per-packet one-way delay: 1.144 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 206.78 Mbit/s
95th percentile per-packet one-way delay: 1.144 ms
Loss rate: 0.07%

Run 9: Report of Indigo — Data Link



Run 10: Statistics of Indigo

Start at: 2017-11-15 23:11:43

End at: 2017-11-15 23:12:13

Local clock offset: 1.518 ms

Remote clock offset: -0.706 ms

Below is generated by plot.py at 2017-11-16 03:49:15

Datalink statistics

-- Total of 1 flow:

Average throughput: 202.45 Mbit/s

95th percentile per-packet one-way delay: 1.088 ms

Loss rate: 0.06%

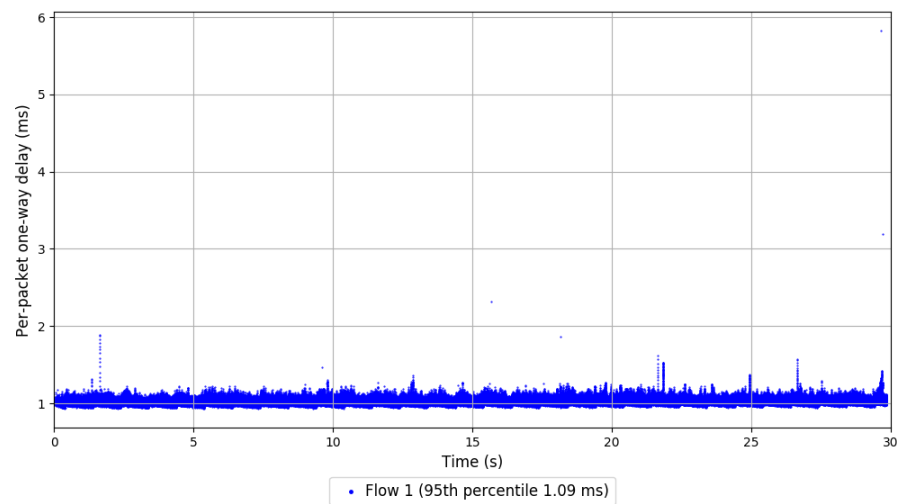
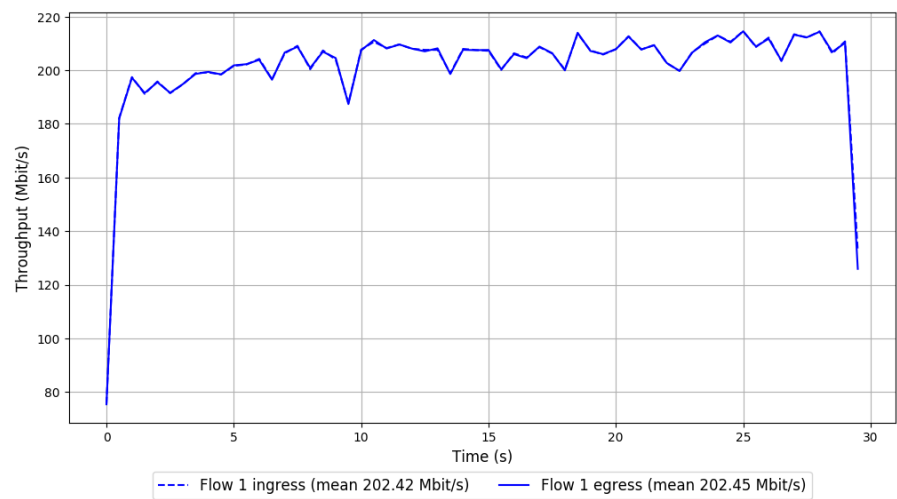
-- Flow 1:

Average throughput: 202.45 Mbit/s

95th percentile per-packet one-way delay: 1.088 ms

Loss rate: 0.06%

Run 10: Report of Indigo — Data Link

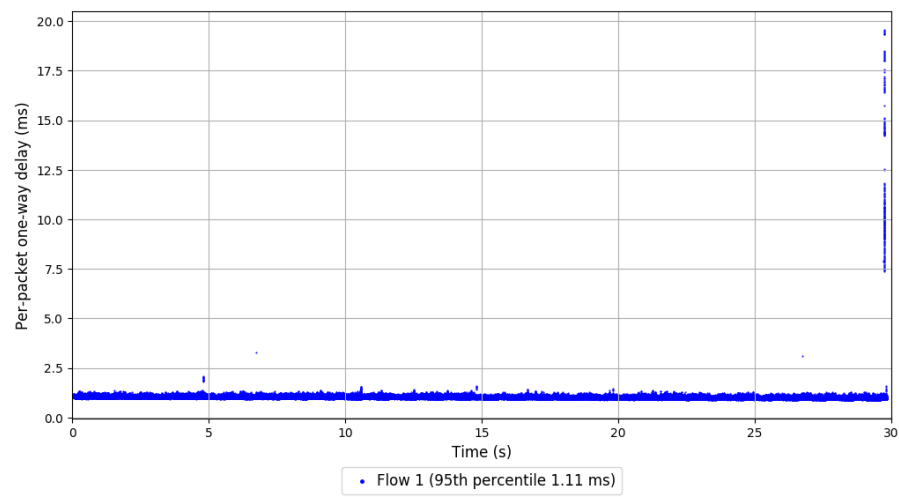
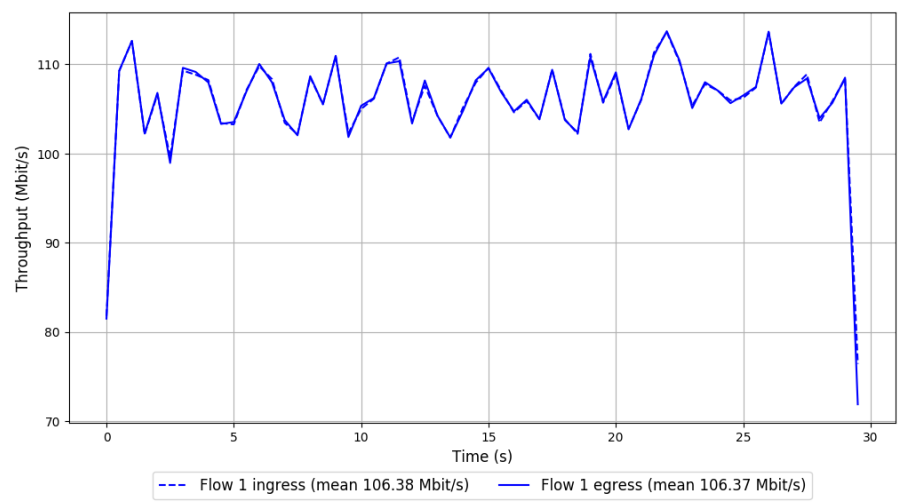


```
Run 1: Statistics of Indigo-calib

Start at: 2017-11-15 20:21:19
End at: 2017-11-15 20:21:49
Local clock offset: -0.657 ms
Remote clock offset: -2.484 ms

# Below is generated by plot.py at 2017-11-16 03:49:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 106.37 Mbit/s
95th percentile per-packet one-way delay: 1.115 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 106.37 Mbit/s
95th percentile per-packet one-way delay: 1.115 ms
Loss rate: 0.07%
```

Run 1: Report of Indigo-calib — Data Link

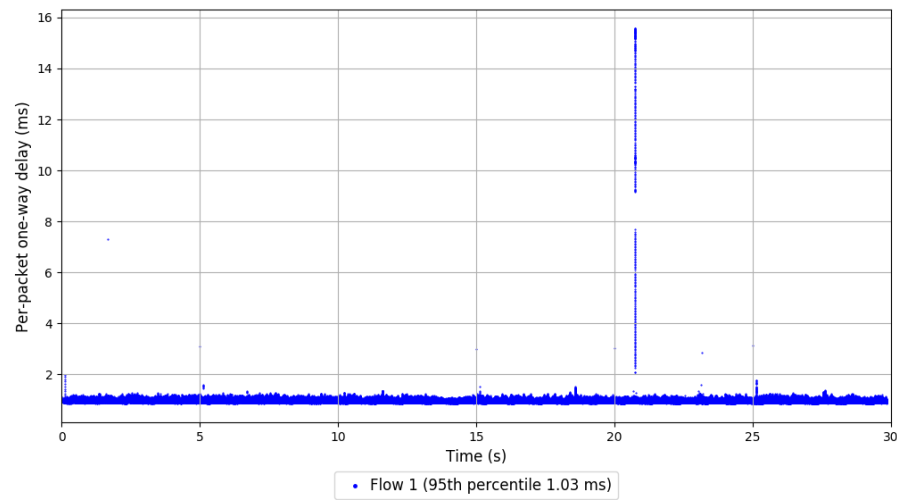
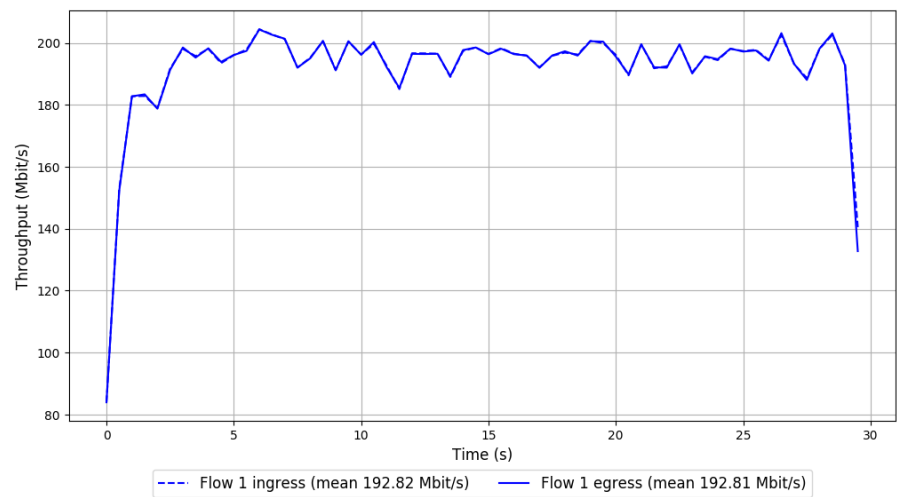


```
Run 2: Statistics of Indigo-calib

Start at: 2017-11-15 20:40:23
End at: 2017-11-15 20:40:53
Local clock offset: 1.292 ms
Remote clock offset: -1.957 ms

# Below is generated by plot.py at 2017-11-16 03:49:31
# Datalink statistics
-- Total of 1 flow:
Average throughput: 192.81 Mbit/s
95th percentile per-packet one-way delay: 1.030 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 192.81 Mbit/s
95th percentile per-packet one-way delay: 1.030 ms
Loss rate: 0.07%
```

Run 2: Report of Indigo-calib — Data Link



Run 3: Statistics of Indigo-calib

Start at: 2017-11-15 20:59:46

End at: 2017-11-15 21:00:16

Local clock offset: 1.984 ms

Remote clock offset: -1.722 ms

Below is generated by plot.py at 2017-11-16 03:49:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 201.54 Mbit/s

95th percentile per-packet one-way delay: 1.108 ms

Loss rate: 0.06%

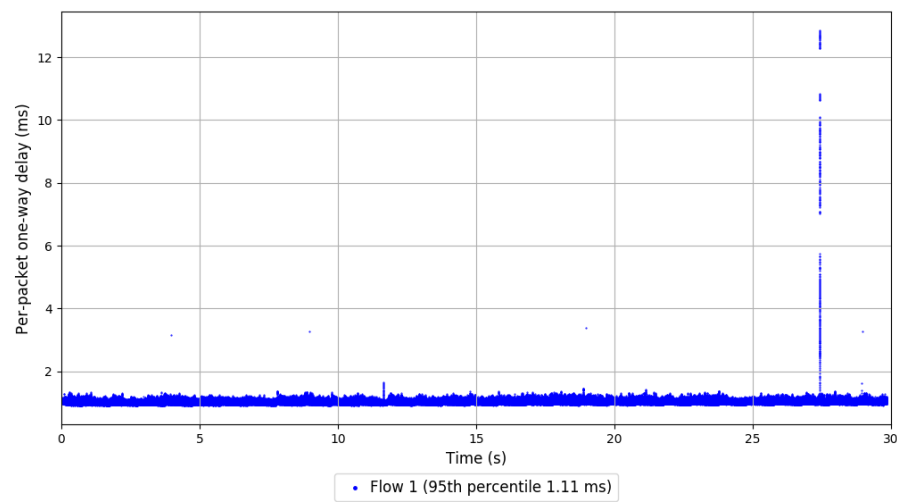
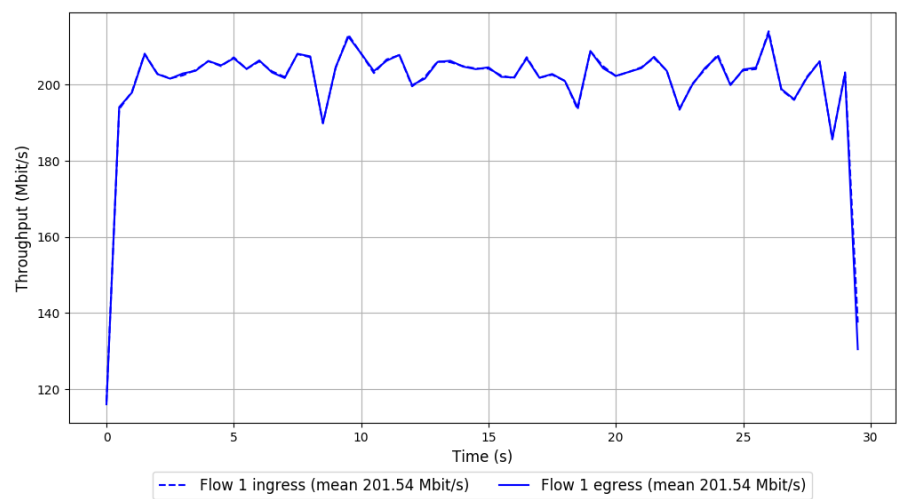
-- Flow 1:

Average throughput: 201.54 Mbit/s

95th percentile per-packet one-way delay: 1.108 ms

Loss rate: 0.06%

Run 3: Report of Indigo-calib — Data Link



Run 4: Statistics of Indigo-calib

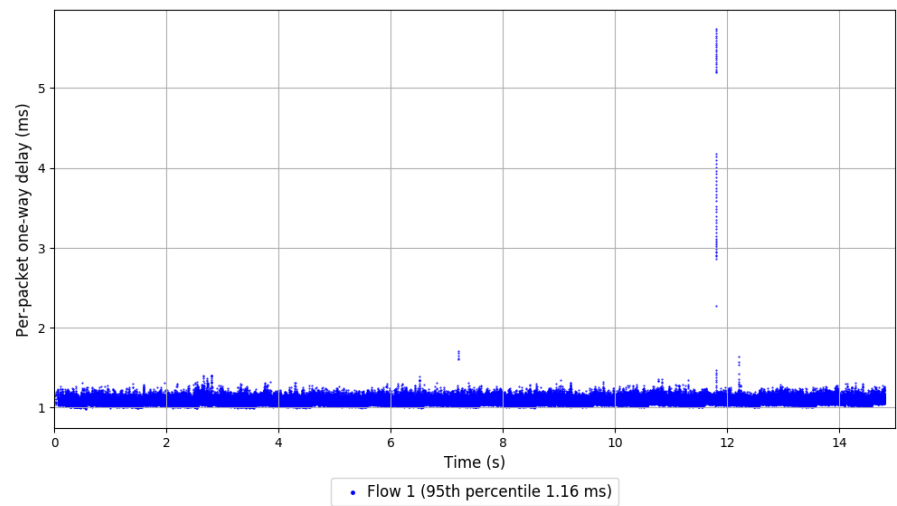
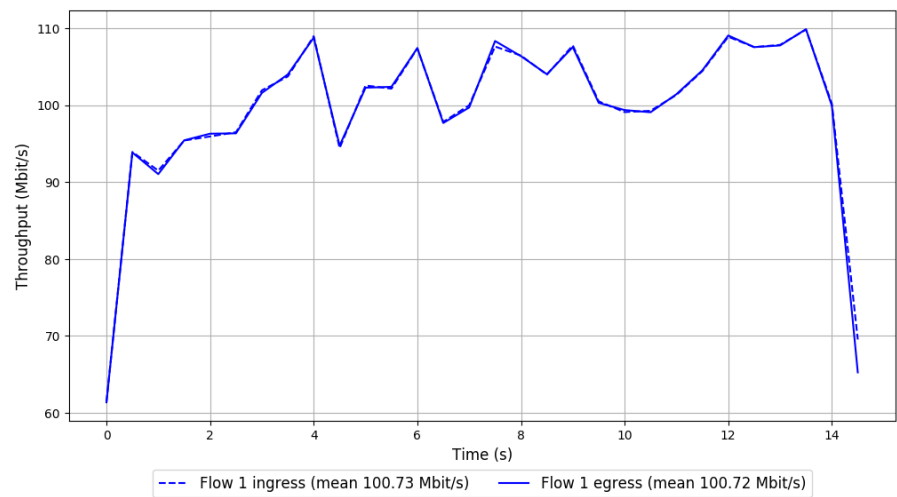
Start at: 2017-11-15 21:19:08

End at: 2017-11-15 21:19:38

Local clock offset: 1.657 ms

Remote clock offset: -1.783 ms

Run 4: Report of Indigo-calib — Data Link

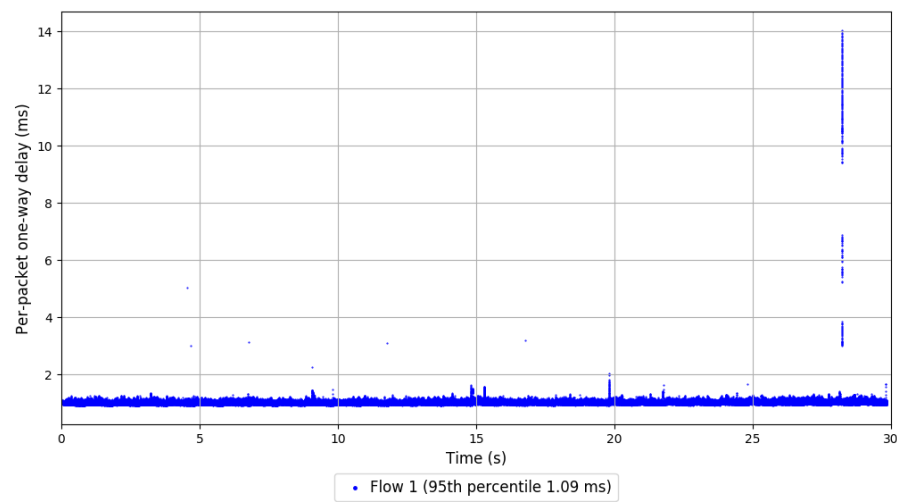
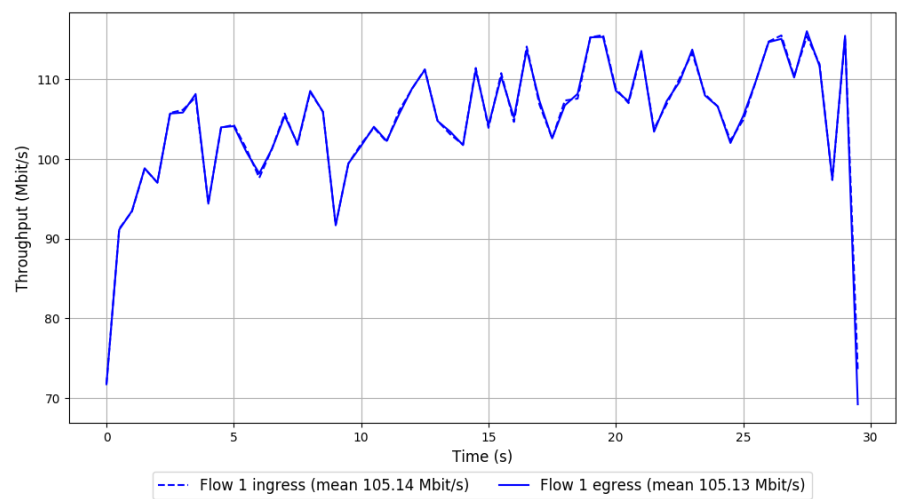


Run 5: Statistics of Indigo-calib

Start at: 2017-11-15 21:38:31
End at: 2017-11-15 21:39:01
Local clock offset: 0.323 ms
Remote clock offset: -1.591 ms

Below is generated by plot.py at 2017-11-16 03:49:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 105.13 Mbit/s
95th percentile per-packet one-way delay: 1.089 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 105.13 Mbit/s
95th percentile per-packet one-way delay: 1.089 ms
Loss rate: 0.07%

Run 5: Report of Indigo-calib — Data Link



Run 6: Statistics of Indigo-calib

Start at: 2017-11-15 21:57:34

End at: 2017-11-15 21:58:04

Local clock offset: -0.598 ms

Remote clock offset: -1.423 ms

Below is generated by plot.py at 2017-11-16 03:49:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 106.69 Mbit/s

95th percentile per-packet one-way delay: 1.210 ms

Loss rate: 0.07%

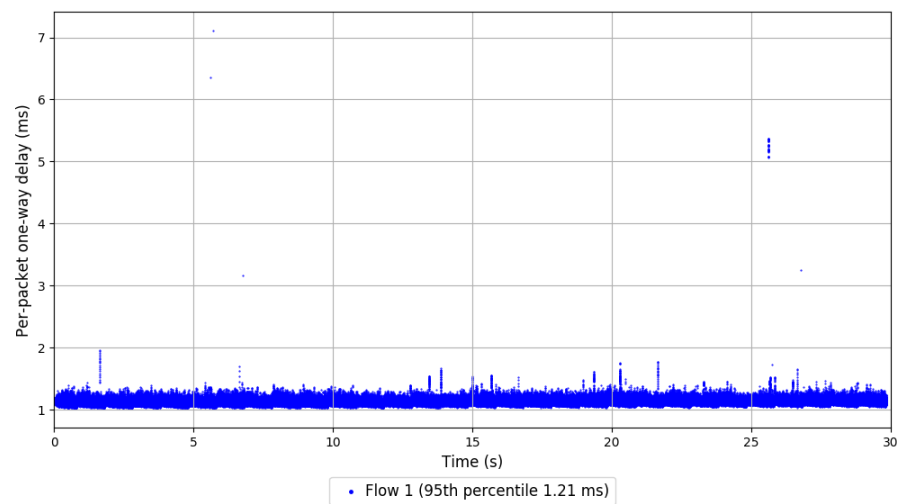
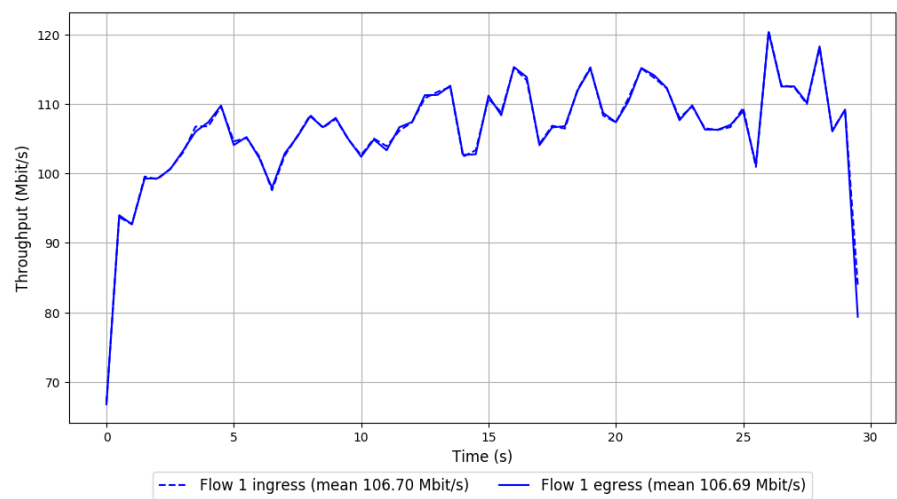
-- Flow 1:

Average throughput: 106.69 Mbit/s

95th percentile per-packet one-way delay: 1.210 ms

Loss rate: 0.07%

Run 6: Report of Indigo-calib — Data Link

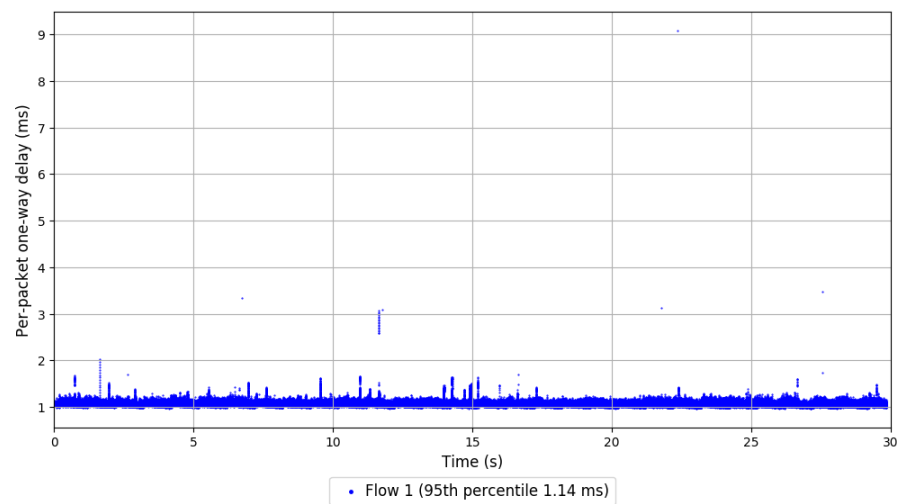
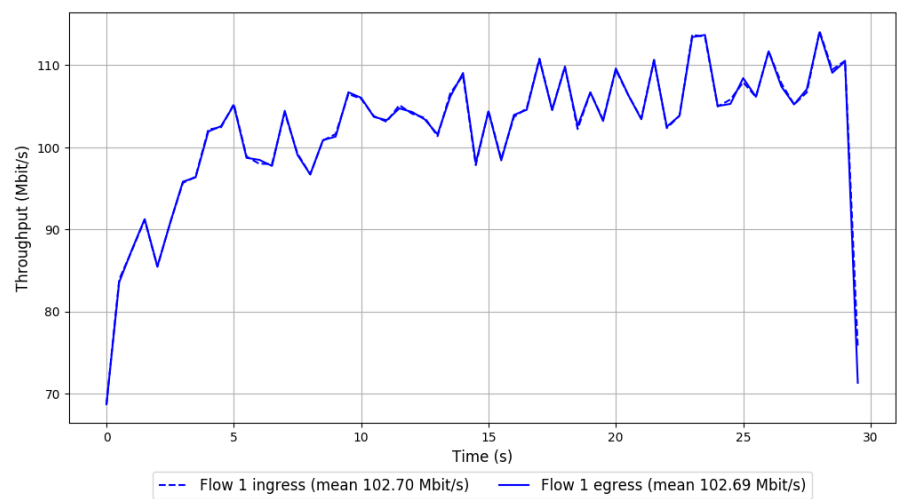


Run 7: Statistics of Indigo-calib

Start at: 2017-11-15 22:17:00
End at: 2017-11-15 22:17:30
Local clock offset: -0.186 ms
Remote clock offset: -1.196 ms

Below is generated by plot.py at 2017-11-16 03:49:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 102.69 Mbit/s
95th percentile per-packet one-way delay: 1.141 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 102.69 Mbit/s
95th percentile per-packet one-way delay: 1.141 ms
Loss rate: 0.08%

Run 7: Report of Indigo-calib — Data Link



Run 8: Statistics of Indigo-calib

Start at: 2017-11-15 22:36:12

End at: 2017-11-15 22:36:42

Local clock offset: 0.613 ms

Remote clock offset: -0.968 ms

Below is generated by plot.py at 2017-11-16 03:49:37

Datalink statistics

-- Total of 1 flow:

Average throughput: 107.87 Mbit/s

95th percentile per-packet one-way delay: 0.931 ms

Loss rate: 0.07%

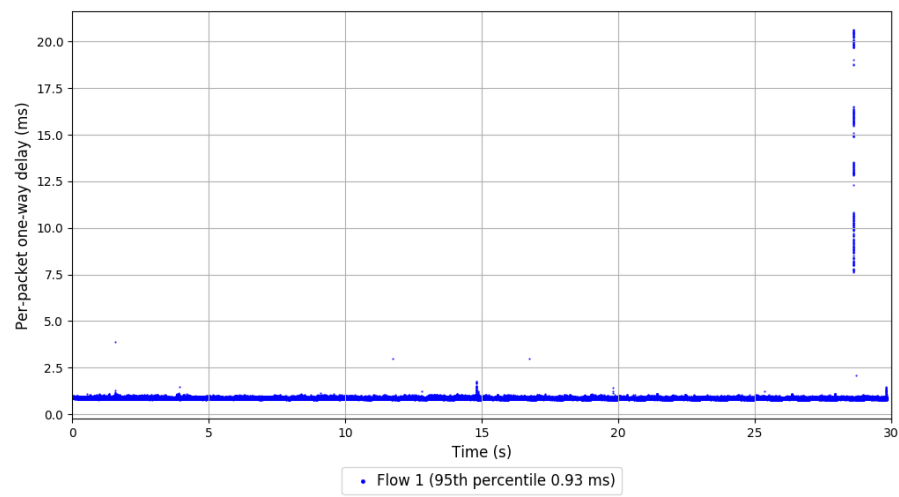
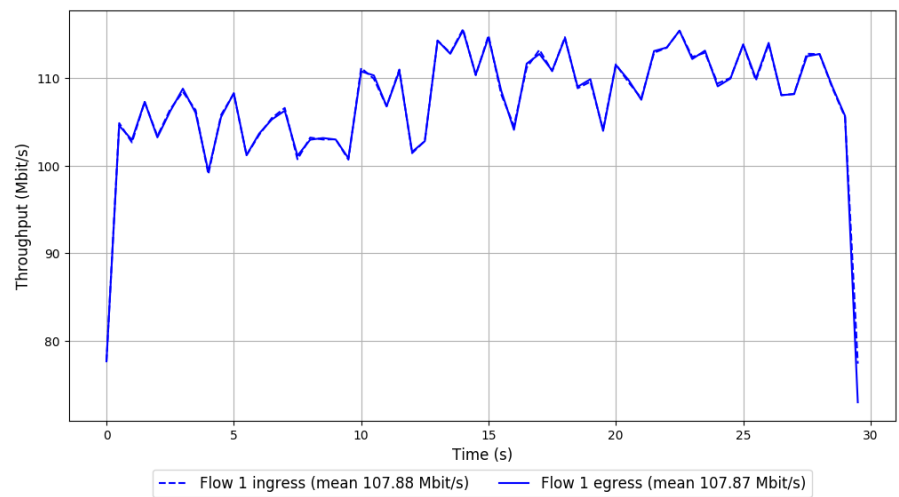
-- Flow 1:

Average throughput: 107.87 Mbit/s

95th percentile per-packet one-way delay: 0.931 ms

Loss rate: 0.07%

Run 8: Report of Indigo-calib — Data Link



Run 9: Statistics of Indigo-calib

Start at: 2017-11-15 22:55:28

End at: 2017-11-15 22:55:58

Local clock offset: 1.296 ms

Remote clock offset: -1.046 ms

Below is generated by plot.py at 2017-11-16 03:49:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 198.11 Mbit/s

95th percentile per-packet one-way delay: 1.022 ms

Loss rate: 0.08%

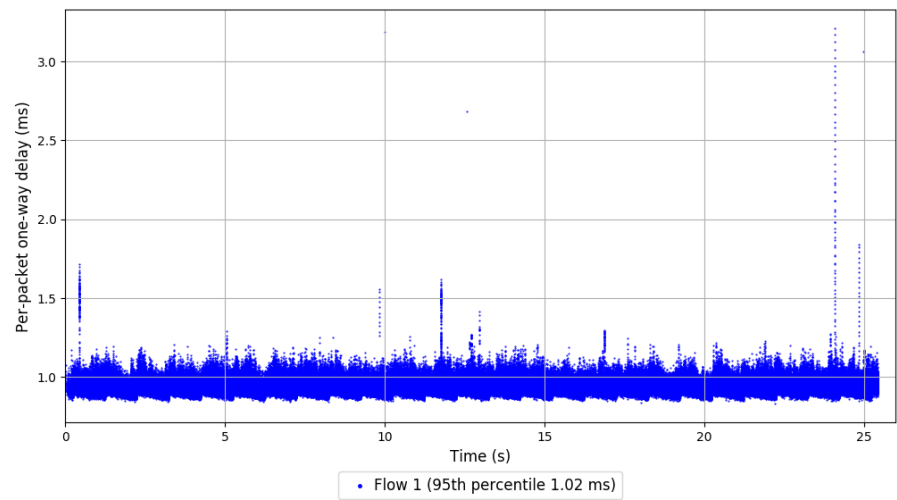
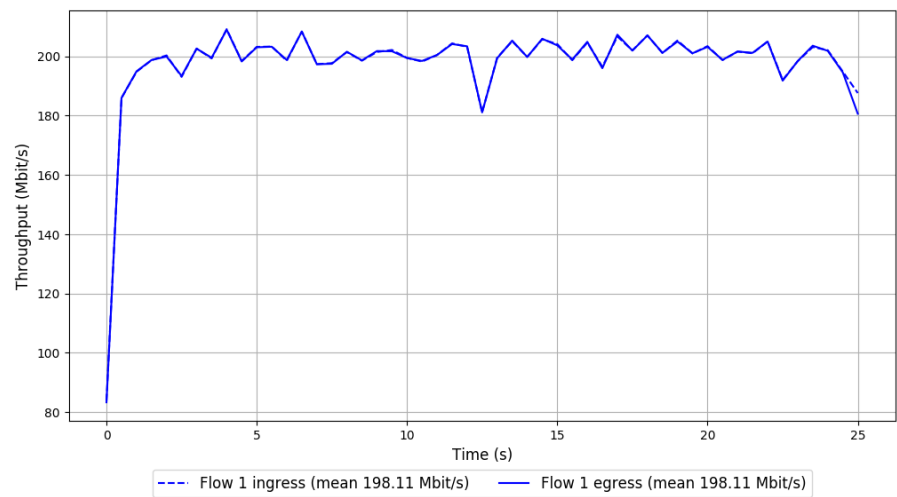
-- Flow 1:

Average throughput: 198.11 Mbit/s

95th percentile per-packet one-way delay: 1.022 ms

Loss rate: 0.08%

Run 9: Report of Indigo-calib — Data Link



Run 10: Statistics of Indigo-calib

Start at: 2017-11-15 23:14:49

End at: 2017-11-15 23:15:19

Local clock offset: 1.577 ms

Remote clock offset: -0.667 ms

Below is generated by plot.py at 2017-11-16 03:49:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 134.27 Mbit/s

95th percentile per-packet one-way delay: 1.170 ms

Loss rate: 0.09%

-- Flow 1:

Average throughput: 134.27 Mbit/s

95th percentile per-packet one-way delay: 1.170 ms

Loss rate: 0.09%

Run 10: Report of Indigo-calib — Data Link

