

Pantheon Report

Generated at 2018-01-02 20:16:39 (UTC).

Data path: India ppp0 (*remote*) → AWS India 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).

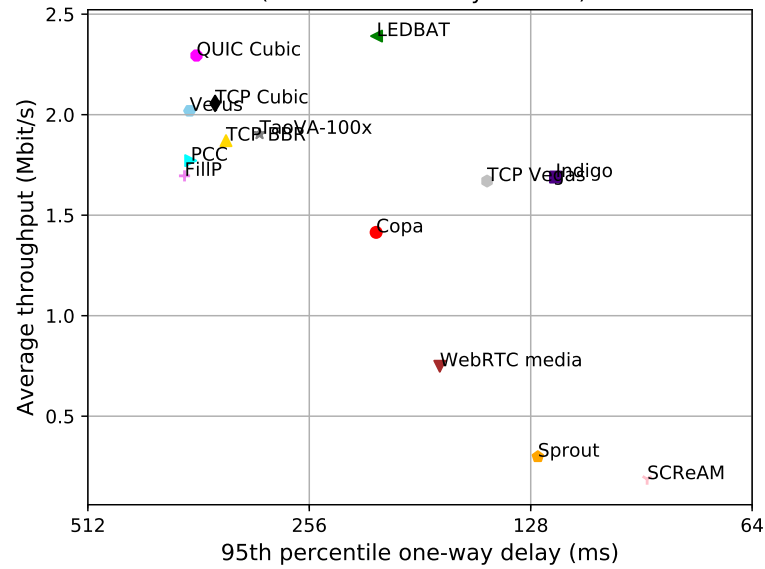
Tested BBR with qdisc of Fair Queuing (**fq**), and other schemes with the default Linux qdisc (**pfifo_fast**).

NTP offsets were measured against **nets.org.sg** and have been applied to correct the timestamps in logs.

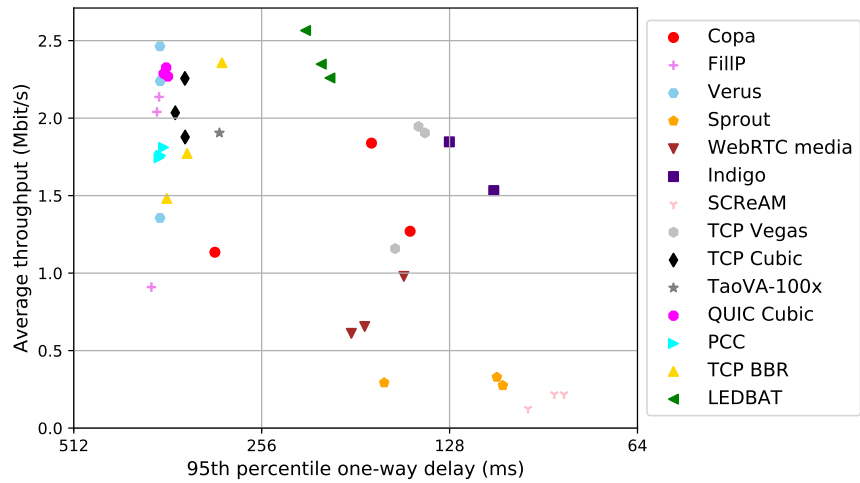
Git summary:

```
branch: master @ 904a5750834816b1e46a2c86405d707788d27c16
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
  M datagrump/sender.cc
third_party/fillp @ dcaef6b00654e660f73f7ed679d2eab61ce08639
third_party/genericCC @ 80b516c448f795fd6e9675f7177b69c622f07da8
third_party/indigo @ b19f3730105f9aa95452552af924e3719b03cc55
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/webrtc @ a488197ddd041ace68a42849b2540ad834825f42
```

test from India ppp0 to AWS India 1 Ethernet, 3 runs of 30s each per scheme
(mean of all runs by scheme)



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



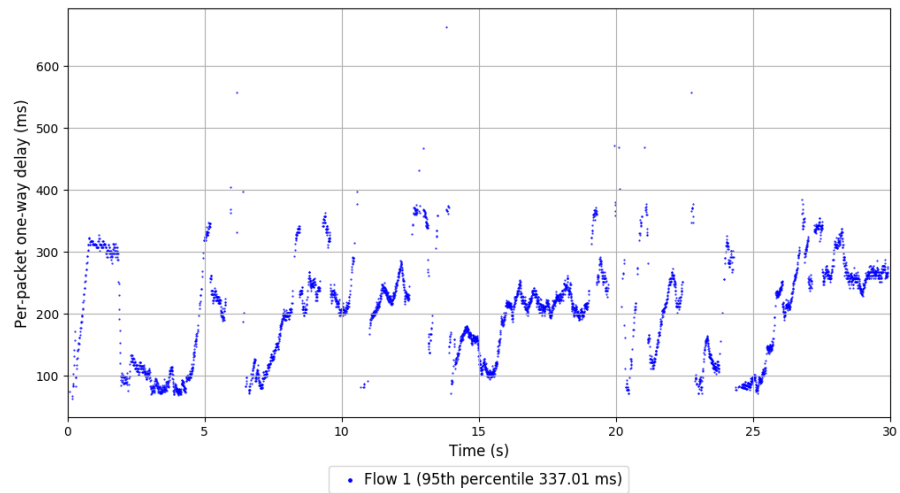
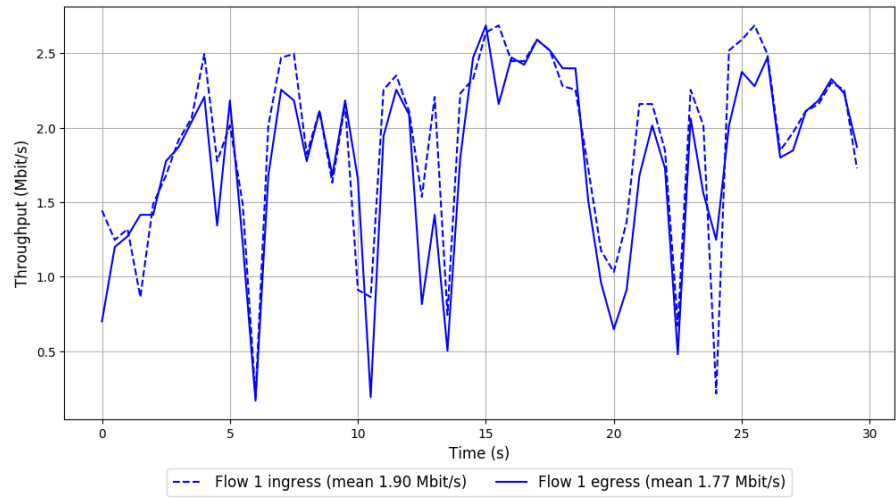
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	1.87	332.24	5.93
TCP Cubic	3	2.06	343.78	2.99
LEDBAT	3	2.39	207.40	0.68
PCC	3	1.77	371.06	22.59
QUIC Cubic	3	2.30	364.42	2.70
SCReAM	3	0.19	88.91	0.14
WebRTC media	3	0.75	170.15	0.69
Sprout	3	0.30	125.19	0.42
TaoVA-100x	1	1.90	299.15	3.95
TCP Vegas	3	1.67	146.74	0.67
Verus	3	2.02	372.37	20.41
Copa	3	1.41	207.66	0.38
FillP	3	1.70	378.32	94.87
Indigo	2	1.69	118.43	0.69

Run 1: Statistics of TCP BBR

Start at: 2018-01-02 18:53:31
End at: 2018-01-02 18:54:02
Local clock offset: -2.463 ms
Remote clock offset: -14.409 ms

Below is generated by plot.py at 2018-01-02 20:16:07
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.77 Mbit/s
95th percentile per-packet one-way delay: 337.006 ms
Loss rate: 6.71%
-- Flow 1:
Average throughput: 1.77 Mbit/s
95th percentile per-packet one-way delay: 337.006 ms
Loss rate: 6.71%

Run 1: Report of TCP BBR — Data Link

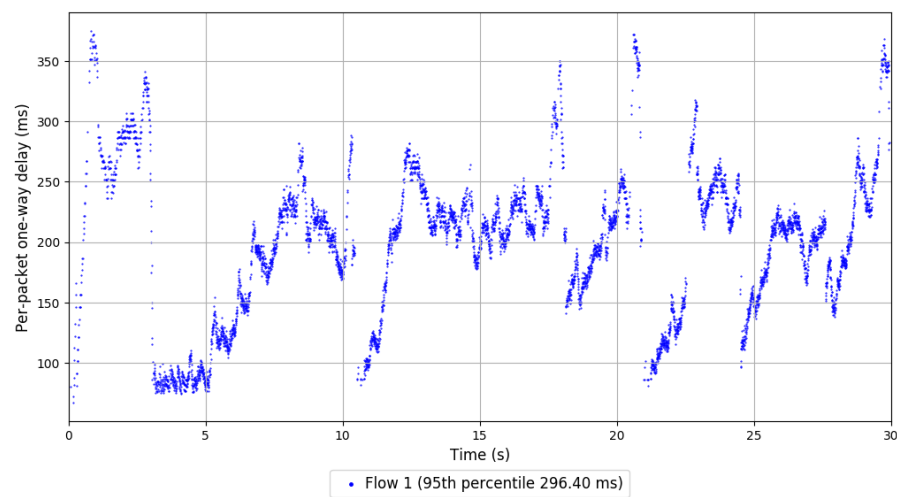
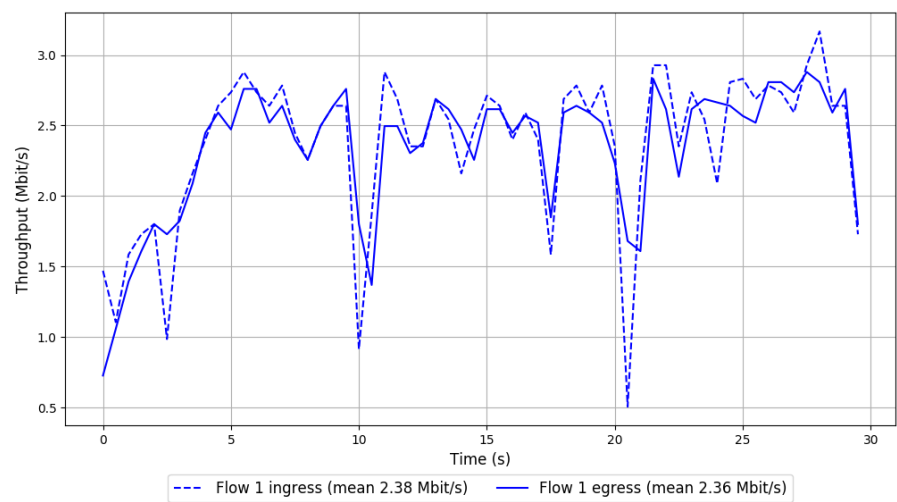


Run 2: Statistics of TCP BBR

Start at: 2018-01-02 19:09:50
End at: 2018-01-02 19:10:20
Local clock offset: -3.35 ms
Remote clock offset: -19.325 ms

Below is generated by plot.py at 2018-01-02 20:16:09
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.36 Mbit/s
95th percentile per-packet one-way delay: 296.401 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 2.36 Mbit/s
95th percentile per-packet one-way delay: 296.401 ms
Loss rate: 1.00%

Run 2: Report of TCP BBR — Data Link

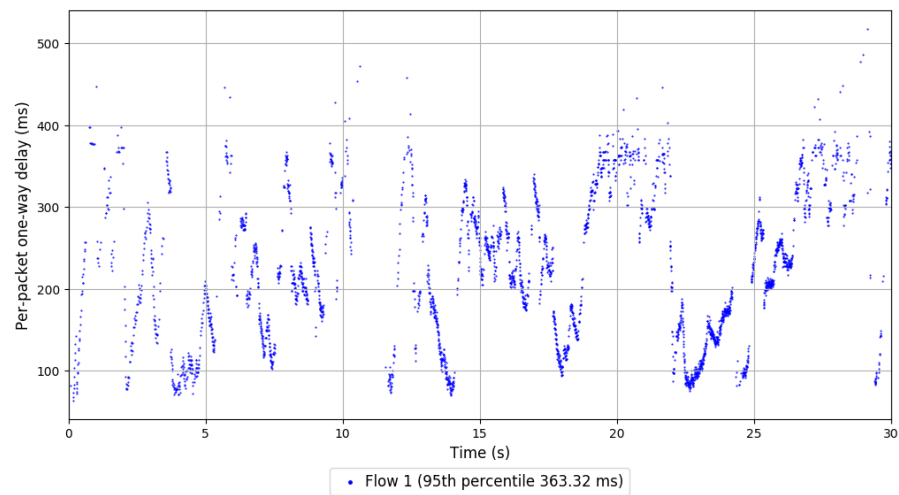
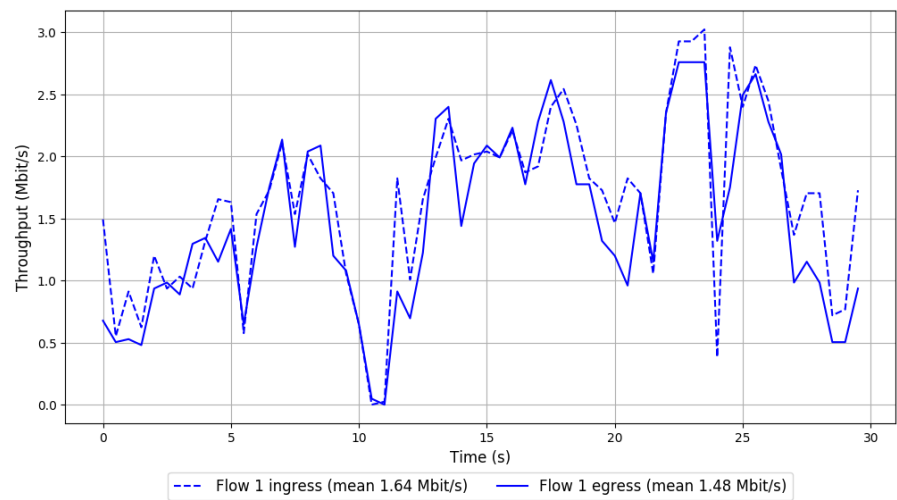


Run 3: Statistics of TCP BBR

Start at: 2018-01-02 19:26:09
End at: 2018-01-02 19:26:39
Local clock offset: 0.544 ms
Remote clock offset: -12.465 ms

Below is generated by plot.py at 2018-01-02 20:16:09
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.48 Mbit/s
95th percentile per-packet one-way delay: 363.316 ms
Loss rate: 10.07%
-- Flow 1:
Average throughput: 1.48 Mbit/s
95th percentile per-packet one-way delay: 363.316 ms
Loss rate: 10.07%

Run 3: Report of TCP BBR — Data Link

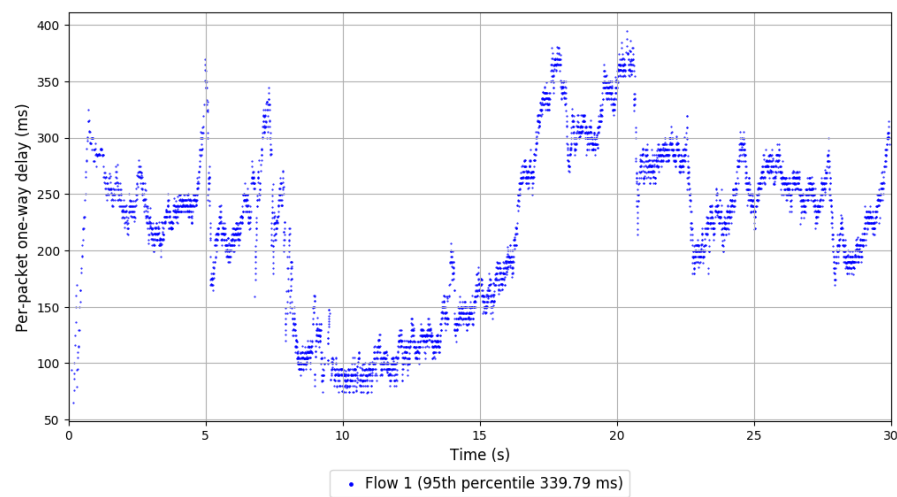
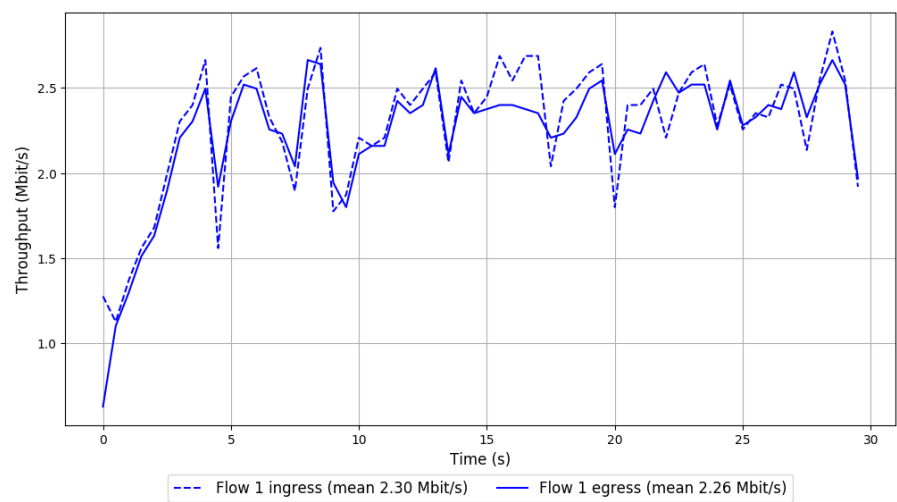


Run 1: Statistics of TCP Cubic

Start at: 2018-01-02 18:40:16
End at: 2018-01-02 18:40:46
Local clock offset: -0.147 ms
Remote clock offset: -16.098 ms

Below is generated by plot.py at 2018-01-02 20:16:09
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 339.785 ms
Loss rate: 1.97%
-- Flow 1:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 339.785 ms
Loss rate: 1.97%

Run 1: Report of TCP Cubic — Data Link

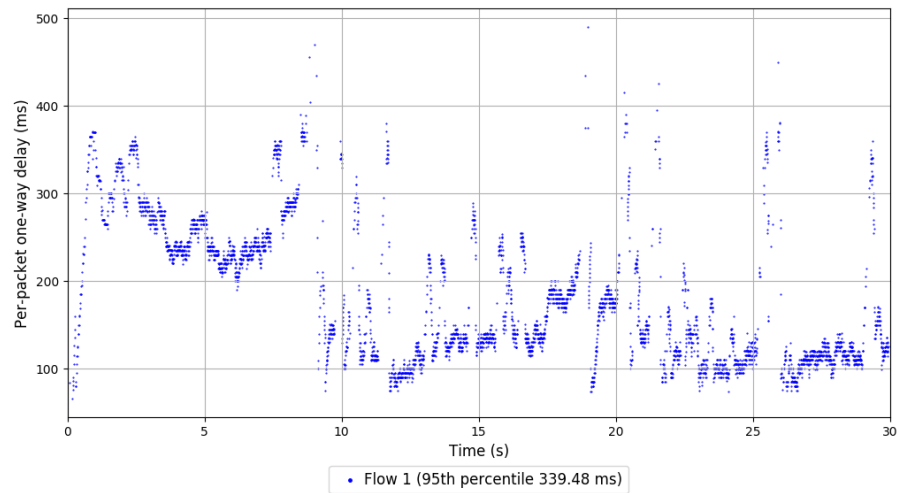
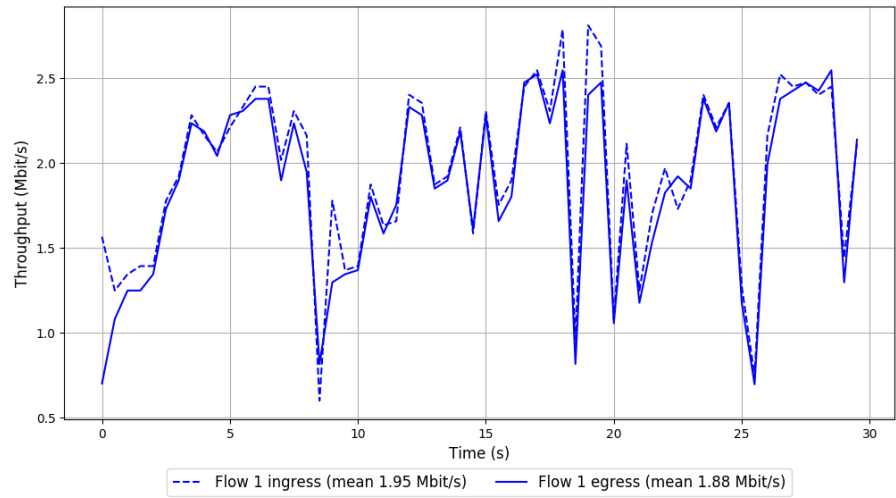


Run 2: Statistics of TCP Cubic

Start at: 2018-01-02 18:56:47
End at: 2018-01-02 18:57:17
Local clock offset: 0.597 ms
Remote clock offset: -14.886 ms

Below is generated by plot.py at 2018-01-02 20:16:09
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 339.480 ms
Loss rate: 4.09%
-- Flow 1:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 339.480 ms
Loss rate: 4.09%

Run 2: Report of TCP Cubic — Data Link

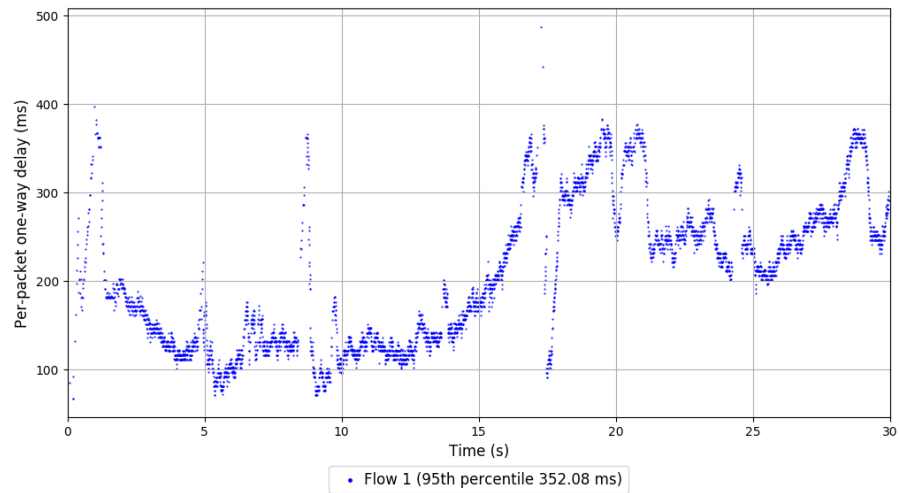
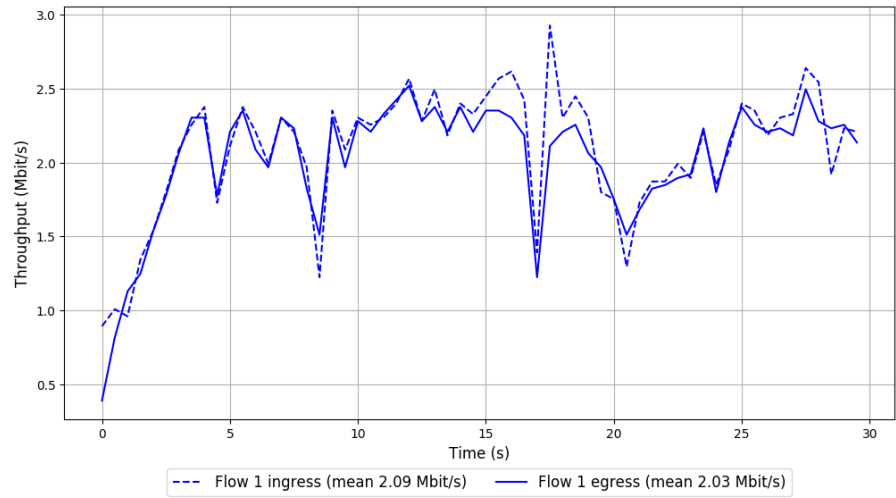


Run 3: Statistics of TCP Cubic

Start at: 2018-01-02 19:13:06
End at: 2018-01-02 19:13:36
Local clock offset: -0.326 ms
Remote clock offset: -12.816 ms

Below is generated by plot.py at 2018-01-02 20:16:09
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.03 Mbit/s
95th percentile per-packet one-way delay: 352.081 ms
Loss rate: 2.91%
-- Flow 1:
Average throughput: 2.03 Mbit/s
95th percentile per-packet one-way delay: 352.081 ms
Loss rate: 2.91%

Run 3: Report of TCP Cubic — Data Link

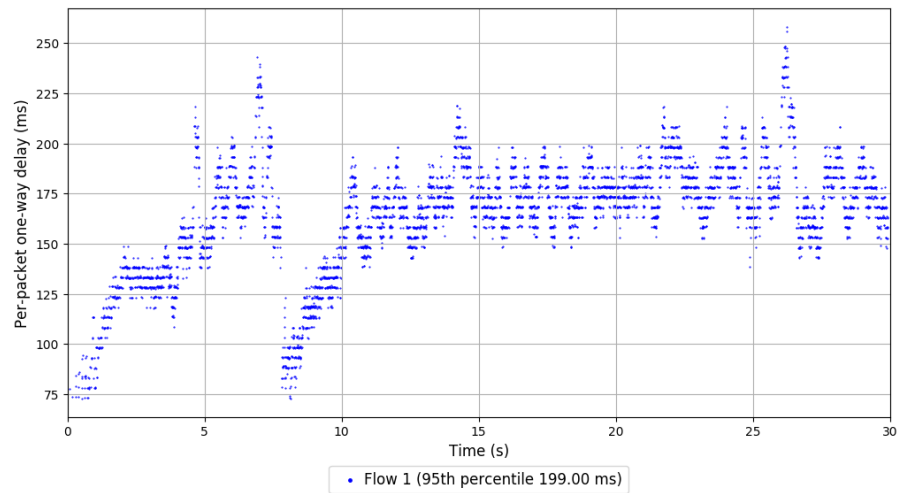
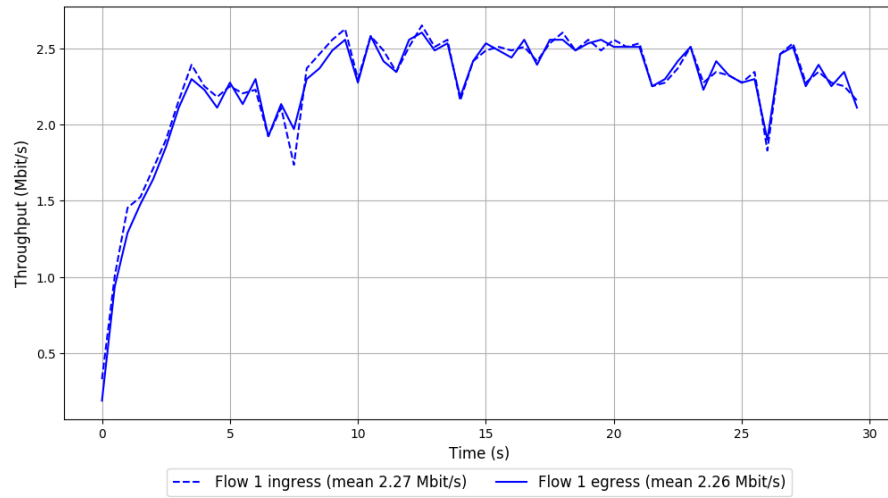


```
Run 1: Statistics of LEDBAT

Start at: 2018-01-02 18:52:26
End at: 2018-01-02 18:52:56
Local clock offset: -2.588 ms
Remote clock offset: -15.435 ms

# Below is generated by plot.py at 2018-01-02 20:16:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 198.997 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 198.997 ms
Loss rate: 0.61%
```

Run 1: Report of LEDBAT — Data Link

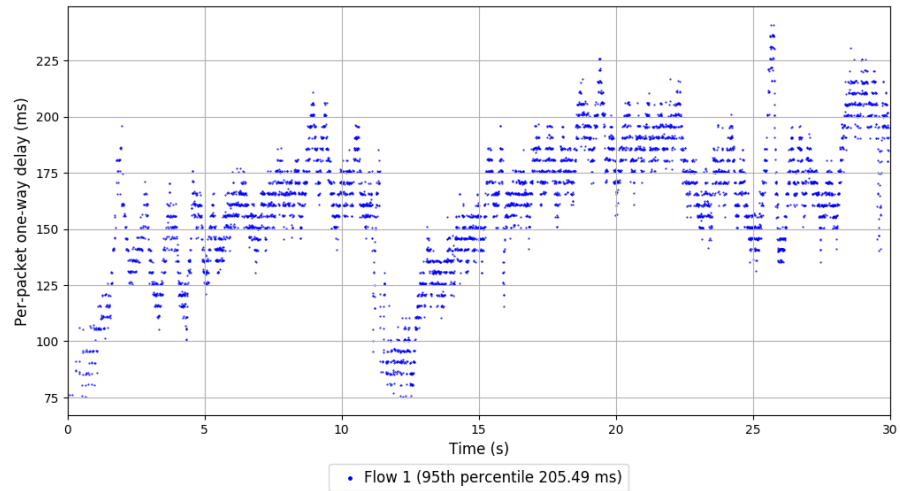
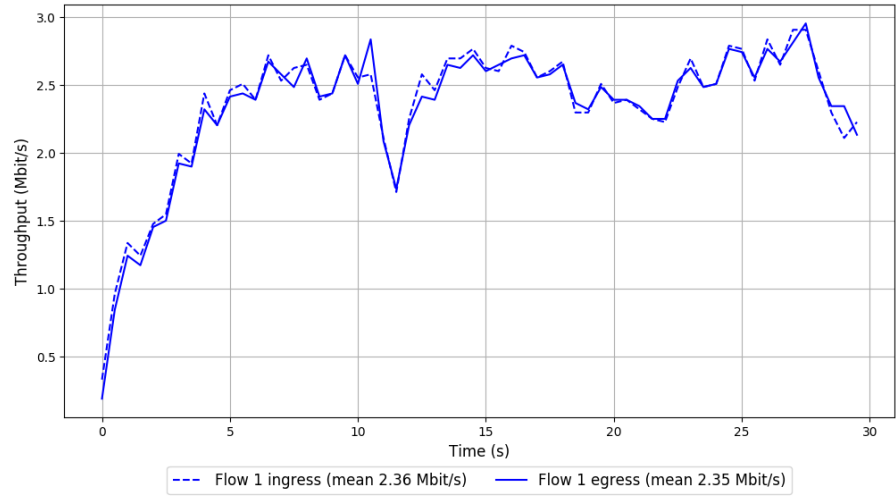


Run 2: Statistics of LEDBAT

Start at: 2018-01-02 19:08:45
End at: 2018-01-02 19:09:15
Local clock offset: 0.316 ms
Remote clock offset: -14.754 ms

Below is generated by plot.py at 2018-01-02 20:16:09
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.35 Mbit/s
95th percentile per-packet one-way delay: 205.489 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 2.35 Mbit/s
95th percentile per-packet one-way delay: 205.489 ms
Loss rate: 0.80%

Run 2: Report of LEDBAT — Data Link

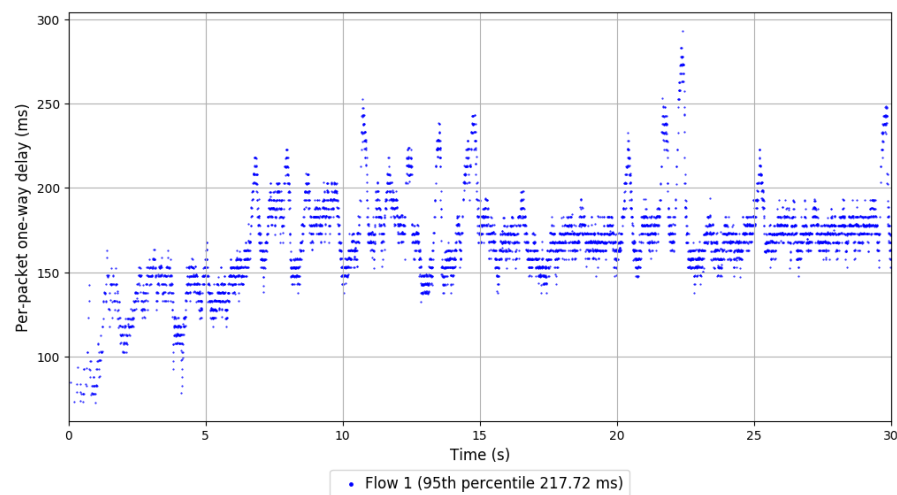
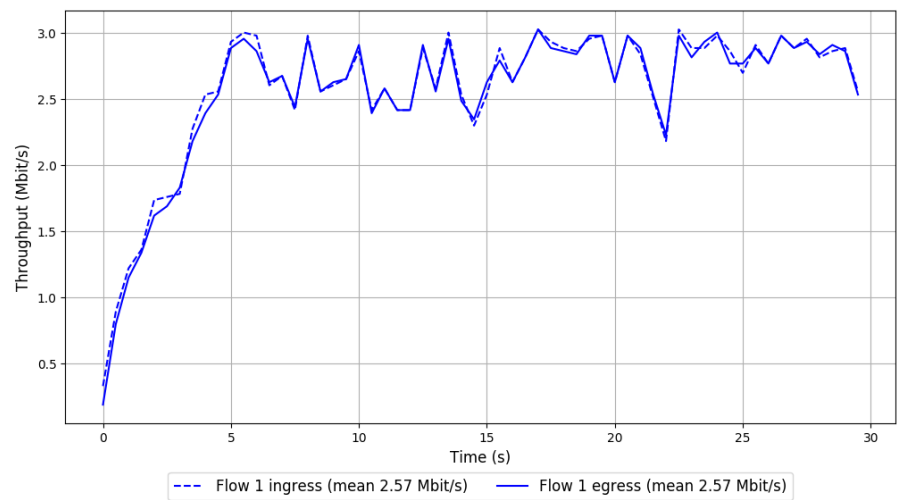


Run 3: Statistics of LEDBAT

Start at: 2018-01-02 19:25:04
End at: 2018-01-02 19:25:34
Local clock offset: -2.474 ms
Remote clock offset: -14.985 ms

Below is generated by plot.py at 2018-01-02 20:16:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.57 Mbit/s
95th percentile per-packet one-way delay: 217.716 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 2.57 Mbit/s
95th percentile per-packet one-way delay: 217.716 ms
Loss rate: 0.62%

Run 3: Report of LEDBAT — Data Link

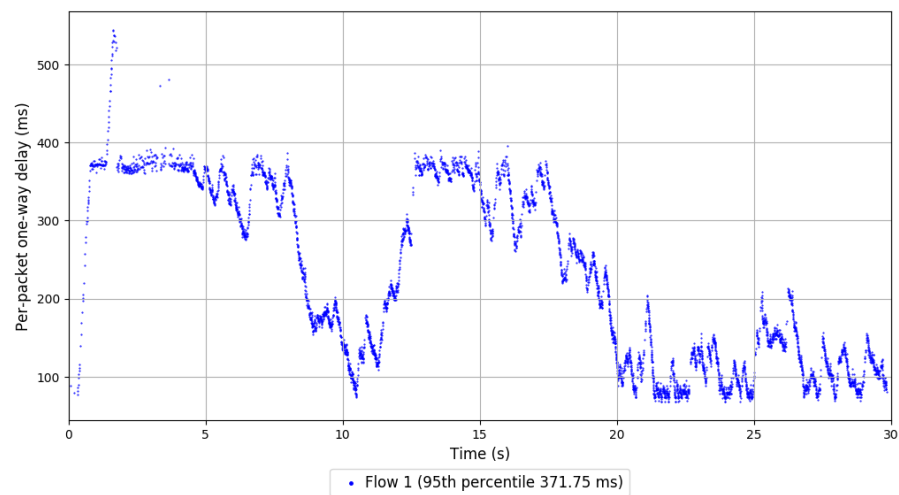
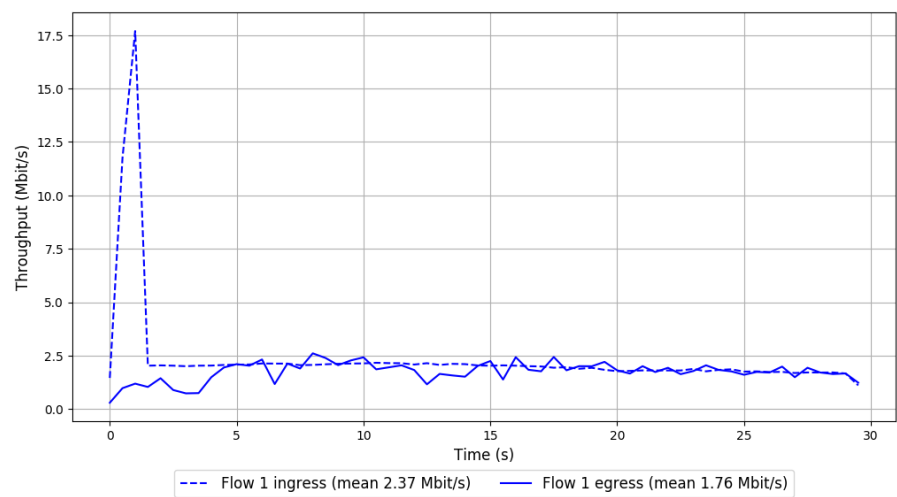


Run 1: Statistics of PCC

Start at: 2018-01-02 18:39:11
End at: 2018-01-02 18:39:41
Local clock offset: -0.804 ms
Remote clock offset: -15.505 ms

Below is generated by plot.py at 2018-01-02 20:16:15
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.76 Mbit/s
95th percentile per-packet one-way delay: 371.749 ms
Loss rate: 26.07%
-- Flow 1:
Average throughput: 1.76 Mbit/s
95th percentile per-packet one-way delay: 371.749 ms
Loss rate: 26.07%

Run 1: Report of PCC — Data Link

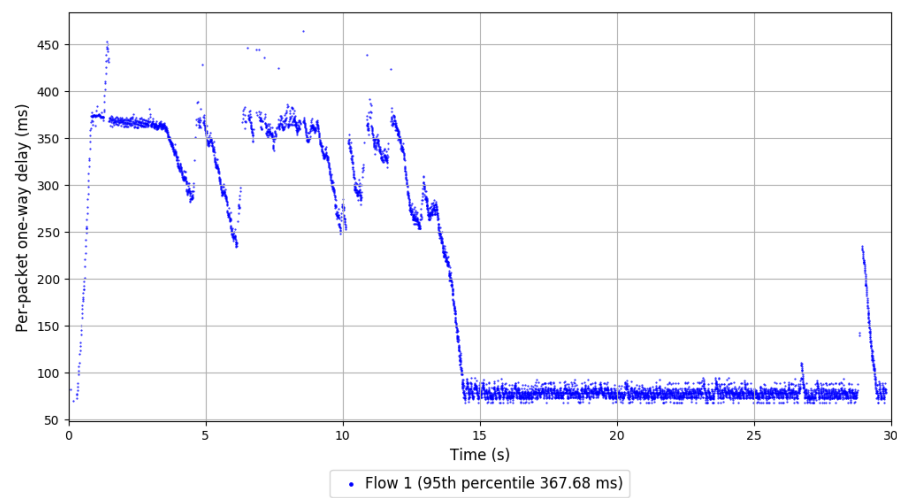
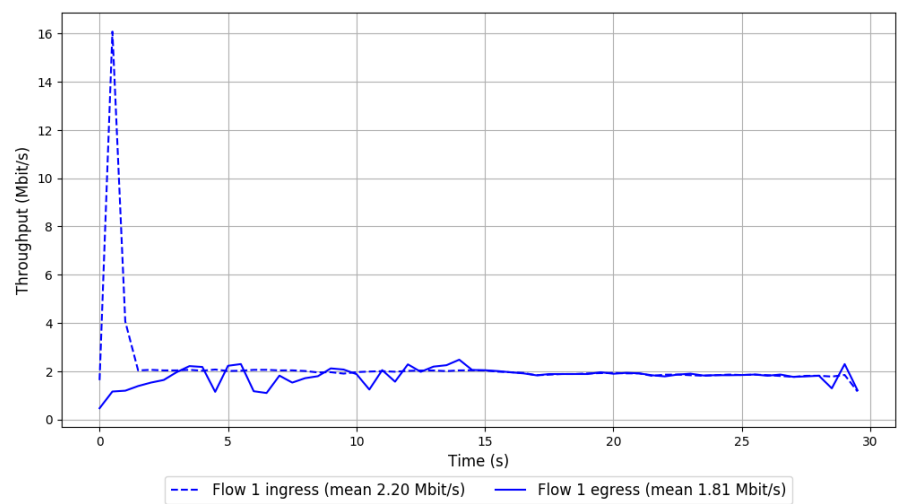


Run 2: Statistics of PCC

Start at: 2018-01-02 18:55:41
End at: 2018-01-02 18:56:11
Local clock offset: -0.547 ms
Remote clock offset: -14.298 ms

Below is generated by plot.py at 2018-01-02 20:16:16
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.81 Mbit/s
95th percentile per-packet one-way delay: 367.676 ms
Loss rate: 17.90%
-- Flow 1:
Average throughput: 1.81 Mbit/s
95th percentile per-packet one-way delay: 367.676 ms
Loss rate: 17.90%

Run 2: Report of PCC — Data Link

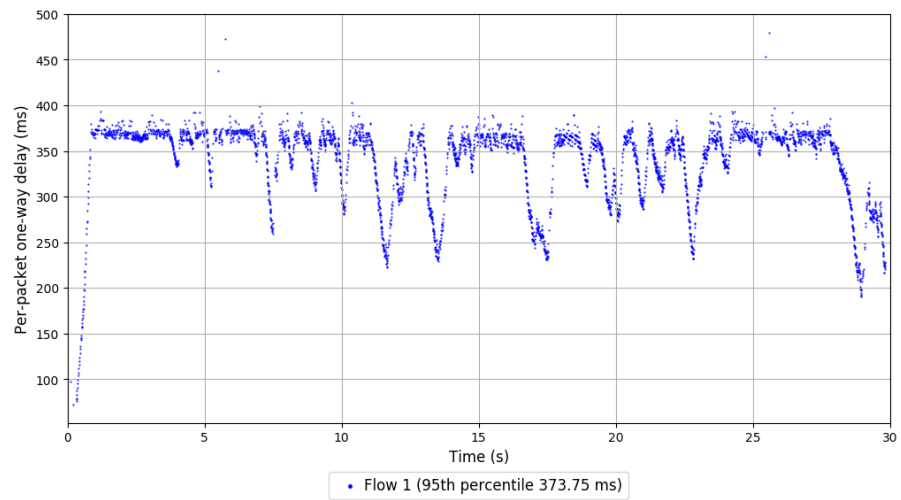
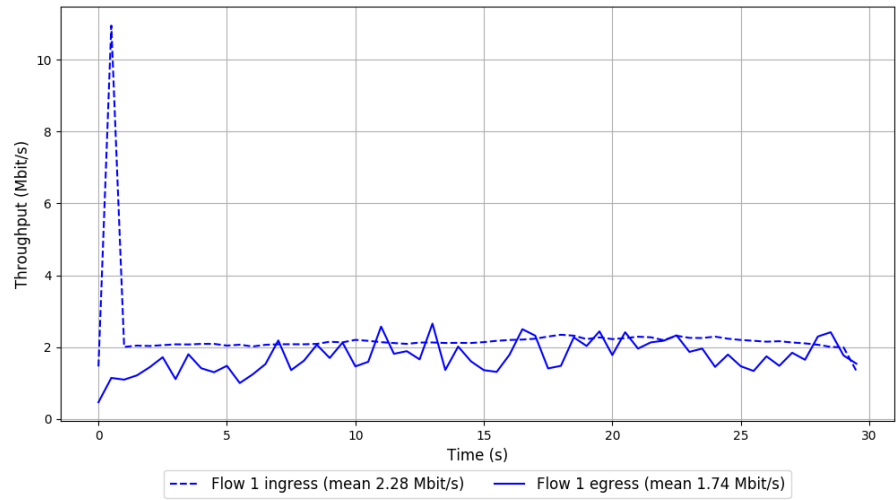


Run 3: Statistics of PCC

Start at: 2018-01-02 19:12:01
End at: 2018-01-02 19:12:31
Local clock offset: -2.801 ms
Remote clock offset: -14.808 ms

Below is generated by plot.py at 2018-01-02 20:16:16
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.74 Mbit/s
95th percentile per-packet one-way delay: 373.754 ms
Loss rate: 23.81%
-- Flow 1:
Average throughput: 1.74 Mbit/s
95th percentile per-packet one-way delay: 373.754 ms
Loss rate: 23.81%

Run 3: Report of PCC — Data Link

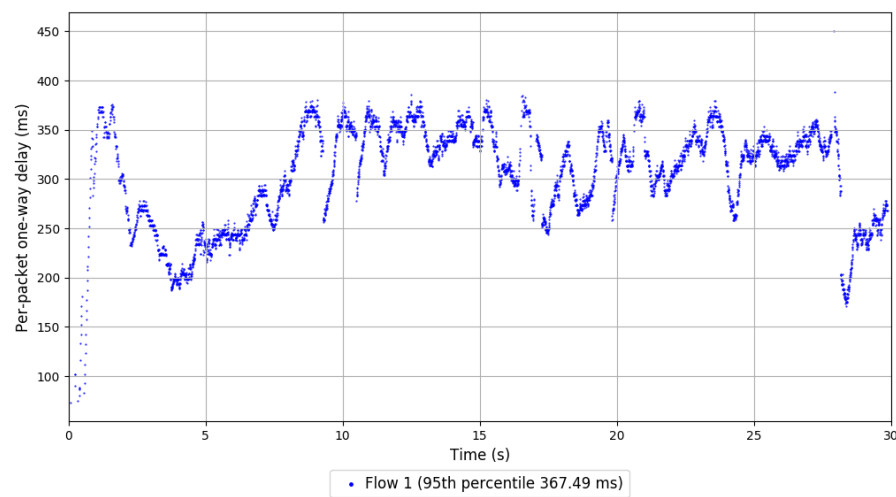
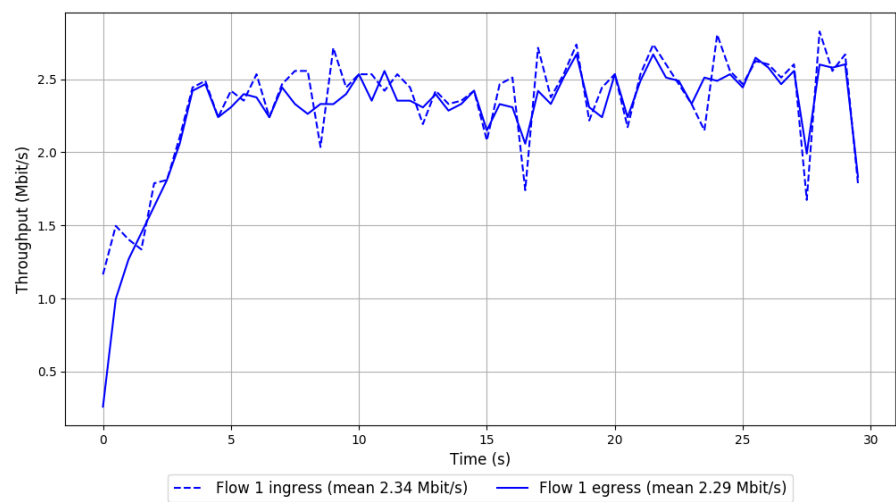


Run 1: Statistics of QUIC Cubic

Start at: 2018-01-02 18:47:00
End at: 2018-01-02 18:47:30
Local clock offset: 0.204 ms
Remote clock offset: -16.034 ms

Below is generated by plot.py at 2018-01-02 20:16:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.29 Mbit/s
95th percentile per-packet one-way delay: 367.492 ms
Loss rate: 2.49%
-- Flow 1:
Average throughput: 2.29 Mbit/s
95th percentile per-packet one-way delay: 367.492 ms
Loss rate: 2.49%

Run 1: Report of QUIC Cubic — Data Link

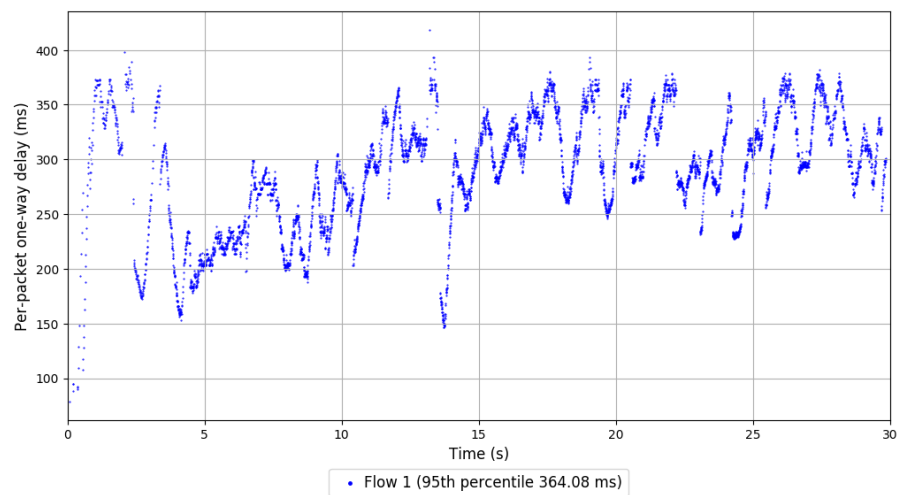
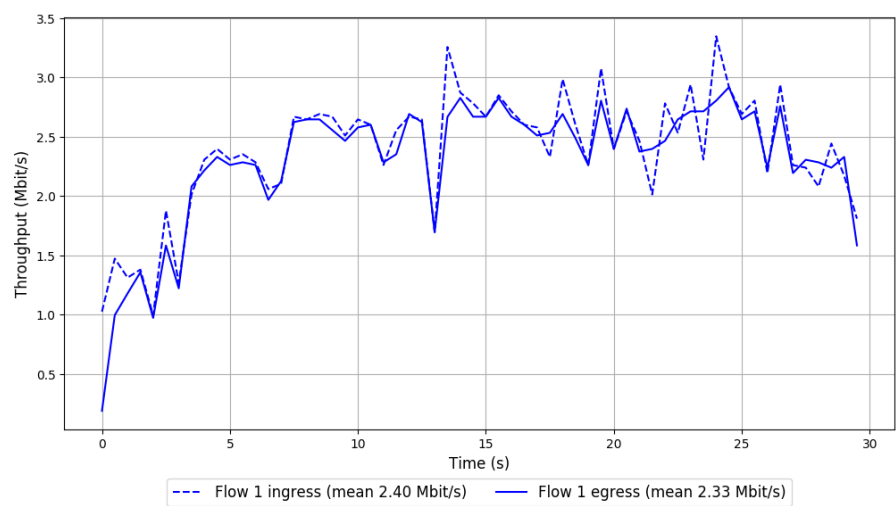


Run 2: Statistics of QUIC Cubic

Start at: 2018-01-02 19:03:20
End at: 2018-01-02 19:03:50
Local clock offset: 1.836 ms
Remote clock offset: -13.975 ms

Below is generated by plot.py at 2018-01-02 20:16:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.33 Mbit/s
95th percentile per-packet one-way delay: 364.082 ms
Loss rate: 3.19%
-- Flow 1:
Average throughput: 2.33 Mbit/s
95th percentile per-packet one-way delay: 364.082 ms
Loss rate: 3.19%

Run 2: Report of QUIC Cubic — Data Link

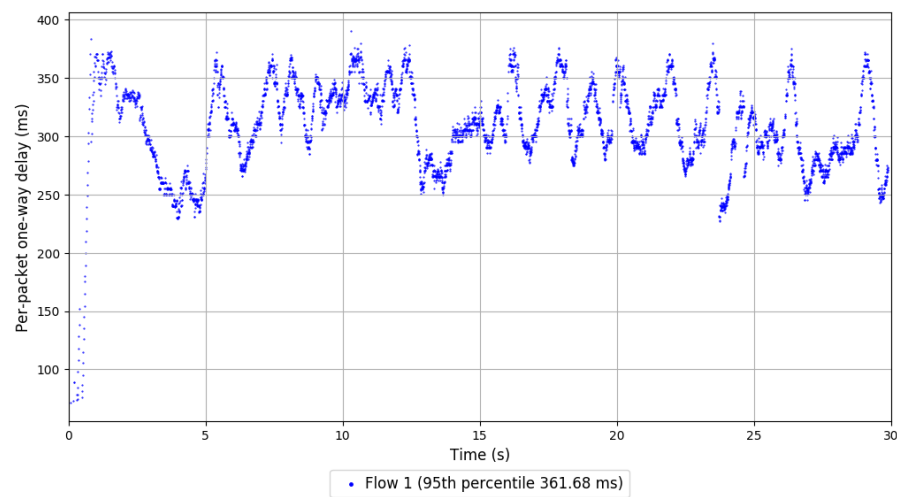
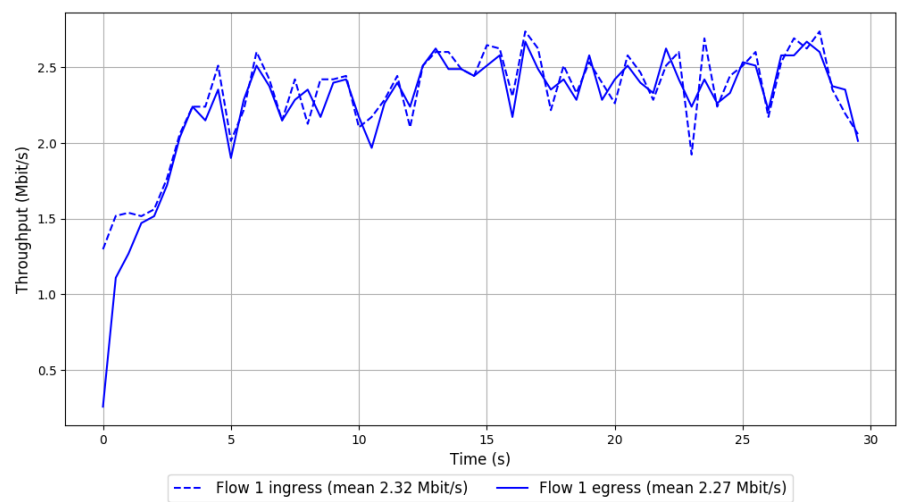


Run 3: Statistics of QUIC Cubic

Start at: 2018-01-02 19:19:38
End at: 2018-01-02 19:20:08
Local clock offset: -0.292 ms
Remote clock offset: -13.643 ms

Below is generated by plot.py at 2018-01-02 20:16:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 361.679 ms
Loss rate: 2.42%
-- Flow 1:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 361.679 ms
Loss rate: 2.42%

Run 3: Report of QUIC Cubic — Data Link

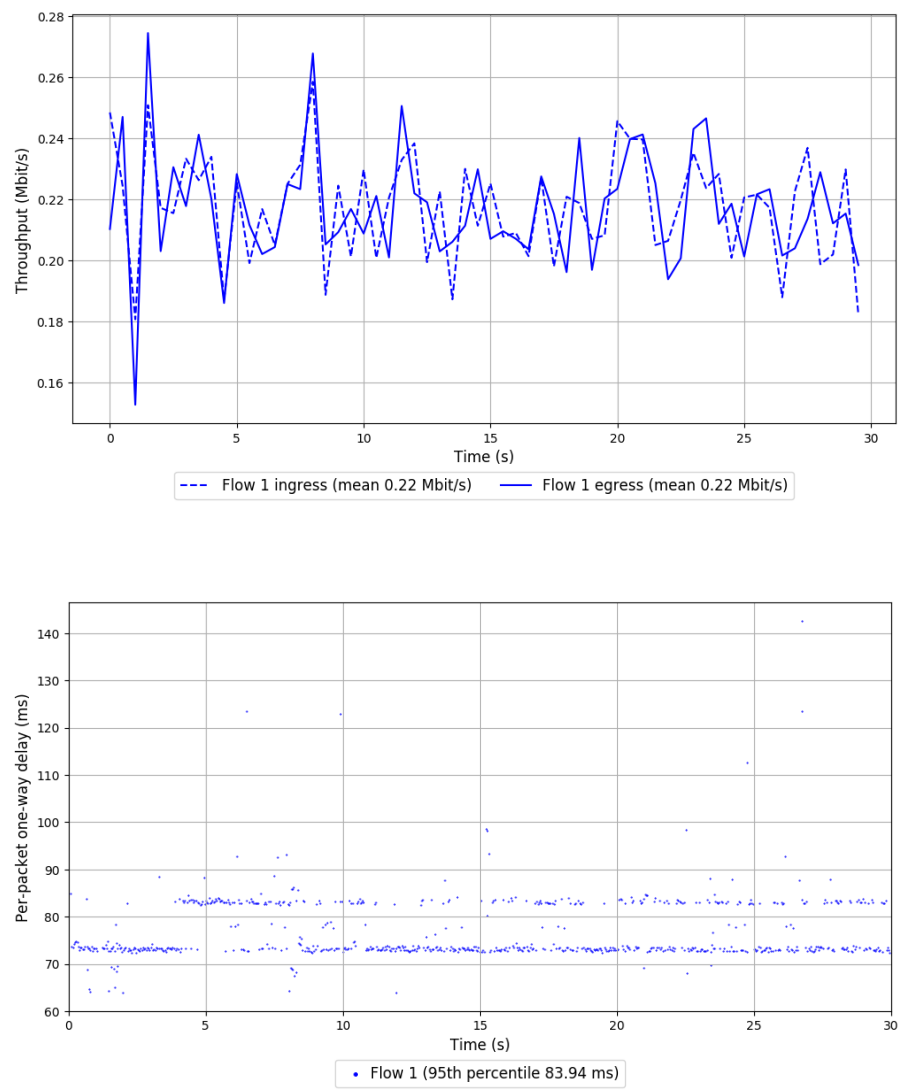


Run 1: Statistics of SCReAM

Start at: 2018-01-02 18:38:06
End at: 2018-01-02 18:38:36
Local clock offset: 0.012 ms
Remote clock offset: -15.562 ms

Below is generated by plot.py at 2018-01-02 20:16:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 83.941 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 83.941 ms
Loss rate: 0.12%

Run 1: Report of SReAM — Data Link

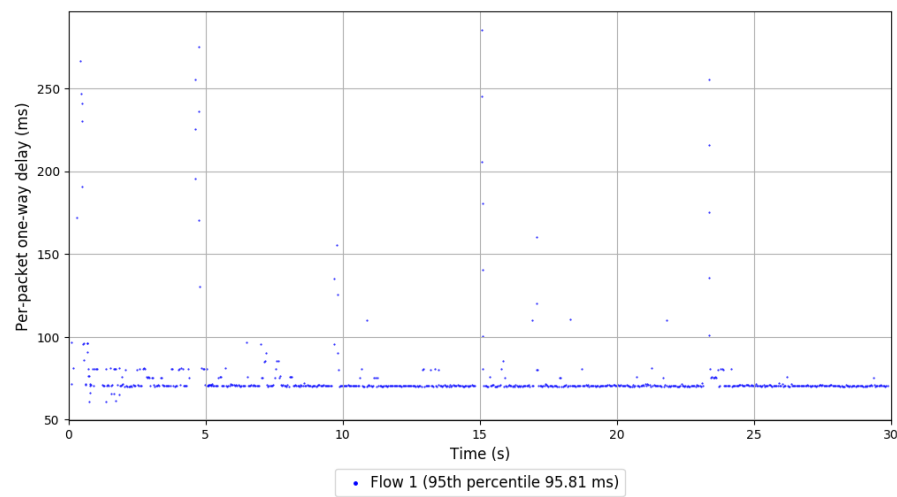
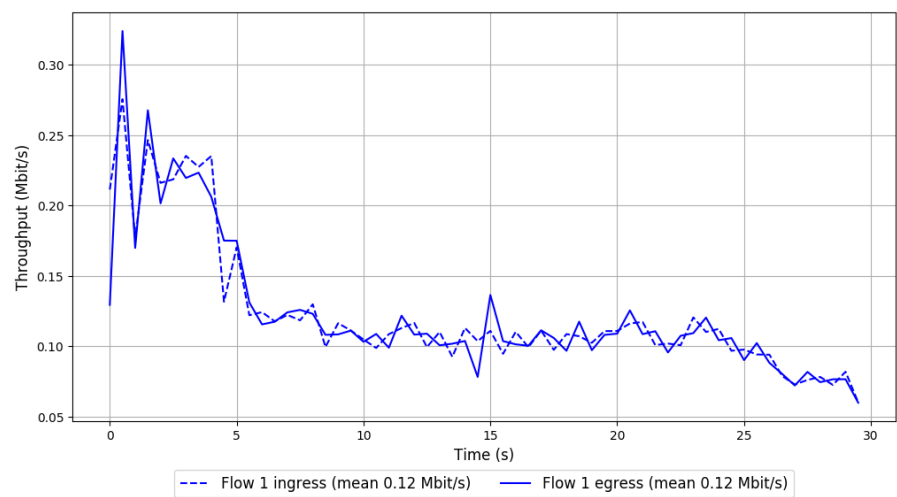


Run 2: Statistics of SCReAM

Start at: 2018-01-02 18:54:37
End at: 2018-01-02 18:55:07
Local clock offset: -3.142 ms
Remote clock offset: -14.451 ms

Below is generated by plot.py at 2018-01-02 20:16:17
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 95.813 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 95.813 ms
Loss rate: 0.16%

Run 2: Report of SReAM — Data Link

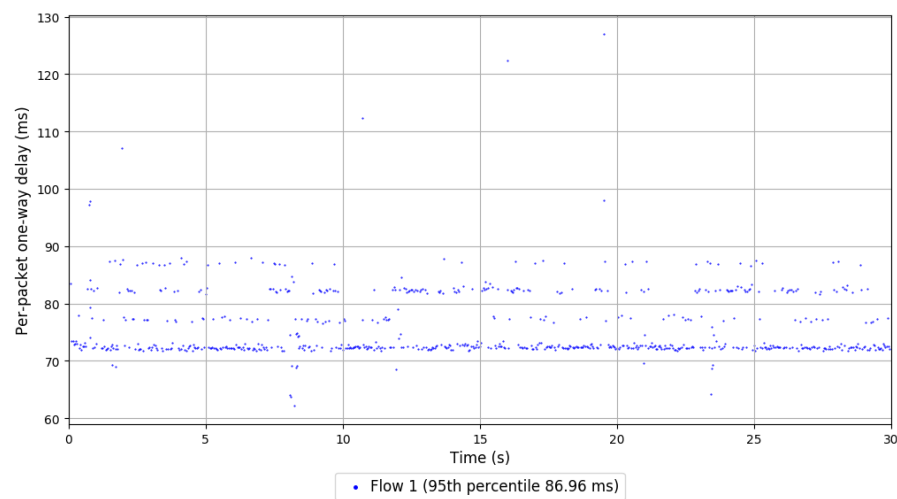
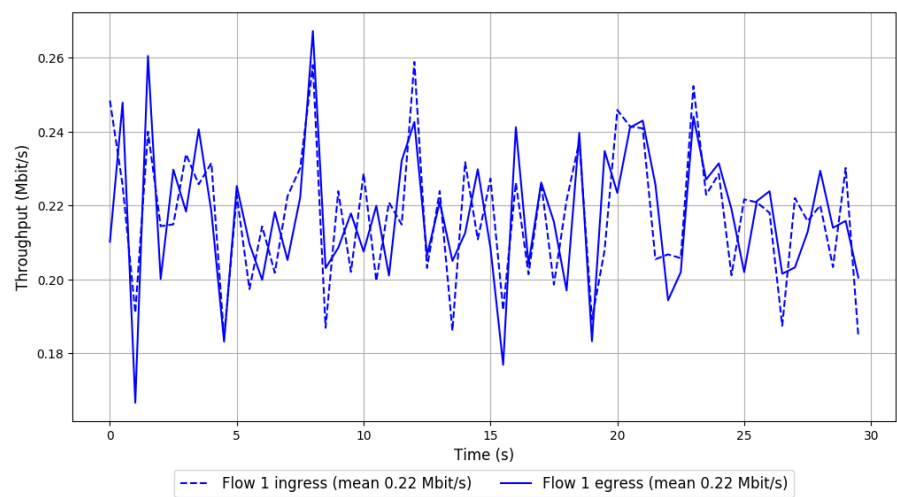


Run 3: Statistics of SCReAM

Start at: 2018-01-02 19:10:55
End at: 2018-01-02 19:11:26
Local clock offset: 0.91 ms
Remote clock offset: -13.334 ms

Below is generated by plot.py at 2018-01-02 20:16:18
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.962 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.962 ms
Loss rate: 0.13%

Run 3: Report of SReAM — Data Link

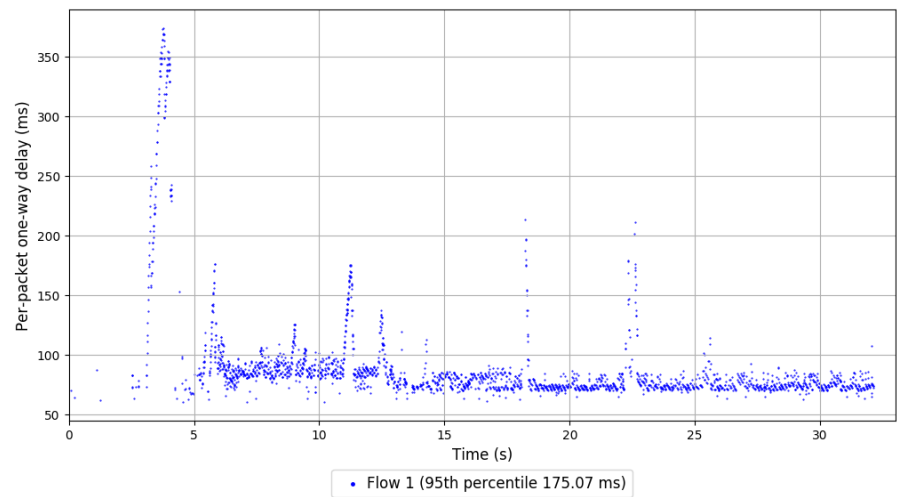
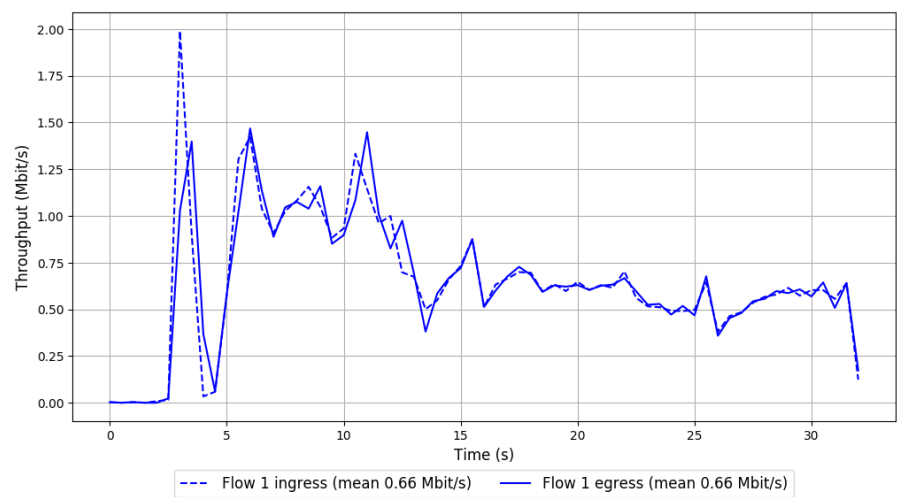


```
Run 1: Statistics of WebRTC media

Start at: 2018-01-02 18:51:21
End at: 2018-01-02 18:51:51
Local clock offset: -0.986 ms
Remote clock offset: -13.861 ms

# Below is generated by plot.py at 2018-01-02 20:16:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 175.075 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 175.075 ms
Loss rate: 0.41%
```

Run 1: Report of WebRTC media — Data Link

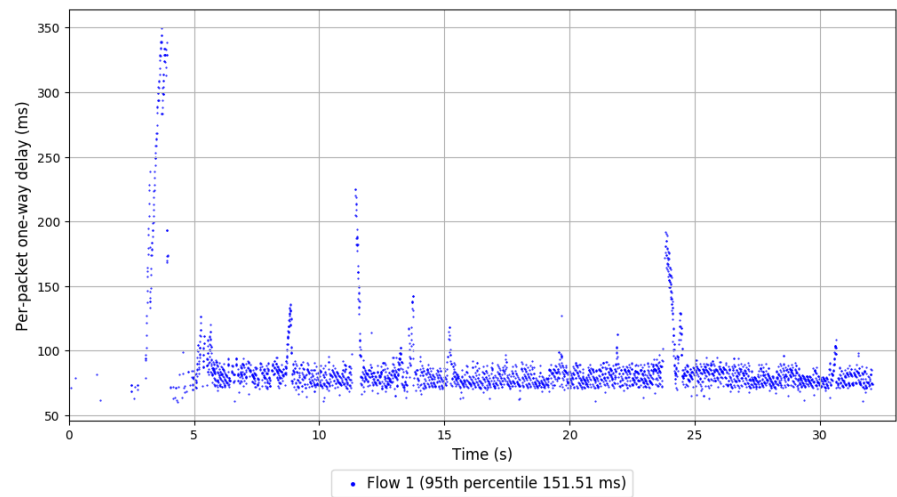
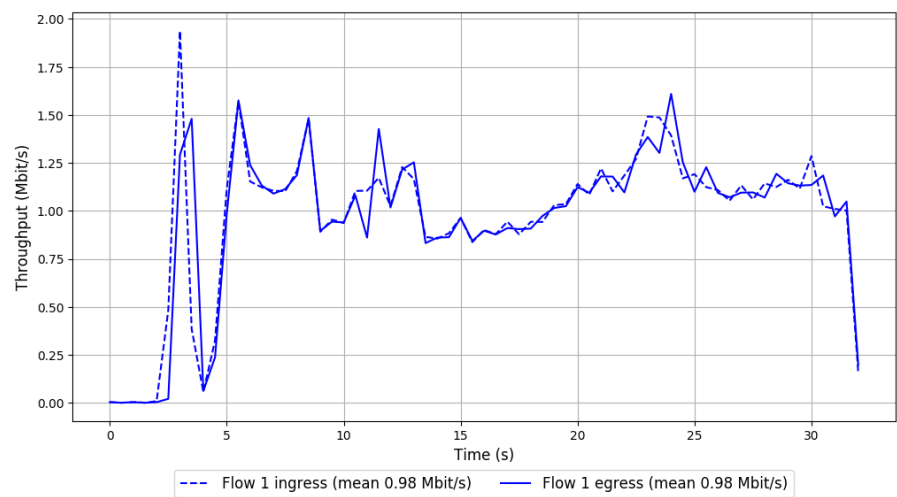


Run 2: Statistics of WebRTC media

Start at: 2018-01-02 19:07:40
End at: 2018-01-02 19:08:10
Local clock offset: -2.276 ms
Remote clock offset: -15.294 ms

Below is generated by plot.py at 2018-01-02 20:16:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 151.514 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 151.514 ms
Loss rate: 0.23%

Run 2: Report of WebRTC media — Data Link

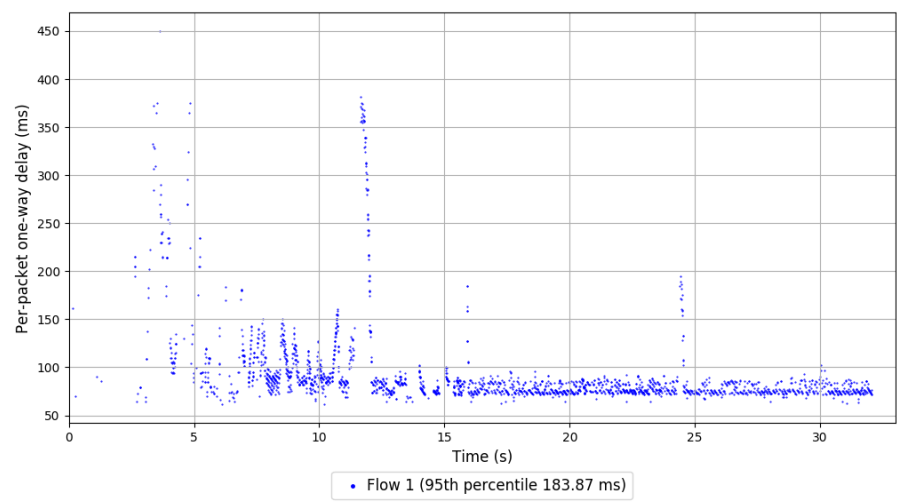
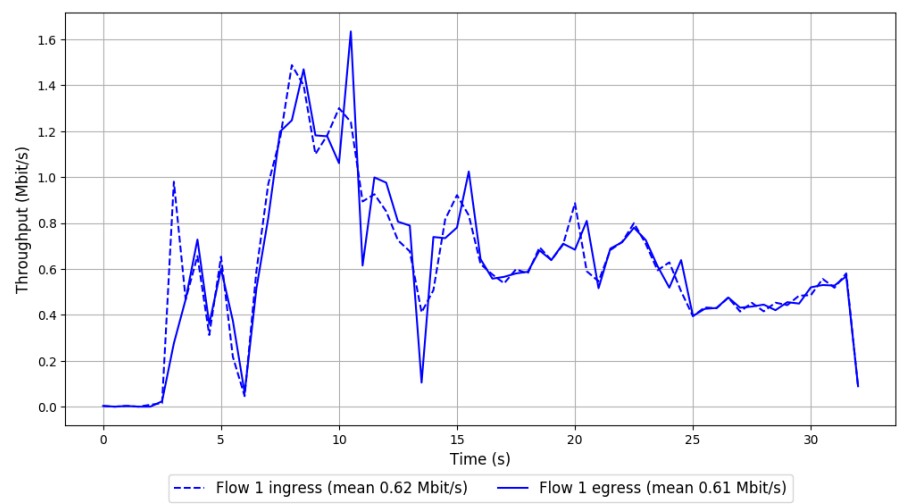


Run 3: Statistics of WebRTC media

Start at: 2018-01-02 19:23:59
End at: 2018-01-02 19:24:29
Local clock offset: 0.688 ms
Remote clock offset: -13.172 ms

Below is generated by plot.py at 2018-01-02 20:16:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 183.871 ms
Loss rate: 1.43%
-- Flow 1:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 183.871 ms
Loss rate: 1.43%

Run 3: Report of WebRTC media — Data Link

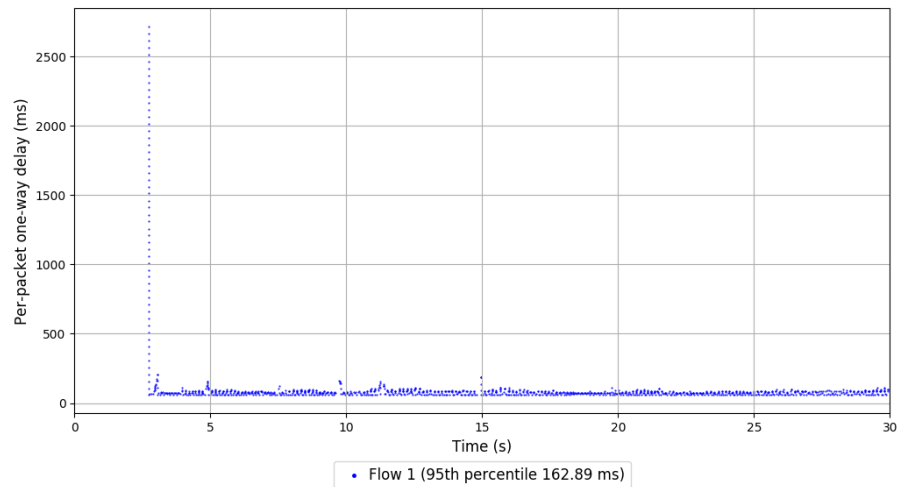
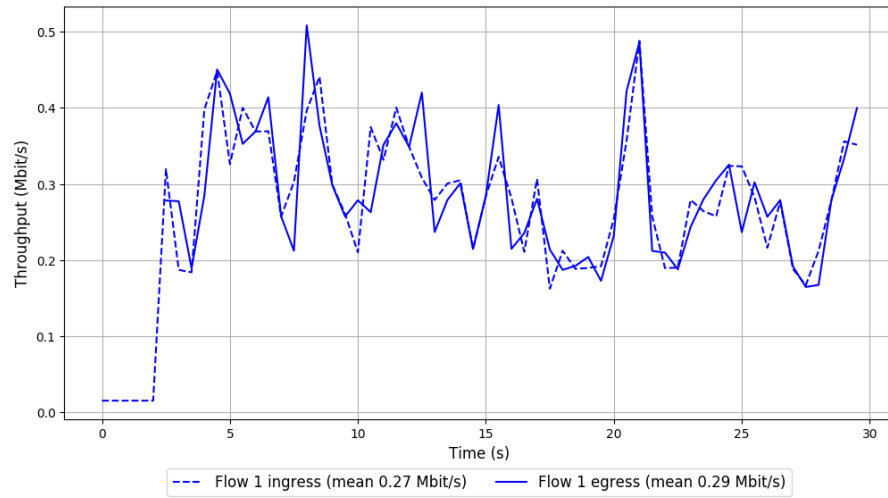


Run 1: Statistics of Sprout

Start at: 2018-01-02 18:49:11
End at: 2018-01-02 18:49:41
Local clock offset: -2.917 ms
Remote clock offset: -15.421 ms

Below is generated by plot.py at 2018-01-02 20:16:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 162.889 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 162.889 ms
Loss rate: 0.40%

Run 1: Report of Sprout — Data Link

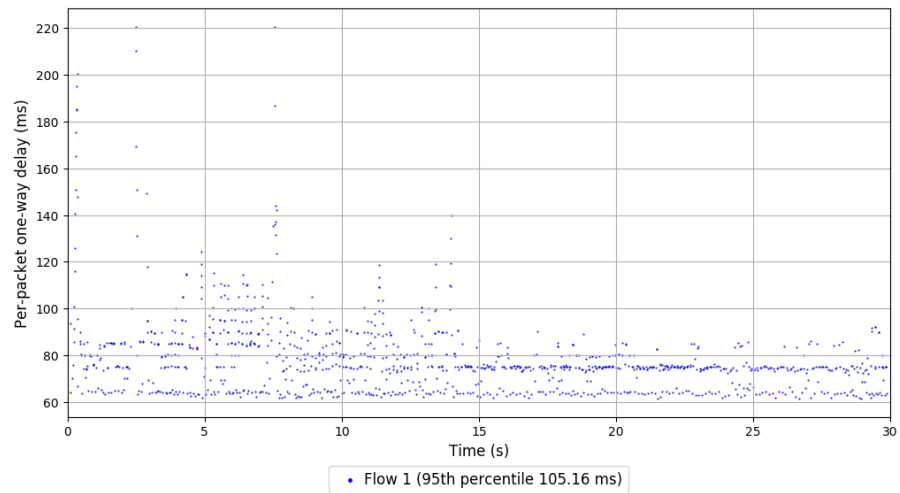
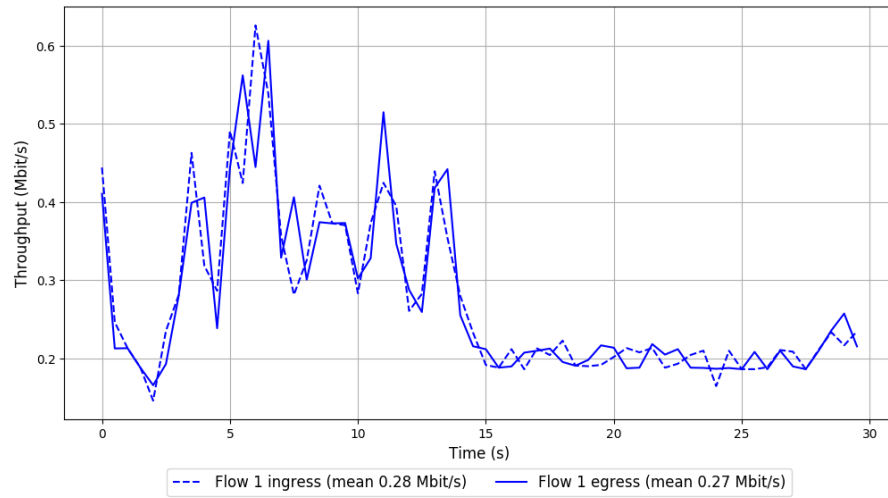


Run 2: Statistics of Sprout

Start at: 2018-01-02 19:05:30
End at: 2018-01-02 19:06:00
Local clock offset: -2.459 ms
Remote clock offset: -16.118 ms

Below is generated by plot.py at 2018-01-02 20:16:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 105.163 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 105.163 ms
Loss rate: 0.27%

Run 2: Report of Sprout — Data Link

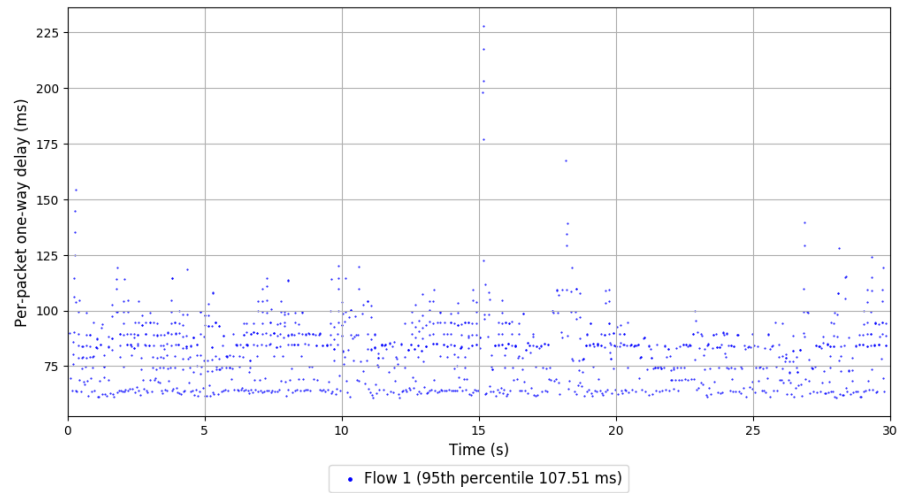
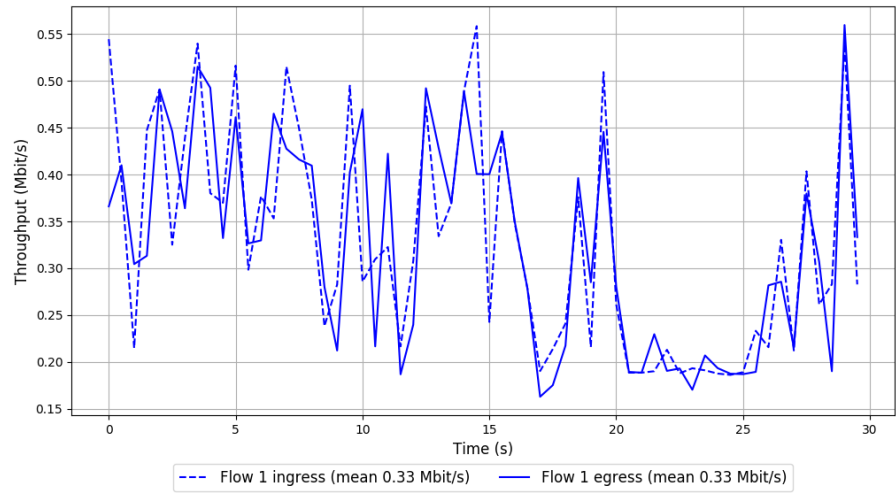


Run 3: Statistics of Sprout

Start at: 2018-01-02 19:21:49
End at: 2018-01-02 19:22:19
Local clock offset: -0.328 ms
Remote clock offset: -14.05 ms

Below is generated by plot.py at 2018-01-02 20:16:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 107.510 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 107.510 ms
Loss rate: 0.58%

Run 3: Report of Sprout — Data Link

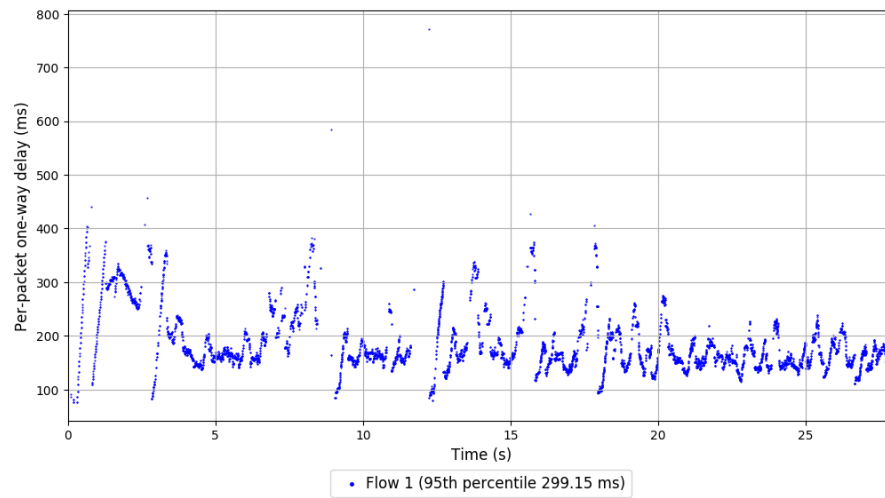
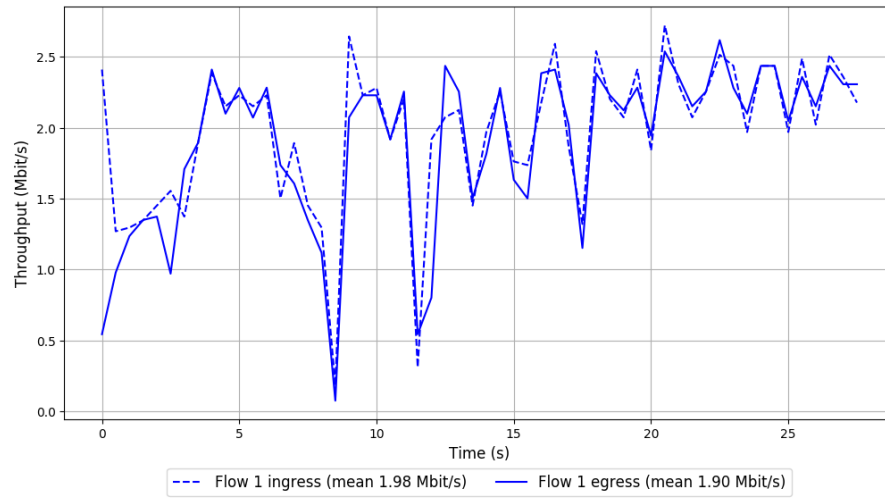


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-01-02 18:48:05
End at: 2018-01-02 18:48:35
Local clock offset: -1.22 ms
Remote clock offset: -15.425 ms

# Below is generated by plot.py at 2018-01-02 20:16:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 299.147 ms
Loss rate: 3.95%
-- Flow 1:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 299.147 ms
Loss rate: 3.95%
```

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



Run 2: Statistics of TaoVA-100x

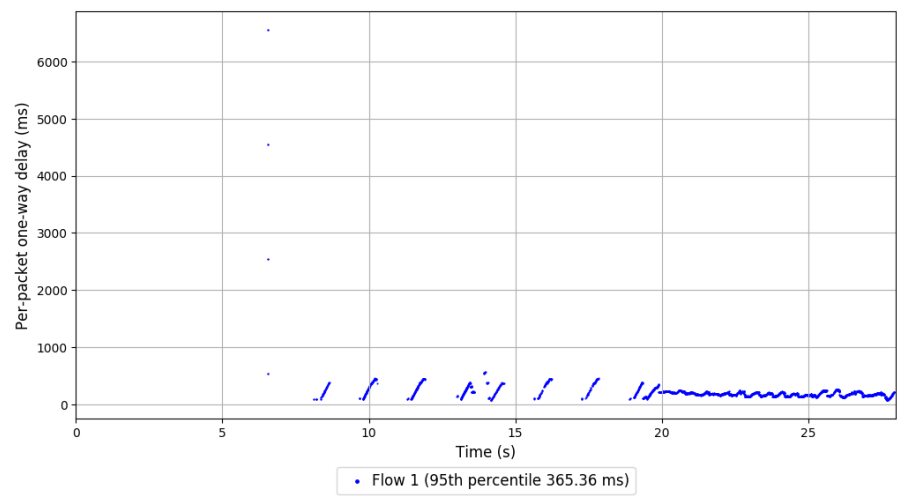
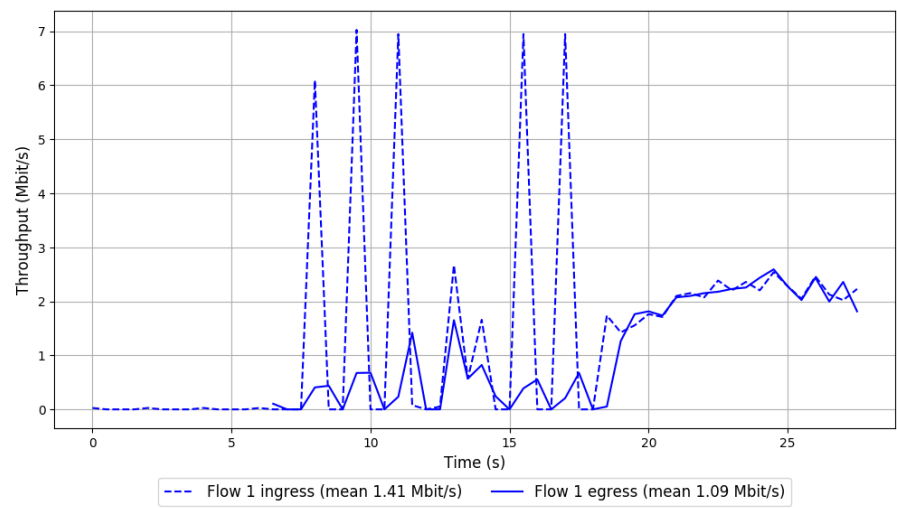
Start at: 2018-01-02 19:04:25

End at: 2018-01-02 19:04:55

Local clock offset: -2.732 ms

Remote clock offset: -15.63 ms

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



Run 3: Statistics of TaoVA-100x

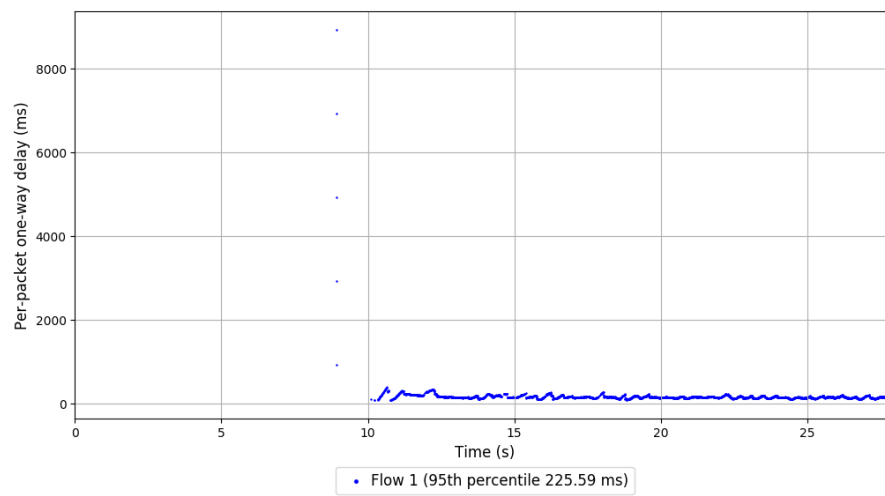
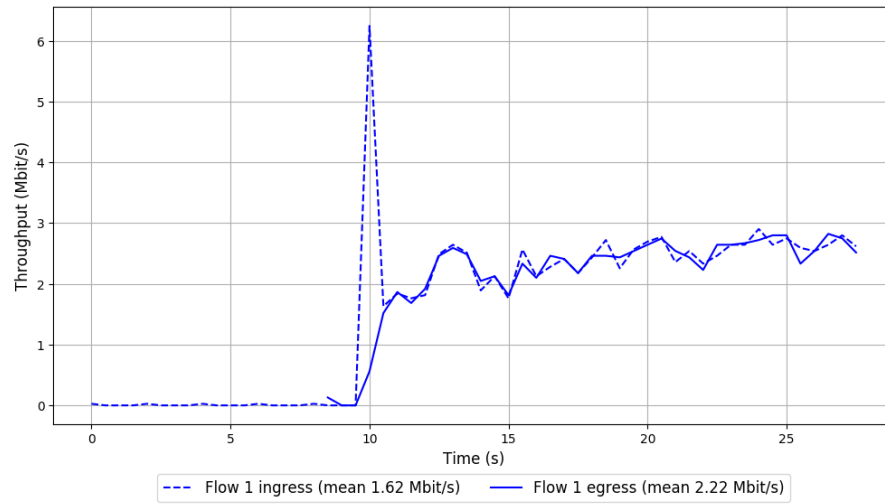
Start at: 2018-01-02 19:20:43

End at: 2018-01-02 19:21:13

Local clock offset: 0.913 ms

Remote clock offset: -14.782 ms

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

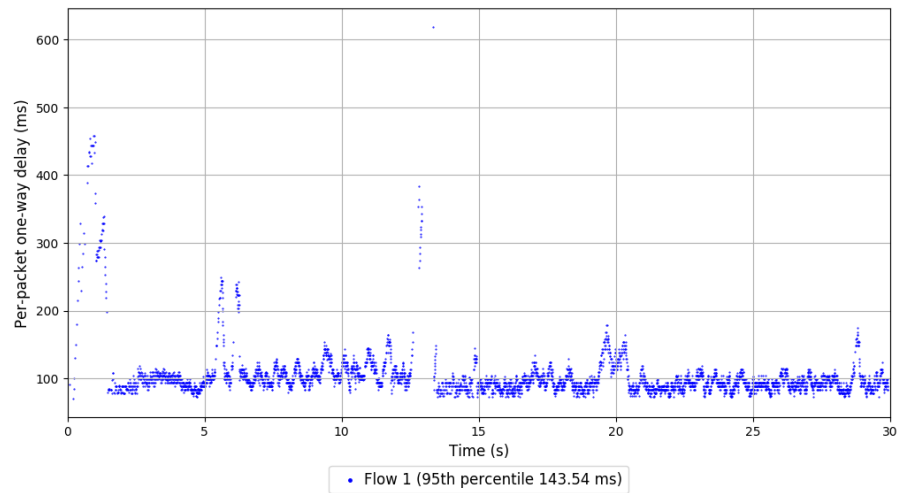
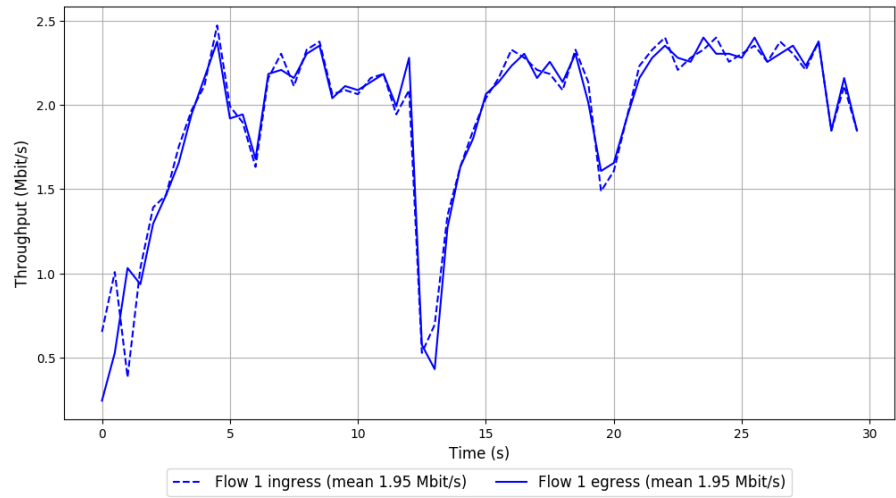


Run 1: Statistics of TCP Vegas

Start at: 2018-01-02 18:42:30
End at: 2018-01-02 18:43:00
Local clock offset: -0.377 ms
Remote clock offset: -16.256 ms

Below is generated by plot.py at 2018-01-02 20:16:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.95 Mbit/s
95th percentile per-packet one-way delay: 143.541 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 1.95 Mbit/s
95th percentile per-packet one-way delay: 143.541 ms
Loss rate: 0.64%

Run 1: Report of TCP Vegas — Data Link

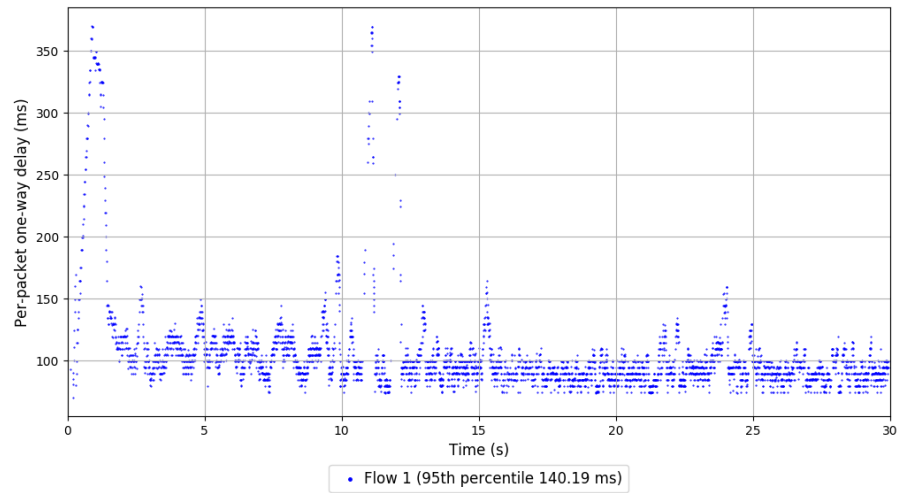
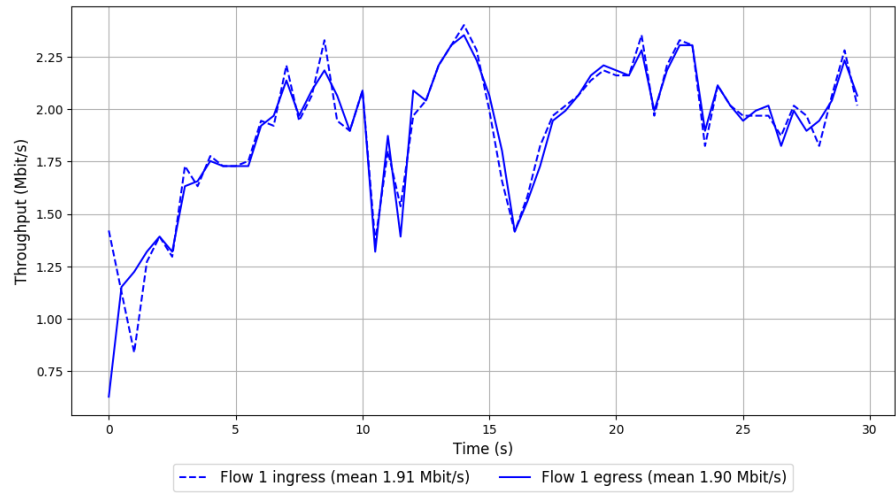


Run 2: Statistics of TCP Vegas

Start at: 2018-01-02 18:58:59
End at: 2018-01-02 18:59:29
Local clock offset: 0.019 ms
Remote clock offset: -16.142 ms

Below is generated by plot.py at 2018-01-02 20:16:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 140.195 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 140.195 ms
Loss rate: 0.40%

Run 2: Report of TCP Vegas — Data Link

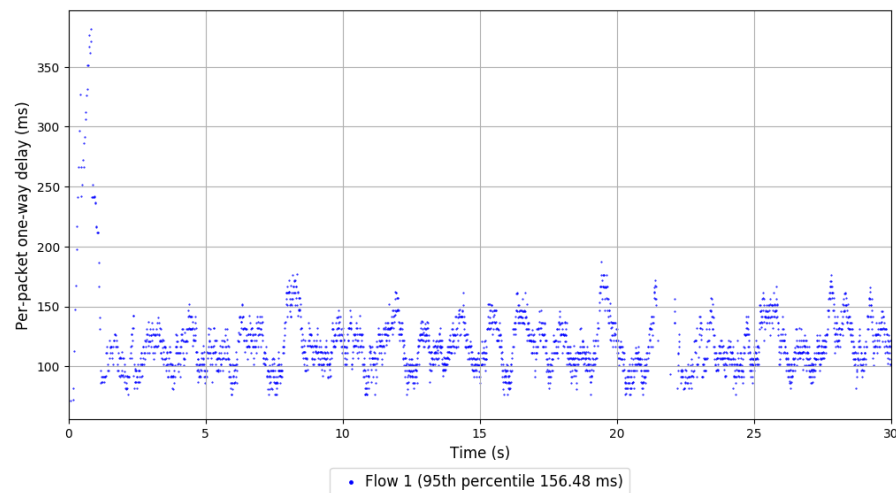
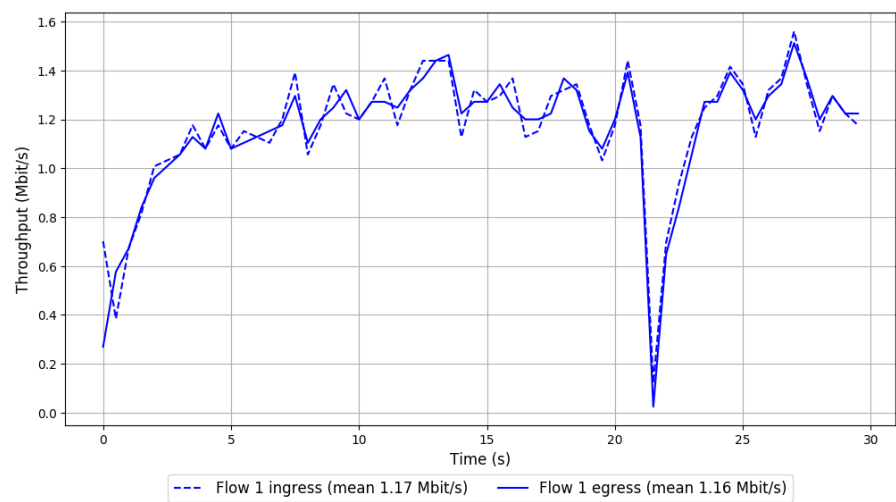


Run 3: Statistics of TCP Vegas

Start at: 2018-01-02 19:15:18
End at: 2018-01-02 19:15:48
Local clock offset: -0.156 ms
Remote clock offset: -12.712 ms

Below is generated by plot.py at 2018-01-02 20:16:28
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.16 Mbit/s
95th percentile per-packet one-way delay: 156.479 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 1.16 Mbit/s
95th percentile per-packet one-way delay: 156.479 ms
Loss rate: 0.96%

Run 3: Report of TCP Vegas — Data Link

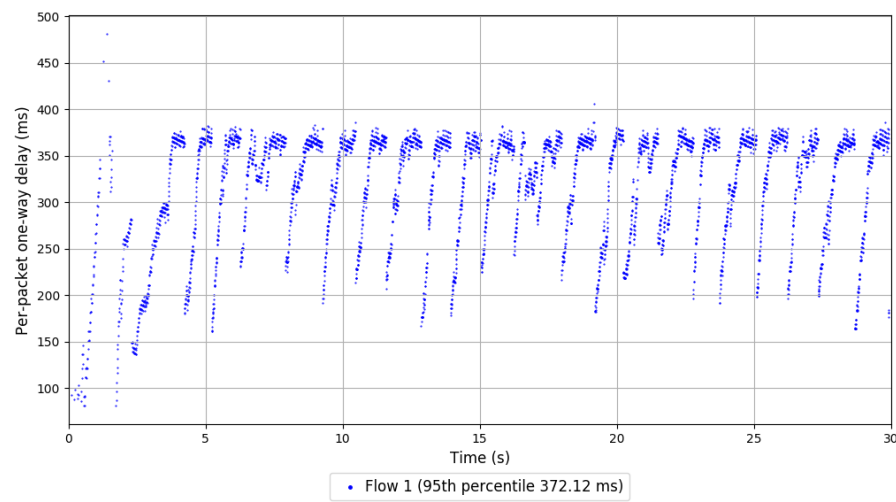
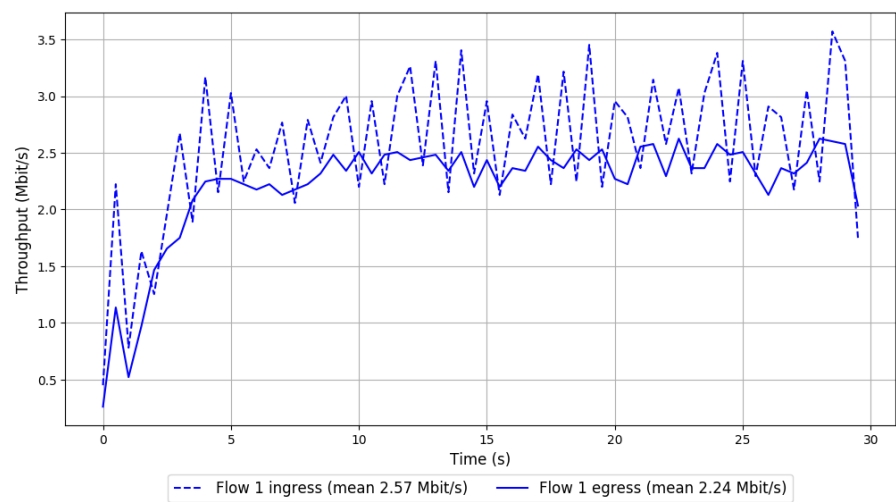


Run 1: Statistics of Verus

Start at: 2018-01-02 18:50:16
End at: 2018-01-02 18:50:46
Local clock offset: -0.438 ms
Remote clock offset: -15.273 ms

Below is generated by plot.py at 2018-01-02 20:16:29
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 372.116 ms
Loss rate: 13.17%
-- Flow 1:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 372.116 ms
Loss rate: 13.17%

Run 1: Report of Verus — Data Link

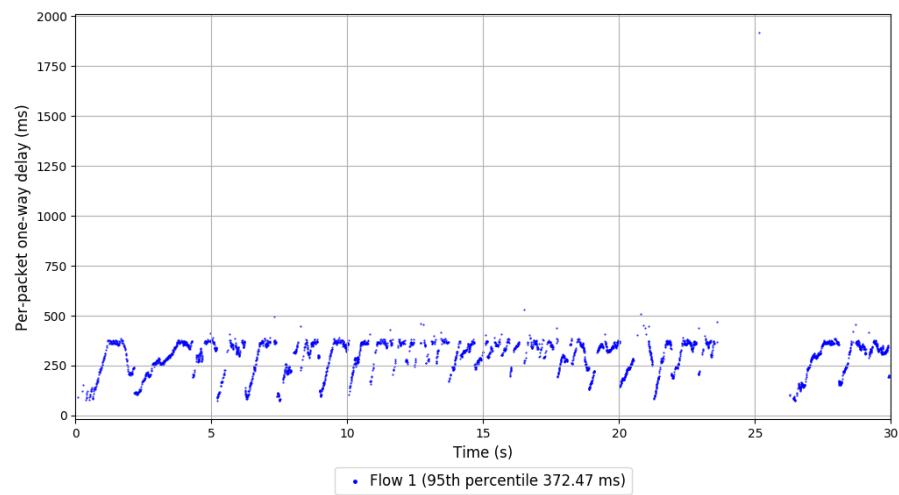
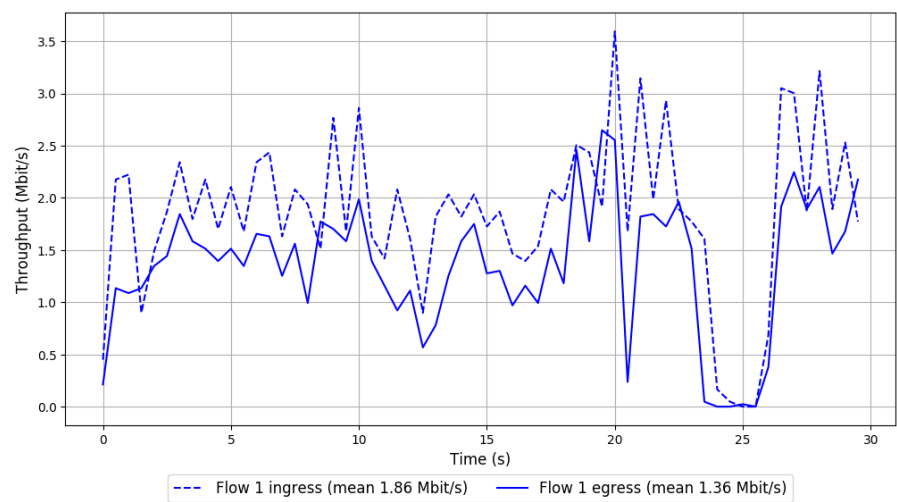


Run 2: Statistics of Verus

Start at: 2018-01-02 19:06:35
End at: 2018-01-02 19:07:05
Local clock offset: -2.468 ms
Remote clock offset: -14.956 ms

Below is generated by plot.py at 2018-01-02 20:16:29
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.36 Mbit/s
95th percentile per-packet one-way delay: 372.474 ms
Loss rate: 27.27%
-- Flow 1:
Average throughput: 1.36 Mbit/s
95th percentile per-packet one-way delay: 372.474 ms
Loss rate: 27.27%

Run 2: Report of Verus — Data Link

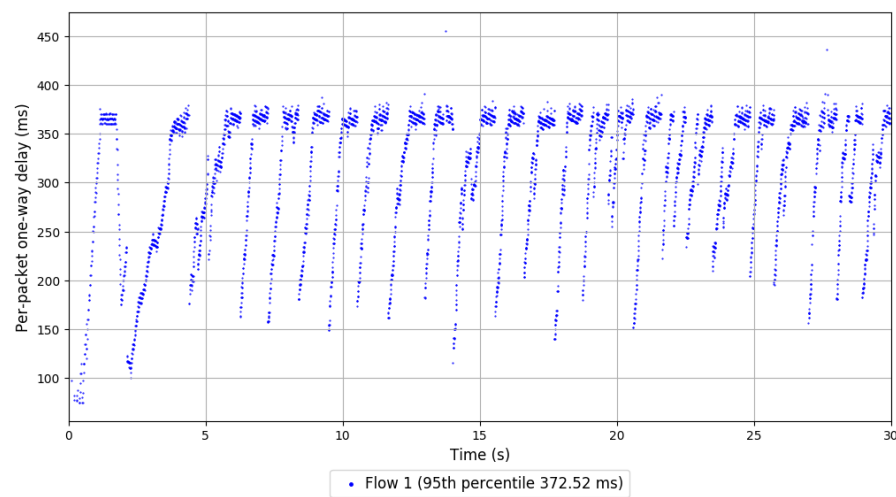
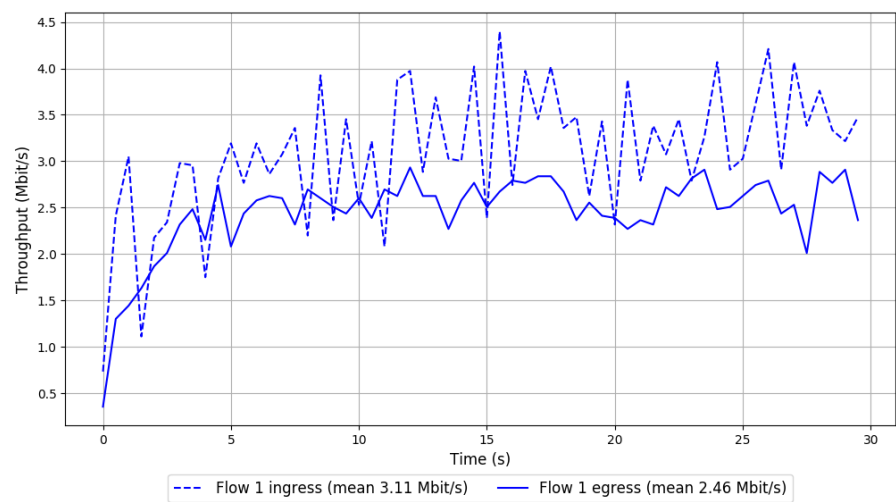


Run 3: Statistics of Verus

Start at: 2018-01-02 19:22:53
End at: 2018-01-02 19:23:24
Local clock offset: -0.923 ms
Remote clock offset: -14.997 ms

Below is generated by plot.py at 2018-01-02 20:16:31
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.46 Mbit/s
95th percentile per-packet one-way delay: 372.523 ms
Loss rate: 20.80%
-- Flow 1:
Average throughput: 2.46 Mbit/s
95th percentile per-packet one-way delay: 372.523 ms
Loss rate: 20.80%

Run 3: Report of Verus — Data Link

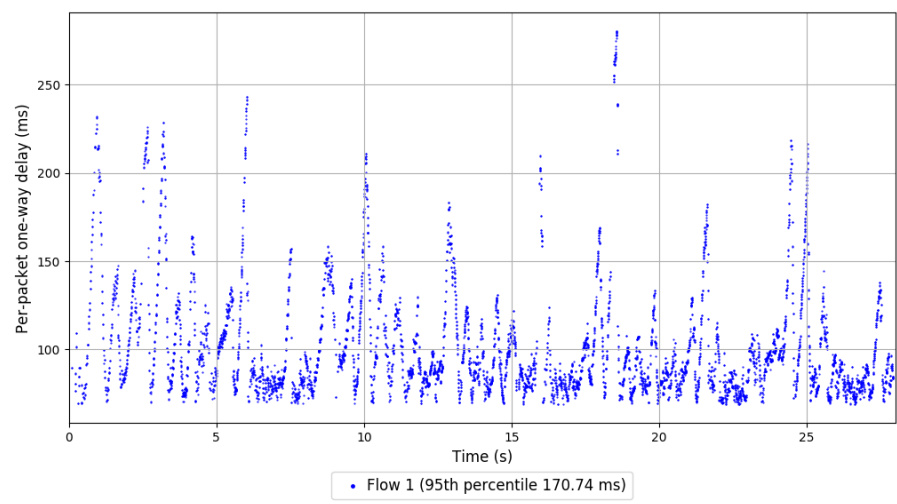
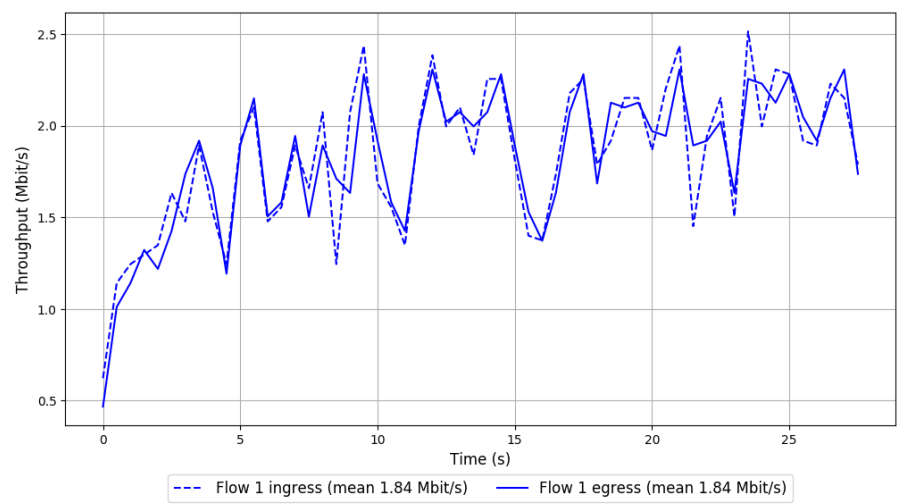


Run 1: Statistics of Copa

Start at: 2018-01-02 18:43:35
End at: 2018-01-02 18:44:05
Local clock offset: -2.826 ms
Remote clock offset: -14.44 ms

Below is generated by plot.py at 2018-01-02 20:16:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.84 Mbit/s
95th percentile per-packet one-way delay: 170.737 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 1.84 Mbit/s
95th percentile per-packet one-way delay: 170.737 ms
Loss rate: 0.28%

Run 1: Report of Copa — Data Link

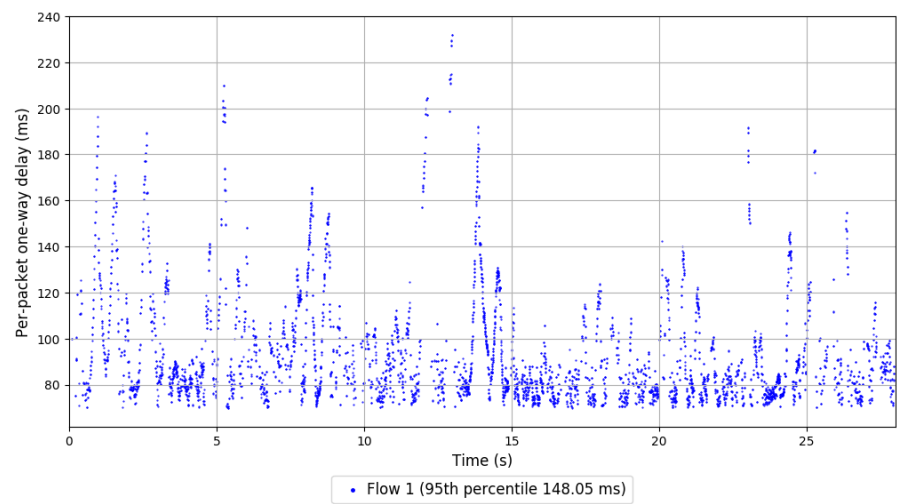
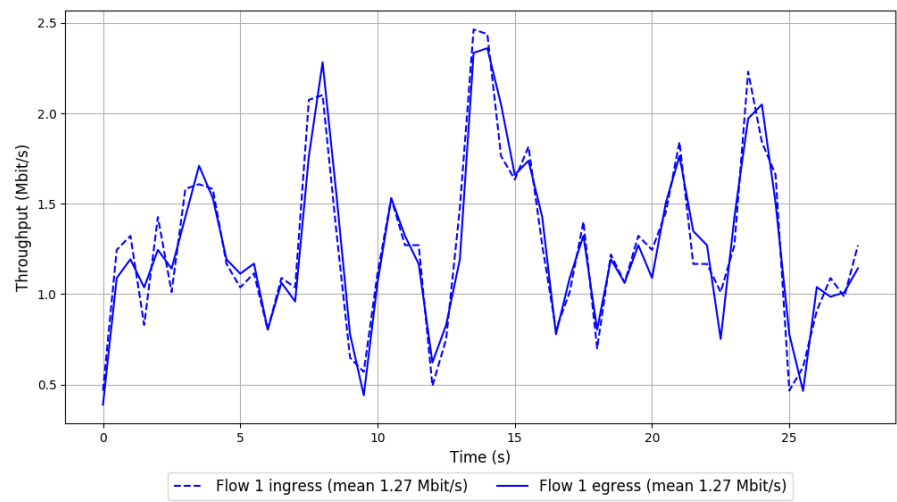


Run 2: Statistics of Copa

Start at: 2018-01-02 19:00:04
End at: 2018-01-02 19:00:34
Local clock offset: 0.015 ms
Remote clock offset: -12.546 ms

Below is generated by plot.py at 2018-01-02 20:16:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.27 Mbit/s
95th percentile per-packet one-way delay: 148.052 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 1.27 Mbit/s
95th percentile per-packet one-way delay: 148.052 ms
Loss rate: 0.40%

Run 2: Report of Copa — Data Link

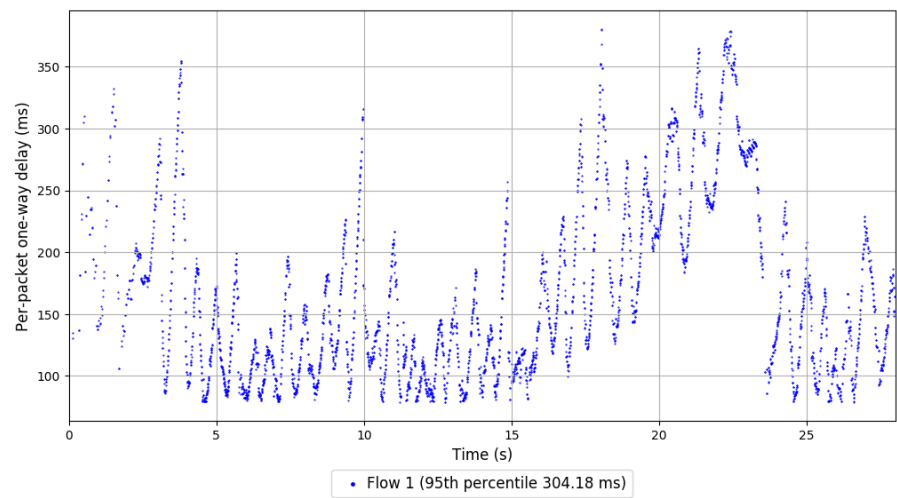
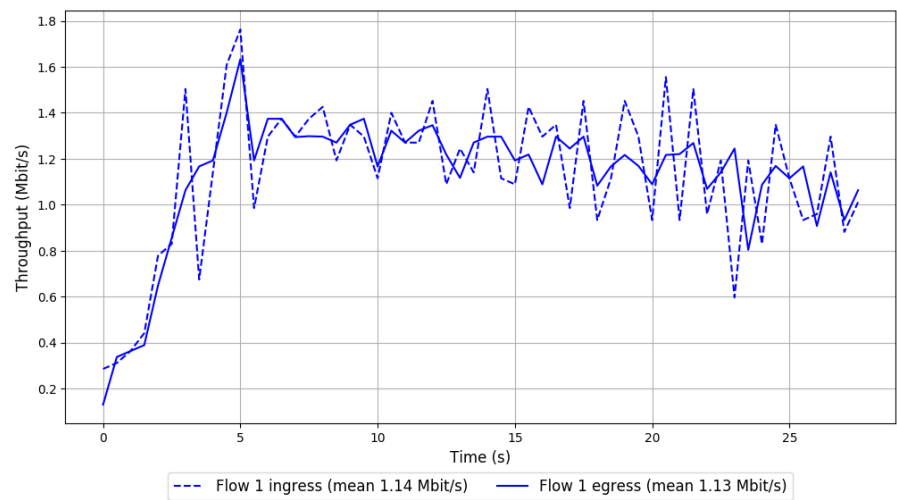


Run 3: Statistics of Copa

Start at: 2018-01-02 19:16:23
End at: 2018-01-02 19:16:53
Local clock offset: 1.474 ms
Remote clock offset: -14.012 ms

Below is generated by plot.py at 2018-01-02 20:16:33
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 304.180 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 304.180 ms
Loss rate: 0.45%

Run 3: Report of Copa — Data Link

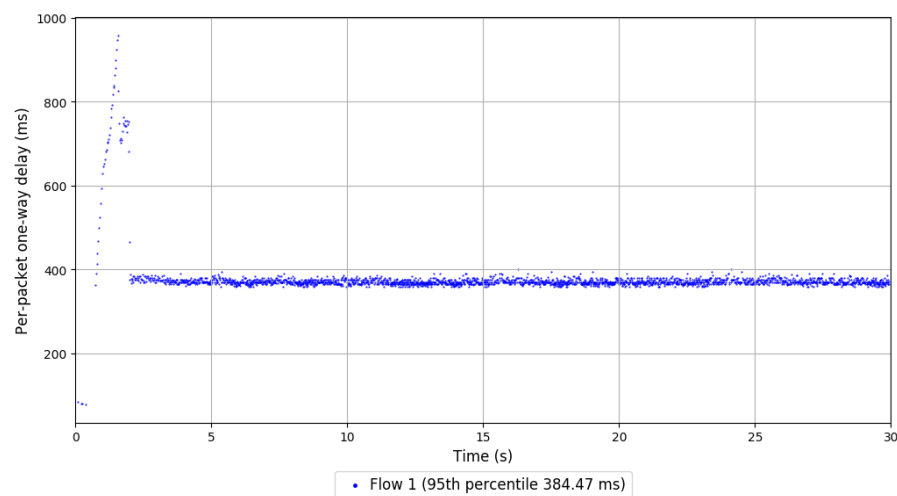
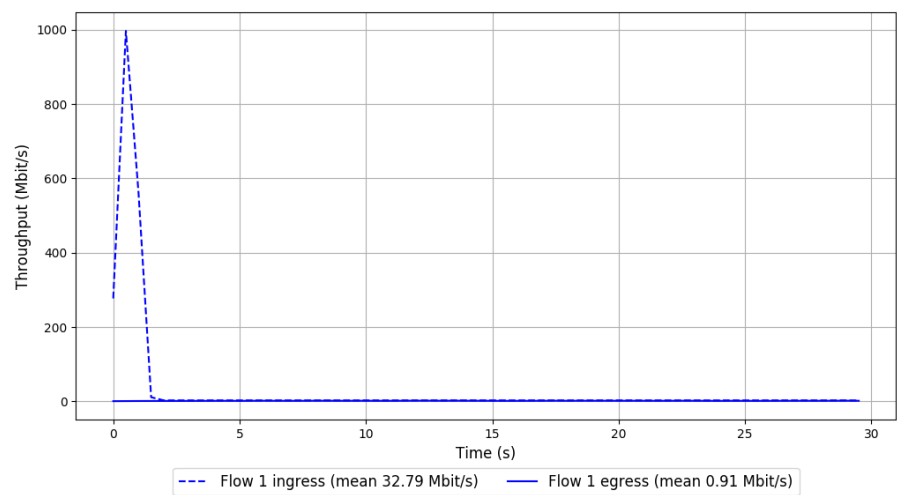


Run 1: Statistics of FillP

Start at: 2018-01-02 18:41:24
End at: 2018-01-02 18:41:54
Local clock offset: -2.576 ms
Remote clock offset: -14.372 ms

Below is generated by plot.py at 2018-01-02 20:16:37
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.91 Mbit/s
95th percentile per-packet one-way delay: 384.473 ms
Loss rate: 97.23%
-- Flow 1:
Average throughput: 0.91 Mbit/s
95th percentile per-packet one-way delay: 384.473 ms
Loss rate: 97.23%

Run 1: Report of FillP — Data Link

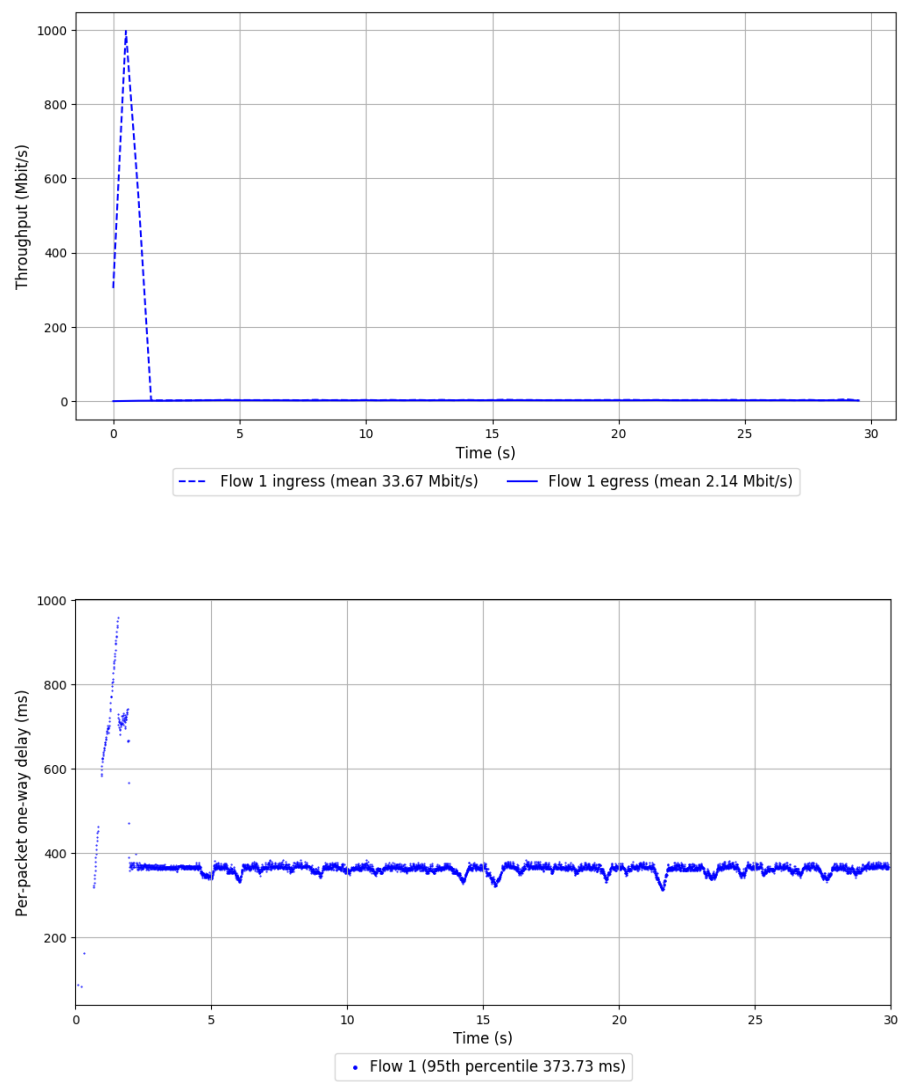


Run 2: Statistics of FillP

Start at: 2018-01-02 18:57:52
End at: 2018-01-02 18:58:22
Local clock offset: -3.13 ms
Remote clock offset: -15.838 ms

Below is generated by plot.py at 2018-01-02 20:16:37
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.14 Mbit/s
95th percentile per-packet one-way delay: 373.726 ms
Loss rate: 93.67%
-- Flow 1:
Average throughput: 2.14 Mbit/s
95th percentile per-packet one-way delay: 373.726 ms
Loss rate: 93.67%

Run 2: Report of FillP — Data Link

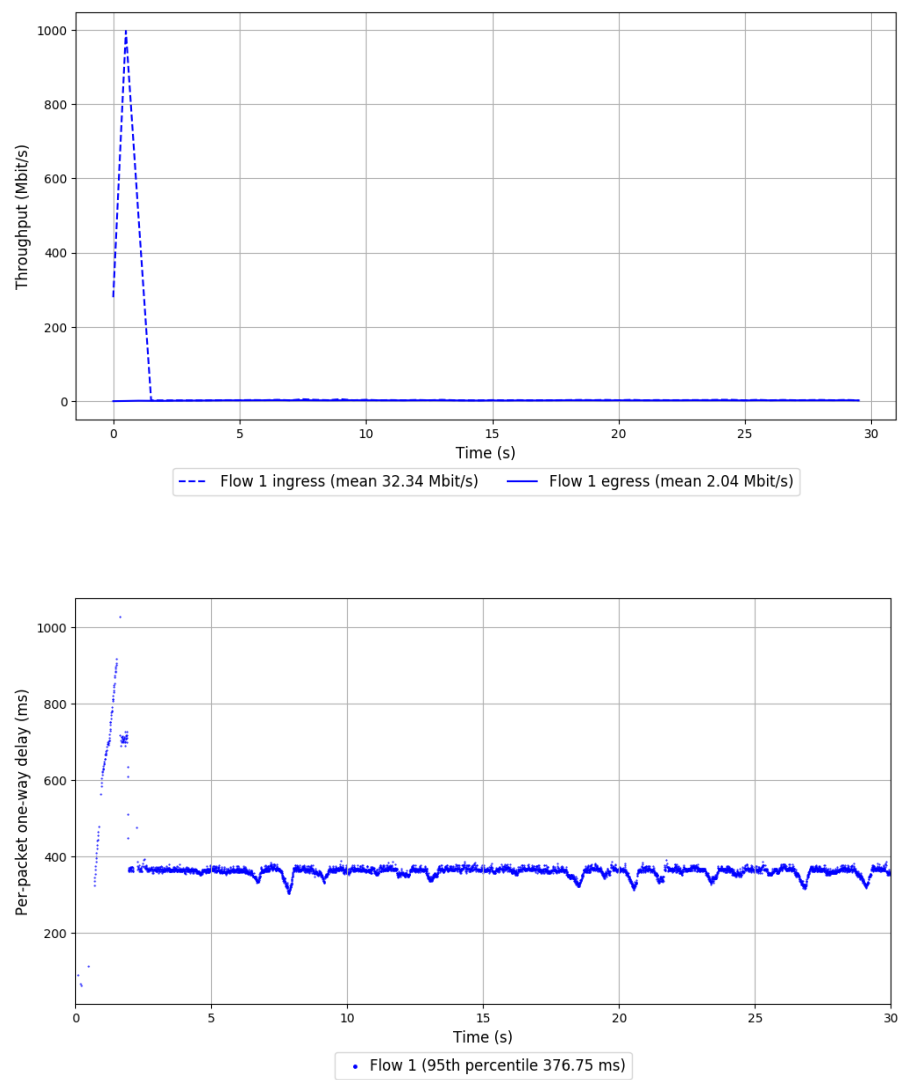


Run 3: Statistics of FillP

Start at: 2018-01-02 19:14:11
End at: 2018-01-02 19:14:41
Local clock offset: 0.058 ms
Remote clock offset: -13.99 ms

Below is generated by plot.py at 2018-01-02 20:16:37
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.04 Mbit/s
95th percentile per-packet one-way delay: 376.746 ms
Loss rate: 93.71%
-- Flow 1:
Average throughput: 2.04 Mbit/s
95th percentile per-packet one-way delay: 376.746 ms
Loss rate: 93.71%

Run 3: Report of FillP — Data Link

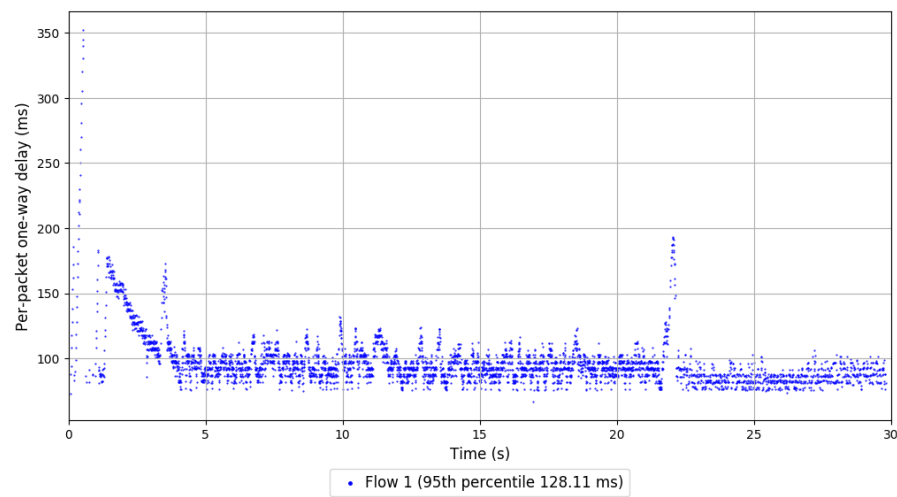
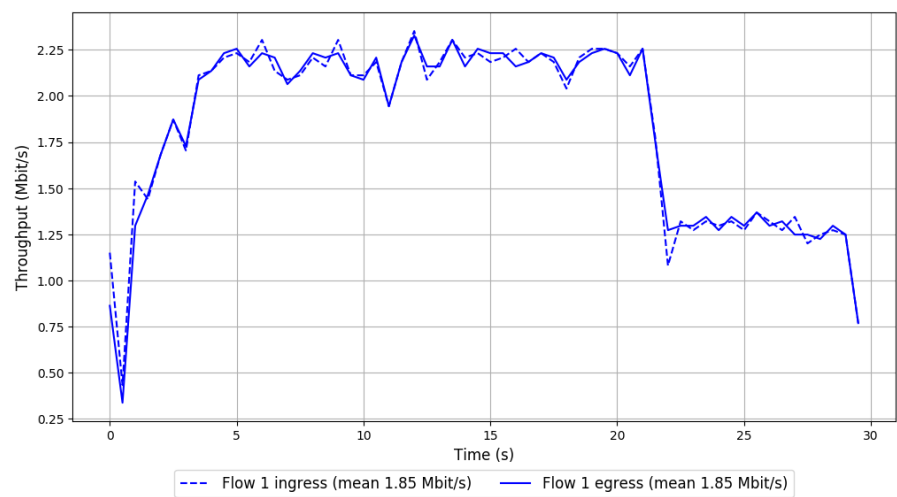


```
Run 1: Statistics of Indigo

Start at: 2018-01-02 18:45:54
End at: 2018-01-02 18:46:24
Local clock offset: -0.834 ms
Remote clock offset: -16.324 ms

# Below is generated by plot.py at 2018-01-02 20:16:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 128.108 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 128.108 ms
Loss rate: 0.39%
```

Run 1: Report of Indigo — Data Link

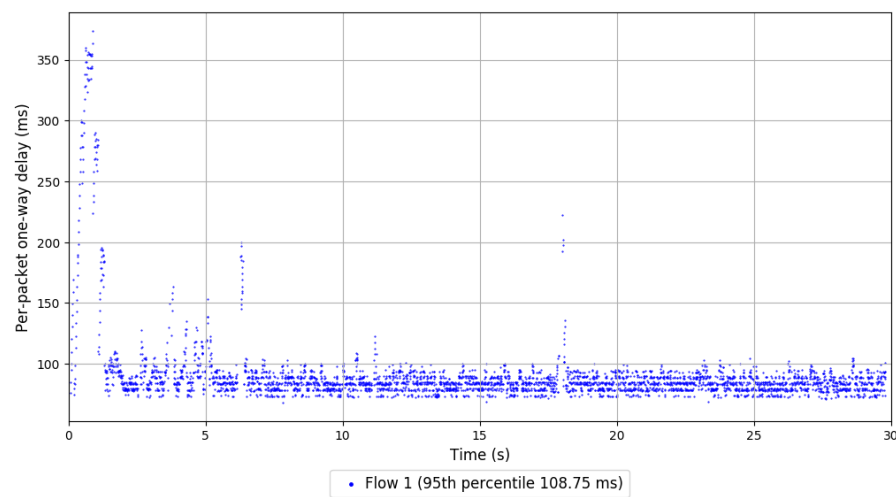
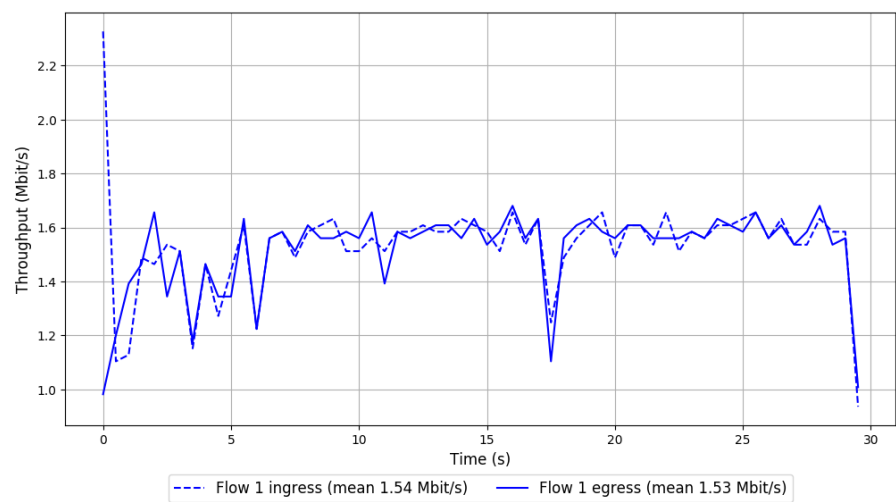


Run 2: Statistics of Indigo

Start at: 2018-01-02 19:02:15
End at: 2018-01-02 19:02:45
Local clock offset: -0.633 ms
Remote clock offset: -12.908 ms

Below is generated by plot.py at 2018-01-02 20:16:37
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.53 Mbit/s
95th percentile per-packet one-way delay: 108.749 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 1.53 Mbit/s
95th percentile per-packet one-way delay: 108.749 ms
Loss rate: 0.99%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-01-02 19:18:33

End at: 2018-01-02 19:19:03

Local clock offset: -0.091 ms

Remote clock offset: -14.977 ms

Run 3: Report of Indigo — Data Link

Figure is missing

Figure is missing