

Pantheon Report

Generated at 2017-12-01 01:04:41 (UTC).

Data path: AWS Korea Ethernet (*local*) → China ppp0 (*remote*).

Repeated the test of 14 congestion control schemes 3 times.

Each test lasted for 30 seconds running 1 flow.

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

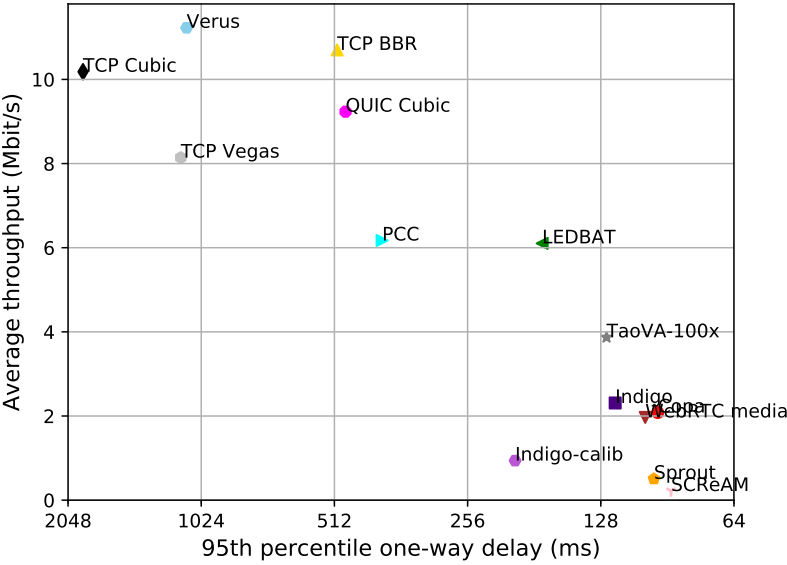
Tested BBR with qdisc of Fair Queuing (**fq**), and other schemes with the default Linux qdisc (**pfifo_fast**).

NTP offsets were measured against `ntp.nict.jp` and have been applied to correct the timestamps in logs.

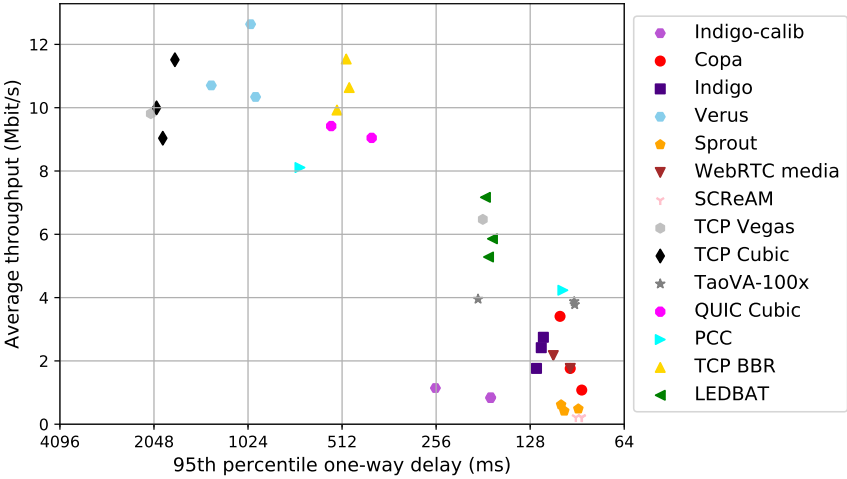
Git summary:

```
branch: indigos @ e3a57ad5ac5cfcaca0e3f983c8dd4cc3509e0262
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
  M datagrump/sender.cc
third_party/genericCC @ b5b7c38e8391001927dc41c6cfa2627d03dde737
third_party/indigo @ b19f3730105f9aa95452552af924e3719b03cc55
third_party/indigo-cellular @ aee99e8eb842cb053f8c9a80e28cd256a930bbc2
third_party/indigo-no-calib @ 7224f2202e8a044d8306fa0b983ad84360c53d89
third_party/indigo-no-cwnd @ 3e58442c04028a11d7b02456e137604633ba2d6c
third_party/indigo-no-delivery-rate @ 57caa40858b964906edff4876d5a7e5bfff666c5
third_party/indigo-no-queuing-delay @ 03455460fd1a8ffbdad86fab936fdca204b80db
third_party/indigo-no-send-rate @ b39dfa6b2c5f19cb7cd89626cb4f5bb81f9fecda
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
  M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ baf443516dea3eeddeccaf9b916cc313273ca4f4
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
  M receiver/src/buffer.h
  M receiver/src/core.cpp
  M sender/src/buffer.h
  M sender/src/core.cpp
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream @ c3370fd7bd17265a79aeb34e4016ad23f5965885
third_party/sourdough @ f1a14bffe749737437f61b1eaaeb30b267cde681
third_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce
  M src/examples/cellsim.cc
  M src/examples/sproutbt2.cc
  M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
  M src/verus.hpp
  M tools/plot.py
third_party/webrtc @ a488197ddd041ace68a42849b2540ad834825f42
```

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



test from AWS Korea Ethernet to China ppp0, 3 runs of 30s each per scheme



scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	10.70	504.64	0.97
TCP Cubic	3	10.19	1894.62	4.69
LEDBAT	3	6.10	173.70	0.63
PCC	2	6.17	399.43	0.15
QUIC Cubic	2	9.23	483.18	1.76
SCReAM	3	0.22	88.80	0.09
WebRTC media	2	1.96	101.57	0.17
Sprout	3	0.51	97.08	0.01
TaoVA-100x	3	3.87	124.22	0.04
TCP Vegas	2	8.14	1138.79	2.06
Verus	3	11.23	1105.14	2.98
Copa	3	2.08	95.18	0.26
Indigo	3	2.31	118.76	0.14
Indigo-calib	3	0.94	199.95	0.14

Run 1: Statistics of TCP BBR

Start at: 2017-12-01 00:25:35

End at: 2017-12-01 00:26:05

Local clock offset: -1.245 ms

Remote clock offset: -6.568 ms

Below is generated by plot.py at 2017-12-01 01:04:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 11.54 Mbit/s

95th percentile per-packet one-way delay: 496.604 ms

Loss rate: 1.01%

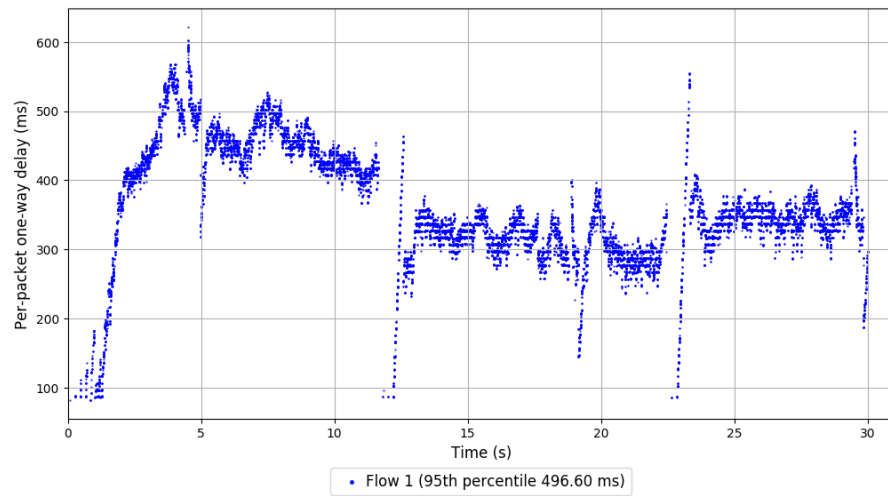
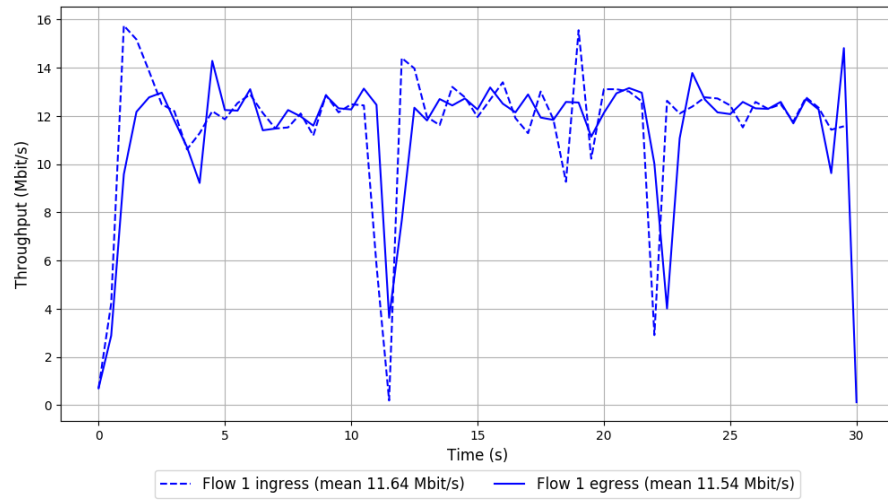
-- Flow 1:

Average throughput: 11.54 Mbit/s

95th percentile per-packet one-way delay: 496.604 ms

Loss rate: 1.01%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2017-12-01 00:41:41

End at: 2017-12-01 00:42:11

Local clock offset: -1.064 ms

Remote clock offset: -6.62 ms

Below is generated by plot.py at 2017-12-01 01:04:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 10.64 Mbit/s

95th percentile per-packet one-way delay: 485.649 ms

Loss rate: 0.85%

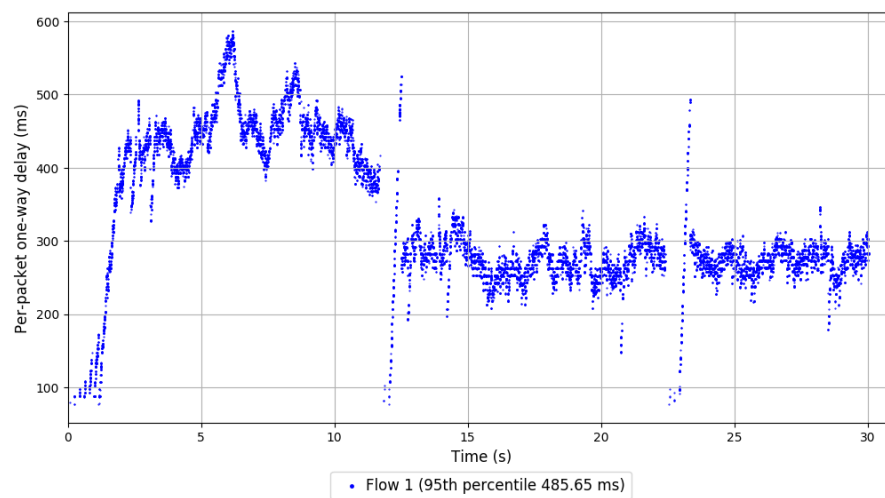
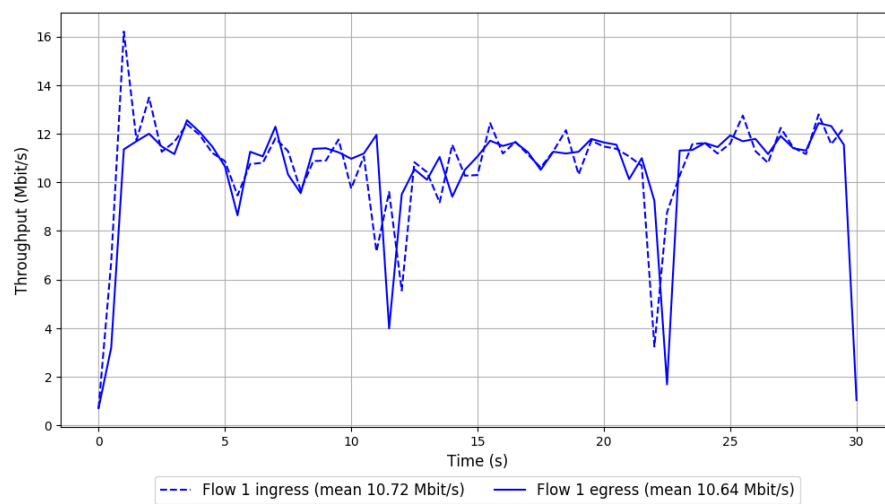
-- Flow 1:

Average throughput: 10.64 Mbit/s

95th percentile per-packet one-way delay: 485.649 ms

Loss rate: 0.85%

Run 2: Report of TCP BBR — Data Link

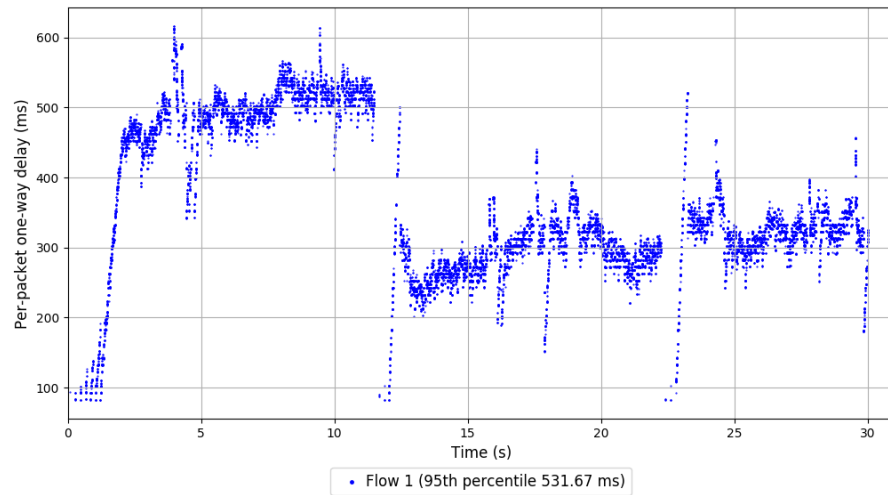
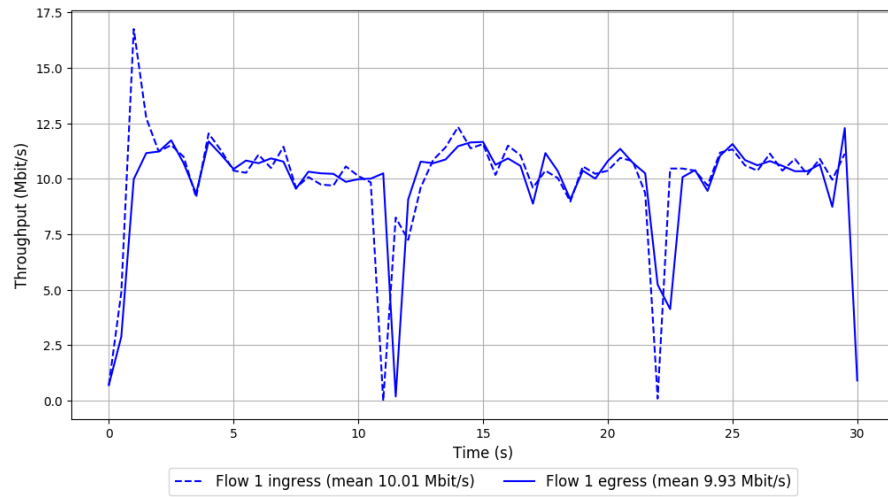


Run 3: Statistics of TCP BBR

Start at: 2017-12-01 00:57:48
End at: 2017-12-01 00:58:18
Local clock offset: -0.701 ms
Remote clock offset: -6.704 ms

Below is generated by plot.py at 2017-12-01 01:04:04
Datalink statistics
-- Total of 1 flow:
Average throughput: 9.93 Mbit/s
95th percentile per-packet one-way delay: 531.670 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 9.93 Mbit/s
95th percentile per-packet one-way delay: 531.670 ms
Loss rate: 1.05%

Run 3: Report of TCP BBR — Data Link

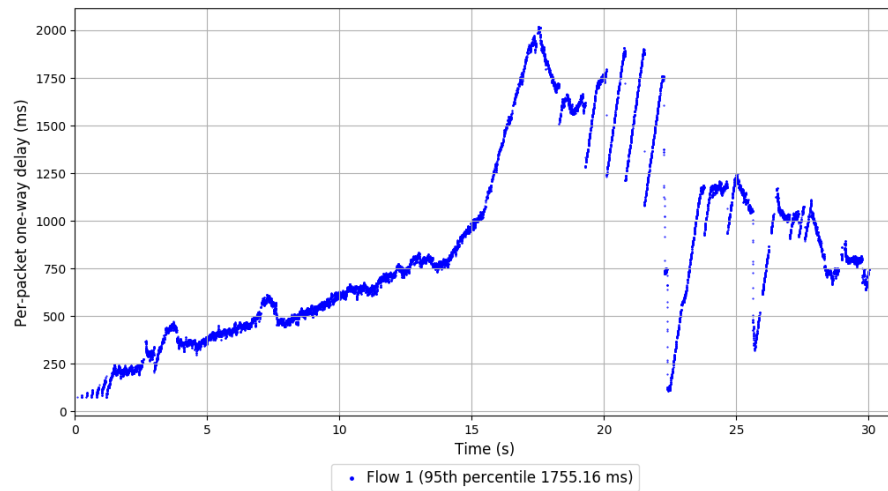
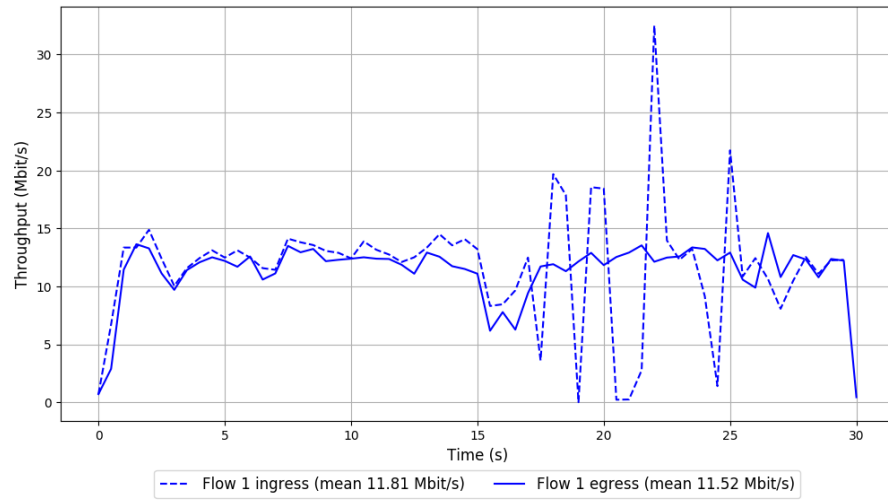


Run 1: Statistics of TCP Cubic

Start at: 2017-12-01 00:18:42
End at: 2017-12-01 00:19:12
Local clock offset: -1.479 ms
Remote clock offset: -6.426 ms

Below is generated by plot.py at 2017-12-01 01:04:04
Datalink statistics
-- Total of 1 flow:
Average throughput: 11.52 Mbit/s
95th percentile per-packet one-way delay: 1755.160 ms
Loss rate: 2.57%
-- Flow 1:
Average throughput: 11.52 Mbit/s
95th percentile per-packet one-way delay: 1755.160 ms
Loss rate: 2.57%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2017-12-01 00:34:47

End at: 2017-12-01 00:35:17

Local clock offset: -1.282 ms

Remote clock offset: -6.62 ms

Below is generated by plot.py at 2017-12-01 01:04:04

Datalink statistics

-- Total of 1 flow:

Average throughput: 9.04 Mbit/s

95th percentile per-packet one-way delay: 1919.092 ms

Loss rate: 6.78%

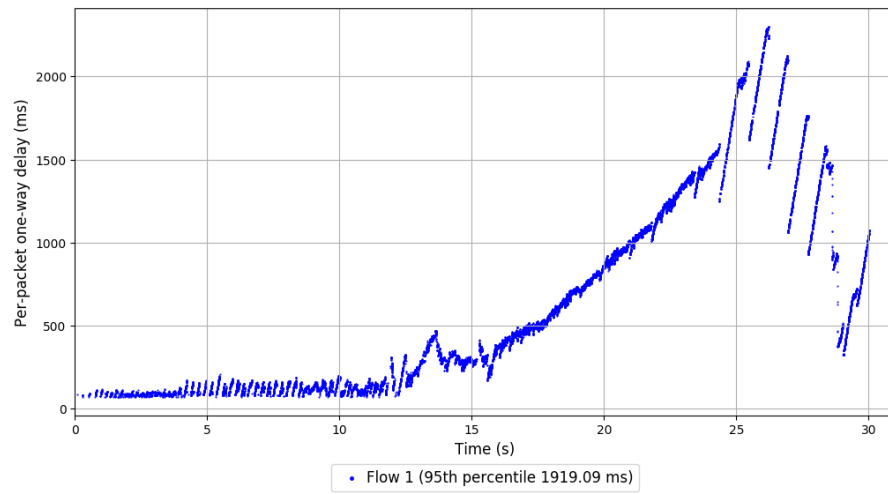
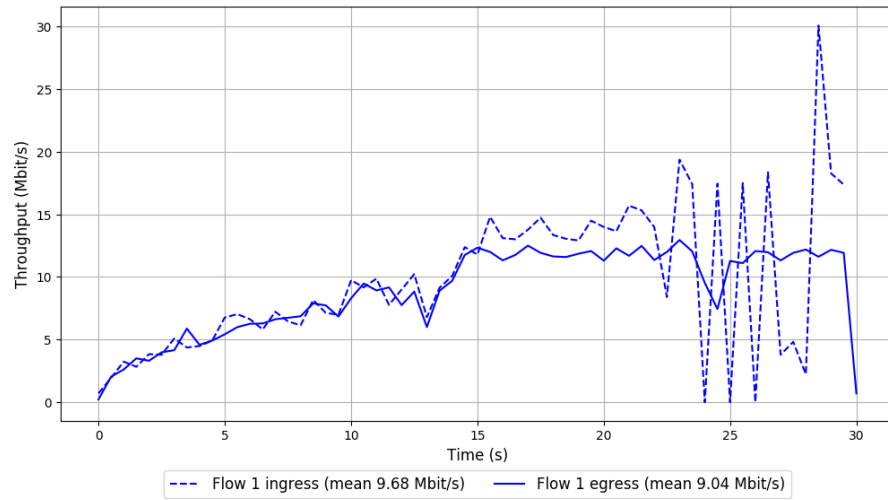
-- Flow 1:

Average throughput: 9.04 Mbit/s

95th percentile per-packet one-way delay: 1919.092 ms

Loss rate: 6.78%

Run 2: Report of TCP Cubic — Data Link

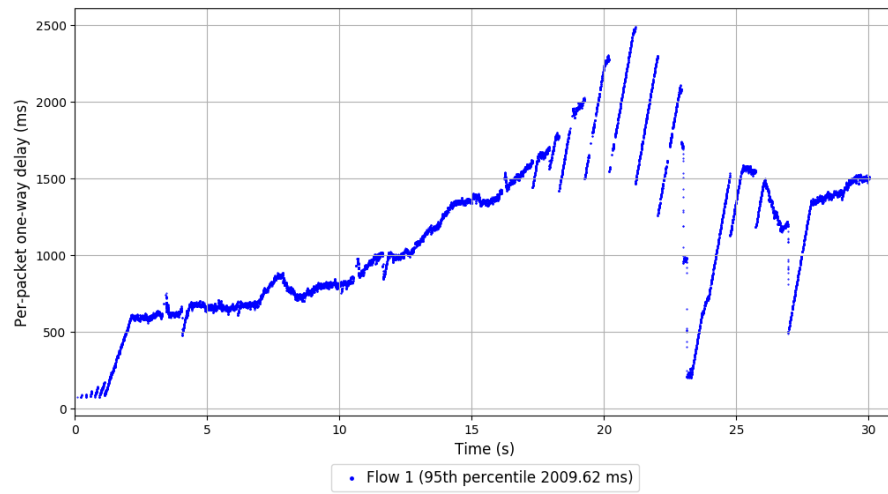
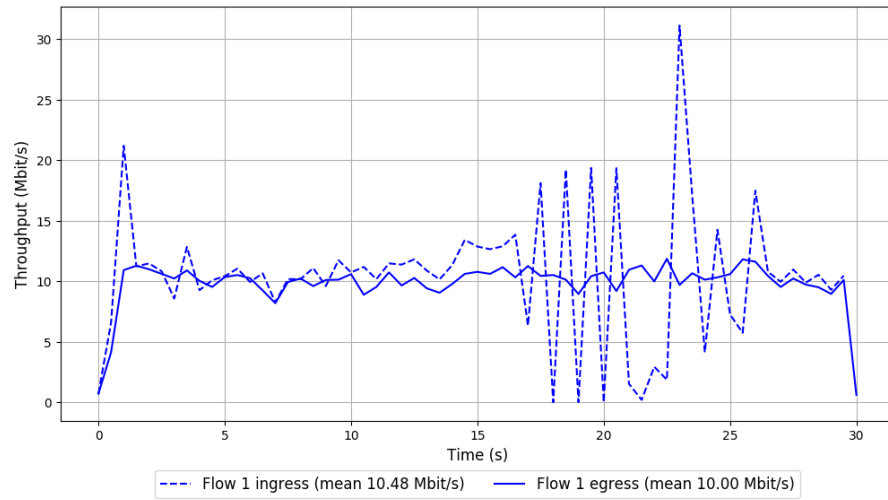


Run 3: Statistics of TCP Cubic

Start at: 2017-12-01 00:50:53
End at: 2017-12-01 00:51:23
Local clock offset: -1.032 ms
Remote clock offset: -6.666 ms

Below is generated by plot.py at 2017-12-01 01:04:04
Datalink statistics
-- Total of 1 flow:
Average throughput: 10.00 Mbit/s
95th percentile per-packet one-way delay: 2009.617 ms
Loss rate: 4.73%
-- Flow 1:
Average throughput: 10.00 Mbit/s
95th percentile per-packet one-way delay: 2009.617 ms
Loss rate: 4.73%

Run 3: Report of TCP Cubic — Data Link

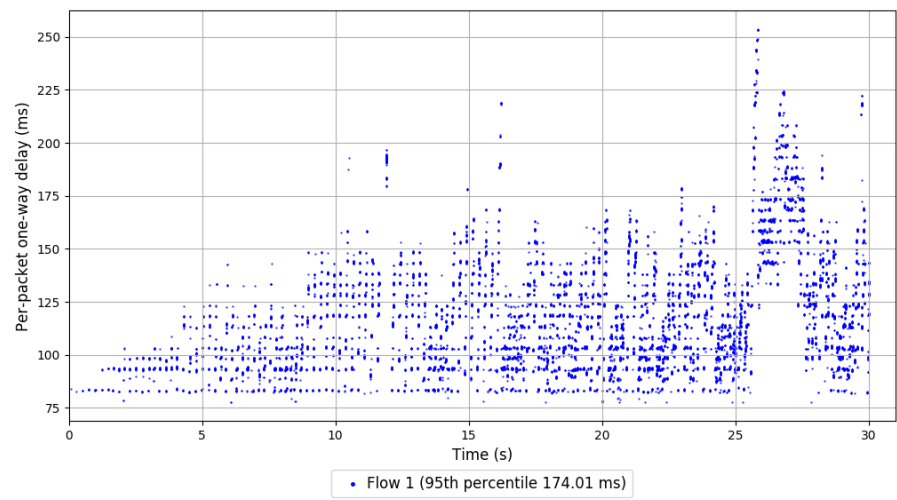
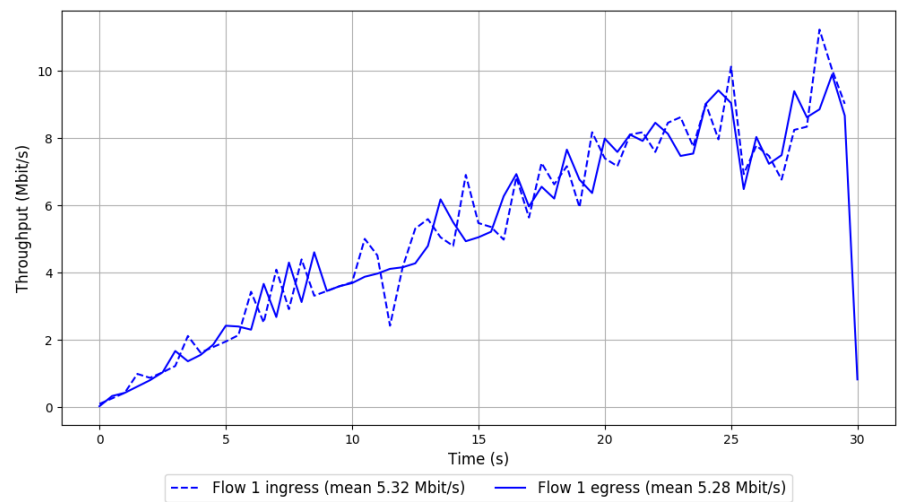


Run 1: Statistics of LEDBAT

Start at: 2017-12-01 00:27:53
End at: 2017-12-01 00:28:23
Local clock offset: -1.228 ms
Remote clock offset: -6.577 ms

Below is generated by plot.py at 2017-12-01 01:04:04
Datalink statistics
-- Total of 1 flow:
Average throughput: 5.28 Mbit/s
95th percentile per-packet one-way delay: 174.012 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 5.28 Mbit/s
95th percentile per-packet one-way delay: 174.012 ms
Loss rate: 0.77%

Run 1: Report of LEDBAT — Data Link

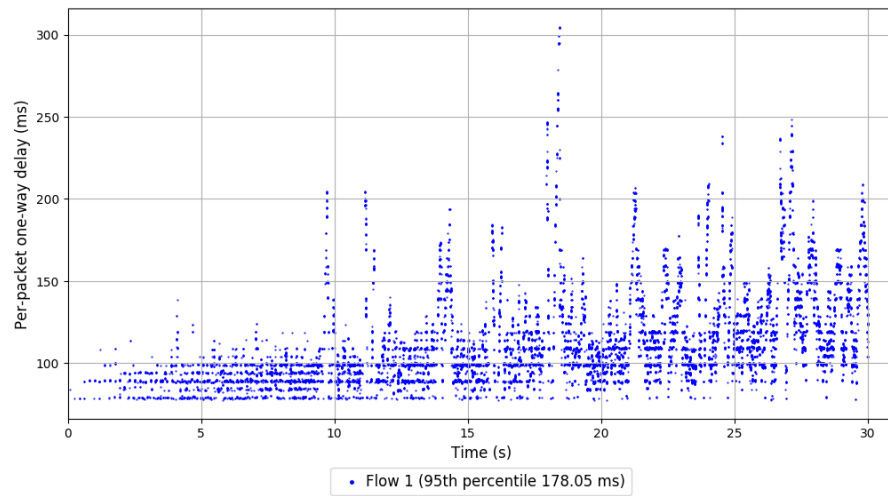
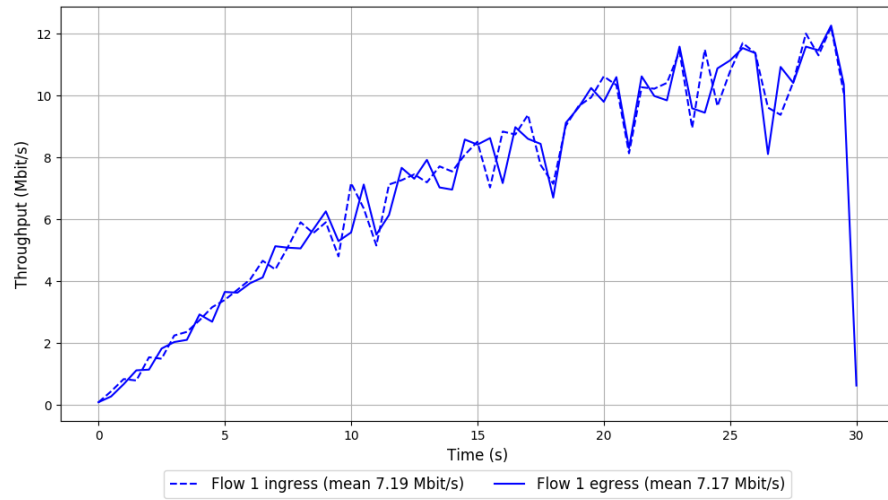


Run 2: Statistics of LEDBAT

Start at: 2017-12-01 00:43:59
End at: 2017-12-01 00:44:29
Local clock offset: -1.031 ms
Remote clock offset: -6.657 ms

Below is generated by plot.py at 2017-12-01 01:04:04
Datalink statistics
-- Total of 1 flow:
Average throughput: 7.17 Mbit/s
95th percentile per-packet one-way delay: 178.046 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 7.17 Mbit/s
95th percentile per-packet one-way delay: 178.046 ms
Loss rate: 0.41%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2017-12-01 01:00:06

End at: 2017-12-01 01:00:36

Local clock offset: -0.76 ms

Remote clock offset: -6.69 ms

Below is generated by plot.py at 2017-12-01 01:04:05

Datalink statistics

-- Total of 1 flow:

Average throughput: 5.86 Mbit/s

95th percentile per-packet one-way delay: 169.055 ms

Loss rate: 0.71%

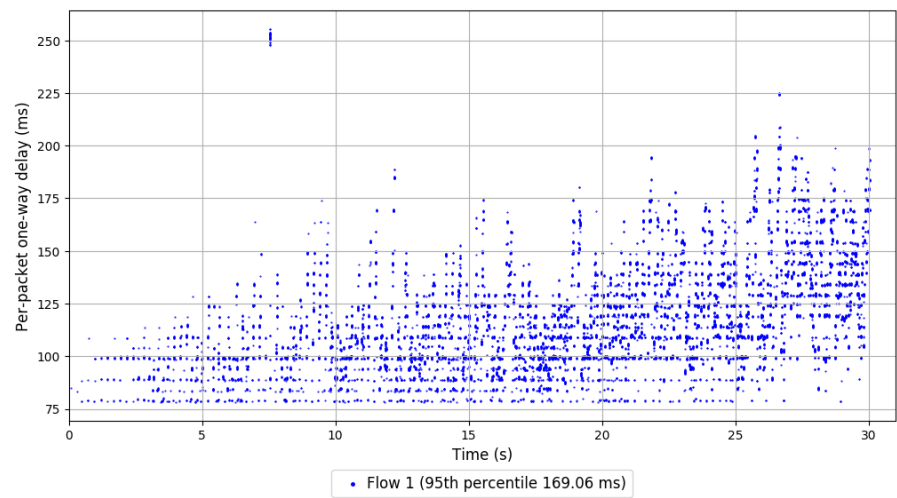
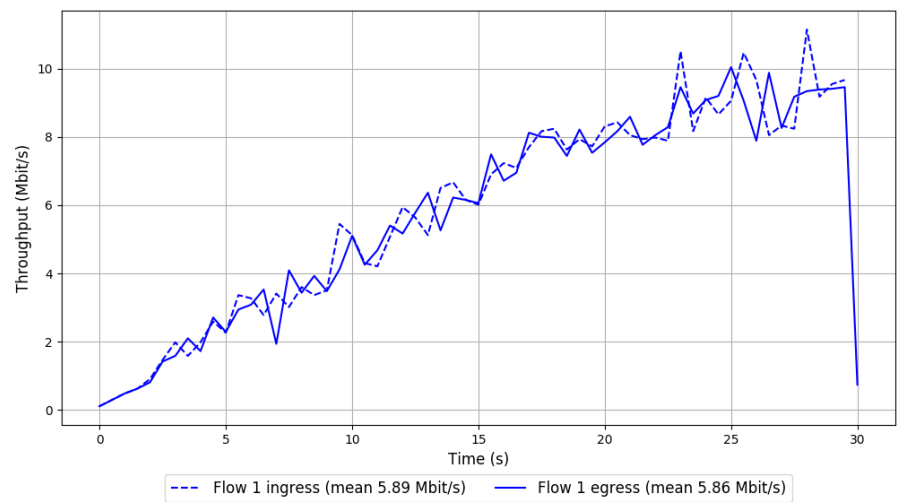
-- Flow 1:

Average throughput: 5.86 Mbit/s

95th percentile per-packet one-way delay: 169.055 ms

Loss rate: 0.71%

Run 3: Report of LEDBAT — Data Link

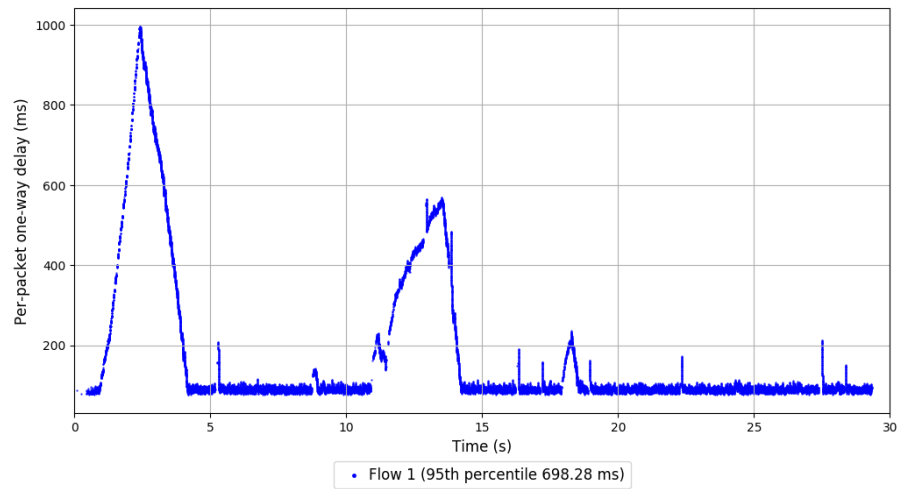
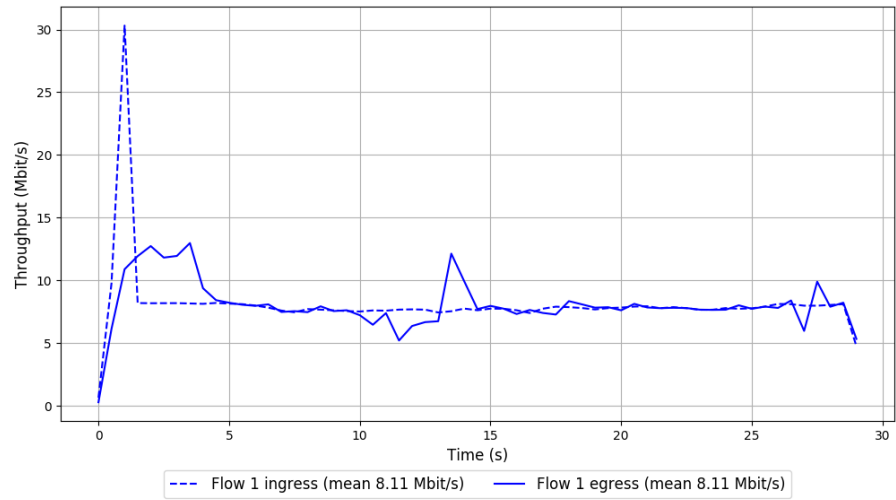


Run 1: Statistics of PCC

Start at: 2017-12-01 00:16:24
End at: 2017-12-01 00:16:54
Local clock offset: -1.379 ms
Remote clock offset: -6.428 ms

Below is generated by plot.py at 2017-12-01 01:04:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 8.11 Mbit/s
95th percentile per-packet one-way delay: 698.277 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 8.11 Mbit/s
95th percentile per-packet one-way delay: 698.277 ms
Loss rate: 0.18%

Run 1: Report of PCC — Data Link



Run 2: Statistics of PCC

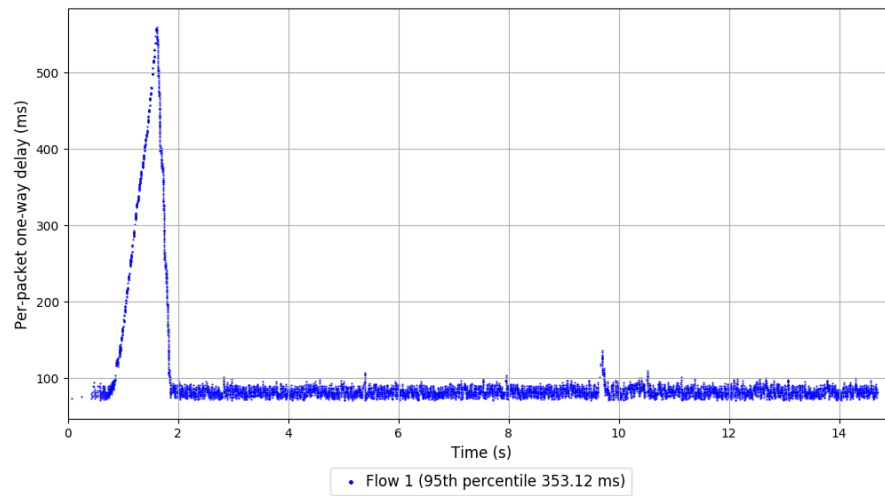
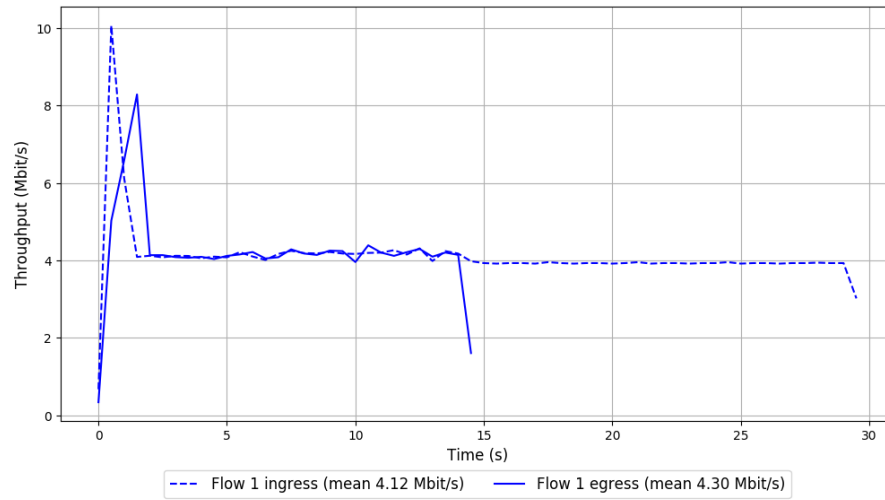
Start at: 2017-12-01 00:32:29

End at: 2017-12-01 00:32:59

Local clock offset: -1.17 ms

Remote clock offset: -6.594 ms

Run 2: Report of PCC — Data Link

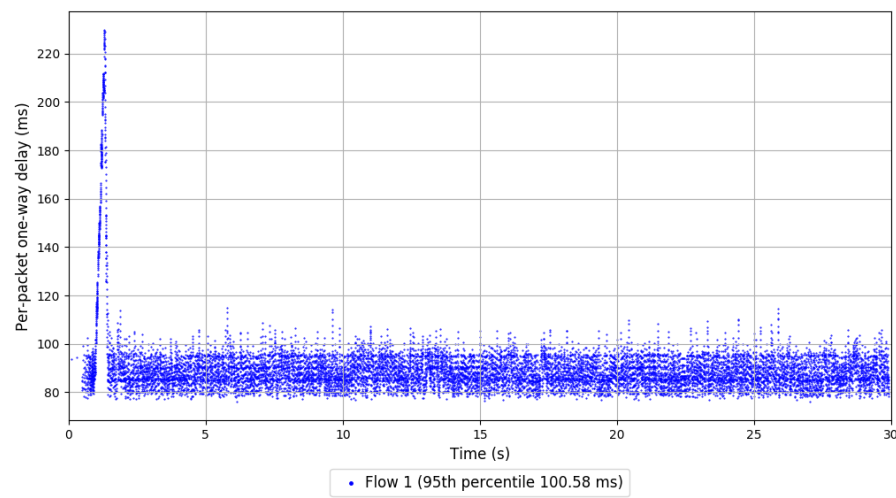
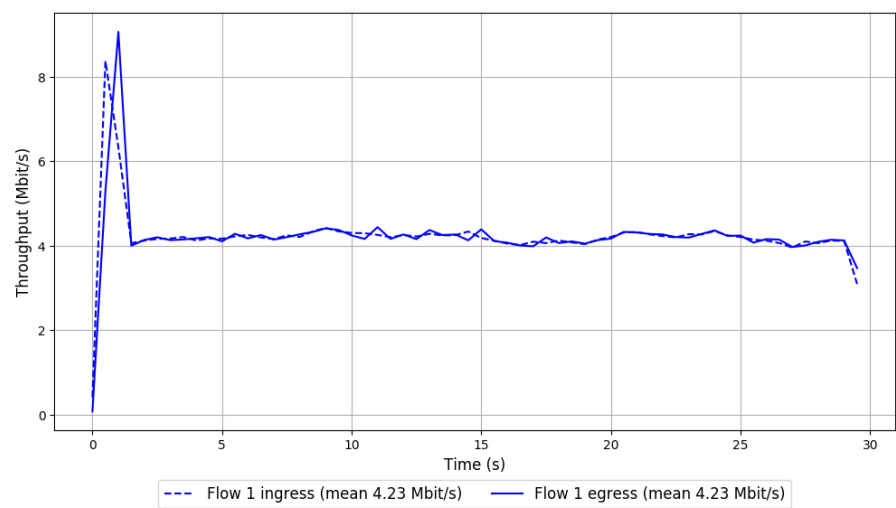


Run 3: Statistics of PCC

Start at: 2017-12-01 00:48:36
End at: 2017-12-01 00:49:06
Local clock offset: -1.045 ms
Remote clock offset: -6.662 ms

Below is generated by plot.py at 2017-12-01 01:04:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 4.23 Mbit/s
95th percentile per-packet one-way delay: 100.585 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 4.23 Mbit/s
95th percentile per-packet one-way delay: 100.585 ms
Loss rate: 0.12%

Run 3: Report of PCC — Data Link



Run 1: Statistics of QUIC Cubic

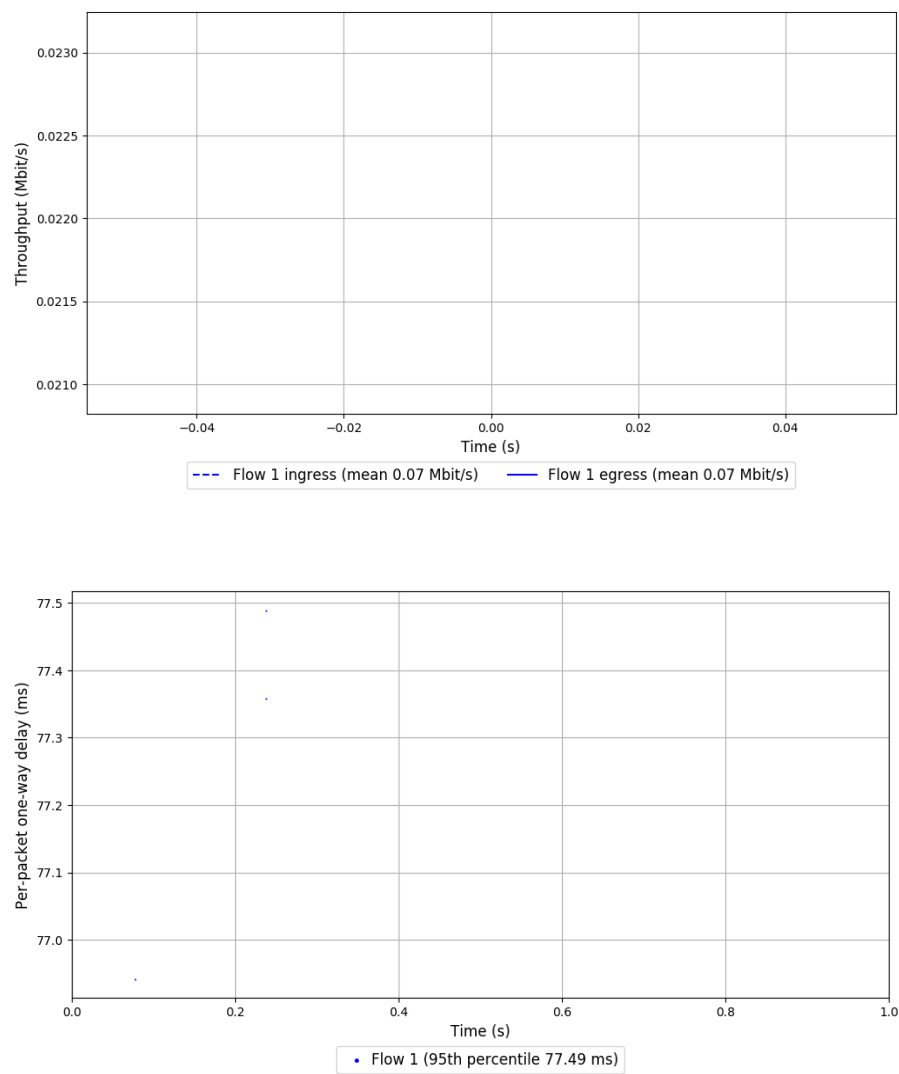
Start at: 2017-12-01 00:23:18

End at: 2017-12-01 00:23:48

Local clock offset: -1.467 ms

Remote clock offset: -6.464 ms

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2017-12-01 00:39:23

End at: 2017-12-01 00:39:53

Local clock offset: -1.107 ms

Remote clock offset: -6.607 ms

Below is generated by plot.py at 2017-12-01 01:04:22

Datalink statistics

-- Total of 1 flow:

Average throughput: 9.42 Mbit/s

95th percentile per-packet one-way delay: 554.711 ms

Loss rate: 1.84%

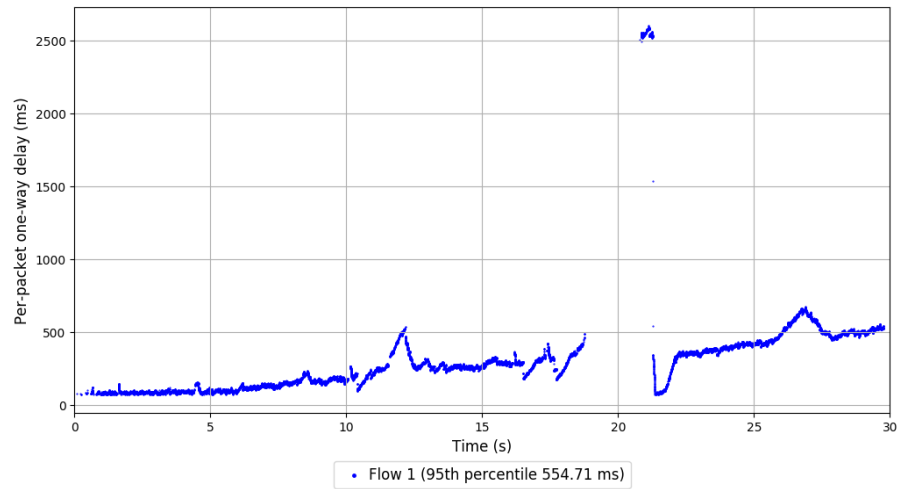
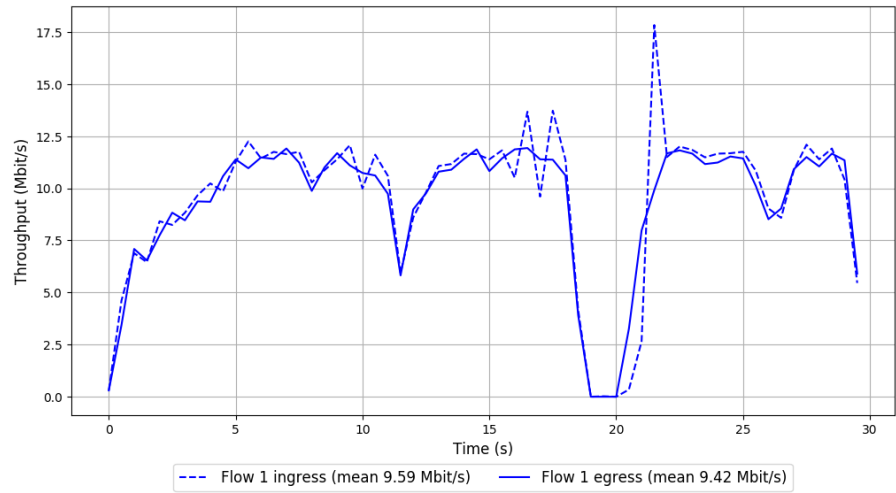
-- Flow 1:

Average throughput: 9.42 Mbit/s

95th percentile per-packet one-way delay: 554.711 ms

Loss rate: 1.84%

Run 2: Report of QUIC Cubic — Data Link

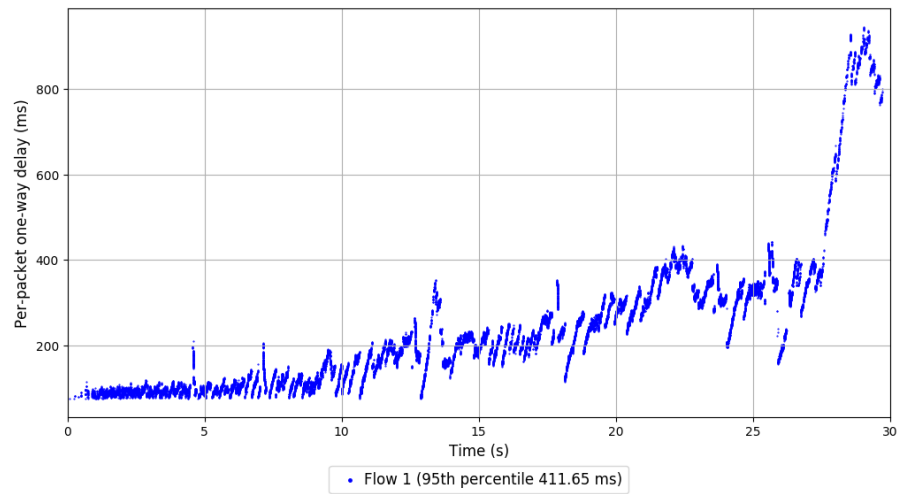
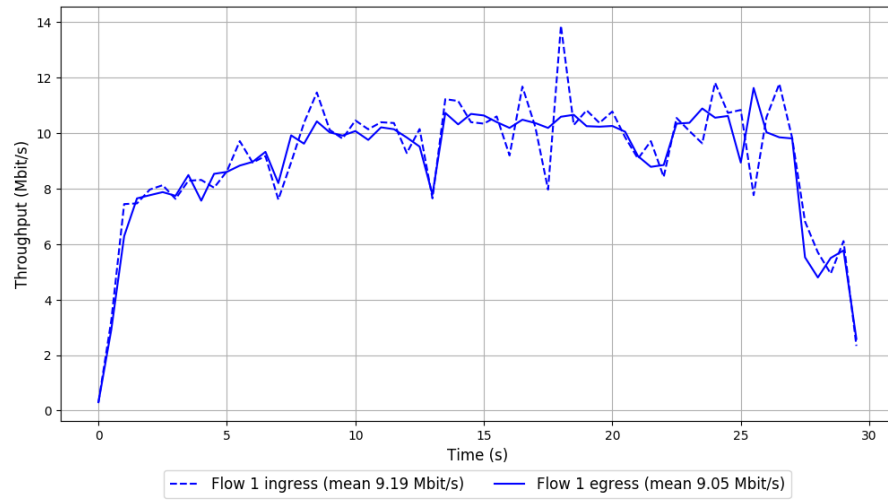


Run 3: Statistics of QUIC Cubic

Start at: 2017-12-01 00:55:30
End at: 2017-12-01 00:56:00
Local clock offset: -0.947 ms
Remote clock offset: -6.697 ms

Below is generated by plot.py at 2017-12-01 01:04:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 9.05 Mbit/s
95th percentile per-packet one-way delay: 411.653 ms
Loss rate: 1.68%
-- Flow 1:
Average throughput: 9.05 Mbit/s
95th percentile per-packet one-way delay: 411.653 ms
Loss rate: 1.68%

Run 3: Report of QUIC Cubic — Data Link

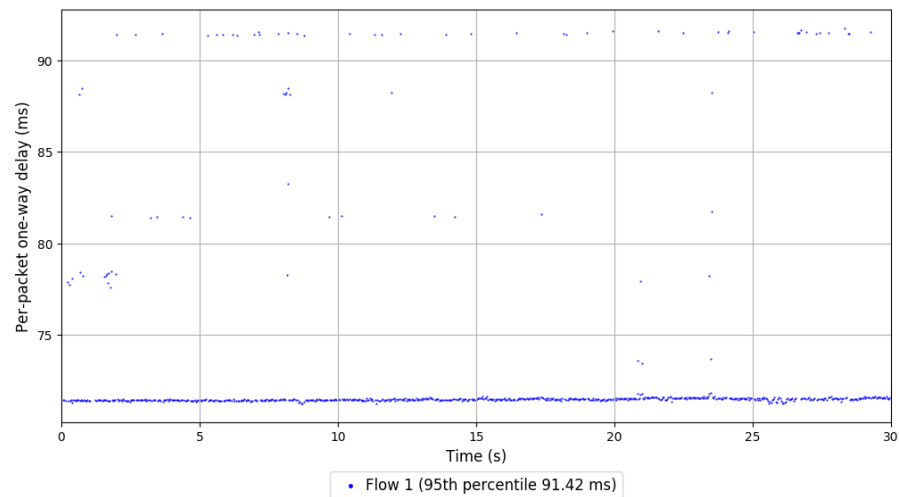
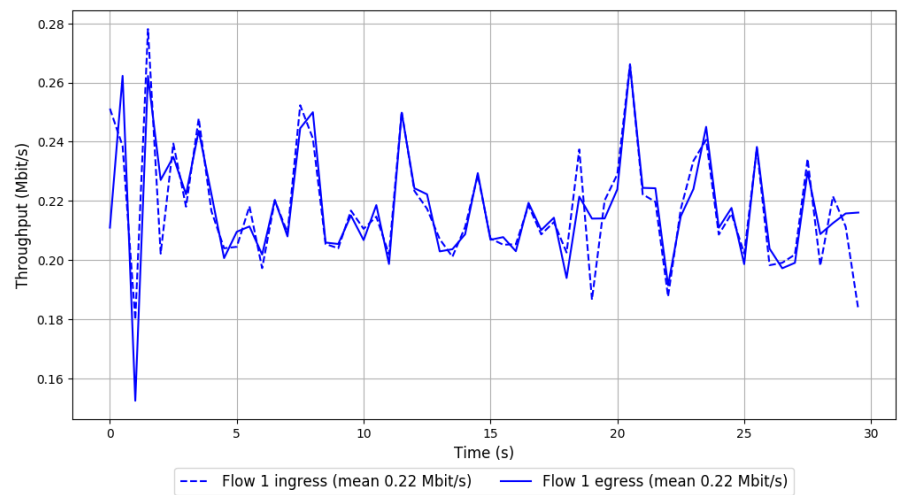


Run 1: Statistics of SCReAM

Start at: 2017-12-01 00:26:45
End at: 2017-12-01 00:27:15
Local clock offset: -1.36 ms
Remote clock offset: -6.566 ms

Below is generated by plot.py at 2017-12-01 01:04:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 91.419 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 91.419 ms
Loss rate: 0.00%

Run 1: Report of SReAM — Data Link

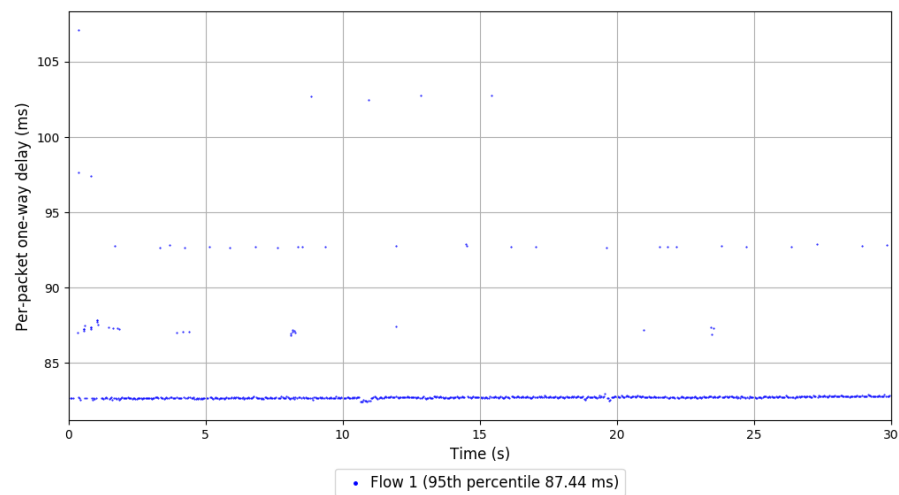
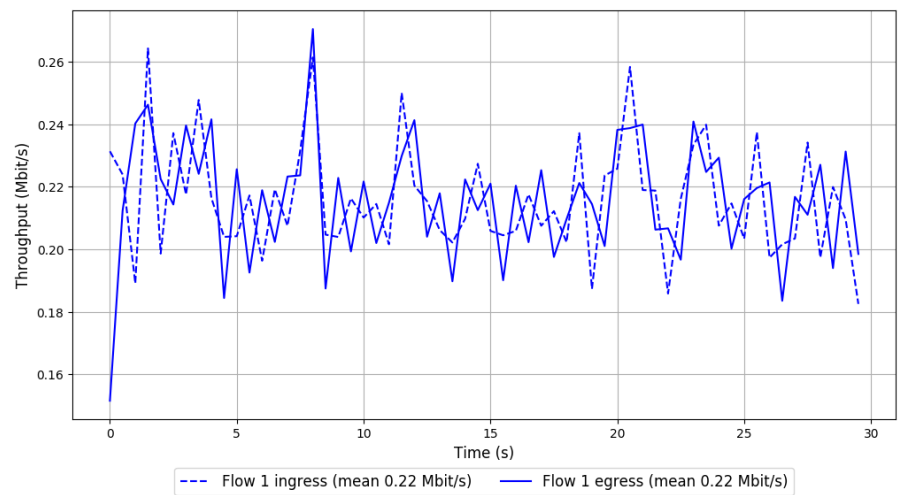


Run 2: Statistics of SCReAM

Start at: 2017-12-01 00:42:51
End at: 2017-12-01 00:43:21
Local clock offset: -1.055 ms
Remote clock offset: -6.603 ms

Below is generated by plot.py at 2017-12-01 01:04:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.436 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.436 ms
Loss rate: 0.13%

Run 2: Report of SReAM — Data Link

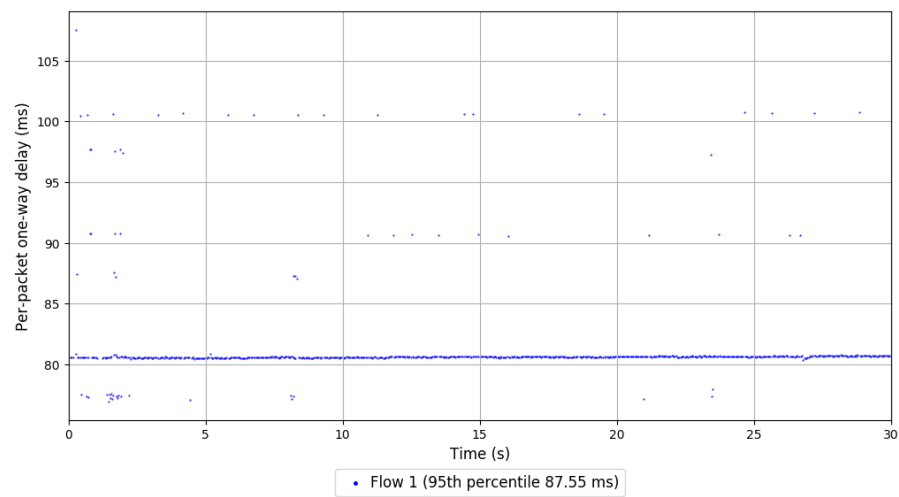
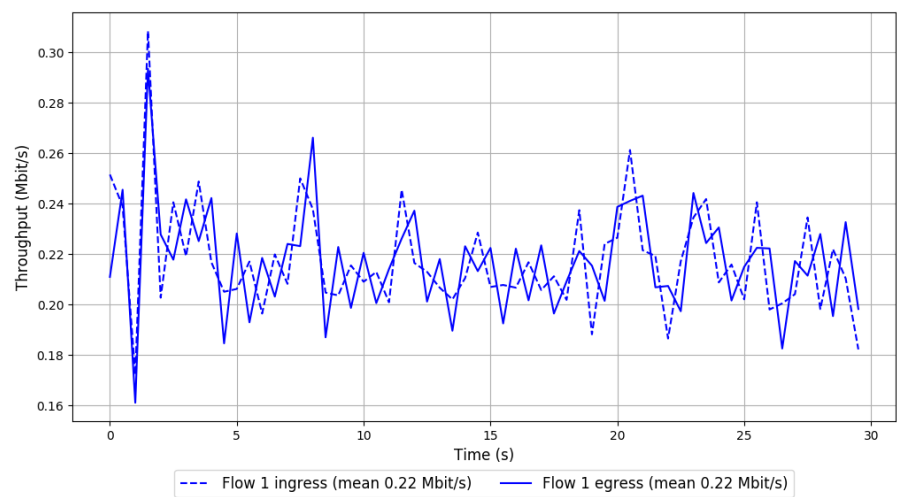


Run 3: Statistics of SCReAM

Start at: 2017-12-01 00:58:57
End at: 2017-12-01 00:59:27
Local clock offset: -0.887 ms
Remote clock offset: -6.701 ms

Below is generated by plot.py at 2017-12-01 01:04:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.545 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.545 ms
Loss rate: 0.13%

Run 3: Report of SReAM — Data Link



Run 1: Statistics of WebRTC media

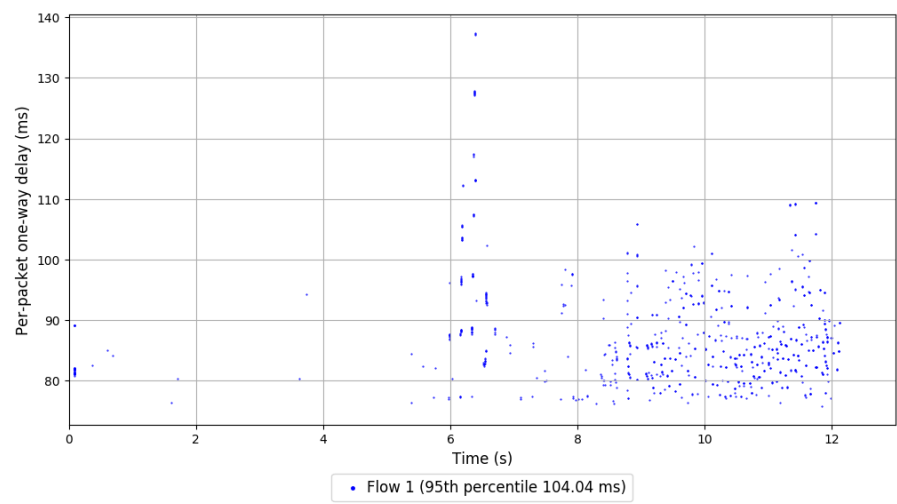
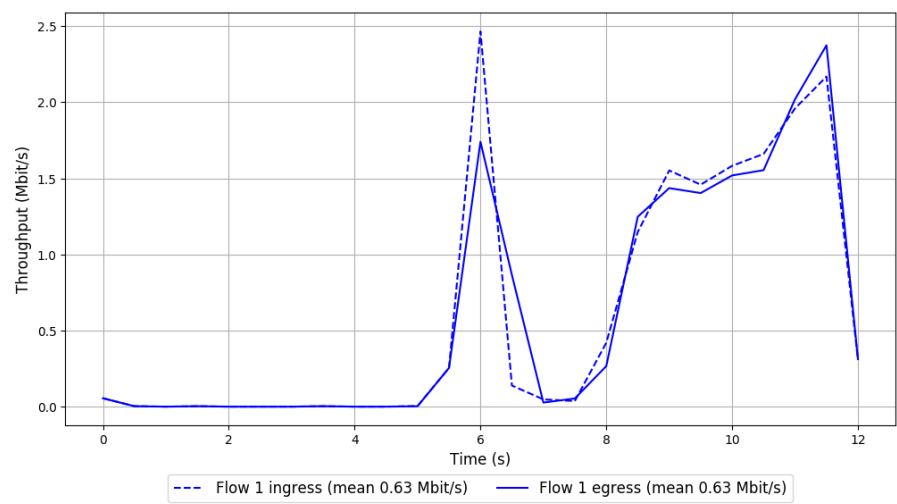
Start at: 2017-12-01 00:22:09

End at: 2017-12-01 00:22:39

Local clock offset: -1.217 ms

Remote clock offset: -6.524 ms

Run 1: Report of WebRTC media — Data Link

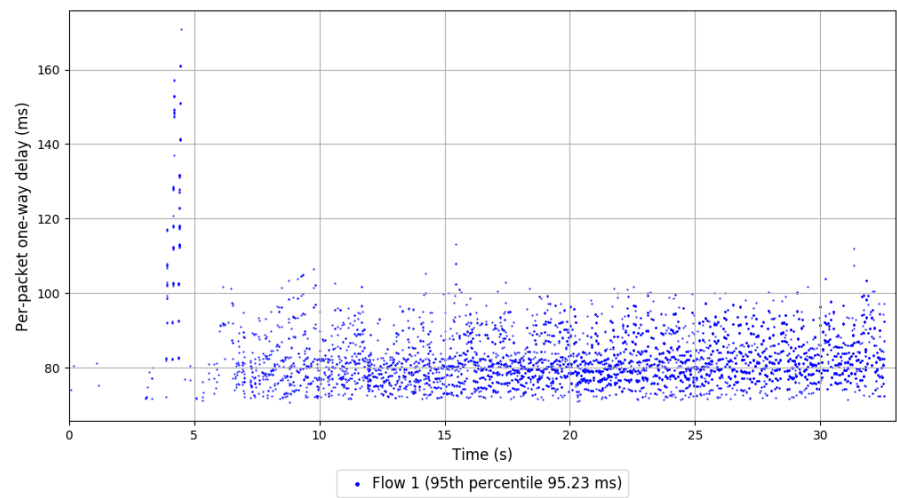
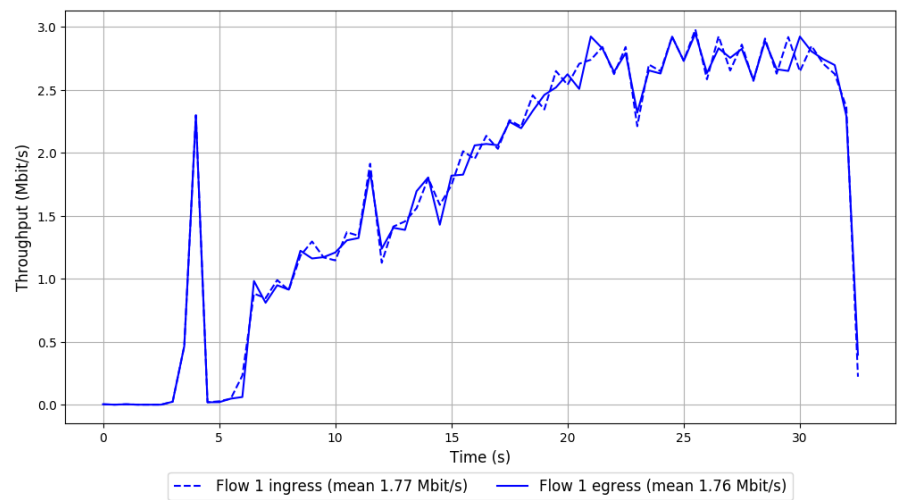


Run 2: Statistics of WebRTC media

Start at: 2017-12-01 00:38:14
End at: 2017-12-01 00:38:44
Local clock offset: -1.09 ms
Remote clock offset: -6.605 ms

Below is generated by plot.py at 2017-12-01 01:04:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.76 Mbit/s
95th percentile per-packet one-way delay: 95.233 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 1.76 Mbit/s
95th percentile per-packet one-way delay: 95.233 ms
Loss rate: 0.23%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2017-12-01 00:54:21

End at: 2017-12-01 00:54:51

Local clock offset: -0.894 ms

Remote clock offset: -6.67 ms

Below is generated by plot.py at 2017-12-01 01:04:22

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.17 Mbit/s

95th percentile per-packet one-way delay: 107.912 ms

Loss rate: 0.11%

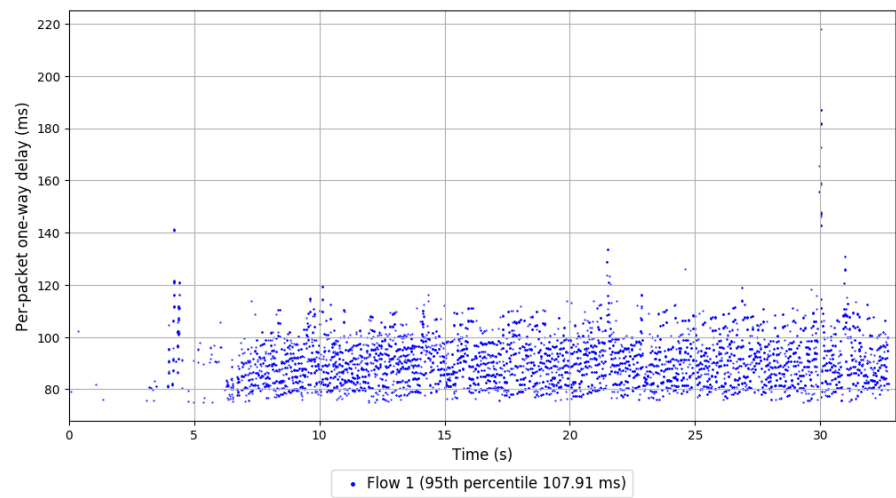
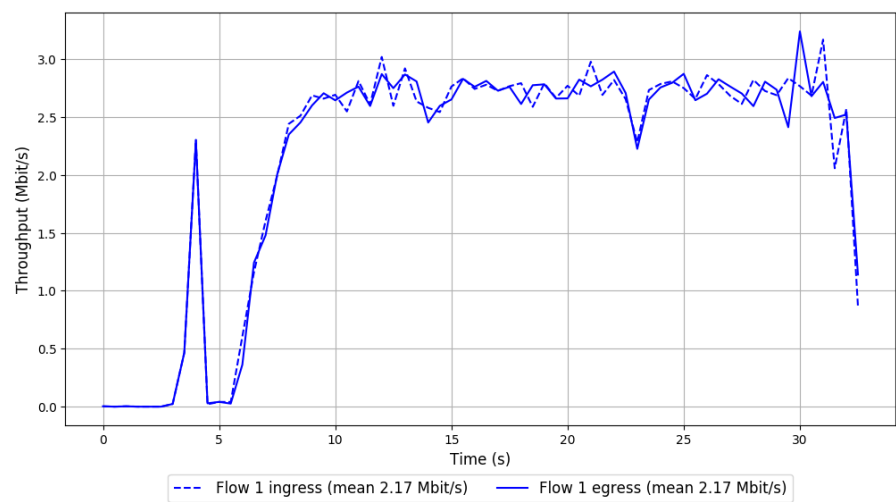
-- Flow 1:

Average throughput: 2.17 Mbit/s

95th percentile per-packet one-way delay: 107.912 ms

Loss rate: 0.11%

Run 3: Report of WebRTC media — Data Link

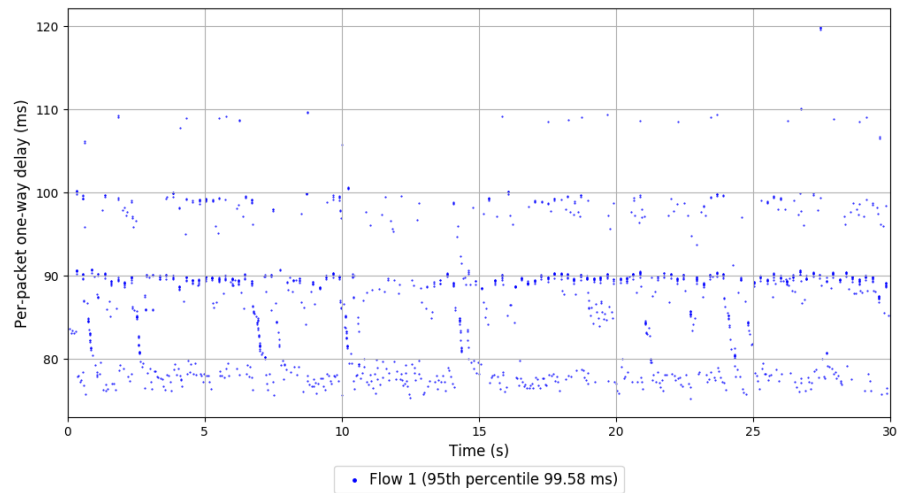
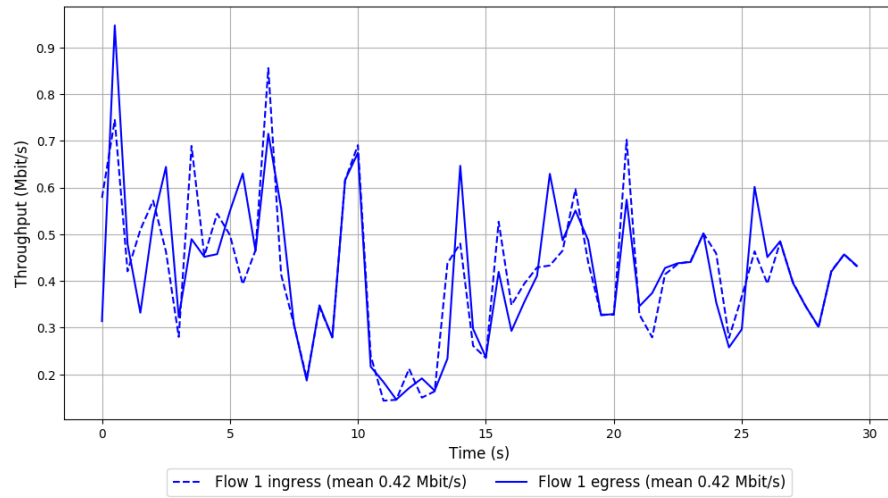


Run 1: Statistics of Sprout

Start at: 2017-12-01 00:17:33
End at: 2017-12-01 00:18:03
Local clock offset: -1.489 ms
Remote clock offset: -6.408 ms

Below is generated by plot.py at 2017-12-01 01:04:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 99.579 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 99.579 ms
Loss rate: 0.01%

Run 1: Report of Sprout — Data Link

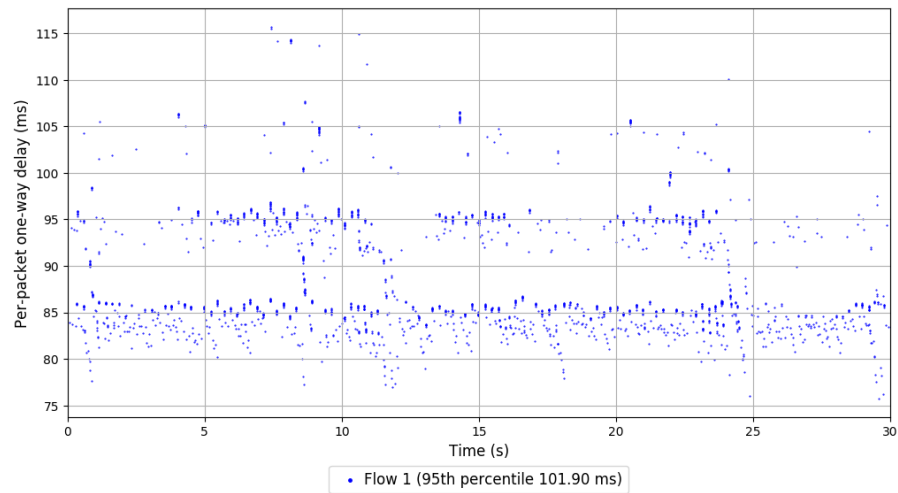
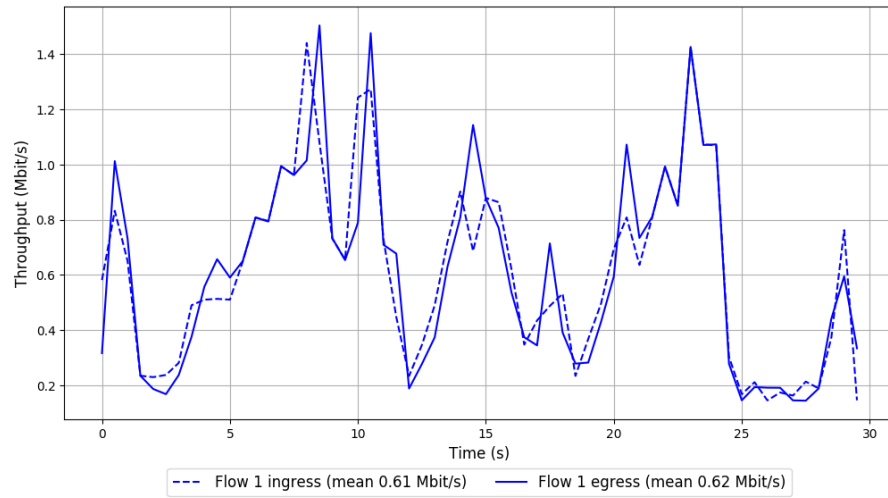


Run 2: Statistics of Sprout

Start at: 2017-12-01 00:33:38
End at: 2017-12-01 00:34:08
Local clock offset: -1.197 ms
Remote clock offset: -6.612 ms

Below is generated by plot.py at 2017-12-01 01:04:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 101.901 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 101.901 ms
Loss rate: 0.00%

Run 2: Report of Sprout — Data Link

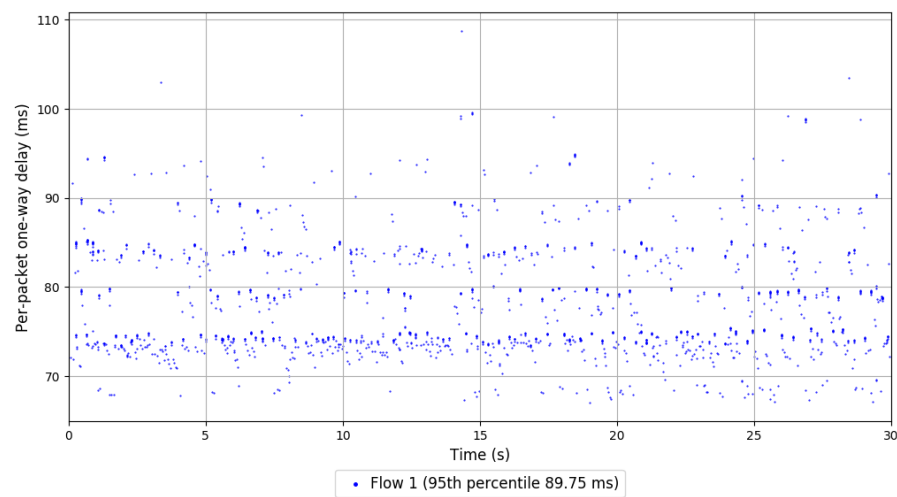
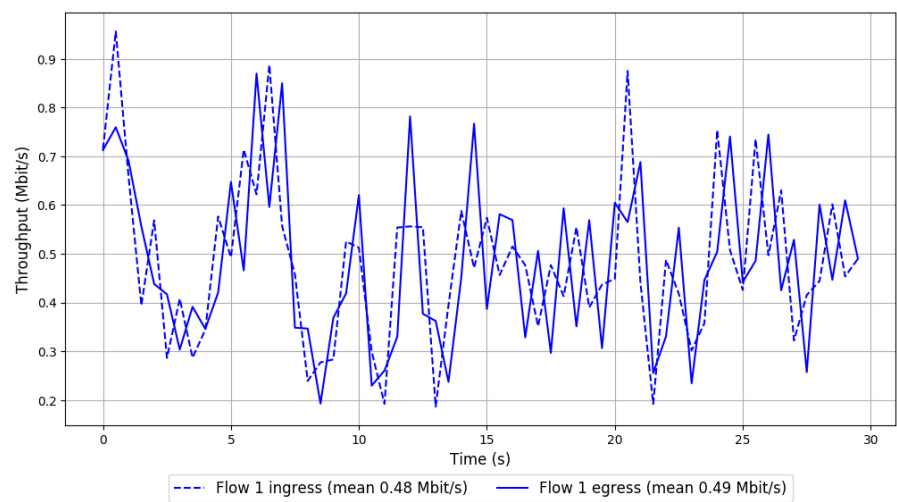


Run 3: Statistics of Sprout

Start at: 2017-12-01 00:49:45
End at: 2017-12-01 00:50:15
Local clock offset: -0.981 ms
Remote clock offset: -6.668 ms

Below is generated by plot.py at 2017-12-01 01:04:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 89.752 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 89.752 ms
Loss rate: 0.01%

Run 3: Report of Sprout — Data Link

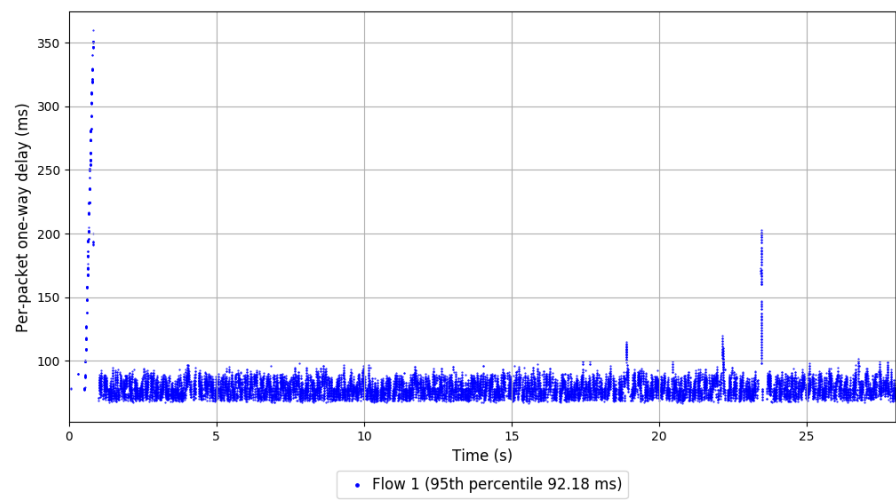
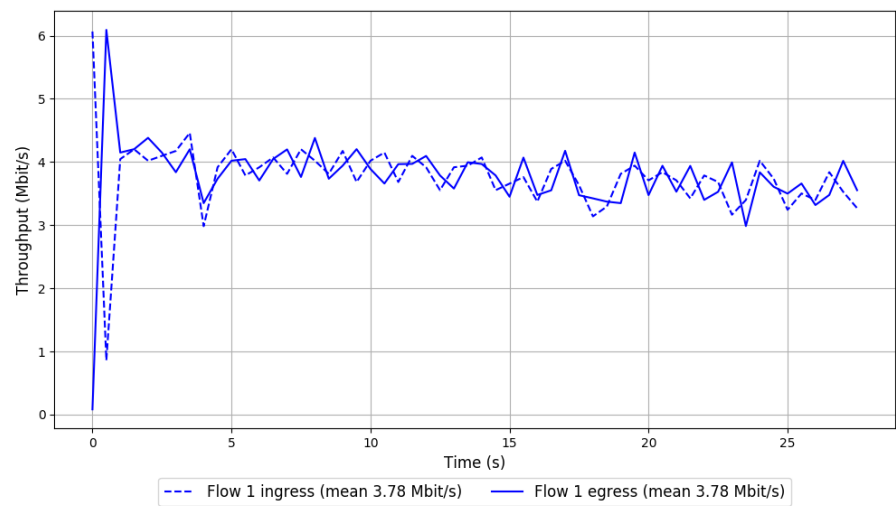


Run 1: Statistics of TaoVA-100x

Start at: 2017-12-01 00:21:00
End at: 2017-12-01 00:21:30
Local clock offset: -1.455 ms
Remote clock offset: -6.473 ms

Below is generated by plot.py at 2017-12-01 01:04:24
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.78 Mbit/s
95th percentile per-packet one-way delay: 92.176 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 3.78 Mbit/s
95th percentile per-packet one-way delay: 92.176 ms
Loss rate: 0.00%

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



Run 2: Statistics of TaoVA-100x

Start at: 2017-12-01 00:37:05

End at: 2017-12-01 00:37:35

Local clock offset: -1.14 ms

Remote clock offset: -6.646 ms

Below is generated by plot.py at 2017-12-01 01:04:25

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.88 Mbit/s

95th percentile per-packet one-way delay: 92.534 ms

Loss rate: 0.13%

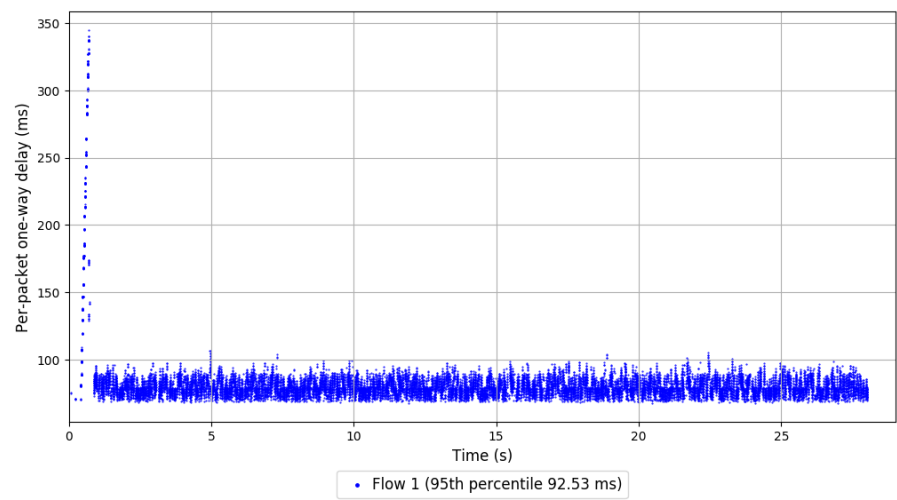
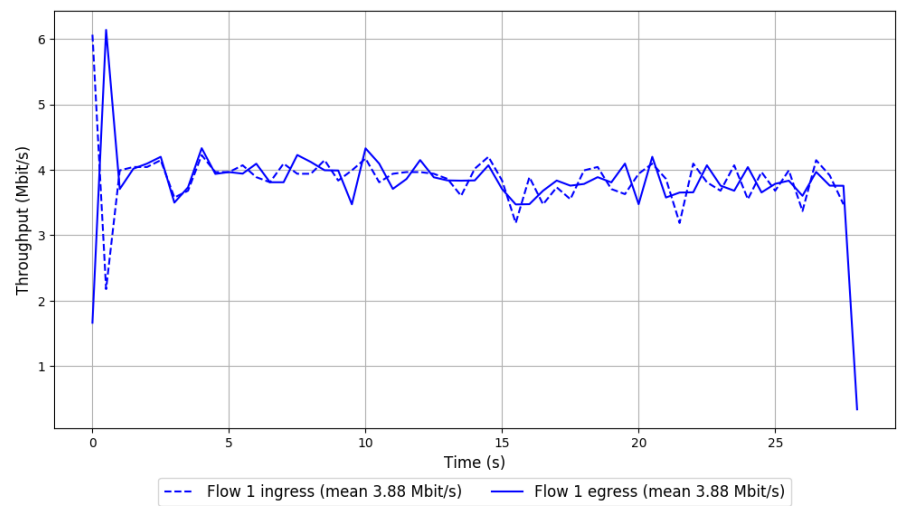
-- Flow 1:

Average throughput: 3.88 Mbit/s

95th percentile per-packet one-way delay: 92.534 ms

Loss rate: 0.13%

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

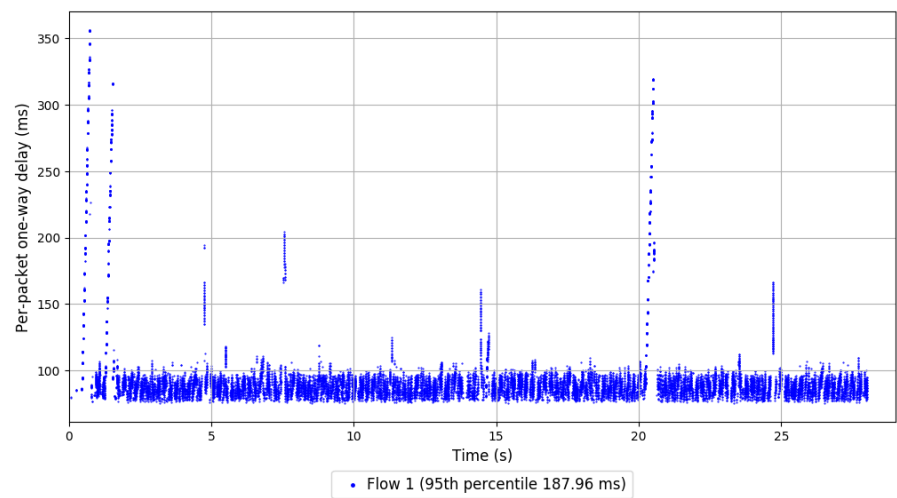
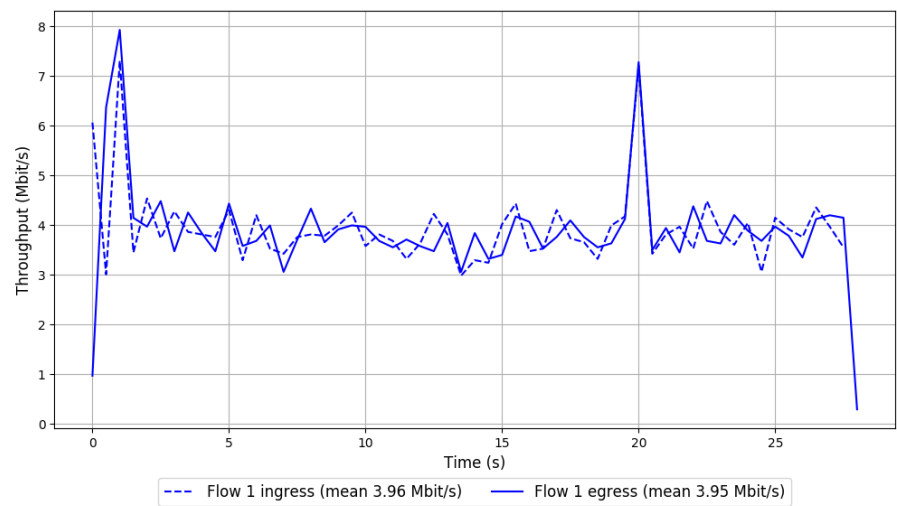


Run 3: Statistics of TaoVA-100x

Start at: 2017-12-01 00:53:12
End at: 2017-12-01 00:53:42
Local clock offset: -0.882 ms
Remote clock offset: -6.669 ms

Below is generated by plot.py at 2017-12-01 01:04:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.95 Mbit/s
95th percentile per-packet one-way delay: 187.963 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 3.95 Mbit/s
95th percentile per-packet one-way delay: 187.963 ms
Loss rate: 0.00%

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



Run 1: Statistics of TCP Vegas

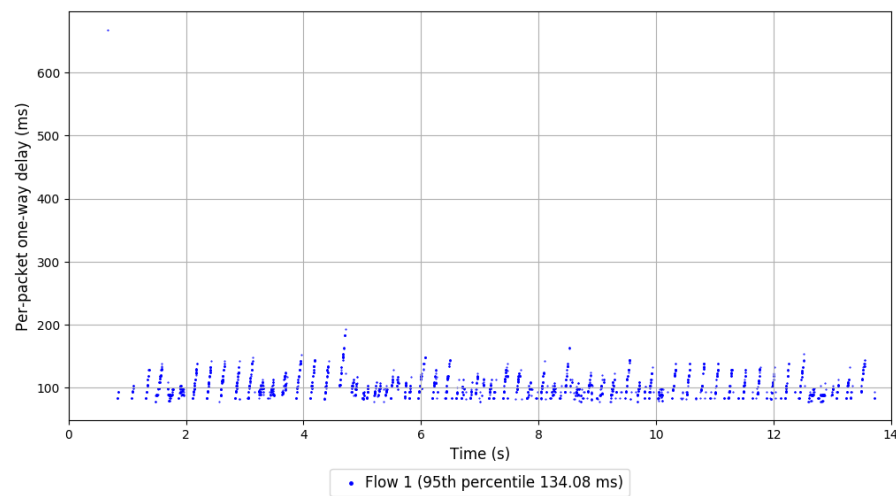
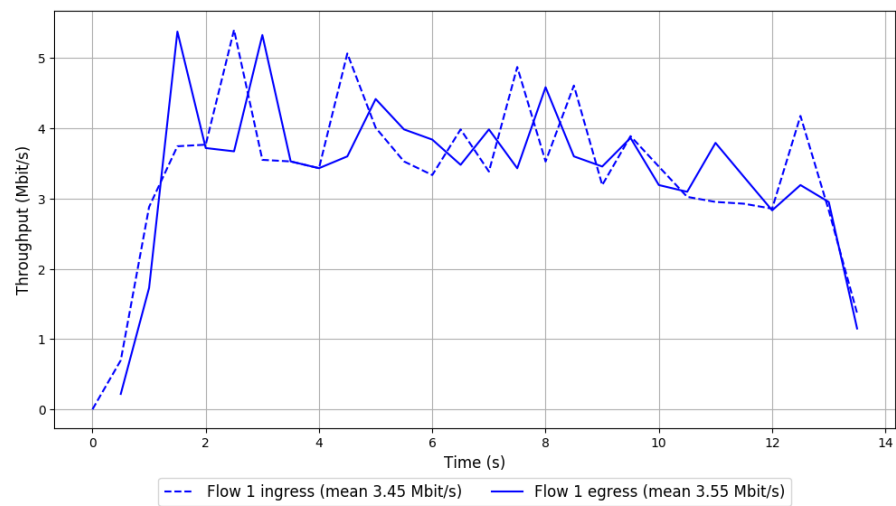
Start at: 2017-12-01 00:29:02

End at: 2017-12-01 00:29:32

Local clock offset: -1.294 ms

Remote clock offset: -6.612 ms

Run 1: Report of TCP Vegas — Data Link

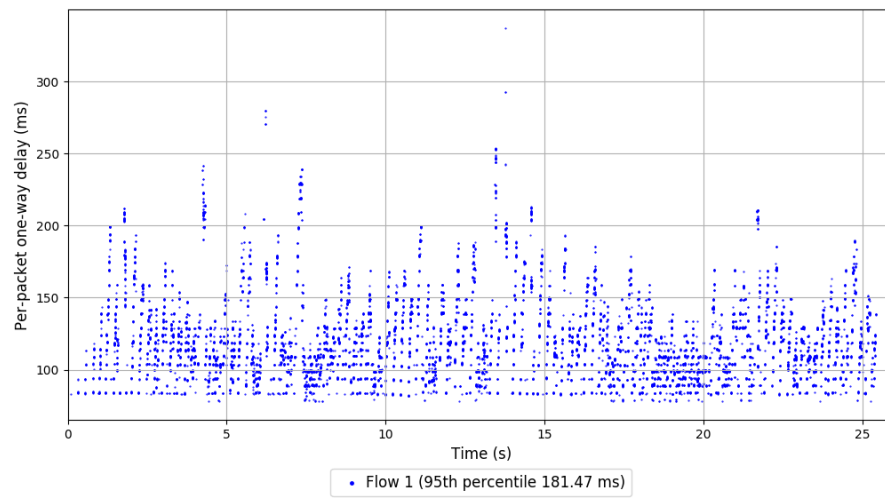
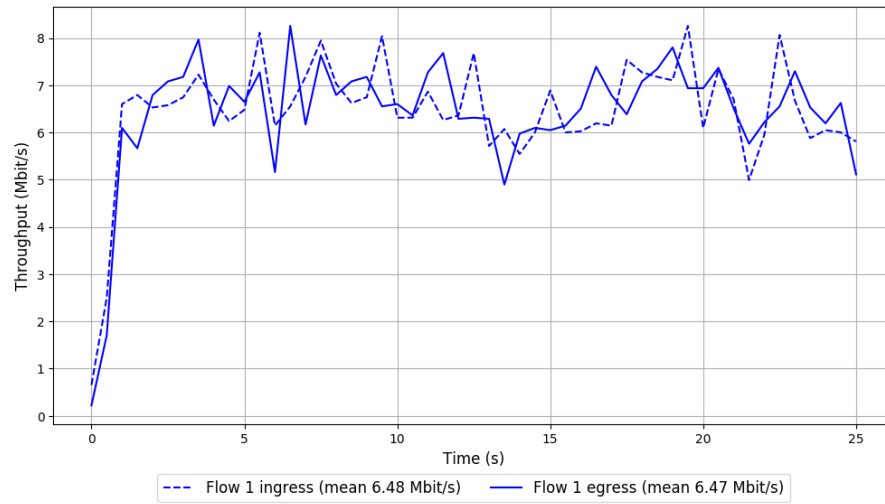


Run 2: Statistics of TCP Vegas

Start at: 2017-12-01 00:45:08
End at: 2017-12-01 00:45:38
Local clock offset: -0.844 ms
Remote clock offset: -6.618 ms

Below is generated by plot.py at 2017-12-01 01:04:25
Datalink statistics
-- Total of 1 flow:
Average throughput: 6.47 Mbit/s
95th percentile per-packet one-way delay: 181.473 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 6.47 Mbit/s
95th percentile per-packet one-way delay: 181.473 ms
Loss rate: 0.25%

Run 2: Report of TCP Vegas — Data Link

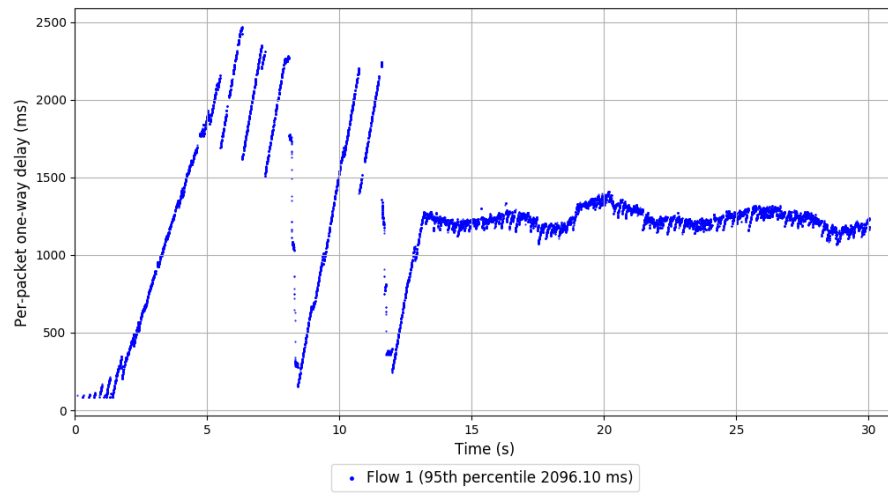
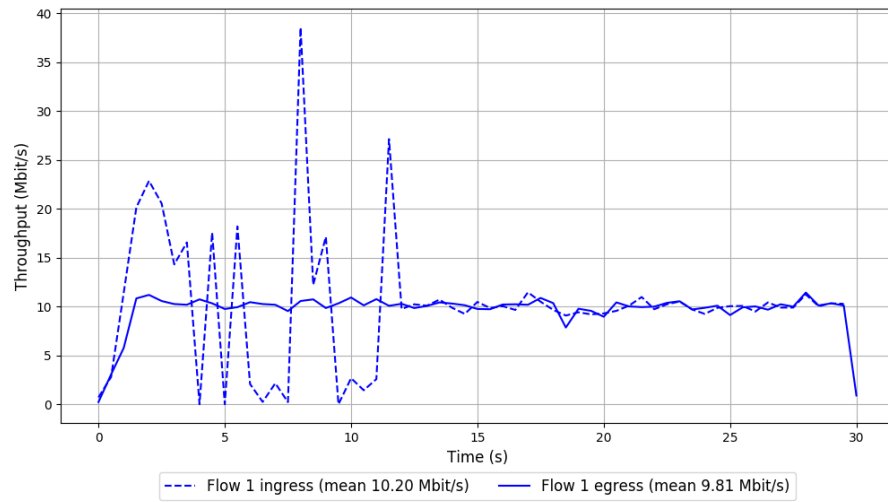


Run 3: Statistics of TCP Vegas

Start at: 2017-12-01 01:01:15
End at: 2017-12-01 01:01:45
Local clock offset: -0.75 ms
Remote clock offset: -6.745 ms

Below is generated by plot.py at 2017-12-01 01:04:32
Datalink statistics
-- Total of 1 flow:
Average throughput: 9.81 Mbit/s
95th percentile per-packet one-way delay: 2096.101 ms
Loss rate: 3.88%
-- Flow 1:
Average throughput: 9.81 Mbit/s
95th percentile per-packet one-way delay: 2096.101 ms
Loss rate: 3.88%

Run 3: Report of TCP Vegas — Data Link

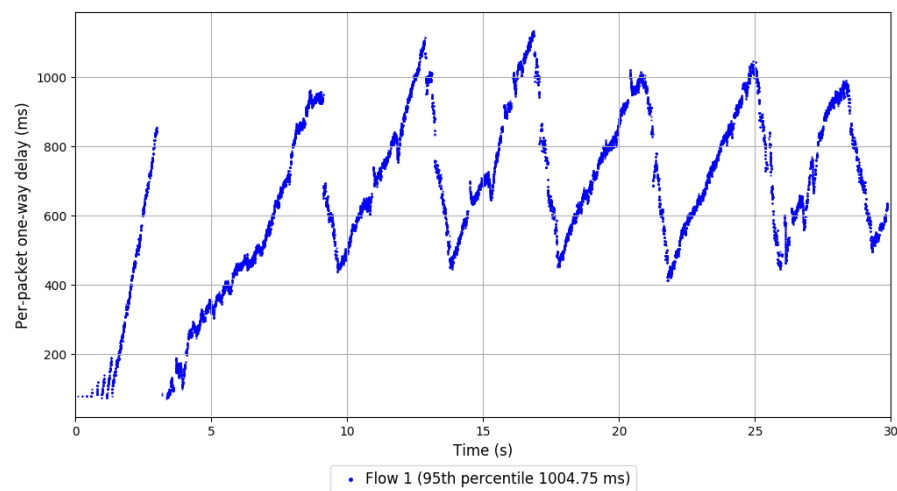
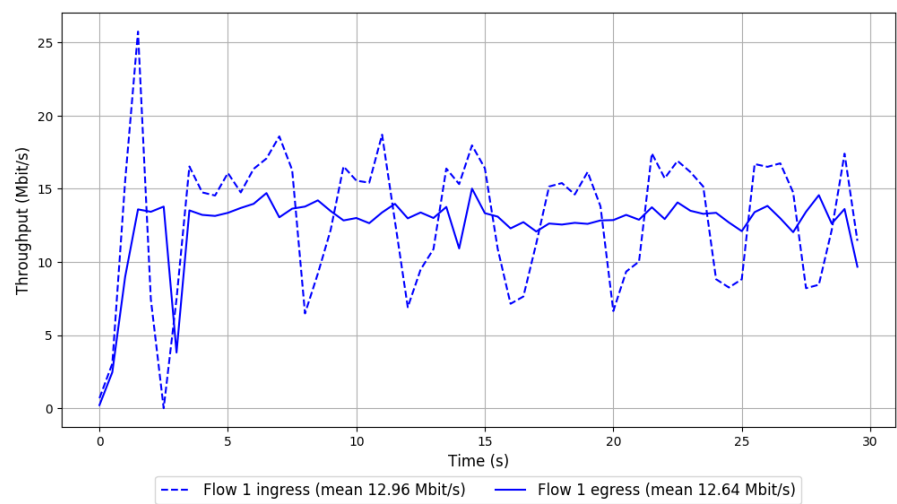


Run 1: Statistics of Verus

Start at: 2017-12-01 00:15:14
End at: 2017-12-01 00:15:44
Local clock offset: -1.278 ms
Remote clock offset: -6.495 ms

Below is generated by plot.py at 2017-12-01 01:04:38
Datalink statistics
-- Total of 1 flow:
Average throughput: 12.64 Mbit/s
95th percentile per-packet one-way delay: 1004.753 ms
Loss rate: 2.61%
-- Flow 1:
Average throughput: 12.64 Mbit/s
95th percentile per-packet one-way delay: 1004.753 ms
Loss rate: 2.61%

Run 1: Report of Verus — Data Link

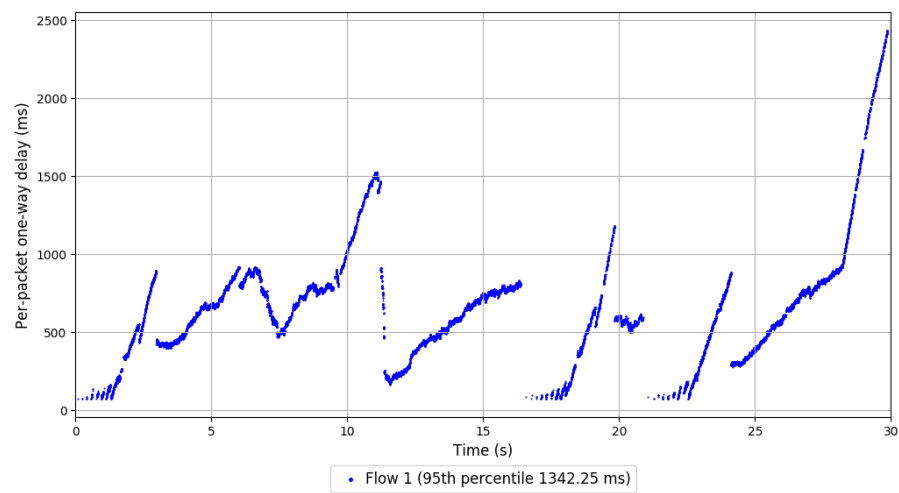
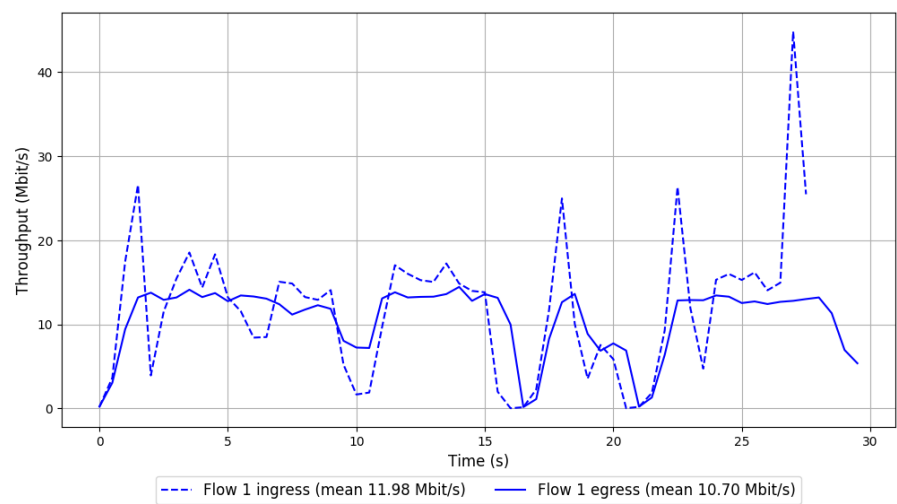


Run 2: Statistics of Verus

Start at: 2017-12-01 00:31:20
End at: 2017-12-01 00:31:50
Local clock offset: -1.178 ms
Remote clock offset: -6.593 ms

Below is generated by plot.py at 2017-12-01 01:04:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 10.70 Mbit/s
95th percentile per-packet one-way delay: 1342.251 ms
Loss rate: 4.51%
-- Flow 1:
Average throughput: 10.70 Mbit/s
95th percentile per-packet one-way delay: 1342.251 ms
Loss rate: 4.51%

Run 2: Report of Verus — Data Link

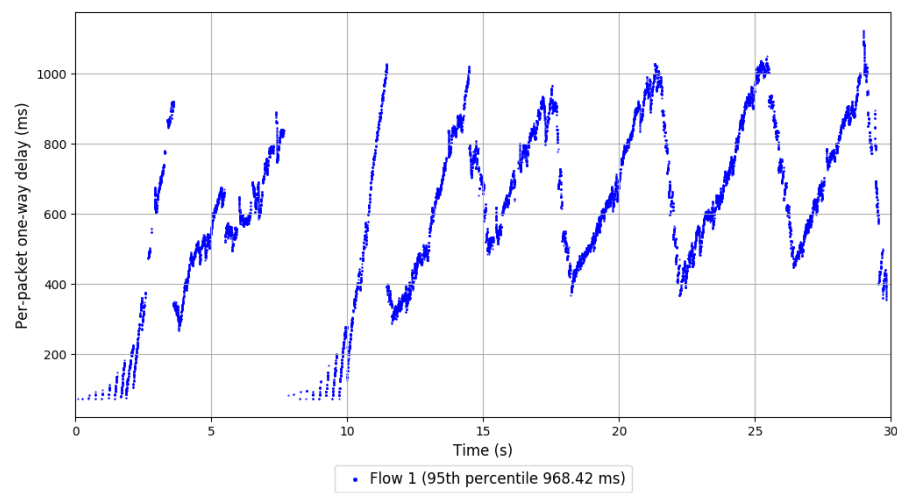
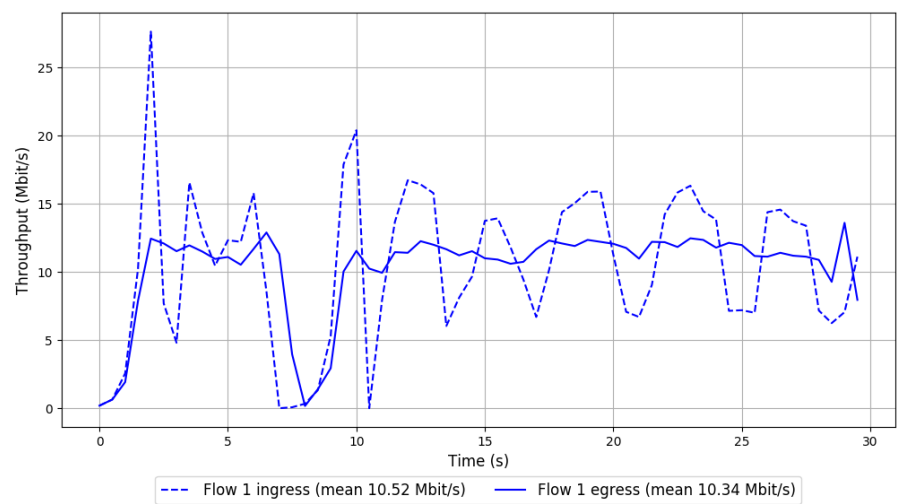


Run 3: Statistics of Verus

Start at: 2017-12-01 00:47:26
End at: 2017-12-01 00:47:56
Local clock offset: -0.962 ms
Remote clock offset: -6.593 ms

Below is generated by plot.py at 2017-12-01 01:04:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 10.34 Mbit/s
95th percentile per-packet one-way delay: 968.425 ms
Loss rate: 1.82%
-- Flow 1:
Average throughput: 10.34 Mbit/s
95th percentile per-packet one-way delay: 968.425 ms
Loss rate: 1.82%

Run 3: Report of Verus — Data Link

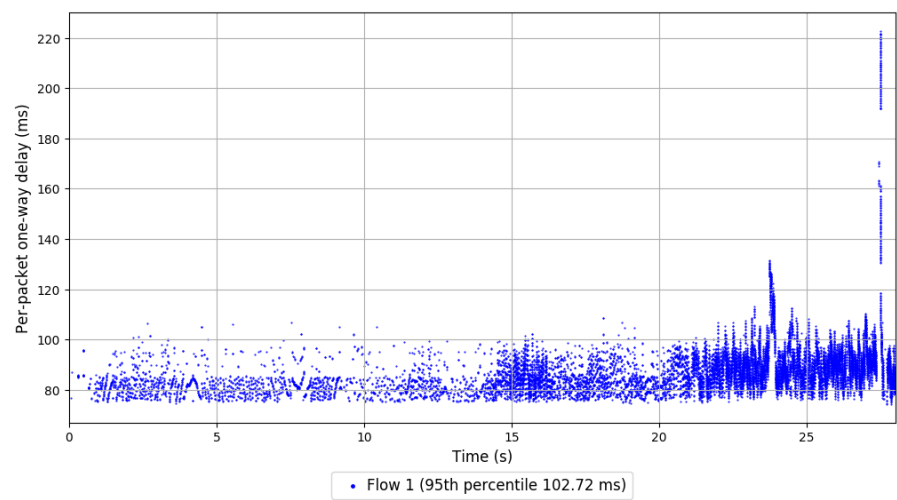
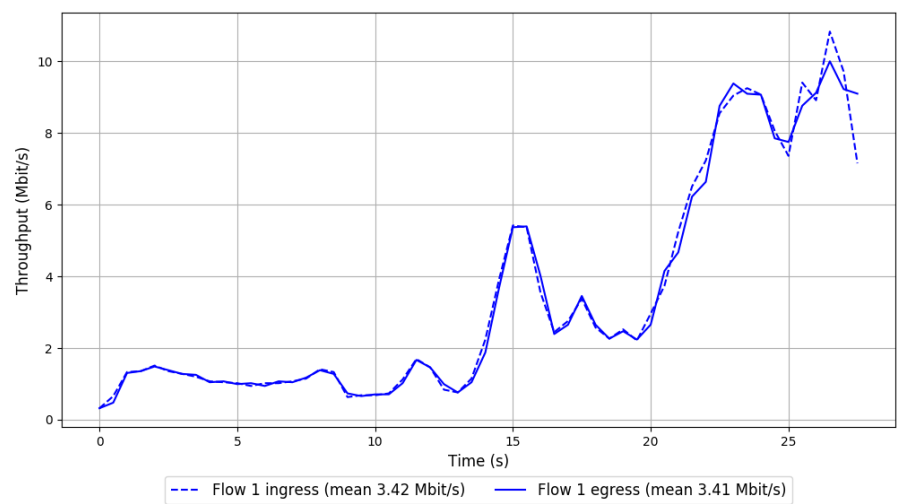


Run 1: Statistics of Copa

Start at: 2017-12-01 00:19:51
End at: 2017-12-01 00:20:21
Local clock offset: -1.423 ms
Remote clock offset: -6.474 ms

Below is generated by plot.py at 2017-12-01 01:04:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.41 Mbit/s
95th percentile per-packet one-way delay: 102.720 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 3.41 Mbit/s
95th percentile per-packet one-way delay: 102.720 ms
Loss rate: 0.51%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2017-12-01 00:35:56

End at: 2017-12-01 00:36:26

Local clock offset: -1.107 ms

Remote clock offset: -6.62 ms

Below is generated by plot.py at 2017-12-01 01:04:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.76 Mbit/s

95th percentile per-packet one-way delay: 95.287 ms

Loss rate: 0.18%

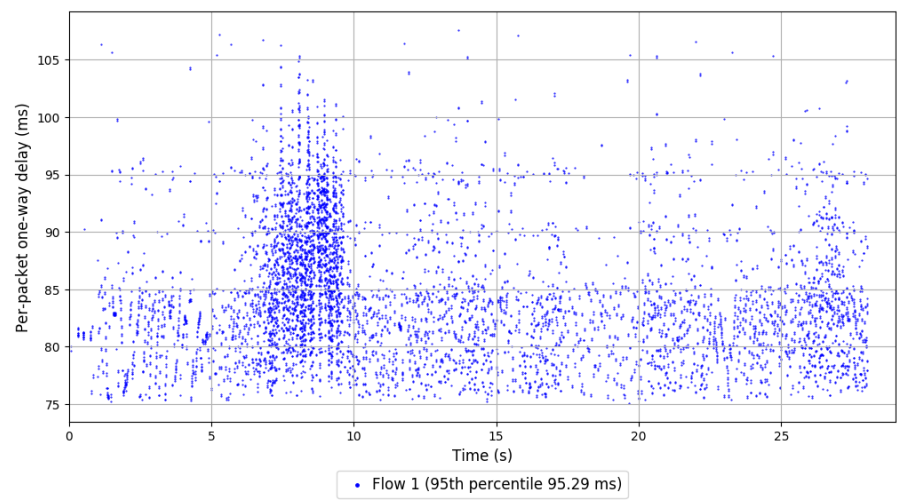
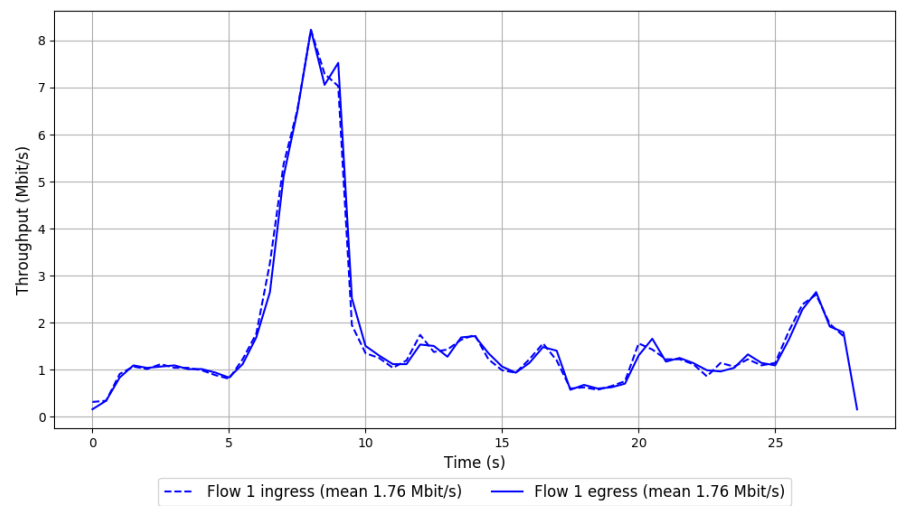
-- Flow 1:

Average throughput: 1.76 Mbit/s

95th percentile per-packet one-way delay: 95.287 ms

Loss rate: 0.18%

Run 2: Report of Copa — Data Link

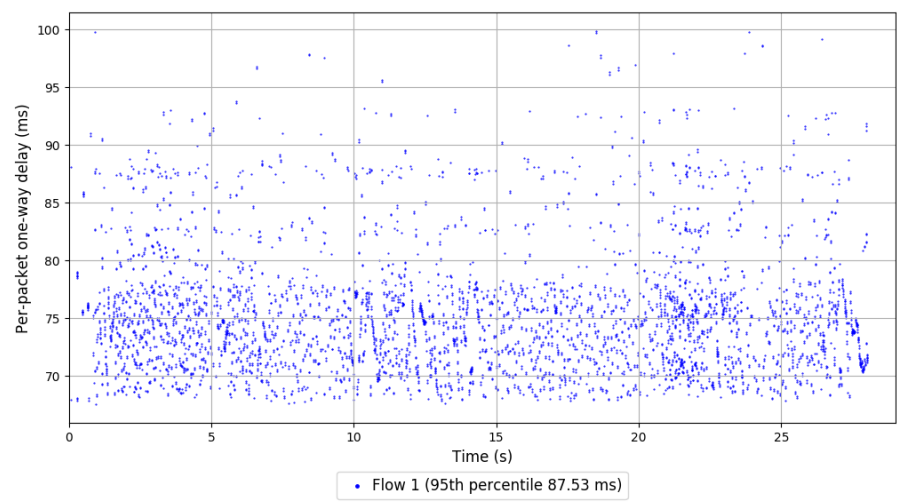
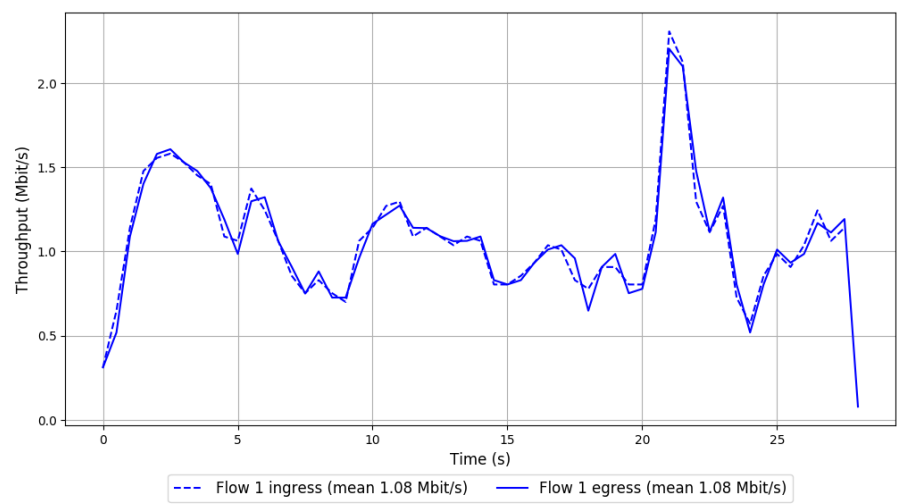


Run 3: Statistics of Copa

Start at: 2017-12-01 00:52:03
End at: 2017-12-01 00:52:33
Local clock offset: -0.891 ms
Remote clock offset: -6.673 ms

Below is generated by plot.py at 2017-12-01 01:04:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.08 Mbit/s
95th percentile per-packet one-way delay: 87.532 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 1.08 Mbit/s
95th percentile per-packet one-way delay: 87.532 ms
Loss rate: 0.09%

Run 3: Report of Copa — Data Link

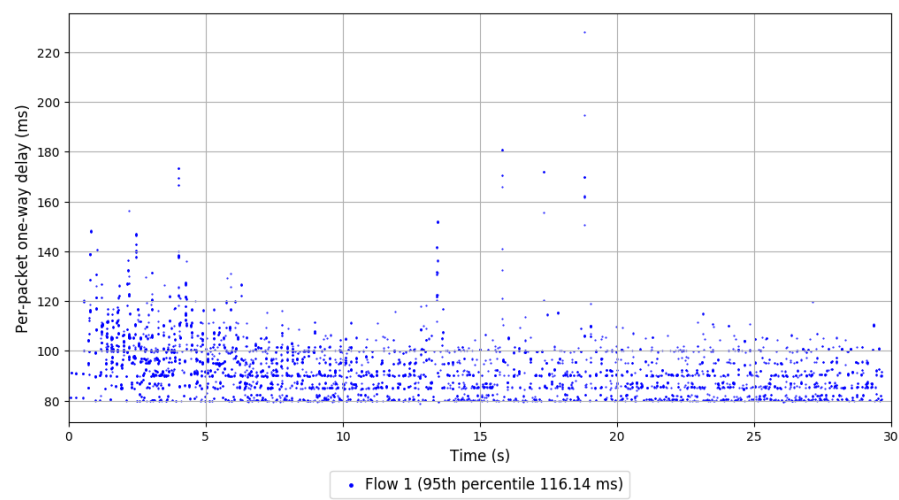
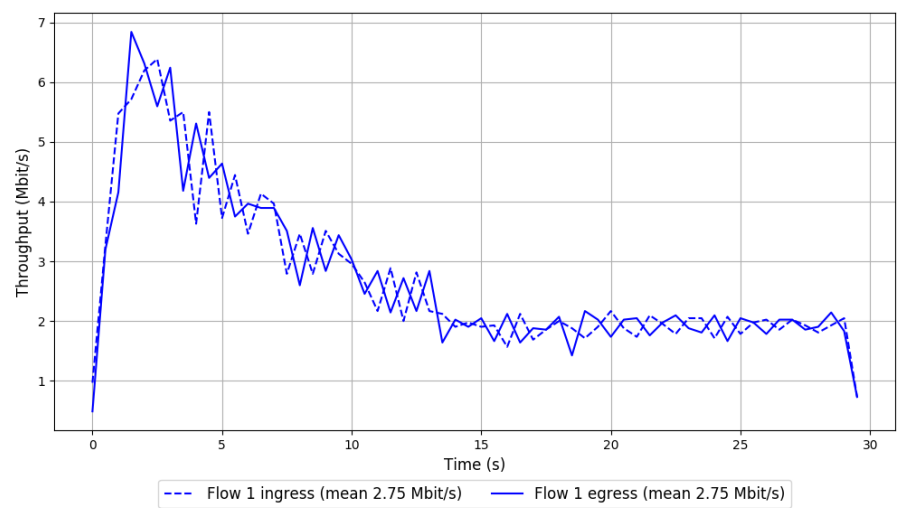


```
Run 1: Statistics of Indigo

Start at: 2017-12-01 00:24:26
End at: 2017-12-01 00:24:56
Local clock offset: -1.307 ms
Remote clock offset: -6.562 ms

# Below is generated by plot.py at 2017-12-01 01:04:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.75 Mbit/s
95th percentile per-packet one-way delay: 116.141 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 2.75 Mbit/s
95th percentile per-packet one-way delay: 116.141 ms
Loss rate: 0.21%
```

Run 1: Report of Indigo — Data Link

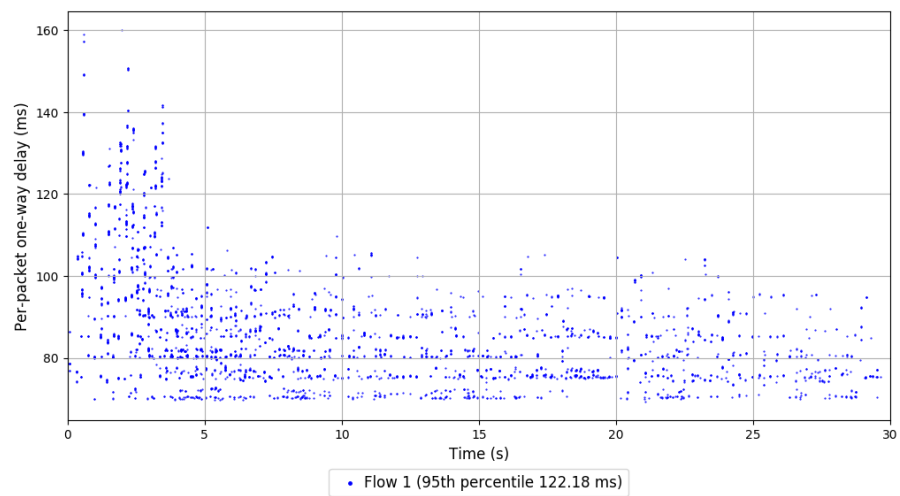
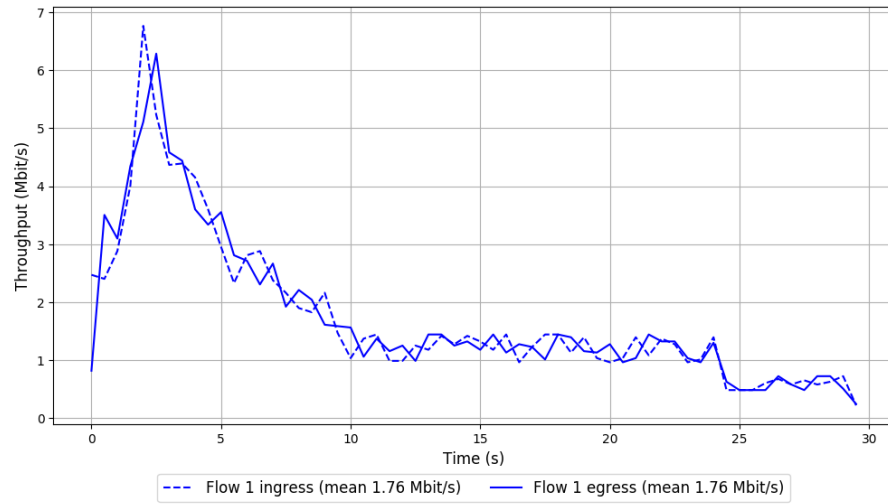


Run 2: Statistics of Indigo

Start at: 2017-12-01 00:40:32
End at: 2017-12-01 00:41:02
Local clock offset: -1.118 ms
Remote clock offset: -6.606 ms

Below is generated by plot.py at 2017-12-01 01:04:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.76 Mbit/s
95th percentile per-packet one-way delay: 122.176 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 1.76 Mbit/s
95th percentile per-packet one-way delay: 122.176 ms
Loss rate: 0.18%

Run 2: Report of Indigo — Data Link

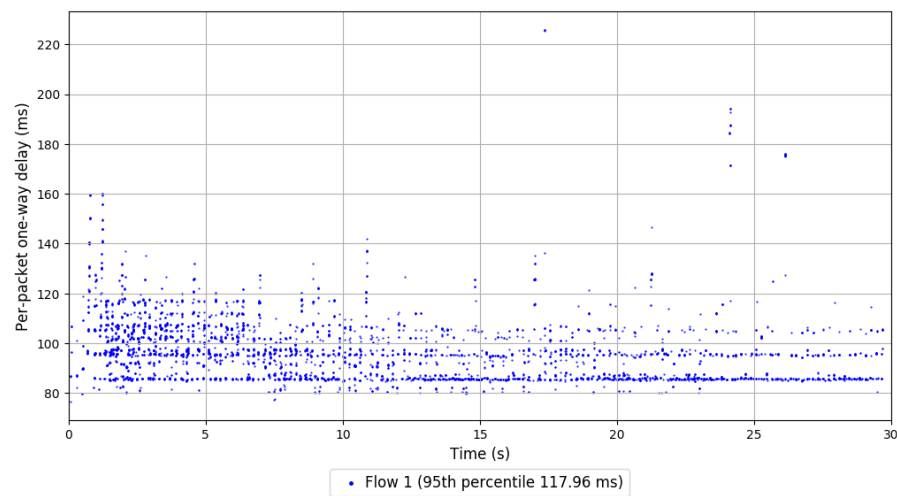
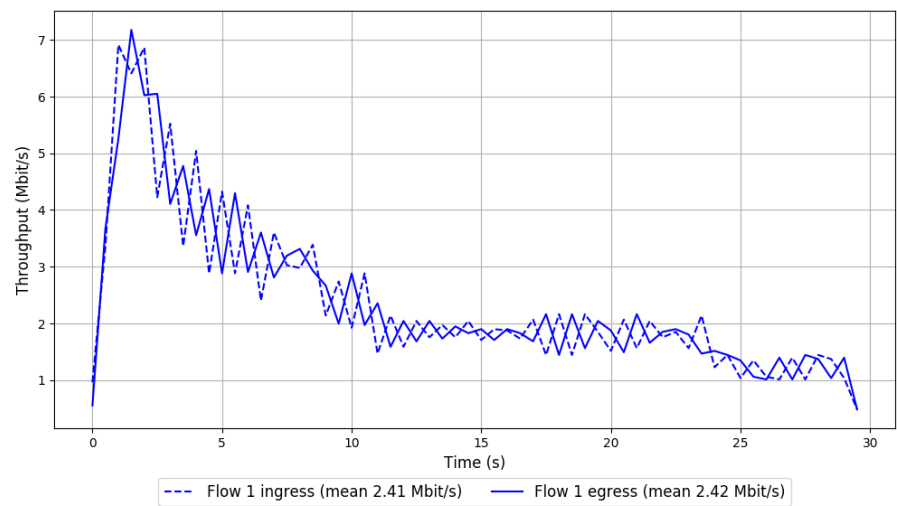


Run 3: Statistics of Indigo

Start at: 2017-12-01 00:56:39
End at: 2017-12-01 00:57:09
Local clock offset: -0.851 ms
Remote clock offset: -6.706 ms

Below is generated by plot.py at 2017-12-01 01:04:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.42 Mbit/s
95th percentile per-packet one-way delay: 117.960 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 2.42 Mbit/s
95th percentile per-packet one-way delay: 117.960 ms
Loss rate: 0.03%

Run 3: Report of Indigo — Data Link

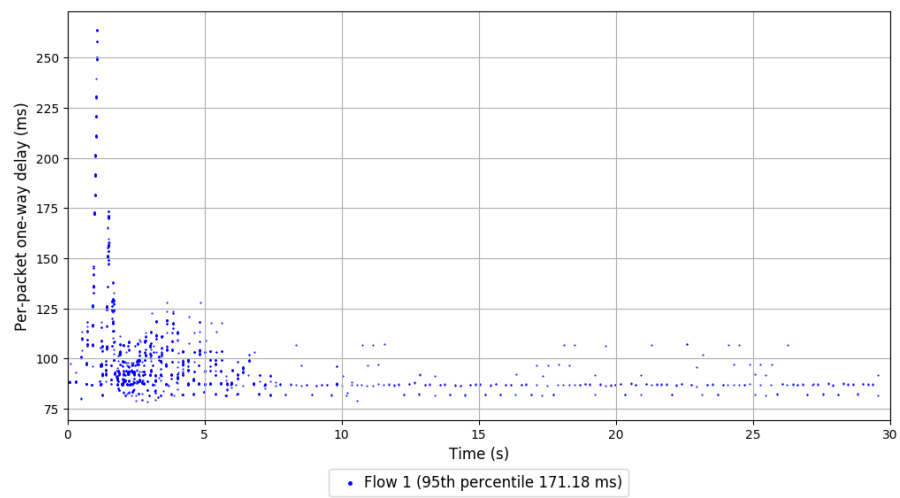
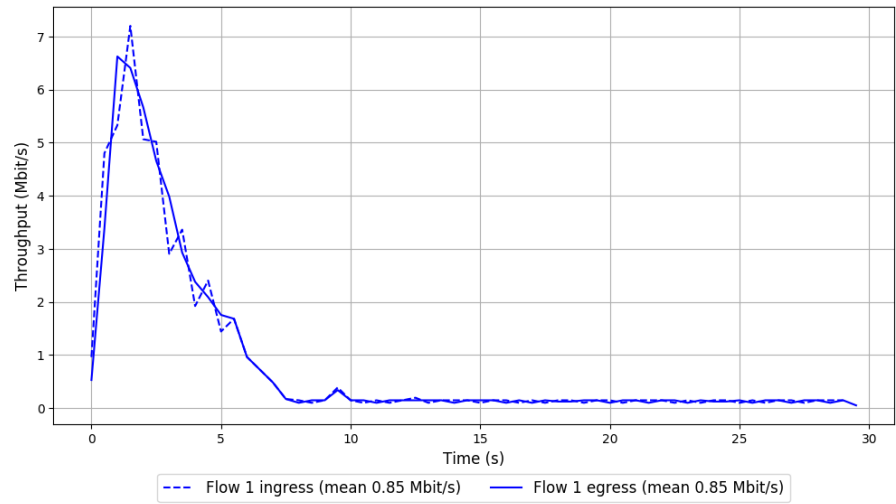


```
Run 1: Statistics of Indigo-calib

Start at: 2017-12-01 00:30:11
End at: 2017-12-01 00:30:41
Local clock offset: -1.331 ms
Remote clock offset: -6.544 ms

# Below is generated by plot.py at 2017-12-01 01:04:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.85 Mbit/s
95th percentile per-packet one-way delay: 171.179 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.85 Mbit/s
95th percentile per-packet one-way delay: 171.179 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo-calib — Data Link



Run 2: Statistics of Indigo-calib

Start at: 2017-12-01 00:46:17

End at: 2017-12-01 00:46:47

Local clock offset: -0.996 ms

Remote clock offset: -6.67 ms

Below is generated by plot.py at 2017-12-01 01:04:39

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.82 Mbit/s

95th percentile per-packet one-way delay: 171.344 ms

Loss rate: 0.00%

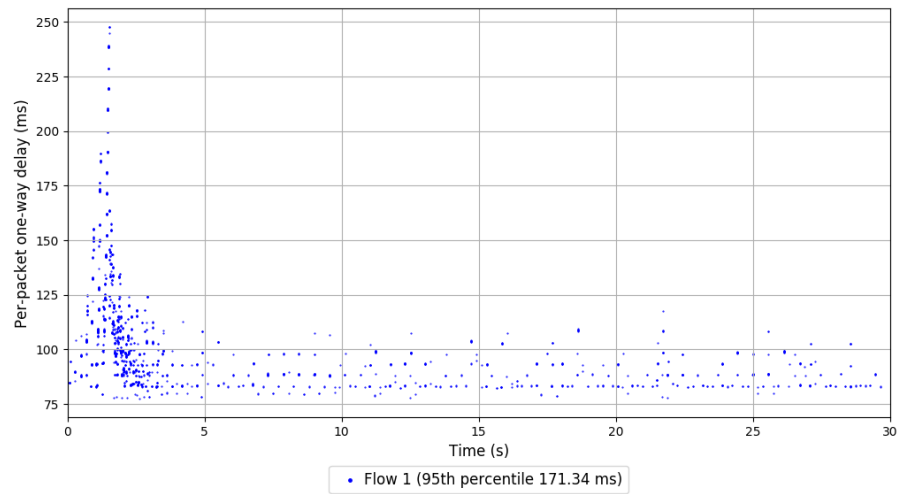
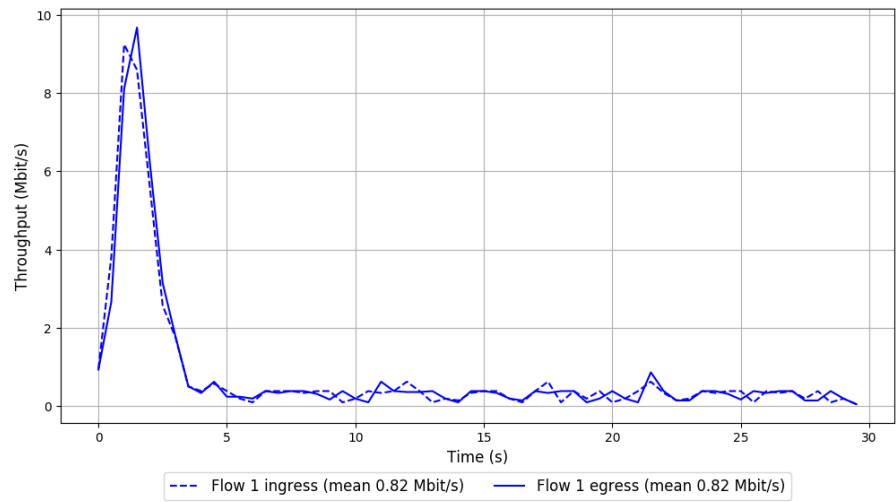
-- Flow 1:

Average throughput: 0.82 Mbit/s

95th percentile per-packet one-way delay: 171.344 ms

Loss rate: 0.00%

Run 2: Report of Indigo-calib — Data Link



Run 3: Statistics of Indigo-calib

Start at: 2017-12-01 01:02:24
End at: 2017-12-01 01:02:54
Local clock offset: -0.752 ms
Remote clock offset: -6.779 ms

Below is generated by plot.py at 2017-12-01 01:04:39
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.14 Mbit/s
95th percentile per-packet one-way delay: 257.317 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 1.14 Mbit/s
95th percentile per-packet one-way delay: 257.317 ms
Loss rate: 0.43%

Run 3: Report of Indigo-calib — Data Link

