

Pantheon Report

Generated at 2018-01-25 18:16:34 (UTC).

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

Repeated the test of 15 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).

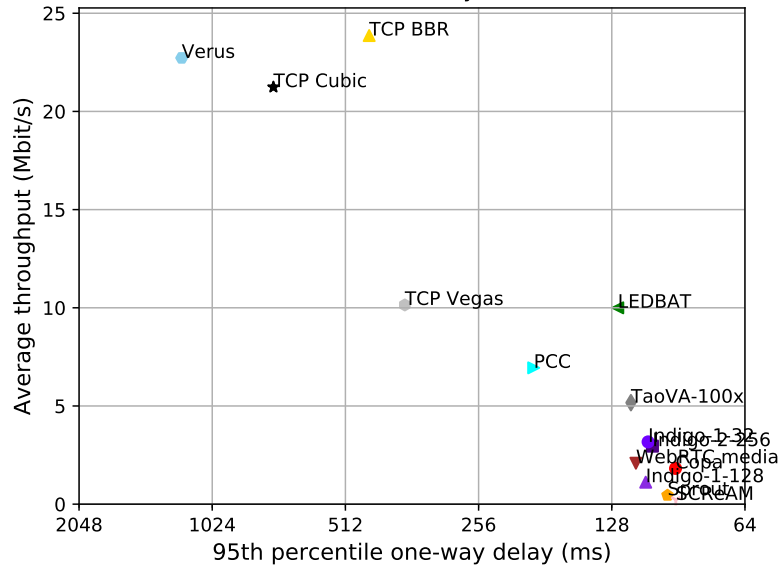
Tested BBR with qdisc of Fair Queuing (*fq*), and other schemes with the default Linux qdisc (*pfifo_fast*).

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

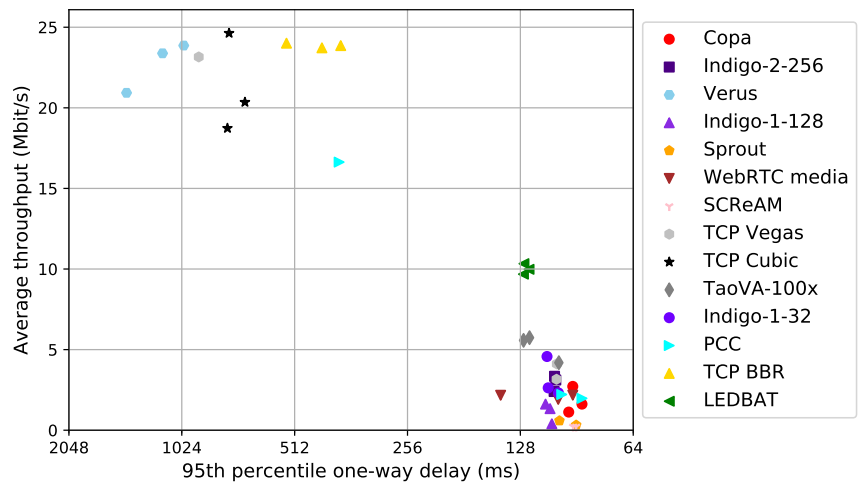
Git summary:

```
branch: master @ f23294ec38436c9f802847d477a41b7343ec76e6
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
  M datagrump/sender.cc
third_party/fillp @ ec9585325218d5048c4d4152fa42240af54c6e67
third_party/genericCC @ 80b516c448f795fd6e9675f7177b69c622f07da8
third_party/indigo @ a9b2060d39e4da2e8987e893e3eca2a6c7cd0ab9
third_party/indigo-1-layer-128-unit @ 3ae9e4ef4230db7484501f82ce8b377695f2f66d
third_party/indigo-1-layer-32-unit @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-1-layer-32-unit-no-calib @ 1f3a7f75b41135ed5b540c0fd3505939528e2a5f
third_party/indigo-no-calib @ 7224f2202e8a044d8306fa0b983ad84360c53d89
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
  M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ fb1053193c2861da659ba9013db26744ccfcf993
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
  M receiver/src/buffer.h
  M receiver/src/core.cpp
  M sender/src/buffer.h
  M sender/src/core.cpp
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream @ c3370fd7bd17265a79aeb34e4016ad23f5965885
third_party/sourdough @ f1a14bffe749737437f61b1eaeab30b267cde681
third_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce
  M src/examples/cellsim.cc
  M src/examples/sproutbt2.cc
  M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
  M src/verus.hpp
  M tools/plot.py
third_party/vivace @ 423cbca3e8ea1d599e7b5cf725835e8a2b6bfac6
third_party/webrtc @ a488197ddd041ace68a42849b2540ad834825f42
```

test from AWS 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	23.86	452.39	0.89
TCP Cubic	3	21.24	744.77	1.62
LEDBAT	3	10.00	124.09	0.35
PCC	3	6.94	192.15	0.11
QUIC Cubic	0	N/A	N/A	N/A
SCReAM	2	0.22	91.73	0.13
WebRTC media	3	2.08	112.90	0.16
Sprout	2	0.45	95.78	0.01
TaoVA-100x	3	5.17	115.86	0.07
TCP Vegas	3	10.14	375.85	0.73
Verus	3	22.72	1200.52	2.11
Copa	3	1.82	91.86	0.10
Indigo-2-256	3	2.96	103.59	0.12
Indigo-1-32	3	3.17	105.96	0.11
Indigo-1-128	3	1.12	107.28	0.00

Run 1: Statistics of TCP BBR

Start at: 2018-01-25 17:27:36

End at: 2018-01-25 17:28:06

Local clock offset: 2.842 ms

Remote clock offset: -5.583 ms

Below is generated by plot.py at 2018-01-25 18:15:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 24.01 Mbit/s

95th percentile per-packet one-way delay: 538.312 ms

Loss rate: 1.03%

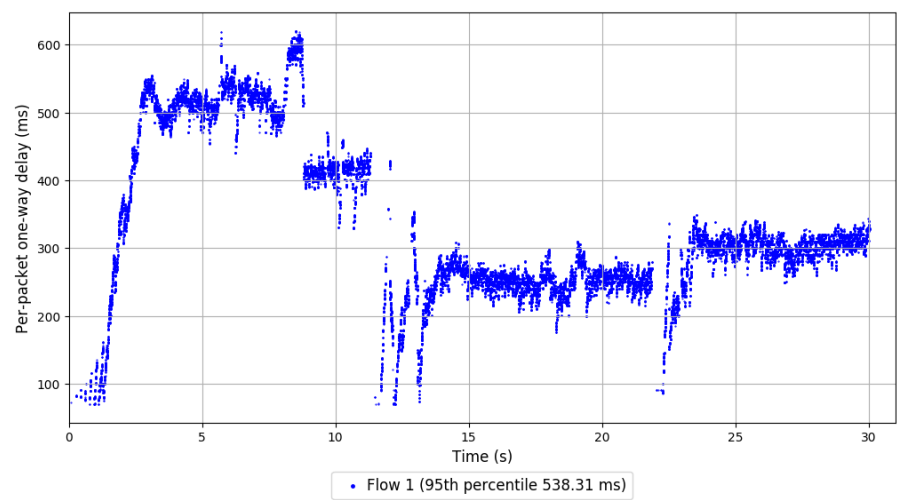
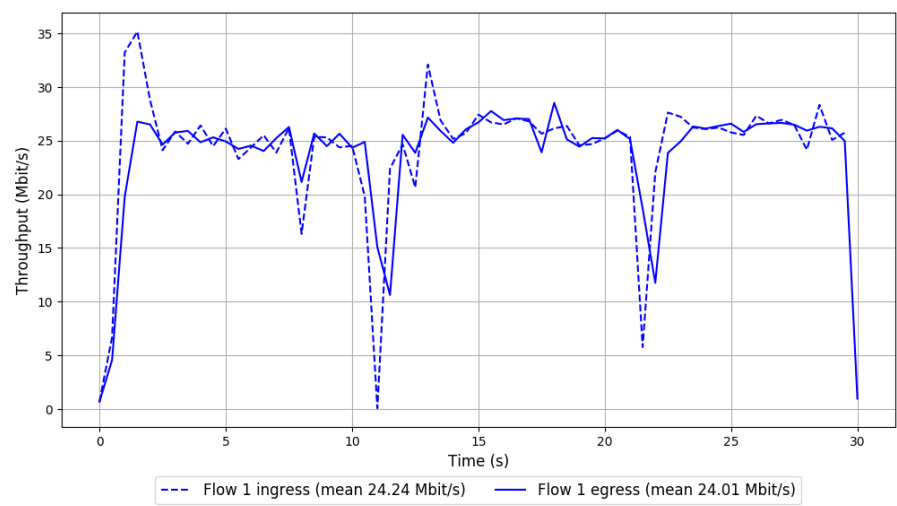
-- Flow 1:

Average throughput: 24.01 Mbit/s

95th percentile per-packet one-way delay: 538.312 ms

Loss rate: 1.03%

Run 1: Report of TCP BBR — Data Link

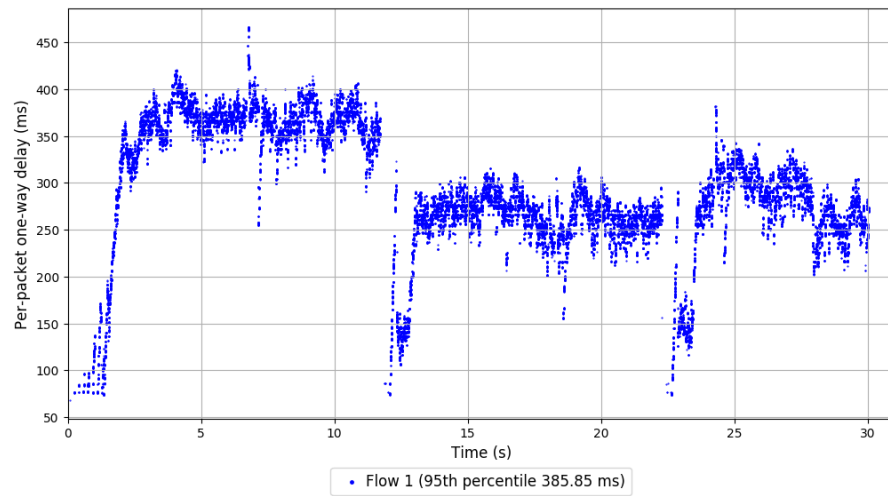
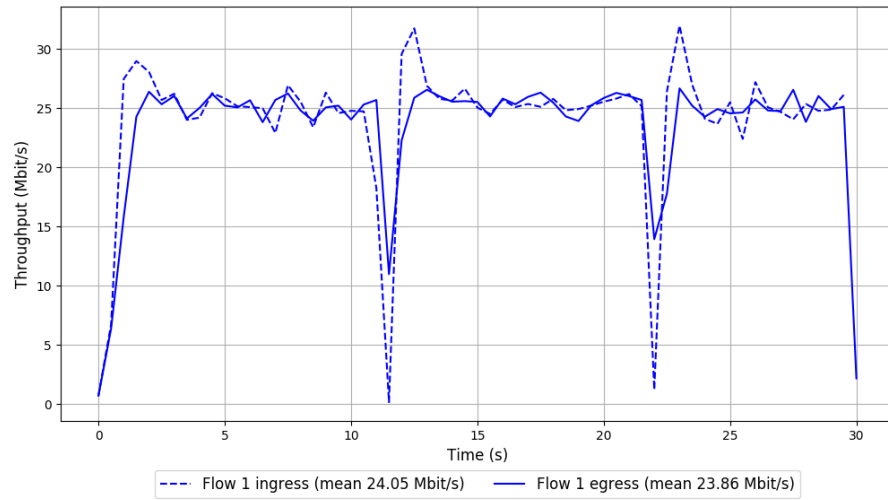


Run 2: Statistics of TCP BBR

Start at: 2018-01-25 17:46:01
End at: 2018-01-25 17:46:31
Local clock offset: 2.193 ms
Remote clock offset: -5.858 ms

Below is generated by plot.py at 2018-01-25 18:15:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 23.86 Mbit/s
95th percentile per-packet one-way delay: 385.847 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 23.86 Mbit/s
95th percentile per-packet one-way delay: 385.847 ms
Loss rate: 0.78%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-01-25 18:04:26

End at: 2018-01-25 18:04:56

Local clock offset: 0.921 ms

Remote clock offset: -6.402 ms

Below is generated by plot.py at 2018-01-25 18:15:59

Datalink statistics

-- Total of 1 flow:

Average throughput: 23.72 Mbit/s

95th percentile per-packet one-way delay: 433.020 ms

Loss rate: 0.85%

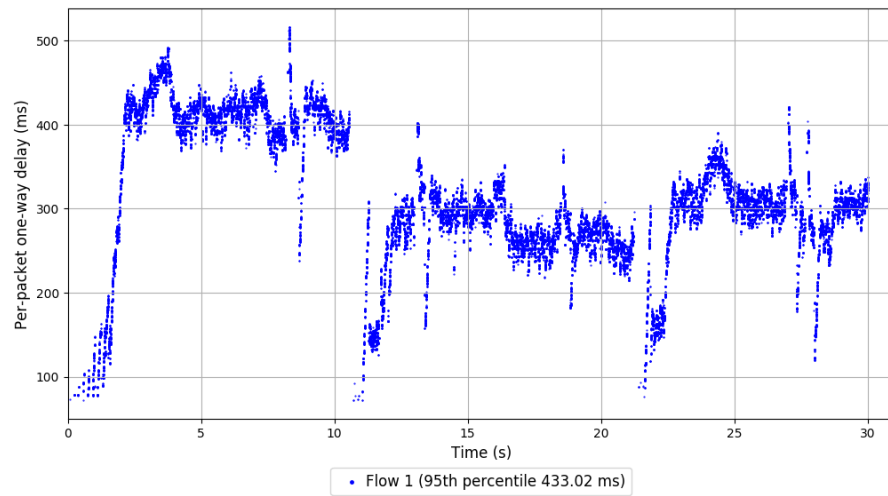
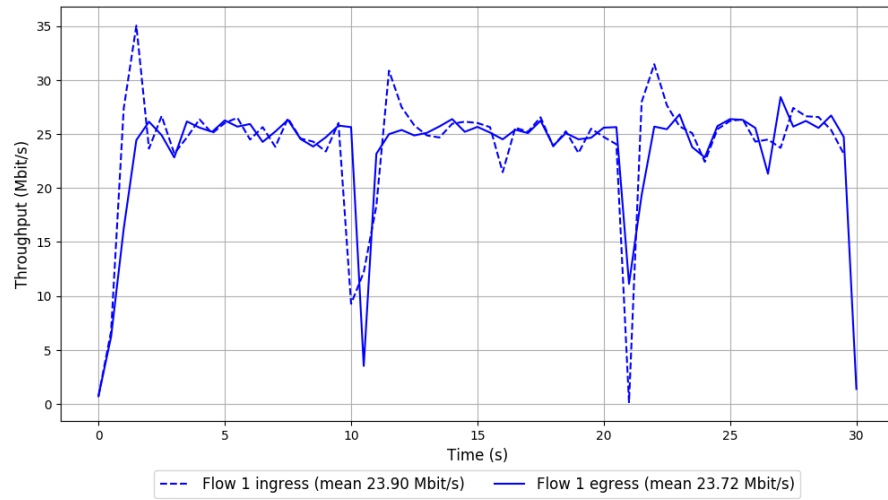
-- Flow 1:

Average throughput: 23.72 Mbit/s

95th percentile per-packet one-way delay: 433.020 ms

Loss rate: 0.85%

Run 3: Report of TCP BBR — Data Link

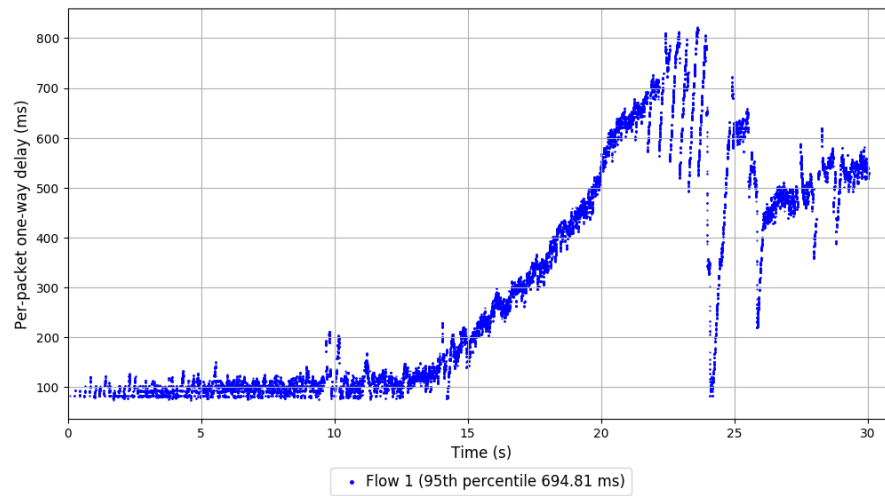
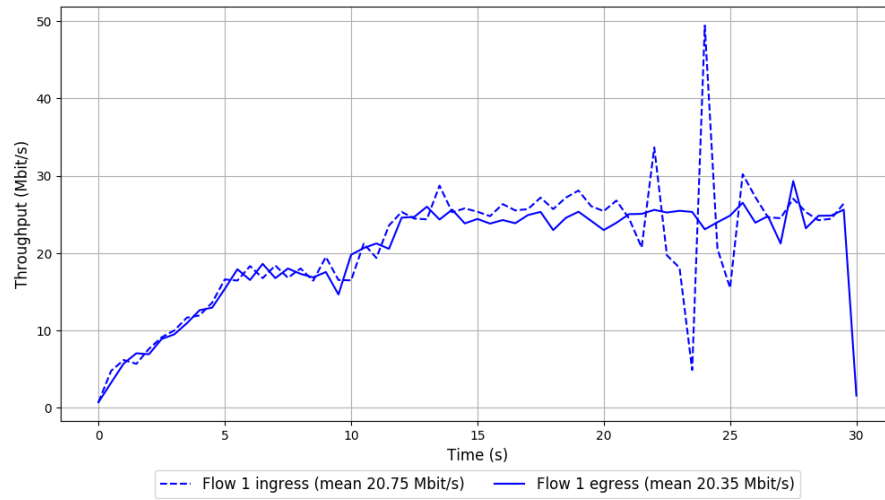


Run 1: Statistics of TCP Cubic

Start at: 2018-01-25 17:34:30
End at: 2018-01-25 17:35:00
Local clock offset: 2.588 ms
Remote clock offset: -5.973 ms

Below is generated by plot.py at 2018-01-25 18:15:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 20.35 Mbit/s
95th percentile per-packet one-way delay: 694.812 ms
Loss rate: 2.04%
-- Flow 1:
Average throughput: 20.35 Mbit/s
95th percentile per-packet one-way delay: 694.812 ms
Loss rate: 2.04%

Run 1: Report of TCP Cubic — Data Link

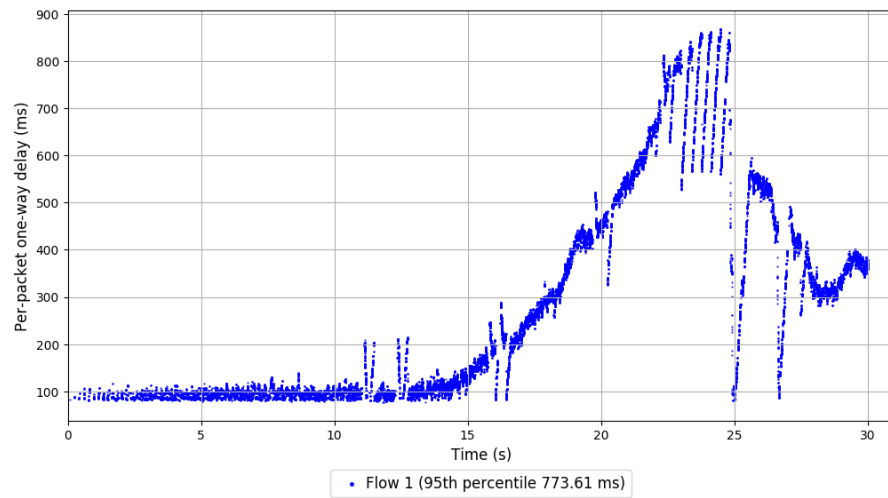
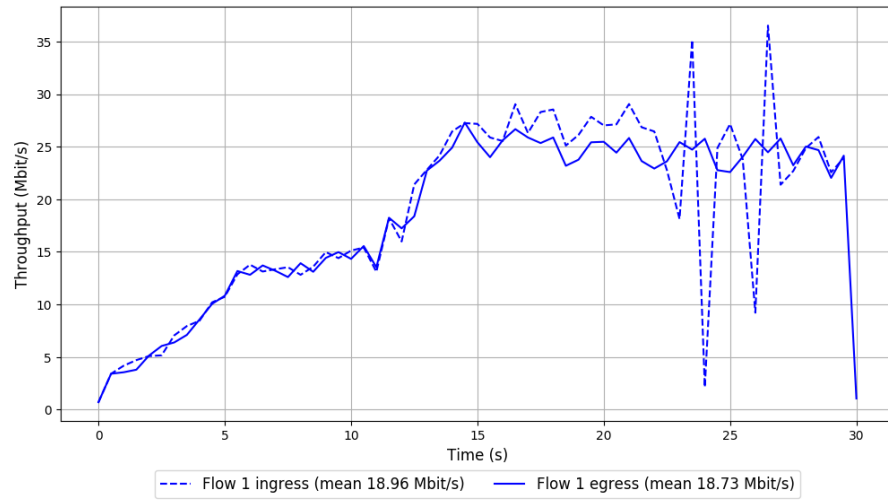


Run 2: Statistics of TCP Cubic

Start at: 2018-01-25 17:52:55
End at: 2018-01-25 17:53:25
Local clock offset: 2.064 ms
Remote clock offset: -6.002 ms

Below is generated by plot.py at 2018-01-25 18:15:59
Datalink statistics
-- Total of 1 flow:
Average throughput: 18.73 Mbit/s
95th percentile per-packet one-way delay: 773.607 ms
Loss rate: 1.36%
-- Flow 1:
Average throughput: 18.73 Mbit/s
95th percentile per-packet one-way delay: 773.607 ms
Loss rate: 1.36%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2018-01-25 18:11:31

End at: 2018-01-25 18:12:01

Local clock offset: 1.168 ms

Remote clock offset: 36.63 ms

Below is generated by plot.py at 2018-01-25 18:16:01

Datalink statistics

-- Total of 1 flow:

Average throughput: 24.63 Mbit/s

95th percentile per-packet one-way delay: 765.886 ms

Loss rate: 1.45%

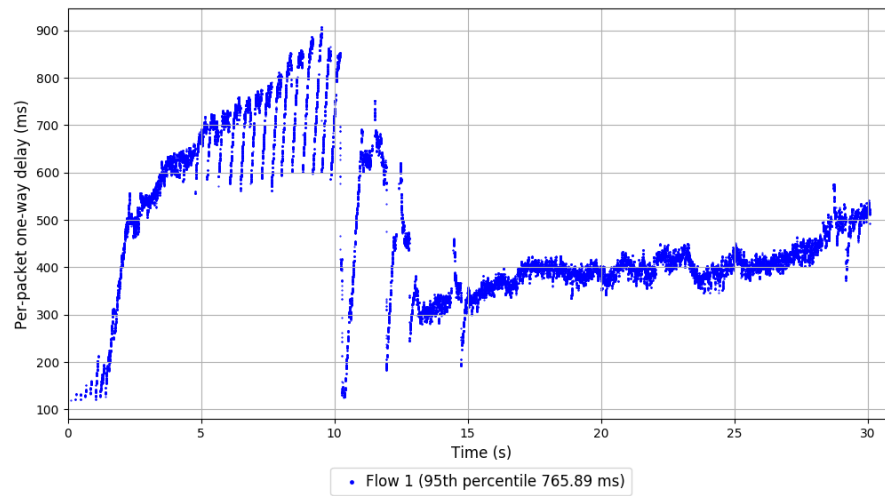
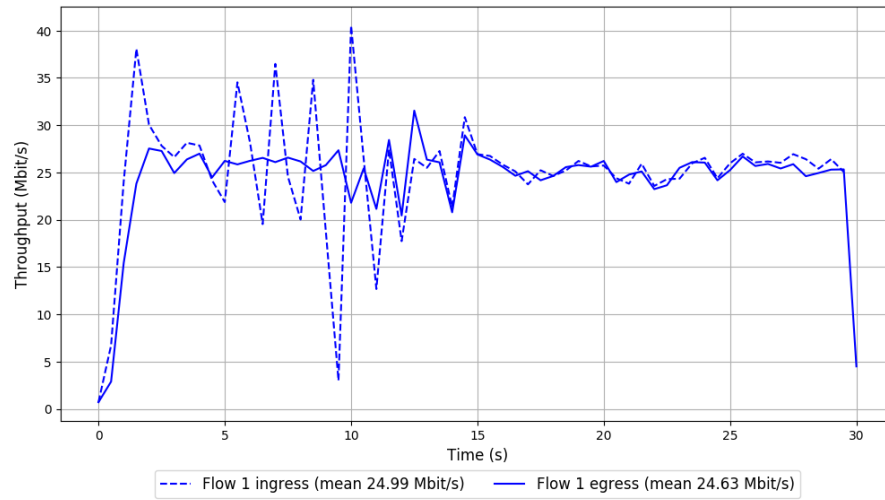
-- Flow 1:

Average throughput: 24.63 Mbit/s

95th percentile per-packet one-way delay: 765.886 ms

Loss rate: 1.45%

Run 3: Report of TCP Cubic — Data Link



Run 1: Statistics of LEDBAT

Start at: 2018-01-25 17:20:43

End at: 2018-01-25 17:21:13

Local clock offset: 2.904 ms

Remote clock offset: -5.39 ms

Below is generated by plot.py at 2018-01-25 18:16:01

Datalink statistics

-- Total of 1 flow:

Average throughput: 9.98 Mbit/s

95th percentile per-packet one-way delay: 121.392 ms

Loss rate: 0.43%

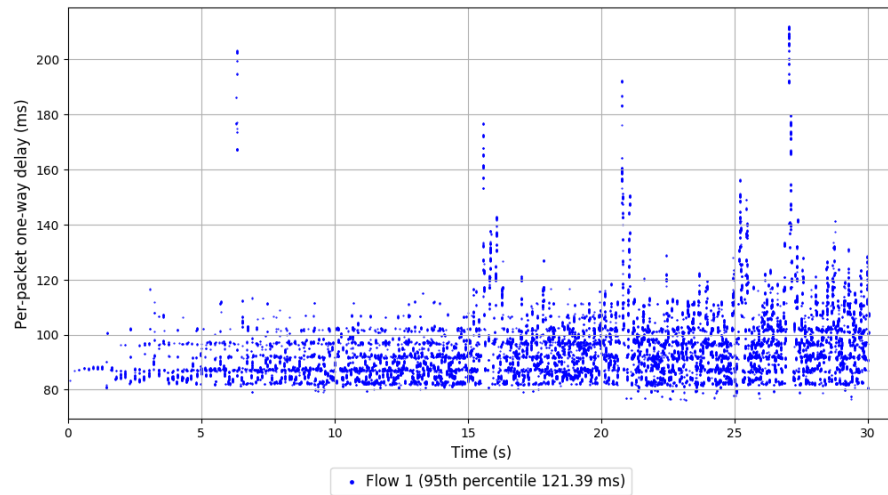
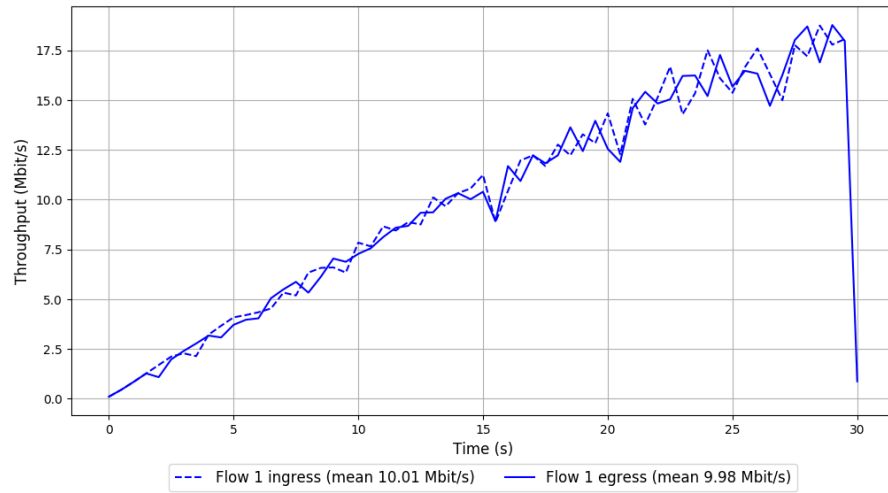
-- Flow 1:

Average throughput: 9.98 Mbit/s

95th percentile per-packet one-way delay: 121.392 ms

Loss rate: 0.43%

Run 1: Report of LEDBAT — Data Link

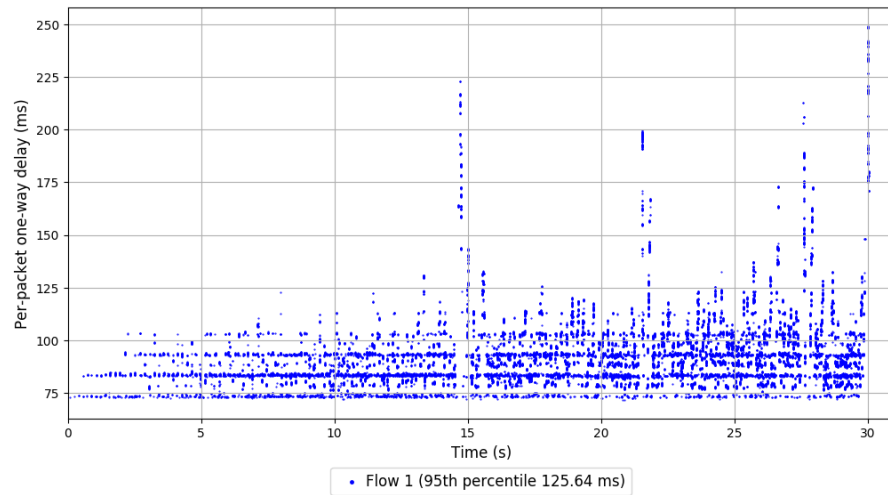
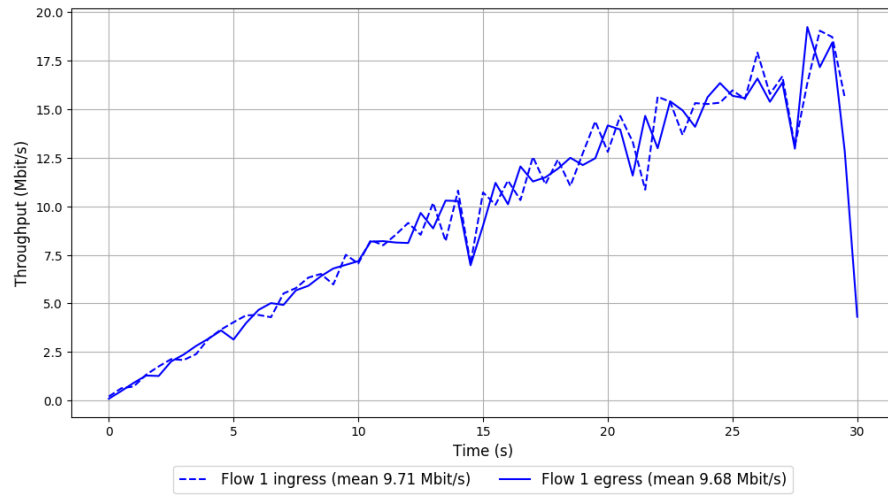


Run 2: Statistics of LEDBAT

Start at: 2018-01-25 17:39:08
End at: 2018-01-25 17:39:38
Local clock offset: 2.331 ms
Remote clock offset: -5.891 ms

Below is generated by plot.py at 2018-01-25 18:16:01
Datalink statistics
-- Total of 1 flow:
Average throughput: 9.68 Mbit/s
95th percentile per-packet one-way delay: 125.637 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 9.68 Mbit/s
95th percentile per-packet one-way delay: 125.637 ms
Loss rate: 0.40%

Run 2: Report of LEDBAT — Data Link

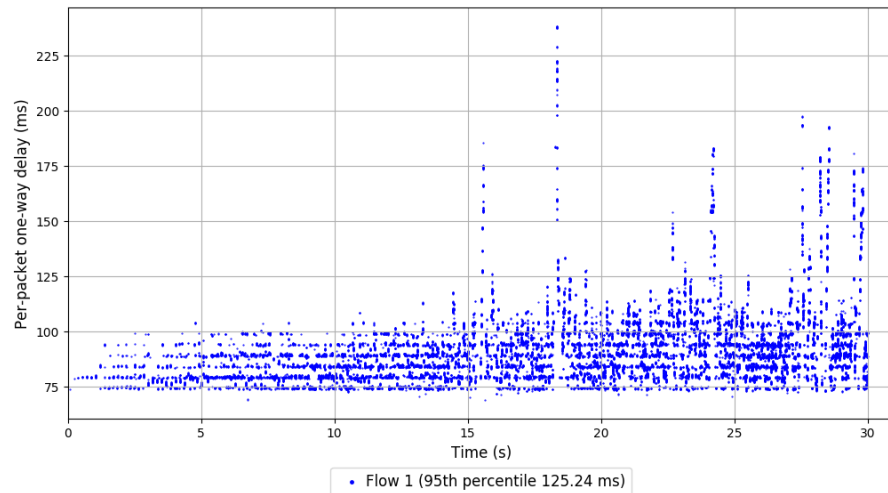
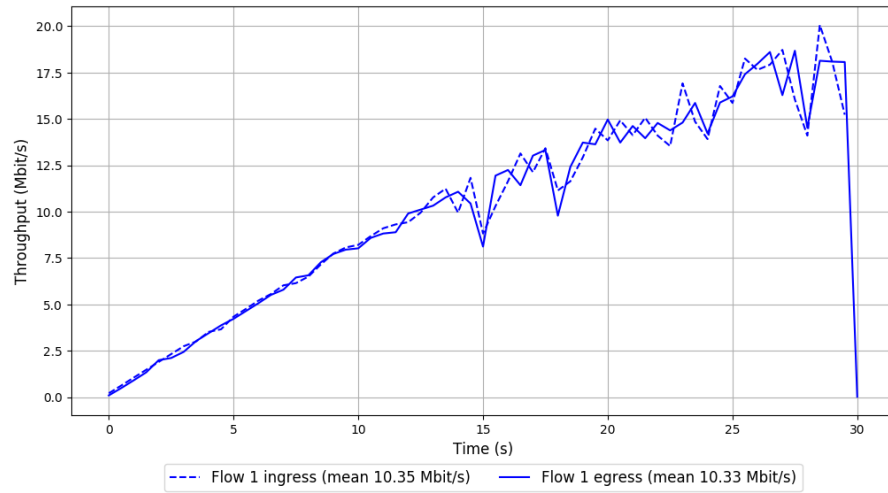


Run 3: Statistics of LEDBAT

Start at: 2018-01-25 17:57:32
End at: 2018-01-25 17:58:02
Local clock offset: 1.084 ms
Remote clock offset: -6.193 ms

Below is generated by plot.py at 2018-01-25 18:16:01
Datalink statistics
-- Total of 1 flow:
Average throughput: 10.33 Mbit/s
95th percentile per-packet one-way delay: 125.241 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 10.33 Mbit/s
95th percentile per-packet one-way delay: 125.241 ms
Loss rate: 0.22%

Run 3: Report of LEDBAT — Data Link

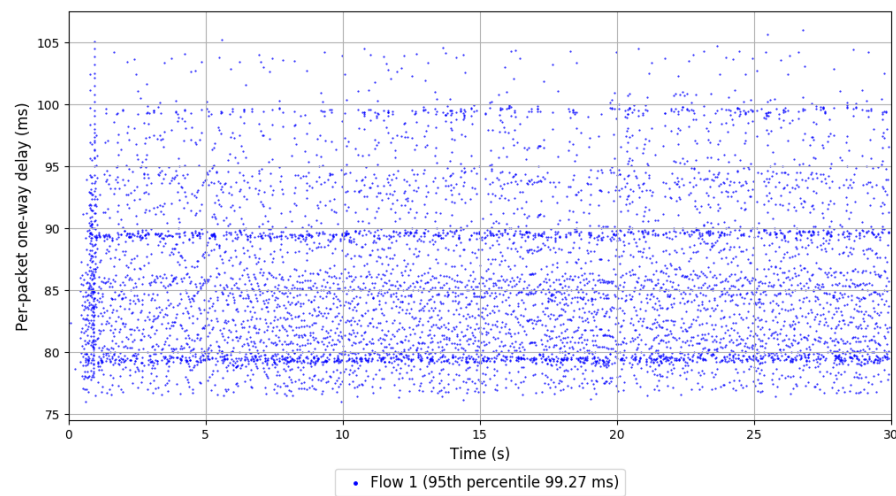
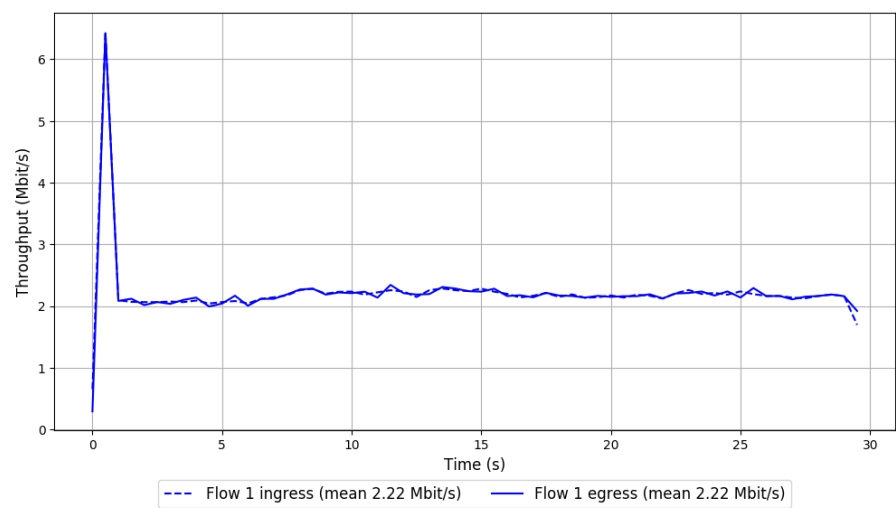


Run 1: Statistics of PCC

Start at: 2018-01-25 17:26:27
End at: 2018-01-25 17:26:57
Local clock offset: 2.858 ms
Remote clock offset: -5.504 ms

Below is generated by plot.py at 2018-01-25 18:16:01
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.22 Mbit/s
95th percentile per-packet one-way delay: 99.268 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 2.22 Mbit/s
95th percentile per-packet one-way delay: 99.268 ms
Loss rate: 0.11%

Run 1: Report of PCC — Data Link



Run 2: Statistics of PCC

Start at: 2018-01-25 17:44:52

End at: 2018-01-25 17:45:22

Local clock offset: 2.302 ms

Remote clock offset: -5.84 ms

Below is generated by plot.py at 2018-01-25 18:16:01

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.97 Mbit/s

95th percentile per-packet one-way delay: 87.652 ms

Loss rate: 0.10%

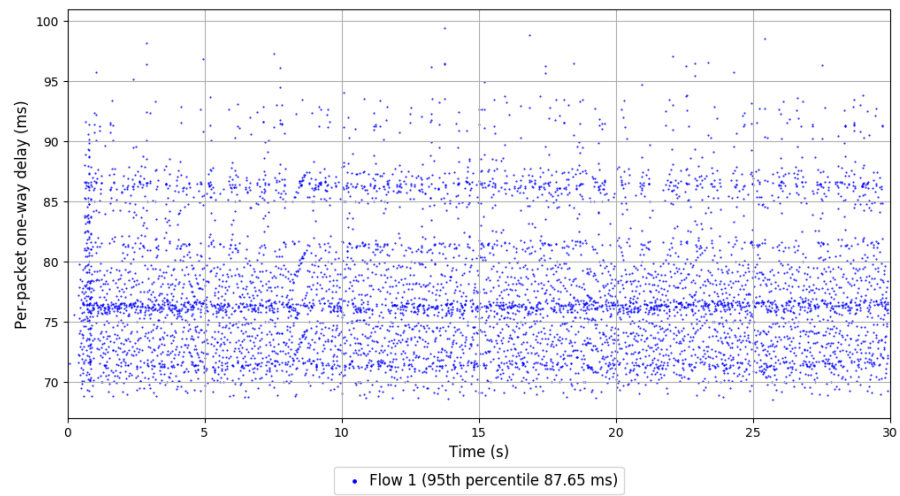
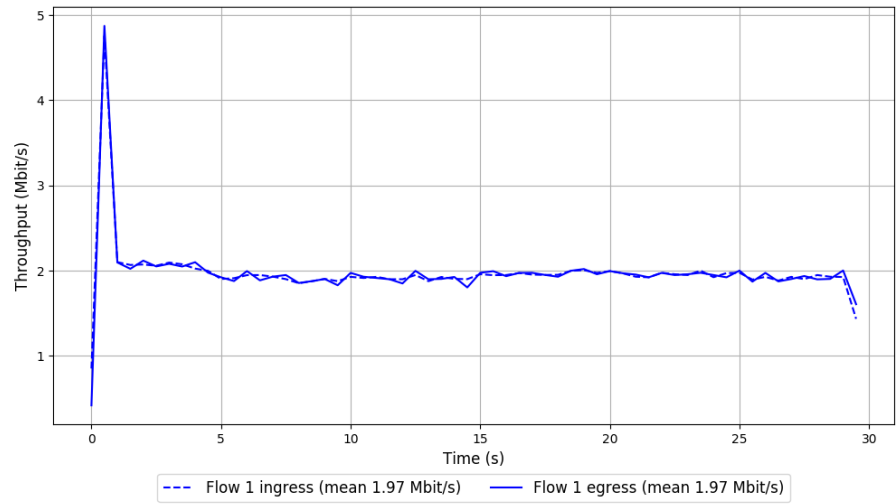
-- Flow 1:

Average throughput: 1.97 Mbit/s

95th percentile per-packet one-way delay: 87.652 ms

Loss rate: 0.10%

Run 2: Report of PCC — Data Link

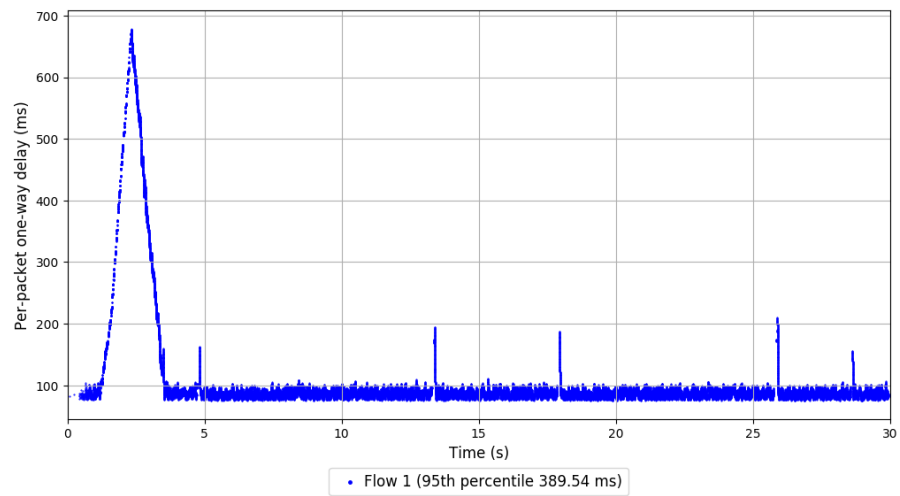
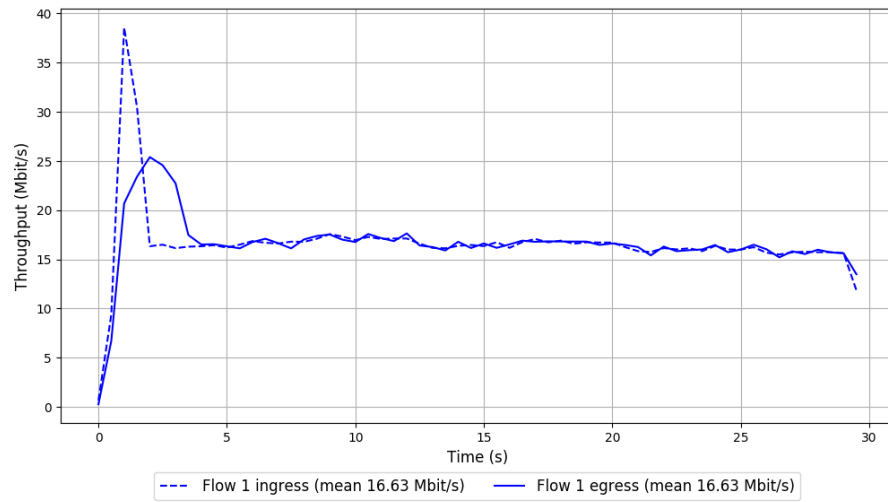


Run 3: Statistics of PCC

Start at: 2018-01-25 18:03:17
End at: 2018-01-25 18:03:47
Local clock offset: 1.672 ms
Remote clock offset: -6.371 ms

Below is generated by plot.py at 2018-01-25 18:16:12
Datalink statistics
-- Total of 1 flow:
Average throughput: 16.63 Mbit/s
95th percentile per-packet one-way delay: 389.543 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 16.63 Mbit/s
95th percentile per-packet one-way delay: 389.543 ms
Loss rate: 0.11%

Run 3: Report of PCC — Data Link



Run 1: Statistics of QUIC Cubic

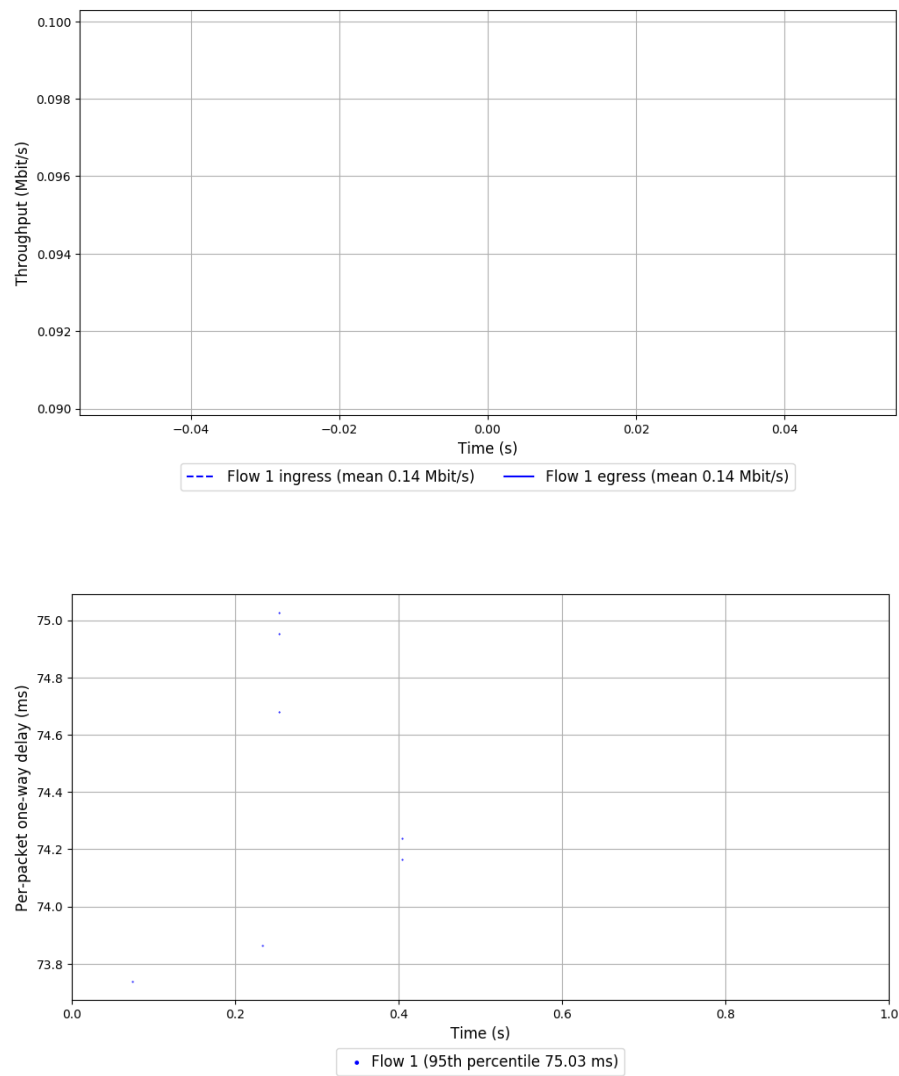
Start at: 2018-01-25 17:25:19

End at: 2018-01-25 17:25:49

Local clock offset: 2.976 ms

Remote clock offset: -5.473 ms

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

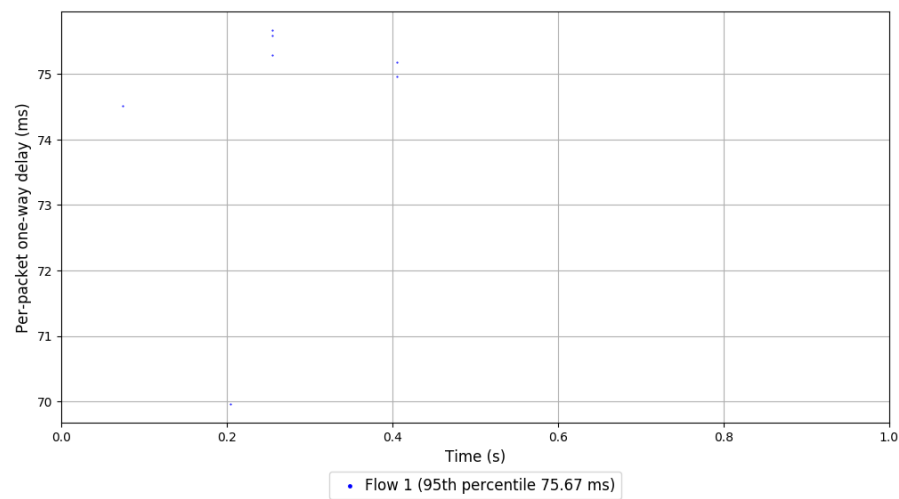
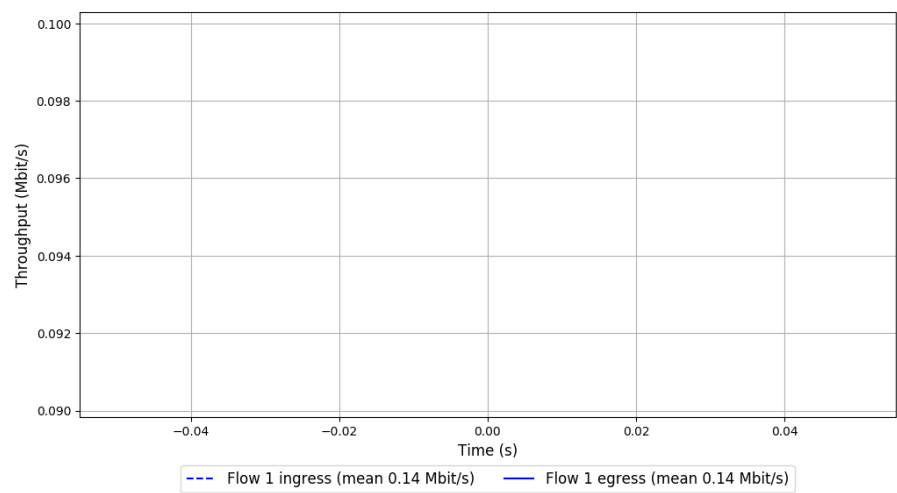
Start at: 2018-01-25 17:43:44

End at: 2018-01-25 17:44:14

Local clock offset: 2.107 ms

Remote clock offset: -5.814 ms

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

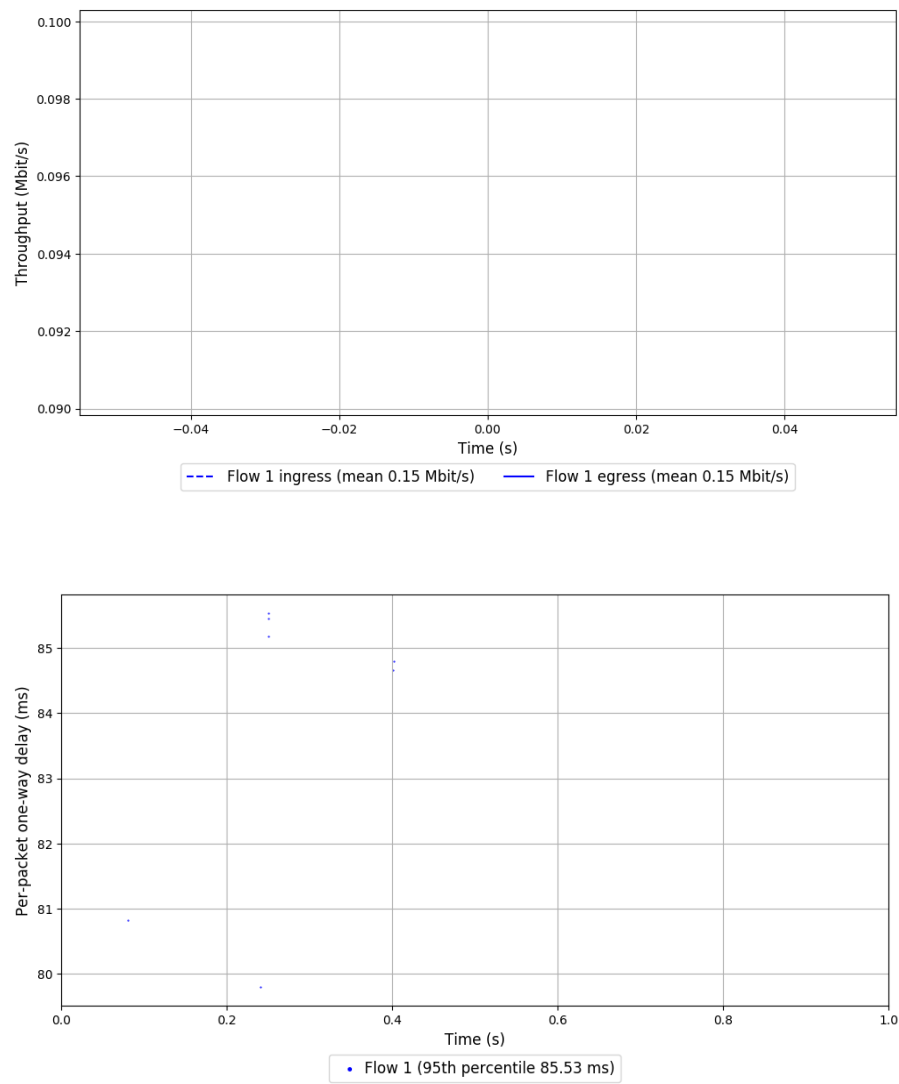
Start at: 2018-01-25 18:02:08

End at: 2018-01-25 18:02:38

Local clock offset: 1.255 ms

Remote clock offset: -6.328 ms

Run 3: Report of QUIC Cubic — Data Link

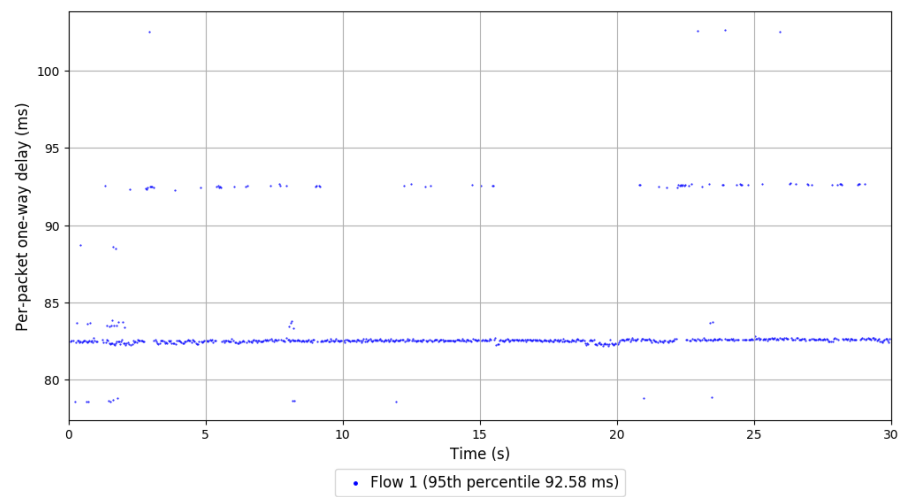
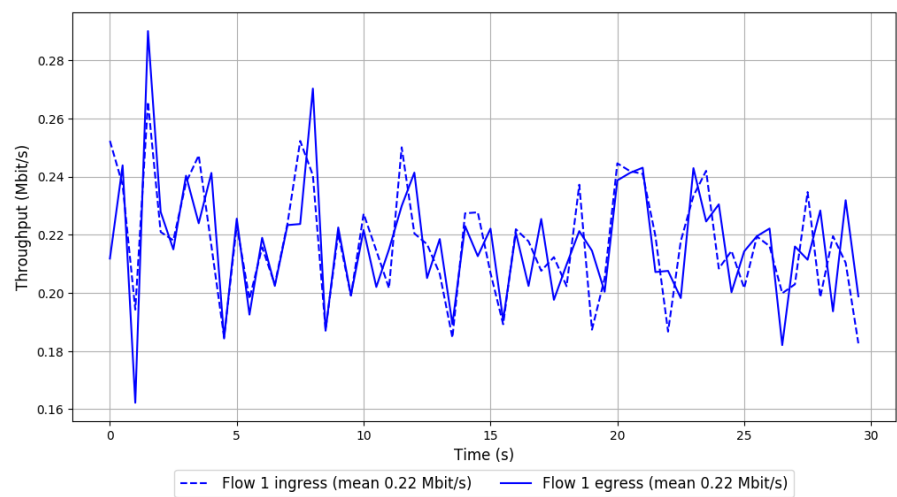


Run 1: Statistics of SCReAM

Start at: 2018-01-25 17:19:34
End at: 2018-01-25 17:20:05
Local clock offset: 2.576 ms
Remote clock offset: -5.398 ms

Below is generated by plot.py at 2018-01-25 18:16:12
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 92.579 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 92.579 ms
Loss rate: 0.13%

Run 1: Report of SReAM — Data Link

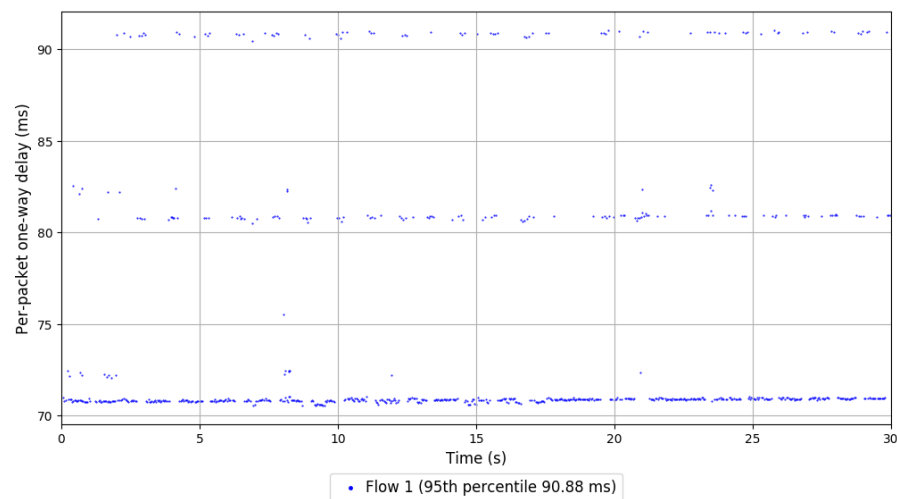
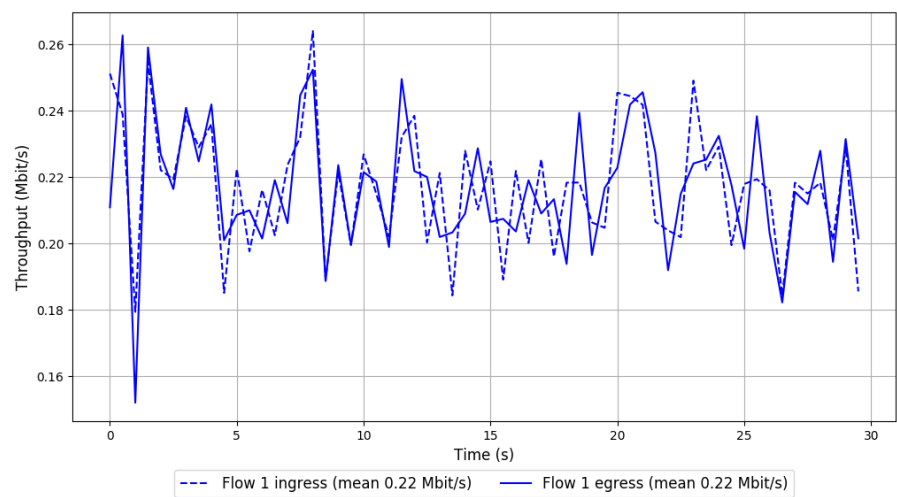


Run 2: Statistics of SCReAM

Start at: 2018-01-25 17:37:59
End at: 2018-01-25 17:38:29
Local clock offset: 2.353 ms
Remote clock offset: -5.913 ms

Below is generated by plot.py at 2018-01-25 18:16:12
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 90.880 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 90.880 ms
Loss rate: 0.13%

Run 2: Report of SReAM — Data Link



Run 3: Statistics of SCReAM

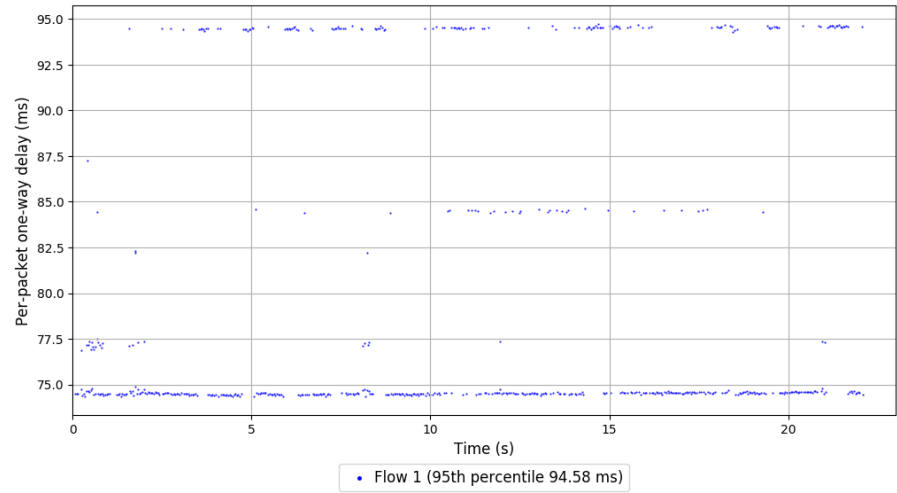
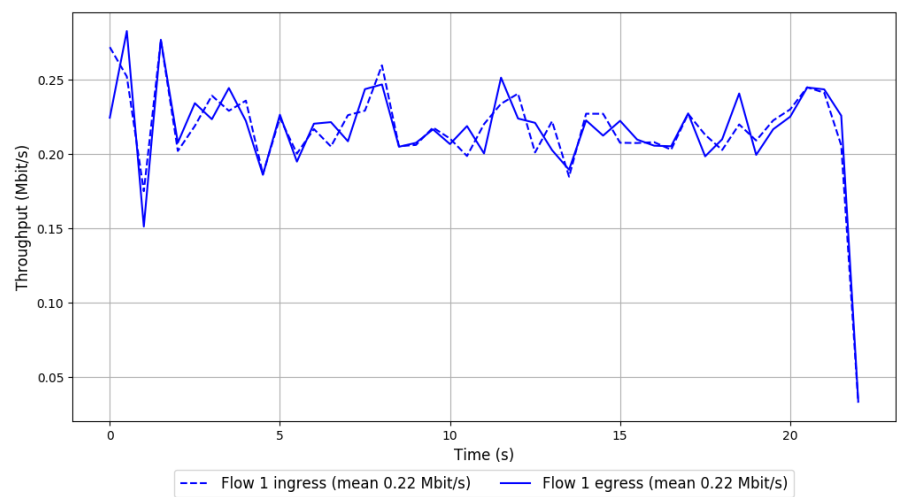
Start at: 2018-01-25 17:56:24

End at: 2018-01-25 17:56:54

Local clock offset: -0.915 ms

Remote clock offset: -6.078 ms

Run 3: Report of SReAM — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-01-25 17:35:40

End at: 2018-01-25 17:36:10

Local clock offset: 2.385 ms

Remote clock offset: -5.99 ms

Below is generated by plot.py at 2018-01-25 18:16:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.91 Mbit/s

95th percentile per-packet one-way delay: 101.439 ms

Loss rate: 0.16%

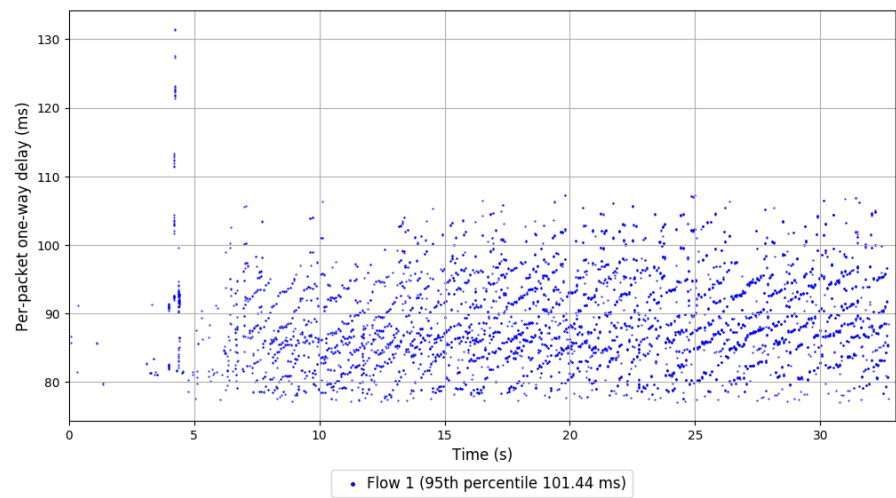
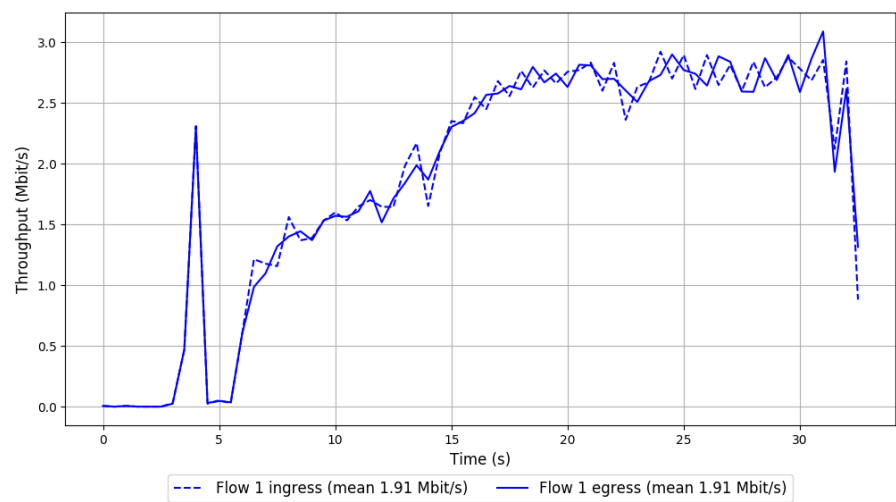
-- Flow 1:

Average throughput: 1.91 Mbit/s

95th percentile per-packet one-way delay: 101.439 ms

Loss rate: 0.16%

Run 1: Report of WebRTC media — Data Link

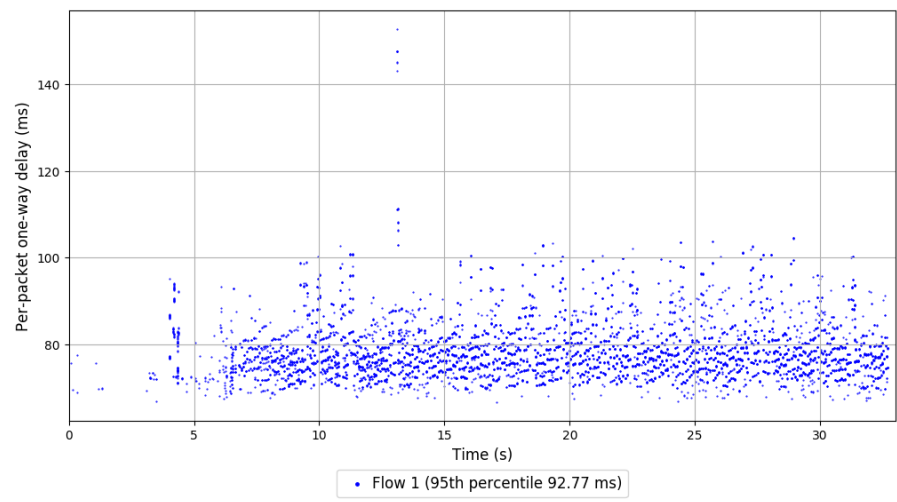
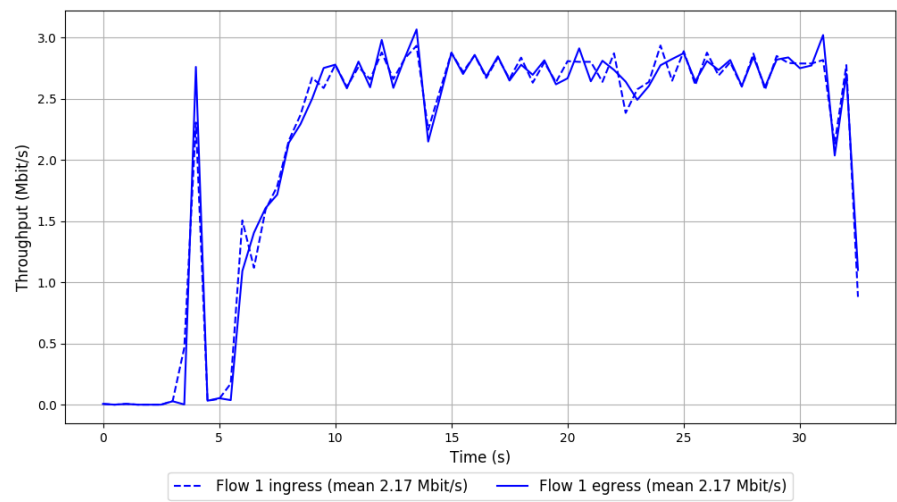


Run 2: Statistics of WebRTC media

Start at: 2018-01-25 17:54:05
End at: 2018-01-25 17:54:35
Local clock offset: 2.046 ms
Remote clock offset: -6.031 ms

Below is generated by plot.py at 2018-01-25 18:16:12
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.17 Mbit/s
95th percentile per-packet one-way delay: 92.771 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 2.17 Mbit/s
95th percentile per-packet one-way delay: 92.771 ms
Loss rate: 0.15%

Run 2: Report of WebRTC media — Data Link

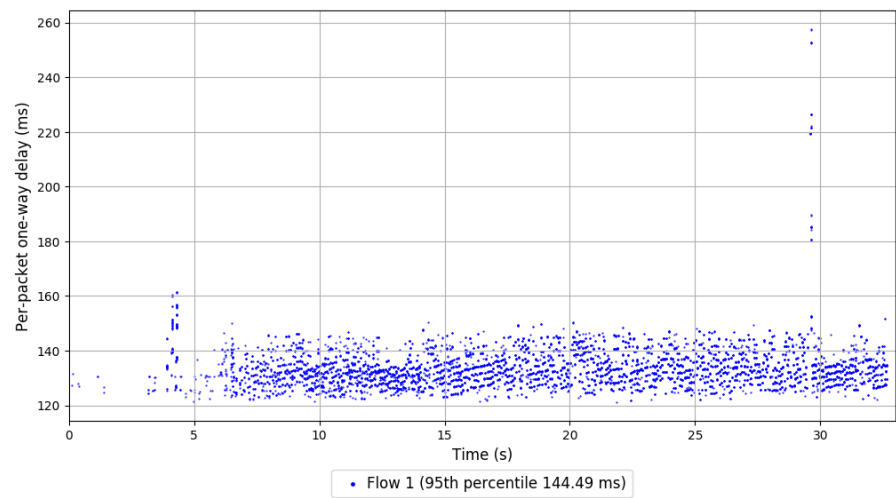
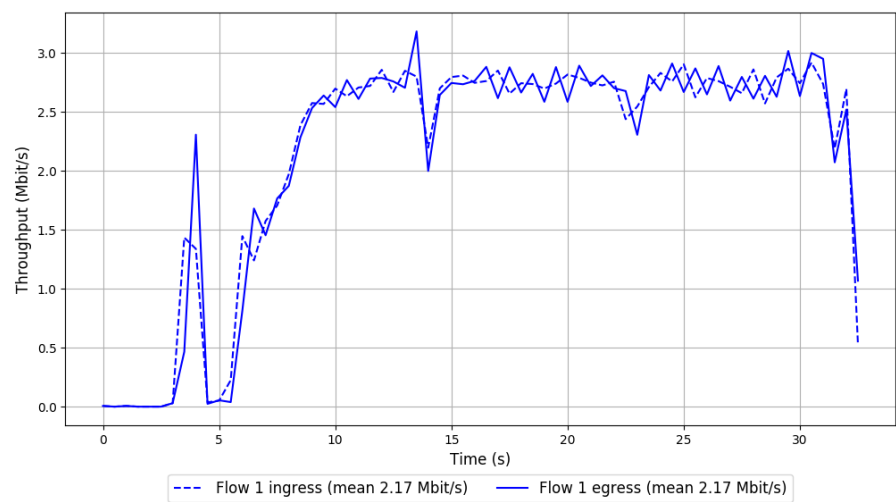


Run 3: Statistics of WebRTC media

Start at: 2018-01-25 18:12:46
End at: 2018-01-25 18:13:16
Local clock offset: -1.526 ms
Remote clock offset: 36.384 ms

Below is generated by plot.py at 2018-01-25 18:16:12
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.17 Mbit/s
95th percentile per-packet one-way delay: 144.491 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 2.17 Mbit/s
95th percentile per-packet one-way delay: 144.491 ms
Loss rate: 0.16%

Run 3: Report of WebRTC media — Data Link

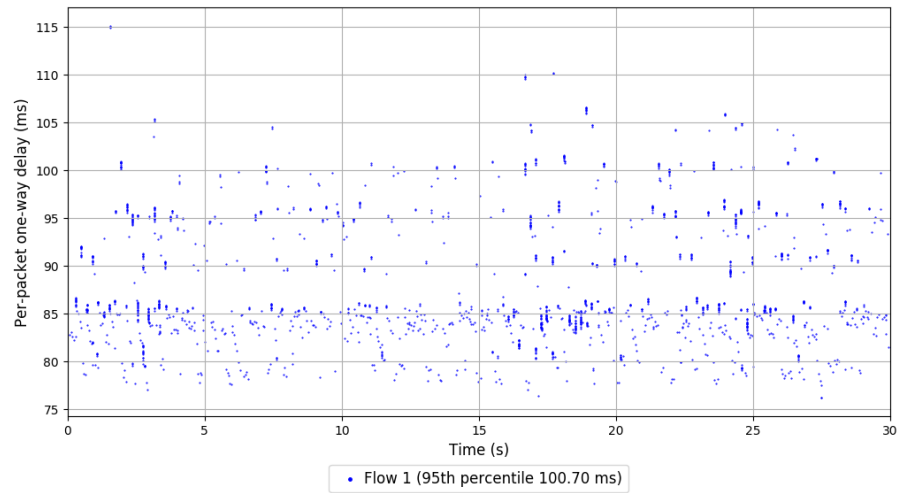
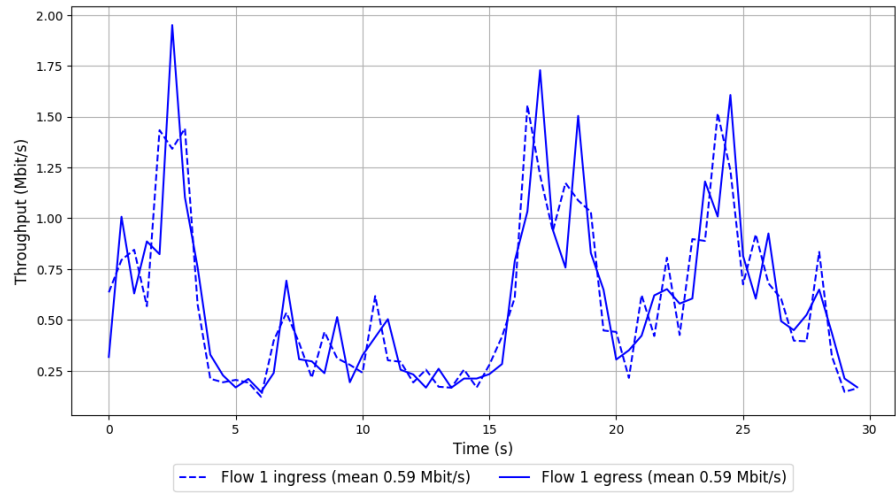


Run 1: Statistics of Sprout

Start at: 2018-01-25 17:31:04
End at: 2018-01-25 17:31:34
Local clock offset: 2.525 ms
Remote clock offset: -5.694 ms

Below is generated by plot.py at 2018-01-25 18:16:12
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 100.698 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 100.698 ms
Loss rate: 0.00%

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

Start at: 2018-01-25 17:49:29

End at: 2018-01-25 17:49:59

Local clock offset: 2.292 ms

Remote clock offset: -5.89 ms

Below is generated by plot.py at 2018-01-25 18:16:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.32 Mbit/s

95th percentile per-packet one-way delay: 90.854 ms

Loss rate: 0.01%

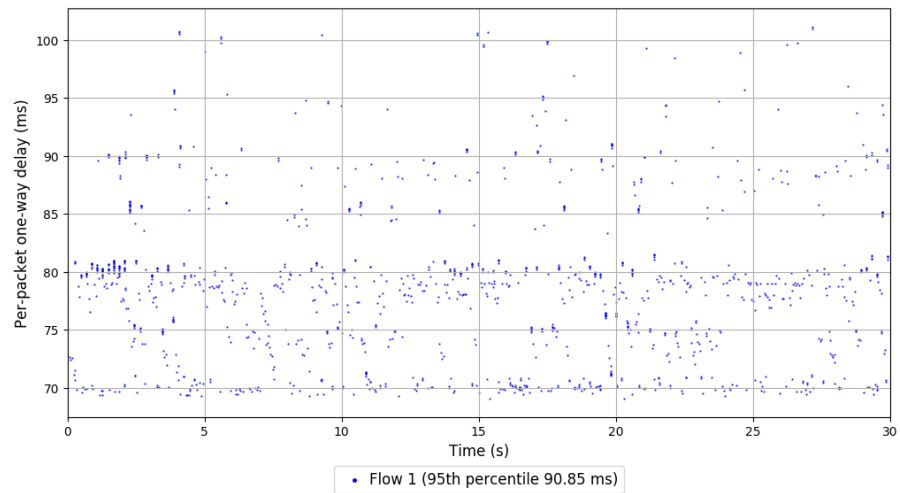
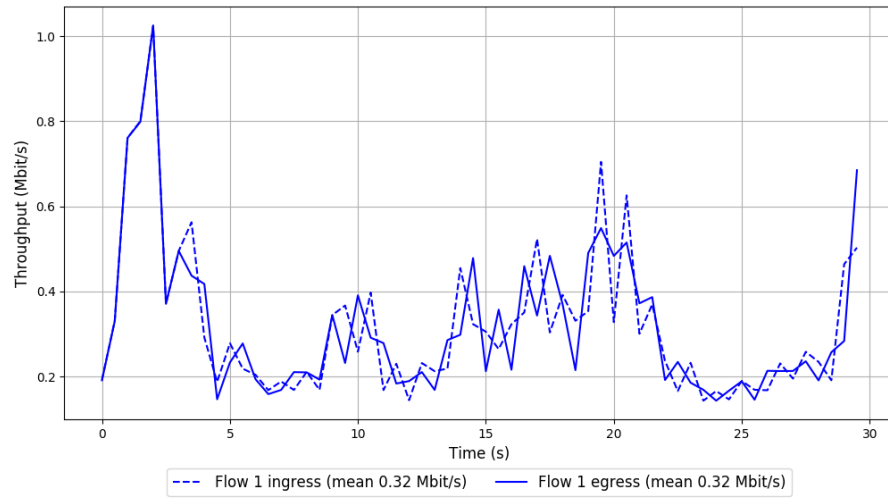
-- Flow 1:

Average throughput: 0.32 Mbit/s

95th percentile per-packet one-way delay: 90.854 ms

Loss rate: 0.01%

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

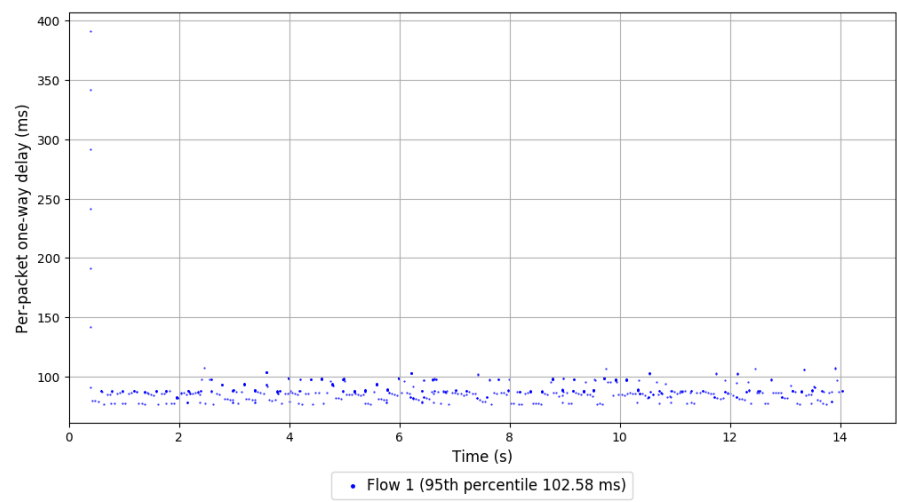
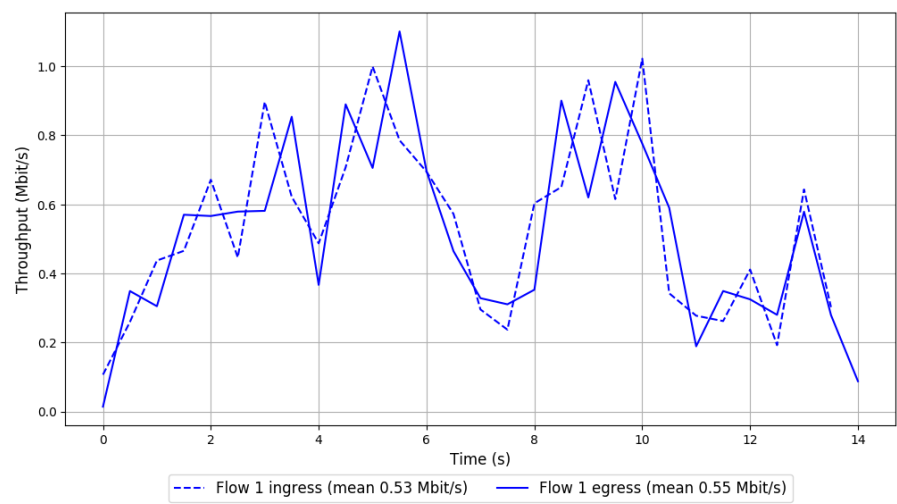
Start at: 2018-01-25 18:07:54

End at: 2018-01-25 18:08:24

Local clock offset: 1.58 ms

Remote clock offset: -6.607 ms

Run 3: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2018-01-25 17:29:55

End at: 2018-01-25 17:30:25

Local clock offset: 2.623 ms

Remote clock offset: -5.632 ms

Below is generated by plot.py at 2018-01-25 18:16:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 5.57 Mbit/s

95th percentile per-packet one-way delay: 125.526 ms

Loss rate: 0.06%

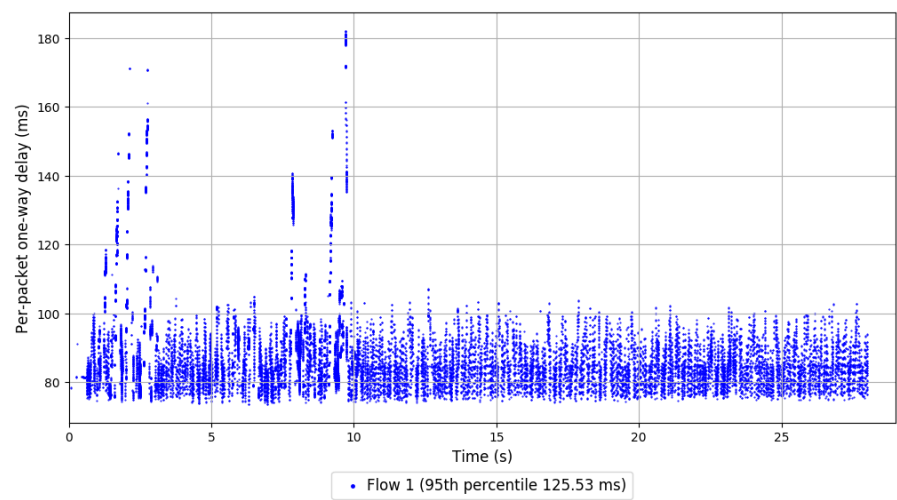
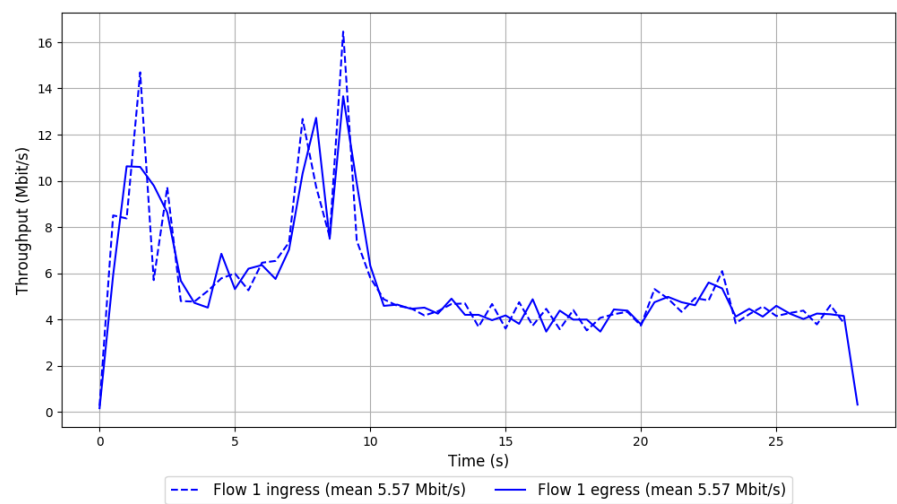
-- Flow 1:

Average throughput: 5.57 Mbit/s

95th percentile per-packet one-way delay: 125.526 ms

Loss rate: 0.06%

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-01-25 17:48:20

End at: 2018-01-25 17:48:50

Local clock offset: 2.175 ms

Remote clock offset: -5.872 ms

Below is generated by plot.py at 2018-01-25 18:16:13

Datalink statistics

-- Total of 1 flow:

Average throughput: 5.74 Mbit/s

95th percentile per-packet one-way delay: 121.007 ms

Loss rate: 0.11%

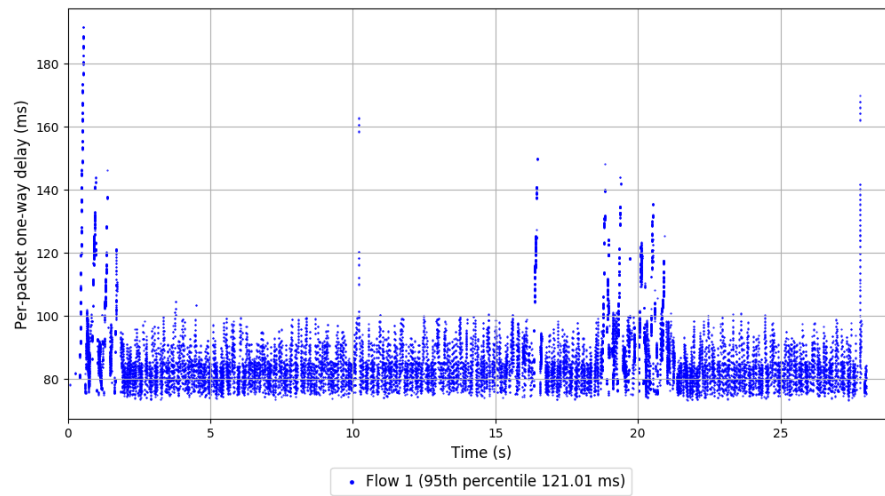
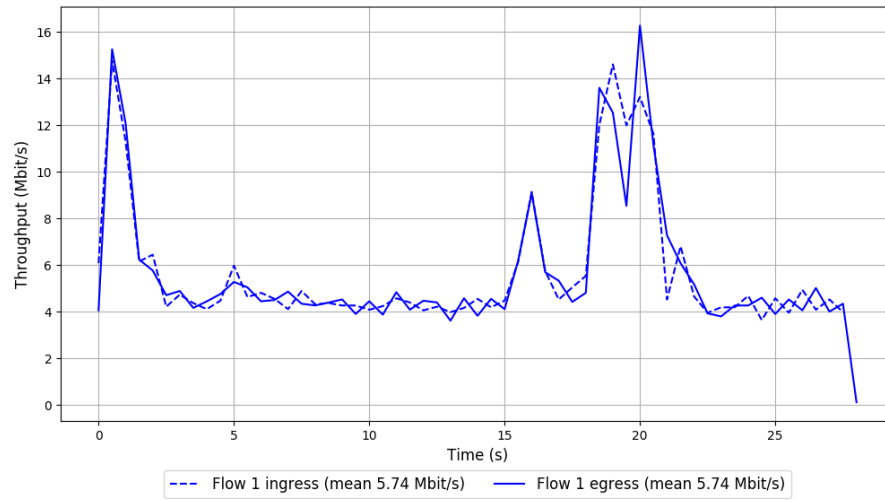
-- Flow 1:

Average throughput: 5.74 Mbit/s

95th percentile per-packet one-way delay: 121.007 ms

Loss rate: 0.11%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-01-25 18:06:45

End at: 2018-01-25 18:07:15

Local clock offset: 0.919 ms

Remote clock offset: -6.537 ms

Below is generated by plot.py at 2018-01-25 18:16:13

Datalink statistics

-- Total of 1 flow:

Average throughput: 4.19 Mbit/s

95th percentile per-packet one-way delay: 101.053 ms

Loss rate: 0.04%

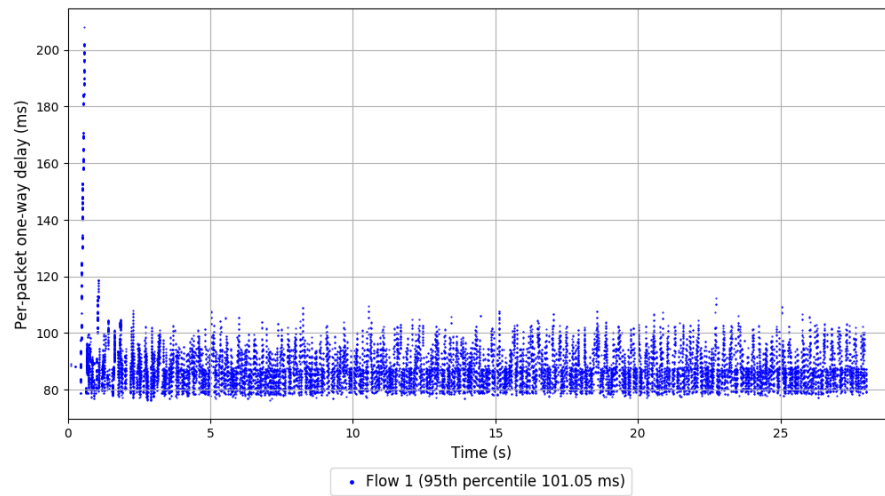
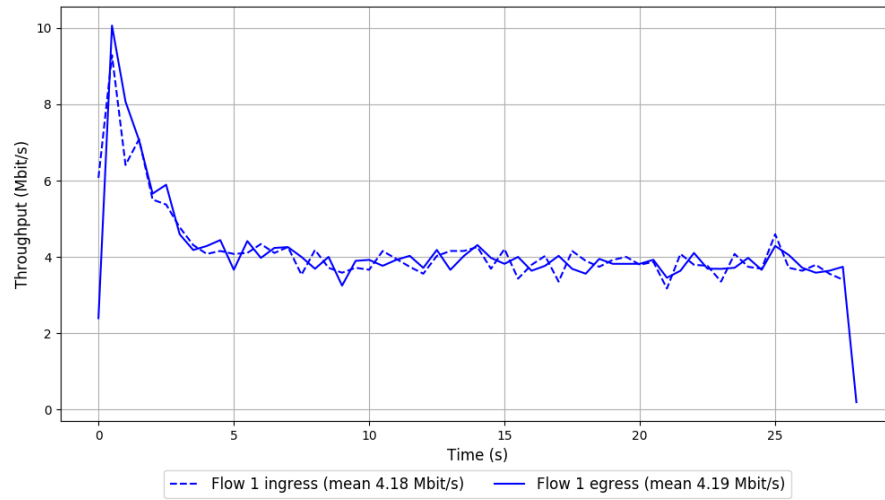
-- Flow 1:

Average throughput: 4.19 Mbit/s

95th percentile per-packet one-way delay: 101.053 ms

Loss rate: 0.04%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-01-25 17:32:13

End at: 2018-01-25 17:32:43

Local clock offset: 2.679 ms

Remote clock offset: -5.77 ms

Below is generated by plot.py at 2018-01-25 18:16:13

Datalink statistics

-- Total of 1 flow:

Average throughput: 4.11 Mbit/s

95th percentile per-packet one-way delay: 102.353 ms

Loss rate: 0.04%

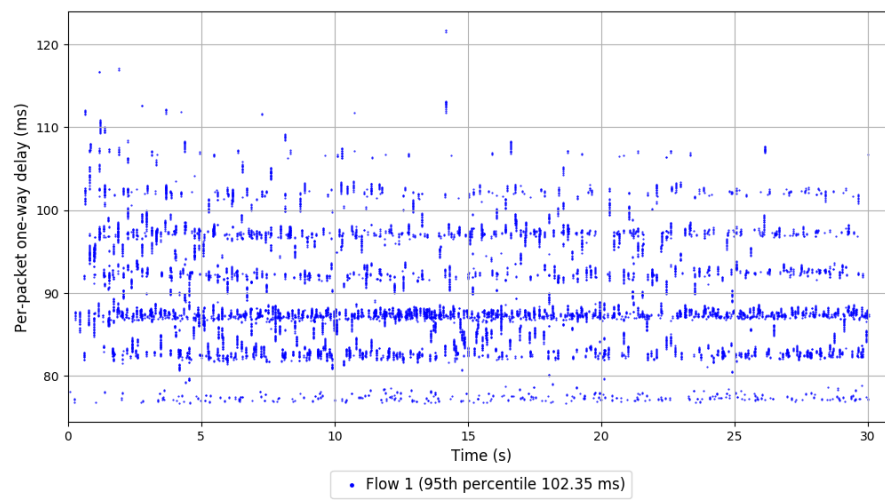
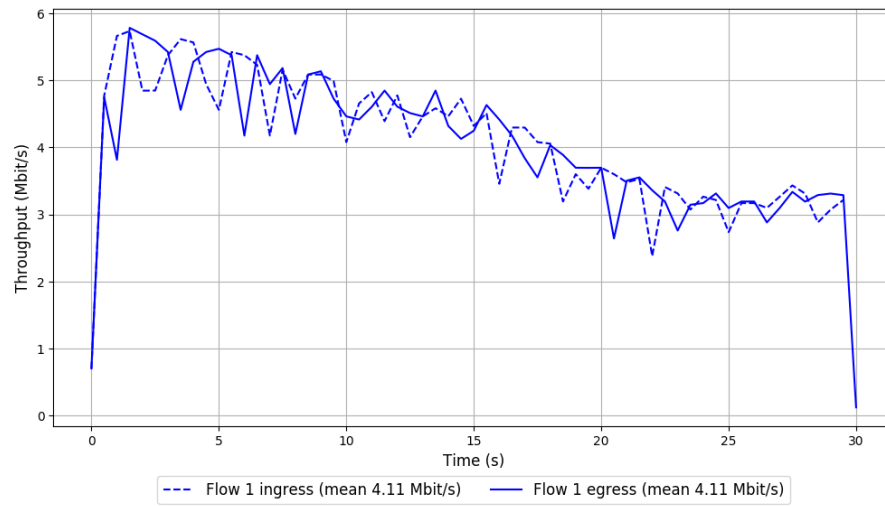
-- Flow 1:

Average throughput: 4.11 Mbit/s

95th percentile per-packet one-way delay: 102.353 ms

Loss rate: 0.04%

Run 1: Report of TCP Vegas — Data Link

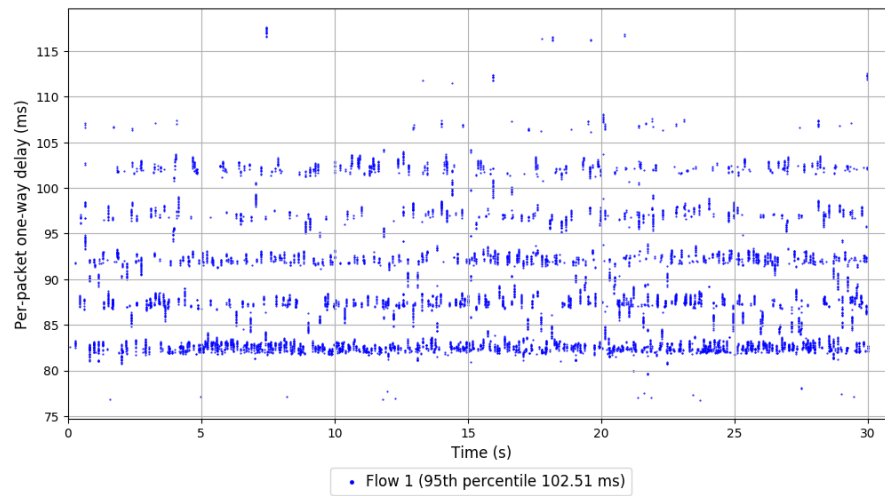
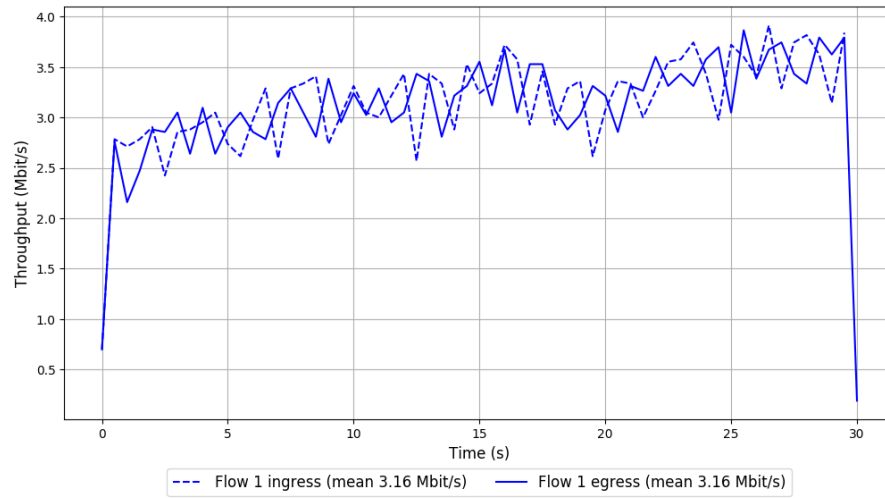


Run 2: Statistics of TCP Vegas

Start at: 2018-01-25 17:50:38
End at: 2018-01-25 17:51:08
Local clock offset: 1.918 ms
Remote clock offset: -5.953 ms

Below is generated by plot.py at 2018-01-25 18:16:13
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.16 Mbit/s
95th percentile per-packet one-way delay: 102.507 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 3.16 Mbit/s
95th percentile per-packet one-way delay: 102.507 ms
Loss rate: 0.16%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2018-01-25 18:09:02

End at: 2018-01-25 18:09:33

Local clock offset: 0.73 ms

Remote clock offset: -6.68 ms

Below is generated by plot.py at 2018-01-25 18:16:31

Datalink statistics

-- Total of 1 flow:

Average throughput: 23.16 Mbit/s

95th percentile per-packet one-way delay: 922.680 ms

Loss rate: 1.99%

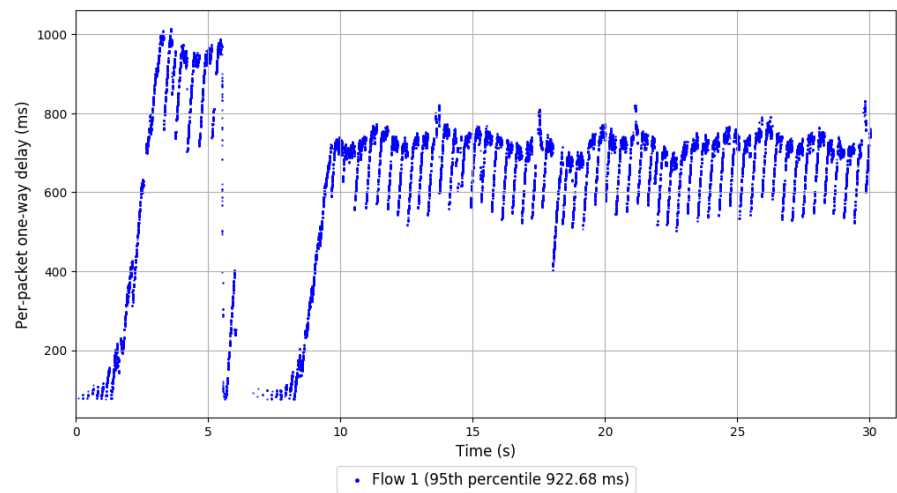
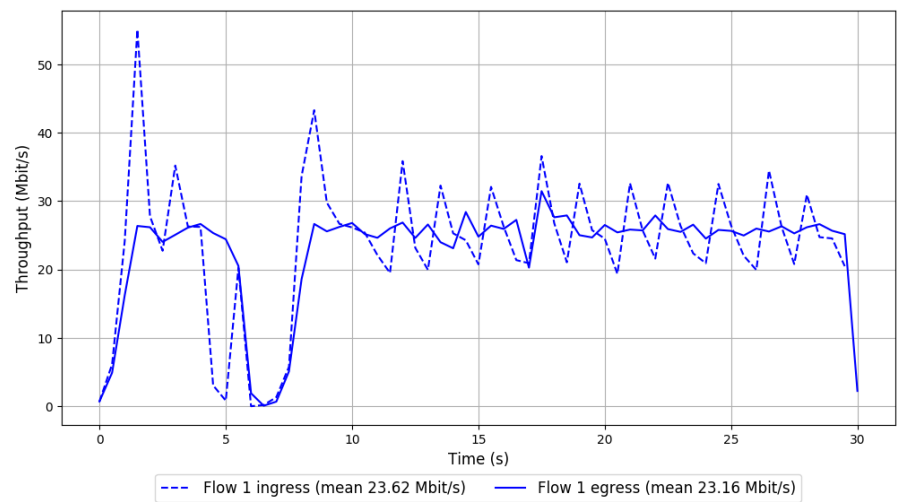
-- Flow 1:

Average throughput: 23.16 Mbit/s

95th percentile per-packet one-way delay: 922.680 ms

Loss rate: 1.99%

Run 3: Report of TCP Vegas — Data Link

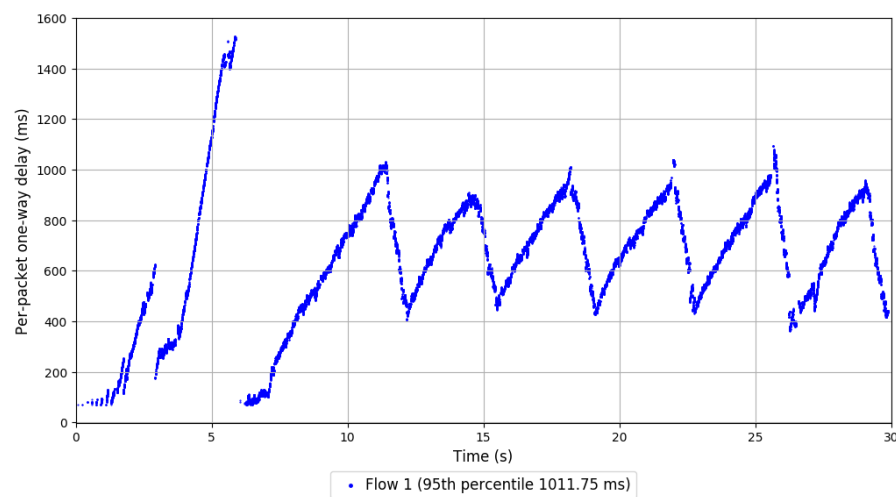
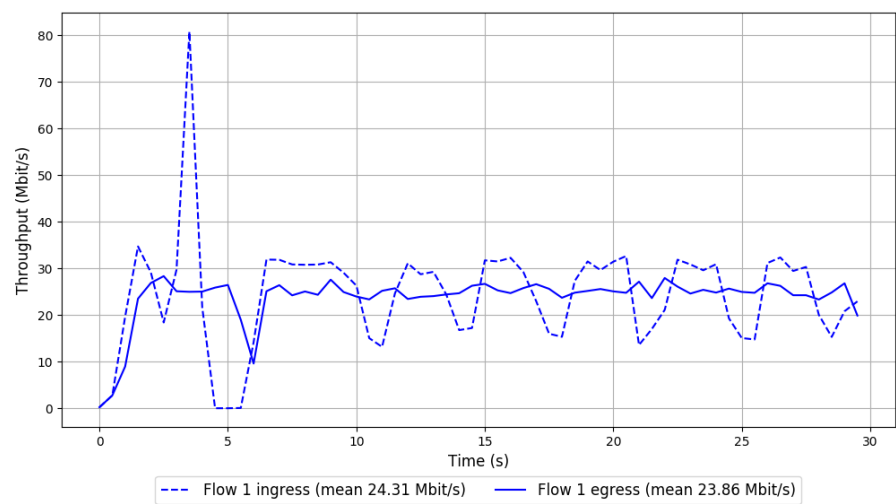


Run 1: Statistics of Verus

Start at: 2018-01-25 17:36:49
End at: 2018-01-25 17:37:19
Local clock offset: 2.687 ms
Remote clock offset: -5.976 ms

Below is generated by plot.py at 2018-01-25 18:16:31
Datalink statistics
-- Total of 1 flow:
Average throughput: 23.86 Mbit/s
95th percentile per-packet one-way delay: 1011.753 ms
Loss rate: 1.91%
-- Flow 1:
Average throughput: 23.86 Mbit/s
95th percentile per-packet one-way delay: 1011.753 ms
Loss rate: 1.91%

Run 1: Report of Verus — Data Link

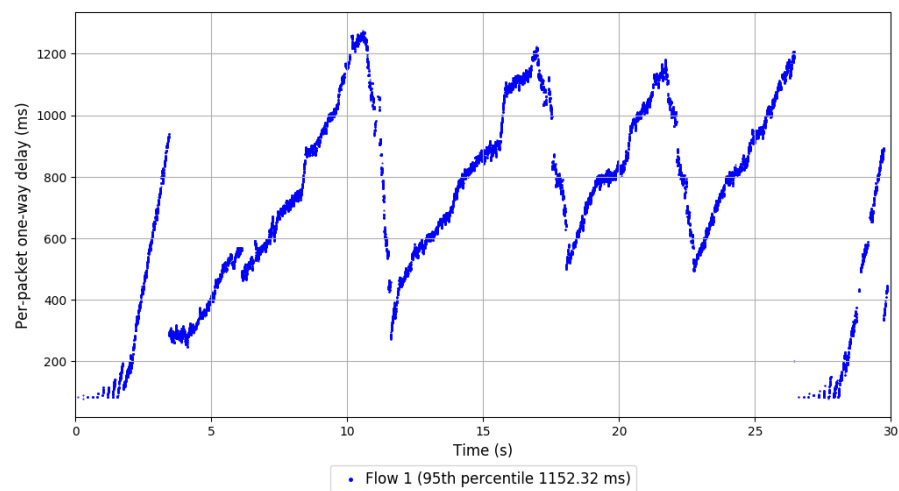
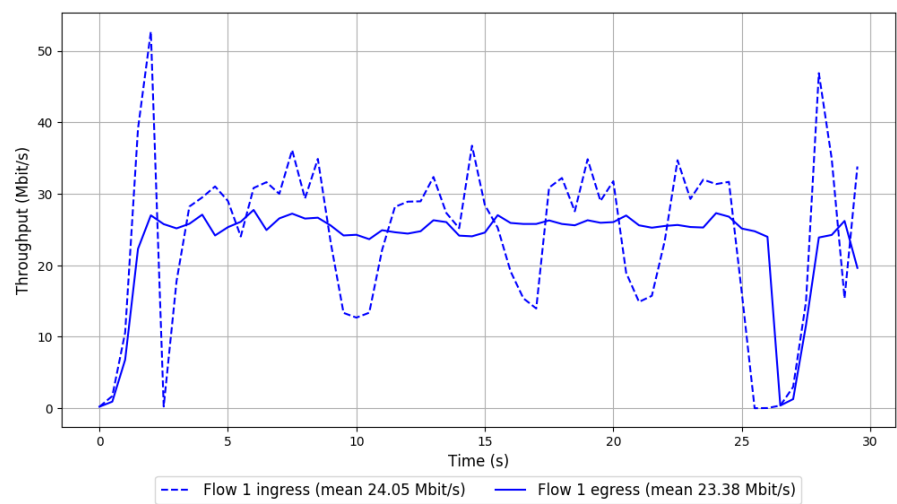


Run 2: Statistics of Verus

Start at: 2018-01-25 17:55:13
End at: 2018-01-25 17:55:43
Local clock offset: 1.735 ms
Remote clock offset: -6.048 ms

Below is generated by plot.py at 2018-01-25 18:16:32
Datalink statistics
-- Total of 1 flow:
Average throughput: 23.38 Mbit/s
95th percentile per-packet one-way delay: 1152.315 ms
Loss rate: 2.93%
-- Flow 1:
Average throughput: 23.38 Mbit/s
95th percentile per-packet one-way delay: 1152.315 ms
Loss rate: 2.93%

Run 2: Report of Verus — Data Link

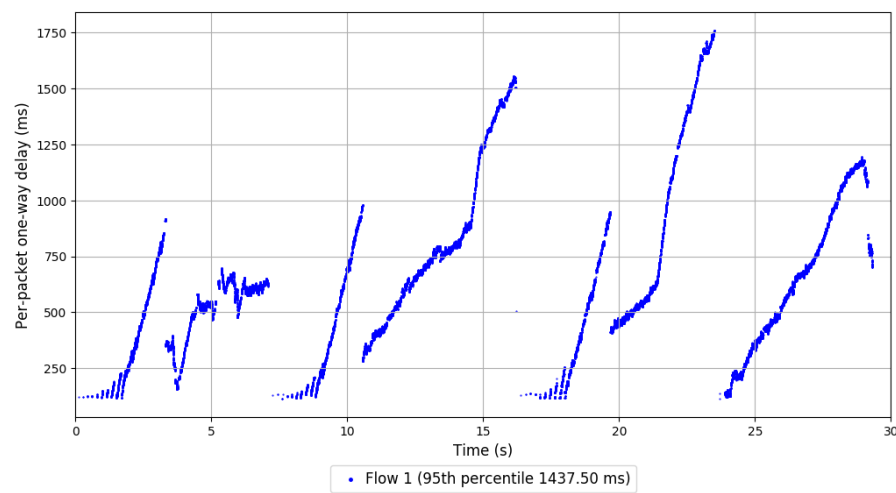
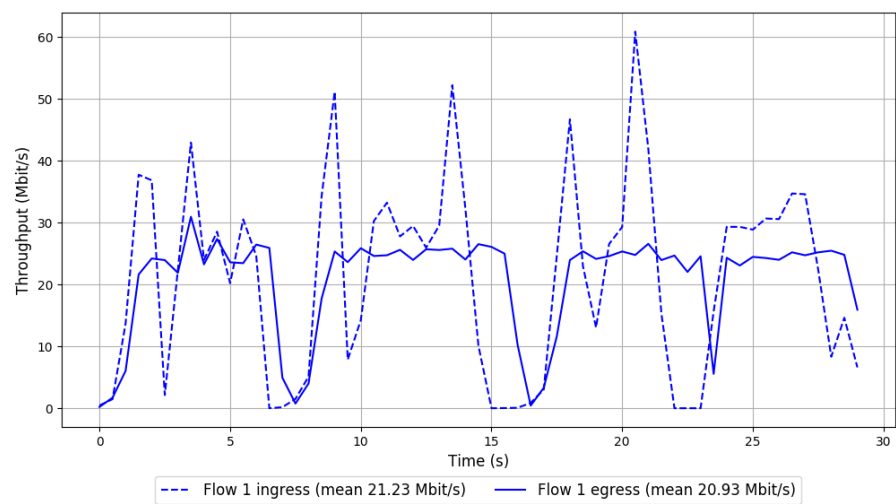


Run 3: Statistics of Verus

Start at: 2018-01-25 18:14:00
End at: 2018-01-25 18:14:30
Local clock offset: 1.057 ms
Remote clock offset: 36.205 ms

Below is generated by plot.py at 2018-01-25 18:16:32
Datalink statistics
-- Total of 1 flow:
Average throughput: 20.93 Mbit/s
95th percentile per-packet one-way delay: 1437.501 ms
Loss rate: 1.50%
-- Flow 1:
Average throughput: 20.93 Mbit/s
95th percentile per-packet one-way delay: 1437.501 ms
Loss rate: 1.50%

Run 3: Report of Verus — Data Link

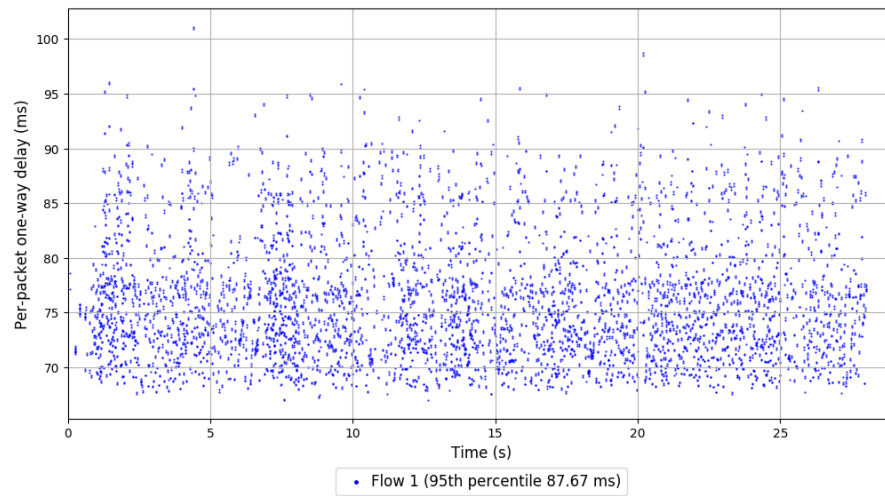
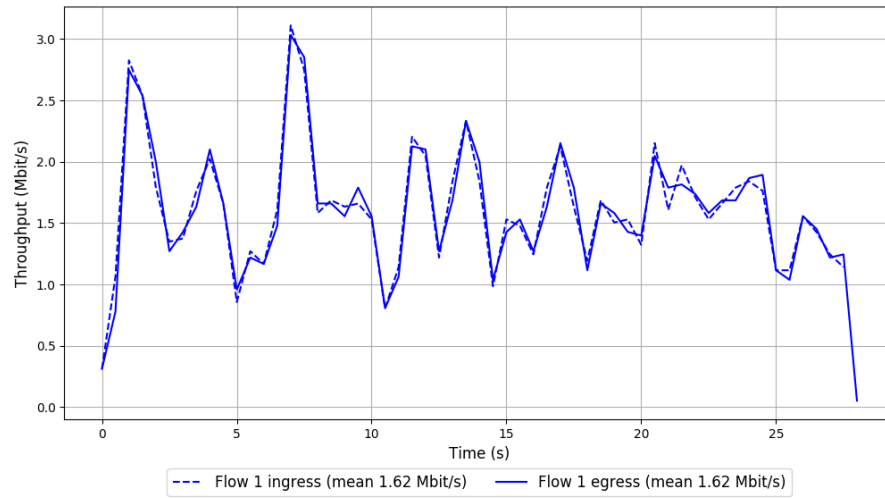


Run 1: Statistics of Copa

Start at: 2018-01-25 17:23:01
End at: 2018-01-25 17:23:31
Local clock offset: 2.923 ms
Remote clock offset: -5.487 ms

Below is generated by plot.py at 2018-01-25 18:16:32
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.62 Mbit/s
95th percentile per-packet one-way delay: 87.674 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 1.62 Mbit/s
95th percentile per-packet one-way delay: 87.674 ms
Loss rate: 0.06%

Run 1: Report of Copa — Data Link

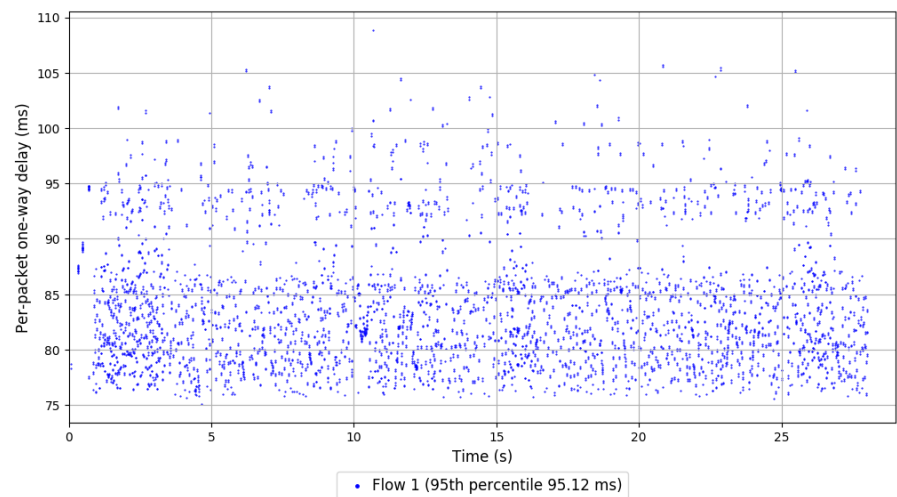
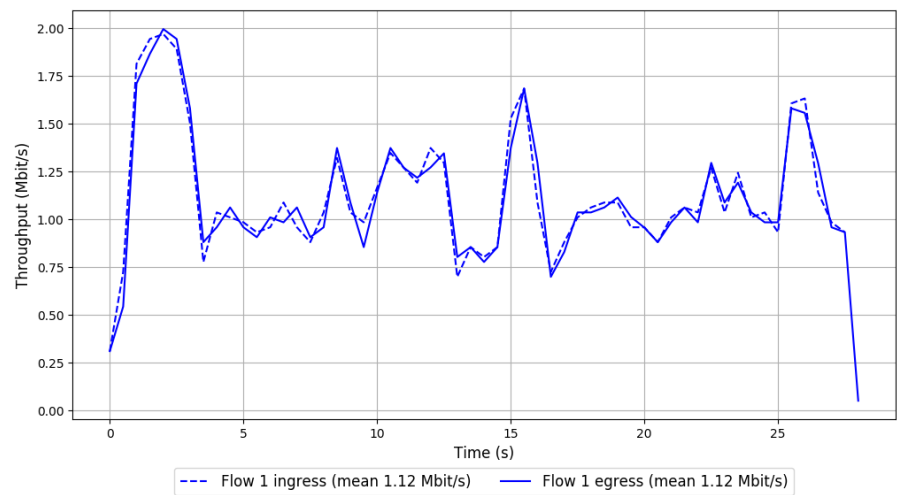


Run 2: Statistics of Copa

Start at: 2018-01-25 17:41:26
End at: 2018-01-25 17:41:56
Local clock offset: 2.208 ms
Remote clock offset: -5.887 ms

Below is generated by plot.py at 2018-01-25 18:16:32
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.12 Mbit/s
95th percentile per-packet one-way delay: 95.121 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 1.12 Mbit/s
95th percentile per-packet one-way delay: 95.121 ms
Loss rate: 0.12%

Run 2: Report of Copa — Data Link

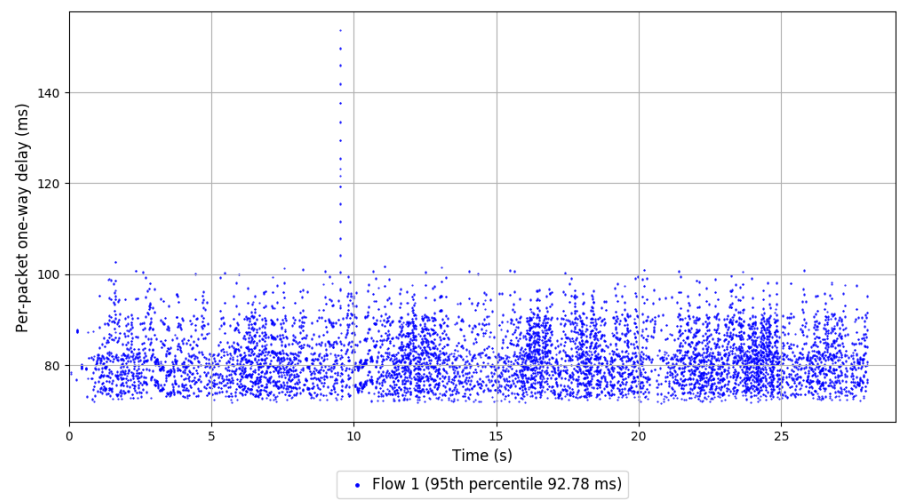
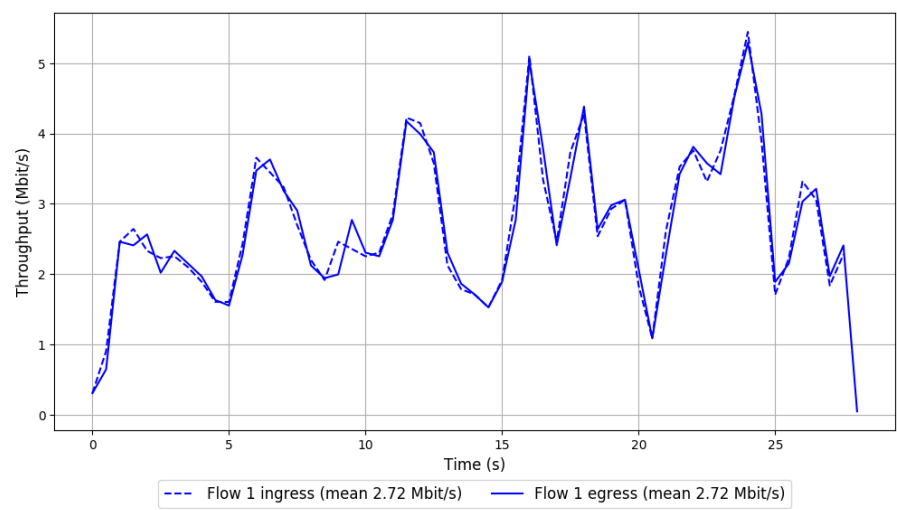


Run 3: Statistics of Copa

Start at: 2018-01-25 17:59:50
End at: 2018-01-25 18:00:20
Local clock offset: 1.756 ms
Remote clock offset: -6.223 ms

Below is generated by plot.py at 2018-01-25 18:16:32
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.72 Mbit/s
95th percentile per-packet one-way delay: 92.780 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 2.72 Mbit/s
95th percentile per-packet one-way delay: 92.780 ms
Loss rate: 0.12%

Run 3: Report of Copa — Data Link

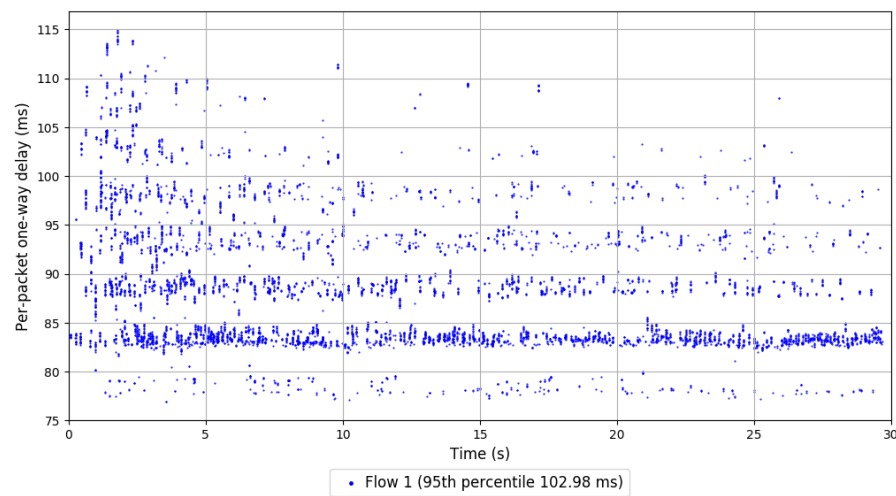
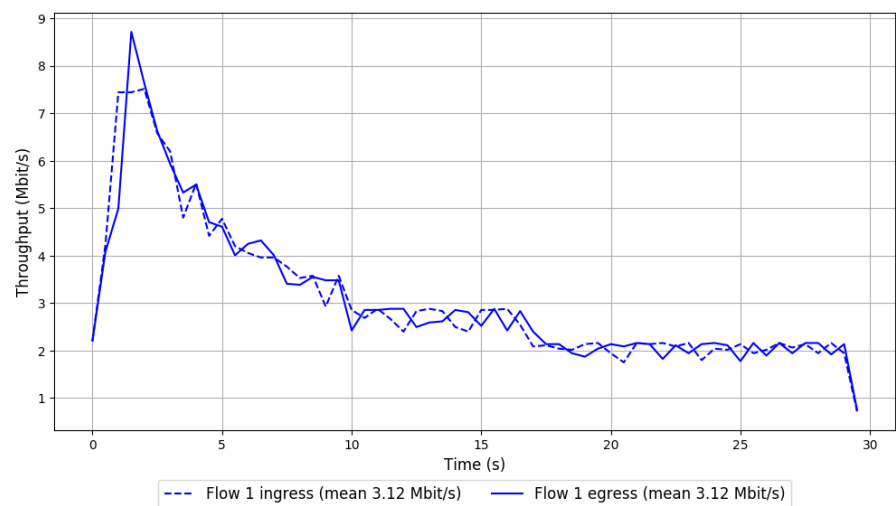


Run 1: Statistics of Indigo-2-256

Start at: 2018-01-25 17:24:10
End at: 2018-01-25 17:24:40
Local clock offset: 3.316 ms
Remote clock offset: -5.482 ms

Below is generated by plot.py at 2018-01-25 18:16:32
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.12 Mbit/s
95th percentile per-packet one-way delay: 102.978 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 3.12 Mbit/s
95th percentile per-packet one-way delay: 102.978 ms
Loss rate: 0.13%

Run 1: Report of Indigo-2-256 — Data Link

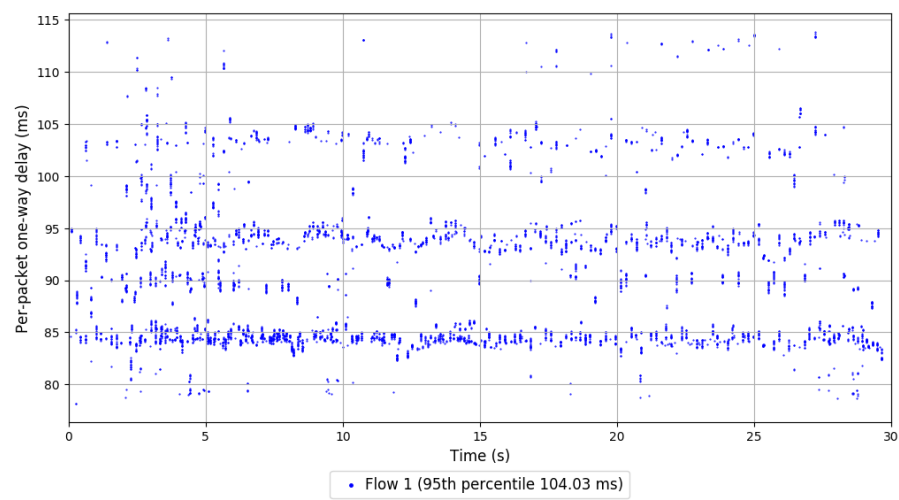
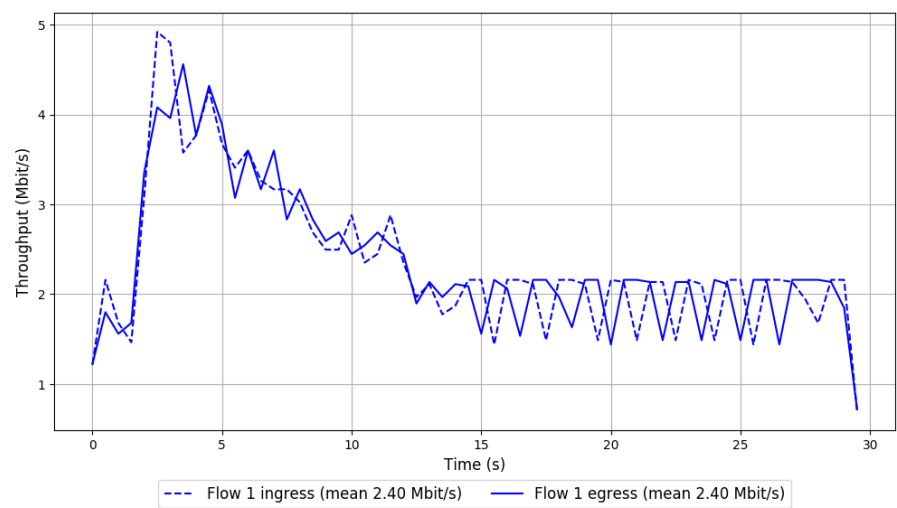


Run 2: Statistics of Indigo-2-256

Start at: 2018-01-25 17:42:35
End at: 2018-01-25 17:43:05
Local clock offset: 2.378 ms
Remote clock offset: -5.802 ms

Below is generated by plot.py at 2018-01-25 18:16:32
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.40 Mbit/s
95th percentile per-packet one-way delay: 104.026 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 2.40 Mbit/s
95th percentile per-packet one-way delay: 104.026 ms
Loss rate: 0.22%

Run 2: Report of Indigo-2-256 — Data Link

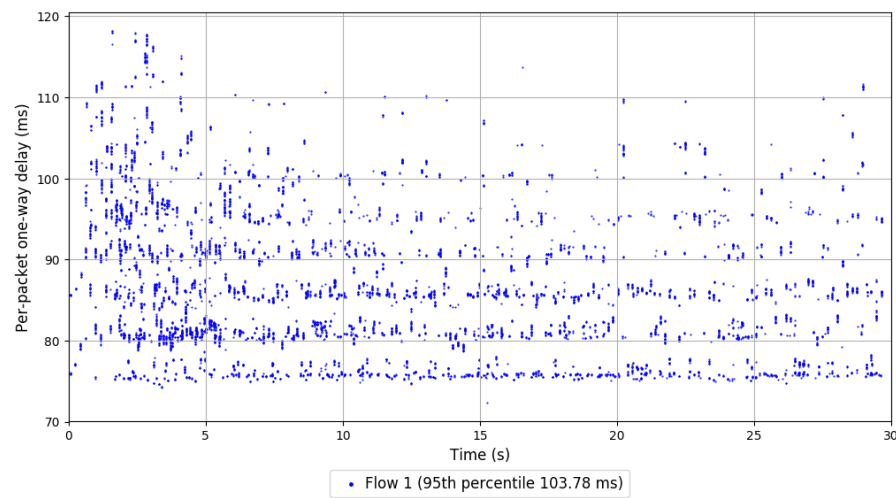
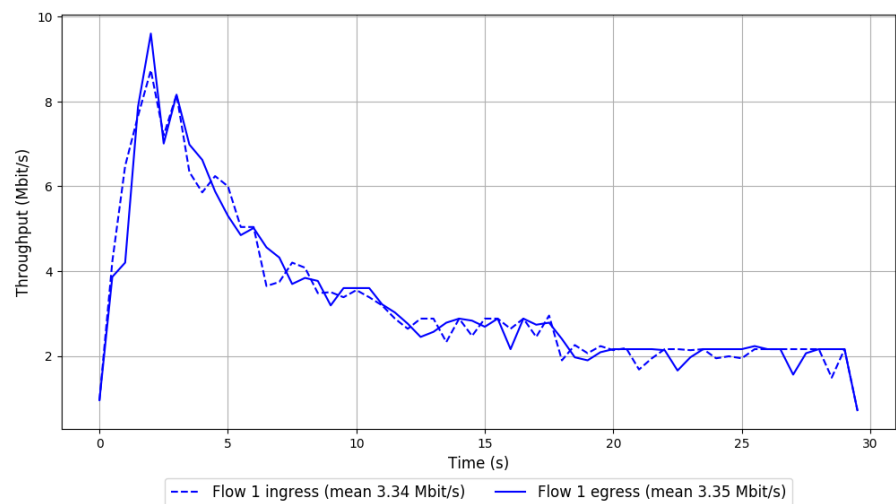


Run 3: Statistics of Indigo-2-256

Start at: 2018-01-25 18:00:59
End at: 2018-01-25 18:01:29
Local clock offset: 1.058 ms
Remote clock offset: -6.269 ms

Below is generated by plot.py at 2018-01-25 18:16:32
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.35 Mbit/s
95th percentile per-packet one-way delay: 103.776 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 3.35 Mbit/s
95th percentile per-packet one-way delay: 103.776 ms
Loss rate: 0.02%

Run 3: Report of Indigo-2-256 — Data Link



Run 1: Statistics of Indigo-1-32

Start at: 2018-01-25 17:21:52

End at: 2018-01-25 17:22:22

Local clock offset: 2.642 ms

Remote clock offset: -5.391 ms

Below is generated by plot.py at 2018-01-25 18:16:32

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.31 Mbit/s

95th percentile per-packet one-way delay: 101.314 ms

Loss rate: 0.00%

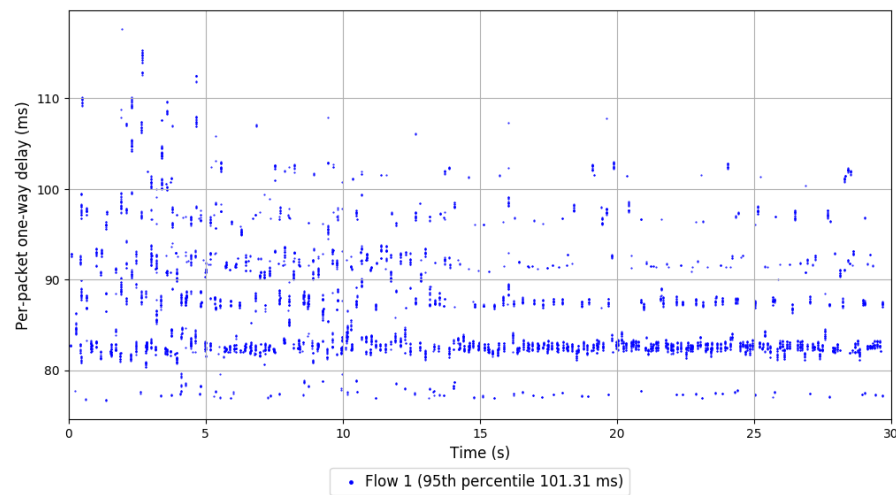
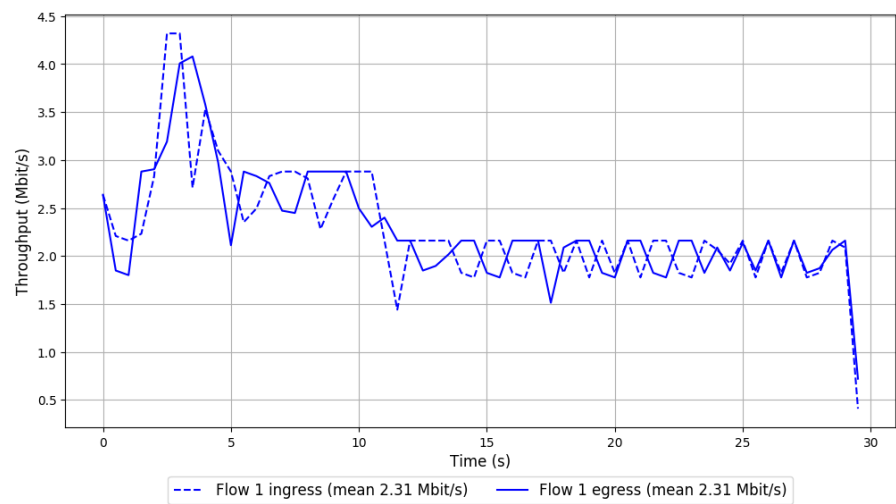
-- Flow 1:

Average throughput: 2.31 Mbit/s

95th percentile per-packet one-way delay: 101.314 ms

Loss rate: 0.00%

Run 1: Report of Indigo-1-32 — Data Link

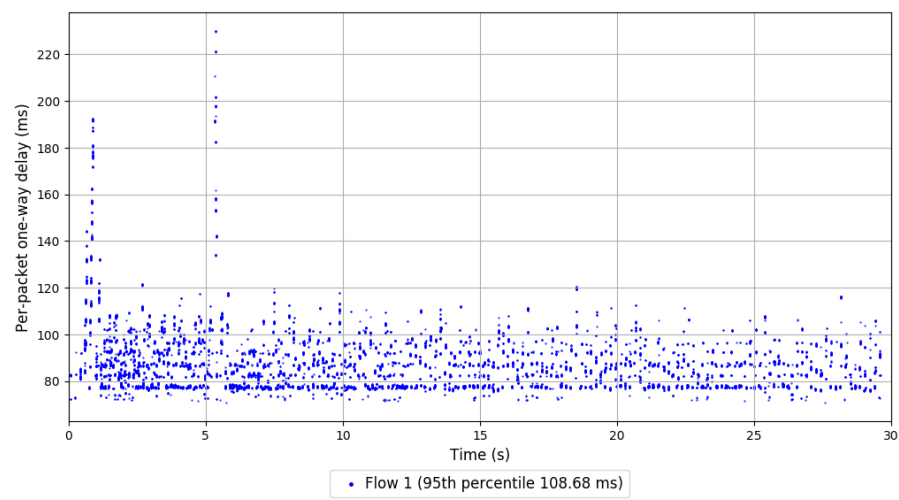
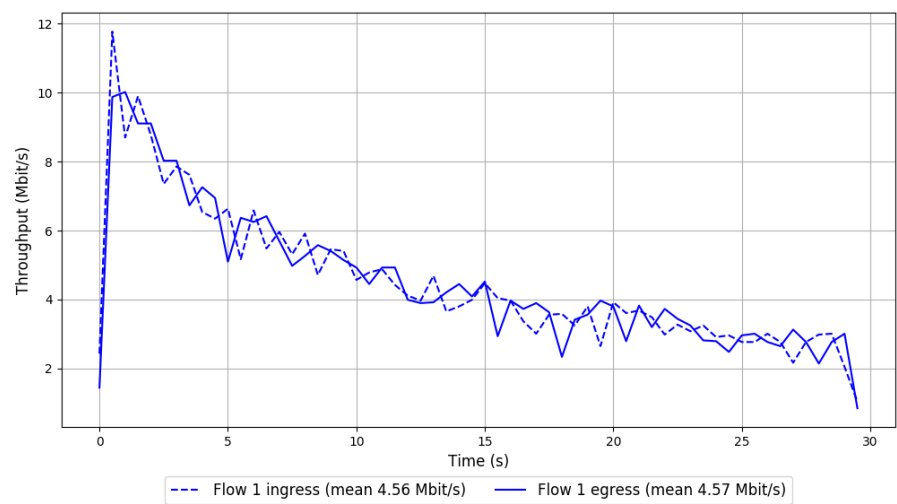


Run 2: Statistics of Indigo-1-32

Start at: 2018-01-25 17:40:17
End at: 2018-01-25 17:40:47
Local clock offset: 2.552 ms
Remote clock offset: -5.897 ms

Below is generated by plot.py at 2018-01-25 18:16:32
Datalink statistics
-- Total of 1 flow:
Average throughput: 4.57 Mbit/s
95th percentile per-packet one-way delay: 108.678 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 4.57 Mbit/s
95th percentile per-packet one-way delay: 108.678 ms
Loss rate: 0.12%

Run 2: Report of Indigo-1-32 — Data Link

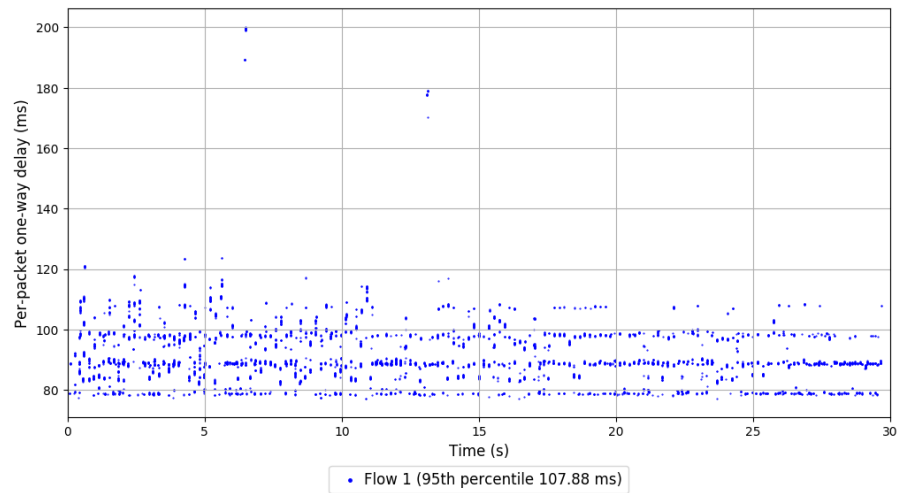
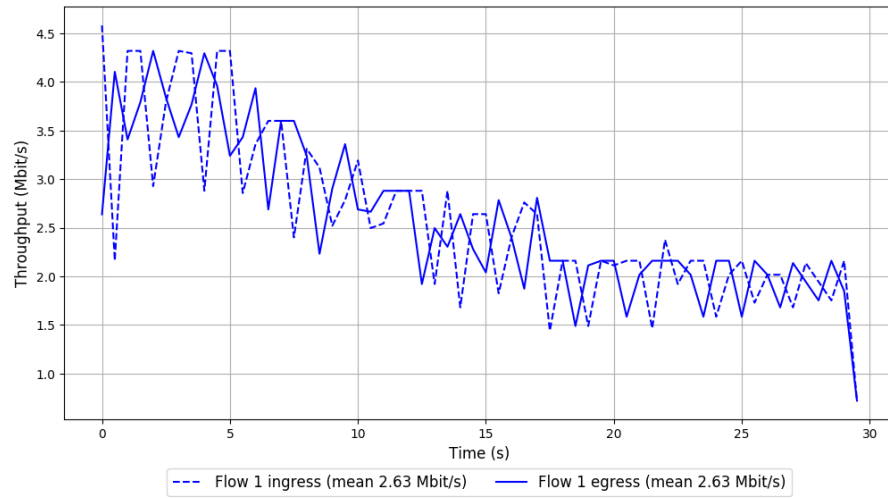


Run 3: Statistics of Indigo-1-32

Start at: 2018-01-25 17:58:41
End at: 2018-01-25 17:59:11
Local clock offset: 1.232 ms
Remote clock offset: -6.199 ms

Below is generated by plot.py at 2018-01-25 18:16:32
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.63 Mbit/s
95th percentile per-packet one-way delay: 107.882 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 2.63 Mbit/s
95th percentile per-packet one-way delay: 107.882 ms
Loss rate: 0.20%

Run 3: Report of Indigo-1-32 — Data Link



Run 1: Statistics of Indigo-1-128

Start at: 2018-01-25 17:33:21

End at: 2018-01-25 17:33:51

Local clock offset: 2.455 ms

Remote clock offset: -5.88 ms

Below is generated by plot.py at 2018-01-25 18:16:32

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.34 Mbit/s

95th percentile per-packet one-way delay: 106.663 ms

Loss rate: 0.00%

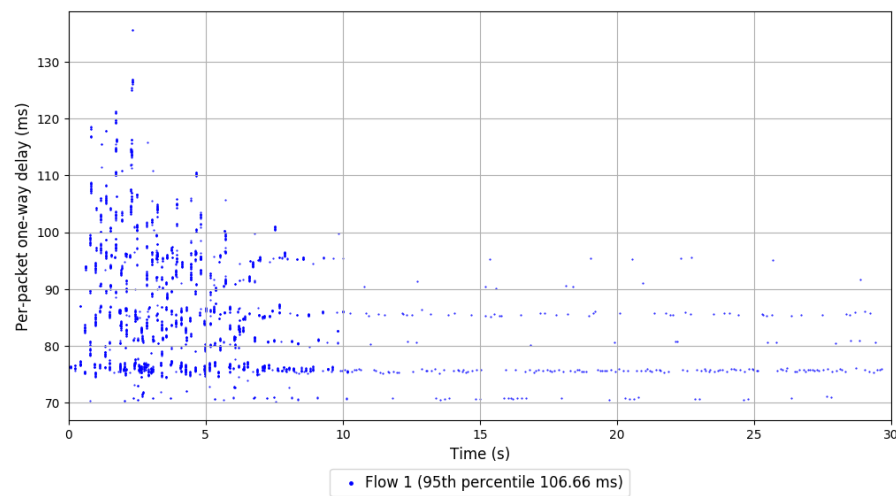
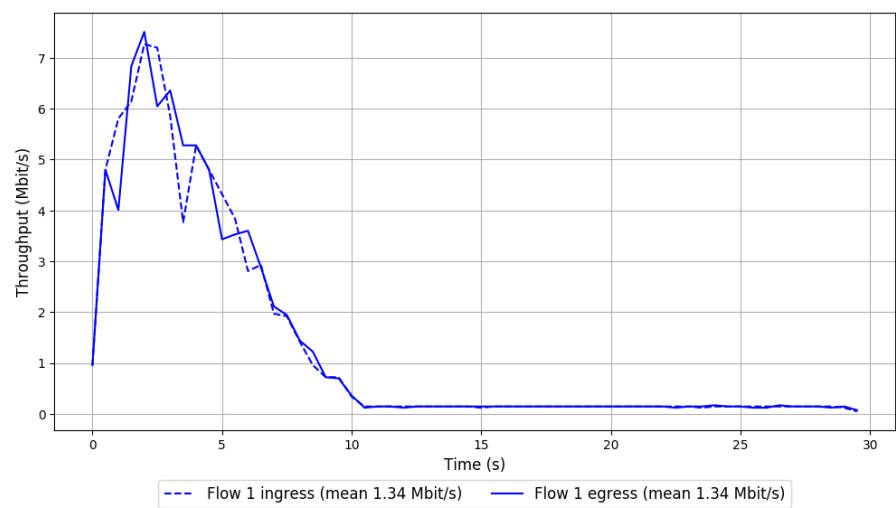
-- Flow 1:

Average throughput: 1.34 Mbit/s

95th percentile per-packet one-way delay: 106.663 ms

Loss rate: 0.00%

Run 1: Report of Indigo-1-128 — Data Link



Run 2: Statistics of Indigo-1-128

Start at: 2018-01-25 17:51:46

End at: 2018-01-25 17:52:16

Local clock offset: 1.87 ms

Remote clock offset: -6.001 ms

Below is generated by plot.py at 2018-01-25 18:16:32

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.40 Mbit/s

95th percentile per-packet one-way delay: 105.500 ms

Loss rate: 0.00%

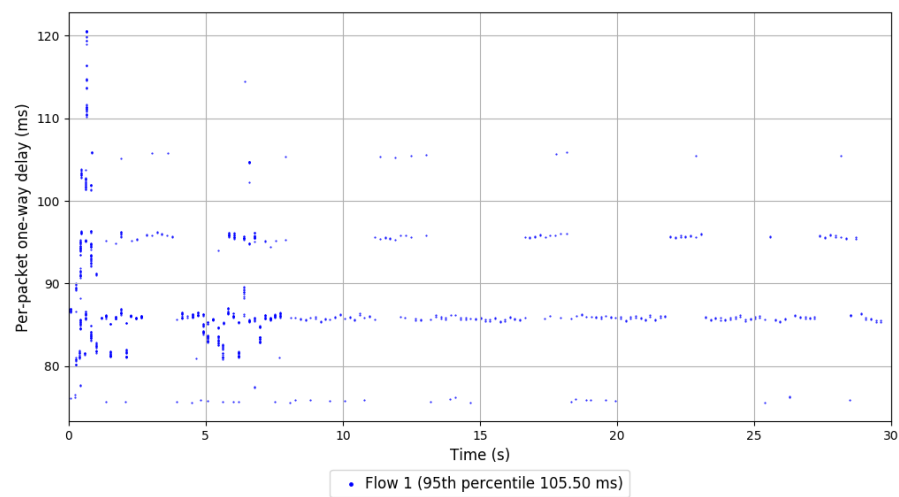
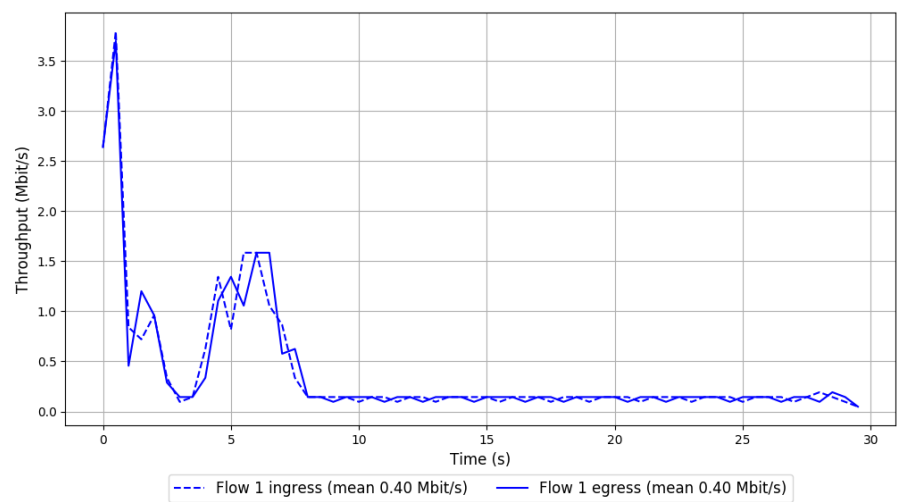
-- Flow 1:

Average throughput: 0.40 Mbit/s

95th percentile per-packet one-way delay: 105.500 ms

Loss rate: 0.00%

Run 2: Report of Indigo-1-128 — Data Link



Run 3: Statistics of Indigo-1-128

Start at: 2018-01-25 18:10:17
End at: 2018-01-25 18:10:47
Local clock offset: 1.264 ms
Remote clock offset: -6.714 ms

Below is generated by plot.py at 2018-01-25 18:16:32
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.62 Mbit/s
95th percentile per-packet one-way delay: 109.671 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.62 Mbit/s
95th percentile per-packet one-way delay: 109.671 ms
Loss rate: 0.00%

Run 3: Report of Indigo-1-128 — Data Link

