

Pantheon Report

Generated at 2017-09-22 11:21:57 (UTC).

Data path: Stanford ppp0 (*remote*) → AWS California 1 Ethernet (*local*).

Repeated the test of 14 congestion control schemes 3 times.

Each test lasted for 30 seconds running 1 flow.

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

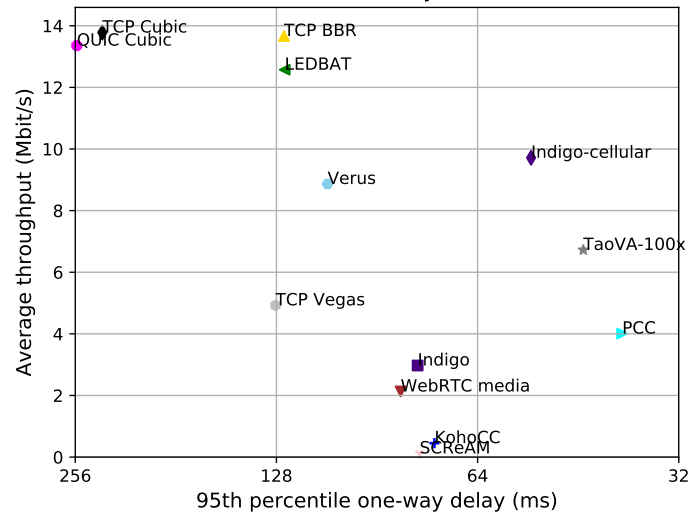
Tested BBR with qdisc of Fair Queuing (**fq**), and other schemes with the default Linux qdisc (**pfifo_fast**).

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

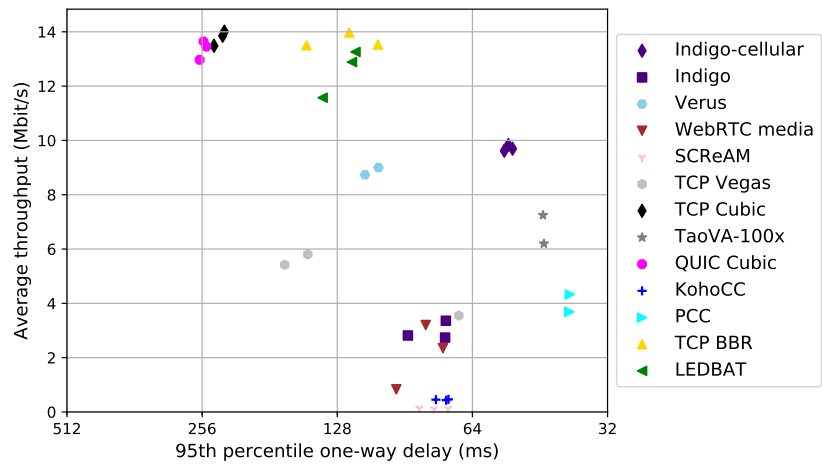
Git summary:

```
branch: indigos @ 46c7c812d4acb71eea4f5fb0b03b3657cea3062f
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 ppp0 to AWS California 1 Ethernet, 3 runs of 30s each per scheme
(mean of all runs by scheme)



test from Stanford ppp0 to AWS California 1 Ethernet, 3 runs of 30s each per scheme



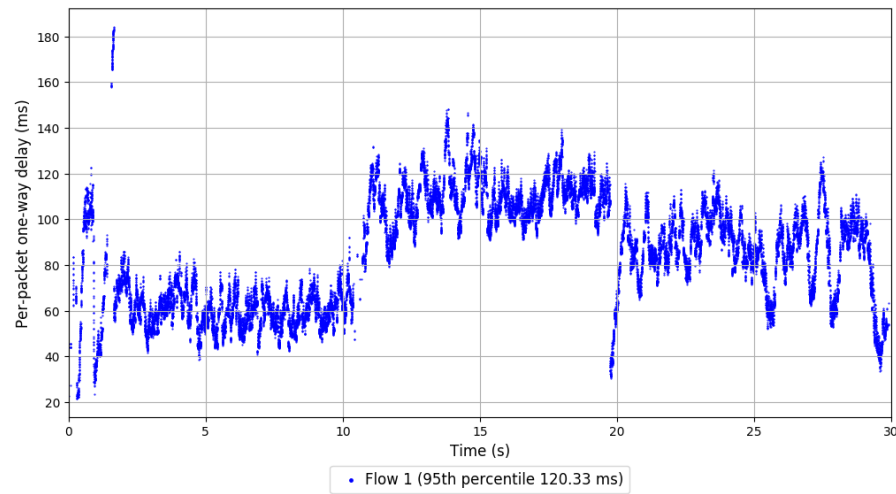
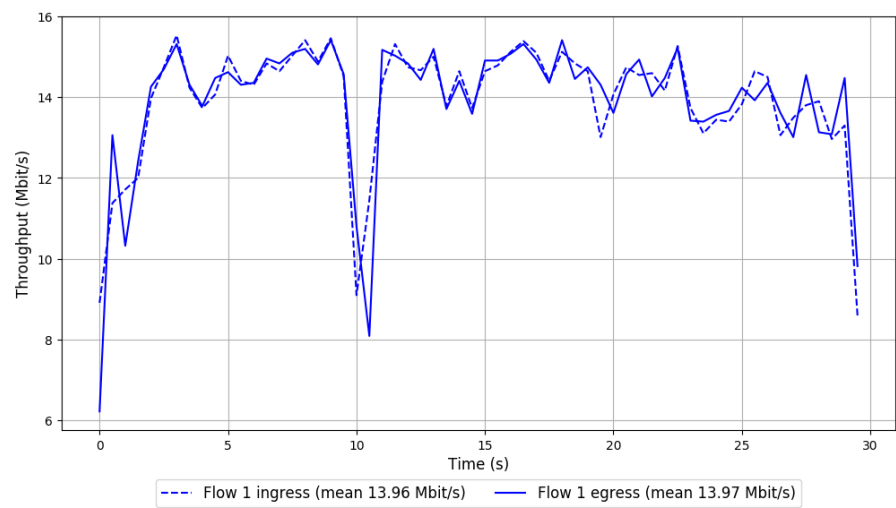
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	13.67	124.69	0.32
TCP Cubic	3	13.78	233.22	0.89
LEDBAT	3	12.57	124.42	0.52
PCC	2	4.01	38.88	0.14
QUIC Cubic	3	13.36	254.66	1.26
SCReAM	3	0.12	78.15	0.44
WebRTC media	3	2.13	83.44	0.56
Sprout	0	N/A	N/A	N/A
TaoVA-100x	2	6.72	44.46	0.73
TCP Vegas	3	4.92	128.39	0.04
Verus	2	8.87	107.33	31.25
Indigo	3	2.97	78.68	0.19
Indigo-cellular	3	9.71	53.22	0.19
KohoCC	3	0.45	74.26	0.68

Run 1: Statistics of TCP BBR

Start at: 2017-09-22 09:50:27
End at: 2017-09-22 09:50:57
Local clock offset: -0.904 ms
Remote clock offset: -2.115 ms

Below is generated by plot.py at 2017-09-22 11:21:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 13.97 Mbit/s
95th percentile per-packet one-way delay: 120.333 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 13.97 Mbit/s
95th percentile per-packet one-way delay: 120.333 ms
Loss rate: 0.01%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2017-09-22 10:06:56

End at: 2017-09-22 10:07:26

Local clock offset: -0.683 ms

Remote clock offset: -2.398 ms

Below is generated by plot.py at 2017-09-22 11:21:13

Datalink statistics

-- Total of 1 flow:

Average throughput: 13.53 Mbit/s

95th percentile per-packet one-way delay: 103.937 ms

Loss rate: 0.43%

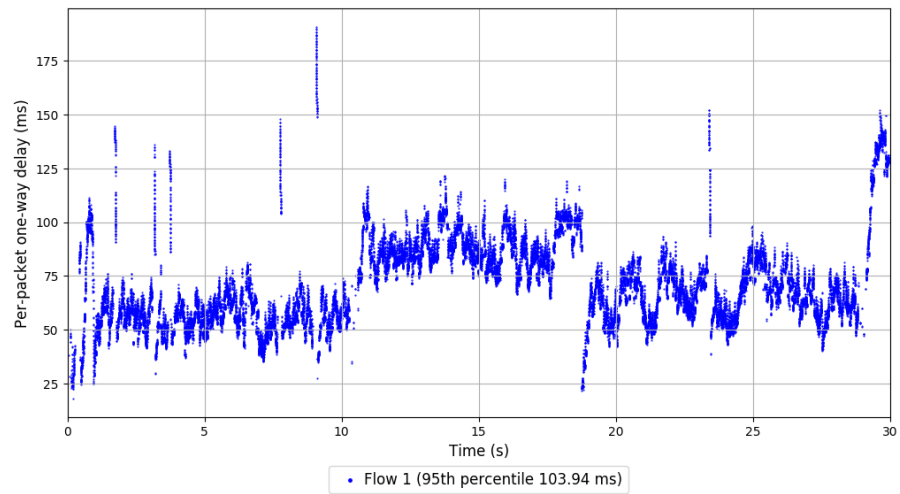
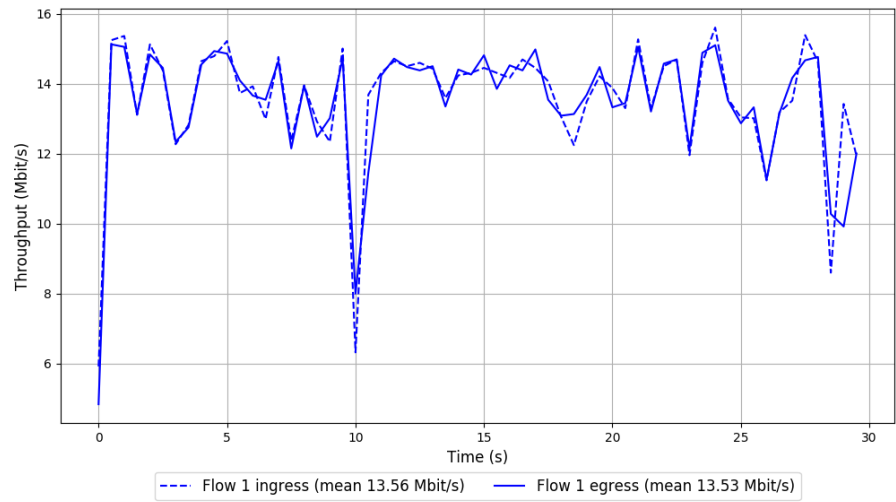
-- Flow 1:

Average throughput: 13.53 Mbit/s

95th percentile per-packet one-way delay: 103.937 ms

Loss rate: 0.43%

Run 2: Report of TCP BBR — Data Link

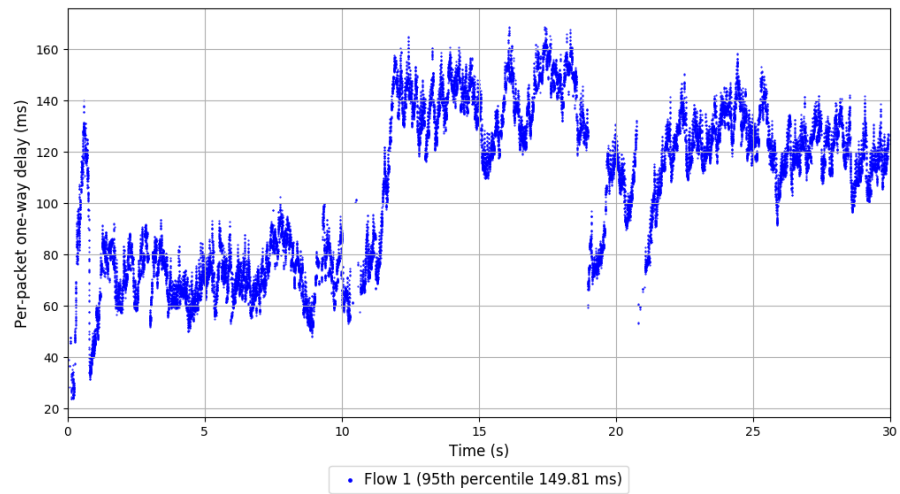
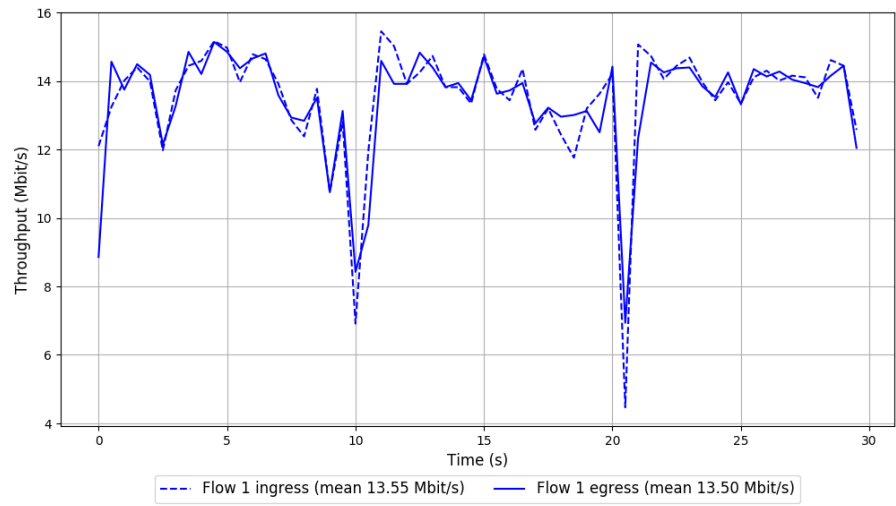


Run 3: Statistics of TCP BBR

Start at: 2017-09-22 10:23:25
End at: 2017-09-22 10:23:55
Local clock offset: -0.456 ms
Remote clock offset: -1.963 ms

Below is generated by plot.py at 2017-09-22 11:21:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 13.50 Mbit/s
95th percentile per-packet one-way delay: 149.808 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 13.50 Mbit/s
95th percentile per-packet one-way delay: 149.808 ms
Loss rate: 0.51%

Run 3: Report of TCP BBR — Data Link

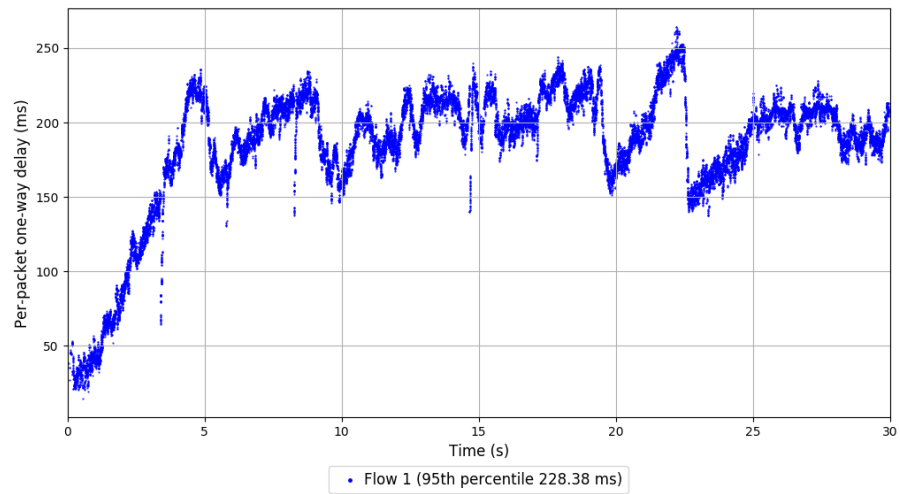
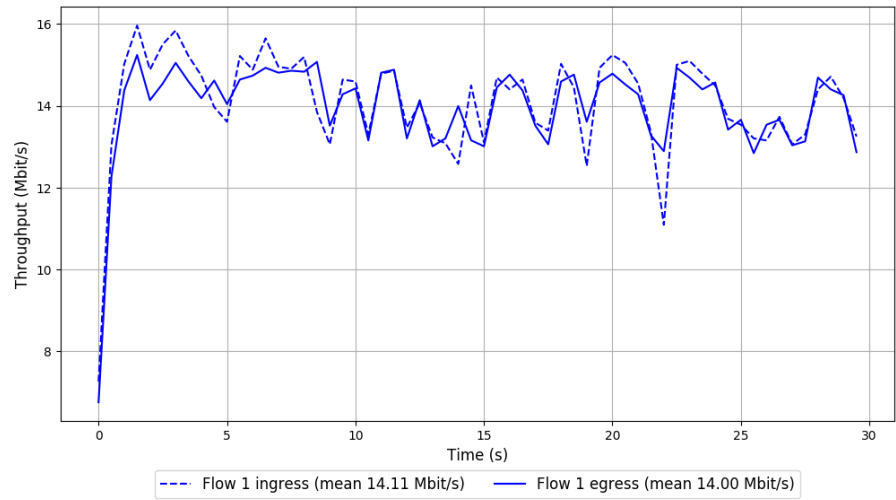


Run 1: Statistics of TCP Cubic

Start at: 2017-09-22 09:52:49
End at: 2017-09-22 09:53:19
Local clock offset: -0.9 ms
Remote clock offset: -2.187 ms

Below is generated by plot.py at 2017-09-22 11:21:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 14.00 Mbit/s
95th percentile per-packet one-way delay: 228.379 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 14.00 Mbit/s
95th percentile per-packet one-way delay: 228.379 ms
Loss rate: 0.88%

Run 1: Report of TCP Cubic — Data Link

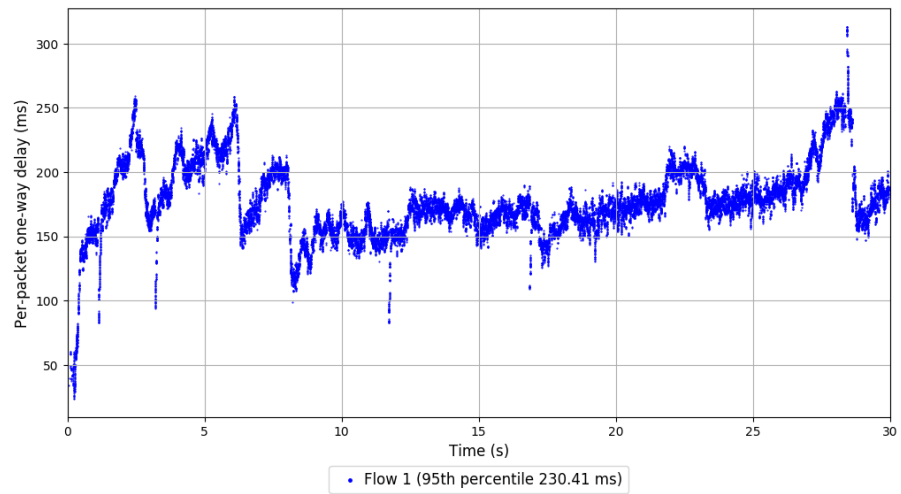
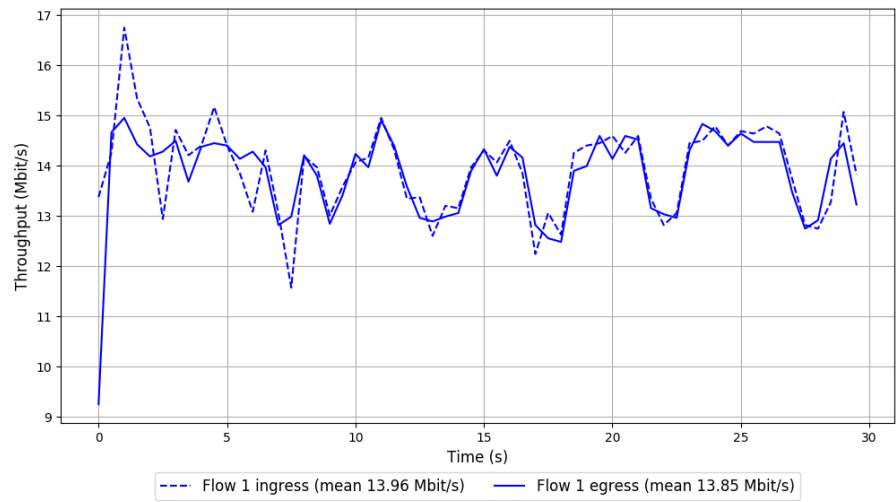


Run 2: Statistics of TCP Cubic

Start at: 2017-09-22 10:09:18
End at: 2017-09-22 10:09:48
Local clock offset: -0.648 ms
Remote clock offset: -2.296 ms

Below is generated by plot.py at 2017-09-22 11:21:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 13.85 Mbit/s
95th percentile per-packet one-way delay: 230.411 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 13.85 Mbit/s
95th percentile per-packet one-way delay: 230.411 ms
Loss rate: 0.92%

Run 2: Report of TCP Cubic — Data Link

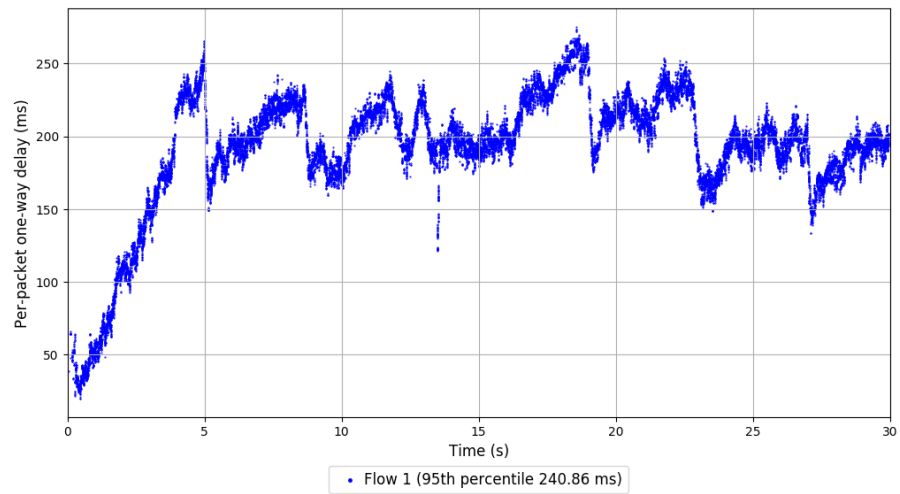
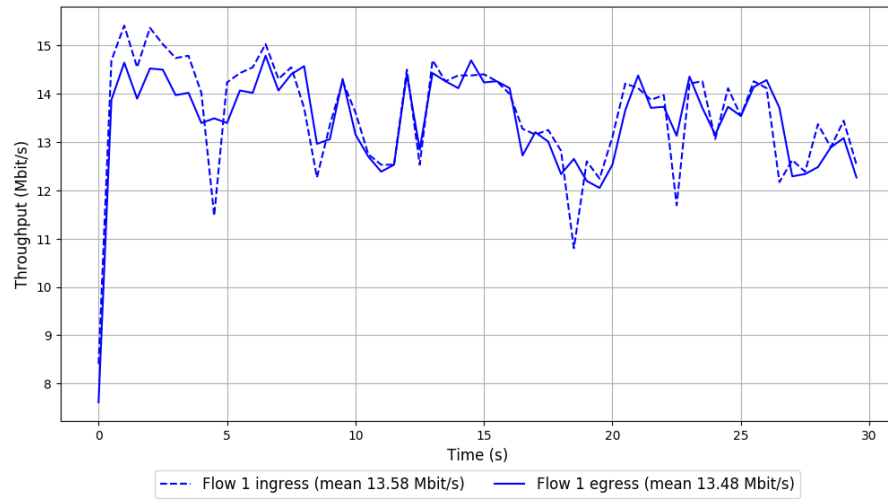


Run 3: Statistics of TCP Cubic

Start at: 2017-09-22 10:25:47
End at: 2017-09-22 10:26:17
Local clock offset: -0.405 ms
Remote clock offset: -2.024 ms

Below is generated by plot.py at 2017-09-22 11:21:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 13.48 Mbit/s
95th percentile per-packet one-way delay: 240.862 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 13.48 Mbit/s
95th percentile per-packet one-way delay: 240.862 ms
Loss rate: 0.87%

Run 3: Report of TCP Cubic — Data Link

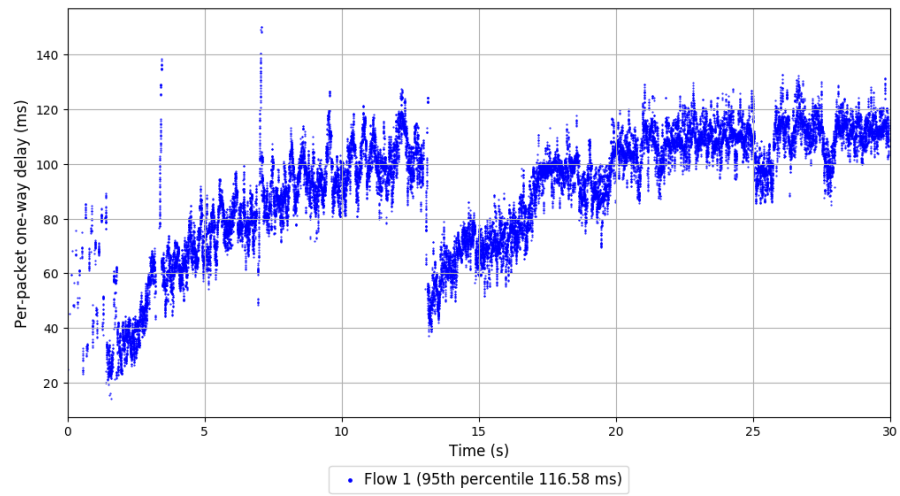
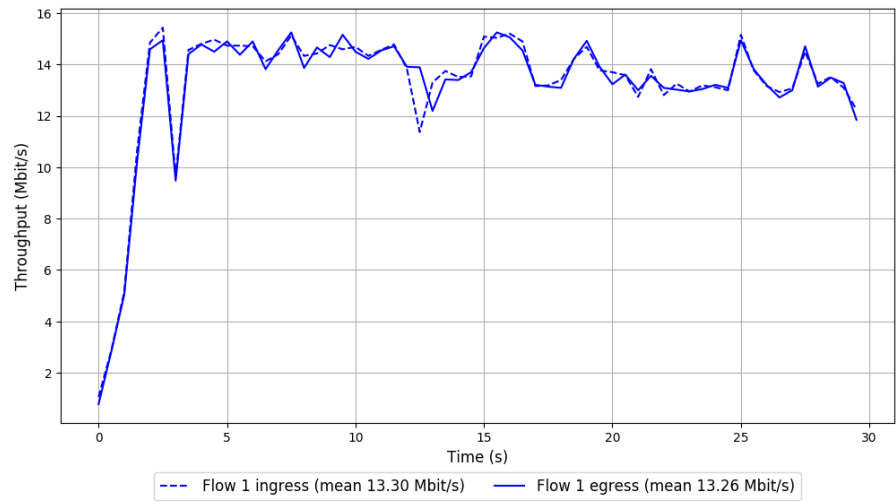


Run 1: Statistics of LEDBAT

Start at: 2017-09-22 09:51:38
End at: 2017-09-22 09:52:08
Local clock offset: -1.005 ms
Remote clock offset: -2.243 ms

Below is generated by plot.py at 2017-09-22 11:21:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 13.26 Mbit/s
95th percentile per-packet one-way delay: 116.581 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 13.26 Mbit/s
95th percentile per-packet one-way delay: 116.581 ms
Loss rate: 0.42%

Run 1: Report of LEDBAT — Data Link

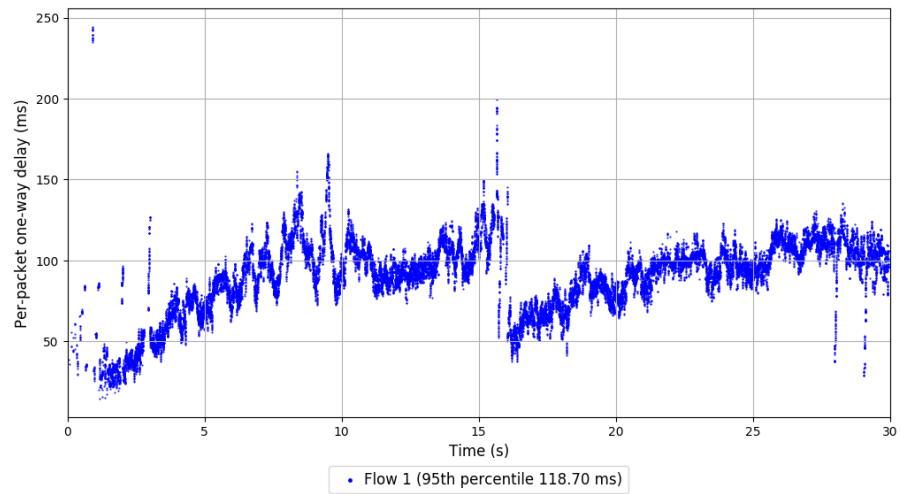
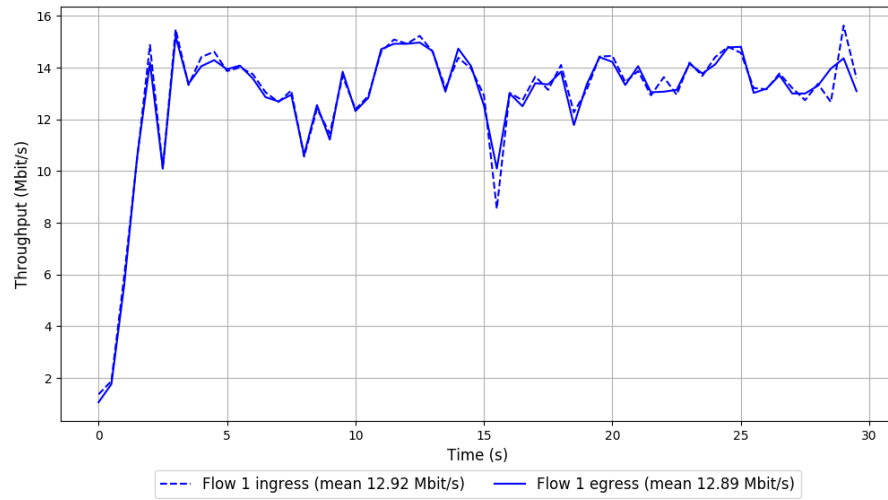


Run 2: Statistics of LEDBAT

Start at: 2017-09-22 10:08:07
End at: 2017-09-22 10:08:37
Local clock offset: -0.682 ms
Remote clock offset: -2.288 ms

Below is generated by plot.py at 2017-09-22 11:21:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 12.89 Mbit/s
95th percentile per-packet one-way delay: 118.702 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 12.89 Mbit/s
95th percentile per-packet one-way delay: 118.702 ms
Loss rate: 0.45%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2017-09-22 10:24:36

End at: 2017-09-22 10:25:06

Local clock offset: -0.415 ms

Remote clock offset: -1.92 ms

Below is generated by plot.py at 2017-09-22 11:21:27

Datalink statistics

-- Total of 1 flow:

Average throughput: 11.57 Mbit/s

95th percentile per-packet one-way delay: 137.966 ms

Loss rate: 0.69%

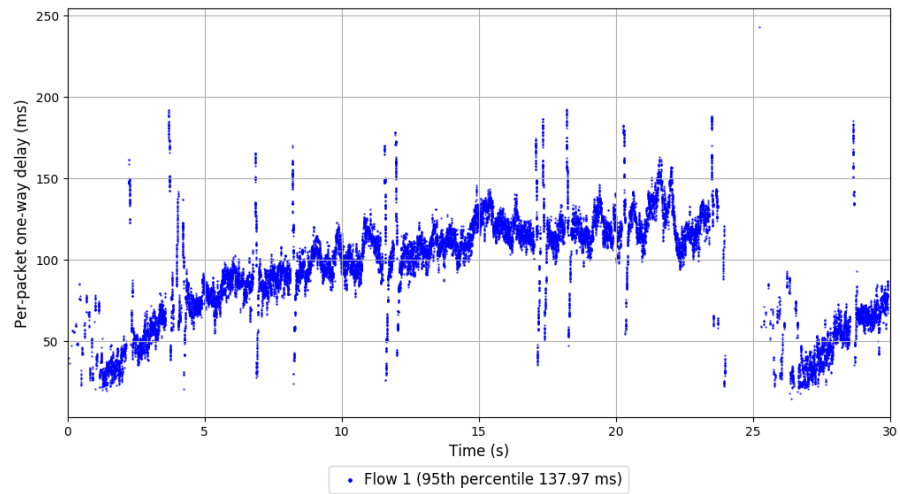
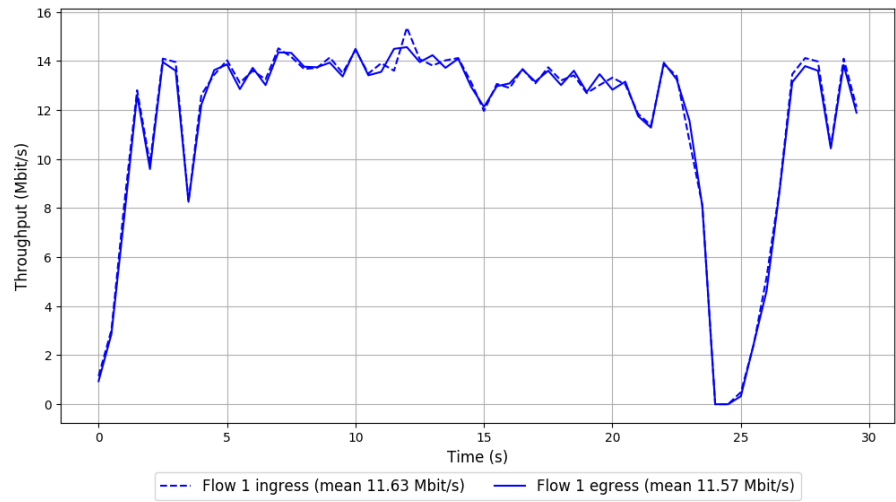
-- Flow 1:

Average throughput: 11.57 Mbit/s

95th percentile per-packet one-way delay: 137.966 ms

Loss rate: 0.69%

Run 3: Report of LEDBAT — Data Link



Run 1: Statistics of PCC

Start at: 2017-09-22 09:57:32

End at: 2017-09-22 09:58:02

Local clock offset: -0.806 ms

Remote clock offset: -2.239 ms

Run 1: Report of PCC — Data Link

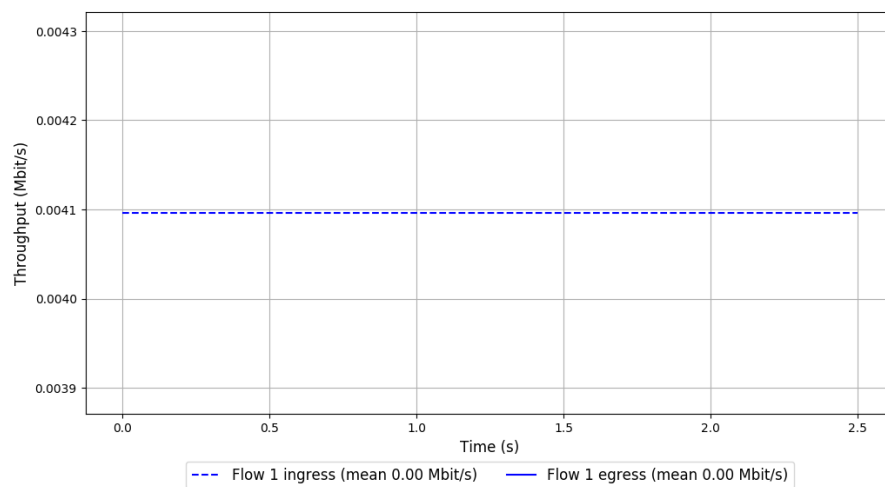


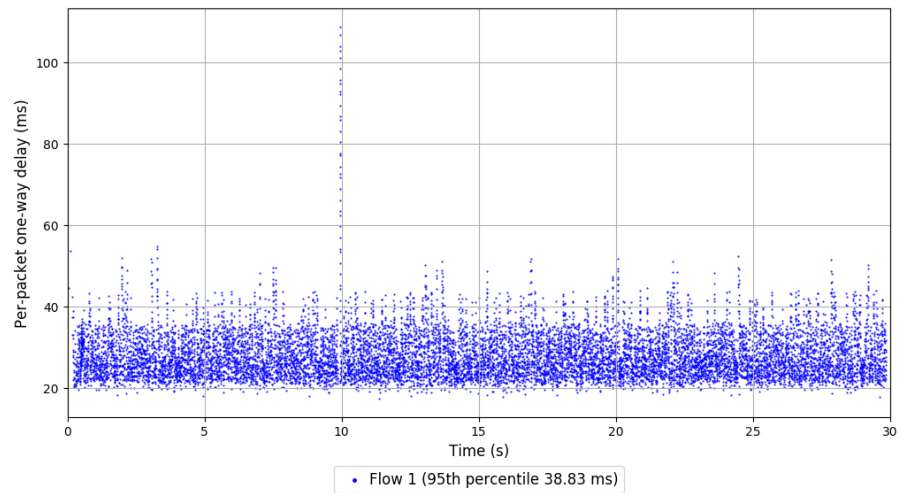
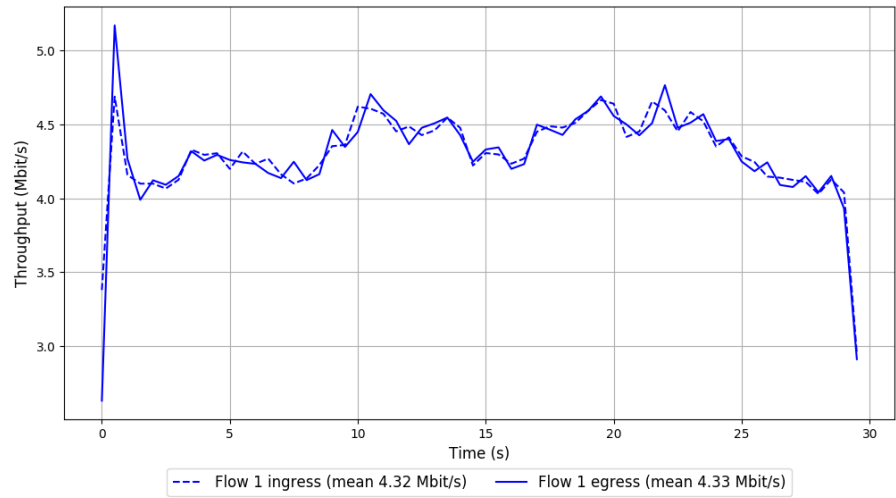
Figure is missing

Run 2: Statistics of PCC

Start at: 2017-09-22 10:14:01
End at: 2017-09-22 10:14:31
Local clock offset: -0.578 ms
Remote clock offset: -2.241 ms

Below is generated by plot.py at 2017-09-22 11:21:27
Datalink statistics
-- Total of 1 flow:
Average throughput: 4.33 Mbit/s
95th percentile per-packet one-way delay: 38.827 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 4.33 Mbit/s
95th percentile per-packet one-way delay: 38.827 ms
Loss rate: 0.14%

Run 2: Report of PCC — Data Link

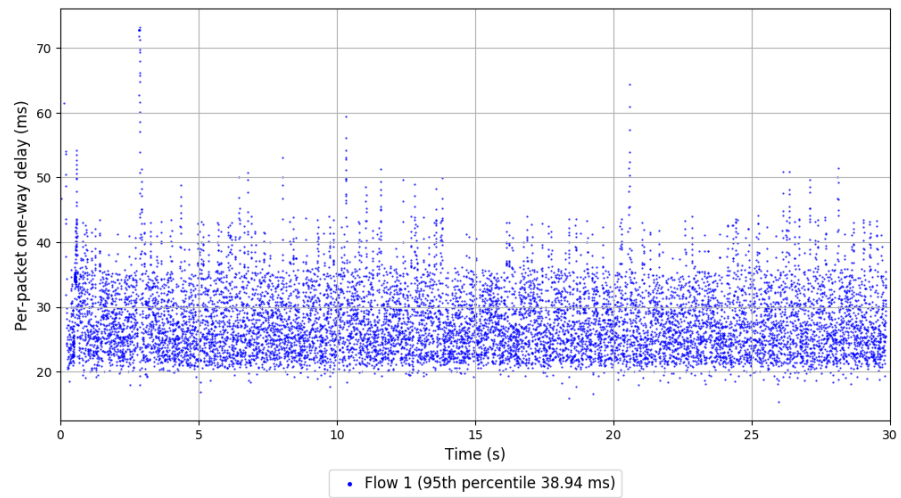
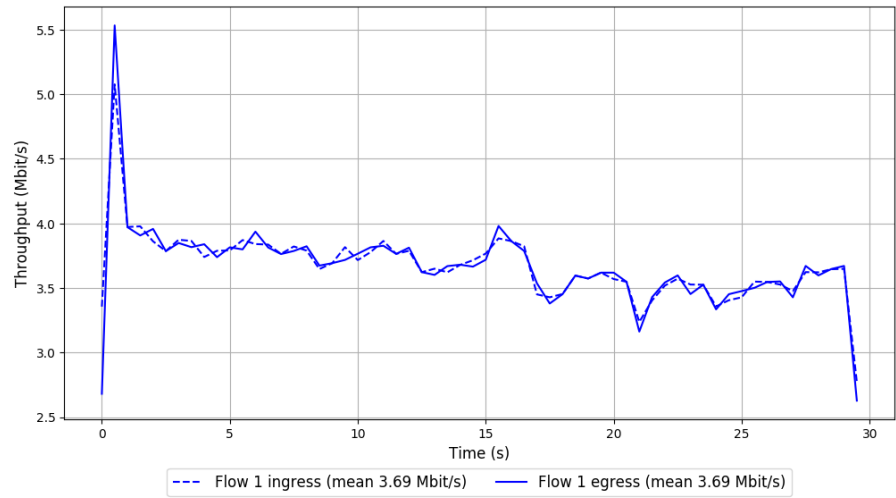


Run 3: Statistics of PCC

Start at: 2017-09-22 10:30:30
End at: 2017-09-22 10:31:00
Local clock offset: -0.432 ms
Remote clock offset: -2.098 ms

Below is generated by plot.py at 2017-09-22 11:21:27
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.69 Mbit/s
95th percentile per-packet one-way delay: 38.941 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 3.69 Mbit/s
95th percentile per-packet one-way delay: 38.941 ms
Loss rate: 0.14%

Run 3: Report of PCC — Data Link

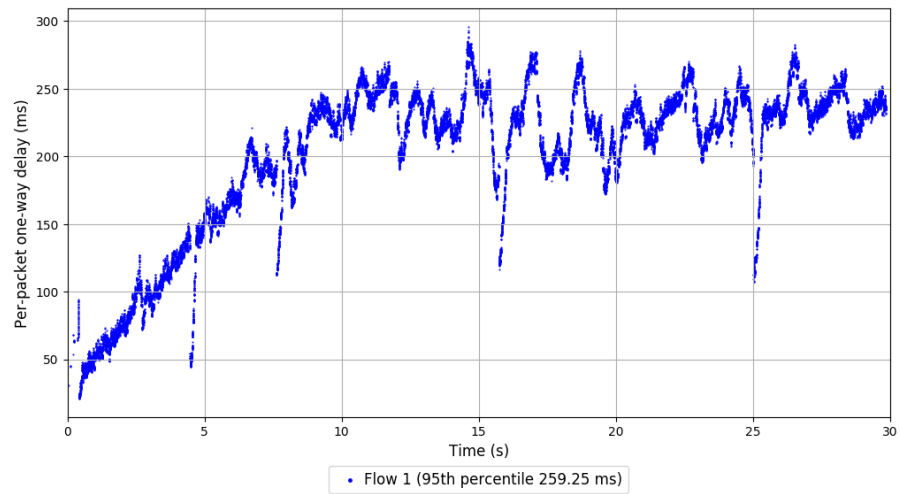
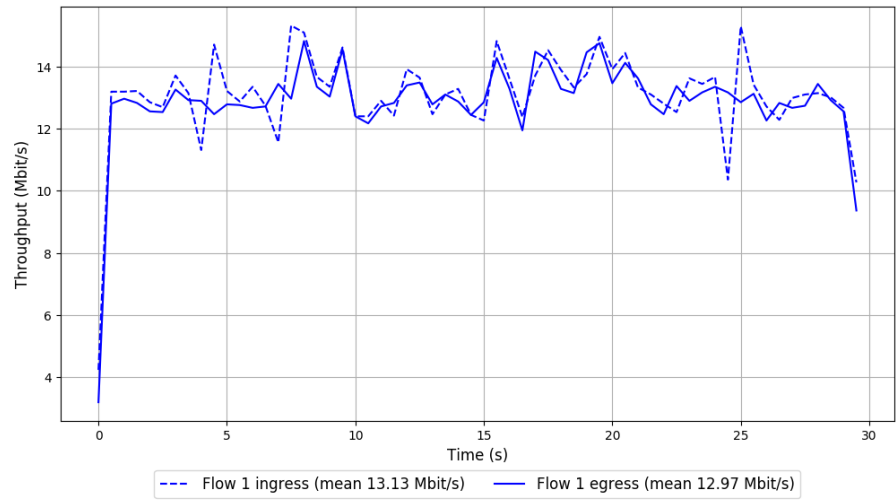


Run 1: Statistics of QUIC Cubic

Start at: 2017-09-22 09:48:06
End at: 2017-09-22 09:48:36
Local clock offset: -0.933 ms
Remote clock offset: -2.231 ms

Below is generated by plot.py at 2017-09-22 11:21:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 12.97 Mbit/s
95th percentile per-packet one-way delay: 259.248 ms
Loss rate: 1.37%
-- Flow 1:
Average throughput: 12.97 Mbit/s
95th percentile per-packet one-way delay: 259.248 ms
Loss rate: 1.37%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2017-09-22 10:04:34

End at: 2017-09-22 10:05:04

Local clock offset: -0.807 ms

Remote clock offset: -2.388 ms

Below is generated by plot.py at 2017-09-22 11:21:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 13.64 Mbit/s

95th percentile per-packet one-way delay: 254.161 ms

Loss rate: 1.22%

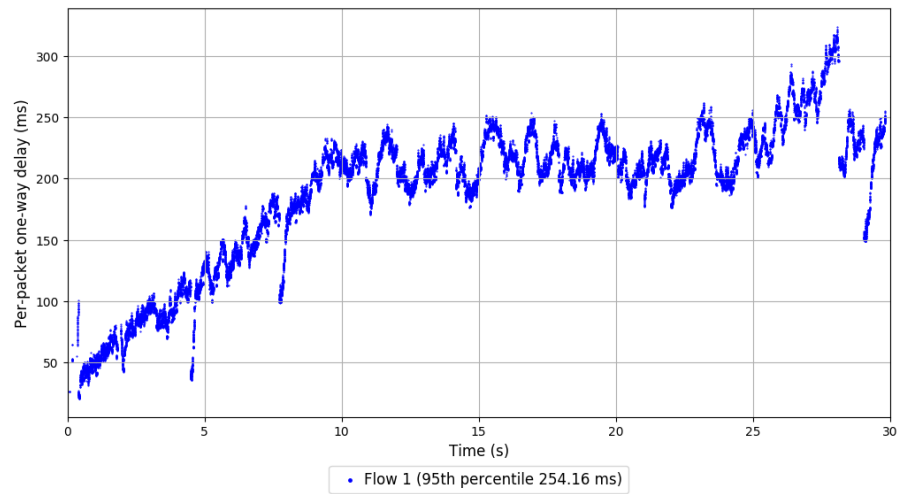
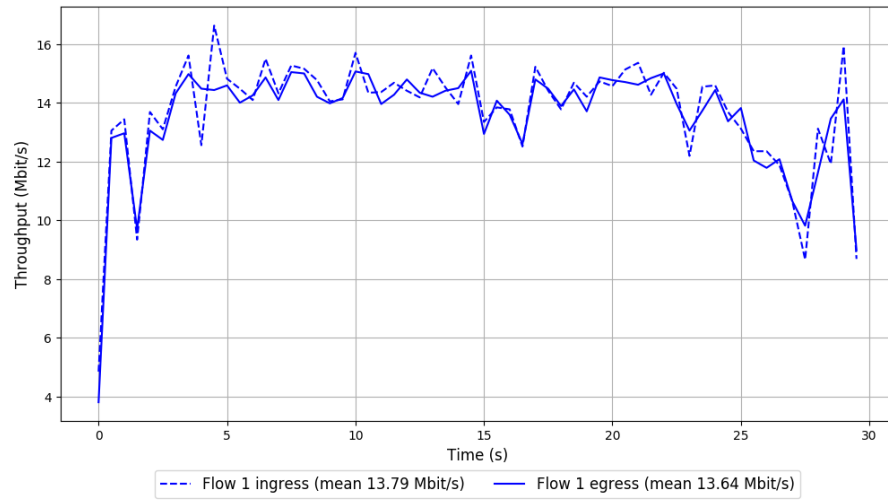
-- Flow 1:

Average throughput: 13.64 Mbit/s

95th percentile per-packet one-way delay: 254.161 ms

Loss rate: 1.22%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2017-09-22 10:21:04

End at: 2017-09-22 10:21:34

Local clock offset: -0.551 ms

Remote clock offset: -2.053 ms

Below is generated by plot.py at 2017-09-22 11:21:34

Datalink statistics

-- Total of 1 flow:

Average throughput: 13.46 Mbit/s

95th percentile per-packet one-way delay: 250.579 ms

Loss rate: 1.20%

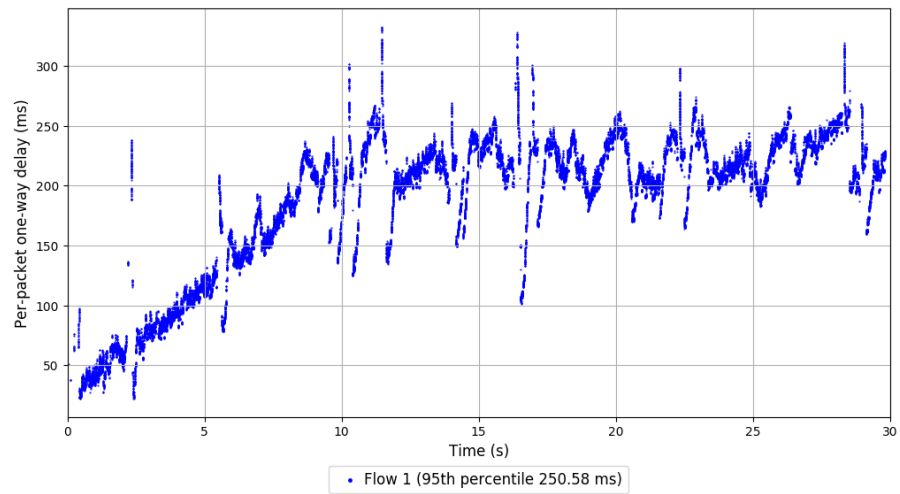
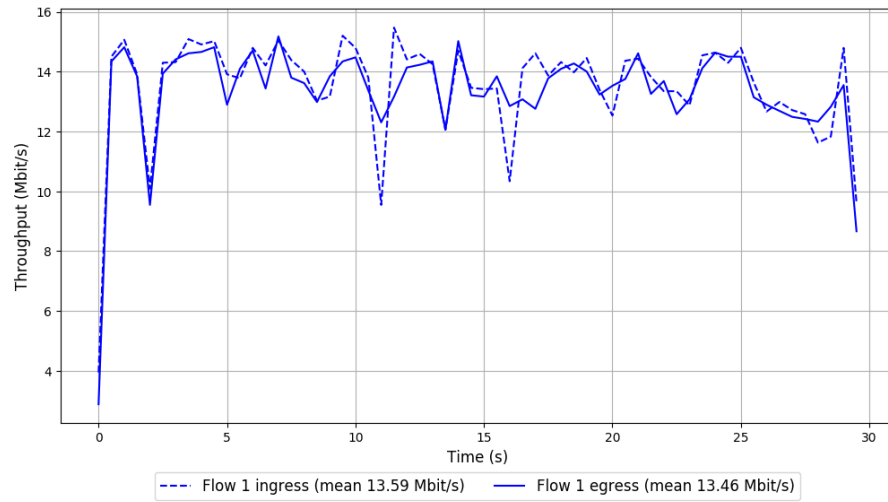
-- Flow 1:

Average throughput: 13.46 Mbit/s

95th percentile per-packet one-way delay: 250.579 ms

Loss rate: 1.20%

Run 3: Report of QUIC Cubic — Data Link

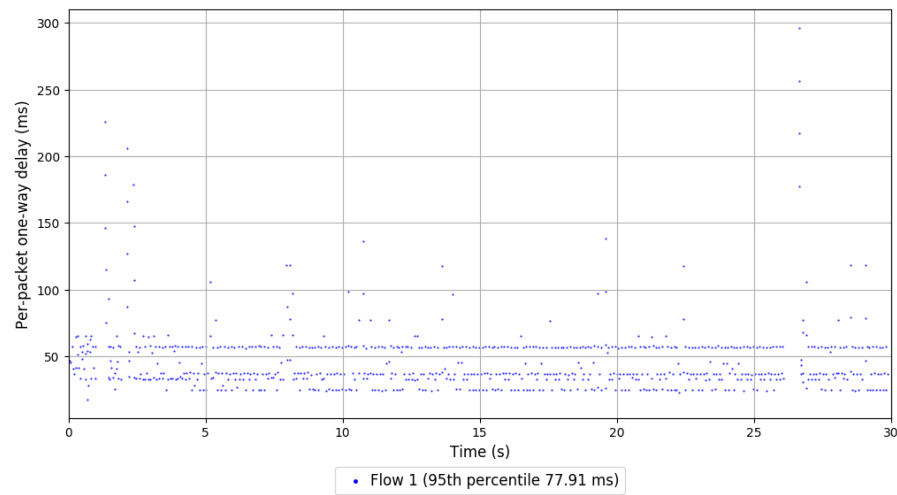
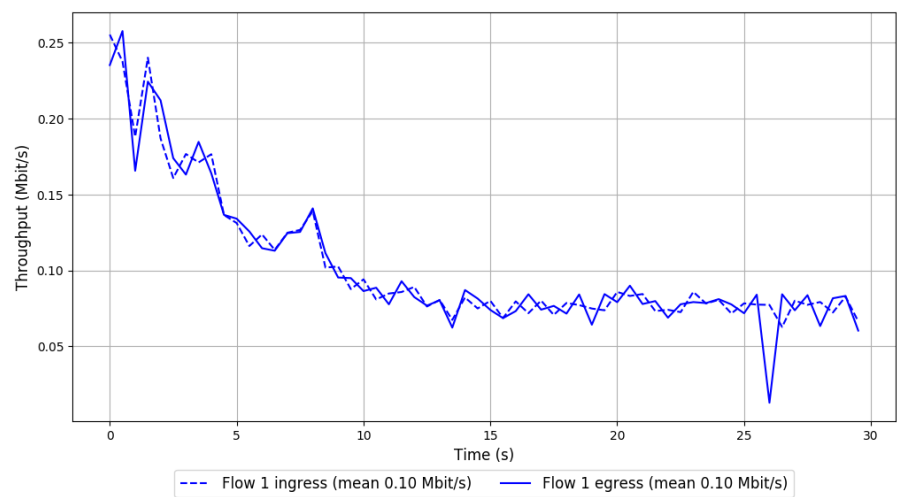


Run 1: Statistics of SCReAM

Start at: 2017-09-22 09:42:13
End at: 2017-09-22 09:42:43
Local clock offset: -1.12 ms
Remote clock offset: -2.195 ms

Below is generated by plot.py at 2017-09-22 11:21:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 77.907 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 77.907 ms
Loss rate: 0.88%

Run 1: Report of SReAM — Data Link

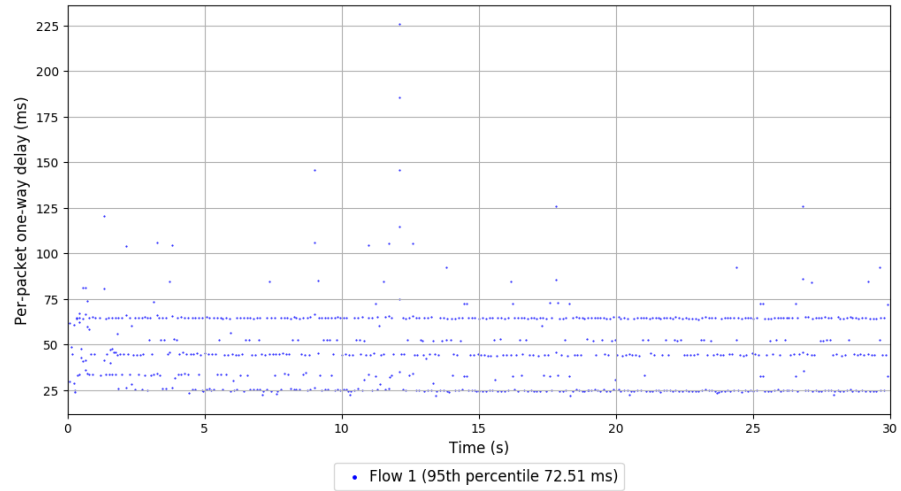
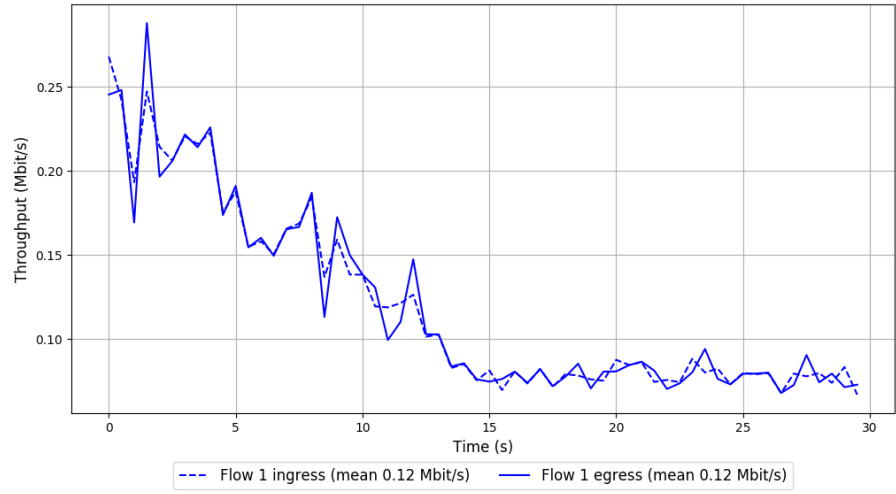


Run 2: Statistics of SCReAM

Start at: 2017-09-22 09:58:42
End at: 2017-09-22 09:59:12
Local clock offset: -0.798 ms
Remote clock offset: -2.353 ms

Below is generated by plot.py at 2017-09-22 11:21:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 72.506 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 72.506 ms
Loss rate: 0.08%

Run 2: Report of SReAM — Data Link

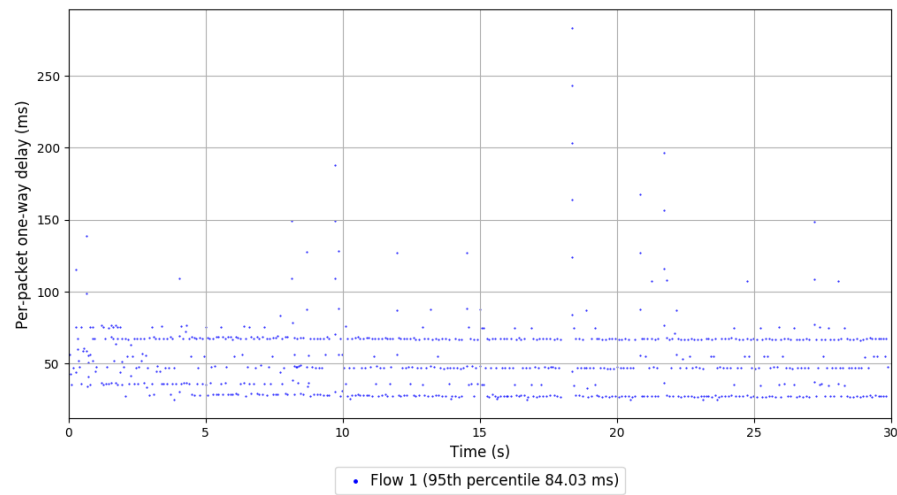
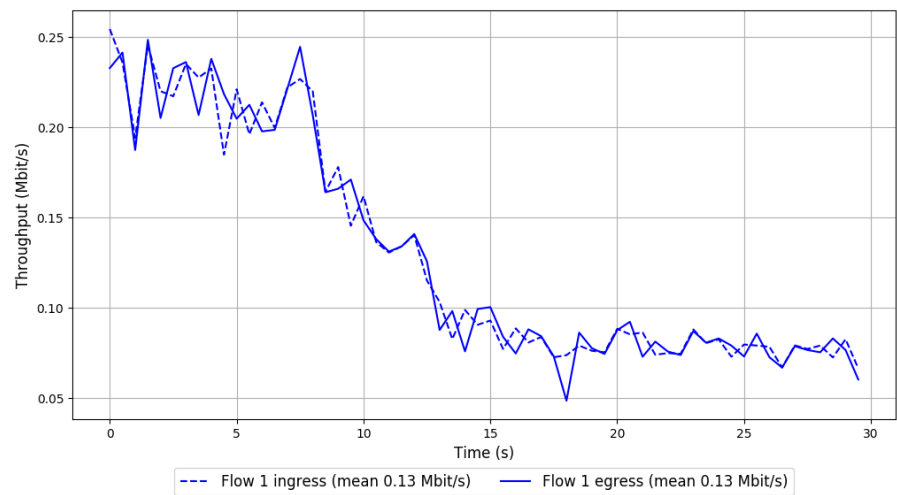


Run 3: Statistics of SCReAM

Start at: 2017-09-22 10:15:11
End at: 2017-09-22 10:15:41
Local clock offset: -0.548 ms
Remote clock offset: -2.217 ms

Below is generated by plot.py at 2017-09-22 11:21:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 84.030 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 84.030 ms
Loss rate: 0.37%

Run 3: Report of SReAM — Data Link

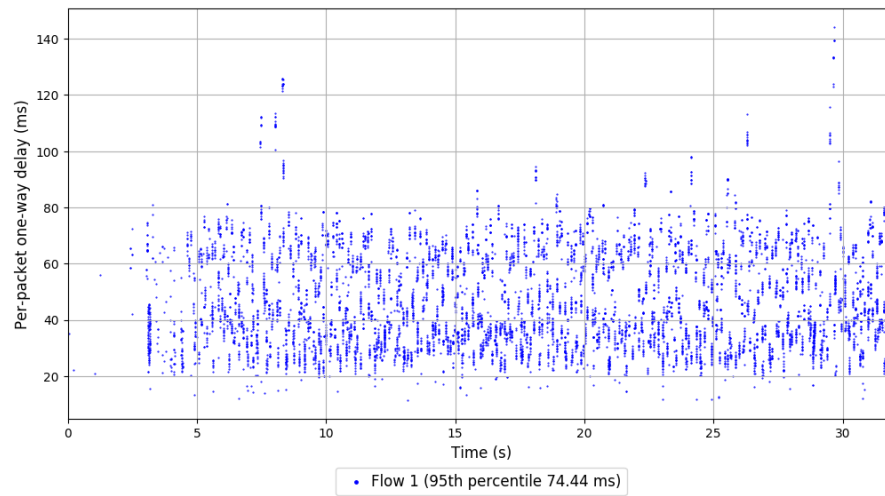
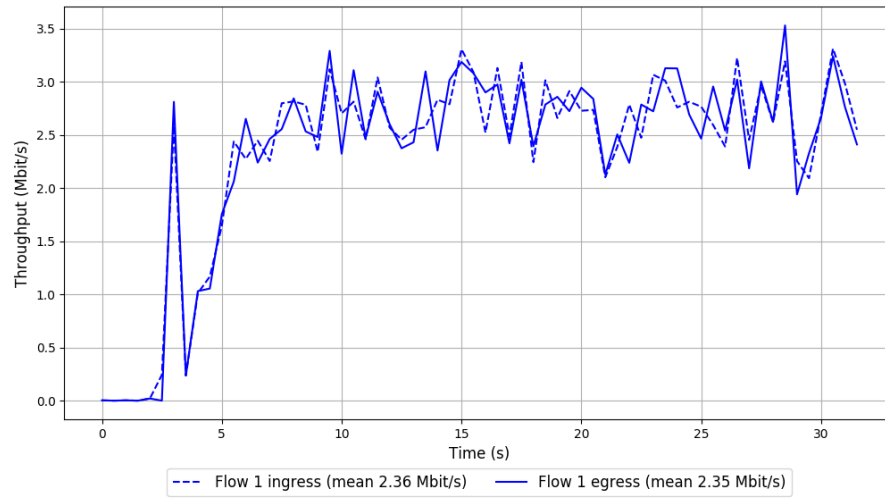


Run 1: Statistics of WebRTC media

Start at: 2017-09-22 09:45:45
End at: 2017-09-22 09:46:15
Local clock offset: -1.078 ms
Remote clock offset: -2.235 ms

Below is generated by plot.py at 2017-09-22 11:21:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.35 Mbit/s
95th percentile per-packet one-way delay: 74.445 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 2.35 Mbit/s
95th percentile per-packet one-way delay: 74.445 ms
Loss rate: 0.42%

Run 1: Report of WebRTC media — Data Link

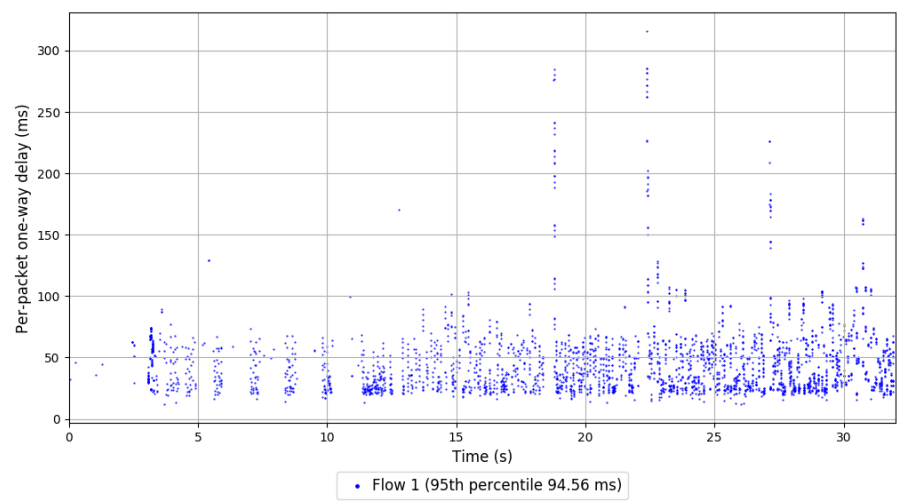
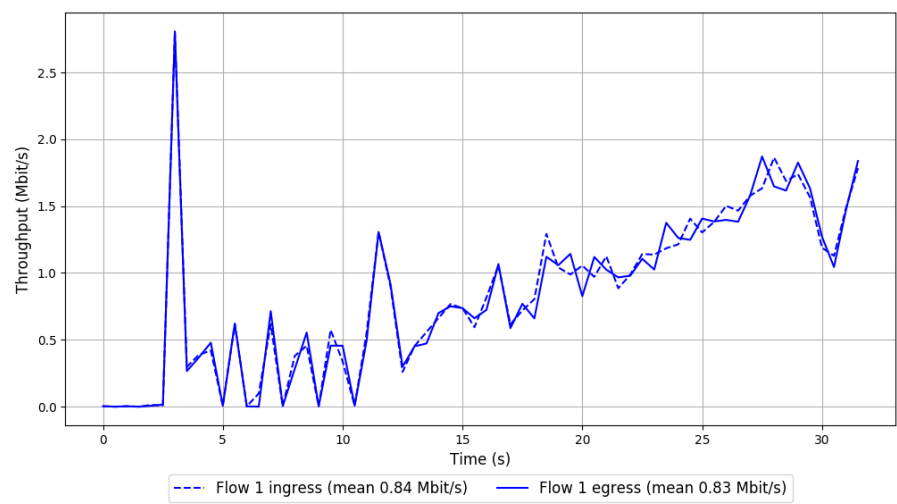


Run 2: Statistics of WebRTC media

Start at: 2017-09-22 10:02:13
End at: 2017-09-22 10:02:43
Local clock offset: -0.837 ms
Remote clock offset: -2.359 ms

Below is generated by plot.py at 2017-09-22 11:21:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 94.563 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 94.563 ms
Loss rate: 0.59%

Run 2: Report of WebRTC media — Data Link

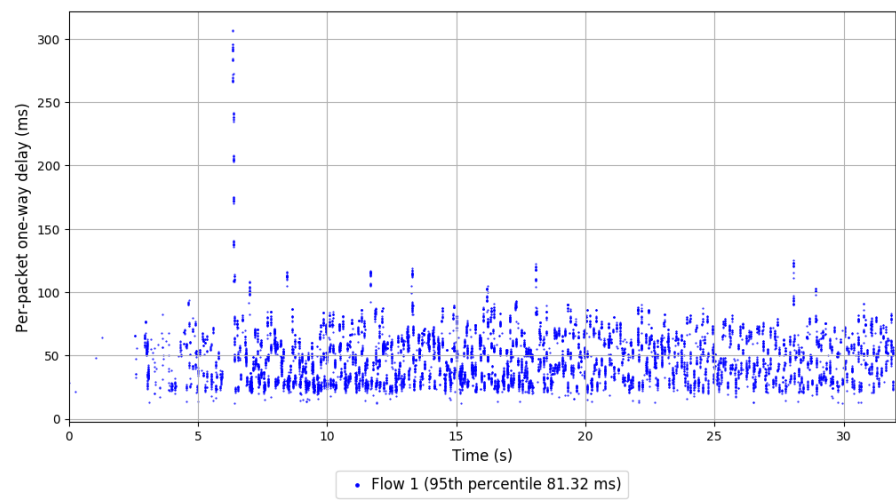
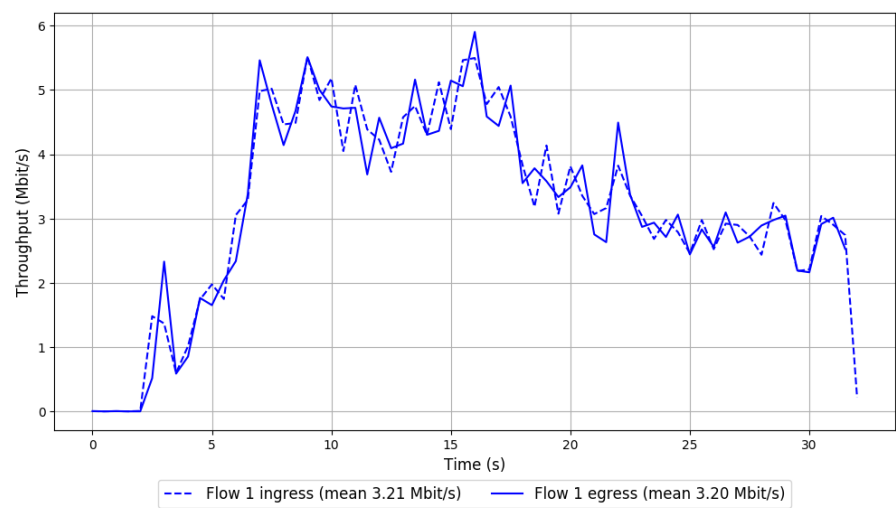


Run 3: Statistics of WebRTC media

Start at: 2017-09-22 10:18:43
End at: 2017-09-22 10:19:13
Local clock offset: -0.509 ms
Remote clock offset: -2.161 ms

Below is generated by plot.py at 2017-09-22 11:21:34
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.20 Mbit/s
95th percentile per-packet one-way delay: 81.323 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 3.20 Mbit/s
95th percentile per-packet one-way delay: 81.323 ms
Loss rate: 0.66%

Run 3: Report of WebRTC media — Data Link



Run 1: Statistics of Sprout

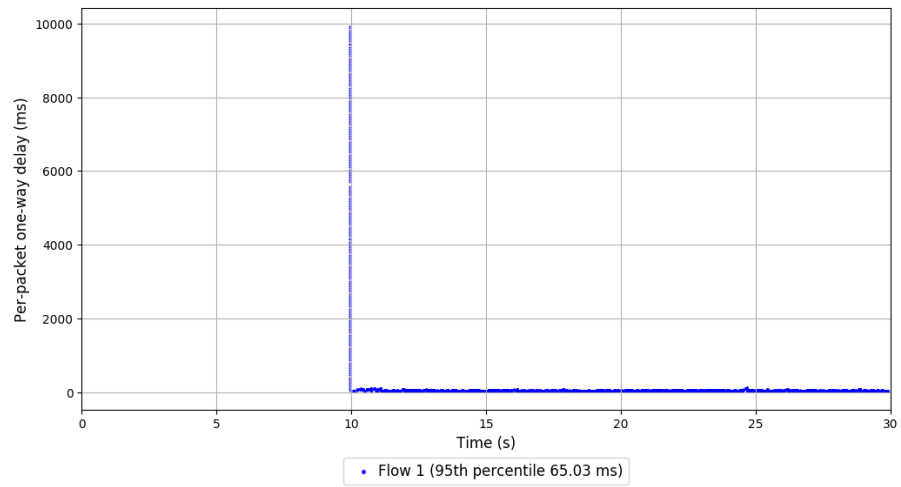
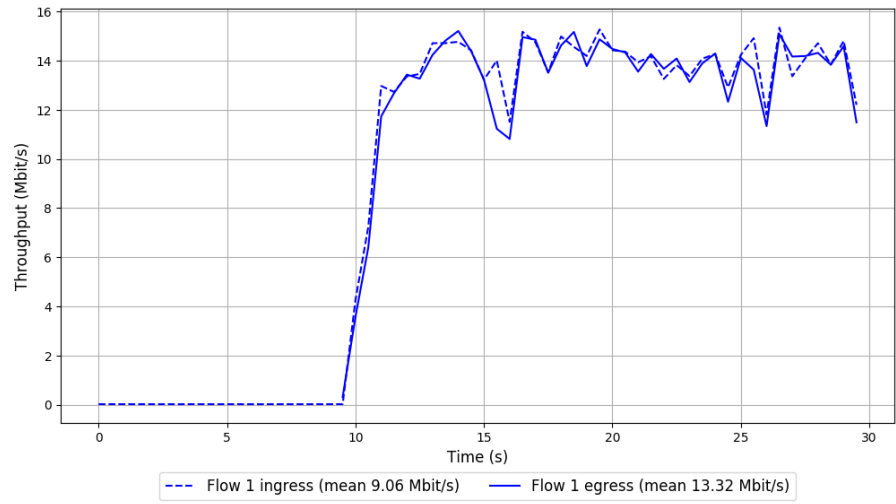
Start at: 2017-09-22 09:49:17

End at: 2017-09-22 09:49:47

Local clock offset: -1.028 ms

Remote clock offset: -2.201 ms

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

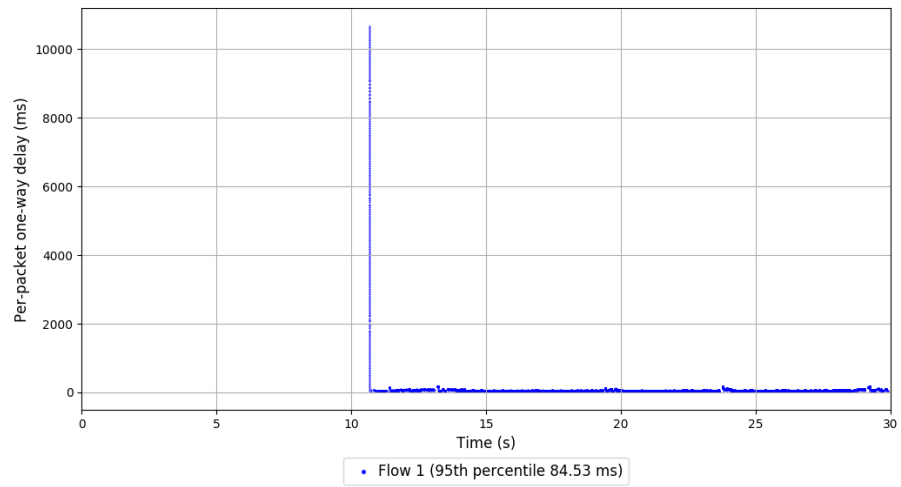
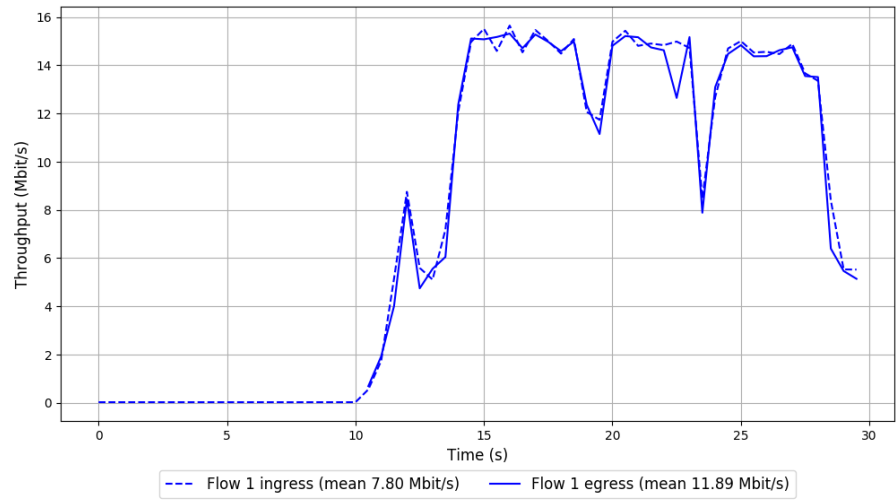
Start at: 2017-09-22 10:05:45

End at: 2017-09-22 10:06:15

Local clock offset: -0.691 ms

Remote clock offset: -2.439 ms

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

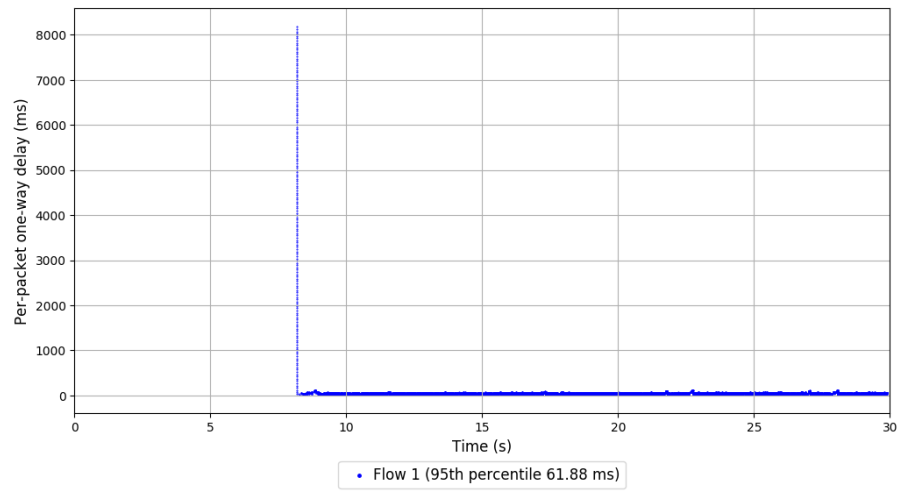
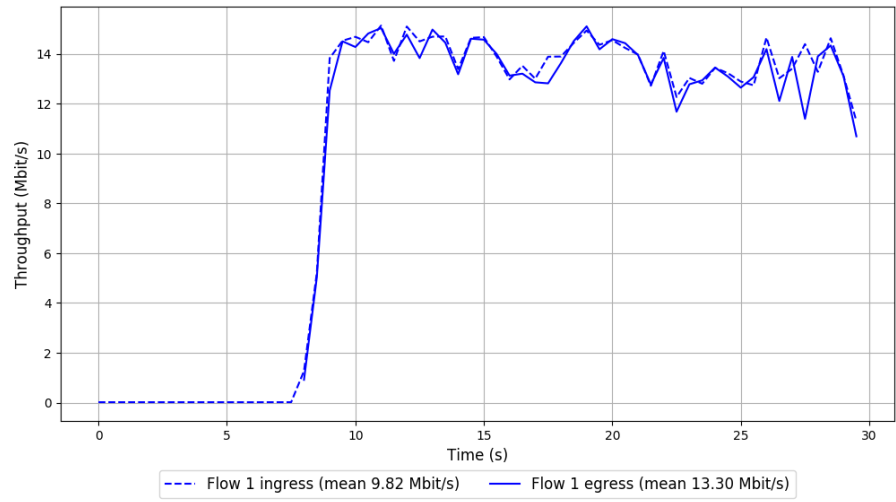
Start at: 2017-09-22 10:22:15

End at: 2017-09-22 10:22:45

Local clock offset: -0.458 ms

Remote clock offset: -1.999 ms

Run 3: Report of Sprout — Data Link

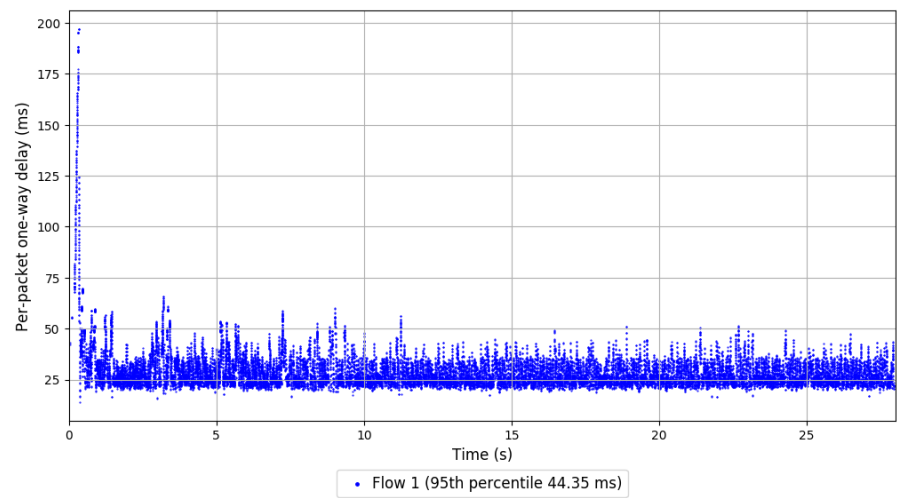
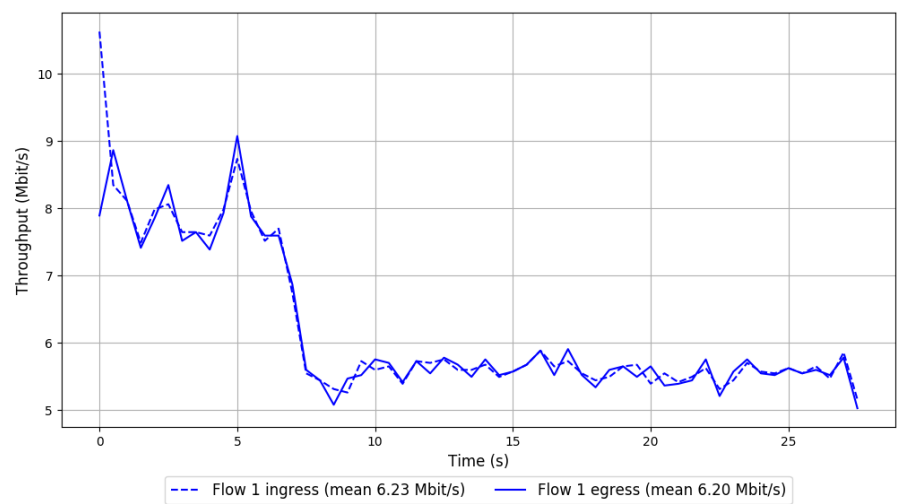


Run 1: Statistics of TaoVA-100x

Start at: 2017-09-22 09:54:00
End at: 2017-09-22 09:54:30
Local clock offset: -0.873 ms
Remote clock offset: -2.173 ms

Below is generated by plot.py at 2017-09-22 11:21:40
Datalink statistics
-- Total of 1 flow:
Average throughput: 6.20 Mbit/s
95th percentile per-packet one-way delay: 44.350 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 6.20 Mbit/s
95th percentile per-packet one-way delay: 44.350 ms
Loss rate: 0.68%

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

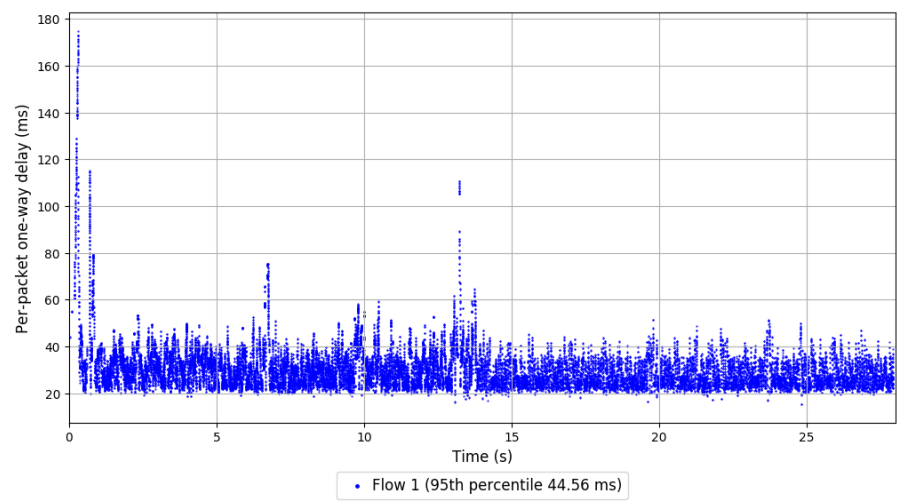
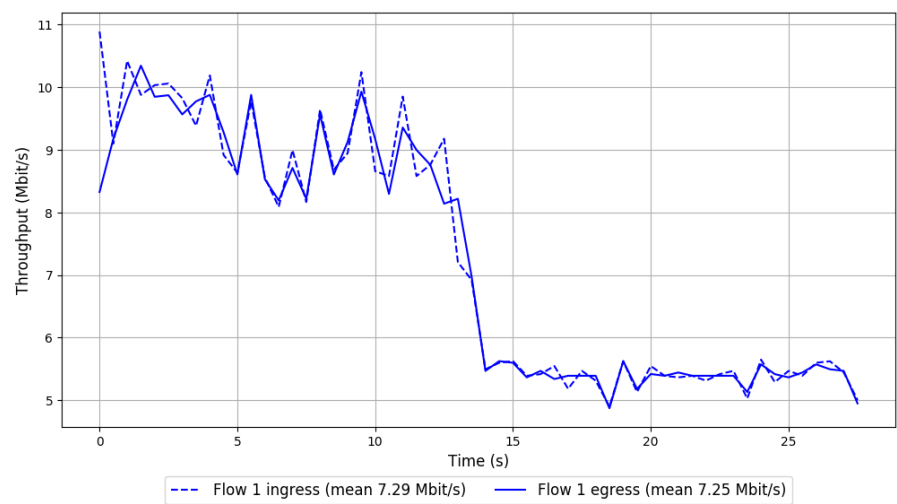


Run 2: Statistics of TaoVA-100x

Start at: 2017-09-22 10:10:29
End at: 2017-09-22 10:10:59
Local clock offset: -0.713 ms
Remote clock offset: -2.333 ms

Below is generated by plot.py at 2017-09-22 11:21:48
Datalink statistics
-- Total of 1 flow:
Average throughput: 7.25 Mbit/s
95th percentile per-packet one-way delay: 44.563 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 7.25 Mbit/s
95th percentile per-packet one-way delay: 44.563 ms
Loss rate: 0.77%

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



Run 3: Statistics of TaoVA-100x

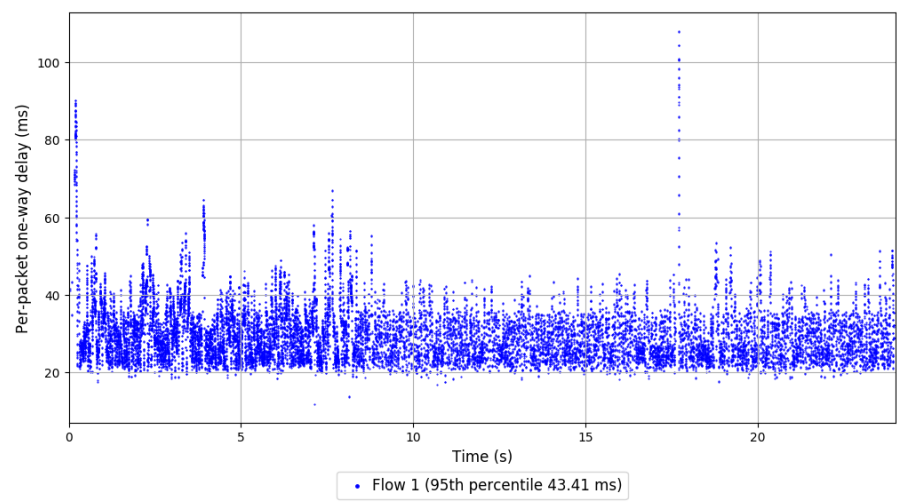
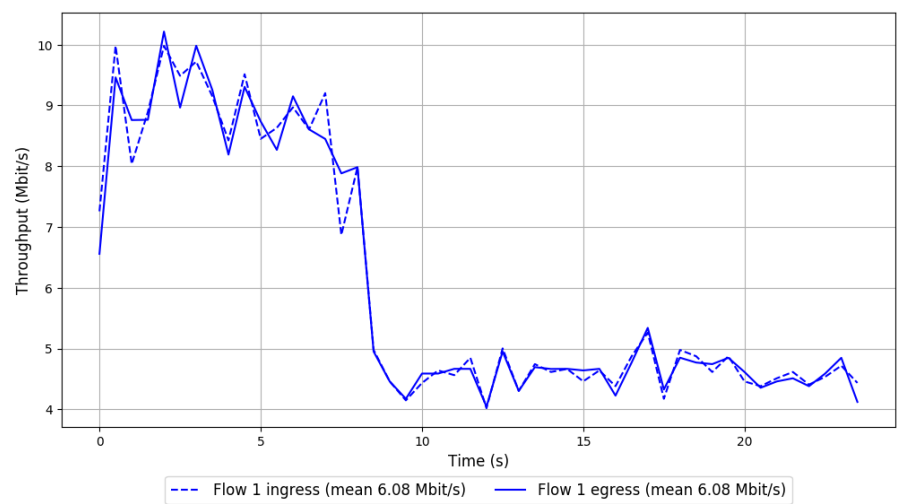
Start at: 2017-09-22 10:26:58

End at: 2017-09-22 10:27:28

Local clock offset: -0.483 ms

Remote clock offset: -2.039 ms

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

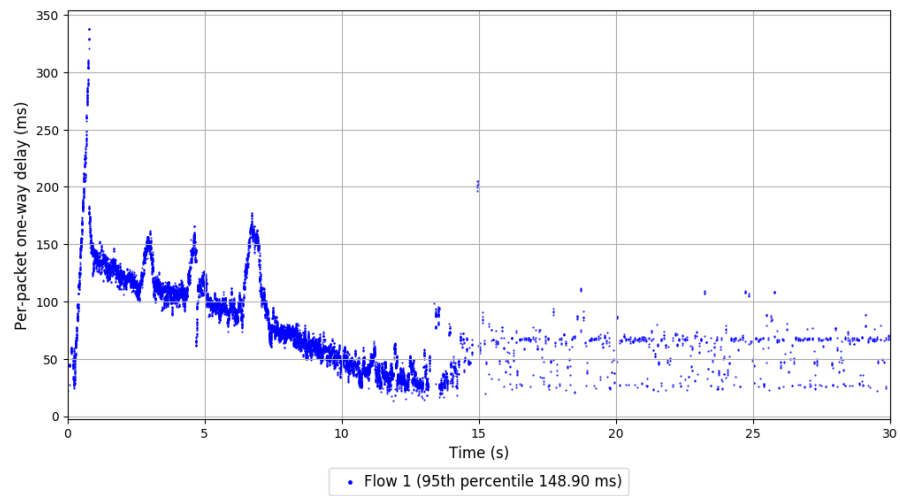
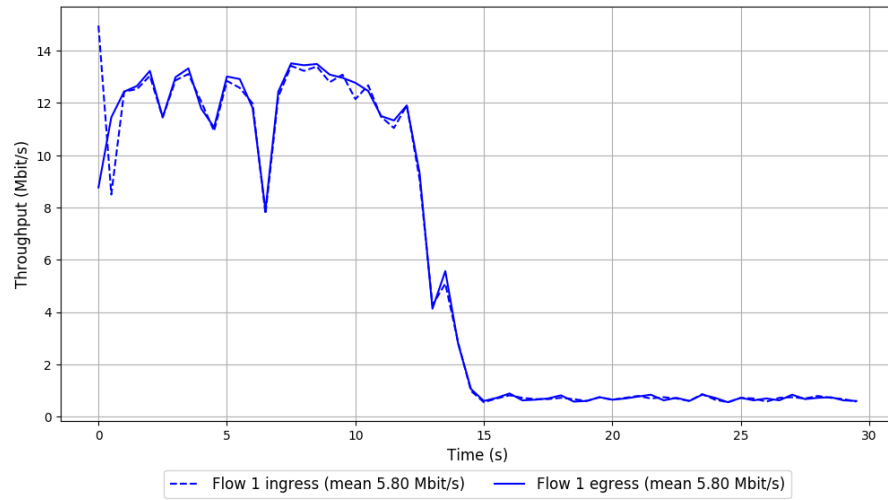


Run 1: Statistics of TCP Vegas

Start at: 2017-09-22 09:44:34
End at: 2017-09-22 09:45:04
Local clock offset: -1.097 ms
Remote clock offset: -2.274 ms

Below is generated by plot.py at 2017-09-22 11:21:48
Datalink statistics
-- Total of 1 flow:
Average throughput: 5.80 Mbit/s
95th percentile per-packet one-way delay: 148.896 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 5.80 Mbit/s
95th percentile per-packet one-way delay: 148.896 ms
Loss rate: 0.03%

Run 1: Report of TCP Vegas — Data Link

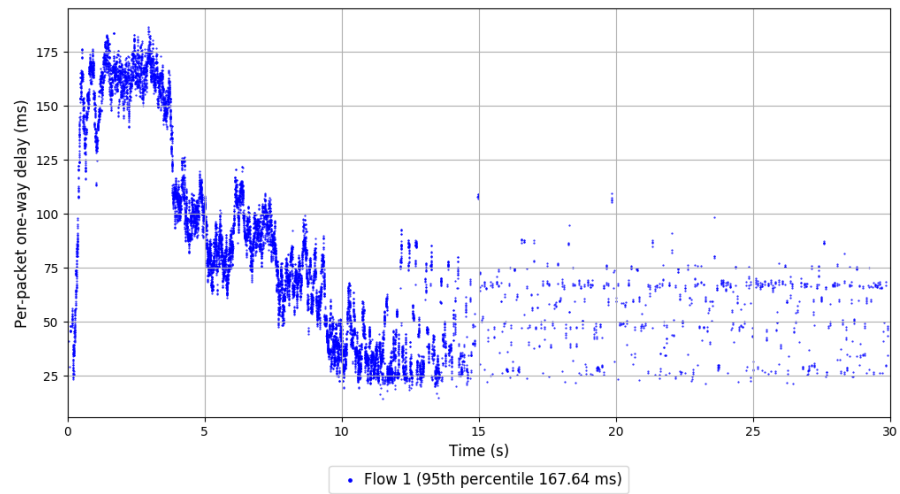
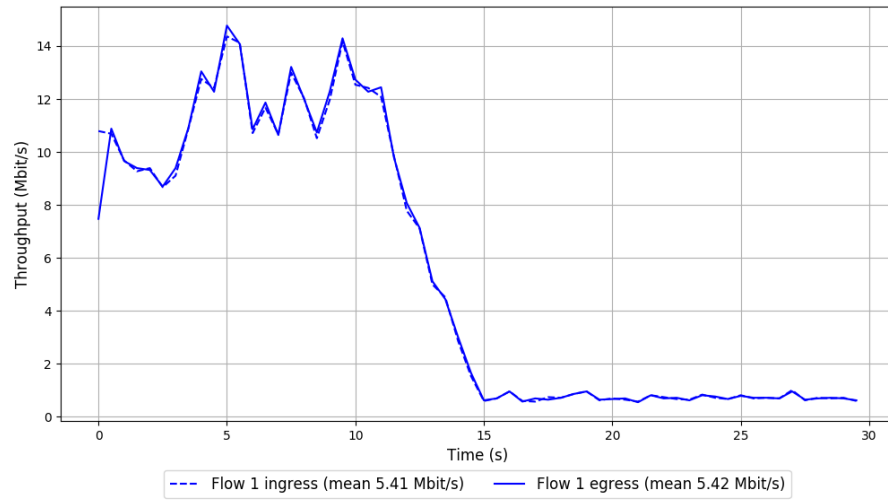


Run 2: Statistics of TCP Vegas

Start at: 2017-09-22 10:01:03
End at: 2017-09-22 10:01:33
Local clock offset: -0.846 ms
Remote clock offset: -2.347 ms

Below is generated by plot.py at 2017-09-22 11:21:48
Datalink statistics
-- Total of 1 flow:
Average throughput: 5.42 Mbit/s
95th percentile per-packet one-way delay: 167.642 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 5.42 Mbit/s
95th percentile per-packet one-way delay: 167.642 ms
Loss rate: 0.03%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2017-09-22 10:17:32

End at: 2017-09-22 10:18:02

Local clock offset: -0.507 ms

Remote clock offset: -2.08 ms

Below is generated by plot.py at 2017-09-22 11:21:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 3.55 Mbit/s

95th percentile per-packet one-way delay: 68.621 ms

Loss rate: 0.06%

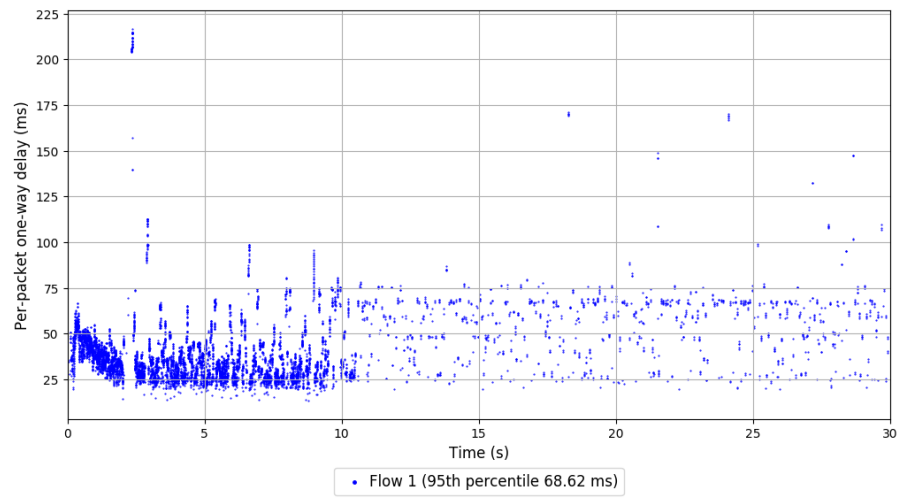
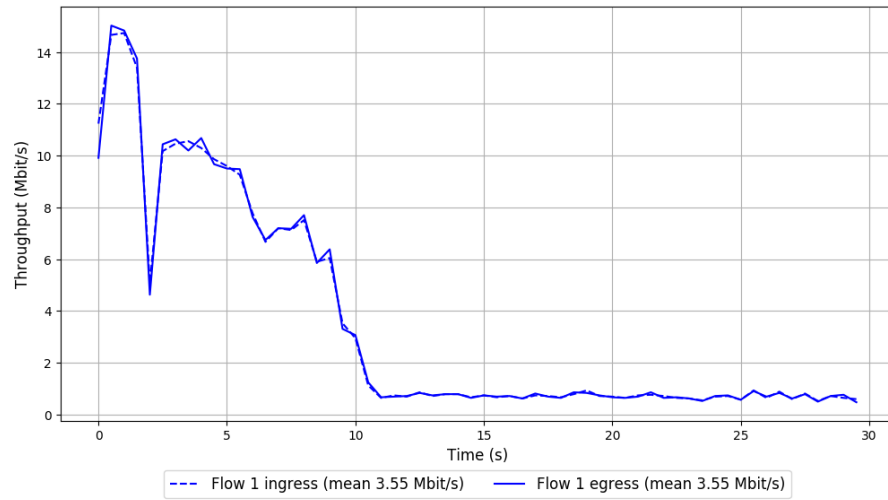
-- Flow 1:

Average throughput: 3.55 Mbit/s

95th percentile per-packet one-way delay: 68.621 ms

Loss rate: 0.06%

Run 3: Report of TCP Vegas — Data Link

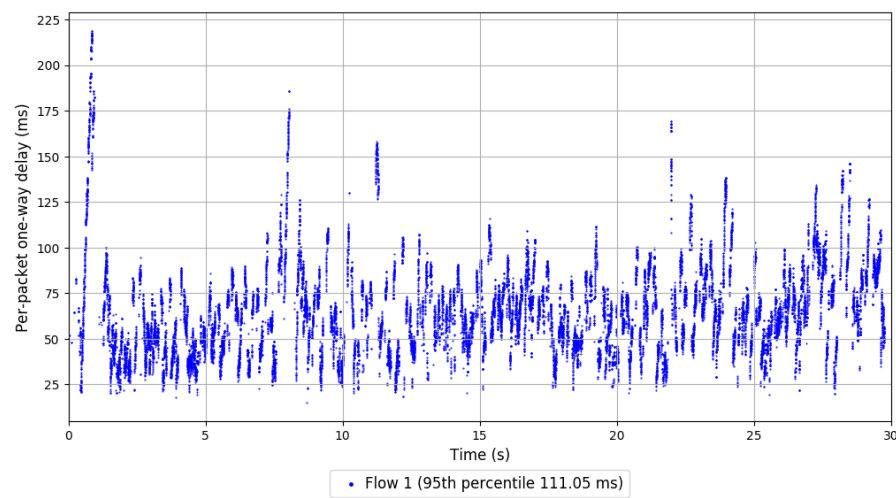
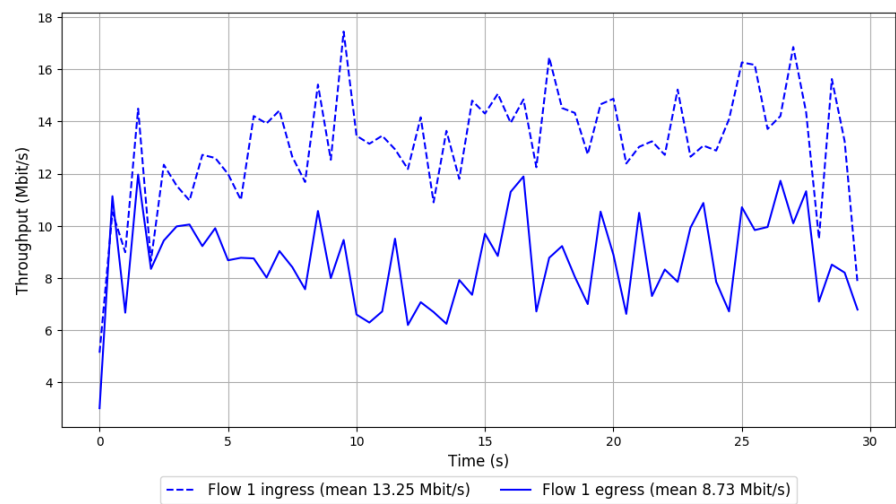


Run 1: Statistics of Verus

Start at: 2017-09-22 09:55:11
End at: 2017-09-22 09:55:41
Local clock offset: -0.938 ms
Remote clock offset: -2.238 ms

Below is generated by plot.py at 2017-09-22 11:21:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 8.73 Mbit/s
95th percentile per-packet one-way delay: 111.052 ms
Loss rate: 34.24%
-- Flow 1:
Average throughput: 8.73 Mbit/s
95th percentile per-packet one-way delay: 111.052 ms
Loss rate: 34.24%

Run 1: Report of Verus — Data Link

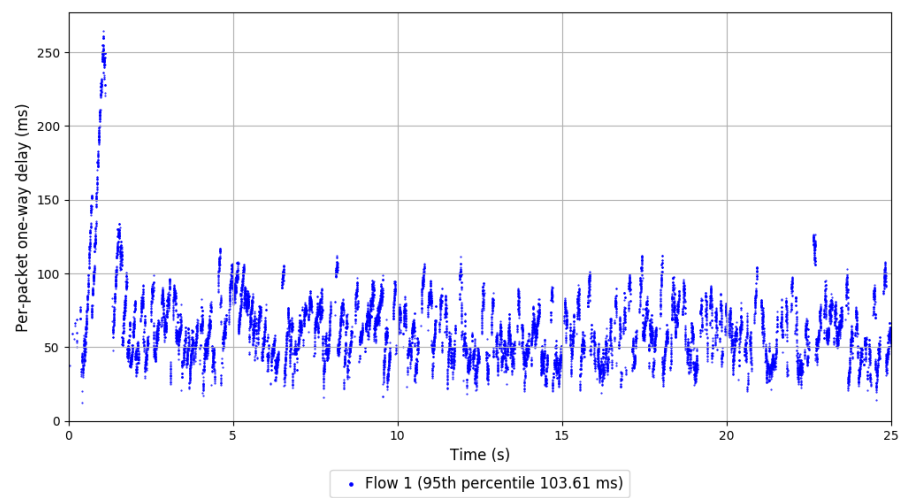
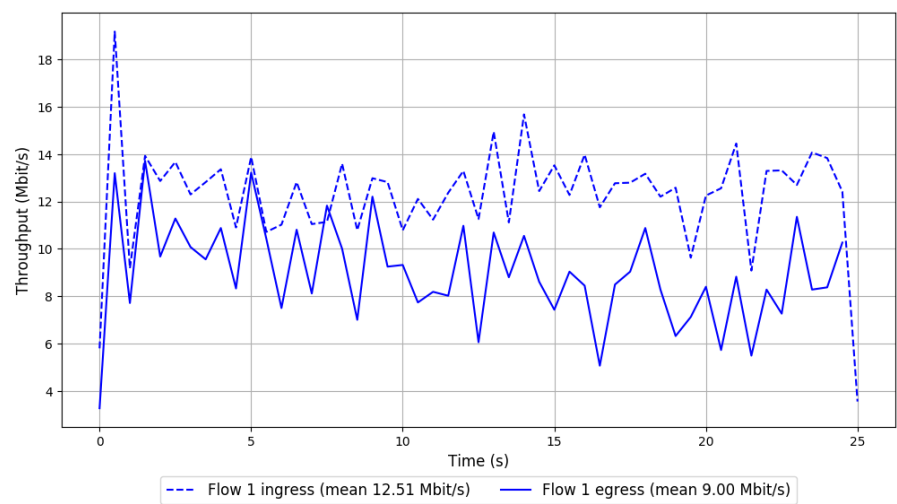


Run 2: Statistics of Verus

Start at: 2017-09-22 10:11:40
End at: 2017-09-22 10:12:10
Local clock offset: -0.616 ms
Remote clock offset: -2.21 ms

Below is generated by plot.py at 2017-09-22 11:21:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 9.00 Mbit/s
95th percentile per-packet one-way delay: 103.611 ms
Loss rate: 28.26%
-- Flow 1:
Average throughput: 9.00 Mbit/s
95th percentile per-packet one-way delay: 103.611 ms
Loss rate: 28.26%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

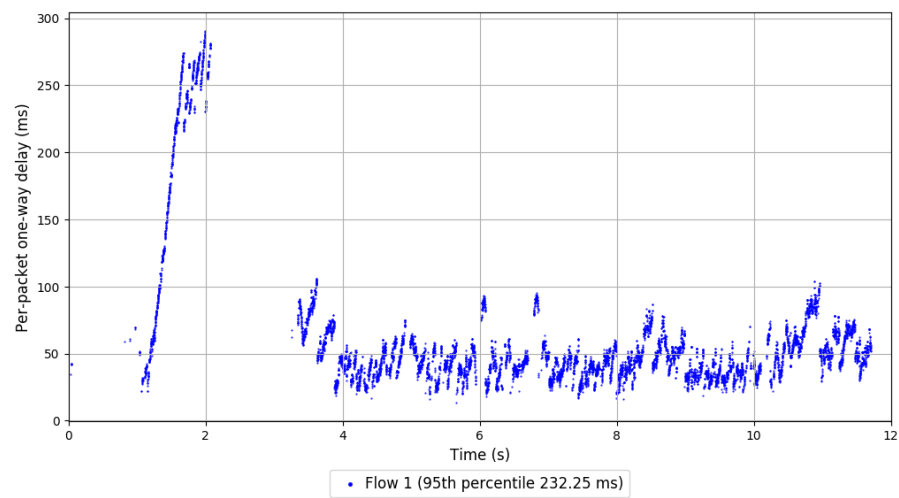
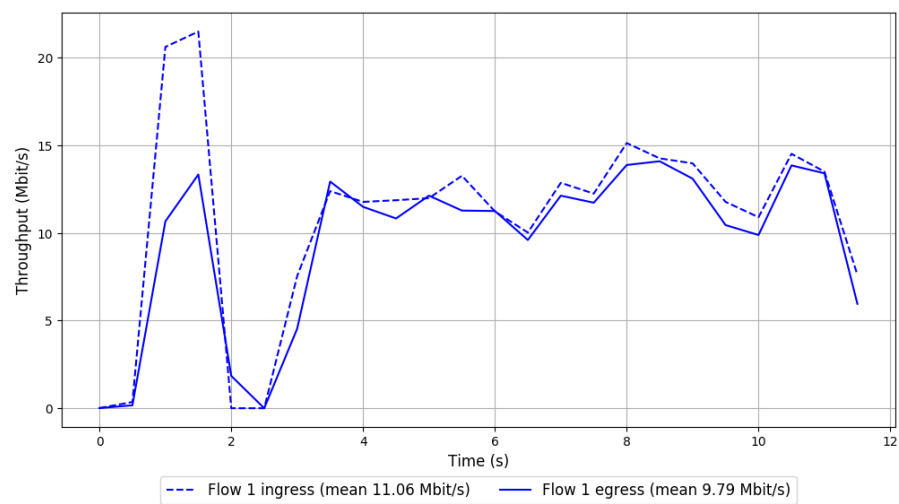
Start at: 2017-09-22 10:28:08

End at: 2017-09-22 10:28:39

Local clock offset: -0.465 ms

Remote clock offset: -2.055 ms

Run 3: Report of Verus — Data Link

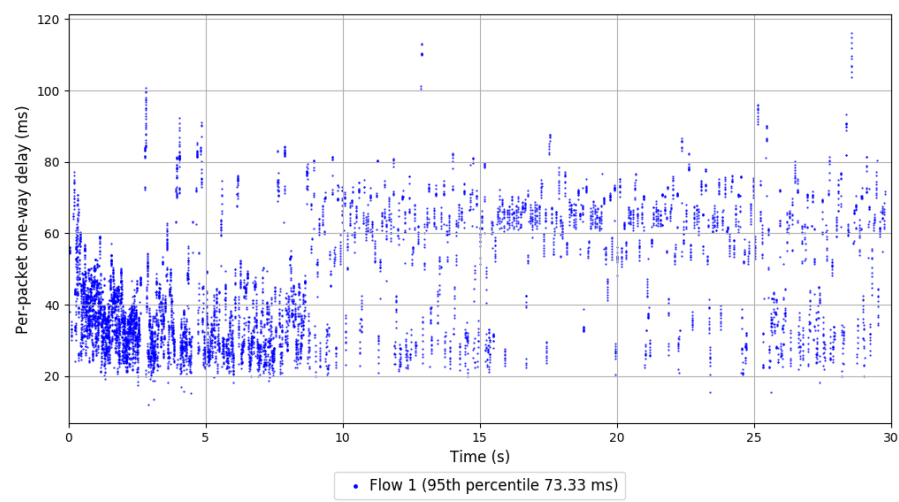
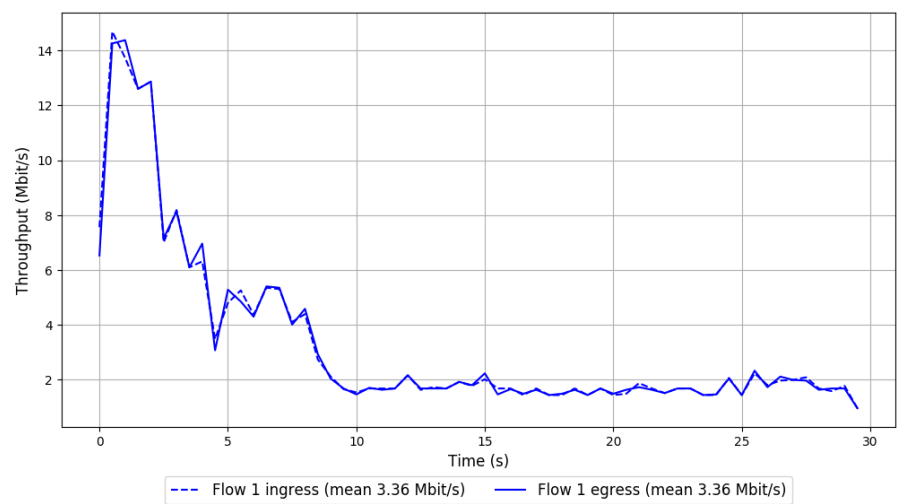


```
Run 1: Statistics of Indigo

Start at: 2017-09-22 09:56:21
End at: 2017-09-22 09:56:51
Local clock offset: -0.832 ms
Remote clock offset: -2.256 ms

# Below is generated by plot.py at 2017-09-22 11:21:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 3.36 Mbit/s
95th percentile per-packet one-way delay: 73.329 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 3.36 Mbit/s
95th percentile per-packet one-way delay: 73.329 ms
Loss rate: 0.12%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2017-09-22 10:12:50

End at: 2017-09-22 10:13:20

Local clock offset: -0.677 ms

Remote clock offset: -2.18 ms

Below is generated by plot.py at 2017-09-22 11:21:52

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.82 Mbit/s

95th percentile per-packet one-way delay: 89.093 ms

Loss rate: 0.30%

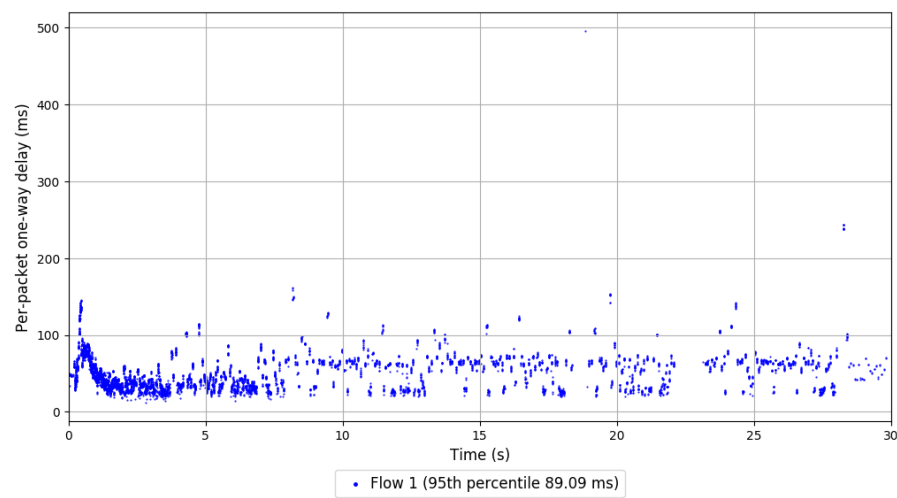
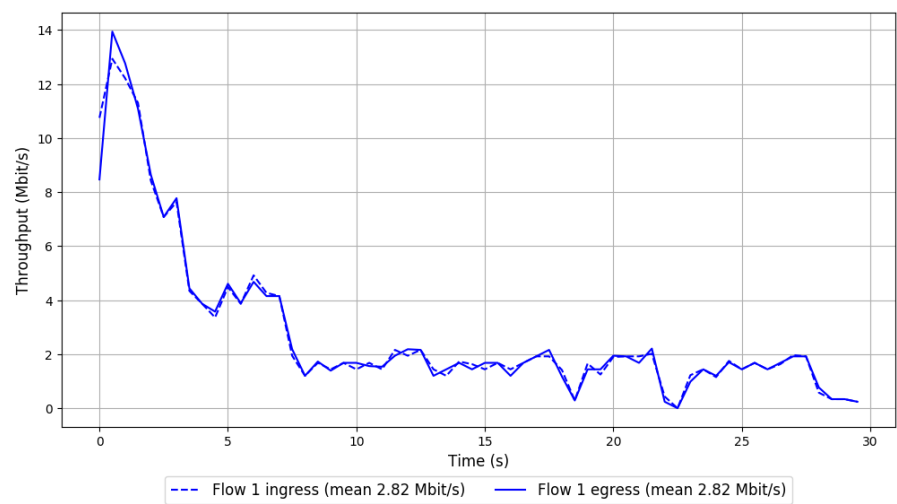
-- Flow 1:

Average throughput: 2.82 Mbit/s

95th percentile per-packet one-way delay: 89.093 ms

Loss rate: 0.30%

Run 2: Report of Indigo — Data Link

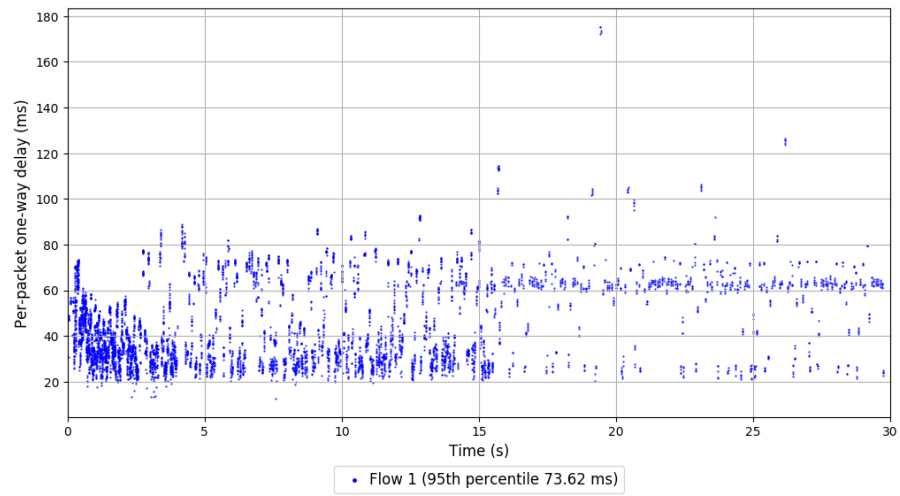
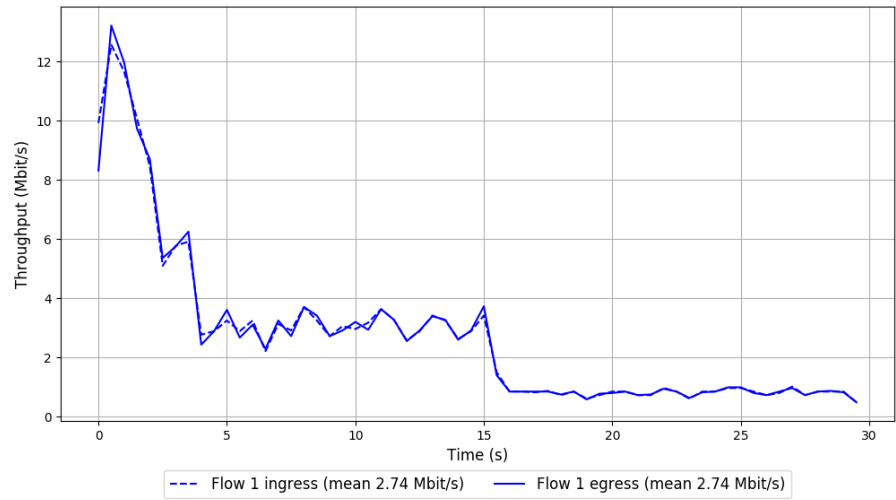


Run 3: Statistics of Indigo

Start at: 2017-09-22 10:29:19
End at: 2017-09-22 10:29:49
Local clock offset: -0.36 ms
Remote clock offset: -2.064 ms

Below is generated by plot.py at 2017-09-22 11:21:52
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.74 Mbit/s
95th percentile per-packet one-way delay: 73.619 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 2.74 Mbit/s
95th percentile per-packet one-way delay: 73.619 ms
Loss rate: 0.16%

Run 3: Report of Indigo — Data Link

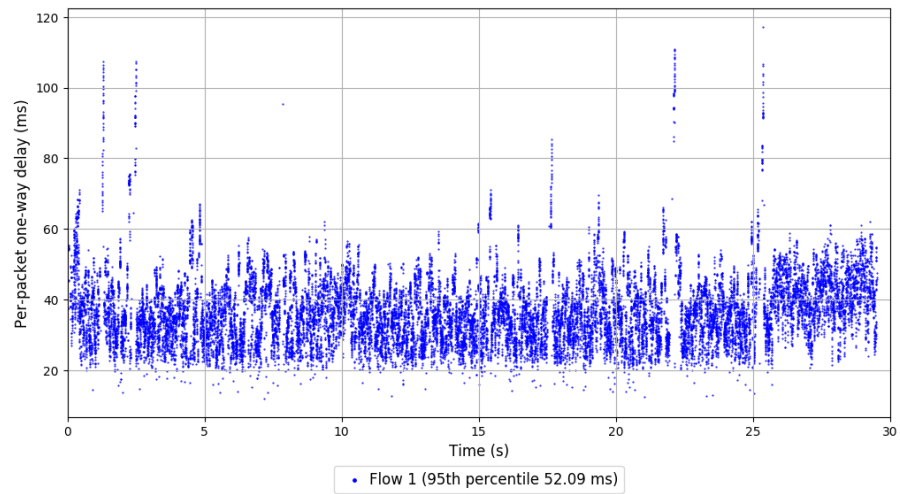
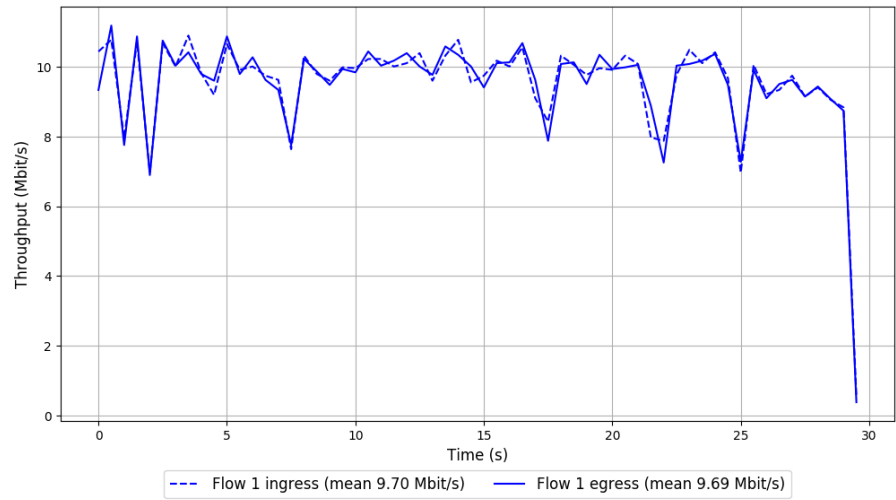


Run 1: Statistics of Indigo-cellular

Start at: 2017-09-22 09:46:55
End at: 2017-09-22 09:47:25
Local clock offset: -0.954 ms
Remote clock offset: -2.187 ms

Below is generated by plot.py at 2017-09-22 11:21:55
Datalink statistics
-- Total of 1 flow:
Average throughput: 9.69 Mbit/s
95th percentile per-packet one-way delay: 52.090 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 9.69 Mbit/s
95th percentile per-packet one-way delay: 52.090 ms
Loss rate: 0.21%

Run 1: Report of Indigo-cellular — Data Link



Run 2: Statistics of Indigo-cellular

Start at: 2017-09-22 10:03:24

End at: 2017-09-22 10:03:54

Local clock offset: -0.824 ms

Remote clock offset: -2.449 ms

Below is generated by plot.py at 2017-09-22 11:21:56

Datalink statistics

-- Total of 1 flow:

Average throughput: 9.83 Mbit/s

95th percentile per-packet one-way delay: 53.232 ms

Loss rate: 0.18%

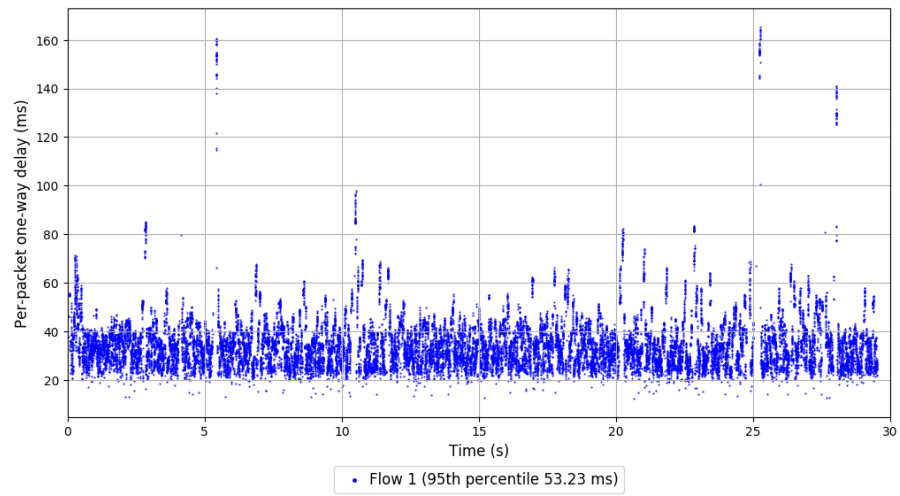
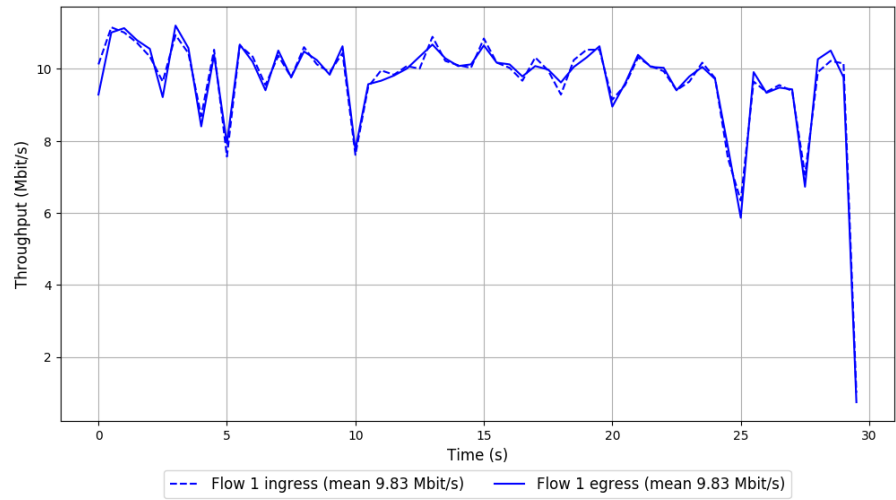
-- Flow 1:

Average throughput: 9.83 Mbit/s

95th percentile per-packet one-way delay: 53.232 ms

Loss rate: 0.18%

Run 2: Report of Indigo-cellular — Data Link

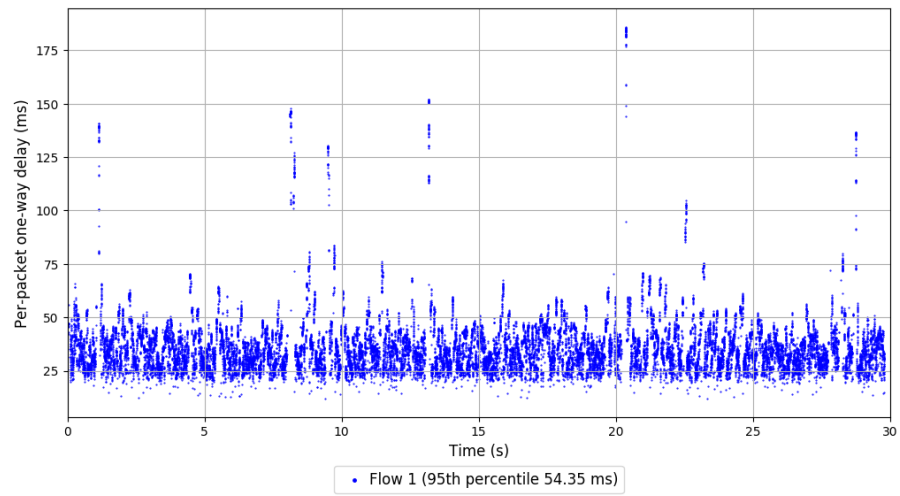
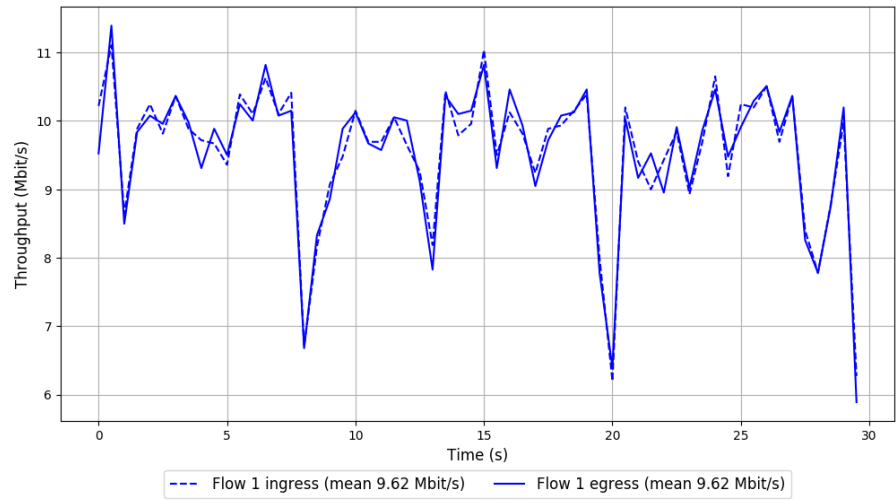


Run 3: Statistics of Indigo-cellular

Start at: 2017-09-22 10:19:53
End at: 2017-09-22 10:20:23
Local clock offset: -0.509 ms
Remote clock offset: -2.107 ms

Below is generated by plot.py at 2017-09-22 11:21:56
Datalink statistics
-- Total of 1 flow:
Average throughput: 9.62 Mbit/s
95th percentile per-packet one-way delay: 54.349 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 9.62 Mbit/s
95th percentile per-packet one-way delay: 54.349 ms
Loss rate: 0.17%

Run 3: Report of Indigo-cellular — Data Link

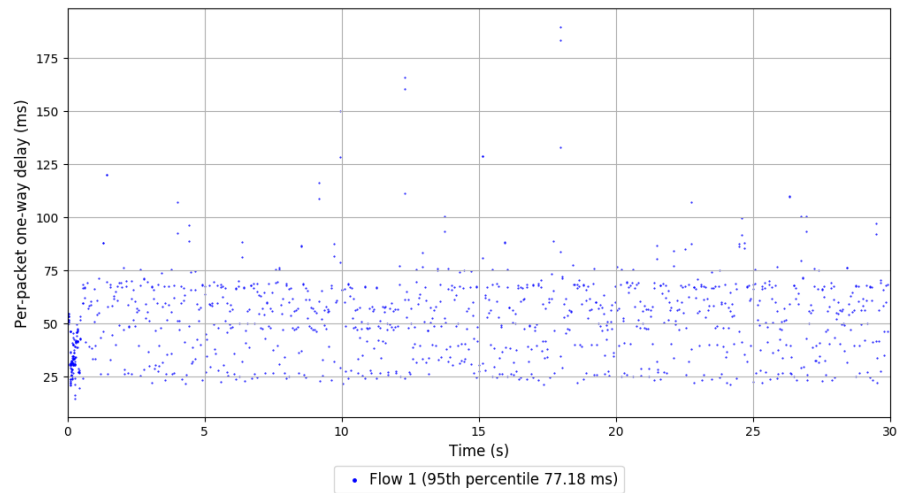
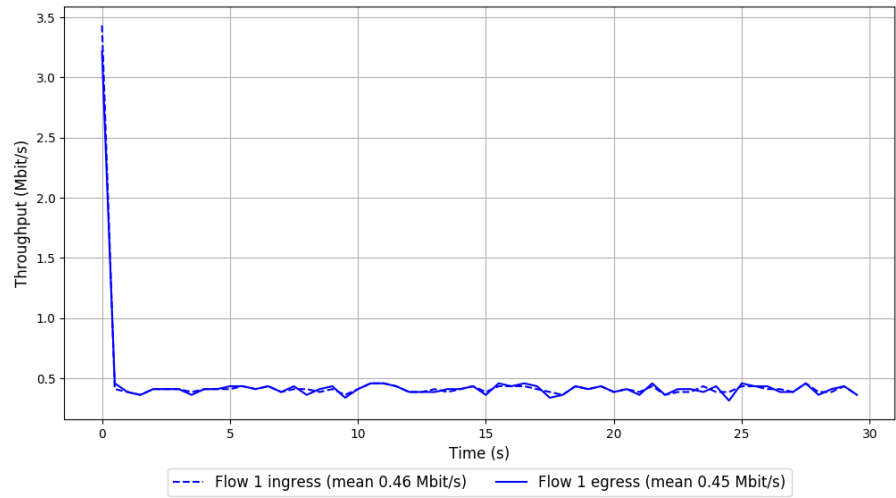


Run 1: Statistics of KohoCC

Start at: 2017-09-22 09:43:24
End at: 2017-09-22 09:43:54
Local clock offset: -1.102 ms
Remote clock offset: -2.199 ms

Below is generated by plot.py at 2017-09-22 11:21:56
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 77.180 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 77.180 ms
Loss rate: 0.62%

Run 1: Report of KohoCC — Data Link

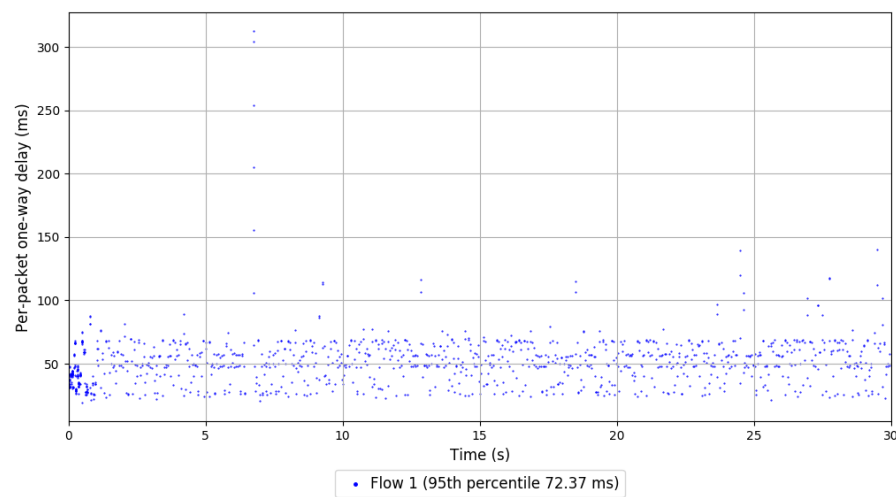
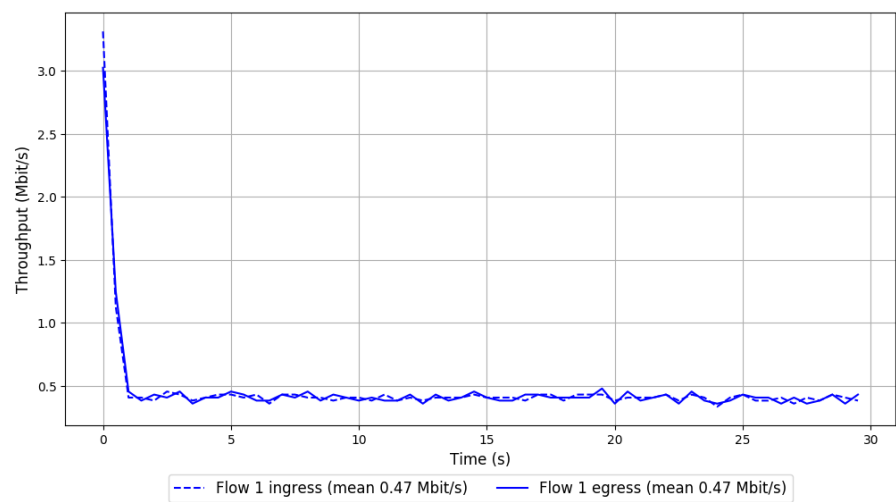


Run 2: Statistics of KohoCC

Start at: 2017-09-22 09:59:52
End at: 2017-09-22 10:00:22
Local clock offset: -0.797 ms
Remote clock offset: -2.382 ms

Below is generated by plot.py at 2017-09-22 11:21:56
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 72.370 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 72.370 ms
Loss rate: 0.51%

Run 2: Report of KohoCC — Data Link



Run 3: Statistics of KohoCC

Start at: 2017-09-22 10:16:21
End at: 2017-09-22 10:16:51
Local clock offset: -0.543 ms
Remote clock offset: -2.136 ms

Below is generated by plot.py at 2017-09-22 11:21:56
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 73.219 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 73.219 ms
Loss rate: 0.91%

Run 3: Report of KohoCC — Data Link

